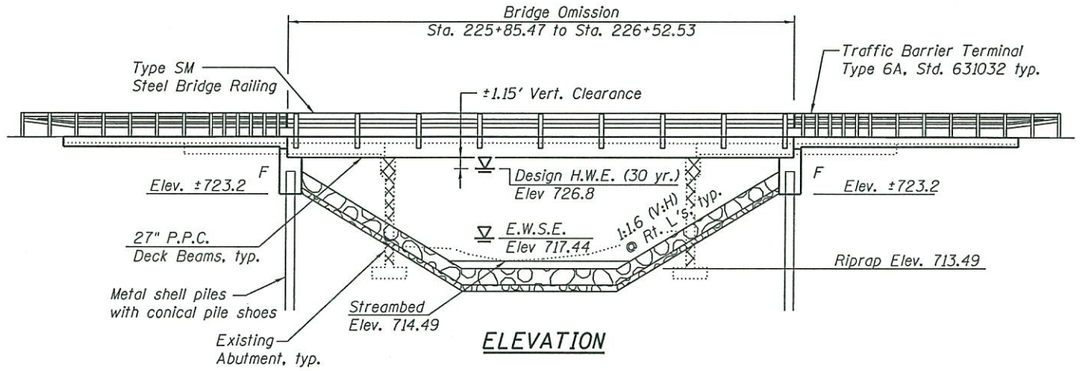
Benchmarks: 4360-4 IDOT brass disk located in the top of the NW wingwall of S.N. 010-0131, Sta. 226+08, 18.0' Lt., Elev. 730.09.
4360-13 (P-200) disk located in the top of the west end of the south headwall of a 12' concrete box culvert approximately 0.6 miles west of Illinois Central Railroad in Leverett; 18' south of centerline of road; Elev. 727.86.

Existing Structure: S.N. 010-0131 built as County Highway 15D (S.A. Rte. 21 & 1A) - Sec. 106B-15D in 1940, was a single span steel beam and concrete slab bridge supported on closed concrete abutments with spread footings. Rehabilitation in 1988 consisted of a superstructure replacement with 17" P.P.C. deck beams and a bituminous wearing surface and waterproofing membrane system. Abutment modifications included new reinforced concrete beam seats. The structure is 42'-6½" back to back of abutments, and 33'-0" out to out of deck.

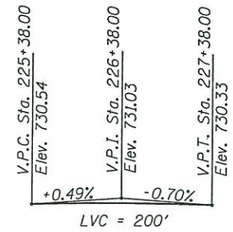
The structure is to be removed and replaced with a single span PPC deck beam bridge.

The roadway is to be closed and traffic detoured during construction.

Salvage existing Type S-1 Steel Bridge Railing.

