

DBH

SANGAMON

STATE OF ILLINOIS

* 16(3+) = 164 TOTAL SHEETS

F.A.I. RTE.	SECTION	COUNTY	SHEETS	SHEET NO.
12		SANGAMON	163	76
		ILLINOIS	CONTRACT NO. 72B54	

- 11-21-14 LETTING ITEM 076
- 2 COVER SHEET
 - GENERAL NOTES, COMMITMENTS, AND HIGHWAY STANDARDS
 - 3-11 SUMMARY OF QUANTITIES
 - 12-26 SCHEDULE OF QUANTITIES
 - 27-30 TYPICAL SECTIONS
 - 31-92 PLAN SHEETS
 - 93-104 MAINTENANCE OF TRAFFIC PLANS
 - 105-117 MISCELLANEOUS BRIDGE EXPANSION JOINT REPLACEMENTS
 - 118-120 SN 084-0142 (WAVERLY RD.) REPAIR PLANS
 - 121-126 SN 084-0148/0149 (WABASH) REPAIR PLANS
 - 127-129 SN 084-0127/0128 (NSRR) REPAIR PLANS
 - 130-131 SN 084-0126 (COCKRELL LN.) REPAIR PLANS
 - 131-137 SN 084-0136/0137 (IL RTE 4) REPAIR PLANS
 - 138-152 SN 084-0185 (CHATHAM RD.) REPAIR PLANS
 - 153-163 MISCELLANEOUS DETAILS

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAI 72 (I-72/US 36)
SECTION (84-9-2&3)RS-2&MISC STRUC REP
PROJECT ACNHPP-0072 (402)
HMA RESURFACING, BRIDGE REPAIRS
SANGAMON COUNTY

C-96-010-08



LOCATION OF SECTION INDICATED THUS: -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED August 27, 2014
Roger A. Drickoll
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Oct 17, 2014
John D. Baranzelli P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

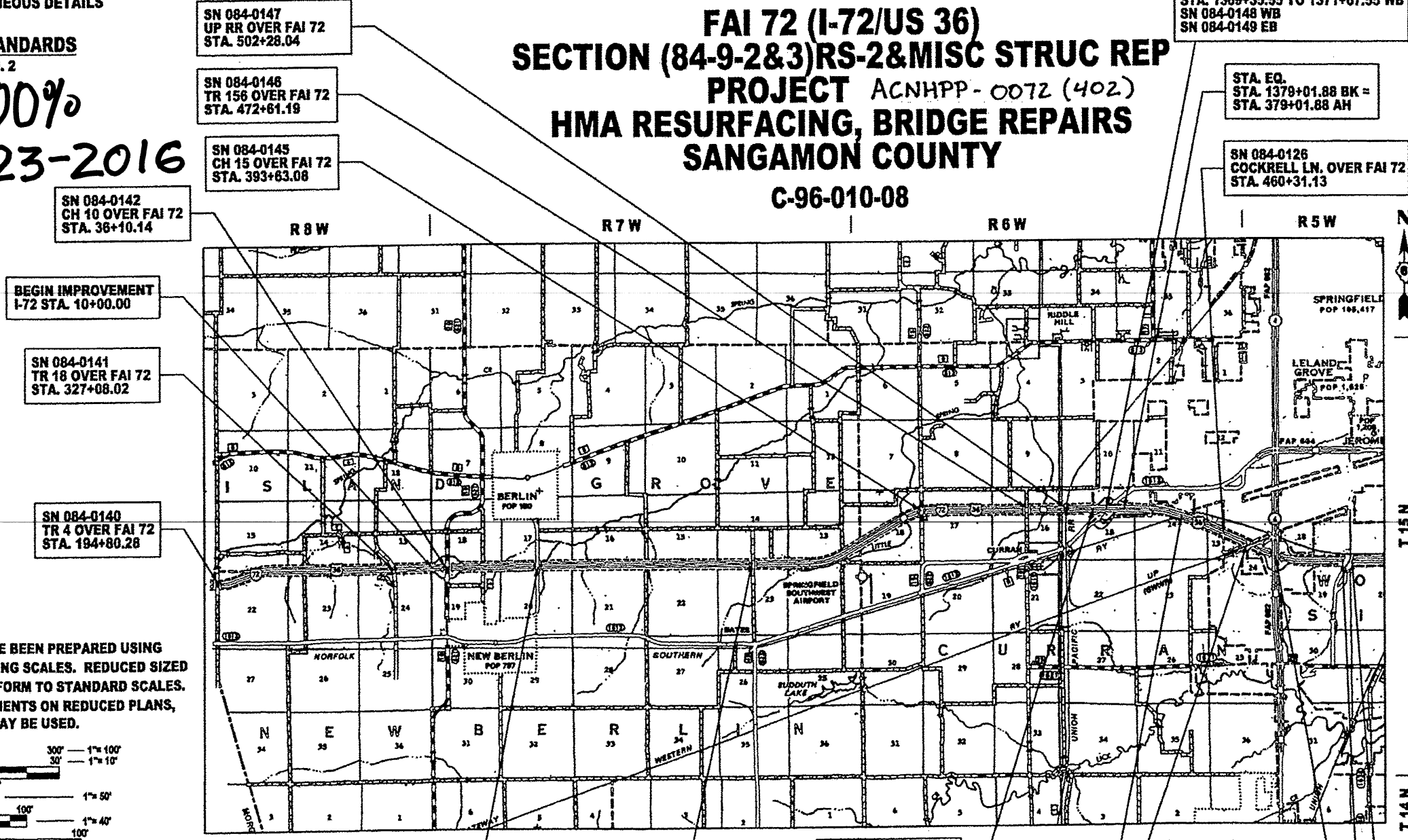
Oct 17, 2014
Omer Osman P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS



HIGHWAY STANDARDS
SEE SHEET NO. 2

100%
4-23-2016



BEGIN IMPROVEMENT I-72 STA. 10+00.00

SN 084-0141 TR 18 OVER FAI 72 STA. 327+08.02

SN 084-0140 TR 4 OVER FAI 72 STA. 194+80.28

SN 084-0147 UP RR OVER FAI 72 STA. 502+28.04

SN 084-0146 TR 156 OVER FAI 72 STA. 472+61.19

SN 084-0145 CH 15 OVER FAI 72 STA. 393+63.08

SN 084-0142 CH 10 OVER FAI 72 STA. 36+10.14

SN 084-0143 OLD CH 10 OVER FAI 72 STA. 101+25.35

SN 084-0144 TR 94 OVER FAI 72 STA. 260+28.21

STA. EQ. STA. 506+80.50 BK = STA. 1345+01.88 AH

SN 084-0125 GWWR RR OVER FAI 72 STA. 480+89.00

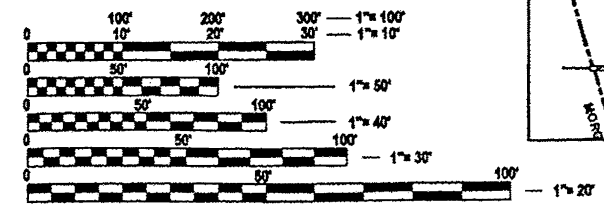
SN 084-0185 CHATHAM RD OVER FAI 72 STA. 555+29.79

END IMPROVEMENT I-72 STA. 554+00.00

SN 084-0136 SN 084-0137 IL RTE 4 OVER FAI 72 STA. 502+60.00

BRIDGE OMISSION: STA. 422+98.91 TO 425+22.91 EB STA. 424+14.79 TO 426+38.79 WB SN 084-0127 EB SN 084-0128 WB

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE SCALES BELOW MAY BE USED.



J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

PROJECT ENGINEER : VICTOR YOUNG (217) 524-0472
PROJECT MANAGER : VINCE MADONIA (217) 785-9046
CONTRACT NO. 72B54 **084-0142**



NET LENGTH OF FAI 72 = 70,122.62 FT = 13.281 MILES
TOTAL LENGTH OF PROJECT = 70,578.62 FT = 13.367 MILES

Existing Structure: The existing structure was constructed in 1974 as FA 408, Section 84-9-2HB. In 1998, the existing wearing surface and expansion joints were replaced. The structure is a two span continuous bridge with a reinforced concrete deck supported on nine 48 inch steel plate girders with vaulted abutments and a multicolumn pier. The existing structure is at right angles to the crossed feature. The structure measures 249'-6" back to back of the approach bents and 68'-0" out to out of bridge deck. One lane of traffic shall be maintained during the rehabilitation using traffic signals.

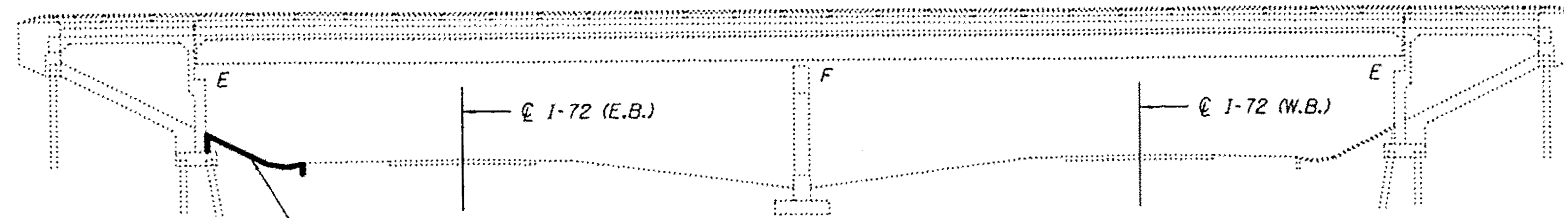
Sloped repair shall be sequenced to occur simultaneously with adjacent lane closures used for the I-72 resurfacing.

INDEX OF SHEETS

1. General Plan and Elevation
2. General Data
3. Existing Plans

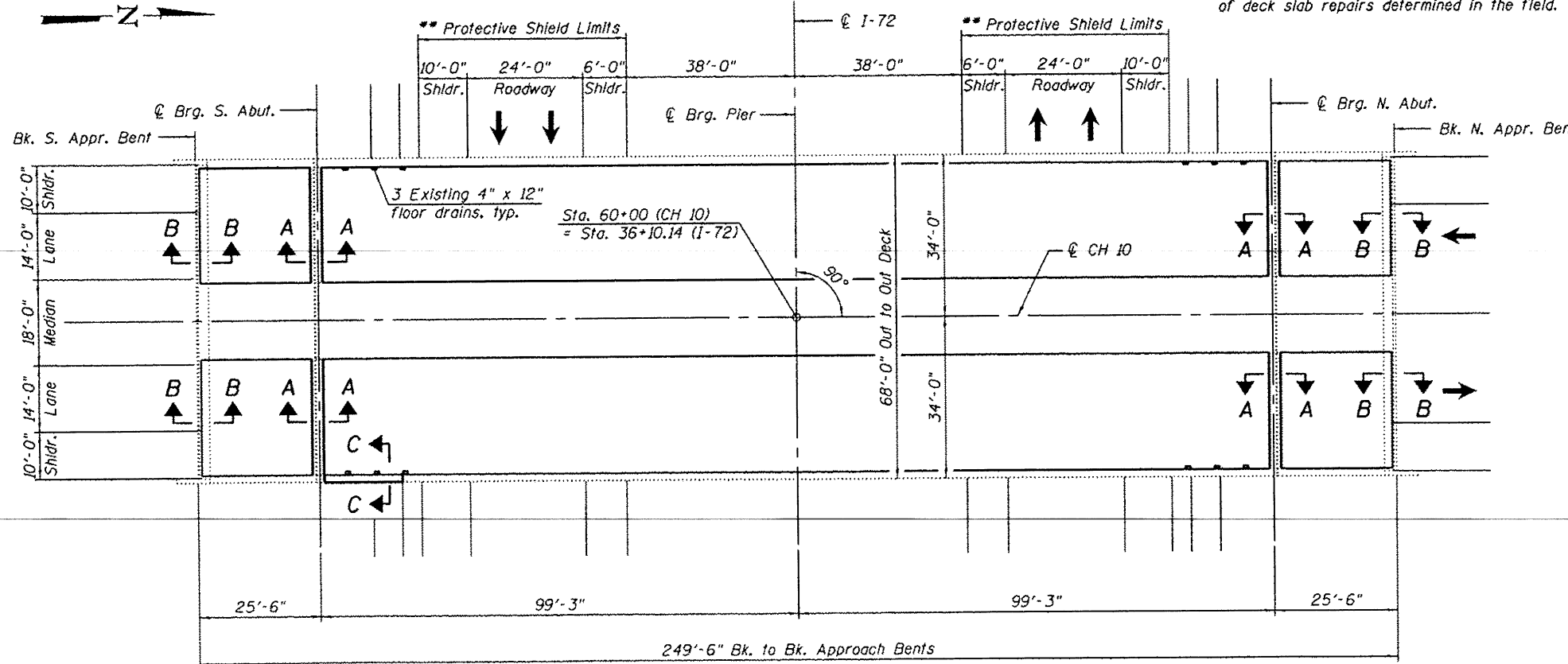
GENERAL NOTES

1. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction 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 scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
2. Removal of existing backer rod and silicone joint sealer will not be measured for payment but shall be included in the cost of Silicone Joint Sealer, of the size specified.
3. Resident Engineer shall determine deck slab repair areas after removal of existing HMA overlay. Repair areas shall be documented in the as-built plans.
4. The indicated portion of the existing slope wall shall be removed and replaced in-kind. See existing plans for details. Backfilling, compaction, and dressing of the existing earth bedding may be required and shall be completed to the satisfaction of the Engineer. Backfilling, compaction, and dressing of the existing earth bedding will not be measured for payment but shall be included in the cost of Slope Wall, of the thickness specified.
5. Sloped walls shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.
6. Reinforcement bars designated (E) shall be epoxy coated.



ELEVATION

** Resident Engineer may reduce the required limits of Protective Shield as acceptable for the extent of deck slab repairs determined in the field.



PLAN

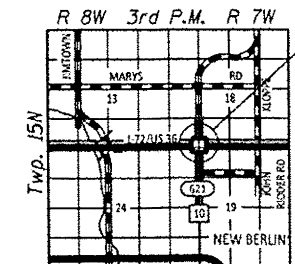
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Hot-Mix Asphalt Surface Course, Mix "C", N50	Ton	165
Waterproofing Membrane System (Special)	Sq. Yd.	1309.5
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	1309.5
Deck Slab Repair (Partial)	Sq. Yd.	131
Silicone Joint Sealer, 2"	Foot	135.5
Slope Wall Removal	Sq. Yd.	22
Slope Wall, 4"	Sq. Yd.	22
Protective Shield	Sq. Yd.	587

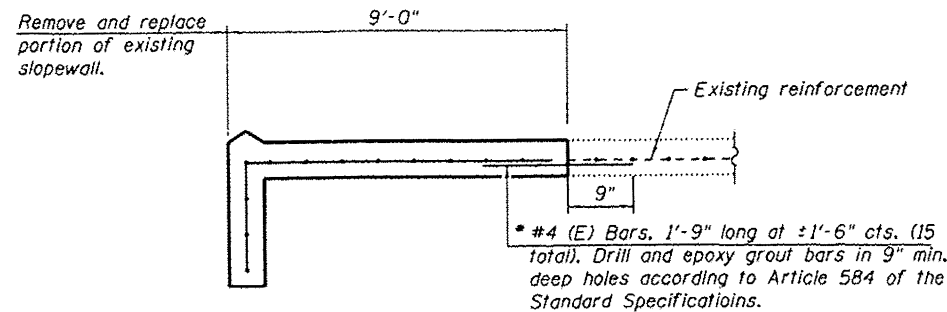


W. Hodel
 Expires: 11/30/2016
 10/14/14

**GENERAL PLAN AND ELEVATION
 WAVERLY ROAD (CH10) OVER I-72
 F.A.I. 72 SEC. (84-9-283)RS-2
 SANGAMON COUNTY
 STATION 36+10.14
 STRUCTURE NO. 084-0142**



LOCATION SKETCH



SECTION C-C

SCOPE OF WORK

1. Remove and replace the existing HMA overlay and waterproofing membranes.
 2. Repair bridge deck.
 3. Remove and replace existing expansion joints at both abutments.
 4. Repair sloped wall.
- * This work and the cost of the reinforcement bars will not be measured or paid for separately but shall be considered as included in the unit price bid for Slope Wall, 4".



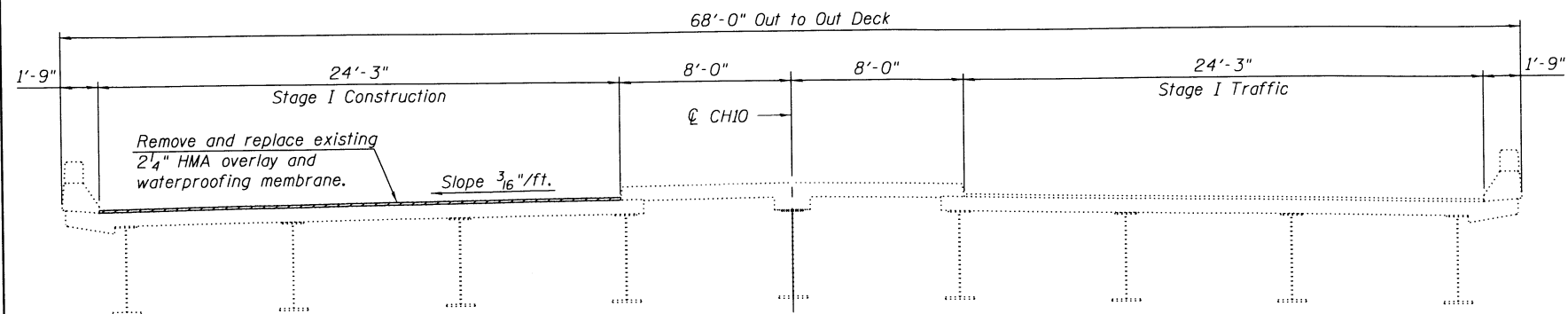
USER NAME *	DESIGNED - CEH	REVISED
FILE NAME *	CHECKED - CWC	REVISED
PLOT SCALE *	DRAWN - DLH	REVISED
PLOT DATE *	CHECKED - CEH/CWC	REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

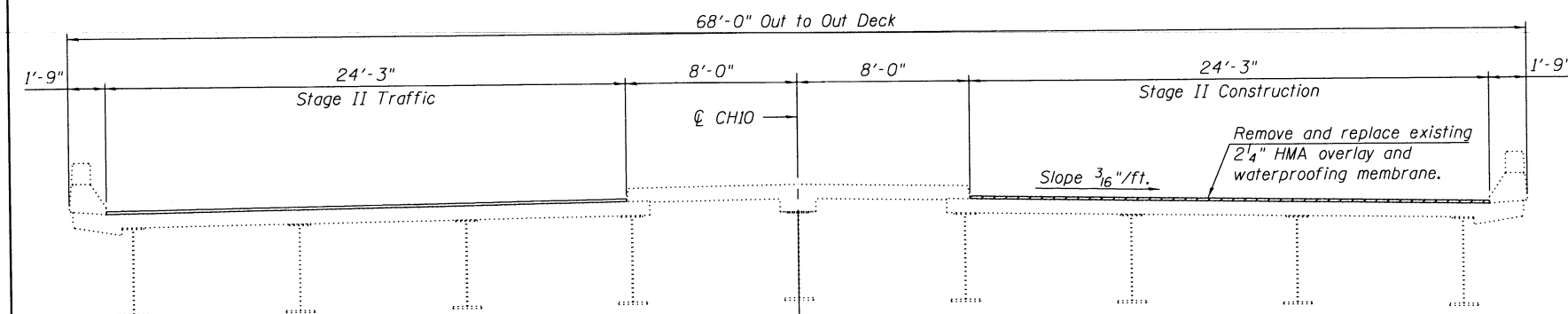
**GENERAL PLAN AND ELEVATION
 STRUCTURE NO. 084-0142**

SHEET NO. 1 OF 3 SHEETS

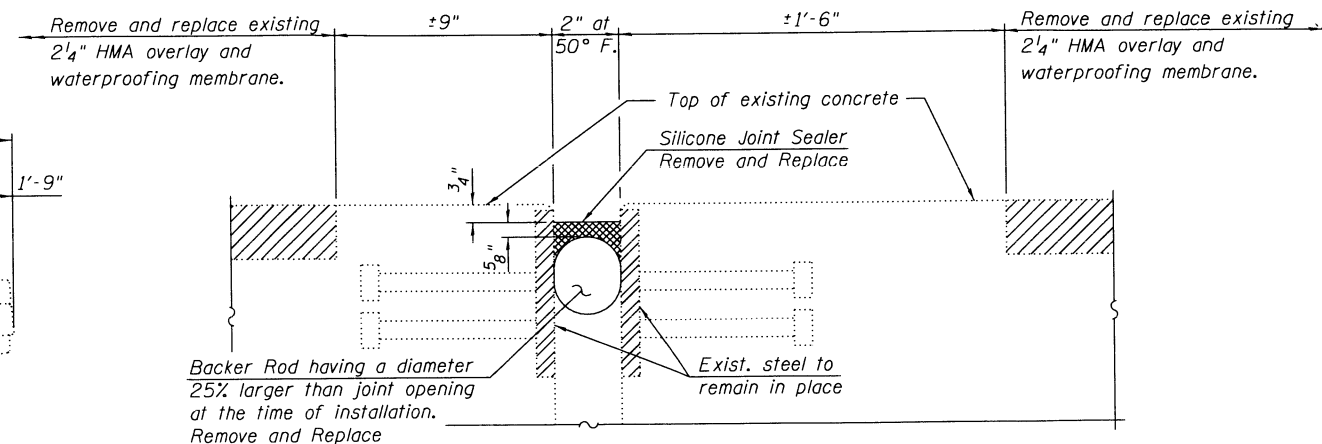
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	-	SANGAMON	163	118
			CONTRACT NO. 72B54	
ILLINOIS FED. AID PROJECT				
(84-9-283)RS-2&MISC STRUC REP				



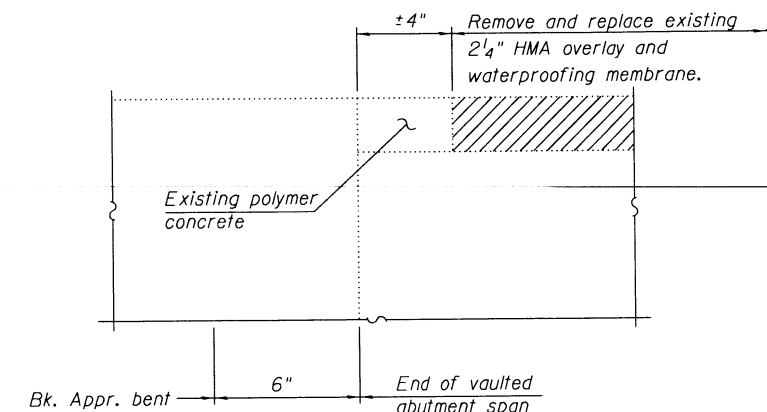
STAGE I CONSTRUCTION
(Looking North)



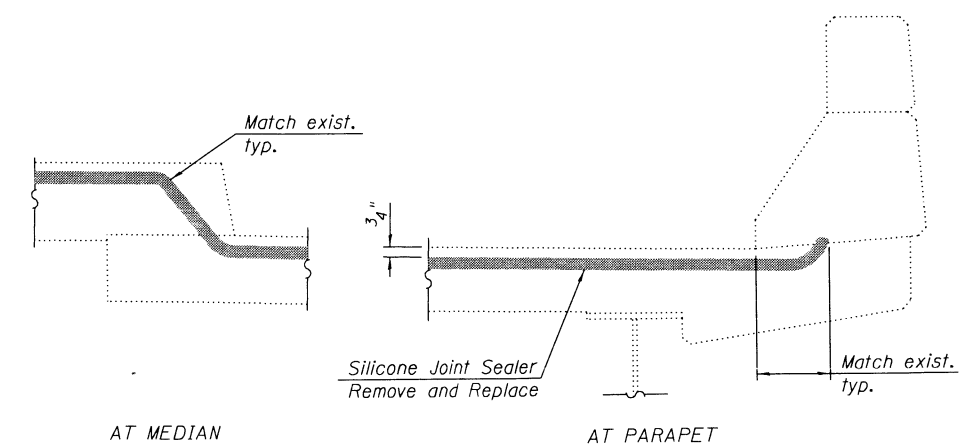
STAGE II CONSTRUCTION
(Looking North)



SECTION A-A



SECTION B-B



TYPICAL END OF SEAL TREATMENT



USER NAME =	DESIGNED - CEH	REVISED
FILE NAME =	CHECKED - CWC	REVISED
PLOT SCALE =	DRAWN - DLH	REVISED
PLOT DATE =	CHECKED - CEH/CWC	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA
STRUCTURE NO. 084-0142**

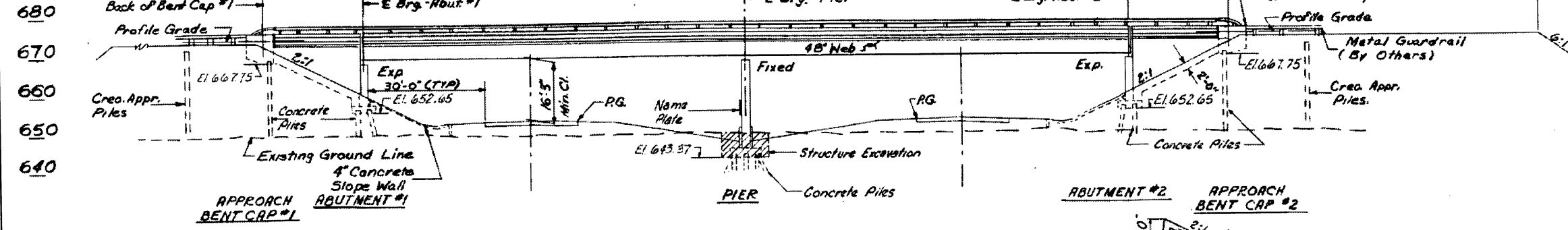
SHEET NO. 2 OF 3 SHEETS

F.A.I. RTE. = 72	SECTION =	COUNTY = SANGAMON	TOTAL SHEETS = 163	SHEET NO. = 119
			CONTRACT NO. 72B54	

ILLINOIS FED. AID PROJECT
•(84-9-2&3)RS-2&MISC STRUC REP

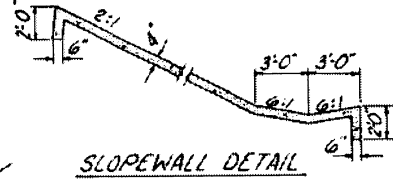
T.B.M. #3 - Nail and Brace in 18" Hedge tree 22' Left of & FA 408 Sta. 31+44. Elev. 653.65.

