

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	MADE BY	DATE
1	Original Issue		7-12
2			
3			
4			

		STEEL LIST																			
Mark	Type	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'-6	5	*5 9'-0	6	*5 9'-3	6	*5 9'-6	6	*5 10'-3	6	*5 10'-6	6	*5 10'-9	7	*6 11'-3	7	*6 11'-9	7	*6 12'-0
a2	A	5	*5 9'-0	5	*5 9'-6	5	*5 9'-9	6	*5 10'-3	6	*5 10'-9	6	*5 11'-3	6	*6 11'-6	6	*6 12'-0	7	*6 12'-6	7	*7 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 11'-9	6	*6 12'-3	6	*7 12'-6	7	*7 13'-3	7	*7 13'-6
a4	A	5	*5 10'-3	5	*5 10'-9	5	*5 11'-0	5	*5 11'-6	5	*6 11'-6	6	*6 12'-0	6	*7 12'-6	6	*7 12'-9	6	*7 13'-3	6	*7 14'-0
a5	A	5	*5 10'-9	5	*6 11'-3	5	*6 11'-6	5	*6 11'-6	5	*6 12'-3	5	*7 12'-9	6	*7 13'-3	6	*7 13'-6	6	*7 14'-0	6	*8 15'-0
a6	A	4	*6 11'-6	5	*6 12'-0	5	*6 12'-3	5	*7 12'-9	5	*7 13'-6	5	*7 14'-0	6	*7 14'-3	6	*8 14'-9	6	*8 15'-6	6	*8 15'-9
a7	A	4	*6 12'-0	4	*6 12'-6	5	*7 12'-9	5	*7 13'-6	5	*7 14'-0	5	*7 14'-9	6	*8 15'-0	6	*8 15'-6	6	*8 16'-3	6	*8 16'-6
a8	A	5	*5 8'-6	5	*5 9'-0	5	*5 9'-3	5	*5 9'-6	5	*5 10'-3	6	*5 10'-6	6	*5 10'-9	6	*6 11'-3	6	*6 11'-9	6	*6 12'-0
a9	A	4	*5 9'-3	5	*5 9'-9	5	*5 10'-3	5	*5 10'-6	5	*5 11'-0	5	*6 11'-6	6	*6 11'-9	6	*6 12'-3	6	*7 12'-9	6	*7 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'-6	5	*7 12'-9	6	*7 13'-3	6	*7 14'-0	6	*7 14'-3
a11	A	4	*5 11'-3	4	*6 11'-6	4	*6 12'-0	5	*7 12'-3	5	*7 13'-0	5	*7 13'-9	5	*7 14'-0	5	*8 14'-3	6	*8 15'-0	6	*8 15'-3
a12	A	4	*6 12'-0	4	*6 12'-6	4	*7 13'-0	4	*7 13'-3	5	*7 14'-0	5	*7 14'-9	5	*8 15'-0	5	*8 15'-6	5	*8 16'-3	6	*8 16'-6
b1	str	2	*4 32'-3	2	*4 33'-9	2	*4 35'-3	2	*4 36'-9	2	*4 38'-3	2	*4 39'-9	2	*4 41'-3	2	*4 42'-9	2	*4 44'-3	2	*4 45'-9
b2	str	8	*4 32'-0	8	*4 33'-6	8	*4 35'-0	8	*4 36'-6	10	*4 38'-0	10	*4 39'-6	10	*4 41'-0	10	*4 42'-6	10	*4 44'-0	12	*4 45'-6
b3	str	2	*4 22'-0	2	*4 26'-0	2	*4 30'-0	2	*4 35'-0	2	*4 26'-0	2	*4 28'-6	2	*4 32'-6	2	*4 38'-6	2	*4 43'-0	2	*4 35'-0
b4	str	2	*4 8'-0	2	*4 12'-6	2	*4 17'-0	2	*4 22'-6	2	*4 11'-6	2	*4 16'-0	2	*4 19'-9	2	*4 25'-3	2	*4 30'-0	2	*4 22'-0
b5	str					2	*4 4'-0	2	*4 10'-0			2	*4 3'-6	2	*4 7'-0	2	*4 12'-0	2	*4 17'-0	2	*4 9'-0
b6	str																	2	*4 4'-0		
b7	str	2	*4 20'-3	2	*4 21'-3	2	*4 22'-3	2	*4 23'-3	2	*4 24'-3	2	*4 25'-3	2	*4 26'-3	2	*4 27'-3	2	*4 28'-3	2	*4 29'-3
b8	str	8	*4 20'-0	8	*4 21'-0	8	*4 22'-0	8	*4 23'-0	10	*4 24'-0	10	*4 25'-0	10	*4 26'-0	10	*4 27'-0	10	*4 28'-0	12	*4 29'-0
