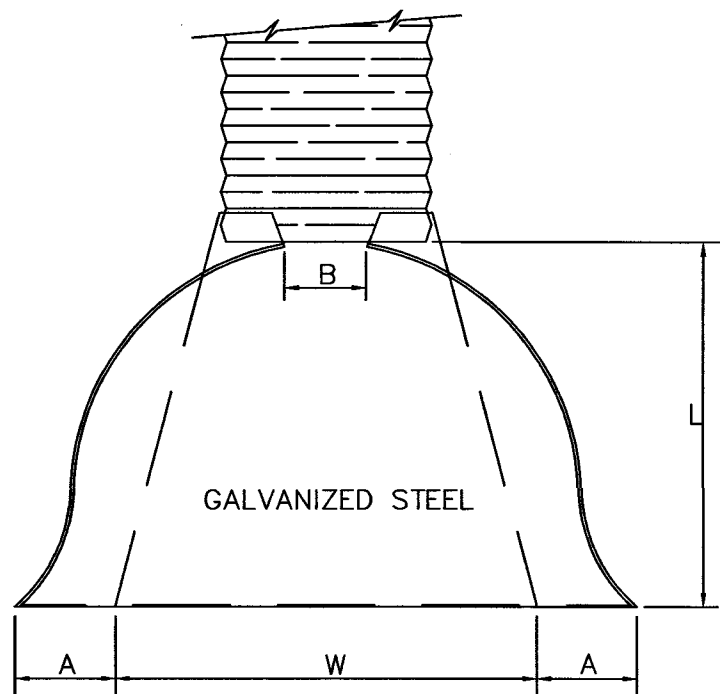
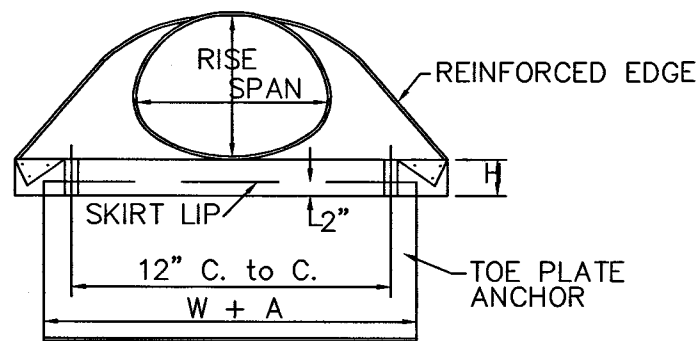


