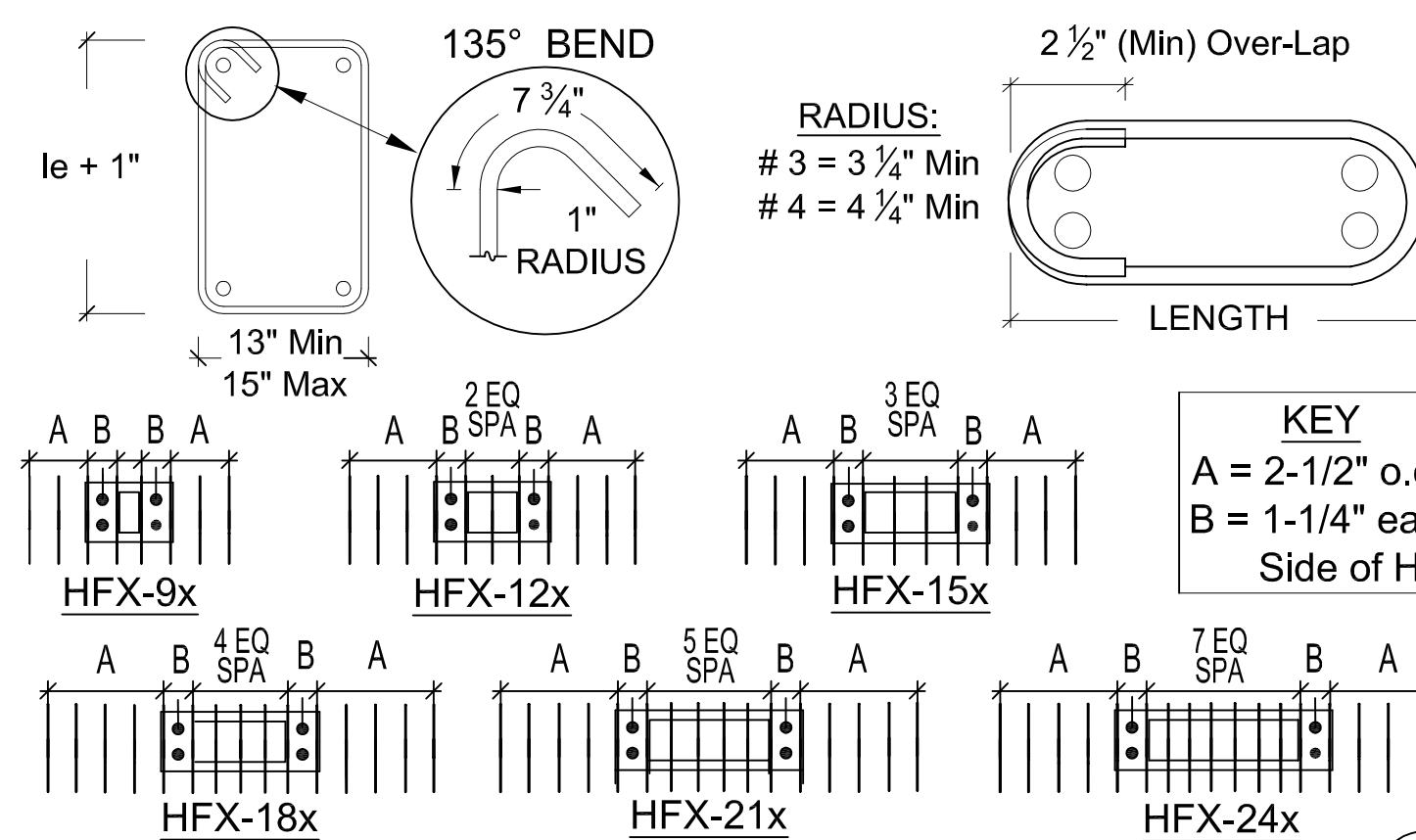
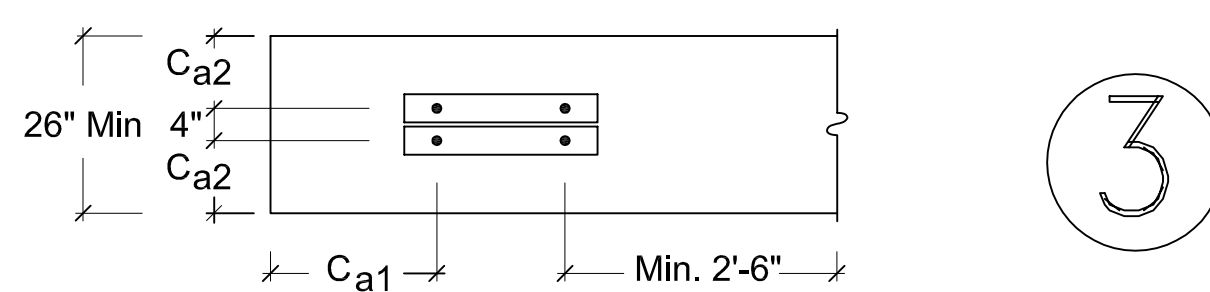
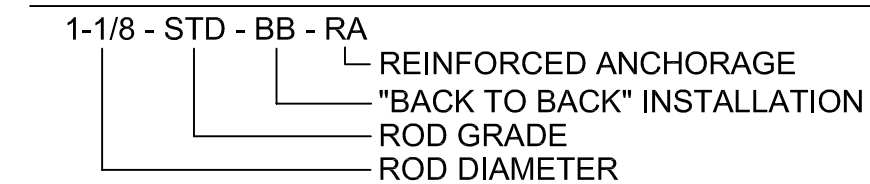


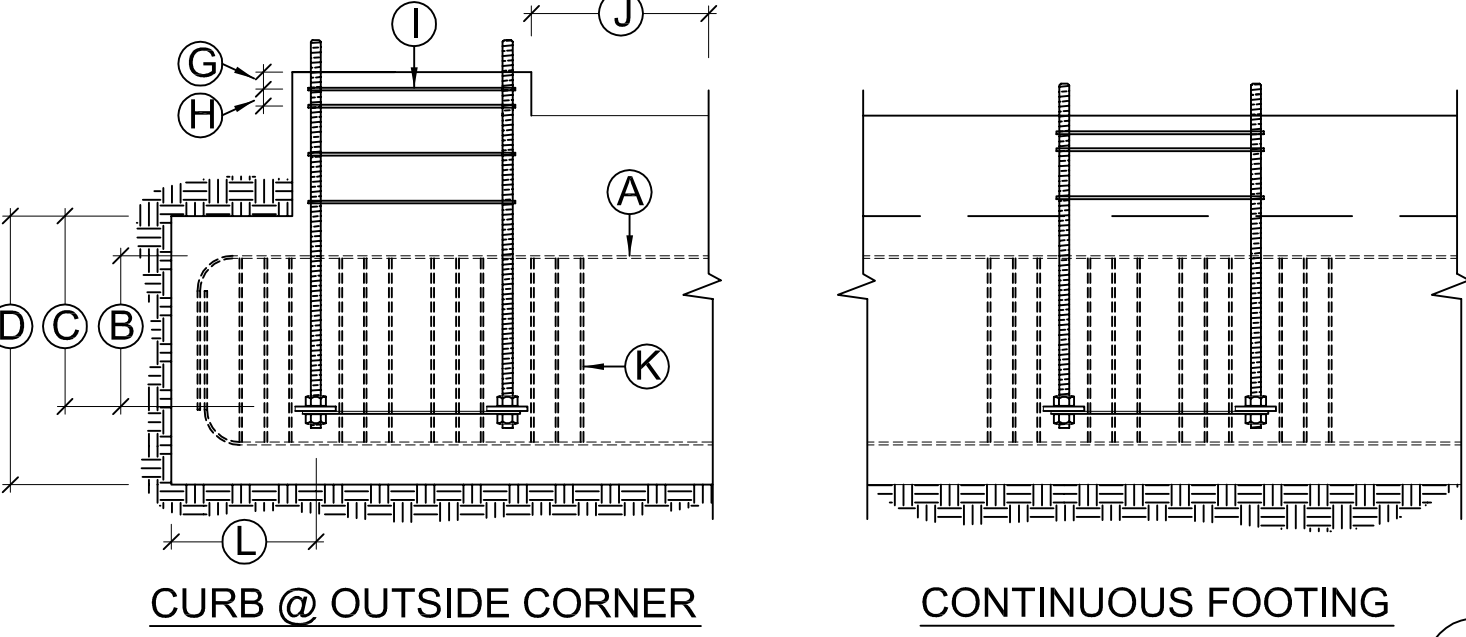
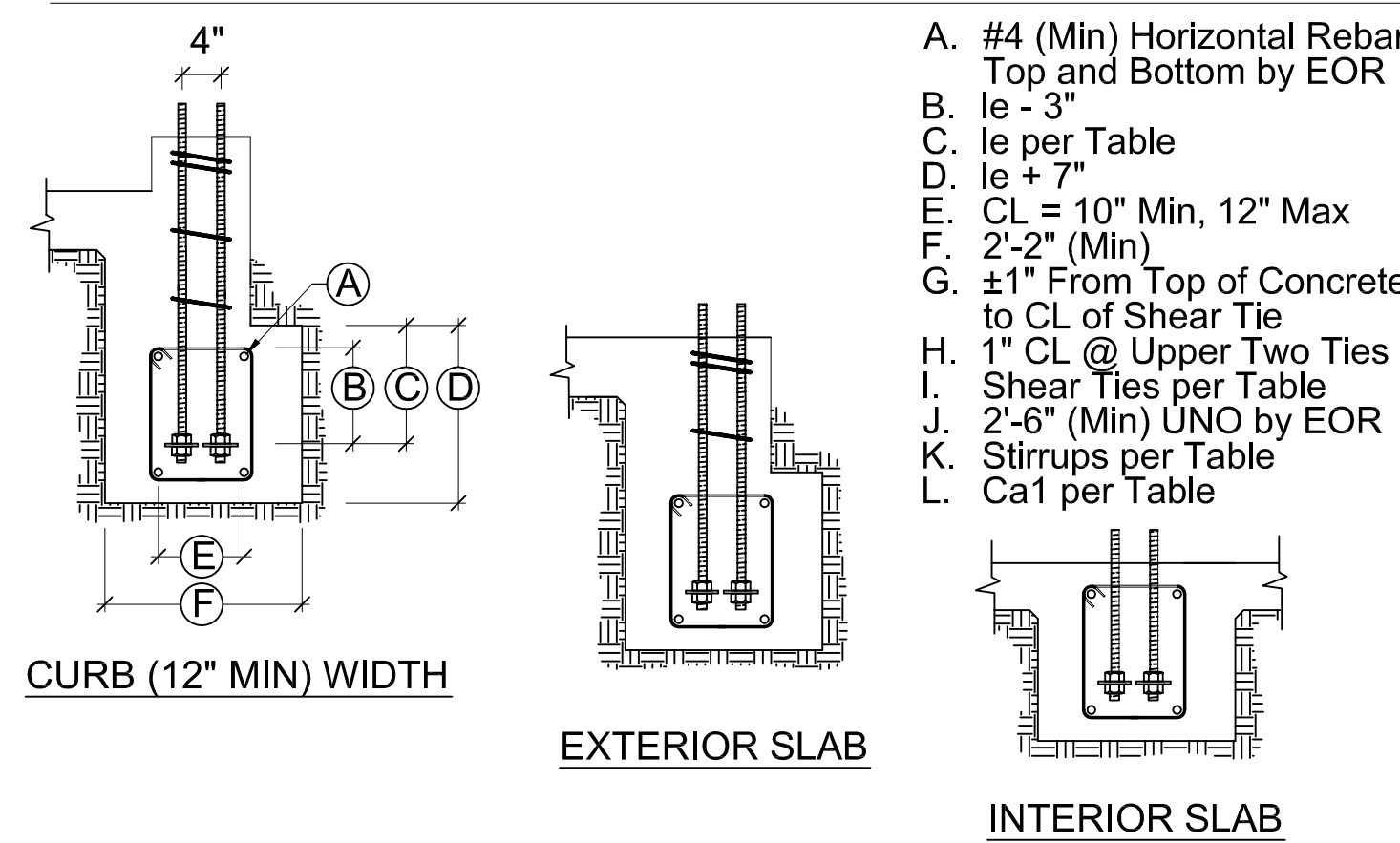
BACK TO BACK REINFORCED ANCHORAGE (BB-RA)

Model	Panel Width (in)	Anchorage 1	Rod Dia (in)	Rod 2,3 Grade	BB-RA			Stirrups 9 (in)	Shear 7 Ties
					le 4 (in)	Ca1 5 (in)	Ca2 6 (in)		
HFX-9x	9	1-1/8-STD-BB-RA	1-1/8	STD	13	19-3/4	8 - # 4	# 3 (min) @ 3-3/4" OC	
HFX-12x	12	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA		STD HS	18		11 - # 4	# 3 (min) @ 4" OC	
HFX-15x	15	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS	20		11	12 - # 4		
HFX-18x	18	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS	23		20-5/8	15 - # 4	# 4 (min) @ 4" OC	
HFX-21x	21	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS		26		16 - # 4		
HFX-24x	24	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS				18 - # 4		

