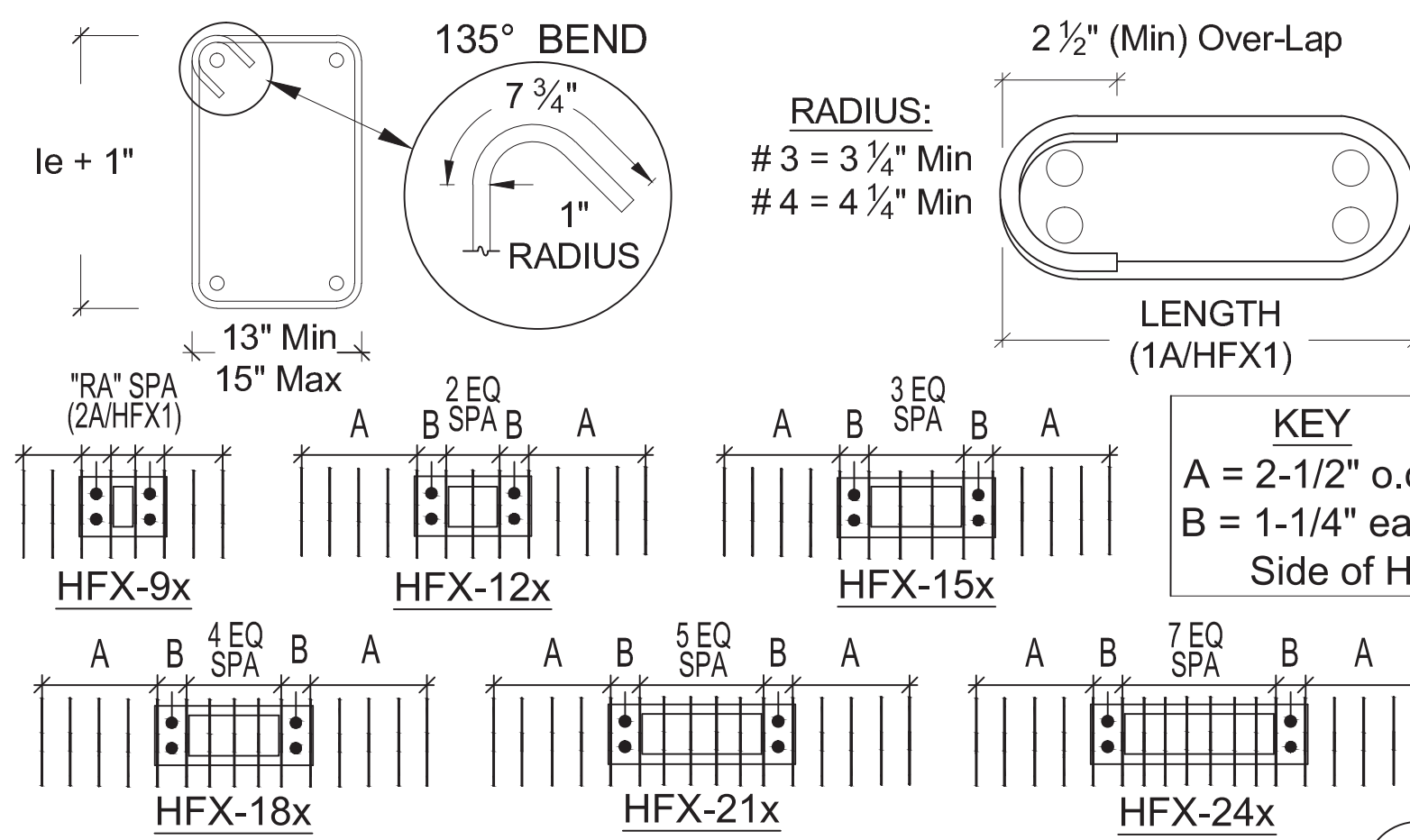
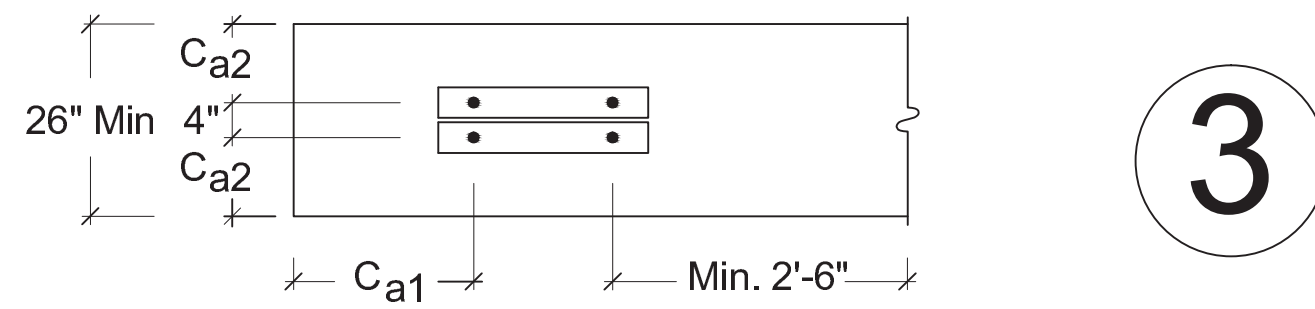
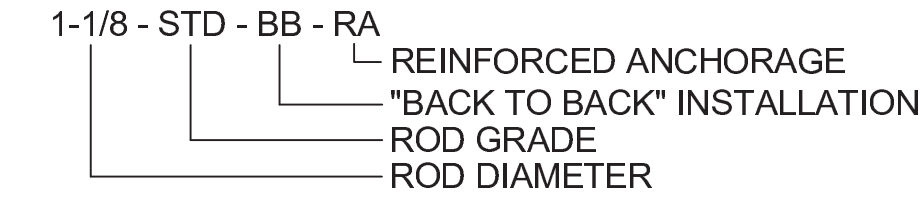


