

US00D897974S

(12) **United States Design Patent** (10) **Patent No.:** **US D897,974 S**
Taguchi et al. (45) **Date of Patent:** **** Oct. 6, 2020**

(54) **SEMICONDUCTOR WAFER**

FOREIGN PATENT DOCUMENTS

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TW D146040 S 3/2012
TW D167113 S 4/2015

(Continued)

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(57) **CLAIM**

(**) Term: **15 Years**

The ornamental design for a semiconductor wafer, as shown and described.

(21) Appl. No.: **35/506,381**

(22) Filed: **Sep. 5, 2018**

DESCRIPTION

(80) **Hague Agreement Data**

Int. Filing Date: **Sep. 5, 2018**
Int. Reg. No.: **DM/200035**
Int. Reg. Date: **Sep. 5, 2018**
Int. Reg. Pub. Date: **Mar. 8, 2019**

1.-2. Semiconductor wafer

1.1 : Front view

1.2 : Rear view

1.3 : Top plan view

1.4 : Bottom view

1.5 : Right side view

1.6 : Left side view

1.7 : Enlarged view showing a portion of Reproduction 1.2 defined by lines 1.7-1.7 and 1.7'-1.7'

1.8 : Enlarged view showing a portion of Reproduction 1.7 defined by lines 1.8-1.8 and 1.8'-1.8'

1.9 : Enlarged view showing a portion of Reproduction 1.7 defined by lines 1.9-1.9 and 1.9'-1.9'

1.10 : Enlarged view showing a portion of Reproduction 1.7 defined by lines 1.10-1.10 and 1.10'-1.10'

1.11 : Enlarged cross-sectional view along line 1.11 of Reproduction 1.8

1.12 : Enlarged cross-sectional view along line 1.12 of Reproduction 1.9

1.13 : Enlarged cross-sectional view along line 1.13 of Reproduction 1.10

2.1 : Front view

2.2 : Rear view

2.3 : Top plan view

2.4 : Bottom view

2.5 : Right side view

2.6 : Left side view

(30) **Foreign Application Priority Data**

Mar. 29, 2018 (JP) 2018-006854
Mar. 29, 2018 (JP) 2018-006855

(51) **LOC (12) Cl.** **13-03**

(52) **U.S. Cl.**
USPC **D13/182**

(58) **Field of Classification Search**
USPC D13/182, 102; D24/225

(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

D262,962 S * 2/1982 Strumpell D13/182
D632,246 S * 2/2011 Park D13/102

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2.7 : Enlarged view showing a portion of Reproduction 2.2 defined by lines 2.7-2.7 and 2.7'-2.7'

2.8 : Enlarged view showing a portion of Reproduction 2.7 defined by lines 2.8-2.8 and 2.8'-2.8'

2.9 : Enlarged view showing a portion of Reproduction 2.7 defined by lines 2.9-2.9 and 2.9'-2.9'

2.10 : Enlarged view showing a portion of Reproduction 2.7 defined by lines 2.10-2.10 and 2.10'-2.10'

2.11: Enlarged cross-sectional view along line 2.11 of Reproduction 2.8

2.12 : Enlarged cross-sectional view along line 2.12 of Reproduction 2.9

2.13 : Enlarged cross-sectional view along line 2.13 of Reproduction 2.10

1.-2. Designs 1 and 2: each article is a wafer used in the production of photodetectors, or the like; the parts shown in solid lines are parts for which design registration is sought; design 1: reproduction 1.7 is an enlarged view of upper left part of reproduction 1.2; reproduction 1.8 is an enlarged view of upper left part of reproduction 1.7; reproduction 1.9 is an enlarged view of bottom left part of reproduction 1.7; reproduction 1.10 is an enlarged view of upper right part of reproduction 1.7; reproduction 1.11 is an enlarged cross-sectional view in the vertical direction of reproduction 1.8; reproduction 1.12 is an enlarged cross-sectional view in the vertical direction of reproduction 1.9; reproduction 1.13 is an enlarged cross-sectional view in the horizontal direction of reproduction 1.10; design 2: reproduction 2.7 is an enlarged view of upper left part of reproduction 2.2; reproduction of 2.8 is an enlarged view of upper left part of reproduction 2.7; reproduction 2.9 is an enlarged view of bottom left part of reproduction 2.7; reproduction 2.10 is an enlarged view of upper right part of reproduction 2.7; reproduction 2.11 is an enlarged cross-sectional view in the vertical direction of reproduction 2.8; reproduction 2.12 is an enlarged cross-sectional view in the vertical direction of reproduction 2.9; reproduction 2.13 is an enlarged cross-sectional view in the horizontal direction of reproduction 2.10. In the drawings, the dash-dot-dash broken lines are for the purpose of illustrating the boundaries of the claimed design and form no part of the claimed design. The evenly

spaced broken lines are for the purpose of showing portions of the semiconductor wafer and form no part of the claimed design.

1 Claim, 26 Drawing Sheets

(58) **Field of Classification Search**
 CPC B23K 26/0736
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

