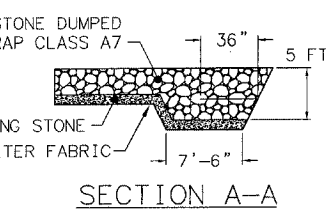
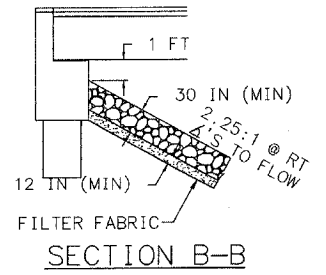
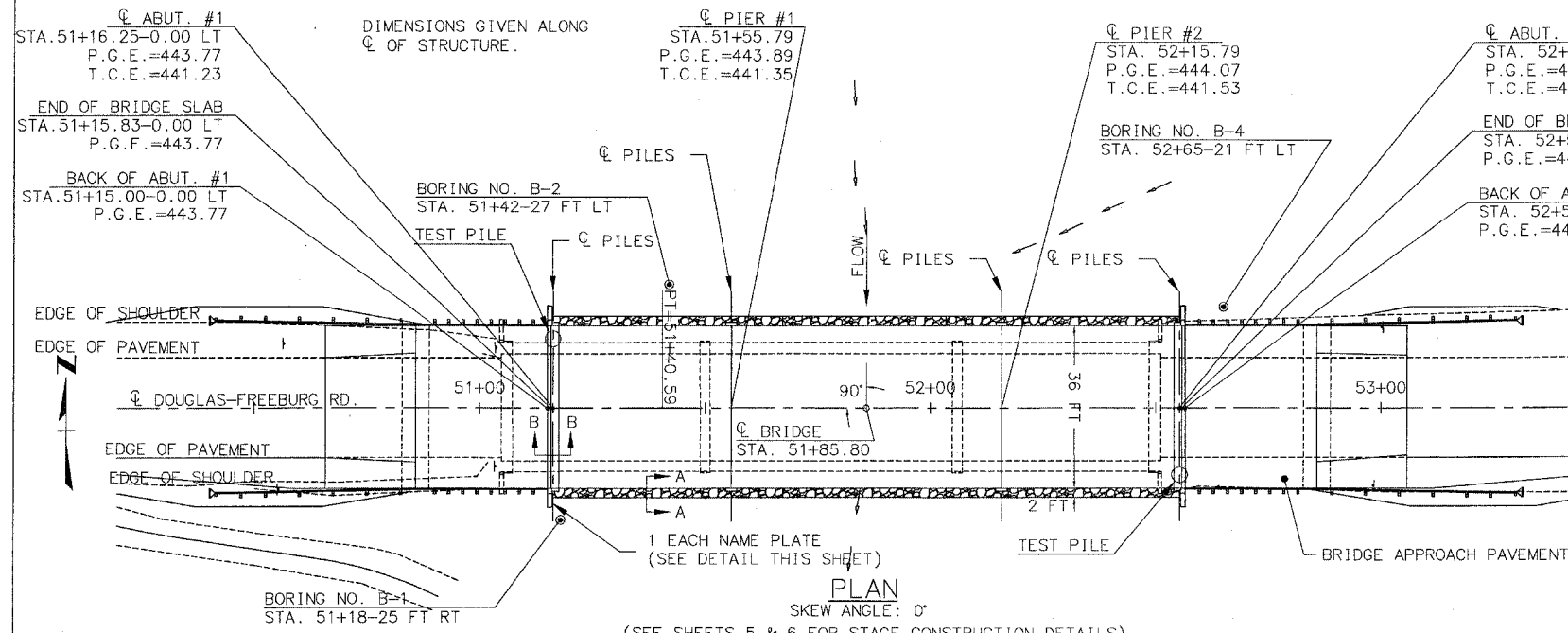


EXISTING STRUCTURE NO. 082-3031  
 A THREE (44'-56'-44') SPAN BRIDGE WITH STEEL GIRDERS.  
 CAST IN PLACE CONCRETE DECK, SPILL THROUGH ABUTMENT AND  
 28.5 FT WIDE DECK (OUT-TO-OUT).

SALVAGE: ALL MATERIALS REQUIRED TO BE REMOVED WHICH ARE  
 CONSIDERED SALVAGABLE BY THE ENGINEER SHALL REMAIN THE  
 PROPERTY OF THE COUNTY. ALL OTHERS SHALL BE DISPOSED OF  
 BY THE CONTRACTOR AT HIS OWN EXPENSE.

