

Bench Mark: BM#1 FD STATE OF ILLINOIS HIGHWAY
DEPARTMENT DISK SW corner of bridge; El. 636.505.

Existing (SN 016-2859) Structure : Originally built in 1923 and widened in 1930. Reinforced slab bridge removed in 1968 and replaced with Precast Prestressed box beams. The substructure consists of solid walls supported on pile footings.

Rehabilitation work will be done utilizing stage construction.

The proposed improvements consist of replacing the existing super structure with new concrete slab bridge on new pile supported stub abutments.

Repairs and modifications to existing substructure.

No salvage.

TOTAL BILL OF MATERIAL

ITEM	UNIT	Super	Sub	TOTAL
Pourous Granular Embankment, Special	Cu. Yd.		95	95
Removal of Existing Superstructures	Each	1		1
Concrete Removal	Cu. Yd.		39.8	39.8
Structure Excavation	Cu. Yd.		290	290
Concrete Structures	Cu. Yd.		95.1	95.1
Concrete Superstructure	Cu. Yd.	434.7		434.7
Bridge Deck Grooving	Sq. Yd.		257	257
Protective Coat	Sq. Yd.		257	257
Furnishing and Erecting Structural Steel	Pound		14,860	14,860
Reinforcement Bars, Epoxy Coated	Pound	95,100	17,240	112,340
Bar Splicers	Each		20	344
Aluminum Railing, Type L	Foot		68	68
Slope Wall 4 Inch	Sq. Yd.		122	122
Furnishing Steel Piles HP12X53	Foot		1196	1196
Driving Piles	Foot		1196	1196
Test Pile Steel HP12X53	Each		2	2
Name Plates	Each		1	1
Epoxy Crack Injection	Foot		198	198
Geo Composite Wall Drain	Sq. Yd.		56	56
Structural Repair of Concrete (Depth Equal to or less than 5 in.)	Sq. Ft.		38	38
Pipe Underdrains For Structures 4"	Foot		172	172

INDEX OF SHEETS

- General Plan and Elevation
- Existing Footing Layout
- Stage Construction Details
- Temporary Concrete Barrier for Stage Construction
- Existing Substructure Staging and Repairs
- Substructure Repair Details
- Top of Slab Elevations
- Top of Approach Slab Elevations
- Superstructure Plan and Cross Section
- Superstructure Details
- Bridge Approach Slab Details
- Bridge Approach Slab Details
- Aluminum Railing, Type L
- Abutment Plan and Elevation
- HP Pile Details
- Bar Splicer Assembly Details
- Boring Log B-01
- Boring Log B-02
- Existing SN 016-2859 Ref. Sht. 1
- Existing SN 016-2859 Ref. Sht. 2
- Existing SN 016-2859 Ref. Sht. 3

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications, 5th Edition, with 2010 Interim Revisions

LOADING HL-93

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

DESIGN STRESSES

NEW FIELD UNITS

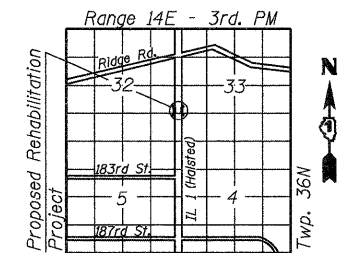
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)

EXISTING CONSTRUCTION

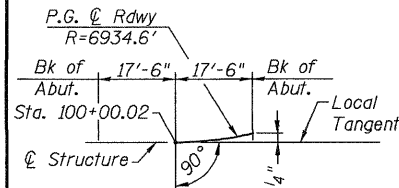
$f'_c = 1,400$ psi
 $f_s = 20,000$ psi (reinforcement)
 $f_s = 20,000$ psi (structural steel)

