

NO.	DESCRIPTION OF REVISIONS	DATE
1	Original Issue	
2		
3		
4		

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.

Mark	Bend	RIGHT ANGLE									
		90°	96°	102°	108°	114°	120°	126°	132°	138°	144°
		NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth
h	D	17 9'-3"	18 9'-3"	19 9'-3"	20 9'-3"	21 9'-3"	22 9'-3"	23 9'-3"	24 9'-3"	25 9'-3"	26 9'-3"
j	str	8 26'-6"	8 28'-0"	8 29'-6"	8 31'-0"	8 32'-6"	8 34'-0"	8 35'-6"	8 37'-0"	8 38'-6"	8 40'-0"
k	E	17 7'-0"	18 7'-0"	19 7'-0"	20 7'-0"	21 7'-0"	22 7'-0"	23 7'-0"	24 7'-0"	25 7'-0"	26 7'-0"
r1	str	9 23'-6"	9 24'-9"	9 26'-3"	9 27'-6"	9 29'-0"	11 30'-3"	11 31'-9"	11 33'-0"	13 34'-6"	13 36'-0"
r2	str	4 18'-0"	4 20'-0"	4 21'-6"	4 24'-0"	4 25'-6"	4 25'-0"	4 28'-0"	4 29'-6"	4 29'-0"	4 30'-6"
r3	str	4 12'-6"	4 15'-0"	4 16'-6"	4 18'-6"	4 20'-6"	4 19'-9"	4 22'-3"	4 24'-3"	4 23'-9"	4 25'-3"
r4	str	4 7'-0"	4 10'-0"	4 11'-6"	4 13'-0"	4 15'-6"	4 14'-6"	4 16'-6"	4 19'-0"	4 18'-3"	4 20'-0"
r5	str				2 10'-0"	2 12'-0"	2 9'-0"	4 11'-0"	4 14'-0"	4 13'-0"	4 14'-9"
s	str	57 2'-0"	60 2'-0"	64 2'-0"	67 2'-0"	70 2'-0"	74 2'-0"	77 2'-0"	80 2'-0"	84 2'-0"	87 2'-0"
t1	str	4 8'-0"	4 8'-6"	4 8'-9"	5 9'-3"	5 9'-9"	5 10'-3"	5 10'-9"	5 11'-0"	6 11'-6"	6 12'-0"
t2	str	4 10'-6"	4 11'-3"	4 11'-6"	4 12'-3"	5 13'-0"	5 13'-6"	5 14'-3"	5 14'-9"	5 15'-3"	6 16'-0"
t3	str	4 13'-0"	4 14'-3"	4 14'-6"	4 15'-3"	4 16'-0"	5 17'-0"	5 17'-9"	5 18'-3"	5 19'-3"	5 20'-0"
t4	str	3 15'-6"	4 17'-3"	4 17'-3"	4 18'-3"	4 19'-3"	4 20'-3"	5 21'-3"	5 22'-0"	5 23'-0"	5 24'-0"
t5	str	3 18'-0"	4 20'-0"	4 20'-0"	4 21'-3"	4 22'-6"	4 23'-6"	5 24'-9"	5 25'-9"	5 26'-9"	5 28'-0"
t6	str	3 20'-6"	3 22'-0"	4 23'-0"	4 24'-3"	4 25'-6"	4 27'-0"	4 28'-3"	5 29'-3"	5 30'-9"	5 32'-0"
t7	str	3 23'-0"	3 24'-3"	3 25'-9"	4 27'-3"	4 28'-9"	4 30'-3"	4 31'-9"	4 33'-0"	5 34'-6"	5 36'-0"

