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	5	#5	9'-3	5	#5	9'-6	5	#5	9'-9	5	#5	10'-3	5	#5	10'-9	6	#5	11'-0	6	#5	11'-3	6	#5	11'-9	6	#5	12'-3	6	#6	12'-6
a2	A	4	#5	9'-9	5	#5	10'-0	5	#5	10'-3	5	#5	10'-9	5	#5	11'-3	5	#6	11'-6	6	#5	11'-9	6	#6	12'-3	6	#6	13'-0	6	#6	13'-3
a3	A	4	#5	10'-3	4	#5	10'-6	5	#5	10'-9	5	#5	11'-3	5	#6	12'-0	5	#6	12'-3	6	#6	12'-6	6	#6	13'-0	6	#6	13'-6	6	#7	13'-9
a4	A	4	#5	10'-6	4	#5	11'-0	5	#6	11'-3	5	#6	11'-9	5	#6	12'-6	5	#7	12'-9	5	#7	13'-0	6	#7	13'-6	6	#7	14'-3	6	#7	14'-6
a5	A	4	#5	11'-0	4	#6	11'-6	4	#6	12'-0	5	#6	12'-6	5	#7	13'-0	5	#7	13'-3	5	#7	13'-9	5	#7	14'-3	6	#7	15'-0	6	#7	15'-3
a6	A	4	#6	11'-6	4	#6	12'-0	4	#6	12'-6	4	#7	13'-0	5	#7	13'-6	5	#7	13'-9	5	#7	14'-3	5	#7	14'-9	6	#7	15'-6	6	#8	15'-9
a7	A	4	#6	12'-0	4	#6	12'-6	4	#7	13'-0	4	#7	13'-6	5	#7	14'-3	5	#7	14'-6	5	#7	15'-0	5	#8	15'-6	5	#8	16'-3	6	#8	16'-6
a8	A	3	#5	8'-3	4	#5	8'-6	4	#5	8'-9	4	#5	9'-0	4	#5	9'-6	4	#5	9'-9	5	#5	10'-0	5	#5	10'-3	5	#5	10'-9	5	#5	11'-0
a9	A	3	#5	9'-3	3	#5	9'-6	4	#5	9'-9	4	#5	10'-0	4	#5	10'-6	4	#5	10'-9	4	#5	11'-3	5	#6	11'-6	5	#6	12'-0	5	#6	12'-3
a10	A	3	#5	10'-3	3	#5	10'-6	3	#6	10'-9	4	#6	11'-3	4	#6	11'-9	4	#6	12'-0	4	#6	12'-3	4	#6	12'-9	5	#7	13'-3	5	#7	13'-9
a11	A	3	#5	11'-0	3	#6	11'-6	3	#6	12'-0	3	#6	12'-3	4	#7	12'-9	4	#7	13'-0	4	#7	13'-6	4	#7	14'-0	4	#7	14'-9	5	#8	15'-3
a12	A	3	#6	12'-0	3	#6	12'-6	3	#6	13'-0	3	#7	13'-6	3	#7	14'-0	4	#7	14'-3	4	#7	14'-9	4	#8	15'-3	4	#8	16'-0	4	#8	16'-6
b1	str	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	2	#4	38'-6	2	#4	40'-0	2	#4	41'-6
b2	str	8	#4	28'-0	8	#4	29'-6	8	#4	31'-0	10	#4	32'-6	10	#4	34'-0	10	#4	35'-6	10	#4	37'-0	12	#4	38'-6	12	#4	40'-0	12	#4	41'-6
b3	str	2	#4	21'-0	2	#4	27'-0	2	#4	29'-0	2	#4	20'-0	2	#4	25'-0	2	#4	28'-9	2	#4	33'-9	2	#4	26'-3	2	#4	30'-3	2	#4	34'-0
b4	str	2	#4	7'-6	2	#4	13'-6	2	#4	15'-9	2	#4	6'-0	2	#4	12'-0	2	#4	15'-9	2	#4	20'-6	2	#4	11'-0	2	#4	16'-6	2	#4	20'-0
b5	str							2	#4	2'-6							2	#4	3'-0	2	#4	7'-6				2	#4	3'-0	2	#4	6'-3
b6	str																														
