DESIGN		
INT.	DATE	REASON

PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

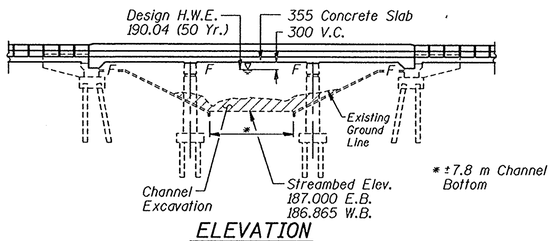
Bench Mark: Top of curb at Northwest abutment of Bridge 006-0004 at Station 60+304.360, Elev. 190.930

Existing Structures: S.N. 006-0003 (E.B.) and S.N. 006-0004 (W.B.). Both Structures are 3 span continuous R.C. slab bridges. 22.40 m bk. to bk. abutments, 13.31 m out to out of deck on R.C. stub abutments and solid piers. Built as F.A.I. Route 80, Section 06-1B-1 at Station 80+02.50 (English) in 1963. The Contractor shall remove both existing superstructures and portions of the substructure as required and replace with a 3-span continuous R.C. slab bridge. Replace deteriorated portions of slopewall with RR5 riprap. No salvage.

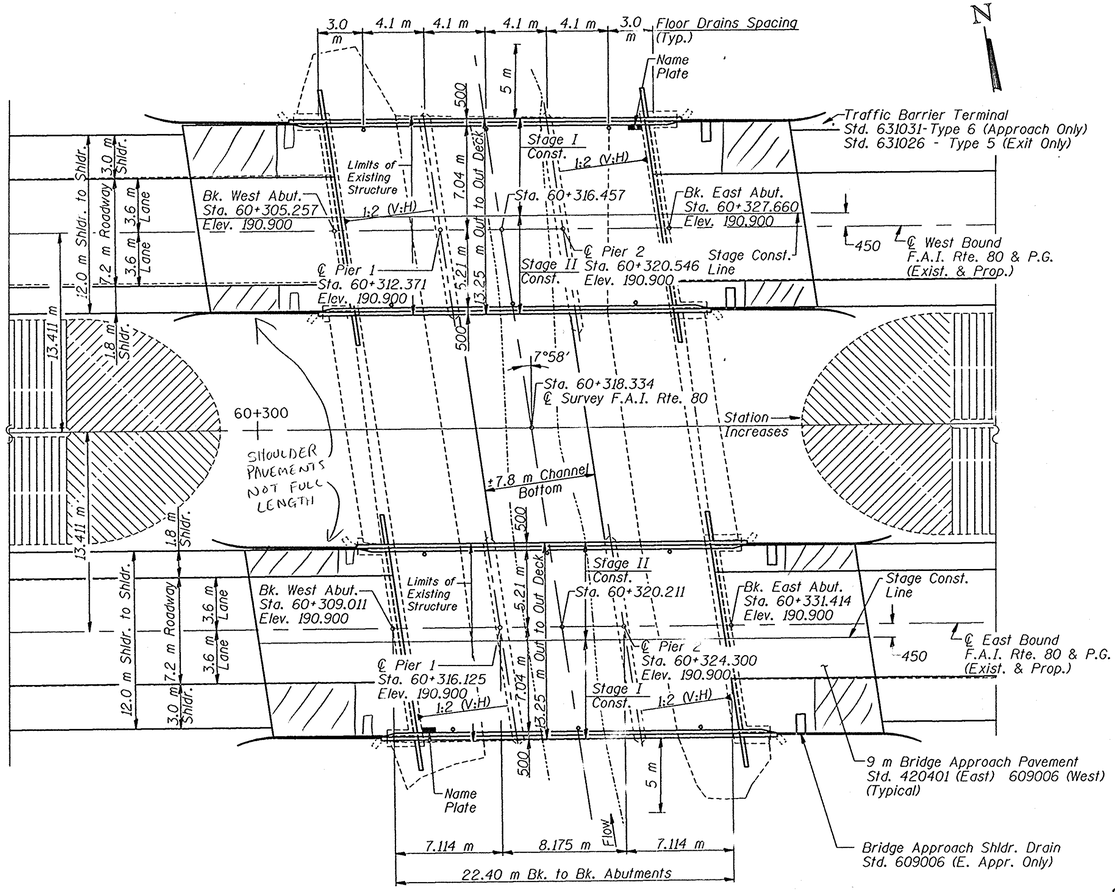
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	46
STA.	———	TO STA.	———	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Bridge Sheet 1 of 11 Sheets



ELEVATION



PLAN

GENERAL NOTES

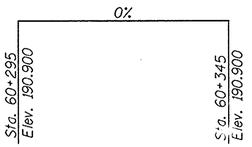
1. Reinforcement Bars shall conform to the requirements of AASHTO M31M, M42M, or M53M, Grade 400.
2. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify 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.
3. The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of false work, in addition to allowance for dead load deflection.
4. All dimensions are in millimeters (mm) except as noted.
5. All Structural Steel shall be AASHTO M270M, Grade 250
6. All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1.
7. Forms for the deck slab shall be removed before the placement of the approach slab.

TWO STRUCTURES TOTAL BILL OF MATERIALS

	ITEM	UNIT	SUPER	SUB	TOTAL
*	Removal of Existing Superstructures	Each	2		2
	Reinforcement Bars, Epoxy Coated	Kg.	26,970	1,570	28,540
	Concrete Structures	m^3		16.2	16.2
	Concrete Superstructure	m^3	260.0		260.0
	Protective Coat	m^2	632		632
	Bridge Deck Grooving	m^2	508		508
	Name Plates	Each	2		2
	Bar Splicers	Each	268	184	452
	Floor Drains	Each	12		12
	Furnishing and Erecting Structural Steel	Kg.	~~3,600~~		~~3,600~~ 3195
	Concrete Removal	m^3		12.2	12.2
	Channel Excavation	m^3		251	251

* See Special Provisions

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES



PROFILE GRADE
(Along ℄ Proposed Roadway)

STATION 60+318.334
REBUILT 20 BY
STATE OF ILLINOIS
F.A.I. RTE. 80
SECTION 06-1B(2R)
F.A. PROJ.
LOADING MS18 AND ALT.
STRUCTURE NO. 006-0003 (E.B.)

STATION 60+318.334
REBUILT 20 BY
STATE OF ILLINOIS
F.A.I. RTE. 80
SECTION 06-1B(2R)
F.A. PROJ.
LOADING MS18 AND ALT.
STRUCTURE NO. 006-0004 (W.B.)

WRONG SECTION NUMBERS

NAME PLATES
See Std. 515001

Note: The existing Name Plate is to be cleaned and relocated next the new Name Plate. Cost is included with Name Plates.

WATERWAY INFORMATION

Drainage Area = 16.32 km^2 | Low Grade Elev. = 190.704 @ Sta. 60+176.124, 13.411 m Lt.

Flood Class	Freq. Yr.	Q m^3/s	Opening, (m^2) Exist.	Opening, (m^2) Prop.	Natural H.W.E.	Head (m) Exist.	Head (m) Prop.	Headwater Elev.- m Exist.	Headwater Elev.- m Prop.(*)
Design	50	44.7	27.49	27.49	190.04	0.34	0.34	190.38	190.38
Base	100	51.1	28.74	28.74	190.10	0.35	0.35	190.45	190.45
Overtopping	200	58.9	30.62	30.62	190.20	0.48	0.48	190.68	190.68
Max. Calc.	500	58.9	30.62	30.62	190.20	0.48	0.48	190.68	190.68

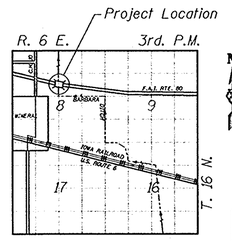
* HEADWATER EL. = W.S.EL. @ UPSTREAM FACE OF PROPOSED STRUCTURE.

DESIGN SPECIFICATIONS
1996 AASHTO With 1997 - 1999 Interims

LOADING MS18 AND ALT.
Allow 2.4 kN/m^2 for future wearing surface.

