

DESCRIPTION: PPC DECK BEAMS,  
60' LONG, 27" DEEP,  
PILE BENT PIERS.  
SKEW: 0'

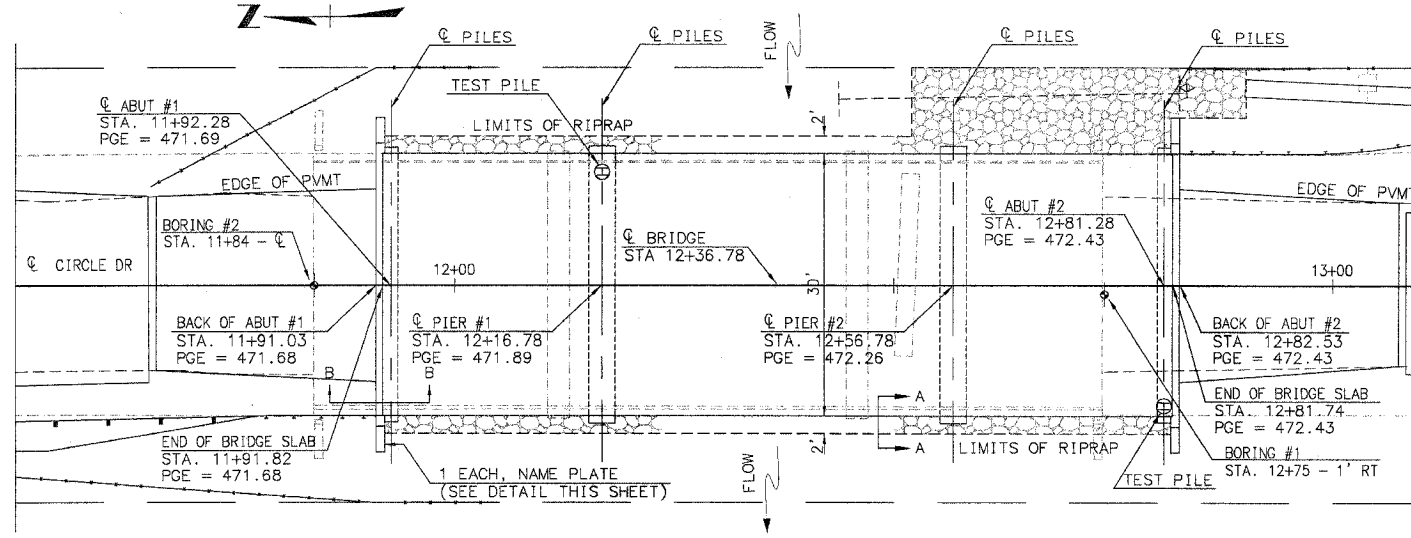
EXISTING STRUCTURE NO. 082-3002 IS A THREE SPAN (28'-34'-28') PRECAST,  
CONCRETE DECK SLAB STRUCTURE. IT IS 28 FOOT (F TO F OF CURBS) WIDE  
WITH 10 GAUGE, METAL BRIDGE RAIL ON BOTH SIDES OF THE STRUCTURE.

SALVAGE: ALL MATERIALS REQUIRED TO BE REMOVED WHICH ARE  
CONSIDERED SALVAGABLE BY THE ENGINEER SHALL REMAIN THE  
PROPERTY OF ST. CLAIR COUNTY. ALL OTHERS SHALL BE DISPOSED  
OF BY THE CONTRACTOR AT HIS OWN EXPENSE.  
SALVAGE: NO SALVAGE ANTICIPATED.

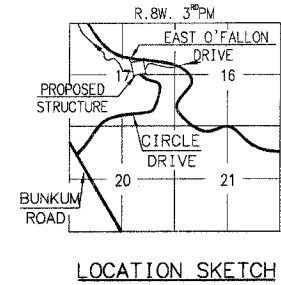
SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
02-00261-02-BR	83	ST. CLAIR	4 OF 14
FHWA REG. NO.	ILLINOIS	PROJ BROS-163(30)	
FEDERAL AID PROJECT	CONTRACT # 97346		
GENERAL PLAN AND ELEVATION			