SEISMIC DATA

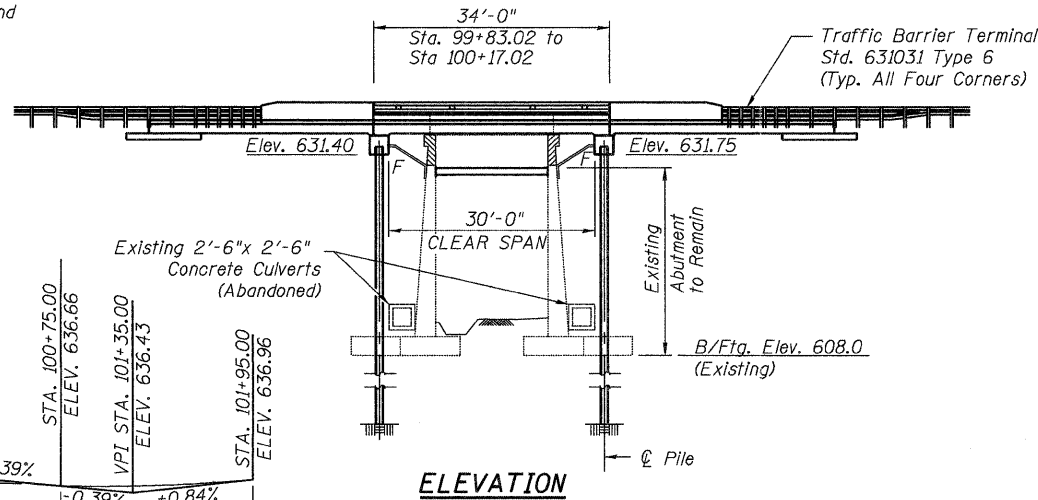
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.092
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.155
Soil Site Class = D



