

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
1	Original Issue	7-12	SJM
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	4	*5 9'-3	5	*5 9'-6	5	*5 10'-0	5	*5 10'-3	5	*5 11'-0	6	*5 11'-3	6	*5 11'-6	6	*5 12'-0	6	*6 12'-6	7	*6 12'-9
a2	A	4	*5 9'-9	5	*5 10'-0	5	*5 10'-6	5	*5 11'-0	5	*5 11'-6	6	*6 12'-0	6	*5 12'-3	6	*6 12'-9	6	*6 13'-3	7	*7 13'-6
a3	A	4	*5 10'-3	4	*5 10'-9	5	*5 11'-3	5	*6 11'-6	5	*6 12'-3	5	*6 12'-6	6	*6 13'-0	6	*6 13'-6	6	*7 14'-0	6	*7 14'-3
a4	A	4	*5 11'-0	4	*5 11'-3	4	*6 11'-9	5	*6 12'-3	5	*7 12'-9	5	*7 13'-3	5	*7 13'-6	6	*7 14'-0	6	*7 14'-6	6	*7 15'-3
a5	A	4	*5 11'-6	4	*6 12'-0	4	*6 12'-6	5	*7 12'-9	5	*7 13'-3	5	*7 13'-9	5	*7 14'-3	6	*7 14'-9	6	*7 15'-3	6	*8 16'-0
a6	A	4	*6 12'-0	4	*6 12'-6	4	*7 13'-0	4	*7 13'-6	5	*7 14'-0	5	*7 14'-6	5	*7 15'-0	5	*7 15'-6	6	*8 16'-0	6	*8 16'-9
a7	A	4	*5 8'-9	4	*5 9'-0	4	*5 9'-3	5	*5 9'-6	5	*5 10'-0	5	*5 10'-3	5	*5 10'-6	6	*5 10'-9	6	*5 11'-3	6	*5 11'-6
a8	A	4	*5 9'-3	4	*5 9'-9	4	*5 10'-0	4	*5 10'-3	5	*5 10'-9	5	*5 11'-0	5	*5 11'-3	5	*5 11'-6	6	*6 12'-3	6	*6 12'-6
a9	A	4	*5 10'-0	4	*5 10'-6	4	*5 10'-9	4	*5 11'-0	5	*6 11'-6	5	*6 11'-9	5	*6 12'-3	5	*6 12'-6	6	*6 13'-0	6	*7 13'-6
a10	A	3	*5 10'-9	4	*5 11'-3	4	*5 11'-6	4	*6 11'-9	4	*7 12'-3	5	*7 12'-6	5	*6 13'-0	5	*7 13'-6	5	*7 14'-0	6	*7 14'-6
a11	A	3	*5 11'-3	3	*6 11'-9	4	*6 12'-0	4	*7 12'-6	4	*7 13'-0	4	*7 13'-6	5	*7 14'-0	5	*7 14'-3	5	*7 15'-0	5	*8 15'-6
a12	A	3	*6 12'-0	3	*6 12'-6	4	*7 12'-9	4	*7 13'-3	4	*7 13'-9	4	*7 14'-3	5	*7 14'-9	5	*7 15'-3	5	*8 16'-0	5	*8 16'-6
b1	str	2	*4 23'-6	2	*4 25'-0	2	*4 26'-6	2	*4 28'-0	2	*4 29'-6	2	*4 31'-0	2	*4 32'-6	2	*4 34'-0	2	*4 35'-6	2	*4 37'-0
b2	str	8	*4 23'-6	8	*4 25'-0	10	*4 26'-6	10	*4 28'-0	10	*4 29'-6	10	*4 31'-0	12	*4 32'-6	12	*4 34'-0	12	*4 35'-6	12	*4 37'-0
b3	str	2	*4 19'-0	2	*4 23'-0	2	*4 12'-6	2	*4 19'-0	2	*4 24'-0	2	*4 28'-3	2	*4 20'-0	2	*4 24'-0	2	*4 29'-0	2	*4 34'-0
b4	str	2	*4 7'-0	2	*4 10'-0	2	*4 2'-3	2	*4 6'-0	2	*4 11'-6	2	*4 16'-6	2	*4 6'-0	2	*4 11'-0	2	*4 16'-6	2	*4 20'-3
b5	str											2	*4 5'-0					2	*4 4'-0	2	*4 6'-6
b6	str																				
b7	str	2	*4 20'-3	2	*4 21'-9	2	*4 23'-3	2	*4 24'-9	2	*4 26'-3	2	*4 27'-9	2	*4 29'-3	2	*4 31'-0	2	*4 32'-6	2	*4 34'-0