SEISMIC DATA
Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04
Site Coefficient (S) = 1.5

DESIGN STRESSES FIELD UNITS
f'c = 24 MPa
fy = 400 MPa (Reinforcement)
fy = 250 MPa (Structural Steel M270M Gr250)



LOCATION SKETCH
(NTS)

N

THOMAS F. FITCH
081-005396
LICENSED STRUCTURAL ENGINEER
OF
WILLIAMSVILLE
ILLINOIS

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

REVISIONS	
NAME	DATE
PER B.O.	12/18/01
ABUT. BARS	12/27/01
WINGWALLS QTYS.	1/23/02

ILLINOIS DEPARTMENT OF TRANSPORTATION
GENERAL PLAN & ELEVATION

FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT. HORIZ.
DATE: 3/16/99-TMJ
DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC. OF SPRINGFIELD
CONSULTING ENGINEERS
300 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62703
(217) 753-6644, (217) 753-6217 FAX

COMPUTER FILE NO. 01159GPE-3
PROJECT 01159
03/20/02-RPB

METGPE - 1:100 8/24/98

F.A.I. RTE. 80 - BUREAU COUNTY

DESIGN		
INT.	DATE	REASON

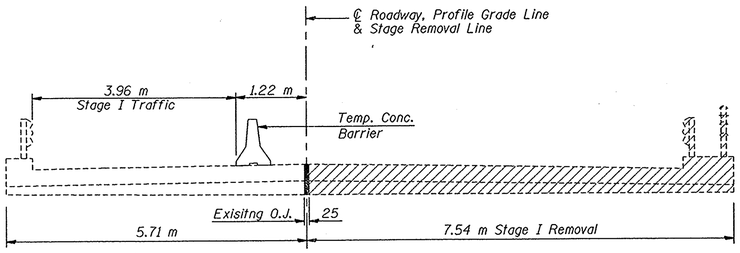
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

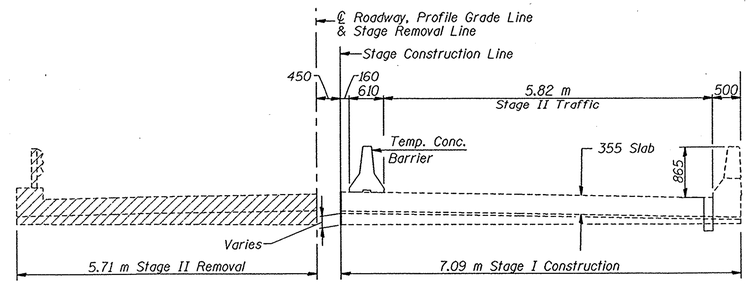
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	47
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

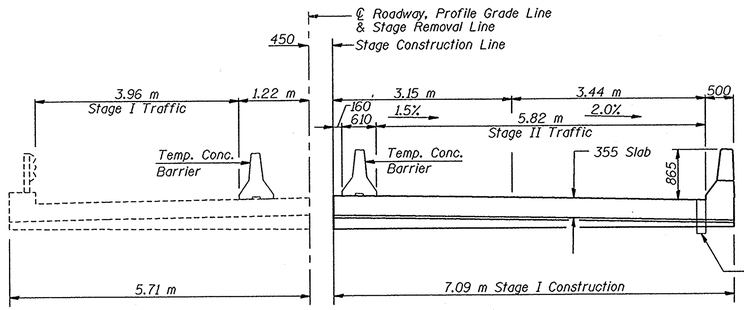
Bridge Sheet 2 of 11 Sheets



STAGE I REMOVAL
(Looking in direction of traffic)

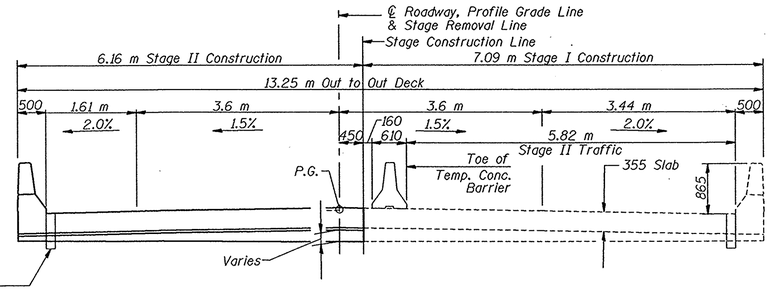


STAGE II REMOVAL
(Looking in direction of traffic)



STAGE I CONSTRUCTION
(Looking in direction of traffic)

160 Dia. Floor Drain
(See General Plan & Elevation sheet
for location and spacing).



STAGE II CONSTRUCTION
(Looking in direction of traffic)

Note: All horizontal dimensions
at right angles to centerline.

Notes:

1. Hatched area indicates Removal of Existing Superstructures.
2. For details of Temporary Concrete Barrier, see sheet 4 of 11.
3. For quantity of Temporary Concrete Barrier, see Roadway Plans.
4. Steel handrail removal shall be included with Removal of Existing Superstructures.

REVISIONS	
NAME	DATE
PER B.O.	12/18/01

ILLINOIS DEPARTMENT OF TRANSPORTATION
STAGE CONSTRUCTION DETAILS
FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT.
HORIZ.
DATE: 08/28/01-RPB

DRAWN BY: BISHOP
DESIGNED BY:BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC.
OF SPRINGFIELD
CONSULTING ENGINEERS
350 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62707
(217) 793-6464, (217) 793-5237 FAX

COMPUTER FILE NO.
SHT1500-3

PROJECT 01159
12/18/01-RPB

DESIGN		
INT.	DATE	REASON

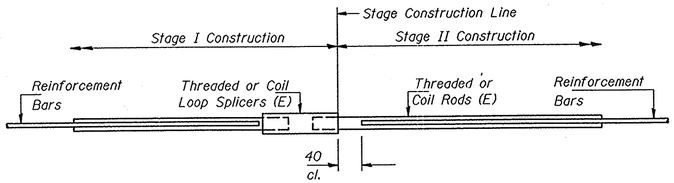
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

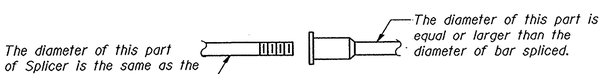
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	48
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Bridge Sheet 3 of 11 Sheets



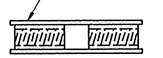
SPLICER DETAIL

Bar Size	No. Req'd. (Splicers)	Location
#15	216	Superstructure
#20	28	Superstructure
#20	160	Abutments
#20	24	Hatched Area



ROLLED THREAD DOWEL BAR

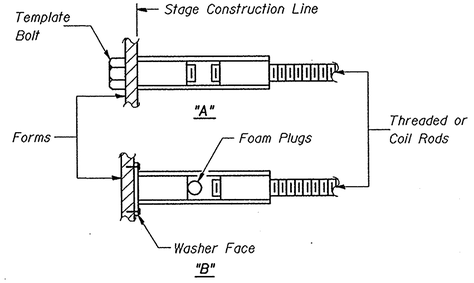
** ONE PIECE



WELDED SECTIONS

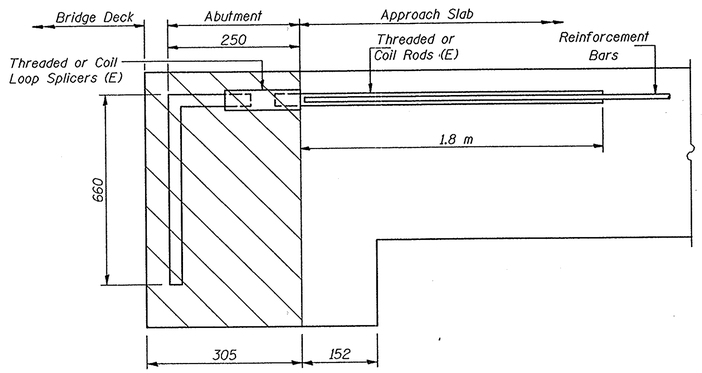
SPLICER ALTERNATIVES

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



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 ASSEMBLY DETAIL FOR ABUTMENT

(160 Required)

20 mm ϕ Bar Splicer Assembly x 1.2 m and 1.8 m Splicer Rods — Minimum Capacity = 100 kN-tension; Minimum Pull-out Strength = 40 kN-tension

NOTES

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

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

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

Splicer (coupler) assembly 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 (Tension in kN) = $1.25 \times 10^{-3} \times fy \times A_t$

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

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

Typical Splicer (Coupler) Assembly Sizes:

#15 bar lap with 20 mm ϕ Splicer (Coupler) x 610 mm Splicer Rods — Minimum Capacity = 100 kN-tension; Minimum Pull-out Strength = 40 kN-tension

#20 bar lap with 25 mm ϕ Splicer (Coupler) x 790 mm Splicer Rods — Minimum Capacity = 150 kN-tension; Minimum Pull-out Strength = 60 kN-tension

#25 bar lap with 30 mm ϕ Splicer (Coupler) x 1.04 m Splicer Rods — Minimum Capacity = 250 kN-tension; Minimum Pull-out Strength = 100 kN-tension

#30 bar lap with 36 mm ϕ Splicer (Coupler) x 1.37 m Splicer Rods — Minimum Capacity = 350 kN-tension; Minimum Pull-out Strength = 140 kN-tension

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

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

REVISIONS	
NAME	DATE
PER B.O.	12/18/01

ILLINOIS DEPARTMENT OF TRANSPORTATION
BAR SPLICER ASSEMBLY
FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT.
HORIZ.
DATE: 08/28/01-RPB
DRAWN BY: BISHOP
DESIGNED BY:BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC.
OF SPRINGFIELD
CONSULTING ENGINEERS
300 OUTER PARK DRIVE
SPRINGFIELD, ILLINOIS 62703
(217) 793-3444, (217) 793-4217 FAX