BACK TO BACK REINFORCED ANCHORAGE NOMENCLATURE



BB-RA SHEAR TIES & STIRRUPS

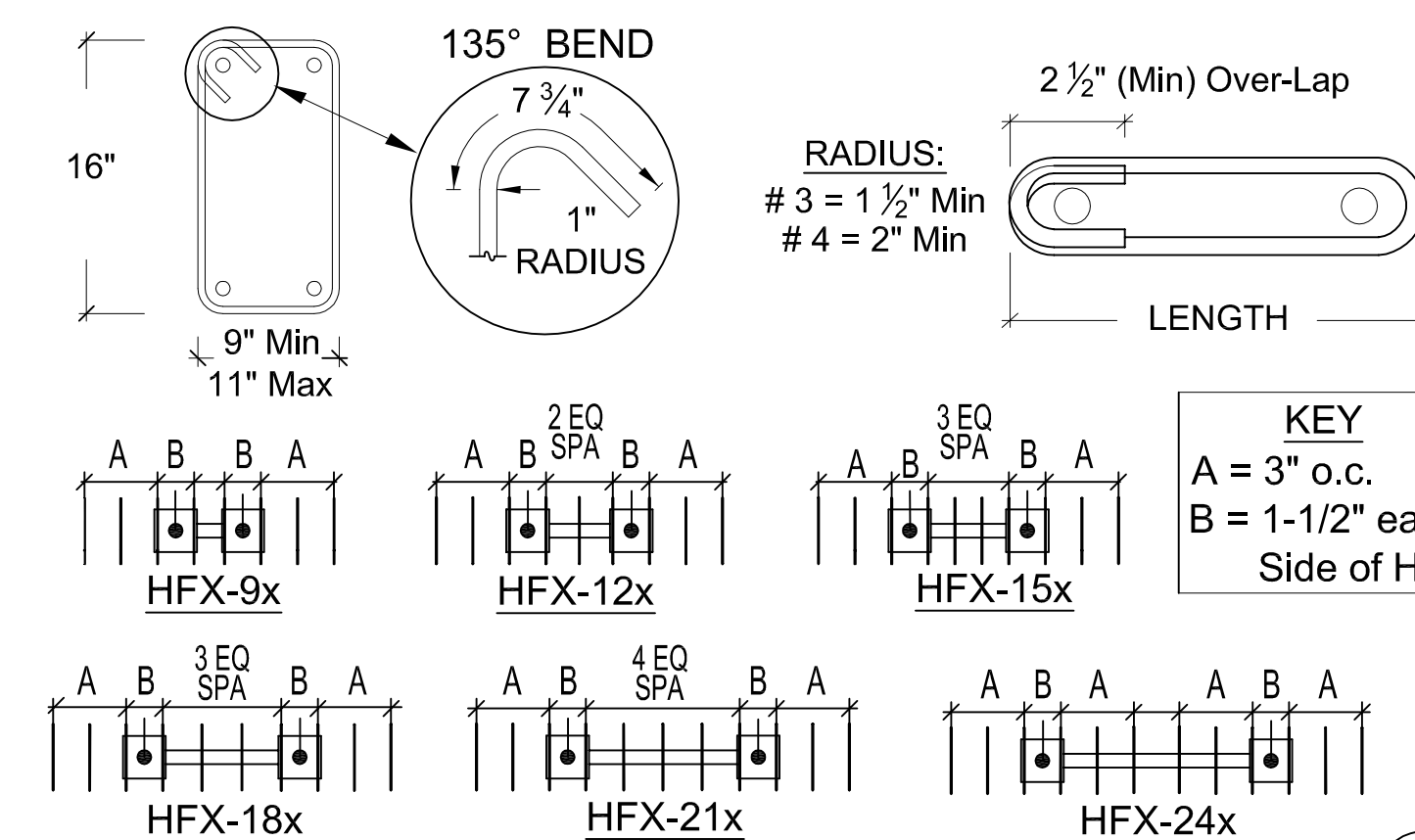
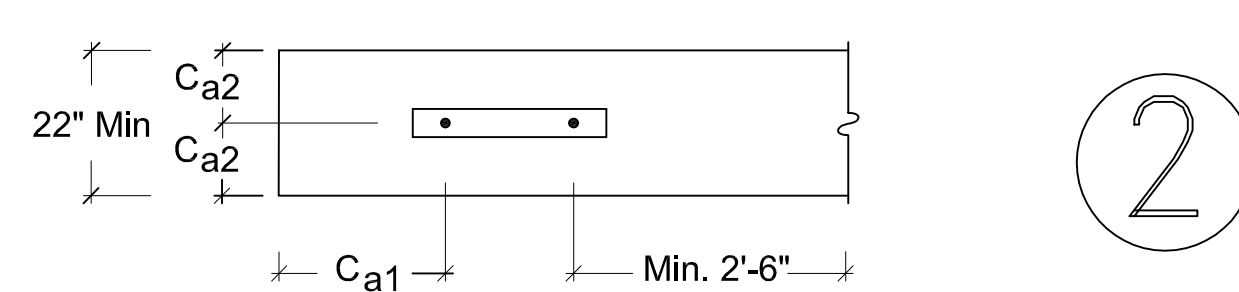
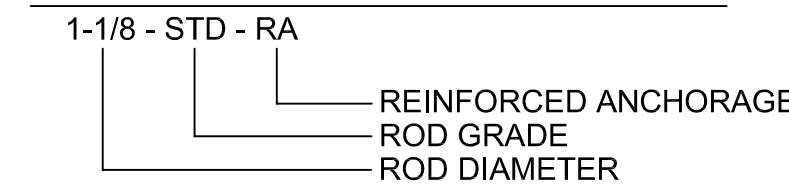


BB-RA SECTIONS & ELEVATIONS

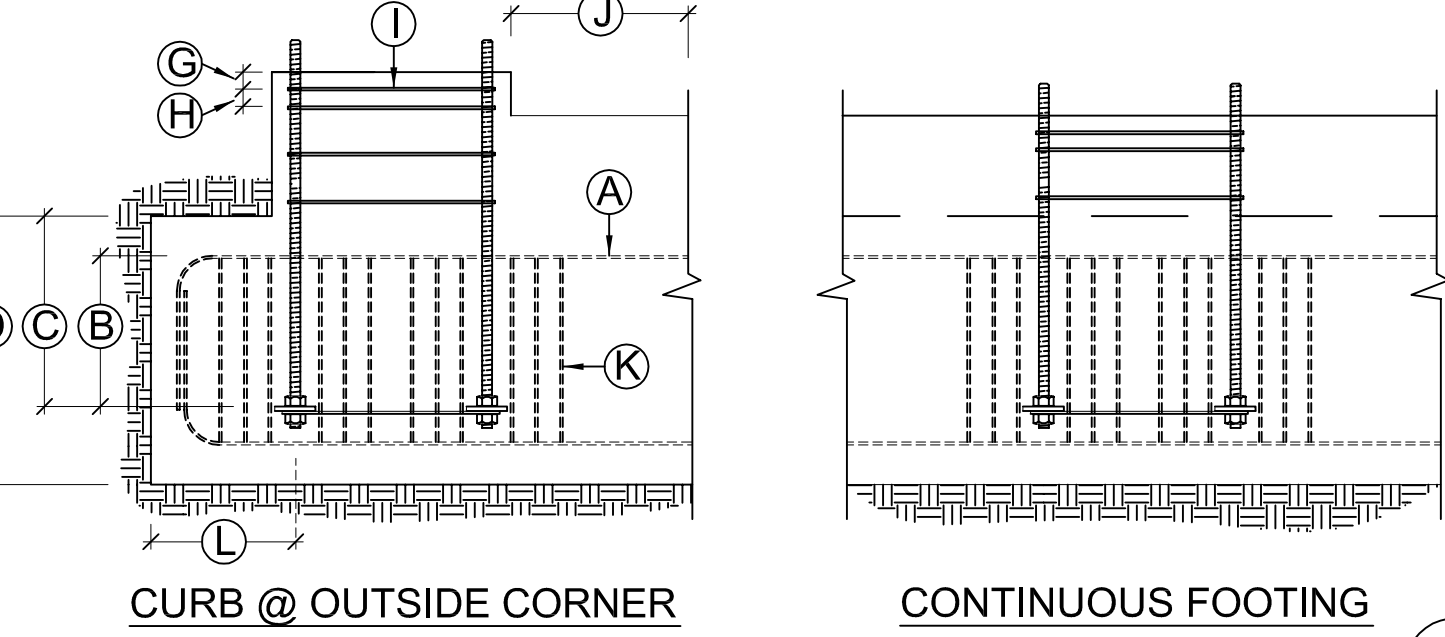
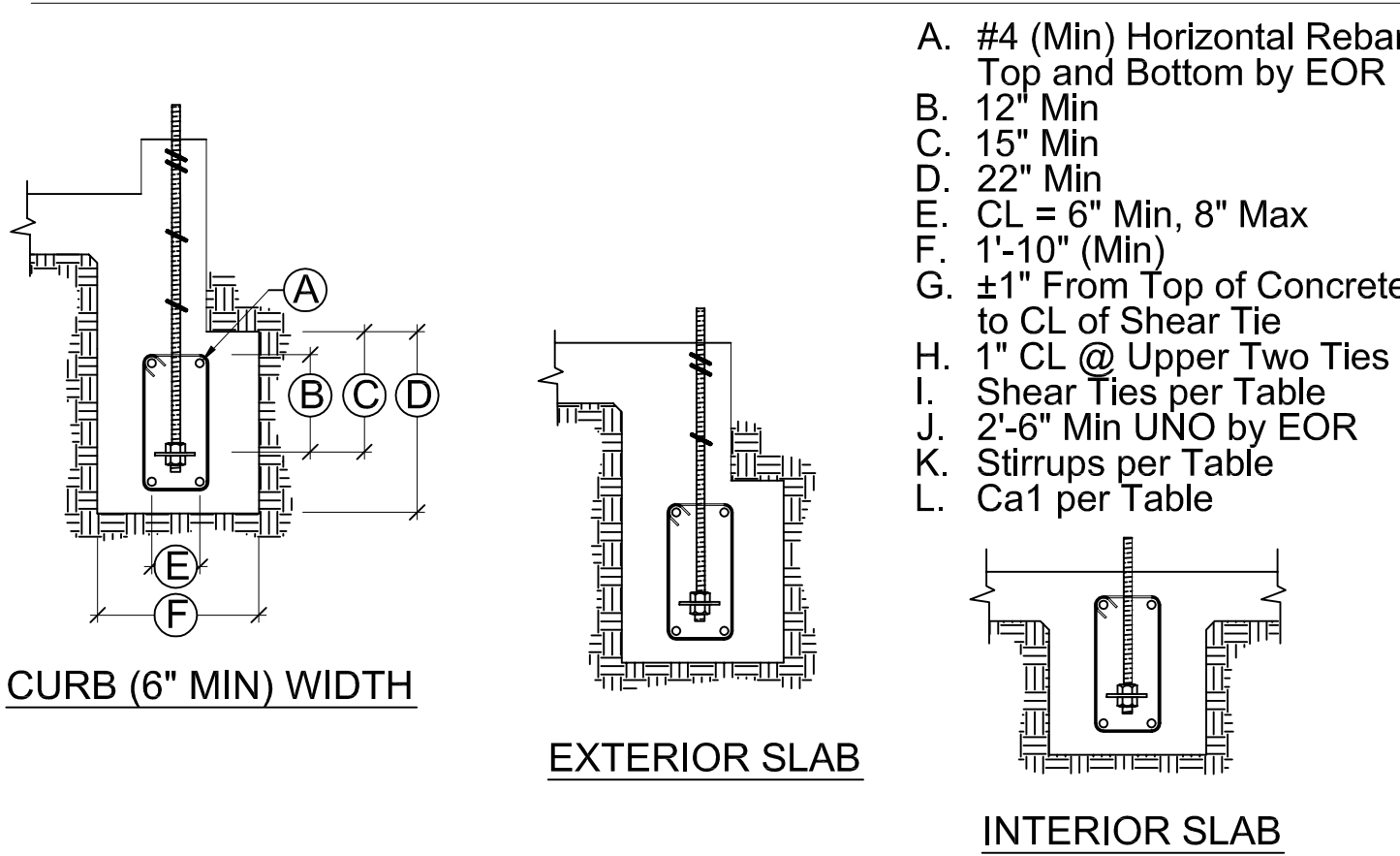
REINFORCED ANCHORAGE (RA)

Model	Panel Width (in)	Anchorage 1	Rod Dia (in)	Rod 2,3 Grade	RA			Stirrups 9 (in)	Shear 7 Ties
					le 4 (in)	Ca1 5 (in)	Ca2 6 (in)		
HFX-9x	9	1-1/8-STD-RA	1-1/8	STD	13	19-3/4	8 - # 4	# 3 (min) @ 3-3/4" OC	
HFX-12x	12	1-1/8-STD-RA 1-1/8-HS-RA		STD HS	18		11	9 - # 4	
HFX-15x	15	1-1/8-STD-RA 1-1/8-HS-RA	STD HS	20		15	10 - # 4	# 3 (min) @ 4" OC	
HFX-18x	18	1-1/8-STD-RA 1-1/8-HS-RA	STD HS	23		20-5/8	11 - # 4		
HFX-21x	21	1-1/8-STD-RA 1-1/8-HS-RA	STD HS		26		12 - # 4	# 4 (min) @ 4" OC	
HFX-24x	24	1-1/8-STD-RA 1-1/8-HS-RA	STD HS						

