



## **Report of Compliance with USA Building Codes:**

- **2024 International Residential Code (IRC)**
- **2023 Florida Residential Code (FRC)**

### **DISCLAIMER**

#### **WARNING**

Comply with all applicable building codes. Before using this product, ensure foundation is suitable. Not suitable for all applications or any commercial use. Do not overload. Wear protective attire and eyewear.

**MTE****MTE Consultants**

520 Bingham Centre Dr., Kitchener, Ontario N2B 3X9

November 22, 2023

**Revised:** November 25, 2024

MTE File No.: C60153\_001

Peak Products USA Corporation

[www.peakproducts.com](http://www.peakproducts.com)**Project: Peak® Stair Riser Compliance****Subject: Structural Review of Peak® Stair Riser and Extension Bracket to United States Building Codes**

This letter summarizes the findings of our review of the structural resistance of the Peak® Stair Riser.

**PRODUCT DESCRIPTION**

Peak® Stair Risers come in 1 to 7 step configurations and are constructed of hollow structural steel sections with inverted U steel straps welded to the hollow section forming the horizontal tread support. All configurations have a step rise of 7.56 in, a run of 10.39 in, and are designed to support 2-2x6 or 1-2x12 treads. The specified steel strength of the hollow section and steel strap is 34 ksi.

A Stair Extension Bracket with supporting post and bracing can be used to extend the risers for heights up to 120 in. Drawings of the various configurations are included in Appendix A.

**STRUCTURAL LOADS**

The Peak® Stair Risers were reviewed for their resistance to a 40 psf distributed residential live load or a 300 lb concentrated live load. The dead load was calculated to be the self-weight of the riser with 2x12 wood treads. Deflection of the riser and treads was limited to the span divided by 240 (L/240).

**STANDARDS**

Peak® Stair Risers were evaluated in accordance with the following codes:

- 2024 International Residential Code (IRC)
- 2023 Florida Residential Code (FRC)
- Steel Construction Manual, 15th Ed (AISC)
- 2018 National Design for Wood Construction (NDS)

## FINDINGS

Peak® Stair Risers and Stair Extension Bracket provide adequate resistance to residential floor loads, with a maximum live load deflection of L/240, given the span limitations illustrated in Appendix A.

### Notes:

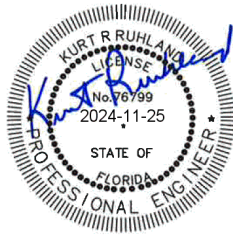
1. L is the sloping span of the riser.
2. Some jurisdictions may require closed risers.

## CLOSURE

The Peak® Stair Risers were found to meet the requirements, for use in dwelling units, within the 2024 International Residential Code and the 2023 Florida Residential Code. Limitations of compliance are defined in the findings above, and in the assembly drawings presented in Appendix A.

Yours Truly,

**MTE Consultants Inc.**



**Kurt Ruhland, P.Eng.**  
Vice President  
519-743-6500 ext. 1236  
[kruhland@mte85.com](mailto:kruhland@mte85.com)

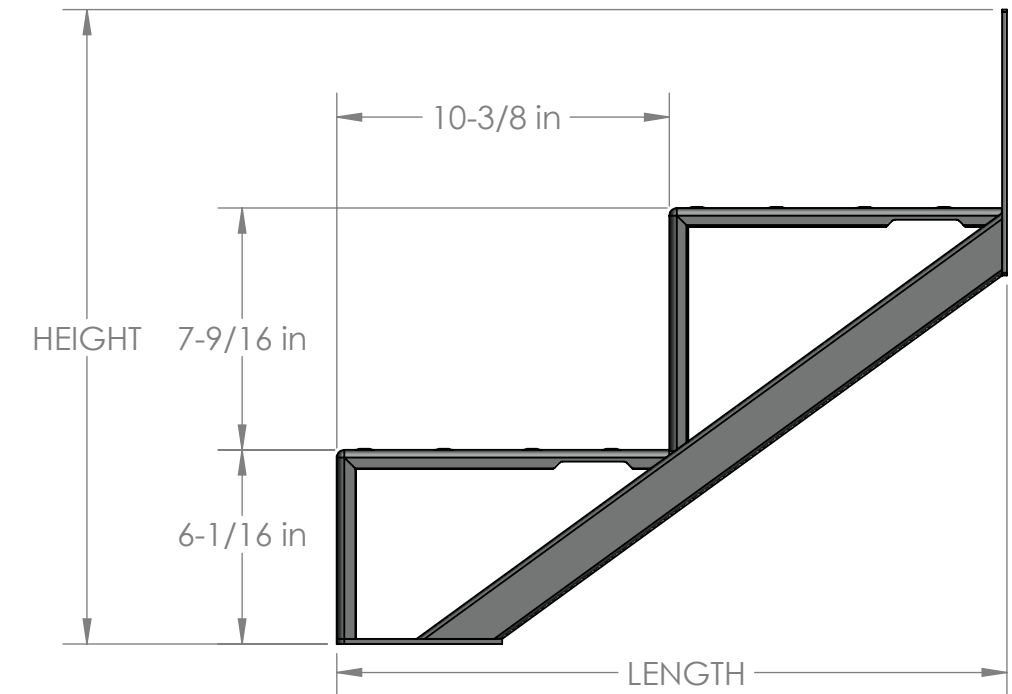
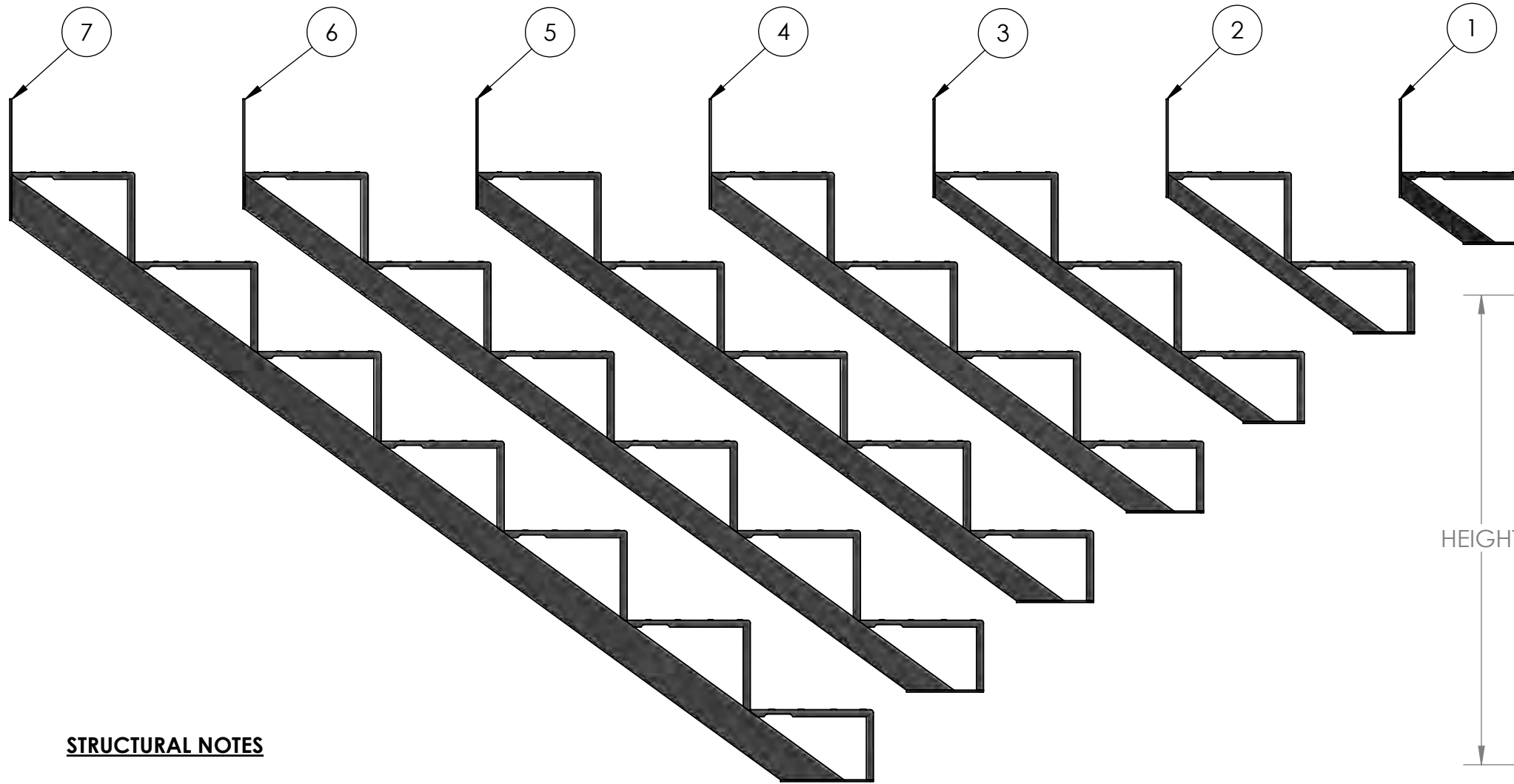
KUR: smk  
Attach.

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# Appendix A

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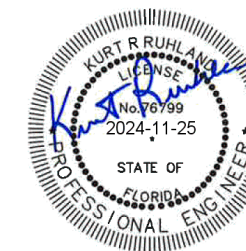
## Drawings



**STRUCTURAL NOTES**

**A. GENERAL**

- 1. MODIFICATION OF THE RISER IS NOT PERMITTED.
- 2. STAIR RISER IS INTENDED FOR RESIDENTIAL USE ONLY (IRC).

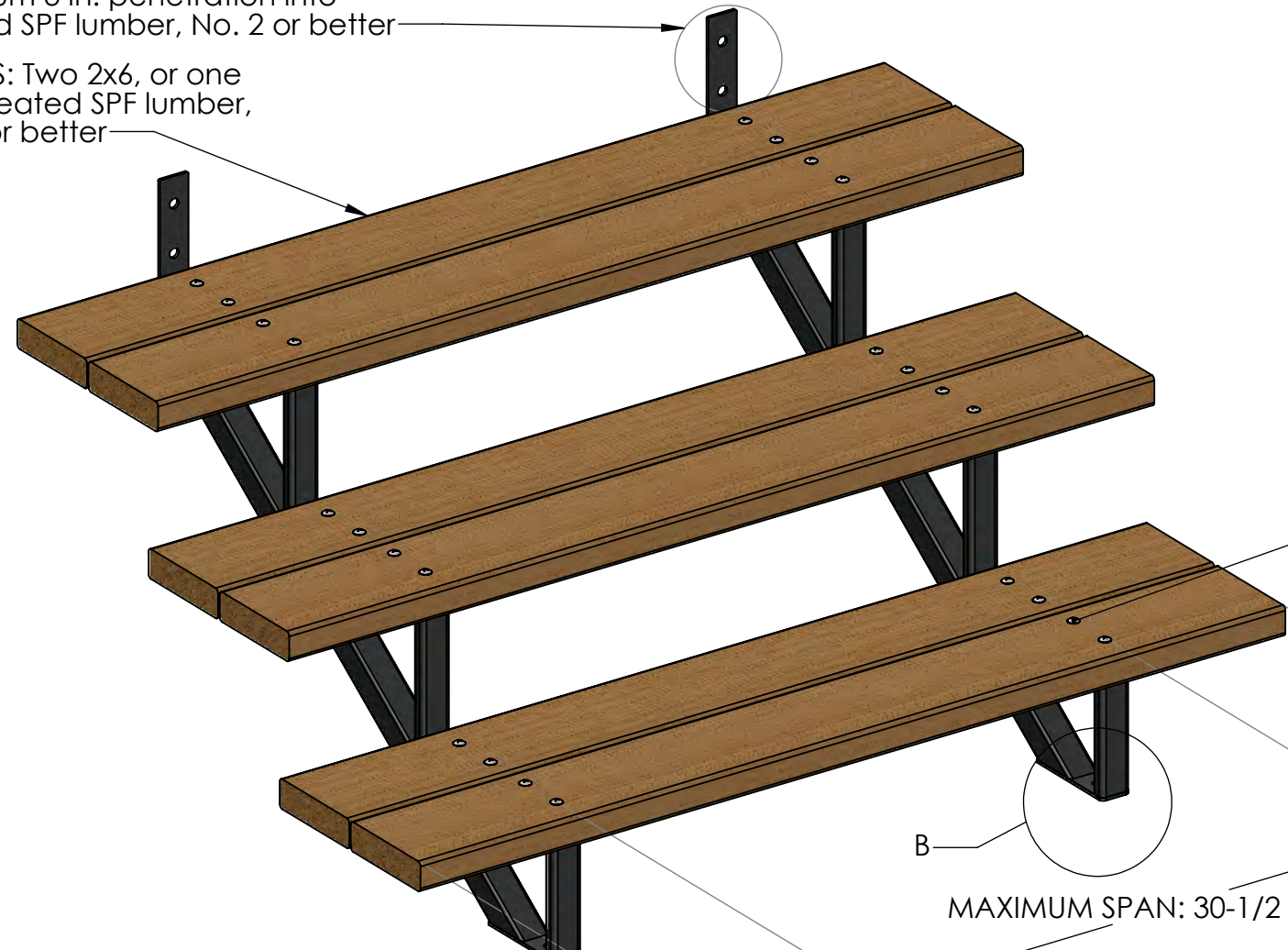


ITEM NO.	SKU	DESCRIPTION	LENGTH (in)	HEIGHT (in)
1	2851	1 Step	10-9/16	12-1/4
2	2852	2 Step	20-15/16	19-13/16
3	2853	3 Step	31-5/16	27-3/8
4	2854	4 Step	41-3/4	34-15/16
5	2855	5 Step	52-1/8	42-1/2
6	2856	6 Step	62-1/2	50-1/16
7	2857	7 Step	72-15/16	57-5/8

TITLE	General Information	
PART FILE	Report SKUs - USA	
DWG REV	B	
DIMENSIONS ARE IN MM UNLESS NOTED DO NOT SCALE DRAWING		
<b>PROPRIETARY AND CONFIDENTIAL</b>		
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SIZE	DWG. NO.	
<b>B</b>	Report_USA_GeneralInformation	
SCALE: 1:9	SHT REV 2016-06-01-A	Sheet 1 of 15

Wood attachment:  
Two 3/8 in. diameter lag screws,  
minimum 3 in. penetration into  
treated SPF lumber, No. 2 or better

