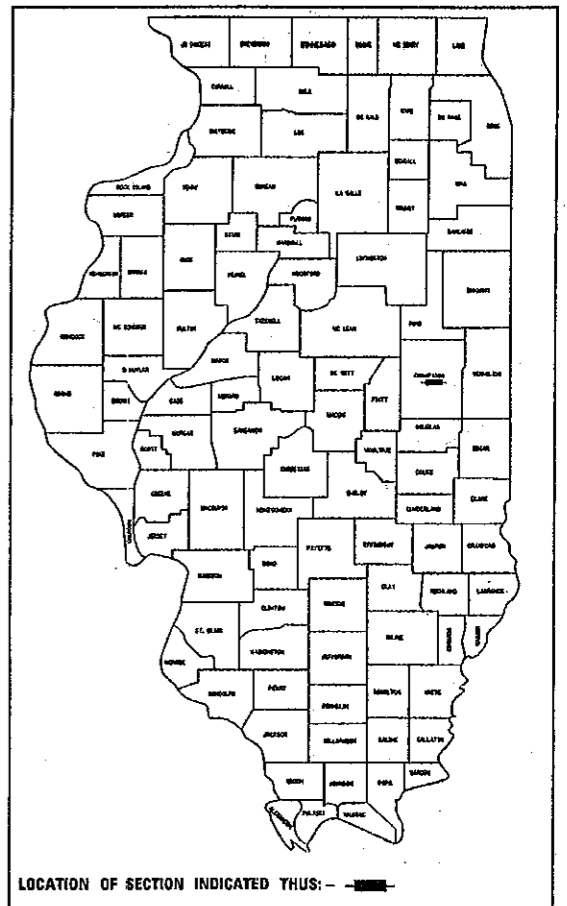


FAI ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74		CHAMPAIGN	115	1

2015-1-RS-1,14-1(R)RS & 6RS-3 = 116

D-95-070-00



STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
 HIGHWAY IMPROVEMENT**

1-20-06 Letting, Item 69

FOR INDEX OF SHEETS, SEE SHEET NO. 2
 FOR SUMMARY OF QUANTITIES, SEE SHEETS NO. 6 - 9

AS-BUILT PLANS

Resident: Kenneth D. Crawford
 Contractor: Champaign Asphalt

Date Started: 4-17-2006
 Date Completed: 4/30/2007

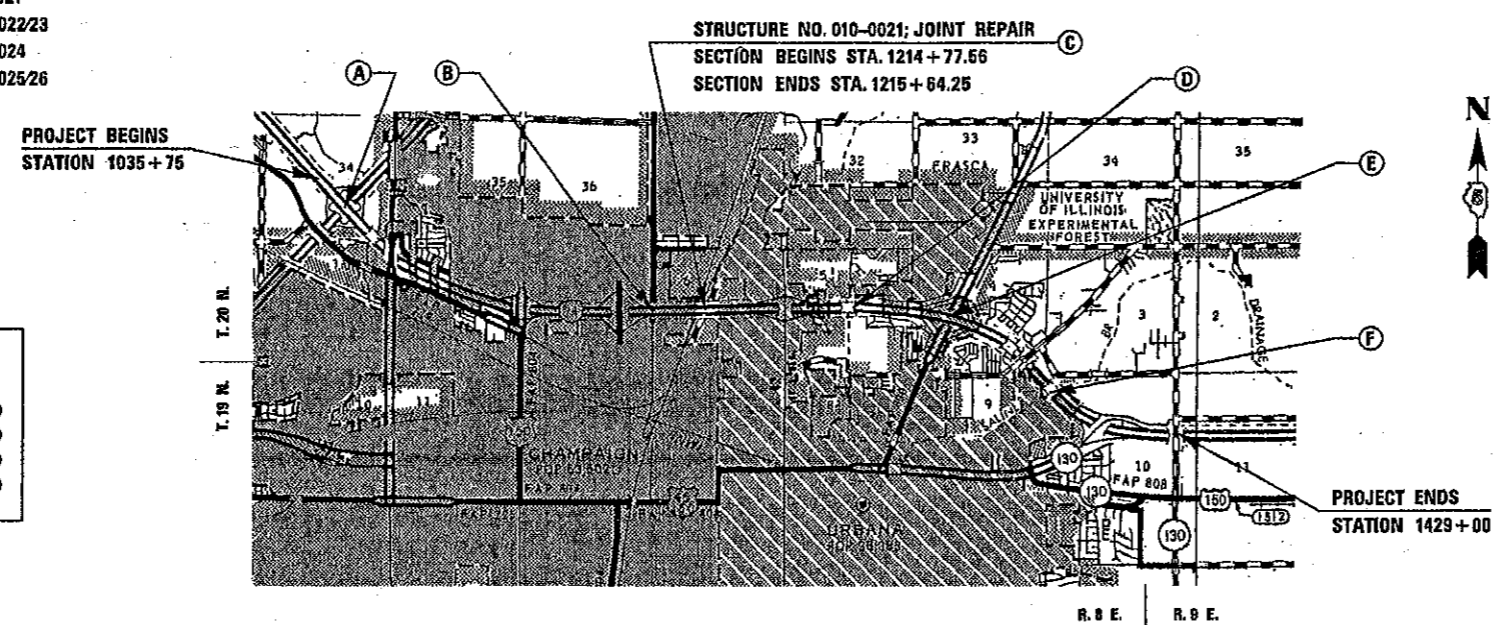
SCALES
 PLAN 1"=100'
 PROFILE HORIZ. N/A
 PROFILE VERT. N/A
 CROSS SECTIONS 1"=5' HORIZONTAL 1"=2' VERTICAL

**SECTION 10(5-1-RS-1,14-1(R)RS & 6RS-3)
 CHAMPAIGN COUNTY
 PROJECT IM-HS-74-5(154)178**

C-95-134-00

RESURFACING FROM 0.5 MILE WEST OF F.A.I. 57 TO IL 130 IN URBANA

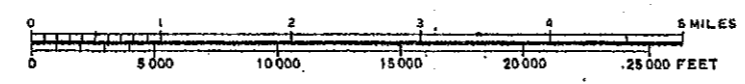
- PAVING OMISSIONS**
- (A) STA. 1059 + 55.66 TO STA. 1083 + 15.83; S.N. 010-001819
 - (B) STA. 1188 + 83.64 TO STA. 1201 + 28.89; S.N. 010-0020
 - (C) STA. 1214 + 77.68 TO STA. 1223 + 01.68; S.N. 010-0021
 - (D) STA. 1279 + 20.00 TO STA. 1280 + 70.00; S.N. 010-002223
 - (E) STA. 1320 + 35.74 TO STA. 1322 + 80.08; S.N. 010-0024
 - (F) STA. 1372 + 04.45 TO STA. 1374 + 26.36; S.N. 010-002526



ADT - 2005

LEG "A" W. OF I-57 AND E. OF US 45	32,800
LEG "B" I-57 TO PROSPECT AVE	38,900
LEG "C" PROSPECT AVE TO NEIL ST	47,000
LEG "D" NEIL ST TO LINCOLN AVE	52,300

**DESIGN DESIGNATION
 RESURFACING**



TOTAL LENGTH OF SECTION & PROJECT = 39,325.00 FEET = 7.448 MILES
 NET LENGTH OF SECTION & PROJECT = 37,322.80 FEET = 7.069 MILES

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED Oct 31 20 05

Donald C. Gering
 DEPUTY DIRECTOR OF HIGHWAYS, REGION THREE ENGINEER

December 9, 2005
Mike Hine
 ENGINEER OF DESIGN AND ENVIRONMENT

December 9, 2005
Eric Harshbarger
 DEPUTY DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

FOR UNDERGROUND UTILITY
 LOCATIONS CALL
 TOLL FREE J.U.L.I.E. TELEPHONE NO.
 1-800-892-0123

U.S. DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____

DIVISION ADMINISTRATOR DATE

CONTRACT NO. 70141

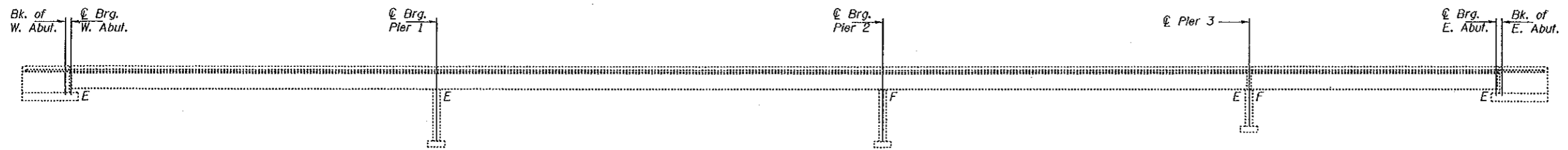
FAI ROUTE 74 SECTION 10(5-1-RS-1,14-1(R)RS & 6RS-3) CHAMPAIGN COUNTY

