



47177 Conrad Anderson Rd
Hammond, LA 70401

www.heckerridgetiles.com

800.248.4537

INSTALLATION MANUAL

FOR WOOD CONSTRUCTION

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9. LAP RIDGE TILE ASSEMBLY
10. LAP RIDGE TILE ROOF CONDITIONS & 3 WAY MITER DETAIL

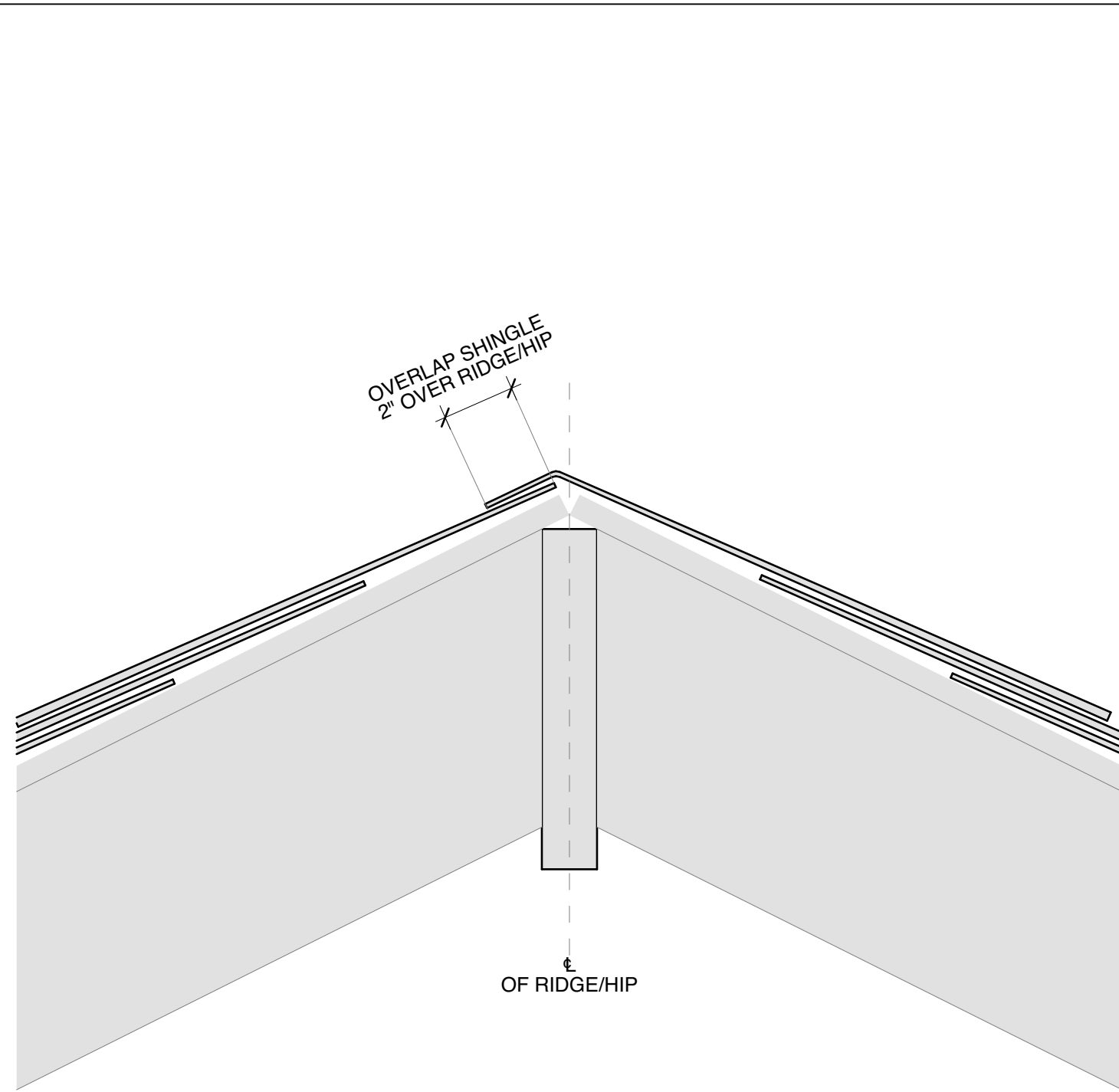


FIGURE 1

NOTE: CUT SHINGLES EVEN ON ONE SIDE OF THE HIP/RIDGE. LAP OTHER SIDE APPROX. 2" OVER AND NAIL OVERLAP SHINGLE EVERY 5" FROM BOTTOM TO TOP WITH ROOFING NAILS. (DO NOT LEAVE EXPOSED NAILS)

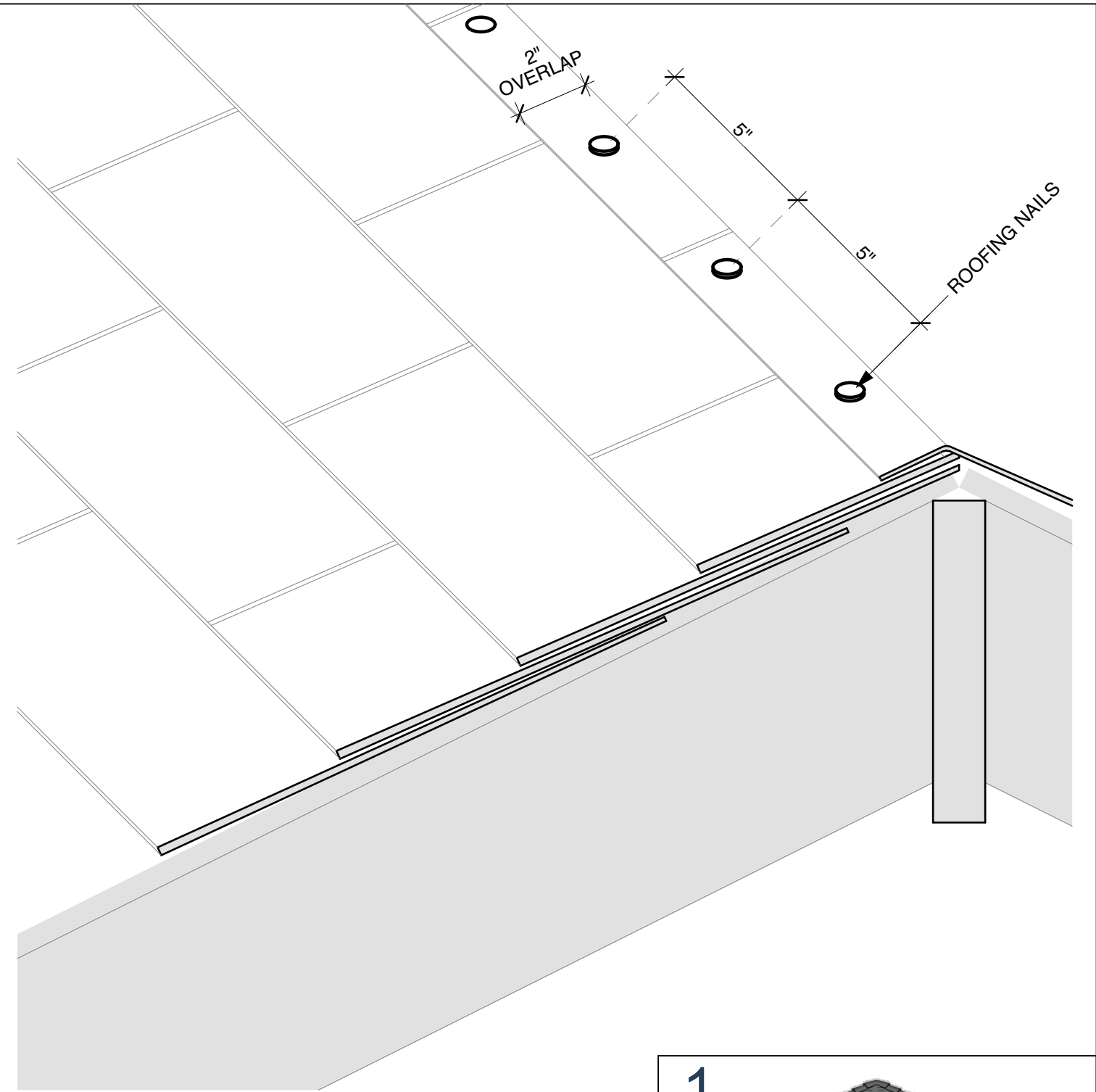


FIGURE 2

NOTE: FOR WOOD CONSTRUCTION ONLY

RIDGE TILE ASSEMBLY

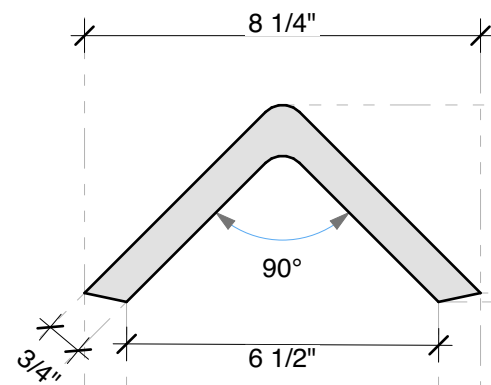
SHINGLE PREPARATION (TYPICAL)

