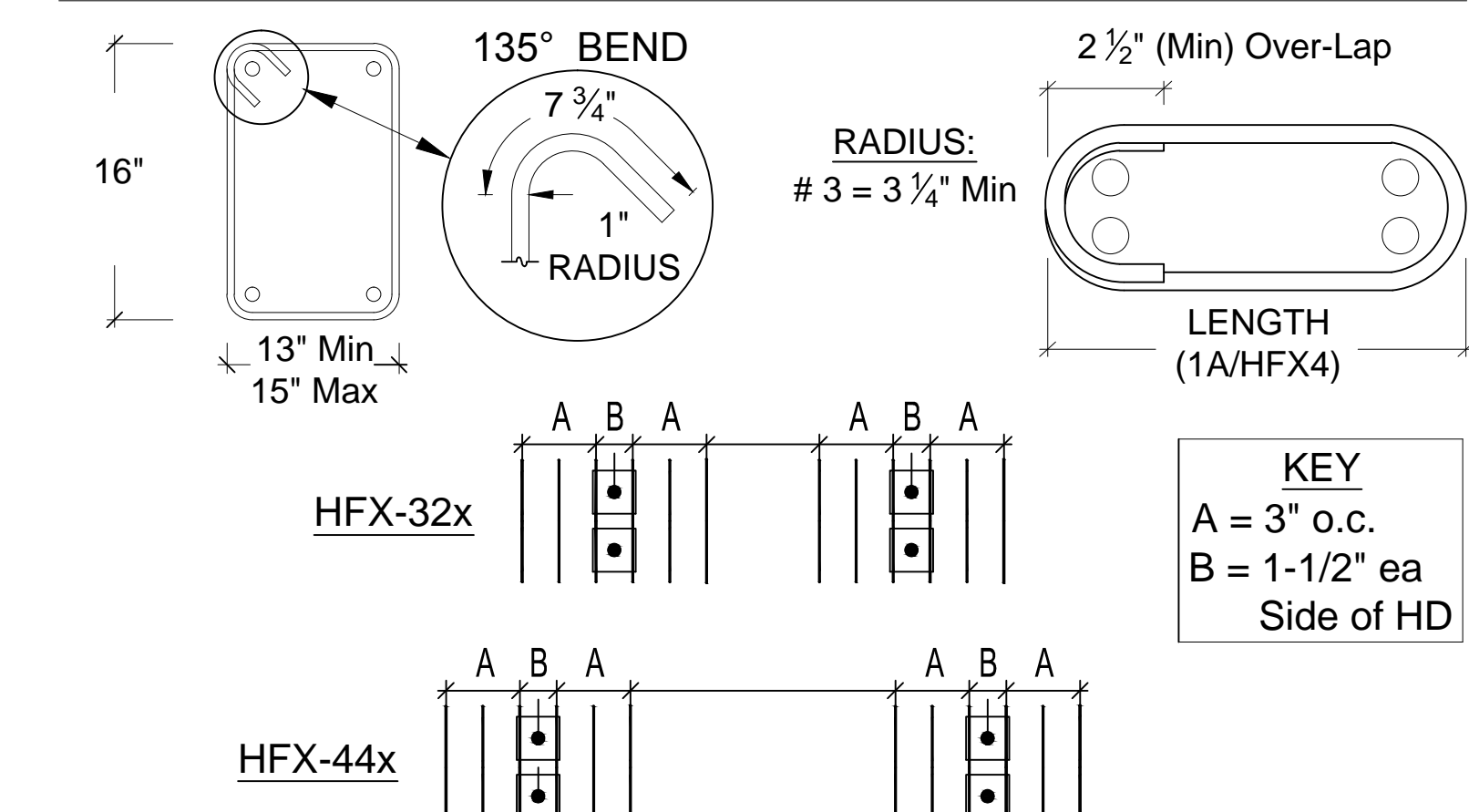
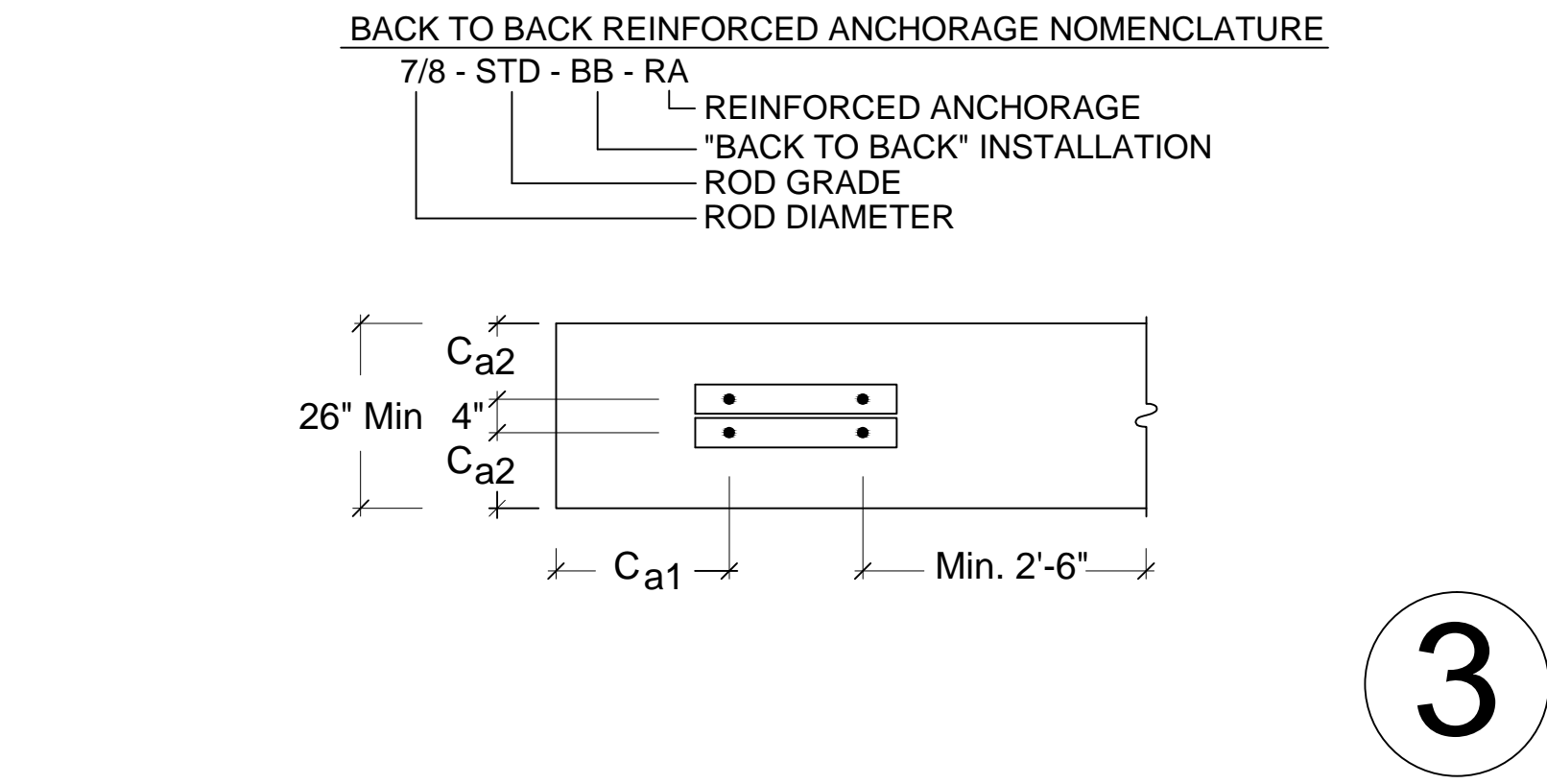
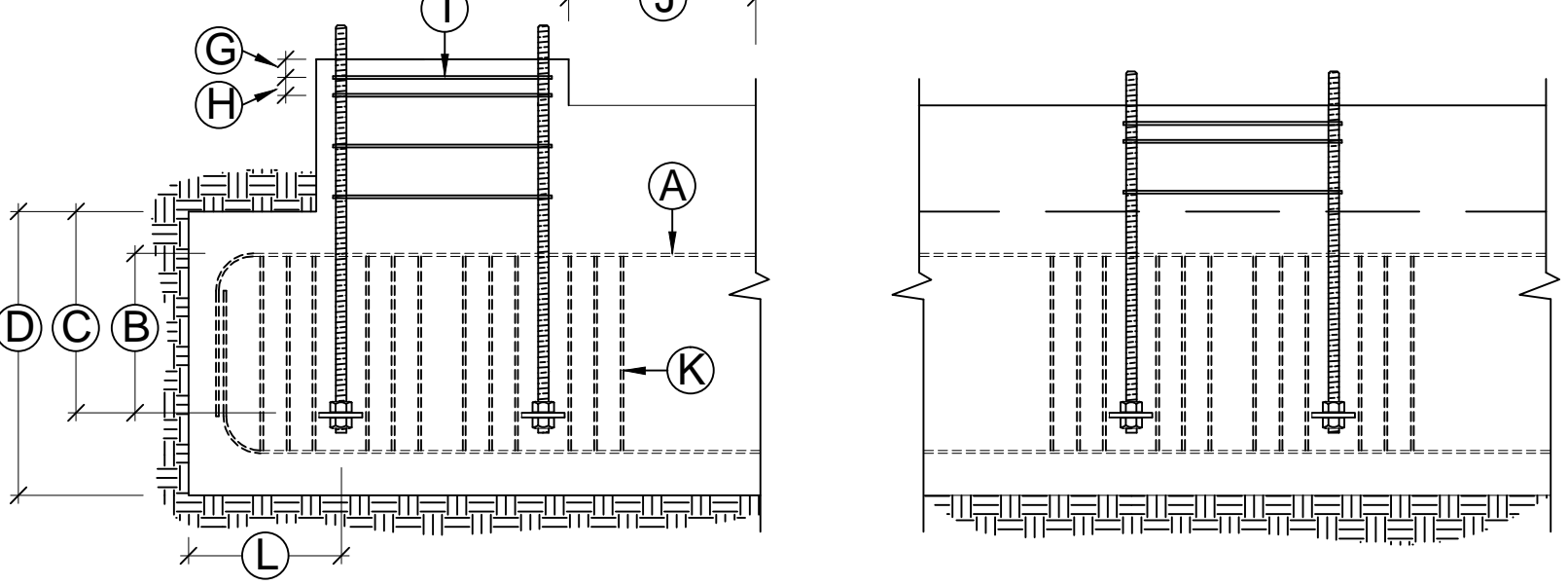
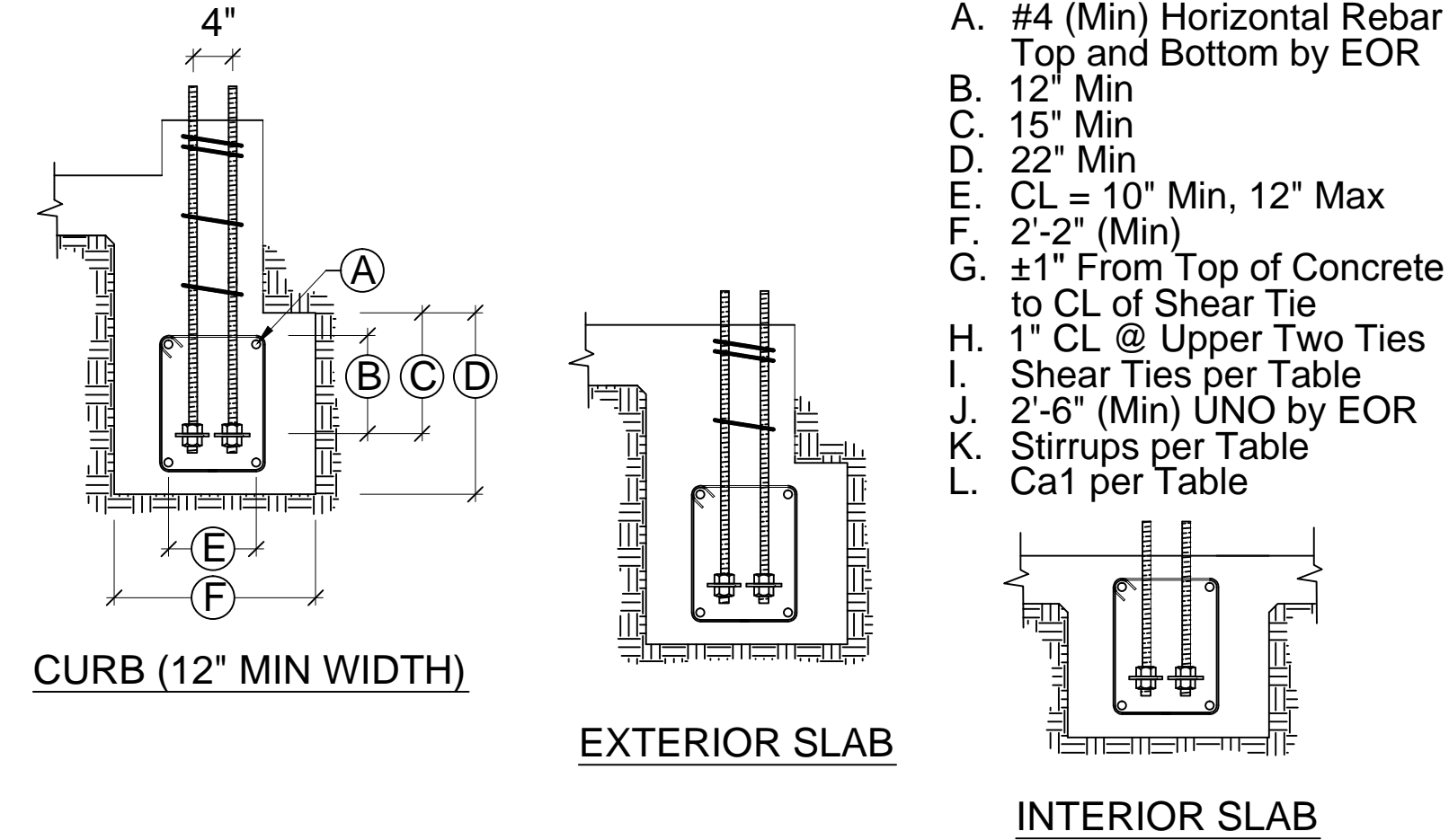


