

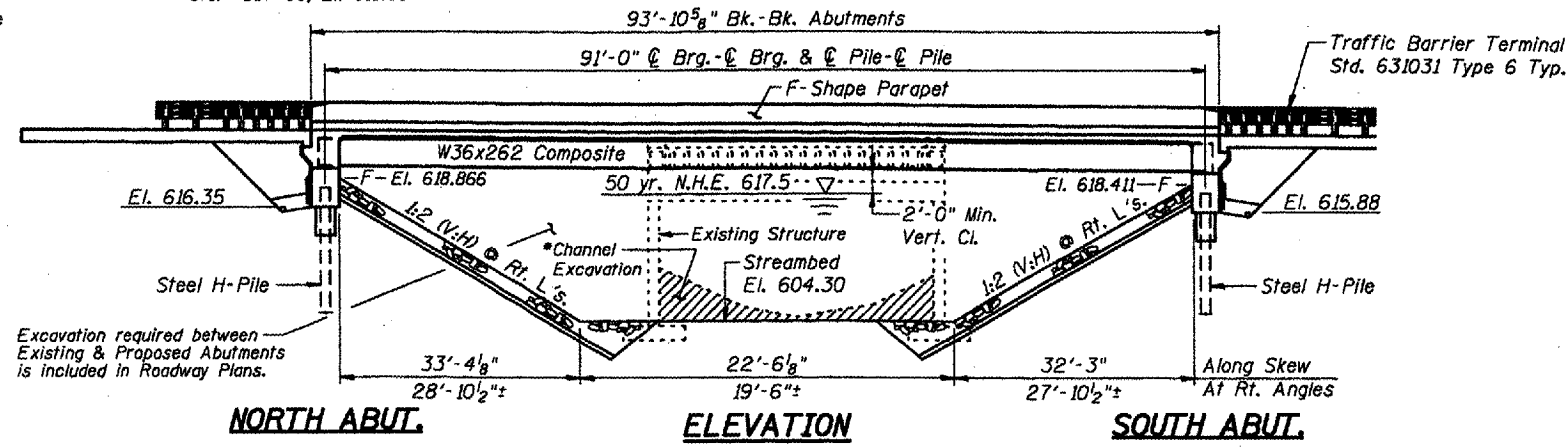
**EXISTING STRUCTURE** S.N. 048-0040  
 Built in 1932 as S.B.I. Rte. 180 as a single span reinforced concrete slab bridge 30'-6" Bk.-Bk. abutments on untreated timber piles. Existing bridge to be removed and replaced. No Salvage.

**BENCH MARK** Set Chiseled "I" Northeast Wingwall of Rte. 180 Bridge @ Twp. Rd. 1750N. Sta. +587+00, El.=618.63

CONTRACT #88896

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
FAS 1195	(112B) BR-3	KNOX	76	21
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

- INDEX OF STRUCTURAL SHEETS**
1. GENERAL PLAN AND ELEVATION
  2. RIPRAP & PILE LAYOUT
  3. TOP OF SLAB ELEVATIONS
  4. APPROACH PAVEMENT SHEET
  5. SUPERSTRUCTURE
  6. FRAMING AND DIAPHRAGM DETAILS
  7. PARAPET DETAILS
  8. NORTH ABUTMENT
  9. SOUTH ABUTMENT
  10. BAR SPLICER (COUPLER DETAILS)
  11. STEEL H-PILE DETAILS
  12. BORING LOGS



