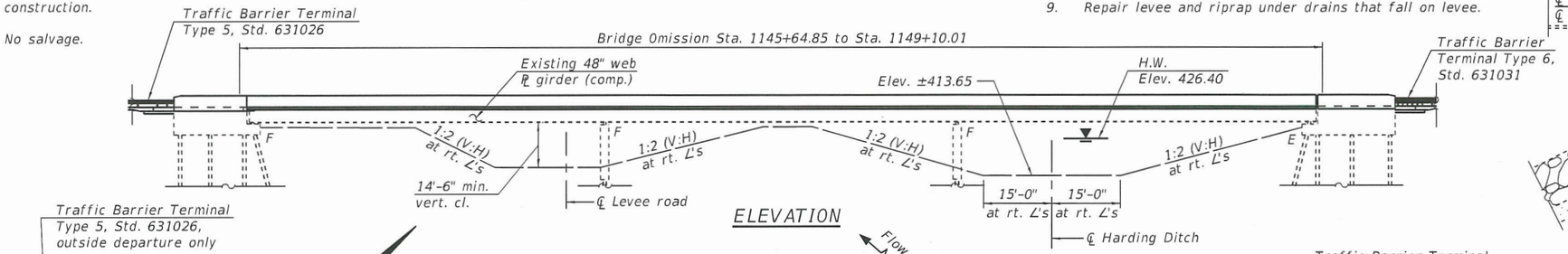
Benchmark: Aluminum disk on SE corner of parapet of Northbound I-255 over Harding Ditch (S.N. 082-0245). Elev. 440.341.

Existing structure: S.N. 082-0246 (S.B.) was originally constructed in 1985 as F.A.I. Route 255 in Section 82-1BI-3 at Sta. 1148+95. The existing superstructure consists of three spans of equal length 113'-0"-113'-0"-113'-0" on continuous (composite) steel hybrid plate girders. The overall length of the bridge measures 347'-5½" back to back of abutments and the out-to-out deck width is 59'-2". The deck is cast-in-place concrete over stay-in-place precast-preformed- concrete (PPC) deck planks. The deck provides three 12'-0" lanes with two 10'-0" shoulders. The thickness of the concrete deck is 7½". In 2003, the structure was rehabilitated and the deck was patched and paved with a 2" superpave overlay and waterproofing membrane system. The substructure consists of reinforced concrete abutments and piers supported by single rows of battered and straight steel piles. Elastomeric bearings are located at the north abutment to allow movement while the south abutment and the piers have fixed bearings. Detour during construction.

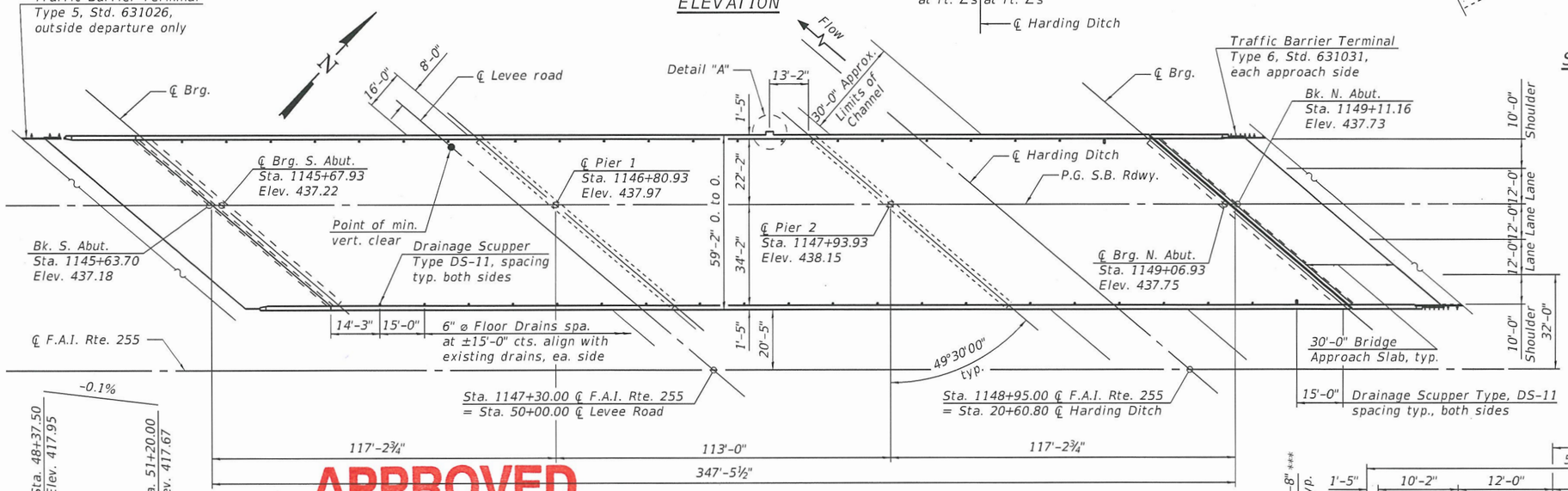
No salvage.

