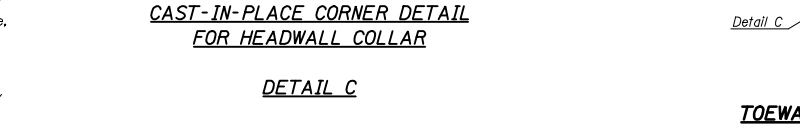
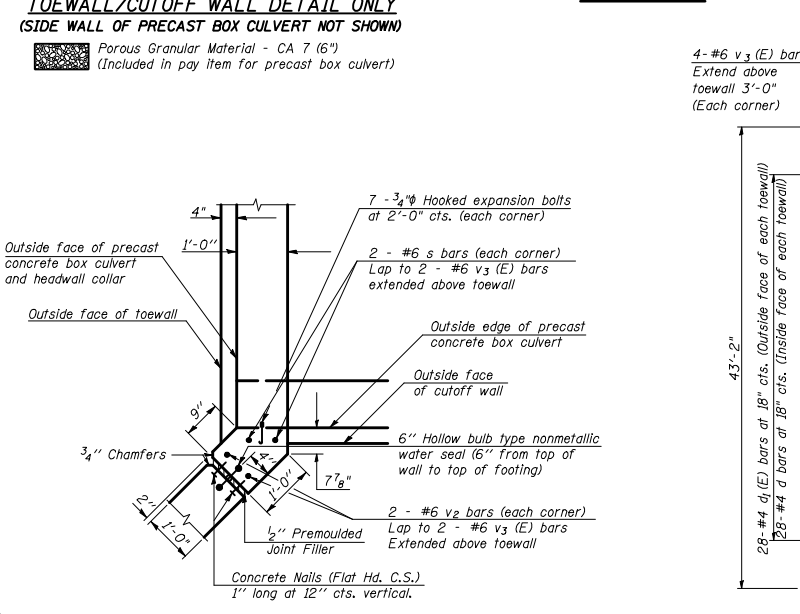
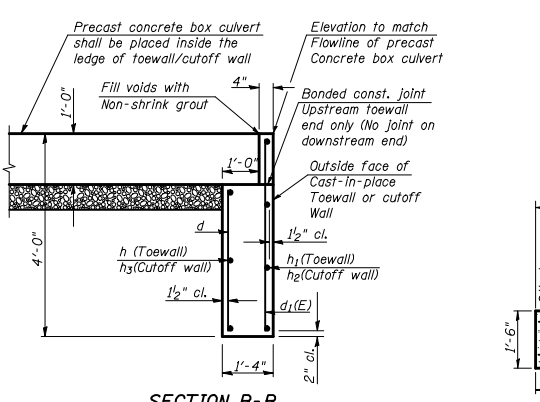
