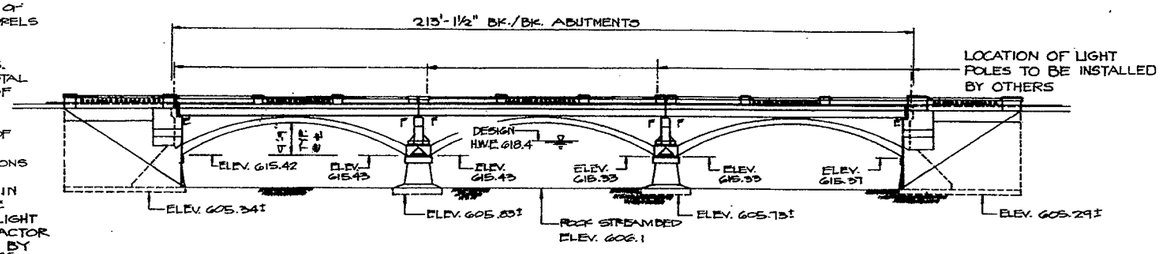
BENCHMARK: RR RAIL ON FILL OF FIRE HYDRANT AT SOUTHEAST CORNER OF WASHINGTON & MONROE STREETS.
ELEV. 631.25

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 18	103-D-BR	JO DAVIESS	27	9

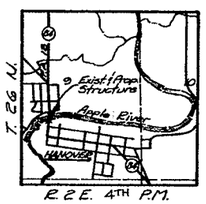
SHEET 1 OF 15 SHEETS

EXISTING STRUCTURE:

Structure No. 043-0028; BUILT 1934 AS S.B.I. RTE. 80, SECTION 103-D CONSISTS OF THREE SPANS, CONCRETE ARCHES WITH SPANDRELS SUPPORTING CONCRETE DECK.
SUBSTRUCTURE CONSISTS OF CONCRETE PIERS AND CLOSED CONCRETE ABUTMENTS. ARCHES HAVE CLEAR SPAN OF 65'-0". TOTAL LENGTH OF STRUCTURE BACK TO BACK OF EXISTING ABUTMENTS IS 209'-6", OUT TO OUT OF EXISTING DECK IS 39'-0". CONTRACTOR TO REMOVE AND DISPOSE OF EXISTING SUPERSTRUCTURE DECK AND SPANDRELS TO TOP OF ARCHES AND PORTIONS OF EXISTING PIERS AND ABUTMENTS AS SHOWN IN DETAIL PLANS IN STAGES ALL IN ACCORDANCE WITH SECTION 501 OF THE STANDARD SPECIFICATIONS. EXISTING LIGHT STANDARDS TO BE SALVAGED BY CONTRACTOR AND STOCKPILED AT SITE AS DIRECTED BY ENGINEER FOR REINSTALLATION BY OTHERS.



