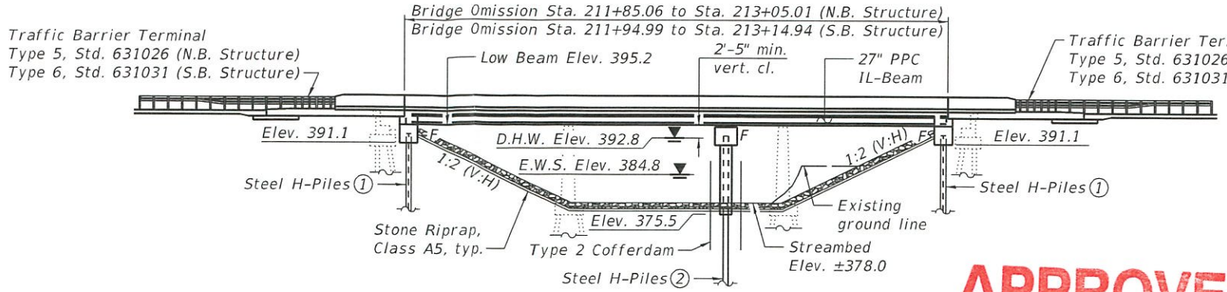
Bench Mark: Chiseled square on southwest wingwall of S.N. 028-0002, Sta. 213+27, ±61.2 Right, Elev. 400.73.

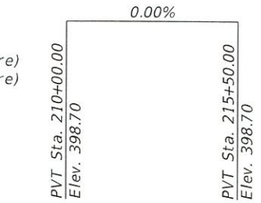
Existing Structure: S.N. 028-0001 (N.B.) and S.N. 028-0002 (S.B.) were originally built in 1961 as F.A.I. 57, Section 28-5B-1. The back to back abutment length is 132'-3" and the out to out deck width is 43'-8". Each structure consists of a three span steel 27WF superstructure supported by concrete stub abutments founded on steel H piles and concrete piers founded on steel H pile supported footings. Structures to be removed and replaced.

Traffic Control: Two traffic lanes will be maintained in each direction by utilizing staged construction.

Salvage: None.



ELEVATION



PROFILE GRADE F.A.I. RTE. 57 ③
(along P.G.L. of N.B. and S.B. roadway)

