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	4	#5	8'-6	4	#5	8'-9	4	#5	9'-3	4	#5	9'-6	4	#5	10'-0	5	#5	10'-3	5	#5	10'-9	5	#5	11'-0	5	#5	11'-6	5	#5	11'-9
a2	A	4	#5	9'-3	4	#5	9'-6	4	#5	10'-0	4	#5	10'-3	4	#5	10'-9	4	#5	11'-0	5	#5	11'-6	5	#5	11'-9	5	#5	12'-6	5	#6	12'-9
a3	A	3	#5	10'-0	4	#5	10'-3	4	#5	10'-9	4	#5	11'-0	4	#6	11'-6	4	#6	12'-0	4	#6	12'-6	5	#6	12'-9	5	#6	13'-3	5	#7	13'-9
a4	A	3	#5	10'-6	3	#5	11'-0	4	#6	11'-6	4	#6	12'-0	4	#6	12'-6	4	#6	12'-9	4	#6	13'-3	4	#7	13'-6	5	#7	14'-3	5	#7	14'-6
a5	A	3	#5	11'-3	3	#6	11'-9	3	#6	12'-3	4	#7	12'-9	4	#7	13'-3	4	#7	13'-9	4	#7	14'-3	4	#7	14'-6	4	#7	15'-0	5	#8	15'-6
a6	A	3	#6	12'-0	3	#6	12'-6	3	#7	13'-0	3	#7	13'-6	4	#7	14'-0	4	#7	14'-6	4	#8	15'-0	4	#8	15'-3	4	#8	16'-0	4	#8	16'-6
a7	A	3	#5	7'-9	4	#5	8'-0	4	#5	8'-3	4	#5	8'-6	4	#5	9'-0	4	#5	9'-3	4	#5	9'-6	5	#5	9'-9	5	#5	10'-3	5	#5	10'-6
a8	A	3	#5	8'-6	3	#5	9'-0	4	#5	9'-3	4	#5	9'-6	4	#5	10'-0	4	#5	10'-3	4	#5	10'-6	4	#5	10'-9	5	#5	11'-6	5	#5	11'-9
a9	A	3	#5	9'-3	3	#5	9'-9	3	#5	10'-0	4	#5	10'-6	4	#5	11'-0	4	#5	11'-3	4	#5	11'-6	4	#6	12'-0	4	#6	12'-6	5	#6	13'-0
a10	A	3	#5	10'-3	3	#5	10'-9	3	#6	11'-0	3	#6	11'-6	4	#6	12'-0	4	#6	12'-6	4	#6	12'-9	4	#7	13'-0	4	#7	13'-9	4	#7	14'-0
a11	A	3	#5	11'-0	3	#6	11'-6	3	#6	12'-0	3	#7	12'-6	3	#7	13'-0	4	#7	13'-6	4	#7	13'-9	4	#7	14'-3	4	#7	14'-9	4	#7	15'-3
a12	A	3	#6	11'-9	3	#6	12'-6	3	#7	13'-0	3	#7	13'-6	3	#7	14'-0	3	#7	14'-6	4	#8	14'-9	4	#8	15'-3	4	#8	16'-0	4	#8	16'-6
b1	str	2	#4	19'-3	2	#4	20'-3	2	#4	21'-3	2	#4	22'-3	2	#4	23'-3	2	#4	24'-3	2	#4	25'-3	2	#4	26'-6	2	#4	27'-6	2	#4	28'-6
b2	str	8	#4	19'-0	8	#4	20'-0	8	#4	21'-0	8	#4	22'-0	10	#4	23'-0	10	#4	24'-0	10	#4	25'-0	10	#4	26'-0	10	#4	27'-0	10	#4	28'-0
b3	str	2	#4	12'-0	2	#4	14'-6	2	#4	17'-6	2	#4	20'-3	2	#4	15'-3	2	#4	18'-0	2	#4	19'-6	2	#4	22'-6	2	#4	23'-0	2	#4	24'-0
b4	str	2	#4	5'-0	2	#4	7'-0	2	#4	10'-3	2	#4	12'-3	2	#4	7'-9	2	#4	10'-3	2	#4	11'-9	2	#4	14'-6	2	#4	15'-0	2	#4	16'-9
b5	str							2	#4	3'-0	2	#4	4'-3				2	#4	2'-6	2	#4	4'-3	2	#4	6'-6	2	#4	7'-0	2	#4	9'-3
b6	str																												2	#4	2'-0
b7	str	2	#4	17'-6	2	#4	18'-6	2	#4	19'-6	2	#4	20'-6	2	#4	21'-6	2	#4	22'-6	2	#4	23'-9	2	#4	24'-9	2	#4	25'-9	2	#4	26'-9