COMPUTER FILE NO. SHT1501-3
PROJECT 01159
12/18/01-RPB

METPLN - 1:100 8/24/98

DESIGN		
INT.	DATE	REASON

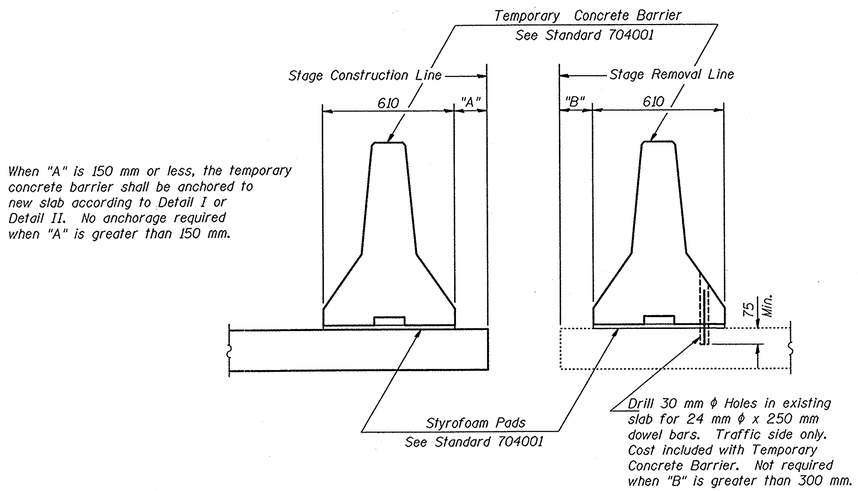
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	49
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Bridge Sheet 4 of 11 Sheets



When "A" is 150 mm or less, the temporary concrete barrier shall be anchored to new slab according to Detail I or Detail II. No anchorage required when "A" is greater than 150 mm.

SECTIONS THRU SLAB

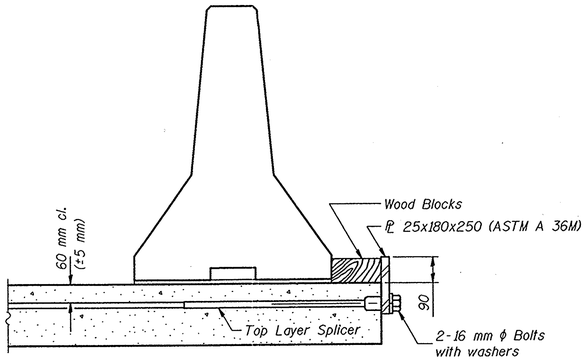
NOTES

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

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

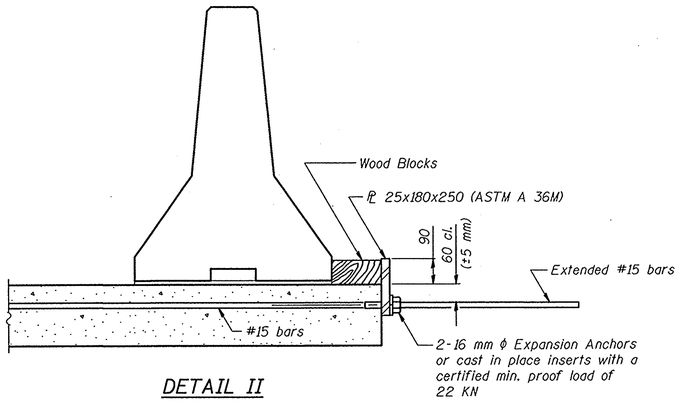
Cost of anchorage included with Temporary Concrete Barrier.

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



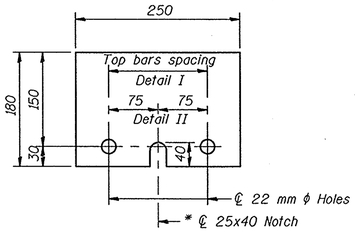
DETAIL I

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



DETAIL II

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



ℙ 25x180x250

* Required only with Detail II

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIERS

FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT. HORIZ.
DATE: 08/28/01-RPB
DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC. OF SPRINGFIELD
CONSULTING ENGINEERS
2020 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62707
(217) 793-3644, (217) 793-3657 FAX

COMPUTER FILE NO. SHT1504-3
PROJECT 01159
11/13/01-RPB

R-27 (M) 4-30-99

METPLN - 1:100 8/24/98

DESIGN		
INT.	DATE	REASON

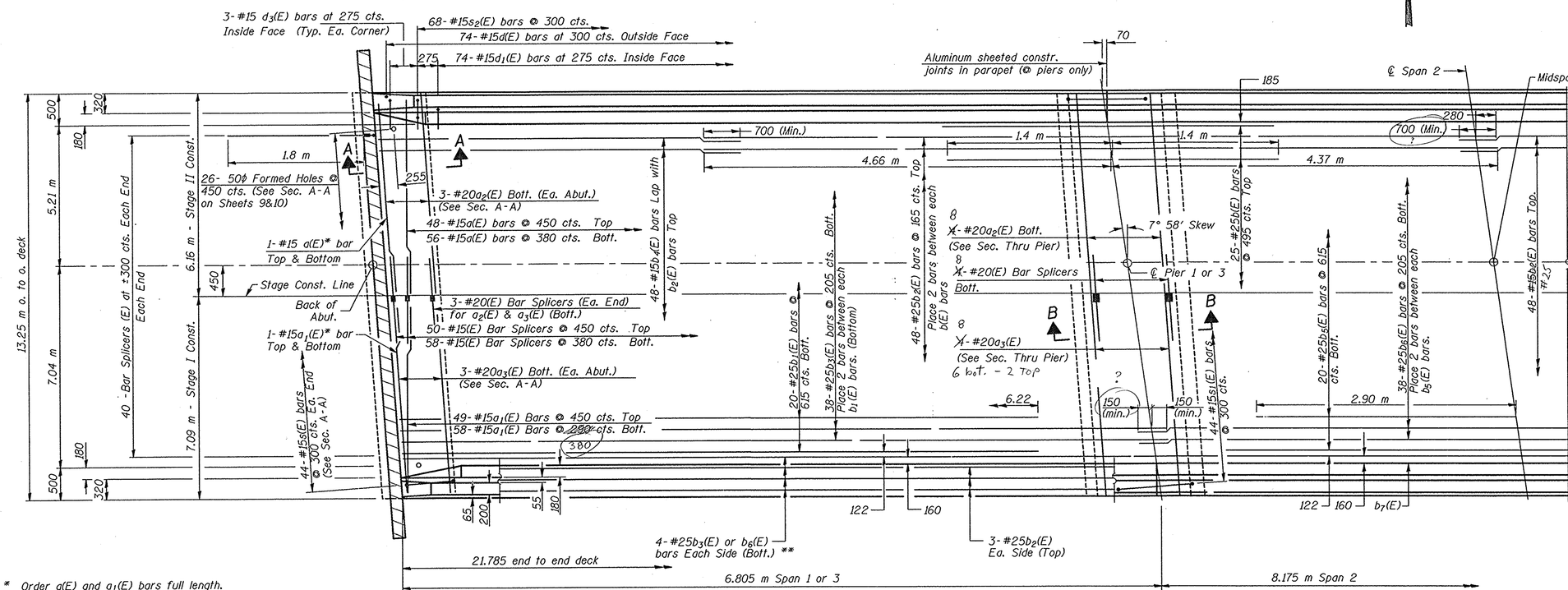
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	50
STA.	——— TO STA. ———			
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Bridge Sheet 5 of 11 Sheets



* Order a(E) and a_1(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

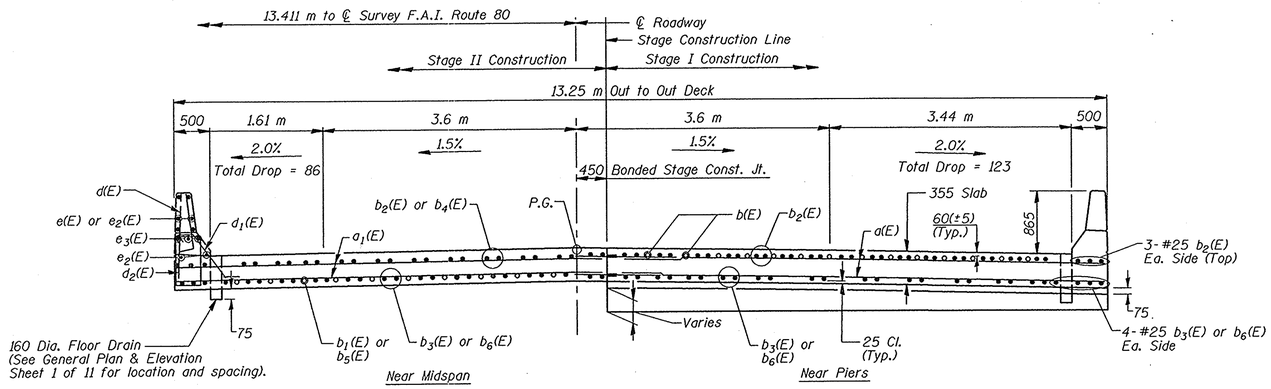
See sheet 9 or 10 of 11 for Sec. A-A.

