GRUMMAN

SPACE FABRICATION DEMONSTRATION SYSTEM
QUARTERLY PROGRESS REPORT NO. 5

February 16, 1978 - May 15, 1978

NASA-MSFC Contract NAS8-32472

GRUMMAN AEROSPACE CORPORATION
BETHPAGE, NEW YORK 11714

NSS-SFDS-LR040
Contract NAS8-32472
May 31, 1978

National Aeronautics and Space Administration
George C. Marshall Space Flight Center
Marshall Space Flight Center, Alabama 35812

Attention: Erich E. Engler, COR
Code EP-13 Bldg. 4610

Subject: SPACE FABRICATION DEMONSTRATION SYSTEM - Quarterly Progress Report No. 5, February 16, 1978 - May 15, 1978

Enclosures: (1) Structural Member Development
(2) Beam Builder Design, Assembly and Test

References: (a) SFDS - Monthly Progress Letter No. 9, March 30, 1978
(b) SFDS - Monthly Progress Letter No. 10, April 28, 1978

SUMMARY

This fifth quarter year of the Space Fabrication Demonstration System (SFDS) program included the completion of assembly of the beam builder and its first automatic production of a truss on May 4, 1978. During this quarter we also successfully tested a four-bay, hand-assembled, roll-formed members truss to ultimate load on May 5, 1978. Details associated with these achievements are included in the enclosures. This report, supplemented by our previous monthly progress letters, references (a) and (b), constitutes our fifth quarterly report.

During the next monthly reporting period, we anticipate completing subsystem debugging and establishing the operating parameters for the beam builder. No major problems are anticipated at this time.

The weekly telcon review continues to provide an excellent information base for problem resolutions as they occur. These and the periodic meetings of NASA-MSFC and Grumman program personnel have assisted in keeping the program progressing smoothly.

DISCUSSION

WBS 1.1 PROGRAM MANAGEMENT

Program progress, in percent completion, where applicable, is shown in Figure 1, SFDS Master Program Schedule. Continued detailed review of tasks committed versus tasks completed has help to maintain the SFDS schedule.

WBS 1.2 DESIGN and DEVELOPMENT

1.2.1 Structural Member Development

The test of the structural test truss to ultimate load in compression was successfully completed during this quarter. The truss failed at a compression load of 1507 pounds, which is about 115 percent of the theoretical ultimate load. The test and its results are detailed in Enclosure (1).

No further effort in this development area will be conducted under the present contract.

1.2.2 Fabrication Facility Design

Detail design of the fabrication facility (beam builder) was completed during this quarter. Design efforts associated with subsystem debugging are described in detail in Enclosure (2).

WBS 1.3 FABRICATION and ASSEMBLY

1.3.1 Detailed Parts

Fabrication of all detailed parts for the beam builder were completed during this quarter. No further beam builder detailed parts fabrication will take place under the present contract.

1.3.2 Assembly

Assembly of the beam builder was completed during this quarter. Only such efforts for subsystems debugging and proper beam builder operation which require disassembly and reassembly will be conducted during the remainder of this contract.

The beam builder assembly is described in greater detail in Enclosure (2).

WBS 1.4 TEST

1.4.1 Fabrication Facility Test

Testing of the fabrication facility (beam builder) was initiated during this quarter. Numerous one-bay truss specimens were produced during this effort to demonstrate subsystem operation and detect beam builder problem areas. No significant problems were found. The machine operates well. Further detail is included in Enclosure (2).

1.4.2 Structural Element Test

It is anticipated that the quality assurance, structural test and demonstration trusses will be produced during the next quarterly program period.

WBS 1.5 FLIGHT DEMONSTRATION PLAN

Effort associated with the final SFDS Flight Demonstration Plan has continued during this reporting period. Submittal of the draft of this plan is anticipated about the middle of the next quarterly program period. It will include an evaluation of the suitability of the ground demonstration beam builder for space flight, modifications required, recommendations, estimated cost and schedule.

CONCLUSION

The SFDS program is well on its way to a successful conclusion with the assembly of the beam builder and first operation having been done on time.

RECOMMENDATION

NASA-MSFC and Grumman program management personnel continue close surveillance of the remaining SFDS program elements to assure successful program completion utilizing telcon and face-to-face information interchange for problem discussion and resolution in a timely manner.

Should you have any questions with regard to the above, the enclosures, or the program in general, please contact us.

Very truly yours,
GRUMMAN AEROSPACE CORPORATION

Walter K. Muench

Walter K. Muench
SFDS Program Manager

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SFDS MASTER PROGRAM SCHEDULE

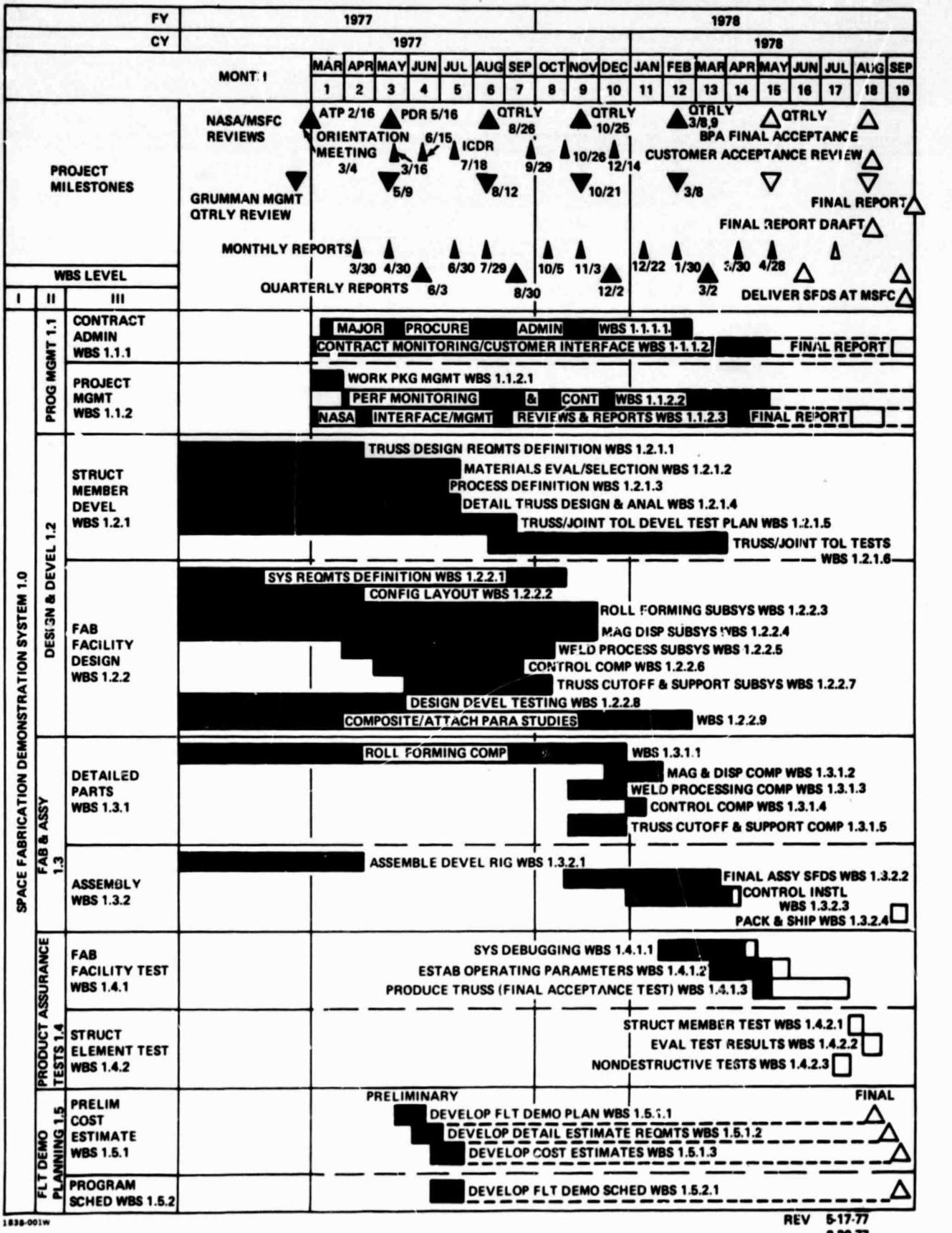

Figure 1 -Status 5/15/78

ENCLOSURE (1)

STRUCTURAL MEMBER DEVELOPMENT

W.B.S. 1.2.1.6 STRUCTURAL MEMBER TEST

A structural test of a one meter x six meter long specimen (four 1.5 meter bays) was tested on May 5, 1978 under an axial compression load applied by an hydraulic cylinder and tension rod interconnector loading fixtures at each end of the specimen. The ultimate design load based on an SSPS design with concentration ratio of two was 1300 pounds compression. The structure failed at 1507 pounds; the failure mode was cap torsion/flexure instability in Bay III with an average load per cap of 502 pounds compression.

Figure 1-1 shows the test specimen with the method of load application to the end fixtures and the three instrumented links at the upper fixture installed to measured induced loads. In addition the links simulate the torsion end attachments required when applying the beam to actual design configurations under development. The typical instrumentation, both strain and deflection gage locations are given in Figure 1-2. In order to keep the total instrumentation requirements within limits the total number of strain gages was 154 and deflection gages 67 distributed as given in Table 1-1.

Measured data are shown in the Appendix; these include the strains, stresses and deflections of all instrumentation for limit and ultimate loads. Also included are data measurements versus percent of applied load for typical points on the structure. Figures 1-3 and 1-4 show the plots of measured stresses versus developed length of the cap cross section in Bay I for ultimate and limit loads respectively. While the curves are drawn connecting points across the corner locations, these extrapolations are only for identification since the local corner stresses are much higher, particularly on the centerline. The curve at ultimate indicates a high degree of torsional strain as do the deflection data. Figures 1-5 and 1-6 show similar data for the diagonals in Bay I. The data for the battens between Bay I and Bay II are given in Figure 1-7.

Using the measured data the loads in the diagonals of Bay I were estimated for limit and ultimate applied loads; the load at limit is -14.6 pounds and is -22 pounds at ultimate. A major portion of the stresses obtained from strain measurements is caused by bending and torsion induced by the load being applied eccentrically to the member through the spot welds.

Since the horizontal component of the load in the diagonal is related to the forces which would be measured by the load links attached to the upper fixture, the strain measurements in the load links show a substantial difference between links at each applied external load level. However, if the three loads are averaged, the limit load is 7.8 pounds and the ultimate load is 15.7 pounds. The horizontal components for the upper bay diagonals give 9 pounds and 13.4 pounds for the limit and ultimate loads respectively.

Further analyses of the data are necessary in order to obtain correlation with techniques for analyzing the structure. These include member load definition as well as prediction of modes of failure considering joint stiffnesses, member torsional/bending stiffnesses and initial imperfections.

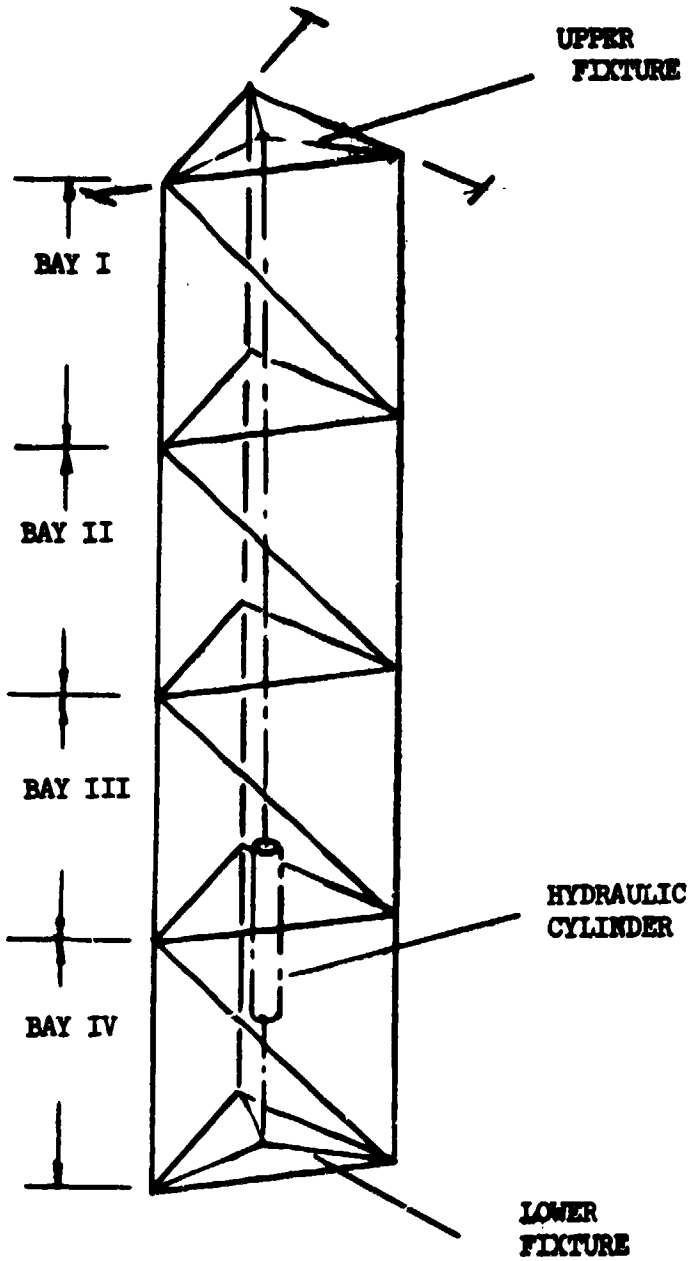

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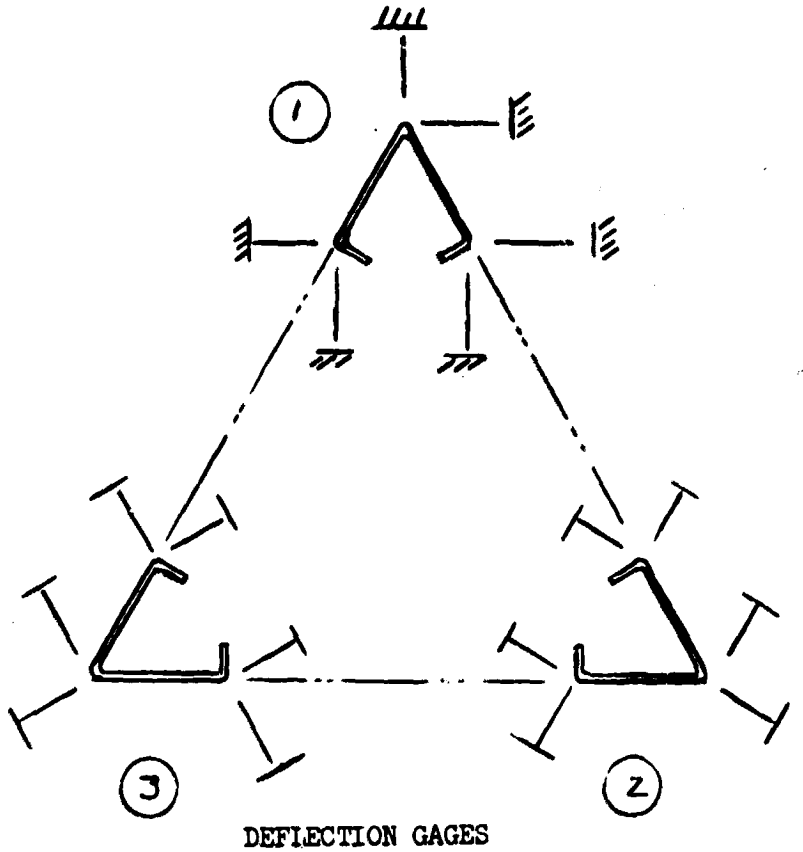
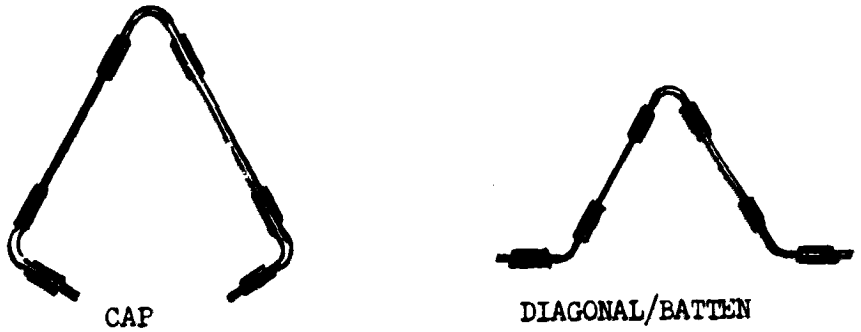
Figure 1-1 Six Meter Compression Test Specimen



DEFLECTION GAGES



STRAIN GAGES

1838-003W

Figure 1-2 Typical Instrumentation

Table 1-1 Test Specimen Instrumentation (Sheet 1 of 3)

STRAIN GAGES

ELEMENT	BAY	STATIONS IN BAY	NUMBER OF GAGES PER MEMBER	NUMBER OF MEMBERS	TOTAL NUMBER OF GAGES
	I	2	12	3	72
CAPS	II	1	6	2	12
AXIAL GAGES	III	1	4	1	4
	IV	1	4	1	4
				SUBTOTAL	92
DIAGONALS					
	I	1	12	2	24
	II	1	2	1	2
AXIAL GAGES	III	1	2	1	2
	IV	-			
				SUBTOTAL	28

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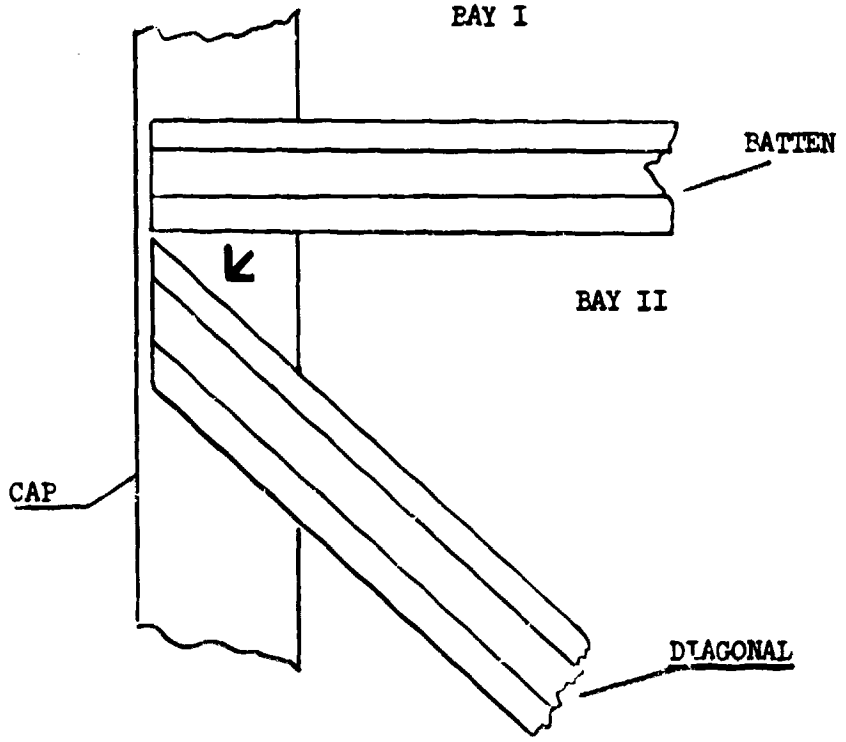
Table 1-1 Test Specimen Instrumentation (Sheet 2 of 3)

STRAIN GAGES (Contd)

BAY	STATIONS IN BAY	NUMBER OF GAGES PER MEMBER	NUMBER OF MEMBERS	TOTAL NUMBER OF GAGES
BATTENS AXIAL GAGES I/II, II/III, III/IV	1	8	2	16
			SUBTOTAL	16



AXIAL GAGES		12
TRIAXIAL 6 per Cap	CAPS -	6
	TOTAL GAGES	154

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Table 1-1 Test Specimen Instrumentation (Sheet 3 of 3)

NUMBER & LOCATION OF DEFLECTION GAGES

LOCATION	NUMBER OF OF GAGES
Upper Fixture	7
Bay I Two Stations	2 X 18
Bay II One Station (Mid)	18
Bay III One Station, One Cap Only	6
Total	67

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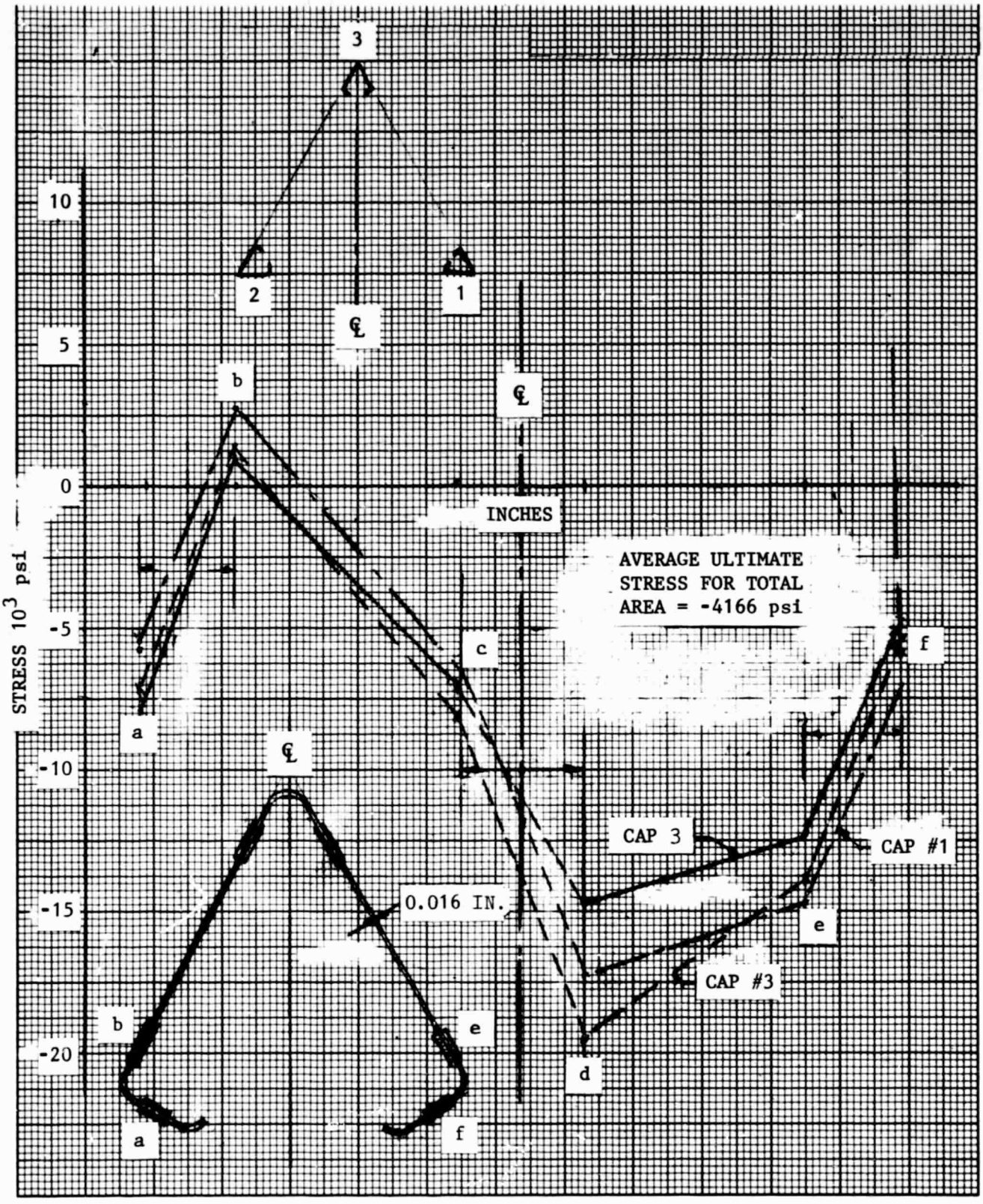

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Figure 1-3 Cap Stresses Bay 1 vs Developed Flat Pattern of Cap at Ultimate Load – 1300 Pounds

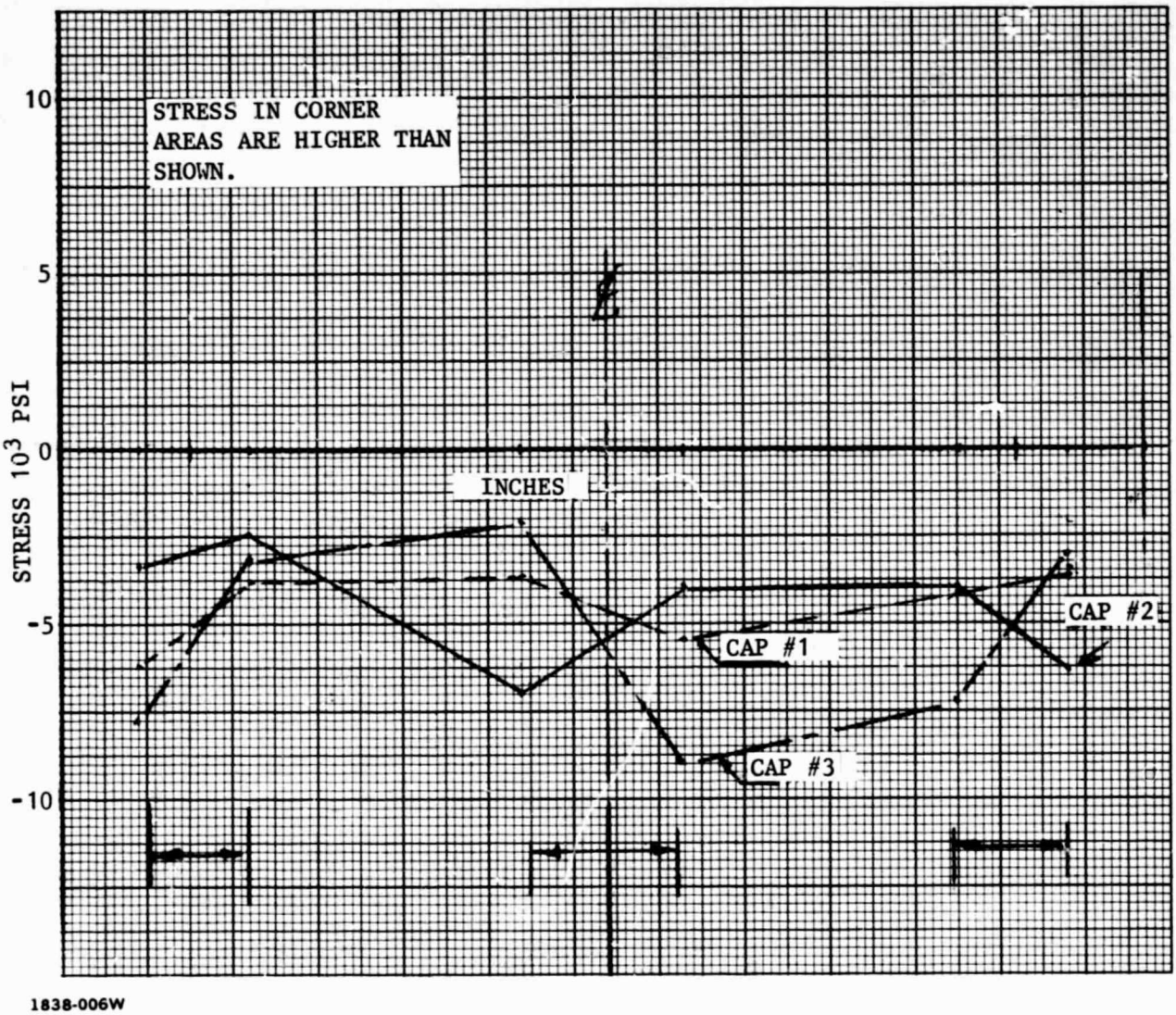

Figure 1-4 Cap Stresses Bay 1 vs Developed Flat Pattern of Cap at Limit Load – 930 Pounds

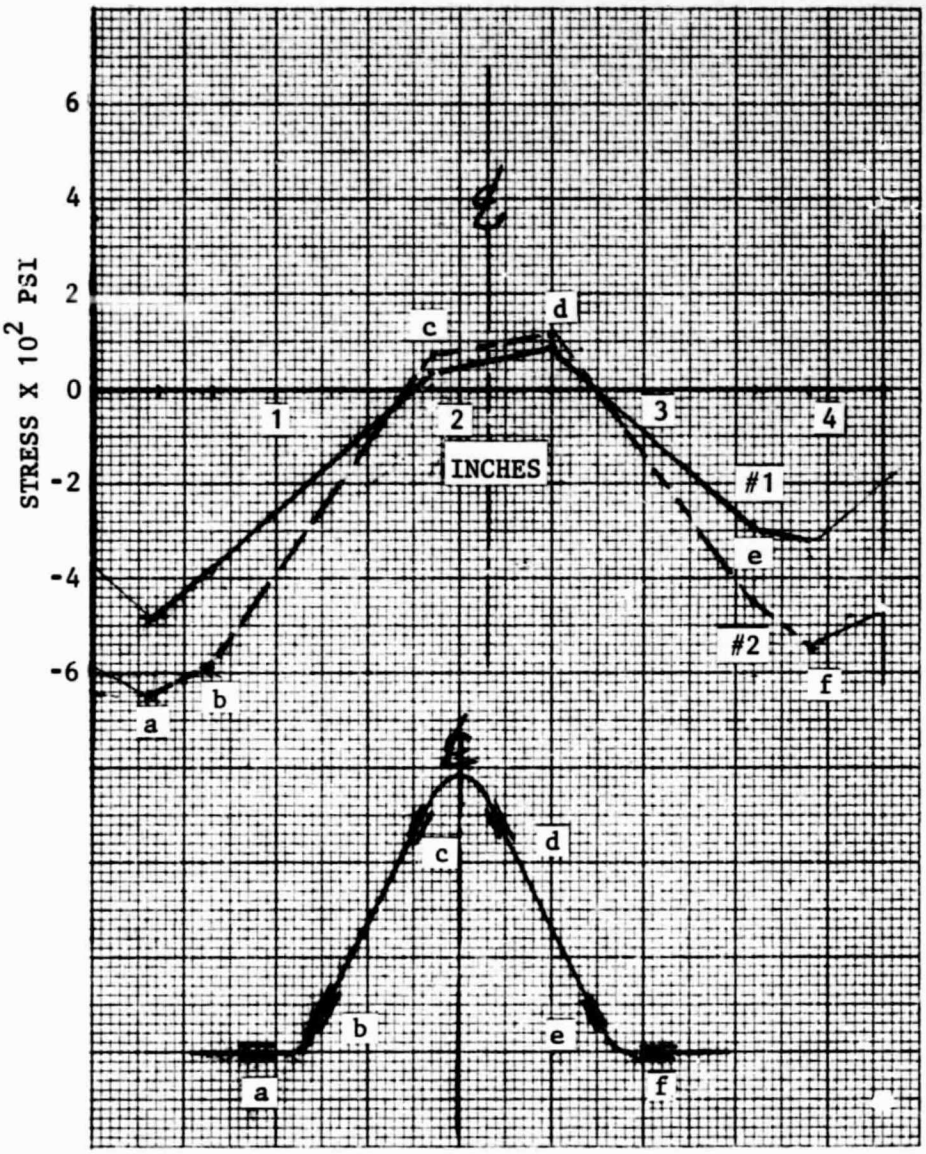

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Figure 1-5 Stress in Diagonals in Bay 1 at Limit Load

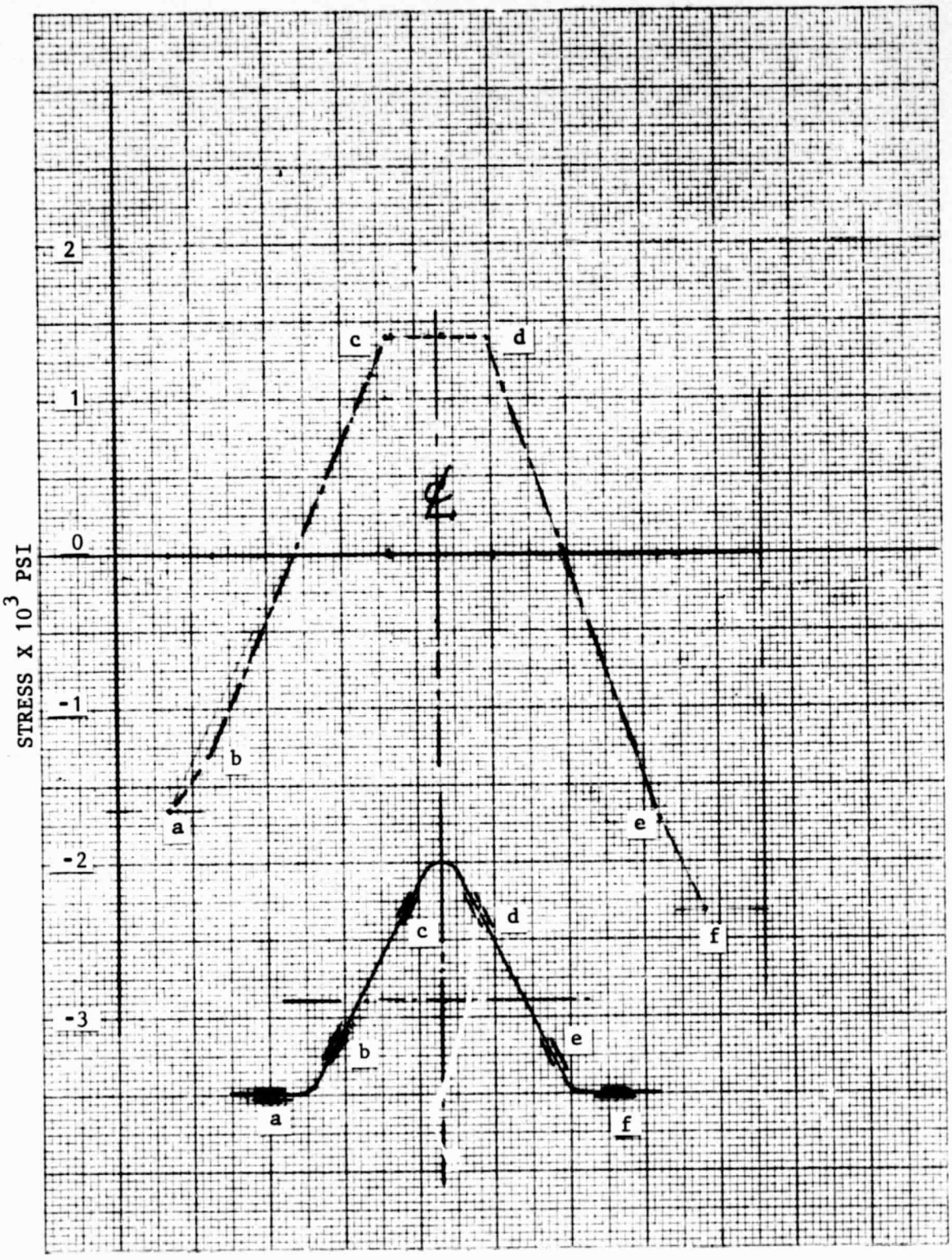

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Figure 1-6 Stresses in Diagonal in Bay 1 at Ultimate Load

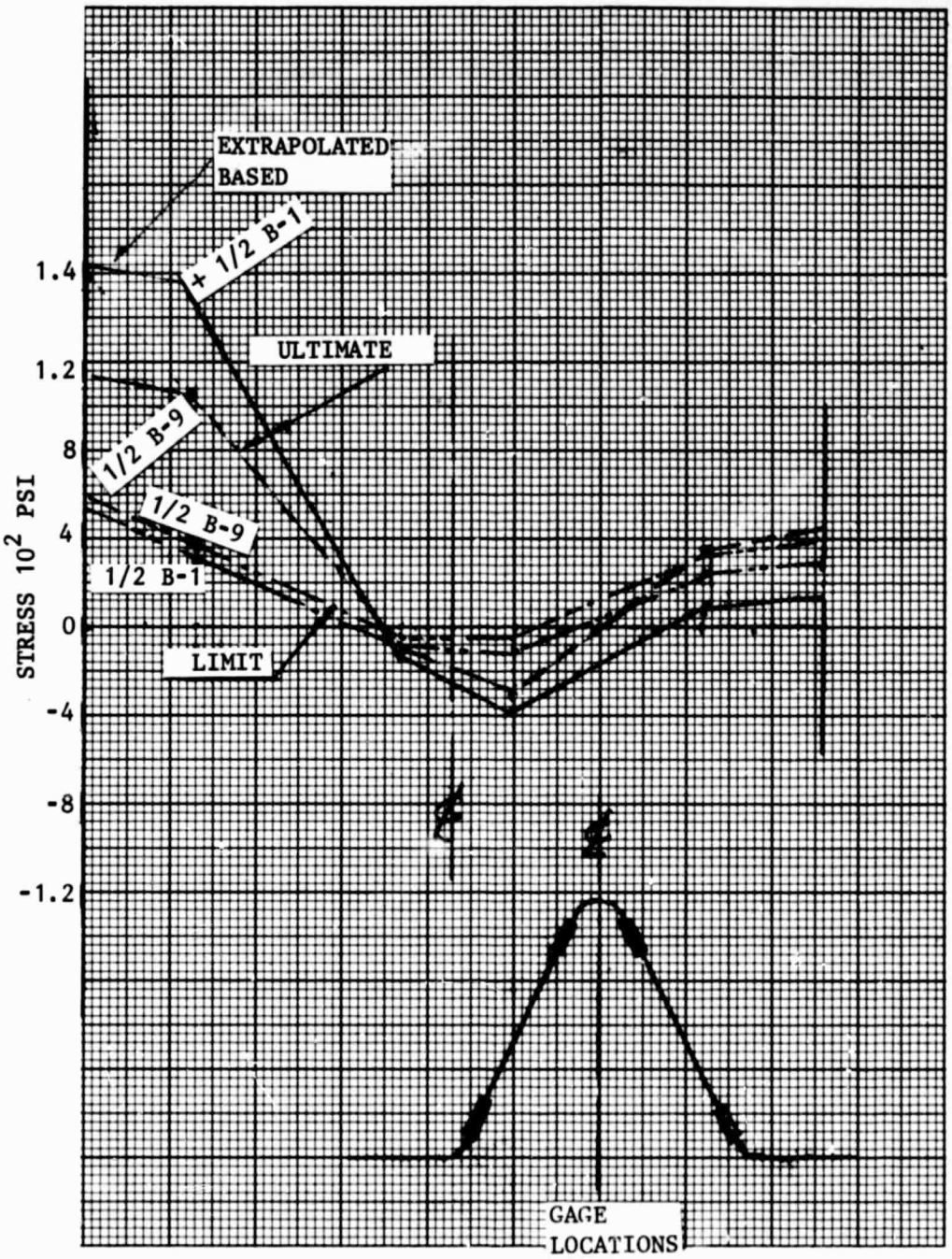

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Figure 1-7 Stresses in Battens vs Developed Flat Pattern at Bottom of Bay 1

APPENDIX

- STRAINS, STRESSES & DEFLECTIONS AT LIMIT & ULTIMATE LOADS
- CURVES OF TYPICAL MEASUREMENTS VERSUS PERCENT OF LOAD
- PHOTOGRAPHS

TYPICAL INSTRUMENTATION MEASUREMENTS AT SIGNIFICANT LOCATIONS

1. Vertical Deflection Gages
   Upper Fixture

   DFV-1, DFV-2, DFV-3

2. Horizontal Deflection Gages
   Upper Fixture

   DU1-1, DU1-2, DU3-1, DU3-2

3. Deflection Gages on Cap 2 Center Bay

   2D2-1
   2D2-2
   2D2-3
   2D2-4
   2D2-5
   2D2-6

4. Deflection Gages on Cap 1 Bay I

   1D2-1A
   1D2-2A
   1D2-3A
   1D2-4A
   1D2-5A
   1D2-6A

5. Strain Gages Cap 2 Bay II

   2-C-3
   2-C-4
   2-C-8
   2-C-7
   2-C-9
   2-C-10

6. Strain Gages Bay I

Cap 2	Cap 3
1-C-37	1-C-61
1-C-38	1-C-62
1-C-39	1-C-63
1-C-40	1-C-64
1-C-41	1-C-65
1-C-42	1-C-66

Cap 2	Cap 3
1-C-43	1-C-67
1-C-44	1-C-68
1-C-45	1-C-69
1-C-46	1-C-70
1-C-47	1-C-71
1-C-48	1-C-72

7. Strain Gages Bay I

Diagonal 1	Diagonal 2
1-D-1	1-D-13
1-D-2	1-D-14
1-D-3	1-D-15
1-D-4	1-D-16
1-D-5	1-D-17
1-D-6	1-D-18
1-D-7	1-D-19
1-D-8	1-D-20
1-D-9	1-D-21
1-D-10	D-D-22
1-D-11	1-D-23
1-D-12	1-D-24

2 2 2 CONTROL STATION II 2 2 2

MTJACO/1 SPACE TRUSS COMPRESSION - MANUAL ASSY [8] STATIC

DAY: 125, TIME 11:24:49.288 TEST CONSTANTS: 1770 0295 0513

LOADS: USED		THUMBWHEELS		OFFSET	CALCULATED
71.000	%	71.000	%	0.000000	%

CHAN		DATA		ALARM		PROJECTION		COMMENT
130		891.39	LBS			1292.6	LBS	G2-107 INPUT LOAD
131	-	0.13325	IN		-	0.22857	IN	DFV1
132	-	0.13422	IN		-	0.22214	IN	DFV2
133	-	0.13677	IN		-	0.23413	IN	DFV3
134		0.03463	IN			0.06156	IN	D01-1
135		0.12427	IN			0.22536	IN	D01-2
13A		0.00003	IN			0.00046	IN	D03-1
137		0.02656	IN			0.04859	IN	D03-2
138		0.04391	IN			0.07212	IN	101-1A
139		0.09293	IN			0.16331	IN	101-2A
14		0.04163	IN			0.07845	IN	101-3A
141		0.08713	IN			0.16524	IN	101-4A
142		0.07336	IN			0.13594	IN	101-5A
143		0.03297	IN			0.07503	IN	101-6A
144	-	0.00236	IN		-	0.00489	IN	102-1A
145		0.04437	IN			0.10949	IN	102-2A
146	-	0.04223	IN		-	0.07233	IN	102-3A
147		0.03035	IN			0.09412	IN	102-4A
148	-	0.00709	IN		-	0.00786	IN	102-5A
149		0.01013	IN			0.01378	IN	102-6A
15		0.02065	IN			0.03574	IN	103-1A
151		0.01978	IN			0.03594	IN	103-2A
152		0.03516	IN			0.06333	IN	103-3A
153		0.02100	IN			0.06179	IN	103-4A
154		0.06970	IN			0.12275	IN	103-5A
155	-	0.03311	IN		-	0.05359	IN	103-6A
156		0.03485	IN			0.05149	IN	101-1B
157		0.02698	IN			0.06240	IN	101-3B
158		0.17178	IN			0.10376	IN	101-4B
16		0.06754	IN			0.13647	IN	101-5B
161		0.01429	IN			0.04385	IN	101-6B
162	-	0.03314	IN		-	0.06241	IN	102-1B
163		0.04935	IN			0.11542	IN	102-2B
164	-	0.03342	IN		-	0.05264	IN	102-3B
165		0.05013	IN			0.12307	IN	102-4B
166		0.00456	IN			0.02571	IN	102-5B
167		0.00381	IN			0.00643	IN	102-6B
168		0.02525	IN			0.04914	IN	103-1B
169		0.02384	IN			0.05995	IN	103-2B
17		0.02368	IN			0.03433	IN	103-3B
171		0.02324	IN			0.02693	IN	103-4B
172		0.05147	IN			0.12331	IN	103-5B
173	-	0.03743	IN		-	0.10548	IN	103-6B
174		0.01451	IN			0.03987	IN	201-1
175		0.03717	IN			0.08182	IN	201-2

1838-093W

CHAN		DATA		ALARM	PROJECTION		COMMENT
176		0.00496	IN		0.01773	IN	201-3
177		0.02867	IN		0.06829	IN	201-4
178		0.1[illegible]24	IN		0.22817	IN	201-5
179	-	0.14273	IN	-	0.19960	IN	201-6
180	-	0.02295	IN	-	0.03408	IN	202-1
181		0.04729	IN		0.11201	IN	202-2
182		0.03995	IN		0.10958	IN	202-3
183		0.12554	IN		0.30114	IN	202-4
184		0.00926	IN		0.02873	IN	202-5
185		0.02804	IN		0.06857	IN	202-6
186	-	0.00415	IN	-	0.01223	IN	203-1
187		0.03684	IN		0.10730	IN	203-2
188		0.2[illegible]66	IN		0.61263	IN	203-3
189		0.12414	IN		0.30[illegible]8	IN	203-4
190	-	0.10519	IN	-	0.29777	IN	203-5
191		0.23406	IN		0.70121	IN	203-6
192	-	0.00[illegible]4	IN		0.01833	IN	301-1
193	-	0.00[illegible]3	IN		0.00575	IN	301-2
194		0.04707	IN		0.12759	IN	301-3
195		0.07762	IN		0.19868	IN	301-4
196	-	0.01108	IN		0.00312	IN	301-5
197		0.01006	IN		0.01430	IN	301-6
198	-	0.20861	KSI		0.47439	KSI	1-C-1
199	-	2.1195	KSI	-	4.1[illegible]	KSI	1-C-2
200	-	6.[illegible]891	KSI	-	13.366	KSI	1-C-3
201	-	4.2322	KSI	-	8.7351	KSI	1-C-4
202	-	7.[illegible]618	KSI	-	14.[illegible]43	KSI	1-C-5
203	-	4.4721	KSI	-	9.4742	KSI	1-C-6
204	-	1.3647	KSI	-	1.7396	KSI	1-C-7
205	-	1.[illegible]334	KSI	-	2.8146	KSI	1-C-8
206	-	4.7424	KSI	-	6.9331	KSI	1-C-9
207	-	5.[illegible]508	KSI	-	8.8869	KSI	1-C-10
208	-	6.1275	KSI	-	13.[illegible]04	KSI	1-C-11
209	-	7.[illegible]090	KSI	-	12.7[illegible]5	KSI	1-C-12
210	-	7.[illegible]706	KSI	-	12.953	KSI	1-C-13
211	-	6.[illegible]020	KSI	-	11.152	KSI	1-C-14
212	-	2.[illegible]633	KSI	-	4.1213	KSI	1-C-15
213	-	3.[illegible]386	KSI	-	6.1343	KSI	1-C-16
214	-	1.[illegible]596	KSI	-	2.[illegible]02[illegible]	KSI	1-C-17
215	-	2.3150	KSI	-	3.7271	KSI	1-C-18
216	-	8.[illegible]926	KSI	-	13.256	KSI	1-C-19
217	-	6.[illegible]204	KSI	-	9.817[illegible]	KSI	1-C-20
218	-	7.[illegible]334	KSI	-	11.548	KSI	1-C-21
219	-	6.[illegible]817	KSI	-	10.453	KSI	1-C-22
220	-	1.[illegible]20	KSI	-	3.2134	KSI	1-C-23
221	-	4.[illegible]71	KSI	-	7.4982	KSI	1-C-24
222	-	8.[illegible]458	KSI	-	12.374[illegible]	KSI	1-C-25
223	-	4.[illegible]643	KSI	-	8.8732	KSI	1-C-26
224	-	2.[illegible]140	KSI	-	3.[illegible]977	KSI	1-C-27
225	-	3.[illegible]458	KSI	-	5.2447	KSI	1-C-28
226	-	2.[illegible]884	KSI	-	1.2436	KSI	1-C-29
227	-	2.[illegible]221	KSI	-	1.5369	KSI	1-C-30
228	-	3.[illegible]843	KSI	-	7.8[illegible]43	KSI	1-C-31
229	-	3.[illegible]812	KSI	-	7.528[illegible]	KSI	1-C-32

1838-094W

CHAN		DATA		ALARM	PROJECTION		COMMENT
332	=	3.5614	KSI	=	9.1362	KSI	1-C-33
333	=	4.1845	KSI	=	7.2485	KSI	1-C-34
334	=	5.8564	KSI	=	6.8252	KSI	1-C-35
335	=	4.4963	KSI	=	5.3845	KSI	1-C-36
336	=	3.3043	KSI	=	3.9692	KSI	1-C-37
337	=	3.5466	KSI	=	5.4614	KSI	1-C-38
338	=	1.8210	KSI	=	4.5068	KSI	1-C-39
339	=	3.0079	KSI	=	5.2711	KSI	1-C-40
340	=	2.3537	KSI	=	6.4854	KSI	1-C-41
341	=	3.3408	KSI	=	5.9125	KSI	1-C-42
342	=	5.7370	KSI	=	8.0073	KSI	1-C-43
343	=	4.1105	KSI	=	5.6044	KSI	1-C-44
344	=	4.7856	KSI	=	6.5141	KSI	1-C-45
345	=	4.0614	KSI	=	6.0557	KSI	1-C-46
346	=	5.9859	KSI	=	7.5675	KSI	1-C-47
347	=	4.1920	KSI	=	7.5997	KSI	1-C-48
348	=	3.3856	KSI	=	5.6760	KSI	1-C-49
349	=	3.2961	KSI	=	5.5537	KSI	1-C-50
350	=	4.9946	KSI	=	7.824	KSI	1-C-51
351	=	3.4843	KSI	=	5.6466	KSI	1-C-52
352	=	6.2071	KSI	=	10.307	KSI	1-C-53
353	=	4.1564	KSI	=	6.452	KSI	1-C-54
354	=	2.2272	KSI	=	3.7594	KSI	1-C-55
355	=	4.9751	KSI	=	8.1015	KSI	1-C-56
356	=	2.7607	KSI	=	4.4318	KSI	1-C-57
357	=	4.9312	KSI	=	8.1547	KSI	1-C-58
358	=	6.1920	KSI	=	9.7714	KSI	1-C-59
359	=	5.9291	KSI	=	9.4373	KSI	1-C-60
360	=	8.2817	KSI	=	13.042	KSI	1-C-61
361	=	7.1126	KSI	=	11.017	KSI	1-C-62
362	=	2.3765	KSI	=	3.4047	KSI	1-C-63
363	=	3.7596	KSI	=	5.6954	KSI	1-C-64
364	=	1.3134	KSI	=	2.9036	KSI	1-C-65
365	=	2.5312	KSI	=	5.1773	KSI	1-C-66
366	=	9.9406	KSI	=	14.474	KSI	1-C-67
367	=	8.3364	KSI	=	12.906	KSI	1-C-68
368	=	8.1932	KSI	=	12.667	KSI	1-C-69
369	=	6.7564	KSI	=	10.919	KSI	1-C-70
370	=	2.9270	KSI	=	5.3166	KSI	1-C-71
371	=	3.3063	KSI	=	5.2094	KSI	1-C-72
372	=	7.3126	KSI	=	13.100	KSI	2-C-3
373	=	5.7542	KSI	=	10.416	KSI	2-C-4
374	=	1.1976	KSI	=	2.4931	KSI	2-C-7
375	=	3.0346	KSI	=	5.0524	KSI	2-C-8
376	=	1.1136	KSI	=	1.3449	KSI	2-C-9
377	=	2.8088	KSI	=	4.4331	KSI	2-C-10
378	=	7.4602	KSI	=	11.132	KSI	2-C-15
379	=	5.3706	KSI	=	8.3275	KSI	2-C-16
380	=	0.76229	KSI	=	0.70260	KSI	2-C-19
381	=	4.1768	KSI	=	7.2987	KSI	2-C-20
382	=	1.3993	KSI	=	1.8926	KSI	2-C-21
383	=	3.9504	KSI	=	6.6796	KSI	2-C-22