b8	str	8	*4 20'-0	8	*4 21'-6	8	*4 23'-0	8	*4 24'-6	10	*4 26'-0	10	*4 27'-6	10	*4 29'-0	10	*4 30'-6	10	*4 32'-0	10	*4 33'-6
b9	str	2	*4 13'-6	2	*4 17'-3	2	*4 19'-6	2	*4 23'-0	2	*4 18'-0	2	*4 20'-6	2	*4 23'-3	2	*4 29'-0	2	*4 30'-0	2	*4 32'-0
b10	str	2	*4 5'-0	2	*4 8'-6	2	*4 10'-9	2	*4 13'-6	2	*4 9'-0	2	*4 11'-9	2	*4 14'-6	2	*4 19'-0	2	*4 21'-3	2	*4 23'-3
b11	str					2	*4 2'-0	2	*4 4'-3			2	*4 3'-0	2	*4 6'-0	2	*4 9'-3	2	*4 12'-3	2	*4 14'-6
b12	str																	2	*4 3'-6	2	*4 6'-0
b13	str																				
b14	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	*7 15'-6	6	*7 16'-0	6	*8 16'-6	6	*8 17'-0
e1	C	6	*5 4'-3	5	*5 4'-3	5	*5 4'-6	5	*5 4'-9	5	*5 4'-9	6	*5 5'-0	6	*5 5'-3	6	*5 5'-6	6	*5 5'-9	7	*5 5'-9
e2	C	6	*5 4'-6	4	*5 4'-6	5	*5 4'-9	5	*5 5'-0	5	*5 5'-3	6	*5 5'-3	6	*5 5'-6	6	*5 5'-9	6	*6 6'-0	6	*6 6'-3
e3	C	6	*5 4'-9	4	*5 4'-9	5	*5 5'-0	5	*5 5'-3	5	*5 5'-6	5	*5 5'-9	6	*6 5'-9	6	*6 6'-3	6	*6 6'-6	6	*6 6'-9
e4	C	6	*5 5'-0	4	*5 5'-0	4	*5 5'-3	5	*5 5'-6	5	*6 5'-9	5	*6 6'-0	5	*6 6'-3	6	*6 6'-6	6	*7 7'-9	6	*7 8'-0
e5	C			4	*5 5'-3	4	*5 5'-6	4	*5 5'-9	5	*6 6'-3	5	*6 6'-6	5	*6 6'-6	5	*7 7'-9	6	*7 8'-0	6	*7 8'-3
e6	C			4	*5 5'-6	4	*6 5'-9	4	*6 6'-0	5	*6 6'-6	5	*6 6'-9	5	*7 7'-9	5	*7 8'-3	6	*8 8'-6	6	*8 8'-9
e7	C	3	*5 5'-3	3	*5 5'-9	3	*6 6'-0	3	*6 6'-3	3	*7 7'-6	4	*7 7'-9	4	*7 8'-3	4	*7 8'-6	4	*8 9'-0	4	*8 9'-6
e8	C	9	*5 5'-3	9	*5 5'-9	10	*6 6'-0	10	*6 6'-3	11	*7 7'-6	11	*7 7'-9	12	*7 8'-3	12	*7 8'-6	13	*8 9'-0	13	*8 9'-6
e9	C	5	*5 5'-3	5	*5 5'-9	5	*6 6'-0	5	*6 6'-3	5	*7 7'-6	5	*7 7'-9	5	*7 8'-3	5	*7 8'-6	5	*8 9'-0	5	*8 9'-6
e10	C	5	*5 5'-0	3	*5 5'-6	3	*6 5'-9	4	*6 6'-0	4	*6 6'-6	4	*6 6'-9	4	*7 7'-9	5	*7 8'-3	5	*8 8'-6	5	*8 9'-0
e11	C	5	*5 4'-9	3	*5 5'-3	4	*5 5'-6	4	*5 5'-9	4	*6 6'-3	4	*6 6'-6	5	*6 6'-6	5	*7 7'-9	5	*7 8'-0	5	*7 8'-6
e12	C	5	*5 4'-6	4	*5 5'-0	4	*5 5'-3	4	*5 5'-6	4	*6 5'-9	5	*6 6'-0	5	*6 6'-3	5	*6 7'-6	5	*7 7'-9	6	*7 8'-0
e13	C	5	*5 4'-3	4	*5 4'-9	4	*5 5'-0	4	*5 5'-3	4	*5 5'-6	5	*5 5'-9	5	*6 5'-9	5	*6 6'-3	5	*6 6'-6	6	*6 6'-9
e14	C			4	*5 4'-6	4	*5 4'-9	4	*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
e15	C			4	*5 4'-3	4	*5 4'-6	5	*5 4'-9	5	*5 4'-9	5	*5 5'-0	5	*5 5'-3	6	*5 5'-6	6	*5 5'-9	6	*5 5'-9
f1	str	4	*4 7'-6	5	*4 7'-9	5	*4 8'-0	5	*4 8'-6	5	*4 9'-0	6	*4 9'-3	6	*4 9'-6	6	*4 10'-0	6	*4 10'-3	7	*4 10'-6