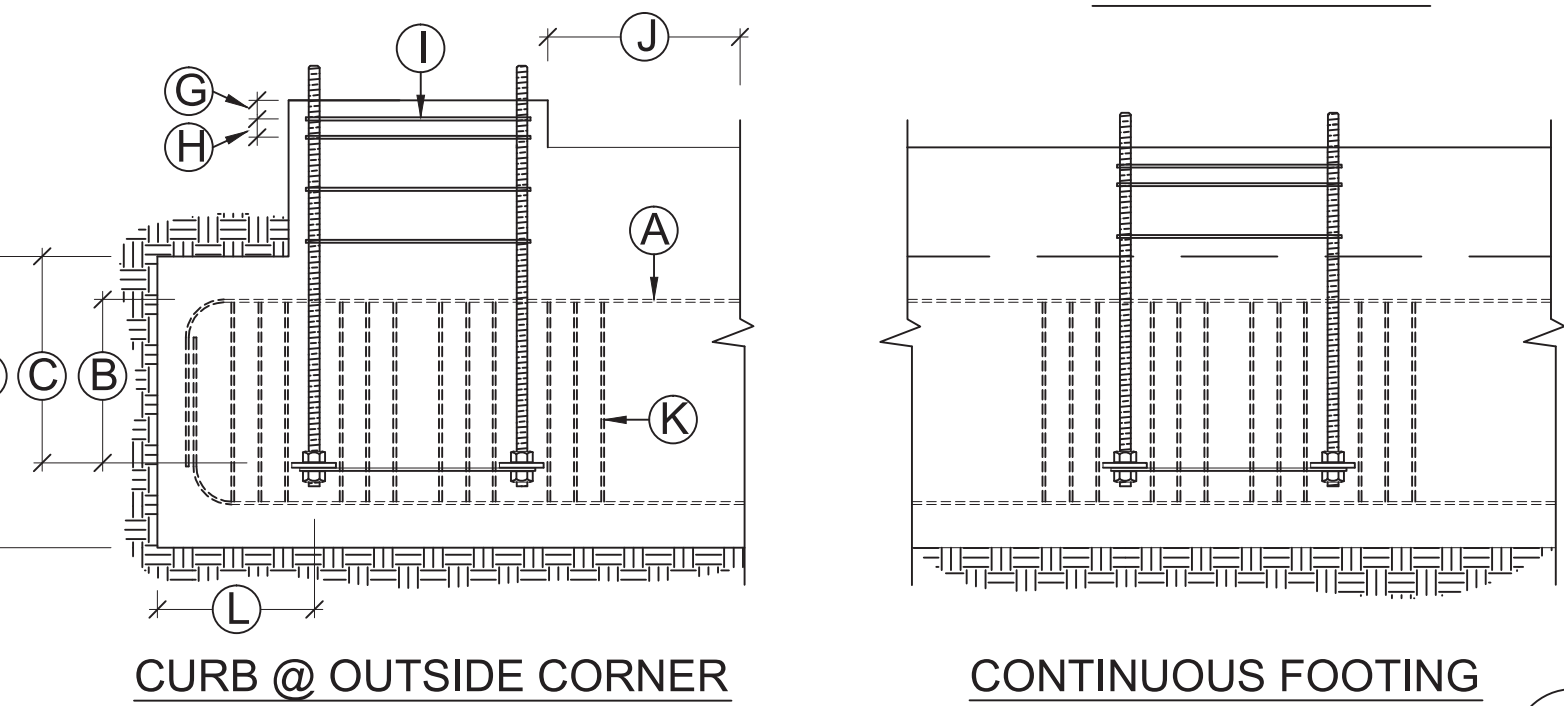
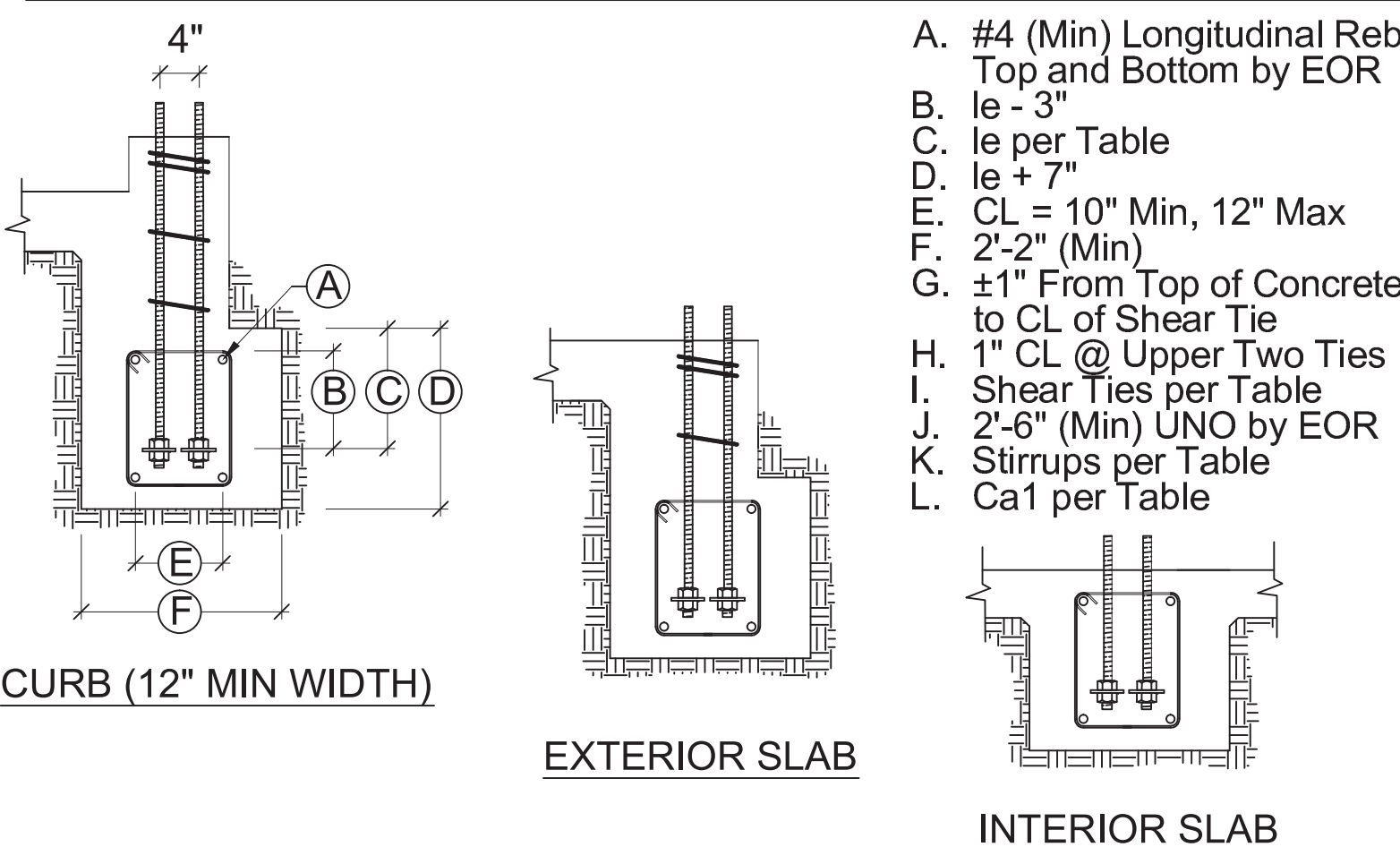
BACK TO BACK REINFORCED ANCHORAGE (BB-RA)

