

Rational Analysis Evaluation Report

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Product Manufacturer

Rytec Corporation
One Cedar Parkway
Jackson, WI 53037

Product Name, Model and/or Description

Spiral Rollup Doors
Models SST-HZ and SSN-HZ

Code: Current Edition of the Florida Building Code including the 8th Edition (2023) Florida Building Code

Compliance Methods: Product Approval Rule 61G20-3.005(1)(d) – Product Evaluation Report by a Licensed Professional Engineer

Product Name, Model and/or Designation

- Spiral Rollup Doors, Models SST-HZ and SSN-HZ

Installation Instructions

- PTC Product Design Group Drawing No. 9B963, Rev. 10, dated 5/4/22, Spiral Rollup Doors, Models SST-HZ and SSN-HZ, Installation Anchorage Details, signed and sealed by Robert J. Amoruso, P.E., FL No. 49752.

Rational Analysis

This analysis addressed changes to the originally tested Rollup Doors, substantiating acceptance based on the following rational analysis.

Item No. 1

Adds a Tab Style to the way the Spring Pack can be installed in the jamb columns. The Tab Style is shown on Rytec drawing ASSY, SRING PACK, TAB STYLE. This drawing is included in Appendix A, along with the original installation drawing, titled SPRING PACK ASSEMBLY. It is the intent to have both types of installation to be acceptable. The spring packs are in the jamb columns, away from the door guides, receive no wind loads, and have no effect on the wind load strength of the doors.

Therefore, it is concluded to be acceptable and does not affect the allowable wind load induced design pressure of +/-50 psf.

Item No. 2

Revises the End Brackets that fit into the bottom slat at each end have been changed. The bracket has its end lug slightly altered and made stronger where it fits into the slat. This change does not affect the load capacity of the component because it is not required to withstand any wind loading. The new configuration is shown on Rytec number 238841-1 and -2. The old configuration is shown on Rytec number 238831-1 and -2. All of these drawings are titled END Bracket ASSY and are included in Appendix B.

Therefore, it is concluded to be acceptable and does not affect the allowable wind load induced design pressure of +/-50 psf.

Item No. 3

The side columns are now supplied spliced along their height from two pieces of 11 gage (.123" thick) steel, where they were originally fabricated from a single piece of 11 gage steel. Each column is "C" shaped, with unequal length



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flanges. There is a splice plate at each flange and one at the web joining the two pieces of each column. These columns are connected to the concrete substrate at 7-1/2" spacing along their height. These installation fasteners are located close to the guide track (4.53" -2.83" -1.00" = 0.70") as shown in the Side Column Mounting Location and Guide Details on sheets 1 and 3 of drawing 9B963-R10. No wind load passes through the splice joint in the columns as it is directly transferred to the column in shear and reacts at the substrate anchorage. The splice configuration is shown on the Rytec drawings 1071333-1B and 2B. The configuration without splice is shown on the Rytec drawings 1070877-1 and 2. See Appendix C for these drawings.

Therefore, it is concluded to be acceptable and does not affect the allowable wind load induced design pressure of +/-50 psf.

Item No. 4

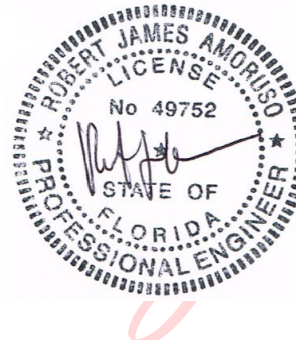
Rytec drawing sheets of the columns are added in Appendix D for clarity. They are 1070878-1 & 2, 1071347-1 sheets 1 & 2 and 1071347-2 sheets 1 & 2.

[NOTE: Drawings shown in the Appendices are available from the manufacturer if needed.]

Certificate of Independence per Product Approval Rule 61G20-3.009

PTC Product Design Group, LLC and Robert J. Amoruso, P.E. does not have, nor will acquire, any financial interest in the company manufacturing or distributing product(s) covered by this Product Evaluation Report.

PTC Product Design Group, LLC and Robert J. Amoruso, P.E. do not have, nor will acquire any financial interest in any other entity involved in the approval process or testing of the product(s) covered by this Product Evaluation Report.