f2	str	4	*4 8'-3	4	*4 8'-6	5	*4 9'-0	5	*4 9'-3	5	*4 9'-9	5	*4 10'-3	6	*4 10'-6	6	*4 11'-0	6	*4 11'-3	6	*4 11'-9
f3	str	4	*4 9'-3	4	*4 9'-6	4	*4 10'-0	5	*4 10'-3	5	*4 10'-9	5	*4 11'-3	5	*4 11'-6	6	*4 12'-0	6	*4 12'-6	6	*4 13'-0
f4	str	4	*4 10'-0	4	*4 10'-6	4	*4 11'-0	4	*4 11'-3	5	*4 11'-9	5	*4 12'-3	5	*4 12'-9	5	*4 13'-3	6	*4 13'-9	6	*4 14'-3
f5	str	4	*4 7'-0	4	*4 7'-3	4	*4 7'-6	5	*4 7'-9	5	*4 8'-0	5	*4 8'-3	5	*4 8'-6	6	*4 8'-9	6	*4 9'-0	6	*4 9'-3
f6	str	4	*4 8'-0	4	*4 8'-3	4	*4 8'-6	4	*4 9'-0	5	*4 9'-3	5	*4 9'-6	5	*4 10'-0	5	*4 10'-3	6	*4 10'-6	6	*4 11'-0
f7	str	3	*4 9'-0	4	*4 9'-6	4	*4 9'-9	4	*4 10'-0	4	*4 10'-6	5	*4 11'-0	5	*4 11'-3	5	*4 11'-9	5	*4 12'-3	6	*4 12'-6
f8	str	3	*4 10'-0	3	*4 10'-6	4	*4 10'-9	4	*4 11'-3	4	*4 11'-9	4	*4 12'-3	5	*4 12'-9	5	*4 13'-3	5	*4 13'-9	5	*4 14'-3
g	str	2	*4 9'-3	2	*4 9'-9	2	*4 10'-3	2	*4 10'-9	2	*4 11'-3	2	*4 11'-9	2	*4 12'-3	2	*4 12'-9	2	*4 13'-3	2	*4 13'-9
m1	str	4	*4 26'-3	4	*4 27'-9	4	*4 29'-3	5	*4 31'-0	5	*4 32'-6	5	*4 34'-3	5	*4 36'-0	6	*4 37'-6	6	*4 39'-0	6	*4 40'-9
m2	str	1	*4 26'-3	1	*4 27'-9	1	*4 29'-3	1	*4 31'-0	1	*4 32'-6	1	*4 34'-3	1	*4 36'-0	1	*4 37'-6	1	*4 39'-0	1	*4 40'-9
m3	str	4	*4 24'-3	4	*4 26'-0	4	*4 27'-6	5	*4 29'-3	5	*4 31'-0	5	*4 32'-9	5	*4 34'-6	6	*4 36'-3	6	*4 38'-0	6	*4 39'-9
m4	str	1	*4 24'-3	1	*4 26'-0	1	*4 27'-6	1	*4 29'-3	1	*4 31'-0	1	*4 32'-9	1	*4 34'-6	1	*4 36'-3	1	*4 38'-0	1	*4 39'-9
n1	str	4	*4 15'-0	4	*4 15'-9	4	*4 16'-9	5	*4 17'-9	5	*4 18'-6	5	*4 19'-3	5	*4 20'-3	6	*4 21'-3	6	*4 22'-0	6	*4 23'-0
n2	str	1	*4 15'-0	1	*4 15'-9	1	*4 16'-9	1	*4 17'-9	1	*4 18'-6	1	*4 19'-3	1	*4 20'-3	1	*4 21'-3	1	*4 22'-0	1	*4 23'-0
p	str	4	*5 10'-9	4	*5 11'-3	4	*5 11'-9	4	*5 12'-3	4	*5 12'-9	4	*5 13'-3	4	*5 14'-3	4	*5 14'-9	4	*5 15'-3	4	*5 15'-9
q	str	2	*6 12'-9	2	*6 13'-3	2	*6 13'-9	2	*6 14'-3	2	*6 14'-9	2	*6 15'-3	2	*6 16'-3	2	*6 16'-9	2	*6 17'-3	2	*6 17'-9
u	B	7	*4 5'-0	7	*4 5'-0	8	*4 5'-0	8	*4 5'-0	8	*4 5'-0	9	*4 5'-0	9	*4 5'-0	9	*4 5'-0	10	*4 5'-0	10	*4 5'-0
v	str	1	*4 23'-6	1	*4 25'-0	1	*4 26'-6	1	*4 28'-0	1	*4 29'-6	1	*4 31'-0	1	*4 32'-6	1	*4 34'-0	1	*4 35'-6	1	*4 37'-0
w	str	1	*4 20'-0	1	*4 21'-6	1	*4 23'-0	1	*4 24'-6	1	*4 26'-0	1	*4 27'-6	1	*4 29'-0	1	*4 30'-6	1	*4 32'-0	1	*4 33'-6

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