CENDEK RAILINGS LTD.
TEST REPORT

SCOPE OF WORK
REPORT OF 4 FT. PRIVACY WALL – CENTURY FASCIA MOUNT TESTED IN ACCORDANCE WITH ASTM E935-21, *STANDARD TEST METHODS FOR PERFORMANCE OF PERMANENT METAL RAILING SYSTEMS AND RAILS FOR BUILDINGS*

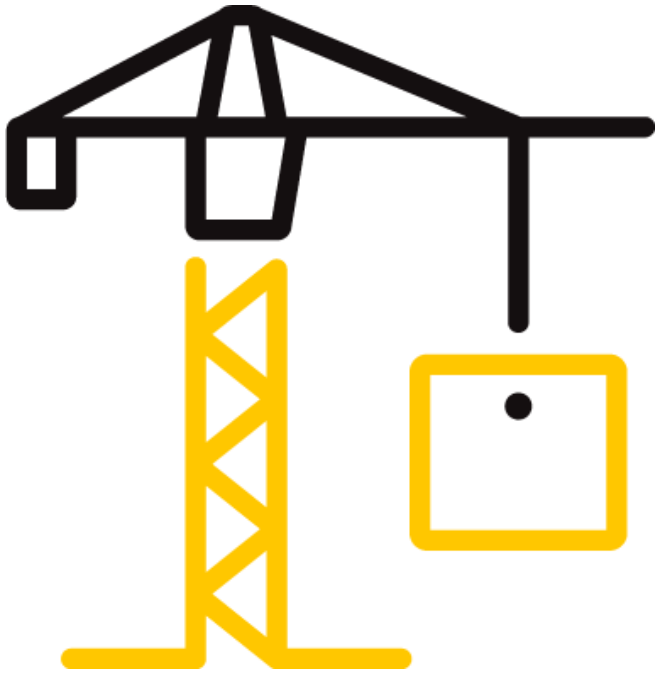
REPORT NUMBER
105626012COQ-005

TEST DATES
06/06/24

ISSUE DATE
06/19/24

PAGES
21

DOCUMENT CONTROL NUMBER
GFT-OP-10c (09/29/20)



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TEST REPORT FOR CENDEK RAILINGS LTD.
Report No.: 105626012COQ-005
Date: 06/19/24

REPORT ISSUED TO
CENDEK RAILINGS LTD.
9685 Agur St.
Summerland, BC, V0H 1Z2
Canada

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by Cendek Railings Ltd., 9685 Agur St., Summerland, BC, V0H 1Z2, Canada to perform testing on their Privacy Wall product in accordance with ASTM E935-21, *Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings.* The scope of the testing as requested by Cendek Railings Ltd. was to assess the ability of the guard system to resist the load requirements of Section 1607.9 of the 2024 IBC and R301.5 of the 2024 IRC. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at the Intertek test facility in Coquitlam, BC, Canada on December 6, 2023.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY:	Chris Chang, P.Eng.	**REVIEWED BY:**	Baldeep Sandhu
TITLE:	Sr. Technician – Building & Construction	**TITLE:**	Manager – Building & Construction
SIGNATURE:	 EGBC Permit No.: 1000953	**SIGNATURE:**	
DATE:	06/19/24	**DATE:**	06/19/24

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SECTION 2
SUMMARY OF TEST RESULTS

SYSTEM DESCRIPTION	TEST	PASS/FAIL
Privacy Wall – Century Fascia Mount (4 ft. o/c span)	In-fill Load	Pass
	Uniform Load	Pass
	Horizontal – Mid-Span Concentrated Load	Pass
	Horizontal – Adjacent to Post Concentrated Load	Pass
	Horizontal – Top of Post Concentrated Load	Pass

Refer to Appendix B for photos of testing.

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SECTION 3
TEST METHOD

The guard specimen was evaluated in accordance with the following:

> **ASTM E935-21,** *Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings.*

The required test loads were based on the Specified Loads per the following Building Code articles with the Safety Factors applied as indicated in this report.