**BILL OF MATERIAL - BRIDGE** Structural Sheet 1 of 12

ITEM	UNIT	SUB	SUPER	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.	170		170
Stone Riprap, Class A4	Sq. Yd.	1,599		1,599
Filter Fabric	Sq. Yd.	1,599		1,599
Removal of Existing Structures No. 2	Each		1	1
Structure Excavation	Cu. Yd.	114		114
Concrete Encasement	Cu. Yd.	5.0		5.0
Concrete Structures	Cu. Yd.	41.8		41.8
Concrete Superstructure	Cu. Yd.		163.1	163.1
Bridge Deck Grooving	Sq. Yd.		397	397
Protective Coat	Sq. Yd.		496	496
Furnishing & Erecting Structural Steel	L. Sum		1	1
Stud Shear Connectors	Each		1,332	1,332
Reinforcement Bars, Epoxy Coated	Pound	5,820	31,440	37,260
Bar Splicers	Each		80	80
Furnishing Steel Piles, HP 12x53	Foot	534		534
Driving Piles	Foot	534		534
Test Pile, Steel HP 12x53	Each	2		2
Name Plates	Each	1		1
Anchor Bolts, 1"	Each		24	24
Geocomposite Wall Drain	Sq. Yd.	83		83
Pipe Underdrains for Structures 4"	Foot	173		173

