

Note to Designer:
 The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

NO.	DESCRIPTION OF REVISIONS	DATE	MADE BY	CHKD. BY
1	Original Issue	7-12		
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Mark	Bent	90° Dia.			96° Dia.			102° Dia.			108° Dia.			114° Dia.			120° Dia.			126° Dia.			132° Dia.			138° Dia.			144° Dia.		
		No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth
a1	A	4	#5	7'-9"	4	#5	8'-3"	5	#5	8'-6"	5	#5	8'-9"	5	#5	9'-3"	5	#5	9'-9"	5	#5	10'-0"	5	#5	10'-3"	5	#5	10'-9"	6	#5	11'-3"
a2	A	4	#5	8'-6"	4	#5	9'-0"	4	#5	9'-3"	5	#5	9'-6"	5	#5	10'-0"	5	#5	10'-6"	5	#5	10'-9"	5	#5	11'-3"	5	#6	11'-6"	5	#6	12'-0"
a3	A	4	#5	9'-3"	4	#5	9'-6"	4	#5	10'-0"	4	#5	10'-3"	5	#5	11'-0"	5	#6	11'-3"	5	#6	11'-6"	5	#6	12'-0"	5	#6	12'-6"	5	#7	13'-0"
a4	A	4	#5	10'-0"	4	#5	10'-3"	4	#5	10'-6"	4	#5	11'-0"	4	#6	11'-9"	5	#6	12'-0"	5	#7	12'-6"	5	#7	13'-3"	5	#7	13'-9"	5	#7	14'-9"
a5	A	4	#5	10'-9"	4	#5	11'-0"	4	#6	11'-3"	4	#6	11'-9"	4	#7	12'-6"	4	#7	13'-0"	5	#7	13'-3"	5	#7	13'-9"	5	#7	14'-3"	5	#8	14'-9"
a6	A	4	#5	11'-6"	4	#6	11'-9"	4	#6	12'-0"	4	#7	12'-6"	4	#7	13'-6"	4	#7	13'-9"	4	#7	14'-3"	5	#8	14'-6"	5	#8	15'-0"	5	#8	15'-6"
a7	A	3	#6	12'-3"	4	#6	12'-6"	4	#7	12'-9"	4	#7	13'-3"	4	#7	14'-3"	4	#7	14'-6"	4	#8	15'-0"	4	#8	15'-6"	5	#8	16'-0"	5	#8	16'-6"
a8	A	4	#5	8'-0"	4	#5	8'-3"	4	#5	8'-6"	4	#5	8'-9"	5	#5	9'-3"	5	#5	9'-6"	5	#5	9'-9"	5	#5	10'-0"	5	#5	10'-6"	6	#5	10'-9"
a9	A	4	#5	9'-0"	4	#5	9'-3"	4	#5	9'-6"	4	#5	9'-9"	4	#5	10'-6"	5	#5	10'-9"	5	#5	11'-0"	5	#6	11'-3"	5	#6	11'-9"	5	#6	12'-3"
a10	A	3	#5	10'-0"	4	#5	10'-3"	4	#5	10'-9"	4	#5	11'-0"	4	#6	11'-6"	4	#6	12'-0"	5	#6	12'-3"	5	#7	12'-6"	5	#7	13'-0"	5	#7	13'-9"
a11	A	3	#5	11'-0"	3	#6	11'-6"	4	#6	11'-9"	4	#6	12'-3"	4	#7	12'-9"	4	#7	13'-3"	4	#7	13'-6"	5	#7	14'-0"	5	#7	14'-6"	5	#8	15'-0"
a12	A	3	#6	11'-9"	3	#6	12'-6"	3	#7	12'-9"	4	#7	13'-3"	4	#7	14'-0"	4	#7	14'-6"	4	#7	14'-9"	4	#7	15'-3"	5	#8	15'-9"	5	#8	16'-6"
b1	str	2	#4	26'-6"	2	#4	27'-6"	2	#4	28'-6"	2	#4	29'-6"	2	#4	30'-6"	2	#4	31'-6"	2	#4	32'-6"	2	#4	33'-6"	2	#4	34'-6"	2	#4	35'-6"
b2	str	6	#4	26'-0"	6	#4	27'-0"	8	#4	28'-0"	8	#4	29'-0"	8	#4	30'-0"	10	#4	31'-0"	10	#4	32'-0"	10	#4	33'-0"	10	#4	34'-0"	10	#4	35'-0"
b3	str	2	#4	23'-6"	2	#4	26'-0"	2	#4	20'-6"	2	#4	24'-0"	2	#4	25'-6"	2	#4	29'-0"	2	#4	23'-6"	2	#4	26'-6"	2	#4	29'-6"	2	#4	32'-0"