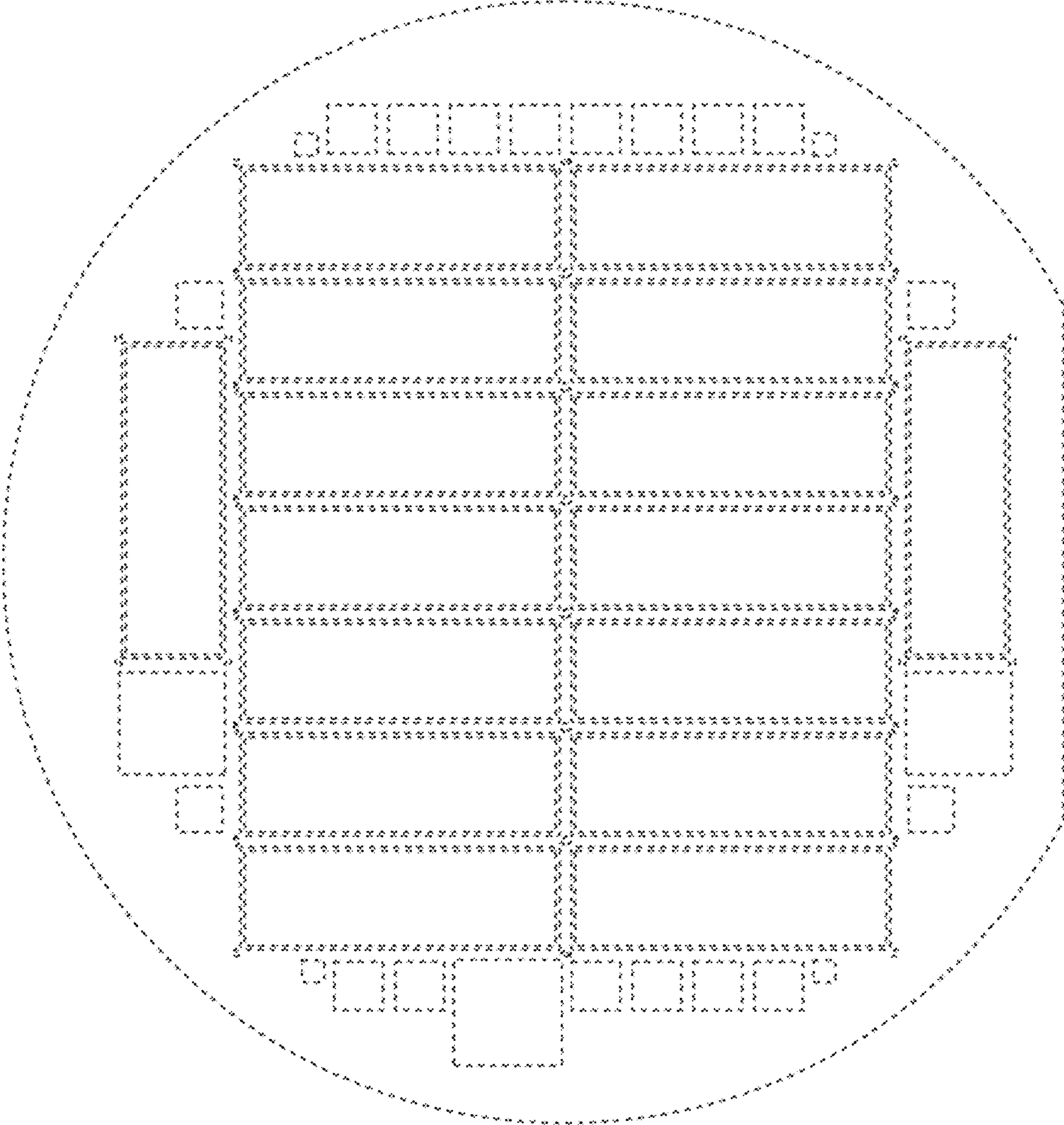
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8,828,260	B2 *	9/2014	Shimoi	B23K 26/0736 216/87
D720,313	S *	12/2014	Flynn	D13/182
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D733,913	S *	7/2015	Ito	D24/225
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D740,439	S *	10/2015	Ito	D24/225
D740,440	S *	10/2015	Ito	D24/225
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D750,800	S *	3/2016	Ito	D24/225
D762,874	S *	8/2016	Ito	D24/225
D784,937	S *	4/2017	Motoyama	D13/182
D785,576	S *	5/2017	Motoyama	D13/182
D786,810	S *	5/2017	Motoyama	D13/182
D789,311	S *	6/2017	Okada	D13/182
D791,091	S *	7/2017	Okada	D13/182
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D836,211	S *	12/2018	Ito	D24/225
D843,011	S *	3/2019	Ito	D24/225
D843,012	S *	3/2019	Ito	D24/225
D843,013	S *	3/2019	Ito	D24/225
D843,594	S *	3/2019	Ito	D24/225
D855,205	S *	7/2019	Ito	D24/225
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D855,210	S *	7/2019	Ito	D24/225

FOREIGN PATENT DOCUMENTS

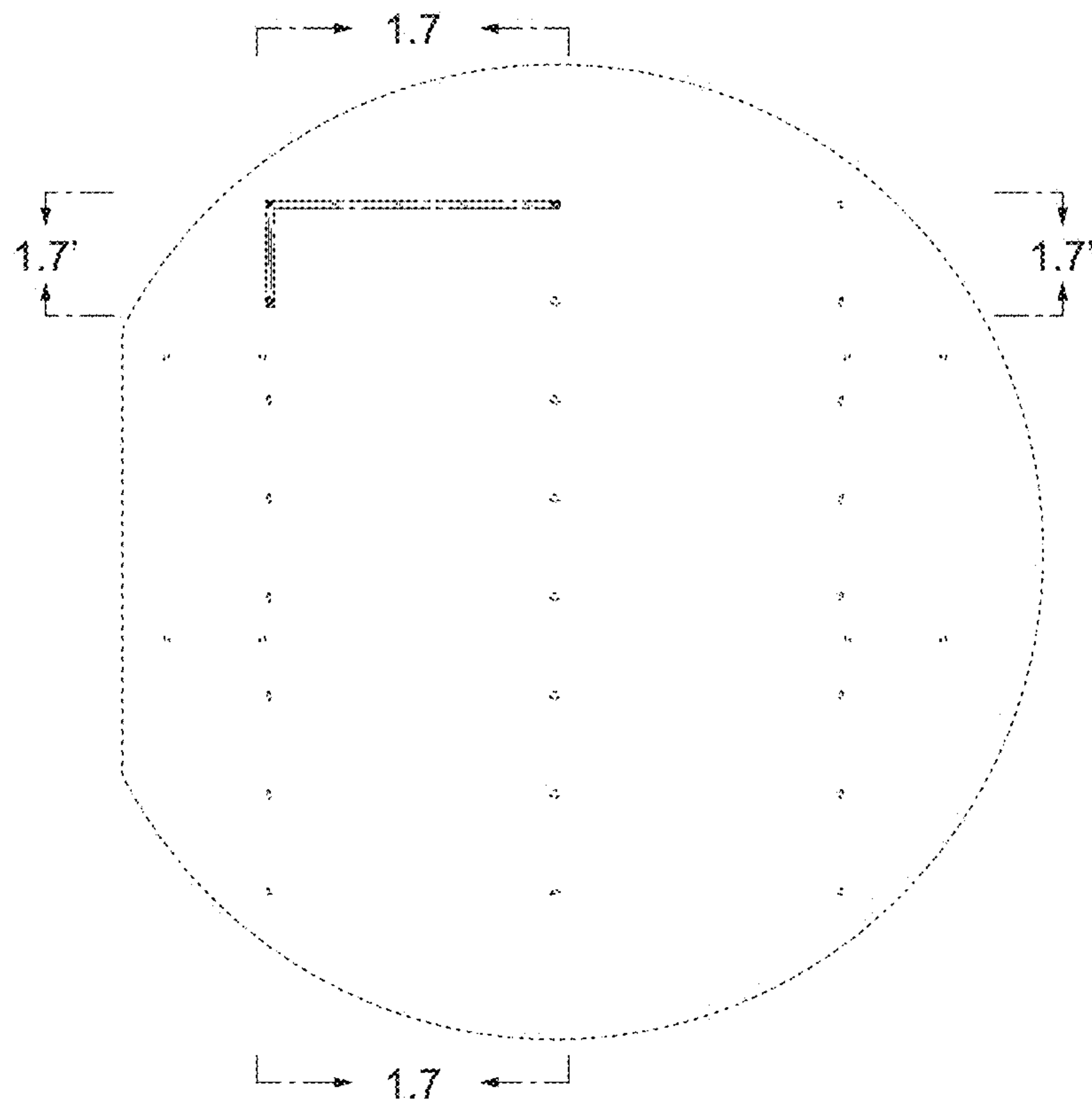
TW	D171960	S	11/2015
TW	D171961	S	11/2015
TW	D171962	S	11/2015