2024 International Building Code (IBC)

- Section 1607.9 *Loads on Handrails, Guards, Grab Bars and Seats*

2024 International Residential Code (IRC)

- R301.5 *Live Load*

SECTION 4
MATERIAL SOURCE

The client submitted the guard system to the Evaluation Center on April 8, 2024 (Coquitlam ID# VAN2404081327-001). The sample was received in good condition and was suitable for testing unless noted otherwise. The sample was not independently selected for testing.

SECTION 5
EQUIPMENT

Calibration of test equipment was performed by Intertek B&C in accordance with ISO 17025 requirements.

ASSET #	DESCRIPTION	MODEL	CAL DUE DATE
P60692	Artech 5k lb S-Type Load Cell	20210-5k	01/15/25
P60610	T&D Temperature and Humidity Indicator	TR-72Ui	08/30/24
P60624	Extech Stopwatch	365515	12/15/24
52650	Mitutoyo 8 in. Digital Caliper	CD-8	06/22/24
P60494	Stanley Tape Measure	FatMax	10/19/24

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SECTION 6
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Frank Gadea-Lopez	Intertek B&C
Chris Chang	Intertek B&C

Note: The above observer(s) witnessed part of the test program.

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SECTION 7
TESTING PROCEDURE

The evaluation was conducted in accordance with the testing procedures of ASTM E935-21, *Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings.* The test specimen was loaded at a rate to achieve the specified loads between 10 seconds and 5 minutes. The specified test loads were held for one minute before the load was released. Testing was conducted with reference to the specified load requirements of the following:

IN-FILL LOAD TEST

The in-fill load test was conducted in accordance with Section 1607.9.1.2 *Guard Component Loads* of the 2024 IBC and Table R301.5 *Minimum Uniformly Distributed Live Loads* of the 2024 IRC. Testing was conducted with reference to Section 4.5.1.2 *Guard System Component Loads* of ASCE/SEI 7-22, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* with a safety factor of 2.5. A load of 125 lbs was applied using a 1 square foot block normal to the in-fill. After release of the load, the system was evaluated for failure, any evidence of disengagements of any component and/or visible cracking from any component.

UNIFORM LOAD TEST

The uniform load test was conducted in accordance with Section 1607.9.1.1 *Uniform Load* of the 2024 IBC and Table R301.5 *Minimum Uniformly Distributed Live Loads* of the 2024 IRC. Testing was conducted with reference to Section 4.5.1.1 *Uniform Load* of ASCE/SEI 7-22, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* with a safety factor of 2.5. The Privacy Board at 42 in. height was subjected to a uniform load of 125 plf applied horizontally. The load was applied using quarter point loads. After release of the load, the system was evaluated for failure, any evidence of disengagements of any component and visible cracks in any component.

CONCENTRATED LOAD TEST

The concentrated load tests were conducted in accordance with Section 1607.9.1 *Concentrated Load* of the 2024 IBC and Table R301.5 *Minimum Uniformly Distributed Live Loads* of the 2024 IRC. Testing was conducted with reference to Section 4.5.1 *Handrail and Guardrail Systems* of ASCE/SEI 7-22, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* with a safety factor of 2.5. An individual Privacy Board at 42 in. height was subjected to three (3) separate horizontal tests where a concentrated load of 500 lbs was applied:

- horizontally at the mid-span of the Privacy Board,
- horizontally at the Privacy Board adjacent to the post connection to verify the connection capacity, and
- horizontally on the post at 42 in. height.

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After release of the load, the system was evaluated for failure, any evidence of disengagements of any component and/or visible cracking from any component.

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Report No.: 105626012COQ-005
Date: 06/19/24

SECTION 8
TEST SPECIMEN DESCRIPTION

The sample was identified as the following:

TABLE 1. RAILING CONFIGURATION

PART NAME	PART NUMBER	QTY	PART DIMENSIONS				REPORTED MATERIAL
			LENGTH	WIDTH	HEIGHT	NOMINAL THICKNESS	
4 FT. PRIVACY WALL – CENTURY FASCIA MOUNT							
Post	N/A	2	2.53 in.	2.53 in.	71.6 in.	0.09 in.	Aluminum
Century Fascia Bracket	D000610	2	4.75 in.	4.38 in.	3.88 in.	0.31 in.	Aluminum
Infill – Privacy Board	N/A	12	5.38 in.	46.5 in.	0.63 in.	0.08 in.	Aluminum

Note 1: For detailed drawings of the test samples and components, refer to Appendix C.

