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# INSTALLATION INSTRUCTIONS





ROOFTOP METALWALK SYSTEM





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# **METALWALK® INSTALLATION TABLE OF CONTENTS**

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## METALWALK® INSTALLATION INSTRUCTIONS FOR SSR PANELS

#### **PART 1 GENERAL**

- 1.01 PARALLEL RUNS up and down the slope, ridge to eave.
- 1.02 **PERPENDICULAR RUNS** across roof high ribs, same as the ridge cap.
- 1.03 Use lengths of 10', 12', 20' or 24'-0" grating sections and nominal 10' or 21' handrail tubing to reduce waste. Other lengths available. Check roof plans provided by Architect and METALWALK® drawings from manufacturer.
- 1.04 Assemble grating sections. Starting with a male/female grating section and finish with a male/male grating section.
- 1.05 Support plates are provided for METALWALK® grating with handrail and without handrail.
- 1.06 Remove debris and clean roof of shavings from drilling.
- 1.07 Spray cut ends of METALWALK® grating sections with Galvanizing Compound or rust inhibitive primer to prevent future rust.

#### PART 2 TOOL LIST

- 2.01 Power chop saw with metal cutting blade, or Tubing cutter to accept 1.9" OD pipe.
- 2.02 Allen hex wrench 3/16" or 5/16" size (depending on fitting type).
- 2.03 Ratchet socket set, 3/8" drive, ½" hex head socket.
- 2.04 Box or open end ½" wrench or adjustable wrench.
- 2.05 Electric screw gun, speed 0-2500 rpm, reversing.
- 2.06 Magnetic 5/16" hex head bit with  $\frac{1}{4}$ " shank drive.
- 2.07 Electric Drill with 5/16" drill bit.

#### PART 3 PRODUCTS

**3.01 PARALLEL RUNS--**up and down the slope, ridge to eave.

#### A. SUPPORT PLATE

1. Install S5!® Clamps on each seam corresponding to the number of 1" long holes in the support plate (Typical 2 per support plate). Tighten S5!® setscrew to 130-150 inch lbs torque for 24 ga. panels. Set support plate directly on S5!® Clamps and install supplied integral bolt & washer. Standard Support plate spacing is maximum 6'-0. (see roof layout drawing for variances)

**NOTE:** Area to have handrail installed requires support plates with (4) pre-punched 5/16" diameter holes on one or both ends to accommodate vertical post square base flange.

Support plate will extend out from the roof panel major standing seam 3" to 6"inches.

Other sizes available on special order.

Determine which side of the METALWALK® grating the handrail is to be located from drawings.

- 2. Space support plates so that the grating sections butt end to end on the center of a support plate. No more than 12" of METALWALK® grating should project past the support plate at the ending run.
- 3. Add a support plate at intersections and termination of runs as required.





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## METALWALK® INSTALLATION INSTRUCTIONS FOR SSR PANELS

#### **B. METALWALK® GRATING SECTIONS - PARALLEL RUNS**

- 1. Align METALWALK® grating sections parallel to roof panel major ribs on the Support Plate.
- 2. Install (1) MHC25 Hold Down Clamp thru open rungs of each grating plank onto the support plate using (2) 12-14 x 3/4" self-drilling fasteners.
- 3. Fasteners should be centered to penetrate the mid-section of the support plate.
- 4. Use an electric screw gun with a magnetic 5/16" hex head bit set to a proper hold-down torque, minimum of 92 inch pounds.

3.02 PERPENDICULAR RUNS - across roof high ribs, same direction as ridge cap.

#### A. METALWALK® GRATING SECTIONS -

- 1. Install S-5!® Clamps directly on SSR Rib. Spacing based on corresponding 1" long holes in the support plate. Tighten S-5!® to 130-150 inch lbs. for 24 ga. panels.
- 2. Set Support Plate directly on S5!® Clamps and install supplied integral bolt & washer.
- 3. Install MHC25 Clamp thru open rungs of each grating plank onto support plate using (2)12-14 x 3/4" self-drilling fasteners. **SEE NOTE BELOW**

# (OFFSET MHC25 CLAMP FROM CENTER OF SUPPORT PLATE SO FASTENERS DO NOT PENETRATE SEAM)

#### **B. SPLICE CHANNEL-- IF REQUIRED**

- 1. Where two METALWALK® grating sections are butted end to end, on perpendicular runs, install a splice channel from the underside.
- 2. Center splice channel 1-1/2" either side of joint.
- 3. Fasten splice channel with 12-14 x 3/4" self-drilling fasteners into each grating section, total of (4) fasteners, (2) each side.
- 4. Install MHC25 Hold Down Clamp thru open rungs onto the splice channel using (2) 12-14 x 3/4" self-drilling fasteners per MHC25 Clamp. (1) per 12" wide plank.
- 5. *Important* Check the fastener locations and penetrations through the splice channel, that fasteners will *not* penetrate the roof panel standing seam major rib area.

