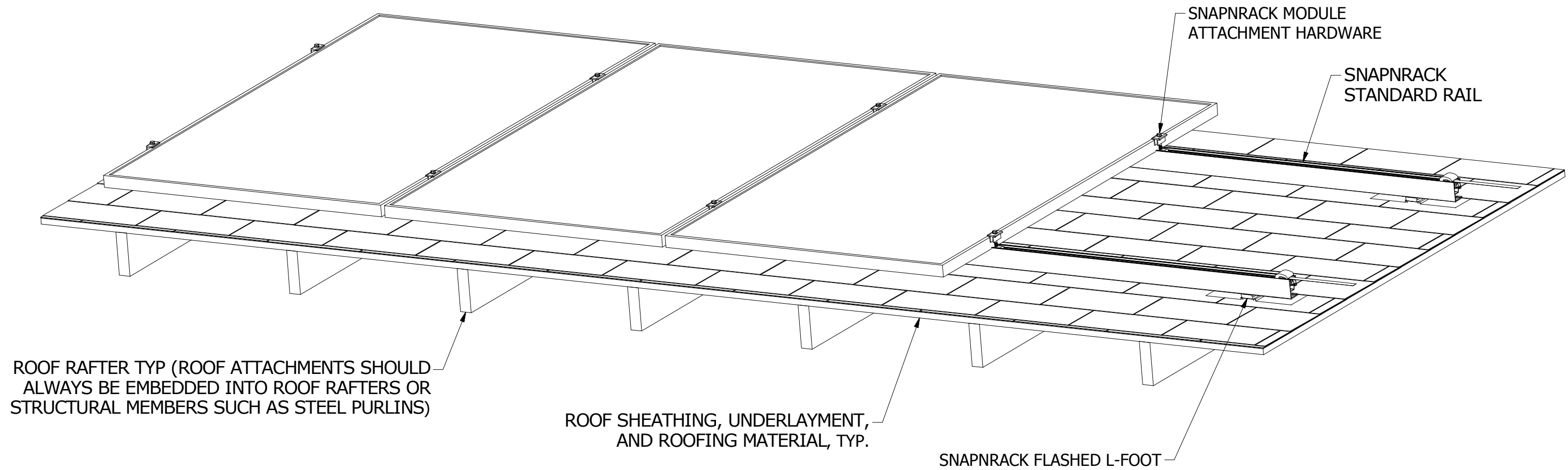


SNAPNRACK SERIES 100 ON FLASHED L-FEET

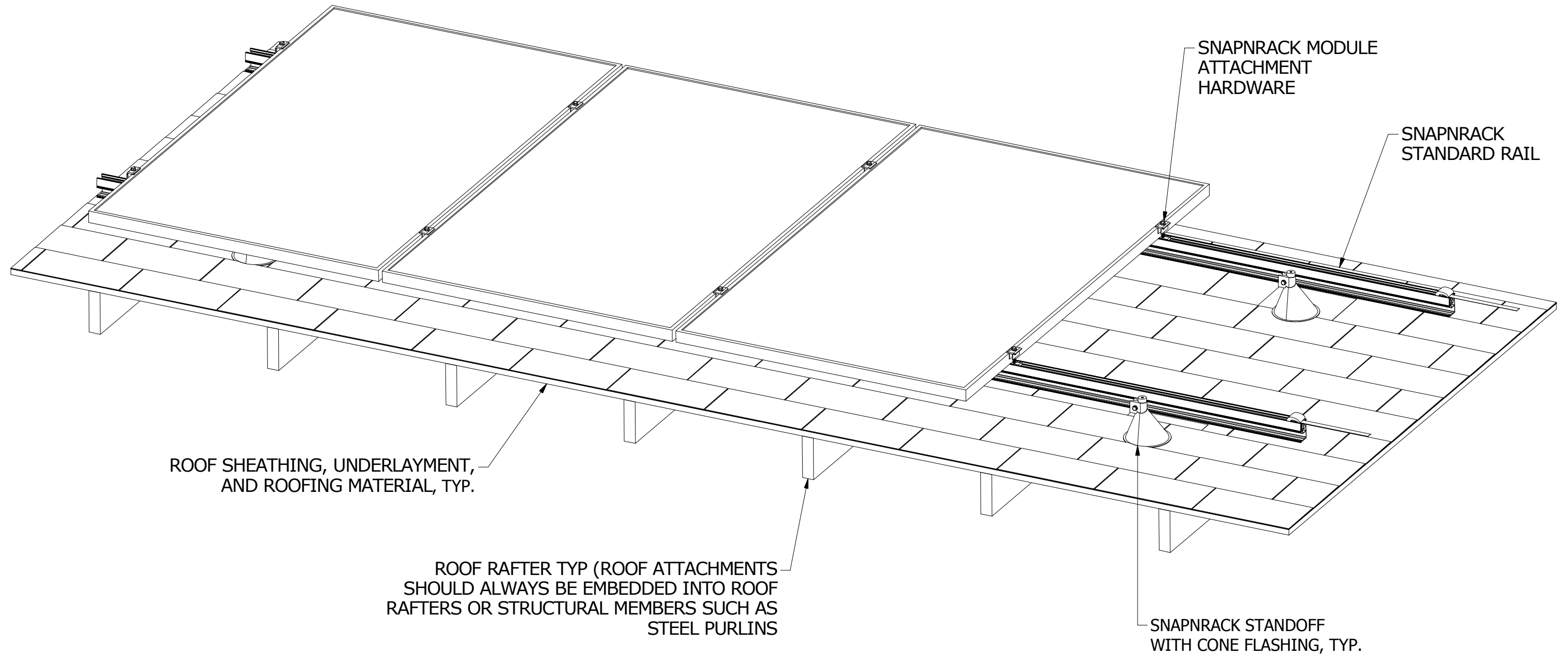
FLASHED L-FEET ARE OPTIMIZED FOR QUICK AND ROBUST INSTALLATION ON STANDARD COMPOSITION SHINGLE ROOF SURFACES

FOR OTHER ROOF TYPES STANDOFFS ARE RECOMMENDED

REVISION:



REVISION:



ROOF SHEATHING, UNDERLAYMENT,
AND ROOFING MATERIAL, TYP.

ROOF RAFTER TYP (ROOF ATTACHMENTS
SHOULD ALWAYS BE EMBEDDED INTO ROOF
RAFTERS OR STRUCTURAL MEMBERS SUCH AS
STEEL PURLINS)

SNAPNRACK MODULE
ATTACHMENT
HARDWARE

SNAPNRACK
STANDARD RAIL

SNAPNRACK STANDOFF
WITH CONE FLASHING, TYP.

SnapNrack™
PV Mounting Systems

MAINSTREAM ENERGY CORP.
775 FIERO LANE, SUITE 200 • SAN LUIS OBISPO, CA 93401 USA
PHONE (805) 528-9705 • FAX (805) 528-9701

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MAINSTREAM ENERGY CORPORATION.

DESIGNER: G McPheeters
DRAFTER: D Ryan
APPROVED BY: _____

SCALE: DNS
DATE: 120113

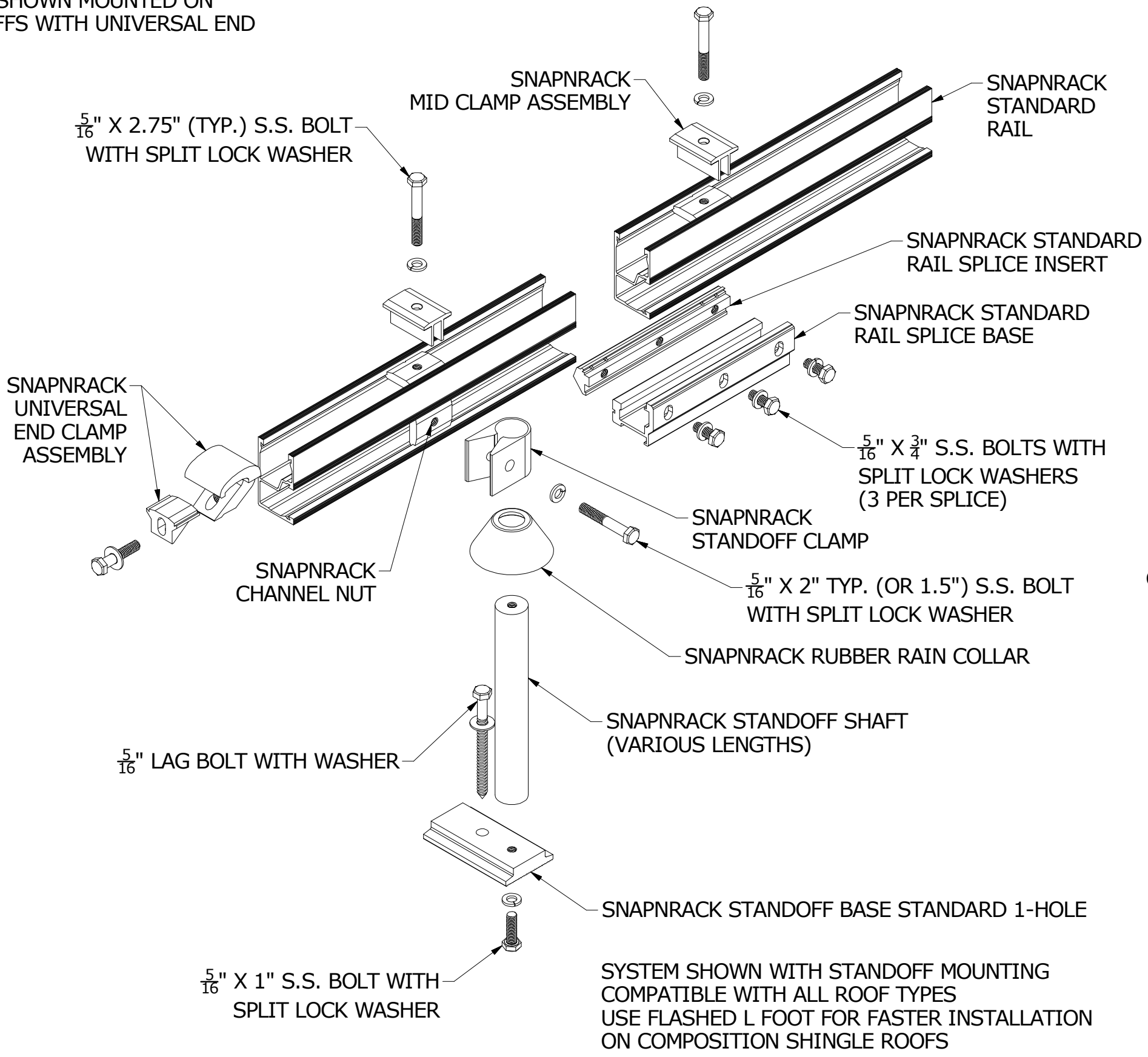
PART NUMBER:
S100 D02

DESCRIPTION:
SERIES 100 OVERVIEW, ON STANDOFFS

REV **F**

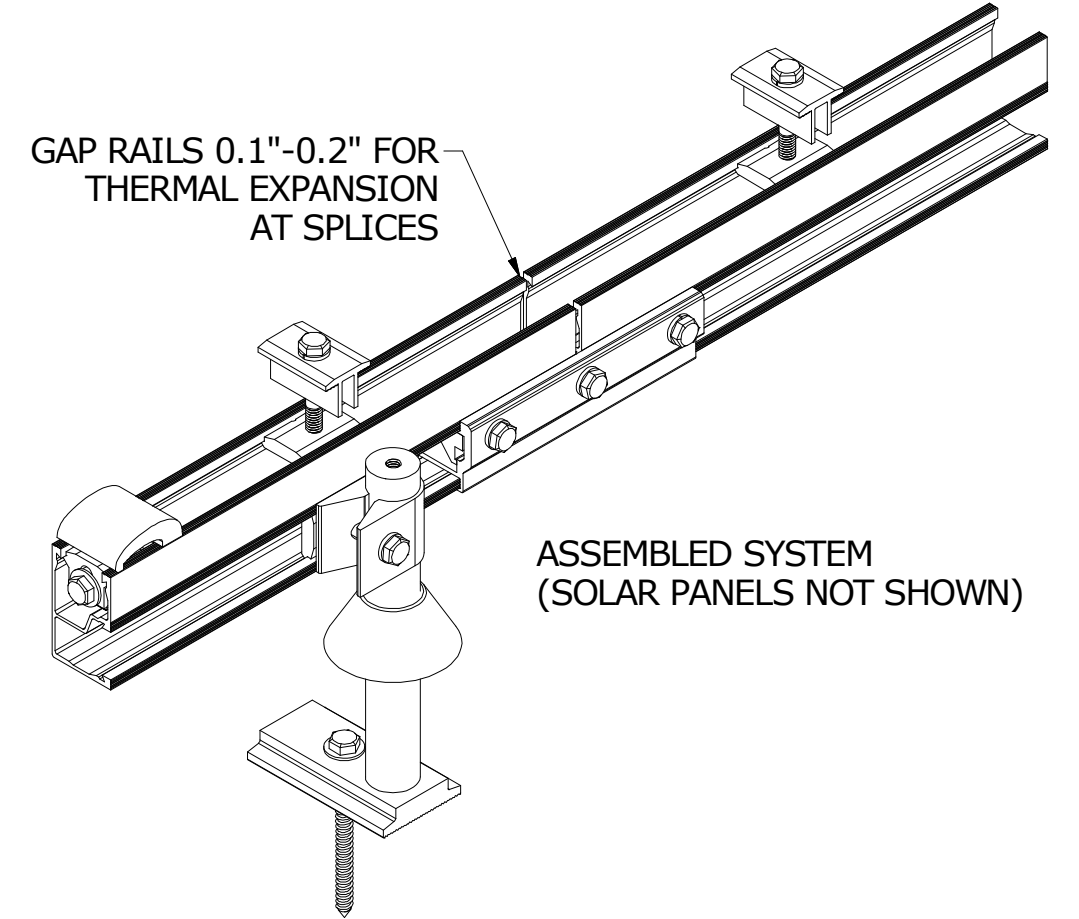
SNAPNRACK SERIES 100 RACKING SYSTEM SHOWN MOUNTED ON STANDOFFS WITH UNIVERSAL END CLAMPS

REVISION:



NOTES:

- STANDARD LAG BOLT SPEC ASSUMES 5/16" LAG BOLTS WITH 2.5" EMBEDMENT IN ROOF STRUCTURAL MEMBERS/RAFTERS
- TORQUE ALL 5/16" HARDWARE TO THE FOLLOWING:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- RAIL CAN MOUNT TO EITHER SIDE OF POST (UPSLOPE vs. DOWNSLOPE)
- FOR UNEVEN ROOF SURFACES, USE UP TO TWO LEVELING SPACERS PER FOOT OR STANDOFF. SEE DRAWING "STANDARD RAIL LEVELING" FOR DETAILS AND LIMITATIONS



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 PHONE (805) 528-9705 • FAX (805) 528-9701

DESIGNER: G McPheeters
 DRAFTER: D Ryan
 APPROVED BY: _____

SCALE: DNS
 DATE: 120113

PART NUMBER: S100 D03

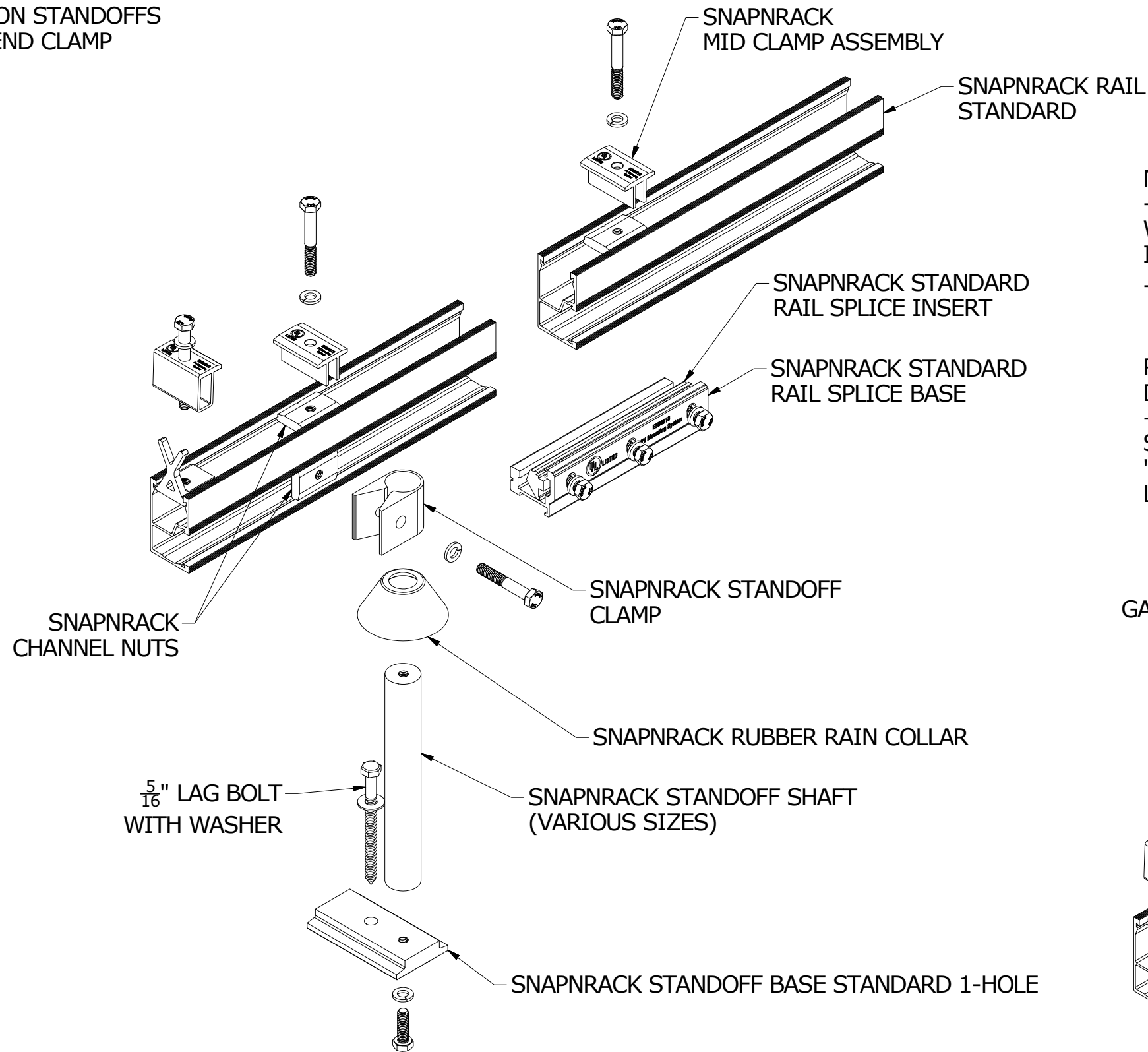
DESCRIPTION: SERIES 100 ASSEMBLY DETAILS UEC

REV F

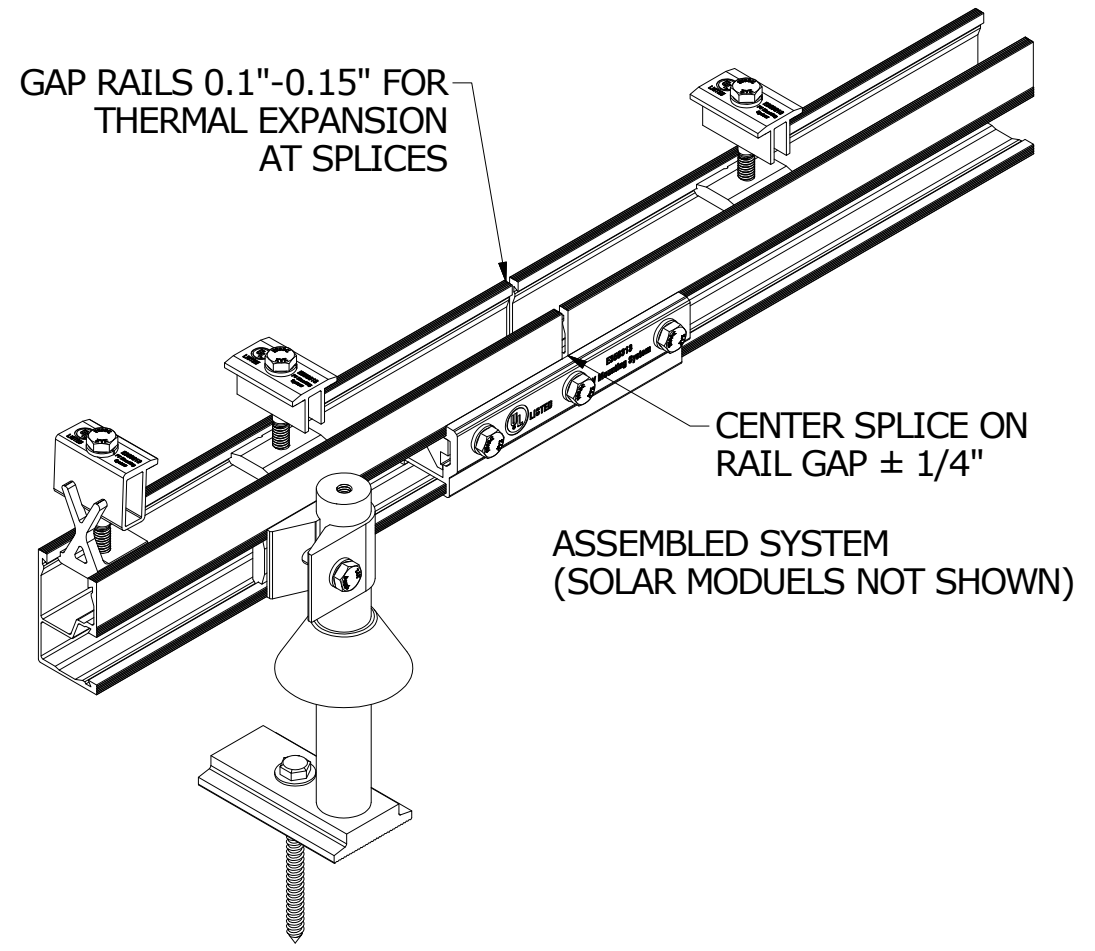
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SNAPNRACK SERIES 100 RACKING SYSTEM
 SHOWN MOUNTED ON STANDOFFS
 WITH TOP MOUNT END CLAMP

REVISION:	
F	12/02/15



NOTES:
 - STANDARD LAG BOLT SPEC ASSUMES 5/16" LAG BOLTS WITH 2.5" EMBEDMENT IN ROOF STRUCTURAL MEMBERS/RAFTERS
 - TORQUE ALL 5/16" HARDWARE TO THE FOLLOWING:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
 RAIL CAN MOUNT TO EITHER SIDE OF POST (UPSLOPE vs. DOWNSLOPE)
 - FOR UNEVEN ROOF SURFACES, USE UP TO TWO LEVELING SPACERS PER L FOOT OR STANDOFF. SEE DRAWING "STANDARD RAIL LEVELING" FOR DETAILS AND LIMITATIONS



SYSTEM SHOWN WITH STANDOFF MOUNTING
 COMPATIBLE WITH ALL ROOF TYPES
 USE FLASHED L FOOT FOR FASTER INSTALLATION
 ON COMPOSITION SHINGLE ROOFS



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DESIGNER: G.McPheeters
 DRAFTER: D.Ryan
 APPROVED BY: G.McPheeters

SCALE: DNS
 DATE: 12/02/15

PART NUMBER:
S100 D04

DESCRIPTION:
SERIES 100 TILT KITS 0-15 DEG

REV
F

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SNAPNRACK SERIES 100 RACKING SYSTEM TYPICAL ROOF LAYOUT

REVISION:

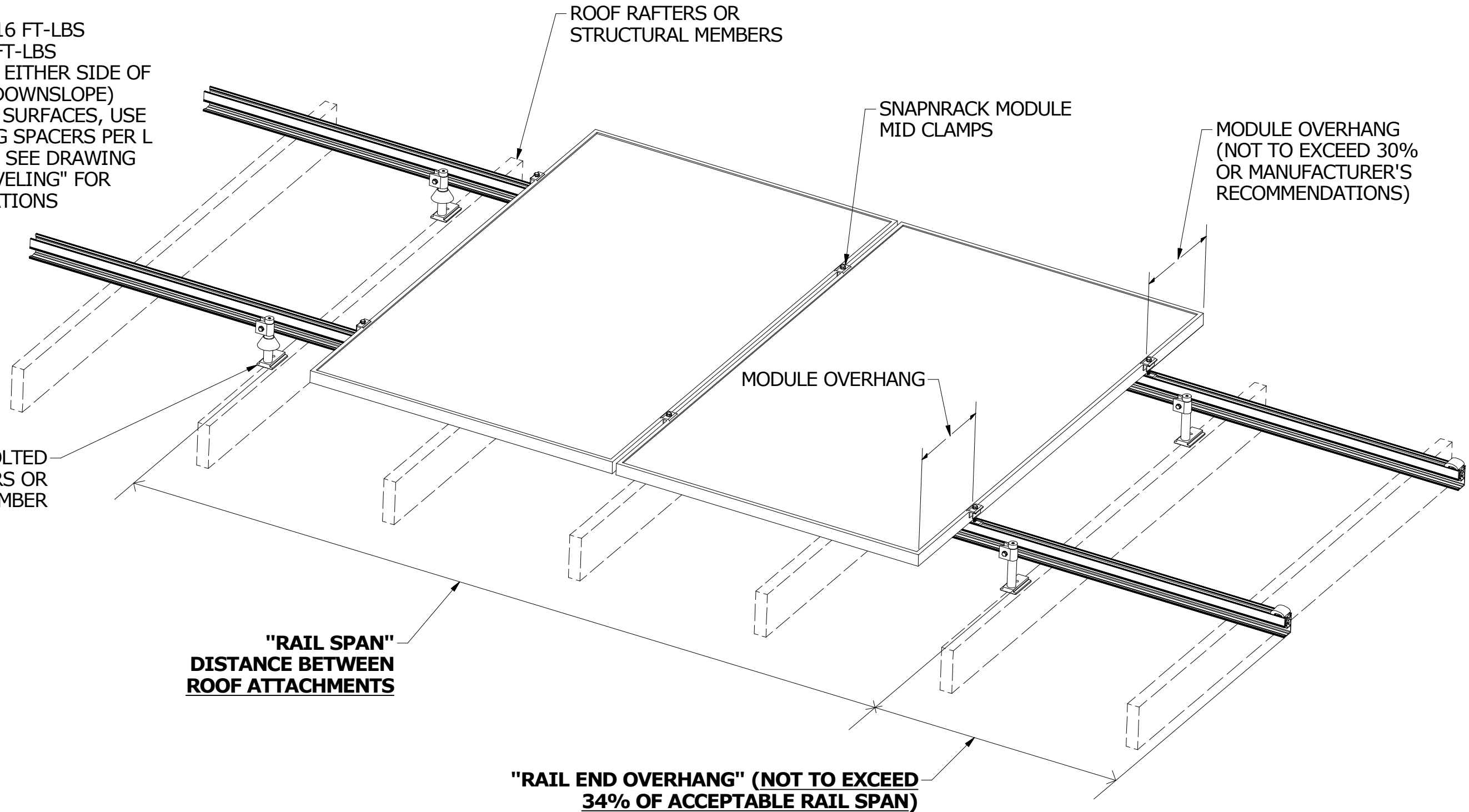
NOTES:
 - STANDARD LAG BOLT SPEC ASSUMES 5/16" LAG BOLTS WITH 2.5" EMBEDMENT IN ROOF STRUCTURAL MEMBERS/RAFTERS

