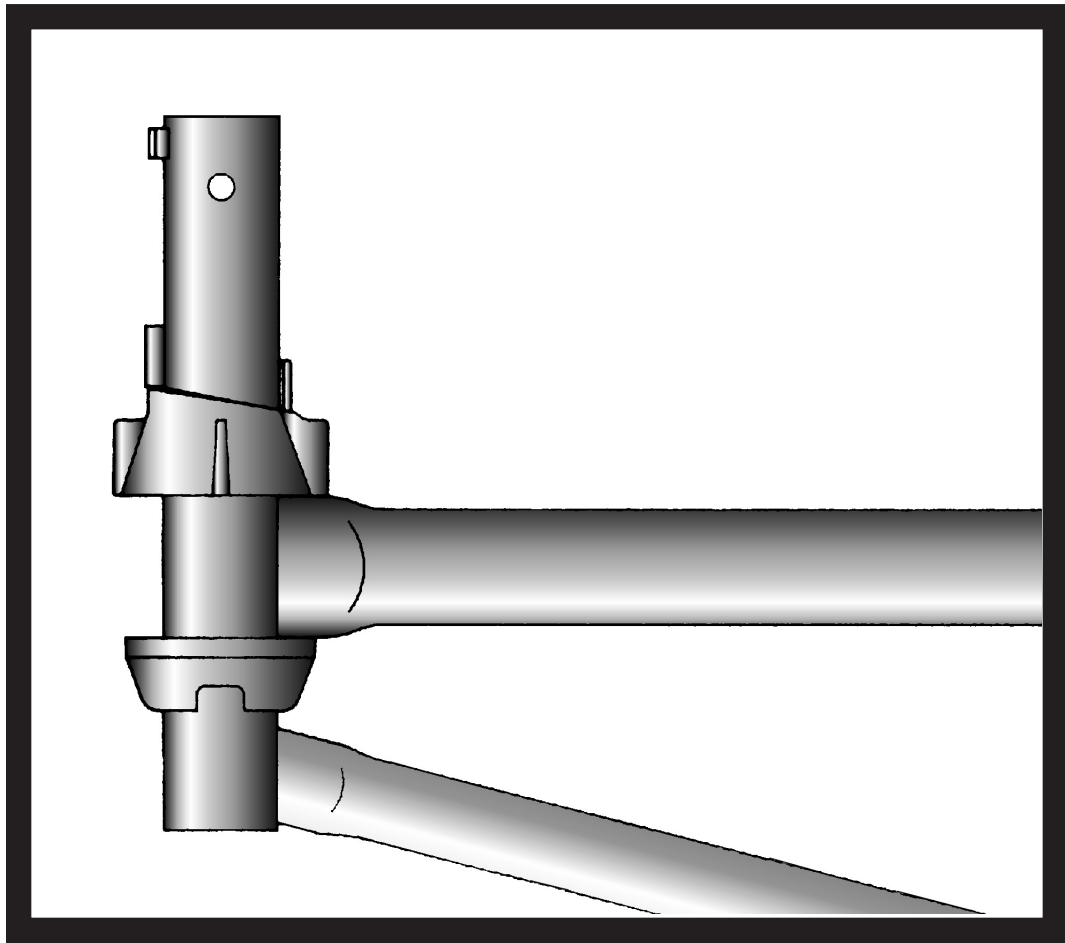


Locking Cup Modular Scaffold Technical Manual

Edition April, 2001



LL-204-83

BIL-JAX
A STEP ABOVE®

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This manual is subject to periodic revision and updating. All photos / drawings are for illustration only. Always concerned with the improvement of the quality of this product, the manufacturer reserves the right to modify specifications without prior notice. Follow all applicable ANSI and OSHA Codes and Regulations for use of this equipment. Do not use this product in areas where user can come in contact with live power.

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SECTION A

Component Identification

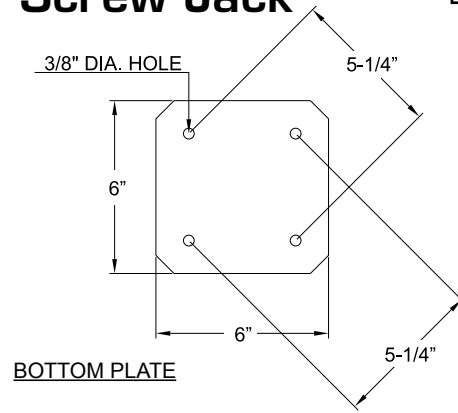
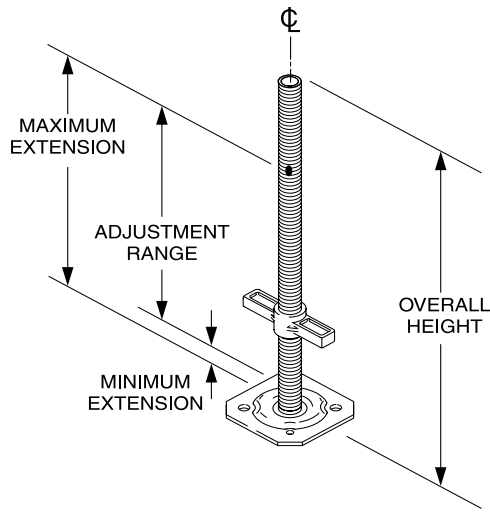
SECTION A

Introduction Component Identification

This section contains system scaffold components illustrations, dimensions and weights to be used for visual part recognition and dimensional identification. The noted weights may be used for shipping weight and / or total scaffold weight calculations.

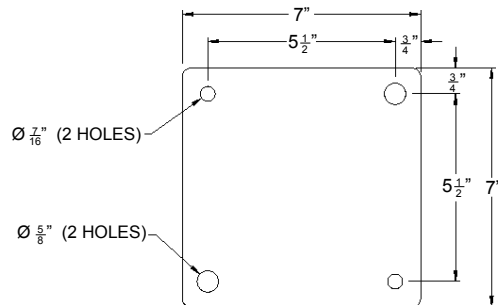
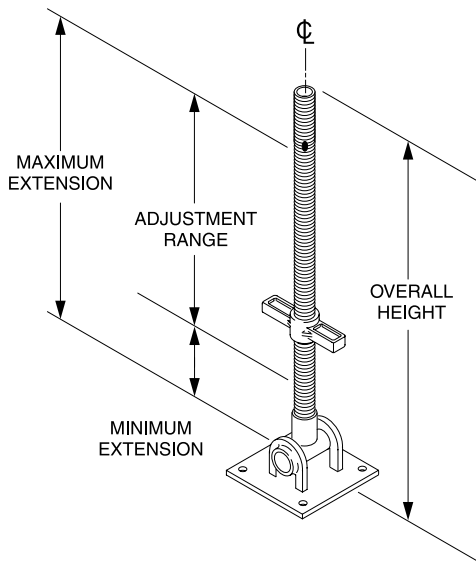
Locking Cup Tubular Screw Jack

Rev.



Part Number	0032-609
Maximum Extension	17"
Minimum Extension	2"
Adjustment Range	15"
Overall Height	24"
Weight Galvanized	8 lbs.

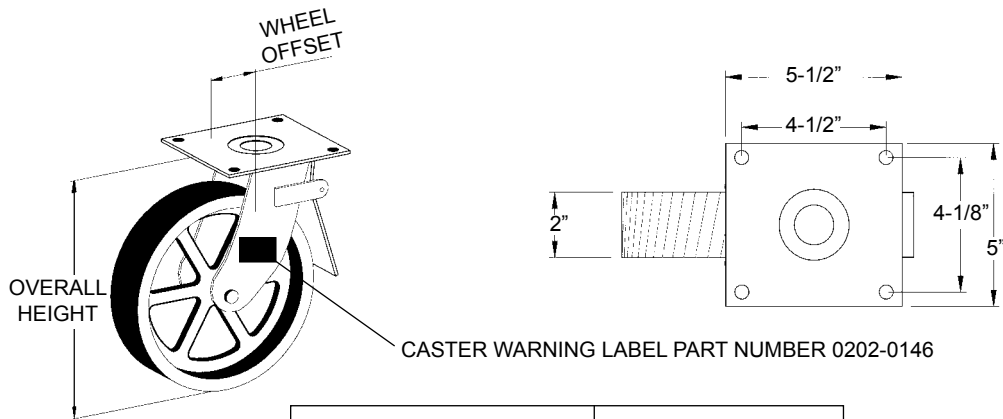
Locking Cup Swivel Screw Jack



Part Number	0032-135
Maximum Extension	22"
Minimum Extension	8"
Adjustment Range	14"
Overall Height	28"
Weight Galvanized	15 lbs.

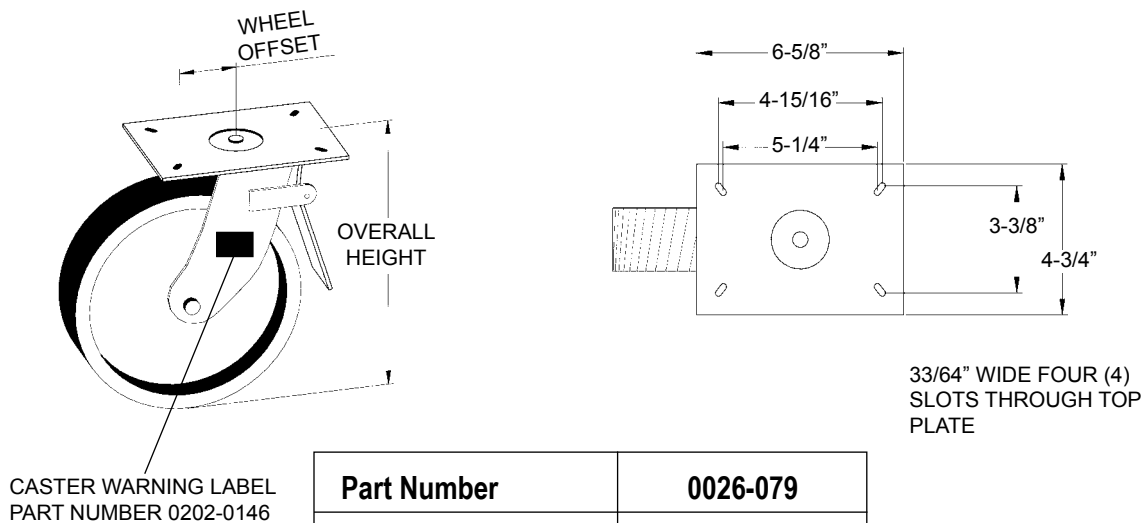
Locking Cup 8" Diameter Caster

Rev.



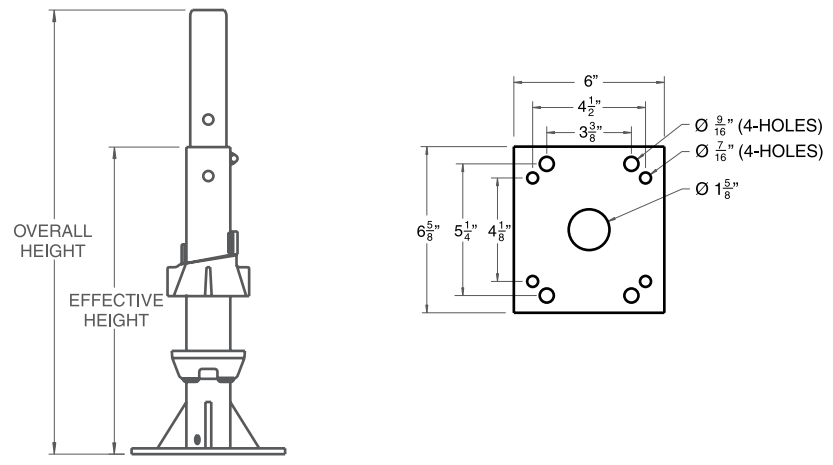
Part Number	0026-001
Wheel Style	Steel
Wheel Offset	2"
Overall Height	9-1/2"
Wheel Thickness	2"
Weight	15.4 lbs.

Locking Cup 12" Diameter Caster



Part Number	0026-079
Wheel Style	Steel
Wheel Offset	2-7/8"
Overall Height	14-1/2"
Wheel Thickness	2-5/8"
Weight	36.7 lbs.

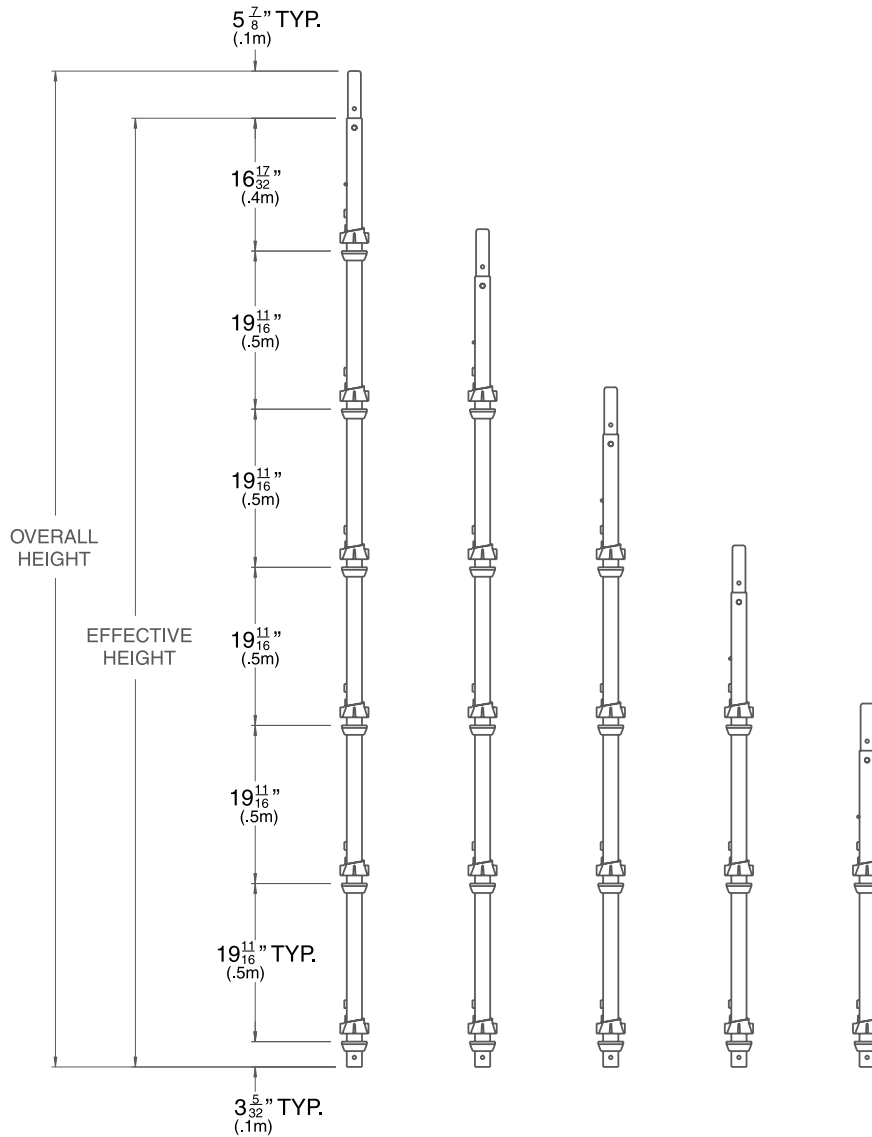
Locking Cup Caster Adapter



Part Number	0254-13
Effective Height	13-1/4"
Overall Height	19-5/32"
Weight Galvanized	9.2 lbs.

