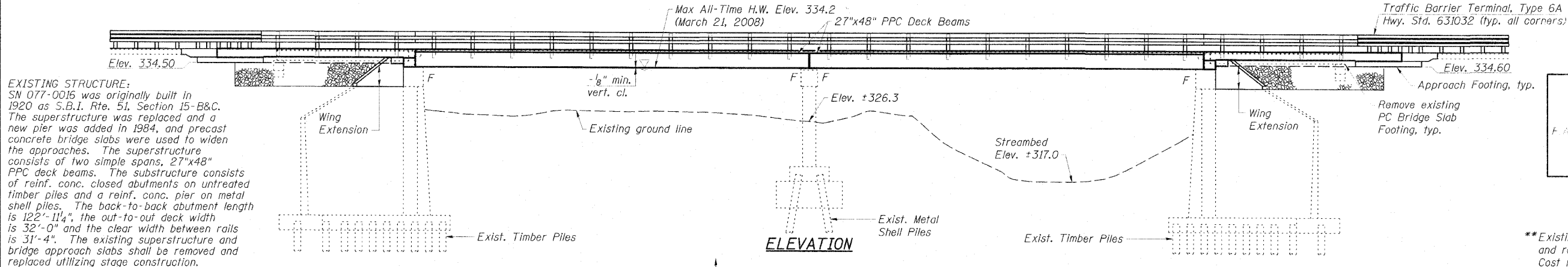


BENCHMARK: BM 0770802 - RR spike in power pole at Sta. 834+93, 30'+ Lt., Elev. 333.76 (NAVD 88)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Note:
See sheet 2 of 20 for Structure Index of Sheets.



EXISTING STRUCTURE:
SN 077-0016 was originally built in 1920 as S.B.I. Rte. 51, Section 15-B&C. The superstructure was replaced and a new pier was added in 1984, and precast concrete bridge slabs were used to widen the approaches. The superstructure consists of two simple spans, 27"x48" PPC deck beams. The substructure consists of reinf. conc. closed abutments on untreated timber piles and a reinf. conc. pier on metal shell piles. The back-to-back abutment length is 122'-11 1/4", the out-to-out deck width is 32'-0" and the clear width between rails is 31'-4". The existing superstructure and bridge approach slabs shall be removed and replaced utilizing stage construction.

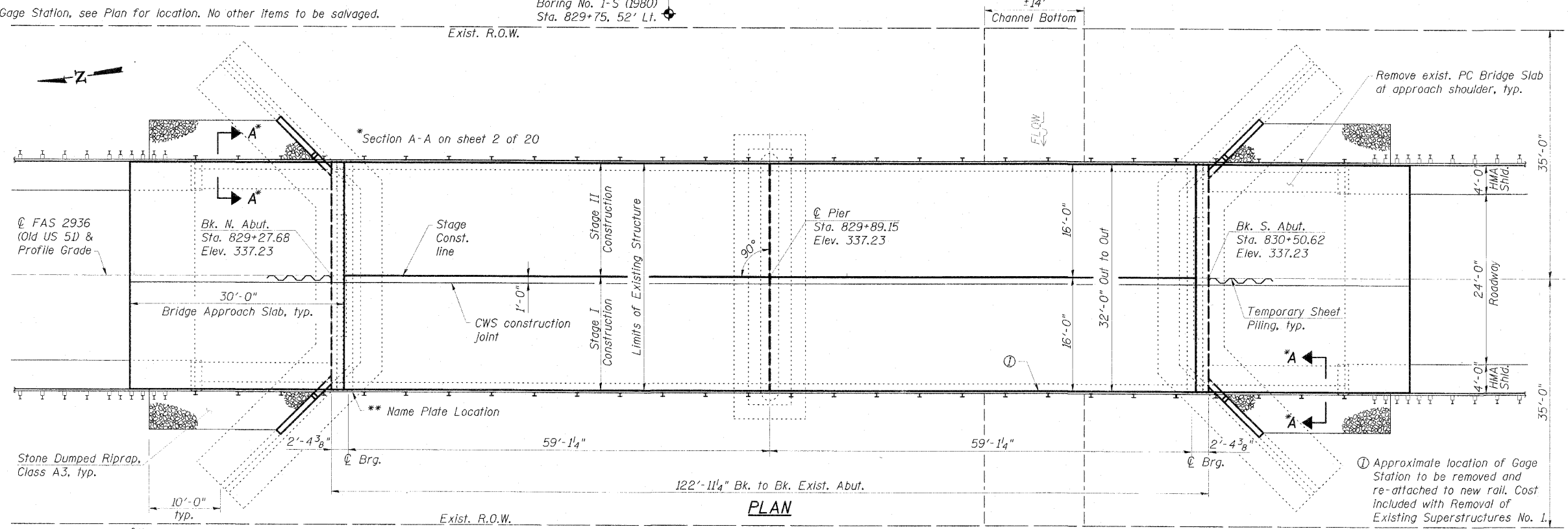
STATION 829+89.15
RE-BUILT 20__ BY
STATE OF ILLINOIS
F.A.S. RT. 2936 SEC. 14BR-1
LOADING HL-93
STR. NO. 077-0016