ELEVATION



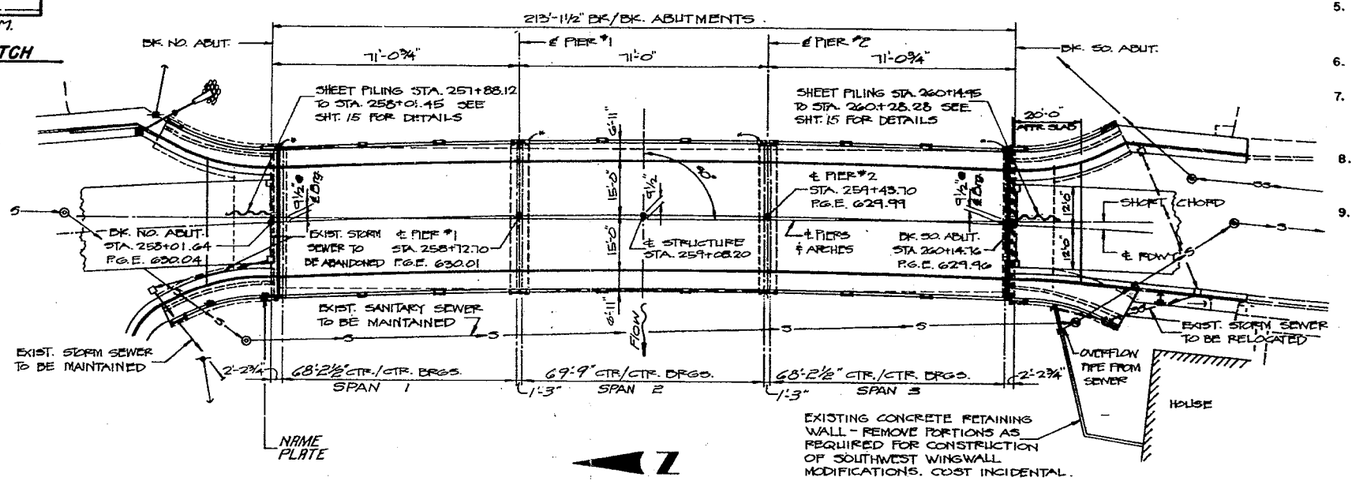
LOCATION SKETCH

℄ Structure
Sta. 259+08.20
P.G.E. 630.00

-0.40%

PROFILE GRADE
(Top of Class I)

* LIGHT POLE BASE LOCATIONS - 8 REQ'D (SEE SHEET 5)



PLAN

NOTE: ALL LONGITUDINAL DIMENSIONS AND STATIONING SHOWN ON PLAN ARE MEASURED ALONG THE SHORT CHORD.

GENERAL NOTES:

1. ALL STRUCTURAL STEEL SHALL BE SHOP PAINTED WITH TWO COATS OF BASIC LEAD SILICO CHROMATE PAINT.
2. EXPANSION GUARDS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH ARTICLE 503.07(C) OF THE STANDARD SPECIFICATIONS, AND ARE INCLUDED IN THE QUANTITY OF STRUCTURAL STEEL.
3. THE TOP SURFACE OF THE BEAMS SHALL BE FINISHED IN ACCORDANCE WITH ARTICLE 505.06 OF THE STANDARD SPECIFICATIONS EXCEPT THAT THE SURFACE SHALL NOT BE ROUGHENED BY BROOMING. THE FINISHED SURFACE SHALL BE FREE OF DEPRESSIONS OR HIGH SPOTS WITH SHARP CORNERS, AND THE TOP EDGE OF KEYS SHALL BE ROUNDED OR CHAMFERRED A MINIMUM OF 1/4".
4. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
5. PROTECTIVE COAT SHALL NOT BE APPLIED TO SURFACES TO WHICH WATERPROOFING MEMBRANE SYSTEM IS APPLIED.
6. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. M-31 OR M-53 GRADE 60.
7. A CALCIUM NITRITE CORROSION INHIBITOR, AS COVERED IN THE SPECIAL PROVISIONS, SHALL BE USED IN THE CONCRETE FOR PRECAST PRESTRESSED CONCRETE DECK BEAMS.
8. EXPANSION BOLTS SHALL CONSIST OF APPROVED EXPANSION ANCHORS, PROVIDING MINIMUM CERTIFIED PROOF LOAD = 4080 LBS. , AND 3/4"Φ x 12" HOOKED BOLTS AS INDICATED ON PLANS (unless noted otherwise)
9. DECK BEAMS & PIERS TO BE BUILT ON A ℄ OFFSET 9 1/2" FROM A SHORT CHORD FROM CENTER TO CENTER OF ABUTMENT BEARINGS. WALKWAYS AND PARAPETS TO BE BUILT ON TRUE CURVE WITH THE ℄ OF ROAD AS ℄.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	SUB.	TOTAL
CONCRETE REMOVAL	CU. YD.	—	96.0	96.0
REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1	—	1
PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ.FT.	8806	—	8806
CLASS X CONCRETE	CU. YD.	151.2	189.6	340.8
REINFORCEMENT BARS	LBS.	810	15,460	16,270
REINFORCEMENT BARS (EPOXY COATED)	LBS.	16,340	—	16,340
TEMPORARY SLAB SUPPORT SYSTEM	EACH	1		1
NAME PLATES	EACH	—	—	1
PORTLAND CEMENT MORTAR FAIRING COURSE	LIN. FT.	2240	—	2240
WATERPROOFING MEMBRANE SYSTEM	SQ.YD.	707	—	707
BITUMINOUS CONCRETE SURFACE COURSE (MIX D) CLASS I	TON	83.2	—	83.2
PROTECTIVE COAT	SQ.YD.	546	—	546
PREFORMED JOINT SEAL 2 1/2"	LIN. FT.	136	—	136
EXPANSION BOLTS 3/4" ϕ	EACH	—	114	114
TEMPORARY BRIDGE RAILING	LIN.FT.	258	—	258
TEMPORARY SHEET PILING	SQ.FT.	—	—	404
STRUCTURAL STEEL	LBS.	5,330	—	5,330
FLOOR DRAIN SPECIAL	EACH	12	—	12

