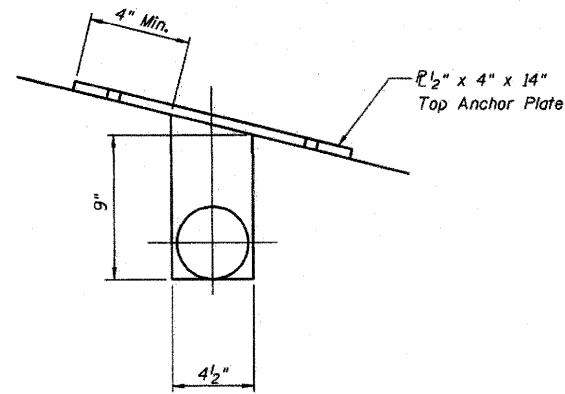
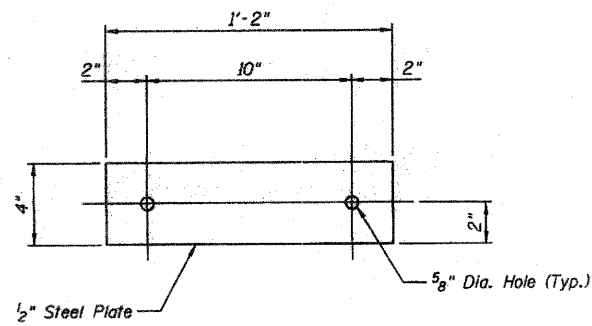
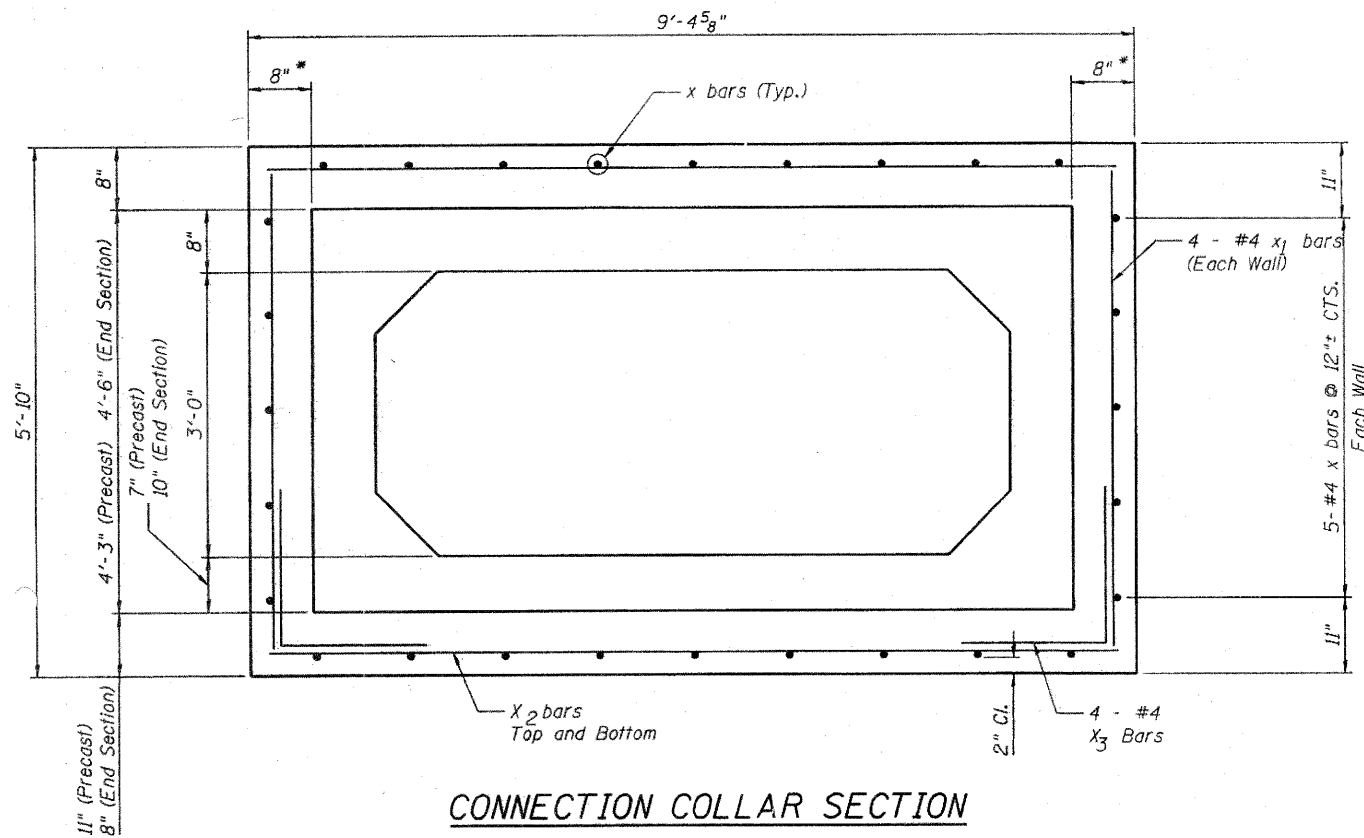


