

Benchmarks: B.M. 4360-9 Brass disk on SW Wingwall SN 010-0237, 18' Rt. Sta. 70+92, Elev. 752.52

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

| | | | | | |
|-----------------------|-----------|-------------------|-------|-------|-----------|
| ROUTE NO. | SECTION | COUNTY | SHEET | SHEET | SHEET NO. |
| F.A.S. 502 | (86BR) BR | CHAMPAIGN | 30 | 11 | 8 SHEETS |
| FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT- | | | |

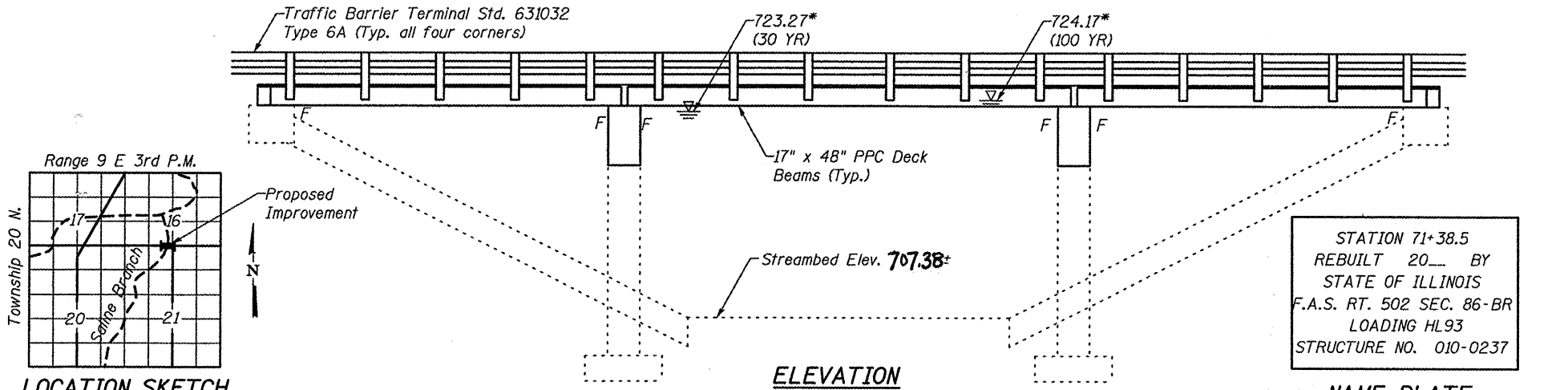
Contract # 70426

Existing Structure: Structure Number 010-0237 was built in 1980 as FAS 502, Section 86 BR. The three span structure consists of PPC deck beams on open abutments. The bk. to bk. abutment is 93'-4" and the o. to o. width is 33'-0". The existing superstructure shall be replaced with PPC deck beams. Existing abutments and piers shall be repaired. Traffic will be detoured during construction.

Salvage: Existing abutments and piers.

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|-------|-------|------|-------|
| 40600100 Bituminous Materials (Prime Coat) | Gal | 25 | 0 | 25 |
| 40600625 Leveling Binder (Machine Method), N50 | Ton | 8 | 0 | 8 |
| 40603310 Hot-Mix Asphalt Surface Course, Mix "C", N50 | Ton | 39 | 0 | 39 |
| 50101500 Removal Of Existing Superstructures | Each | 1 | 0 | 1 |
| 50102400 Concrete Removal | Cu Yd | 0 | 36 | 36 |
| 50300225 Concrete Structures | Cu Yd | 0 | 36 | 36 |
| 50400305 Precast Prestressed Concrete Deck Beams (17" Depth) | Sq Ft | 2875 | 0 | 2875 |
| 50800205 Reinforcement Bars, Epoxy Coated | Pound | 0 | 3710 | 3710 |
| 50901050 Steel Railing, Type SM | Foot | 180 | 0 | 180 |
| 51500100 Name Plates | Each | 1 | 0 | 1 |
| 58300100 Portland Cement Mortar Fairing Course | Foot | 693 | 0 | 693 |
| 59000200 Epoxy Crack Injection | Foot | 0 | 36 | 36 |
| X0322121 Sheet Waterproofing Membrane System | Sq Yd | 328 | 0 | 328 |
| X0325305 Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches) | Sq Ft | 0 | 427 | 427 |