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CHAN		DATA		ALARM		PROJECTION		COMMENT
409	-	0.01123	KSI	-		1.9369	KSI	2-C-73-1
410	-	0.09546	KSI	-		0.93644	KSI	2-C-73-2
411		3.0576	KSI			4.1762	KSI	2-C-73-3
	SHEAR			MIN		MAX		ANGLE
	1.7190	KSI	-	0.04268	KSI	3.3954	KSI -	73.888 DEG
	TAU			SIG1		SIG3		
-	0.01631	KSI		0.22195	KSI	3.1348	KSI	
412	-	3.7431	KSI	-		3.2218	KSI	2-C-74-1
413	-	2.6786	KSI	-		3.7834	KSI	2-C-74-2
414	-	0.01905	KSI	-		1.4915	KSI	2-C-74-3
	SHEAR			MIN		MAX		ANGLE
	1.1392	KSI	-	4.5438	KSI -	2.2654	KSI -	82.443 DEG
	TAU			SIG1		SIG3		
-	0.29491	KSI	-	4.5039	KSI -	2.3053	KSI	
415	-	2.3822	KSI	-		2.8227	KSI	3-C-7
416	-	2.5811	KSI	-		3.5706	KSI	3-C-8
417	-	2.1482	KSI	-		3.4224	KSI	3-C-9
418	-	2.7885	KSI	-		4.7245	KSI	3-C-10
419	-	0.95556	KSI	-		1.4423	KSI	4-C-7
420	-	2.2530	KSI	-		4.2540	KSI	4-C-8
421	-	1.0876	KSI			0.24575	KSI	4-C-9
422	-	2.7894	KSI	-		3.3864	KSI	4-C-10
423	-	0.36077	KSI	-		0.95524	KSI	1-D-1
424	-	0.45091	KSI	-		0.84377	KSI	1-D-2
425	-	0.38416	KSI	-		0.74736	KSI	1-D-3
426	-	0.39275	KSI	-		0.74115	KSI	1-D-4
427		0.02852	KSI			0.06511	KSI	1-D-5
428		0.03557	KSI			0.09470	KSI	1-D-6
429		0.08006	KSI			0.15731	KSI	1-D-7
430		0.08104	KSI			0.13362	KSI	1-D-8
431	-	0.20356	KSI	-		0.69147	KSI	1-D-9
432	-	0.31475	KSI	-		0.81791	KSI	1-D-10
433	-	0.32413	KSI	-		0.83562	KSI	1-D-11
434	-	0.32541	KSI	-		0.83769	KSI	1-D-12
435	-	0.64756	KSI	-		1.3434	KSI	1-D-13
436	-	0.63859	KSI	-		1.3018	KSI	1-D-14
437	-	0.54542	KSI	-		1.1216	KSI	1-D-15
438	-	0.58641	KSI	-		1.2072	KSI	1-D-16
439		0.07414	KSI			0.21671	KSI	1-D-17
440		0.04459	KSI			0.16413	KSI	1-D-18
441		0.11529	KSI			0.28551	KSI	1-D-19
442		0.11525	KSI			0.28744	KSI	1-D-20
443	-	0.41543	KSI	-		0.96139	KSI	1-D-21
444	-	0.48100	KSI	-		1.1050	KSI	1-D-22
445	-	0.59251	KSI	-		1.3745	KSI	1-D-23
446	-	0.56067	KSI	-		1.3023	KSI	1-D-24
447		0.21110	KSI			0.49759	KSI	2-D-7
448		0.07911	KSI			0.18055	KSI	2-D-8
449	-	0.02483	KSI	-		0.22155	KSI	2-D-25
450		0.16829	KSI			0.17434	KSI	2-D-26
451		0.15946	KSI			0.28152	KSI	2-D-27
452		0.24438	KSI			0.45576	KSI	2-D-28

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CHAN		DATA		ALARM	PROJECTION		COMMENT
453	-	0.0044RR	KSI		0.00611	KSI	2-D-29
454		0.03561	KSI		0.15604	KSI	2-D-30
455	-	1.0049	KSI	-	1.7091	KSI	2-D-31
456	-	0.92986	KSI	-	1.6414	KSI	2-D-32
457	-	0.07325	KSI	-	0.21149	KSI	3-D-7
458	-	0.07557	KSI	-	0.21769	KSI	3-D-8
459		0.29436	KSI		0.67486	KSI	1/2-B-1
460		0.33694	KSI		0.72549	KSI	1/2-B-2
461	-	0.08329	KSI	-	0.1[illegible]71	KSI	1/2-B-3
462	-	0.07623	KSI	-	0.15274	KSI	1/2-B-4
463	-	0.05944	KSI	-	0.10121	KSI	1/2-B-5
464	-	0.05462	KSI	-	0.10213	KSI	1/2-B-6
465		0.27404	KSI		0.54386	KSI	1/2-B-7
466		0.25464	KSI		0.53112	KSI	1/2-B-8
467		0.34236	KSI		0.61888	KSI	1/2-B-9
468		0.39412	KSI		0.71472	KSI	1/2-B-10
469	-	0.01622	KSI		0.01432	KSI	1/2-B-11
470	-	0.03617	KSI	-	0.04428	KSI	1/2-B-12
471	-	0.04399	KSI	-	0.03585	KSI	1/2-B-13
472	-	0.05392	KSI	-	0.05797	KSI	1/2-B-14
473		0.38522	KSI		0.70424	KSI	1/2-B-15
474		0.3[illegible]3	KSI		0.71671	KSI	1/2-B-16
475	-	0.15[illegible]	KSI	-	0.35495	KSI	1/2-B-17
476	-	0.02461	KSI	-	0.10979	KSI	1/2-B-18
477		0.32660	KSI		0.58248	KSI	1/2-B-19
478		0.63453	KSI		1.1254	KSI	1/2-B-20
479		16.810	UM/M		36.791	UM/M	TR1-1
480	-	9.7254	UM/M		14.336	UM/M	TR1-2
481		19.482	UM/M		62.592	UM/M	TR1-3
482		15.573	UM/M		26.232	UM/M	TR1-4
483		19.853	UM/M		42.933	UM/M	TR2-1
484		11.712	UM/M		41.401	UM/M	TR2-2
485		5.9219	UM/M		24.301	UM/M	TR2-3
486		1.2735	UM/M	-	8.0089	UM/M	TR2-4
487	-	0.7707	UM/M	-	0.80535	UM/M	TR3-1
488		49.334	UM/M		85.395	UM/M	TR3-2
489		104.41	UM/M		109.44	UM/M	TR3-3
490		33.845	UM/M		43.508	UM/M	TR3-4
2	2	2	CONTROL STATION II			2	2 2

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2 2 2 CONTROL STATION II 2 2 2

YYIIACQ/1 SPACE TRUSS COMPRESSION - MANUAL ASSY (B) STATIC

DAY: 125, TIME 11:30:54.071 TEST CONSTANTS: 1770 0205 0516

LOADS: USED		THUMBWHEELS		OFFSET	CALCULATED
100.00	%	100.00	%	0.000000 %	

CHAN		DATA		ALARM		PROJECTION		COMMENT
130		1263.5	LBS			1263.5	LBS	G2-107 INPUT LOAD
131	-	0.42318	IN		-	0.42318	IN	DFV1
132	-	0.34358	IN		-	0.34358	IN	DFV2
133	-	0.39215	IN		-	0.39215	IN	DFV3
134		0.44668	IN			0.04468	IN	DD1-1
135		0.13531	IN			0.13531	IN	DD1-2
136		0.00901	IN			0.00901	IN	DD3-1
137		0.02074	IN			0.02074	IN	DD3-2
138		0.08511	IN			0.08511	IN	1D1-1A
139		0.14590	IN			0.14590	IN	1D1-2A
140		0.40469	IN			0.40469	IN	1D1-3A
141		0.56811	IN			0.56811	IN	1D1-4A
142	-	0.09775	IN		-	0.09775	IN	1D1-5A
143		0.06346	IN			0.06346	IN	1D1-6A
144		0.02900	IN			0.02900	IN	1D2-1A
145	-	0.00655	IN		-	0.00655	IN	1D2-2A
146	-	0.15059	IN		-	0.15059	IN	1D2-3A
147	-	0.52589	IN		-	0.52589	IN	1D2-4A
148		0.30998	IN			0.30998	IN	1D2-5A
149	-	0.33519	IN		-	0.33519	IN	1D2-6A
150		0.09686	IN			0.09686	IN	1D3-1A
151	-	0.65976	IN		-	0.65976	IN	1D3-2A
152	-	0.11964	IN		-	0.11964	IN	1D3-3A
153	-	0.82897	IN		-	0.82897	IN	1D3-4A
154		0.50147	IN			0.50147	IN	1D3-5A
155	-	0.55242	IN		-	0.55242	IN	1D3-6A
156		0.02988	IN			0.02988	IN	1D1-1B
157		0.07835	IN			0.07835	IN	1D1-3B
158		0.92494	IN			0.92494	IN	1D1-4B
159	-	0.28637	IN		-	0.28637	IN	1D1-5B
160		0.98468	IN			0.98468	IN	1D1-6B
161		0.04307	IN			0.04307	IN	1D2-1B
162	-	0.05937	IN		-	0.05937	IN	1D2-2B
163	-	0.14396	IN		-	0.14396	IN	1D2-3B
164	-	0.56135	IN		-	0.56135	IN	1D2-4B
165		0.61149	IN			0.61149	IN	1D2-5B
166	-	0.63719	IN		-	0.63719	IN	1D2-6B
167		0.03974	IN			0.03974	IN	1D3-1B
168	-	0.02813	IN		-	0.02813	IN	1D3-2B
169	-	0.24972	IN		-	0.24972	IN	1D3-3B
170	-	0.75228	IN		-	0.75228	IN	1D3-4B
171		0.66417	IN			0.66417	IN	1D3-5B
172	-	0.81000	IN		-	0.81000	IN	1D3-6B
173	-	0.10155	IN		-	0.10155	IN	2D1-1
174	-	0.22310	IN		-	0.22310	IN	2D1-2

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CHAN		DATA		ALARM	PROJECTION		COMMENT
176	-	0.11130	IN	-	0.11131	IN	201-3
177	-	1.3455	IN	-	1.3455	IN	201-4
178		1.0195	IN		1.0195	IN	201-5
179	-	1.0644	IN	-	1.0644	IN	201-6
180		0.03664	IN		0.03664	IN	202-1
181	-	0.02468	IN	-	0.02468	IN	202-2
182		0.01207	IN		0.01206	IN	202-3
183		0.02774	IN		0.02773	IN	202-4
184	-	0.17062	IN	-	0.17062	IN	202-5
185		0.71410	IN		0.71410	IN	202-6
186	-	0.01988	IN	-	0.01988	IN	203-1
187		0.15452	IN		0.15452	IN	203-2
188		0.93225	IN		0.93225	IN	203-3
189		0.97520	IN		0.97520	IN	203-4
190	-	0.26558	IN	-	0.26558	IN	203-5
191		1.1217	IN		1.1217	IN	203-6
192	-	0.16941	IN	-	0.16941	IN	301-1
193	-	0.11127	IN	-	0.11127	IN	301-2
194		0.54205	IN		0.54204	IN	301-3
195		0.03694	IN		0.03694	IN	301-4
196	-	0.49270	IN	-	0.49270	IN	301-5
197		0.70444	IN		0.70444	IN	301-6
300	-	0.14406	KSI	-	0.14407	KSI	1-C-1
301	-	1.6337	KSI	-	1.6337	KSI	1-C-2
302	-	4.0569	KSI	-	4.0570	KSI	1-C-3
303	-	3.6669	KSI	-	3.6668	KSI	1-C-4
304	-	12.273	KSI	-	12.273	KSI	1-C-5
305	-	9.9996	KSI	-	9.9996	KSI	1-C-6
306	-	4.7727	KSI	-	4.7727	KSI	1-C-7
307	-	4.8309	KSI	-	4.8309	KSI	1-C-8
308	-	9.9064	KSI	-	9.9064	KSI	1-C-9
309	-	10.946	KSI	-	10.946	KSI	1-C-10
310	-	10.379	KSI	-	10.379	KSI	1-C-11
311	-	10.388	KSI	-	10.388	KSI	1-C-12
312	-	10.781	KSI	-	10.781	KSI	1-C-13
313	-	9.2933	KSI	-	9.2933	KSI	1-C-14
314	-	4.5474	KSI	-	4.5474	KSI	1-C-15
315	-	9.7880	KSI	-	9.7880	KSI	1-C-16
316	-	4.8196	KSI	-	4.8196	KSI	1-C-17
317	-	8.8020	KSI	-	8.8020	KSI	1-C-18
318	-	14.395	KSI	-	14.395	KSI	1-C-19
319	-	10.854	KSI	-	10.854	KSI	1-C-20
320	-	6.3217	KSI	-	6.3216	KSI	1-C-21
321	-	4.8364	KSI	-	4.8364	KSI	1-C-22
322	-	1.7079	KSI	-	1.7079	KSI	1-C-23
323	-	0.98394	KSI	-	0.98396	KSI	1-C-24
324		4.7193	KSI		4.7193	KSI	1-C-25
325		0.15583	KSI		0.15582	KSI	1-C-26
326	-	10.614	KSI	-	10.614	KSI	1-C-27
327	-	2.7745	KSI	-	2.7745	KSI	1-C-28
328	-	21.142	KSI	-	21.142	KSI	1-C-29
329	-	14.511	KSI	-	14.511	KSI	1-C-30
330		0.00383	KSI		0.00383	KSI	1-C-31
331	-	2.7119	KSI	-	2.7119	KSI	1-C-32

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CHAN		DATA		ALARM		PROJECTION		COMMENT
332	=	10.573	KSI	=		10.573	KSI	1-C-33
333	=	11.643	KSI	=		11.643	KSI	1-C-34
334	=	7.9304	KSI	=		7.9305	KSI	1-C-35
335	=	6.6554	KSI	=		6.6555	KSI	1-C-36
336	=	8.3627	KSI	=		8.3628	KSI	1-C-37
337	=	7.2965	KSI	=		7.2965	KSI	1-C-38
338		2.6393	KSI			2.6394	KSI	1-C-39
339	=	0.48419	KSI	=		0.48425	KSI	1-C-40
340	=	3.2075	KSI	=		3.2076	KSI	1-C-41
341	=	7.2278	KSI	=		7.2278	KSI	1-C-42
342	=	15.643	KSI	=		15.643	KSI	1-C-43
343	=	13.493	KSI	=		13.493	KSI	1-C-44
344	=	13.853	KSI	=		13.853	KSI	1-C-45
345	=	11.578	KSI	=		11.578	KSI	1-C-46
346	=	2.8854	KSI	=		2.8854	KSI	1-C-47
347	=	5.8427	KSI	=		5.8427	KSI	1-C-48
348	=	5.4794	KSI	=		5.4794	KSI	1-C-49
349	=	8.1481	KSI	=		8.1481	KSI	1-C-50
350	=	14.702	KSI	=		14.702	KSI	1-C-51
351	=	14.757	KSI	=		14.757	KSI	1-C-52
352	=	20.296	KSI	=		20.296	KSI	1-C-53
353	=	14.252	KSI	=		14.252	KSI	1-C-54
354	=	4.7024	KSI	=		4.7024	KSI	1-C-55
355	=	8.2325	KSI	=		8.2325	KSI	1-C-56
356		4.4792	KSI			4.4792	KSI	1-C-57
357		0.95215	KSI			0.95214	KSI	1-C-58
358	=	6.1439	KSI	=		6.1440	KSI	1-C-59
359	=	5.0494	KSI	=		5.0495	KSI	1-C-60
360	=	8.2043	KSI	=		8.2044	KSI	1-C-61
361	=	6.5587	KSI	=		6.5588	KSI	1-C-62
362	=	0.41966	KSI	=		0.41967	KSI	1-C-63
363	=	2.2683	KSI	=		2.2683	KSI	1-C-64
364	=	6.3177	KSI	=		6.3177	KSI	1-C-65
365	=	9.6610	KSI	=		9.6610	KSI	1-C-66
366	=	20.896	KSI	=		20.896	KSI	1-C-67
367	=	18.101	KSI	=		18.101	KSI	1-C-68
368	=	14.294	KSI	=		14.294	KSI	1-C-69
369	=	12.799	KSI	=		12.799	KSI	1-C-70
370	=	6.0355	KSI	=		6.0355	KSI	1-C-71
371	=	4.8185	KSI	=		4.8185	KSI	1-C-72
372	=	16.404	KSI	=		16.404	KSI	2-C-3
373	=	14.744	KSI	=		14.744	KSI	2-C-4
374	=	5.7061	KSI	=		5.7061	KSI	2-C-7
375	=	7.4777	KSI	=		7.4777	KSI	2-C-8
376		5.3729	KSI			5.3729	KSI	2-C-9
377		1.8123	KSI			1.8123	KSI	2-C-10
378		0.31156	KSI			0.31155	KSI	2-C-15
379		2.8127	KSI			2.8127	KSI	2-C-16
380	=	3.1648	KSI	=		3.1648	KSI	2-C-19
381	=	14.304	KSI	=		14.304	KSI	2-C-20
382	=	7.9928	KSI	=		7.9928	KSI	2-C-21
383	=	19.949	KSI	=		19.949	KSI	2-C-22

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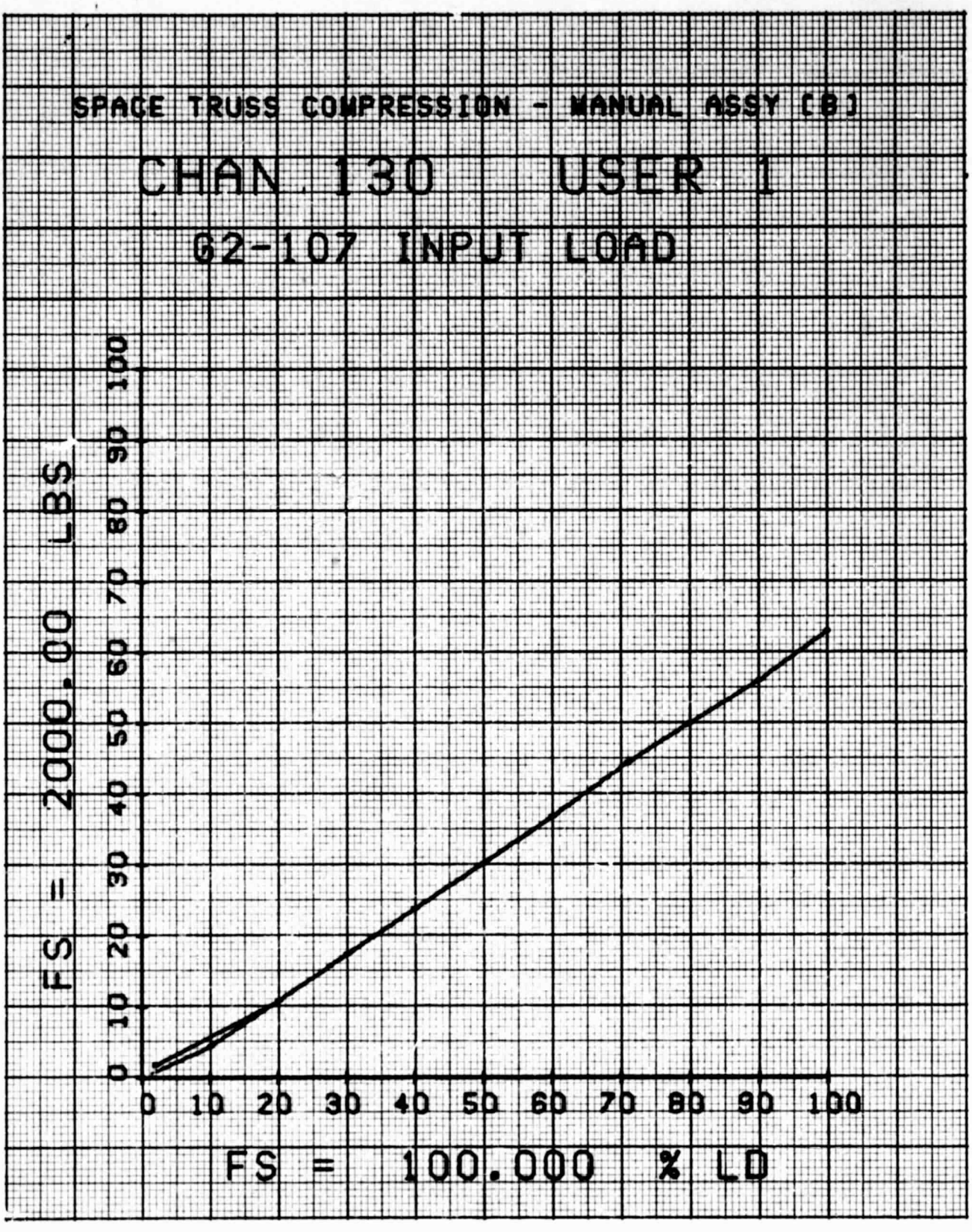
CHAN	DATA	ALARM	PROJECTION	COMMENT
409	2.2265 KSI		2.2265 KSI	2-C-73-1
410	0.54177 KSI		0.54177 KSI	2-C-73-2
411	5.4017 KSI		5.4016 KSI	2-C-73-3
	SHEAR	MIN	MAX	ANGLE
	2.7346 KSI	2.9580 KSI	6.4273 KSI -	57.942 DEG
	TAU	SIG1	SIG3	
-	2.4504 KSI	4.4990 KSI	6.8864 KSI	
412	- 6.3193 KSI	- 6.3193 KSI	2-C-74-1	
413	- 3.5902 KSI	- 3.5902 KSI	2-C-74-2	
414	- 0.80187 KSI	- 0.80188 KSI	2-C-74-3	
	SHEAR	MIN	MAX	ANGLE
	2.0743 KSI -	7.3887 KSI -	3.2400 KSI -	89.854 DEG
	TAU	SIG1	SIG3	
-	0.02225 KSI -	7.3866 KSI -	3.2401 KSI	
415	- 3.4815 KSI	- 3.4815 KSI	3-C-7	
416	- 10.729 KSI	- 10.729 KSI	3-C-8	
417	- 7.0700 KSI	- 7.0714 KSI	3-C-9	
418	- 11.817 KSI	- 11.817 KSI	3-C-10	
419	- 5.4223 KSI	- 5.4223 KSI	4-C-7	
420	- 8.3629 KSI	- 8.3629 KSI	4-C-8	
421	4.8779 KSI	4.8779 KSI	4-C-9	
422	2.0166 KSI	2.0166 KSI	4-C-10	
423	- 0.23339 KSI	- 0.23339 KSI	1-D-1	
424	- 0.21186 KSI	- 0.21186 KSI	1-D-2	
425	- 0.26483 KSI	- 0.26483 KSI	1-D-3	
426	- 0.27051 KSI	- 0.27051 KSI	1-D-4	
427	- 0.53662 KSI	- 0.53661 KSI	1-D-5	
428	- 0.60015 KSI	- 0.60015 KSI	1-D-6	
429	- 0.61183 KSI	- 0.61183 KSI	1-D-7	
430	- 0.53293 KSI	- 0.53293 KSI	1-D-8	
431	- 0.54799 KSI	- 0.54800 KSI	1-D-9	
432	- 0.61642 KSI	- 0.61642 KSI	1-D-10	
433	- 0.56665 KSI	- 0.56665 KSI	1-D-11	
434	- 0.52975 KSI	- 0.52976 KSI	1-D-12	
435	- 1.6570 KSI	- 1.6570 KSI	1-D-13	
436	- 1.6740 KSI	- 1.6740 KSI	1-D-14	
437	- 1.2717 KSI	- 1.2717 KSI	1-D-15	
438	- 1.3666 KSI	- 1.3666 KSI	1-D-16	
439	1.5310 KSI	1.5310 KSI	1-D-17	
440	1.3941 KSI	1.3941 KSI	1-D-18	
441	1.4083 KSI	1.4082 KSI	1-D-19	
442	1.4178 KSI	1.4177 KSI	1-D-20	
443	- 1.5699 KSI	- 1.5699 KSI	1-D-21	
444	- 1.8975 KSI	- 1.8975 KSI	1-D-22	
445	- 2.4059 KSI	- 2.4059 KSI	1-D-23	
446	- 2.2463 KSI	- 2.2463 KSI	1-D-24	
447	2.4997 KSI	2.4997 KSI	2-D-7	
448	1.1515 KSI	1.1515 KSI	2-D-8	
449	- 1.0025 KSI	- 1.0025 KSI	2-D-25	
450	- 1.0609 KSI	- 1.0609 KSI	2-D-26	
451	1.4969 KSI	1.4969 KSI	2-D-27	
452	1.8265 KSI	1.8265 KSI	2-D-28	

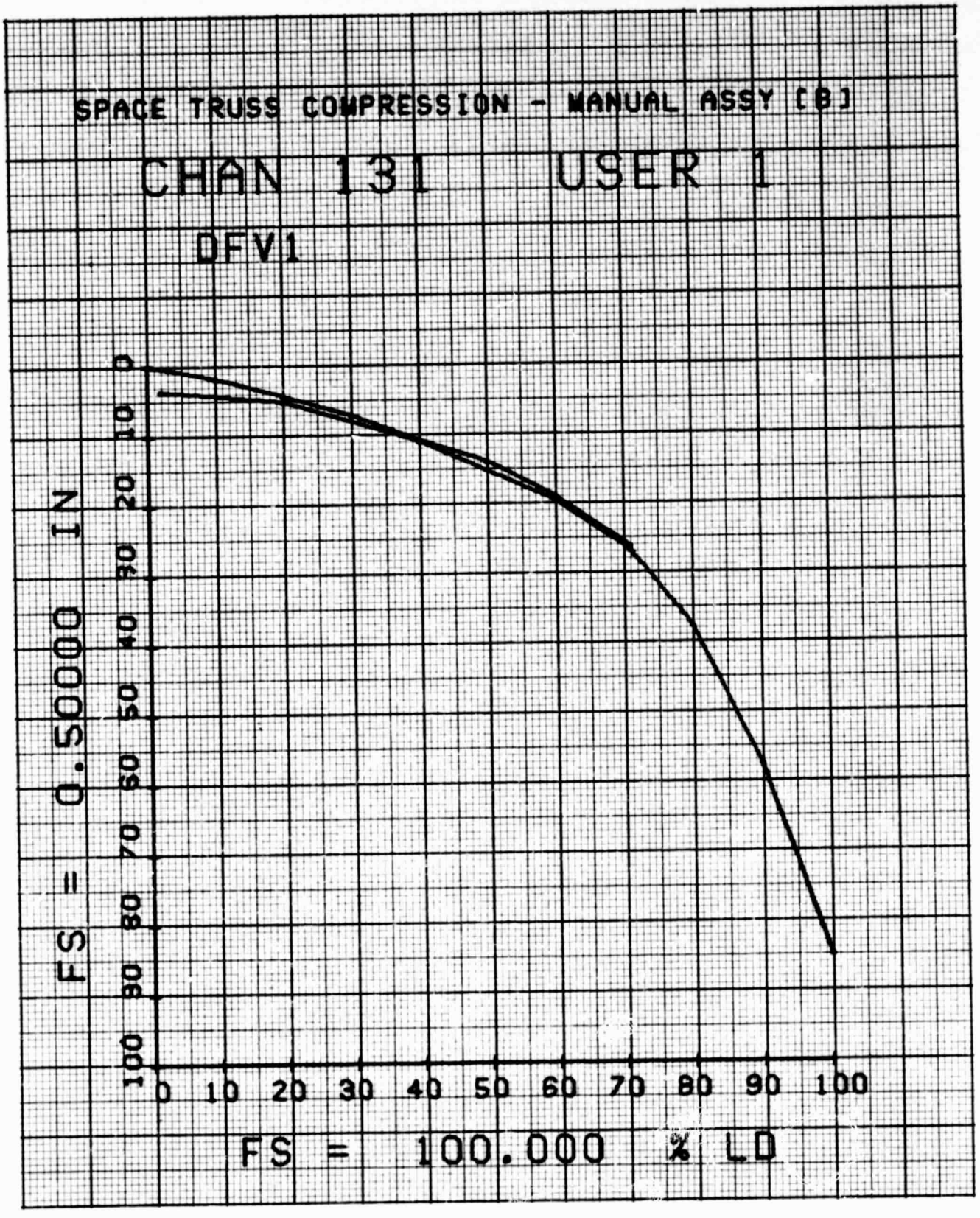
1838-101W

CHAN		DATA		ALARM	PROJECTION		COMMENT
453		2.4971	KSI		2.4971	KSI	2-0-29
454		2.7127	KSI		2.7126	KSI	2-0-30
455	-	2.5567	KSI	-	2.5567	KSI	2-0-31
456	-	2.3653	KSI	-	2.3653	KSI	2-0-32
457	-	2.0670	KSI	-	2.0670	KSI	3-0-7
458	-	1.6848	KSI	-	1.6848	KSI	3-0-8
459		1.3546	KSI		1.3546	KSI	1/2-B-1
460		1.3963	KSI		1.3963	KSI	1/2-B-2
461	-	0.13958	KSI	-	0.13958	KSI	1/2-B-3
462	-	0.08181	KSI	-	0.08181	KSI	1/2-B-4
463	-	0.48067	KSI	-	0.48067	KSI	1/2-B-5
464	-	0.37469	KSI	-	0.37469	KSI	1/2-B-6
465		0.02231	KSI		0.02232	KSI	1/2-B-7
466		0.01697	KSI		0.01697	KSI	1/2-B-8
467		0.34476	KSI		0.34476	KSI	1/2-B-9
468		0.41492	KSI		0.41492	KSI	1/2-B-10
469	-	0.32439	KSI	-	0.32439	KSI	1/2-B-11
470	-	0.29245	KSI	-	0.29245	KSI	1/2-B-12
471	-	0.12564	KSI	-	0.12564	KSI	1/2-B-13
472	-	0.15867	KSI	-	0.15867	KSI	1/2-B-14
473		1.1268	KSI		1.1268	KSI	1/2-B-15
474		1.4353	KSI		1.4353	KSI	1/2-B-16
475	-	1.3670	KSI	-	1.3670	KSI	1/2-B-17
476	-	1.0954	KSI	-	1.0954	KSI	1/2-B-18
477	-	0.33248	KSI	-	0.33247	KSI	1/2-B-19
478		0.24464	KSI		0.24464	KSI	1/2-B-20
479	-	53.956	U"/"	-	53.955	U"/"	TR1-1
480		23.191	U"/"		23.191	U"/"	TR1-2
481		42.677	U"/"		42.677	U"/"	TR1-3
482	-	35.564	U"/"	-	35.564	U"/"	TR1-4
483		57.469	U"/"		57.469	U"/"	TR2-1
484		28.455	U"/"		28.454	U"/"	TR2-2
485		8.2458	U"/"		8.2456	U"/"	TR2-3
486		60.384	U"/"		60.384	U"/"	TR2-4
487	-	27.436	U"/"	-	27.435	U"/"	TR3-1
488		64.992	U"/"		64.992	U"/"	TR3-2
489		125.49	U"/"		125.49	U"/"	TR3-3
490	-	3.7360	U"/"	-	3.7358	U"/"	TR3-4

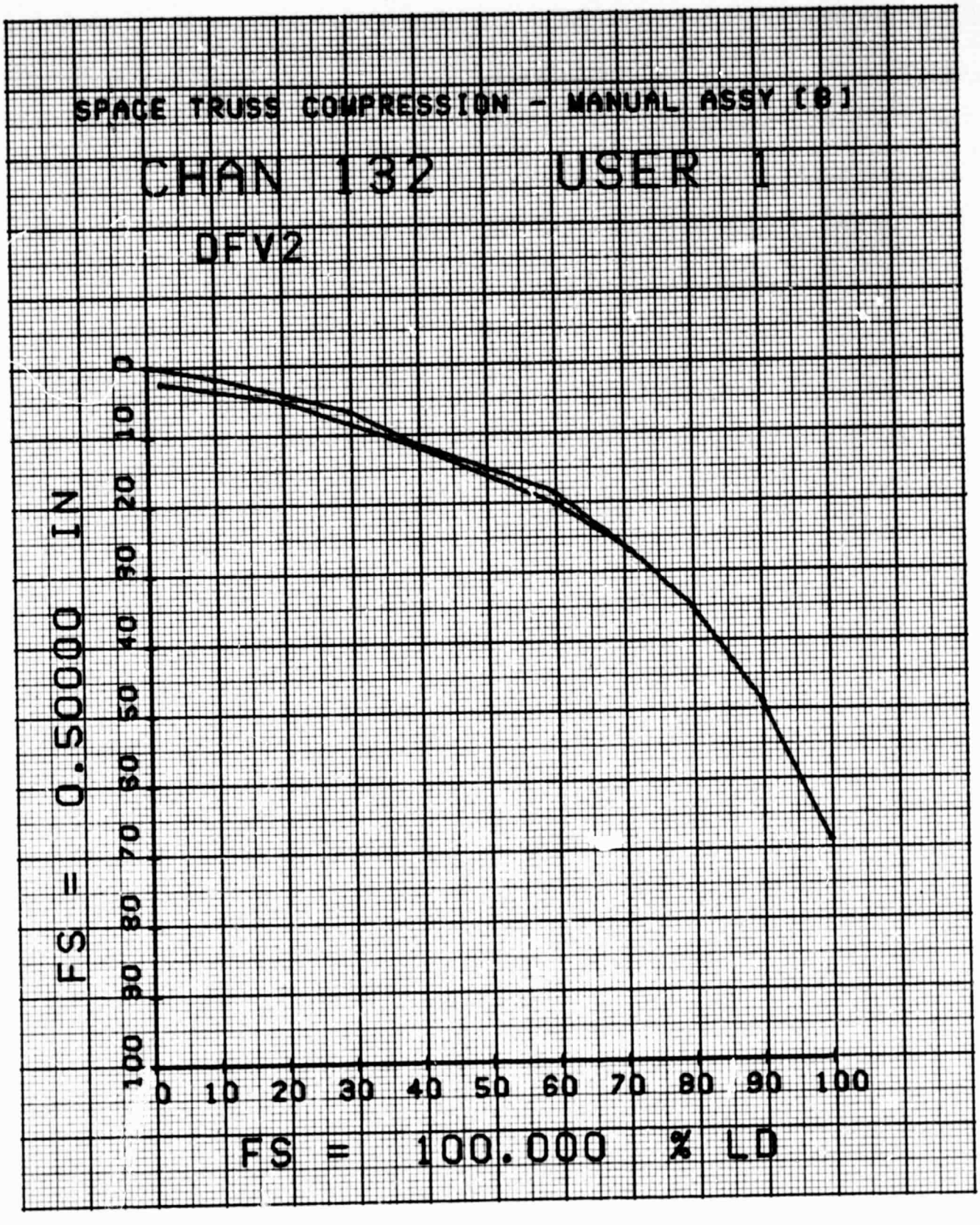
2 2 2 CONTROL STATION II 2 2 2


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 130 USER 1
62-107 INPUT LOAD
FS = 2000.00 LBS
0 10 20 30 40 50 60 70 80 90 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

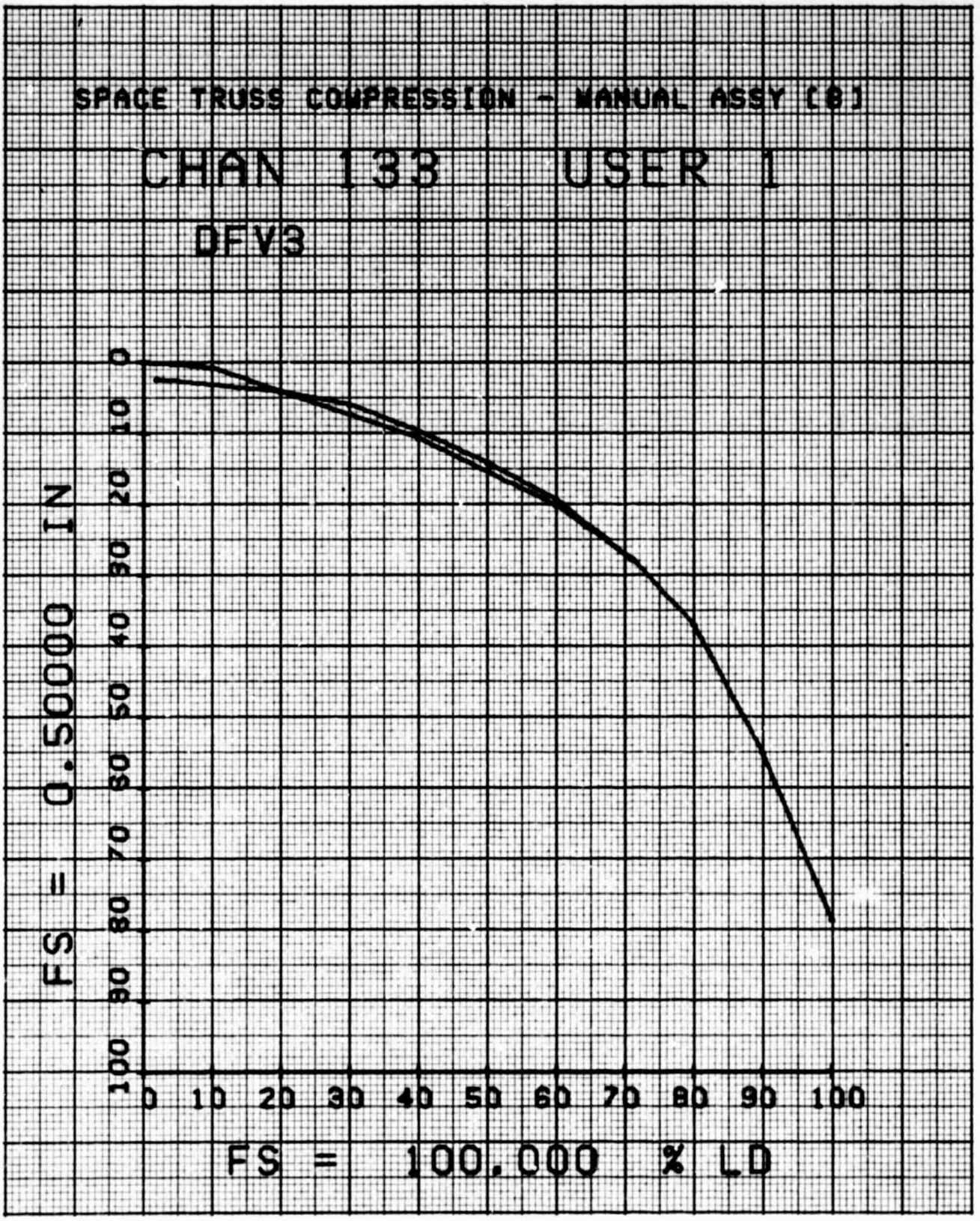
1838-010W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 131 USER 1
DFV1
FS = 0.50000 IN
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

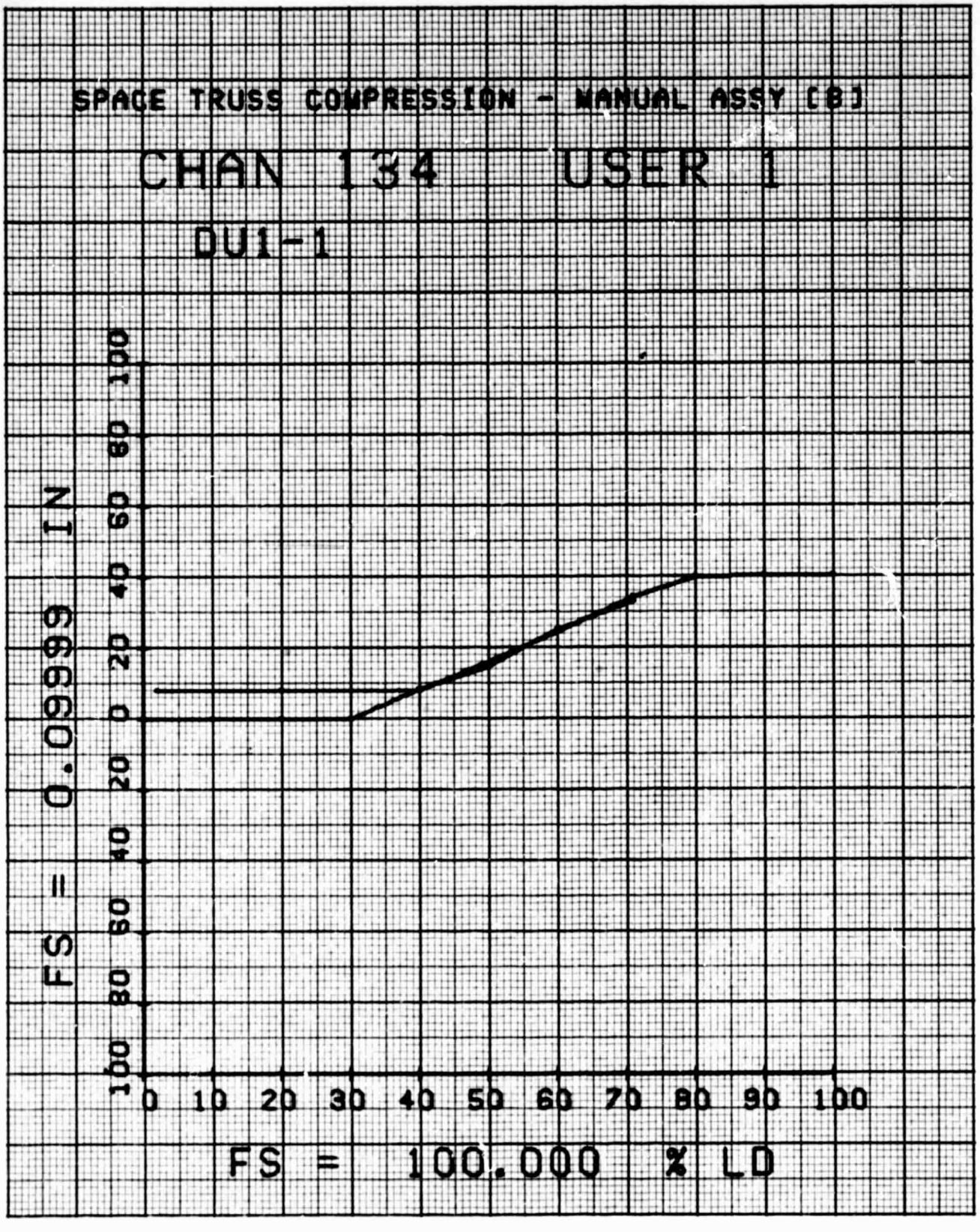
1838-011W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 132 USER 1
DFV2
FS = 0.50000 IN
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

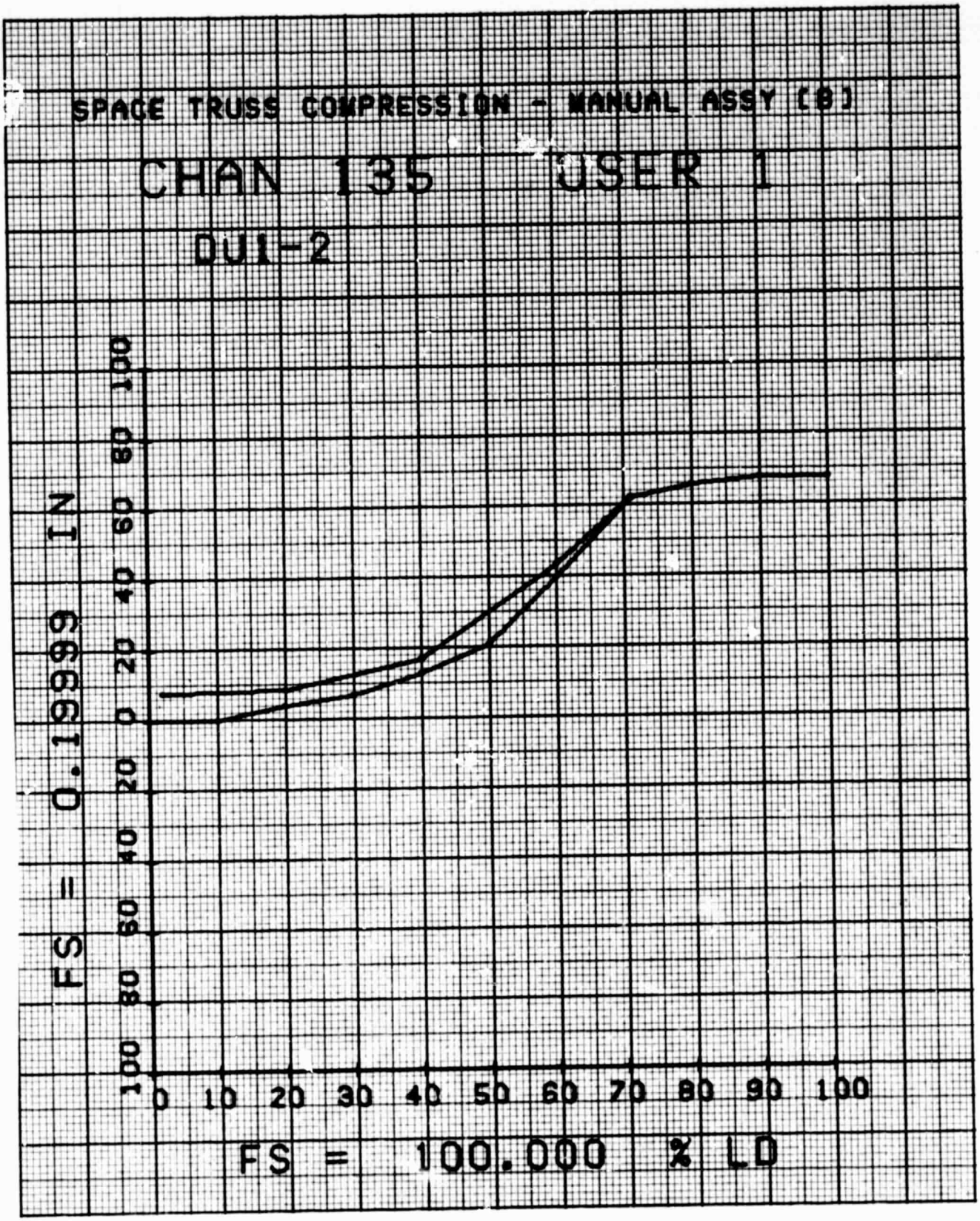
1838-012W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 133 USER 1
DFV3
FS = 0.50000 IN
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

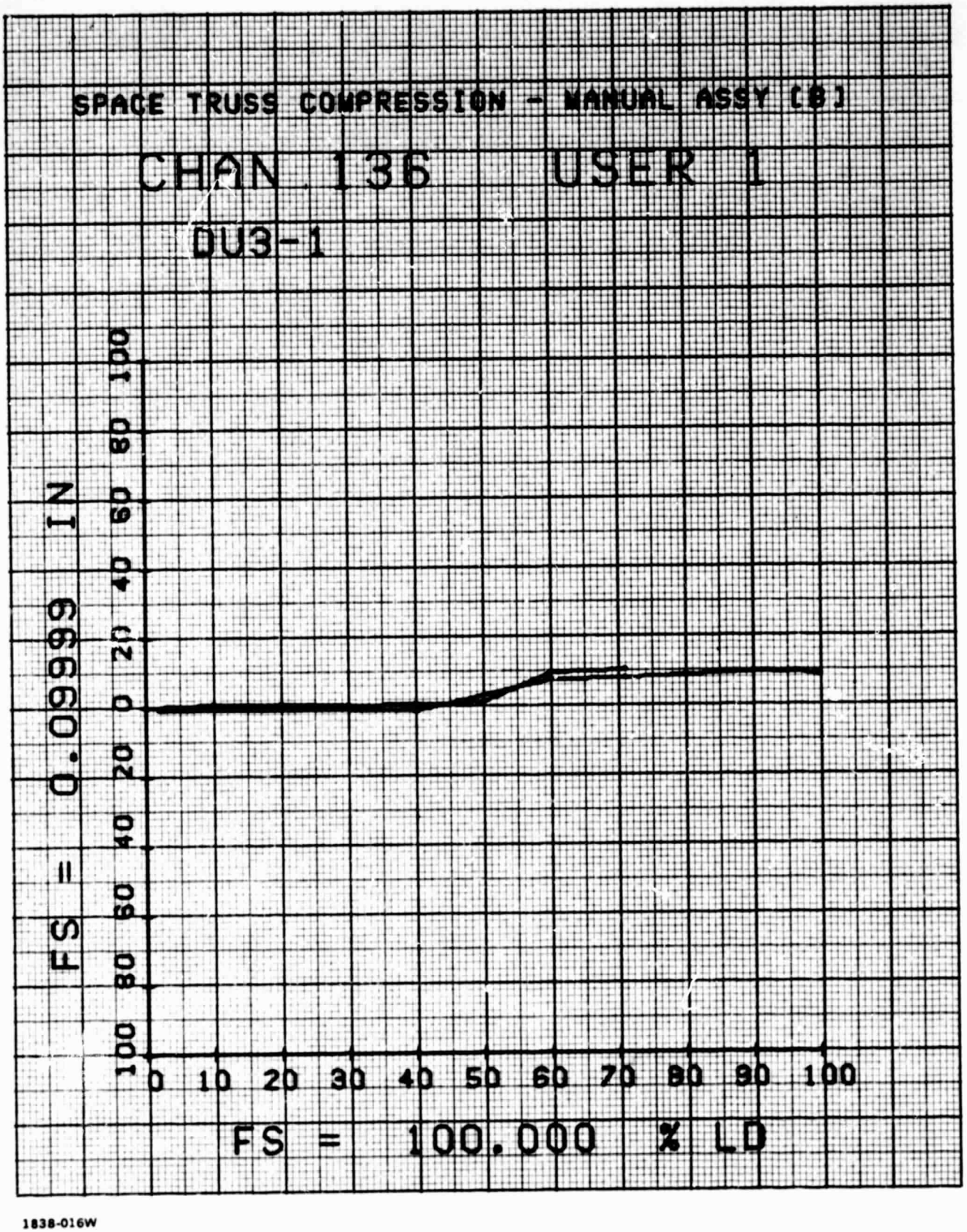
1838-013W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 134 USER 1
DU1-1
FS = 0.09999 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

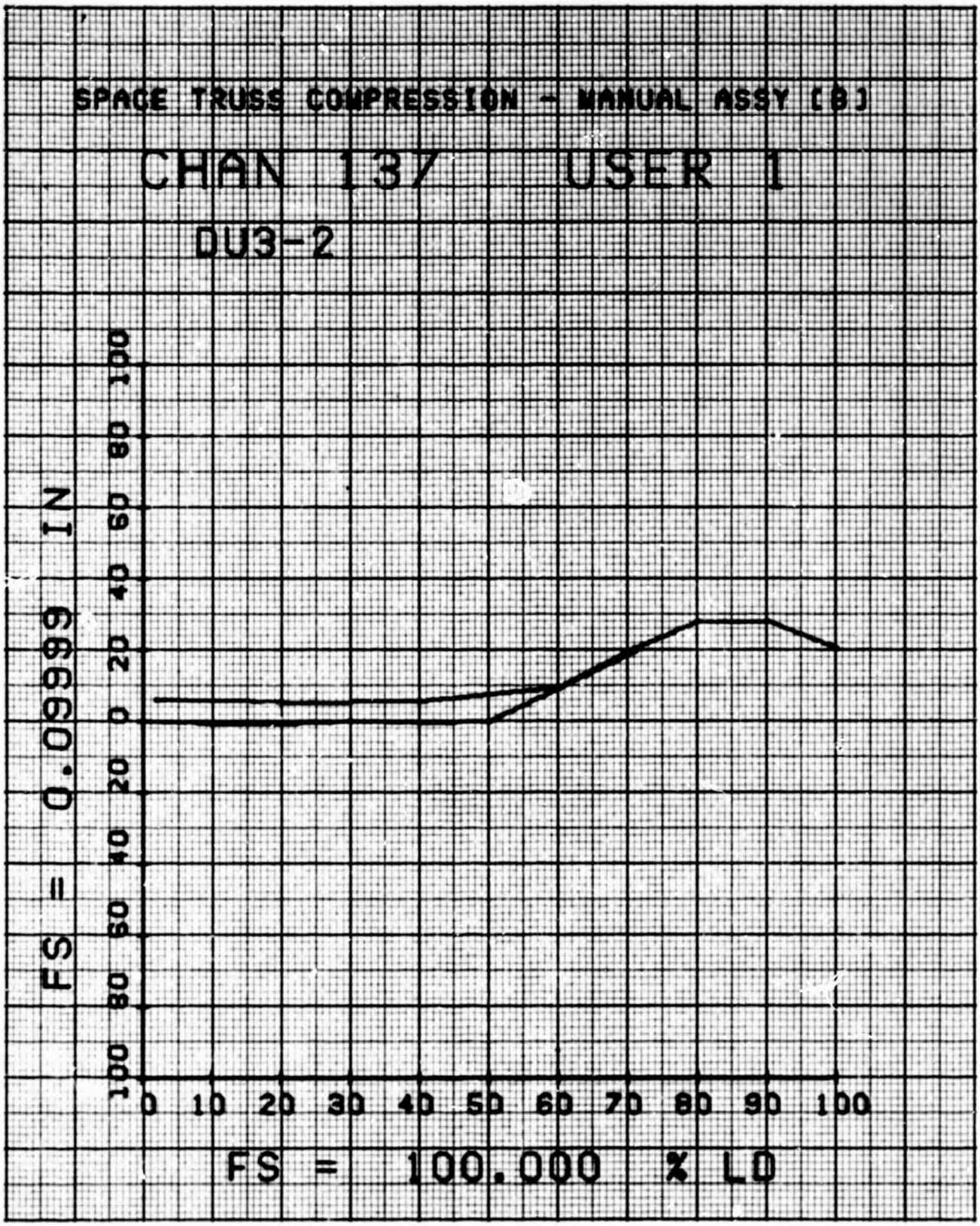
1838-014W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 135 USER 1
DUI-2
FS = 0.19999 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

