

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
303	I29K	WINNEBAGO	585	268
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

DIMENSIONS AND QUANTITIES IN ONE HEADWALL TYPE III 4:1 SLOPE TWIN PIPE CULVERT

PIPE DIA.	DIMENSIONS										NO. OF SPACES	CONCRETE QUANTITY (CU. YD.)	REIN. STEEL (LBS.)
	A	B	C	D	E	F	G	H	I	J			
18"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	2	2.9	238
24"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	2	4.8	417
30"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	2	7.1	675
36"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	2	9.7	911
42"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	2	12.3	788
48"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	2	15.1	890

DIMENSIONS AND QUANTITIES IN ONE HEADWALL TYPE III 6:1 SLOPE TWIN PIPE CULVERT

PIPE DIA.	DIMENSIONS										NO. OF SPACES	CONCRETE QUANTITY (CU. YD.)	REIN. STEEL (LBS.)	
	A	B	C	D	E	F	G	H	I	J				
18"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	1	2	5.1	372
24"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	1	3.7	476	
30"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	1	5.1	642	
36"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	1	6.7	802	
42"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	1	8.3	979	
48"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	1	10.0	1126	

DIMENSIONS AND QUANTITIES IN ONE HEADWALL TYPE III 10:1 SLOPE TWIN PIPE CULVERT

PIPE DIA.	DIMENSIONS										NO. OF SPACES	CONCRETE QUANTITY (CU. YD.)	REIN. STEEL (LBS.)	
	A	B	C	D	E	F	G	H	I	J				
18"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	1	1	6.8	476
24"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	1	1	10.2	738
30"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	1	1	14.7	1059
36"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	1	1	20.0	1540
42"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	1	1	26.1	1774
48"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	1	1	33.1	2392

TABLE OF BARS IN ONE HEADWALL TYPE III 4:1 SLOPE TWIN PIPE CULVERT

PIPE DIA.	NO. 4 REINFORCING BARS			
	MARK	TYPE	NO.	LENGTH
18"	1	1	2	11'-0"
	2	1	2	11'-0"
	3	1	2	11'-0"
	4	1	2	11'-0"
24"	1	1	2	15'-0"
	2	1	2	15'-0"
	3	1	2	15'-0"
	4	1	2	15'-0"
30"	1	1	2	19'-0"
	2	1	2	19'-0"
	3	1	2	19'-0"
	4	1	2	19'-0"
36"	1	1	2	23'-0"
	2	1	2	23'-0"
	3	1	2	23'-0"
	4	1	2	23'-0"
42"	1	1	2	27'-0"
	2	1	2	27'-0"
	3	1	2	27'-0"
	4	1	2	27'-0"
48"	1	1	2	31'-0"
	2	1	2	31'-0"
	3	1	2	31'-0"
	4	1	2	31'-0"

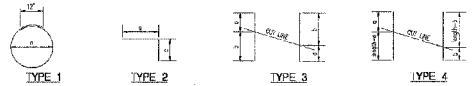
TABLE OF BARS IN ONE HEADWALL TYPE III 6:1 SLOPE TWIN PIPE CULVERT

PIPE DIA.	NO. 4 REINFORCING BARS			
	MARK	TYPE	NO.	LENGTH
18"	1	1	2	11'-0"
	2	1	2	11'-0"
	3	1	2	11'-0"
	4	1	2	11'-0"
24"	1	1	2	15'-0"
	2	1	2	15'-0"
	3	1	2	15'-0"
	4	1	2	15'-0"
30"	1	1	2	19'-0"
	2	1	2	19'-0"
	3	1	2	19'-0"
	4	1	2	19'-0"
36"	1	1	2	23'-0"
	2	1	2	23'-0"
	3	1	2	23'-0"
	4	1	2	23'-0"
42"	1	1	2	27'-0"
	2	1	2	27'-0"
	3	1	2	27'-0"
	4	1	2	27'-0"
48"	1	1	2	31'-0"
	2	1	2	31'-0"
	3	1	2	31'-0"
	4	1	2	31'-0"

TABLE OF BARS IN ONE HEADWALL TYPE III 10:1 SLOPE TWIN PIPE CULVERT

PIPE DIA.	NO. 4 REINFORCING BARS			
	MARK	TYPE	NO.	LENGTH
18"	1	1	2	11'-0"
	2	1	2	11'-0"
	3	1	2	11'-0"
	4	1	2	11'-0"
24"	1	1	2	15'-0"
	2	1	2	15'-0"
	3	1	2	15'-0"
	4	1	2	15'-0"
30"	1	1	2	19'-0"
	2	1	2	19'-0"
	3	1	2	19'-0"
	4	1	2	19'-0"
36"	1	1	2	23'-0"
	2	1	2	23'-0"
	3	1	2	23'-0"
	4	1	2	23'-0"
42"	1	1	2	27'-0"
	2	1	2	27'-0"
	3	1	2	27'-0"
	4	1	2	27'-0"
48"	1	1	2	31'-0"
	2	1	2	31'-0"
	3	1	2	31'-0"
	4	1	2	31'-0"

