98764 #50 6-14-02 FAP 312 UNION See D-9 J&R #50

50

99%
8-24-2002

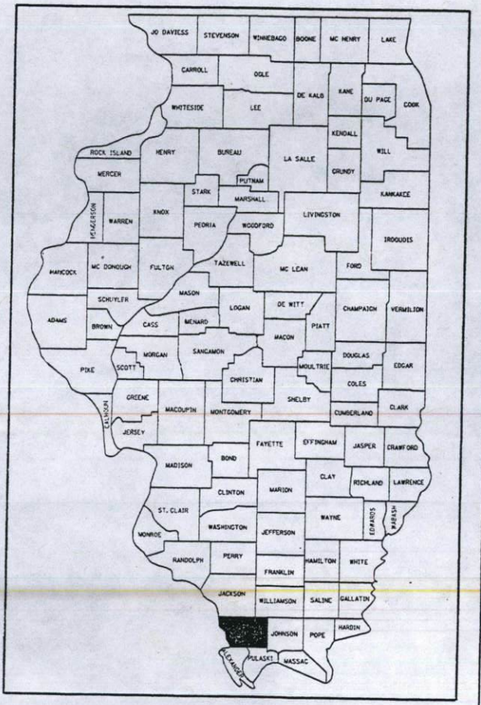
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

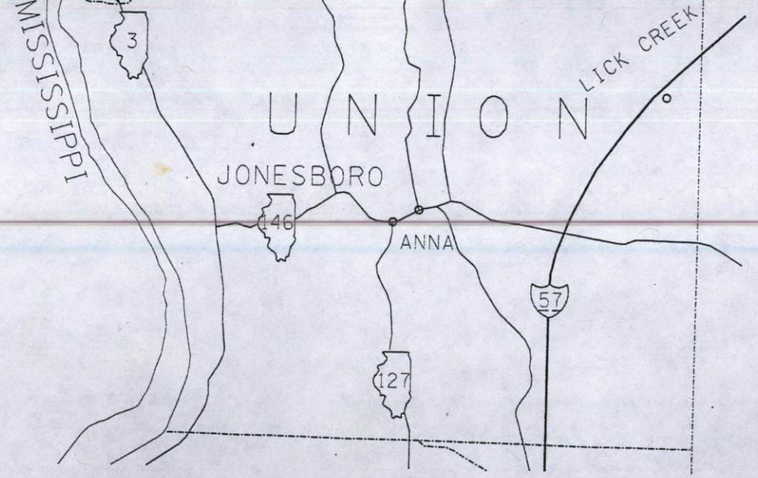
FAP ROUTE 312 (IL ROUTE 3)
SECTION D–9 CONT.MAINT.FY 2003–2
C–99–048–02
UNION COUNTY

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	*	UNION	7	1
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

*D-9 CONT.MAINT.FY 2003-2



PROPOSED IMPROVEMENT
SN 091-0031
EXPANSION JOINT REPLACEMENT
BITUMINOUS OVERLAY
BITUMINOUS BUTT JOINT WITH TEMPORARY RAMP



MAP NOT TO SCALE
TOTAL IMPROVEMENT LENGTH = 626.64 FEET

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 26 20 02
Kathleen Bartkowski
DISTRICT ENGINEER

May 10, 20 02
Michael Klein
ENGINEER OF DESIGN AND ENVIRONMENT

May 10 20 02
James C. Easter
DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

PLAN DRAWINGS ARE NOT TO SCALE.

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

CONTRACT NO. 98764 091-0031

PROJECT ENGINEER: KAREN RICHARDSON PHONE: (618) 549-2171
SQUAD LEADER: RITA GAUTNEY CENTREX: 782-4554

...\27rkg Coversheet, S.O.Q., I.O. 03/12/2002 01:43:41 PM

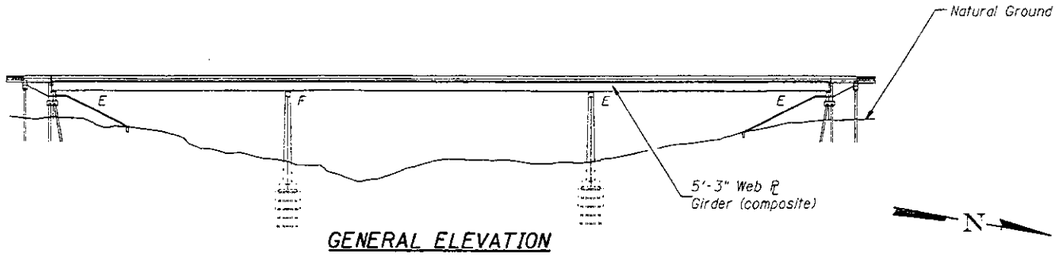
091-0031

9-

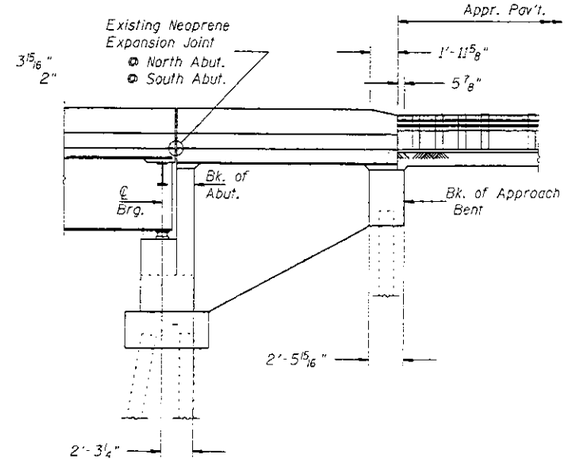
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	*	UNION	7	3
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

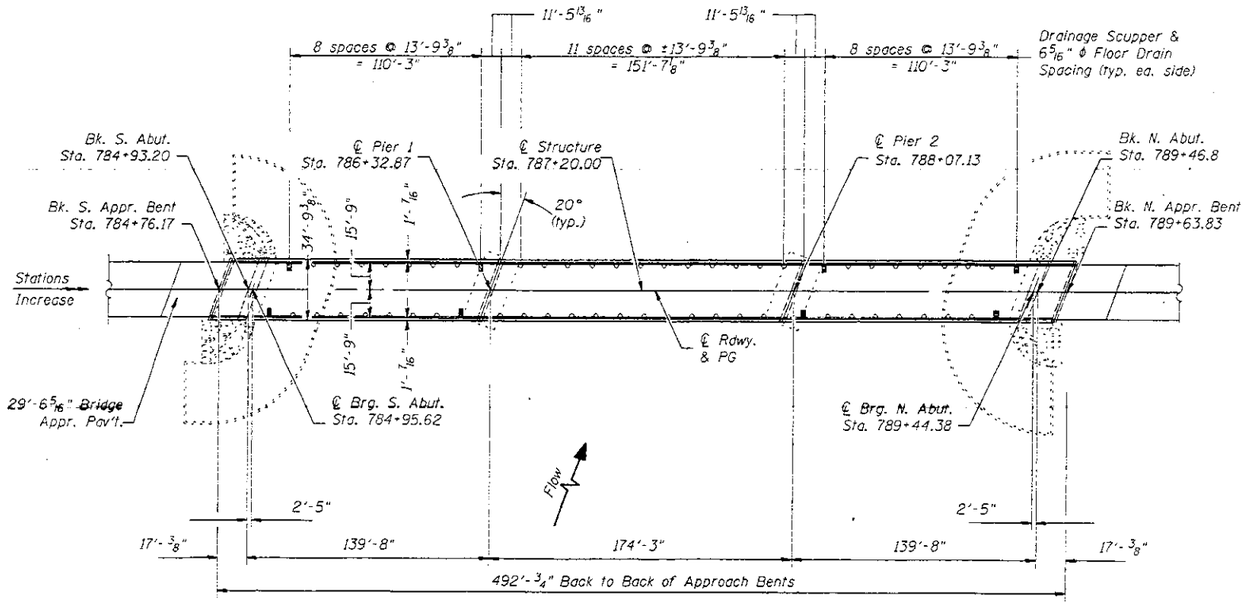
*D-9 CONT.MAINT.FY 2003-2



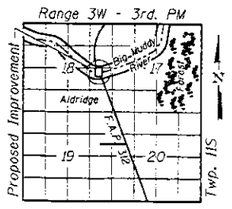
GENERAL ELEVATION



SECTION THRU VAULTED ABUTMENT
(Dimensions ⊥ Rt. ∠'s)



GENERAL PLAN



LOCATION SKETCH

DESIGNED	R.K.E.
CHECKED	C.N.T.
DRAWN	R.K.E.
CHECKED	C.N.T.

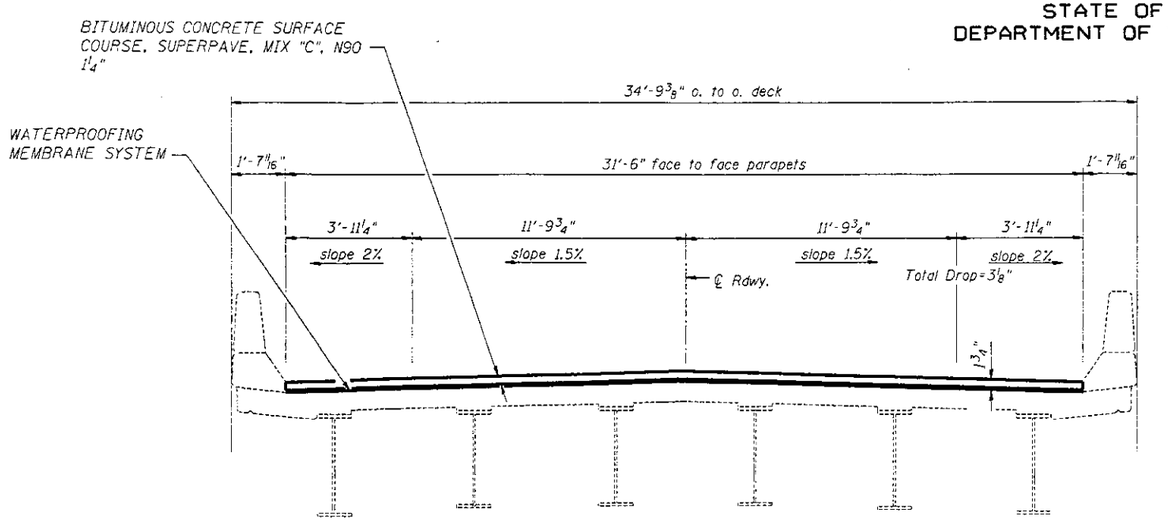
GENERAL PLAN AND ELEVATION
ILLINOIS ROUTE 3 OVER
BIG MUDDY RIVER
F.A.P. ROUTE 312
SECTION D-9 CONT.MAINT.FY 2003-2
UNION COUNTY
STATION 787+20.00
STRUCTURE NO. 091-0031

...14-16-02 dkg 0910031.dgn 04/16/2002 10:50:27 AM

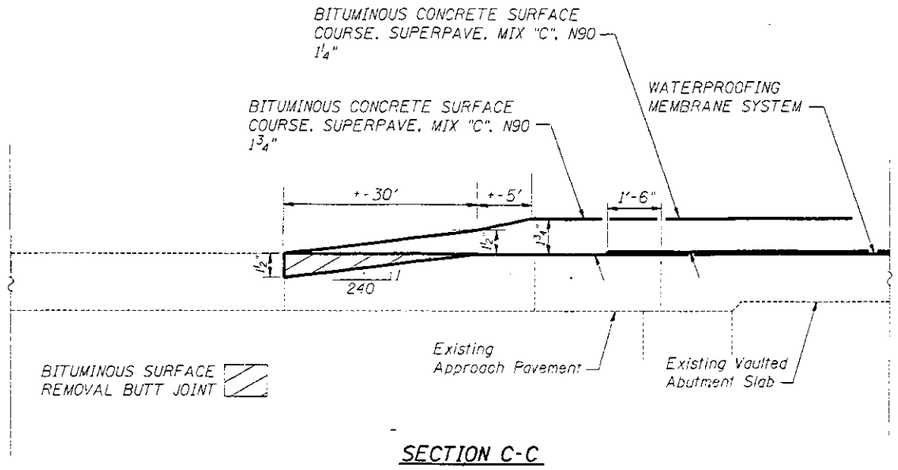
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	*	UNION	7	4
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

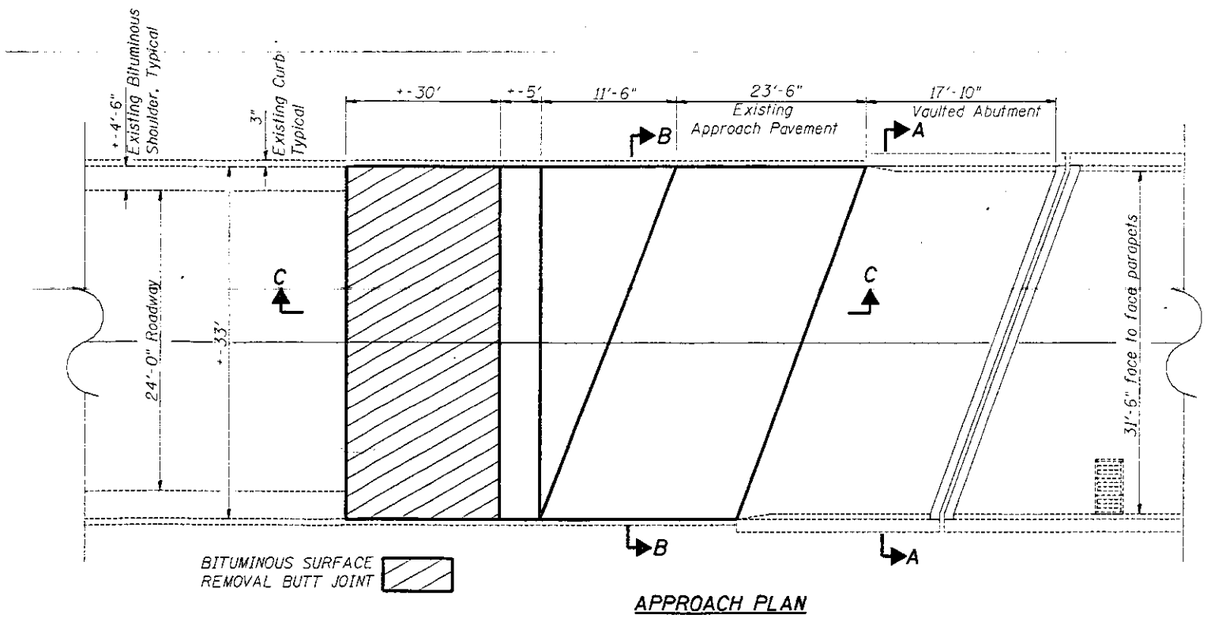
*D-9 CONT.MAINT.FY 2003-2



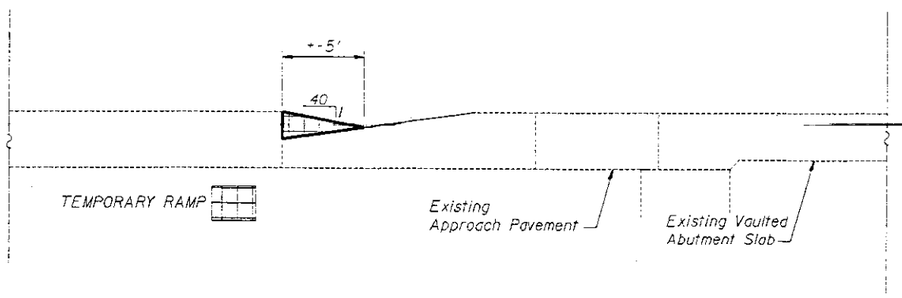
BRIDGE DECK TYPICAL SECTION



SECTION C-C



APPROACH PLAN



SECTION C-C

DESIGNED	RKE
CHECKED	CNT
DRAWN	RKE
CHECKED	CNT

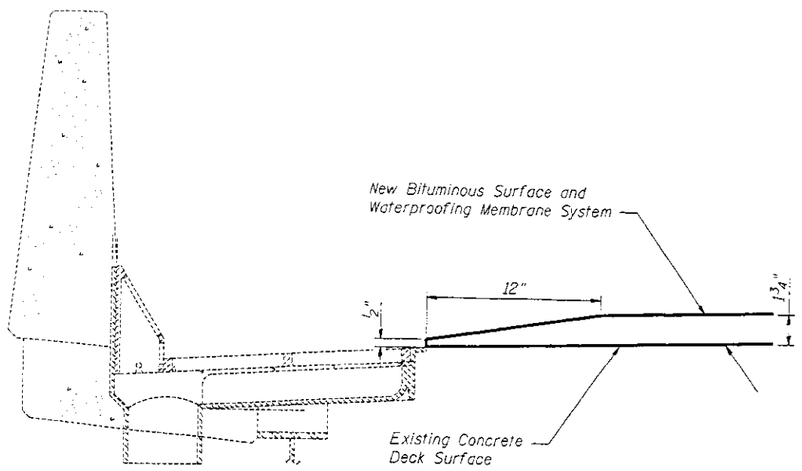
Note: All BITUMINOUS SURFACE REMOVAL - BUTT JOINT may be completed as one operation.

BRIDGE DECK TYPICAL SECTION
APPROACH PLAN
APPROACH SECTIONS
F.A.P. ROUTE 312
SECTION D-9 CONT.MAINT.FY 2003-2
UNION COUNTY
STATION 787+20.00

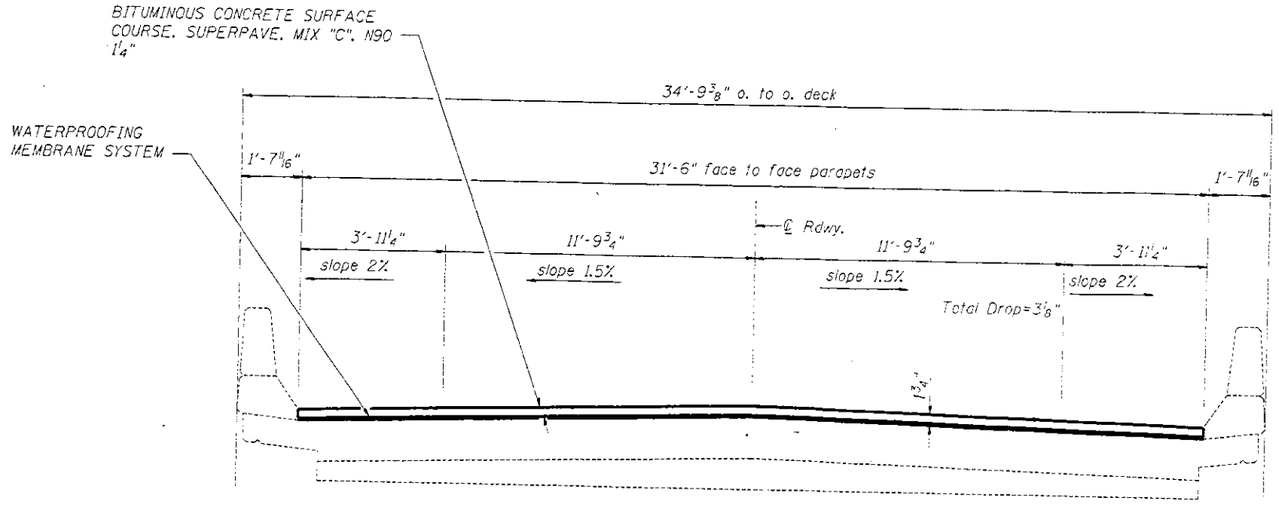
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	*	UNION	7	5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

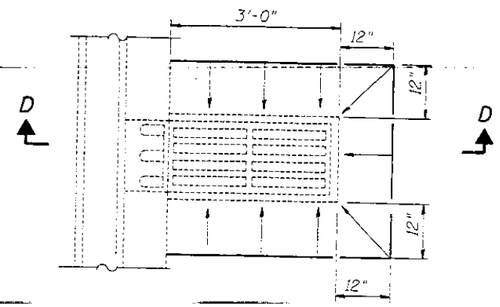
*D-9 CONT. MAINT. FY 2003-2



SECTION D-D
DRAINAGE SCUPPER

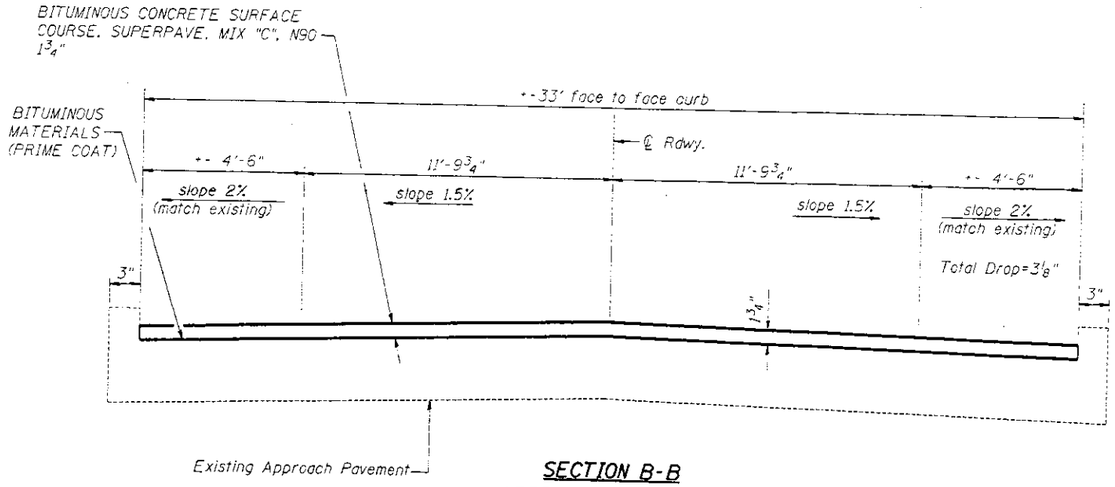


SECTION A-A
VAULTED ABUTMENT



DRAINAGE SCUPPER PLAN
(Showing Slope of Bituminous Surface)

Note: Bituminous Surface shall be sloped in similar fashion at +-6" diameter floor drains.



SECTION B-B
APPROACH PAVEMENT

DESIGNED	RKC
CHECKED	C.T.
DRAWN	RKC
CHECKED	CNT

VAULTED ABUTMENT SECTION
APPROACH TYPICAL SECTION
SCUPPER DETAILS
F.A.P. ROUTE 312
SECTION D-9 CONT.MAINT.FY 2003-2
UNION COUNTY
STATION 787+20.00

...4-16-02 rkg 0910031.dgn 04/15/2002 01:39:06 PM

#98350 #37 4-24-98 F.A.P. RTE 312 JACKSON-UNION COUNTIES I&R COPY #37

S.N. 091-0031

37 97% 9-18-1999

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
312	(131B-1)DR	JACKSON/UNION	54	1
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	*

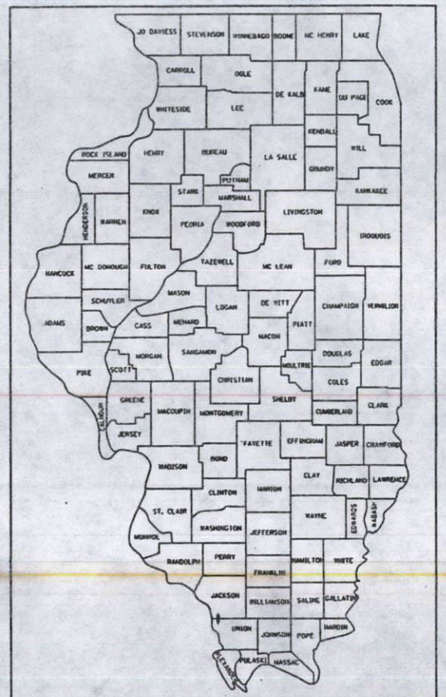
*ACBHF-312(12)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY

F.A.P. 312 (ILLINOIS 3)
SECTION (131B-1)DR
PROJECT NO. ACBHF-312(12)
JACKSON / UNION COUNTY
C-99-018-98

D-99-014-95



LOCATION OF SECTION INDICATED THUS: –

METRIC RATIOS

0 5 m 10 m
1 : 50

0 5 m 10 m
1 : 100

5 m 0 20 m
1 : 500

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

GRAND TOWER/PRESTON TOWNSHIP

1996 ADT = 1,500
20% TRUCKS
POSTED SPEED: 55mph

PROPOSED IMPROVEMENT
ENDS - STA. 27+800

STRUCTURE REHABILITATION
STA. 27+439.37
S.N. 091-0031; 148.64 m
OVER BIG MUDDY RIVER

PROPOSED IMPROVEMENT
BEGINS - STA. 27+150

N

ROADWAY LENGTH	=	501.36 METERS
BRIDGE LENGTH	=	148.64 METERS
NET LENGTH OF PROJECT	=	650.00 METERS
GROSS LENGTH OF PROJECT	=	650.00 METERS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Feb. 2 19 98
Bill Bathenyer
DISTRICT ENGINEER
March 20, 19 98
Bill Lueckey
ENGINEER OF DESIGN AND ENVIRONMENT
March 20, 19 98
James C. Sligo
DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PROJECT ENGINEER: DAVID PICHE (618) 549-2171 CENTREX 782-4554

CONTRACT NO. 98350
091-0031 910031

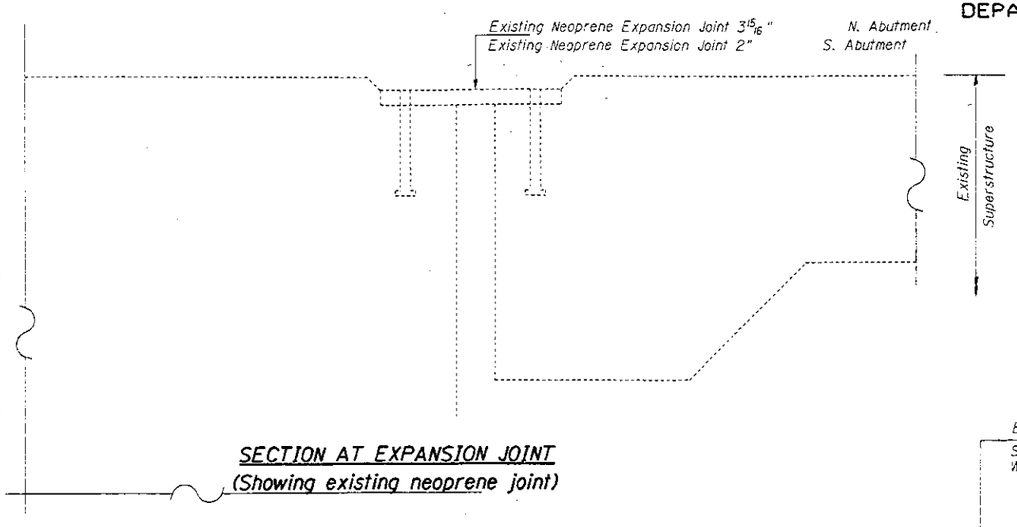
9-158

COUNTY: JACKSON/UNION SECTION: (131B-1)DR ROUTE: F.A.P. 312 (ILL. RTE. 3)

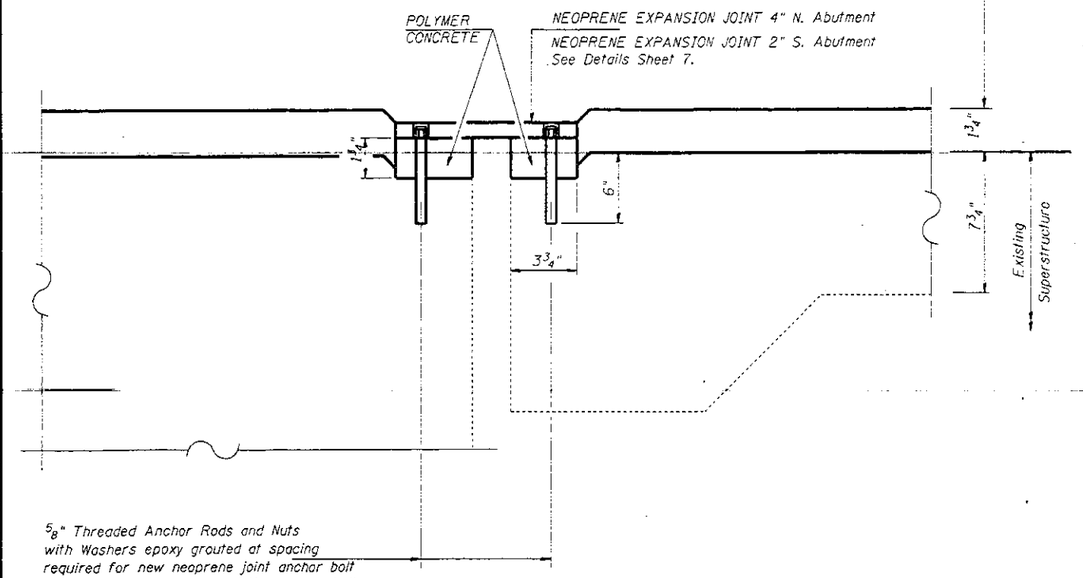
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	*	UNION	7	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

*D-9 CONT.MAINT.FY 2003-2

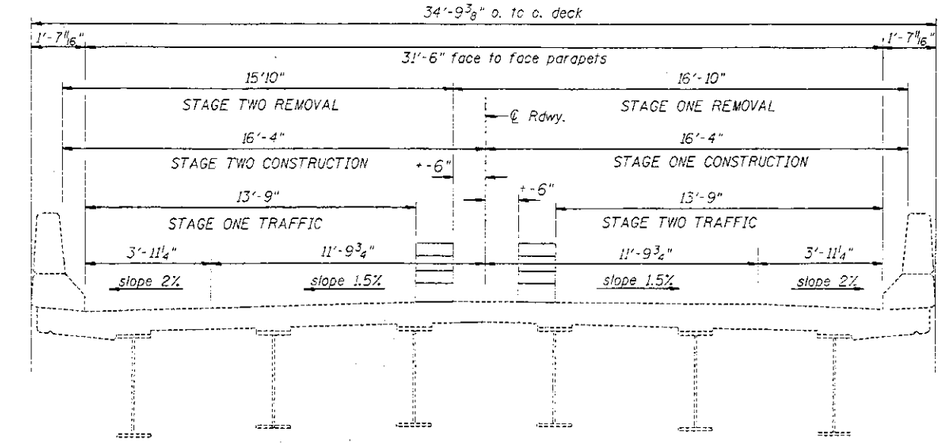


SECTION AT EXPANSION JOINT
(Showing existing neoprene joint)

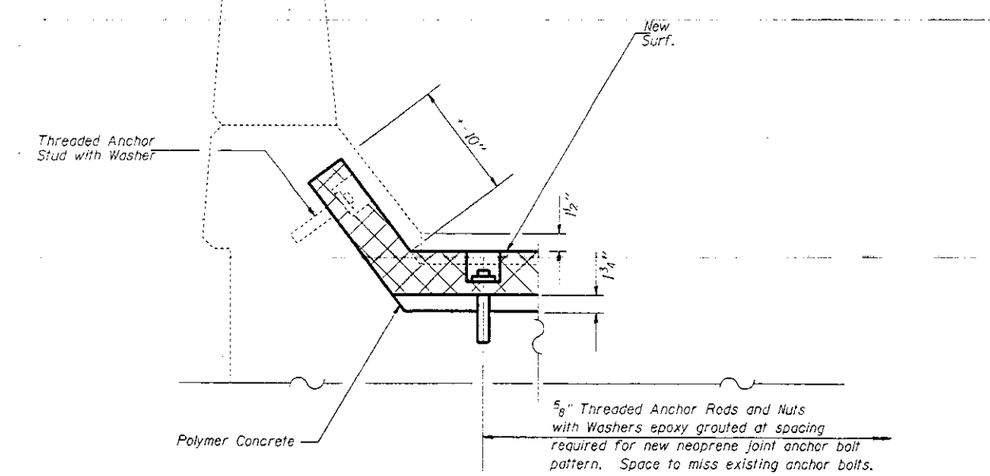


SECTION AT EXPANSION JOINT
(Showing new neoprene joint)

Note: Removal of existing neoprene joint is included in cost of new neoprene joint.

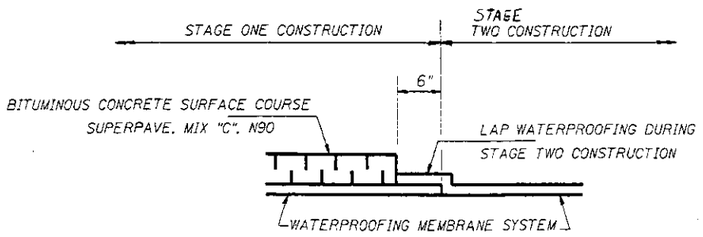


STAGES OF CONSTRUCTION



Reuse existing Threaded Anchor Stud for the placement of the new Neoprene Expansion Joint in the parapet.

EXPANSION JOINT SECTION AT PARAPET



WATERPROOFING TREATMENT AT STAGE CONSTRUCTION

DESIGNED	RKG
CHECKED	CNT
DRAWN	RKG
CHECKED	CNT

STAGES OF CONSTRUCTION
EXPANSION JOINT DETAILS
F.A.P. ROUTE 312
SECTION D-9 CONT.MAINT.FY 2003-2
UNION COUNTY
STATION 787+20.00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	d	UNION	7	7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

*D-9 CONT. MAINT. FY 2003-2

Joint Size	"C" at 50°F	"D" at 50°F
2"	2"	1½" Min.
2½"	2½"	1¾" Min.
4"	3"	2½" Min.

INSTALLATION NOTES

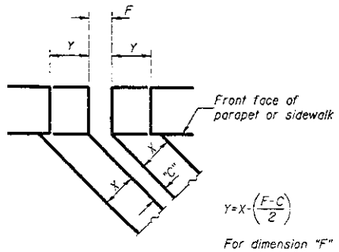
1. Install continuous seal in roadway, parapet, curb, and sidewalk.
2. Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

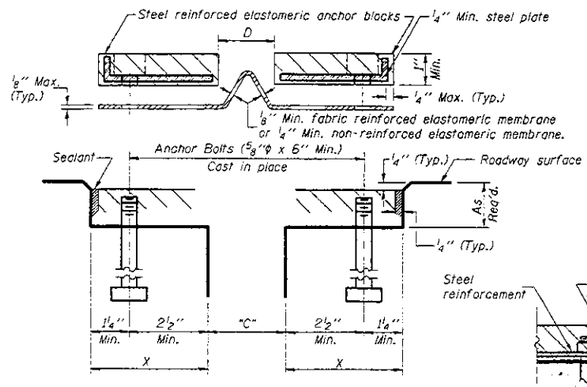
SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

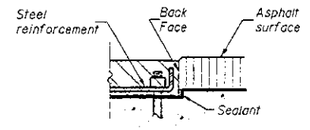
For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed according to dimension "D", might require modifications to insure a minimum clearance of 1½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.



