

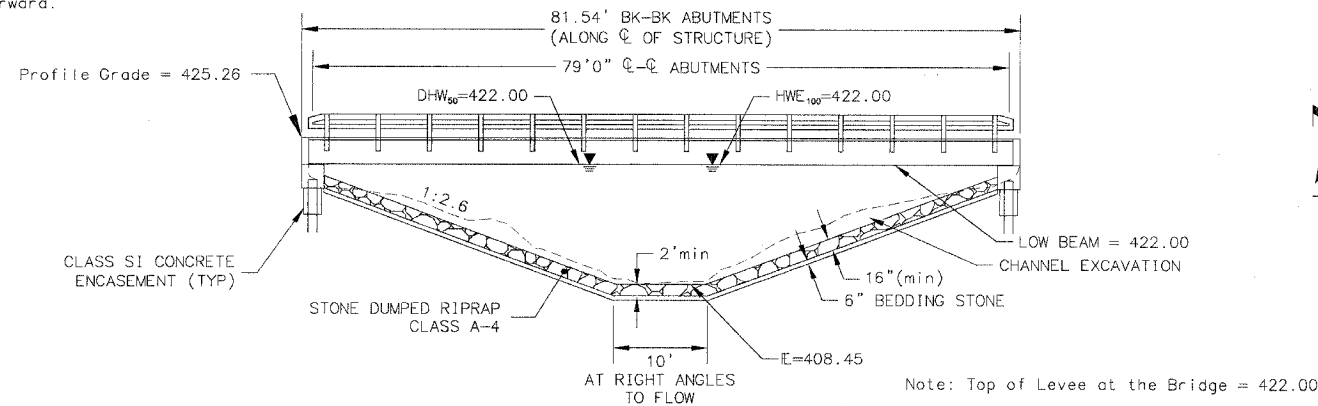
B.M.: N.G.S. BRASS TAB IN N.W. WING WALL  
 STA. 202+96.66; 18.94' LT.  
 ELEV. 422.49

Description: PPC Deck Beams(33" Deep).  
 Pile Bent Spill Thru Abutments.  
 Skew 10' Rt Forward.

EXISTING STRUCTURE NO. 082-3000  
 IS A THREE SPAN 86'-5" LONG STRUCTURE WITH A CONCRETE DECK,  
 CONCRETE SIDEWALKS, STEEL I-BEAMS, AND ABUTMENTS AND PIERS ON  
 16" PRECAST CONCRETE PILING. THE STRUCTURE WIDTH IS 36'-4".  
 THE CONSTRUCTION DATE IS 1956.

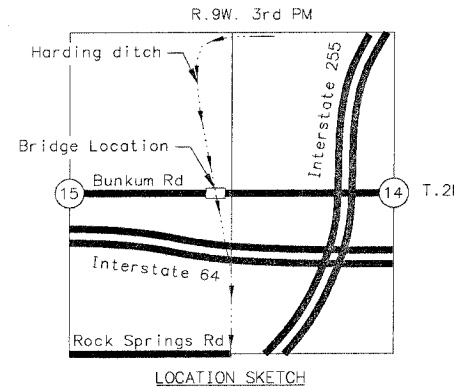
SALVAGE: ALL MATERIALS REQUIRED TO BE REMOVED WHICH ARE  
 CONSIDERED SALVAGABLE BY THE ENGINEER SHALL REMAIN THE  
 PROPERTY OF THE COUNTY. ALL OTHERS SHALL BE DISPOSED OF  
 BY THE CONTRACTOR AT HIS OWN EXPENSE.

SECTION NO.	COUNTY HIGHWAY	COUNTY	SHEET OF SHEETS
02-00161-02-BR	CH 34	ST. CLAIR	10 OF 22
FHWA REG. NO. 7		ILLINOIS	PROJ.: BRM-5011(188)
GENERAL PLAN & ELEV		CONTRACT 97280	



ELEVATION

PGE = PROFILE GRADE ELEVATION  
 TCE = TOP OF CAP ELEVATION



LOCATION SKETCH

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 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 SM WHICH PRICE SHALL INCLUDE THE COST OF FURNISHING AND ERECTING.
5. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A706 GRADE 60 (1L MODIFIED). SEE SPECIAL PROVISIONS.
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 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. LAYOUT OF SLOPE PROTECTION SYSTEM MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.
10. BACKFILL BEHIND THE ABUTMENTS SHALL BE PLACED AFTER THE SUPERSTRUCTURE IS IN PLACE AND THE DOWEL RODS GROUTED.

