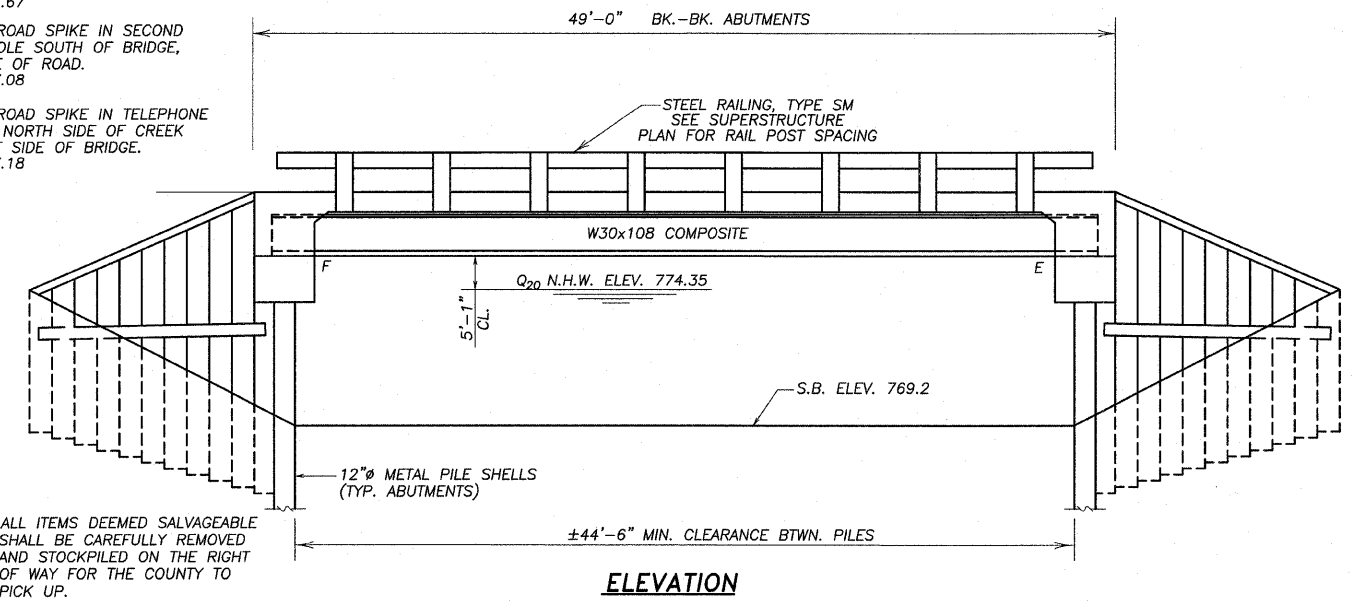


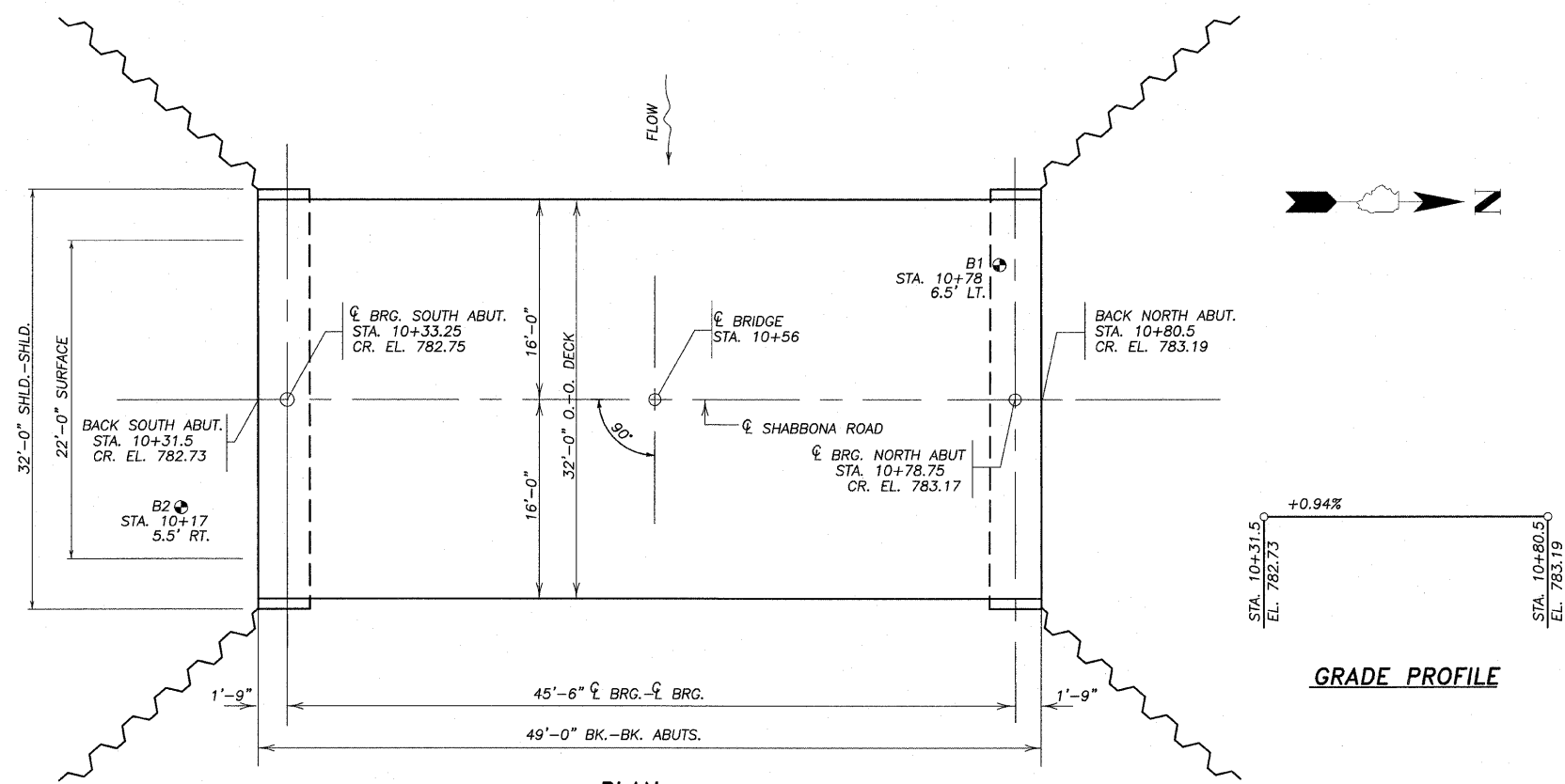
| FAS ROUTE NO. | SEC | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------|-----|--------|--------------|-----------|
| 174           | *   | DEKALB | 17           | 6         |