BACK TO BACK REINFORCED ANCHORAGE (BB-RA)

Model	Brace Frame Height	Anchorage <sup>1</sup>	Rod Dia (in)	Rod Grade <sup>2,3</sup>	le <sup>4</sup> (in)	Ca1 <sup>5</sup> (in)	Ca2 <sup>6</sup> (in)	Stirrups <sup>9</sup> (in)	Shear <sup>7</sup> Ties
HFX-32x	8' - 13'	1-1/8-STD-BB-RA	7/8	STD	15	23-3/4	11	12 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-BB-RA		HS					
HFX-44x		1-1/8-STD-BB-RA		STD					
		1-1/8-HS-BB-RA		HS					



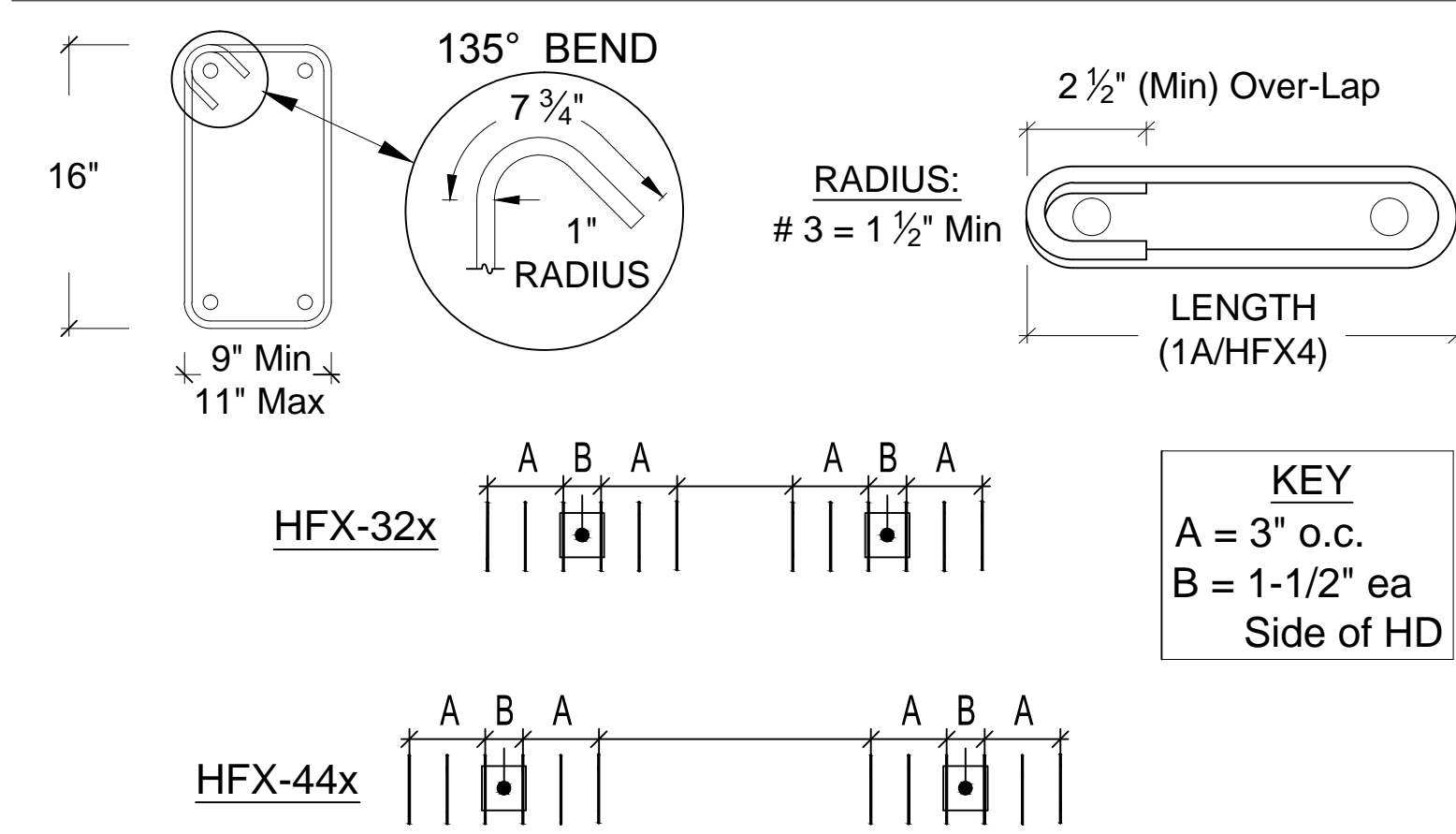
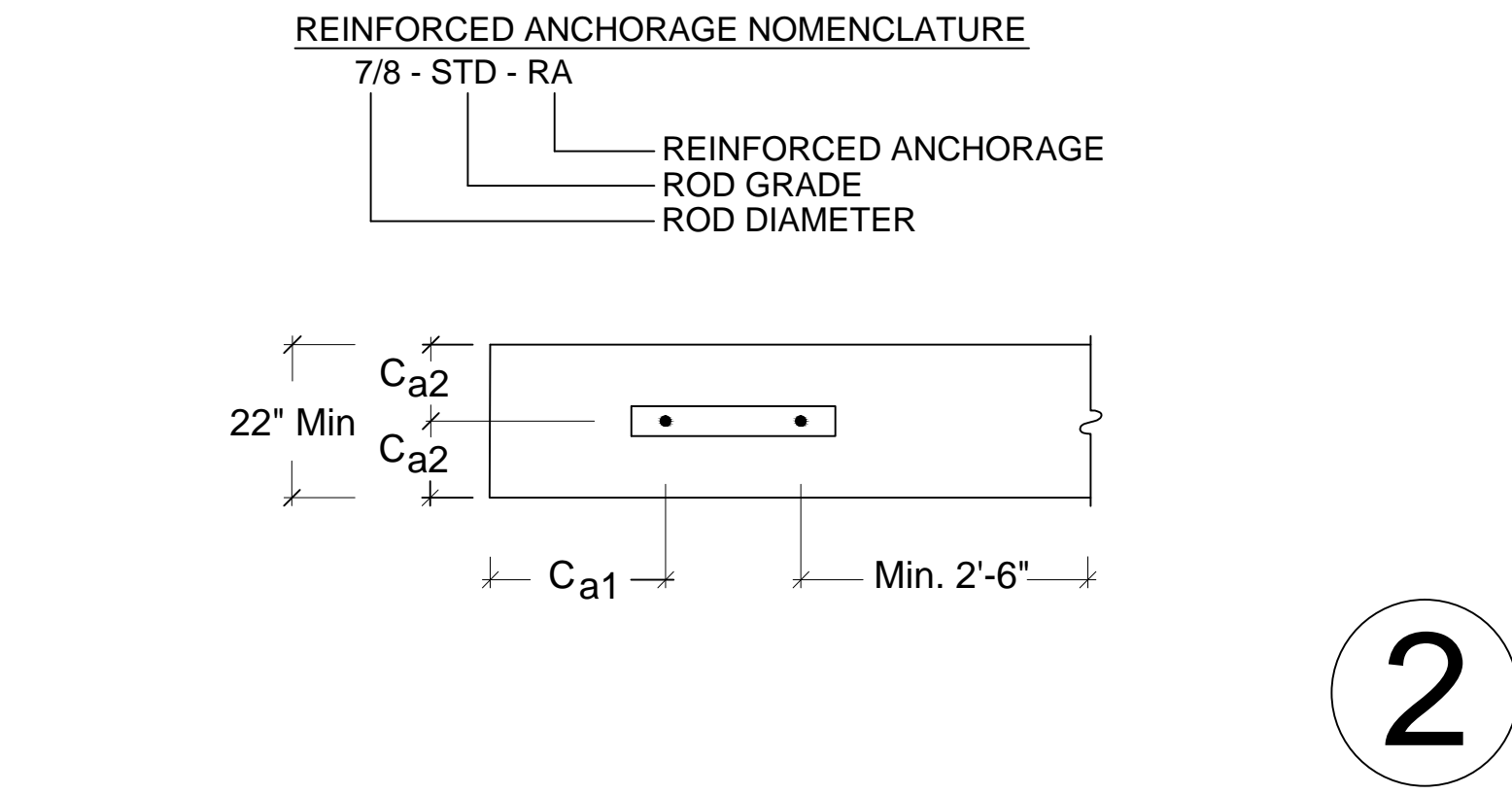
BB-RA SHEAR TIES & STIRRUPS



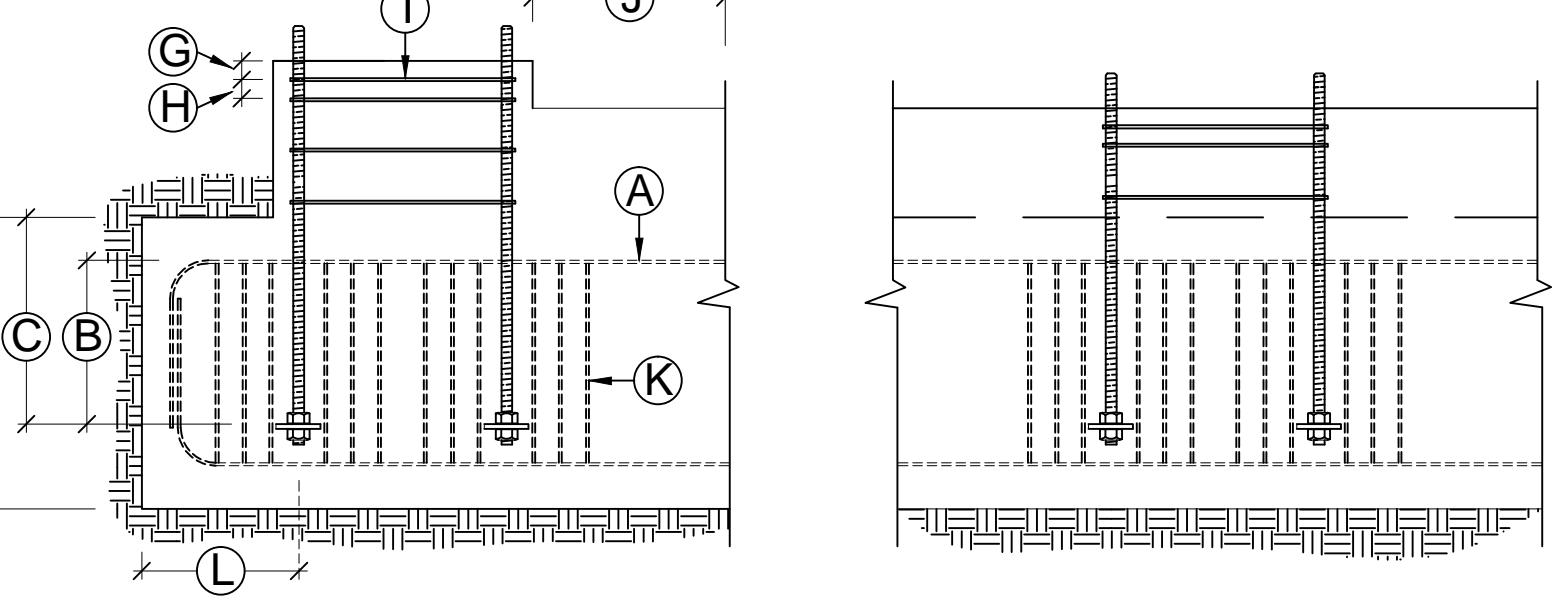
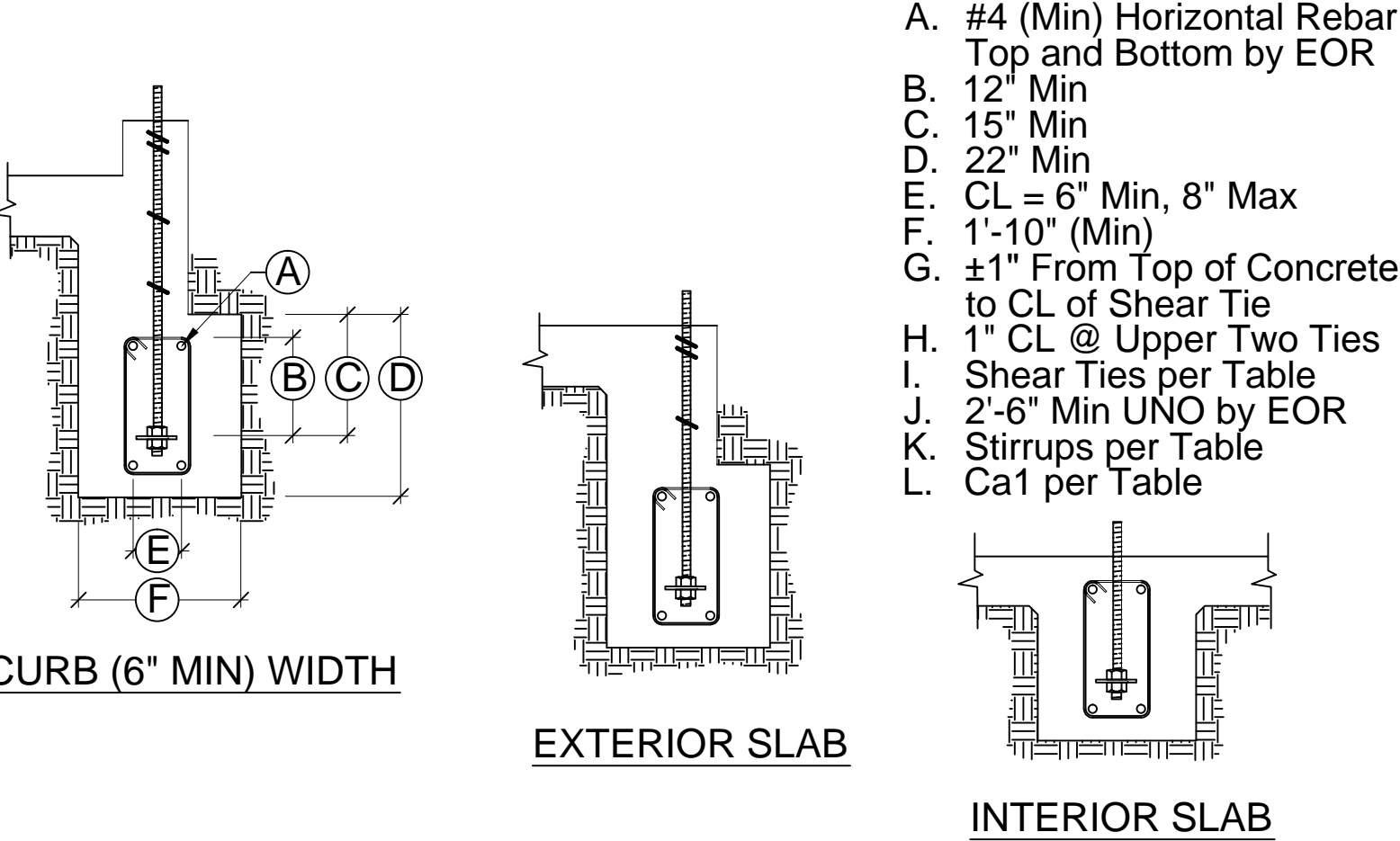
BB-RA SECTIONS & ELEVATIONS