Note 2: The supporting structure attachment was outside the scope of this evaluation, and is subject to evaluation and approval by the Engineer of Record and the Authority Having Jurisdiction (AHJ). The assemblies were attached to a rigid test support using steel plates with four (4) 3/8 in. Grade 5 bolts on each post.

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SECTION 9
TEST RESULTS

A full set of test results is included in Appendix A.

SECTION 10
CONCLUSION

Intertek Testing Services NA Ltd. (Intertek) has conducted testing for Cendek Railings Ltd. on the Privacy Wall product per ASTM E935-21, *Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings.* The scope of the testing as requested by Cendek Railings Ltd. was to assess the ability of the guard system to resist the loads as prescribed in the following building code articles:

2024 International Building Code (IBC)

- Section 1607.9 *Loads on Handrails, Guards, Grab Bars and Seats*

2024 International Residential Code (IRC)

- R301.5 *Live Load*

The Cendek Railings Ltd. Privacy Wall product identified and evaluated in this report has met the load requirements of the above criteria. Overall compliance with the Building Codes must be evaluated and approved by the Engineer of Record and Authority Having Jurisdiction.

The conclusions of this test may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

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SECTION 11

APPENDIX A – TEST DATA (2 PAGES)

Company	Cendek Railings Ltd.	Technician(s)	Frank Gadea-Lopez / Chris Chang
Project No.	G105616012	Reviewer	Baldeep Sandhu
Models	4 ft. o/c	Start/End Date	June 6, 2024
Product Name	Privacy Wall	Sample ID	VAN2404081327-001
Standard	**2024 IBC/IRC**		

Test Data Package

Table of Contents

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Test:	**Loads on Guards**			Project:	G105626012
Date:	6-Jun-24			Eng/Tech:	Frank Gadea-Lopez / Chris Chang
Client:	Cendek Railings Ltd.			Reviewer:	Baldeep Sandhu
Product:	**Privacy Screen - Century Fascia Mount**			Location:	Coquitlam, BC, Canada
Post Spacing:	4.00 ft	1.22 m			
Height of Guard:	42.1 in	1070 mm			
Opening in Guard:	0.38 in	10 mm	(between slats)		
	2.38 in	60 mm	(under bottom rail)		

Method: ASTM E2353-21, *Standard Test Methods for Performance of Glazing in Permanent Railing Systems, Guards, and Balustrades*
2024 International Building Code (IBC)
2024 International Residential Code (IRC)

Safety Factor: 2.50

Equipment: Artech 5000 lbf Load Cell (Intertek ID# P60692, cal due January 15, 2025)
T&D TR-72Ui Temperature and Humidity Logger (Intertek ID# P60610, cal due August 30, 2024)
Stopwatch (Intertek ID# P60624, cal due December 15, 2024)
Mitutoyo Digital Caliper (Intertek ID# 52650 cal due June 22, 2024)
Stanley Tape Measure (Intertek ID# P60494, cal due October 19, 2024)

Time/Temp/RH: 10:00AM / 23.0°C / 48.0%

Direction	Test	Design Load (Inward/ Outward) (lbf)	Factored Load	Required Proof Load (lbf)	Pass/Fail
Outward	Individual Elements (over 12 in. x 12 in.) (most critical location)	50	125	125	**Pass**
	Midspan Horizontal Concentrated Load	200	500	500	**Pass**
	Top Rail Adjacent to Connection Concentrated Load	200	500	500	**Pass**
	Top of Post	200	500	500	**Pass**
	Horizontal Uniform Load (per ft)	50	125	500	**Pass**