TREADS: Two 2x6, or one  
2x12 Treated SPF lumber,  
No. 2 or better

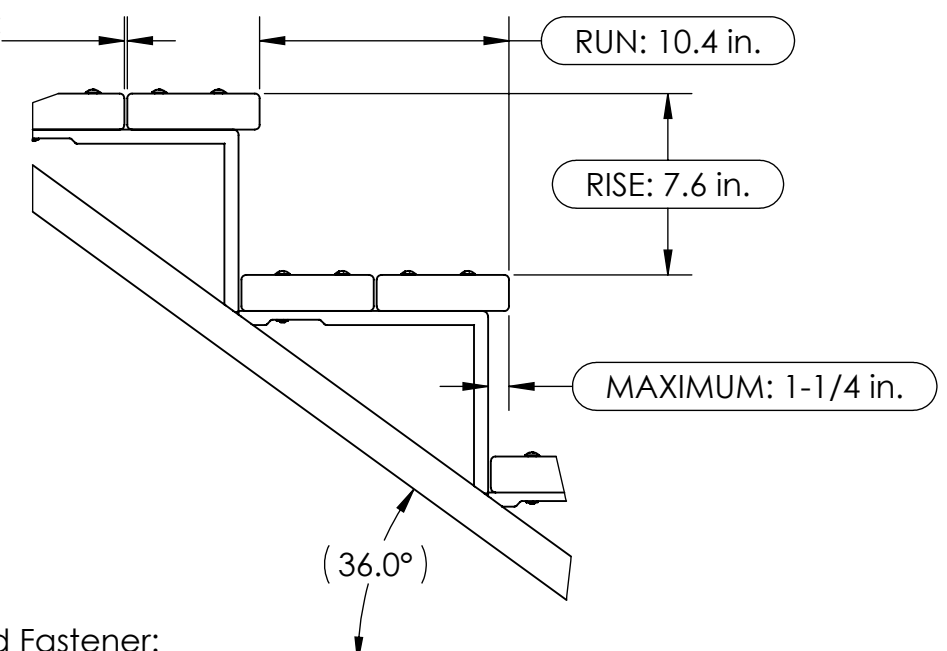


MAXIMUM: 8-3/4 in.  
MINIMUM: 2-3/4 in.

MAXIMUM SPAN: 30-1/2 in. O.C.

MAXIMUM STAIR WIDTH:  
48 in.

2x6 BOARD SPACING:  
1/8 in. - 3/16 in.

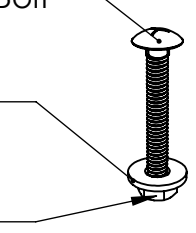


Recommended Fastener:

1/4 in. x 2 in.  
Carriage Bolt

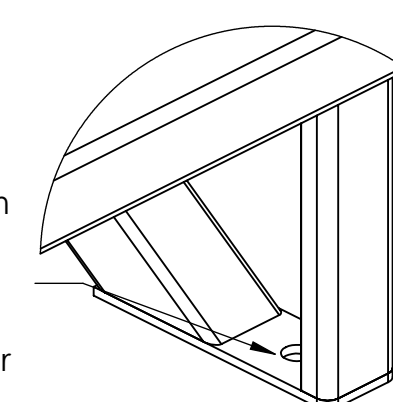
Washer

Hex Nut

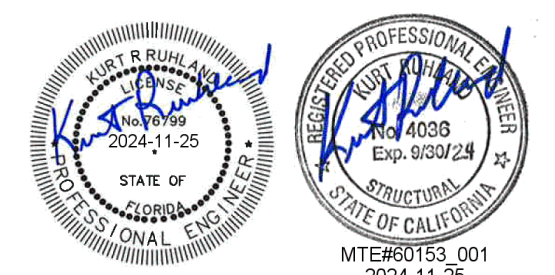


Concrete attachment:  
One Hilti Kwik Bolt 1, diameter 3/8 in., with minimum  
concrete embedment 2 in.

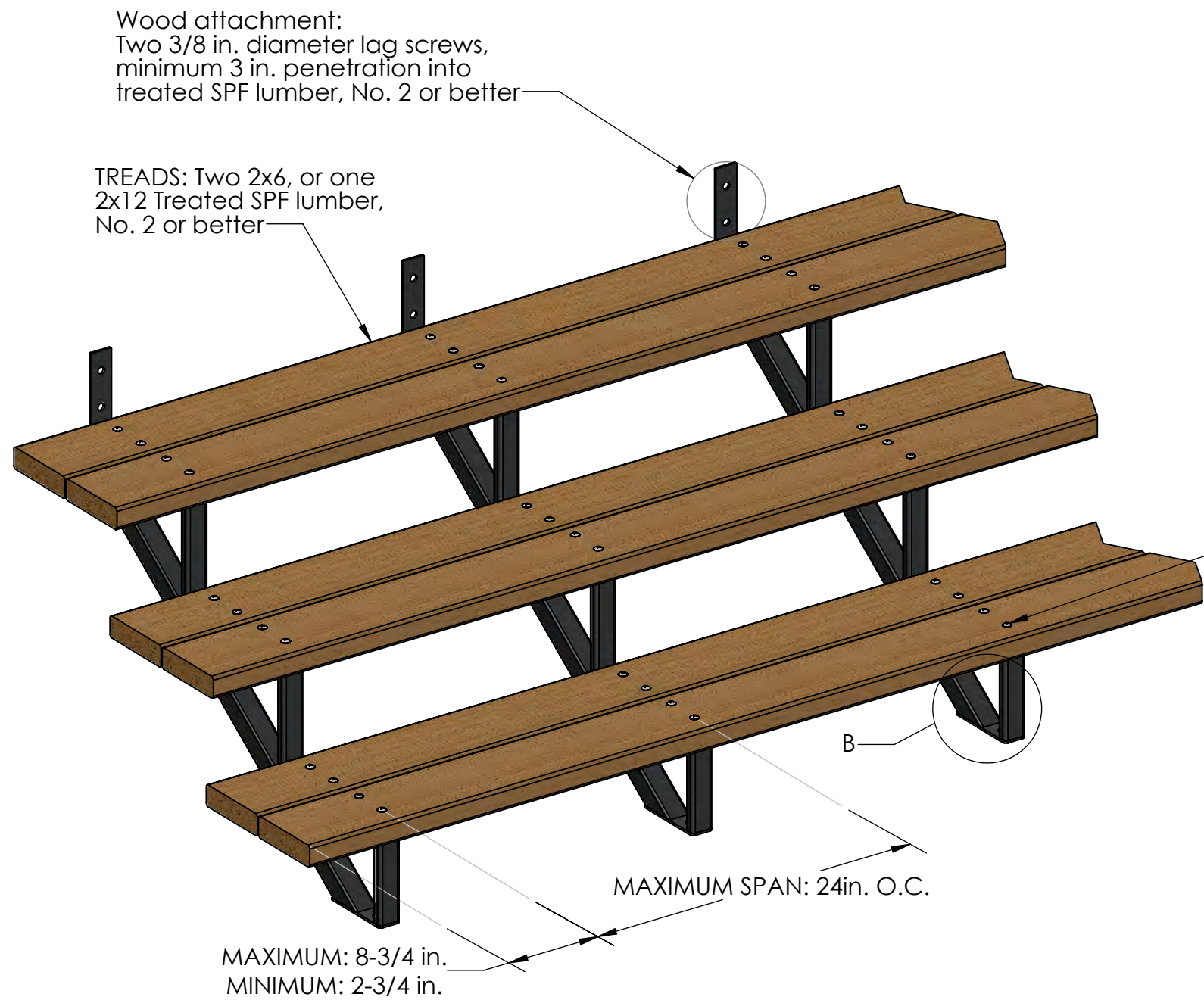
Wood attachment:  
One 3/8 in. diameter lag screw, minimum 3 in.  
penetration into treated SPF lumber, No. 2 or better



DETAIL B

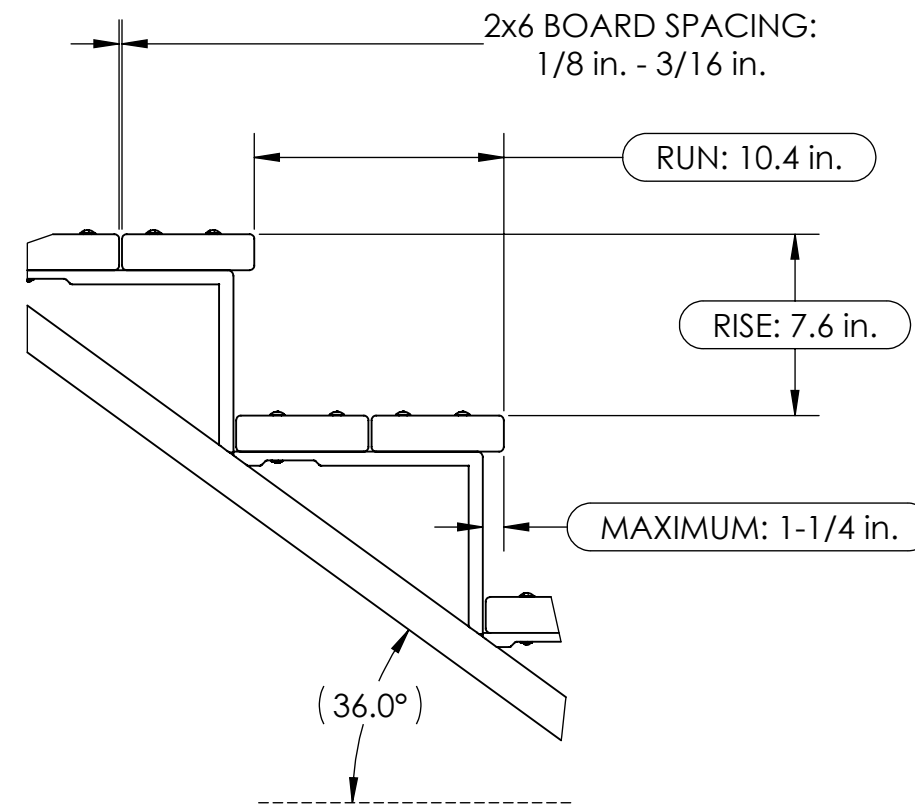


TITLE		Two Riser Configuration	
PART FILE		Report Assembly USA	
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DIMENSIONS ARE IN MM UNLESS NOTED DO NOT SCALE DRAWING			
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SIZE	DWG. NO.		
<b>B</b>	Report_USA		
SCALE: 5:1	SHT REV	2017-05-16	Sheet 2 of 15



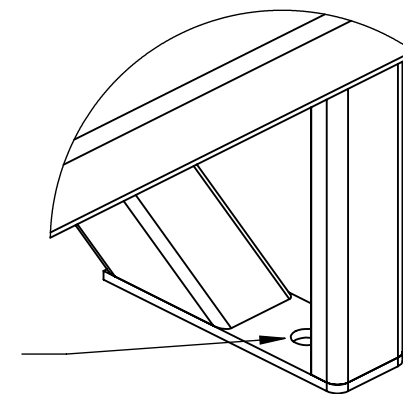
Concrete attachment:  
One Hilti Kwik Bolt 1, diameter 3/8 in., with minimum concrete embedment 2 in.

Wood attachment:  
One 3/8 in. diameter lag screw, minimum 3 in. penetration into treated SPF lumber, No. 2 or better

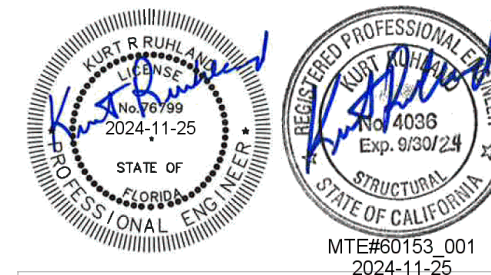


Recommended Fastener:

- 1/4 in. x 2 in. Carriage Bolt
- Washer
- Hex Nut



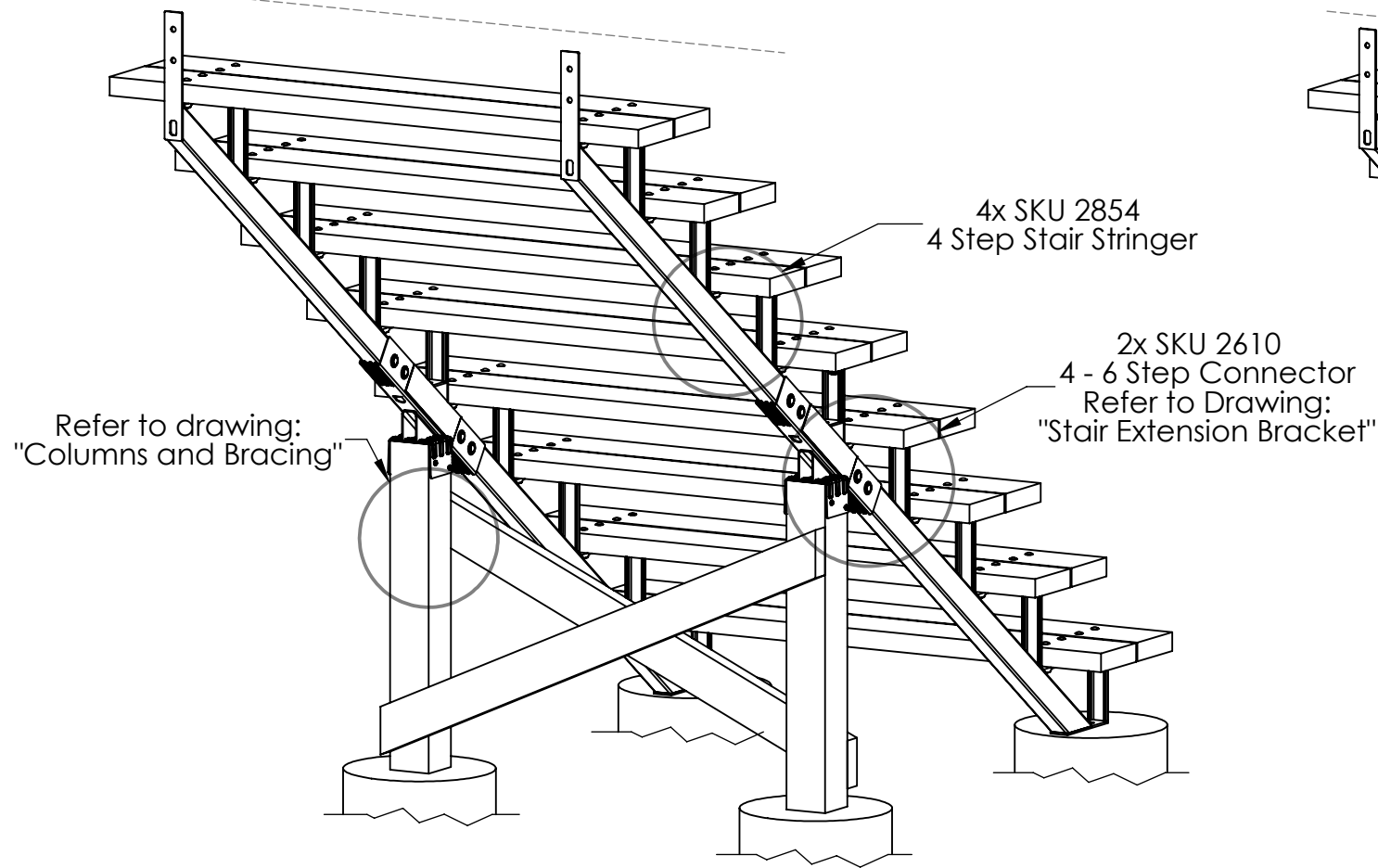
DETAIL B



<b>PEAK</b>	
TITLE Multi-Riser Configuration	
PART FILE Report Assembly USA	
DWG REV B	
<small>DIMENSIONS ARE IN MM UNLESS NOTED DO NOT SCALE DRAWING</small>	
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SIZE <b>B</b>	DWG. NO. Report_USA
SCALE: 5:1	SHT REV 2017-05-16
Sheet 3 of 15	