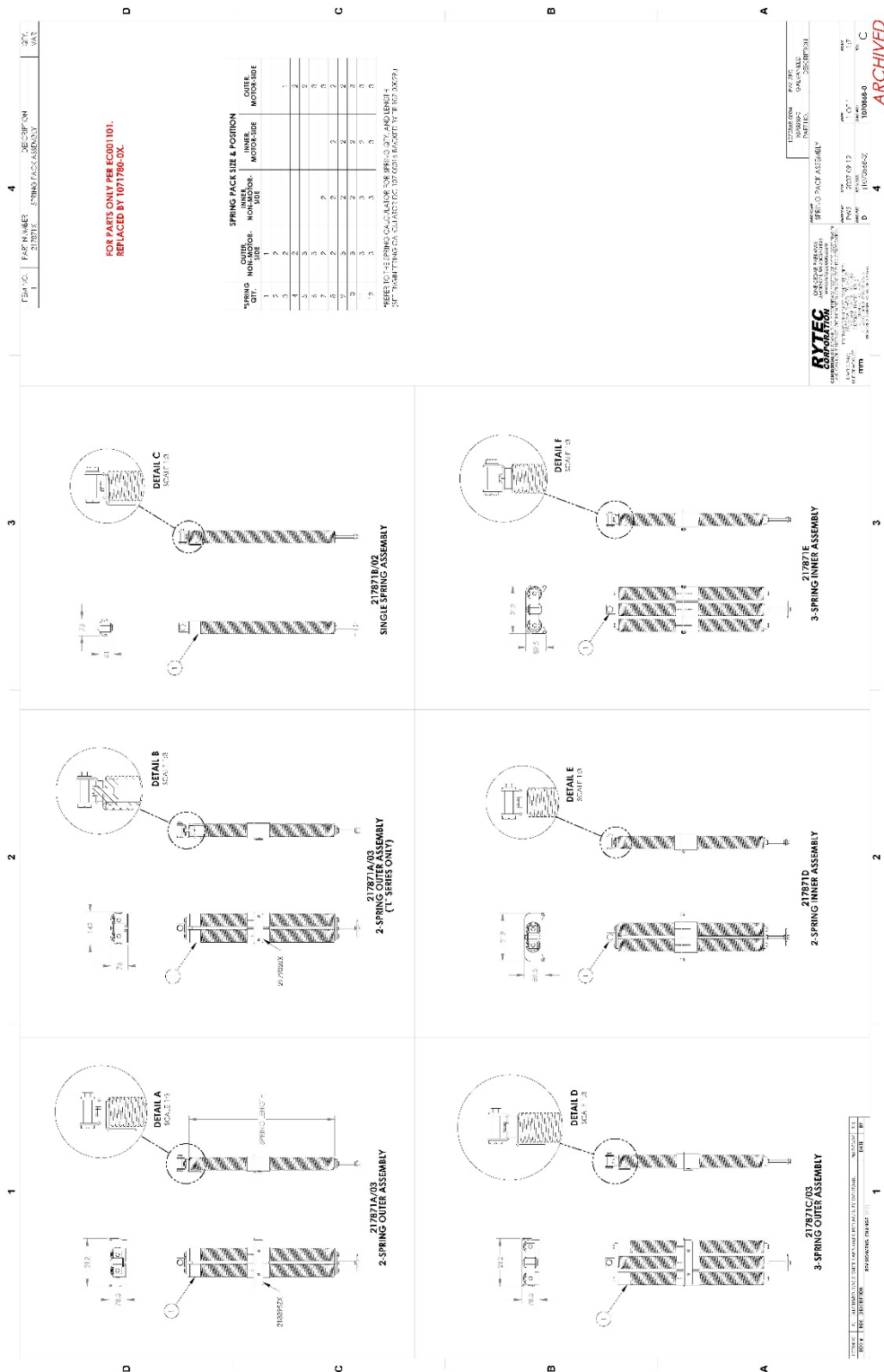


Digitally signed
by Robert J
Amoruso
Date:
2023.09.01
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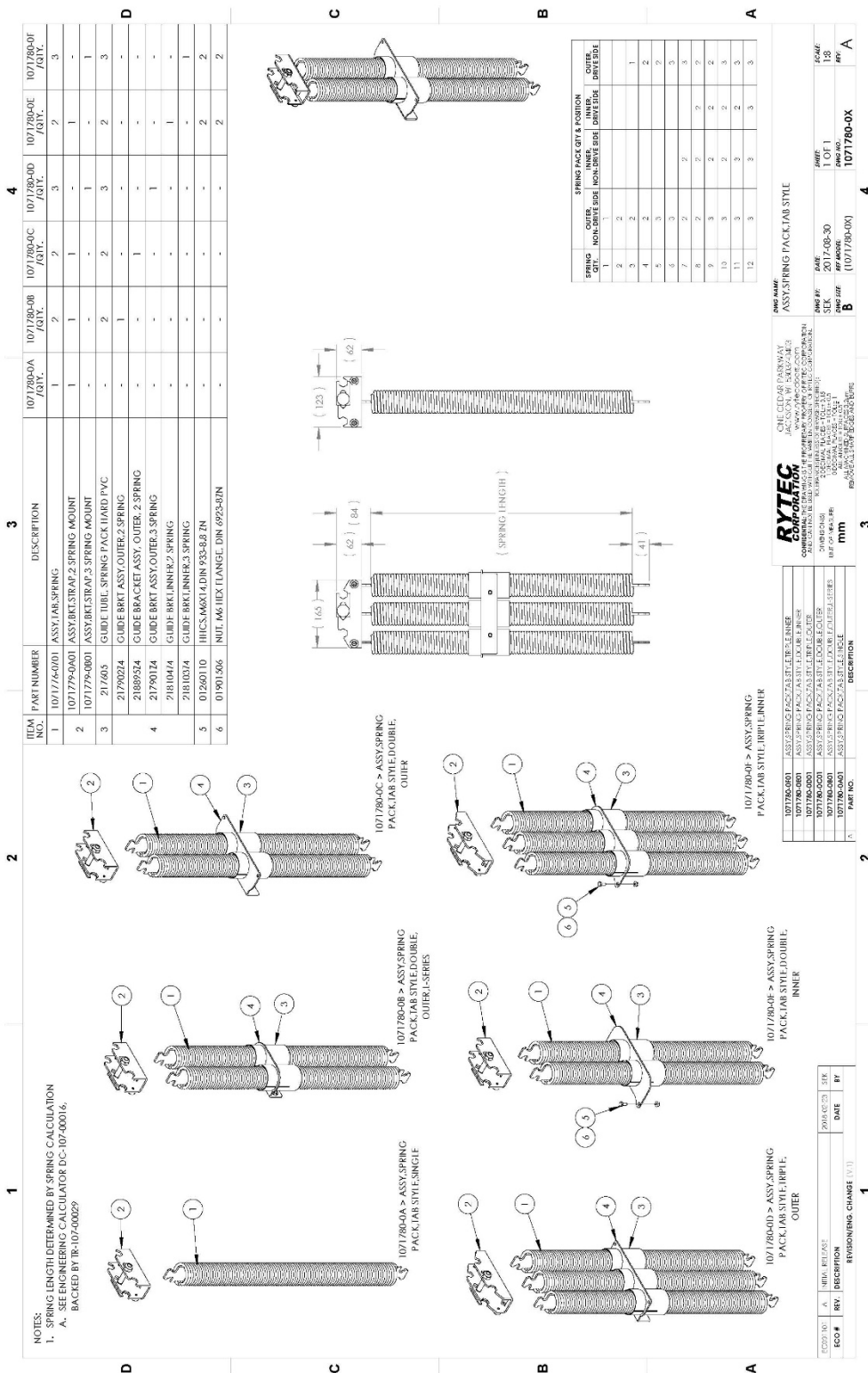
Evaluated By:
Robert J. Amoruso, P.E.
FL P.E. License Number 49752



APPENDIX A – Spring Pack Assembly Drawing (first drawing is the as-tested assembly, the second drawing is the tab-style assembly)