NO Existing Structure

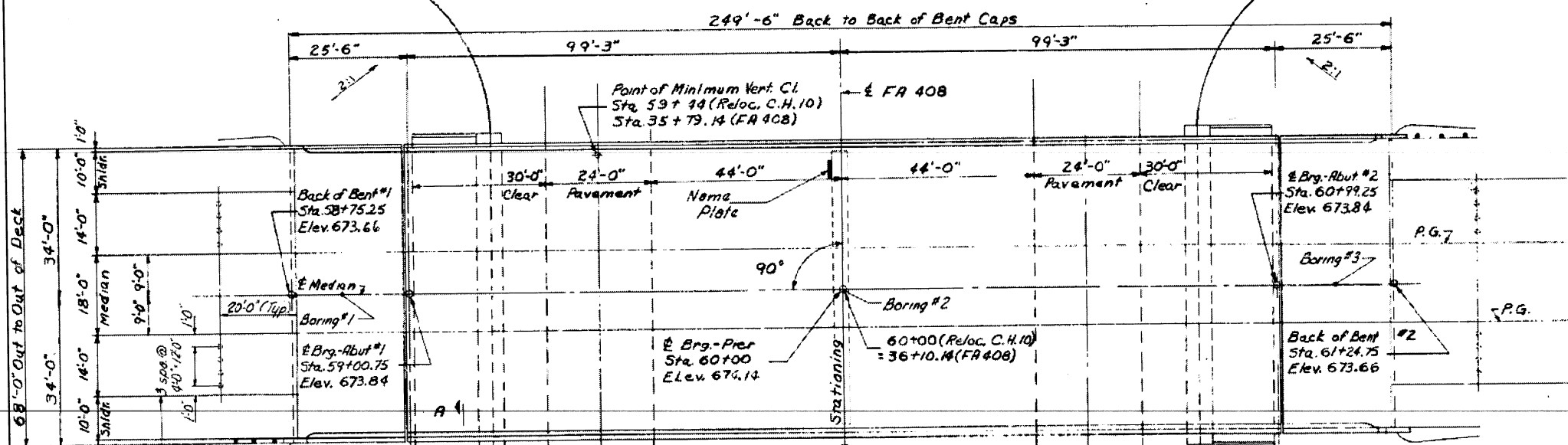


ELEVATION

APPROACH PILE DATA
Type - Crossed
Reqd. Length - 20'
No. Required - 16
See Special Provisions



SLOPEWALL DETAIL



PLAN

Note: Deck elevations shown are 0.14' higher than profile grade.

DESIGN LOADING

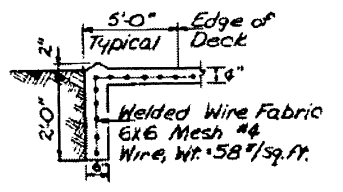
Live HS-20-44 AASHTO 1969 Spec. & 1971 Interim Dead Load includes 25 #/Sq Ft. of Roadway for Future Wearing Surface plus 15 #/Sq Ft. for Initial Waterproofing.

DESIGN STRESSES

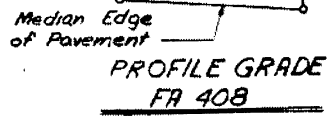
f_c = 1400 p.s.i. Substructure, Curb & Parapets.
f_c = 1200 p.s.i. Superstructure Slab
f_{vc} = 75 p.s.i. Footings
f_s = 20,000 p.s.i. Reinforcing Steel
f_s = 20,000 p.s.i. Structural Steel (A-36)
n = 10

LIVE LOAD DEFLECTION

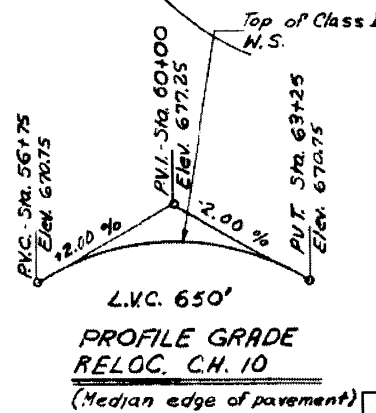
1/1200 for composite construction



SECTION A-A



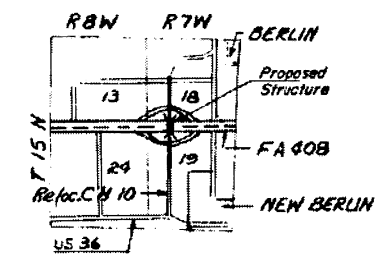
PROFILE GRADE FA 408



PROFILE GRADE RELOC. CH. 10 (Median edge of pavement)

STATION 36+10.14 BUILT 197 BY STATE OF ILLINOIS F.A. RT. 408 SEC. 84-9-2HB F.A. PROJ. LOADING HS20

LETTERING FOR NAME PLATE (See Std 2113)



LOCATION PLAN



Glenn S. Harris

GENERAL NOTES

- All reinforcement bars shall be lapped 24 diameters unless otherwise noted.
- Fasteners shall be high strength bolts. Bolts 3/4" open holes 13/16" unless otherwise noted.
- Calculated weight of Structural Steel = 426,050 LBS.
- The basic lead silico chromate paint system shall be used for shop and field painting of Structural Steel.
- Field welding of Construction Accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the Pier Supports. Field welding in other areas will be permitted only when approved by the Engineer.
- Anchor bolts shall be set before bolting diaphragms over Supports.
- The Contractor shall drive one Concrete Test Pile each in a permanent location at Bent No. 1, Pier and Abutment No. 2 as directed by the Engineer before ordering the remainder of piles.

- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the Abutments.
- The Concrete Rail Section above the mandatory construction joint at the top of the Slab shall be constructed of Class "X" Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.
- Protective coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.
- Slope wall shall be reinforced with Wadwed Wire Fabric 6" x 6" mesh, weighing 58 #/100 Sq.ft.
- The Contractor shall take precautions against over-driving piles due to presence of extremely dense and hard material.
- The main load carrying member components subject to the Supplemental Requirements for Arch Toughness are the flanges, webs, and splice plates of the steel girders or wide flange beams.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPERSTR.	SUBSTR.	TOTAL
Structure Excavation	Cu. Yds.		180.0	180.0
Class "X" Concrete	Cu. Yds.	577.0	424.3	1001.3
Reinforcement Bars	Lbs.	131,800	45,290	177,090
Structural Steel	L.S.	L.S.		L.S.
Aluminum Railing	Lin. Ft.	513		513
Name Plates	Each		1	1
Concrete Piles	Lin. Ft.		2970	2970
Test Piles (Concrete)	Each		3	3
Slope wall 4"	Sq. Yds.		648	648
Stud Shear Connectors	Each	3510		3510
Preformed Joint Sealer 2 1/2"	Lin. Ft.	136		136
Protective Coat	Sq. Yds.	662		662
Creosoted Piles (Up to 20')	Lin. Ft.		320	320
Coal Tar Interlayer Protective Coat	Sq. Yds.	1338		1338
Bituminous Concrete Surface Course - Class I	Tons	112.4		112.4
Sand Backfill	Cu. Yds.		940.0	940.0

GENERAL PLAN & ELEVATION

REVISIONS	DATE	INITIALS
1	8/28	GS/4

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RELOC. CH 10 OVER FA 408 PROJECT
Sta. 36+10.14 (FA 408) SANGAMON CO.

HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS

FOR INFORMATION ONLY

EXISTING PLANS
STRUCTURE NO. 084-0142
SHEET NO. 3 OF 3 SHEETS

55

98%
9-18-98

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

SCALES (PLAN PROFILE HORIZ. PROFILE VERT. CROSS SECTIONS)

F.A.I. ROUTE 72 (I-72)
SECTION : DISTRICT 6 BRIDGE REPAIR 1998-2
MORGAN & SANGAMON COUNTIES

C-96-522-97

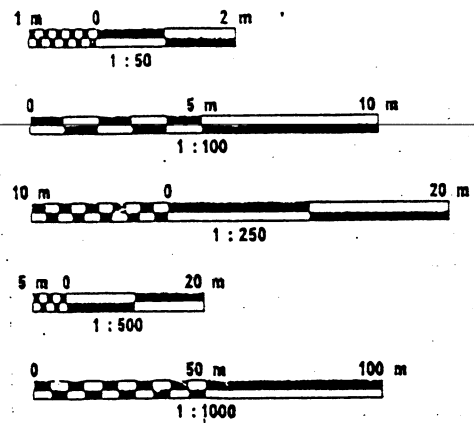
INDEX OF SHEETS

SHEET NO	ITEM
1	TITLE SHEET
2-3	SUMMARY OF QUANTITIES
4-8	STRUCTURE 069 - 0059 (WB) & 069 - 0060 (EB)
9-17	STRUCTURE 084 - 0142 CH # 10
18-22	STRUCTURE 084 - 0148 (WB) & 084 - 0149 (EB)
23-27	STRUCTURE 084 - 0127 (EB) & 084 - 0128 (WB)
28-29	WIDTH RESTRICTION SIGNING TYPICAL
30	BAR SPLICER ASSEMBLY DETAIL

STANDARDS

- 701101
- 701106-01
- 701401
- 701406
- 702001
- 704001
- 780001

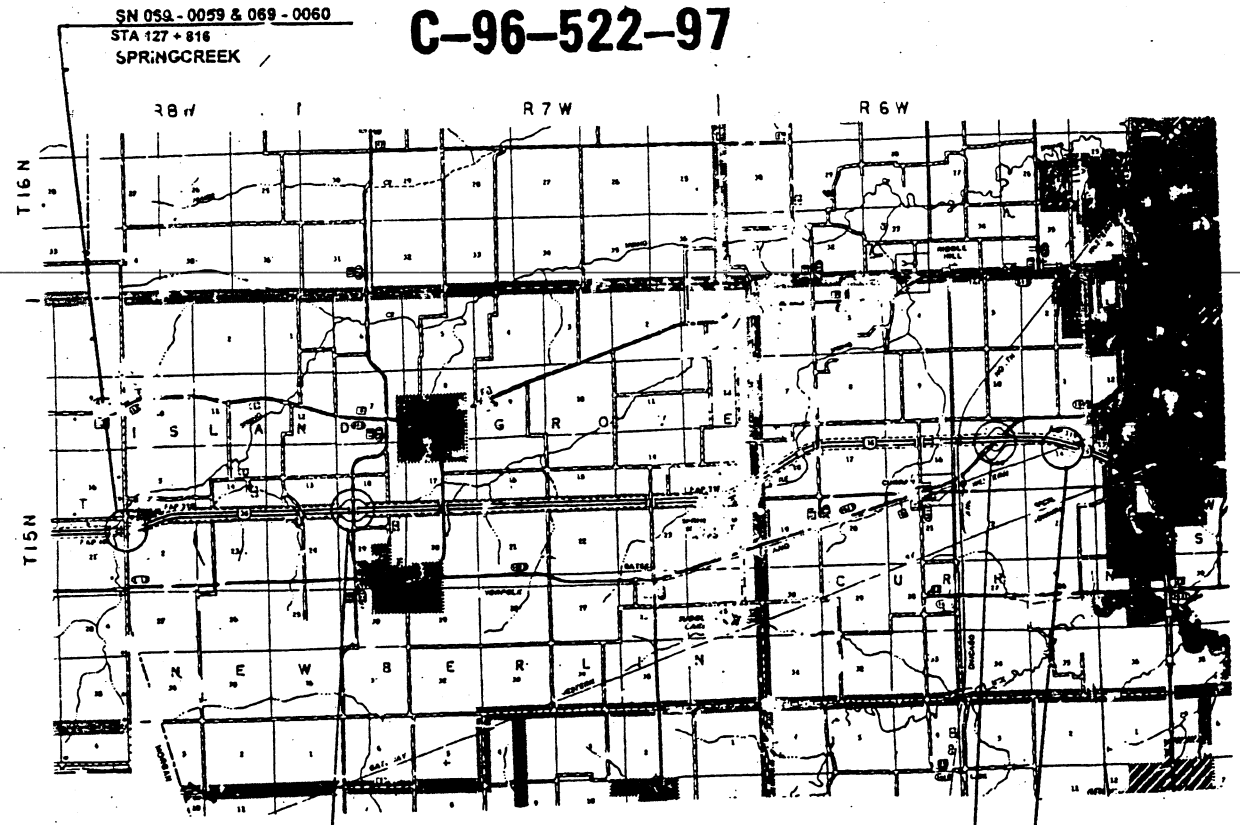
METRIC RATIOS



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.J.L.L.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-400-292-0123

CONTRACT NO: 92930
084-0142

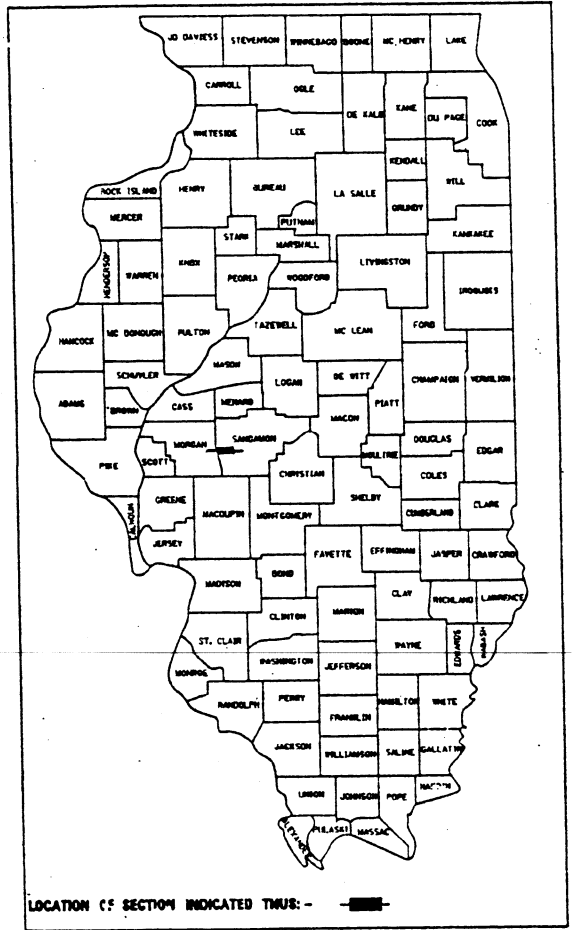


SN 084 - 0142 (CH # 10) STA 133 + 438
 SN 084 - 0148 & 084 - 0149 STA 148 + 573 IL # 4
 SN 084 - 0127 & 084 - 0128 STA 150 + 238 N & W R.R.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	**	MORGAN	30	1
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

** DISTRICT 6 BRIDGE REPAIR 1998-2

D 96-615-96



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED: Oct 24, 1997
James Tate DISTRICT ENGINEER

ENGINEER OF PROJECT DEVELOPMENT AND IMPLEMENTATION

ENGINEER OF DESIGN AND ENVIRONMENT

DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

SEAL

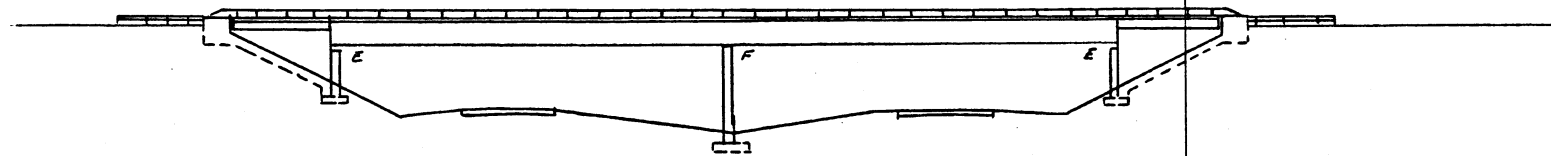
6-233

\\nw\project\mcd556\ncs136pp 3gn Lvl-61
Wed Nov 27 16:23:57 1998
PROJECT ENGINEER: DAVID KASTENICK (217)782-5503
SQUAD LEADER: VK VELLODY (217)522-472

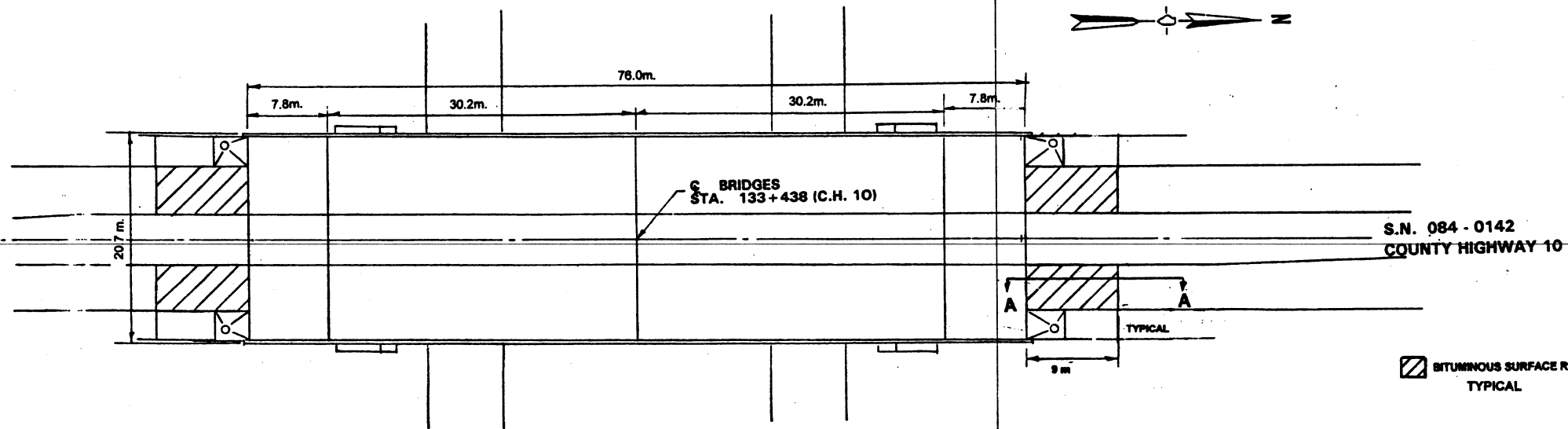
FBI ROUTE	SECTION	COUNTIES	TOTAL SHEETS	SHEET NO.
72		M-M	30	9

* DIST. 6 BRIDGE REPAIR 1998-2
 ** MORGAN & SANGAMON

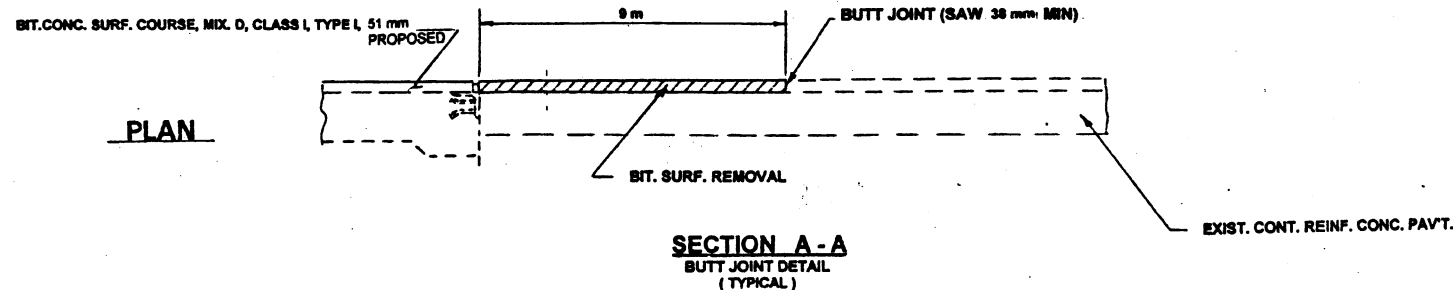
SHEET 1 OF 9



ELEVATION



PLAN



SECTION A-A
 BUTT JOINT DETAIL
 (TYPICAL)

PLAN SHEET

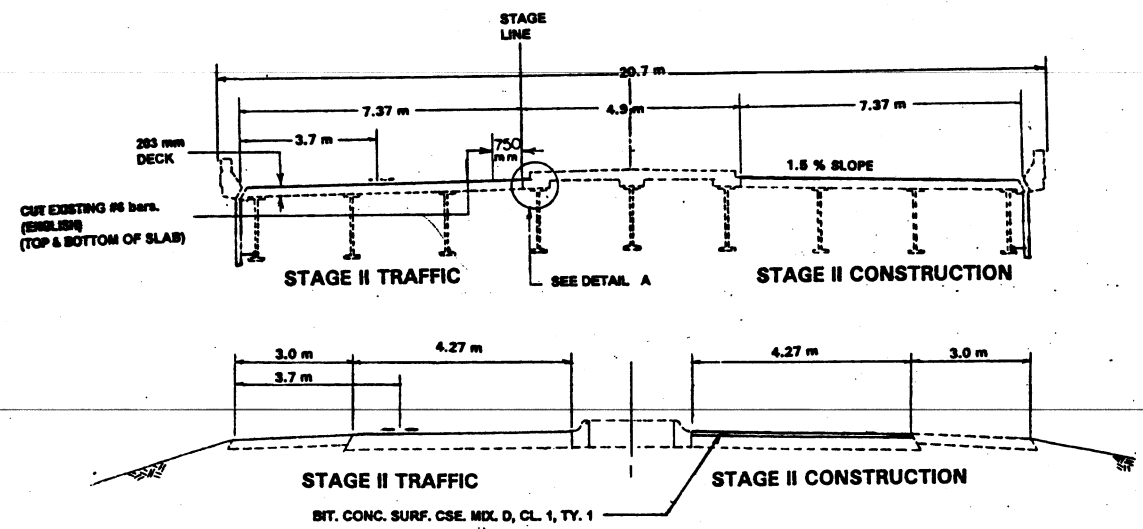
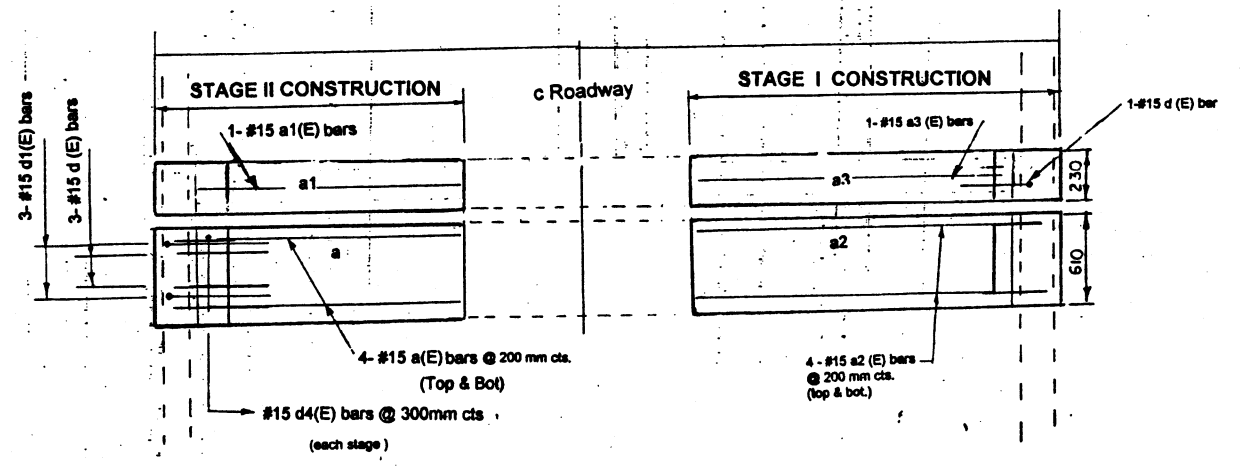
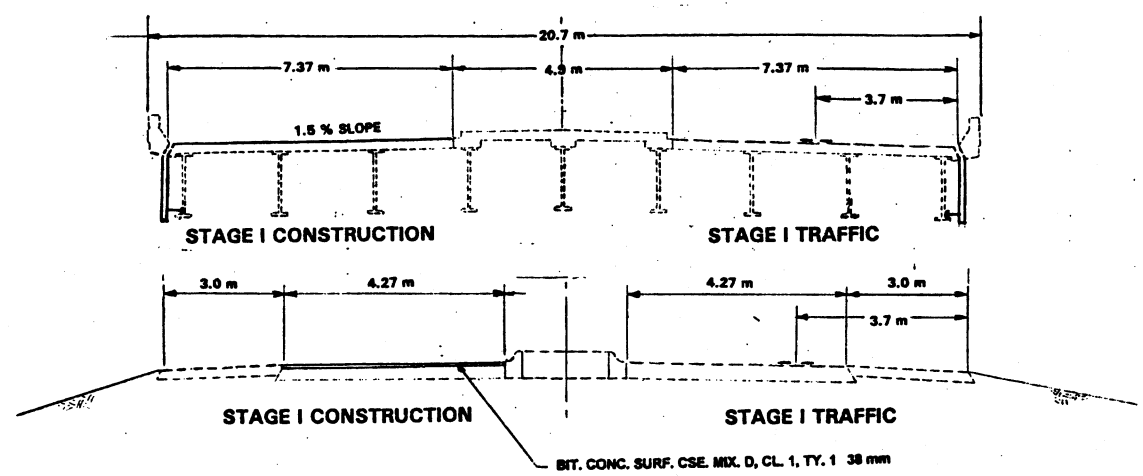
SN 084 - 0142 (CH # 10)
 STA 133 + 438

FAP ROUTE 319 (I-72)
 DISTRICT 6 BRIDGE REPAIR 1998 - 2
 MORGAN & SANGAMON COUNTY

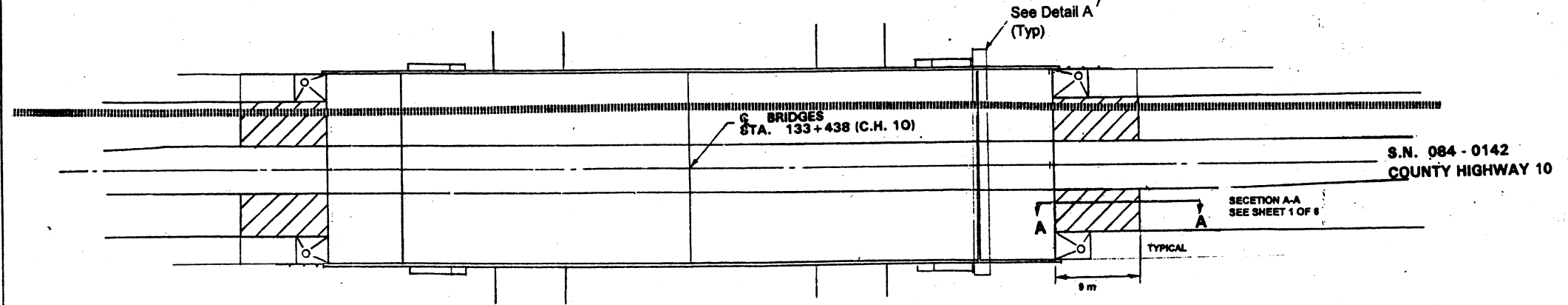
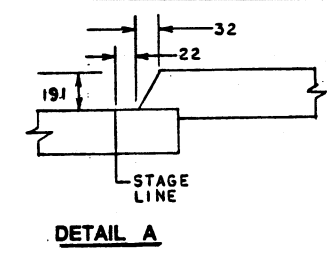
FBI ROUTE	SECTION	COUNTIES	TOTAL SHEETS	SHEET NO.
72		MORGAN & SANGAMON	30	10
ILLINOIS PROJECT				

DIST. 6 BRIDGE REPAIR 1998-2
MORGAN & SANGAMON

SHEET 2 OF 9



Detail A PLAN (Deck Joint Repairs)
Reinforcement Bar Details (Typical)



TYPICAL & DETAIL SHEET
SN 084-0142
STA. 133+438
FAP ROUTE 319 (I-72)
DISTRICT 6 BRIDGE REPAIR 1998 - 2
MORGAN & SANGAMON COUNTY

11/17/97

FBI RFL	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	**	30	11
FHW.A. REG.		ILLINOIS PROJECT		

* DIST. 6 BRIDGE REPAIR 1998 -
** MORGAN & SANGAMON SHEET 3 OF 9

GENERAL NOTES
PLAN DIMENSIONS AND DETAILS RELATIVE TO THE 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 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.

ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT AS NOTED.

ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M 270 GR 250.

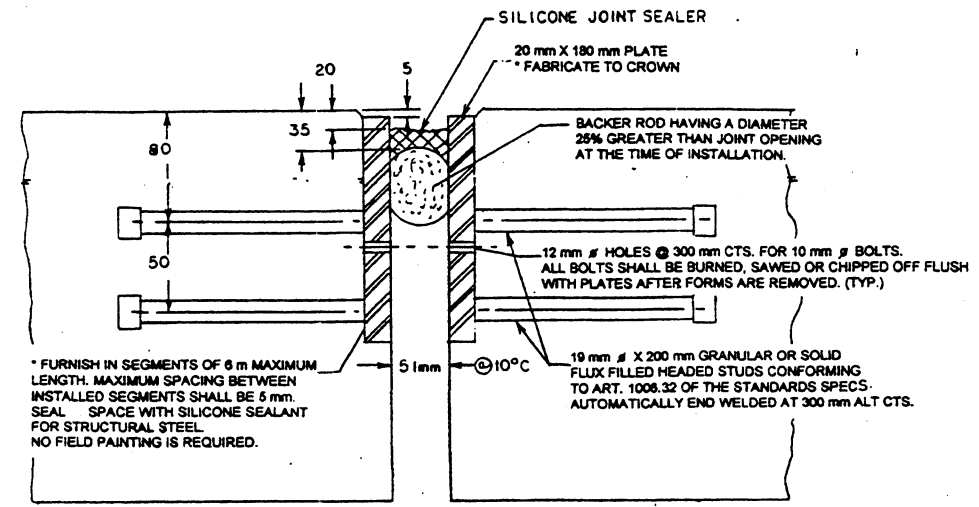
REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO CLASSIFICATION M-31M, M-42M OR M-53M GRADE 400.

PRIOR TO POURING THE NEW CONCRETE FOR THE DECK, ALL LOOSE RUST, LOOSE MILL SCALE, AND ALL OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM THE EMBEDDED PORTIONS OF THE FLANGES OF BEAM. THE REMOVAL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OR THE SSPC SURFACE PREPARATION SPECIFICATIONS SP-3 FOR POWER TOOL CLEANING OR SP-2 FOR HAND TOOL CLEANING. COST SHALL BE INCLUDED IN THE COST OF CONCRETE REMOVAL. NO FIELD PAINTING IS REQUIRED. AFTER FABRICATION ALL SURFACES OF THE STEEL PLATES SHALL BE GIVEN ONE COAT OF THE INORGANIC ZINC SILICATE PRIMER. COST SHALL BE INCLUDED IN THE COST OF STRUCTURAL STEEL.

ANY EXISTING REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL SHALL BE REPLACED WITH AN APPROVED BAR SPICER OR ANCHORAGE SYSTEM. COST SHALL BE INCLUDED IN THE COST OF CONCRETE REMOVAL.

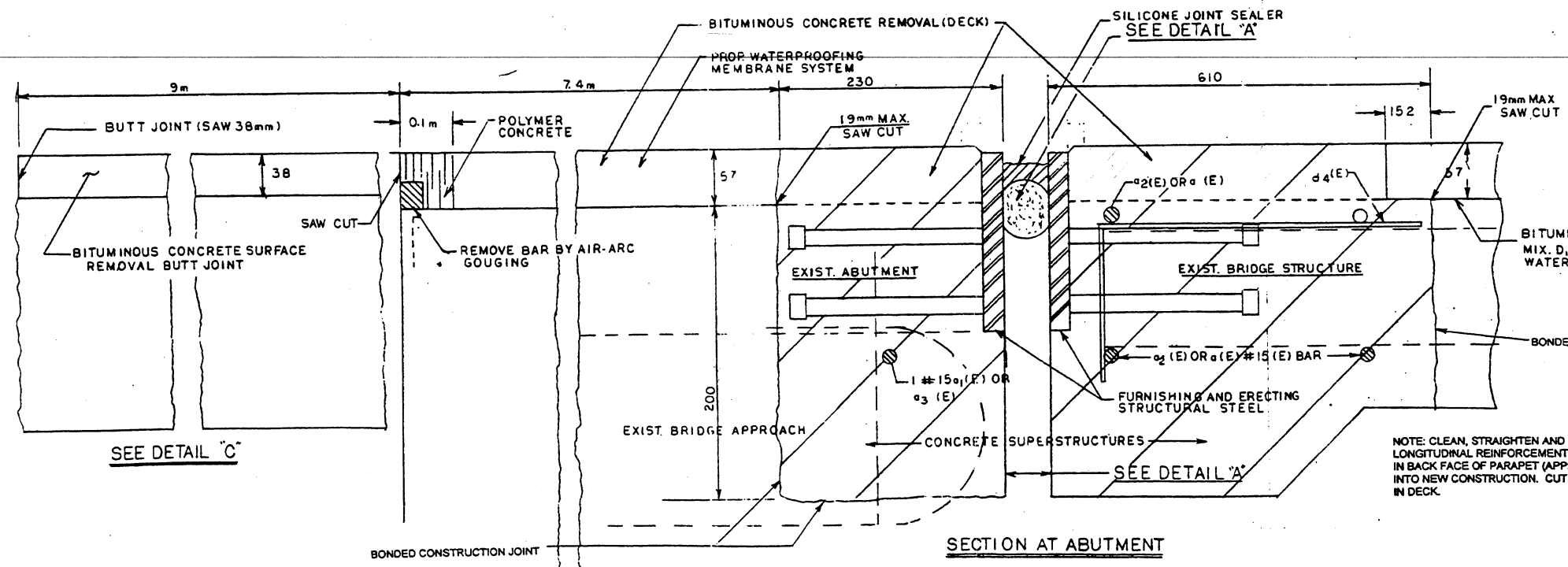
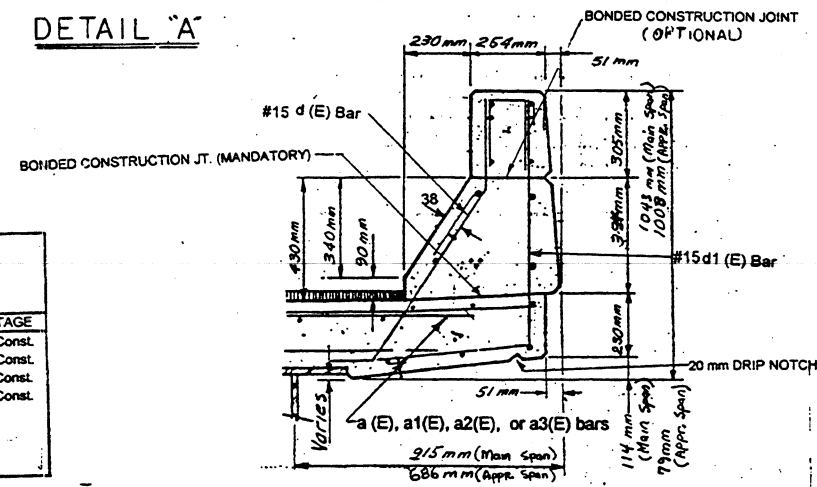
DURING STAGE CONSTRUCTION THE EXISTING MEDIAN INLET BE COVERED WITH A SUITABLE PLATE AND TEMPORARILY FILL LEVEL TO THE EXISTING GRADE WITH BITUMINOUS CONCRETE (HOT MIX). PRIMING IS NOT REQUIRED. THIS BITUMINOUS CONCRETE MATERIAL SHALL BE REMOVED AND INLETS CLEANED AFTER STAGE CONSTRUCTION IS COMPLETED. COST SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION.

THE AMOUNT OF RAP SHALL BE 10% IN BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 1; 15% FOR BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 2 & 25% FOR BITUMINOUS CONCRETE BINDER COURSE, TYPE 2.



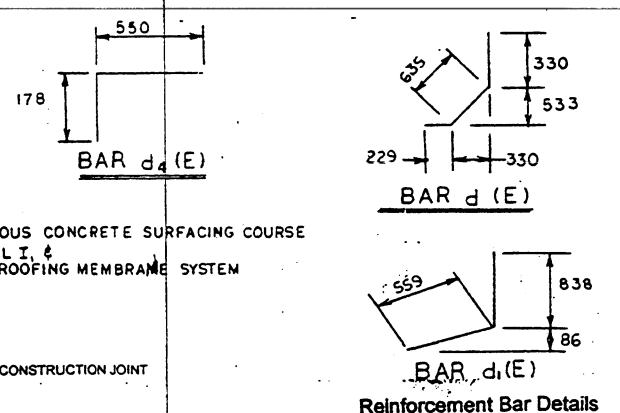
DETAIL 'A'

BAR LIST ONE BRIDGE (TYPICAL)					
BAR	NO.	SIZE	LENGTH (m)	SHAPE	STAGE
a	(E)	#15	7.8		II Const.
a 1	(E)	#15	7.8		II Const.
a 2	(E)	#15	7.8		I Const.
a 3	(E)	#15	7.8		I Const.
d	(E)	#15	1.19		
d 1	(E)	#15	1.40		
d 4	(E)	#15	0.73		



SECTION AT ABUTMENT

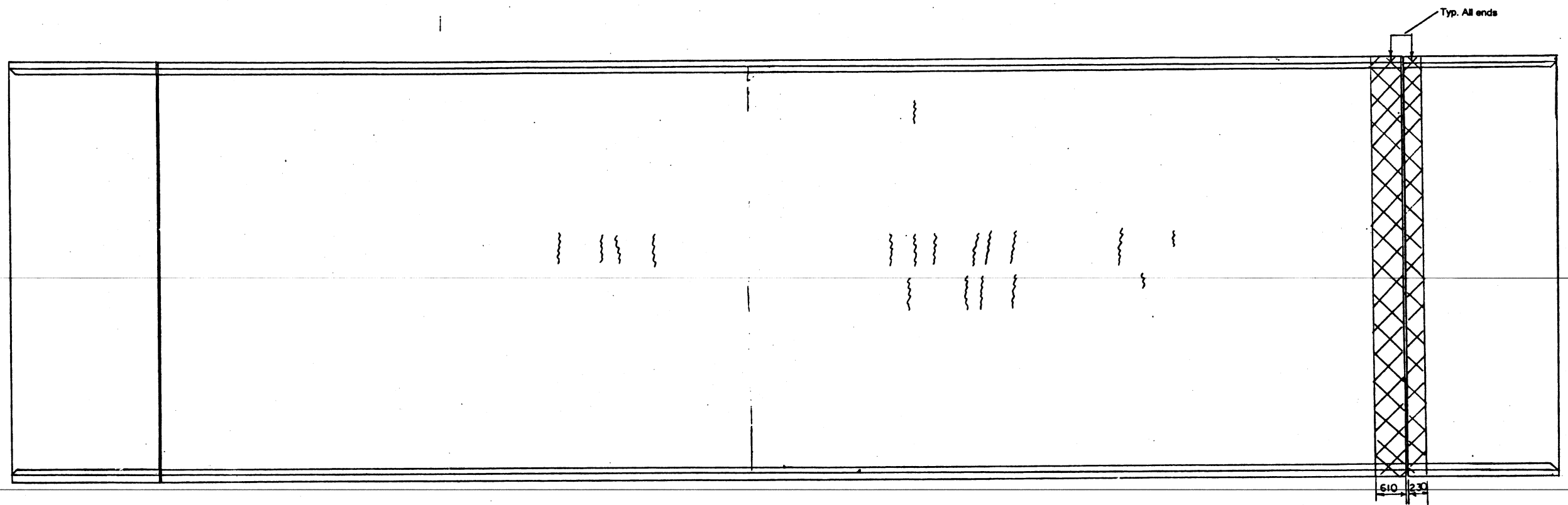
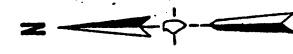
TOTAL BILL OF MATERIAL - BRIDGE QUANTITIES	
ITEM	SN 084 - 0142 STA 133 + 438
SILICONE JOINT SEALER	42 METER
FLOOR DRAIN EXTENSION	12 EACH
BITUMINOUS CONCRETE REMOVAL (DECK)	981 SQ M
CONCRETE REMOVAL	12.5 CU M
CONCRETE SUPERSTRUCTURES	13.0 CU M
FURNISHING AND ERECTING STRUCTURAL STEEL	1,704 KG
REINFORCEMENT BARS, EPOXY COATED	810 KG
WATERPROOFING MEMBRANE SYSTEM	875 SQ M
POLYMER CONCRETE	0.1 CU M
BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D CLASS I TYPE 2	129 M TON
BILL OF MATERIAL - ROADWAY QUANTITIES	
TRAFFIC CONTROL AND PROTECTION WIDTH RESTRICTION SIGNING	1 L SUM 0.14 L SUM
BITUMINOUS MATERIALS (PRIME COAT)	0.1 M TON
AGGREGATE (PRIME COAT)	0.24 M TON
CONCRETE MEDIAN SURFACE REMOVAL	126 SQ M
CONCRETE MEDIAN SURFACE 100 mm	126 SQ M
COMB. CURB AND GUTTER REM	258 M
COMB CONC CURB & GUTTER TY M - 15.30	258 M
BIT. CONC. SURF. REM. BUTT JOINT	175 SQ M
BIT BSE CSE REM.	124 SQ M
BITUMINOUS SHOULDER REMOVAL	1,474 SQ M
BITUMINOUS CONCRETE BINDER COURSE TYPE 2	809 M TON
BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D CLASS I TYPE 2	170 M TON
SHORT TERM PAVEMENT MARKING	8 METER
EXPANSION BOLTS #20 x 375	322 EACH
ENGINEER'S FIELD OFFICE, TYPE A	1.50 CAL MO



SCHEDULE & DETAILS	
SN 084 - 0142 (CH # 10) STA 133 + 438	
FAP ROUTE 319 (I-72) DISTRICT 6 BRIDGE REPAIR 1998 - 2 MORGAN & SANGAMON COUNTIES	

FBI ROUTE	SECTION	COUNTIES	TOTAL SHEETS	SHEET NO.
72			30	12

ILLINOIS PROJECT
 * DIST. 6 BRIDGE REPAIR 1998-2
 MORGAN & SANGAMON
 SHEET 4 OF 9






DATE OF DECK SURVEY : 4/24/97

S.N. 084 - 0142
 COUNTY HIGHWAY 10

FOR INFORMATION ONLY

~ CRACK WITH EFFLORESCENCE
 - - - CRAZE OR MAP

- Legend**
-  Deck Slab Repair (Partial)
 -  Concrete Removal & Concrete Superstructure
 -  DECK SLAB REPAIR (FULL DEPTH)

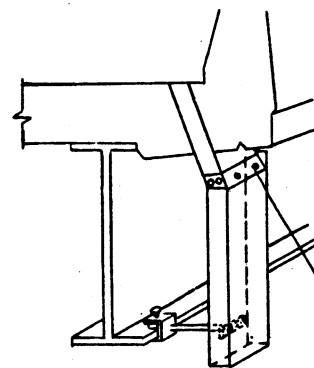
Note:
 Locations of deck repairs are estimated. Actual deck repairs to be shown by Field Engineer for as built plans.

**DECK PLAN &
 DECK REPAIRS**
 SN 084 - 0142 (CH 10)
 STA 133+438
 FAP ROUTE 319 (I-72)
 DISTRICT 6 BRIDGE REPAIR 1998 - 2
 MORGAN & SANGAMON COUNTY

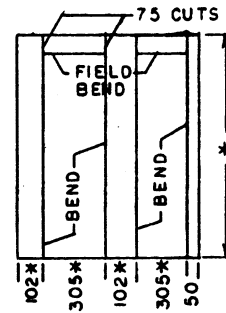
ROUTE FBI	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	**	30	13
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	

* DIST. 6 BRIDGE REPAIR -1998-2
 ** MORGAN, SANGAMON

SHEET 5 OF 9



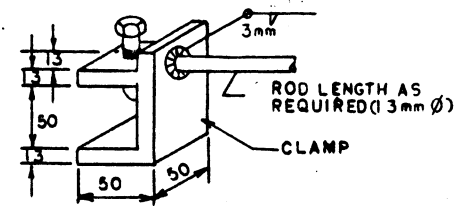
Bottom of Extension at least 75 mm below Bottom of Sheet Beam.



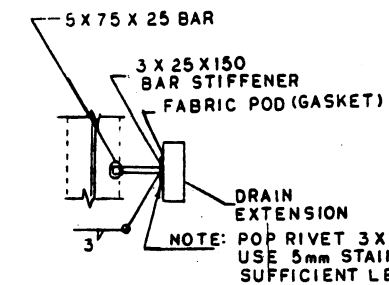
* FIELD MEASURE

Drill and Pop Rivet 200 mm cts. along Length of Drain Extension

Drill & Pop Rivet 50 mm from each corner & on 100 mm cts. along top edge into existing drain. Use 200 mm cts. @ side seam.

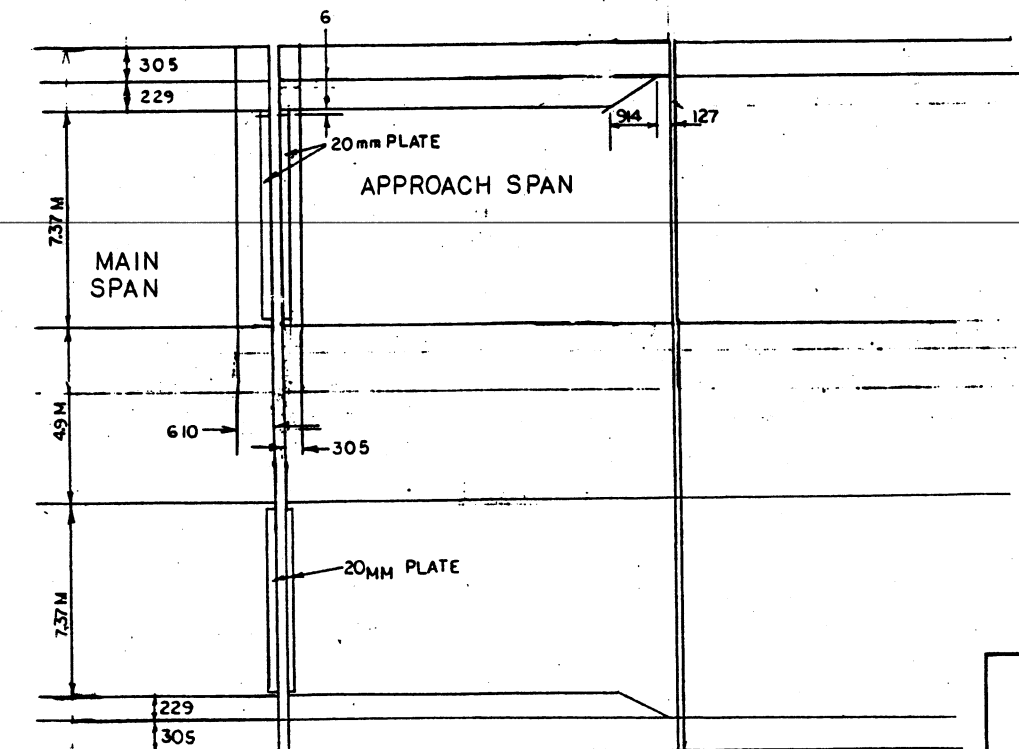


STEEL CLAMP



The exterior surface of the Floor Drains shall be painted with the paint system specified for the structural steel. The exterior surface of Aluminum shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 and SSPC-Paint 27 prior to painting. Color shall match the structural steel.

FLOOR DRAIN EXPANSION DETAILS & STEEL CLAMP



PARAPETS END DETAIL

DETAIL SHEET

SN 069 - 0142 CH # 10
 STA 133 + 438

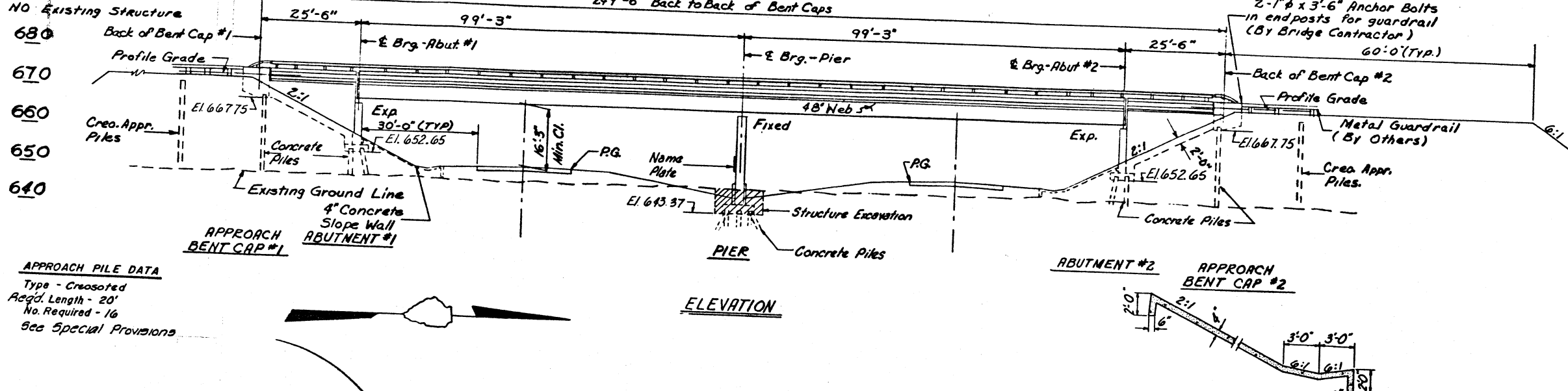
FAP ROUTE 319 (I-72)
 DISTRICT 6 BRIDGE REPAIR 1998 - 2
 MORGAN & SANGAMON COUNTIES

11/17/97 VM

T.B.M. #3 - Nail and Brace in 18" Hedge tree 22' Left of FA 408 Sta. 31+44. Elev. 653.65.