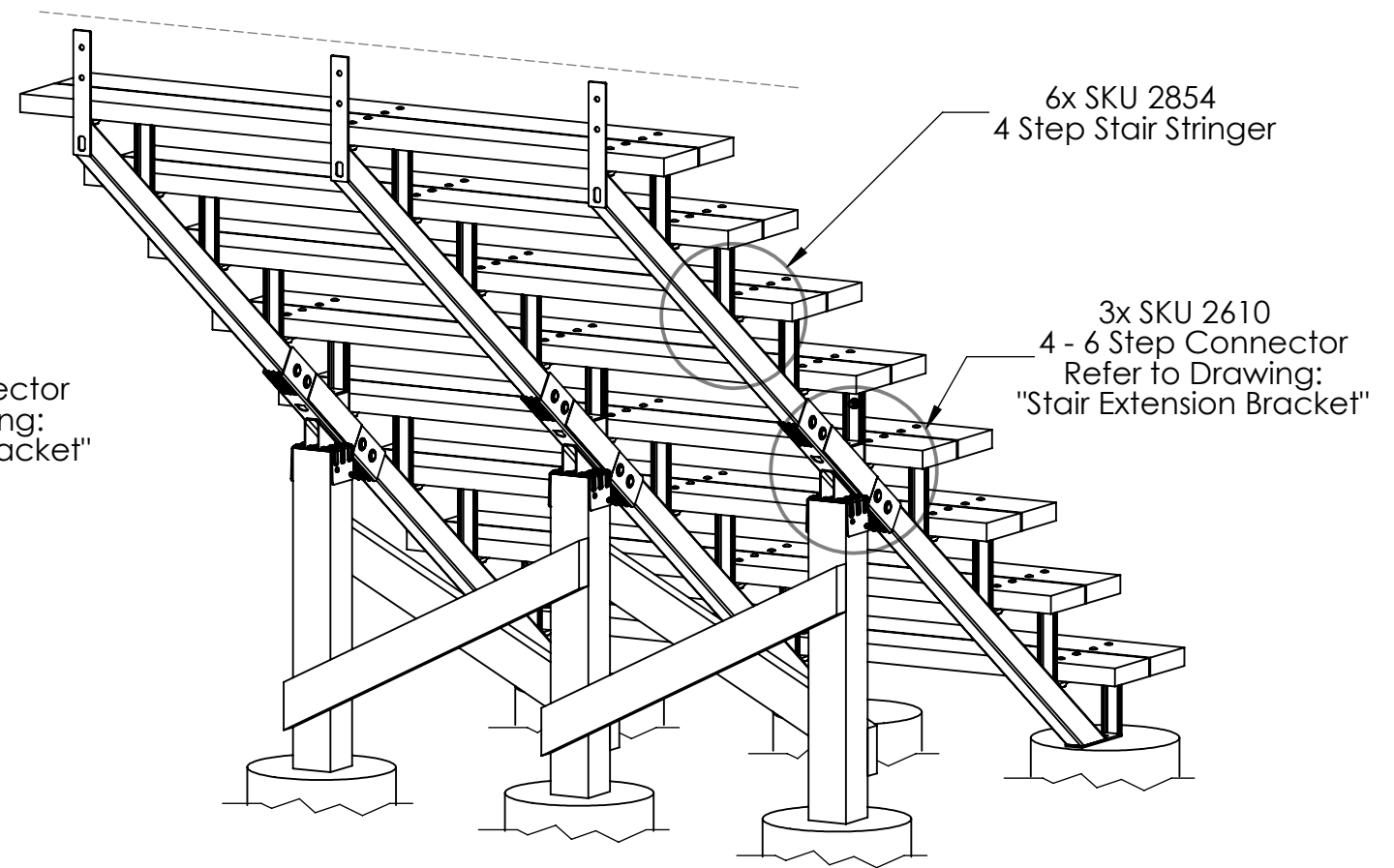
DECK HEIGHT :  
68.0 in.

### Two Riser Assembly



DECK HEIGHT :  
68.0 in.

### Multi Riser Assembly



TITLE  
8-Step Stair Assembly

PART FILE  
Stair Assembly 8 Step (4+4) - USA

DWG REV  
A

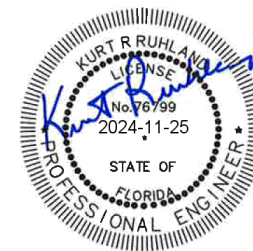
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SIZE  
**B**

DWG. NO.  
Stair Assemblies - USA

SCALE: 1:24  
SHT REV  
2017-05-16  
Sheet 4 of 15



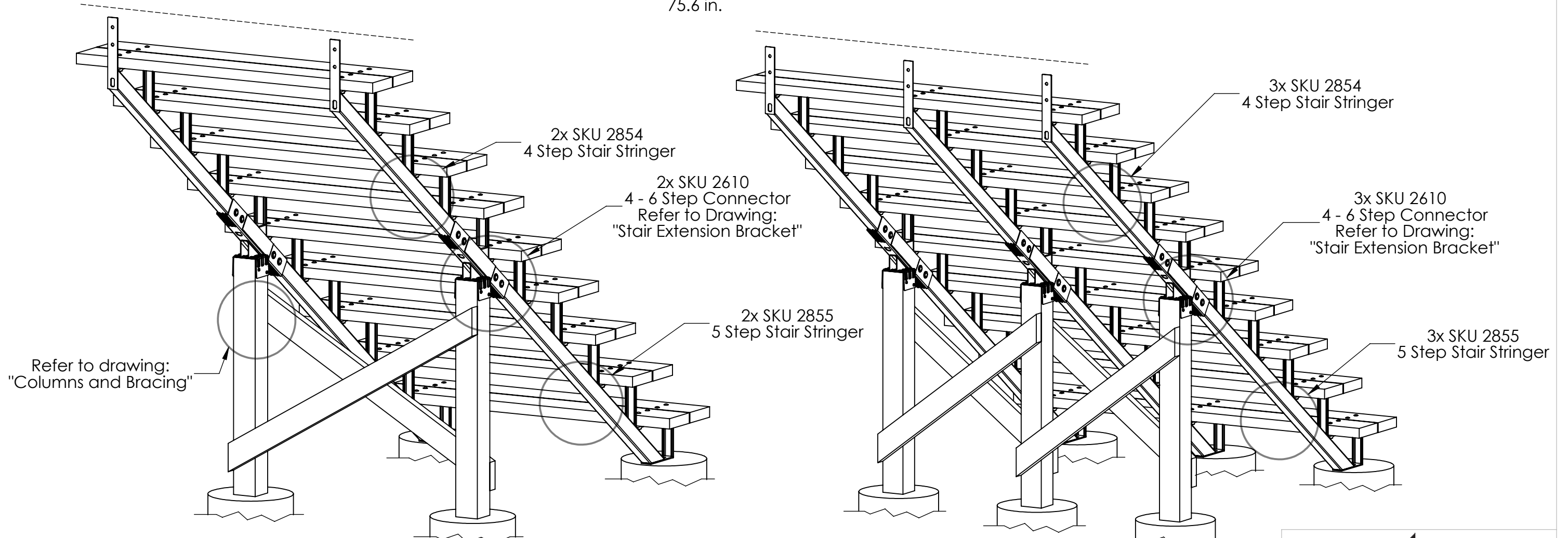
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2024-11-25

DECK HEIGHT :  
75.6 in.

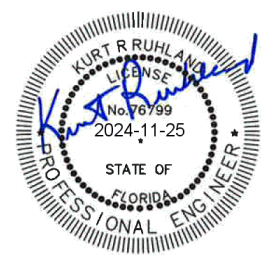
### Two Riser Assembly

DECK HEIGHT :  
75.6 in.

### Multi Riser Assembly



TITLE	
9-Step Stair Assembly	
PART FILE	
Stair Assembly 8 Step (4+4) - USA	
DWG REV	
A	
DIMENSIONS ARE IN MM UNLESS NOTED DO NOT SCALE DRAWING	
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SIZE	DWG. NO.
<b>B</b>	Stair Assemblies - USA
SCALE: 1:24	SHT REV 2017-05-16
Sheet 5 of 15	



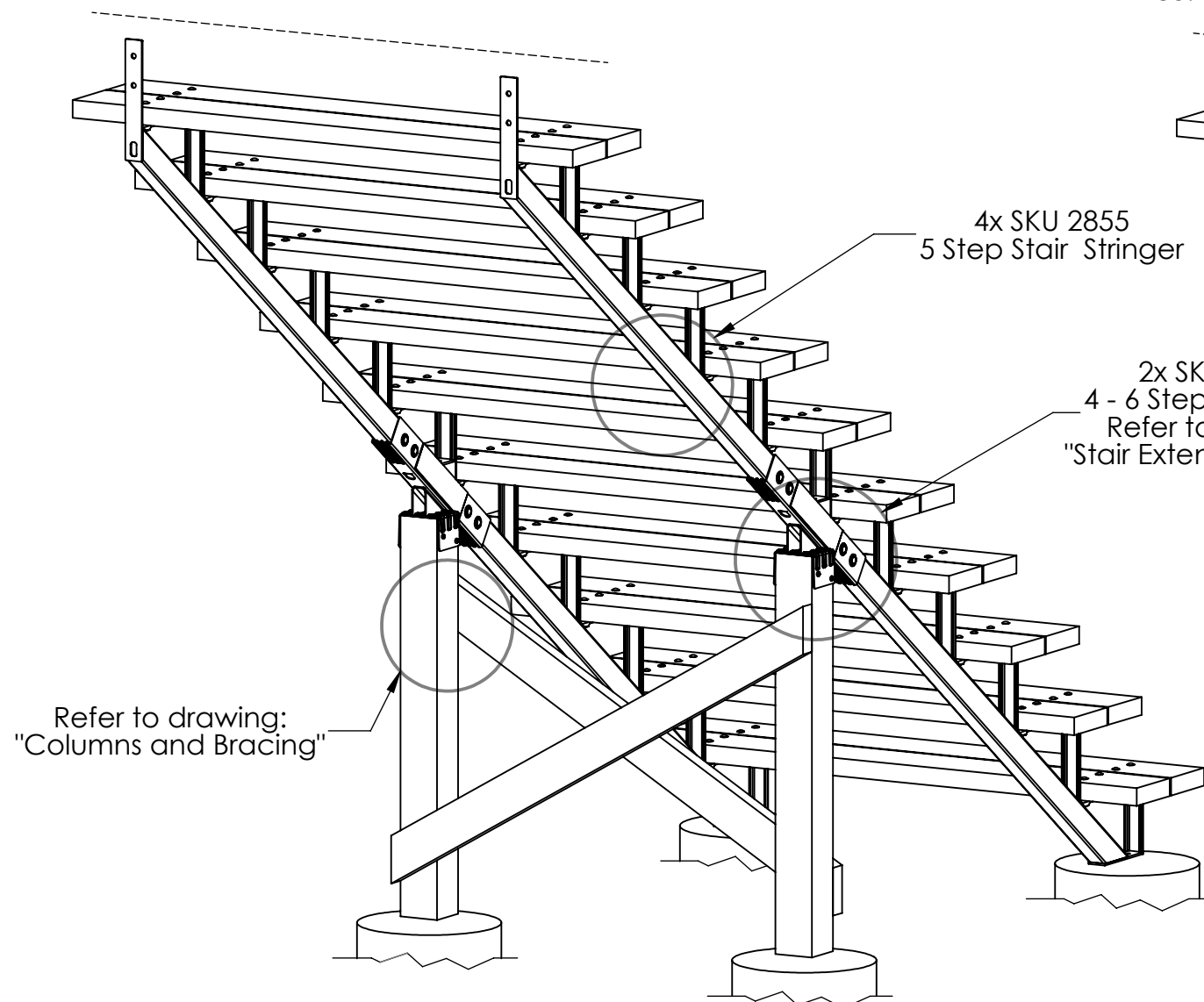
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DECK HEIGHT :  
83.2 in.

### Two Riser Assembly

DECK HEIGHT :  
83.2 in.

