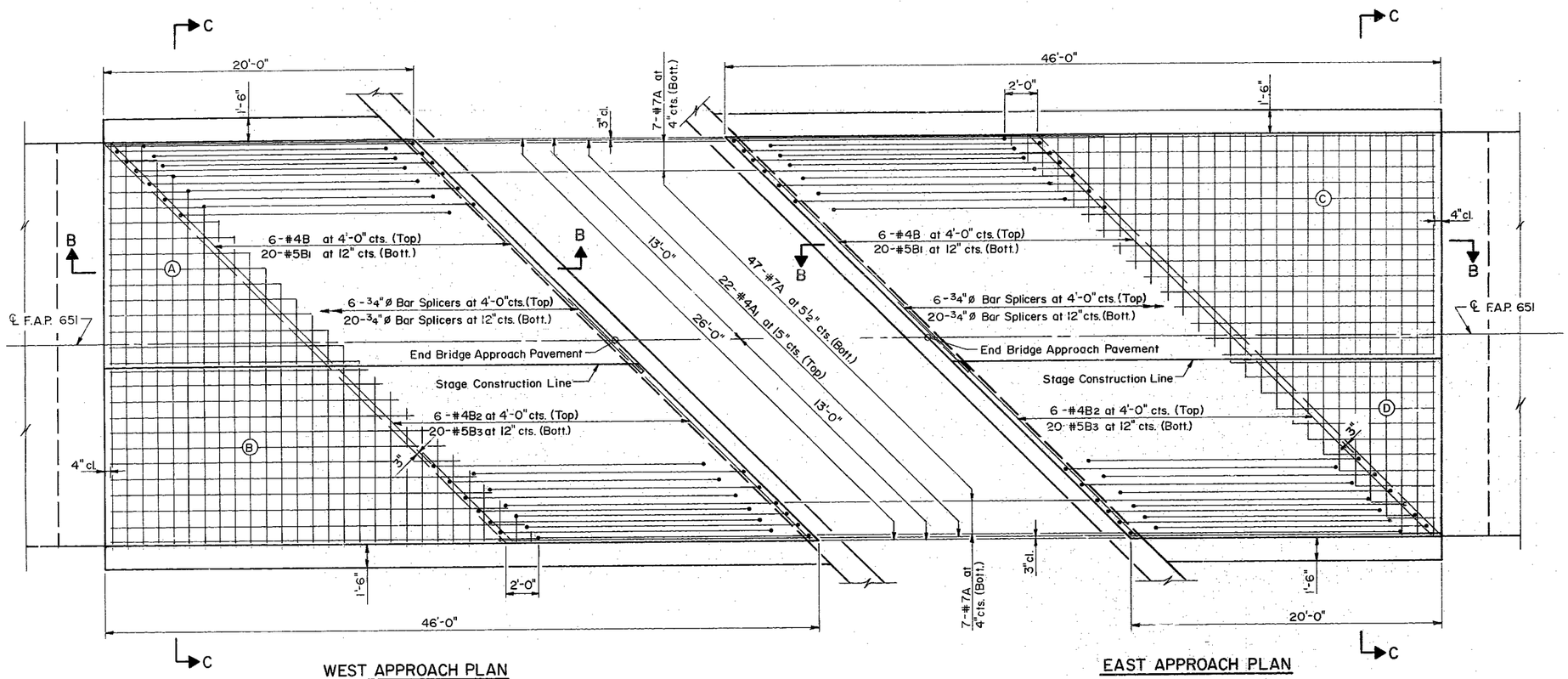
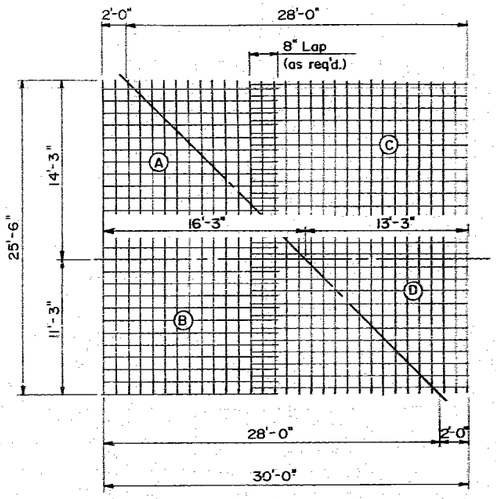
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108 BR-2 108 BR-3	LIVINGSTON	46	10
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		



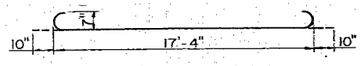
WEST APPROACH PLAN

EAST APPROACH PLAN

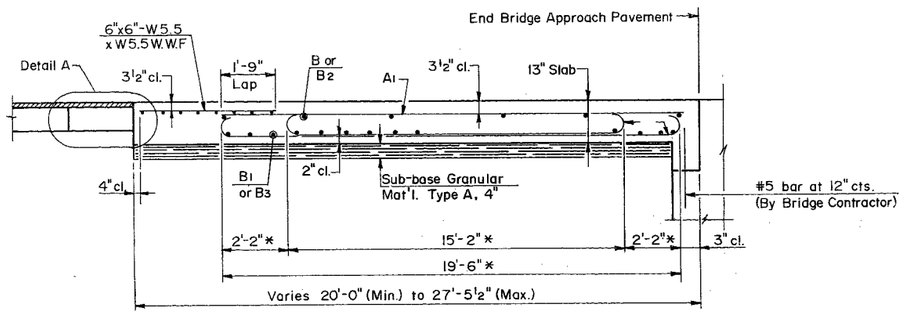


WIRE CUTTING DIAGRAM

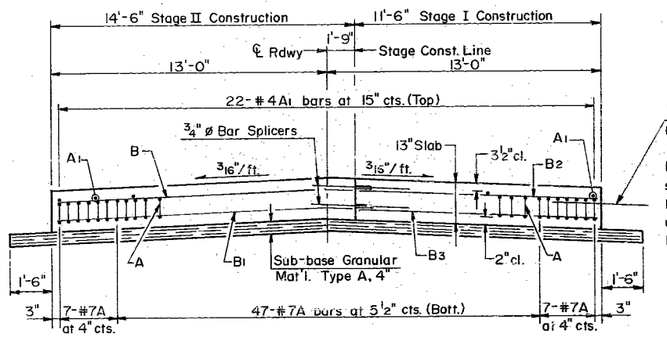
Cut welded wire fabric as shown. Use sections (A) & (B) at south bridge approach and sections (C) & (D) at north bridge approach as shown on plans



BAR A



SECTION B-B



SECTION C-C

½"ø Steel tie bars at 2'-6" cts. (Typical Each Side) In accordance with the detail for Bulkhead Longitudinal Const. Jt. shown on Std. 2323. Cost of tie bars will be included in the contract unit price for Bridge Appr. Shld. Pav't. Std. 2324.

BILL OF MATERIAL
(FOR FOUR APPROACHES)

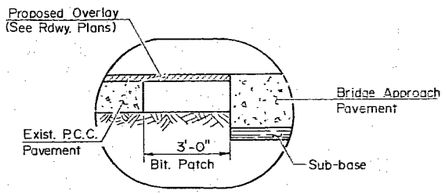
BAR	NO.	SIZE	LENGTH	SHAPE
A	244	#7	19'-0"	( )
A1	88	#4	19'-6"	—
B	24	#4	20'-3"	—
B1	80	#5	20'-3"	—
B2	24	#4	16'-0"	—
B3	80	#5	16'-0"	—

ITEM	UNIT	QUANTITY
Reinforcement Bars	Lbs.	14,230
Bridge Approach Pav't. (Standard 2382) Special	Sq. Yds.	381.3

GENERAL NOTES

The cost of bar splicers, sub-base and welded wire fabric shall be considered as included in the unit cost of the Bridge Approach Pavement (Standard 2382) Special.

For details of bar splicers, see Bridge Plans.



DETAIL A

* Stagger alternate #7A bars as shown on plans-full width.

Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31, M-42 or M-53, Grade 60.

Expanded Metal weighing not less than 78 Pounds per 100 Sq. Ft. or welded bar mat weighing not less than 78 Pounds per 100 Sq. Ft. having members of equal size in both directions spaced not over 8" apart. may be used instead of the 6"x6"-W5.5 x W5.5 W.W.F., provided the expanded metal or bar mat is furnished at no additional cost to the State.

BRIDGE APPROACH PAV'T. STANDARD (2382) SPECIAL F.A.P. RTE. 651 (IL RTE. 17) SEC. 108BR-2 & 108BR-3 LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.

DESIGNED: R.D.L.	CHECKED:	
DRAWN: R.D.L.	DATE:	NO. H-063

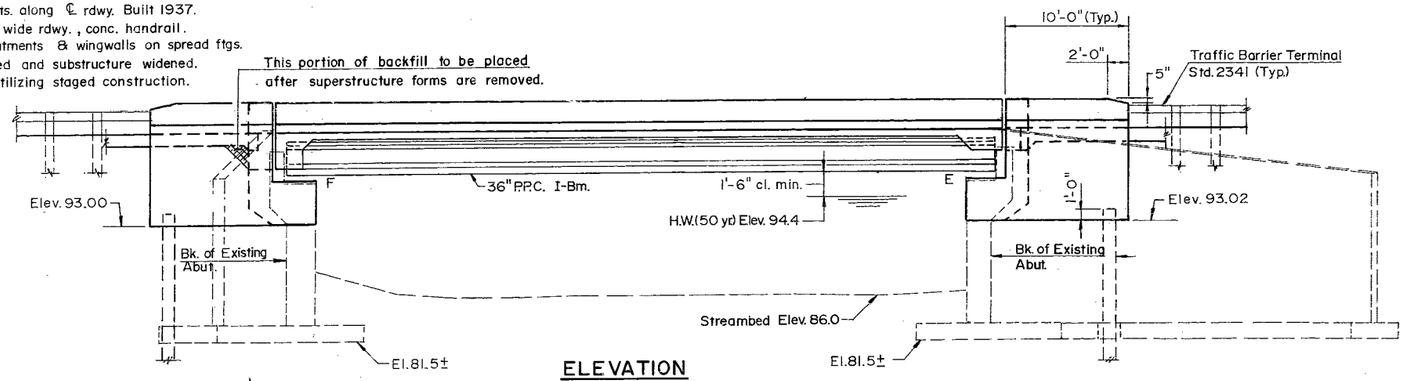
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 651	108-BR2	LIVINGSTON	46	12
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET 1 OF 16

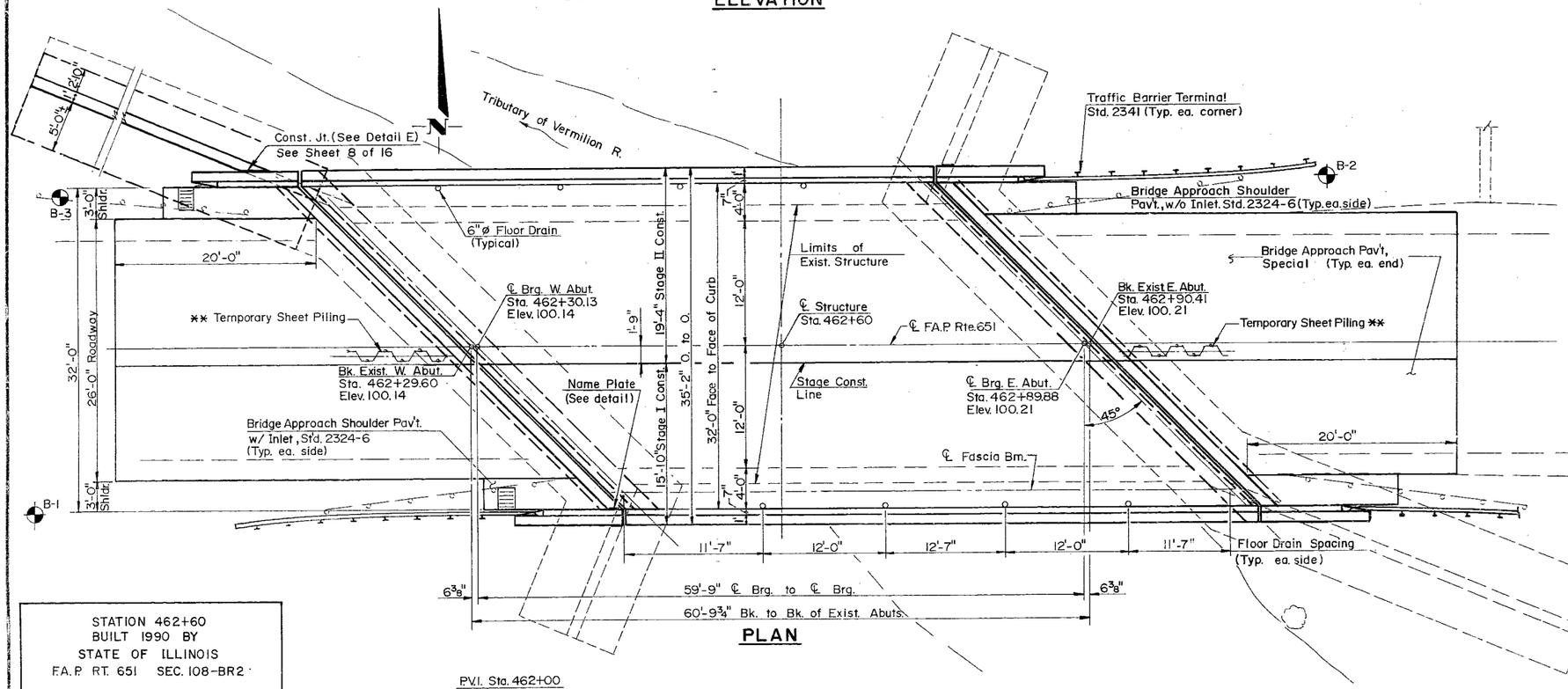
B.M. Chiseled "a" in top of S.W. Wingwall. 15.5' Rt. Sta. 462+45. El. 100.00

Existing Structure: Sta. 462+60, FA.P Rte. 651, 108 BR-2, S.N. 053-0027
Single span 56.6' f. to f. abuts. along ℄ rdwy. Built 1937.
Superstructure R.C.D.G., 24' wide rdwy., conc. handrail.
Substructure R.C. closed abutments & wingwalls on spread ftgs.
Superstructure to be removed and substructure widened.
Traffic to be maintained utilizing staged construction.

No Salvage.



ELEVATION



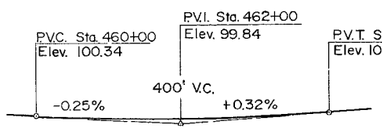
PLAN

** See Sheet 16 for suggested details.

STATION 462+60
BUILT 1990 BY
STATE OF ILLINOIS
F.A.P. RT. 651 SEC. 108-BR2

LOADING HS20
STR. NO. 053-0027

NAME PLATE
(See Std. 2113)



PROFILE GRADE

STATE OF ILLINOIS
WEI HSIONG
2919
SPRINGFIELD, IL
REGISTERED STRUCTURAL ENGINEER

APPROVED
FOR STRUCTURAL ADEQUACY
Engineer of Bridges and Structures

Illinois Structural No. 2919

WATERWAY INFORMATION

Drainage Area = 6.74 sq. mi. Low Grade Elev. 100.07 @ Sta. 461+75

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head — Ft. Exist.	Head — Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	1090	280	280	94.4	0.38	0.38	94.78	94.78
Base	100	1248	296	296	94.8	0.47	0.47	95.27	95.27
Overtopping	*								*
Max. Calc.	500	1612		335	95.8		0.66		96.46

GENERAL NOTES

See Proposal for Boring Data.

All structural steel shall be shop painted with the zinc-silicate and vinyl paint system. The color of the vinyl finish coats shall be Munsell No. 10Y Light Grey.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, or M-53 Grade 60.

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.

Expansion bolts shall consist of approved expansion anchors, providing minimum certified proof load = 4,080 lbs., and 3/4" X 12" hooked bolts.

The concrete for bridge floors finished in accordance with Article 503.15 of the Standard Specifications, shall be placed and compacted parallel to the skew in uniform increments along centerline of bridge. The finished machine, when required, shall be set parallel to the skew for striking off and screeding the concrete.

Bridge Seat Sealer shall be applied to the seat area of both Abutments. Estimated quantity 231 Sq. ft.

Shoulder transition to wingwall shall be shaped with broken concrete. Cost incidental.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yds.	——	236	236
Class X Concrete Superstructure	Cu. Yds.	89.9	——	89.9
Class X Concrete	Cu. Yds.	——	101.1	101.1
Concrete Removal	Cu. Yds.	——	54	54
Furnishing & Erecting Structural Steel	Pounds	2,300	——	2,300
Expansion Bolts 3/4" Inch	Ea.	——	175	175
Reinforcement Bars	Pounds	——	2560	2560
Reinforcement Bars (Epoxy Coated)	Pounds	15,530	9180	24,710
Removal of Existing Superstructure	Ea.	1	——	1
Temporary Bridge Rail	Lin. Ft.	125	——	125
Name Plates	Ea.	1	——	1
Preformed Joint Seal 1 3/4"	Lin. Ft.	49	——	49
Elastomeric Bearing Assembly, Type I	Ea.	6	——	6
* Temporary Sheet Piling	Sq. Ft.	——	372	372
Neoprene Expansion Joint 2"	Lin. Ft.	48	——	48
Furnishing & Erecting P.P.C. I-Bms., 36"	Lin. Ft.	367	——	367
Floor Drains	Ea.	8	——	8
Protective Coat	Sq. Yd.	291	——	291
Bridge Seat Sealer	L.S.	——	1	1
Steel Piles HP 10 x 42	Lin. Ft.	——	80	80

Note: Estimated quantity of Temporary Concrete Barrier for Stage Construction = 68 Lin. Ft. Quantity is included in Roadway Plan.

* See Special Provision.

Protective Coat quantity includes bridge deck, parapet and wingwalls.

DESIGN SPECIFICATIONS

1989 AASHTO

LOADING HS 20-44

Allow 25#/sq. ft. for future wearing surface.

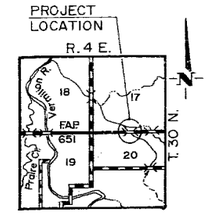
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinf.)

PRECAST PRESTRESSED UNITS

f'c = 6,000 p.s.i.
f'ci = 4,300 p.s.i.
f's = 270,000 p.s.i. (1/2" ø Strands)
f'si = 189,000 p.s.i. (1/2" ø Strands)



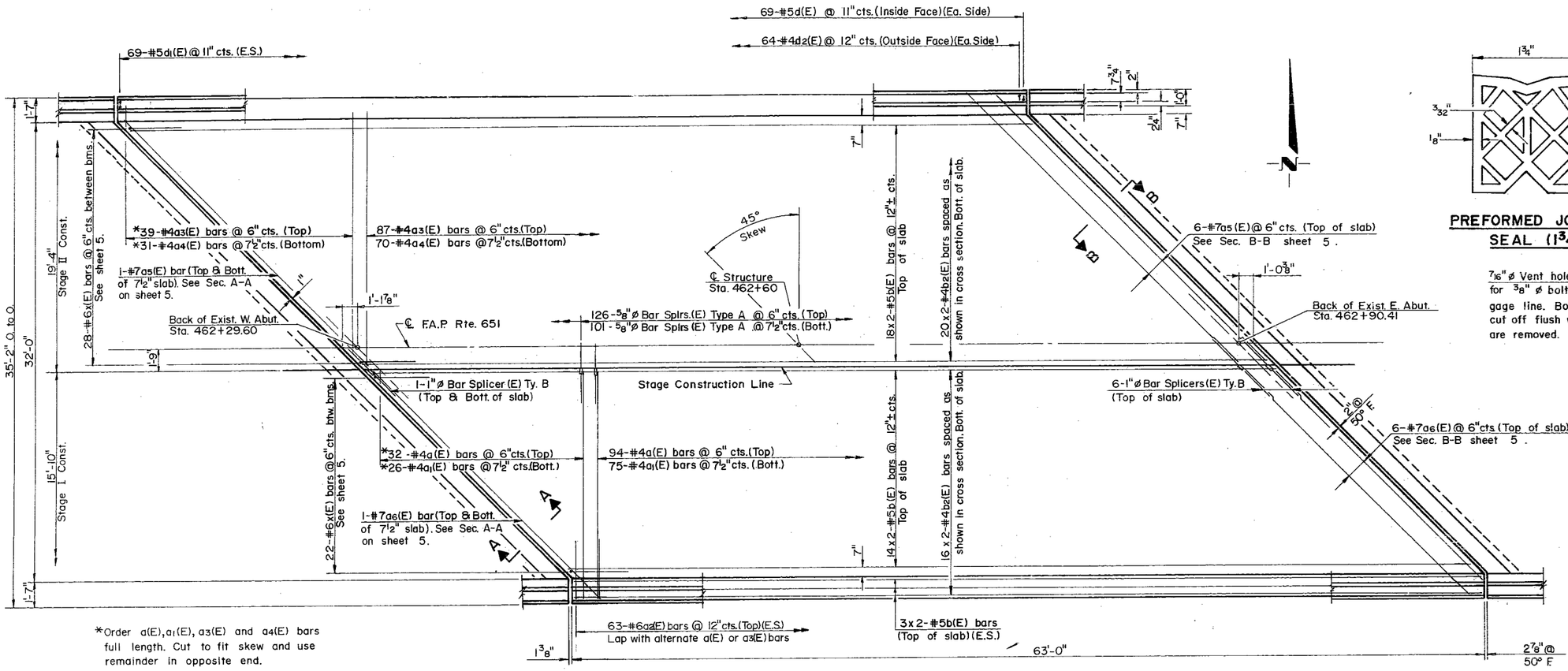
LOCATION SKETCH

GENERAL PLAN
IL. RTE. 17 OVER
TRIB. OF VERMILION RIVER
F.A.P. RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY
S.N. 053-0027

HSIONG ASSOCIATES LTD.

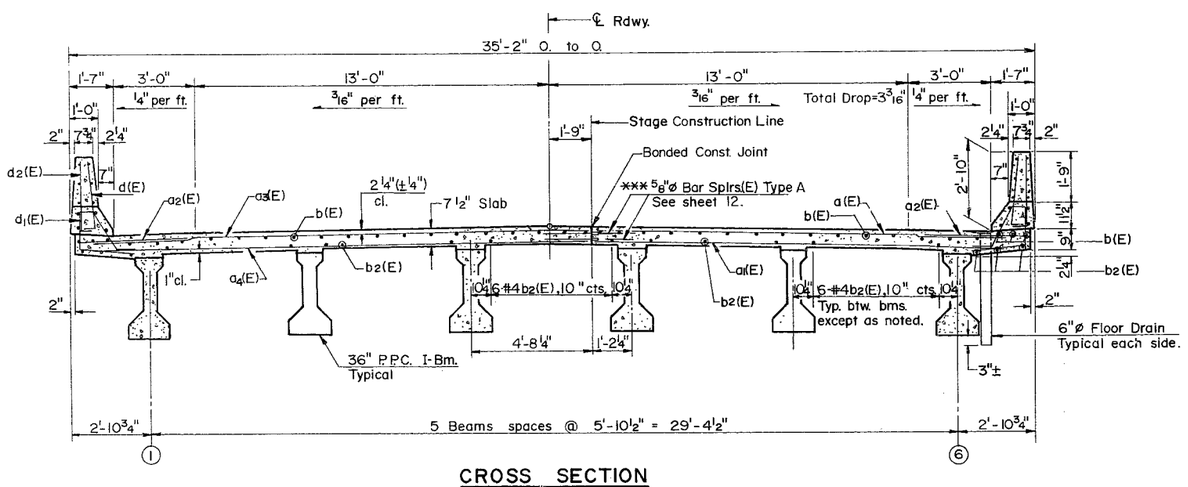
DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: C.L. DATE: NO. H-063B

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR2	LIVINGSTON	46	13
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
	SHEET 2 OF 16			



*Order a(E), a1(E), a3(E) and a4(E) bars full length. Cut to fit skew and use remainder in opposite end.

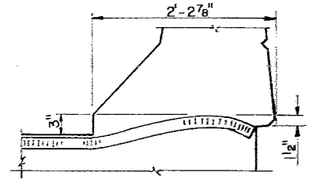
PLAN



CROSS SECTION
(Looking East)

See Sheet 4 for Stage Construction Details.

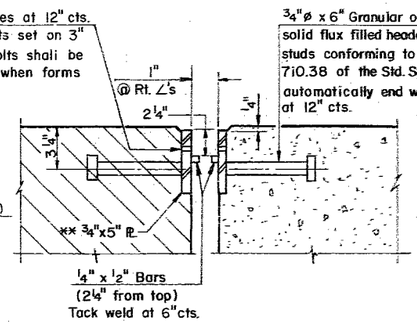
PREFORMED JOINT SEAL (1¾")



TYPICAL END OF SEAL TREATMENT

7/16" ø Vent holes at 12" cts. for ⅜" ø bolts set on 3" gage line. Bolts shall be cut off flush when forms are removed.

¾" ø x 6" Granular or solid flux filled headed studs conforming to Art. 7i0.38 of the Std. Spec's. automatically end welded at 12" cts.



JOINT DETAILS AT WEST ABUTMENT

** Furnish in segments of 20 feet. Max. length. Max. space between installed segments shall be 3/16". Seal space with Silicone Sealant suitable for Structural Steel.