- TORQUE ALL 5/16" HARDWARE TO THE FOLLOWING:

- SILVER S.S. 10-16 FT-LBS
- BLACK S.S. 7-9 FT-LBS

RAIL CAN MOUNT TO EITHER SIDE OF POST (UPSLOPE vs. DOWNSLOPE)

- FOR UNEVEN ROOF SURFACES, USE UP TO TWO LEVELING SPACERS PER FOOT OR STANDOFF. SEE DRAWING "STANDARD RAIL LEVELING" FOR DETAILS AND LIMITATIONS



STANDOFFS ARE BOLTED INTO ROOF RAFTERS OR STRUCTURAL MEMBER

**"RAIL SPAN"
DISTANCE BETWEEN
ROOF ATTACHMENTS**

**"RAIL END OVERHANG" (NOT TO EXCEED
34% OF ACCEPTABLE RAIL SPAN)**

REVISION:	

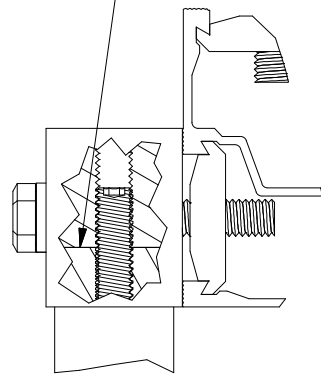
- 1X SNAPRACK LEVELING SPACER

- 2X SNAPRACK LEVELING SPACER

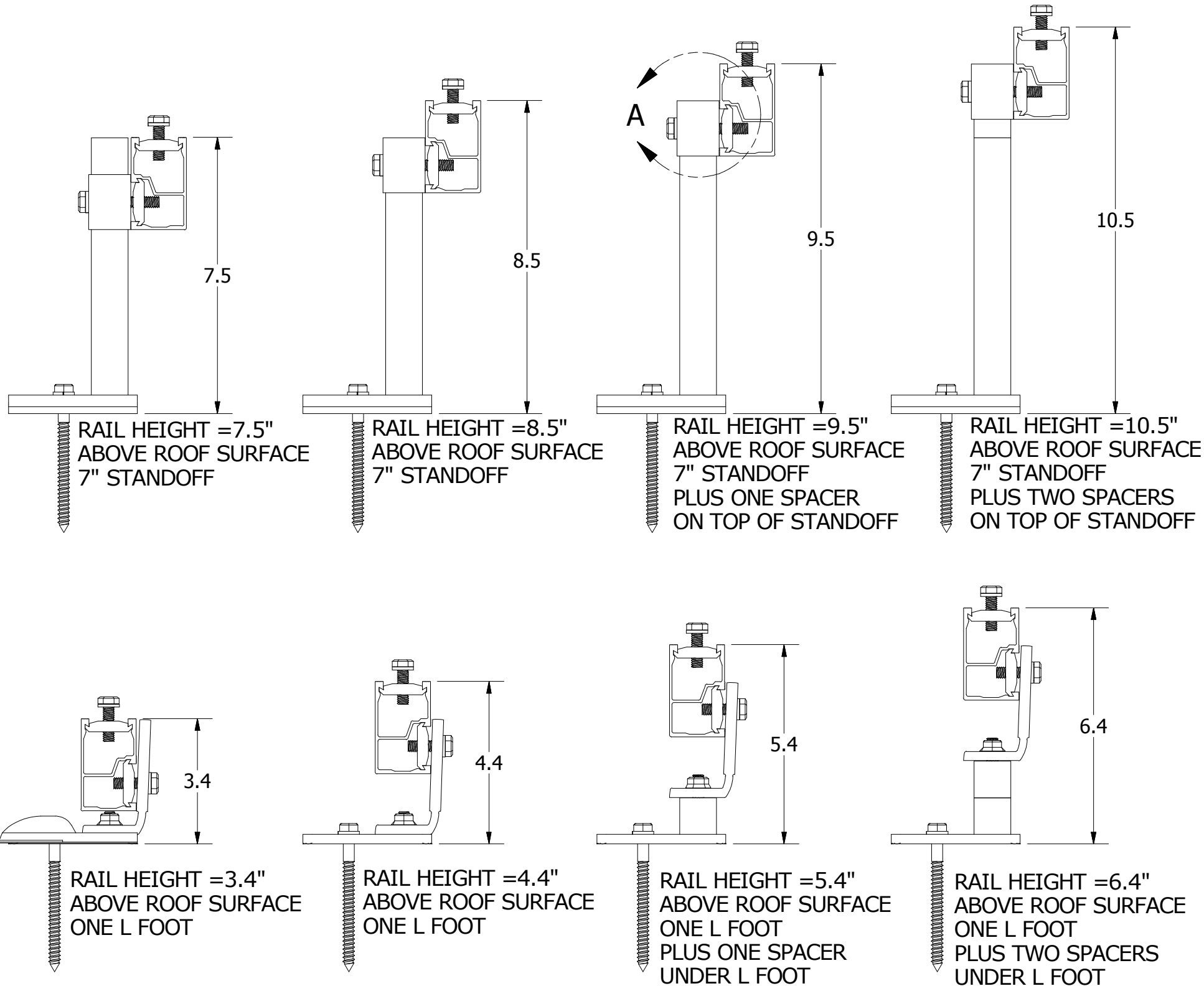
- 1X $\frac{5}{16}$ "-18 X 1" LONG SET SCREW

- 2X $\frac{5}{16}$ "-18 X 1" LONG SET SCREW

USE CARE DURING INSTALLATION TO ENSURE THAT THE SET SCREW IS ROUGHLY CENTERED BETWEEN THE TWO PIECES BEING JOINED



DETAIL A
SCALE 5:8



STANDARD SERIES 100 ATTACHMENTS FEATURE 3" OF VERTICAL ADJUSTABILITY ON ALL MOUNTING POINTS WITH THE USE OF 1" LEVELING SPACERS

THE FIRST INCH OF ADJUSTABILITY IS ACCOMPLISHED WITH SLIDING FEATURES BUILT INTO BOTH L FOOT AND STANDOFF CLAMP COMPONENTS

FOR AN ADDITIONAL INCH OF HEIGHT ADJUSTMENT, ADD ONE LEVELING SPACER. USE OF SINGLE LEVELING SPACER NOT TO EXCEED 30% OF ATTACHMENT POINTS ON L-FEET OR 10" STANDOFFS.

FOR A SECOND ADDITIONAL INCH OF HEIGHT ADJUSTMENT, ADD ANOTHER LEVELING SPACER. USE OF TWO LEVELING SPACERS NOT TO EXCEED 10% OF ATTACHMENT POINTS ON L-FEET OR 10" STANDOFFS.

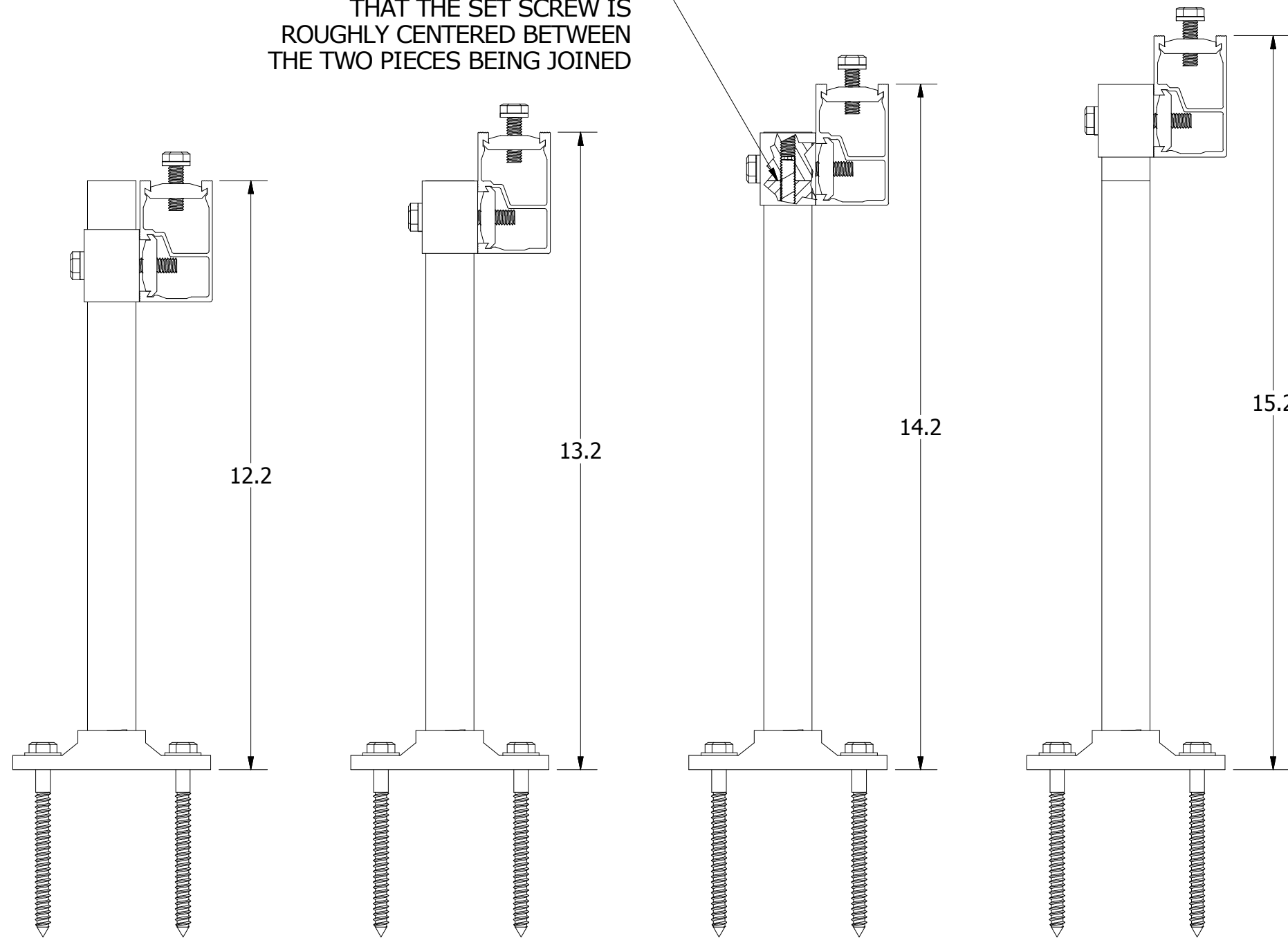
REVISION:	

- 1X SNAPNRACK LEVELING SPACER
 - 1X $\frac{5}{16}$ "-18 X 1" LONG SET SCREW

- 2X SNAPNRACK LEVELING SPACER

- 2X $\frac{5}{16}$ "-18 X 1" LONG SET SCREW

USE CARE DURING INSTALLATION TO ENSURE THAT THE SET SCREW IS ROUGHLY CENTERED BETWEEN THE TWO PIECES BEING JOINED



RAIL HEIGHT =12.2" ABOVE ROOF SURFACE
12" HD STANDOFF

RAIL HEIGHT =13.2" ABOVE ROOF SURFACE
12" HD STANDOFF

RAIL HEIGHT =14.2" ABOVE ROOF SURFACE
12" HD STANDOFF PLUS ONE SPACER ON TOP OF STANDOFF

RAIL HEIGHT =15.2" ABOVE ROOF SURFACE
12" HD STANDOFF PLUS TWO SPACERS ON TOP OF STANDOFF

STANDARD SERIES 100 ATTACHMENTS FEATURE 3" OF VERTICAL ADJUSTABILITY ON ALL MOUNTING POINTS WITH THE USE OF 1" LEVELING SPACERS

THE FIRST INCH OF ADJUSTABILITY IS ACCOMPLISHED WITH SLIDING FEATURES BUILT INTO BOTH L FOOT AND STANDOFF CLAMP COMPONENTS

FOR AN ADDITIONAL INCH OF HEIGHT ADJUSTMENT, ADD ONE LEVELING SPACER. USE OF SINGLE LEVELING SPACER NOT TO EXCEED 30% OF ATTACHMENT POINTS.

FOR A SECOND ADDITIONAL INCH OF HEIGHT ADJUSTMENT, ADD ANOTHER LEVELING SPACER. USE OF TWO LEVELING SPACERS NOT TO EXCEED 10% OF ATTACHMENT POINTS.

THE LIMITS ABOVE APPLY WHEN YOU ARE AT THE MAXIMUM STANDOFF HEIGHT DEPENDING ON THE STANDOFF BASE BEING USED. FOR HD STANDOFFS ON HD STANDOFF BASES, THE MAXIMUM STANDOFF HEIGHT (BEFORE APPLYING THE LIMITATIONS ABOVE) IS 12".

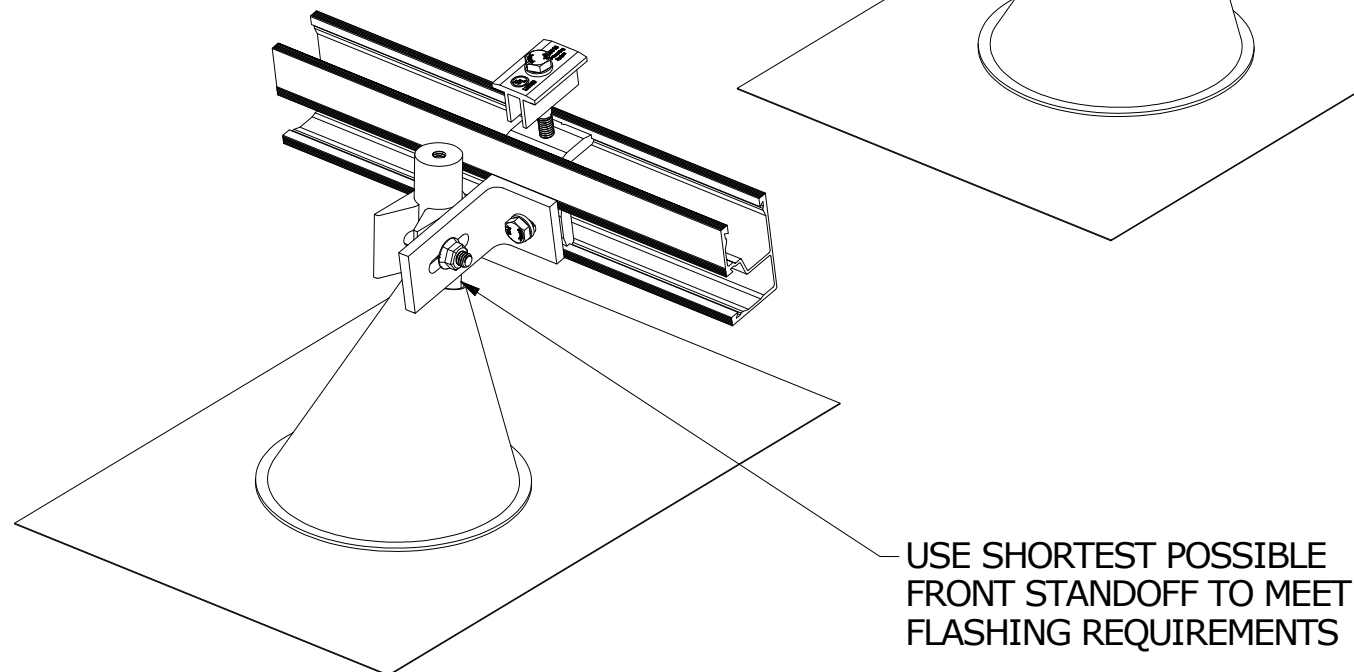
USE TILT KIT OPTION FOR INSTALLATIONS THAT REQUIRE MODULES TO BE TILTED ABOVE THE EXISTING ROOF SLOPE

LOW TILT SYSTEM SHOWN IS DESIGNED FOR TILT ANGLES FROM 0 TO 15 DEGREES ABOVE ROOF SURFACE

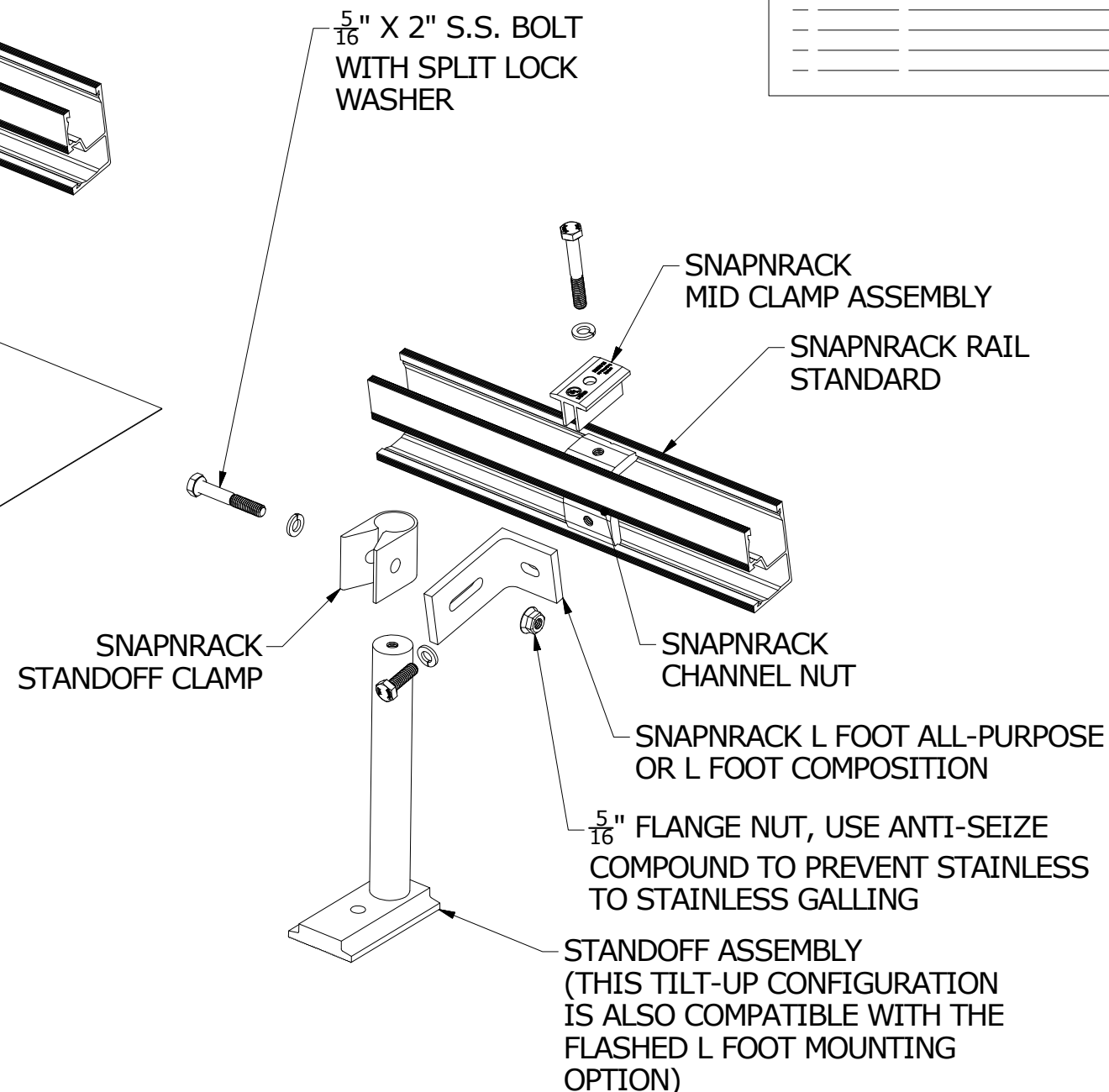
REVISION:	
F	12/02/15

USE OF ANTI-SEIZE ON TILT HARDWARE IS RECOMMENDED (PARTICULARLY FOR STAINLESS TO STAINLESS HARDWARE) TO PREVENT GALLING

MAX. REAR STANDOFF HEIGHT: 18 INCHES



USE SHORTEST POSSIBLE FRONT STANDOFF TO MEET FLASHING REQUIREMENTS



5/16" X 2" S.S. BOLT WITH SPLIT LOCK WASHER

SNAPNRACK MID CLAMP ASSEMBLY

SNAPNRACK RAIL STANDARD

SNAPNRACK STANDOFF CLAMP

SNAPNRACK CHANNEL NUT

SNAPNRACK L FOOT ALL-PURPOSE OR L FOOT COMPOSITION

5/16" FLANGE NUT, USE ANTI-SEIZE COMPOUND TO PREVENT STAINLESS TO STAINLESS GALLING

STANDOFF ASSEMBLY (THIS TILT-UP CONFIGURATION IS ALSO COMPATIBLE WITH THE FLASHED L FOOT MOUNTING OPTION)

NOTES:

- TORQUE 5/16" HARDWARE TO THE FOLLOWING UNLESS OTHERWISE NOTED:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- REFER TO ENGINEERING CHARTS FOR RAIL SPAN BASED ON MODULE TILT ANGLE, WIND SPEED, AND SNOW LOAD
- FOR HIGHER TILT APPLICATIONS SEE "SERIES 100 TILT KIT 10-45 DEG"



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DESIGNER: G McPheeters

DRAFTER: D Ryan

APPROVED BY: G McPheeters

SCALE: DNS

DATE: 12/02/15

PART NUMBER: S100 D08

DESCRIPTION: SERIES 100 TILT KITS 0-15 DEG

REV F

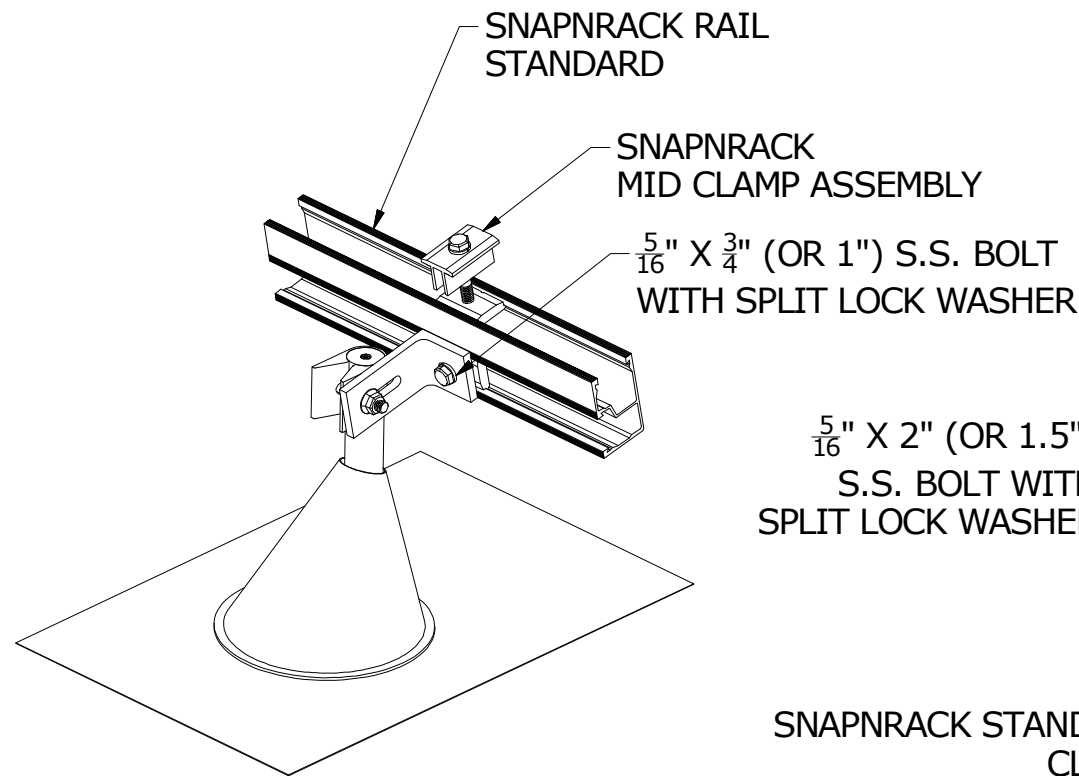
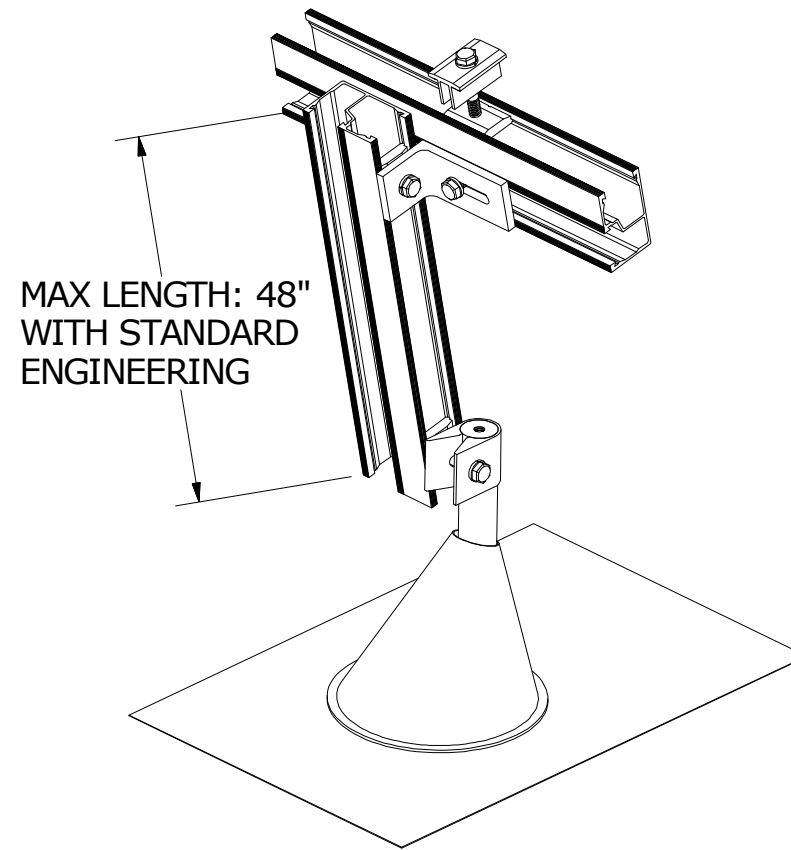
USE TILT KIT OPTION FOR INSTALLATIONS THAT REQUIRE MODULES TO BE TILTED ABOVE THE EXISTING ROOF SLOPE

SYSTEM SHOWN IS DESIGNED FOR TILT ANGLES FROM 10 TO 45 DEGREES ABOVE ROOF SURFACE

USE OF ANTI-SEIZE ON TILT HARDWARE IS RECOMMENDED (PARTICULARLY FOR STAINLESS TO STAINLESS HARDWARE)

REFER TO S100 TKT SERIES 170 TILT KIT TOOL FOR A SIMPLE TOOL THAT DRAMATICALLY SIMPLIFIES TILT KIT INSTALLATION BY SUPPORTING THE UPPER RAIL AHEAD OF MODULE INSTALLATION

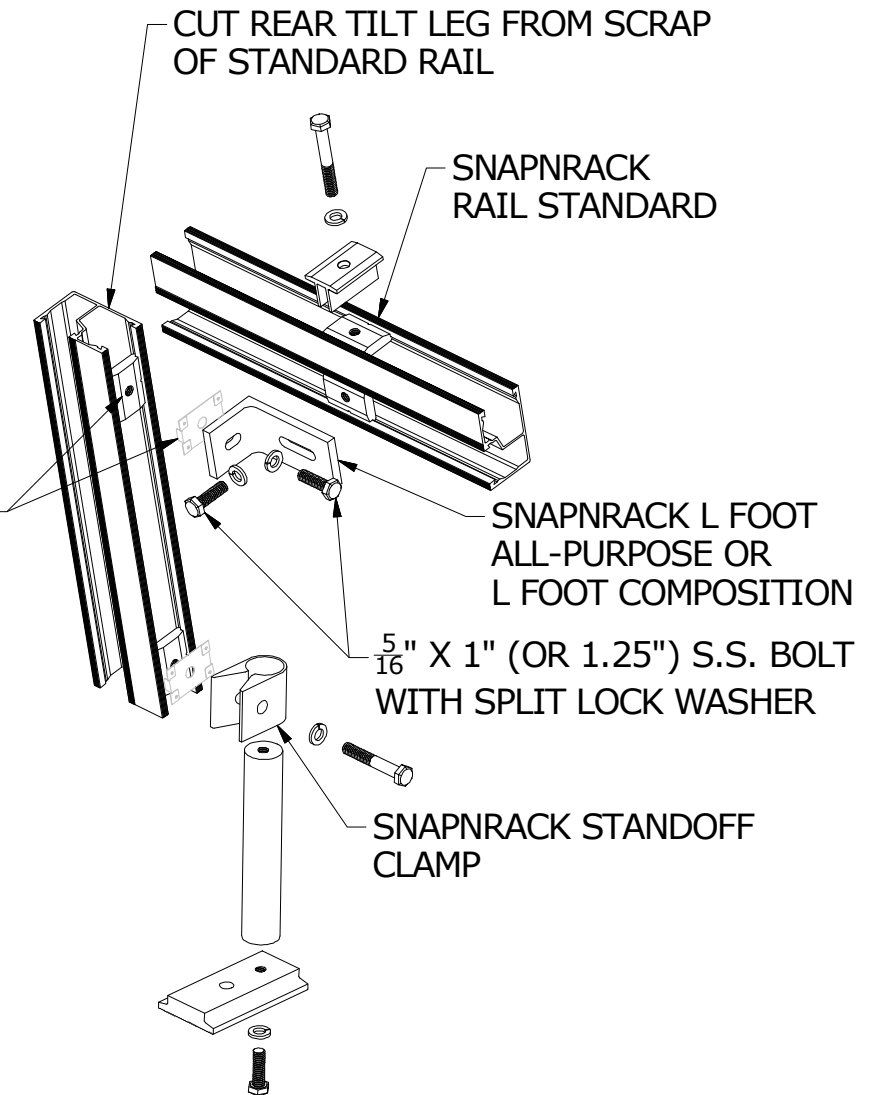
REVISION:	



$\frac{5}{16}$ " X 2" (OR 1.5") S.S. BOLT WITH SPLIT LOCK WASHER

SNAPNRACK STANDOFF CLAMP

SNAPNRACK CHANNEL NUTS, TORQUE TO 10-16 FT-LBS WHEN USING WEEBS. WHEN USING SNAPNRACK BONDING CHANNEL NUTS, TORQUE TO 14-16 FT-LBS. WEEBS ARE NOT REQUIRED WITH BONDING CHANNEL NUTS.