1

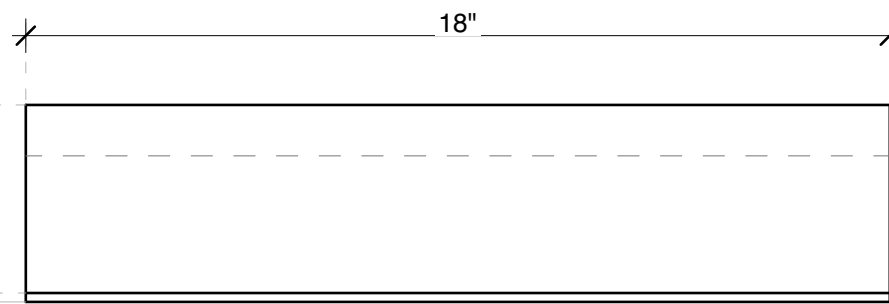


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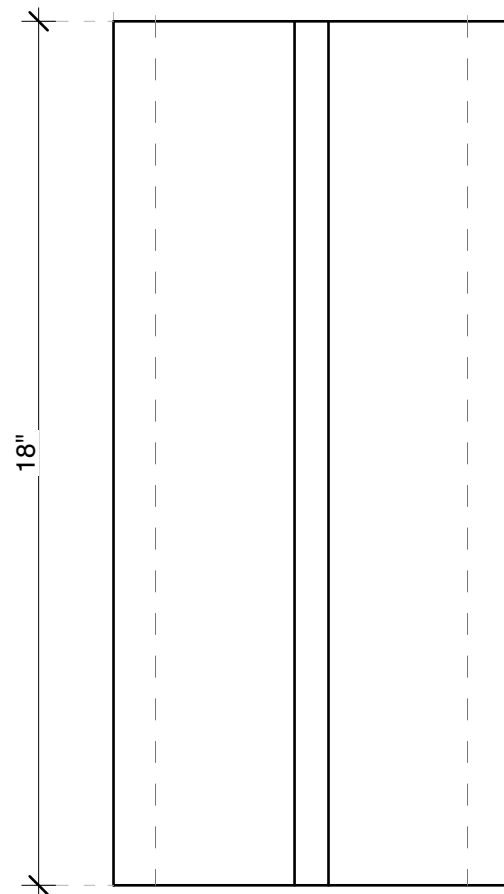
FRONT VIEW



SIDE VIEW



TOP VIEW



WEIGHT PER PIECE - 11.1 LB

MIN. ROOF SLOPE - 3:12

BASE TEXTURE: SMOOTH

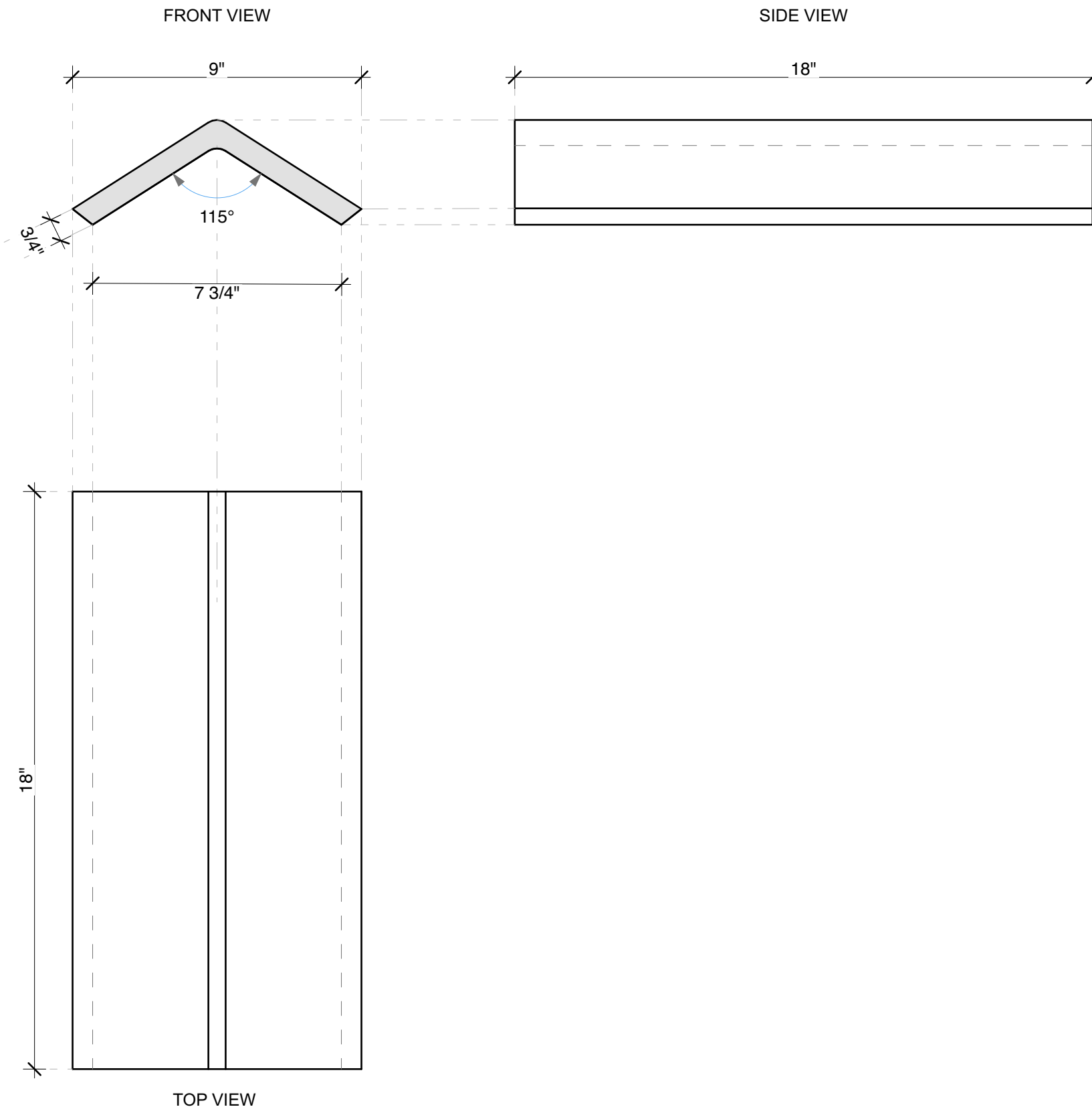
COLOR BLENDS - CHARCOAL, DARK BROWN, LIGHT BROWN, TERRACOTTA RED
MATERIAL: CONCRETE

"V" TILE 90°

2



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WEIGHT PER PIECE - 9.2 LB

MIN. ROOF SLOPE - 3:12

BASE TEXTURE: SMOOTH

COLOR BLENDS - CHARCOAL, DARK BROWN, LIGHT BROWN, TERRACOTTA RED
 MATERIAL: CONCRETE

"V" TILE 115°

3



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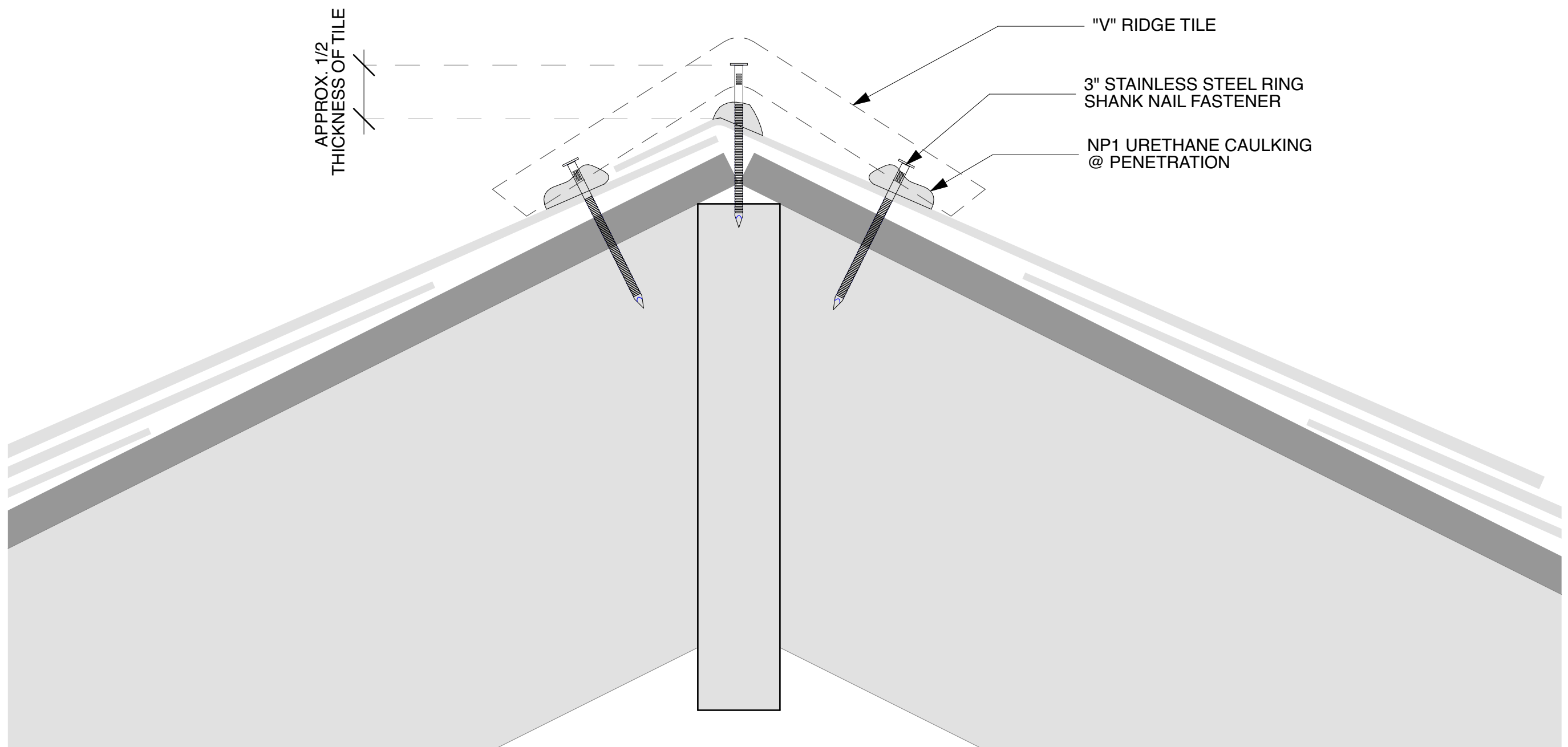


