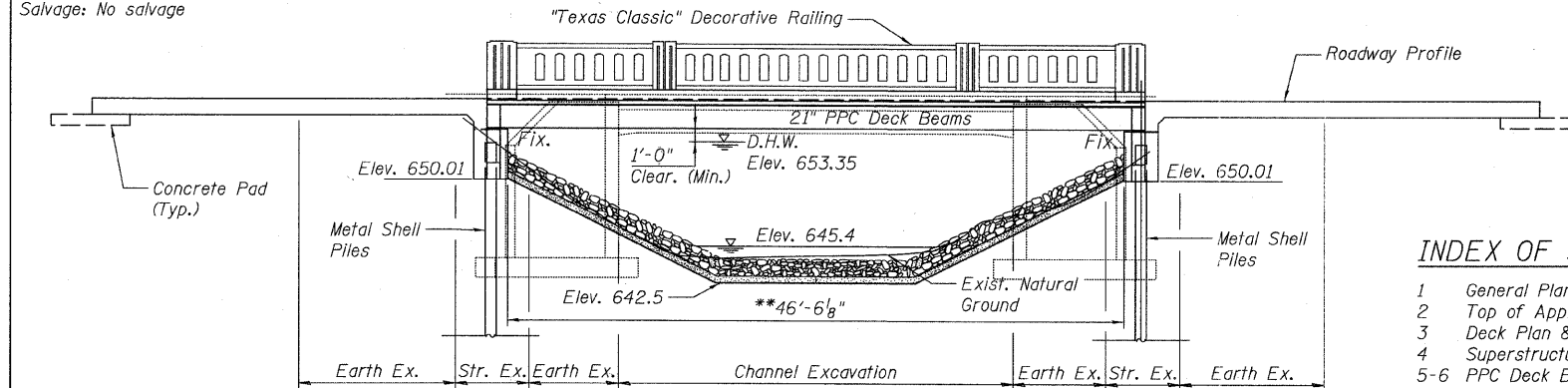


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure: S/N: 049-6154 was originally built in 1930 by the Village of Deerfield. It consists of a single span 21" deep precast prestressed concrete deck beam superstructure. The superstructure is supported on closed concrete abutments founded on spread footings. The structure length measures 32'-0" from back-to-back of abutments and the roadway width measures 20'-0" from face-to-face of curb. The existing structure will be removed and replaced. The roadway will be closed during construction. Traffic will utilize a detour.