#### C. LEDGER ANGLE-IF REQUIRED

- 1. Where METALWALK® grating sections butt into side of a parallel run, fasten a ledger angle using 12-14 x 3/4" self-drilling fasteners, equally spaced.
- 2. Rest end of grating section on ledger angle.
- 3. Install MHC25 Hold Down Clip thru open rungs onto the ledger angle using 12-14 x 3/4" self-drilling fasteners. (1) per 12" wide plank. Use an electric screw gun with a magnetic 5/16"head bit set to proper hold-down torque of minimum of 92 inch pounds. Do not over torque fasteners which could cause deformation of METALWALK® grating section.
- 4. *Important* Check the fastener locations and penetrations through the ledger angle, that fasteners will *not* penetrate the roof panel standing seam major rib area.



**ROOFTOP METALWALK SYSTEM - PAGE 4** 





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## METALWALK® INSTALLATION INSTRUCTIONS FOR SSR PANELS

#### 3.03 HANDRAIL

#### A. VERTICAL POSTS

- Position the slip-on pipe Square Flange Base for the vertical post over the pre-punched holes with the set screws pointed out from the grating to allow room for ease of tightening the setscrews with a allen wrench. Secure the Square Flange Base to the support plate using (4) 5/16" x 1" bolts, (8) 7/8" washers and (4) lock nuts. 7/8" washers to be installed under each nut and bolt head. Tighten to 130 150 inch lbs torque.
- 2. Insert pre-cut 42-3/4" tubing, 1.9" OD into the Square Flange Base on support plate, make sure it bottoms out, secure by tightening the (2) setscrews to 204 inch pounds.
- 3. Mark Vertical Posts from the top at 19" for receiving mid-rail Cross slip-on fitting(top of fitting)

#### B. MID-RAIL

- 1. Determine if mid-rail is to be located on the inside or outside of the railing.
- 2. Slide on Vertical Posts a Cross slip-on fitting with the open barrel to the side to receive midrail.
- 3. Secure temporarily in place at the pre-marked 19" (top of fitting) by tightening one setscrew lightly with Allen hex wrench.
- 4. Measure the distance from center to center of the two end vertical posts and add 2-1/4". Cut lengths from the standard 1.9" OD tubing and join together with the pre-tapered end or if cut to length, join together at the Vertical Post Cross slip-on fitting. If the tubing joint is mid-way between Vertical Posts an External Coupling (optional) slip-on fitting can be installed.
- 5. Assemble mid-rail by sliding tubing through all of the Cross slip-on fittings, adjust as necessary for alignment, tighten all setscrews to 204 inch pounds.
- Install Metal Plug in the mid-rail tubing at each end or the Vertical Post OR install Elbow with a piece of vertical piece of tubing to connect with Elbow on top rail where handrail needs to extend past the end of the Vertical Post.

#### C. TOP RAIL

- 1. Measure the distance from center to center of the two end vertical posts. Cut lengths from the standard 1.9" OD tubing so that they will but together at the Vertical Post Tee or join together with the pre-tapered end. If the tubing joint is mid-way between Vertical Posts an External Coupling (optional) slip-on fitting can be installed.
- 2. Slide on each Vertical Post a Tee slip-on fitting with the setscrew pointed away from METALWALK grating.
- 3. Slide the 1.9" OD tubing through the Tee slip-on fittings. At each end Vertical Post install an Elbow. The top rail tubing should be resting on the Vertical Posts.
- 4. Secure in place by tightening setscrews with Allen hex wrench to 204 in. lbs.

#### D. CORNER CONDITION

- OUTSIDE CORNER: Extend pipe past the tee and cross fitting of the last vertical post
  at desired corner. Field measure pipes to align with intersecting pipes at corner and cut to
  desired length.
- 2. Install Elbow slip-on fitting to the pipes in the desired direction of the adjacent top and mid-rail. tighten setscrew to 204 inch lbs.
- 3. Attach elbow to top-rail and mid-rail of adjacent pipes and tighten setscrew to 204 inch lbs



ROOFTOP METALWALK SYSTEM - PAGE 5



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## METALWALK® INSTALLATION INSTRUCTIONS FOR SSR PANELS

- 4. **INSIDE CORNER:** Extend pipe past the tee and cross fitting of the last vertical post at desired corner. Field measure pipes to align with intersecting pipes at corner and cut to desired length. Be sure not to extend pipe into Metalwalk walking area.
- 5. Install Elbow slip-on fitting to he pipes in the desired direction of the adjacent top and mid-rail. Tighten setscrew to 204 inch lbs.
- 6. Attach elbow to top-rail and mid-rail of adjacent pipes and tighten setscrew to 204 inch lbs.