b7	str	2	#4	14'-6	2	#4	15'-6	2	#4	16'-6	2	#4	17'-6	2	#4	18'-6	2	#4	19'-6	2	#4	20'-6	2	#4	21'-6	2	#4	22'-9	2	#4	23'-9
b8	str	8	#4	14'-0	8	#4	15'-0	8	#4	16'-0	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
b9	str	2	#4	8'-9	2	#4	11'-6	2	#4	12'-3	2	#4	14'-0	2	#4	16'-3	2	#4	18'-3	2	#4	14'-3	2	#4	16'-6	2	#4	18'-3	2	#4	20'-3
b10	str	2	#4	3'-6	2	#4	5'-3	2	#4	7'-3	2	#4	8'-6	2	#4	10'-9	2	#4	12'-9	2	#4	8'-9	2	#4	10'-9	2	#4	12'-9	2	#4	14'-9
b11	str							2	#4	2'-0	2	#4	3'-3	2	#4	5'-3	2	#4	7'-3	2	#4	3'-3	2	#4	5'-3	2	#4	7'-6	2	#4	9'-3
b12	str																2	#4	1'-9							2	#4	2'-0	2	#4	3'-6
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	4	#5	4'-0	5	#5	4'-0	5	#5	4'-3	5	#5	4'-6	5	#5	4'-6	6	#5	4'-9	6	#5	5'-0	6	#5	5'-0	6	#6	5'-3	6	#6	5'-6
e2	C	4	#5	4'-3	5	#5	4'-3	5	#5	4'-6	5	#5	4'-9	5	#5	5'-0	5	#5	5'-3	6	#6	5'-6	6	#6	5'-6	6	#6	5'-9	6	#6	6'-0
e3	C	4	#5	4'-6	4	#5	4'-9	5	#5	5'-0	5	#5	5'-3	5	#5	5'-3	5	#5	5'-6	5	#6	5'-9	6	#6	6'-0	6	#6	6'-3	6	#7	7'-3
e4	C	4	#5	5'-0	4	#5	5'-3	4	#5	5'-6	5	#5	5'-6	5	#6	5'-9	5	#6	6'-0	5	#7	7'-3	6	#7	7'-3	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'-0	5	#6	6'-3	5	#6	6'-6	5	#7	7'-9	5	#7	7'-9	6	#7	8'-3	6	#8	8'-9
e6	C	4	#5	5'-6	4	#5	5'-9	4	#6	6'-0	4	#6	6'-3	5	#7	7'-6	5	#7	7'-9	5	#7	8'-0	5	#7	8'-3	5	#8	9'-0	6	#8	9'-3
e7	C	4	#5	5'-9	4	#6	6'-3	4	#6	6'-6	4	#7	7'-6	4	#7	8'-0	5	#7	8'-3	5	#7	8'-6	5	#8	9'-0	5	#8	9'-6	6	#8	9'-9
e8	C	2	#5	6'-0	2	#6	6'-6	2	#6	6'-9	2	#7	8'-0	2	#7	8'-3	3	#7	8'-6	3	#7	8'-9	3	#8	9'-6	3	#8	9'-9	3	#8	10'-0
e9	C	12	#5	6'-0	13	#6	6'-6	13	#6	6'-9	14	#7	8'-0	14	#7	8'-3	15	#7	8'-6	15	#7	8'-9	16	#8	9'-6	16	#8	9'-9	17	#8	10'-0
e10	C	5	#5	6'-0	5	#6	6'-6	5	#6	6'-9	6	#7	8'-0	6	#7	8'-3	6	#7	8'-6	6	#7	8'-9	7	#8	9'-6	7	#8	9'-9	7	#8	10'-0
e11	C	3	#5	5'-9	3	#6	6'-3	3	#6	6'-6	3	#6	6'-9	3	#7	8'-0	3	#7	8'-3	4	#7	8'-6	4	#7	9'-0	4	#7	9'-3	4	#7	9'-6
e12	C	3	#5	5'-3	3	#5	5'-9	3	#5	6'-0	3	#6	6'-3	4	#6	6'-6	4	#6	6'-9	4	#7	7'-9	4	#7	8'-3	4	#7	8'-6	4	#7	8'-9
e13	C	3	#5	4'-9	3	#5	5'-0	3	#5	5'-3	4	#5	5'-9	4	#6	5'-9	4	#6	6'-0	4	#6	6'-3	4	#6	6'-6	4	#7	7'-9	5	#7	8'-0
