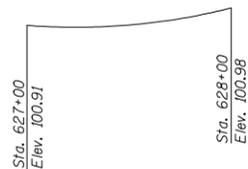


BENCHMARK ELEV. = 100.00 Chiseled square on north headwall of SN 092-8033.



Profile Grade
Along ϕ Roadway

STATION 627+36
BUILT 201 BY
STATE OF ILLINOIS
F.A.P. RT. 711 SEC. 116CR
LOADING HS 20
STRUCTURE NO. 092-8074

NAME PLATE
See Std. 515001

INDEX OF SHEETS

1. General Plan and Elevation
2. Box Culvert End Section Details
3. Porous Granular Embankment Detail
4. Soil Borings
- 5-7. As-Built Plans

DESIGN SPECIFICATIONS
2002 AASHTO

LOADING HS20-44

Allow 50#/sq.ft. for future wearing surface

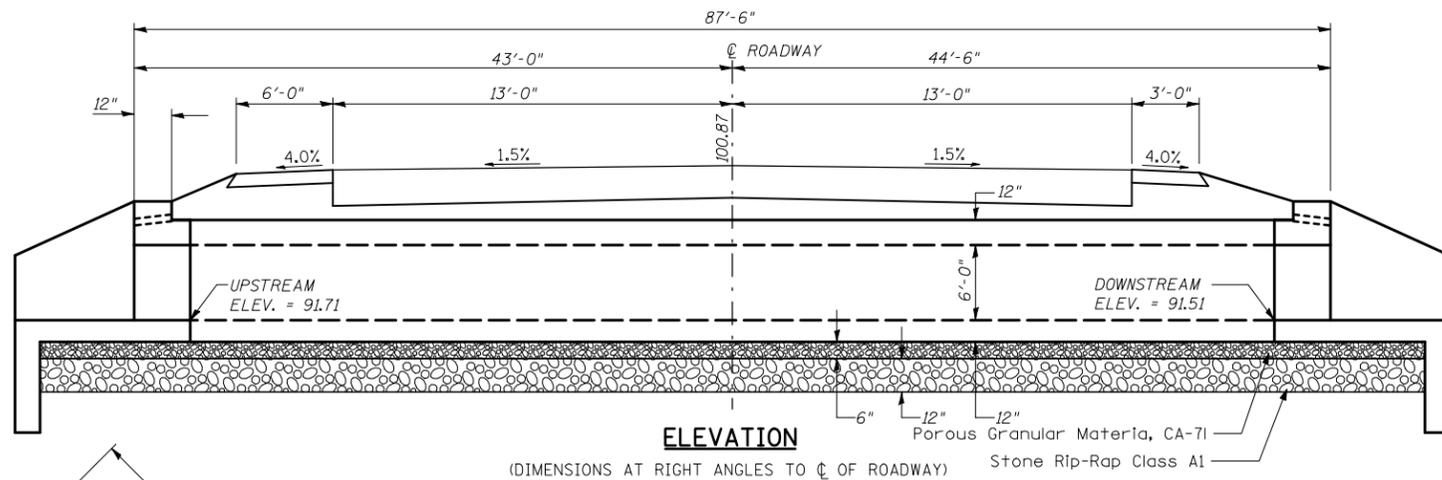
DESIGN STRESSES

FIELD UNITS

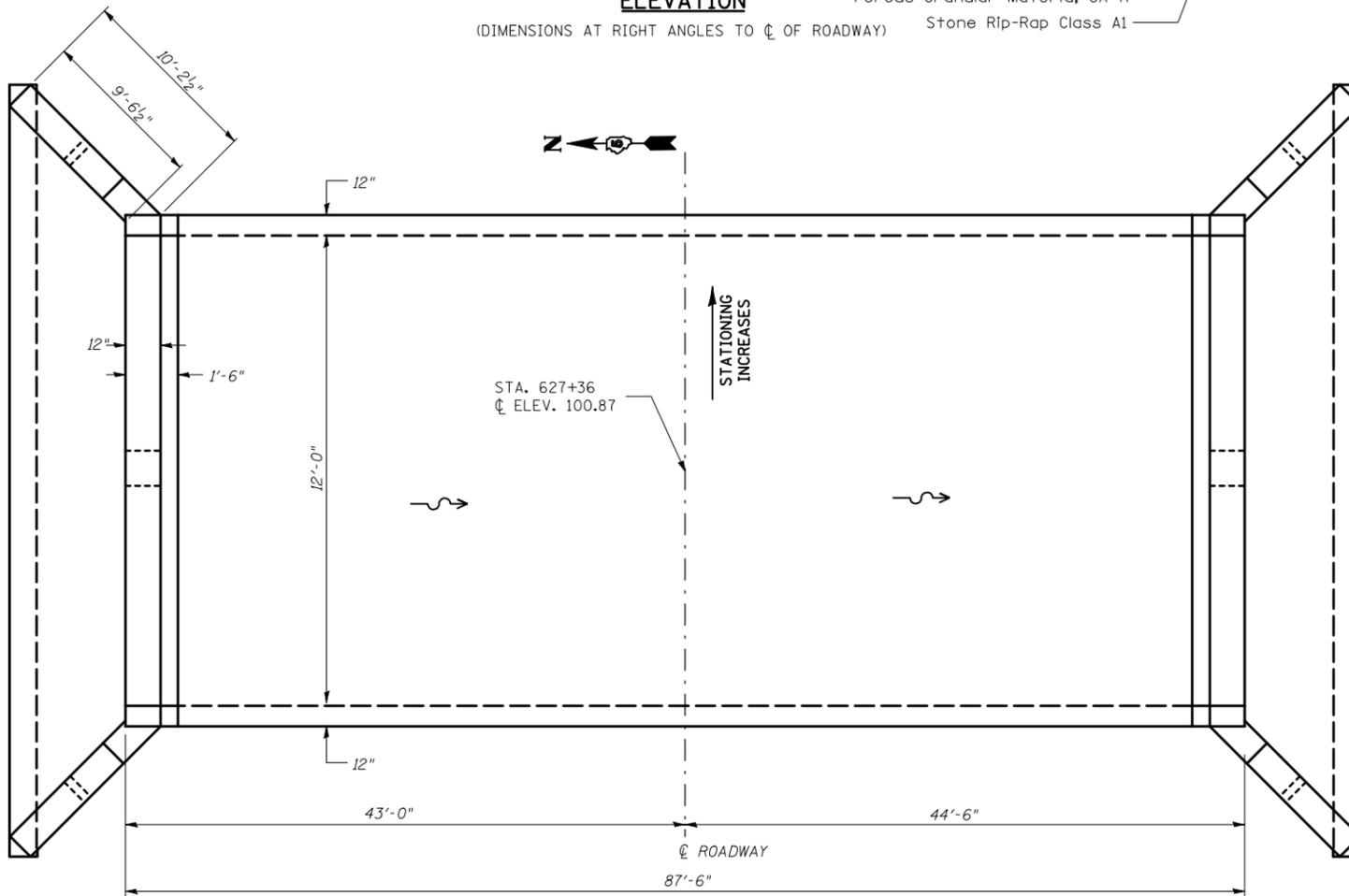
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 65,000$ psi (welded wire fabric)

