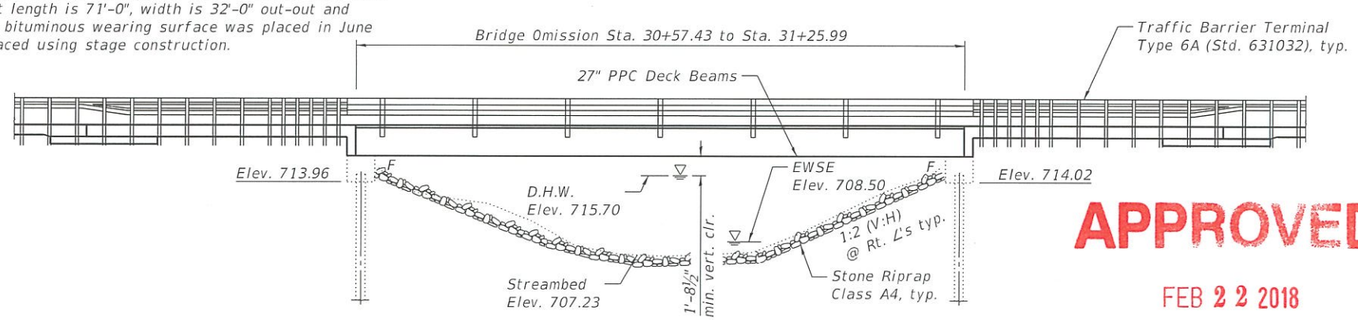
Benchmark: Chiseled "□" on northeast corner of curb hubguard for SN 102-0042, Sta. 141+10±, Offset 15.5' left, Elevation 720.48.

Existing Structure: SN 102-0042 was built in 1984 as F.A.P. Route 673, Section 108BR at Sta. 30+91.71 as a single span precast prestressed concrete deck beam bridge. Back-to-back of abutment length is 71'-0", width is 32'-0" out-out and supported on steel H-piles. A 3" bituminous wearing surface was placed in June 2009. Superstructure to be replaced using stage construction.

No Salvage.



ELEVATION

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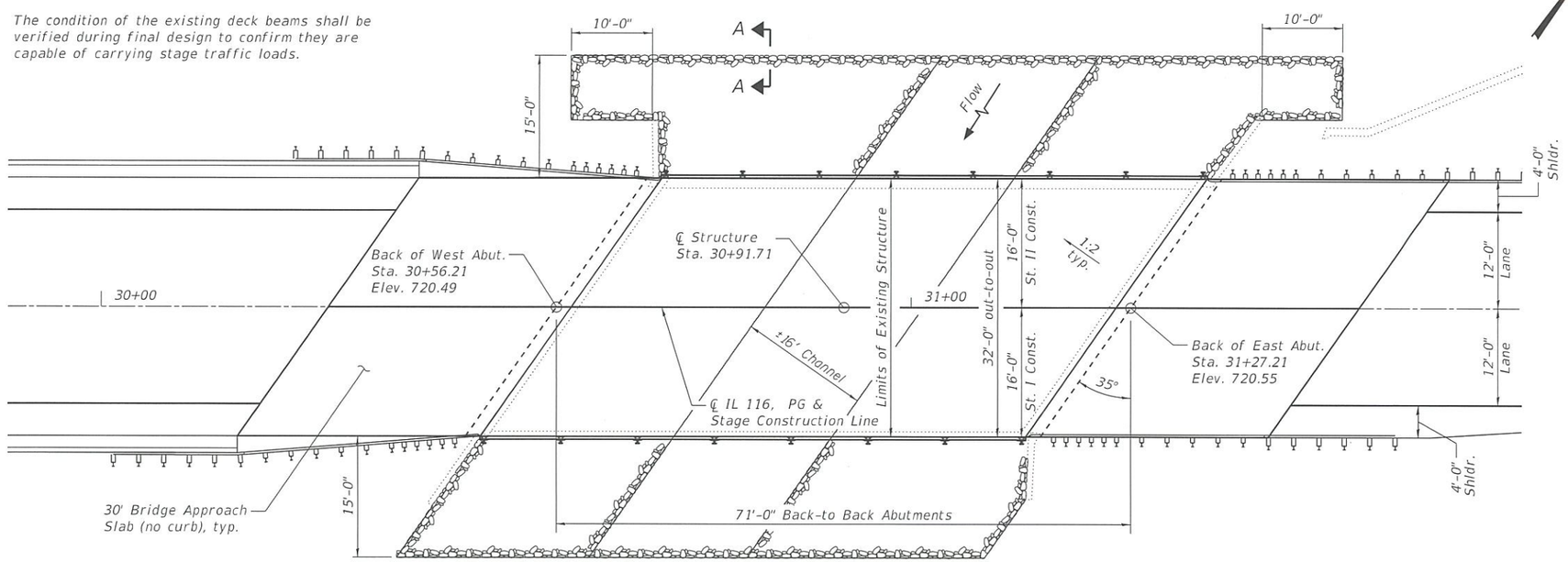
SCOPE OF WORK

1. Remove and replace existing Superstructure
2. Repair the Substructure.
3. Install Riprap.

The condition of the existing deck beams shall be verified during final design to confirm they are capable of carrying stage traffic loads.