b4	str	2	#4	14'-6"	2	#4	17'-3"	2	#4	11'-6"	2	#4	15'-3"	2	#4	17'-0"	2	#4	20'-3"	2	#4	14'-6"	2	#4	17'-6"	2	#4	20'-6"	2	#4	23'-3"
b5	str	2	#4	5'-6"	2	#4	8'-6"	2	#4	3'-0"	2	#4	6'-6"	2	#4	8'-6"	2	#4	11'-3"	2	#4	5'-6"	2	#4	8'-6"	2	#4	11'-6"	2	#4	14'-9"
b6	str																														
b7	str	2	#4	16'-6"	2	#4	17'-6"	2	#4	18'-6"	2	#4	19'-6"	2	#4	20'-6"	2	#4	21'-6"	2	#4	22'-6"	2	#4	23'-6"	2	#4	24'-6"	2	#4	25'-6"
b8	str	6	#4	16'-0"	8	#4	17'-0"	8	#4	18'-0"	8	#4	19'-0"	8	#4	20'-0"	8	#4	21'-0"	8	#4	22'-0"	8	#4	23'-0"	10	#4	24'-0"	10	#4	25'-0"
b9	str	2	#4	14'-9"	2	#4	11'-6"	2	#4	13'-0"	2	#4	15'-6"	2	#4	17'-3"	2	#4	19'-6"	2	#4	20'-6"	2	#4	22'-6"	2	#4	19'-0"	2	#4	21'-6"
b10	str	2	#4	9'-0"	2	#4	5'-6"	2	#4	7'-6"	2	#4	10'-0"	2	#4	11'-3"	2	#4	13'-6"	2	#4	14'-9"	2	#4	16'-9"	2	#4	13'-3"	2	#4	15'-9"
b11	str	2	#4	3'-6"				2	#4	2'-0"	2	#4	4'-6"	2	#4	5'-6"	2	#4	7'-6"	2	#4	9'-3"	2	#4	11'-0"	2	#4	7'-9"	2	#4	10'-0"
b12	str																														
c	str	5	#4	10'-6"	5	#4	11'-0"	5	#4	11'-6"	5	#4	12'-0"	5	#4	12'-6"	5	#4	13'-0"	5	#4	13'-6"	5	#4	14'-0"	5	#4	14'-6"	5	#4	15'-0"
d	A	6	#6	12'-3"	6	#6	12'-9"	6	#7	13'-3"	6	#7	13'-9"	6	#7	14'-6"	6	#7	15'-0"	6	#8	15'-6"	6	#8	16'-0"	6	#8	16'-6"	6	#8	17'-0"
e1	C	4	#5	3'-6"	4	#5	3'-9"	5	#5	3'-9"	5	#5	4'-0"	5	#5	4'-0"	5	#5	4'-3"	5	#5	4'-3"	5	#5	4'-6"	5	#5	4'-6"	5	#5	4'-9"
e2	C	4	#5	3'-9"	4	#5	4'-0"	4	#5	4'-0"	5	#5	4'-6"	5	#5	4'-6"	5	#5	4'-9"	5	#5	4'-9"	5	#5	5'-0"	5	#6	5'-0"	5	#6	5'-3"
e3	C	4	#5	4'-3"	4	#5	4'-6"	4	#5	4'-6"	4	#5	4'-9"	4	#5	5'-0"	5	#5	5'-3"	5	#6	5'-3"	5	#6	5'-6"	5	#6	5'-6"	5	#6	5'-9"
e4	C	4	#5	4'-6"	4	#5	4'-9"	4	#5	5'-0"	4	#5	5'-3"	4	#6	5'-3"	4	#6	5'-6"	5	#6	5'-9"	5	#6	6'-0"	5	#7	7'-0"	5	#7	7'-6"
e5	C	4	#5	4'-9"	4	#5	5'-0"	4	#5	5'-3"	4	#5	5'-6"	4	#6	5'-9"	4	#6	6'-0"	4	#7	7'-6"	5	#7	7'-6"	5	#7	7'-9"	5	#7	8'-0"
e6	C	4	#5	5'-3"	4	#5	5'-6"	4	#5	5'-9"	4	#6	6'-0"	4	#6	6'-3"	4	#7	7'-6"	4	#7	7'-9"	4	#7	8'-0"	5	#7	8'-3"	5	#8	8'-6"
e7	C	3	#5	5'-6"	4	#6	5'-9"	4	#6	6'-0"	4	#6	6'-6"	4	#7	7'-9"	4	#7	8'-0"	4	#7	8'-3"	4	#7	8'-6"	4	#8	9'-0"	5	#8	9'-3"
e8	C	2	#5	5'-9"	2	#6	6'-0"	2	#6	6'-3"	2	#6	6'-9"	3	#7	8'-0"	3	#7	8'-3"	3	#7	8'-9"	3	#7	9'-0"	3	#8	9'-6"	3	#8	9'-9"
e9	C	9	#5	5'-9"	10	#6	6'-0"	10	#6	6'-3"	11	#6	6'-9"	11	#7	8'-0"	12	#7	8'-3"	12	#7	8'-9"	13	#7	9'-0"	13	#8	9'-6"	14	#8	9'-9"