#### E. DIAGONAL SUPPORT - OPTIONAL AT RAIL-END POST-- USE ONLY WHEN SPECIFIED

- 1. Before installing the top railing, on the desired rail-end vertical post, install Adjustable Elbow slip-on fitting, direct it out from railing at 90 degrees.
- 2. Use a pre-cut 42-3/4" post OR cut tubing to proper length and insert into the Adjustable elbow and lightly tighten setscrew.
- 3. Install on the tubing end Angle Base OR Adjustable Flange, and lightly tighten setscrews.
- 4. Place a support plate across roof panel major high ribs, positioned under the end of the diagonal tubing. Align Angle Base OR Adjustable Flange on the center 4" wide section of support plate and mark location of the mounting (4) holes of the Flange to the Support Plate (if not already pre-punched).
- 5. Remove support plate, center punch, and drill the (4) 5/16" diameter holes.
- 6. Secure the Angle Base OR Adjustable Flange to the support plate using (4) 5/16"-18 x 1" bolts with flat washers under each bolt head and the self-locking nut assembly. Tighten the self-locking nuts to a torque of 130 to 150 inch-pounds.
- 7. Install support plate, slip together tube into flange, attach to roof panel per Part 3.01, Section A- 1.
- 8. Secure in place by tightening setscrews with Allen hex wrench to 204 in. lbs.

#### F. FINAL INSPECTION

- 1. Check for proper installation, proper torque setting of all bolts, nuts and setscrews, remove any metal shavings, all tools and equipment.
- 2. Spray cut ends of METALWALK® grating sections with Galvanizing Compound or rust inhibitive primer to prevent future rust.

**END OF SECTION** 

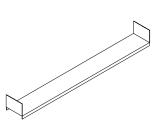


COMPONENTS.

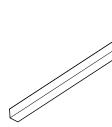


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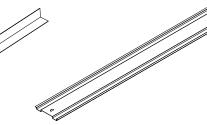
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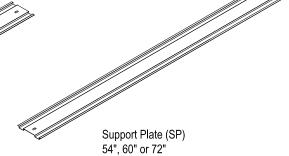
Splice Channel (SC) 24", 36" or 48"

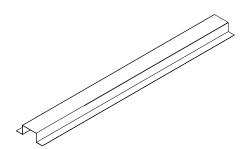


Ledger Angle (LA) 24", 36" or 48"

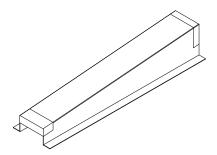


Support Plate (SP) 24", 30", 36" or 48"

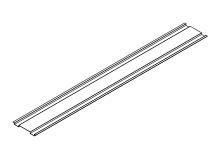




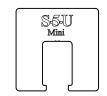
Standard Hat Section (HS) for "R" Panel installation



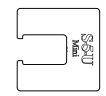
Standard Pitched Hat Section (PHS) for "R" Panel installation

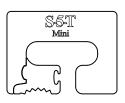


Support Plate (SP) for "R" Panel installation



S-5-U CLAMP (TOP MOUNT) S-5-U CLAMP (SIDE MOUNT)





S-5-T CLAMP W/INSERT



S-5-Z CLAMP W/INSERT



M8 BOLT **PACKAGED SEPERATELY** 



SET SCREWS PACKAGED **SEPERATELY** 



MHC25 HOLD DOWN CLAMP ATTACHES GRATING TO PLATES



12-14X 3/4" SDST FASTENER FOR ALL FASTENER APPLICATIONS



M8 X 60 METRIC BOLT FOR OPTIONAL BOLT ASSEMBLIES



SW-2 SQUARE WASHER FOR OPTIONAL BOLT ASSEMBLIES

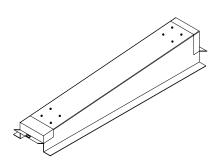


METALWALK COMPONENTS - PAGE 7

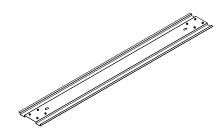




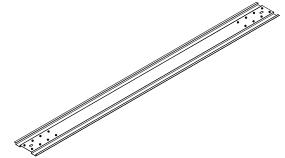
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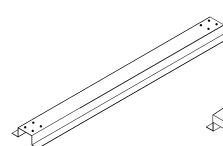
PHSR-PITCHED HAT FOR SSR FOR PERPENDICULAR LEVEL RUNS



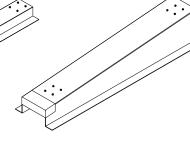
SPR RAILING SUPPORT PLATE FOR SSR SPR-38 (SIZE BASED ON METALWALK WIDTH)



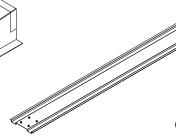
SPR RAILING SUPPORT PLATE FOR SSR SPR-54 & 62 (SIZE BASED ON METALWALK WIDTH)