REINFORCED ANCHORAGE NOMENCLATURE



RA SHEAR TIES & STIRRUPS

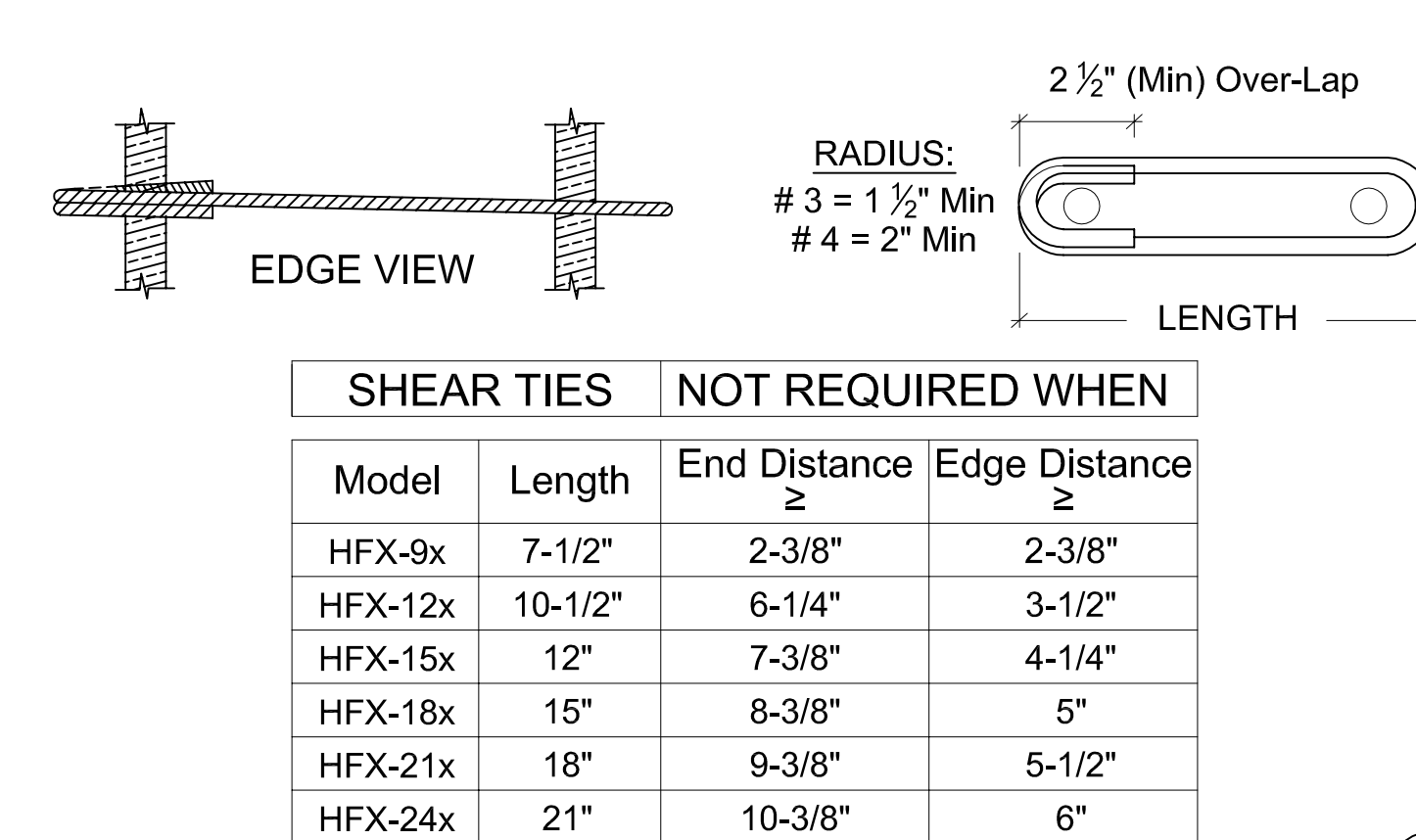
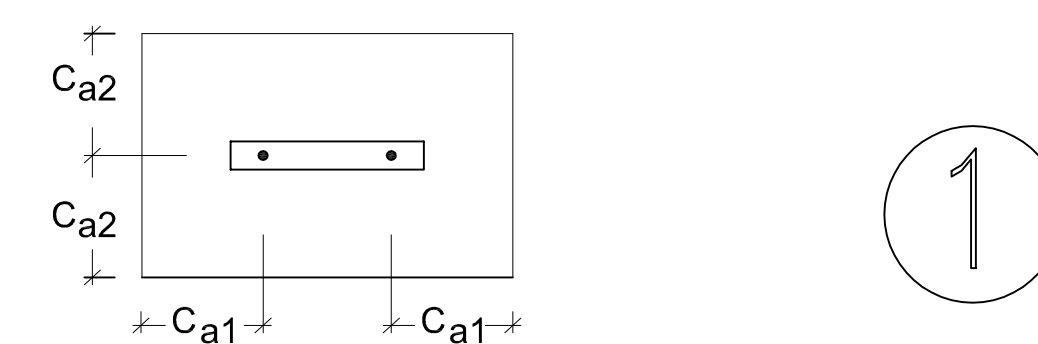
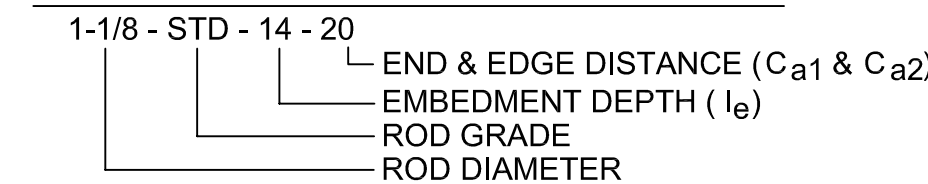


RA SECTIONS & ELEVATIONS

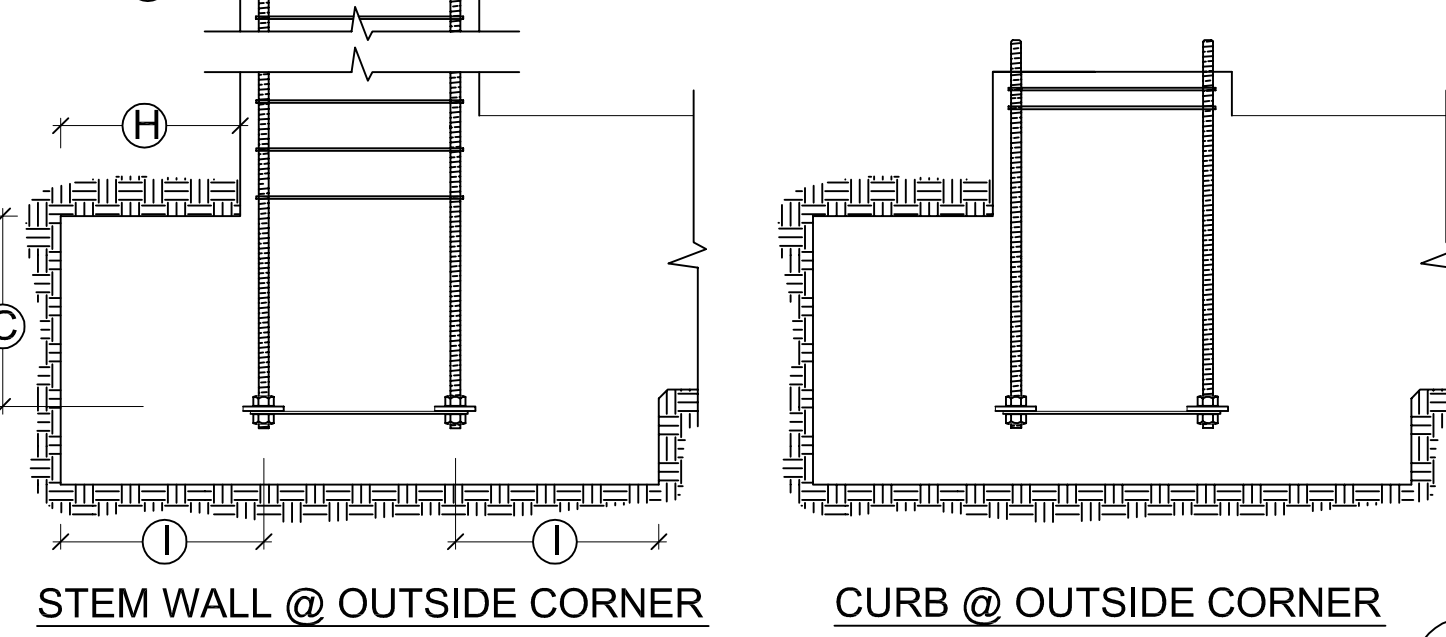
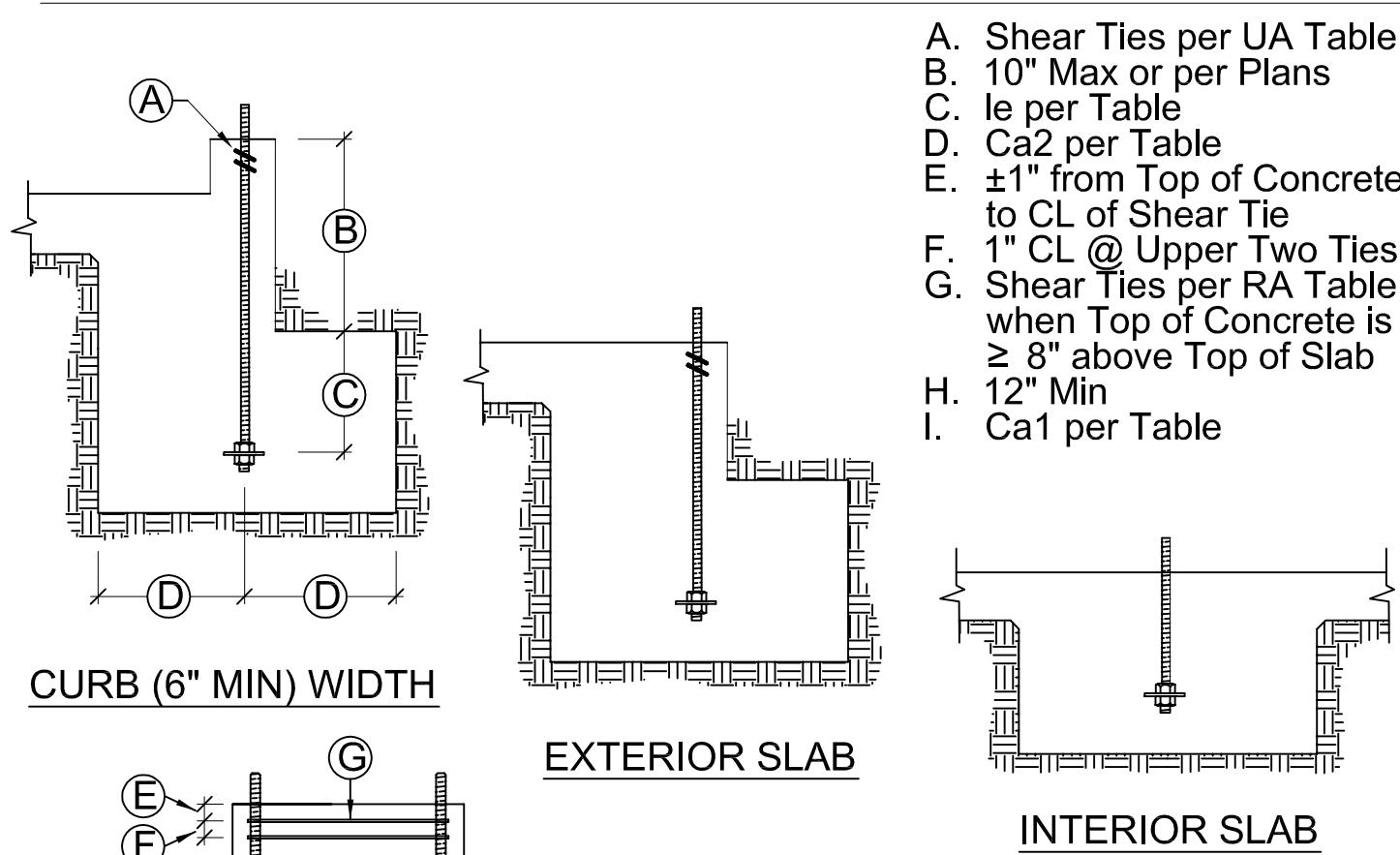
UNREINFORCED ANCHORAGE (UA)

Model	Panel Height	Anchorage 1	Rod Dia (in)	Rod 2,3 Grade	UA			Stirrups 9 (in)	Shear 7,8 Ties
					le 4 (in)	Ca1 5 (in)	Ca2 6 (in)		
HFX-9x	79.5" - 8'	1-1/8-STD-13-19	1-1/8	STD	13	19	8 - # 4	# 3 (min) @ 3-3/4" OC	
HFX-12x	78" - 10'	1-1/8-HS-20-30		HS	20	30	9 - # 4		
HFX-15x, 18x	78" - 13'	1-1/8-STD-14-20	1-1/8	STD	14	20	10 - # 4	# 3 (min) @ 4" OC	
HFX-15x, 18x Balloon	14' - 20'	1-1/8-HS-20-30		HS	20	30	11 - # 4		
HFX-21x, 24x	78" - 13'	1-1/8-STD-14-20 1-1/8-HS-23-34	1-1/8	STD	14	20	12 - # 4	# 4 (min) @ 4" OC	
HFX-21x, 24x Balloon	14' - 20'	1-1/8-HS-20-30		HS	20	30			

UNREINFORCED ANCHORAGE NOMENCLATURE



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 Hardy Frame Bolt Brace (HFXBB) installed with double nuts on the embed end.
- HS indicates Anchors complying with ASTM A193 Grade B7 with a 1/2"x3"x3"(Min) Plate Washer installed with double nuts on the embed end (HFXBB not required).
- le = length of embedment from the top of footing or grade beam to the top of the HFXBB Bolt Brace (top of the embedded Plate Washer @ HS anchors)
- 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, fc = 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

Model	Width	HFX ANCHOR CENTERLINES	
		(A)	(B)
HFX-9x	9"	1-3/4"	5-1/2"
HFX-12x	12"		8-1/2"
HFX-15x	15"		9-3/4"
HFX-18x	18"	2-5/8"	12-3/4"
HFX-21x	21"		15-3/4"
HFX-24x	24"		18-3/4"

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.
- FOR RA AND BB-RA INSTALLATIONS, THE HFXBB BOLT BRACE MAY BE PLACED ON TOP OF THE STIRRUPS WITH DOUBLE-NUTS INSTALLED AT EMBED END OF STANDARD GRADE ANCHOR RODS. (NOTE: 1/2" x 3" x 3" PLATE WASHERS ARE REQUIRED TO BE DOUBLE-NUTTED AT EMBED END OF HIGH STRENGTH ANCHOR RODS.)
- HIGH STRENGTH ALL-THREAD RODS PROVIDED BY HARDY FRAMES ARE STAMPED ON BOTH ENDS.