WATERWAY INFORMATION

DRAINAGE AREA = 248 SQ.MI. LOW GRADE ELEV. = 624.24 @ STA. 261+00

FLOOD	FREQ. YR.	Q C.F.S.	OPENING SQ.FT. EXIST.	OPENING SQ.FT. PROP.	NAT. H.W.E.	HEAD-FT. EXIST.	HEAD-FT. PROP.	HEADWATER EL. EXIST.	HEADWATER EL. PROP.
DESIGN	50	14,244	2048	2048	618.4	0.16	0.16	618.56	618.56
BASE	100	15,821	2143	2143	618.9	0.2	0.2	619.10	619.10
OVERTOPPING	N/A								
MAX. CALC.	500	19,900	2377	2377	620.0	0.26	0.26	620.26	620.26

HORIZONTAL CURVE DATA

P.I. STATION 259+16.70
Δ = 9°-46'-00"
D = 1°-40'-00"
R = 3437.75'
T = 293.71'
L = 586.00'
E = 12.52'

STATION 259+08.20
APPLE RIVER
BUILT 198
F. A. RTE. 18 SEC. 103 D BR
F. A. PROJECT NO. BHF-18(121)
LOADING HS 20
STRUCT. NO. 043-0028

NAME PLATE
(SEE STD. 2113)

APPROVED
Engineer of Bridges and Structures

DESIGN STRESSES

PRECAST PRESTRESSED UNITS
f'c = 5,000 P.S.I.
f'ci = 4,000 P.S.I.
fs = 270,000 P.S.I. (1/2" ϕ Strands)
fsi = 189,000 P.S.I. (1/2" ϕ Strands)

CAST IN PLACE CONCRETE
f'c = 3500 P.S.I.
fy = 60,000 P.S.I. (REINFORCEMENT)
n = 9

STRUCTURAL STEEL (FOR TEMP. SUPPORT SYSTEM)
fy = 36,000 P.S.I. (MIN.)

LOADING HS 20-44

Design Specification: 1977 A.A.S.H.T.O.; 1978; 1979; 1980; 1981 & 1982 Interim Specifications
(Allow 25 p.s.f. for future wearing surface)

DESIGNED:	V. S. N.
CHECKED:	D. H. C.
DRAWN:	R. A. W.
CHECKED:	K. L. F.

DATE 5-23-83
KENNETH L. FIGGE
REGISTERED STRUCTURAL ENGINEER
IN ILLINOIS. NO. 2992

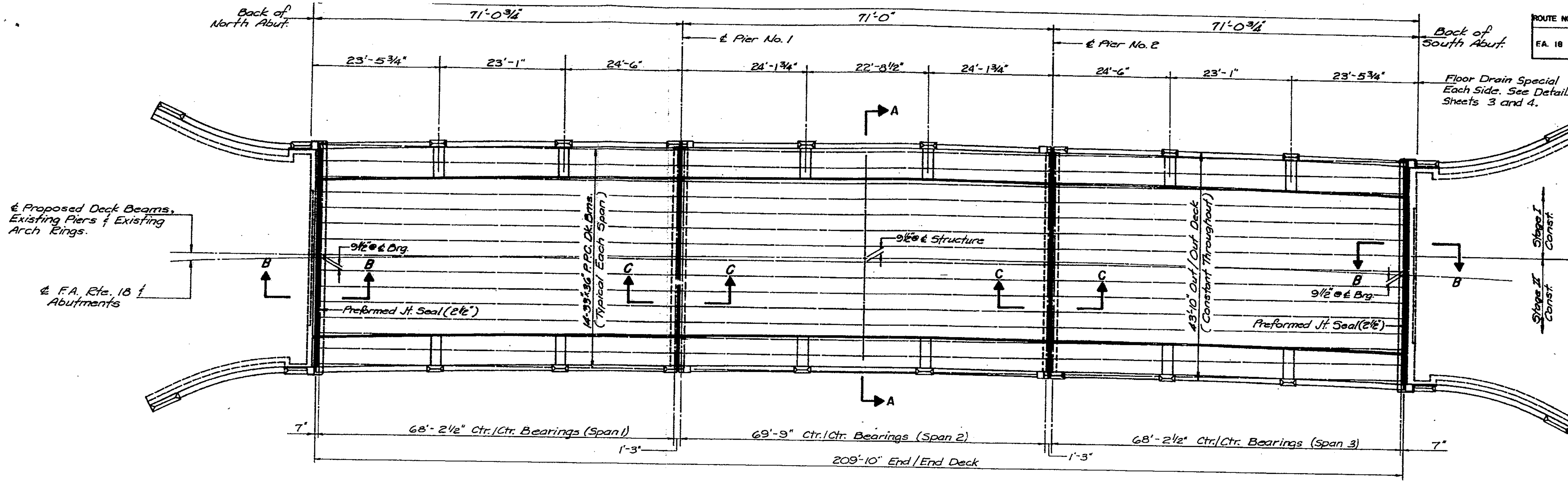
STATE OF ILLINOIS
KENNETH L. FIGGE
2992
REGISTERED STRUCTURAL ENGINEER

