

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		
2				
3				
4				

		STEEL LIST																			
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	5	#5 8'-3"	5	#5 8'-9"	5	#5 9'-0"	6	#5 9'-3"	6	#5 9'-9"	6	#5 10'-3"	6	#5 10'-6"	7	#5 10'-9"	7	#5 11'-3"	7	#5 11'-9"
a2	A	5	#5 9'-0"	5	#5 9'-6"	5	#5 9'-9"	6	#5 10'-0"	6	#5 10'-6"	6	#5 11'-0"	6	#5 11'-3"	7	#5 11'-6"	7	#6 12'-3"	7	#6 12'-9"
a3	A	5	#5 9'-9"	5	#5 10'-3"	5	#5 10'-6"	5	#5 11'-0"	6	#6 11'-6"	6	#6 12'-0"	6	#6 12'-3"	7	#6 12'-6"	7	#6 13'-3"	7	#7 13'-9"
a4	A	4	#5 10'-6"	5	#5 11'-0"	5	#6 11'-3"	5	#6 11'-9"	5	#6 12'-3"	6	#6 12'-9"	6	#6 13'-0"	6	#7 13'-6"	6	#7 14'-0"	7	#7 14'-6"
a5	A	4	#5 11'-3"	5	#6 11'-9"	5	#6 12'-0"	5	#7 12'-6"	5	#7 13'-0"	6	#7 13'-6"	6	#7 13'-9"	6	#7 14'-3"	6	#7 15'-0"	7	#8 15'-6"
a6	A	4	#6 12'-0"	4	#6 12'-6"	5	#7 12'-9"	5	#7 13'-6"	5	#7 14'-0"	5	#7 14'-6"	6	#7 14'-9"	6	#8 15'-3"	6	#8 16'-0"	6	#8 16'-6"
a7	A	5	#5 8'-0"	5	#5 8'-3"	5	#5 8'-6"	5	#5 8'-9"	6	#5 9'-3"	6	#5 9'-6"	6	#5 9'-9"	6	#5 10'-0"	7	#5 10'-6"	7	#5 10'-9"
a8	A	4	#5 8'-9"	5	#5 9'-0"	5	#5 9'-3"	5	#5 9'-6"	5	#5 10'-0"	6	#5 10'-6"	6	#5 10'-9"	6	#5 11'-0"	6	#5 11'-6"	7	#6 12'-0"
a9	A	4	#5 9'-6"	5	#5 10'-0"	5	#5 10'-3"	5	#5 10'-6"	5	#5 11'-0"	6	#6 11'-6"	6	#6 11'-9"	6	#6 12'-0"	6	#6 12'-6"	7	#6 13'-0"
a10	A	4	#5 10'-3"	4	#5 10'-9"	5	#6 11'-3"	5	#6 11'-6"	5	#6 12'-0"	5	#6 12'-3"	6	#6 13'-0"	6	#6 13'-3"	6	#7 13'-9"	6	#7 14'-3"
a11	A	4	#5 11'-3"	4	#6 11'-6"	4	#6 12'-0"	5	#7 12'-3"	5	#7 12'-9"	5	#7 13'-3"	5	#7 14'-0"	6	#7 14'-3"	6	#7 14'-9"	6	#7 15'-3"
a12	A	4	#6 12'-0"	4	#6 12'-6"	4	#7 13'-0"	5	#7 13'-3"	5	#7 13'-9"	5	#7 14'-3"	5	#7 15'-0"	6	#8 15'-3"	6	#8 15'-9"	6	#8 16'-6"
b1	str	2	#4 26'-9"	2	#4 28'-3"	2	#4 29'-9"	2	#4 31'-3"	2	#4 32'-9"	2	#4 34'-3"	2	#4 35'-9"	2	#4 37'-3"	2	#4 38'-9"	2	#4 40'-3"
b2	str	8	#4 26'-6"	8	#4 28'-0"	8	#4 29'-6"	8	#4 31'-0"	8	#4 32'-6"	10	#4 34'-0"	10	#4 35'-6"	10	#4 37'-0"	10	#4 38'-6"	12	#4 40'-0"