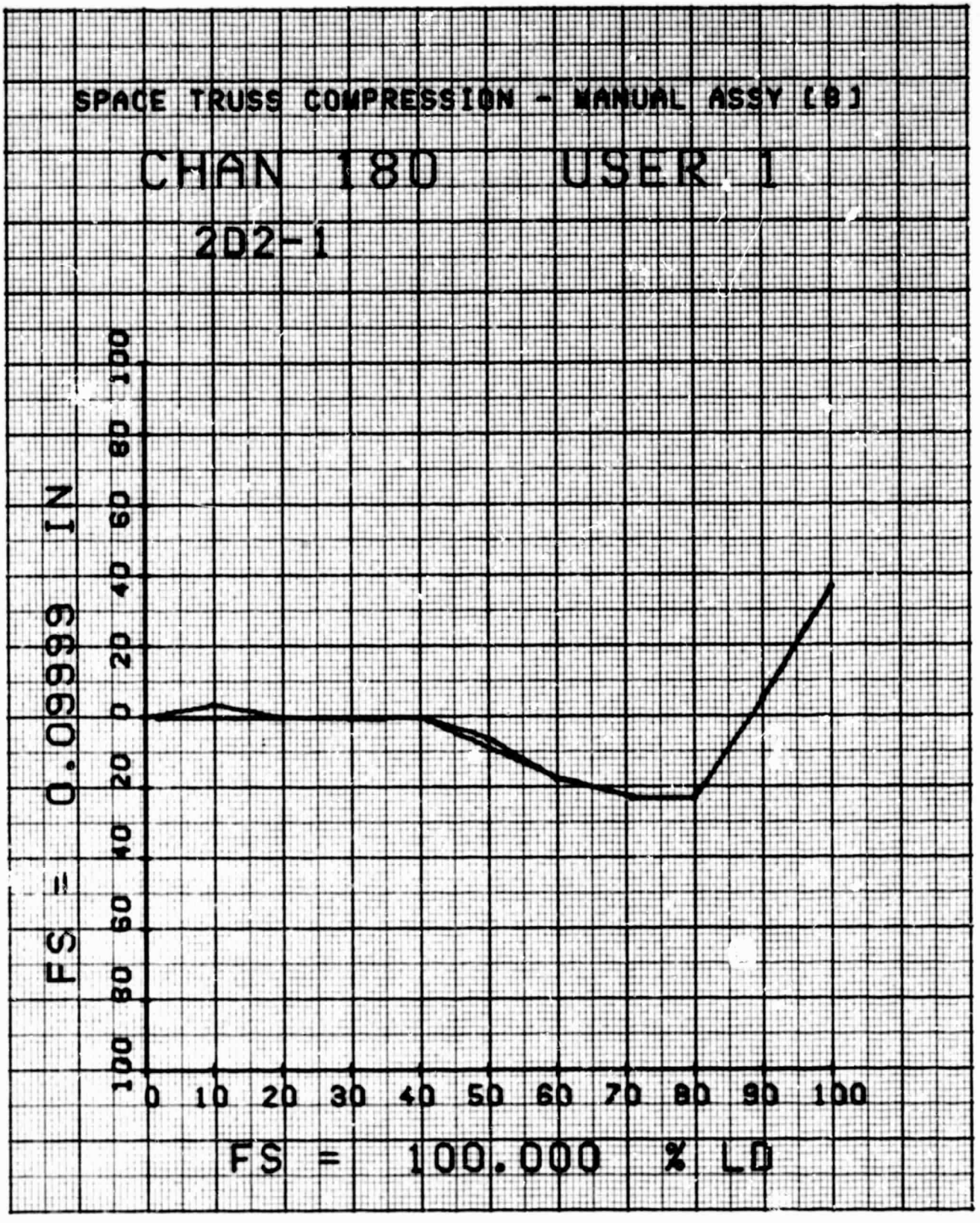
1838-015W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 136 USER 1
DU3-1
FS = 0.09999 IN
0 20 40 60 80 100
100 80 60 40 20 0
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

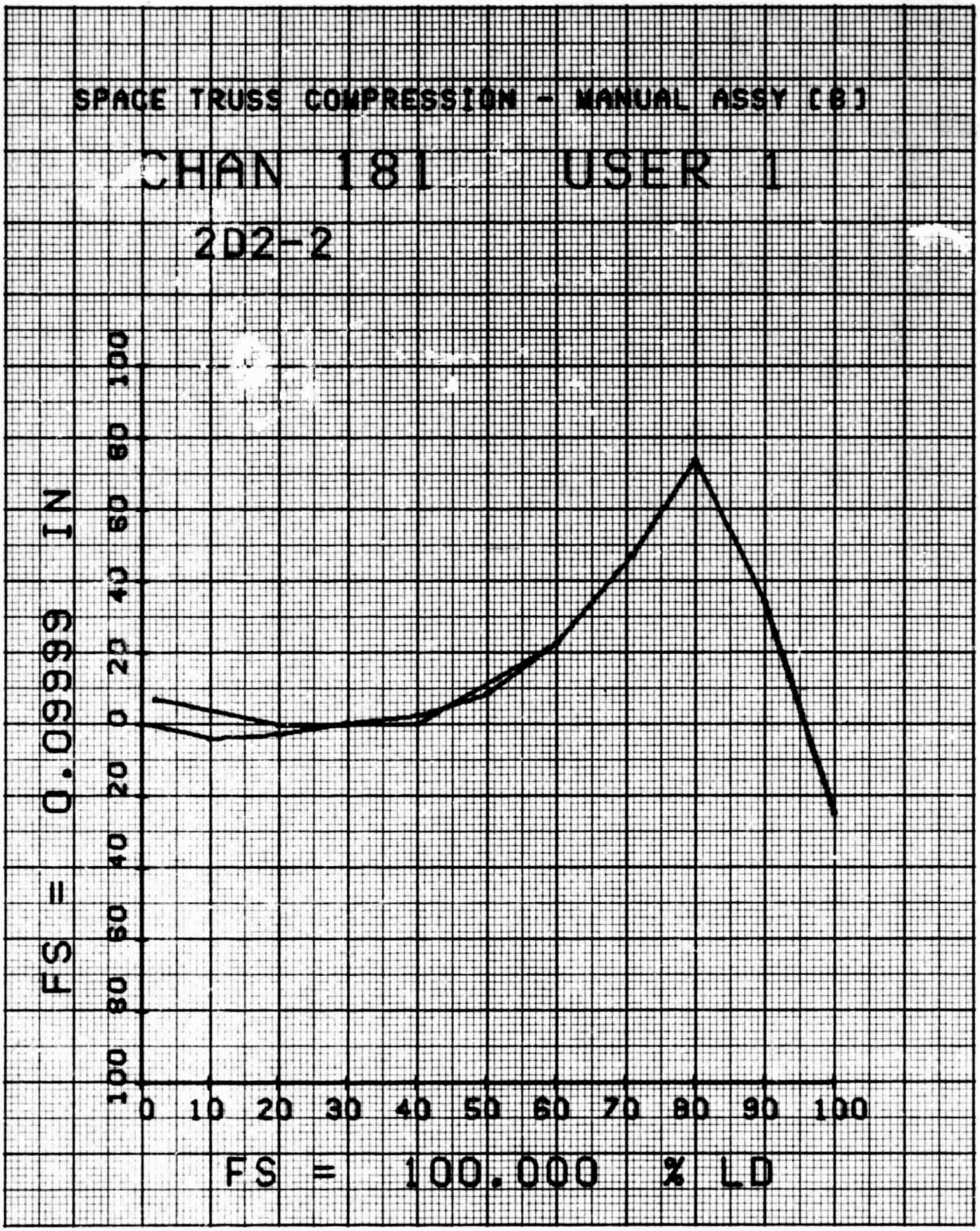
1838-016W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 137 USER 1
DU3-2
FS = 0.09999 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

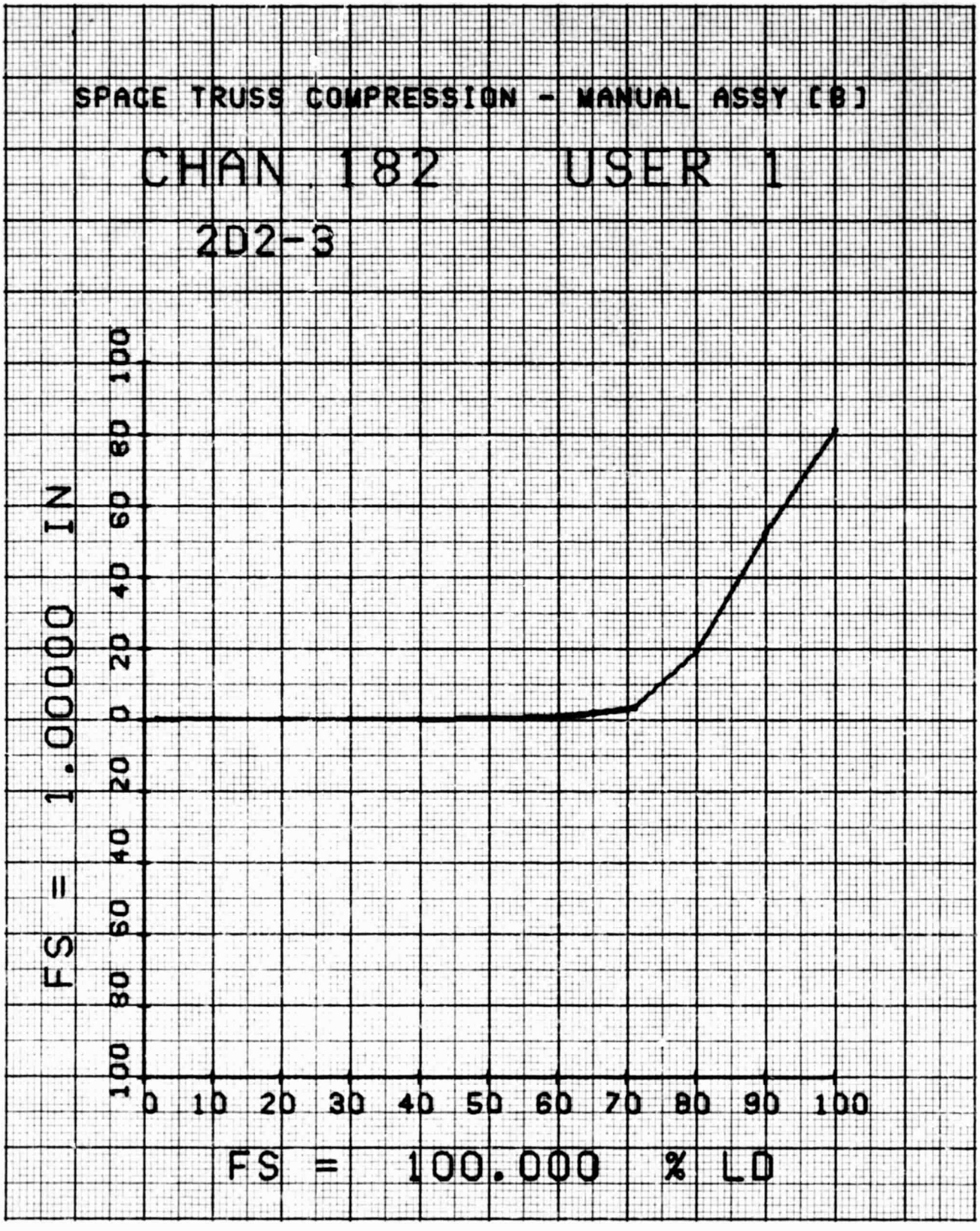
1838-017W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 180 USER 1
2D2-1
FS = 0.09999 IN
100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

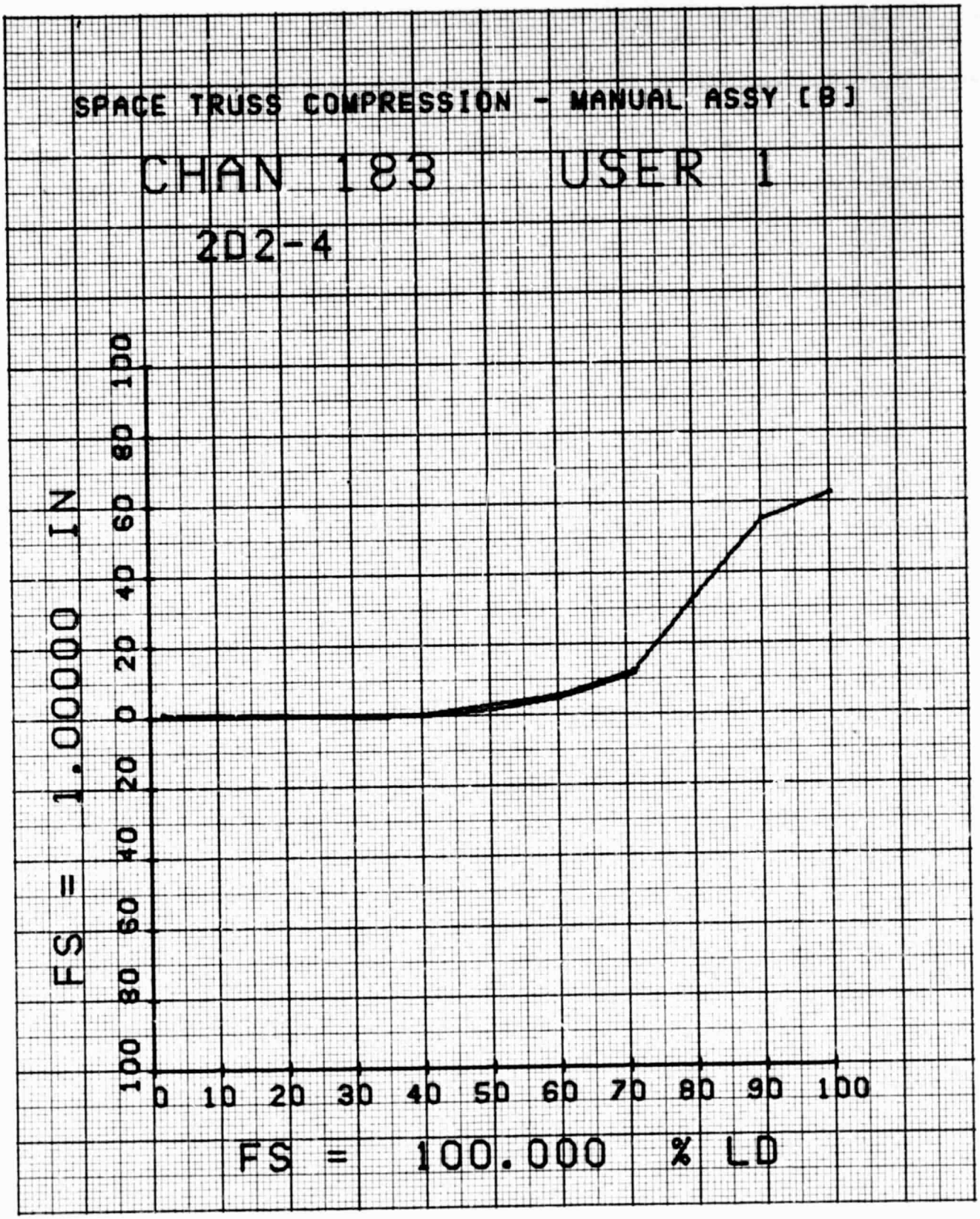
1838-018W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 181 USER 1
2D2-2
FS = 0.09999 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

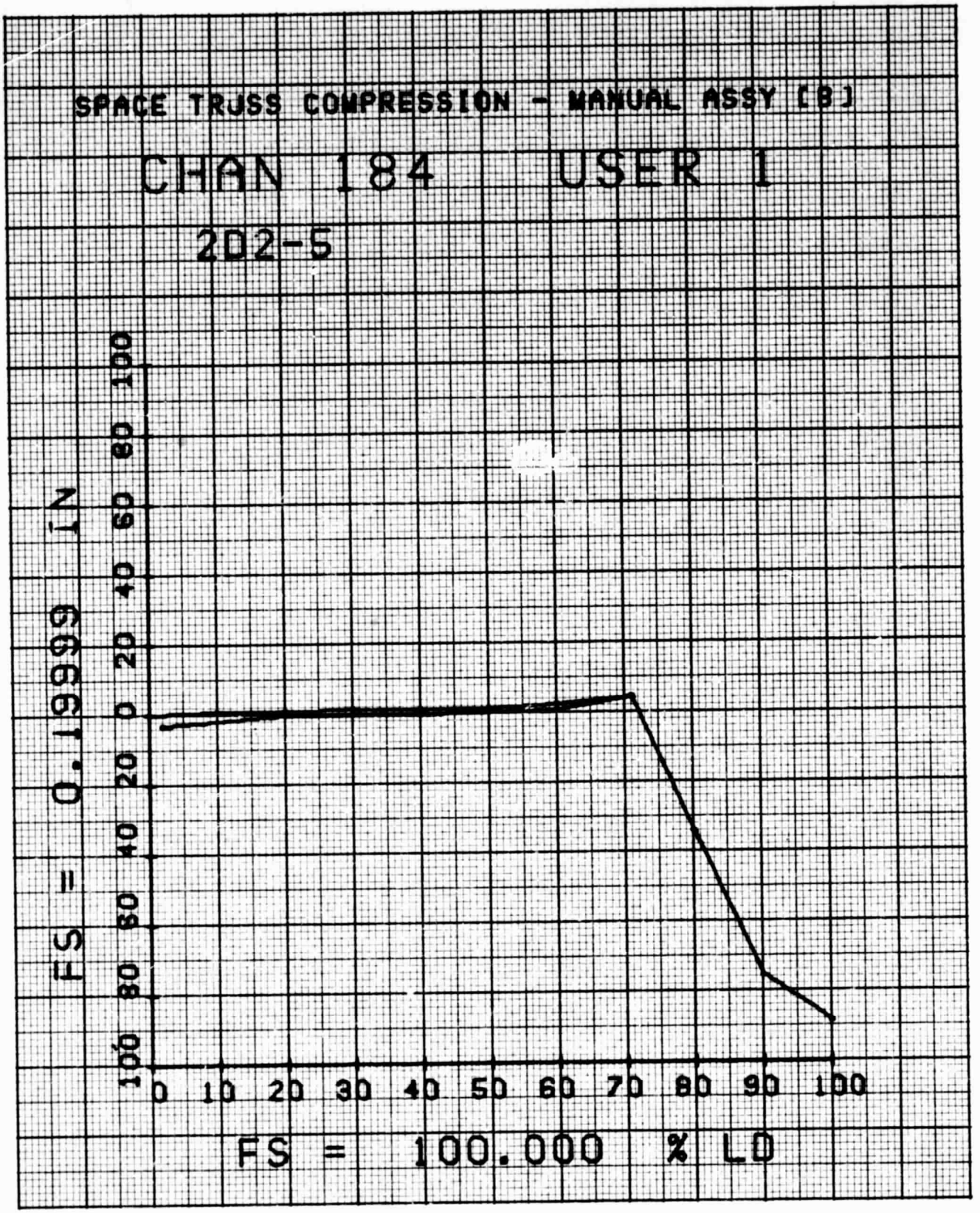
1838-019W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 182 USER 1
2D2-3
FS = 1.00000 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

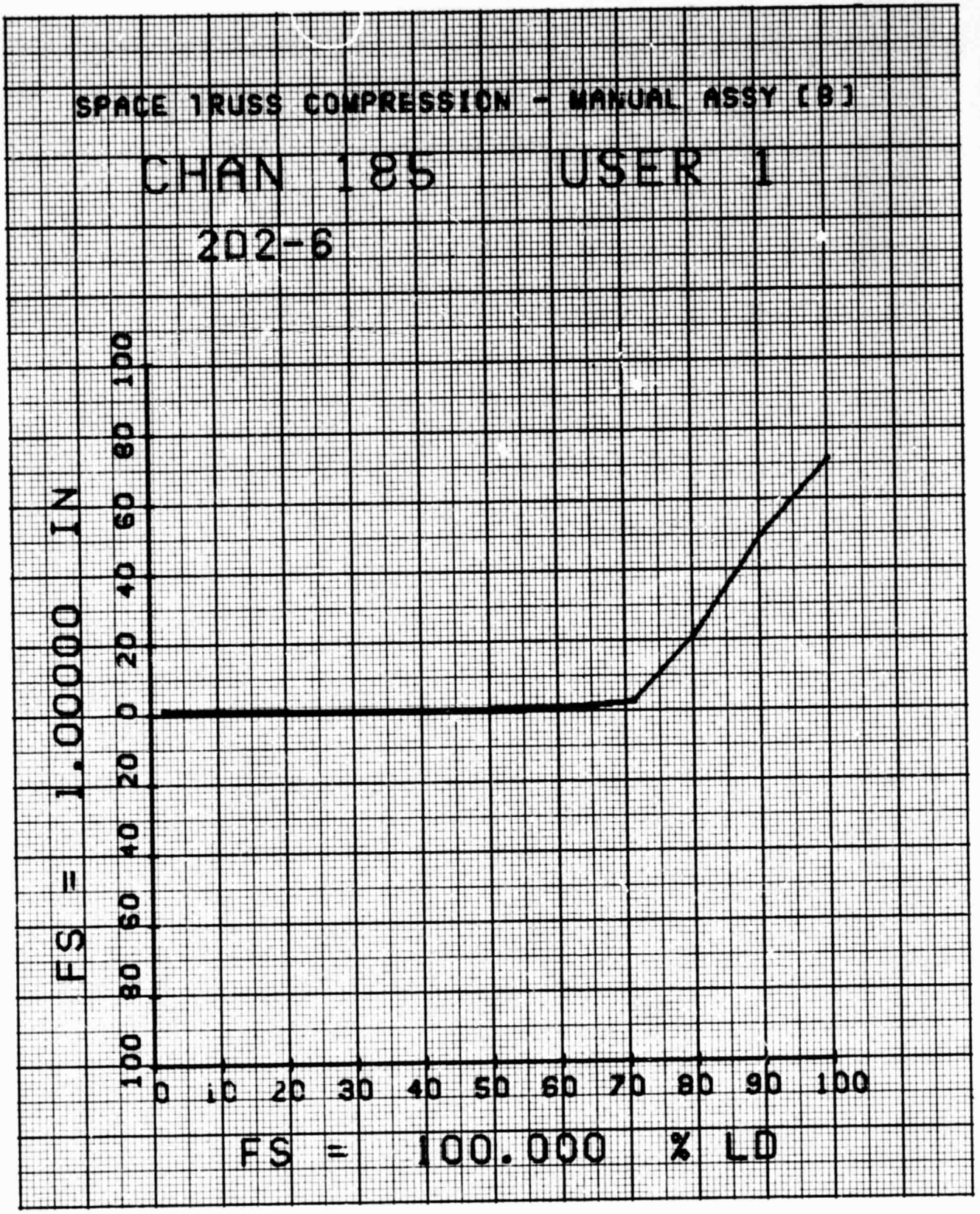
1838-020W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 183 USER 1
202-4
FS = 1.00000 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

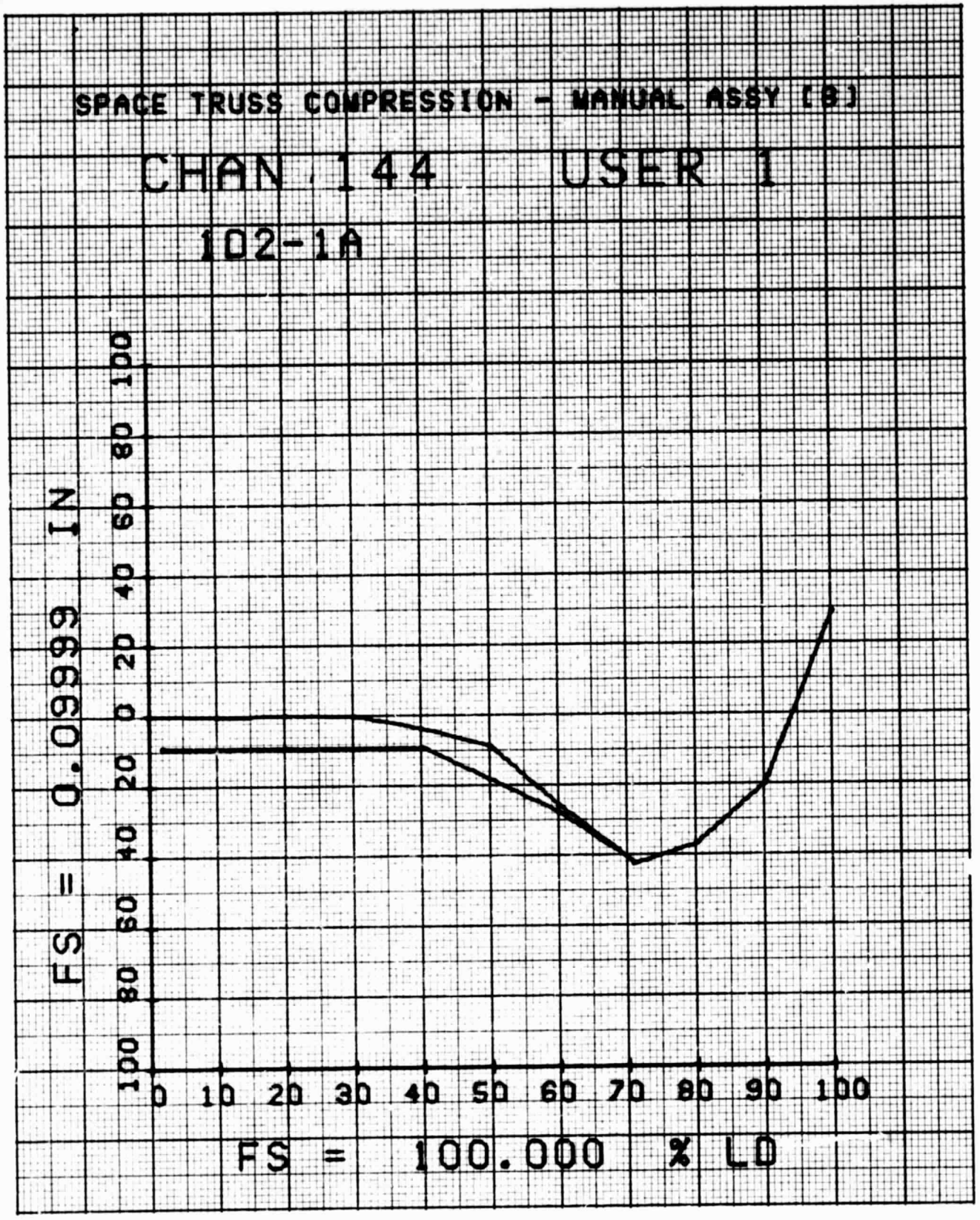
1838-021W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 184 USER 1
202-5
FS = 0.19999 LN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

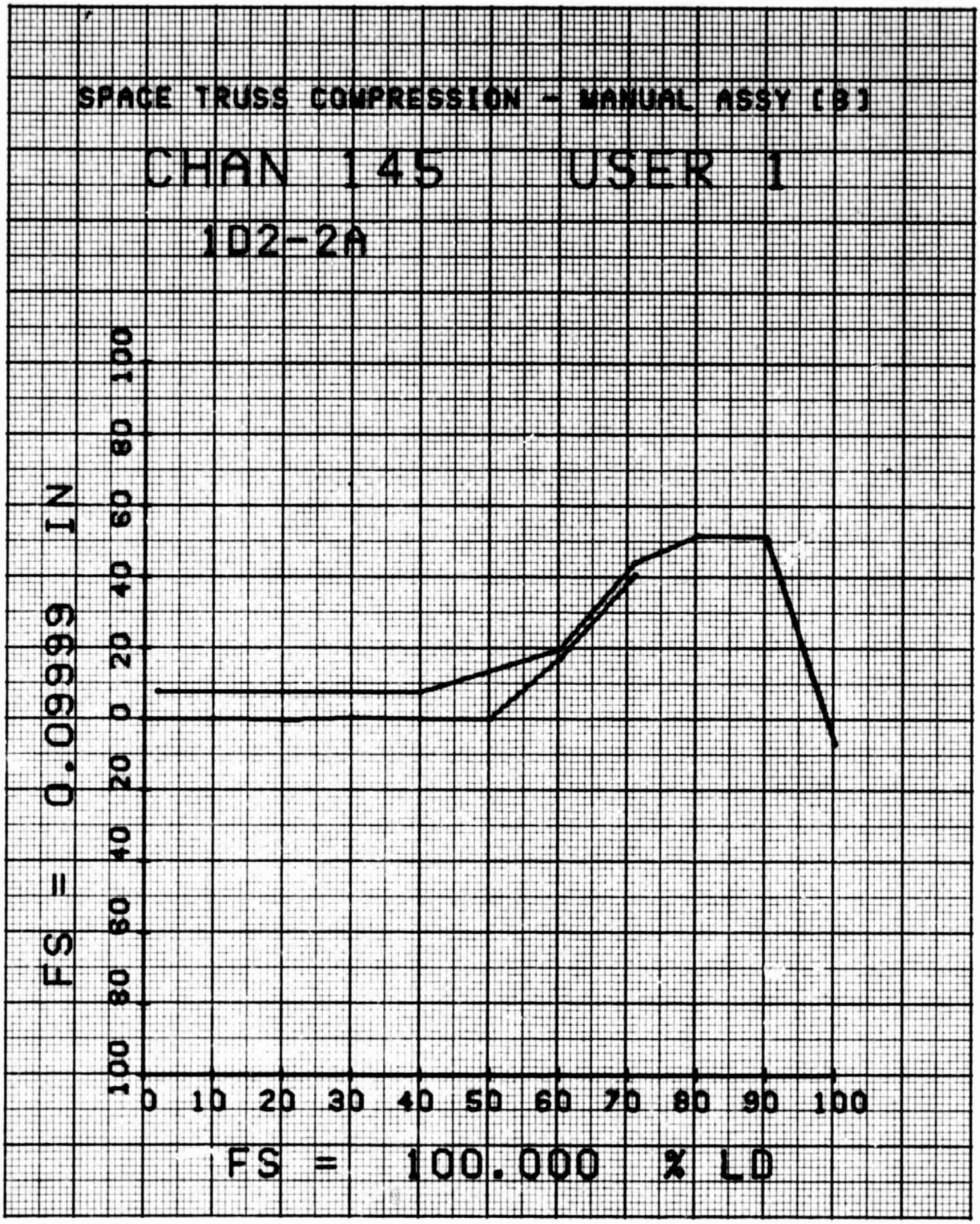
1838-022W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 185 USER 1
202-6
FS = 1.00000 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

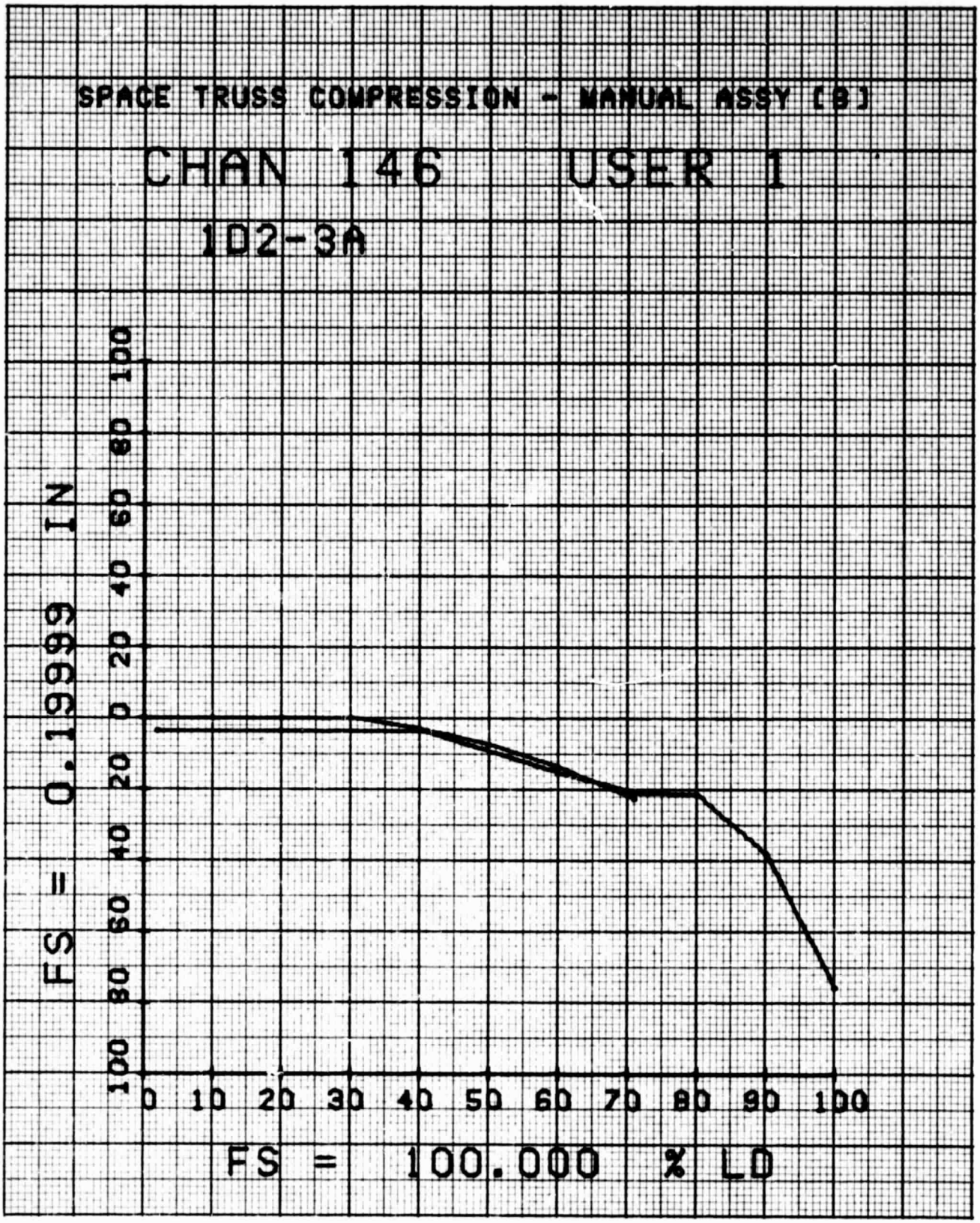
1838-023W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 144
USER 1
102-1A
FS = 0.09999 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

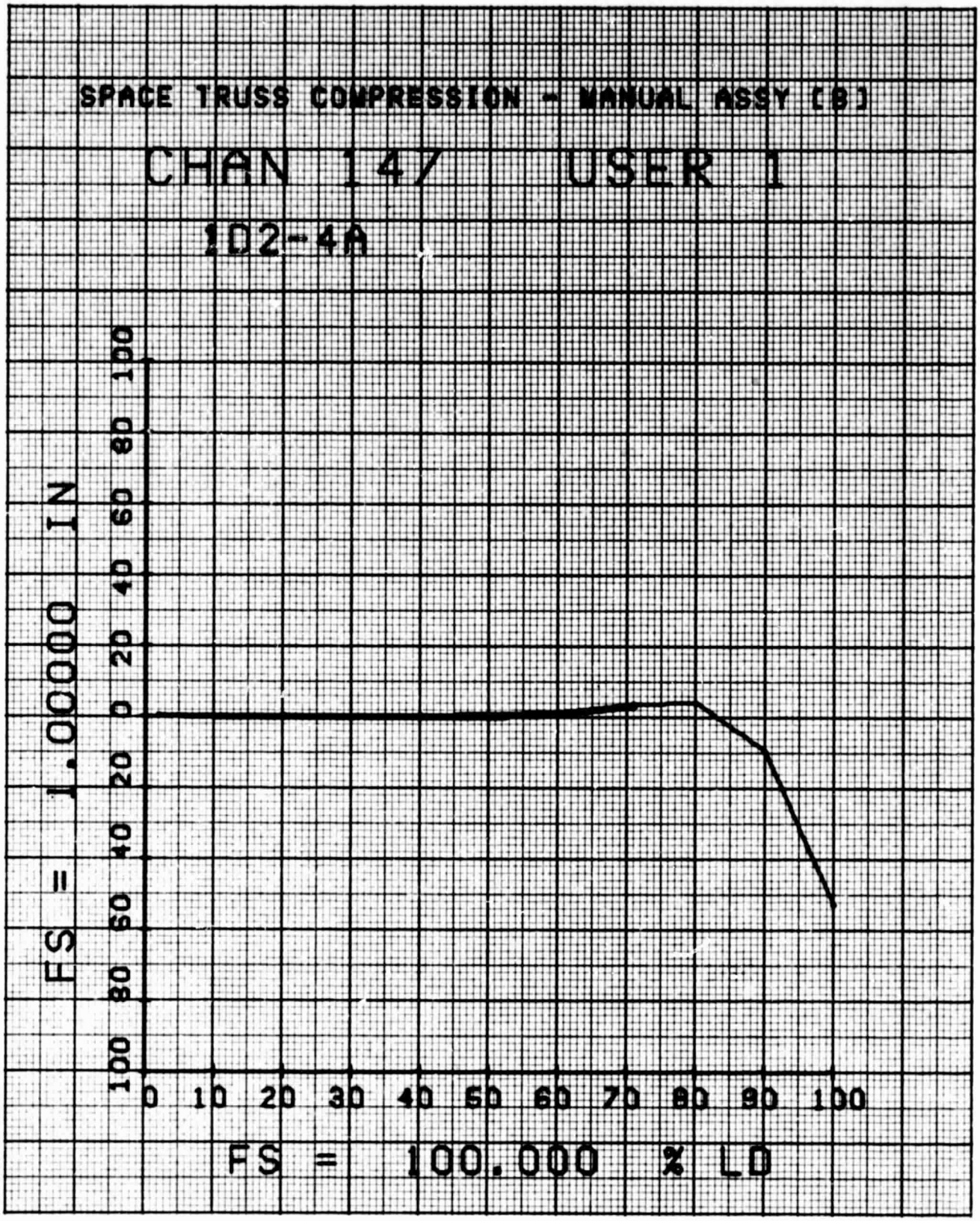
1838-024W


SPACE TRUSS COMPRESSION - MANUAL ASSY (3)
CHAN 145 USER 1
102-2A
FS = 0.09999 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

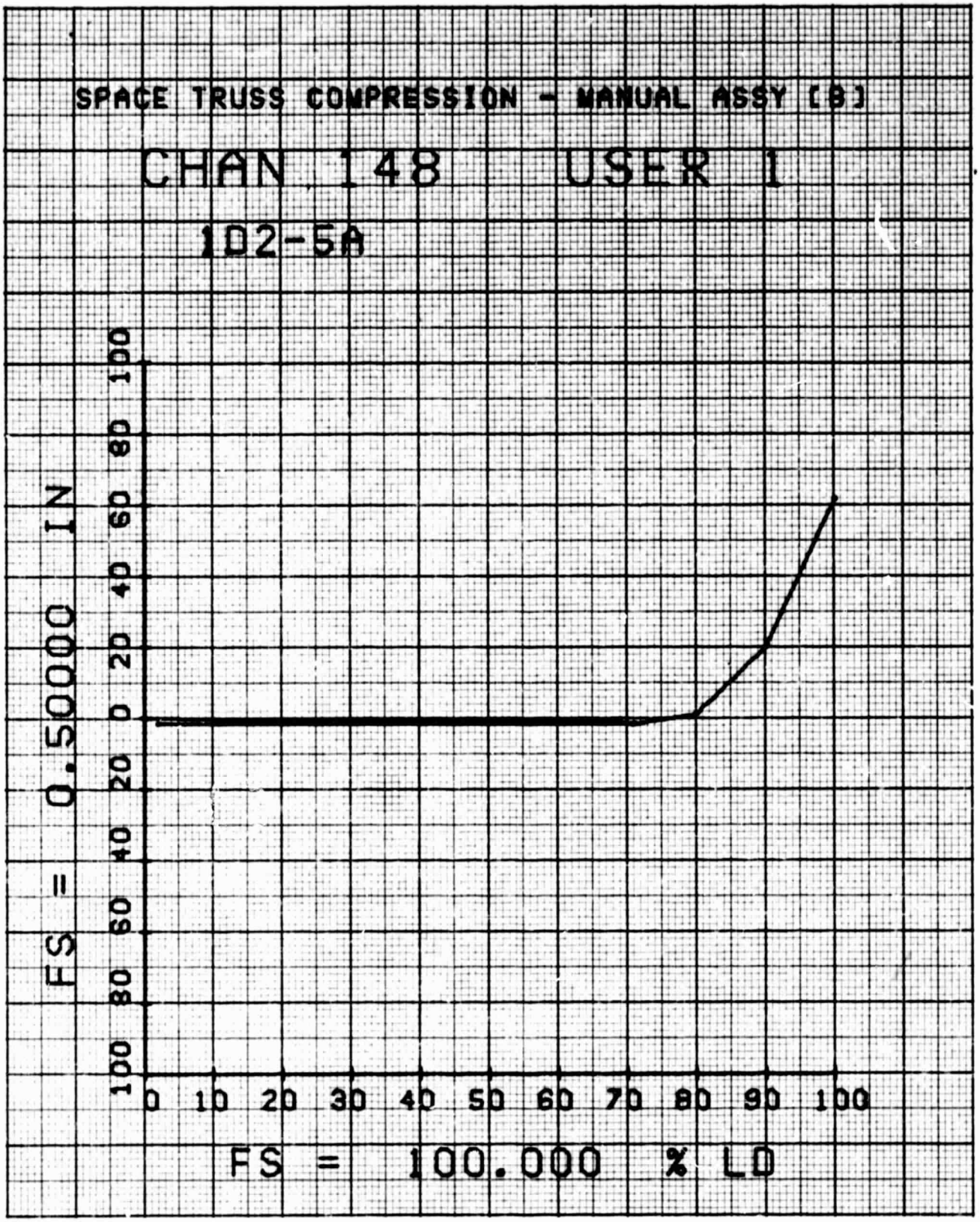
1838-025W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 146 USER 1
1D2-3A
FS = 0.1999 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

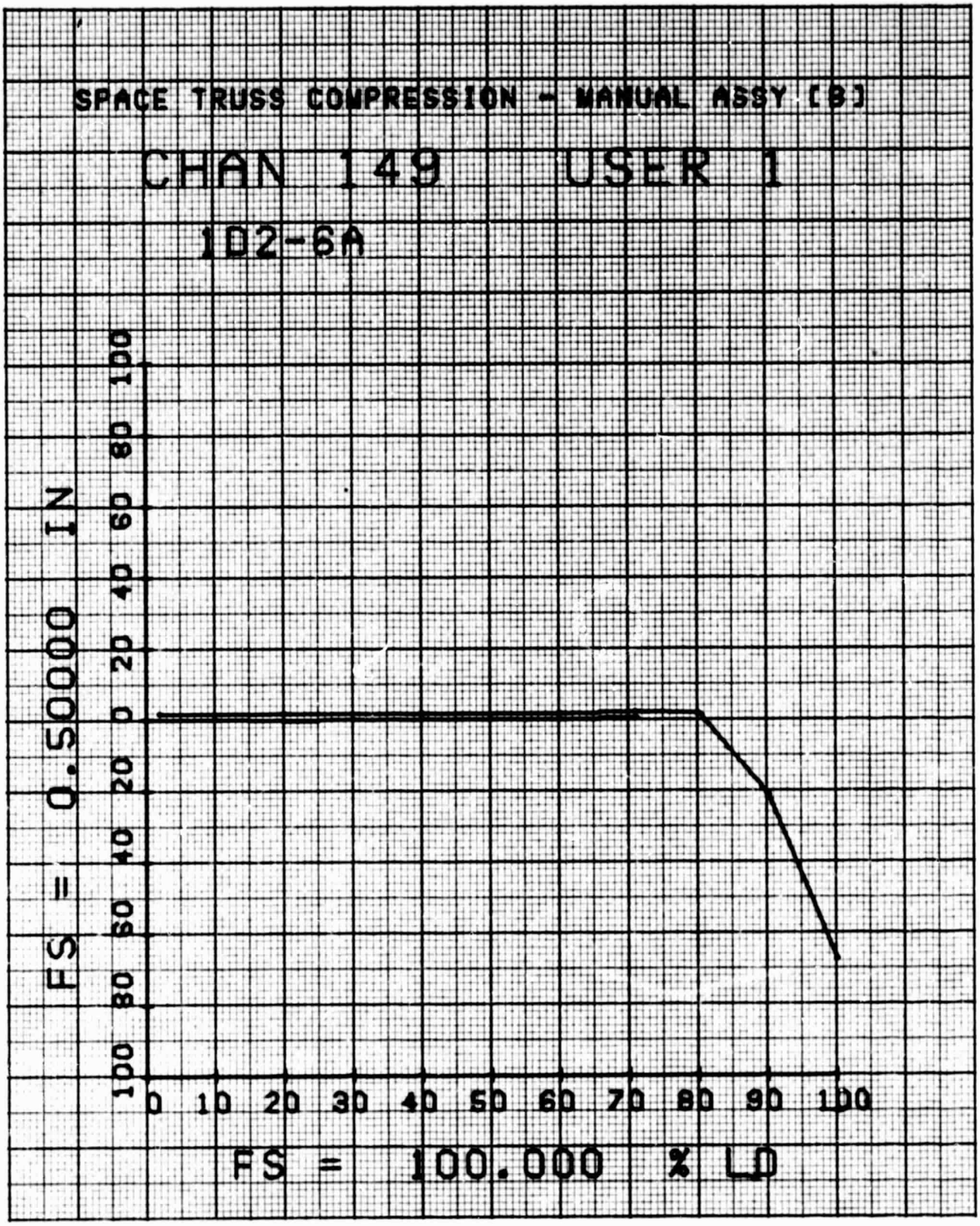
1838-026W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 14/ USER 1
102-4A
FS = 1.00000 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

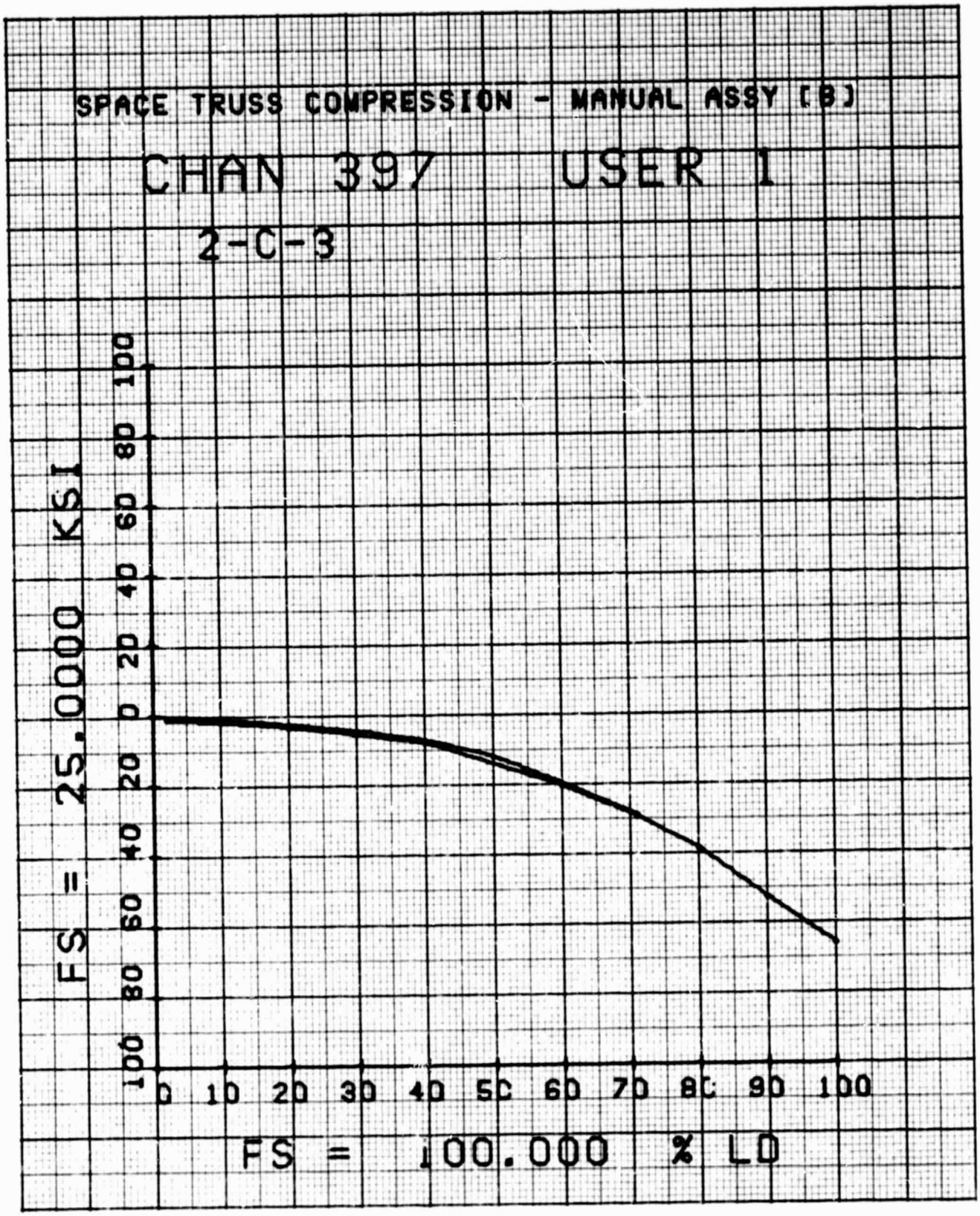
1838-027W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 148 USER 1
102-5A
FS = 0.50000 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

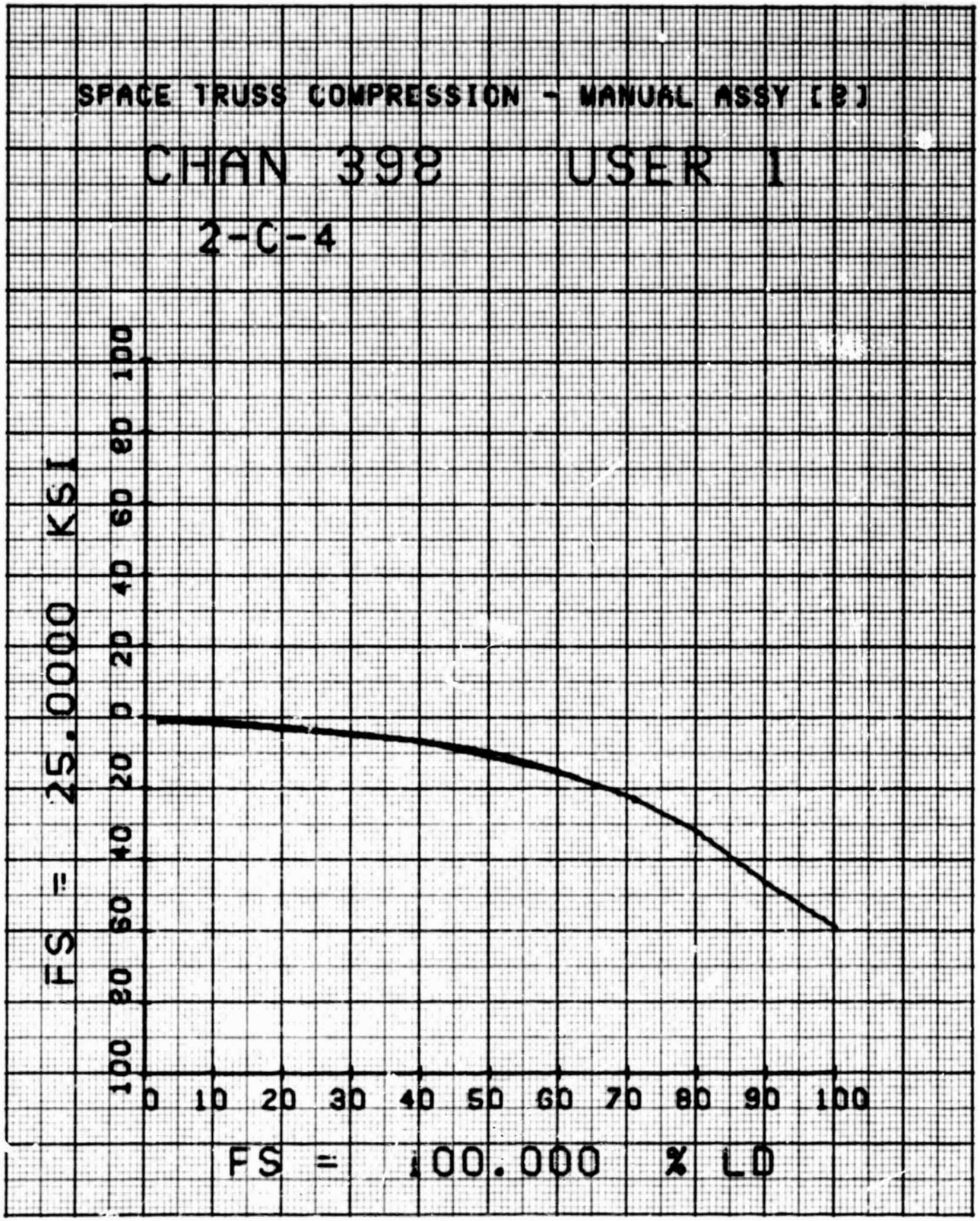
1838-028W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 149 USER 1
102-6A
FS = 0.50000 IN
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