See sheet 7 of 11 for Sec. B-B.

** b_3(E) Span 1 & 3
b_6(E) Span 2

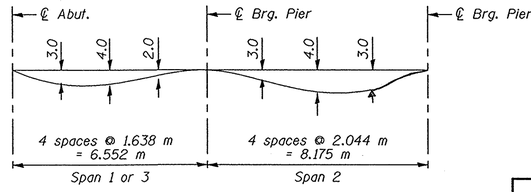
HALF PLAN-EASTBOUND

(Symmetrical by 180° Rotation about midspan)
(Westbound Similar by 180° Rotation about ℄ Roadway)



TYPICAL CROSS SECTION

E.B. (Looking East)
W.B. (Looking West)



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

MINIMUM BAR LAPS

#15	640
#25	810

NOTES

For drain locations see General Plan and Elevation sheet 1 of 11.

Reinforcement Bars designated (E) shall be epoxy coated.

See sheet 6 of 11 for Parapet Reinforcement, Superstructure details and Bill of Materials.

See sheet 3 of 11 for Bar Splicer Details.

All dimensions are in millimeters (mm) unless otherwise noted.

REVISIONS	
NAME	DATE
PER B.O.	12/18/01
ABUT. BARS	12/27/01

ILLINOIS DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE
FAI ROUTE 80 OVER BARBARA CREEK
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT. HORIZ.
DATE: 9/07/01-PAM
DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC. OF SPRINGFIELD
CONSULTING ENGINEERS
2020 SOUTHWIND DRIVE
SPRINGFIELD, ILLINOIS 62703
(217) 793-6614, (217) 793-6207 FAX

COMPUTER FILE NO. SHT1502-3
PROJECT 01159
12/27/01-RPB

SI-2-L (M) 4-30-99

METPLN - 1:100 8/24/98

DESIGN		
INT.	DATE	REASON

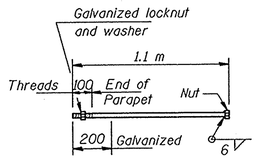
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

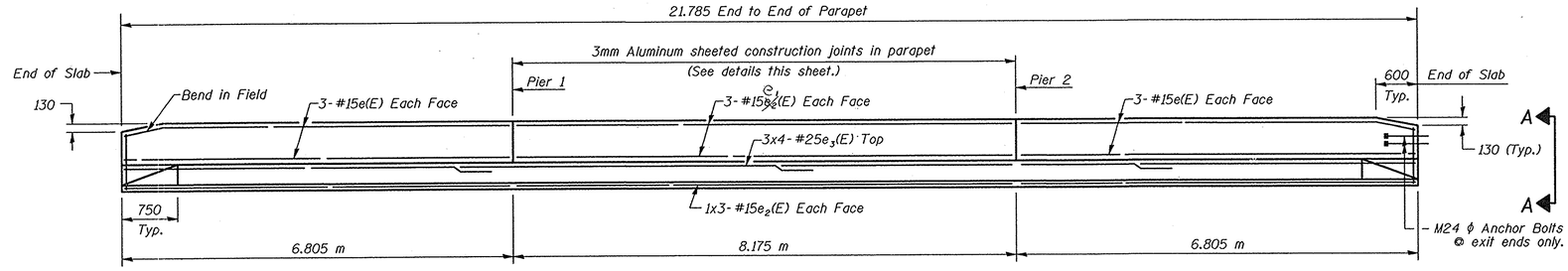
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	51
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

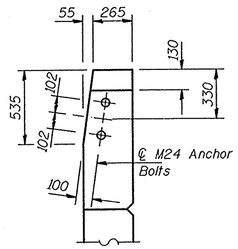
Bridge Sheet 6 of 11 Sheets



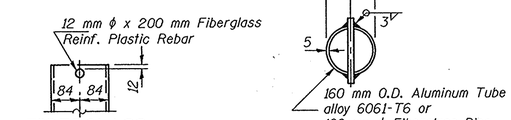
M24 ANCHOR BOLT
(Cost included with Concrete Superstructure)



INSIDE ELEVATION OF PARAPET

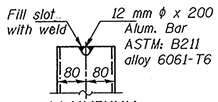


VIEW A-A

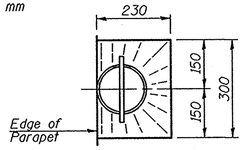


FIBERGLASS PIPE

TOP PLAN
(Showing Aluminum Tube)

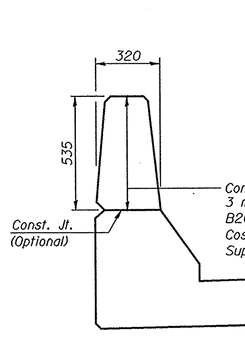


ALUMINUM TUBE

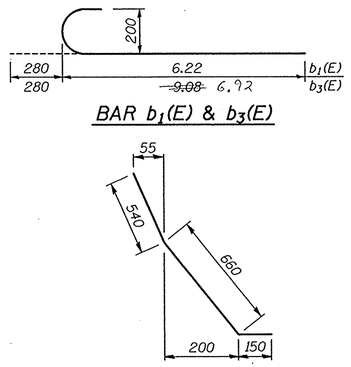


TOP PLAN

FLOOR DRAIN DETAILS

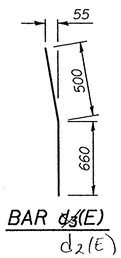


PARAPET JOINT DETAILS



BAR $b_1(E)$ & $b_3(E)$

BAR $d_1(E)$



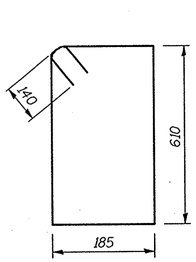
BAR d3(E) d2(E)

Notes:
The exterior surfaces of the floor drains shall be coated or pigmented by the Manufacturer with a color that matches the color of the concrete.

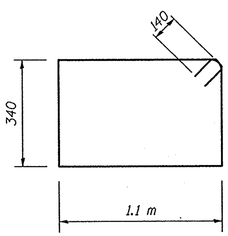
Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 200 MPa minimum.

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

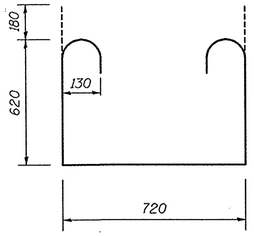
SECTION THRU PARAPET



BAR $s_2(E)$



BAR $s_1(E)$



BAR s(E)

MIN. BAR LAPS
(Parapets)
#15 - 490
#25 - 1.010 m

TWO (2) SUPERSTRUCTURES BILL OF MATERIAL

	Bar	No.	Size	Length (m)	Shape
	a(E)	216	#15	6.08	
	$a_1(E)$	216	#15	7.00	
44	$a_2(E)$	~~28~~	#20	6.14	
44	$a_3(E)$	~~28~~	#20	7.06	
	b(E)	100	#25	2.8	
	$b_1(E)$	80	#25	6.5	
#25	$b_2(E)$	216	~~#15~~ #25	9.03	7.20
	$b_3(E)$	184	#25	~~6.85~~	
	$b_4(E)$	192	#15	2.84	
	$b_5(E)$	40	#25	5.80	
	$b_6(E)$	92	#25	8.48	
	d(E)	296	#15	0.910	
	$d_1(E)$	296	#15	1.35	
	$d_2(E)$	24	#15	1.16	
	e(E)	48	#15	6.72	
24	#15	$e_1(E)$	~~12~~	~~#25~~	~~6.72~~
	$e_2(E)$	24	#15	~~5.80~~	8.10
	$e_3(E)$	48	#25	6.18	7.56
	s(E)	176	#15	2.32	
	$s_1(E)$	176	#15	3.16	
	$s_2(E)$	272	#15	1.87	
	Reinforcement Bars, Epoxy Coated		kg	~~26,970~~	
	Concrete Superstructure		m^3	260.0	

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1 x 2-#15 etc. indicates 1 line of bars with 2 lengths per line.