HF B7

IMPORTANT NOTES

REVISIONS DATE

ANCHORAGE DETAILS - HFX PANELS

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

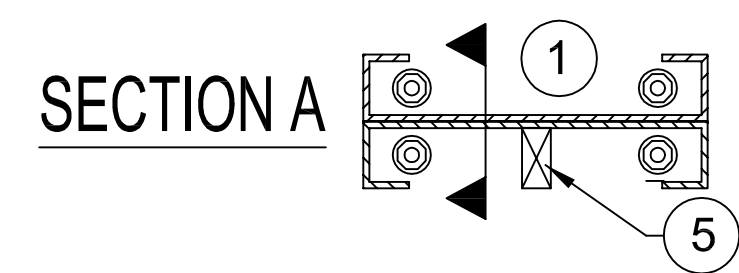
HARDY FRAME
SHEAR-WALL SYSTEM

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



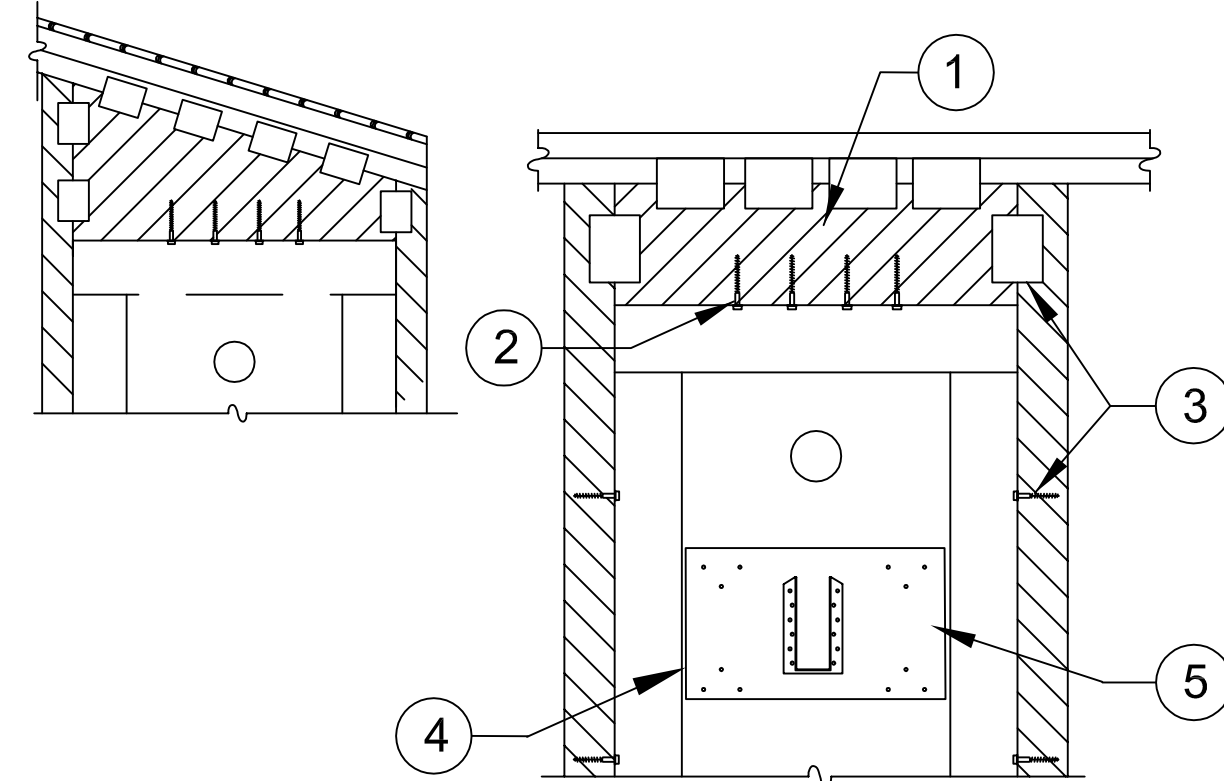
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HFX1



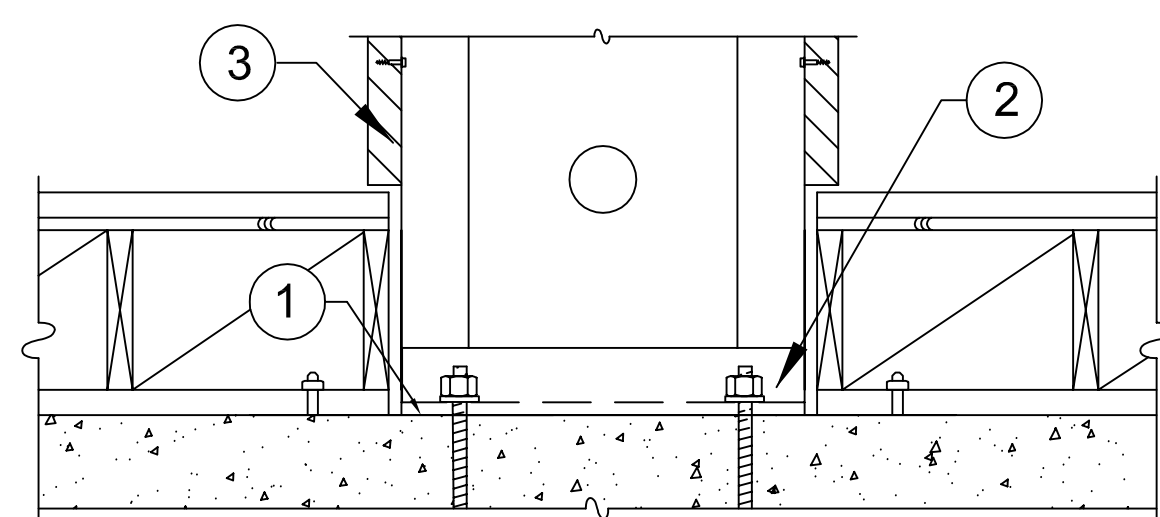
1. CAVITY ORIENTED FOR CONNECTION ACCESS.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS. SEE HFX1 FOR ANCHORAGE.
3. 8 INCH FRAMING ABOVE (MIN).
4. A 2x FILLER WITH 1/4" x 4-1/2" MIN USP-WS SCREWS (OR EQUAL) IS PERMITTED.
5. WOOD BACKING FIELD INSTALLED AS NEEDED.

BACK TO BACK INSTALLATION



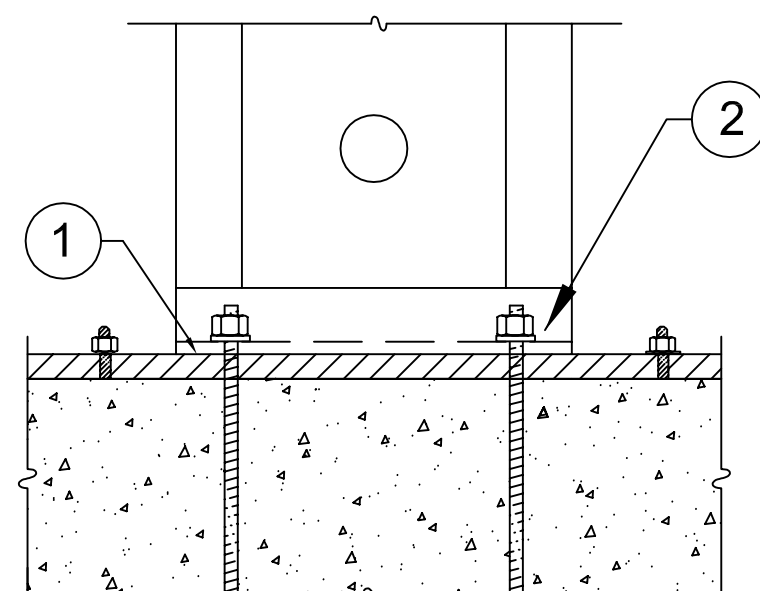
1. 4x WOOD FILLER WITH USP MP4-F CONNECTORS (OR EQUAL) BY BUILDING DESIGN PROFESSIONAL.
2. 1/4" x 3" (MIN) USP "WS-SERIES" SCREWS (OR EQUAL). QUANTITY PER TABLES
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS IS INSTALLED AT THE EDGES WHEN INSTALLING A 4x FILLER ABOVE OR WHEN SPECIFIED BY DESIGN PROFESSIONAL.
4. OPTIONAL LEDGER PRE-DRILL 3/16" DIA. HOLES, EVENLY SPACED IN FACE OF PANEL AND INSTALL 1/4" DIA. WOOD SCREWS INTO 2x (MIN.) WOOD LEDGER LOCATED IN PANEL CAVITY.
5. CONNECTOR AND ATTACHMENT BY BUILDING DESIGN PROFESSIONAL.

TOP CONNECTION W/ 4x FILLER



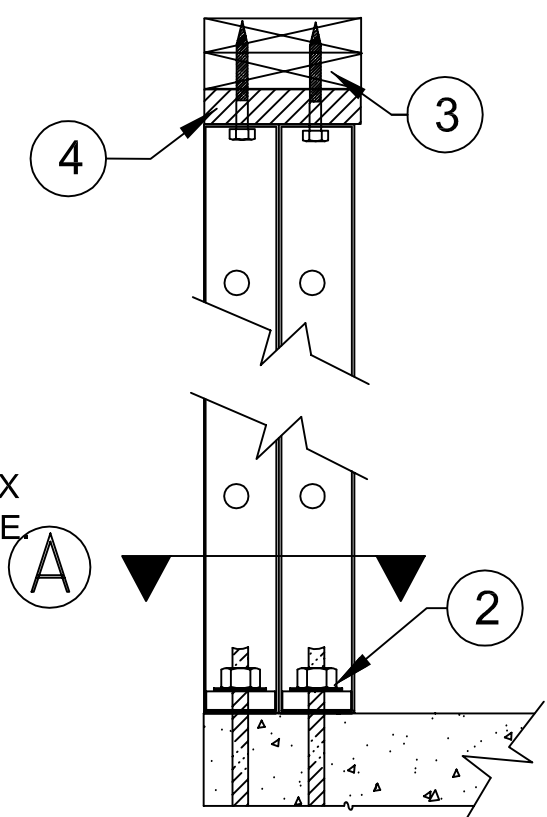
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS. SEE HFX1 FOR ANCHORAGE.
3. ADJACENT FRAMING WITH 1/4" DIAMETER SCREWS IS INSTALLED AT THE EDGES WHEN INSTALLING A 4x FILLER ABOVE OR WHEN SPECIFIED BY DESIGN PROFESSIONAL.

RAISED FLOOR HEAD-OUT



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.

INSTALLATION ON 2x PLATE



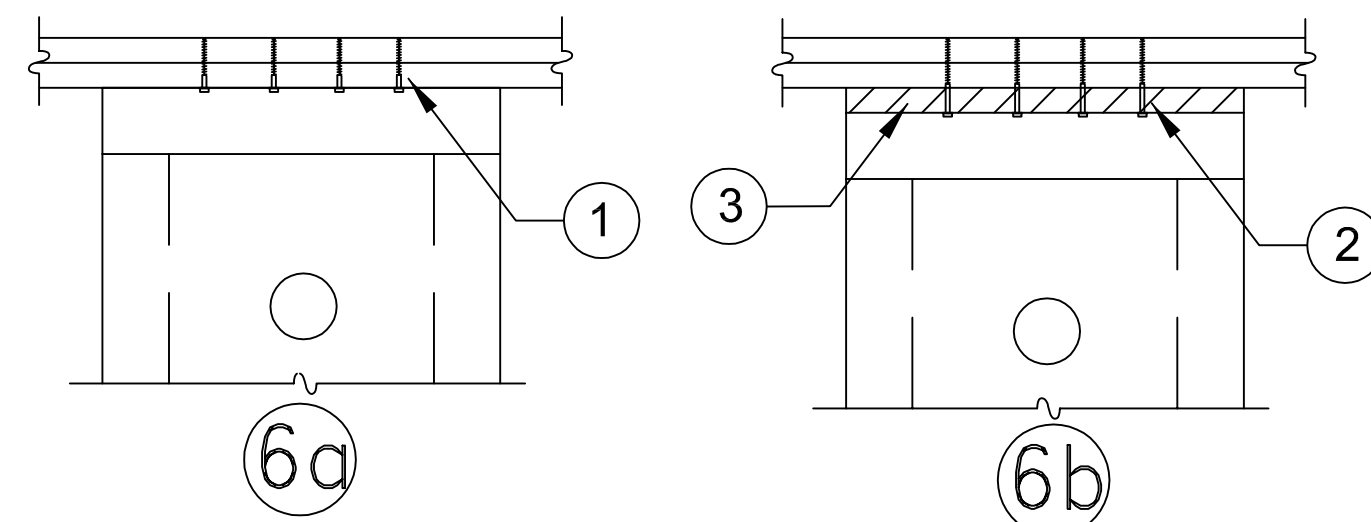
NOTES:

A) OUT OF PLANE FORCES TO BE RESISTED BY OTHER FRAMING MEMBERS PER THE BUILDING DESIGN PROFESSIONAL.

