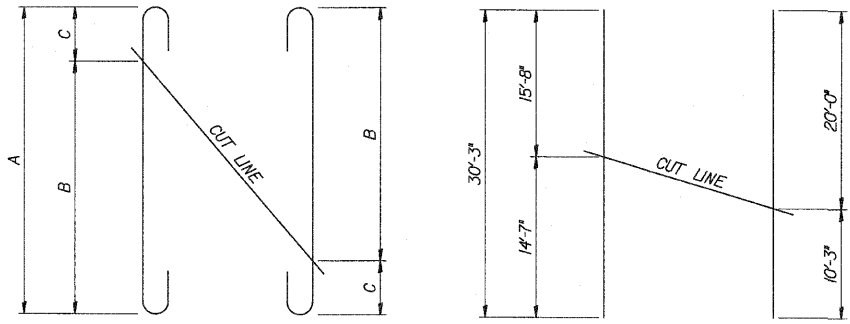


BILL OF MATERIAL

Bar No.	Size	Length	Shape		
a1	3/8	7	12'-10"		
a2	1/2	11	14'-4"		
a3	1/2	11	14'-8"		
a4	1/2	11	15'-1"		
a5	1/2	11	15'-2"		
a6	1/2	11	15'-2"		
a7	1/2	11	15'-2"		
a8	1/2	11	15'-2"		
a9	1/2	11	15'-2"		
a10	1/2	11	15'-2"		
a11	1/2	11	15'-2"		
a12	1/2	11	15'-2"		
a13	1/2	11	15'-2"		
a14	1/2	11	15'-2"		
a15	1/2	11	15'-2"		
a16	1/2	11	15'-2"		
a17	1/2	11	15'-2"		
a18	1/2	11	15'-2"		
a19	1/2	11	15'-2"		
a20	1/2	11	15'-2"		
a21	1/2	11	15'-2"		
a22	1/2	11	15'-2"		
a23	1/2	11	15'-2"		
d	1/2	4	4'-5"		
d1	1/2	4	4'-8"		
d2	1/2	4	3'-3"		
d3	1/2	4	11'-0"		
d4	1/2	4	12'-10"		
d5	1/2	4	11'-2"		
d6	1/2	4	3'-4"		
d7	1/2	4	3'-6"		
d8	1/2	4	4'-0"		
d9	1/2	4	4'-10"		
d10	1/2	4	6'-10"		
d11	1/2	4	5'-4"		
d12	1/2	4	4'-0"		
d13	1/2	4	4'-4"		
h	1/2	6	30'-3"		
h1	1/2	6	10'-3"		
h2	1/2	6	20'-0"		
h3	1/2	6	4'-1"		
h4	1/2	6	13'-7"		
h5	1/2	6	27'-10"		
h6	1/2	6	14'-8"		
h7	1/2	6	14'-1"		
h8	1/2	6	14'-4"		
h9	1/2	6	16'-11"		
h10	1/2	6	3'-9"		
h11	1/2	6	7'-11"		
h12	1/2	6	5'-3"		
h13	1/2	6	9'-6"		
h14	1/2	6	6'-9"		
h15	1/2	6	11'-0"		
h16	1/2	6	11'-2"		
h17	1/2	6	15'-11"		
h18	1/2	6	5'-3"		
h19	1/2	6	9'-5"		
h20	1/2	6	3'-9"		
h21	1/2	6	3'-4"		
h22	1/2	6	20'-5"		
h23	1/2	6	15'-3"		
h24	1/2	6	5'-1"		
h25	1/2	6	4'-0"		
h26	1/2	6	19'-4"		
h27	1/2	6	15'-4"		
h28	1/2	6	3'-8"		
h29	1/2	6	25'-3"		
h30	1/2	6	25'-3"		
h31	1/2	6	25'-3"		
h32	1/2	6	25'-3"		
h33	1/2	6	8'-2"		
v	1/2	4	5'-1"		
v1	1/2	4	8'-5"		
v2	1/2	4	2'-10"		
v3	1/2	4	6'-3"		
v4	1/2	4	9'-4"		
v5	1/2	4	11'-1"		
v6	1/2	4	2'-6"		
v7	1/2	4	2'-9"		
v8	1/2	4	6'-1"		
v9	1/2	4	7'-5"		
v10	1/2	4	8'-2"		
v11	1/2	4	8'-2"		
v12	1/2	4	6'-10"		
v13	1/2	4	6'-2"		
v14	1/2	4	5'-9"		
v15	1/2	4	4'-11"		
v16	1/2	4	5'-9"		
v17	1/2	4	5'-2"		
v18	1/2	4	4'-10"		
x	1/2	4	5'-5"		
x1	1/2	4	8'-8"		
x2	1/2	4	12'-8"		
x3	1/2	4	3'-10"		
x4	1/2	4	6'-10"		
CONCRETE BOX CULVERTS				CU. YD.	1309
REINFORCEMENT BARS				POUND	25,966