REVISIONS	
NAME	DATE
PER B.O.	12/18/01

ILLINOIS DEPARTMENT OF TRANSPORTATION
PARAPET DETAILS
FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT. HORIZ.
DATE: 08/28/01-RPB
DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC. OF SPRINGFIELD
CONSULTING ENGINEERS
3600 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62707
(217) 793-5444, (217) 793-6227 Fax

COMPUTER FILE NO. SHT1602-3
PROJECT 01159
12/20/01-RPB

S-1-D (M) 3-31-95
METPLN - 1:100 8/24/98

DESIGN		
INT.	DATE	REASON

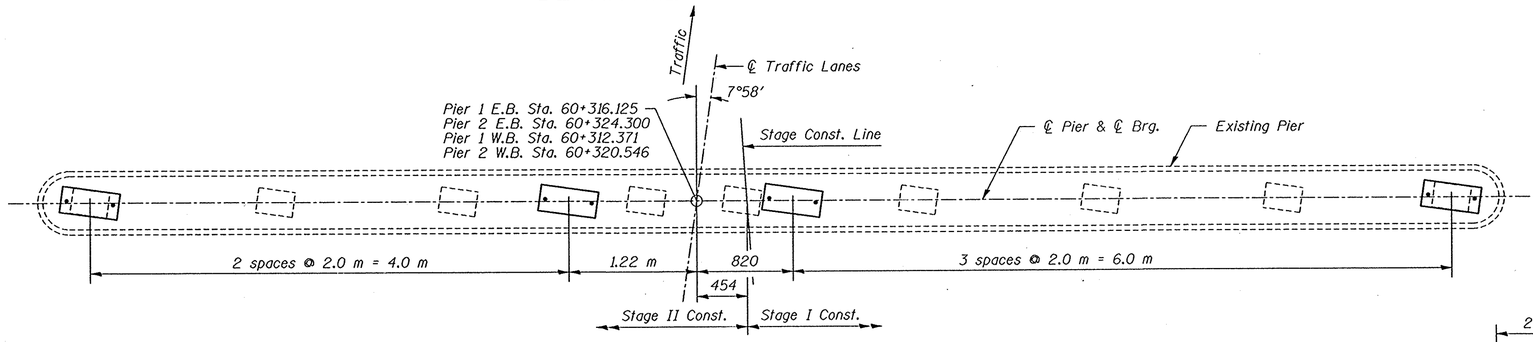
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

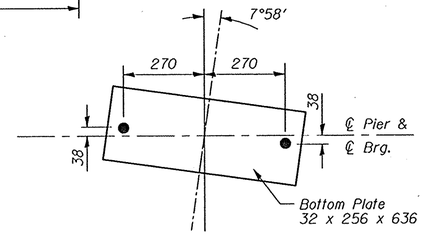
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	52
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

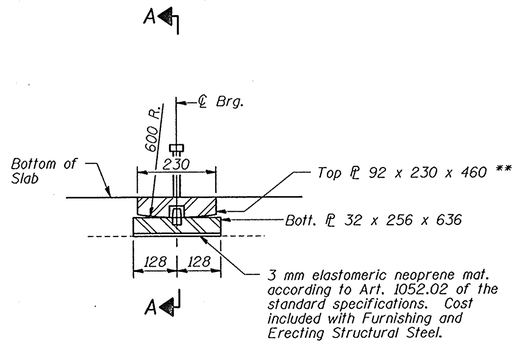
Bridge Sheet 7 of 11 Sheets



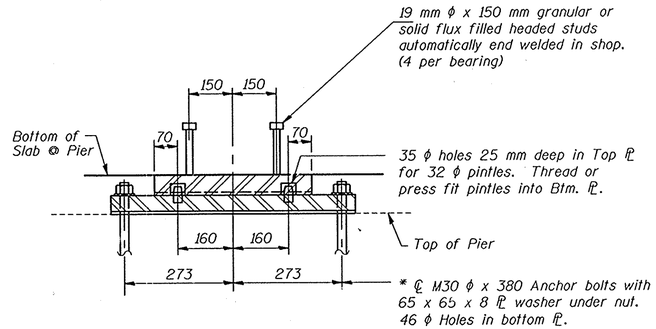
TOP PLAN PIERS 1 & 2



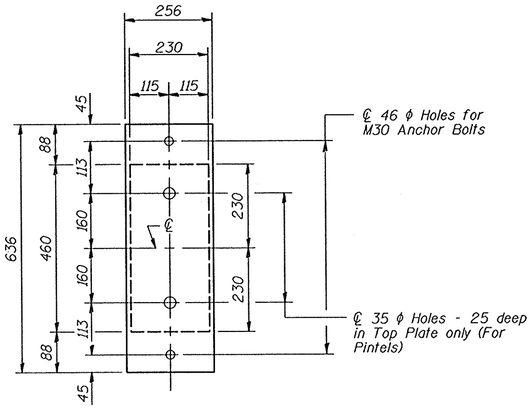
ANCHOR BOLT LOCATION
(Typical all Piers)



SECTION AT PIER



SECTION A-A



PLAN OF
TOP & BOTTOM PLATES

* Anchor bolts shall be drilled and grouted into place and the bearings set prior to superstructure concrete placement.

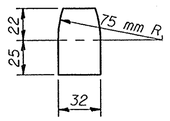
See sheet 11 of 11 for anchor bolt installation.

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

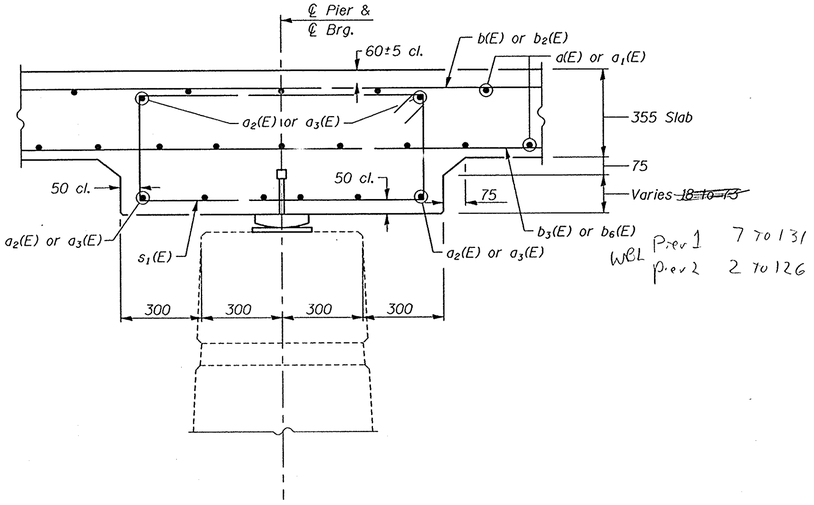
Removal of existing bearings included in the cost of "Removal of Existing Superstructure"

Burn existing anchor bolts flush with existing concrete surface. Grind flush if necessary and seal with epoxy. Cost included with removal of existing Superstructures.

** Equivalent stacked plates, with an all around partial penetration weld, can be used in lieu of a single plate. The minimum plate thickness shall be 38mm.



PINTLE



SECTION B-B
℄ PIER.

WBL Prev 1 7 to 131
Prev 2 2 to 126

FIXED BEARING

PI-2FB (M) 7-1-94

REVISIONS	
NAME	DATE
PER B.O.	12/18/01
ABUT. BARS	12/27/01

ILLINOIS DEPARTMENT OF TRANSPORTATION
PIER & BEARING DETAILS
FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT.
HORIZ.
DATE: 08/28/01-RPB
DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC.
OF SPRINGFIELD
CONSULTING ENGINEERS
2500 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62707
(217) 793-5644, (217) 793-5237 FAX

COMPUTER FILE NO.
SHT1607-3
PROJECT 01159
03/20/02-RPB

METPLN - 1:100 8/24/98

DESIGN		
INT.	DATE	REASON

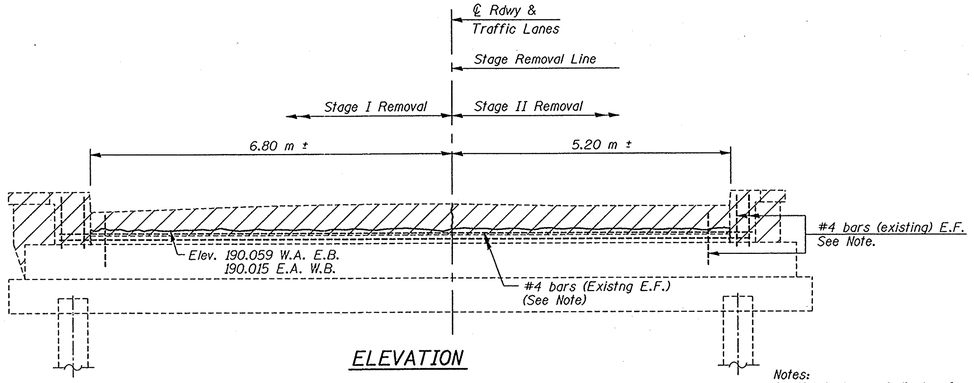
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