REINFORCED ANCHORAGE (RA)

Model	Brace Frame Height	Anchorage <sup>1</sup>	Rod Dia (in)	Rod Grade <sup>2,3</sup>	le <sup>4</sup> (in)	Ca1 <sup>5</sup> (in)	Ca2 <sup>6</sup> (in)	Stirrups <sup>9</sup> (in)	Shear <sup>7</sup> Ties
HFX-32x	8' - 13'	1-1/8-STD-RA	7/8	STD	15	23-3/4	11	12 - # 4	# 3 (min) @ 4" OC
		1-1/8-HS-RA		HS					
HFX-44x		1-1/8-STD-RA		STD					
		1-1/8-HS-RA		HS					



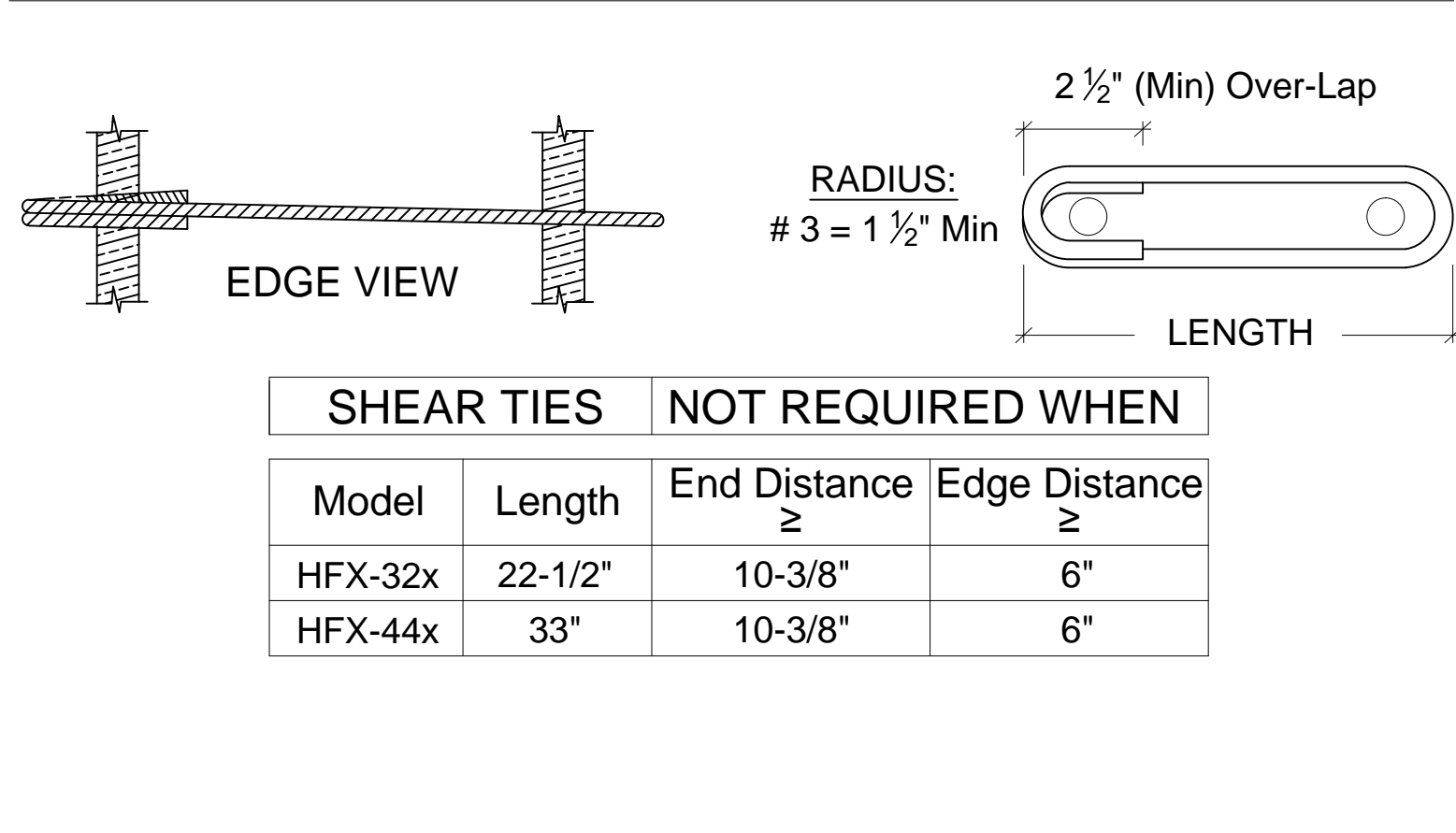
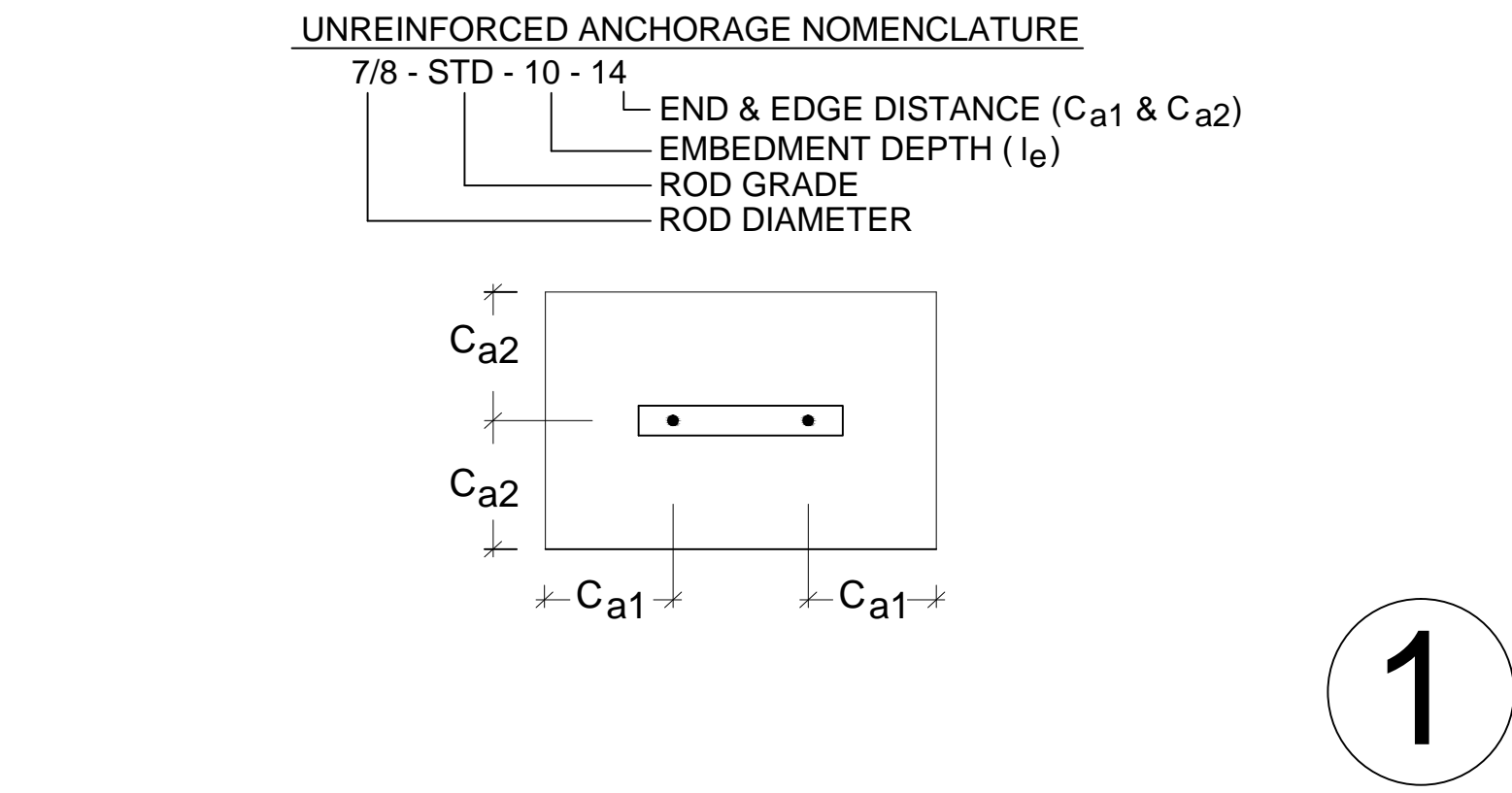
RA SHEAR TIES & STIRRUPS



