

Bench Mark: Chiseled "□" in south face of concrete base of east storage bin located approximately 425' northwest of existing S.N. 056-0005. Elev. 836.91.

Existing Structure: S.N. 056-0005, built in 1931 as SBI Rte. 67, Sec. 119, Reconstructed in 1970.

The existing structure is a single span PPC deck beam superstructure on closed abutments. The structure is 43'-0" Bk. to Bk. Abutments and 33'-0" O. to O. Deck. The structure shall be removed and replaced with a single span wide flange superstructure on pile bent abutments. The road shall be kept open to one lane of traffic at all times by utilizing stage construction.

No Salvage.

| ROUTE NO. | SECTION | COUNTY  | TOTAL SHEETS | SHEET NO. |
|-----------|---------|---------|--------------|-----------|
| 533       | 119R-2B | McHenry | 64           | 15        |

SHEET NO. 1 OF 21 SHEETS

Contract #62336

**DESIGN SPECIFICATIONS**

AASHTO LRFD 4th Edition, 2007

**DESIGN STRESSES**

**FIELD UNITS**

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

**SEISMIC DATA**

Seismic Performance Category (SPC) = A  
 Bedrock Acceleration Coefficient (A) = 0.035g  
 Site Coefficient (S) = 1.0

**LOADING HL-93**

Allow 50 #/ sq. ft. for Future Wearing Surface

**ADDITIONAL**

**SOIL BORING LOCATION TABLE**

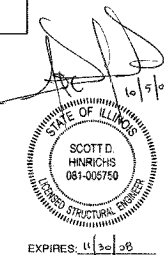
| Soil Boring | Station | Offset    |
|-------------|---------|-----------|
| R-2         | 11+50   | 10.5' Rt. |
| R-3         | 12+30   | 13.0' Rt. |
| R-4         | 13+30   | 13.0' Rt. |

STATION 10+00  
 BUILT 200\_ BY  
 STATE OF ILLINOIS  
 F.A.P. RTE 533 SEC. 120A-B-R  
 LOADING HL-93  
 STR. NO. 056-0078

**NAME PLATE**  
 See Std. 515001

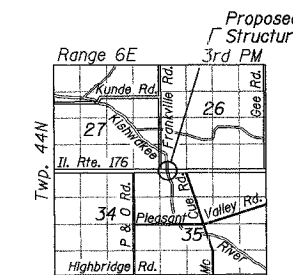
**LEGEND**

- Exist. Abut. & Wingwalls to be removed to 1'-0" below proposed grade
- Stone Riprap
- Soil Boring (For additional Soil Borings at Retaining Walls, see Retaining Wall Plans)