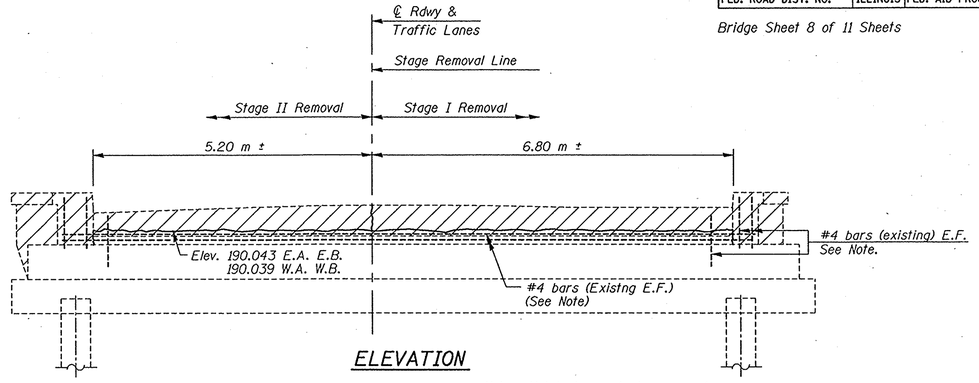
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	53
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Bridge Sheet 8 of 11 Sheets



ELEVATION

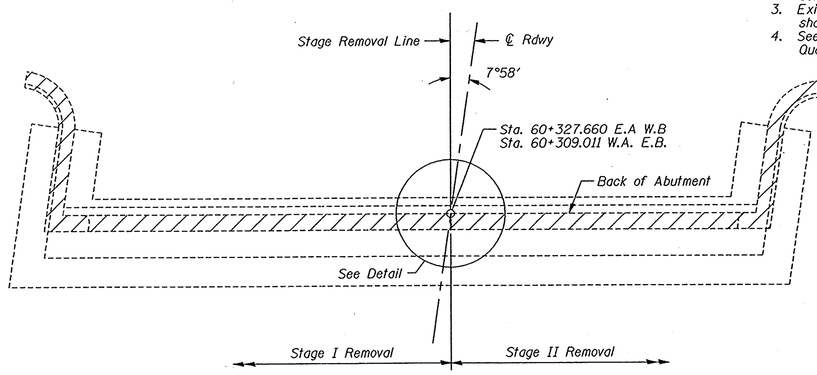
Note: Hatched area to be removed to elevation shown in Wingwall Removal.



ELEVATION

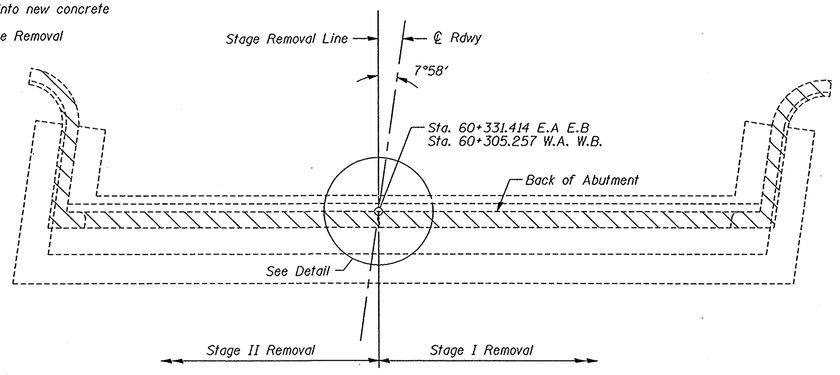
Note: Hatched area to be removed to elevation shown and in Wingwall Removal.

Notes:
1. Hatched area indicates Concrete Removal.
2. Existing Reinf. extending into new concrete shall be cleaned, straightened and incorporated into new construction. Cost included with Concrete Removal.
3. Existing Reinf. not extending into new concrete shall be cut off flush.
4. See Sheet 9 of 11 for Concrete Removal Quantity.



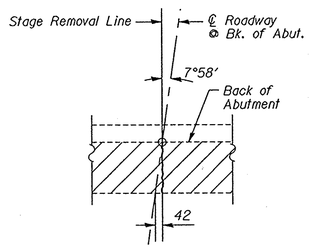
PLAN

West Abutment (E.B.)
East Abutment (W.B.)

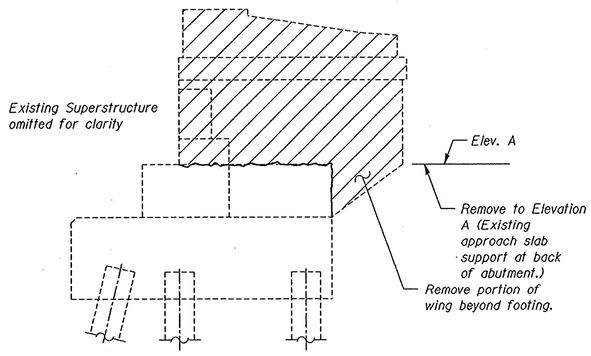


PLAN

East Abutment (E.B.)
West Abutment (W.B.)



DETAIL



WINGWALL REMOVAL

(Typical)

ELEVATION A

Location	Elev.
W. Abut. W.B.	190.036
E. Abut. W.B.	190.015
W. Abut. E.B.	190.059
E. Abut. E.B.	190.043

REVISIONS	
NAME	DATE
PER B.O.	12/18/01

ILLINOIS DEPARTMENT OF TRANSPORTATION
ABUTMENT REMOVAL
FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT. HORIZ.
DATE: 08/28/01-RPB
DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC.
OF SPRINGFIELD
CONSULTING ENGINEERS
3RD CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62707
(217) 793-2244, (217) 793-4277 FAX

COMPUTER FILE NO. SHT1609-3
PROJECT 01159
12/18/01-RPB

DESIGN		
INT.	DATE	REASON

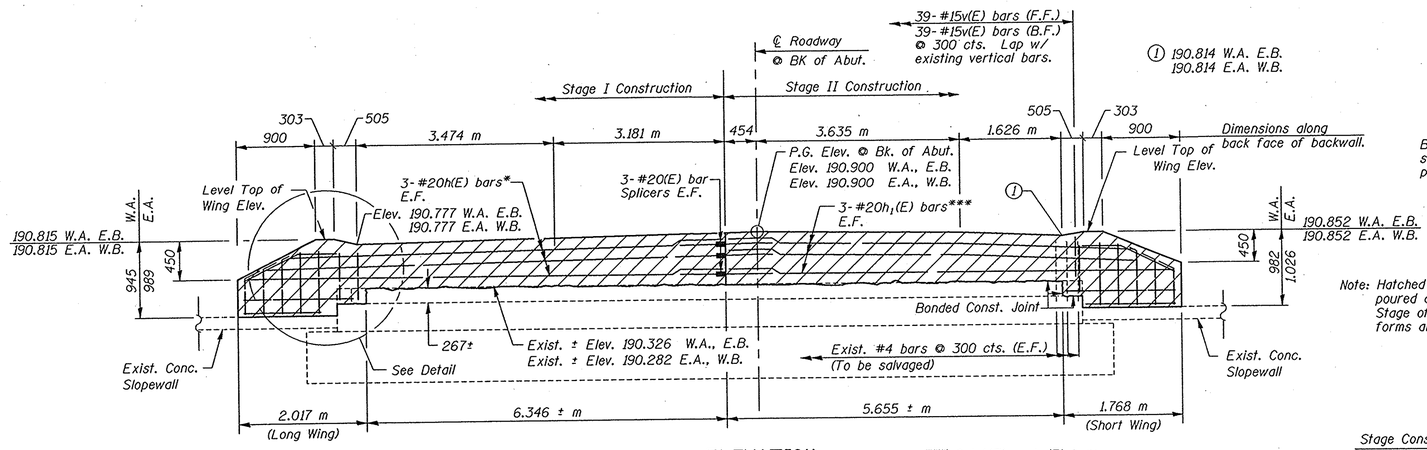
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	54
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Bridge Sheet 9 of 11 Sheets

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

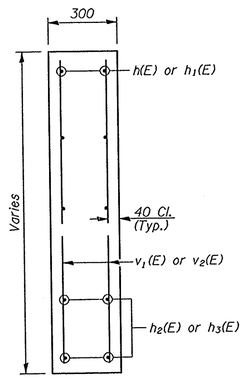


Bars indicated to be reused shall be cleaned and straightened prior to placing new concrete.

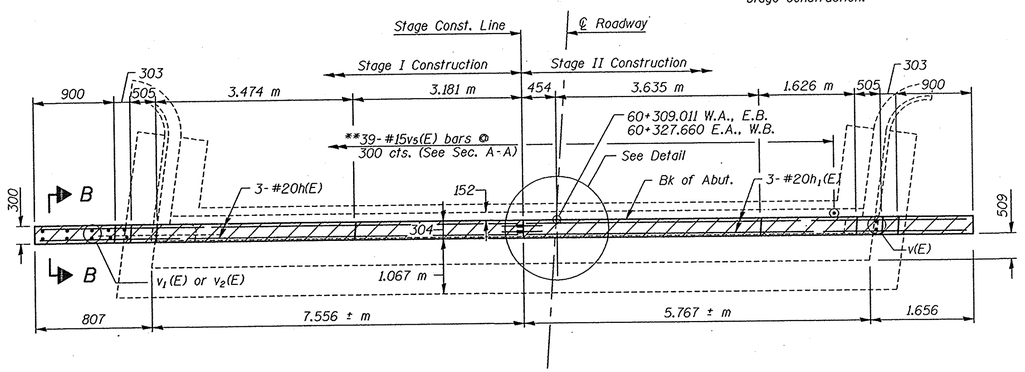
Note: Hatched area to be poured after each Stage of Superstructure forms are removed.