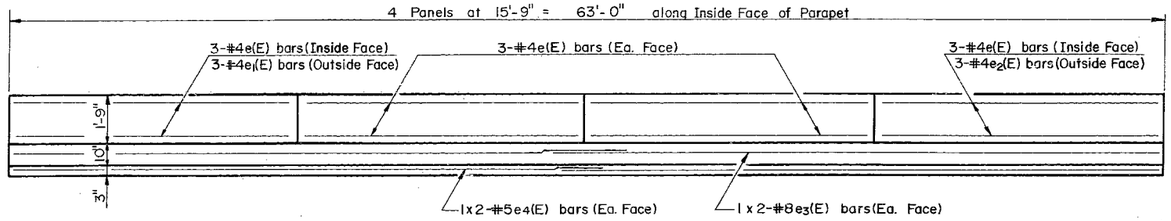
Note: After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for structural steel.

*** Bar splicers lapped with a(E), a1(E), a3(E), a4(E), a5(E) & a6(E) bars shall be tied with double the number of ties normally used.

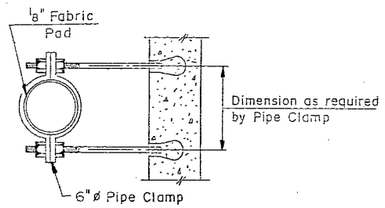
SUPERSTRUCTURE
F.A.P RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.		
DESIGNED: W.H.	CHECKED: G.J.G.	
DRAWN: C.L.	DATE:	NO. H-0638

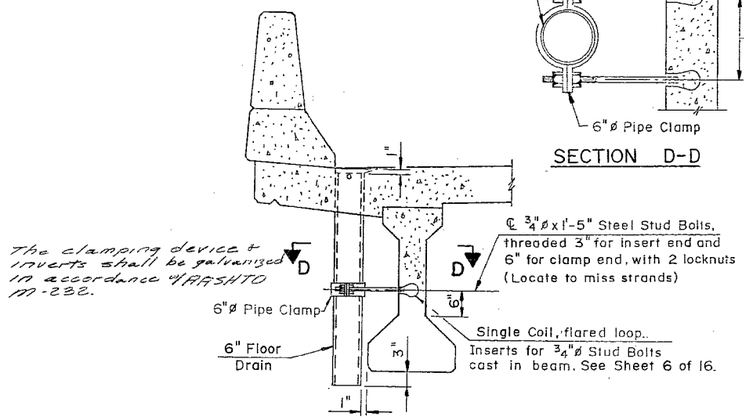
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108-BR2	LIVINGSTON	46	14
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
		SHEET 3 OF 16		



ELEVATION – PARAPET
(Inside View)

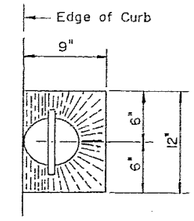


SECTION D-D

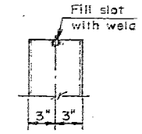


SECTION AT PARAPET

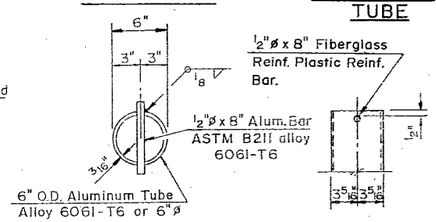
The surface of the Fiberglass pipe shall be free of bond inhibiting agents.



TOP PLAN



ALUMINUM TUBE



TOP PLAN
(Showing Aluminum Tube)

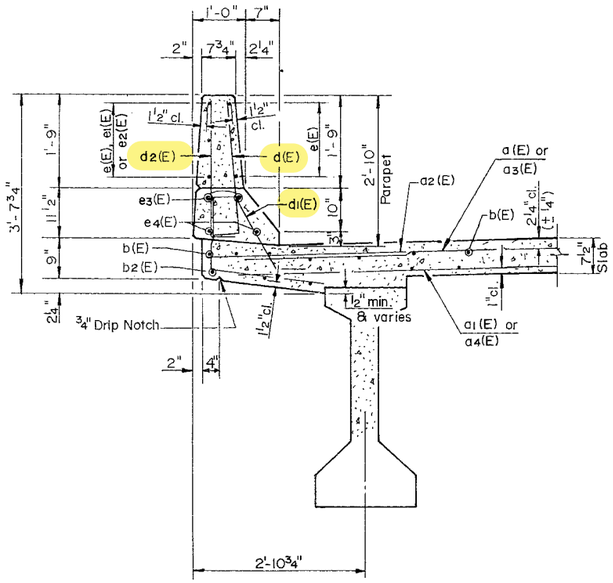
FIBERGLASS PIPE

The exterior surfaces of the aluminum drains shall be cleaned and given a washcoat pretreatment in accordance with the steel structures Painting Council's Specs SSPC-SP1 & SSPC- Paint 27 followed by the vinyl enamel coat painting specified for Structural Steel.
Fiberglass Pipe shall conform to ASTM 2996, with short-time rupture strength hoop tensile stress of 30,000 psi min. Fiberglass to have prewash as per MIL-P-15328 prior to painting. The surface of the Fiberglass pipe shall be free of bond inhibiting agents. The exterior surfaces of the fiberglass floor drains shall be painted with a vinyl enamel coat. The color shall be Munsel Std. 10Y7/1 light grey. Painting of the fiberglass floor drains will not be required when the exterior surfaces of the furnished drains are coated by the manufacturer with silver pigment or a pigment that matches the color of the concrete slab.

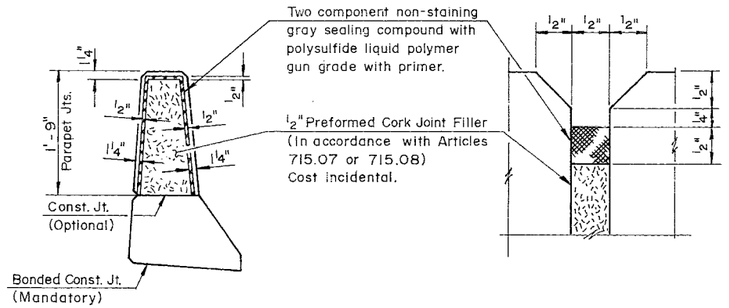
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	126	#4	15'-3"	
a1(E)	101	#4	14'-9"	
a2(E)	126	#6	4'-0"	
a3(E)	126	#4	18'-9"	
a4(E)	101	#4	18'-3"	
a5(E)	8	#7	26'-0"	
a6(E)	8	#7	21'-6"	
a7(E)	20	#6	7'-4"	
a8(E)	5	#6	6'-0"	
b(E)	76	#5	32'-6"	
b2(E)	72	#4	32'-3"	
d(E)	138	#5	3'-0"	
d1(E)	138	#5	6'-0"	
d2(E)	128	#4	3'-0"	
e(E)	36	#4	15'-6"	
e1(E)	6	#4	16'-6"	
e2(E)	6	#4	14'-6"	
e3(E)	8	#8	33'-6"	
e4(E)	8	#5	32'-6"	
m(E)	16	#4	7'-4"	
m1(E)	8	#6	6'-3"	
m2(E)	4	#4	6'-0"	
m3(E)	2	#6	5'-6"	
s1(E)	30	#4	7'-6"	
x(E)	50	#6	5'-6"	
x1(E)	55	#6	8'-10"	
Reinforcement Bars (Epoxy Coated)			L.bs.	15,530
Class X Conc. Sup-str.			Cu. Yds.	89.9

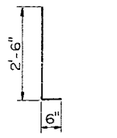
Bars & Splicers (Couplers) indicated with (E) shall be Epoxy Coated.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.



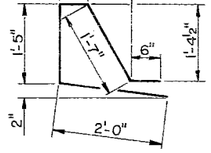
SECTION THRU PARAPET



PARAPET JOINT DETAILS



BARS d(E) & d2(E)



BAR d1(E)

MIN BAR LAP

#4.....1'-8"
#5.....2'-2"
#8.....4'-6"

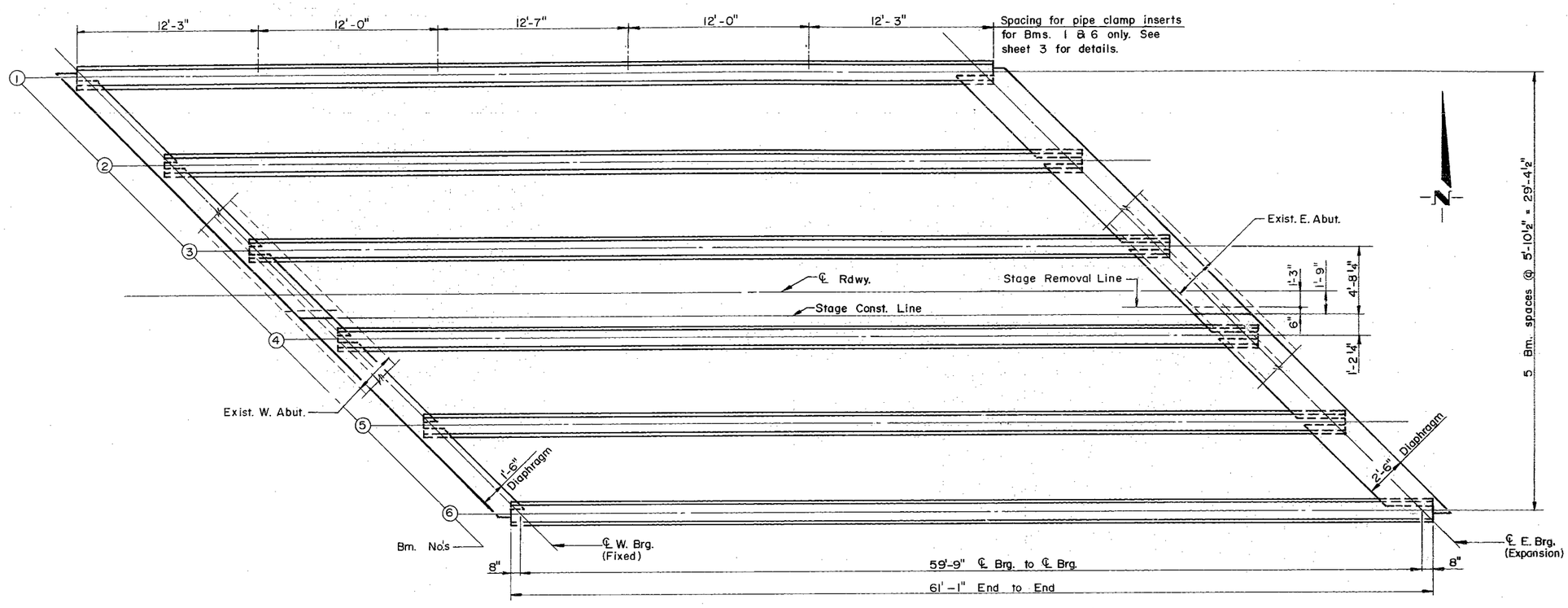
SUPERSTRUCTURE DETAILS
F.A.P. RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.

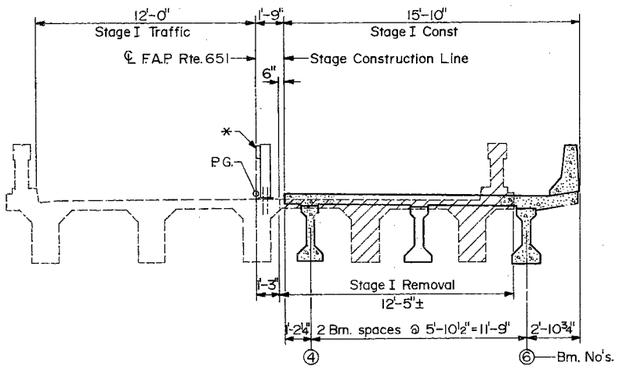
DESIGNED: W.H.	CHECKED: G.J.G.	
DRAWN: C.L.	DATE:	NO. H-0638

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
FAP 651	108-BR2	LIVINGSTON	46	15
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET 4 OF 16

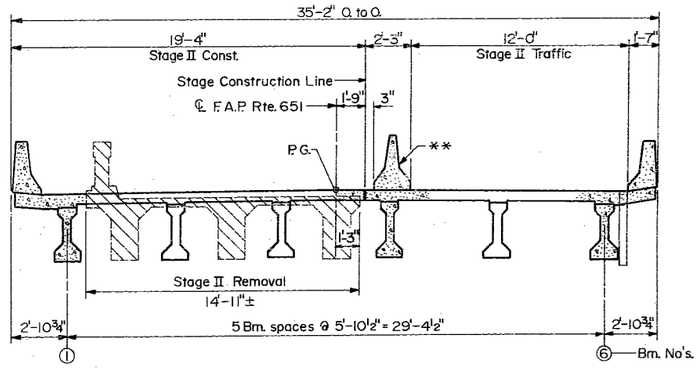


FRAMING PLAN



STAGE I TYPICAL SECTION
(Looking East)

* Temp. Bridge Rail (See sheet 14.)
Hatched area indicates removal of exist. superstructure.



STAGE II TYPICAL SECTION
(Looking East)

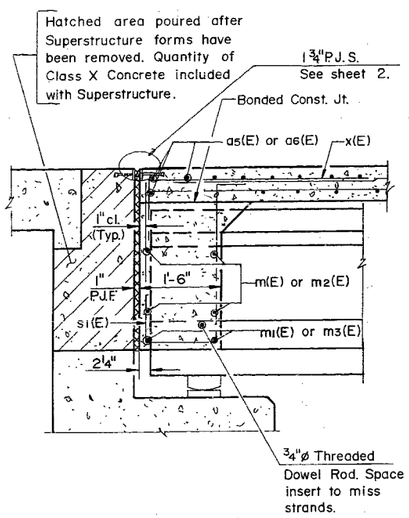
** Temp. Conc. Barrier, See Sheet 13 & see Std. 2383.
Hatched area indicates removal of exist. superstructure.

FRAMING PLAN
F.A.P. RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

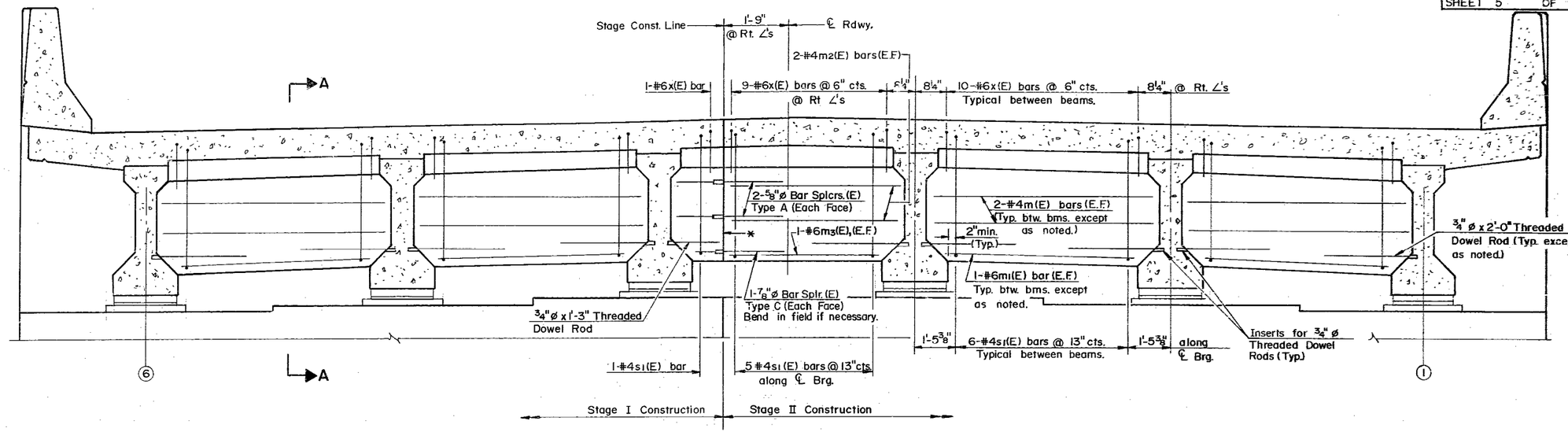
HSIONG ASSOCIATES LTD.

DESIGNED: WH	CHECKED: G.J.G.
DRAWN: CL	DATE: NO. H-0638

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR2	LIVINGSTON	46	16
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT		
		SHEET 5	OF 16	



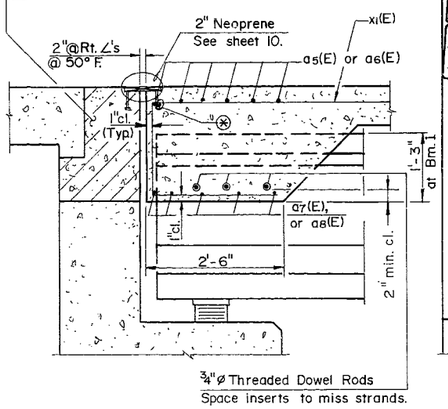
SECTION A-A AT WEST ABUTMENT
(@ Rt. ∠'s)



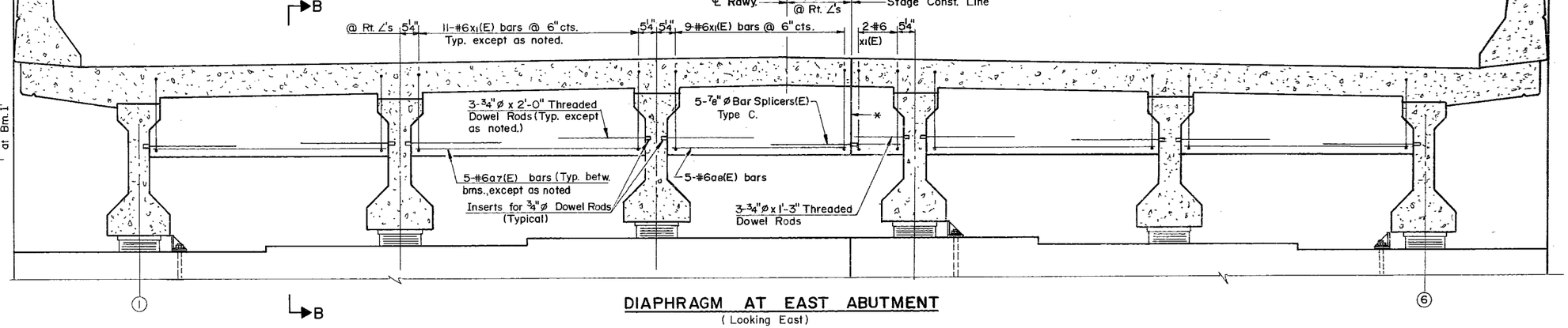
DIAPHRAGM AT WEST ABUTMENT
(Looking West)

*Bonded Const. Jt.

Hatched area poured after Superstructure forms have been removed. Quantity of Class X Concrete included with Superstructure.

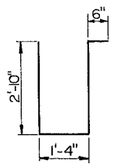


SECTION B-B AT EAST ABUTMENT
(@ Rt. ∠'s)

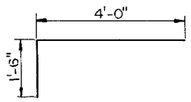


DIAPHRAGM AT EAST ABUTMENT
(Looking East)

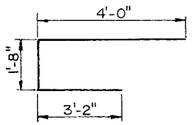
⊛ Place a5(E) and a6(E) bars in back of anchor bolt as shown if required to maintain 1" cl.(+0-⅛"). Ancher bolts should be tied to a5(E) and a6(E) bars.



BAR s1 (E)



BAR x(E)



BAR x1(E)

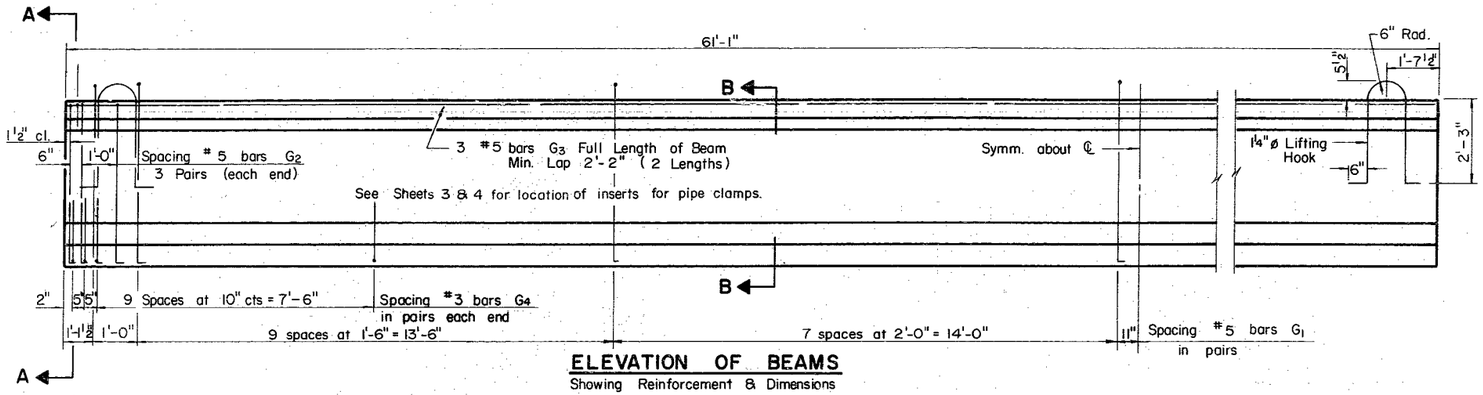
Quantities on this sheet are billed on sheet 3.

DIAPHRAGM DETAILS
F.A.P RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

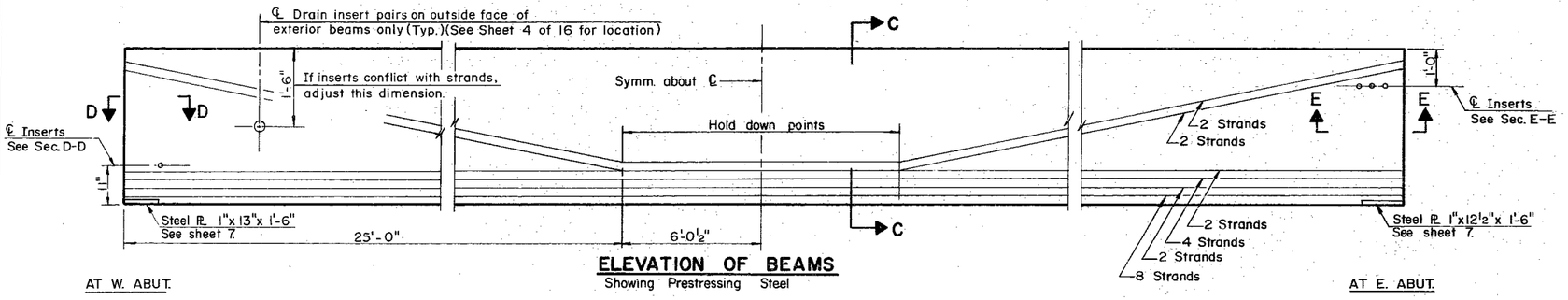
HSIONG ASSOCIATES LTD.

DESIGNED: W.H.	CHECKED: G.J.G.	
DRAWN: CL	DATE:	NO. H-0638

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR2	LIVINGSTON	46	17
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
		SHEET 6 OF 16		



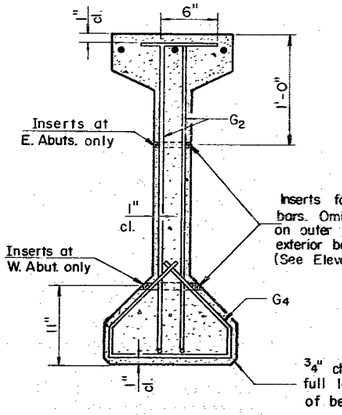
ELEVATION OF BEAMS
Showing Reinforcement & Dimensions



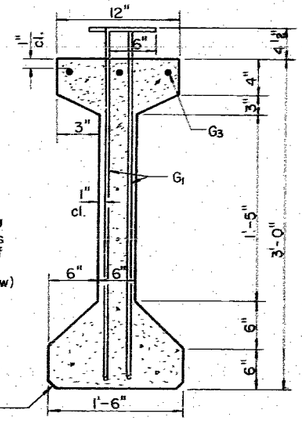
ELEVATION OF BEAMS
Showing Prestressing Steel

AT W. ABUT.

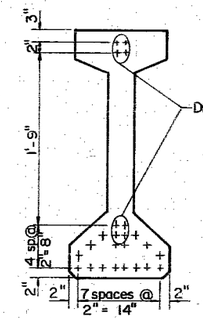
AT E. ABUT.



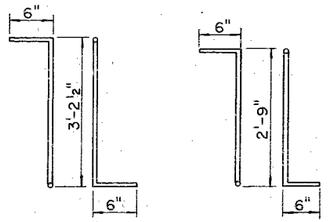
SECTION A-A



SECTION B-B



SECTION C-C

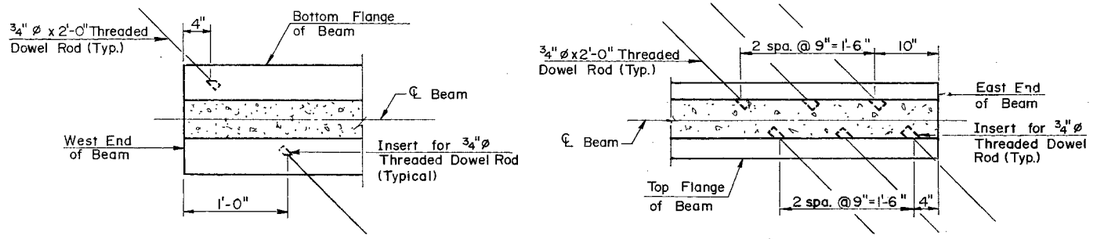


BAR G1 BAR G2 BAR G4

*BAR LIST

Bar	No.	Size	Length	Shape
G1	72	#5	4'-2½"	⌐L
G2	12	#5	3'-9"	⌐L
G3	6	#5	31'-8"	——
G4	48	#3	2'-7"	∠

*For one beam only



SECTION D-D

SECTION E-E

BILL OF MATERIAL

Item	Unit	Total
Furnishing & Erecting Precast Prestressed Concrete I-Beams, 36"	L.in. Ft.	367

NOTES

All inserts and threaded rods for inserts, reinforcing and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beams shall be included in the contract unit price per lineal foot of "Furnishing And Erecting Precast Prestressed Concrete I-Beams, 36 in."