FIGURE 1

NOTE:

USE (3) STAINLESS STEEL RING SHANK NAILS W/ NP1 URETHANE CAULKING WHERE NAIL PENETRATES THE SHINGLE AND ROOF DECKING TO FASTEN TILES TO ROOF.

STAINLESS STEEL RING SHANK NAILS TO BE INSTALLED APPROX. HALF WAY THE THICKNESS OF THE TILE.

NOTE: FOR WOOD CONSTRUCTION ONLY

RIDGE TILE ASSEMBLY

"V" TILE FASTENER DETAIL

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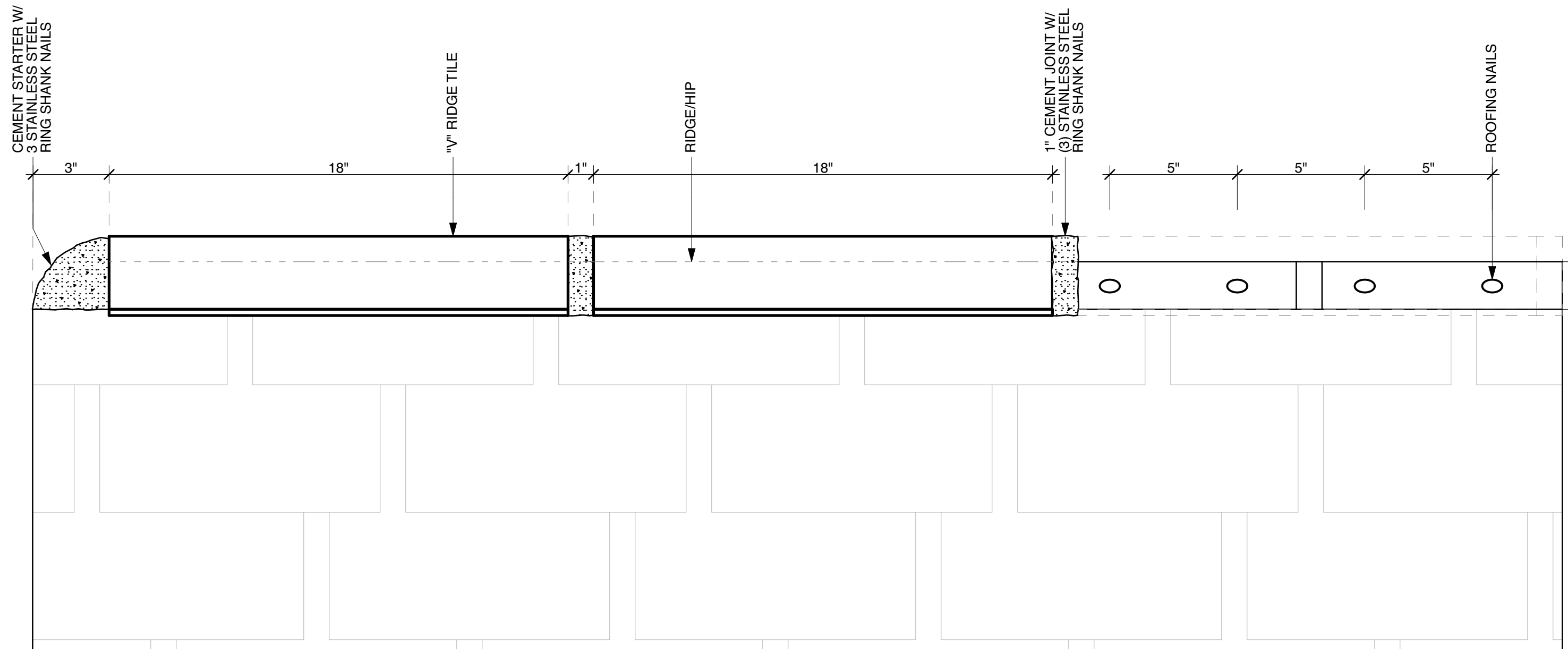


FIGURE 1

NOTE:

MIX TWO PARTS SAND WITH 1 PART PORTLAND TYPE 1-2 CEMENT TO BE USED @ JOINTS, MITER 3 WAYS, AND HIP/ GABLE STARTERS.

JOINTS TO BE APPROX. 1" WIDTH FROM THE TOP OF THE TILE DOWN TO THE SHINGLE ROOF.

CEMENT HIP/GABLE STARTER USING (3) 3" STAINLESS STEEL RING SHANK NAILS WITH NP1 URETHANE CAULKING @ ROOF PENETRATION.