e10	C	5	#5	5'-9"	5	#6	6'-0"	5	#6	6'-3"	6	#6	6'-9"	6	#7	8'-0"	6	#7	8'-3"	6	#7	8'-9"	7	#7	9'-0"	7	#8	9'-6"	7	#8	9'-9"
e11	C	4	#5	5'-6"	4	#6	5'-9"	4	#6	6'-0"	4	#6	6'-6"	4	#6	6'-9"	5	#7	7'-9"	5	#7	8'-0"	5	#7	8'-3"	5	#7	8'-6"	5	#7	9'-0"
e12	C	3	#5	5'-0"	4	#5	5'-3"	4	#5	5'-6"	4	#5	5'-9"	4	#6	6'-3"	5	#6	6'-6"	5	#6	6'-6"	5	#6	6'-6"	5	#7	7'-9"	5	#7	8'-0"
e13	C	3	#5	4'-6"	3	#5	4'-9"	4	#5	4'-9"	4	#5	5'-3"	4	#5	5'-3"	4	#5	5'-6"	4	#5	5'-9"	5	#5	6'-0"	5	#6	6'-0"	5	#6	6'-3"
e14	C	3	#5	4'-0"	3	#5	4'-3"	3	#5	4'-3"	4	#5	4'-6"	4	#5	4'-6"	4	#5	4'-9"	4	#5	5'-0"	4	#5	5'-3"	5	#5	5'-3"	5	#5	5'-6"
e15	C	3	#5	3'-6"	3	#5	3'-9"	3	#5	3'-9"	3	#5	4'-0"	4	#5	4'-0"	4	#5	4'-3"	4	#5	4'-3"	4	#5	4'-6"	4	#5	4'-6"	5	#5	4'-9"
f1	str	5	#4	6'-3"	5	#4	6'-6"	5	#4	6'-9"	5	#4	7'-0"	5	#4	7'-6"	6	#4	7'-9"	6	#4	8'-0"	6	#4	8'-6"	6	#4	8'-9"	6	#4	9'-0"
f2	str	5	#4	7'-6"	5	#4	7'-9"	5	#4	8'-0"	5	#4	8'-3"	5	#4	8'-9"	5	#4	9'-3"	6	#4	9'-6"	6	#4	10'-0"	6	#4	10'-3"	6	#4	10'-6"
f3	str	4	#4	8'-9"	4	#4	9'-0"	5	#4	9'-3"	5	#4	9'-9"	5	#4	10'-3"	5	#4	10'-6"	5	#4	11'-0"	5	#4	11'-6"	6	#4	12'-0"	6	#4	12'-3"
f4	str	4	#4	9'-9"	4	#4	10'-3"	4	#4	10'-6"	5	#4	11'-0"	5	#4	11'-6"	5	#4	12'-0"	5	#4	12'-6"	5	#4	13'-0"	5	#4	13'-6"	6	#4	13'-9"
f5	str	3	#4	6'-6"	3	#4	6'-9"	3	#4	7'-0"	4	#4	7'-3"	4	#4	7'-6"	4	#4	7'-9"	4	#4	8'-0"	4	#4	8'-3"	4	#4	8'-6"	5	#4	8'-9"
f6	str	3	#4	7'-9"	3	#4	8'-0"	3	#4	8'-3"	3	#4	8'-6"	4	#4	9'-0"	4	#4	9'-3"	4	#4	9'-6"	4	#4	9'-9"	4	#4	10'-0"	4	#4	10'-6"
f7	str	3	#4	8'-9"	3	#4	9'-0"	3	#4	9'-6"	3	#4	10'-0"	3	#4	10'-3"	3	#4	10'-6"	4	#4	11'-3"	4	#4	11'-6"	4	#4	11'-9"	4	#4	12'-3"
f8	str	2	#4	10'-0"	3	#4	10'-3"	3	#4	10'-9"	3	#4	11'-3"	3	#4	11'-9"	3	#4	12'-0"	3	#4	12'-9"	4	#4	13'-0"	4	#4	13'-3"	4	#4	14'-0"
g	str	2	#4	10'-0"	2	#4	10'-6"	2	#4	11'-0"	2	#4	11'-6"	2	#4	12'-0"	2	#4	12'-6"	2	#4	13'-0"	2	#4	13'-6"	2	#4	14'-3"	2	#4	14'-9"
m1	str	4	#4	28'-6"	4	#4	29'-9"	4	#4	30'-9"	5	#4	31'-9"	5	#4	33'-0"	5	#4	34'-0"	5	#4	35'-0"	6	#4	36'-3"	6	#4	37'-3"	6	#4	38'-6"
m2	str	1	#4	28'-6"	1	#4	29'-9"	1	#4	30'-9"	1	#4	31'-9"	1	#4	33'-0"	1	#4	34'-0"	1	#4	35'-0"	1	#4	36'-3"	1	#4	37'-3"	1	#4	38'-6"
m3	str	4	#4	21'-9"	4	#4	23'-0"	4	#4	24'-3"	5	#4	25'-6"	5	#4	26'-9"	5	#4	28'-0"	5	#4	29'-6"	6	#4	30'-9"						