GENERAL PLAN & ELEVATION
F.A. RTE. 18 OVER APPLE RIVER
F.A. RTE. 18, SEC. 103-D-BR
JO DAVIESS COUNTY
STATION 259+08.20

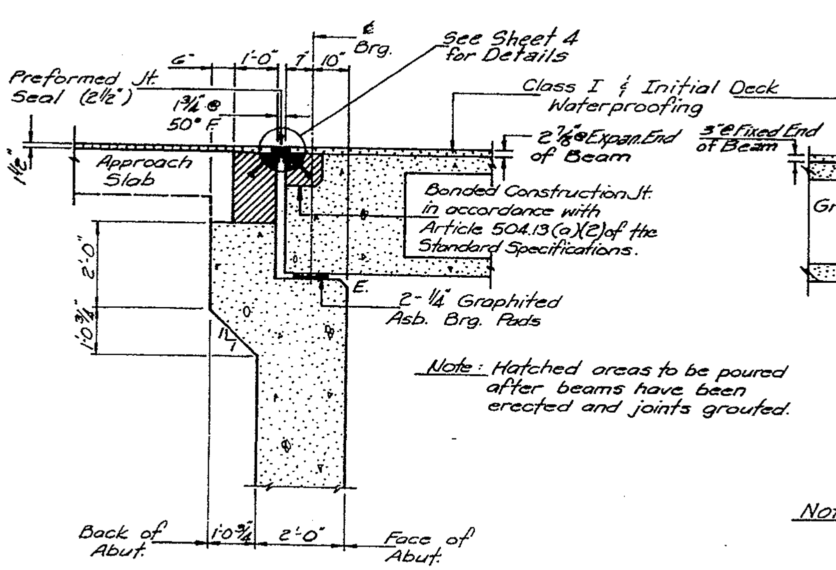
H. M. & G. NO. 1930 / 0028

Rev. Reinf. Bars (Epoxy Ct) from 14,500 to 16,340 11-4-83 AJR
Rev 1/6/83 - Add "Temp Slab Spt Syst" JE

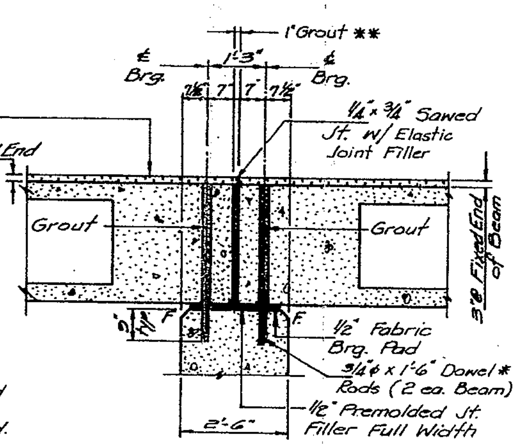
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 18	103-D-BR	JO DAVIESS	27	10