Prestressing Steel shall have a nominal diameter of ½" and the nominal cross-sectional area shall be 0.153 sq. in..

Inserts for ¾" ø threaded rods are to be two strut, coil type for interior I-Beams and single coil, flared loop type for exterior I-Beams.

Required release strength, f'ci, shall be 4,300 p.s.i.

Steel for lifting hooks shall be non-deformed bars fy = 40,000 psi.

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270.

Non-prestressing steel shall conform to AASHTO designation M-31, M-42, or M-53 Grade 60.

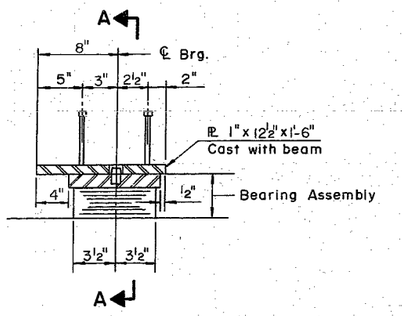
BEAM DETAILS
F.A.P. RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.

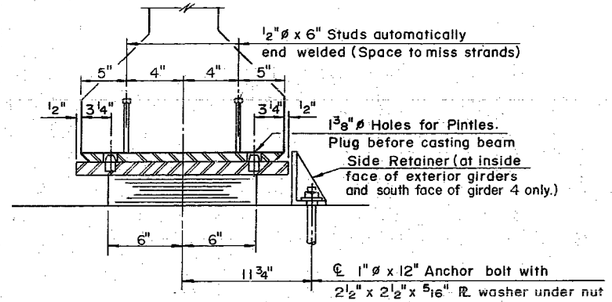
DESIGNED: W.H. CHECKED: G.J.G.

DRAWN: C.L. DATE: NO. H-0638

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR2	LIVINGSTON	46	18
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			
	SHEET 7 OF 16			



SECTION AT E. ABUT.



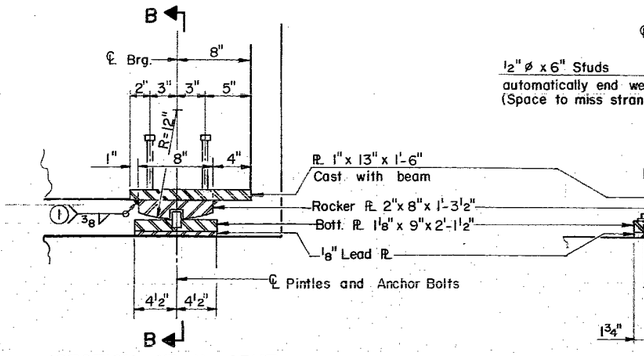
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

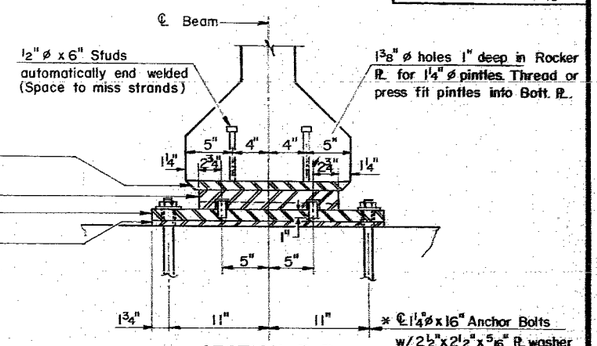
No. Req'd. 6

NOTE: After beams have been erected holes at expansion bearing shall be drilled and anchor bolts grouted in place.

(1) Shop weld by Beam Fabricator.



SECTION AT W. ABUT.

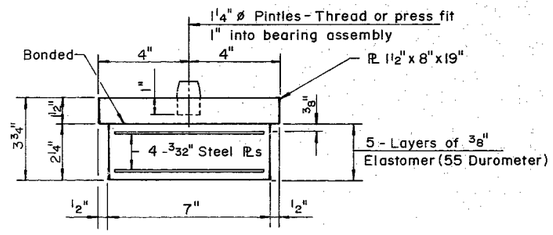


SECTION B-B

FIXED BEARING

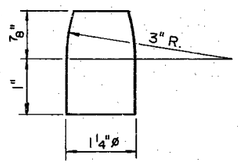
No. Req'd. 6

*Anchor bolts may be built into the masonry or drilled and grouted in place after all beams have been erected.

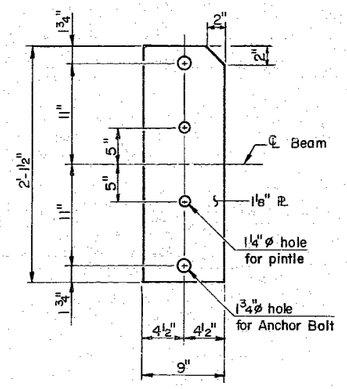


BEARING ASSEMBLY

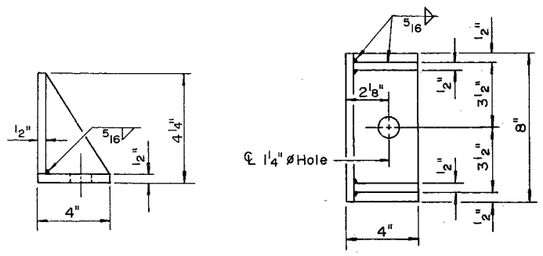
NOTE: Shim plates shall not be place under bearing assembly.



PINTLE



BOTT. ℄ DETAIL



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

No. Req'd. 3

BILL OF MATERIALS

ITEM	UNIT	TOTAL
Elastomeric Brg., Type I	Ea.	6
Structural Steel	Lbs.	2,270

BEARING DETAILS
F.A.P. RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.

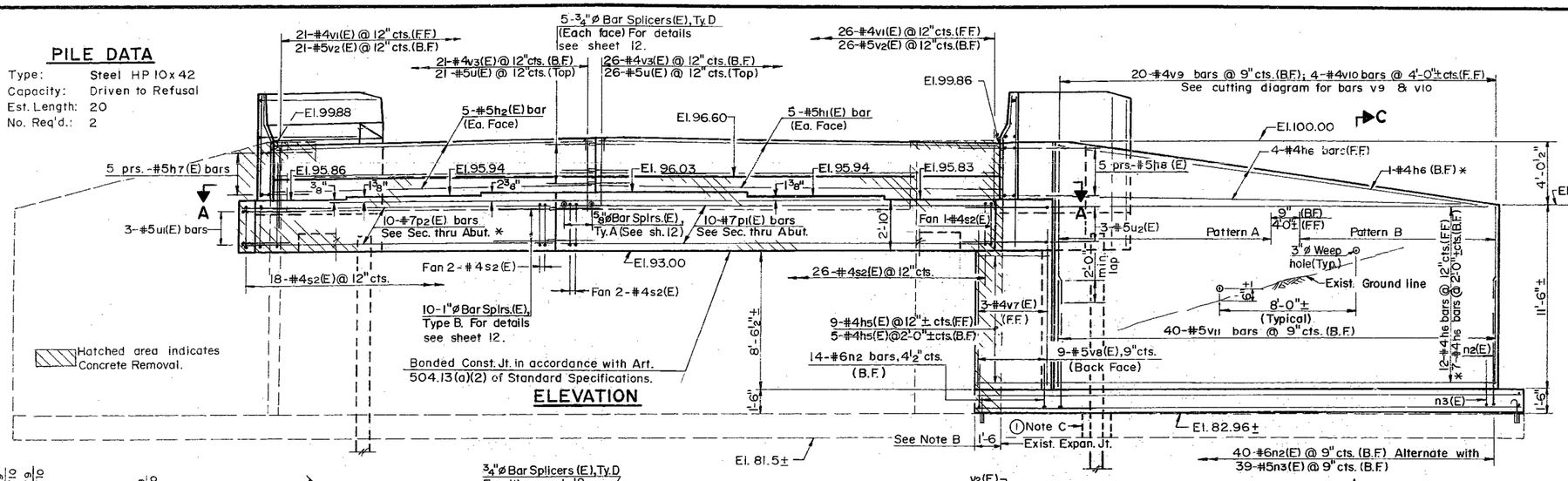
DESIGNED: W.H.	CHECKED: G.J.G.	
DRAWN: CL	DATE:	NO. H-063B

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
E.A.P. 651	108-BR2	LIVINGSTON	46	19
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
		SHEET 8 OF 16		

PILE DATA

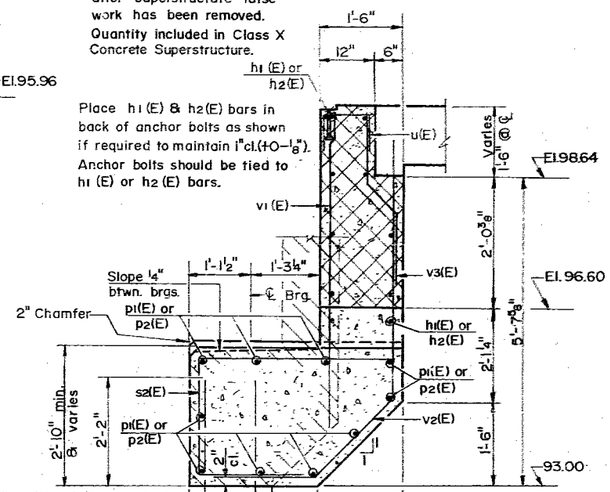
Type: Steel HP 10x42
Capacity: Driven to Refusal
Est. Length: 20
No. Req'd.: 2

ELEVATION



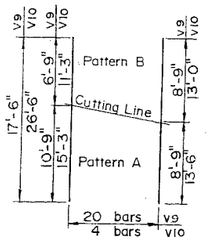
Cross-hatched area to be poured after superstructure false-work has been removed. Quantity included in Class X Concrete Superstructure.

Note B:
Remove portion of exist. concrete wingwall as shown retaining 1'-6" of the exist. horizontal re-bars. Clean exist. re-bars by sandblasting to gray metal and incorporate into new construction. Cost incid. to Class X Conc.

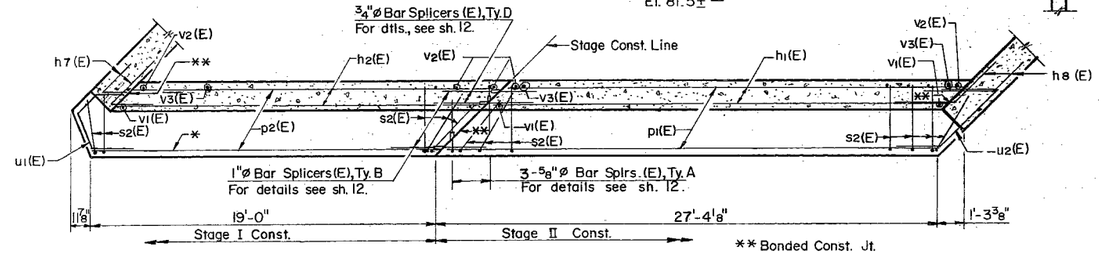


Note A: Cut off existing vertical re-bars as shown. Clean by sandblasting to gray metal and incorporate into new construction. Cost incidental to Class X Concrete.

SECTION THRU ABUTMENT

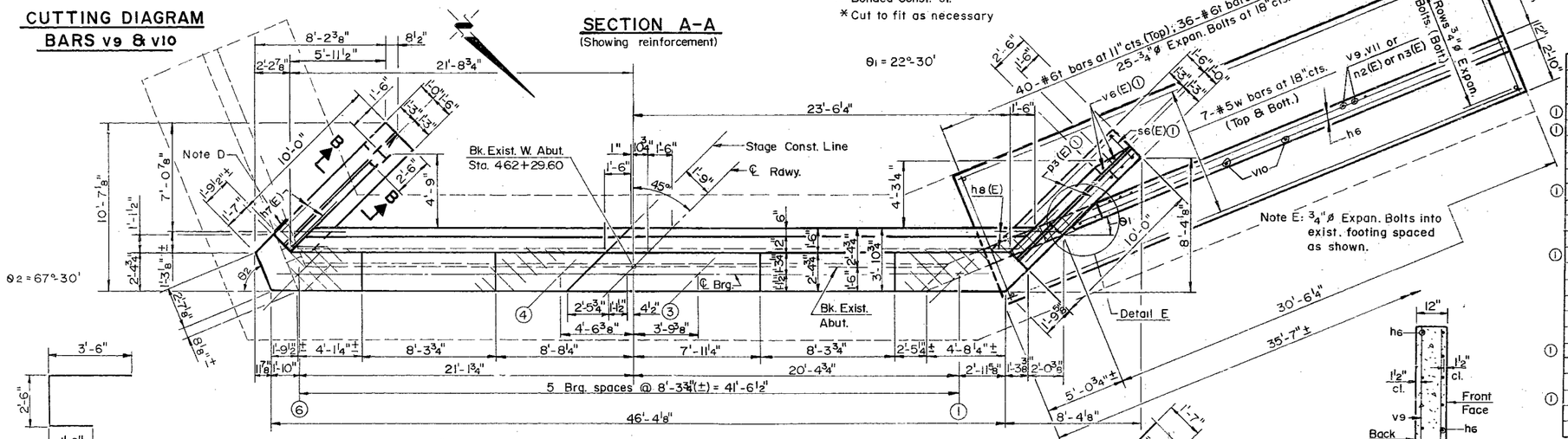


CUTTING DIAGRAM BARS v9 & v10

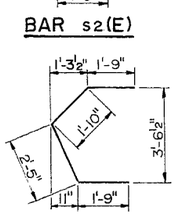


** Bonded Const. Jt.
* Cut to fit as necessary

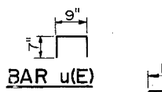
SECTION A-A (Showing reinforcement)



PLAN

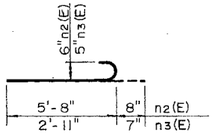


BAR s2(E)

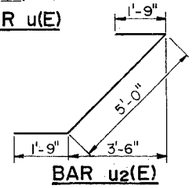


BAR u(E)

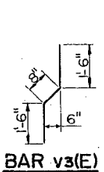
BAR u1(E)



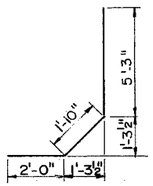
BARS n2(E) & n3(E)



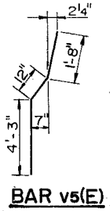
BAR u2(E)



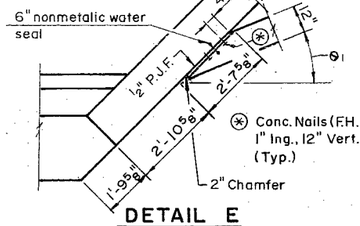
BAR v3(E)



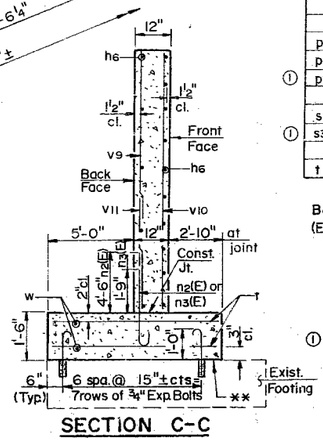
BAR v2(E)



BAR v5(E)



DETAIL E



SECTION C-C

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h1(E)	10	#5	25'-0"	—
h2(E)	10	#5	20'-0"	—
① h3(E)	22	#4	9'-9"	—
① h4(E)	14	#4	9'-9"	—
h5(E)	14	#4	4'-9"	—
h6	24	#4	30'-3"	—
h7(E)	10	#5	6'-6"	⟋
① h8(E)	10	#5	6'-6"	⟋
n2(E)	54	#6	6'-4"	⌒
n3(E)	39	#5	3'-6"	⌒
① n4(E)	16	#6	10'-0"	▭
n5(E)	12	#6	5'-0"	⌒
p1(E)	10	#7	27'-0"	—
p2(E)	10	#7	22'-0"	—
① p3(E)	12	#7	11'-0"	—
s2(E)	49	#4	7'-6"	⊏
① s3(E)	24	#4	9'-5"	⊐
t	76	#6	8'-6"	—

BAR	NO.	SIZE	LENGTH	SHAPE
u(E)	47	#5	1'-11"	⊓
u1(E)	3	#5	7'-9"	⊂
u2(E)	3	#5	8'-6"	⊃
v1(E)	47	#4	6'-0"	—
v2(E)	47	#5	9'-1"	⌐
v3(E)	47	#4	3'-8"	—
① v4(E)	22	#6	6'-9"	—
① v5(E)	16	#6	6'-11"	⌒
① v6(E)	6	#6	6'-9"	—
v7(E)	3	#4	10'-3"	—
v8(E)	9	#5	10'-9"	—
v9	20	#4	17'-6"	—
v10	4	#4	26'-6"	—
v11	40	#5	6'-9"	—
w	14	#5	35'-3"	—

Steel Piles HP 10x42	Lin.Ft.	40
Reinforcement Bars	Lbs.	2,560
Reinf. Bars Epoxy Ctd.	Lbs.	5,000
Class X Concrete	Cu. Yds.	64.8
Concrete Removal	Cu. Yds.	39
Structure Excavation	Cu. Yds.	216
3/4"ø Expansion Bolts	Ea.	175

Bars & Splicers (Couplers) indicated with (E) shall be Epoxy Coated.

Note: Pour steps monolithically with cap. All exposed edges shall have 3/4" chamfer unless otherwise noted.

① For Sec. B-B, Bar details, Note C & D, & Wing Wall Elevation see Sheet 9

WEST ABUTMENT DETAILS FA.P. RTE. 651, SEC. 108-BR2 STA. 462+60.00 LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.
DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: C.L. DATE: NO. H-0638

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA.P 651	108-BR2	LIVINGSTON	46	20
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
		SHEET 9 OF 16		

BARS h4(E) & v6(E)

ELEVATION

Hatched area indicates Concrete Removal

Cross-hatched area to be poured after superstructure falsework has been removed. Quantity included in Class X Concrete Superstructure.

Place h9(E) & h10(E) bars in back of anchor bolts as shown if req'd. to maintain 1" cl. (+0 −⅛"). Anchor bolts should be tied to h9(E) & h10(E) bars.

BAR v3(E)

BAR v5(E)

BAR v2(E)

BAR n5(E)

BAR n4(E)

BAR h7(E)

BAR h8(E)

SECTION A-A
(Showing reinforcement)

* Cut to fit as necessary
** Bonded Construction Jt.

PLAN

WINGWALL ELEVATION

SECTION B-B

SECTION C-C

SECTION THRU ABUTMENT

BAR u(E)

BAR u1(E)

BAR u2(E)

BAR s5(E)

BAR s3(E)

Note A: Cut off existing vertical re-bars as shown. Clean by sandblasting to gray metal and incorporated into new construction. Cost incidental to Cl. X Conc.

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h3(E)	22	#4	9'-9"	
h4(E)	14	#4	9'-9"	
h7(E)	10	#5	6'-6"	
h8(E)	10	#5	6'-6"	
h9(E)	10	#5	19'-9"	
h10(E)	10	#5	24'-9"	
v1(E)	47	#4	6'-0"	
v2(E)	47	#5	9'-1"	
v3(E)	47	#4	3'-8"	
v4(E)	22	#6	6'-9"	
v5(E)	10	#6	6'-11"	
v6(E)	6	#6	6'-9"	
s2(E)	49	#4	7'-6"	
s3(E)	24	#4	9'-5"	

BAR	NO.	SIZE	LENGTH	SHAPE
u(E)	47	#5	1'-11"	
u1(E)	3	#5	7'-9"	
u2(E)	3	#5	8'-6"	
n4(E)	16	#6	10'-0"	
n5(E)	12	#6	5'-0"	
p3(E)	12	#7	11'-0"	
p4(E)	10	#7	22'-0"	
p5(E)	10	#7	27'-0"	
s2(E)	49	#4	7'-6"	
s3(E)	24	#4	9'-5"	

Structure Excavation	Cu. Yd.	20
Steel Piles HP 10x42	Lin. Ft.	40
Reinf. Bars Epoxy Ctd.	Lbs.	4180
Class X Concrete	Cu. Yds.	36.3
Concrete Removal	Cu. Yds.	15

Bars & Splicers (Couplers) indicated with (E) shall be Epoxy Coated.

Note: Pour steps monolithically with cap. All exposed edges shall have 3/4" chamfer unless otherwise noted.

Note C: Provide hole through existing footing to accommodate the pile installation. Cost incidental to Driving Steel Piles. Structure Excavation associated with installation of the pile through the existing footing shall be incidental to Driving Steel Piles.

Note D: Saw Cut 3/4" deep before removing concrete.

PILE DATA

Type: Steel HP 10x42
Capacity: Driven to Refusal
Est. Length: 20
No. Req'd.: 2

EAST ABUTMENT DETAILS
FA.P RTE 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.

DESIGNED: WH CHECKED: G.J.G.
DRAWN: C.L. DATE: NO. H-0638

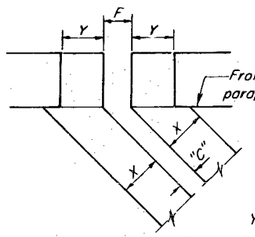
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108-BR2	LIVINGSTON	46	21
FED ROAD DIST NO 7		ILLINOIS PROJECT		
		SHEET 10 OF 16		

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 sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

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



FORMING BLOCKOUT SKETCH

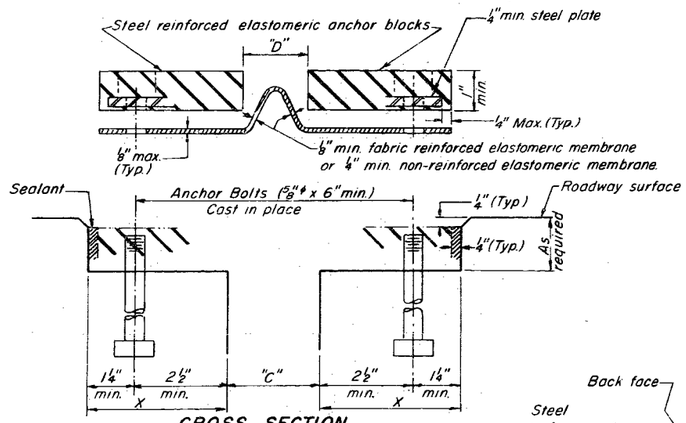
$Y = X - \left(\frac{F-C}{2}\right)$

For dimension "F" see sheet #

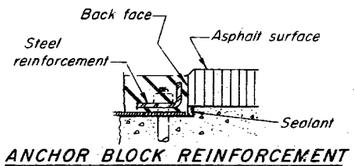
SKEW LIMITATIONS

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 in accordance with 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.



CROSS SECTION



ANCHOR BLOCK REINFORCEMENT 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.