ELEVATION

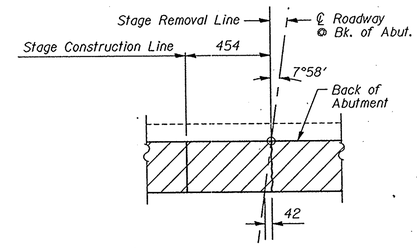
*** Cut h(E) or h_1(E) bars as required. Cut end to be opposite end of stage construction.



SECTION B-B



PLAN



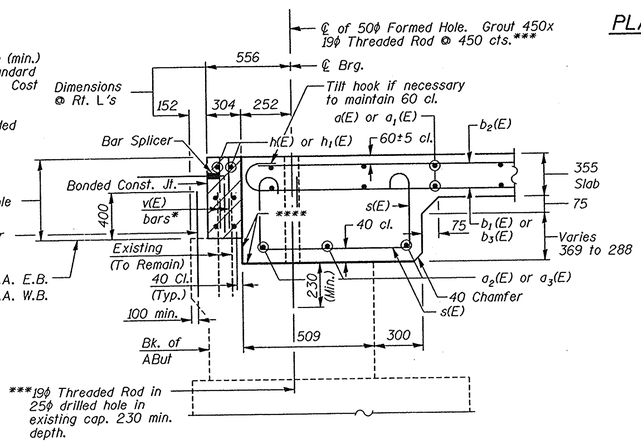
DETAIL

*Lap w/ existing vertical reinf.

**Drill and grout #15v5(E) bars @ 300 cts. in 230mm (min.) holes as shown according to Section 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Reinforcement Bars, Epoxy Coated.

***Drill to miss existing reinforcement. Cost of threaded rod included with Concrete Superstructures. Grout to be approved by the Engineer.

****Roofing Felt 4.4 kg/m² (Cost included with Concrete Structures)

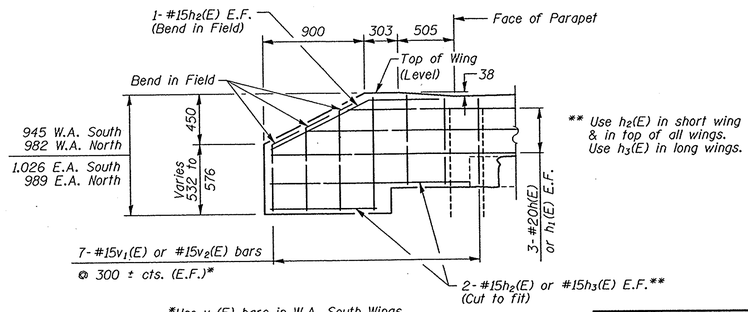


SECTION A-A

Hatched area to be poured after superstructure slab is in place.

TABLE OF DIMENSIONS

Abutment	@ ℄	@ Outside	@ Inside
W.A. E.B.	574	451	488
E.A. W.B.	615	492	529



*Use v_1(E) bars in W.A. South Wings
Use v_2(E) bars in other 3 Wings

WINGWALL DETAIL

(Typical - Each Wing)

BILL OF MATERIALS
WEST ABUT. (E.B.)
EAST ABUT. (W.B.)

Bar	No.	Size	Length (m)	Shape
h(E)	12	#20	8.30	——
h_1(E)	12	#20	7.40	——
h_2(E)	12	#15	1.72	——
h_3(E)	8	#15	1.96	——
v(E)	156	#15	0.400	——
v_1(E)	14	#15	0.900	——
v_2(E)	42	#15	0.940	——
v_5(E)	78	#15	0.800	——
Concrete Removal			m^3	6.1
Concrete Structures			m^3	8.1
Reinforcement Bars, Epoxy Coated			kg	780
Bar Splicers			Each	12

REVISIONS	
NAME	DATE
PER B.O.	12/18/01
ABUT. BARS	12/27/01
WINGWALL QTYS.	1/23/02

ILLINOIS DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS

FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT.
HORIZ.
DATE: 08/28/01-RPB

DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC. OF SPRINGFIELD
CONSULTING ENGINEERS
3501 CONSTITUTION DRIVE, SPRINGFIELD, ILLINOIS 62707
(217) 793-5454, (217) 793-6217 FAX

COMPUTER FILE NO. SHT1610-3
PROJECT 01159
1/23/02-RPB

METPLN - 1:100 8/24/98

F.A.I. RTE. 80 - BUREAU COUNTY

DESIGN		
INT.	DATE	REASON

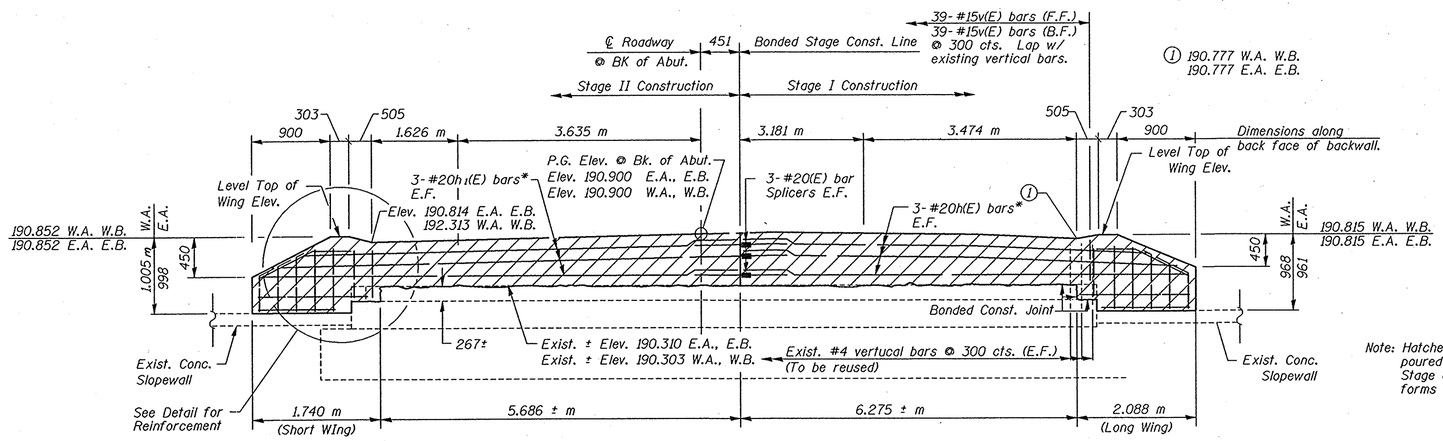
PLOTS & CHECKS			
INT.	DATE	NO.	REASON

CHECKS		
INT.	DATE	REASON

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	55
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Bridge Sheet 10 of 11 Sheets

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

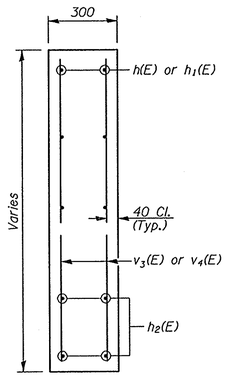


ELEVATION

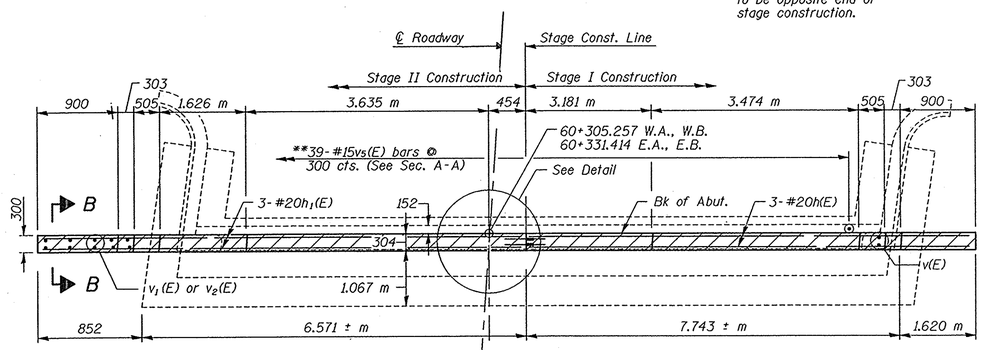
* Cut h(E) or h_1(E) bars as required. Cut end to be opposite end of stage construction.

