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	6	#5	9'-6	6	#5	10'-0	6	#5	10'-3	6	#5	10'-9	7	#5	11'-3	7	#6	11'-9	7	#5	12'-3	7	#6	12'-6	7	#6	13'-3	8	#7	13'-6
a2	A	6	#5	10'-0	6	#5	10'-6	6	#5	10'-6	6	#5	11'-0	6	#6	11'-9	7	#6	12'-3	7	#6	12'-9	7	#6	13'-0	7	#7	13'-9	7	#7	14'-0
a3	A	5	#5	10'-3	6	#5	10'-9	6	#5	11'-0	6	#6	11'-6	6	#6	12'-3	6	#6	12'-9	7	#6	13'-3	7	#7	13'-6	7	#7	14'-3	7	#7	14'-6
a4	A	5	#5	10'-9	5	#6	11'-3	6	#6	11'-6	6	#6	12'-0	6	#7	12'-9	6	#7	13'-0	7	#7	13'-6	7	#7	14'-0	7	#7	14'-9	7	#7	15'-0
a5	A	5	#5	11'-3	5	#6	11'-9	6	#6	12'-0	6	#7	12'-6	6	#7	13'-3	6	#7	13'-6	6	#7	14'-0	7	#7	14'-6	7	#7	15'-3	7	#8	15'-9
a6	A	5	#6	11'-6	5	#6	12'-0	5	#6	12'-6	6	#7	13'-0	6	#7	13'-9	6	#7	14'-0	6	#7	14'-6	6	#7	15'-0	7	#8	15'-9	7	#8	16'-3
a7	A	5	#6	12'-0	5	#6	12'-6	5	#7	13'-0	5	#7	13'-6	6	#7	14'-3	6	#7	14'-6	6	#7	15'-0	6	#8	15'-6	7	#8	16'-3	7	#8	16'-9
a8	A	4	#5	9'-3	4	#5	9'-6	4	#5	9'-9	5	#5	10'-3	5	#5	10'-9	5	#5	11'-0	5	#5	11'-3	5	#5	11'-9	6	#6	12'-3	6	#6	12'-6
a9	A	4	#5	10'-0	4	#5	10'-3	4	#5	10'-6	4	#5	11'-0	5	#6	11'-6	5	#6	11'-9	5	#6	12'-3	5	#6	12'-6	5	#6	13'-3	6	#7	13'-6
a10	A	4	#5	10'-6	4	#5	11'-0	4	#6	11'-6	4	#6	11'-9	4	#6	12'-3	5	#7	12'-9	5	#7	13'-0	5	#7	13'-6	5	#7	14'-0	5	#7	14'-6
a11	A	3	#6	11'-3	4	#6	11'-9	4	#6	12'-3	4	#7	12'-6	4	#7	13'-3	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	13'-0	4	#7	13'-3	4	#7	14'-0	4	#7	14'-6	4	#7	15'-0	5	#8	15'-3	5	#8	16'-0	5	#8	16'-6
b1	str	2	#4	36'-0	2	#4	37'-6	2	#4	39'-0	2	#4	40'-6	2	#4	42'-0	2	#4	43'-6	2	#4	45'-0	2	#4	46'-6	2	#4	48'-0	2	#4	49'-6
b2	str	8	#4	36'-0	10	#4	37'-6	10	#4	39'-0	10	#4	40'-6	10	#4	42'-0	12	#4	43'-6	12	#4	45'-0	12	#4	46'-6	14	#4	48'-0	14	#4	49'-6
b3	str	2	#4	32'-0	2	#4	19'-0	2	#4	25'-0	2	#4	32'-0	2	#4	37'-0	2	#4	25'-0	2	#4	32'-0	2	#4	39'-6	2	#4	27'-0	2	#4	36'-0
b4	str	2	#4	11'-0				2	#4	6'-0	2	#4	13'-0	2	#4	18'-6	2	#4	5'-0	2	#4	12'-0	2	#4	19'-0	2	#4	6'-6	2	#4	14'-0
b5	str																														
b6	str																														
b7	str	2	#4	17'-0	2	#4	18'-0	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