Direction	Test	Design Load (Inward/ Outward) (kN)	Factored Load	Required Proof Load (kN)	Pass/Fail
Outward	Individual Elements (over 305 mm in. x 305 mm) (most critical location)	0.22	0.56	0.56	**Pass**
	Midspan Horizontal Concentrated Load	0.89	2.22	2.22	**Pass**
	Top Rail Adjacent to Connection Concentrated Load	0.89	2.22	2.22	**Pass**
	Top of Post	0.89	2.22	2.22	**Pass**
	Horizontal Uniform Load (per m)	0.73	1.83	2.23	**Pass**

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SECTION 11

APPENDIX B – PHOTOS (2 PAGES)

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Figure 1. In-fill Load Test

Figure 2. Uniform Load

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Figure 3. Mid-Span of Privacy Board Concentrated Load

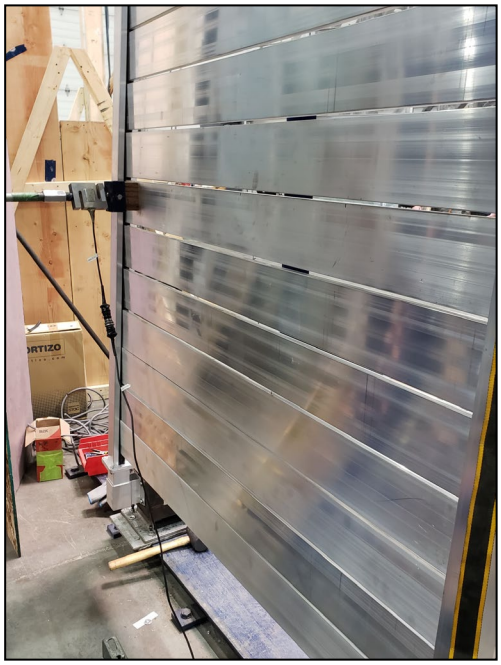

Figure 4. Adjacent to Post Concentrated Load

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SECTION 12

APPENDIX C – DRAWINGS (4 PAGES)

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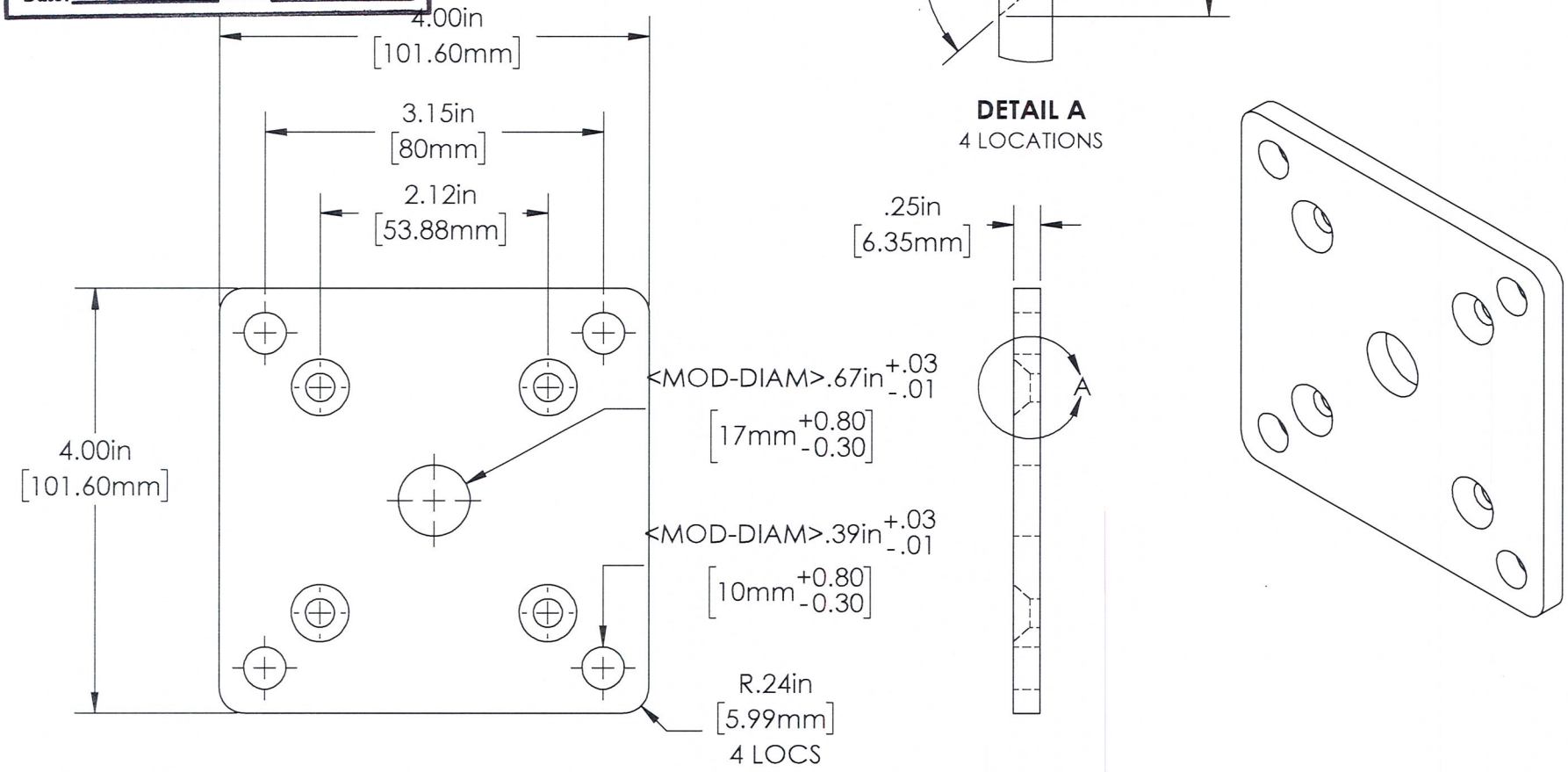
Test sample complies with these details.
Deviations are noted.