PROJECT ENGINEER: TIM BRANDENBURG (217)465-4181
 SQUAD LEADER: MICHAEL LEROY

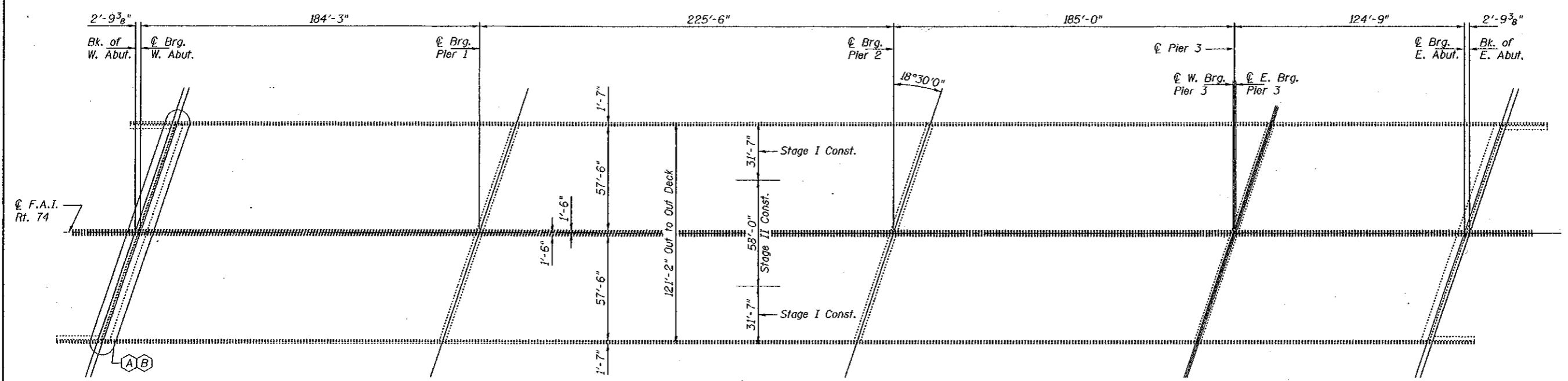
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
		Champaign	72	10 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Contract No. 70141



ELEVATION



PLAN

- (A) Remove and Replace Finger Plate
- (B) Remove and Replace Abutment Backwall

GENERAL NOTES

All finger plates and stools shall conform to AASHTO M270 Gr. 50. All other structural steel shall conform to AASHTO Classification M270 Gr. 36.
 Calculated weight of new structural steel Grade 36 = 4770 lbs.
 Grade 50 = 45,930 lbs.
 Fasteners shall be high strength bolts. Bolts 3/4" ϕ , open holes 13/16" ϕ , unless noted otherwise.
 Reinforcement bars shall conform to the requirements of AASHTO M-31 or M322 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.
 Finger Plate Expansion Joints shall be assembled in the proper position with the ends in place and shall be left assembled for shop inspection. The finger plates shall be flame cut as provided in Article 505.04(k) of the Standard Specifications.
 Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Furnishing and Erecting Structural Steel.
 Prior to pouring the new concrete deck, all loose rust, loose mill scale and other loose potentially detrimental foreign material shall be removed from the surface of the girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.
 Cost of removal and/or re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included in the cost of Furnishing and Erecting Structural Steel.
 The existing structural steel coating contains lead. The contractor should take appropriate precautions to deal with the presence of lead on the project.
 Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Removal	Pound	43,270
Furnishing and Erecting Structural Steel	L.S.	1
Concrete Removal	Cu. Yd.	371.3
Concrete Superstructure	Cu. Yd.	22.7
Reinforcement Bars, Epoxy Coated	Pound	13,560
Bar Splicers	Each	218
Fabric Reinforced Elastomeric Trough	Foot	131
Concrete Structures	Cu. Yd.	69.8
Temporary Sheet Piling	Sq. Ft.	430
Structure Excavation	Cu. Yd.	420
Porous Granular Embankment	Cu. Yd.	420
Mechanical Splicers	Each	248



EXPIRES 11-30-2006

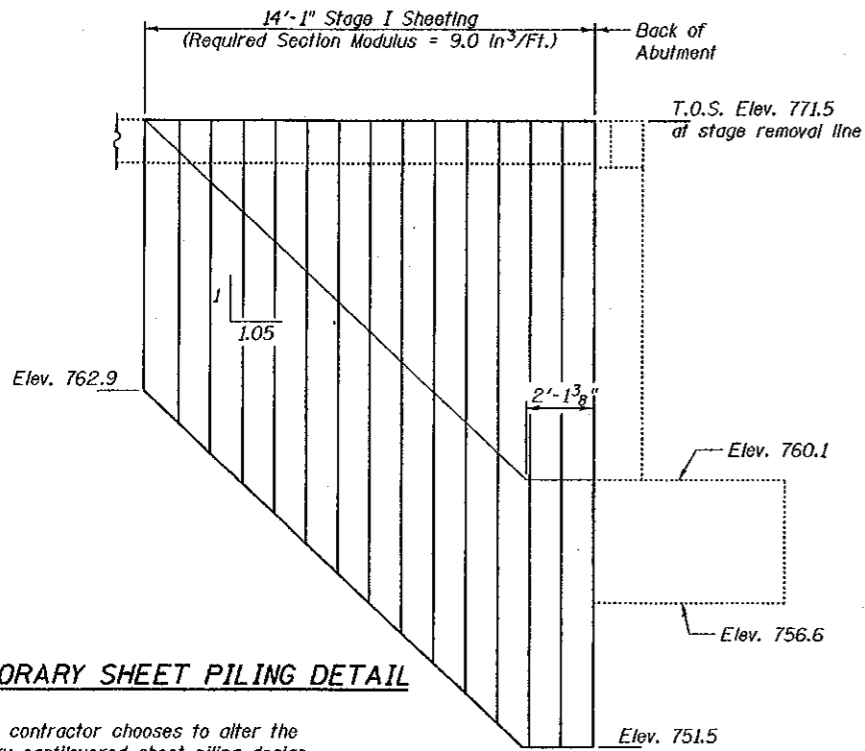
DESIGNED	M. J. Full
CHECKED	Raimi Polina
DRAWN	Polina
CHECKED	M.J.T.

EXAMINED	December 7, 2005	John A. Morris
PASSED		Robert E. Anderson

PLAN AND ELEVATION
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
		Champaign	73	2
10 SHEETS				
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 70141	



TEMPORARY SHEET PILING DETAIL

Notes:
If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

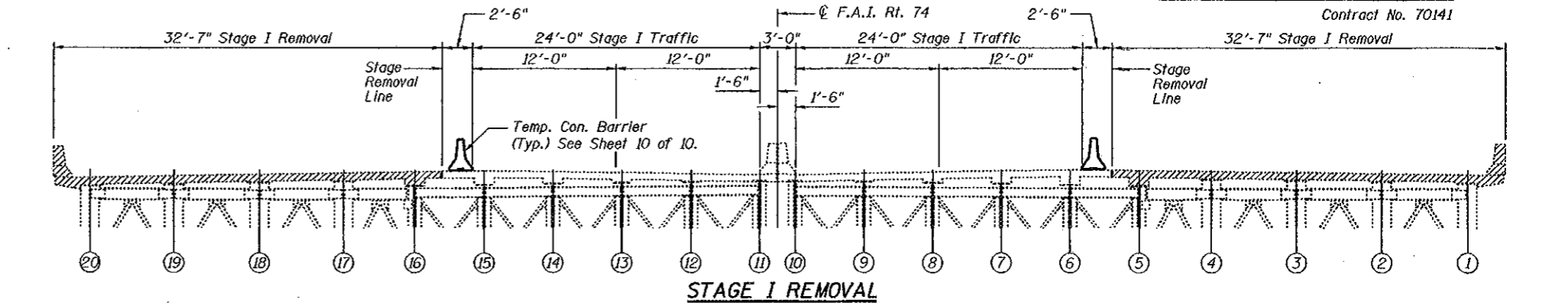
Backfill with uncompacted porous granular embankment with a gradation of CA-5 or CA-7 by Bridge Contractor after superstructure is in place. Limits shall be 1'-0" from the end of each wingwall.

Excavation for placing Porous Granular Embankment is paid for as Structure Excavation.

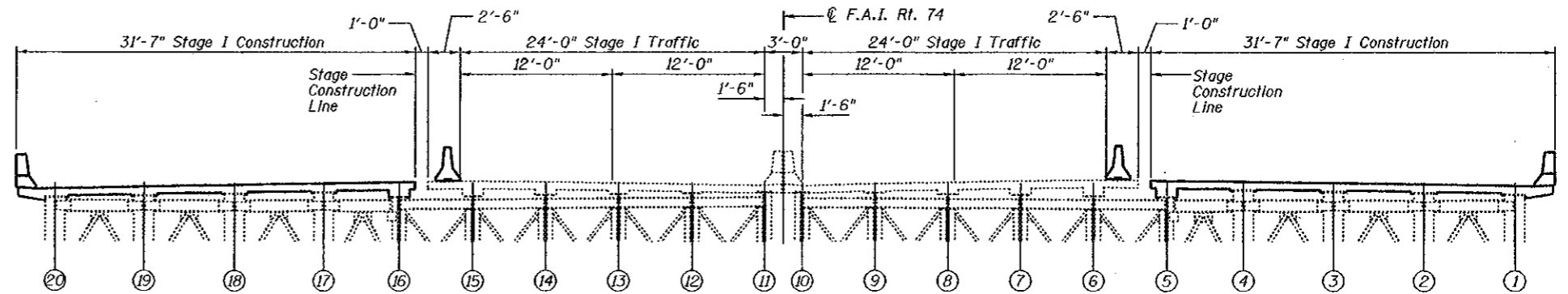
Geotechnical fabric for french drains. Included in the cost of Porous Granular Embankment.

