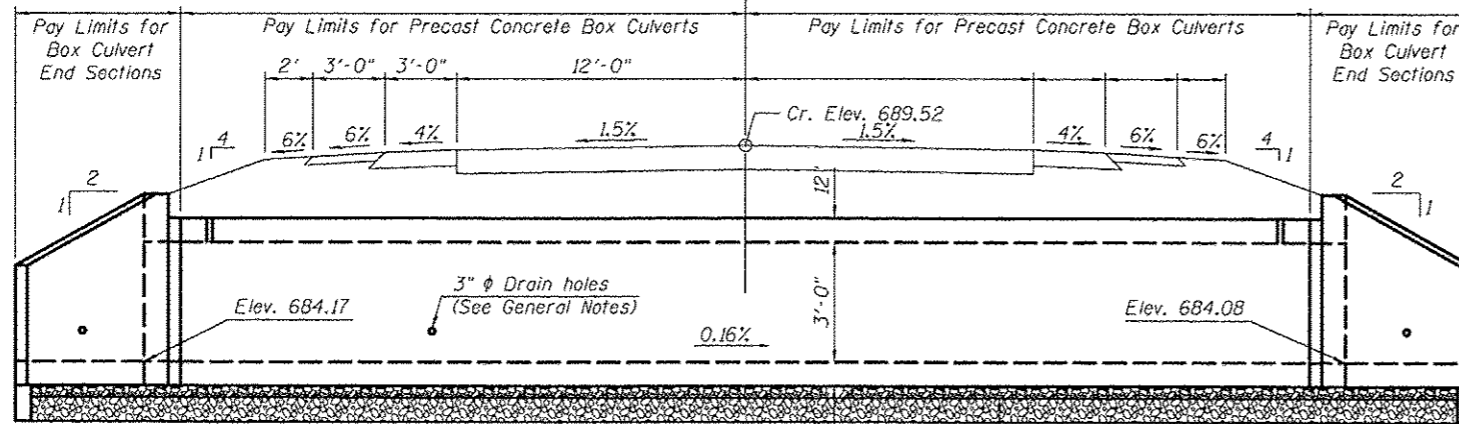
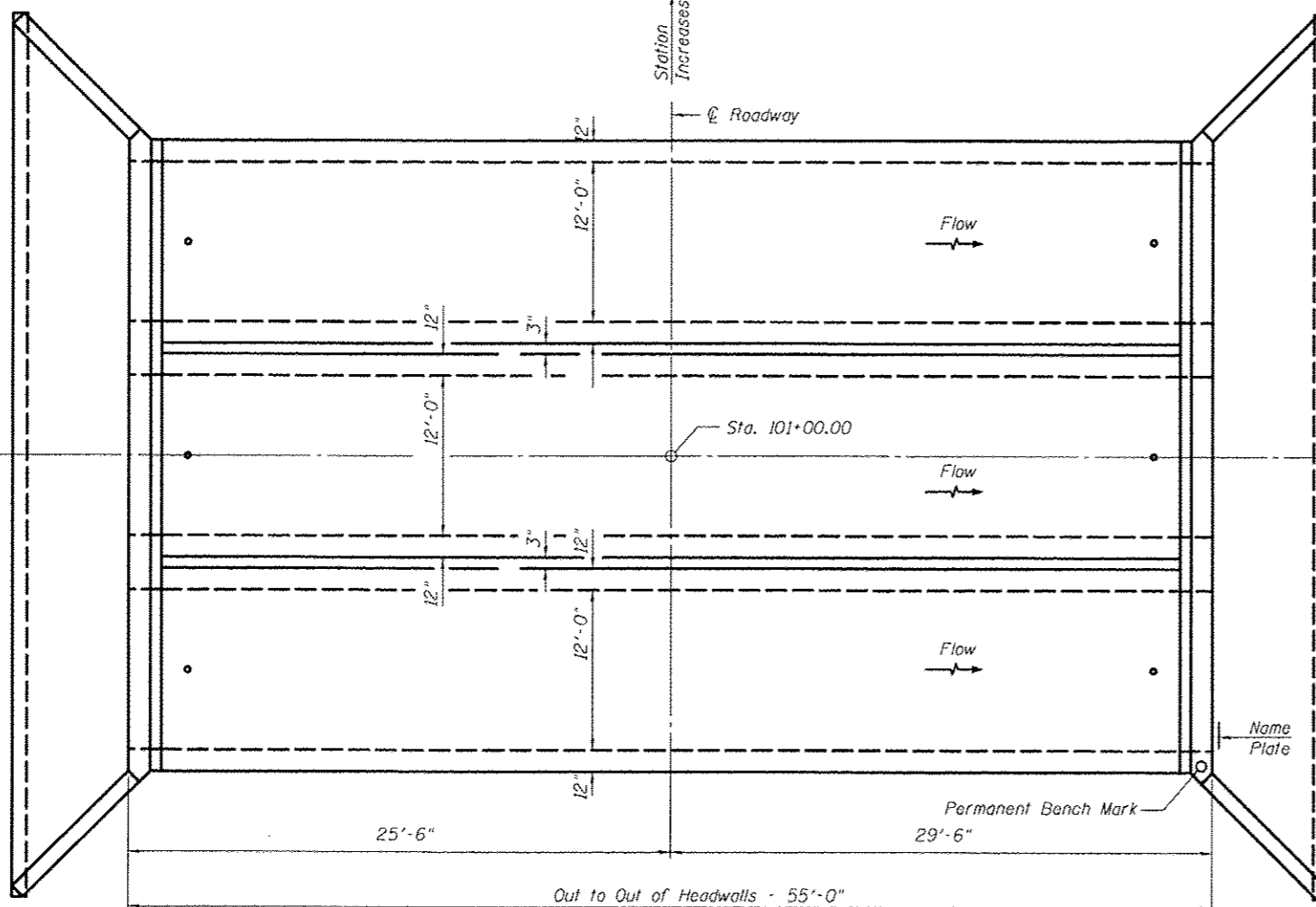


