

Benchmark:
Railroad spike in east face of wood power pole located on the west side of Winn Road and approximately 715 feet north of the centerline of Main Street. Elevation = 788.15 (NAVD88)

Existing Structure:
This existing structure SN 056-3123 was built in 1964 by the Richmond Township Road District as a three-span precast, prestressed concrete deck beam bridge supported on pile bent abutments and piers. The design loading used was H15-S12-44. Structure to be removed and replaced. Road to be closed during construction. Traffic to be maintained with temporary detour route during construction.

Salvage:
No salvage

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	Pier 1	Pier 2	N. Abut.
	759.08	744.40	746.30	759.11

LEGEND

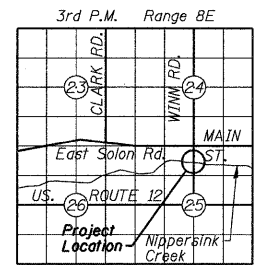
- G— Gas (to be relocated by others)
- FO— Fiber Optic (remaining in place)
- A— Aerial Utilities (remaining in place)
- S— Sanitary (remaining in place)

◆ Soil Boring Location

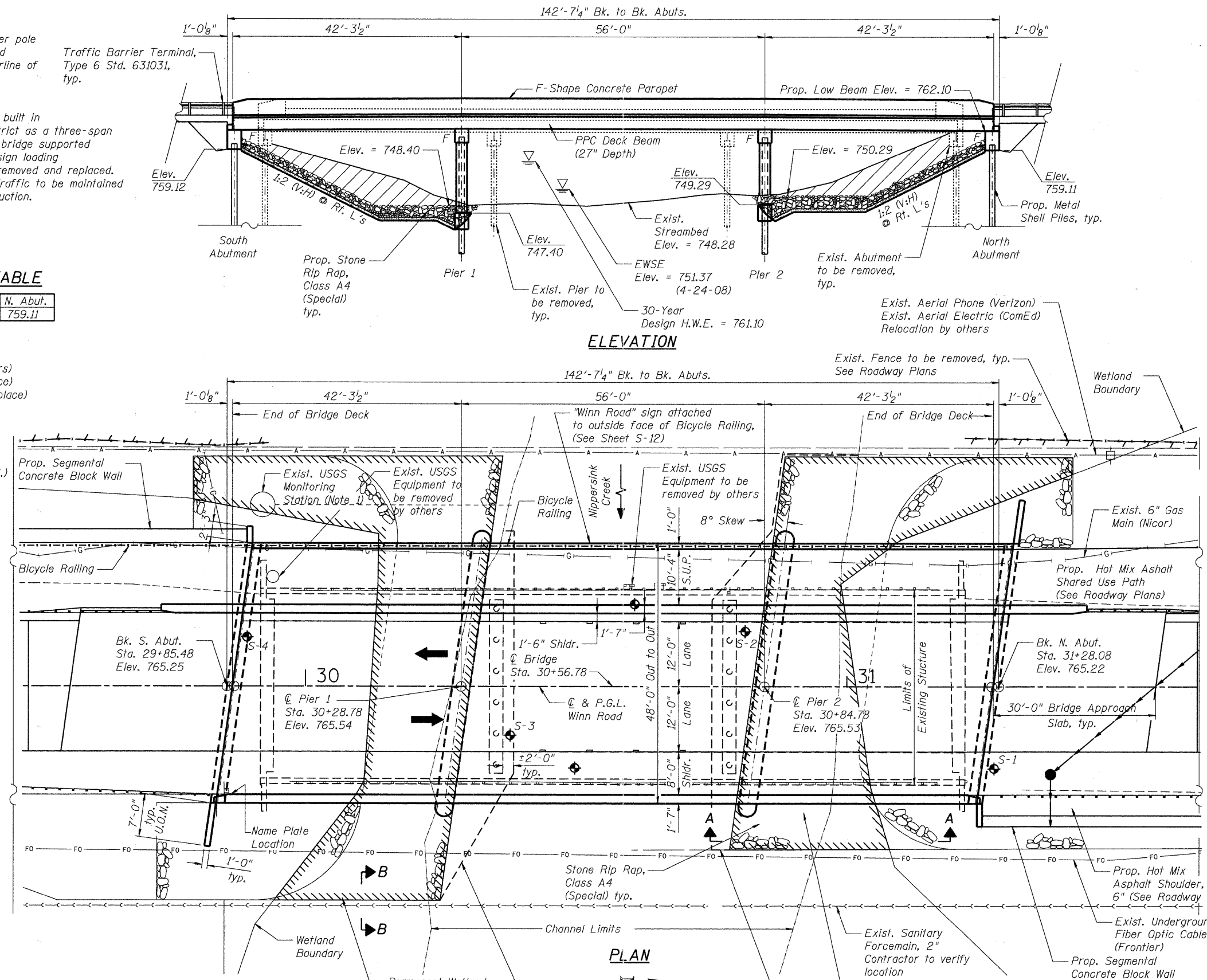
▨ Permanent Wetland Impact (Impact to Waters of the U.S.)

▨ Removal and Disposal of Unsuitable Material (See Roadway Plans)

Total Permanent Wetland Impact = 0.10 AC



LOCATION SKETCH



WATERWAY INFORMATION

Drainage Area = 194 sq. mi. Low Grade Elev. 763.23 @ Sta. 32+60

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	30	5600	1147	1409	761.1	0.1	0.1	760.2	760.2	
Base	50	6331	1197	1493	761.7	0.5	0.1	762.2	761.8	
Overtopping	100	7460	1197	1558	762.6	0.6	0.4	763.2	763.0	
	>100	8150		1558	762.9		0.5		763.4	

Note 1. Coordinate rip rap slope protection layout with USGS station access door. Maintain access to door.

DESIGN SPECIFICATIONS
2007 AASHTO LRFD Bridge Design Specifications with 2008 and 2009 Interims

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'ci = 5,000 psi
f'c = 6,000 psi
fpu = 270,000 psi (1/2" φ low lax strands)
fpbt = 201,960 psi (1/2" φ low lax strands)

LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.112
Design Spectral Acceleration at 0.2 sec. (SD5) = 0.200
Soil Site Class = E



To the best of my 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".

Robert G. Davis 4/27/2011
Structural Engineer Expires: 11/30/2012
SEC Group Inc.
An HR Green Company

GENERAL PLAN AND ELEVATION
WINN ROAD
OVER NIPPERSINK CREEK
F.A.U. ROUTE 0157
SECTION NO. 07-00012-00-BR
MCHENRY COUNTY
STATION 30+56.78
STRUCTURE NO. 056-6123

DATE: 7/1/11

SHEET NO.	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-1	0157	07-00012-00-BR	MCHENRY	41	13
CONTRACT NO. 63544					
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT BRM-8003 (921)					

SEC GROUP INC.
An HR Green Company
420 N. Front Street, McHenry, IL 60050
t. 815.385.1778 f. 815.385.1781
www.secgroupinc.com
McHenry, IL • Yorkville, IL • New Lenox, IL • Chicago, IL

FILE NAME: 090212.dwg PLOT DRIVER: pldrvr.plt PEN TABLE: STANDARD-TRANS.ZPL