CEILING | SYSTEMS

Between us, ideas become reality™

OPTIMA® RADIAL

Custom Ceiling Systems Technical Guide

This booklet provides drawings, details and specification information for Optima Radial Custom Ceiling Systems.

Key Selection Attributes

- Smooth, nondirectional finish on scratch-resistant surface
- DuraBrite surface for excellent durability and superior light reflectance (reduces lighting and energy costs by up to 18%)
- Outstanding acoustical performance in both Articulation Class (190-200) and NRC (0.90-0.95)
- Durable:
    - Washable, Impact-resistant
    - Scratch-resistant, Soil-resistant
- Humidity-resistant HumiGuard Plus performance to inhibit panel sag
- ASTM E1264 Classification – Type XII, Form 2, Pattern E
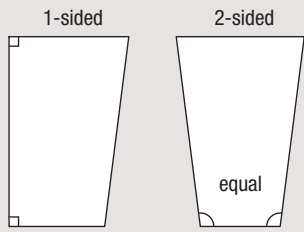
In this Booklet
(also found on armstrong.com/radial)

Typical Applications

- Office
- Education
- Hospitality and retail
- Healthcare
- Transportation

Armstrong®

The following are key design factors to consider for use of Optima Radial ceilings. Please review these system capabilities and limitations carefully.*
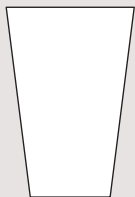
One-sided or symmetrical two-sided trapezoid

One-sided:

- A one-sided trapezoidal panel is available
- Refer to Optima Radial Technical Guide for additional capabilities

Two-sided:

- A two-sided trapezoidal panel is available
- Each tapered side MUST be symmetrical
- Refer to Optima Radial Technical Guide for additional capabilities

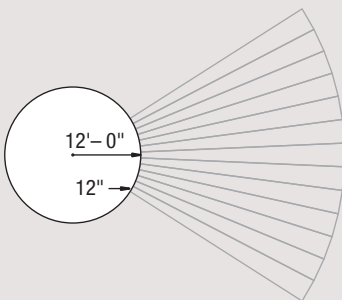Width 12" - 48"

Width:

- Trapezoid panels are available in widths from 12" to 48"
- See charts with sample widths on pages 3-4
  (Note: capabilities are not limited to the 3" intervals shown)
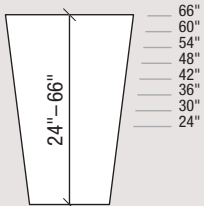
Length 24"-66" in 6" increments

Length:

- Trapezoidal panels are available in 8 lengths from 24" to 66"
- Lengths are only available in the following 6" increments: 24," 30," 36," 42," 48," 54," 60" and 66"

Minimum radius 12'-0"
(12" minimum panel edge)

Minimum radius:

- The minimum achievable radius is 12'. This is based on a minimum panel edge of 12" with the maximum tapers noted below
- Optima Radial CANNOT be used inside this 12' radius – drywall may be a suitable alternative.
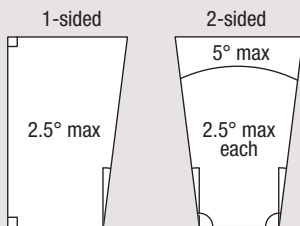
Taper maximum 2.5° angle per side

Taper:

- The maximum taper angle per side for all trapezoids is 2.5 degrees
- For two-sided trapezoids, the taper angle must be equal on both sides (i.e. symmetrical) for a maximum of 5 degrees

* Note: These do not apply to WoodWorks or MetalWorks Radial ceilings. Please consult with Architectural Specialties at 1-877-276-7876 and select options 1-1-4, or visit armstrong.com/radial for more details.