Report #: 105626012COQ-005

Date: 06/19/24 Tech: C. C.



CUT LENGTH TOLERANCE		MACHINING TOLERANCE	
Dimension (mm)	Tolerance	Dimension (mm)	Tolerance
≤100	0.5	≤10	0.2
>100<500	0.8	>10<20	0.3
>500<1000	1.0	>20<30	0.4
>1000<1500	1.5	>30<40	0.5
>1500<3000	1.8	>40<60	0.6
>3000<6000	2.0	>60<100	0.8
Above 6000	2.5	Above 100	1.0

REVISIONS

REV.	DESCRIPTION	DATE	INITIALS

CenDek Railings Ltd.

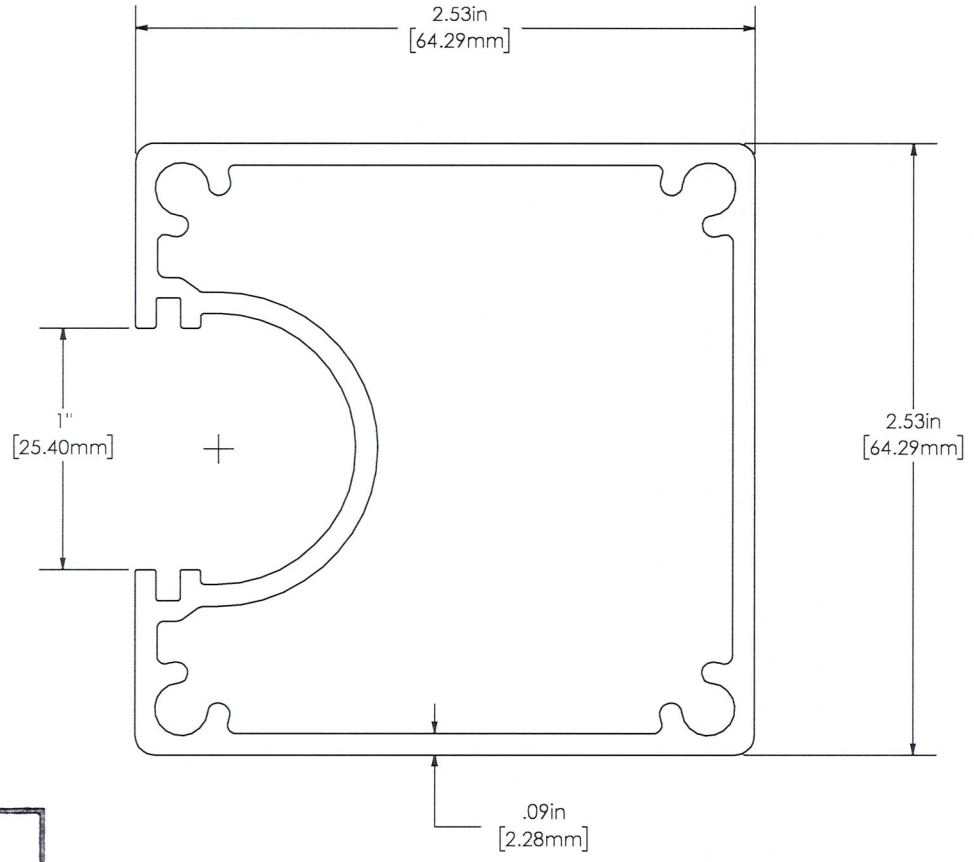
DRAWN BY	Admin
CREATED	9/6/2017
MATERIAL	6005A - T6
DIE NO.	DYG10072635

