Benchmark: Chiseled "□" on top of Northeast parapet. Sta. 139+66; 17.8' Lt.; Elev. 634.306

Existing structure: SN 070-0003 built in 1967 as S.B.I. Route 132, Section 104-BR at Sta. 138+26.29. The existing structure consists of a three span steel wide flange beam superstructure supported on pile bent abutments and solid wall piers. Back-to-back of abutment length is 223'-0" and out-to-out width of deck is 36'-0". The existing superstructure is to be replaced and the structure shall be widened on each side. Traffic is to be maintained using stage construction.

No salvage of the superstructure.

DESIGN SPECIFICATIONS

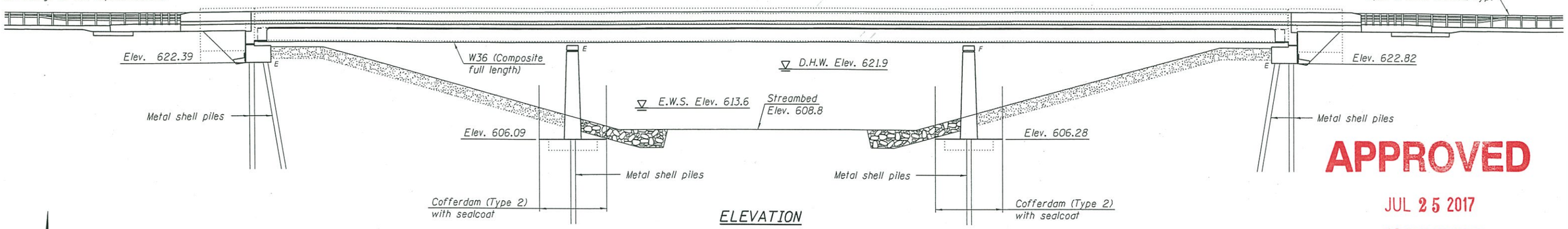
2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 and 2016 Interims
1995 FHWA Seismic Retrofitting Manual

LOADING HL-93

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

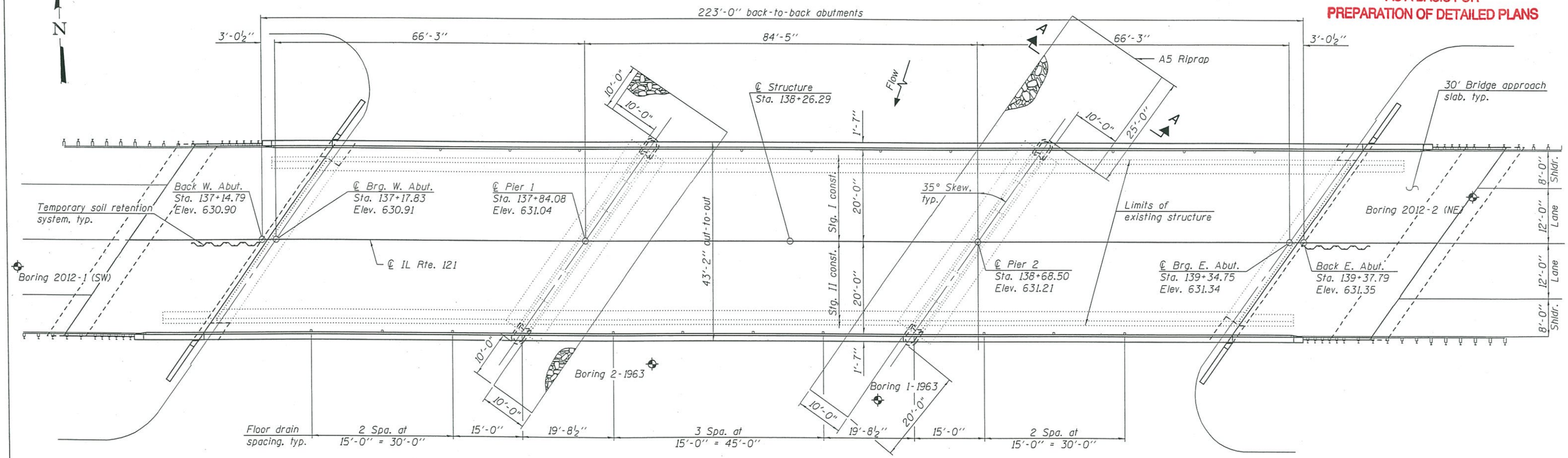
SEISMIC DATA

Seismic Performance Category (SPC) = A
Horizontal Bedrock Acceleration Coefficient (A) = 0.05 g
Site Coefficient = 1.5



