

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		WILL	64	17
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
02-11106-01-BR		CONTRACT NO. 83949		

BENCHMARK

Brass disk set in northeast wingwall of High Road bridge over Long Run Creek. Disk marked "U.S. Coast & Geodetic Survey Benchmark (L-140)." El. 609.40

EXISTING STRUCTURE

S.N. 099-3167 built in 1935 is a single span reinforced concrete slab bridge on closed abutments. 50 feet clear between abutments. 28 feet out to out of deck.

The structure is to be removed and replaced. Traffic is to be detoured.

No salvage.

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coefficient (S) = 1.0

HIGHWAY CLASSIFICATION

TR 216A (High Road)
Functional Class: Local Road Urban
ADT: 5,600 (2006); 10,600 (2030)
DHV: 960 (2030)
ADTT: 34%
Design Speed: 50 mph
Posted Speed: 45 mph

DESIGN SPECIFICATIONS

AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002

CONSTRUCTION SPECIFICATIONS

Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, Adopted January 1, 2007.

DESIGN LOADS

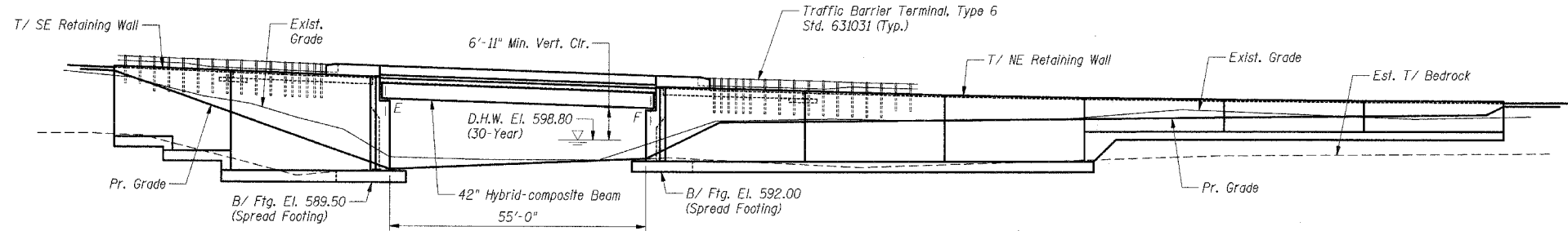
Live Loads = HS20-44
Allowance for future wearing surface = 50#/sq.ft.
Seismic Data
Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.06g
Site Coefficient (S) = 1.0

DESIGN STRESSES

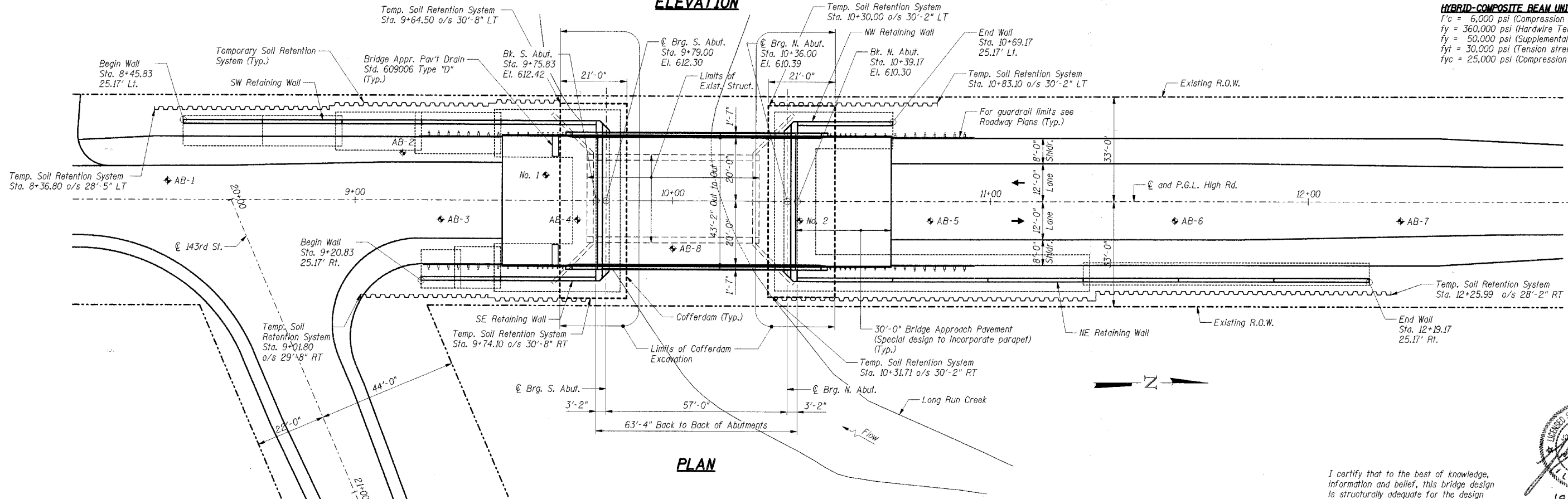
FIELD UNITS
f'c = 3,500 psi
fy = 50,000 psi (M270 Grade 50)
fy = 60,000 psi (reinforcement)