* cited by examiner

1.1



[1.2]



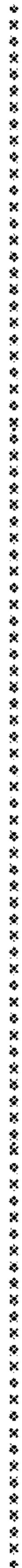
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1.4

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1.5



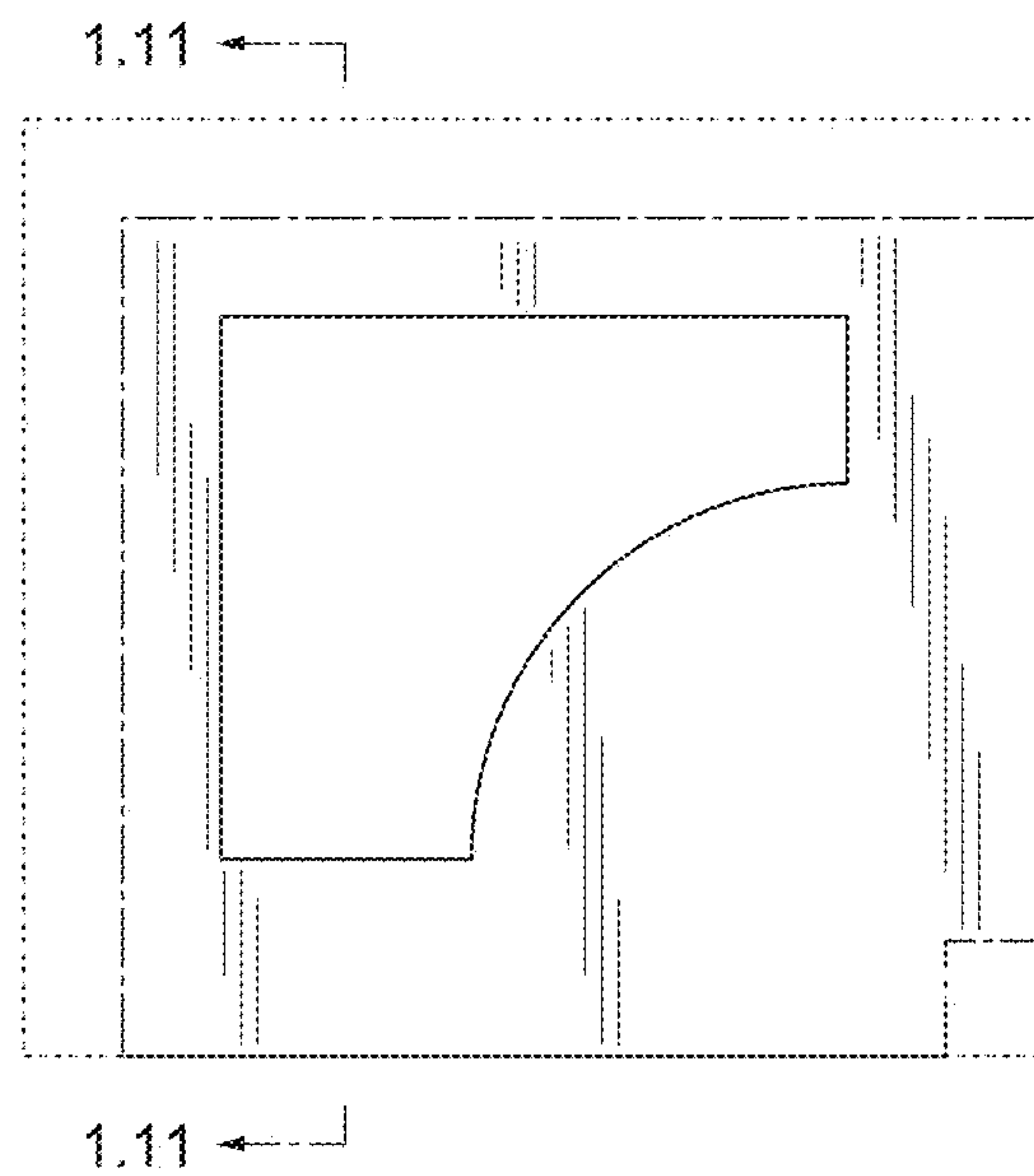
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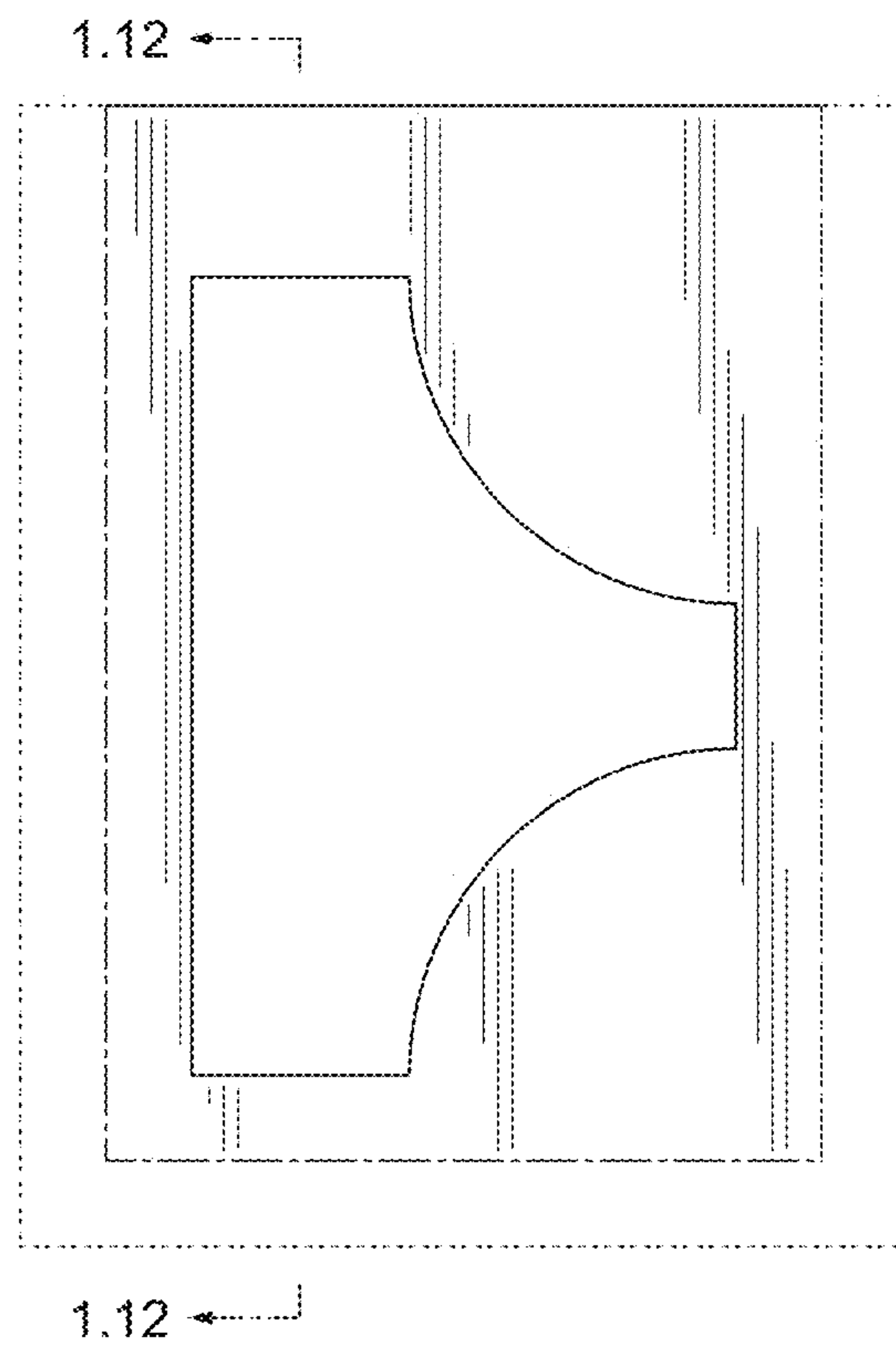