B) BALLOON WALL APPLICATIONS REQUIRE HIGH STRENGTH ANCHORAGE. SEE FOUNDATION PLAN AND ANCHORAGE TABLES ON SHEET HFX-1

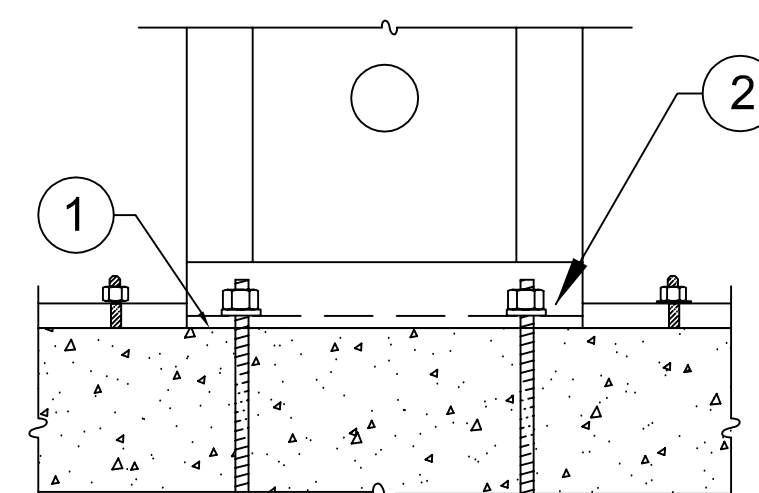
1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
3. WELDED CONNECTION BY HARDY FRAMES, INC. (NO FIELD CONNECTION REQUIRED).
4. A 2x FILLER WITH 1/4" x 4-1/2" MIN USP-WS SCREWS (OR EQUAL) IS PERMITTED.
5. WHEN REQUIRED BY THE BUILDING DESIGN PROFESSIONAL ATTACH ADJACENT WOOD MEMBERS TO PANEL WITH 1/4" USP-WS SCREWS (OR EQUAL) THROUGH THE PANEL EDGE INTO THE WOOD MEMBER.

BALLOON WALL INSTALLATION



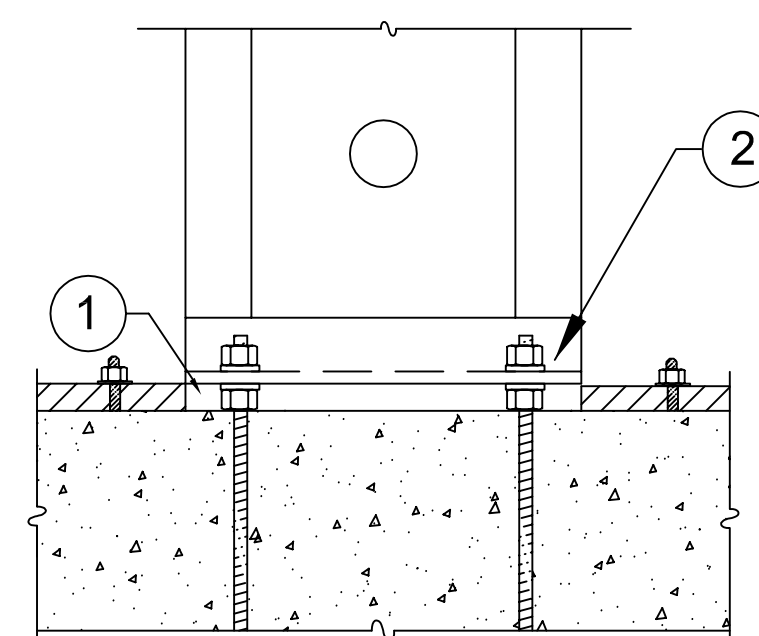
1. 1/4" x 3" (MIN) USP "WS-SERIES" SCREWS (OR EQUAL). QUANTITY PER TABLES
2. 1/4" x 4-1/2" (MIN) USP "WS-SERIES" SCREWS (OR EQUAL). QUANTITY PER TABLES
3. 2x WOOD FILLER.

TOP PLATE CONNECTIONS



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS. SEE HFX1 FOR ANCHORAGE.

INSTALLATION ON FOUNDATION

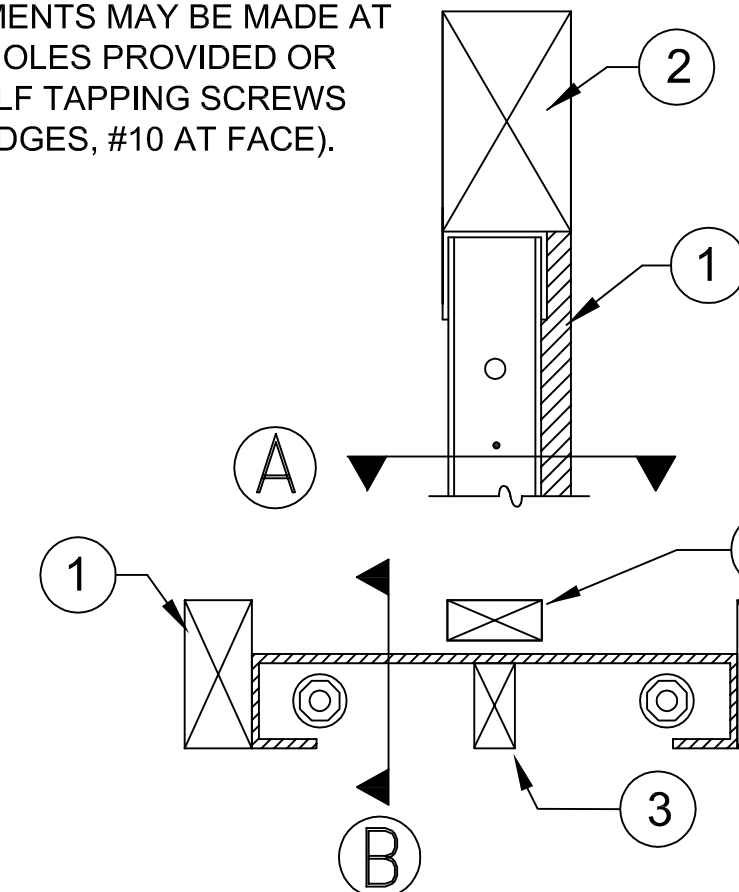


1. PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH MIN 5,000 PSI STRENGTH NON-SHRINK GROUT.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.

INSTALLATION ON NUTS&WASHERS

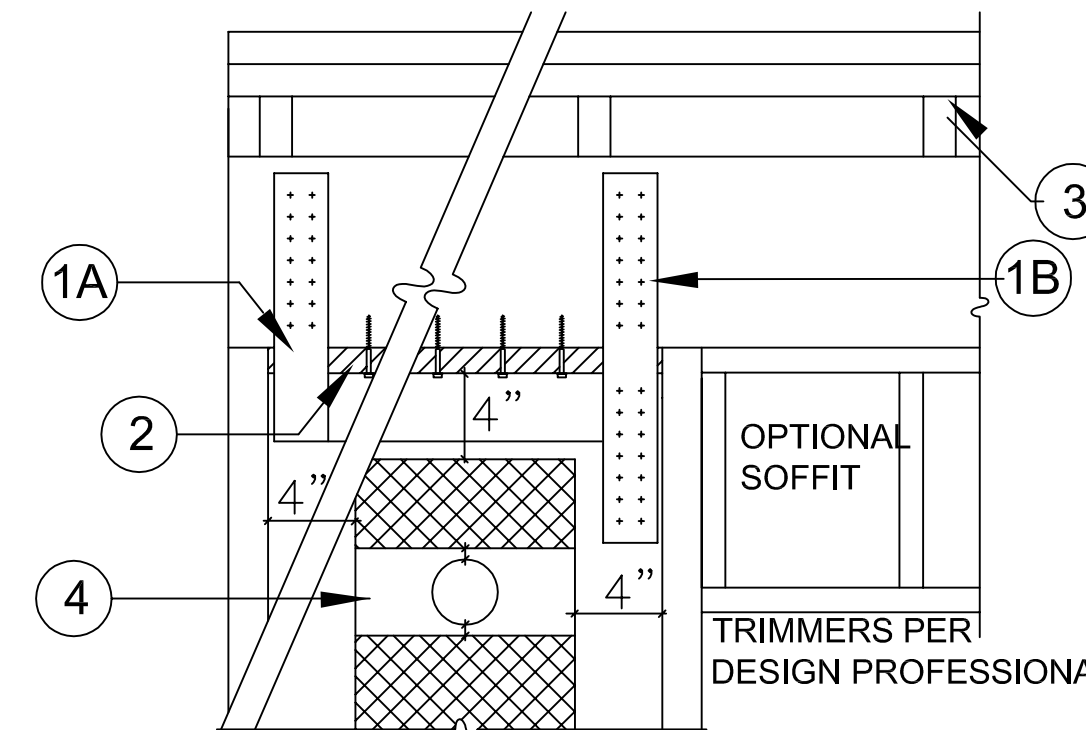
NOTES:

ATTACHMENTS MAY BE MADE AT SCREW HOLES PROVIDED OR WITH SELF TAPPING SCREWS (#12 AT EDGES, #10 AT FACE).



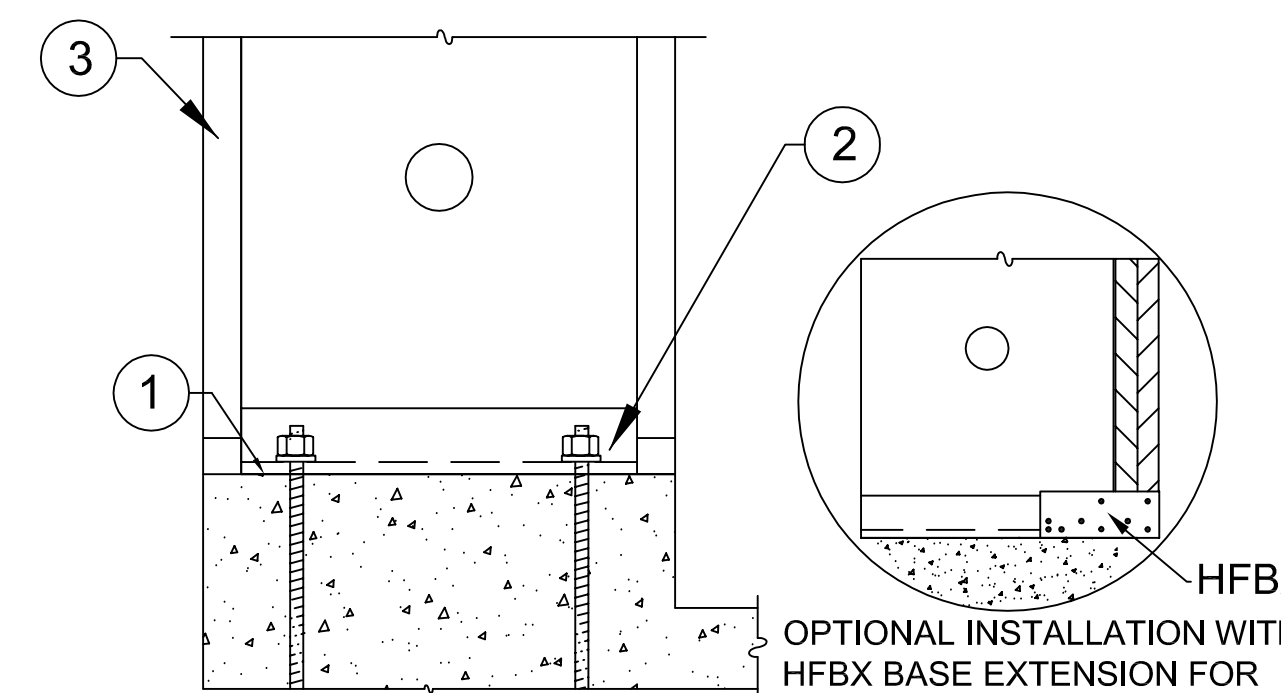
1. TRIMMERS PROVIDE FULL BEARING FOR HEADER ABOVE, DESIGN AND CONNECTIONS BY OTHERS.
2. 6x HEADER.
3. WOOD MEMBERS MAY BE INSERTED VERTICALLY OR HORIZONTALLY IN CAVITY FOR BACKING AS NEEDED.

6x HEADER ABOVE-SECTION



- 1A. WELDED STRAPS ARE AVAILABLE FROM MANUFACTURER WHEN REQUIRED BY THE DESIGN PROFESSIONAL.
- 1B. WHEN STRAPS ARE FIELD INSTALLED THE DESIGN AND CONNECTION IS BY THE DESIGN PROFESSIONAL. CONNECTION TO PANEL WITH SELF TAPPING SCREWS IS PERMITTED.
2. A 2x WOOD FILLER WITH 1/4"x4-1/2" (MIN.) USP "WS" SERIES SCREWS OR EQUAL IS PERMITTED.
3. WHEN CRIPPLE STUDS OCCUR, SHEAR TRANSFER DESIGN TO BE PER THE DESIGN PROFESSIONAL.
- 4A. THERE IS NO "INSIDE" OR "OUTSIDE" FACE OF PANEL. TO PREVENT THE NEED FOR ADDITIONAL HOLES ORIENT THE PANEL CAVITY TOWARD THE FIXTURE BEING INSTALLED.
- 4B. A 1" DIA. HOLE MAY BE ADDED IN THE PANEL FACE WHEN IT IS LOCATED IN THE UPPER HALF OF THE PANEL HEIGHT AND IS 4" MIN. FROM ANY EDGE. FOR PANELS MORE THAN 12" WIDE, ADDITIONAL HOLES MUST ALSO BE 1" MINIMUM ABOVE AND BELOW THE 3" DIA. HOLE PROVIDED.
- 4C. FOR HOLES LARGER THAN 1" DIA. OR TO ADD MORE THAN ONE HOLE CONTACT HARDY FRAMES, INC.