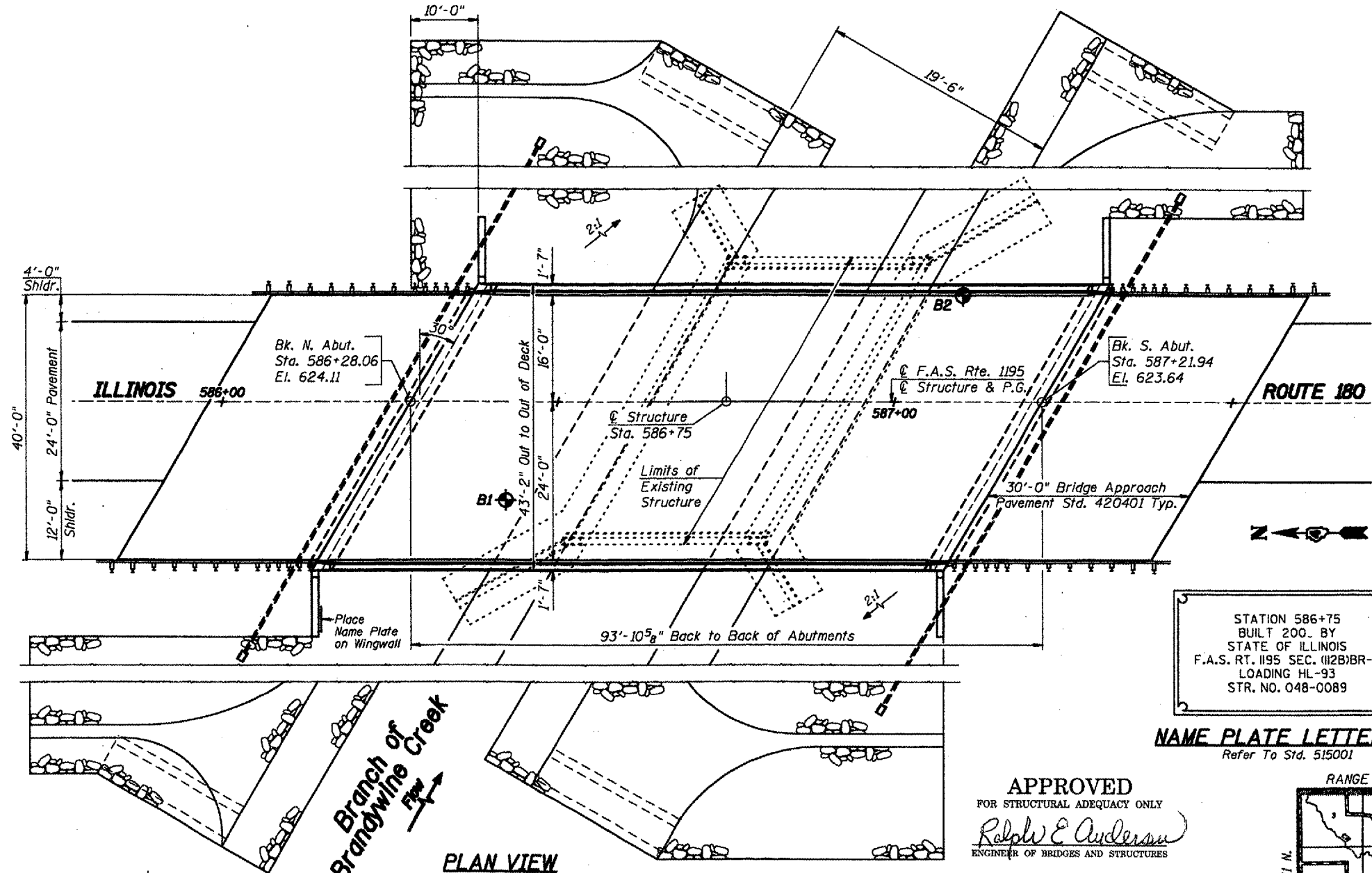
**WATERWAY INFORMATION**

Drainage Area = 3.1 Sq. Mi. Low Grade Elev. = 618.92 (Exist.) @ Sta. 5+247.44  
 Low Grade Elev. = 618.92 (Prop.) @ Sta. 5+247.44

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Nat. H.W.E.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	50	1102	266	598	617.50	1.20	0.80	618.70	618.30
Overtopping	70	1179	266		617.70	1.20		618.90	
Base	100	1282	266	634	618.00	1.20	0.90	619.20	618.90
Max. Calc.	500	1727	266	709	619.00	1.40	1.10	620.40	620.10

**GENERAL NOTES:**

- Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts 3/4" φ, holes 5/8" φ, unless otherwise noted.
- Calculated weight of Structural Steel = 151,120 lbs.
- All structural steel shall be AASHTO M 270 Grade 50W.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (LL Modified). See Special Provisions
- Reinforcement bars designated (E) shall be epoxy coated.
- Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 3 inches. Those areas shall be primed in the shop with a Department approved zinc rich primer. No field painting shall be required. All structural steel shall be cleaned as specified in the Special Provision for "Surface Preparation and Painting Requirements for Weathering Steel".
- Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at substructures specified or approved by the Engineer before ordering the remainder of piles.
- \* Channel shall be transitioned from edge of deck to Proposed Right of Way. Channel excavation included in Roadway plans.
- \*\* Quantity is for the deck, top & inside face of parapet only.
- Slip forming of the parapets is not allowed.



STATION 586+75  
 BUILT 200. BY  
 STATE OF ILLINOIS  
 F.A.S. RT. 1195 SEC. (112B)BR-3  
 LOADING HL-93  
 STR. NO. 048-0089

**NAME PLATE LETTERING**  
 Refer To Std. 515001

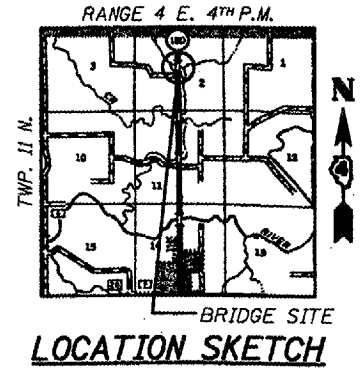
**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY  
*Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

**DESIGN SPECIFICATIONS**  
 AASHTO LRFD Bridge Design Specifications - 4th Ed. Allow 50#/sq. ft. for future wearing surface.

**DESIGN STRESSES**  
 FIELD UNITS  
 f'c = 3,500 psi  
 fy = 60,000 psi (Reinforcement)  
 fy = 50,000 psi (M270 Grade 50W)

**LOADING HL-93**

**SEISMIC DATA**  
 Seismic Performance Zone (SPZ) = 1  
 Bedrock Acceleration Coefficient (A) = 0.04g  
 Site Coefficient (S) = 1.0



**GENERAL PLAN AND ELEVATION**  
**ILLINOIS ROUTE 180 OVER**  
**BRANCH OF BRANDYWINE CREEK**  
**F.A.S. ROUTE 1195 - SECTION (112B)BR-3**  
**KNOX COUNTY**  
**STA. 586+75 (S.N. 048-0089)**

Designed by: B.K. Converse  
 DATE: 7/07  
 Checked by: M.A. Small  
 DATE: 7/07  
 Drawn by: F.D. Lachat  
 DATE: 9/07

**WILLET, HOFMANN & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS  
 808 East Second Street, Orono, Illinois 61851  
 Phone: 815.284.2887 Fax: 815.284.2888  
 Chicago Office: 312.461.2228  
 www.willett-hofmann.com

WHA #1189D06