PLAN

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specification, 8th Edition
1995 FHWA Seismic Retrofit Manual for Highway Bridges

DESIGN STRESSES

FIELD UNITS (NEW CONST.)

f'c = 3,500psi (Substructure)
f'c = 4,000 psi (Approach Pavements)
f'c = 5,000 psi (concrete Wearing Surface)
f'c = 60,000 (Reinforcement)

FIELD UNITS (EXIST. CONST.)

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"ø Low Lax Strands)
fpbt = 201,960 psi (½"ø Low Lax Strands)

HIGHWAY CLASSIFICATION

FAP Route 673 - IL 116
Functional Class: Minor Arterial
ADT: 2700 (2017); 3132 (2032)
ADTT: 465 (2017); 540 (2032)
DHV: 313 (2032)
Design Speed: 40mph
Posted Speed: 40mph
Two-Way Traffic
Directional Distribution: 50% / 50%

LOADING HL-93 (NEW CONST.)

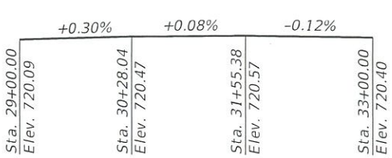
Allow 25#/sq. ft. for Future Wearing Surface.

SEISMIC DATA

Seismic Performance Category (SPC) = A
Horizontal Bedrock Acceseration Coefficient = 0.042g
Site Coefficient (S) = 1.5

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.) W. Abut.	E. Abut.	Item 113
Q100	713.96	714.02	8
Q200	713.96	714.02	
Design	713.96	714.02	
Check	N/A	N/A	



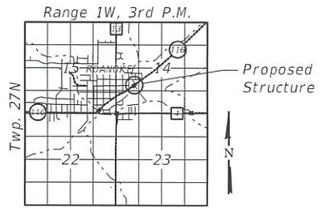
PROFILE GRADE
(Along ℄ IL 116)

WATERWAY INFORMATION

Drainage Area = 4.3 sq. mi.
Existing Overtopping Elev. = 720.03 at Sta. 29+50
Proposed Overtopping Elev. = 720.09 at Sta. 29+00

Flood Event	Freq. Yr.	Discharge Ft³/s	Waterway Opening - ft² Existing	Proposed	Natural H.W.E. ft.	Head - ft. Existing	Proposed	Headwater Elevation ft. Existing	Proposed
	10	672	220	231	714.10	0.1	0.1	714.20	714.20
Design	50	1090	306	317	715.70	0.1	0.1	715.80	715.80
Base	100	1280	343	354	716.20	0.2	0.2	716.40	716.40
Scour Design Check	200	1405	366	377	716.60	0.2	0.2	716.80	716.80
Overtop Existing									
Overtop Proposed									
Max. Calc.	500	1740	418	429	717.40	0.4	0.4	717.80	717.80

10 Year Velocity Through Existing Bridge = 3.50ft/s
10 Year Velocity Through Proposed Bridge = 3.50ft/s



LOCATION SKETCH

GENERAL PLAN
ILLINOIS ROUTE 116 OVER
WEST BRANCH OF PANTHER CREEK
F.A.P. RTE. 673 - SEC. 108BR-1
WOODFORD COUNTY
STA 30+91.71
STRUCTURE NO. 102-0042

QUIGG ENGINEERING INC

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PLOT DATE = 2/16/2018	CHECKED - M.D.C.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
673	108BR-1	WOODFORD		
		CONTRACT NO. 68805		
	ILLINOIS	FED. AID PROJECT		