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NOTE: DO NOT BLOCK WATER ON VALLEYS OR WALL FLASHINGS

RIDGE TILE ASSEMBLY

"V" TILE

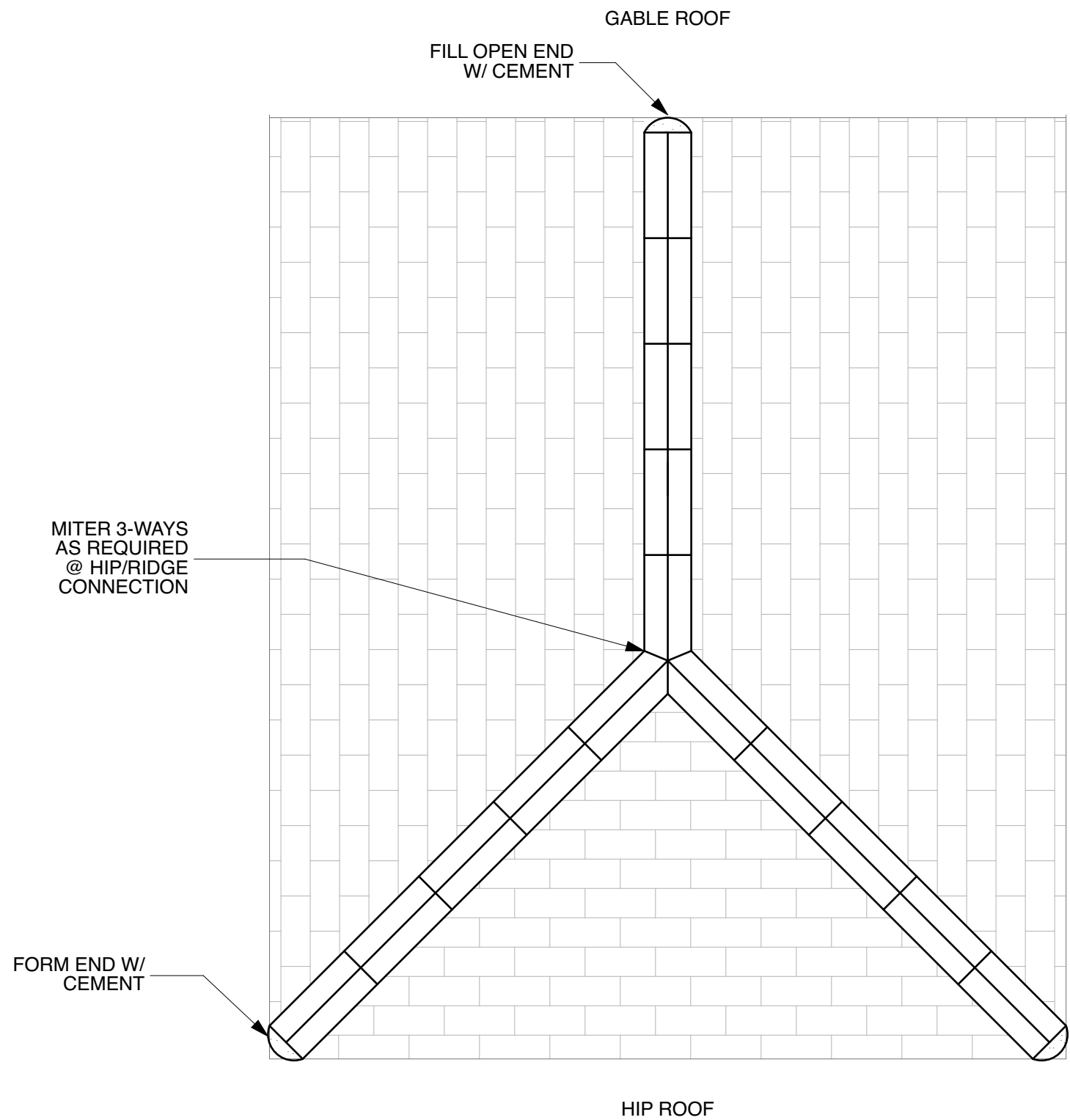
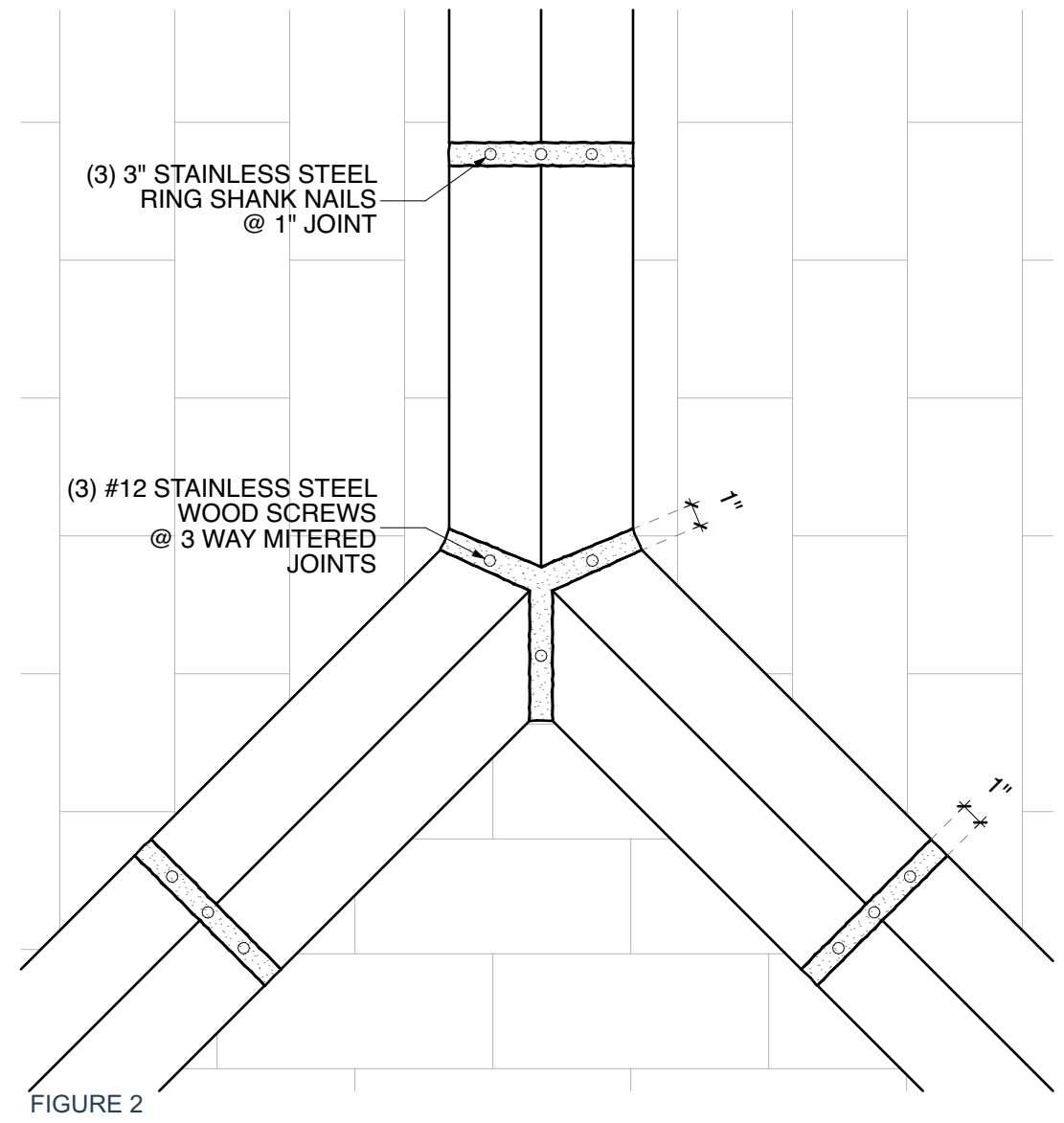


FIGURE 1



NOTE:

MITER 3 WAYS, AS NECESSARY, USING (3) # 12 STAINLESS STEEL WOOD SCREWS W/ NP1 URETHANE CAULKING @ ROOF PENETRATION.

USE (#) STAINLESS STEEL RING SHANK NAILS W/ NP1 URETHANE CAULKING @ ROOF PENETRATION

FILL 1" JOINTS W/ 2 PART SAND & 1 PART PORTLAND TYPE 1-2 CEMENT MIXTURE.