b3	str	2	#4 16'-0"	2	#4 20'-0"	2	#4 22'-3"	2	#4 25'-6"	2	#4 30'-6"	2	#4 23'-0"	2	#4 27'-6"	2	#4 30'-6"	2	#4 35'-6"	2	#4 29'-0"
b4	str	2	#4 7'-0"	2	#4 9'-6"	2	#4 12'-6"	2	#4 16'-3"	2	#4 19'-9"	2	#4 12'-9"	2	#4 17'-3"	2	#4 19'-9"	2	#4 24'-9"	2	#4 18'-3"
b5	str					2	#4 3'-0"	2	#4 7'-0"	2	#4 9'-0"	2	#4 2'-6"	2	#4 7'-3"	2	#4 9'-0"	2	#4 14'-3"	2	#4 7'-3"
b6	str																	2	#4 3'-6"		
b7	str	2	#4 24'-9"	2	#4 26'-3"	2	#4 27'-9"	2	#4 29'-3"	2	#4 30'-9"	2	#4 32'-6"	2	#4 34'-0"	2	#4 35'-6"	2	#4 37'-0"	2	#4 38'-6"
b8	str	6	#4 24'-6"	8	#4 26'-0"	8	#4 27'-6"	8	#4 29'-0"	8	#4 30'-6"	8	#4 32'-0"	8	#4 33'-6"	10	#4 35'-0"	10	#4 36'-6"	10	#4 38'-0"
b9	str	2	#4 23'-0"	2	#4 16'-9"	2	#4 20'-0"	2	#4 23'-6"	2	#4 26'-0"	2	#4 29'-0"	2	#4 31'-9"	2	#4 27'-0"	2	#4 29'-0"	2	#4 33'-0"
b10	str	2	#4 14'-0"	2	#4 8'-3"	2	#4 11'-3"	2	#4 14'-6"	2	#4 17'-3"	2	#4 20'-3"	2	#4 23'-0"	2	#4 18'-3"	2	#4 20'-3"	2	#4 24'-3"
b11	str	2	#4 5'-0"			2	#4 2'-6"	2	#4 5'-6"	2	#4 8'-6"	2	#4 11'-3"	2	#4 14'-3"	2	#4 9'-6"	2	#4 11'-6"	2	#4 15'-3"
b12	str							2	#4 2'-6"	2	#4 5'-6"							2	#4 3'-0"	2	#4 6'-6"
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	#7 15'-6"	6	#8 16'-0"	6	#8 16'-6"	6	#8 17'-0"
e1	C	5	#5 4'-0"	5	#5 4'-3"	5	#5 4'-3"	6	#5 4'-6"	6	#5 4'-9"	6	#5 4'-9"	6	#5 5'-0"	7	#5 5'-3"	7	#5 5'-3"	7	#5 5'-6"
e2	C	5	#5 4'-3"	5	#5 4'-6"	5	#5 4'-6"	5	#5 4'-9"	6	#5 5'-0"	6	#5 5'-3"	6	#5 5'-6"	6	#5 5'-9"	7	#5 6'-0"	7	#6 6'-0"
e3	C	5	#5 4'-6"	5	#5 4'-9"	5	#5 5'-0"	5	#5 5'-3"	6	#5 5'-6"	6	#5 5'-6"	6	#5 5'-9"	6	#6 6'-3"	7	#6 6'-6"	7	#6 6'-9"
e4	C	4	#5 4'-9"	5	#5 5'-0"	5	#5 5'-3"	5	#5 5'-6"	5	#5 5'-9"	6	#6 6'-0"	6	#6 6'-3"	6	#6 6'-6"	6	#7 7'-9"	7	#7 8'-3"
e5	C	4	#5 5'-0"	4	#5 5'-3"	5	#5 5'-9"	5	#5 6'-0"	5	#6 6'-3"	5	#6 6'-6"	6	#6 6'-9"	6	#7 8'-0"	6	#7 8'-3"	6	#7 8'-9"
e6	C	4	#5 5'-3"	4	#5 5'-6"	5	#5 6'-0"	5	#6 6'-3"	5	#6 6'-6"	5	#7 7'-9"	6	#7 8'-0"	6	#7 8'-6"	6	#7 8'-9"	6	#8 9'-6"