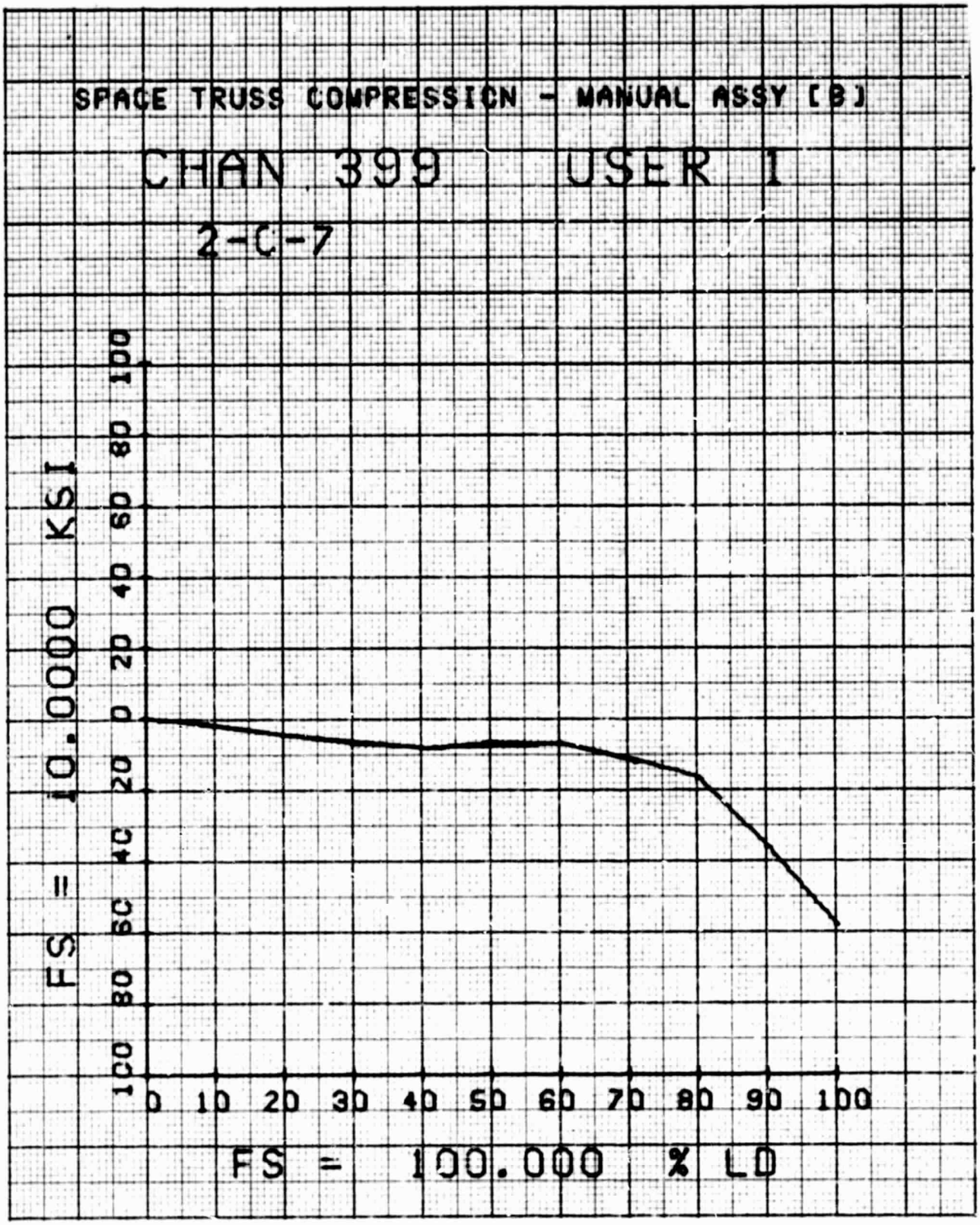
1838-029W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 397 USER 1
2-C-3
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

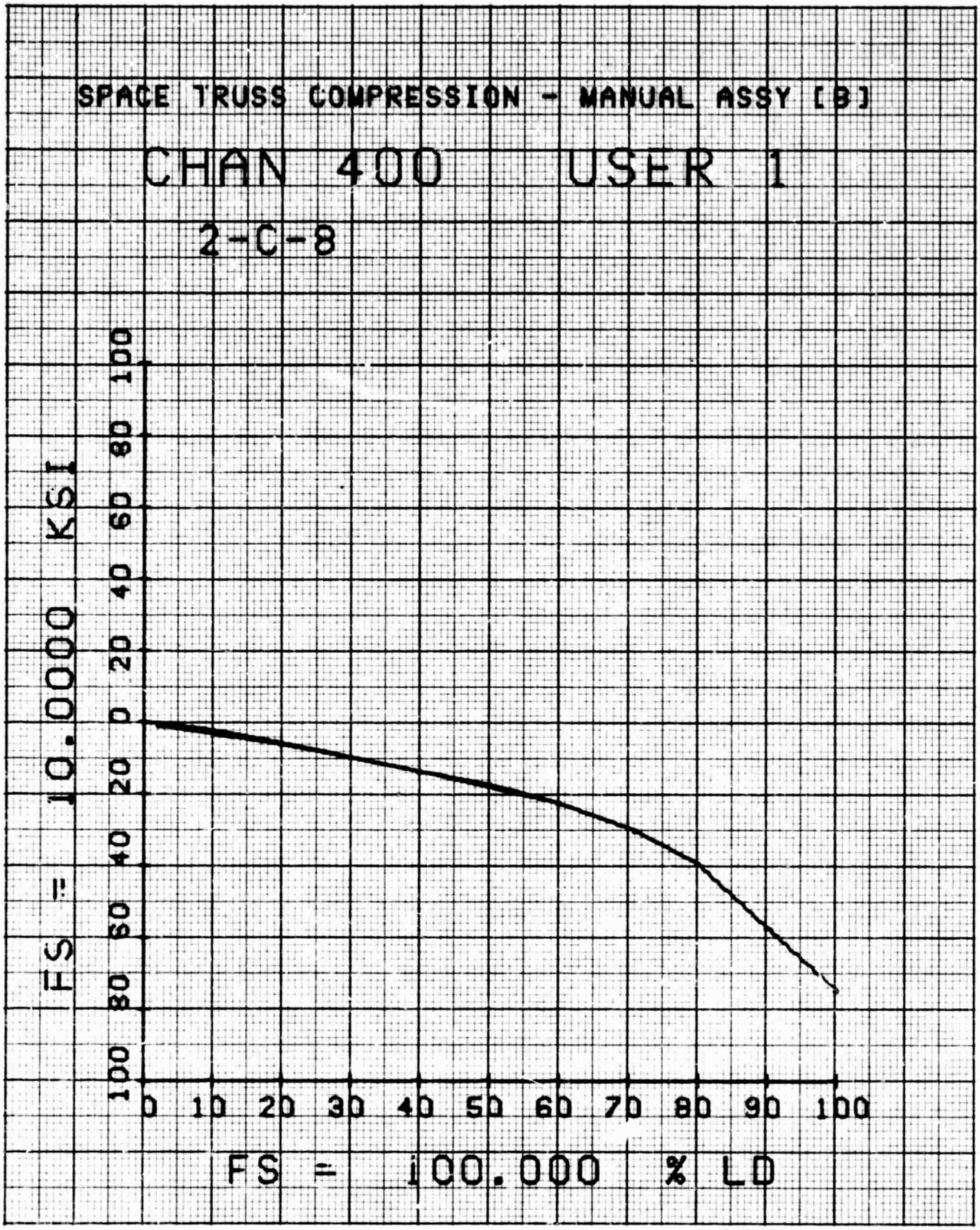
1838-030W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 398 USER 1
2-C-4
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

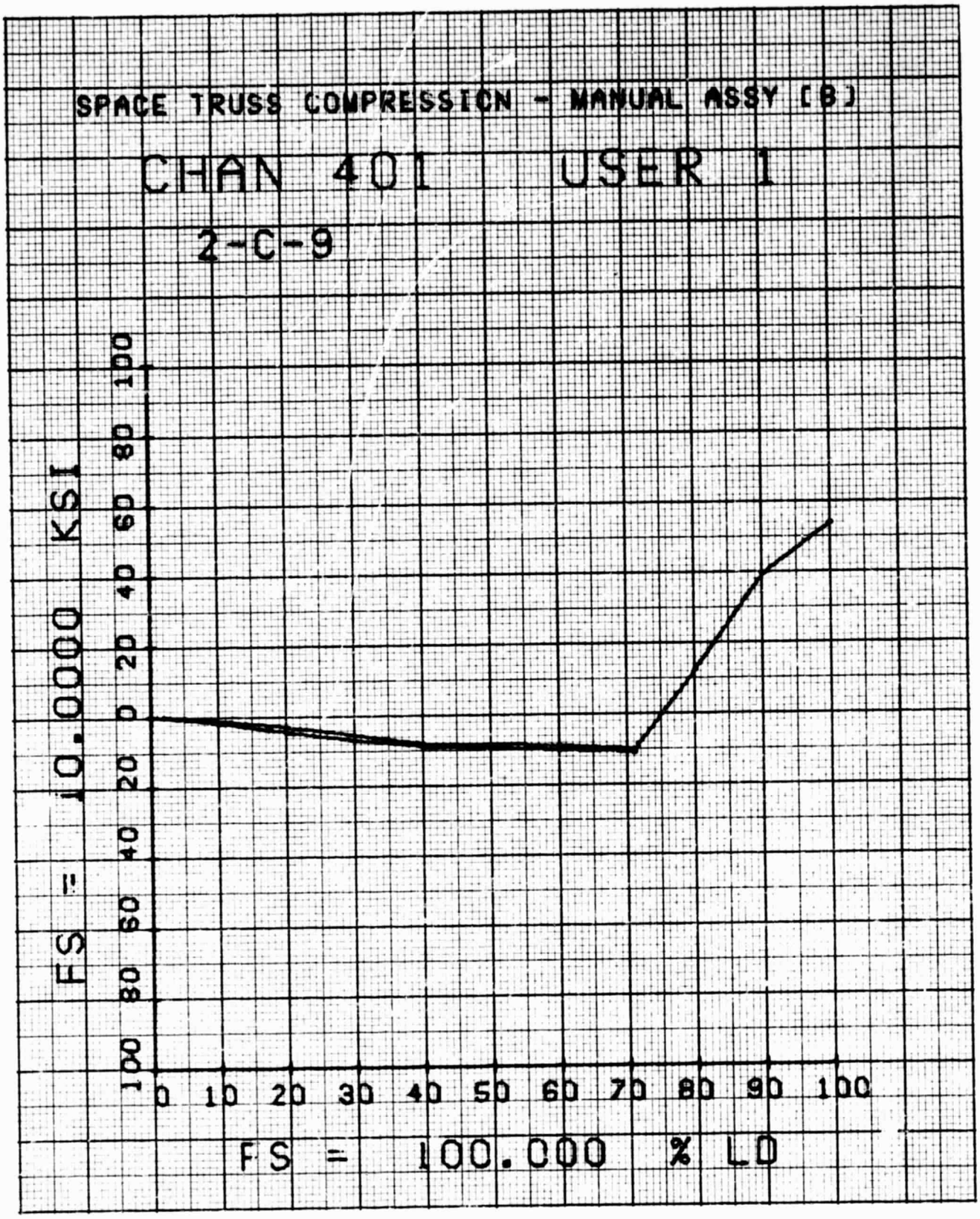
1838-031W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 399 USER 1
2-C-7
FS = 10.0000 KSI
0 20 40 60 80 100
100 80 60 40 20 0
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

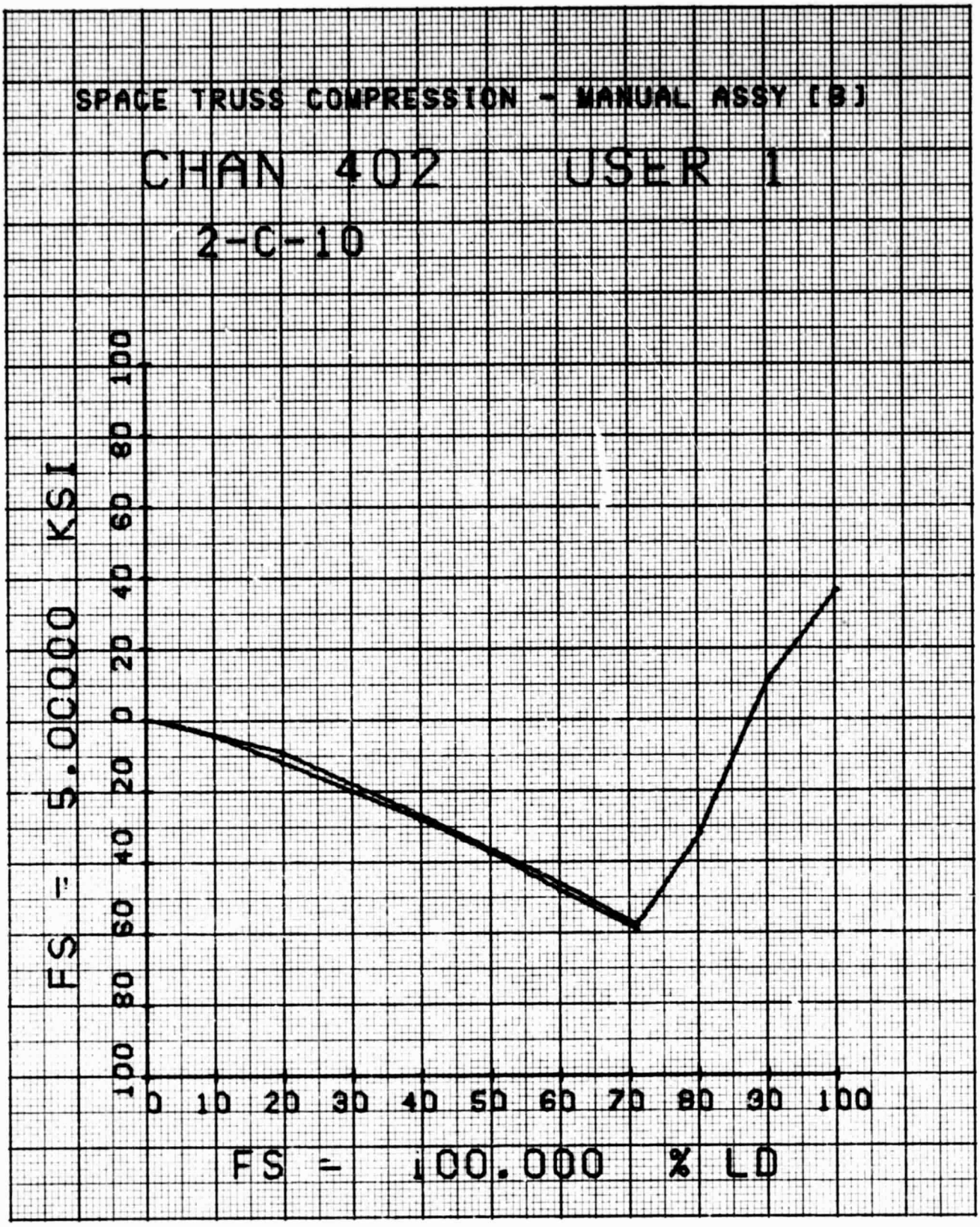
1838-032W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 400 USER 1
2-C-8
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

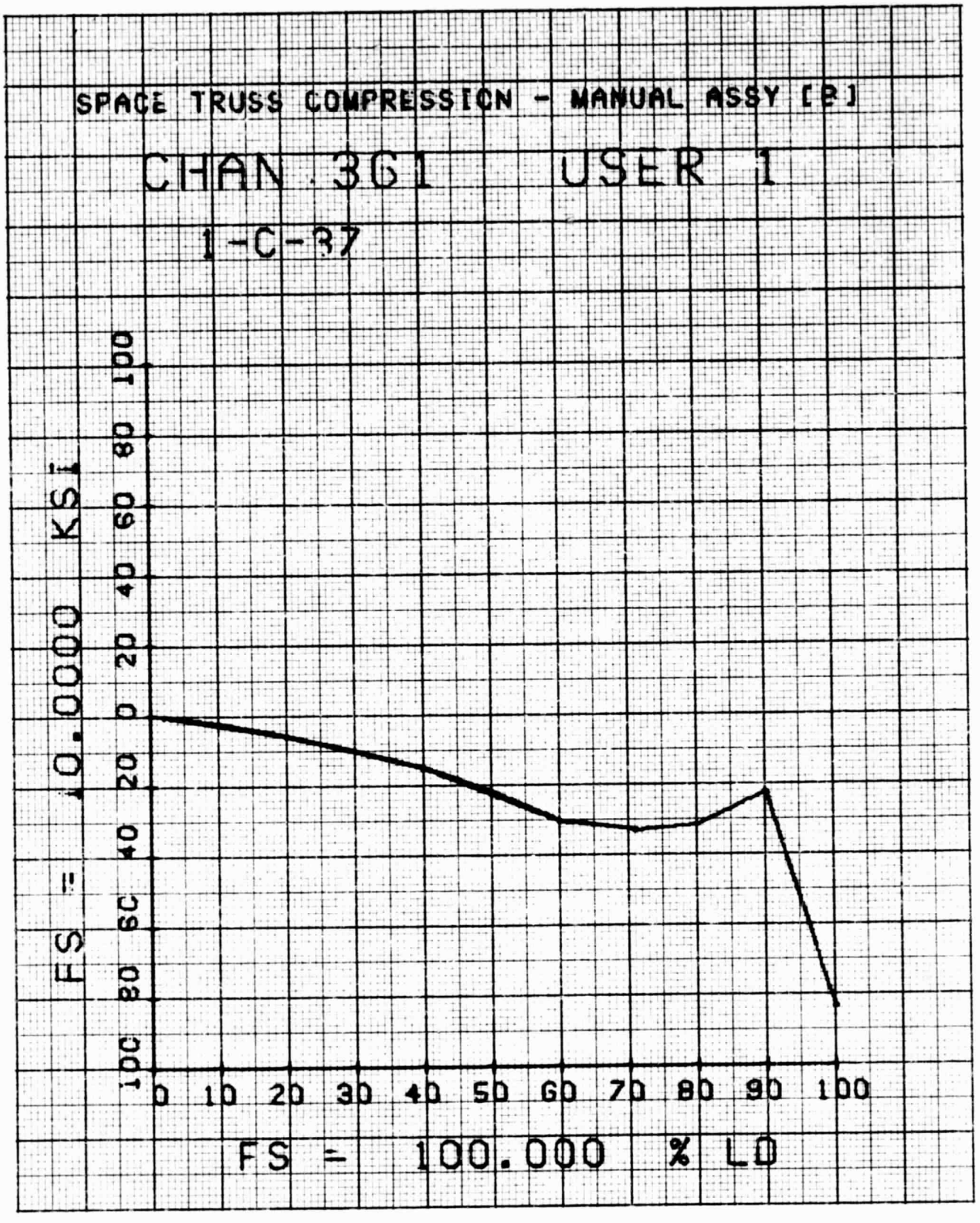
1838-033W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 401 USER 1
2-C-9
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

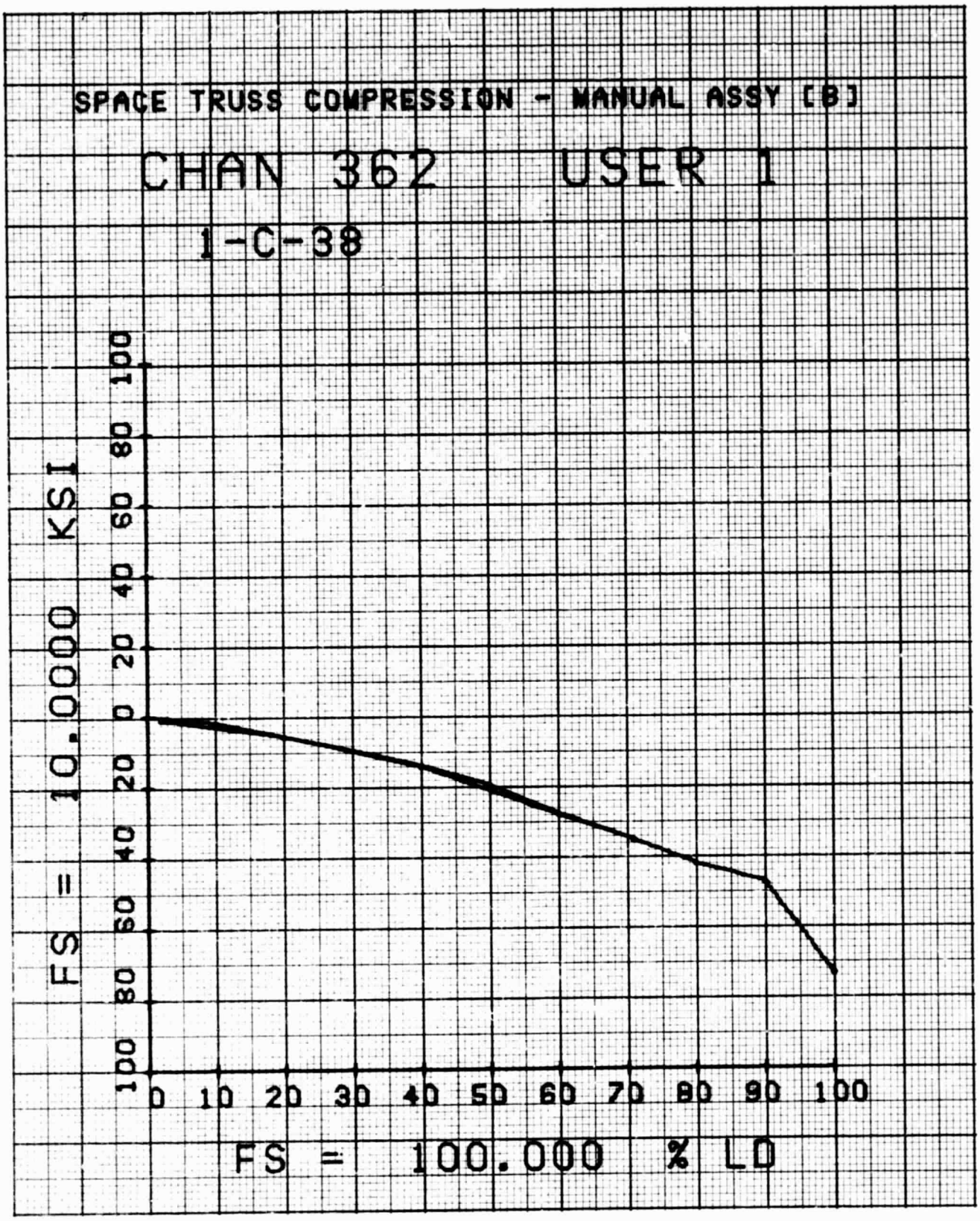
1838-034W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 402 USER 1
2-C-10
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

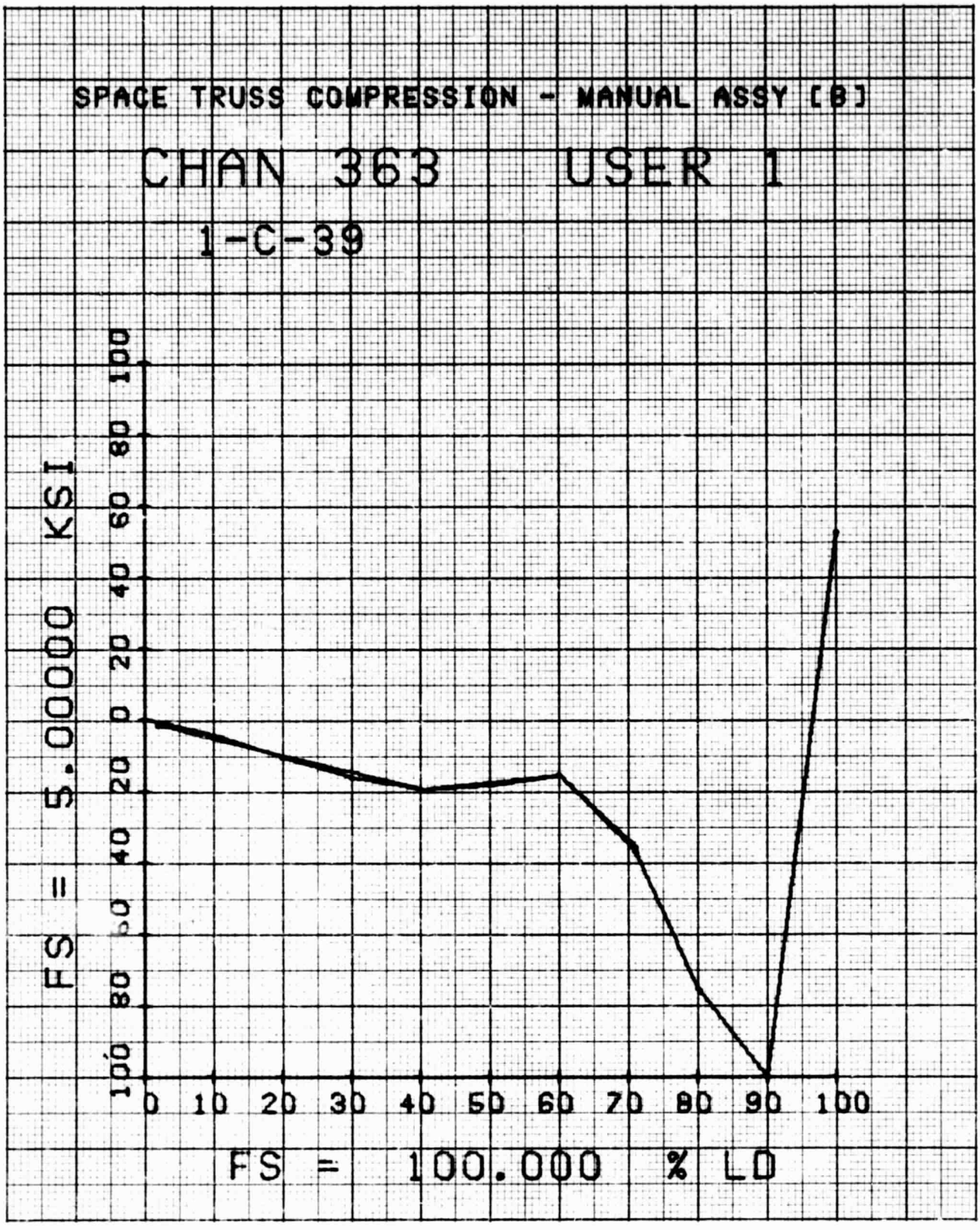
1838-035W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 361 USER 1
1-C-37
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

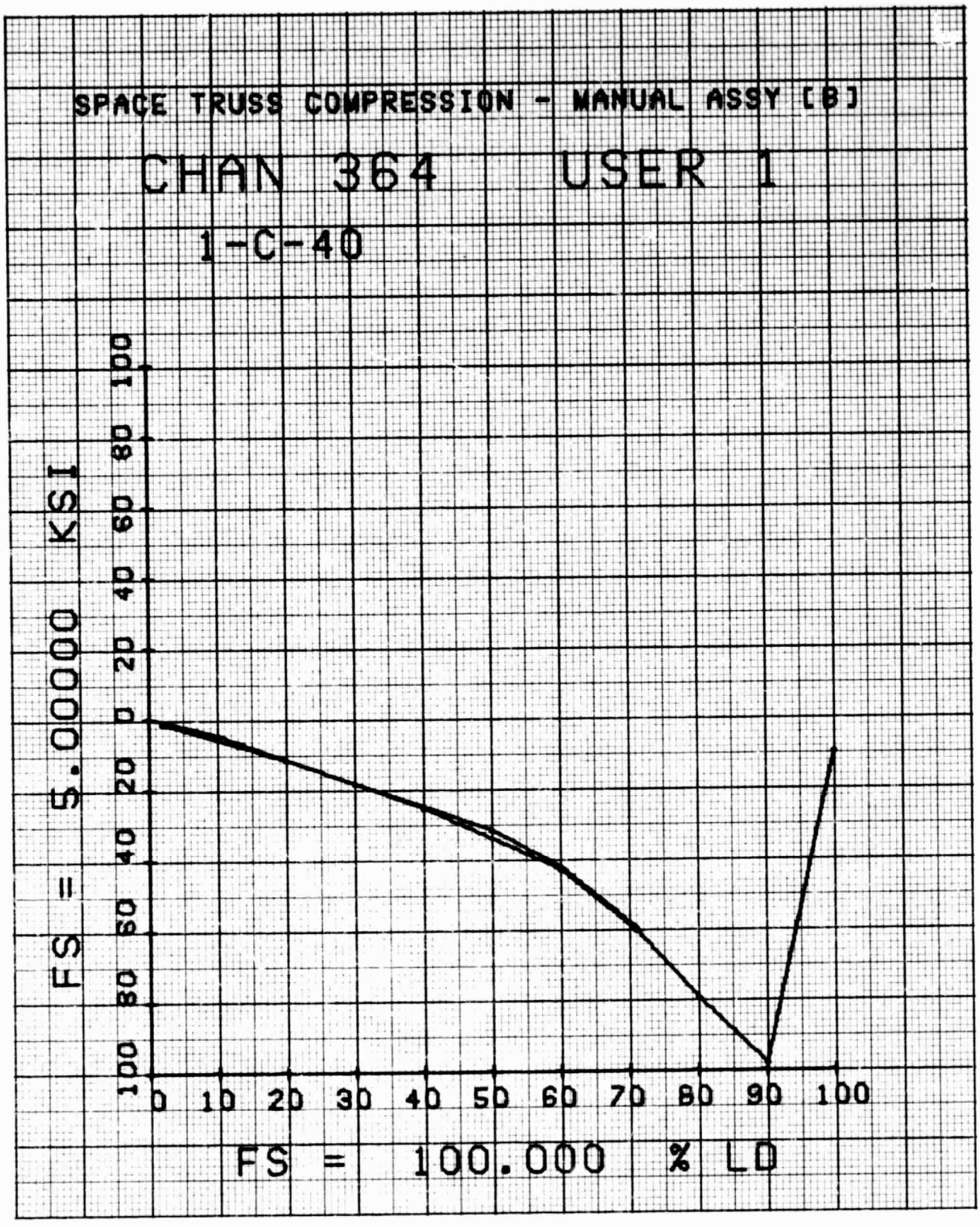
1838-036W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 362 USER 1
1-C-38
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

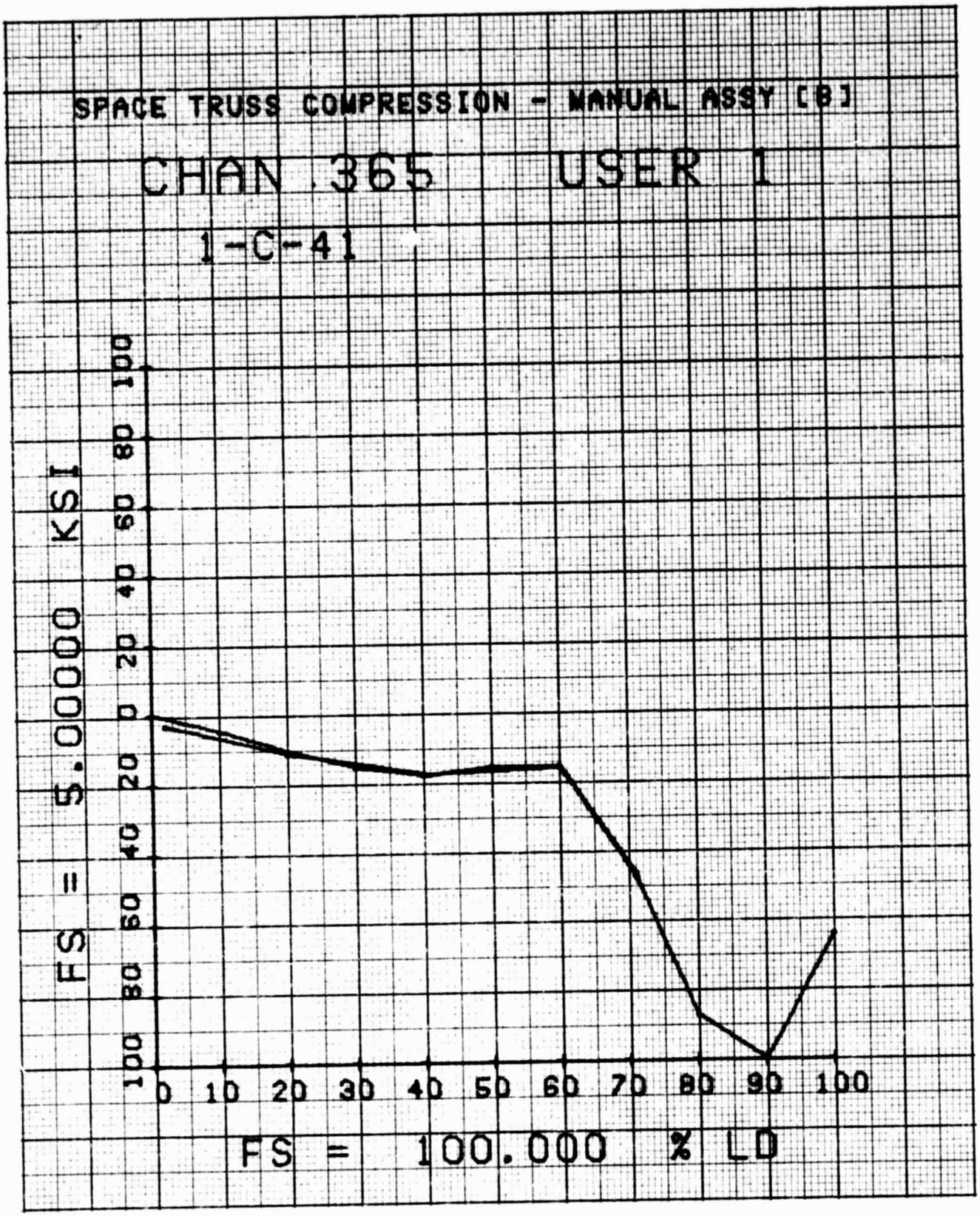
1838-037W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 363 USER 1
1-C-39
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

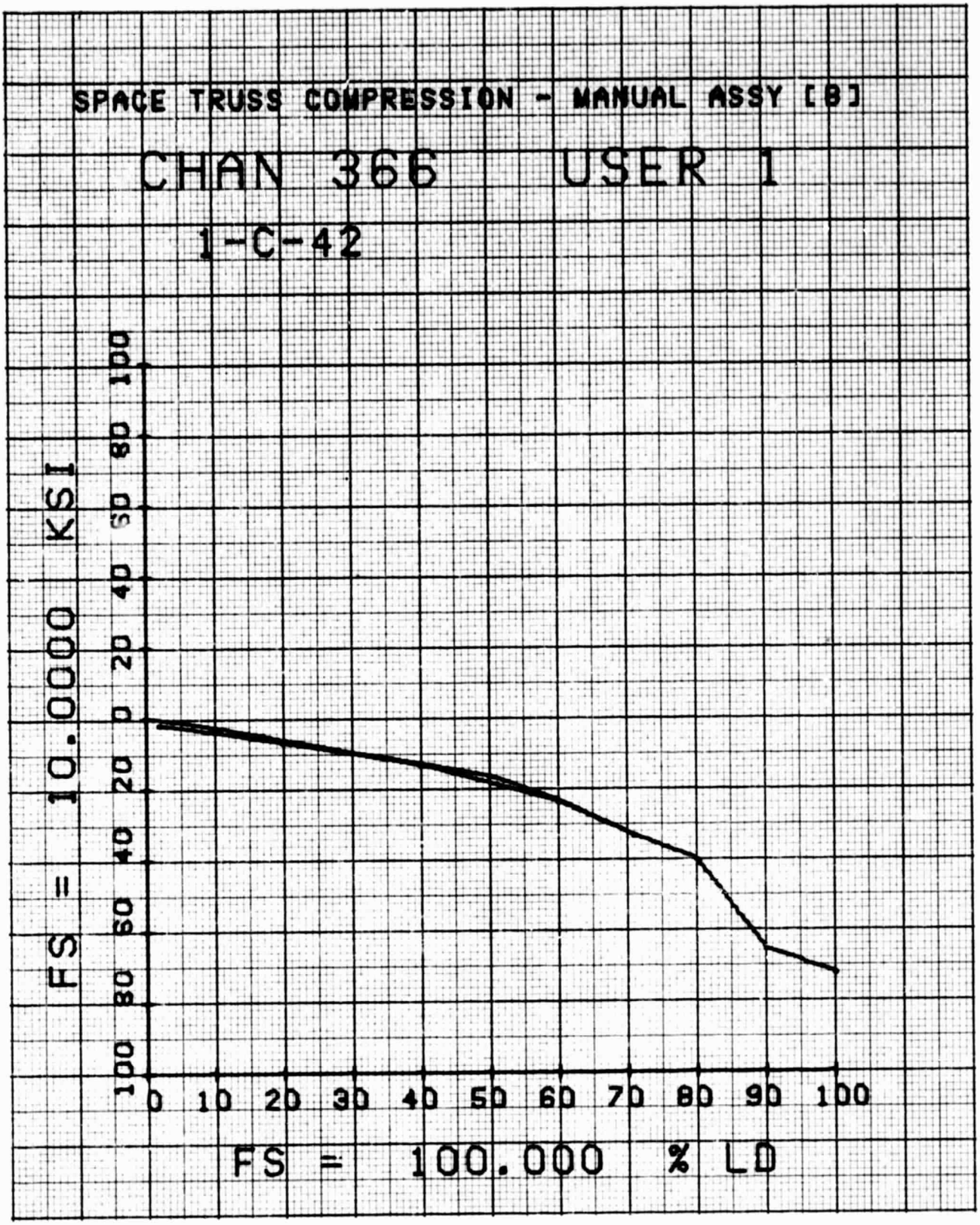
1838-038W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 364 USER 1
1-C-40
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

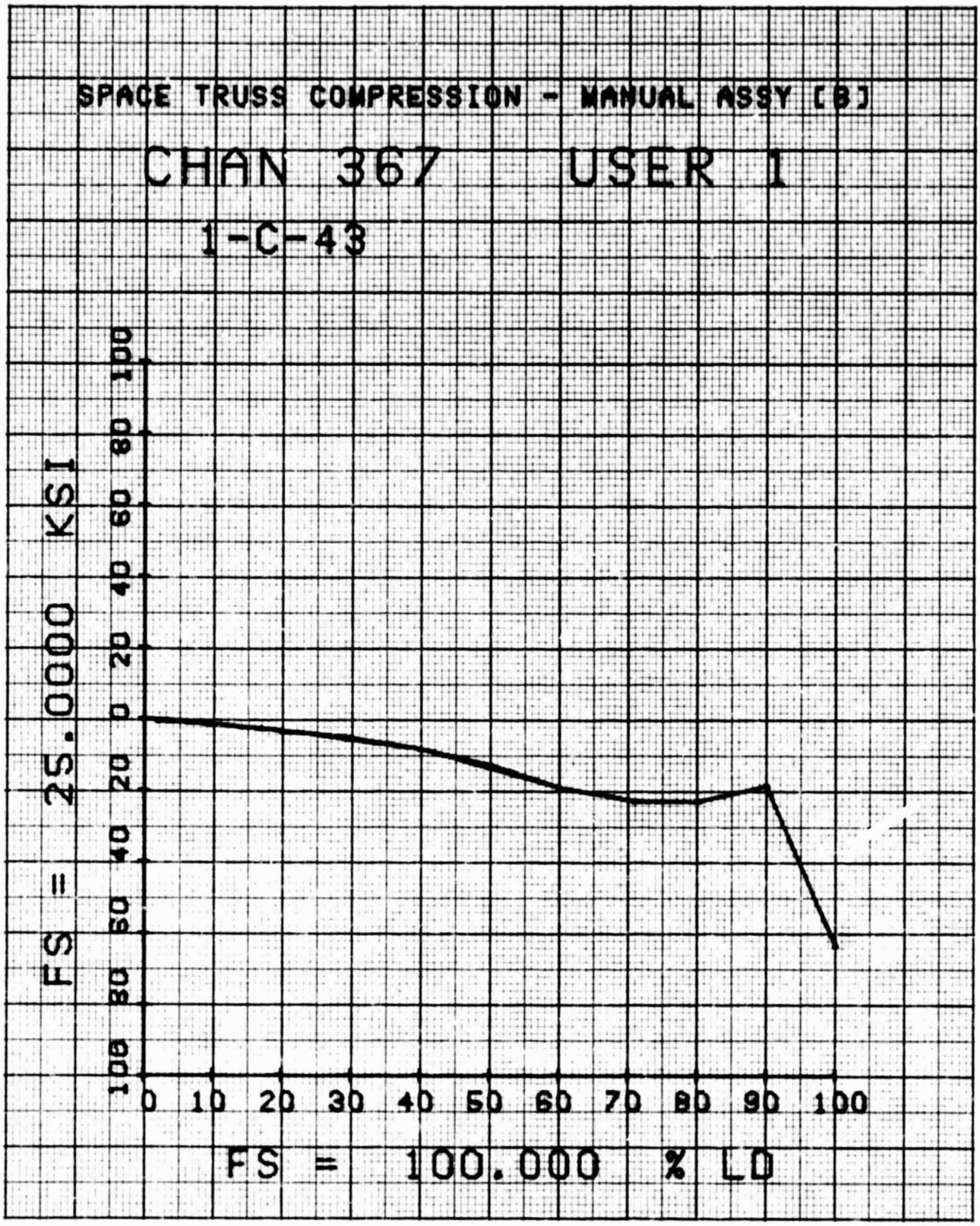
1838-039W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 365 USER 1
1-C-41
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

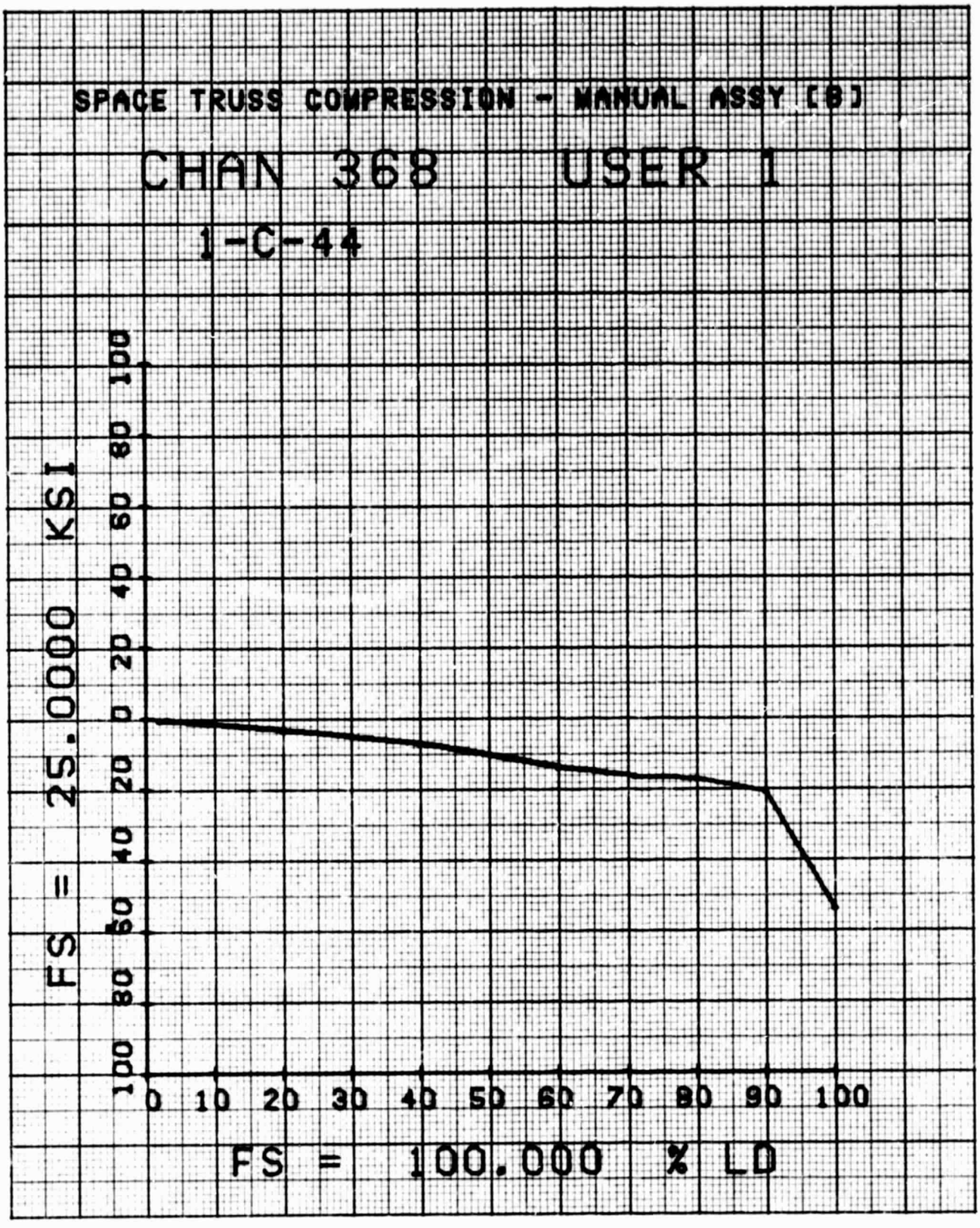
1838-040W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 366 USER 1
1-C-42
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

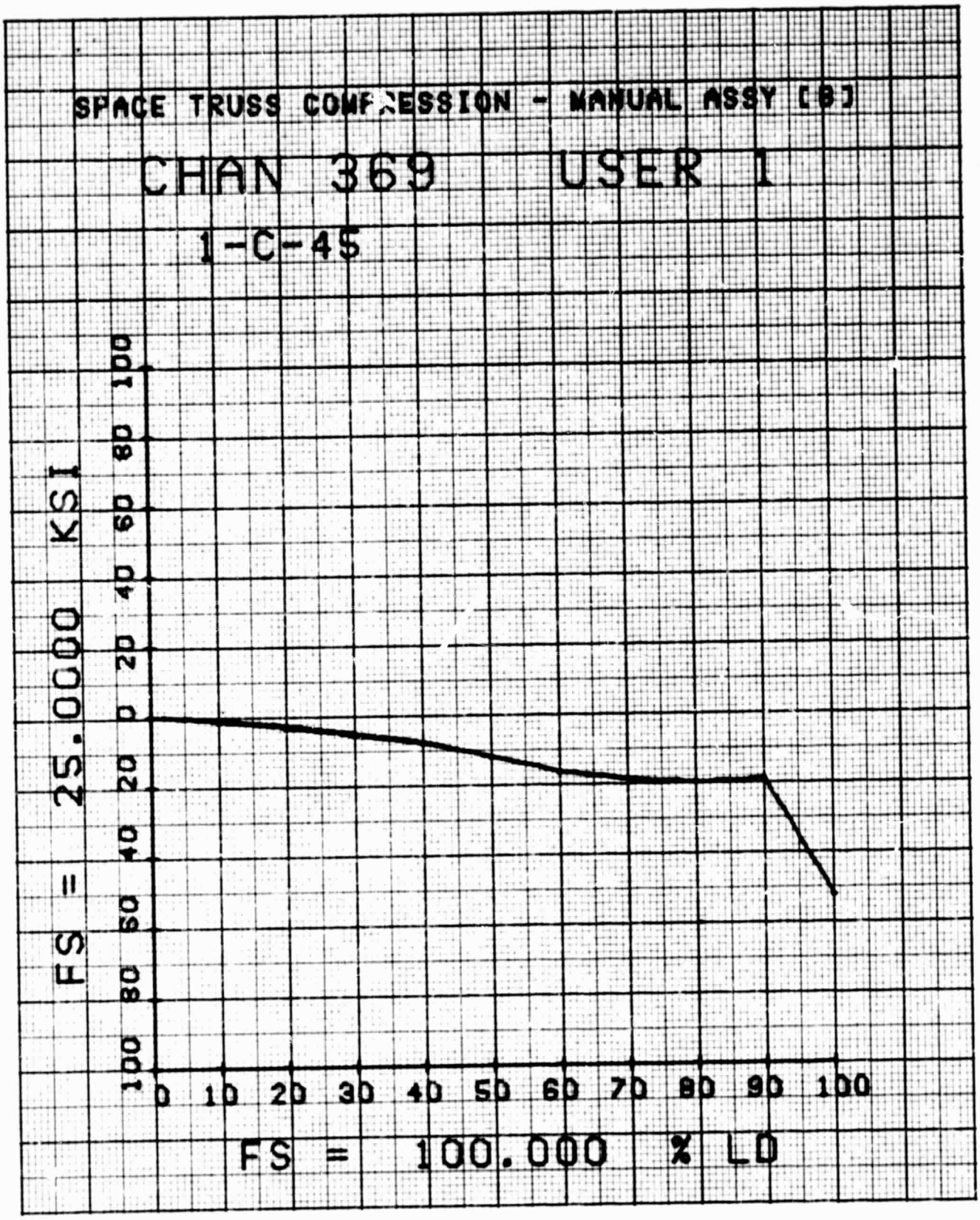
1838-041W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 367 USER 1
1-C-43
FS = 25.0000 KSI
100
80
60
40
20
0
20
40
60
80
100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

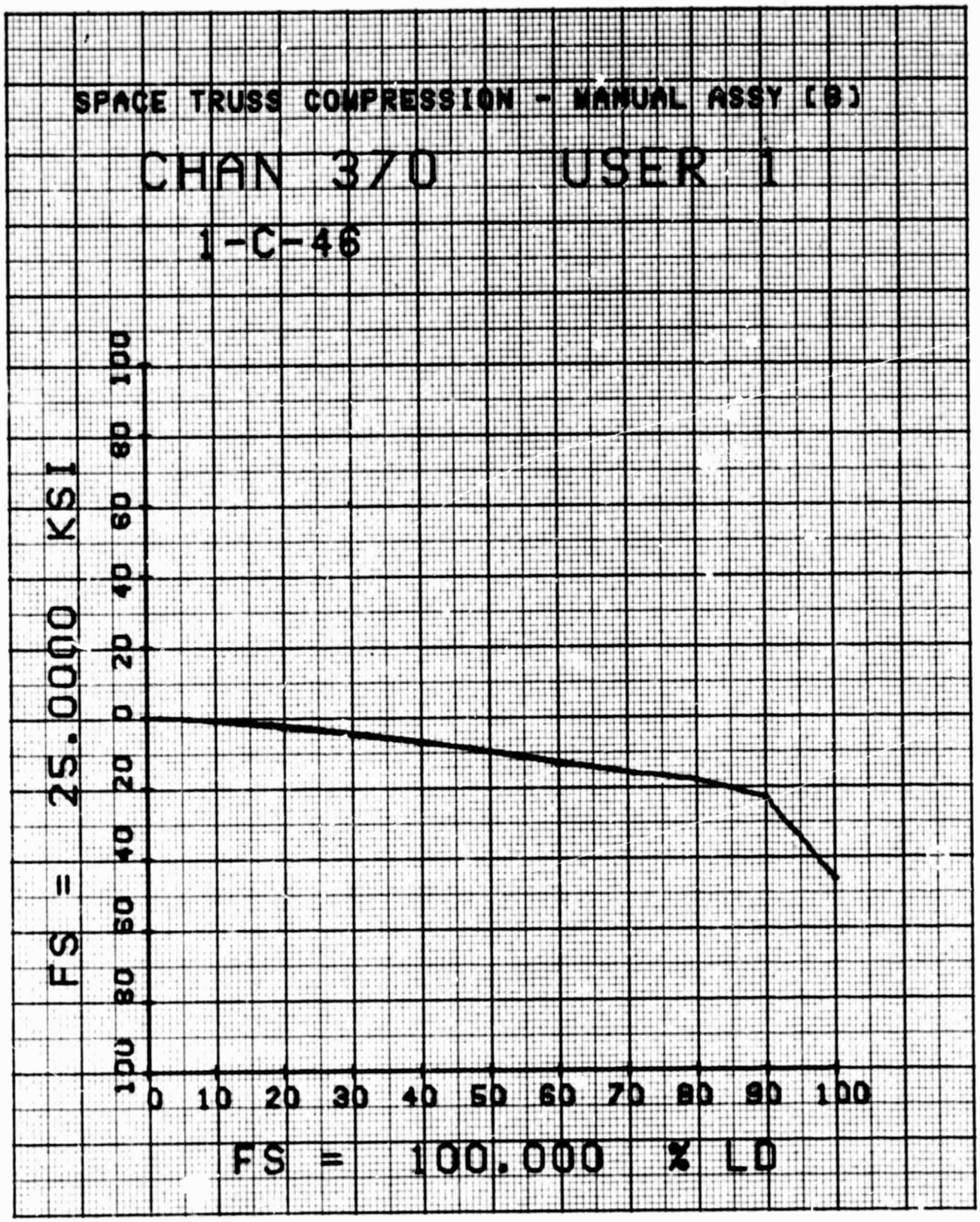
1838-042W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 368 USER 1
1-C-44
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