ALL DIMENSION IN INCHES/mm

DESCRIPTION
Baseplate 4"x 4" 2-1/2" Post

Part No. D000063 | Eng No. 0054PB

Weight 0.36 lbs | SHEET 1 OF 4 | Rev -



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Test sample complies with these details.
Deviations are noted.

Report #: 105626012COQ-005

Date: 06/19/24 Tech: C. L.

REVISIONS			
REV.	DESCRIPTION	DATE	INITIAL

CenDek Railings Ltd.

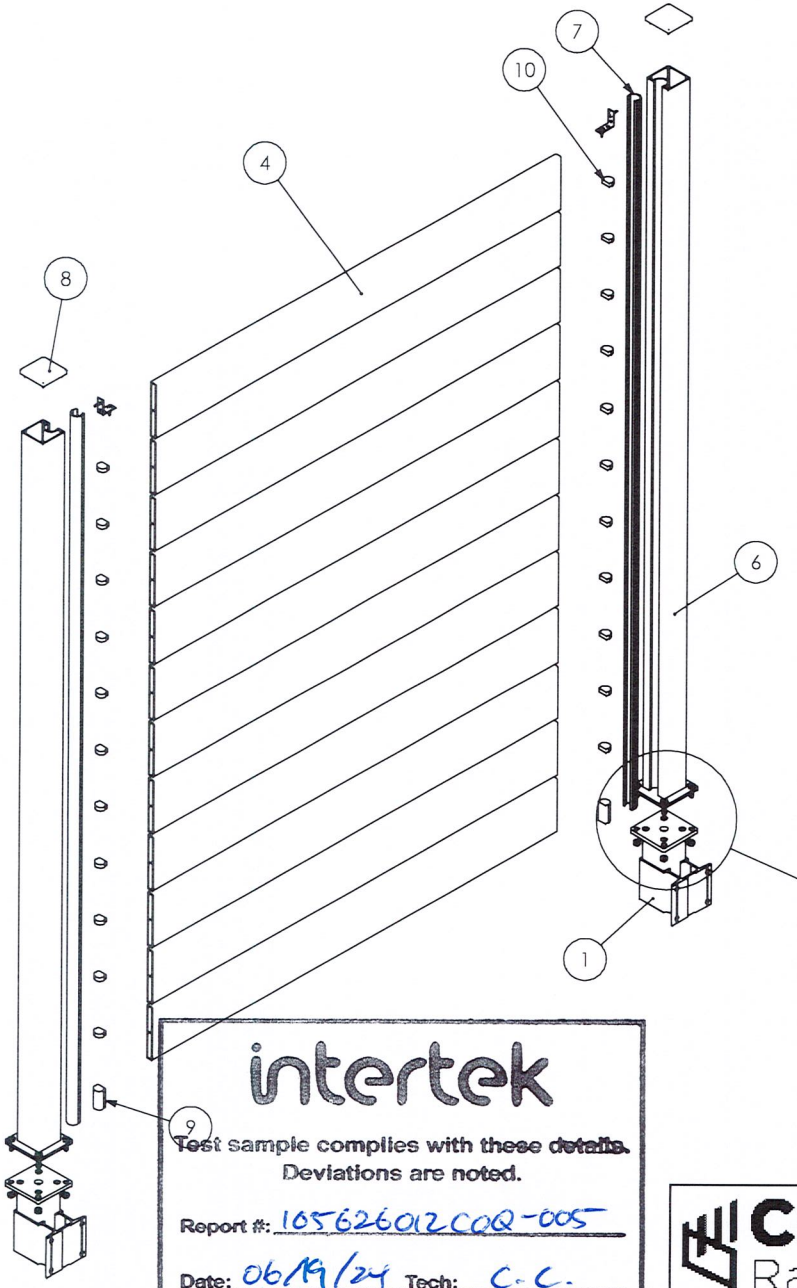
DRAWN BY	Admin
CREATED	9/19/2017
MATERIAL	6063-T5
DIE NO.	