e7	C	3	#5 5'-3"	3	#5 5'-6"	3	#5 6'-0"	3	#6 6'-3"	3	#6 6'-6"	3	#7 7'-9"	3	#7 8'-3"	3	#7 8'-9"	3	#7 9'-0"	3	#8 9'-6"
e8	C	9	#5 5'-3"	9	#5 5'-6"	10	#5 6'-0"	10	#6 6'-3"	11	#6 6'-6"	11	#7 7'-9"	12	#7 8'-3"	12	#7 8'-9"	13	#7 9'-0"	13	#8 9'-6"
e9	C	4	#5 5'-3"	4	#5 5'-6"	4	#5 6'-0"	5	#6 6'-3"	5	#6 6'-6"	5	#7 7'-9"	5	#7 8'-3"	6	#7 8'-9"	6	#7 9'-0"	6	#8 9'-6"
e10	C	4	#5 5'-3"	4	#5 5'-6"	4	#5 6'-0"	4	#6 6'-3"	5	#6 6'-6"	5	#7 7'-9"	5	#7 8'-0"	5	#7 8'-6"	6	#7 8'-9"	6	#8 9'-6"
e11	C	4	#5 5'-0"	4	#5 5'-3"	4	#5 5'-9"	5	#5 6'-0"	5	#6 6'-3"	5	#6 6'-6"	5	#6 6'-9"	6	#7 8'-0"	6	#7 8'-3"	6	#7 8'-9"
e12	C	4	#5 4'-9"	4	#5 5'-0"	5	#5 5'-3"	5	#5 5'-6"	5	#5 5'-9"	5	#6 6'-0"	6	#6 6'-3"	6	#6 6'-9"	6	#7 7'-9"	6	#7 8'-3"
e13	C	4	#5 4'-6"	4	#5 4'-9"	5	#5 5'-0"	5	#5 5'-3"	5	#5 5'-6"	5	#5 5'-9"	6	#6 6'-3"	6	#6 6'-6"	6	#6 6'-9"	6	#6 6'-9"
e14	C	4	#5 4'-3"	5	#5 4'-6"	5	#5 4'-6"	5	#5 4'-9"	5	#5 5'-0"	6	#5 5'-3"	6	#5 5'-6"	6	#5 5'-9"	6	#5 6'-0"	7	#6 6'-0"
e15	C	5	#5 4'-0"	5	#5 4'-3"	5	#5 4'-3"	5	#5 4'-6"	6	#5 4'-9"	6	#5 4'-9"	6	#5 5'-0"	6	#5 5'-3"	7	#5 5'-3"	7	#5 5'-6"
f1	str	5	#4 6'-6"	5	#4 6'-9"	5	#4 7'-3"	6	#4 7'-6"	6	#4 7'-9"	6	#4 8'-3"	6	#4 8'-6"	7	#4 8'-9"	7	#4 9'-3"	7	#4 9'-6"
f2	str	5	#4 7'-9"	5	#4 8'-0"	5	#4 8'-6"	5	#4 8'-9"	6	#4 9'-0"	6	#4 9'-6"	6	#4 10'-0"	6	#4 10'-3"	7	#4 10'-6"	7	#4 11'-0"
f3	str	4	#4 8'-9"	5	#4 9'-3"	5	#4 9'-6"	5	#4 10'-0"	5	#4 10'-6"	6	#4 11'-0"	6	#4 11'-3"	6	#4 11'-6"	6	#4 12'-0"	7	#4 12'-6"
f4	str	4	#4 10'-0"	4	#4 10'-6"	5	#4 10'-9"	5	#4 11'-3"	5	#4 11'-9"	5	#4 12'-3"	6	#4 12'-9"	6	#4 13'-0"	6	#4 13'-6"	6	#4 14'-0"
f5	str	5	#4 6'-3"	5	#4 6'-6"	5	#4 6'-9"	5	#4 7'-0"	6	#4 7'-3"	6	#4 7'-6"	6	#4 7'-9"	6	#4 8'-0"	7	#4 8'-3"	7	#4 8'-6"
f6	str	4	#4 7'-6"	5	#4 7'-9"	5	#4 8'-0"	5	#4 8'-3"	5	#4 8'-9"	6	#4 9'-0"	6	#4 9'-3"	6	#4 9'-6"	6	#4 10'-0"	7	#4 10'-3"
f7	str	4	#4 8'-6"	4	#4 9'-0"	5	#4 9'-3"	5	#4 9'-6"	5	#4 10'-0"	5	#4 10'-6"	5	#4 10'-9"	6	#4 11'-3"	6	#4 11'-6"	6	#4 12'-0"
f8	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"	6	#4 12'-9"	6	#4 13'-3"	6	#4 13'-9"