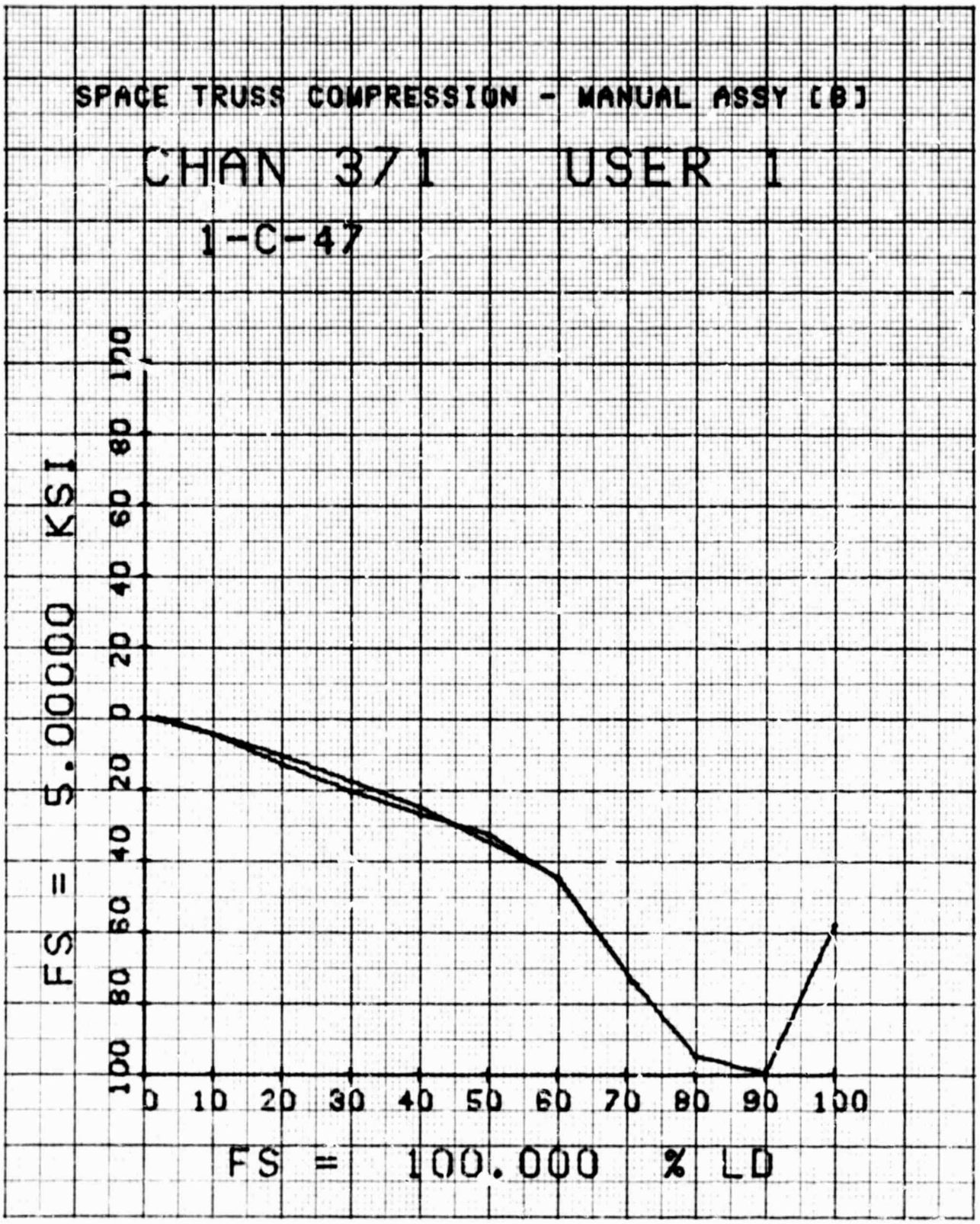
1838-043W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 369 USER 1
1-C-45
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

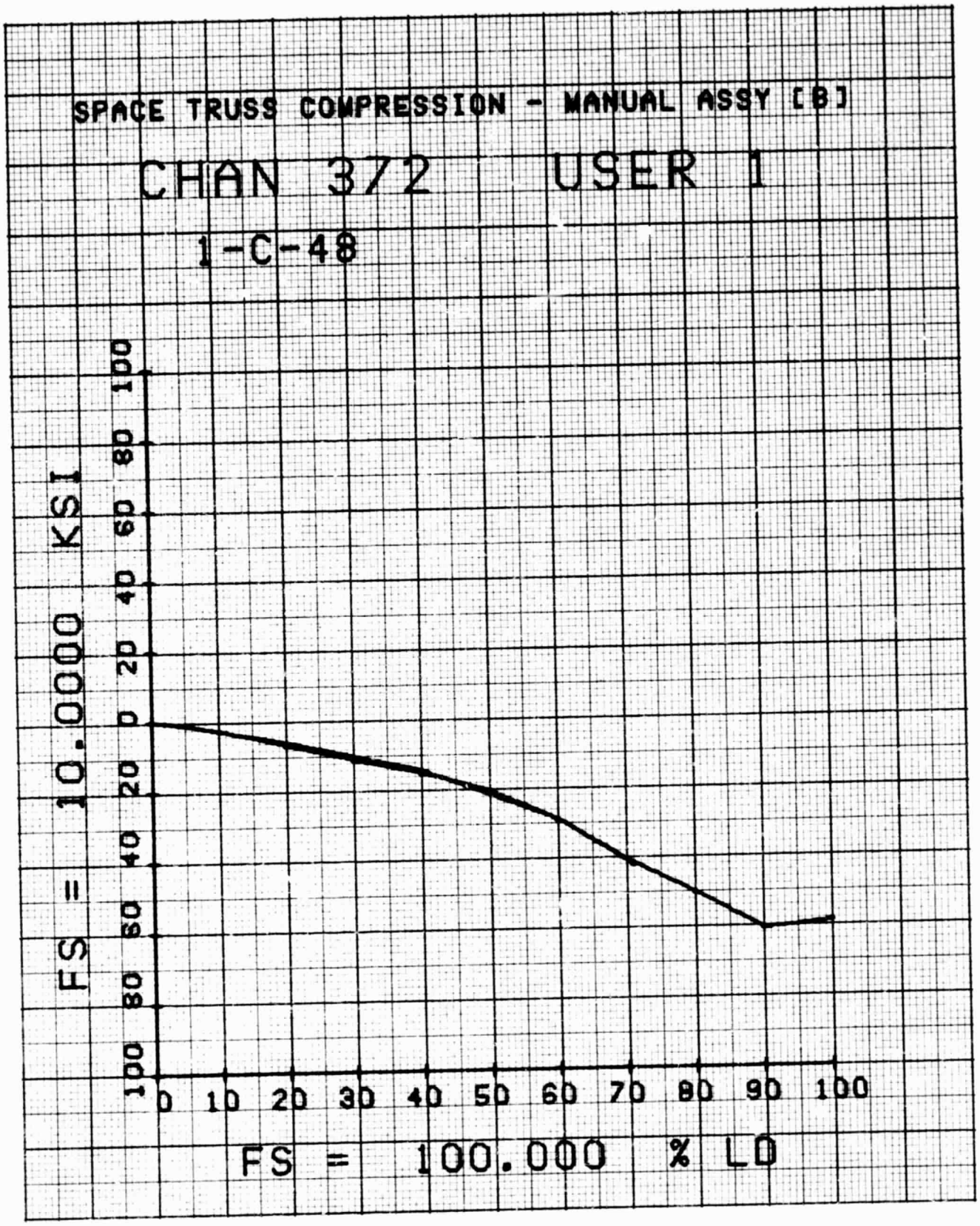
1838-044W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 370 USER 1
1-C-46
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

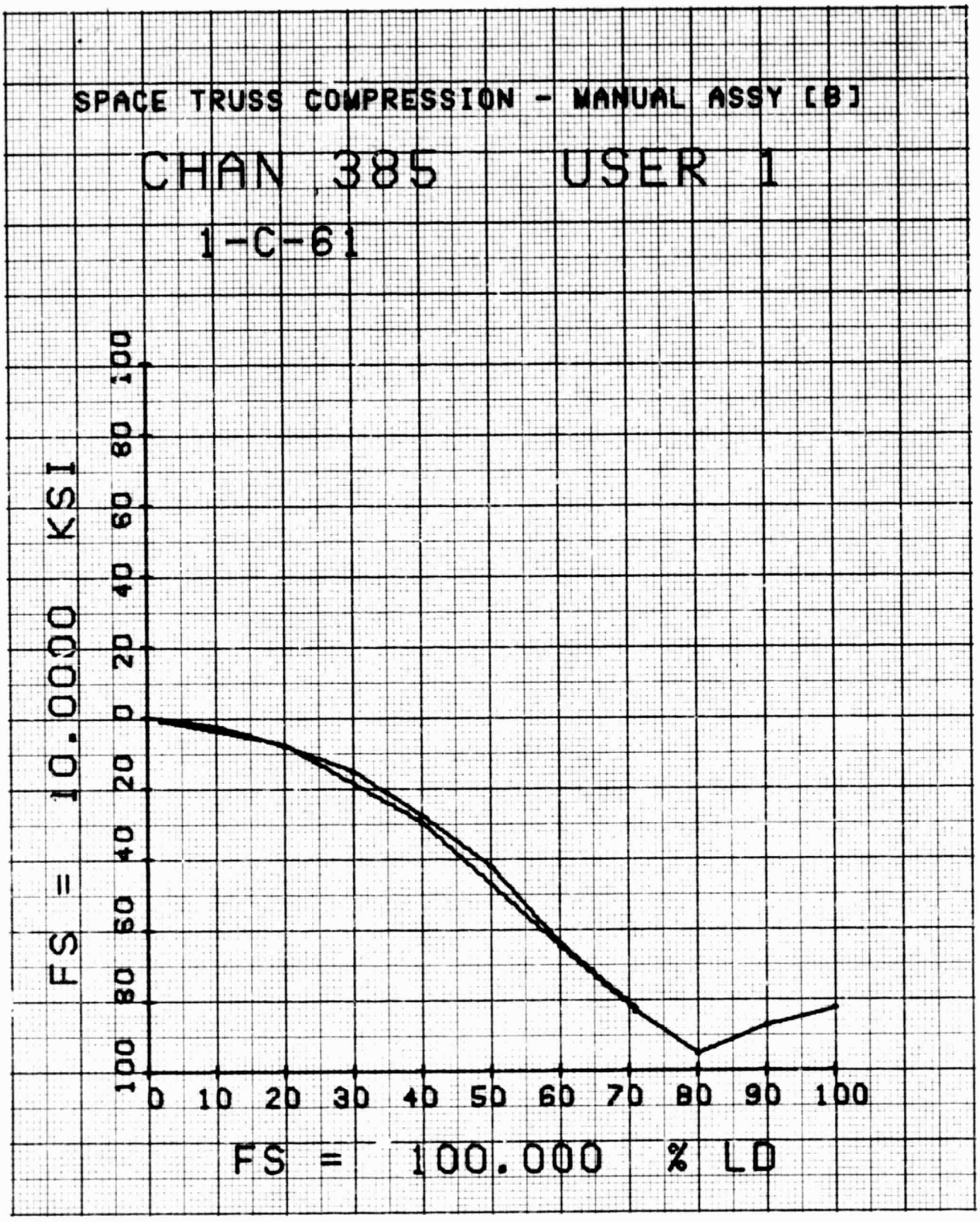
1838-045W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 371 USER 1
1-C-47
FS = 5.00000 KSI
120
80
60
40
20
0
20
40
60
80
100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

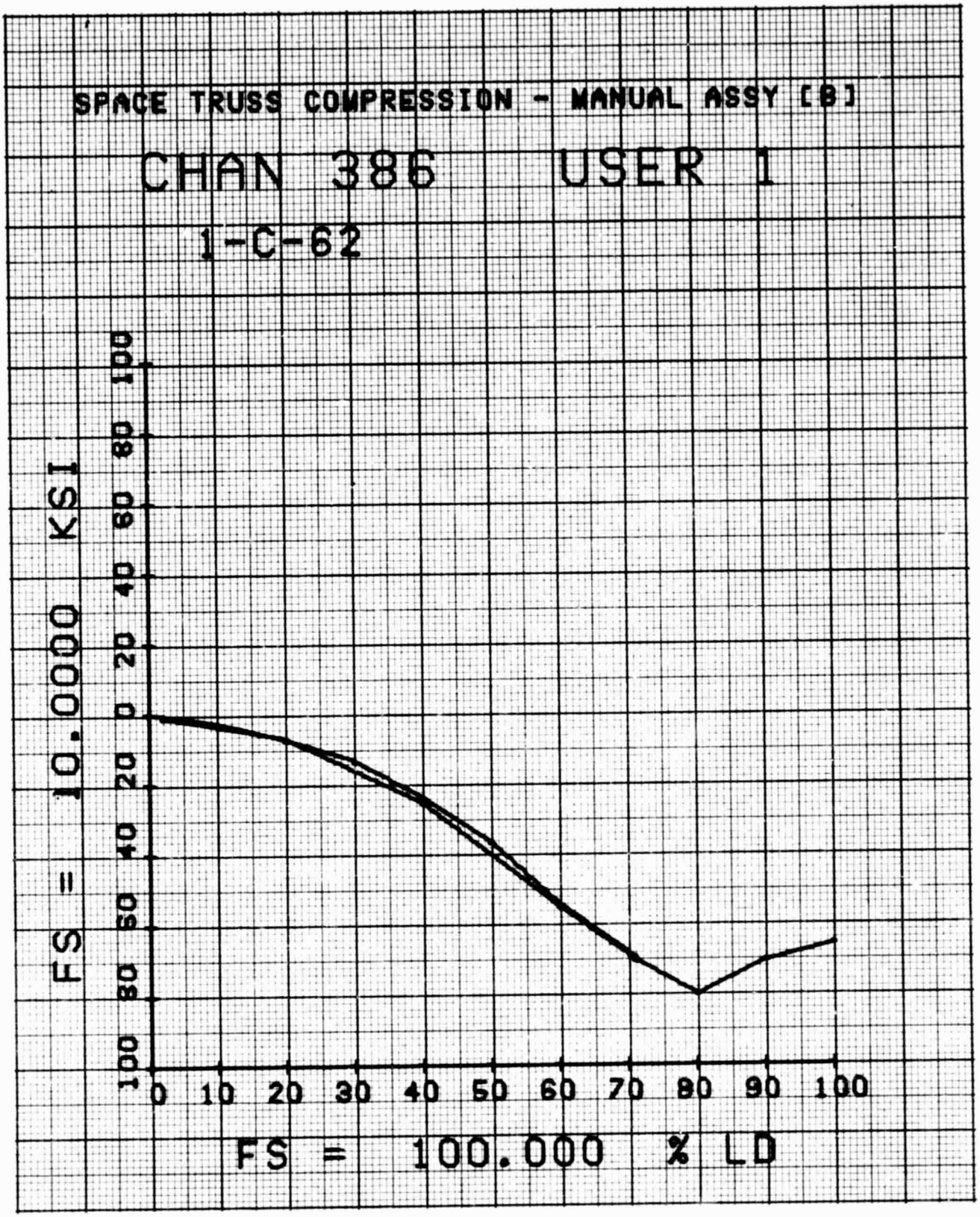
1838-046W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 372 USER 1
1-C-48
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

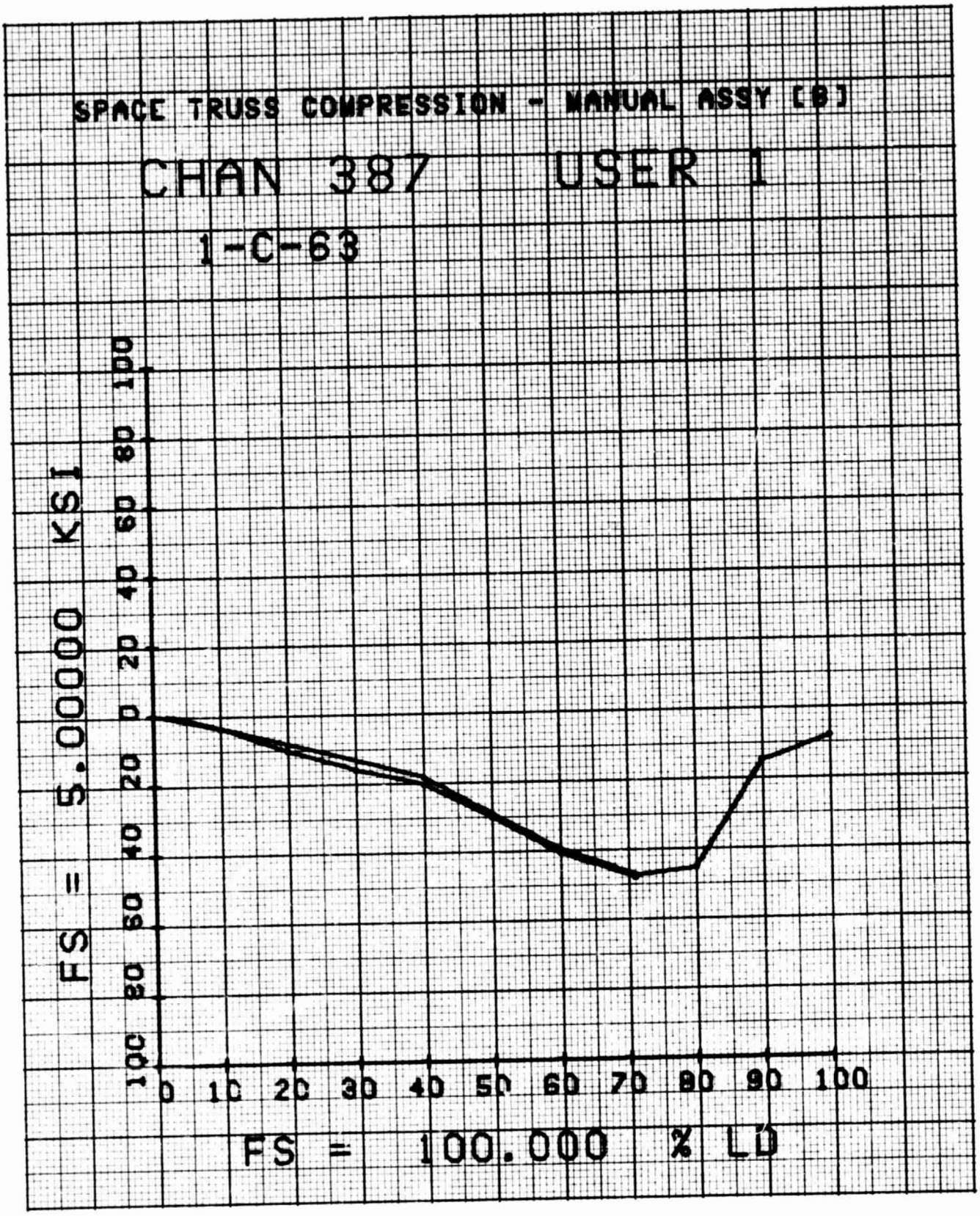
1838-047W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 385 USER 1
1-C-61
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

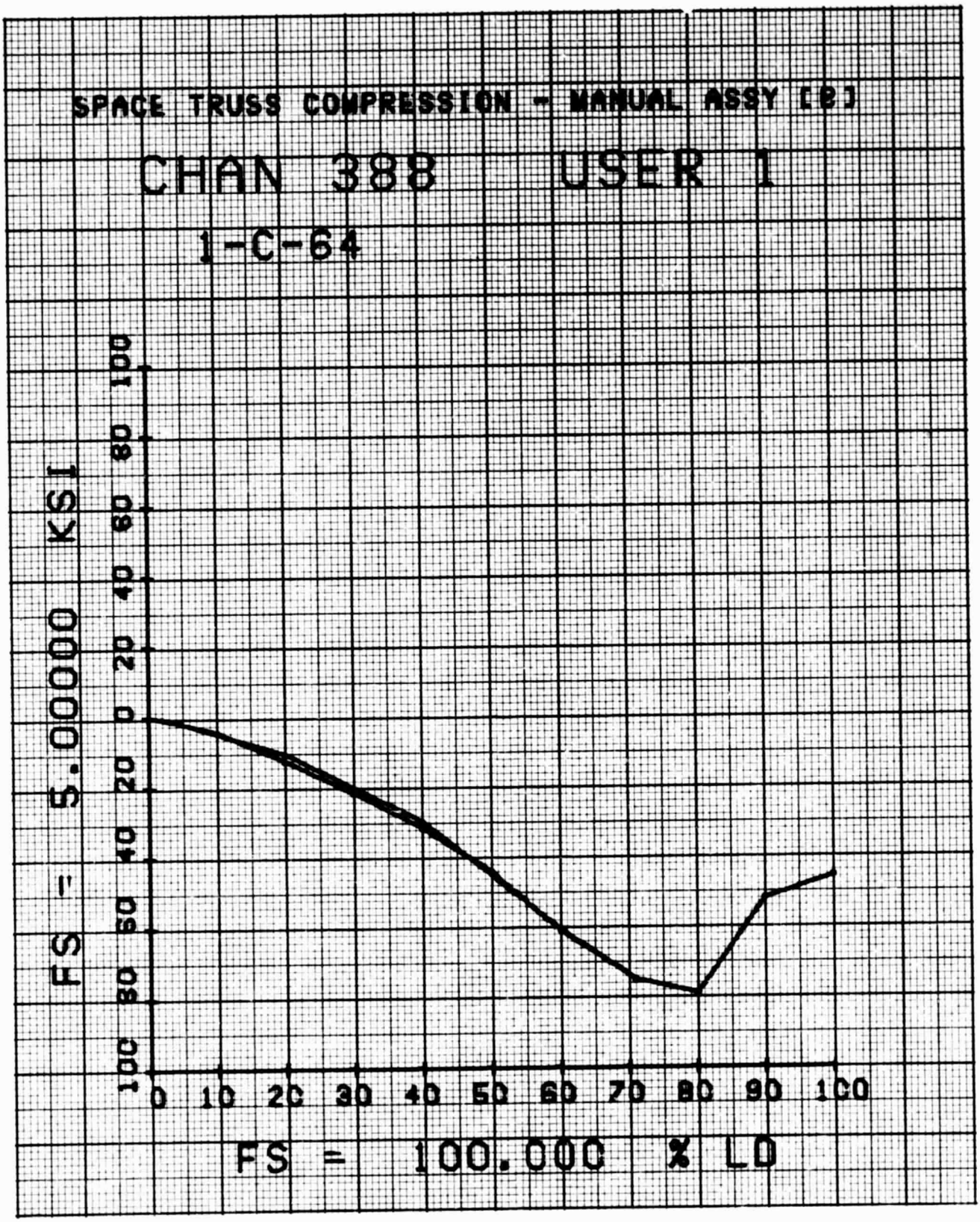
1838-048W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 386 USER 1
1-C-62
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

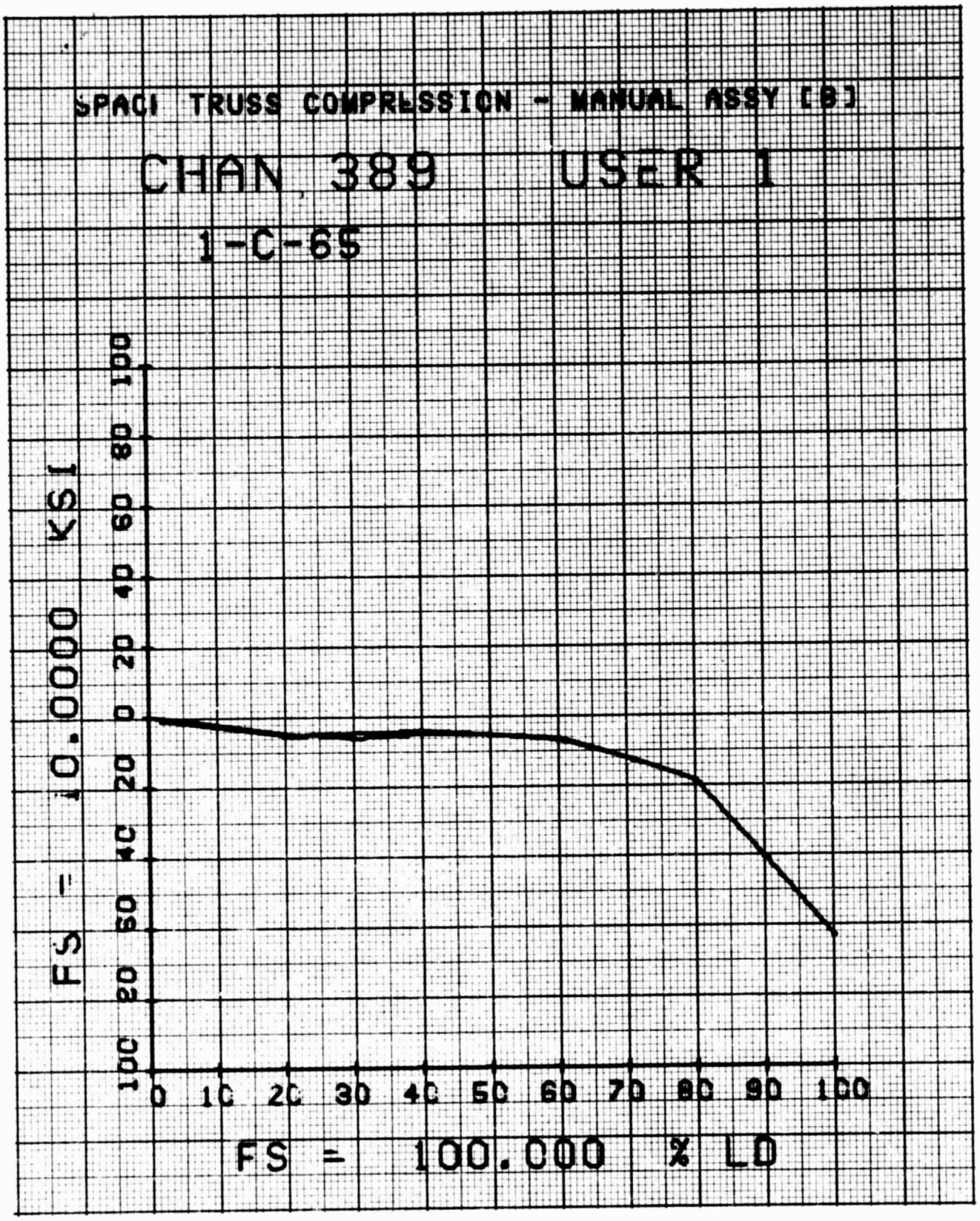
1838-049W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 387 USER 1
1-C-63
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

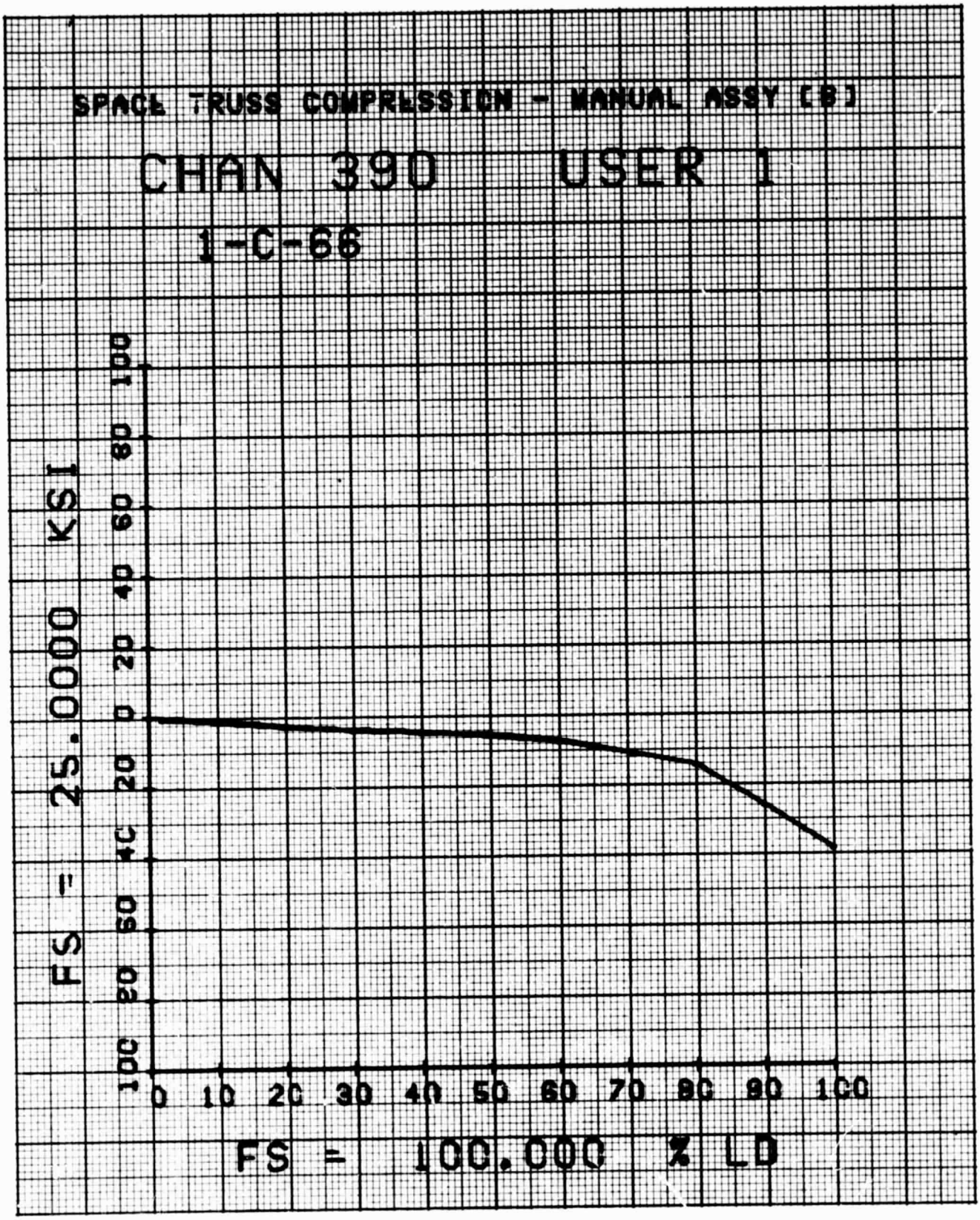
1838-050W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 388 USER 1
1-C-64
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

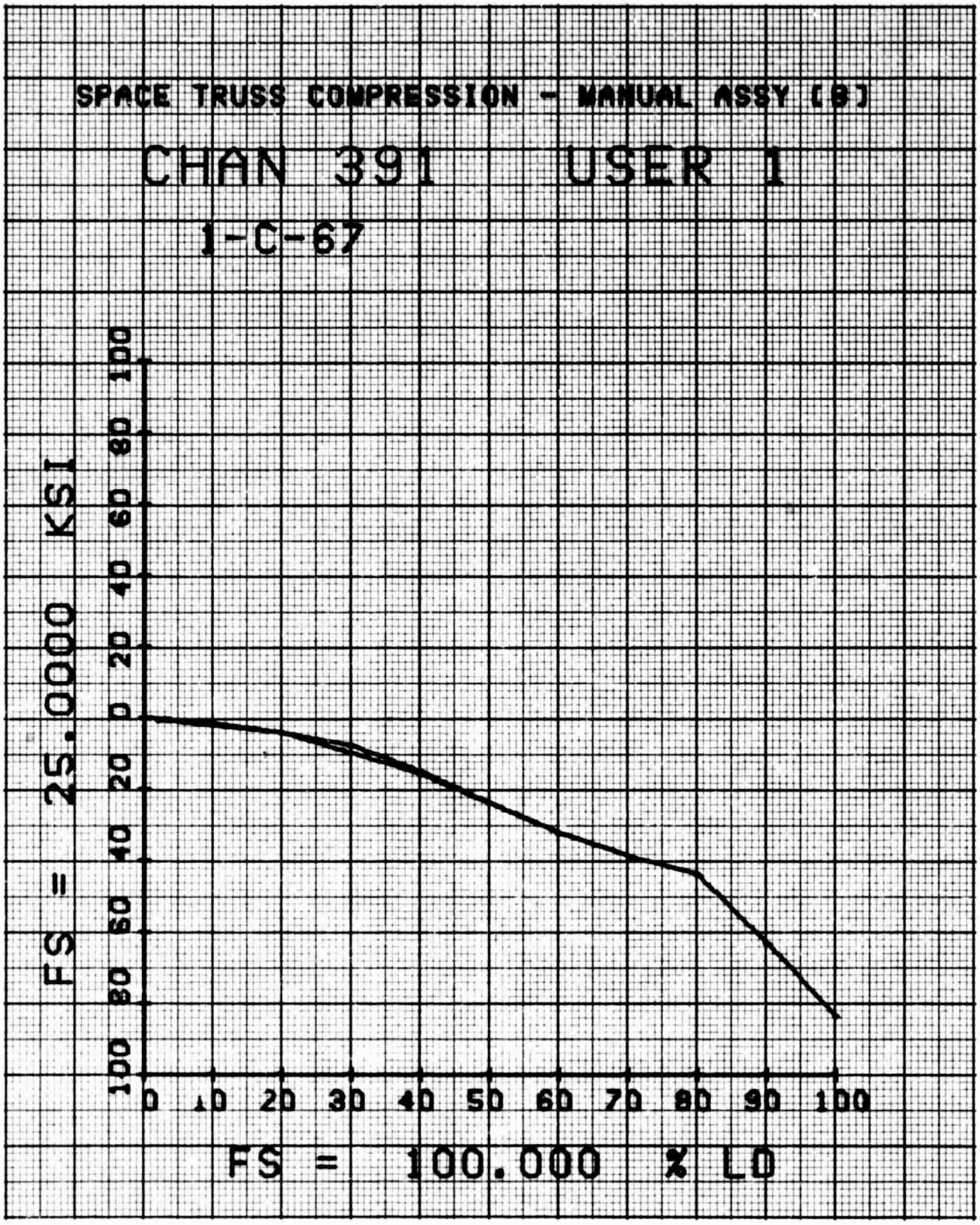
1838-051W


SPACI TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 389 USER 1
1-C-6S
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

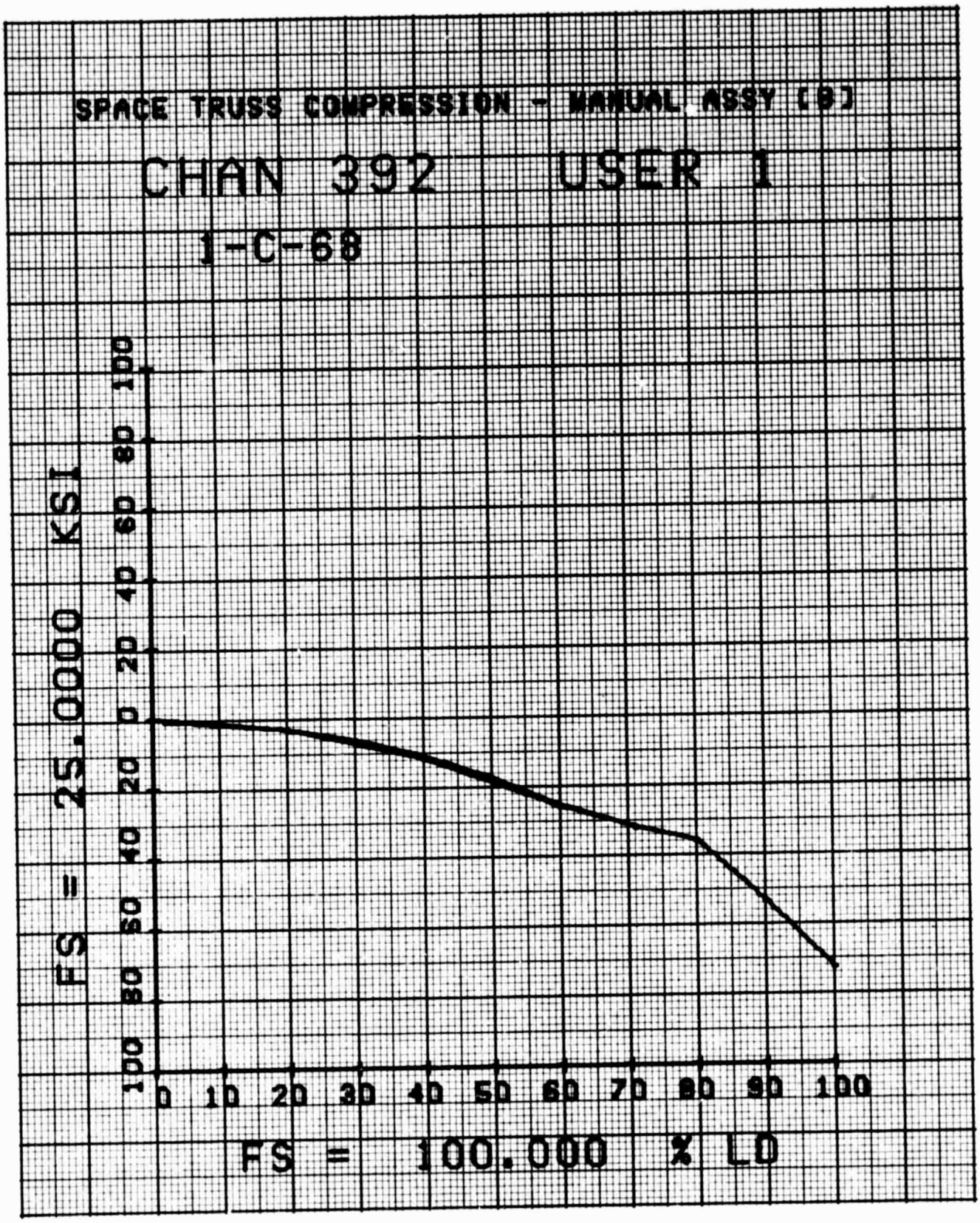
1838-052W


SPACE TRUSS COMPRESSION - MANUAL ASSY (S)
CHAN 390 USER 1
1-C-66
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

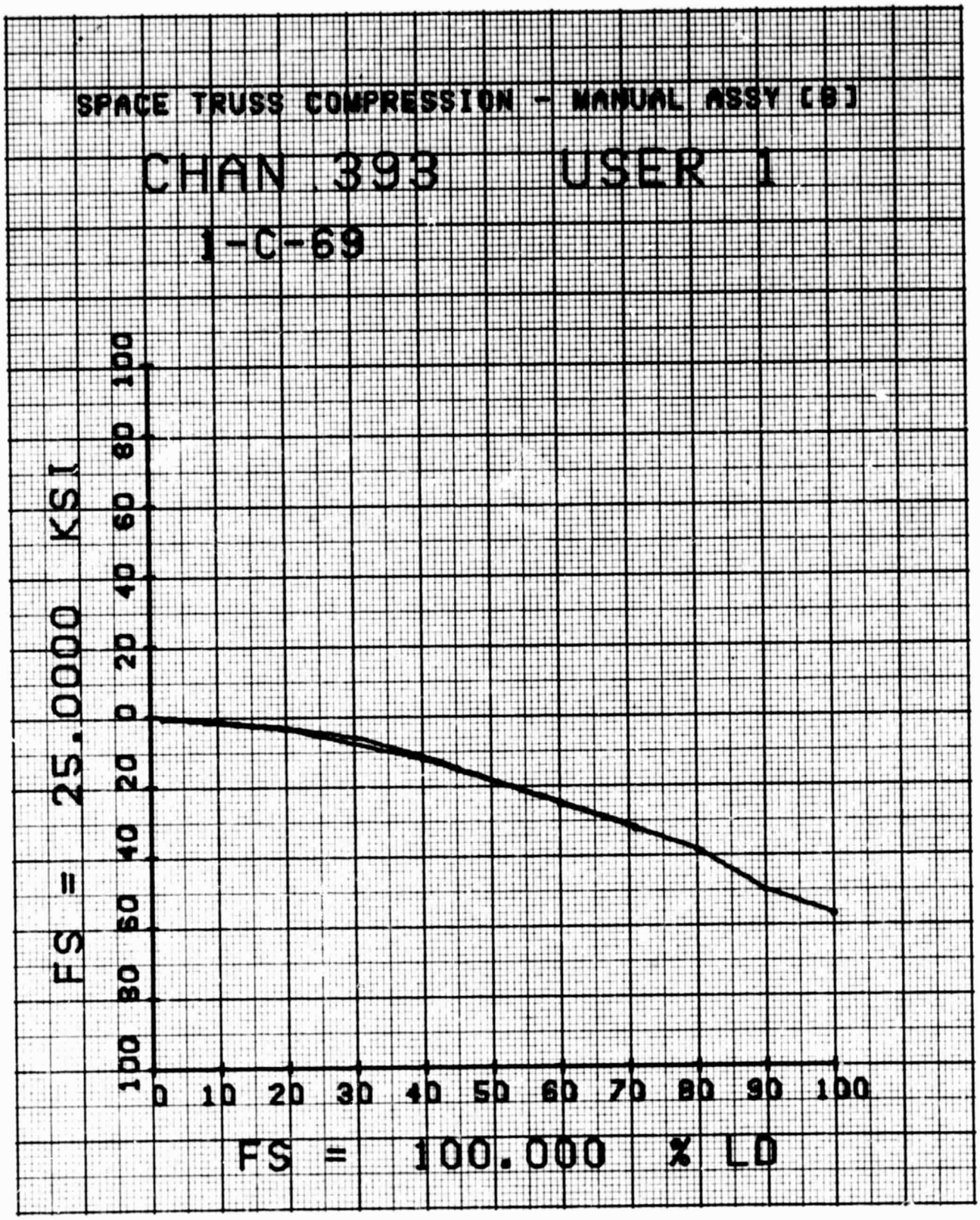
1838-053W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 391 USER 1
1-C-67
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

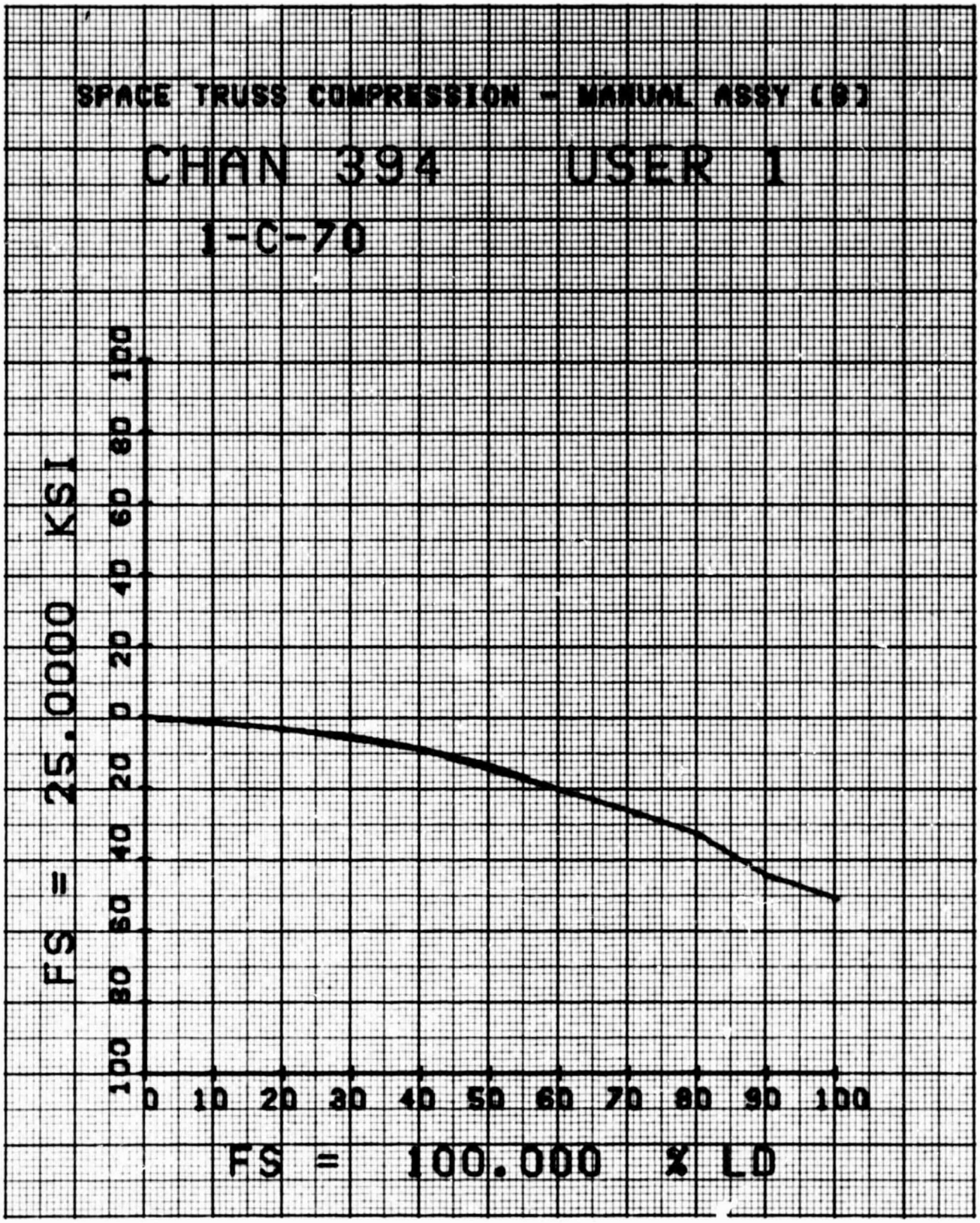
1838-054W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 392 USER 1
1-C-68
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

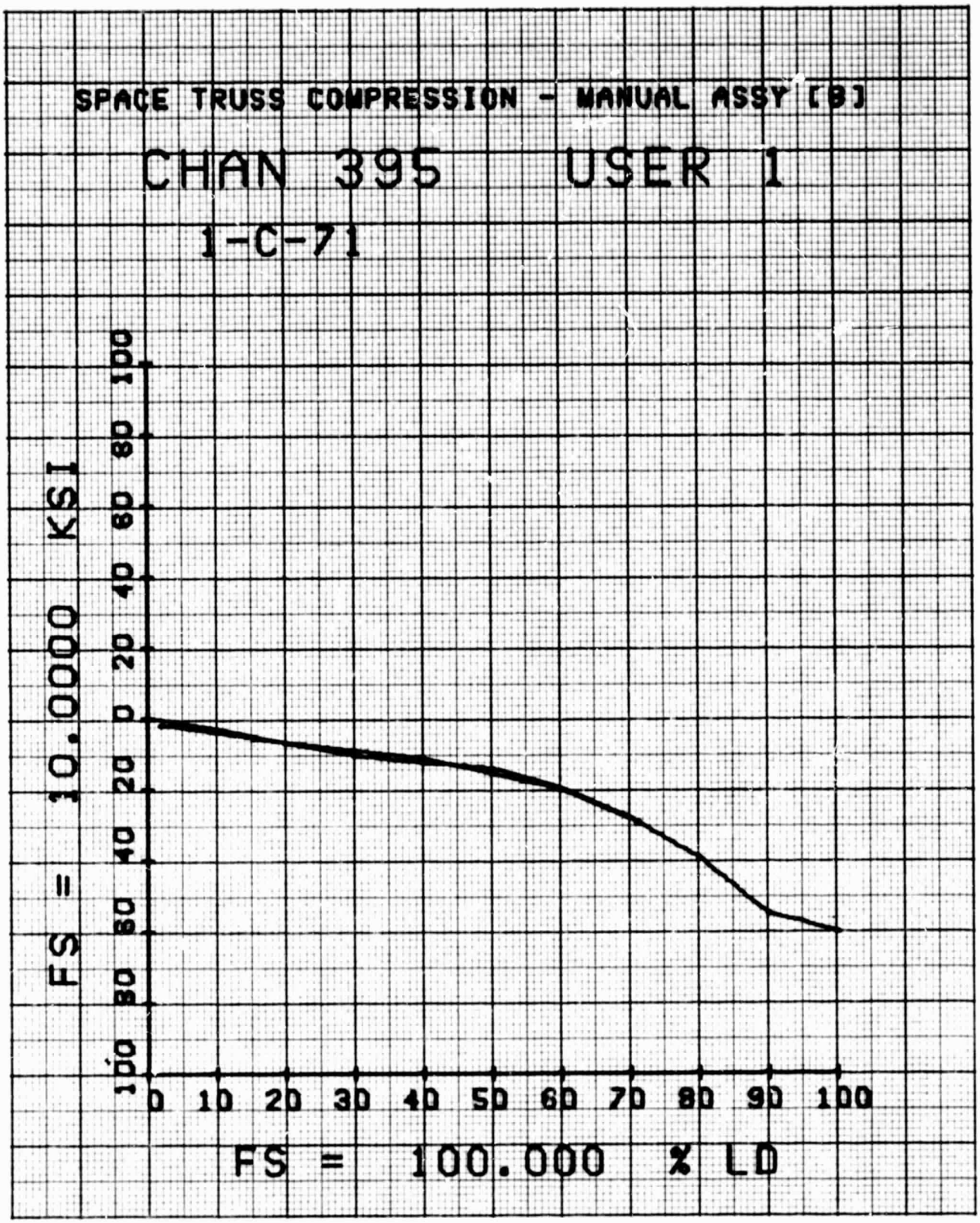
1838-055W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 393 USER 1
1-C-69
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