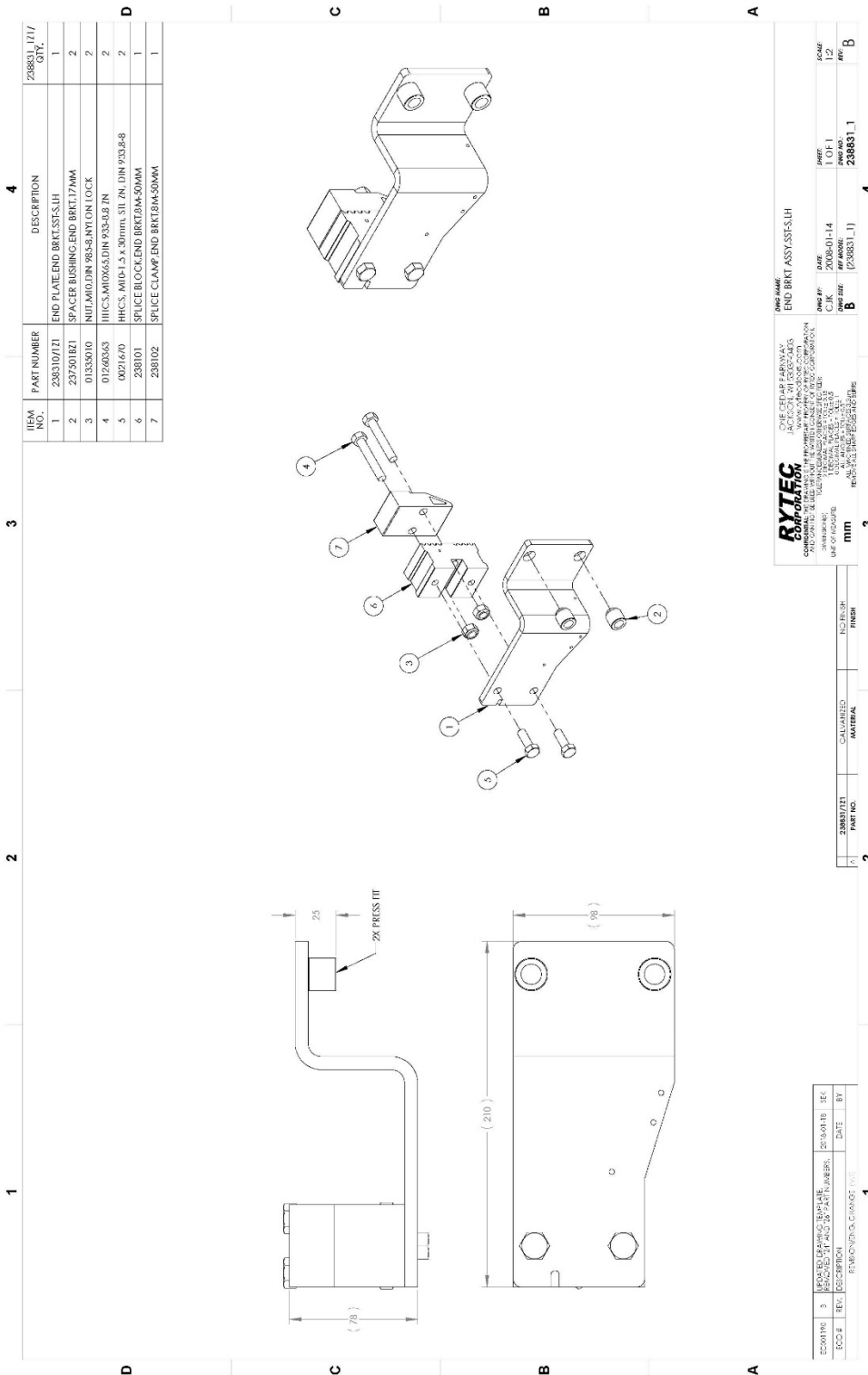
APPENDIX A – Spring Pack Assembly Drawing (first drawing is the as-tested assembly, the second drawing is the tab-style assembly)



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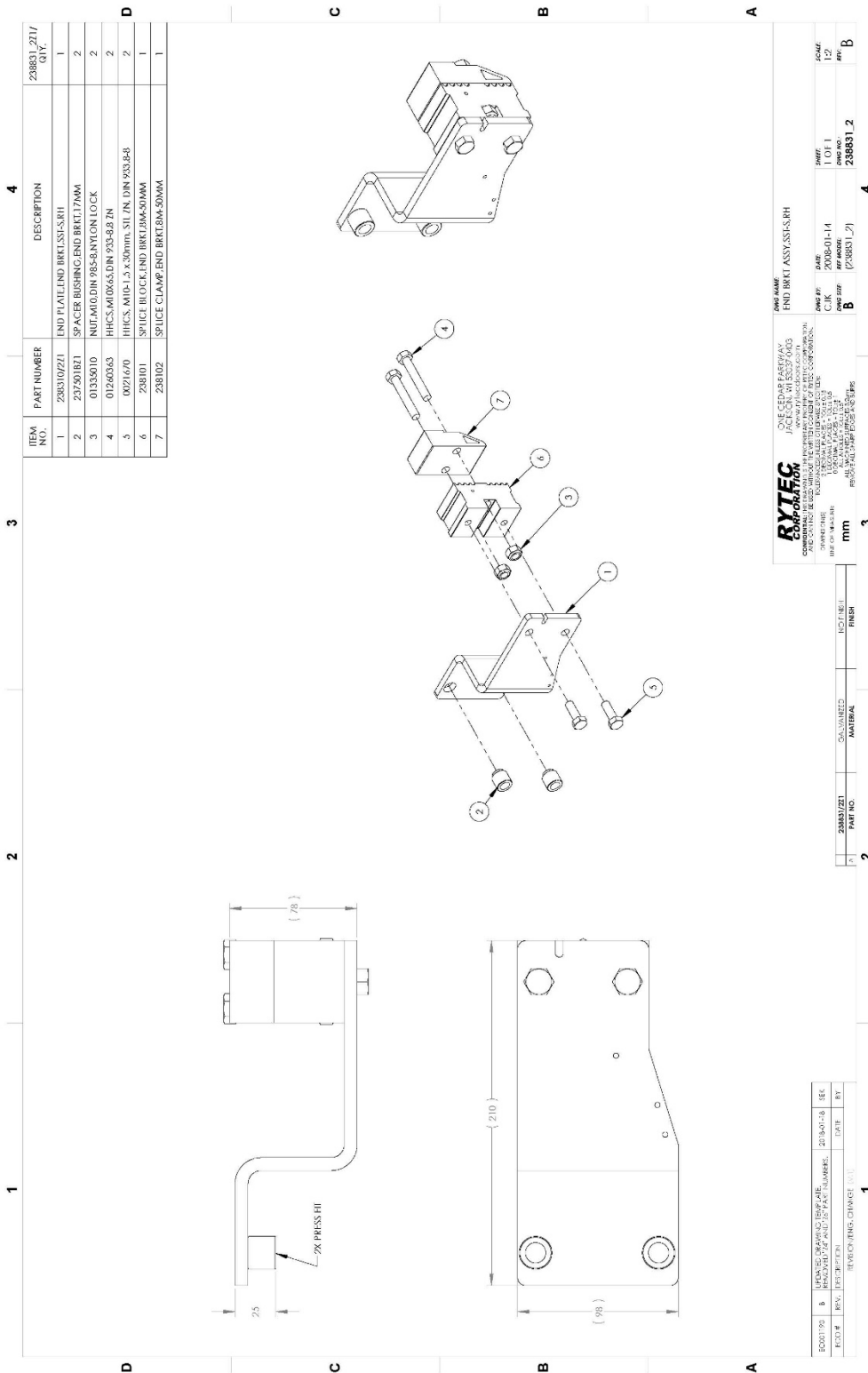
APPENDIX B – End Bracket Drawing (first drawing set is the as-tested assembly, the second drawing set is the new assembly)



