

Bench Mark: Iron pipe approximately 72' northwest of Pier 4, approximately 93' southwest of Pier 5, and approximately 13' east of Northbound Stony Island Extension edge of shoulder. Elevation 584.63.

Existing Structure: Structure No. 016-2437 was constructed in 1972 by the Cook County Department of Highways. The superstructure consists of four curved steel plate girders with fourteen spans arranged in four continuous units. The deck has a constant out-to-out width of 28'-0", consisting of a composite 7 1/2" reinforced concrete slab with a 1 1/2" bituminous concrete overlay. The back-to-back of abutment length of the bridge is 1450'-5". Abutment 1 is a sand-filled vaulted concrete abutment. Abutment 2 is a vaulted abutment with P.P.C. I-beams supporting a concrete slab. All abutments and approach bents are founded on steel H-Piles. The hammerhead piers are supported on a round column and caisson with a belled end. The ramp is to be closed and traffic is to be detoured during construction.

No salvage.

DESIGN STRESSES

FIELD UNITS (New Construction)

f'c = 3,500 psi
 fy = 60,000 psi (reinforcement)
 fy = 50,000 psi (structural steel)

FIELD UNITS (Exist. Construction)

f'c = 3,500 psi
 fy = 40,000 psi (reinforcement - unless noted)
 fy = 60,000 psi (reinforcement - pier shafts and subpiers)
 fy = 36,000 psi (structural steel - unless noted)
 fy = 50,000 psi (structural steel - select flange plates)

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

SEISMIC DATA

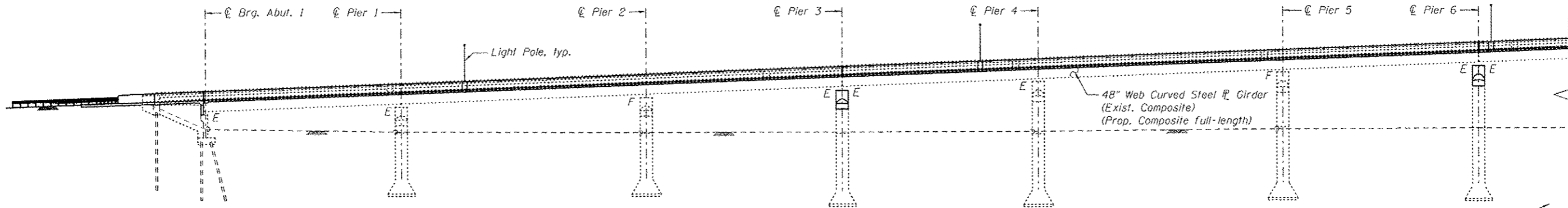
Seismic Performance Category (SPC) = A
 Bedrock Acceleration Coefficient (A) = 0.038g
 Site Coefficient (S) = 1.0

LOADING HS20-44 & ALT. MILITARY

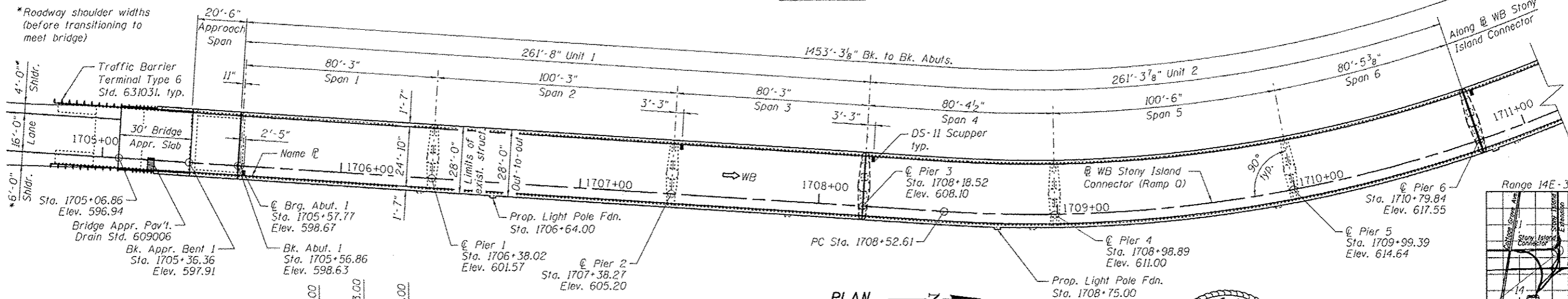
Allow 50#/sq. ft. for future wearing surface.