HSR-PITCHED HAT FOR "R" PANEL FOR PERPENDICULAR RUNS



HSR-PITCHED HAT FOR "R" PANEL FOR PERPENDICULAR LEVEL RUNS



SPR RAILING SUPPORT PLATE FOR "R" PANEL



10' 6" LONG HORIZONTAL PIPE W/SWEDGED END





12-14 X 3/4 SDST FASTENER



**FAB-LOK FASTENER** FOR "R" PANEL INSTALL



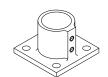
5/16" LOCK NUT FOR RAIL BASE INSTALL



5/16" X 1" OR 1-1/2" LONG FOR RAIL BASE INSTALL



1" DIA, FLAT WASHER FOR RAIL BASE INSTALL



RAIL BASE #45SBC-8



CROSS #12-8



TEE #5E-8



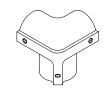
ELBOW #3-8 **CORNER CONDITION #1** 



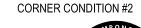
PLUG #62AG-8



#20-8



OUTSIDE CORNER SIDE OUTLET ELBOW



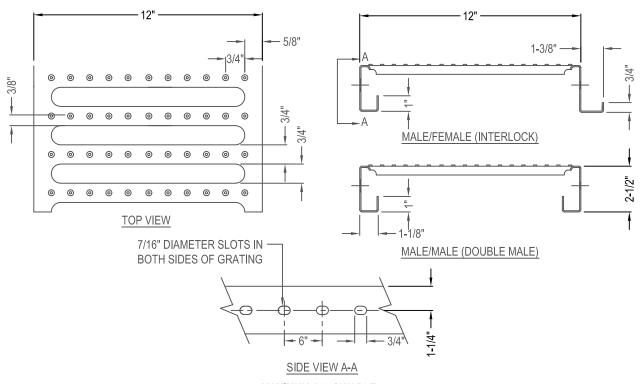


HANDRAIL COMPONENTS - PAGE 8





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# MAXIMUM ALLOWABLE CONCENTRATED LOAD (lbs/sf)

SIMPLY SUPPORTED SPAN				
LENGTH (ft.)	3'-0"	4'-0"	5'-0"	6'-0"
WEIGHT (lbs.)	529*	529	501	420

(1) LOADS ARE CONTROLLED BY BENDING STRENGTH (DEFLECTION < L/240)

(2) ALL LOADS ARE TOTAL LOADS (DEAD WEIGHT OF GRATING MUST BE SUBTRACTED TO OBTAIN LIVE LOAD)
(3) LOAD VALUES CAN BE INCREASED BY AT LEAST 50% WHEN GRATING SECTIONS INTERLOCK TOGETHER
\*LOAD CONTROLLED BY 2" END BEARING STRENGTH (DEFLECTION < L/240)

# FASTENER PERFORMANCE DATA

ı	PULLOUT VALUES (average lbs. ultimate)					
FASTENER			STEEL GAUGE			
	SIZE	POINT	24	18	14	12
	12-14	Teks/3	211	551	1063	1631

STRENGTH CHARACTERISTICS				
FASTENER		TENSILE SHEAR		TORQUE
SIZE	POINT	(lbs.min.)	(avg.lbs.ult.)	(min.in.lbs.)
12-14	Teks/3	2778	2000	92

#### NOTES:

- 1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
- 2. DO NOT SCALE DRAWING.
- 3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
- 4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
- 5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 5018-008.

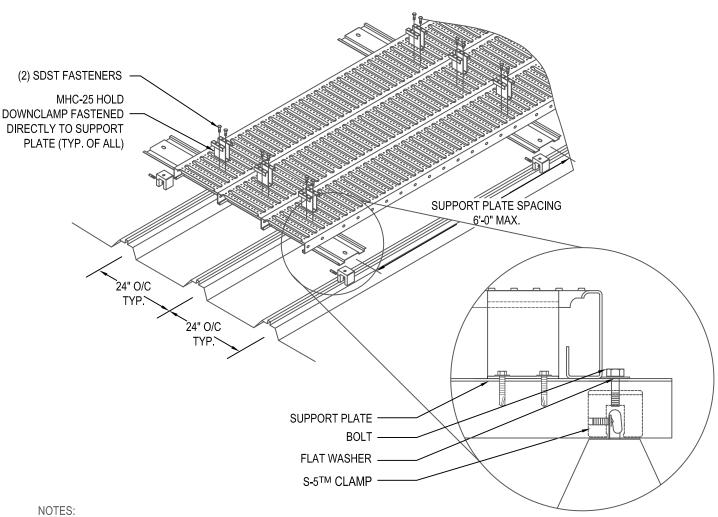


**GRATING SPEC - PAGE 9** 





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PARALLEL RUNS - PAGE 10

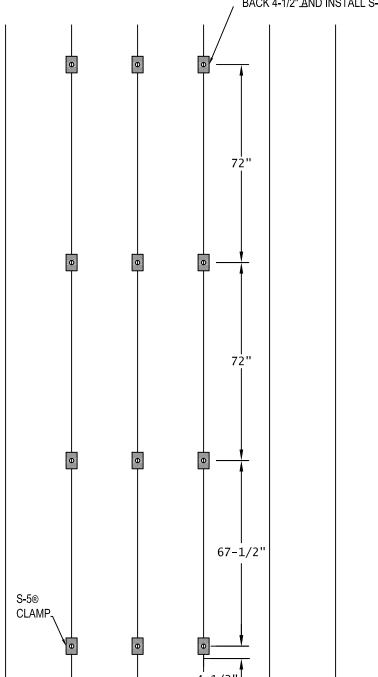
36" WIDE METALWALK®, NO HANDRAIL, S-5™ CLAMP, PARALLEL



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MEASURE TO END OF DESIRED RUN AND MEASURE BACK 4-1/2" AND INSTALL S-5® CLAMP.