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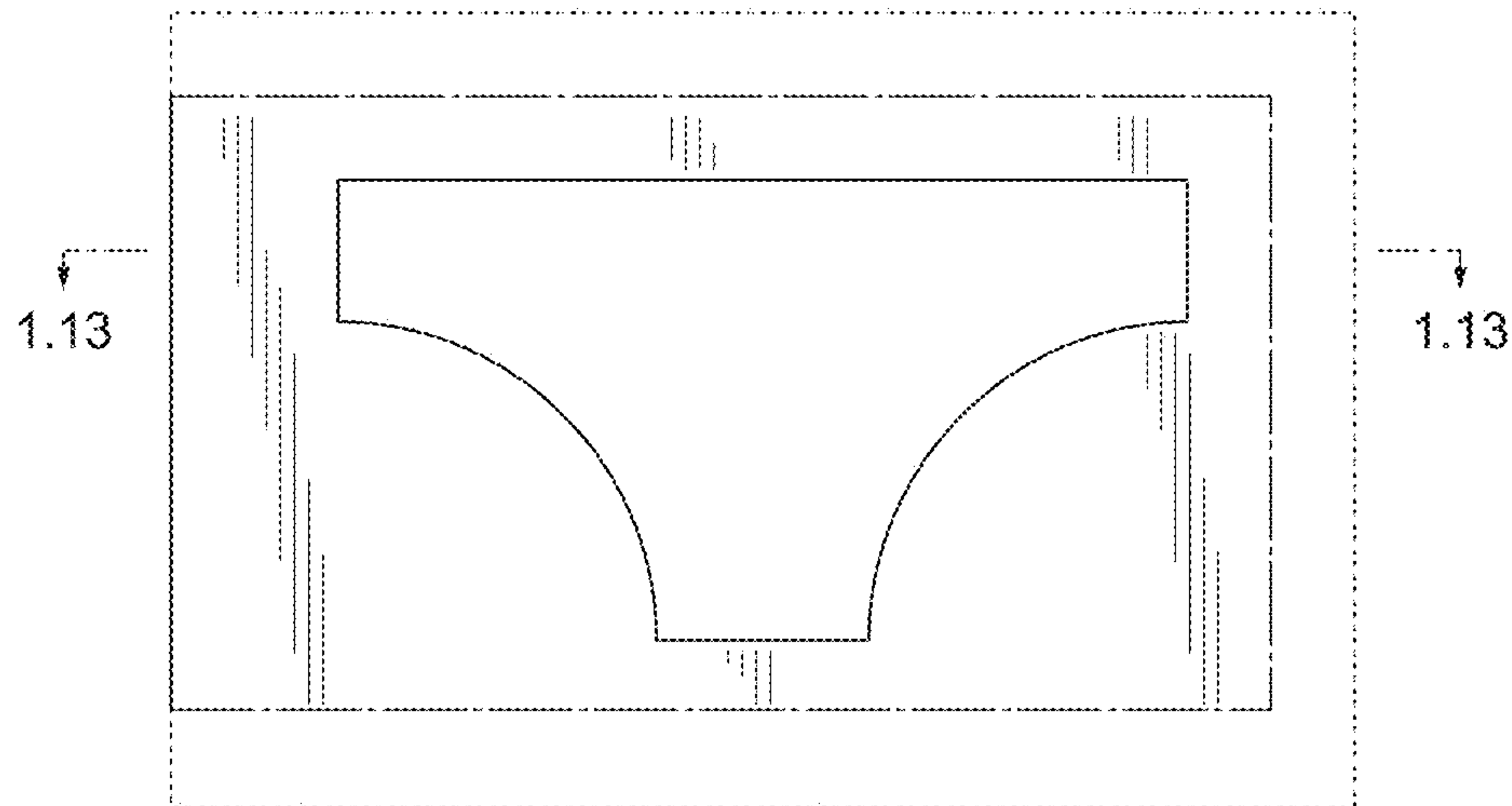
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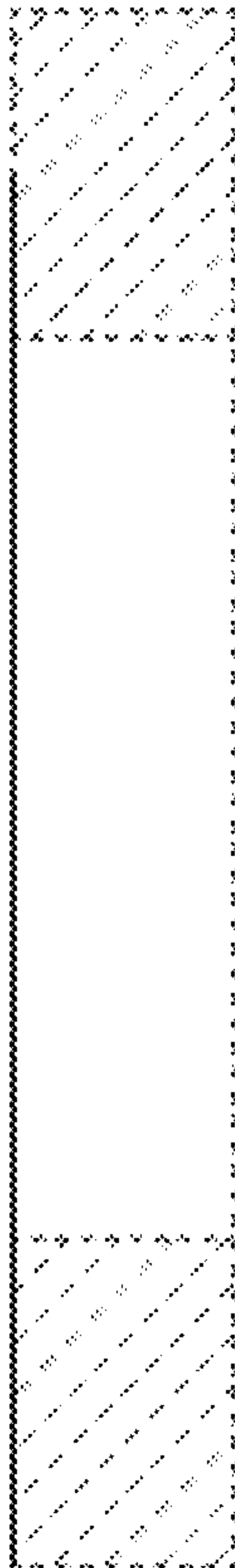
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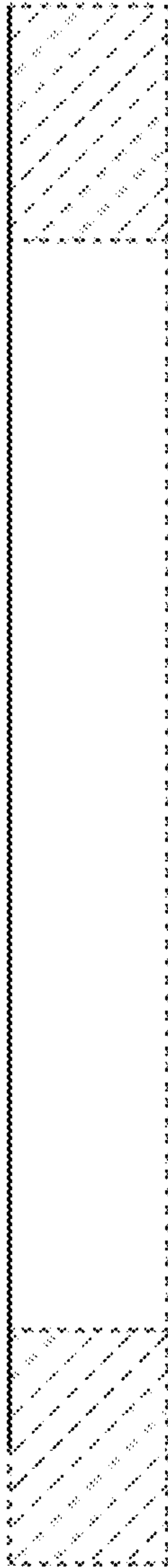