TOP CONNECTION TO HEADER



1. 15# FELT OR EQUIVALENT MOISTURE BARRIER RECOMMENDED BETWEEN PANEL BASE AND CONCRETE.
2. 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
3. ADJACENT FRAMING OPTIONAL U.N.O. BY BUILDING DESIGN PROFESSIONAL.

INSTALLATION ON CURB

HFX-SERIES 78 IN. THRU 13 FOOT

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter ¹ (in)	Top Screw Qty ² (ea)	Screw Qty Available at Edges (ea) ³
HFX-12,15,18,21 & 24x78	78	3-1/2	1-1/8	9" Width = 5	4
HFX-9x79.5	79-1/2			12" Width = 6	
HFX-12,15,18,21 & 24x8	92-1/4			15" Width = 8	
HFX-9x8	93-3/4			18" Width = 10	5
HFX-12,15,18,21 & 24x9	104-1/4			21" Width = 12	
HFX-12,15,18,21 & 24x10	116-1/4			24" Width = 14	
HFX-15,18,21 & 24x11	128-1/4			6	
HFX-15,18,21 & 24x12	140-1/4			7	
HFX-15,18,21 & 24x13	152-1/4			8	

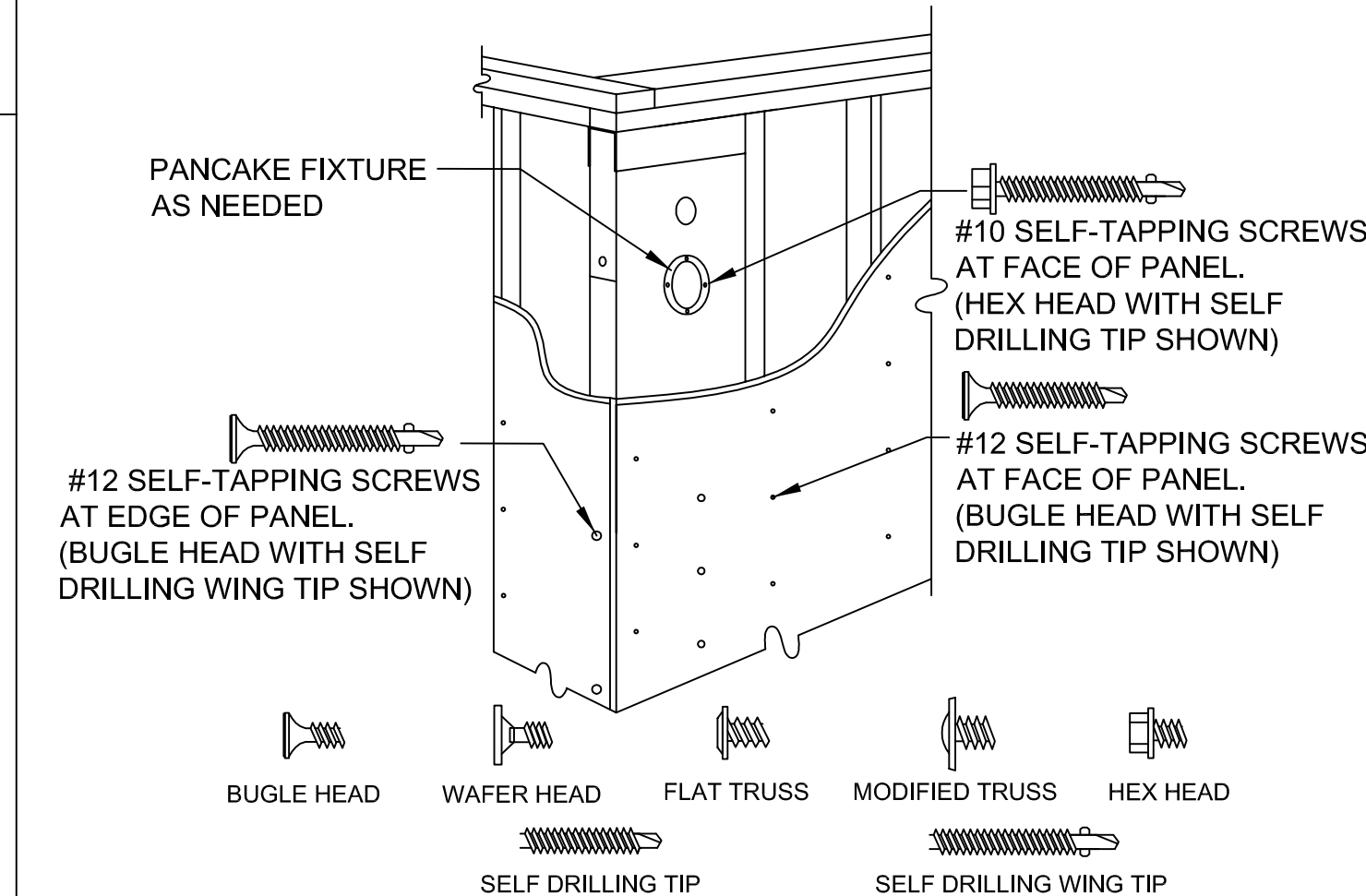
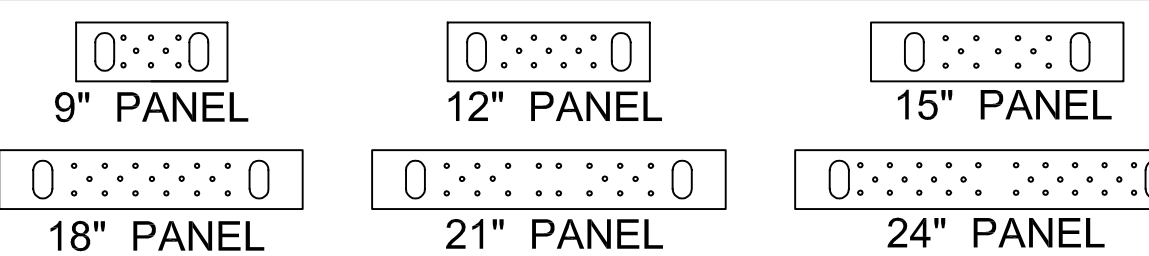
BALLOON PANELS 14 FEET THRU 20 FEET

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter ¹ (in)	Top Screw Qty ² (ea)	Screw Qty Available at Edges (ea) ³
HFX-15,18,21 & 24x14	164-1/4	3-1/2	1-1/8	15" Width = 8	6
HFX-15,18,21 & 24x15	176-1/4			18" Width = 10	
HFX-15,18,21 & 24x16	188-1/4			21" Width = 12	
HFX-15,18,21 & 24x17	200-1/4			24" Width = 14	7
HFX-15,18,21 & 24x18	212-1/4				
HFX-15,18,21 & 24x19	224-1/4				
HFX-15,18,21 & 24x20	236-1/4			8	

- 1) Hold down bolts connect to the Panel base with (1 ea) Hardened Round, (2 ea) Round-Flat or (2 ea) SAE Washers below (1 ea) Grade 8 Hex Nut on each rod or as specified by the Building Design Professional.
- 2) 1/4" diameter USP-WS Series screws (or equal). Length is 3" (minimum) when attached directly to the collector and 4-1/2" (minimum) when installing a 2x filler above the Panel.
- 3) Adjacent framing with 1/4" diameter screws is required at the edges when installing a 4X filler above or when specified by the Design Professional.

INSTALLATION INSTRUCTIONS

- When installing directly on concrete, place Panel over bolts and connect with (1 ea) Hardened Round, (2 ea) Round-Flat or (2 ea) SAE Washers below (1 ea) Grade 8 or 2H Heavy Hex Nut. Secure with a deep socket (recommended) until "Snug Tight".
- If bottom connection is not detailed on plans, confirm with Design Professional before installing on Nuts & Washers or on a Mudsill.
- Use 1/4"x4-1/2" USP-WS Series screws (or equal) at top connections with a 2x filler. If the top of Panel is in direct contact with the collector above (top plates, header, beam, etc.) use 1/4 x 3" (minimum)
- For installations with a 4x filler above 1/4" diameter screws are required at the Panel edges to brace for the out-of-plane hinge or when they are specified by the Design Professional.



NOTES:

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

REVISIONS DATE

FRAMING DETAILS - HFX PANELS

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

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



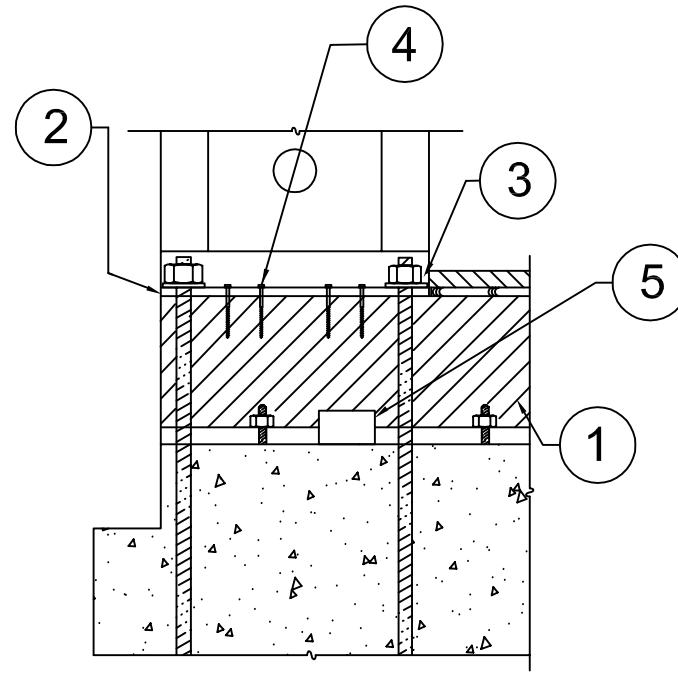
DATE:

1-1-2017

HFX2

NOTE: INSTALLATION WITHOUT **HARDY FRAME** BEARING PLATE (HFXPB) RESULTS IN A DECREASE OF ALLOWABLE SHEAR VALUE. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.

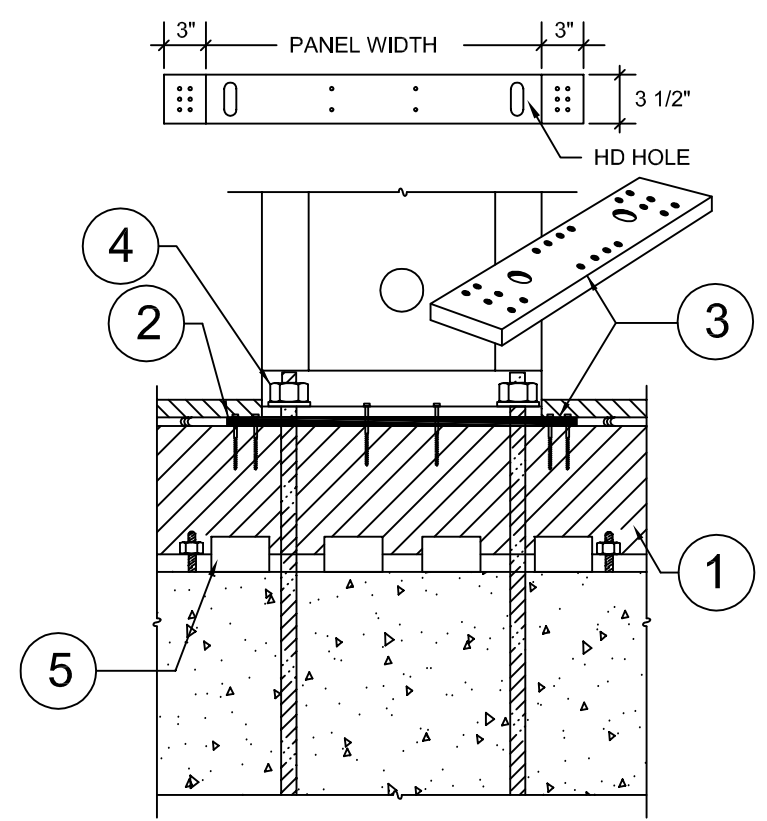
NOTE: COUPLING NUTS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.



- 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
- FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXPB).
- HARDY FRAME** BEARING PLATE (HFXPB) WITH 6 EA. 1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
- USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

RAISED-OS CORNER ④

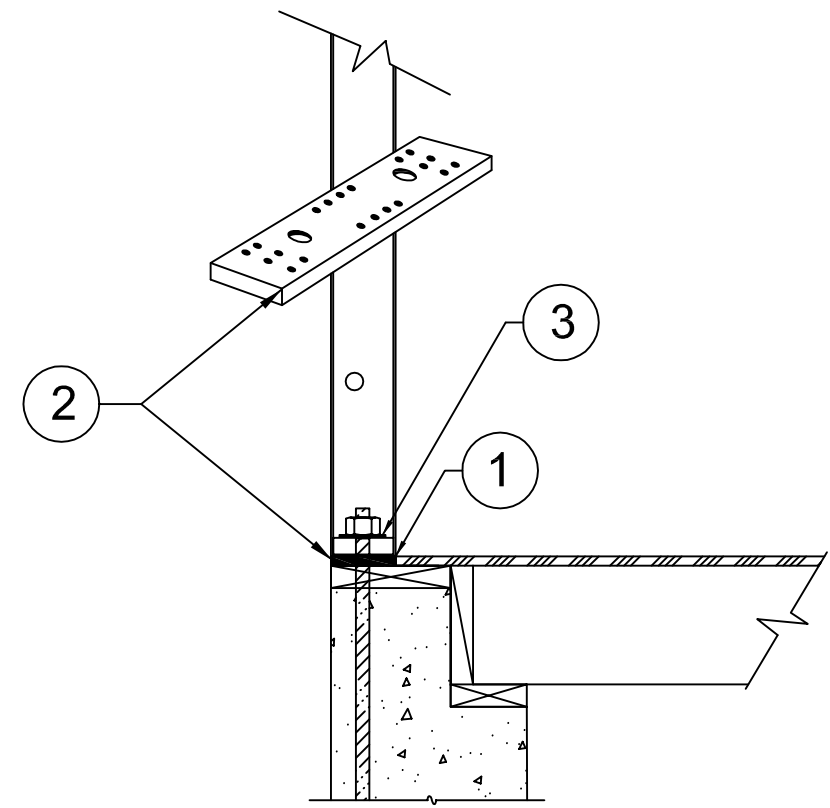
NOTE: COUPLING NUTS MAY BE USED WHEN THREADED ROD IS SUBJECT TO TENSION LOADS ONLY.