b8	str	8	#4	17'-0	8	#4	18'-0	8	#4	19'-0	10	#4	20'-0	10	#4	21'-0	10	#4	22'-0	10	#4	23'-0	10	#4	24'-0	12	#4	25'-0	12	#4	26'-0
b9	str	2	#4	12'-6	2	#4	16'-0	2	#4	18'-0	2	#4	13'-0	2	#4	16'-0	2	#4	19'-0	2	#4	21'-3	2	#4	23'-6	2	#4	19'-0	2	#4	21'-3
b10	str	2	#4	4'-0	2	#4	7'-0	2	#4	10'-6	2	#4	4'-6	2	#4	8'-0	2	#4	11'-0	2	#4	13'-0	2	#4	15'-3	2	#4	10'-6	2	#4	13'-3
b11	str							2	#4	1'-6							2	#4	3'-0	2	#4	5'-0	2	#4	7'-3	2	#4	2'-3	2	#4	5'-0
b12	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	#6	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	4'-3	7	#5	4'-3	7	#5	4'-6	7	#5	4'-9	6	#5	4'-9	7	#5	5'-0	7	#5	5'-3	7	#6	5'-3	7	#6	5'-6	8	#6	5'-9
e2	C	7	#5	4'-6	7	#5	4'-6	7	#5	4'-9	7	#5	5'-0	6	#5	5'-0	7	#5	5'-3	7	#6	5'-6	7	#6	5'-9	7	#6	6'-0	7	#6	6'-3
e3	C	7	#5	4'-9	6	#5	4'-9	7	#5	5'-0	7	#5	5'-3	6	#5	5'-3	6	#6	5'-6	7	#6	6'-0	7	#6	6'-3	7	#7	7'-0	7	#7	7'-3
e4	C	7	#5	5'-0	6	#5	5'-0	6	#5	5'-3	7	#6	5'-6	6	#6	5'-6	6	#6	5'-9	6	#6	6'-3	7	#7	7'-6	7	#7	7'-6	7	#7	7'-9
e5	C	7	#5	5'-3	6	#5	5'-3	6	#6	5'-6	7	#6	5'-9	6	#6	6'-0	6	#6	6'-3	6	#7	7'-3	7	#7	8'-0	7	#7	8'-3	7	#7	8'-0
e6	C				6	#6	5'-6	6	#6	5'-9	6	#6	6'-0	6	#6	6'-3	6	#7	7'-3	6	#7	7'-9	6	#7	8'-6	7	#8	8'-6	7	#8	8'-9
e7	C													6	#7	7'-3	6	#7	7'-6	6	#7	8'-0	6	#7	8'-3	6	#8	8'-9	7	#8	9'-0
e8	C	2	#5	5'-3	2	#6	5'-6	2	#6	6'-0	2	#6	6'-3	2	#7	7'-6	3	#7	8'-0	3	#7	8'-3	3	#7	8'-6	3	#8	9'-0	3	#8	9'-6
e9	C	12	#5	5'-3	13	#6	5'-6	13	#6	6'-0	14	#6	6'-3	14	#7	7'-6	15	#7	8'-0	15	#7	8'-3	16	#7	8'-6	16	#8	9'-0	17	#8	9'-6
e10	C	5	#5	5'-3	5	#6	5'-6	5	#6	6'-0	6	#6	6'-3	6	#7	7'-6	6	#7	8'-0	6	#7	8'-3	7	#7	8'-6	7	#8	9'-0	7	#8	9'-6
e11	C	3	#5	5'-3	3	#5	5'-6	3	#5	5'-9	4	#6	6'-0	4	#6	6'-6	4	#6	6'-9	4	#6	7'-0	4	#6	7'-3	5	#7	8'-6	5	#7	8'-9
e12	C	3	#5	5'-0	3	#5	5'-3	4	#5	5'-6	4	#5	5'-9	4	#6	6'-0	4	#6	6'-3	4	#6	6'-6	5	#6	6'-9	5	#6	7'-3	5	#6	7'-6
e13	C	3	#5	4'-9	4	#5	4'-9	4	#5	5'-0	4	#5	5'-3	4	#5	5'-9	4	#5	6'-0	5	#5	6'-3	5	#6	6'-3	5	#6	6'-6	5	#6	6'-9
e14	C	4	#5	4'-6	4	#5	4'-6	4	#5	4'-9	4	#5	5'-0	4	#5	5'-3	5	#5	5'-6	5	#5	5'-9	5	#5	5'-9	5	#5	6'-0	5	#5	6'-3
e15	C	4	#5	4'-3	4	#5	4'-3	4	#5	4'-6	4	#5	4'-9	5	#5	4'-9	5	#5	5'-0	5	#5	5'-3	5	#5	5'-3	5	#5	5'-6	6	#5	5'-9