SECTION NO.	COUNTY HWY.	COUNTY	SHEET OF SHEETS
00-00196-08-BR	47	ST. CLAIR	8 OF 18
FHWA REG. NO. 7	ILLINOIS	FED. AID PROJECT	
CONTRACT 97257			



**GENERAL NOTES**

1. THE CONTRACTOR SHALL DRIVE TWO (2) STEEL HP 12x53 TEST PILES, AS SPECIFIED, IN A PERMANENT LOCATION AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINING PILES.
2. REFER TO THE SPECIAL PROVISIONS FOR BORING LOG INFORMATION.
3. A CORROSION INHIBITOR, AS COVERED IN THE SPECIAL PROVISIONS, SHALL BE USED IN THE CONCRETE FOR THE PRECAST PRESTRESSED CONCRETE DECK BEAMS.
4. RAILING SHALL BE IN ACCORDANCE WITH SECTION 509 OF THE STANDARD SPECIFICATIONS, EXCEPT AS NOTED ON THE PLANS, AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT FOR STEEL RAILING, TYPE SM WHICH PRICE SHALL INCLUDE THE COST OF FURNISHING AND ERECTING.
5. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42, OR M-53, GRADE 60.
6. THE COST OF STRUCTURE EXCAVATION SHALL BE CONSIDERED INCLUDED IN THE COST OF CONCRETE STRUCTURES.
7. IN ADDITION TO ALL OTHER REQUIREMENTS OF SECTION 512 OF THE STANDARD SPECIFICATIONS, SPLICES FOR STEEL H PILES SHALL DEVELOP FULL CAPACITY OF THE STEEL'S CROSS SECTIONAL AREA OF THE PILE FOR TENSION, SHEAR AND BENDING FORCES. ONE APPROVED METHOD OF ACHIEVING THIS REQUIREMENT IS FULL PENETRATION BUTT WELDING OF THE ENTIRE CROSS SECTION. OTHER TYPES OF SPLICES MEETING THE FULL CAPACITY REQUIREMENT MAY BE ALLOWED SUBJECT TO THE APPROVAL OF THE ENGINEER. ANY PROPOSAL BY THE CONTRACTOR TO USE AN ALTERNATE SPLICE METHOD MUST INCLUDE ADEQUATE DOCUMENTATION DEMONSTRATING THAT THE FULL TENSION, SHEAR AND BENDING CAPACITIES WILL BE MET. APPROPRIATE WELDER QUALIFICATIONS WILL BE REQUIRED FOR THE POSITIONS AND PROCESSES USED IN SPLICING ALL PILES. NONDESTRUCTIVE TESTING OF COMPLETED WELDS WILL BE LIMITED TO VISUAL INSPECTION.

**TOTAL BILL OF MATERIALS (STRUCTURE)**

ITEM	UNIT	SUPER		TOTAL
		ABUTS.	PIERS	
CHANNEL EXCAVATION	CU YD			614
STONE DUMPED RIPRAP, CLASS A7	SQ YD			650
FILTER FABRIC	SQ YD			650
BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50	TON	94.1		94.1
CONCRETE STRUCTURES	CU YD	40.4	18.2	58.6
PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	5031		5031
REINFORCEMENT BARS, EPOXY COATED	POUND	3314	1496	4810
STEEL RAILING, TYPE SM	FOOT	280		280
FURNISHING STEEL PILES HP 12x53	FOOT	1049	1950	2999
DRIVING STEEL PILES	FOOT	1049	1950	2999
TEST PILE STEEL HP 12x53	EACH	2		2
CONCRETE ENCASEMENT	CU YD	4.0	44.4	48.4
WATERPROOFING MEMBRANE SYSTEM	SQ YD	560		560
PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	1120		1120
REMOVAL OF EXISTING STRUCTURES	EACH			1
METAL SHOES	EACH	10	18	28
NAME PLATES	EACH			1
BAR SPLICERS	EACH	36	12	48

**DESIGN SPECIFICATIONS**

2003 AASHTO, HS-20 LOADING, LOAD FACTOR DESIGN  
 ALLOW 25 PSF FOR FUTURE WEARING SURFACE

**SEISMIC DATA**

S.P.C. = B  
 A = 0.120  
 S = I/1.0

**INDEX OF SHEETS**

8. GENERAL PLAN & ELEVATION
9. P.P.C. DECK BEAM SUPERSTRUCTURE (40'-0" SPAN)
10. P.P.C. DECK BEAM SUPERSTRUCTURE (60'-0" SPAN)
11. P.P.C. DECK BEAM DETAILS
12. P.P.C. DECK BEAMS PILE BENT ABUTMENT
13. P.P.C. DECK BEAMS PILE BENT PIER
14. STANDARD CN
15. STANDARD CR-TSM
16. STANDARD CX-1

**PILE DATA (2-ABUTMENTS)**

TYPE: HP 12x53 (W/ METAL SHOES)  
 CAPACITY: DRIVEN TO REFUSAL  
 ESTIMATED LENGTH: 104 FT (ABUTMENT #1)  
 107 FT (ABUTMENT #2)  
 NUMBER REQUIRED: 12 (INCLUDES TWO TEST PILES TO BE DRIVEN AT THE LOCATIONS SHOWN ON THE PLANS)