Mark	Bend	15° SKEW									
		90°	96°	102°	108°	114°	120°	126°	132°	138°	144°
		NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth
h	D	18 9'-3"	19 9'-3"	20 9'-3"	21 9'-3"	22 9'-3"	23 9'-3"	24 9'-3"	25 9'-3"	26 9'-3"	27 9'-3"
j	str	8 26'-0"	8 27'-6"	8 29'-0"	8 30'-6"	8 32'-0"	8 33'-6"	8 35'-0"	8 36'-6"	8 38'-0"	8 39'-6"
k	E	18 7'-0"	19 7'-0"	20 7'-0"	21 7'-0"	22 7'-0"	23 7'-0"	24 7'-0"	25 7'-0"	26 7'-0"	27 7'-0"
r1	str	9 22'-6"	9 23'-9"	9 25'-3"	10 26'-6"	10 28'-0"	10 29'-3"	11 30'-9"	12 32'-3"	12 33'-6"	13 35'-0"
r2	str	2 20'-0"	2 22'-6"	2 23'-6"	3 22'-6"	3 23'-6"	3 26'-0"	3 27'-6"	3 28'-0"	3 29'-0"	3 30'-6"
r3	str	2 18'-6"	2 19'-3"	2 20'-6"	2 19'-3"	2 20'-3"	3 21'-0"	3 23'-0"	3 23'-3"	3 24'-6"	3 25'-9"
r4	str	2 15'-3"	2 16'-3"	2 17'-6"	2 16'-0"	2 17'-0"	2 18'-0"	3 18'-6"	3 18'-6"	3 20'-0"	3 21'-3"
r5	str	2 11'-9"	2 13'-3"	2 14'-6"	2 13'-0"	2 14'-0"	2 15'-0"	2 15'-3"	3 14'-0"	3 15'-6"	3 16'-6"
r6	str	2 8'-3"	2 10'-0"	2 11'-6"	2 9'-9"	2 10'-9"	2 12'-0"	2 12'-3"	2 11'-0"	3 11'-0"	3 11'-6"
r7	str	2 5'-0"	2 7'-0"	2 8'-6"	2 6'-6"	2 7'-6"	2 9'-0"	2 9'-3"	2 7'-6"	2 8'-0"	3 7'-0"
r8	str	1 8'-0"	1 11'-0"	1 16'-0"	1 17'-6"	2 15'-0"	2 17'-0"	1 20'-0"	1 25'-0"	2 19'-0"	2 15'-0"
s	str	56 2'-0"	59 2'-0"	62 2'-0"	65 2'-0"	68 2'-0"	71 2'-0"	74 2'-0"	77 2'-0"	80 2'-0"	83 2'-0"
t1	str	3 8'-0"	3 8'-6"	3 9'-0"	3 9'-6"	3 10'-0"	4 10'-6"	4 11'-0"	4 11'-6"	4 12'-0"	4 12'-6"
t2	str	3 10'-6"	3 10'-9"	3 11'-3"	3 11'-6"	3 12'-3"	3 13'-6"	4 14'-0"	4 15'-3"	4 15'-3"	4 15'-3"
t3	str	3 12'-9"	3 13'-3"	3 13'-9"	3 13'-6"	3 14'-6"	3 15'-9"	3 17'-0"	4 19'-0"	4 18'-3"	4 18'-3"
t4	str	2 15'-6"	3 15'-6"	3 16'-3"	3 15'-6"	3 16'-9"	3 18'-3"	3 19'-6"	3 21'-0"	4 21'-6"	4 21'-3"
t5	str	2 17'-0"	3 18'-0"	3 18'-6"	3 17'-6"	3 19'-0"	3 20'-6"	3 21'-9"	3 23'-3"	3 24'-0"	4 24'-0"
t6	str	2 18'-6"	2 20'-0"	3 21'-0"	3 19'-6"	3 21'-6"	3 23'-0"	3 24'-3"	3 25'-6"	3 26'-6"	3 27'-6"
t7	str	2 20'-0"	2 21'-9"	2 23'-0"	3 21'-6"	3 23'-9"	3 25'-3"	3 26'-9"	3 28'-0"	3 29'-0"	3 30'-0"
t8	str	2 21'-6"	2 23'-3"	2 24'-6"	2 25'-6"	3 26'-0"	3 27'-6"	3 29'-0"	3 30'-3"	3 31'-6"	3 32'-6"
t9	str	2 23'-0"	2 25'-0"	2 26'-0"	2 27'-0"	2 28'-0"	3 30'-0"	3 31'-6"	3 32'-6"	3 34'-0"	3 35'-0"
t10	str	1 17'-6"	1 21'-0"	1 24'-0"	2 18'-0"	2 16'-0"	2 16'-0"	2 18'-0"	2 23'-0"	2 26'-0"	2 24'-0"
t11	str	1 25'-0"	1 26'-6"	1 28'-0"	1 29'-6"	1 31'-0"	1 32'-6"	1 34'-0"	1 35'-6"	1 37'-0"	1 38'-6"