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

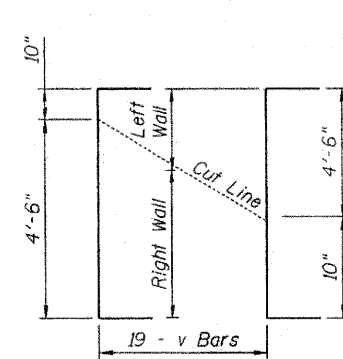


TOP ANCHOR PLATE
(8 TOTAL)

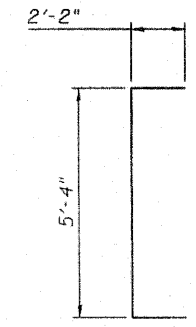
DETAIL 'A'



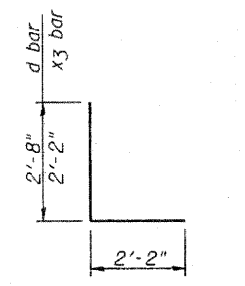
CONNECTION COLLAR SECTION



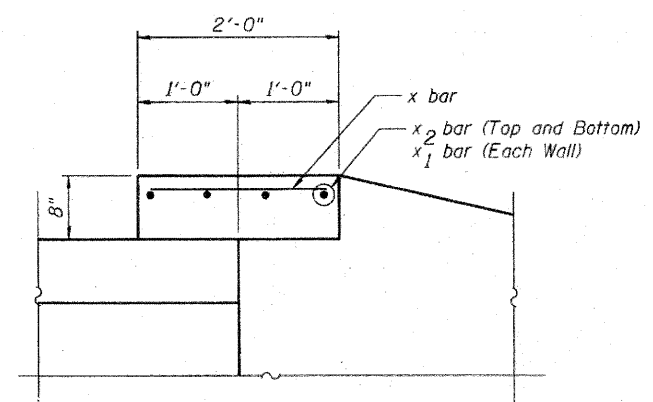
**BAR v
CUTTING DIAGRAM**



BAR v



BARS d and x3



COLLAR DETAIL



Jennifer L. Anderson 10/10/08
JENNIFER L. ANDERSON, S.E., P.E.
LICENSE NO. 081-005858
EXPIRES: 11/2008

*** STEEL PIPE GRATING
BILL OF MATERIAL**

DESCRIPTION	UNIT	QTY
5/8" X 10" Galv. Steel Bolts	Each	8
3 1/2" Galv. Steel Pipe	Ø4	8'-3"
3 1/2" Galv. Steel Pipe	Ø2	17'-0"
3 1/2" Galv. Pipe Caps	Each	12
1/2" X 4" X 14" Galv. Plate	Each	8
1/4" Galv. Steel Plate (9" Nominal)	Each	8

* Quantities given are for each Grated End Section.
For informational purposes only.

**** CONNECTION COLLAR
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
x	28	4	1'-9"	
x1	8	4	5'-3"	
x2	8	4	9'-0"	
x3	8	4	4'-4"	
Concrete Structures		Cu.Yd.		1.4
Reinforcement Bars		Pound		130

** Quantities given are for each Grated End Section
for informational purposes only. Cost to be included in
the Bid Item "PRECAST CONCRETE BOX
CULVERT 3'X6'".

***** BOX CULVERT END SECTION NO. 1
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a	38	5	7'-8"	
d	8	4	4'-10"	
h	16	5	17'-10"	
h1	2	5	14'-4"	
h2	2	5	9'-10"	
h3	2	5	5'-4"	
h4	2	5	0'-6"	
h5	6	5	3'-10"	
h6	2	5	2'-3"	
h7	3	6	7'-8"	
v	19	5	9'-8"	
Concrete Structures		Cu. Yd.		7.2
Reinforcement Bars		Pound		940

*** Quantities given are for each Grated End Section.
For informational purposes only.

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A707 GR. 60 (IL Modified), see Special Provisions.

Steel pipes shall conform to A.S.T.M. A-53 (TYPE E OR S) Grade B, Schedule 40, and shall be galvanized to A.S.T.M. A-120.

Steel plates shall conform to AASHTO M-183 and shall be galvanized conforming to AASHTO M-111.

Bolts, nuts, and washers shall be in accordance with Article 1006.08 of the Standard Specifications and shall be galvanized.

The contract unit price "EACH" for Grated End Section No. 1 shall include the Expansion Bolts, Galvanized Pipes, Class SI Concrete, Bolts, Nuts, Reinforcement, Washers, and Steel Plates.

Contractor shall field verify galvanized pipe length.

**GRATED END SECTION NO. 1
STATION 1173+89.80
DETAILS**

DESIGNED - JLA
CHECKED - SB
DRAWN - AJP
CHECKED - JLA

KUDRNA & ASSOCIATES, LTD.
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Chicago, Illinois 60607
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Fax (312)738-9792

CIVIL ENGINEERING • PLANNING • DESIGN • LAND SURVEY • CONSTRUCTION MANAGEMENT

SHEET NO. 2 10 SHEETS	F.A.P RTE. 316	SECTION 2T	COUNTY OGLE	TOTAL SHEETS 48	SHEET NO. 24
	D-92-003-03		CONTRACT NO. 64851		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		