LOCATION SKETCH



OFFSET SKETCH

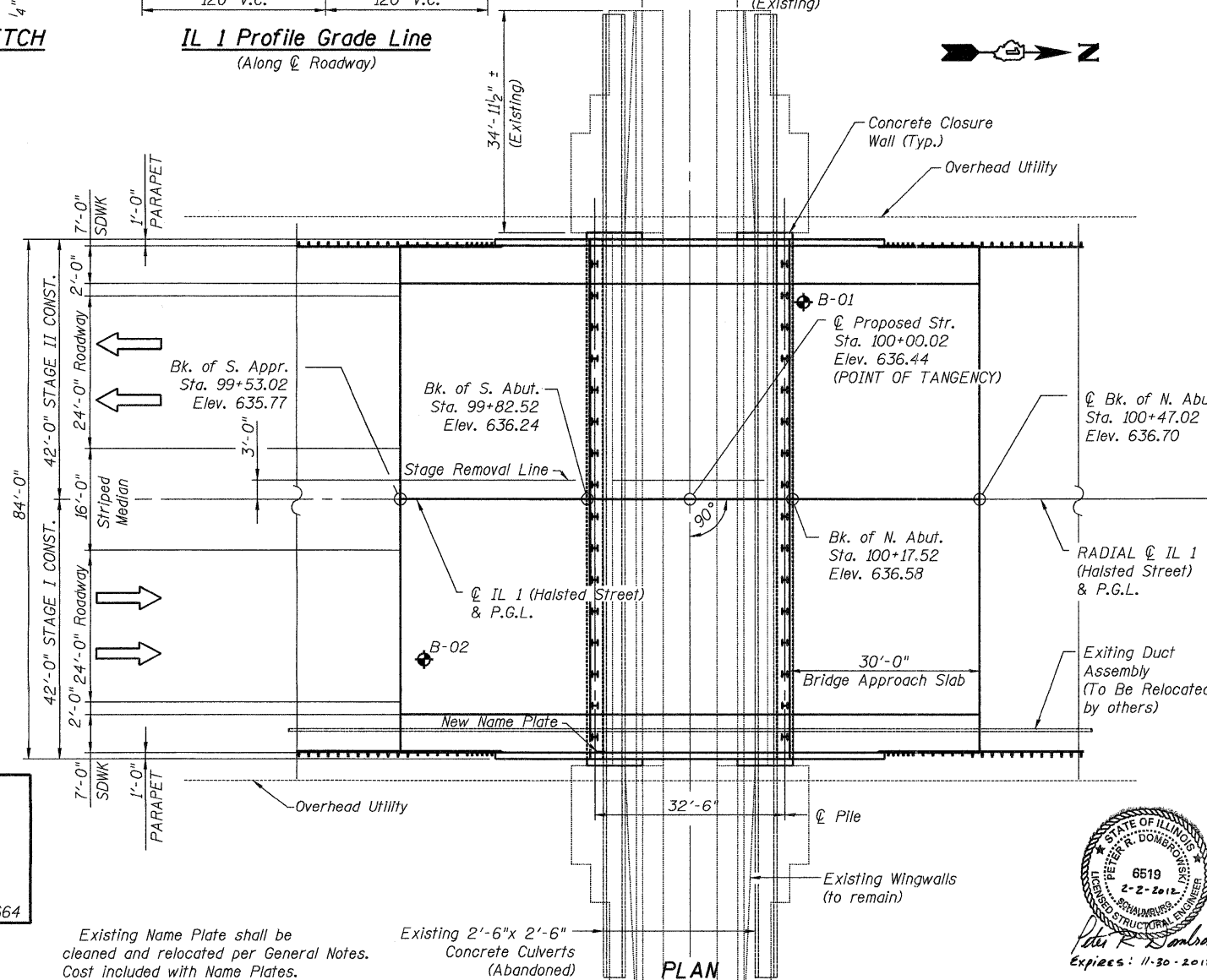


ELEVATION

IL 1 Profile Grade Line
(Along Center Roadway)

HORIZONTAL CURVE DATA

$\Delta = 3^\circ 45' 30''$
 $D = 0^\circ 49' 39''$
 $R = 6934.6'$
 $T = 225.0'$
 $L = 449.75'$
 $E = 3.70'$



PLAN

GENERAL NOTES

All structural steel shall be AASHTO M 270 Grade 50.

No field welding is permitted except as specified in the contract documents.

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.

The contractor shall make allowances for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection. Forms for deck slab shall be removed prior to placement of bridge approach slab.

Channels, support struts, shims, anchor bolts, nuts, washers, and material noted (Gal.) on plans shall be galvanized according to AASHTO M111 or M232 as applicable.

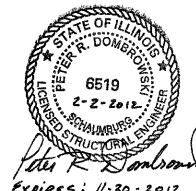
The contractor shall sawcut the upper portion of the existing removal line before stage I removal to ensure the remaining portion will not be damaged.

Piles may be driven through 12 inch diameter precored holes extending to elevation 599.00 according to Article 512.09(c) of the Standard Specifications. Cost included with "Driving Piles".

The Contractor shall limit the pile hammer size selected considering the relatively high soil (rock) strengths indicated in the borings and avoid overdriving the piles beyond their nominal required bearing to prevent pile damage during driving.

New Name Plate shall be located as shown on plan. Existing Name Plate shall be cleaned and relocated to Existing North East Wingwall Approximately 1'-0" East of Abutment/Wall Joint and approximately 3'-6" above existing grade. Cost included with Name Plates.

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 structure.



APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Peter R. Lombardi
ENGINEER OF BRIDGES AND STRUCTURES

STATION 100+00.02
BUILT 20 BY
STATE OF ILLINOIS
FAP 876
SEC. 2011-032-BR
LOADING HL-93
STRUCTURE NO. 016-0664

NAME PLATE
See Std. 515001

Existing Name Plate shall be cleaned and relocated per General Notes. Cost included with Name Plates.

Existing 2'-6" x 2'-6" Concrete Culverts (Abandoned)

	USER NAME =	DESIGNED PRD	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION STRUCTURE NO. 016-0664	SHEET NO. 1 OF 21 SHEETS	F.A.P. RTE. 876	SECTION 2011-032-BR	COUNTY COOK	TOTAL SHEETS 41	SHEET NO. 12
	PLOT SCALE =	CHECKED AWW	REVISED				CONTRACT 60P38				
	PLOT DATE =	DRAWN PRD	REVISED				ILLINOIS FED. AID PROJECT				
		CHECKED AWW	REVISED								