This shows some specific capabilities based on the design factors and limitations described on page 2 for a one-sided trapezoid.
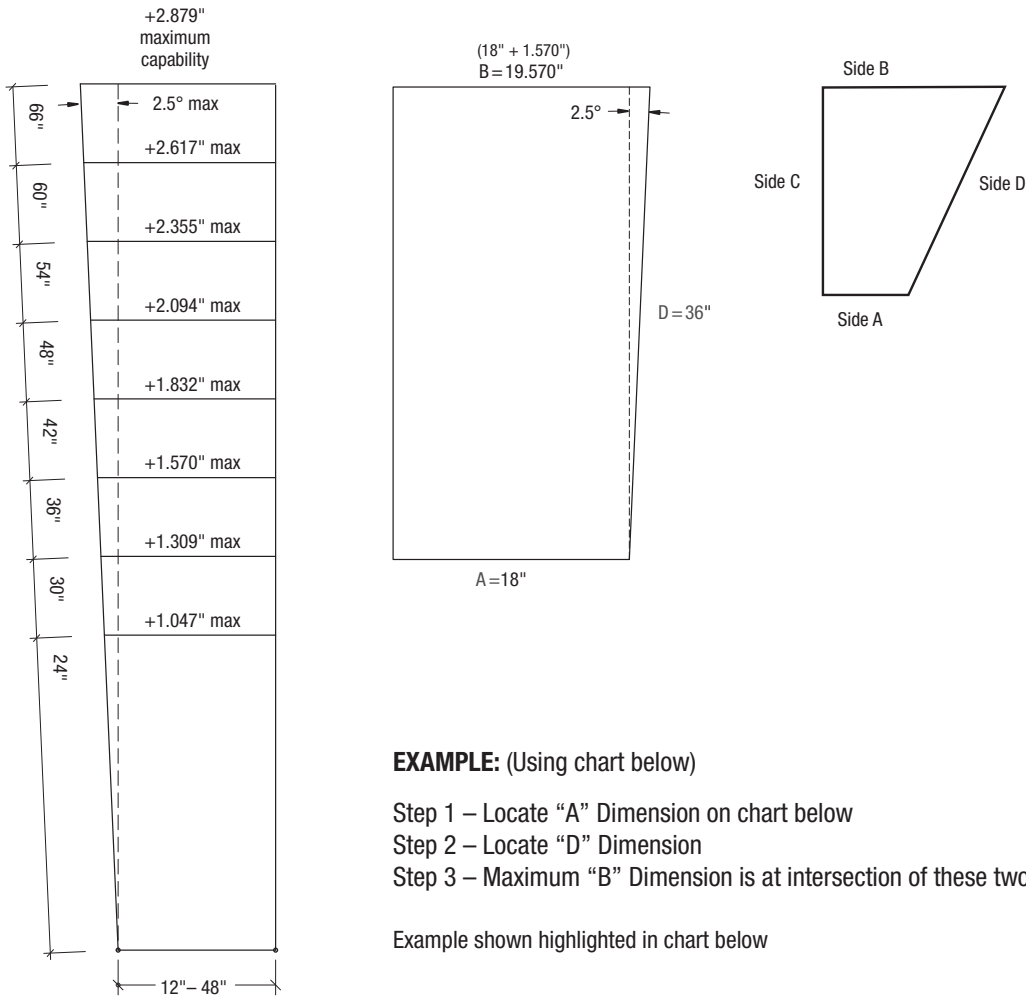
Panel Size Limitations:
- Minimum 12" width by 24" length
- Maximum 45" width by 66" length

+2.879" maximum capability

66"
2.5° max
+2.617" max
60"
+2.355" max
54"
+2.094" max
48"
+1.832" max
42"
+1.570" max
36"
+1.309" max
30"
+1.047" max
24"

12"– 48"

(18" + 1.570")
B = 19.570"

2.5°

D = 36"

A = 18"

Side B
Side C
Side D
Side A

EXAMPLE: (Using chart below)

Step 1 – Locate "A" Dimension on chart below
Step 2 – Locate "D" Dimension
Step 3 – Maximum "B" Dimension is at intersection of these two coordinates

Example shown highlighted in chart below

The interior area of the chart represents Maximum "B" Dimensions

		Width – Side "A"										
		12	15	18	21	24	27	30	33	36	39	42	45
Length – Side "D"	**24**	13.047	16.047	19.047	22.047	25.047	28.047	31.047	34.047	37.047	40.047	43.047	46.047
	30	13.309	16.309	19.309	22.309	25.309	28.309	31.309	34.309	37.309	40.309	43.309	46.309
	36	13.570	16.570	19.570	22.570	25.570	28.570	31.570	34.570	37.570	40.570	43.570	46.570
	42	13.832	16.832	19.832	22.832	25.832	28.832	31.832	34.832	37.832	40.832	43.832	46.832
	48	14.094	17.094	20.094	23.094	26.094	29.094	32.094	35.094	38.094	41.094	44.094	47.094
	54	14.355	17.355	20.355	23.355	26.355	29.355	32.355	35.355	38.355	41.355	44.355	47.355
	60	14.617	17.617	20.617	23.617	26.617	29.617	32.617	35.617	38.617	41.617	44.617	47.617
	66	14.879	17.879	20.879	23.879	26.879	29.879	32.879	35.879	38.879	41.879	44.879	47.879

This shows some specific capabilities based on the design factors and limitations described on page 2 for a two-sided trapezoid.

