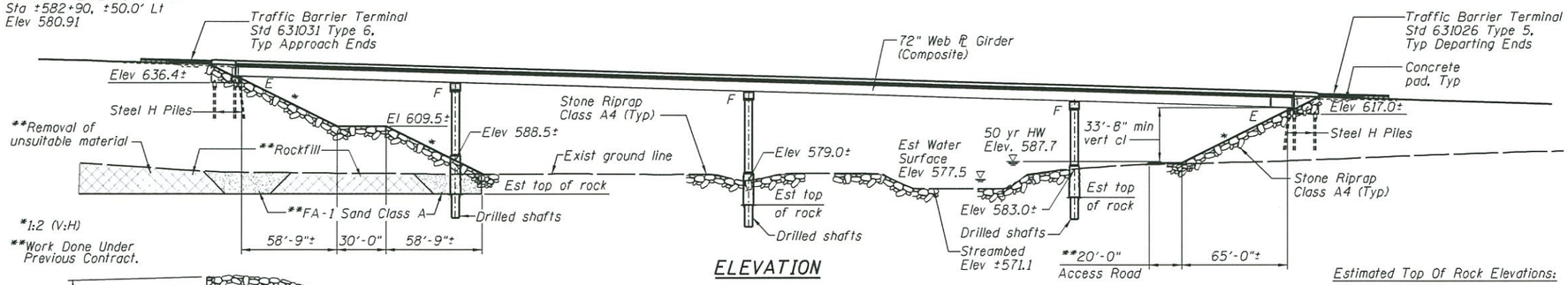
Bench Mark: BM HEI 28
R.R. spike in ±26" maple tree.
S. side of E. Lamoine River
Sta ±582+90, ±50.0' Lt
Elev 580.91

Existing Structure: None



ELEVATION

DESIGN SCOUR ELEVATION TABLE

Design Scour Elev (ft.)	S Abut	Pier 1	Pier 2	Pier 3	N Abut
0.100	636.4	567.8	556.2	569.7	617.0
0.500	636.4	567.8	556.2	569.7	617.0

Estimated Top Of Rock Elevations:
SB Pier 1: 568.2
NB Pier 1: 567.8
SB Pier 2: 556.5
NB Pier 2: 562.2
SB Pier 3: 571.1
NB Pier 3: 570.1