Mark	Bend	30° SKEW									
		90°	96°	102°	108°	114°	120°	126°	132°	138°	144°
		NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth
h	D	23 9'-3"	24 9'-3"	25 9'-3"	26 9'-3"	27 9'-3"	28 9'-3"	29 9'-3"	30 9'-3"	31 9'-3"	32 9'-3"
j	str	8 34'-0"	8 35'-6"	8 37'-3"	8 39'-0"	8 40'-9"	8 42'-3"	8 44'-0"	8 45'-9"	8 47'-3"	8 49'-0"
k	E	23 7'-0"	24 7'-0"	25 7'-0"	26 7'-0"	27 7'-0"	28 7'-0"	29 7'-0"	30 7'-0"	31 7'-0"	32 7'-0"
r1	str	9 19'-6"	10 20'-6"	10 21'-6"	11 22'-6"	11 23'-6"	12 24'-6"	13 25'-6"	13 26'-6"	14 27'-6"	14 28'-6"
r2	str	3 18'-0"	3 18'-6"	3 19'-6"	3 20'-0"	3 21'-6"	3 22'-0"	3 23'-0"	4 24'-0"	4 24'-6"	4 26'-0"
r3	str	2 16'-3"	3 16'-0"	3 18'-3"	3 17'-9"	3 19'-3"	3 19'-6"	3 20'-6"	3 21'-6"	4 21'-0"	4 22'-9"
r4	str	2 14'-9"	2 14'-6"	3 17'-0"	3 15'-3"	3 17'-0"	3 17'-3"	3 18'-3"	3 19'-0"	3 18'-6"	4 19'-6"
r5	str	2 13'-0"	2 12'-9"	2 15'-0"	3 13'-0"	3 14'-6"	3 14'-9"	3 15'-9"	3 16'-6"	3 16'-0"	3 16'-6"
r6	str	2 11'-6"	2 11'-3"	2 12'-9"	2 11'-3"	3 12'-3"	3 12'-6"	3 13'-3"	3 14'-0"	3 13'-6"	3 14'-0"
r7	str	2 9'-9"	2 9'-9"	2 10'-9"	2 9'-9"	3 10'-0"	3 10'-0"	3 10'-9"	3 11'-6"	3 11'-0"	3 11'-9"
r8	str	2 8'-3"	2 8'-0"	2 8'-6"	2 8'-3"	2 8'-3"	2 8'-3"	3 8'-6"	3 9'-0"	3 8'-6"	3 9'-3"
r9	str	2 6'-6"	2 6'-6"	2 6'-6"	2 6'-6"	2 6'-6"	2 6'-6"	3 6'-6"	3 6'-6"	3 6'-0"	3 7'-0"
s	str	60 2'-0"	63 2'-0"	65 2'-0"	68 2'-0"	71 2'-0"	73 2'-0"	76 2'-0"	79 2'-0"	81 2'-0"	84 2'-0"
t1	str	3 9'-3"	3 9'-9"	3 10'-3"	3 11'-0"	3 11'-6"	3 12'-0"	3 12'-0"	4 13'-0"	4 13'-9"	4 14'-3"
t2	str	3 12'-9"	3 13'-3"	3 13'-9"	3 14'-6"	3 15'-0"	3 15'-6"	3 16'-0"	3 17'-6"	4 18'-6"	4 19'-0"
t3	str	3 16'-6"	3 17'-0"	3 17'-6"	3 18'-0"	3 18'-9"	3 19'-3"	3 19'-9"	3 21'-0"	3 21'-6"	4 23'-9"
t4	str	2 20'-0"	2 21'-0"	3 21'-0"	3 21'-6"	3 22'-3"	3 22'-9"	3 23'-3"	3 24'-9"	3 25'-6"	4 28'-6"
t5	str	2 22'-6"	2 23'-3"	2 24'-0"	3 25'-9"	3 25'-9"	3 26'-3"	3 26'-9"	3 28'-3"	3 29'-6"	3 33'-0"
t6	str	2 25'-0"	2 25'-6"	2 26'-9"	2 28'-0"	3 29'-6"	3 30'-0"	3 30'-3"	3 31'-9"	3 33'-6"	3 36'-9"
t7	str	2 27'-6"	2 27'-9"	2 29'-3"	2 30'-6"	3 33'-0"	3 33'-3"	3 34'-0"	3 35'-6"	3 37'-6"	3 40'-3"
t8	str	2 30'-0"	2 30'-0"	2 32'-0"	2 33'-0"	2 36'-6"	2 36'-6"	3 37'-6"	3 39'-0"	3 41'-6"	2 44'-0"
t9	str		1 25'-0"	1 26'-0"	1 29'-0"		1 27'-0"	1 35'-0"	1 34'-0"	1 37'-0"	1 38'-0"
t10	str	1 33'-3"	1 35'-0"	1 35'-9"	1 38'-6"	1 40'-3"	1 42'-0"	1 43'-9"	1 45'-6"	1 47'-3"	1 49'-0"

