

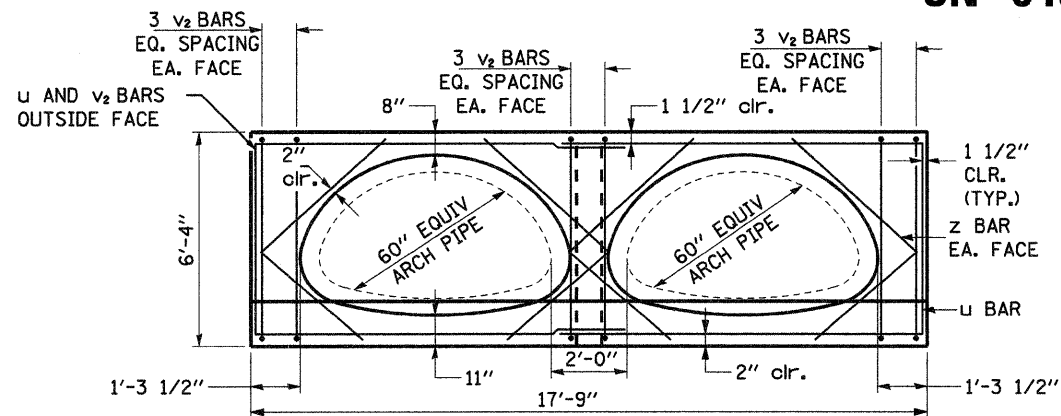
GRATED CULVERT EXTENSION, NO. 1

SN 043-1041 - RT & LT STA. 897+77.46 (IL RTE 78)

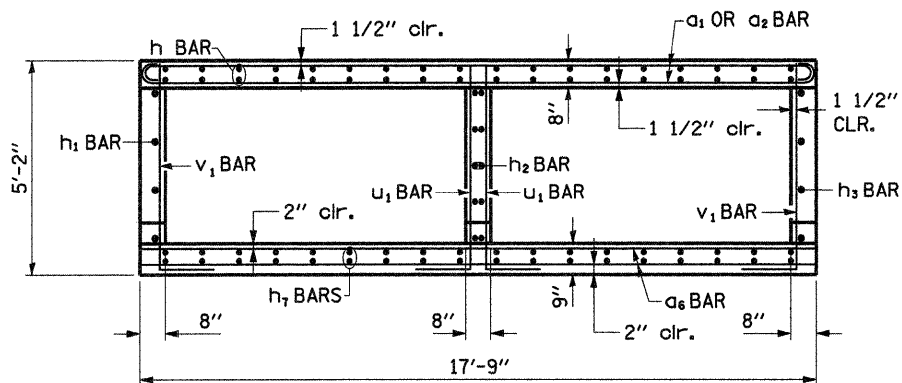
CULVERT @ 45° SKEW TO RDWY

BILL OF BARS - ONE STRUCTURE
(TOTAL OF TWO REQUIRED) (FOR INFORMATION ONLY)

BAR	NO.	SIZE	LENGTH	SHAPE
a	3	#4	24'-9"	▬▬▬
a ₁	30	#6	18'-11"	▬▬▬
a ₂	6	#6	18'-9"	▬▬▬
a ₅	18	#5	17'-10"	▬▬▬
a ₆	54	#5	17'-5"	▬▬▬
d	26	#4	5'-0"	└┘
d ₁	52	#4	5'-3"	└┘
f	36	#4	3'-6"	└┘
h	18	#5	25'-0"	▬▬▬
h ₁	4	#5	21'-0"	▬▬▬
h ₂	8	#5	12'-6"	▬▬▬
h ₃	4	#5	4'-0"	▬▬▬
h ₄	6	#6	24'-8"	▬▬▬
h ₅	9	#4	25'-3"	▬▬▬
h ₆	2	#4	25'-11"	▬▬▬
h ₇	36	#5	26'-0"	▬▬▬
h ₈	18	#5	24'-0"	▬▬▬
s	26	#4	4'-11"	└┘
u	6	#6	31'-7"	▬▬▬
u ₁	32	#4	6'-6"	└┘
v	12	#4	6'-5"	▬▬▬
v ₁	31	#4	6'-6"	▬▬▬
v ₂	18	#4	7'-7"	▬▬▬
z	8	#4	8'-3"	└┘



SECTION B-B
(REINFORCEMENT DETAIL)



SECTION C-C
(REINFORCEMENT DETAIL)

