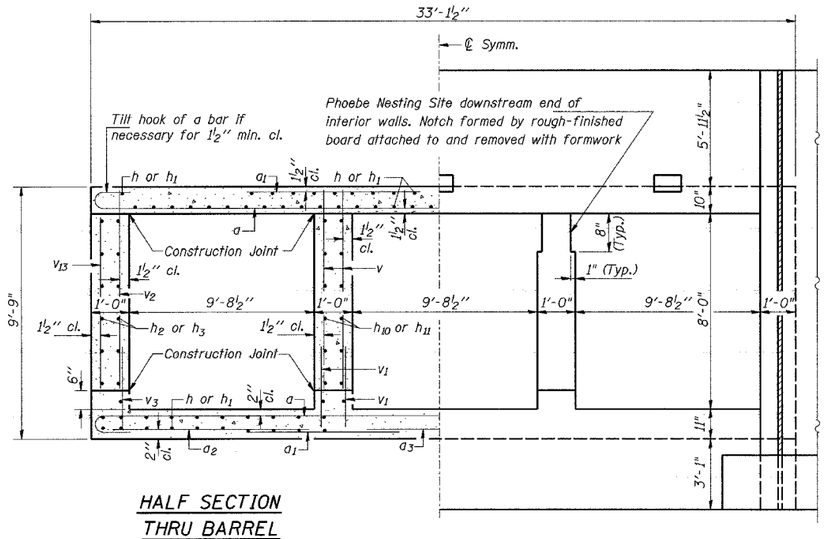
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 348	•••	COOK	86	32
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

SHEET NO. S5
S13 SHEETS

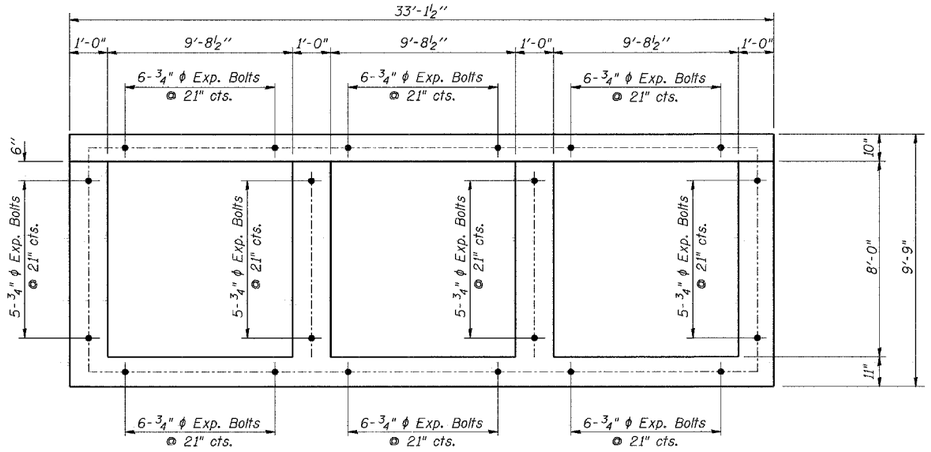
••• (1214 & 3127-1)RS-1

Contract 62343



HALF SECTION THRU BARREL

HALF END ELEVATION



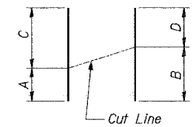
EXPANSION BOLT LOCATIONS - ELEVATION

Notes:

Existing expansion bolts shall not be reused. They shall be cut off at the concrete removal line. New expansion bolts shall be installed as shown above. Location of each new expansion bolt shall be adjusted horizontally so that a new expansion bolt shall be no closer than 4" to an existing expansion bolt. Expansion bolts shall be ¾" ϕ hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete.

All expansion bolts shall be placed parallel to the C.L. of the culvert.

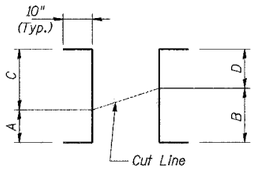
The expansion bolt spacing in the top and bottom slabs shall be at right angles to the C.L. of the culvert.