APPROVED
SEP 03 2013
AS A BASIS FOR
PREPARATION OF DETAILED PLANS

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications
6th Edition

DESIGN STRESSES

FIELD UNITS

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

SEISMIC DATA

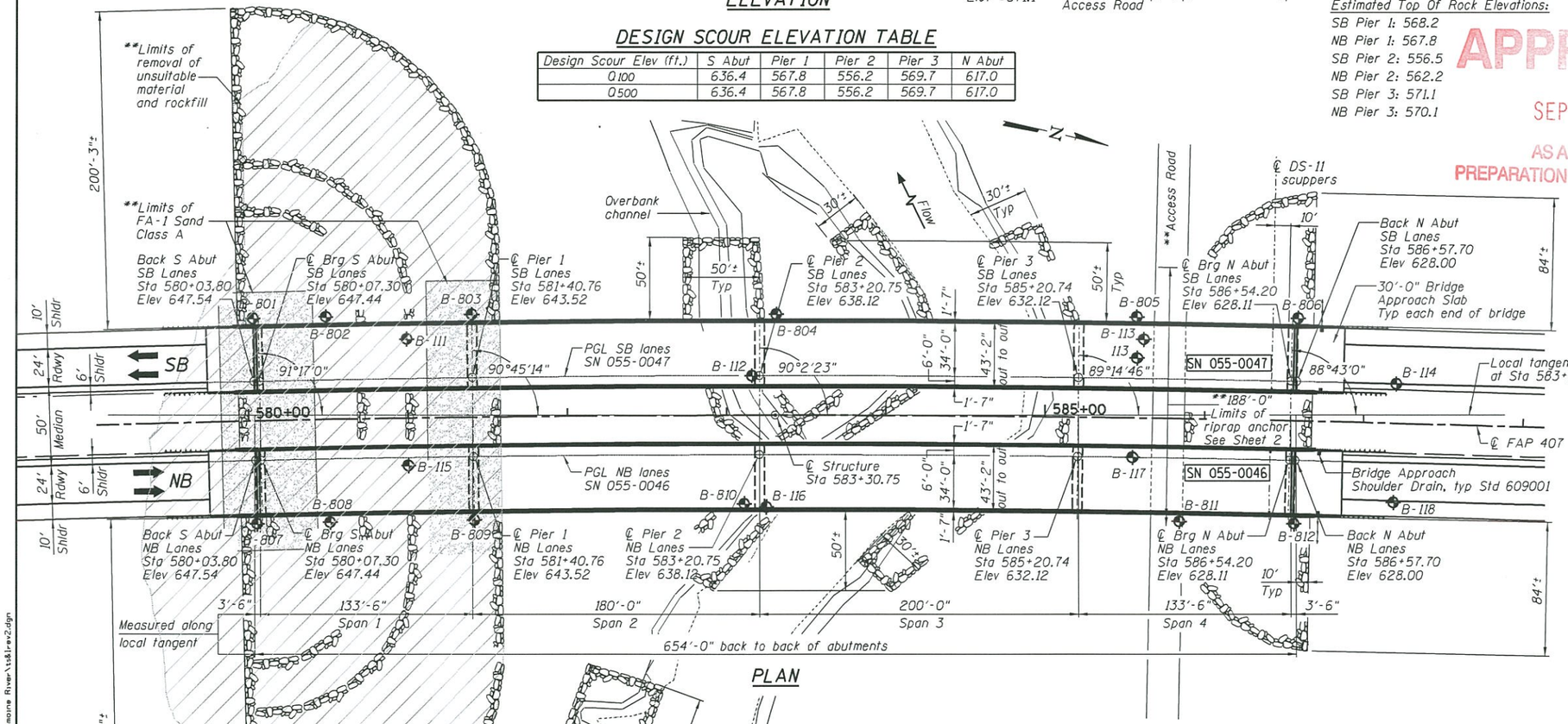
Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 Sec. (Sd1) = 0.08g
Design Spectral Acceleration at 0.2 Sec. (Sds) = 0.13g
Soil Site Class = C

HIGHWAY CLASSIFICATION

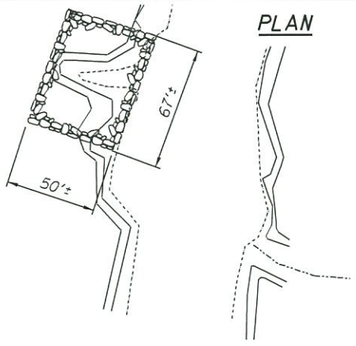
FAP Rte. 407 (IL 336)
Functional Class: Freeway
ADT: 3045 (2015); 3715 (2035) (NB & SB)
ADTT: 305 (2015); 370 (2035) (NB & SB)
DHV: 10% (NB & SB)
Design Speed: 70 m.p.h.
Posted Speed: 65 m.p.h.
One-Way Traffic Each Structure
Directional Distribution: 50:50

CURVE DATA

PROP. CURVE IL336-2
PI STA. = 590+36.90
Δ = 9° 15' 34" (RT)
D = 0° 23' 48"
R = 14,440.00'
T = 1,169.34'
L = 2,333.59'
E = 47.27'
P.C. STA. = 578+67.56
P.T. STA. = 602+01.15



PLAN

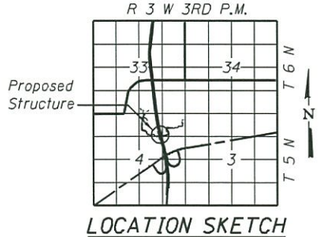


WATERWAY INFORMATION

Drainage Area = 165 Sq Mi Low Grade Elev. 611.7 @ Sta. 592+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	8,280	--	2,151	585.3	--	0.7	--	586.0
Design	50	12,700	--	3,149	587.7	--	0.8	--	588.5
Base	100	14,700	--	3,854	588.7	--	1.0	--	589.7
Max. Calc.	500	19,500	--	5,365	590.5	--	1.0	--	591.5

10 Year Velocity thru Exist Br = n/a 10 Year Velocity thru Prop Br = 3.9 fps



PROFILE GRADE

LOCATION SKETCH

GENERAL PLAN AND ELEVATION
FAP ROUTE 407 OVER
EAST FORK LAMOINE RIVER
SECTION 55-3
MCDONOUGH COUNTY
STA 583+30.75
STRUCTURE NO. 055-0046 (NB)
STRUCTURE NO. 055-0047 (SB)

