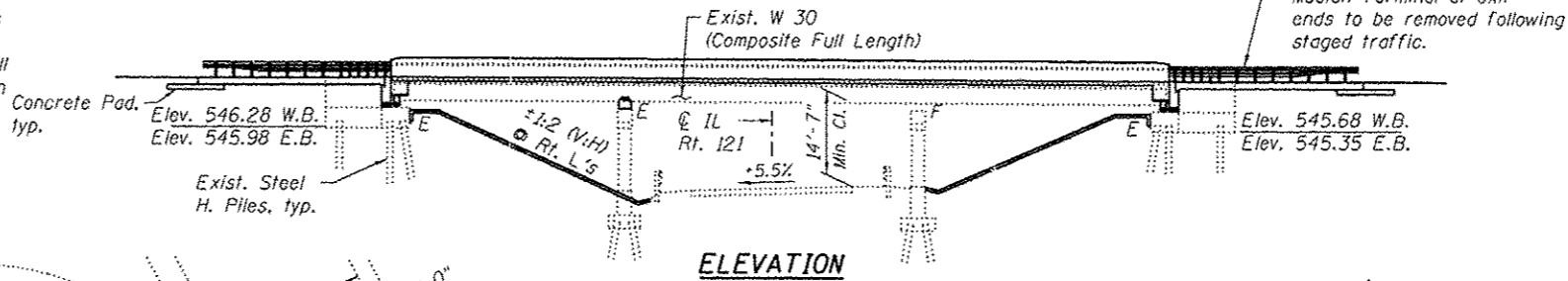


Bench Mark: Chiseled square on the SE wingwall on the W.B. Structure over IL Rte. 121. Elevation = 556.86.

Existing Structure: S.N. 018-0047 (Westbound) and 018-0048 (Eastbound) built in 1969 as F.A.I. Rt. 70 Section 18-47HB at Station 142+93.20. The superstructure consists of super-elevated three span continuous steel beams with a reinforced concrete deck slab. All substructure units are supported off of steel H-piling. The substructure consists of open abutments and grade separation piers on piled footings. The structure length measures 138'-5" bk-to-bk of abutments and 42'-0" out-to-out of deck with a 24°37'10" skew. Spans 1, 2, & 3 are 39'-8", 51'-9", and 41'-8" respectively. Existing concrete decks, approach slabs, abutment backwalls and abutment bearings to be removed and replaced. Slopewalls to be repaired.

Traffic to be maintained using cross-overs.

No Salvage



SCOPE OF WORK:

- Repair concrete slopewall.
- Remove existing concrete deck, approach slabs and abutment backwalls.
- Jack and raise the existing beams 37".
- Install concrete pedestals and new bearings at the piers and abutments at S.N. 018-0048 (E.B.).
- Install new abutment bearings and steel extensions at S.N. 018-0047 (W.B.).
- Construct new backwalls.
- Construct new deck, approach slabs and install expansion joints.

LOADING HS20-44 & ALT.

Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications

SEISMIC DATA

Seismic Performance Category (SPC)=A
Bedrock acceleration coefficient (A) = 0.067
Site Coefficient (S) = 1.0

DESIGN STRESSES

FIELD UNITS (NEW CONSTRUCTION)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (M270 Grade 36)

FIELD UNITS (EXIST. CONSTRUCTION)