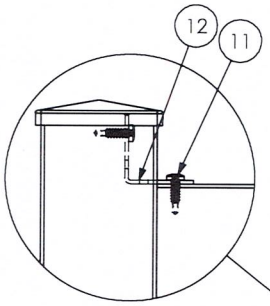
ALL DIMENSION IN INCHES/mm

DESCRIPTION
2-1/2" Scenic End Post Drawing

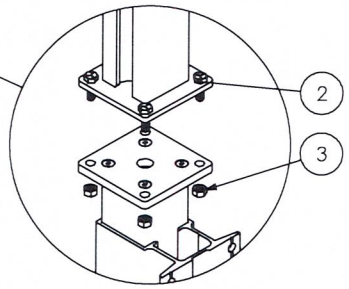
Part No. NA	Eng No. 0069PJ	
Weight 1.29 Lbs		Rev -

ITEM NO.	Eng No.	Part No.	DESCRIPTION	QTY.
1	0217A	D000610	Fascia Bracket 2-1/2" Line/End/Stair with baseplate	2
2	2077P	D000430	Bolt Hex 5/16" x 1" NC Stainless	8
3	2557P	D000429	Nut Hex 5/16" Nyloc NC Stainless	8
4	2677PA	D020332	5/8" X 5-3/8" X 46-5/8" Privacy Board	12
5	0054PB	D000063	Baseplate 4"x 4" 2-1/2" Post	2
6	0069PX		2-1/2" Scenic End Post Material 71-3/4"	2
7	2340PA	D020104	Vinyl Scenic Privacy Post Insert 71-3/4"	2
8	2657P	D000960	End/Line Pyramid (external) Post Cap	2
9	0495PA	D000224	Rubber Scenic Post Glass Setting Block 1-7/8"	2
10	0495PB	D020049	Rubber Scenic post glass setting block 3/8"	22
11	0096PA	D000332	Screw #10x3/4" PH Robertson TEK Zinc	4
12	2318P	D020048	L-Bracket 1-1/2 x1-1/2 x 1/16 Black	2