FORMING BLOCKOUT SKETCH



CROSS SECTION



ANCHOR BLOCK WITH ASPHALT SURFACE

GENERAL NOTES

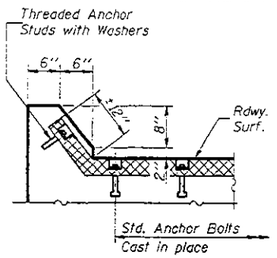
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

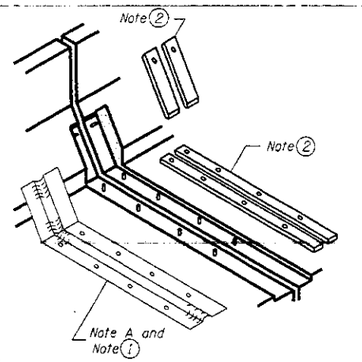
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

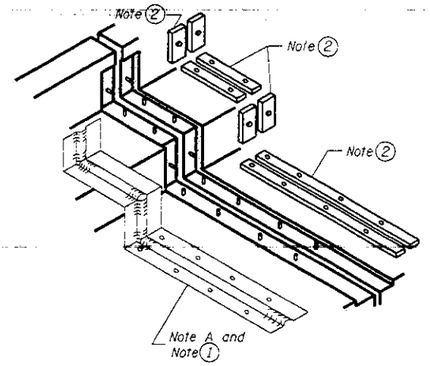
The parapet and roadway membrane shall be made continuous by an approved vulcanizing process. Lapping will not be permitted.



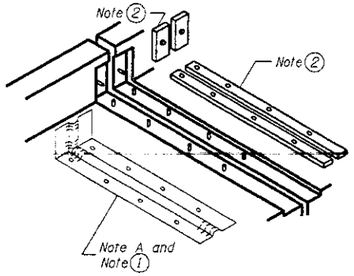
AT CURB



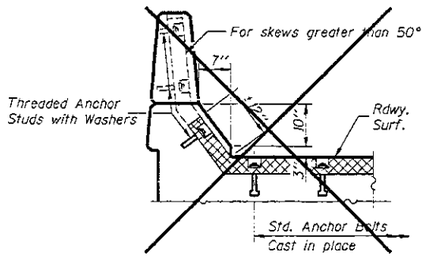
AT PARAPET



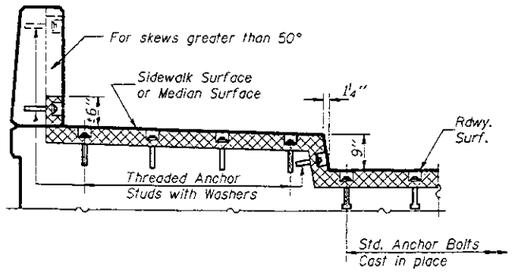
AT SIDEWALK OR MEDIAN



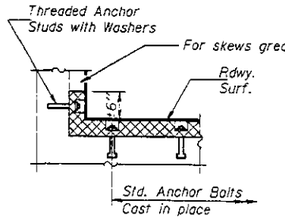
AT WALL



AT PARAPET



AT SIDEWALK OR MEDIAN



AT WALL

TYPICAL END TREATMENTS

DESIGNED	RKS
CHECKED	CNT
DRAWN	RKE
CHECKED	CNT

EJ-CS 4-30-97

CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
For 2", 2½" and 4" Movement

F.A.P. ROUTE 312
SECTION D-9 CONT. MAINT. FY 2003-2
UNION COUNTY
STATION 787+20.00

...14-16-02 rkg 0910031.dgn 04/16/2002 11:01:43 AM

#98350 #37 4-24-98 F.A.P. RTE 312 JACKSON-UNION COUNTIES I&R COPY #37

S.N. 091-0031

37

97%
9-18-1999

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
312	(131B-1)DR	JACKSON/UNION	54	1
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT *	

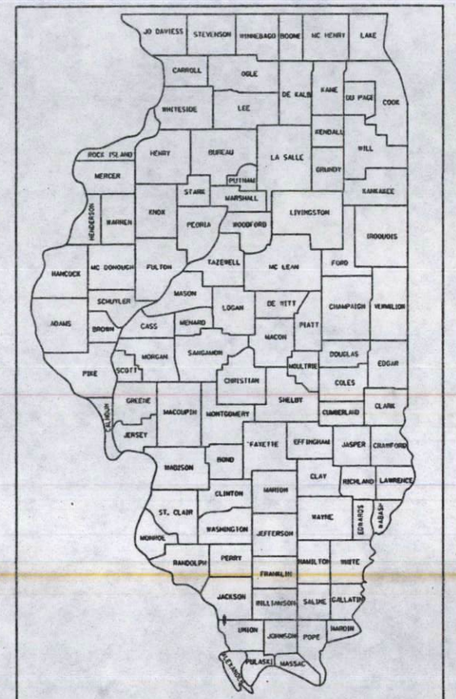
*ACBHF-312(12)

D-99-014-95

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED HIGHWAY

F.A.P. 312 (ILLINOIS 3)
SECTION (131B-1)DR
PROJECT NO. ACBHF-312(12)
JACKSON / UNION COUNTY
C-99-018-98



LOCATION OF SECTION INDICATED THUS: –

METRIC RATIOS

0 5 m 10 m
1 : 50

0 5 m 10 m
1 : 100

5 m 0 20 m
1 : 500

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.

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 2

THE BIG MUDDY RIVER AT THIS SITE IS A PUBLIC BODY OF WATER AS DEFINED BY THE ILLINOIS DEPT OF NATURAL RESOURCES AND IS GOVERNED BY THEIR PERMIT RULES FOR CONSTRUCTION IN SUCH BODIES OF WATER.

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

GRAND TOWER/PRESTON TOWNSHIP

1996 ADT = 1,500
20% TRUCKS
POSTED SPEED: 55mph

PROPOSED IMPROVEMENT
ENDS - STA. 27+800

STRUCTURE REHABILITATION
STA. 27+439.37
S.N. 091-0031; 148.64 m
OVER BIG MUDDY RIVER

PROPOSED IMPROVEMENT
BEGINS - STA. 27+150

N

ROADWAY LENGTH	=	501.36 METERS
BRIDGE LENGTH	=	148.64 METERS
NET LENGTH OF PROJECT	=	650.00 METERS
GROSS LENGTH OF PROJECT	=	650.00 METERS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Feb. 2 19 98
Bill Bathenyer
DISTRICT ENGINEER

March 20, 19 98
Bill Swindle
ENGINEER OF DESIGN AND ENVIRONMENT

March 20, 19 98
James C. Sligh
DIRECTOR, DIVISION OF HIGHWAYS

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PROJECT ENGINEER: DAVID PICHE (618) 549-2171 CENTREX 782-4554

CONTRACT NO. 98350
091-0031 910031

9-158

COUNTY: JACKSON/UNION SECTION: (131B-1)DR ROUTE: F.A.P. 312 (ILL. RTE. 3)

Bench Mark: "□" cut in hubguard 5.8 m Rt. of S.E. wingwall. Elev. 113.277

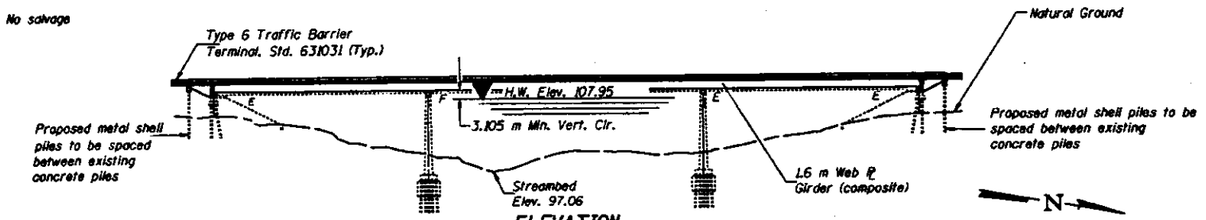
Existing Structure: S.N. 091-0031 Built in 1958 as S.B.I. Rte. 150, Sec. 131-B-1 at Sta. 27+439.370. The structure is a three-span continuous plate girder on vaulted abutments and hammerhead piers on concrete piles. The length is 138.252 m bk. to bk. abutments, and the width is 10.871 m O. to O. deck. The contractor shall remove and replace the existing superstructure. Traffic shall be maintained by using stage construction.

No salvage

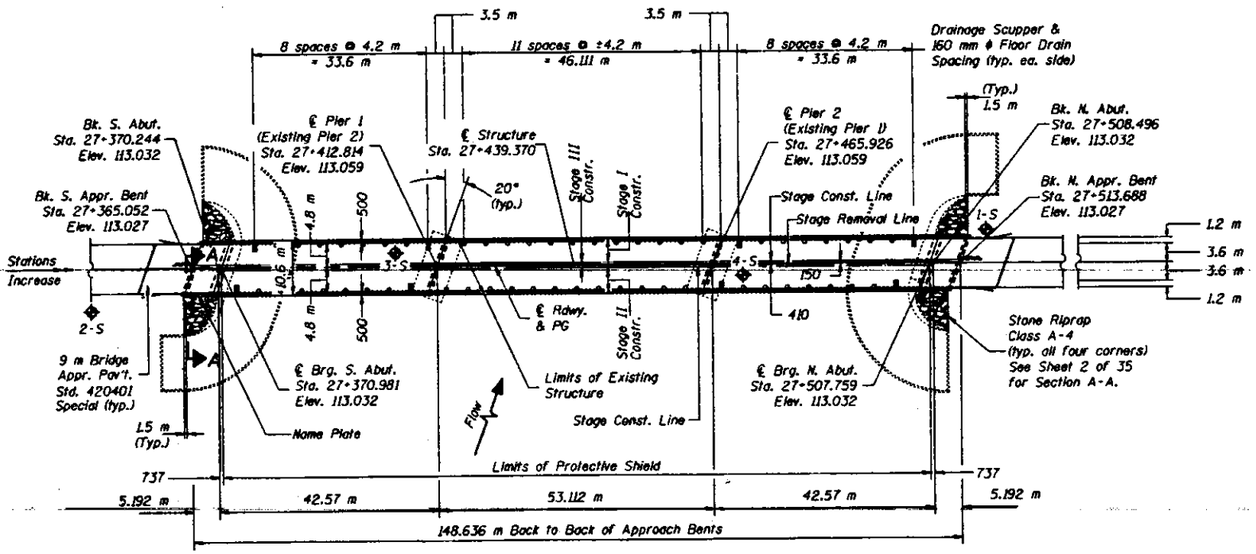
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	(131B-1)DR	JACKSON/ UNION	54	20

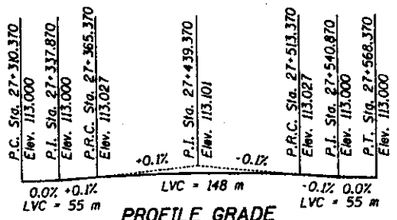
SHEET NO. 1
35 SHEETS



ELEVATION



PLAN



PROFILE GRADE
(along ℄ roadway)

DESIGNED Ted Mantay
CHECKED W.D. Collins
DRAWN S. VERN TAYLOR
CHECKED Tina

February 25 19 98
EXAMINED Dennis D. Kaspar CHAIRMAN OF BRIDGE DESIGN
PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

EXPIRES 11-30-98

WATERWAY INFORMATION

Drainage Area = 6182.01 km² Low Grade Elev. 113.0 m @ Sta. 27+600

Flood	Freq. Yr.	Q m³/s	Opening m² Exist.	Opening m² Prop.	Nat. H.W.E.	Head - m Exist.	Head - m Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	1132.0	834.6	890.0	107.95	0.03	0.03	107.98	107.98
Base	100	1273.5	889.5	944.8	108.43	0.03	0.03	108.46	108.46
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	1570.7	997.8	1054.4	109.33	0.06	0.06	109.39	109.39

STATION 27+439.370
REBUILT 1999 BY
STATE OF ILLINOIS
F.A.P. RT. 312 SEC.(131B-1)DR
PROJECT ACBHF-312(12)
LOADING MS18
STR. NO. 091-0031

NAME PLATE
See Std. 515001

Note: Existing Name Plate to be cleaned and relocated next to the new Name Plate. Cost included with "Name Plates".

TOTAL BILL OF MATERIAL

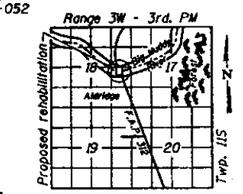
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	m²		263	263
Filter Fabric for use with Riprap	m²		263	263
Protective Coat	m²	1756		1756
Removal of Existing Superstructures	Each	1		1
Concrete Removal	m³		57	57
~~Structure Excavation~~	~~m³~~		~~670~~	~~670~~
Floor Drains	Each	52		52
Neoprene Expansion Joint 50 mm	m	10.8		10.8
Neoprene Expansion Joint 100 mm	m	10.8		10.8
Concrete Structures	m³		133.3	133.3
Concrete Superstructures	m³	417.6		417.6
Bridge Deck Grooving	m²	1236		1236
Elastomeric Bearing Assembly, Type II	Each	6		6
Elastomeric Bearing Assembly, Type III	Each	6		6
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	3006		3006
Reinforcement Bars, Epoxy Coated	kg	59710	5890	65600
Bar Splicers	Each	1341	68	1409
Furnishing Metal Pile Shells 305 mm	m		130	130
~~Driving and Filling Shells~~	~~m~~		~~130~~	~~130~~
Test Pile Metal Shell	Each		1	1
Name Plates	Each	1		1
Floating Bearing, Guided Expansion 1250 kN	Each	6		6
Drainage Scuppers	Each	8		8
Temporary Sheet Piling	m²		15.3	15.3

LOADING MS18
Allow 1.2 kN/m² for future wearing surface.

DESIGN SPECIFICATIONS
1996 AASHTO with 1997 Interims and 1995 Seismic Retrofitting Manual for Highway Bridges FHWA-RD-94-052

DESIGN STRESSES
FIELD UNITS
f'_c = 24 MPa
f_y = 400 MPa (reinforcement)
f_y = 345 MPa (structural steel M270 Grade 345)

SEISMIC DATA
Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 15%g
Site Coefficient (S) = 1.5



LOCATION SKETCH

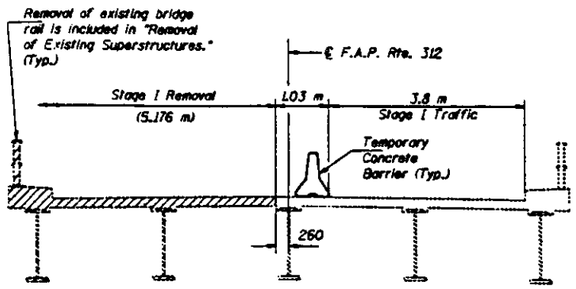
GENERAL PLAN
ILLINOIS ROUTE 3 OVER
BIG MUDDY RIVER*
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370
STRUCTURE NO. 091-0031
*PUBLIC WATER

4-24-97, 6-3-97

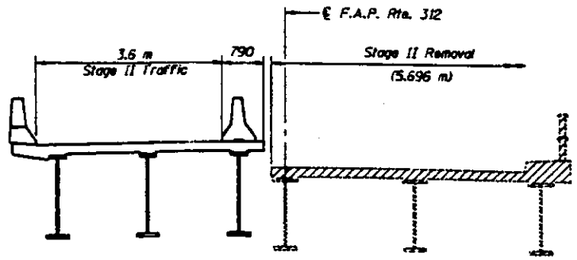
D-99-014-95

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

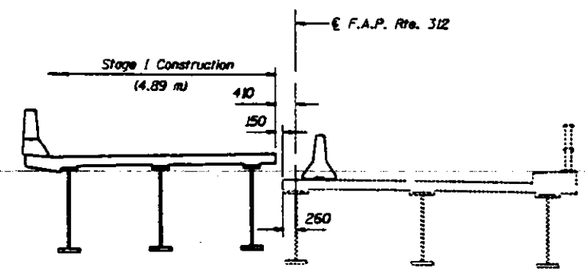
					SHEET NO. 2
F.A.P. 312	0348-00R	JOHNSON/UNION	54	21	35 SHEETS



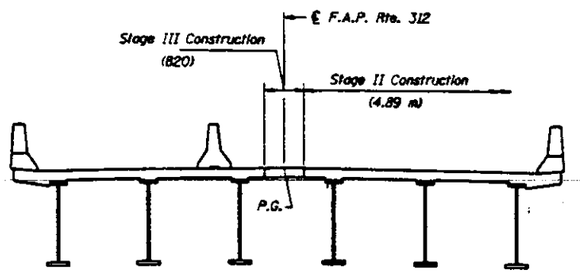
STAGE I REMOVAL
(Looking North)



STAGE II REMOVAL
(Looking North)

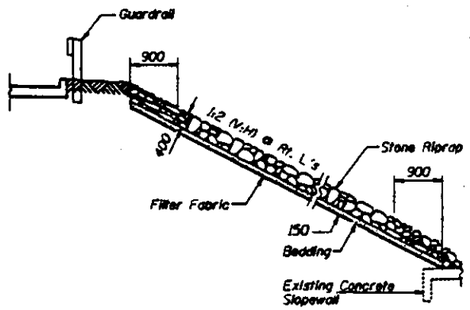


STAGE I CONSTRUCTION
(Looking North)

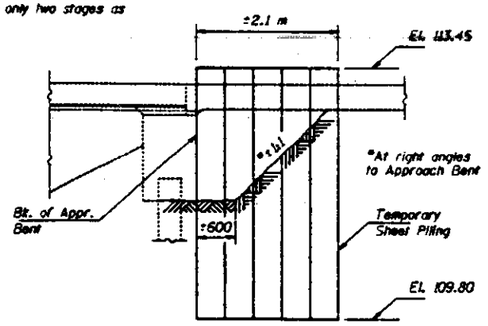


**STAGE II and III CONSTRUCTION
(Looking North)

**Stage III Construction is only applicable to pouring of the concrete deck. The approach span slab and all substructure units require only two stages as shown on sheets 17, 19 and 21 of 35.



SECTION A-A



TEMPORARY SHEET PILING NOTES

If the contractor chooses to alter Temporary Cantilevered Sheet Piling design requirements shown on the plans for lesser design requirements, then full design submittals with the required seals will be expected by the Department, for review and approval.
Required embedment = 1.5 m
Required section modulus = 54760 mm3/m

DESIGNED Ted Matney
CHECKED
AMC
DRAWN G. VON TAYLOR
CHECKED Tmm DTS

February 25 1998
EXAMINED
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

GENERAL NOTES

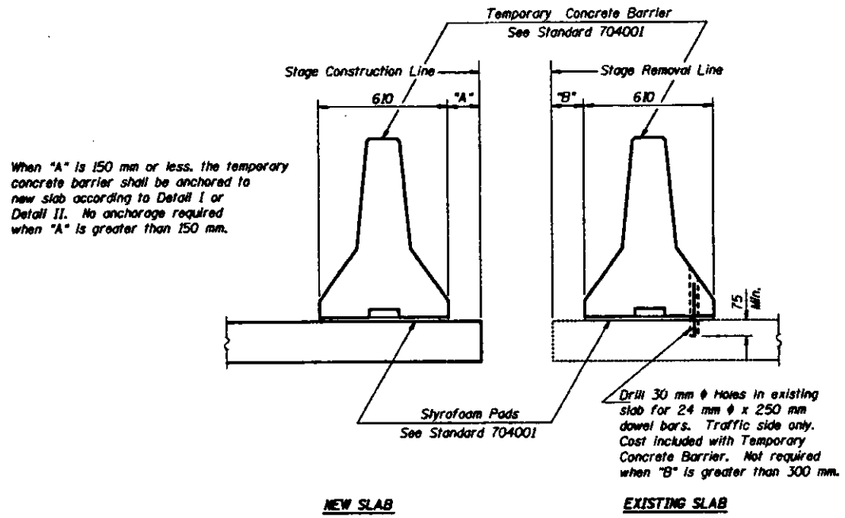
Fasteners shall be high strength bolts. Bolts M20, open holes 22 mm ϕ, unless otherwise noted.
Calculated mass of Structural Steel { 254,760 kg (M270M Grade 345) / 17,840 kg (M270M Grade 250) } [1]
The inorganic zinc rich primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all steel surfaces shall be gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".
Field welding of construction accessories will not be permitted to the bottom flange of beams 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 cross frames over supports.
The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges, webs and all splice plate material except fill plates.
Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M Grade 400.
Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
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.
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 3 mm. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 3 mm adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.
Bridge Seat Sealer shall be applied to the seat areas of the abutments.
The contractor shall drive one (1) test pile in a permanent location at the south abutment as directed by the Engineer before ordering the remainder of piles.
In addition to all other requirements of section 512 of the Standard Specifications, splices for Metal Shell piles shall develop the full capacity of the steels cross sectional area of the pile for tension, shear and bending forces. One approved method of achieving this requirement is full penetration butt welding of the entire cross section. Other types of splices meeting the full capacity requirement may be allowed subject to the approval of the Engineer. Any proposal by the contractor to use an alternate splice method must include adequate documentation demonstrating that the full tension, shear and bending capacities will be met. Appropriate welder qualifications will be required for the positions and processes used in splicing all piles. Nondestructive testing of completed welds will be limited to visual inspection.
All dimensions are in millimeters (mm) except as noted.
The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection.
The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.
The contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc.

[1] Revised 8/14/98 Tmm

STAGE CONSTRUCTION DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 3
F.A.P. 312	(318-1)DR	JACKSON / UNION	54	22	35 SHEETS



SECTIONS THRU SLAB

NOTES

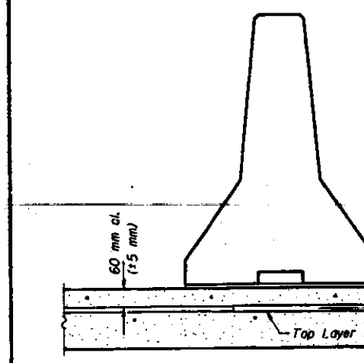
Detail I - With Bar Splicer or Couplers:
Connect one (1) 25x180x250 steel ℄ to the top layer of couplers with 2-16 mm ϕ bolts screwed to coupler at approximate ℄ of each 3 m barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 25x180x250 steel ℄ to the concrete slab with 2-16 mm ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each 3 m barrier panel.

Cost of anchorage included with Temporary Concrete Barrier.

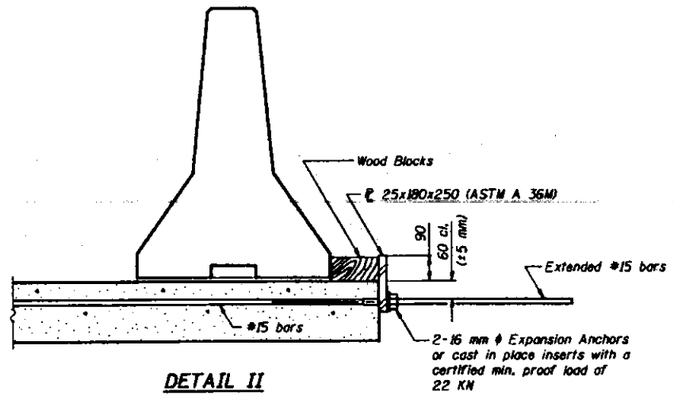
Quantity of Temporary Concrete Barrier is included in the Roadway Plans.

All dimensions are in millimeters (mm) except as noted.



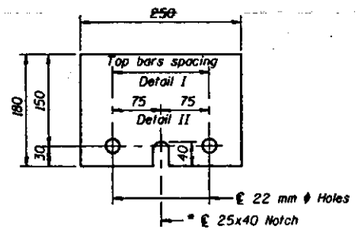
DETAIL I

The 25x180x250 Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 25x180x250 Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



℄ 25x180x250

* Required only with Detail II

DESIGNED	Ted Mostroy
CHECKED	AMC
DRAWN	S. VAN TAYLOR
CHECKED	TMM DJB

February 25, 19 98

EXAMINED Raj D. Kasper
CHIEFETH OF BUREAU OF BRIDGE DESIGN

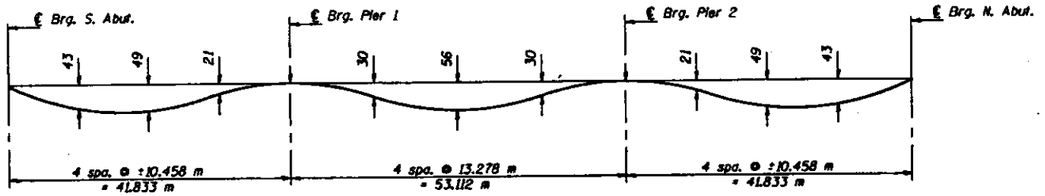
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

R-27 (M) 4-30-97

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

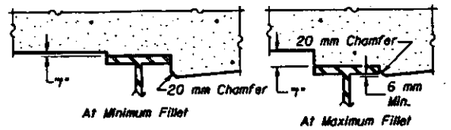
				SHEET NO. 4
F.A.P. 312 (SBI-1) OR		JACKSON/UNION	54	23
				35 SHEETS



DEAD LOAD DEFLECTION DIAGRAM

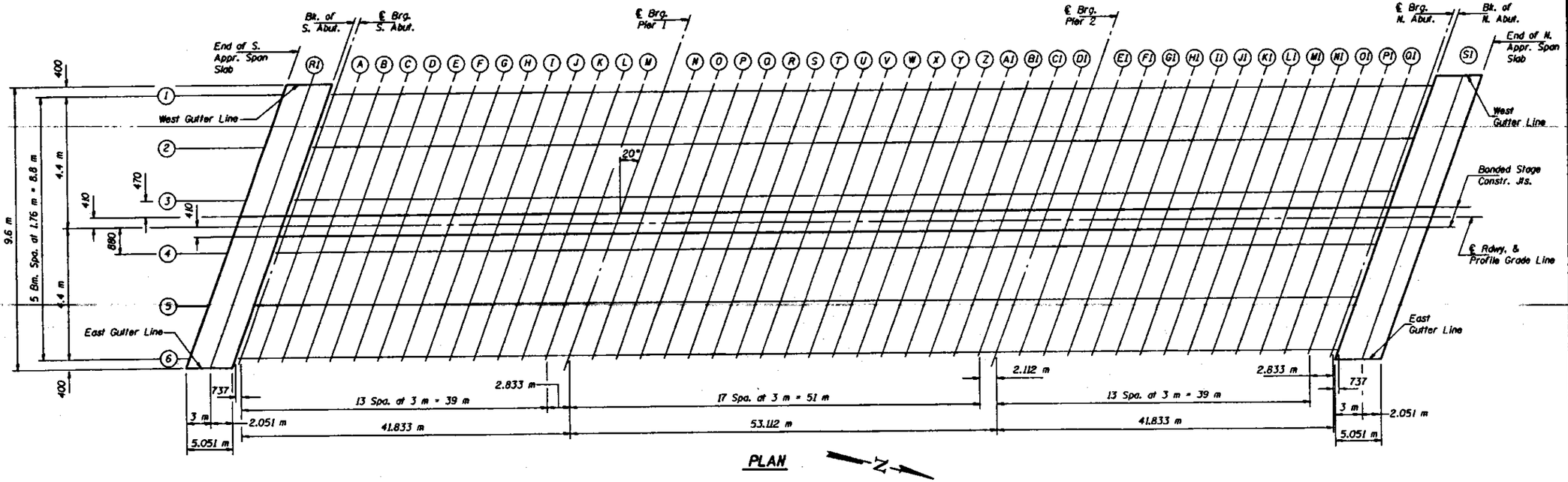
(Includes weight of concrete only)

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 5 thru 7 of 35.
All dimensions are in millimeters (mm) except as noted.
All offsets are in meters.



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

FILLET HEIGHTS



PLAN

DESIGNED	Ted Montoney
CHECKED	Daniel L. Smith
	AMC
DRAWN	S. VIJAY TAYLOR
CHECKED	Thinn DTS

February 25, 19 98

EXAMINED Greg J. Kasper, ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson, ENGINEER OF BRIDGES AND STRUCTURES

E-S (M) 4-30-97

TOP OF SLAB ELEVATIONS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

F.A.P. 312	(318-8)R	JACKSON/ UNION	54	24

SHEET NO. 5
35 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27371.845	-4.400	112.963	112.963
CL Brg. S. Abut.	27372.582	-4.400	112.964	112.964
A	27375.582	-4.400	112.967	112.979
B	27378.582	-4.400	112.969	112.994
C	27381.582	-4.400	112.971	113.008
D	27384.582	-4.400	112.974	113.018
E	27387.582	-4.400	112.976	113.021
F	27390.582	-4.400	112.978	113.025
G	27393.582	-4.400	112.980	113.029
H	27396.582	-4.400	112.982	113.022
I	27399.582	-4.400	112.983	113.016
J	27402.582	-4.400	112.985	113.010
K	27405.582	-4.400	112.986	113.004
L	27408.582	-4.400	112.988	112.999
M	27411.582	-4.400	112.989	112.994
Pier 1	27414.415	-4.400	112.990	112.990
N	27417.415	-4.400	112.981	112.998
O	27420.415	-4.400	112.992	113.005
P	27423.415	-4.400	112.992	113.013
Q	27426.415	-4.400	112.993	113.020
R	27429.415	-4.400	112.993	113.027
S	27432.415	-4.400	112.994	113.033
T	27435.415	-4.400	112.994	113.039
U	27438.415	-4.400	112.994	113.045
V	27441.415	-4.400	112.994	113.049
W	27444.415	-4.400	112.994	113.043
X	27447.415	-4.400	112.994	113.037
Y	27450.415	-4.400	112.993	113.031
Z	27453.415	-4.400	112.993	113.024
A1	27456.415	-4.400	112.992	113.017
B1	27459.415	-4.400	112.991	113.010
C1	27462.415	-4.400	112.990	113.002
D1	27465.415	-4.400	112.989	112.994
Pier 2	27467.527	-4.400	112.989	112.989
E1	27470.527	-4.400	112.987	112.993
F1	27473.527	-4.400	112.986	112.998
G1	27476.527	-4.400	112.985	113.003
H1	27479.527	-4.400	112.983	113.008
I1	27482.527	-4.400	112.981	113.015
J1	27485.527	-4.400	112.980	113.021
K1	27488.527	-4.400	112.978	113.027
L1	27491.527	-4.400	112.976	113.023
M1	27494.527	-4.400	112.973	113.019
N1	27497.527	-4.400	112.971	113.015
O1	27500.527	-4.400	112.969	113.005
P1	27503.527	-4.400	112.966	112.990
Q1	27506.527	-4.400	112.964	112.975
CL Brg. N. Abut.	27509.360	-4.400	112.961	112.961
Bk. N. Abut.	27510.097	-4.400	112.960	112.960

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27371.205	-2.640	112.993	112.993
CL Brg. S. Abut.	27371.942	-2.640	112.994	112.994
A	27374.942	-2.640	112.996	113.009
B	27377.942	-2.640	112.999	113.024
C	27380.942	-2.640	113.001	113.038
D	27383.942	-2.640	113.004	113.048
E	27386.942	-2.640	113.006	113.051
F	27389.942	-2.640	113.008	113.055
G	27392.942	-2.640	113.010	113.059
H	27395.942	-2.640	113.012	113.052
I	27398.942	-2.640	113.013	113.046
J	27401.942	-2.640	113.015	113.040
K	27404.942	-2.640	113.016	113.034
L	27407.942	-2.640	113.018	113.029
M	27410.942	-2.640	113.019	113.025
Pier 1	27413.775	-2.640	113.020	113.020
N	27416.775	-2.640	113.021	113.028
O	27419.775	-2.640	113.022	113.035
P	27422.775	-2.640	113.023	113.043
Q	27425.775	-2.640	113.023	113.050
R	27428.775	-2.640	113.024	113.057
S	27431.775	-2.640	113.024	113.063
T	27434.775	-2.640	113.024	113.069
U	27437.775	-2.640	113.024	113.075
V	27440.775	-2.640	113.024	113.080
W	27443.775	-2.640	113.024	113.074
X	27446.775	-2.640	113.024	113.067
Y	27449.775	-2.640	113.024	113.061
Z	27452.775	-2.640	113.023	113.055
A1	27455.775	-2.640	113.023	113.048
B1	27458.775	-2.640	113.022	113.040
C1	27461.775	-2.640	113.021	113.033
D1	27464.775	-2.640	113.020	113.025
Pier 2	27466.887	-2.640	113.019	113.019
E1	27469.887	-2.640	113.018	113.024
F1	27472.887	-2.640	113.017	113.029
G1	27475.887	-2.640	113.015	113.033
H1	27478.887	-2.640	113.014	113.039
I1	27481.887	-2.640	113.012	113.045
J1	27484.887	-2.640	113.010	113.052
K1	27487.887	-2.640	113.008	113.057
L1	27490.887	-2.640	113.006	113.054
M1	27493.887	-2.640	113.004	113.050
N1	27496.887	-2.640	113.002	113.046
O1	27499.887	-2.640	113.000	113.036
P1	27502.887	-2.640	112.997	113.021
Q1	27505.887	-2.640	112.995	113.006
CL Brg. N. Abut.	27508.720	-2.640	112.992	112.992
Bk. N. Abut.	27509.457	-2.640	112.991	112.991

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27370.564	-.880	113.019	113.019
CL Brg. S. Abut.	27371.301	-.880	113.019	113.019
A	27374.301	-.880	113.022	113.035
B	27377.301	-.880	113.025	113.049
C	27380.301	-.880	113.027	113.064
D	27383.301	-.880	113.030	113.073
E	27386.301	-.880	113.032	113.077
F	27389.301	-.880	113.034	113.081
G	27392.301	-.880	113.036	113.085
H	27395.301	-.880	113.038	113.078
I	27398.301	-.880	113.039	113.072
J	27401.301	-.880	113.041	113.066
K	27404.301	-.880	113.042	113.060
L	27407.301	-.880	113.044	113.056
M	27410.301	-.880	113.045	113.051
Pier 1	27413.134	-.880	113.046	113.046
N	27416.134	-.880	113.047	113.054
O	27419.134	-.880	113.048	113.062
P	27422.134	-.880	113.049	113.069
Q	27425.134	-.880	113.049	113.077
R	27428.134	-.880	113.050	113.083
S	27431.134	-.880	113.050	113.090
T	27434.134	-.880	113.051	113.096
U	27437.134	-.880	113.051	113.102
V	27440.134	-.880	113.051	113.106
W	27443.134	-.880	113.051	113.100
X	27446.134	-.880	113.050	113.094
Y	27449.134	-.880	113.050	113.088
Z	27452.134	-.880	113.050	113.081
A1	27455.134	-.880	113.049	113.074
B1	27458.134	-.880	113.048	113.067
C1	27461.134	-.880	113.048	113.059
D1	27464.134	-.880	113.047	113.051
Pier 2	27466.246	-.880	113.046	113.046
E1	27469.246	-.880	113.045	113.051
F1	27472.246	-.880	113.043	113.056
G1	27475.246	-.880	113.042	113.060
H1	27478.246	-.880	113.041	113.066
I1	27481.246	-.880	113.039	113.072
J1	27484.246	-.880	113.037	113.078
K1	27487.246	-.880	113.035	113.084
L1	27490.246	-.880	113.033	113.081
M1	27493.246	-.880	113.031	113.077
N1	27496.246	-.880	113.029	113.073
O1	27499.246	-.880	113.027	113.063
P1	27502.246	-.880	113.024	113.048
Q1	27505.246	-.880	113.021	113.033
CL Brg. N. Abut.	27508.079	-.880	113.019	113.019
Bk. N. Abut.	27508.816	-.880	113.018	113.018

STAGE CONSTRUCTION LINE (WEST)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27370.393	-.410	113.026	113.026
CL Brg. S. Abut.	27371.130	-.410	113.026	113.026
A	27374.130	-.410	113.029	113.041
B	27377.130	-.410	113.032	113.056
C	27380.130	-.410	113.034	113.071
D	27383.130	-.410	113.036	113.080
E	27386.130	-.410	113.039	113.084
F	27389.130	-.410	113.041	113.088
G	27392.130	-.410	113.043	113.092
H	27395.130	-.410	113.045	113.085
I	27398.130	-.410	113.046	113.079
J	27401.130	-.410	113.048	113.073
K	27404.130	-.410	113.049	113.067
L	27407.130	-.410	113.051	113.063
M	27410.130	-.410	113.052	113.058
Pier 1	27412.963	-.410	113.053	113.053
N	27415.963	-.410	113.054	113.061
O	27418.963	-.410	113.055	113.069
P	27421.963	-.410	113.056	113.076
Q	27424.963	-.410	113.056	113.084
R	27427.963	-.410	113.057	113.090
S	27430.963	-.410	113.057	113.097
T	27433.963	-.410	113.058	113.103
U	27436.963	-.410	113.058	113.109
V	27439.963	-.410	113.058	113.113
W	27442.963	-.410	113.058	113.107
X	27445.963	-.410	113.058	113.101
Y	27448.963	-.410	113.057	113.095
Z	27451.963	-.410	113.057	113.088
A1	27454.963	-.410	113.056	113.081
B1	27457.963	-.410	113.056	113.074
C1	27460.963	-.410	113.055	113.066
D1	27463.963	-.410	113.054	113.059
Pier 2	27466.075	-.410	113.053	113.053
E1	27469.075	-.410	113.052	113.058
F1	27472.075	-.410	113.051	113.063
G1	27475.075	-.410	113.049	113.067
H1	27478.075	-.410	113.048	113.073
I1	27481.075	-.410	113.046	113.079
J1	27484.075	-.410	113.044	113.086
K1	27487.075	-.410	113.042	113.091
L1	27490.075	-.410	113.040	113.088
M1	27493.075	-.410	113.038	113.084
N1	27496.075	-.410	113.036	113.080
O1	27499.075	-.410	113.034	113.070
P1	27502.075	-.410	113.031	113.055
Q1	27505.075	-.410	113.029	113.040
CL Brg. N. Abut.	27507.908	-.410	113.026	113.026
Bk. N. Abut.	27508.645	-.410	113.025	113.025

Work this Sheet with Sheet 4 of 35.