**STEP 1 - MEASURE TOTAL LENGTH** OF PARALLEL RUN. FROM EDGE OF DESIRED STARTING POINT OF GRATING, MEASURE 4-1/2" AND INSTALL S-5® CLAMP (SEE TORQUE GUIDE IN BOX). **INSTALL ADDITIONAL CLAMPS** BASED ON QUANTITY OF SLOTS IN SUPPORT PLATE AND SPACING SHOWN TO LEFT.





S-5-U®





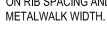


S-5-T®

S-5-Z®

NOTE: THE QUANTITY OF S-5® CLAMPS IS DETERMINED BY THE QUANTITY AND

SPACING OF THE 1" SLOTS IN THE SUPPORT PLATE. QUANTITY WILL VARY BASED ON RIB SPACING AND





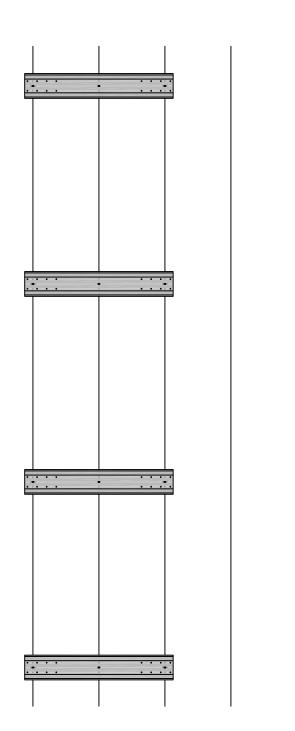
PARALLEL RUNS - S-5® CLAMP PLACEMENT - PAGE 11



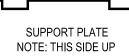


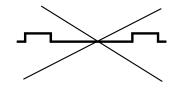
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STEP 2 - ATTACH SUPPORT PLATES TO S-5® CLAMPS THRU THE 1" SLOTS IN THE SUPPORT PLATE. USE THE M-8 BOLTS SUPPLIED WITH THE S-5® CLAMPS.





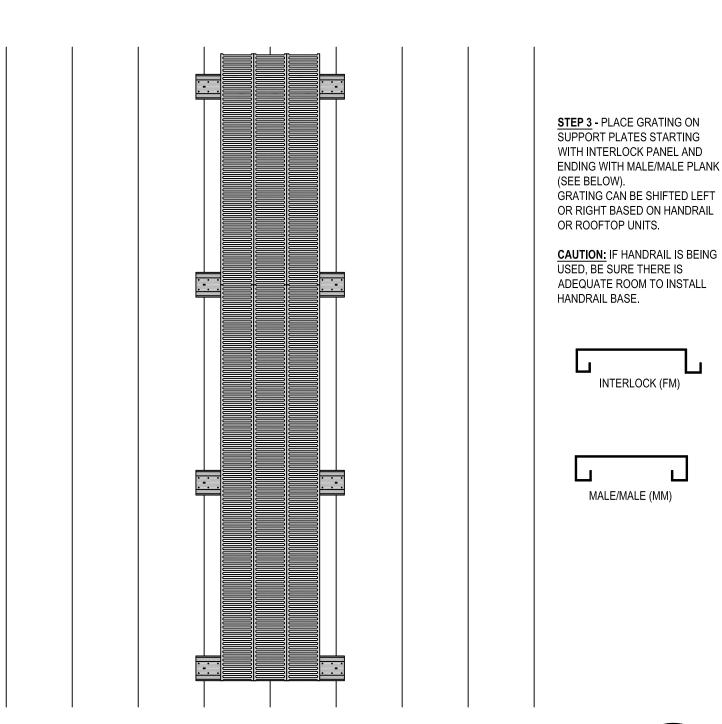
PARALLEL RUNS - SUPPORT PLATE ATTACHMENT - PAGE 12





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ON PONENTS.

