Bench Mark No. 2:
Set rail road spike in power pole sta. 315.78.739, 32,528 ft. right. El. 736.876.

Bench Mark No. 3:
found Chiseled Square Top Wing Wall,
Sta. 319+07.705, 18,950 ft. Right,
El. 735.048.

Existing Structure:
The existing structure number 027-0031, built in 1928 is located 207 ft. South of the original structure. The existing structure was built as SBI Route 115, Section 108B, Ford County at station 318+82.42. The structure is a one span reinforced concrete slab bridge, with closed abutments supported on untreated timber piles. The existing bridge is 26'-3¾" long back to back of abutments & 36'-2" wide out to out of slab. The bridge is at 30° RF skew. The existing structure to be removed and replaced by 2-10' wide x 6' deep Pre-Cast Concrete Box Culverts. Traffic to be mainained utilizing detour.
No Salvage

# STATE OF ILLINOIS
# DEPARTMENT OF TRANSPORTATION

| ROUTE NO. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| F.A.P. 798 | * | FORD | 92 | 50 |
| FED. ROAD DIST. NO. | | ILLINOIS | FED. AID PROJECT- | |

SHEET NO. S1
S4 SHEETS

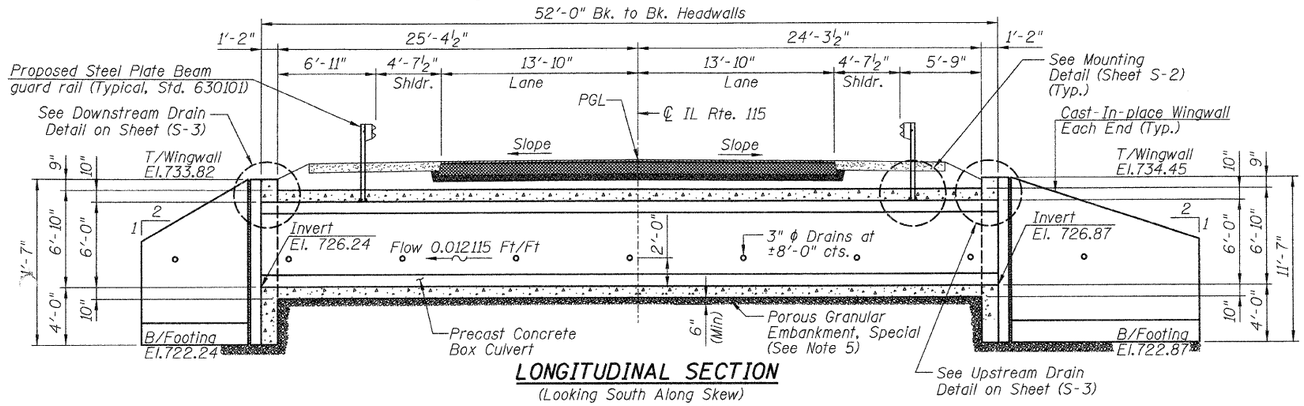
*107-BR, 108-BR, 108-BR-1 Contract #66698

## INDEX OF SHEETS

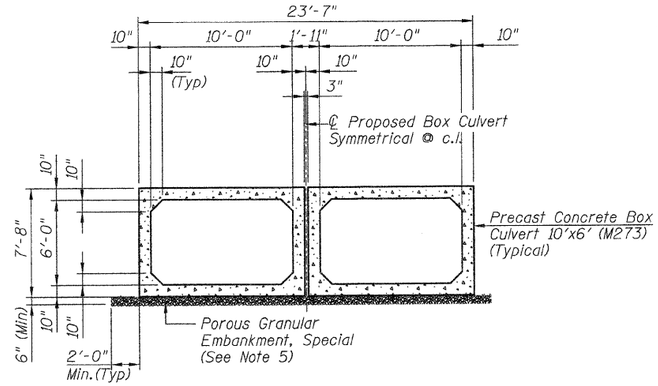


## TOTAL BILL OF MATERIAL

| ITEM | UNIT | TOTAL |
|---|---|---|
| Porous Granular Embankment | Cu. Yd. | 284.0 |
| Porous Granular Embankment, Special | Cu. Yd. | 37.0 |
| Removal of Existing Structures No. 2 | Each | 1 |
| Structure Excavation | Cu. Yd. | 515.0 |
| Reinforcement Bars | Pound | 16,370.0 |
| Reinforcement Bars, (Epoxy Coated) | Pound | 350.0 |
| Name Plates | Each | 1 |
| Concrete Box Culverts | Cu. Yd. | 70.0 |
| Precast Concrete Box Culvert 10'x6' (M273) | Foot | 64.0 |