A 6" ϕ perforated pipe shall be situated at the bottom of an approximate 2'-0" x 2'-0" area of porous granular embankment. The 2'-0" x 2'-0" area shall be wrapped completely in geotechnical fabric for french drains. Extend pipe parallel with the cap until intersecting with the sideslope. Pipes shall drain onto concrete headwalls (Article 601.05 of the Standard Specifications and Highway Standard 60110). Included in the cost of Porous Granular Embankment.

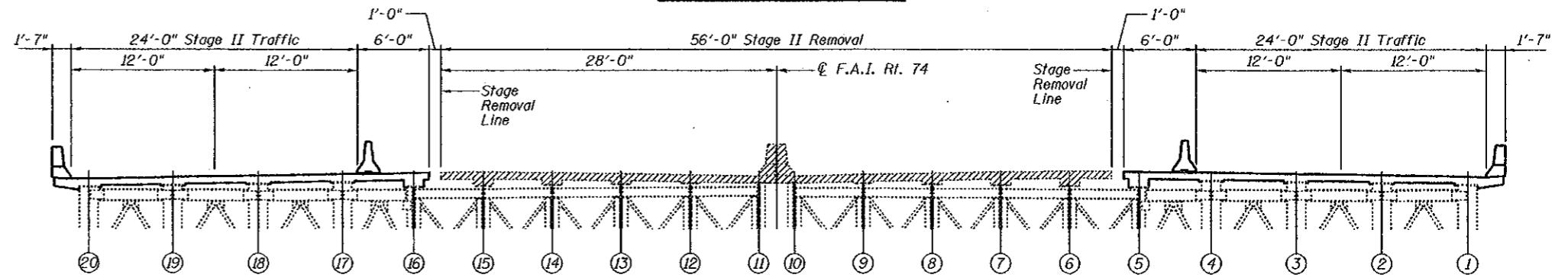
DRAIN DETAIL AT ABUTMENT



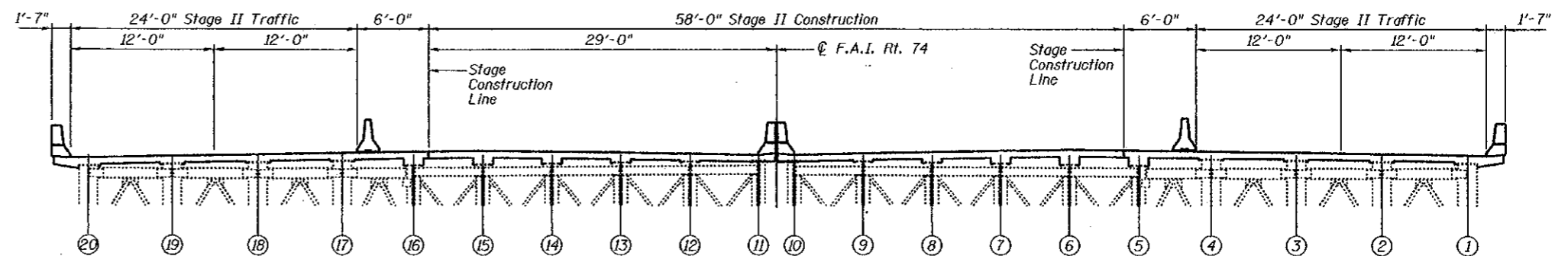
STAGE I REMOVAL



STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION

STAGE CONSTRUCTION DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

Notes:
All stage sections looking west.

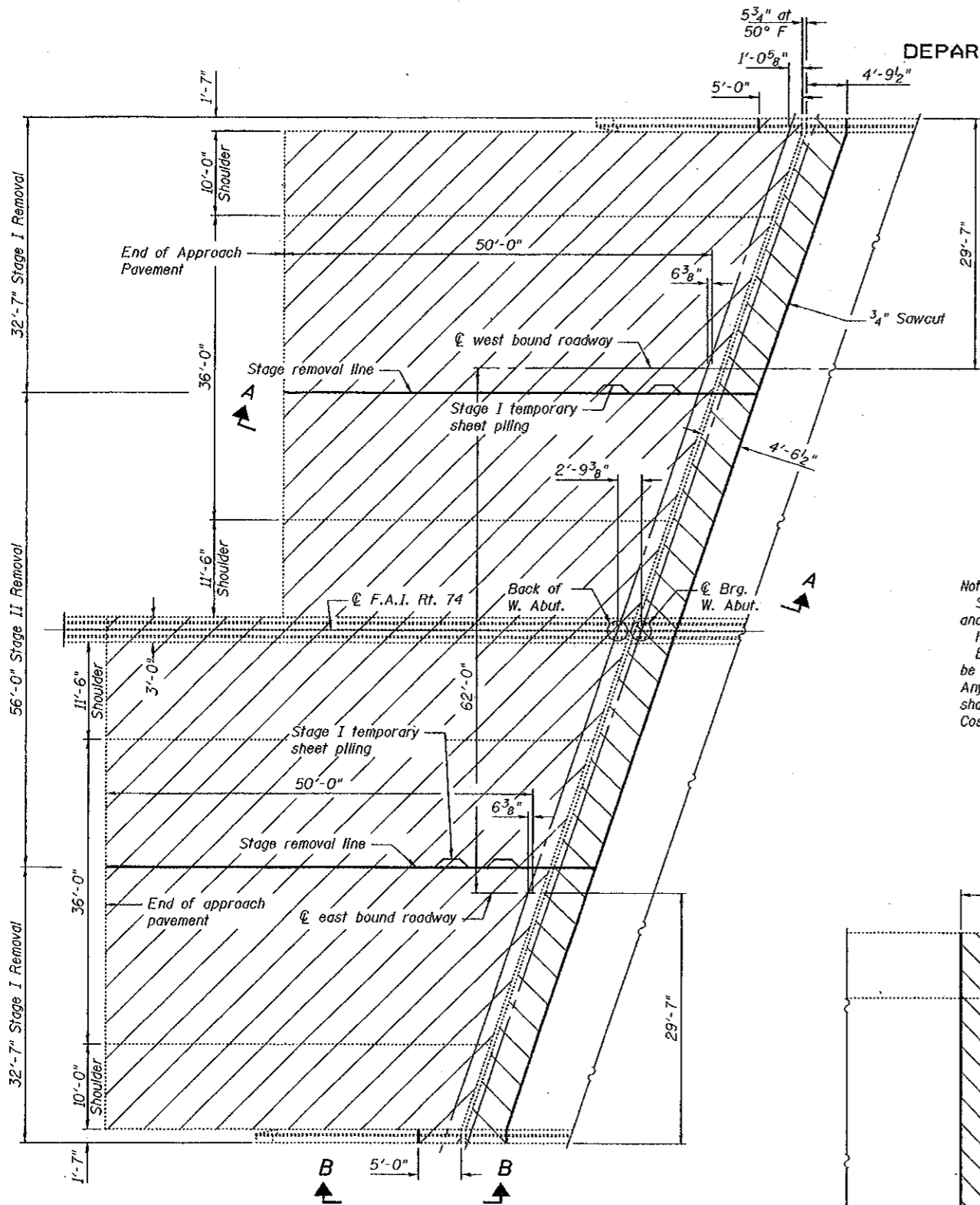
DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T. D.A.B.