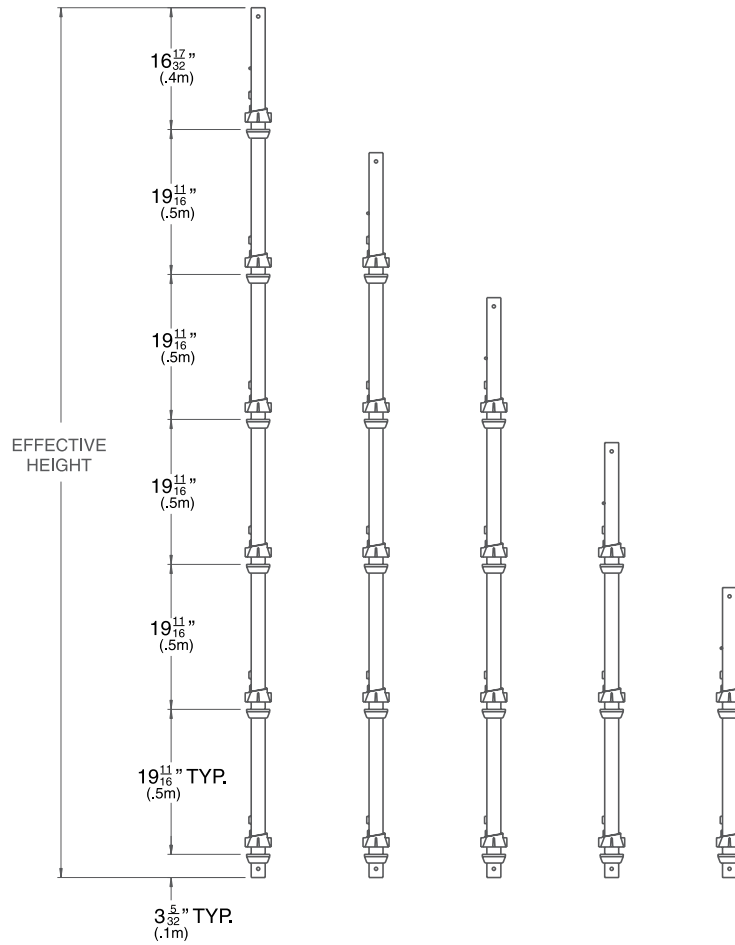
Locking Cup Vertical Standards (Bolted Inserts)

Rev.



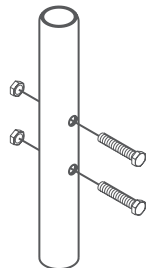
Part Number	0254-22-130		0254-22-125		0254-22-120		0254-22-115		0254-22-110	
	metric	imperial	metric	imperial	metric	imperial	metric	imperial	metric	imperial
Effective Ht.	3.0m	118-1/8"	2.5m	98-7/16"	2.0m	78-3/4"	1.5m	59-1/16"	1.0m	39-3/8"
Overall Ht.	3.15m	124"	2.65m	104-9/32"	2.15m	84-19/32"	1.65m	64-15/16"	1.15m	45-1/4"
Weight Galv.	17kg	37.5 lbs.	13.8kg	30.5 lbs.	11.6kg	25.5 lbs.	8.8kg	19.5 lbs.	6.1kg	13.5 lbs.

Locking Cup Vertical Standards (Without Inserts)



Part Number	0254-19-130		0254-19-125		0254-19-120		0254-19-115		0254-19-110	
Units	metric	imperial	metric	imperial	metric	imperial	metric	imperial	metric	imperial
Effective Ht.	3.0m	118-1/8"	2.5m	98-7/16"	2.0m	78-3/4"	1.5m	59-1/16"	1.0m	39-3/8"
Weight Galv.	17.3kg	38.1 lbs.	12.9kg	28.4 lbs.	10.9kg	24.1 lbs.	8.2kg	18.1 lbs.	5.5kg	12.1 lbs.

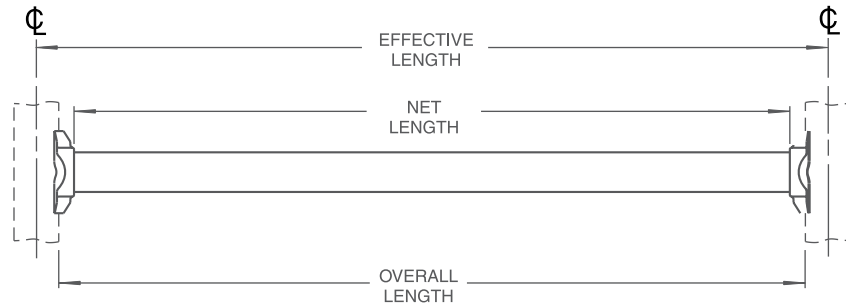
Locking Cup Insert With Nut And Bolt



Part Number 0007-186
Weight Galv. 2 lbs.

Locking Cup Horizontals

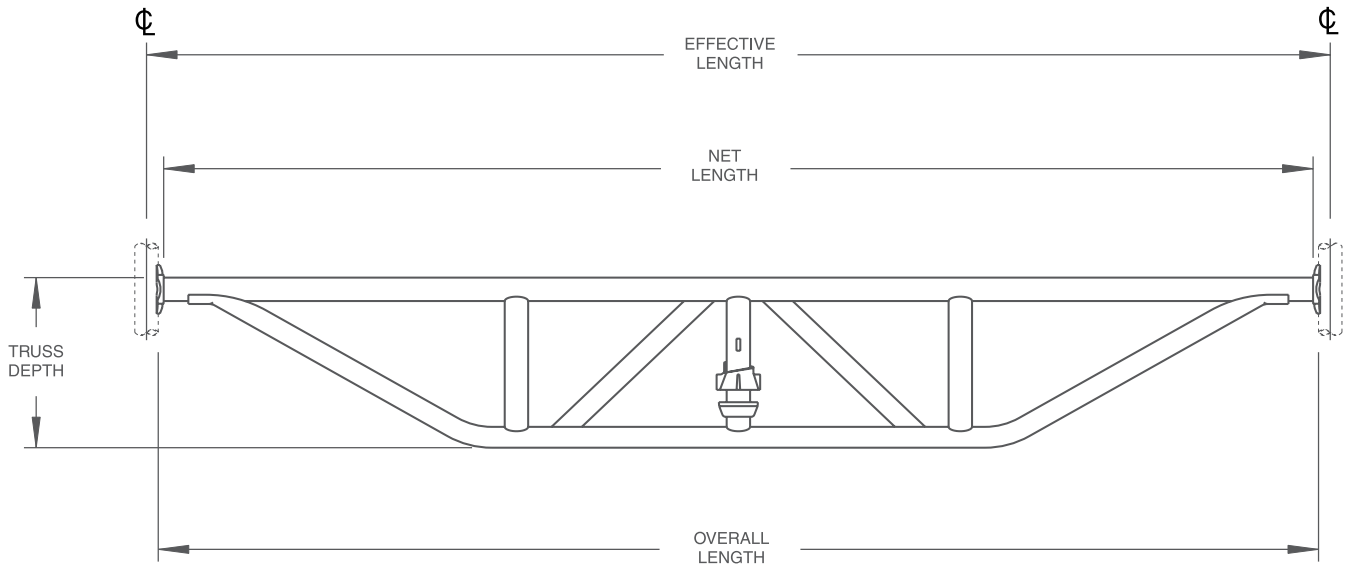
Rev.



Part Number	Effective Length	Net Length	Overall Length	Weight Galv.
0254-02-2036	3'	33-3/8"	34"	10 lbs.
0254-02-2042	3' 6"	39-3/8"	40"	11 lbs.
0254-02-2048	4'	45-3/8"	46"	12 lbs.
0254-02-2060	5'	57-3/8"	58"	14 lbs.
0254-02-2072	6'	69-3/8"	70"	16 lbs.
0254-02-2084	7'	81-3/8"	82"	18.6 lbs.
0254-02-2096	8'	93-3/8"	94"	21.1 lbs.
0254-02-2108	9'	105-3/8"	106"	24 lbs.
0254-02-2120	10'	117-3/8"	118"	26.4 lbs.

Locking Cup Horizontal Trusses

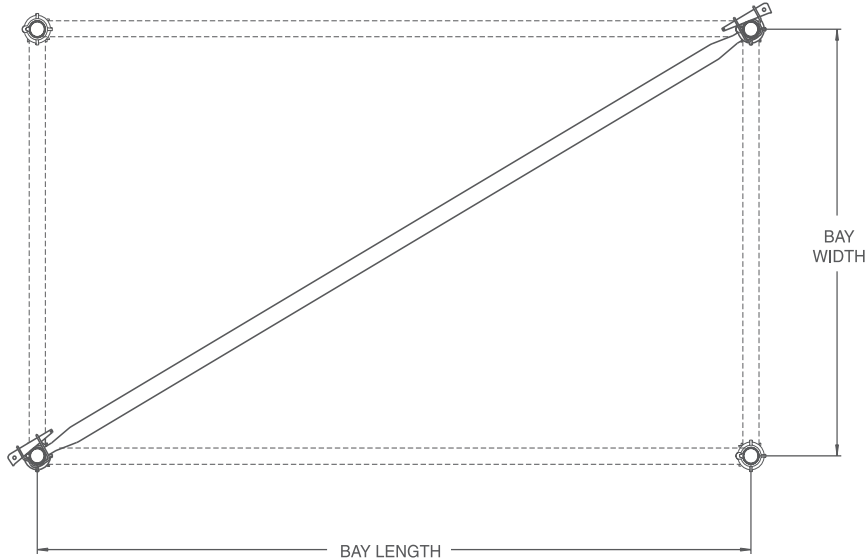
Rev.



Part Number	0254-04-2084	0254-04-2096	0254-04-2120	0254-04-2144
Effective Length	7'	8'	10'	12'
Net Length	81-3/8"	93-3/8"	117-3/8"	141-3/8"
Truss Depth	13-25/32"	13-25/32"	13-25/32"	15-11/16"
Overall Length	80-1/4"	92-1/4"	116-1/4"	140-1/4"
Weight Galv.	32 lbs.	49 lbs.	60.3lbs.	73.9 lbs.

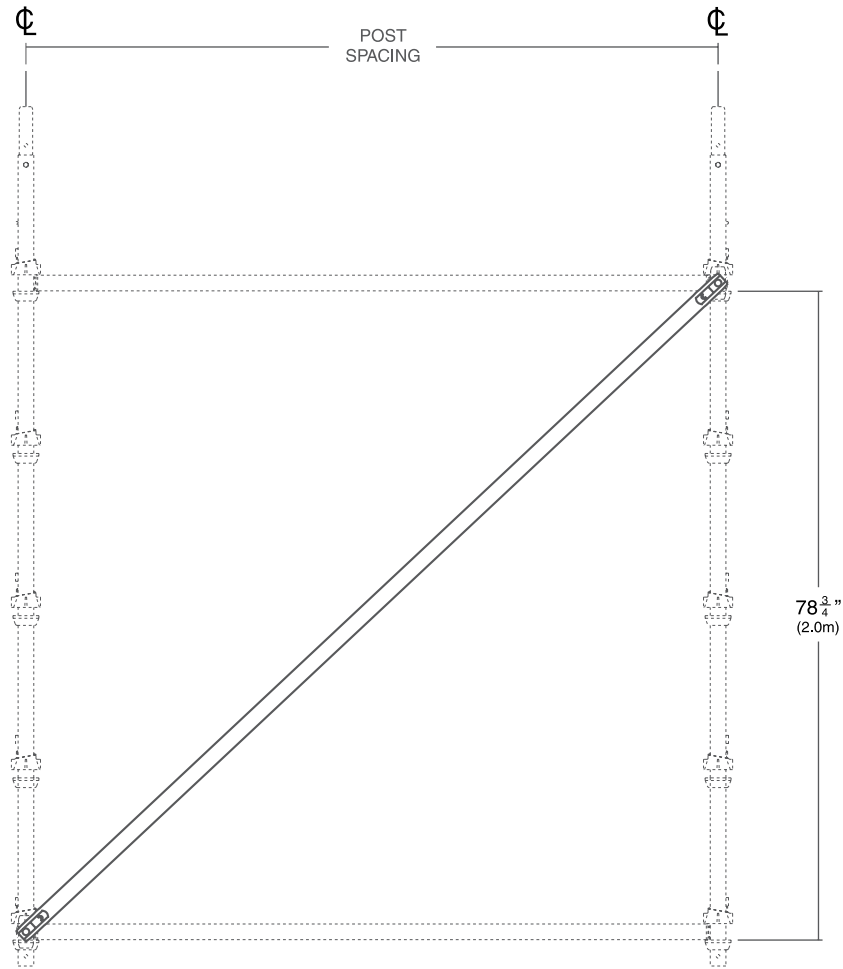
Locking Cup Horizontal Braces

Rev.