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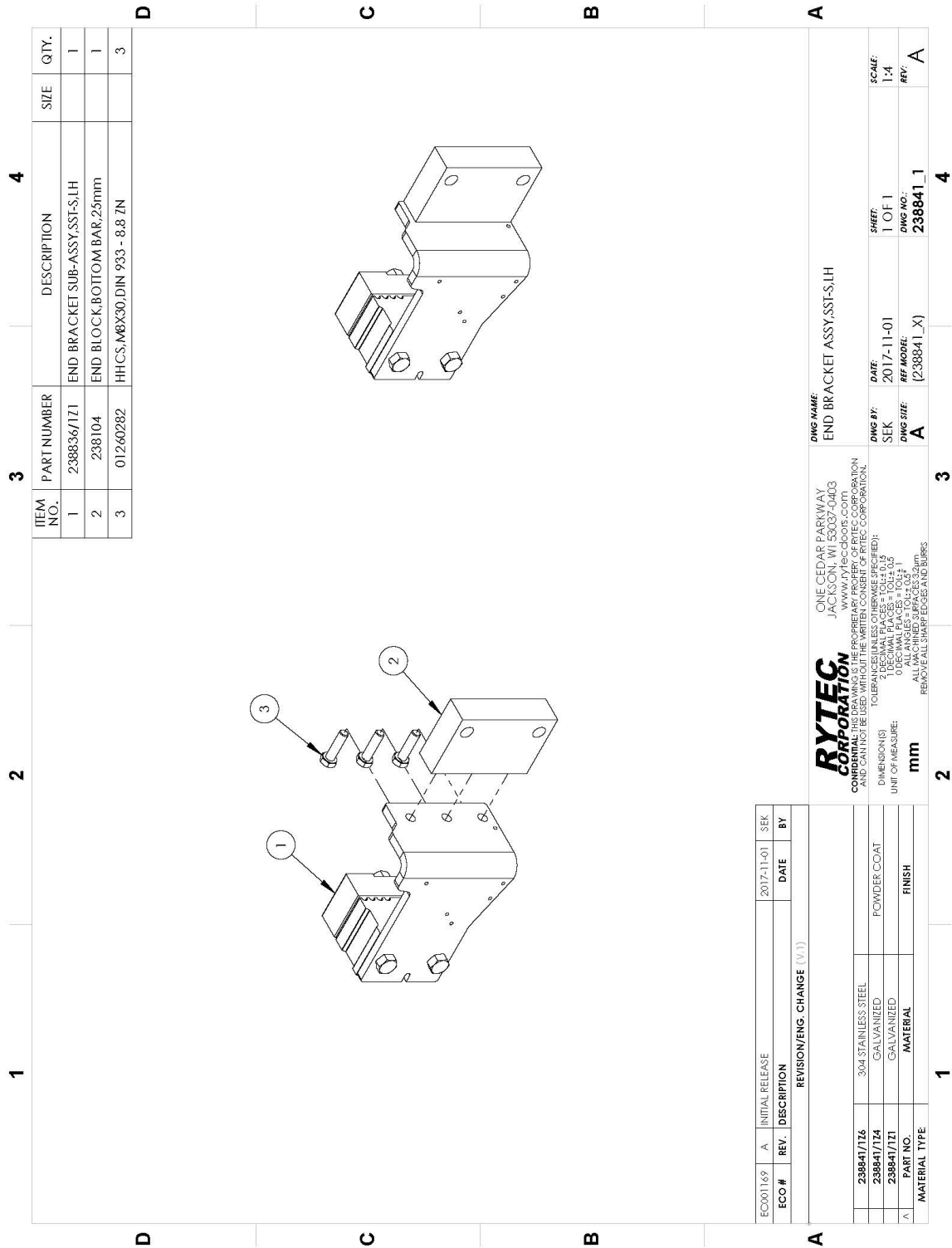
APPENDIX B – End Bracket Drawing (first drawing set is the as-tested assembly, the second drawing set is the new assembly)



