

Bench Mark: P.K. Nail in edge of outside bituminous shoulder of Northbound Stony Island Extension, approximately 90' south of East Abutment, Elevation 585.34.

Existing Structure: Structure No. 016-2438 was constructed in 1972 by the Cook County Department of Highways. The superstructure is a curved steel plate girder bridge with two continuous spans, 105'-4 1/2" and 123'-11 1/8" long, supporting a composite 7 1/2" reinforced concrete deck. The end-to-end length of the bridge between centerlines of abutment bearings is 229'-3 5/8" with a constant out-to-out deck width of 42'-0". The west abutment is a vaulted abutment with P.P.C. I-beams supporting a concrete slab. The east abutment is a closed concrete abutment. Both abutments have concrete wingwalls extending parallel to the Stony Island Connector. The pier is a four-column hammerhead pier. All substructure units are supported on steel H-Piles. The bridge will be replaced using staged construction, maintaining one lane of traffic in each stage.

No Salvage.

**SCOPE OF WORK**

- 1. Remove and replace existing bridge and approach slabs.

**DESIGN SPECIFICATIONS**

2010 AASHTO LRFD Bridge Design Specifications with 2010 Interims

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
 Design Spectral Acceleration at 1.0 sec. (S<sub>01</sub>) = 0.063g  
 Design Spectral Acceleration at 0.2 sec. (S<sub>05</sub>) = 0.112g  
 Soil Site Class = C

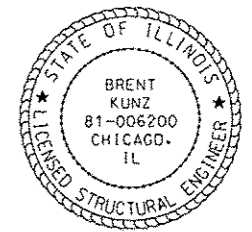
**LOADING HL-93**

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

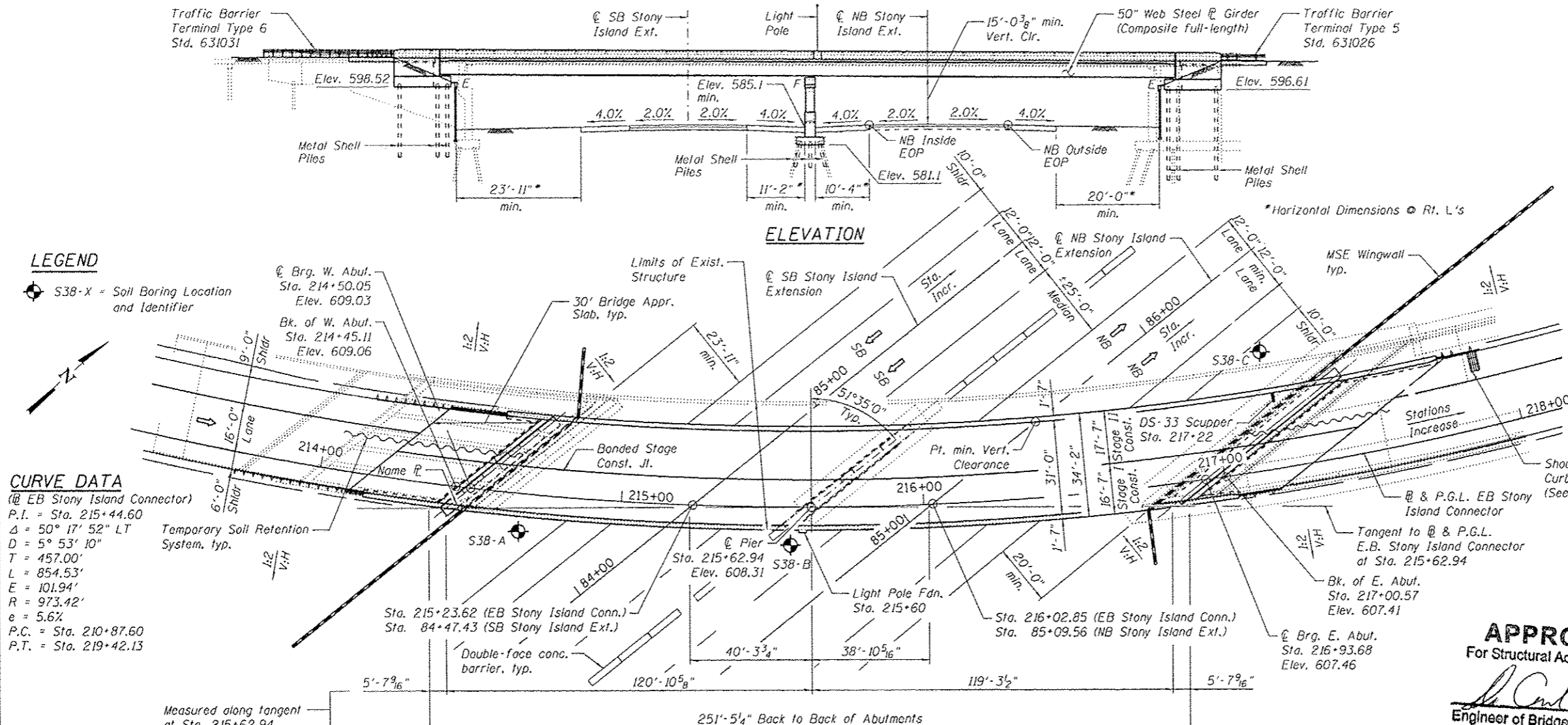
**DESIGN STRESSES**

**FIELD UNITS**

f'<sub>c</sub> = 3,500 psi  
 f<sub>y</sub> = 60,000 psi (Reinforcement)  
 f<sub>y</sub> = 50,000 psi (AASHTO M270 Grade 50)