Panel Size Limitations:

- Minimum 12" width by 24" length
- Maximum 45" width by 66" length

+5.758" maximum capability

5° max

+5.234" max

+4.711" max

+4.187" max

+3.664" max

+3.141" max

+2.617" max

+2.094" max

66" 60" 54" 48" 42" 36" 30" 24"

12"-48"

(18" + 3.141")
B = 21.141"

2.5°   2.5°

C = 36"   D = 36"

A = 18"

Side B

Side C   Side D

Side A

EXAMPLE: (Using chart below)

Step 1 – Locate "A" Dimension on chart below
Step 2 – Locate "C" or "D" Dimension
Step 3 – Maximum "B" Dimension is at intersection of these two coordinates

Example shown highlighted in chart below

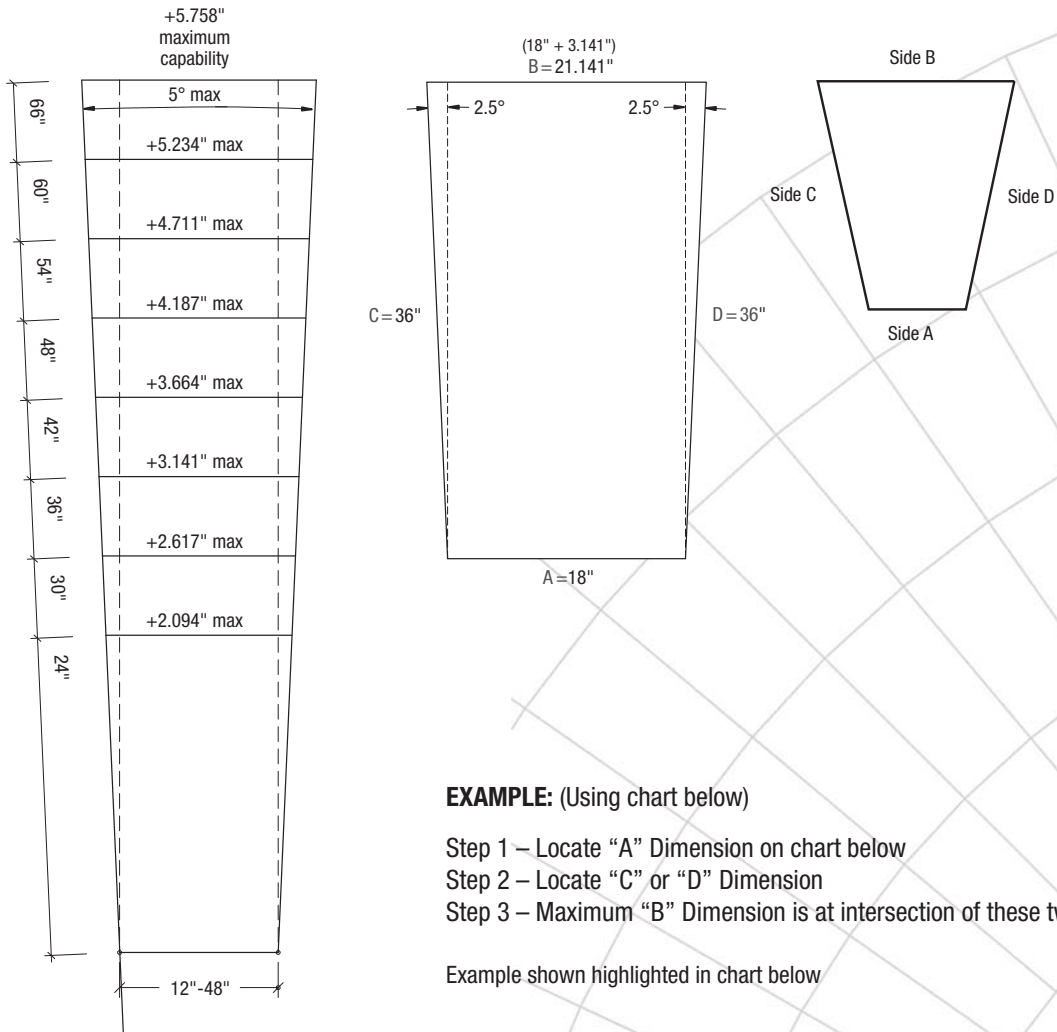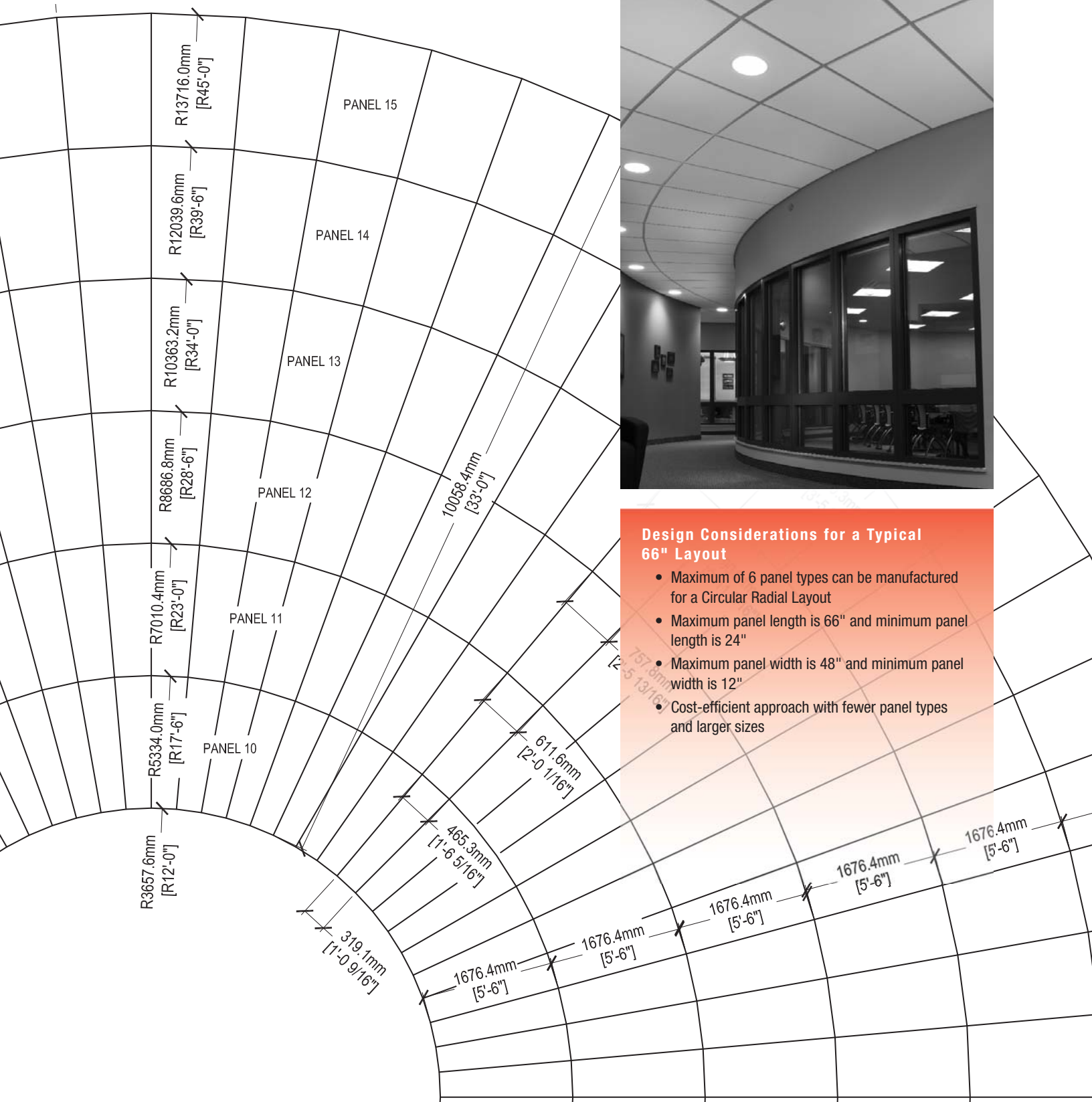**The interior area of the chart represents Maximum "B" Dimensions**