EXAMINED	December 7, 2005 John A. Morris ENGINEER OF STRUCTURAL SERVICES
PASSED	Ralph E. Anderson ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

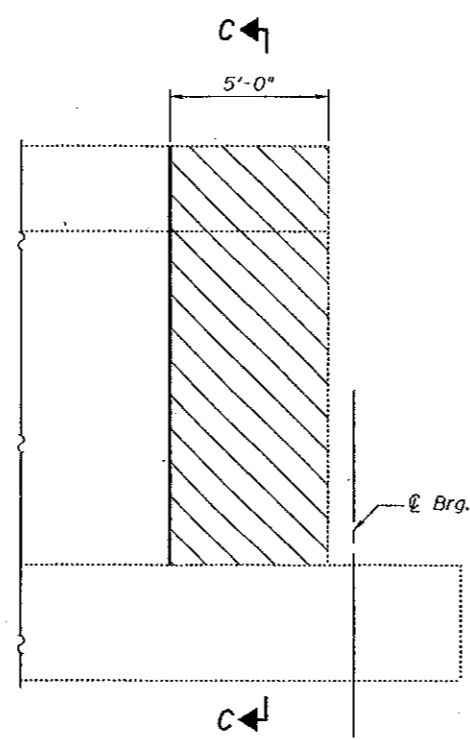
ROUTE NO.	SECTION	COUNTY	SHEET	TOTAL	SHEET NO. 3
		Champaign	74	10	10 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract No. 70141

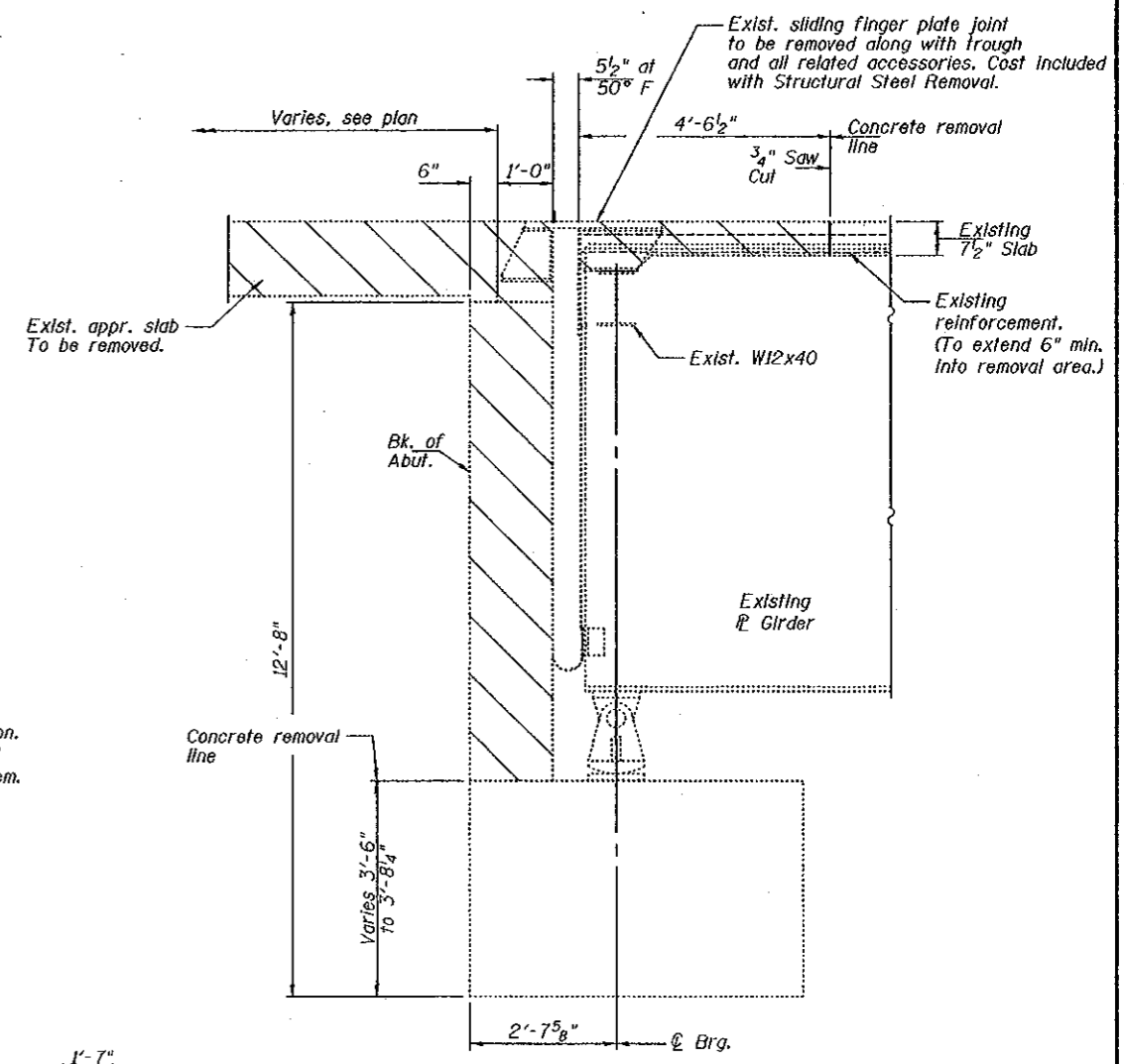


Note:
See roadway plans for details and quantities of new approach, and approach median parapets.
Hatched area indicates area of concrete removal.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.

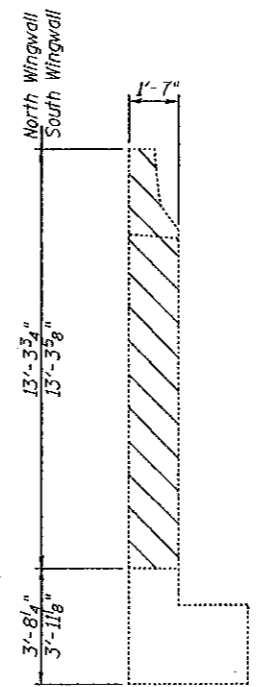
WEST ABUTMENT AND APPROACH PLAN



VIEW B-B



SECTION A-A



SECTION C-C

WEST ABUTMENT FINGER PLATE AND
APPROACH SLAB REMOVAL DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

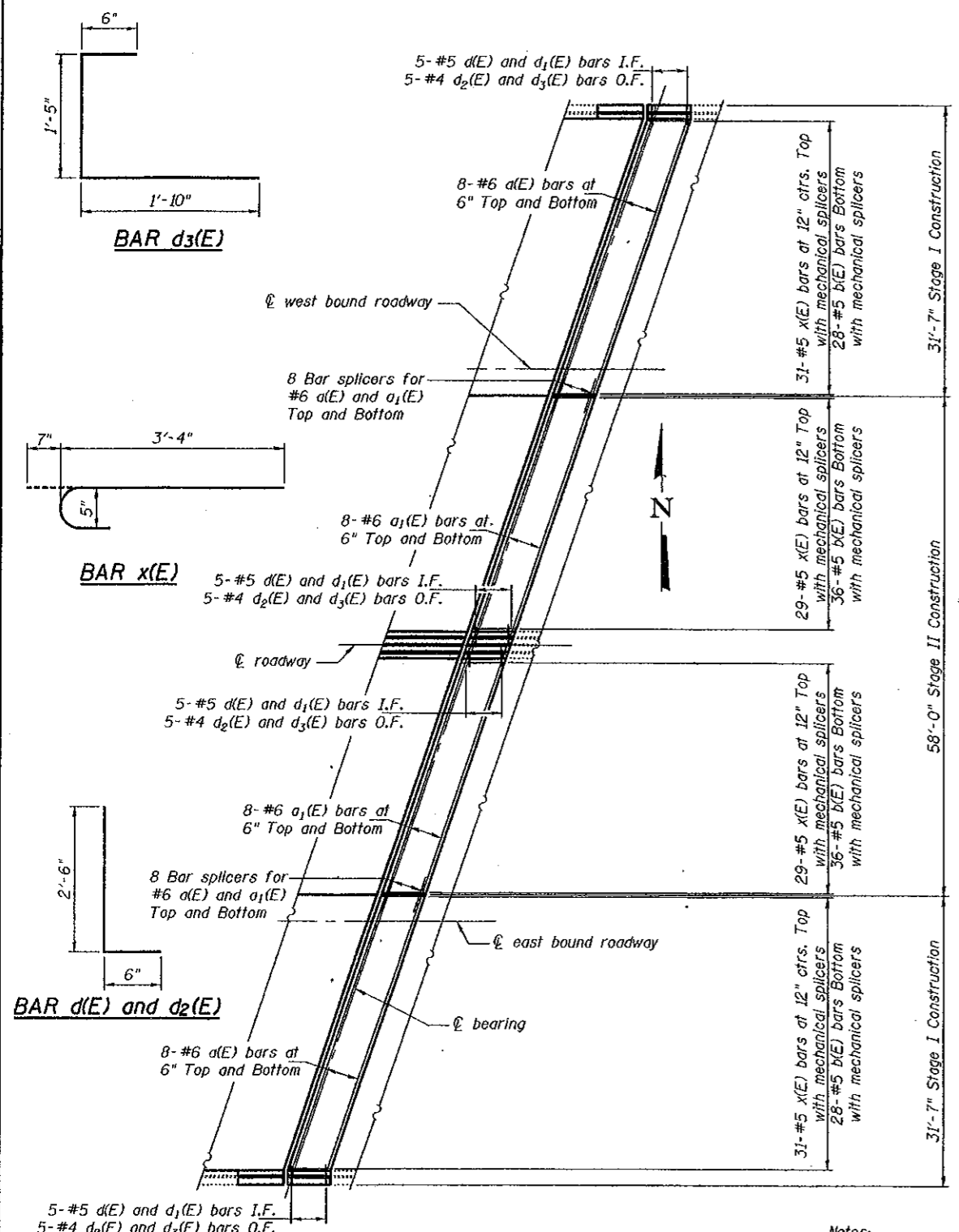
DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

DECEMBER 7, 2005
EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	NO.
		Champaign	75	
SHEET NO. 4				
10 SHEETS				

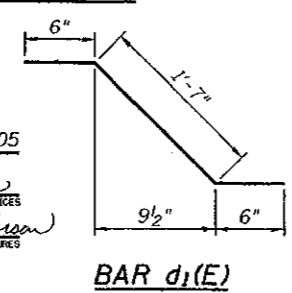
Contract No. 70141



DECK PLAN AT WEST ABUTMENT

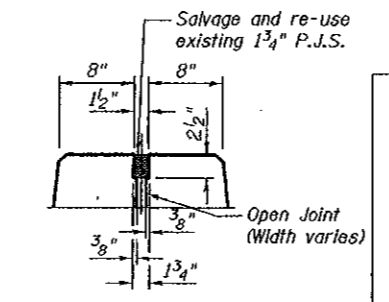
DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T. D.A.B.