Benchmark: 687.296, Chiseled square on top of headwall of existing structure NE QUAD of Cottonwood Rd.

Existing Structure: 2-36" PVC pipe culverts under Cottonwood Dr. and existing RC Box. — Roadway



**ELEVATION**



**WATERWAY INFORMATION**

| Drainage Area = 2.35 sq. mi. Low Grade Elev. 688.07 @ Sta. 107+75.00 |           |          |         |         |             |                  |                      |                     |       |
|--|-----------|----------|---------|---------|-------------|------------------|----------------------|---------------------|-------|
| Flood  | Freq. Yr. | Q C.F.S. | Opening | Sq. Ft. | Not. Exist. | Head - Ft. Prop. | Headwater El. Exist. | Headwater El. Prop. |       |
| Design   | 10        | 541      | 36      | 90      | 686.6       | N/A              | 0.7                  | over                | 687.3 |
| Base   | 20        | 693      | 36      | 95      | 686.7       | N/A              | 1.2                  | over                | 687.9 |
| Overtopping  | 100       | 1060     | 36      | 106     | 687.0       | N/A              | 1.6                  | over                | 688.6 |
| US 150 Design  | 25        | 740      | 36      | 96      | 686.8       | N/A              | 1.3                  | over                | 688.1 |
|  | 50        | 896      | 36      | 102     | 686.9       | N/A              | 1.5                  | over                | 688.4 |

**DESIGN SCOUR ELEVATION TABLE**

| Design Scour Elevation (ft.) | Upstream | Downstream |
|------------------------------|----------|------------|
|                              | 681.17   | 681.08     |