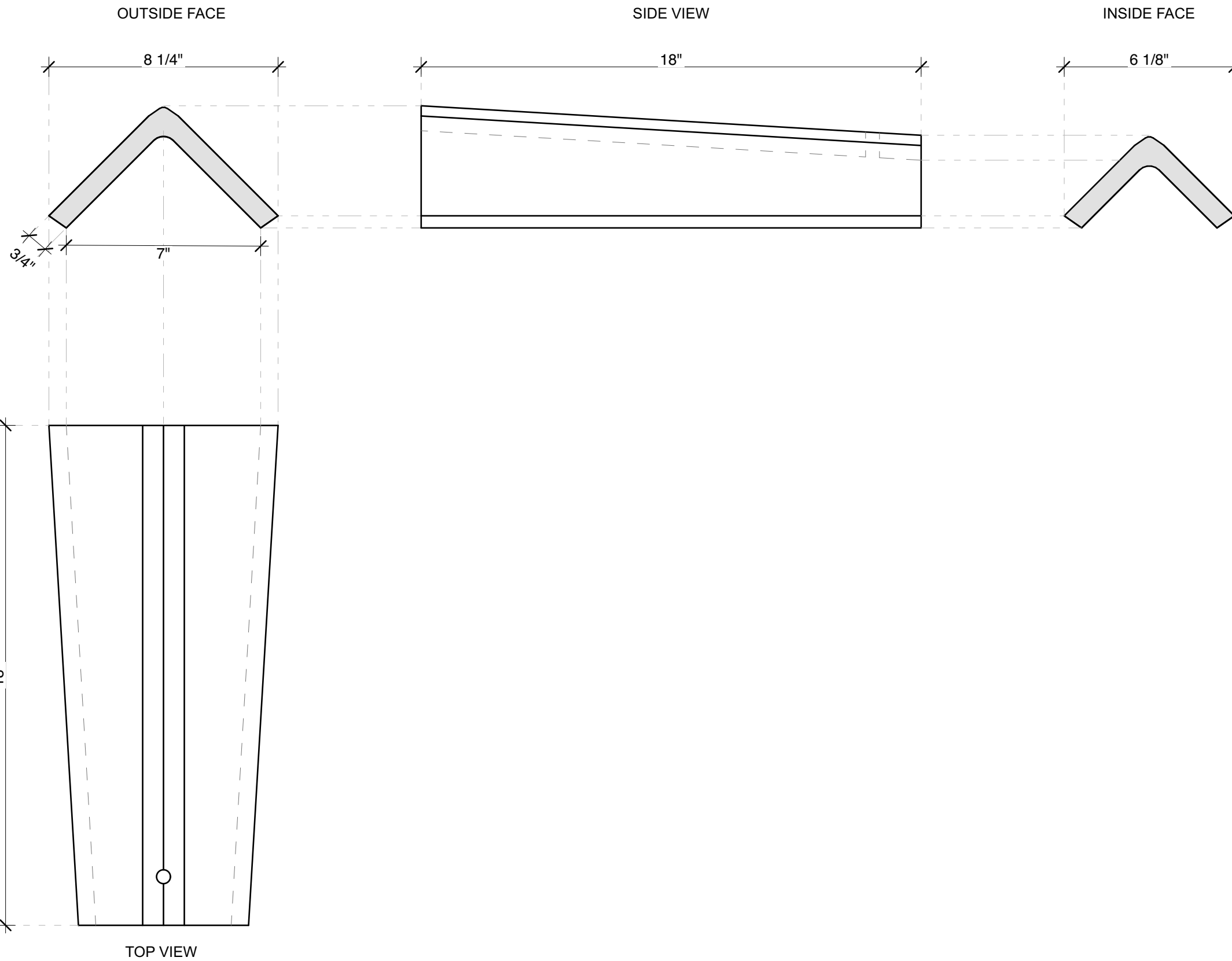
NOTE: FOR WOOD CONSTRUCTION ONLY

"V" RIDGE TILE - ROOF CONDITIONS & 3 WAY MITER DETAIL

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WEIGHT PER PIECE - 10.4 LB

MIN. ROOF SLOPE - 3:12

BASE TEXTURE: SMOOTH

COLOR BLENDS - CHARCOAL, DARK BROWN, LIGHT BROWN, TERRACOTTA RED
 MATERIAL: CONCRETE

LAP RIDGE TILE

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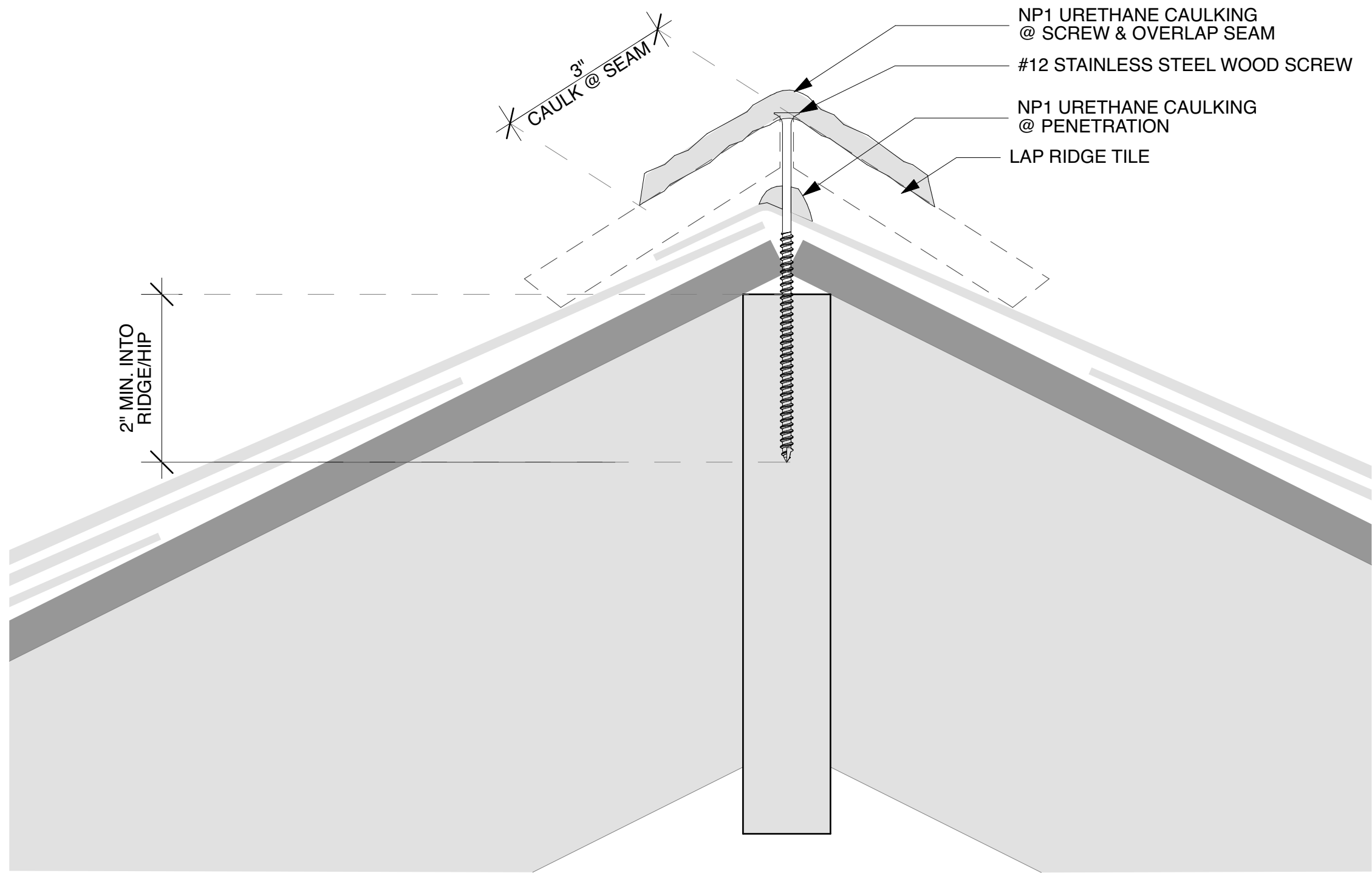


FIGURE 1

NOTE:
 USE #12 STAINLESS STEEL WOOD SCREWS TO PENETRATE HIP/RIDGE AT LEAST 2".
 NP1 URETHANE CAULKING TO BE APPLIED AT ROOF PENETRATION, ALONG THE SCREW, & TO SEAL THE OVERLAP SEAM.

NP1 URETHANE CAULKING @ SCREW & OVERLAP SEAM
 #12 STAINLESS STEEL WOOD SCREW
 NP1 URETHANE CAULKING @ PENETRATION
 LAP RIDGE TILE

2" MIN. INTO RIDGE/HIP

3" CAULK @ SEAM

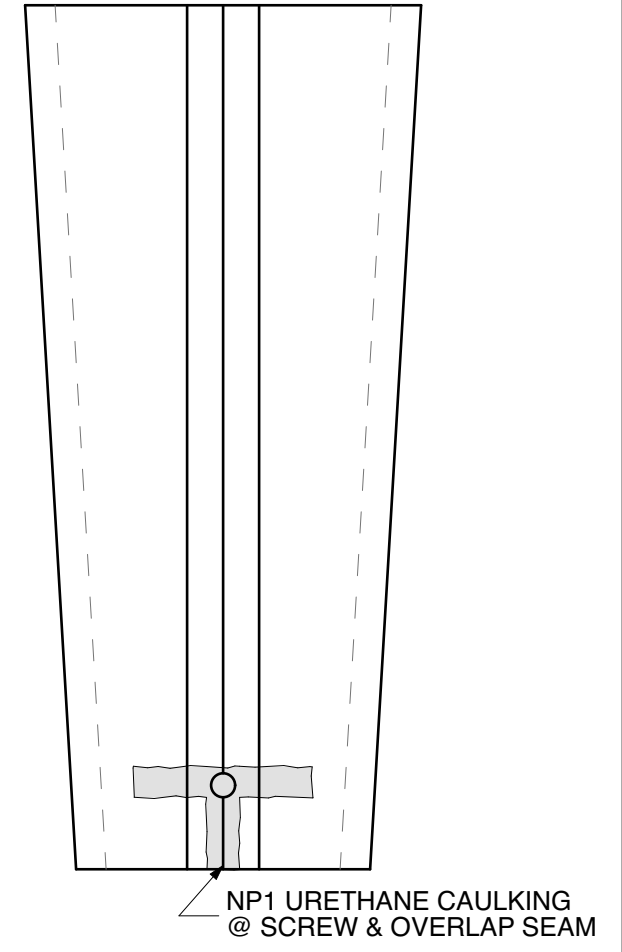


FIGURE 2

NP1 URETHANE CAULKING @ SCREW & OVERLAP SEAM

NOTE: FOR WOOD CONSTRUCTION ONLY

RIDGE TILE ASSEMBLY

LAP RIDGE TILE FASTENER DETAIL

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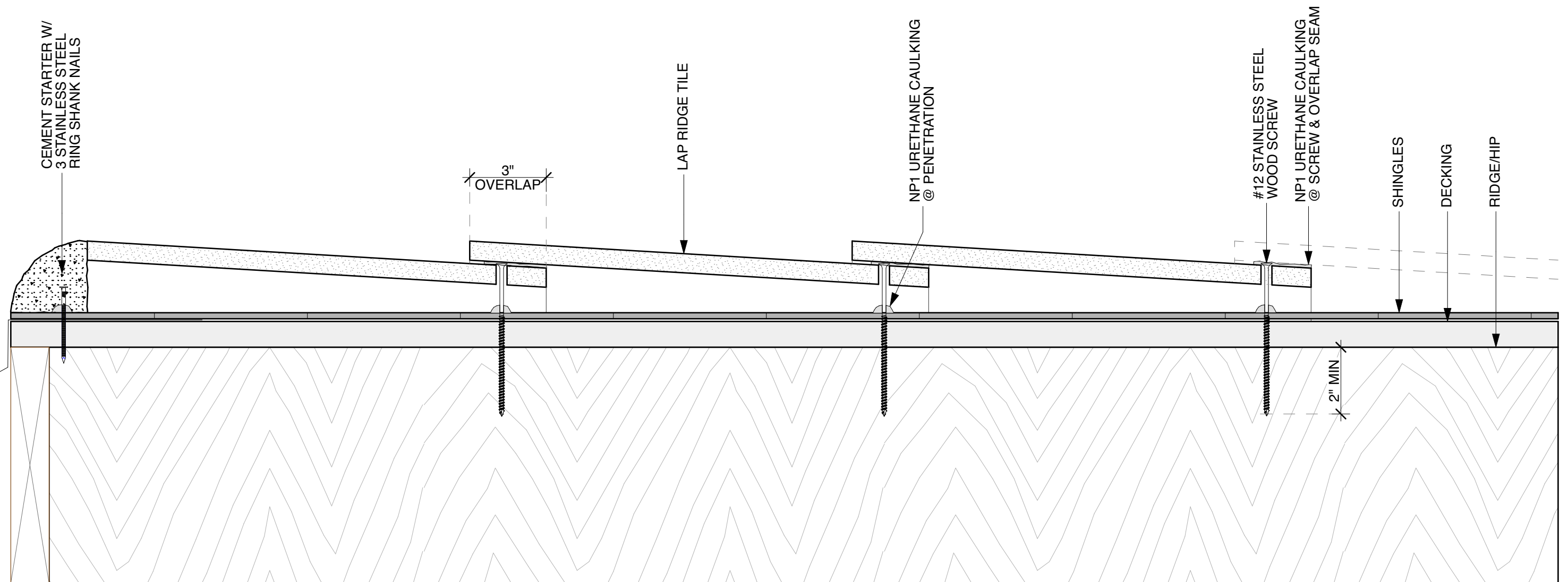