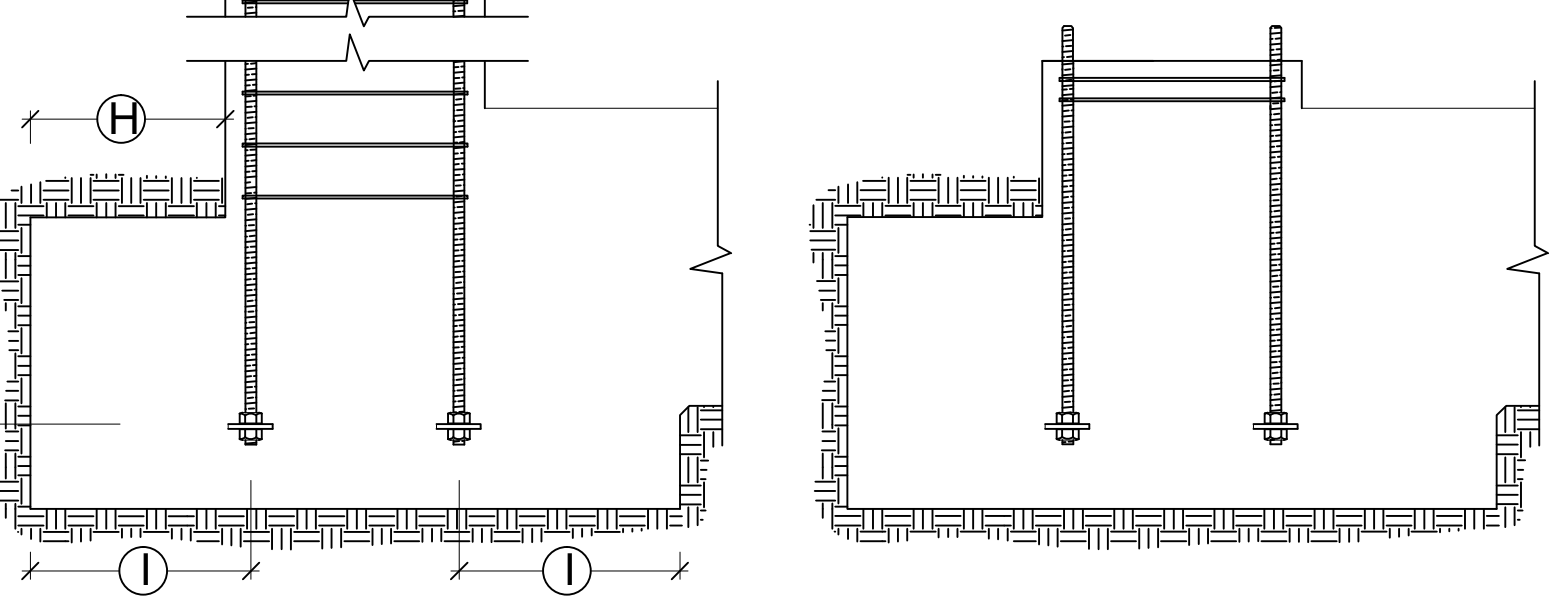
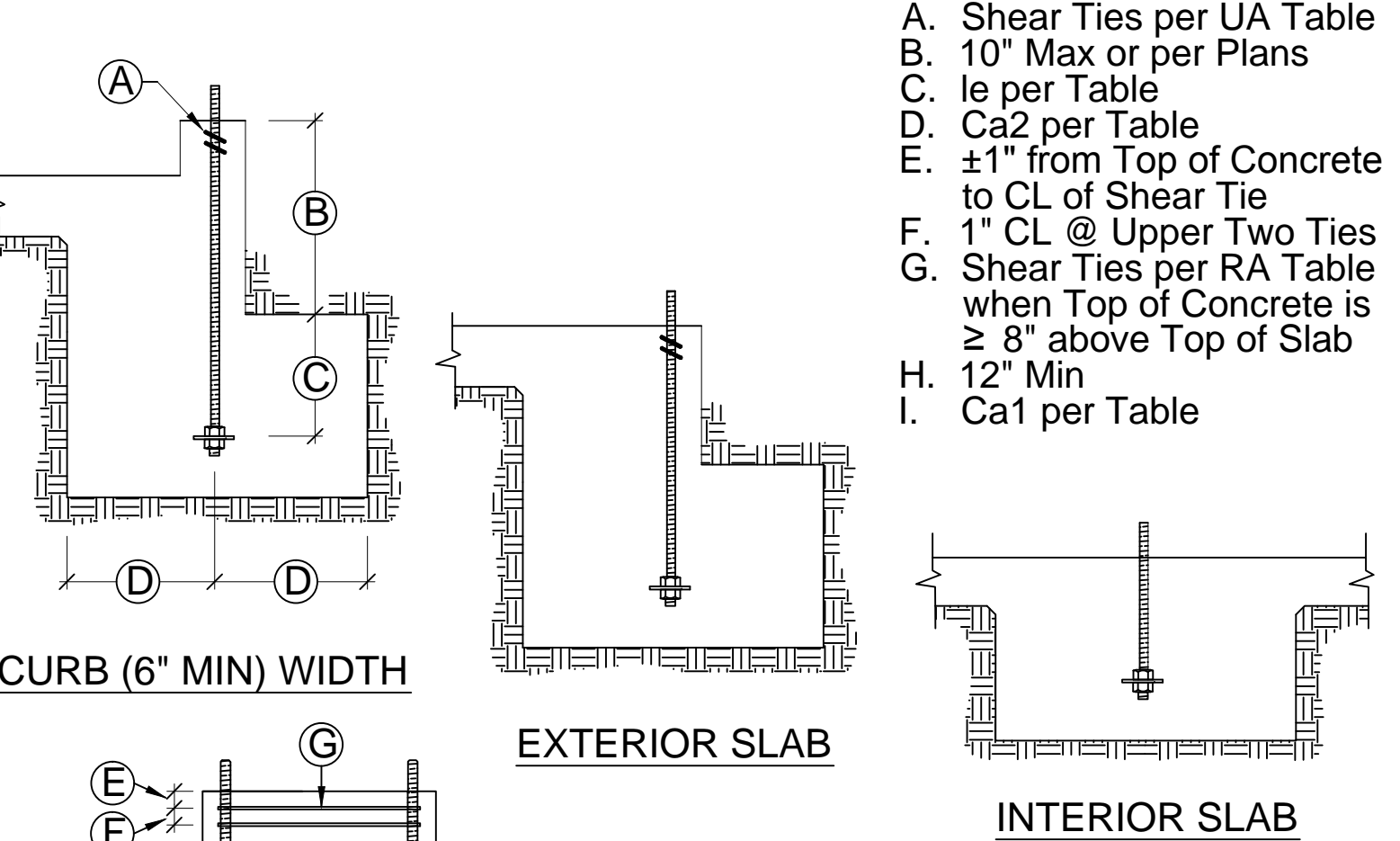
RA SECTIONS & ELEVATIONS

UNREINFORCED ANCHORAGE (UA)

Model	Brace Frame Height	Anchorage <sup>1</sup>	Rod Dia (in)	Rod Grade <sup>2,3</sup>	le <sup>4</sup> (in)	Ca1 <sup>5</sup> & Ca2 <sup>6</sup> (in)	Shear <sup>7,8</sup> Ties
HFX-32x	8' - 13'	7/8-STD-10-14	7/8	STD	10	14	1 - # 3
		7/8-HS-15-22		HS			
HFX-44x		7/8-STD-10-14		STD			
		7/8-HS-15-22		HS			



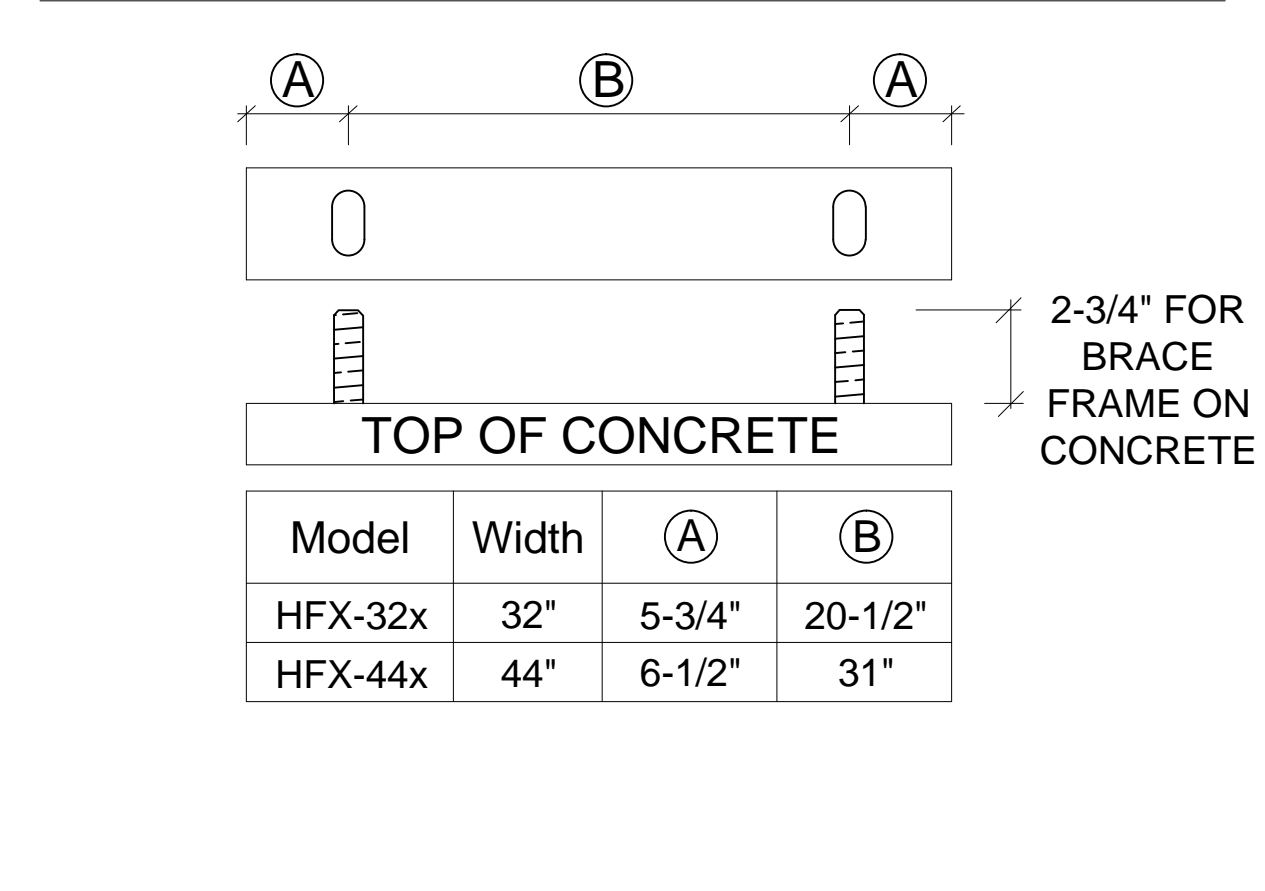
UA SHEAR TIES



UA SECTIONS & ELEVATIONS

TABLE NOTES

- DESIGNS ARE TO RESIST LOADING PER ACI 318-14, SECTION 17.2.3.4.3.
- STD INDICATES ANCHORS COMPLYING WITH ASTM F1554 GRADE 36 WITH A 1/2"x3"x3"(MIN) HFPW PLATE WASHER INSTALLED WITH DOUBLE NUTS ON THE EMBED END.
- HS INDICATES ANCHORS COMPLYING WITH ASTM A193 GRADE B7 WITH A 1/2"x3"x3"(MIN) HFPW PLATE WASHER INSTALLED WITH DOUBLE NUTS ON THE EMBED END.
- LE = LENGTH OF EMBEDMENT FROM THE TOP OF FOOTING OR GRADE BEAM TO THE TOP OF THE EMBEDDED HFPW PLATE WASHER.
- CA1 = DISTANCE FROM HD CENTERLINE TO THE END OF THE FOOTING OR GRADE BEAM.
- CA2 = DISTANCE FROM HD CENTERLINE TO BOTH THE FRONT AND THE BACK FACE OF THE FOOTING OR GRADE BEAM.
- SHEAR TIES ARE GRADE 60 (MIN) REBAR AND REQUIRED FOR NEAR EDGE DISTANCE CONDITIONS PER ACI-318-14, F'C = 2,500 PSI. CURBS AND STEM WALLS MUST BE 6 INCH (MIN) WIDTH FOR UA AND RA, 12 INCH (MIN) WIDTH FOR BB-RA.
- FOR UA APPLICATIONS, ADDITIONAL TIES MAY BE REQUIRED AT STEM WALLS. SHEAR TIES ARE NOT REQUIRED FOR INSTALLATION AWAY FROM EDGE (SEE DETAIL 1A), INSTALLATION ON WOOD FRAMING, OR FOR IRC BRACED WALL PANEL APPLICATIONS.
- STIRRUPS ARE GRADE 60 (MIN) REBAR. SEE TABLE FOR SIZE AND SPACING. SEE "STIRRUP LAYOUT" DIAGRAMS AND "KEY" FOR LAYOUT PATTERNS.
- CONCRETE EDGE DISTANCES MUST COMPLY WITH ACI 318-14, SECTION 17.7.1



HFX ANCHOR CENTERLINES

IMPORTANT!

- ANCHORAGE IS DESIGNED FOR TENSION AND SHEAR TRANSFER ONLY, FOUNDATION DESIGN PER EOR.
- REINFORCEMENT SHOWN IS THE MINIMUM REQUIREMENT AND IS NOT INTENDED TO REPLACE REINFORCEMENT DESIGNED BY THE EOR.
- HIGH STRENGTH ALL-THREAD RODS PROVIDED BY MITEK HARDY FRAME ARE STAMPED ON BOTH ENDS.