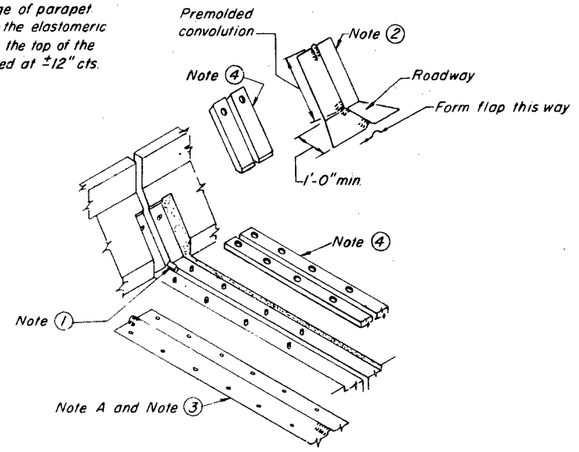
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

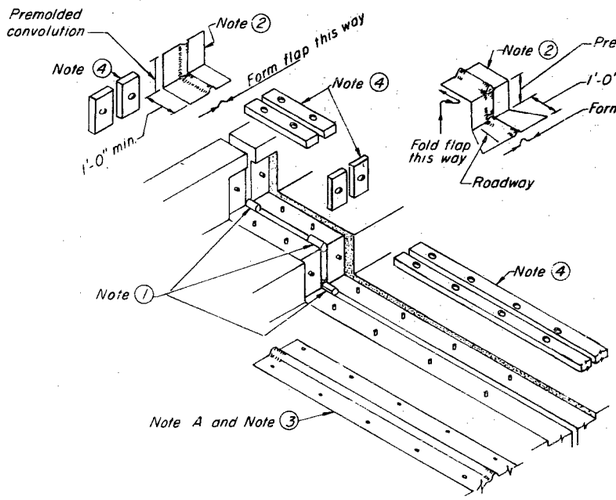
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

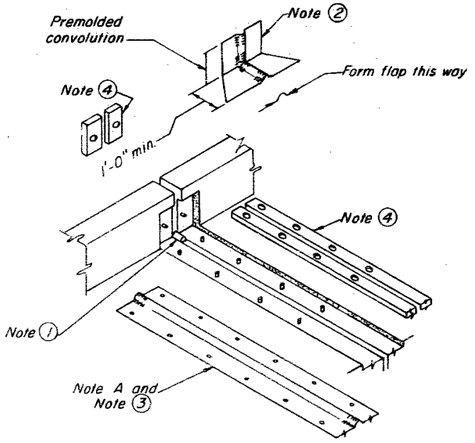
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



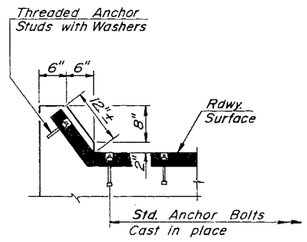
AT PARAPET



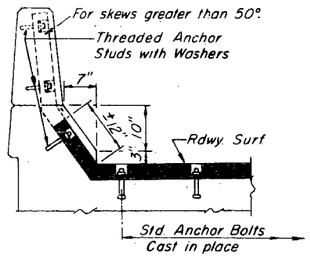
AT SIDEWALK or MEDIAN



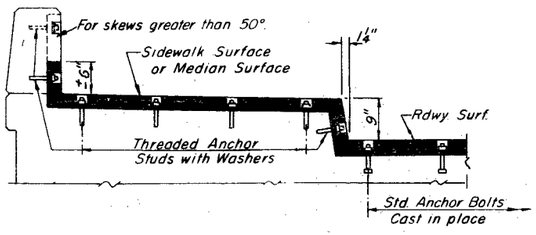
AT WALL



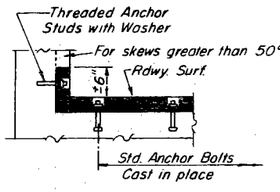
AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN TYPICAL END TREATMENT



AT WALL

CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS FOR 2", 2½" AND 4" MOVEMENT

F.A.P. RTE. 651, SEC. 108-BR2
STA. 462+60.00
LIVINGSTON COUNTY

HSIONG ASSOCIATES LTD.		
DESIGNED: W.H.	CHECKED: G.J.G.	
DRAWN: CL	DATE:	NO. H-063B

STANDARD

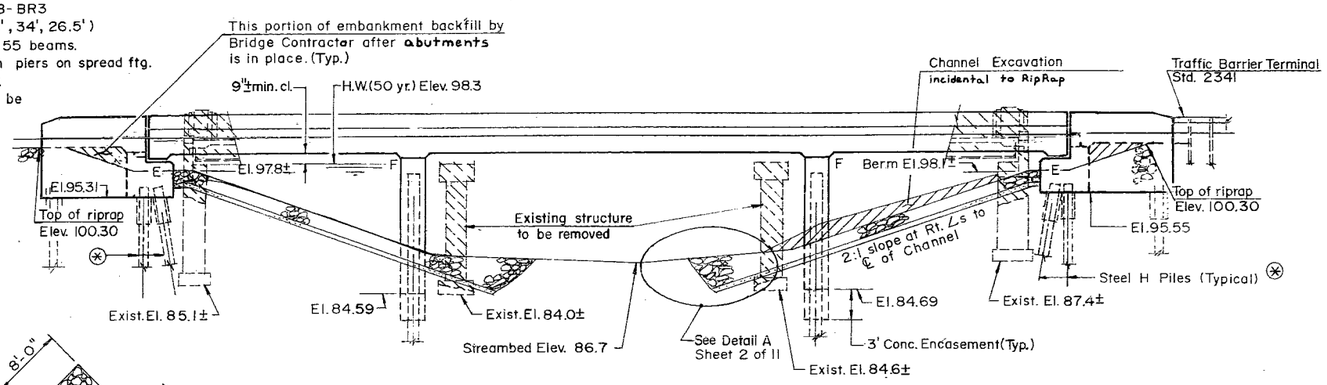
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108-BR3	LIVINGSTON	46	28
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT		
		SHEET 1 OF 12		

B.M. Chiseled "□" in S.W. wingwall 16' Rt. Sta. 479+83. Elev. 101.36

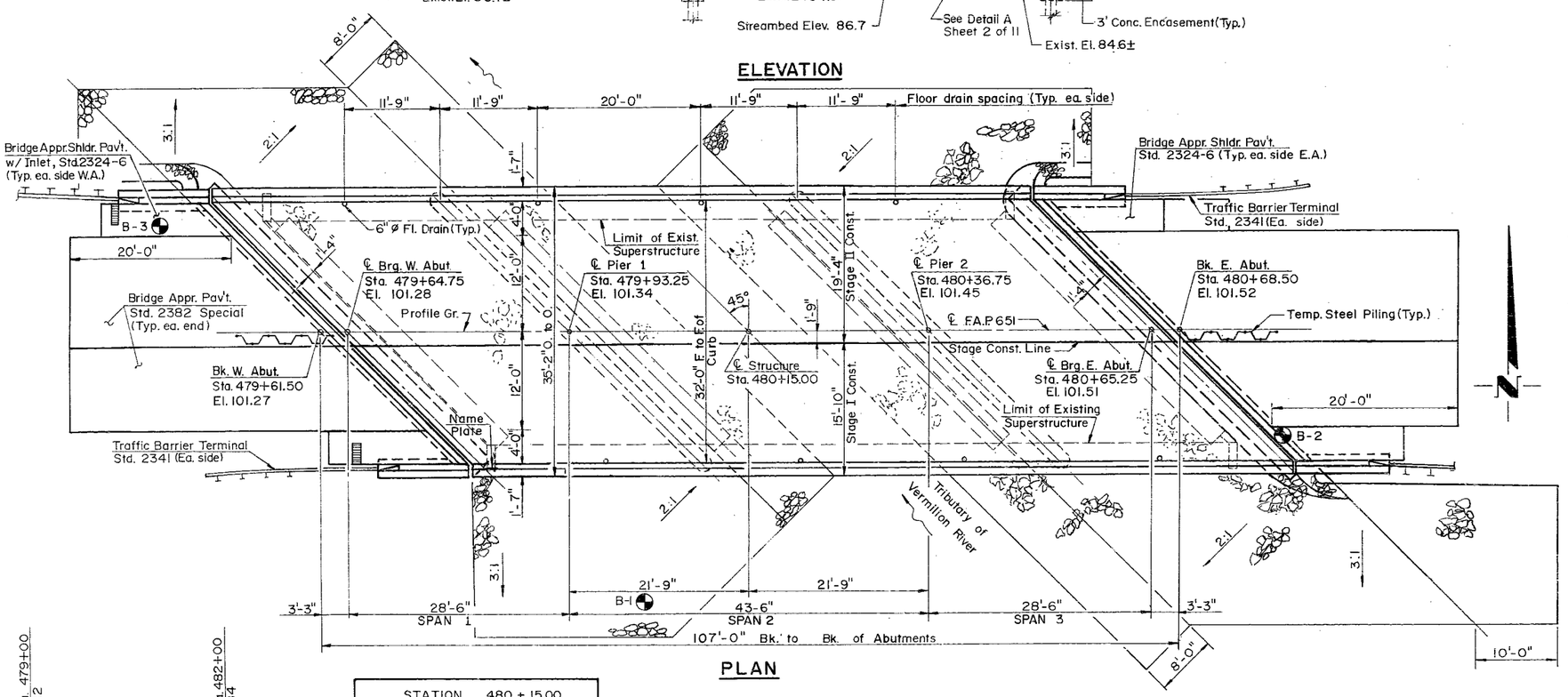
Exist. Structure: Sta. 480+15, F.A.P. Rte. 651, Sec. 108-BR3
S.N. 053-0028 Built in 1937. 3 spans (26.5', 34', 26.5')
Superstructure R.C. deck & conc. handrail. 18W-55 beams.
Substructure spill-thru abutments, 4 column piers on spread ftg.
91'-7" Bk. to Bk. of Abuts., 24' rdwy., 27'-8" O. to O.
Existing structure to be removed. Traffic to be maintained utilizing stage construction.

No Salvage.

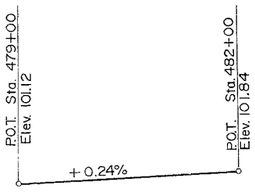
Ⓚ Place piles in precored holes to bottom of existing footing. Optional. See Special Provisions



ELEVATION



PLAN



PROFILE GRADE
(F.A.P. Rte. 651)

STATION 480 + 15.00
BUILT 199_ BY
STATE OF ILLINOIS
F.A.P. RTE. 651 SEC. 108-BR3
LOADING HS20
STR. NO. 053-0167

NAME PLATE
(Std. 2113)

WATERWAY INFORMATION

Drainage Area = 5.65 sq. mi. Low Grade Elev. 99.8 @ Sta. 474+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head — Ft. Exist.	Head — Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	1204	356	436	98.3	0.0	0.0	98.3	98.3
Base	100	1382	373	454	98.7	0.0	0.0	98.7	98.7
Overtopping	*								*
Max. Calc.	500	1796	373	454	99.8	0.44	0.34	100.24	100.14

DESIGN SPECIFICATIONS
1989 AASHTO

LOADING HS 20-44
Allow 25 #/sq. ft. for future wearing surface.

DESIGN STRESSES
f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinf.)

GENERAL NOTES

See Proposal for Boring Data.

All structural steel shall be shop painted with the zinc-silicate and vinyl paint system. The color of the vinyl finish coats shall be Munsell No.10Y 7/1 Light Grey.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, or M-53 Grade 60.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection.

The contractor shall drive one steel test pile in a permanent location at the West Abutment and Pier 2 as directed by the Engineer before ordering the remainder of piles.

The existing substructure shall be removed in Stage II except as noted.

Bridge Seat Sealer shall be applied to the seat areas of both abutments. Estimated Quantity = 211 sq.ft.

BILL OF MATERIAL

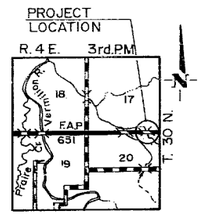
	ITEM	UNIT	SUPER	SUB	TOTAL
	Removal of Existing Structures	Each	——	——	1
	Structure Excavation	Cu.Yd.	——	202	202
	Floor Drains	Each	8	——	8
	Neoprene Expansion Joint 2"	Lin. Ft.	95	——	95
	Class X Concrete, Superstructure	Cu. Yd.	269.4	——	269.4
ⓘ	Protective Coat	Sq. Yd.	463	——	463
	Elastomeric Bearing Assembly, Type I	Each	——	12	12
	Class X Concrete	Cu. Yd.	——	170.0	170.0
	Reinforcement Bars, Epoxy Coated	Pound	38300	14930	53230
Ⓚ	Furnishing Steel Piles HP10X42	Lin. Ft.	——	1,360	1,360
	Driving Steel Piles	Lin. Ft.	——	1,360	1,360
	Test Pile Steel HP10X42	Each	——	2	2
	Temporary Sheet Piling	Sq. Ft.	——	558	558
	Name Plates	Each	1	——	1
	Stone Riprap, Class A 4	Sq. Yd.	——	700	700
	Bridge Seat Sealer	L. Sum	1	——	1
	Filter Fabric for use with Riprap	Sq. Yd.	——	700	700
	Temporary Bridge Rail	Lin. Ft.	170	——	170

ⓘ Includes bridge deck, parapets and wing walls.

The Earth Excavation between existing and new abutments is incidental to the "Removal of Existing Structures. For pavement removal between the abutments see Roadway Plans.

Ⓚ See Special Provisions and Sheet 2 of 12 for details.

Illinois Structural No. 81-2919



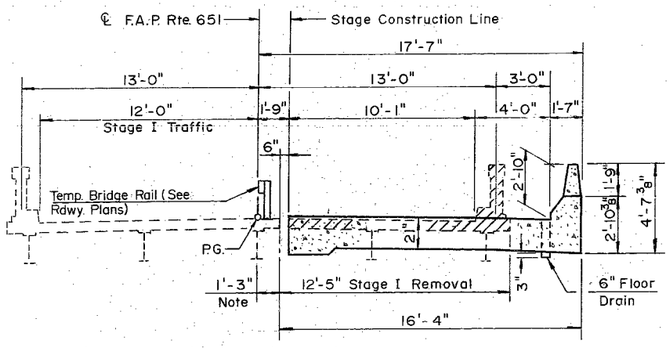
LOCATION SKETCH

GENERAL PLAN & ELEVATION
IL. RTE. 17 OVER
TRIB. OF VERMILION RIVER
F.A.P. RTE. 651, SEC. 108-BR3
STA. 480+15.00
LIVINGSTON COUNTY
S.N. 053-0167

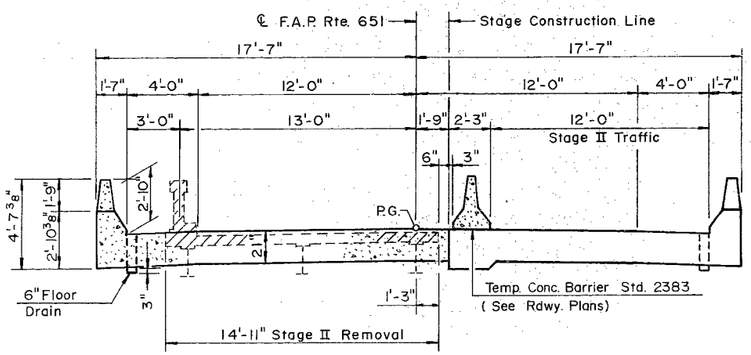
HSIONG ASSOCIATES LTD.

DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: C.L. DATE: NO. H-063C

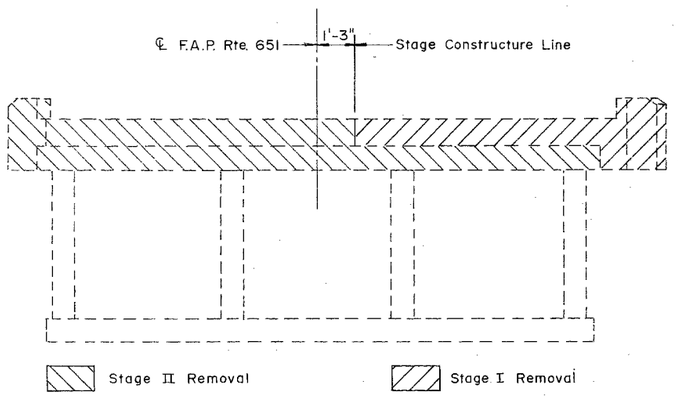
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108-BR3	LIVINGSTON	46	29
FED. ROAD DIST NO. 7	ILLINOIS PROJECT			
		SHEET 2 OF 12		



CROSS SECTION - STAGE I CONSTRUCTION

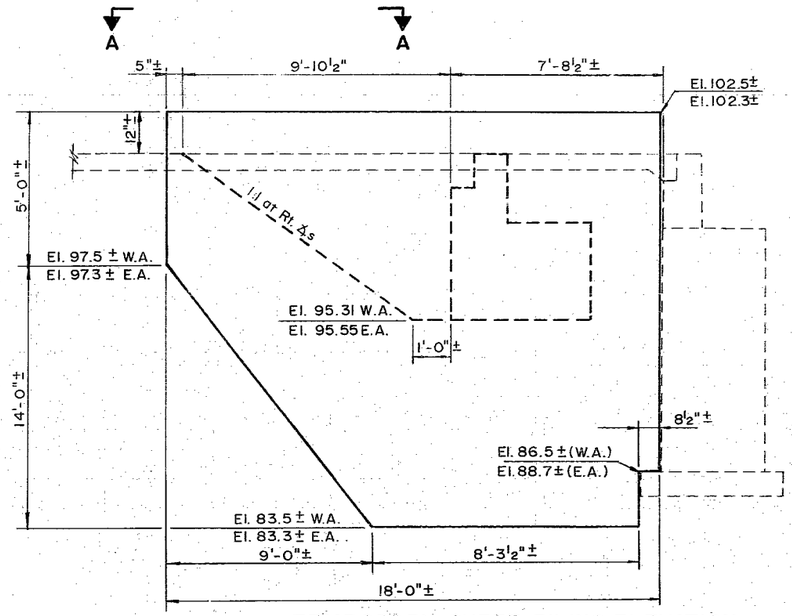


CROSS SECTION - STAGE II CONSTRUTION



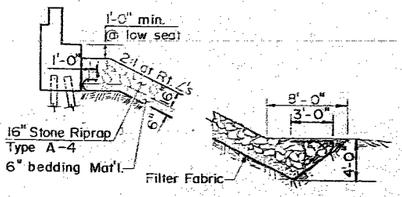
EXISTING WEST ABUTMENT

East Abutment similar

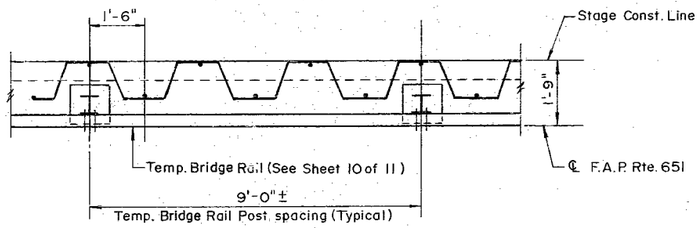


TEMPORARY SHEET PILING ELEVATION

(West Abut. shown East Abut. similar)



DETAIL A



VIEW A-A

(Suggested placement of Bridge Rail Post)

The Information shown for the Temporary Sheet Piling is estimated. It is the Contractor's responsibility to provide a design and computations of the Temporary Sheet Piling and associated members, if required, subject to the approval of the Engineer.

NORTH GUTTER LINE

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJ. FOR D.L. DEFLECTION
BK. W. ABUT	479+45.500	16.000	100.963	100.963
CL BRG. W. ABUT	479+48.750	16.000	100.971	100.971
A	479+58.750	16.000	100.995	100.995
B	479+68.750	16.000	101.019	101.019
CL PIER 1	479+77.250	16.000	101.039	101.039
C	479+87.250	16.000	101.063	101.063
D	479+97.250	16.000	101.087	101.093
E	480+07.250	16.000	101.111	101.116
CL PIER 2	480+20.750	16.000	101.144	101.144
F	480+30.750	16.000	101.168	101.168
G	480+40.750	16.000	101.192	101.192
CL BRG. E. ABUT	480+49.250	16.000	101.212	101.212
BK. E. ABUT	480+52.500	16.000	101.220	101.220

DECK ELEVATIONS AND STAGE CONSTRUCTION DETAILS F.A.P. RTE. 651, SEC. 108-BR3 LIVINGSTON COUNTY STA. 480+15.00

HSIONG ASSOCIATES LTD.

DESIGNED: W.H. CHECKED: G.J.G.

DRAWN: R.H.H. DATE: NO. H-063C

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108-BR3	LIVINGSTON	46	30
FED. ROAD DIST NO. 7		ILLINOIS PROJECT		
		SHEET 3 OF 12		

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJ. FOR D.L. DEFLECTION
BK. W. ABUT	479+48.500	13.000	101.033	101.033
CL BRG. W. ABUT	479+51.750	13.000	101.041	101.041
A	479+61.750	13.000	101.065	101.066
B	479+71.750	13.000	101.089	101.089
CL PIER 1	479+80.250	13.000	101.110	101.110
C	479+90.250	13.000	101.134	101.138
D	480+00.250	13.000	101.158	101.163
E	480+10.250	13.000	101.182	101.187
CL PIER 2	480+23.750	13.000	101.214	101.214
F	480+33.750	13.000	101.238	101.238
G	480+43.750	13.000	101.262	101.262
CL BRG. E. ABUT	480+52.250	13.000	101.282	101.282
BK. E. ABUT	480+55.500	13.000	101.290	101.290

PROFILE GRADE

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJ. FOR D.L. DEFLECTION
BK. W. ABUT	479+61.500	0.000	101.268	101.268
CL BRG. W. ABUT	479+64.750	0.000	101.275	101.275
A	479+74.750	0.000	101.299	101.300
B	479+84.750	0.000	101.323	101.324
CL PIER 1	479+93.250	0.000	101.344	101.344
C	480+03.250	0.000	101.368	101.372
D	480+13.250	0.000	101.392	101.397
E	480+23.250	0.000	101.416	101.421
CL PIER 2	480+36.750	0.000	101.448	101.448
F	480+46.750	0.000	101.472	101.472
G	480+56.750	0.000	101.496	101.497
CL BRG. E. ABUT	480+65.250	0.000	101.517	101.517
BK. E. ABUT	480+68.500	0.000	101.524	101.524

STAGE CONSTRUCTION LINE

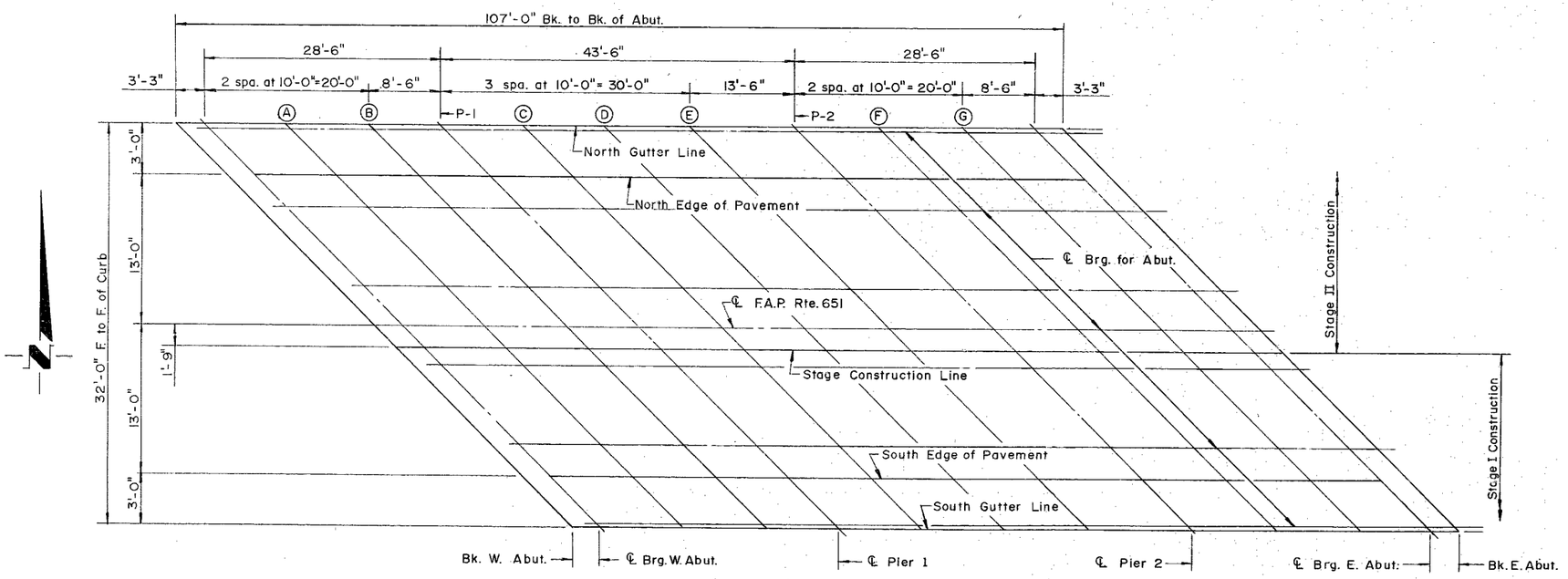
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJ. FOR D.L. DEFLECTION
BK. W. ABUT	479+63.250	-1.750	101.245	101.245
CL BRG. W. ABUT	479+66.500	-1.750	101.253	101.253
A	479+76.500	-1.750	101.277	101.277
B	479+86.500	-1.750	101.301	101.301
CL PIER 1	479+95.000	-1.750	101.321	101.321
C	480+05.000	-1.750	101.345	101.349
D	480+15.000	-1.750	101.369	101.375
E	480+25.000	-1.750	101.393	101.398
CL PIER 2	480+38.500	-1.750	101.425	101.425
F	480+48.500	-1.750	101.449	101.450
G	480+58.500	-1.750	101.473	101.474
CL BRG. E. ABUT	480+67.000	-1.750	101.494	101.494
BK. E. ABUT	480+70.250	-1.750	101.502	101.502

SOUTH EDGE OF PAVEMENT

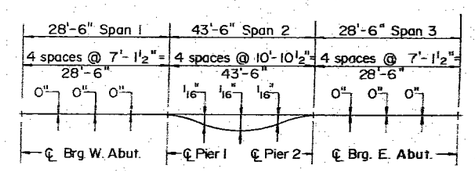
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJ. FOR D.L. DEFLECTION
BK. W. ABUT	479+74.500	-13.000	101.096	101.096
CL BRG. W. ABUT	479+77.750	-13.000	101.104	101.104
A	479+87.750	-13.000	101.128	101.128
B	479+97.750	-13.000	101.152	101.152
CL PIER 1	480+06.250	-13.000	101.172	101.172
C	480+16.250	-13.000	101.196	101.200
D	480+26.250	-13.000	101.220	101.226
E	480+36.250	-13.000	101.244	101.249
CL PIER 2	480+49.750	-13.000	101.276	101.276
F	480+59.750	-13.000	101.300	101.301
G	480+69.750	-13.000	101.324	101.325
CL BRG. E. ABUT	480+78.250	-13.000	101.345	101.345
BK. E. ABUT	480+81.500	-13.000	101.353	101.353

SOUTH GUTTER LINE

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEV'S ADJ. FOR D.L. DEFLECTION
BK. W. ABUT	479+77.500	-16.000	101.040	101.040
CL BRG. W. ABUT	479+80.750	-16.000	101.048	101.048
A	479+90.750	-16.000	101.072	101.072
B	480+00.750	-16.000	101.096	101.096
CL PIER 1	480+09.250	-16.000	101.116	101.116
C	480+19.250	-16.000	101.140	101.145
D	480+29.250	-16.000	101.164	101.170
E	480+39.250	-16.000	101.188	101.193
CL PIER 2	480+52.750	-16.000	101.221	101.221
F	480+62.750	-16.000	101.245	101.245
G	480+72.750	-16.000	101.269	101.269
CL BRG. E. ABUT	480+81.250	-16.000	101.289	101.289
BK. E. ABUT	480+84.500	-16.000	101.297	101.297



PLAN



DEAD LOAD DEFLECTION DIAGRAM

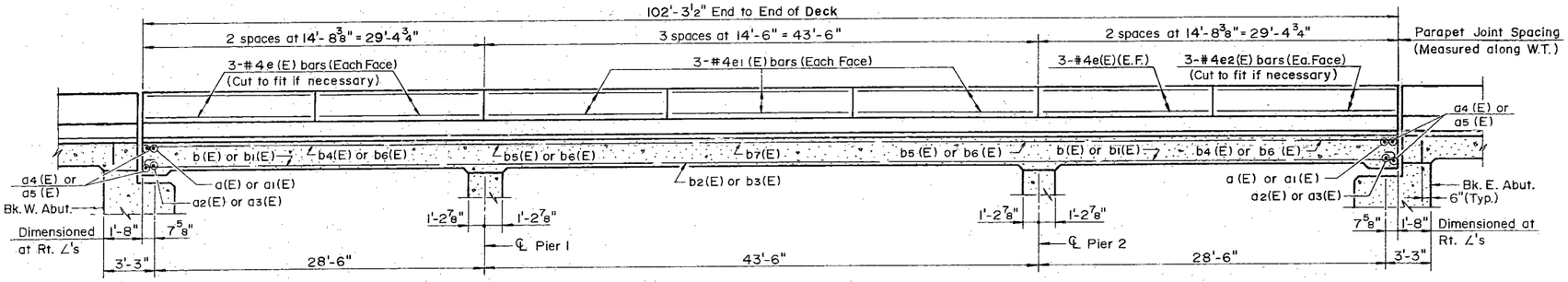
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections.

