

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SCOPE OF WORK

- 1.) Remove and replace the existing bridge superstructure.
- 2.) Remove and replace the existing concrete approach slab.
- 3.) Remove the existing abutment backwall and wingwalls as shown.
- 4.) Convert the existing abutments to semi-integral abutments.
- 5.) Place additional concrete on the existing pier caps in order to meet the proposed grade change.
- 6.) Repair the substructure elements as required.

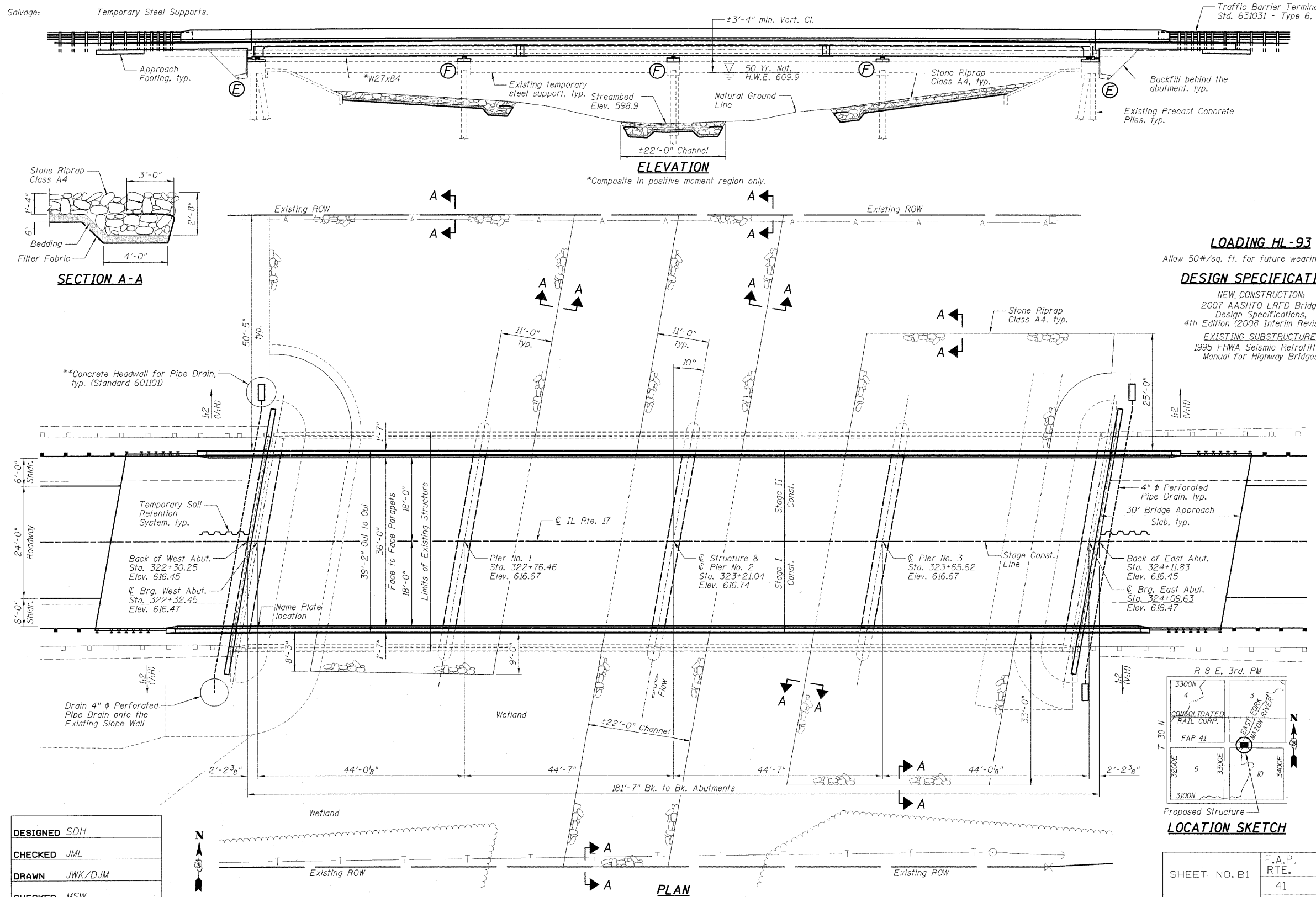
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B33	BAR SPLICER ASSEMBLY DETAILS
B34	CANTILEVER FORMING BRACKETS FOR SUPERSTRUCTURES WITH W27 BEAMS AND SMALLER

