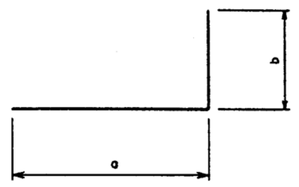
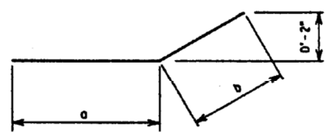
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	472-84071	2005	R5.14	

DATE	BY

REBAR SHAPES





SLOPE = 1 : 2

PIPE DIAMETER = 24" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	8	4'-8"	-	-	
A2	5	2	4'-4"	-	-	
A3	5	12	1'-2" - 4'-4"	-	-	
A4	5	3	9'-0"	-	-	
A5	5	3	5'-6" - 7'-10"	-	-	
H1	5	6	3'-2"	-	-	
H2	5	8	3'-9"	-	-	
H3	5	4	7'-3"	4'-1"	3'-2"	
T1	4	20	4'-0"	2'-7"	1'-5"	
T2	4	6	9'-0"	-	-	
W1	4	8	1'-0" - 3'-3"	-	-	
W2	4	10	2'-8" - 3'-10"	-	-	
W3	5	20	7'-10" - 8'-0"	3'-11" - 5'-4"	2'-8" - 3'-10"	
W4	5	4	3'-11"	3'-7"	0'-4"	
W5	4	8	3'-9"	-	-	

REBAR = 535 LB. CONCRETE = 3.18 CU. YARDS

PIPE DIAMETER = 30" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	12	5'-8"	-	-	
A2	5	2	4'-10"	-	-	
A3	5	12	1'-2" - 5'-4"	-	-	
A4	5	3	10'-8"	-	-	
A5	5	4	6'-4" - 9'-7"	-	-	
H1	5	10	3'-10"	-	-	
H2	5	10	4'-3"	-	-	
H3	5	4	8'-0"	4'-7"	3'-5"	
T1	4	24	4'-0"	2'-7"	1'-5"	
T2	4	6	10'-8"	-	-	
W1	4	8	1'-0" - 4'-6"	-	-	
W2	4	12	2'-8" - 4'-8"	-	-	
W3	5	24	8'-1" - 9'-4"	3'-8" - 6'-5"	2'-8" - 4'-8"	
W4	5	4	5'-3"	4'-11"	0'-4"	
W5	4	8	4'-8"	-	-	

REBAR = 721 LB. CONCRETE = 4.23 CU. YARDS

PIPE DIAMETER = 36" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	12	6'-8"	-	-	
A2	5	2	5'-6"	-	-	
A3	5	12	2'-2" - 6'-2"	-	-	
A4	5	3	12'-4"	-	-	
A5	5	6	5'-2" - 12'-4"	-	-	
H1	5	10	4'-4"	-	-	
H2	5	10	4'-9"	-	-	
H3	5	4	8'-9"	5'-1"	3'-8"	
T1	4	26	4'-0"	2'-7"	1'-5"	
T2	4	6	12'-4"	-	-	
W1	4	12	1'-3" - 5'-10"	-	-	
W2	4	12	2'-8" - 5'-2"	-	-	
W3	5	24	8'-7" - 9'-8"	3'-9" - 7'-0"	2'-8" - 4'-10"	
W4	5	4	6'-6"	6'-1"	0'-4"	
W5	4	8	6'-0"	-	-	

REBAR = 834 LB. CONCRETE = 5.40 CU. YARDS

PIPE DIAMETER = 42" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	14	7'-8"	-	-	
A2	5	2	5'-11"	-	-	
A3	5	12	2'-2" - 6'-2"	-	-	
A4	5	3	14'-0"	-	-	
A5	5	6	5'-10" - 14'-0"	-	-	
H1	5	12	4'-10"	-	-	
H2	5	10	5'-3"	-	-	
H3	5	4	9'-6"	5'-7"	3'-11"	
T1	4	30	4'-0"	2'-7"	1'-5"	
T2	4	6	13'-11"	-	-	
W1	4	12	1'-2" - 7'-2"	-	-	
W2	4	14	2'-8" - 5'-7"	-	-	
W3	5	26	9'-4" - 10'-6"	4'-0" - 7'-10"	2'-8" - 5'-4"	
W4	5	4	7'-9"	7'-5"	0'-4"	
W5	4	8	7'-1"	-	-	