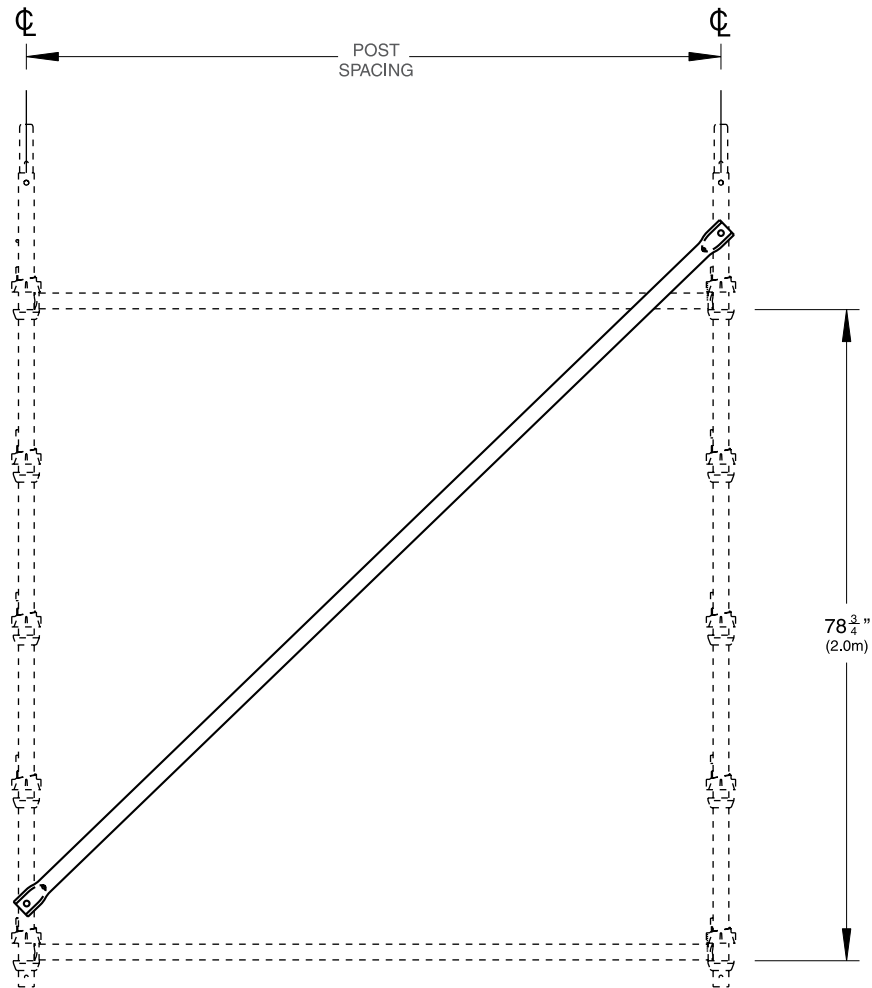
Part Number	Bay Width x Bay Length	Tube Length	Overall Length	Weight Galv.
0250-06-2036034	3' x 7'	89-1/16"	95-1/16"	14 lbs.
0250-06-2036096	3' x 8'	100-1/4"	106-1/4"	15 lbs.
0250-06-2036108	3' x 9'	111-1/2"	117-1/2"	17.5 lbs.
0250-06-2036120	3' x 10'	123"	129"	19 lbs.
0250-06-2042084	42" x 7'	91-5/8"	97-5/8"	14.5 lbs.
0250-06-2042096	42" x 8'	104-25/32"	110-25/32"	16.5 lbs.
0250-06-2042108	42" x 9'	113-9/16"	121-9/16"	18 lbs.
0250-06-2042120	42" x 10'	124-13/16"	134-13/16"	20 lbs.
0250-06-2048084	4' x 7'	94-15/32"	100-15/32"	15 lbs.
0250-06-2048096	4' x 8'	105-1/32"	111-1/32"	17 lbs.
0250-06-2148108	4' x 9'	115-29/32"	121-29/32"	18.5 lbs.
0250-06-2148120	4' x 10'	126-15/16"	132-15/16"	20 lbs.
0250-06-2060084	5' x 7'	100-15/16"	106-15/16"	15 lbs.
0250-06-2060096	5' x 8'	110-15/16"	116-15/16"	17.5 lbs.
0250-06-2060108	5' x 9'	121-1/4"	127-1/4"	19.5 lbs.
0250-06-2060120	5' x 10'	131-7/8"	137-7/8"	21 lbs.
0250-06-2072084	6' x 7'	108-11/32"	114-11/32"	17.5 lbs.
0250-06-2072096	6' x 8'	117-23/32"	123-23/32"	19 lbs.
0250-06-2072108	6' x 9'	127-5/8"	133-5/8"	20 lbs.
0250-06-2072120	6' x 10'	137-21/32"	143-21/32"	22 lbs.
0250-06-2084084	7' x 7'	116-1/2"	122-1/2"	18.5 lbs.
0250-06-2084108	7' x 9'	134-17/32"	140-17/32"	21.5 lbs.
0250-06-2084120	7' x 10'	146-15/32"	152-15/32"	23.5 lbs.
0250-06-2108108	9' x 9'	150-7/16"	156-7/16"	24 lbs.
0250-06-2108120	9' x 10'	159-5/32"	165-5/32"	25.5 lbs.
0250-06-2120120	10' x 10'	167-13/32"	173-13/32"	26 lbs.

Locking Cup Vertical Braces



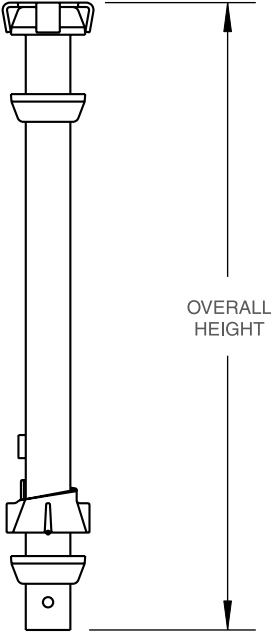
Part Number	Post Spacing	Tube Length	Vertical Distance	Weight Galv.
0254-05-303620	3'	88-7/32"	2.0m	78-3/4" 22 lbs.
0254-05-304220	3' 6"	90-7/8"	2.0m	78-3/4" 22.5 lbs.
0254-05-304820	4'	93-7/8"	2.0m	78-3/4" 23 lbs.
0254-05-306020	5'	100-5/8"	2.0m	78-3/4" 24 lbs.
0254-05-307220	6'	108-5/16"	2.0m	78-3/4" 25.5 lbs.
0254-05-308420	7'	116-25/32"	2.0m	78-3/4" 26 lbs.
0254-05-309620	8'	125-25/32"	2.0m	78-3/4" 27 lbs.
0254-05-310820	9'	135-9/32"	2.0m	78-3/4" 28 lbs.
0254-05-312020	10'	145-5/32"	2.0m	78-3/4" 33 lbs.

Locking Cup Vertical Braces Swivel Calmp Brace



Part Number	Post Spacing	Tube Length	Vertical Distance		Weight Galv.
0254-24-303620	3'	89-9/16"	2.0m	78-3/4"	23.5 lbs.
0254-24-306020	5'	100-31/32"	2.0m	78-3/4"	27 ls.
0254-24-308420	7'	117-1/8"	2.0m	78-3/4"	31.2 lbs.
0254-24-309620	8'	126-5/32"	2.0m	78-3/4"	33.6 lbs.
0254-24-312020	10'	145-17/32"	2.0m	78-3/4"	38.7 lbs.

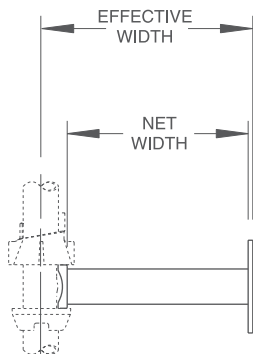
Locking Cup Solid Deck Adapter



Part Number	0254-10
Overall Height	26-3/4"
Weight Galv.	12 lbs.

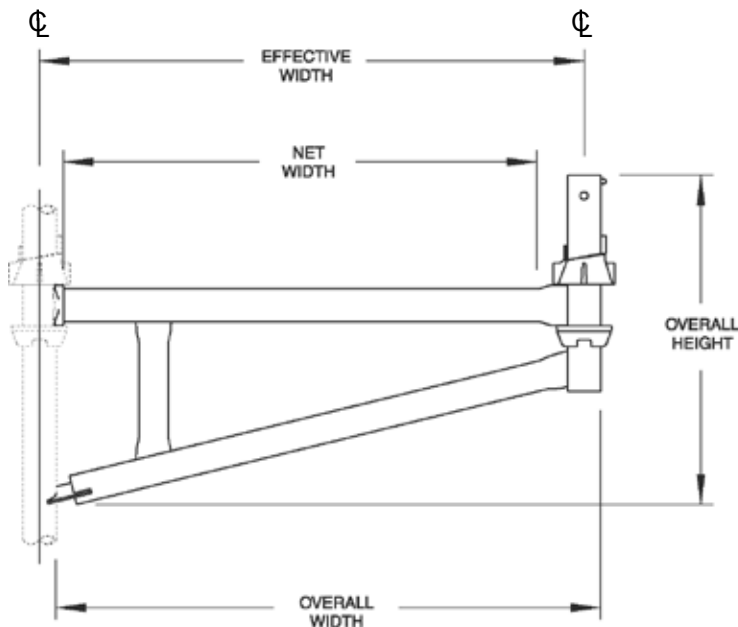
Locking Cup Side Bracket (One Board)

Rev.



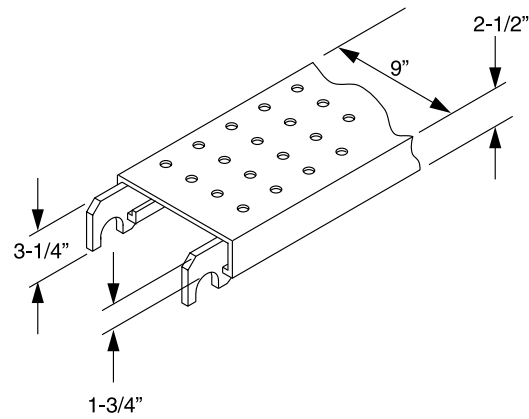
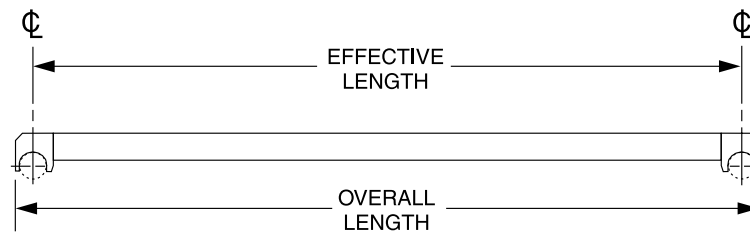
Part Number	0254-07
Description	One Board
Effective Width	11-7/16"
Net Width	9-3/4"
Weight Galvanized	3.4 lbs.

Locking Cup Side Brackets (Two and Three Board)



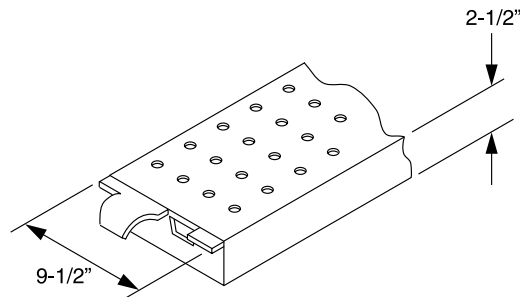
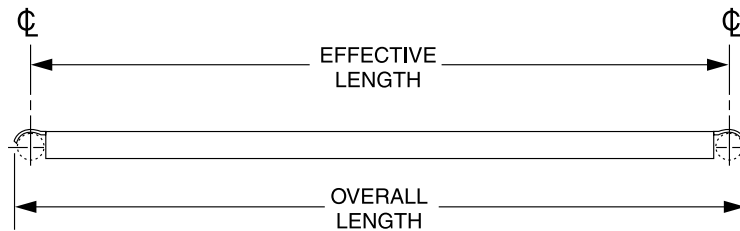
Part Number	0254-08	0254-09
Description	Two Board	Three Board
Effective Width	22-1/4"	31-5/16"
Net Width	18"	27"
Overall Width	24-5/32"	33-3/16"
Overall Height	18-27/32"	18-27/32"
Weight Galvanized	10 lbs.	12.3 lbs.

Locking Cup Raised Steel Planks (Galvanized)



Part Number	Effective Length	Overall Length	Weight Galv.
0056-01-03	3'	34"	16.6 lbs.
0056-01-04	4'	51"	21.2 lbs.
0056-01-05	5'	63"	25.9 lbs.
0056-01-06	6'	75"	30.6 lbs.
0056-01-07	7'	87"	35.2 lbs.
0056-01-08	8'	99"	39.8 lbs.
0056-01-09	9'	111"	44.6 lbs.
0056-01-10	10'	123"	49.2 lbs.

Locking Cup Flush Steel Planks (Galvanized)

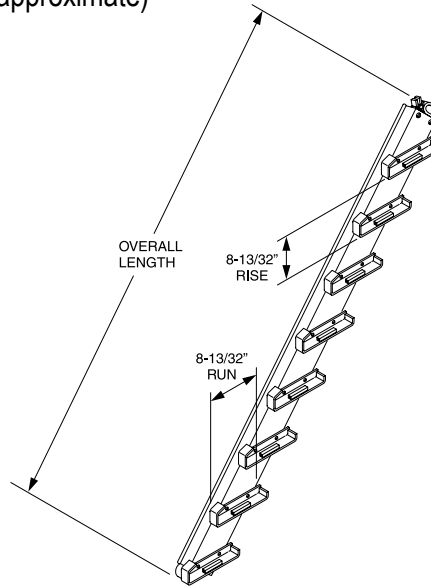


Part Number	Effective Length	Overall Length	Weight Galv.
0056-07-03	3'	38-5/16"	18 lbs.
0056-07-04	4'	50-5/16"	24 lbs.
0056-07-05	5'	62-5/16"	28 lbs.
0056-07-06	6'	74-5/16"	32 lbs.
0056-07-07	7'	86-5/16"	36 lbs.
0056-07-08	8'	98-5/16"	40 lbs.
0056-07-09	9'	110-5/16"	44 lbs.
0056-07-10	10'	120-5/16"	48 lbs.

Locking Cup Stair Stringers For Use With Raised Planks

Part Number	Side	Bay Size	Overall Length	No. of Steps	Weight Galv.
0042-229L	Left	7' x 2.0m	117-1/32"	8	60 lbs.
0042-229R	Right	7' x 2.0m	117-1/32"	8	60 lbs.
0042-171L	Left	8' x 2.0m	126-1/16"	10	70 lbs.
0042-171R	Right	8' x 2.0m	126-1/16"	10	70 lbs.

NOTE: 2.0m = 6' 6" (approximate)

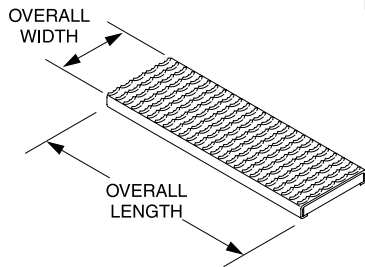


Locking Cup Stair Stringers For Use With Flush Planks

Part Number	Side	Bay Size	Overall Length	No. of Steps	Weight Galv.
0088-081	Left	7' x 2.0m	117-1/32"	8	60 lbs.
0088-082	Right	7' x 2.0m	117-1/32"	8	60 lbs.
0088-074	Left	8' x 2.0m	126-1/32"	9	66 lbs.
0088-075	Right	8' x 2.0m	126-1/32"	9	66 lbs.

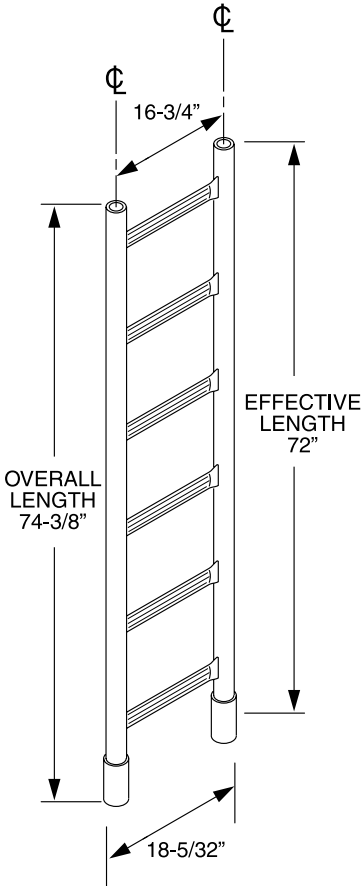
NOTE: 2.0m = 6' 6" (approximate)

Locking Cup Stair Treads

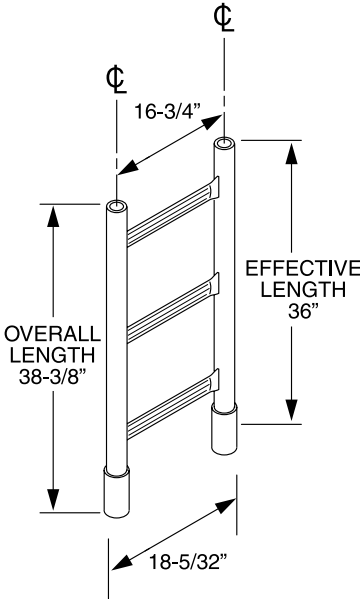


Part Number	Bay Size	Overall Length	Overall Width	Weight Galv.
0042-170-0306	42"	32-5/8"	11-3/4"	13 lbs.
0042-170-04	48"	39-3/8"	11-3/4"	15 lbs.