- Bench Marks:
- 1.) BM #1 Chiseled "□" on top of Northwest wingwall of bridge S.N. 053-0150, Station 322+35/24.4' LT., Elevation = 614.51.
  - 2.) BM #2 Chiseled "□" on top of Southeast wingwall of bridge S.N. 053-0150, Station 324+07/24.0' RT., Elevation = 614.56.
  - 3.) BM #3 Railroad spike in power pole, Station 324+02/68.0' LT., Elevation = 608.72.

Existing Structure: Structure No. 053-0150, built in 1979 as Section 15 BR-2. The superstructure consists of precast prestressed concrete deck beams with a concrete parapet attached to the exterior beams and bituminous wearing surface. The substructure consists of concrete pile bent abutments supported by precast concrete piles, two concrete pile bent piers (Pier No. 1 and Pier No. 3) supported by precast concrete piles and one concrete solid shaft pile bent pier (Pier No. 2) supported by precast concrete piles. The back-to-back of abutments dimension measures 181'-7" and the out-to-out dimension measures 47'-2". The span lengths are 43'-11<sup>3</sup>/<sub>4</sub>", 44'-7" and 43'-11<sup>3</sup>/<sub>4</sub>" (℄ bearing to ℄ bearing) with a 10° left forward skew. The existing superstructure shall be removed and replaced, existing abutments to be converted to semi-integral abutments and the existing piers will be repaired. One lane of traffic will be maintained utilizing stage construction.

Salvage: Temporary Steel Supports.



LOADING HL-93

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

DESIGN SPECIFICATIONS

NEW CONSTRUCTION:  
2007 AASHTO LRFD Bridge Design Specifications, 4th Edition (2008 Interim Revisions)

EXISTING SUBSTRUCTURE:  
1995 FHWA Seismic Retrofitting Manual for Highway Bridges

DESIGN STRESSES

FIELD UNITS: NEW CONSTRUCTION

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (AASHTO M270 Grade 50W)

FIELD UNITS: EXISTING CONSTRUCTION

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)

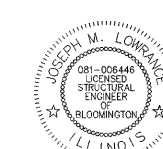
SEISMIC DATA

NEW CONSTRUCTION:

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.074 g  
Design Spectral Acceleration at 0.2 sec. (SD5) = 0.130 g  
Soil Site Class = C

EXISTING CONSTRUCTION:

Seismic Performance Category (SPC) = A  
Bedrock Acceleration Coefficient (A) = 0.041 g  
Site Coefficient (S) = 1.0

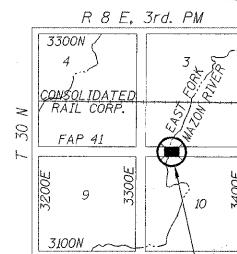


Joseph M. Lowrance  
Date 10/27/09  
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APPROVED  
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson (TSP)  
ENGINEER OF BRIDGES AND STRUCTURES

GENERAL PLAN AND ELEVATION  
IL. ROUTE 17 OVER EAST  
FORK MAZON RIVER  
F.A.P. ROUTE 41 - SECTION 15BR-2  
LIVINGSTON COUNTY  
STATION 323+21.04  
STRUCTURE NO. 053-0150



Proposed Structure  
LOCATION SKETCH

DESIGNED	SDH
CHECKED	JML
DRAWN	JWK/DJM
CHECKED	MSW

DATE 10/07/09

FARNSWORTH GROUP, INC.

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SHEET NO. B1	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	41	15BR-2	LIVINGSTON	64	17
34 SHEETS		CONTRACT NO. 66691			
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		