HF B7

IMPORTANT NOTES

REVISIONS

DATE

ANCHORAGE DETAILS - HFX BRACE FRAMES

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH HARDY FRAME PRODUCTS

HARDY FRAME<sup>®</sup>  
SHEAR WALL SYSTEM  
1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003  
TELEPHONE: 800 754-3030 / www.hardyframe.com

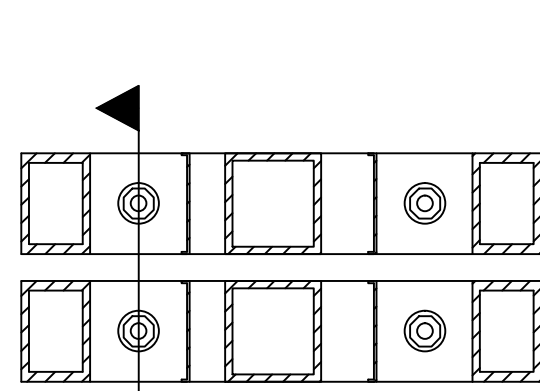
MiTek<sup>®</sup>

DATE:  
1-1-2018

HFX4

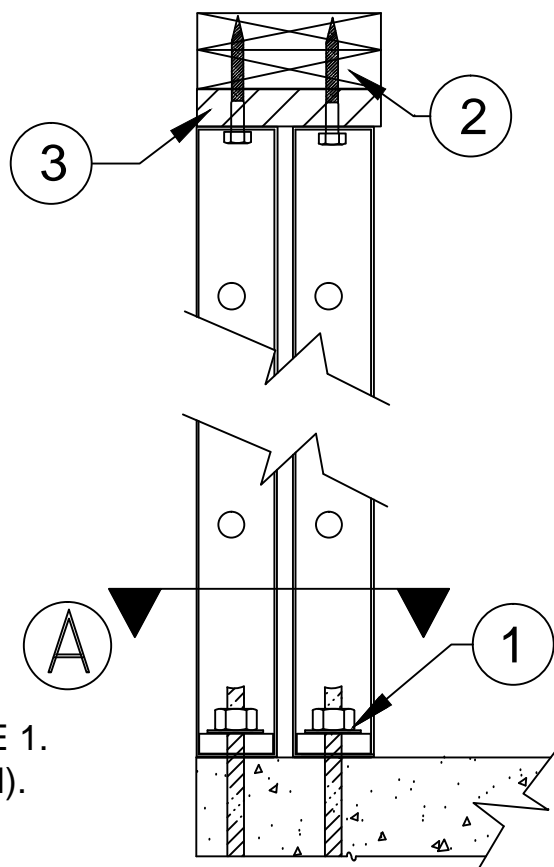
B



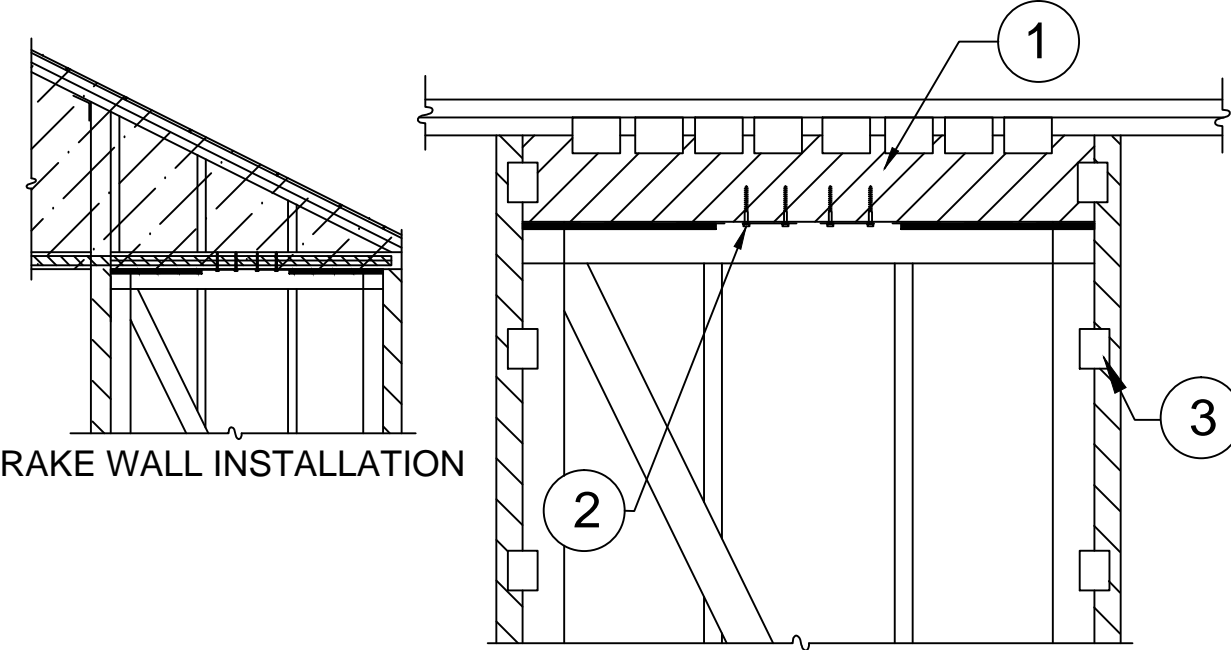


SECTION A

1. NUTS AND WASHERS PER TABLE NOTE 1.
2. NOMINAL 8 INCH FRAMING ABOVE (MIN).
3. A 2x FILLER WITH 1/4" x 4-1/2" MINIMUM WS SCREWS IS PERMITTED.

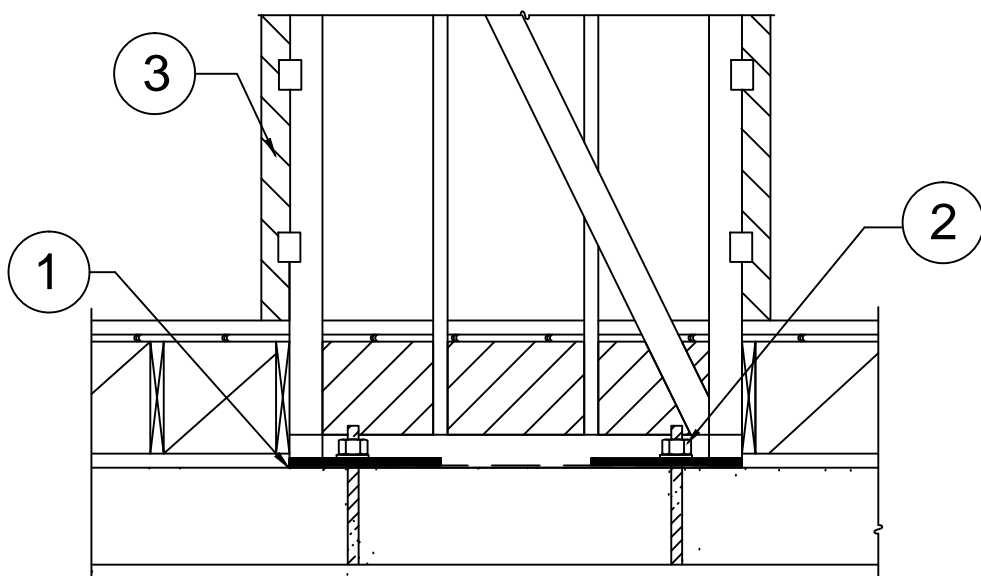


BACK TO BACK INSTALLATION 3



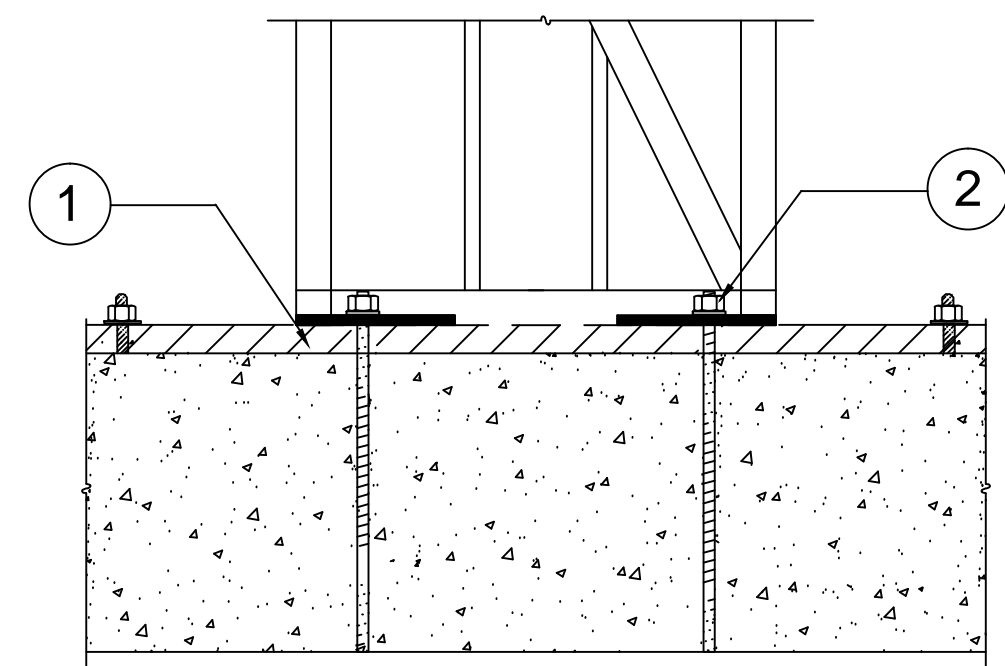
1. WOOD FILLER WITH USP MP4F CONNECTORS BOTH SIDES, QUANTITY BY BUILDING DESIGN PROFESSIONAL.
2. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. ADJACENT FRAMING WITH #10 SELF-TAPPING SCREWS OR USP MP4F CONNECTORS BOTH SIDES OF FRAME AND BOTH SIDES OF FILLER TO KING POST. SEE TABLE NOTE 3, DETAIL A AND INSTALLATION INSTRUCTION NOTE 4, DETAIL B.

FILLER GREATER THAN 1-1/2 IN. 6



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN BRACE FRAME BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING WITH #10 SELF-TAPPING SCREWS OR USP MP4F CONNECTORS BOTH SIDES OF FRAME WHEN INSTALLING A FILLER GREATER THAN 1-1/2" ABOVE OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.

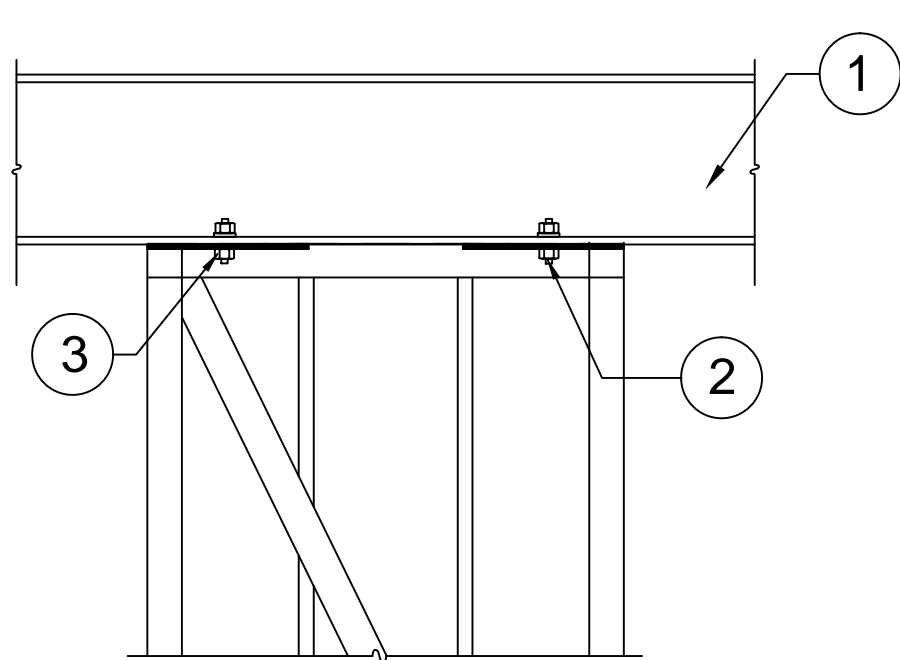
RAISED FLOOR HEAD-OUT 8



ALLOWABLE VALUES ON 2x PLATE ARE LESS THAN ON CONCRETE

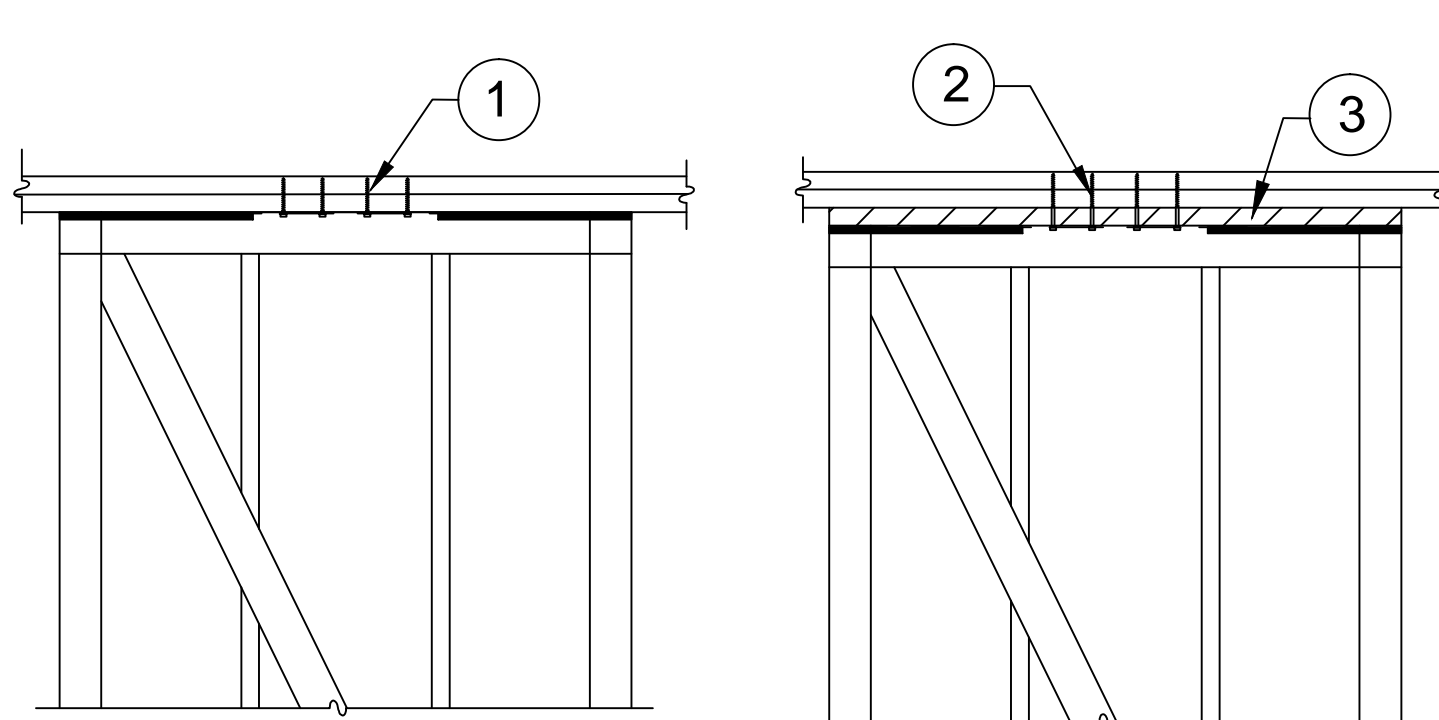
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND TREATED PLATE.
2. NUTS AND WASHERS PER TABLE NOTE 1.