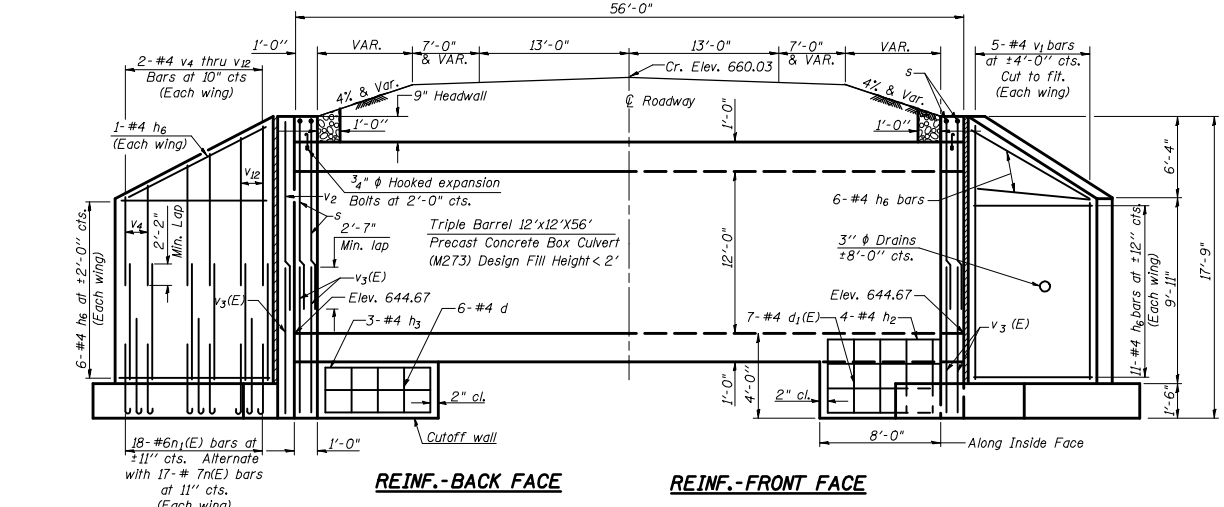
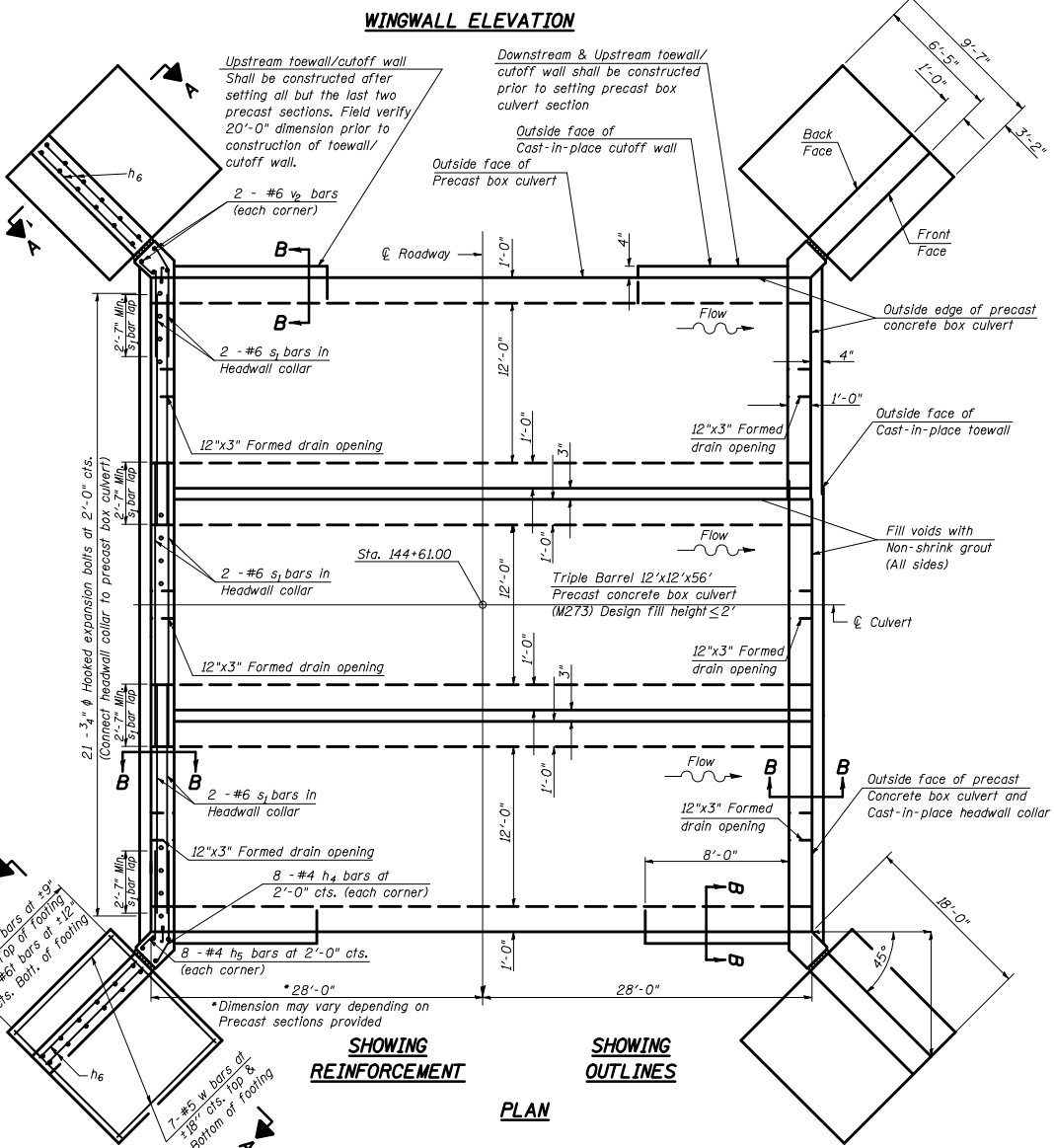