Locking Cup Access Ladder Units

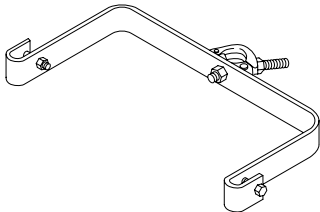


Part Number 0004-0582
Weight Galv. 18 lbs.



Part Number 0004-0581
Weight Galv. 9.5 lbs.

Locking Cup Access Ladder Bracket

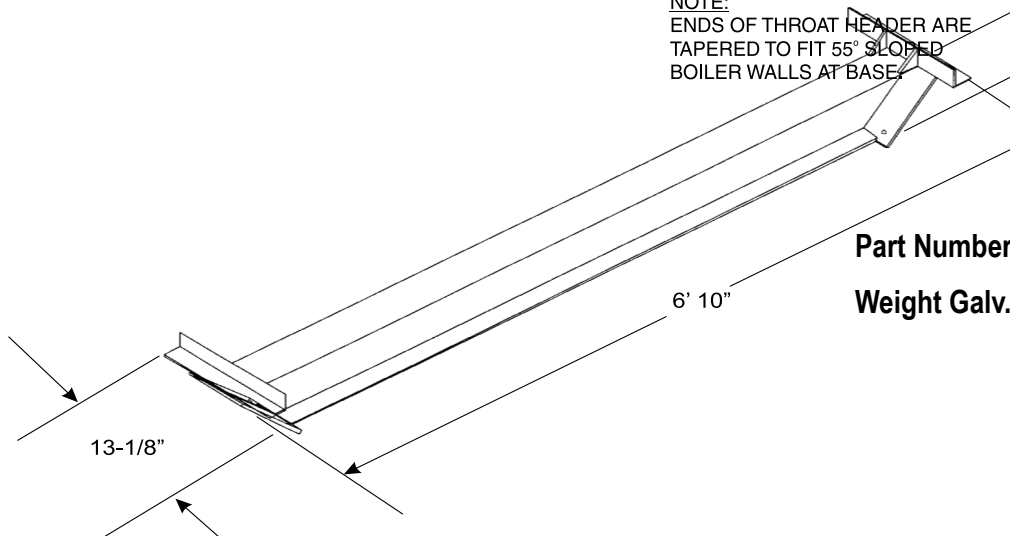


Part Number 0063-0570
Weight Galv. 5.5 lbs.

Rev.

Locking Cup Base Beam (Boiler Applications)

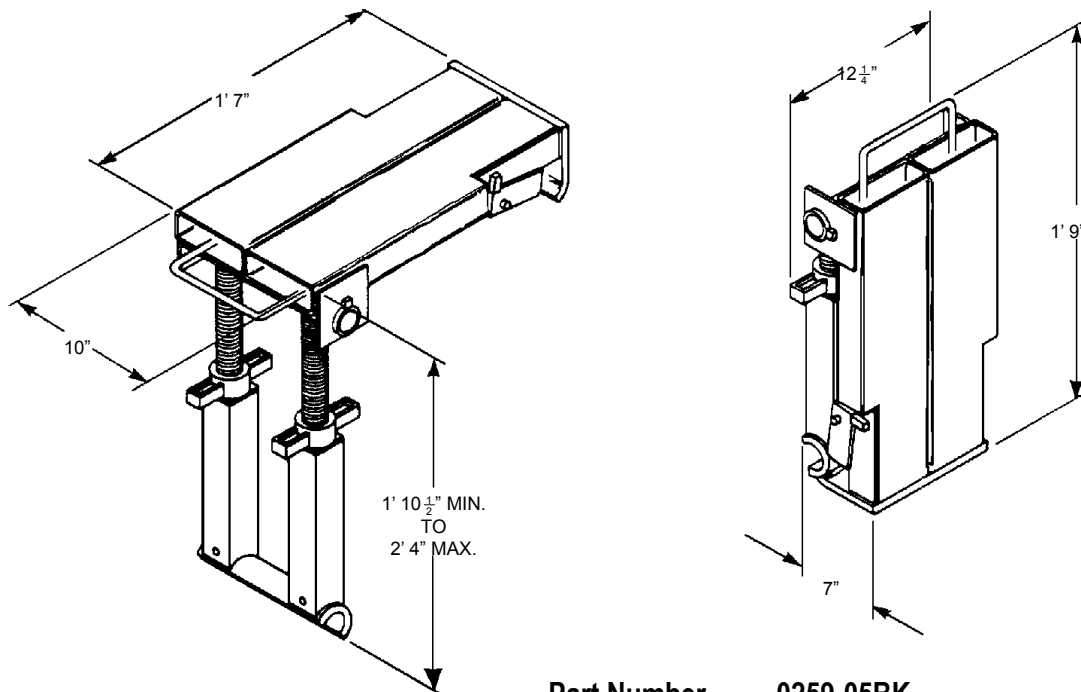
NOTE:
ENDS OF THROAT HEADER ARE
TAPERED TO FIT 55° SLOPED
BOILER WALLS AT BASE



Part Number 0259-04-06BK

Weight Galv. 115 lbs.

Locking Cup Adjustable Support Bracket (Boiler Applications)

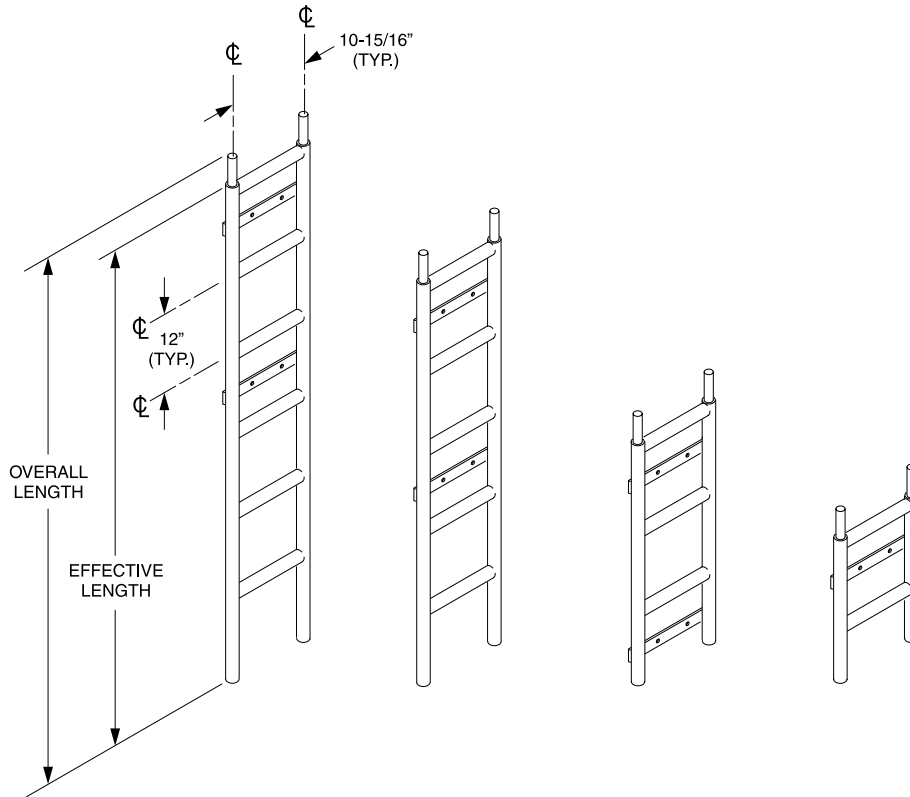


Part Number 0259-05BK

Weight Galv. 53 lbs.

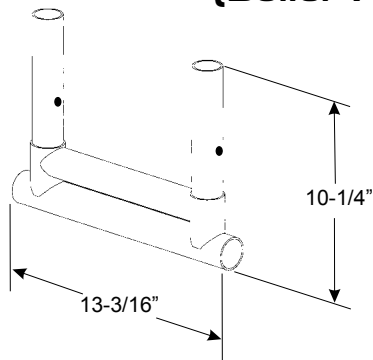
Locking Cup Support Frames (Boiler Applications)

Rev.



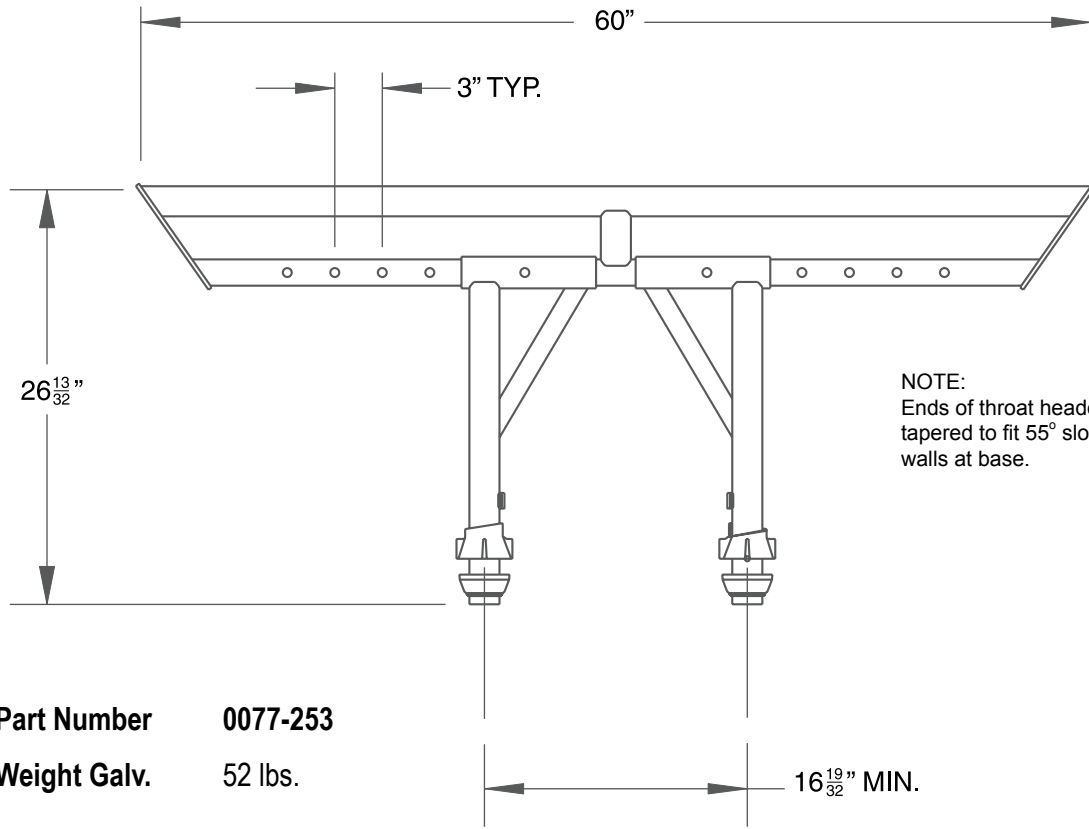
Part Number	Effective Length	Overall Length	Weight
0259-03-01BK	12-1/8"	18-1/8"	12.2 lbs.
0259-03-03BK	36"	42"	26.2 lbs.
0259-03-05BK	60"	66"	37.8 lbs.
0259-03-06BK	72"	78"	43.5 lbs.

Locking Cup Support Frame Starter (Boiler Applications)



Part Number 0259-02BK
Weight Galv. 7.4 lbs.

Locking Cup Throat Header (Boiler Applications)

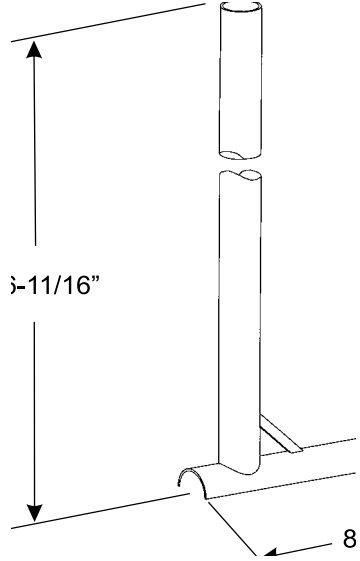


NOTE:
Ends of throat header are tapered to fit 55° sloped boiler walls at base.

Part Number 0077-253

Weight Galv. 52 lbs.

Locking Cup Saddle Brace (Boiler Applications)

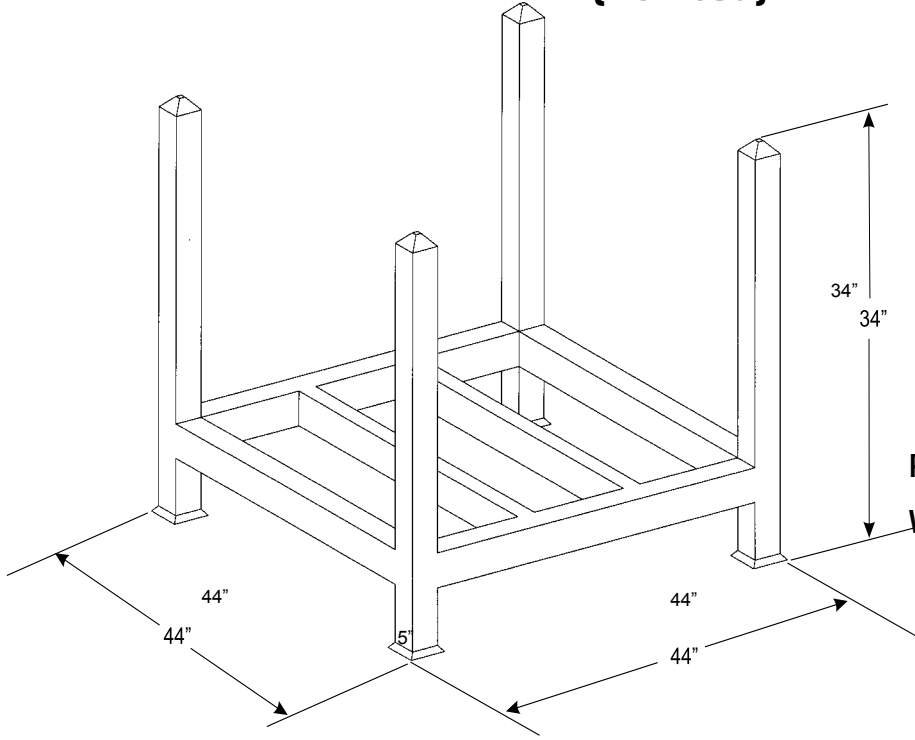


Part Number 0259-01BK
Weight Galv. 21 lbs.