INSTALLATION ON 2x PLATE 11



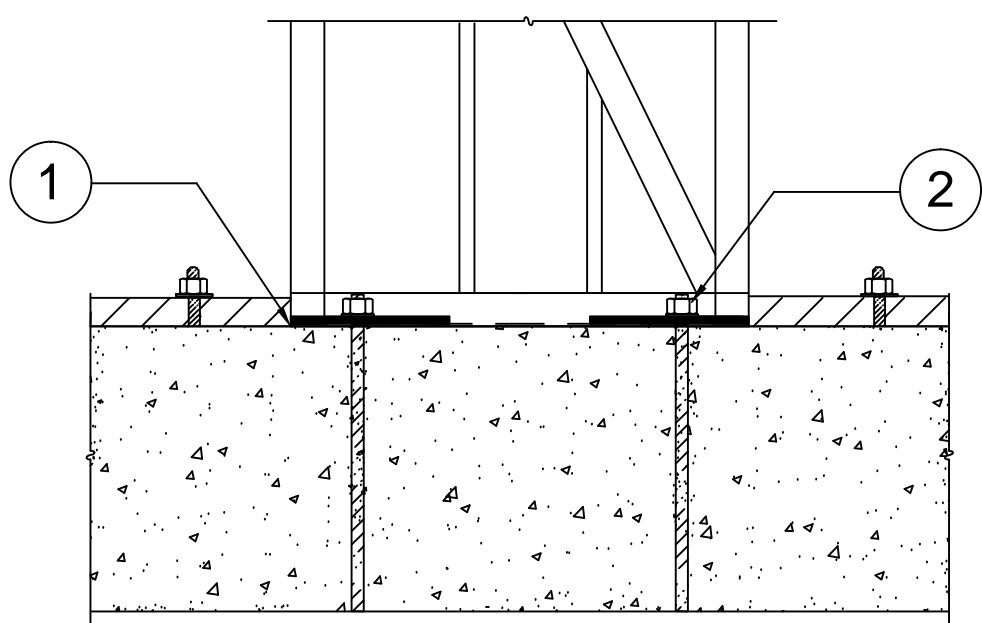
1. STEEL BEAM PER PLANS
2. ALL THREAD RODS THRU-BOLTED TO STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
3. NUTS AND WASHERS PER TABLE NOTE 1.

STEEL BEAM ABOVE 2



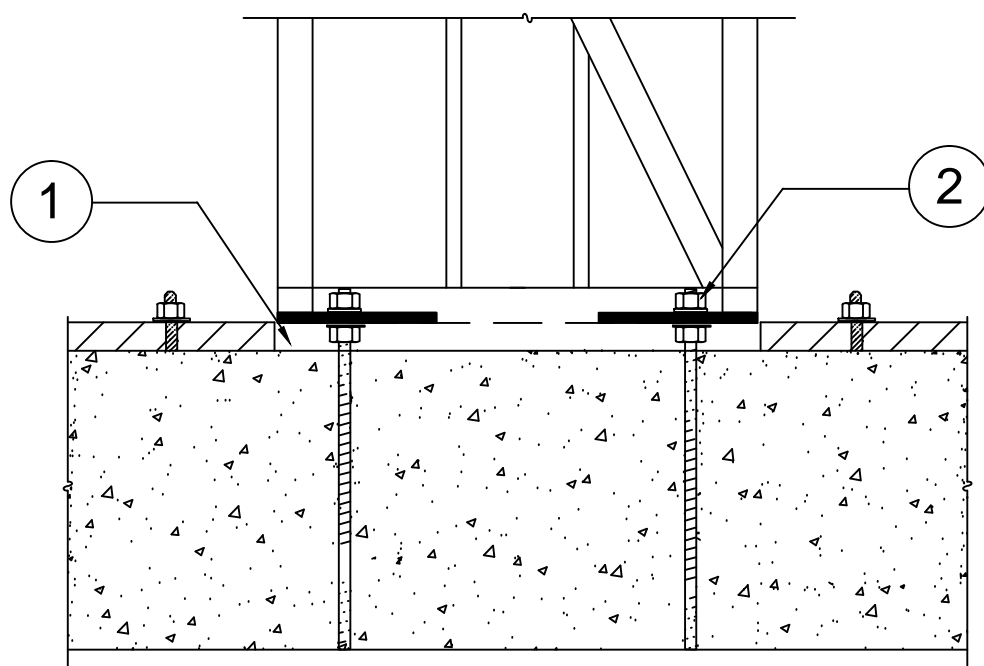
1. 1/4" x 3" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
2. 1/4" x 4-1/2" (MINIMUM) WS SCREWS, QUANTITY PER TABLES
3. 2x WOOD FILLER.

TOP PLATE CONNECTIONS 5



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.

INSTALLATION ON CONCRETE 7

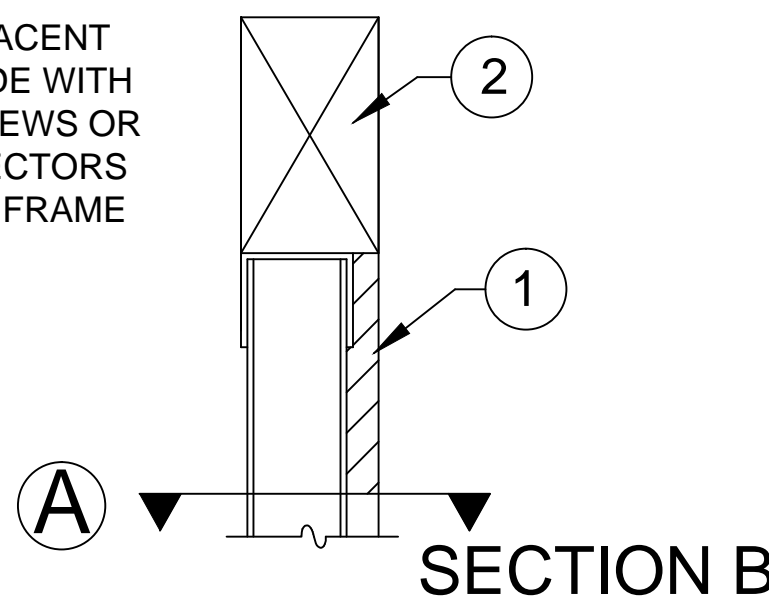


ALLOWABLE VALUES ON N&W ARE LESS THAN INSTALLATION ON CONCRETE

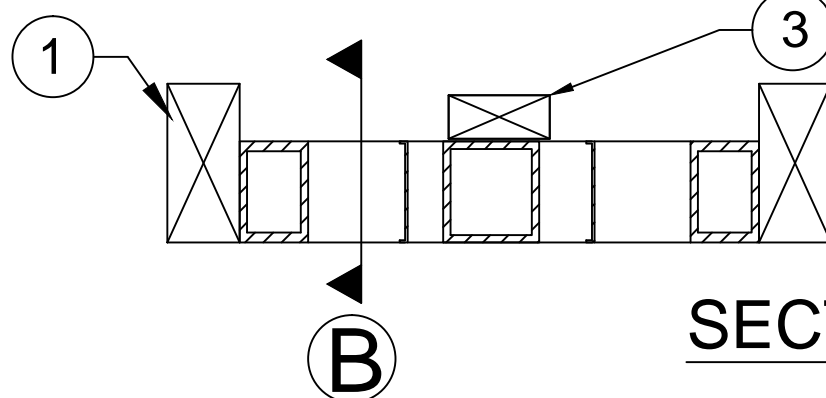
1. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH 5,000 PSI NON-SHRINK GROUT (MINIMUM).
2. NUT AND WASHER GRADES PER TABLE NOTE 1.

INSTALLATION ON NUTS & WASHERS 10

NOTE:  
ATTACHMENTS TO ADJACENT TRIMMERS MAY BE MADE WITH #10 SELF-TAPPING SCREWS OR WITH USP MP4F CONNECTORS ON EACH FACE OF THE FRAME



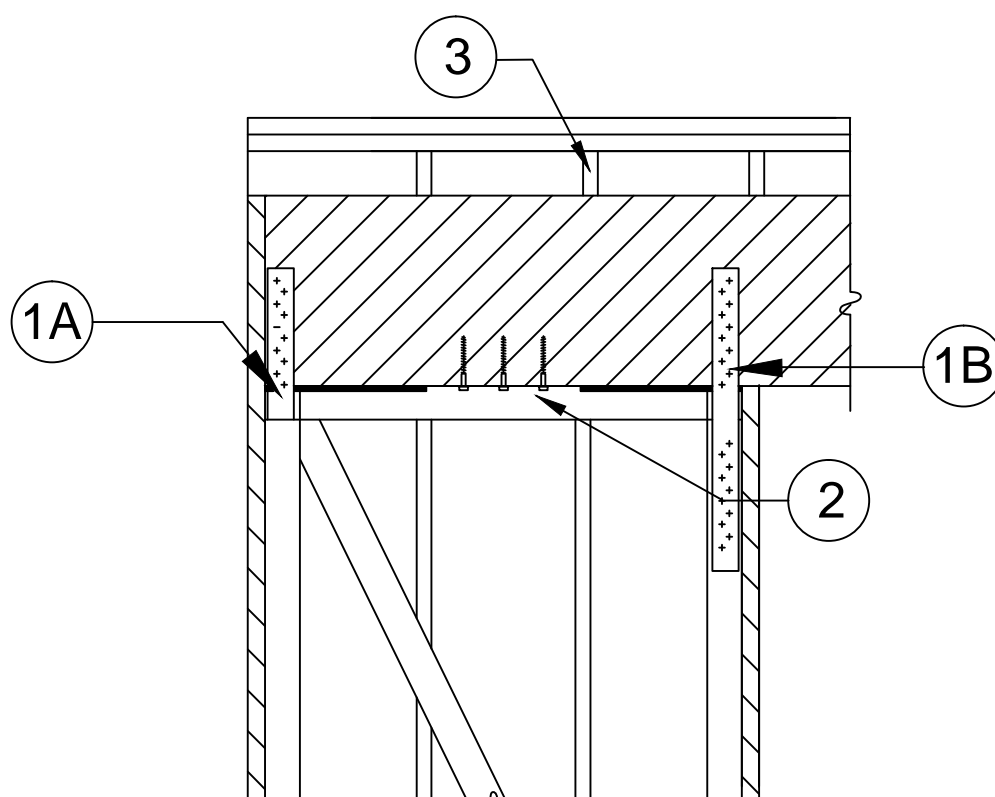
SECTION B



SECTION A

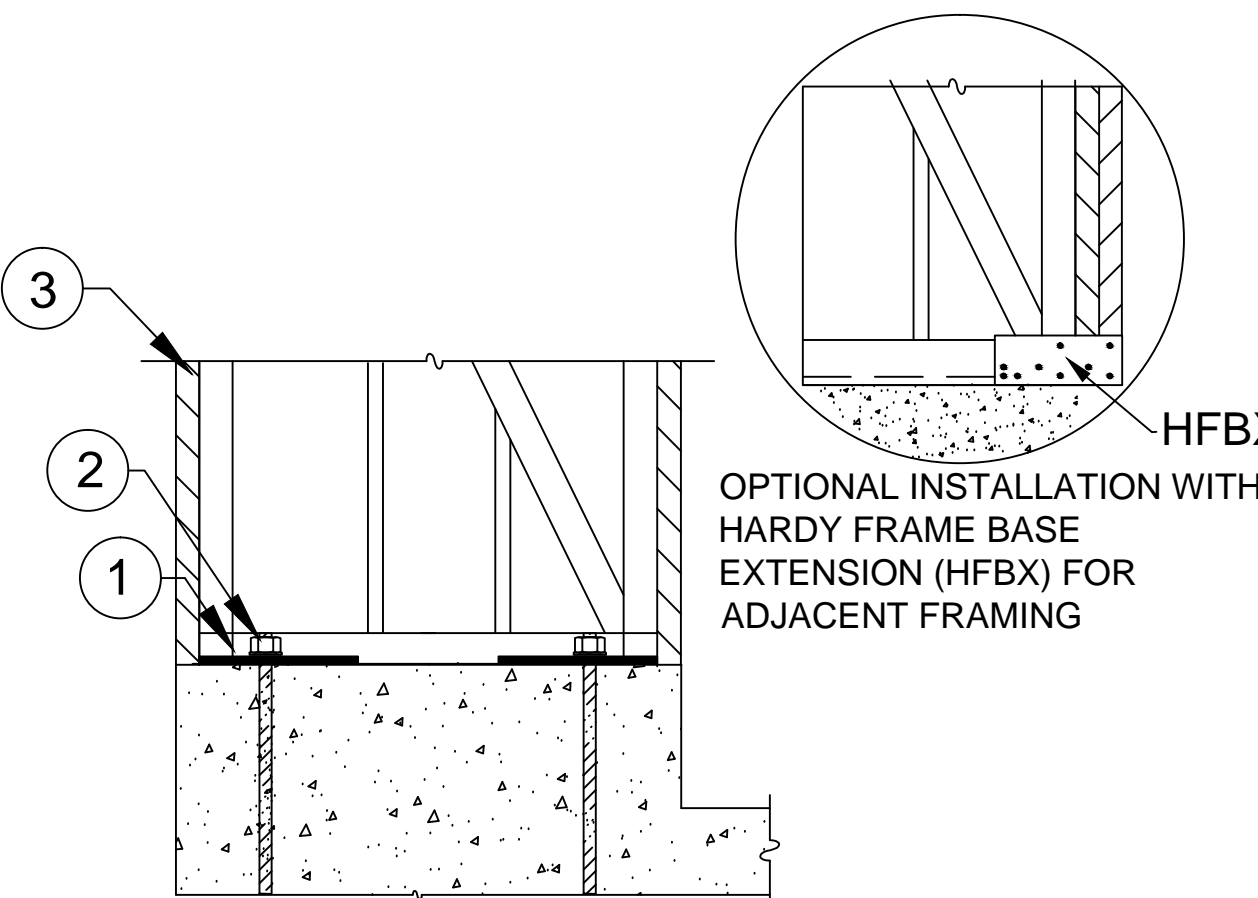
1. TRIMMERS PROVIDE FULL BEARING FOR HEADER ABOVE, DESIGN AND CONNECTIONS BY BUILDING DESIGN PROFESSIONAL.
2. 6x HEADER.
3. WOOD MEMBER FLUSH TO FACE OF WALL FOR BACKING AS NEEDED.