ILLINOIS PROJECT ARA-0174(118)  
 \* 05-00213-00-BR  
 CONTRACT NO. 87403

- B.M. "A" SET CHISELED "□" TOP OF N.E. ABUTMENT OF EXISTING STRUCTURE. ELEV. 782.67
- B.M. "B" SET RAILROAD SPIKE IN SECOND POWER POLE SOUTH OF BRIDGE, EAST SIDE OF ROAD. ELEV. 777.08
- B.M. "C" SET RAILROAD SPIKE IN TELEPHONE POLE ON NORTH SIDE OF CREEK AND WEST SIDE OF BRIDGE. ELEV. 777.18



**ELEVATION**



**PLAN**

**GRADE PROFILE**

**GENERAL NOTES**

CALCULATED WEIGHT OF STRUCTURAL STEEL - 6216 POUNDS AASHTO M183 GRADE 36 END OF DECK PLATES, STUDS, WALERS, CHANNELS, BEAM ANCHOR BOLTS, & MISC. STEEL. 26313 POUNDS AASHTO M270 GRADE 50W BEAMS, DIAPHRAGMS, AND ROCKER PLATES OF FIXED BEARINGS.

FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE CENTER OF THE BRIDGE. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706, GRADE 60.

FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4" DIAMETER, OPEN HOLES 13/16" DIAMETER UNLESS OTHERWISE NOTED.

TIGHTENING AND INSPECTION OF ALL HIGH STRENGTH BOLT CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST ISSUE OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 (M164) OR A490 (M253) BOLTS FOR SLIP-CRITICAL CONNECTIONS. EXCEPT TIGHTENING METHODS USING EITHER THE LOAD INDICATING WASHERS OR THE CALIBRATED WRENCH ARE NOT ALLOWED.

PROTECTIVE COAT HAS BEEN INCLUDED FOR THE TOP OF DECK AND THE EAST AND WEST EDGES OF THE DECK TO THE DRIPNOTCH.

THE 3/4" STRUCTURAL STEEL PLATES AT EACH END OF THE DECK ARE INCLUDED FOR PAYMENT PER POUND OF FURNISHING AND ERECTING STRUCTURAL STEEL. AFTER FABRICATION, ALL SURFACES OF THE STEEL PLATES SHALL BE GIVEN ONE SHOP COAT OF PAINT SPECIFIED FOR STRUCTURAL STEEL.

THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS.

BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS.

THE CONTRACTOR SHALL DRIVE ONE 12" METAL PILE SHELL TEST PILE IN A PERMANENT LOCATION AT THE NORTH ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

THE CONTRACTOR SHALL MAKE ALLOWANCE FOR THE DEFLECTION OF FORMS, SHRINKAGE AND SETTLEMENT OF FALSEWORK, IN ADDITION TO ALLOWANCE FOR DEAD LOAD DEFLECTION.