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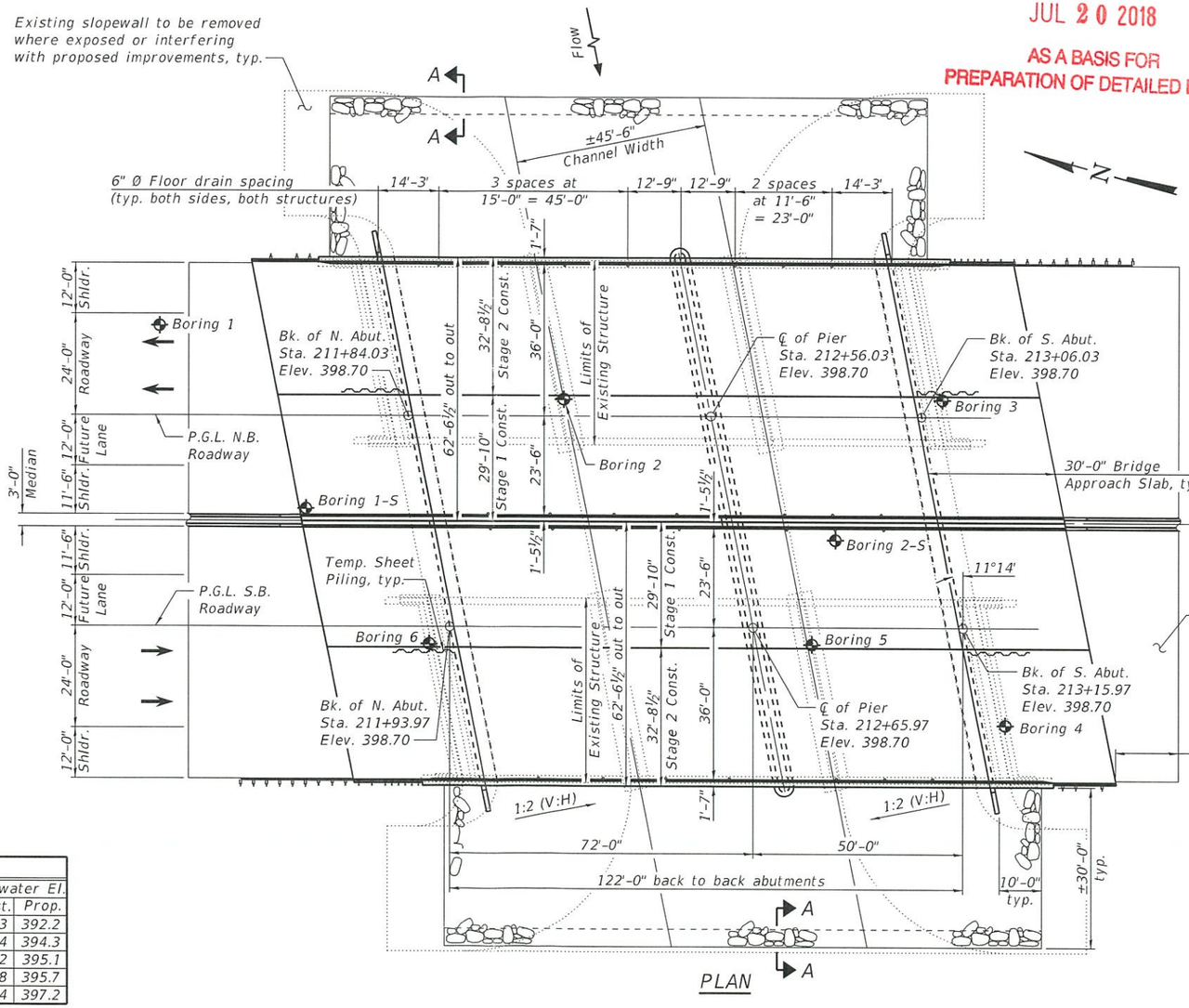
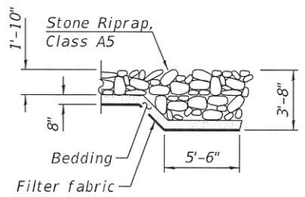


PLAN



SECTION A-A

Notes:
① Space piles to miss existing battered piles.
② Pier pile design shall account for scour accordingly.
③ The Profile Grade shows the final elevations after grinding.
④ Up to 1/4 inch may be ground off the bridge deck and the bridge approach slabs.

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)			
	N. Abut.	Pier	S. Abut.	Item 113 ②
Q100	391.1	368.5	391.1	5
Q200	391.1	368.3	391.1	
Design	391.1	368.5	391.1	
Check	391.1	368.3	391.1	

WATERWAY INFORMATION

Drainage Area = 34 sq. mi. Low Grade Elev. 398.7 @ Sta. 213+08

Flood	Freq. Yr.	Q C.F.S.	Opening Ft²		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
	10	3,970	816	922	391.3	1.0	0.9	392.3	392.2
Design	50	6,230	970	1,069	392.8	1.6	1.5	394.4	394.3
Base	100	7,220	1,031	1,126	393.4	1.8	1.7	395.2	395.1
Check	200	8,000	1,085	1,172	393.8	2.0	1.9	395.8	395.7
Max. Calc.	500	9,750	1,193	1,267	394.7	2.7	2.5	397.4	397.2

HIGHWAY CLASSIFICATION

F.A.I. Rte. 57 - I-57
Functional Class: Interstate
ADT (one-way): 19,945 (2017); 26,865 (2037)
ADTT (one-way): 6,040 (2017); 8,130 (2037)
DHV (one-way): 2,420 (2037)
Design Speed: 70 m.p.h.
Posted Speed: 70 m.p.h.

