

AD-A210 413

ARTECH CORP FALLS CHURCH VA  
PREPARATION AND TESTING OF 2-IN HY-100 STEEL PLATE.(U)  
SEP 81

F/8 11/6

UNCLASSIFIED

ARTECH-J8137

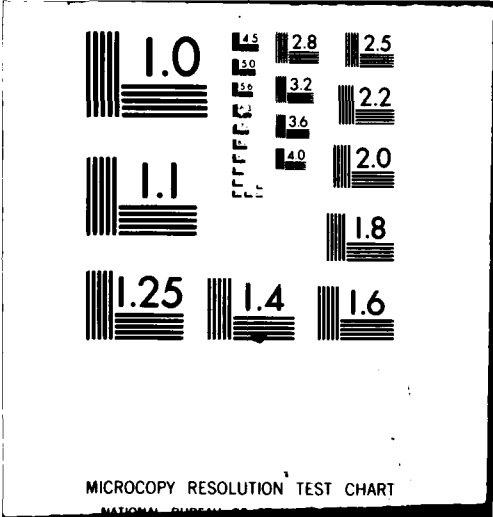
N00014-81-C-2240

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1 of 1  
9/82



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9-82  
DTIC



MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A



**LEVEL II**

12 fw

ARTECH CORP. 2901 Telestar Court Falls Church, Virginia 22042 (703) 560-3292

AD A110413

PREPARATION AND TESTING  
OF 2-IN HY-100 STEEL PLATE  
(Unclassified)

September 2, 1981

DTIC  
SELECTED  
FEB 2 1982  
H

Prepared for  
NAVAL RESEARCH LABORATORY  
Washington, D. C. 20375  
Code 6380 (F. J. Loss)

Contract No. N00014-81-C-2240

DTIC FILE COPY

ARTECH ~~NO~~ J8137

406367

Approved for public release; distribution unlimited

82 02 02 062

PREPARATION AND TESTING  
OF 2-IN HY-100 STEEL PLATE  
(Unclassified)

*1/2 - 2-in. thick of this material to*

I. Objective: To assist NRL in the procurement of HY-100 steel plate (2" thick) from various suppliers and to determine tensile and assist in the determination of dynamic tear properties of material provided by NRL.

II. Work Performed: ARTECH CORP. technical personnel have conferred with NRL Code 6380 personnel and provided consultation services in the procurement of 2-inch HY-100 plates from various suppliers. Continuous liaison with the suppliers has been maintained to assure conformance with all applicable specifications.

Accession For	
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Justification	
By	
Distribution/	
Availability Codes	
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ARTECH CORP. has determined tensile properties of material provided by NRL. The original source of this material was Heat #1, Phoenix Steel Corp. The results are presented below:

TENSILE PROPERTIES  
HY-100

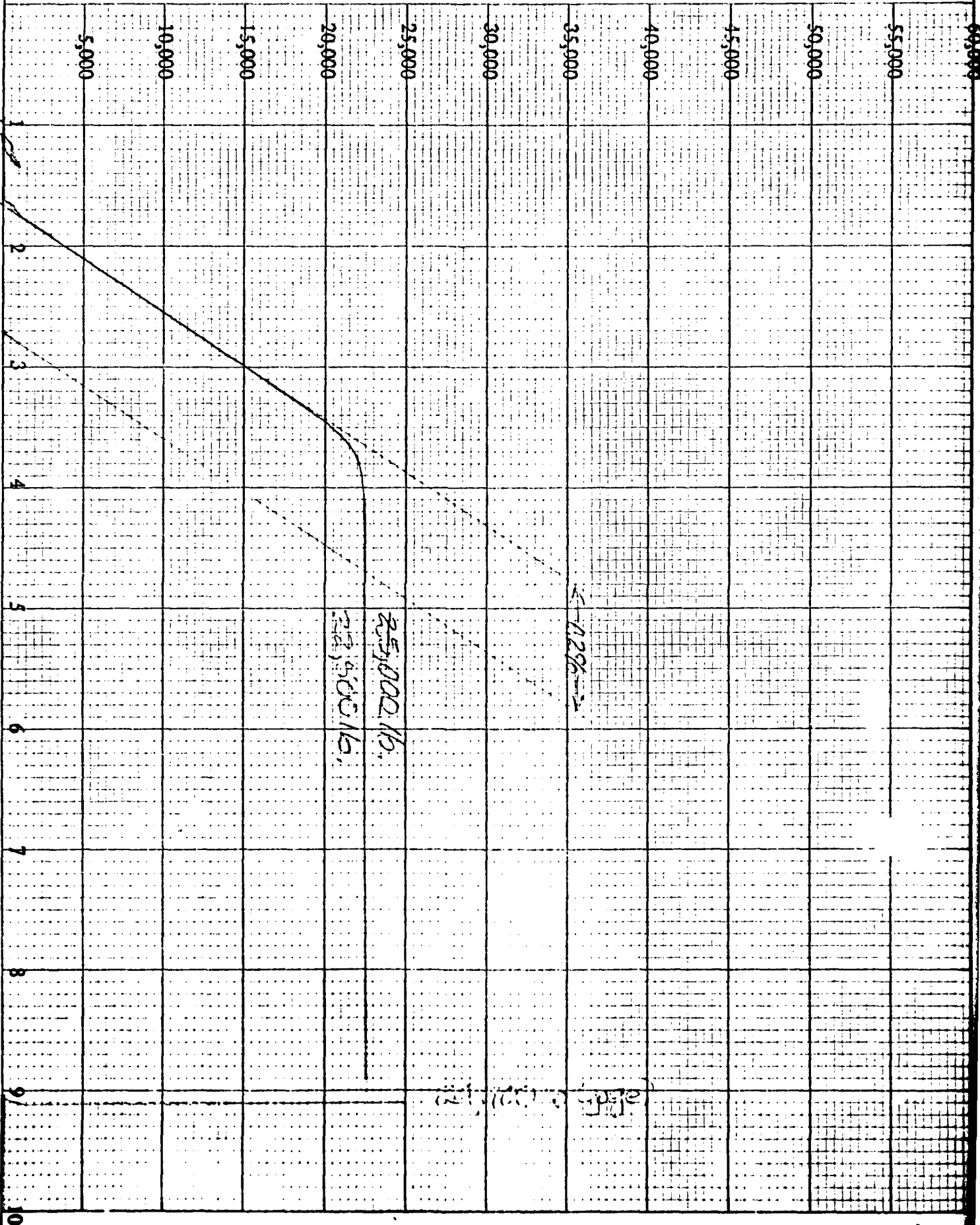
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Specimen Number	Cross Sectional Area, in. <sup>2</sup>	Yield Str. 0.2% Offset kpsi	Ultimate Ten. Str. kpsi	Elongation in 2.0, %	Reduction in Area, %
T1	0.1985	113.3	124.4	23.4	72.5
T2	0.1974	112.0	124.3	22.7	72.5
T3	0.1971	111.9	123.6	22.9	72.0
T4	0.1982	111.0	123.4	23.1	70.8

The above properties are considered normal and satisfactory with respect to intended use. Standard ASTM-E8, .505 tensile specimens have been utilized. Individual charts pertaining to the above tests are presented in the following pages.

Test No. 11 Size 0.020 in. At 1000 lb. Yield Point Lbs. Sq. In. 13,500 Ultimate Str. Lbs. Sq. In. 13,500  
 Elongation } In. 2.0 Inches 2.0 Per Cent Elongation 25.5 Per Cent Reduced Area