- 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
- FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXPB).
- HARDY FRAME** BEARING PLATE (HFXPB) WITH 6 EA. 1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
- USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

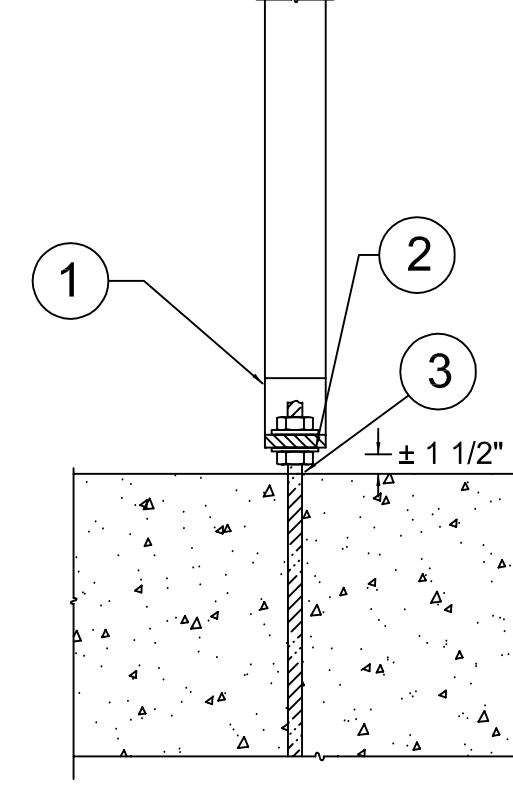
RAISED-BEARING PL ③

NOTE: INSTALLATION WITHOUT **HARDY FRAME** BEARING PLATE (HFXPB) MAY INCREASE DEFLECTION AND RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUE. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



- FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXPB).
- HARDY FRAME** BEARING PLATE (HFXPB) WITH 6 EA. 1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.

RAISED STEM WALL ②



- ACCESS HOLE LOCATED AT EDGE OF POST.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT. SEE HFX1 FOR ANCHORAGE.
- PLUS OR MINUS 1-1/2" GAP TO BE FILLED WITH MINIMUM 5,000 PSI STRENGTH NON-SHRINK GROUT.

POST ON DBL. NUT ①

Model Number	Net Height (in)	Depth (in)	Hold Down Diameter ¹ (in)	Screw Quantity		Screw Qty ⁴ Available at Edges (ea)
				Panel	Top ² (ea)	
HFX-12,15,18,21 & 24x8	92-1/4	3-1/2	1-1/8	12" Width	6	4
HFX-12,15,18,21 & 24x9	104-1/4			15" Width	8	
HFX-12,15,18,21 & 24x10	116-1/4			18" Width	10	
HFX-15,18,21 & 24x11	128-1/4			21" Width	12	
HFX-15,18,21 & 24x12	140-1/4			24" Width	14	5
HFX-15,18,21 & 24x13	152-1/4					6

NOTE: **HARDY FRAME** "STK" WASHERS ARE REQUIRED IN THE TOP OF PANELS WHEN CONNECTING TO A HOLD DOWN ROD FROM ABOVE. **HARDY FRAME** "STK PANELS" INCLUDE STK WASHERS PRE-WELDED IN THE TOP CHANNEL.

- Hold down bolts specified as Standard Grade (STD) must comply with ASTM F1554 Grade 36 (or equal). Hold down bolts specified as High Strength (HS) must comply with ASTM A 193 Grade B7 (or equal). HD bolts (both grades) connect to the base of the Panel above with one Hardened Round, two Flat or two SAE Washers and a Grade 8 Hex Nut (or equal). HD bolts (both grades) connect to the top channel of the Panel below with a **Hardy Frame** Stacking (STK) Washer (may be pre-welded in a **Hardy Frame** "STK" Panel), one Hardened Round, two Flat or two SAE Washers and a Grade 8 Hex Nut (or equal).
- 1/4" diameter USP-WS Series screws (or equal). Length is 3" (minimum) when attaching directly to the collector and 4-1/2" (minimum) when installing a 2x filler above the Panel.
- 1/4" diameter USP-WS Series screws (or equal). Length is 4-1/2" (minimum) through base of Panel and 3" (minimum) at **Hardy Frame** Bearing Plate (HFXPB).
- 1/4" diameter screws are required at the edges when installing a 4x filler above or when specified by the Design Professional.

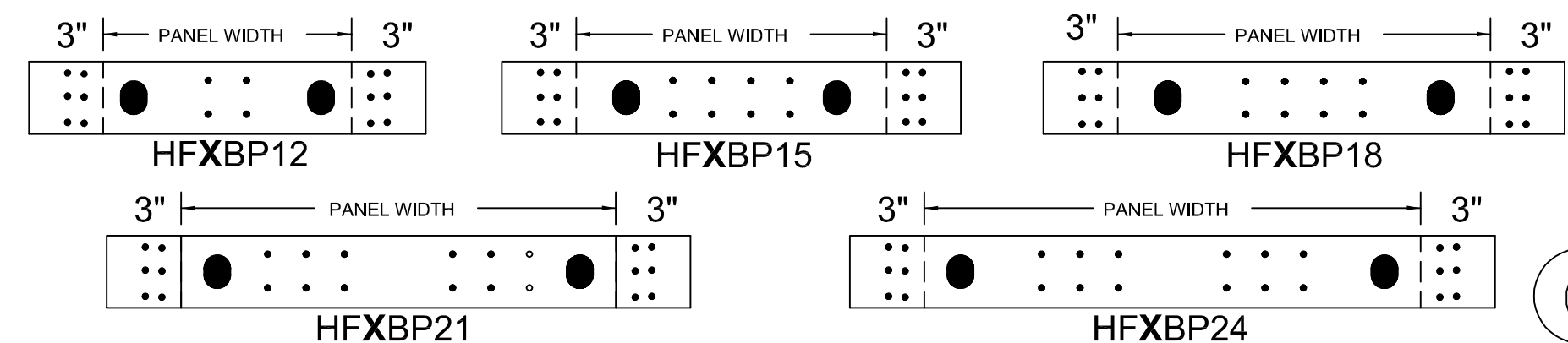
(A)

INSTALLATION ON FLOOR SYSTEMS WITH **HARDY FRAME** BEARING PLATE (HFXPB)

- Install a solid 4x (min) rim in floor system below Panel. Table values assume Engineered Wood Product (EWP).
- Notch floor sheathing and screw ends of HFXPB to rim with 1/4"x3" (min) USP "WS" Series Screws (or equal).
- Install Panel on HFXPB, connect with threaded rod grade specified on plans and secure base of Panel with Hardened Round Washer and Grade 8 Nut (or equal). Nuts to be snug tight.
- When stacking to a Panel below, "STK" Panels include "STK Washers" pre-welded in the top channel, or field install "STK" Washer, Hardened Round Washer and a Grade 8 Nut in the top channel of the Panel below.
- When more than 12 screws are required for minimum bottom screw quantity, install 1/4"x4-1/2" Screws through Panel base and HFXPB into rim.
- For standard wall heights, install a 2x filler above Panel (Dtl 6/HFX2). For larger fillers see Dtl 10/HFX2.

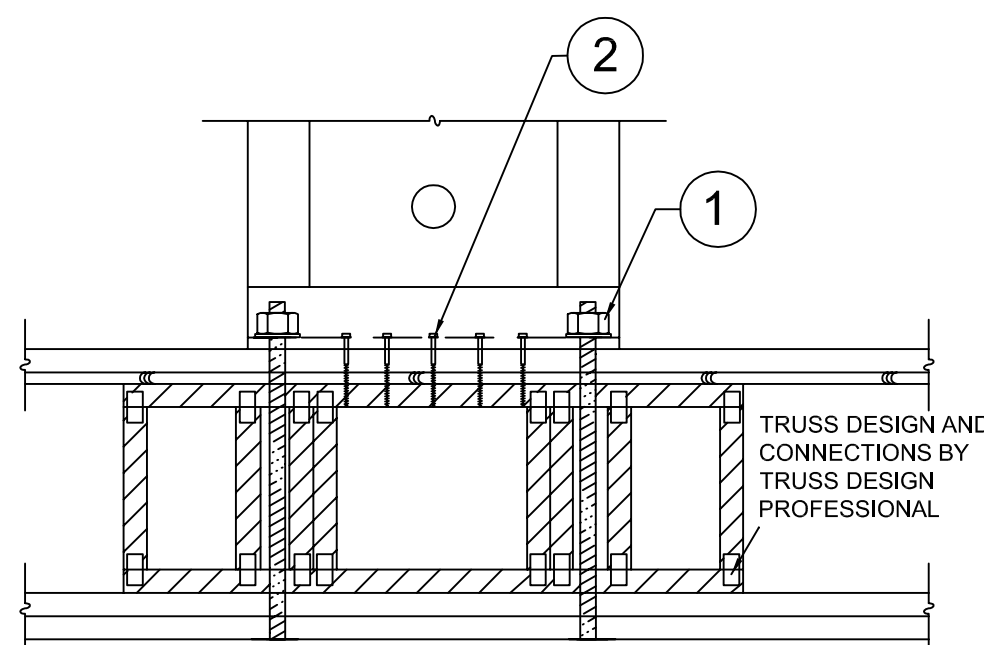
NOTE: Installations may vary with specific job conditions and/or specifications by the Design Professional.

(B)



(C)

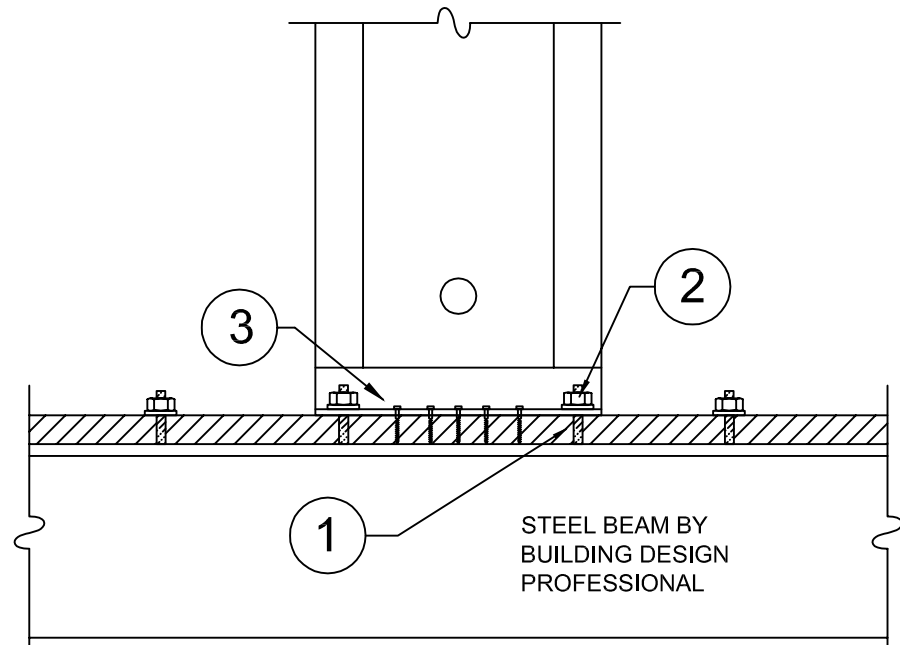
NOTE: A. INSTALLATION WITHOUT **HARDY FRAME** BEARING PLATE (HFXPB) INCREASES DEFLECTION AND MAY RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUES BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS. B. TRUSS DESIGN PROFESSIONAL TO CHECK LATERAL SHEAR AND OVERTURNING MOMENT OF TRUSS SYSTEM. C. END BLOCK CONFIGURATION MAY CHANGE TO ACCOMMODATE SPECIFIC JOB CONDITIONS.



- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
- 1/4" MIN USP-WS SCREWS (OR EQUAL) WITH FULL PENETRATION INTO TOP CHORD OF BLOCK.