LOADING HL-93

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

DESIGN SPECIFICATIONS

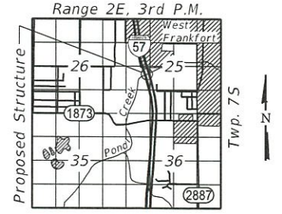
2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
f'c = 4,000 psi (Superstructure concrete)
fy = 60,000 psi (Reinforcement)
PRECAST PRESTRESSED UNITS
f'c = 8,500 psi
f'ci = 7,000 psi
fpu = 270,000 psi (0.6" ∅ low-relax strands)
fpbt = 202,300 psi (0.6" ∅ low-relax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.33
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.79
Soil Site Class = D



LOCATION SKETCH

GENERAL PLAN & ELEVATION
I-57 OVER POND CREEK
F.A.I. RTE. 57 - SEC. 28-5(B-2)
FRANKLIN COUNTY
STA. 212+50.00
STRUCTURE NO. 028-0085 (N.B.)
STRUCTURE NO. 028-0086 (S.B.)

FILE NAME: H:\P\13042\13042.004\Structural\TSL\Microstation\02800085_0086-001-General Plan & Elevation.dgn

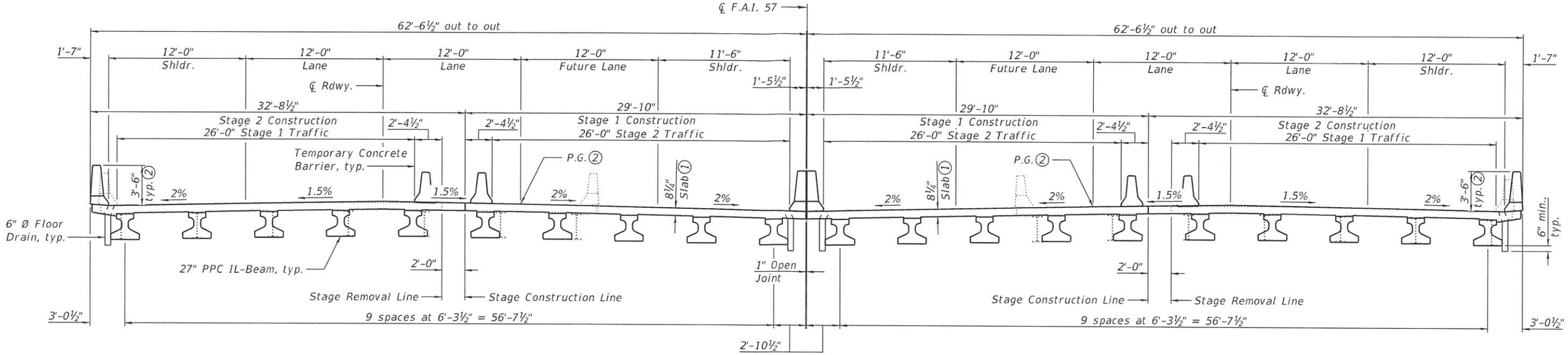
OATES ASSOCIATES
www.oatesassociates.com
ILLINOIS DESIGN FIRM LICENSE NO.: 184.001115

USER NAME =		DESIGNED - KBC	REVISED -
		CHECKED - DGL	REVISED -
PLOT SCALE =		DRAWN - KBC	REVISED -
PLOT DATE = 6/25/2018		CHECKED - DGL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 2 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	28-5(B-2)	FRANKLIN		
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			