Locking Cup U-Head (Boiler Applications)

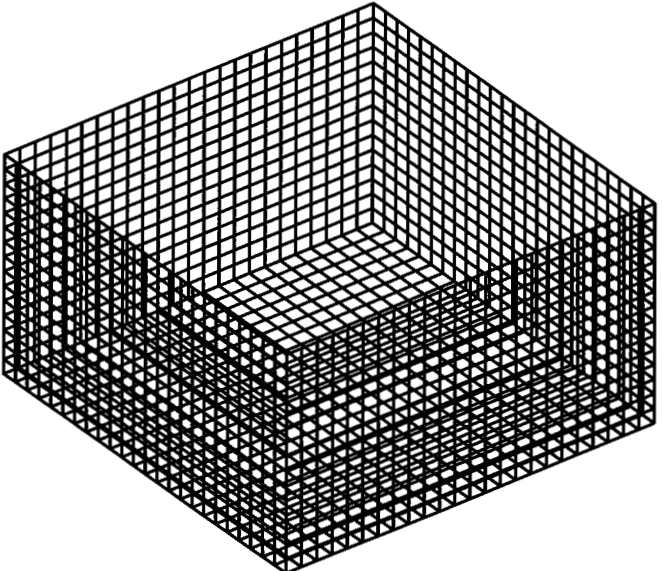
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Locking Cup Storage Rack (Painted)



Part Number 0110-209
Weight Galv. 120 lbs.

Locking Cup Storage Rack Bin (Painted)



Part Number 0110-211
Weight Galv. 125 lbs.

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SECTION B

Allowable Component Loads

SECTION B

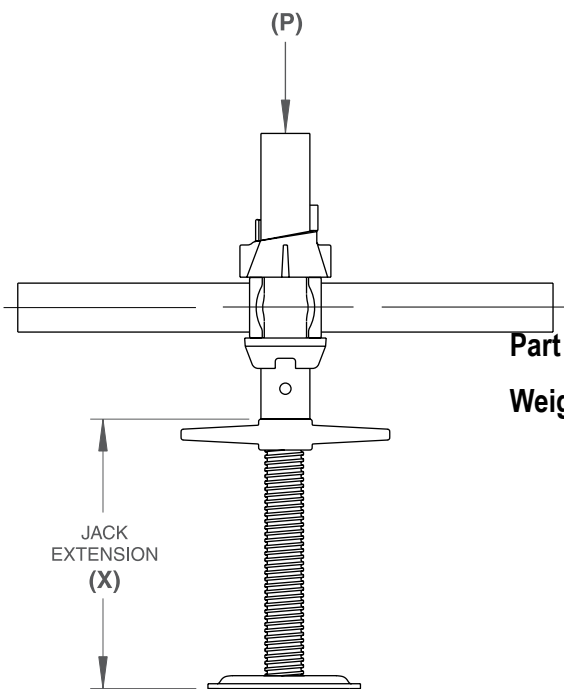
Introduction Allowable Component Loads

This section contains illustrations and load ratings for the various systems scaffold components. The load ratings are based on the capacity of the individual components only. Refer to Section D and warning on inside front cover before computing the scaffold loads.

Allowable loads specified in this section include safety factors required by Federal OSHA.

When designing scaffolds with unique configurations or special loading conditions, consult with bil-jax engineering department or a professional structural engineer prior to design finalization.

Capacity of Locking Cup Tubular Screw Jack (For Variable Jack Extensions)



Part Number 0032-609

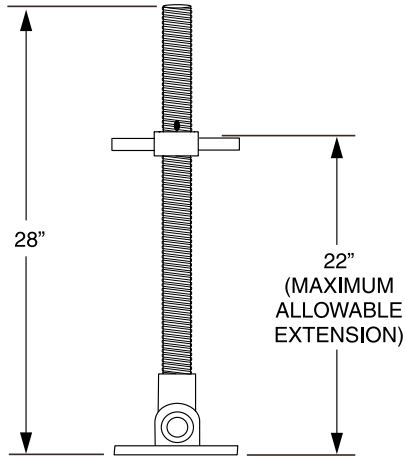
Weight Galv. 7 lbs.

Jack Extension (X)		Maximum Allowable Compressive Load (P)	
Metric (m)	Imperial (in.)	Metric (kn)	Imperial (lbs.)
0.43m	17"	18kn	4,000 lbs.
0.35m	14"	31kn	7,000 lbs.
0.30m	12"	33kn	7,500 lbs.

Rated For Scaffold Use

Capacity of Locking Cup Swivel Screw Jack

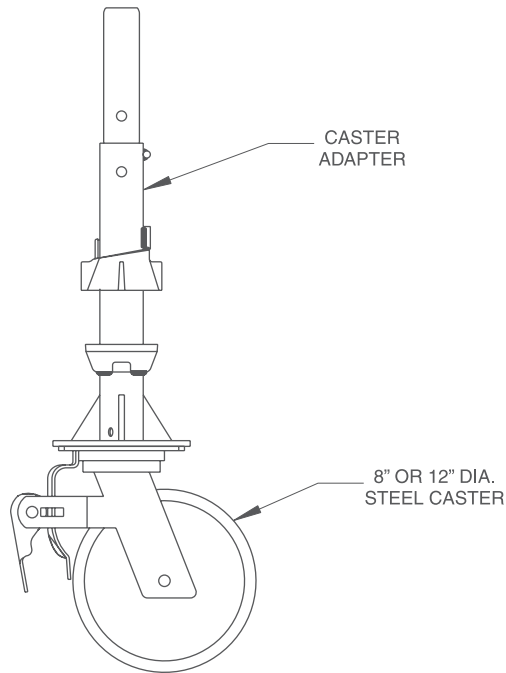
Rev.



Part Number 0032-135
 Weight Galv. 30 lbs.
 Max. Cap. 3000 lbs. at 22"

ANCHOR HOLE SIZE AND LOCATIONS ARE NOTED ON PAGE 1 OF SECTION A

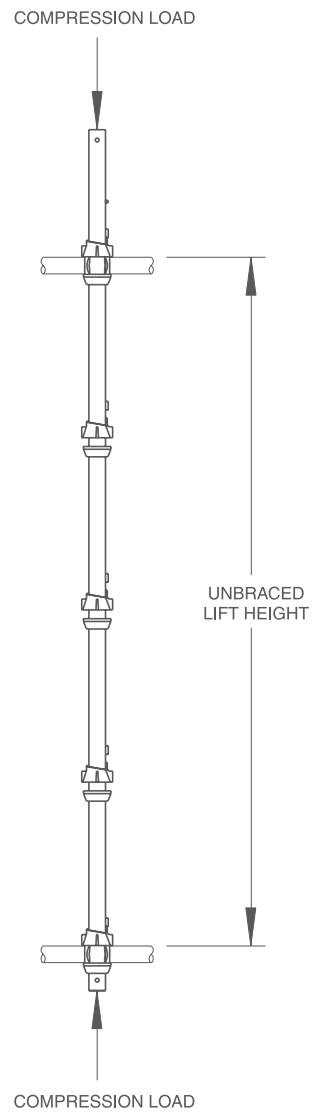
Capacity of Locking Cup Casters



Part No.	Wheel Dia.	Wheel Style	Allowable Rolling Load
0026-001	8"	Steel	500 lbs.
0026-079	12"	Steel	900 lbs.

Rated For Scaffold Use

Capacity of Locking Cup Vertical Standards



Lift Height		Maximum Allowable Compressive Load	
Metric (m)	Imperial (in.)	Metric (kN)	Imperial (lbs.)
2.0m	78-3/4"	20kn	4,500 lbs.

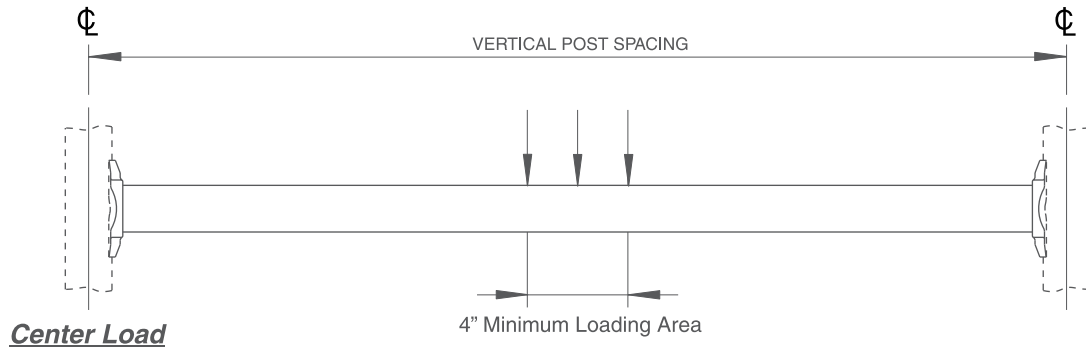
Load Capacity without Vertical Diagonal Brace

Rated For Scaffold Use

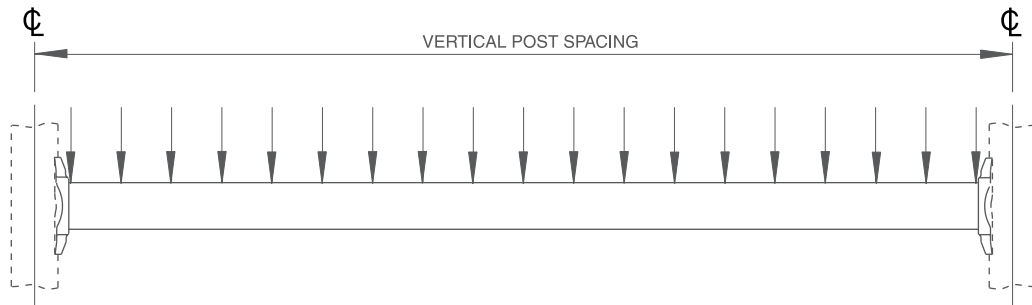


Capacity of Locking Cup Horizontals

Rev.



Center Load



Uniform Load

Part Number	Vertical Post Spacing	Allowable Center Load	Allowable Uniform Load
0254-02-2036	3'	1,380 lbs.	920 lbs. / ft.
0254-02-2042	3' 6"	1,180 lbs.	675 lbs. / ft.
0254-02-2048	4'	1,040 lbs.	520 lbs. / ft.
0254-02-2060	5'	830 lbs.	330 lbs. / ft.
0254-02-2084	7'	595 lbs.	170 lbs. / ft.

Length of Bearer	Maximum Allowable Uniform Distributed Load Per Square Feet Area								
	Bay Length in Feet								
	3'	3' 6"	4'	5'	6'	7'	8'	9'	10'
3'	306	262	230	184	153	131	115	102	92
3' 6"	225	193	168	135	113	96	84	75	68
4'	173	149	130	104	86	75	65	58	52
5'	110	94	83	66	55	47	41	37	33
7'	57	49	43	34	28	24	21	19	17

Rated For Scaffold Use

Technical Manual

Section B

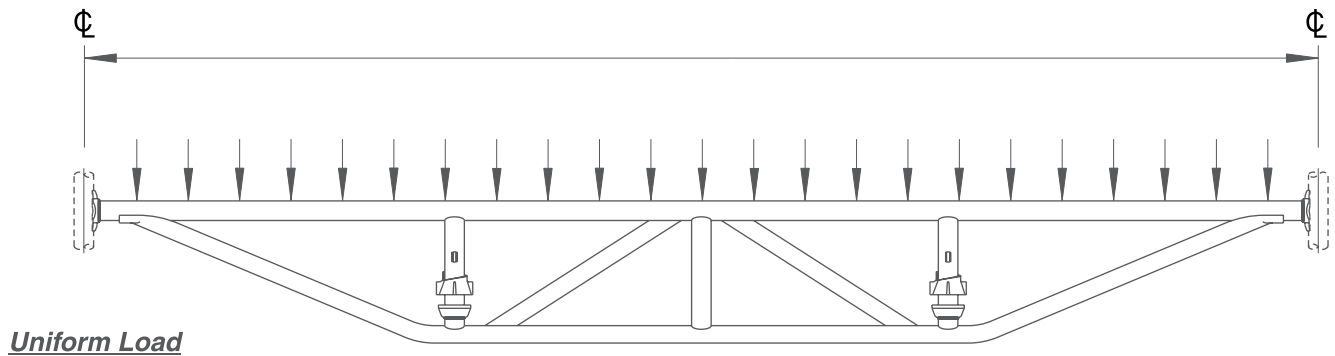
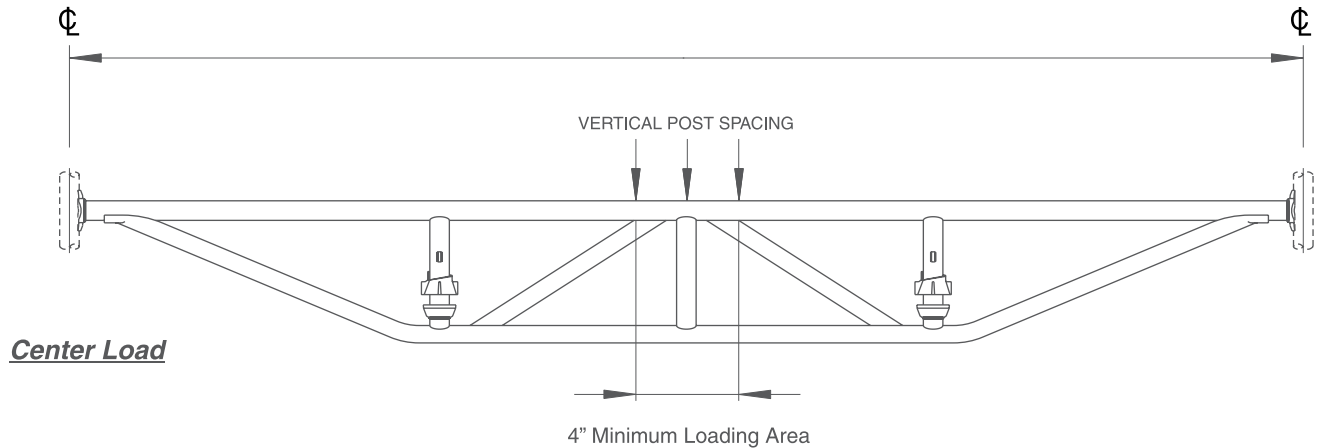
Page 4 of 7

**Locking Cup Modular Scaffold
Component Allowable Loads**



Capacity of Locking Cup Horizontal Trusses

Rev.



Part Number	Vertical Post Spacing	Allowable Center Load	Allowable Uniform Load
0254-04-2084	7'	3,000 lbs.	860 lbs. / ft.
0254-04-2096	8'	3,040 lbs.	760 lbs. / ft.
0254-04-2108	9'	2,925 lbs.	650 lbs. / ft.
0254-04-2120	10'	2,625 lbs.	525 lbs. / ft.
0254-04-2144	12'	2,400 lbs.	400 lbs. / ft.