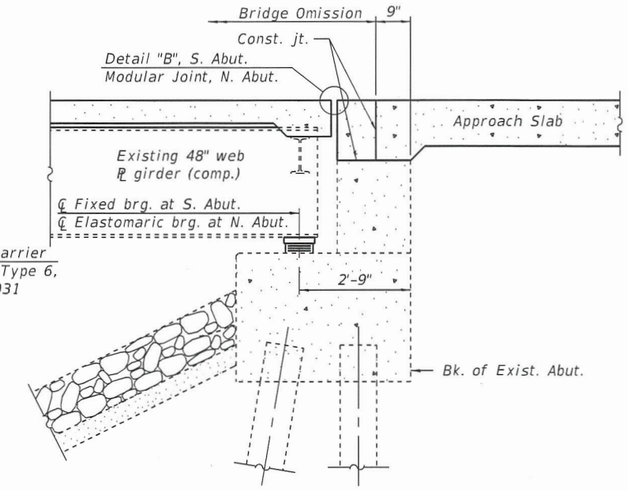
SCOPE OF WORK

1. Remove existing (composite) concrete deck and HMA and replace with new concrete deck to revised profile.
2. Remove and replace bridge approach slabs.
3. Replace fixed bearings at S. Abutment.
4. Replace elastomeric bearings at N. Abutment.
5. Blasting and painting at beams ends, end diaphragms under joints.
6. Clean and apply concrete sealer on abutment seats.
7. Repair concrete on abutments.
8. Remove and replace parapets on the wingwalls.
9. Repair levee and riprap under drains that fall on levee.



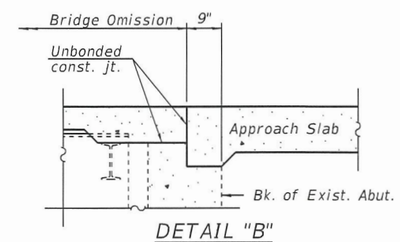
ELEVATION





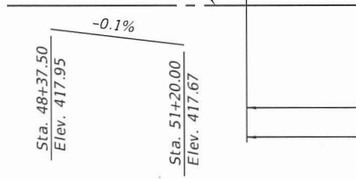
SECTION THRU PILE SUPPORTED STUB ABUTMENT

(Horiz. dim. at rt. L's)



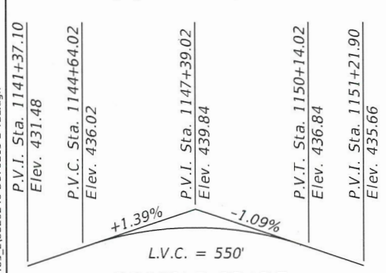
DETAIL "B"

(Horiz. dim. at rt. L's)



PROFILE GRADE

(Along ℄ Levee Road)



PROFILE GRADE

(Along P.G. S.B. Rdwy.)

