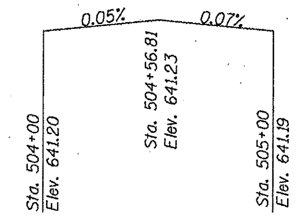
EXISTING STRUCTURE: S.N. 021-8021 was constructed in 1927 at STA. 503+00 as a 8'x3'x42' cast-in-place box culvert with concrete headwalls as S.B.I. 121, Sec. 146 in Douglas County.
In 2000 the box was extended with precast concrete box culverts and cast-in-place end sections,under Section (145,146)RS-2 & 147 RS-4.
The existing structure is to be completely removed and replaced. There will be no salvage of any materials.
Road closure will be utilized.
BENCHMARK ELEV. = 640.75 Chiseled square on top of center of south headwall of S.N. 021-8021 at STA. 504+57.63, 30.62' RT.



PROFILE GRADE

Along ℄ Roadway

STATION 504+56.81
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 323 SEC. (145,146)CR
LOADING HS 20
STRUCTURE NO. 021-8052

NAME PLATE

See Std. 515001

INDEX OF SHEETS

1. Plan & Profile
2. As Built Plan
3. Pourous Granular Embankment Detail
4. General Plan and Elevation
5. Box Culvert End Section Details

DESIGN SPECIFICATIONS

2002 AASHTO

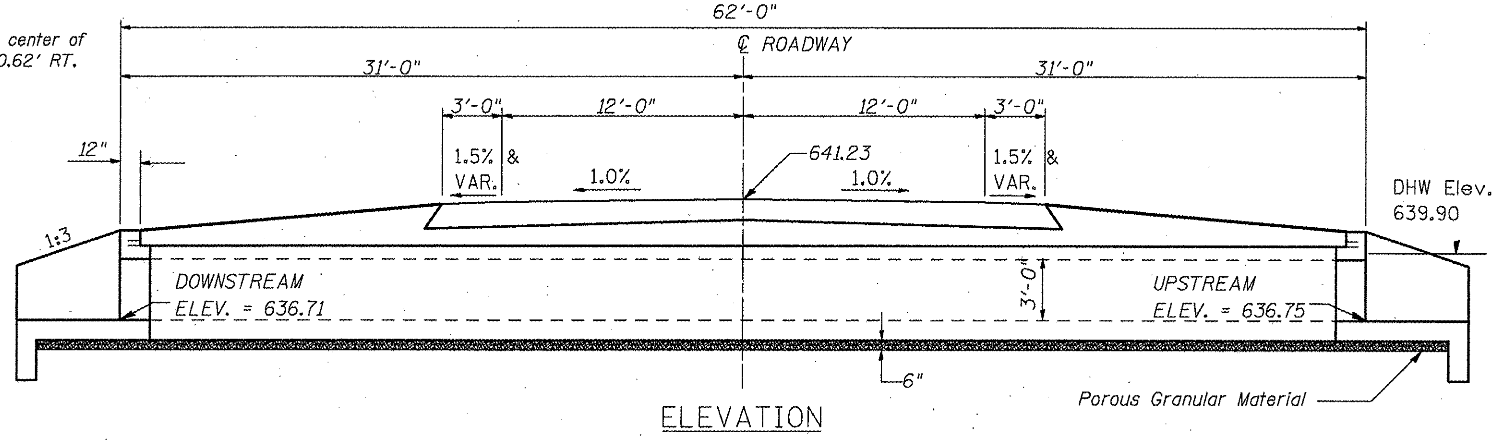
LOADING HS20-44

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

DESIGN STRESSES

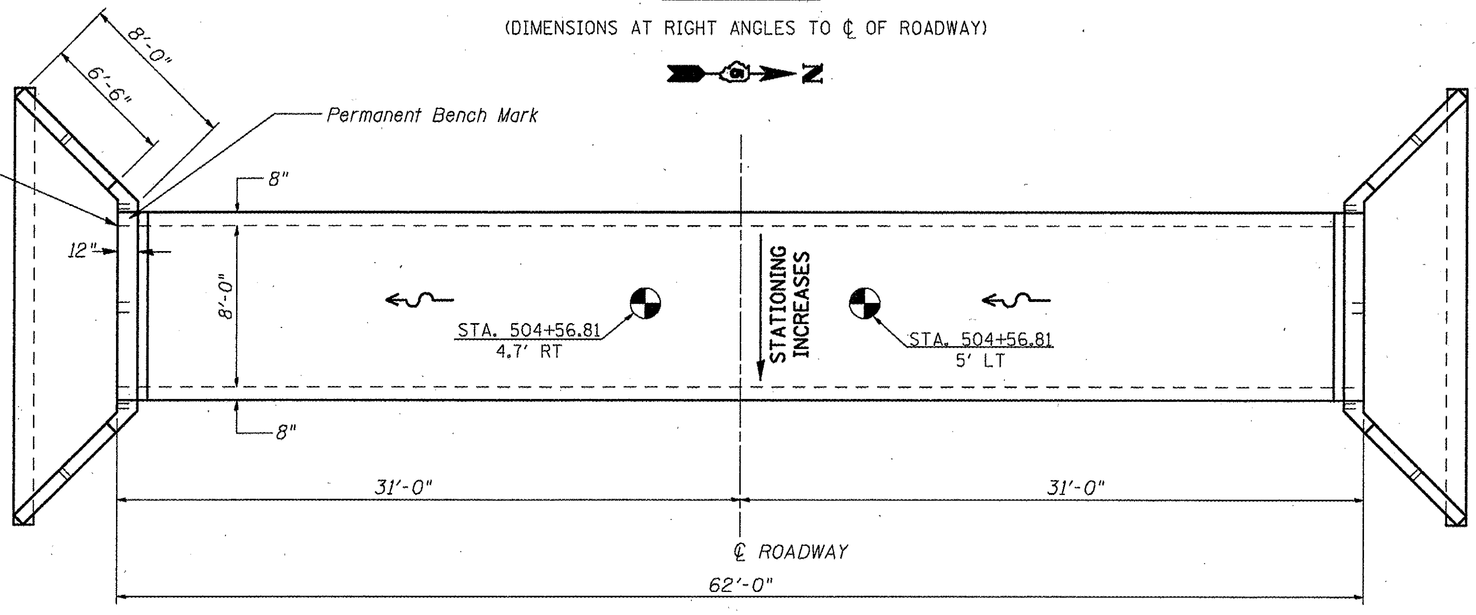
FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (reinforcement)
fy = 65,000 psi (welded wire fabric)

PRECAST UNITS
f'c = 5,000 psi
fy = 65,000 psi (welded wire fabric)



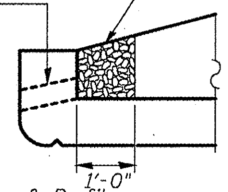
ELEVATION

(DIMENSIONS AT RIGHT ANGLES TO ℄ OF ROADWAY)



PLAN

Pavement Borings



DRAIN DETAIL

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.

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 design reinforcement areas shall conform to those found in Table 1 of AASHTO M273 for an 8'x4' box section except the extension of the As1 bars into the top slab shall be equal to (23 inches + 2 longitudinal wire spaces).

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, E-E, and F-F on Sheet 5.

