BENCHMARK

Chiseled "a" on the base of the traffic signal pole on the southeast corner of Bethany Road and North 1st Street - Elev. 839.74

EXISTING STRUCTURE

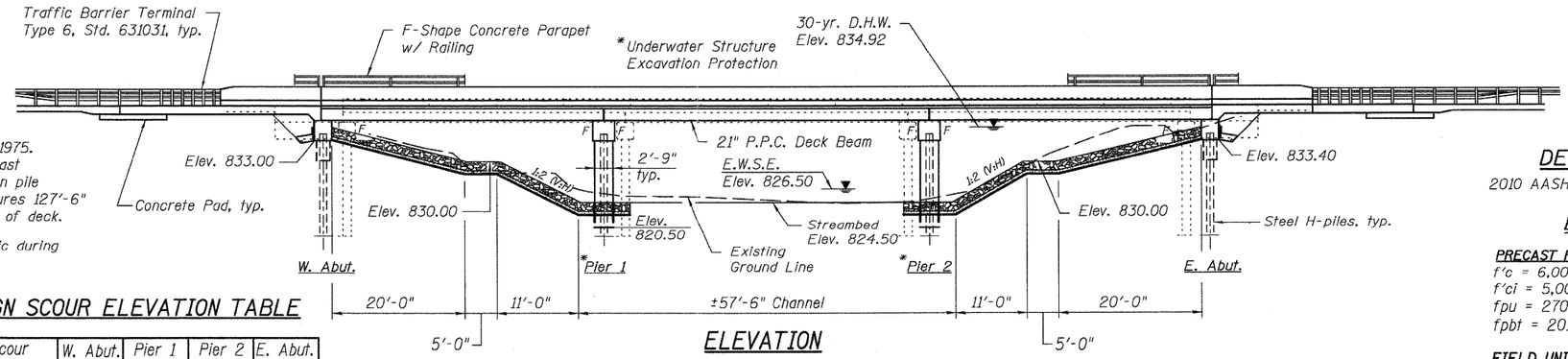
Structure No. 019-4704 was originally built in 1975. The three-span structure consists of 17" Precast Prestressed Concrete Deck Beams supported on pile bent abutments and piers. The structure measures 127'-6" back to back abutments and 42'-0" out to out of deck.

The existing roadway will remain open to traffic during construction utilizing staged construction.

SALVAGE

Existing flood gauge to be salvaged. Contractor to deliver to location specified by the Engineer.

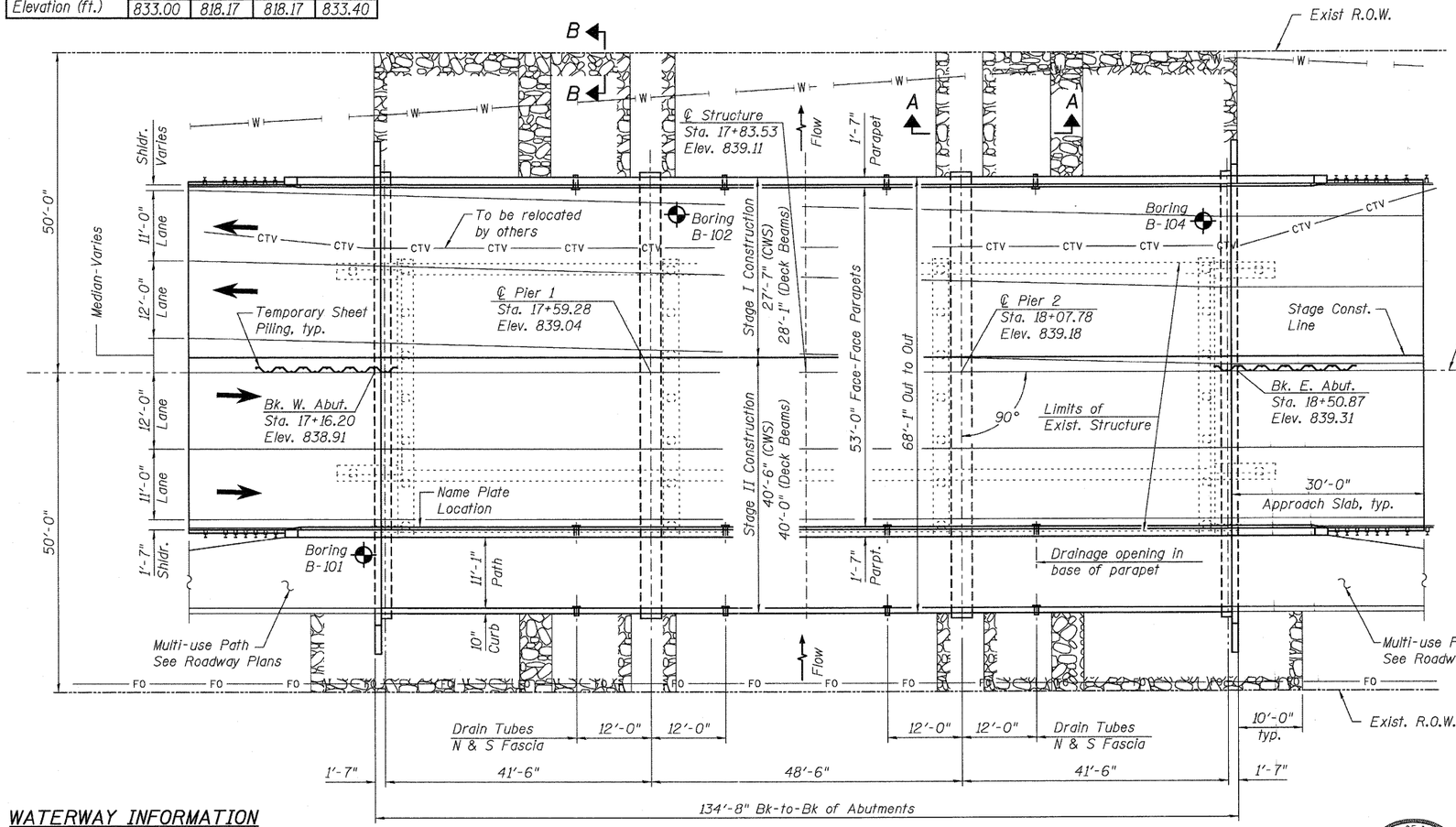
Existing name plate to be salvaged. Contractor to deliver to Engineer.