DECEMBER 7, 2005
EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

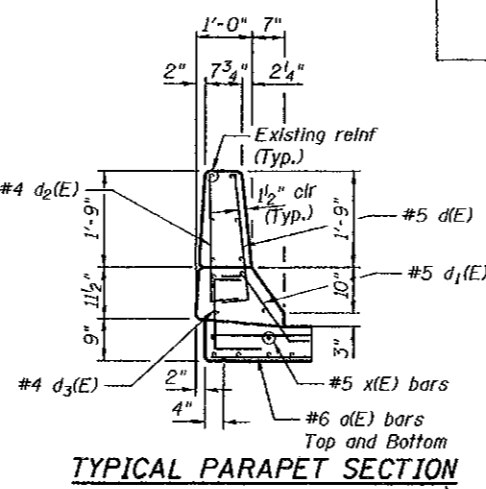


BAR d1(E)

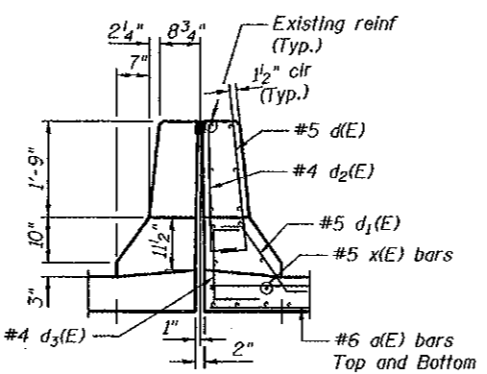
Notes:
For stool details see sheet 6 of 10.
For stool locations, see sheet 5 of 10.
For view D-D see sheet 6 of 10.
For concrete removal details for the deck, approach and at the abutment see sheet 3 of 10.
For approach pavement details, median parapet details and quantities see roadway plans.
For bar splicer details see sheet 9 of 10.
Existing shear studs that interfere with the finger plate stools shall be removed using the air - arc method and grind smooth all weld material remaining on the top flange. Cost included with Furnishing and Erecting Structural Steel.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.



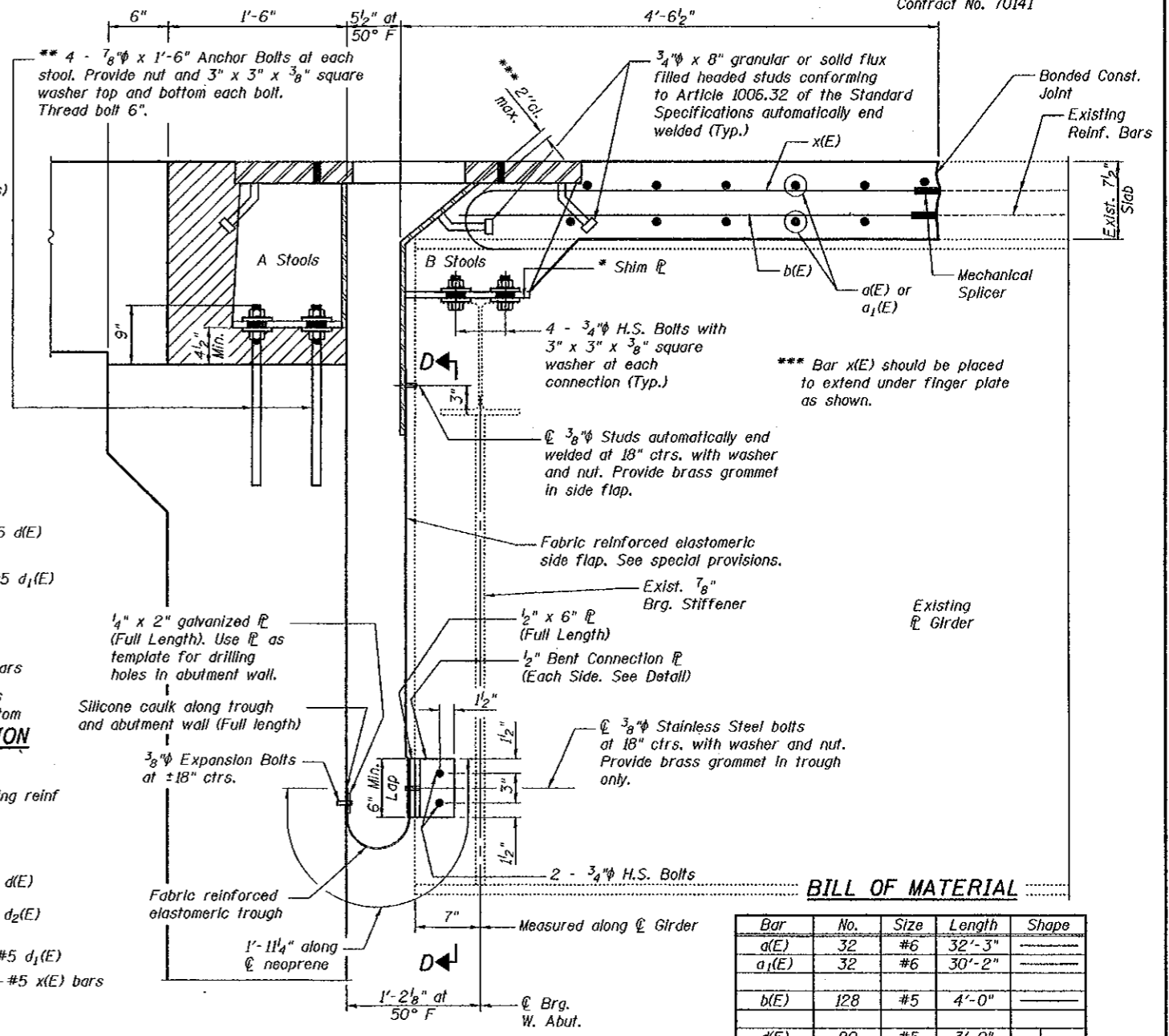
MEDIAN PARAPET
JOINT DETAIL



TYPICAL PARAPET SECTION



TYPICAL SECTION
THRU MEDIAN PARAPET



SECTION THROUGH WEST ABUTMENT

Horizontal dimensions are measured normal to backwall of W. Abut. except as noted.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	32	#6	32'-3"	
a1(E)	32	#6	30'-2"	
b(E)	128	#5	4'-0"	
d(E)	20	#5	3'-0"	
d1(E)	24	#5	2'-7"	
d2(E)	20	#4	3'-0"	
d3(E)	24	#4	3'-9"	
x(E)	120	#5	3'-11"	
Concrete Removal			Cu. Yd.	371.3
Concrete Superstructure			Cu. Yd.	22.7
Bar Splicers			Each	32
Mechanical Splicers			Each	248
Reinforcement Bars, Epoxy Coated			Lbs.	4340

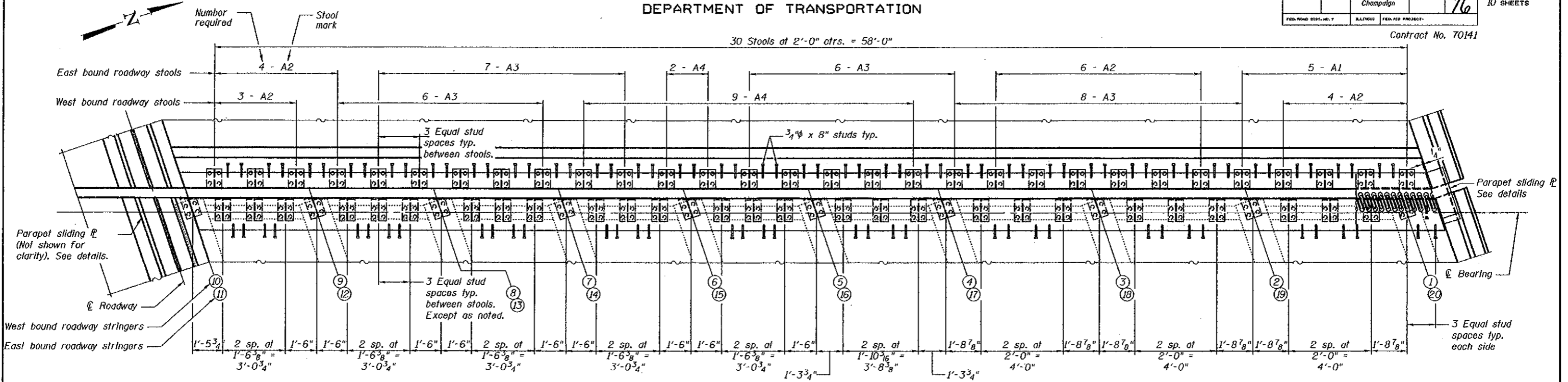
Reinforcement bars designated (E) shall be epoxy coated.

