

Bench Mark: U.S.G.S. Disk on top of Southwest wingwall, elevation 801.26.

Existing Structure: S.N. 045-0016 carrying IL Route 31 over Soo Line Railroad was originally built in 1952 as SBI Route 22, Section R-VB. The bridge is a 3-span continuous structure with 12 lines of non-composite rolled steel beams. The existing structure is 58'-4" out to out and measures 246'-0" back to back abutment, and is supported by spill thru pile bent abutments and multi column piers. The structure was rehabilitated in 1984 and included waterproofing the deck and installing a bituminous wearing surface, new 1'-8" wide bridge parapets, the transverse expansion joints were rebuilt and the longitudinal open joint was closed. The transverse joints now consist of a 2 1/2" neoprene joint at south abutment, and a poured joint at the north abutment. The structure has a 50°24'00" forward left skew. The existing deck is to be removed and replaced and substructure repaired. One lane of traffic in each direction is to be maintained utilizing stage construction. No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCOPE OF WORK

1. Remove and replace deck and approach pavements.
2. Remove and replace abutment backwalls and substructure repairs.
3. Remove and replace bearings at abutments and piers. Jack and raise existing superstructure by providing steel extensions at abutments and Pier 2, and concrete extensions at Pier 1.
4. Remove and replace all end diaphragms.
5. Provide stud shear connectors.
6. Remove blast plates.
7. Clean and paint existing structural steel within 10 ft of each beam end, the exterior surface and bottom flange of fascia beam, and interior surfaces where paint failure occurred.
8. Regrade and construct bituminous coated aggregate slopewalls.