Mark	Bend	45° SKEW									
		90°	96°	102°	108°	114°	120°	126°	132°	138°	144°
		NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth	NoLgth
h	D	29 9'-3"	30 9'-3"	32 9'-3"	33 9'-3"	34 9'-3"	36 9'-3"	37 9'-3"	38 9'-3"	40 9'-3"	41 9'-3"
j	str	8 44'-0"	8 46'-0"	8 48'-0"	8 50'-0"	8 52'-0"	8 54'-0"	8 56'-0"	8 58'-0"	8 60'-0"	8 62'-0"
k	E	29 7'-0"	30 7'-0"	32 7'-0"	33 7'-0"	34 7'-0"	36 7'-0"	37 7'-0"	38 7'-0"	40 7'-0"	41 7'-0"
r1	str	11 15'-6"	12 16'-3"	13 17'-3"	14 18'-3"	14 19'-0"	15 20'-0"	16 20'-9"	16 21'-9"	17 22'-6"	17 23'-6"
r2	str	4 14'-0"	4 15'-6"	4 16'-6"	4 17'-3"	4 17'-0"	4 18'-0"	4 18'-9"	4 19'-6"	4 20'-3"	4 22'-0"
r3	str	3 12'-6"	3 14'-0"	3 15'-0"	3 15'-9"	3 15'-3"	3 16'-6"	4 16'-9"	4 17'-6"	4 18'-3"	4 19'-9"
r4	str	3 11'-0"	3 12'-9"	3 13'-3"	3 14'-0"	3 14'-0"	3 15'-0"	4 15'-0"	4 15'-6"	4 16'-0"	4 17'-9"
r5	str	3 9'-6"	3 11'-3"	3 11'-9"	3 12'-6"	3 12'-3"	3 13'-6"	3 13'-0"	4 13'-6"	4 14'-0"	4 15'-6"
r6	str	3 8'-0"	3 9'-9"	3 10'-3"	3 10'-9"	3 11'-0"	3 12'-0"	3 11'-6"	3 11'-9"	4 12'-0"	4 13'-3"
r7	str	3 6'-6"	3 8'-3"	3 8'-9"	3 9'-3"	3 9'-3"	3 10'-6"	3 10'-0"	3 10'-3"	3 10'-6"	4 11'-3"
r8	str	3 5'-0"	3 7'-0"	3 7'-0"	3 7'-9"	3 8'-3"	3 9'-0"	3 8'-6"	3 8'-9"	3 9'-0"	4 9'-0"
r9	str	3 3'-6"	3 5'-6"	3 5'-6"	3 5'-0"	3 6'-3"	3 7'-6"	3 7'-0"	3 7'-6"	3 7'-6"	3 7'-6"
r10	str		2 4'-6"	2 4'-6"	3 4'-6"	3 5'-0"	3 6'-0"	3 5'-6"	3 6'-0"	3 6'-0"	3 6'-6"
s	str	58 2'-0"	61 2'-0"	64 2'-0"	67 2'-0"	70 2'-0"	73 2'-0"	76 2'-0"	79 2'-0"	82 2'-0"	85 2'-0"
t1	str	2 11'-6"	2 12'-3"	2 13'-0"	2 13'-9"	3 14'-6"	3 15'-3"	3 16'-0"	3 16'-9"	3 17'-6"	3 18'-3"
t2	str	2 15'-9"	2 16'-3"	2 17'-0"	2 18'-0"	3 20'-6"	3 21'-0"	3 22'-0"	3 23'-0"	3 23'-6"	3 24'-9"
t3	str	2 20'-0"	2 20'-6"	2 21'-3"	2 22'-0"	2 26'-6"	2 27'-0"	3 28'-0"	3 29'-0"	3 29'-6"	3 31'-3"
t4	str	2 24'-3"	2 24'-6"	2 25'-6"	2 26'-3"	2 30'-6"	2 31'-3"	2 34'-0"	3 35'-3"	3 35'-6"	3 37'-9"
t5	str	2 28'-3"	2 28'-9"	2 29'-6"	2 30'-6"	2 34'-3"	2 35'-6"	2 38'-0"	2 41'-6"	3 41'-6"	3 44'-0"
t6	str	2 32'-6"	2 32'-9"	2 33'-9"	2 34'-9"	2 38'-3"	2 39'-6"	2 42'-0"	2 45'-0"	2 47'-0"	3 50'-6"
t7	str	2 36'-9"	2 36'-9"	2 37'-9"	2 38'-9"	2 42'-0"	2 43'-9"	2 46'-0"	2 48'-6"	2 50'-6"	2 57'-0"
t8	str	1 41'-0"	2 41'-0"	2 42'-0"	2 43'-0"	2 46'-0"	2 48'-0"	2 50'-0"	2 52'-0"	2 54'-0"	2 45'-0"
t9	str			1 23'-0"	2 33'-0"	1 19'-0"	2 22'-0"	2 28'-0"	2 24'-0"	2 20'-0"	2 20'-0"
t10	str	1 42'-0"	1 44'-0"	1 46'-0"	1 48'-0"	1 50'-0"	1 52'-0"	1 54'-0"	1 56'-0"	1 58'-0"	1 60'-0"

	QUANTITIES		
	PIPE Dia.	RE INF. Lbs.	CONCRETE C. Y.
	RIGHT ANGLE	90°	255
	96°	300	5.7</