b8	str	6	#4	17'-0	6	#4	18'-0	6	#4	19'-0	8	#4	20'-0	8	#4	21'-0	8	#4	22'-0	8	#4	23'-0	8	#4	24'-0	8	#4	25'-0	10	#4	26'-0
b9	str	2	#4	14'-6	2	#4	17'-0	2	#4	18'-6	2	#4	15'-6	2	#4	17'-0	2	#4	19'-0	2	#4	21'-3	2	#4	22'-6	2	#4	24'-6	2	#4	21'-0
b10	str	2	#4	9'-0	2	#4	11'-3	2	#4	13'-0	2	#4	9'-9	2	#4	11'-6	2	#4	13'-3	2	#4	15'-6	2	#4	16'-9	2	#4	19'-0	2	#4	15'-3
b11	str	2	#4	3'-6	2	#4	5'-6	2	#4	7'-6	2	#4	4'-0	2	#4	6'-0	2	#4	7'-9	2	#4	9'-9	2	#4	11'-0	2	#4	13'-6	2	#4	9'-3
b12	str							2	#4	2'-0							2	#4	2'-0	2	#4	4'-0	2	#4	5'-3	2	#4	8'-0	2	#4	3'-6
b13	str																									2	#4	2'-6			
b14	str																														
c	str	5	#4	10'-6	5	#4	11'-0	5	#4	11'-6	5	#4	12'-0	5	#4	12'-6	5	#4	13'-0	5	#4	13'-6	5	#4	14'-0	5	#4	14'-6	5	#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	3'-9	4	#5	3'-9	4	#5	4'-0	4	#5	4'-3	4	#5	4'-3	5	#5	4'-6	5	#5	4'-9	5	#5	4'-9	5	#5	5'-0	5	#5	5'-3
e2	C	4	#5	4'-0	4	#5	4'-3	4	#5	4'-6	4	#5	4'-9	4	#5	4'-9	4	#5	5'-0	5	#5	5'-3	5	#5	5'-6	5	#6	5'-9	5	#6	6'-0
e3	C	3	#5	4'-6	4	#5	4'-9	4	#5	5'-0	4	#5	5'-3	4	#5	5'-3	4	#6	5'-9	4	#6	6'-0	5	#6	6'-0	5	#6	6'-3	5	#7	7'-6
e4	C	3	#5	5'-0	3	#5	5'-0	4	#5	5'-3	4	#5	5'-9	4	#6	6'-0	4	#6	6'-3	4	#6	6'-6	4	#6	6'-9	5	#7	8'-0	5	#7	8'-3
e5	C	3	#5	5'-3	3	#5	5'-6	3	#5	5'-9	4	#6	6'-3	4	#7	7'-3	4	#7	7'-9	4	#7	8'-0	4	#7	8'-3	4	#8	8'-6	5	#8	8'-9
e6	C	3	#5	5'-9	3	#6	6'-0	3	#6	6'-3	3	#6	6'-9	4	#7	7'-9	4	#7	8'-3	4	#7	8'-6	4	#7	8'-6	4	#8	9'-6	4	#8	9'-9
e7	C	3	#5	6'-0	3	#6	6'-3	3	#6	6'-6	3	#6	7'-0	3	#7	8'-0	4	#7	8'-6	4	#7	8'-9	4	#7	8'-9	4	#8	9'-9	4	#8	10'-0
e8	C	9	#5	6'-0	9	#6	6'-3	10	#6	6'-6	10	#6	7'-0	11	#7	8'-0	11	#7	8'-6	12	#7	8'-9	12	#7	8'-9	13	#8	9'-9	13	#8	10'-0
e9	C	5	#5	6'-0	5	#6	6'-3	5	#6	6'-6	5	#6	7'-0	5	#7	8'-0	6	#7	8'-6	6	#7	8'-9	6	#7	8'-9	6	#8	9'-9	6	#8	10'-0
e10	C	2	#5	5'-9	3	#6	6'-0	3	#6	6'-3	3	#6	6'-9	3	#7	7'-9	3	#7	8'-3	3	#7	8'-6	4	#7	8'-6	4	#8	9'-6	4	#8	9'-9
e11	C	3	#5	5'-3	3	#5	5'-6	3	#5	5'-9	3	#6	6'-3	3	#7	7'-3	3	#7	7'-9	4	#7	8'-0	4	#7	8'-3	4	#8	8'-6	4	#8	8'-9
e12	C	3	#5	5'-0	3	#5	5'-0	3	#5	5'-3	3	#5	5'-9	3	#6	6'-0	4	#6	6'-3	4	#6	6'-6	4	#6	6'-9	4	#7	8'-0	4	#7	8'-3
e13	C	3	#5	4'-6	3	#5	4'-9	3	#5	5'-0	3	#5	5'-3	4	#5	5'-3	4	#6	5'-9	4	#6	6'-0	4	#6	6'-0	4	#6	6'-3	4	#7	7'-6
e14	C	3	#5	4'-0	3	#5	4'-3	3	#5	4'-6	4	#5	4'-9	4	#5	4'-9	4	#5	5'-0	4	#5	5'-3	4	#5	5'-6	4	#6	5'-9	5	#6	6'-0