CROSS SECTION

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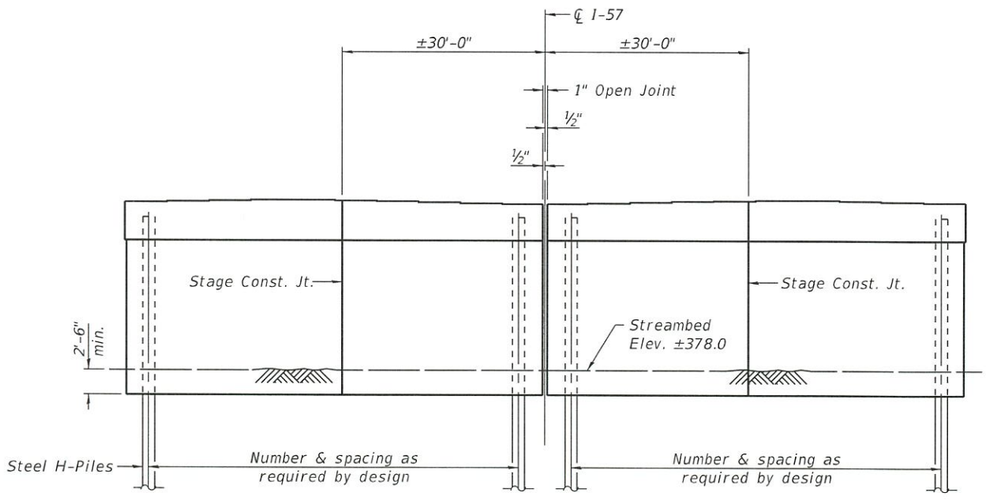
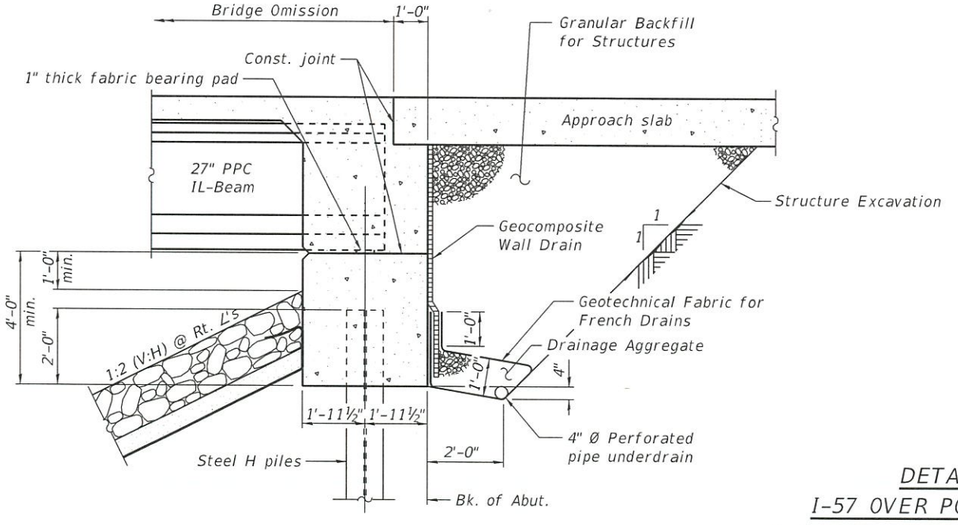
Notes:
① Before grinding.
② After grinding.



PIER SKETCH



SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. ℄'s)

DETAILS
I-57 OVER POND CREEK
F.A.I. RTE. 57 - SEC. 28-5(B-2)
FRANKLIN COUNTY
STA. 212+50.00
STRUCTURE NO. 028-0085 (N.B.)
STRUCTURE NO. 028-0086 (S.B.)

FILE NAME: H:\P\13042\13042.0041\Structural\TSL\Microstation\0280085_0086-002-Details.dgn

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PLOT SCALE =	DRAWN - KBC	REVISED -	
PLOT DATE = 6/25/2018	CHECKED - DGL	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 2 OF 2 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	28-5(B-2)	FRANKLIN		
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			