PLAN

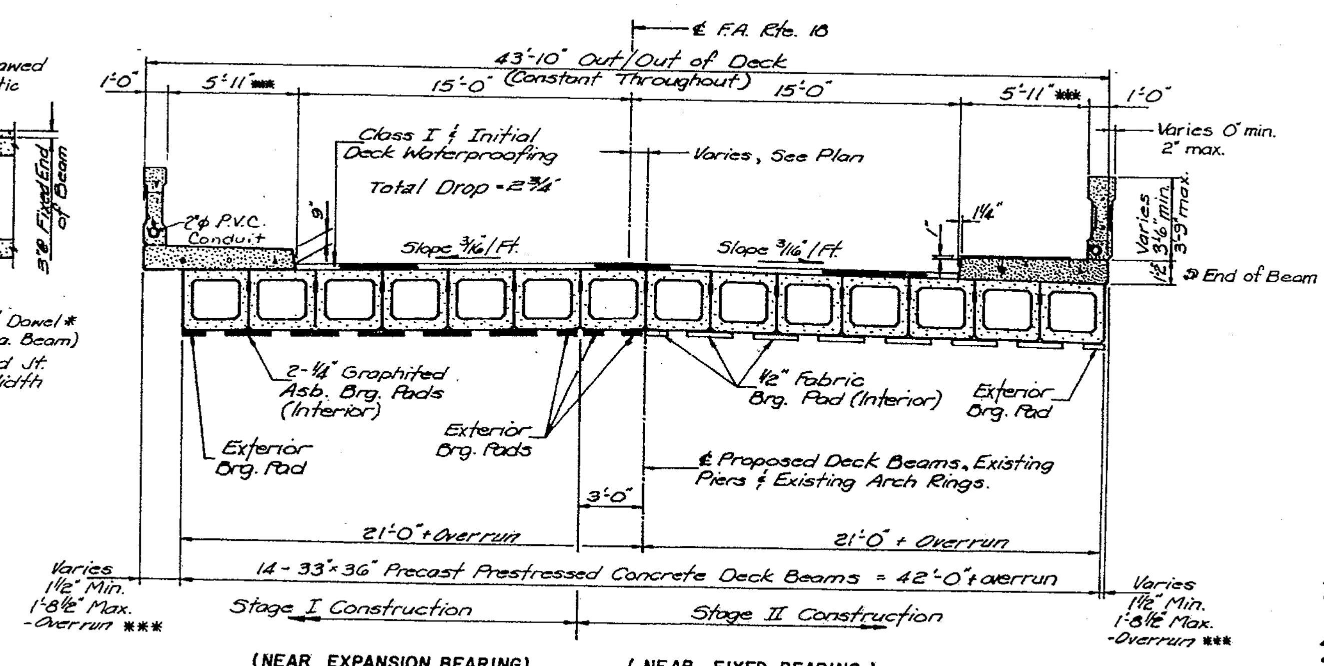


SECTION B-B



SECTION C-C

Note ** 1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. Mortar. 1" Dimension may vary plus or minus to accomodate tolerance in beam lengths.



Note: *** If overrun at either side exceeds 1½", the sidewalk on that side shall be widened sufficiently to cover the top of the outside beam & o/o deck adjusted.

SECTION A-A

NOTE: Bars indicated thus 6x3 - etc. indicates 6 lines of bars with 3 lengths per line.

Note: * Dowel rods to be grouted in 1¼"φ drilled holes after beams are in place and allowed to cure 24hrs (min) prior to grouting the Shear Keys.

Note: Ends of beams shall be aligned at the expansion joints. Any lineal variations in the beam lengths shall be placed at the fixed joints.

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
b(E)	24	#5	20'-7"	—
b1(E)	24	#5	20'-10"	—
b2(E)	24	#5	23'-2"	—
b3(E)	32	#5	22'-10"	—
b4(E)	16	#5	20'-5"	—
b5(E)	24	#5	24'-3"	—
b6(E)	8	#5	6'-0"	—
c(E)	420	#6	7'-10"	—
d(E)	354	#4	6'-0"	L
d1(E)	354	#7	6'-0"	L
f1	6	#5	17'-8"	
f2	6	#5	23'-8"	
h1	8	#6	16'-10"	—
h2	8	#6	24'-5"	—
h3	8	#6	5'-6"	—

Class X Concrete	Cu. Yds.	111.3
Reinf. Bars	Lbs.	810
Reinf. Bars (Epx. Coated)	Lbs.	14,080
P.P.C. Dk. Bms. (33" Dp.)	Sq. Ft.	8,806

For location of "f" bars at expansion end of deck beam, see sheet 6.

Bars designated (E) shall be epoxy coated. (See Spec. Provisions)

DESIGNED:	V. S. N.
CHECKED:	D. H. C.
DRAWN:	R. A. W.
CHECKED:	K. L. F.

SUPERSTRUCTURE DECK

F.A. RTE. 18 OVER APPLE RIVER

SECTION 103-D-BR

JO DAVIESS COUNTY

STATION 259+08.20

Rev. Rebar (Ep. Coated) from 1324v to 14,080 11-4-83

added 112 ... #3 ...