Width – Side "A"

Length – Side "C" or "D"		12	15	18	21	24	27	30	33	36	39	42	45
	24	14.094	17.094	20.094	23.094	26.094	29.094	32.094	35.094	38.094	41.094	44.094	47.094
	30	14.617	17.617	20.617	23.617	26.617	29.617	32.617	35.617	38.617	41.617	44.617	47.617
	36	15.141	18.141	21.141	24.141	27.141	30.141	33.141	36.141	39.141	42.141	45.141	48.000
	42	15.664	18.664	21.664	24.664	27.664	30.664	33.664	36.664	39.664	42.664	45.664	48.000
	48	16.187	19.187	22.187	25.187	28.187	31.187	34.187	37.187	40.187	43.187	46.187	48.000
	54	16.711	19.711	22.711	25.711	28.711	31.711	34.711	37.711	40.711	43.711	46.711	48.000
	60	17.234	20.234	23.234	26.234	29.234	32.234	35.234	38.234	41.234	44.234	47.234	48.000
	66	17.758	20.758	23.758	26.758	29.758	32.758	35.758	38.758	41.758	44.758	47.758	48.000

Circular Radial Layout

R13716.0mm [R45'-0"]

R12039.6mm [R39'-6"]

R10363.2mm [R34'-0"]

R8686.8mm [R28'-6"]

R7010.4mm [R23'-0"]

R5334.0mm [R17'-6"]

R3657.6mm [R12'-0"]

PANEL 15

PANEL 14

PANEL 13

PANEL 12

PANEL 11

PANEL 10

10058.4mm [33'-0"]

611.6mm [2'-0 1/16"]

465.3mm [1'-6 5/16"]

319.1mm [1'-0 9/16"]

757.8mm [2'-5 13/16"]

1676.4mm [5'-6"]

1676.4mm [5'-6"]

1676.4mm [5'-6"]

1676.4mm [5'-6"]

1676.4mm [5'-6"]

Design Considerations for a Typical 66" Layout

- Maximum of 6 panel types can be manufactured for a Circular Radial Layout
- Maximum panel length is 66" and minimum panel length is 24"
- Maximum panel width is 48" and minimum panel width is 12"
- Cost-efficient approach with fewer panel types and larger sizes
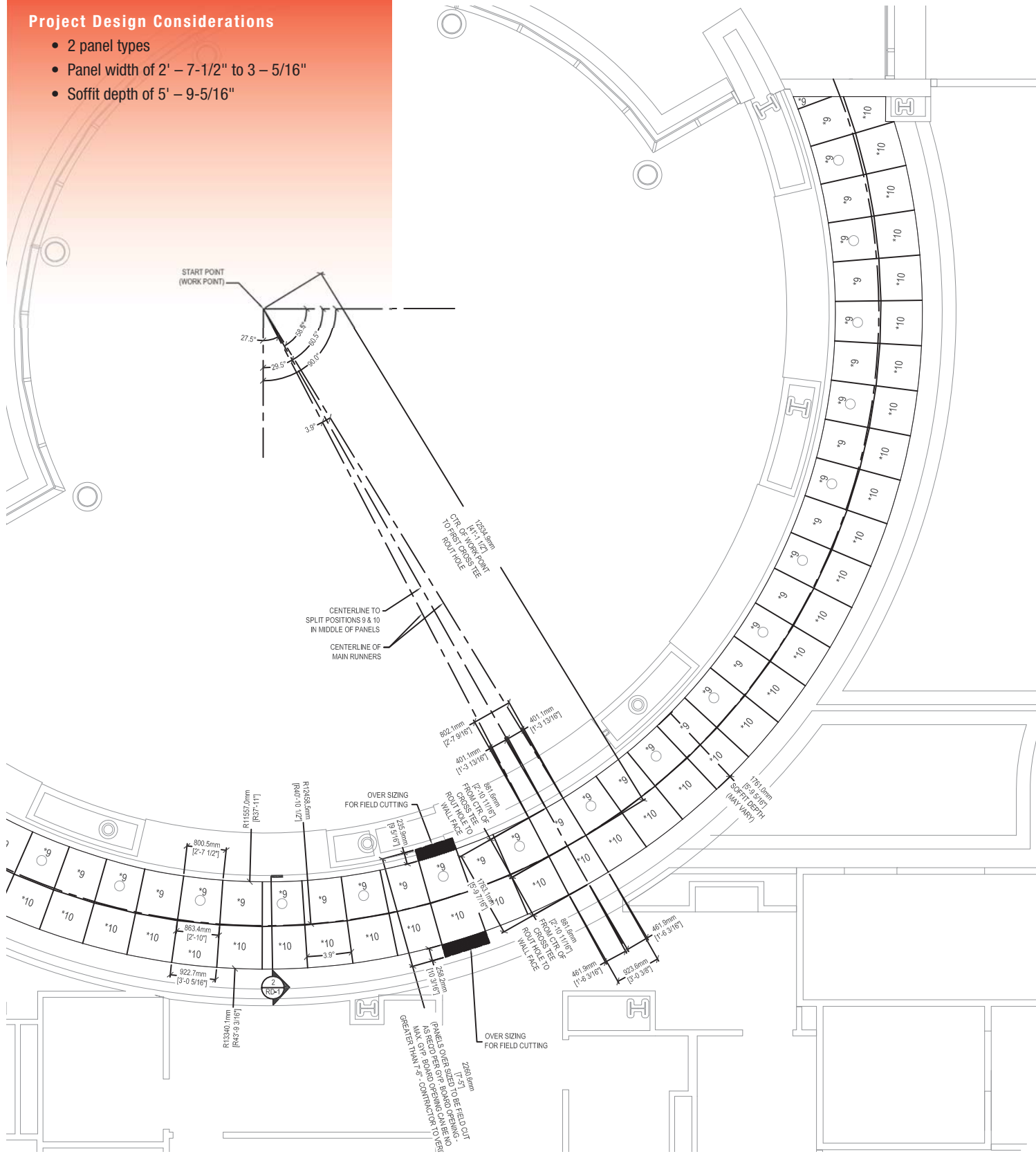
Sectional Cloud Radial Layout