LOAD IN POUNDS



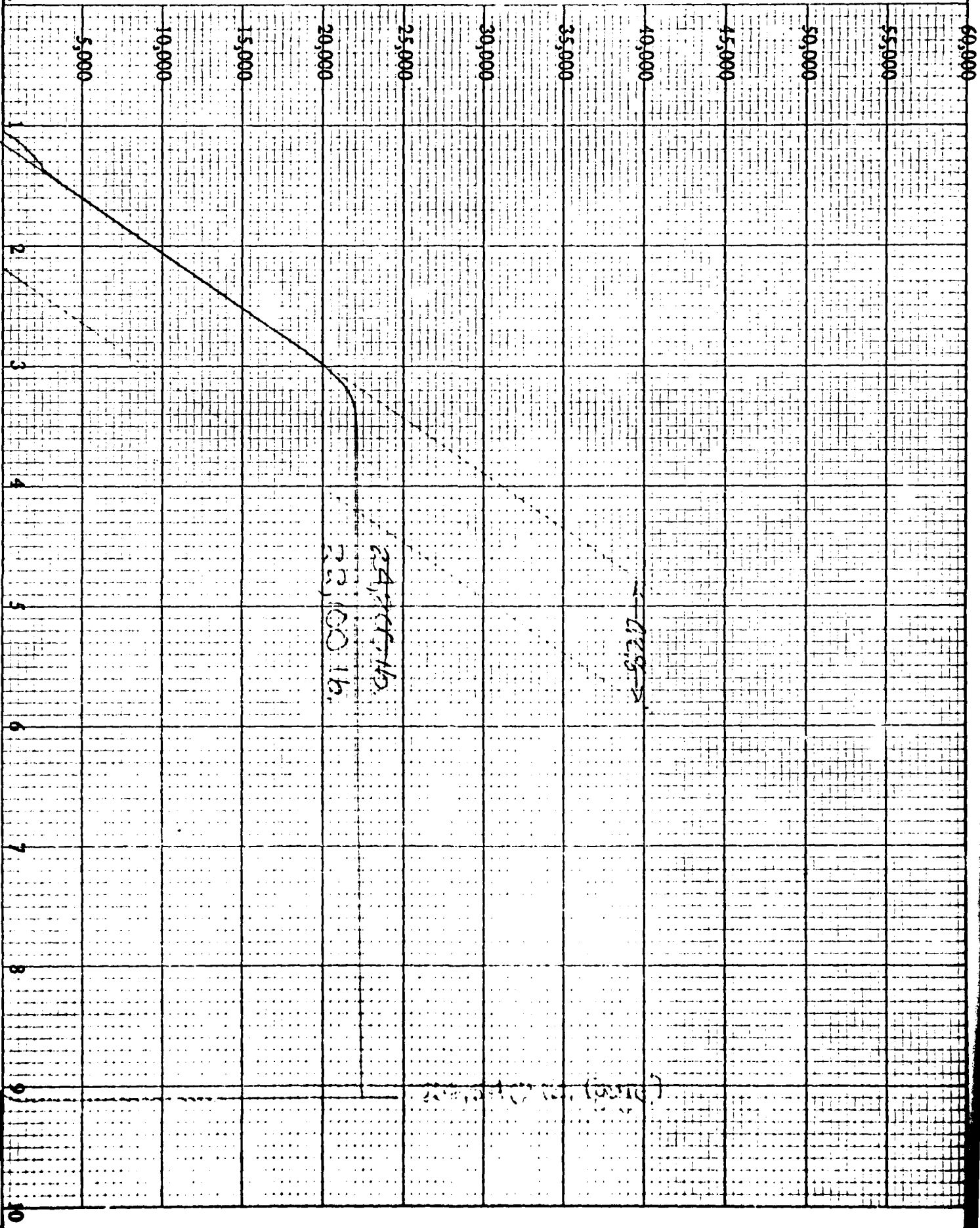
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ELONGATION-COMPRESSION

TINUS OLSEN TESTING MACHINE CO

Test No. 12 Size 0.1250 A. B. C. D. Yield Point Lbs. Sq. In. 11,000 Ultimate Str. Lbs. Sq. In. 124,300  
 Elongation In. 2.0 Inches 2.2 Per Cent Elongation 22.0 Per Cent Reduced Area       
 Compression )