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.

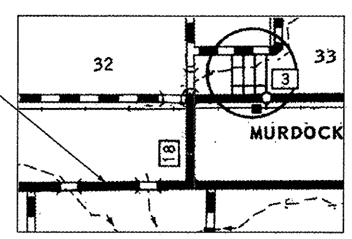
The joints between precast box sections shall be sealed, all voids filled with a mastic joint sealer. In addition, the joints shall be externally sealed on all four sides with a 13 inch wide external sealing band. The seal shall be centered over the joint, secured in place and protected during the backfilling 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 Culvert 8'x3'(M273)	Foot	59
Box Culvert End Section, Culvert No. 1	Each	2
Name Plates	Each	1
Permanent Bench Marks	Each	1
Porous Granular Embankment	Cu.Yd.	22



PROP. S.N. 021-8052
STA. 504+56.81

WATERWAY INFORMATION

Drainage Area = 0.3 sq. mi. Low Grade Elev. 641.11 @ Sta. 502+25									
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Nat. H.W.E.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
	10	69	20	20				639.2	639.2
Design	50	111	24	24				639.9	639.9
Base	100	129	24	24				640.2	640.2
Overtopping									
Max. Calc.	500	173	24	24				640.9	640.9

Note: Information provided using the Regression Method.

Design Scour Elevation Table

	Upstream	Downstream
Design Scour Elevation (ft.)	633.75	633.71

GENERAL PLAN AND ELEVATION
SINGLE 8'x3' PRECAST BOX CULVERT
F.A.P. ROUTE 323 - SECTION (145,146)CR
DOUGLAS COUNTY
STATION 504+56.81 S.N. 021-8052
CULVERT NO. 1

1. Plan & Profile
2. As Built Plan
3. Pourous Granular Embankment Detail
4. General Plan and Elevation
5. Box Culvert End Section Details

FILE NAME = c:\pw_work\PWIDOT\...	DESIGNED - RLA	REVISED -
	DRAWN - RLA	REVISED -
PLOT SCALE = 40.0000 ' / IN.	CHECKED - JMS	REVISED -
PLOT DATE = 3/22/2010	DATE - 11/2/09	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
PROPOSED CULVERT NO. 1 - S.N. 021-8052

SCALE: N/A | SHEET NO. 4 OF 5 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
323	(145,146)CR	DOUGLAS	36	13

CONTRACT NO. 70696
ILLINOIS FED. AID PROJECT