SNAPNRACK L FOOT ALL-PURPOSE OR L FOOT COMPOSITION

$\frac{5}{16}$ " FLANGE NUT

$\frac{5}{16}$ " X 1" (OR 1.25") S.S. BOLT WITH SPLIT LOCK WASHER

STANDOFF ASSEMBLY (THIS CONFIGURATION ALSO COMPATIBLE WITH FLASHED L FOOT MOUNTING)

NOTES:

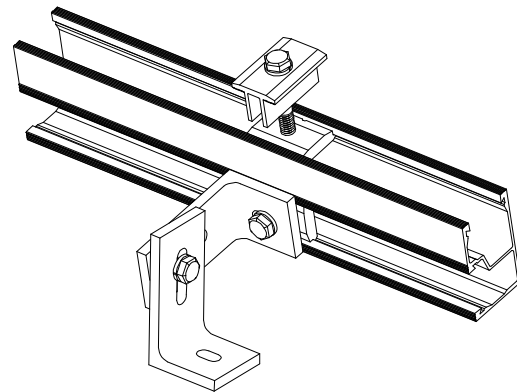
- TORQUE $\frac{5}{16}$ " HARDWARE TO THE FOLLOWING UNLESS OTHERWISE NOTED:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- REFER TO ENGINEERING CHARTS FOR RAIL SPAN BASED ON MODULE TILT ANGLE, WIND SPEED, AND NOW LOAD
- BACK SUPPORT "LEG" IS FABRICATED FROM A SCRAP OF RAIL. CALCULATE REQUIRED TILT LEG LENGTH AND CUT RAIL TO LENGTH
- FOR LOWER TILT APPLICATIONS SEE "SERIES 100 TILT KIT 0-15 DEG"
- SNAPNRACK RAIL COVER CAN BE USED TO COVER CHANNEL IN REAR TILT LEG

USE TILT KIT OPTION FOR INSTALLATIONS THAT REQUIRE MODULES TO BE TILTED ABOVE THE EXISTING ROOF SLOPE

SYSTEM SHOWN IS DESIGNED FOR TILT ANGLES FROM 10 TO 45 DEGREES ABOVE ROOF SURFACE

USE OF ANTI-SEIZE ON TILT HARDWARE IS RECOMMENDED (PARTICULARLY FOR STAINLESS TO STAINLESS HARDWARE)

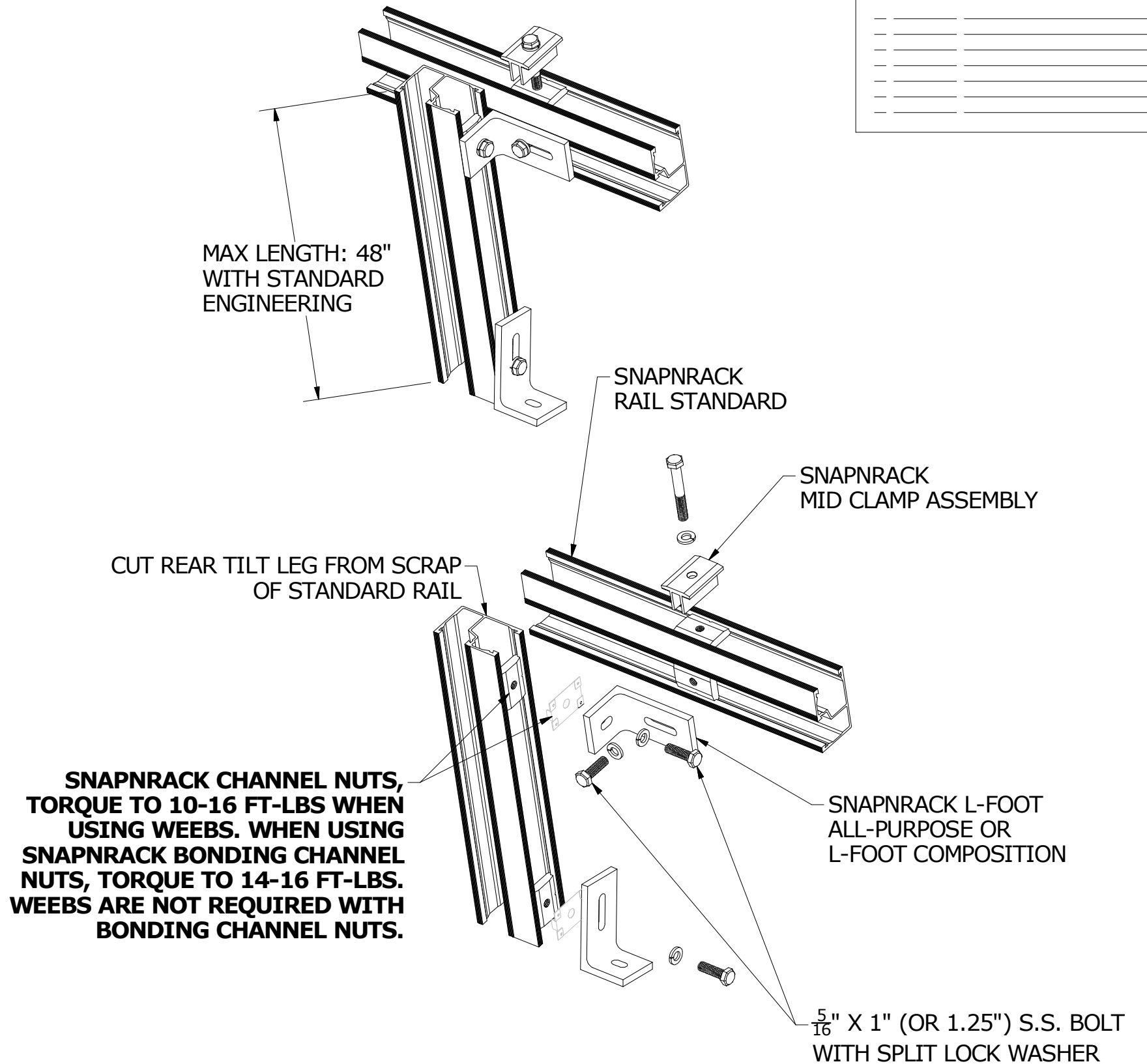
REFER TO S100 TKT SERIES 170 TILT KIT TOOL FOR A SIMPLE TOOL THAT DRAMATICALLY SIMPLIFIES TILT KIT INSTALLATION BY SUPPORTING THE UPPER RAIL AHEAD OF MODULE INSTALLATION



NOTES:

- TORQUE $\frac{5}{16}$ " HARDWARE TO THE FOLLOWING UNLESS OTHERWISE NOTED:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- REFER TO ENGINEERING CHARTS FOR RAIL SPAN BASED ON MODULE TILT ANGLE, WIND SPEED, AND SNOW LOAD
- BACK SUPPORT "LEG" IS FABRICATED FROM A SCRAP OF RAIL. CALCULATE REQUIRED TILT LEG LENGTH. USE WEEB GROUNDING WASHERS AT JOINTS BETWEEN L-Feet AND SNAPRACK STANDARD RAIL SCRAP PIECE
- FOR LOWER TILT APPLICATIONS SEE "SERIES 100 TILT KIT 0-15 DEG"
- SNAPRACK RAIL COVER CAN BE USED TO COVER CHANNEL IN REAR TILT LEG

REVISION:	



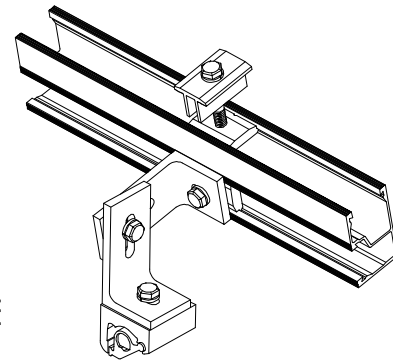
	MAINSTREAM ENERGY CORP. 775 FIERO LANE, SUITE 200 • SAN LUIS OBISPO, CA 93401 USA PHONE (805) 528-9705 • FAX (805) 528-9701	DESIGNER: <u>G McPheeters</u>	SCALE: <u>DNS</u>	PART NUMBER: <u>S100 D10</u>	DESCRIPTION: <u>SERIES 100 TILT KITS 10-45 DEG WITH L FOOT MOUNT</u>	REV <u>F</u>
		DRAFTER: <u>D Ryan</u>	DATE: <u>120113</u>			
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USE TILT KIT OPTION FOR INSTALLATIONS THAT REQUIRE MODULES TO BE TILTED ABOVE THE EXISTING ROOF SLOPE

SYSTEM SHOWN IS DESIGNED FOR TILT ANGLES FROM 10 TO 45 DEGREES ABOVE ROOF SURFACE ON STANDING SEAM METAL ROOFS

USE OF ANTI-SEIZE ON TILT HARDWARE IS RECOMMENDED (PARTICULARLY FOR STAINLESS TO STAINLESS HARDWARE)

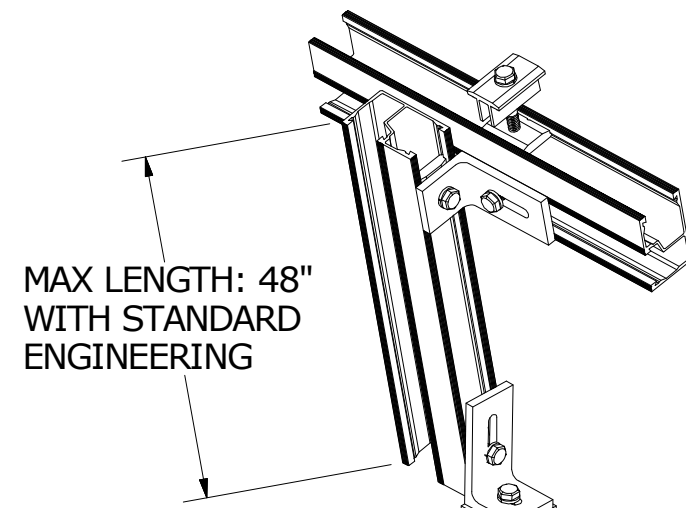
REFER TO S100 TKT SERIES 170 TILT KIT TOOL FOR A SIMPLE TOOL THAT DRAMATICALLY SIMPLIFIES TILT KIT INSTALLATION BY SUPPORTING THE UPPER RAIL AHEAD OF MODULE INSTALLATION



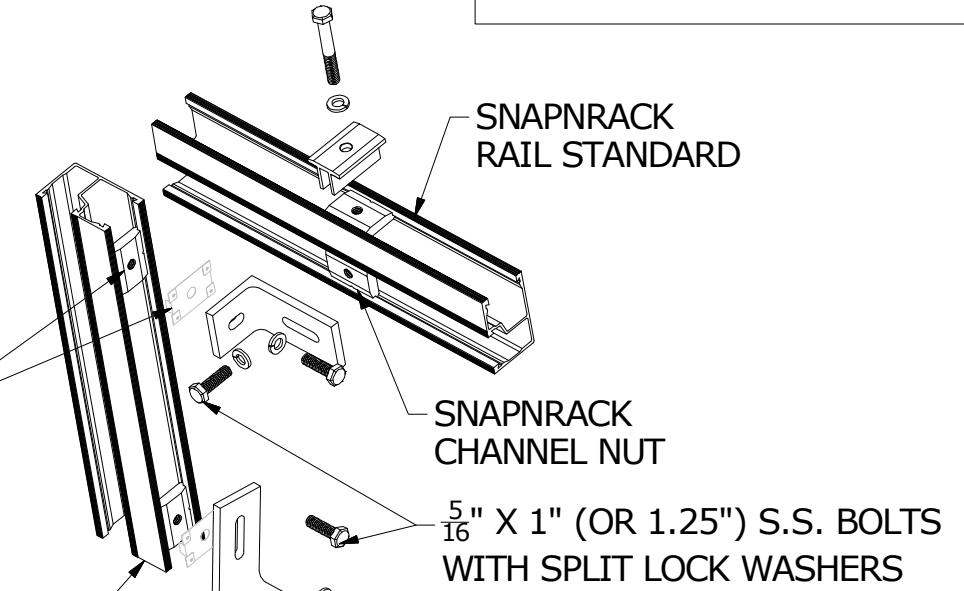
NOTES:

- TORQUE $\frac{5}{16}$ " HARDWARE TO THE FOLLOWING UNLESS OTHERWISE NOTED:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- REFER TO ENGINEERING CHARTS FOR RAIL SPAN BASED ON MODULE TILT ANGLE, WIND SPEED, AND SNOW LOAD
- BACK SUPPORT "LEG" IS FABRICATED FROM A SCRAP OF RAIL. CALCULATE REQUIRED TILT LEG LENGTH AND CUT RAIL TO LENGTH
- FOR LOWER TILT APPLICATIONS SEE "SERIES 100 TILT KIT 0-15 DEG"
- SNAPNRACK RAIL COVER CAN BE USED TO COVER CHANNEL IN REAR TILT LEG

REVISION:

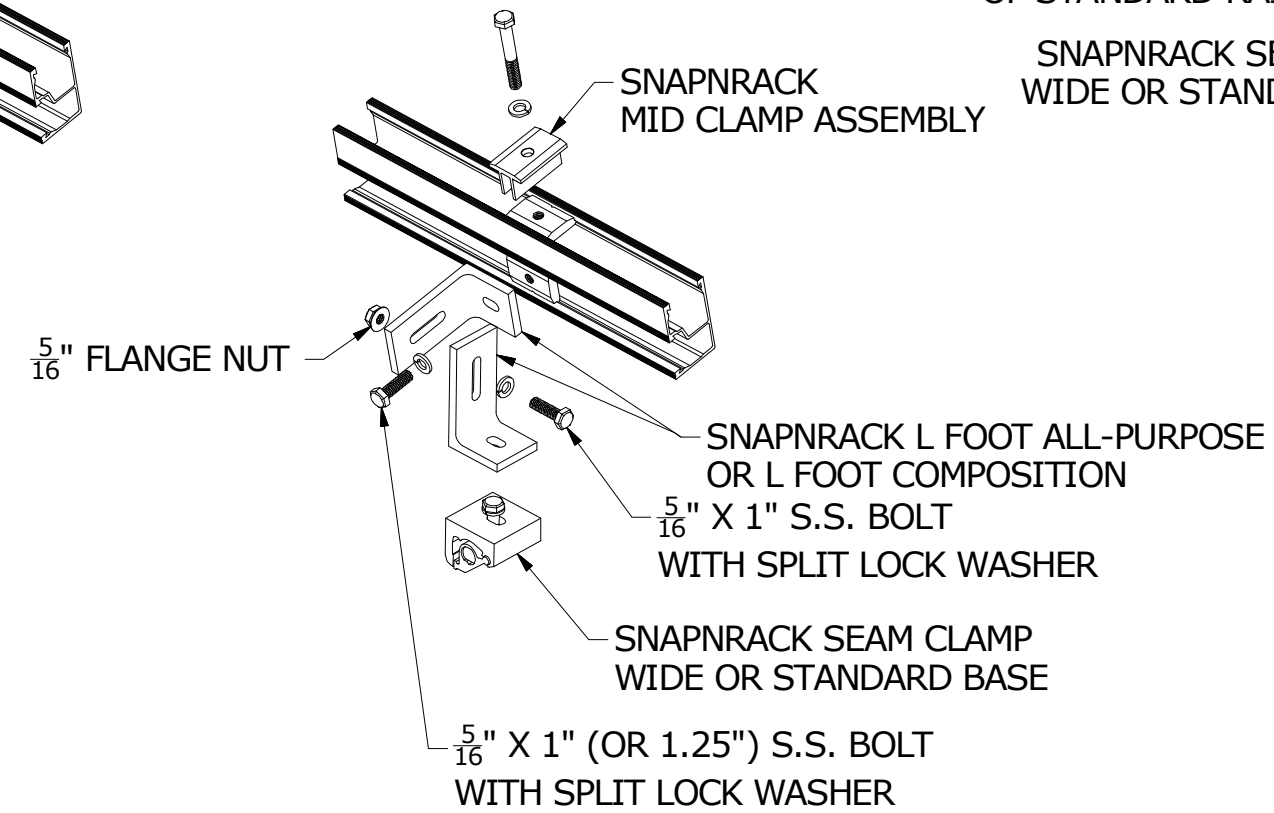


SNAPNRACK CHANNEL NUTS, TORQUE TO 10-16 FT-LBS WHEN USING WEEBS. WHEN USING SNAPNRACK BONDING CHANNEL NUTS, TORQUE TO 14-16 FT-LBS. WEEBS ARE NOT REQUIRED WITH BONDING CHANNEL NUTS.



CUT REAR TILT LEG FROM SCRAP OF STANDARD RAIL

SNAPNRACK SEAM CLAMP WIDE OR STANDARD BASE



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DESIGNER: G McPheeters

DRAFTER: D Ryan

APPROVED BY: _____

SCALE: DNS

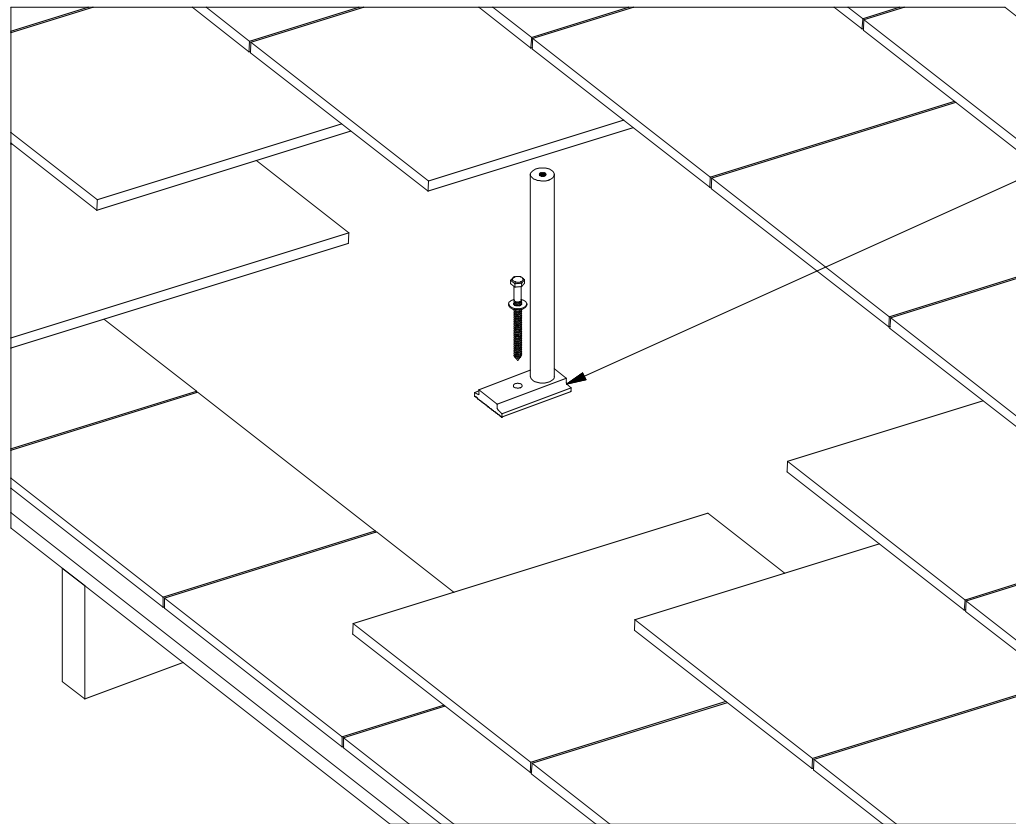
DATE: 042514

PART NUMBER: S100 D11

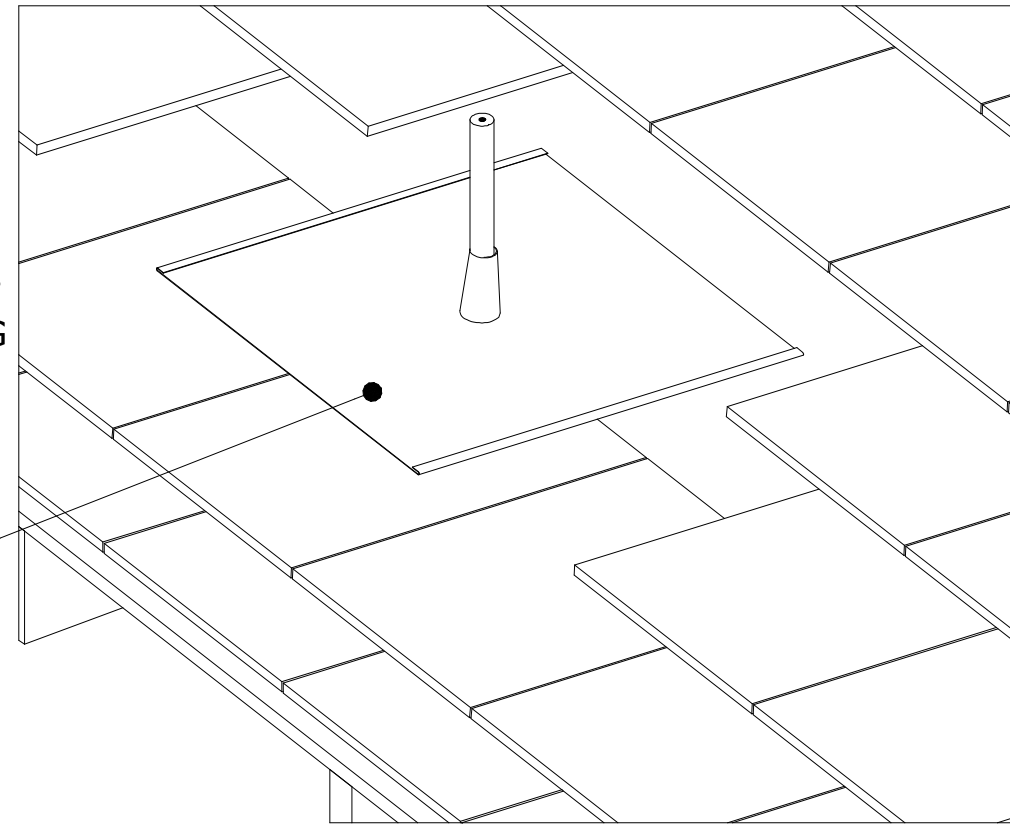
DESCRIPTION: SERIES 100 TILT KITS 10-45 DEG SEAM CLAMP MOUNT