**GENERAL NOTES**

1. THE CONTRACTOR SHALL DRIVE TEST PILES TO 110% OF THE NOMINAL REQUIRED BEARING SPECIFIED IN PRODUCTION LOCATIONS, AT THE SUBSTRUCTURES SPECIFIED, OR AS APPROVED BY THE ENGINEER, BEFORE ORDERING THE REMAINDER OF THE PILES.
2. REFER TO THE SPECIAL PROVISIONS FOR BORING LOG INFORMATION.
3. A CORROSION INHIBITOR SHALL BE USED IN THE CONCRETE FOR THE PRECAST, PRESTRESSED CONCRETE DECK BEAMS. ACCORDING TO ARTICLE 1020.05(b)(12) OF THE STANDARD SPECIFICATIONS.
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 BRIDGE RAILING, TYPE S1 WHICH PRICE SHALL INCLUDE THE COST OF FURNISHING AND ERECTING.
5. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706 GRADE 60 (IL MODIFIED). SEE SPECIAL PROVISIONS. THIS NOTE SUPERCEDES NOTES ON THE STANDARDS.
6. THE COST OF STRUCTURE EXCAVATION SHALL BE CONSIDERED INCLUDED IN THE COST OF CONCRETE STRUCTURES.
7. DECK BEAM KEYWAY SURFACES SHALL BE CLEANED TO REMOVE FORM OIL OR OTHER BOND-BREAKING MATERIAL PRIOR TO SHIPMENT OF THE BEAMS. CLEANING SHALL BE DONE BY SAND BLASTING THE KEYWAY AREAS BETWEEN THE TOP OF THE BEAM AND THE BOTTOM EDGE OF THE KEY.
8. 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 PROCEDURES USED IN SPLICING ALL PILES. NONDESTRUCTIVE TESTING OF COMPLETED WELDS WILL BE LIMITED TO VISUAL INSPECTION.
9. BACKFILL BEHIND THE ABUTMENTS SHALL BE PLACED AFTER THE SUPERSTRUCTURE IS IN PLACE AND THE DOWEL RODS GROUTED.
10. THE STEEL H-PILES SHALL BE ACCORDING TO AASHTO M270 GRADE 50.



**PLAN**  
SKEW ANGLE: 0'



**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 = 1/1.0

**PILE DATA**

**NORTH ABUTMENT**  
PILE TYPE: STEEL HP 10x42 WITH PILE SHOES  
ALLOWABLE RESISTANCE AVAILABLE: 50 KIPS  
NOMINAL REQUIRED BEARING: 150 KIPS  
ESTIMATED LENGTH: 29 FT.  
NUMBER OF TEST PILES: NONE

**SOUTH ABUTMENT**  
PILE TYPE: STEEL HP 10x42 WITH PILE SHOES  
ALLOWABLE RESISTANCE AVAILABLE: 50 KIPS  
NOMINAL REQUIRED BEARING: 150 KIPS  
ESTIMATED LENGTH: 28 FT.  
NUMBER OF TEST PILES: 1

**NORTH AND SOUTH PIERS**  
PILE TYPE: STEEL HP 10x42 WITH PILE SHOES  
ALLOWABLE RESISTANCE AVAILABLE: 70 KIPS  
NOMINAL REQUIRED BEARING: 210 KIPS  
ESTIMATED LENGTH: 29.0 FT.  
ONE TEST PILE REQUIRED AT NORTH PIER

NUMBER OF PRODUCTION PILES = 20  
NUMBER OF TEST PILES: 2

**DESIGN STRESSES**

FIELD UNITS  
f'c = 3500 psi  
fy = 60,000 psi

**PRECAST PRESTRESSED UNITS**

f'c = 5000 psi  
f'ci = 4000 psi  
f's = 27000 psi (1/2 ø STRESSED RELIEVED STRANDS)  
f'si = 201,960 psi (1/2 ø STRESSED RELIEVED STRANDS)  
fy = 60000 psi

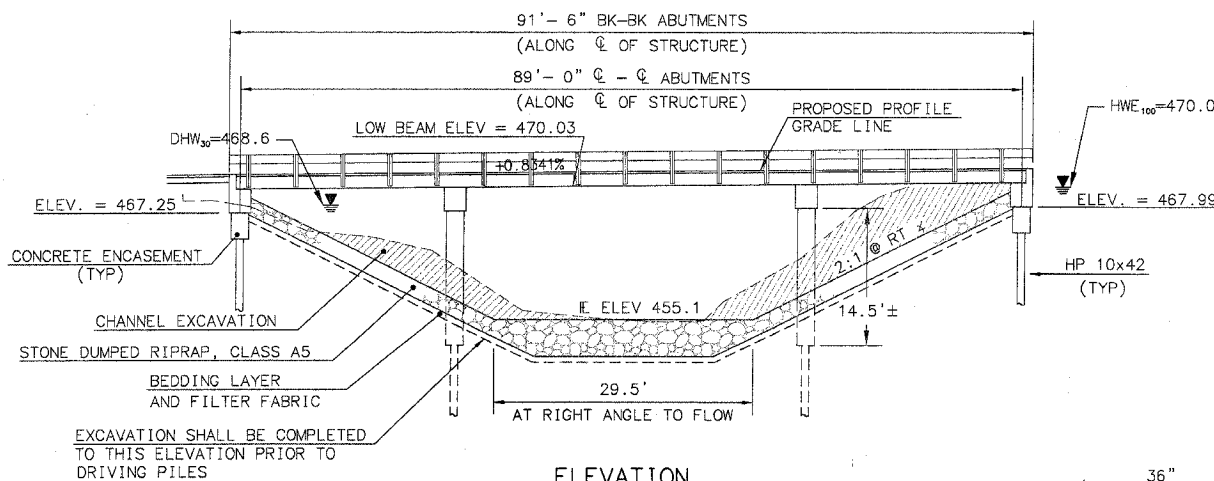
**WATERWAY INFORMATION**

DRAINAGE AREA = 6.1 sq.mi.		LOW GRADE ELEVATION = 468.34 @ STA 10+19.7								
FLOOD	FREQUENCY (year)	FLOWRATE Q (cfs)	OPENING EXISTING (sq.ft.)	OPENING PROPOSED (sq.ft.)	NATURAL H.W.E.	EXISTING PROPOSED	HEAD (ft.) EXISTING	HEAD (ft.) PROPOSED	HEADWATER ELEVATION EXISTING	HEADWATER ELEVATION PROPOSED
DESIGN	30	3128	559	716	468.37	0.21	0.22	468.58	468.59	
BASE	100	4224	665	832	469.84	0.28	0.17	470.12	470.01	
OVERTOPPING										
MAX. CALC.	500	5682	672	863	471.57	0.17	0.03	471.74	471.60	

