

B.M.: BM#14; Chiseled Square on Southeast abut. wingwall of SN 031-0015 on IL 267 over Apple Creek, Elev. 511.16'  
 BM#15; Chiseled Square on Northwest abut. wingwall of SN 031-0015 on IL 267 over Apple Creek, Elev. 510.85'

Traffic: Traffic shall be maintained during construction by Staged Construction.

Existing Structure: SN 031-0015, 7-span Reinforced concrete slab on wide flange steel beams with expansion joints at abutments and Pier 4 (Bent 5). Reinforced concrete piers, Reinforced concrete abutments, Built as F.A.I. 64 Sec. 3-B-D-F Sta. 464+62.00 in 1938. Deck replacement and existing wide flange beams made composite 528'-7" long x 32'-6" wide as F.A.Rte. 164 Sec. 3BY-2 Sta. 464+62.00 in 1969. Deck Overlay & Joint Replacement as F.A.Rte. 10 Sec. 3BI-2 in 1987.

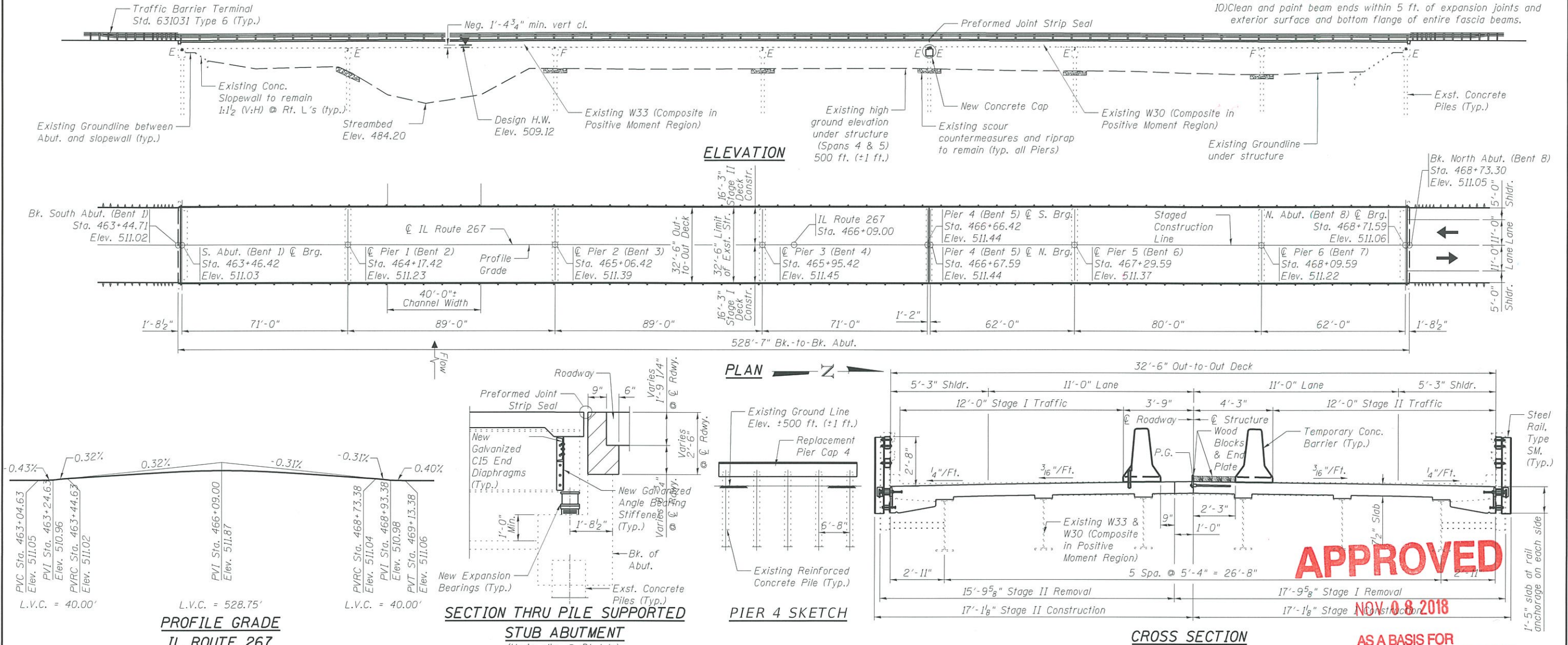
Salvage: None.

### DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)								Item 113
	S. Abut. (Bent 1)	Pier 1 (Bent 2)	Pier 2 (Bent 3)	Pier 3 (Bent 4)	Pier 4 (Bent 5)	Pier 5 (Bent 6)	Pier 6 (Bent 7)	N. Abut. (Bent 8)	
Q100	504.14	496.34	499.69	499.49	499.27	499.19	494.92	504.41	8
Q200	504.14	496.20	499.55	499.35	499.13	499.05	494.78	504.41	
Design	504.14	496.34	499.69	499.49	499.27	499.19	494.92	504.41	

### SCOPE OF WORK

- 1) Pre-Stage deck repair, interior diaphragm repair/replacement and temporary shoring & cribbing at abutments and Pier 4 (Bent 5) for Stage I Traffic. Repairs refined in Final design.
- 2) Remove and replace concrete deck and steel railing.
- 3) Remove and replace deteriorated diaphragms & all end diaphragms.
- 4) Remove and replace abutment and Pier 4 (Bent 5) bearings.
- 5) Repair all beam ends by adding galvanized angle bearing stiffeners.
- 6) Reset Pier bearings that are rotated.
- 7) Remove and replace pier cap at Pier 4 (Bent 5). Provide temporary support system to facilitate pier cap replacement.
- 8) Repair deteriorated parts of concrete substructures.
- 9) Clean Abut. & Pier seats.
- 10) Clean and paint beam ends within 5 ft. of expansion joints and exterior surface and bottom flange of entire fascia beams.



**WATERWAY INFORMATION**

Drainage Area = 146.85 sq.mi. Low Grade Elev. 511.37 @ Sta. 462+00

Flood	Freq. Yr.	Q C.F.S.	Opening Ft <sup>2</sup>		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	15,981	2,989	2,989	506.10	3.02	3.02	509.12	509.12
Base	100	18,269	3,116	3,116	506.35	3.26	3.26	509.61	509.61
Overtopping									
Max. Calc.	500	23,720			506.87	3.77	3.77	510.64	510.64

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications

**LOADING HS-20-44**

Future wearing surface not allowed.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = .162  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D2}$ ) = .304  
 Soil Site Class = D

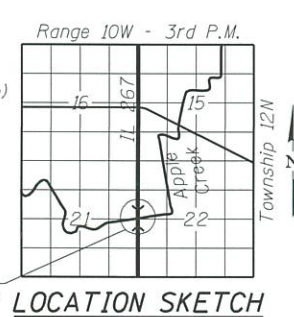
**DESIGN STRESSES**

**FIELD UNITS**

$f'_c$  = 5,000 psi (Superstructure)  
 $f'_c$  = 3,500 psi (Substructure)  
 $f_y$  = 60,000 psi (Reinforcement)  
 $f_y$  = 36,000 psi (M270 Grade 36)

**FIELD UNITS (Exist. Const.)**

$f'_c$  superstructure = 2,400 psi  
 $f'_c$  substructure = 2,400 psi  
 $f_y$  substructure = 40,000 psi (Reinforcement)  
 $f_y$  = 33,000 psi (A7), Beam Strength limited to yield strength subject to bracing req.



**AS A BASIS FOR PREPARATION OF DETAILED PLANS**

**GENERAL PLAN & ELEVATION**  
 IL ROUTE 267 OVER APPLE CREEK  
 F.A.P. RTE. 10 - SECTION 3BR-2  
 GREENE COUNTY  
 STA. 466+09.00  
 STRUCTURE NO. 031-0015

**BENTON & ASSOCIATES, INC.**

FILE NAME	USER NAME	DESIGNED	REVISIONS
P:\10e2166-25\Design\Plans\TSL\0310015-76M21		MBH	
-001-TSL.dgn		RHB	
		MBH	
		RHB	

**STATE OF ILLINOIS**  
 DEPARTMENT OF TRANSPORTATION

**GENERAL PLAN**  
 STRUCTURE NO. 031-0015  
 SHEET NO. 1 OF 1 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10	3BR-2	GREENE	1	1
				CONTRACT NO. 76M21
FED. ROAD DIST. NO. 8 ILLINOIS FED. AID PROJECT				