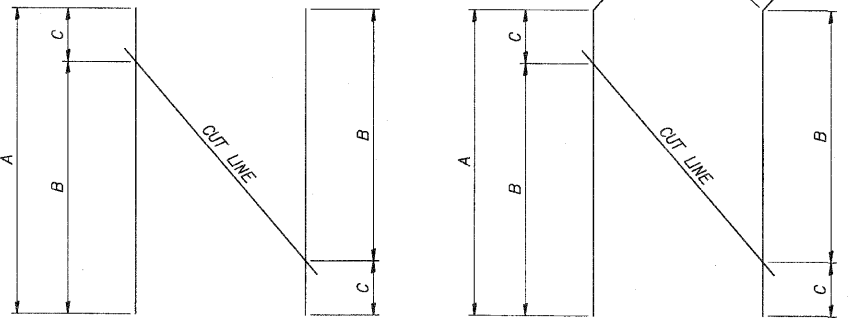


BARS a1, a6 OR all
a1-16 BARS-1 SET
a6-20 BARS-1 SET
all-3 BARS-2 SETS

BARS h
5 BARS-1 SET

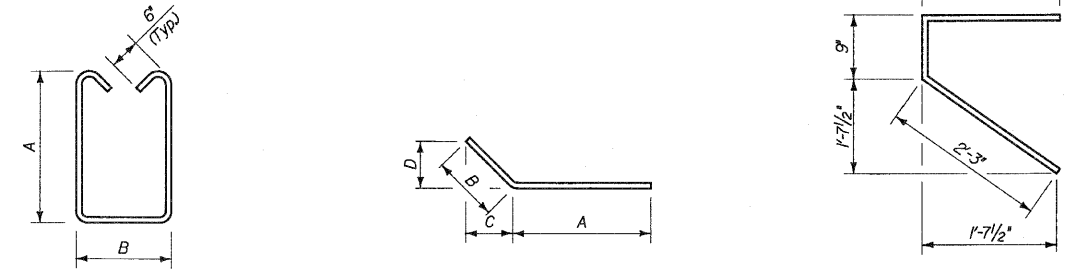


BARS a3 THRU a6, a8, a10 OR all BARS d, d2, d6, d7, d10 OR d13 BAR d1

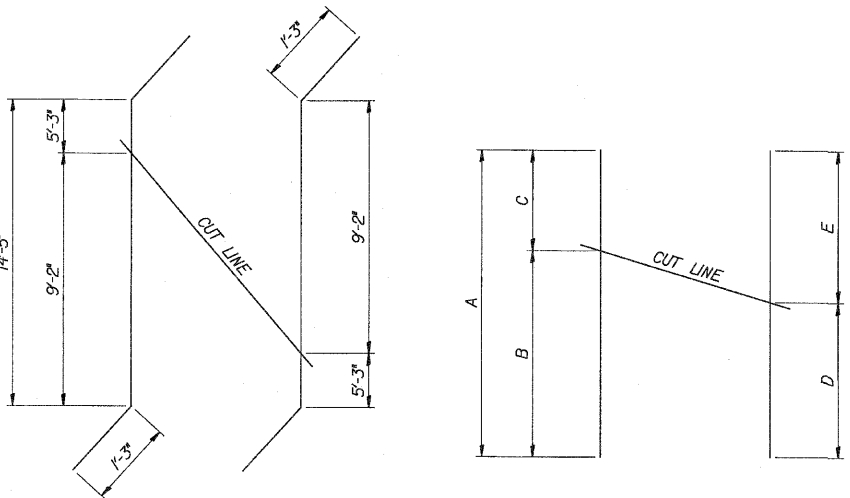


BARS h3 OR h26
h3-11 BARS-1 SET
h26-9 BARS-1 SET

BARS h8, h17 OR h65
h8-11 BARS-2 SETS
h17-11 BARS-2 SETS
h65-11 BARS-2 SETS

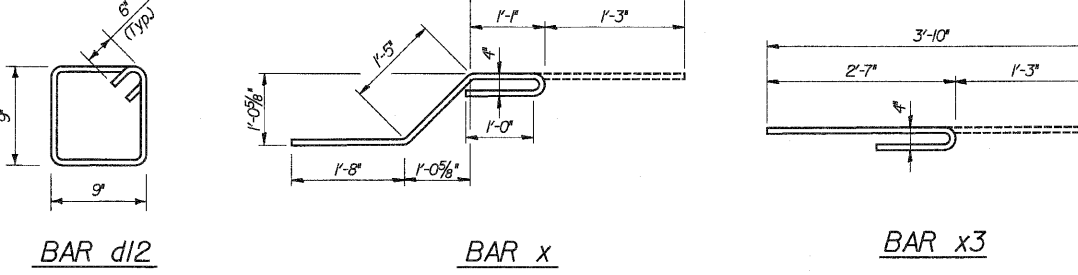


BARS d3 THRU d5 BARS d8, d11, h8, h12 THRU h15, h17 OR h52 THRU h65 BAR d9

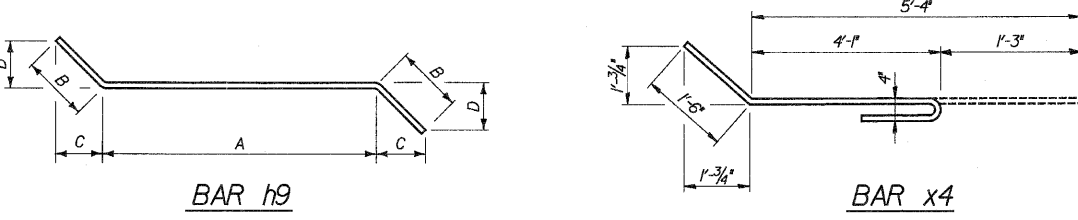


BARS h9
11 BARS-1 SET

BARS a12, a18 OR h22
a12-2 BARS-1 SET
a18-3 BARS-1 SET
h22-5 BARS-1 SET



BAR d12 BAR x BAR x3



BAR h9 BAR x4

BAR BENDING DIAGRAMS

Bar	A		B		C		D	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
a	11	2	0	10	0	7		
a1	13	4	0	10	0	7		
a2	11	2	1	7	1	2 1/2		
a3	11	6	1	7	1	2 1/2		
a4	11	11	1	7	1	2 1/2		
a5	11	8	0	10	0	7		
a6	13	6	0	10	0	7		
a8	11	8	0	11	0	8		
a10	3	8	0	6	0	4		
a11	5	0	0	6	0	4		
d	2	8	1	9				
d2	2	0	1	3				
d3	4	9	0	6				
d4	5	8	0	6				
d5	4	9	0	8				
d6	1	8	1	8				
d7	1	10	1	8				
d8	2	0	2	0	1	5	1	5
d10	5	2	1	8				
d11	3	4	2	0	1	5	1	5
d13	2	8	1	8				

Bar	A		B		C		D	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