REV **F**

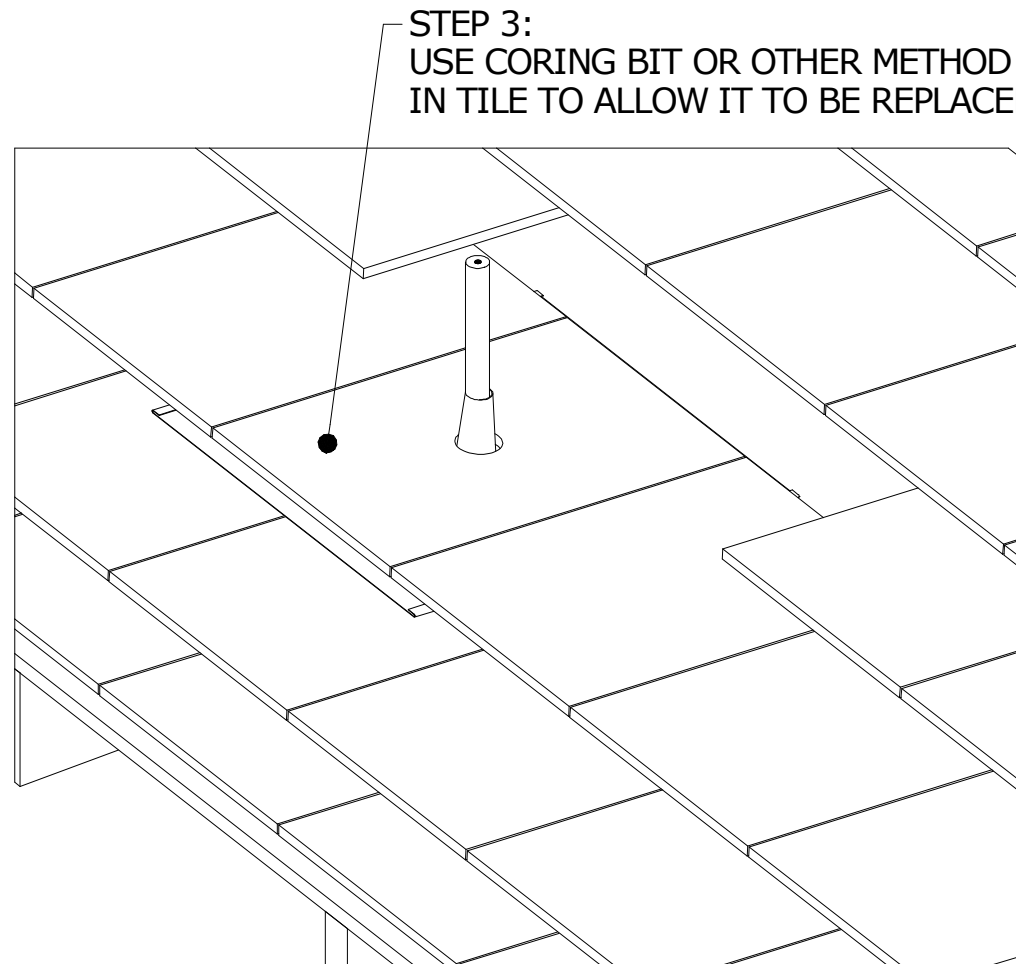
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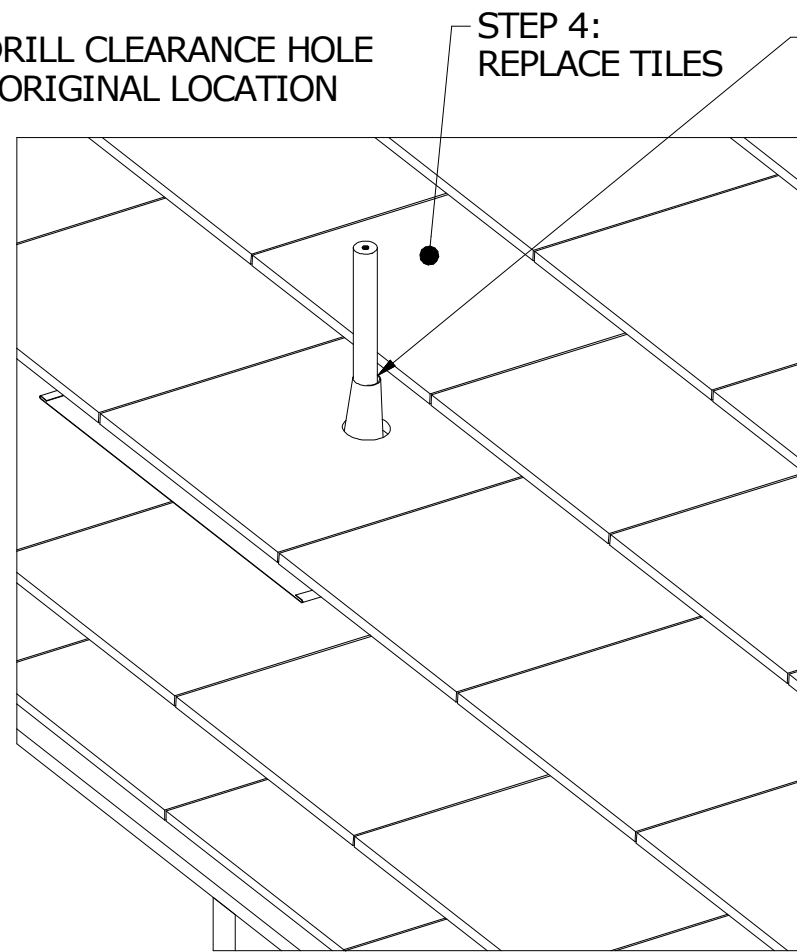
STEP 1:
REMOVE TILE AND IDENTIFY
RAFTER LOCATION WITH A
PILOT DRILL. MOUNT STANDOFF
ASSEMBLY TO ROOF SHEATHING
WITH A 5/16IN LAG BOLT
MINIMUM 2.5" EMBEDMENT TYP.
BE SURE LAG BOLT IS FULLY
SEATED



STEP 2:
SLIDE FLASHING OVER POST,
UNDER UPPER LAYER OF TILE

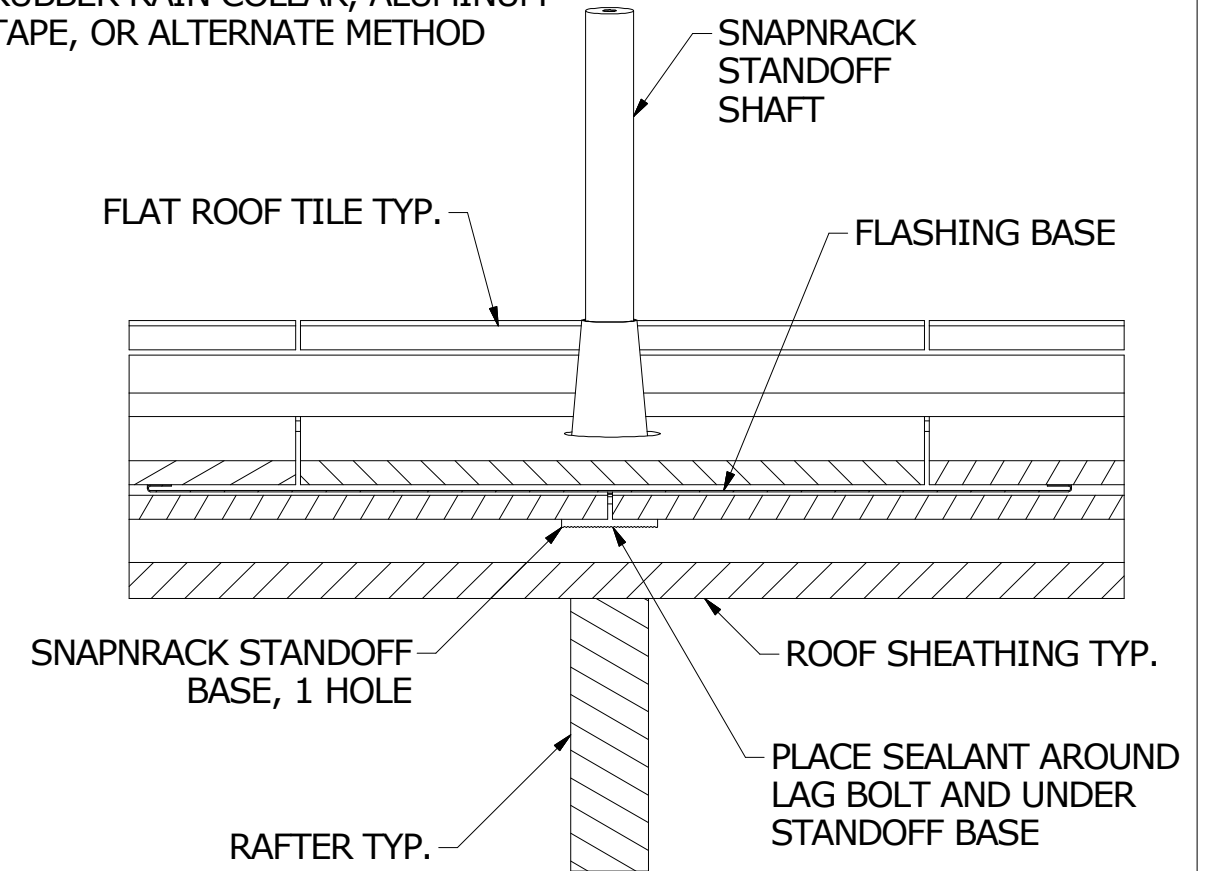


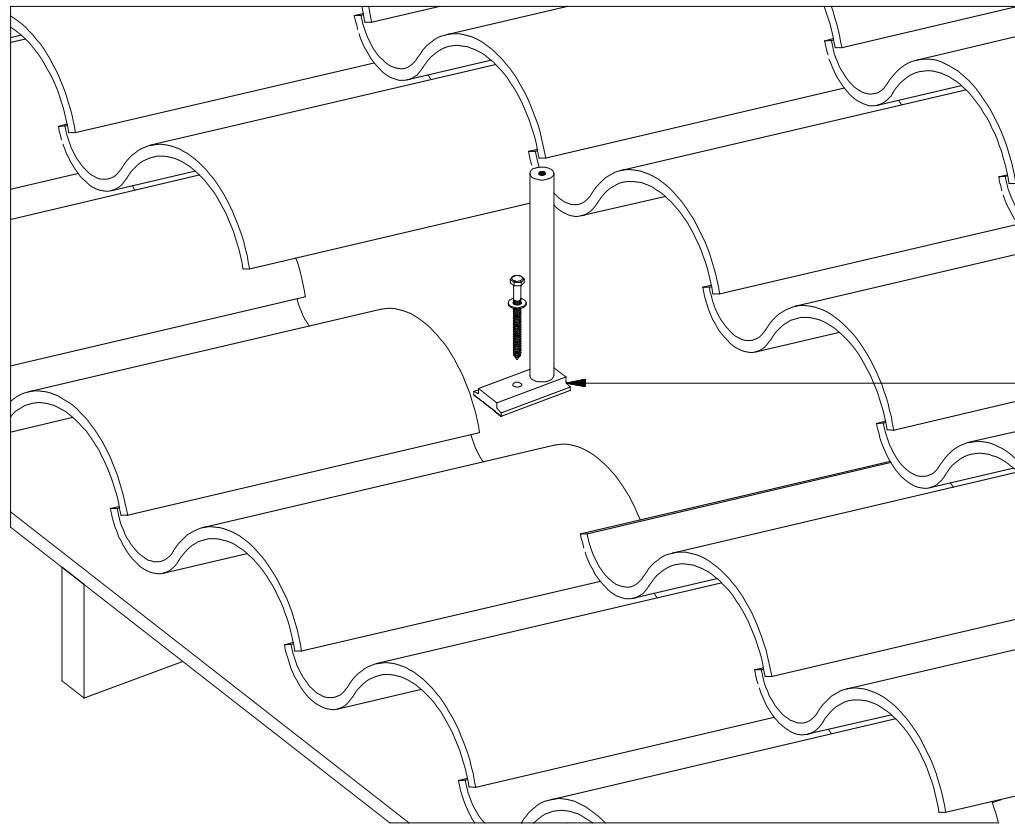
STEP 3:
USE CORING BIT OR OTHER METHOD TO DRILL CLEARANCE HOLE
IN TILE TO ALLOW IT TO BE REPLACED IN ORIGINAL LOCATION



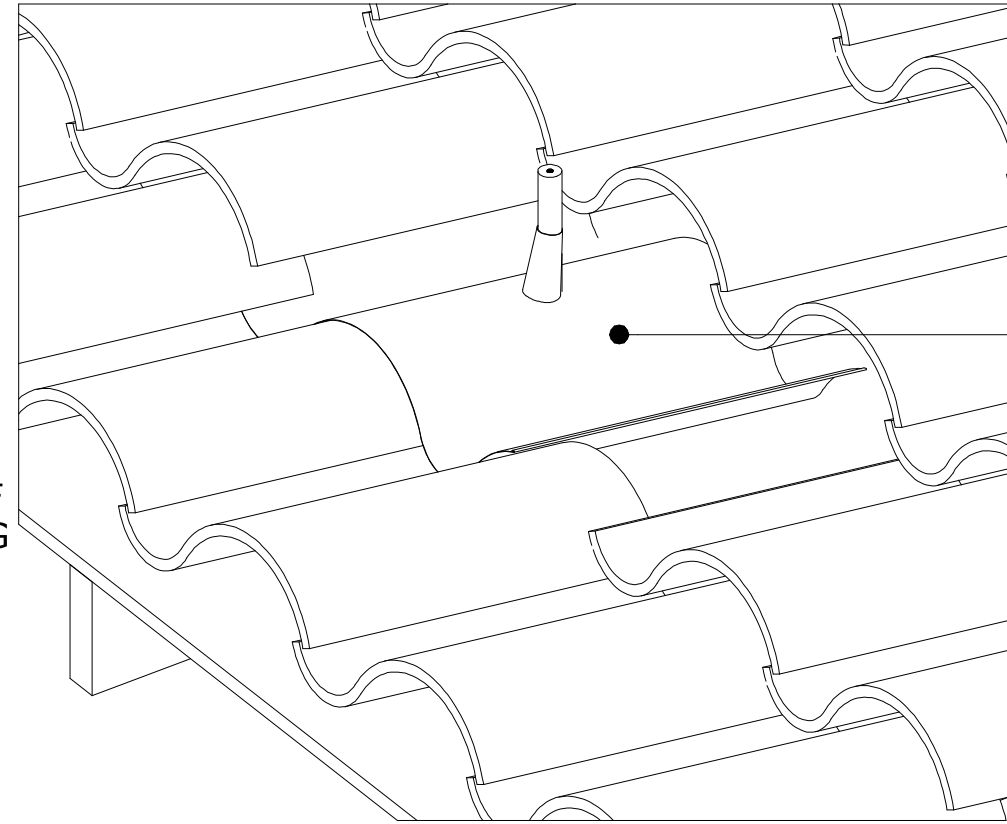
STEP 4:
REPLACE TILES

SEAL TOP OF CONE FLASHING WITH
RUBBER RAIN COLLAR, ALUMINUM
TAPE, OR ALTERNATE METHOD

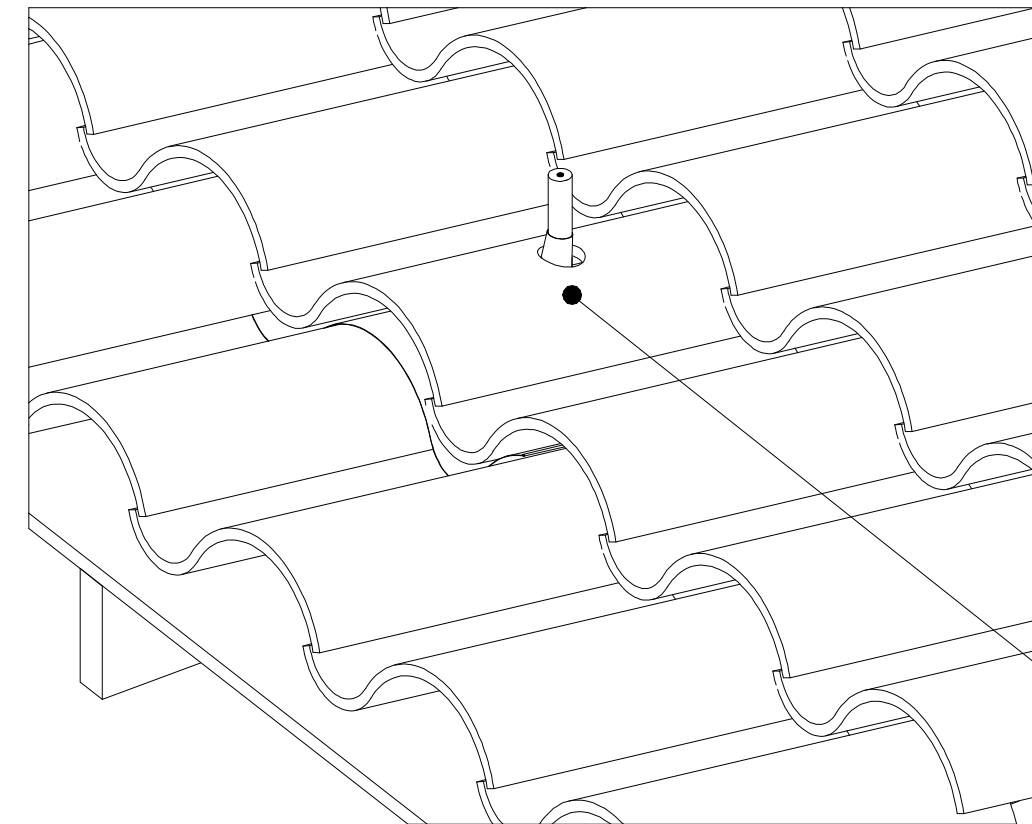




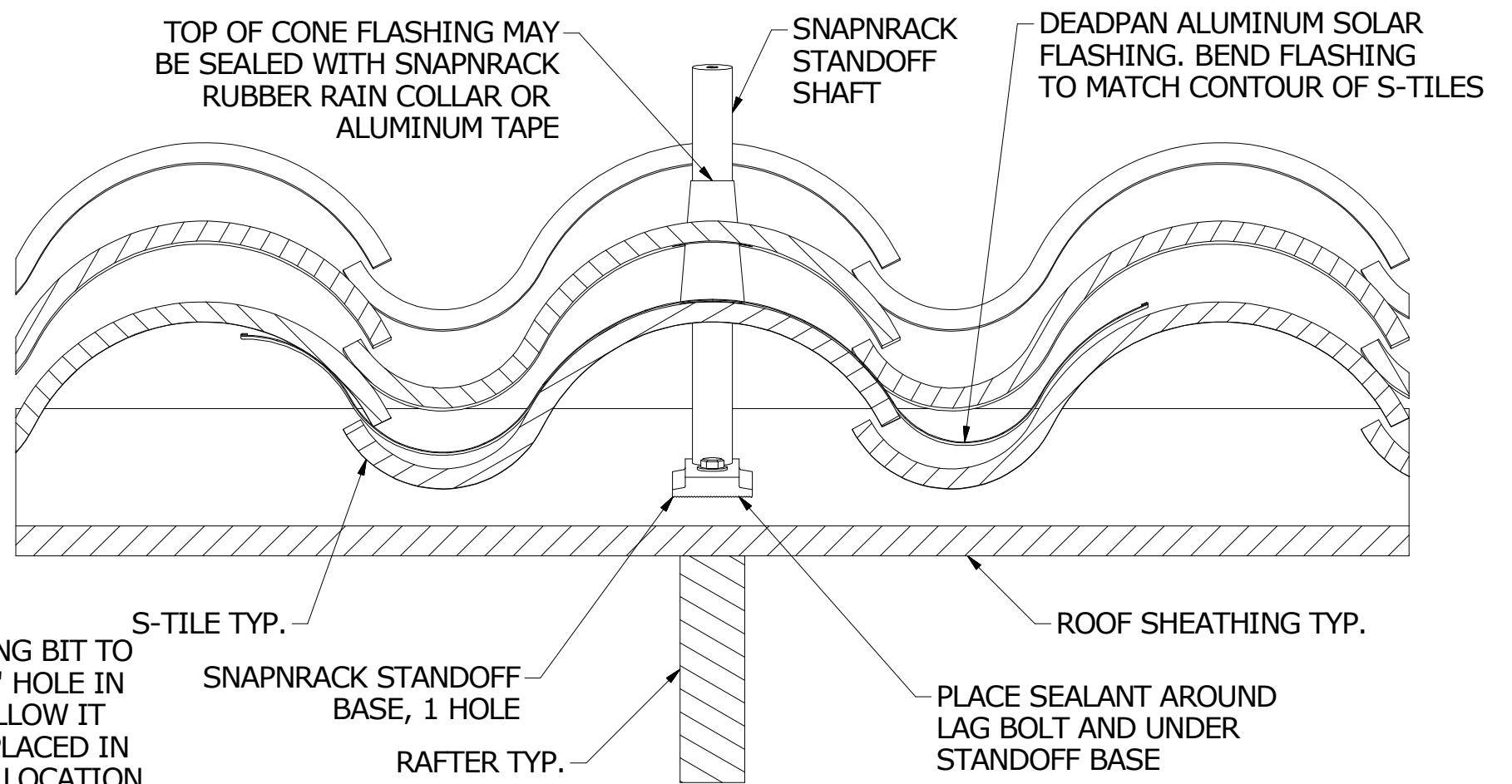
STEP 1:
 REMOVE TILE AND IDENTIFY
 RAFTER LOCATION WITH A
 PILOT DRILL. MOUNT STANDOFF
 ASSEMBLY TO ROOF SHEATHING
 WITH A 5/16IN LAG BOLT
 MINIMUM 2IN EMBEDMENT TYP.
 BE SURE LAG BOLT IS FULLY
 SEATED



STEP 2:
 SLIDE FLASHING OVER POST,
 UNDER UPPER LAYER OF TILE,
 AND FORM FLASHING TO
 MATCH CONTOUR OF TILES



STEP 3:
 USE CORING BIT TO
 DRILL 2.5" HOLE IN
 TILE TO ALLOW IT
 TO BE REPLACED IN
 ORIGINAL LOCATION



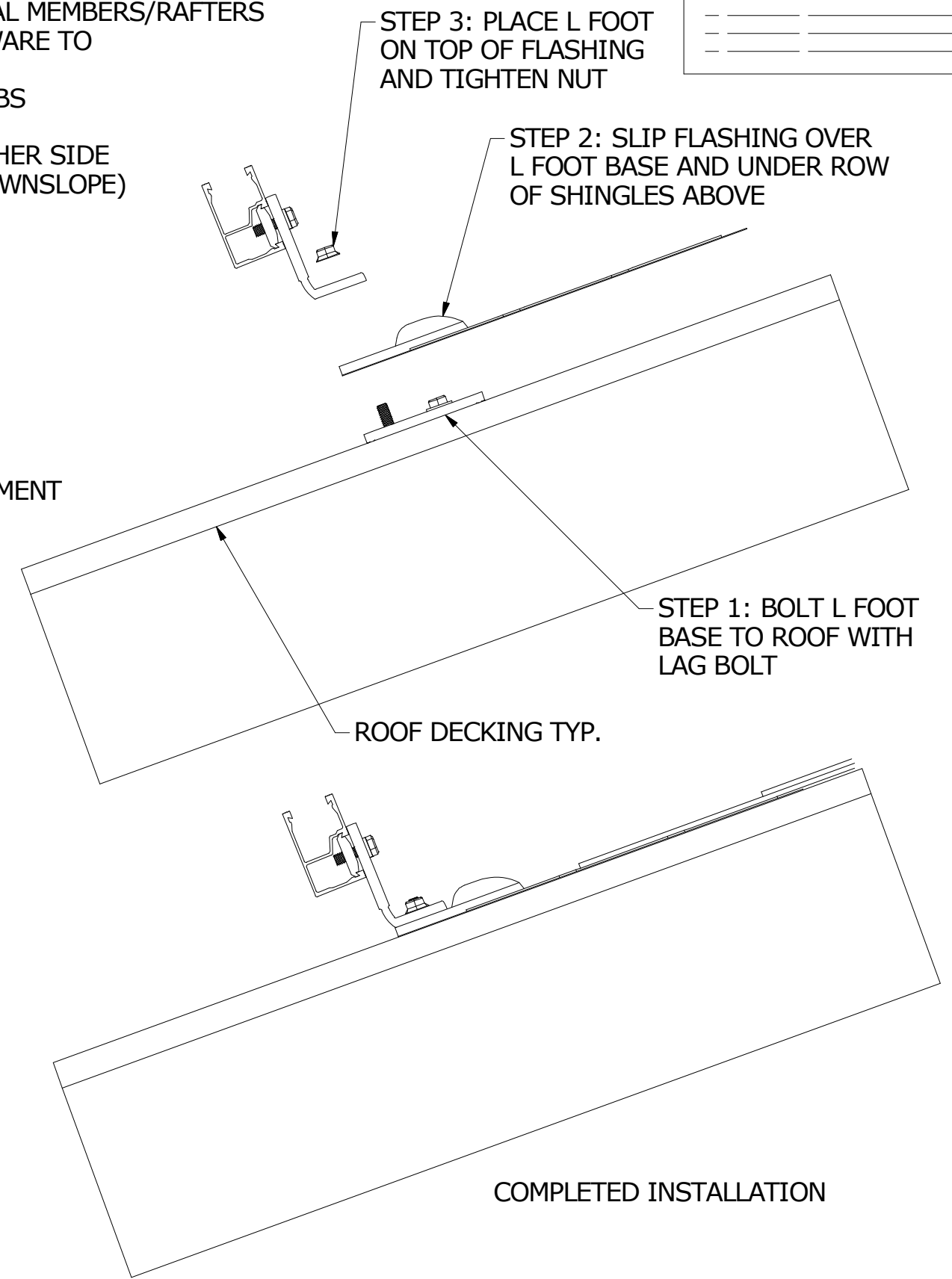
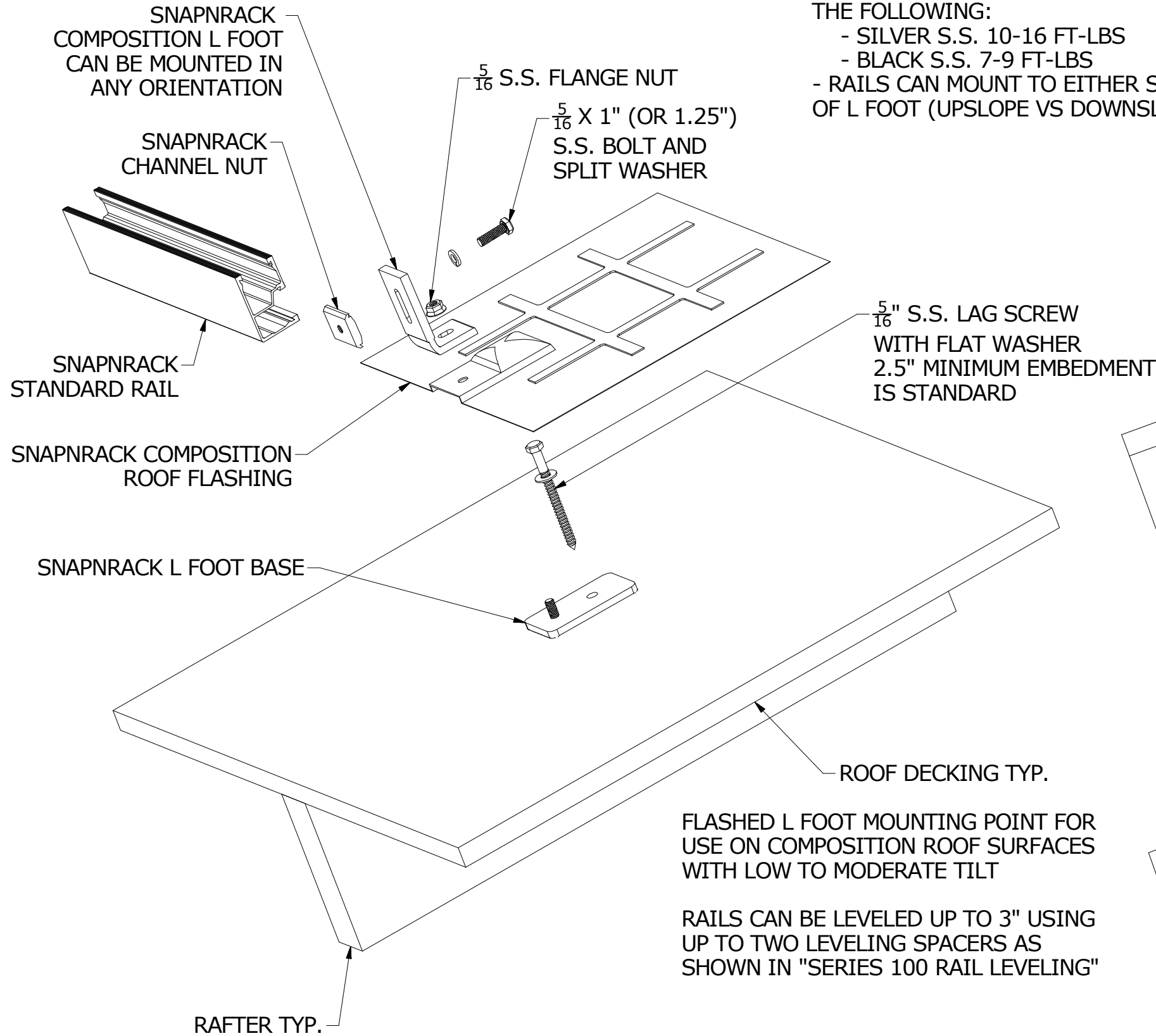
REVISION:

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REVISION:	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

NOTES:

- 5/16" LAG BOLTS MUST EMBED 2.5" INTO ROOF STRUCTURAL MEMBERS/RAFTERS
- TORQUE ALL 5/16" HARDWARE TO THE FOLLOWING:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- RAILS CAN MOUNT TO EITHER SIDE OF L FOOT (UPSLOPE VS DOWNSLOPE)



FLASHED L FOOT MOUNTING POINT FOR USE ON COMPOSITION ROOF SURFACES WITH LOW TO MODERATE TILT

RAILS CAN BE LEVELED UP TO 3" USING UP TO TWO LEVELING SPACERS AS SHOWN IN "SERIES 100 RAIL LEVELING"



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 775 FIERO LANE, SUITE 200 • SAN LUIS OBISPO, CA 93401 USA
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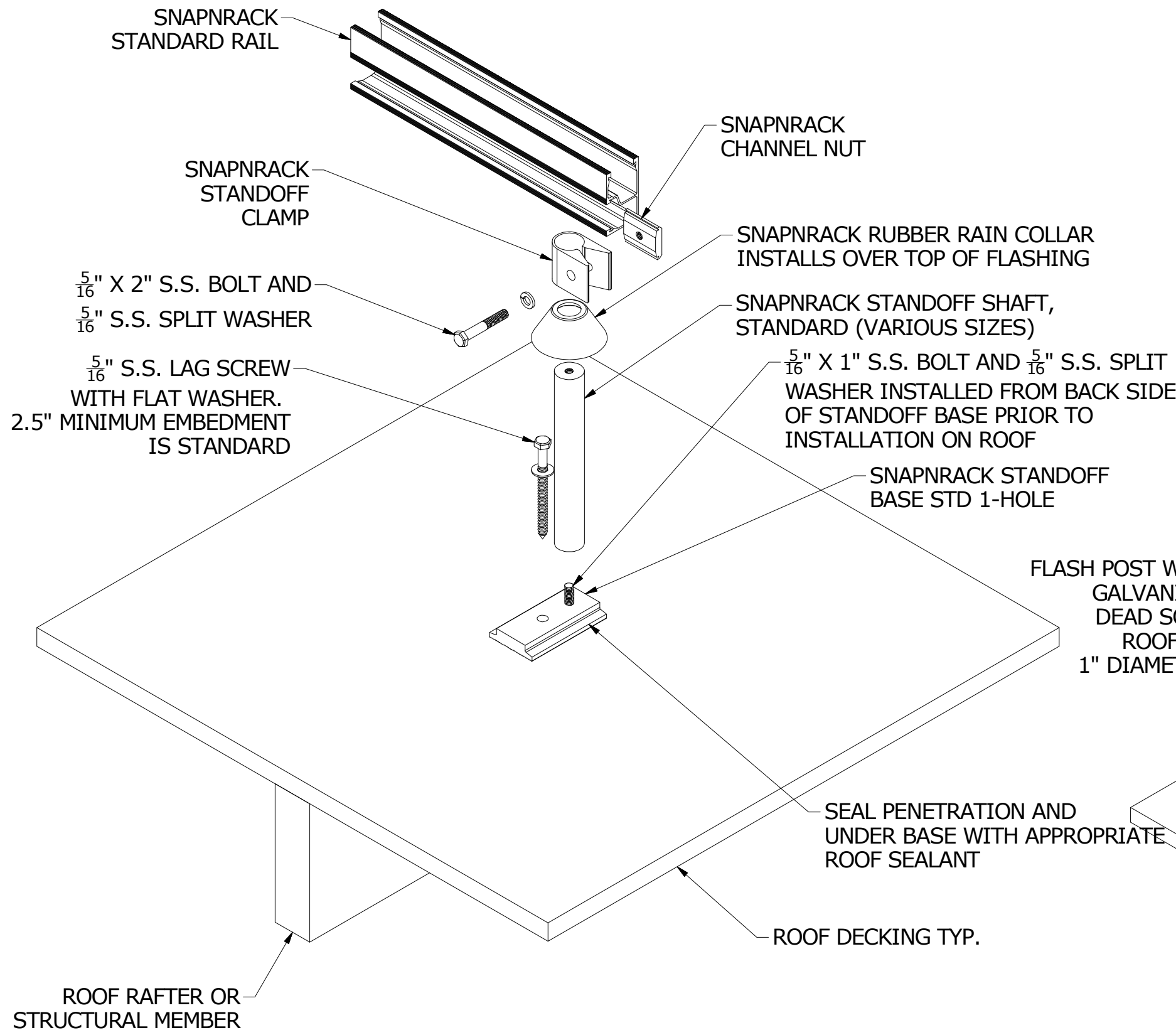
DESIGNER: G McPheeters
 DRAFTER: D Ryan
 APPROVED BY: _____

SCALE: DNS
 DATE: 120113

PART NUMBER: S100 PEN D01

DESCRIPTION: PEN DETAIL 01, FLASHED L FOOT TO RAFTER

REV **F**

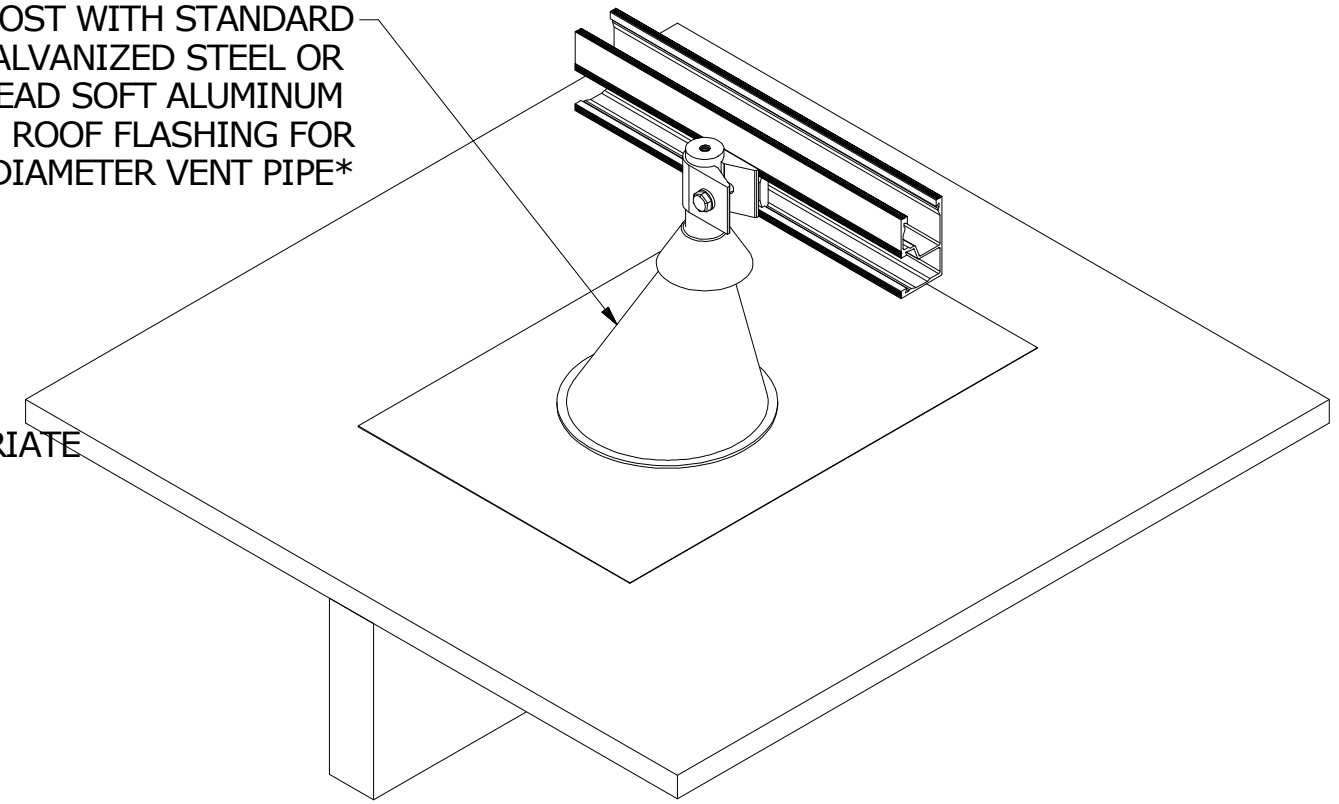


NOTES:

- 5/16" LAG BOLTS MUST EMBED 2.5" INTO ROOF STRUCTURAL MEMBERS/RAFTERS
- TORQUE ALL 5/16" HARDWARE TO THE FOLLOWING:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- RAILS CAN MOUNT TO EITHER SIDE OF POST (UPSLOPE VS. DOWNSLOPE)
- RAILS CAN BE LEVELED UP TO 3" USING UP TO TWO LEVELING SPACERS AS SHOWN IN "SERIES 100 RAIL LEVELING"
- * A Poured sealant-style flashing may be used with SnapRack standoffs as an alternative to a typical cone flashing when installed per manufacturer's instructions on low-slope roof surfaces

REVISION:

FLASH POST WITH STANDARD GALVANIZED STEEL OR DEAD SOFT ALUMINUM ROOF FLASHING FOR 1" DIAMETER VENT PIPE*



COMPLETE INSTALLATION (SHOWN WITH FLASHING IN PLACE)

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REVISION:	
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NOTES:

- TEK SCREWS MUST EMBED IN ROOF STRUCTURAL MEMBERS/PURLINS

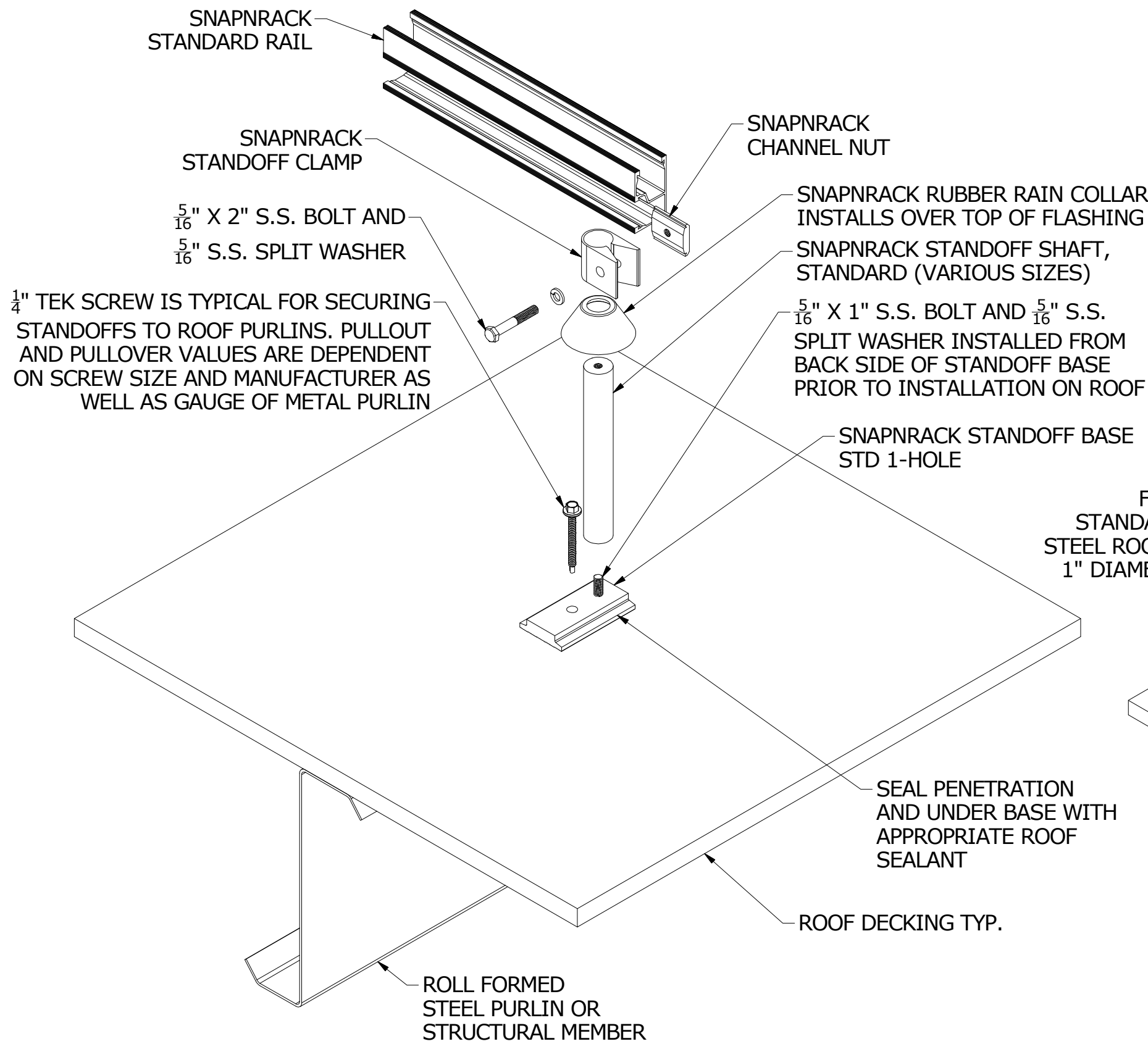
- TORQUE ALL $\frac{5}{16}$ " HARDWARE TO THE FOLLOWING:

- SILVER S.S. 10-16 FT-LBS
- BLACK S.S. 7-9 FT-LBS

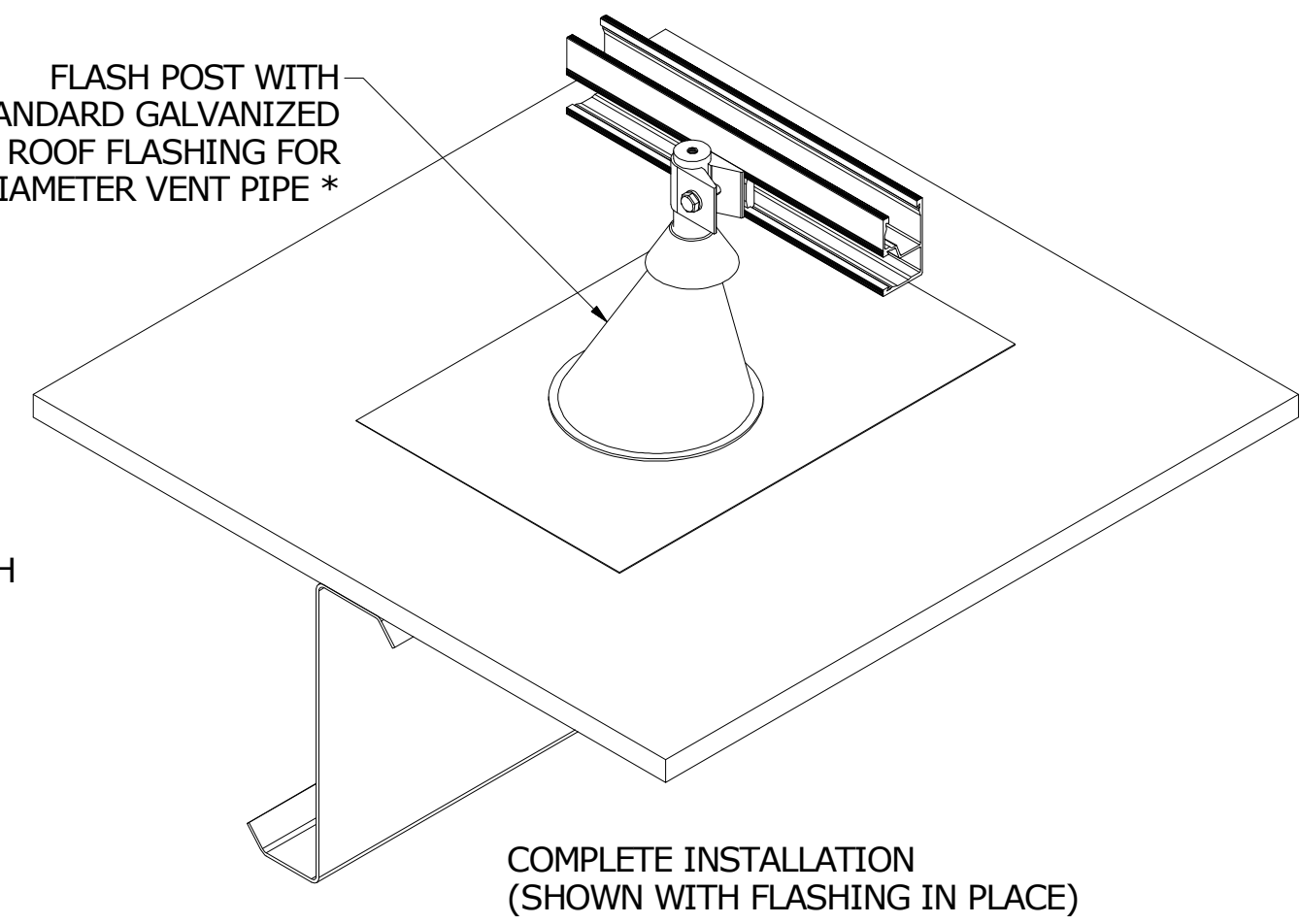
- RAILS CAN MOUNT TO EITHER SIDE OF POST (UPSLOPE VS. DOWNSLOPE)

- RAILS CAN BE LEVELED UP TO 3" USING UP TO TWO LEVELING SPACERS AS SHOWN IN "SERIES 100 RAIL LEVELING"

* A Poured Sealant-Style Flashing May Be Used With SnapRack Standoffs As An Alternative To A Typical Cone Flashing When Installed Per Manufacturer's Instructions On Low-Slope Roof Surfaces



FLASH POST WITH STANDARD GALVANIZED STEEL ROOF FLASHING FOR 1" DIAMETER VENT PIPE *



SEAL PENETRATION AND UNDER BASE WITH APPROPRIATE ROOF SEALANT

ROOF DECKING TYP.

ROLL FORMED STEEL PURLIN OR STRUCTURAL MEMBER



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PHONE (805) 528-9705 • FAX (805) 528-9701

DESIGNER: G McPheeters
DRAFTER: D Ryan
APPROVED BY: _____

SCALE: DNS
DATE: 120113

PART NUMBER: S100 PEN D03

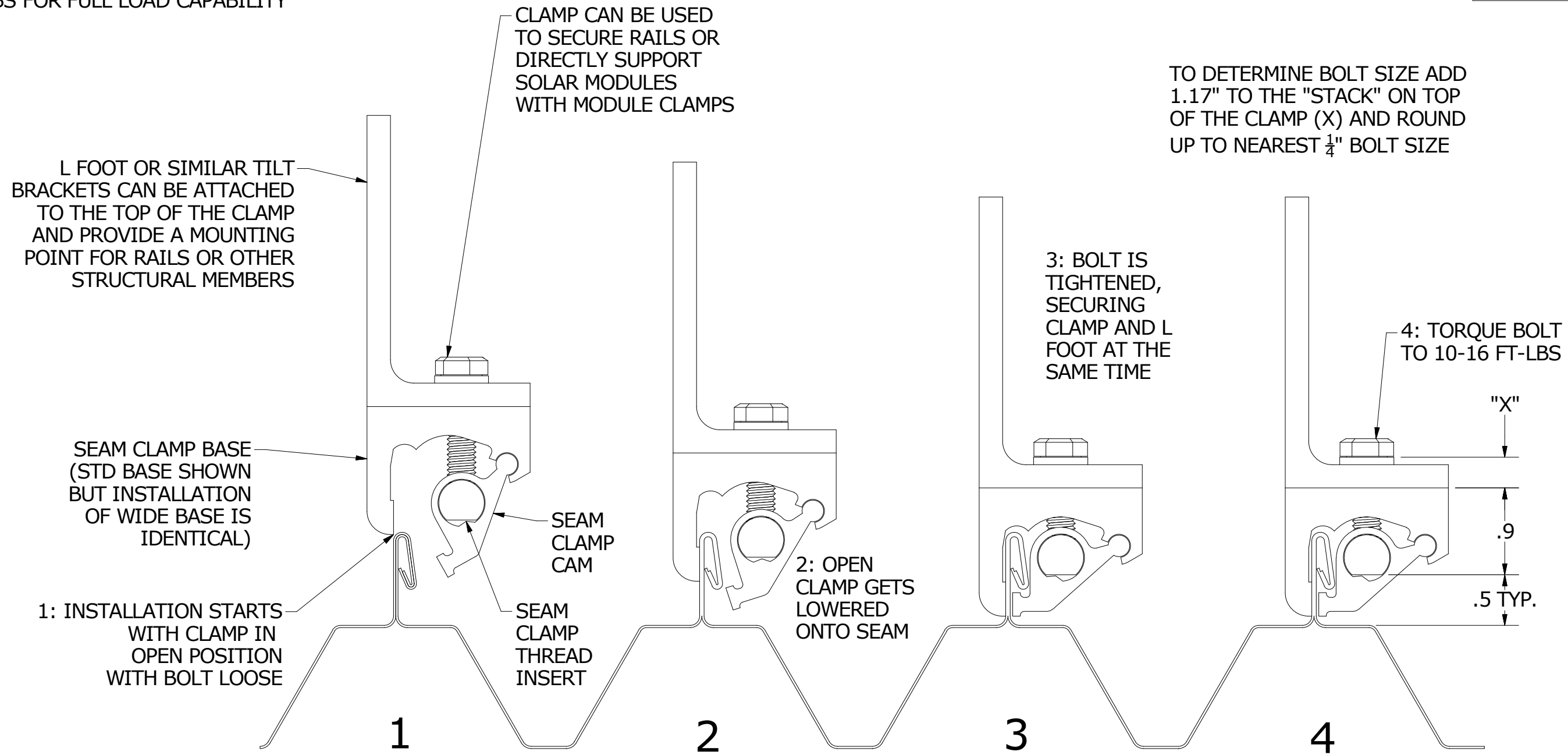
DESCRIPTION: PEN DETAIL 03, STANDOFF TO PURLIN

REV **F**

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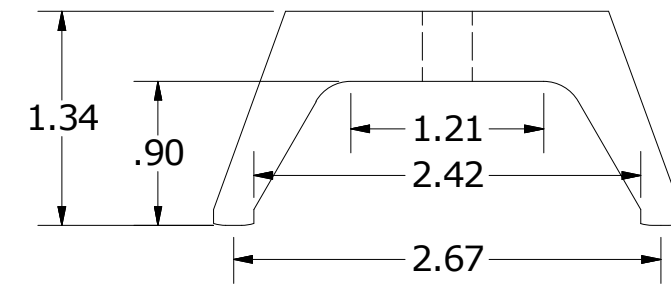
CAMMING SEAM CLAMPS ARE SPECIFIED WITH A BLACK OXIDE STAINLESS STEEL BOLT. IT IS IMPORTANT TO USE THE PROVIDED BOLT AND TO TIGHTEN TO 16 FT-LBS FOR FULL LOAD CAPABILITY

REVISION:	
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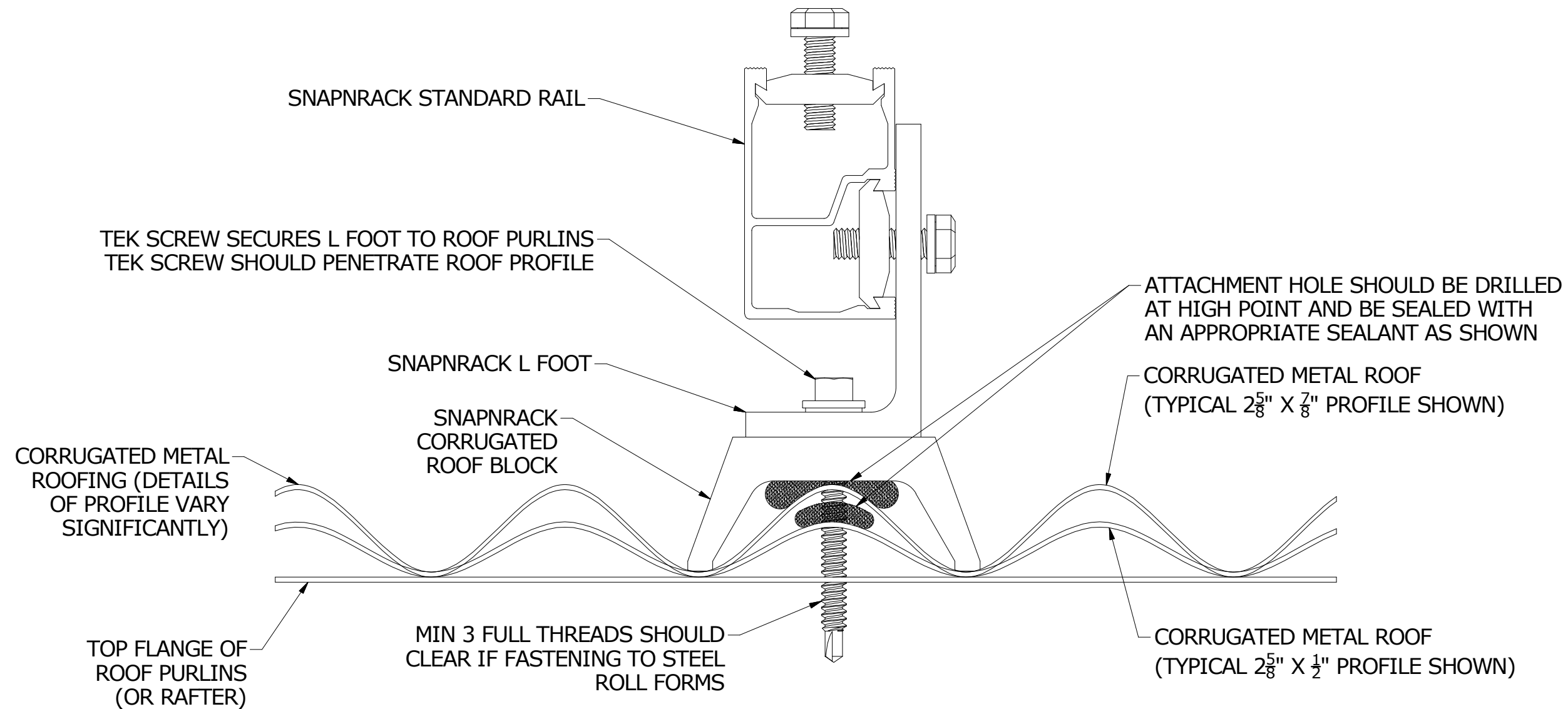


USE THE SNAPRACK CORRUGATED ROOF BLOCK TO STRADDLE THE RAISED PORTIONS OF CORRUGATED METAL ROOFING MATERIALS. THIS ALLOWS AN L FOOT TO BE MOUNTED WITH THE PENETRATION AT THE HIGH POINT OF THE ROOFING MATERIAL WITHOUT CRUSHING THE ROOF PROFILE. SHOWN WITH A TEK SCREW ATTACHMENT TYPICAL OF A METAL PURLIN STRUCTURE, BUT THE SYSTEM WORKS WELL WITH A LAG BOLT INTO A WOOD RAFTER AS WELL. BE SURE TO USE PROPER SEALANT TO SEAL UP THE HOLE IN THE METAL ROOFING MATERIAL

REVISION:



PART DIMENSIONS



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DESIGNER: G McPheeters
 DRAFTER: D Ryan
 APPROVED BY: _____

