

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. The unit of measurement of each for the pay item Box Culvert End Sections shall include all culvert sections necessary to construct the end section for the multi-cell culvert.

Typical box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements of AASHTO M 259 or M 273 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

Length and number of precast box sections required to construct Box Culvert End Sections shall be determined by the Contractor.

Cast-in-place concrete toewall shall be reinforced the full length with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft. Forms for the toewall may be omitted when soil conditions permit.

See roadway plans for embankment slope (V:H).

1"  $\phi$  anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4" x 2 1/4" x 5/16" plate washers shall be provided under each nut required for the anchor rods. All anchor rods in a culvert tie assembly shall be snug tightened by a few impacts of an impact wrench or the full force of a worker using an ordinary spud wrench. Formed holes may be provided in the culvert walls for the culvert tie assembly in lieu of drilling holes.

Culvert ties shall be provided on the exterior walls. Alternate culvert ties similar in strength and stiffness to the plan details may be provided by the Contractor. Alternate culvert ties shall be subject to approval of the Engineer.

The superimposed headwall shall be cast directly onto the box sections after being laid in the field. Class SI concrete shall be used for construction of the superimposed headwall.

In lieu of using expansion anchors or ferrule loop inserts, the Contractor may attach the headwall to the box section by epoxy grouting reinforcement bars or threaded rods according to the requirements of Section 584 of the Standard Specifications. The chemical adhesive system shall be capable of achieving the minimum proof load stated with drilled hole depths that do not exceed 2/3 of the thickness of the top slab of the box section.

All costs associated with furnishing and installing or constructing the filter fabric, toewall, superimposed headwall, and culvert ties will not be measured for payment but shall be included in the contract unit price for Box Culvert End Sections.

Reinforcement bars designated (E) shall be epoxy coated.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60. See Special Provisions.

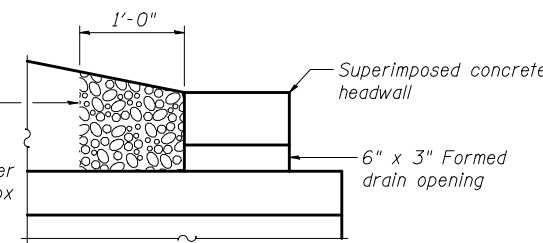
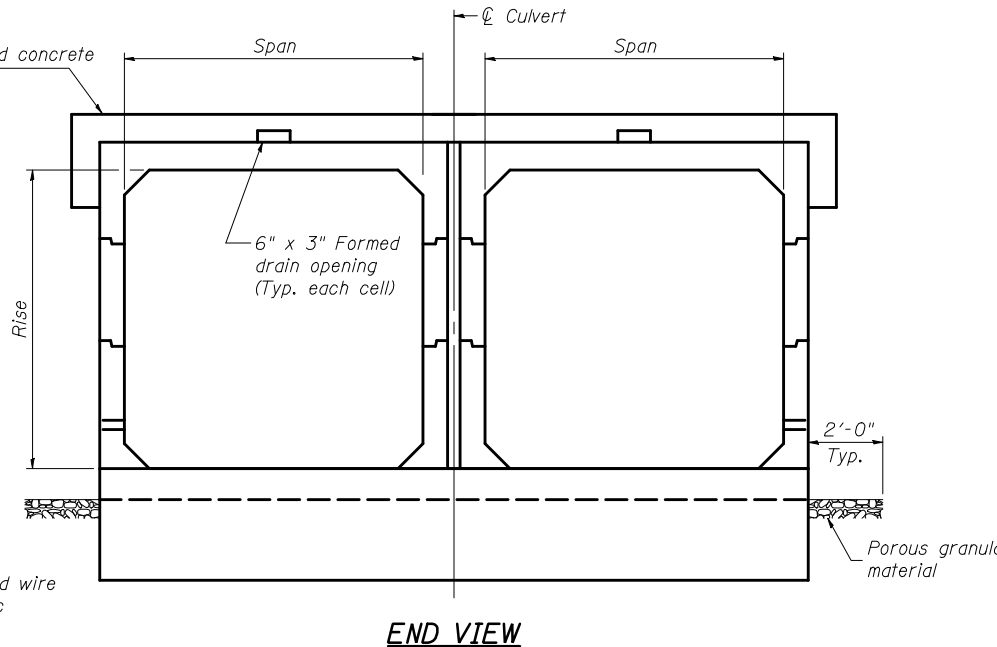
Drainage holes shall conform to the requirements of Article 503.11 of the Standard Specifications.