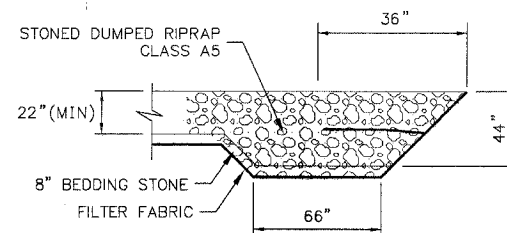
NOTE: O.T.R. FLOW OCCURS DURING THE DESIGN AND 100-YR EVENT.

**TOTAL BILL OF MATERIALS (STRUCTURE)**

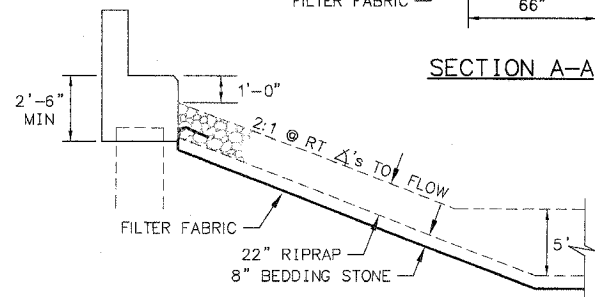
ITEM	UNIT	SUPER	SUB	TOTAL
CHANNEL EXCAVATION	CU YD			980
STONE DUMPED RIPRAP, CLASS A5	SQ YD			518
FILTER FABRIC	SQ YD			518
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	45.3		45.3
REMOVAL OF EXISTING STRUCTURES	EACH			1
CONCRETE STRUCTURES	CU YD		38.4	38.4
PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2700		2700
REINFORCEMENT BARS, EPOXY COATED	POUND		4480	4480
STEEL BRIDGE RAILING, TYPE S1	FOOT	180		180
FURNISHING STEEL PILES HP10x42	FOOT		574	574
DRIVING PILES	FOOT		574	574
TEST PILE STEEL HP10x42	EACH		2	2
PILE SHOES	EACH		22	22
CONCRETE ENCASUREMENT	CU YD		17.6	17.6
NAME PLATES	EACH			1
WATERPROOFING MEMBRANE SYSTEM	SQ YD	300.1		300.1
PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	810		810



**ELEVATION**



**SECTION A-A**



**SECTION B-B**

LITTLE CANTEN CREEK  
BUILT 2008 BY  
ST. CLAIR COUNTY  
SEC. 02-00261-02-BR  
PROJECT NO. BROS 163(30)  
STA. 12+36.78  
STR. NO. 082-3103 LOADING HS20

**LETTERING FOR NAME PLATE**  
(STANDARD CN)  
LOCATE NAME PLATE AT N.W. WINGWALL  
OF BRIDGE (SEE STD. 515001)

**INDEX OF SHEETS**

4. GENERAL PLAN & ELEVATION
- 5-6. SUPERSTRUCTURE DETAILS
7. P.C.C. DECK BEAM DETAILS
8. ABUTMENT DETAILS
9. PIER DETAILS
10. STANDARD CR-TS1
11. STANDARD CN
12. STANDARD CX-1

	INITIALS	DATE
DESIGNED	RG	1/08
CHECKED	TH	1/08
DRAWN	DS	1/08
CHECKED	RG	1/08

PREPARED BY ST. CLAIR COUNTY  
HIGHWAY DEPARTMENT

I CERTIFY THESE STANDARD BRIDGE PLANS FOR  
SEISMIC ADEQUACY ONLY.

February 29, 2008  
NAME: Michael L. Alberswerth  
LICENSED STRUCTURAL ENGINEER  
LICENSE NO. 081-006353  
LICENSE EXPIRATION DATE: November 30, 2008

THESE PLANS WERE PREPARED BY ME OR BY A FULL-TIME MEMBER  
OF MY STAFF WORKING UNDER MY PERSONAL SUPERVISION.

Darrell I. Cates 4/1, 2008  
DARRELL I. CATES, P.E.  
COUNTY ENGINEER  
LICENSE NO. 62-29109  
LICENSE EXPIRATION DATE: NOVEMBER 30, 2009

**GENERAL PLAN & ELEVATION**

CH 83  
OVER LITTLE CANTEN CREEK  
SECTION 02-00261-02-BR  
ST. CLAIR COUNTY  
STATION 12+36.78  
S.N. 082-3103