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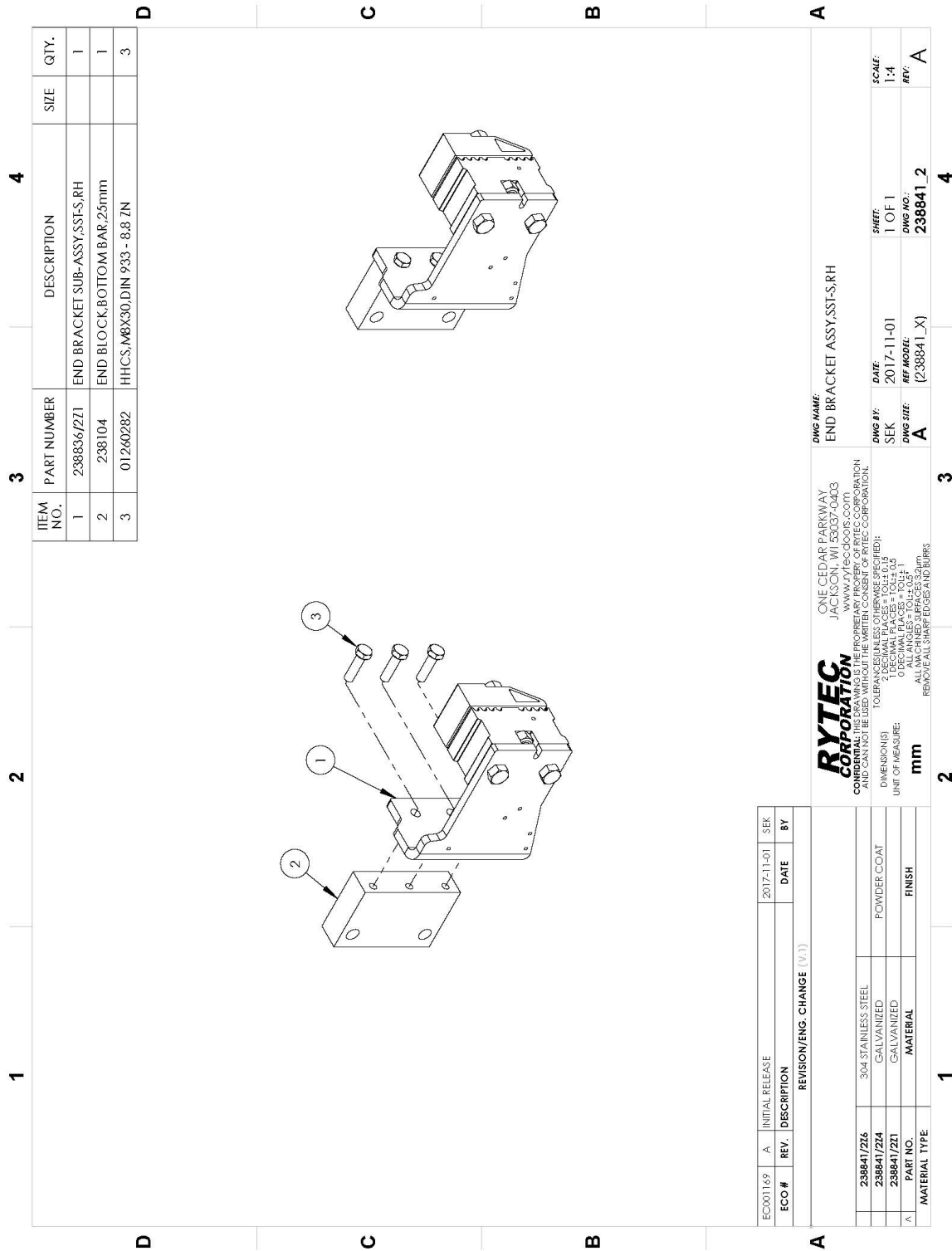
APPENDIX B – End Bracket Drawing (first drawing set is the as-tested assembly, the second drawing set is the new assembly)



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APPENDIX B – End Bracket Drawing (first drawing set is the as-tested assembly, the second drawing set is the new assembly)



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DOOR NO.	PH	A	B	# OF 10001530	HEAD SIZE
	5050.00	5976.00	5046.00		
	mm		198.66		
	in	235.27		11	D

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ITEM NO.	PART NUMBER	DESCRIPTION	SIZE	QTY.
1	0903324	SC WELD JST-HL-HL-H DRIVE		1
2	01001530	RIV-NUT M8 A3-4 8/25-380		VAR

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321-690-1788 | FBPE Certification of Authorization No. 25935

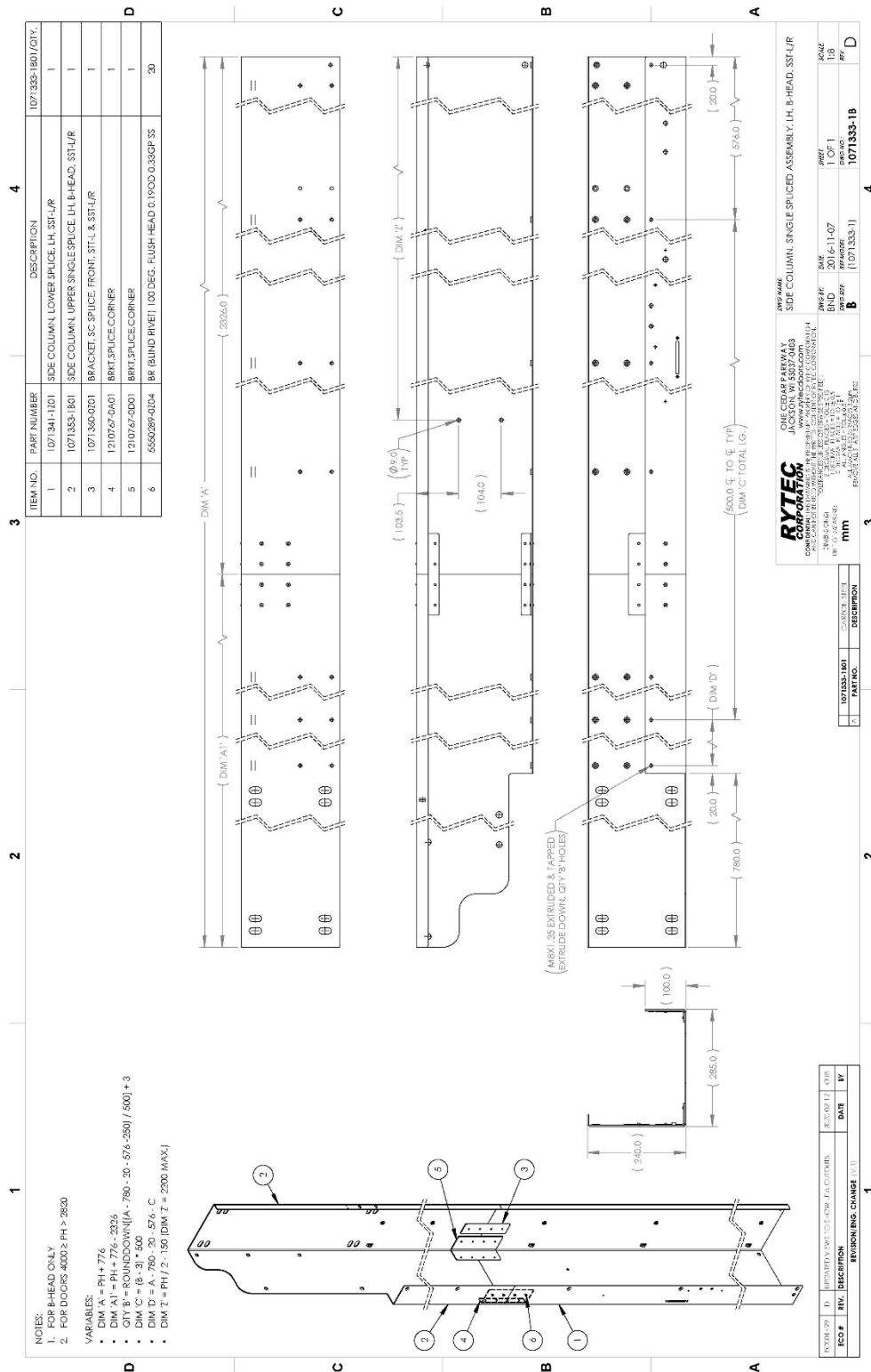
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APPENDIX C – Column Splice Drawings (first drawing set is the as-tested assembly, the second drawing is the spliced assembly)