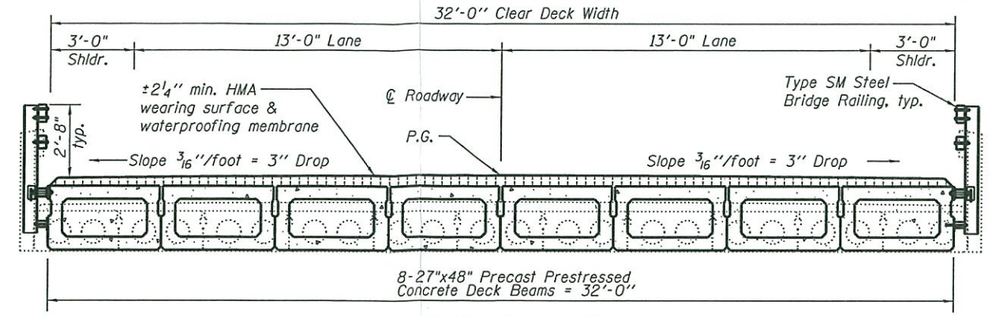


ELEVATION



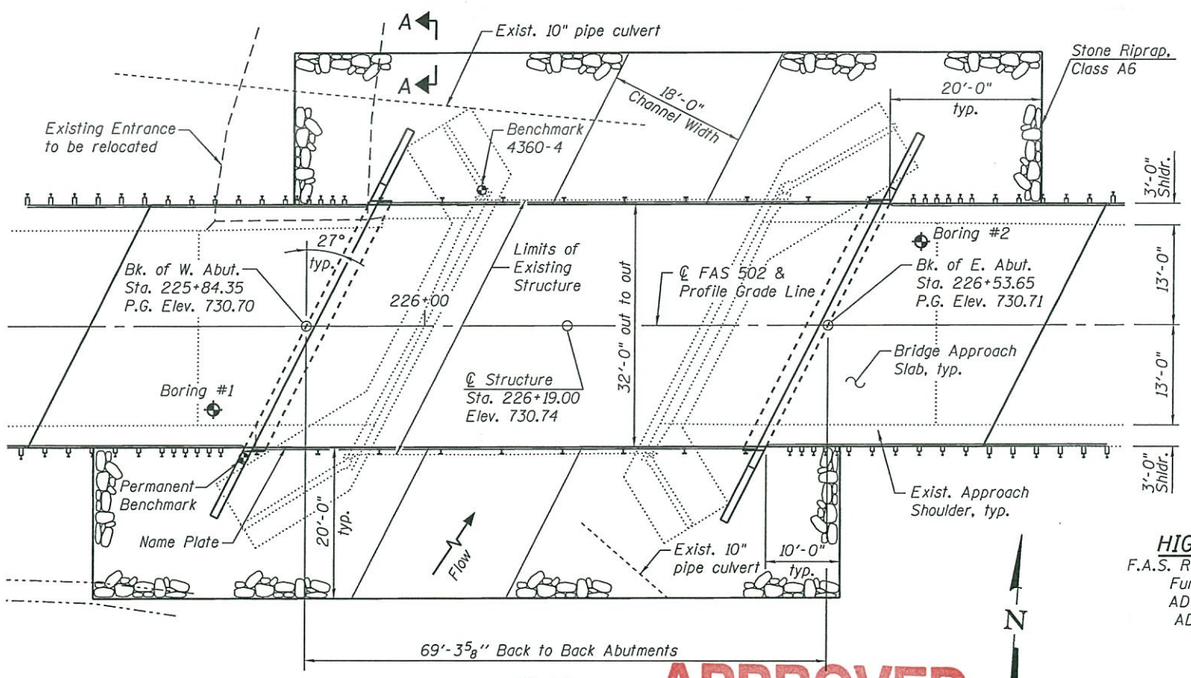
PROFILE GRADE

℄ FAS 502

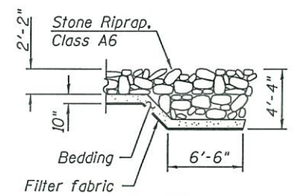


CROSS SECTION

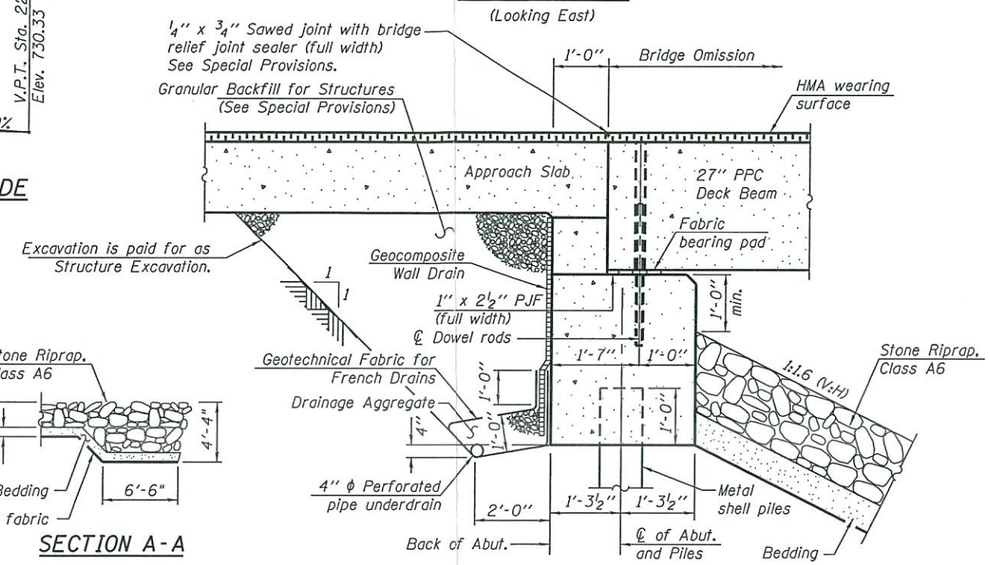
(Looking East)