REBAR = 982 LB. CONCRETE = 6.70 CU. YARDS

PIPE DIAMETER = 48" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	12	8'-8"	-	-	
A2	5	2	6'-5"	-	-	
A3	5	14	1'-6" - 8'-5"	-	-	
A4	5	3	15'-8"	-	-	
A5	5	7	7'-8" - 15'-6"	-	-	
H1	5	12	5'-4"	-	-	
H2	5	12	5'-9"	-	-	
H3	5	4	10'-3"	6'-1"	4'-2"	
T1	4	34	4'-0"	2'-7"	1'-5"	
T2	4	6	15'-8"	-	-	
W1	4	12	1'-6" - 6'-1"	-	-	
W2	4	18	2'-8" - 5'-10"	-	-	
W3	5	30	10'-9" - 11'-3"	4'-11" - 8'-5"	2'-10" - 5'-10"	
W4	5	4	9'-0"	8'-9"	0'-4"	
W5	4	8	8'-3"	-	-	

REBAR = 1170 LB. CONCRETE = 8.13 CU. YARDS

PIPE DIAMETER = 54" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	16	9'-8"	-	-	
A2	5	2	6'-11"	-	-	
A3	5	16	1'-4" - 7'-4"	-	-	
A4	5	3	17'-3"	-	-	
A5	5	8	8'-2" - 17'-3"	-	-	
H1	5	14	5'-10"	-	-	
H2	5	14	6'-3"	-	-	
H3	5	4	11'-0"	6'-7"	4'-5"	
T1	4	36	4'-0"	2'-7"	1'-5"	
T2	4	6	17'-3"	-	-	
W1	4	12	2'-6" - 7'-2"	-	-	
W2	4	18	2'-8" - 6'-4"	-	-	
W3	5	34	11'-2" - 12'-5"	4'-10" - 9'-9"	2'-8" - 6'-4"	
W4	5	4	10'-3"	9'-11"	0'-4"	
W5	4	8	9'-4"	-	-	

REBAR = 1398 LB. CONCRETE = 9.68 CU. YARDS

PIPE DIAMETER = 60" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	16	10'-8"	-	-	
A2	5	2	7'-5"	-	-	
A3	5	16	2'-8" - 9'-2"	-	-	
A4	5	3	18'-10"	-	-	
A5	5	9	8'-6" - 13'-11"	-	-	
H1	5	14	6'-4"	-	-	
H2	5	14	6'-9"	-	-	
H3	5	4	11'-9"	7'-1"	4'-8"	
T1	4	40	4'-0"	2'-7"	1'-5"	
T2	4	6	18'-11"	-	-	
W1	4	16	2'-2" - 9'-1"	-	-	
W2	4	20	2'-8" - 6'-10"	-	-	
W3	5	38	12'-6" - 12'-0"	5'-2" - 10'-4"	2'-8" - 6'-10"	
W4	5	4	11'-6"	11'-2"	0'-4"	
W5	4	8	10'-7"	-	-	

REBAR = 1614 LB. CONCRETE = 11.36 CU. YARDS

PIPE DIAMETER = 66" SLOPE = 1:2

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	18	11'-8"	-	-	
A2	5	2	7'-11"	-	-	
A3	5	20	1'-0" - 10'-2"	-	-	
A4	5	3	20'-7"	-	-	
A5	5	10	9'-2" - 20'-7"	-	-	
H1	5	16	6'-10"	-	-	
H2	5	16	7'-3"	-	-	
H3	5	4	12'-6"	7'-7"	4'-11"	
T1	4	42	4'-0"	2'-7"	1'-5"	
T2	4	6	20'-7"	-	-	
W1	4	20	1'-0" - 10'-2"	-	-	
W2	4	20	2'-8" - 7'-4"	-	-	
W3	5	46	12'-9" - 13'-10"	5'-5" - 10'-2"	2'-8" - 7'-4"	
W4	5	4	12'-9"	12'-5"	0'-4"	
W5	4	8	11'-8"	-	-	