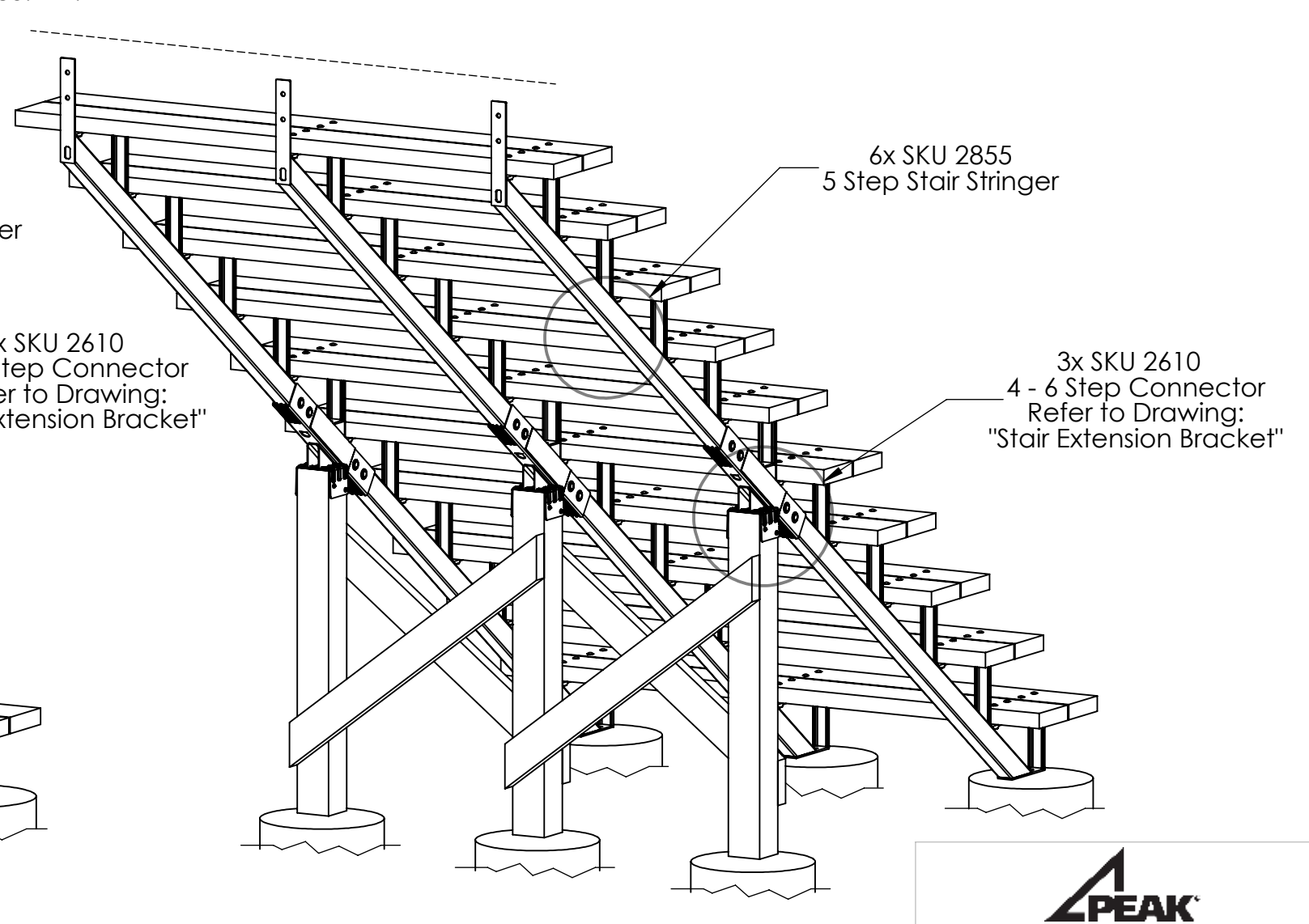
### Multi Riser Assembly



4x SKU 2855  
5 Step Stair Stringer

2x SKU 2610  
4 - 6 Step Connector  
Refer to Drawing:  
"Stair Extension Bracket"

Refer to drawing:  
"Columns and Bracing"



6x SKU 2855  
5 Step Stair Stringer

3x SKU 2610  
4 - 6 Step Connector  
Refer to Drawing:  
"Stair Extension Bracket"



TITLE  
10-Step Stair Assembly

PART FILE  
Stair Assembly 8 Step (4+4) - USA

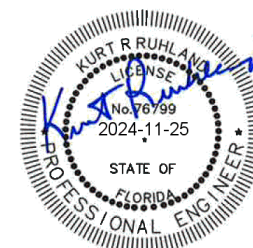
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SIZE  
**B** DWG. NO.  
Stair Assemblies - USA

SCALE: 1:24 SHT REV  
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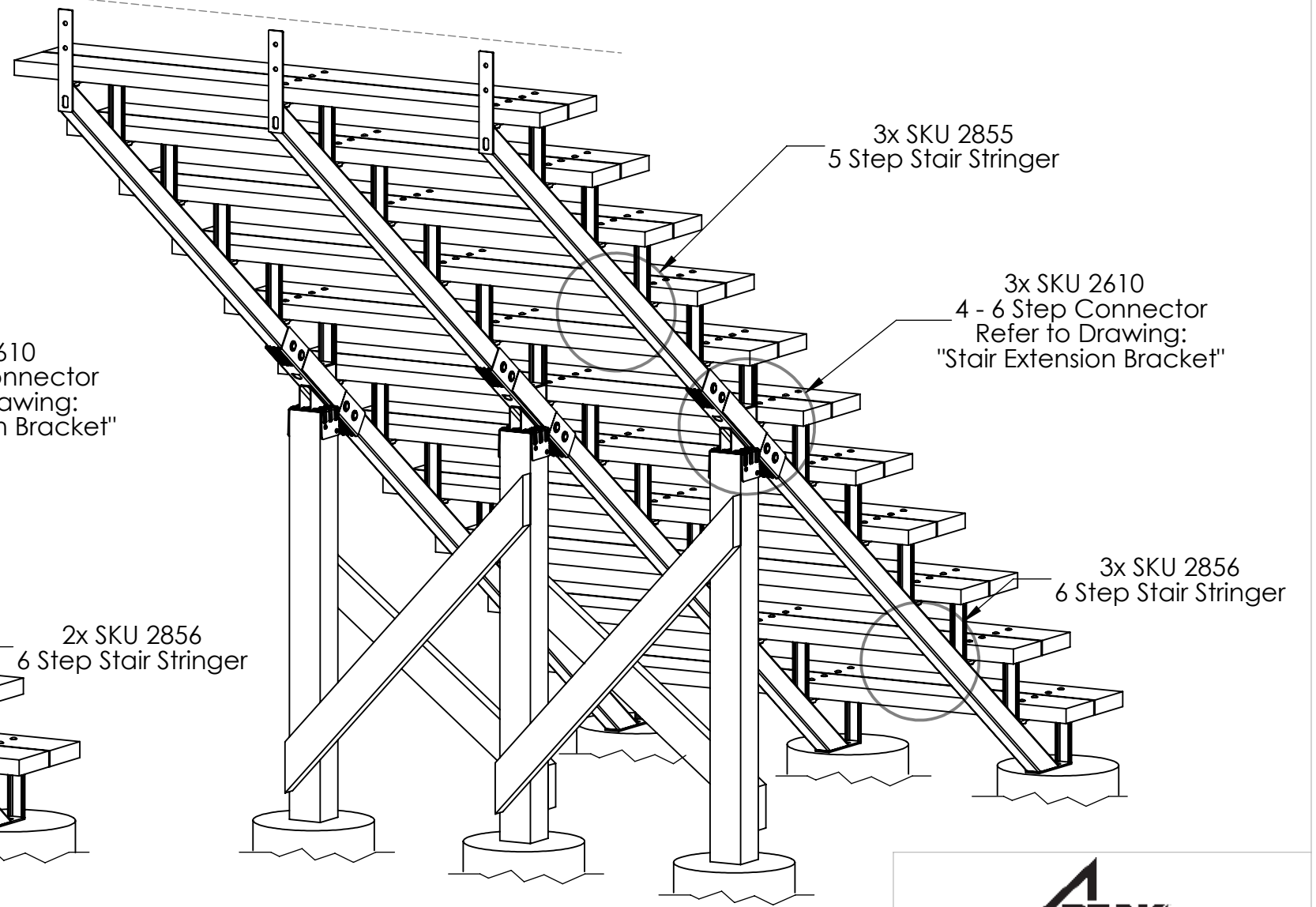
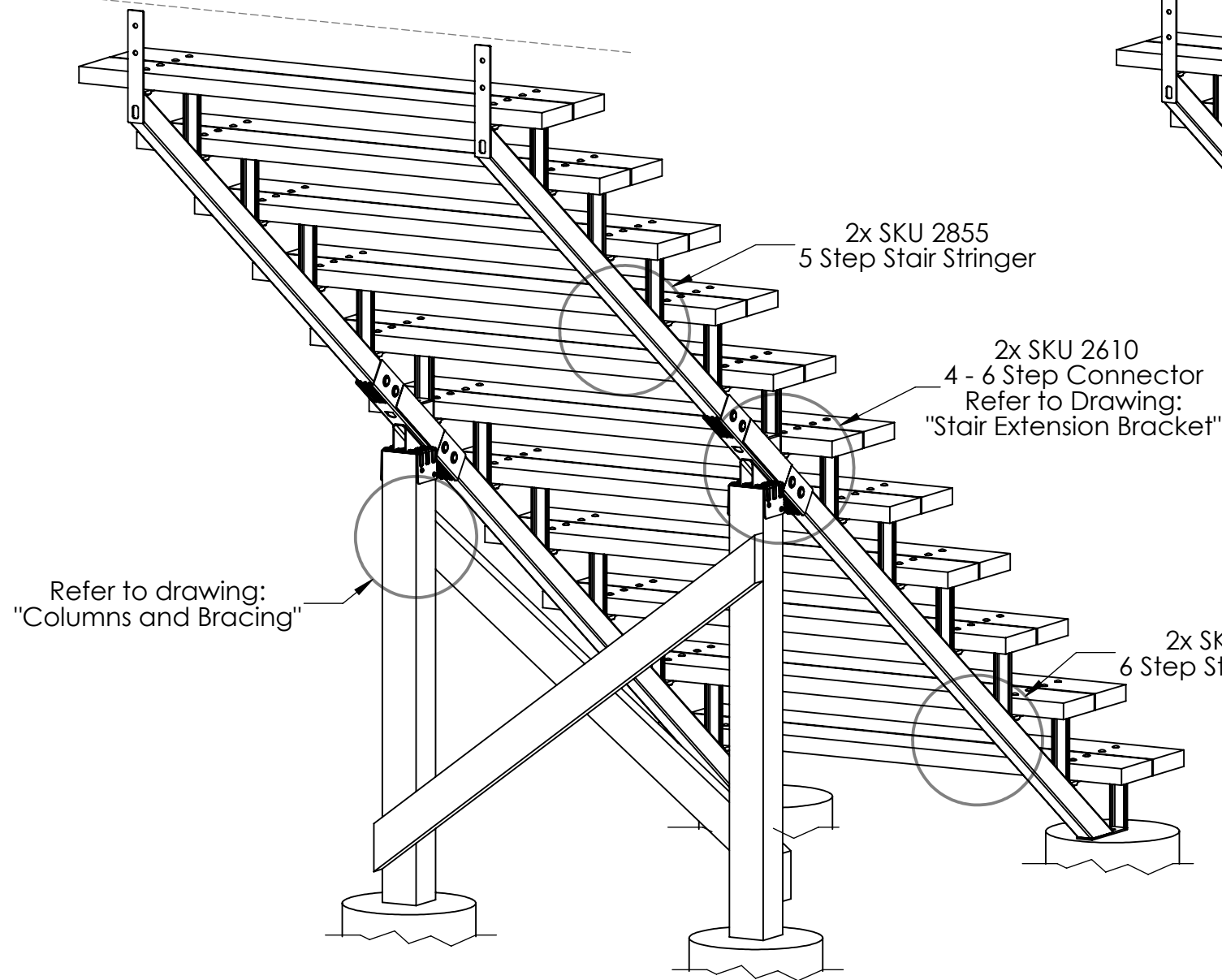
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2024-11-25

DECK HEIGHT :  
90.7 in.

### Two Riser Assembly

DECK HEIGHT :  
90.7 in.

### Multi Riser Assembly



TITLE  
11-Step Stair Assembly

PART FILE  
Stair Assembly 8 Step (4+4) - USA

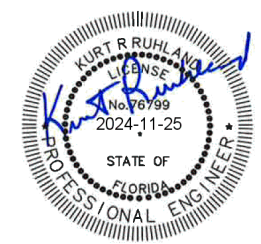
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SIZE  
**B** DWG. NO.  
Stair Assemblies - USA

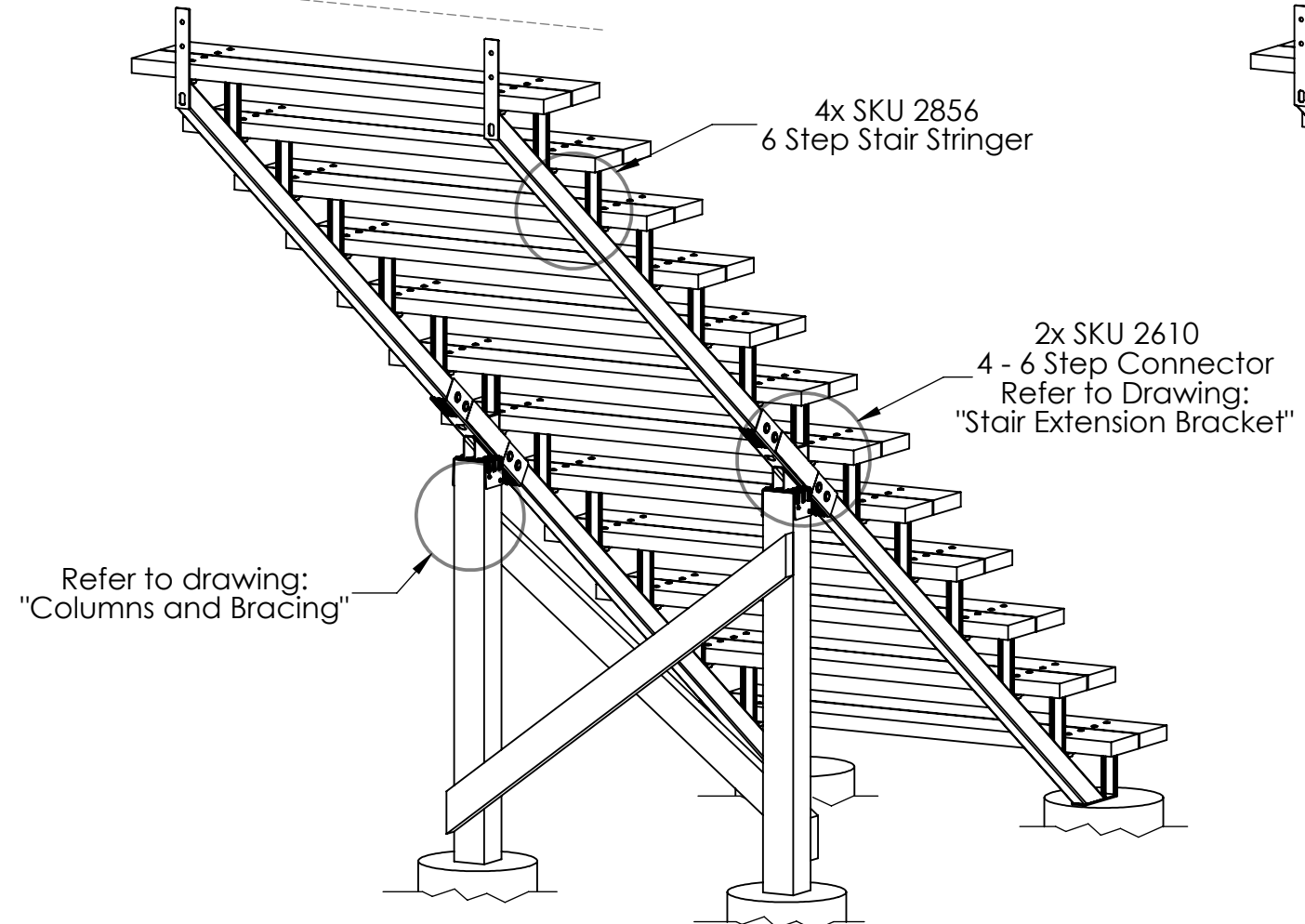
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2017-05-16 Sheet 7 of 15