e14	C	3	#5	4'-6	3	#5	4'-6	4	#5	4'-9	4	#5	5'-0	4	#5	5'-3	4	#5	5'-6	4	#5	5'-9	4	#6	5'-9	5	#6	6'-0	5	#6	6'-3
e15	C	3	#5	4'-0	4	#5	4'-0	4	#5	4'-3	4	#5	4'-6	4	#5	4'-6	4	#5	4'-9	4	#5	5'-0	5	#5	5'-0	5	#5	5'-3	5	#5	5'-6
f1	str	5	#4	7'-3	5	#4	7'-9	6	#4	8'-0	6	#4	8'-3	6	#4	8'-9	6	#4	9'-0	7	#4	9'-3	7	#4	9'-9	7	#4	10'-0	7	#4	10'-3
f2	str	5	#4	8'-3	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'-9	7	#4	11'-3	7	#4	11'-6
f3	str	5	#4	9'-0	5	#4	9'-6	5	#4	9'-9	5	#4	10'-3	6	#4	10'-6	6	#4	11'-0	6	#4	11'-6	6	#4	12'-0	7	#4	12'-3	7	#4	12'-9
f4	str	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	6	#4	13'-6	7	#4	14'-0
f5	str	3	#4	6'-6	3	#4	6'-9	3	#4	7'-0	3	#4	7'-3	3	#4	7'-6	4	#4	7'-9	4	#4	8'-0	4	#4	8'-3	4	#4	8'-6	4	#4	8'-9
f6	str	3	#4	7'-9	3	#4	8'-0	3	#4	8'-3	3	#4	8'-6	3	#4	8'-9	3	#4	9'-0	4	#4	9'-6	4	#4	9'-9	4	#4	10'-3	4	#4	11'-6
f7	str	2	#4	8'-9	2	#4	9'-0	3	#4	9'-6	3	#4	9'-9	3	#4	10'-3	3	#4	10'-6	3	#4	11'-0	3	#4	11'-6	4	#4	11'-9	4	#4	12'-0
f8	str	2	#4	10'-0	2	#4	10'-3	2	#4	10'-9	3	#4	11'-0	3	#4	11'-6	3	#4	11'-9	3	#4	12'-6	3	#4	13'-0	3	#4	13'-6	4	#4	13'-9
g	str	6	#4	11'-6	6	#4	12'-3	6	#4	12'-9	6	#4	13'-6	6	#4	14'-3	6	#4	15'-0	6	#4	15'-9	6	#4	16'-3	6	#4	17'-0	6	#4	17'-9
m1	str	4	#4	29'-9	4	#4	31'-3	4	#4	33'-0	5	#4	34'-6	5	#4	36'-0	5	#4	37'-9	5	#4	39'-3	6	#4	40'-9	6	#4	42'-6	6	#4	44'-0
m2	str	1	#4	29'-9	1	#4	31'-3	1	#4	33'-0	1	#4	34'-6	1	#4	36'-0	1	#4	37'-9	1	#4	39'-3	1	#4	40'-9	1	#4	42'-6	1	#4	44'-0
m3	str	4	#4	20'-0	4	#4	21'-3	4	#4	22'-6	5	#4	24'-0	5	#4	25'-3	5	#4	26'-6	5	#4	27'-9	6	#4	29'-3	6	#4	30'-6	6	#4	31'-9
m4	str	1	#4	20'-0	1	#4	21'-3	1	#4	22'-6	1	#4	24'-0	1	#4	25'-3	1	#4	26'-6	1	#4	27'-9	1	#4	29'-3	1	#4	30'-6	1	#4	31'-9
n1	str	4	#4	18'-9	4	#4	20'-0	4	#4	21'-0	5	#4	22'-0	5	#4	23'-0	5	#4	24'-3	5	#4	25'-3	6	#4	26'-3	6	#4	27'-6	6	#4	28'-6
n2	str	1	#4	18'-9	1	#4	20'-0	1	#4	21'-0	1	#4	22'-0	1	#4	23'-0	1	#4	24'-3	1	#4	25'-3	1	#4	26'-3	1	#4	27'-6	1	#4	28'-6