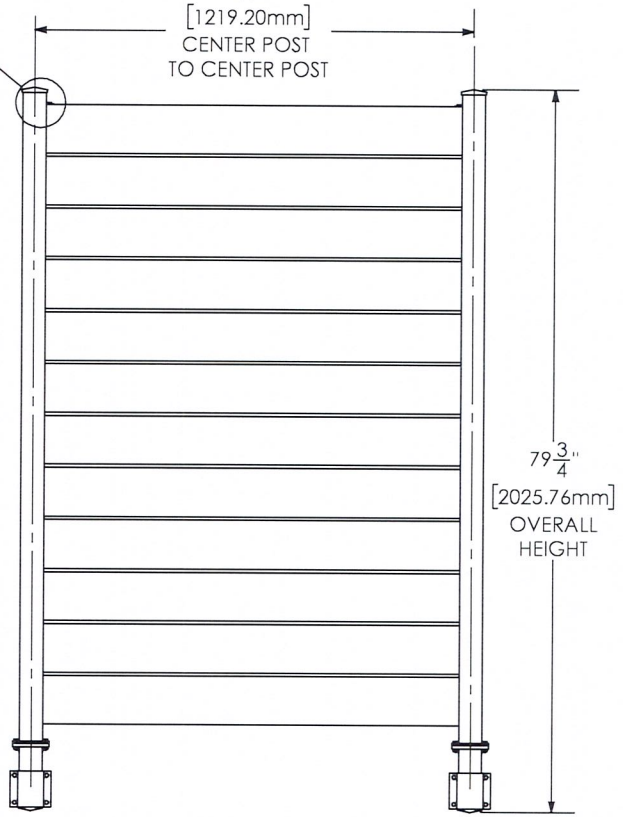




DETAIL F
FASTEN BOTH SIDES OF THE TOP BOARD TO POST WITH L-BRACKET
SCALE 1 : 4



DETAIL B
SCALE 2 : 15



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Test sample complies with these details.
Deviations are noted.

Report #: 105626012COQ-005

Date: 06/19/24 Tech: C.C.

REVISIONS

REV.	DESCRIPTION	DATE	INTIALS

CenDek Railings Ltd.

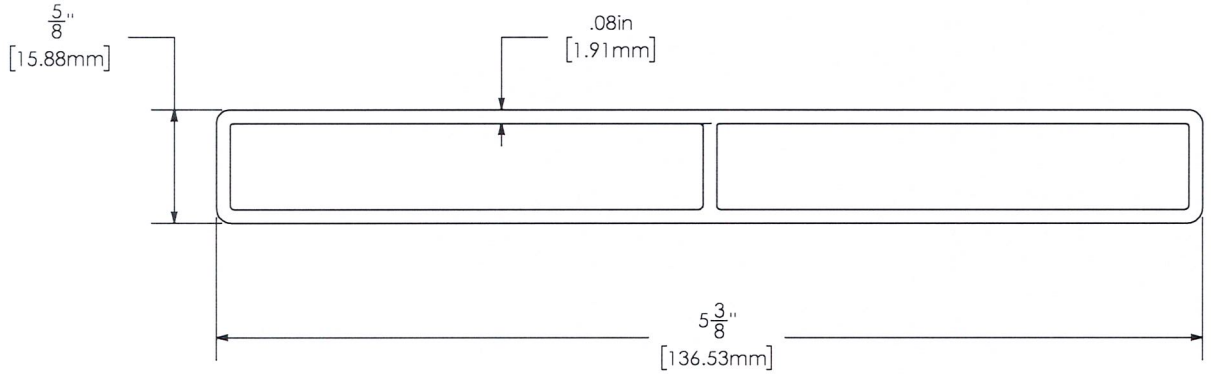
DRAWN BY	Admin
CREATED	6/10/2024
MATERIAL	
DIE NO.	

ALL DIMENSION IN INCHES/mm

DESCRIPTION

4ft Privacy Wall - Century Fascia Mount

Part No. NA	Eng No. 2427AC	
Weight 72.54 Lbs	SHEET 1 OF 1	Rev -



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Deviations are noted.

Report #: 105626012COQ-005

Date: 06/19/24 Tech: C.C.

CenDek Railings Ltd.

DRAWN BY	Eng1
CREATED	1/13/2022
MATERIAL	6063-T5
DIE NO.	

ALL DIMENSION IN INCHES/mm

DESCRIPTION

5/8" X 5-3/8" X 70-5/8" Privacy Board

Part No.

Eng No. 2677PC

Weight 6.26 lbs

SHEET 1 OF 1

Rev -

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SECTION 13

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	06/19/24	N/A	Original Report Issue