FIELD CUTTING DIAGRAM

Bar	No.	A	B	C	D
v_4	31	2'-8"	9'-7"	9'-7"	2'-8"
v_5	18	2'-8"	9'-7"	9'-7"	2'-8"
v_6	8	9'-10"	16'-9"	16'-9"	9'-10"
v_7	5	9'-10"	16'-9"	16'-9"	9'-10"
v_9	40	2'-6"	7'-2"	7'-2"	2'-6"

Order v_4 thru v_7 and v_9 bars full length, Cut as shown and use remainder of bars as noted in Elevation on sht. S4 of S13.



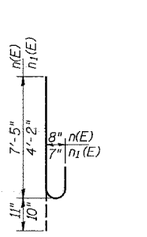
FIELD CUTTING DIAGRAM

Bar	No.	A	B	C	D
h_8	40	1'-6"	6'-10"	6'-10"	1'-6"

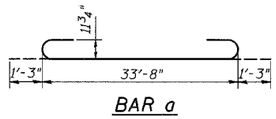
Order h_8 bars full length, Cut as shown and use remainder of bars as noted in Elevation on sht. S4 of S13.

BILL OF MATERIAL

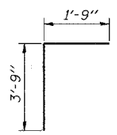
Bar	No.	Size	Length	Shape
a	132	#9	36'-2"	
a_1	244	#9	8'-3"	
a_2	44	#4	8'-7"	
a_3	22	#4	6'-1"	
d	108	#4	5'-6"	
h	122	#7	16'-2"	
h_1	122	#7	24'-2"	
h_2	32	#6	16'-2"	
h_3	32	#6	24'-2"	
h_4	54	#6	39'-0"	
h_5	50	#4	15'-8"	
h_6	50	#4	27'-8"	
h_7	16	#5	9'-11"	
h_8	40	#5	10'-0"	
h_9	24	#5	3'-0"	
h_{10}	32	#5	16'-2"	
h_{11}	32	#5	24'-2"	
n(E)	94	#8	8'-4"	
n_1(E)	98	#7	5'-0"	
s	152	#4	4'-11"	
t	212	#6	9'-10"	
v	220	#5	8'-2"	
v_1	220	#5	2'-6"	
v_2	100	#6	8'-2"	
v_3	100	#6	2'-6"	
v_4	31	#4	12'-3"	
v_5	18	#4	12'-3"	
v_6	8	#4	26'-7"	
v_7	5	#4	26'-7"	
v_8	152	#4	8'-3"	
v_9	40	#5	9'-8"	
v_{10}	8	#7	14'-2"	
v_{11}	8	#7	7'-1"	
v_{12}	98	#6	9'-0"	
v_{13}	44	#5	7'-4"	
w	44	#5	27'-8"	
w_1	44	#5	15'-8"	
Concrete Box Culverts		Cu. Yd.	284.2	
Reinforcement Bars, Epoxy Coated		Pound	3,100	
Reinforcement Bars		Pound	55,880	



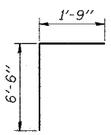
BARS n(E) and n_1(E)



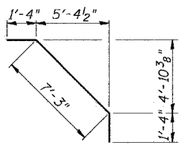
BAR a



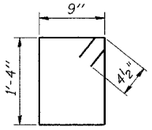
BAR d



BAR v_8



BAR h_7



BAR s

Notes:

For Additional Reinforcement Details see sheets S3 & S4 of S13

REVISIONS	
NAME	DATE

COLLINS ENGINEERS, INC.
123 N. WACKER DR.
SUITE 300
CHICAGO, IL. 60606
(312)704-9300
ILLINOIS PROFESSIONAL DESIGN FIRM
LICENSE NO. 184-000993

ILLINOIS DEPARTMENT OF TRANSPORTATION
HARLEM AVENUE (IL. 43) OVER
TINLEY CREEK
FAP ROUTE 348 SECTION (1214 & 3127-1)RS-1
COOK COUNTY STATION 20+29
STRUCTURE NO. 016-2400

TRIPLE BOX CULVERT DETAILS-III

DRAWN BY: KAC
CHECKED BY: RAM/DGS DATE: JULY, 2003

33590003

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