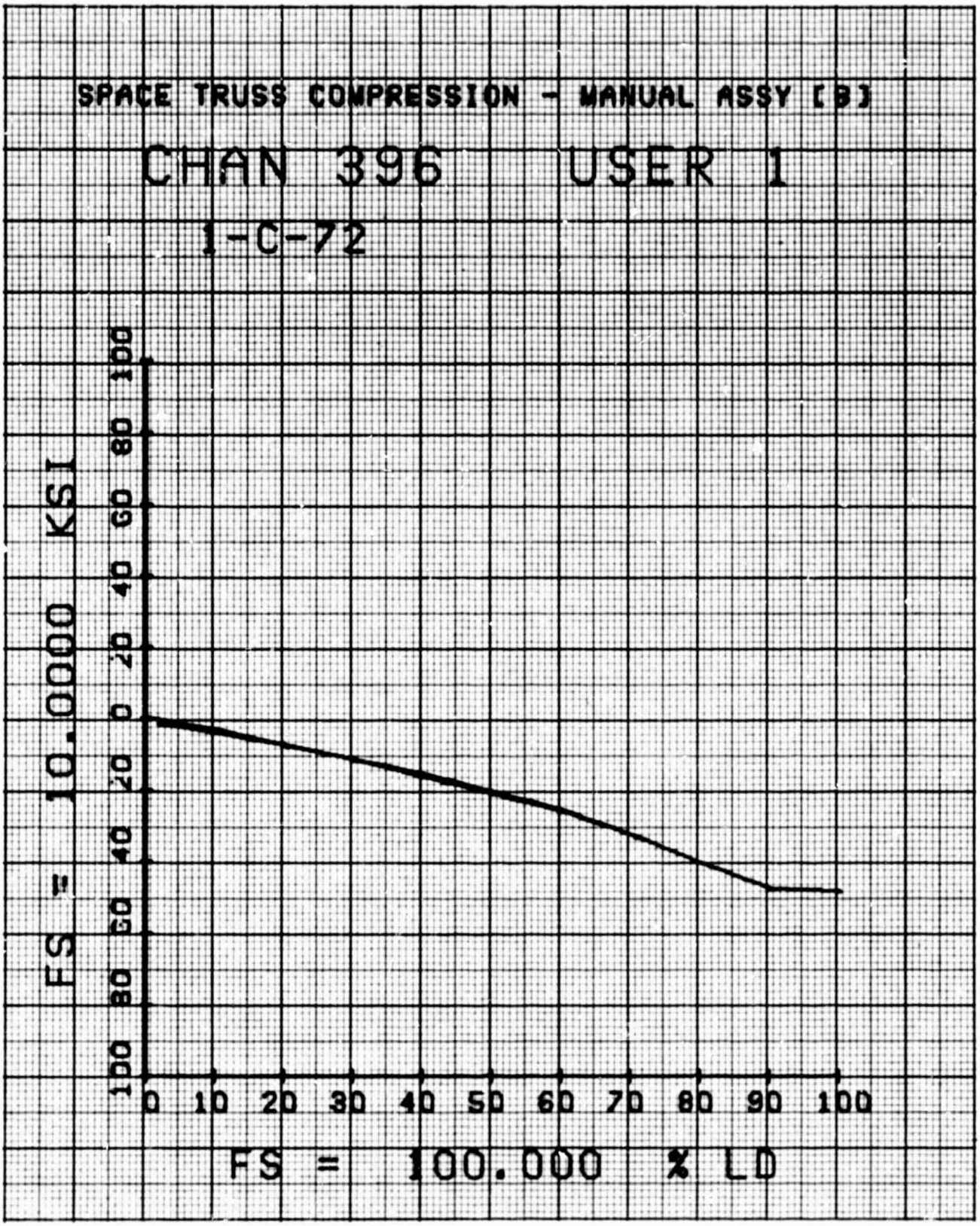
1838-056W


SPACE TRUSS COMPRESSION - MANUAL ASSY (6)
CHAN 394 USER 1
1-C-70
FS = 25.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

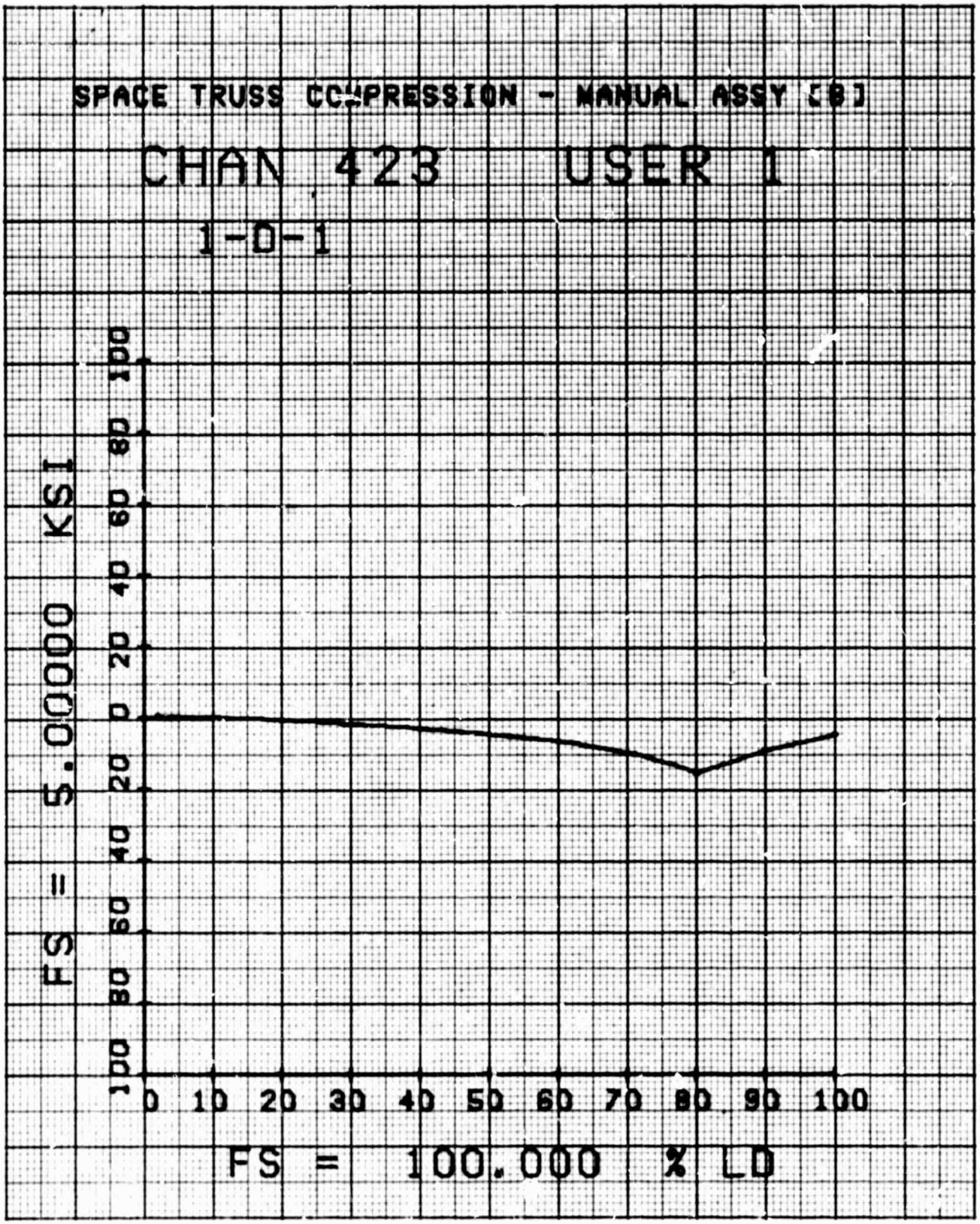
1838-057W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 395 USER 1
1-C-71
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

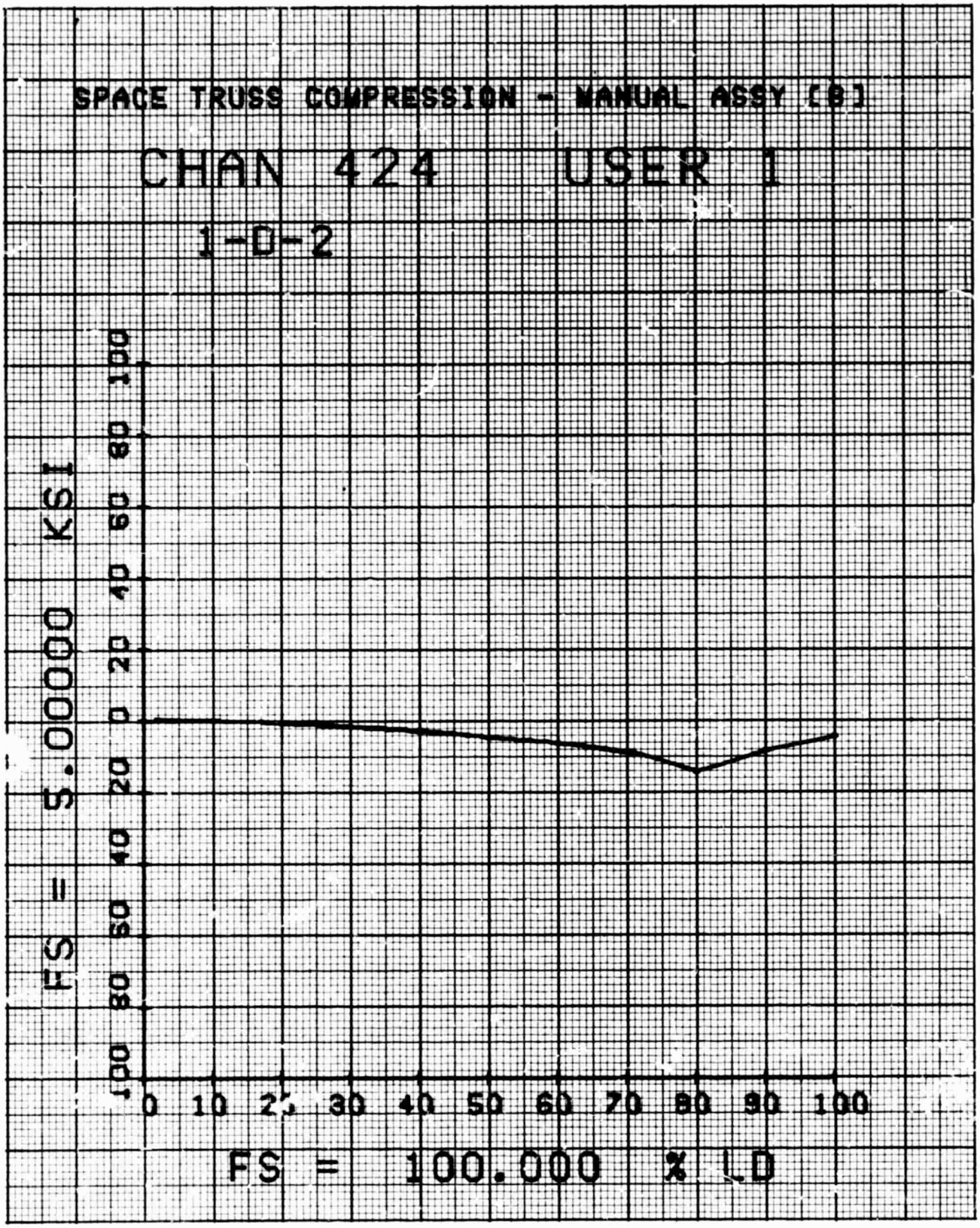
1838-058W


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 396 USER 1
1-C-72
FS = 10.0000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

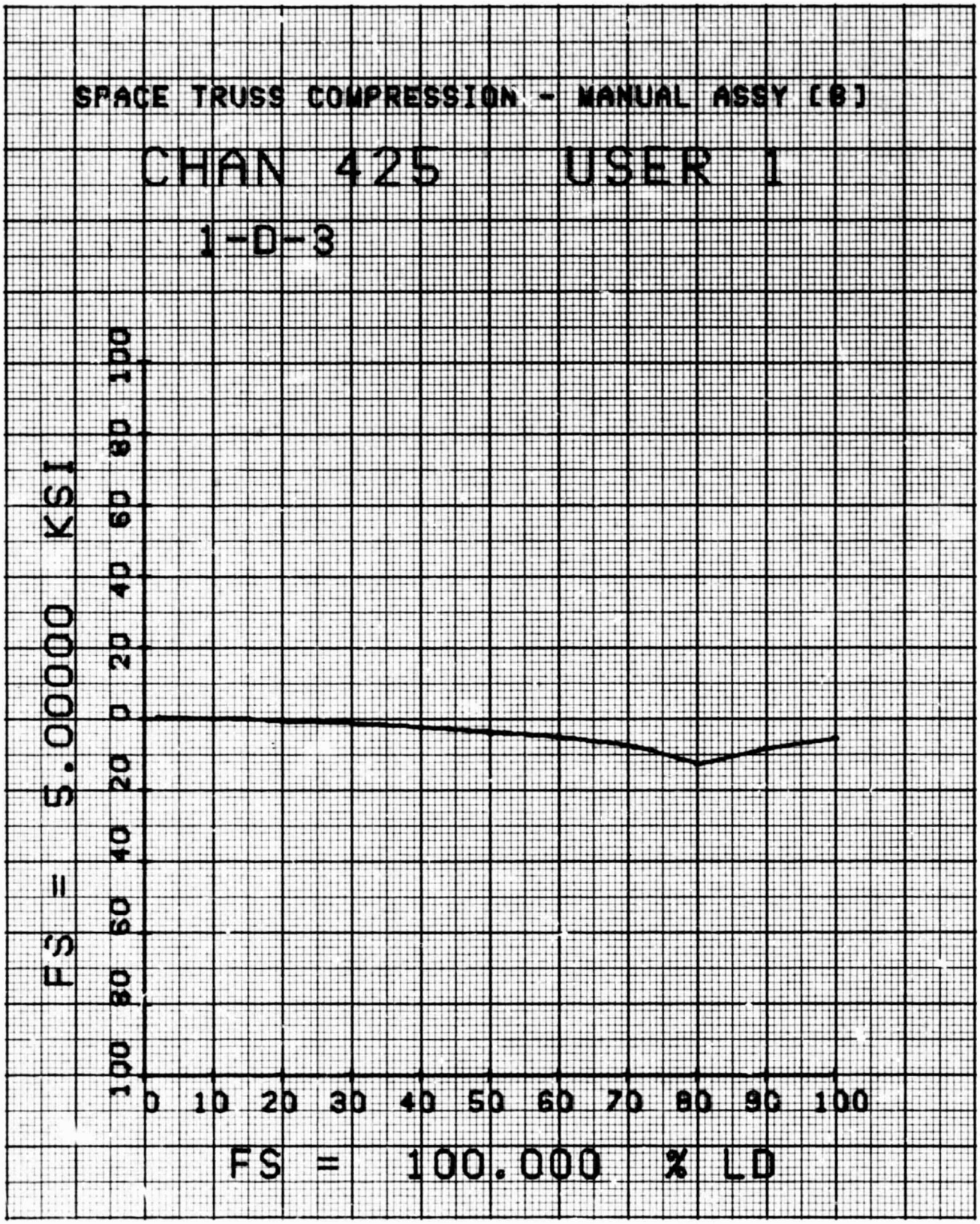
1838-059W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 423 USER 1
1-0-1
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

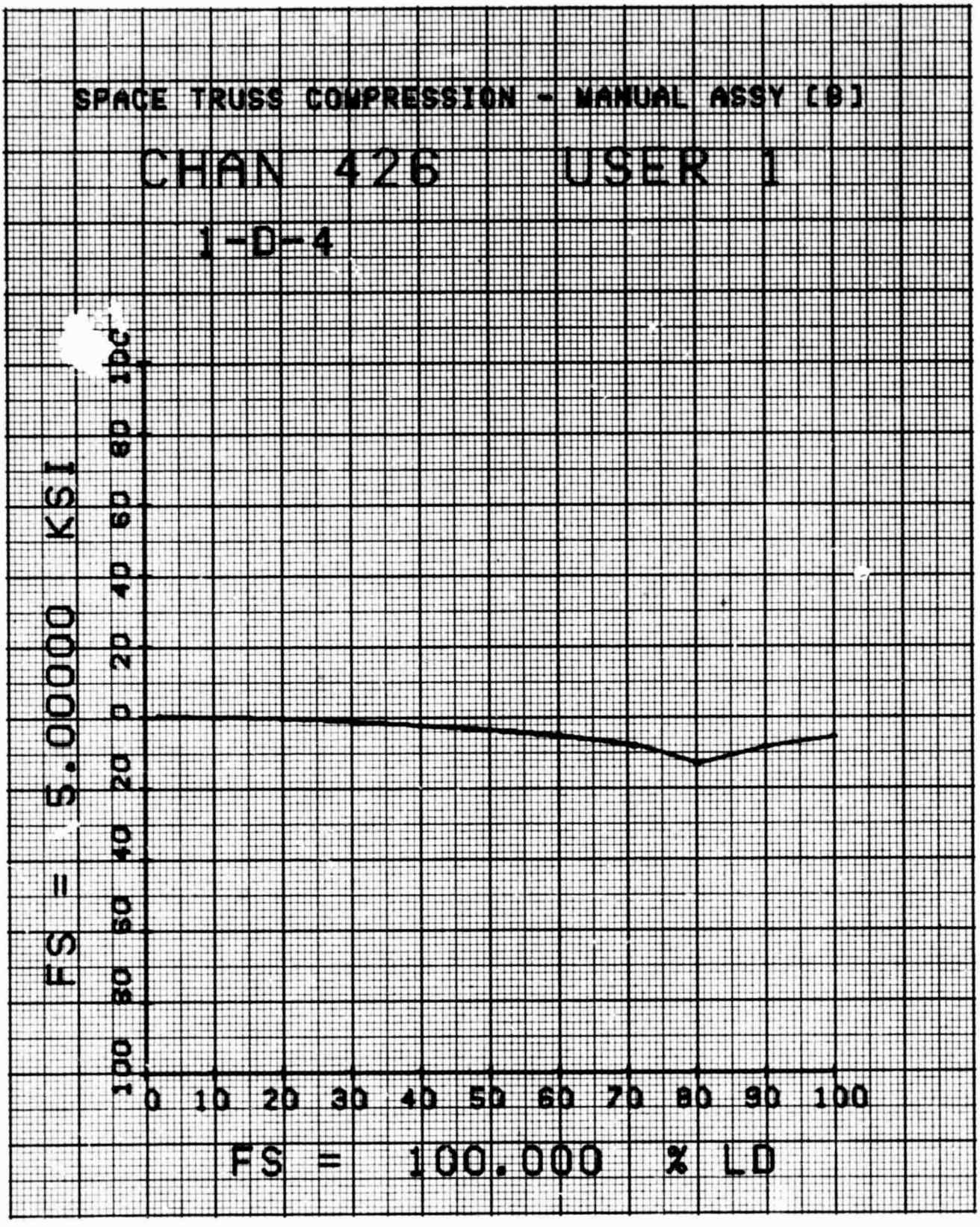
1838-060W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 424 USER 1
1-0-2
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

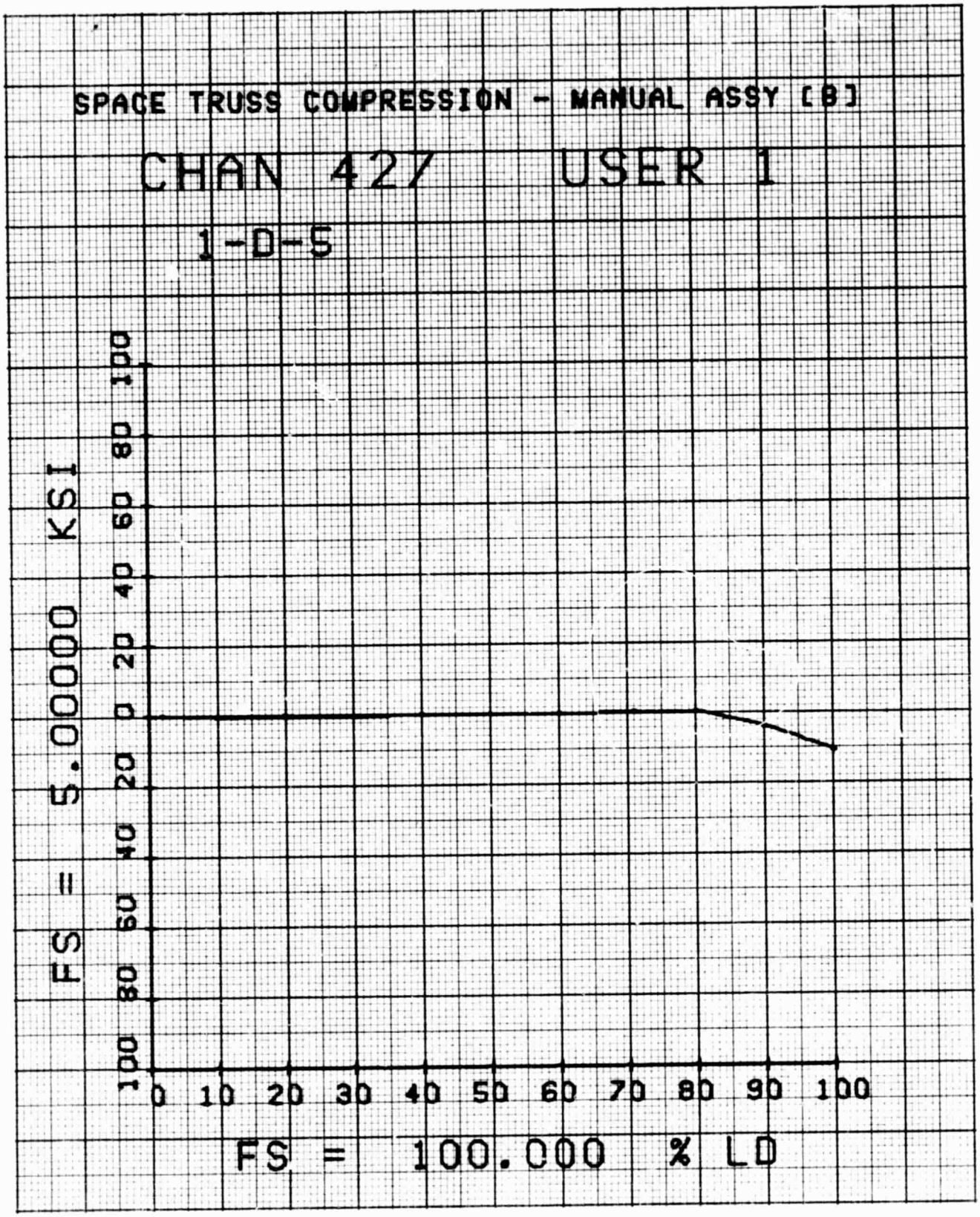
1838-061W

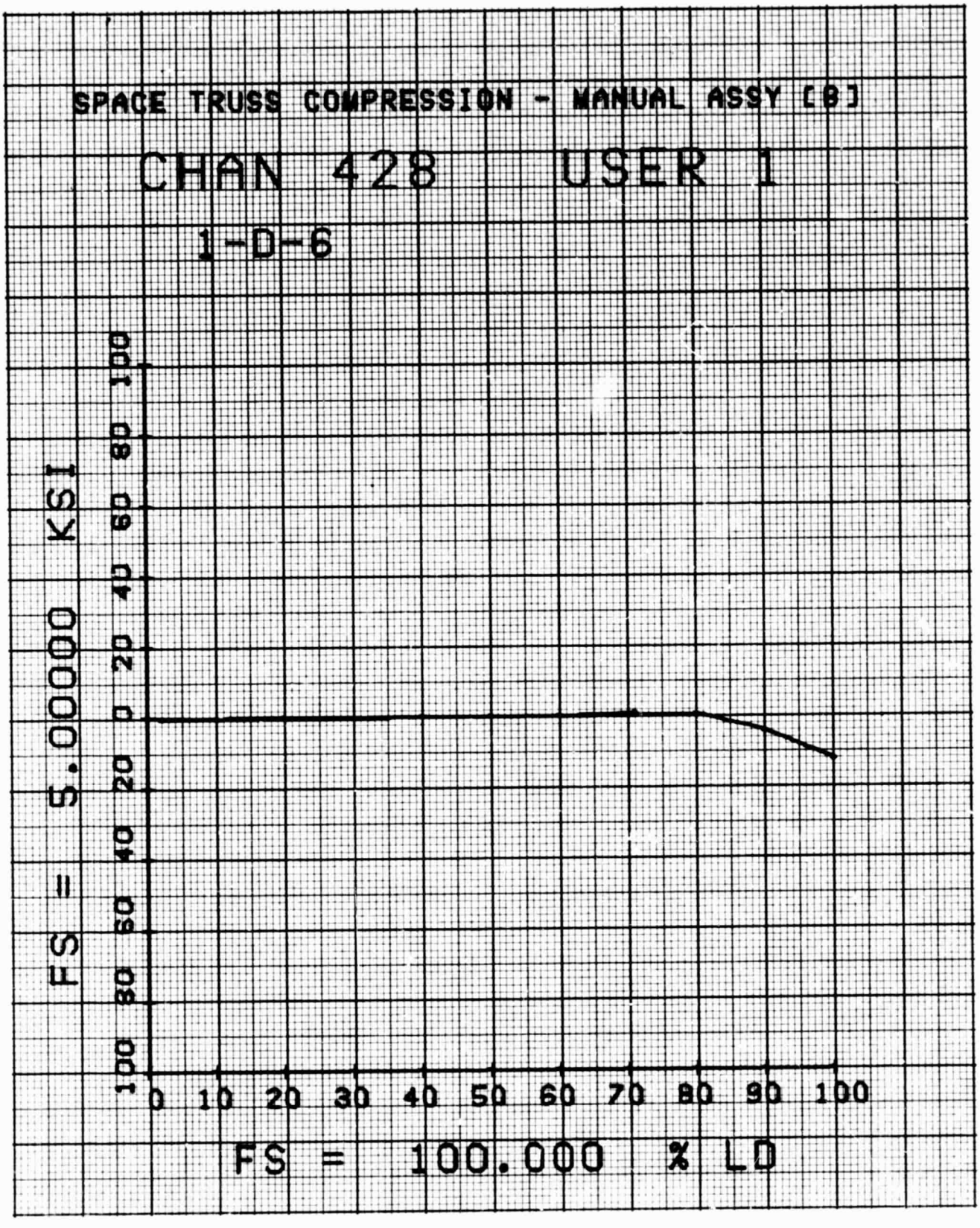

SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 425 USER 1
1-D-3
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-062W

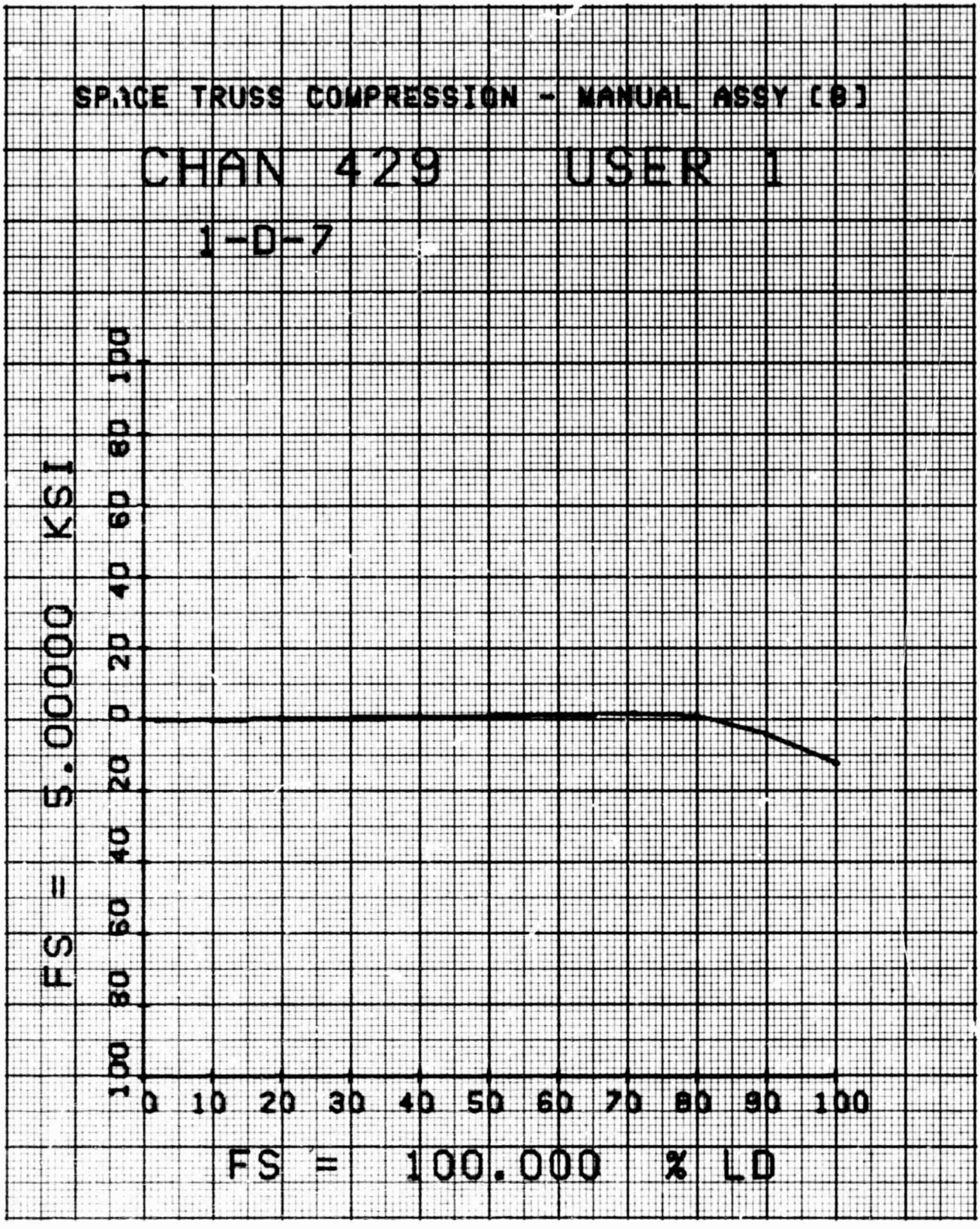

SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 426 USER 1
1-D-4
FS = 5.00000 KSI
100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-063W

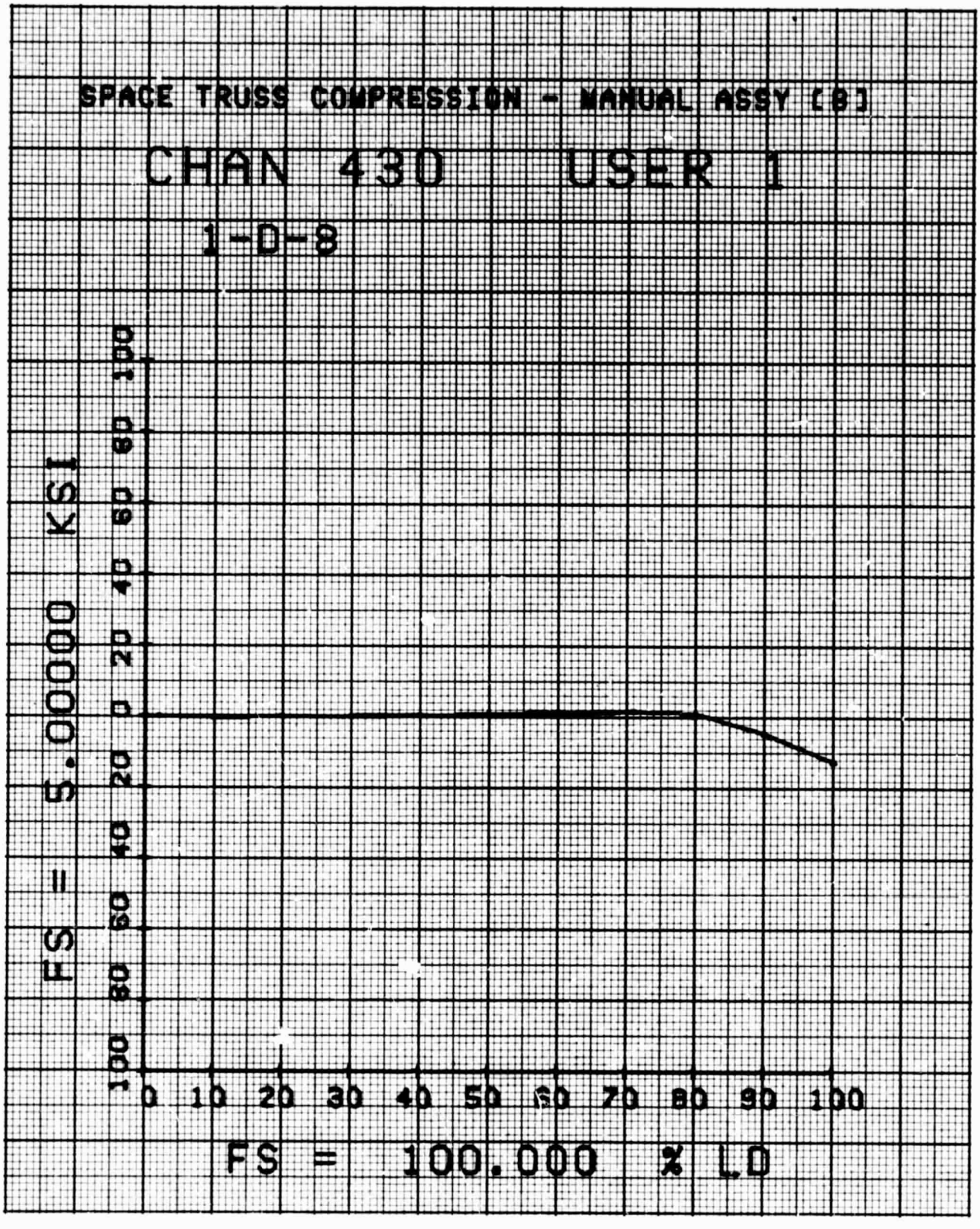

SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 427 USER 1
1-D-5
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 428 USER 1
1-D-6
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

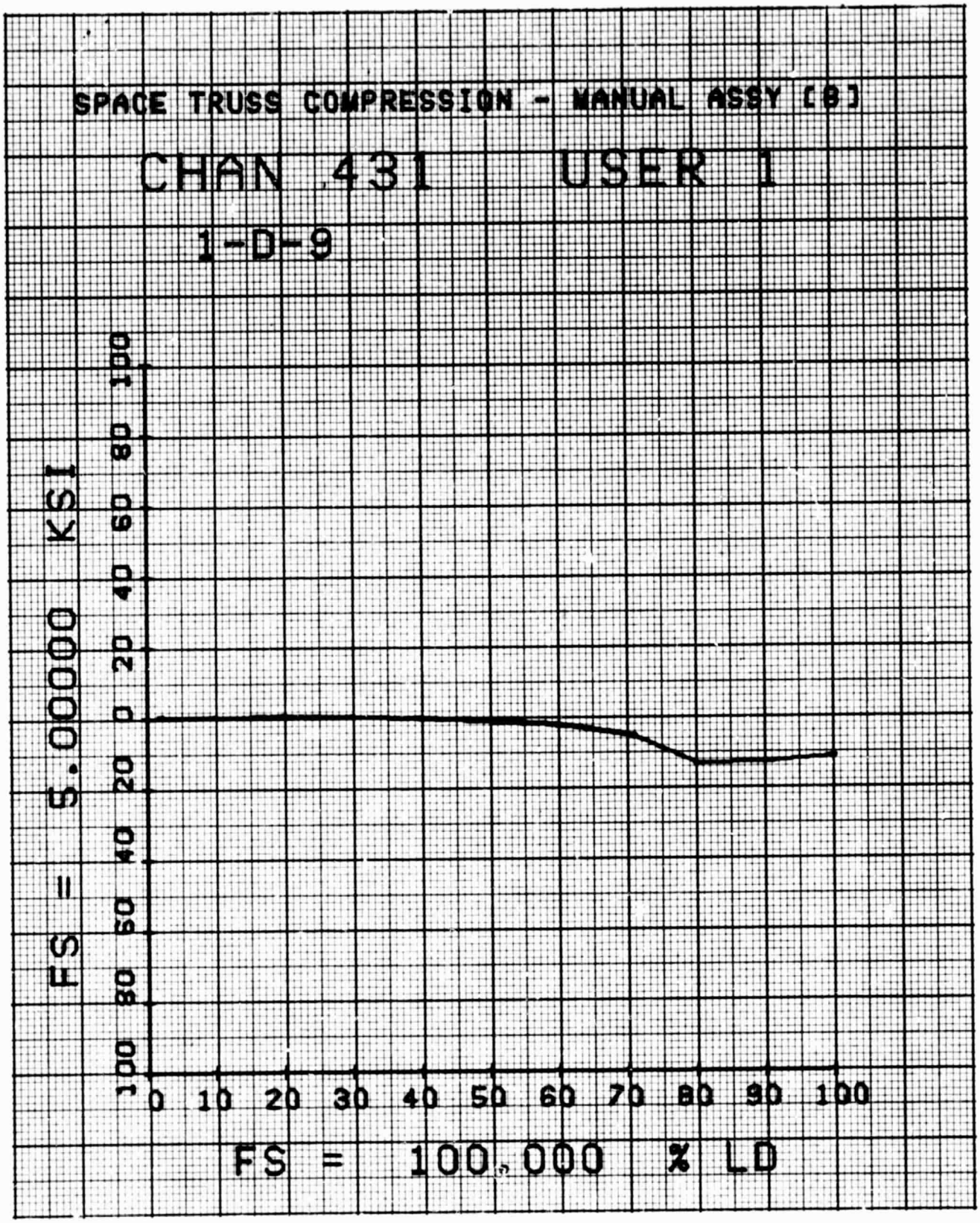
1838-065W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 429 USER 1
1-D-7
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

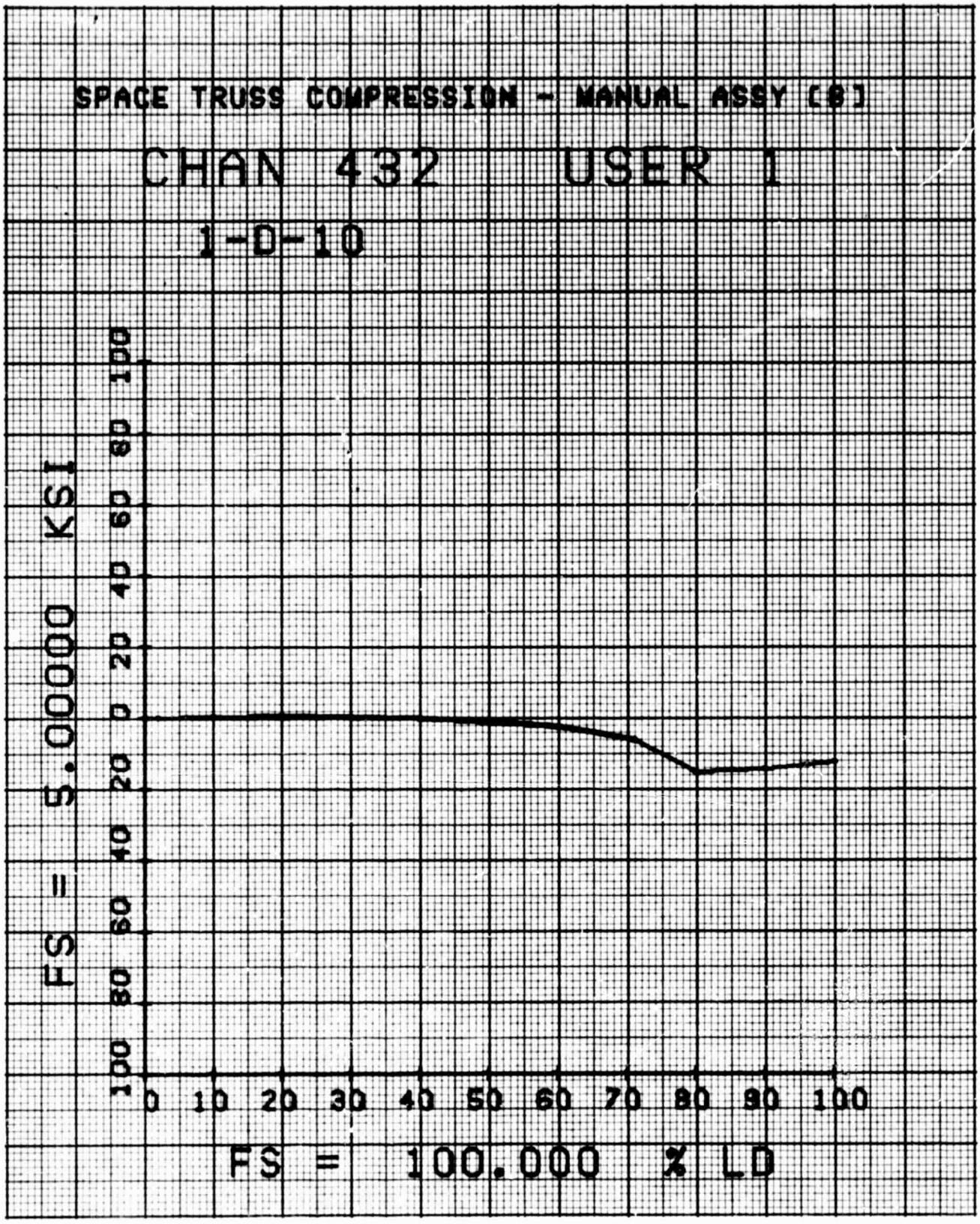
1838-066W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 430 USER 1
1-D-8
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

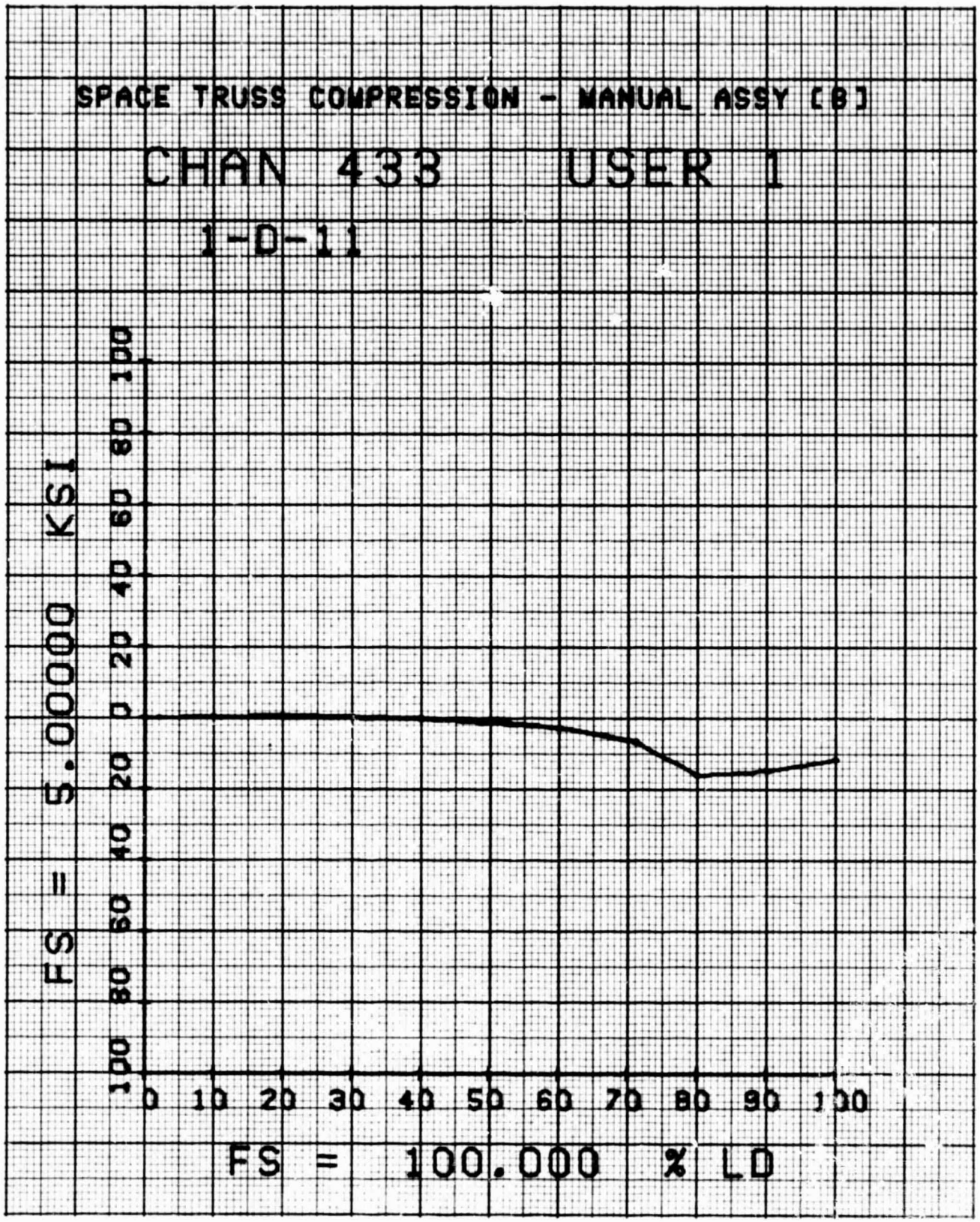
1838-067W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 431 USER 1
1-D-9
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

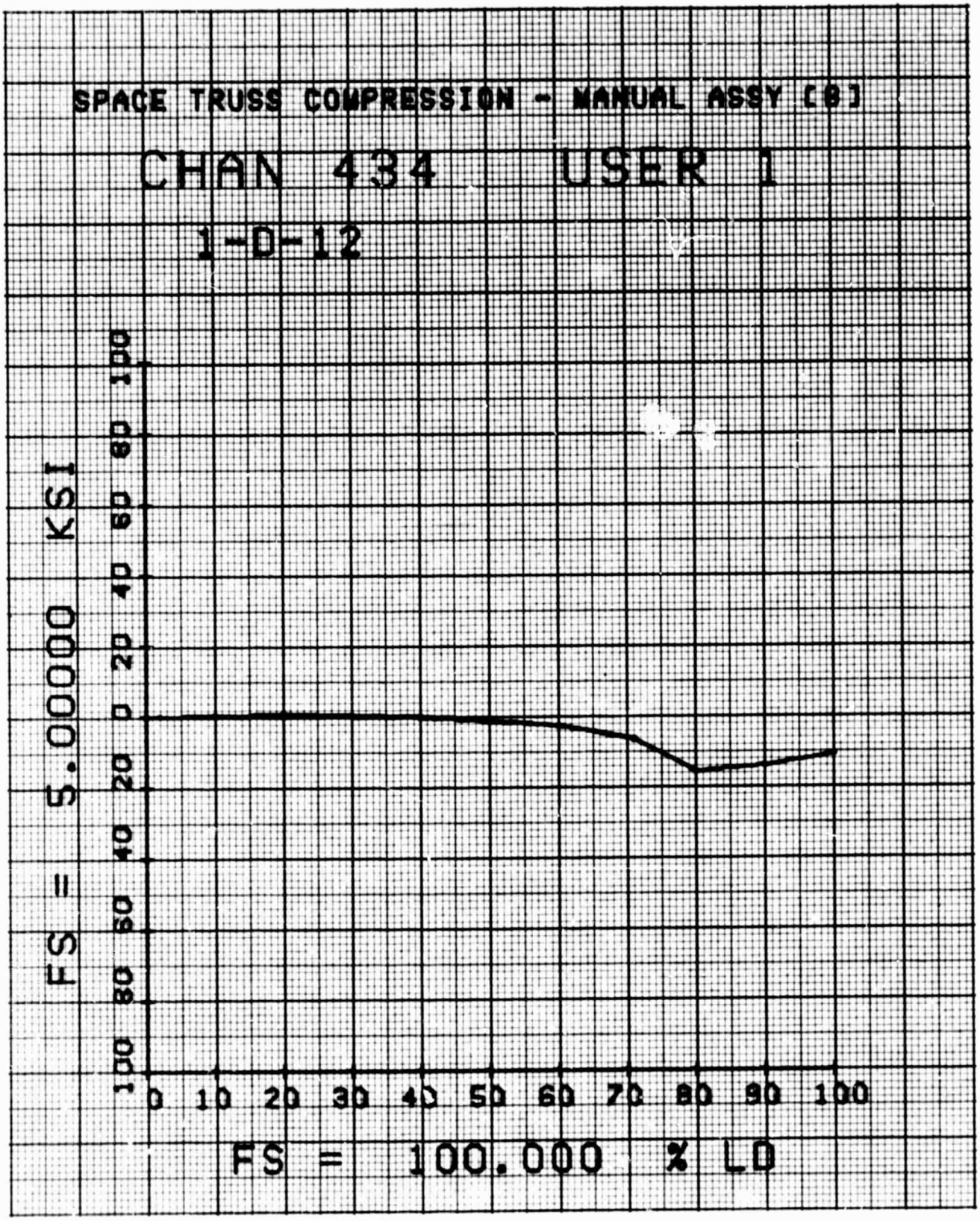
1838-068W

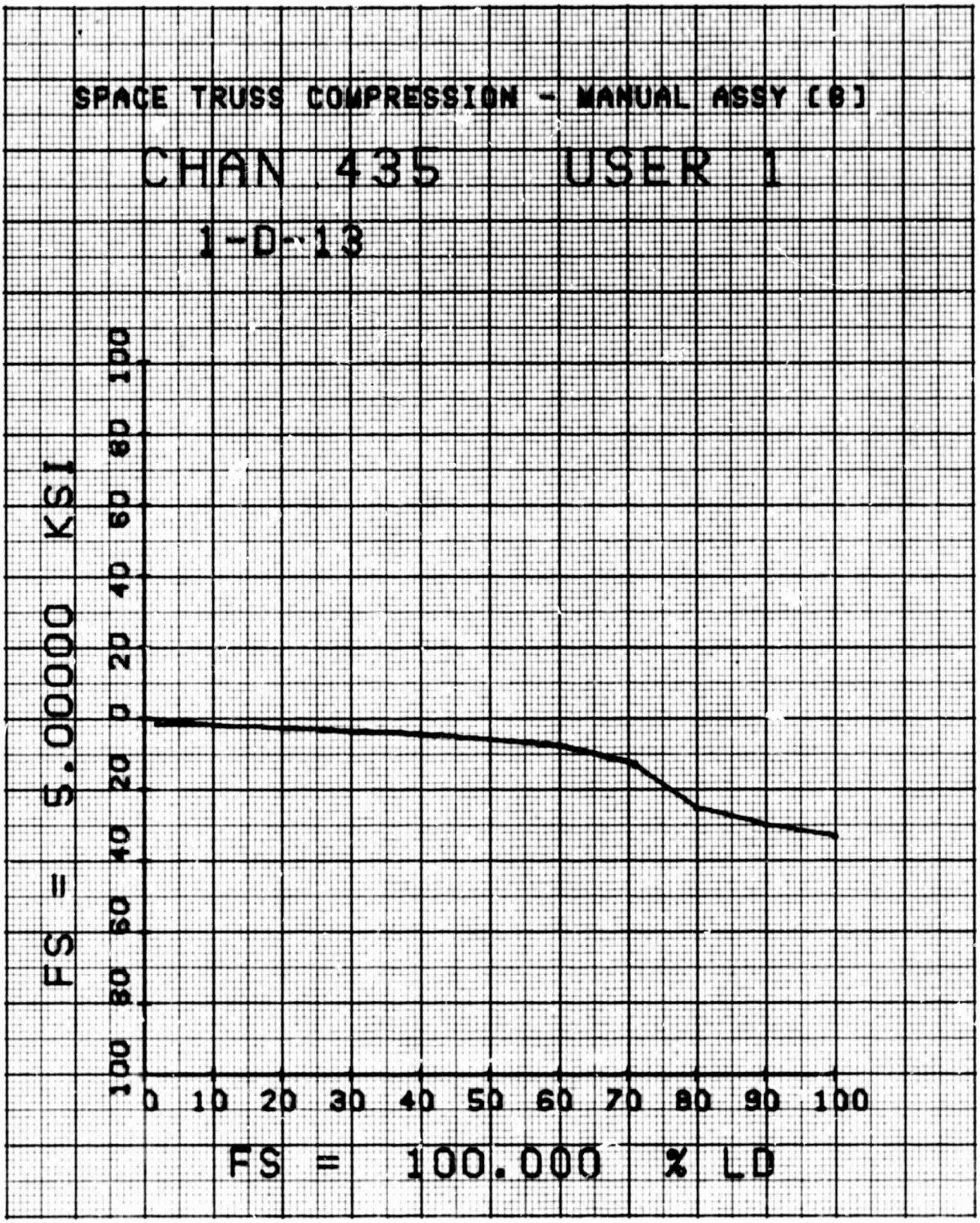

SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 432 USER 1
1-D-10
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-069W