Sheet No. 1 of 15 Sheets

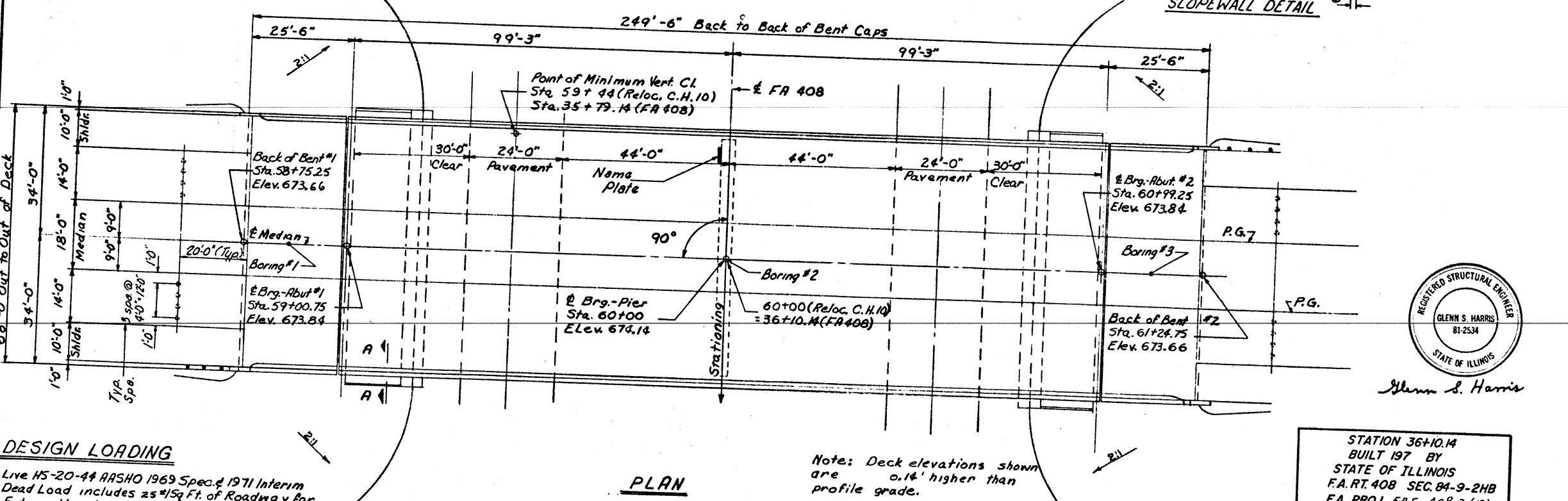
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA-408	84-9-2HB	SANGAMON	36	11



GENERAL NOTES

- All reinforcement bars shall be lapped 24 diameters unless otherwise noted.
- Fasteners shall be high strength bolts. Bolts 3/4" ϕ open holes 13/16" unless otherwise noted.
- Calculated weight of Structural Steel = 426,050 LBS.
- The basic lead silico chromate paint system shall be used for shop and field painting of Structural Steel.
- Field welding of Construction Accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the spanlength each way from the Pier Supports. Field welding in other areas will be permitted only when approved by the Engineer.
- Anchor bolts shall be set before bolting diaphragms over Supports.
- The Contractor shall drive one Concrete Test Pile each in a permanent location at Bent No.1, Pier and Abutment No.2 as directed by the Engineer before ordering the remainder of piles.
- The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the Abutments.
- The Concrete Rail Section above the mandatory construction joint at the top of the Slab shall be constructed of Class "X" Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.
- *Protective coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.
- Slope wall shall be reinforced with Welded Wire Fabric 6"x6" mesh, weighing 58#/100 Sq.ft.
- The Contractor shall take precautions against over-driving piles due to presence of extremely dense and hard material.

APPROACH PILE DATA
 Type - Creosoted
 Req'd. Length - 20'
 No. Required - 16
 See Special Provisions



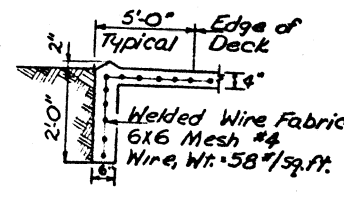
PLAN



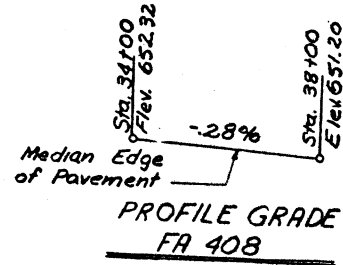
Glenn S. Harris

STATION 36+10.14
 BUILT 197 BY
 STATE OF ILLINOIS
 F.A. RT. 408 SEC. 84-9-2HB
 F.A. PROJ. 84-408-2(12)
 LOADING HS20

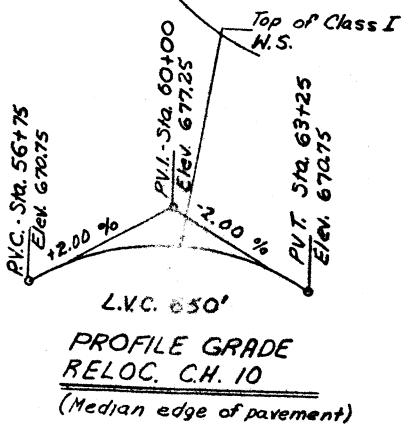
LETTERING FOR NAME PLATE
 (See Sta. 2113)



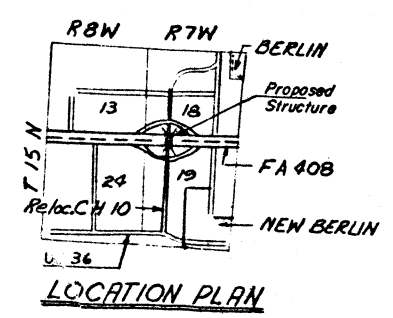
SECTION A-A



PROFILE GRADE FA 408



PROFILE GRADE RELOC. C.H. 10 (Median edge of pavement)



LOCATION PLAN

TOTAL BILL OF MATERIAL				
ITEM	UNIT	SUPERSTR.	SUBSTR.	TOTAL
Structure Excavation	Cu.Yds.		180.0	180.0
Class "X" Concrete	Cu.Yds.	577.0	424.3	1001.3
Reinforcement Bars	Lbs.	131,800	45,650	177,450
Structural Steel	L. S.	L. S.		L. S.
Aluminum Railing	Lin.Ft.	513		513
Name Plates	Each		1	1
Concrete Piles	Lin.Ft.		2920	2920
Test Piles (Concrete)	Each		3	3
Slopedwall 4"	Sq.Yds.		648	648
Stud Shear Connectors	Each	3510		3510
Preformed Joint Sealer 2 1/2"	Lin.Ft.	136		136
* Protective Coat	Sq.Yds.	662		662
Creosoted Piles (Up to 20')	Lin.Ft.		320	320
* Coal Tar Interlayer Protective Coat	Sq.Yds.	1338		1338
* Bituminous Concrete Surface Course - Class I	Tons	112.4		112.4
Sand Backfill	Cu.Yds.		940.0	940.0

GENERAL PLAN & ELEVATION			
REVISIONS 1. DATE 8/7/72 BY SRK 2. DATE 6/5/74 BY SRK	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS RELOC. CH 10 OVER FA 408 FA 408 SEC 84-9-2HB PROJECT 84-408-2(12) Sta. 36+10.14 (FA 408) SANGAMON CO.	DRAWN BY DATE SRK 12-71 CHECKED BY DATE R/S 7-72 BOOK NUMBER PROJECT NO. 2385-1 SHEET NO. 11	HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS

DESIGN LOADING

Live HS-20-44 AASHO 1969 Spec. & 1971 Interim Dead Load includes 25#/Sq Ft. of Roadway for Future Wearing Surface plus 18#/Sq Ft. for Initial Waterproofing.

DESIGN STRESSES

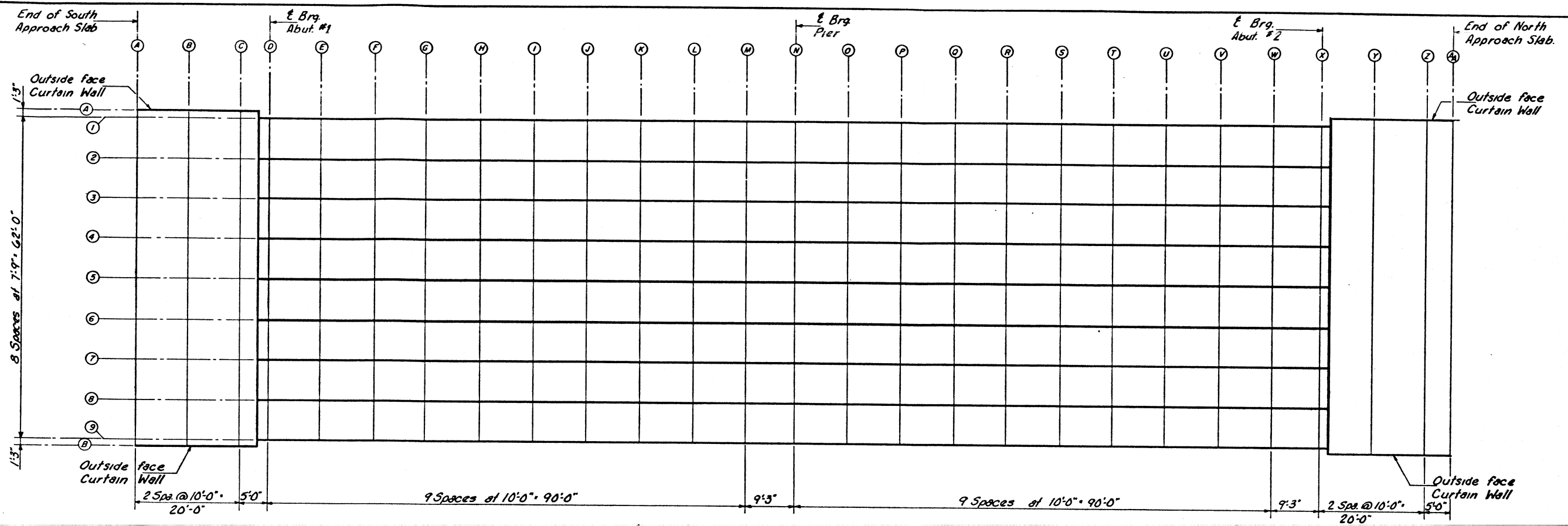
f_c = 1400 psi. Substructure, Curbs & Parapets.
 f_c = 1200 psi. Superstructure Slab
 f_c = 75 psi. Footings
 f_s = 20,000 psi. Reinforcing Steel
 f_s = 20,000 psi. Structural Steel (A-36)
 n = 10

LIVE LOAD DEFLECTION

1/1200 for composite construction

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA-408	B4-9-2NB	SANGAMON	36	12
FED. ROAD DIST. NO.	ILLINOIS PROJECT			

Sheet No. 2
of 15 Sheets.



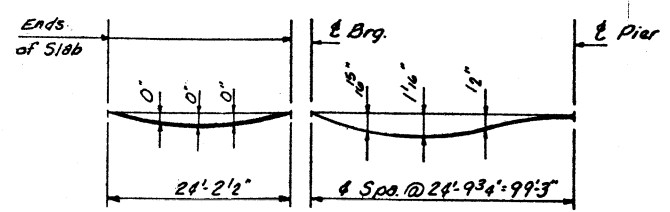
SPAN No. 1

SPAN No. 2

SPAN No. 3

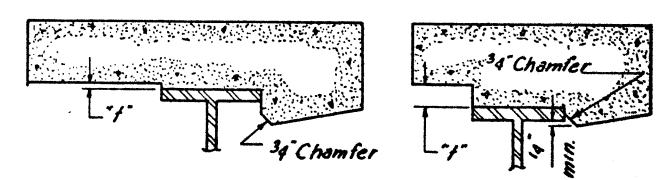
SPAN No. 4

PLAN



- DEAD LOAD DEFLECTION DIAGRAM -

(Includes weight of concrete only)
Note: The above deflections are not to be used in the field if the Engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets #3&4



- AT MINIMUM FILLET - - AT MAXIMUM FILLET -

- FILLET HEIGHTS -

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sh. #3&4 minus slab thickness, equals the fillet heights "t" above top flange of beams.

DECK ELEVATIONS

REVISIONS NO. DATE INITIALS		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS		DRAWN BY DATE SKK 7-72
PROJECT NO. 2385-1		RELOC. CH 10 OVER FA 408 FA 408 SEC. B4-9-2NB STA. 36+10.18 (FA 408) SANGAMON CO.		CHECKED BY DATE KFS 7-72
CONSULTING ENGINEERS HOMER L. CHASTAIN & ASSOCIATES DECATUR, ILLINOIS		PROJECT NO. 2385-1		SHEET NO. 12

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA-408	94-9-2HB	SANGAMON	36	14
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

SPAN No.3

LINE	BEAM OR GIRDER	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
O	LINE A	6010.000	32.250	673.508	673.514
	BEAM 1	6010.000	31.000	673.527	673.534
	BEAM 2	6010.000	23.250	673.648	673.654
	BEAM 3	6010.000	15.500	673.769	673.775
	BEAM 4	6010.000	7.750	673.890	673.896
	BEAM 5	6010.000	0.000	674.011	674.017
	BEAM 6	6010.000	-7.750	673.890	673.896
	BEAM 7	6010.000	-15.500	673.769	673.775
	BEAM 8	6010.000	-23.250	673.648	673.654
	BEAM 9	6010.000	-31.000	673.527	673.534
	LINE B	6010.000	-32.250	673.508	673.514
P	LINE A	6020.000	32.250	673.498	673.524
	BEAM 1	6020.000	31.000	673.518	673.544
	BEAM 2	6020.000	23.250	673.639	673.665
	BEAM 3	6020.000	15.500	673.760	673.786
	BEAM 4	6020.000	7.750	673.881	673.907
	BEAM 5	6020.000	0.000	674.002	674.028
	BEAM 6	6020.000	-7.750	673.881	673.907
	BEAM 7	6020.000	-15.500	673.760	673.786
	BEAM 8	6020.000	-23.250	673.639	673.665
	BEAM 9	6020.000	-31.000	673.518	673.544
	LINE B	6020.000	-32.250	673.498	673.524
Q	LINE A	6030.000	32.250	673.483	673.535
	BEAM 1	6030.000	31.000	673.503	673.554
	BEAM 2	6030.000	23.250	673.624	673.675
	BEAM 3	6030.000	15.500	673.744	673.796
	BEAM 4	6030.000	7.750	673.865	673.917
	BEAM 5	6030.000	0.000	674.011	674.663
	BEAM 6	6030.000	-7.750	673.865	673.917
	BEAM 7	6030.000	-15.500	673.744	673.796
	BEAM 8	6030.000	-23.250	673.624	673.675
	BEAM 9	6030.000	-31.000	673.503	673.554
	LINE B	6030.000	-32.250	673.483	673.535
R	LINE A	6040.000	32.250	673.462	673.537
	BEAM 1	6040.000	31.000	673.481	673.556
	BEAM 2	6040.000	23.250	673.602	673.677
	BEAM 3	6040.000	15.500	673.723	673.798
	BEAM 4	6040.000	7.750	673.844	673.919
	BEAM 5	6040.000	0.000	674.011	674.665
	BEAM 6	6040.000	-7.750	673.844	673.919
	BEAM 7	6040.000	-15.500	673.723	673.798
	BEAM 8	6040.000	-23.250	673.602	673.677
	BEAM 9	6040.000	-31.000	673.481	673.556
	LINE B	6040.000	-32.250	673.462	673.537
S	LINE A	6050.000	32.250	673.434	673.525
	BEAM 1	6050.000	31.000	673.453	673.545
	BEAM 2	6050.000	23.250	673.574	673.666
	BEAM 3	6050.000	15.500	673.695	673.787
	BEAM 4	6050.000	7.750	673.816	673.908
	BEAM 5	6050.000	0.000	674.011	674.665
	BEAM 6	6050.000	-7.750	673.816	673.908
	BEAM 7	6050.000	-15.500	673.695	673.787
	BEAM 8	6050.000	-23.250	673.574	673.666
	BEAM 9	6050.000	-31.000	673.453	673.545
	LINE B	6050.000	-32.250	673.434	673.525
T	LINE A	6060.000	32.250	673.400	673.496
	BEAM 1	6060.000	31.000	673.420	673.516
	BEAM 2	6060.000	23.250	673.540	673.637
	BEAM 3	6060.000	15.500	673.661	673.757
	BEAM 4	6060.000	7.750	673.782	673.878
	BEAM 5	6060.000	0.000	674.011	674.665
	BEAM 6	6060.000	-7.750	673.782	673.878
	BEAM 7	6060.000	-15.500	673.661	673.757
	BEAM 8	6060.000	-23.250	673.540	673.637
	BEAM 9	6060.000	-31.000	673.420	673.516
	LINE B	6060.000	-32.250	673.400	673.496
U	LINE A	6070.000	32.250	673.360	673.448
	BEAM 1	6070.000	31.000	673.380	673.467
	BEAM 2	6070.000	23.250	673.500	673.588
	BEAM 3	6070.000	15.500	673.621	673.709
	BEAM 4	6070.000	7.750	673.742	673.830
	BEAM 5	6070.000	0.000	674.011	674.665
	BEAM 6	6070.000	-7.750	673.742	673.830
	BEAM 7	6070.000	-15.500	673.621	673.709
	BEAM 8	6070.000	-23.250	673.500	673.588
	BEAM 9	6070.000	-31.000	673.380	673.467
	LINE B	6070.000	-32.250	673.360	673.448

SPAN No.4

LINE	BEAM OR GIRDER	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
X	LINE A	6099.250	32.250	673.208	673.208
	BEAM 1	6099.250	31.000	673.227	673.227
	BEAM 2	6099.250	23.250	673.348	673.348
	BEAM 3	6099.250	15.500	673.469	673.469
	BEAM 4	6099.250	7.750	673.590	673.590
	BEAM 5	6099.250	0.000	674.011	674.011
	BEAM 6	6099.250	-7.750	673.590	673.590
	BEAM 7	6099.250	-15.500	673.469	673.469
	BEAM 8	6099.250	-23.250	673.348	673.348
	BEAM 9	6099.250	-31.000	673.227	673.227
	LINE B	6099.250	-32.250	673.208	673.208
Y	LINE A	6109.250	32.250	673.144	673.150
	BEAM 1	6109.250	31.000	673.163	673.169
	BEAM 2	6109.250	23.250	673.284	673.290
	BEAM 3	6109.250	15.500	673.405	673.411
	BEAM 4	6109.250	7.750	673.526	673.532
	BEAM 5	6109.250	0.000	674.011	674.011
	BEAM 6	6109.250	-7.750	673.526	673.532
	BEAM 7	6109.250	-15.500	673.405	673.411
	BEAM 8	6109.250	-23.250	673.284	673.290
	BEAM 9	6109.250	-31.000	673.163	673.169
	LINE B	6109.250	-32.250	673.144	673.150
Z	LINE A	6119.250	32.250	673.073	673.073
	BEAM 1	6119.250	31.000	673.093	673.093
	BEAM 2	6119.250	23.250	673.214	673.214
	BEAM 3	6119.250	15.500	673.335	673.335
	BEAM 4	6119.250	7.750	673.455	673.455
	BEAM 5	6119.250	0.000	674.011	674.011
	BEAM 6	6119.250	-7.750	673.455	673.455
	BEAM 7	6119.250	-15.500	673.335	673.335
	BEAM 8	6119.250	-23.250	673.214	673.214
	BEAM 9	6119.250	-31.000	673.093	673.093
	LINE B	6119.250	-32.250	673.073	673.073
AA	LINE A	6124.2500	32.2500	673.0357	673.0357
	BEAM 1	6124.2500	31.0000	673.0552	673.0552
	BEAM 2	6124.2500	23.2500	673.1761	673.1761
	BEAM 3	6124.2500	15.5000	673.2970	673.2970
	BEAM 4	6124.2500	7.7500	673.4179	673.4179
	BEAM 5	6124.2500	0.0000	674.0111	674.0111
	BEAM 6	6124.2500	-7.7500	673.4179	673.4179
	BEAM 7	6124.2500	-15.5000	673.2970	673.2970
	BEAM 8	6124.2500	-23.2500	673.1761	673.1761
	BEAM 9	6124.2500	-31.0000	673.0552	673.0552
	LINE B	6124.2500	-32.2500	673.0357	673.0357

End of North Approach Slab

DECK ELEVATIONS

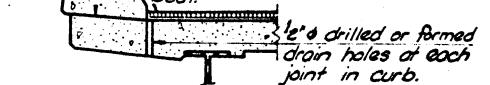
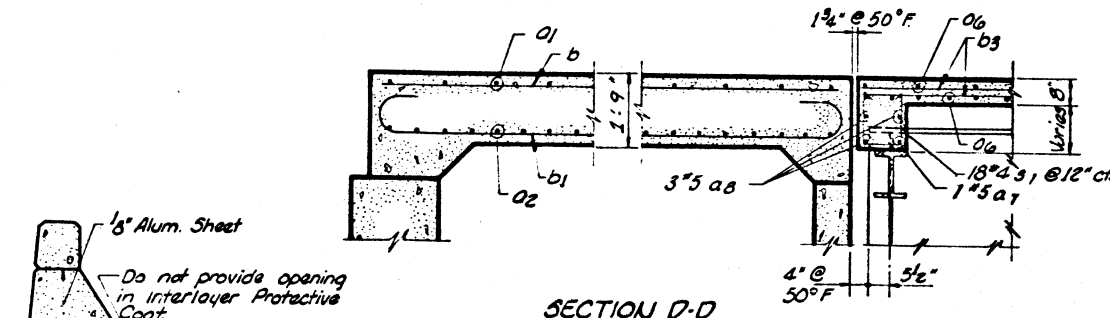
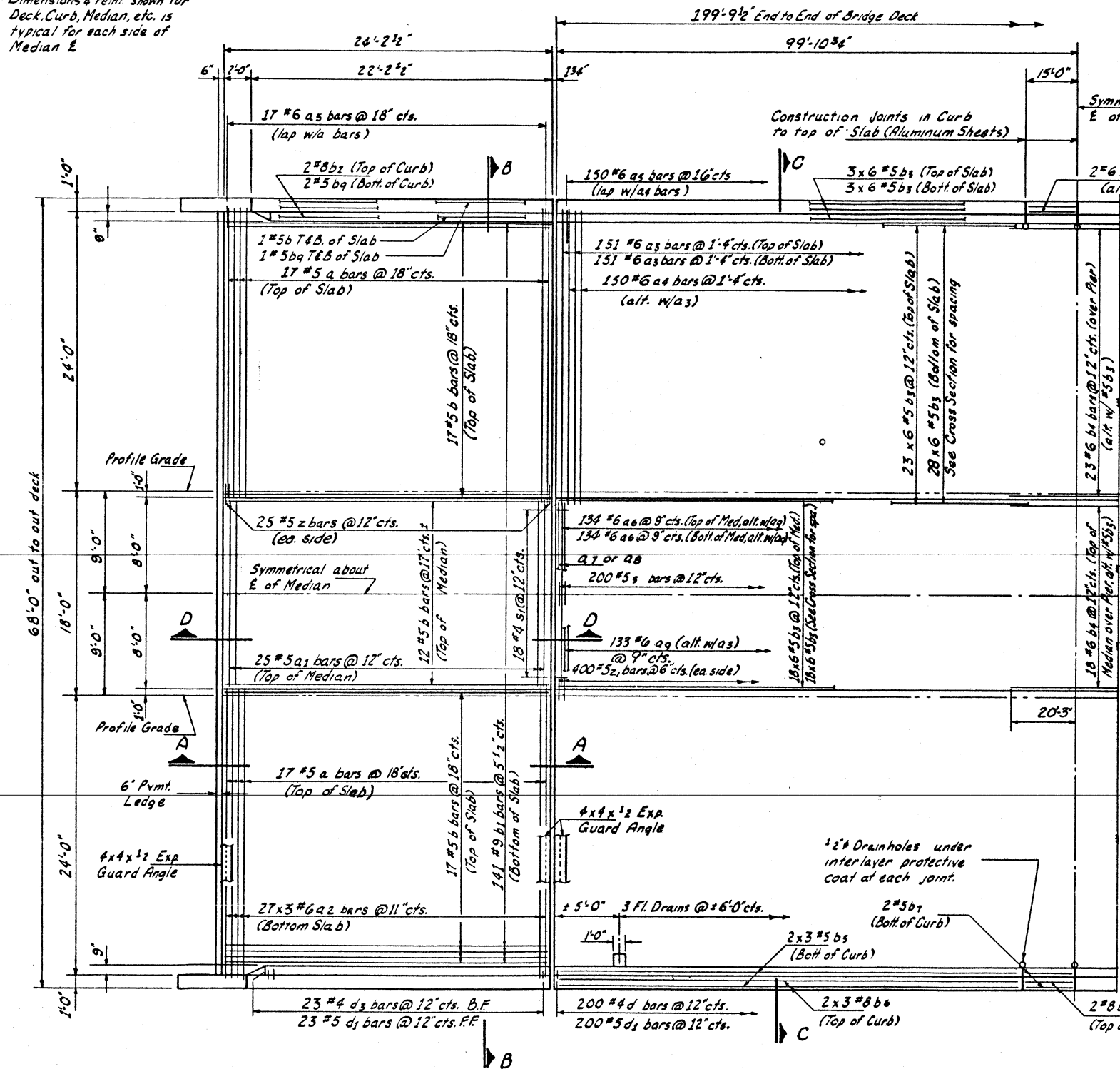
REVISIONS		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS RELOC. CH. 10 OVER FA 408 STA. 36+10.14 (FA 408) SANGAMON CO. HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS	DRAWN BY DATE SRK 7-72
1			CHECKED BY DATE 11/7-72
2			BOOK NUMBER
3			PROJECT NO. 2385-1
4			SHEET NO. 14
5			
6			
7			
8			
9			

Notes:
Dimensions & reinf. shown for Deck, Curb, Median, etc. is typical for each side of Median &

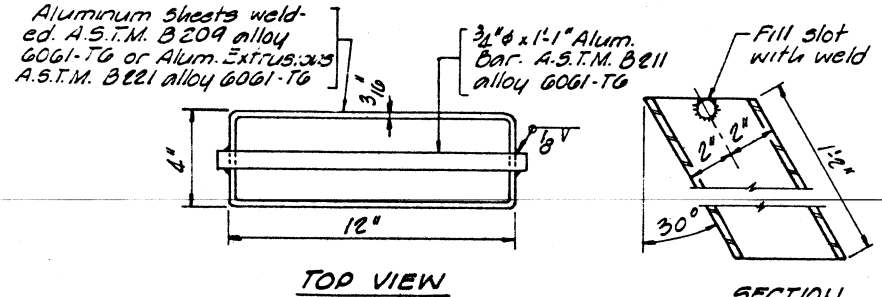
NOTE: Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
Minimum bar lap = 24 diameters.