STATION 71+38.5
REBUILT 20__ BY
STATE OF ILLINOIS
F.A.S. RT. 502 SEC. 86-BR
LOADING HL93
STRUCTURE NO. 010-0237

NAME PLATE
See Std. 515001

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

NOTES:

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.
Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.
The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.
If the Contractor's procedure for existing beam removal and placement of new beams involves placement of cranes or other heavy equipment on existing or new beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the existing or new beams. To distribute load to multiple beams and protect the concrete, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. Prior to placement of the timber mats on new beams, the following shall be done: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys.

LOADING HL-93 (New Construction)
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
PRECAST PRESTRESSED UNITS
f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2")
fpbt = 201,960 psi (1/2")

EXISTING SUBSTRUCTURE FIELD UNITS

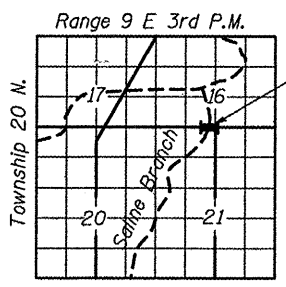
f'c = 3,500 psi
fy = 60,000 psi

SEISMIC DATA

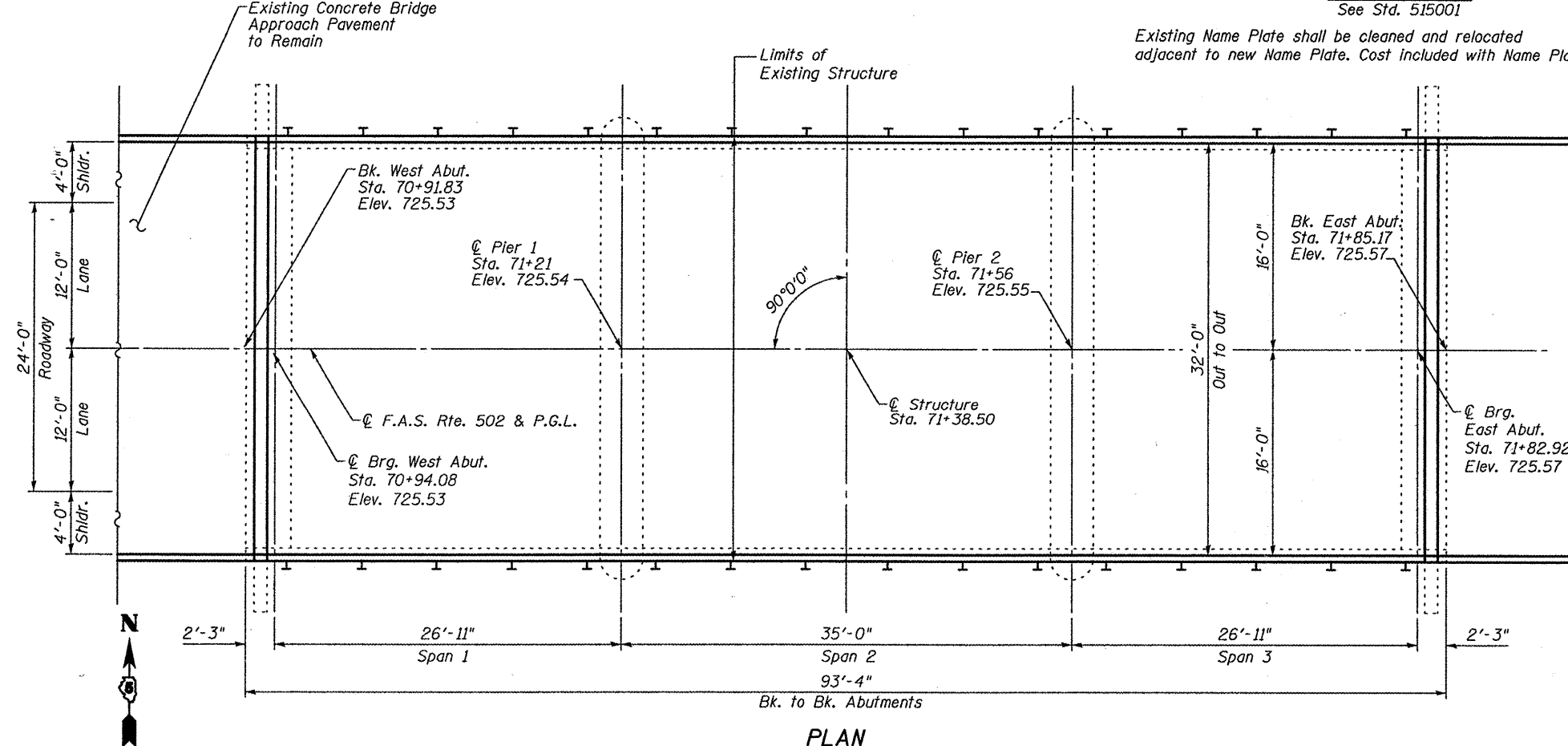
Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 4.6%
Site Coefficient (S) = 1.0