AASHTO M 270 GRADE 50W STRUCTURAL STEEL SHALL ONLY BE PAINTED, AT THE ENDS OF THE BEAMS, 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 AN INORGANIC ZINC RICH PRIMER PER AASHTO M 300, TYPE I. NO FIELD PAINTING SHALL BE REQUIRED. ALL GRADE 50W STRUCTURAL STEEL SHALL BE CLEANED AS SPECIFIED IN THE SPECIAL PROVISION FOR "SURFACE PREPARATION AND PAINTING REQUIREMENTS FOR WEATHERING STEEL."

**BILL OF MATERIAL BRIDGE**

| ITEM                                      | UNIT     | SUPERSTR. | SUBSTR. | TOTAL |
|---|----------|-----------|---------|-------|
| CONCRETE SUPERSTRUCTURE                   | CU. YD.  | 61.3      |         | 61.3  |
| CONCRETE STRUCTURES                       | CU. YD.  |           | 18.7    | 18.7  |
| FURN. AND ERECTING STRUCTURAL STEEL       | LUMP SUM | 1         |         | 1     |
| STUD SHEAR CONNECTORS                     | EACH     | 840       |         | 840   |
| REINFORCEMENT BARS, EPOXY COATED          | POUND    | 11874     | 2112    | 13986 |
| PROTECTIVE COAT                           | SQ. YD.  | 189       |         | 189   |
| NAME PLATES                               | EACH     | 1         |         | 1     |
| STEEL BRIDGE RAIL, TYPE SM                | FOOT     | 98        |         | 98    |
| FURNISHING METAL SHELL PILES 12" x 0.250" | FOOT     |           | 270     | 270   |
| DRIVING PILES                             | FOOT     |           | 270     | 270   |
| TEST PILE METAL SHELLS                    | EACH     |           | 1       | 1     |
| PERMANENT STEEL SHEET PILING              | SQ. FT.  |           | 2691    | 2691  |
| HARDWARE                                  | POUND    |           | 1117    | 1117  |
| BRIDGE DECK GROOVING                      | SQ. YD.  | 174       |         | 174   |
| ELASTOMERIC BEARING ASSEMBLY, TYPE 1      | EACH     | 5         |         | 5     |

**WATERWAY INFORMATION**

| Drainage Area = 3.12 sq. miles |           | Low Grade Elev. = 782.5 |                   | at Roadway Sta. 10+48 |                   |
|--------------------------------|-----------|-------------------------|-------------------|-----------------------|-------------------|
| Flood                          | Frequency | Q                       | Opening Sq. Ft.   | Natural H.W.E.        | Headwater El.     |
|                                | Year      | (cfs)                   | Existing Proposed | Existing Proposed     | Existing Proposed |
| Design                         | 20        | 536                     | 206 229           | 774.35 0.17 0.20      | 774.52 774.55     |
| Base                           | 100       | 788                     | 234 260           | 775.04 0.34 0.38      | 775.38 775.42     |
| Overtopping                    |           |                         |                   |                       |                   |
| Max Calc.                      | 500       | 1023                    |                   | 775.95 0.02 0.08      | 775.97 776.03     |

**DESIGN STRESSES**

- f'c = 3500 P.S.I.
- fs = 60,000 P.S.I. (REINFORCEMENT)
- fy = 36,000 P.S.I. (STRUCTURAL STEEL, M183, GRADE 36)
- fy = 50,000 P.S.I. (STRUCT. STEEL, M270, GRADE 50W)

DESIGN SPECIFICATIONS 2007 AASHTO  
 (ALLOWED FOR 50 P.S.F. FOR FUTURE WEARING SURFACE.)  
**LOADING HL 93**

BRANCH OF INDIAN CREEK  
 BUILT 2009 BY  
 DEKALB COUNTY  
 SECTION 05-00213-00-BR  
 STATION 10+56 FAS 174/CH 6  
 SN 019-3066 LOADING HL 93

**LETTERING FOR NAME PLATE**  
 SEE STD. 515001



RUSSELL L. RENNER  
 DIXON, ILLINOIS  
 ILLINOIS LICENSED STRUCTURAL  
 ENGINEER NO. 081-005322  
 EXPIRES 11-30-2008

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH REQUIREMENTS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES".

**GENERAL PLAN AND ELEVATION  
 SECTION 05-00213-00-BR  
 SHABBONA ROAD  
 DEKALB COUNTY  
 SN 019-3066**

REVISIONS

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|-----|------|-------------|

REVISIONS

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|-----|------|-------------|

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**GENERAL PLAN AND ELEVATION  
 OF  
 SHABBONA ROAD BRIDGE REPLACEMENT  
 FOR  
 DEKALB COUNTY HIGHWAY**

SHEET TITLE

JOB NUMBER  
 2080381

DATE  
 2/27/2009

SHEET NO.