PLAN



SECTION A-A



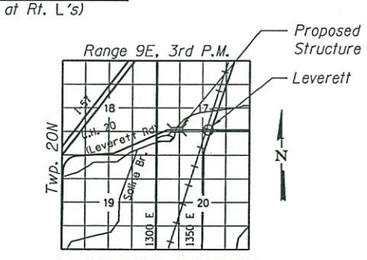
SECTION THRU ABUTMENT

(Dimensions are at Rt. L's)

WATERWAY INFORMATION

Drainage Area = 13.9 Sq. Mi. Low Grade Elev. 727.57 @ Sta. 235+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	1670	338	400	726.0	0.7	0.5	726.7	726.5
Design	30	2381	366	445	726.8	0.7	0.6	727.5	727.4
Base	100	3200	383	473	727.3	0.9	0.9	728.2	728.2
Overtopping	35	2483	369	450	726.9	0.8	0.7	727.7	727.6



LOCATION SKETCH

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.) W. Abut.	Design Scour Elevations (ft.) E. Abut.	Item 113
Q100	723.2	723.2	8
Q200	723.2	723.2	
Design	723.2	723.2	
Check	723.2	723.2	

HIGHWAY CLASSIFICATION

F.A.S. Rte. 502 - C.H. 20 / Leverett Rd.
Functional Class: Major Collector
ADT: 2350 (2014); 2600 (2034)
ADTT: 219 (2014); 242 (2034)
DHV: 235
Design Speed: 60 m.p.h.
Posted Speed: 55 m.p.h.
2-Way Traffic
Directional Distribution: 55:45

LOADING HL-93

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

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 7th Edition

DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (½" ϕ low lax strands)
fpbt = 201,960 psi (½" ϕ low lax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.13g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.23g
Soil Site Class = D

APPROVED

JAN 22 2015

AS A BASIS FOR PREPARATION OF DETAILED PLANS

GENERAL PLAN & ELEVATION
F.A.S. 502 (C.H. 20 / LEVERETT RD.)
OVER SALINE BRANCH
DRAINAGE DITCH
SECTION 106BR-1(2)
CHAMPAIGN COUNTY
STA. 226+19.00
S.N. 010-0292

F:\Projects\IDOT PROJECTS\18-006-7\drawings\0180292-70599-TSL.dgn

McDonough-Whitlow, P.C. Consulting Engineers & Land Surveyors PROFESSIONAL DESIGN No. 184-002754	USER NAME = Jim	DESIGNED - CMF	REVISED -
		CHECKED - TMM	REVISED -
	PLOT SCALE = 0:2.0000 ' / in.	DRAWN - JLM	REVISED -
	PLOT DATE = 1/15/2015	CHECKED - TMM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 010-0292

SHEET NO. 1 OF 1 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
502	106BR-1(2)	CHAMPAIGN	-	-
		CONTRACT NO. 70599		
		ILLINOIS FED. AID PROJECT		