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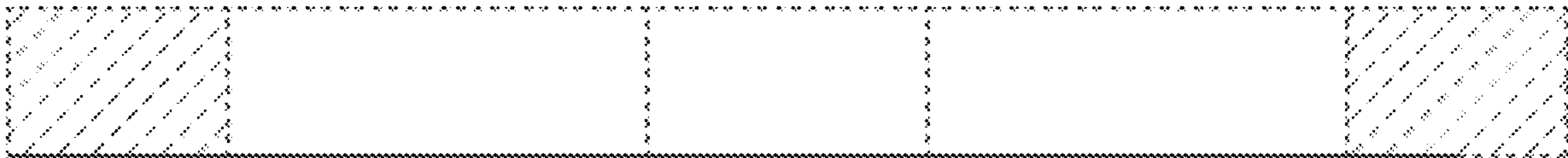
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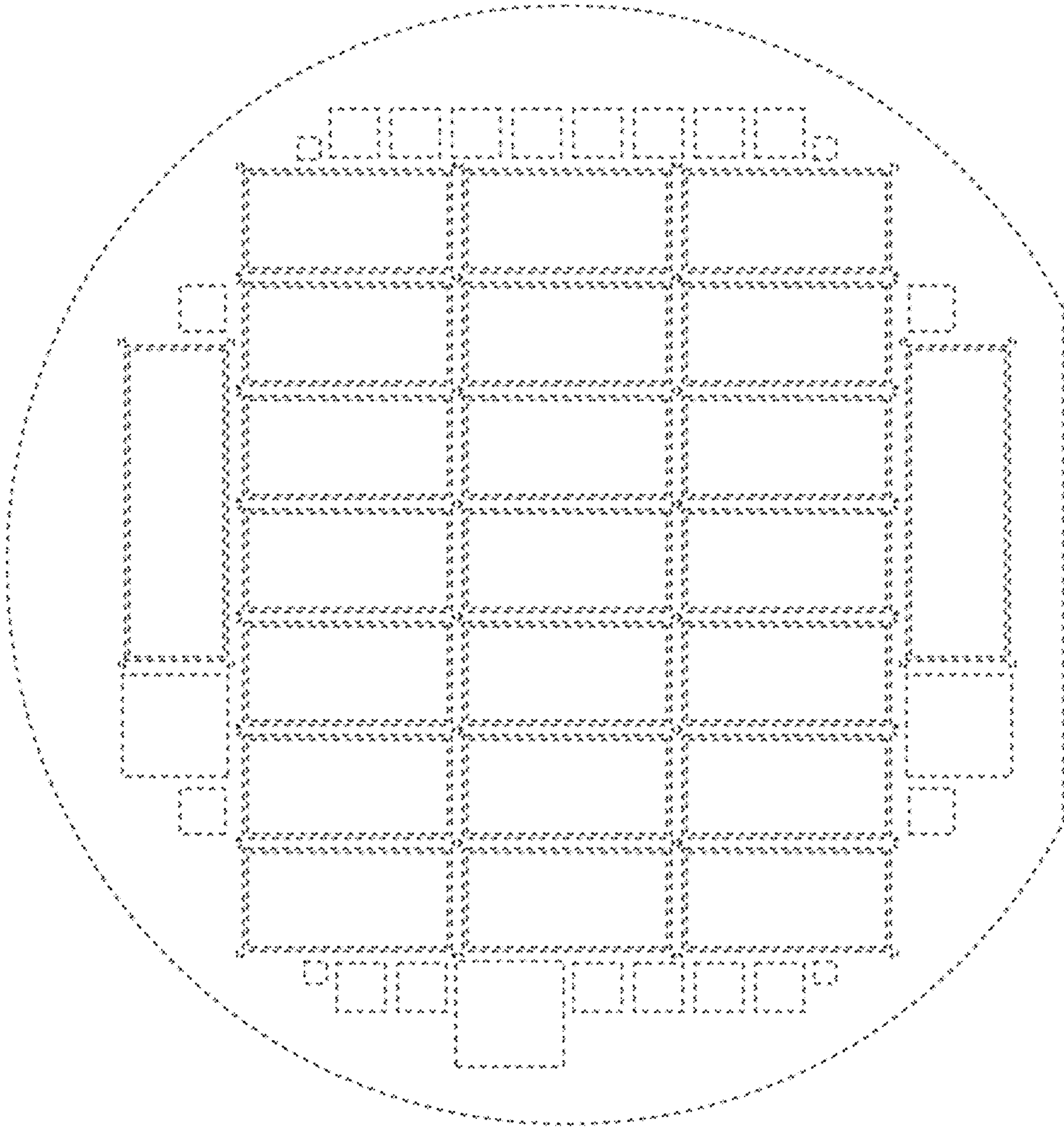
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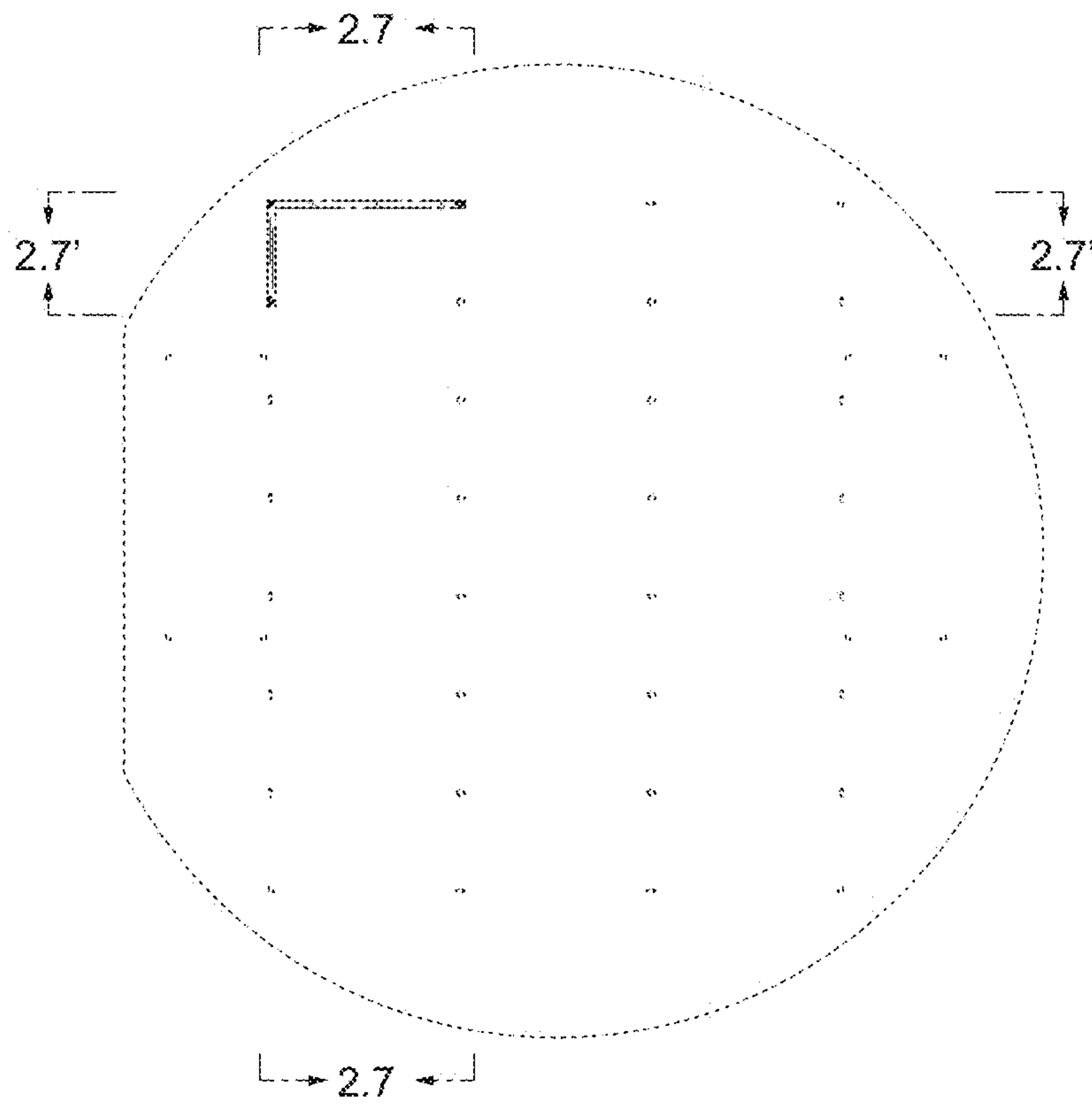
1.13