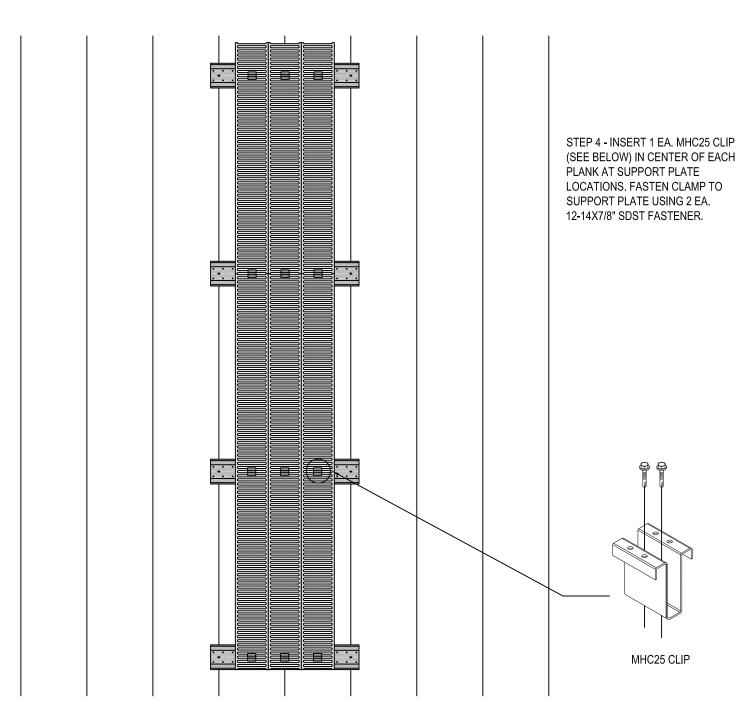
RESIDENTS





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PARALLEL RUNS - GRATING ATTACHMENT - PAGE 14

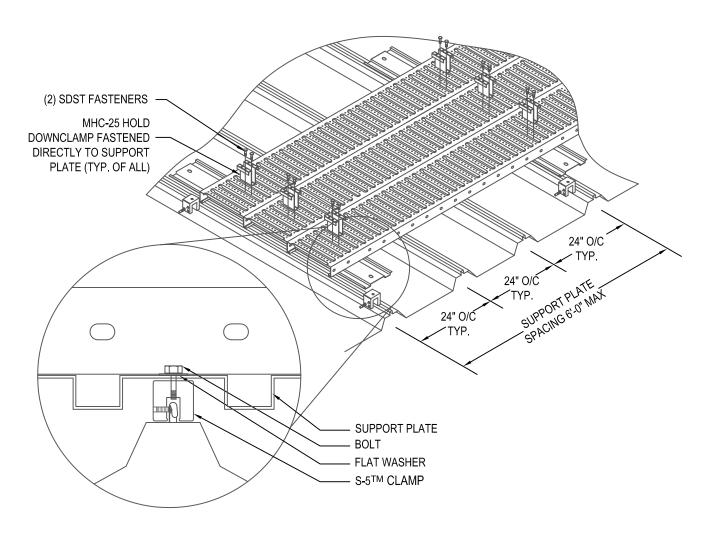




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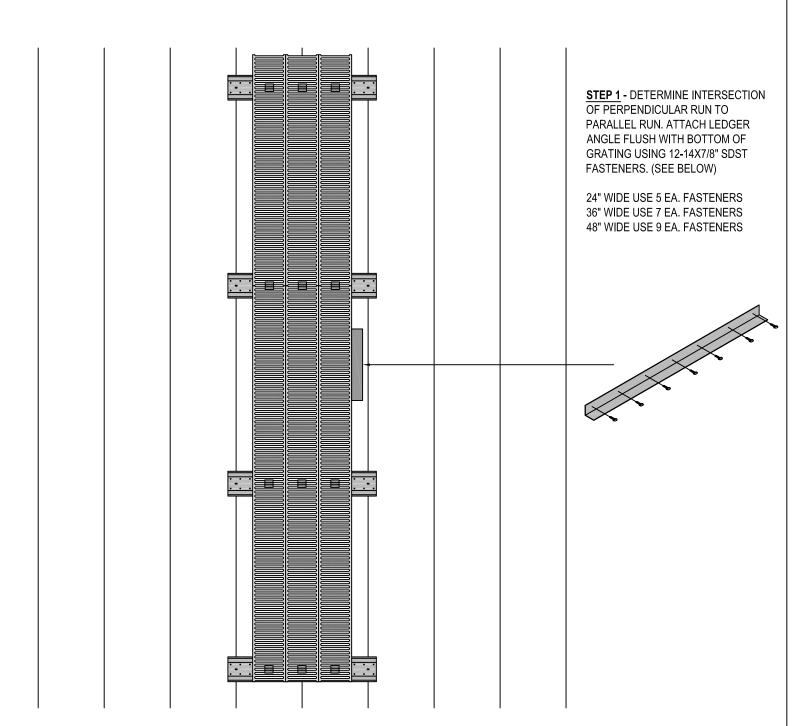
# PERPENDICULAR RUNS - PAGE 15