DESIGNED
CHECKED
AMC
DRAWN S. VSEN TAYLOR
CHECKED

February 25, 1998
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

E-S (M) 4-30-97

TOP OF SLAB ELEVATIONS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

ROUTE NO.	SECTION	COUNTY	JOB NO.	SHEET NO.
F.A.P. 312	(3HB-1)OR	JACKSON / UNION	54	25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		35 SHEETS

SHEET NO. 6

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROFILE GRADE LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27370.244	.000	113.032	113.032
CL Brg. S. Abut.	27370.981	.000	113.032	113.032
A	27373.981	.000	113.035	113.047
B	27376.981	.000	113.038	113.062
C	27379.981	.000	113.040	113.077
D	27382.981	.000	113.043	113.086
E	27385.981	.000	113.045	113.090
F	27388.981	.000	113.047	113.094
G	27391.981	.000	113.049	113.098
H	27394.981	.000	113.051	113.091
I	27397.981	.000	113.052	113.085
J	27400.981	.000	113.054	113.079
K	27403.981	.000	113.056	113.073
L	27406.981	.000	113.057	113.069
M	27409.981	.000	113.058	113.064
Pier 1	27412.814	.000	113.059	113.059
N	27415.814	.000	113.060	113.067
O	27418.814	.000	113.061	113.075
P	27421.814	.000	113.062	113.082
Q	27424.814	.000	113.063	113.090
R	27427.814	.000	113.063	113.096
S	27430.814	.000	113.064	113.103
T	27433.814	.000	113.064	113.109
U	27436.814	.000	113.064	113.115
V	27439.814	.000	113.064	113.119
W	27442.814	.000	113.064	113.113
X	27445.814	.000	113.064	113.107
Y	27448.814	.000	113.063	113.101
Z	27451.814	.000	113.063	113.095
A1	27454.814	.000	113.062	113.087
B1	27457.814	.000	113.062	113.080
C1	27460.814	.000	113.061	113.072
D1	27463.814	.000	113.060	113.065
Pier 2	27465.926	.000	113.059	113.059
E1	27468.926	.000	113.058	113.064
F1	27471.926	.000	113.057	113.069
G1	27474.926	.000	113.055	113.074
H1	27477.926	.000	113.054	113.079
I1	27480.926	.000	113.052	113.085
J1	27483.926	.000	113.051	113.092
K1	27486.926	.000	113.049	113.098
L1	27489.926	.000	113.047	113.094
M1	27492.926	.000	113.045	113.090
N1	27495.926	.000	113.042	113.086
O1	27498.926	.000	113.040	113.076
P1	27501.926	.000	113.038	113.068
Q1	27504.926	.000	113.035	113.047
CL Brg. N. Abut.	27507.759	.000	113.032	113.032
Bk. N. Abut.	27508.496	.000	113.032	113.032

STAGE CONSTRUCTION LINE (EAST)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27370.095	.410	113.025	113.025
CL Brg. S. Abut.	27370.832	.410	113.026	113.026
A	27373.832	.410	113.029	113.041
B	27376.832	.410	113.031	113.056
C	27379.832	.410	113.034	113.071
D	27382.832	.410	113.036	113.080
E	27385.832	.410	113.038	113.084
F	27388.832	.410	113.041	113.088
G	27391.832	.410	113.043	113.091
H	27394.832	.410	113.044	113.085
I	27397.832	.410	113.046	113.079
J	27400.832	.410	113.048	113.072
K	27403.832	.410	113.049	113.067
L	27406.832	.410	113.051	113.062
M	27409.832	.410	113.052	113.058
Pier 1	27412.665	.410	113.053	113.053
N	27415.665	.410	113.054	113.061
O	27418.665	.410	113.055	113.069
P	27421.665	.410	113.056	113.076
Q	27424.665	.410	113.056	113.084
R	27427.665	.410	113.057	113.090
S	27430.665	.410	113.057	113.097
T	27433.665	.410	113.058	113.103
U	27436.665	.410	113.058	113.109
V	27439.665	.410	113.058	113.113
W	27442.665	.410	113.058	113.107
X	27445.665	.410	113.058	113.101
Y	27448.665	.410	113.057	113.095
Z	27451.665	.410	113.057	113.088
A1	27454.665	.410	113.056	113.081
B1	27457.665	.410	113.056	113.074
C1	27460.665	.410	113.055	113.066
D1	27463.665	.410	113.054	113.059
Pier 2	27465.777	.410	113.053	113.053
E1	27468.777	.410	113.052	113.058
F1	27471.777	.410	113.051	113.063
G1	27474.777	.410	113.049	113.067
H1	27477.777	.410	113.048	113.073
I1	27480.777	.410	113.046	113.079
J1	27483.777	.410	113.045	113.086
K1	27486.777	.410	113.043	113.092
L1	27489.777	.410	113.041	113.098
M1	27492.777	.410	113.039	113.084
N1	27495.777	.410	113.036	113.090
O1	27498.777	.410	113.034	113.070
P1	27501.777	.410	113.032	113.056
Q1	27504.777	.410	113.029	113.041
CL Brg. N. Abut.	27507.610	.410	113.026	113.026
Bk. N. Abut.	27508.347	.410	113.026	113.026

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27369.924	.880	113.018	113.018
CL Brg. S. Abut.	27370.661	.880	113.019	113.019
A	27373.661	.880	113.022	113.034
B	27376.661	.880	113.024	113.049
C	27379.661	.880	113.027	113.064
D	27382.661	.880	113.029	113.073
E	27385.661	.880	113.031	113.077
F	27388.661	.880	113.033	113.081
G	27391.661	.880	113.035	113.084
H	27394.661	.880	113.037	113.078
I	27397.661	.880	113.039	113.072
J	27400.661	.880	113.041	113.065
K	27403.661	.880	113.042	113.060
L	27406.661	.880	113.044	113.055
M	27409.661	.880	113.045	113.051
Pier 1	27412.494	.880	113.046	113.046
N	27415.494	.880	113.047	113.054
O	27418.494	.880	113.048	113.061
P	27421.494	.880	113.049	113.069
Q	27424.494	.880	113.049	113.076
R	27427.494	.880	113.050	113.083
S	27430.494	.880	113.050	113.090
T	27433.494	.880	113.051	113.096
U	27436.494	.880	113.051	113.102
V	27439.494	.880	113.051	113.106
W	27442.494	.880	113.051	113.100
X	27445.494	.880	113.051	113.094
Y	27448.494	.880	113.050	113.088
Z	27451.494	.880	113.050	113.081
A1	27454.494	.880	113.049	113.074
B1	27457.494	.880	113.049	113.067
C1	27460.494	.880	113.048	113.059
D1	27463.494	.880	113.047	113.052
Pier 2	27465.606	.880	113.046	113.046
E1	27468.606	.880	113.045	113.051
F1	27471.606	.880	113.044	113.056
G1	27474.606	.880	113.042	113.060
H1	27477.606	.880	113.041	113.066
I1	27480.606	.880	113.039	113.072
J1	27483.606	.880	113.038	113.079
K1	27486.606	.880	113.036	113.085
L1	27489.606	.880	113.034	113.081
M1	27492.606	.880	113.032	113.077
N1	27495.606	.880	113.029	113.073
O1	27498.606	.880	113.027	113.063
P1	27501.606	.880	113.025	113.049
Q1	27504.606	.880	113.022	113.034
CL Brg. N. Abut.	27507.439	.880	113.019	113.019
Bk. N. Abut.	27508.176	.880	113.019	113.019

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27369.283	2.640	112.991	112.991
CL Brg. S. Abut.	27370.020	2.640	112.992	112.992
A	27373.020	2.640	112.995	113.007
B	27376.020	2.640	112.997	113.022
C	27379.020	2.640	113.000	113.037
D	27382.020	2.640	113.002	113.046
E	27385.020	2.640	113.004	113.050
F	27388.020	2.640	113.007	113.054
G	27391.020	2.640	113.009	113.057
H	27394.020	2.640	113.011	113.051
I	27397.020	2.640	113.012	113.045
J	27400.020	2.640	113.014	113.039
K	27403.020	2.640	113.015	113.033
L	27406.020	2.640	113.017	113.029
M	27409.020	2.640	113.018	113.024
Pier 1	27411.853	2.640	113.019	113.019
N	27414.853	2.640	113.020	113.027
O	27417.853	2.640	113.021	113.035
P	27420.853	2.640	113.022	113.042
Q	27423.853	2.640	113.023	113.050
R	27426.853	2.640	113.023	113.057
S	27429.853	2.640	113.024	113.063
T	27432.853	2.640	113.024	113.069
U	27435.853	2.640	113.024	113.075
V	27438.853	2.640	113.024	113.080
W	27441.853	2.640	113.024	113.074
X	27444.853	2.640	113.024	113.068
Y	27447.853	2.640	113.024	113.061
Z	27450.853	2.640	113.024	113.055
A1	27453.853	2.640	113.023	113.048
B1	27456.853	2.640	113.022	113.041
C1	27459.853	2.640	113.022	113.033
D1	27462.853	2.640	113.021	113.025
Pier 2	27464.965	2.640	113.020	113.020
E1	27467.965	2.640	113.019	113.025
F1	27470.965	2.640	113.018	113.030
G1	27473.965	2.640	113.016	113.034
H1	27476.965	2.640	113.015	113.040
I1	27479.965	2.640	113.013	113.046
J1	27482.965	2.640	113.012	113.053
K1	27485.965	2.640	113.010	113.059
L1	27488.965	2.640	113.008	113.055
M1	27491.965	2.640	113.006	113.051
N1	27494.965	2.640	113.004	113.047
O1	27497.965	2.640	113.001	113.038
P1	27500.965	2.640	112.999	113.023
Q1	27503.965	2.640	112.996	113.008
CL Brg. N. Abut.	27506.798	2.640	112.994	112.994
Bk. N. Abut.	27507.535	2.640	112.993	112.993

Work this Sheet with Sheet 4 of 35.
For Girder 6, see sheet 7 of 35.

DESIGNED	Ted Montroy
CHECKED	Dennis Snyder
AMC	
DRAWN	S. YSEN TAYLOR
CHECKED	Thim OJS

February 25 19 98

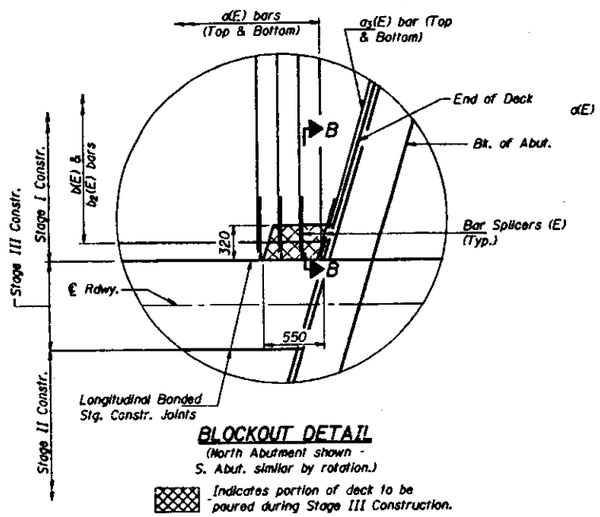
EXAMINED Oscar O. Kasper
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

TOP OF SLAB ELEVATIONS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

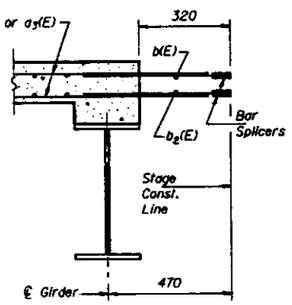
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 7
F.A.P. 312 (SBI-B) 2R		JACKSON/UNION	54	26	35 SHEETS

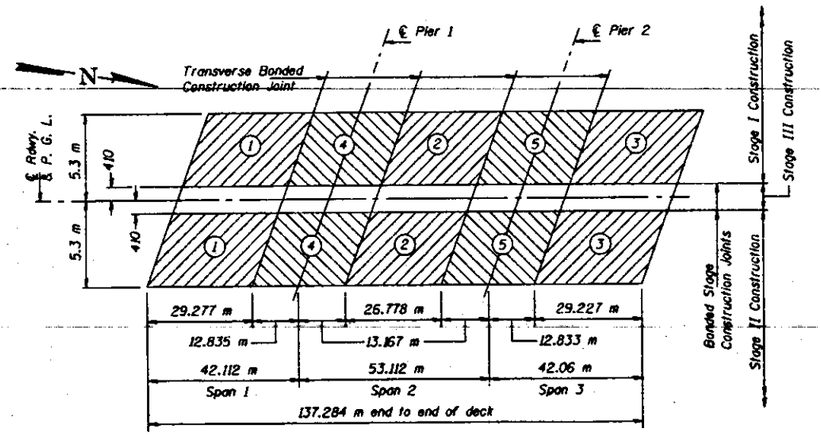


BLOCKOUT DETAIL
(North Abutment shown - S. Abut. similar by rotation.)

Indicates portion of deck to be poured during Stage III Construction.



SECTION B-B



DECK POURING SEQUENCE PLAN

Notes: The deck pouring sequence shall be as shown above.
When the deck pour is stopped for the day at one or more of the transverse Bonded Construction Joints in the deck pouring sequence as shown, the next pour shall not be made until both the following requirements are met:
1. At least 72 hours shall have elapsed from the end of the previous pour.
2. The concrete strength shall have attained a minimum modulus of rupture of 4.5 MPa or a minimum compressive strength of 24 MPa.

Indicates pouring sequence in positive moment areas.

Indicates pouring sequence in negative moment areas.

DESIGNED	Ted Mantay
CHECKED	
DRAWN	AMC S. VANN TAYLOR
CHECKED	Thm DTB

February 25 19 98
EXAMINED Engineer of Bridge Design
PASSED Rafael E. Arafiles Engineer of Bridges and Structures

E-S (M) 4-30-97

EAST GUTTER LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of S. Appr. Sp.	27363.465	4.8	112.948	112.948
P1	27366.465	4.8	112.950	112.951
Bk. S. Abut.	27368.497	4.8	112.952	112.952
Bk. N. Abut.	27506.749	4.8	112.955	112.955
S1	27509.749	4.8	112.953	112.954
End of N. Appr. Sp.	27511.781	4.8	112.951	112.951

℄ ROADWAY AND PROFILE GRADE LINE

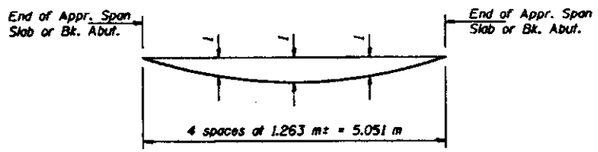
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of S. Appr. Sp.	27365.212	0.0	113.027	113.027
P1	27368.212	0.0	113.030	113.031
Bk. S. Abut.	27370.244	0.0	113.032	113.032
Bk. N. Abut.	27508.496	0.0	113.032	113.032
S1	27511.496	0.0	113.029*	113.030
End of N. Appr. Sp.	27513.528	0.0	113.027	113.027

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of S. Appr. Sp.	27365.361	-0.410	113.021	113.021
P1	27368.361	-0.410	113.023	113.024
Bk. S. Abut.	27370.393	-0.410	113.026	113.026
Bk. N. Abut.	27508.645	-0.410	113.025	113.025
S1	27511.645	-0.410	113.023	113.024
End of N. Appr. Sp.	27513.677	-0.410	113.021	113.021

WEST GUTTER LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
End of S. Appr. Sp.	27366.959	-4.8	112.951	112.951
P1	27369.959	-4.8	112.953	112.954
Bk. S. Abut.	27371.991	-4.8	112.955	112.955
Bk. N. Abut.	27510.243	-4.8	112.952	112.952
S1	27513.243	-4.8	112.949	112.950
End of N. Appr. Sp.	27515.275	-4.8	112.947	112.947



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only)

Notes: 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 below.
All dimensions are in millimeters (mm) except as noted.
All offsets are in meters.

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	27368.643	4.400	112.960	112.960
CL Brg. S. Abut.	27369.380	4.400	112.961	112.961
A	27372.380	4.400	112.964	112.976
B	27375.380	4.400	112.966	112.991
C	27378.380	4.400	112.969	113.006
D	27381.380	4.400	112.971	113.015
E	27384.380	4.400	112.974	113.019
F	27387.380	4.400	112.976	113.023
G	27390.380	4.400	112.978	113.027
H	27393.380	4.400	112.980	113.020
I	27396.380	4.400	112.982	113.014
J	27399.380	4.400	112.983	113.008
K	27402.380	4.400	112.985	113.002
L	27405.380	4.400	112.986	112.998
M	27408.380	4.400	112.988	112.993
Pier 1	27411.213	4.400	112.989	112.989
N	27414.213	4.400	112.990	112.997
O	27417.213	4.400	112.991	113.004
P	27420.213	4.400	112.992	113.012
Q	27423.213	4.400	112.992	113.019
R	27426.213	4.400	112.993	113.026
S	27429.213	4.400	112.993	113.033
T	27432.213	4.400	112.994	113.039
U	27435.213	4.400	112.994	113.045
V	27438.213	4.400	112.994	113.049
W	27441.213	4.400	112.994	113.043
X	27444.213	4.400	112.994	113.037
Y	27447.213	4.400	112.994	113.031
Z	27450.213	4.400	112.993	113.025
A1	27453.213	4.400	112.993	113.018
B1	27456.213	4.400	112.992	113.010
C1	27459.213	4.400	112.991	113.003
D1	27462.213	4.400	112.990	112.995
Pier 2	27464.325	4.400	112.990	112.990
E1	27467.325	4.400	112.989	112.995
F1	27470.325	4.400	112.988	113.000
G1	27473.325	4.400	112.986	113.004
H1	27476.325	4.400	112.985	113.010
I1	27479.325	4.400	112.983	113.016
J1	27482.325	4.400	112.982	113.023
K1	27485.325	4.400	112.980	113.029
L1	27488.325	4.400	112.978	113.025
M1	27491.325	4.400	112.976	113.021
N1	27494.325	4.400	112.974	113.017
O1	27497.325	4.400	112.971	113.008
P1	27500.325	4.400	112.969	112.993
Q1	27503.325	4.400	112.966	112.978
CL Brg. N. Abut.	27506.158	4.400	112.964	112.964
Bk. N. Abut.	27506.895	4.400	112.963	112.963

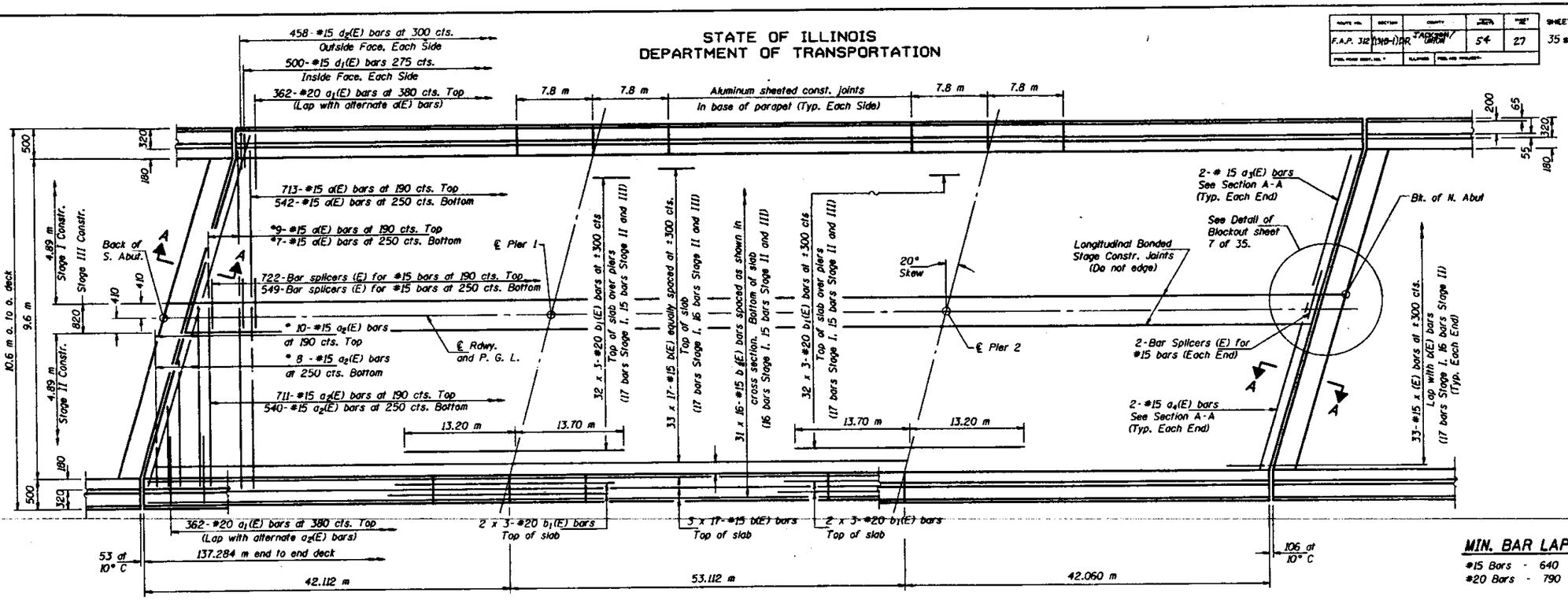
Work this Sheet with Sheet 4 of 35.

TOP OF SLAB ELEVATIONS
NORTH AND SOUTH APPROACH SPANS &
GIRDER 6 of MAIN SPANS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.P. 312	(1)B-(1)DR	JACKSON/UNION	54	27

SHEET NO. 8
35 SHEETS

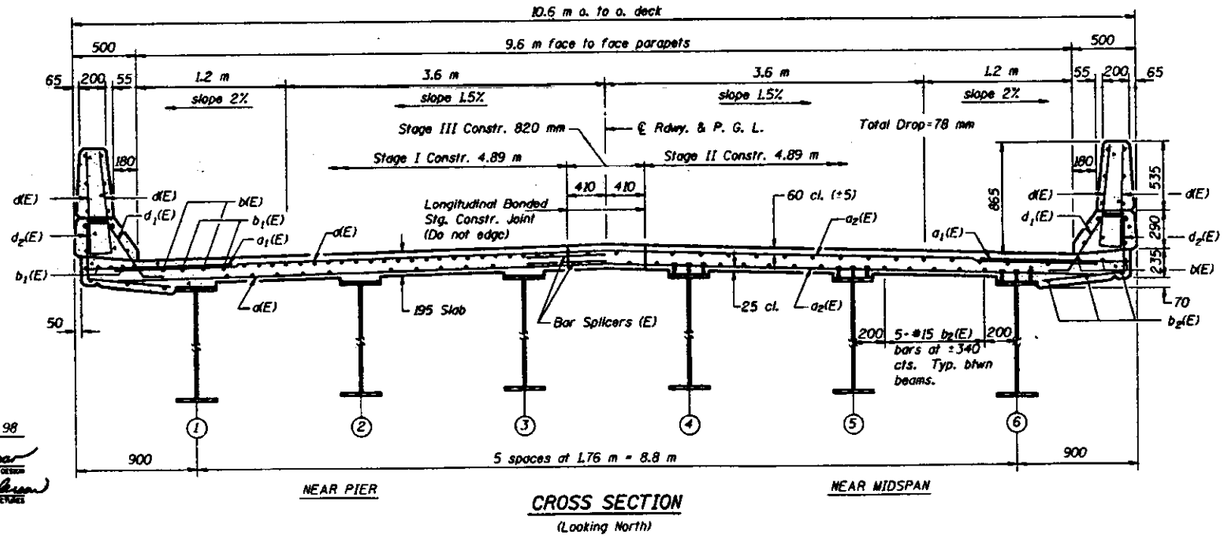
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



MIN. BAR LAP

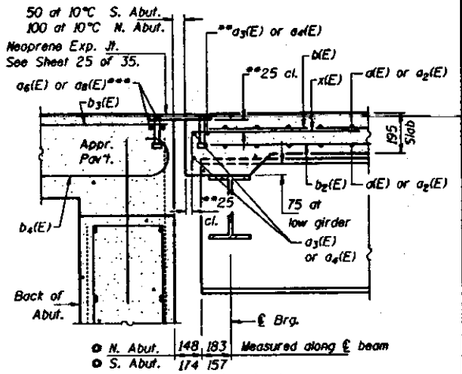
#15 Bars - 640
#20 Bars - 790

PLAN



CROSS SECTION

(Looking North)



SECTION A-A

Notes: See Sheet #9 of 35 for superstructure details and Bill of Material.

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.

~~See Sht. 9 of 35 for parapet reinforcement.~~

All dimensions are in millimeters (mm) except as noted.

See Sht. 22 of 35 for bar splicer details.

See Sht. 1 of 35 for Drainage Scupper and Floor Drain spacings.

See Sht. 7 of 35 for Deck Pouring Sequence.

*Order d(E) & d_2(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

**Place a_3(E) and a_4(E) bars in back of anchor bolts as shown if required to maintain 25 mm cl. (+0-3 mm). Anchor bolts should be tied to a_3(E) bars.

***Place a_5(E) and a_6(E) bars in back of anchor bolts as shown if required to maintain 25 mm cl. (+0-3 mm). Anchor bolts should be tied to a_5(E) and a_6(E) bars at end of slab. See Sheet 10 of 35 for approach slab reinforcement.

DESIGNED	T. Ted Montney
CHECKED	
CHECKED	AMC
DRAWN	S. VERN TAYLOR
CHECKED	

February 25 1998

EXAMINED Raj D. Kapur
LEADER OF BRIDGE DESIGN

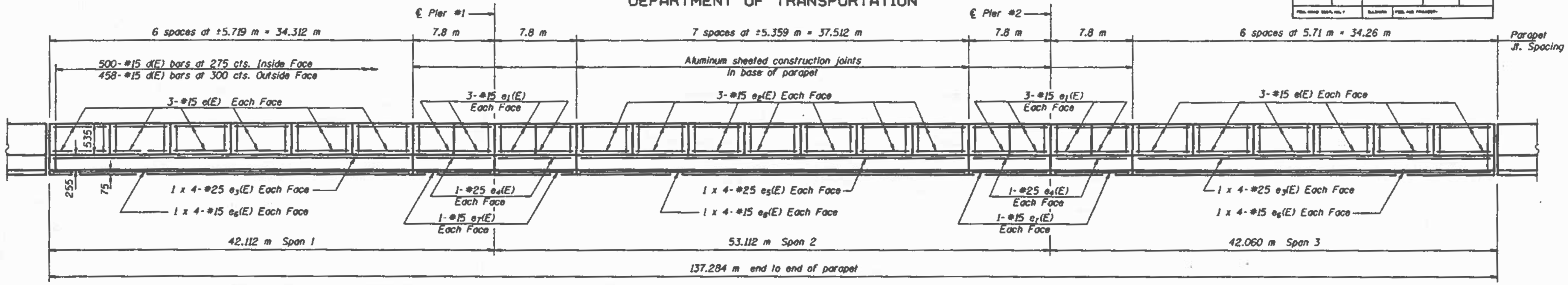
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

SUPERSTRUCTURE
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

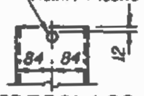
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	131B-2	JACKSON/UNION	54	28

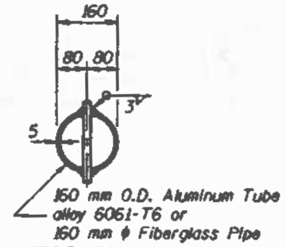
SHEET NO. 9
35 SHEETS



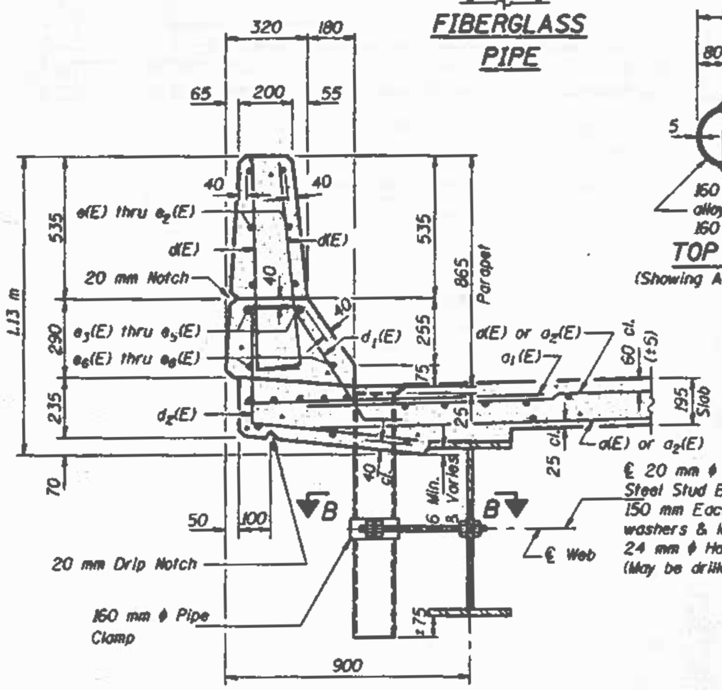
INSIDE ELEVATION OF PARAPET



FIBERGLASS PIPE

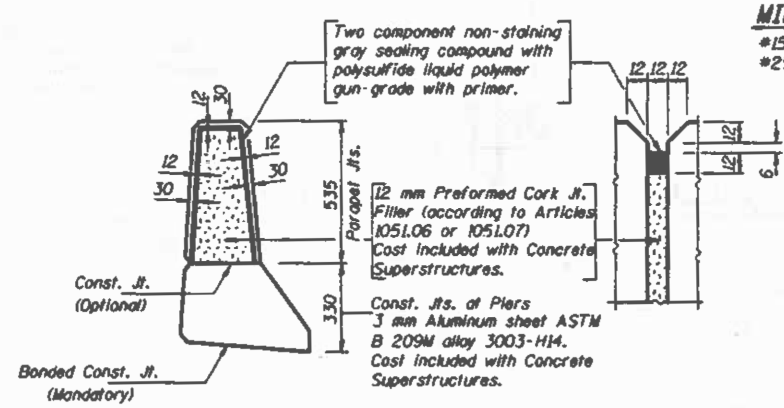


TOP PLAN
(Showing Aluminum Tube)



SECTION THRU PARAPET

℄ 20 mm ϕ x 500 mm (Min.) Steel Stud Bolts threaded 150 mm Each End with 2 washers & locknut
24 mm ϕ Holes in web (May be drilled in field.)



PARAPET JOINT DETAILS

Notes:

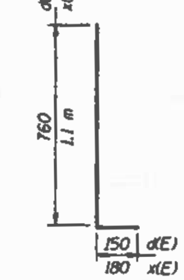
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drain shall be cleaned and given a washcoat pretreatment according to Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC Paint 27 prior to painting.

Fiberglass pipe shall conform to ASTM D 2996. with short-time rupture strength hoop tensile stress of 200 MPa minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

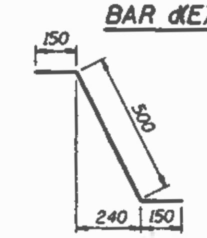
All dimensions are in millimeters (mm) except as noted.

PARAPET MIN. BAR LAP

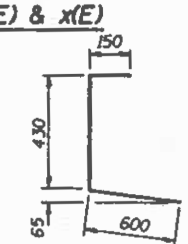
#15 Bars - 490
#25 Bars - 1.01 m



BAR d(E) & x(E)



BAR $d_1(E)$



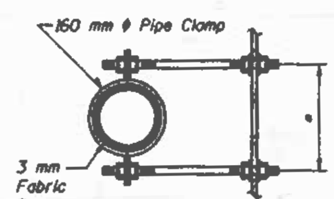
BAR $d_2(E)$

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
a(E)	1271	#15	4.60	——
a_1(E)	724	#20	1.2	——
a_2(E)	1271	#15	5.4	——
a_3(E)	4	#15	4.9	——
a_4(E)	4	#15	5.75	——
a_5(E)	64	#15	0.60	——
b(E)	663	#15	8.67	——
b_1(E)	216	#20	9.50	——
b_2(E)	496	#15	9.17	——
d(E)	1916	#15	0.91	
d_1(E)	1000	#15	0.80	
d_2(E)	916	#15	1.18	
e(E)	144	#15	5.61	——
e_1(E)	96	#15	3.8	——
e_2(E)	84	#15	5.25	——
e_3(E)	32	#25	9.32	——
e_4(E)	16	#25	7.7	——
e_5(E)	16	#25	10.12	——
e_6(E)	32	#15	8.95	——
e_7(E)	16	#15	7.7	——
e_8(E)	16	#15	9.75	——
x(E)	66	#15	1.28	
Reinforcement Bars, Epoxy Coated			kg	54.660
Concrete Superstructures			m³	375.4

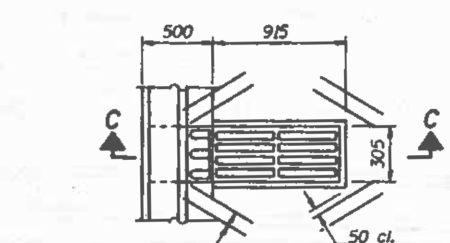
Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 1 x 4-#15 etc. indicates 1 line of bars with 4 lengths per line.