DECK ELEVATIONS
F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 480+15.00

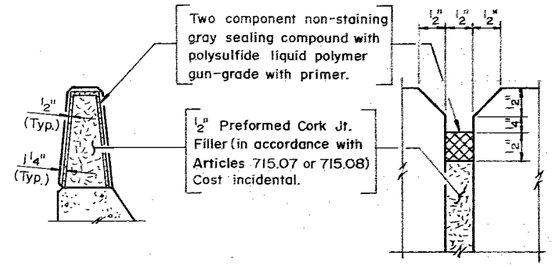
HSIONG ASSOCIATES LTD.

DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: R.H.H. DATE: NOH-063C

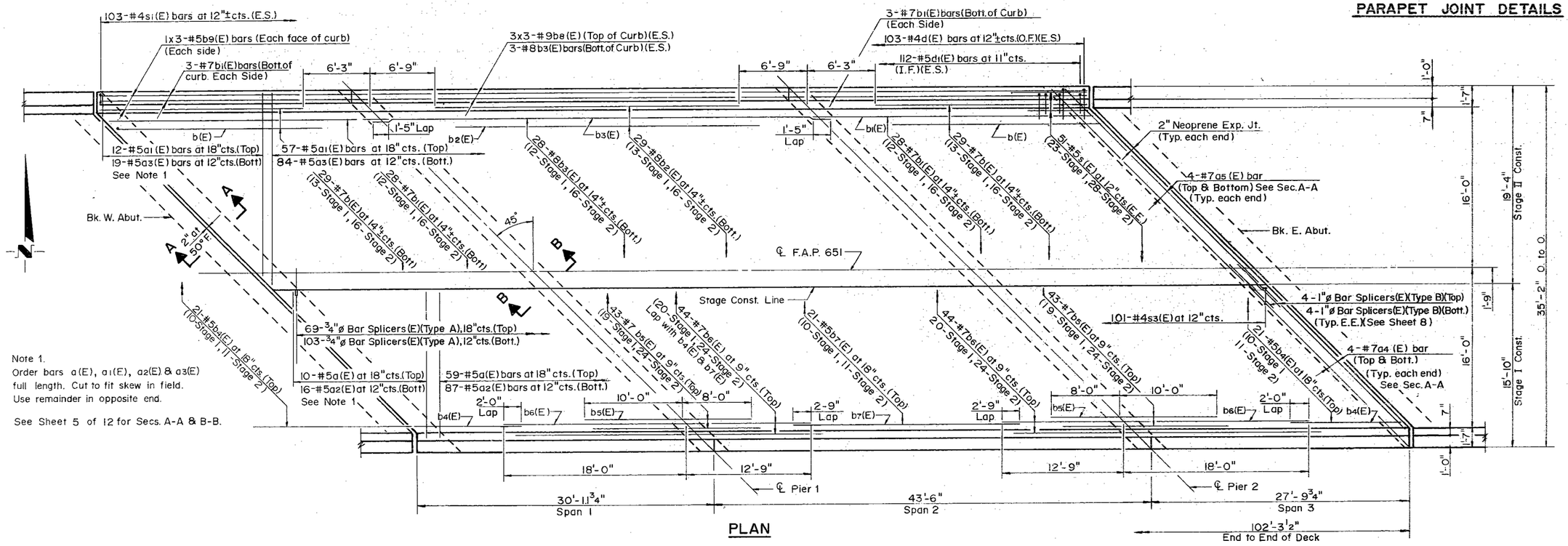
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	46	31
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
		SHEET 4 OF 12		



LONGITUDINAL SECTION



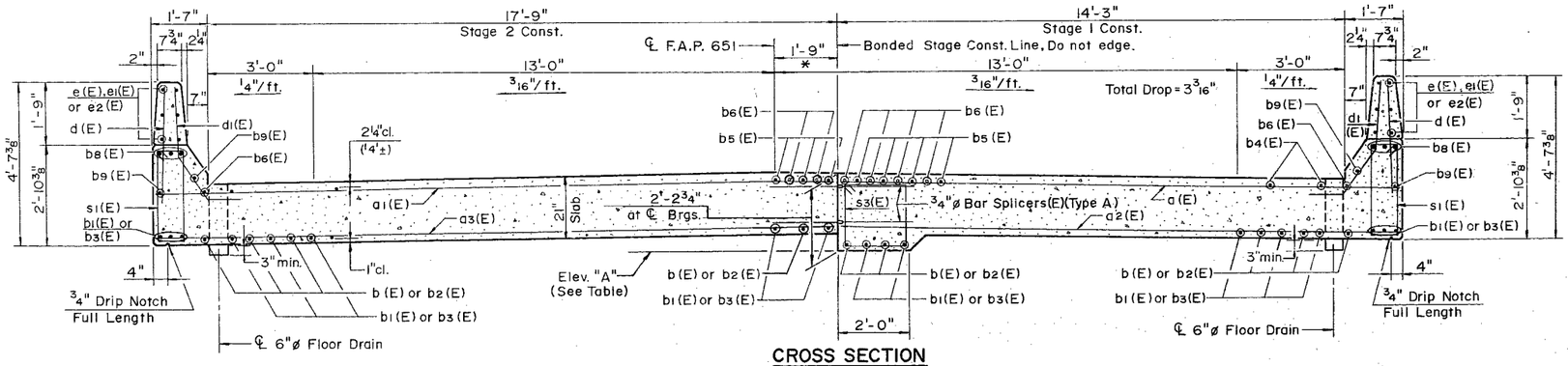
PARAPET JOINT DETAILS



PLAN

Note 1.
Order bars a(E), a1(E), a2(E) & a3(E) full length. Cut to fit skew in field. Use remainder in opposite end.

See Sheet 5 of 12 for Secs. A-A & B-B.



CROSS SECTION

TABLE OF VALUE "A"

	West Abut.	P-1	P-2	East Abut.
A	99.02	99.09	99.19	99.26

* Lapped Bars at this location shall be tied with double the number of ties normally used.

MIN. BAR LAP

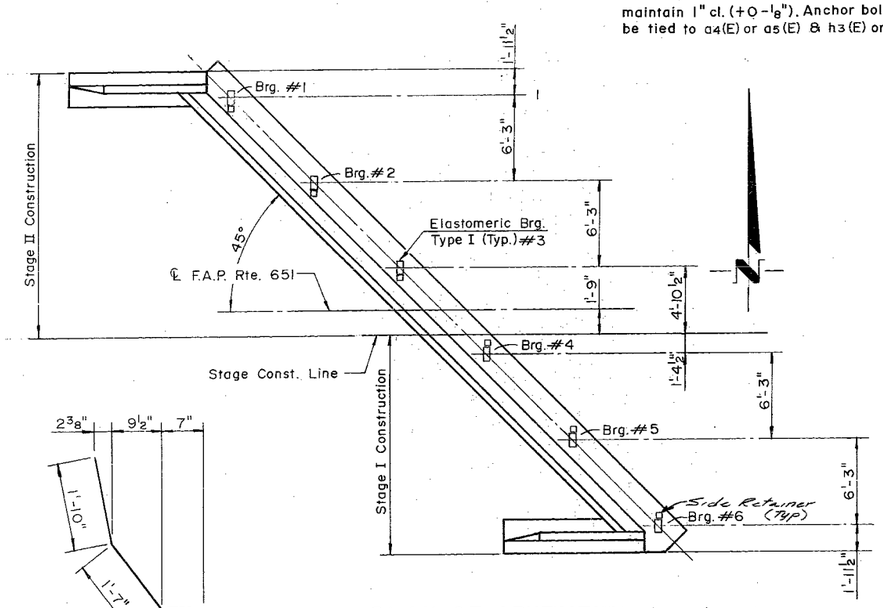
	Other bars	Top bars
#5	2'-2"	N.A.
#9	5'-9"	8'-1"

Work this Sheet with Sheet 5

SUPERSTRUCTURE
F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 480 + 15.00

HSIONG ASSOCIATES LTD.
DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: T.G. & L.M.L. DATE: NO. H-063C

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	46	32
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			
	SHEET 5 OF 12			



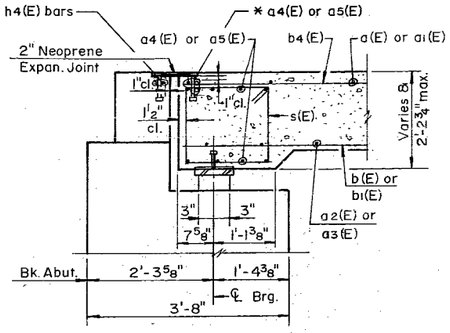
* Place a4(E) or a5(E) bars & h3(E) or h4(E) in back of anchor bolts as shown if required to maintain 1" cl. (+0 -1/8"). Anchor bolts should be tied to a4(E) or a5(E) & h3(E) or h4(E) bars.

PLAN OF ABUTMENT

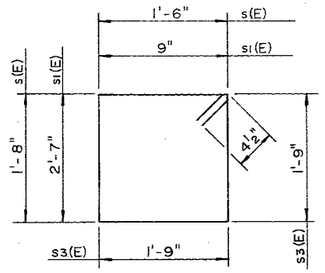
(Showing layout of Bearings) (Typ.)

BAR d1(E)

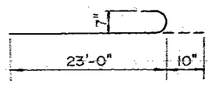
Place side retainers on the north side of the bearings south of the ℄ of roadway. Place side retainers on the south side of the bearings north of the ℄ of roadway.



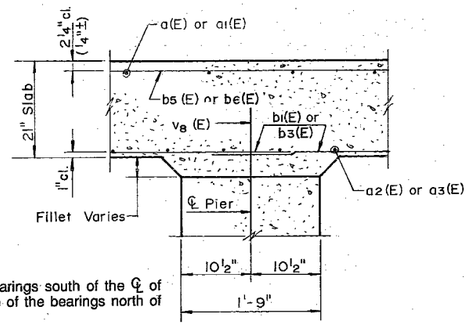
SECTION A-A



BARS s(E), s1(E) & s3(E)

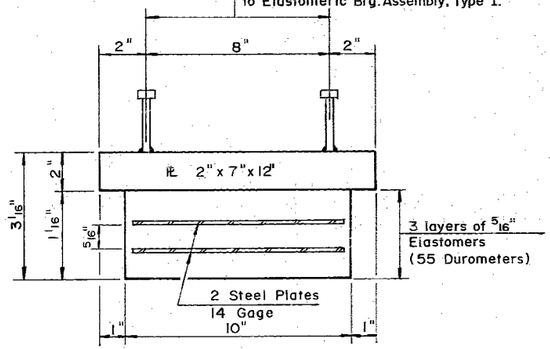


BAR b(E)



SECTION B-B

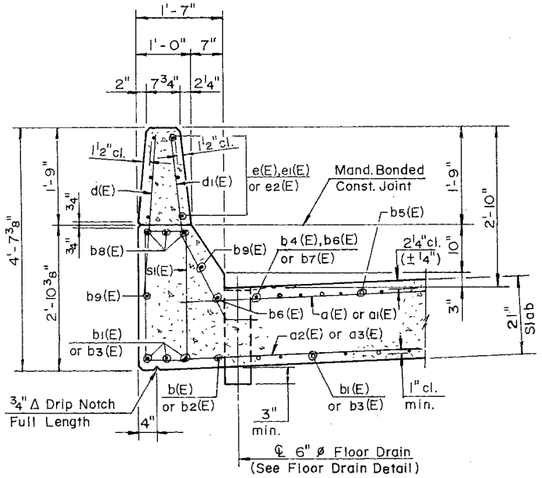
½" ø x 6" studs automatically end welded.
Granular or solid flux filled conforming to Sec. 507 of the Std. Secs. Cost incidental to Elastomeric Brg. Assembly, Type I.



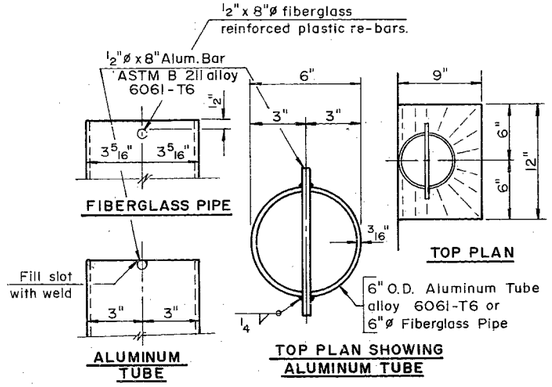
BILL OF MATERIAL

Bar	No	Size	Length	Shape
a(E)	69	#5	15'-6"	
a1(E)	69	#5	19'-0"	
a2(E)	103	#5	15'-6	
a3(E)	103	#5	19'-0"	
a4(E)	16	#7	22'-0"	
a5(E)	16	#7	27'-0	
b(E)	58	#7	23'-10"	
b1(E)	68	#7	30'-0"	
b2(E)	29	#8	30'-0"	
b3(E)	34	#8	45'-0"	
b4(E)	42	#5	13'-3"	
b5(E)	86	#7	18'-0"	
b6(E)	88	#7	30'-9"	
b7(E)	21	#5	23'-6"	
b8(E)	18	#9	39'-6"	
b9(E)	12	#5	35'-6"	
d(E)	206	#4	3'-0"	
d1(E)	224	#5	4'-0"	
e(E)	36	#4	14'-6"	
e1(E)	36	#4	14'-3"	
e2(E)	12	#4	15'-6"	
s(E)	103	#5	7'-1"	
s1(E)	204	#4	7'-5"	
s3(E)	101	#4	7'-9"	
Class X Conc., Superstructure		Cu.Yd.	269.4	
Reinforcement Bars Epoxy-Coated		Lb.	38,300	

Reinforcement bars indicated with (E), shall be Epoxy Coated.

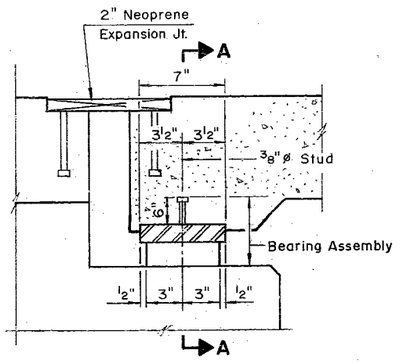


SECTION THRU PARAPET

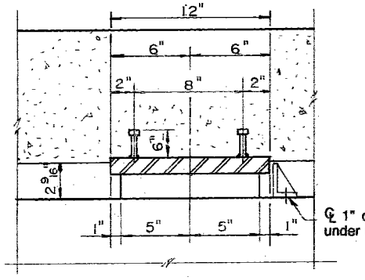


FLOOR DRAIN DETAILS

The exterior surfaces of the aluminum drains shall be cleaned and given a washcoat pretreatment in accordance with the steel structures Painting Council's Specs SSPC-SPI & SSPC- Paint 27 followed by the vinyl enamel coat painting specified for Structural Steel.
Fiberglass Pipe shall conform to ASTM 2996, with short-time rupture strength hoop tensile stress of 30,000 psi min. Fiberglass to have prewash as per MIL-P-15328 prior to painting. The surface of the Fiberglass pipe shall be free of bond inhibiting agents. The exterior surfaces of the fiberglass floor drains shall be painted with a vinyl enamel coat. The color shall be Munsel Std. 10Y7/1 light grey. Painting of the fiberglass floor drains will not be required when the exterior surfaces of the furnished drains are coated by the manufacturer with silver pigment or a pigment that matches the color of the concrete slab.



ELEVATION AT ABUT.

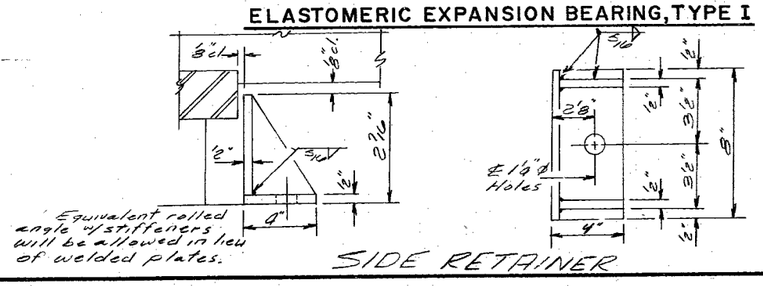


SECTION A-A

℄ 1" dia. x 12" Anchor bolts with 2 1/2" x 2 1/2" x 5/16" plate washer under nut.

The cost of the side retainers and anchor bolts shall be included with the pay item, ELASTOMERIC BEARING ASSEMBLY, TYPE I.

ELASTOMERIC EXPANSION BEARING, TYPE I

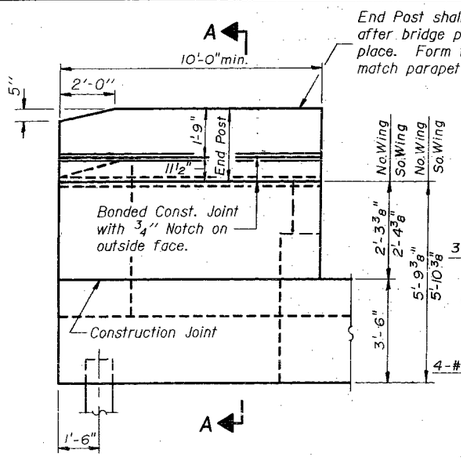


SUPERSTRUCTURE DETAILS
F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 480+15.00

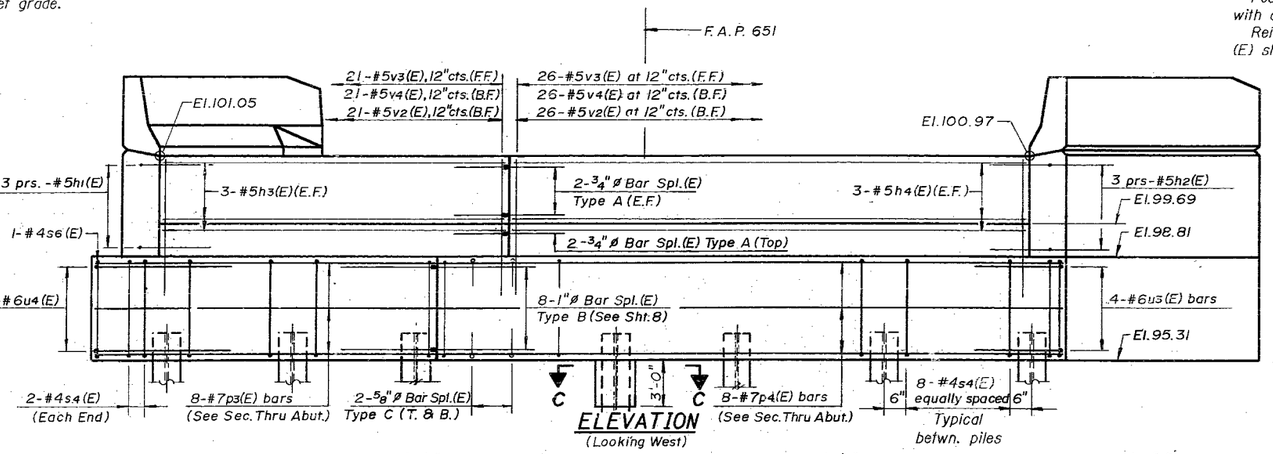
HSIONG ASSOCIATES LTD.		
DESIGNED: W.H.	CHECKED: G.J.G.	
DRAWN: R.H.H.	DATE:	NO. H-063C

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	46	33
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
	SHEET 6 OF 12			

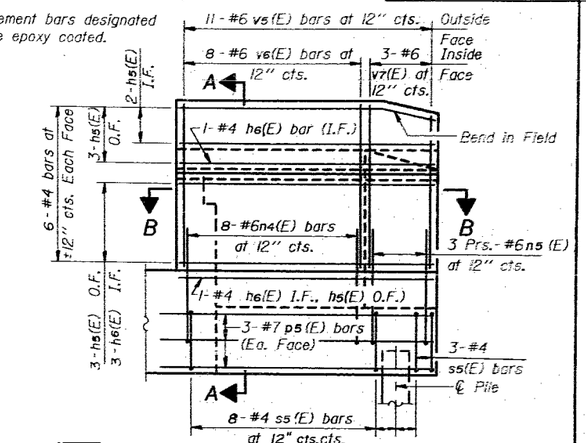
Notes: Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Reinforcement bars designated (E) shall be epoxy coated.



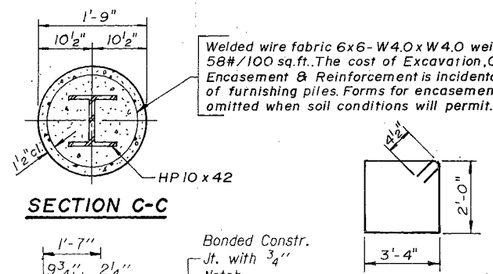
WING WALL ELEVATION



ELEVATION
(Looking West)



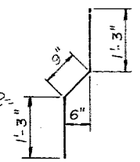
WING WALL ELEVATION
Reinforcement



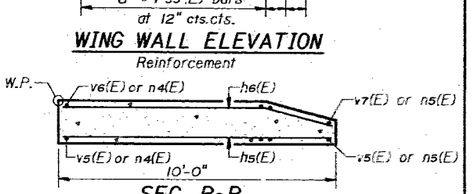
Welded wire fabric 6x6-W4.0xW4.0 weighing 58#/100 sq.ft. The cost of Excavation, Class X Concrete Encasement & Reinforcement is incidental to the cost of furnishing piles. Forms for encasement may be omitted when soil conditions will permit.

SECTION C-C

BAR s6(E)

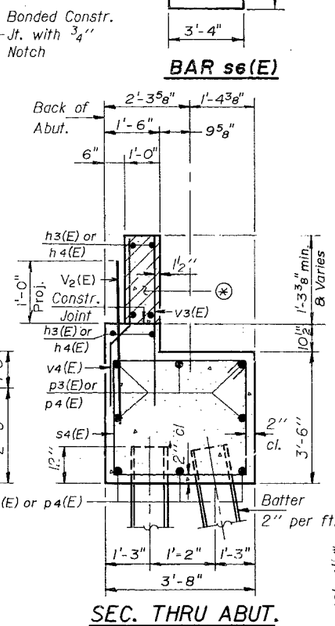


BAR v4(E)

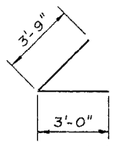


SEC. B-B

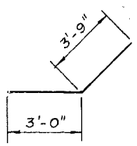
SEC. A-A



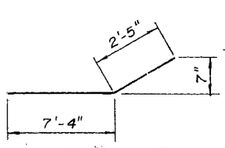
SEC. THRU ABUT.



