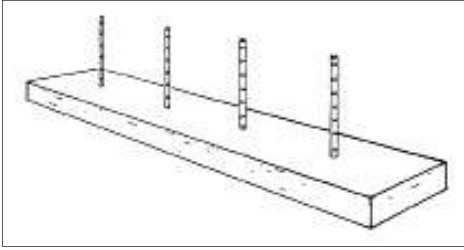


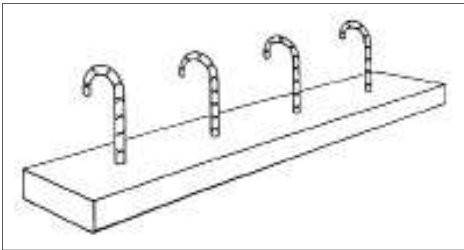


Staybox Rebar Splicing

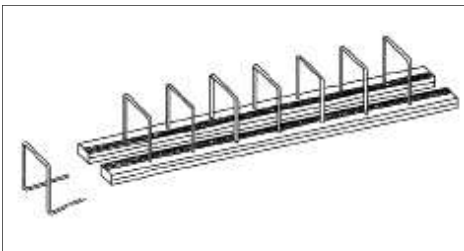




Staybox - Straight type
Single row - 12" oc
Box 1-1/2"x3-1/2"x48"



Staybox - Hook type
Single row - 12" oc
Box 1-1/2"x3-1/2"x48"



Staybox - Stirrup type
Double row - 6" oc
Box 1-1/2"x3-1/2"x48"

Staybox Rebar Splicing

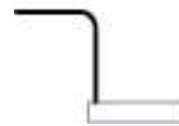
The Staybox system is prebent rebar and a formed metal box that creates a single "pull out" bar assembly. The assembly is used as a keyway and lap splice between concrete construction joints, including slab, deck, wall, beam and column intersections.

The metal box is formed in two pieces that slide together. The box is typically 1-1/2" deep; 2-1/2", 3-1/2", 6" or 8" wide; and 48" long. While those are standard sizes, the metal box can be fabricated to match other specifications or conditions.

The rebar is typically #3, #4 or #5 A706, with optional epoxy coating. The exposed rebar will be a straight, hook or stirrup type, depending on the application. The unseen portion of the rebar is prebent to fit inside the formed metal box.



Type A



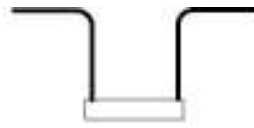
Type B



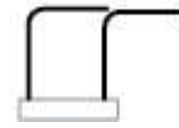
Type C



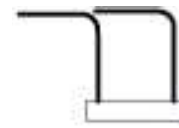
Type D



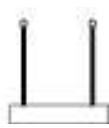
Type E



Type F



Type G



Type H

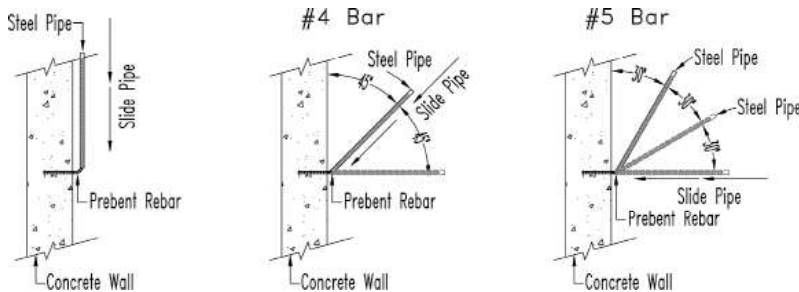
The two-piece metal box is designed so the back plate remains in the concrete, while the front plate can be removed for access to the prebent rebar inside. The box itself and both ends are sealed to prevent concrete from seeping into the assembly.

The exposed Staybox rebar is tied to the main reinforcement and the metal box is fastened to the form face material. After concrete placement, the cover plate is removed and the prebent bars are straightened to provide a lap splice for subsequent pours.

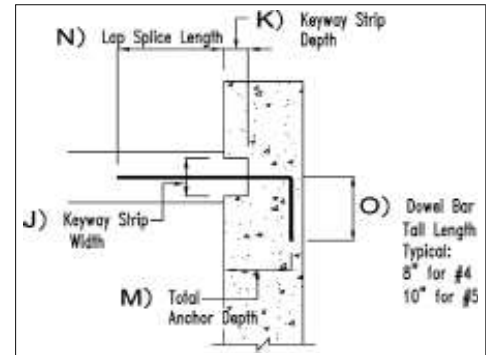
The Staybox system provides a cost- and labor-saving solution for most concrete construction joints. There is no need to drill or alter the form face during installation. The prepositioned rebar provides alignment and load transfer between placements.

Staybox Straightening Procedure

1. Workmen need a stable platform and firm footing when using the Staybox system and straightening the prebent rebar. Follow safe work practices to prevent injuries.
2. Remove the top plate to expose the prebent rebar. The rebar should be free of frost and temperatures above freezing. The prebent rebar can be pulled away from the trapped plate by hand. In some cases, a pry bar may be needed.
3. When there is enough clearance, slide a steel pipe over the rebar as close as possible to the factory bend. Do not attempt to straighten and extend the prebent rebar without a steel pipe.