SCOPE OF WORK

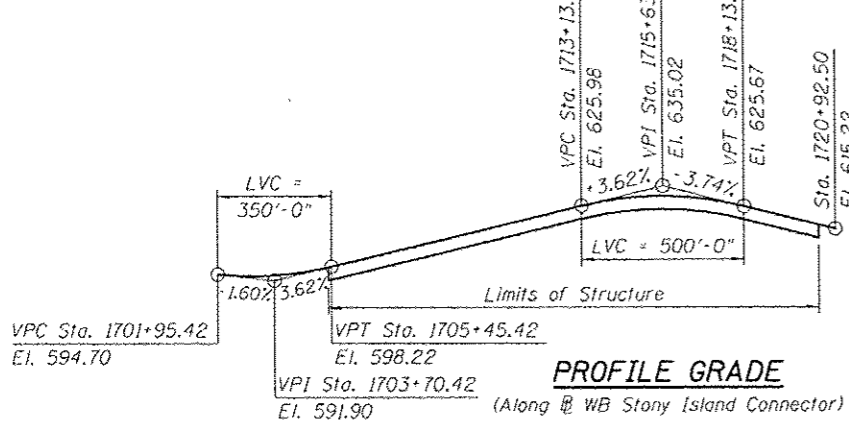
1. Remove and replace deck, vaulted abutment approach span slabs, and approach pavements.
2. Remove and replace abutment backwalls.
3. Remove and replace pier caps at Pier 3 and Pier 6.
4. Remove and replace bearings at all abutments and piers except Pier 10.
5. Remove PPC I-beams at Abutment 2, fill the abutment vault with expanded polystyrene fill and replace with slab span.
6. Crack injection and formed concrete repairs at abutments and piers.
7. Clean and paint steel superstructure, install stud shear connectors on girders in negative moment regions, and retrofit select flange splices.
8. Remove and replace drainage system.



ELEVATION



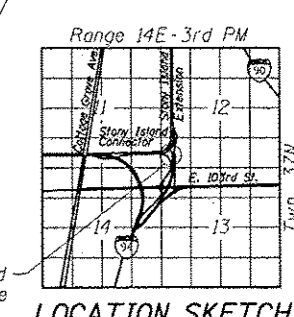
PLAN



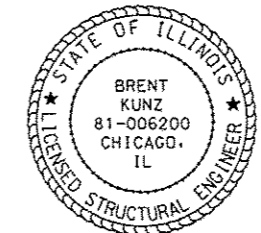
PROFILE GRADE

CURVE DATA

(@ WB Stony Island Connector)
 P.I. = Sta. 1718+26.06
 $\Delta = 118^\circ 54' 55"$ LT
 $D = 9^\circ 58' 31"$
 $T = 973.45'$
 $L = 1192.10'$
 $E = 555.90'$
 $R = 574.38'$
 $e = 6.0\%$
 P.C. = Sta. 1708+52.61
 P.T. = Sta. 1720+44.71



LOCATION SKETCH



APPROVED

For Structural Adequacy Only

Brent Kunz
 Engineer of Bridges & Structures

SIGNED: *Brent Kunz*

DATE: December 07, 2012

EXPIRES: November 30, 2014

GENERAL PLAN & ELEVATION I
WB STONY ISLAND CONNECTOR (RAMP Q)
OVER STONY ISLAND EXTENSION
F.A.I. RTE. 94 - SEC. 2012-060-BR
COOK COUNTY
STATION 1713+33.77
STRUCTURE NO. 016-2437

BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbainc.com	USER NAME =	DESIGNED - TL	REVISOR -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SHEET NO. S-1 OF S-83 SHEETS	F.A.I. RTE. 94	SECTION 2012-060-BR	COUNTY COOK	TOTAL SHEETS 285	SHEET NO. 164
	PLLOT SCALE =	CHECKED - BAK	REVISOR -						CONTRACT NO. 60V61	
	PLLOT DATE = 11/08/2012	DRAWN - TL	REVISOR -							