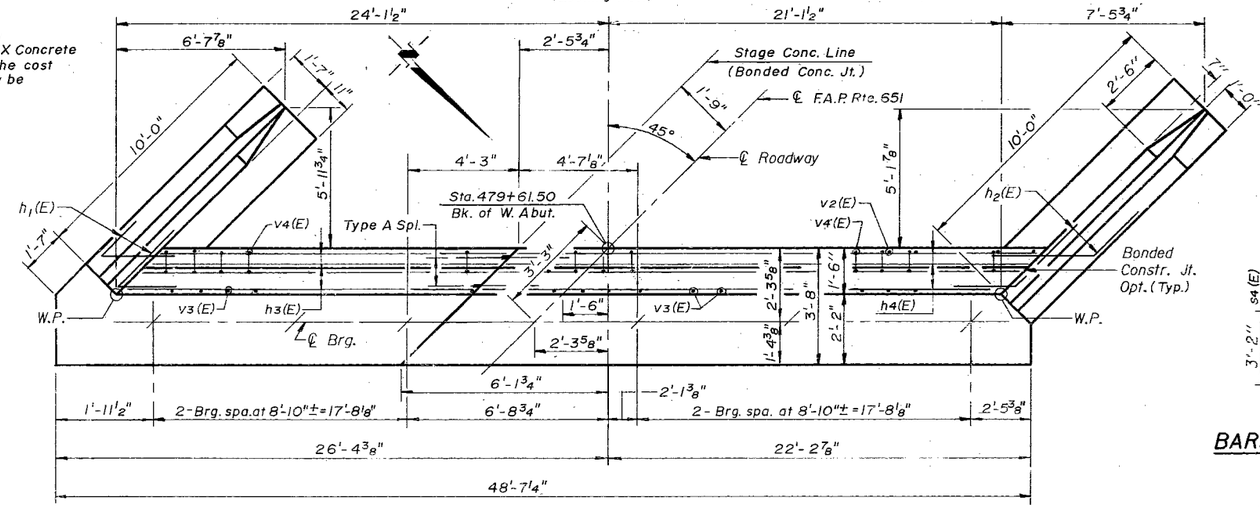
BAR h1(E)



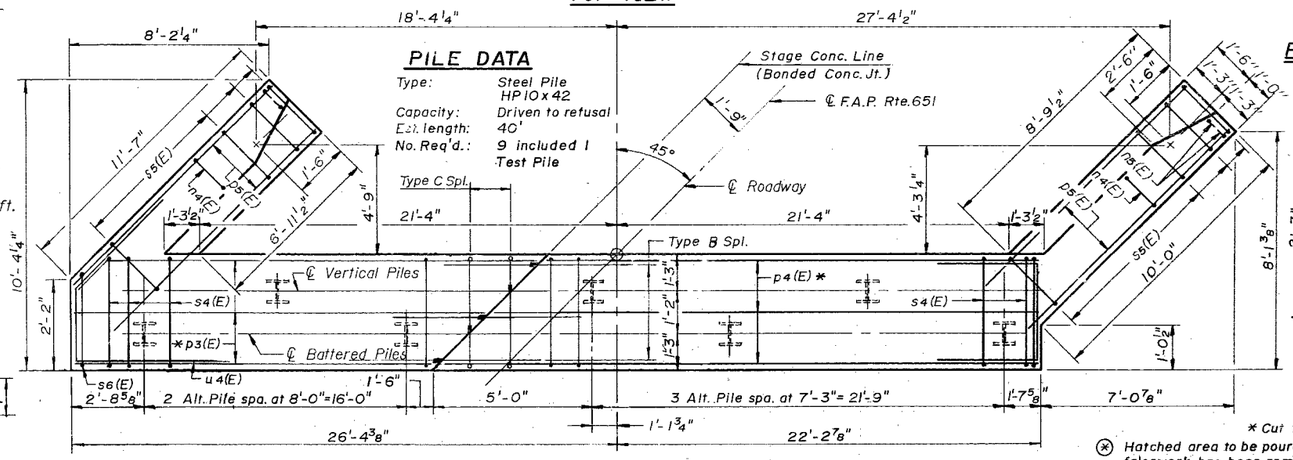
BAR h2(E)



BAR h6(E)



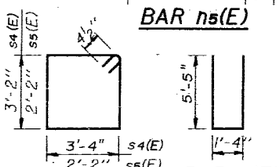
TOP VIEW



STAGE I CONSTRUCTION — PLAN-PILE CAP — STAGE II CONSTRUCTION

* Cut to fit Section

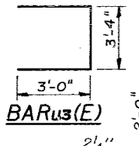
⊛ Hatched area to be poured after superstructure falsework has been removed. Quantity of concrete included with Class X Concrete Superstructure.



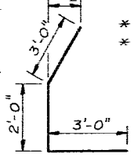
BAR h5(E)

BARS s4(E) & s5(E)

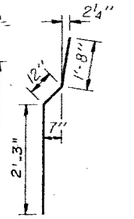
BAR n4(E)



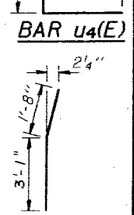
BAR u3(E)



BAR u4(E)



BAR v6(E)



BAR v7(E)

WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	6	#5	6'-9"	
h2(E)	6	#5	6'-9"	
h3(E)	6	#5	19'-9"	
h4(E)	6	#5	24"-9"	
h5(E)	18	#4	9'-9"	
h6(E)	10	#4	9'-9"	
n4(E)	16	#6	12'-2"	
n5(E)	12	#6	6'-1"	
p3(E)	8	#7	22'-0"	
p4(E)	8	#7	28'-0"	
p5(E)	12	#7	11'-3"	
s4(E)	52	#4	13'-9"	
s5(E)	22	#4	9'-5"	
s6(E)	1	#4	11'-5"	
u3(E)	4	#6	9'-4"	
u4(E)	4	#6	8'-0"	
v2(E)	47	#5	2'-9"	
v3(E)	47	#5	3'-0"	
v4(E)	47	#5	3'-3"	
v5(E)	22	#6	4'-9"	
v6(E)	16	#6	4'-11"	
v7(E)	6	#6	4'-9"	
Test Pile Steel HP10x42		Each	1	
Structure Excavation		Cu. Yd.	60	
Class X Concrete		Cu. Yd.	35.3	
Reinforcement Bars (Epoxy Coated)		Lbs.	3,530	
Steel Piles HP10x42		Lin. Ft.	320	

WEST ABUTMENT
F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY

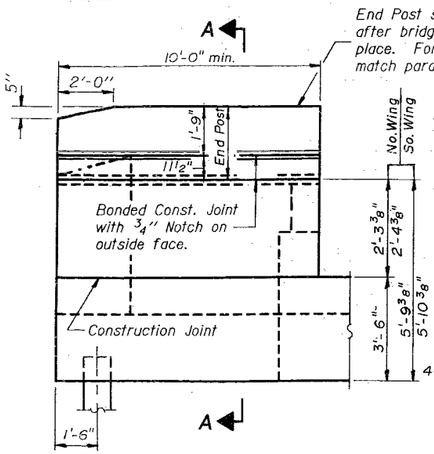
HSIONG ASSOCIATES LTD.

DESIGNED: G.J.G. CHECKED: W.H.
DRAWN: R.H.H. DATE: NO. H-063C

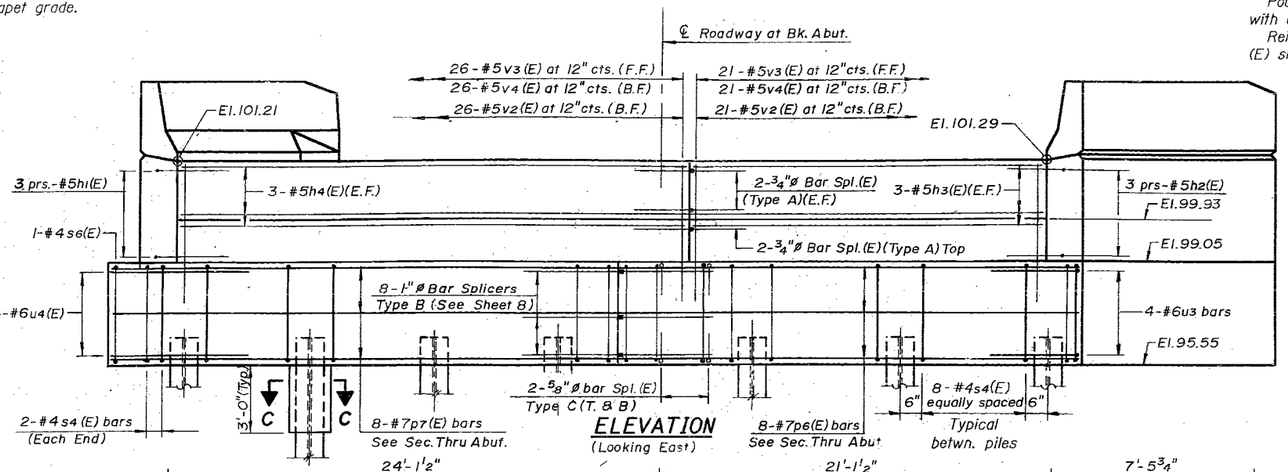
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	46	34
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET 7 OF 12

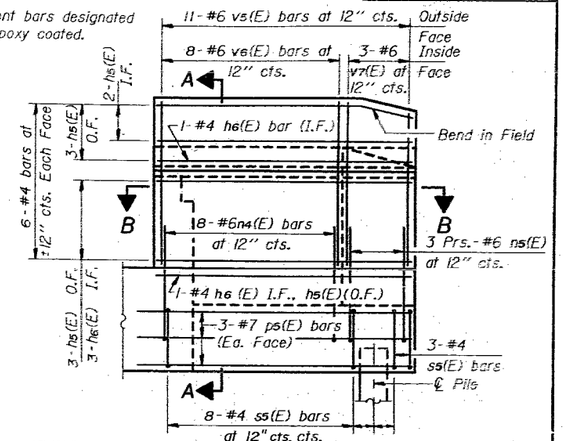
Notes: Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Reinforcement bars designated (E) shall be epoxy coated.



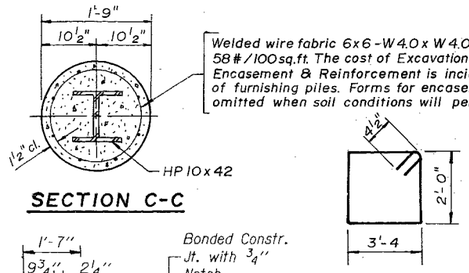
WING WALL ELEVATION



ELEVATION
(Looking East)

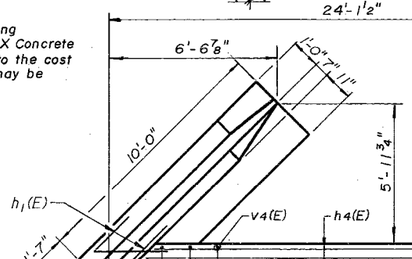


WING WALL ELEVATION
Reinforcement

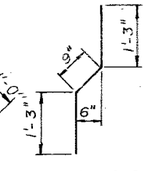


SECTION C-C

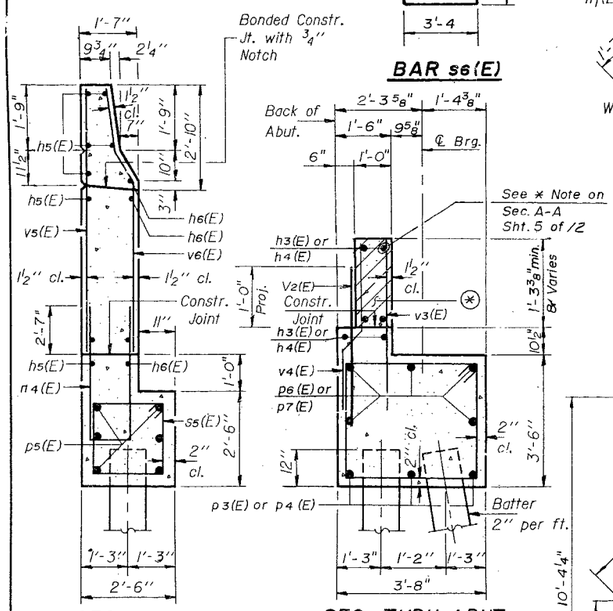
BAR s6(E)

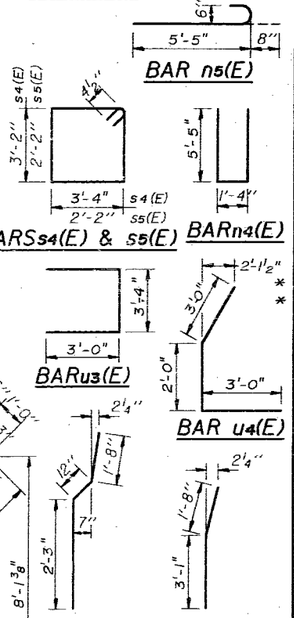


TOP VIEW



BAR v4(E)





BAR n5(E)

BARS s4(E) & s5(E)

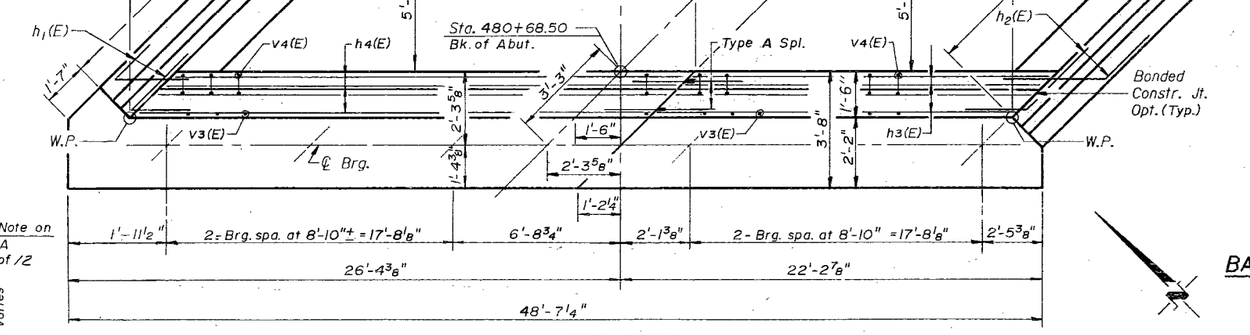
BAR n4(E)

BAR u3(E)

BAR u4(E)

BAR v6(E)

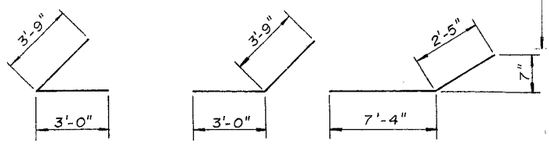
BAR v7(E)



STAGE II CONSTRUCTION

PLAN-PILE CAP

STAGE I CONSTRUCTION



EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	6	#5	6'-9"	
h2(E)	6	#5	6'-9"	
h3(E)	6	#5	19'-9"	
h4(E)	6	#5	24'-9"	
h5(E)	18	#4	9'-9"	
h6(E)	10	#4	9'-9"	
n4(E)	16	#6	12'-2"	
n5(E)	12	#6	6'-1"	
p5(E)	12	#7	11'-3"	
p6(E)	8	#7	23'-3"	
p7(E)	8	#7	27'-0"	
s4(E)	52	#4	13'-9"	
s5(E)	22	#4	9'-5"	
s6(E)	1	#4	11'-5"	
u3(E)	4	#6	9'-4"	
u4(E)	4	#6	8'-0"	
v2(E)	47	#5	2'-9"	
v3(E)	47	#5	3'-0"	
v4(E)	47	#5	3'-3"	
v5(E)	22	#6	4'-9"	
v6(E)	16	#6	4'-11"	
v7(E)	6	#6	4'-9"	
Structure Excavation			Cu. Yd.	60
Class X Concrete			Cu. Yd.	35.3
Reinforcement Bars (Epoxy Coated)			Lbs.	3530
Steel Piles HP10x42			Lin. Ft.	360

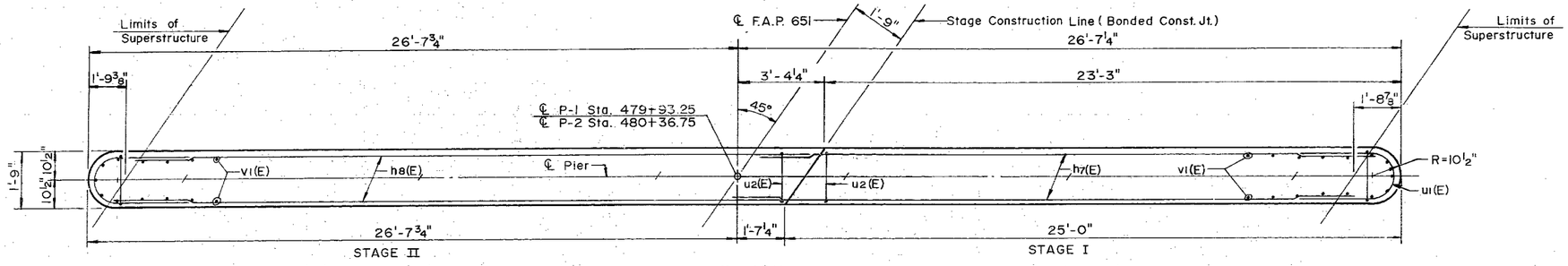
EAST ABUTMENT
F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY

Ⓐ See note on Sheet 6 of 12.
* Order these bars full length cut in field to fit.

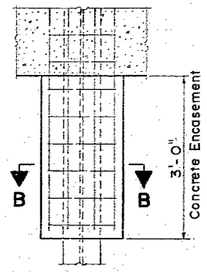
HSIONG ASSOCIATES LTD.

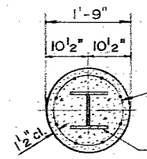
DESIGNED: G.J.G. CHECKED: W.H.
DRAWN: R.H.H. DATE: NO. H-063C

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	40	35
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		
		SHEET 8 OF 12		



PLAN

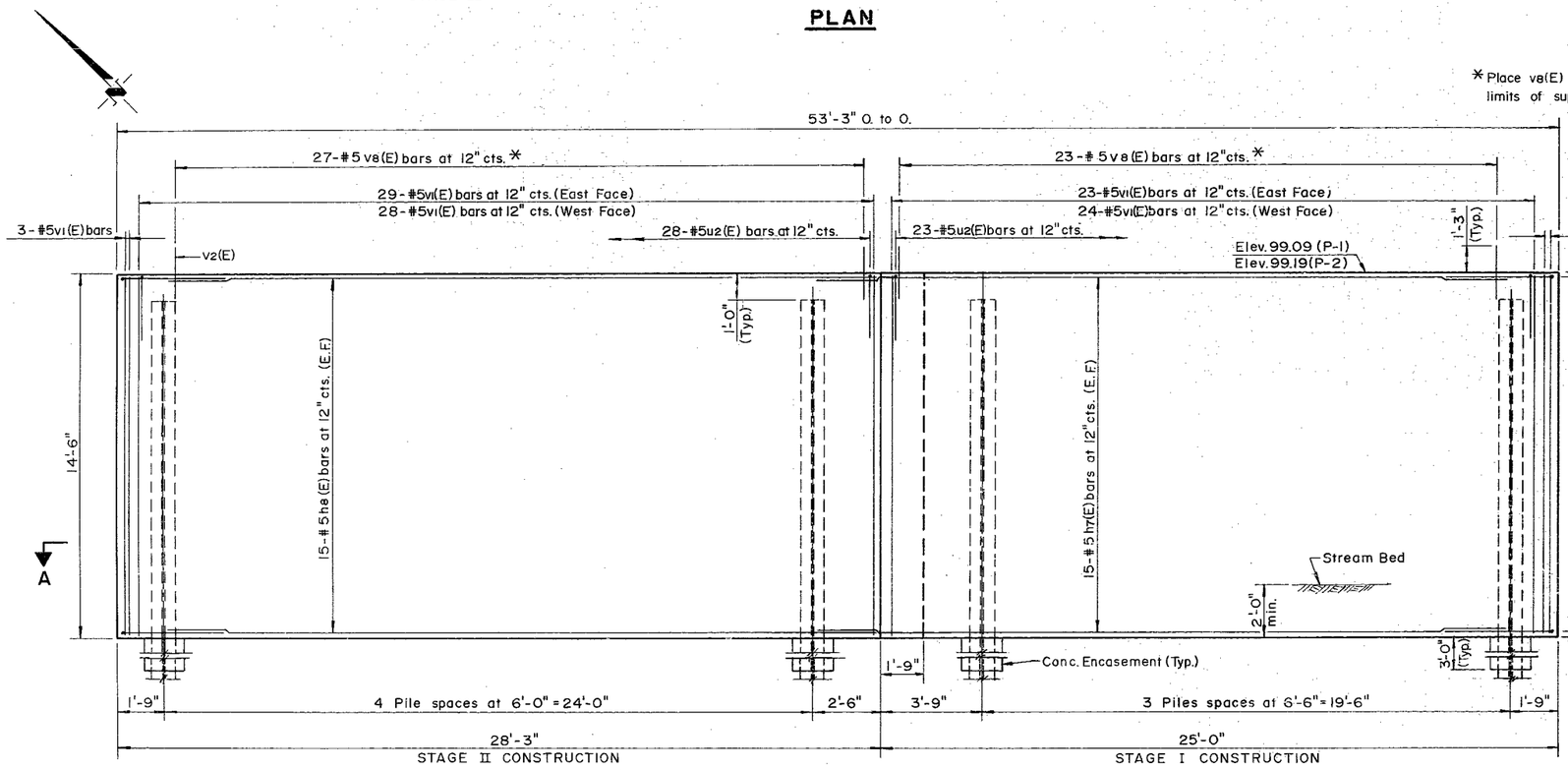




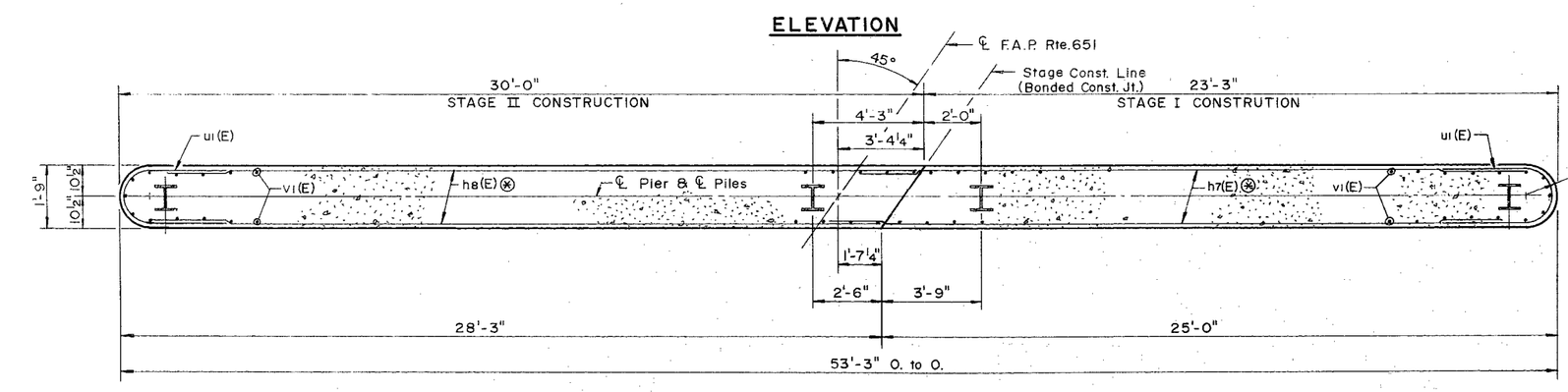
W.W. fabric 6x6-W4.0xW4.0 58/100 sq.ft.. Cost of Excav., Class X Conc. Encasement & Reinf. is incidental to the cost of Furnishing Piles. Forms may be omited when soil condition permit.

SECTION B-B

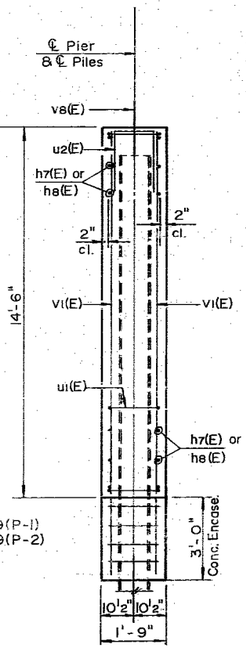
DETAIL OF PILE ENCASEMENT



ELEVATION



SECTION A-A



END VIEW

BILL OF MATERIAL

Bar	No	Size	Length	Shape
h7(E)	60	# 5	23'-0"	
h8(E)	60	# 5	28'-0"	
u1(E)	60	# 5	8'-9"	
u2(E)	102	# 5	5'-8"	
v1(E)	220	# 5	14'-3"	
v8(E)	100	# 5	2'-6"	
Class X Concrete			Cu.Yd.	99.4
Reinf. Bars, Epoxy Coated			Lb.	7870
Test Pile, Steel HP 10 x 42			Each	1
Steel Piles, HP 10 x 42			Lin.Ft.	680
Structure Excavation			Cu.Yd.	82

⊗ NOTE: Cut h (E) & h (E) bars in field to fit if necessary.

Bars indicated (E) shall be Epoxy Coat.

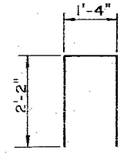
PILE DATA

Type ____ Steel Piles HP10x42

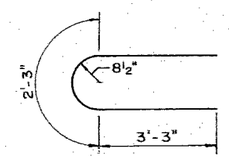
Capacity ____ driven to refusal

Est. length ____ 40'

No. Req'd. ____ 18 including 1 test pile at Pier 2



BAR u2(E)



BAR u1(E)

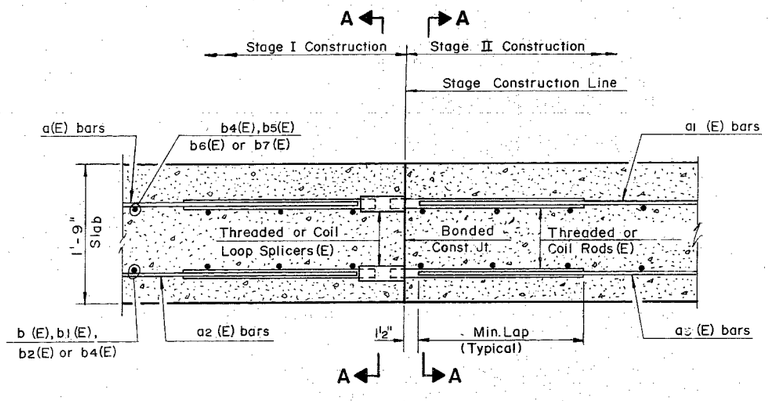
PIER DETAILS
F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 480+15.00

HSIONG ASSOCIATES LTD.