SIGNED: *Brent Kunz*  
 DATE: March 29, 2013  
 EXPIRES: November 30, 2014



**LEGEND**

S38-X = Soil Boring Location and Identifier

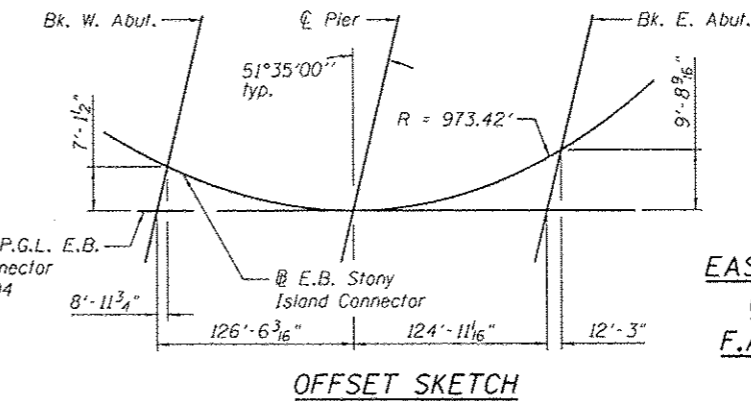
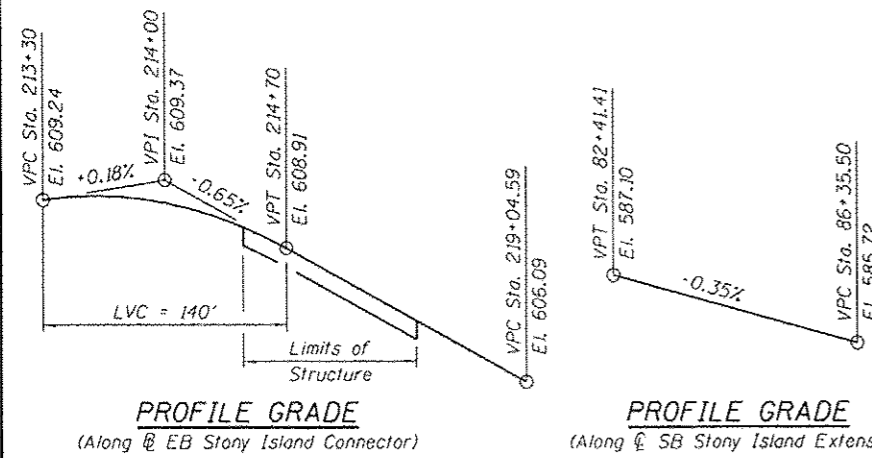
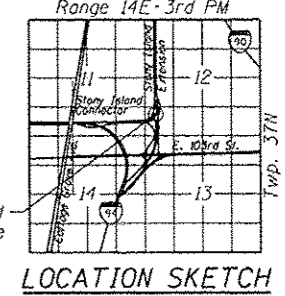
**CURVE DATA**

@ EB Stony Island Connector  
 P.I. = Sta. 215+44.60  
 Δ = 50° 17' 52" LT  
 D = 5° 53' 10"  
 T = 457.00'  
 L = 854.53'  
 E = 101.94'  
 R = 973.42'  
 e = 5.6%  
 P.C. = Sta. 210+87.60  
 P.T. = Sta. 219+42.13

3/29/2013

S:\107285\_CADD\Structure\158182471\000\_Sheets\158182471-001-000.dwg

**APPROVED**  
 For Structural Adequacy Only  
*Carl Krueger*  
 Engineer of Bridges & Structures



BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.9106 www.bbainc.com		USER NAME: _____ PLOT SCALE: _____ PLOT DATE: 03/29/2013	DESIGNED - TL CHECKED - BAK DRAWN - TL CHECKED - BAK	REVISED - _____ REVISED - _____ REVISED - _____ REVISED - _____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	F.A.I. RTE. 94 SECTION 2012-059-BR COUNTY COOK TOTAL SHEETS 631 SHEET NO. 499 CONTRACT NO. 60J12
------------------------------------------------------------------------------------------------------------------	--	----------------------------------------------------------------	---------------------------------------------------------------	--------------------------------------------------------------------------	---------------------------------------------------	-----------------------------------------------------------------------------------------------------------------