2.1



[2.2]



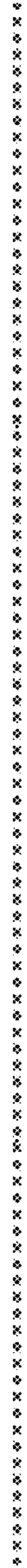
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2.4

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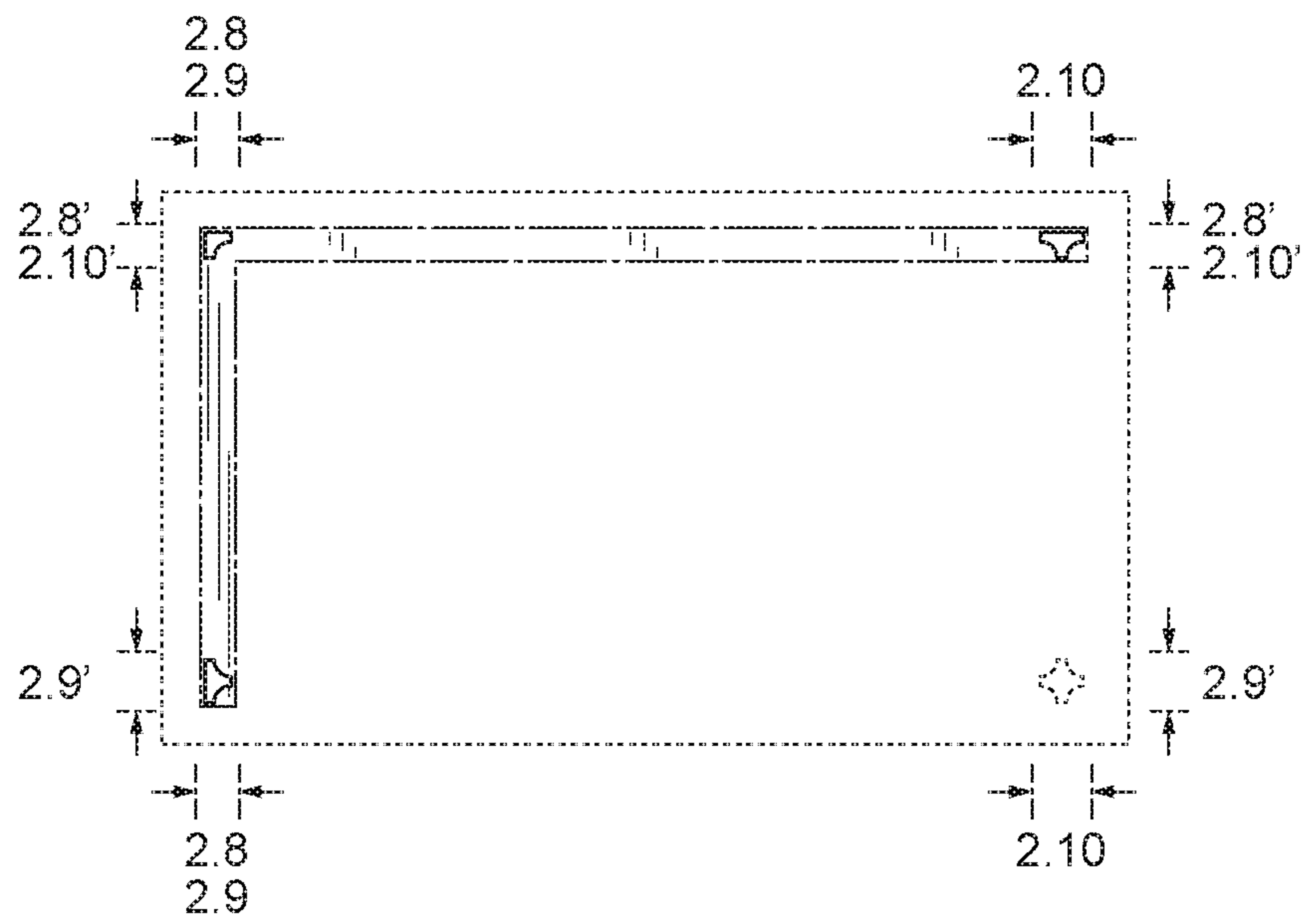
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