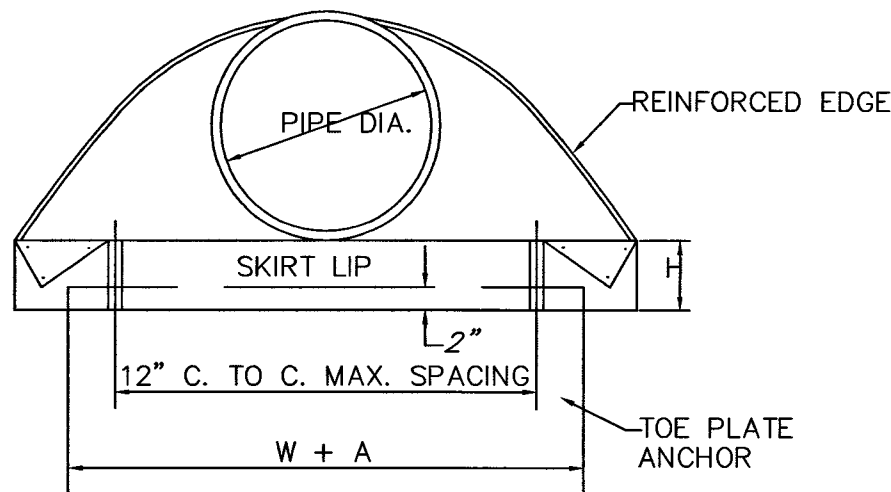
PLAN VIEW



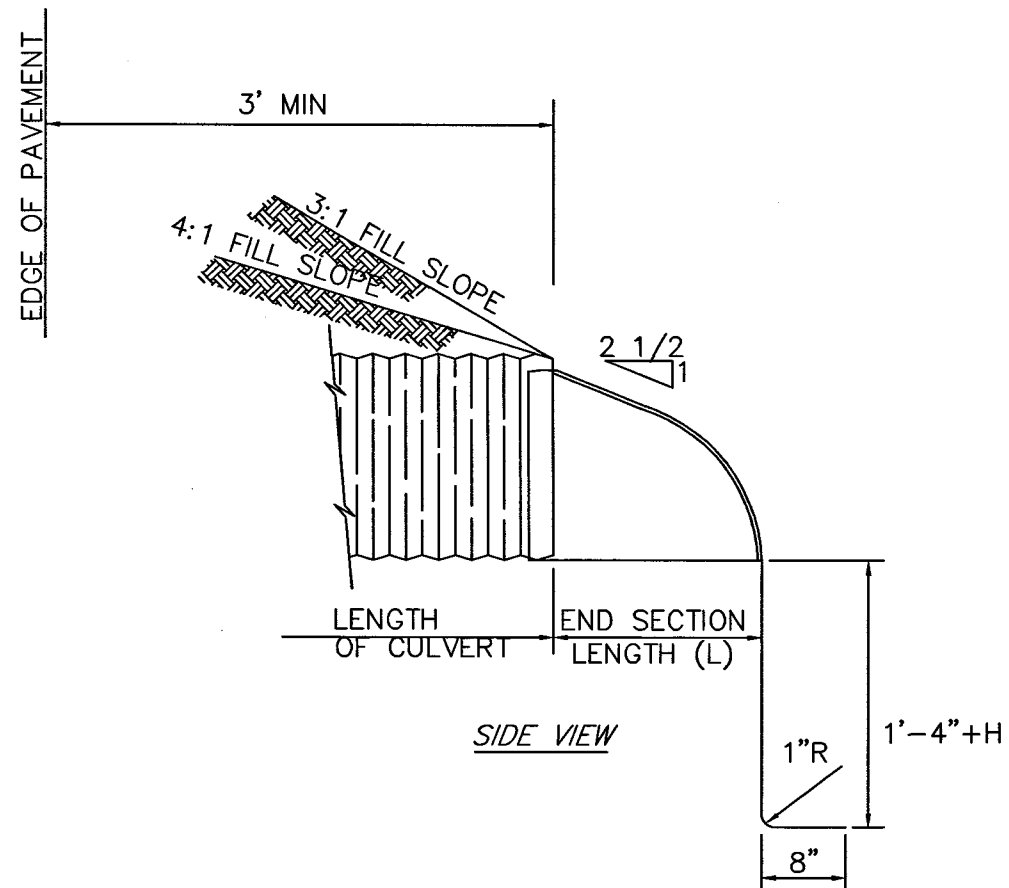
PLAN VIEW



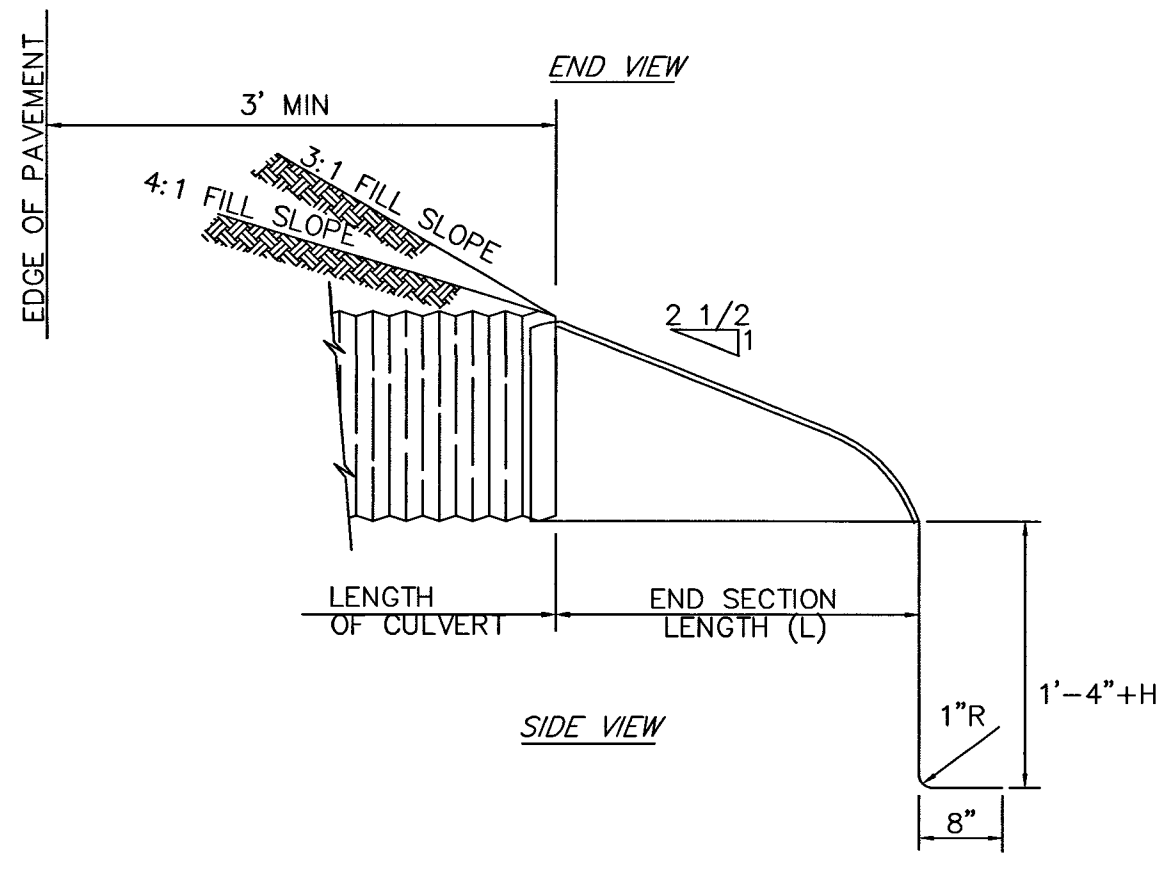
END VIEW



END VIEW



SIDE VIEW



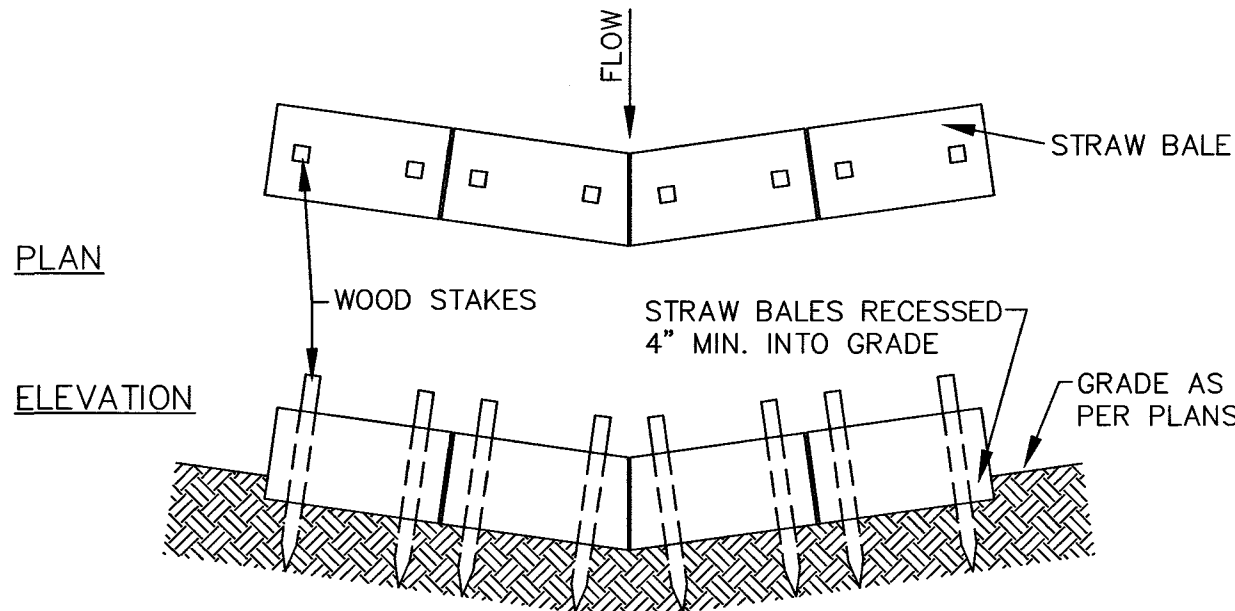
SIDE VIEW

DRIVEWAY CULVERT  
NOT TO SCALE

1. END SECTIONS AND TOE PLATE ANCHORS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS AS SET OUT IN THE INDOT STANDARD SPECIFICATIONS.
2. MULTIPLE PANEL BODIES SHALL HAVE LAP SEAMS WHICH SHALL BE TIGHTLY JOINTED WITH 3/8" DIA. GALVANIZED RIVETS OR BOLTS.