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	15	19-3/4	11	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					13 - # 4
HFX-15x	15	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS	23	20-5/8	11	14 - # 4	15 - # 4	# 4 (min) @ 4" OC
HFX-18x	18	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS						
HFX-21x	21	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS	18 - # 4					
HFX-24x	24	1-1/8-STD-BB-RA 1-1/8-HS-BB-RA	STD HS						

BACK TO BACK REINFORCED ANCHORAGE NOMENCLATURE



BB-RA SHEAR TIES & STIRRUPS

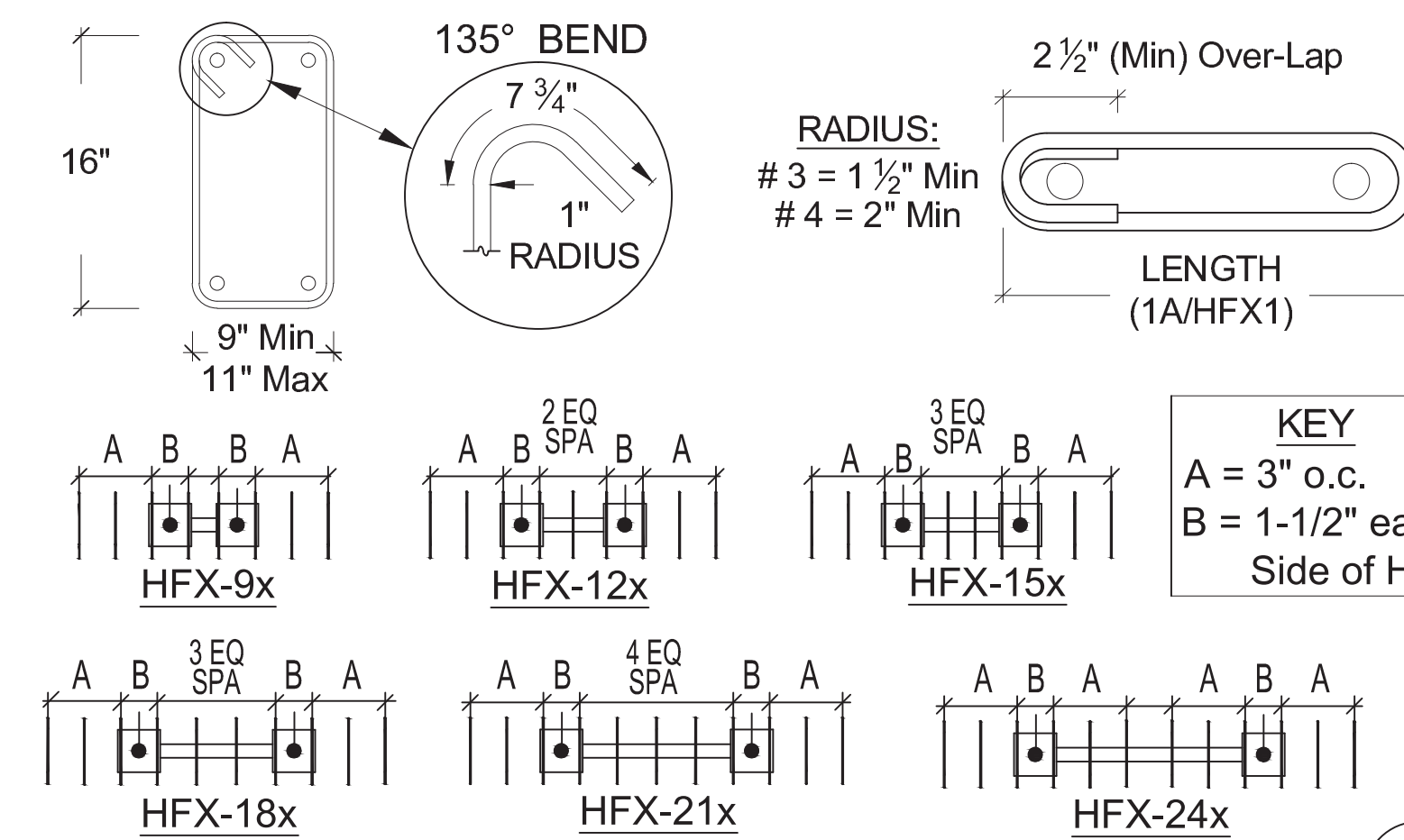
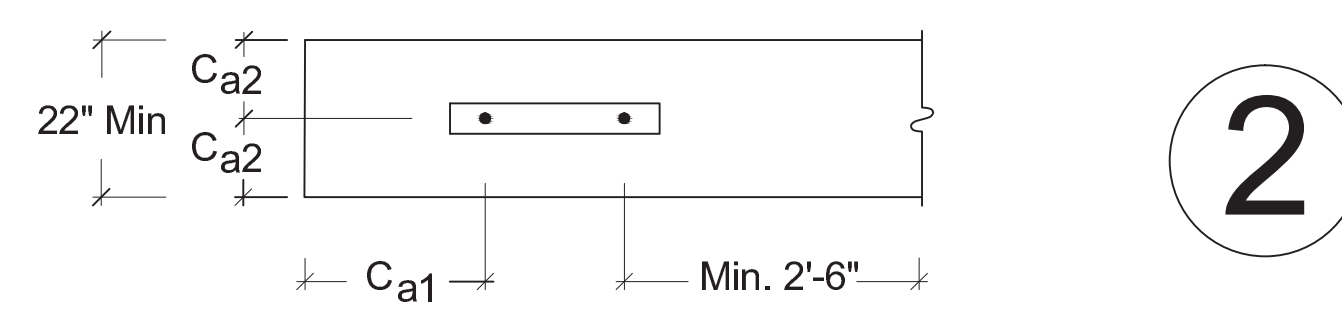
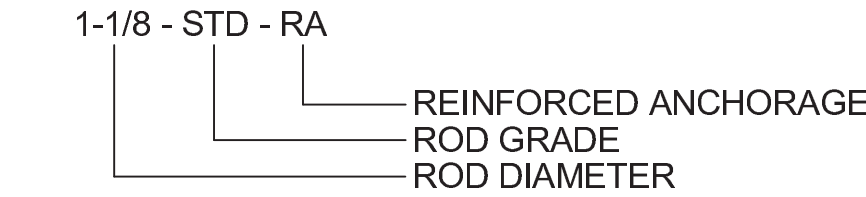