Sheet No 5
of 15 Sheets

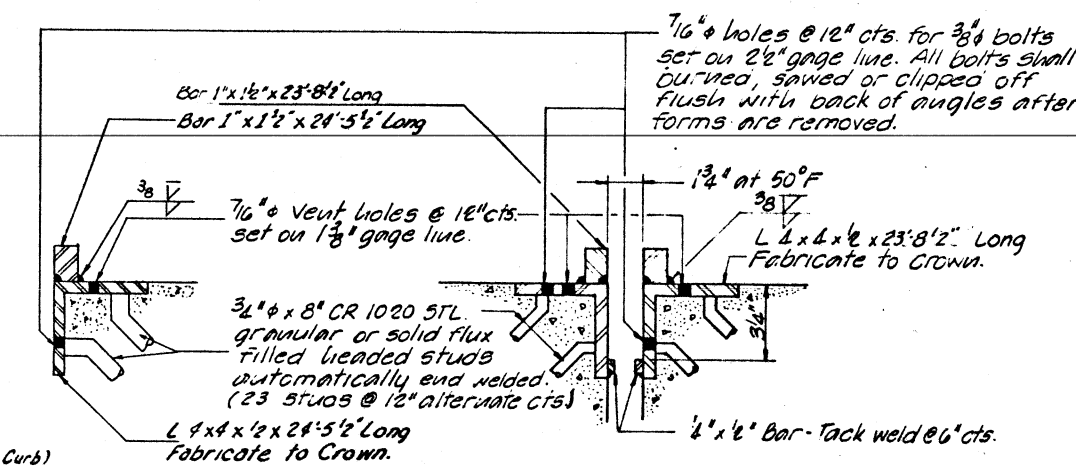
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
FA-408	84-9-24B	SANGAMON	36	15
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		



SECTION AT CURB JOINTS



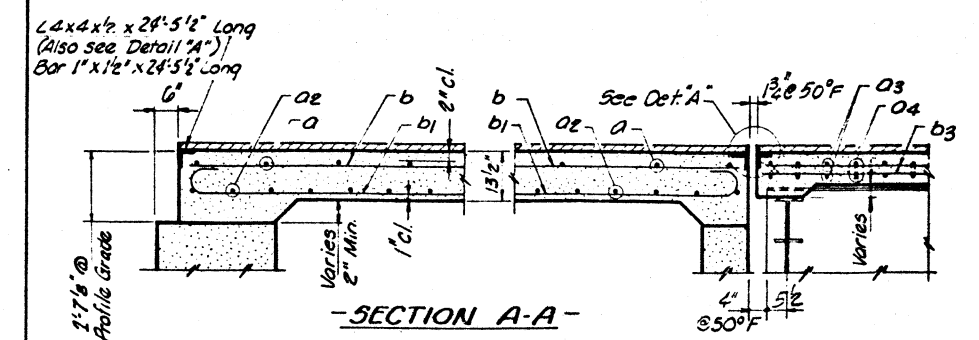
FLOOR DRAIN
Cost incidental to Class X Conc.



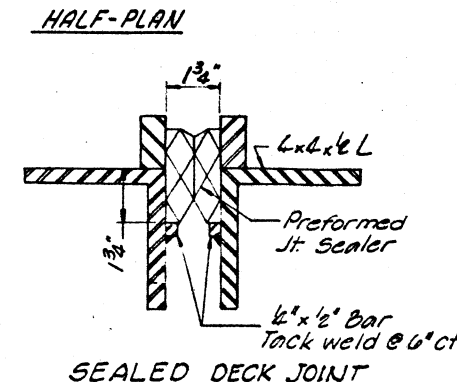
DETAIL A

BILL OF MATERIAL
SPANS 1,2,3&4

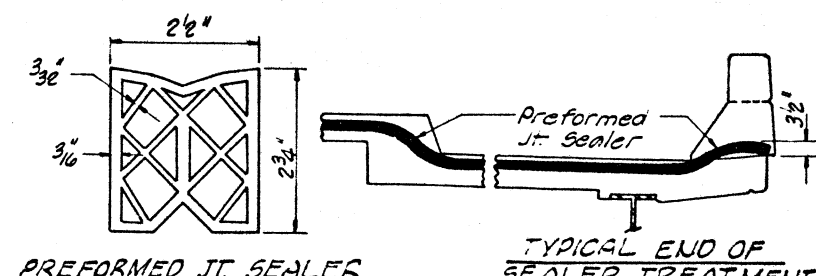
Bar	N ^o	Size	Length	Shape
a	68	#5	24'-0"	
a ₁	50	#5	15'-0"	
a ₂	162	#6	22'-5"	
a ₃	604	#6	26'-10"	
a ₄	300	#6	28'-1"	
a ₅	368	#6	4'-0"	
a ₆	268	#6	15'-6"	
a ₇	4	#5	7'-6"	
a ₈	6	#5	17'-9"	
a ₉	133	#6	16'-5"	
b	100	#5	24'-0"	
b ₁	282	#9	26'-6"	
b ₂	8	#8	21'-9"	
b ₃	860	#5	34'-4"	
b ₄	68	#6	40'-6"	
b ₅	24	#5	29'-0"	
b ₆	24	#8	29'-0"	
b ₇	8	#5	14'-9"	
b ₈	8	#8	14'-9"	
b ₉	16	#5	21'-9"	
d	400	#4	4'-7"	L
d ₁	492	#5	3'-11"	L
d ₃	92	#4	6'-4"	L
s	200	#5	4'-10"	□
s ₁	36	#4	4'-11"	□
z	100	#5	2'-3"	
z ₁	800	#5	2'-0"	
Reinforcement Bars		Lbs.	130,180	
Class 'X' Concrete		Cu. Yds.	561.3	
Structural Steel		L.S.	L.S.	



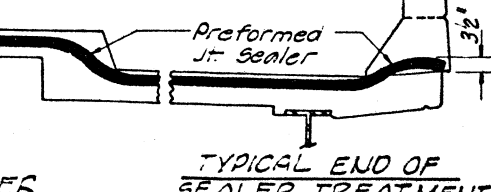
SECTION A-A



HALF-PLAN
SEALED DECK JOINT



PREFORMED JT. SEALER



TYPICAL END OF SEALER TREATMENT

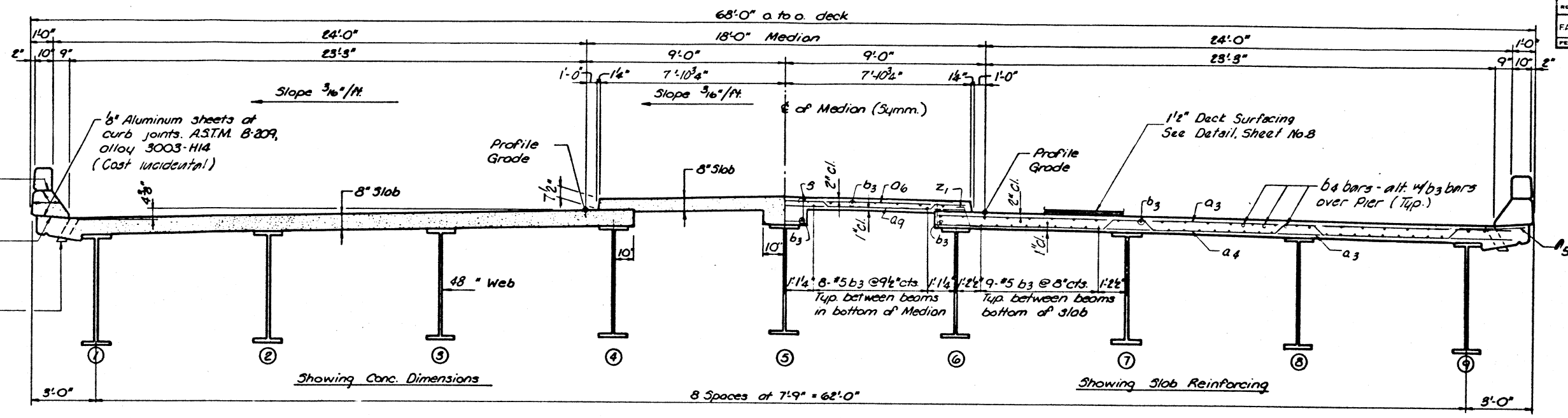
CONCRETE DECK

REVISIONS	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	DRAWN BY DATE SKK 3-72
8/76 GSH	RELOC. C.H. 10 OVER FA. 408 FA. 408 SEC. 84-9-24B S-2.36+10.14 (FA. 408)	SEAL BY DATE KJF 7-72
	SANGAMON Co.	PROJECT NO. 2385-1
	HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS	SHEET NO. 15

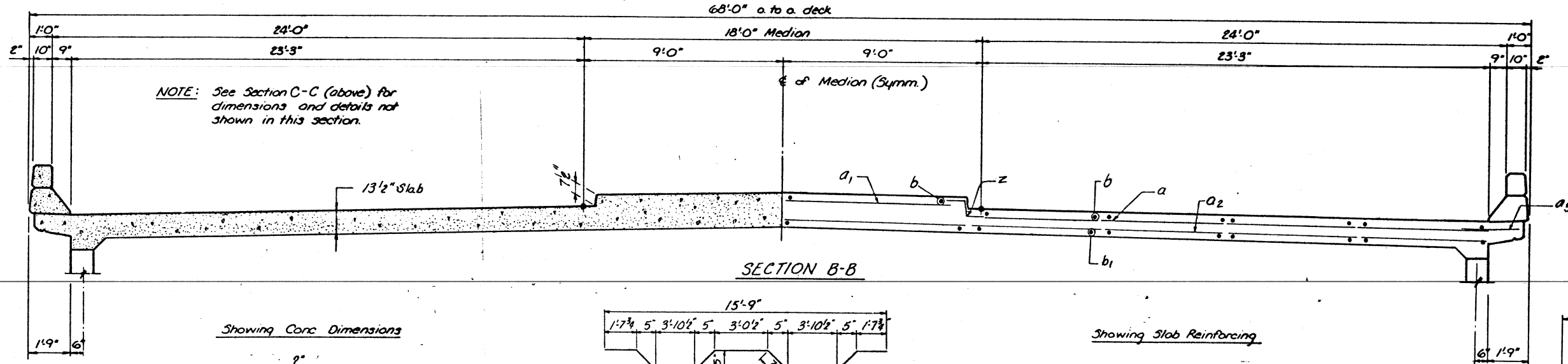
NOTE: All edges shall have 3/4" chamfers.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
FA-408	84-9-2HB	SANGAMON	36
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	

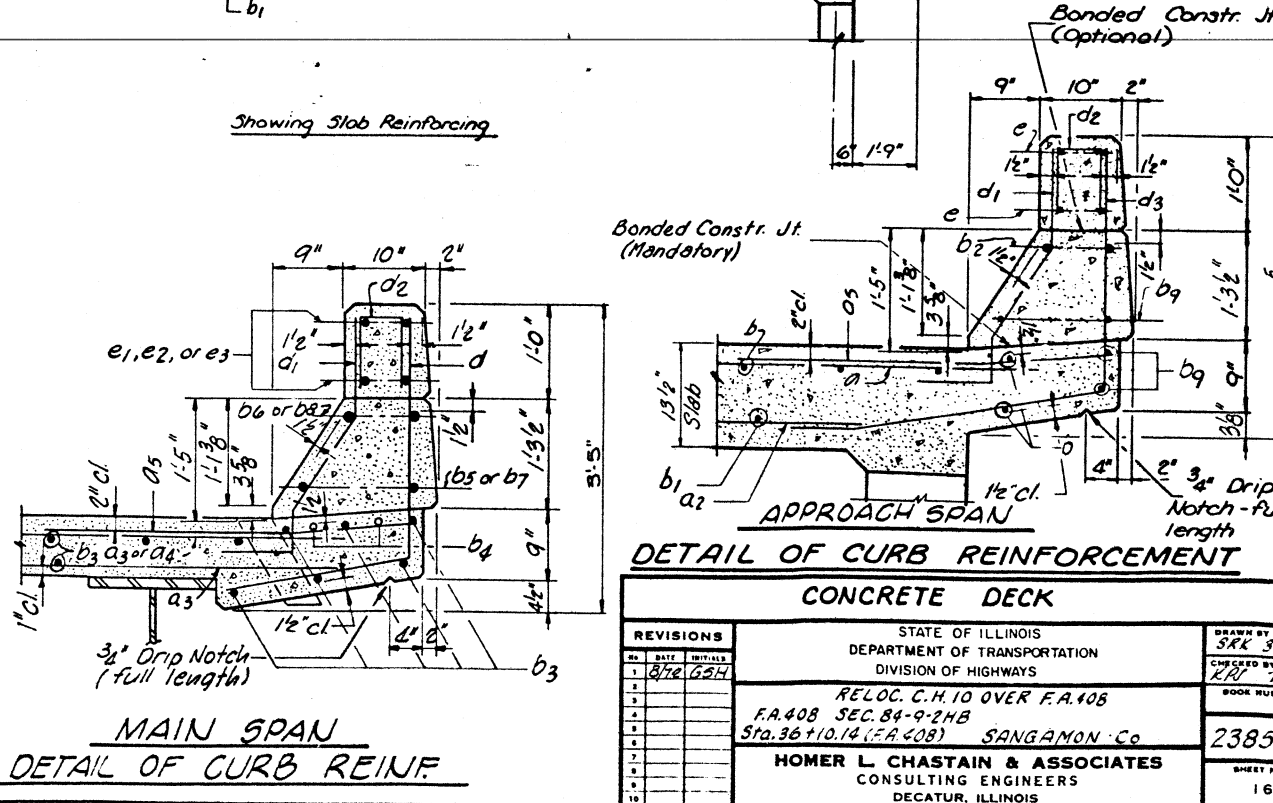
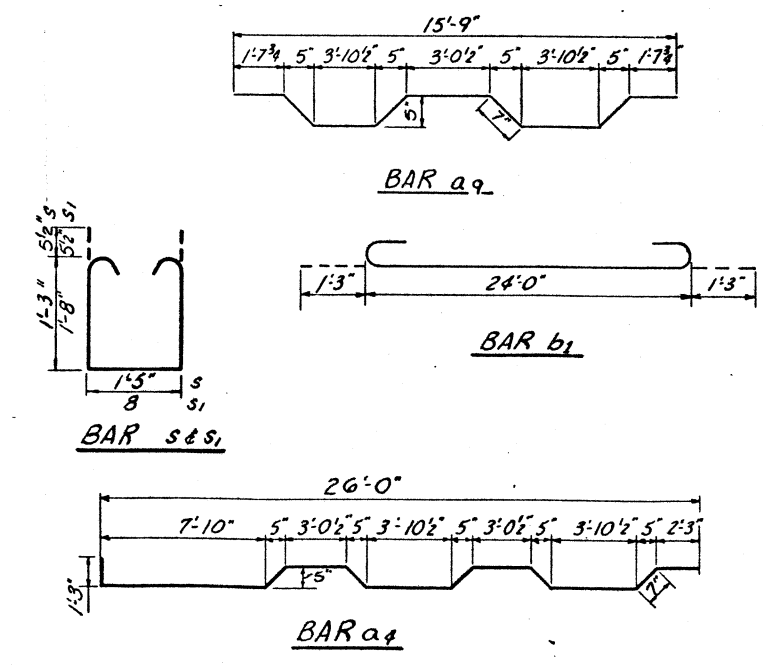
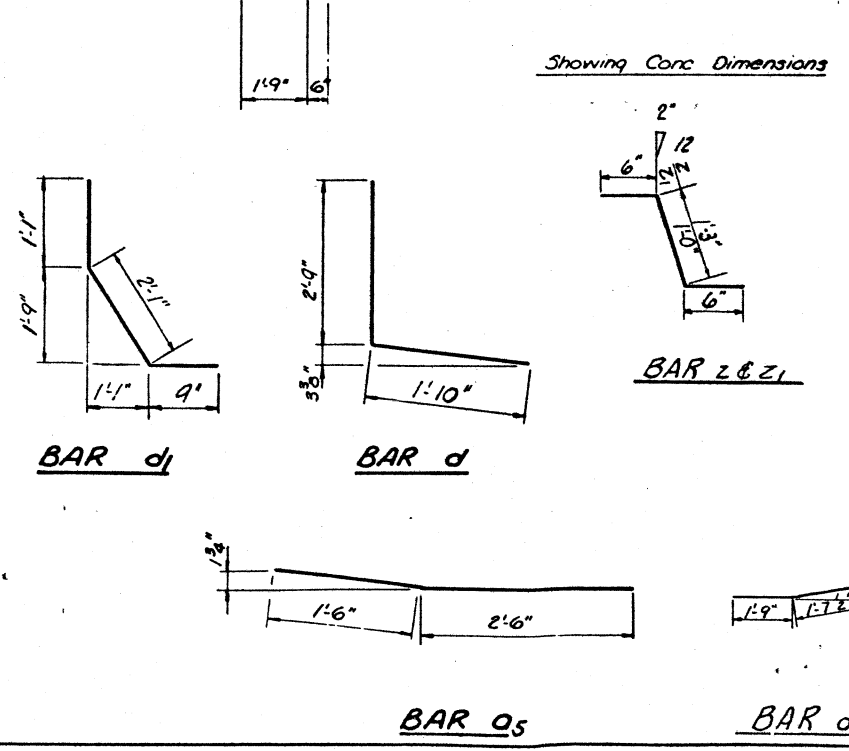
Sheet No. 6 of 15 Sheets



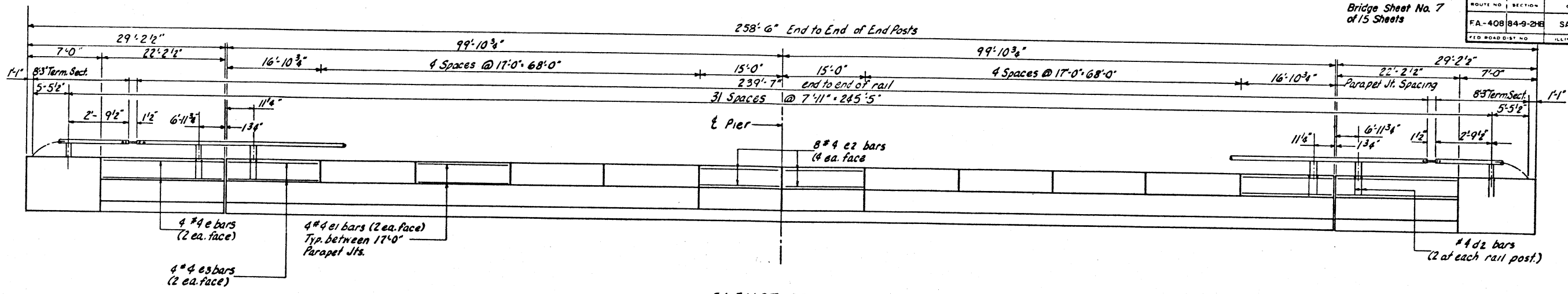
SECTION C-C



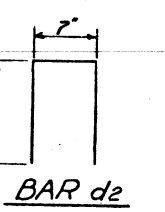
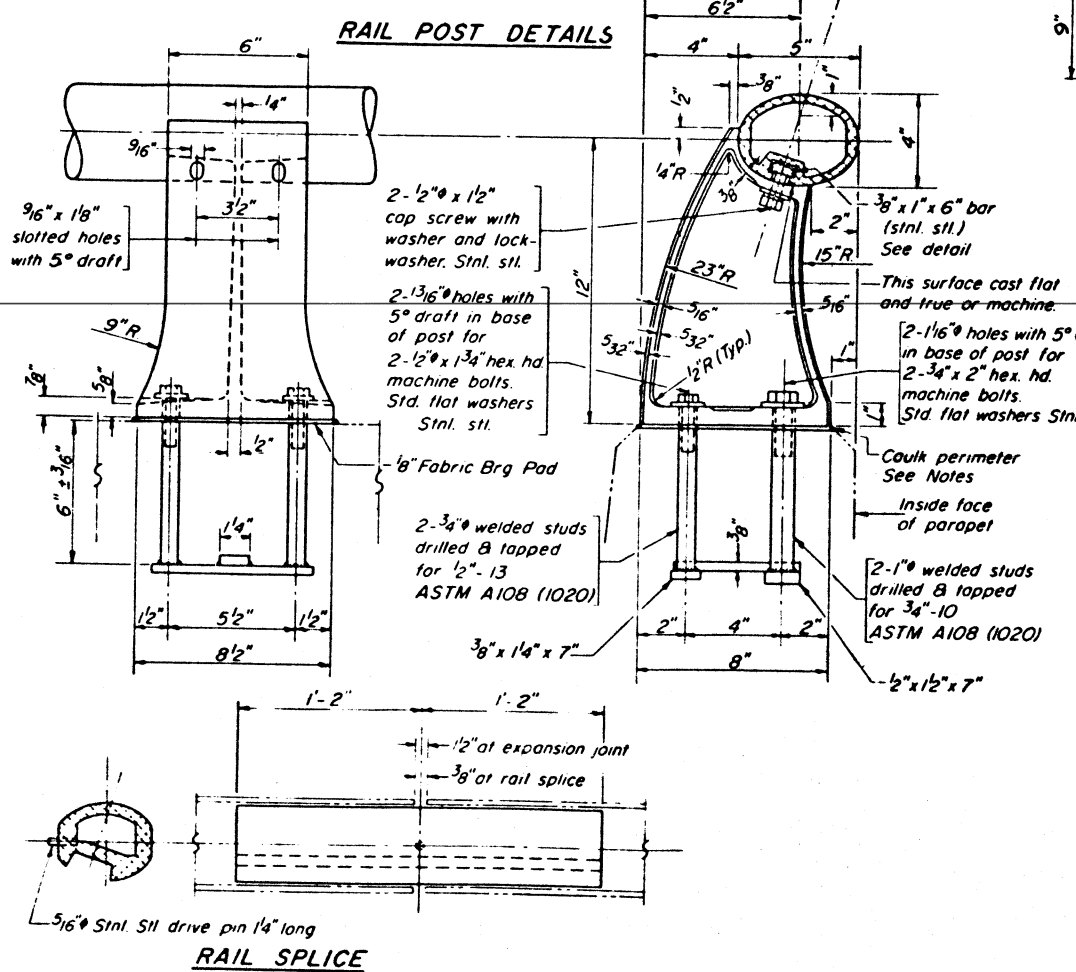
SECTION B-B



REVISIONS			CONCRETE DECK	
NO.	DATE	INITIALS	STATE OF ILLINOIS	
1	8/22/65	BSH	DEPARTMENT OF TRANSPORTATION	
2			DIVISION OF HIGHWAYS	
3			RELOC. C.H. 10 OVER F.A. 408	
4			F.A. 408 SEC. 84-9-2HB	
5			Sta. 36+10.14 (FA 408) SANGAMON Co	
6			2385-	
7			HOMER L. CHASTAIN & ASSOCIATES	
8			CONSULTING ENGINEERS	
9			DECATUR, ILLINOIS	
10			SHEET NO. 16	

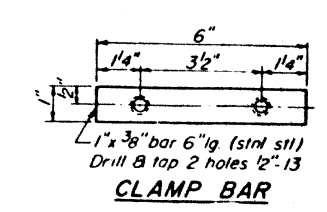
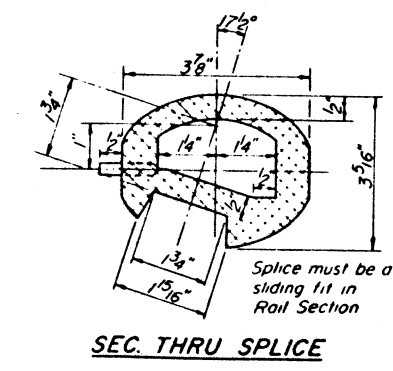
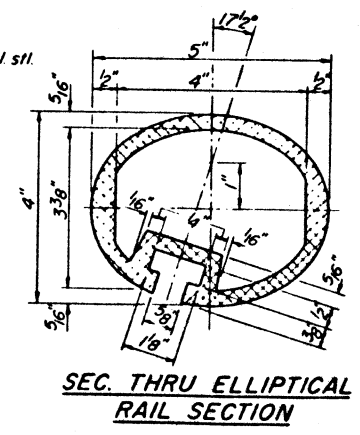
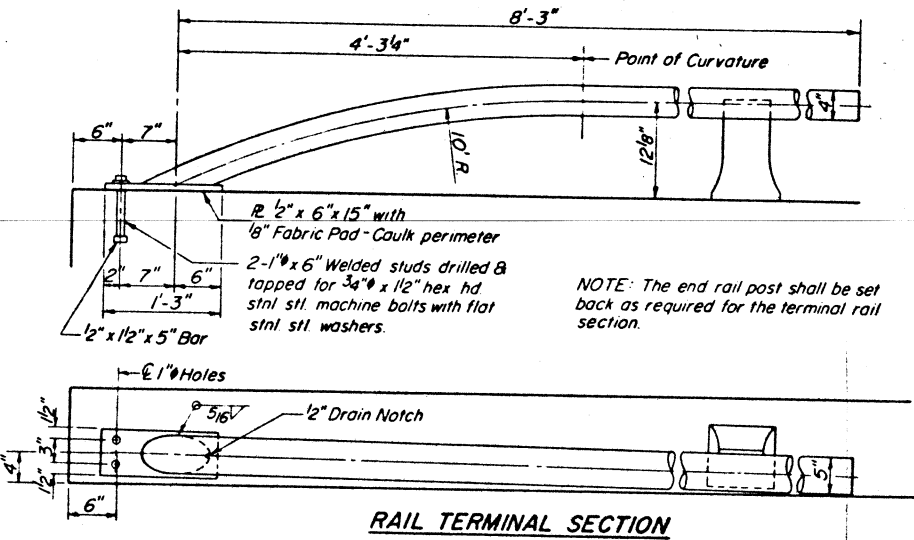
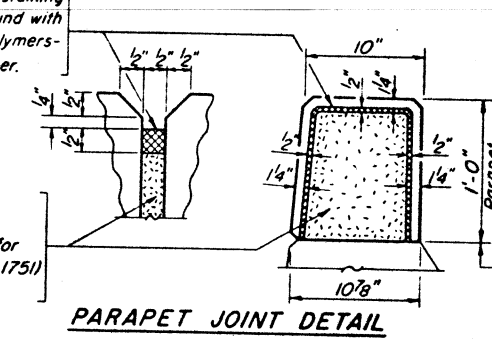


-ELEVATION-



Two component non-staining gray sealing compound with polysulfide liquid polymers - gun grade with primer.