ELEVATION

APPROVED
JUL 25 2017
AS A BASIS FOR PREPARATION OF DETAILED PLANS



PLAN

DESIGN STRESSES

FIELD UNITS (New construction)

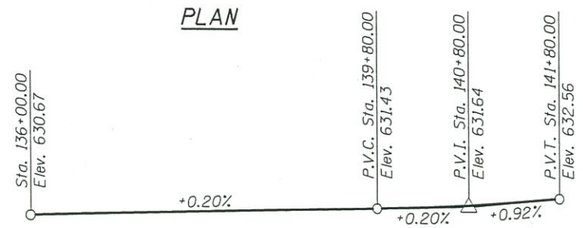
f'c = 3,500 psi
f'c = 4,000 psi (Superstructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Structural Steel M270 Grade 50W)

FIELD UNITS (Existing construction)

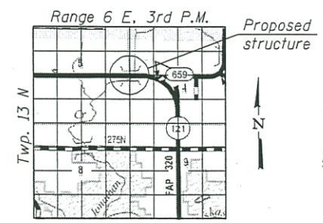
f'c = 3,500 psi
fy = 40,000 psi (Reinforcement)

HIGHWAY CLASSIFICATION

F.A.P. Rte. 320 - IL Rte. 121
Functional Class: Other Principal Arterial
ADT: 5700 (2012); 6092 (2018)
ADTT: 473 (2012)
DHV: 1312
Design Speed: 60 m.p.h.
Posted Speed: 55 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50



PROFILE GRADE
(Along ℄ roadway)



LOCATION SKETCH

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 121 OVER JONATHAN CREEK
F.A.P. ROUTE 320 - SEC. (104BR)BR-1
MOULTRIE COUNTY
STA. 138+26.29
STRUCTURE NO. 070-0003

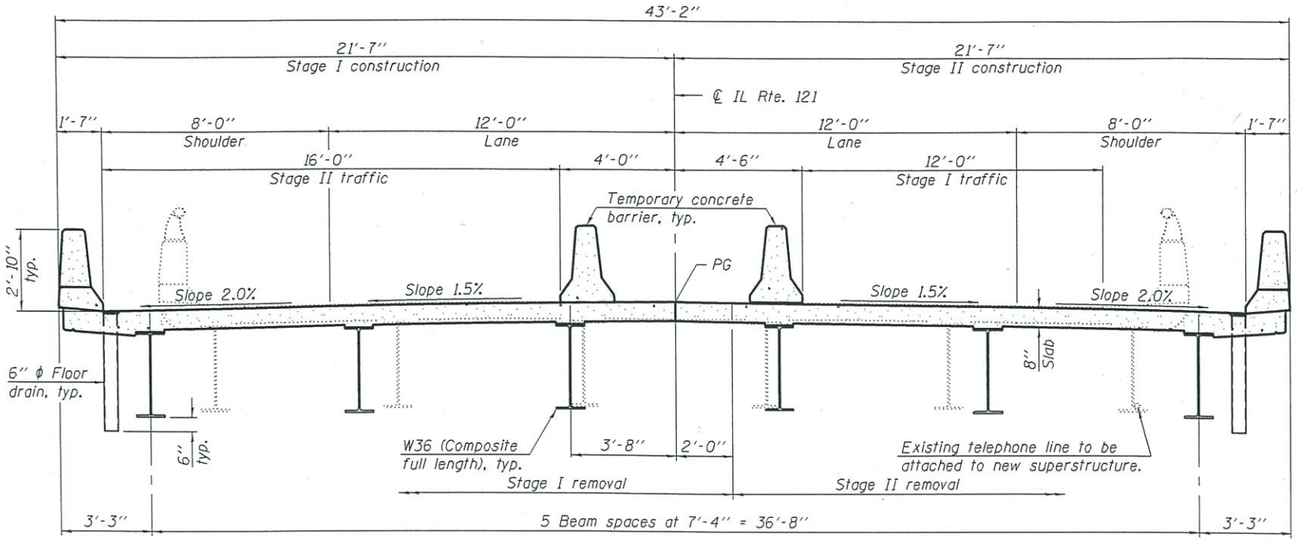
DESIGNED	-	DEREK G. VERHULST
CHECKED	-	TIM A. CRAVEN
DRAWN	-	MICHAEL B. MOSSMAN
CHECKED	-	DEREK G. VERHULST