FIGURE 1

NOTE:

MIX TWO PARTS SAND WITH 1 PART PORTLAND TYPE 1-2 CEMENT TO BE USED @ 3 WAY MITRE AND HIP/GABLE STARTERS.

CEMENT HIP/GABLE STARTER USING (3) 3" STAINLESS STEEL RING SHANK NAILS WITH NP1 URETHANE CAULKING @ ROOF PENETRATION.

APPROX. 3" OVERLAP BETWEEN RIDGE TILES & APPLY NP1 URETHANE CAULKING @ SCREW AND OVERLAP SEAM TO SEAL.

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NOTE: DO NOT BLOCK WATER ON VALLEYS OR WALL FLASHINGS

RIDGE TILE ASSEMBLY

LAP RIDGE TILE

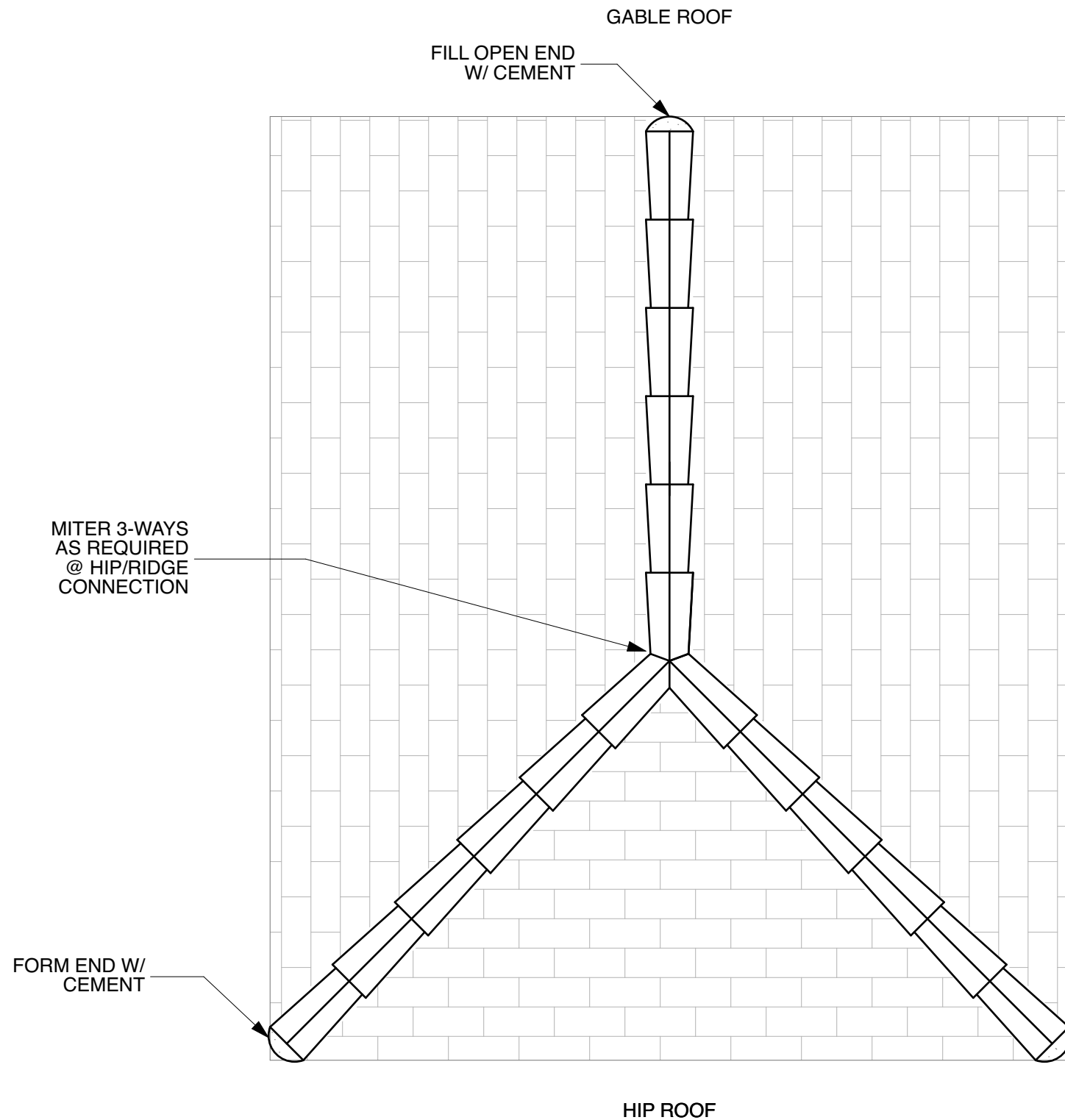


FIGURE 1

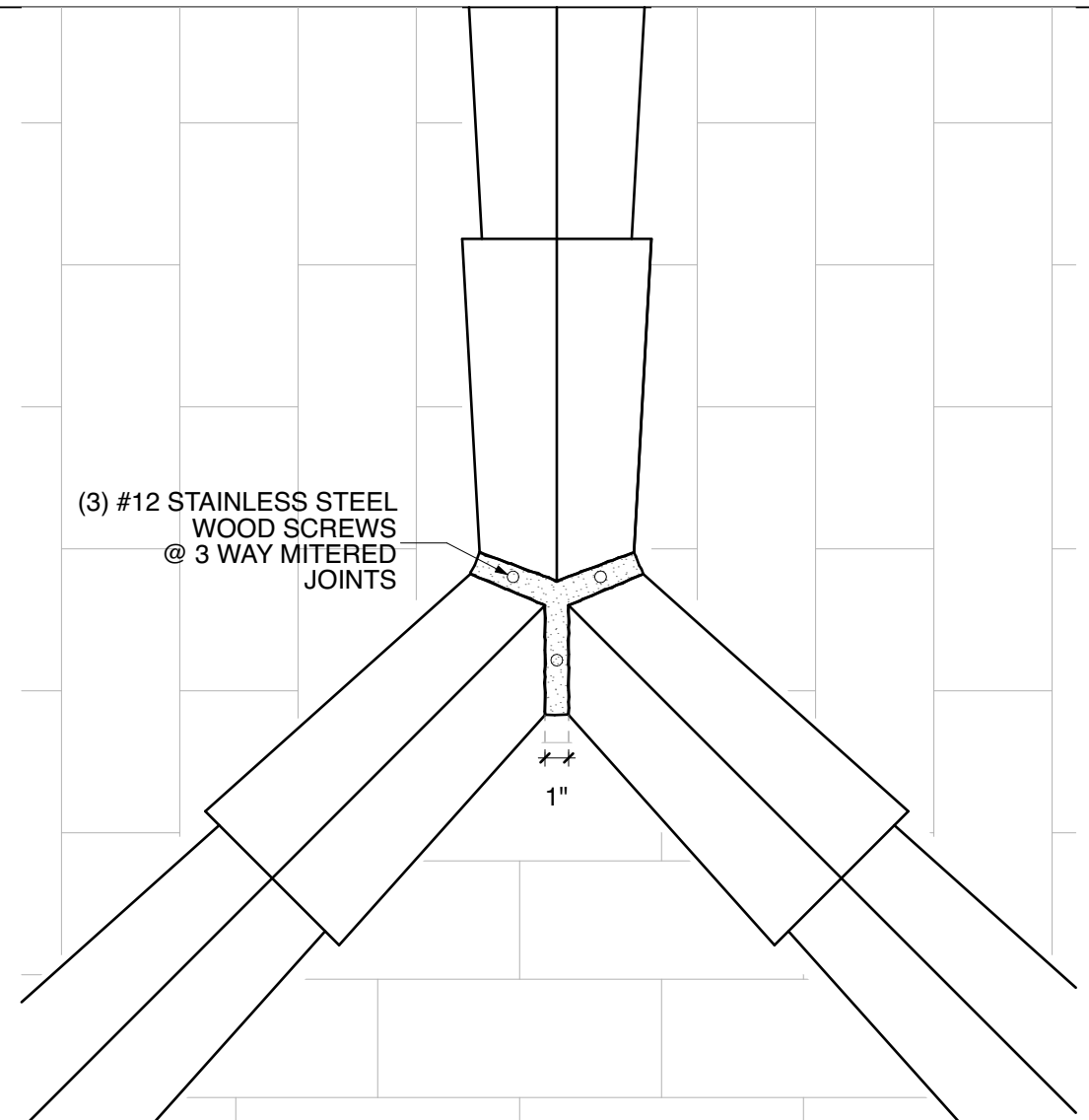


FIGURE 2

NOTE:

MITER 3 WAYS, AS NECESSARY, USING (3) # 12 STAINLESS STEEL WOOD SCREWS W/ NP1 URETHANE CAULKING @ ROOF PENETRATION.