1/2" Preformed Cork Asphalt Joint Filler. (meets qualifications for ASTM: Designation D 1751) Cost incidental.



NOTES:
 All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.
 All joints in rail shall be spliced per detail.
 Provide 1-1/8" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.
 Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.
 Aluminum alloy rail shall conform to ASTM B 221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.

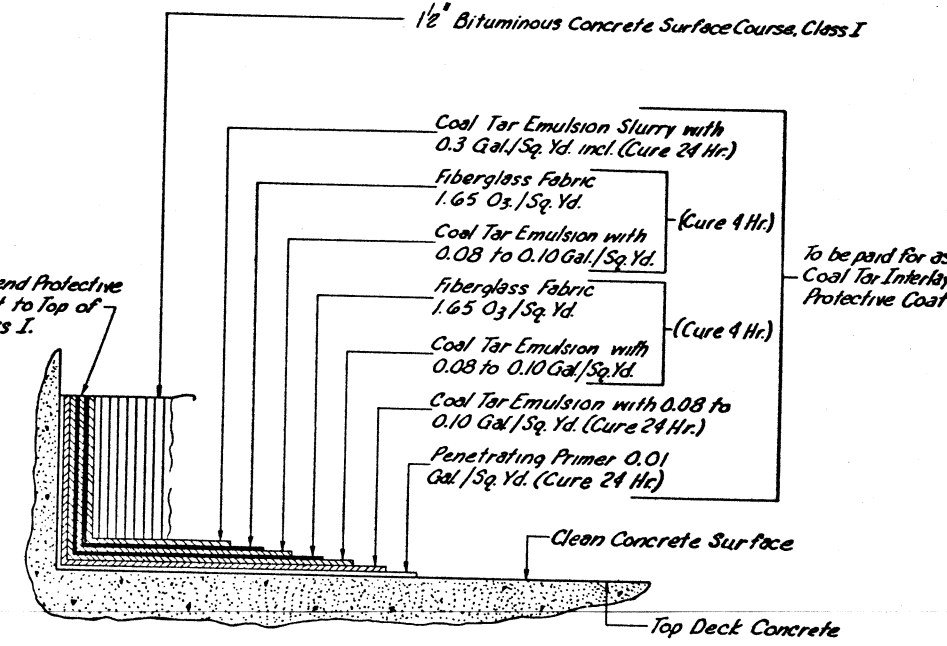
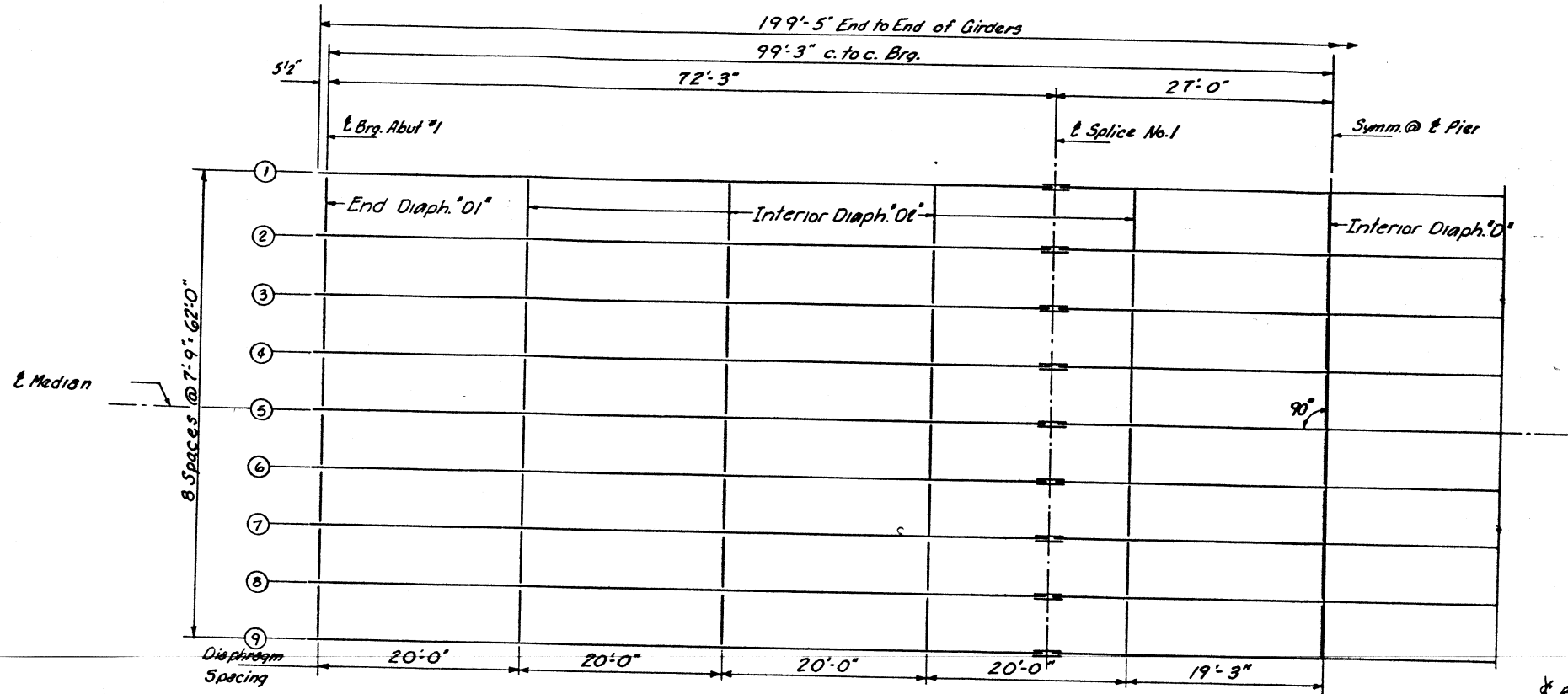
PARAPETS & RAILS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d2	128	#4	2'-1"	□
e	16	#4	22'-0"	—
e1	64	#4	16'-9"	—
e2	32	#4	14'-9"	—
e3	16	#4	16'-7"	—
Reinforcement Bars		Lbs.	1620	
Class X Concrete		Cu Yds.	15.7	
Aluminum Railing		L in Ft.	513	

ALUMINUM RAILING

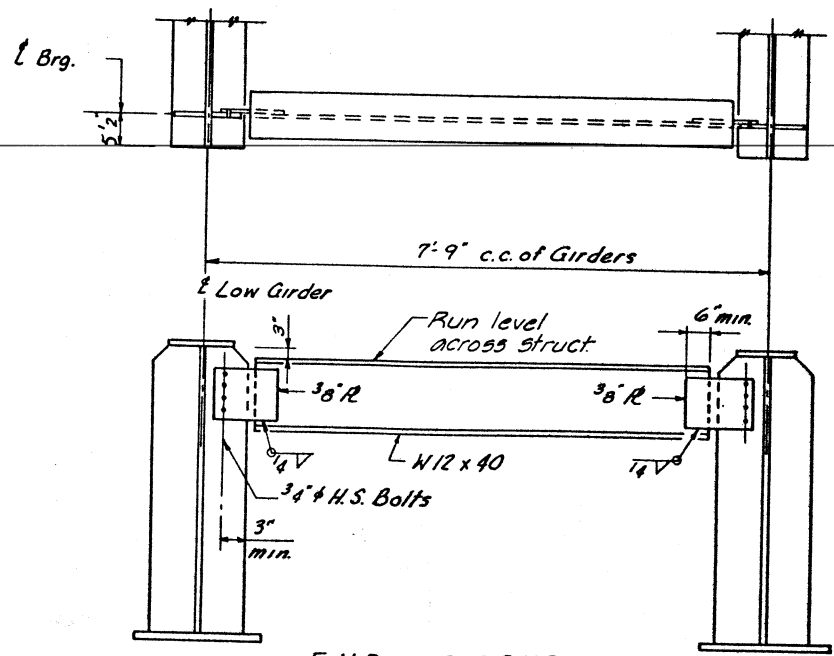
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	DRAWN BY DATE SKK 3-72
RELOC. CH. 10 OVER FA. 408 FA. 408 SEC. 84-9-2HB Sta. 36+10.14 (FA. 408)	PROJECT NO. 2385-1
SANGAMON Co.	
HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS	SHEET NO. 17

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA-408	84-9-2HB	SANGAMON	36	18
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

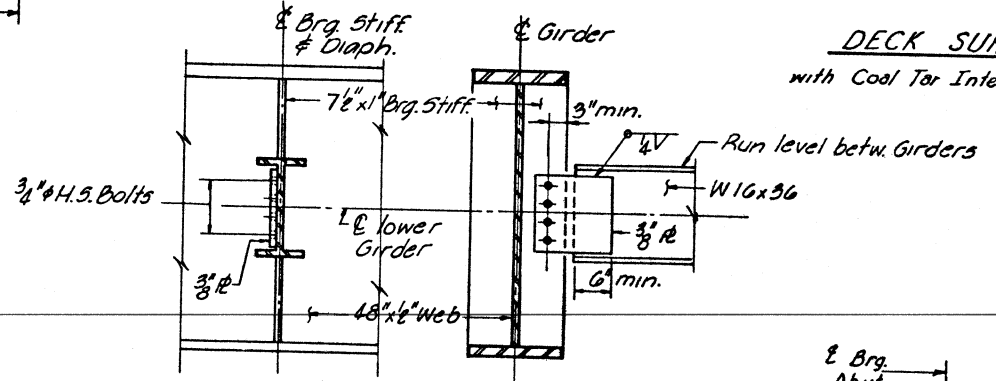


FRAMING PLAN
All end Diaphragm MK D1
All interior Diaphragm MK D2 or D3

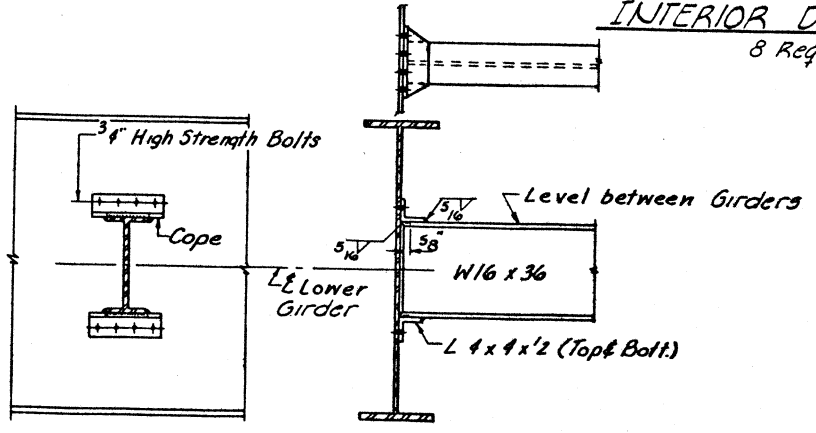
DECK SURFACING
with Coal Tar Interlayer Protective Coat



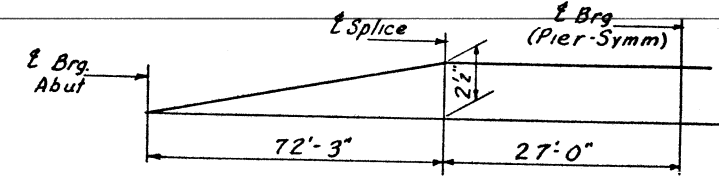
END DIAPHRAGM
16 Required - MK D1



INTERIOR DIAPHRAGM
8 Required - MK D2



INTERIOR DIAPHRAGM
64 Required - MK D2



BEAM FABRICATION DIAGRAM

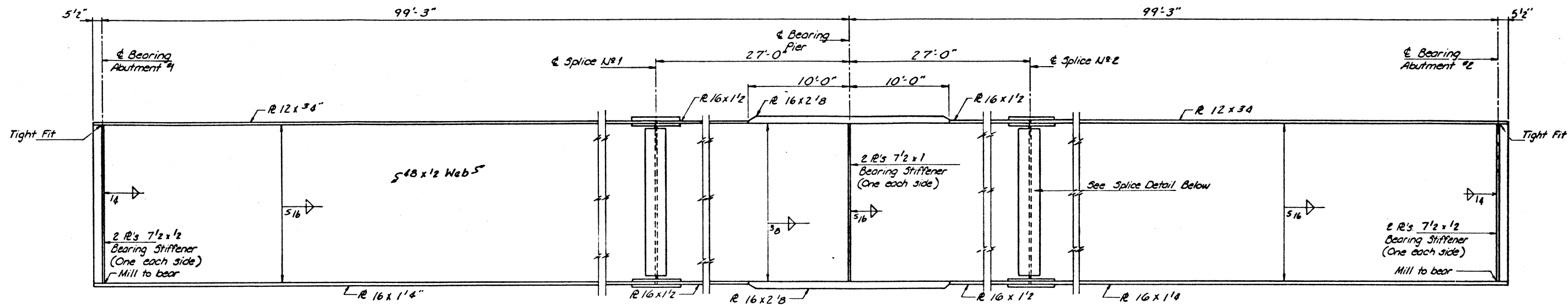
TOP OF WEB ELEVATIONS *									
GIRDER	1	2	3	4	5	6	7	8	9
E Brg. Abut #1	673.46	673.58	673.70	673.82	673.94	673.82	673.70	673.58	673.46
E Splice #2 & E Pier	673.66	673.79	673.91	674.03	674.15	674.03	673.91	673.79	673.66
E Brg. Abut. #2	673.46	673.58	673.70	673.82	673.94	673.82	673.70	673.58	673.46

* For Fabrication Only

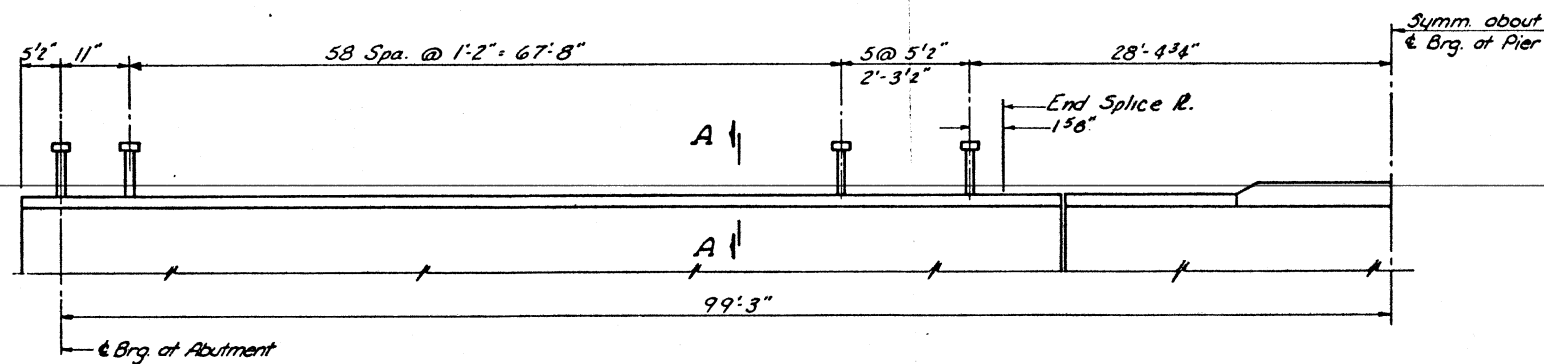
REVISIONS		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS		DRAWN BY DATE SRK 4-72	
1	8/7/72	RELOC. C.H. 10 OVER FA 408 FA 408 SEC. 84-9-2HB Sta. 36+10.14 (FA 408) SANGAMON CO.		PROJECT NO. 2385-1 SHEET NO. 18	
2					
3					
4					
5					
6					
7					
8					
9					
10					

STRUCTURAL STEEL DETAILS

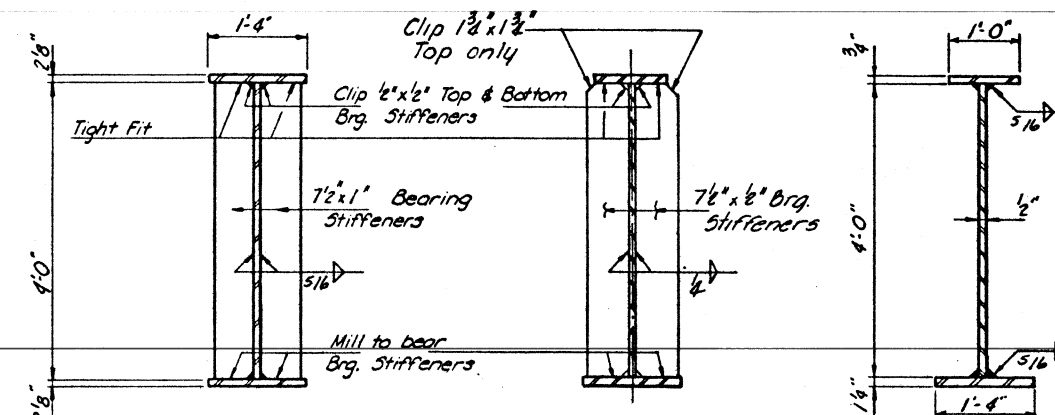
HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS



GIRDER ELEVATION



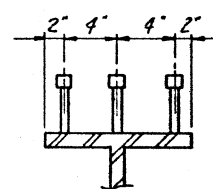
SHEAR CONNECTOR ELEVATION
(390 stud shear connectors req'd. ea girder)



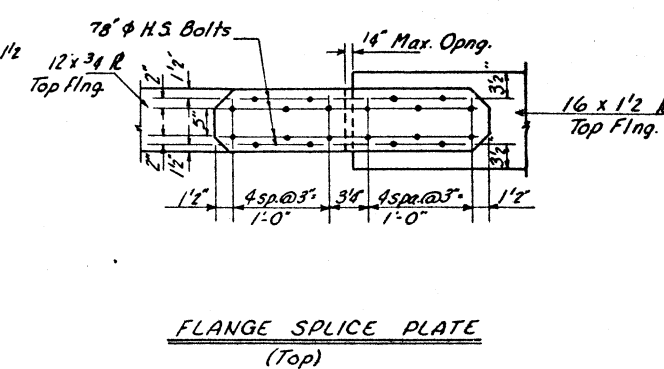
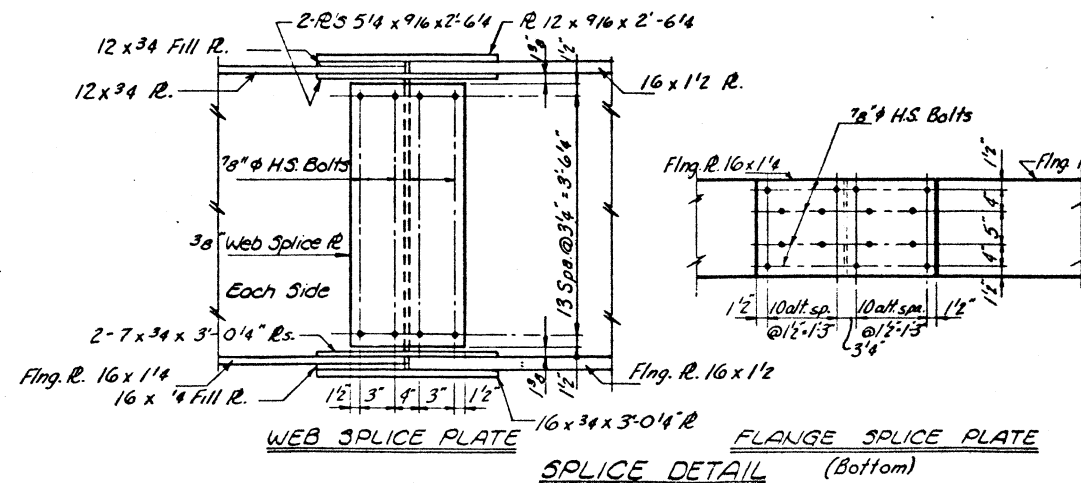
SECTION AT PIER

SECTION AT ABUTMENT

TYPICAL GIRDER SECTION
(Except From Splice to Pier)



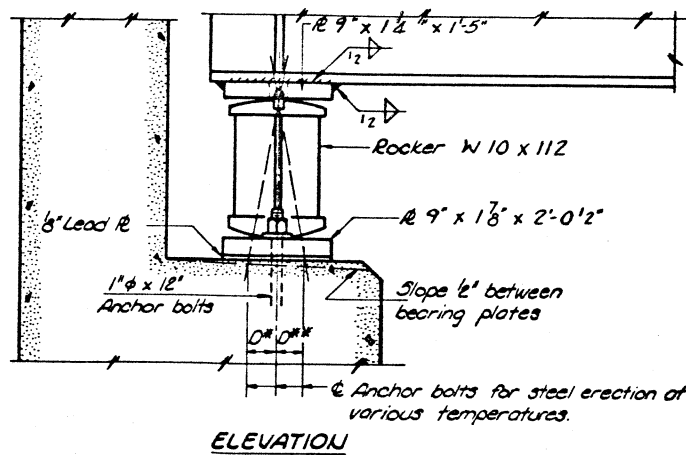
SECTION A-A
3/4" x 4" CR 1020 steel, granular or solid, flux-filled, headed studs. Automatically end welded. 3510 studs required.



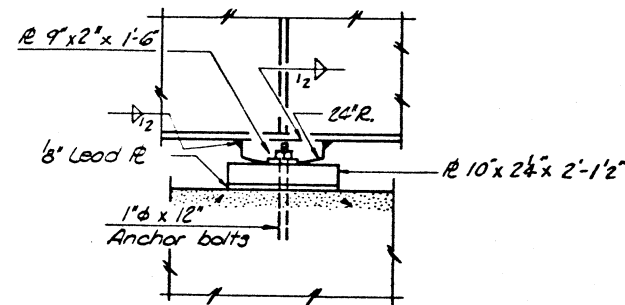
FLANGE SPLICE PLATE (Top)

REVISIONS			STRUCTURAL STEEL	
No.	DATE	INITIALS	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
1	8/74	GSH	RELOC. C.H. 10 OVER FA 408 FA 408 SEC. 84-9-2HB Sta. 36+10.14 (FA 408)	
2			SANGAMON Co.	
3			HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS	
4			DRAWN BY DATE SRK 3-72	
5			CHECKED BY DATE RPL 7-72	
6			BOOK NUMBER 2385-1	

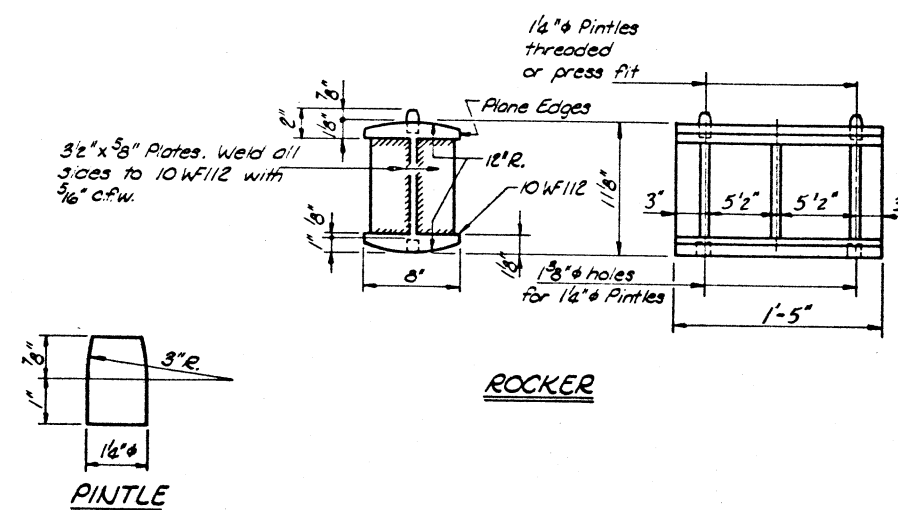
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
FA-408	84-9-2HB	SANGAMON	36
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	



ELEVATION

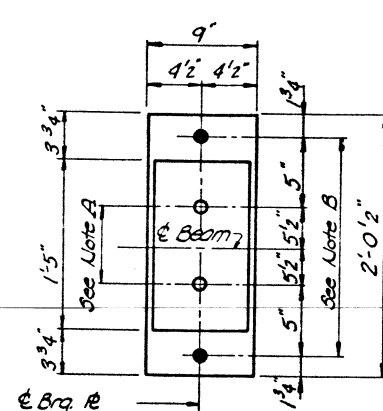


ELEVATION



ROCKER

PINDLE

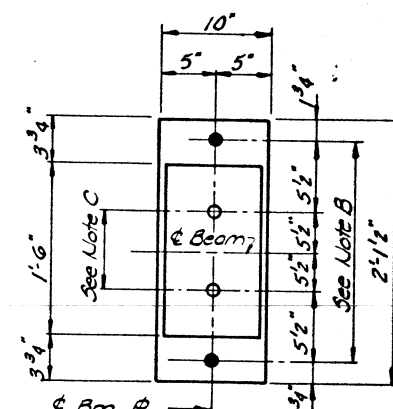


PLAN AT ABUTMENT

NOTE A
1/8" holes - 1" deep in top R for pindles. Thread or press fit pindles into bottom R.

NOTE B
1/2" holes for 1" anchor bolts. 2" x 2" x 3/16" R washers under nut.

NOTE C
1/8" holes 1" deep in top R only for 1/4" pindles.