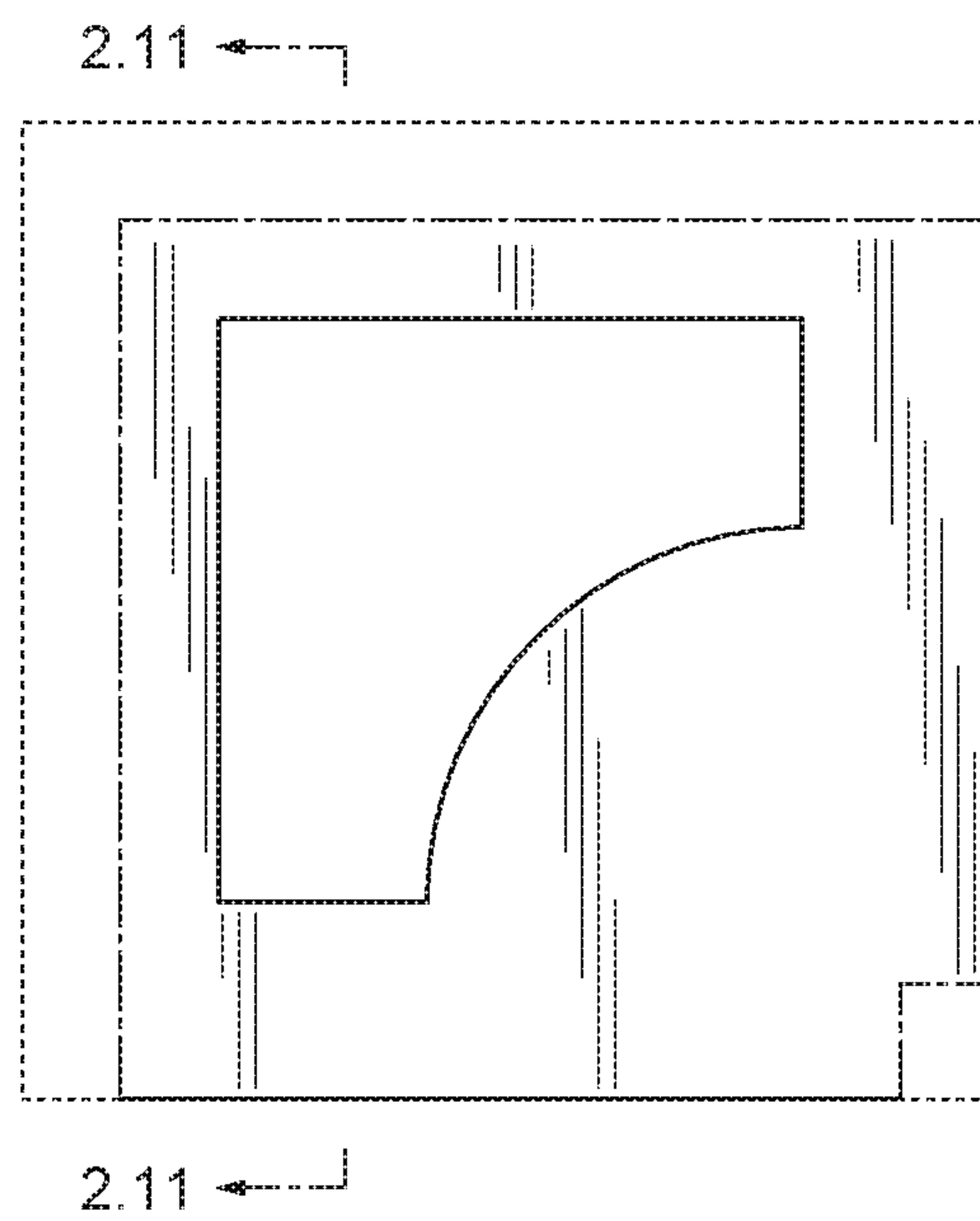
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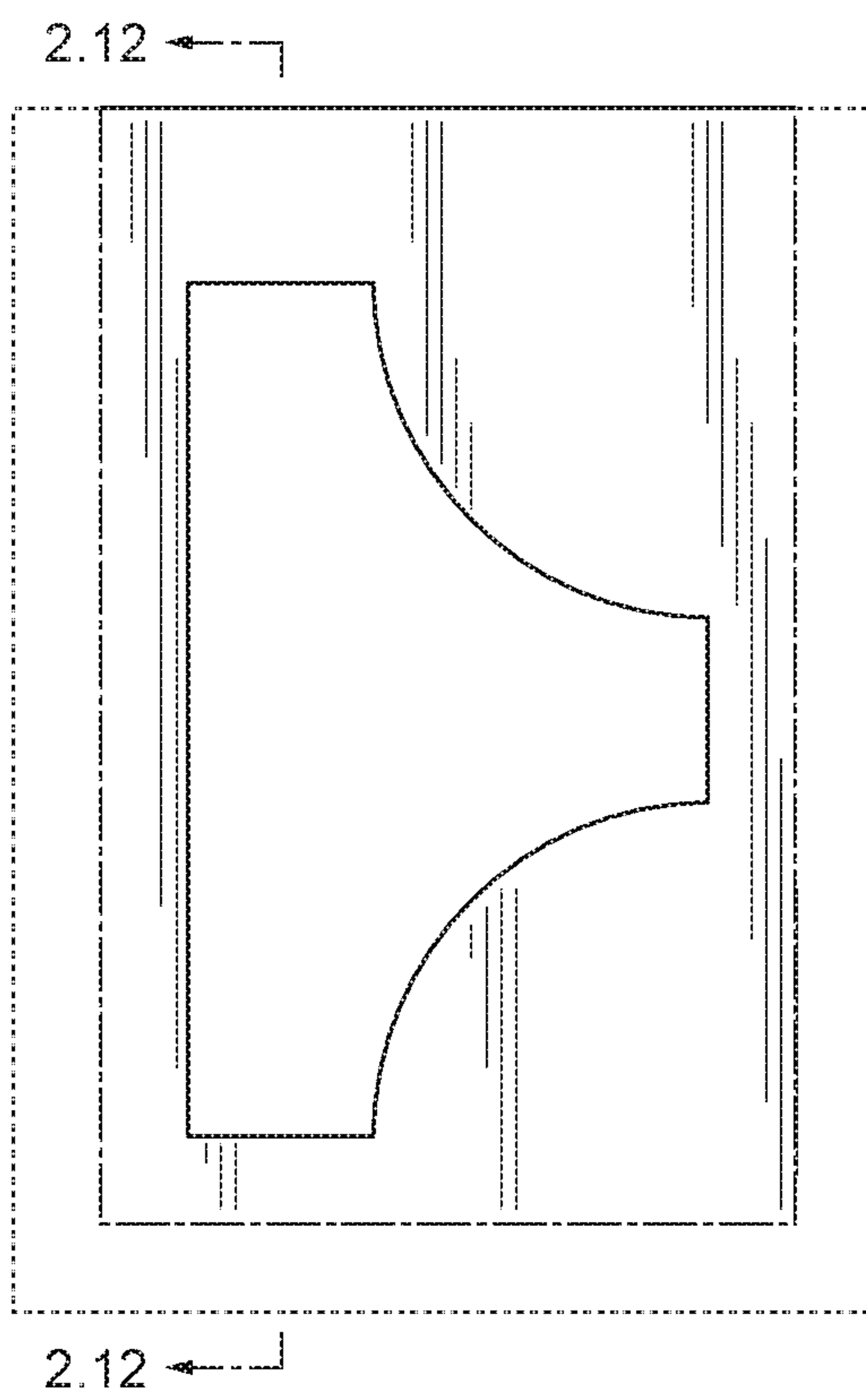
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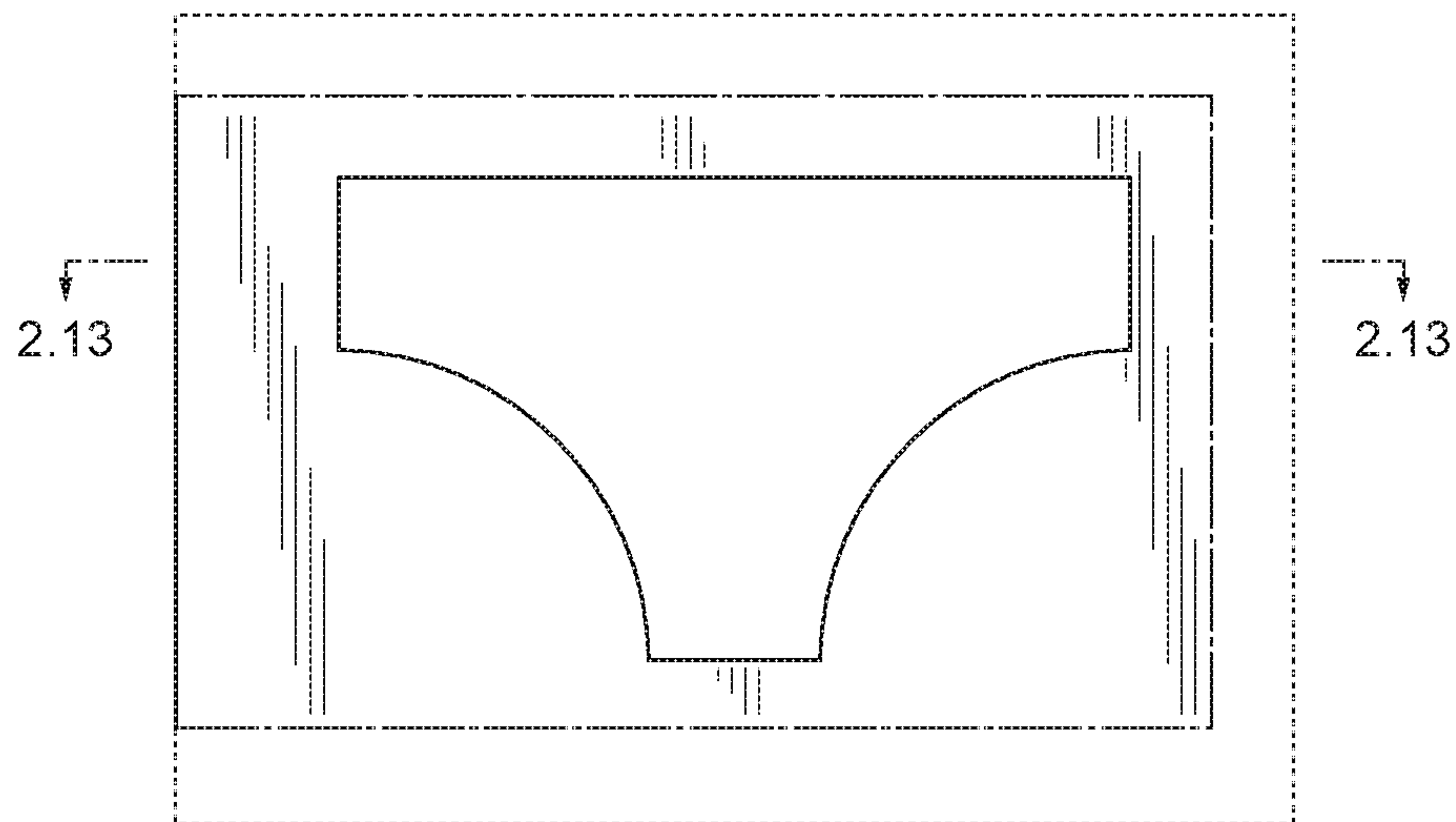
[2.8]