Salvage: No salvage

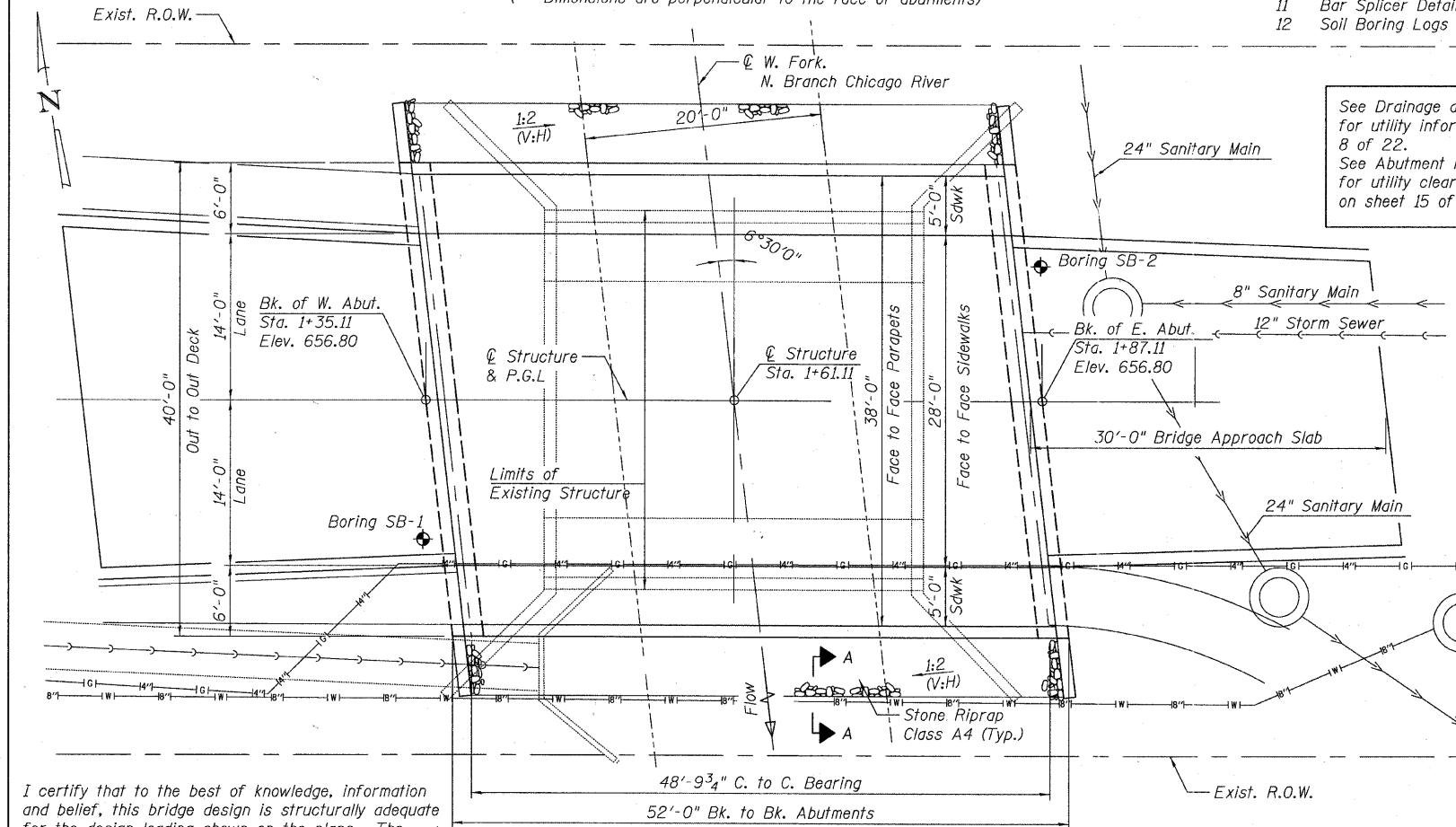


ELEVATION

(** Dimensions are perpendicular to the face of abutments)

INDEX OF SHEETS

- 1 General Plan & Elevation
- 2 Top of Approach Slab Elevations
- 3 Deck Plan & Section
- 4 Superstructure & Railing Details
- 5-6 PPC Deck Beam Details
- 7 Substructure Plan & Details
- 8 Metal Shell Pile Details
- 9-10 Approach Slab Details
- 11 Bar Splicer Details
- 12 Soil Boring Logs



PLAN

WATERWAY INFORMATION

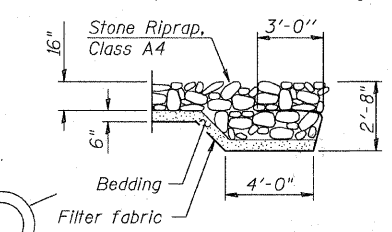
| Flood | | Q | | Opening Sq. Ft. | | Nat. H.W.E. | | Head - Ft. | | Headwater El. | |
|-------------|--------|--------|-------|-----------------|--------|-------------|--------|------------|--------|---------------|--------|
| Freq. Yr. | C.F.S. | Exist. | Prop. | Exist. | Prop. | Exist. | Prop. | Exist. | Prop. | Exist. | Prop. |
| 10 | 182 | 196 | 197 | 652.96 | 0.00 | 0.00 | 652.96 | 652.96 | 652.96 | 652.96 | 652.96 |
| Design | 30 | 256 | 210 | 213 | 653.34 | 0.01 | 0.01 | 653.35 | 653.35 | 653.35 | 653.35 |
| Base | 50 | 330 | 233 | 237 | 653.32 | 0.01 | 0.01 | 653.93 | 653.93 | 653.93 | 653.93 |
| Overtopping | 100 | 561 | 237 | 241 | 655.10 | 0.04 | 0.05 | 655.14 | 655.15 | 655.15 | 655.15 |
| Max. Calc. | 500 | 970 | 263 | 271 | 656.70 | 0.16 | 0.17 | 656.86 | 656.87 | 656.87 | 656.87 |

DESIGN SPECIFICATIONS

2009 ASHTO LRFD Bridge Design 4th Edition
2009 IDOT Bridge Manual

LOADING HL-93

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



SECTION A-A

DESIGN SCOUR ELEVATION TABLE

| Design Scour Elevation (ft.) | W. Abut. | E. Abut. |
|------------------------------|----------|----------|
| | 650.01 | 650.01 |

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Reinforcement bars designated (E) shall be epoxy coated.
Plan dimensions and details relative to existing plans are subject to nominal construction 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 at the unit price bid for the work.
Contractor shall install two Village of Deerfield Emblems provided by the Village at the locations shown. Existing Name Plate shall be cleaned and relocated next to the new Name Plate. Cost included with Name Plates.

