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	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth	No	Size	Lgth
a1	A	8	#5	6'-9	8	#5	7'-0	8	#5	7'-3	8	#5	7'-6	8	#5	8'-0	8	#5	8'-3	10	#5	8'-6	10	#5	8'-9	10	#5	9'-3	10	#5	9'-6
a2	A	8	#5	7'-6	8	#5	8'-0	8	#5	8'-3	8	#5	8'-6	8	#5	9'-0	8	#5	9'-3	8	#5	9'-6	10	#5	9'-9	10	#5	10'-6	10	#5	10'-6
a3	A	6	#5	8'-6	8	#5	9'-0	8	#5	9'-3	8	#5	9'-6	8	#5	10'-0	8	#5	10'-3	8	#5	10'-6	8	#5	11'-0	10	#5	11'-6	10	#6	11'-9
a4	A	6	#5	9'-3	6	#5	9'-9	8	#5	10'-0	8	#5	10'-6	8	#5	11'-0	8	#5	11'-3	8	#5	11'-9	8	#6	12'-0	8	#6	12'-9	10	#6	13'-0
a5	A	6	#5	10'-3	6	#5	10'-9	6	#6	11'-0	8	#6	11'-6	8	#6	12'-0	8	#6	12'-3	8	#6	12'-9	8	#7	13'-3	8	#7	14'-0	8	#7	14'-3
a6	A	6	#5	11'-3	6	#6	11'-6	6	#6	12'-0	6	#7	12'-6	8	#7	13'-3	8	#7	13'-6	8	#7	14'-0	8	#7	14'-3	8	#7	15'-0	8	#8	15'-3
a7	A	6	#6	12'-0	6	#6	12'-6	6	#7	13'-0	6	#7	13'-6	6	#7	14'-3	8	#7	14'-6	8	#7	15'-0	8	#8	15'-6	8	#8	16'-3	8	#8	16'-6
b1	str	4	#4	22'-6	4	#4	23'-6	4	#4	24'-9	4	#4	25'-9	4	#4	26'-9	4	#4	27'-9	4	#4	28'-9	4	#4	29'-9	4	#4	30'-9	4	#4	32'-0
b2	str	8	#4	22'-0	12	#4	23'-0	12	#4	24'-0	12	#4	25'-0	12	#4	26'-0	12	#4	27'-0	12	#4	28'-0	16	#4	29'-0	16	#4	30'-0	16	#4	31'-0
b3	str	4	#4	21'-0	4	#4	17'-6	4	#4	19'-0	4	#4	21'-6	4	#4	23'-3	4	#4	25'-6	4	#4	27'-6	4	#4	23'-0	4	#4	25'-9	4	#4	28'-0
b4	str	4	#4	15'-3	4	#4	11'-6	4	#4	13'-3	4	#4	15'-6	4	#4	17'-3	4	#4	19'-6	4	#4	21'-3	4	#4	17'-0	4	#4	19'-9	4	#4	22'-0
b5	str	4	#4	9'-3	4	#4	5'-6	4	#4	7'-3	4	#4	9'-6	4	#4	11'-3	4	#4	13'-6	4	#4	15'-3	4	#4	11'-0	4	#4	14'-0	4	#4	16'-0
b6	str	4	#4	3'-6				4	#4	1'-6	4	#4	3'-6	4	#4	5'-3	4	#4	7'-6	4	#4	9'-0	4	#4	5'-0	4	#4	8'-0	4	#4	10'-0
b7	str																4	#4	1'-6	4	#4	3'-0				4	#4	2'-3	4	#4	4'-0
b8	str																														
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	2'-9	8	#5	2'-9	8	#5	3'-0	10	#5	3'-3	10	#5	3'-3	10	#5	3'-6	10	#5	3'-9	10	#5	3'-9	10	#5	4'-0	12	#5	4'-3
e2	C	8	#5	3'-3	8	#5	3'-6	8	#5	3'-9	8	#5	4'-0	10	#5	4'-0	10	#5	4'-3	10	#5	4'-6	10	#5	4'-6	10	#5	4'-9	10	#5	5'-0