FILE NAME = I:\IDOT\5686, HEI.IL336\CADD\Structural\East Fork Lamoine River\sht&lr-v2.dgn

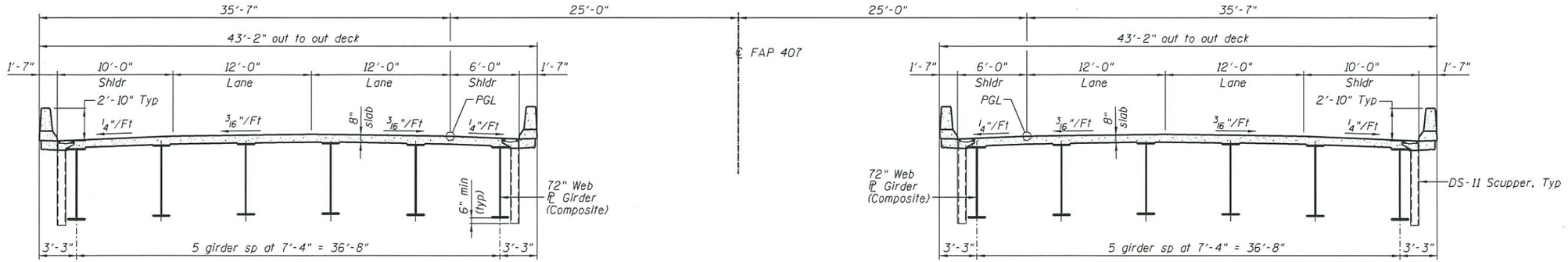
CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

USER NAME = jbuening	DESIGNED - JMB	REVISED -	
PLOT TIME = 11:27:21 AM	CHECKED - ACB	REVISED -	
PLOT SCALE = 80.0000 ' / in.	DRAWN - RLK	REVISED -	
PLOT DATE = 8/29/2013	CHECKED - JMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

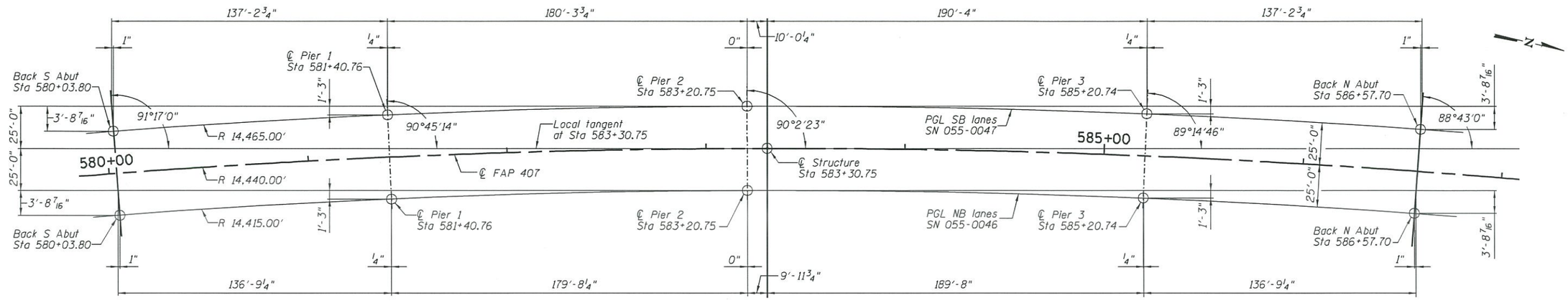
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 055-0046 (NB) & 055-0047 (SB)
SHEET NO. 1 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
407	55-3	MCDONOUGH		
SN. 055-0046 (NB) & 0047 (SB)		CONTRACT NO. 68418		
STA. 583+30.75	ILLINOIS	FED. AID PROJECT		