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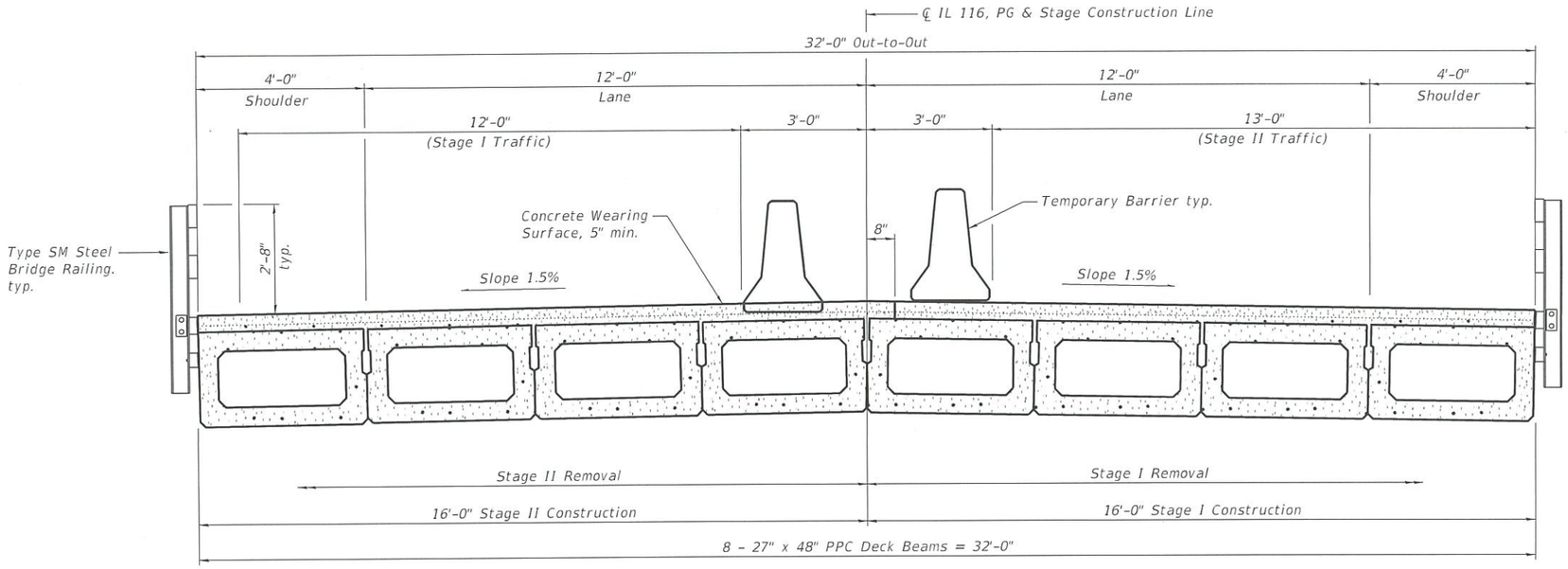
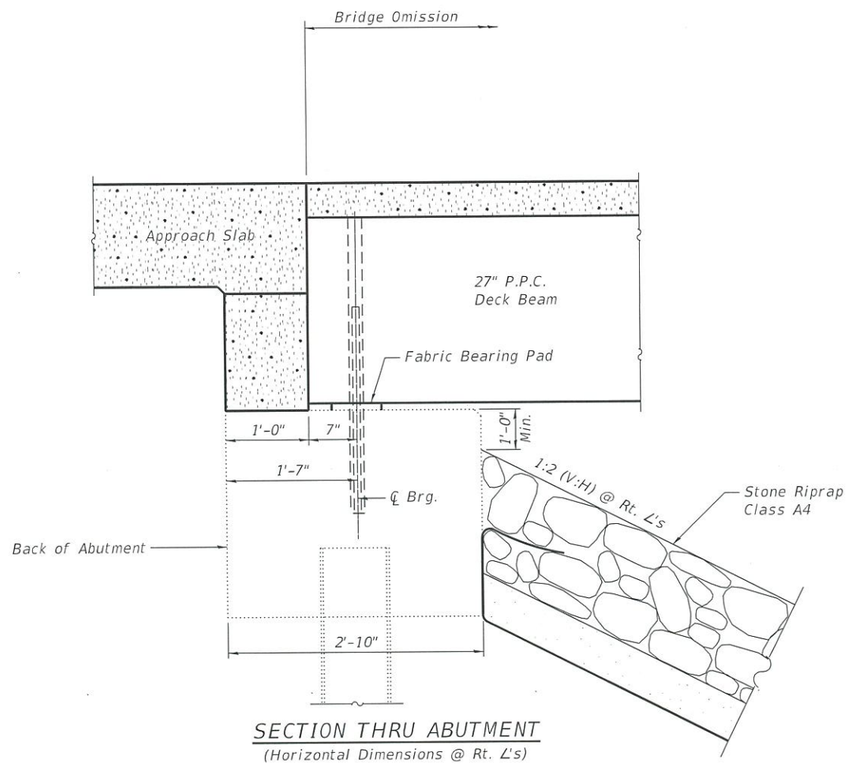
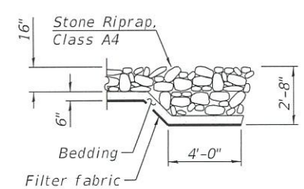


CROSS SECTION
(Looking East)



SECTION THRU ABUTMENT
(Horizontal Dimensions @ Rt. ∠'s)



SECTION A-A

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DETAILS
ILLINOIS ROUTE 116 OVER
WEST BRANCH OF PANTHER CREEK
F.A.P. RTE. 673 - SEC. 108BR-1
WOODFORD COUNTY
STA 30+91.71
STRUCTURE NO. 102-0042

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	PLOT DATE = 2/16/2018	CHECKED - M.D.C.	REVISED -				ILLINOIS	FED. AID PROJECT	