JULY 25, 2017

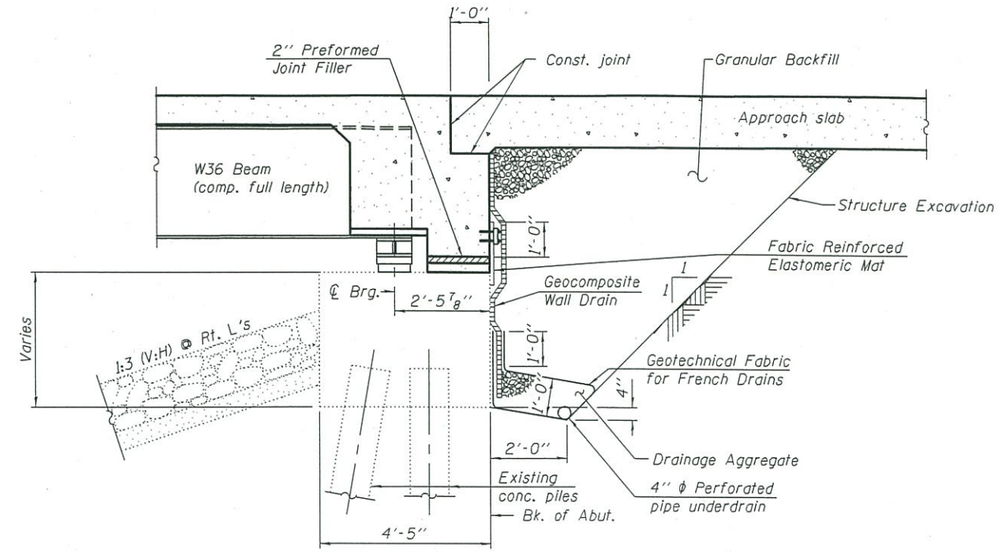
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 2 SHEETS

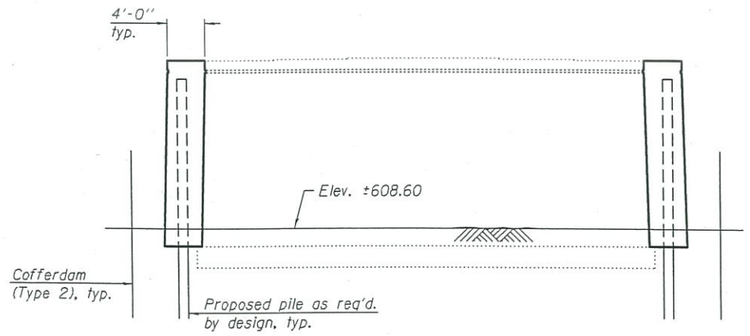
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	(104BR)BR-1	MOULTRIE		
		CONTRACT NO. 74358		
		ILLINOIS FED. AID PROJECT		