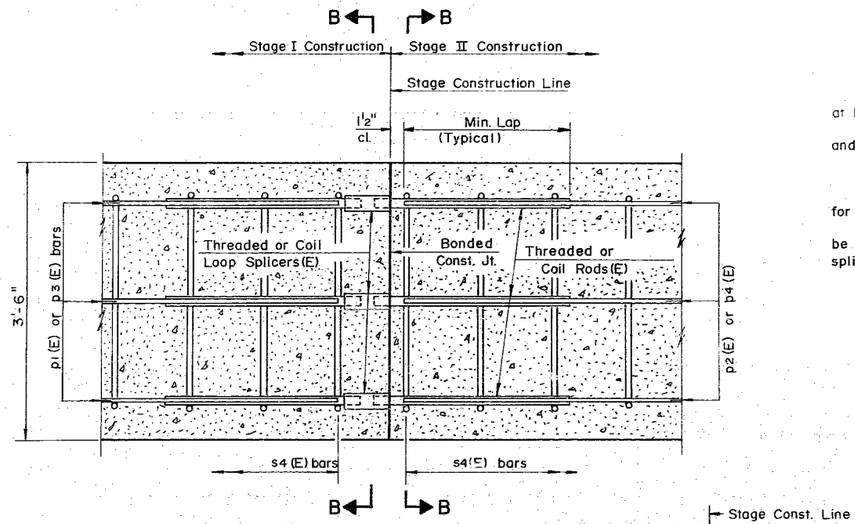
DESIGNED: W.H. CHECKED: G.J.G.

DRAWN: R.H.H. DATE: NO. H-063C

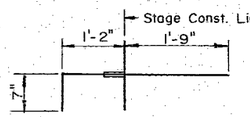
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108-BR3	LIVINGSTON	46	36
FED ROAD DIST NO 7	ILLINOIS	PROJECT		
		SHEET 9 OF 12		



SECTION THRU SLAB



SECTION THRU ABUTMENTS



TYPE C SPLICER

NOTES

Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Steel Splicer rods shall be of minimum 60 ksi. yield strength, threaded or coiled full length and have effective tensile stress area equal or greater than that of the lapped reinforcement bars.

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

Splicer (coupler) assembly in the slab shall be epoxy coated in accordance with 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 splicer (coupler) assembly satisfies the following requirements:

① Minimum Capacity = 1.25 x fy x A_t (Tension in kips)

② Minimum *Pull-out Strength = 1.25 x fs_{allow} x A_t (Tension in kips)

Where fy = Yield strength of lapped reinforcement bars in k.s.i.

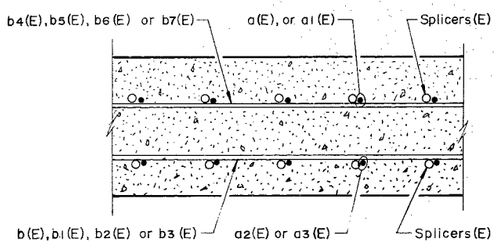
fs_{allow} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load).

* = 28 day concrete

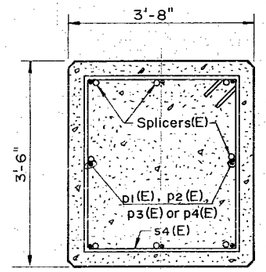
Typical Splicer (Coupler) Assembly Sizes:

- Type A — #5 bar lap with ¾"ø Splicer (Coupler) x 2'-0" Splicer Rods — Minimum Capacity = 23.0 kips-tension; Minimum Pull-out Strength = 9.2 kips-tension
- Type B — #7 bar lap with 1"ø Splicer (Coupler) x 3'-5" Splicer Rods — Minimum Capacity = 45.1 kips-tension; Minimum Pull-out Strength = 180 kips-tension
- Type C — #4 bar lap with ⅝"ø Splicer (Coupler) x 1'-9" Splicer Rods — Minimum Capacity = 58.9 kips-tension; Minimum Pull-out Strength = 23.6 kips-tension

At = Tensile stress area of lapped reinforcement bars.



SECTION A-A



SECTION B-B

BAR SPLICER LIST

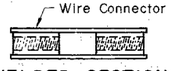
Type	Location	No. Req'd.
A	Deck	172
A	Abut.	12
B	Abut.	16
C	Abut.	8
B	Deck	16

SPLICER DETAILS

Cost incidental to Reinforcement Bars (Epoxy Coated).

** ONE PIECE

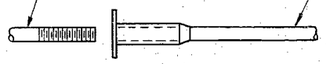
** Heavy Hex Nuts conforming to ASTM A563, Grade C,D or DH may be used.



WELDED SECTIONS

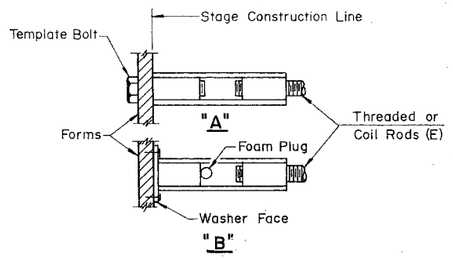
The diameter of this portion of the splicer is the same as the diameter of the bar being spliced

The diameter of this portion is equal or larger than the diameter of bar spliced.



ROLLED THREAD DOWEL BAR

SPLICER ALTERNATIVES



INSTALLATION AND SETTING METHODS

"A" Set splicer by means of a template bolt.

"B" Set splicer by nailing to wood forms or cementing to steel forms.

(E) Indicates epoxy coating.

BAR SPLICER (COUPLER) DETAILS AT STAGE CONSTRUCTION

F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 460+15.00

HSIONG ASSOCIATES LTD.

DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: R.H.H. DATE: NO. H-063C

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108-BR3	LIVINGSTON	46	37
FED ROAD DIST NO 7	ILLINOIS PROJECT			
		SHEET 10 OF 12		

Joint Size	"C" at 50°F	"D" at 50°F
2	2"	1½" min.

INSTALLATION NOTES

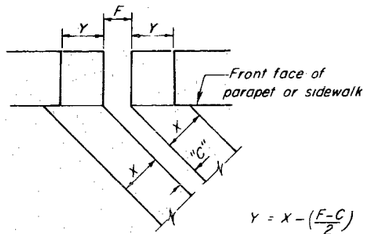
1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

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.

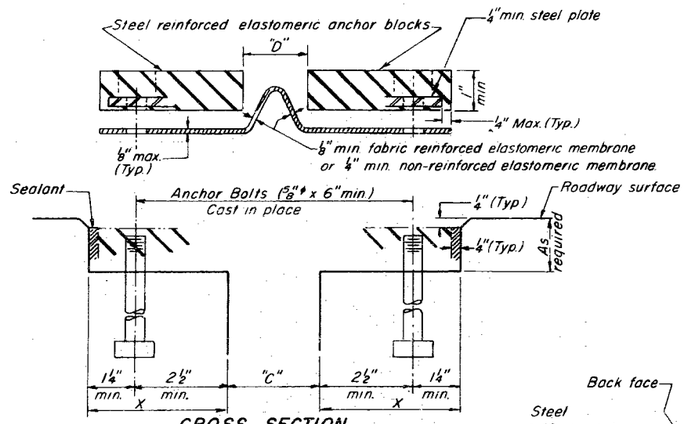
For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also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



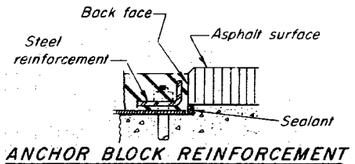
FORMING BLOCKOUT SKETCH

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

For dimension "F" see sheet #



CROSS SECTION



ANCHOR BLOCK REINFORCEMENT 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.

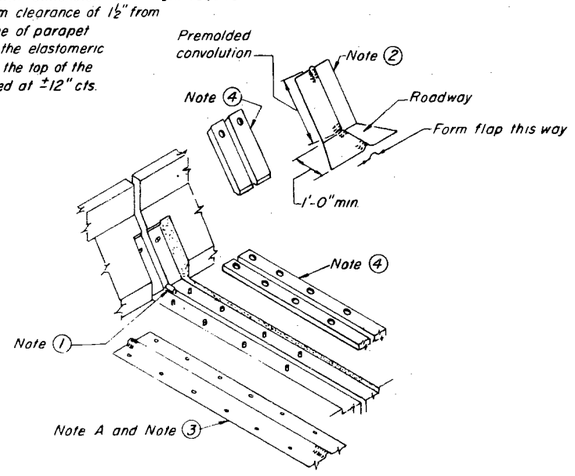
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

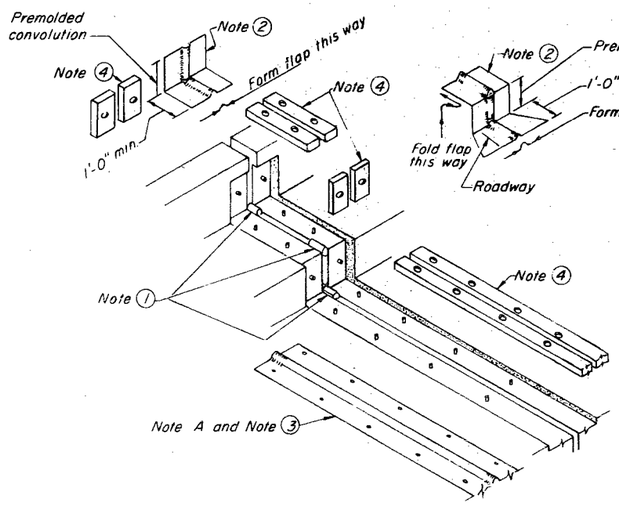
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

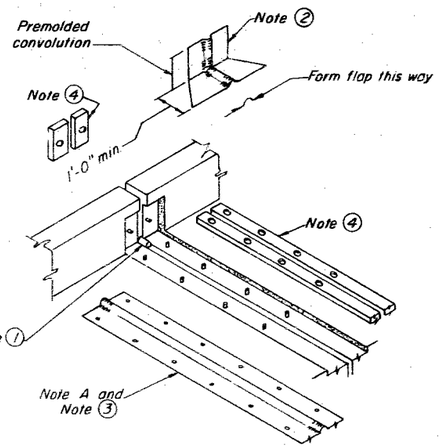
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



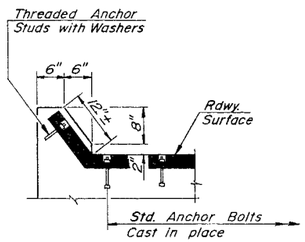
AT PARAPET



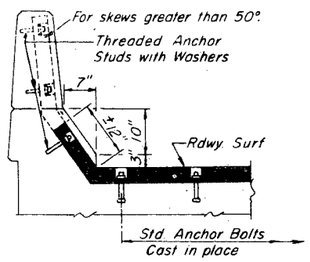
AT SIDEWALK or MEDIAN



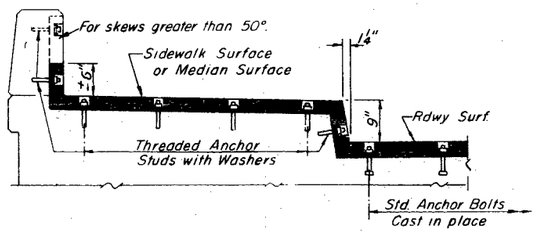
AT WALL



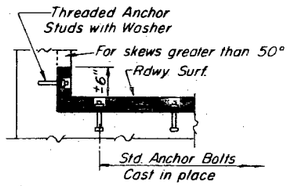
AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN TYPICAL END TREATMENT



AT WALL

CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS

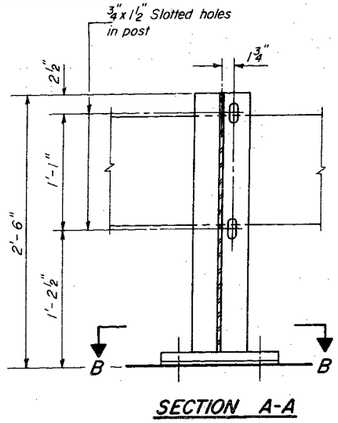
FOR 2", 2½" AND 4" MOVEMENT

F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 480+15.00

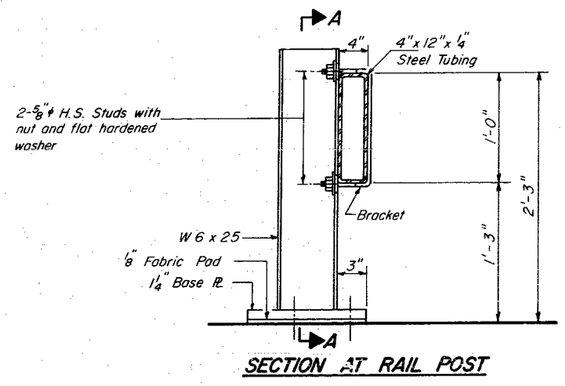
HSIONG ASSOCIATES LTD.

DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: R.H.H. DATE: NO. H-063

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	46	38
FED. ROAD DIST NO. 7	ILLINOIS	PROJECT		
		SHEET 11 OF 12		



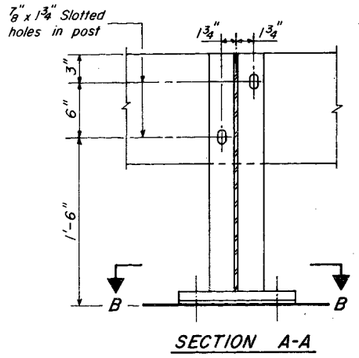
SECTION A-A



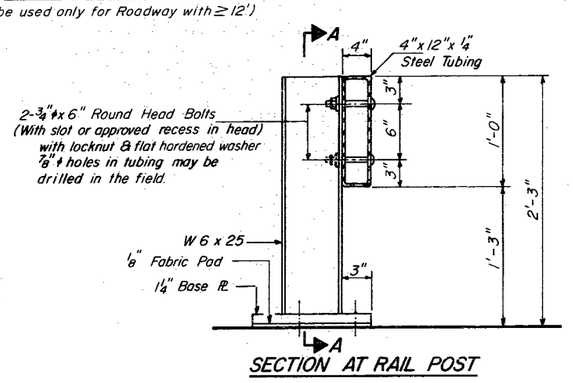
SECTION AT RAIL POST

ALTERNATE I

(To be used only for Roadway with ≥ 12')

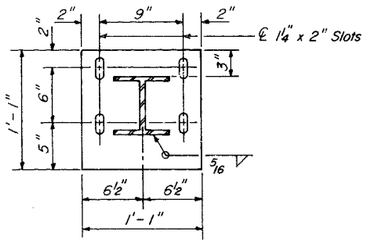


SECTION A-A

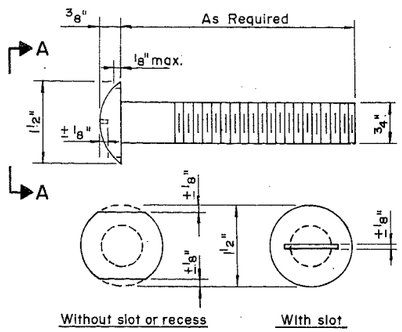


SECTION AT RAIL POST

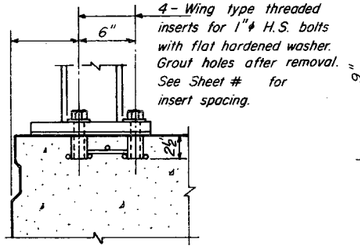
ALTERNATE II



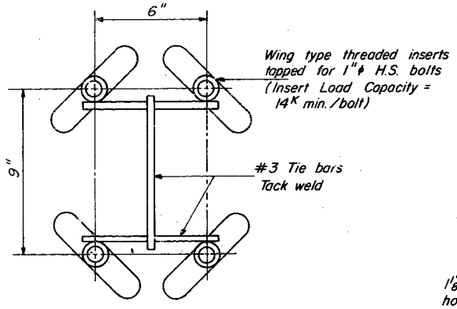
SECTION B-B



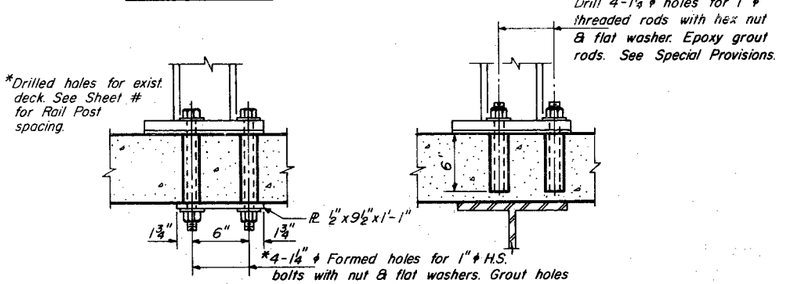
VIEW A-A
ROUND HEAD BOLT



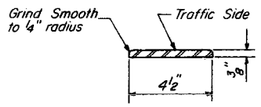
P.P.C. DECK BEAMS



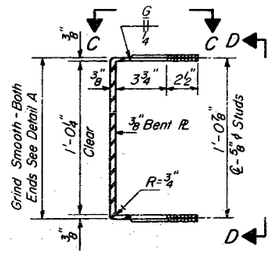
INSERT DETAIL



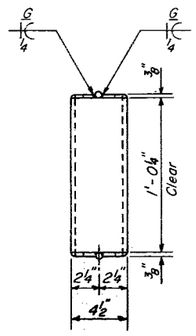
NEW & EXISTING DECKS
ANCHORAGE DETAILS



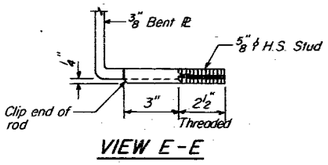
DETAIL A



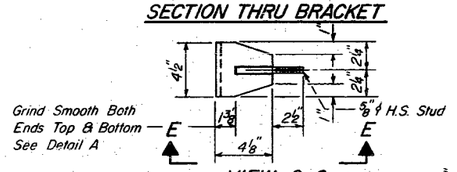
SECTION THRU BRACKET



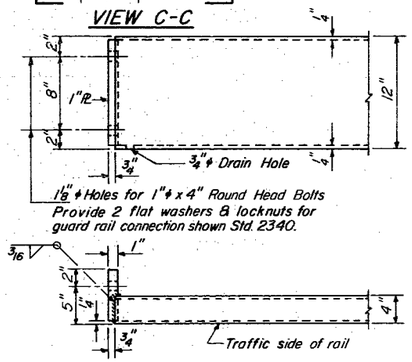
VIEW D-D



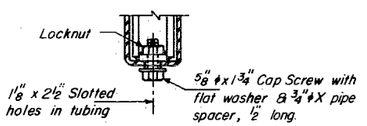
VIEW E-E



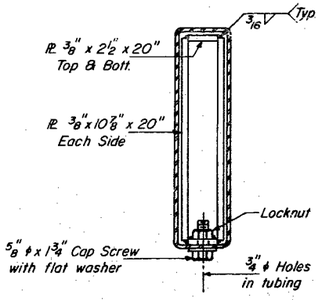
VIEW C-C



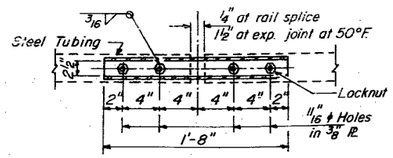
END OF RAIL DETAILS



RAIL SPLICE CONNECTION AT EXPANSION JT.



SECTION AT RAIL SPLICE



PLAN - BOTT. SPLICE PL. TYPICAL

NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-183 except posts and brackets shall conform to A.A.S.H.T.O. M 223 Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, threaded rods, studs, nuts and washers noted which shall conform to A.A.S.H.T.O. M-164.

The bridge rail shall receive one shop coat of a steel prime paint.

The 1"ϕ high strength bolts or threaded rods used to connect the railposts shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specification.

See Special Provisions for Temporary Bridge Rail.

See sheet # for Rail Post spacing.

The contact surfaces between post flange, rail and inside face of bracket for Alternate I shall be free of all lubricants.

The nut for 5/8"ϕ high strength studs used in Alternate I to connect bracket to post shall be tightend to a snug fit and given an additional one half turn.

BILL OF MATERIAL

Item	Unit	Quantity
Temporary Bridge Rail	Lin.Ft.	170

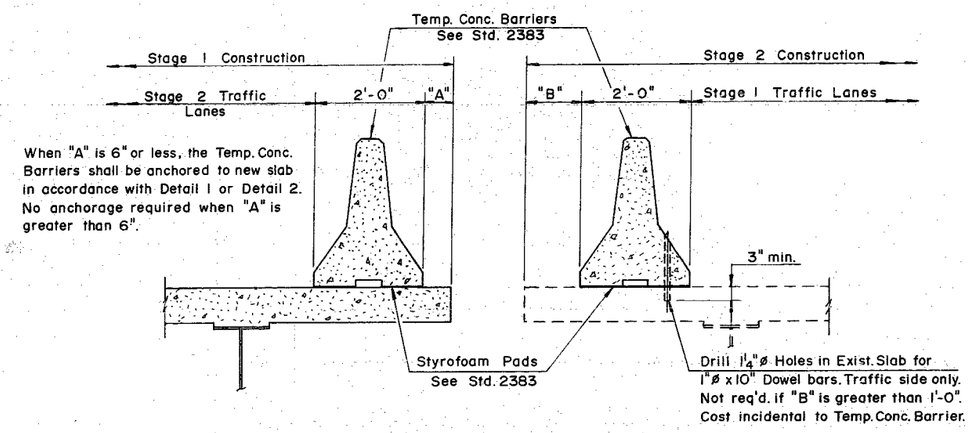
TEMPORARY BRIDGE RAIL

F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 480+15.00

HSIONG ASSOCIATES LTD.

DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: R.H.H. DATE: NO. H-063C

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	46	39
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			
		SHEET 12 OF 12		



PROPOSED SLAB

EXISTING SLAB

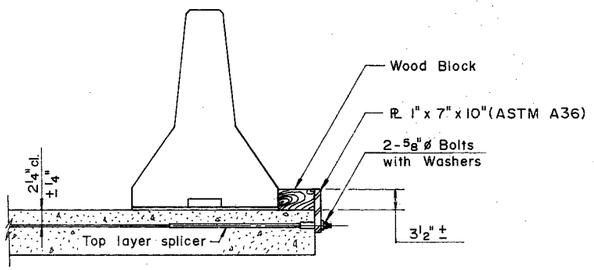
SECTION THRU SLAB

NOTES

Detail 1 with Bar Splicer or Couplers.
Connect one (1) 1" x 7" x 10" Steel PL to the top layer of couplers with 2-5/8"ø bolts screwed to coupler at approximate ℄ of each 10'-0" barrier panel.

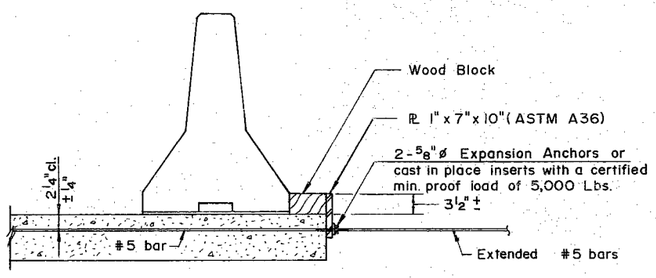
Detail 2 with Extended Reinforcement Bars.
Connect one (1) 1" x 7" x 10" Steel PL to the concrete slab with 2-5/8"ø Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each 10'-0" barrier panel.

Cost of anchorage is incidental to Temporary Concrete Barrier.



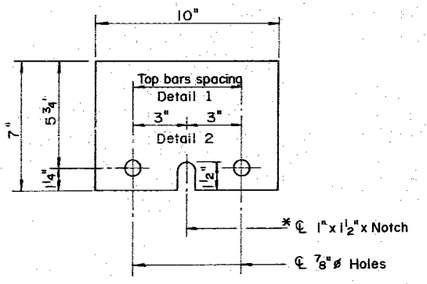
DETAIL 1

The 1" x 7" x 10" PL shall not be removed until Stage 2 Construction forms and reinforcement bars are in place.



DETAIL 2

The 1" x 7" x 10" PL shall not be removed until Stage 2 Construction forms and all reinforcement bars are in place and the conc. is ready to be placed.



PL 1" x 7" x 10"

* Required with Detail 2 only

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION

F.A.P. RTE. 651, SEC. 108-BR3
LIVINGSTON COUNTY
STA. 480+15.00

HSIONG ASSOCIATES LTD.