PRECAST UNITS

$f'_c = 5,000$ psi
 $f_y = 65,000$ psi (welded wire fabric)



ELEVATION
(DIMENSIONS AT RIGHT ANGLES TO ϕ OF ROADWAY)



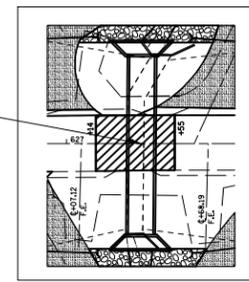
PLAN

Existing Low Grade Elev. = 100.87 at Sta. 627+33

Flood	Freq. Yr.	Q Ft ³ /s	Opening - ft ²		Natural H.W.E.	Head - ft.		Headwater Elevation	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
Design	10	310	40.5	52.6			97.7	96.5	
Base	50	504	52	72			99.9	97.9	
Overtop Existing	100	590	52	72			Overtopped	98.5	
Overtop Proposed									
Max. Calc.	500	799	52	72			Overtopped	100.2	

Design Scour Elevation Table

Design Scour Elevation (ft.)	Upstream	Downstream
	88.71	88.51



LOCATION SKETCH

General Notes

Build tops of headwalls parallel to the grade lines.

All construction joints shall be bonded according to Article 503.09 of the Standard Specifications.

Reinforcement bars shall conform to the requirements of ASTM A706 Gr. (IL Modified). See Special Provisions.

All bars should be rounded and conform to the requirements of Article 1006.10 of the Standard Specification.

The 6" Porous Granular Material required per Art. 540.06 of the Standard Specifications shall also extend beneath the Box Culvert End Sections and shall be considered included in the cost of Precast Concrete Box Culverts and Box Culvert End Sections.

When lapping sheets of welded wire fabric, the overlap measured between the outermost cross wires of each fabric sheet shall not be less than 8"

End Sections will be paid for at the contract unit price per each for BOX CULVERT END SECTIONS, as outlined in Section 540 of the Standard Specifications.

Class SI Concrete shall be used throughout.

Concrete, Rebar, and Welded Wire Fabric quantities and lengths calculated for the cast-in-place End Sections may vary based on the precast box culverts supplied.

Drain holes shall be provided in accordance with Article 503.11 of the Standard Specifications.

The precast manufacturer shall design and detail a connection/construction joint between the precast concrete box sections and the cast-in-place apron and wingwall. The minimum area of reinforcement passing through these construction joints shall be 0.20 sq. in./lineal ft. of welded wire fabric. The design shall be detailed in the shop drawings. The cost of the connection is included in the cost of the end section.

The box culvert end section may be built in the field or using precast construction methods. If the contractor elects to use precast construction methods, shop drawings and a proposed construction sequence shall be submitted to the Engineer for approval. See Special Provisions.

The ends of the precast box sections adjacent to the end section shall be formed without the male and female shapes specified in Article 8.1 of AASHTO M273. See Sections B-B, D-D, and E-E on Sheet 2.

The design fill height for this box is less than 2 feet. The Precast Concrete Box Culvert Sections shall conform to the requirements of AASHTO M 273.

The joints between precast box sections shall be sealed, all voids filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 13 inch wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling process.

All dimensions are in FEET (') - INCHES (") unless otherwise noted.

Drawings not to scale.

TOTAL BILL OF MATERIAL

Item	Unit	Total
Removal of Existing Structures No. 1	Each	1
Precast Concrete Box Culverts 12'x6'	Foot	87.5
Box Culvert End Sections, Culvert No. 1	Each	2
Name Plates	Each	1
Porous Granular Embankment	Cu Yd	183
Stone RipRap, Class A1	Ton	42

SHEET 1 OF 7

GENERAL PLAN AND ELEVATION
SINGLE 12'x6' PRECAST BOX CULVERT
F.A.P. ROUTE 711 - SECTION 116CR
VERMILION COUNTY
STATION 627+36.00 S.N. 092-8074
CULVERT NO. 1