4. Once the steel pipe is as close as possible to the factory bend, begin straightening the rebar. Do not straighten the rebar in a single motion. Stop periodically (approx every 25°) and once again slide the pipe as close as possible to the factory bend before straightening the rebar further.
5. Repeat the straightening process until the rebar is fully extended. Do not heat rebar when straightening. Do not rebend rebar that has already been straightened.



Side view of concrete construction joint with Staybox assembly.

Standard Box

Type	Width	Height	Minimum Length	Standard Length	Maximum Length
60S	2-1/2"	1-1/2"	24"	48"	96"
100S	3-1/2"	1-1/2"	24"	48"	96"
160D	6"	1-1/2"	24"	48"	96"
160DD	6"	1-1/2"	24"	48"	96"

Rebar bends conform to ACI 318 - Building Code Requirements for Structural Concrete and Commentary.

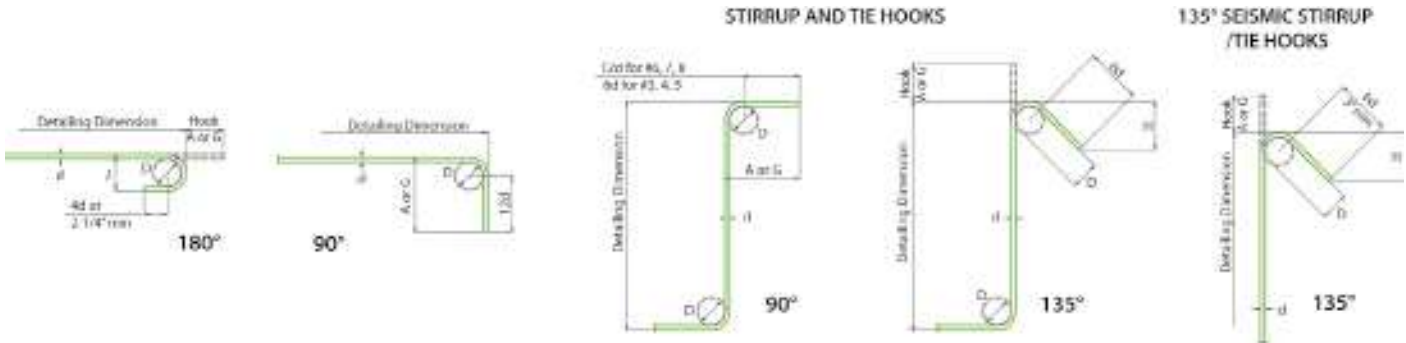
Recommended Practice - Detailing Standard Hook

Specific sizes recommended by CRSI and noted below meet the minimum requirements of ACI 318.

End Hook - All Grades D = Finished bend diameter				
Bar Size	D	180° Hook		90° Hook
		A or G	J	A or G
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	1'-2"
#8	6"	11"	8"	1'-4"
#9	9-1/2"	1'-3"	1'-1-1/4"	1'-7"
#10	10-3/4"	1'-5"	1'-1-3/4"	1'-10"
#11	12"	1'-7"	1'-2-3/4"	2'-0"
#14	18-1/4"	2'-3"	1'-9-3/4"	2'-7"
#18	24"	3-0"	2'-4-1/2"	3'-5"

Stirrup/Tie Hook Grades 40-50-60				
Bar Size	D	90° Hook		135° Hook
		A or G	J	H Approx
#3	1-1/2"	4"	4"	2-1/2"
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	1'-0"	8"	4-1/2"
#7	5-1/4"	1'-2"	9"	5-1/4"
#8	6"	1'-4"	10-1/2"	6"

Seismic Stirrup/Tie Hook Grades 40-50-60			
Bar Size	D	135° Hook	
		A or G	H Approx
#3	1-1/2"	4-1/2"	3"
#4	2"	4-1/2"	3"
#5	2-1/2"	5-1/2"	3-3/4"
#6	4-1/2"	8"	4-1/2"
#7	5-1/4"	9"	5-1/4"
#8	6"	10-1/2"	6"



Rebar Data													
Bar Size	Weight		Diameter (in)	Cross Section (sq in area)	Hook End "B" Dimension	90° Hook							
	Lbs/in	Lbs/ft				Splice Development "C" Length							
#3	0.031	0.376	0.375	0.11	6"	-	-	-	12	12	14	15	18
#4	0.056	0.668	0.500	0.20	8"	-	-	12	15	16	18	20	24
#5	0.087	1.043	0.625	0.31	10"	13	13	15	19	20	23	25	30
#6	0.125	1.502	0.750	0.44	12"	15	17	18	23	24	27	30	36
#7	0.170	2.044	0.875	0.60	14"	18	20	21	27	28	32	35	42
#8	0.223	2.670	1.000	0.79	16"	20	22	24	30	32	36	40	48
#9	0.283	3.400	1.128	1.00	19"	23	25	27	34	36	41	46	55
#10	0.359	4.303	1.270	1.27	22"	26	28	31	38	41	46	51	61
#11	0.443	5.313	1.410	1.56	24"	32	35	38	47	50	57	63	75
#14	0.638	7.650	1.693	2.25	31"	45	50	54	68	72	81	90	108
#18	1.133	13.60	2.257	4.00	41"	80	88	96	120	128	144	160	192



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