REBAR = 1945 LB. CONCRETE = 13.16 CU. YARDS

SLOPE = 1 : 3

PIPE DIAMETER = 24" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	22	1'-5" - 6'-0"	-	-	
A2	5	6	5'-10" - 10'-9"	-	-	
H1	5	8	3'-2"	-	-	
H2	5	8	3'-9"	-	-	
H3	5	4	7'-3"	4'-1"	3'-2"	
T1	4	22	4'-0"	2'-7"	1'-5"	
T2	4	6	10'-9"	-	-	
W1	4	16	0'-11" - 5'-6"	-	-	
W2	4	10	2'-8" - 4'-0"	-	-	
W3	5	18	7'-9" - 8'-9"	3'-9" - 6'-1"	2'-8" - 4'-0"	
W4	5	4	5'-7"	5'-3"	0'-4"	

REBAR = 590 LB. CONCRETE = 4.29 CU. YARDS

PIPE DIAMETER = 30" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	26	1'-7" - 7'-6"	-	-	
A2	5	8	12'-11" - 5'-6"	-	-	
H1	5	10	3'-8"	-	-	
H2	5	8	4'-3"	-	-	
H3	5	4	8'-0"	4'-7"	3'-5"	
T1	4	26	4'-0"	2'-7"	1'-5"	
T2	4	6	12'-11"	-	-	
W1	4	16	1'-9" - 7'-2"	-	-	
W2	4	12	2'-9" - 4'-5"	-	-	
W3	5	22	8'-7" - 9'-10"	4'-2" - 7'-1"	2'-9" - 4'-5"	
W4	5	4	7'-5"	7'-1"	0'-4"	

REBAR = 785 LB. CONCRETE = 5.90 CU. YARDS

PIPE DIAMETER = 36" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	32	0'-11" - 9'-0"	-	-	
A2	5	9	6'-10" - 15'-2"	-	-	
H1	5	10	4'-2"	-	-	
H2	5	10	4'-9"	-	-	
H3	5	4	8'-9"	5'-1"	3'-8"	
T1	4	30	4'-0"	2'-7"	1'-5"	
T2	4	6	15'-2"	-	-	
W1	4	20	0'-11" - 8'-11"	-	-	
W2	4	16	2'-8" - 5'-10"	-	-	
W3	5	30	9'-3" - 11'-0"	4'-3" - 8'-4"	2'-8" - 5'-0"	
W4	5	4	9'-2"	8'-10"	0'-4"	

REBAR = 1060 LB. CONCRETE = 7.72 CU. YARDS

PIPE DIAMETER = 42" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	36	1'-2" - 10'-6"	-	-	
A2	5	11	6'-6" - 17'-5"	-	-	
H1	5	12	4'-8"	-	-	
H2	5	10	5'-3"	-	-	
H3	5	4	9'-6"	5'-7"	3'-11"	
T1	4	36	4'-0"	2'-7"	1'-5"	
T2	4	6	17'-5"	-	-	
W1	4	20	1'-9" - 10'-8"	-	-	
W2	4	18	2'-9" - 5'-5"	-	-	
W3	5	34	10'-1" - 12'-0"	4'-8" - 9'-3"	2'-9" - 5'-5"	
W4	5	4	11'-0"	10'-8"	0'-4"	

REBAR = 1315 LB. CONCRETE = 9.76 CU. YARDS

PIPE DIAMETER = 48" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	40	1'-4" - 12'-0"	-	-	
A2	5	12	7'-10" - 19'-8"	-	-	
H1	5	12	5'-2"	-	-	
H2	5	12	5'-9"	-	-	
H3	5	4	10'-3"	6'-1"	4'-2"	
T1	4	40	4'-0"	2'-7"	1'-5"	
T2	4	6	19'-8"	-	-	
W1	4	24	0'-11" - 12'-5"	-	-	
W2	4	22	2'-8" - 6'-0"	-	-	
W3	5	42	10'-9" - 13'-3"	4'-9" - 10'-7"	2'-8" - 6'-0"	
W4	5	4	12'-10"	12'-6"	0'-4"	