e15	C	3	#5	3'-9	3	#5	3'-9	4	#5	4'-0	4	#5	4'-3	4	#5	4'-3	4	#5	4'-6	4	#5	4'-9	4	#5	4'-9	5	#5	5'-0	5	#5	5'-3
f1	str	4	#4	6'-6	4	#4	7'-0	4	#4	7'-3	4	#4	7'-6	4	#4	8'-0	4	#4	8'-3	5	#4	8'-6	5	#4	9'-0	5	#4	9'-3	5	#4	9'-6
f2	str	3	#4	7'-6	4	#4	8'-0	4	#4	8'-6	4	#4	8'-9	4	#4	9'-3	4	#4	9'-6	4	#4	9'-9	5	#4	10'-6	5	#4	10'-6	5	#4	11'-0
f3	str	3	#4	8'-9	3	#4	9'-3	4	#4	9'-6	4	#4	10'-0	4	#4	10'-3	4	#4	10'-9	4	#4	11'-3	4	#4	12'-3	4	#4	12'-0	5	#4	12'-6
f4	str	3	#4	10'-0	3	#4	10'-3	3	#4	10'-9	3	#4	11'-3	4	#4	11'-6	4	#4	12'-0	4	#4	12'-6	4	#4	13'-0	4	#4	13'-6	4	#4	14'-0
f5	str	3	#4	6'-0	3	#4	6'-3	4	#4	6'-6	4	#4	6'-9	4	#4	7'-0	4	#4	7'-3	4	#4	7'-6	4	#4	7'-9	5	#4	8'-0	5	#4	8'-3
f6	str	3	#4	7'-3	3	#4	7'-6	3	#4	8'-0	4	#4	8'-3	4	#4	8'-6	4	#4	8'-9	4	#4	9'-0	4	#4	9'-6	4	#4	9'-9	5	#4	10'-0
f7	str	3	#4	8'-3	3	#4	8'-9	3	#4	9'-3	3	#4	9'-6	3	#4	10'-0	4	#4	10'-3	4	#4	10'-6	4	#4	11'-0	4	#4	11'-6	4	#4	12'-0
f8	str	3	#4	9'-6	3	#4	10'-0	3	#4	10'-6	3	#4	11'-0	3	#4	11'-6	3	#4	12'-0	4	#4	12'-3	4	#4	12'-9	4	#4	13'-3	4	#4	13'-6
g	str	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	2	#4	13'-9
m1	str	4	#4	22'-0	4	#4	23'-0	4	#4	24'-0	5	#4	25'-3	5	#4	26'-3	5	#4	27'-6	5	#4	28'-6	6	#4	29'-9	6	#4	31'-0	6	#4	32'-0
m2	str	1	#4	22'-0	1	#4	23'-0	1	#4	24'-0	1	#4	25'-3	1	#4	26'-3	1	#4	27'-6	1	#4	28'-6	1	#4	29'-9	1	#4	31'-0	1	#4	32'-0
m3	str	4	#4	21'-9	4	#4	23'-0	4	#4	24'-3	5	#4	25'-6	5	#4	26'-6	5	#4	27'-9	5	#4	29'-0	6	#4	30'-3	6	#4	31'-6	6	#4	32'-9
m4	str	1	#4	21'-9	1	#4	23'-0	1	#4	24'-3	1	#4	25'-6	1	#4	26'-6	1	#4	27'-9	1	#4	29'-0	1	#4	30'-3	1	#4	31'-6	1	#4	32'-9
n1	str	4	#4	15'-9	4	#4	16'-6	4	#4	17'-6	5	#4	18'-3	5	#4	19'-3	5	#4	20'-0	5	#4	21'-0	6	#4	22'-0	6	#4	22'-9	6	#4	23'-9
n2	str	1	#4	15'-9	1	#4	16'-6	1	#4	17'-6	1	#4	18'-3	1	#4	19'-3	1	#4	20'-0	1	#4	21'-0	1	#4	22'-0	1	#4	22'-9	1	#4	23'-9
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	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	10	#4	5'-0	10	#4	5'-0
v	str	1	#4	19'-6	1	#4	20'-6	1	#4	21'-6	1	#4	22'-6	1	#4	23'-6	1	#4	24'-6	1	#4	25'-6	1	#4	26'-6	1	#4	27'-6	1	#4	28'-6
w	str	1	#4	17'-6	1	#4	18'-0	1	#4	19'-6	1	#4	20'-6	1	#4	21'-6	1	#4	22'-6	1	#4	23'-6	1	#4	24'-6	1	#4	25'-6	1	#4	26'-6