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	74	#4	7'-0	78	#4	7'-0	82	#4	7'-0	86	#4	7'-0	90	#4	7'-0	94	#4	7'-0	98	#4	7'-0	102	#4	7'-0	106	#4	7'-0	110	#4	7'-0
v	str	6	#4	29'-0	6	#4	30'-6	6	#4	32'-0	6	#4	33'-6	6	#4	35'-0	6	#4	36'-6	6	#4	38'-0	6	#4	39'-6	6	#4	41'-0	6	#4	42'-0
w	str	6	#4	14'-6	6	#4	15'-6	6	#4	16'-6	6	#4	17'-3	6	#4	18'-3	6	#4	19'-3	6	#4	20'-3	6	#4	21'-0	6	#4	22'-0	6	#4	23'-0

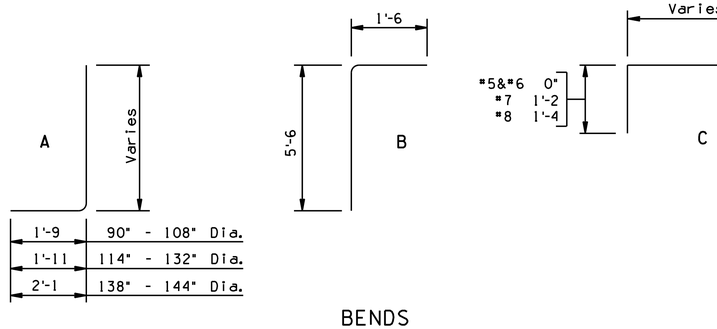
PIPE DIAMETER

	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'- 1	2'- 3	2'- 4	2'- 6	2'- 7	2'- 9	2'-10	3'- 0	3'- 1	3'- 3
D	2'- 1	2'- 3	2'- 5	2'- 7	2'- 9	2'-11	3'- 1	3'- 3	3'- 5	3'- 7
E	6'- 4	6'- 8	7'- 0	7'- 4	7'- 8	8'- 0	8'- 4	8'- 8	9'- 0	9'- 4
F	28'- 0	29'- 6	31'- 0	32'- 6	34'- 0	35'- 6	37'- 0	38'- 6	40'- 0	41'- 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'- 4	6'- 8	7'- 0	7'- 4	7'- 8	8'- 0	8'- 4	8'- 8	9'- 0	9'- 4
K	30'- 1¾	31'- 8⅝	33'- 3¼	34'-10⅞	36'- 4⅞	37'-11¾	39'- 6⅞	41'- 1¾	42'- 8⅜	44'- 3¼
L	7'- 7⅜	8'- 0½	8'- 5⅜	8'-10½	9'- 3½	9'- 8⅝	10'- 2	10'- 7⅞	11'- 0	11'- 5⅛
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	11'- 7⅝	12'- 3⅛	12'-11⅛	13'- 7⅜	14'- 2⅝	14'-10⅞	15'- 8⅛	16'- 4⅜	16'-11⅝	17'- 7⅞
R	14'- 0	15'- 0	16'- 0	17'- 0	18'- 0	19'- 0	20'- 0	21'- 0	22'- 0	23'- 0
S	5'- 6	5'- 9	6'- 0	6'- 3	6'- 6	6'- 9	7'- 0	7'- 3	7'- 6	7'- 9
T	20'- 2	21'- 6	22'- 9	24'- 1	25'- 4	26'- 8	28'- 1	29'- 5	30'- 8	32'- 0
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"	2410	43.7
96"	2715	48.0
102"	3030	52.3
108"	3545	56.9
114"	3985	61.6
120"	4320	66.7
126"	4660	75.7
132"	5460	81.4
138"	5940	87.2
144"	6580	93.3

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 (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. Specific application without consent of professional engineer. Contents within the inner border line shall not be altered.

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	SJUH	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 OUTLET
4 : 1 SLOPE

ROUTE | PROJECT NO. | FA NO. | DRAWING NO. SD 6.34 (7 of 8)

LOCATION | SHEET NO. OF