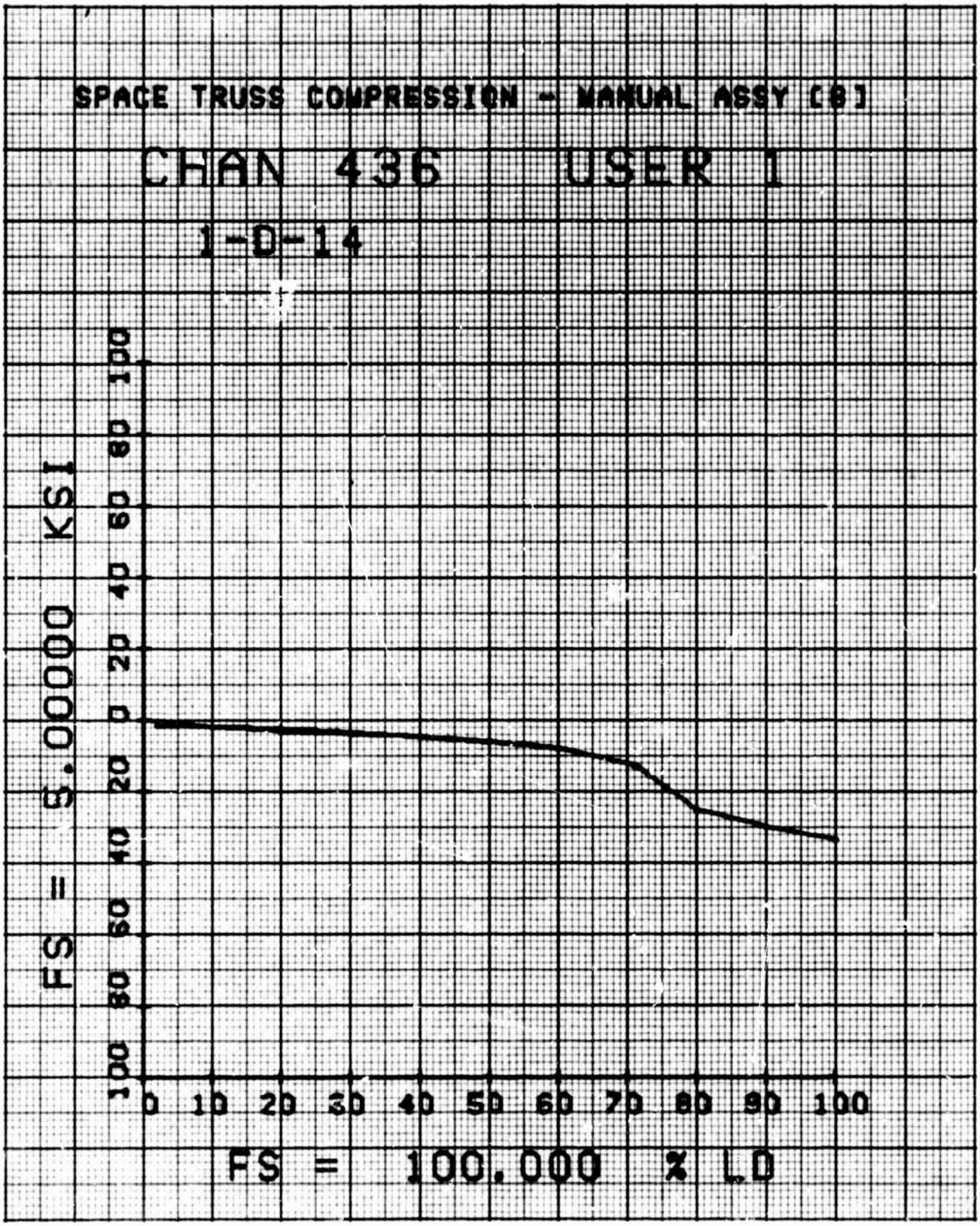

SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 433 USER 1
1-D-11
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-070W

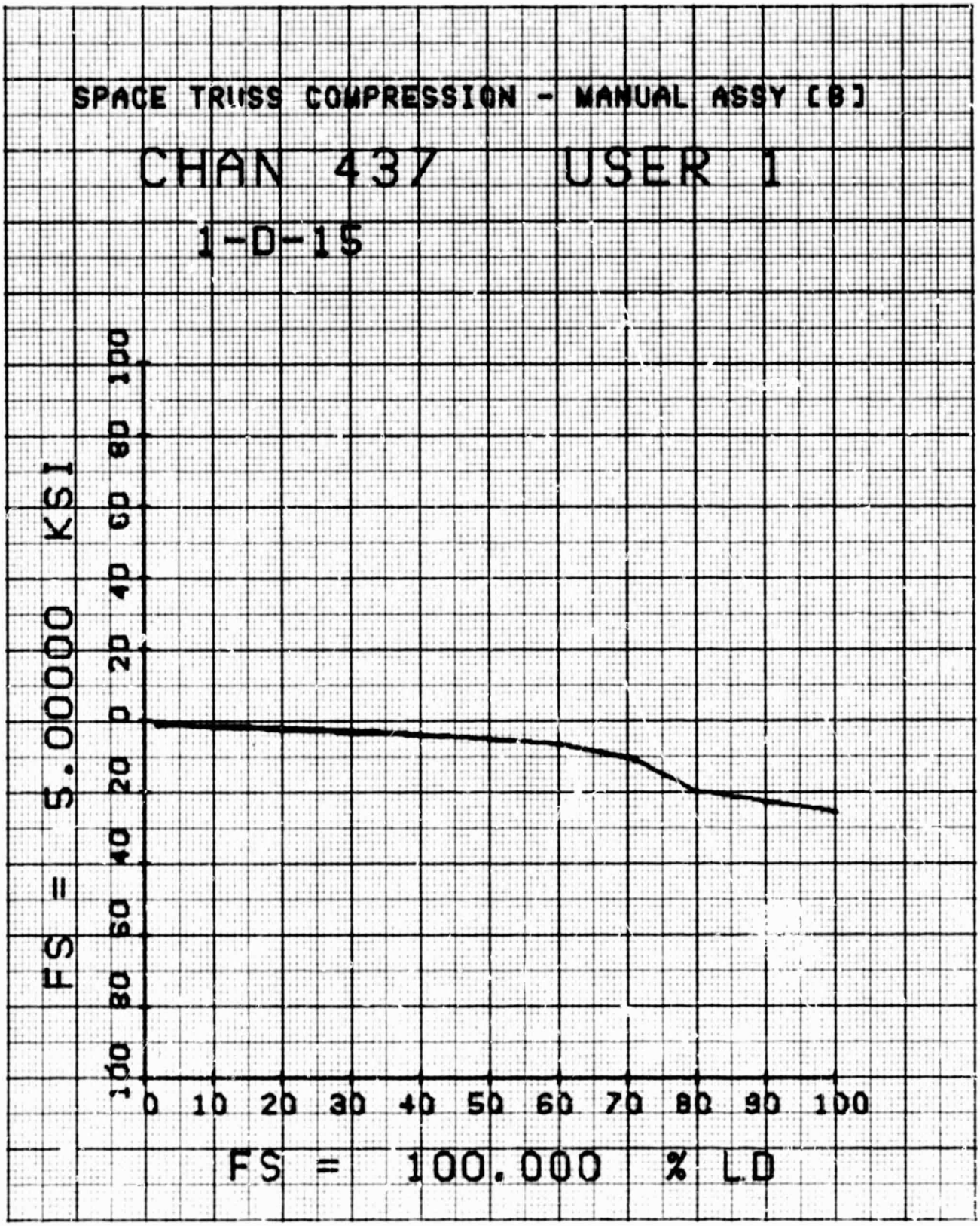

SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 434 USER 1
1-0-12
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 435 USER 1
1-D-13
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

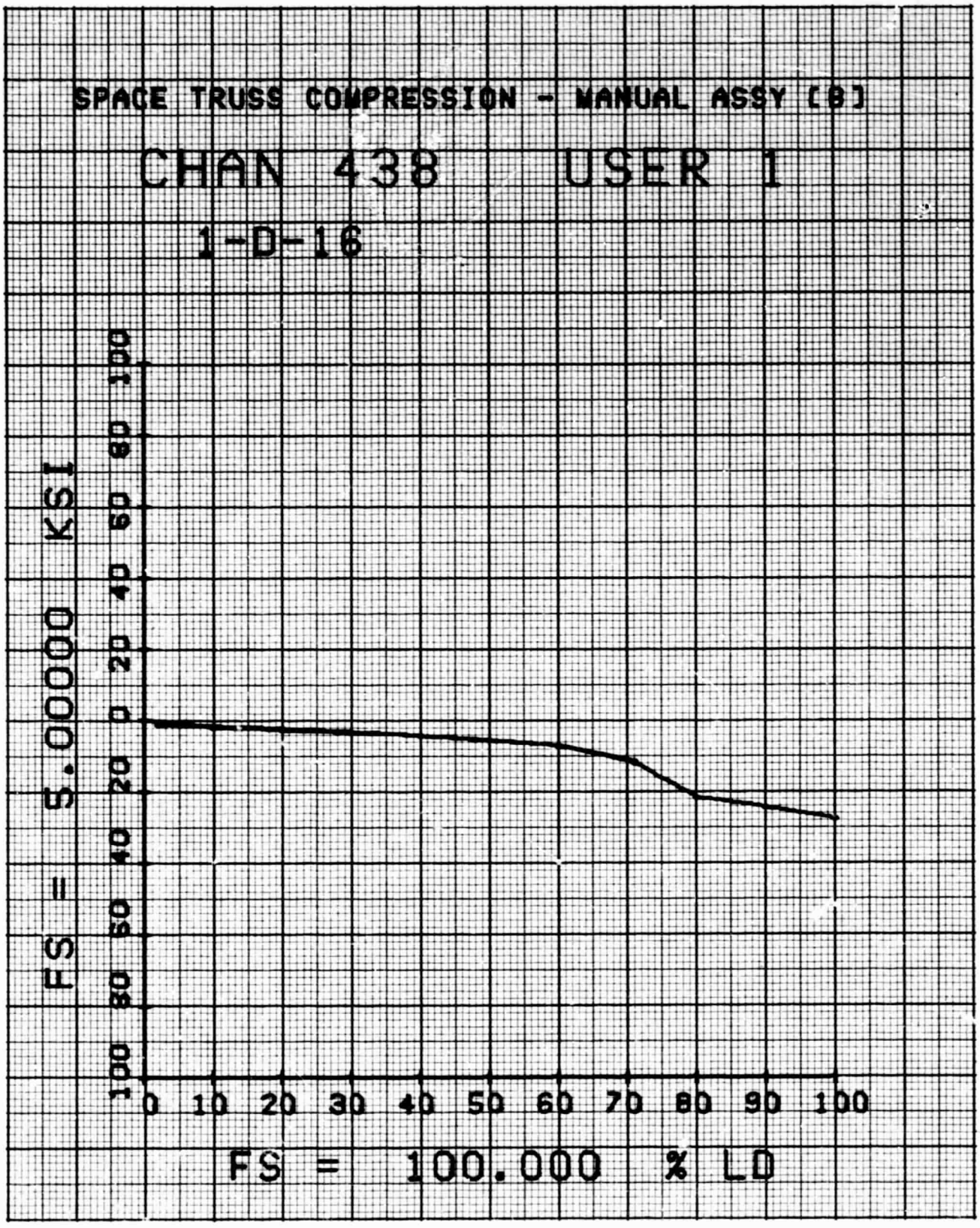
1838-072W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 436 USER 1
1-D-14
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-073W

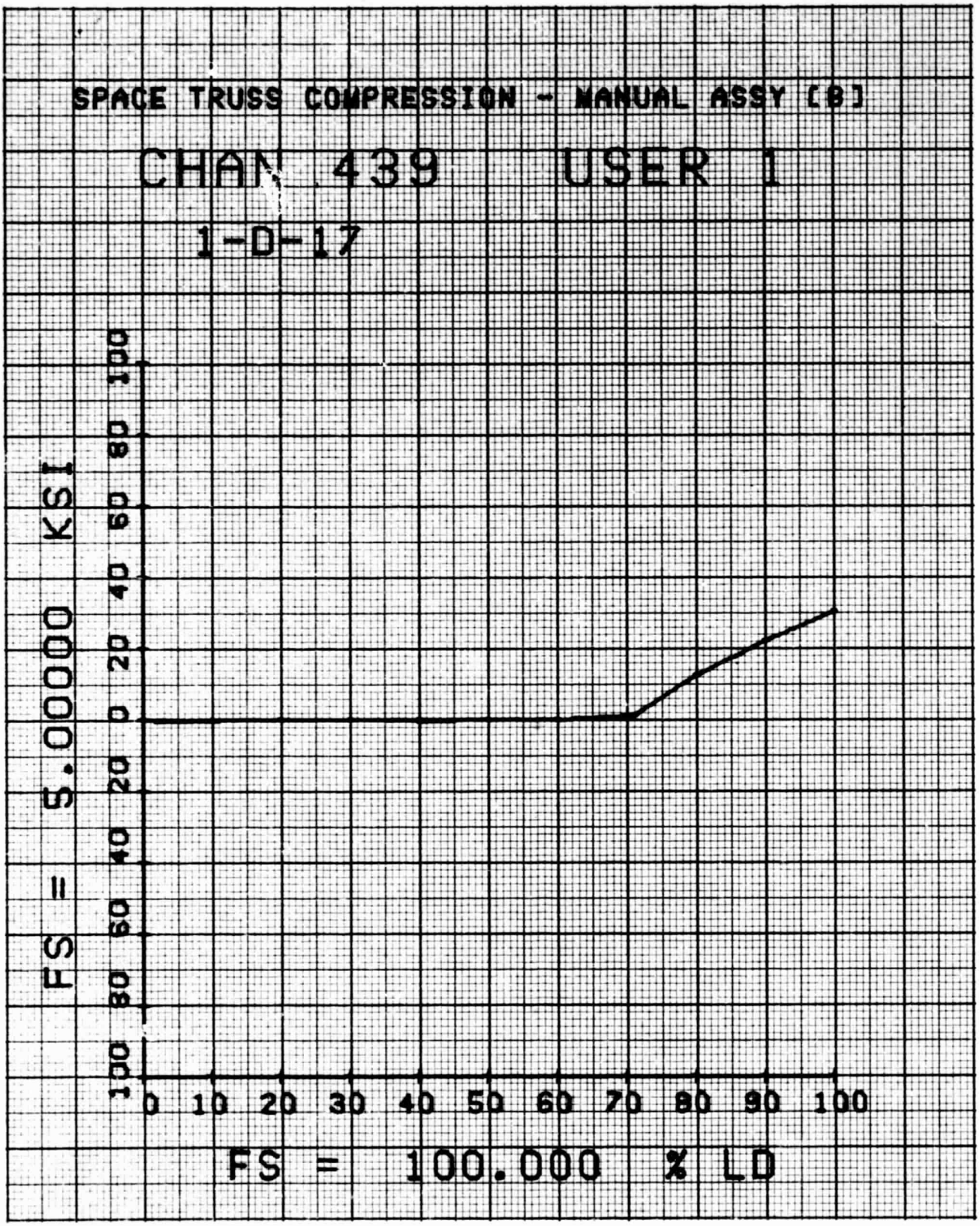

SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 437 USER 1
1-D-15
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-074W

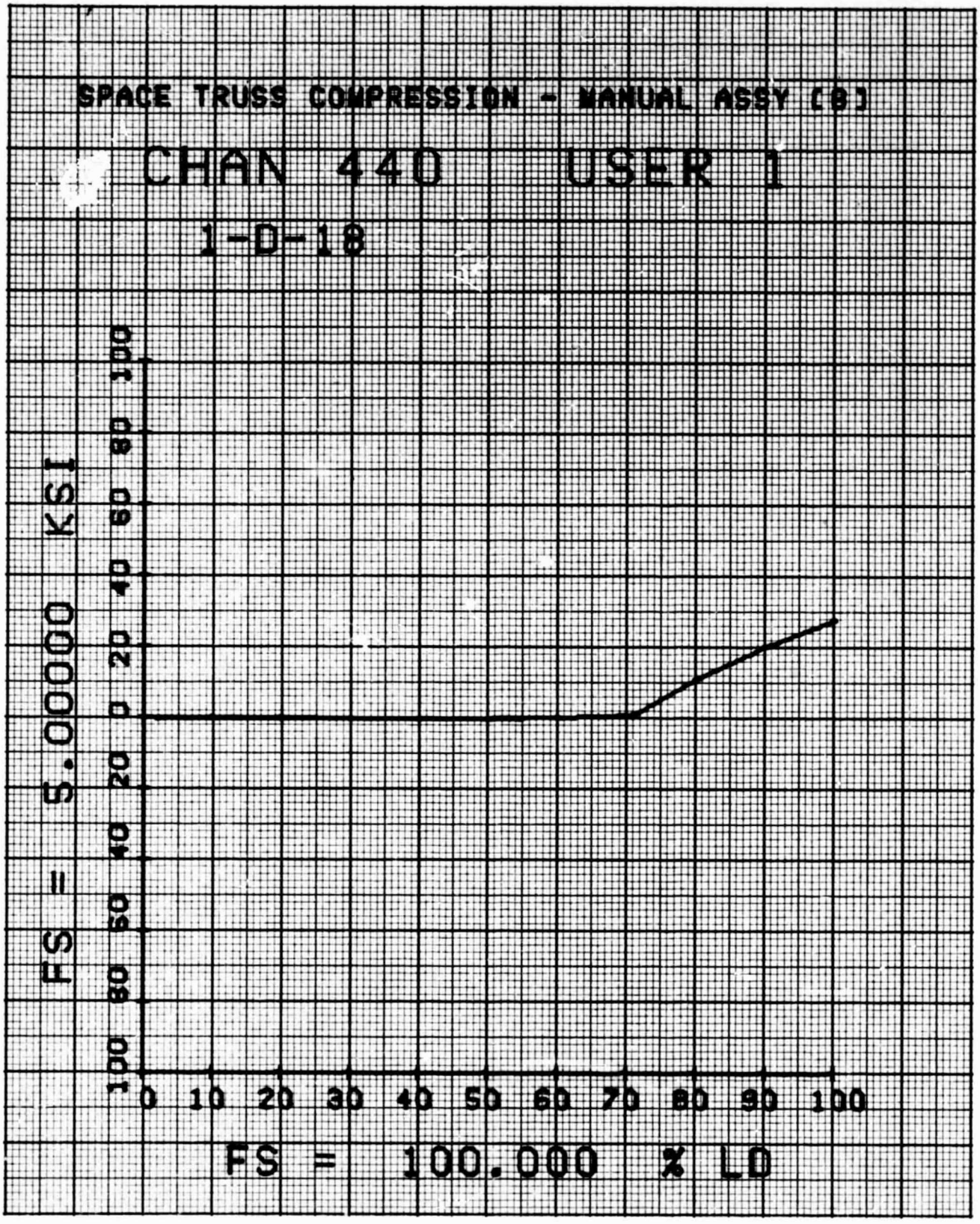

SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 438 USER 1
1-D-16
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-075W

C 2


SPACE TRUSS COMPRESSION - MANUAL ASSY [B]
CHAN 439 USER 1
1-D-17
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-076W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 440 USER 1
1-D-18
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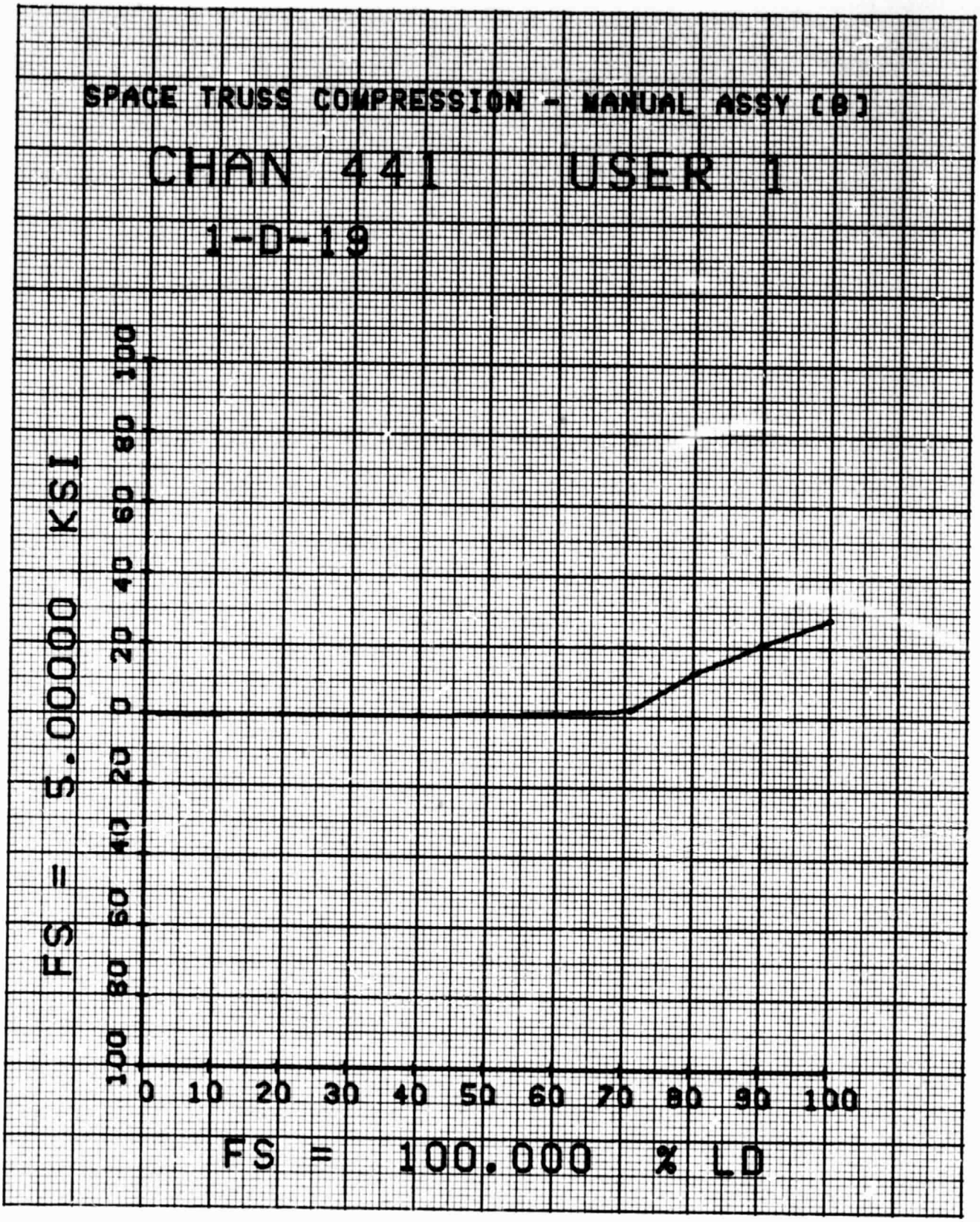
100 80 60 40 20 0
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-077W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 441 USER 1
1-D-19
FS = 5.00000 KSI
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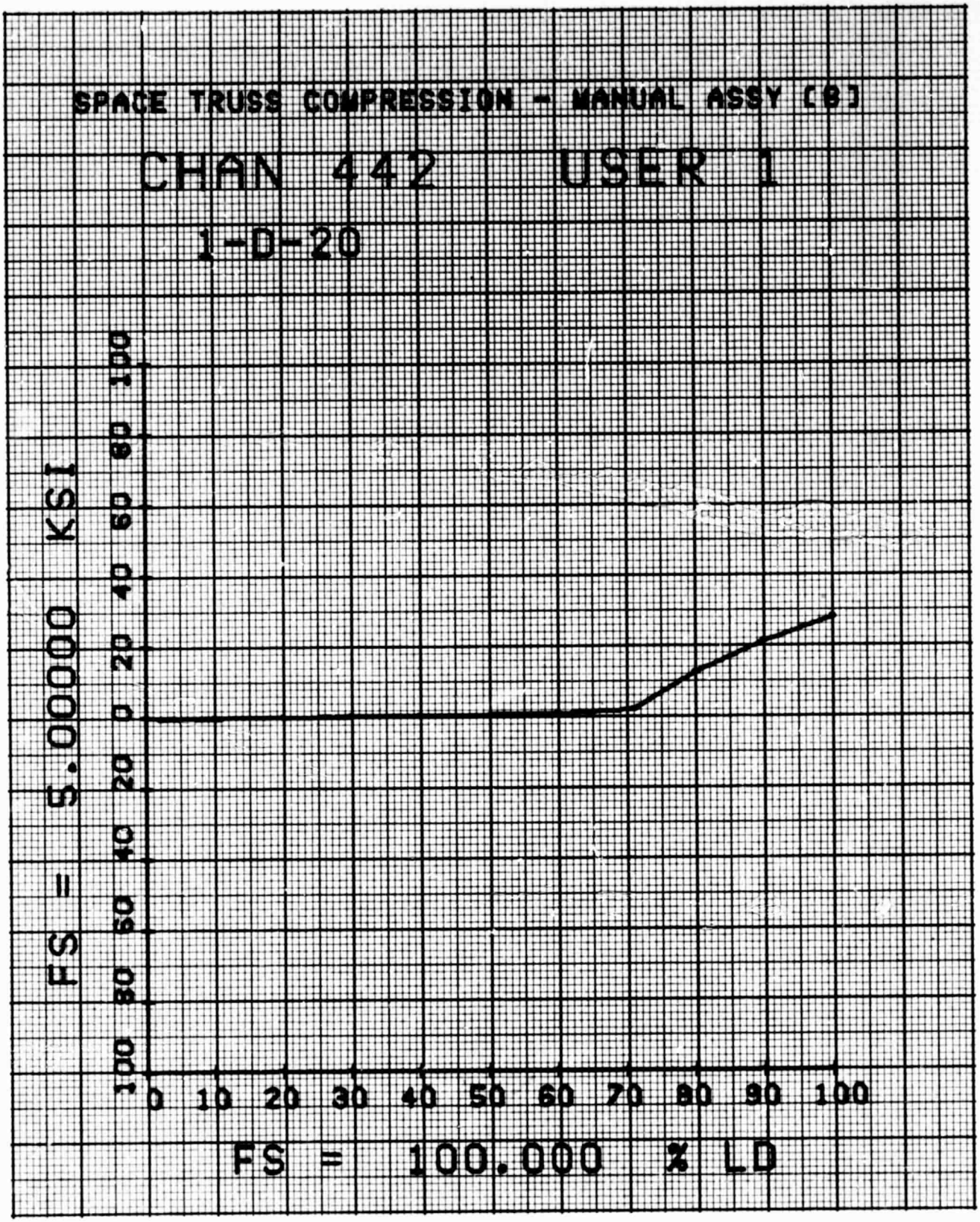
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-078W


SPACE TRUSS COMPRESSION - MANUAL ASSY (B)
CHAN 442 USER 1
1-D-20
FS = 5.00000 KSI
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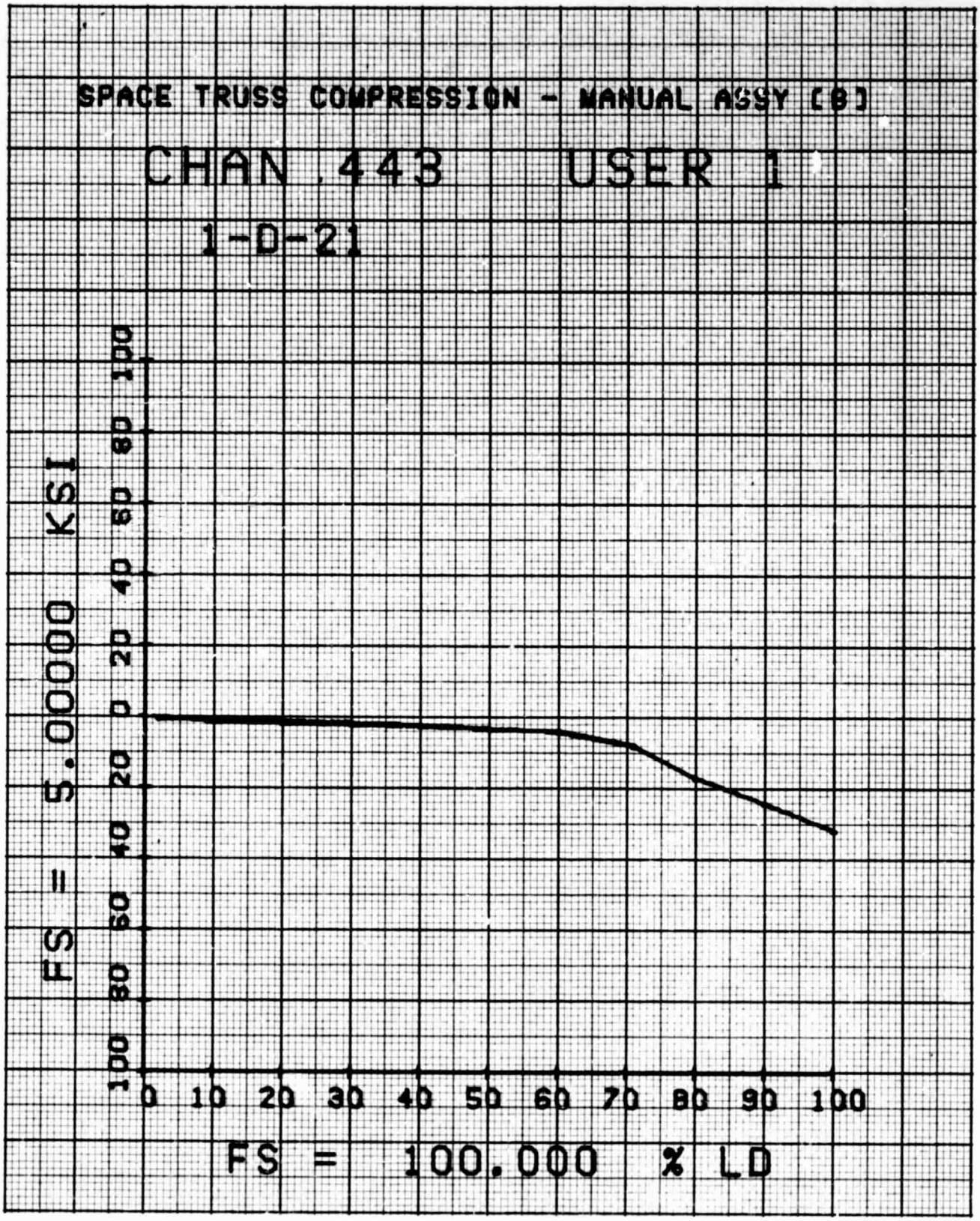
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-079W


SPACE TRUSS COMPRESSION - MANUAL ASSY (8)
CHAN 443 USER 1
1-D-21
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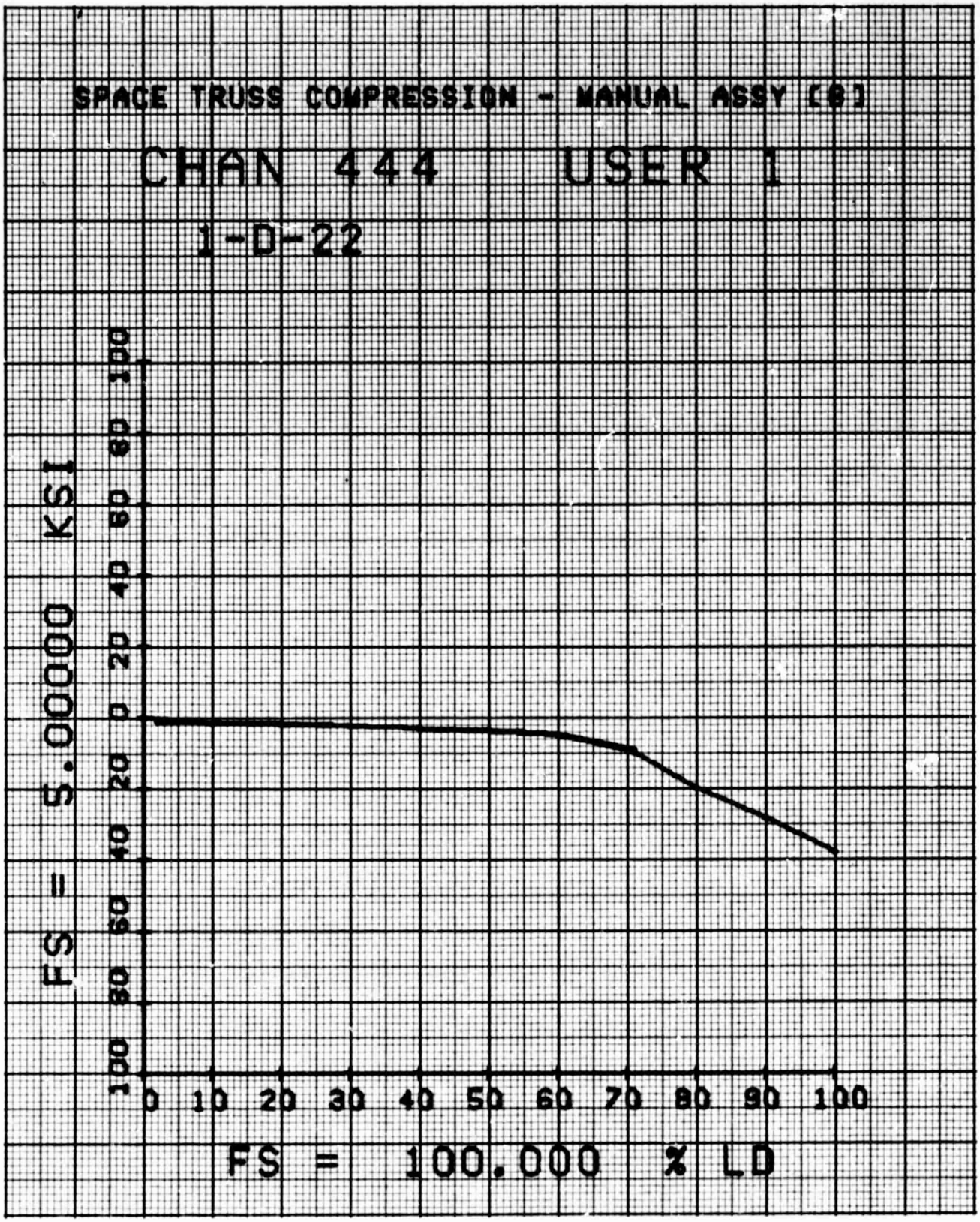
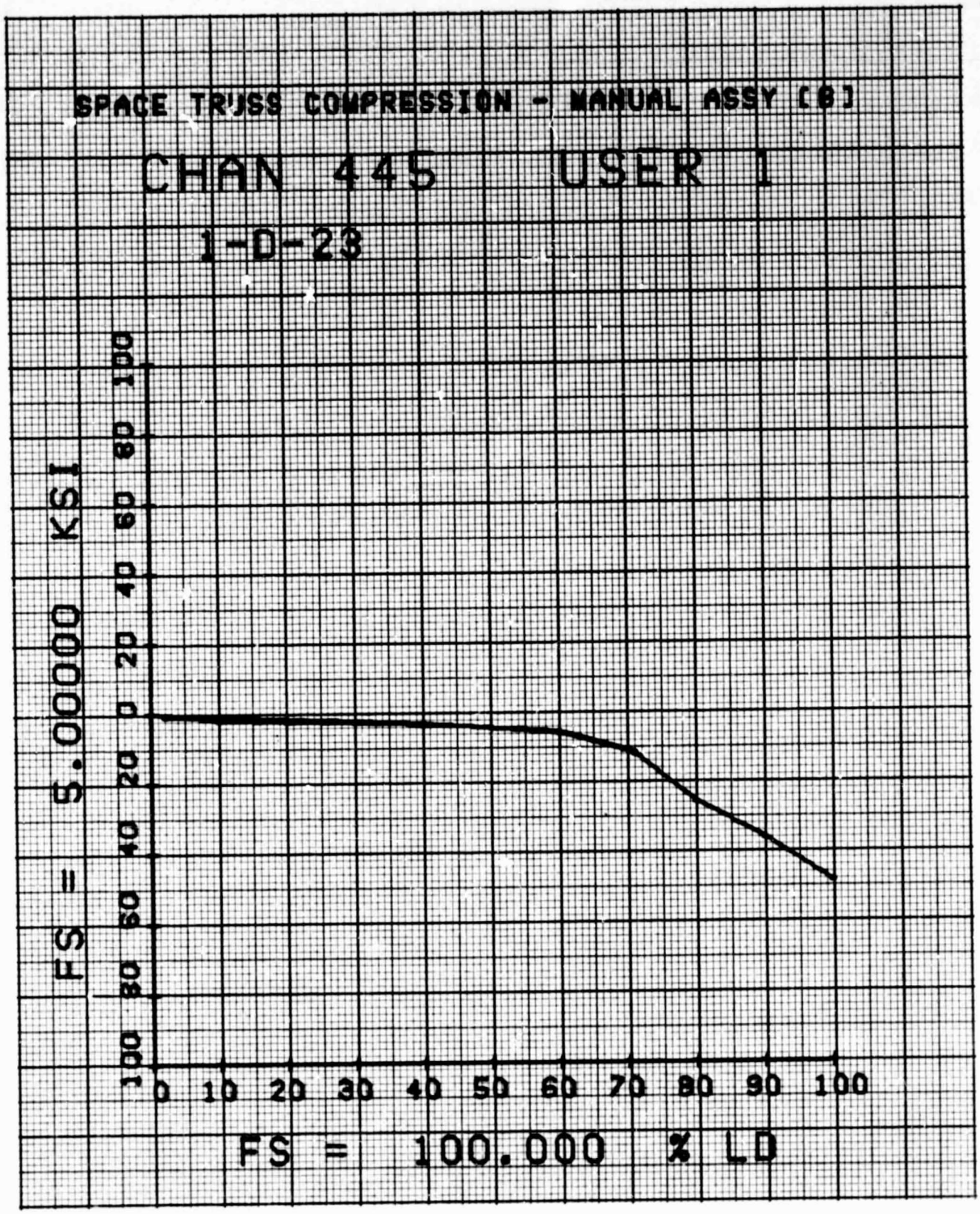
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

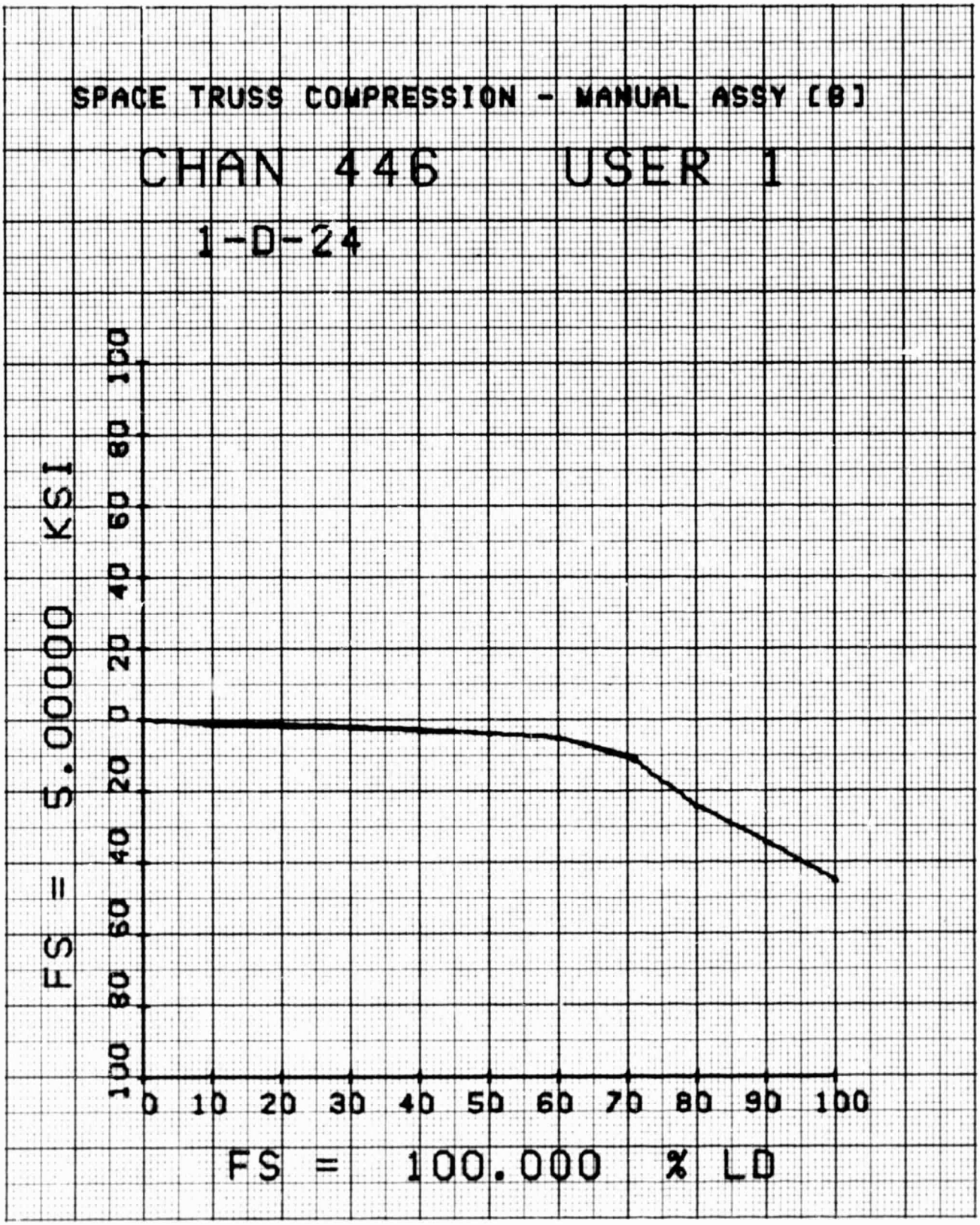
1838-080W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 444 USER 1
1-D-22
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-081W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 445 USER 1
1-D-23
FS = 5.00000 KSI
100 80 60 40 20 0 20 40 60 80 100
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-082W


SPACE TRUSS COMPRESSION - MANUAL ASSY [8]
CHAN 446 USER 1
1-0-24
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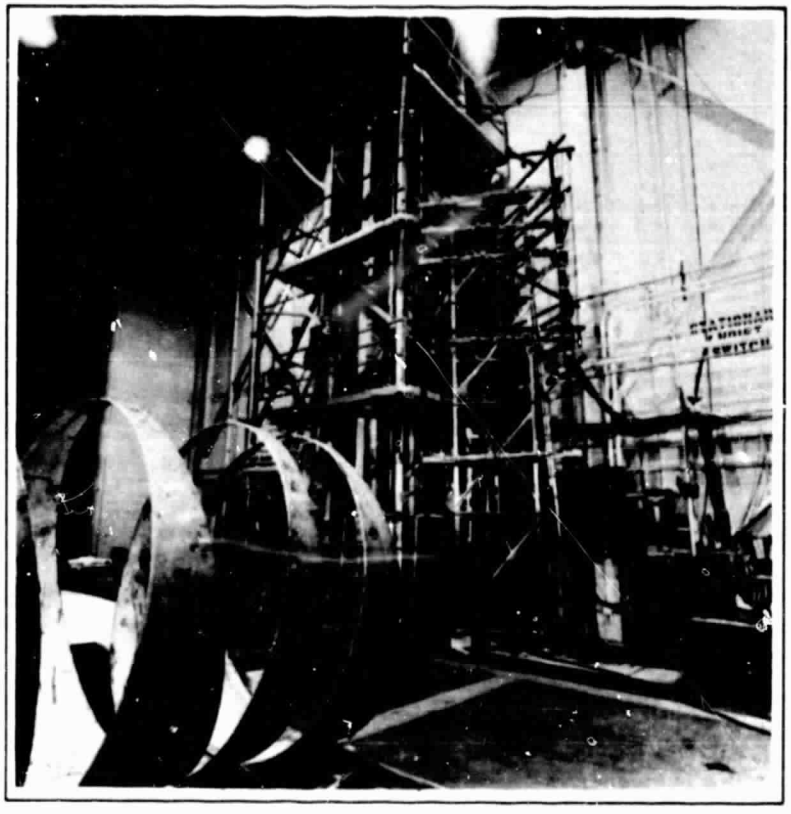
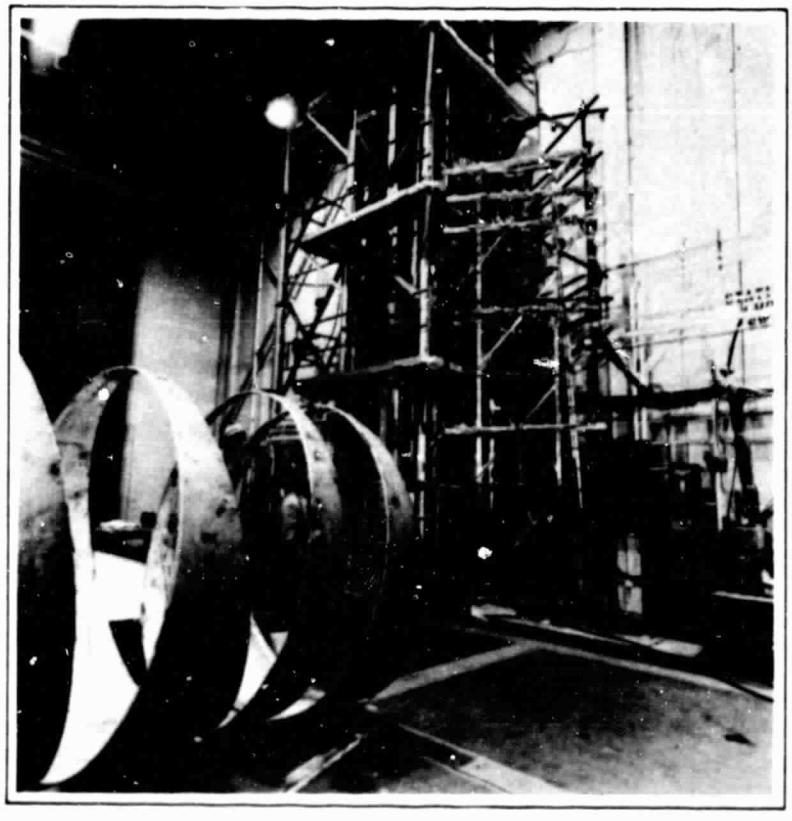
0 10 20 30 40 50 60 70 80 90 100
FS = 100.000 % LD

1838-083W



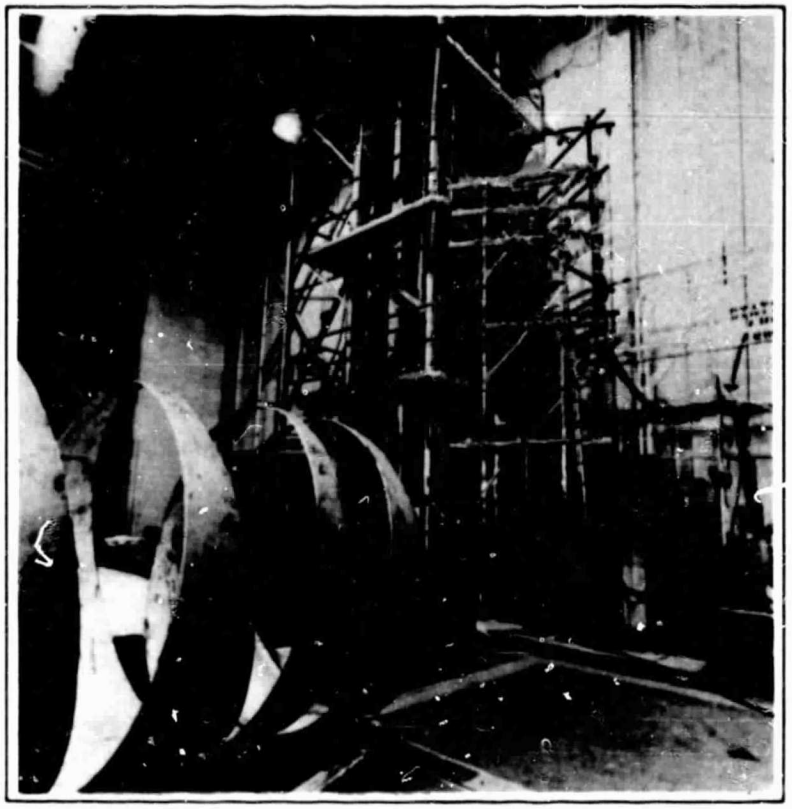
1838-085W

Figure A-1 0% Load



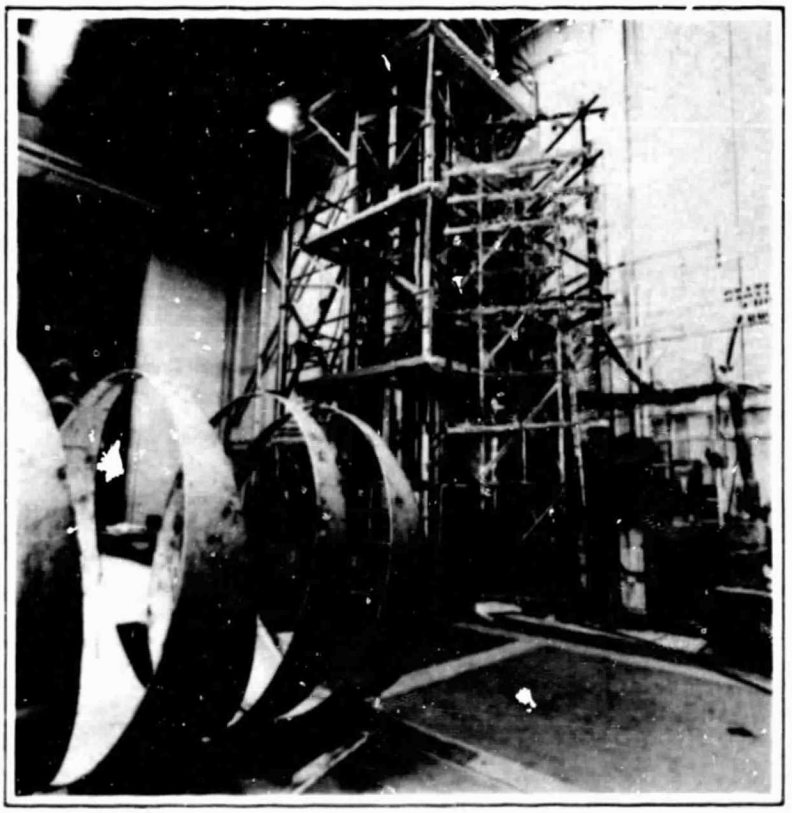
1838-086W

Figure A-2 71% Limit Load



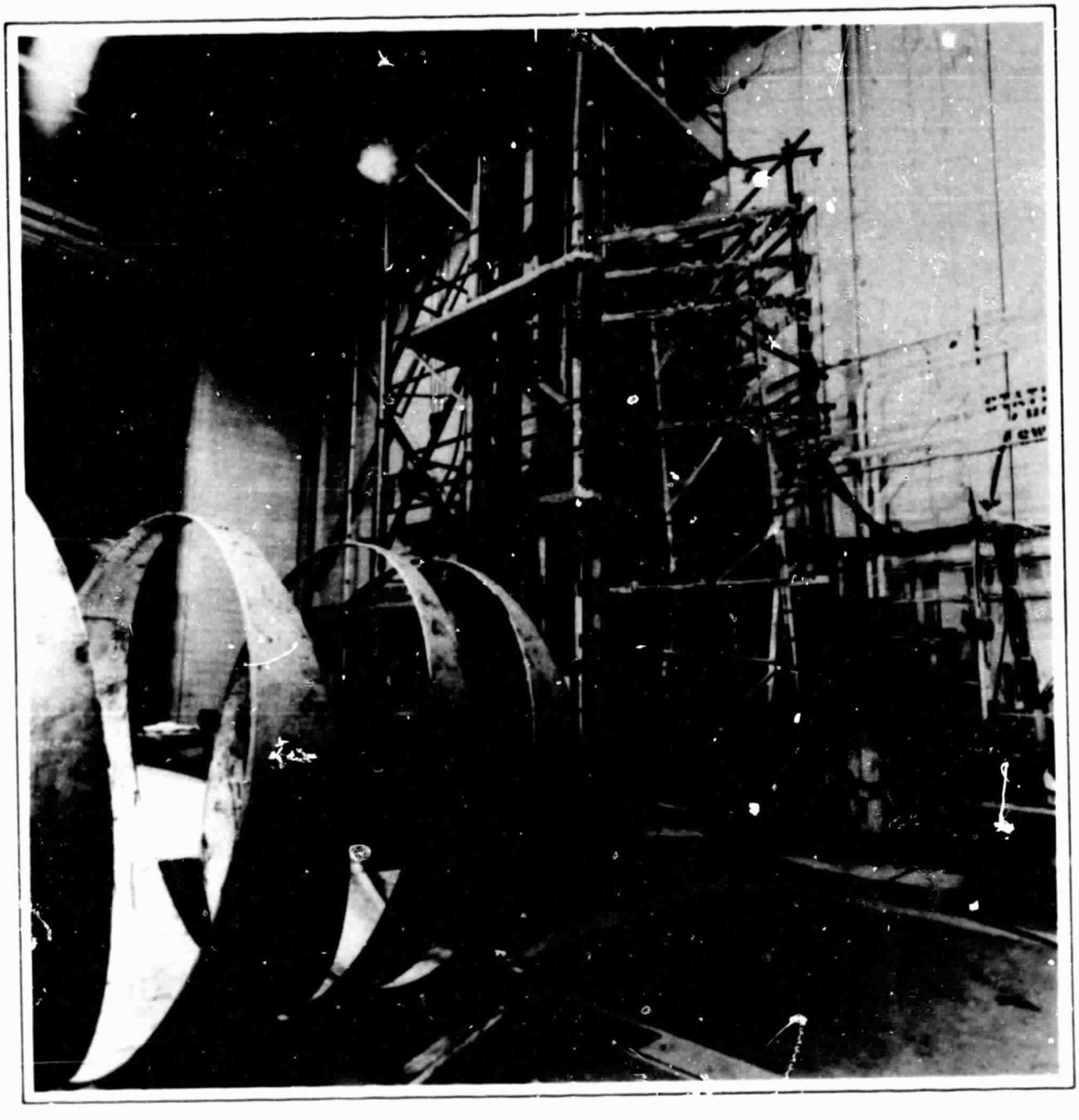
1883-087W

Figure A-3 100%-Ultimate Load



1883-088W

Figure A-4 110% Load



1838-089W

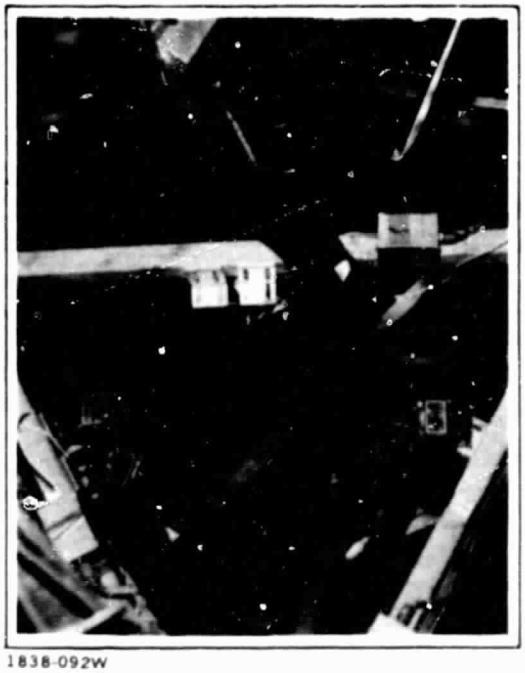
Figure A-5 Failure at 1507 Pounds

1838-090W

Figure A-6 Cap & Diagonal Failure Bay III

1838-091W

Figure A-7 Cap Buckling



1838-092W

Figure A-8 Cap Failure

ENCLOSURE (2)

BEAM BUILDER

DESIGN, ASSEMBLY AND TEST

WBS 1.2.2 Fabrication Facility Design

This effort is complete with the exception of final updating of drawings which may be required as a result of modifications made during debugging and test operations presently underway. A status listing of all drawings associated with the fabrication of SFDS is shown in Table 2-1.