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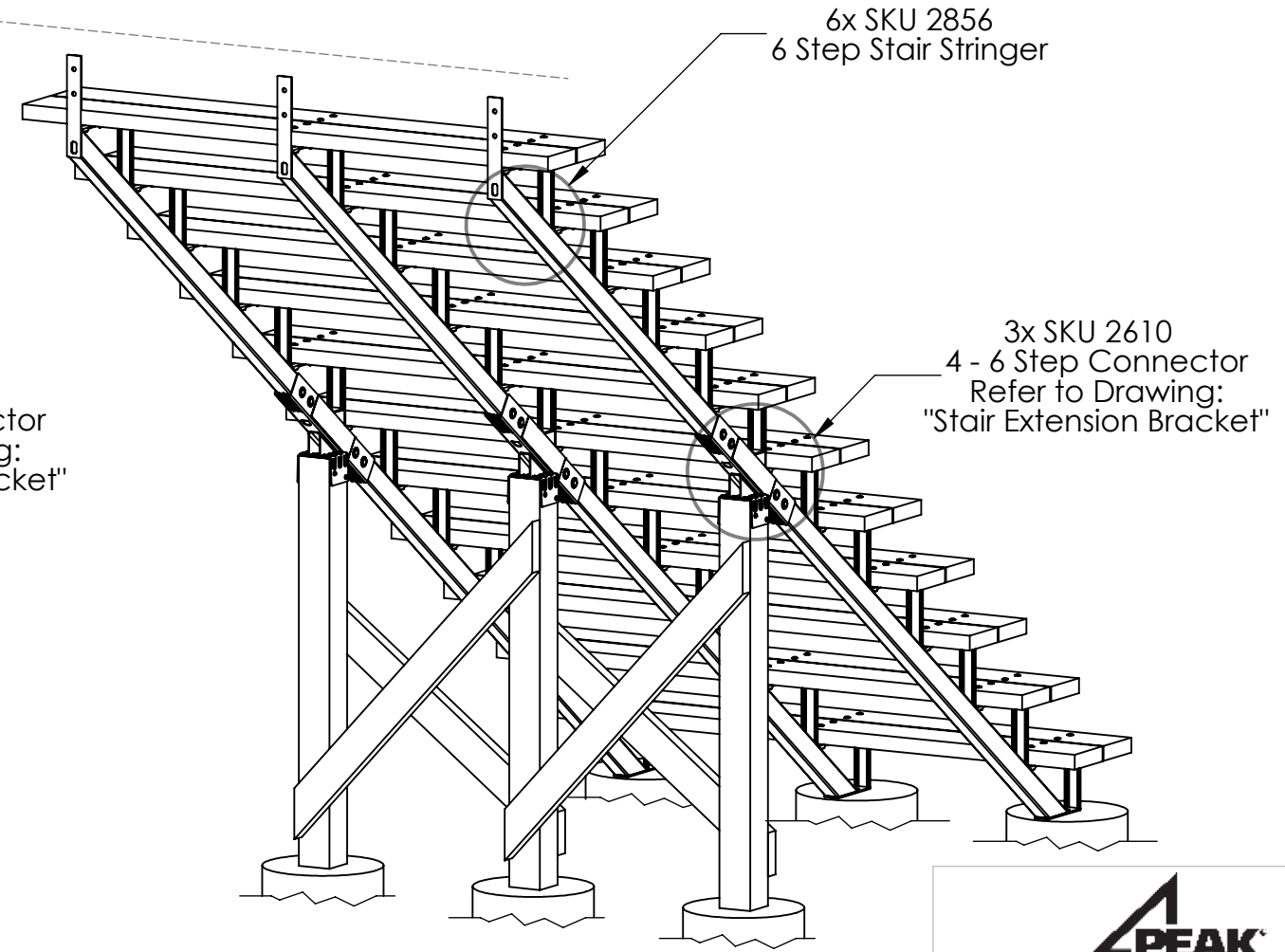
## Two Riser Assembly

DECK HEIGHT :  
98.3 in.



## Multi Riser Assembly

DECK HEIGHT :  
98.3 in.

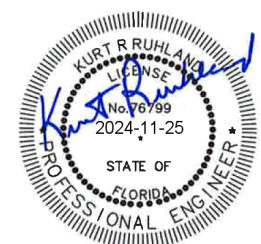


TITLE	12-Step Stair Assembly
PART FILE	Stair Assembly 8 Step (4+4) - USA
DWG REV	A

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SIZE	DWG. NO.
<b>B</b>	Stair Assemblies - USA



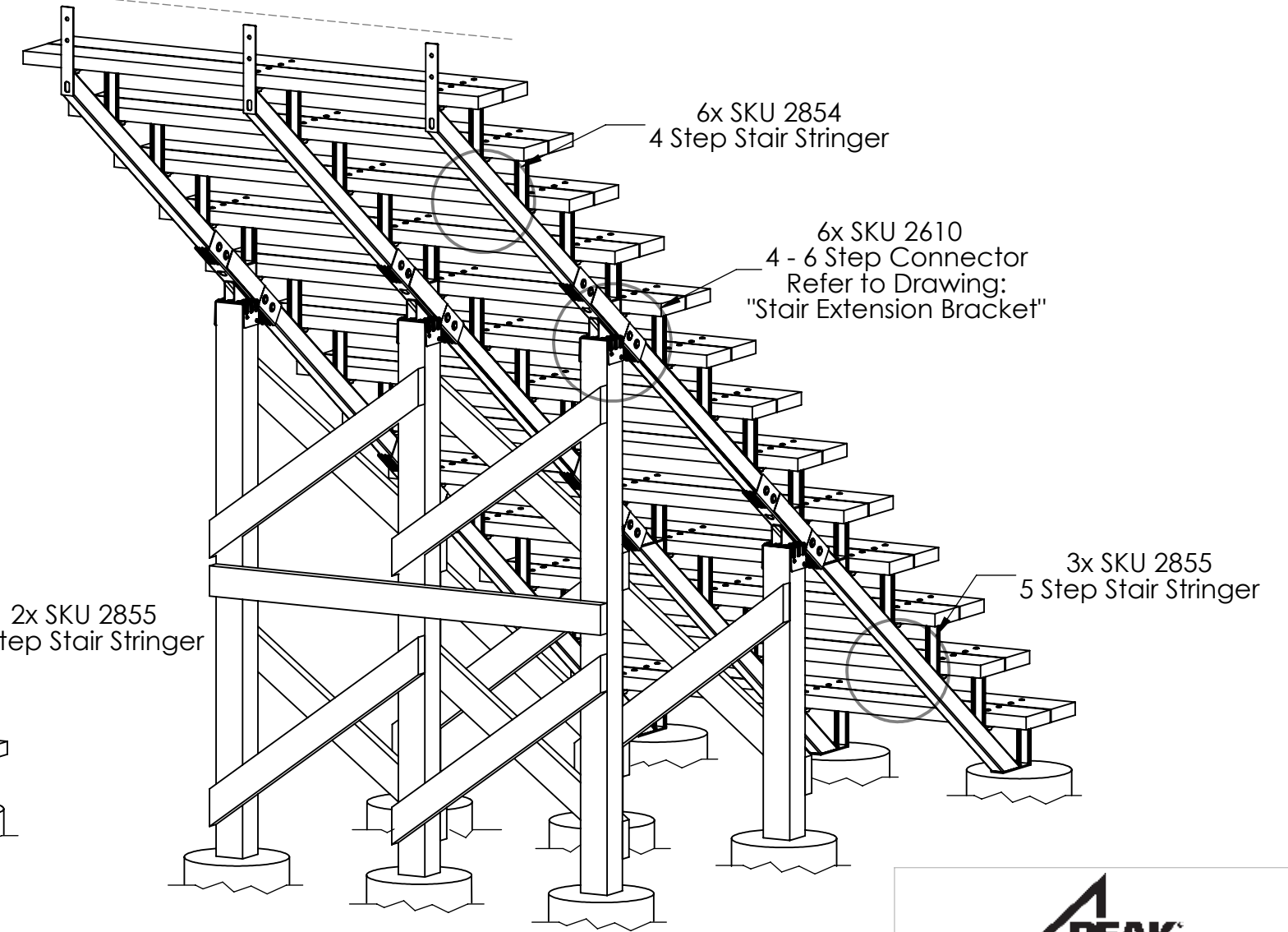
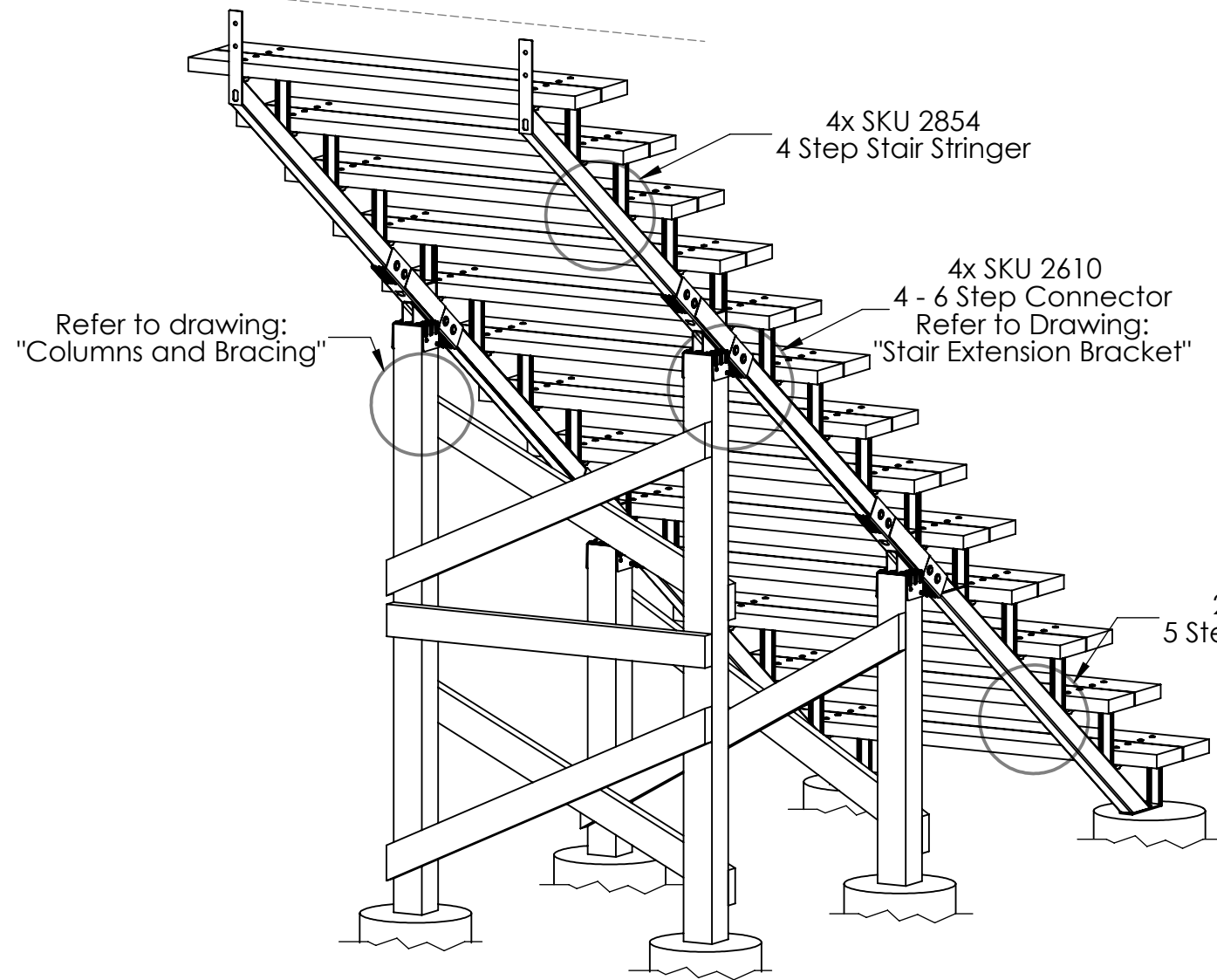
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2024-11-25

DECK HEIGHT :  
105.8 in.

### Two Riser Assembly

DECK HEIGHT :  
105.8 in.