SECTION B-B

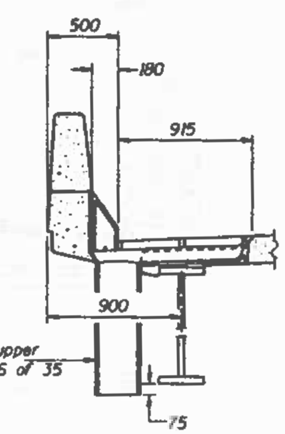
* Dimension as required by Pipe Clamp



2 - #15 a_5(E) bars at 100 mm cts. top (Typ.)

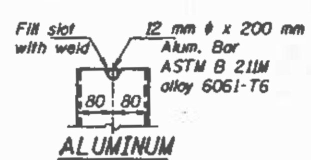
PLAN

Note: Cut longitudinal reinforcement to clear drainage scuppers.

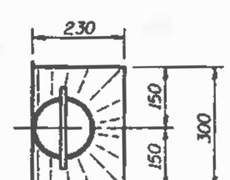


Drainage Scupper See sheet 26 of 35 for details.

SECTION C-C



ALUMINUM TUBE



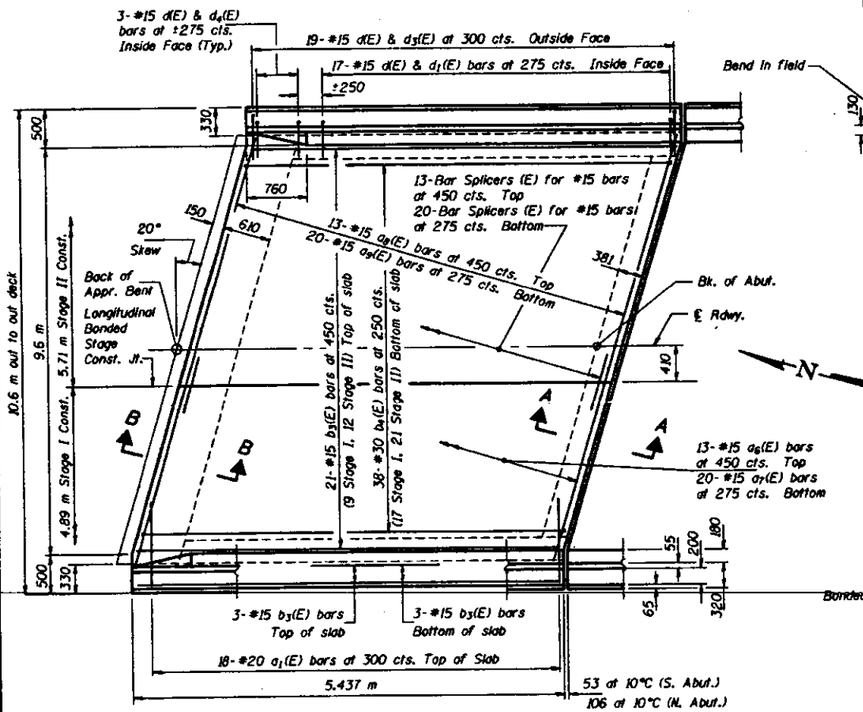
TOP PLAN

DESIGNED	Ted Mertz	February 25 1998	
CHECKED	[signature] AMC	EXAMINED	[signature] ENGINEER OF BRIDGE DESIGN
DRAWN	S. VERN TAYLOR	PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	TMM DJS		

SUPERSTRUCTURE DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

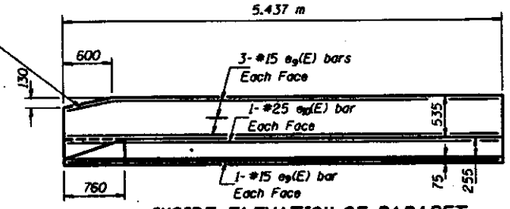
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS NO.	SHEET NO.
F.A.P. 312	(1918-1)BR	JACKSON / UNION	54	29
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		35 SHEETS

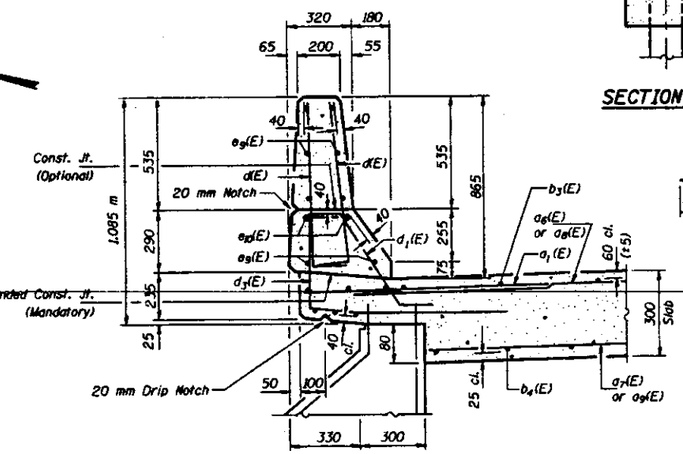


PLAN

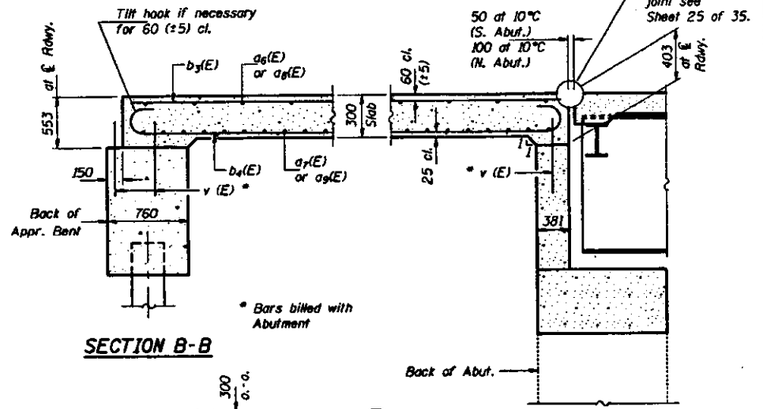
(North Abutment shown -
South Abutment similar by rotation.)



INSIDE ELEVATION OF PARAPET



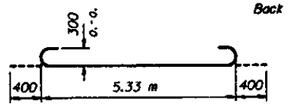
SECTION THRU PARAPET



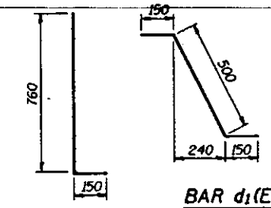
* Bars billed with Abutment

SECTION B-B

SECTION A-A

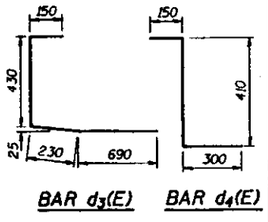


BAR $b_4(E)$



BAR d(E)

BAR $d_1(E)$

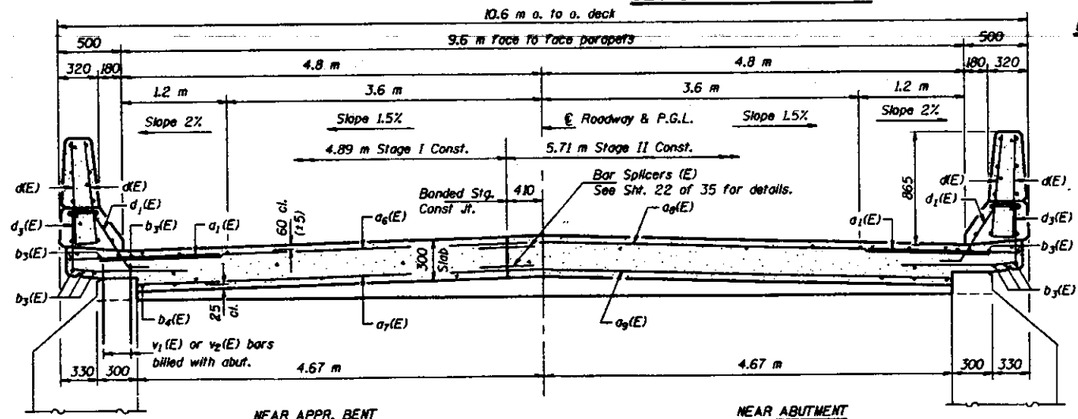


BAR $d_3(E)$ BAR $d_4(E)$

TWO APPROACH SLABS
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
$a_1(E)$	72	#20	1.20	—
$a_6(E)$	26	#15	4.57	—
$a_7(E)$	40	#15	4.16	—
$a_8(E)$	26	#15	5.34	—
$a_9(E)$	40	#15	4.98	—
$b_3(E)$	42	#15	5.33	—
$b_4(E)$	76	#30	6.13	⊂
d(E)	156	#15	0.91	—
$d_1(E)$	80	#15	0.80	⌐
$d_3(E)$	76	#15	1.50	⌐
$d_4(E)$	12	#15	0.86	⌐
$e_9(E)$	32	#15	5.33	—
$e_8(E)$	8	#25	5.33	—
Reinforcement Bars, Epoxy Coated			kg	5.050
Concrete Superstructures			m^3	42.2

Reinforcement bars designated (E) shall be epoxy coated.
All dimensions are in millimeters (mm) except as noted.



NEAR APPR. BENT — NEAR ABUTMENT

CROSS SECTION

(North Abutment shown - Looking North
South Abutment similar by rotation.)

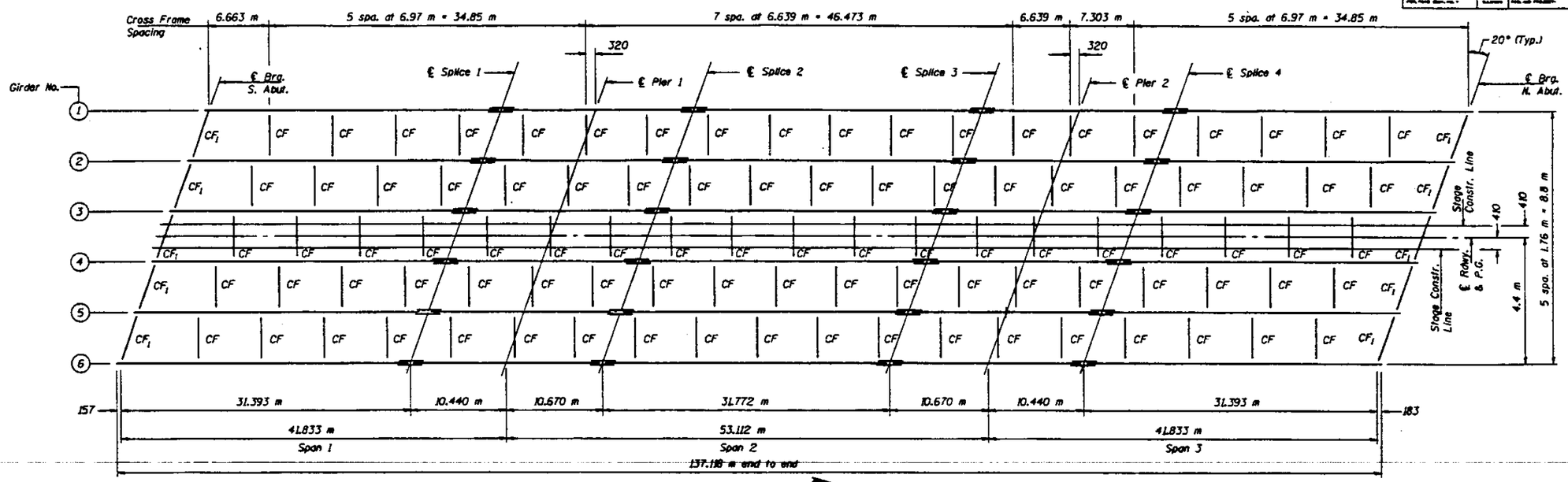
DESIGNED	Ted Mantay	February 25 19 98
CHECKED		EXAMINED Engineer of Bridge Design
CHECKED	AMC	PASSED Ralph E. Anderson Engineer of Bridges and Structures
DRAWN	S. VSEN TAYLOR	
CHECKED		

SA-2-L (M) 4-30-97

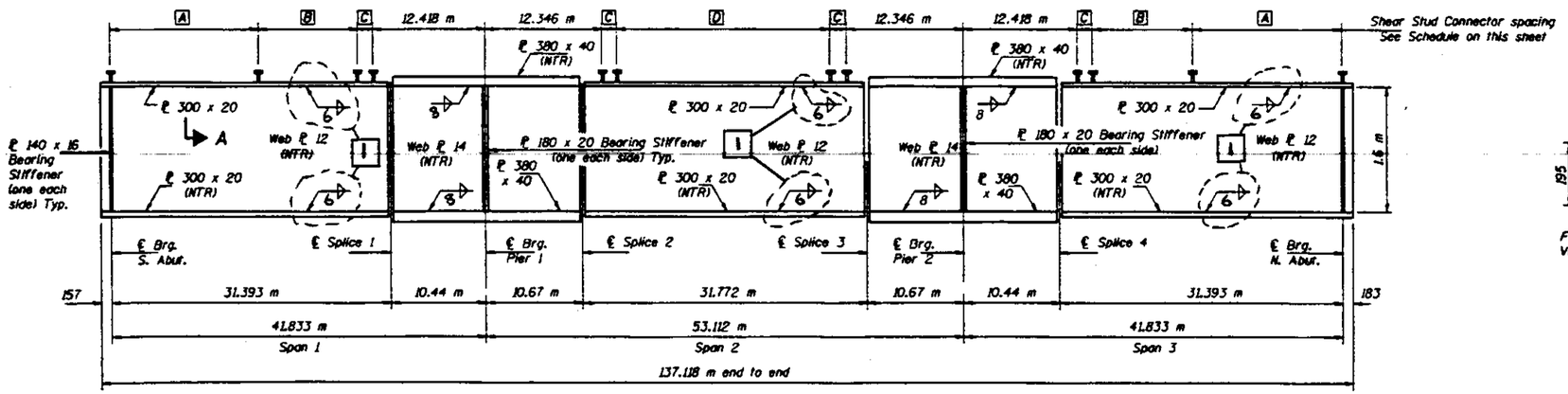
APPROACH SLAB DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 11
F.A.P. 312	(318-0)BR	UNION	54	36	35 SHEETS

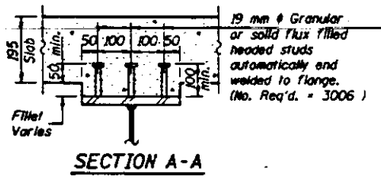


FRAMING PLAN



GIRDER ELEVATION

"NTR" denotes plates to which notch toughness requirements are applicable.



SECTION A-A

Notes: See Sheet 12 of 35 for Structural Steel Details.
All dimensions are in millimeters (mm) except as noted.
All girders, splice plates, and bearing stiffeners shall be AASHTO M270 Grade 345.

SHEAR STUD CONNECTOR SCHEDULE

TYPE	DESCRIPTION
A	27 spa. @ 610 = 16.47 m
B	24 spa. @ 515 = 12.36 m
C	3 spa. @ 195 = 585
D	50 spa. @ 545 = 27.25 m

DESIGNED	Ted Mantay
CHECKED	AMC
DRAWN	S. VSEN TAYLOR
CHECKED	Tmm DTB

February 25, 19 98

EXAMINED Engr. D. Kaspar
ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

1 Revised 8/14/98 Tmm

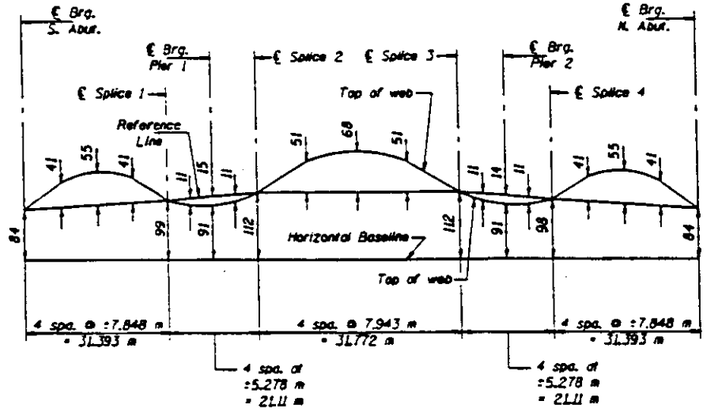
FRAMING PLAN AND GIRDER DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

G-1 (M) 4-30-97

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. 312	2318-0DR	SHEET NO. OF SHEETS STARTING WITH TITLE SHEET	54	31

SHEET NO. 12
35 SHEETS



CAMBER DIAGRAM

TOP OF WEB ELEVATIONS

(For Fabrication Only)

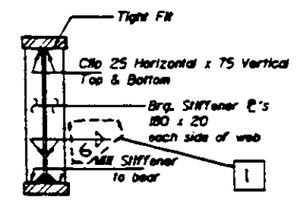
	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
℄ Brg. S. Abut.	112.729	112.759	112.784	112.784	112.757	112.726
℄ Splice 1	112.743	112.773	112.799	112.798	112.772	112.741
℄ Brg. Pier 1	112.735	112.765	112.791	112.791	112.764	112.734
℄ Splice 2	112.756	112.786	112.812	112.812	112.785	112.755
℄ Splice 3	112.755	112.785	112.812	112.812	112.786	112.756
℄ Brg. Pier 2	112.734	112.764	112.791	112.791	112.765	112.735
℄ Splice 4	112.741	112.772	112.798	112.799	112.773	112.743
℄ Brg. N. Abut.	112.726	112.757	112.784	112.784	112.759	112.729

2

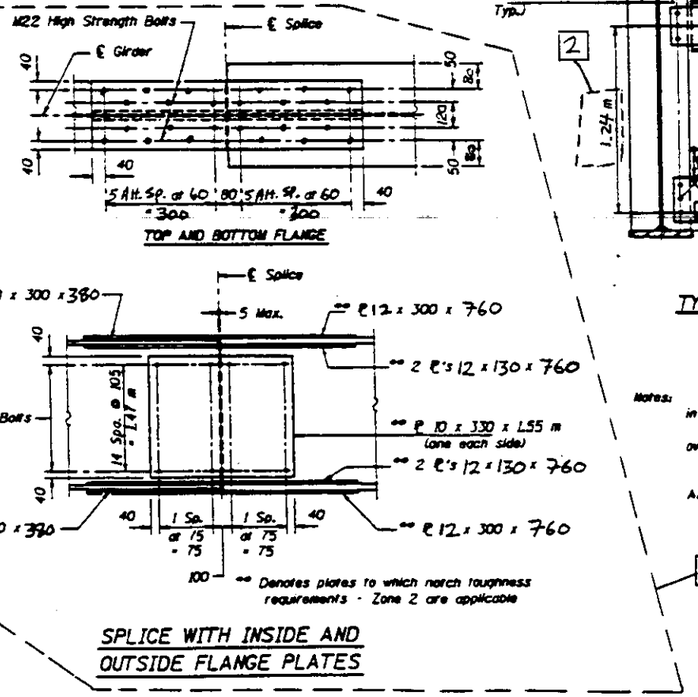
*Installation Sequence for Interior Cross Frames between Girders 3 and 4

*Optional

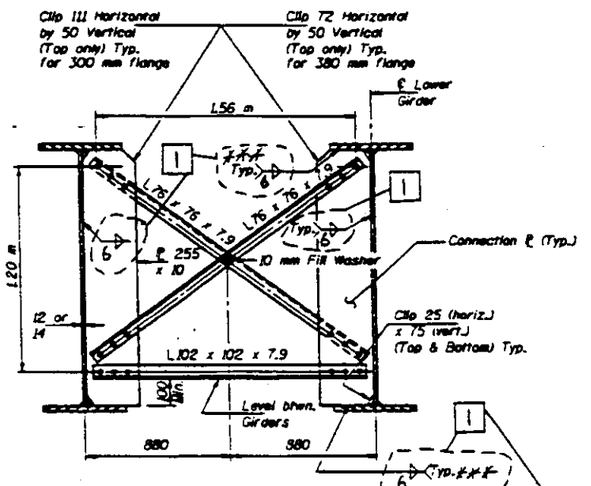
1. Complete Stage I Construction.
2. Erect Girders 4, 5 and 6.
3. Attach angles to Girder 3. Finger tighten bolts only.
4. Complete Stage II Construction.
5. Attach angles to Girder 4. Finger tighten bolts only.
6. Complete Stage III Deck Construction.
7. Fully tighten all crossframe bolts between Girders 3 and 4.



BEARING STIFFENER AT PIER



SPLICE WITH INSIDE AND OUTSIDE FLANGE PLATES



TYPICAL INTERIOR CROSS FRAME (CF)

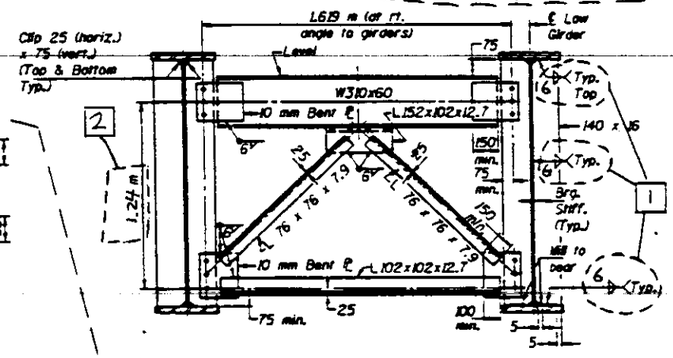
(No. Required = 95)

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. #1 or 0.6 Sp. #3	Pier 1 or Pier 2	0.5 Sp. #2
Is	(10^6 mm⁴)	11970	25224	11970
Ic (n)	(10^6 mm⁴)	27334		27334
Ic (3n)	(10^6 mm⁴)	20033		20033
Ss	(10^3 mm³)	14597	30028	14597
Sc (n)	(10^3 mm³)	20423		20423
Sc (3n)	(10^3 mm³)	18331		18331
w℄	(kN/m)	10.85	16.71	10.85
M℄	(kN-m)	1121	4021	996
sw℄	(kN/m)	4.23		4.23
Msw℄	(kN-m)	480		470
Mℓ	(kN-m)	1289	1583	1372
M (Imp)	(kN-m)	246	282	229
5(Mℓ+M(Imp))	(kN-m)	2557	3109	2669
Mo	(kN-m)	5405	9269	5375
Mu	(kN-m)	5818		7528
fs℄ non-comp	(MPa)	77	134	68
fs℄ (comp)	(MPa)	26		26
fs 5(℄+Imp)	(MPa)	125	204	131
fs (Overload)	(MPa)	228	238	225
fs (Total)	(MPa)		309	
VR	(kN)	177		180

INTERIOR GIRDER REACTION TABLE

		Abuts.	Pier 1 or 2
R℄	(kN)	222	847
Rℓ	(kN)	156	335
Imp.	(kN)	30	38
R (Total)	(kN)	408	1220



TYPICAL END CROSS FRAME (CF)

(No. Required = 10)

Notes:
- 28 mm ϕ holes for all M22 H.S. Bolts will be used in all cross frames.
- Two hardened washers shall be required over all oversize holes in cross frames.
- All dimensions are in millimeters (mm) except as noted.
- All bearing stiffeners and splice plates shall be AASHTO M270 Grade 345.

STRUCTURAL STEEL DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

Ic℄(3n) and Sc℄(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

~~Mo (Applied Moment) = 1.3[M℄ + Ms℄ + 5/3(Mℓ + M(Imp))].~~

The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48.1 and 10.50.1.1.

fs (Overload) is the sum of the stresses due to M℄ + Ms℄ + 5/3(Mℓ + M(Imp)).

fs (Total) (Non-compact section) is the sum of the stresses due to 1.3[M℄ + Ms℄ + 5/3(Mℓ + M(Imp))].

M℄ - is the moment due to dead loads on non-composite section.

Ms℄ - is the moment due to dead loads on the composite section.

Mℓ - is the moment due to live load on the composite section.

M (Imp) - is the moment due to live load impact.

DESIGNED	Ted Matting	February 25 1998
CHECKED	DW Inc.	
DRAWN	AMC G. HUGH TAYLOR	
CHECKED	TMM DB	

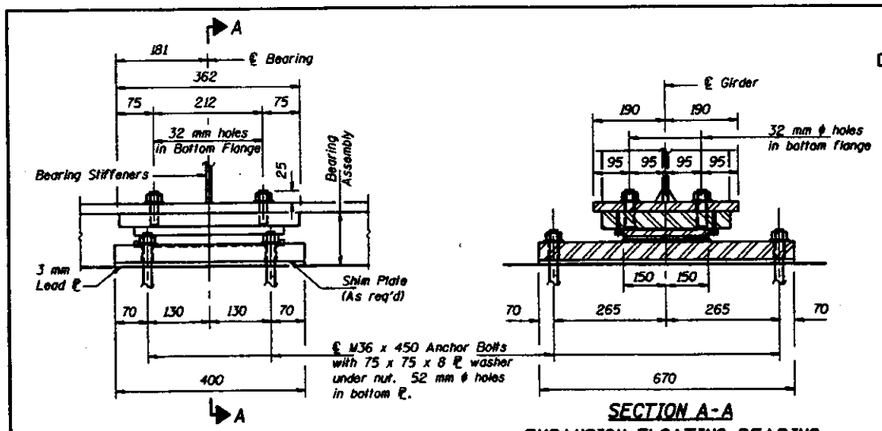
2 Revised 10/8/98 Tmm

1 Revised 8/14/98 Tmm

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

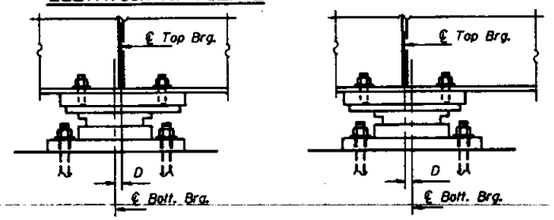
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	(131B-1)BR	JACKSON/ UNION	54	32
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
35 SHEETS



ELEVATION AT PIER 2

SECTION A-A
EXPANSION FLOATING BEARING
(6 Required)

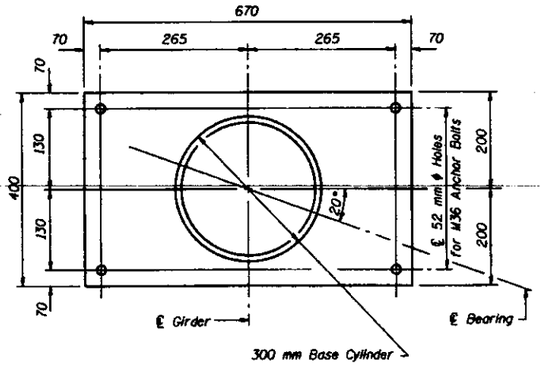


BELOW 10°C
(Move Bott. Brg. away from fixed Brg.)

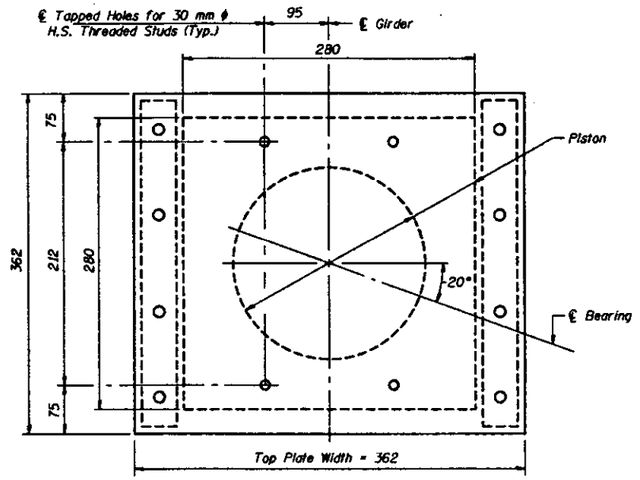
ABOVE 10°C
(Move Bott. Brg. toward fixed Brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

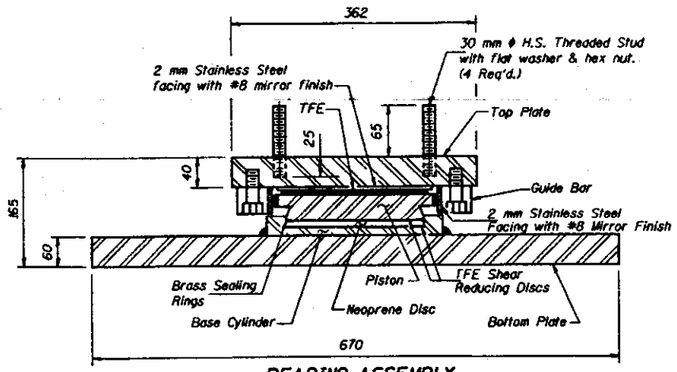
D = 1 mm per each 10 m of expansion for every 8°C temp. change from the normal temp. of 10°C.



BOTTOM PLATE and PISTON PLAN

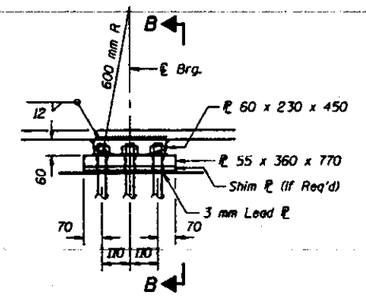


TOP BEARING PLATE and PISTON PLAN

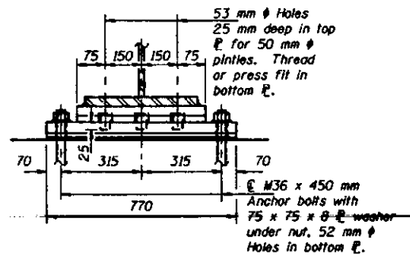


BEARING ASSEMBLY

Notes:
See Sheet 23 of 35 for anchor bolt installation.
All dimensions are in millimeters (mm) except as noted.
Contractor is responsible for adjusting dimensions as required in the field for the actual floating bearings used (including seat elevations). Dimensions to be adjusted shall be submitted to the Engineer for approval prior to fabrication of bearings.
Anchor bolts at fixed bearings may be built into the masonry.

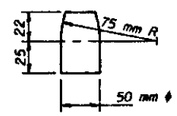


ELEVATION AT PIER 1



SECTION B-B

FIXED BEARING
(6 Required)



PINTLE
(All pintles M270M Gr. 345)

BILL OF MATERIAL

Item	Unit	Total
Floating Bearings, Guided Expansion (1250 kN)	Each	6

FLOATING BEARING CAPACITY

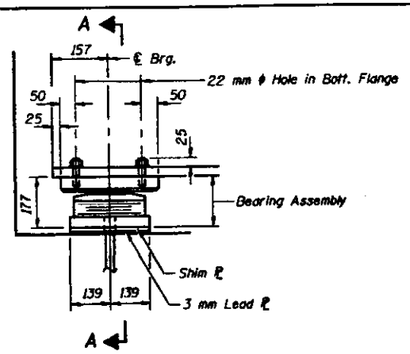
Vertical Load	Horizontal Load	Longitudinal Movement
1250 kN	355 kN	26 mm

DESIGNED	Ted Montoy	February 25 19 98
CHECKED	AMC	EXAMINED Engineer of Bridge Design
DRAWN	S. VERN TAYLOR	PASSED Engineer of Bridges and Structures
CHECKED		

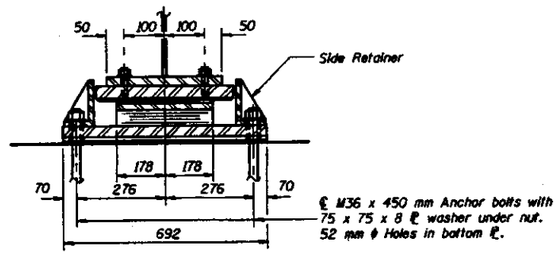
BEARING DETAILS - PIERS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

ROUTE NO.	SECTION	COUNTY	SHEET NO.	"N"	SHEET NO. 14
F.A.P. 312	131B-D,R	UNION	54	33	35 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



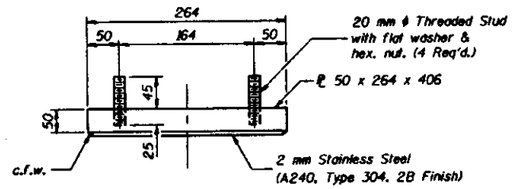
ELEVATION AT SOUTH ABUT.



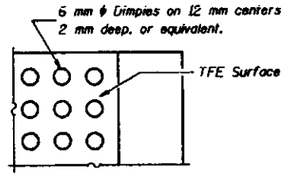
SECTION A-A

Notes: See sheet #23 of 35 for Anchor Bolt Installation.
All dimensions are in millimeters (mm) except as noted.

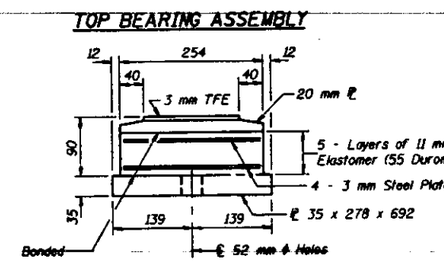
TYPE II ELASTOMERIC EXP. BRG.

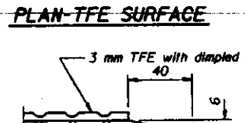


TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



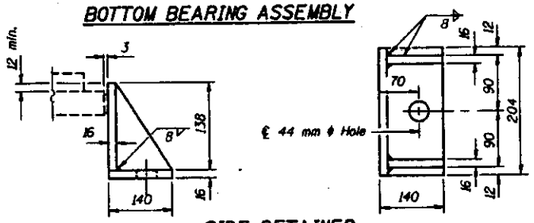


SECTION THRU TFE

Note: The 3 mm TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

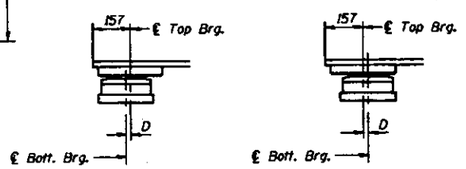
Bonding of 3 mm TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

BOTTOM BEARING ASSEMBLY



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



BELOW 10 °C (Move bott. brg. away from fixed brg.)

ABOVE 10 °C (Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D= 1 mm per each 10 m of expansion for every 8 °C temp. change from the normal temp. of 10 °C.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	6

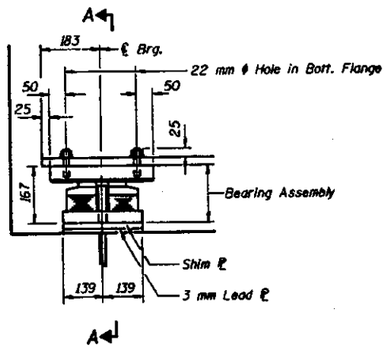
DESIGNED	Ted Mantay	February 25 19 98
CHECKED	AMC	EXAMINED Engineer of Bridge Design
DRAWN	S. VSEN TAYLOR	PASSED Engineer of Bridges and Structures
CHECKED		

I-2-E2 (M) 4-30-97

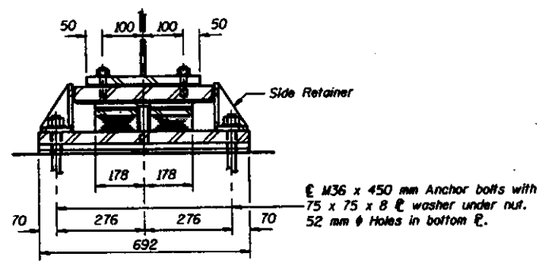
BEARING DETAILS - SOUTH ABUTMENT
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

					SHEET NO. 15
F.A.P. 312	(3)I8-D&A	UNION	54	34	35 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



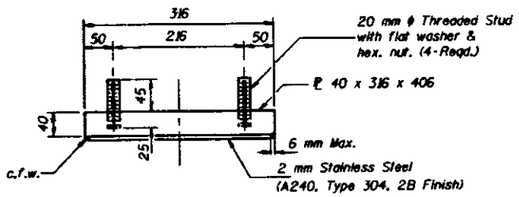
ELEVATION AT NORTH ABUT.



