

NO.	DESCRIPTION OF REVISIONS	DATE
1	Original Issue	7-12
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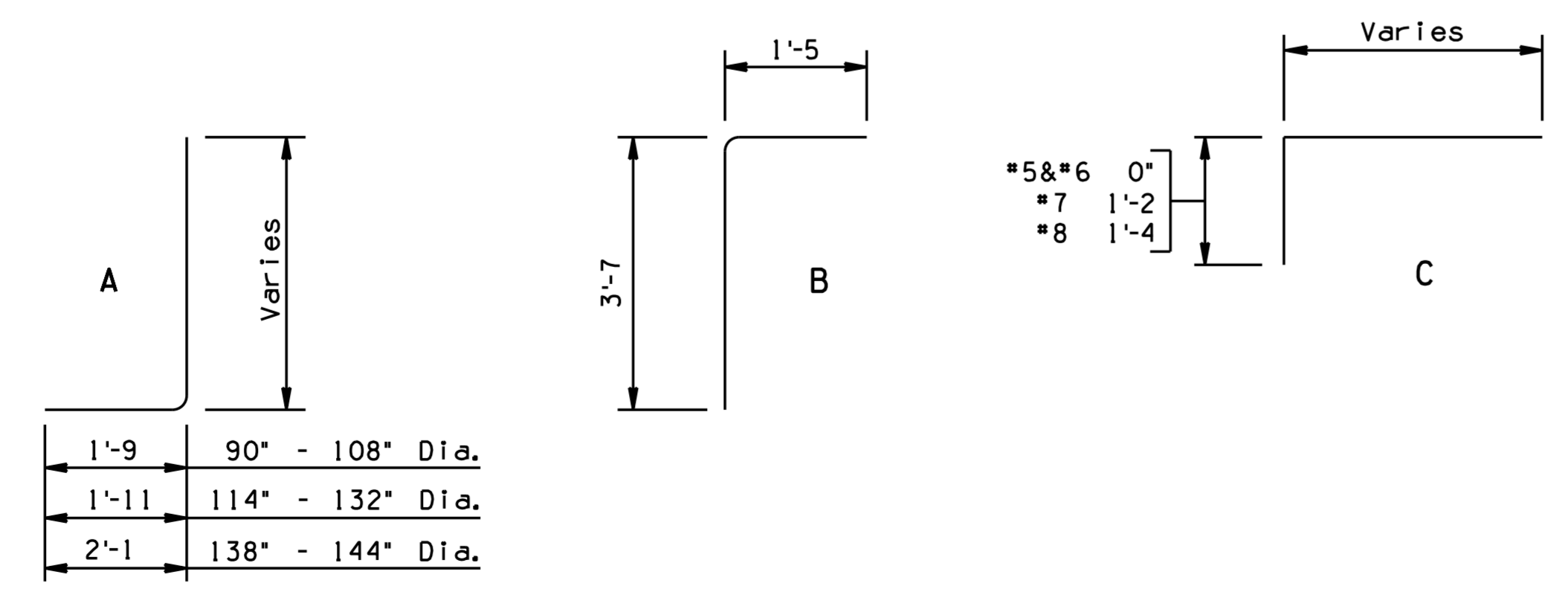
Note to Designer: The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