- NOTES:
1. THE V-BARS TYPE 3 AND TYPE 4 SHALL BE ORDERED FULL LENGTH AND CUT TO THE REQUIRED LENGTH AT THE V-BARS SHALL BE ORDERED IN THE ORDER SHOWN. THE V-BARS SHALL BE ORDERED IN THE ORDER SHOWN.
 2. THE LONG LEG OF THE V AND Y BARS SHALL BE VERTICAL.
 3. QUANTITIES ON THIS SHEET ARE BASED ON THE 4:1-10:1 SLOPE DESIGN.
 4. "S" = STRAIGHT BAR
 5. ALL REINFORCING BARS ARE #4 BARS



TWIN PIPE DESIGN

SHEET 3 OF 5

APPROVED: [Signature] DATE: 5-22-2004

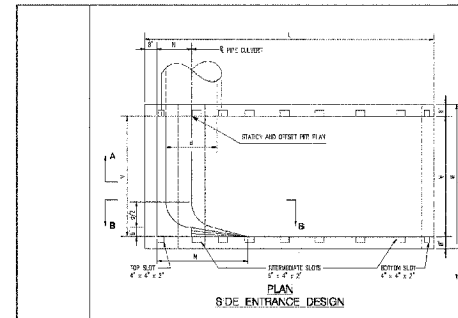
CTE ENGINEERS
CONSULTING ENGINEERS, INC.

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 BODEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

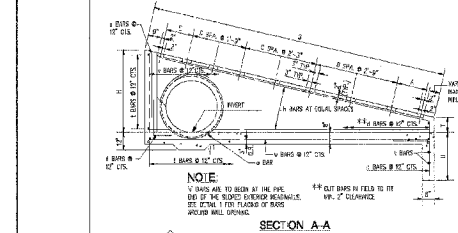
NO. DATE REVISION DESCRIPTION

STANDARD SD 04-18
HEADWALL TYPE III
FOR 4:1, 6:1, AND 10:1 SLOPES

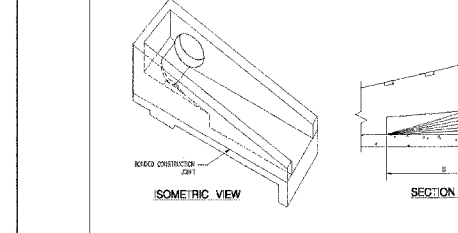
DRAWING NO. B18
CIP



PLAN SIDE ENTRANCE DESIGN



SECTION A-A



ISOMETRIC VIEW SECTION B-B

NOTES:

1. V-BARS ARE TO BE ORDERED BY THE PIPE. THE LONG LEG OF THE V AND Y BARS SHALL BE VERTICAL.
2. ALL REINFORCING BARS ARE #4 BARS.

DIMENSIONS AND QUANTITIES IN ONE HEADWALL TYPE III 4:1 SLOPE

PIPE DIA.	DIMENSIONS										NO. OF SPACES	CONCRETE QUANTITY (CU. YD.)	REIN. STEEL (LBS.)
	A	B	C	D	E	F	G	H	I	J			
18"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	2	2.8	244
24"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	2	4.1	368
30"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	2	5.9	527
36"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	2	7.8	704
42"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	2	10.0	884
48"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	2	12.8	1023

DIMENSIONS AND QUANTITIES IN ONE HEADWALL TYPE III 6:1 SLOPE

PIPE DIA.	DIMENSIONS										NO. OF SPACES	CONCRETE QUANTITY (CU. YD.)	REIN. STEEL (LBS.)	
	A	B	C	D	E	F	G	H	I	J				
18"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	1	1	4.1	368
24"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	1	1	6.1	549
30"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	1	1	8.4	754
36"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	1	1	11.0	984
42"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	1	1	14.0	1262
48"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	1	1	17.5	1583

DIMENSIONS AND QUANTITIES IN ONE HEADWALL TYPE III 10:1 SLOPE

PIPE DIA.	DIMENSIONS										NO. OF SPACES	CONCRETE QUANTITY (CU. YD.)	REIN. STEEL (LBS.)	
	A	B	C	D	E	F	G	H	I	J				
18"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	11'-0"	1	1	6.8	476
24"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	1	1	10.2	738
30"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	19'-0"	1	1	14.7	1059
36"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	23'-0"	1	1	20.0	1540
42"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	27'-0"	1	1	26.1	1774
48"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	31'-0"	1	1	33.1	2392

TABLE OF BARS IN ONE HEADWALL TYPE III 4:1 SLOPE

PIPE DIA.	NO. 4 REINFORCING BARS			
	MARK	TYPE	NO.	LENGTH
18"	1	1	2	11'-0"
	2	1	2	11'-0"
	3	1	2	11'-0"
	4	1	2	11'-0"
24"	1	1	2	15'-0"
	2	1	2	15'-0"
	3	1	2	15'-0"
	4	1	2	15'-0"
30"	1	1	2	19'-0"
	2	1	2	19'-0"
	3	1	2	19'-0"
	4	1	2	19'-0"
36"	1	1	2	23'-0"
	2	1	2	23'-0"
	3	1	2	23'-0"
	4	1	2	23'-0"
42"	1	1	2	27'-0"
	2	1	2	27'-0"
	3			