3. THE TOE PLATE ANCHOR SHALL BE CONSTRUCTED OF 0.138" THICKNESS GALVANIZED STEEL AND BE REQUIRED ON ALL STEEL PIPE END SECTIONS. IT SHALL BE MATCHED-PUNCHED TO FIT HOLES IN SKIRT LIP AND SUPPLIED LOOSE, COMPLETE WITH 3/8" DIA. GALVANIZED BOLTS.
4. PIMPLED CONNECTION BAND MAY BE USED TO CONNECT PIPE END SECTION TO HELICALLY CORRUGATED PIPE.
5. IF ALUMINUM ALLOY PIPE CULVERT IS FURNISHED, ALUMINUM ALLOY END SECTIONS SHALL ALSO BE USED AND ALL COMPONENT PARTS SHALL BE ALUMINUM ALLOY AS SET OUT IN THE STANDARD SPECIFICATIONS.
6. END SECTIONS WILL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EACH DRIVEWAY CULVERT REPLACEMENT COMPLETE IN PLACE AND ACCEPTED.

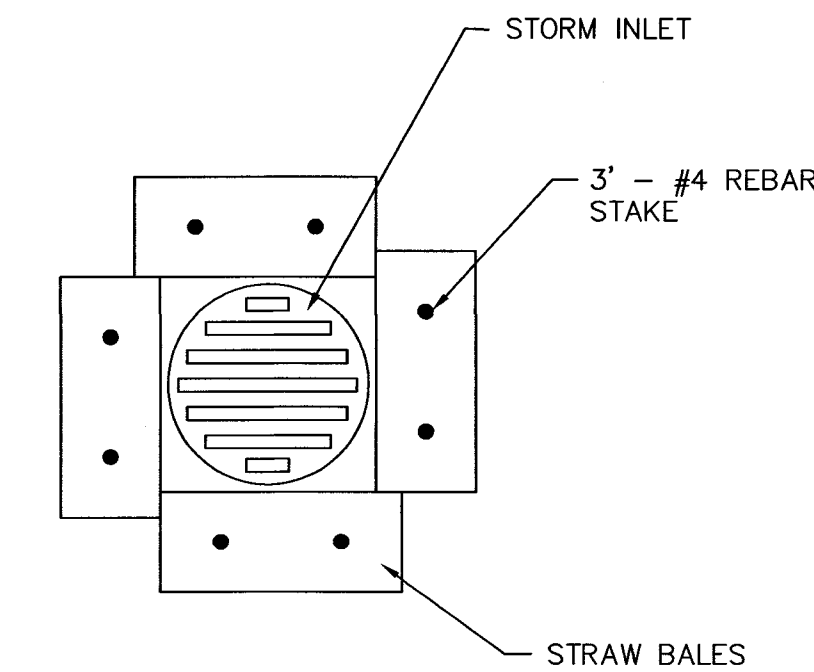
PIPE ARCH DIMENSIONS		T	DIMENSIONS						SLOPE	BODY
SPAN	RISE		A	B	H	L	W			
		in.	1"±	Max.	1"±	1.5"±	2"±	Approx.		
18	11	.064	7	9	6	19	30	2 1/2	1	Pc.
22	13	.064	7	10	6	23	36	2 1/2	1	Pc.
25	16	.064	8	12	6	28	42	2 1/2	1	Pc.
29	18	.064	9	14	6	32	48	2 1/2	1	Pc.
36	22	.079	10	16	6	39	60	2 1/2	1	Pc.
43	27	.079	12	18	8	46	75	2 1/2	1	Pc.