f1	str	6	#4	7'-9	7	#4	8'-0	7	#4	8'-6	7	#4	9'-0	7	#4	9'-3	8	#4	9'-9	8	#4	10'-3	8	#4	10'-6	8	#4	11'-0	9	#4	11'-6
f2	str	6	#4	8'-6	6	#4	8'-9	7	#4	9'-3	7	#4	9'-9	7	#4	10'-0	7	#4	10'-6	8	#4	11'-0	8	#4	11'-6	8	#4	11'-9	8	#4	12'-3
f3	str	6	#4	9'-3	6	#4	9'-9	6	#4	10'-0	7	#4	10'-6	7	#4	11'-0	7	#4	11'-6	7	#4	12'-0	8	#4	12'-3	8	#4	12'-9	8	#4	13'-3
f4	str	6	#4	10'-0	6	#4	10'-6	6	#4	10'-9	6	#4	11'-3	7	#4	11'-9	7	#4	12'-3	7	#4	12'-9	7	#4	13'-3	8	#4	13'-6	8	#4	14'-0
f5	str	3	#4	7'-3	3	#4	7'-9	4	#4	8'-0	4	#4	8'-3	4	#4	8'-9	4	#4	9'-0	4	#4	9'-3	4	#4	9'-9	5	#4	10'-0	5	#4	10'-3
f6	str	3	#4	8'-3	3	#4	8'-9	3	#4	9'-0	4	#4	9'-3	4	#4	9'-9	4	#4	10'-0	4	#4	10'-6	4	#4	10'-9	4	#4	11'-3	5	#4	11'-6
f7	str	3	#4	9'-0	3	#4	9'-6	3	#4	10'-0	3	#4	10'-6	3	#4	11'-0	4	#4	11'-3	4	#4	11'-6	4	#4	12'-0	4	#4	12'-3	4	#4	12'-9
f8	str	3	#4	10'-0	3	#4	10'-6	3	#4	11'-0	3	#4	11'-6	3	#4	12'-0	3	#4	12'-3	4	#4	12'-9	4	#4	13'-0	4	#4	13'-6	4	#4	14'-0
g	str	2	#4	11'-6	2	#4	12'-3	2	#4	12'-9	2	#4	13'-6	2	#4	14'-3	2	#4	15'-0	2	#4	15'-9	2	#4	16'-3	2	#4	17'-0	2	#4	17'-9
m1	str	4	#4	37'-9	4	#4	39'-3	4	#4	40'-9	5	#4	42'-6	5	#4	44'-0	5	#4	45'-6	5	#4	47'-0	6	#4	48'-6	6	#4	50'-3	6	#4	51'-9
m2	str	1	#4	37'-9	1	#4	39'-3	1	#4	40'-9	1	#4	42'-6	1	#4	44'-0	1	#4	45'-6	1	#4	47'-0	1	#4	48'-6	1	#4	50'-3	1	#4	51'-9
m3	str	4	#4	22'-3	4	#4	23'-6	4	#4	24'-9	5	#4	26'-3	5	#4	27'-6	5	#4	28'-9	5	#4	30'-0	6	#4	31'-3	6	#4	32'-9	6	#4	34'-0
m4	str	1	#4	22'-3	1	#4	23'-6	1	#4	24'-9	1	#4	26'-3	1	#4	27'-6	1	#4	28'-9	1	#4	30'-0	1	#4	31'-3	1	#4	32'-9	1	#4	34'-0
n1	str	4	#4	18'-0	4	#4	19'-0	4	#4	20'-3	5	#4	21'-3	5	#4	22'-6	5	#4	23'-6	5	#4	24'-9	6	#4	25'-9	6	#4	26'-9	6	#4	28'-0
n2	str	1	#4	18'-0	1	#4	19'-0	1	#4	20'-3	1	#4	21'-3	1	#4	22'-6	1	#4	23'-6	1	#4	24'-9	1	#4	25'-9	1	#4	26'-9	1	#4	28'-0
p	str	4	#5	13'-9	4	#5	14'-6	4	#5	15'-3	4	#5	16'-0	4	#5	16'-9	4	#5	17'-6	4	#5	18'-3	4	#5	19'-3	4	#5	20'-0	4	#5	20'-9
q	str	2	#6	15'-9	2	#6	16'-6	2	#6	17'-3	2	#6	18'-0	2	#6	18'-9	2	#6	19'-6	2	#6	20'-3	2	#6	21'-3	2	#6	22'-0	2	#6	22'-9
u	B	9	#4	5'-0	9	#4	5'-0	10	#4	5'-0	10	#4	5'-0	11	#4	5'-0	11	#4	5'-0	12	#4	5'-0	12	#4	5'-0	13	#4	5'-0	13	#4	5'-0