g	str	6	#4 9'-6"	6	#4 10'-0"	6	#4 10'-3"	6	#4 10'-9"	6	#4 11'-3"	6	#4 11'-9"	6	#4 12'-6"	6	#4 13'-0"	6	#4 13'-3"	6	#4 13'-9"
m1	str	4	#4 29'-6"	4	#4 31'-3"	4	#4 32'-9"	4	#4 34'-6"	5	#4 36'-3"	5	#4 37'-9"	5	#4 39'-6"	6	#4 41'-3"	6	#4 42'-9"	6	#4 44'-6"
m2	str	1	#4 29'-6"	1	#4 31'-3"	1	#4 32'-9"	1	#4 34'-6"	1	#4 36'-3"	1	#4 37'-9"	1	#4 39'-6"	1	#4 41'-3"	1	#4 42'-9"	1	#4 44'-6"
m3	str	4	#4 29'-3"	4	#4 31'-0"	4	#4 32'-9"	4	#4 34'-6"	5	#4 36'-3"	5	#4 38'-3"	5	#4 40'-0"	6	#4 41'-9"	6	#4 43'-9"	6	#4 45'-6"
m4	str	1	#4 29'-3"	1	#4 31'-0"	1	#4 32'-9"	1	#4 34'-6"	1	#4 36'-3"	1	#4 38'-3"	1	#4 40'-0"	1	#4 41'-9"	1	#4 43'-9"	1	#4 45'-6"
n1	str	4	#4 16'-3"	4	#4 17'-3"	4	#4 18'-0"	5	#4 19'-0"	5	#4 20'-0"	5	#4 21'-0"	5	#4 22'-0"	6	#4 23'-0"	6	#4 24'-0"	6	#4 25'-0"
n2	str	1	#4 16'-3"	1	#4 17'-3"	1	#4 18'-0"	1	#4 19'-0"	1	#4 20'-0"	1	#4 21'-0"	1	#4 22'-0"	1	#4 23'-0"	1	#4 24'-0"	1	#4 25'-0"
p	str	4	#5 11'-0"	4	#5 11'-6"	4	#5 12'-0"	4	#5 12'-9"	4	#5 13'-3"	4	#5 13'-6"	4	#5 14'-6"	4	#5 15'-0"	4	#5 15'-6"	4	#5 16'-0"
q	str	2	#6 13'-0"	2	#6 13'-6"	2	#6 14'-0"	2	#6 14'-9"	2	#6 15'-3"	2	#6 15'-6"	2	#6 16'-6"	2	#6 17'-0"	2	#6 17'-6"	2	#6 18'-0"
u	B	82	#4 7'-0"	86	#4 7'-0"	90	#4 7'-0"	96	#4 7'-0"	100	#4 7'-0"	104	#4 7'-0"	108	#4 7'-0"	114	#4 7'-0"	118	#4 7'-0"	122	#4 7'-0"
v	str	6	#4 27'-0"	6	#4 28'-6"	6	#4 29'-9"	6	#4 31'-6"	6	#4 32'-9"	6	#4 34'-3"	6	#4 35'-9"	6	#4 37'-0"	6	#4 38'-6"	6	#4 40'-0"
w	str	6	#4 25'-0"	6	#4 26'-6"	6	#4 27'-9"	6	#4 29'-6"	6	#4 30'-9"	6	#4 32'-3"	6	#4 33'-9"	6	#4 35'-0"	6	#4 36'-6"	6	#4 38'-0"

		PIPE DIAMETER									
		90°	96°	102°	108°	114°	120°	126°	132°	138°	144°
		A	0'-6"	0'-3"	0'-6"	0'-3"	0'-6"	0'-3"	0'-6"	0'-3"	0'-6"
B	2'-2"	2'-2"	2'-3"	2'-3"	2'-4"	2'-4"	2'-5"	2'-5"	2'-6"	2'-6"	2'-6"
C	2'-2"	2'-4"	2'-5"	2'-7"	2'-8"	2'-10"	2'-11"	3'-1"	3'-2"	3'-2"	3'-4"
D	1'-4"	1'-6"	1'-8"	1'-10"	2'-0"	2'-2"	2'-4"	2'-6"	2'-8"	2'-8"	2'-10"</