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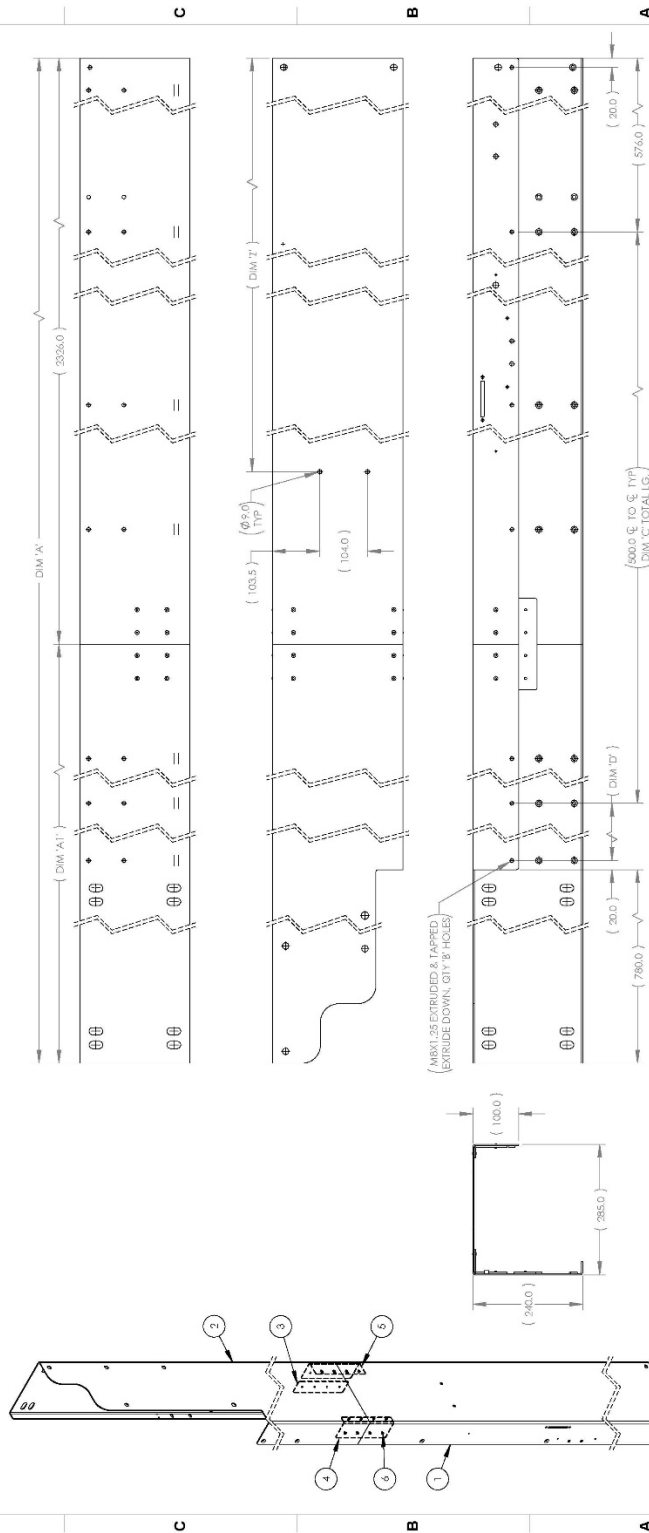
NOTES:

NOTES:

1. FOR B+HEAD ONLY
2. FOR DOORS 4000 $\geq$ PH $>$ 2820

VARIABLES:

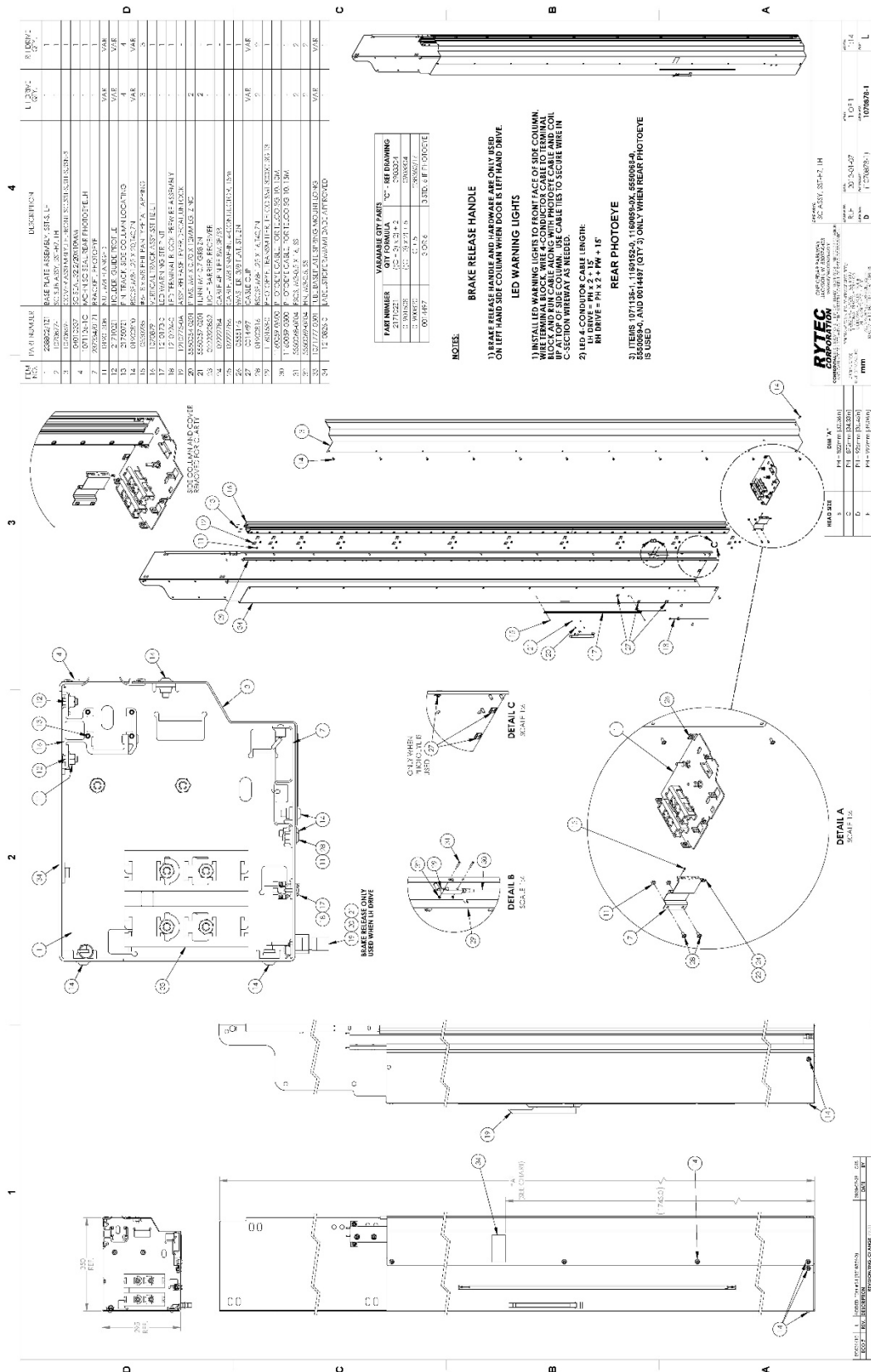
- DIM 'A' = PH + 776
- DIM 'A1' = PH + 776 - 2326
- QTY 'B' = ROUNDDOWN((A - 780 - 20 - 576 - 250) / 500) + 3
- DIM 'C' = (B - 3) * 500
- DIM 'D' = A - 780 - 20 - 576 - C
- DIM 'I' = PH / 2 - 150 (DIM Z = 2200 MAX.)



 RYTEC CORPORATION ONE CEDAR PARKWAY JACKSON, WI 53507-7403 www.rytecbar.com CONTACT RYTEC FOR THE EXACT LOCATION OF THE CONTAINER		DATE OF BIRTH: 2016-11-07 BAND: 1 OF 1 DATE: 1071332-28 BAND: 1071332-28	
DATE OF BIRTH: 2016-11-07 BAND: 1 OF 1 DATE: 1071332-28 BAND: 1071332-28		DATE OF BIRTH: 2016-11-07 BAND: 1 OF 1 DATE: 1071332-28 BAND: 1071332-28	

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PART NUMBER	DESCRIPTION	QTY	UNIT	REMARKS
1	20055-2001 LED ASSEMBLY, 20055, 20055	1	EA	
2	20055-2002 LED ASSEMBLY, 20055, 20055	1	EA	
3	20055-2003 LED ASSEMBLY, 20055, 20055	1	EA	
4	20055-2004 LED ASSEMBLY, 20055, 20055	1	EA	
5	20055-2005 LED ASSEMBLY, 20055, 20055	1	EA	
6	20055-2006 LED ASSEMBLY, 20055, 20055	1	EA	
7	20055-2007 LED ASSEMBLY, 20055, 20055	1	EA	
8	20055-2008 LED ASSEMBLY, 20055, 20055	1	EA	
9	20055-2009 LED ASSEMBLY, 20055, 20055	1	EA	
10	20055-2010 LED ASSEMBLY, 20055, 20055	1	EA	
11	20055-2011 LED ASSEMBLY, 20055, 20055	1	EA	
12	20055-2012 LED ASSEMBLY, 20055, 20055	1	EA	
13	20055-2013 LED ASSEMBLY, 20055, 20055	1	EA	
14	20055-2014 LED ASSEMBLY, 20055, 20055	1	EA	
15	20055-2015 LED ASSEMBLY, 20055, 20055	1	EA	
16	20055-2016 LED ASSEMBLY, 20055, 20055	1	EA	
17	20055-2017 LED ASSEMBLY, 20055, 20055	1	EA	
18	20055-2018 LED ASSEMBLY, 20055, 20055	1	EA	
19	20055-2019 LED ASSEMBLY, 20055, 20055	1	EA	
20	20055-2020 LED ASSEMBLY, 20055, 20055	1	EA	
21	20055-2021 LED ASSEMBLY, 20055, 20055	1	EA	
22	20055-2022 LED ASSEMBLY, 20055, 20055	1	EA	
23	20055-2023 LED ASSEMBLY, 20055, 20055	1	EA	
24	20055-2024 LED ASSEMBLY, 20055, 20055	1	EA	
25	20055-2025 LED ASSEMBLY, 20055, 20055	1	EA	
26	20055-2026 LED ASSEMBLY, 20055, 20055	1	EA	
27	20055-2027 LED ASSEMBLY, 20055, 20055	1	EA	
28	20055-2028 LED ASSEMBLY, 20055, 20055	1	EA	
29	20055-2029 LED ASSEMBLY, 20055, 20055	1	EA	
30	20055-2030 LED ASSEMBLY, 20055, 20055	1	EA	
31	20055-2031 LED ASSEMBLY, 20055, 20055	1	EA	
32	20055-2032 LED ASSEMBLY, 20055, 20055	1	EA	
33	20055-2033 LED ASSEMBLY, 20055, 20055	1	EA	
34	20055-2034 LED ASSEMBLY, 20055, 20055	1	EA	
35	20055-2035 LED ASSEMBLY, 20055, 20055	1	EA	
36	20055-2036 LED ASSEMBLY, 20055, 20055	1	EA	
37	20055-2037 LED ASSEMBLY, 20055, 20055	1	EA	
38	20055-2038 LED ASSEMBLY, 20055, 20055	1	EA	
39	20055-2039 LED ASSEMBLY, 20055, 20055	1	EA	
40	20055-2040 LED ASSEMBLY, 20055, 20055	1	EA	
41	20055-2041 LED ASSEMBLY, 20055, 20055	1	EA	
42	20055-2042 LED ASSEMBLY, 20055, 20055	1	EA	
43	20055-2043 LED ASSEMBLY, 20055, 20055	1	EA	
44	20055-2044 LED ASSEMBLY, 20055, 20055	1	EA	
45	20055-2045 LED ASSEMBLY, 20055, 20055	1	EA	