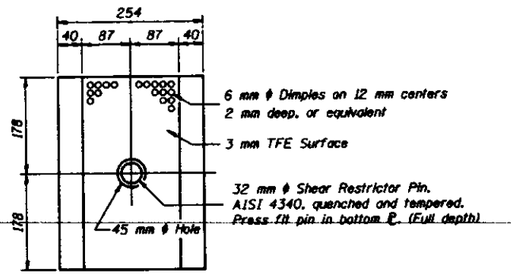
SECTION A-A

Note: See sheet #23 of 35 for Anchor Bolt installation.

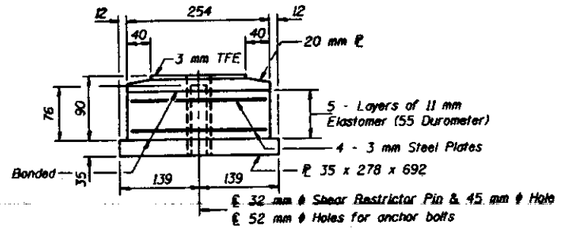
TYPE III ELASTOMERIC EXP. BRG.



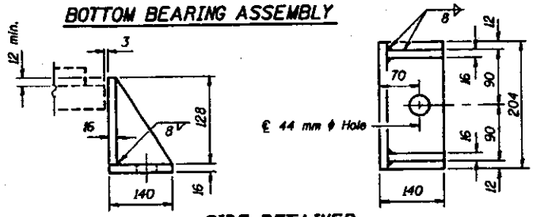
TOP BEARING ASSEMBLY



PLAN-TFE ELASTOMERIC BRG.

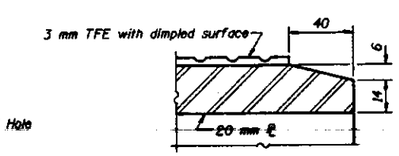


BOTTOM BEARING ASSEMBLY



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

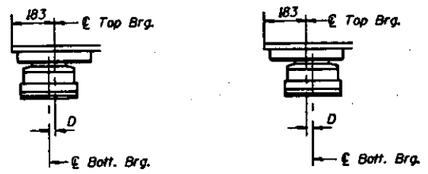


SECTION THRU TFE

Note: The 3 mm TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 3 mm TFE sheet during vulcanizing process will be permitted ~~provided the process and method of adjusting assembly height is~~ approved by the Engineer.

All dimensions are in millimeters (mm) except as noted.



SETTING ANCHOR BOLTS AT EXP. BRG.

D= 1 mm per each 10 m of expansion for every 8 °C temp. change from the normal temp. of 10 °C.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type III	Each	6

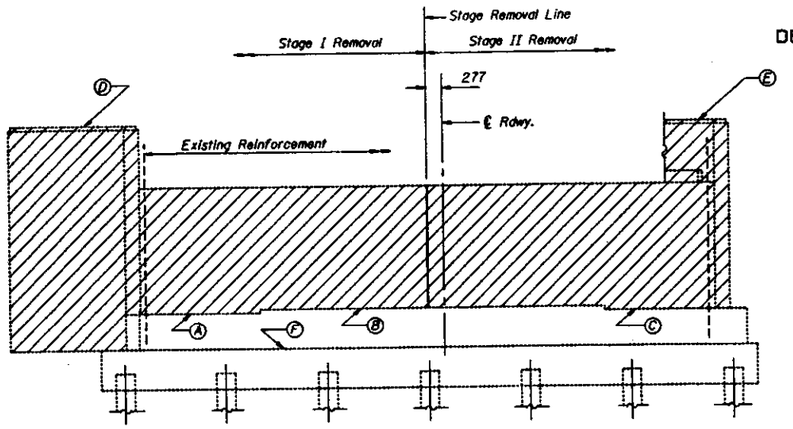
BEARING DETAILS - NORTH ABUTMENT
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

DESIGNED	Ted Mantay	February 25 19 98
CHECKED	D. Lyon	EXAMINED Engineer of Bridge Design
CHECKED	AMC	PASSED Engineer of Bridges and Structures
DRAWN	S. VSEN TAYLOR	
CHECKED	Thm OB	

I-2-E3 (M) 4-30-97

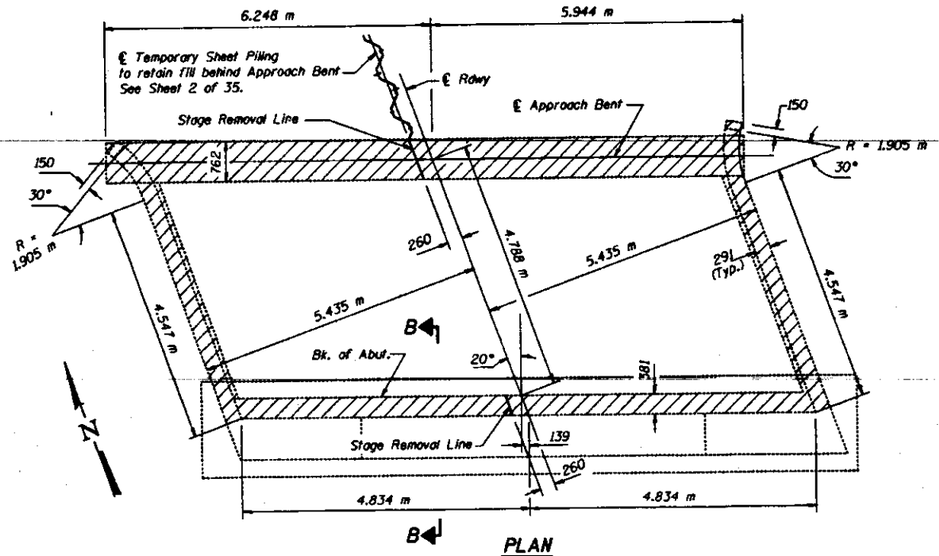
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 16
F.A.P. 312	131B-1&2R	JACKSON/UNION	54	35	55 SHEETS



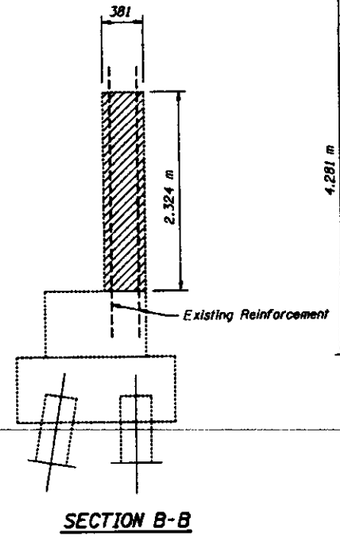
ELEVATION

(North Abutment shown - South Abutment similar by rotation.)

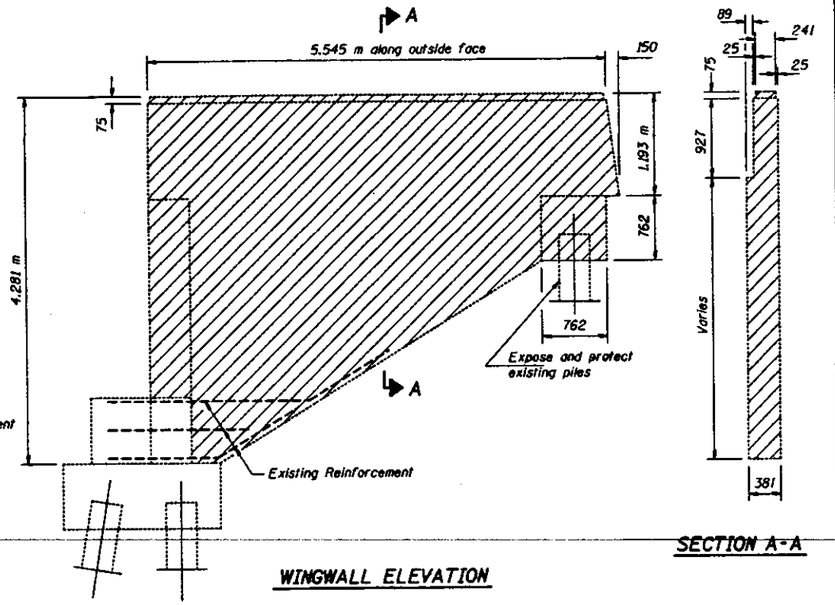


PLAN

(North Abut. shown - South Abut. similar by rotation)



SECTION B-B



WINGWALL ELEVATION

SECTION A-A

Concrete Removal

ELEVATION TABLE

Abutment location	A*	B**	C*	D*	E*	F***
North	109.771	109.815	109.776	113.276	113.276	109.012
South	109.756	109.790	109.741	113.281	113.281	108.987

* Elevations given are from field survey information.

** Elevations given have been obtained by adding 41 mm to the average of elevations A and C. These elevations are subject to normal construction tolerance variations.

*** Elevations given have been obtained by subtracting 762 mm from the average of elevations A and C.

BILL OF MATERIAL
TWO ABUTMENTS

Item	Unit	Total
Concrete Removal	m³	57

Notes: Existing reinforcement extending into new concrete shall be cleaned, straightened and incorporated into the new construction. Cost included with "Concrete Removal".
All dimensions are in millimeters (mm) except as noted.

DESIGNED	Fred Mortney
CHECKED	AMC
DRAWN	S. VERN TAYLOR
CHECKED	TMM DB

February 25, 19 98

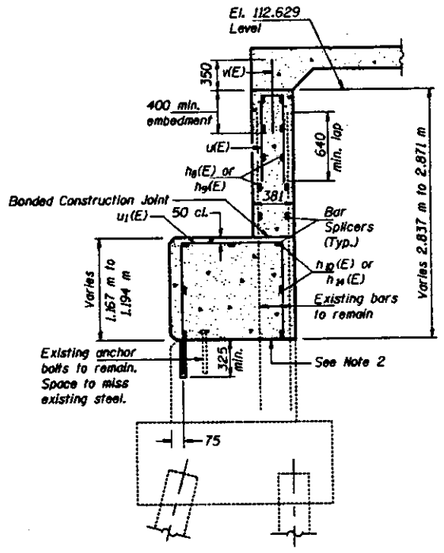
EXAMINED Engineer of Bridge Design

PASSED Ralph E. Anderson, Engineer of Bridges and Structures

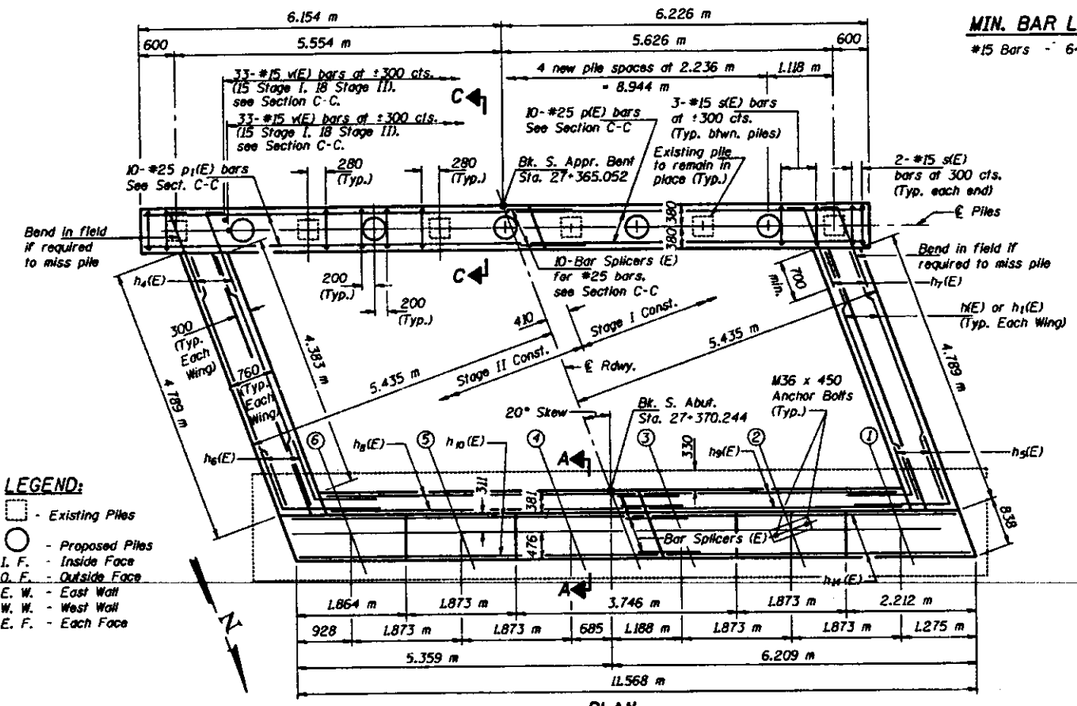
ABUTMENT CONCRETE REMOVAL DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 17
F.A.P. 312	(SR-B)R	JACKSON/UNION	54	36	35 SHEETS



SECTION A-A

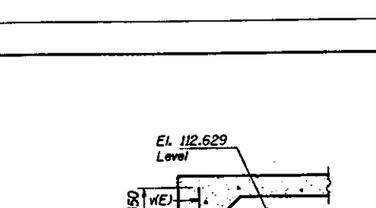


PLAN

LEGEND:

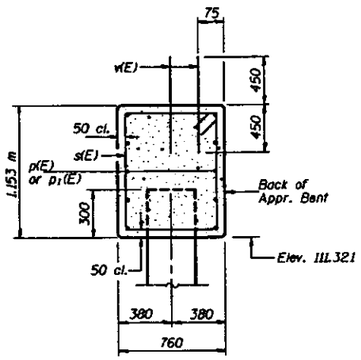
□ - Existing Piles
○ - Proposed Piles
I. F. - Inside Face
O. F. - Outside Face
E. W. - East Wall
W. W. - West Wall
E. F. - Each Face

MIN. BAR LAP
#15 Bars - 640



SECTION D-D

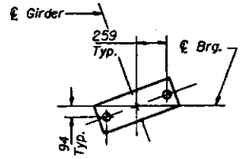
ELEVATION



SECTION C-C

APPR. BENT-PILE DATA

Type: Metal Pile Shell 305
Capacity: 200 kN
Est. Length: 15.5 m
No. Req'd.: 4 + 1 test pile



ANCHOR BOLT LAYOUT

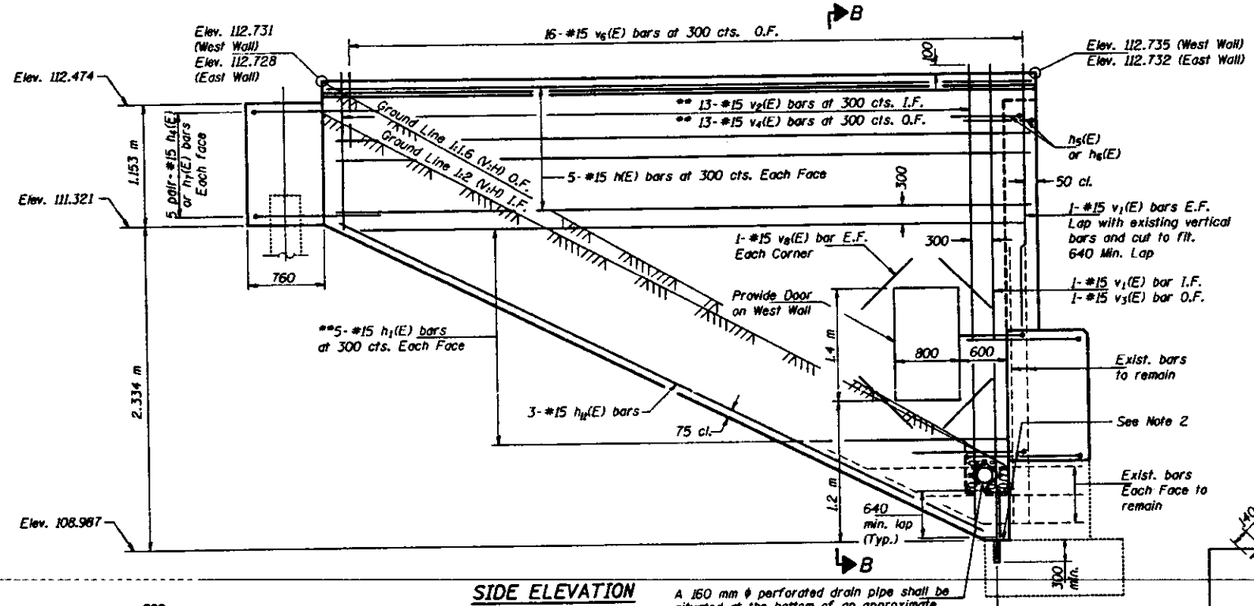
Notes:
1. Epoxy grouting of bars shall be done according to Section 584 of the Standard Specifications. Cost included in "Reinforcement Bars, Epoxy Coated."
2. Bonded Construction Joint shall be according to Art. 503.09 (a) (2) of the Standard Specifications.
3. See Sht. 23 of 35 for Anchor Bolt details.
4. Space reinforcement to miss anchor bolts.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. All dimensions are in millimeters (mm) except as noted.
7. All edges shall have 20 mm chamfer except as noted.
8. Work this sheet with sheet 18 of 35.

DESIGNED	Fed Mostray	February 25 19 98
CHECKED	AMC	EXAMINED Engineer of Bridge Design
DRAWN	S. VSEN TAYLOR	PASSED Engineer of Bridges and Structures
CHECKED	Thm DTS	

SOUTH ABUTMENT DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

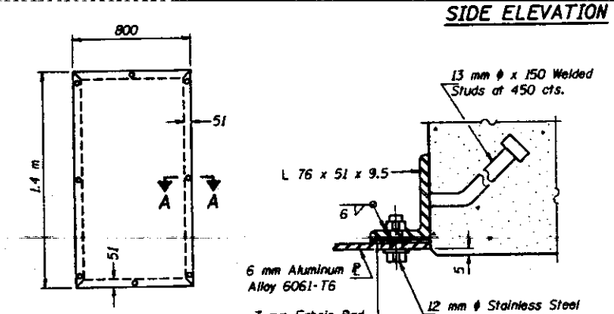
ROUTE NO.	SECTION	COUNTY	JOB NO.	SHEET NO.
F.A.P. 312	(131B-1)DR	JACKSON / UNION	54	37
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		35 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SIDE ELEVATION

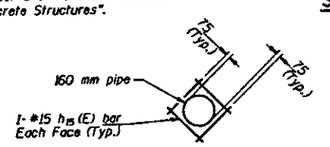
A 160 mm ϕ perforated drain pipe shall be situated at the bottom of an approximate 600 x 600 area of porous granular embankment (P.G.E.). Extend pipe parallel with the backwall and through sidewall until intersecting with the sideslopes. Provide rodent shield at drain pipe outlet as per Standard 601101. Limits of P.G.E. shall be entire length of backwall. Cost included with Concrete Structures.



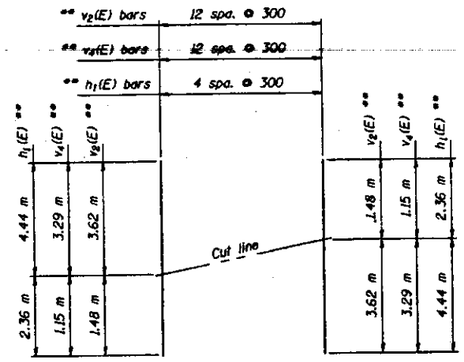
DOOR ELEVATION

Cost of door and frame are included with "Concrete Structures".

SECTION A-A

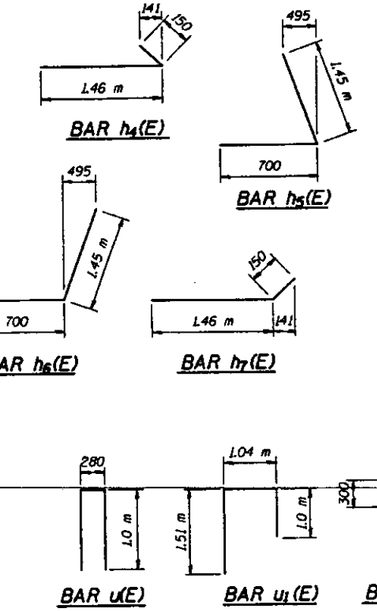


DRAIN PIPE REINFORCEMENT DETAIL



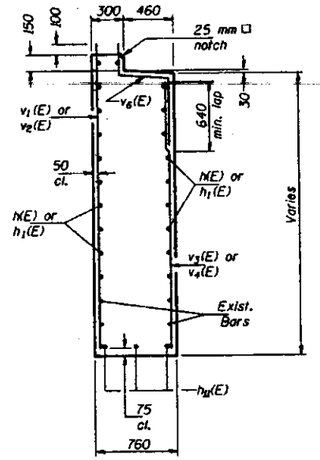
FIELD CUTTING DIAGRAM

** Order $h_1(E)$, $v_2(E)$ and $v_4(E)$ bars full length. Cut to fit as shown and use remainder of bars in opposite face.



BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h(E)	20	#15	4.69	
h_1(E)	20	#15	6.8	
h_4(E)	10	#15	1.61	
h_5(E)	16	#15	2.15	
h_6(E)	16	#15	2.15	
h_7(E)	10	#15	1.61	
h_8(E)	10	#15	5.31	
h_9(E)	10	#15	4.43	
h_{10}(E)	7	#15	5.25	
h_{11}(E)	6	#15	4.28	
h_{14}(E)	7	#15	6.10	
h_{15}(E)	16	#15	0.31	
p(E)	10	#25	5.62	
p_1(E)	10	#25	6.56	
s(E)	34	#15	3.70	
u(E)	33	#15	2.28	
u_1(E)	39	#15	3.55	
v(E)	99	#15	0.90	
v_1(E)	6	#15	3.80	
v_2(E)	26	#15	5.10	
v_3(E)	6	#15	3.45	
v_4(E)	26	#15	3.03	
v_5(E)	12	#15	1.00	
v_6(E)	32	#15	1.40	
v_8(E)	8	#15	0.90	
Concrete Structures			m^3	52.8
Reinforcement Bars (Epoxy Coated)			kg	2430
Test Piles Metal Shell			Each	1
Furnishing Metal Pile Shells			m	62
Driving and Filling Shells			m	62
Structure Excavation			m^3	54.4



SECTION B-B

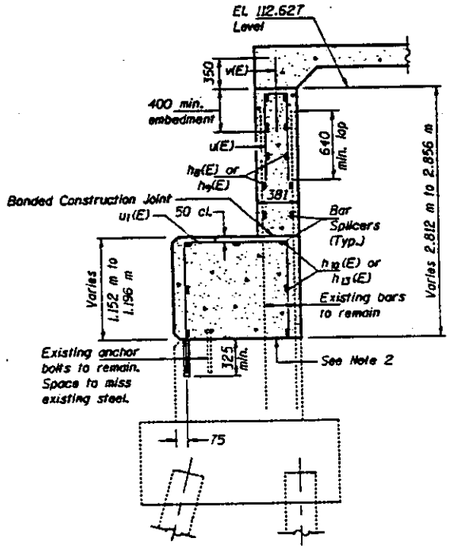
Notes:
1. Epoxy grouting of bars shall be done according to Section 584 of the Standard Specifications. Cost included in "Reinforcement Bars, Epoxy Coated."
2. Bonded Construction Joints shall be according to Art. 503.09 (a) (2) of the Standard Specifications.
3. See Sht. 23 of 35 for Anchor Bolt details.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. All dimensions are in millimeters (mm) except as noted.
6. All edges shall have 20 mm chamfer except as noted.
7. Work this sheet with sheet 17 of 35.
8. Reinforcement bars shall be field cut at door opening on west wall.

DESIGNED	Ted Mantzy	February 25 19 98
CHECKED	AMC	EXAMINED Engineer of Bridge Design
DRAWN	G. VERN TAYLOR	PASSED Engineer of Bridges and Structures
CHECKED	TMM OB	

SOUTH ABUTMENT DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

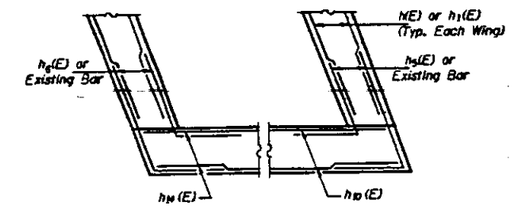
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

				SHEET NO. 19
F.A.P. 312 (318-1)DR		CLARKSON / CARMI	54	38
				35 SHEETS

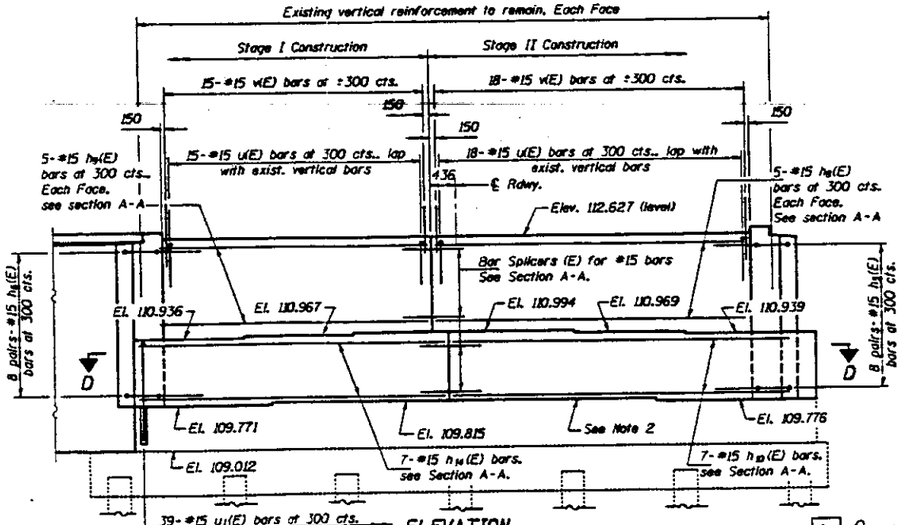


SECTION A-A

PLAN



SECTION D-D

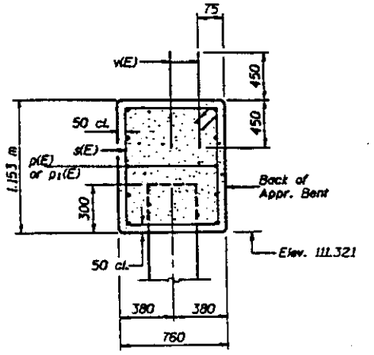


ELEVATION

LEGEND:

□ - Existing Piles
○ - Proposed Piles
I. F. - Inside Face
O. F. - Outside Face
E. W. - East Wall
W. W. - West Wall
E. F. - Each Face

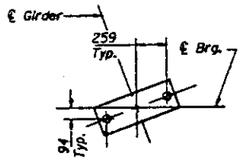
MIN. BAR LAP
#15 Bars - 640



SECTION C-C

APPR. BENT-PILE DATA

Type: Metal Pile Shell 305
Capacity: 200 kN
Est. Length: 13.5 m
No. Req'd.: 5



ANCHOR BOLT LAYOUT

Notes:
1. Epoxy grouting of bars shall be done according to Section 584 of the Standard Specifications. Cost included in "Reinforcement Bars, Epoxy Coated."
2. Bonded Construction Joint shall be according to Art. 503.09 (a) (2) of the Standard Specifications.
3. See Sht. 23 of 35 for Anchor Bolt details.
4. Space reinforcement to miss anchor bolts.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. All dimensions are in millimeters (mm) except as noted.
7. All edges shall have 20 mm chamfer except as noted.
8. Work this sheet with sheet 20 of 35.

DESIGNED	Ted Mantay
CHECKED	AMC
DRAWN	S. YASH TAYLOR
CHECKED	Tmm 03

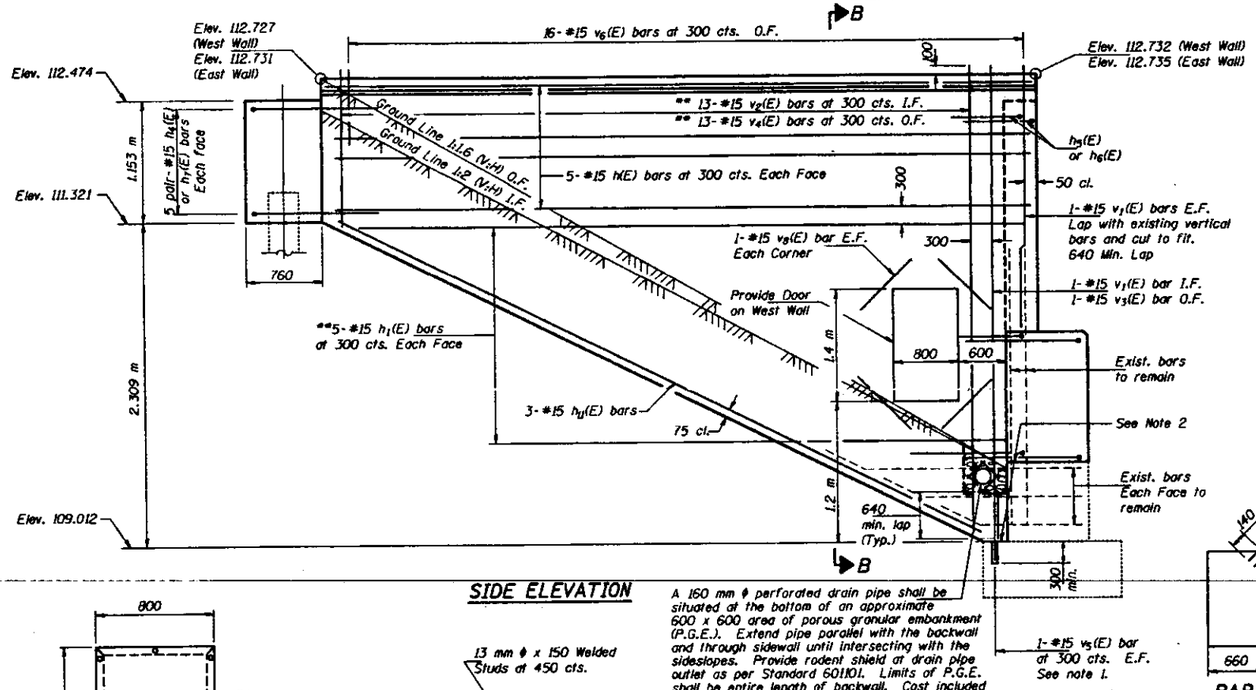
February 25, 1998
EXAMINED: Greg D. Knapp, ENGINEER OF BRIDGE DESIGN
PASSED: Ralph E. Anderson, ENGINEER OF BRIDGES AND STRUCTURES

1 Revised 7/16/98 Tmm

NORTH ABUTMENT DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

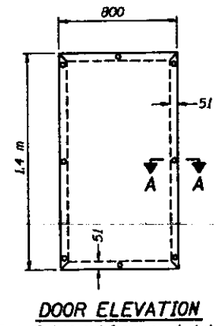
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	(19B-1)DR	JACKSON / UNION	54	39
		ILLINOIS	FED. AID PROJECT	35 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



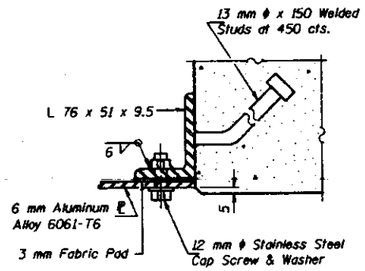
SIDE ELEVATION

A 160 mm ϕ perforated drain pipe shall be situated at the bottom of an approximate 600 x 600 area of porous granular embankment (P.G.E.). Extend pipe parallel with the backwall and through sidewall until intersecting with the sideslopes. Provide rodent shield at drain pipe outlet as per Standard 601101. Limits of P.G.E. shall be entire length of backwall. Cost included with Concrete Structures.

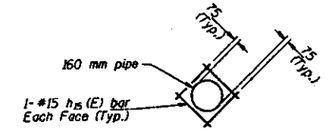


DOOR ELEVATION

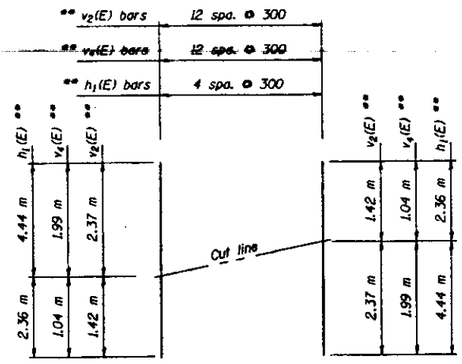
Cost of door and frame are included with "Concrete Structures".



SECTION A-A

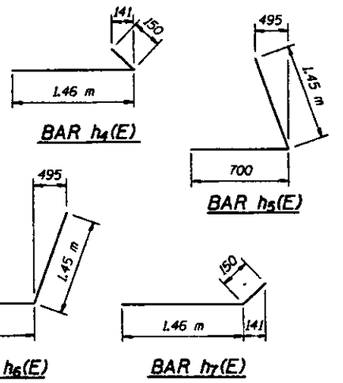


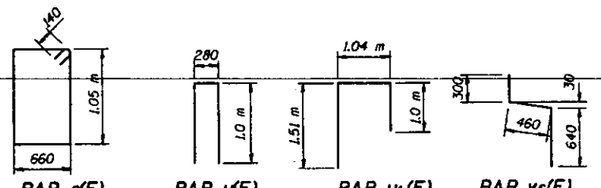
DRAIN PIPE REINFORCEMENT DETAIL

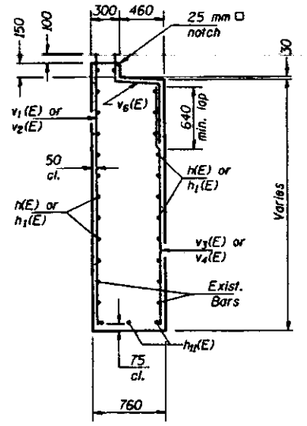


FIELD CUTTING DIAGRAM

** Order $h_1(E)$, $v_2(E)$ and $v_4(E)$ bars full length. Cut to fit as shown and use remainder of bars in opposite face.







SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
h(E)	20	#15	4.69	
h1(E)	20	#15	6.8	
h4(E)	10	#15	1.61	
h5(E)	16	#15	2.15	
h6(E)	16	#15	2.15	
h7(E)	10	#15	1.61	
h8(E)	10	#15	5.31	
h9(E)	10	#15	4.43	
h10(E)	7	#15	5.25	
h11(E)	6	#15	4.28	
h12(E)	7	#15	6.10	
h13(E)	16	#15	0.31	
p(E)	10	#25	5.62	
p1(E)	10	#25	6.56	
s(E)	34	#15	3.70	
u(E)	33	#15	2.28	
u1(E)	39	#15	3.55	
w(E)	99	#15	0.90	
v1(E)	6	#15	3.80	
v2(E)	26	#15	5.10	
v3(E)	6	#15	3.45	
v4(E)	26	#15	3.03	
v5(E)	12	#15	1.00	
v6(E)	32	#15	1.40	
v8(E)	8	#15	0.90	
Concrete Structures		m³	52.8	
Reinforcement Bars (Epoxy Coated)		kg	2430	
Furnishing Metal Pile Shells		m	68	
Driving and Filling Shells		m	68	
Structure Excavation		m³	54.4	

Notes:
1. Epoxy grouting of bars shall be done according to Section 584 of the Standard Specifications. Cost included in "Reinforcement Bars, Epoxy Coated."
2. Bonded Construction Joints shall be according to Art. 503.09 (a) (2) of the Standard Specifications.
3. See Sht. 23 of 35 for Anchor Bolt details.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. All dimensions are in millimeters (mm) except as noted.
6. All edges shall have 20 mm chamfer except as noted.
7. Work this sheet with sheet 19 of 35.
8. Reinforcement bars shall be field cut at door opening on West Wall.

DESIGNED	Jad Mostoller
CHECKED	
AMC	
DRAWN	S. VERN TAYLOR
CHECKED	TMM DB

February 25 19 98

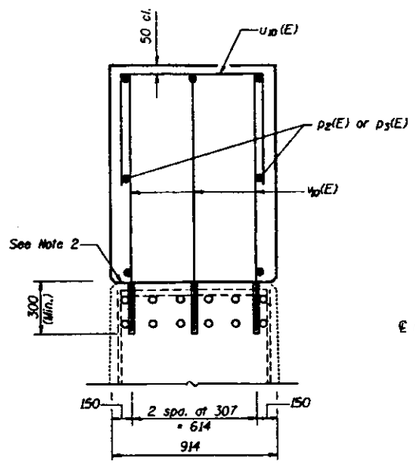
EXAMINED Oraj O. Kaspar ENGINEER OF BRIDGE DESIGN

PASSED Rafael E. Anfasani ENGINEER OF BRIDGES AND STRUCTURES

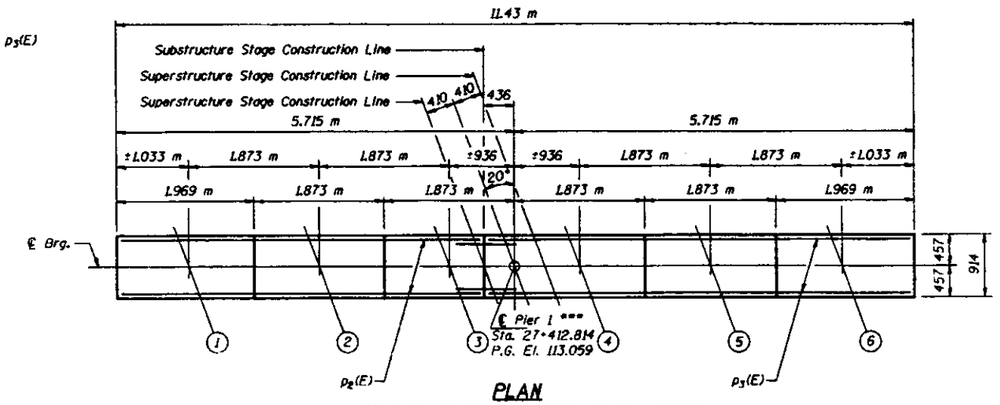
NORTH ABUTMENT DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 21
F.A.P. 312	(NB-1)BR	JACKSON / UNION	54	40	35 SHEETS

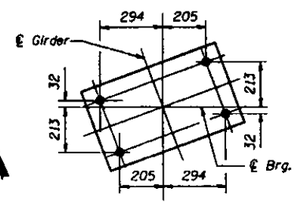


SECTION A-A
(Pier 1)

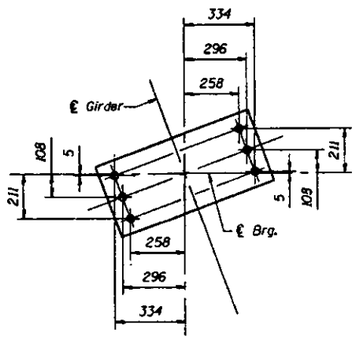


PLAN

*** ℄ Pier 2 Sta. 27+465.926 P.G. Elev. 113.059

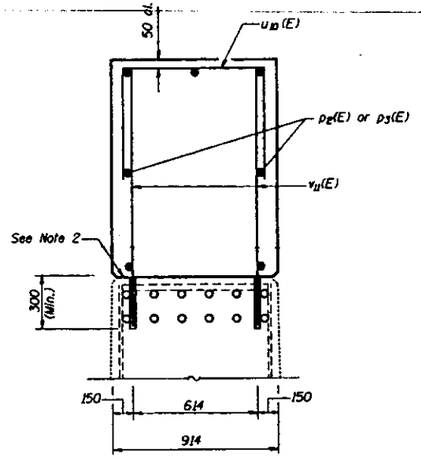


PIER 2

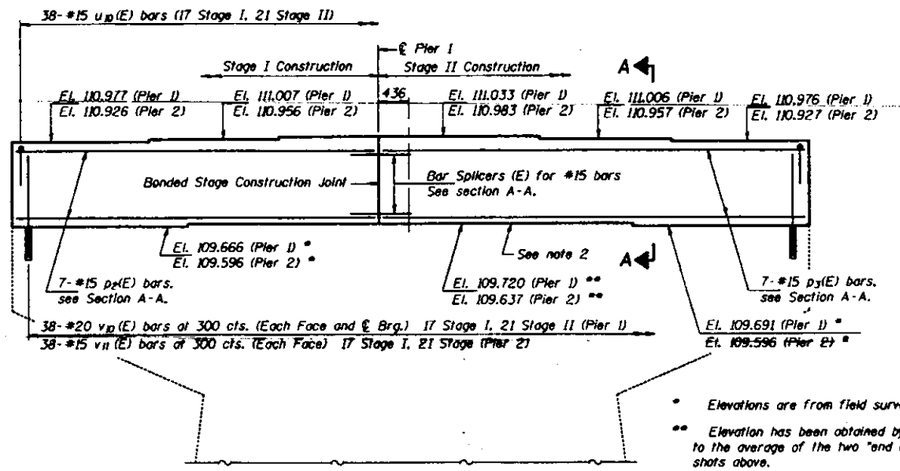


PIER 1

ANCHOR BOLT LAYOUT



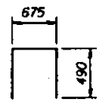
SECTION A-A
(Pier 2)



ELEVATION

* Elevations are from field survey information.

** Elevation has been obtained by adding 41 mm to the average of the two "end of cap" survey shots above.



BAR $u_{ip}(E)$

Notes:
1. Epoxy grouting of bars shall be done according to Section 584 of the Standard Specifications. Cost included in "Reinforcement Bars - Epoxy Coated."
2. Bonded Construction Joint shall be according to Art. 503.09 (a) (2) of the Standard Specifications.
3. See Sht. 23 of 35 for Anchor Bolt details.
4. Space reinforcement in concrete bearing pads to miss anchor bolts.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. All dimensions are in millimeters (mm) except as noted.

BILL OF MATERIAL

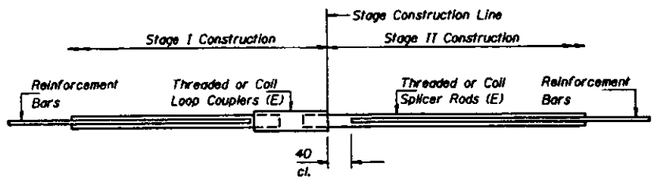
Bar	No.	Size	Length (m)	Shape
$p_E(E)$	14	15	5.17	
$p_S(E)$	14	15	6.05	
$u_{ip}(E)$	76	15	1.65	
$v_{ip}(E)$	114	20	1.50	
$v_{it}(E)$	76	15	1.50	
Concrete Structures			m^3	27.7
Reinforcement Bars, Epoxy Coated			kg	1030

DESIGNED	Fed Mantey	February 25 19 98
CHECKED		EXAMINED Engr. D. Kasper ENGINEER OF BRIDGE DESIGN
CHECKED	AMC	PASSED Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES
DRAWN	G. VERN TAYLOR	
CHECKED	TMM DTS	

PIER DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

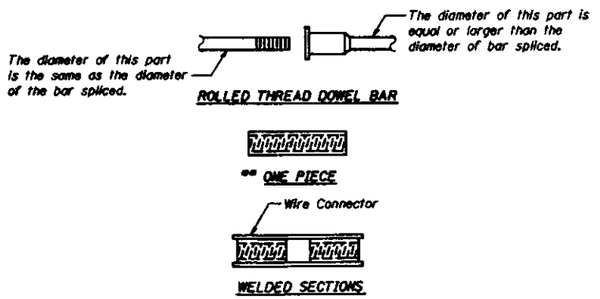
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

				SHEET NO. 22
F.A.P. 312	(31B-1)DR	JACKSON / UNION	54	41 35 SHEETS



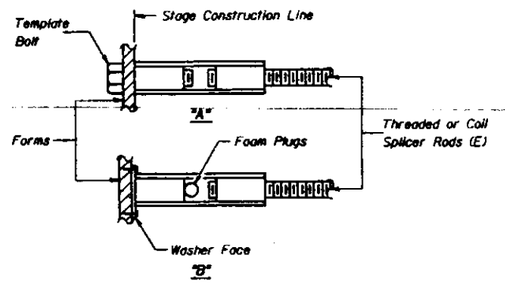
BAR SPLICER ASSEMBLY DETAIL

Bar Size	No. Assemblies Required	Location
15	1275	Deck
15	66	Appr. Slab
15	34	Abutments
25	20	Appr. Bents
15	14	Piers



BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 400 MPa yield strength, threaded or coiled full length.

All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kN) = $1.25 \times 10^{-3} \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kN) = $1.25 \times 10^{-3} \times fs_{allow} \times A_t$

Where f_y = Yield strength of lapped reinforcement bars in MPa.
fs_{allow} = Allowable tensile stress in lapped reinforcement bars in MPa (Service Load)
A_t = Tensile stress area of lapped reinforcement bars (mm^2).
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements: Min. Capacity kN - tension	Strength Requirements: Min. Pull-Out Strength kN - tension
#15	610 mm	100	40
#20	790 mm	150	60
#25	1.04 m	250	100
#30	1.37 m	350	140

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

All dimensions are in millimeters (mm) except as noted.

DESIGNED	Ted Martinez
CHECKED	
DRAWN	AMC S. VERN TAYLOR
CHECKED	

February 25 19 98

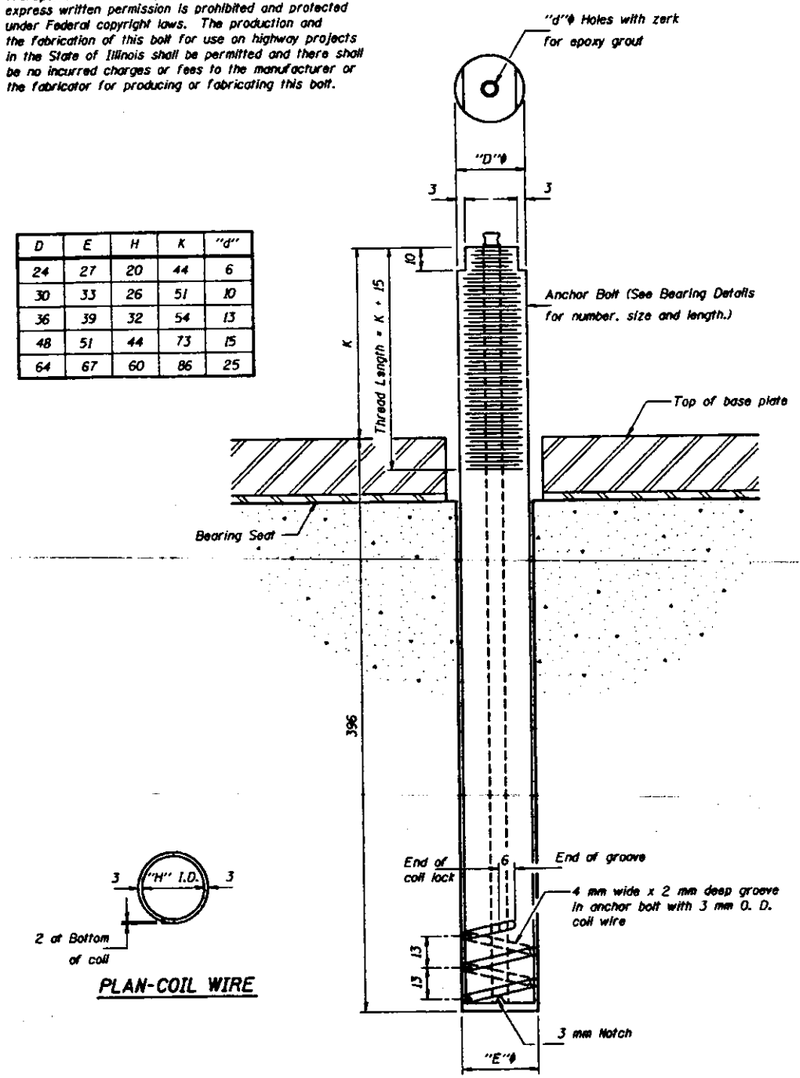
EXAMINED Engineer of Bridge Design

PASSED Engineer of Bridges and Structures

BAR SPLICER ASSEMBLY DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

				SHEET NO. 23
F.A.P. 312	131B-2	UNION	54	42
				35 SHEETS



D	E	H	K	"d"
24	27	20	44	6
30	33	26	51	10
36	39	32	54	13
48	51	44	73	15
64	67	60	86	25

PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer of the type specified.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Type
South Abutment	A307
Pier 1	A325
Pier 2	A307
North Abutment	A307

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

All dimensions are in millimeters (mm) except as noted.

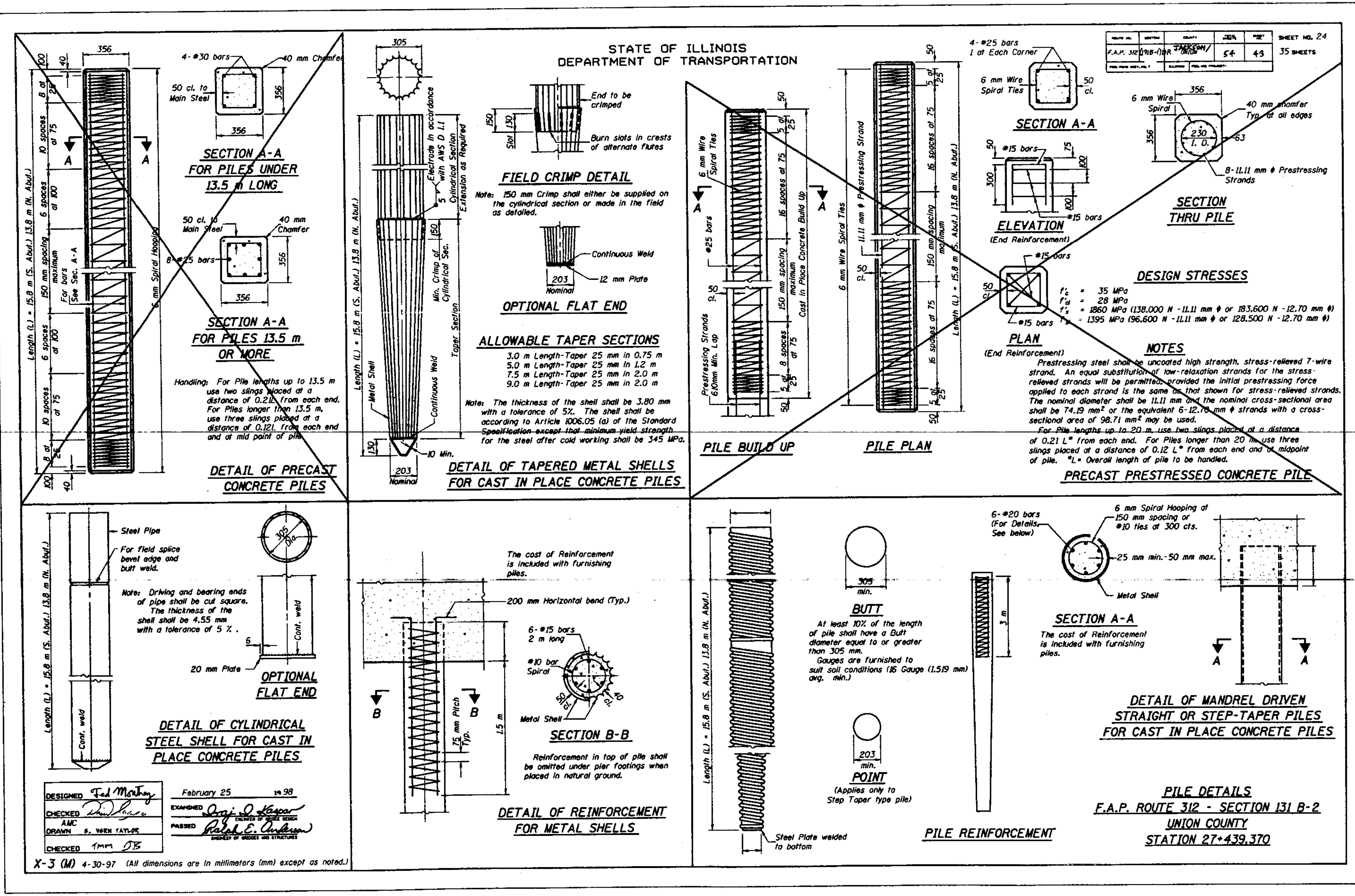
DESIGNED	Fred Mantay
CHECKED	Dan
AMC	
DRAWN	S. VERN TAYLOR
CHECKED	Tim DR

February 25, 1998

EXAMINED Oraj O. Kapur, ENGINEER OF BRIDGE DESIGN

PASSED Ralph E. Anderson, ENGINEER OF BRIDGES AND STRUCTURES

ANCHOR BOLT DETAILS FOR BEARINGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
F.A.P. 312 | (118-1)BR | JACKSON/UNION | 54 | 43
SHEET NO. 24
35 SHEETS
SECTION A-A
FOR PILES UNDER
13.5 m LONG
4-#30 bars
40 mm Chamfer
50 cl. to Main Steel
SECTION A-A
FOR PILES 13.5 m
OR MORE
8-#25 bars
Handling: For Pile lengths up to 13.5 m use two slings placed at a distance of 0.21L from each end. For Piles longer than 13.5 m, use three slings placed at a distance of 0.12L from each end and at mid point of pile.
6 mm Spiral Hooping
Length (L) = 15.8 m (S. Abut.) 13.8 m (N. Abut.)
DETAIL OF PRECAST
CONCRETE PILES
FIELD CRIMP DETAIL
End to be crimped
Burn slots in crests of alternate flutes
Note: 150 mm Crimp shall either be supplied on the cylindrical section or made in the field as detailed.
Continuous Weld
12 mm Plate
OPTIONAL FLAT END
ALLOWABLE TAPER SECTIONS
3.0 m Length-Taper 25 mm in 0.75 m
5.0 m Length-Taper 25 mm in 1.2 m
7.5 m Length-Taper 25 mm in 2.0 m
9.0 m Length-Taper 25 mm in 2.0 m
Note: The thickness of the shell shall be 3.80 mm with a tolerance of 5%. The shell shall be according to Article 1006.05 (a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 345 MPa.
Electrode in accordance with AWS D 1.1
Cylindrical Section
Extension as Required
Min. Crimp of Cylindrical Sec.
Taper Section
Metal Shell
Continuous Weld
10 Min.
203 Nominal
DETAIL OF TAPERED METAL SHELLS
FOR CAST IN PLACE CONCRETE PILES
6 mm Wire Spiral Ties
#25 bars
Prestressing Strands 610mm Min. Lap
150 mm spacing maximum
Cast in Place Concrete Build Up
11.11 mm ϕ Prestressing Strand
6 mm Wire Spiral Ties
PILE BUILD UP
PILE PLAN
4-#25 bars
1 at Each Corner
6 mm Wire Spiral Ties
SECTION A-A
#15 bars
ELEVATION
(End Reinforcement)
PLAN
(End Reinforcement)
6 mm Wire Spiral
40 mm chamfer Typ. at all edges
230 I. D.
8-11.11 mm ϕ Prestressing Strands
SECTION
THRU PILE
DESIGN STRESSES
f'c = 35 MPa
f'ci = 28 MPa
f's = 1860 MPa (138,000 N - 11.11 mm ϕ or 183,600 N - 12.70 mm ϕ)
fsi = 1395 MPa (96,600 N - 11.11 mm ϕ or 128,500 N - 12.70 mm ϕ)
NOTES
Prestressing steel shall be uncoated high strength, stress-relieved 7-wire strand. An equal substitution of low-relaxation strands for the stress-relieved strands will be permitted, provided the initial prestressing force applied to each strand is the same as that shown for stress-relieved strands. The nominal diameter shall be 11.11 mm and the nominal cross-sectional area shall be 74.19 mm² or the equivalent 6-12.70 mm ϕ strands with a cross-sectional area of 98.71 mm² may be used.
For Pile lengths up to 20 m, use two slings placed at a distance of 0.21 L* from each end. For Piles longer than 20 m, use three slings placed at a distance of 0.12 L* from each end and at midpoint of pile. *L= Overall length of pile to be handled.
PRECAST PRESTRESSED CONCRETE PILE
Steel Pipe
For field splice bevel edge and butt weld.
Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 4.55 mm with a tolerance of 5 %.
305 Dia.
Cont. weld
20 mm Plate
OPTIONAL
FLAT END
DETAIL OF CYLINDRICAL
STEEL SHELL FOR CAST IN
PLACE CONCRETE PILES
The cost of Reinforcement is included with furnishing piles.
200 mm Horizontal bend (Typ.)
6-#15 bars
2 m long
#10 bar Spiral
Metal Shell
SECTION B-B
Reinforcement in top of pile shall be omitted under pier footings when placed in natural ground.
75 mm Pitch Typ.
DETAIL OF REINFORCEMENT
FOR METAL SHELLS
305 min.
BUTT
At least 10% of the length of pile shall have a Butt diameter equal to or greater than 305 mm.
Gauges are furnished to suit soil conditions (16 Gauge (1.519 mm) avg. min.)
203 min.
POINT
(Applies only to Step Taper type pile)
Steel Plate welded to bottom
PILE REINFORCEMENT
6-#20 bars
(For Details See below)
6 mm Spiral Hooping at 150 mm spacing or #10 ties at 300 cts.
25 mm min.-50 mm max.
Metal Shell
SECTION A-A
The cost of Reinforcement is included with furnishing piles.
DETAIL OF MANDREL DRIVEN
STRAIGHT OR STEP-TAPER PILES
FOR CAST IN PLACE CONCRETE PILES
PILE DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370
DESIGNED
CHECKED
DRAWN S. VERN TAYLOR
CHECKED
February 25 1998
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
X-3 (M) 4-30-97 (All dimensions are in millimeters (mm) except as noted.)

Joint Size	"C" at 10 °C	"D" at 10 °C
50	50	40 Min.
65	65	45 Min.
100	75	65 Min.

INSTALLATION NOTES

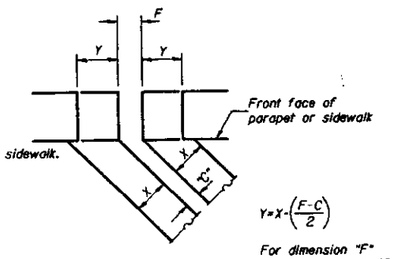
1. Install continuous seal in roadway, parapet, curb, and sidewalk.
2. Install anchor blocks as indicated.

NOTE A: Maximum spacing of anchor bolts shall be 300 centers.

SKEW LIMITATIONS

The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed according to dimension "D", might require modifications to insure a minimum clearance of 40 mm from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±300 cts.

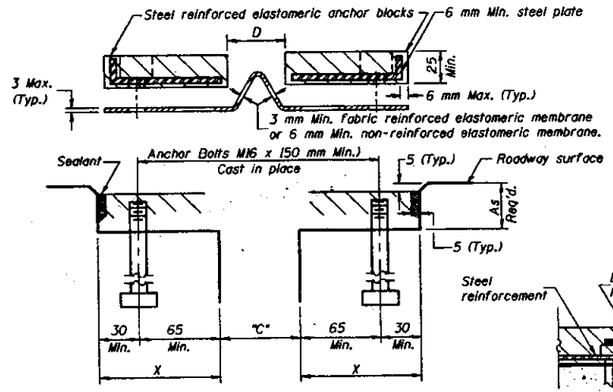


$Y = X - \left(\frac{F-C}{2}\right)$

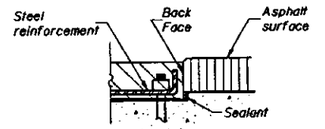
For dimension "F" see sheet #8 of 35.

FORMING BLOCKOUT SKETCH

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



CROSS SECTION



ANCHOR BLOCK WITH ASPHALT SURFACE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEET WIDTH	SHEET NO.
F.A.P. 312	(318-1)OR	JACKSON/ UNION	54	44

SHEET NO. 25
35 SHEETS

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane.

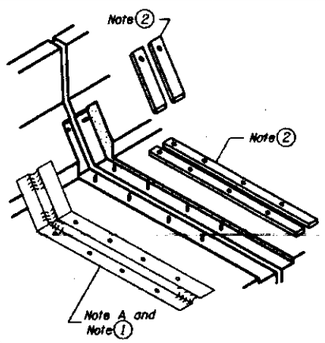
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

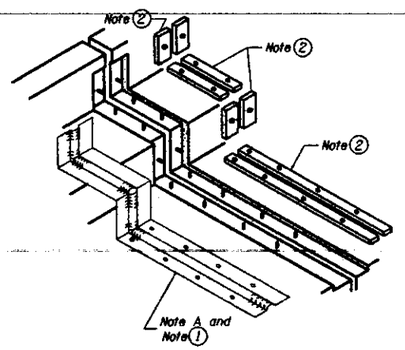
Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 10 °C.

The parapet and roadway membrane shall be made continuous by an approved vulcanizing process. Lapping will not be permitted.

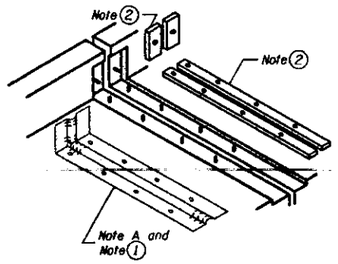
All dimensions are in millimeters (mm) except as noted.



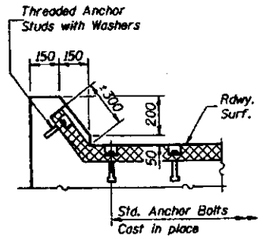
AT PARAPET



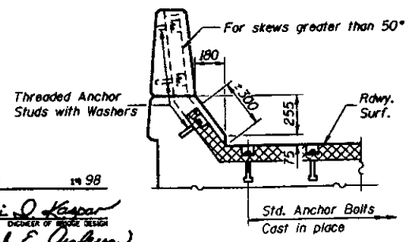
AT SIDEWALK OR MEDIAN



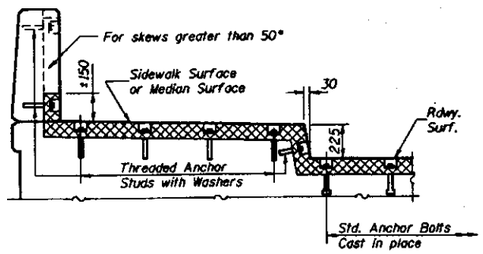
AT WALL



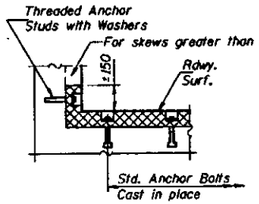
AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN
TYPICAL END TREATMENTS



AT WALL

DESIGNED	Fred Mantay	February 25 19 98
CHECKED	D.A. Lyon	EXAMINED Engineer of Bridge Design
AMC DRAWN	G. VERN TAYLOR	PASSED Ralph E. Anderson Engineer of Bridges and Structures
CHECKED	TMM DJS	

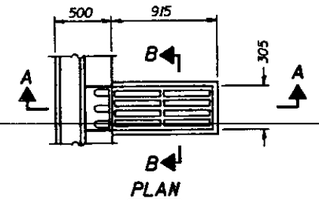
EJ-CS (M) 4-30-97

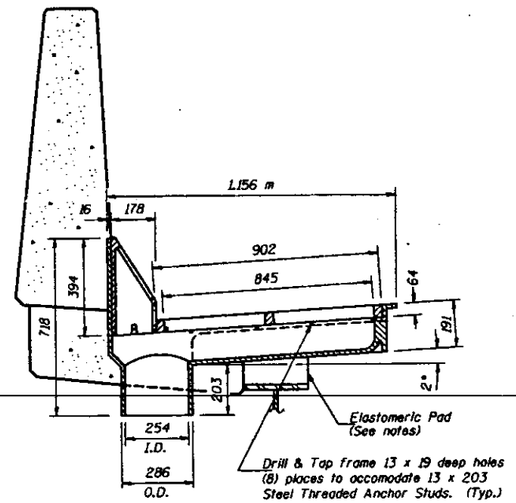
CONTINUOUS SEAL TYPE
NEOPRENE EXPANSION JOINTS
For 50, 65 and 100 Movement

F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

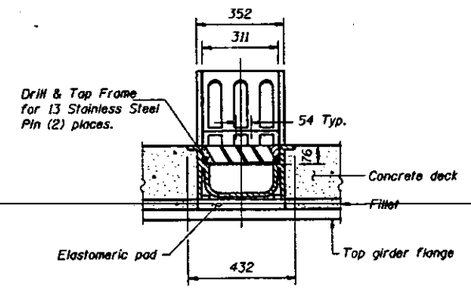
					SHEET NO. 26
F.A.P. 312	(131B-1)DR	JACKSON/ UNION	54	45	35 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION





SECTION A-A



SECTION B-B

DRAINAGE SCUPPER

Notes: All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105; Class 35B.

Bolts, washers and nuts shall conform to the requirements of ASTM A307.

All bolts, washers and nuts shall be galvanized according to AASHTO M232.

As an alternate bolts, washers and nuts may be stainless steel conforming to the requirements of ASTM A193M, Type 304.

Cost of the frame, grate, downspout, bolts, washers and nuts including complete installation of the scupper shall be paid for at the unit bid price each for "Drainage Scuppers".

All dimensions are in millimeters (mm) except as noted.

The downspout connection may be exteriorly threaded, a bolted unitflange, or other methods approved by the Bureau of Bridges and Structures.

Cost of furnishing and installing Anchor Studs and Elastomeric Pads shall be included with "Drainage Scupper". Eight (8) Anchor Studs required for each scupper.