DESIGN SPECIFICATIONS

2002 AASHTO, HS-20 LOADING,  
 LOAD FACTOR DESIGN.  
 ALLOW 25 PSF FOR FUTURE WEARING SURFACE.

SEISMIC DATA

S.P.C. = B  
 A = 0.110  
 S = 1/1.0

PILE DATA (2-ABUTS)

PILE TYPE & SIZE: HP 12 x 53  
 NOMINAL REQUIRED BEARING: 418 KIPS  
 ALLOWABLE RESISTANCE AVAILABLE: 139 KIPS  
 ESTIMATED LENGTH: ABUT. #1 = 100'  
 ABUT. #2 = 100'  
 NUMBER OF PRODUCTION PILES = 11  
 NUMBER OF TEST PILES: 1 (Located in Abut.#1)

INDEX OF SHEETS

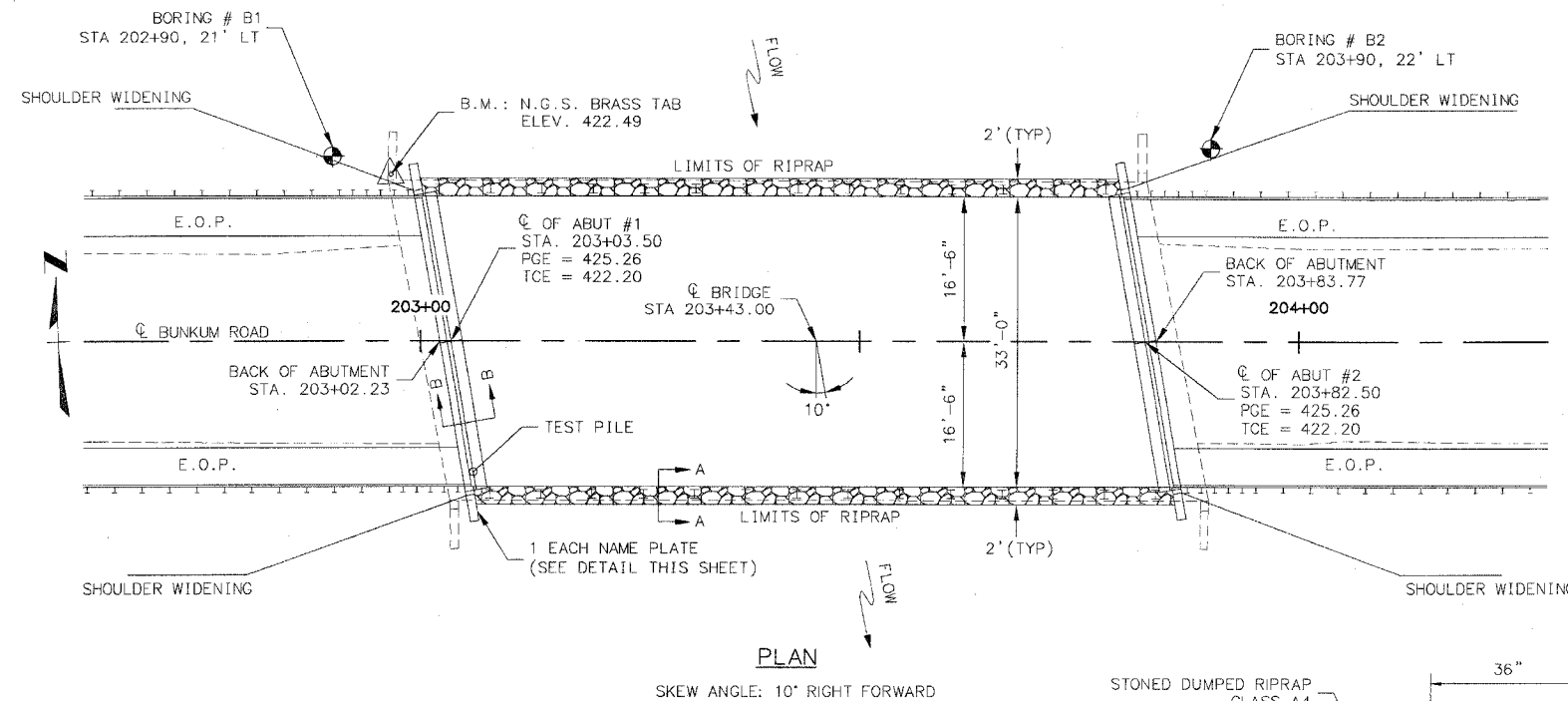
10. GENERAL PLAN & ELEVATION
11. SUPERSTRUCTURE DETAILS
12. P.C.C. DECK BEAM DETAILS
13. ABUTMENT DETAILS
14. STANDARD CR-TSM
15. STANDARD CN
16. STANDARD CX-1

DESIGN STRESSES

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

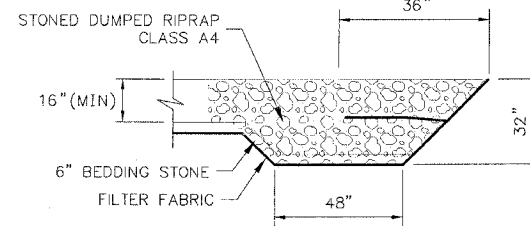
TOTAL BILL OF MATERIALS (STRUCTURE)