OPEN WEB TRUSS ⑭

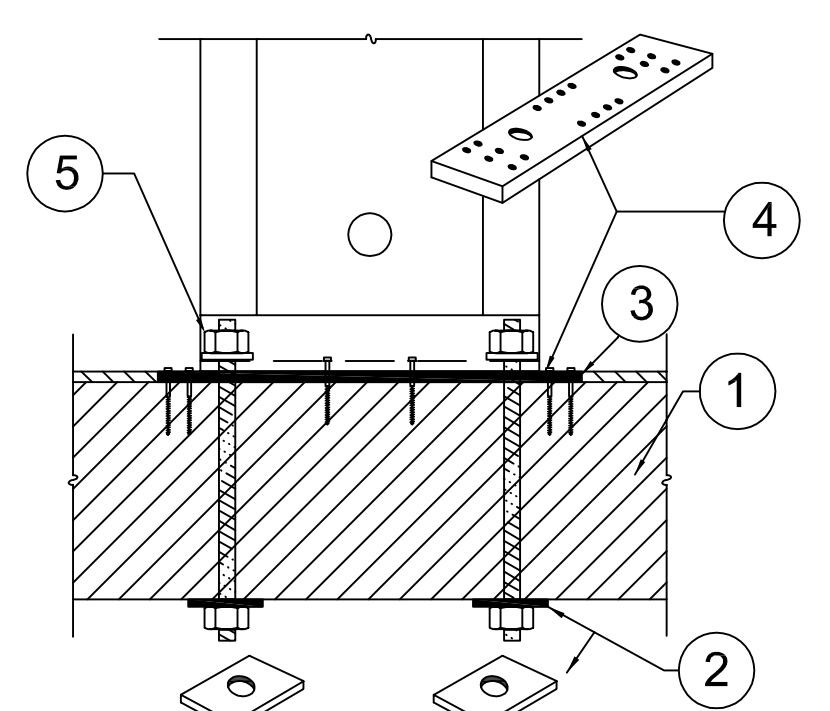
BUILDING DESIGN PROFESSIONAL TO DESIGN
A. LOAD PATH FROM BEAM TO FOUNDATION.
B. INSTALLATION WITHOUT **HARDY FRAME** BEARING PLATE (HFXPB) INCREASES PANEL DEFLECTION AND MAY RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUES. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.
C. BEAM DEFLECTION MAY INCREASE TOTAL DRIFT OF PANEL. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



- HOLD DOWN ALL THREAD RODS WELDED TO STEEL BEAM BY BUILDING DESIGN PROFESSIONAL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT.
- 1/4" MIN USP-WS SCREWS (OR EQUAL) MAY BE INSTALLED FOR ADDITIONAL SHEAR TRANSFER.

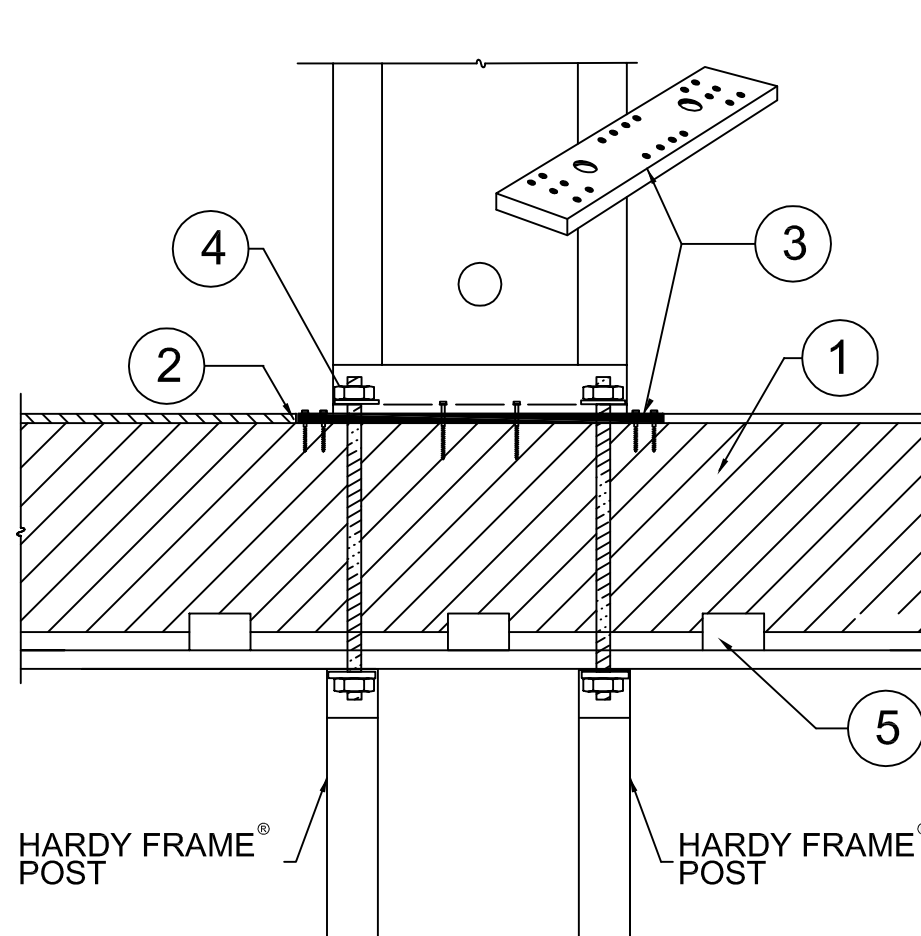
STEEL BM-WELDED HD ⑬

BUILDING DESIGN PROFESSIONAL TO DESIGN
A. LOAD PATH FROM BEAM TO FOUNDATION.
B. INSTALLATION WITHOUT **HARDY FRAME** BEARING PLATE (HFXPB) INCREASES PANEL DEFLECTION AND MAY RESULT IN A DECREASE OF ALLOWABLE SHEAR VALUES. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.
C. BEAM DEFLECTION MAY INCREASE TOTAL DRIFT OF PANEL. BUILDING DESIGN PROFESSIONAL MUST ANALYZE EFFECTS.



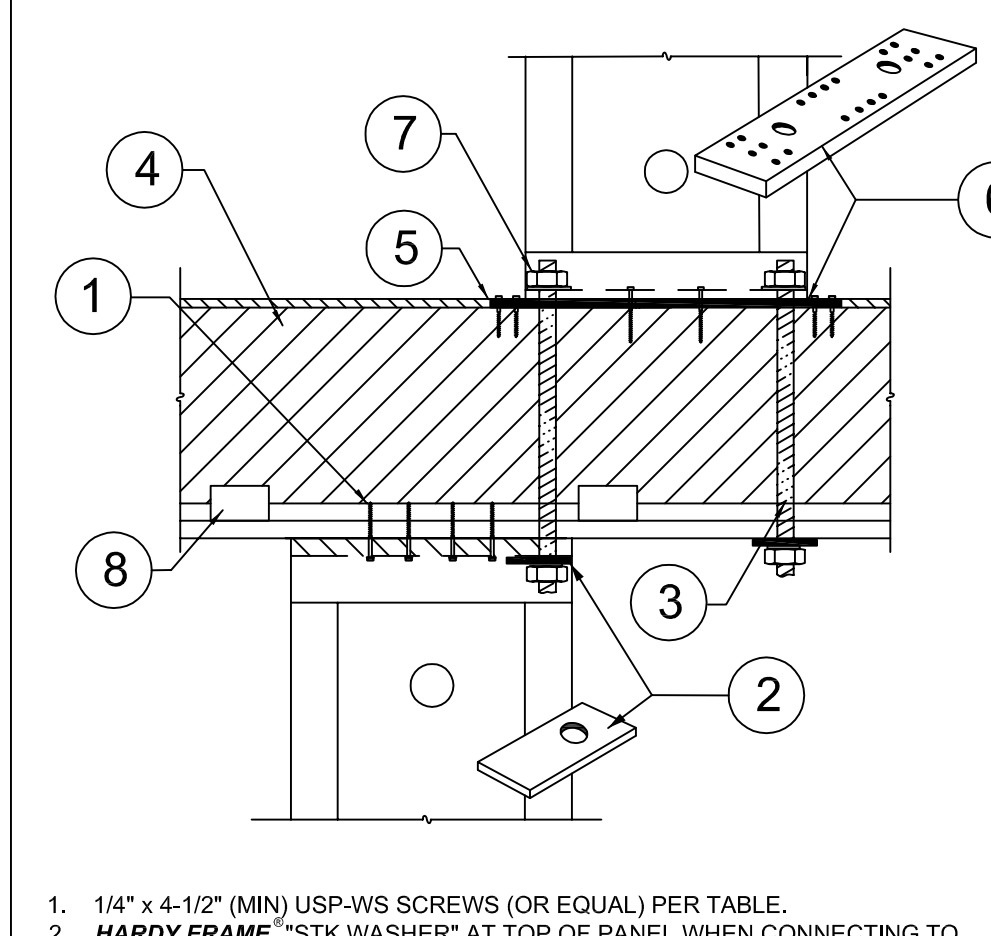
- WOOD BEAM PER PLAN.
- ALL THREAD HOLD DOWN WITH PLATE WASHER AS DETERMINED BY THE BUILDING DESIGN PROFESSIONAL AT UNDERSIDE OF BEAM PER PLAN.
- FLOOR SHEATHING NOTCHED FOR BEARING PLATE.
- HARDY FRAME** BEARING PLATE (HFXPB) WITH 6 EA. 1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT.

WOOD BM THRU BOLT ⑫



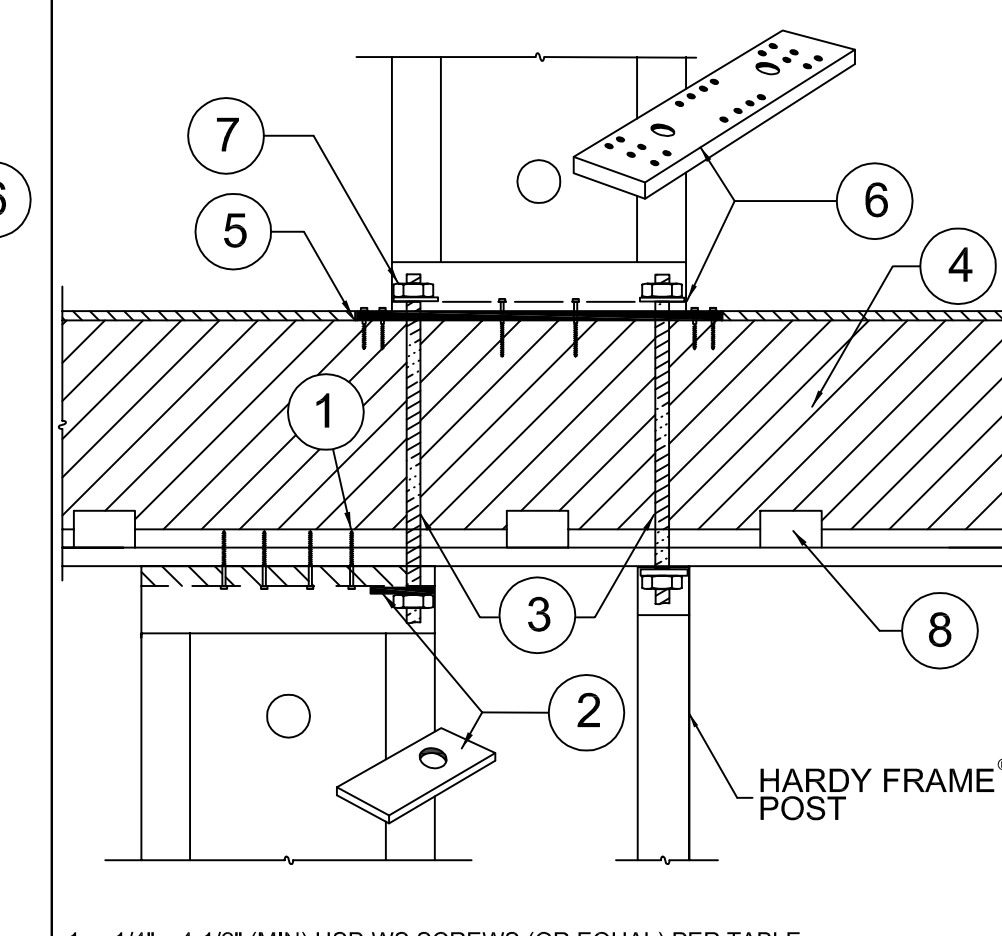
- 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
- FLOOR SHEATHING NOTCHED FOR BEARING PLATE.
- HARDY FRAME** BEARING PLATE (HFXPB) WITH 6 EA. 1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
- USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

POSTS BELOW ⑪



- 1/4" x 4-1/2" (MIN) USP-WS SCREWS (OR EQUAL) PER TABLE.
- HARDY FRAME** "STK" WASHER" AT TOP OF PANEL WHEN CONNECTING TO HOLD DOWN ABOVE.
- ALL THREAD ROD HOLD DOWN WITH PLATE WASHER AS DETERMINED BY THE BUILDING DESIGN PROFESSIONAL AT UNDERSIDE OF BEAM PER PLAN.
- 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
- FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXPB).
- HARDY FRAME** BEARING PLATE (HFXPB) WITH 6 EA. 1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
- USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

STAGGERED-THRU BOLT ⑩



- 1/4" x 4-1/2" (MIN) USP-WS SCREWS (OR EQUAL) PER TABLE.
- HARDY FRAME** "STK" WASHER" AT TOP OF PANEL WHEN CONNECTING TO HOLD DOWN ABOVE.
- ALL THREAD ROD PER PLANS.
- 4x (MIN) RIM, TABLES SPECIFY ENGINEERED WOOD PRODUCT.
- FLOOR SHEATHING NOTCHED FOR BEARING PLATE (HFXPB).
- HARDY FRAME** BEARING PLATE (HFXPB) WITH 6 EA. 1/4" DIA. x 3" (MIN) USP-WS SCREWS (OR EQUAL) AT EACH END. WHEN MORE THAN 12 EA. SCREWS ARE REQUIRED INSTALL 1/4" x 4-1/2" (MIN) SCREWS THROUGH BASE OF PANEL.
- 1 EA. HARDENED ROUND, 2 EA. SAE OR 2 EA. ROUND-FLAT WASHERS AND 1 EA. GRADE 8 HEX NUT AT BOTH ENDS.
- USP MP4 F CONNECTORS OR EQUAL BY BUILDING DESIGN PROFESSIONAL.

STAGGERED TO POST ⑨

REVISIONS DATE
R-3 8/5/15

FLOOR SYSTEM DETAILS - HFX PANELS

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

HARDY FRAME SHEAR WALL SYSTEM

1792 PALMA DRIVE, SUITE 200, VENTURA, CA 93003
TELEPHONE: 800 754-3030 / www.hardyframe.com

DATE: 1-1-2017

HFX SERIES

HFX3