BB-RA SECTIONS & ELEVATIONS

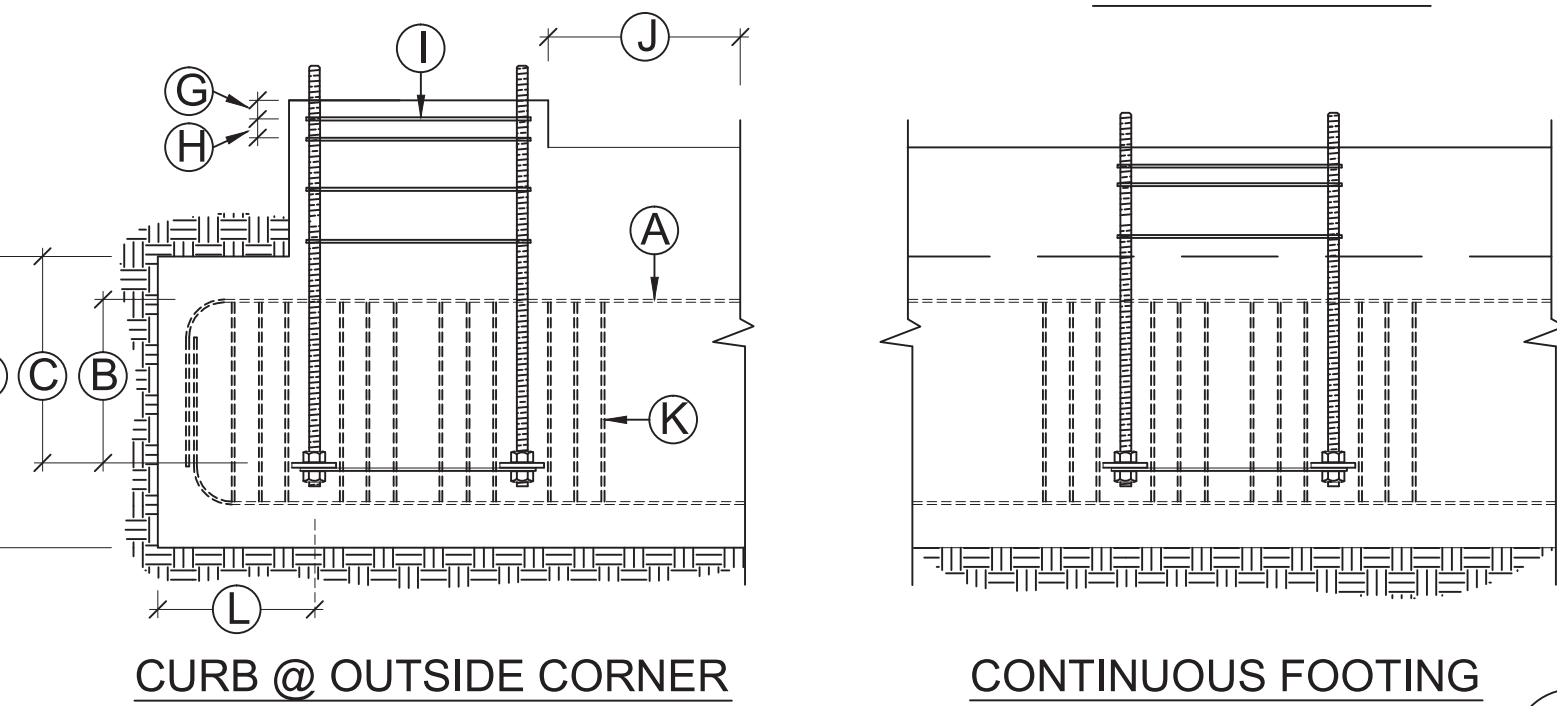
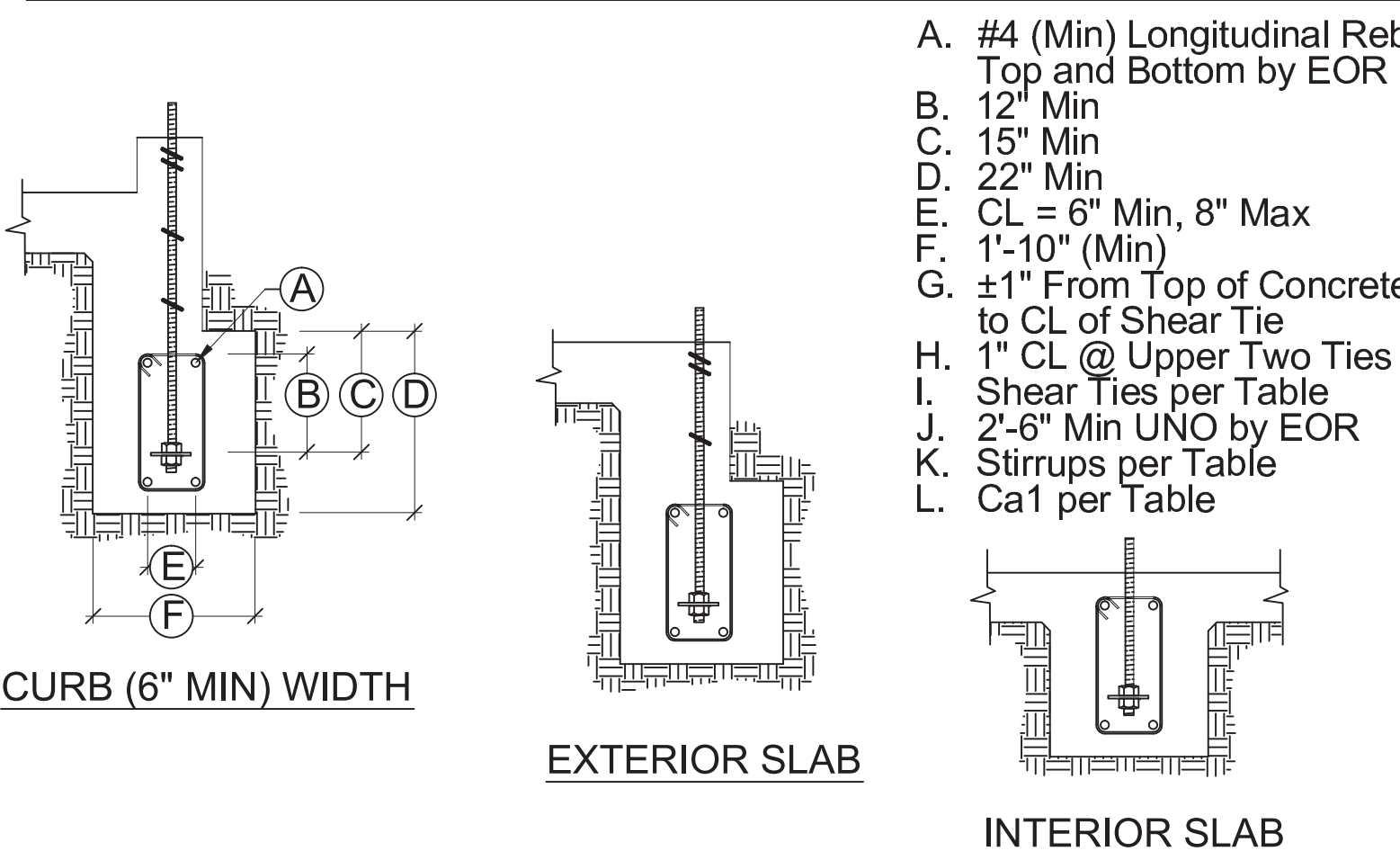
REINFORCED ANCHORAGE (RA)

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	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	12	1-1/8-STD-RA 1-1/8-HS-RA		STD HS					9 - # 4
HFX-15x	15	1-1/8-STD-RA 1-1/8-HS-RA	STD HS	23	20-5/8	11	10 - # 4	11 - # 4	# 3 (min) @ 4" OC
HFX-18x	18	1-1/8-STD-RA 1-1/8-HS-RA	STD HS						12 - # 4
HFX-21x	21	1-1/8-STD-RA 1-1/8-HS-RA	STD HS						
HFX-24x	24	1-1/8-STD-RA 1-1/8-HS-RA	STD HS						