NAME PLATE
(See Hwy. Std. 515001)

** Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

Salvage existing Gage Station, see Plan for location. No other items to be salvaged.

Boring No. 1-S (1980)
Sta. 829+75, 52' Lt.

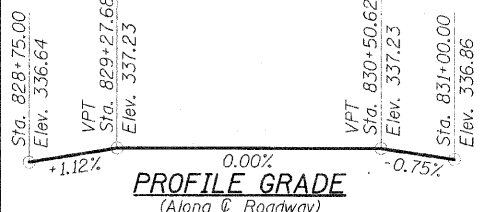


APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Richard D. Payne
ENGINEER OF BRIDGES AND STRUCTURES



EXPIRES 11-30-10
R.D.P.
SIGNATURE
05-18-10
DATE

① Approximate location of Gage Station to be removed and re-attached to new rail. Cost included with Removal of Existing Superstructures No. 1.



LOADING HL-93 (NEW CONST.)
LOADING HS20-44 (EXIST. CONST.)
No allowance for future wearing surface.

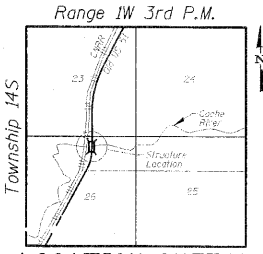
DESIGN SPECIFICATIONS
NEW CONSTRUCTION
2007 AASHTO LRFD Bridge Design Specifications with 2008 & 2009 Interims
EXISTING CONSTRUCTION
2002 AASHTO Bridge Design Specifications
1995 FHWA Seismic Retrofitting Manual For Highway Bridges

DESIGN STRESSES
NEW CONSTRUCTION

FIELD UNITS		PRECAST PRESTRESSED UNITS	
$f'_c = 3,500$ psi	$f'_c = 5,000$ psi (CWS only)	$f'_c = 6,000$ psi	$f'_c = 5,000$ psi
$f_y = 60,000$ psi (Reinforcement)		$f_{pu} = 270,000$ psi ($\frac{1}{2}$ " low lax strands)	$f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " low lax strands)
EXISTING CONSTRUCTION		ORIGINAL ABUTMENT ELEMENTS (1920)	
$f'_c = 3,500$ psi	$f_y = 60,000$ psi (Reinforcement)	(ASSUMED VALUES)	$f'_c = 3,000$ psi
			$f_y = 32,000$ psi (Reinforcement)

SEISMIC DATA

EXISTING CONSTRUCTION
Seismic Performance Category (SPC) = B
Horizontal Bedrock Acceleration Coefficient (A) = 0.168g
Site Coefficient (S) = 1.0



LOCATION SKETCH

GENERAL PLAN
OLD US 51 OVER CACHE RIVER
FAS ROUTE 2936 - SECTION 14BR-1
PULASKI COUNTY
STATION 829+89.15
STRUCTURE NO. 077-0016

ESCA
CONSULTANTS, INC.

DESIGNED BY:	MTD	01/10
DRAWN BY:	DWH/KAH	01/10
CHECKED BY:	MTD	01/10
APPROVED BY:	RDP	05/10

SHEET NO. 1	F.A.S. RTE. 2936	SECTION 14BR-1	COUNTY PULASKI	TOTAL SHEETS 68	SHEET NO. 16
20 SHEETS	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT NO.		CONTRACT NO. 78071		