36" WIDE METALWALK®, NO HANDRAIL, S-5™ CLAMP, PERPENDICULAR



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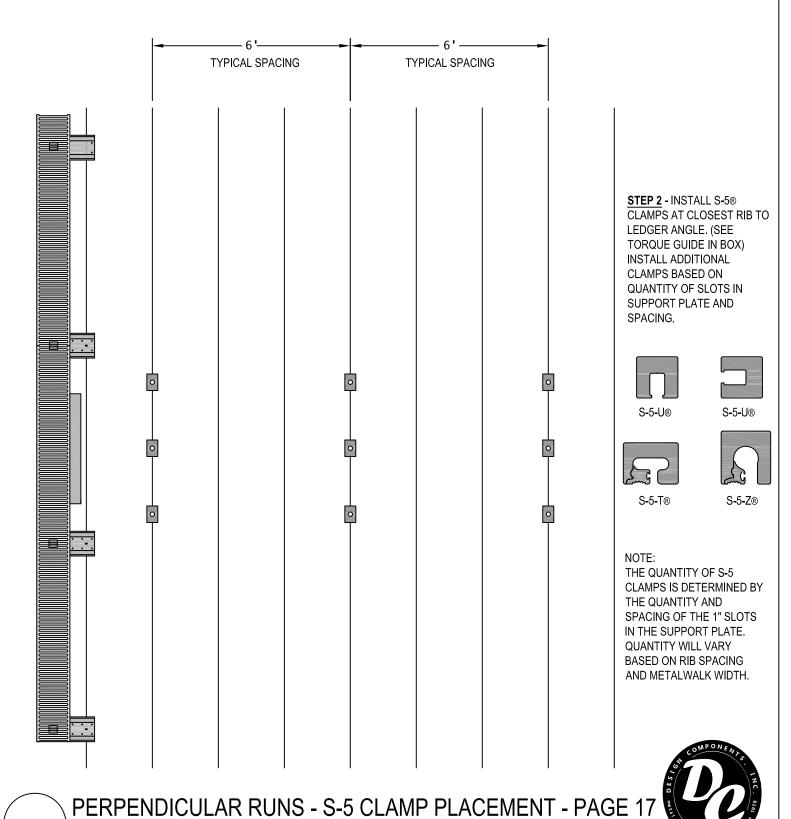
PERPENDICULAR RUNS - LEDGER ANGLE - PAGE 16