1.3.1 Detail Parts Fabrication

All detail parts for the SFDS have been fabricated.

1.3.2 Assembly

All subsystems have been assembled and installed on the SFDS. All limit switches and electrical wiring has been installed with the exception of the slot detector which is presently being mounted in the guide blocks.

The fully assembled system is shown in Figures 2-1, 2-2 and 2-3 which identify all of the key components and subsystems. The rolling mill and servo drive installed in the SFDS frame are shown in Figures 2-4 and 2-5. The vertical and diagonal brace storage magazines are shown in Figure 2-6. The carriage mechanism used to transport the brace members from the magazine to the cap is shown in Figure 2-7. The weld/clamp mechanisms used to hold the brace to the cap and actuate the weld electrodes are shown in Figures 2-8 and 2-9. One of the three cap cutoff mechanisms mounted to the forward bulkhead is shown in Figure 2-10.

1.4.1 Fabrication Facility Test

Subsystem debugging was performed off site prior to integration of the subsystem into the final assembly to minimize potential problems with full system integration and debugging. The vertical and diagonal weld/clamp assemblies were setup on an off-site test bed to check clamp up, electrode activation and weld cycle functions Figure 2-11. The brace magazine assemblies were similarly tested, Figure 2-12, to check brace dispenser functions and required brace spacing in magazine. The software packages for automatic sequencing of the subsystems were checked with each subsystem after wiring and installation of limit switches. The rolling mills for cap forming were checked earlier in the program at the vendor prior to shipment to Grumman.

Eight thousand feet of material was slit and roll formed to fabricate vertical and diagonal braces Figure 2-13 for use in the initial functional tests. A similar amount of material has been cut and coiled for fabrication of beam cap members, Figure 2-14.

The full system was operated to test interfacing of subsystems, alignment and software functional capability. Several single-bay truss sections Figure 2-15 and a two-bay section Figure 2-16 were automatically fabricated by the equipment. As a result of these initial tests minor modifications are being made to correct problems incurred. The principal problem areas to date have been some waviness on the return

flange of the cap member and intermittent welds. Both of these problems appear to be a result of improper alignment of the copper guide blocks to the rolling mills and weld/clamp mechanisms. The blocks are being modified and realigned prior to continued full-system operation.

Table 2-1 (Sheet 1 of 3)

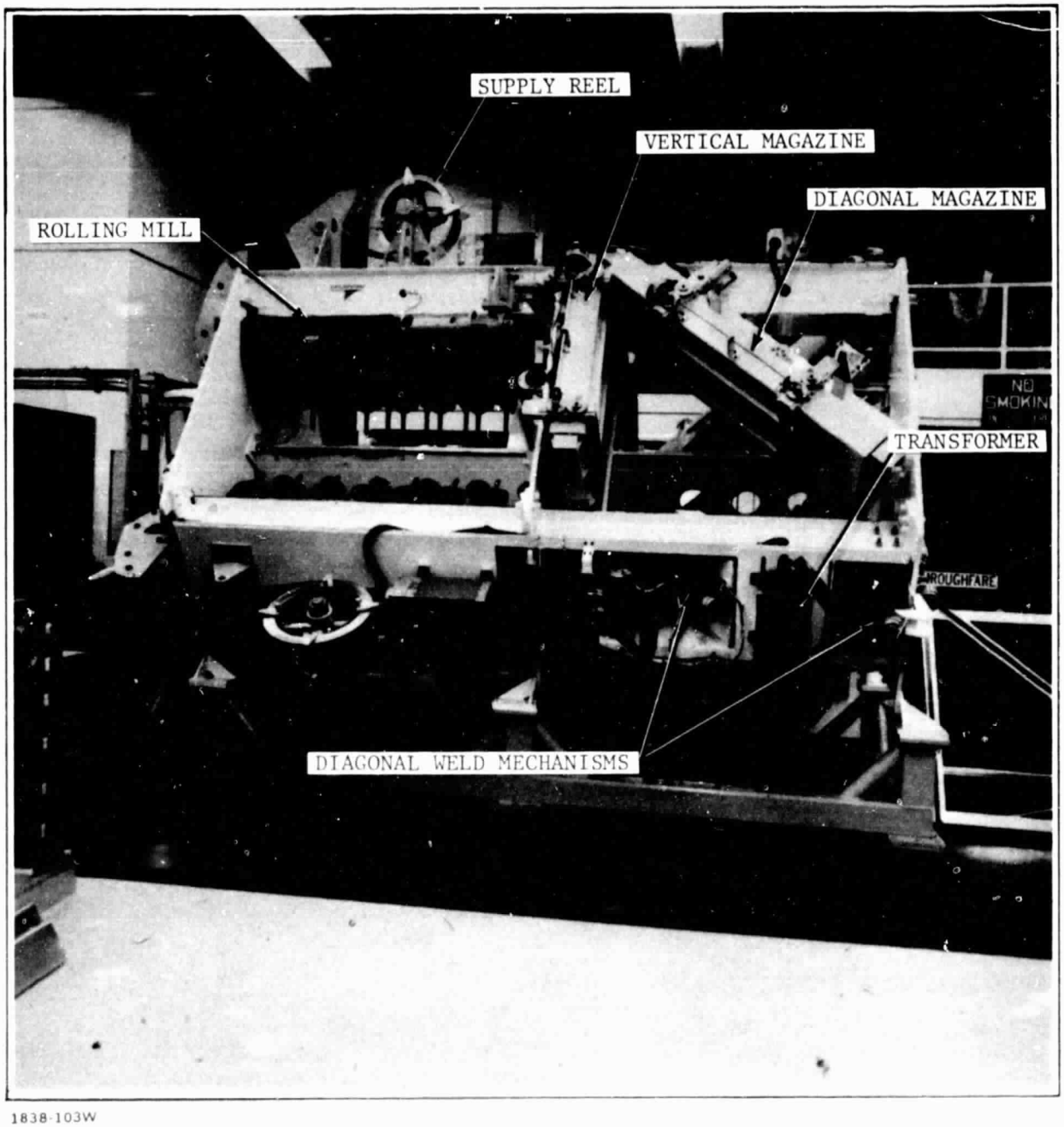
DRAWING NO.	SHT NO.	REV	DESCRIPTION
RDM447-2050	1	NC	General Configuration
-2053	1	A	Vertical & Diagonal Canisters
-2060		A	Yoder Roller Base Plate
-2061	1	A	Yoder Roller Sub-assy
-2061	2	A	Yoder Roller Sub-assy
-2062	No	Dwg	Bulkh'd 1,2,3 Flame Cut Temp
-2063	1	A	Bulkh'd No. 1 Weldment Assy
-2064	1	NC	Slot Detector Bracket
-2065	1	A	Bulkh'd No. 2 Weldment Assy
-2067	1	B	Bulkh'd No. 3 Weldment Assy
-2068	1	A	Int Struct Mtg Brackets
-2069	1	NC	Int Weld Block Supports
-2069	2	NC	Int Weld Block Supports
-2070	1	A	Struct Sub-assy & Alignment
-2070	2	A	Struct Sub-assy & Alignment
-2071	1	A	Yoder Roller-Box Beam Sub-assy
-2072	1	A	Box Beam to Bulkh'd No. 1, No. 2, No. 3 Mtg Brkts
-2072	2	A	Box Beam to Bulkh'd No. 1, No. 2, No. 3 Mtg Brkts
-2072	3	A	Box Beam to Bulkh'd No. 1, No. 2, No. 3 Mtg Brkts
-2073	1	NC	Int Weld Block Support
-2073	2	NC	Int Weld Block Support
-2076	1	NC	Int Structure Weldment
-2076	2	NC	Int Structure Weldment
-2076	3	NC	Int Structure Weldment
-2076	4	NC	Int Structure Weldment
-2077	1	A	Base Frame Weldment
-2078	1	NC	Bulkh'd to Base Mtg Bracket
-2081	1	Adv	Cut-off Mechanism Assy
-2082	1	A	Box Beam Weldment
-2082	2	A	Box Beam Weldment
-2083	1	A	Yoder Mill Installation Bracket
-2085	1	NC	Raw Mat'l Spool Assy
-2085	2	NC	Raw Mat'l Spool Details
-2091	1	NC	Scissor Mechanism Details
-2091	2	NC	Scissor Mechanism Details
-2091	3	NC	Scissor Mechanism Details
-2091	4	NC	Scissor Mechanism Details
-2092	1	A	Weld Block Assy
-2092	2	A	Weld Block Assy
-2093	1	NC	Scissor Details
-2093	2	NC	Scissor Details
-2094	1	NC	Weld Block Details
-2095	1	NC	Scissor Details
-2096	1	NC	Weld Block Assy

Table 2-1 (Sheet 2 of 3)

DRAWING NO.	SHT. NO.	REV.	DESCRIPTION
RDM447-2096	2	NC	Weld Block Assy
-2096	3	NC	Weld Block Assy
-2097	1	A	Canister Brkt Details
-2097	2	A	Canister Helix Detail
-2097	3	NC	Canister Dummy Brace
-2098	1	NC	Canister Bracket Details
-2099	1	A	Canister Strap & Pivot Pets
-2099	2	A	Canister Hinge Mtg Brkt
-2099	3	NC	Canister Mtg Bracket
-2100	1	NC	Canister Sub-assy
-2102	1	NC	Carriage Assy
-2102	2	A	Carriage Details
-2102	3	NC	Carriage Details
-2102	4	NC	Carriage Details
-2102	5	NC	Carriage Details
-2103	1	NC	Clamp Assy - Aft Diag Brace
-2103	2	NC	Clamp Assy - Aft Diag Brace
-2104	1	NC	Clamp Assy - Fwd Diag Brace
-2104	2	NC	Clamp Assy - Fwd Diag Brace
-2107	1	A	Cut-off Mech Upper Sub-assy
-2108	1	NC	Cut-off Mech Middle Sub-assy
-2109	1	A	Cut-off Mech Lower Sub-assy
-2111	1	NC	Facility Requirements
-2112	1	NC	Yoder Drive Sub-assy
-2115	1	2-28-78	Drawing Tree
-2116	1	NC	Int Support Brkt Weld Block
-2116	2	NC	Int Support Brkt Weld Block
-2117	1	NC	Installation Template
-2118	1	NC	Installation Template
-2119	1	NC	Geometry Sheet
-2120	1	NC	Int Weld Block Inst Temp
-2121	1	A	Cut-off Mech Upper Details
-2121	2	A	Cut-off Mech Upper Details
-2122	1	NC	Cut-off Mech Middle Details
-2123	1	A	Cut-off Mech Lower Details
-2123	2	A	Cut-off Mech Lower Details
-2125	1	A	Canister Drive Details
-2126	1	NC	Canister Drive Details
-2127	1	A	Canister Drive Assy
-2129	1	A	Canister End Cap Assy
-2129	2	A	Canister End Cap Assy
-2130	1	NC	Canister Latch Details Mtg Brkt
-2130	2	NC	Canister Strap at Latch End
-2130	3	NC	Canister Mtg Brkt Det
-2131	1	NC	Diagonal Support Structure
-2132	1	NC	Feed Spool Details
-2133	1	NC	Feed Spool Details

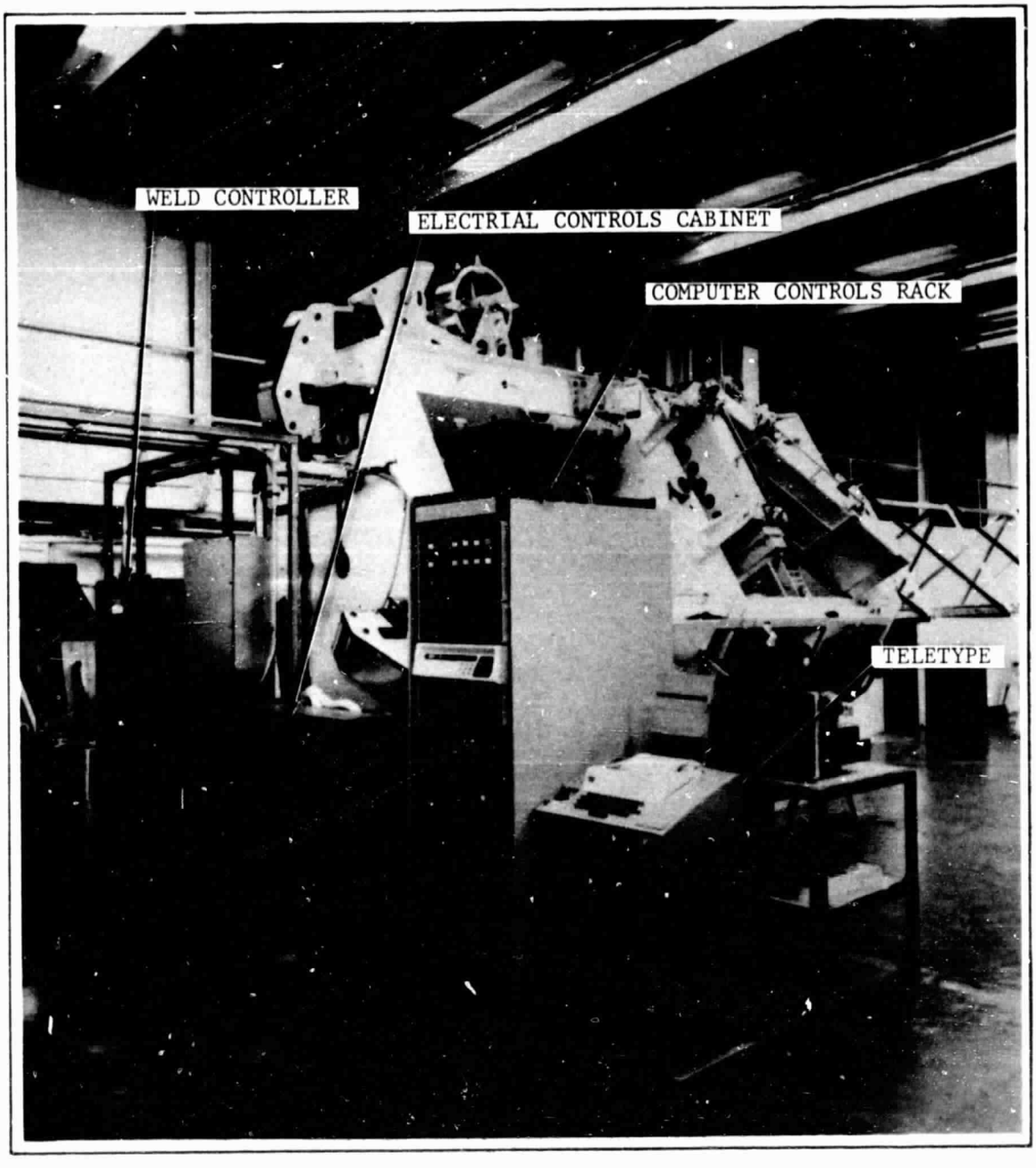
Table 2-1 (Sheet 3 of 3)

DRAWING NO.	SHT. NO.	REV.	DESCRIPTION
RDM447-2133	2	NC	Feed Spool Details
-2136	1	NC	Feed Spool Assy
-2137	1	NC	Transformer Mtg Plates
-2138	1	NC	Yoder Drive Bushing
-2139	1	NC	Mat'l Hoist
-2141	1	NC	Brace Spacer
-2001		NC	Assy Diagram
-2002		NC	System Cabling
-2003		NC	Interface Rack Utilization
-2004		NC	Control Panel Configuration
-2005		NC	Control System Functional Diagram
-2006		NC	Lamp Drivers & Switch Duffers
-2007		NC	Processor Rack Layout
-2010		NC	Material Position Registers
-2011		NC	Voltage Controlled Oscillator & Linear Ramp Gn
-2012		NC	Fifo Buffer & Control
-2013		NC	Isolators & Line Drivers
-2014		NC	Slot Sense Detectors
-2015		NC	Limit Switch Wiring
-2016		NC	Motor Control Relay Junct Box Assy
-2017		NC	Motor Control Relay Junct Box Details
-2018		NC	Typical Motor, Solenoid Control Circuits
-2019		NC	115VAC Power Supply Control
-2020		NC	Motor Power Supplies
-2200		NC	Final Assy



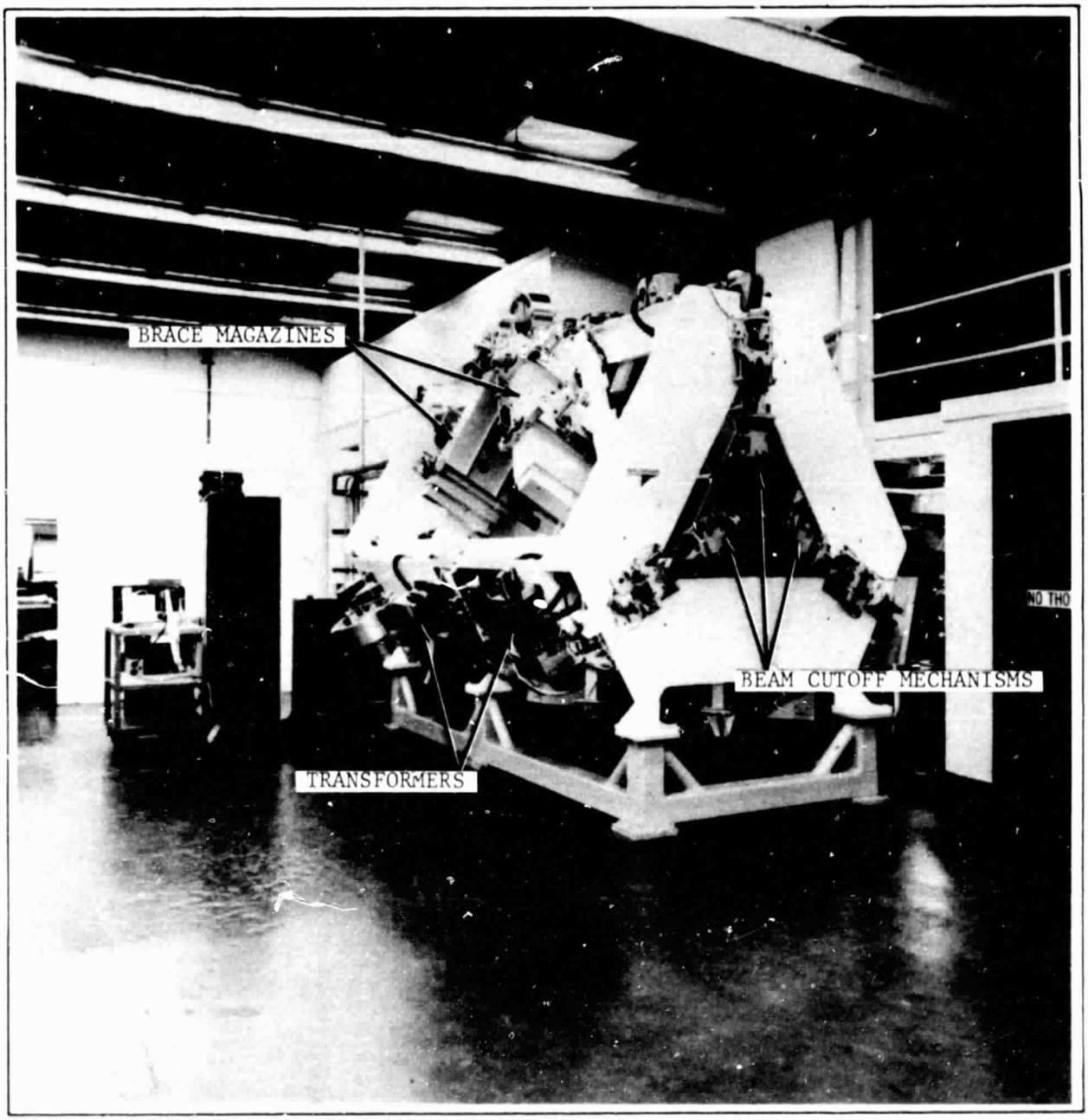
1838-103W

Figure 2-1 SFDS Assembly – Side View



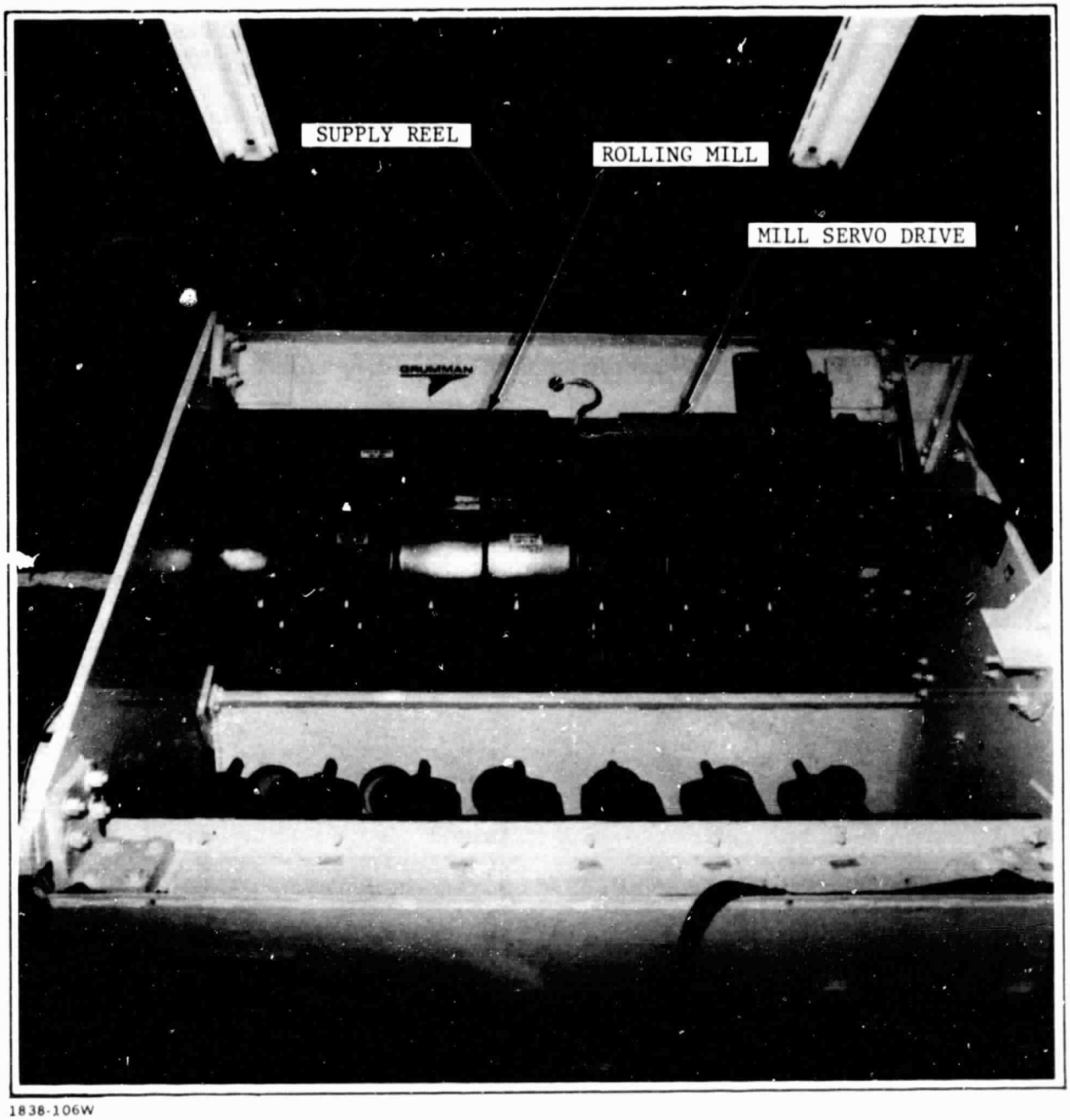
1838-104W

Figure 2-2 SFDS Assembly – View Forward



1838-105W

Figure 2-3 SFDS Assembly – View AFT



1838-106W

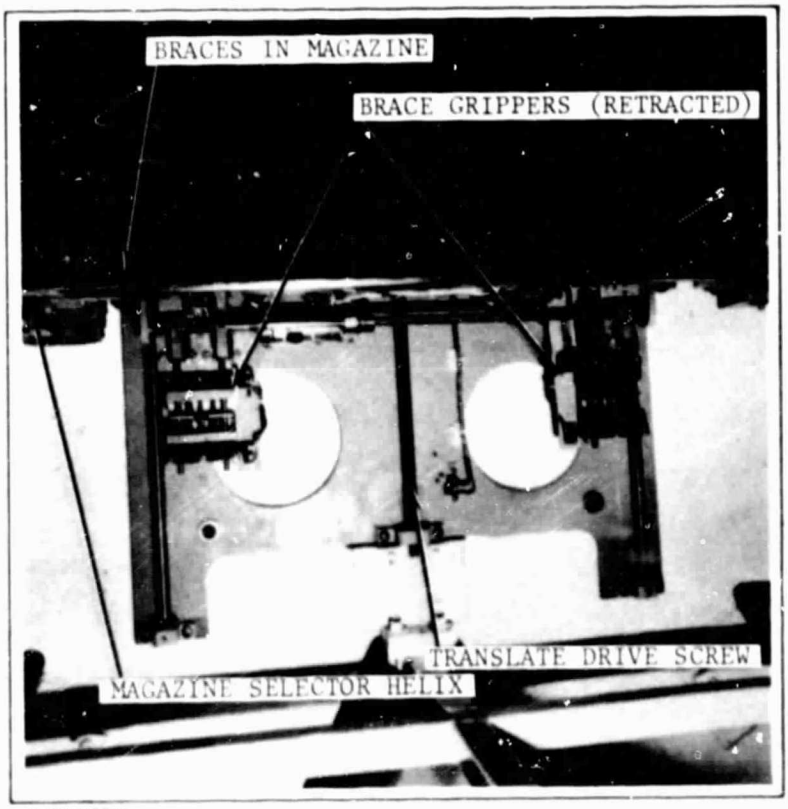
Figure 2-4 Upper Cap Roll Forming Mill and Drive

1838 107W

Figure 2.5 Upper Cap Roll Forming Mill

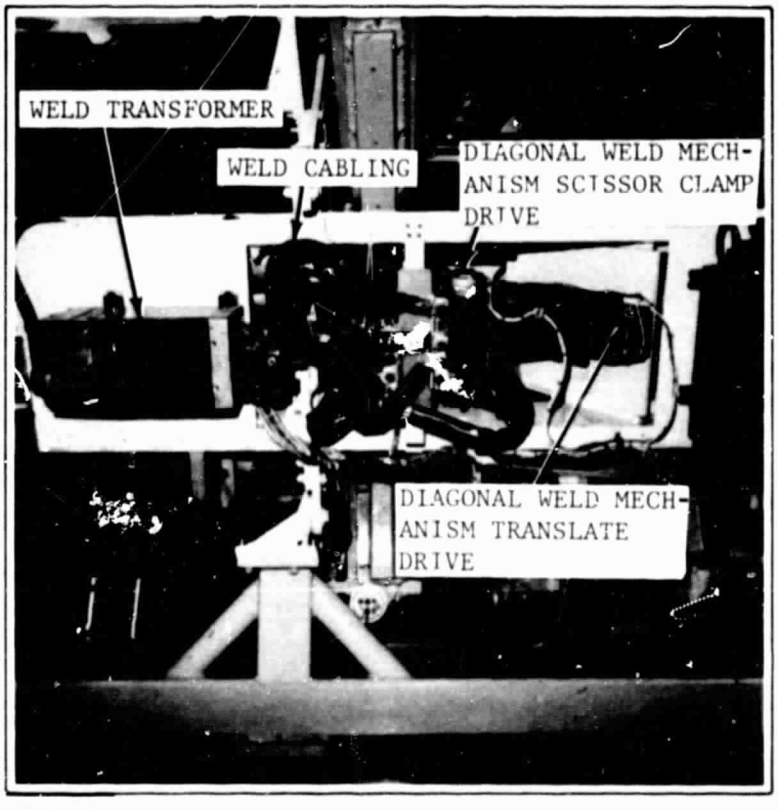
1838-108W

Figure 2-6 Brace Storage Magazines



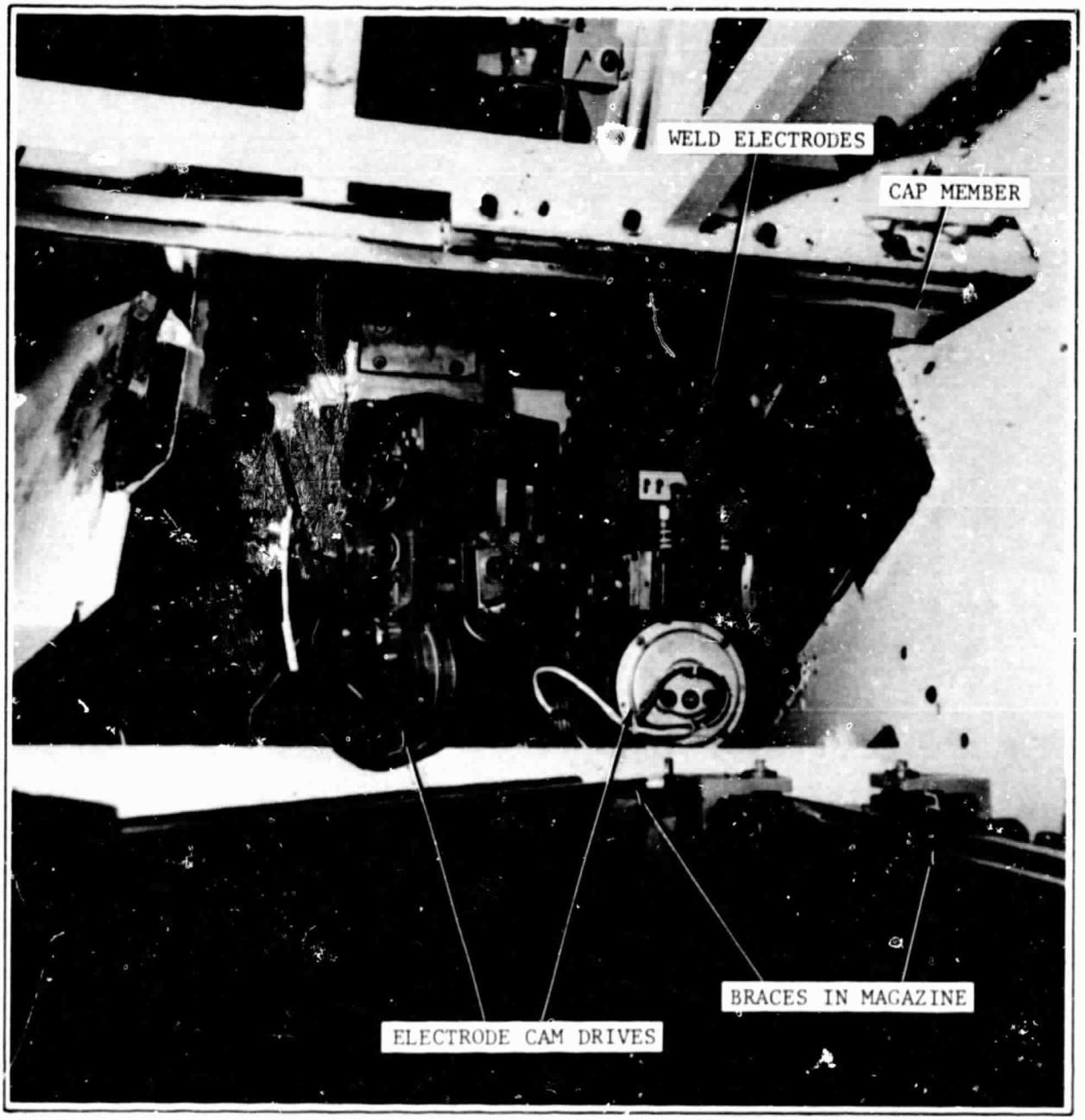
1838-109W

Figure 2-7 Brace Transport Mechanism



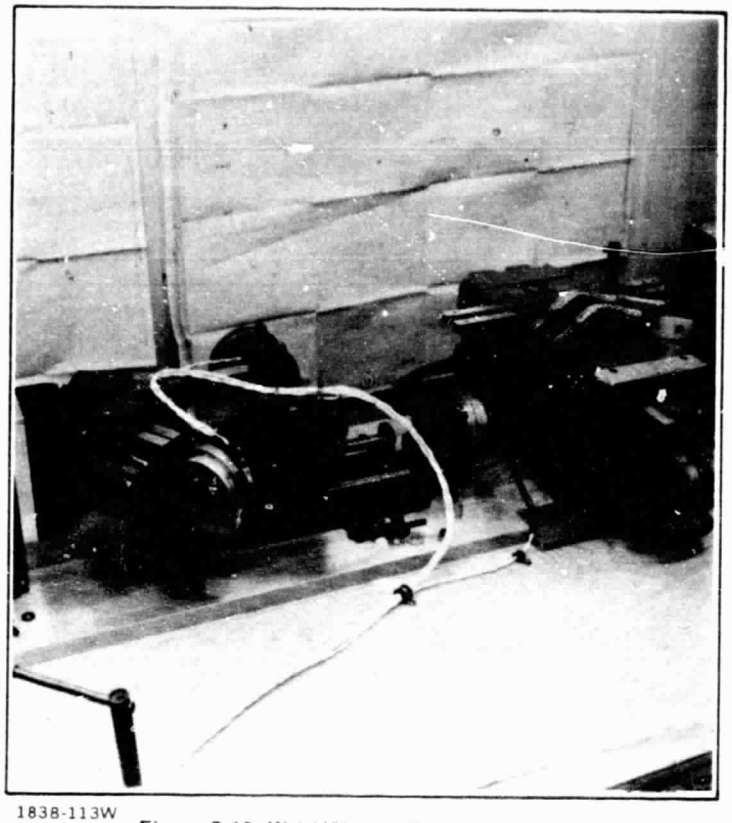
1838-118W

Figure 2-8 Weld Mechanism



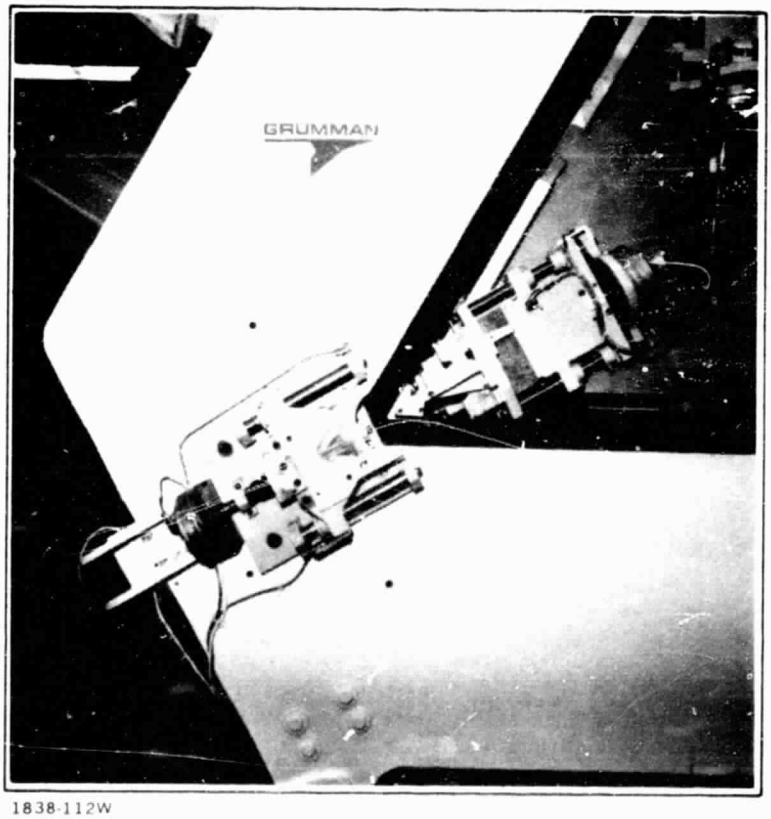
1838-111W

Figure 2-9 Weld Electrode Mechanism



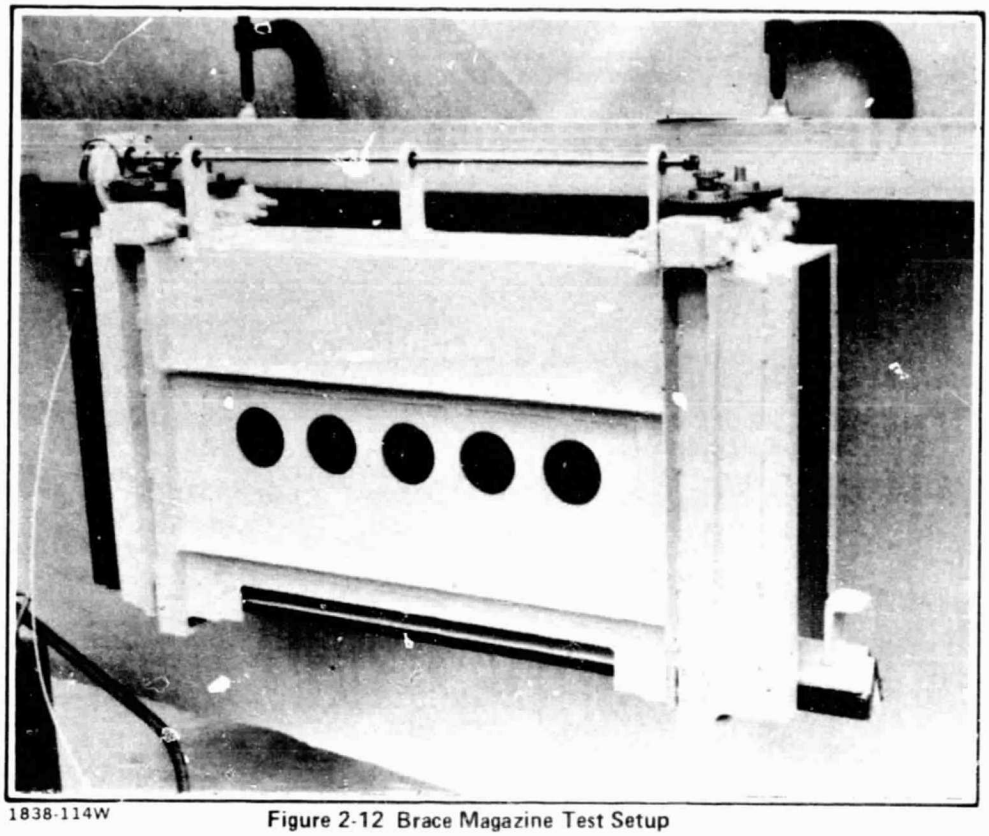
1838-113W

Figure 2-10 Weld/Clamp Mechanism Test Bed



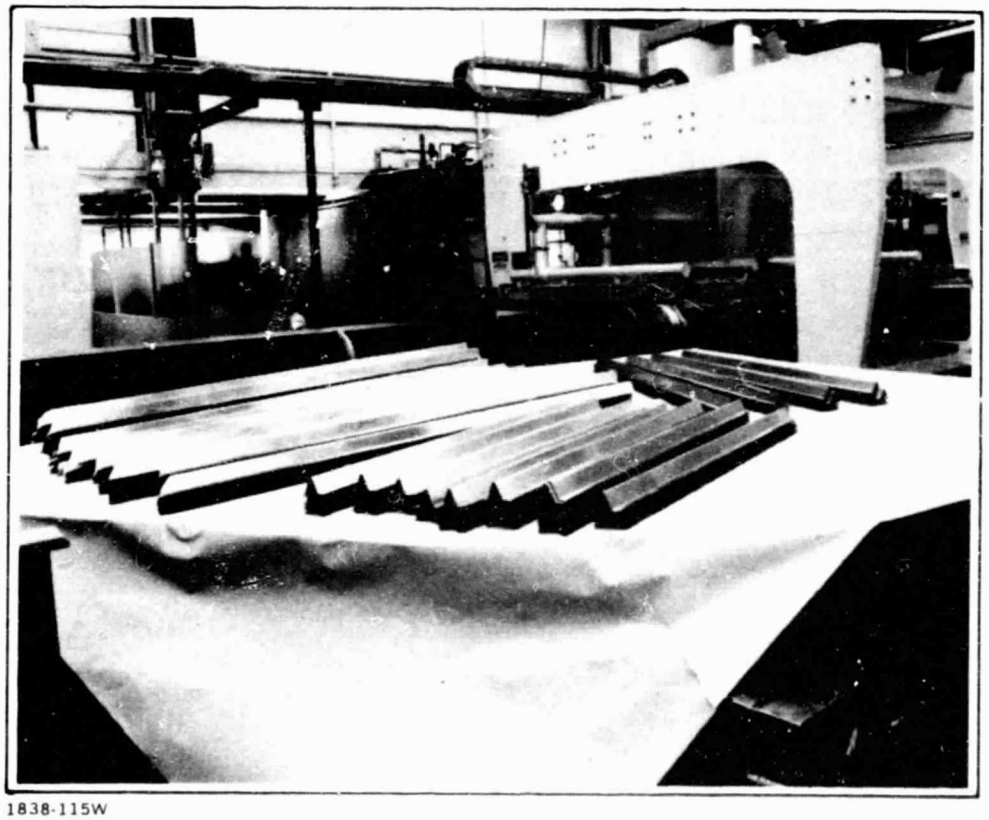
1838-112W

Figure 2-11 Cap Cutoff Mechanism



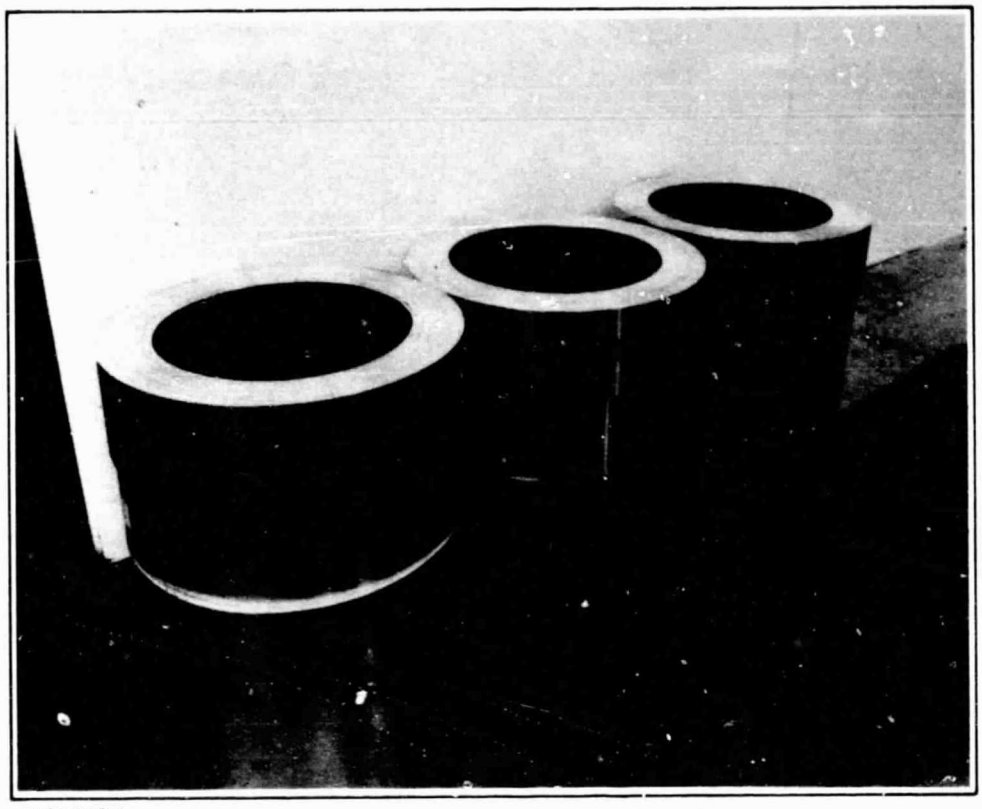
1838-114W

Figure 2-12 Brace Magazine Test Setup



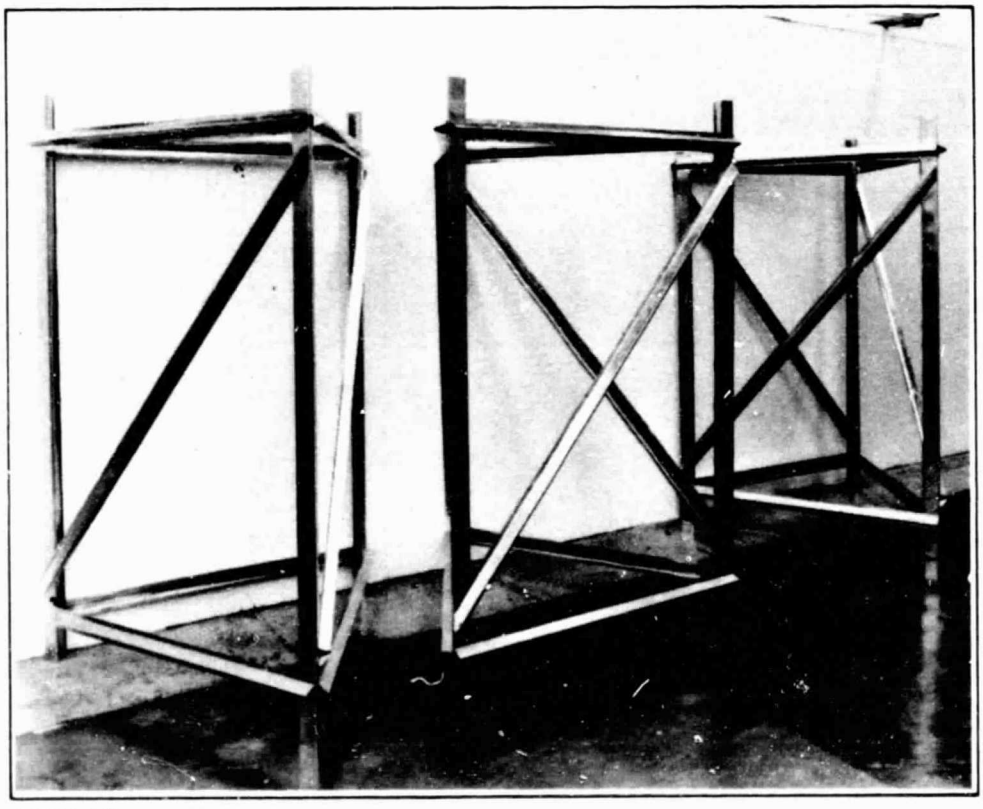
1838-115W

Figure 2-13 Roll Formed Brace Members



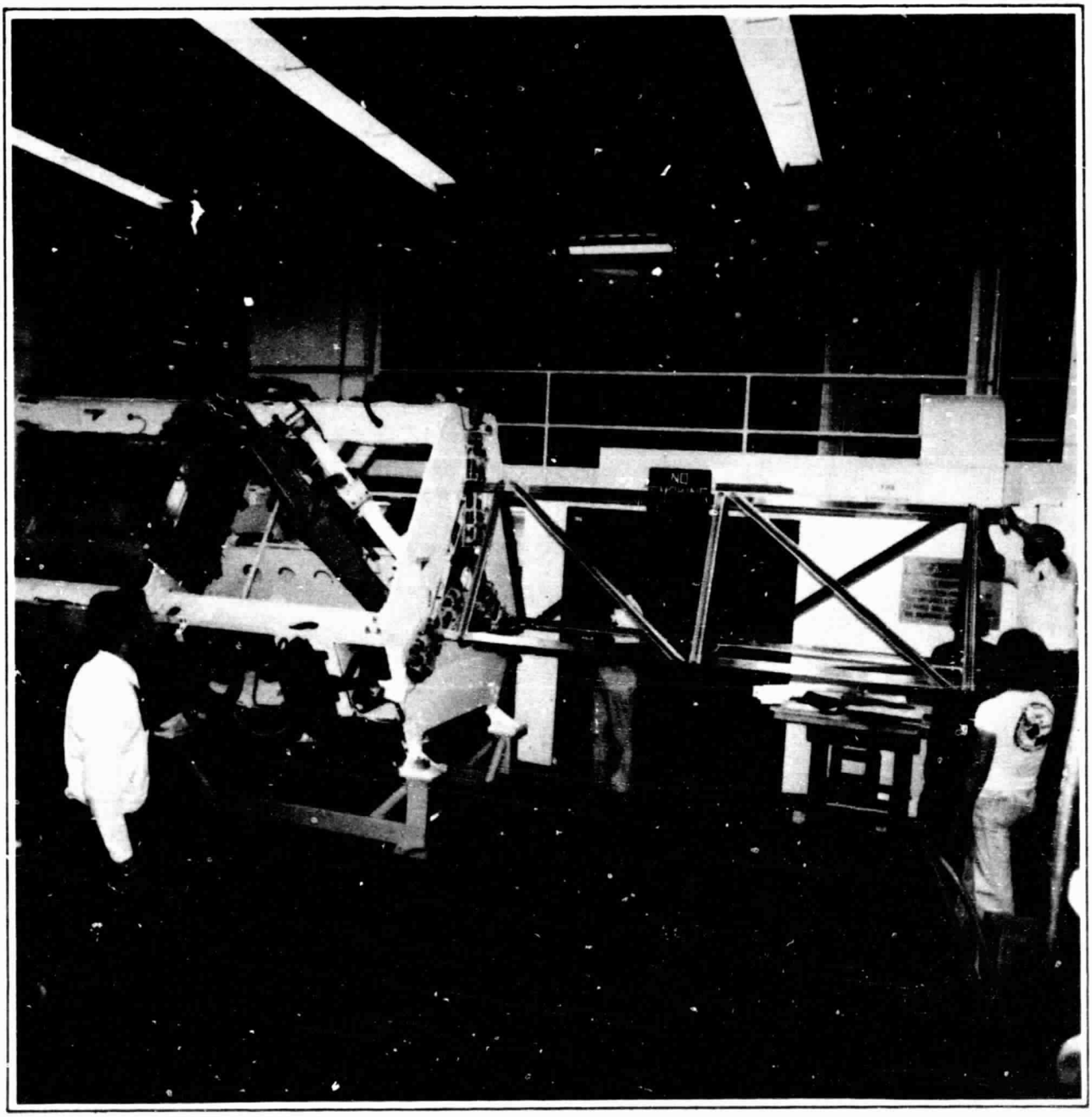
1838-116W

Figure 2-14 Slit and Coiled Cap Material



1838-117W

Figure 2-15 Single Bay Beam Sections



1838-119W

Figure 2-16 Machine Fabricated Two-Bay Beam