* Provide 1/2" normal shim, one 1/4" shim, one 1/8" shim and one 1/16" shim for height adjustment. Tapered shims shall be added under the stools as required by the engineer to make a smooth finger joint. Cost shall be included with Furnishing and Erecting Structural Steel.
** 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 (9" Min. depth) 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 pre measured amounts of the adhesive chemical.
The anchor rods, furnished and installed 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.

FINGER PLATE DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

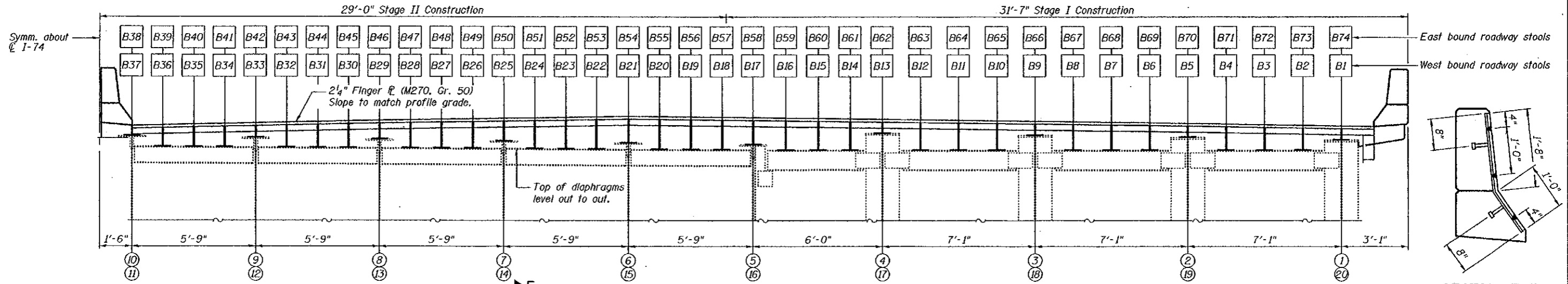
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO. 5
		Champaign	76	10 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT	Contract No. 70141	



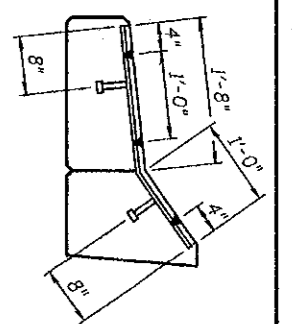
JOINT PLAN

(Showing the West bound lanes)
(East bound lanes similar as noted)

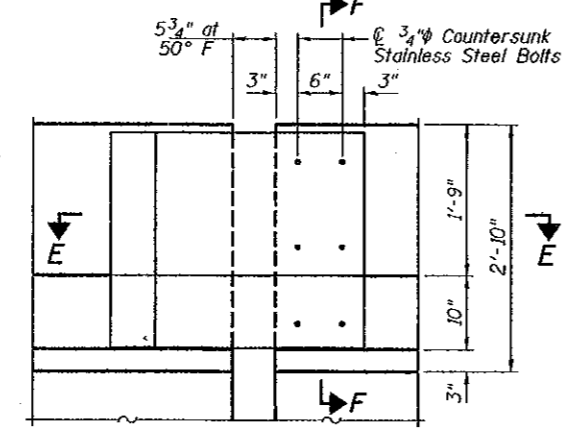


DECK CROSS SECTION

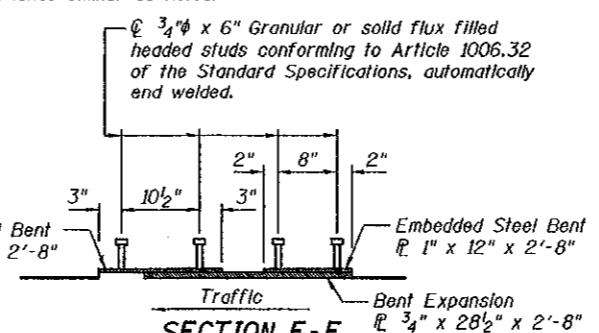
(Looking West)
(East bound lanes similar as noted)



SECTION F-F

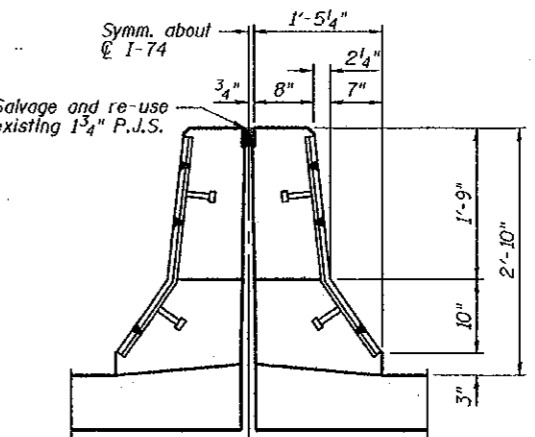


ELEVATION - PARAPET SLIDING PLATE



SECTION E-E

Expansion Plate and Embedded Plates shall be galvanized according to AASHTO M111.
Cost included with Furnishing and Erecting Structural Steel.



SECTION THRU MEDIAN PARAPET

Note:
See sheet 6 of 10 for
Stool dimensions.

**FINGER PLATE JOINT PLAN
AND ELEVATION**
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T. D.A.B.

December 7, 2005
EXAMINED *John A. Morris*
PASSED *Ralph E. Anderson*

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
		Champaign	77	10
FED. ROAD DIST. NO. 7	BRIDGE	FED. AID PROJECT		

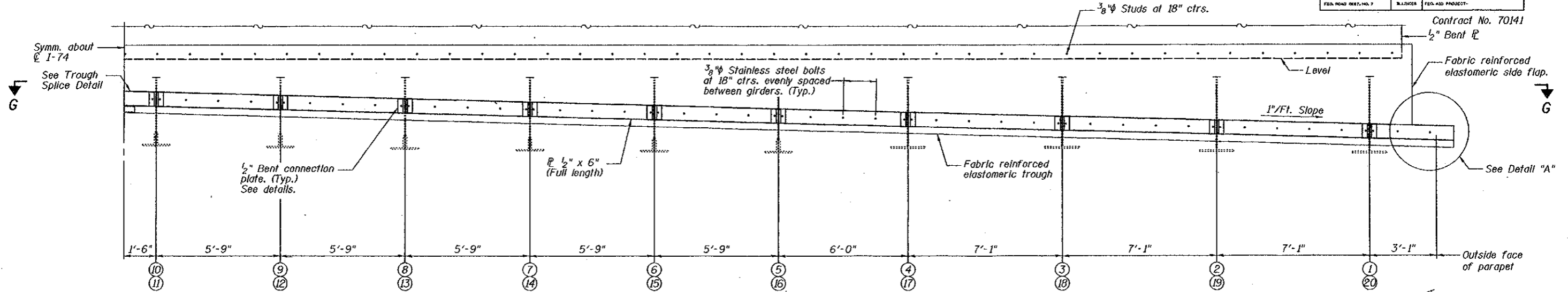
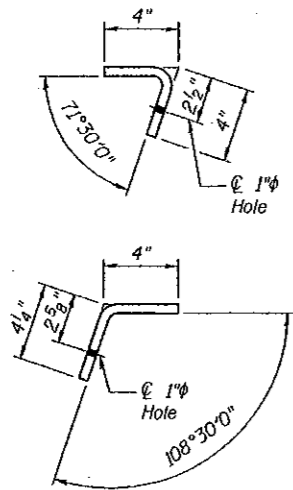