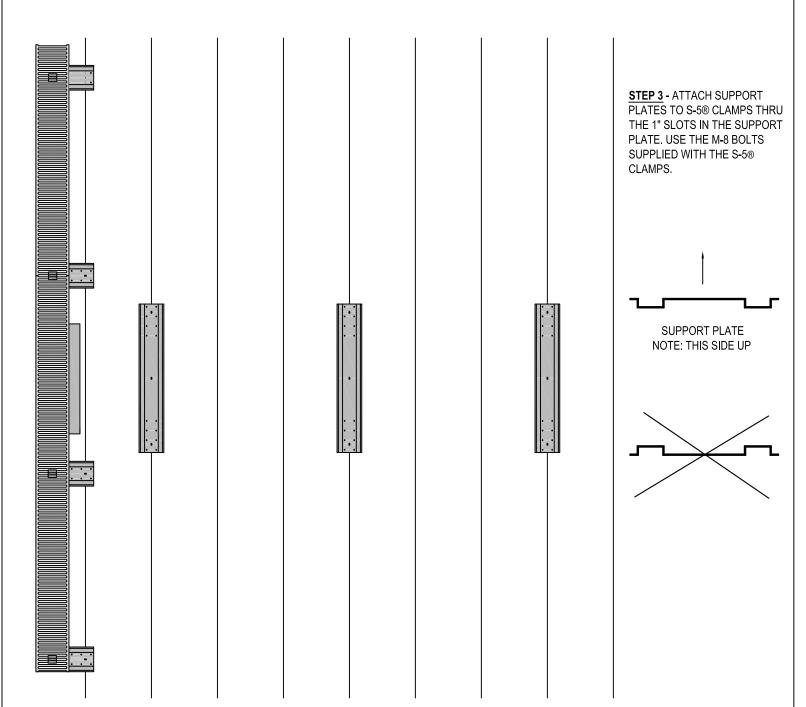
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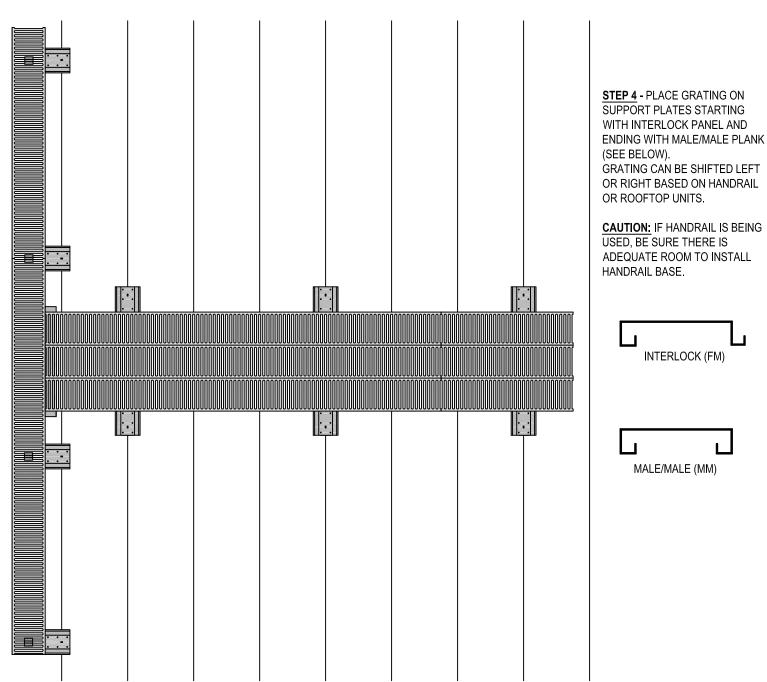
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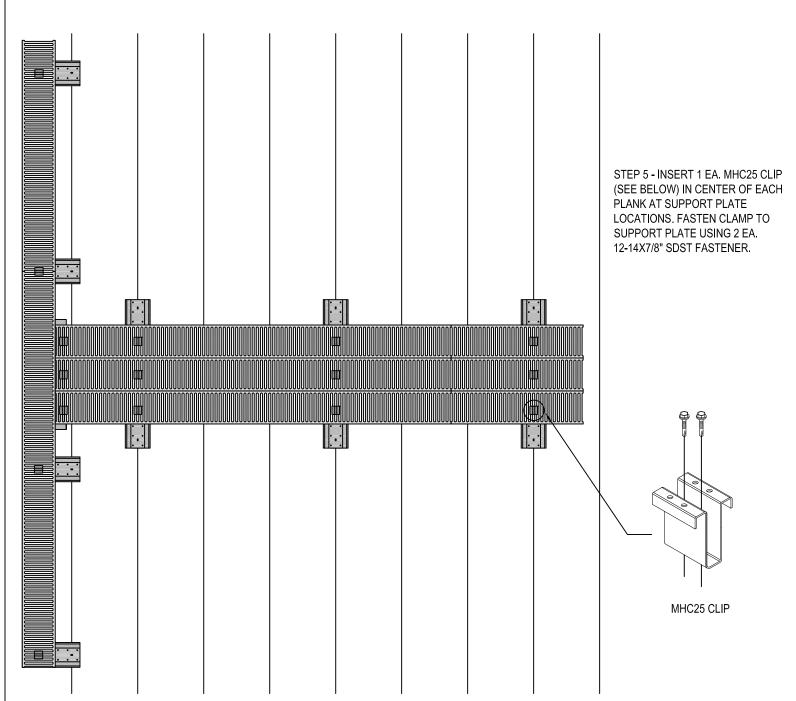
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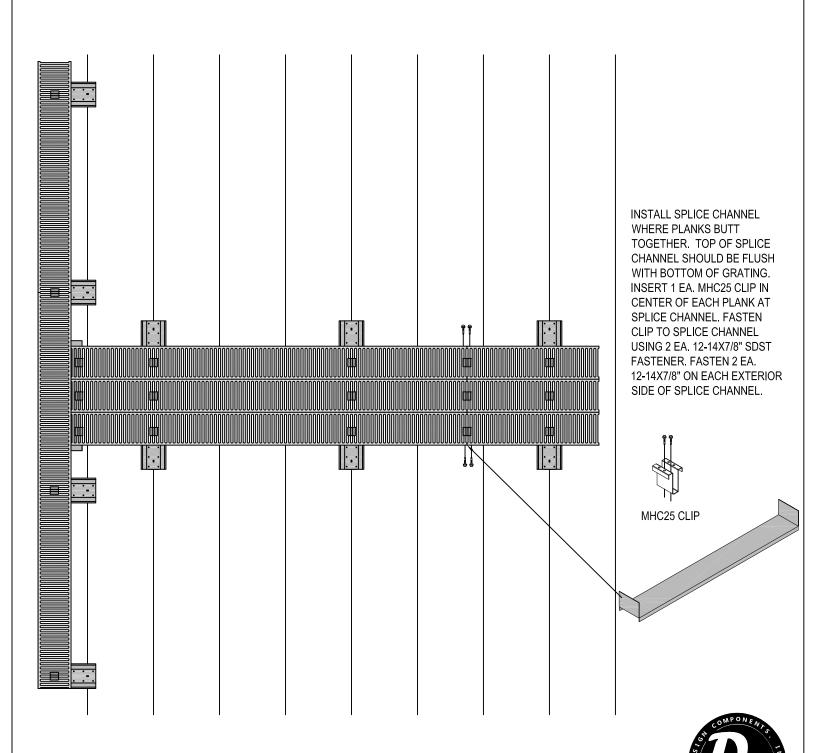
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