Bench Mark No. 112:
Chiseled square top west side of headwall, Elev. 671.771

Existing Structure:
The existing structure number 027-0039, built in 1927 as SBI Route 115, Section 107BR, Ford County at station 24+09.00 is a one span reinforced concrete slab bridge, with closed abutments supported on untreated timber piles. The existing bridge is 26'-0" long back to back of abutments & 36'-2" wide out to out of slab. The existing structure to be removed and replaced by 2-12' wide x 10' deep Pre-Cast Concrete Box Culverts. Traffic to be mainained utilizing detour.
No Salvage.

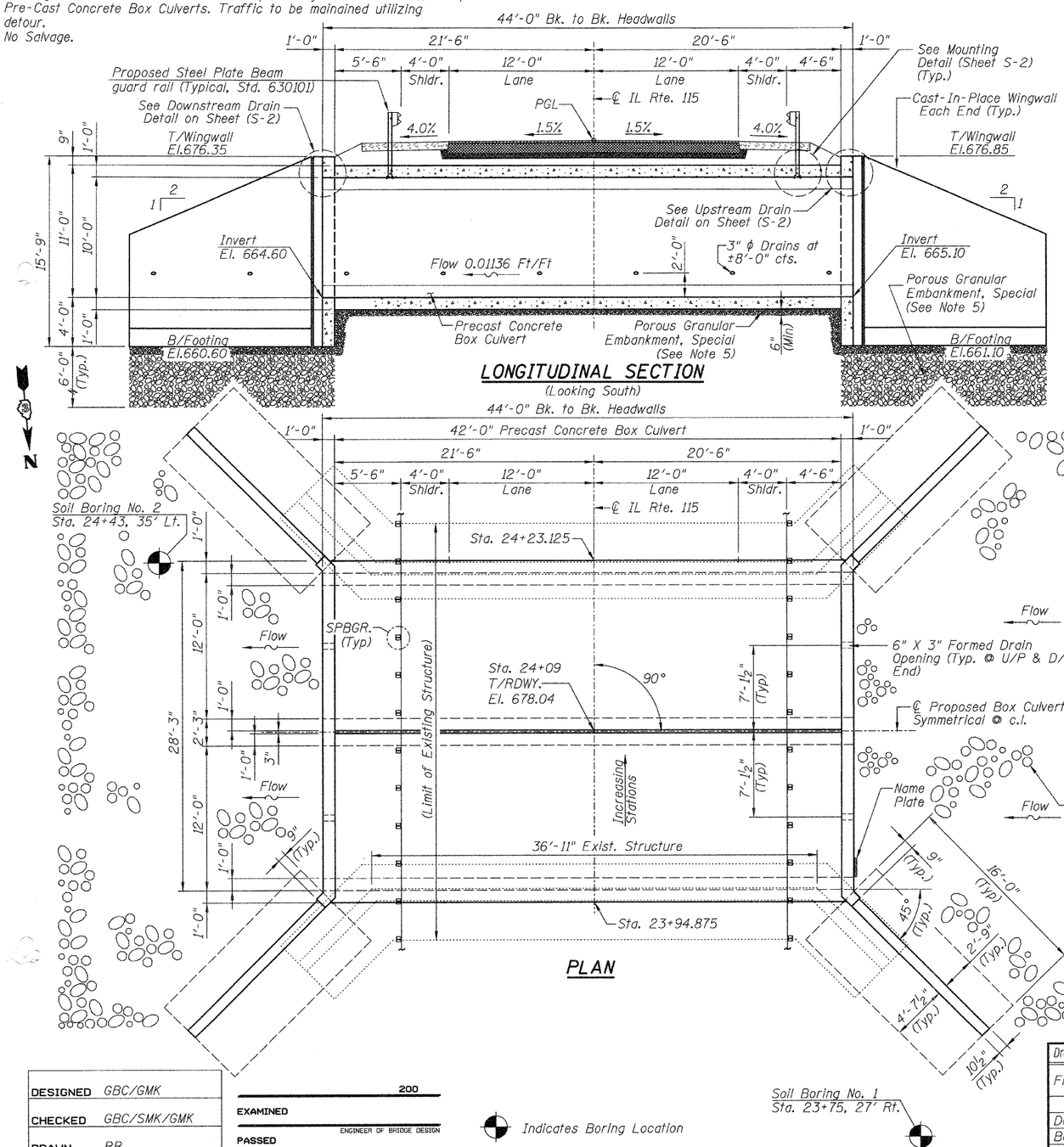
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 798	*	FORD	92	36
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. S1
S4 SHEETS

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



LONGITUDINAL SECTION
(Looking South)

PLAN

Soil Boring No. 1
Sta. 23+75, 27' Rt.