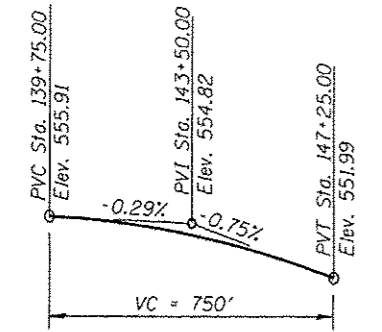
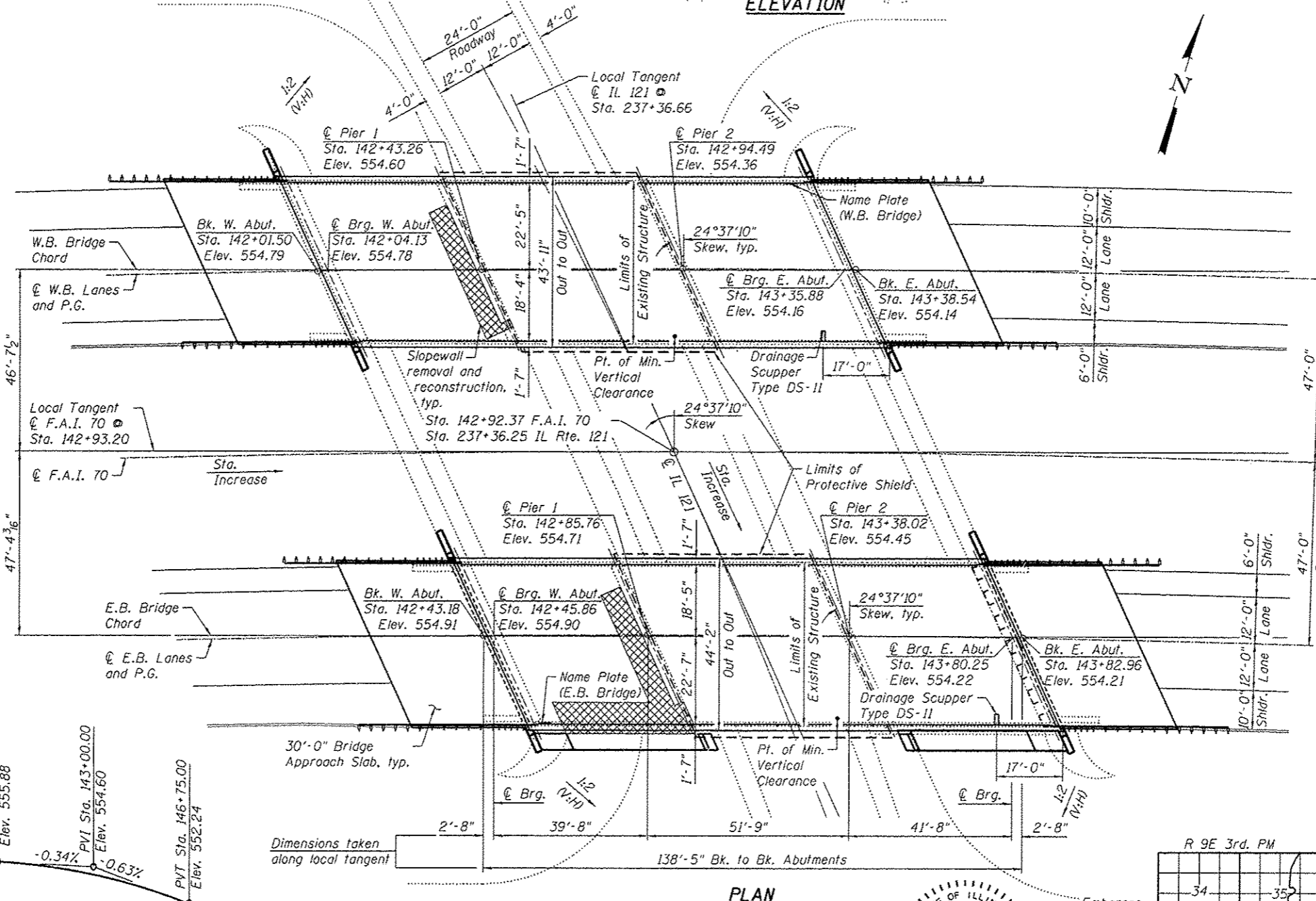
fy = 36,000 psi (Structural Steel)
f'c = 3,500 psi (Substructure)
fy = 40,000 psi (Reinforcement)

FAI 70 CURVE DATA

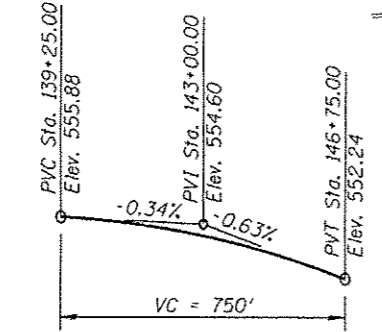
$\Delta = 35^\circ-39'-03''$
 $D = 0^\circ-59'-59''$
 $T = 1842.82$
 $L = 3565.95'$
 $E = 289.00'$
 $R = 5730.98'$
 $S.E. = 0.028$ ft/ft
 $P.C. = \text{Sta. } 117+61.09$
 $P.T. = \text{Sta. } 153+27.05$
 $P.I. = \text{Sta. } 136+03.91$

IL 121 CURVE DATA

$\Delta = 39^\circ-52'-32''$
 $D = 3^\circ-27'-28''$
 $T = 601.08$
 $L = 1,153.24'$
 $E = 105.65'$
 $R = 1,657.04'$
 $S.E. = +0.055$ ft/ft
 $P.C. = \text{Sta. } 228+87.80$
 $P.T. = \text{Sta. } 240+41.04$
 $P.I. = \text{Sta. } 234+88.88$

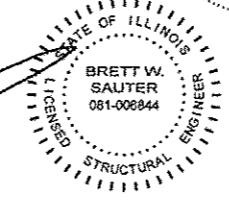


PROFILE GRADE F.A.I. RTE. 70 EASTBOUND
Along \hat{c} Roadway

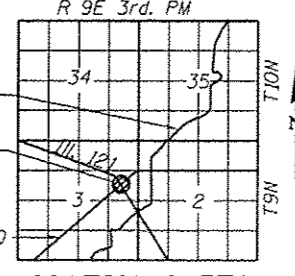


PROFILE GRADE F.A.I. RTE. 70 WESTBOUND
Along \hat{c} Roadway

APPROVED
For Structural Adequacy Only
[Signature]
Engineer of Bridges & Structures



DATE: 8/14/2012
SEAL EXPIRES: 11/30/2012



GENERAL PLAN & ELEVATION
F.A.I. 70
OVER ILL ROUTE 121
SEC. (18-47B, 18-47HB)BR
CUMBERLAND COUNTY
STATION 142+93.20
STRUCTURE NO.
018-0047 (W.B.) & 018-0048 (E.B.)



USER NAME : bsauter	DESIGNED - BWS	REVISOR -
PLLOT SCALE : 3/4" = 1'	CHECKED - DL	REVISOR -
PLLOT DATE : 8/14/2012	DRAWN - RD	REVISOR -
	CHECKED - DL	REVISOR -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE. 70	SECTION (18-47B, 18-47HB)BR	COUNTY CUMBERLAND	TOTAL SHEETS 147	SHEET NO. 59
			CONTRACT NO. 74466	