ITEM	UNIT	SUPER	SUB	TOTAL
CHANNEL EXCAVATION	CU YD			97
STONE DUMPED RIPRAP, CLASS A4	SQ YD			333
FILTER FABRIC	SQ YD			333
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	41.1		41.1
REMOVAL OF EXISTING STRUCTURES	EACH			1
CONCRETE STRUCTURES	CU YD		25.4	25.4
PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2640		2640
REINFORCEMENT BARS, EPOXY COATED	POUND		2700	2700
STEEL RAILING, TYPE SM	FOOT	160		160
FURNISHING STEEL PILES HP 12x53	FOOT		1100	1100
DRIVING PILES	FOOT		1100	1100
TEST PILE STEEL HP12x53	EACH		1	1
CONCRETE ENCASUREMENT	CU YD		4.0	4.0
NAME PLATES	EACH			1
WATERPROOFING MEMBRANE SYSTEM	SQ YD	293.3		293.3
PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	800		800
PILE SHOES	EACH		12	12

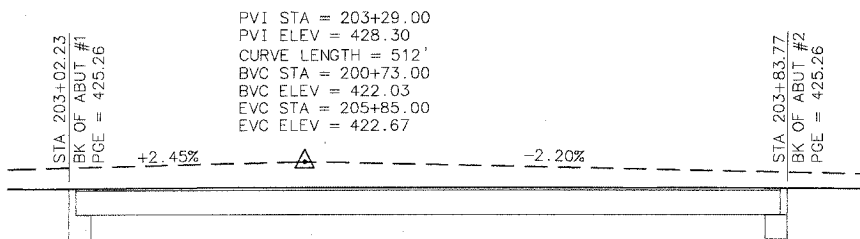


PLAN

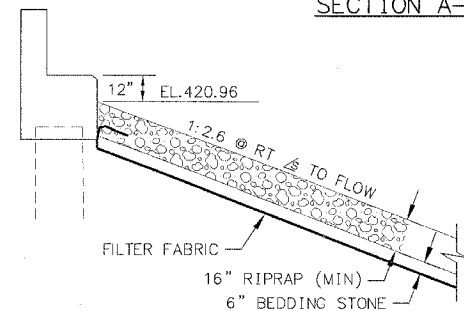
SKIEW ANGLE: 10' RIGHT FORWARD



SECTION A-A



PROPOSED PROFILE ALONG C OF STRUCTURE



SECTION B-B

WATERWAY INFORMATION

DRAINAGE AREA = 7.723 sq.mi. LOW GRADE ELEVATION = 416.1 @ STA 194+58.00

FLOOD FREQUENCY (year)	FLOWRATE Q (cfs)	OPENING (sq.ft.)		NATURAL H.W.E.		HEAD (ft.)		HEADWATER ELEVATION	
		EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED
DESIGN 50	2209*	326	630	422.0	0.00	0.00	422.0	422.0	
BASE 100	2209*	326	630	422.0	0.00	0.00	422.0	422.0	
OVERTOPPING <10	2209*	326	630	422.0	0.00	0.00	422.0	422.0	
MAX. CALC. 100	2209*	326	630	422.0	0.00	0.00	422.0	422.0	

ADDITIONAL OVER-THE-ROAD FLOW AREA:

\* LEVEE CAPACITY AT ELEV. 422.00 = 2209 cfs  
 TOP OF LEVEE ELEV. AT THE BRIDGE = 422.0

Q<sub>25yr</sub> = 1038 cfs  
 Q<sub>50yr</sub> = 1891 cfs  
 Q<sub>100yr</sub> = 2520 cfs

Q<sub>25yr</sub> = 3358 cfs  
 Q<sub>50yr</sub> = 4013 cfs  
 Q<sub>100yr</sub> = 4665 cfs

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, S.E.  
 LICENSE NO. 081-004669  
 LICENSE EXPIRATION DATE: NOVEMBER 30, 2006

GENERAL PLAN & ELEVATION

C.H. 34  
 OVER HARDING DITCH  
 SECTION 02-00161-02-BR  
 ST. CLAIR COUNTY  
 STATION 203+43.00  
 S.N. 082-3100

DRAWING FILE: Gen Plan and Elev.dwg

INITIALS	DATE
DESIGNED WS	10/04
CHECKED RB	6/05
DRAWN WS	10/04
CHECKED RB	6/05

PREPARED BY ST. CLAIR COUNTY

HARDING DITCH  
 BUILT 200\_ BY  
 ST. CLAIR COUNTY  
 SEC. 02-00161-02-BR  
 FAU ROUTE 9160  
 PROJECT: BRM-5011(188)  
 STA. 203+43.00  
 STR. NO. 082-3100  
 LOADING HS-20

LETTERING FOR NAME PLATE

(STANDARD CN)  
 LOCATE NAME PLATE AT S.W. WING WALL  
 CORNER OF BRIDGE (SEE STD. 515001)