LOAD IN POUNDS



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ELONGATION-COMPRESSION

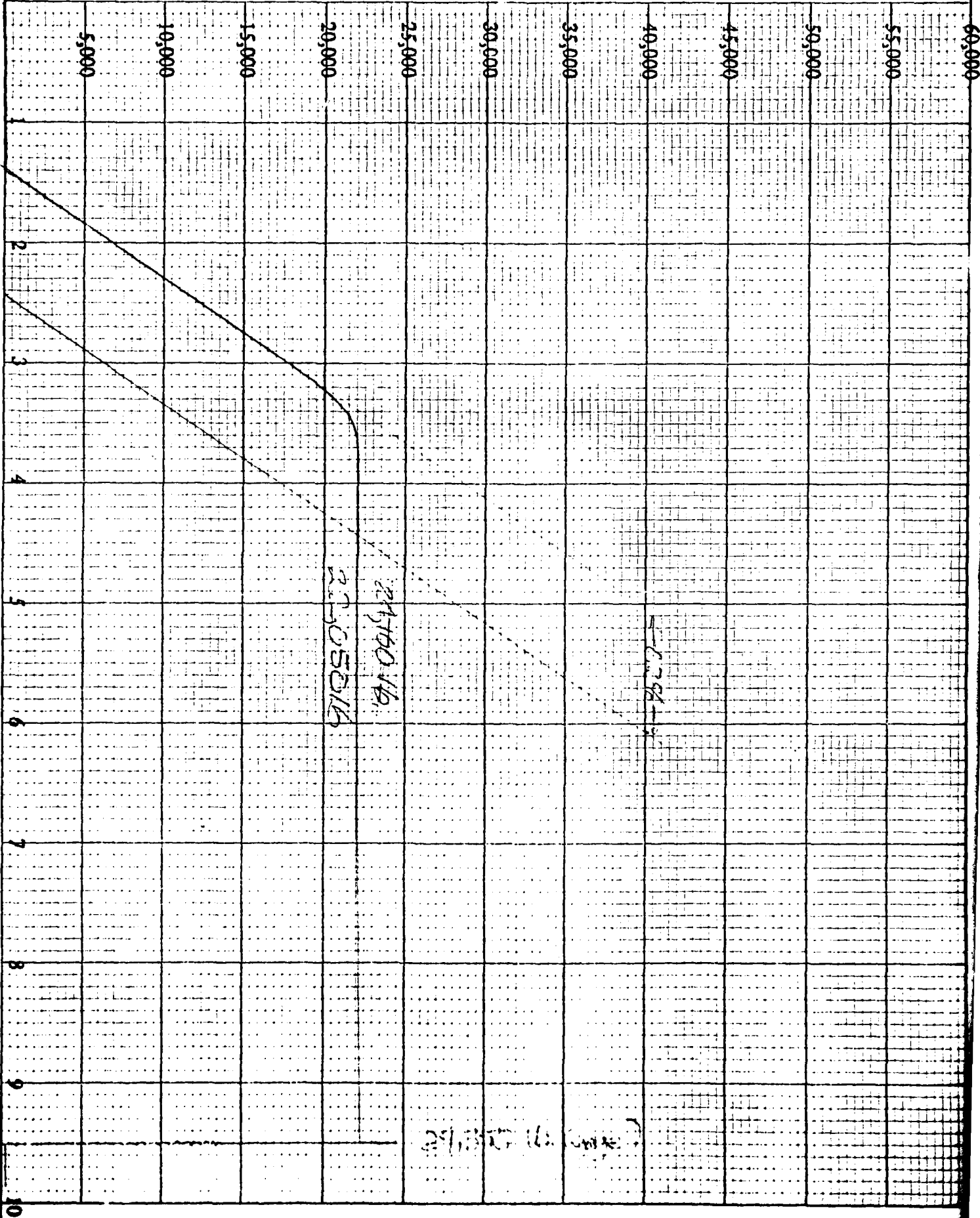
TINIUS OLSEN TESTING MACHINE CO.

Test No. 13 Size 20 Area 3.14 Yield Point Lbs. Sq. In. 11,100 Ultimate Str. Lbs. Sq. In. 17,500  
 Elongation In. 2.0 Inches 2.0 Per Cent Elongation 7.3 Per Cent Reduced Area ...