FILL 1" JOINTS W/ 2 PART SAND & 1 PART PORTLAND TYPE 1-2 CEMENT MIXTURE.

NOTE: FOR WOOD CONSTRUCTION ONLY

LAP RIDGE TILE - ROOF CONDITIONS & 3 WAY MITER DETAIL

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NEMO | etc.

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ENGINEER

EVALUATE

TEST

CONSULT

Laboratory Report 4c-HRT-23-LSOTM-01.A.R2

Uplift Resistance Testing
of
Lap Ridge and V Ridge Tiles
in accordance with
SSTD 11-97

Prepared for: Hecker Ridge Tile, LLC

47177 Conrad Anderson Rd.

Hammond, LA 70401

c/o: John Hecker

Test Lab: NEMO | etc.

10 Mauney Court

Columbia, SC 29201

Date of Issuance: 2023-09-14

Revision 2: 2023-10-10

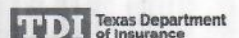
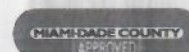
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TL-199



TL-689





LABORATORY REPORT

CLIENT OBJECTIVE

Establish wind uplift resistance performance of proprietary hip and ridge tile configurations.

TESTING SCOPE

Uplift resistance testing of Lap Ridge and V Ridge tiles in accordance with SBCCI-SSTD 11-99.

SAMPLES

INSULATION / COVERBOARDS	BY
V Ridge Tiles	Hecker Ridge Tiles
Lap Ridge Tiles	Hecker Ridge Tiles
ADHESIVE / PRIMERS	BY
MasterSeal NP 1	MBCC Group
APOC 705 Polyset RTA-1 Roof Tile Adhesive	APOC / ICP Construction
SAKRETE® Portland Cement Type I-II	SAKRETE
FASTENERS / PLATES	BY
#12 x 4-in. Stainless Steel wood screws	Generic
3-in. Stainless Steel ring shank nails	Generic

TEST PROGRAM

PROJECT		DURATION		PERSONNEL	
NUMBER:	4a-HRT-23-LSOTM-01	PSA SIGNED:	2023-04-18	NEMO:	C. Phillips
CLIENT REFERENCE:	N/A	MATERIALS RECEIVED:	2023-06-16		
MD NOTIFICATION:	N/A	TEST START:	2023-07-28	CLIENT (BUILDS):	M. Miller
TRACEABILITY		TEST END:	2023-08-10		
VIA:	Product Labels			CLIENT (TEST):	M. Miller
BY:	Client				
DATE:	N/A				

APPENDICES

- Appendix 1 Statement of Limitation
- Appendix 2 Decision Rule 1
- Appendix 3 Traceability
- Appendix 4 Tests, Standards, Equipment and Outsourced Log
- Appendix 5 Standard References

1. UPLIFT RESISTANCE:

1.1 Specimen Preparation:

Six (6) specimens are constructed by client-representatives for each build combination and witnessed by NEMO|etc. and client personnel. The panels are allowed a maximum cure-time of 28-days.

**Build #1:
Lap Ridge Tile with MasterSeal NP
1 Adhesive**

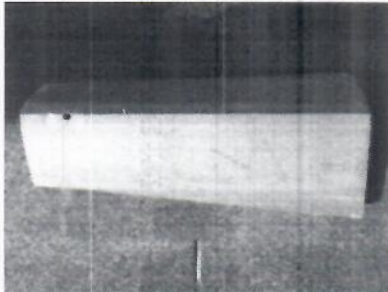


Fig. 1a. #12 x 4"-screw installed at tail (backmost hole) of Lap Ridge Tile



Fig. 1b. Two 6-in. long 0.25-in. wide beads of MasterSeal NP 1 at fastened tail of Lap Ridge Tile



Fig. 1c. Lap Ridge Tile finished installation

**Build #2:
Lap Ridge Tile with APOC 705 Polyset
RTA-1 Roof Tile Adhesive**

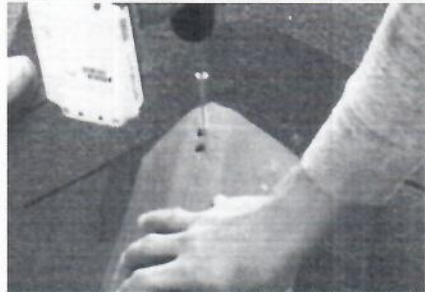


Fig. 2a. #12 x 4"-screw installed at tail (backmost hole) of Lap Ridge Tile

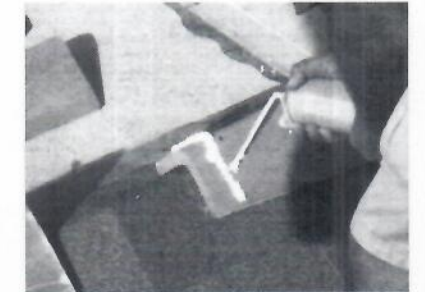


Fig. 2b. APOC 705 Polyset RTA-1 Roof Tile Adhesive applied to fastened tail of Lap Ridge Tile



Fig. 2c. Lap Ridge Tile finished installation

**Build #3:
V Ridge Tile with ring shank nails encased
in SAKRETE Portland Cement Type I-II**



Fig. 3a. V Ridge Tiles with three (3) ring shank nails adjacent to the tail

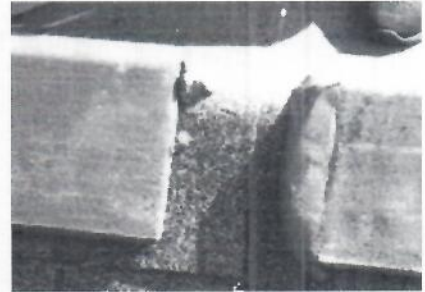


Fig. 3b. SAKRETE Portland Cement Type I-II applied to V Ridge Tiles, encasing the ring shank nails

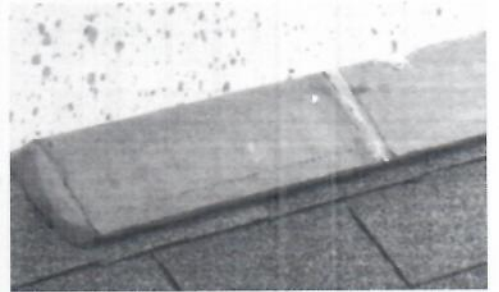


Fig. 3c. V Ridge Tile finished installation

1.2 **Procedure:**

Using a load application frame, load is applied to the epoxy bolt at a rate to cause a deflection of approximately 1-in. per min.

1.3 **Results:**

TABLE 1A: TEST RESULTS, BUILD #1 LAP RIDGE TILE WITH MASTERSEAL NP 1				
ATTACHMENT:	#12 x 4-in. Stainless Steel wood screw at back-most hold of tile, 3-in. head lap, embedded minimum 2 inches into the 2x6 ridge board/structural member.			
ADHESIVE RATES:	MasterSeal NP 1: Two (2) 0.25-in. wide x 6-in. long beads of across tile-width at the 3-in. headlap and one (1) 0.25-in. x 3-in. long bead longitudinally across the fastener location			
CURE TIME (DAYS):	14			
Specimen #	Failing Load, lbf	Mode of Failure	Tile Deflection, in.	Tile Rotation
1	431.5	Fastener Withdrawal	< 0.25	None
2	420.0	Fastener Withdrawal	< 0.25	None
3	350.0	Fastener Withdrawal	< 0.25	None
4	433.0	Fastener Withdrawal	< 0.25	None
5	335.5	Fracture Tile	< 0.25	None
6	357.5	Fracture Tile	< 0.25	None
Tile surface area, sq. ft			1.3	
Fastening system contribution to uplift, lbf			188.9	
Uplift resistance, psf			145.3	
Allowable overturning moment, ft-lbf			239	
Lowest failure overturning moment, ft-lbf			184	