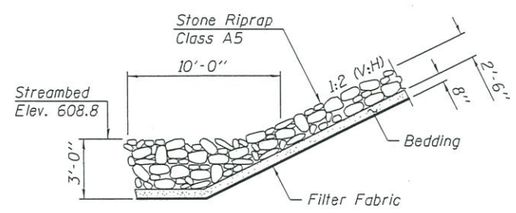
CROSS SECTION
(Looking East)



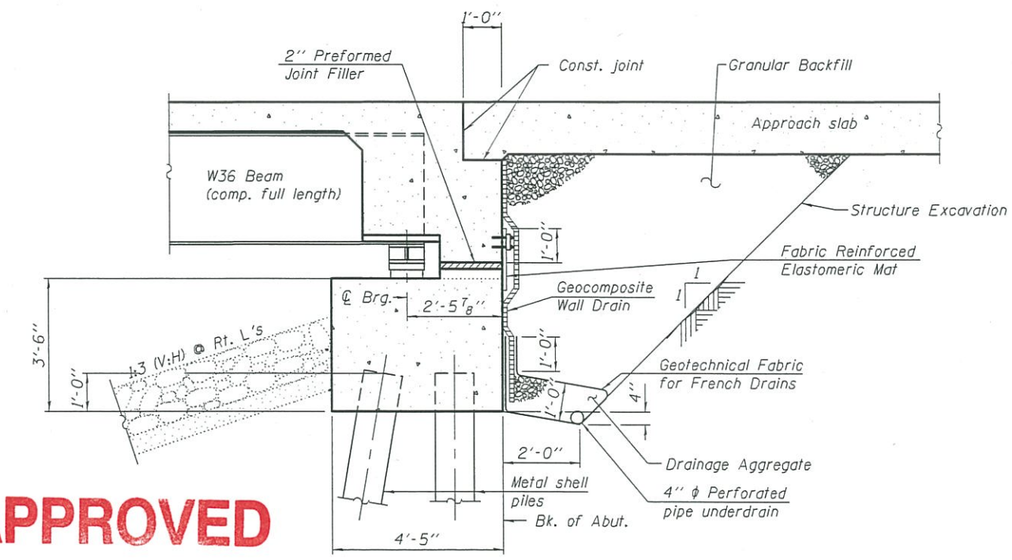
SECTION THRU SEMI-INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)



PIER SKETCH
(Typical each pier)



SECTION A-A



SECTION THRU SEMI-INTEGRAL ABUTMENT EXTENSION
(Horiz. dim. @ Rt. L's)

APPROVED

JUL 25 2017

AS A BASIS FOR PREPARATION OF DETAILED PLANS

WATERWAY INFORMATION

Drainage Area = 53.6 sq. mi. Existing Overtopping Elev. = 630.5 at Sta. 135+00
Proposed Overtopping Elev. = ____ at Sta. ____

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	2710	706	706	620.0	0.4	0.4	620.4	620.4
Design	50	4230	1003	1003	621.9	0.4	0.4	622.3	622.3
Base	100	4890	1140	1140	622.7	0.3	0.3	623.0	623.0
Scour Design Check	200	5571	1283	1283	623.5	0.2	0.2	623.7	623.7
Overtop Existing									
Overtop Proposed									
Max. Calc.	500	6470	1492	1492	624.6	0.2	0.2	624.8	624.8

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.) W. Abut.	Pier 1	Pier 2	E. Abut.	Item 113
0100	622.39	587.42	587.61	622.82	7
0200	622.39	586.78	586.97	622.82	
Design	622.39	603.84	604.03	622.82	
Check	-	-	-	-	

DETAILS
ILLINOIS ROUTE 121 OVER
JONATHAN CREEK
F.A.P. ROUTE 320 - SEC. (104BR)BR-1
MOULTRIE COUNTY
STA. 138+26.29
STRUCTURE NO. 070-0003

DESIGNED -	DEREK G. VERHULST
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DRAWN -	MICHAEL B. MOSSMAN
CHECKED -	DEREK G. VERHULST

JULY 25, 2017

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
320	(104BR)BR-1	MOULTRIE		
		CONTRACT NO. 74358		
		ILLINOIS FED. AID PROJECT		