### Multi Riser Assembly



TITLE  
13-Step Stair Assembly

PART FILE  
Stair Assembly 8 Step (4+4) - USA

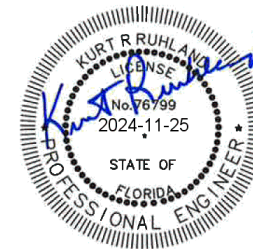
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SIZE  
**B** DWG. NO.  
Stair Assemblies - USA

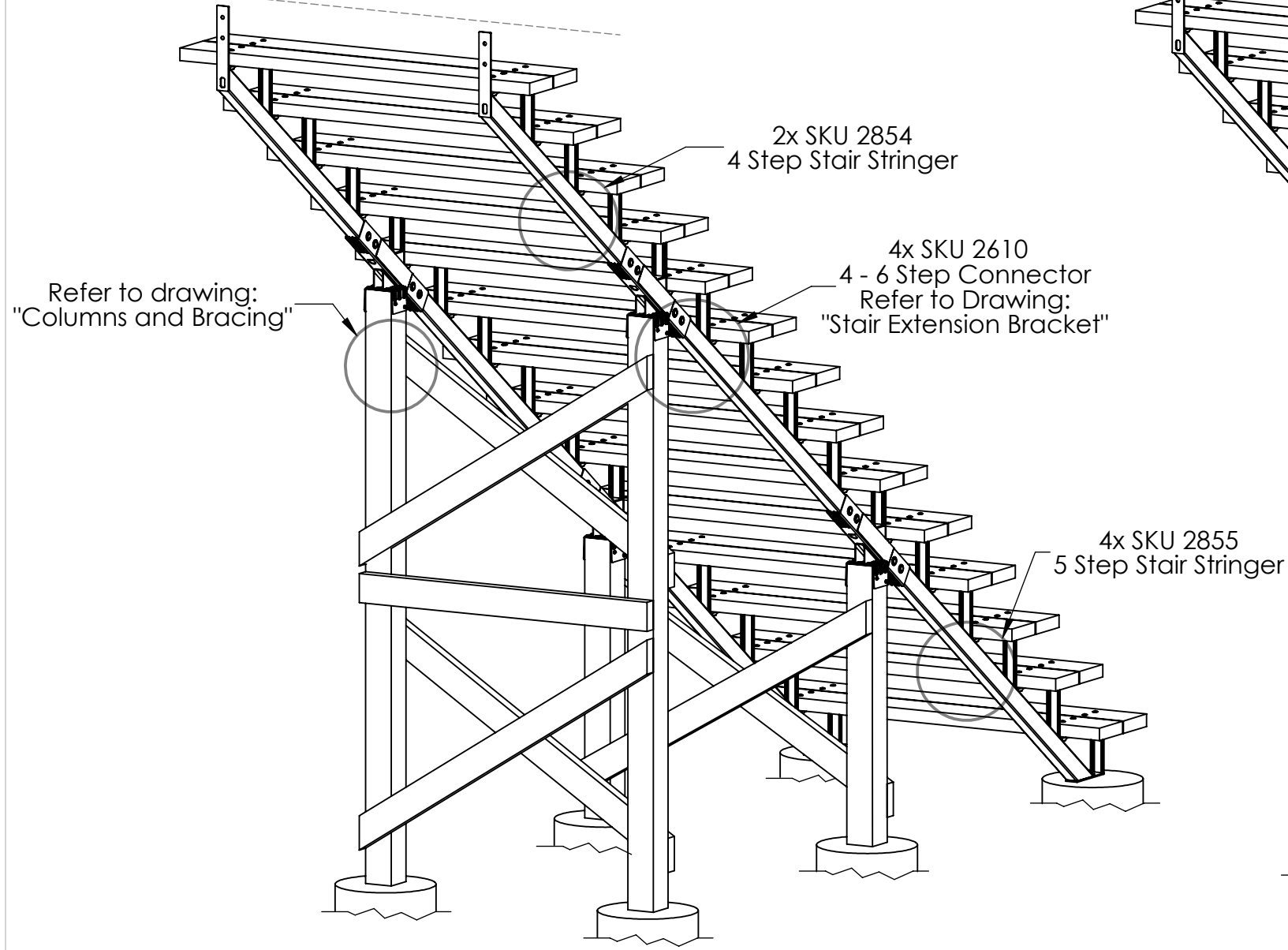
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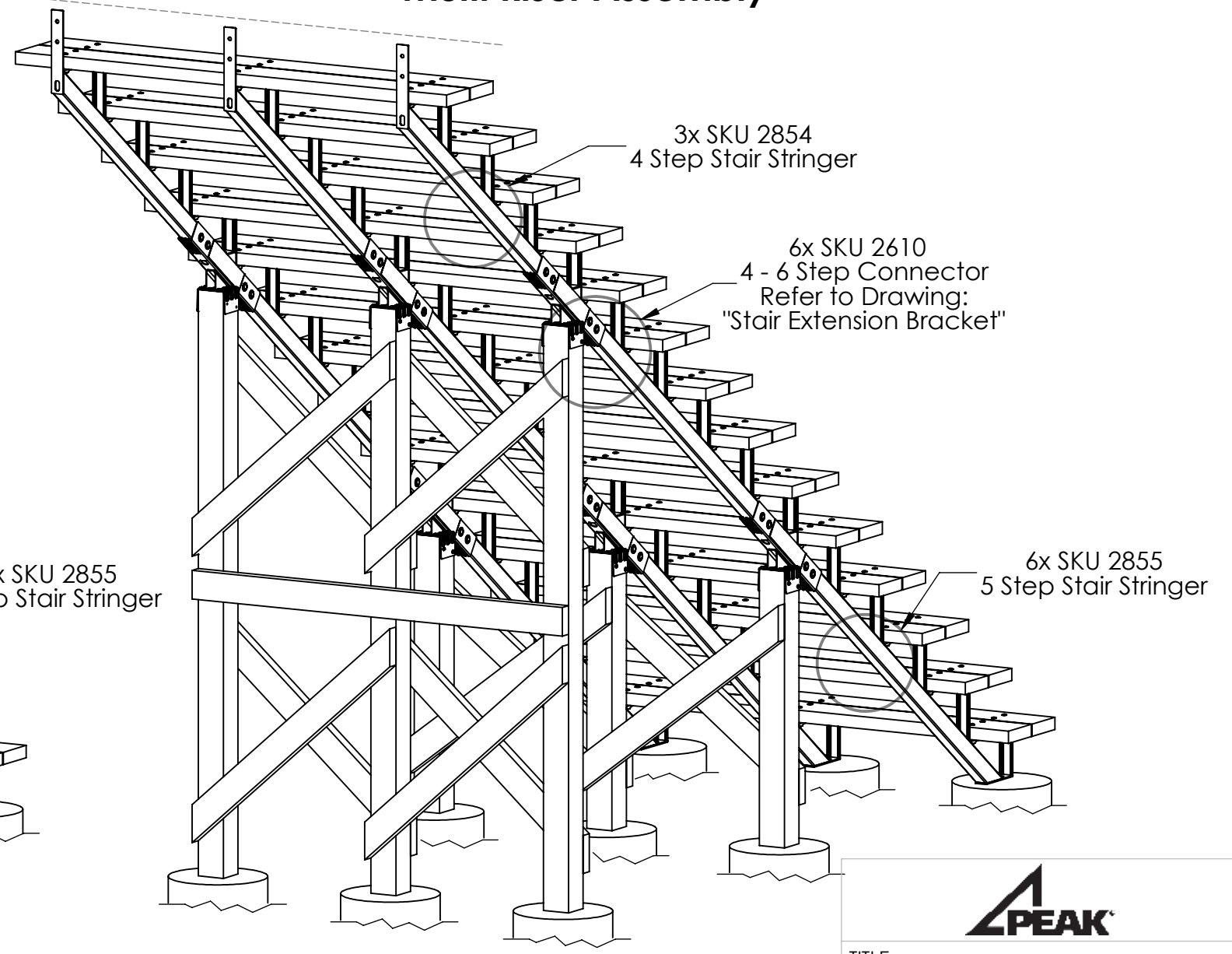
DECK HEIGHT :  
113.4 in.

### Two Riser Assembly



DECK HEIGHT :  
113.4 in.

### Multi Riser Assembly



TITLE  
14-Step Stair Assembly  
Using 4-6 Step Extension Bracket

PART FILE  
Stair Assembly 8 Step (4+4) - USA

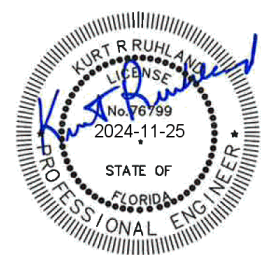
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SIZE DWG. NO.  
**B** Stair Assemblies - USA

SCALE: 1:24 SHT REV 2017-05-16 Sheet 10 of 15



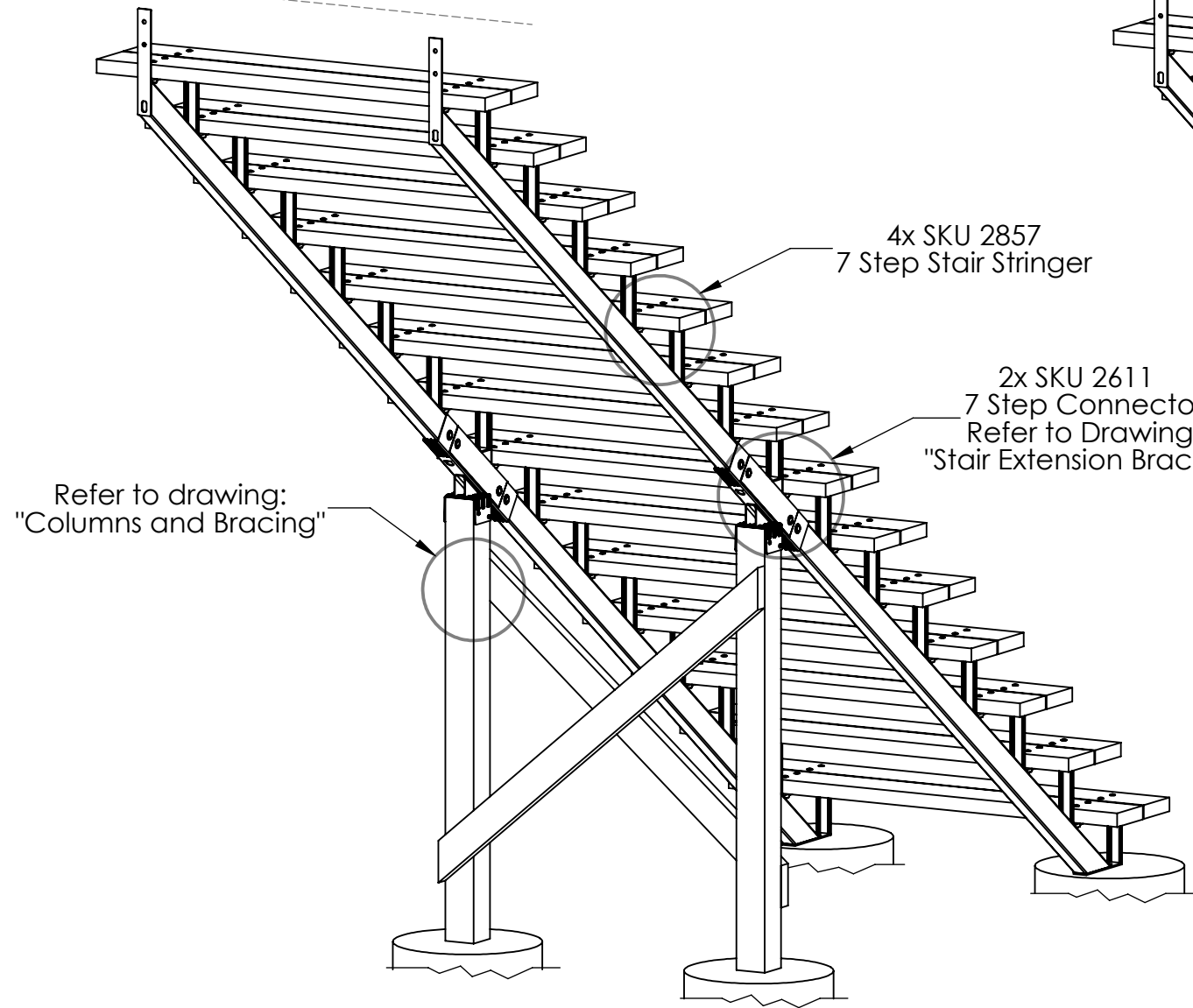
MTE#60153\_001  
2024-11-25

DECK HEIGHT :  
113.4 in.

### Two Riser Assembly

DECK HEIGHT :  
113.4 in.

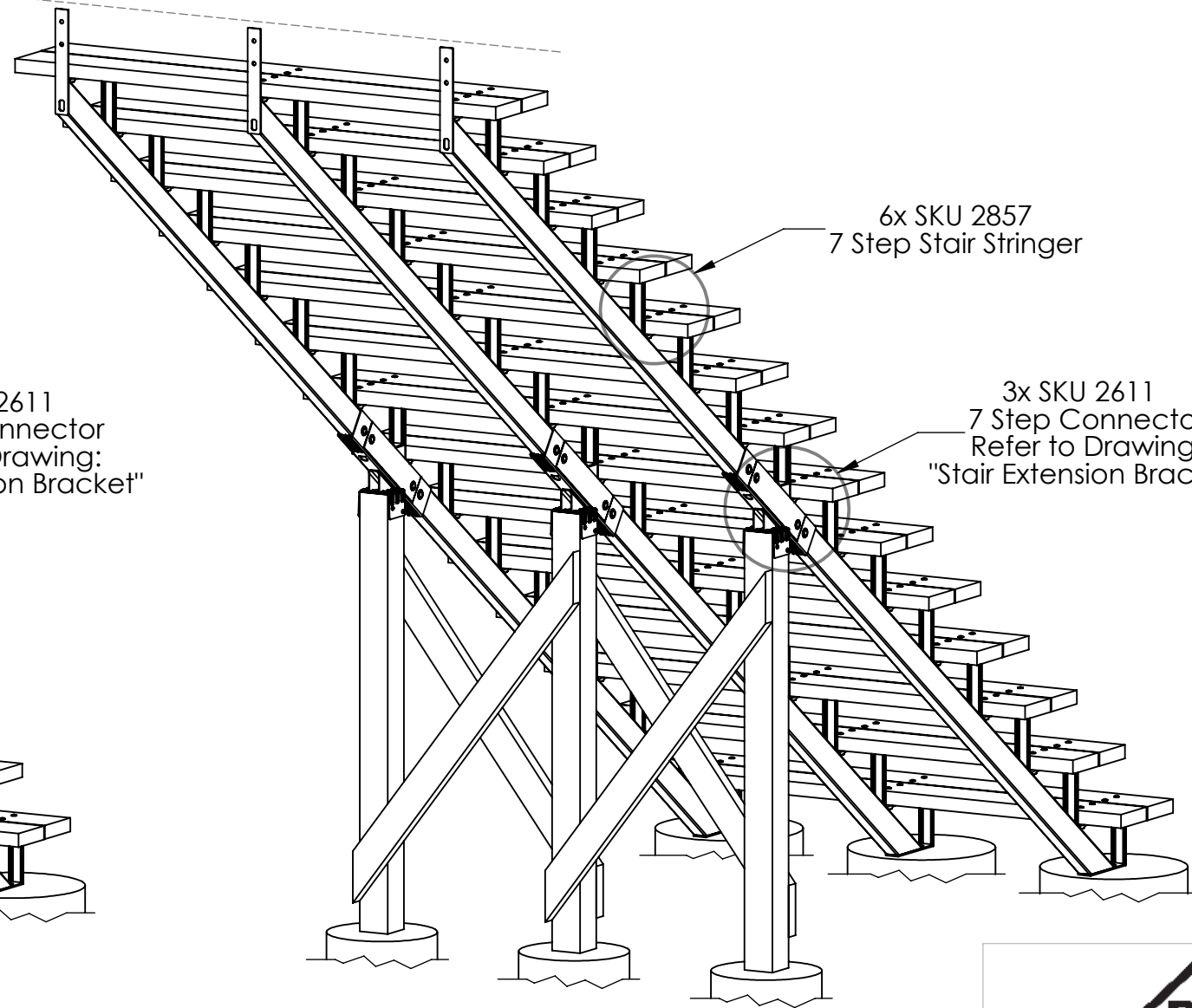
### Multi Riser Assembly



4x SKU 2857  
7 Step Stair Stringer

2x SKU 2611  
7 Step Connector  
Refer to Drawing:  
"Stair Extension Bracket"