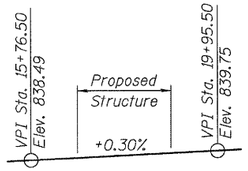


ELEVATION

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	E. Abut.
	833.00	818.17	818.17	833.40





PROFILE GRADE

(Along ℄ Bethany Road)

WATERWAY INFORMATION

Drainage Area = 85 sq. mi. Low Grade Elev. 837.6 @ Sta. 14+80

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	30	4,000	801	844	834.92	0.03	0.00	834.95	834.92
Base	100	5,250	894	926	835.55	0.05	0.00	835.60	835.55
Max. Calc.	500	6,630	894	1001	836.12	0.20	0.02	836.32	836.14

LEGEND

CTV — Comcast

W — Water Main

FO — Fiber Optic

PLAN

" I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO LRFD Bridge Design Specifications'."

STATE OF ILLINOIS
ANDREW E. UNDERWAGER
081-006218
CHICAGO, IL
LICENSED STRUCTURAL ENGINEER

July 1, 2011
EXPIRES NOVEMBER 30, 2012

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications

DESIGN STRESSES

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2" ϕ Low Lax Strands)
fpbt = 201,960 psi (1/2" ϕ Low Lax Strands)

FIELD UNITS

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

LOADING HL-93

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

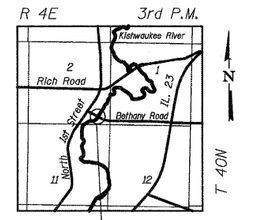
SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = .086g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = .154g
Soil Site Class = D

STATION 17+83.53
BUILT BY
CITY OF DEKALB
LOADING HL-93
STRUCTURE NO. 019-6107

NAME PLATE

See Std. 515001



LOCATION SKETCH

GENERAL PLAN & ELEVATION
BETHANY ROAD OVER
S. BR. KISHWAUKEE RIVER
SECTION 04-00167-00-BR
DEKALB COUNTY
STATION 17+83.53
STRUCTURE NO. 019-6107

WILLS BURKE KELSEY ASSOCIATES LTD.
116 West Main Street, Suite 201
St. Charles, Illinois 60174
(630) 443-7755

USER NAME = $USER$	DESIGNED - MLH	REVISED -	
	CHECKED - AEU	REVISED -	
PLOT SCALE =	DRAWN - MLH	REVISED -	
PLOT DATE = 7/6/2011	CHECKED - AEU	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
5355	04-00167-00-BR	DEKALB	88	47
		CONTRACT NO.87491		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FILE NAME = W:\Projects\2011\1200054 Bethany@Kishwaukee\Structural\Dgn\2011107-87491-001-GP&E.dgn