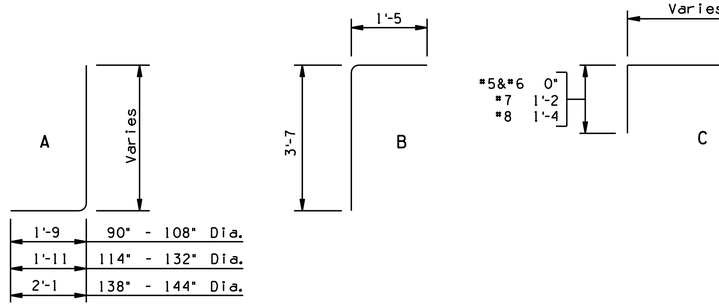
PIPE DIAMETER

	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	1'-10	2'- 0	2'- 1	2'- 3	2'- 4	2'- 6	2'- 7	2'- 9	2'-10	3'- 0
D	2'- 4	2'- 6	2'- 8	2'-10	3'- 0	3'- 2	3'- 4	3'- 6	3'- 8	3'-10
E	6'- 4	6'- 8	7'- 0	7'- 4	7'- 8	8'- 0	8'- 4	8'- 8	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
G	5'- 0⅝	5'- 3¾	5'- 6¾	5'- 9⅞	6'- 1	6'- 4⅛	6'- 7¼	6'-10⅜	7'- 1⅜	7'- 4½
H	9'- 6	10'- 0	10'- 6	11'- 0	11'- 6	12'- 0	12'- 6	13'- 0	13'- 6	14'- 0
J	5'- 8	6'- 0	6'- 4	6'- 8	7'- 0	7'- 4	7'- 8	8'- 0	8'- 4	8'- 8
K	22'- 1⅝	23'- 3⅜	24'- 4⅝	25'- 6¼	26'- 7½	27'- 9⅛	28'-11¼	30'- 0⅞	31'- 2⅛	32'- 3¾
L	7'- 2¼	7'- 7	7'-11⅜	8'- 4⅛	8'- 8½	9'- 1¼	9'- 6⅜	9'-11¼	10'- 3½	10'- 8¼
M	4'- 6¾	4'- 9⅞	5'- 0⅝	5'- 3¾	5'- 6⅜	5'- 9½	6'- 1	6'- 4⅛	6'- 6¾	6'- 9⅞
N	0'- 3	0'- 3	0'- 3	0'- 3	0'- 3	0'- 3	0'- 3	0'- 3	0'- 3	0'- 3
P	9'- 0⅛	9'- 6⅜	9'-11¾	10'- 5⅞	10'-11⅜	11'- 5½	12'- 0½	12'- 6⅝	13'- 0	13'- 6¼
R	17'- 0	18'- 0	19'- 0	20'- 0	21'- 0	22'- 0	23'- 0	24'- 0	25'- 0	26'- 0
S	5'- 0	5'- 3	5'- 6	5'- 9	6'- 0	6'- 3	6'- 6	6'- 9	7'- 0	7'- 3
T	21'-11⅝	23'- 2⅝	24'- 5	25'- 8	26'-10⅜	28'- 1⅜	29'- 5¼	30'- 8¼	31'-10⅝	33'- 1⅝
V	4'- 1⅞	4'- 5	4'- 7¼	4'-10⅜	5'- 0¾	5'- 3⅞	5'- 7¾	5'-10⅞	6'- 1⅞	6'- 4¼
W	5'- 9¼	6'- 0⅜	6'- 3½	6'- 6⅝	6'- 9⅝	7'- 0¾	7'- 6	7'- 9⅛	8'- 0⅛	8'- 3¼
X	5'- 3½	5'- 6⅝	5'- 9¾	6'- 0⅞	6'- 4	6'- 7⅛	7'- 1	7'- 4⅛	7'- 7¼	7'-10⅜

QUANTITIES

PIPE Dia.	REINF Lbs.	CONCRETE C.Y.
90"	1610	30.9
96"	1825	34.1
102"	2100	37.3
108"	2380	40.8
114"	2790	44.3
120"	3050	48.0
126"	3370	55.1
132"	3710	59.3
138"	4300	63.7
144"	4715	68.3

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 6.32 (1 of 8).

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	Original Issue	S.U.H.	7-12
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 is not for specific application without additional verification of its suitability and adaptability by a licensed professional engineer. Contents within the inner border line shall not be altered.

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
15° SKEW INLET
4 : 1 SLOPE

ROUTE	PROJECT NO.	FA NO.	DRAWING NO.
			SD 6.32 (3 of 8)
LOCATION			SHEET NO. OF