Refer to drawing:  
"Columns and Bracing"



6x SKU 2857  
7 Step Stair Stringer

3x SKU 2611  
7 Step Connector  
Refer to Drawing:  
"Stair Extension Bracket"



TITLE  
14-Step Stair Assembly  
Using 7 Step Extension Bracket

PART FILE  
Stair Assembly 8 Step (4+4) - USA

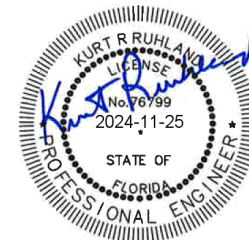
DWG REV  
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SIZE  
**B** DWG. NO.  
Stair Assemblies - USA

SCALE: 1:24 SHT REV  
2017-05-16 Sheet 11 of 15



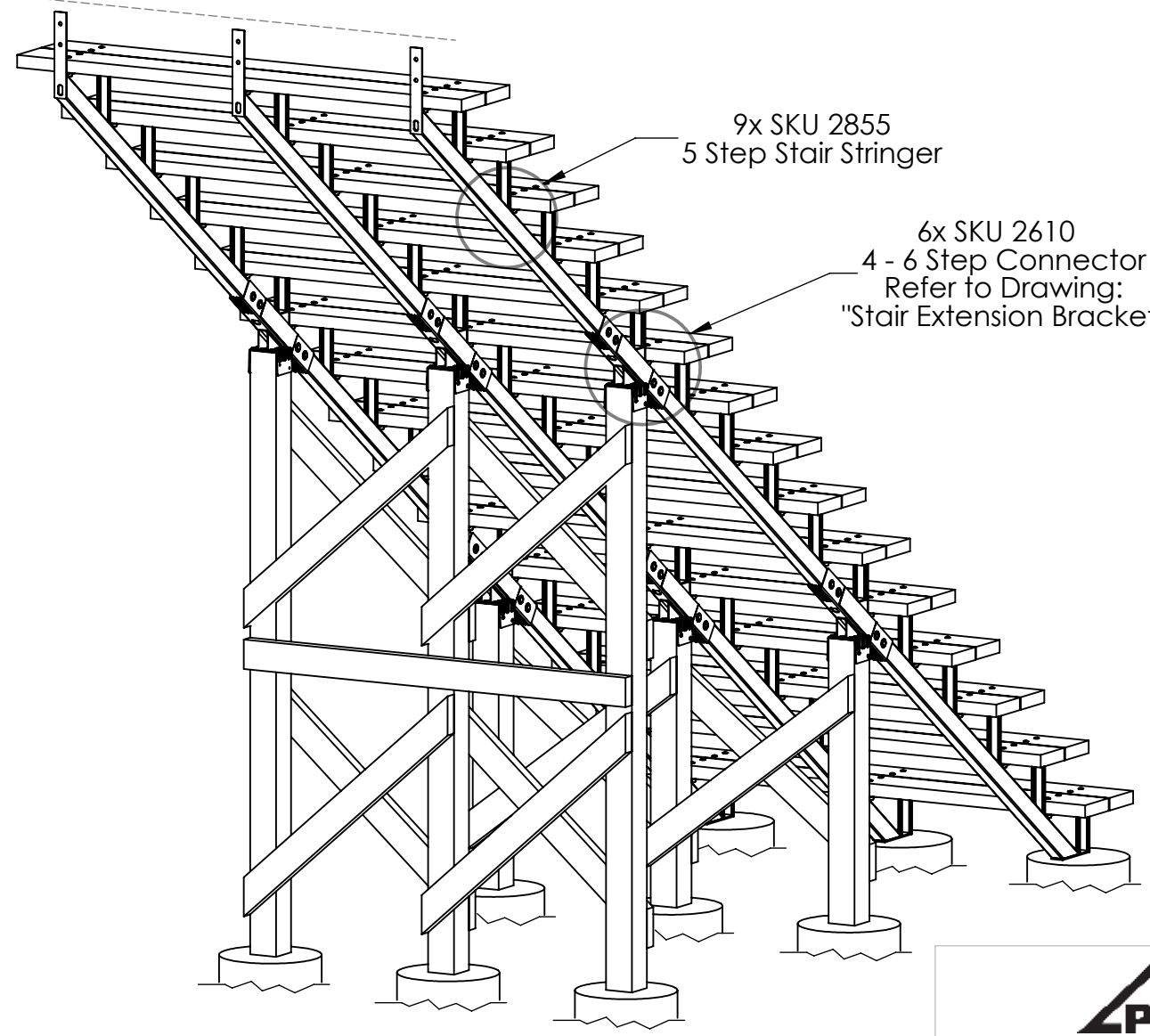
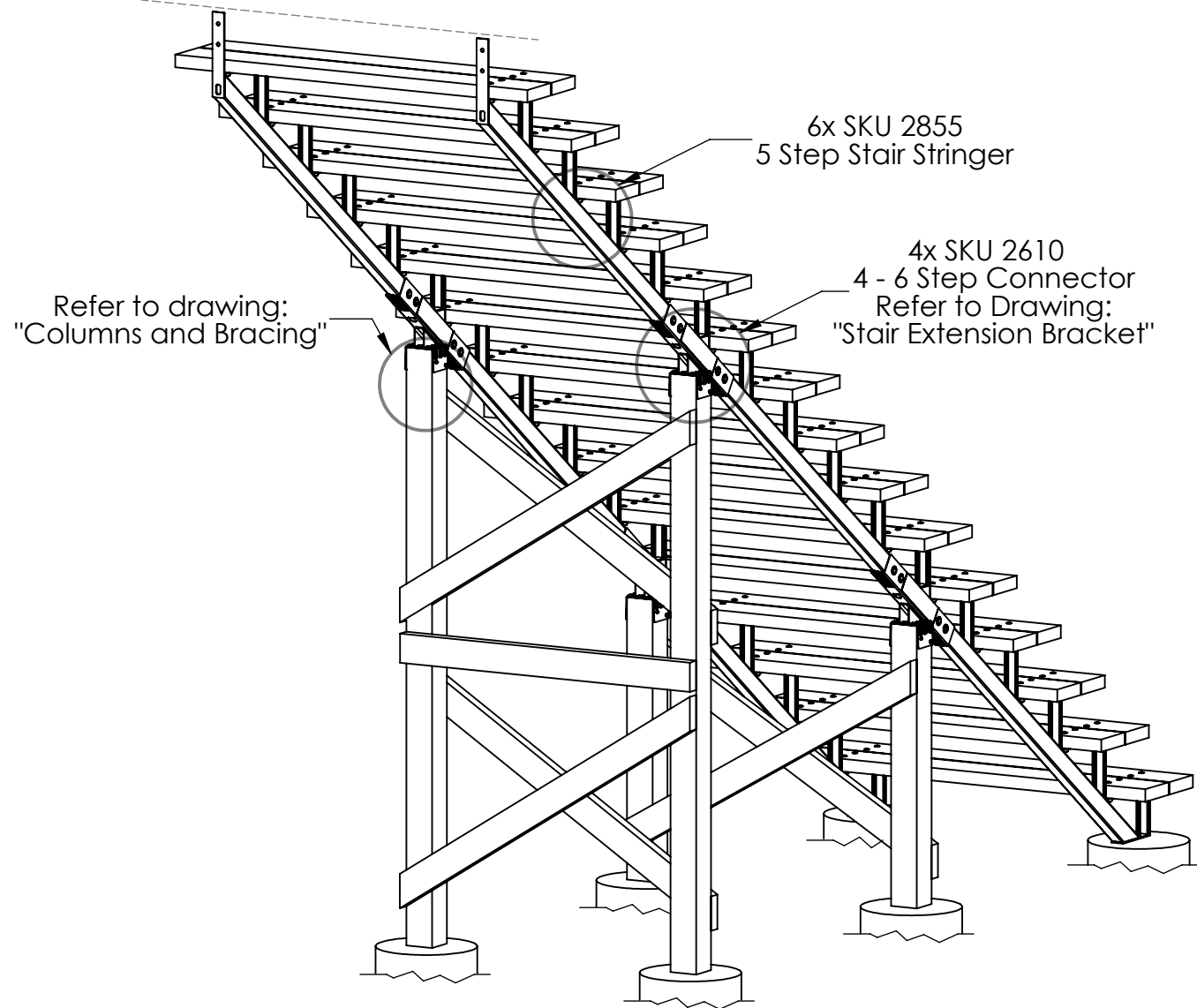
MTE#60153\_001  
2024-11-25

### Two Stringer Assembly

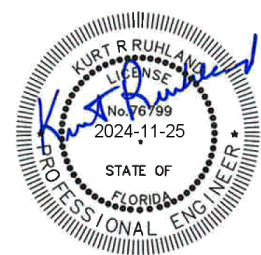
### Multi Stringer Assembly

DECK HEIGHT:  
121 in.

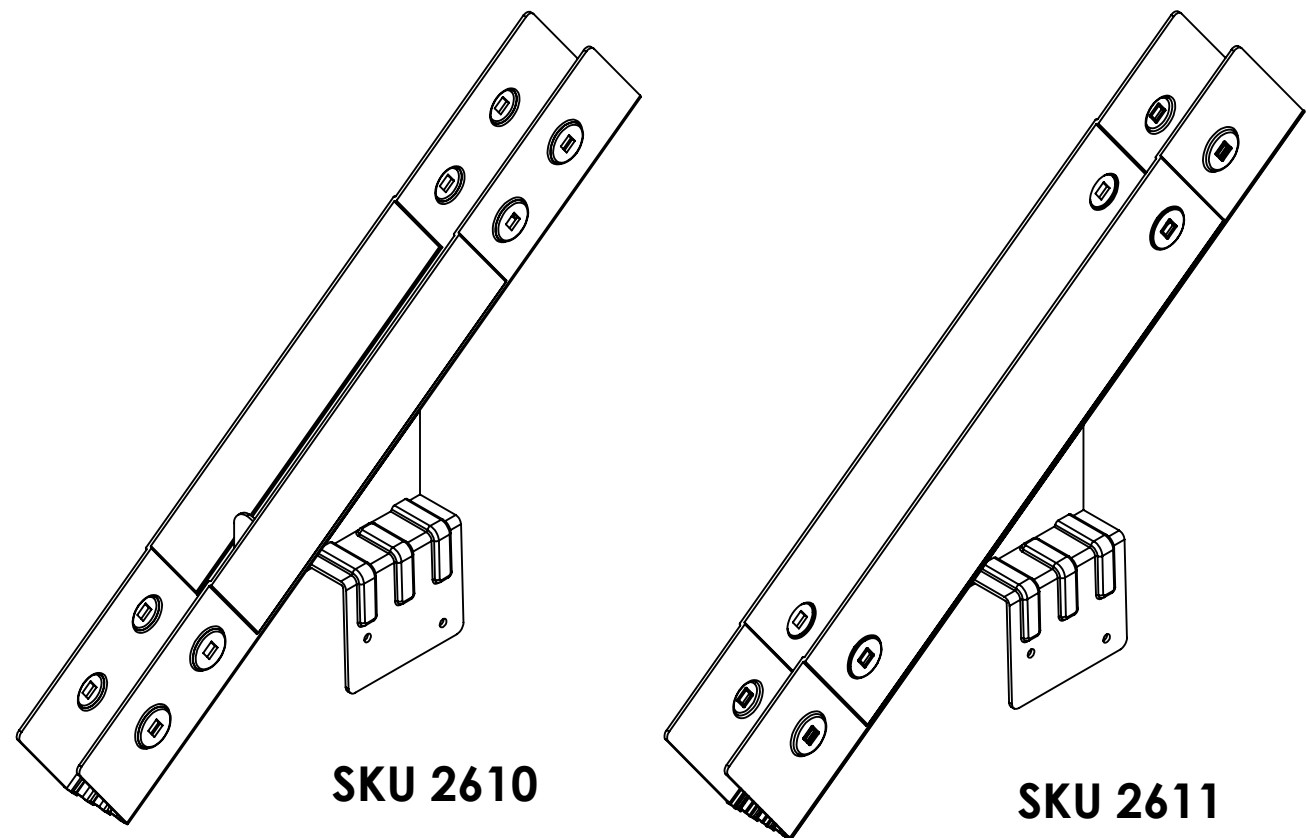
DECK HEIGHT:  
121 in.