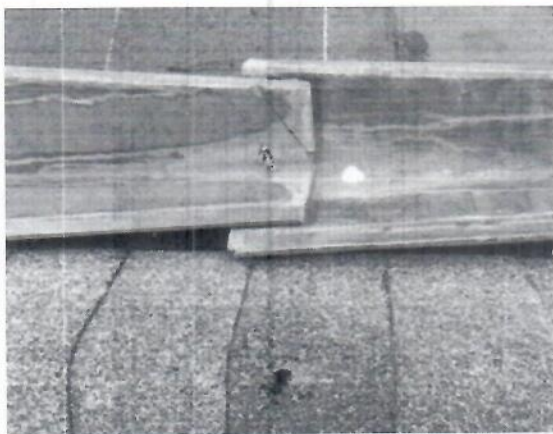


Fig. 4a. MOF, fastener withdrawal (typical)

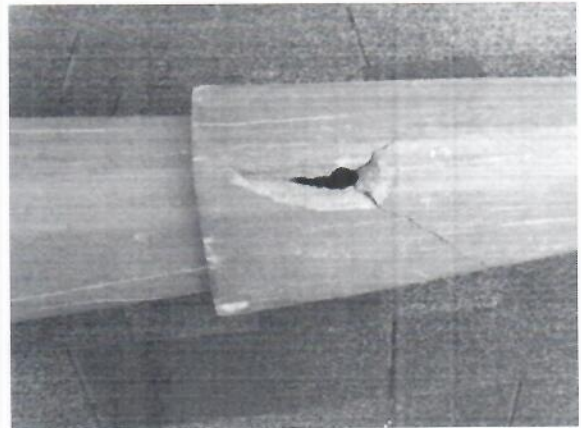


Fig. 4b. MOF, fracture tile (typical)

TABLE 1B: TEST RESULTS, BUILD #2
LAP RIDGE TILE WITH APOC 705 POLYSET RTA-1 ROOF TILE ADHESIVE

ATTACHMENT:	#12 x 4-in. Stainless Steel wood screw at back-most hold of tile, embedded minimum 2 inches into the 2x6 ridge board/structural member.			
ADHESIVE RATES:	APOC 705 Polyset RTA-1 Roof Tile Adhesive: One (1) ~1-in. wide x 6-in. long ribbon across tile-width at 3-in. headlap and one (1) ~1-in. wide x 2-in. long ribbon longitudinally over fastener location			
CURE TIME (DAYS):	14			
Specimen #	Failing Load, lbf	Mode of Failure	Tile Deflection, in.	Tile Rotation
1	461.0	Cohesive Foam	< 0.25	None
2	355.0	Fracture Tile	< 0.25	None
3	327.5	Loading Bolt Withdrawal	< 0.25	None
4	566.0	Fracture Tile	< 0.25	None
5	463.5	Cohesive Foam	< 0.25	None
6	379.0	Cohesive Foam	< 0.25	None
Tile surface area, sq. ft			1.3	
Fastening system contribution to uplift, lbf			207.6	
Uplift resistance, psf			159.7	
Allowable overturning moment, ft-lbf			235.0	
Lowest failure overturning moment, ft-lbf			179.6	

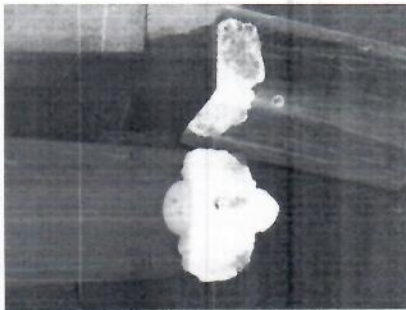


Fig. 5a. MOF, Cohesive foam (typical)

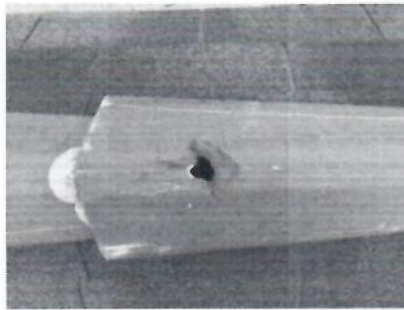


Fig. 5b. MOF, fracture tile (typical)

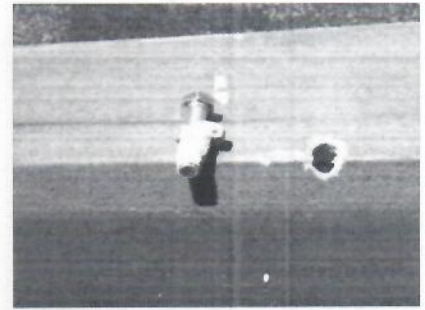


Fig. 5c. MOF, loading-bolt withdrawal (typical)

**TABLE 1C: TEST RESULTS, BUILD #3
 V RIDGE TILE WITH SAKRETE PORTLAND CEMENT TYPE I-II**

ATTACHMENT:	Three (3) ring Stainless Steel shank nails adjacent to tile-ends at each butt-joint			
ADHESIVE RATES:	SAKRETE Portland Cement Type I-II mortar joints at each butt-joint, encasing the ring shank nails in mortar			
CURE TIME (DAYS):	28			
Specimen #	Falling Load, lbf	Mode of Failure	Tile Deflection, in.	Tile Rotation
1	439.5	Fracture Tile	< 0.25	None
2	287.0	Fracture Tile	< 0.25	None
3	244.5	Fracture Tile	< 0.25	None
4	404.5	Fracture Tile	< 0.25	None
5	299.5	Fracture Tile	< 0.25	None
6	311.0	Fracture Tile	< 0.25	None
Tile surface area, sq. ft			1.5	
Fastening system contribution to uplift, lbf			160.9	
Uplift resistance, psf			107.2	
Allowable overturning moment, ft-lbf			223.8	
Lowest failure overturning moment, ft-lbf			133.1	

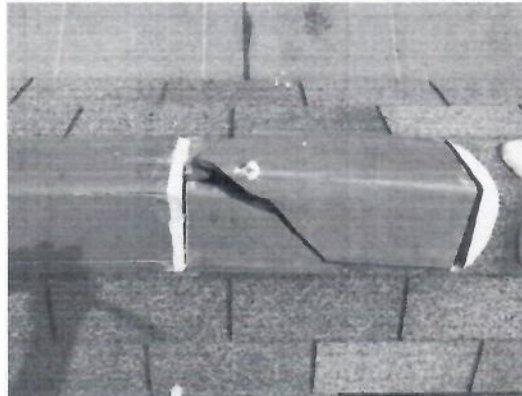


Fig. 6. MOF, fracture tile (typical)



2. SUMMARY:

NEMO|etc. has conducted uplift resistance testing of Lap Ridge Tile and V Ridge Tile in accordance with SBCCI-SSTD 11-99, resulting in the data presented herein.

Signed: C. E. Phillips
 Charles Phillips
 Section Lead, Large-Scale Tests

Signed: Robert Nieminen
 Robert Nieminen, P.E.
 President

REPORT HISTORY:

DATE	EVENT	NOTES	AUTHORIZATION
2023-08-28	DRAFT 1 issued	For client review	RN
2023-09-12	DRAFT 2 issued	For client review	RN
2023-09-12	DRAFT 3 issued	For client review	RN
2023-09-14	FINAL issued	After client review	RN
2023-09-20	DRAFT REVISION issued	Changed "#12 x 4-in. wood screws" to "#12 x 4-in. Stainless Steel wood screws" on page 2. Changed "3-in. ring shank nails" to "3-in. Stainless Steel ring shank nails"	RN
2023-09-20	REVISION issued	After client review	RN
2023-09-26	DRAFT REVISION2 issued	Added "embedded minimum 2 inches into the 2x6 ridge board/structural member" to build#1 and build#2 attachment details	RN
2023-10-10	FINAL REVISION issued	After client review	RN

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TRPT- 0001

REV H

REVISION DATE: 2023-08-01

RELEASED BY: MDA

-END OF REPORT-

APPENDIX 1: STATEMENT OF LIMITATION

The results presented are applicable solely to the products tested herein.

APPENDIX 2: DECISION RULE 1

All results reported to the client reflect observed values without incorporating measurement uncertainty. Determination of conformity to specifications will depend on acceptance limits, where results will be declared to pass if within the limits, and fail if outside the limits.

APPENDIX 3: TRACEABILITY

Product traceability for component tests is facilitated by certification mark, third-party random sampling, or signed Declaration of Manufacturing Location (DML) statement from the client. Third-party random sampling is accepted if undertaken by an ISO/IEC 10720 or ISO/IEC 10725 accredited entity which is independent of the manufacturer and the client. If conducted by NEMO|etc., third-party random sampling is conducted per the sampling plan detailed in SOP-0005, and in accordance with ICC-ES AC85.

APPENDIX 4: TESTS, STANDARDS, EQUIPMENT AND OUTSOURCED LOG

PROPERTY	STANDARD	DESCRIPTION	TEST EQUIPMENT	CALIBRATION	
				ASSET #	PRE-TEST
Static uplift/ Overturning moment	SBCCI-SSTD 11-99	Dynalink Load application frame	0606	2023-04-07	2023-04-07
			0667	-	-

APPENDIX 5: STANDARD REFERENCES

SBCCI-SSTD 11-99 – SBCCI Test Standard for Determining Wind Resistance of Concrete or Clay Roof Tiles