e3	C	8	#5	4'-0	8	#5	4'-0	8	#5	4'-3	8	#5	4'-6	8	#5	4'-6	10	#5	5'-0	10	#5	5'-3	10	#5	5'-3	10	#6	5'-6	10	#6	5'-9
e4	C	8	#5	4'-6	8	#5	4'-9	8	#5	5'-0	8	#5	5'-3	8	#5	5'-3	8	#5	5'-6	10	#6	6'-0	10	#6	6'-0	10	#6	6'-3	10	#6	6'-6
e5	C	6	#5	5'-3	8	#5	5'-3	8	#5	5'-6	8	#5	5'-9	8	#6	6'-0	8	#6	6'-3	8	#6	6'-9	10	#6	7'-0	10	#7	8'-3	10	#7	8'-6
e6	C	6	#5	5'-9	6	#5	6'-0	8	#6	6'-3	8	#6	6'-6	8	#7	8'-0	8	#7	8'-3	8	#7	8'-6	8	#7	8'-9	10	#8	9'-3	10	#8	9'-6
e7	C	6	#5	5'-9	6	#5	6'-0	6	#6	6'-3	6	#6	6'-6	6	#7	8'-3	6	#7	8'-6	8	#7	8'-9	8	#7	9'-0	8	#8	9'-6	8	#8	9'-9
e8	C	9	#5	5'-9	9	#5	6'-0	10	#6	6'-3	10	#6	6'-6	11	#7	8'-3	11	#7	8'-6	12	#7	8'-9	12	#7	9'-0	13	#8	9'-6	13	#8	9'-9
f1	str	6	#4	5'-0	8	#4	5'-3	8	#4	5'-6	8	#4	5'-9	8	#4	6'-0	8	#4	6'-3	8	#4	6'-6	8	#4	6'-9	8	#4	7'-0	10	#4	7'-3
f2	str	6	#4	6'-3	6	#4	6'-6	6	#4	6'-9	8	#4	7'-0	8	#4	7'-6	8	#4	7'-9	8	#4	8'-0	8	#4	8'-3	8	#4	8'-6	8	#4	9'-0
f3	str	6	#4	7'-3	6	#4	7'-9	6	#4	8'-3	6	#4	8'-6	8	#4	8'-9	8	#4	9'-3	8	#4	9'-6	8	#4	9'-9	8	#4	10'-3	8	#4	10'-6
f4	str	6	#4	8'-6	6	#4	9'-0	6	#4	9'-3	6	#4	9'-9	6	#4	10'-3	6	#4	10'-9	8	#4	11'-3	8	#4	11'-6	8	#4	11'-9	8	#4	12'-3
f5	str	6	#4	9'-9	6	#4	10'-3	6	#4	10'-9	6	#4	11'-3	6	#4	11'-9	6	#4	12'-3	6	#4	12'-9	8	#4	13'-0	8	#4	13'-6	8	#4	14'-0
g	str	12	#4	22'-3	12	#4	23'-3	12	#4	24'-3	12	#4	25'-3	12	#4	26'-3	12	#4	27'-3	12	#4	28'-3	12	#4	29'-3	12	#4	30'-3	12	#4	31'-3
j	str	6	#4	8'-3	6	#4	8'-9	6	#4	9'-3	6	#4	9'-6	6	#4	10'-0	6	#4	10'-6	6	#4	11'-0	6	#4	11'-6	6	#4	12'-0	6	#4	12'-6
m1	str	8	#4	26'-3	8	#4	27'-6	8	#4	28'-6	10	#4	29'-9	10	#4	31'-0	10	#4	32'-3	10	#4	33'-3	12	#4	34'-6	12	#4	35'-9	12	#4	37'-0
m2	str	2	#4	26'-3	2	#4	27'-6	2	#4	28'-6	2	#4	29'-9	2	#4	31'-0	2	#4	32'-3	2	#4	33'-3	2	#4	34'-6	2	#4	35'-9	2	#4	37'-0
n1	str	4	#4	17'-0	4	#4	17'-9	4	#4	18'-6	5	#4	19'-3	5	#4	20'-3	5	#4	21'-3	5	#4	22'-3	6	#4	23'-0	6	#4	24'-0	6	#4	25'-0
n2	str	1	#4	17'-0	1	#4	17'-9	1	#4	18'-6	1	#4	19'-3	1	#4	20'-3	1	#4	21'-3	1	#4	22'-3	1	#4	23'-0	1	#4	24'-0	1	#4	25'-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	74	#4	7'-0	78	#4	7'-0	80	#4	7'-0	84	#4	7'-0	86	#4	7'-0	90	#4	7'-0	92	#4	7'-0	96	#4	7'-0	98	#4	7'-0	102	#4	7'-0