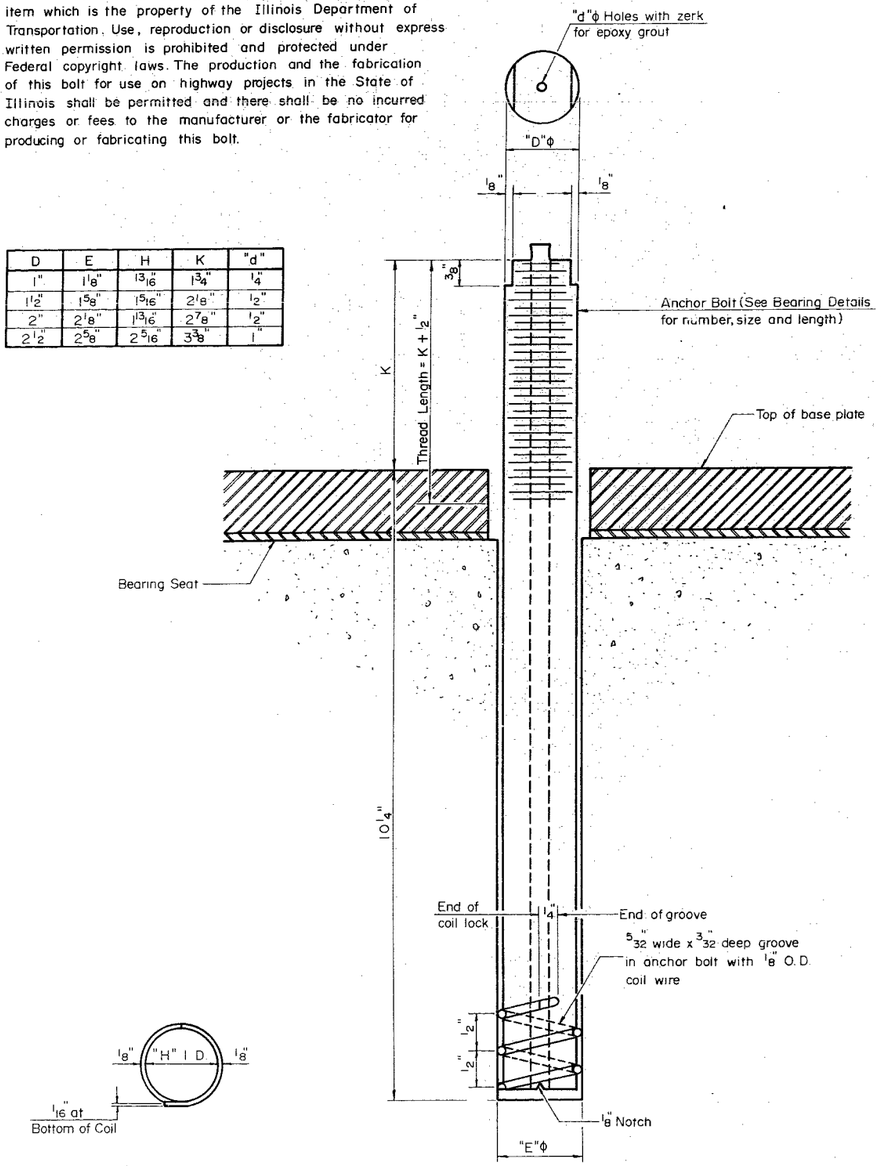
DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: R.H.H. DATE: NO. H-063C

STD. R-27

STANDARD

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108-BR3	LIVINGSTON	46	39A
FED ROAD DIST NO 7	ILLINOIS PROJECT			
	SHEET 12A OF 12			

D	E	H	K	"d"
1"	1 1/8"	13/16"	1 3/4"	1/4"
1 1/2"	1 5/8"	1 9/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



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 A519, Grade 1026 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 C881, Type I, ~~Grade I~~ 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 in accordance with 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 & washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

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

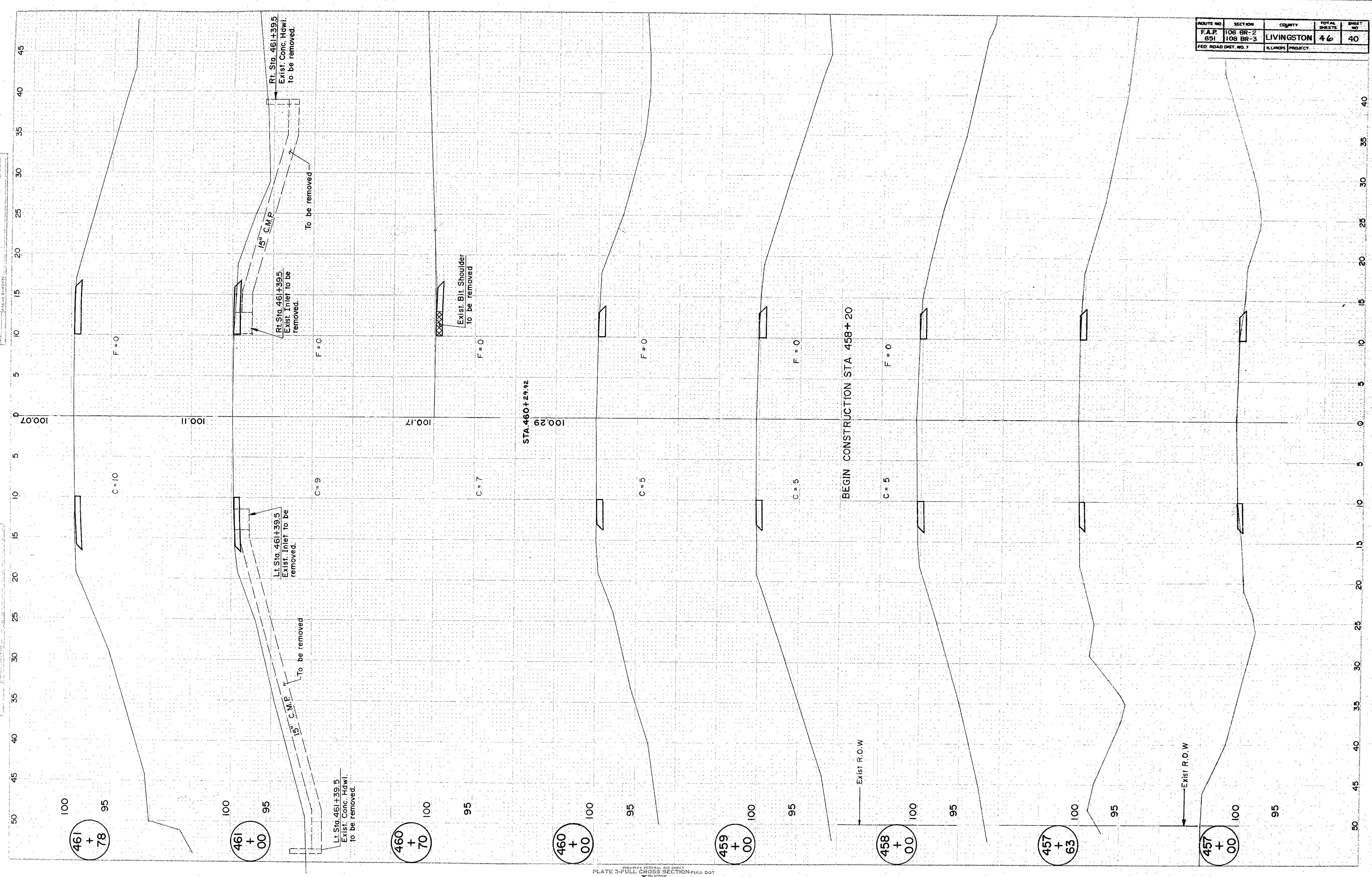
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

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 "ELASTOMERIC BEARING ASSEMBLY, TYPE I."

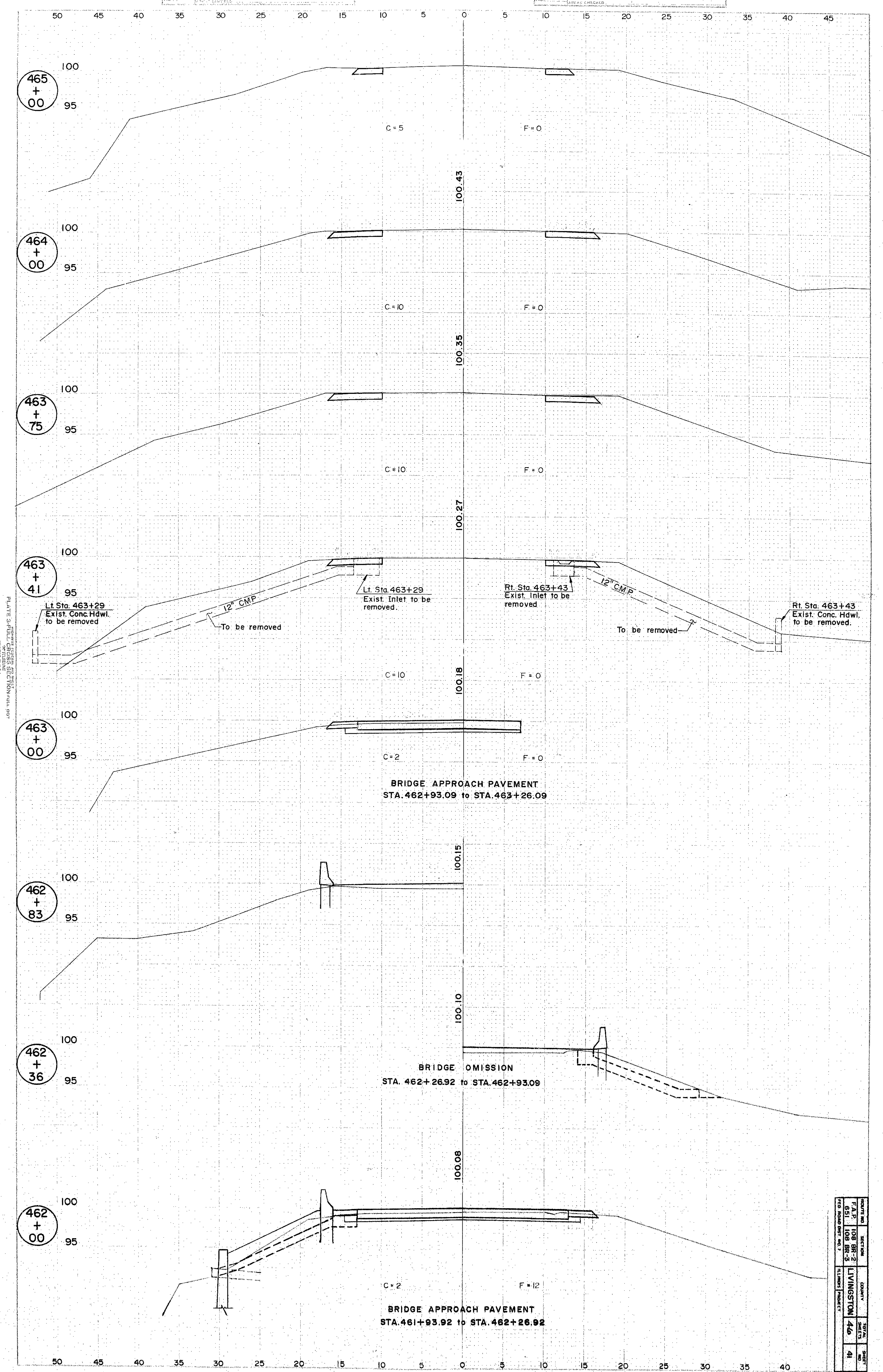
ANCHOR BOLT DETAILS FOR BEARINGS F.A.P. RTE. 651, SEC. 108-BR3 STA. 480+15.00 LIVINGSTON COUNTY S.N. 053-0167

HSIONG ASSOCIATES LTD.

DESIGNED: W.H. CHECKED: G.J.G.
DRAWN: C.L. DATE: NO. H-063C



ROUTE NO. F.A.P. 851
SECTION 108 BR-2 108 BR-3
COUNTY LIVINGSTON
TOTAL SHEETS 46
SHEET NO. 40
FED. ROAD DIST. NO. 7
ILLINOIS PROJECT
Rt. Sta. 461+39.5 Exist. Conc. Hdwl. to be removed.
15" C.M.P.
To be removed
Rt. Sta. 461+39.5 Exist. Inlet to be removed.
Exist. Bit. Shoulder to be removed
Lt. Sta. 461+39.5 Exist. Inlet to be removed.
Lt. Sta. 461+39.5 Exist. Conc. Hdwl. to be removed.
STA. 460+29.92
BEGIN CONSTRUCTION STA 458+20
Exist R.O.W.
100.07
100.11
100.17
100.29
F = 0
C = 10
C = 9
C = 7
C = 5
461+78
461+00
460+70
460+00
459+00
458+00
457+63
457+00
PLATE 3-FULL CROSS SECTION


465 + 00
C = 5
F = 0
100.43
464 + 00
C = 10
F = 0
100.35
463 + 75
C = 10
F = 0
100.27
463 + 41
Lt. Sta. 463+29 Exist. Conc. Hdwl. to be removed
12" CMP
To be removed
Lt. Sta. 463+29 Exist. Inlet to be removed.
Rt. Sta. 463+43 Exist. Inlet to be removed
12" CMP
To be removed
Rt. Sta. 463+43 Exist. Conc. Hdwl. to be removed.
C = 10
F = 0
100.18
463 + 00
C = 2
F = 0
BRIDGE APPROACH PAVEMENT
STA. 462+93.09 to STA. 463+26.09
100.15
462 + 83
100.10
462 + 36
BRIDGE OMISSION
STA. 462+26.92 to STA. 462+93.09
100.08
462 + 00
C = 2
F = 12
BRIDGE APPROACH PAVEMENT
STA. 461+93.92 to STA. 462+26.92
ORIGINAL SURVEY
FINAL SURVEY
PLATE 3-FULL CROSS SECTION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108 BR-2 108 BR-3	LIVINGSTON	46	41
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			

H-263

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.P. 651	108 BR-2 108 BR-3	LIVINGSTON	46	42
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

FINAL SURVEY
ORIGINAL SURVEY

-10.90 %

Aggregate

F = 0

C=5

470 + 00 | 469 + 00 | 468 + 00 | 467 + 39 | 467 + 27 | 467 + 15 | 467 + 00 | 466 + 00

100 95

0 5 10 15 20 25 30 35 40 45 50

HIGHWAY FEDERAL AID SHEET
PLATE 3-FULL CROSS SECTION-FULL DOT
MIELEBRE
PRINTED IN U.S.A.

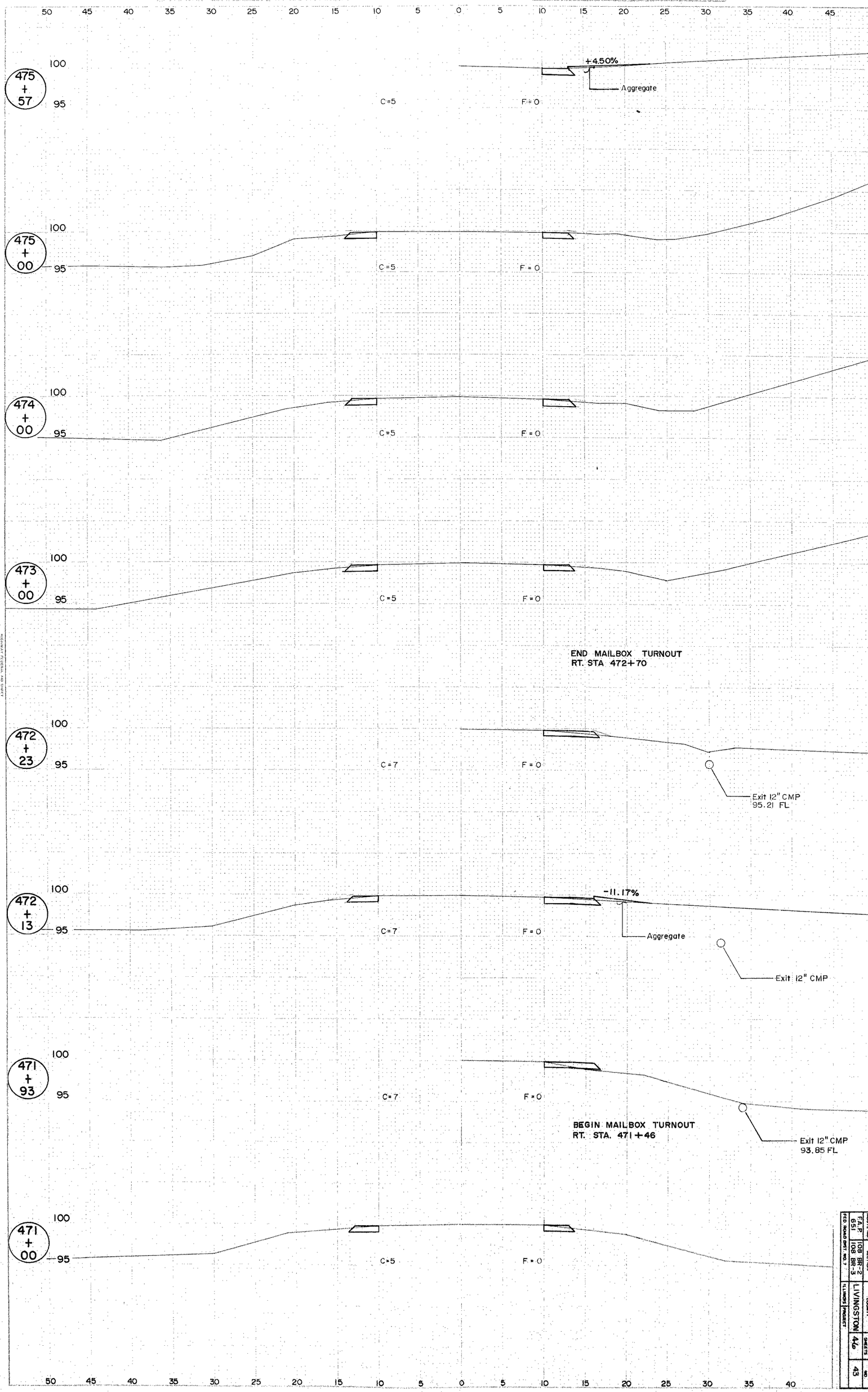
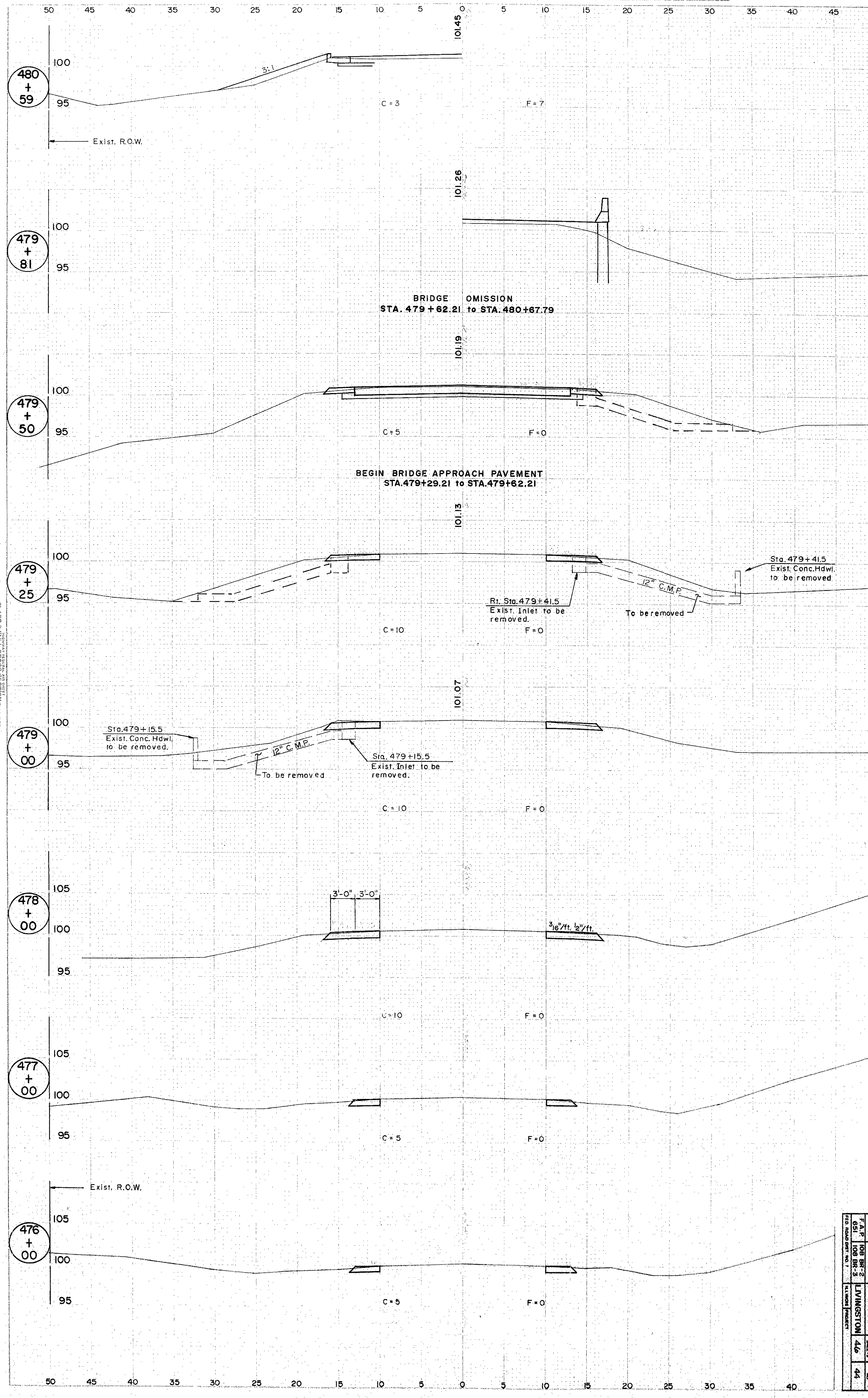


PLATE 3-FULL CROSS SECTION-FULL SCALE

ROUTE NO.	SECTION
F.A.P. 651	108 BR-2
FED. ROAD DIST. NO. 7	108 BR-3
ILLINOIS PROJECT	COUNTY: LIVINGSTON
	TOTAL SHEETS: 46
	SHEET: 43


480 + 59
479 + 81
479 + 50
479 + 25
479 + 00
478 + 00
477 + 00
476 + 00
101.45
101.26
101.19
101.13
101.07
3:1
Exist. R.O.W.
C = 3
F = 7
BRIDGE OMISSION
STA. 479 + 62.21 to STA. 480 + 67.79
C = 5
F = 0
BEGIN BRIDGE APPROACH PAVEMENT
STA. 479+29.21 to STA. 479+62.21
Sta. 479 + 41.5
Exist. Conc. Hdwl.
to be removed
12" C.M.P.
To be removed
Rt. Sta. 479 + 41.5
Exist. Inlet to be
removed.
C = 10
F = 0
Sta. 479 + 15.5
Exist. Conc. Hdwl.
to be removed.
12" C.M.P.
To be removed
Sta. 479 + 15.5
Exist. Inlet to be
removed.
3'-0" 3'-0"
3/16"/ft. 1/2"/ft.
ROUTE NO. F.A.P. 651
SECTION 108 BR-2 108 BR-3
COUNTY LIVINGSTON
TOTAL SHEETS 46
SHEET NO. 44
FED. ROAD DIST. NO. 7
ILLINOIS PROJECT
PLATE 3-FULL CROSS SECTION-FULL DOT
H-963

ORIGINAL SURVEY — BY — DATE

FINAL SURVEY — SURVEYED — BY — DATE — PLOTTED — TEMPLATE — AREA-S — AREA-P CHECKED — ANGLE BLOCK NO.

50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45

Exist. R.O.W.

483 + 00 — 100 — 95 — C=5 — F=0 — Exist. R.O.W.

101.79

482 + 00 — 100 — 95 — C=8 — F=0

101.67

481 + 50 — 100 — 95 — C=5 — F=0

101.61

481 + 25 — 100 — 95 — C=8 — F=0

101.55

481 + 00 — 100 — 95 — C=9.5

3'-0" 3'-0"

3"/ft. 12"/ft

F=0

Sta. 481+15
Exist. Inlet
to be removed

12" C.M.P.

To be removed

Sta. 481+15
Exist. Conc. Hdwl.
to be removed

Exist. R.O.W.

101.49

Sta. 480+89
Exist. Conc. Hdwl.
to be removed

480 + 77 — 100 — 95

12" C.M.P.

To be removed

Sta. 480+89
Exist. Inlet to
be removed

C=5 — F=0

Exist. R.O.W.

BRIDGE APPROACH PAVEMENT
STA. 480+67.79 to STA. 481 +00.79

50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40

FED. ROAD DIST. NO. 7	ILLINOIS	ROUTE NO.	
F.A.P. 651		SECTION 108 BR-2 108 BR-3	
	PROJECT	COUNTY LIVINGSTON	
		TOTAL SHEETS 46	
		SHEET NO. 45	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 651	108 BR-2 108 BR-3	LIVINGSTON	46	46
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

108 BR 30 R&W

END CONSTRUCTION STA. 486+00

80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60

105
100
95
90

Exist. R.O.W.

C = 5 F = 0

Exist. R.O.W.

105
100
95
90

486 + 00

105
100
95
90

Exist. R.O.W.

C = 3 F = 0

Exist. R.O.W.

105
100
95
90

485 + 00

105
100
95
90

Exist. R.O.W.

C = 5 F = 0

Exist. R.O.W.

105
100
95

484 + 00

105
100
95

80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

FINAL SURVEY
SURVEYED
LETTED
CHECKED
NO.

HIGHWAY STANDARD 606001
PLATE 3-FULL CROSS SECTION FULL CUT
TOLEDO
PRINTED IN U.S.A.

H-063