## LONGITUDINAL SECTION
(Looking South Along Skew)

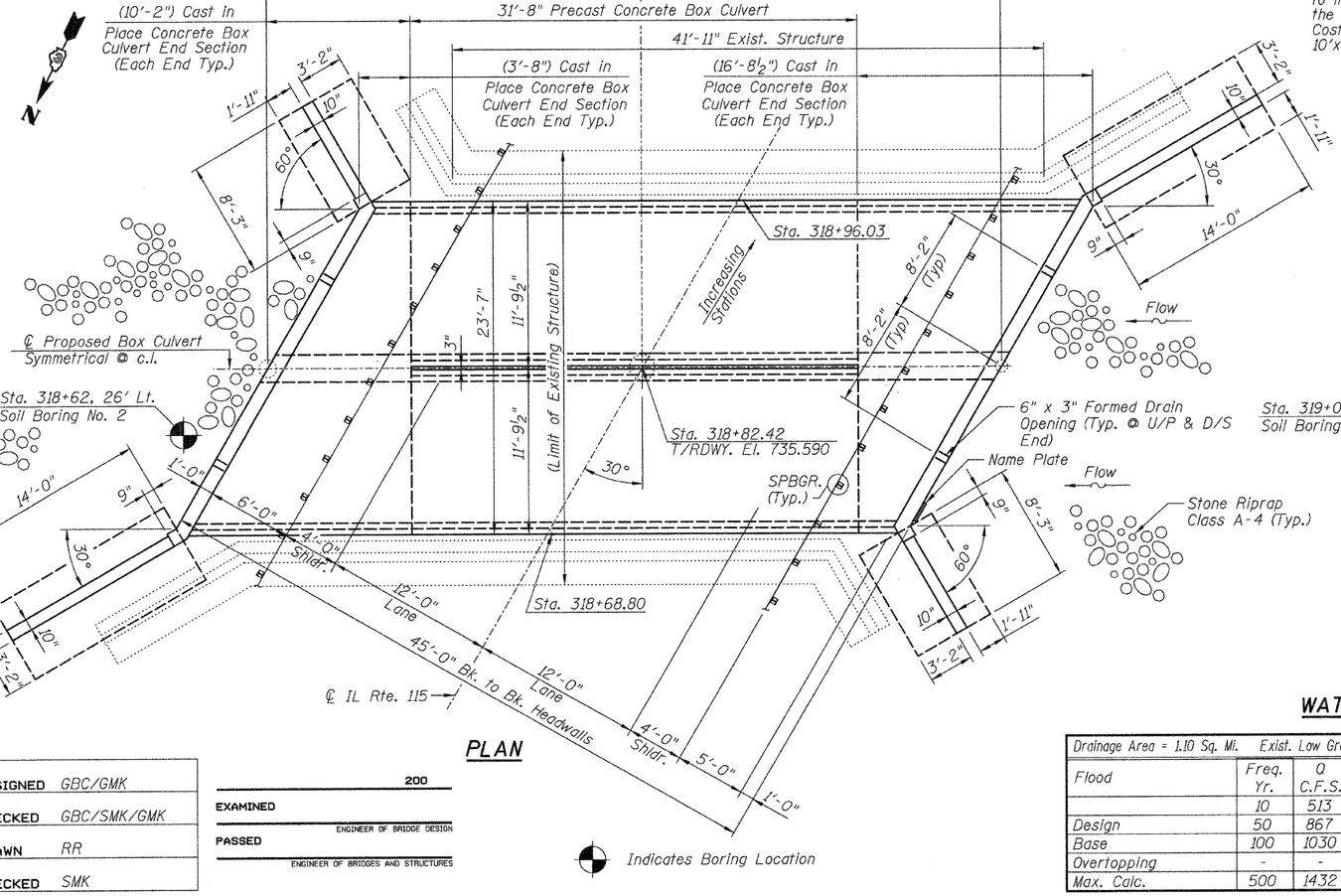



## SECTION THRU PRECAST BARREL

3" nominal space shall be left between adjacent precast sections. After the precast cells are in place and backfill has been placed to mid height of the precast concrete box section on each side, the space between the cells shall be filled with class SI concrete. Cost included with pay item for "precast concrete box culvert 10'x6' (M273)

## GENERAL NOTES

1. Reinforcement bars shall Conform to the requirements of ASTM A 706, Grade 60 (IL Modified). See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
4. Excavation behind existing abutment walls shall be done before removing the existing supestructure.
5. The material used to replace the unsuitable material removed below the bottom of the proposed precast concrete box culvert and cast-in-place concrete wingwalls shall be clean crushed material CA-7 for 6" layer and shall be paid for as "Porous Granular Embankment, Special".