TABLE OF "B" DIMENSIONS TABLE OF "A" DIMENSIONS

Stool No.	Dim. B	Stool No.	Dim. B
B1	6 1/4"	B38	6 1/8"
B2	12 3/8"	B39	12 5/8"
B3	12 13/16"	B40	12 5/8"
B4	13 5/8"	B41	12 5/8"
B5	6 1/4"	B42	8 1/8"
B6	14"	B43	13 9/16"
B7	14 5/8"	B44	13 9/16"
B8	14 5/8"	B45	14 1/4"
B9	6 1/4"	B46	9 1/8"
B10	15 1/8"	B47	14 3/4"
B11	15 7/8"	B48	15"
B12	15 3/4"	B49	15 1/4"
B13	6 1/4"	B50	11 1/8"
B14	16 3/8"	B51	15 1/8"
B15	16 1/2"	B52	15 5/8"
B16	16 3/4"	B53	16 3/8"
B17	13 5/8"	B54	12 1/8"
B18	17 1/8"	B55	16 3/8"
B19	17 5/8"	B56	16"
B20	17 1/8"	B57	15 1/8"
B21	14 1/8"	B58	12 3/8"
B22	17 1/4"	B59	15 5/8"
B23	16 5/8"	B60	14 3/4"
B24	16 1/8"	B61	14 5/8"
B25	12 3/8"	B62	6 1/4"
B26	16 3/8"	B63	13 3/4"
B27	15 1/8"	B64	13 5/8"
B28	15 1/2"	B65	12 7/8"
B29	10 5/8"	B66	6 1/4"
B30	14 13/16"	B67	12 3/8"
B31	14 1/8"	B68	11 3/8"
B32	14"	B69	11 3/8"
B33	8 1/8"	B70	6 1/4"
B34	13 5/8"	B71	10 1/2"
B35	12 13/16"	B72	10"
B36	12 3/8"	B73	9 1/8"
B37	6 1/8"	B74	6 1/4"

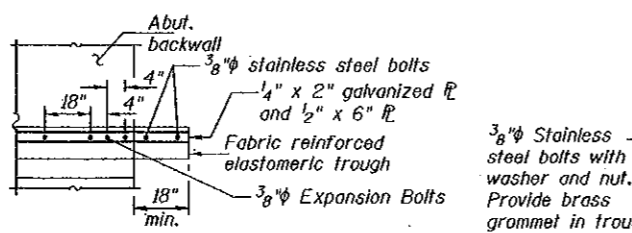
Stool No.	Dim. A	No. Req'd
A1	11"	5
A2	13 1/2"	17
A3	16"	27
A4	18 1/2"	11

Dimension "A" is measured at front face of backwall.



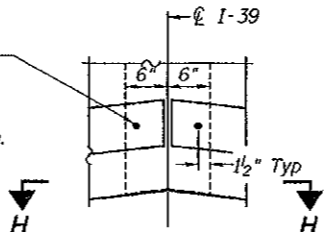
BENT CONNECTION PLATE DETAILS

A STOOLS
Horizontal dimensions are measured normal to back of finger plate.



DETAIL A

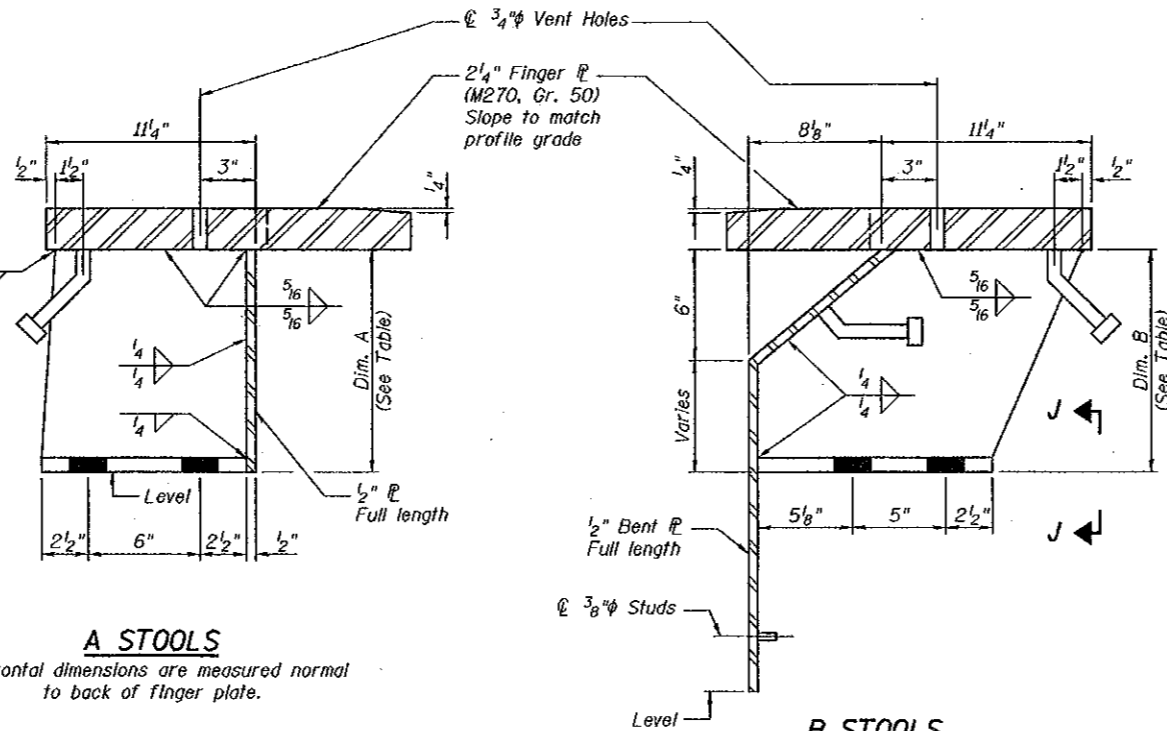
B STOOLS
Horizontal dimensions are measured normal to back of finger plate.



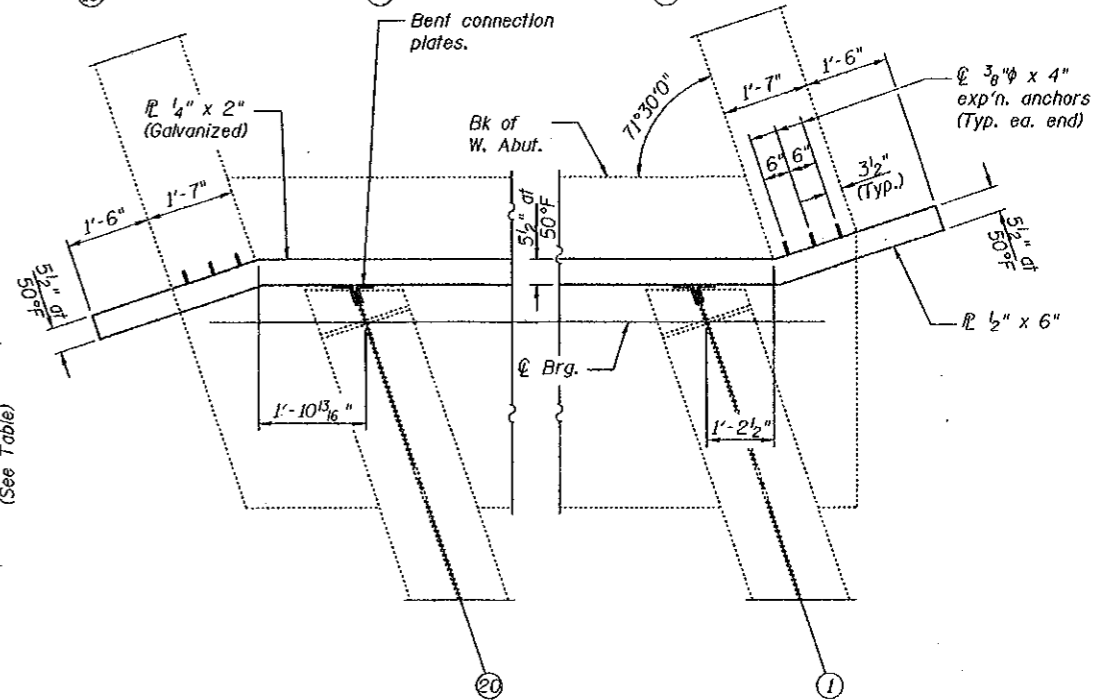
TROUGH SPLICE DETAIL

Notes:
For stool locations, see sheet 5 of 10.

SECTION D-D



SECTION G-G

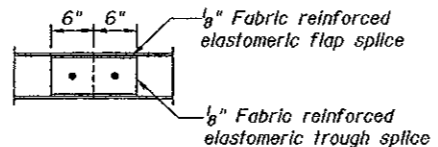


FINGER PLATE DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

DESIGNED M.J.T.
CHECKED D.A.B.
DRAWN Drew Christopher
CHECKED M.J.T. D.A.B.

