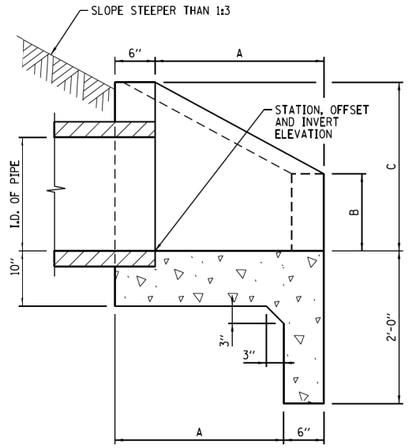
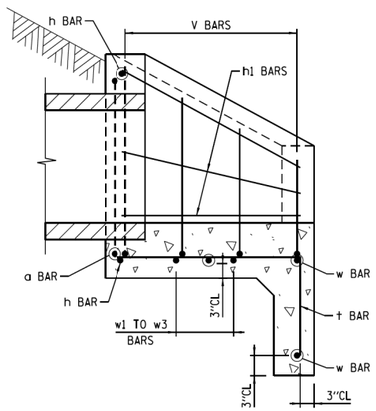
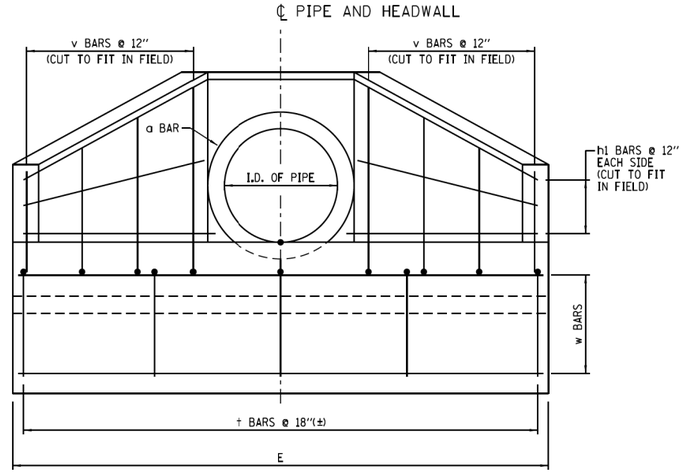


SECTION A-A
(DIMENSIONS)



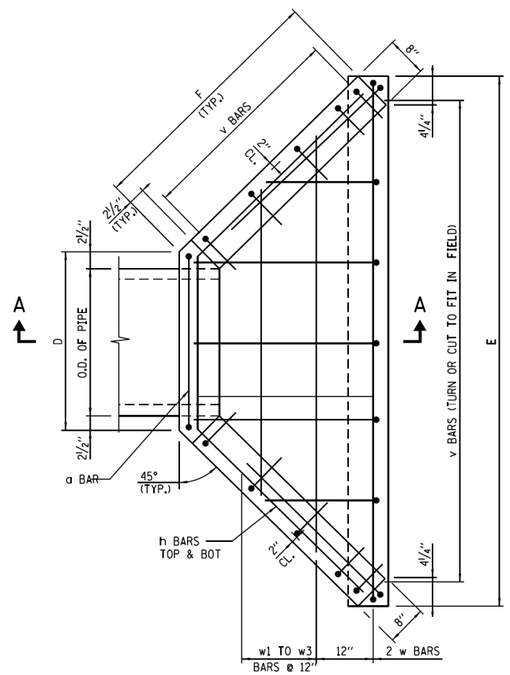
SECTION A-A
(REINFORCEMENT)



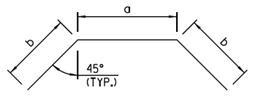
FRONT ELEVATION

NOTES:

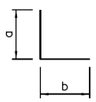
1. SLOPED HEADWALL TYPES I AND II SHALL BE CONSTRUCTED FLUSH WITH EXISTING OR PROPOSED SLOPE.
2. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
3. ALL REINFORCEMENT BARS SHOWN SHALL BE EPOXY COATED.
4. BAR BENDING DETAILS ARE DIMENSIONED OUT TO OUT OF BARS.
5. ALL EXPOSED EDGES SHALL HAVE A ¾"-45° CHAMFER. CHAMFER ON VERTICAL EDGES SHALL BE CONTINUED A MINIMUM OF ONE FOOT BELOW THE FINISHED GROUND LINE.
6. COVER FROM THE FACE OF CONCRETE TO FACE OF REINFORCEMENT BAR SHALL BE 3" FOR SURFACES FORMED AGAINST EARTH AND 2" FOR ALL OTHER SURFACES UNLESS OTHERWISE SHOWN.
7. CARE SHALL BE EXERCISED IN REMOVING ANY LENGTH OF EXISTING PIPE SO THE REMAINING PIPE IS UNDAMAGED AND FULLY FUNCTIONING.
8. ALL SLOPES ARE EXPRESSED AS UNITS OF VERTICAL DISPLACEMENT TO UNITS OF HORIZONTAL DISPLACEMENT.
9. TYPES I AND II HEADWALLS TO BE USED ONLY FOR SLOPES STEEPER THAN 1:3. DIMENSIONS AND QUANTITIES ARE BASES ON A SLOPE 1:2.
10. I.D. DENOTES INSIDE DIAMETER OF PIPE. O.D. DENOTES OUTSIDE DIAMETER OF PIPE.