## PLAN

## HIGHWAY CLASSIFICATION

F.A.P. RTE. 798-IL.RTE 115
Functional Class: Minor Arterial
ADT: 800 (2005); ADT 1000 (2018)
DHV: 91(1998); 125 (2018)
ADTT: 15.0 %
Design Speed: 55 Mph
Posted Speed: 55 Mph

## LOADING HS20-44

Allow 50 #/sq. ft. for Future Wearing Surface

## DESIGN SPECIFICATIONS

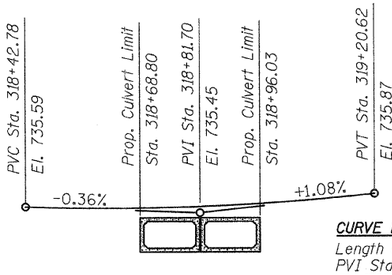
2002 AASHTO

## DESIGN STRESSES

Field Units
Cast-In-Place Reinforced Concrete
f'c = 3,500 psi (Concrete)
fy = 60,000 psi (Reinforcement)
Precast Concrete Box Culvert, Design as per AASHTO M 273 (ASTM C850).
f'c = 5,000 psi
fy = 65,000 psi ( Welded Wire Fabric)

## SEISMIC DATA

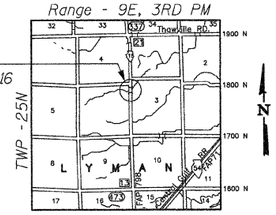
Seismic Performance Category (S.P.C.)=A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coefficient (S) = 1.0




## PROFILE GRADE
(Along ℄ Il. Route 115)

**CURVE DATA:**
Length of Curve = 77.84 Ft.
PVI Sta 318+81.70
El. 735.45'

Range - 9E, 3RD PM




## LOCATION SKETCH

STATION 318+82.42
BUILT 200 BY
STATE OF ILLINOIS
F.A.P. RT. 798 SEC. 108-B
LOADING HS20-44
STR. NO. 027-2016

## NAME PLATE
See Std. 515001

## WATERWAY INFORMATION

| Drainage Area = 1.10 Sq. Mi. | Exist. Low Grade El. = 735.5 @ Sta. 318+75 | | Prop. Low Grade El. = 735.7 @ Sta. 318+75 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Flood | Freq. Yr. | Q C.F.S. | Opening Sq. Ft. Exist. | Opening Sq. Ft. Prop. | Nat. H.W.E. | Head - Ft. Exist. | Head - Ft. Prop. | Headwater El. Exist. | Headwater El. Prop. |
| | 10 | 513 | 69.2 | 102.6 | 732.0 | 2.0 | 0.3 | 734.0 | 732.3 |
| Design | 50 | 867 | 87.9 | 120 | 732.9 | 2.5 | 0.7 | 735.5 | 733.6 |
| Base | 100 | 1030 | 94.1 | 120 | 733.2 | 2.4 | 0.9 | 735.6 | 734.1 |
| Overtopping | - | - | - | - | - | - | - | - | - |
| Max. Calc. | 500 | 1432 | 96.6 | 120 | 734.0 | 2.4 | 1.5 | 736.4 | 735.5 |

| | |
|---|---|
| DESIGNED | GBC/GMK |
| CHECKED | GBC/SMK/GMK |
| DRAWN | RR |
| CHECKED | SMK |

200

EXAMINED
ENGINEER OF BRIDGE DESIGN

PASSED
ENGINEER OF BRIDGES AND STRUCTURES

Syed M. Kazi
Licensed Structural Engineer
State of Illinois
Lic. No. 081-004047
Expires: 11-30-2008

# GENERAL PLAN AND ELEVATION
# ILLINOIS ROUTE 115 OVER DRAINAGE DITCH
# F.A.P. ROUTE 798 - SECTION 108-BR
# FORD COUNTY
# STATION 318+82.42
# EXISTING STRUCTURE NO. 027-0031
# PROPOSED STRUCTURE NO. 027-2016

Scale: None August 2008