GENERAL NOTES:

THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER "EACH" FOR GRATED CULVERT EXTENSION, NO. 1 AND THIS WORK SHALL INCLUDE THE GALVANIZED PIPE, ANCHOR PLATES, & CAPS, CONCRETE STRUCTURES, REINFORCEMENT BARS, ANCHOR RODS, EXPANSION BOLTS, BOLTS, NUTS, WASHERS, INSTALLATION ON THE PROPOSED CULVERT, PRE-FORMED JOINT FILLER, PIPE GRATING, EARTH EXCAVATION AND DIVERTING WATER WHERE REQUIRED, AND ANY NECESSARY GRADING TO FIT THE GRATED CULVERT EXTENSION AS SHOWN IN THE CROSS SECTIONS OR TO SLOPE.

CONCRETE STRUCTURES SHALL BE CONSTRUCTED ACCORDING TO APPLICABLE PORTIONS OF SECTION 503. ONLY CLASS SI CONCRETE SHALL BE USED. EXPOSED EDGES SHALL BE BEVELED 3/4".

SLOPE FLOW LINE FOR END SECTION IS THE SAME RATE AS THE FLOW LINE OF THE PIPE.

BOLTS, NUTS, AND WASHERS SHALL BE IN ACCORDANCE WITH ARTICLE 1006.08 OF THE STANDARD SPECIFICATION AND SHALL BE GALVANIZED. ALL BOLTS SHALL HAVE WASHERS AT EACH END.

STEEL PIPES SHALL CONFORM TO A.S.T.M. A-53 (TYPE E OR S) GRADE B, SCHEDULE 40, AND SHALL BE GALVANIZED CONFORMING TO A.S.T.M. A-53. CONTRACTOR SHALL FIELD VERIFY PIPE LENGTH.

STEEL PLATES SHALL CONFORM TO AASHTO M-270, GR 36 AND SHALL BE GALVANIZED CONFORMING TO AASHTO M-111.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706 GR. 60 (IL MODIFIED).

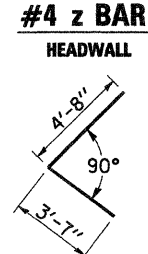
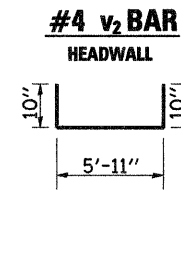
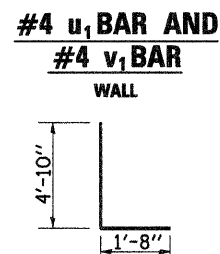
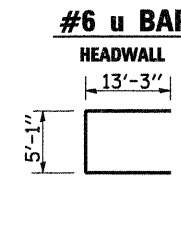
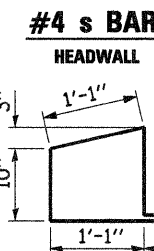
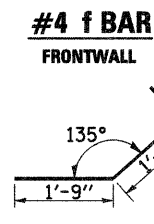
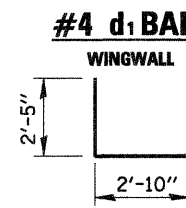
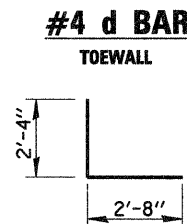
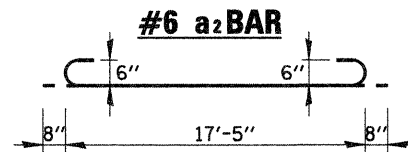
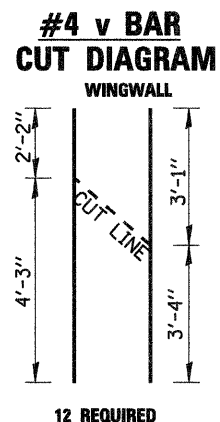
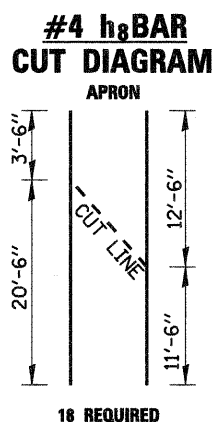
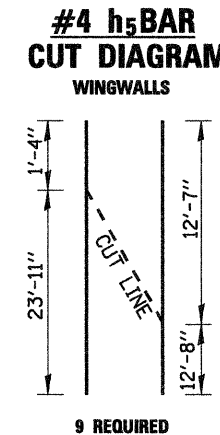
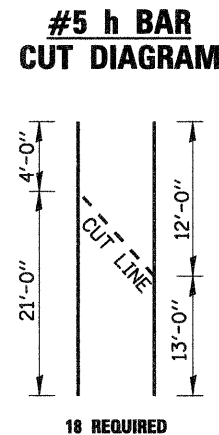
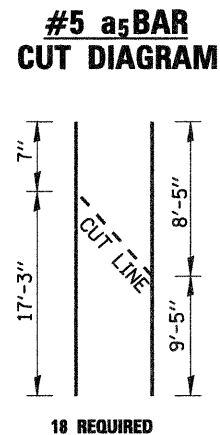
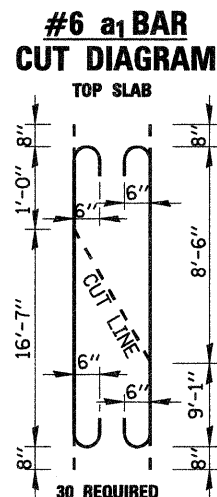
SEE PLAN AND PROFILE SHEET FOR MORE INFORMATION.

