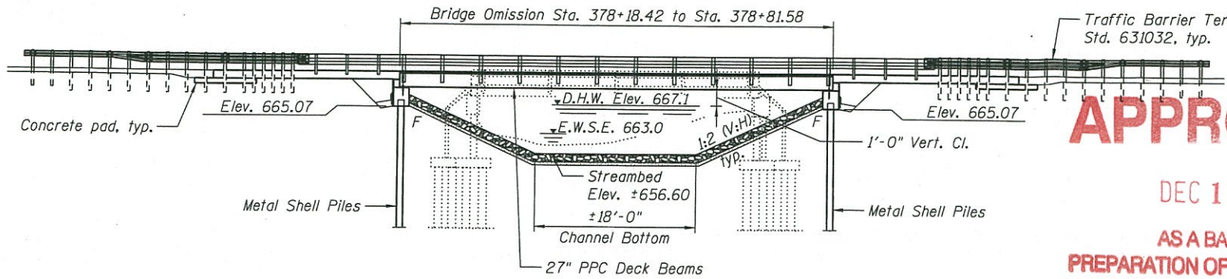
Bench Mark: Chiseled "□" on top of northeast corner of culvert on northeast side of intersection of County Highway 12 and Broadlands Road, 34.5 feet left of the roadway centerline at Station 426+07.90. Elevation = 675.67.

Existing Structure: S.N. 010-0107 built in 1924 as State Aid Route 12, Section 41B-15D at Station 115+14. Wearing surface replaced in 1960. Superstructure replaced and widened in 1982 as F.A.S. Route 522, Section 41-BR at Station 378+50.00. The existing structure consists of one span of precast prestressed deck beams on cast-in-place concrete closed abutments. Length = 46'-9 3/8" (back-to-back of original abutments). Width = 30'-0" (out-to-out deck). Traffic is to be rerouted during construction.

No salvage

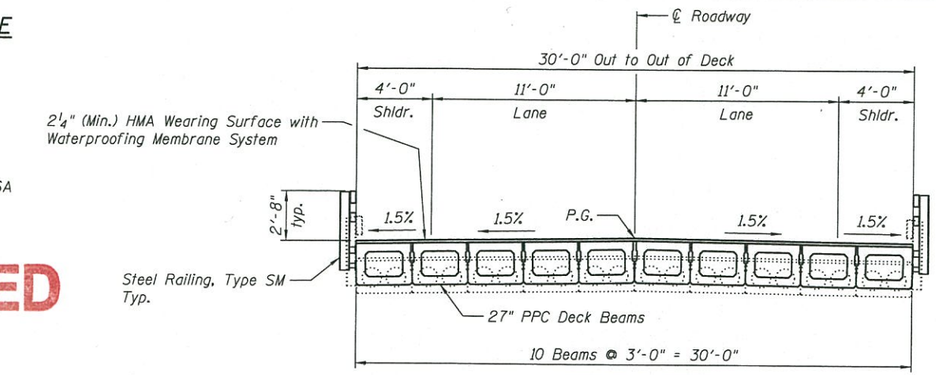
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	N. Abut.	S. Abut.
	665.07	665.07