LOADING HS20-44

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

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

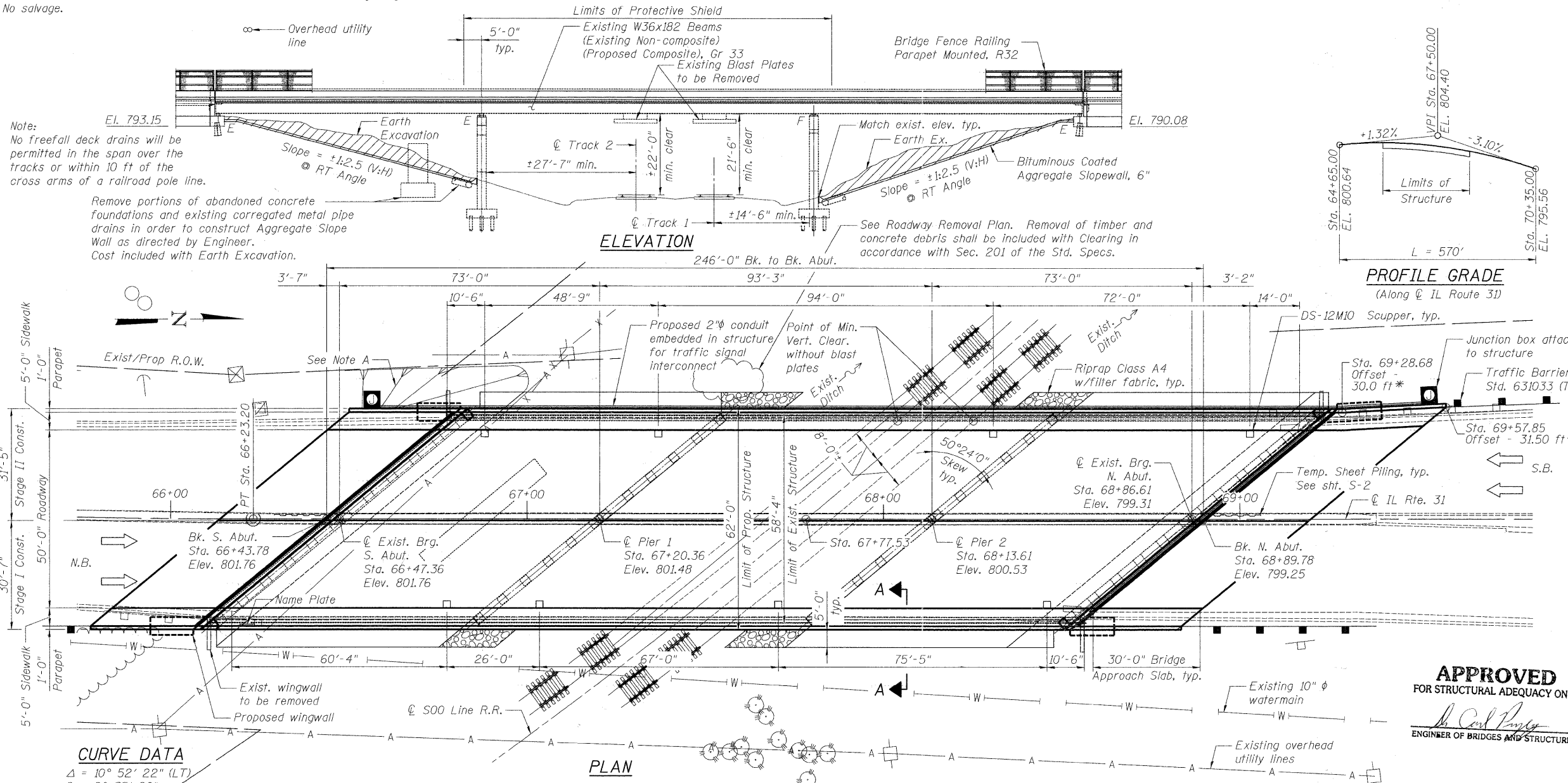
DESIGN STRESSES

FIELD UNITS (New Construction)
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)

FIELD UNITS (Existing Construction)
 $f'_c = 800$ psi (w/earth pressure)
 $f_y = 33,000$ psi (structural steel)
 $f_y = 40,000$ psi (reinforcement)

SEISMIC DATA

Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = 0.04g
 Site Coefficient (S) = 1.0



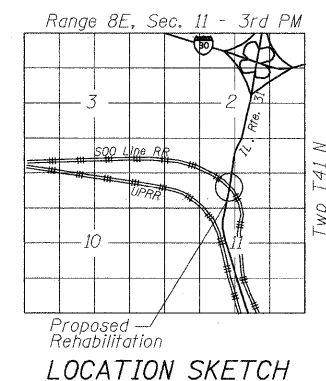
PROFILE GRADE
(Along IL Route 31)

PLAN

SECTION A-A

SECTION THRU ABUTMENT SLOPE WALL

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
[Signature]
ENGINEER OF BRIDGES AND STRUCTURES



CURVE DATA

$\Delta = 10^\circ 52' 22''$ (LT)
 $D = 2^\circ 35' 20''$
 $T = 210.63'$
 $L = 420.00'$
 $E = 10.00'$
 $R = 2,213.24'$
 S.E. = Existing, 2% max.
 P.C. = Sta. 62+03.20
 P.T. = Sta. 66+23.20
 P.I. = Sta. 64+13.83



SIGNED: *[Signature]*
 DATE: JUNE 27, 2011
 EXPIRES: November 30, 2012

DESIGNED - TAH
CHECKED - DF
DRAWN - LAM
CHECKED - BLU

BOWMAN, BARRETT & ASSOCIATES INC.
 CONSULTING ENGINEERS
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 Job No. 910

SHEET NO. S-1	F.A.U. RTE. 3887	SECTION R-VB-R	COUNTY KANE	TOTAL SHEETS 83	SHEET NO. 35
S-34 SHEETS					
CONTRACT NO. 60C06					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT					

GENERAL PLAN & ELEVATION
 IL ROUTE 31 OVER SOO LINE R.R.
 F.A.U. RTE. 3887 SEC. R-VB-R
 KANE COUNTY
 STATION 67+77.53
 STRUCTURE NO. 045-0016