The 3" nominal space between adjacent end sections shall be filled with Class SI concrete in accordance with Article 540.06 of the Standard Specifications. Cost included with Box Culvert End Sections.

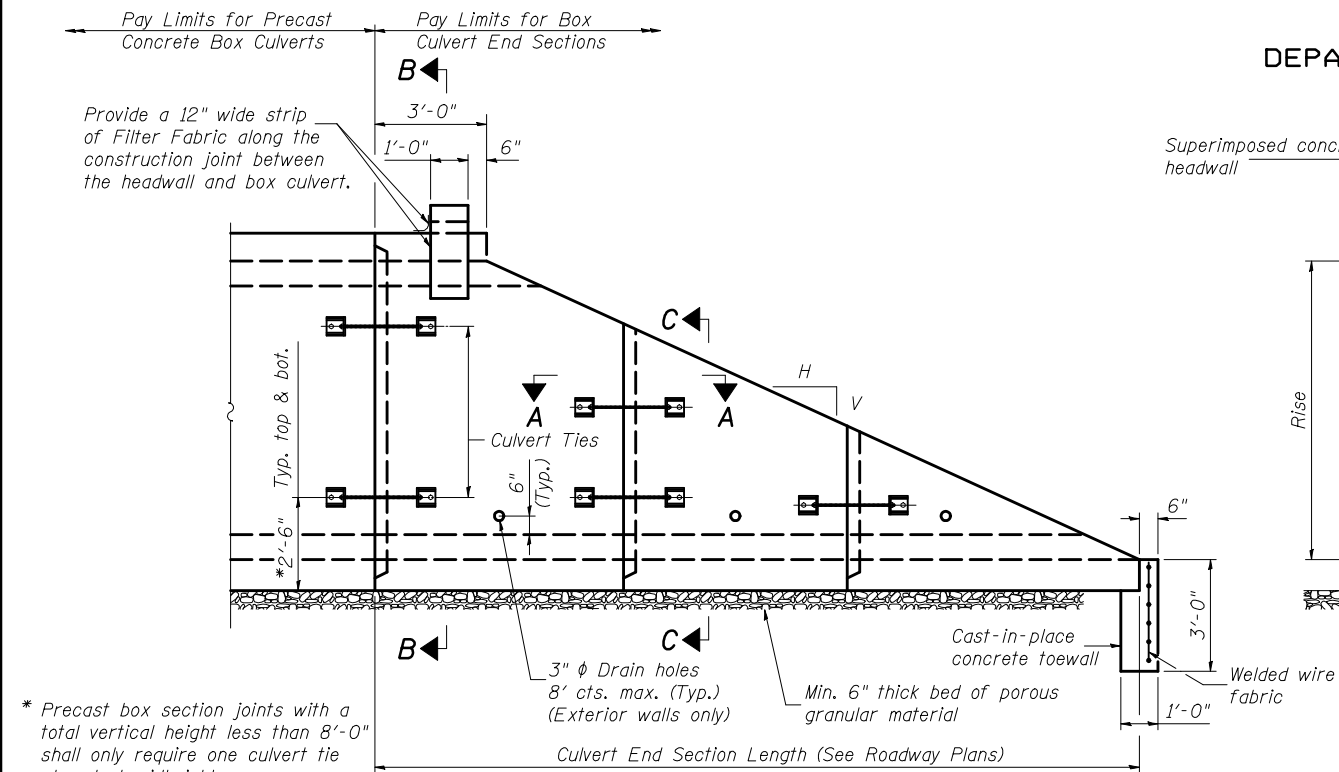
**DOUBLE CELL PRECAST BOX CULVERT END SECTIONS**