INDEX OF SHEETS

- 1 General Plan
- 2 Superstructure
- 3-4 Superstructure Details
- 5 Railing Details
- 6 Abutment Repair Details
- 7-8 Pier Repair Details



LOCATION SKETCH

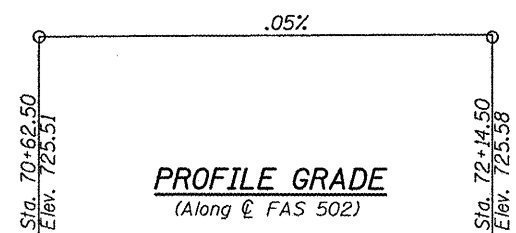


PLAN

EXISTING WATERWAY INFORMATION *

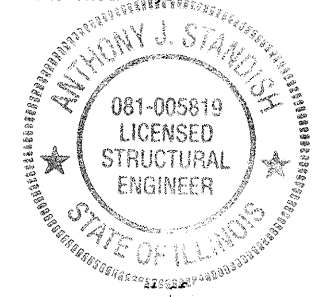
| | |
|-------------------------------------|---------------|
| Drainage Area | 45.88 sq. mi. |
| Discharge (Design Flood 30 yr.) | 3040 c.f.s. |
| Design H.W. Q(30) Elev. | 723.27 |
| Existing Opening (Below 30 yr. HWE) | 668 sq. ft. |
| Required Opening (Below 30 yr. HWE) | 730 sq. ft. |
| Prop. Opening (Below 30 yr. HWE) | 730 sq. ft. |
| Created Head for Design Flood | 0.6 ft. |
| 100 yr. Discharge | 3875 c.f.s. |
| Q(100) H.W. Elev. | 724.17 |
| Created Head for 100 yr. Flood | 0.8 ft. |

* Note: Information per 1980 as-built construction plans. Elevations adjusted from NGVD29 (assumed) to NAVD88.



PROFILE GRADE
(Along C FAS 502)

| | |
|----------|-----|
| DESIGNED | FGE |
| CHECKED | JAR |
| DRAWN | KAS |
| CHECKED | AJS |



APPROVED
For Structural Adequacy Only

Ralph E. Andersen
Engineer of Bridges & Structures

GENERAL PLAN AND ELEVATION
LEVERETT ROAD OVER THE SALINE BRANCH
CHAMPAIGN COUNTY
F.A.S. ROUTE 502 - SEC. (86BR) BR
STATION 71+38.50
S.N. 010-0237

ILLINOIS STRUCTURAL NO. 081-005819 (Expires 11/30/08)

STRAND ASSOCIATES, INC.