		STEEL LIST																														
Mark	Bend	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																
a1	A	6	*5	8'-6"	6	*5	8'-9"	8	*5	9'-3"	8	*5	9'-6"	8	*5	10'-0"	8	*5	10'-3"	8	*5	10'-9"	8	*5	11'-0"	8	*5	11'-6"	10	*5	11'-9"	
a2	A	6	*5	9'-0"	6	*5	9'-3"	6	*5	9'-9"	8	*5	10'-3"	8	*5	10'-9"	8	*5	11'-0"	8	*5	11'-6"	8	*5	11'-9"	8	*6	12'-3"	8	*6	12'-9"	
a3	A	6	*5	9'-9"	6	*5	10'-0"	6	*5	10'-6"	6	*5	11'-0"	8	*6	11'-6"	8	*6	11'-9"	8	*6	12'-3"	8	*6	12'-6"	8	*6	13'-0"	8	*7	13'-6"	
a4	A	6	*5	10'-3"	6	*5	10'-6"	6	*6	11'-0"	6	*6	11'-6"	6	*6	12'-0"	8	*7	12'-6"	8	*6	13'-0"	8	*7	13'-3"	8	*7	13'-9"	8	*7	14'-3"	
a5	A	6	*5	11'-0"	6	*6	11'-3"	6	*6	11'-9"	6	*6	12'-3"	6	*7	12'-9"	6	*7	13'-3"	8	*7	13'-9"	8	*7	14'-0"	8	*7	14'-6"	8	*7	15'-0"	
a6	A	6	*6	11'-6"	6	*6	11'-9"	6	*6	12'-3"	6	*7	12'-9"	6	*7	13'-6"	6	*7	14'-0"	6	*7	14'-6"	8	*7	14'-9"	8	*7	15'-3"	8	*8	16'-0"	
a7	A	4	*6	12'-3"	6	*6	12'-6"	6	*7	13'-0"	6	*7	13'-6"	6	*7	14'-3"	6	*7	14'-9"	6	*7	15'-3"	6	*8	15'-6"	8	*8	16'-0"	8	*8	16'-9"	
b1	str	4	*4	19'-3"	4	*4	20'-3"	4	*4	21'-3"	4	*4	22'-3"	4	*4	23'-3"	4	*4	24'-3"	4	*4	25'-3"	4	*4	26'-6"	4	*4	27'-6"	4	*4	28'-6"	
b2	str	16	*4	19'-0"	16	*4	20'-0"	16	*4	21'-0"	16	*4	22'-0"	20	*4	23'-0"	20	*4	24'-0"	20	*4	25'-0"	20	*4	26'-0"	20	*4	27'-0"	24	*4	28'-0"	
b3	str	4	*4	12'-6"	4	*4	15'-3"	4	*4	18'-0"	4	*4	21'-0"	4	*4	15'-0"	4	*4	18'-0"	4	*4	21'-0"	4	*4	23'-6"	4	*4	26'-6"	4	*4	21'-3"	
b4	str	4	*4	4'-6"	4	*4	7'-0"	4	*4	10'-0"	4	*4	12'-9"	4	*4	6'-6"	4	*4	10'-3"	4	*4	13'-0"	4	*4	15'-3"	4	*4	18'-3"	4	*4	13'-0"	
b5	str							4	*4	2'-0"	4	*4	4'-6"				4	*4	2'-6"	4	*4	5'-0"	4	*4	7'-0"	4	*4	10'-0"	4	*4	5'-0"	
b6	str																								4	*4	2'-0"					
c	str	4	*4	10'-6"	4	*4	11'-0"	4	*4	11'-6"	4	*4	12'-0"	4	*4	12'-6"	4	*4	13'-0"	4	*4	13'-6"	4	*4	14'-0"	4	*4	14'-6"	4	*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	8	*5	3'-9"	8	*5	4'-0"	8	*5	4'-0"	8	*5	4'-3"	8	*5	4'-3"	10	*5	4'-9"	10	*5	4'-9"	10	*5	5'-0"	10	*6	5'-3"	10	*6	5'-3"	
e2	C	6	*5	4'-0"	8	*5	4'-3"	8	*5	4'-6"	8	*5	4'-9"	8	*5	4'-9"	8	*5	5'-0"	8	*6	5'-3"	10	*6	5'-3"	10	*6	5'-6"	10	*6	5'-9"	
e3	C	6	*5	4'-3"	6	*5	4'-6"	8	*5	5'-0"	8	*5	5'-0"	8	*5	5'-3"	8	*6	5'-6"	8	*6	5'-9"	8	*6	6'-0"	10	*7	7'-6"	10	*7	7'-9"	