Indicates Boring Location

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

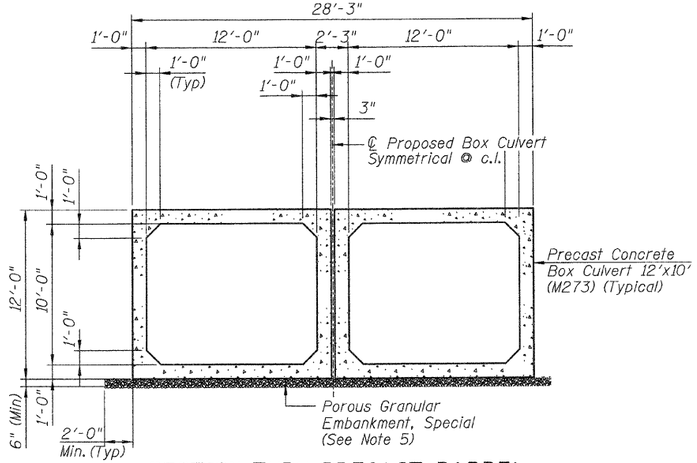
200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES



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 12'x10' (M273)".

HIGHWAY CLASSIFICATION

F.A.P. RTE. 798-IL.RTE 115
Functional Class: Minor Arterial (Non-Urban)
ADT: 750 (2005); ADT 1000 (2025)
ADTT: 175 (2005); 230 (2025)
DHV: 75
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

WATERWAY INFORMATION

Drainage Area = 4.84 Sq. Mi. Exist. Low Grade El. = 677.91 ft. @ Sta. 24+00.00 Prop. Low Grade El. = 677.91 ft. @ Sta. 24+00.00

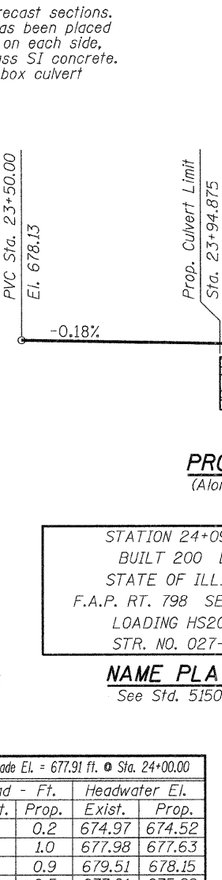
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1211	202	222	674.33	0.6	0.2	674.97	674.52
Design	50	2001	229	240	676.62	1.4	1.0	677.98	677.63
Base	100	2358	229	240	677.30	2.2	0.9	679.51	678.15
Overtopping (Exist.)	21	1583	229	240	675.51	2.4	0.5	677.91	675.99
Overtopping (Prop.)	59	2110	229	240	676.85	1.9	1.1	678.70	677.91
Max. Calc.	500	3233	-	-	677.95	-	-	-	-

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	512.0
Porous Granular Embankment, Special	Cu. Yd.	227.0
Removal of Existing Structures No. 3	Each	1
Structure Excavation	Cu. Yd.	1,348.0
Reinforcement Bars	Pound	6,470.0
Reinforcement Bars, (Epoxy Coated)	Pound	1,080.0
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	66.0
Precast Concrete Box Culvert 12'x10' (M273)	Foot	84.0

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-1 on the bottom 5'-6" layer and CA-7 on the top 6" layer and shall be paid for as "Porous Granular Embankment, Special".



PROFILE GRADE
(Along ℄ Il. Route 115)

STATION 24+09.00
BUILT 200 BY
STATE OF ILLINOIS
F.A.P. RT. 798 SEC. 107BR
LOADING HS20-44
STR. NO. 027-2014

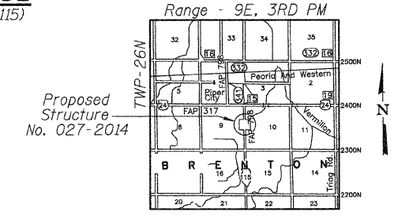
NAME PLATE
See Std. 515001

STATE OF ILLINOIS
SYED M. KAZI
081-004047
REGISTERED STRUCTURAL ENGINEER

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

CURVE DATA:
Length of Curve = 100.00 Ft.
PVI Sta 24+00.00
El. 678.04'

Range - 9E, 3RD PM



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
ILLINOIS ROUTE 115 OVER DRAINAGE DITCH
F.A.P. ROUTE 798 - SECTION 107-BR
FORD COUNTY
STATION 24+09.00
EXISTING STRUCTURE NO. 027-0039
PROPOSED STRUCTURE NO. 027-2014
Scale: None August 2008