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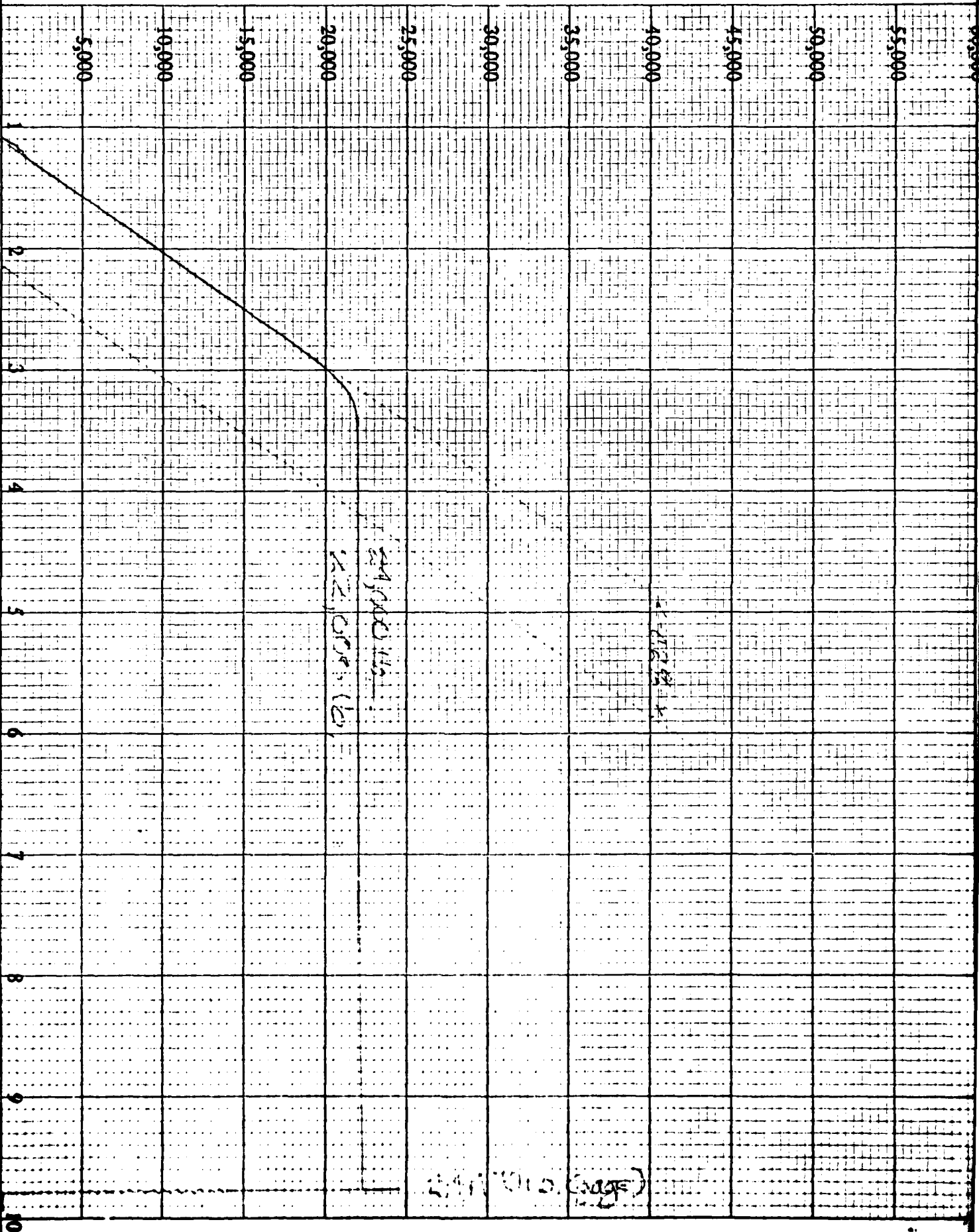
ELONGATION-COMPRESSION



TINUS OLSEN TESTING MACHINE CO

Test No. 14 Size 0.502 in Area 0.157 in<sup>2</sup> Yield Point Lbs. Sq. In. 111,000 Ultimate Str. Lbs. Sq. In. 125,450  
 Elongation } In. 2.0 Inches 23.1 Per Cent. Elongation 6.8 Per Cent. Reduced Area .....  
 Compression }

LOAD IN POUNDS



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ELONGATION-COMPRESSION

TINIUS OLSEN TESTING MACHINE CO

2.0 in. (edge)