NOTES:

- 1) BRACKET RELEASE HANDLE AND HANDLE RELEASE HANDLE ARE ONLY USED ON LEFT HAND DRIVE VEHICLES.
- 2) INSTALL LED WARNING LIGHTS TO FRONT FACE OF SIDE COLUMN. BLOCK AND RUN CABLE ALONG WITH PHOTOE CABLE AND COIL CABLE TO FRONT OF VEHICLE. CABLE TIES TO SECURE WIRE IN CABLE TRAY AS NEEDED.
- 3) LED CONDUIT CABLE LENGTH: LH DRIVE = PHA 2 + 15' RH DRIVE = PHA 2 + PW + 15'
- 4) PART NUMBERS: 20055-2001, 20055-2002, 20055-2003, 20055-2004, 20055-2005, 20055-2006, 20055-2007, 20055-2008, 20055-2009, 20055-2010, 20055-2011, 20055-2012, 20055-2013, 20055-2014, 20055-2015, 20055-2016, 20055-2017, 20055-2018, 20055-2019, 20055-2020, 20055-2021, 20055-2022, 20055-2023, 20055-2024, 20055-2025, 20055-2026, 20055-2027, 20055-2028, 20055-2029, 20055-2030, 20055-2031, 20055-2032, 20055-2033, 20055-2034, 20055-2035, 20055-2036, 20055-2037, 20055-2038, 20055-2039, 20055-2040, 20055-2041, 20055-2042, 20055-2043, 20055-2044, 20055-2045.
- 5) ITEMS 1071155-2, 1155155-2, 1155155-3, 1155155-4, 1155155-5, 1155155-6, 1155155-7, 1155155-8, 1155155-9, 1155155-10, 1155155-11, 1155155-12, 1

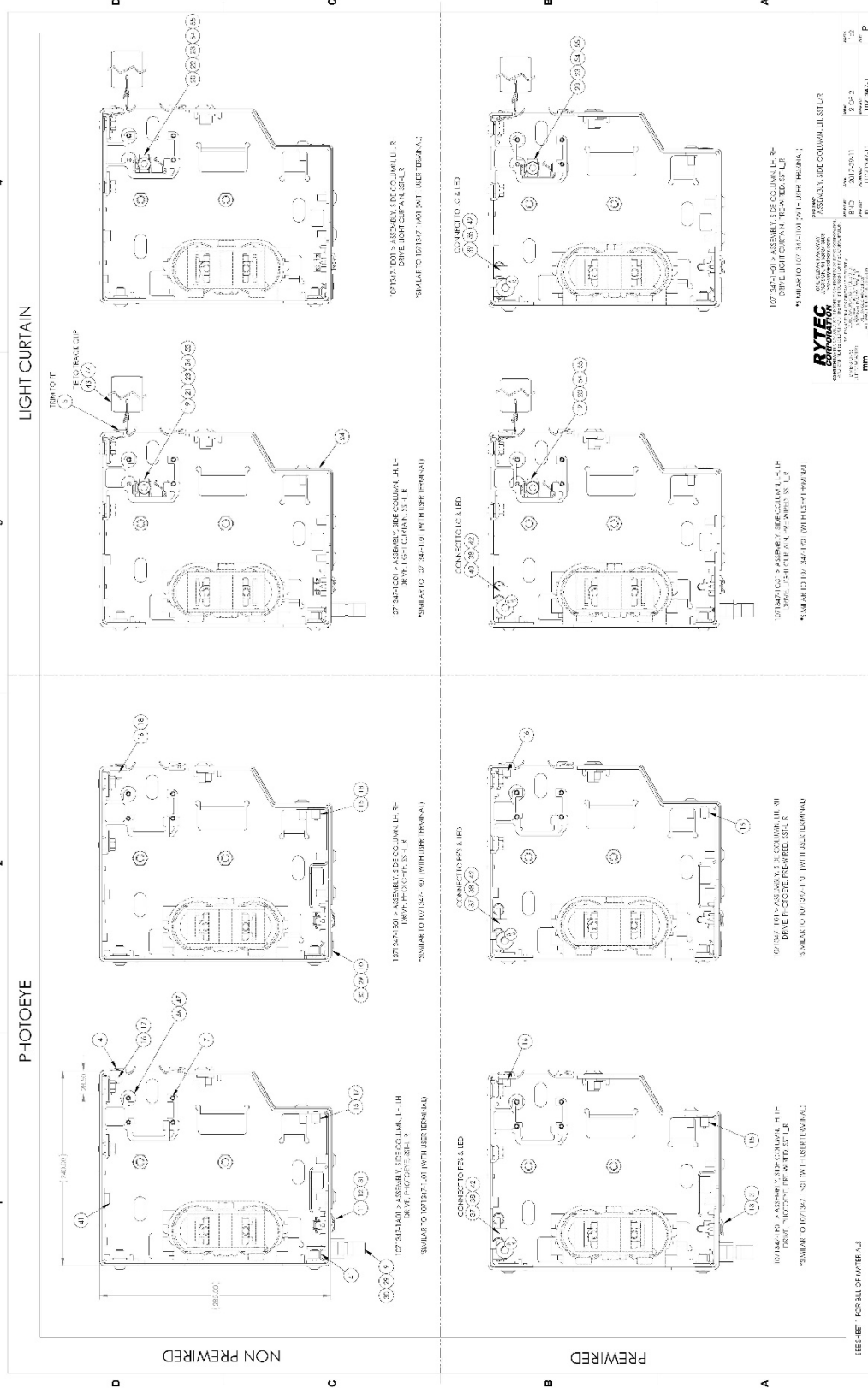
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APPENDIX D – Column Splice Drawings (informational drawings)



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