HYBRID-COMPOSITE BEAM UNITS

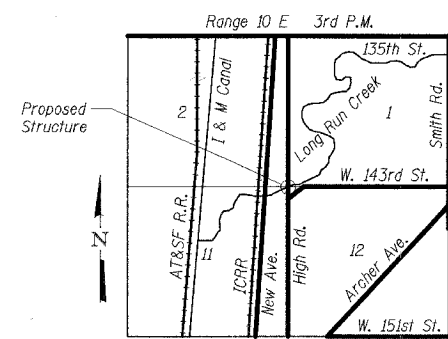
f'c = 6,000 psi (Compression Reinforcement)
fy = 360,000 psi (Hardwire Tension Reinforcement)
fy = 50,000 psi (Supplemental Deflection Reinforcement)
fyt = 30,000 psi (Tension strength of FRP Shell)
fyc = 25,000 psi (Compression strength of FRP Shell)



ELEVATION



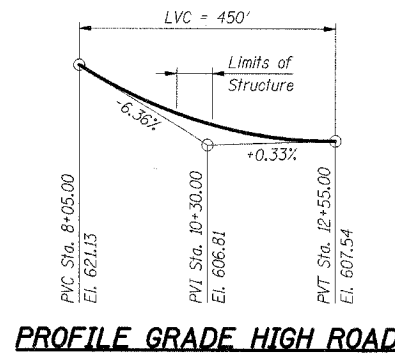
PLAN



LOCATION MAP

LEGEND

- ◆ Soil Boring Location
- ~ Temporary Soil Retention System
- - - Underwater Structure Excavation Protection



PROFILE GRADE HIGH ROAD

WATERWAY INFORMATION

Drainage Area = 24 sq. mi. Low Grade El. 605.56 @ Sta. 12+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.
Design	10	1700	259.0	284.9	598.18	0.14	0.20	598.32	598.38
	30	2300	290.0	319.0	598.80	0.28	0.35	599.08	599.15
	50	2617	303.5	333.9	599.07	0.40	0.47	599.47	599.54
Base	100	3055	322.0	354.2	599.44	0.59	0.68	600.03	600.12

DESIGN SCOUR ELEVATION TABLE

	S. Abut.	N. Abut.
Design Scour Elevation (ft.)	590.50	593.00

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 Standard Specifications for Highway Bridges.



SHT. S-01 OF 28

REVISIONS	
NAME	DATE

LOCKPORT TOWNSHIP HIGHWAY DEPARTMENT
TR216A HIGH ROAD OVER LONG RUN CREEK
SECTION 02-11106-01-BR

GENERAL PLAN AND ELEVATION

SCALE: DATE: 10-19-2007 DRAWN BY: CCE CHECKED BY: JRH