TITLE	
15-Step Stair Assembly	
PART FILE	
Stair Assembly 8 Step (4+4) - USA	
DWG REV	A
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SIZE	DWG. NO.
<b>B</b>	Stair Assemblies - USA
SCALE: 1:24	SHT REV 2017-05-16
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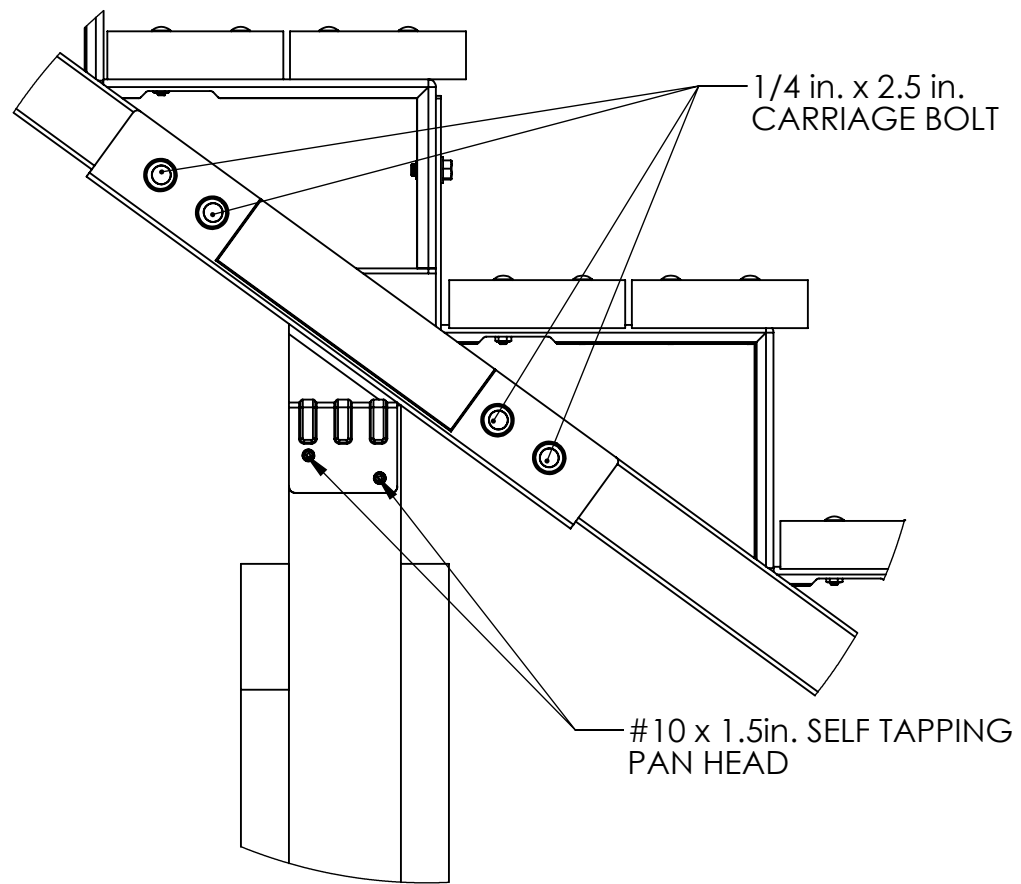


MTE#60153\_001  
2024-11-25

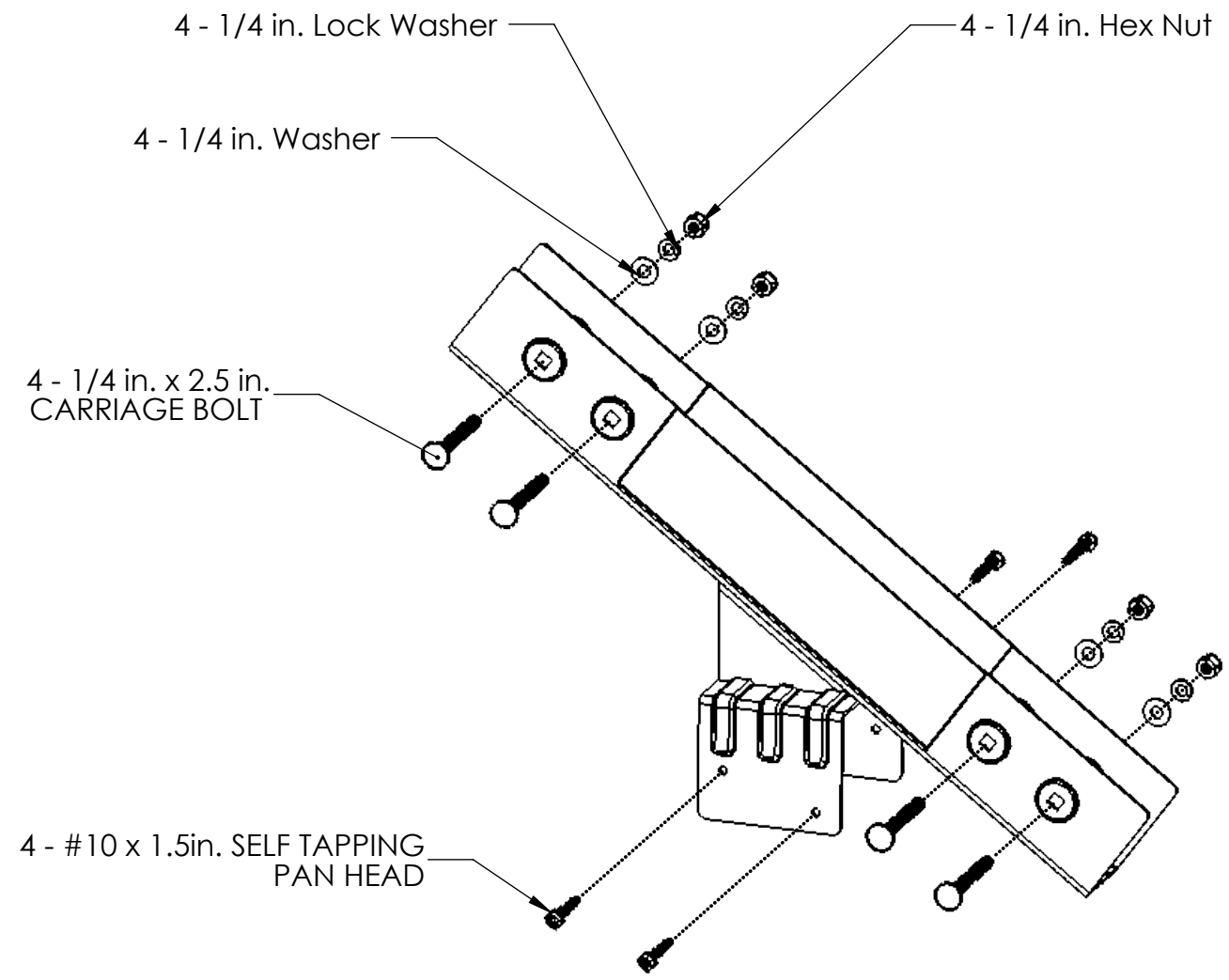


SKU 2610

SKU 2611



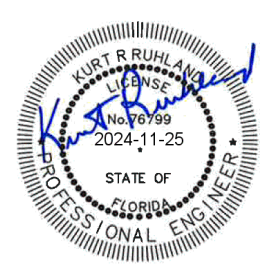
Stair Extension Bracket Installed



Stair Extension Bracket Fasteners

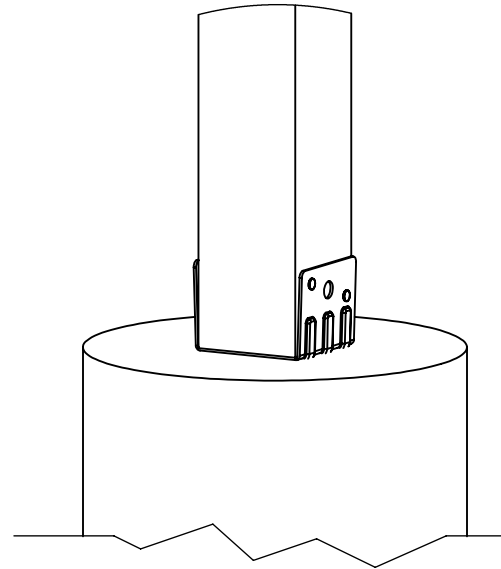


TITLE	Stair Extension Bracket	
PART FILE	8 Step	
DWG REV	A	
DIMENSIONS ARE IN MM UNLESS NOTED DO NOT SCALE DRAWING		
<b>PROPRIETARY AND CONFIDENTIAL</b> THIS DRAWING AND ITS CONTENTS ARE PROPERTY OF THE ISSUING PEAK COMPANY (INCLUDING PEAK INNOVATIONS INC. AND PEAK PRODUCTS CORPORATION). ANY DISSEMINATION OR REPRODUCTION OR UNLICENSED USE IN WHOLE OR IN PART IS STRICTLY PROHIBITED.		
SIZE	DWG. NO.	
<b>B</b>	Stair Extension Bracket - USA Compliance	
SCALE: 1:24	SHT REV 2017-05-16	Sheet 13 of 15



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# Ground Attachment Design



Concrete footings design shall comply with all relevant Building Code, Regulations, Standards, and Local Authority requirements



TITLE  
Ground Attachment

PART FILE  
8 Step

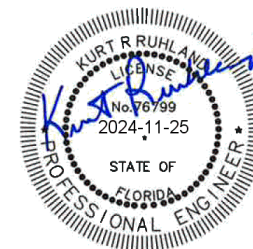
DWG REV  
A

DIMENSIONS ARE IN MM UNLESS NOTED  
DO NOT SCALE DRAWING

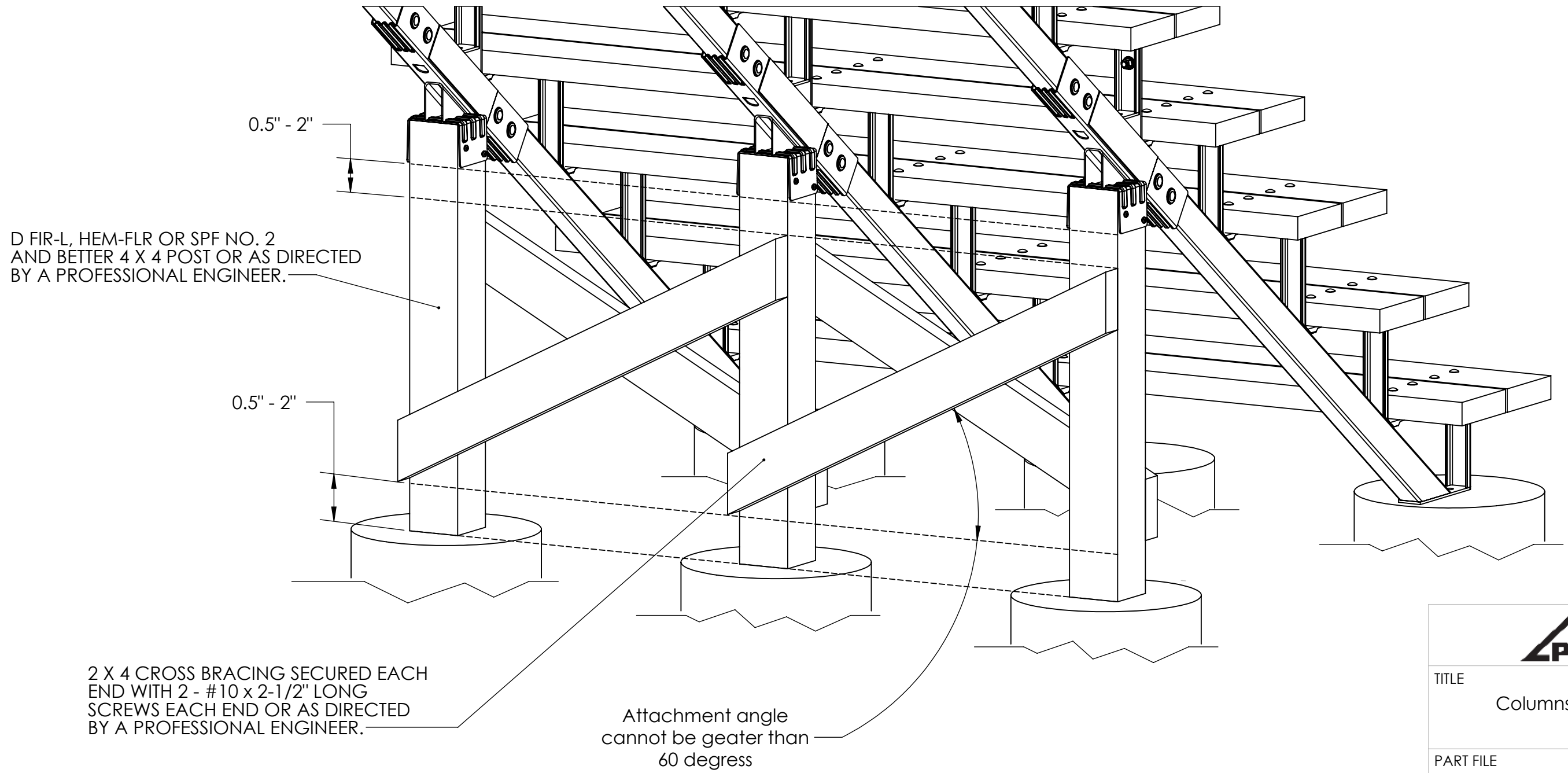
**PROPRIETARY AND CONFIDENTIAL**  
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SIZE DWG. NO.  
**B** Stair Extension Bracket - USA Compliance

SCALE: 1:24 SHT REV 2017-05-16 Sheet 14 of 15



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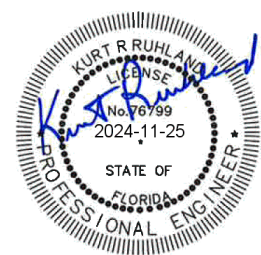
D FIR-L, HEM-FLR OR SPF NO. 2 AND BETTER 4 X 4 POST OR AS DIRECTED BY A PROFESSIONAL ENGINEER.

2 X 4 CROSS BRACING SECURED EACH END WITH 2 - #10 x 2-1/2" LONG SCREWS EACH END OR AS DIRECTED BY A PROFESSIONAL ENGINEER.

Attachment angle cannot be greater than 60 degrees



TITLE		Columns and Bracing	
PART FILE		8 Step	
DWG REV		A	
DIMENSIONS ARE IN MM UNLESS NOTED DO NOT SCALE DRAWING			
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SIZE	DWG. NO.		
<b>B</b>	Stair Extension Bracket - USA Compliance		
SCALE: 1:24	SHT REV	2017-05-16	Sheet 15 of 15



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