SCALE: DNS
 DATE: 120113

PART NUMBER: S100 PEN D05

DESCRIPTION: PEN DETAIL 05, CORRUGATED ROOF BLOCK

REV F

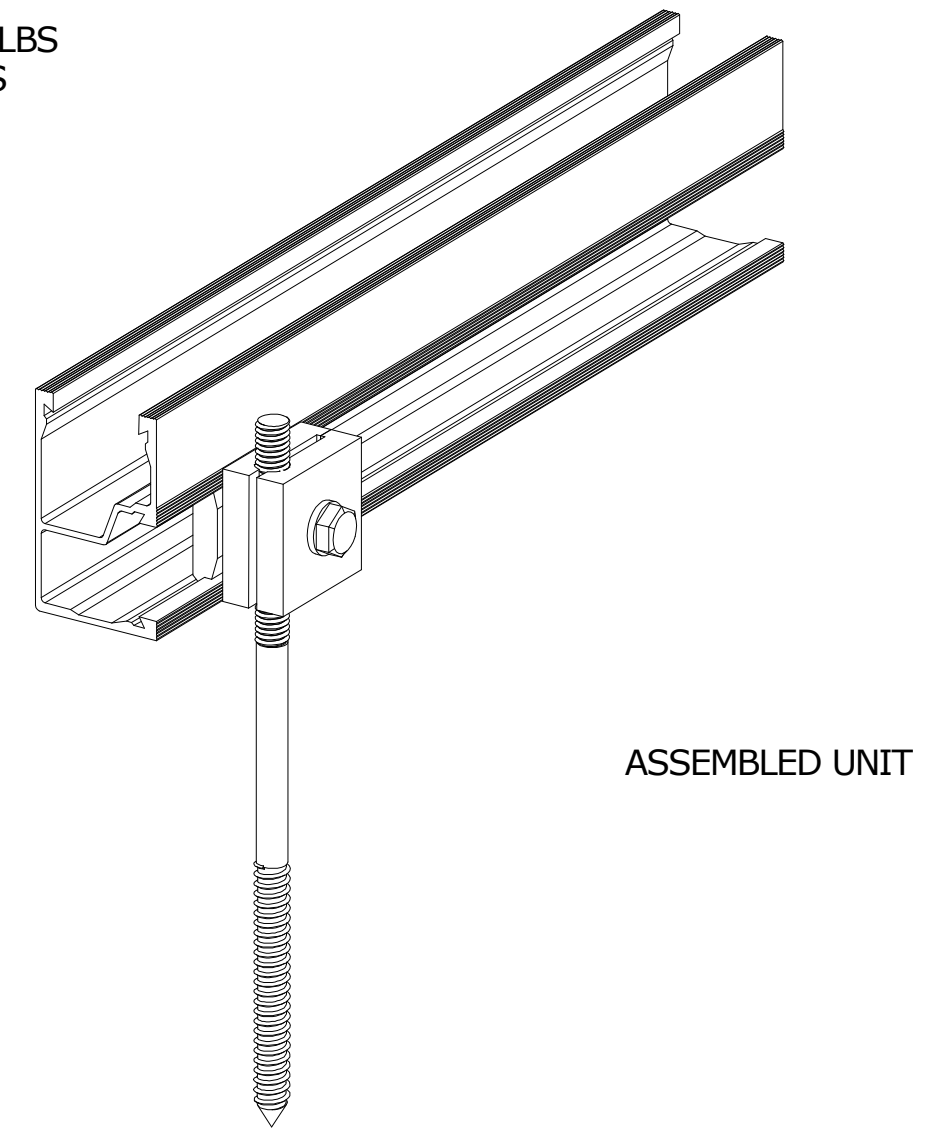
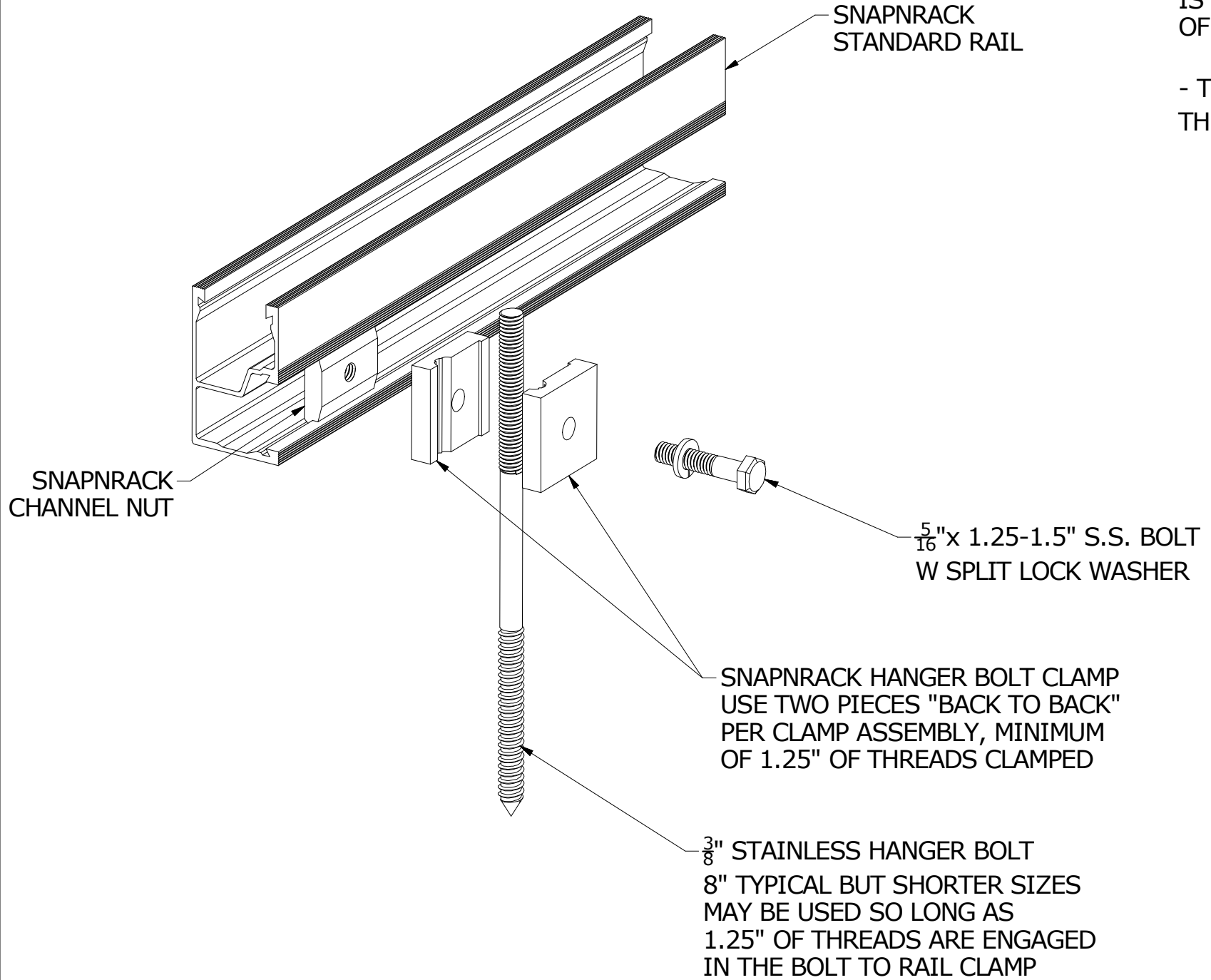
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HANGER BOLT CLAMPS HAVE BEEN DESIGNED FOR USE WITH STANDARD $\frac{3}{8}$ " STAINLESS HANGER BOLTS. THEY ARE COMPATIBLE WITH ANY $\frac{3}{8}$ " STAINLESS BOLT OR THREADED ROD.

THE CLAMPS ARE 1.5" TALL AND ENGINEERED TO HAVE A MINIMUM OF 1.25" OF THREAD IN THE CLAMP AT ALL TIMES. MAXIMUM DESIGN LOAD IS 1,000 LBS (AXIAL) OR 250 LBS IF A FACTOR OF SAFETY OF 4 IS APPLIED.

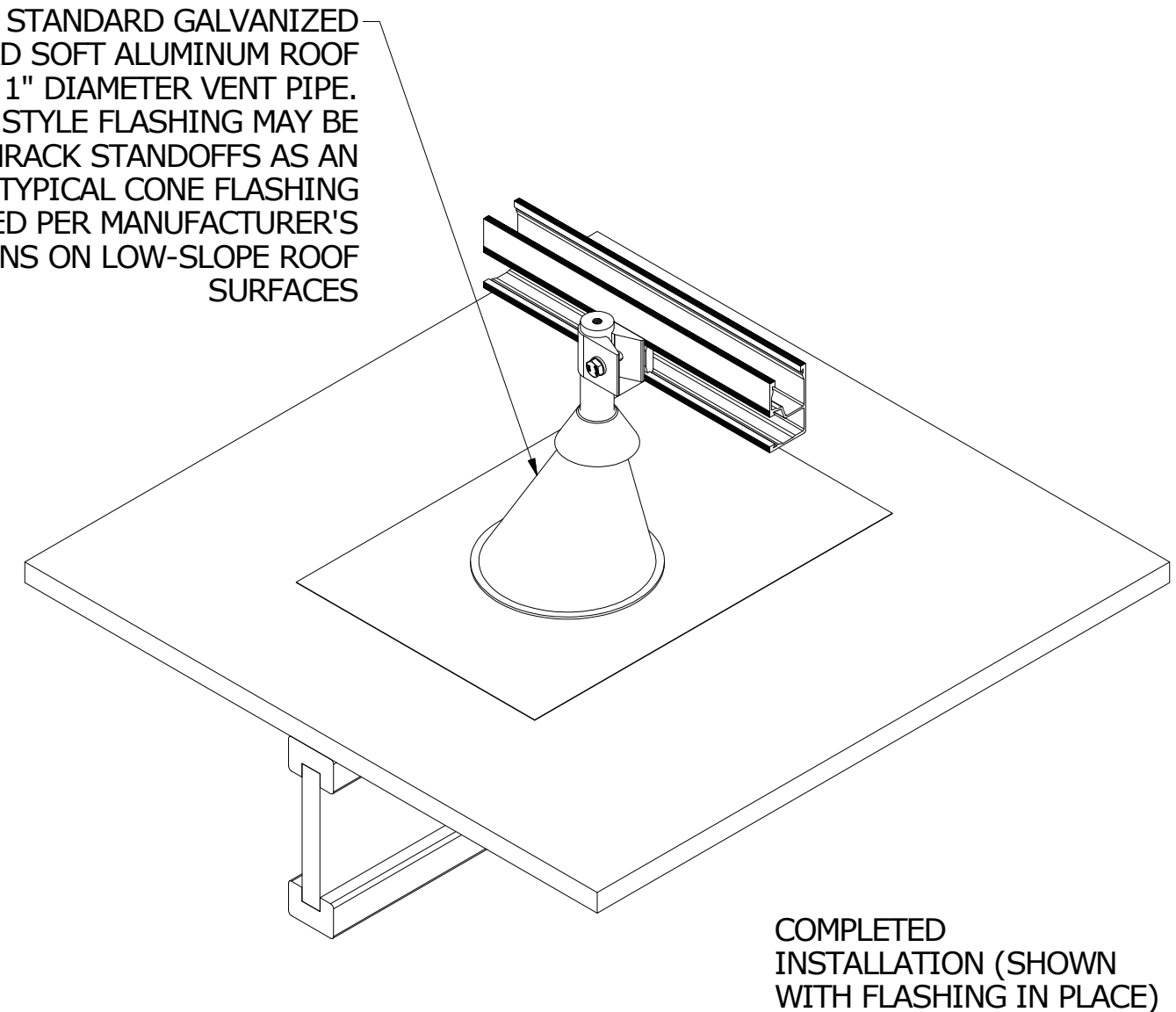
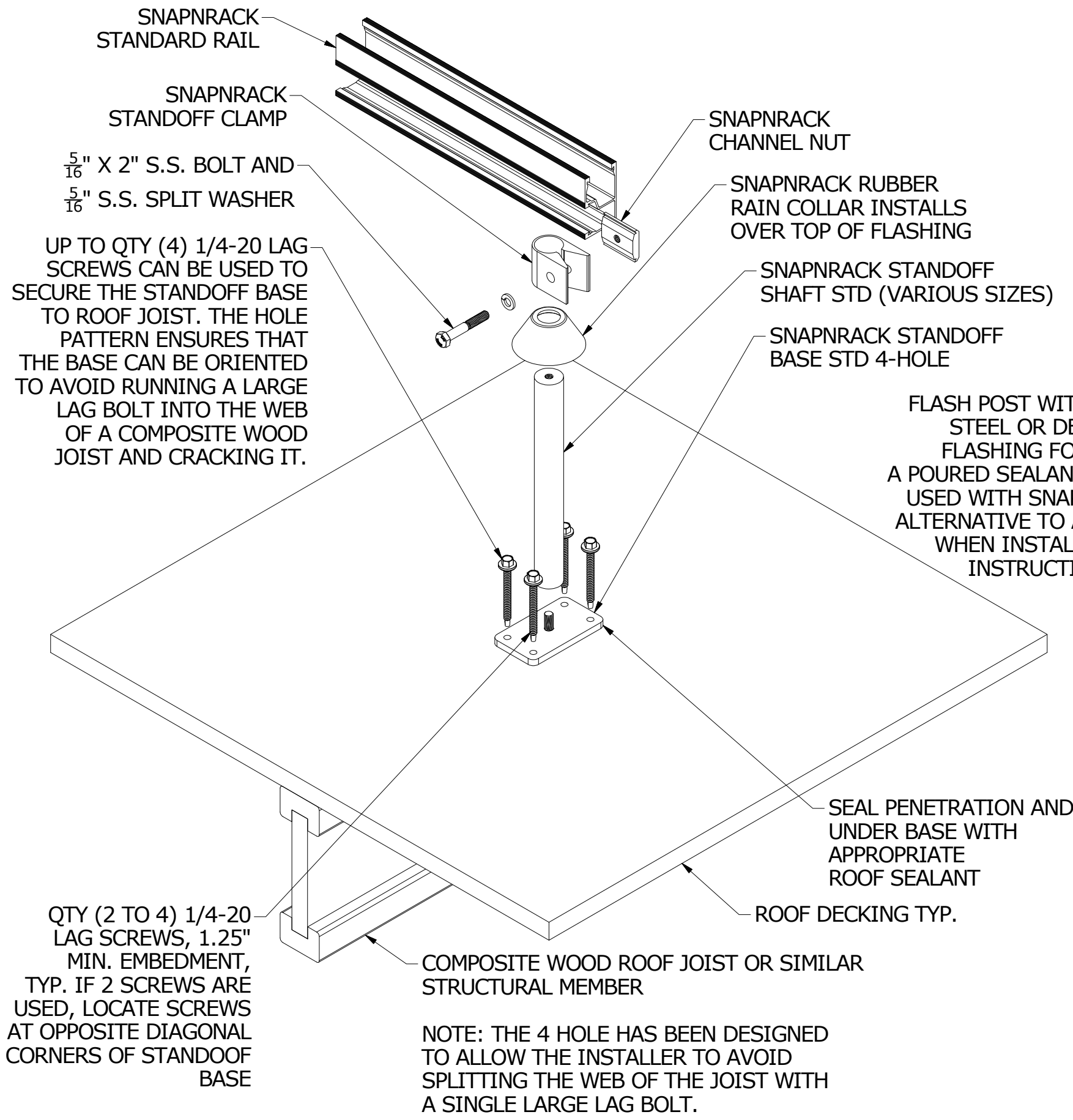
- TORQUE ALL $\frac{5}{16}$ " HARDWARE TO THE FOLLOWING:
- SILVER S.S. 10-16 FT-LBS
- BLACK S.S. 7-9 FT-LBS



REVISION:	
F	12/02/15

NOTES:

- WOOD SCREWS MUST EMBED IN ROOF STRUCTURAL MEMBERS/JOISTS. TYPICAL DESIGN UPLIFT LOAD REQUIREMENT IS 340 LBS PER ATTACHMENT
- TORQUE ALL $\frac{5}{16}$ " HARDWARE TO THE FOLLOWING:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- RAILS CAN MOUNT TO EITHER SIDE OF POST (UPSLOPE VS. DOWNSLOPE)
- RAILS CAN BE LEVELED UP TO 3" USING UP TO TWO LEVELING SPACERS AS SHOWN IN "SERIES 100 RAIL LEVELING"



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 775 FIERO LANE, SUITE 200 • SAN LUIS OBISPO, CA 93401 USA
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DESIGNER: G McPheeters
 DRAFTER: D Ryan
 APPROVED BY: G McPheeters

SCALE: DNS
 DATE: 12/02/15

PART NUMBER: S100 PEN D07

DESCRIPTION: PEN DETAIL 07, STANDOFF TO JOIST

REV F

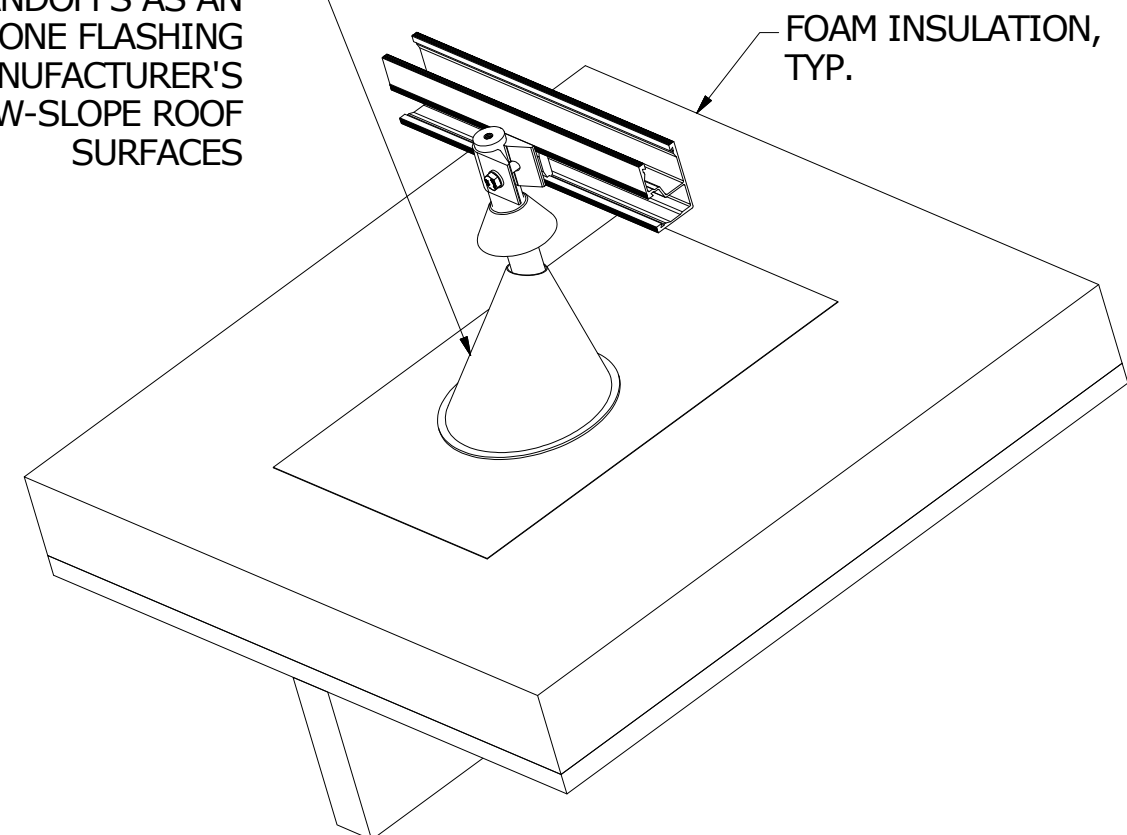
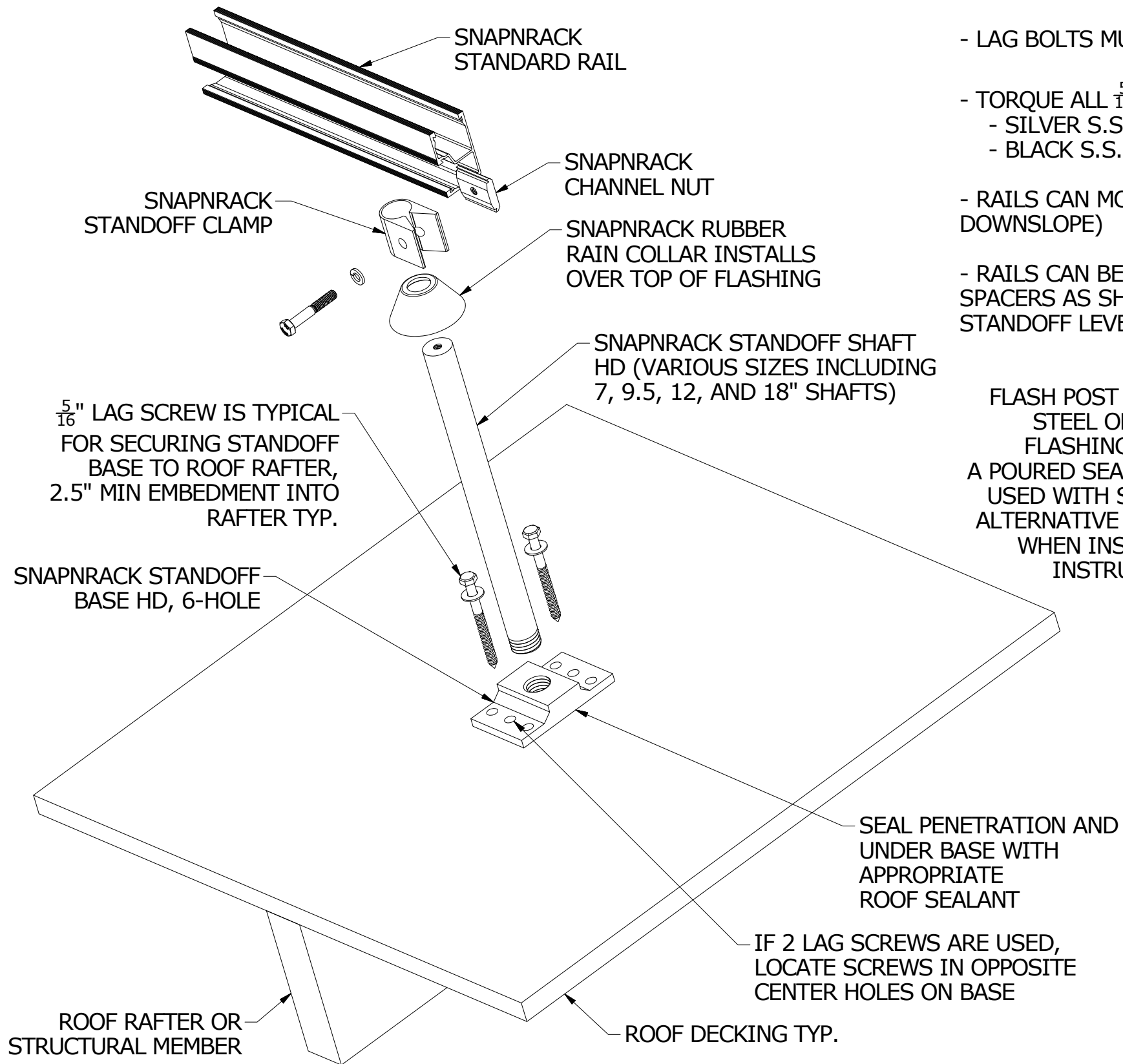
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REVISION:	
F	12/02/15

NOTES:

- LAG BOLTS MUST EMBED IN ROOF STRUCTURAL MEMBERS/RAFTERS
- TORQUE ALL $\frac{5}{16}$ " HARDWARE TO THE FOLLOWING:
 - SILVER S.S. 10-16 FT-LBS
 - BLACK S.S. 7-9 FT-LBS
- RAILS CAN MOUNT TO EITHER SIDE OF POST (UPSLOPE VS. DOWNSLOPE)
- RAILS CAN BE LEVELED UP TO 3" USING UP TO TWO LEVELING SPACERS AS SHOWN IN DRAWING S100 D07 "SERIES 100 HD STANDOFF LEVELING"

FLASH POST WITH STANDARD GALVANIZED STEEL OR DEAD SOFT ALUMINUM ROOF FLASHING FOR 1" DIAMETER VENT PIPE. A Poured SEALANT-STYLE FLASHING MAY BE USED WITH SNAPNRACK STANDOFFS AS AN ALTERNATIVE TO A TYPICAL CONE FLASHING WHEN INSTALLED PER MANUFACTURER'S INSTRUCTIONS ON LOW-SLOPE ROOF SURFACES



SNAPNRACK STANDOFF MOUNTING POINT FOR USE ON ALL ROOF SURFACES

HD STANDOFFS ARE OFTEN USED WITH FOAM ROOF INSULATION



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DESIGNER: G McPheeters
DRAFTER: D Ryan
APPROVED BY: G McPheeters

SCALE: DNS
DATE: 12/02/15

PART NUMBER: S100 PEN D08

DESCRIPTION: PEN DETAIL 08, HD STANDOFF

REV **F**

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STEP 1:
DRILL 3/16" PILOT HOLE IN
RAFTER. ENSURE AREA
SURROUNDING HOLE IS
FREE FROM METAL
SHAVINGS AND DEBRIS.

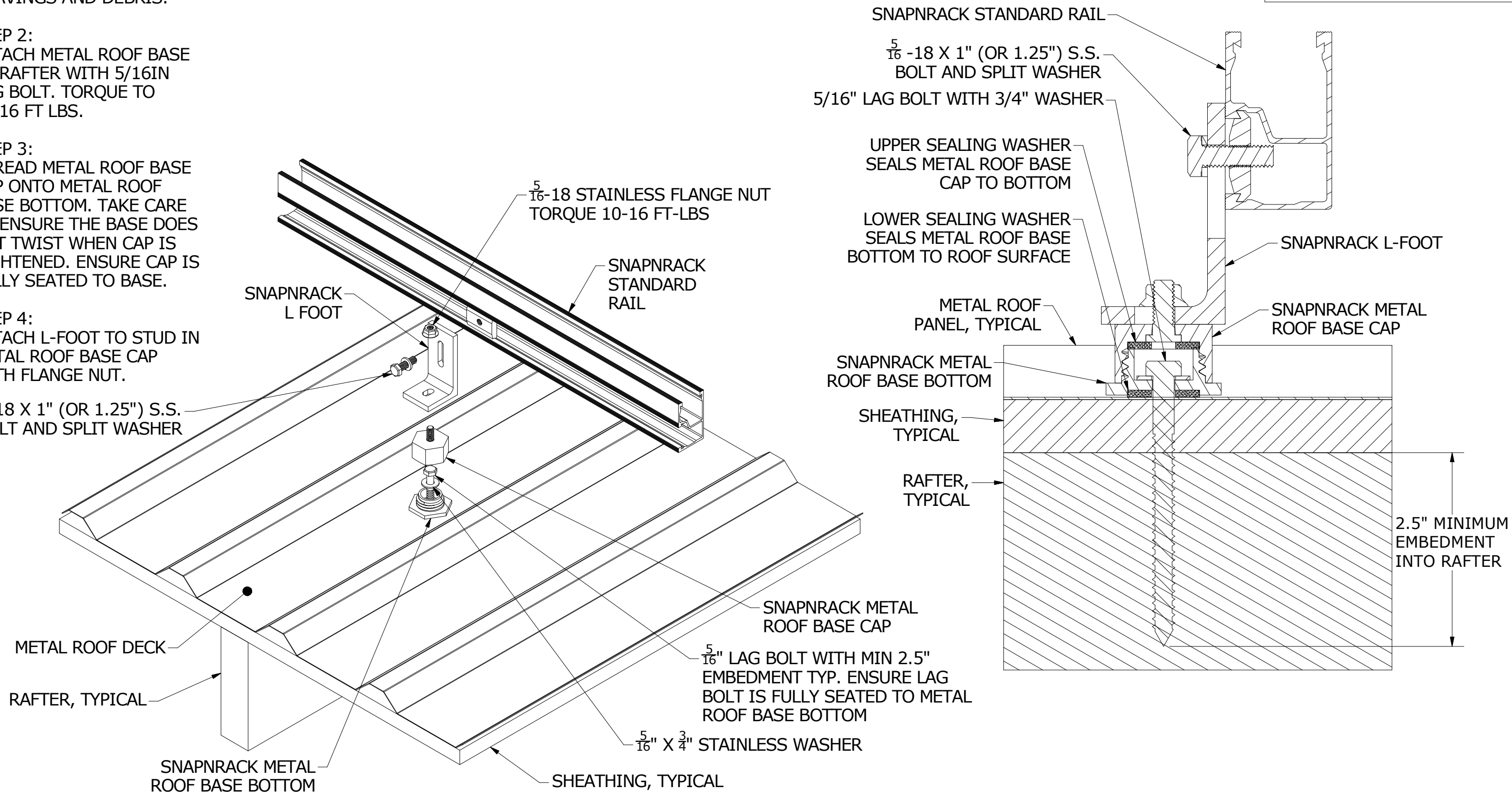
STEP 2:
ATTACH METAL ROOF BASE
TO RAFTER WITH 5/16IN
LAG BOLT. TORQUE TO
10-16 FT LBS.