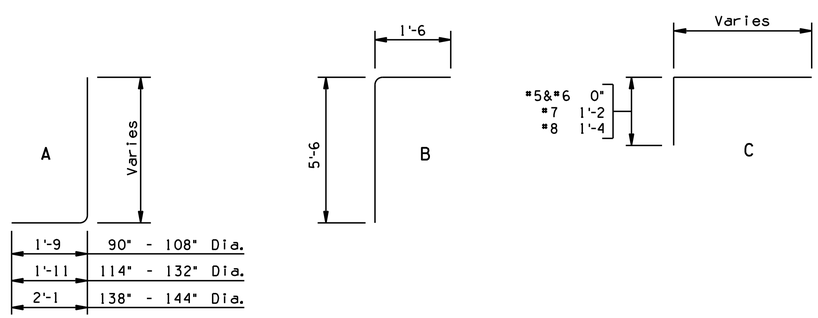
PIPE DIAMETER

	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
B	2'- 2	2'- 2	2'- 3	2'- 3	2'- 4	2'- 4	2'- 5	2'- 5	2'- 6	2'- 6
C	0'-10	1'- 0	1'- 1	1'- 3	1'- 4	1'- 6	1'- 7	1'- 9	1'-10	2'- 0
D	3'- 2	3'- 4	3'- 5	3'- 6	3'- 8	3'-10	3'-11	4'- 1	4'- 2	4'- 4
E	6'- 2	6'- 6	6'- 9	7'- 0	7'- 4	7'- 8	8'-0	8'- 3	8'- 6	8'-10
F	22'- 0	23'- 0	24'- 0	25'- 0	26'- 0	27'- 0	28'- 0	29'- 0	30'- 0	31'- 0
G	4'-11	5'- 2	5'- 5	5'- 8	5'-11	6'- 2	6'- 5	6'- 8	6'-11	7'- 2
H	9'- 6	10'- 0	10'- 6	11'- 0	11'- 6	12'- 0	12'- 6	13'- 0	13'- 6	14'- 0
J	4'- 0	4'- 3	4'- 6	4'- 9	5'- 0	5'- 3	5'- 6	5'- 9	6'- 0	6'- 3
K	26'- 6	27'- 8 7/8	28'-10 1/4	30'- 0	31'- 2 3/8	32'- 5 1/4	33'- 8	34'-10 7/8	36'- 0	37'- 3
L	8'- 5	8'-10 7/8	9'- 3 1/4	9'- 8 3/8	10'- 1 3/8	10'- 7 1/4	11'- 1	11'- 6 7/8	11'-11 1/4	12'- 5
M	4'- 1 1/4	4'- 4 1/4	4'- 6 1/2	4'- 9 1/2	4'-11 3/4	5'- 2 3/4	5'- 6 1/2	5'- 9 1/2	5'-11 3/4	6'- 2 3/4
N	5'- 6 5/8	5'- 9 5/8	6'- 0 5/8	6'- 3 5/8	6'- 6 5/8	6'- 9 5/8	7'- 2 3/4	7'- 5 3/4	7'- 8 3/4	7'-11 3/4

QUANTITIES

PIPE Dia.	REINF Lbs.	CONCRETE C.Y.
90"	2220	40.0
96"	2405	43.5
102"	2920	46.7
108"	3050	50.3
114"	3430	54.2
120"	3645	58.3
126"	3925	66.0
132"	4425	70.3
138"	4990	74.7
144"	5350	79.7

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 (5 of 8).

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 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	S.U.H.	7-12
2			
3			
4			

DESIGN APPROVED: Shafi U. Hasan

APPROVED FOR DISTRIBUTION: Jean A. Nehme

ARIZONA DEPARTMENT OF TRANSPORTATION
INFRASTRUCTURE DELIVERY AND OPERATIONS DIVISION
BRIDGE GROUP STRUCTURE DETAIL

PIPE CULVERT HEADWALLS
RIGHT ANGLE OUTLET
4 : 1 SLOPE

ROUTE | PROJECT NO. | FA NO. | DRAWING NO. SD 6.31 (7 of 8)

LOCATION | SHEET NO. OF