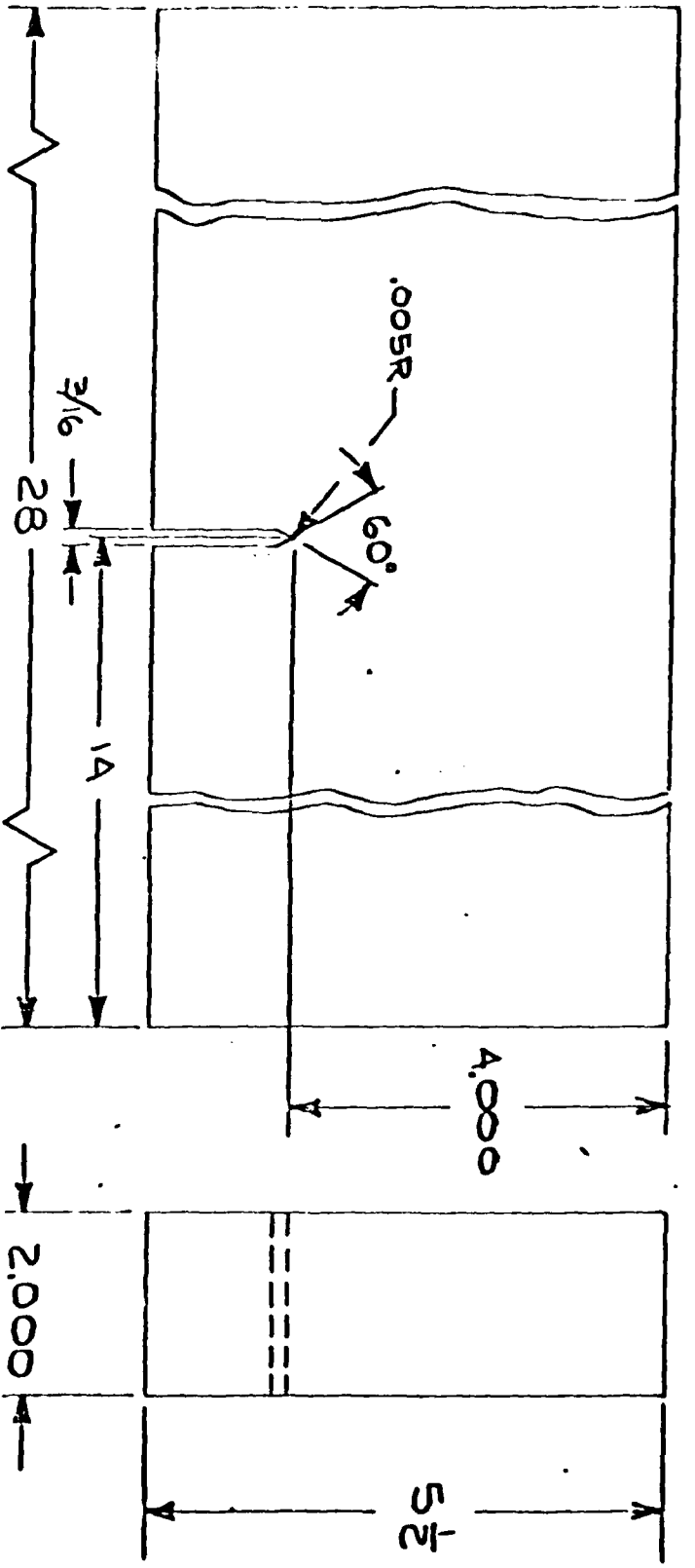


ARTECH CORP. has provided dynamic tear specimens for testing at NRL as follows:

8 - 2" Dynamic Tear Specimens per ARTECH  
Drawing #100020S

12 - 5/8" Dynamic Tear Specimens per ASTM  
E604

III. Status: All work required by this contract has been completed and delivered.



- NOTES:
- (1) BLANKS MAY BE SAW CUT BEFORE MACHINING OR ENTIRE SECTION OF WELDMENT COULD BE MACHINED TO REQUIRED THICKNESS.
  - (2) STARTING AT THE TOP SIDE, MACHINE SURFACES AS NOTED
  - (3) AFTER MACHINING TO THICKNESS, SPECIMEN TO BE ETCHED &  $\phi$  OF WELD TO BE MARKED FOR REFERENCE IN CUTTING BLANKS TO SIZE.
  - (4) MACHINE SPECIMENS TO DIMENSIONS SHOWN, SLOT & NOTCH  $\phi$  OF WELD AS INDICATED

FINISH:		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTR NO.		ARTECH CORP.	
APPLICATION		TOLERANCES: FRACTIONS $\pm \frac{1}{32}$ DECIMALS $\pm .010$ ANGLES $\pm 1^\circ$		DR BY <i>JD</i> 5/2/63		2816 Fairfax Drive Falls Church, Virginia	
NEXT ASSY		MATERIAL:		DWG SUP		2-in. DYNAMIC TEAR SPECIMEN	
USED ON				CHK. <i>(Signature)</i>			
				ENGR			
				PROJ		SIZE	
				APPD		CODE IDENT NO	
						A	
						SCALE 1/2	
						1000205	
						SHEET 1 OF 1	