b9	str	2	*4 13'-6	2	*4 16'-0	2	*4 19'-3	2	*4 21'-0	2	*4 15'-6	2	*4 19'-3	2	*4 22'-0	2	*4 25'-0	2	*4 27'-6	2	*4 22'-0
b10	str	2	*4 6'-0	2	*4 8'-6	2	*4 11'-0	2	*4 13'-3	2	*4 8'-0	2	*4 10'-9	2	*4 13'-6	2	*4 16'-6	2	*4 19'-3	2	*4 14'-0
b11	str					2	*4 2'-9	2	*4 5'-6			2	*4 2'-6	2	*4 5'-0	2	*4 8'-0	2	*4 10'-9	2	*4 6'-0
b12	str																	2	*4 2'-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	*8 15'-6	6	*8 16'-0	6	*8 16'-6	6	*8 17'-0
e1	C	7	*5 4'-3	6	*5 4'-3	6	*5 4'-6	7	*5 4'-9	6	*5 4'-9	6	*5 5'-0	6	*5 5'-3	7	*5 5'-6	7	*5 5'-6	7	*5 5'-9
e2	C	7	*5 4'-6	6	*5 4'-6	6	*5 4'-9	6	*5 5'-0	6	*5 5'-0	6	*5 5'-3	6	*5 5'-6	6	*6 5'-9	7	*6 6'-0	7	*6 6'-0
e3	C	7	*5 4'-9	6	*5 4'-9	6	*5 5'-0	6	*5 5'-3	6	*5 5'-3	6	*5 5'-6	6	*6 5'-9	6	*6 6'-0	7	*6 6'-3	7	*6 6'-3
e4	C	6	*5 5'-0	6	*5 5'-0	6	*5 5'-3	6	*5 5'-6	6	*6 5'-6	6	*6 5'-9	6	*6 6'-0	6	*7 7'-3	6	*7 7'-6	7	*7 7'-9
e5	C	6	*5 5'-3	5	*5 5'-3	6	*5 5'-6	6	*5 5'-9	5	*6 5'-9	6	*6 6'-0	6	*7 7'-3	6	*7 7'-6	6	*7 7'-9	6	*7 8'-3
e6	C			5	*5 5'-6	6	*6 5'-9	6	*6 6'-0	5	*7 7'-3	5	*7 7'-6	6	*7 7'-6	6	*7 7'-9	6	*7 8'-0	6	*7 8'-6
e7	C									5	*7 7'-6	5	*7 7'-9	6	*7 8'-0	6	*7 8'-3	6	*7 8'-6	6	*7 8'-9
e8	C	3	*5 5'-6	3	*5 5'-9	3	*6 6'-0	3	*6 6'-3	3	*7 7'-9	3	*7 8'-0	3	*7 8'-3	3	*7 8'-6	3	*7 8'-9	3	*8 9'-0
e9	C	9	*5 5'-6	10	*5 5'-9	10	*6 6'-0	11	*6 6'-3	11	*7 7'-9	12	*7 8'-0	12	*7 8'-3	13	*7 8'-6	13	*7 8'-9	14	*8 9'-0
e10	C	5	*5 5'-6	5	*5 5'-9	5	*6 6'-0	6	*6 6'-3	6	*7 7'-9	6	*7 8'-0	6	*7 8'-3	7	*7 8'-6	7	*7 8'-9	7	*8 9'-0
e11	C	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	5	*7 8'-3	5	*7 8'-6
e12	C	4	*5 5'-0	4	*5 5'-3	4	*5 5'-6	4	*5 5'-9	5	*6 5'-9	5	*6 6'-0	5	*7 7'-6	5	*7 7'-9	5	*7 8'-0	6	*7 8'-0
e13	C	4	*5 4'-9	4	*5 4'-9	4	*5 5'-0	5	*5 5'-3	5	*5 5'-6	5	*5 5'-9	5	*6 6'-0	5	*6 6'-3	6	*6 6'-6	6	*6 6'-6
e14	C	4	*5 4'-6	4	*5 4'-6	5	*5 4'-9	5	*5 5'-0	5	*5 5'-0	5	*5 5'-3	5	*5 5'-6	6	*6 5'-9	6	*6 6'-0	6	*6 6'-3
e15	C	4	*5 4'-3	5	*5 4'-3	5	*5 4'-6	5	*5 4'-9	5	*5 4'-9	5	*5 5'-0	6	*5 5'-3	6	*5 5'-6	6	*5 5'-6	6	*5 5'-9
f1	str	6	*4 7'-0	6	*4 7'-3	6	*4 7'-9	7	*4 8'-0	7	*4 8'-3	7	*4 8'-9	7	*4 9'-0	8	*4 9'-3	8	*4 9'-9	8	*4 10'-0
f2	str	6	*4 8'-0	6	*4 8'-3	6	*4 8'-9	6	*4 9'-3	7	*4 9'-6	7	*4 10'-0	7	*4 10'-3	7	*4 10'-6	8	*4 11'-0	8	*4 11'-3
f3	str	5	*4 8'-9	6	*4 9'-3	6	*4 9'-9	6	*4 10'-3	6	*4 10'-6	7	*4 11'-0	7	*4 11'-3	7	*4 11'-9	7	*4 12'-3	8	*4 12'-9