Design Considerations

- 5 panel types
- 2 panel types outside of manufacturer range
- Field cutting of panels required for bulkhead transition
- 66" for center panels
- 12" minimum panel size

Sectional Radial Layout

Project Design Considerations
- 2 panel types
- Panel width of 2' – 7-1/2" to 3 – 5/16"
- Soffit depth of 5' – 9-5/16"

START POINT
(WORK POINT)

27.5°

29.5°

38.5°

60.5°

90.0°

3.9°

12534.9mm
[41'-1 1/2"]
CTR. OF WORK POINT
TO FIRST CROSS TEE
ROUT HOLE

CENTERLINE TO
SPLIT POSITIONS 9 & 10
IN MIDDLE OF PANELS

CENTERLINE OF
MAIN RUNNERS

401.1mm
[1'-3 13/16"]

802.1mm
[2'-7 9/16"]

401.1mm
[1'-3 13/16"]

881.6mm
[2'-10 11/16"]
FROM CTR. OF
CROSS TEE
ROUT HOLE TO
WALL FACE

OVER SIZING
FOR FIELD CUTTING

235.9mm
[9 5/16"]

176.1mm
[6 15/16"]

881.6mm
[2'-10 11/16"]
FROM CTR. OF
CROSS TEE
ROUT HOLE TO
WALL FACE

461.9mm
[1'-6 3/16"]

461.9mm
[1'-6 3/16"]

923.6mm
[3'-0 3/8"]

1781.0mm
[5'-9 5/16"]
SOFFIT DEPTH
(MAY VARY)

R11537.0mm
[R37'-11"]

R12468.5mm
[R40'-10 1/2"]

800.5mm
[2'-7 1/2"]

863.4mm
[2'-10"]

3.9°

922.7mm
[3'-0 5/16"]

R13340.1mm
[R43'-9 3/16"]

2
RD-1

258.2mm
[10 3/16"]

OVER SIZING
FOR FIELD CUTTING

(PANELS OVER SIZED TO BE FIELD CUT
AS REQ'D PER GYP. BOARD OPENING -
MAX. GYP. BOARD OPENING CAN BE NO
GREATER THAN 7'-8" CONTRACTOR TO VERIFY

2298.6mm
[7'-5"]

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For project coordination, contact

Architectural Specialties

at **1 877 ARMSTRONG (276-7876)**

and select options 1-1-4.

armstrong.com/radial

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