6x HEADER ABOVE-SECTION 1



1. (A) PRE-WELDED STRAPS ARE AVAILABLE UPON REQUEST. (B) FIELD INSTALLED STRAPS WITH SELF TAPPING SCREWS ARE PERMITTED. THE DESIGN AND CONNECTION IS BY THE DESIGN PROFESSIONAL.
2. A 2x WOOD FILLER WITH 1/4"x4-1/2" (MIN.) WS SCREWS IS PERMITTED.
3. WHEN CRIPPLE STUDS OCCUR, SHEAR TRANSFER DESIGN TO BE PER THE BUILDING DESIGN PROFESSIONAL.

TOP CONNECTION TO HEADER 4



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN BRACE FRAME BASE AND CONCRETE.
2. NUTS AND WASHERS PER TABLE NOTE 1.
3. ADJACENT FRAMING OPTIONAL OR BY BUILDING DESIGN PROFESSIONAL.

INSTALLATION ON CURB 9

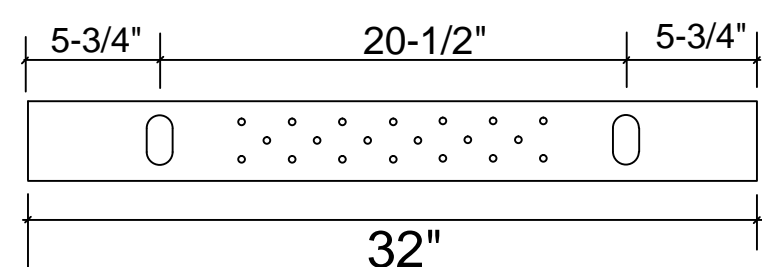
HFX BRACE FRAMES NOMINAL 8 THROUGH 13 FEET

MODEL NUMBER	NET HEIGHT (in)	DEPTH (in)	Hold Down Diameter <sup>1</sup> (in)	Top Screw <sup>2</sup> Qty (ea)	Screw Qty <sup>3</sup> Available at Edges (ea)
HFX-32x8	92-1/4	3-1/2	7/8	32" Width = 10	NA
HFX-44x8					
HFX-32x9	104-1/4				
HFX-44x9					
HFX-32x10	116-1/4				
HFX-44x10					
HFX-32x11	128-1/4				
HFX-44x11					
HFX-32x12	140-1/4				
HFX-44x12					
HFX-32x13	152-1/4				
HFX-44x13					

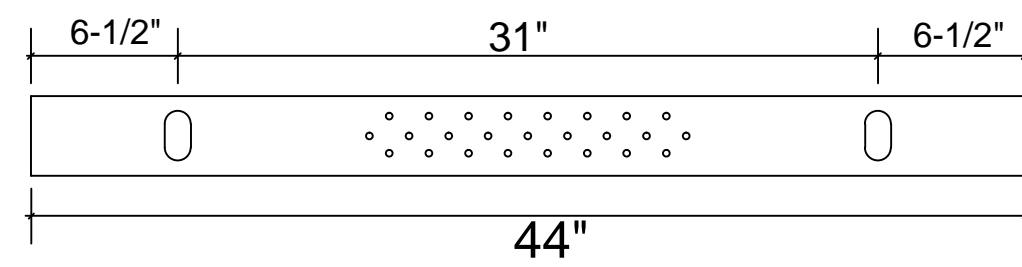
1. HOLD DOWN ANCHOR BOLTS CONNECT TO THE BRACE FRAME BASE WITH HARDENED ROUND WASHERS BELOW GRADE 8 NUTS. ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS ON EACH BOLT. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK<sup>®</sup>PRO SERIES<sup>™</sup> WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHED DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2x FILLER ABOVE THE BRACE FRAME.
3. ADJACENT FRAMING CONNECTED TO THE BRACE FRAME EDGES AND THE FILLER IS REQUIRED WHEN INSTALLING A FILLER ABOVE THE TOP CHANNEL THAT IS GREATER THAN 1-1/2" OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL.

INSTALLATION INSTRUCTIONS

1. WHEN INSTALLING ON CONCRETE CONNECT WITH (1 EA) HARDENED ROUND WASHER BELOW (1 EA) GRADE 8 NUT, SECURE WITH A SOCKET OR WRENCH UNTIL SNUG TIGHT. ALTERNATE WASHERS AND NUTS ARE PROVIDED IN TABLE NOTE 1.
2. INSTALLATION ON CONCRETE PROVIDES THE HIGHEST ALLOWABLE VALUES. CONFIRM WITH THE DESIGN PROFESSIONAL BEFORE INSTALLING ON OTHER SUPPORTING SURFACES.
3. USE 1/4"x4-1/2" MITEK<sup>®</sup> PRO SERIES<sup>™</sup> WS SCREWS AT TOP CONNECTIONS WITH A 2x FILLER. IF THE TOP OF BRACE FRAME IS IN DIRECT CONTACT WITH THE COLLECTOR ABOVE (TOP PLATES, HEADER, BEAM, ETC.) USE 1/4" x 3" (MINIMUM)
4. FOR INSTALLATIONS WITH A FILLER GREATER THAN 1-1/2" ABOVE, OR WHEN SPECIFIED BY THE DESIGN PROFESSIONAL, ADJACENT KING POSTS TO BRACE THE OUT-OF-PLANE HINGE CAN BE CONNECTED TO THE BRACE FRAME WITH SELF-TAPPING SCREWS INSTALLED THROUGH HOLES PRE-DRILLED IN THE WOOD MEMBER OR WITH USP MP4F CONNECTORS ON EACH FACE OF THE FRAME TO THE WOOD MEMBER. FOR BOTH METHODS OF CONNECTING THE FASTENER QUANTITY IS DETERMINED BY THE BUILDING DESIGN PROFESSIONAL.

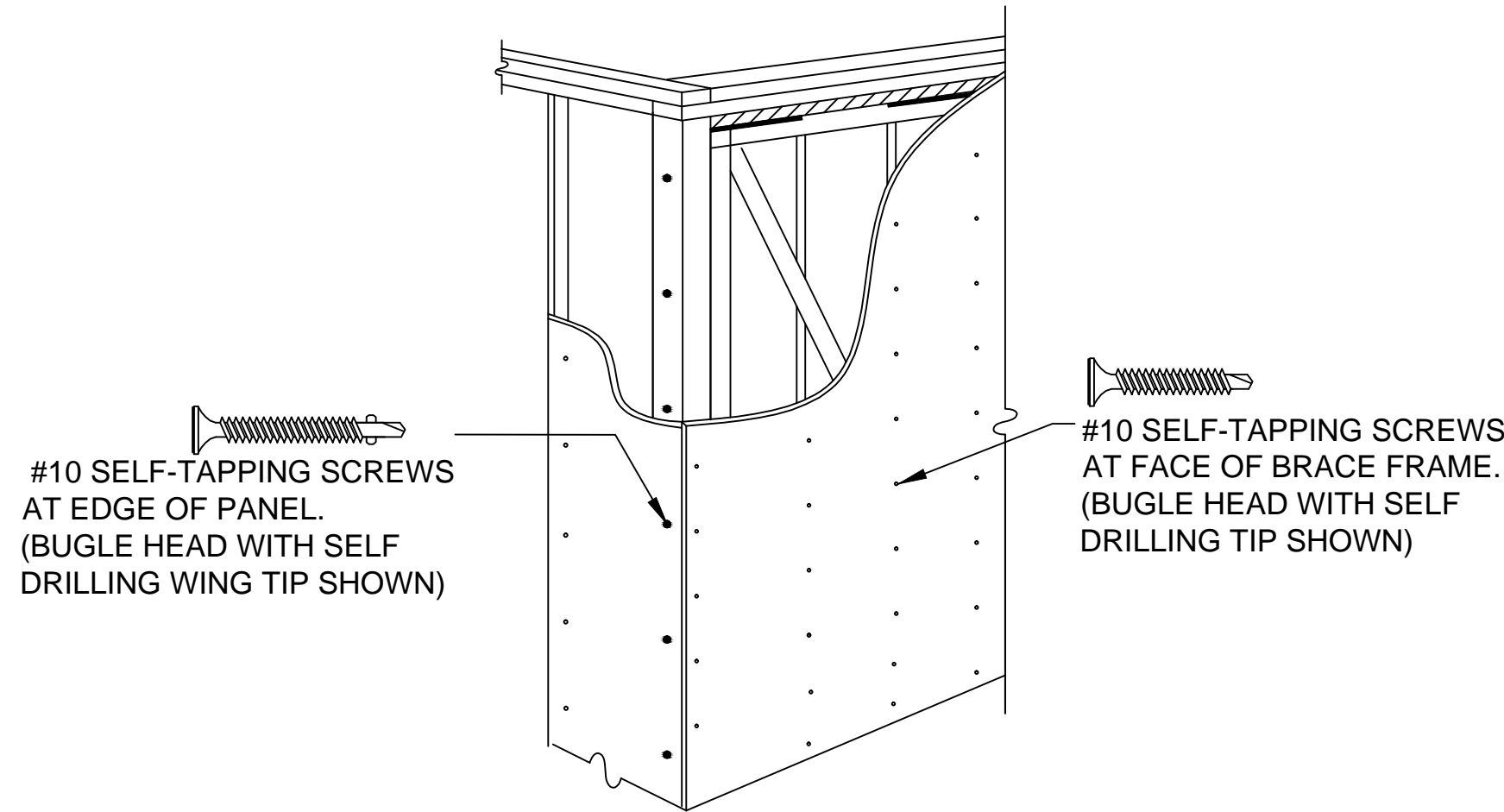


32" BRACE FRAME



44" BRACE FRAME

HOLE PATTERN TOP & BOTTOM C



NOTES:

- A. SURFACE FINISHES, CONNECTORS AND FIXTURES ARE ATTACHED TO THE BRACE FRAME FACE AND EDGES WITH # 10 SELF-TAPPING SCREWS SPACED NO LESS THAN 2-1/4" OC.
- B. STRUCTURAL CONNECTIONS ARE TO BE DESIGNED BY THE DESIGN PROFESSIONAL.
- C. STRUCTURAL HARDWARE USED TO TRANSFER LOADS SHOULD NOT EXCEED 12 GAUGE.

REVISIONS DATE

FRAMING DETAILS - HFX BRACE FRAMES

THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH MITEK<sup>®</sup> HARDY FRAME<sup>®</sup> PRODUCTS

HARDY FRAME<sup>®</sup>  
SHEAR WALL SYSTEM

1732 PALMA DRIVE, SUITE 200, VENTURA, CA 93003  
TELEPHONE: 800 754-3030 / www.hardyframe.com

MiTek<sup>®</sup>

DATE:  
1-1-2018

HFX5



- ## RAISED-OS CORNER (4)

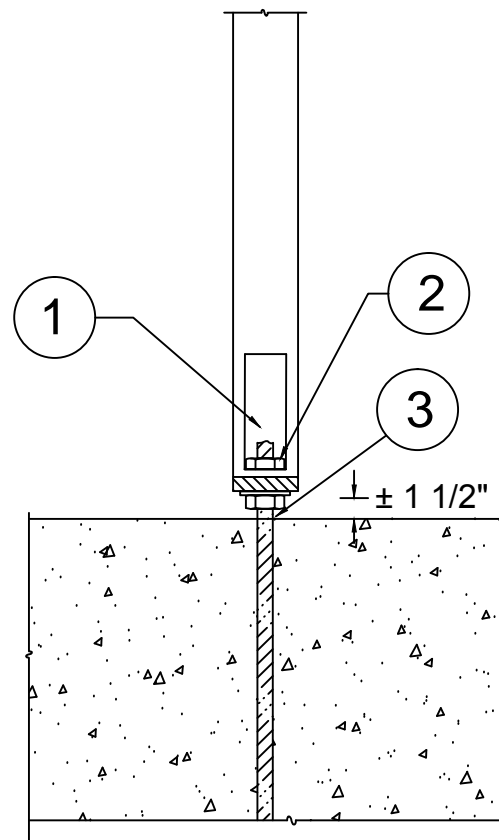
Technical drawing of a cross-section of a building floor slab with a suspended ceiling. The drawing shows a concrete slab (1) with a suspended ceiling (2) and a concrete base (3). The ceiling is supported by hangers (4) and has a grid of acoustic tiles (5).