v	str	1	#4	37'-3	1	#4	38'-9	1	#4	40'-3	1	#4	41'-9	1	#4	43'-3	1	#4	44'-9	1	#4	46'-3	1	#4	47'-9	1	#4	49'-3	1	#4	50'-9
w	str	1	#4	17'-0	1	#4	18'-0	1	#4	19'-0	1	#4	20'-0	1	#4	21'-0	1	#4	22'-0	1	#4	23'-0	1	#4	24'-0	1	#4	25'-0	1	#4	26'-0

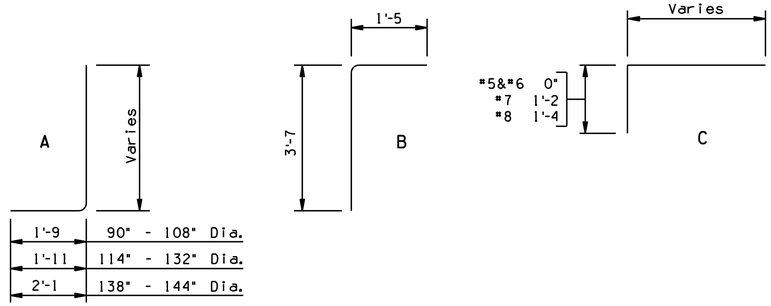
PIPE DIAMETER

	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	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	5'- 8	6'- 0	6'- 4	6'- 8	7'- 0	7'- 4	7'- 8	8'- 0	8'- 4	8'- 8
F	36'- 0	37'- 6	39'- 0	40'- 6	42'- 0	43'- 6	45'- 0	46'- 6	48'- 0	49'- 6
G	6'- 5⅝	6'- 9⅞	7'- 2⅛	7'- 6⅜	7'-10⅝	8'- 2⅞	8'- 7⅛	8'-11⅜	9'- 3⅝	9'- 7⅞
H	9'- 6	10'- 0	10'- 6	11'- 0	11'- 6	12'- 0	12'- 6	13'- 0	13'- 6	14'- 0
J	6'- 8	7'- 1	7'- 6	7'-11	8'- 4	8'- 9	9'- 2	9'- 7	10'- 0	10'- 5
K	38'- 0	39'- 6⅞	41'- 1½	42'- 8⅜	44'- 3⅛	45'-10	47'- 5⅛	49'- 0	50'- 6⅝	52'- 1½
L	7'- 5⅝	7'-10¾	8'- 3⅝	8'- 8¾	9'- 1⅝	9'- 6⅞	10'- 0⅛	10'- 5¼	10'-10¼	11'- 3⅜
M	6'- 2½	6'- 6¾	6'-10¾	7'- 3	7'- 7⅛	7'-11¼	8'- 3¾	8'- 8	9'- 0	9'- 4¼
N	0'- 3	0'- 6	0'- 3	0'- 6	0'- 3	0'- 6	0'- 3	0'- 6	0'- 3	0'- 6
P	10'-11⅝	11'- 7⅞	12'- 3⅛	12'-11⅜	13'- 6⅝	14'- 2⅞	15'- 0⅛	15'- 8⅜	16'- 3⅝	16'-11⅞
R	17'- 0	18'- 0	19'- 0	20'- 0	21'- 0	22'- 0	23'- 0	24'- 0	25'- 0	26'- 0
S	6'- 4	6'- 8	7'- 0	7'- 4	7'- 8	8'- 0	8'- 4	8'- 8	9'- 0	9'- 4
T	22'- 6	23'-10	25'- 1	26'- 5	27'- 8	29'- 0	30'- 5	31'- 9	33'- 0	34'- 4
V	5'- 3⅝	5'- 7⅞	5'-11⅛	6'- 3⅜	6'- 6⅝	6'-10⅞	7'- 4⅛	7'- 8⅜	7'-11⅝	8'- 3⅞
W	7'- 5⅝	7'- 9⅞	8'- 2⅛	8'- 6⅜	8'-10⅝	9'- 2⅞	9'- 9⅛	10'- 1⅜	10'- 5⅝	10'- 9⅞
X	6'- 4	6'- 8¼	7'- 0½	7'- 4¾	7'- 9	8'- 1¼	8'-10¼	9'- 2½	9'- 6⅝	9'-10⅞

QUANTITIES

PIPE Dia.	REINF Lbs.	CONCRETE C.Y.
90"	2290	42.5
96"	2585	46.7
102"	2900	51.0
108"	3405	55.5
114"	3940	60.2
120"	4340	65.2
126"	4655	75.1
132"	5375	80.8
138"	6215	86.7
144"	6780	92.8

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 6.34 (1 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 is not for specific application without engineering verification of its suitability and specific design 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
45° SKEW INLET
6 : 1 SLOPE

ROUTE	PROJECT NO.	FA NO.	DRAWING NO.
			SD 6.34 (4 of 8)
LOCATION			SHEET NO. OF