REBAR = 1660 LB. CONCRETE = 12.02 CU. YARDS

PIPE DIAMETER = 54" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	44	1'-7" - 13'-6"	-	-	
A2	5	14	7'-6" - 21'-11"	-	-	
H1	5	14	5'-8"	-	-	
H2	5	12	6'-3"	-	-	
H3	5	4	11'-0"	6'-7"	4'-5"	
T1	4	44	4'-0"	2'-7"	1'-5"	
T2	4	6	21'-11"	-	-	
W1	4	24	1'-9" - 14'-1"	-	-	
W2	4	24	2'-9" - 6'-5"	-	-	
W3	5	46	11'-7" - 14'-3"	5'-2" - 11'-6"	2'-9" - 6'-5"	
W4	5	4	14'-7"	14'-3"	0'-4"	

REBAR = 1960 LB. CONCRETE = 14.51 CU. YARDS

PIPE DIAMETER = 60" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	50	0'-11" - 15'-0"	-	-	
A2	5	15	8'-10" - 24'-1"	-	-	
H1	5	14	6'-2"	-	-	
H2	5	14	6'-9"	-	-	
H3	5	4	11'-9"	7'-1"	4'-8"	
T1	4	48	4'-0"	2'-7"	1'-5"	
T2	4	6	24'-1"	-	-	
W1	4	28	0'-11" - 15'-10"	-	-	
W2	4	28	2'-8" - 7'-0"	-	-	
W3	5	54	12'-3" - 15'-5"	5'-3" - 12'-9"	2'-8" - 7'-0"	
W4	5	4	16'-5"	16'-1"	0'-4"	

REBAR = 2370 LB. CONCRETE = 17.21 CU. YARDS

PIPE DIAMETER = 66" SLOPE = 1:3

BAR	SIZE	QUAN.	LENGTH	a	b	SHAPE
A1	5	54	1'-1" - 16'-6"	-	-	
A2	5	17	8'-6" - 26'-4"	-	-	
H1	5	16	6'-8"	-	-	
H2	5	14	7'-3"	-	-	
H3	5	4	12'-6"	7'-7"	4'-11"	
T1	4	54	4'-0"	2'-7"	1'-5"	
T2	4	6	26'-4"	-	-	
W1	4	28	1'-9" - 17'-7"	-	-	
W2	4	30	2'-9" - 7'-5"	-	-	
W3	5	58	13'-1" - 16'-6"	5'-8" - 13'-9"	2'-9" - 7'-5"	
W4	5	4	18'-2"	17'-10"	0'-4"	

REBAR = 2730 LB. CONCRETE = 20.13 CU. YARDS

NOTE:

1. QUANTITIES SHOWN ARE FOR ONE END OF THE CULVERT.
2. INLET AND OUTLET ENDS ARE THE SAME UNLESS SHOWN OTHERWISE.
3. QUANTITIES INCLUDE WINGWALLS, TOEWALLS, APRONS AND HEADWALLS.
4. H_w = 18" FOR ALL LENGTHS AND QUANTITIES SHOWN.

WORK ORDER:	
UP ENGINEER:	
DESIGN BY:	
DRAWN BY:	
SCALE: NONE	
C.E. NO. 114198 SHEET 3 OF 3	REINFORCING SCHEDULES

UNION PACIFIC RAILROAD — OFFICE OF CHIEF ENGINEER DESIGN

TYPE A CULVERT HEADWALL

FILE NAME: pr\station\dgn\std\headwall.std

Plotted on: Tuesday, January 04, 2005 8:26:55 AM
JGraham Plot Queue: \\cbsw100\KC029049-PS
Plot Scale: 1.000000\1.000000 Pen Table: m:\jobs\29049\TechProd\Railroad\plots\fullsize.pen
Design Filename: m:\jobs\29049\TechProd\Railroad\Drawings\Plan_B\Details\UP_Type_A_Culvert3.dgn

This sheet designed by:

HNTB
ARCHITECTS ENGINEERS PLANNERS

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

CITY OF WICHITA

WICHITA CENTRAL CORRIDOR
UPRR STANDARD
TYPE A CULVERT HEADWALL
SHEET 3 OF 3

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.