BILL OF MATERIAL

Item	Unit	Total
Drainage Scupper	Each	4

DESIGNED	Ted Montroy
CHECKED	
DRAWN	AMC S. VERN TAYLOR
CHECKED	

February 25 1998

EXAMINED _____ ENGINEER OF BRIDGE DESIGN

PASSED _____ ENGINEER OF BRIDGES AND STRUCTURES

SCUPPER DETAILS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	(318-1)BR	JACKSON / UNION	54	46

SHEET NO. 27
35 SHEETS

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials
Bridge Foundation Boring Log
STRUCTURE CARRYING FA 312 (IL 3) OVER BIG MUDDY RIVER
SH. 1 OF 3

PROJECT -
ROUTE FA 312
SEC. 1318-2
COUNTY UNION
BRIDGE 091-0031
STA. 27+439.370
Date 10/02/95
Bored By Rich Moberly
Checked By Ed West
Boring No. 1-S
Sta 27+534
O/S 5.2m LT CL
Surf Wat El. NONE
Grndwater El. at Compl -
At - Hrs -

El.	N	Qu kPa	W %
Ground Surface 112.7m			
	2		
	3	134.18	39
	4		
	1		
	2	153.28	31
	4		
	2		
	3	134.18	29
	4		
	2		
	3	134.18	33
	4		
	1		
	3	124.58	32
	4		
	2		
	3	143.68	27
	4		
	2		
	3	153.28	27
	4		
	2		
	5	229.88	39
	7		
	1		
STIFF MOIST GREY AND BROWN CLAY A7-6			
109.0			
STIFF MOIST GREY AND BROWN CLAY TO SILTY CLAY A7-6			
106.8			
VERY STIFF MOIST GREY CLAY A7-6			
106.0			

El.	N	Qu kPa	W %
	1		
	3	153.28	31
	4		
	2		
	3	124.55	41
	4		
	1		
	1	67.08	33
	2		
	1		
	1	19.28	30
	1		
	1		
	3	19.28	28
	2		
	WH		
	1	28.78	33
	2		
	1		
	1	95.88	36
	2		
	1		
	2	3.88	34
	2		
	WH		
STIFF TO MEDIUM VERY MOIST GREY MOTTLED BROWN CLAY TO SILTY CLAY A7-6			
103.7			
VERY SOFT VERY MOIST GREY MOTT BROWN SILTY LOAM TO SILTY CLAY LOAM A-4			
102.9			
VERY SOFT VERY MOIST BROWN LOAM TO SANDY LOAM A-4			
102.2			
SOFT VERY MOIST BROWN MOTT GREY SILTY CLAY LOAM A-4			
101.4			
MED TO STIFF MOIST TO V. MOIST GREY SILTY CLAY TO SILTY CLAY LOAM A-6			
100.7			
VERY SOFT VERY MOIST GREY LOAM TO SILTY LOAM A-4			
99.1			

N-Std Pentr Test: 5cm OD Sampler, 63.5Kg Hammer, 76cm Fall (Fall. B-Bulge S-Shear E-Estimated P-Penetrometer)

Project -
Route FA 312
Sec. 1318-2
County Union
Sh. 2 of 3
Boring No. 1-S
Sta 27+534
O/S 5.2m LT CL

El. m	N	Qu kPa	W %
	WH		
	1 - -		
14	3		
LOOSE TO VERY LOOSE VERY MOIST GREY FINE SILTY SAND			
97.2			
	5		
	9 - -		
16	15		
MEDIUM VERY MOIST GREY FINE SILTY SAND WITH CLAY LAYERS			
	6		
	5 - -		
	9		
18			
	4		
	7 - -		
	8		
20			
92.6			
DENSE MOIST GREY MEDIUM SAND WITH FINE GRAVEL			

El. m	N	Qu kPa	W %
DENSE MOIST GREY MED SAND W/FINE GRAVEL			
91.1			
MEDIUM VERY MOIST GREY FINE TO MEDIUM SAND WITH SILT LAYERS			
23			
89.5			
	10		
	27 - -		
	50		
VERY DENSE TO DENSE MOIST GREY FINE TO COARSE SAND WITH GRAVEL			
25	18 - -		
	25		
27			
85.0			
VERY DENSE TO DENSE MOIST GREY FINE TO MEDIUM SAND			
	14		
	17 - -		
	22		
29			

BORING LOGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	131 B-2	JACKSON UNION	54	47
TOTAL PROJECT SHEET NO.		ALIGNMENT	TOTAL PROJECT	

SHEET NO. 28
35 SHEETS

Project -
Route FA 312
Sec. 1318-2
County Union

Sh. 3 of 3

Boring No. 1-S
Sta 27+534
O/S 5.2m LT CL

El. m	N	Qu kPa	W %
112.7			
108			
102			
96			
90			
84			
78			
72			
66			
60			
54			
48			
42			
36			
30			
24			
18			
12			
6			
0			

VERY DENSE TO DENSE MOIST GREY FINE TO MEDIUM SAND

El. m	N	Qu kPa	W %
78.4	32		
	50	-	-
	49		

BOTTOM OF HOLE=34.3m

DURING DRILLING OPERATIONS IT APPEARED FREE WATER WAS ENCOUNTERED AT 12.2m

ELEVATION REFERENCED TO PLANS

NOTE: TO CONVERT N VALUES TO N60 VALUES MULTIPLY BY 1.25

El. m	N	Qu kPa	W %
78.4	16		
	22	-	-
	23		

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials
Bridge Foundation Boring Log
STRUCTURE CARRYING FA 312 (IL 3) OVER BIG MUDDY RIVER
Sh. 1 of 3

PROJECT -
BRIDGE 091-0031
Date 10/02/95

ROUTE FA 312
Bored By Rich Moberly

SEC. 1318-2
STA. 27+439.370
Checked By Ed West

COUNTY UNION

Boring No. 2-S
Sta 27+347
O/S 5.2m RT CL

Surf Wat El. 100.9
Grndwater El. at Compl 102.1
At - Hrs -

El.	N	Qu kPa	W %
Ground Surface 112.7 0m			
STIFF MOIST GREY AND BROWN CLAY A7-6			
112.1			
STIFF MOIST GREY AND BROWN CLAY A7-6	-1	23" RECOVERY SAMPLE 2-S-1	
111.3			
STIFF MOIST GREY AND BROWN CLAY A7-6	-2	30" RECOVERY SAMPLE 2-S-2	
110.6			
STIFF MOIST GREY AND BROWN CLAY A7-6	-3	29" RECOVERY SAMPLE 2-S-3	
109.8			
STIFF MOIST GREY AND BROWN CLAY A7-6	-4	28" RECOVERY SAMPLE 2-S-4	
109.0			
STIFF MOIST GREY CLAY TO CLAY LOAM A-6	-5	30" RECOVERY SAMPLE 2-S-5	
108.3			
STIFF MOIST GREY SILTY CLAY LOAM TO CLAY ~~LOAM A-6~~	-6	30" RECOVERY SAMPLE ~~2-S-6~~	
107.5			
STIFF MOIST GREY SILTY CLAY LOAM TO CLAY LOAM A-6	-7	30" RECOVERY SAMPLE 2-S-7	
106.8			
MEDIUM MOIST GREY SILTY FINE SAND	-8	19" RECOVERY SAMPLE 2-S-8	
106.0			

El.	N	Qu kPa	W %
STIFF MOIST GREY CLAY A7-6	-7	30" RECOVERY SAMPLE 2-S-9	
105.2			
STIFF MOIST GREY MOTT BROWN CLAY A7-6	-8	30" RECOVERY SAMPLE 2-S-10	
104.5			
STIFF MOIST GREY MOTT BROWN CLAY TO SILTY CLAY A7-6	-9	30" RECOVERY SAMPLE 2-S-11	
103.7			
STIFF MOIST GREY MOTT BROWN CLAY A7-6	-10	30" RECOVERY SAMPLE 2-S-12	
102.9			
MED TO STIFF MOIST GREY MOTT BROWN CLAY A7-6	-11	29" RECOVERY SAMPLE 2-S-13	
102.2			
MED MOIST BROWN FINE SILTY SAND	-12	24" RECOVERY SAMPLE 2-S-14	
101.4			
SOFT MOIST GREY ~~LOAM TO SILTY LOAM~~ A-4	-13	30" RECOVERY ~~SAMPLE~~ 2-S-15	
100.7			
		NO RECOVERY	
99.9			

N-Std Pentr Test: 5cm OD Sampler, 63.5Kg Hammer, 76cm Fall (Fall, B-Bulge S-Shear E-Estimated P-Penetrometer)

BORING LOGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	(131B-1)OR	JACKSON/ UNION	54	48

SHEET NO. 29
35 SHEETS

Project -
Route FA 312
Sec. 131B-2
County Union

Sh. 2 of 3

Boring No. 2-S
Sta 27+347
O/S 5.2m RT CL

El. m	N	Qu kPa	W %
-14	NO RECOVERY		
97.2			
	5		
	10 - -		
-16	13		
	MEDIUM VERY MOIST GREY FINE SILTY SAND		
	5		
	7 - -		
	6		
-18			
94.1			
	12		
	15 - -		
	15		
	MEDIUM VERY MOIST GREY FINE TO COARSE SAND WITH FINE GRAVEL		
-20			
	8		
	13 - -		
	17		

El. m	N	Qu kPa	W %
	MEDIUM VERY MOIST GREY FINE TO COARSE SAND WITH FINE GRAVEL		
-23			
89.5			
	11		
	14 - -		
	14		
	MEDIUM VERY MOIST GREY COARSE SAND WITH GRAVEL		
88.0			
-25	7		
	10 - -		
	11		
	MEDIUM VERY MOIST GREY MEDIUM TO COARSE SAND WITH FINE GRAVEL		
-27			
	9		
	10 - -		
	12		
-29			

Project -
Route FA 312
Sec. 131B-2
County Union

Sh. 3 of 3

Boring No. 2-S
Sta 27+347
O/S 5.2m RT CL

El. m	N	Qu kPa	W %
-30			
	MEDIUM VERY MOIST GREY MEDIUM TO COARSE SAND WITH FINE GRAVEL		
	7		
	8 - -		
	12		
-32			
78.9			
-34	12		
	12 - -		
	12		
	MEDIUM TO DENSE VERY MOIST GREY MEDIUM TO COARSE SAND		
-36			

El. m	N	Qu kPa	W %
	MEDIUM TO DENSE VERY MOIST GREY MEDIUM TO COARSE SAND		
-37			
75.4			
	15		
	17 - -		
	20		
-39			
	BOTTOM OF HOLE=37.3m		
	DURING DRILLING OPERATIONS IT APPEARED FREE WATER WAS ENCOUNTERED AT 10.5m		
	ELEVATION REFERENCED TO PLANS		
	NOTE: TO CONVERT N VALUES TO N60 VALUES MULTIPLY BY 1.25		
-41			
-43			

BORING LOGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

				SHEET NO. 30
F.A.P. 312	(1318-1)OR	JACKSON / UNION	54	49
				35 SHEETS

ILLINOIS DEPARTMENT OF TRANSPORTATION — Bridge Foundation Boring Log
District Nine Materials
STRUCTURE CARRYING FA 312 (IL 3) OVER BIG MUDDY RIVER
Sh. 1 of 3

PROJECT -
ROUTE FA 312
SEC. 1318-2
COUNTY UNION
Boring No. 3-S
Sta 27+399
O/S 3.0m LT CL

BRIDGE 091-0031
STA. 27+439.370
Date 10/10/95
Bored By Rich Moberly
Checked By Ed West
Surf Wat El. NONE
Grndwater El. at Compl -
At - Hrs -

	El.	N	Qu kPa	W %
Ground Surface 112.8 Opn				
AUGERS SUSPENDED THROUGH BRIDGE DECK	-1			
	-2			
	-3			
	-4			
	-5			
	-6			
	-7			
AUGERS SUSPENDED THROUGH BRIDGE DECK	-8			
	-9			
	-10			
	-11			
101.7				
SOFT VERY MOIST BROWN AND GREY SILTY CLAY A-6	-12	WH		
		WH	38.3B	30
		WH		
	-13			
99.2				
		WH		

N-Std Pentr Test: 5cm OD Sampler, 63.5Kg Hammer, 76cm Fall (Fall. B-Bulge S-Shear E-Estimated P-Penetrometer)

Project -
Route FA 312
Sec. 1318-2
County Union
Sh. 2 of 3

Boring No. 3-S
Sta 27+399
O/S 3.0m LT CL

	El.	N	Qu kPa	W %
		WH		
	-14	WH	28.7B	35
		WH		
SOFT TO VERY SOFT VERY MOIST GREY CLAY A7-6 WITH SILT SEAMS		WR		
		WR	19.2B	45
		WH		
	-16			
96.2				
		WR		
		WR	-	29
		WH		
VERY LOOSE TO LOOSE WET GREY FINE SILTY SAND	-18			
		4		
		4	-	22
		5		
93.1				
		7		
	-20	8	-	-
MEDIUM VERY MOIST GREY FINE TO MEDIUM SAND		9		
		4		

	El.	N	Qu kPa	W %
		4		
MEDIUM VERY MOIST GREY FINE TO MEDIUM SAND		7	-	-
		8		
90.1				
	-23	3		
MEDIUM VERY MOIST GREY MEDIUM TO COARSE SAND WITH FINE GRAVEL AND A 5.1cm CLAY LAYER		6	-	19
		6		
88.6				
		13		
		15	-	13
		7		
MEDIUM VERY MOIST BROWN MEDIUM TO COARSE SAND WITH SOME GRAVEL	-25			
	-27			
		6		
		7	-	14
		14		
	-29			

BORING LOGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 31
F.A.P. 312	1318-2DR	UNION	54	50	35 SHEETS

Project -
Route FA 312
Sec. 1318-2
County Union

Sh. 3 of 3

Boring No. 3-S
Sta 27+399
O/S 3.0m LT CL

El. m	N	Qu kPa	W %
MEDIUM VERY MOIST BROWN MEDIUM TO COARSE SAND WITH SOME GRAVEL			
82.5	5		
	7 - 31		
	8		
MEDIUM VERY MOIST GREY FINE TO MEDIUM SAND WITH SILT AND ORGANIC LAYERS			
	4		
	6 - -		
	9		
76.2	17		
MEDIUM VERY MOIST BROWN GRAVEL AND SAND			
72.9	17		
	100 BLOWS 22.9cm		
	14		
	7 - 10		
	5		

BOTTOM OF HOLE=39.9m

DURING DRILLING OPERATIONS IT APPEARED FREE WATER WAS ENCOUNTERED AT 16.8m

ELEVATION REFERENCED TO PLANS

NOTE: TO CONVERT N VALUES TO N60 VALUES MULTIPLY BY 1.25

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials
Bridge Foundation Boring Log
STRUCTURE CARRYING FA 312 (IL 3) OVER BIG MUDDY RIVER
Sh. 1 of 4

PROJECT -
ROUTE FA 312
SEC. 1318-2
COUNTY UNION
Boring No. 4-S
Sta
O/S

BRIDGE 091-0031
STA. 27+439.370
Date 10/12/95
Bored By Rich Moberly
Checked By Ed West
Surf Wat El. 101.8
Grndwater El. at Compl 101.8
At Hrs

El.	N	Qu kPa	W %
Ground Surface 112.80m			
SUSPENDED AUGERS THROUGH BRIDGE DECK			
SUSPENDED AUGERS THROUGH BRIDGE DECK			
102.0	1		
SOFT TO VERY SOFT VERY MOIST GR MOTT BROWN SILTY CLAY A-6			
101.2	2		
SOFT TO V. SOFT VERY MOIST GR SILTY CLAY SILTY CLAY LOAM A-6			
100.5			
SOFT TO V. SOFT VERY MOIST GREY SILTY CLAY A-6	13		
99.7			
MED V. MOIST GREY CLAY TO SILTY CLAY A7-6			

16" RECOVERY SAMPLE 4-S-1			
14" RECOVERY SAMPLE 4-S-2			
19" RECOVERY SAMPLE 4-S-3			
22" RECOVERY SAMPLE 4-S-4			

N-Std Pentr Test: 5cm OD Sampler, 63.5Kg Hammer, 76cm Fall (Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

BORING LOGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 312	1318-2(BR)	JACKSON / UNION	54	51
		ILLINOIS	FED. AID PROJECT	

SHEET NO. 32
35 SHEETS

Project
Route FA 312
Sec. 1318-2
County Union

Sh. 2 of 4

Boring No. 4-S
Sta 27+477
O/S 3.4m RT CL

El. m	N	Qu kPa	W %	
98.9				MED V.M. GR C-SIC A7-6
98.2				MED V.MOIST GREY SILTY CLAY LOAM TO CLAY LOAM A-6
97.4				MED V.MOIST GREY SILTY CLAY A-6 WITH SAND LAYERS
96.2				MEDIUM VERY MOIST GREY SILTY CLAY A-6 WITH SAND LAYERS
93.1				SOFT TO MEDIUM VERY MOIST GREY CLAY A7-6 WITH SAND SEAMS
88.9				VERY LOOSE TO MEDIUM VERY MOIST GREY FINE TO MEDIUM SAND
	12" RECOVERY SAMPLE 4-S-5			
	21" RECOVERY SAMPLE 4-S-6			
	WH	23.98	70	
	1	47.98	33	
	1 - 20			
	5 - -			
	8			
	8			
	2			
	5 - -			
	7			
	3			
	10 - 10			
	11			
	6			
	7 - -			
	8			

Project
Route FA 312
Sec. 1318-2
County Union

Sh. 3 of 4

Boring No. 4-S
Sta 27+477
O/S 3.4m RT CL

El. m	N	Qu kPa	W %	
82.8				MEDIUM VERY MOIST GREY MEDIUM TO COARSE SAND WITH GRAVEL
76.7				VERY DENSE TO MEDIUM VERY MOIST GREY MEDIUM TO COARSE SAND WITH GRAVEL
70.6				LOOSE VERY MOIST GREY SANDY GRAVEL
	30			
	22			
	37 - -			
	45			
	4			
	6 - 12			
	7			
	6			
	4 - 6			
	3			
	37			
	39			
	4			
	5 - -			
	4			
	41			
	3			
	3 - -			
	3			
	43			LOOSE VERY MOIST GREY MEDIUM TO COARSE SAND WITH GRAVEL
	2			

BORING LOGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

					SHEET NO. 35
F.A.P. 312	(131B-1)	OR	JACKSON/ UNION	54	54
					35 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS DEPARTMENT OF TRANSPORTATION — Total Feet ____ — SHELBY TUBE TEST DATA
District Nine Materials — Type Boring ____
STRUCTURE CARRYING FA 312 (IL 3) OVER BIG MUDDY RIVER

Sh. 2 of 3
PROJECT -____ BRIDGE 091-0031 ____ Date 10/18/95
ROUTE FA 312 ____ Bored By Rich Moberly
SEC. 131B-2 ____ STA. - ____ Checked By Ed West
COUNTY Union Boring No. 4-S Sta 27+477 O. - 3.4m RT CL

SPEC NO	DEPTH FT	COMP STR	WATER %	WET WT	DESCRIPTION
41	6.00-6.15		%		AUGERS SUSPENDED THROUGH BRIDGE DECK
42	6.15-6.30		%		
43	6.30-6.45		%		
44	6.45-6.60		%		
45	6.60-6.75		%		
46	6.75-6.90		%		
47	6.90-7.05		%		
48	7.05-7.20		%		
49	7.20-7.35		%		
50	7.35-7.50		%		
51	7.50-7.65		%		
52	7.65-7.80		%		
53	7.80-7.95		%		
54	7.95-8.10		%		
55	8.10-8.25		%		
56	8.25-8.40		%		
57	8.40-8.55		%		
58	8.55-8.70		%		
59	8.70-8.85		%		
60	8.85-9.00		%		
61	9.00-9.15		%		
62	9.15-9.30		%		
63	9.30-9.45		%		
64	9.45-9.60		%		
65	9.60-9.75		%		
66	9.75-9.90		%		
67	9.90-10.05		%		
68	10.05-10.29		%		
69	10.29-10.35		%		
70	10.35-10.50		%		
71	10.50-10.65		%		
72	10.65-10.80		37.7%		SOFT V.MOIST GR MOTT BRN SIC A-6
73	10.80-10.95		38.7%	1,813.3	TX C=30.6 PHI=2.0 "
74	10.95-11.10	28.738	36.0%	1,830.9	" "
75	11.10-11.25		%		NO RECOVERY
76	11.25-11.40		%		NO RECOVERY
77	11.40-11.55	29.695	44.0%	1,835.7	SOFT V.M. GREY SILTY CLAY LOAM A-6
78	11.55-11.70	25.868	36.0%	1,859.7	" "
79	11.70-11.85		%		NO RECOVERY
80	11.85-12.00		%		NO RECOVERY

S - SHEAR B - BULGE P - PENETROMETER

ILLINOIS DEPARTMENT OF TRANSPORTATION — Total Feet ____ — SHELBY TUBE TEST DATA
District Nine Materials — Type Boring ____
STRUCTURE CARRYING FA 312 (IL 3) OVER BIG MUDDY RIVER

Sh. 3 of 3
PROJECT -____ BRIDGE 091-0031 ____ Date 10/18/95
ROUTE FA 312 ____ Bored By Rich Moberly
SEC. 131B-2 ____ STA. - ____ Checked By Ed West
COUNTY Union Boring No. 4-S Sta 27+477 O/S 3.4m RT CL

SPEC NO	DEPTH FT	COMP STR	WATER %	WET WT	DESCRIPTION
81	12.00-12.15		%		NO RECOVERY
82	12.15-12.30		56.2%		SOFT V.MOIST GREY SILTY CLAY A-6
83	12.30-12.45	14.365	41.3%	1,816.5	" "
84	12.45-12.60		36.2%	1,999.1	TX C=13.4 PHI=1.4 "
85	12.60-12.75	25.868	40.1%	1,798.9	" "
86	12.75-12.90		%		NO RECOVERY
87	12.90-13.05		39.9%		V. SOFT V.MOIST GREY CL TO SACL A-4
88	13.05-13.20	15.325	37.1%	1,842.1	V. SOFT V.MOIST GREY CLAY TO SIC A-6
89	13.20-13.35		40.0%	1,797.3	TX C=14.0 PHI=1.4 "
90	13.35-13.50	24.908	37.8%	1,803.7	V. SOFT V.MOIST GREY C TO SIC A-6
91	13.50-13.65		%		NO RECOVERY
92	13.65-13.80		35.1%		MED V.MOIST GREY CLAY LOAM A-6
93	13.80-13.95	48.848	%		" "
94	13.95-14.10		%		NO RECOVERY
95	14.10-14.25		%		NO RECOVERY
96	14.25-14.40		%		NO RECOVERY
97	14.40-14.55		32.5%		MED TO SOFT V.M. GREY CLAY LOAM A-6
98	14.55-14.70	41.188	%	1,335.9	MED TO SOFT V.M. GREY CLAY LOAM A-6
99	14.70-14.85		37.4%	1,880.6	TX C=24.8 PHI=1.4 "
100	14.85-15.00	32.568	39.4%	1,810.1	MED TO SOFT V.M. GREY CLAY LOAM A-6
101	15.00-15.15		%		NO RECOVERY
102	15.15-15.30		%		
103	15.30-15.45		%		
104	15.45-15.60		%		
105	15.60-15.75		%		
106	15.75-15.90		%		
107	15.90-16.05		%		
108	16.05-16.20		%		
109	16.20-16.35		%		
110	16.35-16.50		%		
111	16.50-16.65		%		
112	16.65-16.80		%		
113	16.80-16.95		%		
114	16.95-17.10		%		
115	17.10-17.25		%		
116	17.25-17.40		%		
117	17.40-17.55		%		
118	17.55-17.70		%		
119	17.70-17.85		%		
120	17.85-18.00		%		

S - SHEAR B - BULGE P - PENETROMETER

BORING LOGS
F.A.P. ROUTE 312 - SECTION 131 B-2
UNION COUNTY
STATION 27+439.370

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED STATE BOND ISSUE HIGHWAY

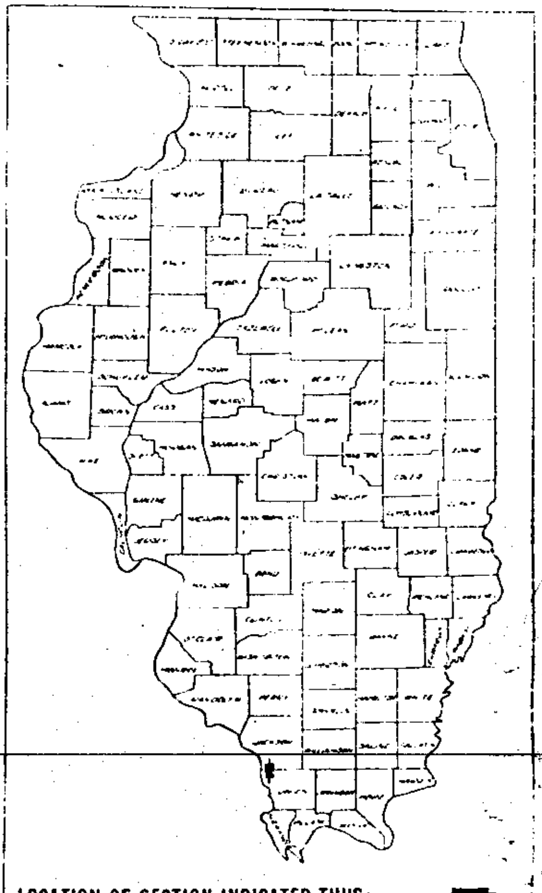
SCALES

S B I ROUTE 150

SEG. ~~131, 131X W.RS, 132 W-1, RS-1~~ 131 F-1 131-B-1

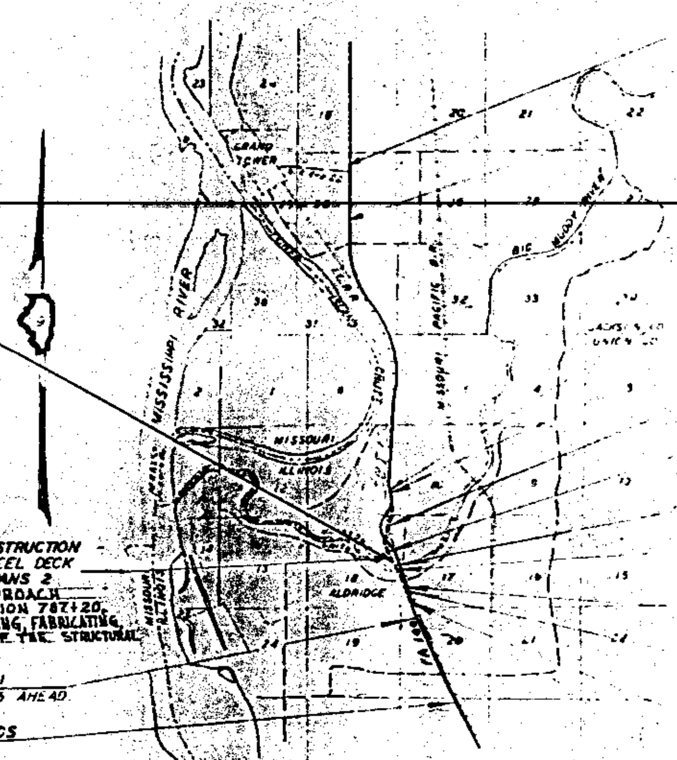
PROJECT F-194 (13)

JACKSON-UNION COUNTY



LOCATION OF SECTION INDICATED THUS:—

SPECIAL COVER SHEET PREPARED FOR FEDERAL PROJECT



SECTION 131-F-1 INCLUDES THE FURNISHING, FABRICATING, SHOP PAINTING, & DELIVERY OF THE STRUCTURAL STEEL F.O.B. ALDRIDGE FOR A CONTINUOUS STEEL DECK PLATE GRIDER BRIDGE, SPANS 2@ 137'-3" & 1@ 174'-3", AND APPROACH SPANS 2@ 15'-8½" AT STATION 787+20.

SEC. 131-B-1 INCLUDES THE CONSTRUCTION OF A ~~CONTINUOUS~~ STEEL DECK PLATE GIRDER BRIDGE, SPANS 2 137'-3" & 1 174'-3", AND APPROACH SPANS 2 @ 15'-8½" AT STATION 787+20, WITH THE EXCEPTION OF FURNISHING, FABRICATING, SHOP PAINTING, AND DELIVERY OF THE STRUCTURAL STEEL.

STATION EQUATION 917+56.1 / 817+37.5 AHEAD

PROPOSED IMPROVEMENT ENDS 873+5[illegible]

PROPOSED IMPROVEMENT BEGINS STATION 551+05

STATION EQUATION 579+94.[illegible] / 580+00 AHEAD

WIDENING & RESURFACING ENDS STATION 735+63.6
PROPOSED RELOCATION & RECONSTRUCTION BEGINS

STATION EQUATION 735+53.2 = / 735+58.2 AHEAD

OMISSION STATION 757+66.6 – 757+85.0 GAP FOR RAILROAD CROSSING

STATION EQUATION 771+65.56 = / 773+88.82 AHEAD

SEC. 131 WRS ENDS STA. 784+00
SEC. 131 X WRS, BEGINS

OMISSION STATION 784+17.5 – 789+62.5 (GAP FOR BRIDGE INCLUDED IN SEC. 131 B-1)

SEG. 131 X WRS ENDS STATION 793+10
SEC. 132 W-1 RS-1 BEGINS

STATION EQUATION 80[illegible]+77.1 / 812+08.7 AHEAD

END OF PROPOSED RELOCATION & RECONSTRUCTION STATION 807+46.6
WIDENING & RESURFACING BEGINS

LAYOUT

APPROXIMATE SCALE 1"=1 MILE

NET LENGTH SECTION 131 WRS,	23041.8 LINEAL FEET,	4.36397 MILES
NET LENGTH SECTION 131 WRS,	925.0 LINEAL FEET,	0.17519 MILES
NET LENGTH SECTION 132W-1 RS-1	7517.0 LINEAL FEET,	1.42367 MILES
NET LENGTH ENTIRE SECTION	31483.9 LINEAL FEET,	5.96283 MILES

Oct. 4 57
Oct. 4 57
Oct. 4 57

9-23

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED [redacted]
DIVISION ENGINEER DATE

787+20.00

691-0031

Jackson-Union COUNTY SECTION 131F-1 131B-1 S. B. I. ROUTE 150

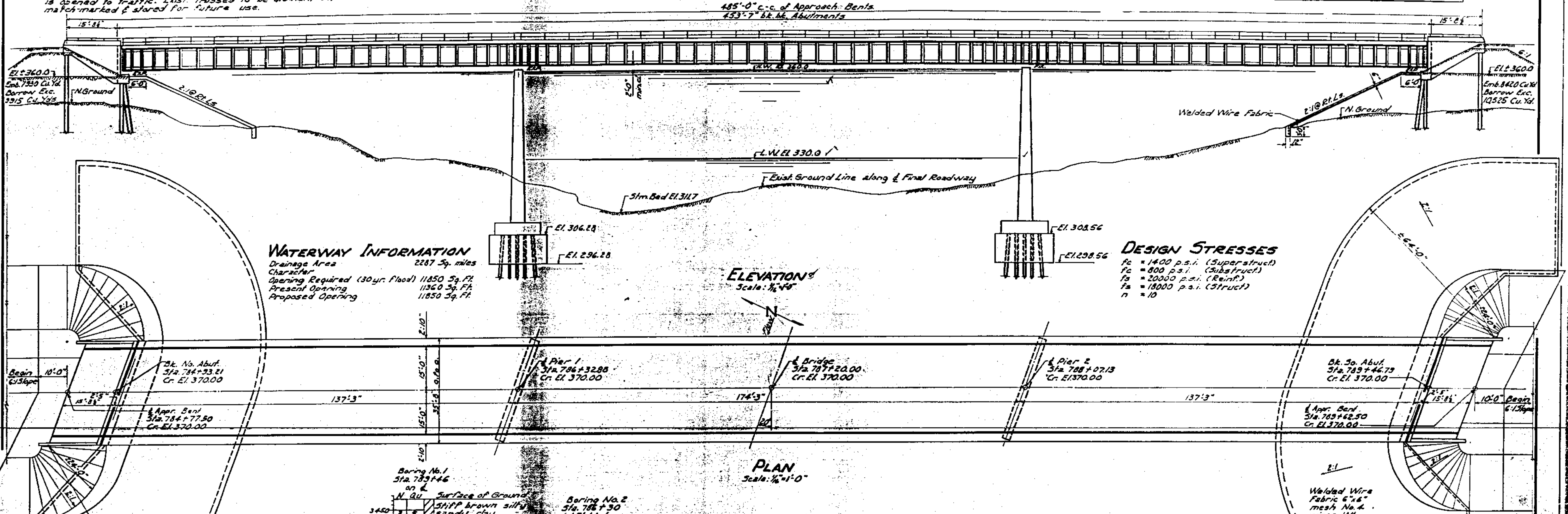
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

Route No.	Section	County	Total Sheets	Sheet No.
S.B.I. 150 / F.A.	131F-1 / 131B-1	Jackson Union	15 / 23	4

SHEET NO. 1
2 SHEETS

B.M. ☐ Cut Top N.E. Corner N.W. Abut. Wing of Bridge Lt. Sta. 785+49 Elevation 361.70

Existing Structure: 3 Penn Trusses 2@100', 1@200' R.C. Floor on Concrete Abuts. & Piers. To be removed by Paving Contr. after new structure is opened to traffic. Exist. Trusses to be dismantled, match-marked & stored for future use.



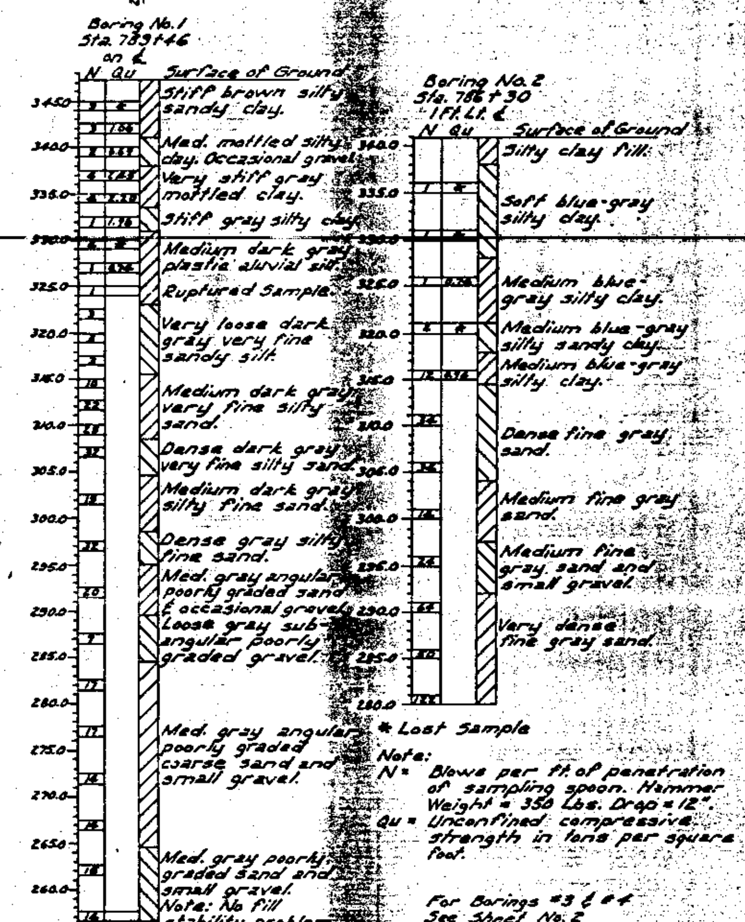
485'-0" c.-c. of Approach Bents
453'-7" bk. bk. Abutments
15'-8½"
El. 360.0
Emb. 7330 Cu. Yd. Borrow Exc. 3915 Cu. Yds.
N. Ground
2:1 @ Rt. Ls
El. 360.0
Emb. 8420 Cu. Yd. Borrow Exc. 10525 Cu. Yd.
Welded Wire Fabric
2:1 @ Rt. Ls
N. Ground
L.W. El. 330.0
Exist. Ground Line along ℄ Final Roadway
Stm. Bed El. 311.7
El. 306.28
El. 296.28
El. 308.56
El. 298.56
ELEVATION
Scale: 1/16"=1'-0"
Flow
N
Begin 6:1 Slope
10'-0"
Bk. No. Abut. Sta. 784+93.21 Cr. El. 370.00
℄ Pier 1 Sta. 786+32.88 Cr. El. 370.00
℄ Bridge Sta. 787+20.00 Cr. El. 370.00
℄ Pier 2 Sta. 788+07.13 Cr. El. 370.00
Bk. So. Abut. Sta. 789+46.79 Cr. El. 370.00
℄ Appr. Bent Sta. 784+77.50 Cr. El. 370.00
℄ Appr. Bent Sta. 789+62.50 Cr. El. 370.00
137'-3"
174'-3"
137'-3"
15'-8½"
10'-0" Begin 6:1 Slope
PLAN
Scale: 1/16"=1'-0"
15'-0"
Emb. 7330 Cu. Yds. Borrow Excav. 3915 Cu. Yds.
Welded Wire Fabric 6"x6" mesh No. 4 wires Wt. 58#/100 Sq. Ft.
Emb. 8420 Cu. Yds. Borrow Excav. 10525 Cu. Yds.

WATERWAY INFORMATION

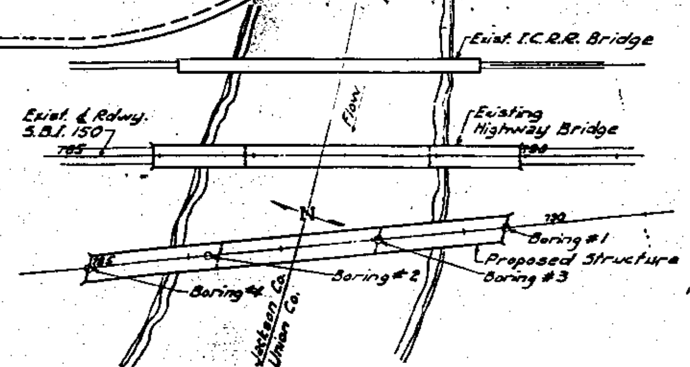
Drainage Area	2287 Sq. miles
Character	
Opening Required (30 yr. Flood)	11850 Sq. Ft.
Present Opening	11360 Sq. Ft.
Proposed Opening	11850 Sq. Ft.

DESIGN STRESSES

fc = 1400 p.s.i. (Superstruct.)
fc = 800 p.s.i. (Substruct.)
fs = 20000 p.s.i. (Reinf.)
fs = 18000 p.s.i. (Struct.)
n = 10



Boring No. 1
Sta. 787+46 on ℄
N Qu
Surface of Ground
Stiff brown silty sandy clay.
Med. mottled silty clay. Occasional gravel.
Very stiff gray mottled clay.
Stiff gray silty clay.
Medium dark gray plastic aluvial silt.
Ruptured Sample.
Very loose dark gray very fine sandy silt.
Medium dark gray very fine silty sand.
Dense dark gray very fine silty sand.
Medium dark gray silty fine sand.
Dense gray silty fine sand.
Med. gray angular poorly graded sand & occasional gravel.
Loose gray sub-angular poorly graded gravel.
Med. gray angular poorly graded coarse sand and small gravel.
Med. gray poorly graded sand and small gravel.
Note: No fill stability problem.
Boring No. 2
Sta. 786+30
1 Ft. Lt. ℄
N Qu
Surface of Ground
Silty clay fill.
Soft blue-gray silty clay.
Medium blue-gray silty clay.
Medium blue-gray silty sandy clay.
Medium blue-gray silty clay.
Dense fine gray sand.
Medium fine gray sand.
Medium fine gray sand and small gravel.
Very dense fine gray sand.
* Lost Sample
Note:
N = Blows per ft. of penetration of sampling spoon. Hammer Weight = 350 Lbs. Drop = 12".
Qu = Unconfined compressive strength in tons per square foot.
For Borings #3 & #4 See Sheet No. 2



LOCATION SKETCH

GENERAL NOTES

Class X Concrete shall be used throughout except as noted.