NAME PLATE

See Std. 515001

TOTAL BILL OF MATERIAL

| ITEM | UNIT | SUPER | SUB | TOTAL |
|---|---------|--------|-------|--------|
| * Removal of Existing Structures | Each | 1 | | 1 |
| Bridge Approach Pavement Connector (Flexible) | Sq. Yd. | 36 | | 36 |
| Structure Excavation | Cu. Yd. | | 88 | 88 |
| Concrete Structures | Cu. Yd. | | 66.4 | 66.4 |
| Concrete Superstructure | Cu. Yd. | 97.5 | | 97.5 |
| Bridge Deck Grooving | Sq. Yd. | 331 | | 331 |
| Protective Coat | Sq. Yd. | 441 | | 441 |
| * Precast Prestressed Concrete Deck Beams (21" Depth) | Sq. Ft. | 2,000 | | 2,000 |
| Reinforcement Bars, Epoxy Coated | Pound | 24,190 | 7,540 | 31,730 |
| Bar Splicers | Each | 54 | | 54 |
| Geocomposite Wall Drain | Sq. Yd. | | 56 | 56 |
| Furnishing Metal Shell Piles 12"x0.179" | Foot | | 1,092 | 1,092 |
| Driving Piles | Foot | | 1,092 | 1,092 |
| Test Pile Metal Shells | Each | | 2 | 2 |
| Pile Shoes | Each | | 28 | 28 |
| Name Plates | Each | 2 | | 2 |
| Concrete Headwalls for Pipe Drains | Each | | 3 | 3 |
| * Concrete Bridge Rail, Sidewalk Mounted | Foot | 100 | | 100 |
| * Porous Granular Embankment, Special | Cu. Yd. | | 75 | 75 |
| * Concrete Wearing Surface, 5" | Sq. Yd. | 222 | | 222 |
| * Pipe Underdrains for Structures, 4" | Foot | | 130 | 130 |

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f'_{ci} = 60,000 psi (Reinforcement)
f_y = 50,000 psi (M270 Grade 50)

PRECAST PRESTRESSED UNITS

f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f_{pu} = 270,000 psi (1/2" φ low lax strands)
f_{pbt} = 201,960 psi (1/2" φ low lax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 0.040g
Site Coefficient (S) = 1.0

I certify that to the best of 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 LRFD Bridge Design Specifications.

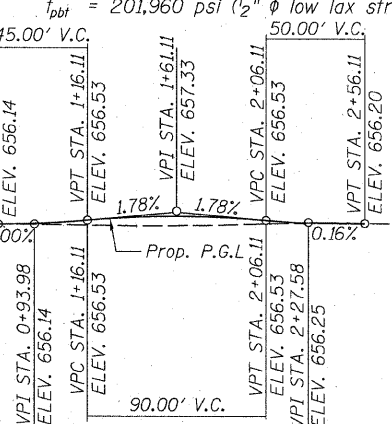
| | |
|----------|-----|
| DESIGNED | DYS |
| CHECKED | JPB |
| DRAWN | DYS |
| CHECKED | JPB |



Handwritten signature and date: 4/5/11 Exp. 11/30/12

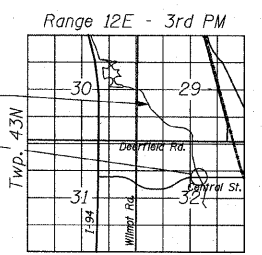


PROFILE GRADE



GENERAL PLAN & ELEVATION

STRUCTURE NO. 049-6161



| SHEET NO. S-1 | F.A.U. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-----------------------|-------------|----------------|---------------------------|--------------|-----------|
| 12 SHEETS | | 09-00085-00-BR | LAKE | 22 | 9 |
| FED. ROAD DIST. NO. - | | | ILLINOIS FED. AID PROJECT | | |