e4	C	6	*5	4'-9"	6	*5	5'-0"	6	*5	5'-3"	8	*6	5'-6"	8	*6	5'-9"	8	*6	6'-0"	8	*6	6'-3"	8	*7	7'-9"	8	*7	8'-0"	10	*7	8'-6"	
e5	C	6	*5	5'-0"	6	*5	5'-3"	6	*5	5'-9"	6	*6	6'-0"	8	*6	6'-3"	8	*6	6'-6"	8	*7	7'-9"	8	*7	8'-3"	8	*7	8'-9"	8	*7	9'-3"	
e6	C	6	*5	5'-6"	6	*6	5'-9"	6	*6	6'-3"	6	*7	8'-0"	6	*7	8'-3"	8	*7	8'-6"	8	*7	8'-9"	8	*8	9'-3"	8	*8	9'-9"	8	*8	10'-0"	
e7	C	6	*5	5'-9"	6	*6	6'-0"	6	*6	6'-6"	6	*7	8'-3"	6	*7	8'-6"	6	*7	8'-9"	6	*7	9'-0"	8	*8	9'-6"	8	*8	10'-0"	8	*8	10'-3"	
e8	C	9	*5	5'-9"	9	*6	6'-0"	10	*6	6'-6"	10	*7	8'-3"	11	*7	8'-6"	11	*7	8'-9"	12	*7	9'-0"	12	*8	9'-6"	13	*8	10'-0"	13	*8	10'-3"	
f1	str	6	*4	6'-9"	6	*4	7'-0"	6	*4	7'-3"	6	*4	7'-6"	8	*4	8'-0"	8	*4	8'-3"	8	*4	8'-6"	8	*4	9'-0"	8	*4	9'-3"	8	*4	9'-6"	
f2	str	6	*4	7'-6"	6	*4	7'-9"	6	*4	8'-0"	6	*4	8'-6"	6	*4	9'-0"	8	*4	9'-3"	8	*4	9'-9"	8	*4	10'-0"	8	*4	10'-3"	8	*4	10'-6"	
f3	str	6	*4	8'-6"	6	*4	8'-9"	6	*4	9'-0"	6	*4	9'-3"	6	*4	9'-9"	6	*4	10'-6"	6	*4	10'-9"	8	*4	11'-3"	8	*4	11'-6"	8	*4	11'-9"	
f4	str	4	*4	9'-3"	6	*4	9'-6"	6	*4	9'-9"	6	*4	10'-3"	6	*4	10'-9"	6	*4	11'-6"	6	*4	11'-9"	6	*4	12'-3"	8	*4	12'-6"	8	*4	13'-0"	
f5	str	4	*4	10'-3"	4	*4	10'-6"	6	*4	10'-9"	6	*4	11'-3"	6	*4	11'-9"	6	*4	12'-3"	6	*4	12'-9"	6	*4	13'-3"	6	*4	13'-9"	6	*4	14'-3"	
g	str	2	*4	19'-0"	2	*4	20'-0"	2	*4	21'-0"	2	*4	22'-0"	2	*4	23'-0"	2	*4	24'-0"	2	*4	25'-0"	2	*4	26'-0"	2	*4	27'-0"	2	*4	28'-0"	
j	str	2	*4	8'-9"	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"	
m1	str	6	*4	22'-0"	8	*4	23'-0"	8	*4	24'-0"	8	*4	25'-3"	10	*4	26'-3"	10	*4	27'-6"	10	*4	28'-9"	10	*4	29'-9"	12	*4	31'-0"	12	*4	32'-0"	
m2	str	2	*4	22'-0"	2	*4	23'-0"	2	*4	24'-0"	2	*4	25'-3"	2	*4	26'-3"	2	*4	27'-6"	2	*4	28'-9"	2	*4	29'-9"	2	*4	31'-0"	2	*4	32'-0"	
n1	str	3	*4	13'-6"	4	*4	14'-3"	4	*4	15'-0"	4	*4	15'-9"	5	*4	16'-6"	5	*4	17'-3"	5	*4	18'-3"	5	*4	19'-0"	6	*4	19'-9"	6	*4	20'-6"	
n2	str	1	*4	13'-6"	1	*4	14'-3"	1	*4	15'-0"	1	*4	15'-9"	1	*4	16'-6"	1	*4	17'-3"	1	*4	18'-3"	1	*4	19'-0"	1	*4	19'-9"	1	*4	20'-6"	
p	str	4	*5	10'-0"	4	*5	10'-6"	4	*5	11'-0"	4	*5	11'-6"	4	*5	12'-0"	4	*5	12'-6"	4	*5	13'-3"	4	*5	13'-9"	4	*5	14'-3"	4	*5	14'-9"	
q	str	2	*6	12'-0"	2	*6	12'-6"	2	*6	13'-0"	2	*6	13'-6"	2	*6	14'-0"	2	*6	14'-6"	2	*6	15'-3"	2	*6	15'-9"	2	*6	16'-3"	2	*6	16'-9"	
u	B	6	*4	5'-0"	7	*4	5'-0"	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"	