PIPE DIA.		T	DIMENSIONS						SLOPE	BODY
	in.		A	B	H	L	W			
			1"±	Max.	1"±	1.5"±	2"±	Approx.		
12	.064	6	6	6	21	24	2 1/2	1	Pc.	
15	.064	7	8	6	26	30	2 1/2	1	Pc.	
18	.064	8	10	6	31	36	2 1/2	1	Pc.	
21	.064	9	12	6	36	42	2 1/2	1	Pc.	
24	.064	10	13	6	41	48	2 1/2	1	Pc.	
30	.079	12	16	8	51	60	2 1/2	1	Pc.	
36	.079	14	19	9	60	72	2 1/2	2	Pc.	

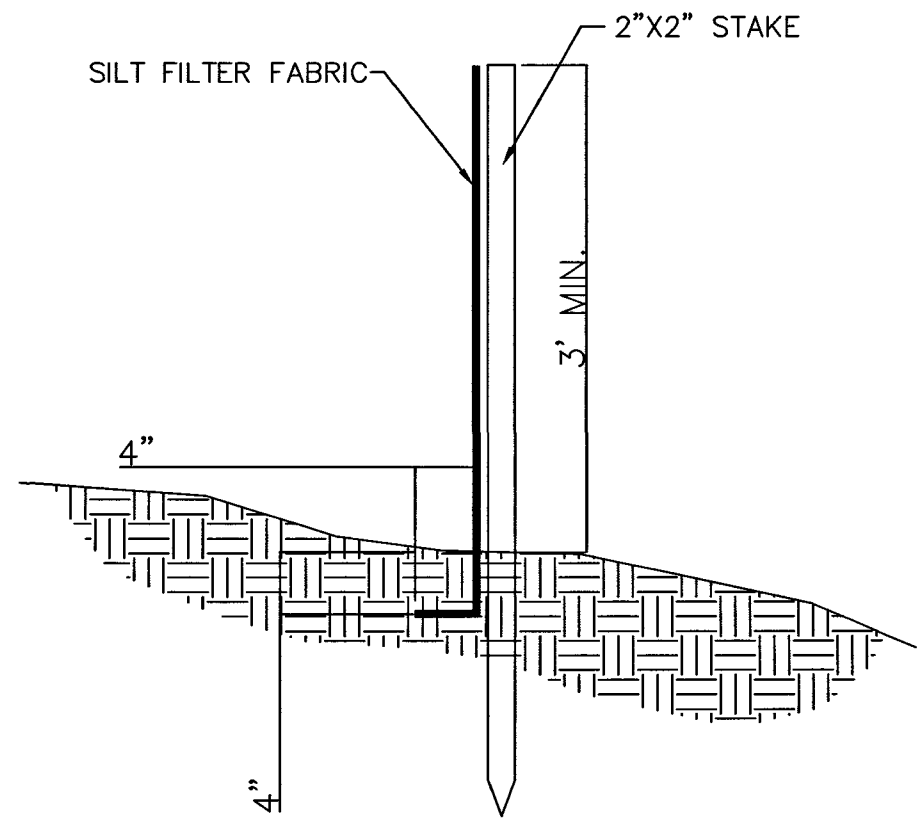


STRAW BALE FILTER DETAIL  
NOT TO SCALE

- NOTES:
1. ALL BALES SHOULD ALL BE EITHER WIRE-BOUND OR STRING-TIED. STRAW BALES SHOULD BE INSTALLED SO THAT BINDINGS ARE ORIENTED AROUND THE SIDES RATHER THAN ALONG THE TOPS AND BOTTOMS OF THE BALES (IN ORDER TO PREVENT DETERIORATION OF THE BINDINGS.)
  2. THE BARRIER SHOULD BE ENTRENCHED AND BACKFILLED. A TRENCH SHOULD BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF 4 INCHES. AFTER THE BALES ARE STAKED AND CHINKED, THE EXCAVATED SOIL SHOULD BE BACKFILLED AGAINST THE BARRIER. BACKFILL SOIL SHOULD CONFORM TO THE GROUND LEVEL ON THE DOWNHILL SIDE AND SHOULD BE BUILT UP TO 4 INCHES AGAINST THE UPHILL SIDE OF THE BARRIER.
  3. EACH BALE SHOULD BE SECURELY ANCHORED BY AT LEAST TWO STAKES OF WOOD OR STEEL DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHOULD BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER. STAKES SHOULD BE DRIVEN DEEP ENOUGH INTO THE GROUND TO SECURELY ANCHOR THE BALES.
  4. THE GAPS BETWEEN BALES SHOULD BE CHINKED (FILLED BY WEDGING) WITH STRAW TO PREVENT WATER FROM ESCAPING BETWEEN THE BALES.
  5. INSPECTION SHOULD BE FREQUENT AND REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED.
  6. STRAW BALE BARRIERS SHOULD BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS, BUT NOT BEFORE THE UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED.