Length of Bearer	Maximum Allowable Uniform Distributed Load Per Square Feet Area								
	Bay Length in Feet								
	3'	3' 6"	4'	5'	6'	7'	8'	9'	10'
7'	287	246	215	172	143	123	108	96	86
8'	253	217	190	152	127	104	95	84	76
9'	217	186	163	130	108	93	81	72	65
10'	175	150	131.25	105	87.5	75	66	58	53

Rated For Scaffold Use



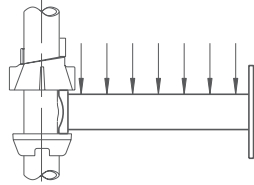
**Locking Cup Modular Scaffold
Component Allowable Loads**

Technical Manual

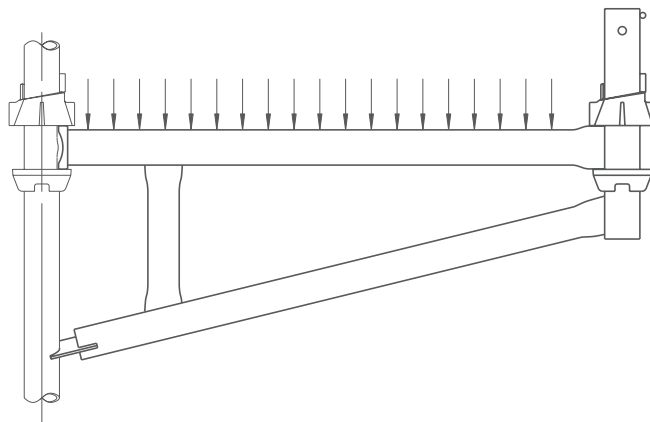
Section B
Page 5 of 7

Capacity of Locking Cup Side Brackets

Rev.



250 lbs. for One Board Bracket

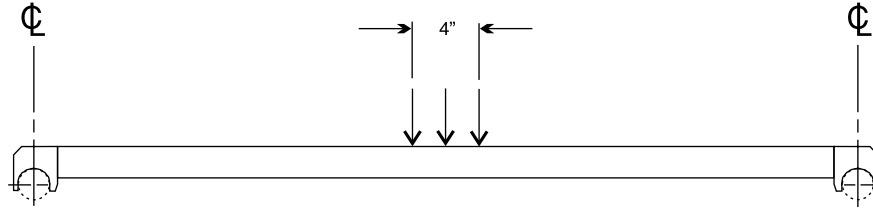


1000 lbs. for Two and Three Board Bracket

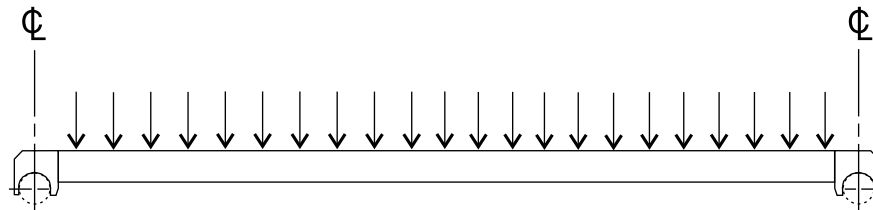
Capacity of Locking Cup Steel Planks

Rev.

Concentrated Load



Uniform Load



Part Number	Effective Length	Allowable Center Load	Allowable Uniform Distributed Load	
		Perforated Plank	Perforated Plank	Perforated Plank
		(lbs.)	(lbs. / lin. ft.)	(lbs. / sq. ft.)
0056-01-03	3' 0"	770	472	630
0056-01-04	4' 0"	550	311	415
0056-01-05	5' 0"	450	213	285
0056-01-06	6' 0"	380	150	200
0056-01-07	7' 0"	325	105	140
0056-01-08	8' 0"	290	82	110
0056-01-09	9' 0"	260	60	80
0056-01-10	10' 0"	250	49	65

NOTE: Allowable loads above are for 9" wide perforated plank.

Rated For Scaffold Use

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SECTION C

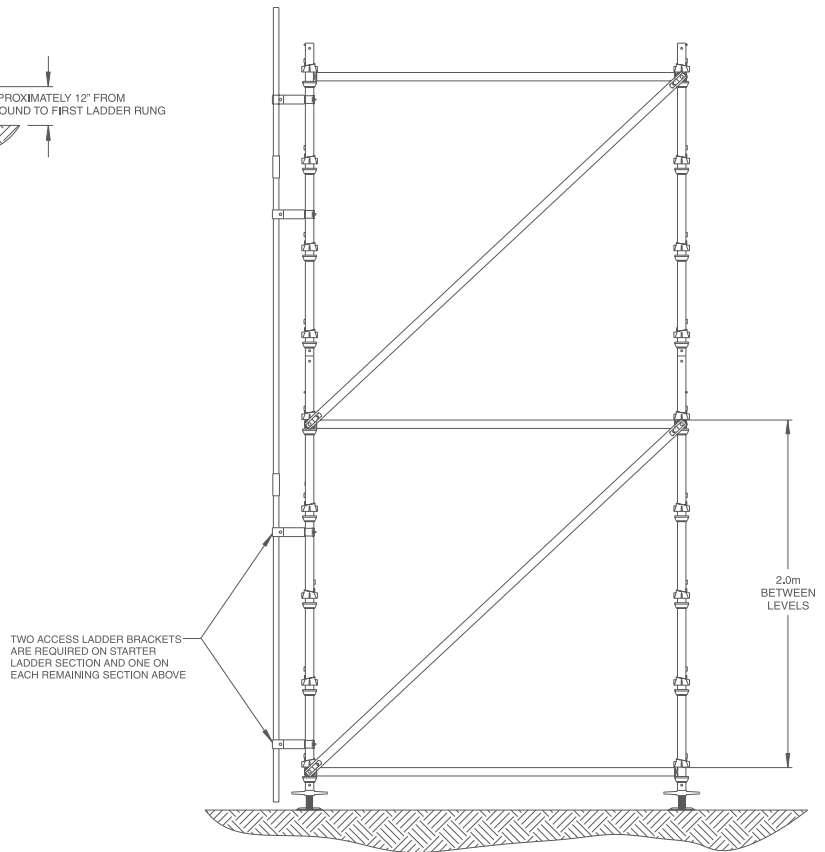
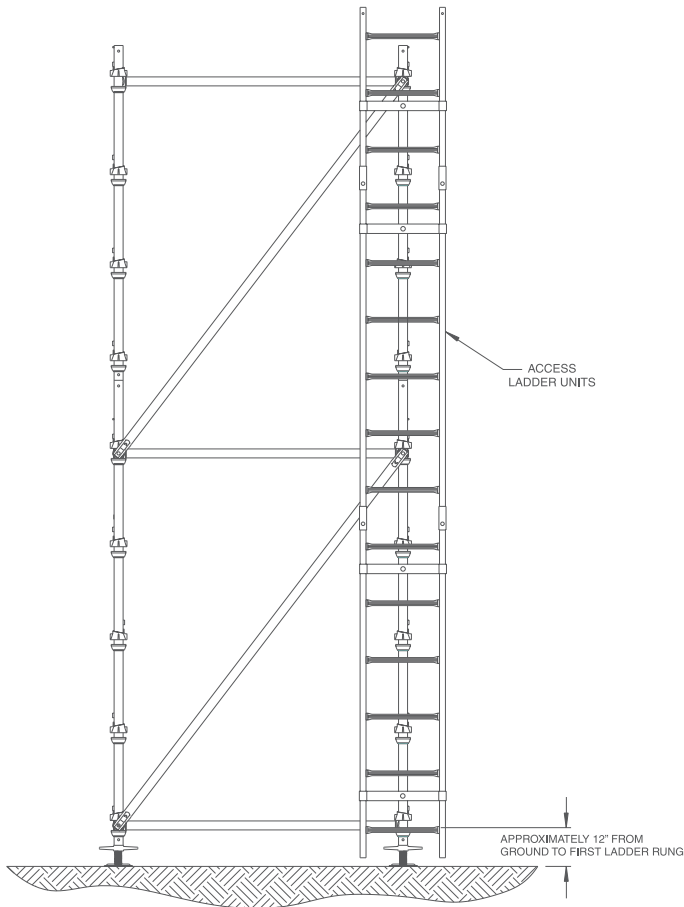
Assembly Details

SECTION C

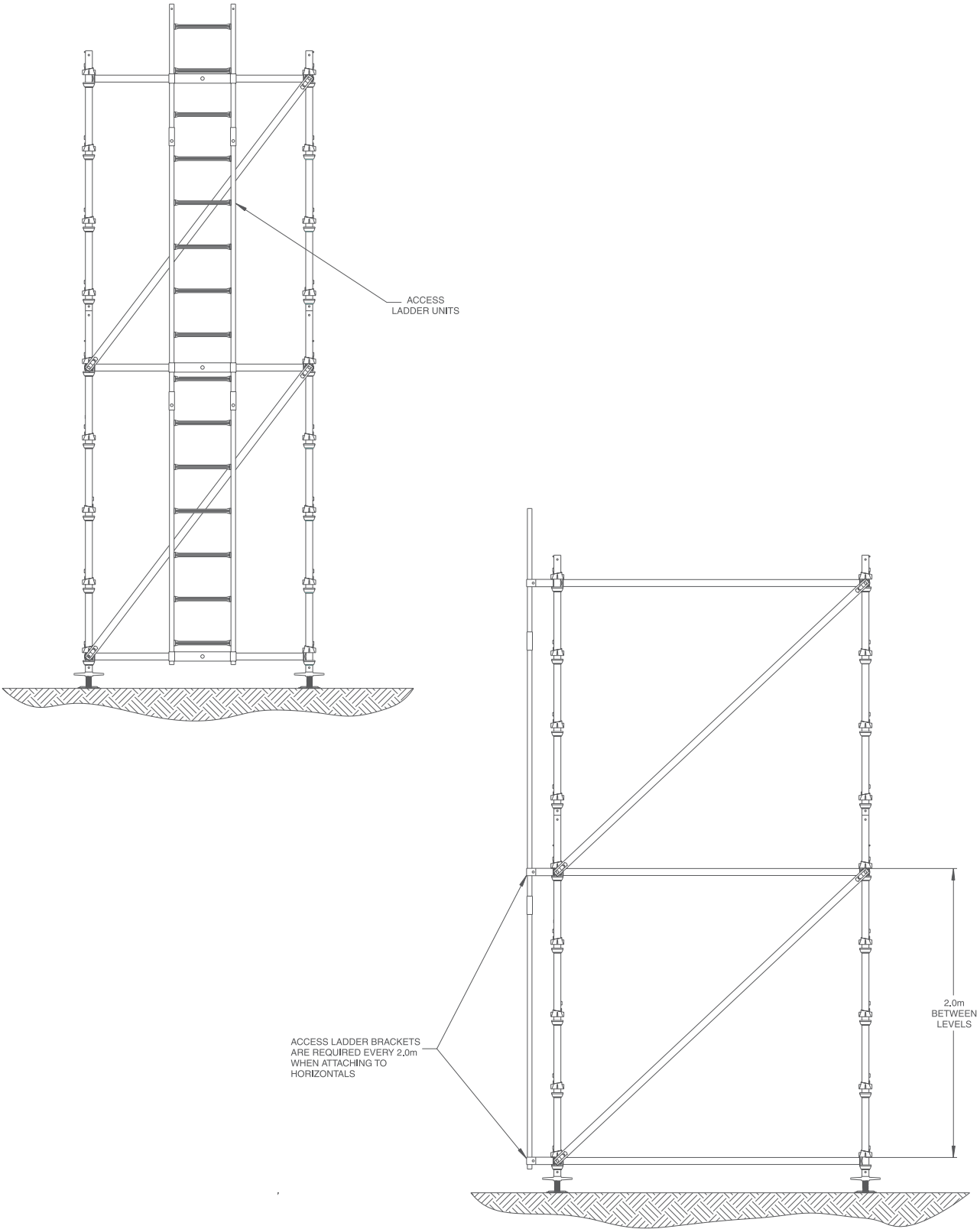
Introduction to Assembly Details

This chapter contains illustrations of partially assembled scaffold components. The illustrations are provided as information to describe component fit and dimensional limitations. This chapter is not intended to be used as a guide for scaffold erection procedures.

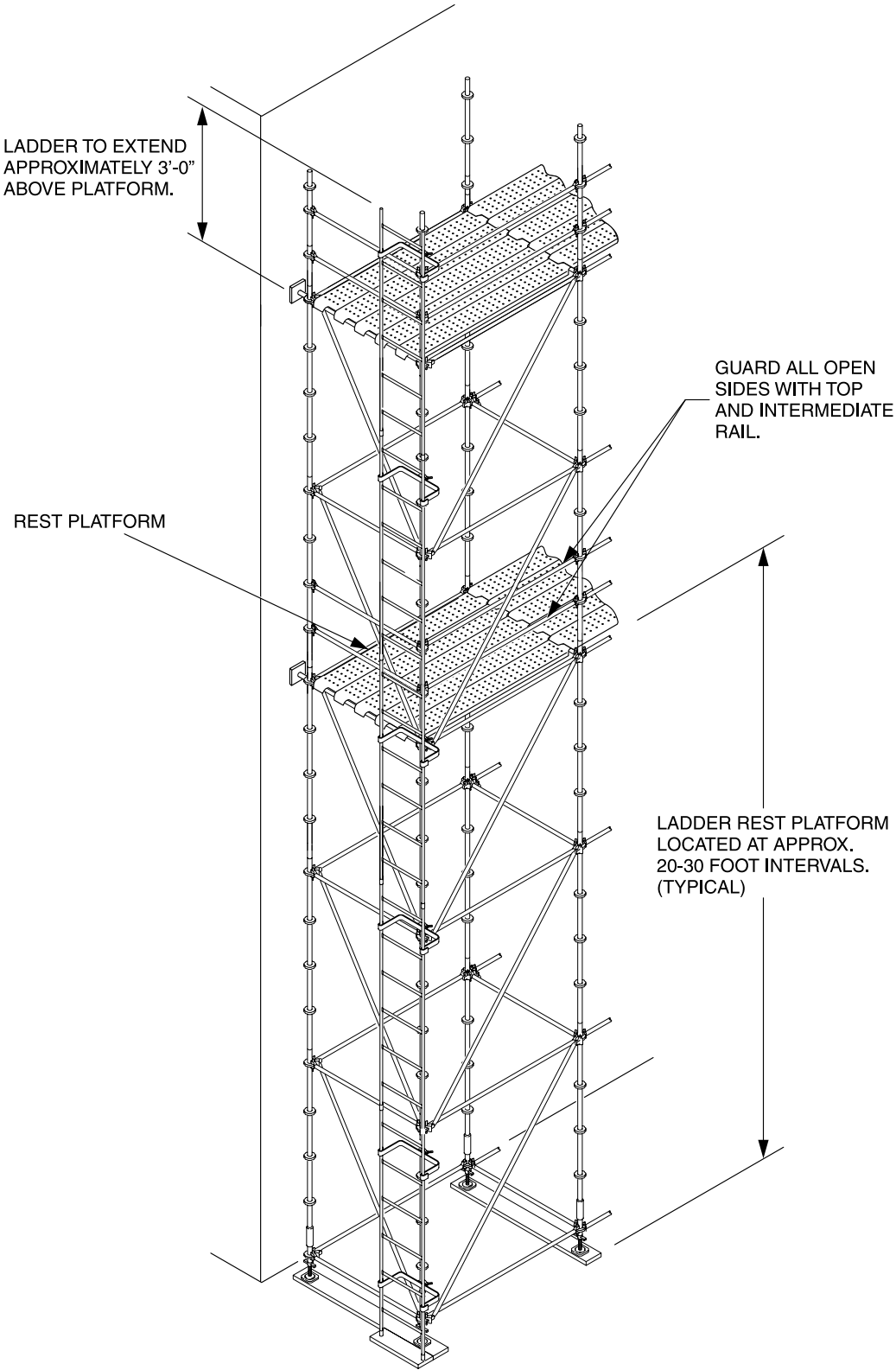
Climbing Ladder Clamped to Vertical Standards