SEE CROSS SECTION SHEET FOR MORE INFORMATION INCLUDING INVERT ELEVATION.

GRATING DESIGN CONFORMS TO AASHTO ROADSIDE DESIGN GUIDE ART. 3.4.2.1.

ALL DIMENSIONS ARE TO BE VERIFIED IN THE FIELD.

ANCHOR RODS SHALL BE FABRICATED IN ACCORDANCE WITH ARTICLE 1006.09 AND INSTALLED IN ACCORDANCE WITH ARTICLE 521.06.



MINIMUM BAR LAP

- #4 = 1'-8"
- #5 = 2'-2"
- #6 = 2'-7"
- #7 = 3'-5"

BILL OF MATERIALS
GRATED CULVERT EXTENSION, NO. 1

DESCRIPTION	UNIT	QTY.
CONCRETE STRUCTURES	CU YD	38.3
REINFORCEMENT BARS	LB	6,420
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	3 AT 18'-1 1/2"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	2 AT 16'-5"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	2 AT 14'-3"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	2 AT 12'-1 1/2"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	2 AT 9'-11 3/4"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	2 AT 7'-10"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	2 AT 5'-8"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	2 AT 3'-5 1/4"
4" GALVANIZED STEEL PIPE, SCH 40	FOOT	1 AT 1'-4 1/2"
10 1/4" X 4 1/2" X 3/8" GALV. STEEL PLATE	EACH	15
10" X 6" X 1/2" GALV. STEEL PLATE	EACH	15
5" X 4 1/2" X 3/8" GALV. STEEL PLATE	EACH	15
3" X 3" X 1/4" GALV. STEEL PLATE	EACH	30
5 1/2" X 4 1/2" X 3/8" GALV. STEEL PLATE	EACH	22
6" X 6" X 1/2" GALV. STEEL PLATE	EACH	11
14" X 4" X 1/2" GALV. STEEL PLATE	EACH	10
3/4" X 7 1/2" GALV. STEEL BOLTS	EACH	26
3/4" X 10" GALV. STEEL BOLTS	EACH	15
EXPANSION BOLTS 1/2" DIA.	EACH	20
ANCHOR RODS 3/4" DIA. X 12"	EACH	11

COMPANY NAME: SEC GROUP, INC.
 PROJECT CONTACT: ROBERT DAVIES
 CLIENT: JODAVIES
 DATE PLOTTED: 8/4/2009 10:02:37 AM
 FILE NAME: IL-78-09
 PLOT DRIVER: pdf.plt
 PEN TABLE: Structure.tbl



USER NAME = whood	DESIGNED - MGH	REVISIONS -
PLOT SCALE =	DRAWN - WJH	REVISIONS -
PLOT DATE = 8/4/2009	CHECKED - RGD	REVISIONS -
	DATE - 4/22/2009	REVISIONS -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GRATED CULVERT EXTENSION, NO. 1 RT & LT STA. 897+77.46
SHEET 3 OF 3

F.A.P. RTE. 650	SECTION 104T-2	COUNTY JODAVIES	TOTAL SHEETS 53	SHEET NO. 27
FED. ROAD DIST. NO. ILLINOIS			CONTRACT NO. 64C79	