PLAN AT PIER

NOTE: BEARING SEAT ADJUSTMENT

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of ± 1/8". Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8" adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

- a) D* (Side of brg away from fixed brg.)
D* = 8" per each 100' of expansion for every 15° below the normal temperature of 50°F.
- D** (Side of brg toward fixed brg.)
D** = 8" per each 100' of expansion for every 15° above the normal temperature of 50°F.
- b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

MOMENT TABLE - Summ Composite 2 Span (Composite in Positive Moment Areas Only)

INTERIOR GIRDER MOMENT TABLE		
	0.4 Sp. 1	Pier
I ₃ (in ⁴)	20678	47346
I _c (in ⁴)	54084	
S ₃ (in ³)	1030	1812
S _c (in ³)	1397	
Q (k/ft)	.997	.997
M _Q (k)	629.1	1346.4
F ₃ Q (k/ft)	7.30	8.90
S ₃ Q (k/ft)	.490	.490
M ₃ Q (k)	352.2	626.4
M ₆ (k)	862.0	795.0
M _{imp} (k)	191.0	178.4
TOTAL (k)	1405.0	1599.8
F ₃ + S ₃ Q (k/ft)	12.10	10.60
F ₃ TOTAL (k/ft)	19.35	19.51
VR (k)	62.4	

REACTION TABLE

INTERIOR GIRDER REACTION TABLE		
	ABUTMENT	PIER
R ₂ (k)	54.1	189.6
R ₄ + S ₃ Q (k)	49.6	78.2
Imp. (k)	11.1	17.4
R ₂ TOTAL (k)	114.8	285.2

I₃ and S₃ are the moment of inertia and section modulus of the steel section.
I_c and S_c are the moment of inertia and section modulus of the composite section used in computing I₃.
VR is the maximum ± Impact shear range.

BEARING DETAILS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

RELOC. C.A. 10 OVER FA. 408
FA 408 SEC. 84-9-2HB
Sta. 36+10.14 (FA. 408)

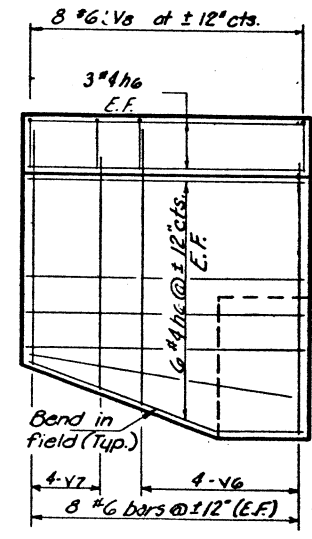
SANGAMON Co.

HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS

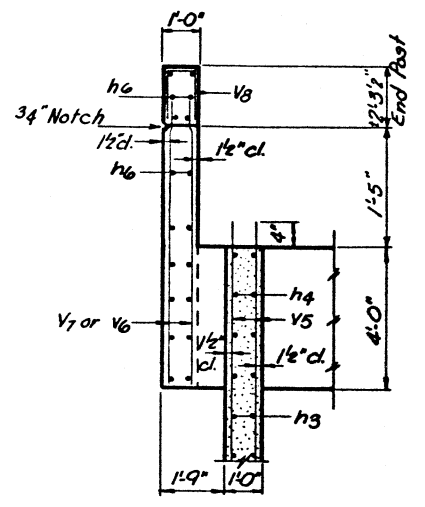
REVISIONS
1 8/28/54 GSH

DRAWN BY: SJK 3-
CHECKED BY: KPP 7-
BOOK NUMBER:
PROJECT NO.: 2385-
SHEET NO.: 20

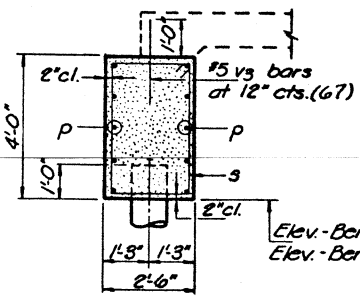
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
FA-408	84-9-2HB	SANGAMON	36	21
FED. ROAD DIST. NO.	ILLINOIS PROJECT			



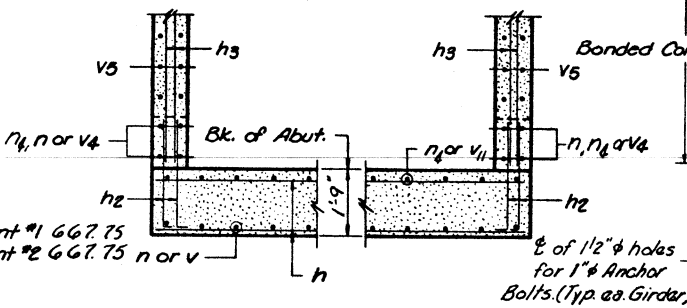
- WING WALL REINFORCEMENT -



- SECTION D-D -



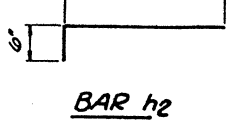
- SECTION B-B -



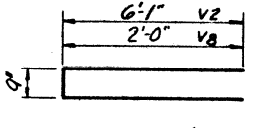
- SECTION E-E -

APPR. BENT - PILE DATA
Type - Concrete
Capacity - 35.0 T
Est. Length - 41'-0"
N^o Req'd. - 22 (Incl. 1 Test Pile at App. Bent #1 only)

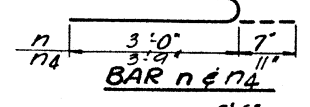
ABUT. - PILE DATA
Type - Concrete
Capacity - 35.0 T
Est. Length - 25'-0"
N^o Req'd. - 56 (Incl. 1 Test Pile at Abut. #2 only)



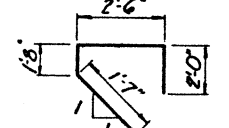
BAR h2



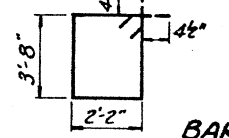
BARS v2 & v8



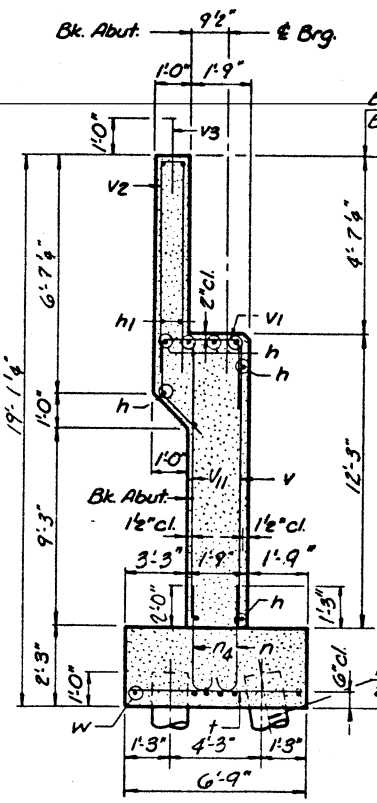
BAR n & n4



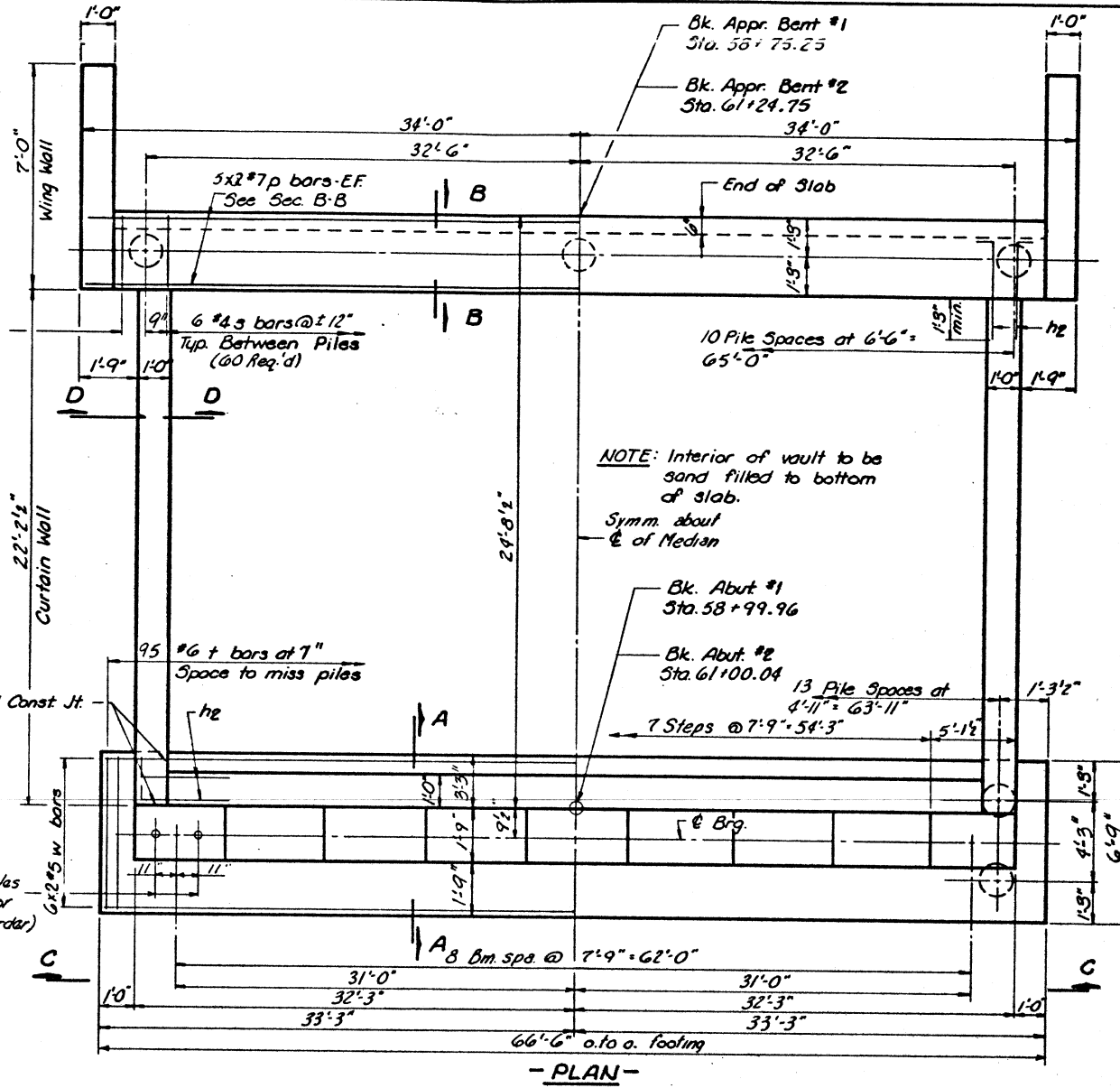
BAR v1



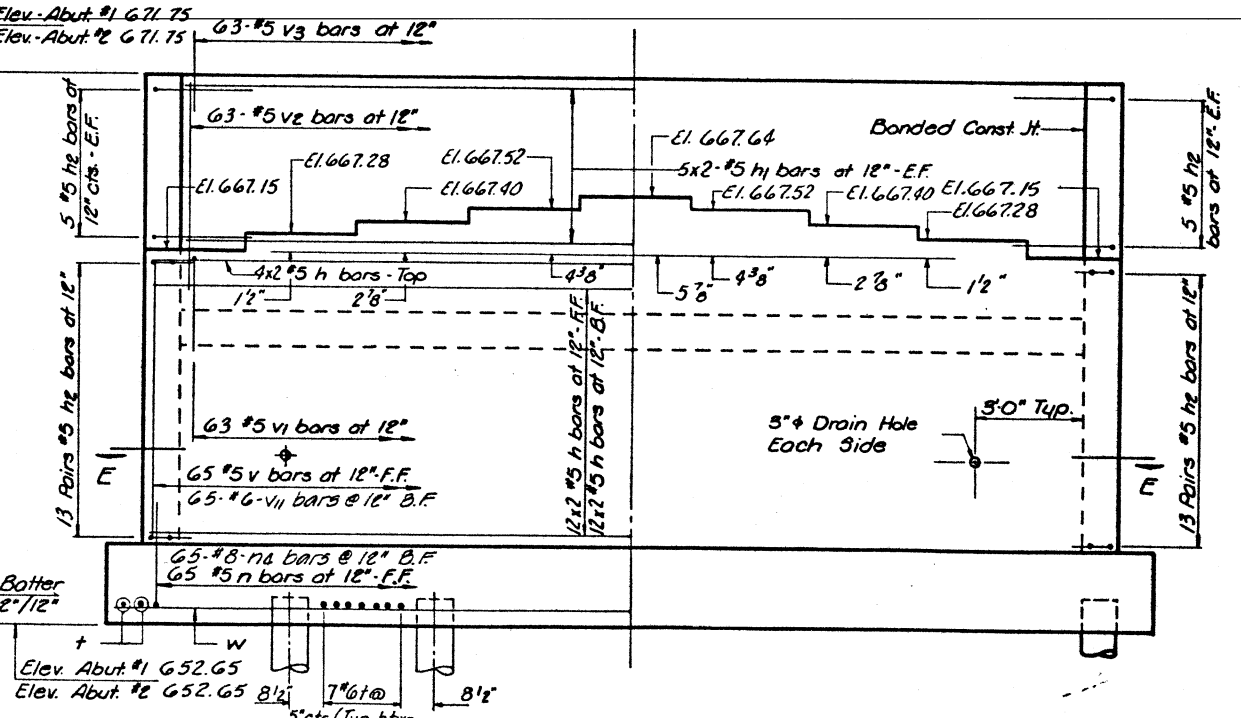
BAR s



- SECTION A-A -



- PLAN -



- VIEW C-C -

2 ABUTMENTS
BILL OF MATERIAL

BAR	N ^o	SIZE	LENGTH	SHAPE
h	112	#5	32'-10"	—
h1	80	#5	31'-10"	—
h2	184	#5	4'-6"	—
h3	36	#4	2'-4"	—
h4	40	#4	22'-0"	—
h5	8	#6	24'-2"	—
h6	72	#4	6'-9"	—
n	146	#5	3'-7"	—
n4	186	#8	4'-8"	—
p	40	#7	34'-10"	—
s	124	#4	12'-5"	—
t	190	#6	6'-6"	—
v	130	#5	12'-0"	—
v1	126	#5	7'-9"	—
v2	126	#5	12'-11"	—
v3	260	#5	2'-3"	—
v4	32	#4	17'-0"	—
v5	76	#4	17'-6"	—
v6	32	#4	7'-6"	—
v7	32	#4	5'-6"	—
v8	32	#4	4'-9"	—
v11	130	#6	12'-0"	—
w	24	#5	33'-10"	—
REINFORCEMENT BARS			LBS.	27020
CLASS "X" CONCRETE			CU. YDS.	298.6
Concrete Piles			Lin. Ft.	2236
Test Piles (Concrete)			Eq.	2

ABUTMENTS

NO.	DATE	INITIALS	REVISIONS
1	8/26	GBH	
2			
3			
4			
5			
6			
7			
8			
9			
10			

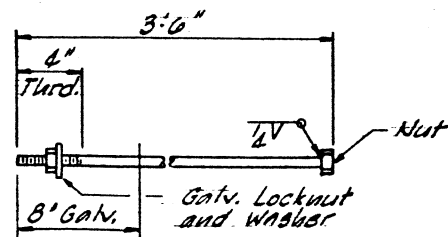
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

RELOC. C.H.10 OVER FA 408
FA 408 SEC. 84-9-2HB
Sta. 36+10.14 (FA 408) SANGAMON COUNTY

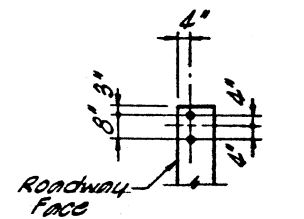
HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS

DRAWN BY: SRK 6-72
CHECKED BY: RPH 2-72
PROJECT NO: 2385-1
SHEET NO: 21

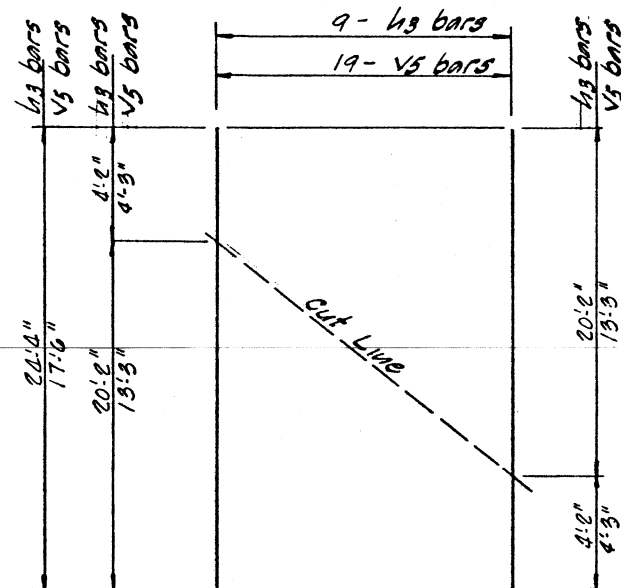
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA-408	84-9-2HB	SANGAMON	36	22
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		



DETAIL OF 1" ANCH. BOLT
(Cost incidental to Br. Struct.)

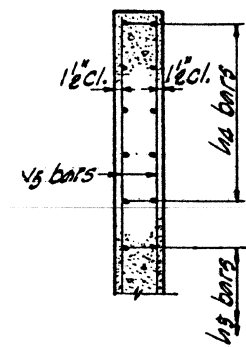


VIEW A-A



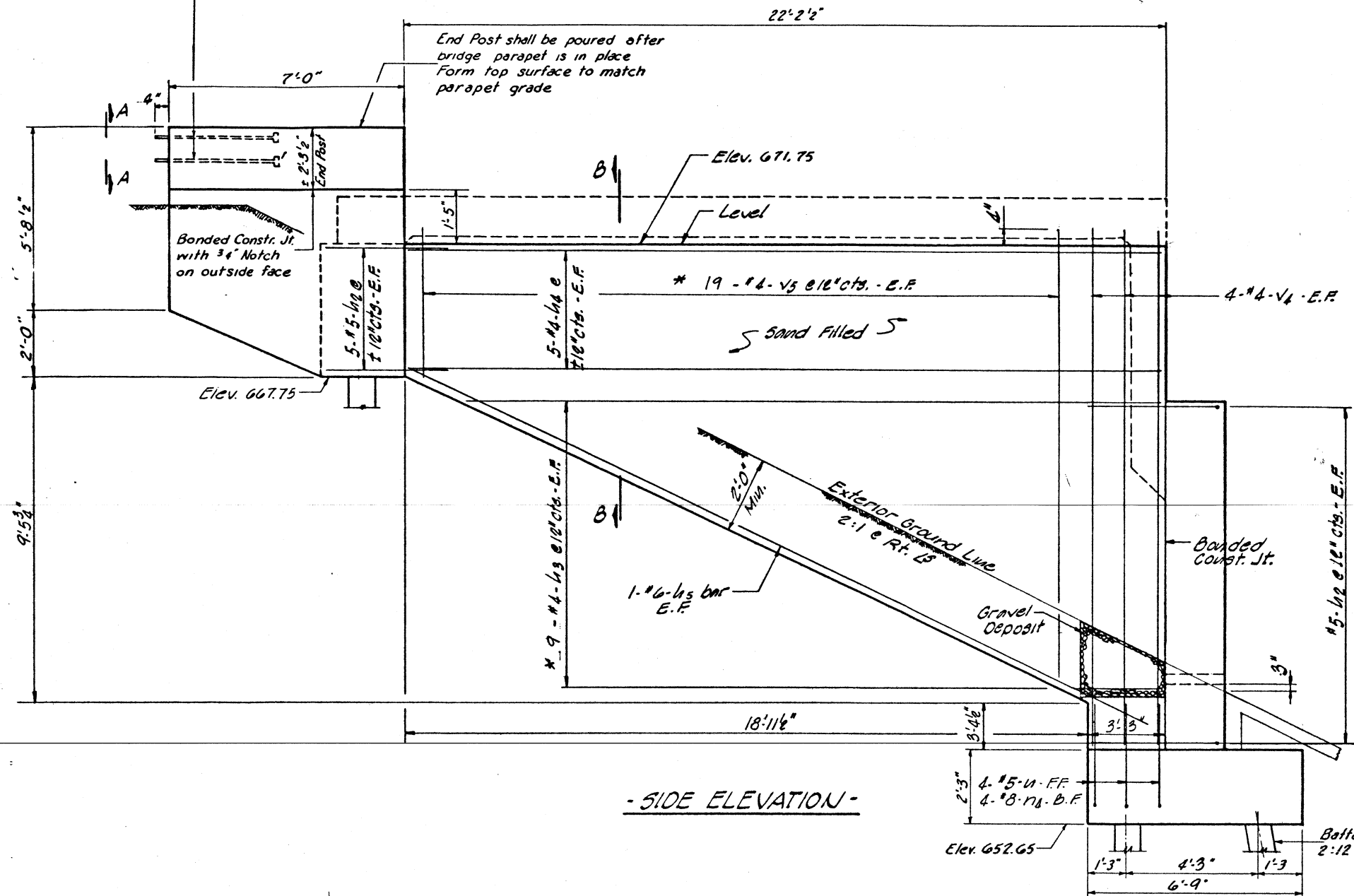
FIELD CUTTING DIAGRAM

* Order $1/3$ and $1/5$ bars full length. Cut to fit as shown and use remainder of bars in other face.



SECTION B-B

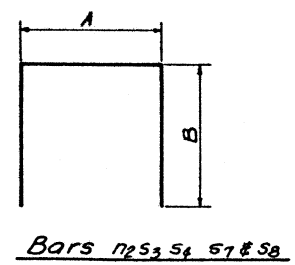
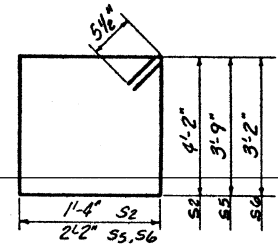
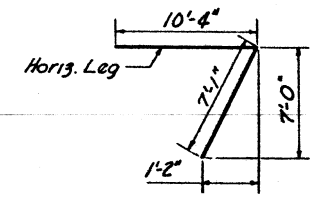
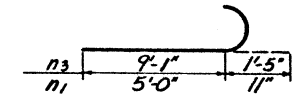
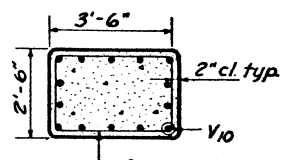
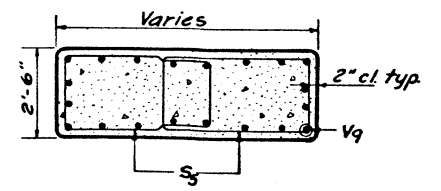
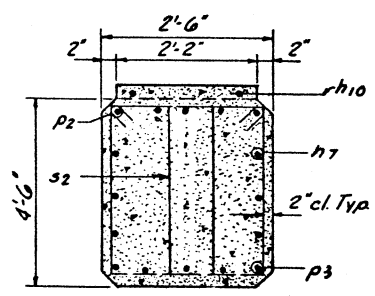
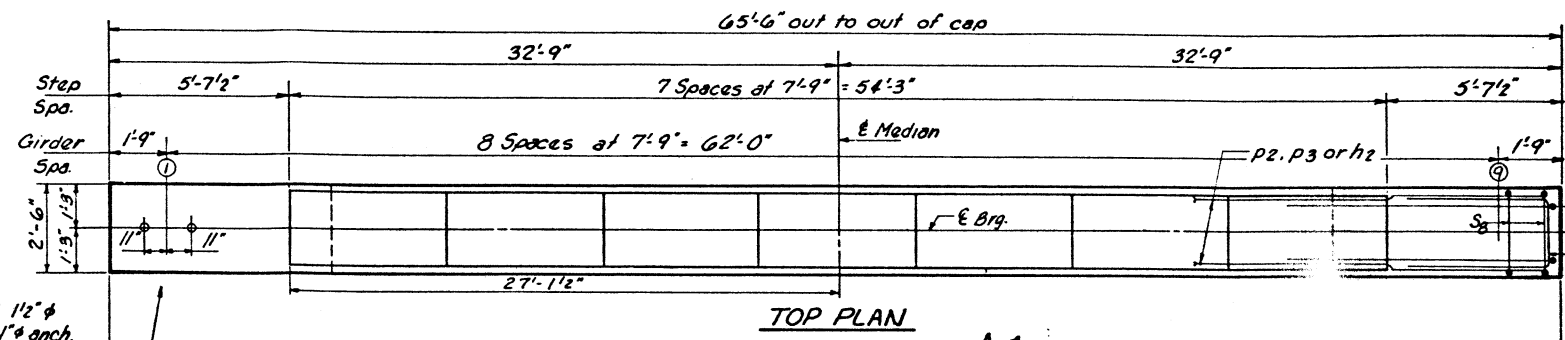
1" Anchor Bolts on East End Post of Abut. #1 & West End Post of Abut. #2 only.