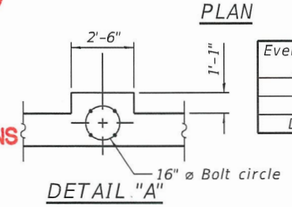
Note: The profile grade shows the final elevations after grinding.

APPROVED

JUL 15 2019

AS A BASIS FOR PREPARATION OF DETAILED PLANS

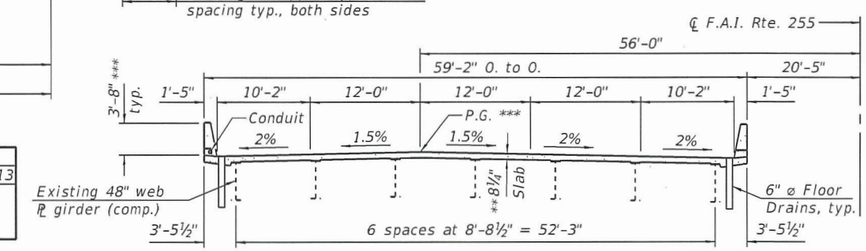
PLAN



DETAIL "A"

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)				
	S. Abut.	Pier 1	Pier 2	N. Abut.	Item 113
Q100	432.20	419.12	418.89	432.10	8
Q200	432.20	419.12	418.89	432.10	
Design	428.31	413.94	412.96	428.24	



CROSS-SECTION

(Looking North)

** Prior to Grinding
*** After Grinding

Notes:
Up to ¼" may be ground off the bridge deck and bridge approach slabs.
Additional fillet reinforcement is required.

HIGHWAY CLASSIFICATION

F.A.I. 255 - I-255
Functional Class: Interstate
ADT: 24,400 (2015); 24,215 (2032)
ADTT: 671 (SU) 3,325 MU
DHV: 3,381 (2039)
Design Speed: 65 m.p.h.
Posted Speed: 65 m.p.h.
One-Way Traffic

EXISTING WATERWAY INFORMATION

Bridge Spans existing levee system. The design high water elevation is 426.4 ft. based on Harding Ditch capacity of 1,600 c.f.s.

LOADING HS20-44 AND ALTERNATE

Allow 25#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition (LFD)

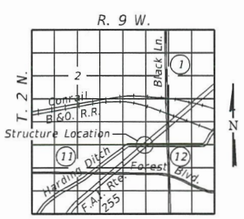
SEISMIC DATA

Seismic Performance Category (SPC) = B
Horizontal Bedrock Acceleration Coefficient (A) = 0.11g
Site Coefficient (S) = 1.0

DESIGN STRESSES

FIELD UNITS (New Construction)
f'c = 4,000 psi (Superstructure)
f'c = 3,500 psi (Substructure)
fy = 60,000 psi (Superstr. Reinf.)
fy = 50,000 psi (Structural Steel)

FIELD UNITS (Exist. Construction)
f'c = 3,500 psi (Superstructure)
fy = 60,000 psi (Superstr. Reinf.)
fs = 20,000 psi (M183)
fs = 27,000 psi (M223 Grade 50)
fc = 1,400 psi (Substructure)
fs = 24,000 psi (Substr. Reinf.)



LOCATION SKETCH

GENERAL PLAN

I-255 OVER HARDING DITCH (S.B.)

F.A.I. 255 - SECTION 82-1RS-2

ST. CLAIR COUNTY

STATION 1148+95.00

STRUCTURE NO. 082-0246 (S.B.)

HORNER SHIFRIN WWW.HORNERSHIFRIN.COM	USER NAME =	DESIGNED - JJD	REVISED -
		CHECKED - JJD	REVISED -
	PLOT SCALE =	DRAWN - CAB	REVISED -
	PLOT DATE =	CHECKED - SSM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 1 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
255	82-1RS	ST. CLAIR		
		CONTRACT NO. 76E13-2		
		ILLINOIS FED. AID PROJECT		

FULL SIZE 1=1

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