**PILE DATA (2-PIERS)**

TYPE: HP 12x53 (W/ METAL SHOES)  
 CAPACITY: DRIVEN TO REFUSAL  
 ESTIMATED LENGTH: 108 FT (PIER #1)  
 108 FT (PIER #2)  
 NUMBER REQUIRED: 18 EACH

**DESIGN STRESSES**

**FIELD UNITS**

f'c = 3500 psi fy = 60000 psi

**PRECAST PRESTRESSED UNITS**

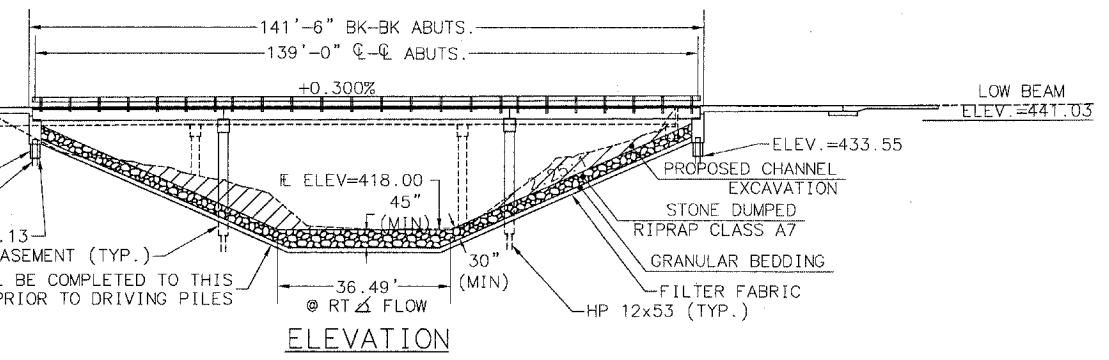
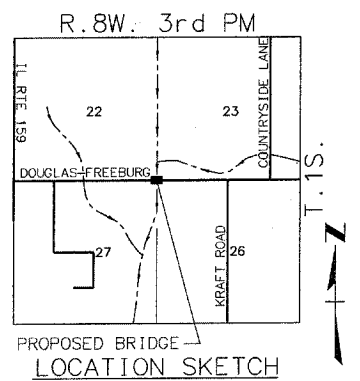
f'c = 5000 psi  
 f'ci = 4000 psi  
 f's = 270000 psi (1/2" STRESSED RELIEVED STRANDS)  
 f'si = 189000 psi (1/2" STRESSED RELIEVED STRANDS)  
 fy = 60000 psi

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH THE REQUIREMENTS OF THE CURRENT AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.

*Robert A. Bruckner*  
 ROBERT A. BRUCKNER, SE  
 LICENSE NO. 081-004669  
 LICENSE EXPIRATION DATE: NOVEMBER 30, 2006

P.G.E. = PROFILE GRADE ELEVATION  
 T.C.E. = TOP OF CAP ELEVATION

BENCHMARK: FOUND CHISELED SQUARE  
 TOP OF S.W. WINGWALL ELEVATION = 443.52 FT.



**PROPOSED PROFILE ALONG C OF STRUCTURE**



**WATERWAY INFORMATION**

DRAINAGE AREA = 53.56 sq.mi. LOW RDWY. ELEV. = 442.26 @ Sta. 45+50

FLOOD FREQ. YR.	Q cfs	OPENING sq. ft.		NAT. H.W.E. ft	HEAD ft		HEADWATER ELEV. - ft		
		EXIST.	PROP.		EXIST.	PROP.	EXIST.	PROP.	
DESIGN	30	14500	1406	1632	438.50	1.80	1.66	440.30	440.16
BASE	100	18500	1521	1745	439.40	3.20	3.16	442.60	442.56

OVER-THE-ROAD FLOW AREA: @ 150 SQFT @ 126 SQFT

RICHLAND CREEK  
 BUILT 20\_\_ BY  
 ST. CLAIR COUNTY  
 SEC. 00-00196-08-BR  
 C.H. 47 STA. 51+85.80  
 PROJ. BRS 840(102)  
 STR. NO. 082-3101 LOADING HS-20

**LETTERING FOR NAME PLATE**

LOCATE NAME PLATE AT S.W. WINGWALL  
 CORNER OF BRIDGE (SEE STD. 515001-02)

**GENERAL PLAN & ELEVATION**

C.H. 47  
 RICHLAND CREEK

SECTION 00-00196-08-BR  
 ST. CLAIR COUNTY  
 STATION 51+85.80  
 S.N. 082-3031

DESIGNED: JLH 6/04  
 CHECKED: JLH 9/04  
 DRAWN: JLH 9/04  
 CHECKED: JLH 9/04  
 PREPARED BY ST. CLAIR COUNTY  
 CADD DRAWING FILE: GPE