  7. IN SHEET FLOW APPLICATIONS, BALES SHOULD BE PLACED IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
  8. IN CHANNEL FLOW APPLICATIONS, BALES SHOULD BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PERPENDICULAR TO THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER. THE BARRIER SHOULD BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE TO ASSURE THAT SEDIMENT LADEN RUNOFF WILL BE TRAPPED.



INLET PROTECTION  
N.T.S.



SILT FENCE DETAIL  
N.T.S.

SEASONAL SOIL PROTECTION CHART

STABILIZATION PRACTICE	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	OCT.	NOV.	DEC.
PERMANENT SEEDING	A											
DORMANT SEEDING	B											
TEMPORARY SEEDING	C											
SODDING	F											
MULCHING	G											

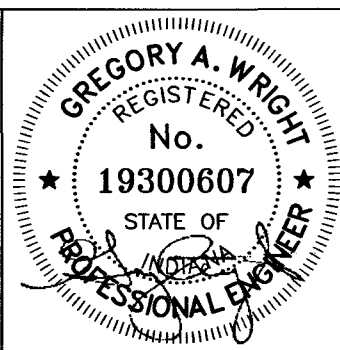
- A = KENTUCKY BLUEGRASS 40 LBS/ACRE; CREEPING RED FESCUE 40 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 20 LBS/ACRE.  
B = KENTUCKY BLUEGRASS 60 LBS/ACRE; CREEPING RED FESCUE 60 LBS/ACRE; PLUS 2 TONS STRAW MULCH/ACRE, OR ADD ANNUAL RYEGRASS 30 LBS/ACRE.  
C = SPRING OATS 3 BUSHEL/ACRE  
D = WHEAT OR RYE 2 BUSHEL/ACRE  
E = ANNUAL RYEGRASS 40 LBS/ACRE. (1 LB/1000 SQ. FT.)  
F = SOD  
G = STRAW MULCH 2 TONS/ACRE  
\*////\* IRRIGATION NEEDED DURING JUNE, JULY, AND/OR SEPTEMBER.  
\*\* IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.

NOTES:

NO.	DESCRIPTION	DATE	BY
1	AS-BUILT	5/2004	MSB
REVISIONS			

HOOSIER HILLS REGIONAL  
WATER DISTRICT  
DIVISION "F" WATERWORKS SYSTEM IMPROVEMENTS  
CONTRACT F-3  
DETAILS

GRW PROJECT NO. 2745-04



**GRW Engineers, Inc.**  
Engineers, Architects, Planners  
INDIANAPOLIS, INDIANA  
LOUISVILLE & LEXINGTON, KENTUCKY  
CINCINNATI, OHIO  
NASHVILLE, TENNESSEE  
ARLINGTON, TEXAS

DRAWN: BJD	DATE: JULY 2002
FILE NAME: SHT.599	SCALE: AS NOTED
CHECKED:	SHEET NO. 599
APPROVED:	