Class A Concrete shall be used in piers.

The concrete floor slab shall be finished in accordance with Article 5118(a) of the Standard Specifications.

Rivets ⅞" ϕ; Open holes 15/16" ϕ, unless noted.

Field connections shall be riveted except as noted.

All rockers, bolsters, bearing plates, lead plates and anchor bolts shall be fabricated and set in accordance with Article 514 of the Standard Specifications and are included for payment as Structural Steel. Estimated Weight = 12,170#

Anchor bolts shall be set before riveting cross frames over supports.

The roadway expansion guard for the North Abutment shall be assembled in the shop in proper position and shall be left assembled for shop inspection.

Plates shall be flame cut in accordance with Article 55.4 of the Standard Specifications.

Except as noted all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint.

All paint shall be furnished and applied by the Contractor.

The Contractor shall drive 4 test piles in permanent locations as directed by the Engineer before ordering or casting the remainder of piles.

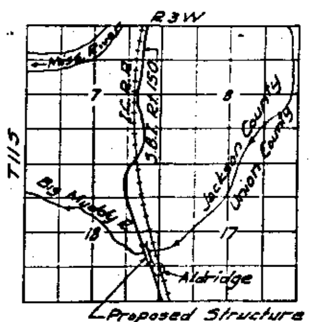
STATION 787+20
BUILT 195_ BY
STATE OF ILLINOIS
S.B.I. RT. 150 SEC. 131-B-1
F.A. PROJ. F-194 (13)
LOADING H20-S16

LETTERING FOR NAME PL.
See Std 2113

Loading H20-S16-44

TOTAL BILL OF MATERIAL

Item		Sec. 131-B-1	Sec. 131-F-1
Class X Concrete	Cu. Yds.	607.8	
Class A Concrete	Cu. Yds.	544.4	
Reinforcement Bars	Lbs.	~~149,080~~ 150,860	
Structural Steel	Lbs.	884,970	884,970
Alternate A. Metal Handrail	Lin. Ft.	962	
Name Plates	Each	1	
Concrete Piles	Lin. Ft.	7420	
Test Piles	Each	4	
Slope Wall	Sq. Yds.	2100	
Borrow Excavation	Cu. Yds.	20440	
Cofferdam - Pier 1	Each	1	
Cofferdam - Pier 2	Each	1	
Cofferdam Excavation	Cu. Yds.	2030	
Seal Coat Concrete	Cu. Yds.	608	
Alternate B - Aluminum Handrail	Lin. Ft.	971	



LOCATION SKETCH

GENERAL PLAN & ELEVATION
BIG MUDDY RIVER BRIDGE @ ALDRIDGE
PROJECT F-194 (13)
S.B.I. RT. 150 (F.A. 100) SEC. 131-(B & F)-1
JACKSON-UNION COUNTIES
STATION 787+20.00

DESIGNED	H. L. Owens	EXAMINED	Sept. 11 1957
CHECKED	J. T. Rayburn	PASSED	
DRAWN	J. Genci	APPROVED	
CHECKED	J. T. R.		

Revised 4-16-58: In TOTAL BILL OF MATERIAL, changed quantity of Reinforcement Bars from 149,080 to 150,860 Lbs. (See notes on Sheets 8 & 9 of 12 sheets)

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 150 / F.A.	131 F-1 / 131 B-1	Jackson-Union	15 / 23	5

SHEET NO 2
12 SHEETS

FOUNDATION BORINGS (Form No. B.B. 137)

Project ______
Route SBI 150 (FA 100)
Section 131-B-1
County Jackson-Union
Bridge over Big Muddy River at Aldridge Station 787+20.00
Borings made by Gordon R. Benson
Sheet __ of __ Sheets
Date Sept. 56

Boring No. 3
Boring located at Station [illegible] on centerline.
Surface of Ground (Fill) 331.6
Silty clay fill.
Free water el. 327.3
326.0
Silty clay.
Qu-0.49 — 1 — 321.5 / 320.5
318.5
Blue silty clay. Qu-0.61 — 1 — 316.5 / 315.5
314.5
Blue silty clay.

Soft blue silty clay. — 1 — 311.5 / 310.5 — Qu-0.29
310.0
Medium dark gray clayey sand.
308.0
Medium gray angular well graded fine sand. — 15 — 306.5 / 305.5
303.5
18 — 301.5 / 300.5
Medium gray angular well graded fine sand, and occasional gravel.
19 — 296.5 / 295.5
292.5
Medium gray angular poorly graded coarse sand and small gravel. — 15 — 291.5 / 290.5
Artesian flow [illegible]

FOUNDATION BORINGS (Form No. B.B. 137)

Project ______
Route SBI 150 (FA 100)
Section 131-B-1
County Jackson-Union
Bridge over Big Muddy River at Aldridge Station 787+20.00
Borings made by Gordon R. Benson
Date [illegible]

Boring No. 3 Cont.
Medium gray angular poorly graded coarse sand and small gravel.
Artesian flow of water from casing at rate of ½ gallon per minute. (3" casing used)
13 — 266.5 / 265.5
264.0
Dense gray poorly graded angular gravel. — 45 — 261.5 / 260.5
277.5
Loose gray angular fine sand. — 6 — 276.5 / 275.5
274.5
Medium gray angular fine sand. — 24 — 271.5 / 270.5
262.0

36 — 266.5 / 265.5
Dense gray angular poorly graded sand and gravel.
46 — 261.5 / 260.5
259.5
Very dense gray angular poorly graded sand and gravel. — 60 — 256.5 / 255.5

FOUNDATION BORINGS (Form No. B.B. 137)

Project ______
Route SBI 150 (FA 100)
Section 131-B-1
County Jackson-Union
Bridge over Big Muddy River at Aldridge Station 787+20.00
Borings made by Francis Kiefer
Date [illegible]

Boring No. 4
Boring located at Station 784+94 on Centerline.
Surface of Ground. 350.6
Qu-2.34 — 6 — 348.0 / 347.0
Very stiff gray silty clay.
Qu-2.51 — 10 — 345.5 / 344.5
Qu-2.94 — 10 — 343.0 / 342.0
341.5
Ruptured sample — 6 — 340.5 / 339.5
Medium silty, clayey sand. 338.0
Qu-0.90 — 1 — 337.0
Qu-0.98 — 1 — 335.5 / 334.5
334.0
Stiff silty clay. Qu-1.06 — 2 — 333.0 / 332.0
331.5
Stiff silty sandy clay. Qu-1.22 — 1 — 330.5 / 329.5

Stiff silty sandy clay. — 3 — 328.0 / 327.0 — Qu-1.34
326.5
18 — 325.5 / 324.5
Medium fine gray sand. — 22 — 320.5 / 319.5
18 — 315.5 / 314.5
24 — 310.5 / 309.5
307.5

FOUNDATION BORINGS (Form No. B.B. 137)

Project ______
Route SBI 150 (FA 100)
Section 131-B-1
County Jackson-Union
Bridge over Big Muddy River at Aldridge Station 787+20.00
Borings made by Francis Kiefer
Date Sept. 56

Boring No. 4 Cont.
307.0
Dense fine gray sand. — 50 — 305.5 / 304.5
42 — 303.0 / 302.0
301.5
Very dense fine gray sand. — 72 — 300.5 / 299.5
298.5
Medium fine gray sand. — 17 — 295.5 / 294.5
293.0
30 — 290.5 / 289.5
Dense poorly graded gravelly sand.
32 — 285.5 / 284.5

Dense poorly graded gravelly sand.
282.5
Very dense poorly graded gravelly sand. — 50 — 280.5 / 279.5

DESIGNED HdQ
CHECKED JJK
DRAWN
CHECKED

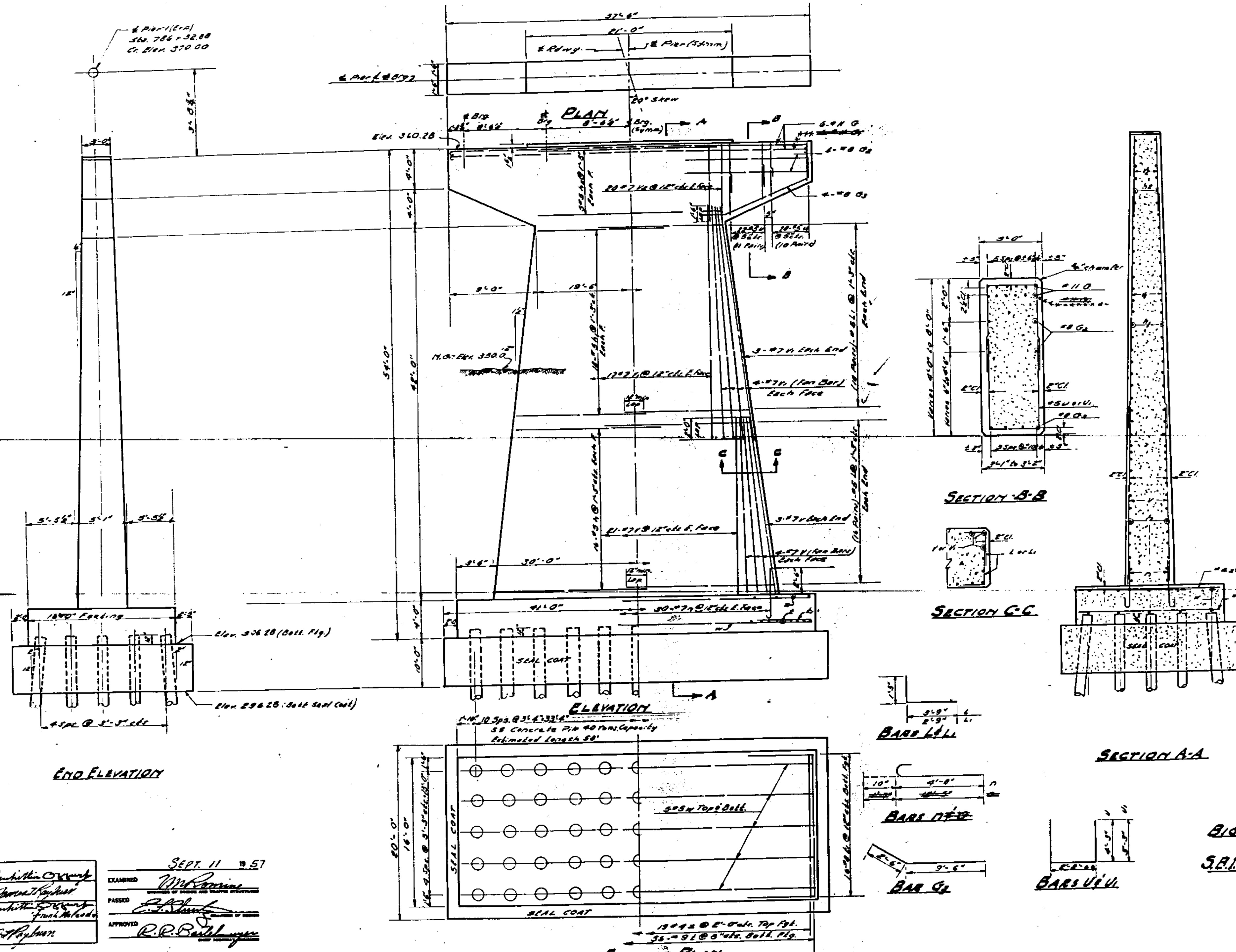
SEPT. 11 1957
EXAMINED V. McRoni[illegible]
PASSED E. L. Stu[illegible]
APPROVED P. P. Bast[illegible]

BORING DATA
BIG MUDDY RIVER AT ALDRIDGE
S.B.I. RT. 150 (F.A. RT. 100) SEC. 131-B-1
JACKSON - UNION COUNTIES
STATION 787+20

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

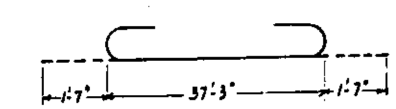
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 150 / F.A.	131F-1 / 131B-1	Jackson-Union	15 / 23	11

SHEET NO. 8
12 SHEETS



BILL OF MATERIAL - PIER 1

BAR	No.	SIZE	LENGTH	SHAPE
G	12	#11	~~40'-6"~~ 40'-5"	
~~G1~~	~~16~~	~~#4~~	~~12'-6"~~	
G2	8	#8	12'-6"	
G3	8	#8	12'-0"	
v	64	#7	22'-0"	
v1	56	#7	23'-6"	
v2	40	#7	7'-11"	
h	64	#5	15'-3"	
h1	72	#5	12'-9"	
h2	10	#5	19'-3"	
u	44	#5	11'-5"	
u1	40	#5	9'-5"	
n	60	#7	5'-6"	
t	66	#9	15'-9"	
t1	32	#8	6'-0"	
z	19	#4	15'-9"	
w	10	#5	36'-9"	
L	64	#5	5'-0"	
L1	72	#5	4'-0"	
Class "A" Concrete			Cu. Yds.	277.6
Reinforcement Bars			Lbs.	~~18,000~~ 17790
Concrete Piles			Lin. Ft.	2700
Test Pile			Each	One
Seal Coat Concrete			Cu. Yds.	304.0
Cofferdam Excavation			Cu. Yds.	1030
Cofferdam			Each	One



BAR G

PIER - 1
BIG MUDDY RIVER BRIDGE AT ALDRIDGE
PROJECT F-194 (13)
S.B.I. RT. 150 (F.A. RT. 100) SEC. 131-B-1
JACKSON-UNION COUNTIES
STA. 787+20.00

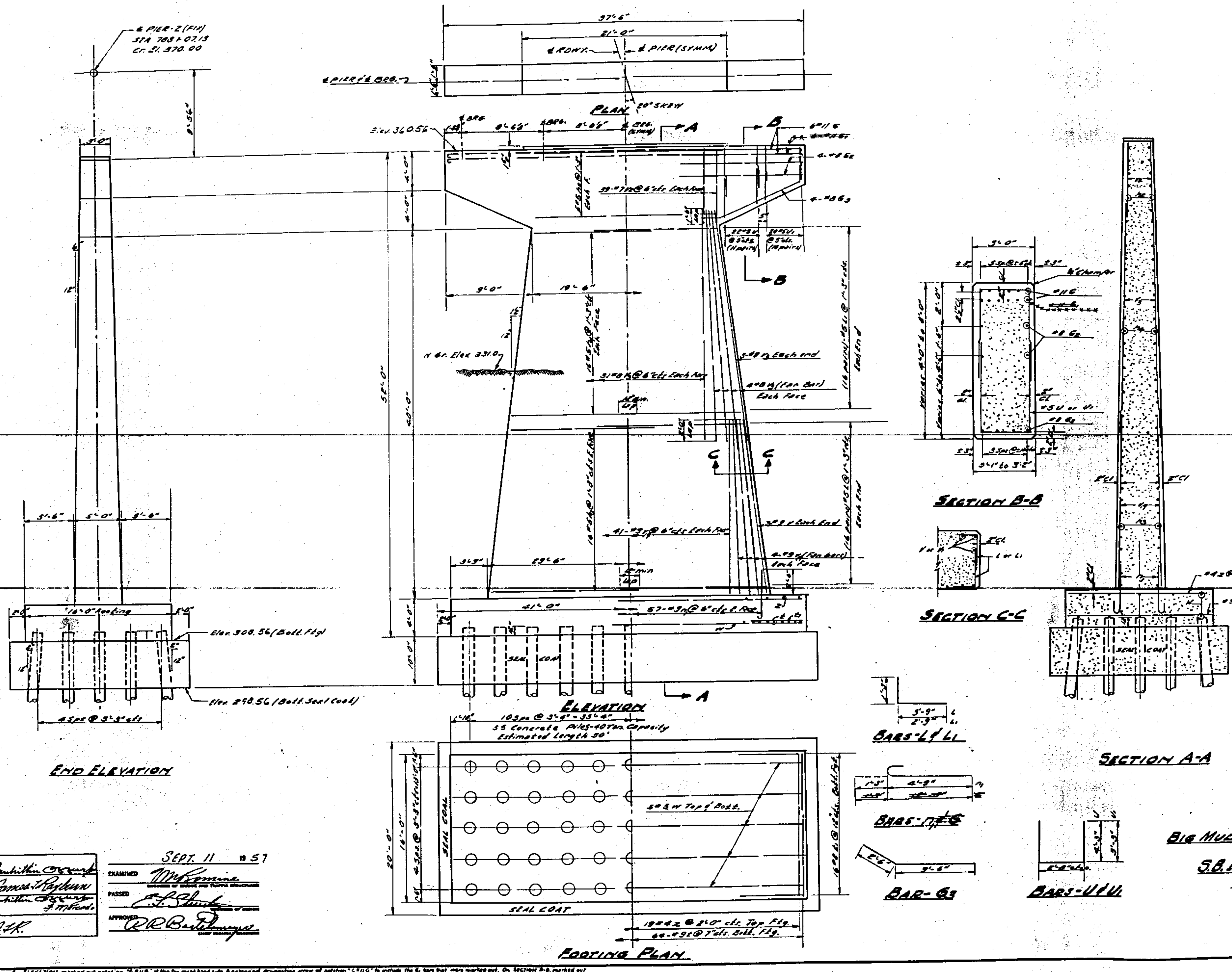
SEPT. 11 1957

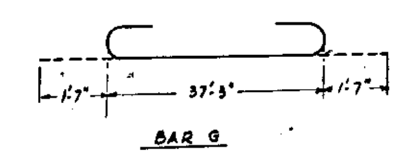
DESIGNED
CHECKED
DRAWN
CHECKED
EXAMINED
PASSED
APPROVED

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

Route No.	Section	County	Total Sheets	Sheet No.
S.B.I. 150 / F.A.	131F-1 / 131B-1	Jackson-Union	15 / 23	12

SHEET NO. 9
12 SHEETS





BILL OF MATERIAL - PIER-2

BAR	NO.	SIZE	LENGTH	SHAPE
G	12	#11	~~[illegible]~~ 40'-5"	
~~G1~~	~~72~~	~~#11~~	~~12'-0"~~	
G2	8	#8	12'-6"	
G3	8	#8	12'-0"	
V1	104	#9	20'-0"	
V3	84	#8	23'-6"	
V2	78	#7	7'-11"	
h3	64	#5	15'-0"	
h4	64	#5	12'-6"	
h2	10	#5	19'-3"	
U	64	#5	11'-2"	
U1	40	#5	9'-2"	
n1	14	#9	6'-0"	
t	64	#9	15'-9"	
t1	32	#8	6'-0"	
z	19	#4	15'-9"	
w	10	#5	36'-9"	
L	64	#5	5'-0"	
L1	64	#5	4'-0"	
Class "A" Concrete			Cu. Yds.	266.9
Reinforcement Bars			Lbs.	~~26,000~~ 27090
Concrete Piles			Lin. Ft.	2700
Test Pile			Each	One
Seal Coat Concrete			Cu. Yds.	304.0
Cofferdam Excavation			Cu. Yds.	1000
Cofferdam			Each	one

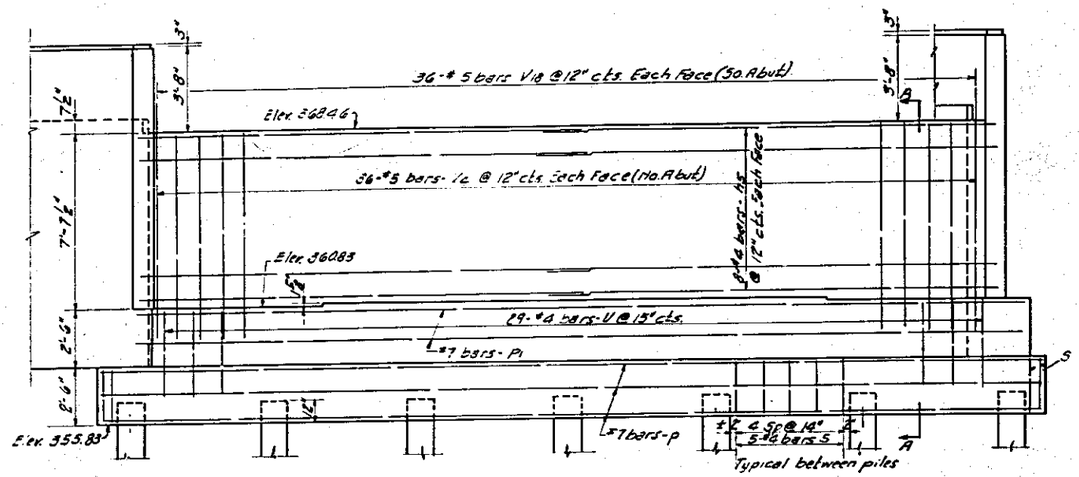
PIER-2
BIG MUDDY RIVER BRIDGE AT ALDRIDGE
PROJECT F-194(13)
S.B.I. RT. 150(F.A. RT 100) SEC 131-B-1
JACKSON-UNION COUNTIES
STA. 787+20.00

DESIGNED [signature]
CHECKED James T. Rayburn
DRAWN [signature] F. Mracek
CHECKED J.L.R.
EXAMINED [signature] SEPT. 11 1957
PASSED [signature]
APPROVED R.R. Bartelsmeyer

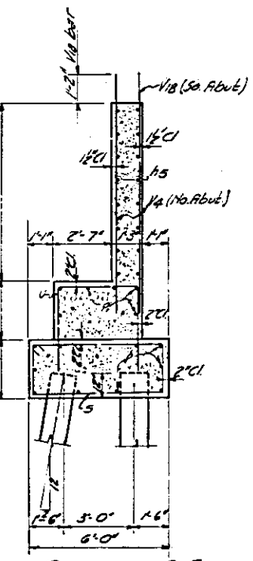
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I.150	131F-1	Jackson-Union	15	13
F.A.	131B-1		23	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

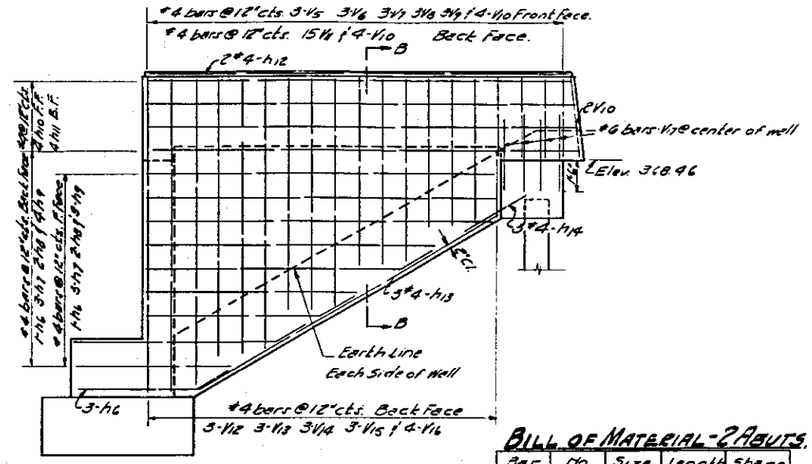
SHEET NO. 10
12 SHEETS



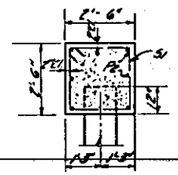
ELEVATION



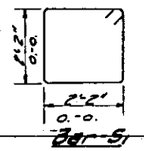
SECTION A-A



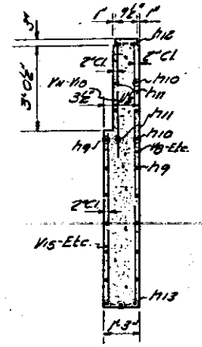
OUTSIDE ELEVATION OF WING



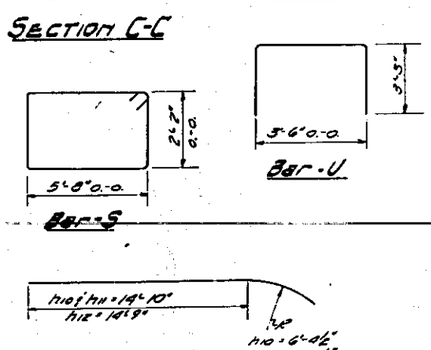
SECTION C-C



Bar-S1

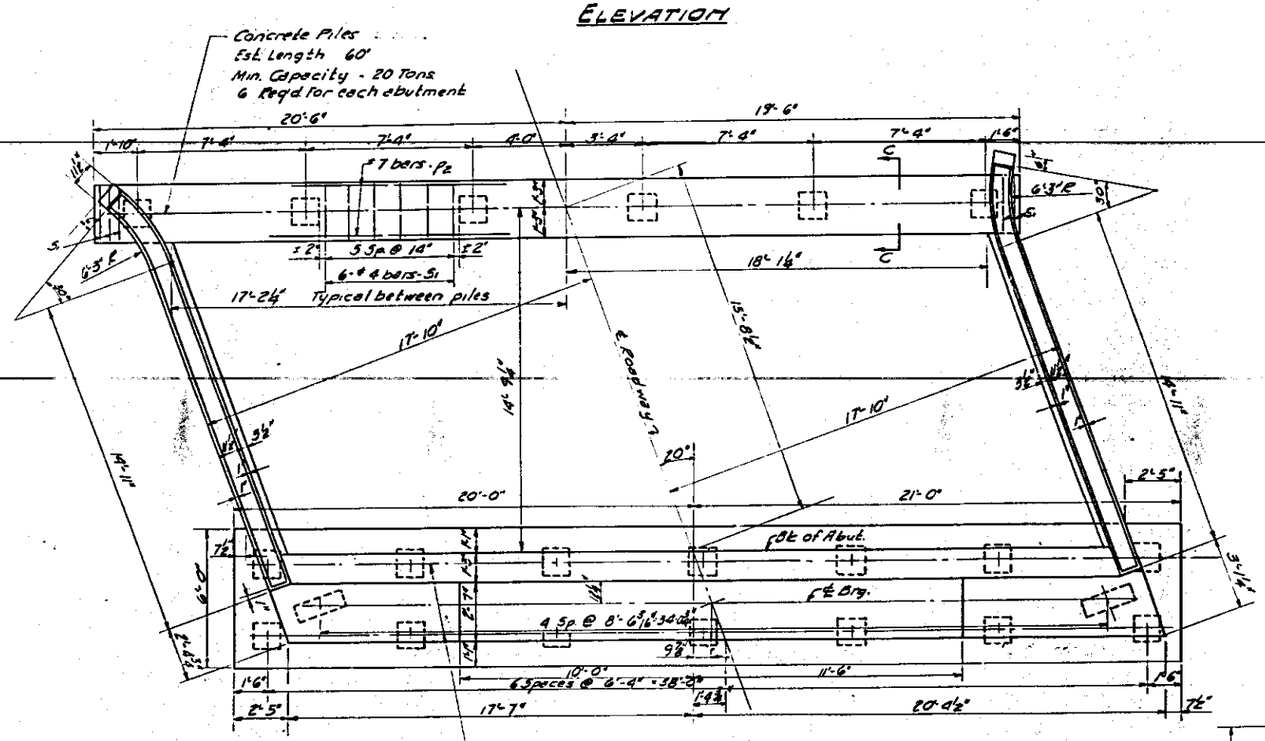


SECTION B-B

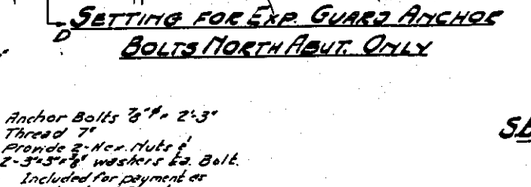


Bar-S Bar-U

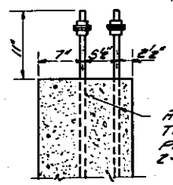
Bars-h10-h11 h12



PLAN



SETTING FOR EXP. GUARD ANCHOR BOLTS NORTH ABUT. ONLY



Anchor Bolts ⅞"ø x 2'-3"
Thread 7"
Provide 2-Hex. Nuts & 2-3"x3"x⅜" washers Ea. Bolt.
Included for payment as Structural Steel

SECTION D-D

BILL OF MATERIAL - 2 ABUTS.

Bar	No.	Size	Length	Shape
h5	64	#4	19'-3"	
h6	20	#4	6'-0"	
h7	24	#4	9'-0"	
h8	16	#4	12'-6"	
h9	28	#4	15'-3"	
h10	16	#4	18'-2"	
h11	16	#4	19'-6"	
h12	8	#4	18'-1"	
h13	12	#4	15'-0"	
h14	12	#4	2'-6"	
P	20	#7	40'-9"	
P1	12	#7	37'-6"	
P2	12	#7	39'-9"	
S	68	#4	16'-3"	
S1	70	#4	9'-3"	
U	58	#4	10'-0"	
V4	72	#5	8'-9"	
V5	12	#5	13'-9"	
V6	12	#4	12'-0"	
V7	12	#4	10'-3"	
V8	12	#4	8'-3"	
V9	12	#4	6'-6"	
V10	40	#4	3'-9"	
V11	60	#4	4'-3"	
V12	12	#4	10'-0"	
V13	12	#4	8'-9"	
V14	12	#4	7'-0"	
V15	12	#4	5'-0"	
V16	16	#4	3'-6"	
V17	16	#6	3'-0"	
V18	72	#5	10'-0"	
Class K Concrete Cu. Yds.			143.0	
Reinforcement Bars Lbs.			9660	
Concrete Piles. Lin. Ft.			2020	
* Test Piles. Each			2	

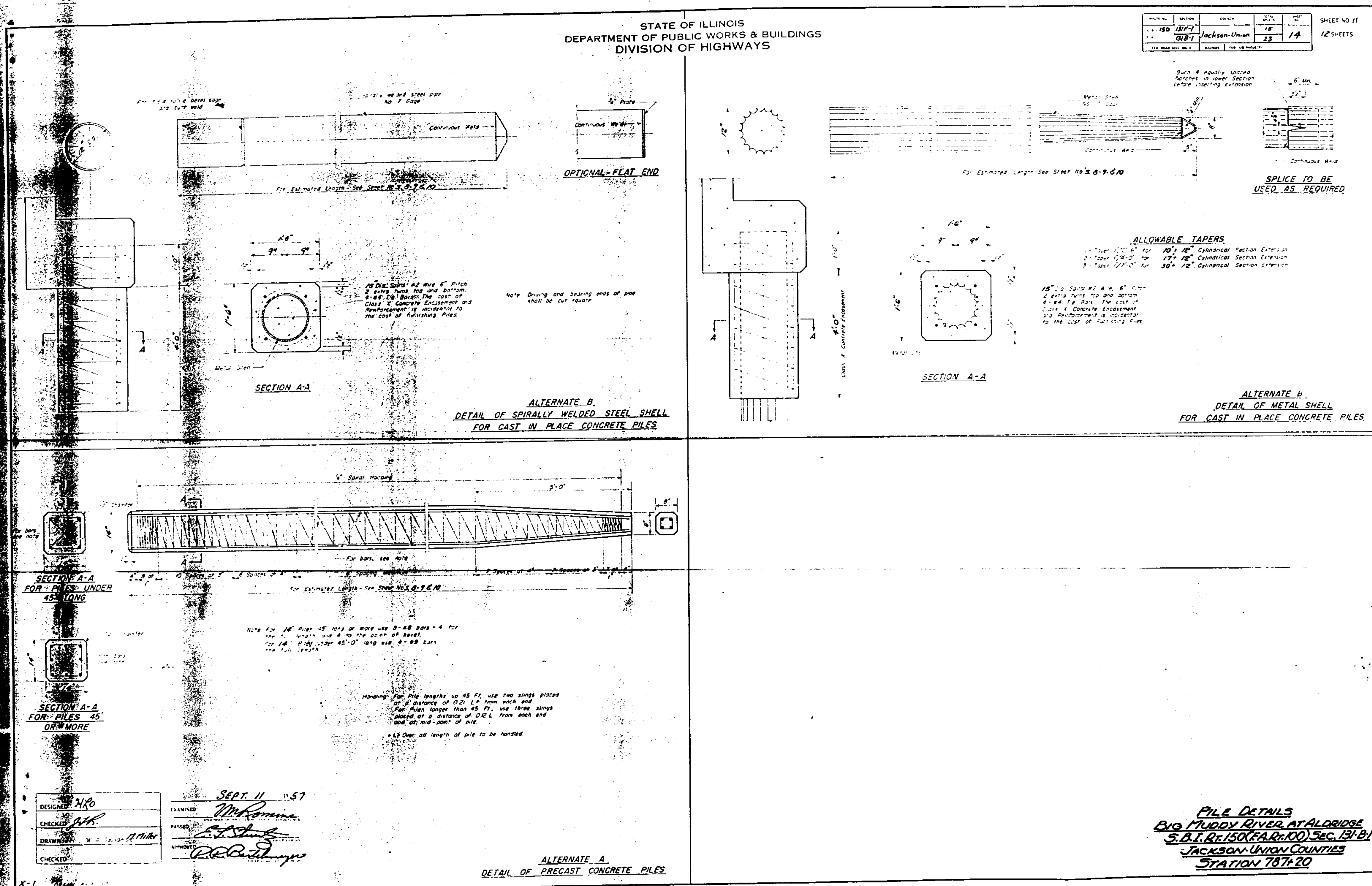
* Drive One Test Pile at Each Abutment

ABUTMENTS
BIG MUDDY RIVER @ ALORIDGE
PROJECT F-194(13)
S.B.I. RT. 150 (F.A. 100) SEC. 131-(B&F)-I
JACKSON-UNION COUNTIES
STATION 787+20.00

DESIGNED	Mukhtiar Singh
CHECKED	Carnes J. Rayburn
DRAWN	A.L.O. F. Mercado P.
CHECKED	J.K.

SEPT. 11 1957

EXAMINED	M.K. Simmons, Engineer of Design and Traffic Structures
PASSED	E.S. Schmitz, Engineer of Bridges
APPROVED	E.E. Burklund, Chief Highway Engineer


STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS
SHEET NO 11
12 SHEETS
150
131F-1
131B-1
Jackson-Union
15
23
14
OPTIONAL - FLAT END
Continuous Weld
SECTION A-A
Note Driving and bearing ends of pipe shall be cut square
ALTERNATE B
DETAIL OF SPIRALLY WELDED STEEL SHELL FOR CAST IN PLACE CONCRETE PILES
SPLICE TO BE USED AS REQUIRED
ALLOWABLE TAPERS
SECTION A-A
ALTERNATE B
DETAIL OF METAL SHELL FOR CAST IN PLACE CONCRETE PILES
SECTION A-A FOR PILES UNDER 45' LONG
SECTION A-A FOR PILES 45' OR MORE
ALTERNATE A
DETAIL OF PRECAST CONCRETE PILES
DESIGNED
CHECKED
DRAWN
CHECKED
EXAMINED
PASSED
APPROVED
SEPT. 11 1957
PILE DETAILS
BIG MUDDY RIVER AT ALDRIDGE
S.B.I. RT. 150 (F.A. RT. 100) SEC. 131-B-1
JACKSON-UNION COUNTIES
STATION 787+20