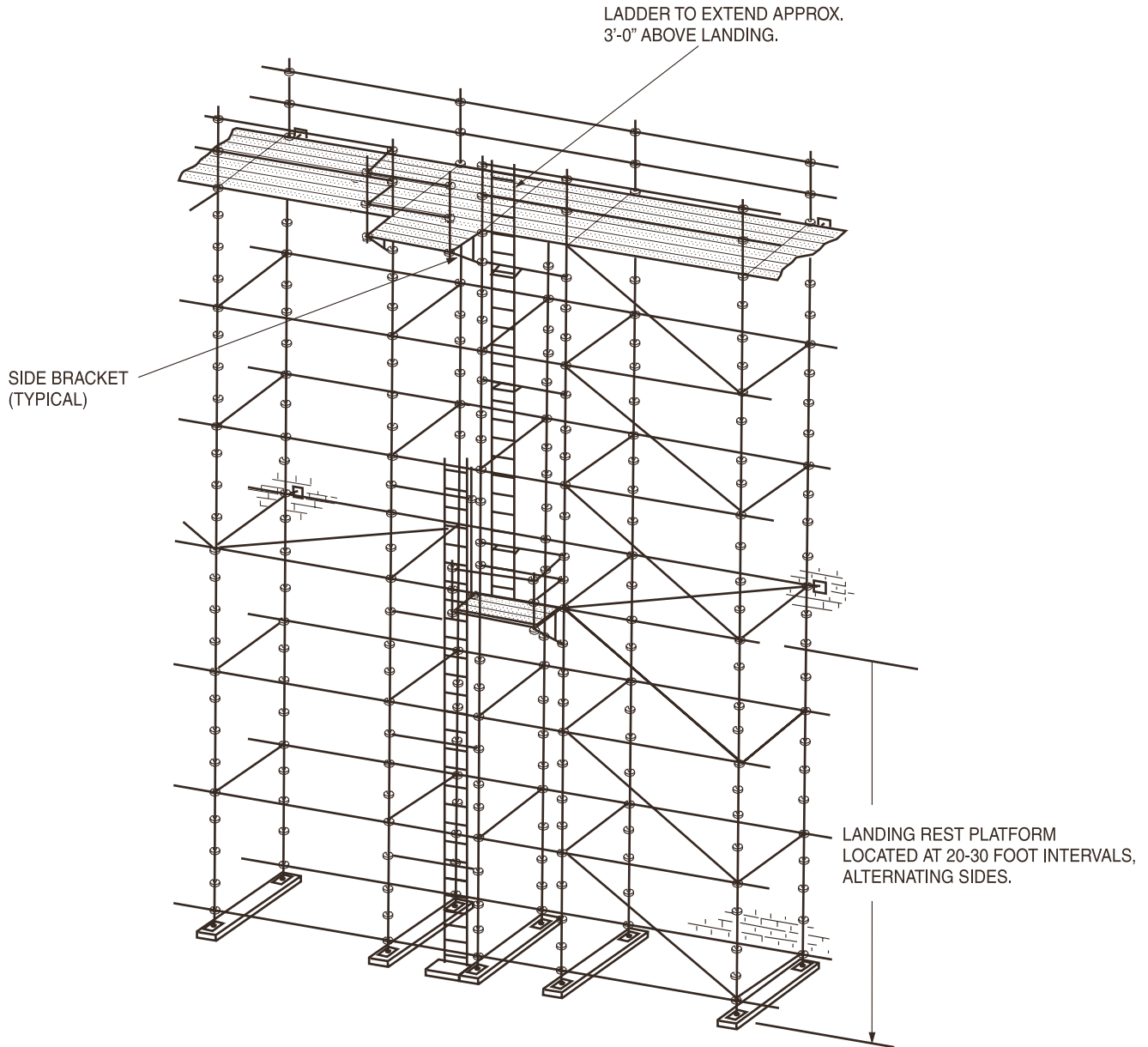
Climbing Ladder Clamped to Horizontals



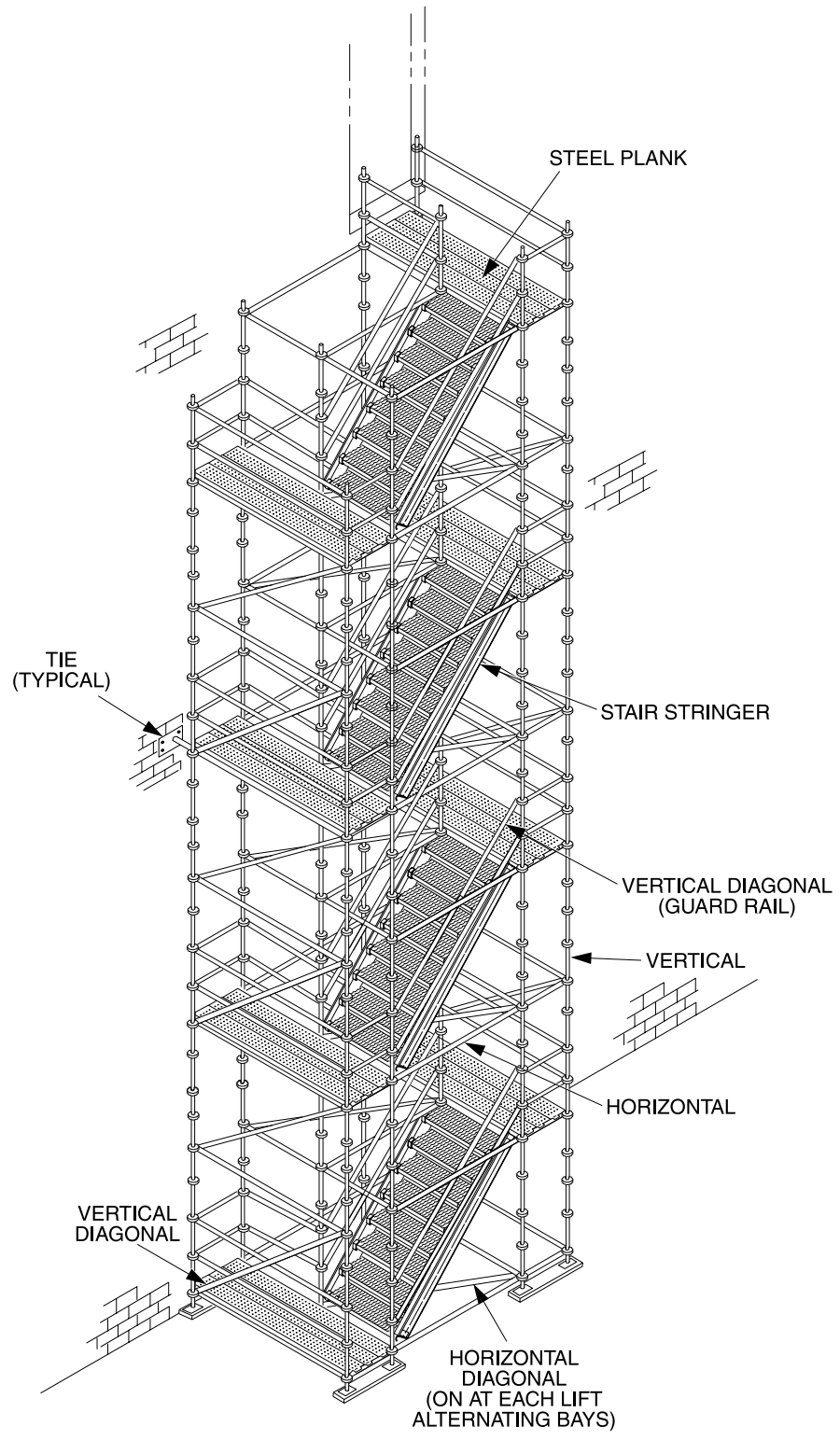
Climbing Ladder - Rest Platforms



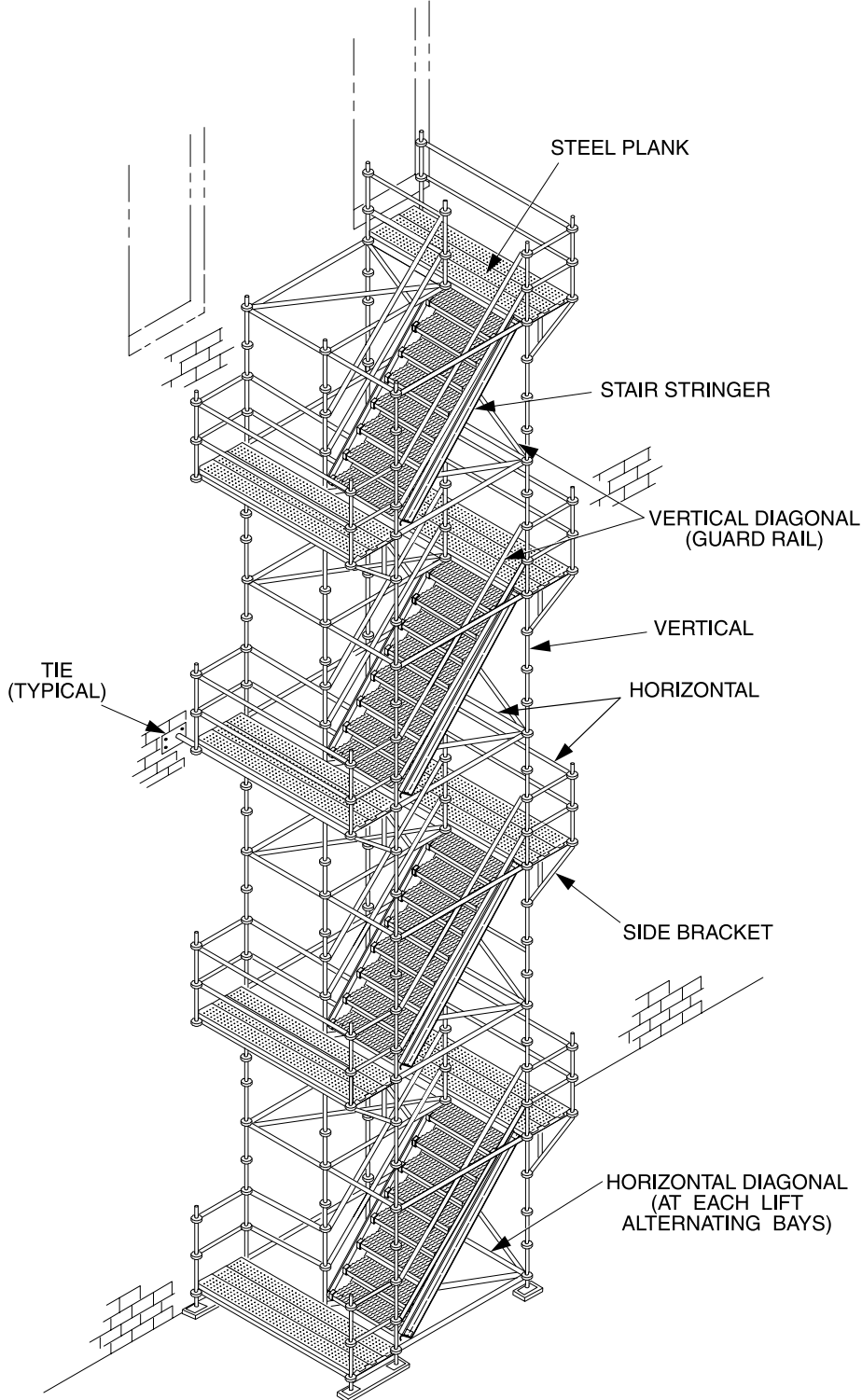
Climbing Ladder - External Landing Platforms



Typical Stair Tower with Post Supported Landings



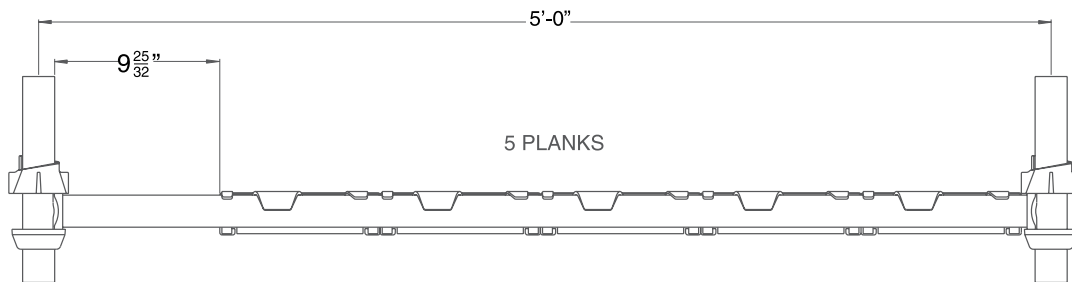
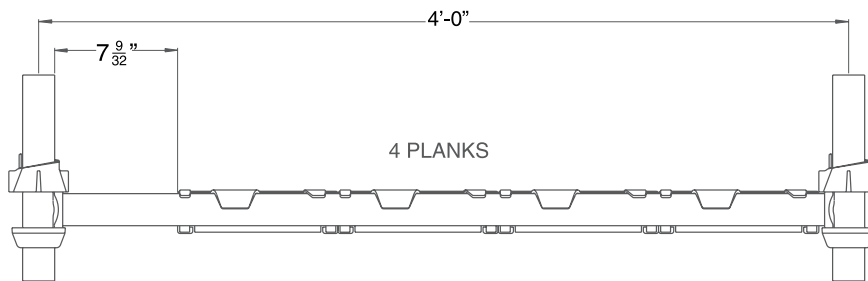
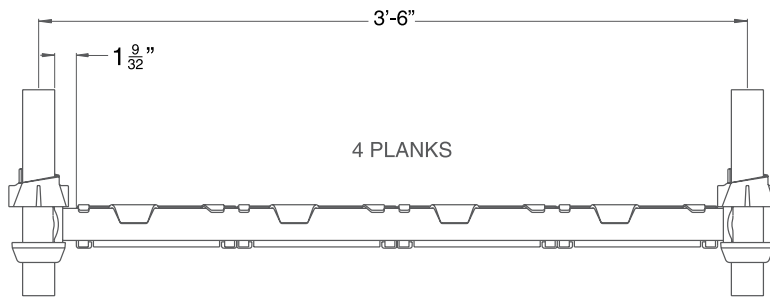
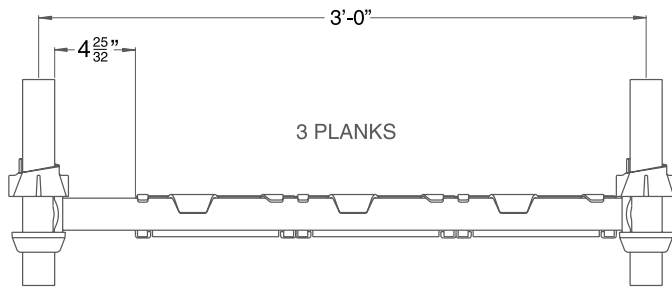
Typical Stair Tower With Side Bracket Supported Landings