F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
816	6RS-1&6BRIBR	DOUGLAS	176	76
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CAST-IN-PLACE BOX CULVERT END SECTION DETAIL

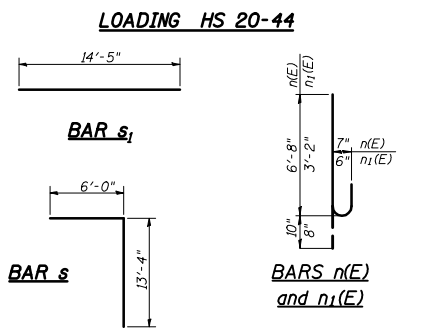
PROPOSED S.N. 021-2025

STATION 144+61.00



STATION 144+61.00
BUILT 2009 BY
STATE OF ILLINOIS
F.A.P. RTE. 816 SEC. (6BRIBR
LOADING HS 20-44
STR. NO. 021-2025

DESIGN STRESSES
Cast in Place
fy = 60,000 psi
f'c = 3,500 psi
Precast
fy = 60,000 psi
f'c = 5,000 psi
Max. Soil Pressure under footing = 3,522 psf



BILL OF MATERIAL (ONE END SECTION) FOR INFORMATION ONLY

Bar	No.	Size	Length	Shape
d	40	#4	2'-8"	
d1(E)	42	#4	3'-8"	
h	3	#4	41'-6"	
h1	4	#4	42'-10"	
h2	8	#4	8'-9"	
h3	6	#4	8'-0"	
h4	16	#4	1'-2"	
h5	16	#4	9"	
h6	48	#4	16'-11"	
n1(E)	34	#7	7'-6"	
n1(E)	36	#6	3'-10"	
s	4	#6	19'-4"	
s1	6	#6	14'-5"	
t	84	#6	9'-4"	
v	36	#5	7'-9"	
v1	10	#4	15'-11"	
v2	4	#6	13'-2"	
v3(E)	8	#6	6'-10"	
v4	4	#4	4'-8"	
v5	4	#4	5'-4"	
v6	4	#4	6'-0"	
v7	4	#4	6'-8"	
v8	4	#4	7'-4"	
v9	4	#4	8'-0"	
v10	4	#4	8'-8"	
v11	4	#4	9'-4"	
v12	4	#4	10'-0"	
w	28	#5	16'-11"	

Class SI Concrete	Cu. Yd.	46.8
Reinforcement Bars, Epoxy Coated	Pound	899.0
Reinforcement Bars	Pound	3672.0
Expansion Bolt 3/4" ϕ	Each	35.0

TOTAL BILL OF MATERIALS

Item	Unit	Qty.
Box Culvert End Section	Each	2.0
Name Plate	Each	1.0

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
CAST-IN-PLACE
BOX CULVERT END SECTION DETAIL
STA 144+61.00

PLOT DATE = 8/14/2008
FILE NAME = c:\projects\2008\816\13 submittal\13 submittal.dwg
PLOT SCALE = 4:23525 / IN.
USER NAME = kgjrb

NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
- The Precast Concrete Box Culvert Sections shall conform to the requirements of AASHTO M273.
- Reinforcement bars designated (E) shall be epoxy coated.
- Expansion bolts shall be 3/4" ϕ hooked bolts. The cost of the bolts shall be included in the cost of Box Culvert End Section.
- Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.
- Areas of the precast box in contact with cast in place concrete shall be sandblasted, cleaned and wetted prior to placing concrete in the field according to Article 503.09(b) of the Standard Specifications.
- The Contractor may substitute cast in place inserts and threaded hooked reinforcement bars for the expansion bolts. This will speed up construction if the contractor doesn't have to spend time drilling holes in the field.
- All dimensions are in FEET (')-INCHES (") unless otherwise noted.
- The joints between precast segments shall be sealed and all voids filled with a mastic joint sealer. In addition, the sides and top shall be sealed with a 1/2" wide external sealing band meeting the requirements of ASTM C877 Type III. The joint areas to be sealed shall be cleaned and primed according to the manufacturer's directions prior to placing the seal. The seal shall be protected during backfilling to prevent damage.
- Concrete and Rebar quantities and lengths calculated for the cast-in-place End Sections will vary based on the precast box culverts supplied.
- End Sections will be paid for at the contract unit price each for BOX CULVERT END SECTION, as outlined in Art. 540.08, which prices shall include all concrete, rebar, and all other items necessary to complete the proposed work.
- Drain holes shall be provided in accordance with Art. 503.11.
- Voids between the Precast Concrete Box Culvert and the Cast-in-place toewall / cutoff wall shall be filled with Non-shrink grout.
- Drawings not to scale.