PLAN

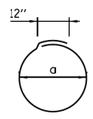


h BARS



v - BARS

t - BARS



a BARS

TABLE OF DIMENSIONS AND QUANTITIES FOR ONE HEADWALL

INSIDE DIA.OF PIPE	SLOPE OF FILL	DIMENSIONS						CL. SI CONC.	REINF. BARS.
		A	B	C	D	E	F		
21"	1:3	2'-6"	1'-2"	2'-6"	2'-8"	7'-11½"	3'-6½"	1.6 C.Y.	75 #
24"	1:3	2'-10"	1'-4"	2'-9"	2'-11"	8'-10½"	4'-2½"	2.1 C.Y.	80 #
27"	1:3	3'-2"	1'-8"	3'-0"	3'-3"	9'-7"	4'-5¾"	2.0 C.Y.	100 #
30"	1:3	3'-4"	1'-7"	3'-3"	3'-6"	10'-5½"	4'-11 "	2.7 C.Y.	120 #
36"	1:3	4'-0"	1'-10"	3'-10"	4'-1"	12'-4½"	5'-10½"	3.6 C.Y.	145 #

TABLE OF REINFORCING STEEL FOR ONE HEADWALL

BAR		21" I.D. PIPE				24" I.D. PIPE				27" I.D. PIPE				30" I.D. PIPE				36" I.D. PIPE			
MARK	SIZE	NO.	LENGTH	a	b	NO.	LENGTH	a	b	NO.	LENGTH	a	b	NO.	LENGTH	a	b	NO.	LENGTH	a	b
a	#4	1	9'-3"	31½"	-	1	10'-2"	35"	-	1	11'-1"	38½"	-	1	12'-0"	42"	-	1	13'-10"	49"	-
h	#4	2	8'-7"	2'-3"	3'-2"	2	10'-2"	2'-6"	3'-10"	2	11'-0"	2'-10"	4'-1"	2	9'-5"	3'-1"	3'-2"	2	11'-0"	3'-8"	4'-1"
h1	#4	4	3'-2"	-	-	4	3'-10"	-	-	4	4'-2"	-	-	5	4'-7"	-	-	6	5'-6"	-	-
v	#4	6	4'-0"	1'-0"	3'-0"	8	4'-3"	1'-0"	3'-3"	8	4'-6"	1'-0"	3'-6"	10	4'-9"	1'-0"	3'-9"	10	5'-4"	1'-0"	4'-4"
†	#4	6	4'-0"	1'-6"	2'-6"	6	4'-3"	1'-6"	2'-9"	6	4'-8"	1'-6"	3'-1"	7	4'-10"	1'-6"	3'-4"	8	5'-4"	1'-6"	3'-10"
w	#4	2	7'-7"	-	-	2	8'-6"	-	-	2	10'-1"	-	-	2	10'-0"	-	-	2	12'-0"	-	-
w1	#4	1	6'-0"	-	-	1	6'-11"	-	-	1	7'-11"	-	-	1	8'-7"	-	-	1	10'-6"	-	-
w2	#4	1	4'-0"	-	-	1	4'-11"	-	-	1	5'-11"	-	-	1	6'-7"	-	-	1	8'-6"	-	-
w3	#4	-	-	-	-	-	-	-	-	-	-	-	-	1	4'-7"	-	-	1	7'-6"	-	-

SHEET 1 OF 2

HEADWALL - TYPE I

(PIPE DIAMETER ≤ 36")

Paul Kovacs
APPROVED..... CHIEF ENGINEER DATE 2-7-2012

Illinois Tollway
Open Roads for a Faster Future

DATE	REVISIONS
2-7-2012	ADDED 21" AND 27" DIA. PIPE
	AND REVISED TABLE QUANTITIES

HEADWALLS
TYPE I AND II

STANDARD B30-01

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

FILE NAME = $FILES$	USER NAME = default	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = H:1"=10' V:1"=5'	CHECKED - RGR	REVISED -
	PLOT DATE = 6/18/2012	DATE - 6/19/2012	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOLLWAY STANDARD DRAWING

SCALE: | SHEET NO. N/A OF N/A SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	49-1-R-1	LAKE	677	631
		CONTRACT NO. 60L77		
	ILLINOIS FED. AID PROJECT			

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