REINFORCED ANCHORAGE NOMENCLATURE



RA SHEAR TIES & STIRRUPS

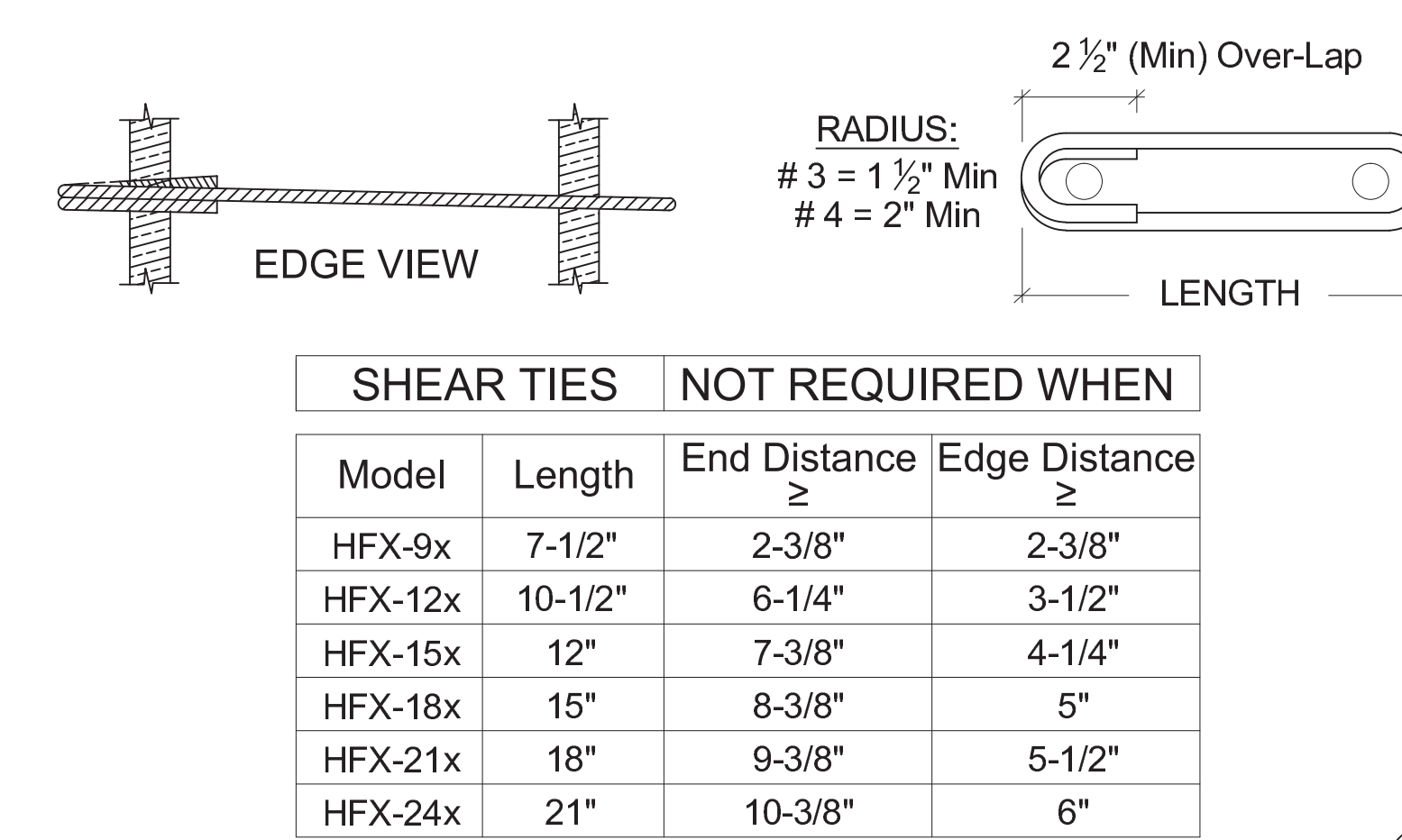
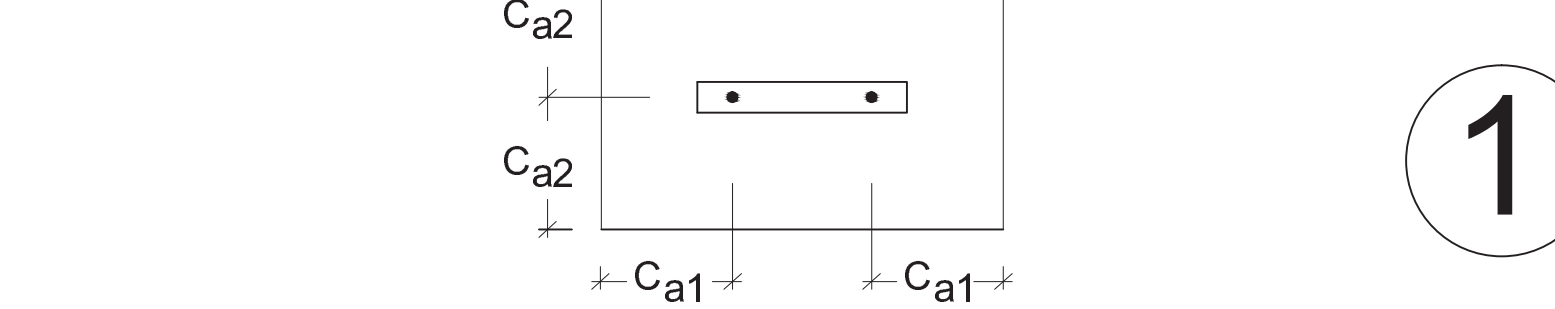
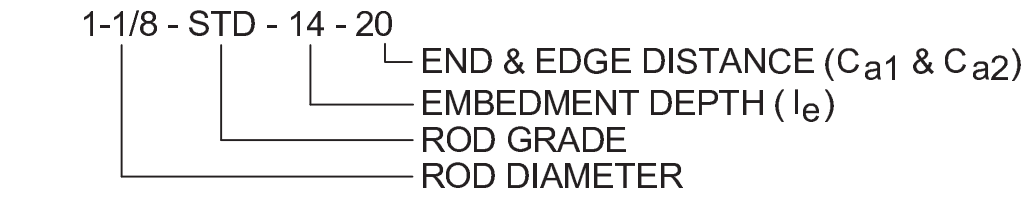