**APPROVED**  
 FOR STRUCTURAL ADEQUACY ONLY

*Robert E. Anderson (TJD)*  
 ENGINEER OF BRIDGES AND STRUCTURES



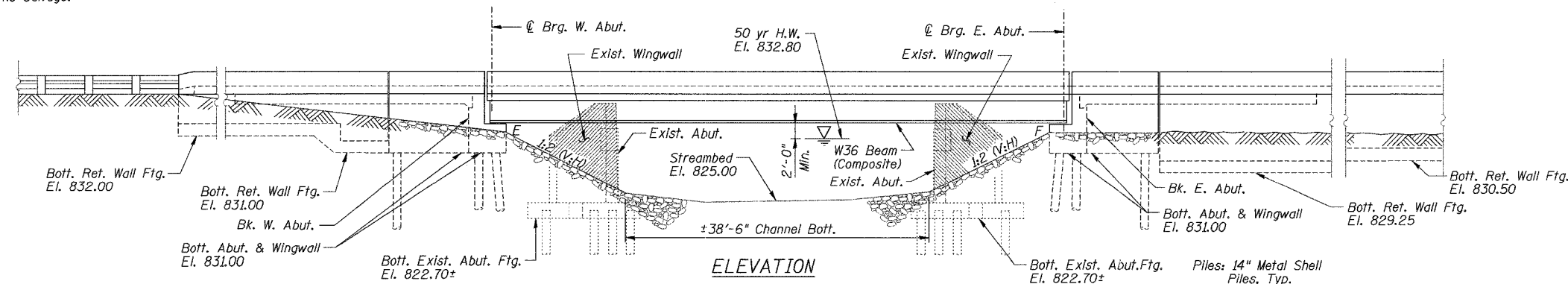
**LOCATION SKETCH**

**GENERAL PLAN & ELEVATION**

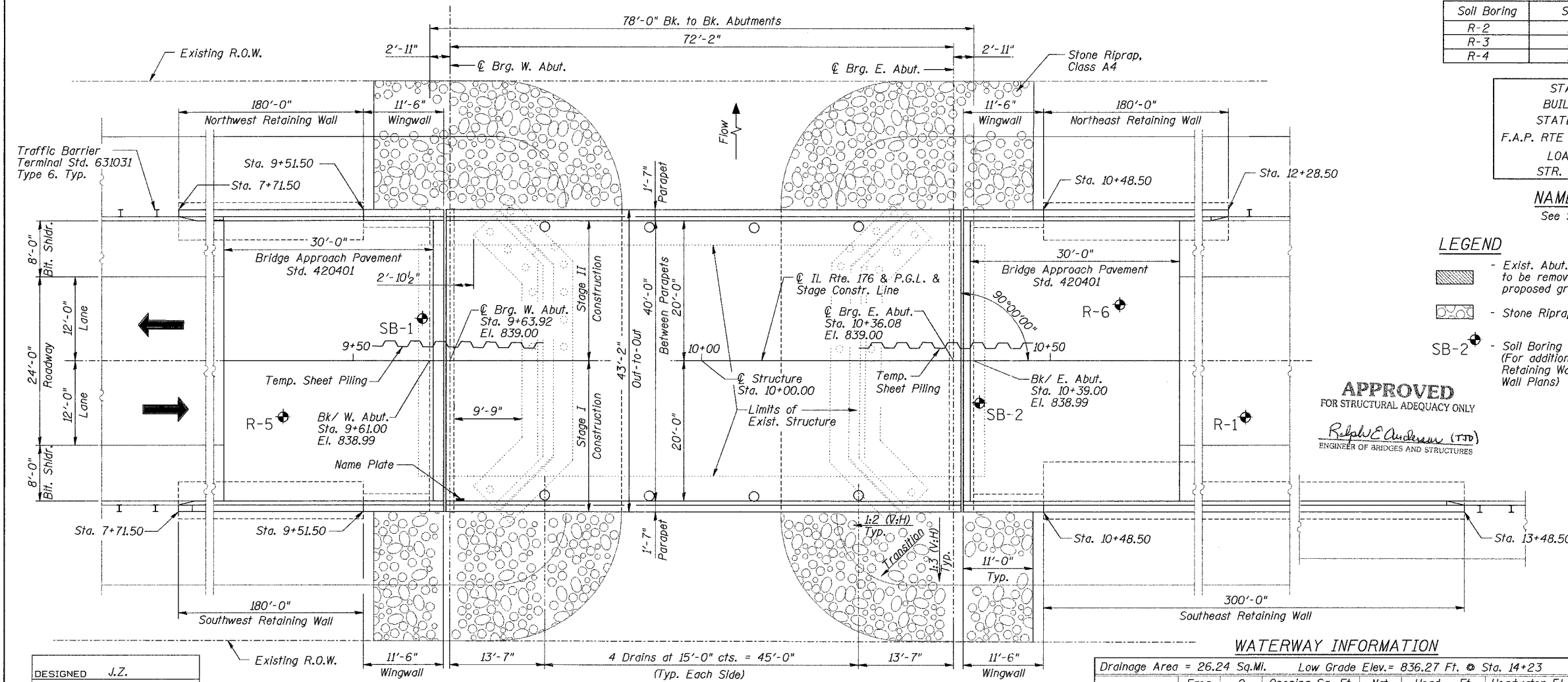
IL Route 176 over the Kishwaukee River  
 F.A.P. RTE 533, SECTION 119R-2B  
 McHENRY COUNTY  
 STATION 10+00.00  
 S.N. 056-0078

DATE: 10-05-07

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES INC  
 CHICAGO ILLINOIS



**ELEVATION**



**PLAN**

**WATERWAY INFORMATION**

Drainage Area = 26.24 Sq.Mi. Low Grade Elev. = 836.27 Ft. @ Sta. 14+23

| Flood       | Freq. Yr. | Q      |        | Opening Sq. Ft. |               | Head - Ft. |        | Headwater El. |       |
|-------------|-----------|--------|--------|-----------------|---------------|------------|--------|---------------|-------|
|             |           | C.F.S. | Exist. | Prop.           | H.W.E. Exist. | Prop.      | Exist. | Prop.         |       |
| Design      | 50        | 1666   | 312    | 405             | 832.8         | 0.3        | 0.2    | 833.1         | 833.1 |
| Base        | 100       | 1875   | 324    | 425             | 833.1         | 0.4        | 0.4    | 833.5         | 833.5 |
| Overtopping | -         | -      | -      | -               | -             | -          | -      | -             | -     |
| Max. Calc.  | 500       | 2320   | 347    | 465             | 833.7         | 0.6        | 0.5    | 834.3         | 834.2 |

|          |        |
|----------|--------|
| DESIGNED | J.Z.   |
| CHECKED  | S.D.H. |
| DRAWN    | M.S.M. |
| CHECKED  | S.D.H. |

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