h8	11	8	2	8	1	10 1/2	1	10 1/2
h9	14	5	1	3	0	10 1/2	0	10 1/2
h12	3	9	1	6	1	0 1/2	1	0 1/2
h13	8	0	1	6	1	0 1/2	1	0 1/2
h14	5	3	1	6	1	0 1/2	1	0 1/2
h15	9	6	1	6	1	0 1/2	1	0 1/2
h17	14	8	1	3	0	10 1/2	0	10 1/2
h52	11	3	3	0	2	9 1/2	1	1 1/2
h53	12	11	3	0	2	9	1	2
h54	5	0	3	0	2	9	1	2
h55	5	8	3	0	1	1 1/2	2	9 1/2
h56	5	5	3	0	1	2	2	9
h57	5	0	3	0	1	2	2	9
h58	3	0	2	11	2	9	1	2
h59	3	0	2	11	1	1 1/2	2	8 1/2
h60	3	10	3	0	2	9	1	2
h61	5	0	2	3	0	10 1/2	2	0 1/2
h62	5	8	3	0	2	9 1/2	1	1 1/2
h63	6	7	3	0	2	9	1	2
h64	5	0	3	0	2	9	1	2
h65	11	8	1	0	0	8 1/2	0	8 1/2

BAR CUTTING DIAGRAMS

Bar	A		B		C		D		E	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
a1	13	4	10	5	2	11				
a6	13	6	11	6	2	0				
a11	5	0	3	3	1	9				
a12	11	10	2	11	8	11	4	11	6	11
a18	13	6	2	0	11	6	5	10	7	8
h3	4	1	27	7	13	6				
h8	11	8	7	11	3	9				
h17	14	8	9	5	5	3				
h22	20	5	15	1	5	4	10	9	9	8
h26	19	4	15	4	4	0				
h65	11	8	7	11	3	9				

DESIGNED	ASP
CHECKED	LNB
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

DLZ 85 W. Algonquin Rd. Ste. 220
Arlington Heights IL 60005

CULVERT 'J'
BARBILL & DETAILS
U.S. ROUTE 30 (LINCOLN HIGHWAY)
F.A.P. 353 (U.S. 30)
SECTION (12 & 13) WRS-3
STATION 182+31.00
WILL COUNTY
STRUCTURE NUMBER 099-C013