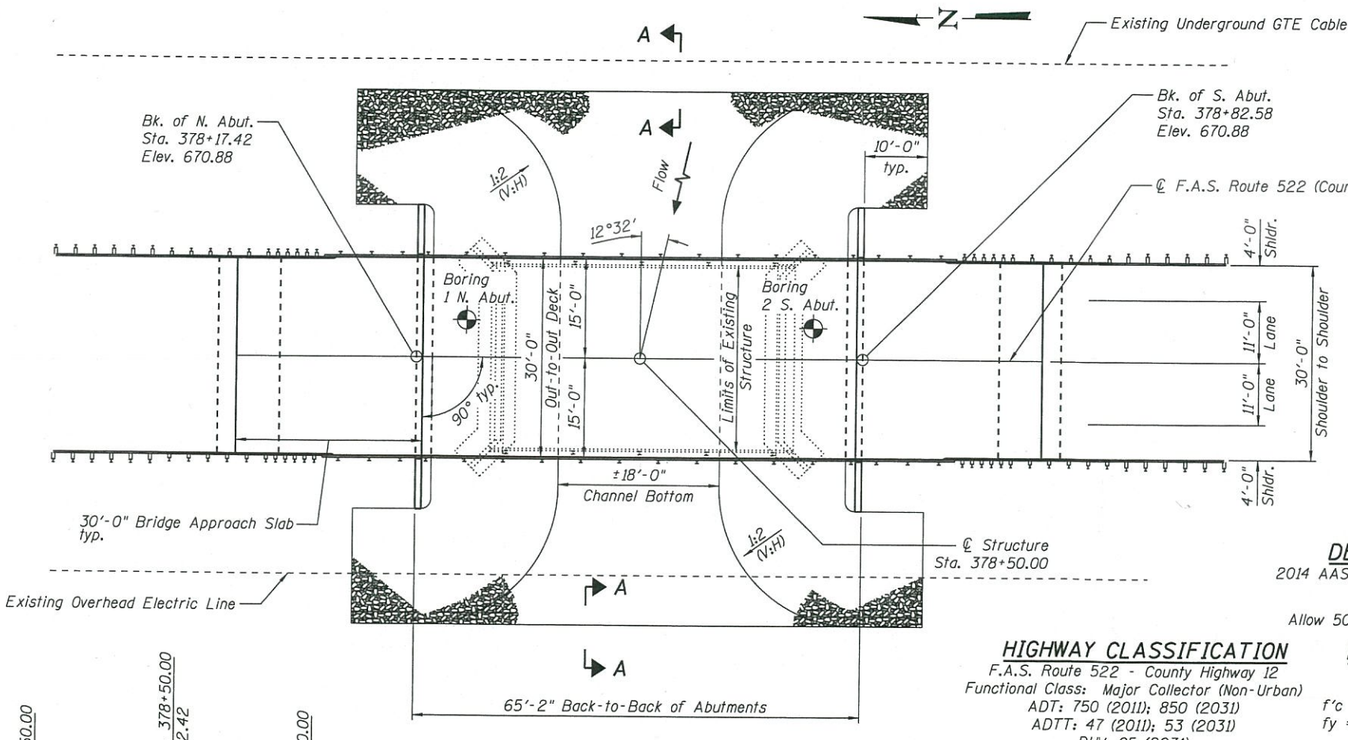


ELEVATION

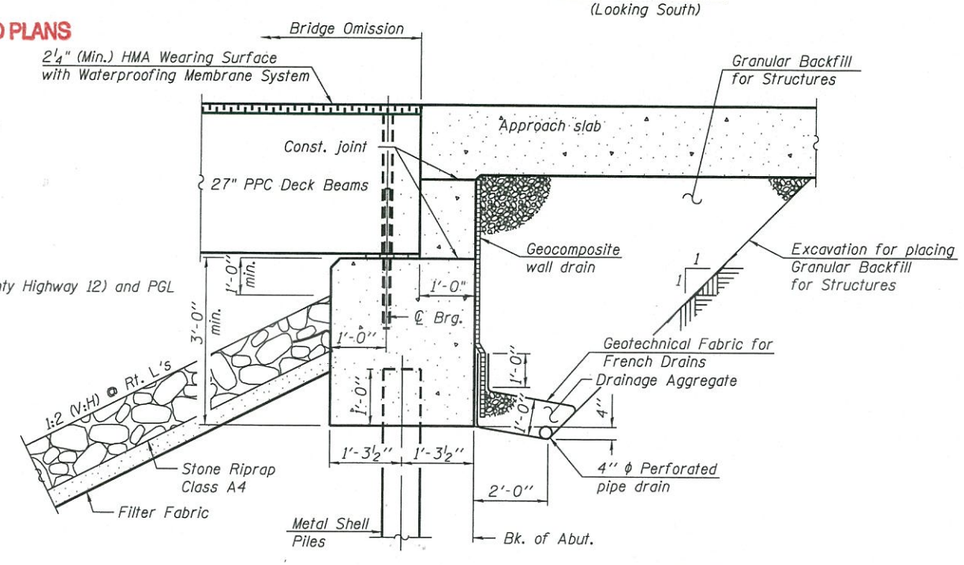
APPROVED
DEC 16 2014
AS A BASIS FOR PREPARATION OF DETAILED PLANS



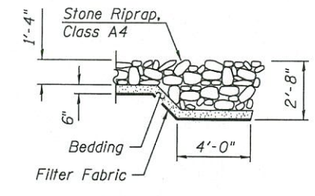
CROSS SECTION
(Looking South)



PLAN



SECTION THRU ABUTMENT
(Dimensions are at Rt. L's)



SECTION A-A

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications

LOADING HL-93

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

HIGHWAY CLASSIFICATION

F.A.S. Route 522 - County Highway 12
Functional Class: Major Collector (Non-Urban)
ADT: 750 (2011); 850 (2031)
ADTT: 47 (2011); 53 (2031)
DHV: 95 (2031)
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
2-Way Traffic
Directional Distribution: 55:45

DESIGN STRESSES

FIELD UNITS

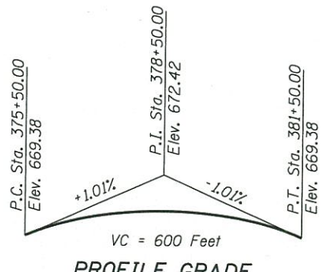
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
f's = 270,000 psi (½"ϕ Low Lax Strands)
f'si = 201,960 psi (½"ϕ Low Lax Strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.104g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.198g
Soil Site Class = C

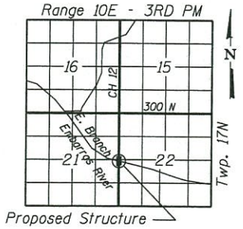


PROFILE GRADE
(along ℄ roadway)

WATERWAY INFORMATION

Drainage Area = 13.40 Sq. Mi. Low Grade Elev. 668.30 @ Sta. 386+70.00

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.
Design	20	1310	297	351	667.1	1.2	1.0	668.3	668.1
Base	100	1920	323	390	667.7	1.2	1.1	668.9	668.8
Overtopping	30	1846		364	667.3		1.1		668.4
Max. Calc.									



LOCATION SKETCH

GENERAL PLAN & ELEVATION
COUNTY HIGHWAY 12 OVER
E. BRANCH OF EMBARRAS RIVER
F.A.S. ROUTE 522 SEC. 41BR-1
CHAMPAIGN COUNTY
STATION 378+50.00
STRUCTURE NO. 010-0290

INFRASTRUCTURE ENGINEERING | INCORPORATED
33 West Monroe | Suite 1540 | Chicago, IL 60603
P 312.425.9560 | F 312.425.9564 | www.infrastructure-eng.com

USER NAME =	DESIGNED - MDJ	REVISED -	
	CHECKED - SPK	REVISED -	
PLOT SCALE =	DRAWN - MDJ	REVISED -	
PLOT DATE =	CHECKED - SPK	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 1 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
522	41BR-1	CHAMPAIGN	1	1
		CONTRACT NO. 70598		
		ILLINOIS FED. AID PROJECT		

12/4/2014 442659 PM P:\P-11\2418-88 PTB 158-024 D5 Phase I & II\WD 4\DGN\C4D2_Sheets\B180290-70598-TSL-00003.dgn