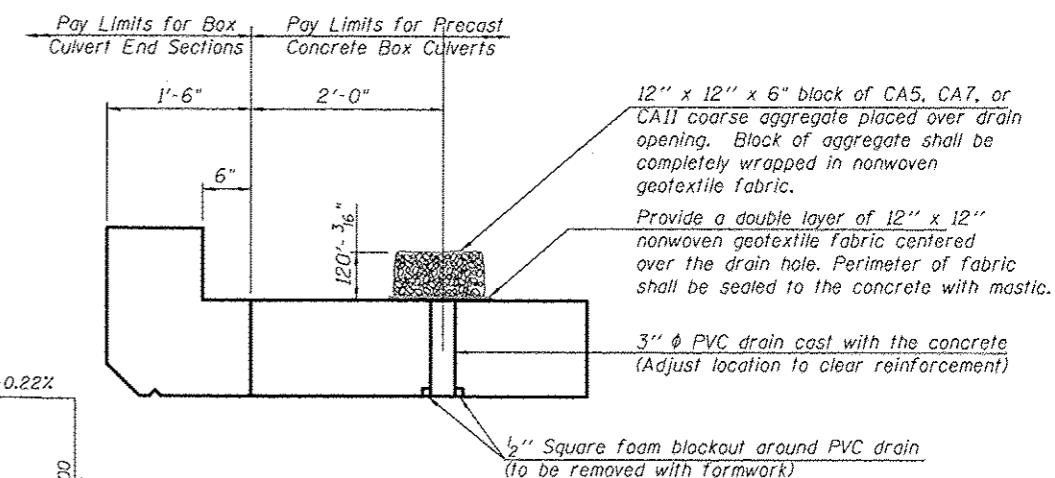
**INDEX OF SHEETS**

1. Plan & Profile Sheet
2. General Plan and Elevation
- 3-4. Precast Concrete Box Culvert Apron End Section Details
5. Porous Granular Embankment Details
6. Dimensions and Quantities Sheets

**GENERAL NOTES**

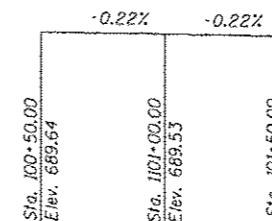
The design fill height for this box is < 2 feet. The precast box culvert sections shall conform to the requirements of AASHTO C 1577. Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification. Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

All exposed edges shall be chamfered 3/4" per article 503.06 of the Standard Specifications.



**DRAIN DETAIL**

(All costs associated with furnishing and constructing the above drain details will not be measured for payment but shall be included in the contract unit price for the box culvert.)



**PROFILE GRADE**

**DESIGN SPECIFICATIONS**

2012 AASHTO LRFD Bridge Design Specifications  
6th Edition

**LOADING HL-93**

**DESIGN STRESSES**

**PRECAST UNITS**

f'c = 5,000 psi  
fy = 65,000 psi (Welded Wire Fabric)

**FIELD UNITS**

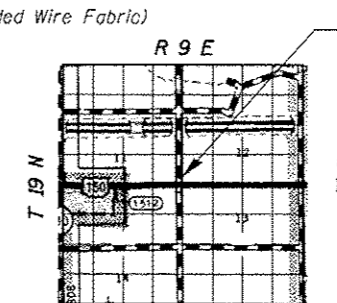
f'c = 3,500 psi  
fy = 65,000 psi (Welded Wire Fabric)

**TOTAL BILL OF MATERIAL**

| ITEM                                    | UNIT    | TOTAL |
|---|---------|-------|
| Name Plates                             | Each    | 1.0   |
| Box Culvert End Sections, Culvert No. 4 | Each    | 2.0   |
| Precast Concrete Box Culverts, 12x3     | Foot    | 156.0 |
| Permanent Bench Marks                   | Each    | 1.0   |
| Stone Riprap, Class A1                  | Sq. Yd. | 353.4 |
| Porous Granular Embankment              | Cu. Yd. | 46.9  |

STATION 101+00.00  
BUILT 2014 BY  
STATE OF ILLINOIS  
F.A.U. RT. 7152 US 150  
SEC. (2X,3)RS-3 & 2RS-4  
LOADING HL-93  
STR. NO. 010-2039

**NAME PLATE**  
See Std. 515001



**LOCATION SKETCH**

PROP. S.N. 010-2039  
STA. 101+00.00

**GENERAL PLAN AND ELEVATION  
DOUBLE 12'x4' PRECAST BOX CULVERT  
F.A.U. ROUTE 7152 (US 150)  
SECTION (2X,3)RS-3 & 2RS-4  
CHAMPAIGN COUNTY  
STATION 101+00.00, S.N. 010-2039  
CULVERT NO. 4**