(Sheet 1 of 2)

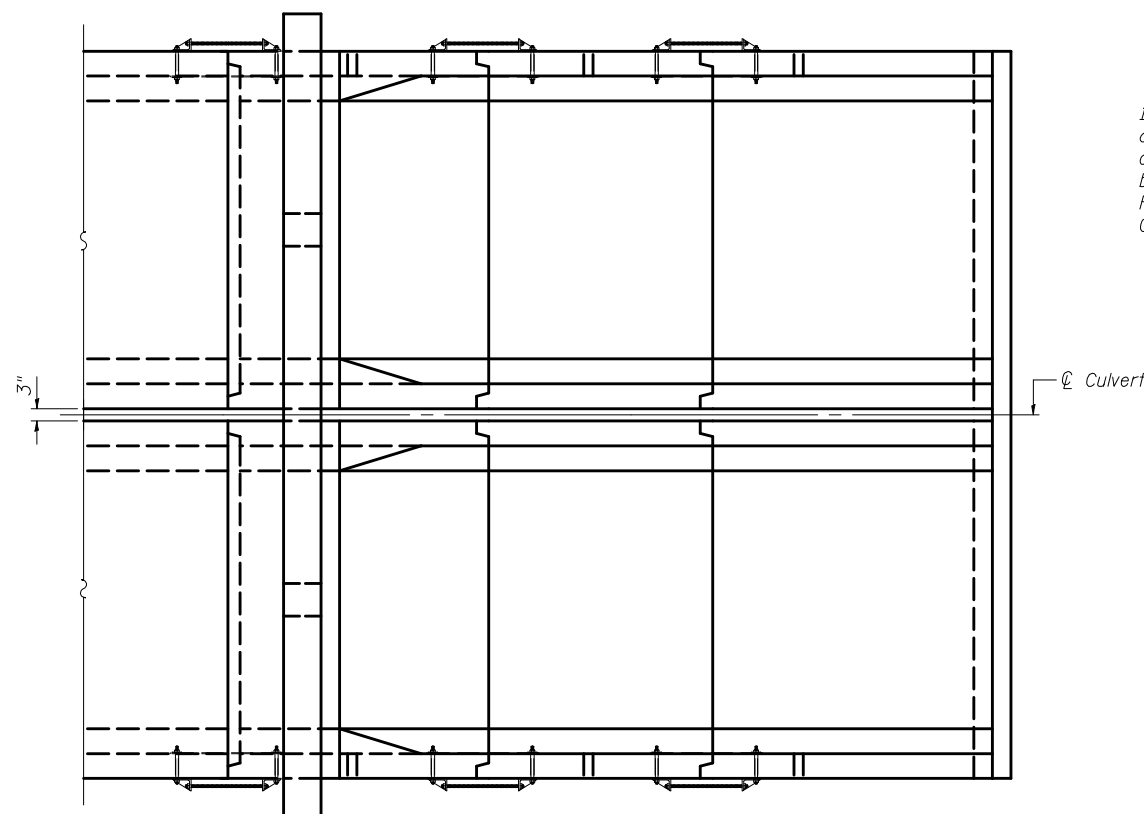
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
71	121R	MCLEAN	87	35
CONTRACT NO. 70592				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



**FORMED DRAIN DETAIL**  
(Showing section thru headwall)



**SIDE ELEVATION**



**PLAN VIEW**

\* Precast box section joints with a total vertical height less than 8'-0" shall only require one culvert tie placed at midheight.

DESIGNED -	200
CHECKED -	EXAMINED
DRAWN -	PASSED
CHECKED -	ENGINEER OF BRIDGES AND STRUCTURES

(09-01-09)