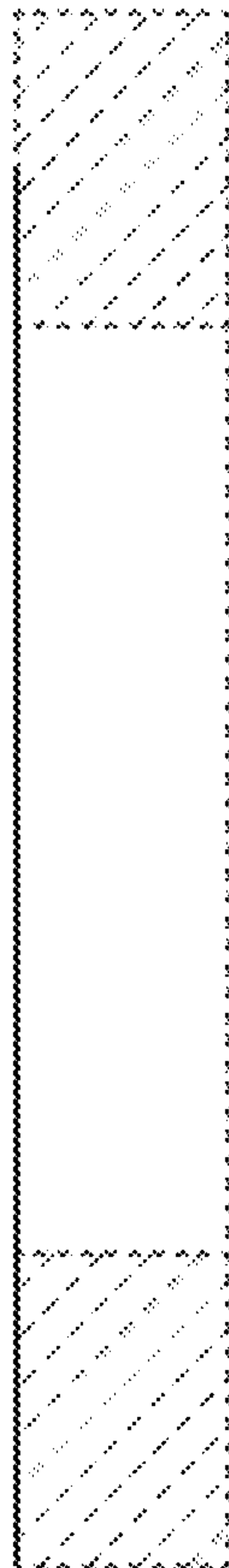
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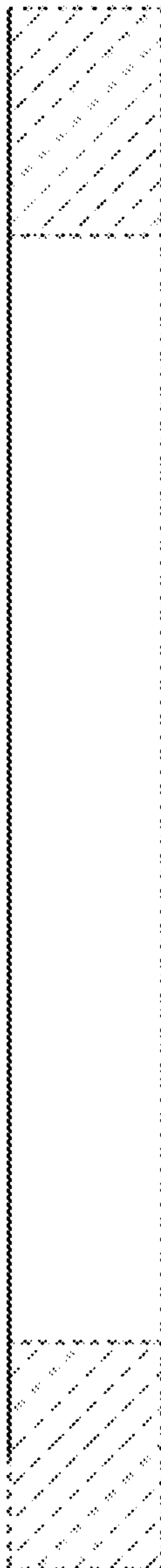
【2.10】



2.11



2.12



2.13