STEP 3:
THREAD METAL ROOF BASE
CAP ONTO METAL ROOF
BASE BOTTOM. TAKE CARE
TO ENSURE THE BASE DOES
NOT TWIST WHEN CAP IS
TIGHTENED. ENSURE CAP IS
FULLY SEATED TO BASE.

STEP 4:
ATTACH L-FOOT TO STUD IN
METAL ROOF BASE CAP
WITH FLANGE NUT.

5/16 -18 X 1" (OR 1.25") S.S.
BOLT AND SPLIT WASHER

REVISION:	



STEP 1:
DRILL 3/16" PILOT HOLE
IN PURLIN. ENSURE AREA
SURROUNDING HOLE IS
FREE FROM METAL
SHAVINGS AND DEBRIS.

STEP 2:
ATTACH METAL ROOF
BASE TO PURLIN WITH 1/4"
TEK OR EQUIVALENT SELF
DRILLING FASTENER.
TORQUE TO
MANUFACTURER
SPECIFICATIONS.

STEP 3:
THREAD METAL ROOF
BASE CAP ONTO METAL
ROOF BASE BOTTOM.
TAKE CARE TO ENSURE
THE BASE DOES NOT
TWIST WHEN CAP IS
TIGHTENED. ENSURE CAP
IS FULLY SEATED TO
BASE.

STEP 4:
ATTACH L-FOOT TO STUD
IN METAL ROOF BASE CAP
WITH FLANGE NUT.

5/16-18 STAINLESS FLANGE
NUT TORQUE 10-16 FT-LBS

1/4-20 TEK OR EQUIVALENT
SELF DRILLING FASTENER.
TORQUE TO MANUFACTURER
SPECIFICATIONS

METAL ROOF DECK

SNAPNRACK METAL
ROOF BASE BOTTOM

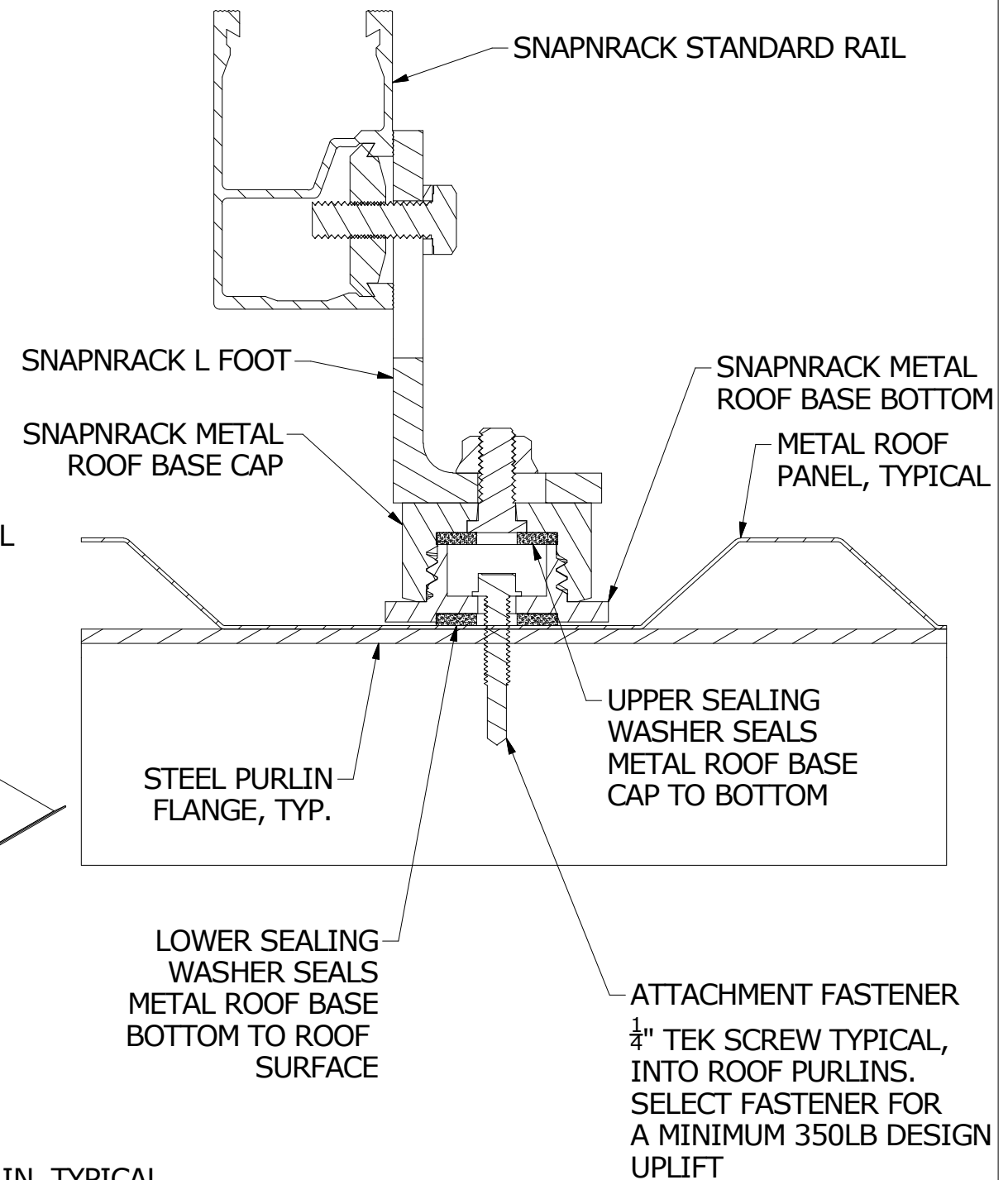
SNAPNRACK STANDARD RAIL

SNAPNRACK L-FOOT

SNAPNRACK METAL
ROOF BASE CAP

STEEL PURLIN, TYPICAL

REVISION:



SnapNrack™
PV Mounting Systems

MAINSTREAM ENERGY CORP.
775 FIERO LANE, SUITE 200 • SAN LUIS OBISPO, CA 93401 USA
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DESIGNER: GMcPHEETERS

DRAFTER: DRyan

APPROVED BY: _____

SCALE: DNS

DATE: 120113

PART NUMBER:
S100 PEN D10

DESCRIPTION:
PEN DETAIL 10, METAL ROOF BASE TO PURLIN

REV
F

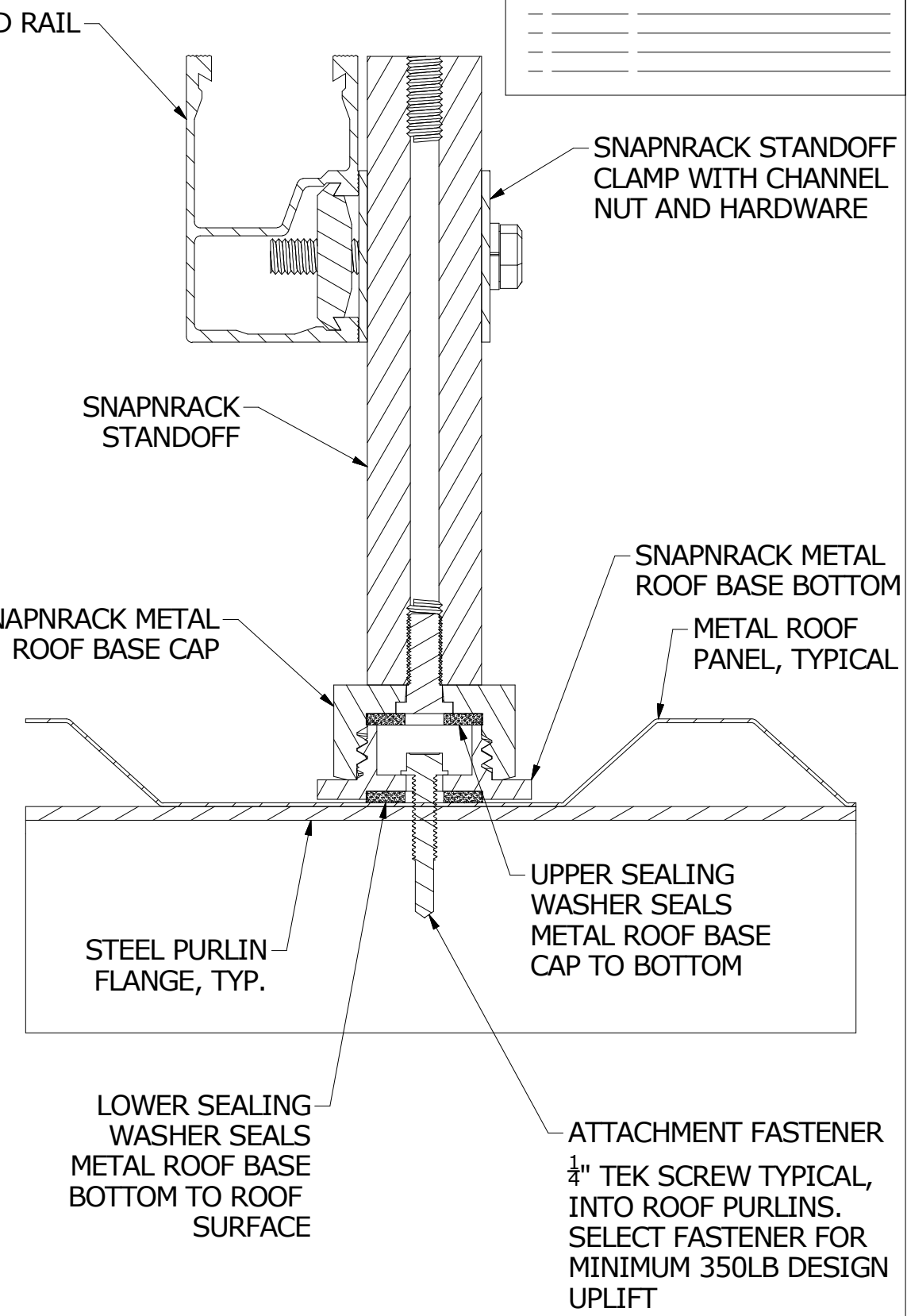
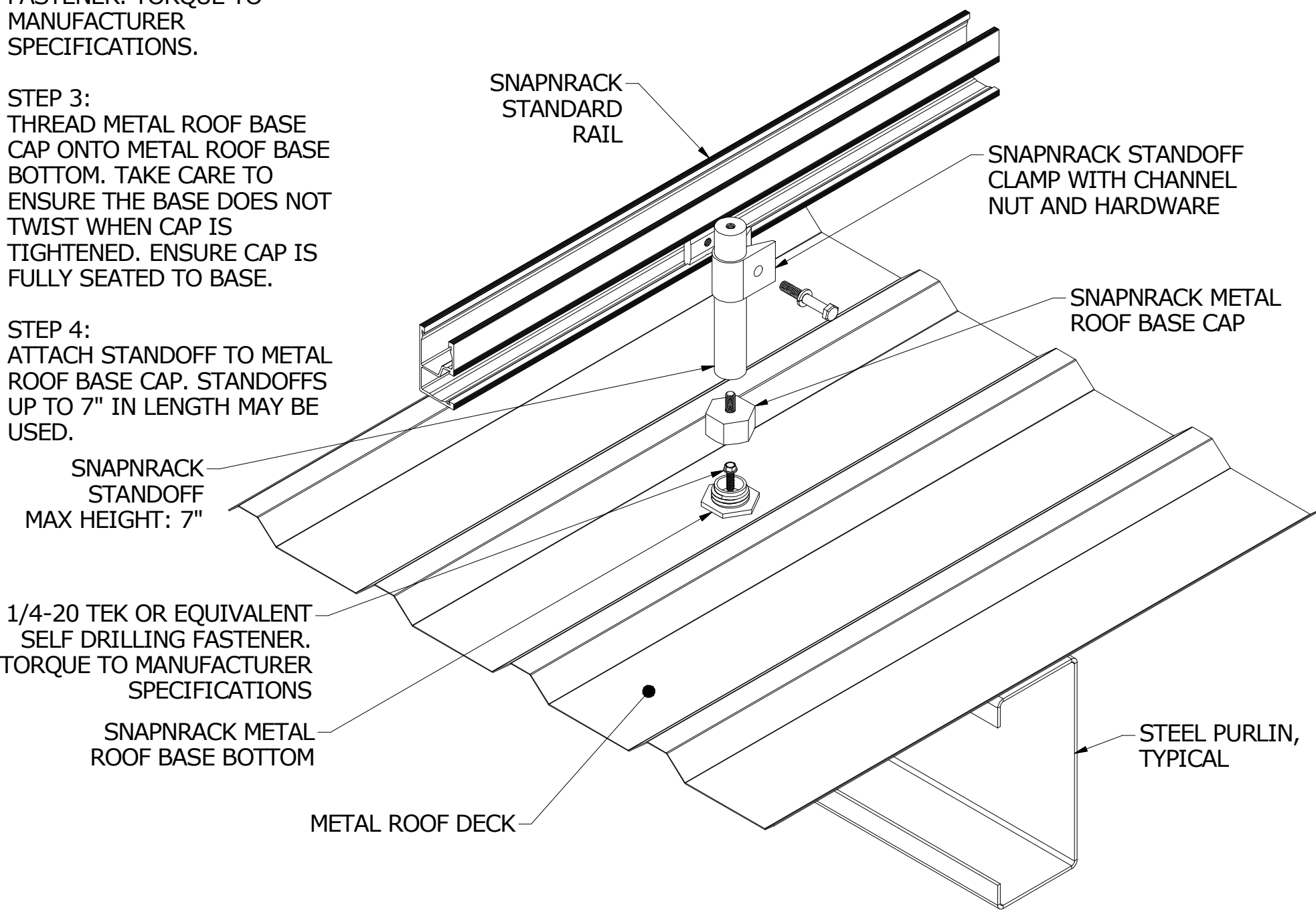
STEP 1:
 DRILL 3/16" PILOT HOLE IN PURLIN. ENSURE AREA SURROUNDING HOLE IS FREE FROM METAL SHAVINGS AND DEBRIS.

STEP 2:
 ATTACH METAL ROOF BASE TO PURLIN WITH 1/4" TEK OR EQUIVALENT SELF DRILLING FASTENER. TORQUE TO MANUFACTURER SPECIFICATIONS.

STEP 3:
 THREAD METAL ROOF BASE CAP ONTO METAL ROOF BASE BOTTOM. TAKE CARE TO ENSURE THE BASE DOES NOT TWIST WHEN CAP IS TIGHTENED. ENSURE CAP IS FULLY SEATED TO BASE.

STEP 4:
 ATTACH STANDOFF TO METAL ROOF BASE CAP. STANDOFFS UP TO 7" IN LENGTH MAY BE USED.

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 775 FIERO LANE, SUITE 200 • SAN LUIS OBISPO, CA 93401 USA
 PHONE (805) 528-9705 • FAX (805) 528-9701

DESIGNER: GMcPHEETERS
 DRAFTER: DRyan
 APPROVED BY: _____

SCALE: DNS
 DATE: 120113

PART NUMBER:
 S100 PEN D12

DESCRIPTION: PEN DETAIL 12, METAL ROOF BASE WITH STANDOFF TO PURLIN

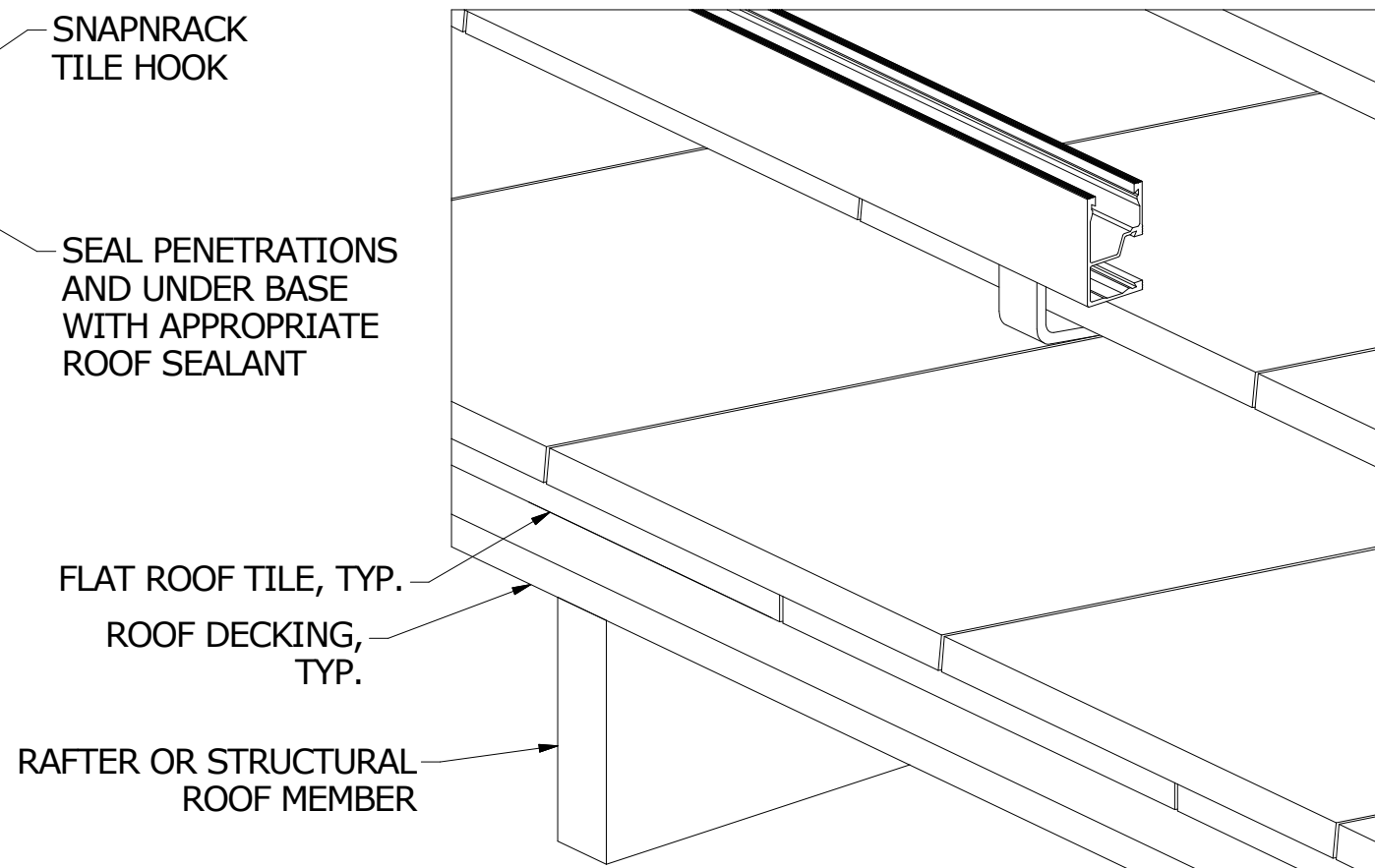
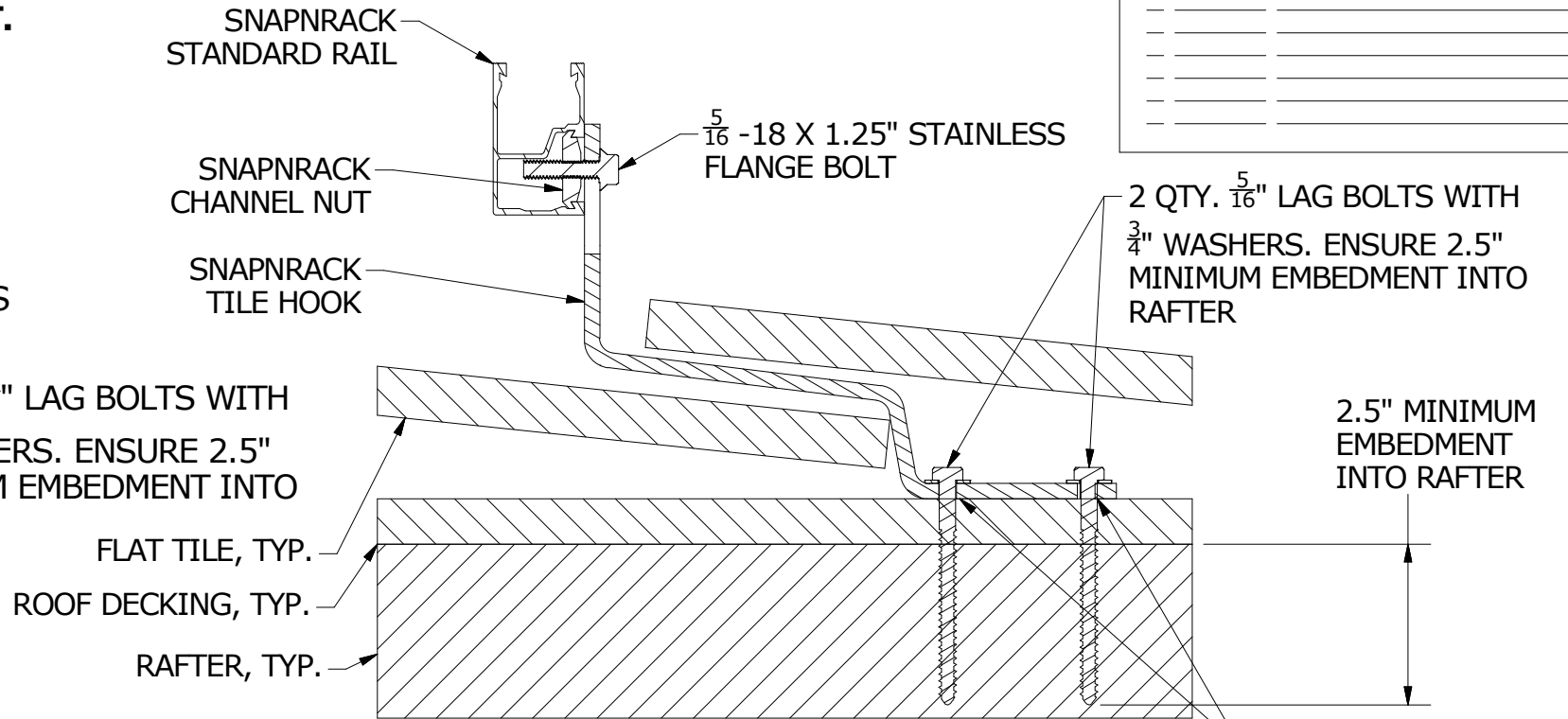
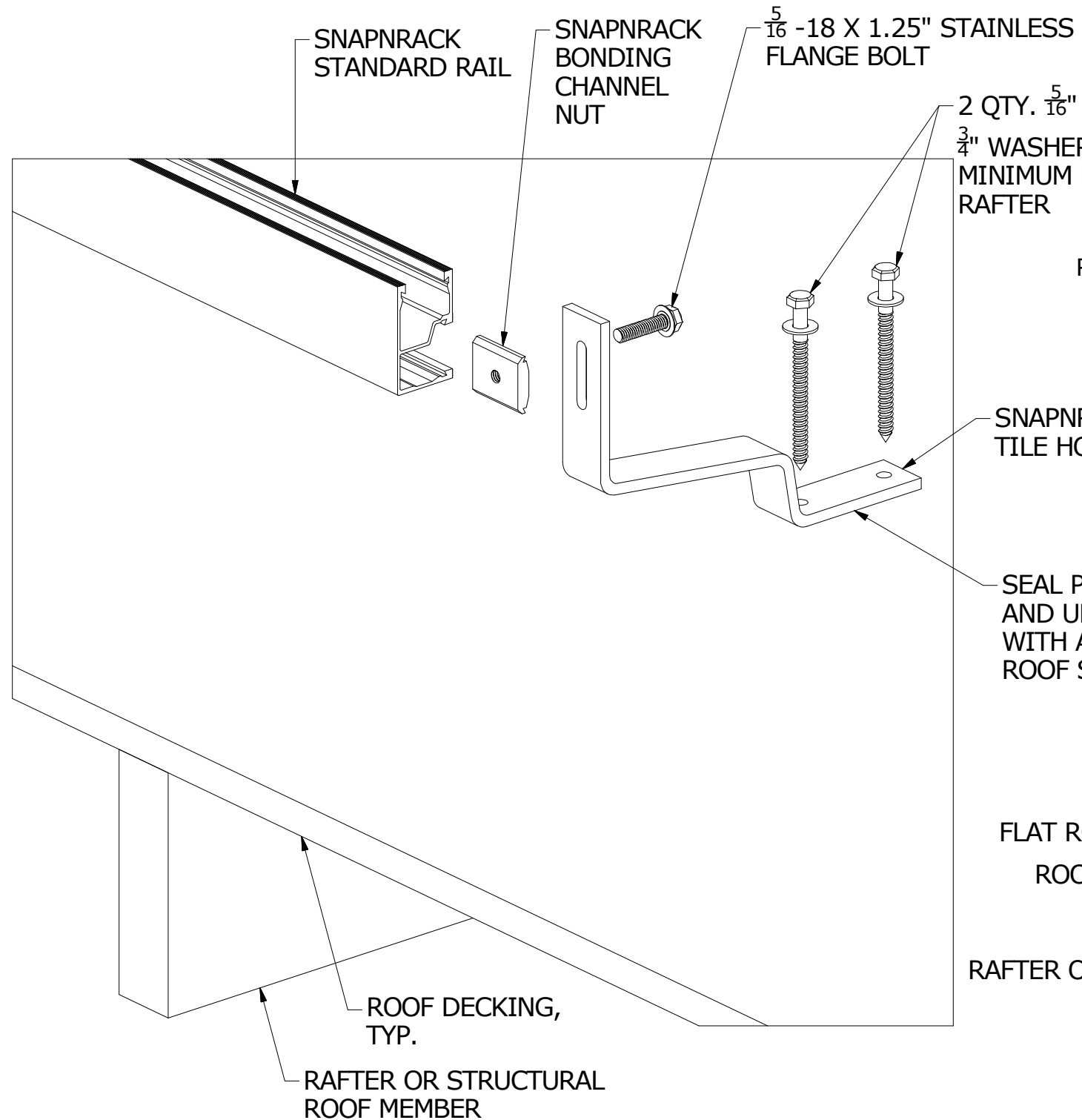
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NOTES:

- INSTALLATIONS OF SNAPNRACK TILE HOOKS ARE LIMITED TO A MAXIMUM WIND SPEED OF 120MPH (IBC2012) AND MAXIMUM ATTACHMENT SPAN OF 6FT.
- 5/16" LAG BOLTS MUST EMBED 2.5" INTO ROOF STRUCTURAL MEMBERS / RAFTERS
- TORQUE ALL 5/16" HARDWARE TO 10-16 FT-LBS
- RAILS CAN MOUNT TO EITHER SIDE OF TILE HOOK (UPSLOPE VS. DOWNSLOPE)
- RAILS CAN BE LEVELED UP TO 1.25" USING THE SLOT IN THE TILE HOOK

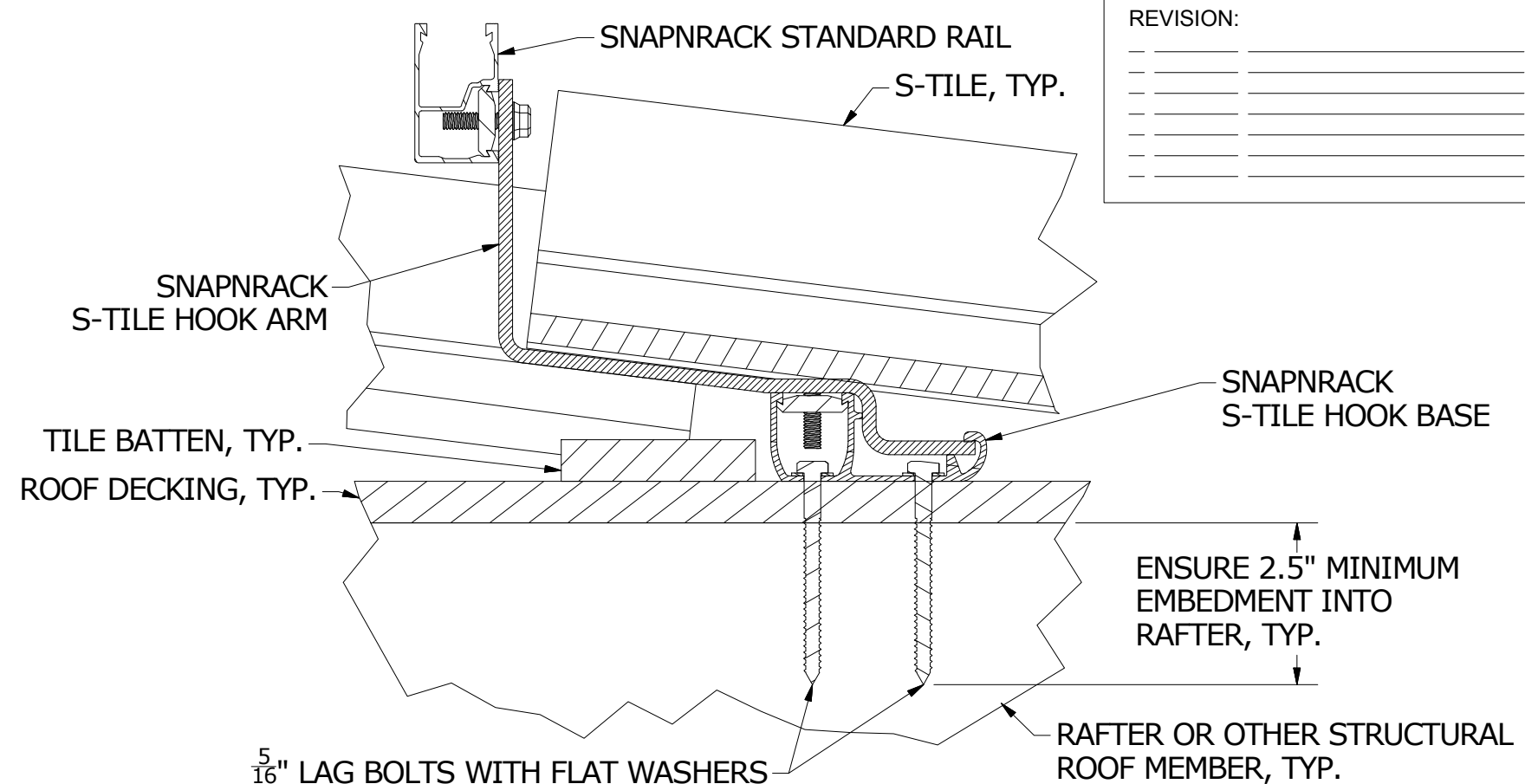
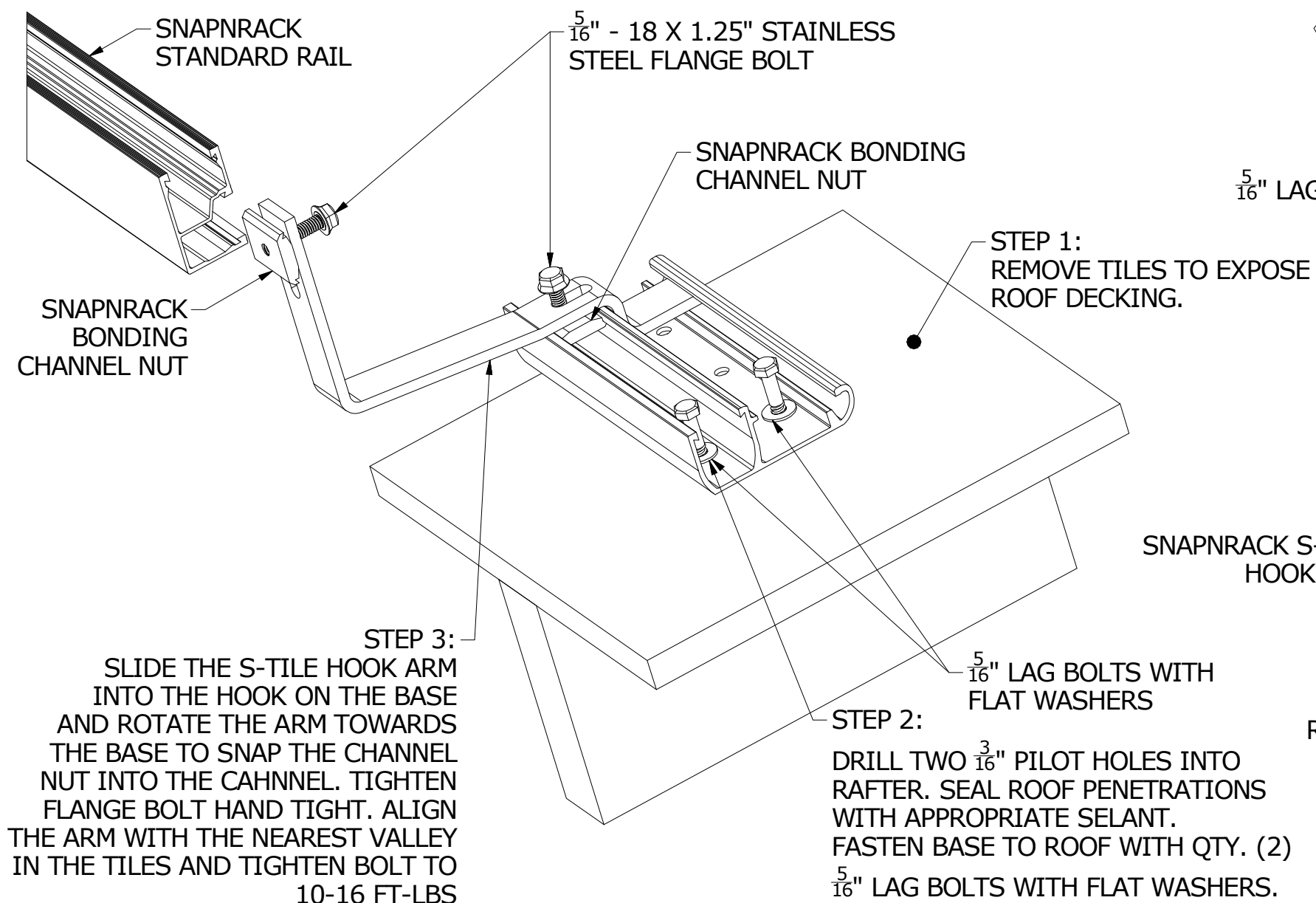
REVISION:



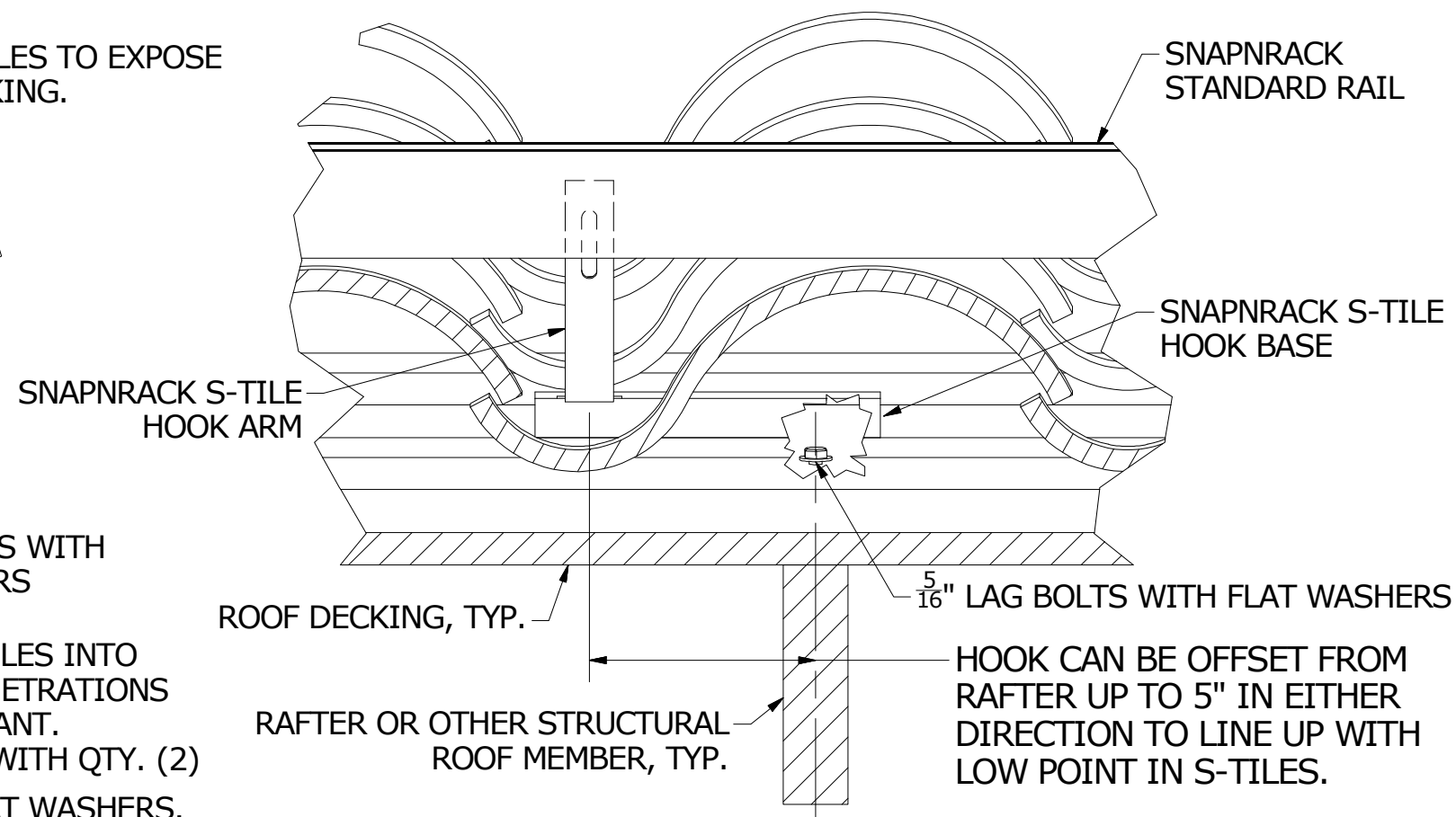
COMPLETED INSTALLATION

THE SNAPNRACK S TILE ROOF HOOK OFFERS A QUICK, COST EFFECTIVE SOLUTION FOR MOUNTING ON S-TILE ROOFTOPS. THE SIMPLE DESIGN HAS BEEN OPTIMIZED FOR SNAPNRACK AND THE HOOKS ARE BUILT INTO OUR SYSTEM ENGINEERING AND UL LISTING. ONCE A TILE HAS BEEN REMOVED, THE BASE PIECE IS BOLTED DOWN TO A RAFTER. ONCE THE BASE IS IN PLACE, THE TILE HOOK ARM IS INSERTED INTO THE HOOK FEATURE IN THE BASE AND ROTATED DOWN TOWARDS THE TRACK SO THAT THE BONDING CHANNEL NUT SNAPS INTO THE CHANNEL. ONCE THE ARM IS ATTACHED TO THE BASE, SLIDE IT ON THE BASE SO THAT IT ALIGNS WITH A LOW POINT IN THE S-TILES, SIMPLY TIGHTEN IT IN PLACE AND REPLACE THE TILE THAT WAS REMOVED. WITH SOME TYPES OF TILE YOU MAY WANT TO DO A LITTLE GRINDING TO HELP EVERYTHING FIT BACK TOGETHER SMOOTHLY, BUT IN MANY CASES NO GRINDING IS REQUIRED.

INSTALLATIONS OF SNAPNRACK S TILE ROOF HOOKS ARE LIMITED TO A MAXIMUM WIND SPEED OF 120MPH (IBC 2012) AND A MAXIMUM ATTACHMENT SPAN OF 6FT.



REVISION:



SnapNrack
PV Mounting Systems

MAINSTREAM ENERGY CORP.
775 FIERO LANE, SUITE 200 • SAN LUIS OBISPO, CA 93401 USA
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DESIGNER: G McPheeters

DRAFTER: D Ryan

APPROVED BY: _____

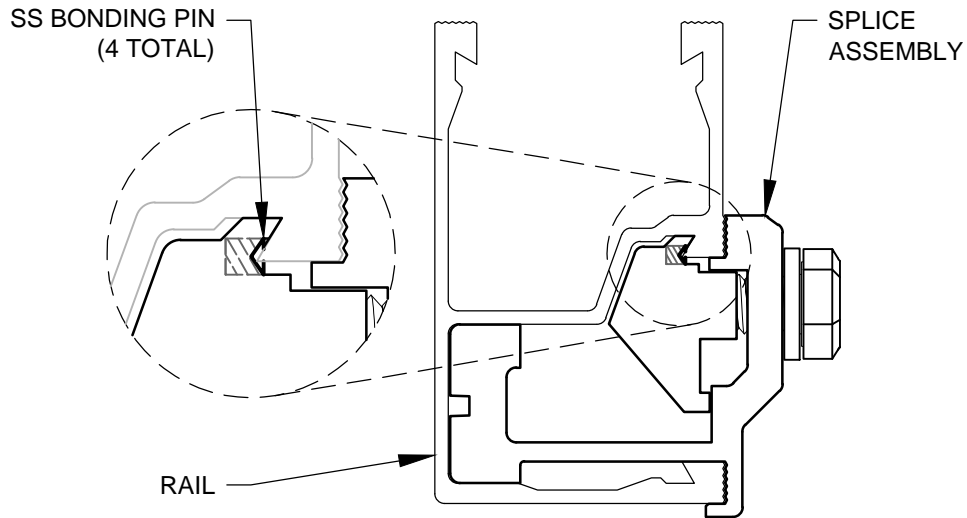
SCALE: DNS

DATE: 031613

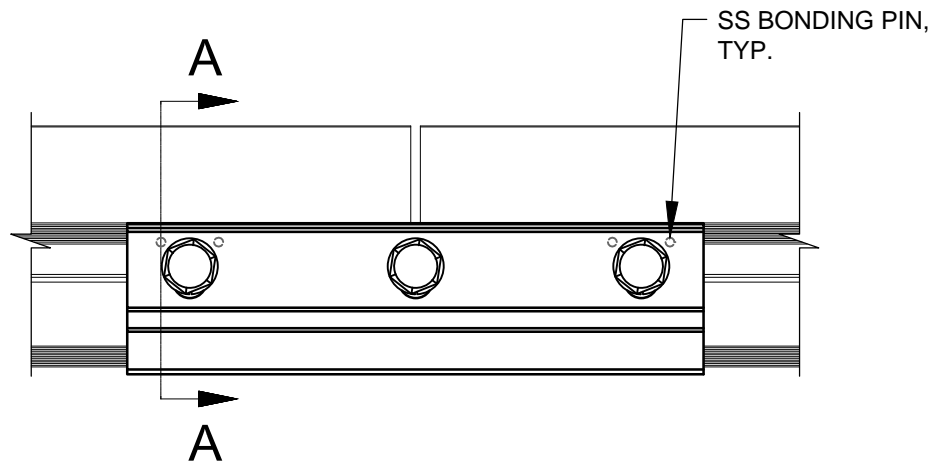
PART NUMBER: S100 PEN D14

DESCRIPTION: SERIES 100 PEN DETAIL 14, S-TILE HOOK

REV **F**



SECTION A-A



NOTE:

1. ALL HARDWARE IS INCLUDED FROM MANUFACTURER
2. ALL SPLICES SHOULD HAVE 3 BOLTS TIGHTENED TO THE PROPER TORQUE (NEVER LEAVE OUT ANY BOLTS IN ANY SPLICE)
 - SILVER 5/16" HARDWARE = 10-16 FT-LBS
 - BLACK 5/16" HARDWARE = 8-10 FT-LBS
3. GAP RAILS 0.1"-0.2" AT ALL SPLICES

ASSEMBLER:

INSPECTOR:

DESCRIPTION:
**SNAPRACK STANDARD RAIL
SPLICE BONDING DETAIL**

DRAWN BY: MIKE WATKINS
 APPROVED BY: CODY NORMAN
 REVISION:
 G 1/11/2016 NEW ITEM

SnapNrack™
Solar Mounting Solutions

Sunrun South LLC
 595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
 PHONE (415) 580-6900 • FAX (415) 580-6902

PART NUMBER:

SCALE:
DNS

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DESCRIPTION:
SNAPNRACK, ARRAY SKIRT, 162"

PART NUMBER(S):
232-01259

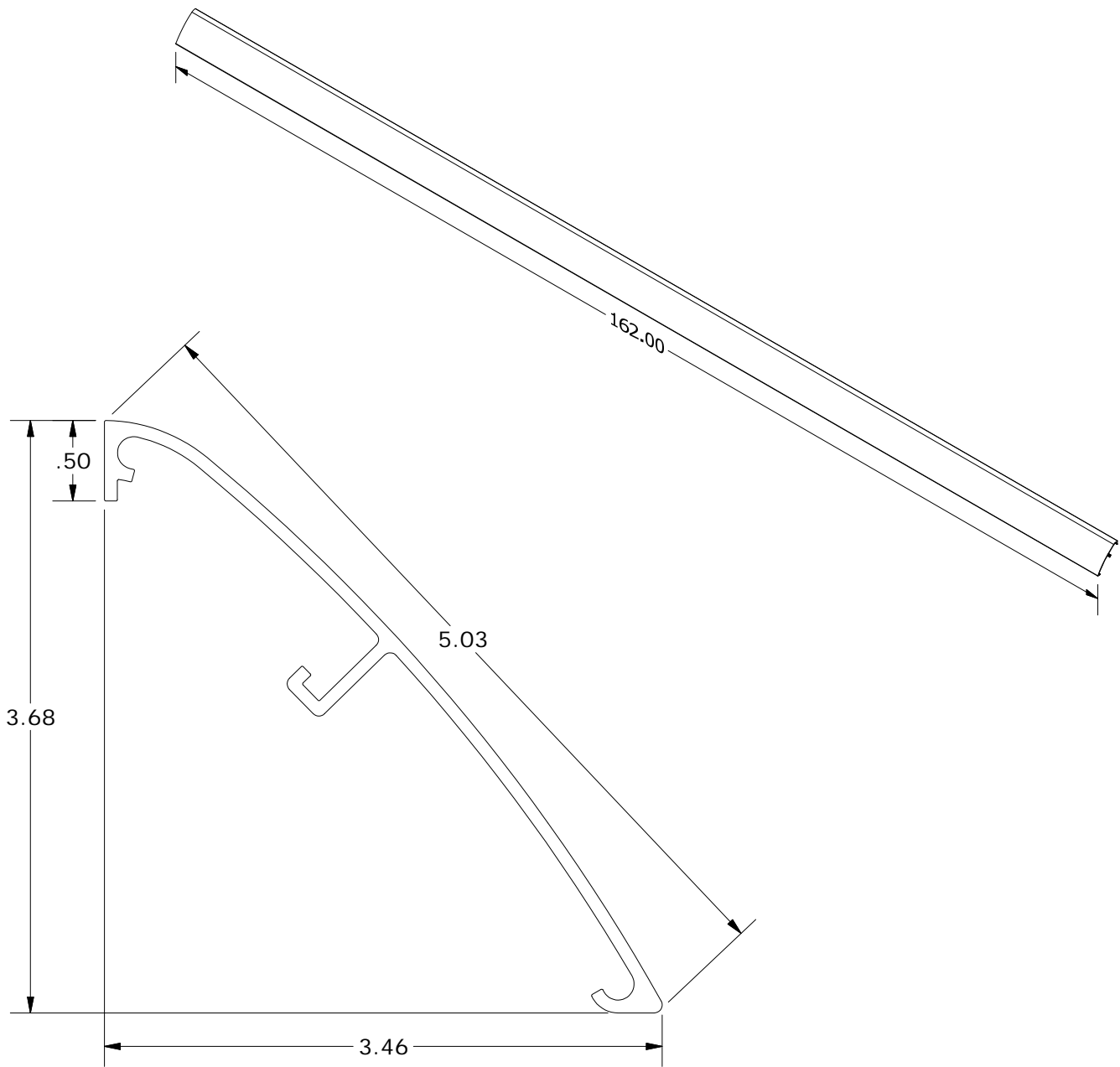
DRAWN BY:
 D.Ryan

REVISION:
A

SnapNrack™
 Solar Mounting Solutions

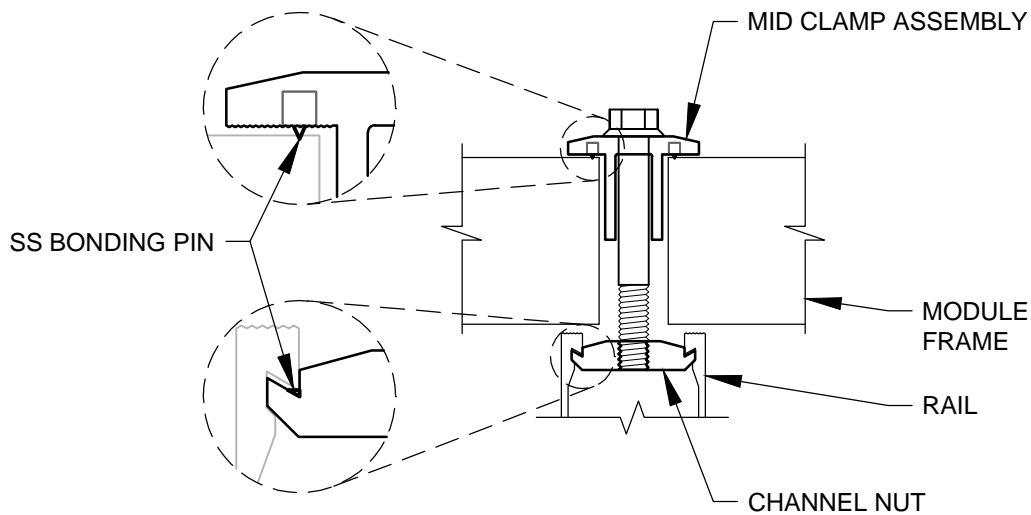
595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
 PHONE (415) 580-6900 • FAX (415) 580-6902

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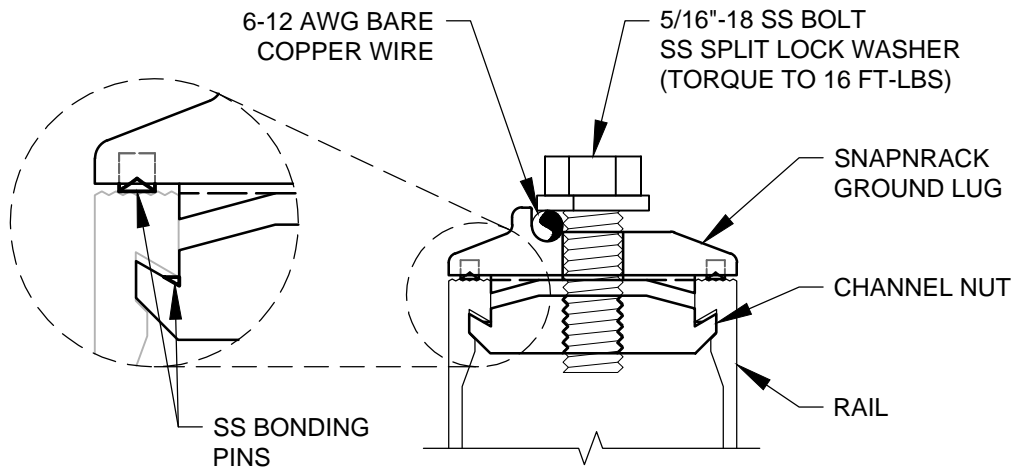
ALL DIMENSIONS IN INCHES

MATERIALS:	6000 SERIES ALUMINUM	OPTIONS:
DESIGN LOAD (LBS):	N/A	BLACK ANODIZED
ULTIMATE LOAD (LBS):	N/A	
TORQUE SPECIFICATION:	N/A LB-FT	
CERTIFICATION:	UL 2703, FILE E359313	
WEIGHT (LBS):	9.00	



NOTE:

1. ADJUSTABLE END CLAMPS USE SAME BONDING PIN DESIGN TO BOND MODULES TO RAIL



NOTE:

1. ALL HARDWARE IS INCLUDED FROM MANUFACTURER
2. A MINIMUM OF ONE GROUND LUG IS TO BE INSTALLED ON EVERY CONTINUOUS ROW OF MODULES
3. GROUND LUG MAY BE INSTALLED IN EITHER RAIL CHANNEL
4. GROUND LUG MAY BE INSTALLED SO GROUND WIRE IS PARALLEL OR PERPENDICULAR TO RAIL
5. ENSURE SPLIT LOCK WASHER IS INSTALLED ON TOP OF COPPER WIRE

ASSEMBLER:

INSPECTOR:

DESCRIPTION:
**SNAPNRACK MOUNTING SYSTEM
GROUNDING DETAILS**

DRAWN BY: MIKE WATKINS
APPROVED BY: CODY NORMAN
REVISION:
G 1/11/2016 NEW ITEM



Sunrun South LLC
595 MARKET STREET, 29TH FLOOR • SAN FRANCISCO, CA 94105 USA
PHONE (415) 580-6900 • FAX (415) 580-6902

PART NUMBER:

SCALE:
DNS

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