RA SECTIONS & ELEVATIONS

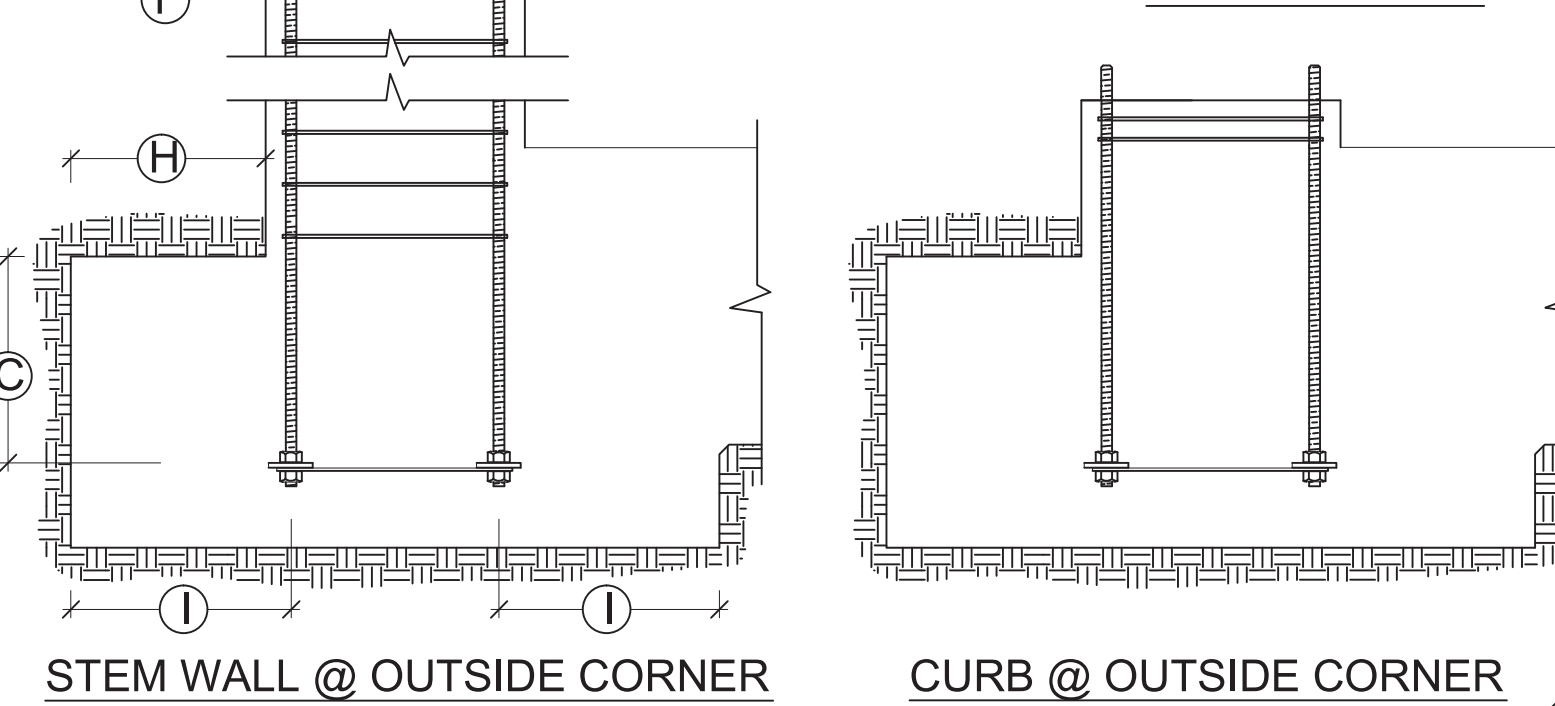
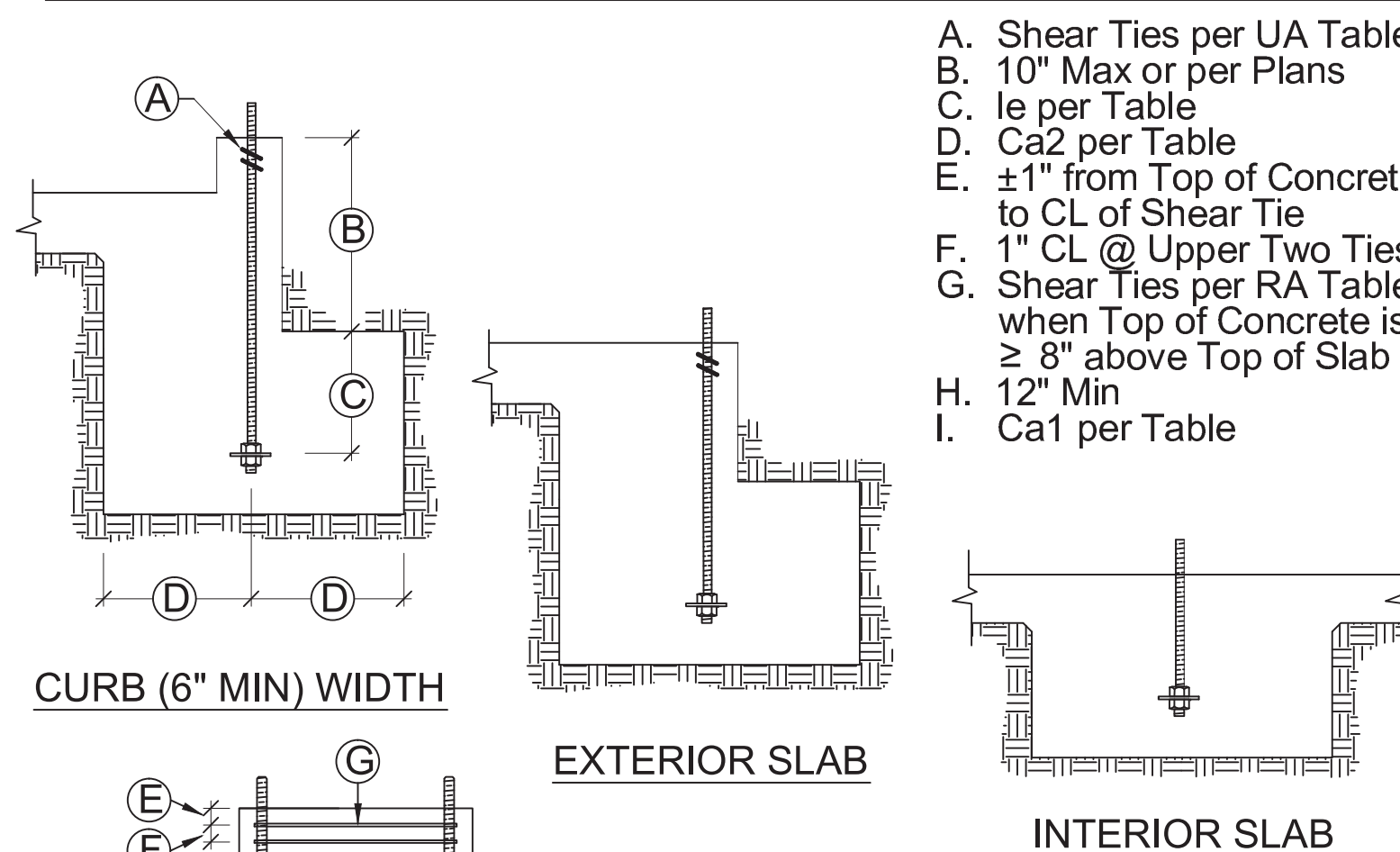
UNREINFORCED ANCHORAGE (UA)