		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	1'-10"	2'-0"	2'-1"	2'-3"	2'-4"	2'-6"	2'-7"	2'-9"	2'-10"	2'-10"	3'-0"
D	2'-4"	2'-6"	2'-8"	2'-10"	3'-0"	3'-2"	3'-4"	3'-6"	3'-8"	3'-8"	3'-10"
E	6'-4"	6'-8"	7'-0"	7'-4"	7'-8"	8'-0"	8'-4"	8'-8"	9'-0"	9'-0"	9'-4"
F	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"	25'-0"	26'-0"	27'-0"	28'-0"	28'-0"
G	4'-11"	5'-2"	5'-5"	5'-8"	5'-11"	6'-2"	6'-5"	6'-8"	6'-11"	7'-2"	7'-2"
H	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	12'-6"	13'-0"	13'-6"	14'-0"	14'-0"
J	5'-8"	6'-0"	6'-4"	6'-8"	7'-0"	7'-4"	7'-8"	8'-0"	8'-4"	8'-8"	8'-8"
K	22'-1 5/8"	23'-3 3/8"	24'-4 5/8"	25'-6 1/4"	26'-7 1/2"	27'-9 1/8"	28'-11 1/4"	30'-0 1/8"	31'-2 1/8"	32'-3 3/4"	32'-3 3/4"
L	7'-0 1/8"	7'-5 3/8"	7'-9 5/8"	8'-2 1/4"	8'-6 1/2"	8'-11 1/8"	9'-4 1/4"	9'-8 5/8"	10'-1 1/8"	10'-5 3/4"	10'-5 3/4"
M	4'-5 1/4"	4'-8 1/4"	4'-10 3/4"	5'-1 3/4"	5'-4 3/8"	5'-7 3/8"	5'-10 3/4"	6'-1 3/4"	6'-4 3/8"	6'-7 3/8"	6'-7 3/8"
N	5'-2"	5'-5"	5'-8"	5'-11"	6'-2"	6'-5"	6'-10 3/4"	7'-1 3/4"	7'-4 3/4"	7'-7 3/4"	7'-7 3/4"

QUANTITIES		
PIPE Dia.	RE INF Lbs.	CONCRETE C. Y.
90"	1620	32.5
96"	1885	34.7
102"	2165	37.9
108"	2535	41.4
114"	2865	44.9
120"	3150	48.6
126"	3385	55.9
132"	4040	60.1
138"	4535	64.5
144"	4940	69.1

NOTE: Quantities and steel list shown are for one headwall.



BENDS

NOTE: For General Notes and additional Details, see SD 6.30 (1 of 5) and SD 6.31 (1 of 8).

DESIGN APPROVED <i>Shafiq U. Hasan</i>		ARIZONA DEPARTMENT OF TRANSPORTATION INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION BRIDGE GROUP STRUCTURE DETAIL	
APPROVED FOR DISTRIBUTION <i>Jason A. Nehme</i>		PIPE CULVERT HEADWALLS RIGHT ANGLE INLET 4 : 1 SLOPE	
ROUTE	PROJECT NO.	FA NO.	DRAWING NO. SD 6.31 (3 of 8)
LOCATION			SHEET NO. OF