Steel Plank and Filler Chart

Horizontals

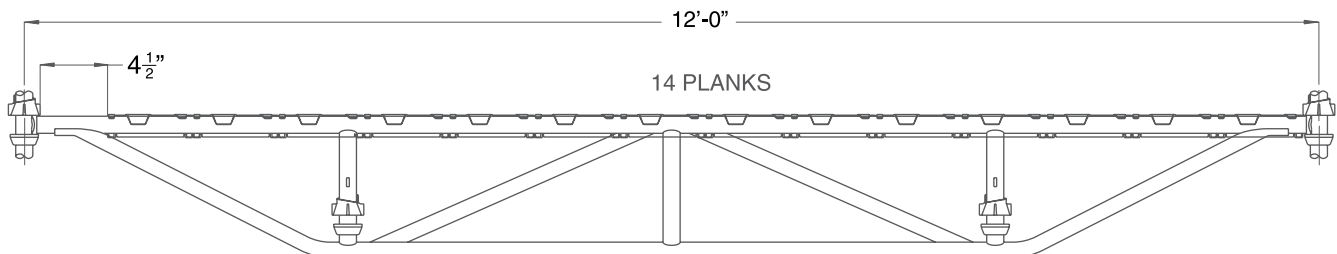
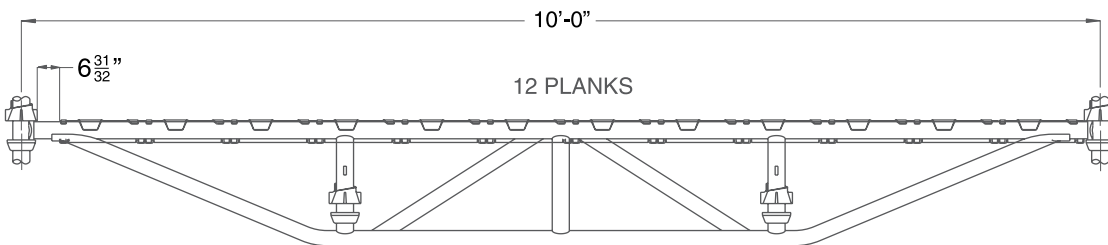
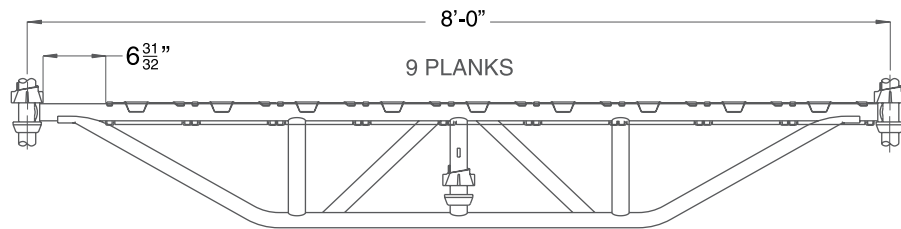
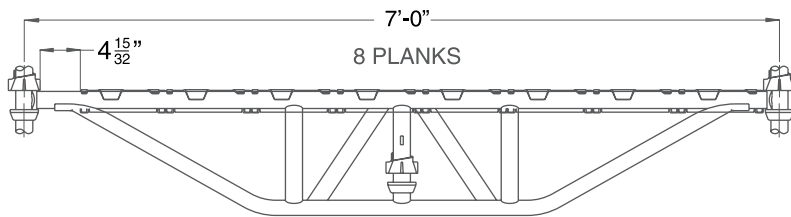
9-1/2" Wide Flush Plank



Steel Plank and Filler Chart

Horizontal Trusses

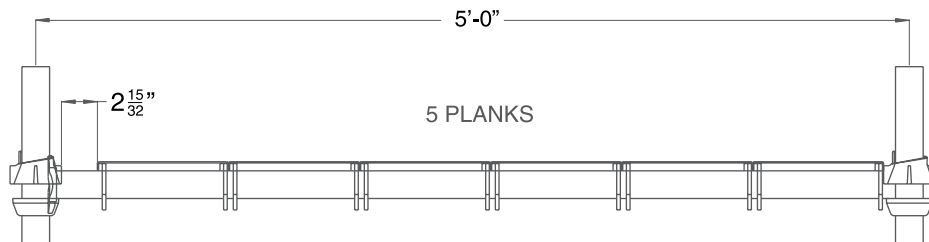
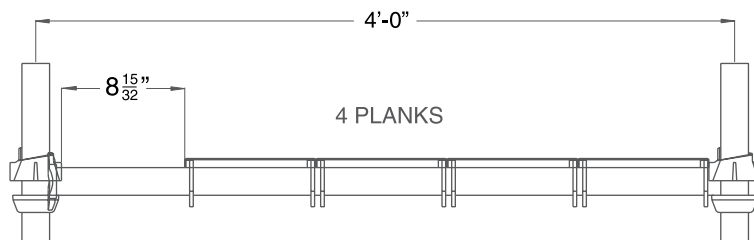
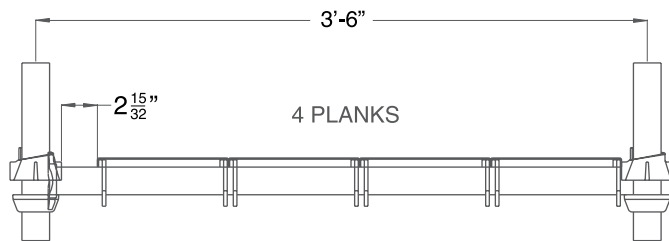
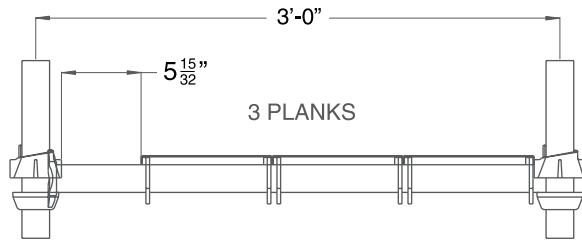
9-1/2" Wide Flush Plank



Steel Plank and Filler Chart

Horizontals

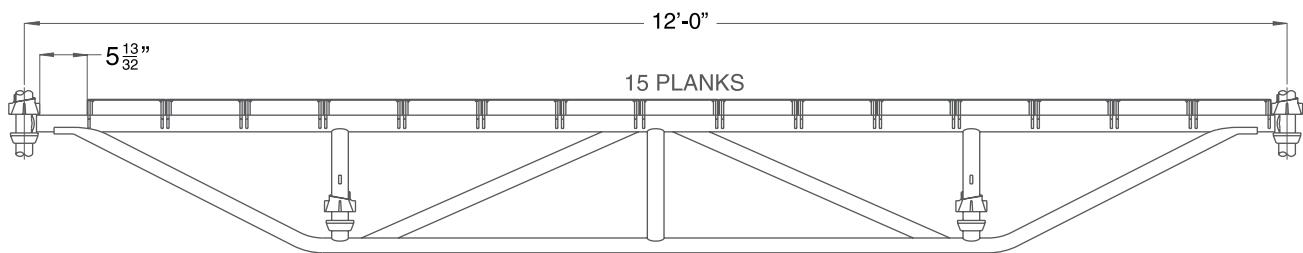
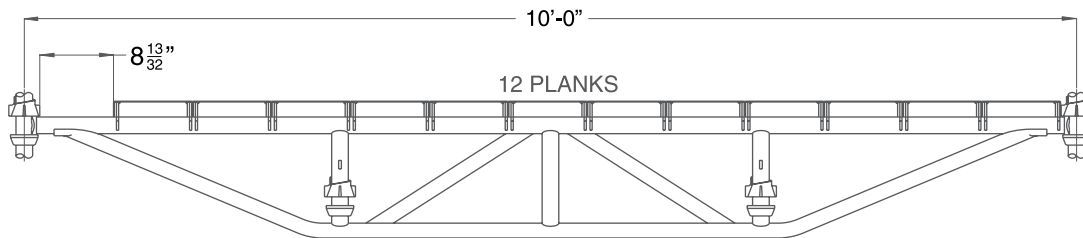
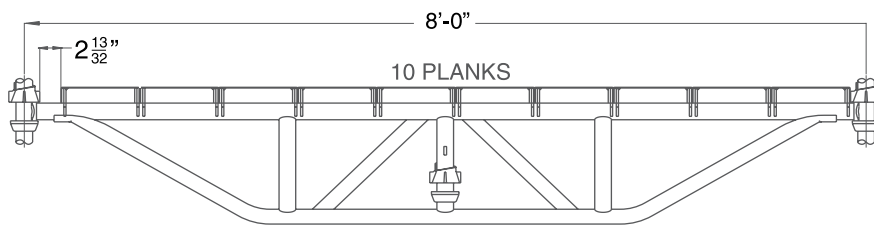
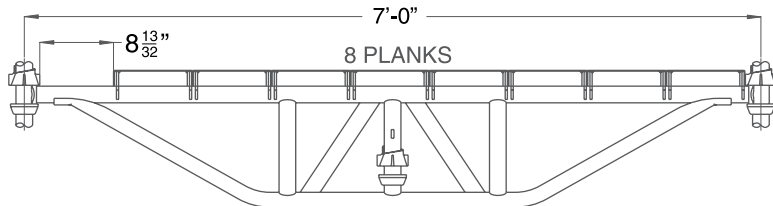
9" Wide Raised Plank



Steel Plank and Filler Chart

Horizontal Trusses

9" Wide Raised Plank



SECTION D

Tieing and Bracing

SECTION D

Tieing and Bracing

Quantities and location of ties, guys and bracing will vary depending upon the scaffold size, weight, shape and load conditions. The following general guidelines indicate minimum bil-jax requirements and are not all inclusive. When designing scaffolds with unique configurations or special loading conditions, consult with bil-jax engineering or a professional structural engineer prior to design finalization.

NOTE:

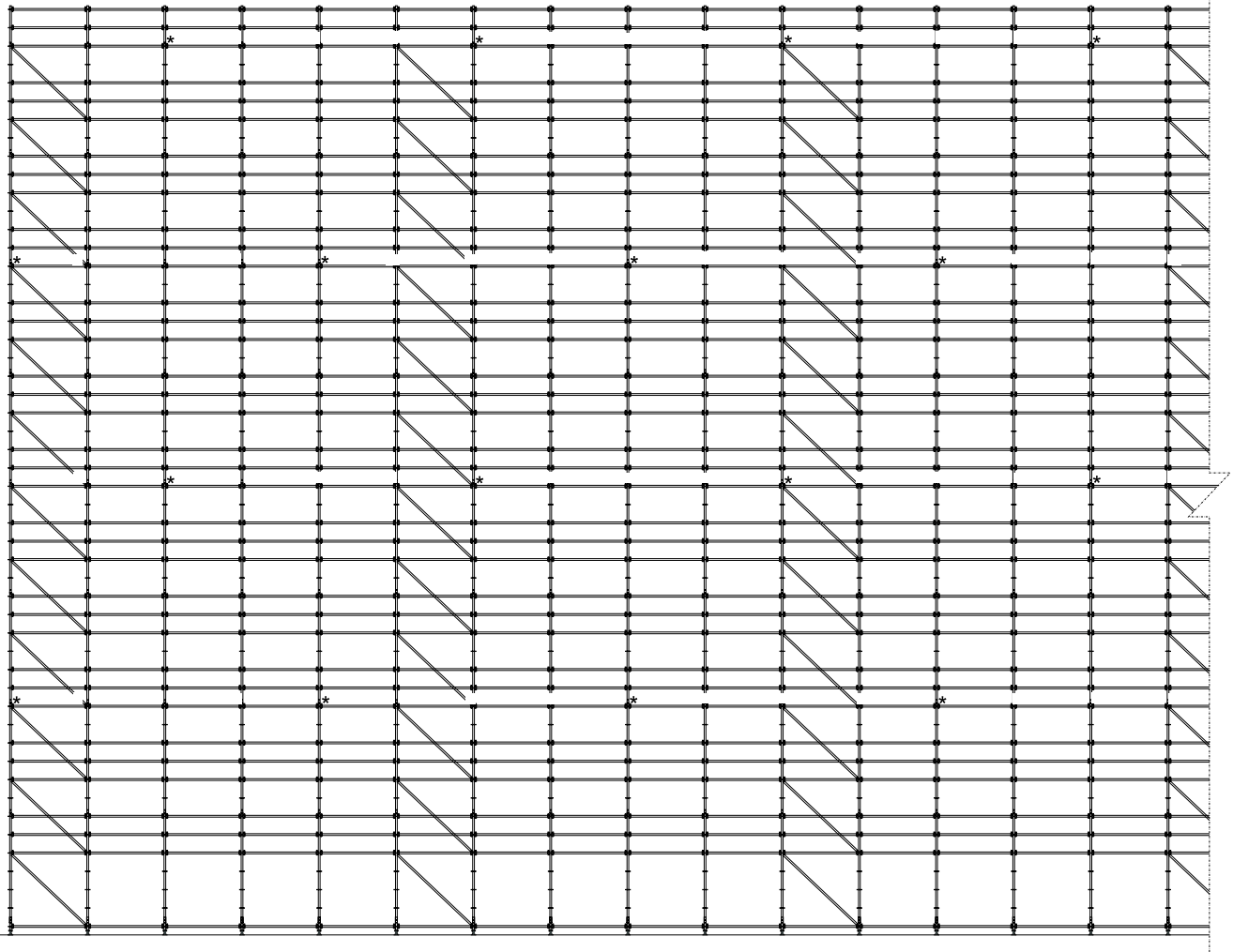
Proper access and platform toeboards are required on all scaffolds. These items have been eliminated from the illustrations in this section for clarity purposes only.

When designing a square or rectangular scaffold, bil-jax recommends a horizontal diagonal be included in the base design. This horizontal diagonal will aid the erector in providing a square scaffold.

bil-jax tube and clamp components may be substituted for systems scaffold bracing members or horizontal diagonal members. When doing so, the load capacity of these components and their effect on the completed scaffold must be considered.

Assure ties, standoffs or guys are located at runner and bearer levels only.

Scaffolding Bracing Pattern



Formula for Wall Tie Location

Horizontal Distance = 28 ft. to 30 ft.

Vertical Distance = 4 times the smaller distance of your bay layout

Ex. A Scaffold setup that is 5 ft. wide by 52 ft. long by 100 ft. tall would require the following amount of wall ties:

Horizontal - $100 \text{ divided by } 28 = 3.5 \text{ (round up to } 4\text{)}$

Vertical - $4 \times 5 = 20$

Conclusion - You will need 4 wall ties horizontally every 20 ft. vertically

NOTE: When using netting or weather protection, contact Bil-Jax engineering or a PE

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