f4	str	5	*4 9'-9	5	*4 10'-3	6	*4 10'-9	6	*4 11'-3	6	*4 11'-6	6	*4 12'-0	7	*4 12'-6	7	*4 13'-0	7	*4 13'-6	7	*4 14'-0
f5	str	4	*4 7'-0	4	*4 7'-3	4	*4 7'-9	4	*4 8'-0	4	*4 8'-3	5	*4 8'-9	5	*4 9'-0	5	*4 9'-3	5	*4 9'-9	5	*4 10'-0
f6	str	4	*4 8'-0	4	*4 8'-3	4	*4 8'-9	4	*4 9'-0	4	*4 9'-6	4	*4 10'-0	5	*4 10'-3	5	*4 10'-6	5	*4 11'-0	5	*4 11'-3
f7	str	3	*4 9'-0	3	*4 9'-6	4	*4 10'-0	4	*4 10'-3	4	*4 10'-6	4	*4 11'-0	4	*4 11'-6	4	*4 12'-0	5	*4 12'-6	5	*4 12'-9
f8	str	3	*4 10'-0	3	*4 10'-6	3	*4 11'-0	4	*4 11'-3	4	*4 11'-9	4	*4 12'-3	4	*4 12'-9	4	*4 13'-3	4	*4 13'-9	5	*4 14'-0
g	str	6	*4 10'-0	6	*4 10'-6	6	*4 11'-0	2	*4 11'-6	6	*4 12'-0	6	*4 12'-6	6	*4 13'-3	6	*4 13'-9	6	*4 14'-3	6	*4 14'-9
m1	str	4	*4 34'-6	4	*4 36'-0	4	*4 37'-6	4	*4 39'-3	4	*4 40'-9	5	*4 42'-3	5	*4 44'-0	5	*4 45'-6	5	*4 47'-0	5	*4 48'-9
m2	str	1	*4 34'-6	1	*4 36'-0	1	*4 37'-6	1	*4 39'-3	1	*4 40'-9	1	*4 42'-3	1	*4 44'-0	1	*4 45'-6	1	*4 47'-0	1	*4 48'-9
m3	str	4	*4 25'-6	4	*4 26'-9	4	*4 28'-0	4	*4 29'-3	4	*4 30'-6	5	*4 31'-9	5	*4 33'-0	5	*4 34'-3	5	*4 35'-6	5	*4 36'-9
m4	str	1	*4 25'-6	1	*4 26'-9	1	*4 28'-0	1	*4 29'-3	1	*4 30'-6	1	*4 31'-9	1	*4 33'-0	1	*4 34'-3	1	*4 35'-6	1	*4 36'-9
n1	str	4	*4 17'-0	4	*4 18'-0	4	*4 18'-9	4	*4 19'-9	4	*4 20'-6	5	*4 21'-6	5	*4 22'-6	5	*4 23'-6	5	*4 24'-3	5	*4 25'-3
n2	str	1	*4 17'-0	1	*4 18'-0	1	*4 18'-9	1	*4 19'-9	1	*4 20'-6	1	*4 21'-6	1	*4 22'-6	1	*4 23'-6	1	*4 24'-3	1	*4 25'-3
p	str	4	*5 12'-0	4	*5 12'-6	4	*5 13'-0	4	*5 13'-9	4	*5 14'-3	4	*5 14'-9	4	*5 15'-6	4	*5 16'-3	4	*5 17'-0	4	*5 17'-6
q	str	2	*6 14'-0	2	*6 14'-6	2	*6 15'-0	2	*6 15'-9	2	*6 16'-3	2	*6 16'-9	2	*6 17'-6	2	*6 18'-3	2	*6 19'-0	2	*6 19'-6
u	B	86	*4 7'-0	90	*4 7'-0	94	*4 7'-0	98	*4 7'-0	102	*4 7'-0	106	*4 7'-0	110	*4 7'-0	114	*4 7'-0	118	*4 7'-0	122	*4 7'-0
v	str	6	*4 32'-6	6	*4 34'-0	6	*4 35'-6	6	*4 37'-0	6	*4 38'-6	6	*4 40'-0	6	*4 41'-6	6	*4 43'-0	6	*4 44'-6	6	*4 46'-0
w	str	6	*4 20'-0	6	*4 21'-0	6	*4 22'-0	6	*4 23'-0	6	*4 24'-0	6	*4 25'-0	6	*4 26'-0	6	*4 27'-0	6	*4 28'-0	6	*4 29'-0

		PIPE DIAMETER									
		90°	96°	102°	108°	114°	120°	126°	132°	138°	144°
A	0'-3	0'-3	0'-3	0'-3	0'-3	0'-3	0'-3	0'-3	0'-3	0'-3	0'-3
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'-4	2'-6	2'-7	2'-9	2'-10	3'-0	3'-1	3'-1	3'-4	3'-6	3'-6
D	1'-6	1'-7	1'-8	1'-9	1'-10	1'-11	2'-0	2'-1	2'-2	2'-3	2'-3
E	6'-0	6'-3	6'-6	6'-9	7'-0	7'-3	7'-6	7'-9	8'-0	8'-3	8'-3
F											