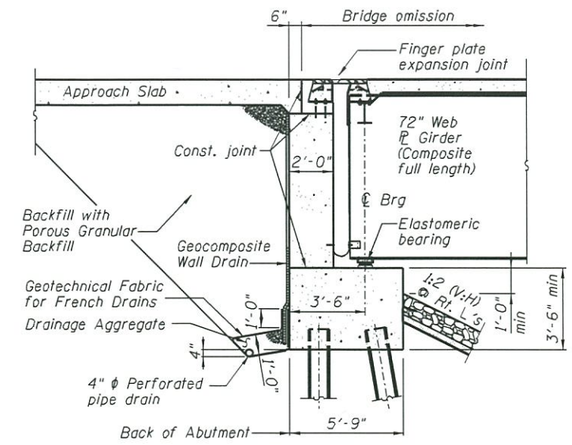


CROSS SECTION LOOKING NORTH

All horizontal dimensions are radial to ℄ FAP 407

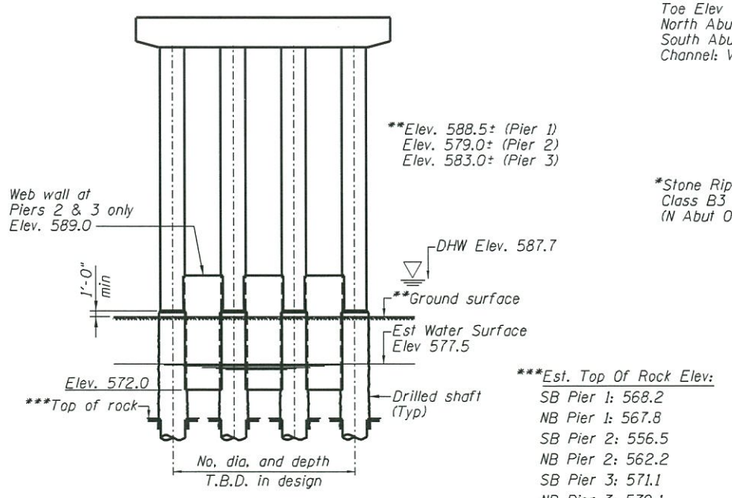


BRIDGE OFFSET SKETCH



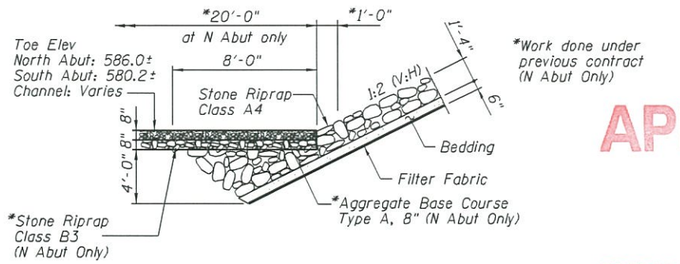
SECTION THRU ABUTMENTS

(Horiz. dim. ℄ Rt. L's)

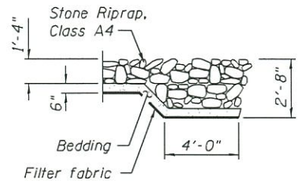


PIER SKETCH

***Est. Top Of Rock Elev:
SB Pier 1: 568.2
NB Pier 1: 567.8
SB Pier 2: 556.5
NB Pier 2: 562.2
SB Pier 3: 571.1
NB Pier 3: 570.1



STONE RIPRAP ANCHOR DETAIL



RIPRAP FLANK DETAIL

APPROVED

SEP 03 2013

AS A BASIS FOR PREPARATION OF DETAILED PLANS

GENERAL PLAN AND ELEVATION
FAP ROUTE 407 OVER
EAST FORK LAMOINE RIVER
SECTION 55-3
MCDONOUGH COUNTY
STA 583+30.75
STRUCTURE NO. 055-0046 (NB)
STRUCTURE NO. 055-0047 (SB)

FILE NAME = (\IDOT\5686_ HEI\IL336\CADD\Structural\East Fork Lamoine River\ts&l2-ev.dgn

CHASTAIN & ASSOCIATES LLC
CONSULTING ENGINEERS
184-001397

USER NAME = jbuening	DESIGNED - JMB	REVISED -	
PLOT TIME = 11:26:42 AM	CHECKED - ACB	REVISED -	
PLOT SCALE = 10:0 ':' / in.	DRAWN - RLK	REVISED -	
PLOT DATE = 8/29/2013	CHECKED - JMB	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS
STRUCTURE NO. 055-0046 (NB) & 055-0047 (SB)
SHEET NO. 2 OF 2 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
407	55-3	MCDONOUGH		
SN. 055-0046 (NB) & 0047 (SB)		CONTRACT NO. 68418		
STA. 583+30.75	ILLINOIS	FED. AID PROJECT		