- ## RAISED FLOOR (3)

**HARDY FRAME®**  
BRACE FRAME

The diagram illustrates the connection between the vertical post and the horizontal beam. The vertical post is labeled 'HARDY FRAME® BRACE FRAME'. The horizontal beam is labeled 'BRACE BEAM'. The connection is made using a 'BRACE BEAM END PLATE' (labeled 1) and a 'BRACE BEAM END PLATE BOLT' (labeled 2). The diagram shows the post, beam, end plate, and bolt in cross-section, with the beam end plate bolt passing through the beam end plate and the post. The beam end plate is shown with a flange that fits into the post's end plate.

- ## RAISED STEM WALL (2)



- POST ON N&W (1)

- ## CRIPPLE WALL (5)

1. TENSION ANCHORS SPECIFIED AS STANDARD GRADE (STD) MUST COMPLY WITH ASTM F1554 GRADE 36 (OR EQUAL) TENSION ANCHORS SPECIFIED AS HIGH STRENGTH (HS) MUST COMPLY WITH ASTM A 193 GRADE B7 (OR EQUAL). TENSION ANCHORS (BOTH GRADES) CONNECT TO THE UPPER AND LOWER BRACE FRAMES WITH HARDENED ROUND WASHERS AND GRADE 8 NUTS. ALTERNATE WASHERS ARE (2 EA) ROUND-FLAT OR (2 EA) SAE WASHERS AT EACH ANCHOR CONNECTION. ALTERNATE NUTS ARE 2H HEAVY HEX.
2. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 3" (MINIMUM) WHEN ATTACHING DIRECTLY TO THE COLLECTOR AND 4-1/2" (MINIMUM) WHEN INSTALLING A 2x FILLER ABOVE THE BRACE FRAME.
3. 1/4" DIAMETER MITEK®PRO SERIES™ WS SCREWS. LENGTH IS 4-1/2" (MINIMUM) AT CONNECTIONS TO FLOOR SYSTEMS AND BEAMS BELOW.

1. WITH HOLES PRE-DRILLED FOR 7/8" DIA. TENSION ANCHORS, INSTALL A SOLID 4x (MINIMUM) RIM IN FLOOR SYSTEM AT BRACE FRAME LOCATION. ALLOWABLE VALUE TABLES ASSUME THE RIM IS ENGINEERED WOOD PRODUCT (EWP).
2. AFTER FLOOR SHEATHING, CUT AND PLOT THE BOTTOM PLATE OR THE PLATE CAN BE CONTINUOUS.
3. INSTALL THE FRAME ON THE WOOD PLATE AND SECURE ANCHORS WITH HARDENED ROUND WASHERS AND GRADE 8 NUTS TO BE SNUG TIGHT.
4. WHEN STACKING FRAMES, CONNECT THE LOWER FRAME TO THE UPPER FRAME WITH TENSION ANCHORS (GRADE PER PLANS) AND SECURE AT BOTH ENDS WITH HARDENED ROUND WASHERS AND GRADE 8 NUTS TO BE SNUG TIGHT. *HARDY FRAME*® BRACE FRAMES AND POSTS (HFP) INCLUDE PLATE WASHERS PRE-WELDED IN THE TOP AND BOTTOM CHANNELS.
5. INSTALL 1/4"x4-1/2" (MIN) MITEK® PRO SERIES™ SCREWS THROUGH THE BOTTOM CHANNEL. SEE TABLE FOR MINIMUM QUANTITY.
6. WHEN JOINTS IN FRAMING MEMBERS OCCUR AT SCREW LOCATIONS, INSTALL ADDITIONAL SCREWS.
7. FOR STANDARD WALL HEIGHTS, INSTALL 1/4"x3" (MIN) MITEK® PRO SERIES™ WS SCREWS THROUGH THE TOP CHANNEL INTO THE COLLECTOR. SEE TABLE FOR MINIMUM QUANTITIES.

Technical drawings of two rectangular panels. The left panel is 32 inches wide. It features a central field of 24 dots arranged in a rectangular grid. On either side of the dot field is a circular cutout. The dimensions are: 5-3/4" for the left margin, 20-1/2" for the central dot field, and 5-3/4" for the right margin. The total width is 32".

The right panel is 44 inches wide. It features a central field of 24 dots arranged in a rectangular grid. On either side of the dot field is a circular cutout. The dimensions are: 6-1/2" for the left margin, 31" for the central dot field, and 6-1/2" for the right margin. The total width is 44".

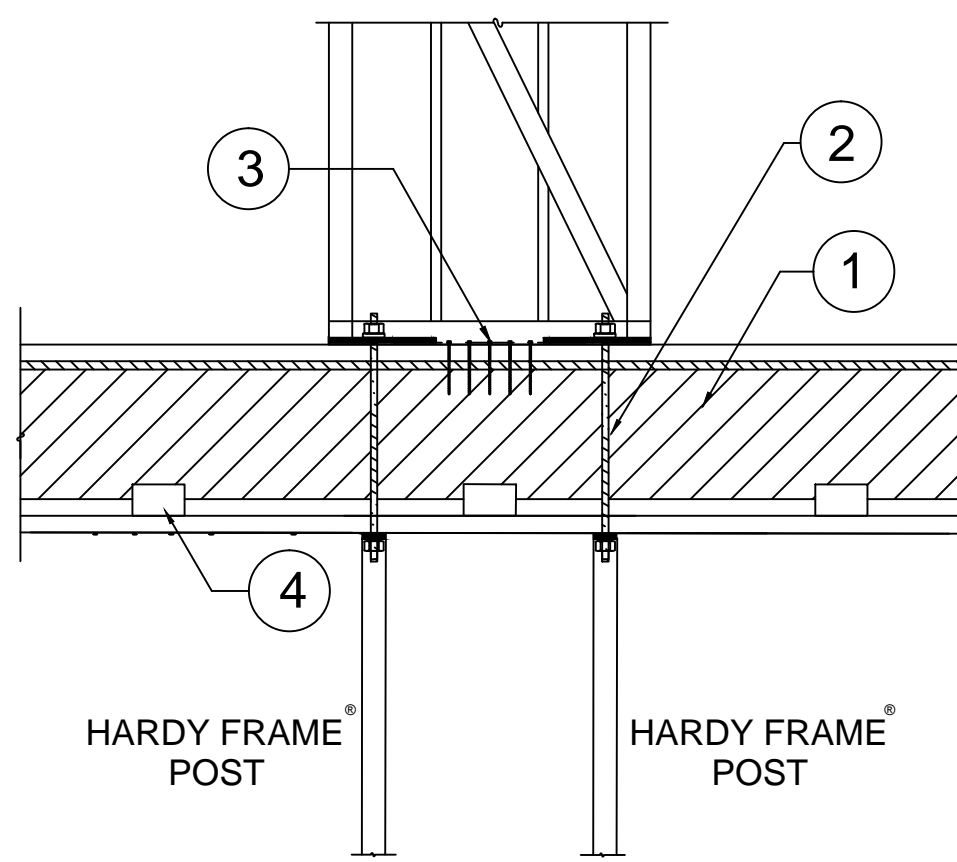
32" BRACE FRAME                      44" BRACE FRAME  
HOLE PATTERN TOP & BOTTOM      ©

- ## DROP BM - FL SYSTEM (14)

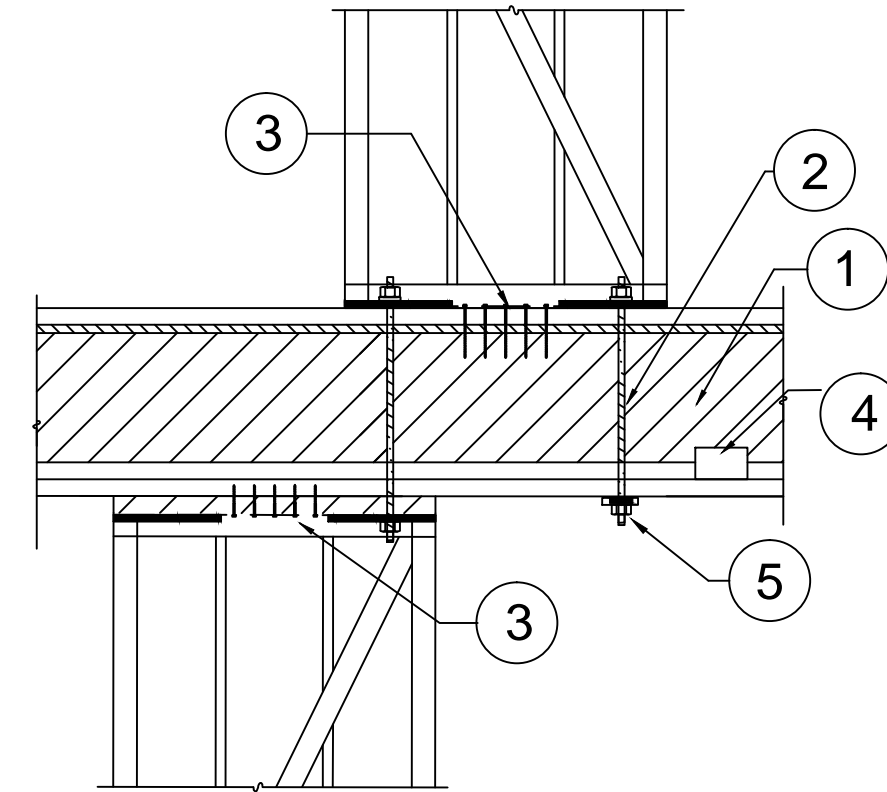
The diagram illustrates a cross-section of a window assembly. A window frame (1) is shown with a diagonal mullion. Below the frame, there is an insulation layer (2) and a mounting bracket (3) which is secured with screws into a structural wall.

- STEEL BM THRU-BOLT (13)

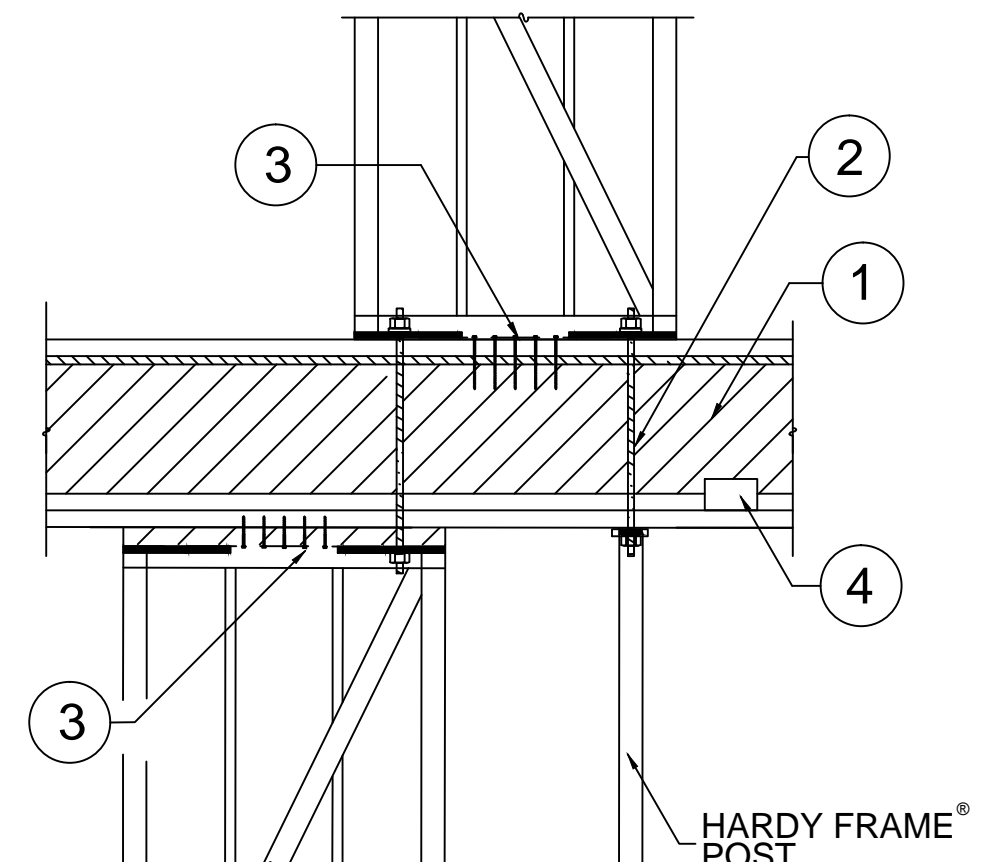
- WOOD BM THRU-BOLT 12



- HFP POSTS BELOW (11)



- ## STAGGERED THRU-BOLT<sup>10</sup>



- STAGGERED-HFP POST (9)

FLOOR SYSTEMS - HFX BRACE FRAMES	THIS DETAIL SHEET IS NOT PROPRIETARY AND IS NOT REQUIRED FOR PLAN SUBMITTAL WITH MITEK®/HARDY FRAME® PRODUCTS
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SHEAR WALL SYSTEM

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MiTek®

DATE:  
1-1-2018

# HFX6