- SIDE ELEVATION -

REVISIONS		DRAWN BY DATE	
1	8/72	SRK	6-72
2			
3			
4			
5			
6			
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10			

ABUTMENTS	
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
RELOC CH10 OVER FA 408 FA 408 SEC. 84-9-2HB Sta 36+10.14 (FA 408) SANGAMON COUNTY	
HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS	
PROJECT NO.	2385-1
SHEET NO.	22



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7	12	#5	32'-0"	—
h8	14	#9	27'-9"	—
h9	16	#5	27'-3"	—
h10	2	#5	38'-5"	—
n1	42	#9	5'-11"	U
n2	53	#5	11'-6"	U
n3	40	#10	10'-6"	U
p1	10	#8	17'-5"	7
p2	5	#7	40'-6"	—
p3	10	#8	32'-0"	—
p4	5	#7	27'-0"	—
s2	88	#5	11'-11"	□
s3	8	#5	11'-8"	□
s4	10	#5	11'-2"	□
s5	56	#5	12'-9"	□
s6	39	#5	11'-7"	□
s7	33	#5	8'-10"	□
s8	28	#5	10'-2"	□
t1	62	#6	8'-8"	—
v9	40	#10	18'-0"	—
v10	42	#9	18'-0"	—
w1	16	#8	37'-0"	—
Class "X" Concrete			Cu. yds.	125.7
Reinforcement Bars			Lbs.	18,630
Structure Excavation			Cu. Yds.	180
Piles Concrete			Lin. Ft.	684
Test Piles			Ea.	1

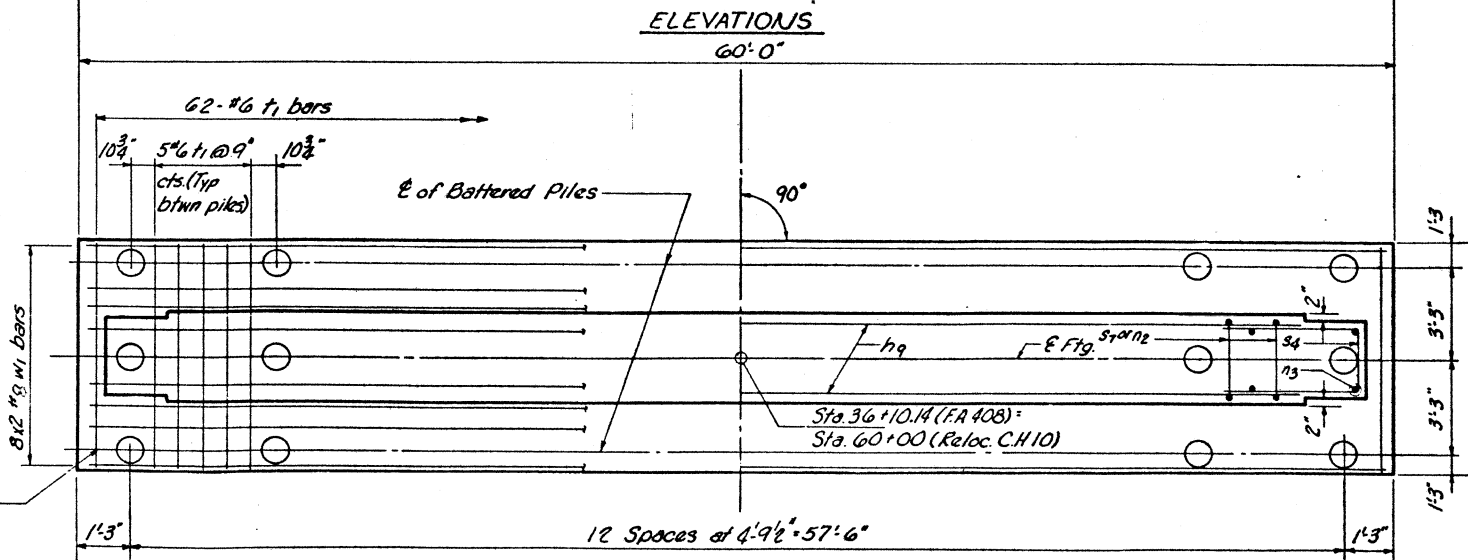
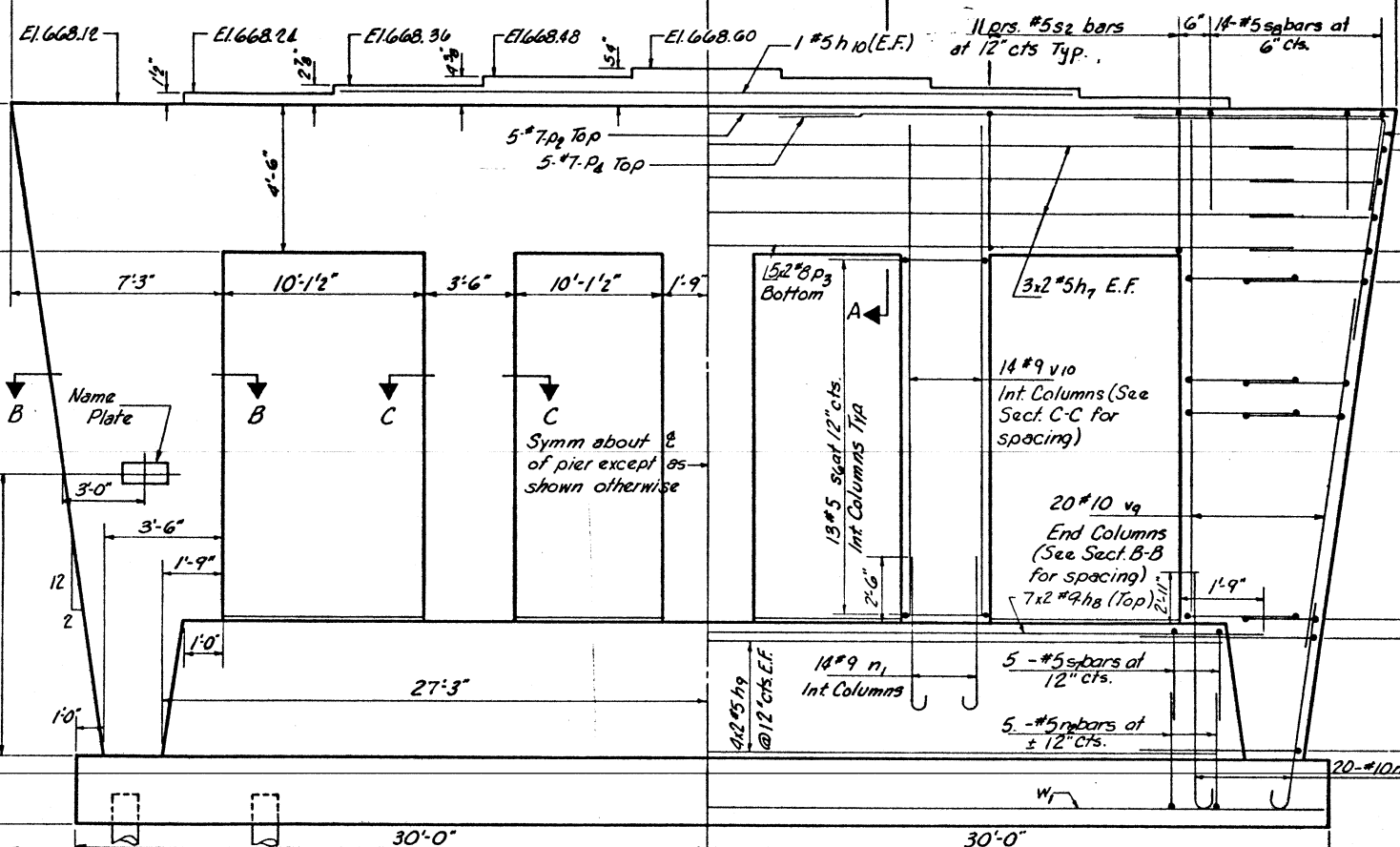
Layout of 1 1/2" φ holes for 1" φ anch. bolts. (Typ. at each girder)

See Sect. A-A for Cap Reinf.

PILE DATA

Type - Concrete
Capacity - 35 Tons
Est. Length - 18'-0"
No. Required - 39 (Inc. 1 Test Pile)

Notes:
Space reinforcement in cap to miss anchor bolts.
All edges shall have standard 3/4" chamfers except as noted.
Four steps monolithically with cap.



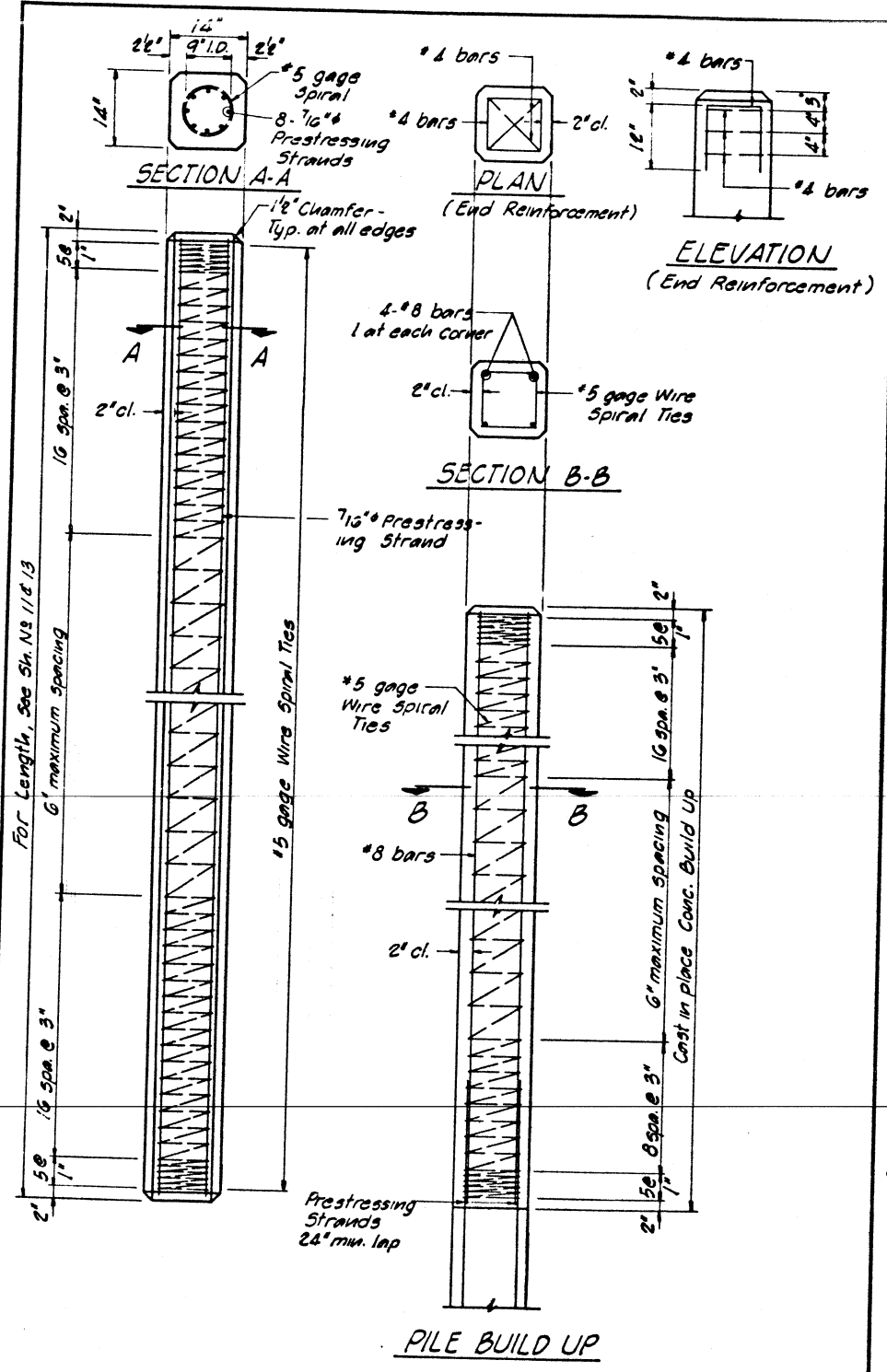
A & B DIMENSIONS

Bar	A	B
n2	2'-6"	4'-6"
s5	2'-2"	4'-9"
s4	2'-2"	4'-6"
s7	2'-6"	3'-2"
s8	2'-2"	4'-0"

PIER

REVISIONS		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS		DRAWN BY SKK	DATE 6-72
NO.	DATE	INITIALS		CHECKED BY KFS	DATE 7-72
1	8/72	GSH		BOOK NUMBER	
PROJECT NO. FA408 SEC. 84-9-2HB Sta. 36+10.14 (FA 408)			PROJECT NO. SANGAMON CO. 2385-1		
HOMER L. CHASTAIN & ASSOCIATES CONSULTING ENGINEERS DECATUR, ILLINOIS			SHEET NO. 23		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS
FA-408	84-9-2HB	SANGAMON	36
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	



NOTE: Prestressing steel shall be non-galvanized extra high strength stress-relieved 7 Wire Strand. The nominal diameter shall be 7/16" and the minimum nominal cross-sectional area shall be 0.1155 square inch.

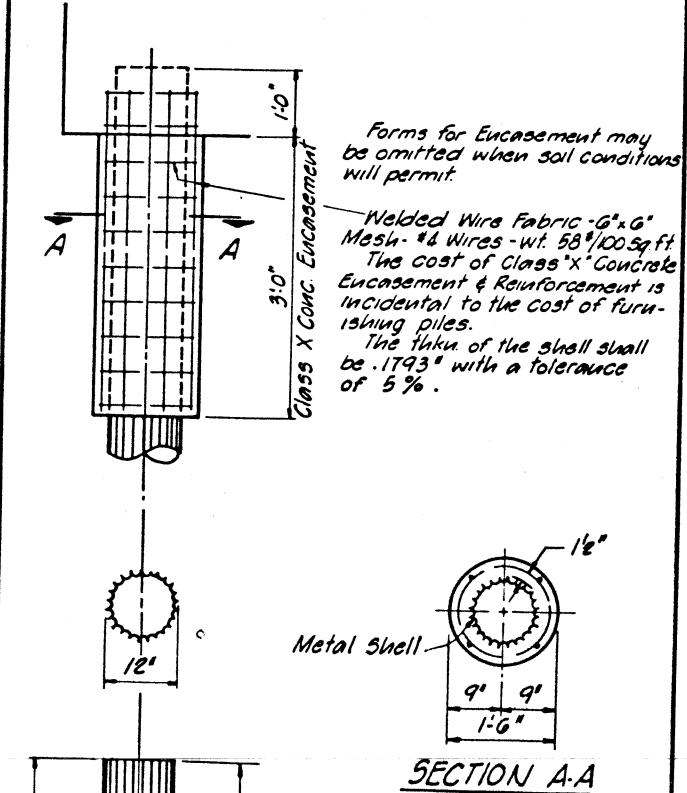
Handling: For pile lengths up to 65', use two slings placed at a distance of 0.21L* from each end. For piles longer than 65', use three slings placed at a distance of 0.18L* from each end and at midpoint of pile.

*L = Over all length of Pile to be handled.

DESIGN STRESSES

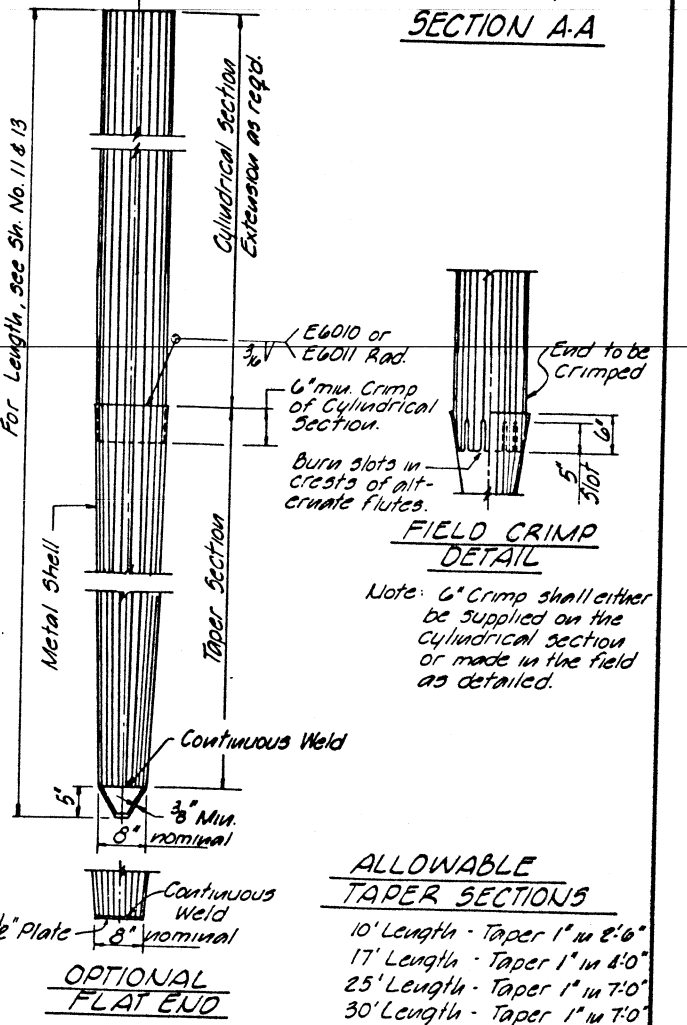
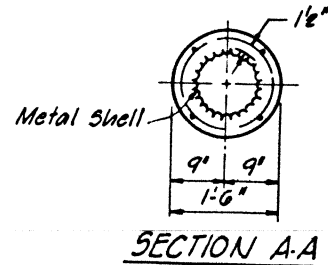
f'_c	= 5000 p.s.i.
f'_t	= 4000 p.s.i.
f_s	= 268,000 p.s.i. (31,000 lbs.)
f_{s1}	= 188,000 p.s.i. (21,700 lbs.)

DETAIL OF PRECAST PRESTRESSED CONCRETE PILES

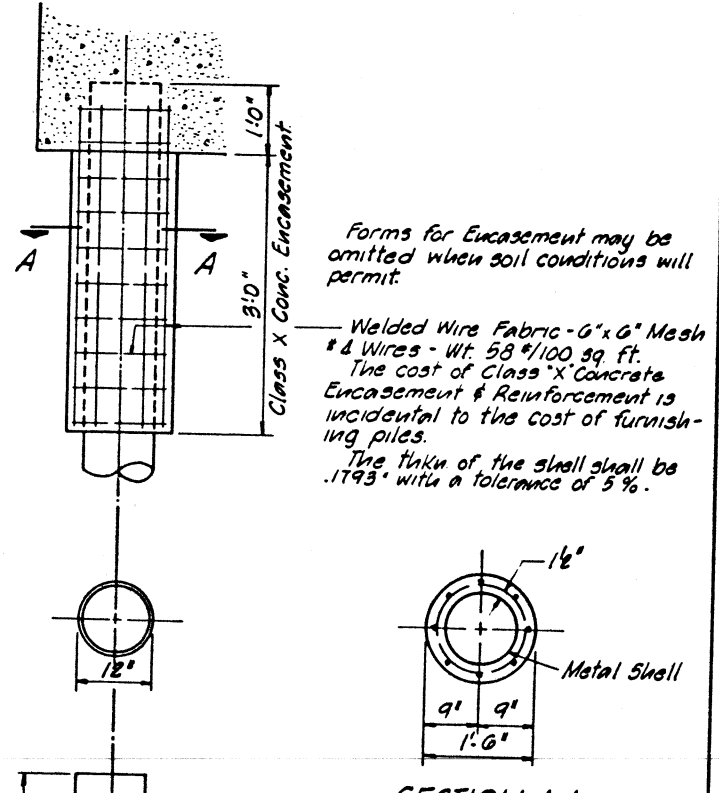


Forms for Encasement may be omitted when soil conditions will permit.

Welded Wire Fabric - 6" x 6" Mesh - #4 Wires - Wt. 58#/100 sq. ft. The cost of Class 'X' Concrete Encasement & Reinforcement is incidental to the cost of furnishing piles. The thickness of the shell shall be .1793" with a tolerance of 5%.

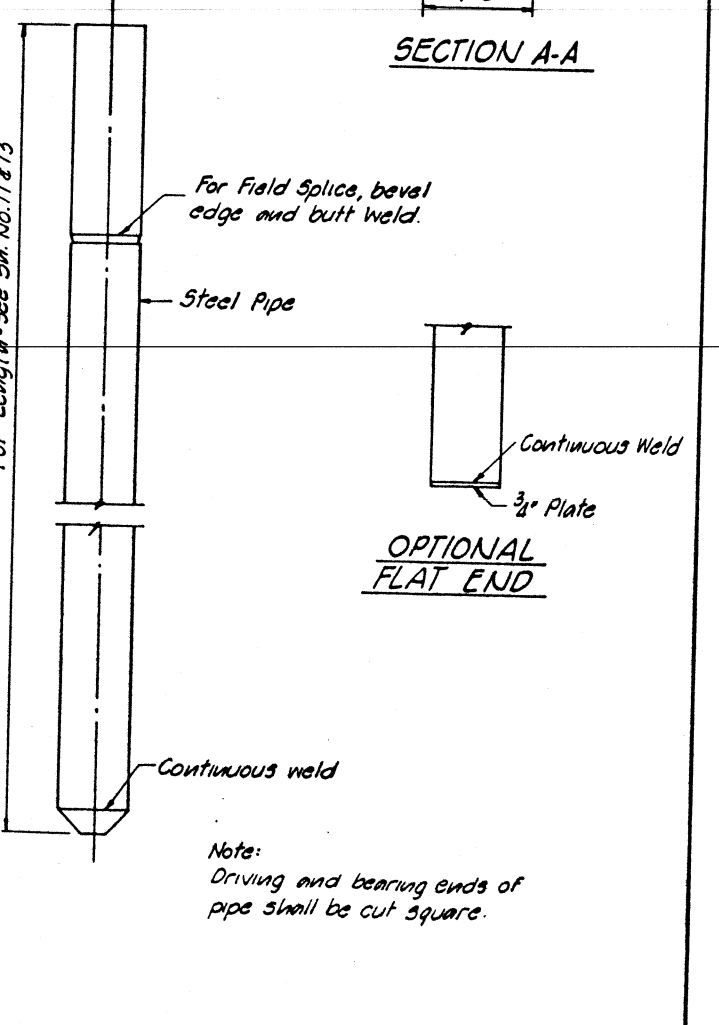
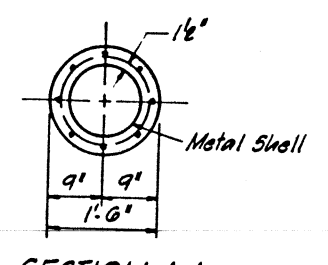


DETAIL OF TAPERED METAL SHELL FOR CAST IN PLACE CONCRETE PILES

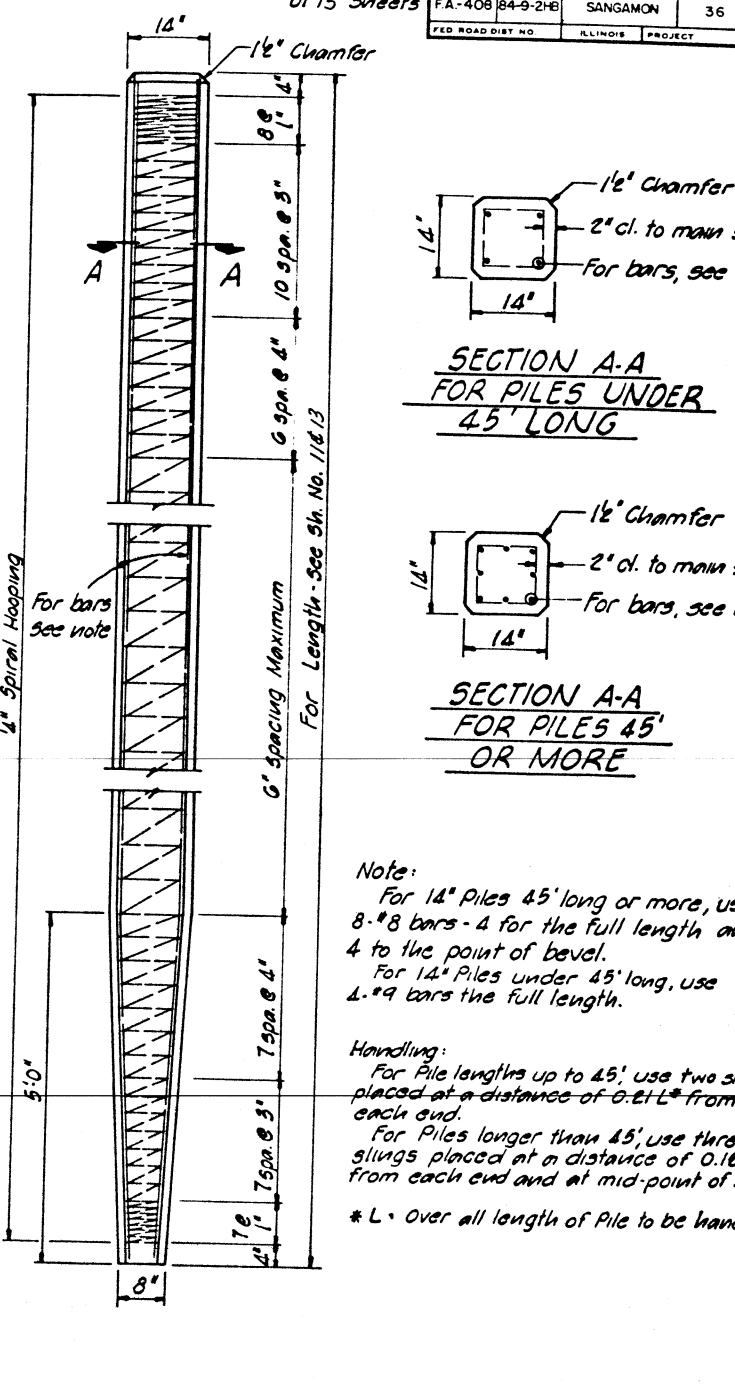


Forms for Encasement may be omitted when soil conditions will permit.

Welded Wire Fabric - 6" x 6" Mesh - #4 Wires - Wt. 58#/100 sq. ft. The cost of Class 'X' Concrete Encasement & Reinforcement is incidental to the cost of furnishing piles. The thickness of the shell shall be .1793" with a tolerance of 5%.



DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



Note:
For 14" Piles 45' long or more, use 8 #8 bars - 4 for the full length and 4 to the point of bevel.
For 14" Piles under 45' long, use 4 #9 bars the full length.

Handling:
For Pile lengths up to 45', use two slings placed at a distance of 0.21L* from each end.
For Piles longer than 45', use three slings placed at a distance of 0.18L* from each end and at midpoint of Pile.
*L = Over all length of Pile to be handled.

DETAIL OF PRECAST CONCRETE PILES

REVISIONS			CONCRETE PILES	
NO.	DATE	INITIALS	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS	
1			RELOC. CH 10 OVER FA 408	
2			FA 408 SEC. 84-9-2HB	
3			Sta 36+10.14 (FA 408) SANGAMON COUNTY	
4			PROJECT NO. 2385-1	
5			BOOK NUMBER	
6			DRAWN BY DATE	
7			SEK 6-7	
8			CHECKED BY DATE	
9			RFD-7-7	
10			SHEET NO. 25	

HOMER L. CHASTAIN & ASSOCIATES
CONSULTING ENGINEERS
DECATUR, ILLINOIS