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	15	19-3/4	11	8 - # 4	# 3 (min) @ 3-3/4" OC
HFX-12x	78" - 10'	1-1/8-STD-20-30		STD					
HFX-15x, 18x	78" - 13'	1-1/8-STD-14-20	1-1/8	HS	23	34	20	20	1 - # 3
HFX-12x	78" - 10'	1-1/8-HS-20-30		STD					
HFX-15x, 18x Balloon	14' - 20'	1-1/8-STD-14-20	1-1/8	STD	23	34	20	20	2 - # 3
HFX-12x	78" - 13'	1-1/8-HS-20-30		HS					
HFX-21x, 24x	78" - 13'	1-1/8-STD-14-20	1-1/8	STD	23	34	20	20	2 - # 3
HFX-15x, 18x Balloon	14' - 20'	1-1/8-HS-20-30		HS					

UNREINFORCED ANCHORAGE NOMENCLATURE



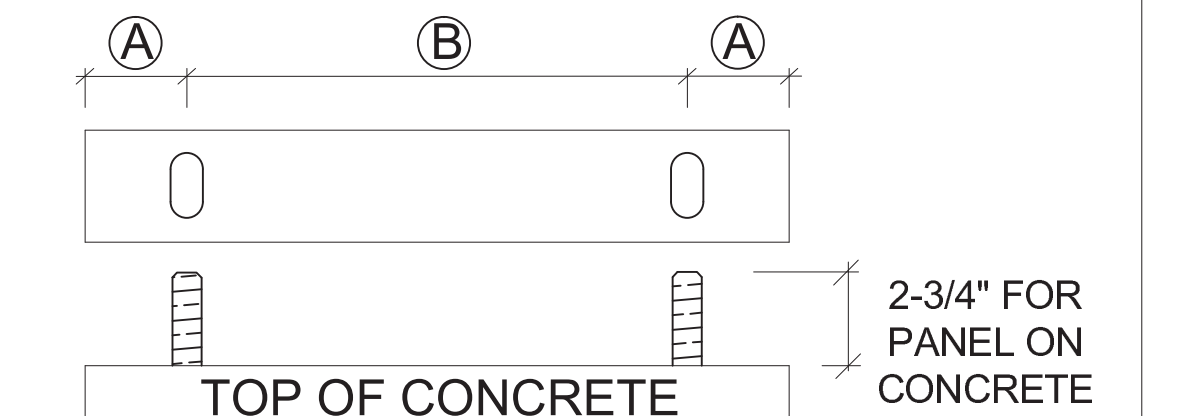
UA SHEAR TIES



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) HFPW 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 HFPW 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, 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				
Model	Width	(A)	(B)	
HFX-9x	9"	1-3/4"	5-1/2"	2-3/4" FOR PANEL ON CONCRETE
HFX-12x	12"		8-1/2"	
HFX-15x	15"	2-5/8"	9-3/4"	
HFX-18x	18"		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" MIN. HFPW 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.



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

MiTek

DATE: 1-1-2018

HFX1