Bars indicated to be reused shall be cleaned and straightened prior to placing new concrete.

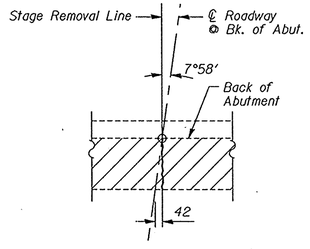
Note: Hatched area to be poured after each Stage of Superstructure forms are removed.



SECTION B-B



PLAN



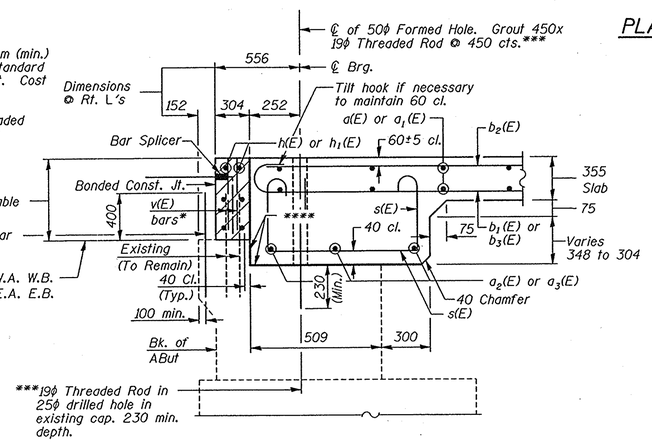
DETAIL

*Lap w/ existing vertical reinf.

**Drill and grout #15vs(E) bars @ 300 cts. in 230mm (min.) holes as shown according to Section 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Reinforcement Bars, Epoxy Coated.

***Drill to miss existing reinforcement. Cost of threaded rod included with Concrete Superstructures. Grout to be approved by the Engineer.

****Roofing Felt 4.4 kg/m² (Cost included with Concrete Structures)



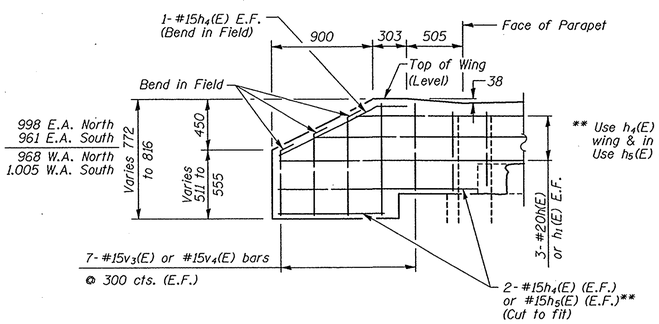
SECTION A-A

Hatched area to be poured after superstructure slab is in place.

TABLE OF DIMENSIONS

Abutment	@ ℄	@ Outside	@ Inside
W.A. W.B.	597	474	511
E.A. E.B.	590	467	504

Hatched area to be poured after superstructure forms have been removed.



*Use v_3(E) bars in 998 & 1.005 Wings
Use v_4(E) bars in 901 & 968 Wings

WINGWALL DETAIL

(Typical - Each Wing)

BILL OF MATERIALS
EAST ABUT. (E.B.)
WEST ABUT. (W.B.)

Bar	No.	Size	Length (m)	Shape
h(E)	12	#20	8.30	
h_1(E)	12	#20	7.40	
h_4(E)	12	#15	1.70	
h_5(E)	8	#15	2.0	
v(E)	156	#15	0.450	
v_3(E)	28	#15	0.950	
v_4(E)	28	#15	0.910	
vs(E)	78	#15	0.800	
Concrete Removal			m^3	6.1
Concrete Structures			m^3	8.1
Reinforcement Bars, Epoxy Coated			kg	790
Bar Splicers			Each	12

REVISIONS	
NAME	DATE
PER B.O.	12/18/01
ABUT. BARS	12/27/01
WINGWALL QTYS.	1/23/02

ILLINOIS DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS

FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT. HORIZ.
DATE: 08/28/01-RPB
DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC. OF SPRINGFIELD
CONSULTING ENGINEERS
350 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62707
(217) 793-4444 (217) 793-4227 FAX

COMPUTER FILE NO. SHT1608-3
PROJECT 01159
1/23/02-RPB

METPLN - 1:100 8/24/98

DESIGN		
INT.	DATE	REASON

PLOTS & CHECKS			
INT.	DATE	NO.	REASON

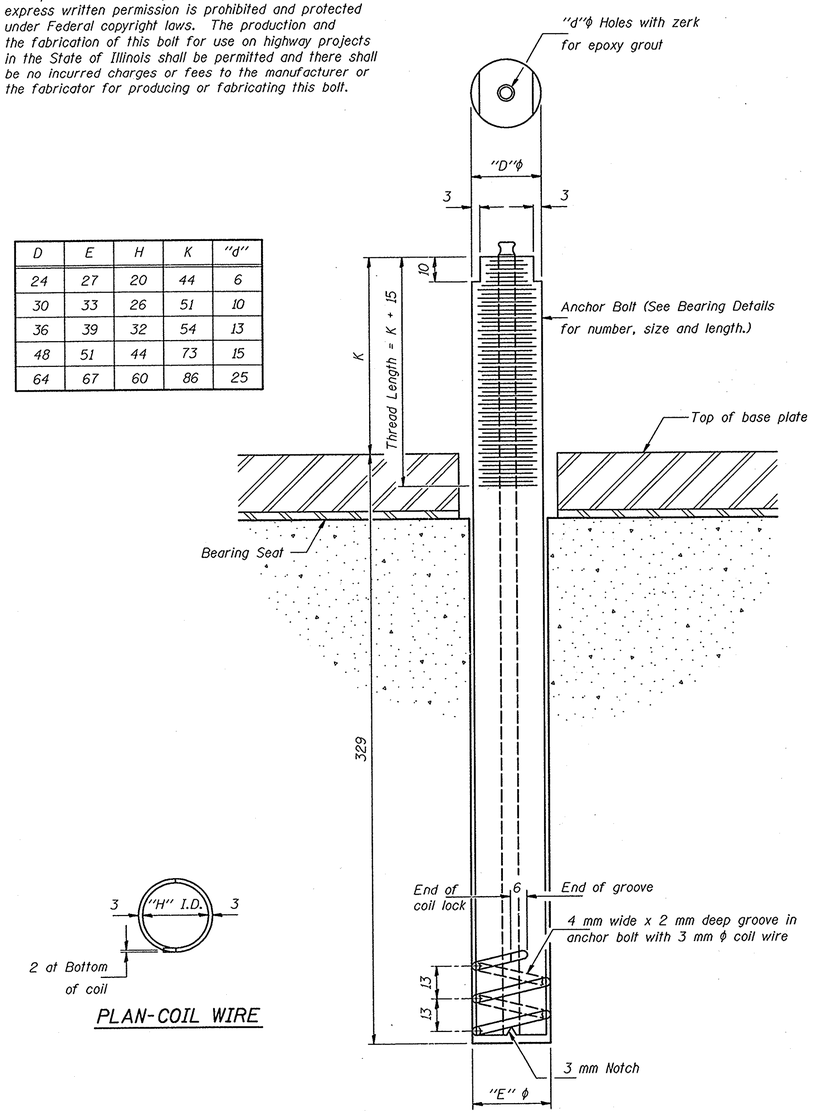
CHECKS		
INT.	DATE	REASON

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	06-1B-1R	BUREAU	94	56
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

Bridge Sheet 11 of 11 Sheets

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



PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

GENERAL NOTES

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

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

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

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

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

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

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

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

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

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.

2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

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

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

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

Location	Type
Pier	A307

ASTM F 1554 (Fy = 724 MPa), ASTM A 449 and AASHTO M 314 (Fy = 724 MPa) anchor bolts may be substituted for the anchor bolts shown above.

REVISIONS	
NAME	DATE
PER B.O.	12/18/01

ILLINOIS DEPARTMENT OF TRANSPORTATION
ANCHOR BOLT DETAILS
FAI ROUTE 80 OVER BARBARA DITCH
SECTION 06-1B-1R
BUREAU COUNTY
STATION 60+318.334
S.N. 006-0003 (E.B.)
S.N. 006-0004 (W.B.)

SCALE: VERT.
HORIZ.
DATE: 09/24/01-RPB

DRAWN BY: BISHOP
DESIGNED BY: BRADFORD
CHECKED BY: FITCH

GREENE & BRADFORD, INC.
OF SPRINGFIELD
CONSULTING ENGINEERS
900 CONSTITUTION DRIVE
SPRINGFIELD, ILLINOIS 62703
(217) 793-3644, (217) 793-3257 Fax

COMPUTER FILE NO. SHT1503-3
PROJECT 01159
12/18/01-RPB

ABB-1 (M) 4-30-99
METPLN - 1:100 8/24/98

F.A.I. RTE. 80 - BUREAU COUNTY