December 7, 2005
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

SECTION H-H



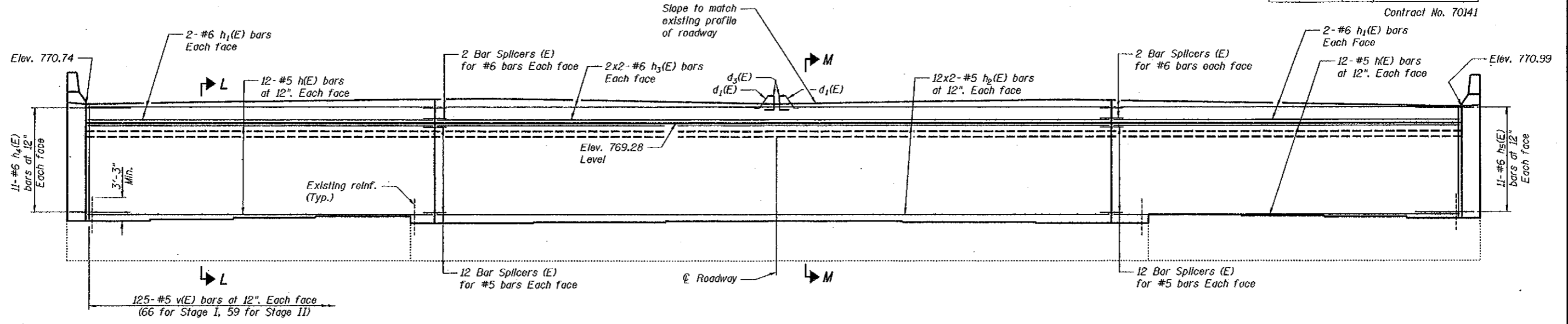
FLAME CUTTING DIAGRAM

Cut from
2 Pl's 2 1/4" x 2'-7 1/8" x 60'-7 1/8" (M270 - Gr. 50)

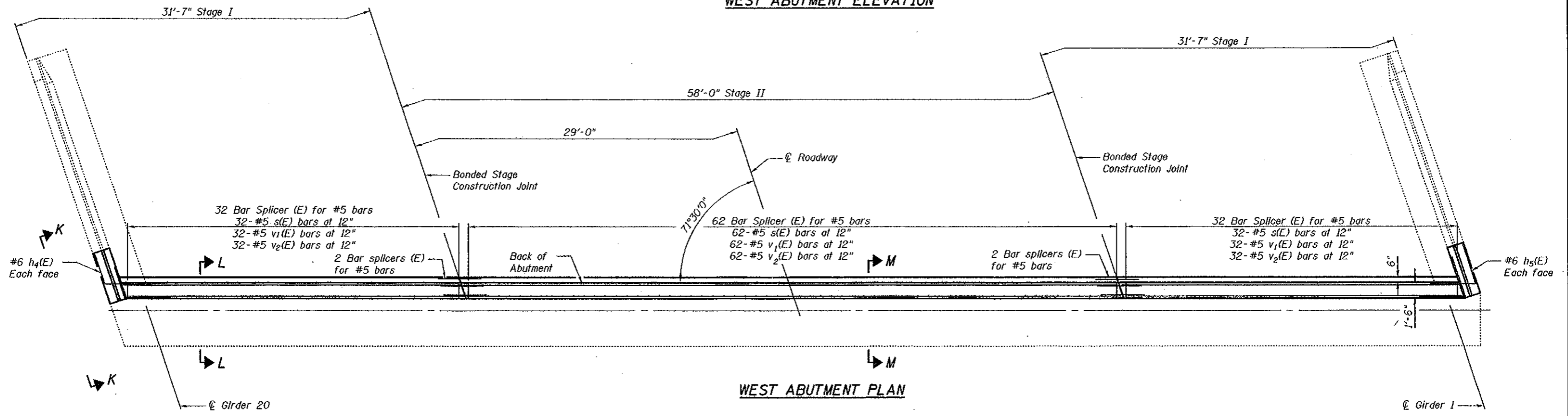
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	ADJACENT	DATE	SHEET	SHEET NO. 7 10 SHEETS
		Champaign		78	
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

Contract No. 70141



WEST ABUTMENT ELEVATION



WEST ABUTMENT PLAN

DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T. D.A.B.

December 7, 2005
EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

MIN. BAR LAPS
#5 = 3'-0"
#6 = 3'-7"

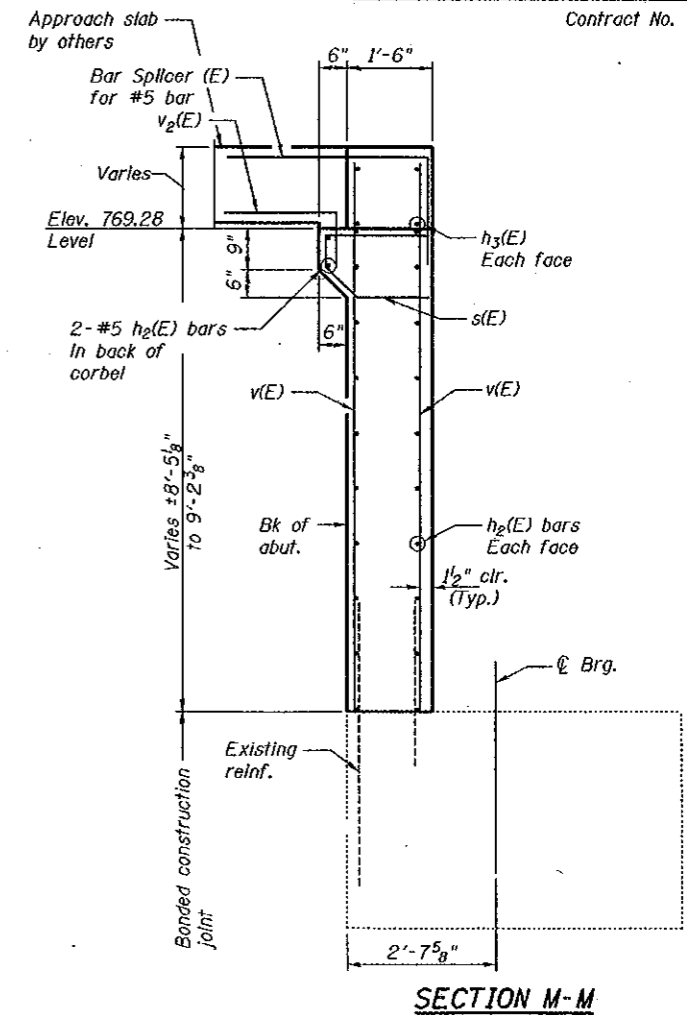
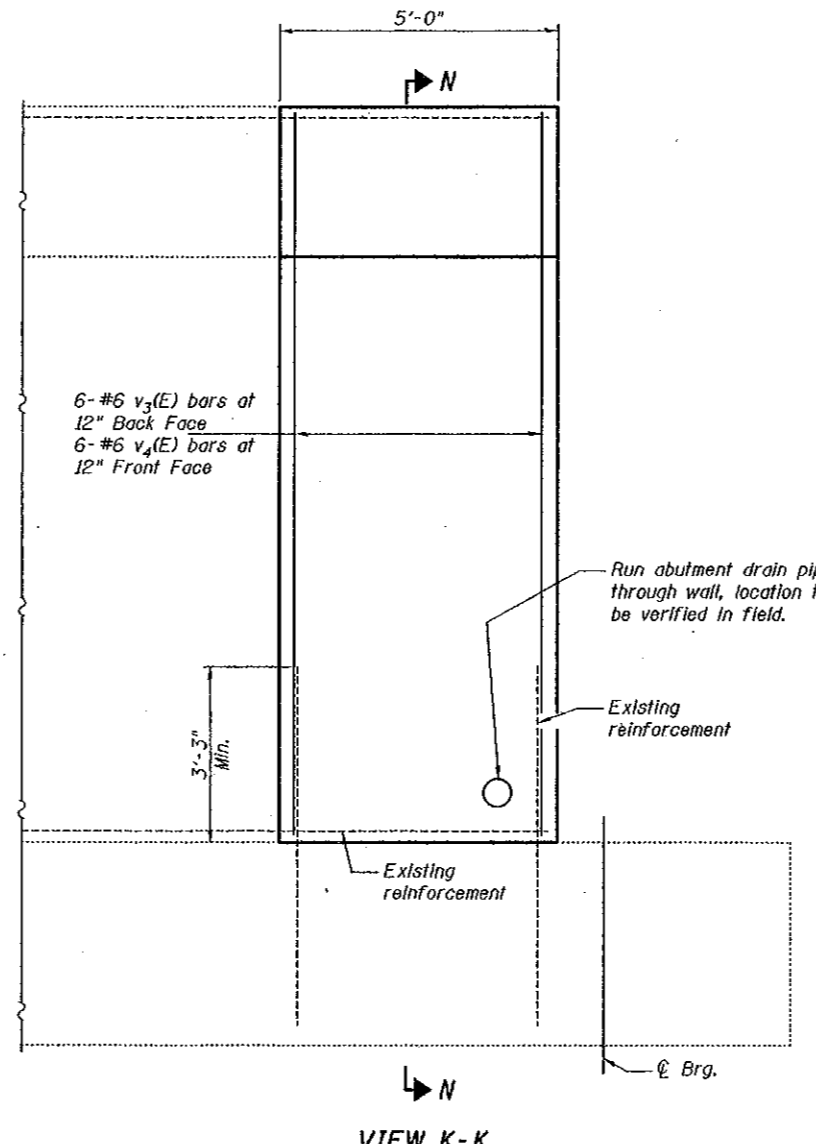
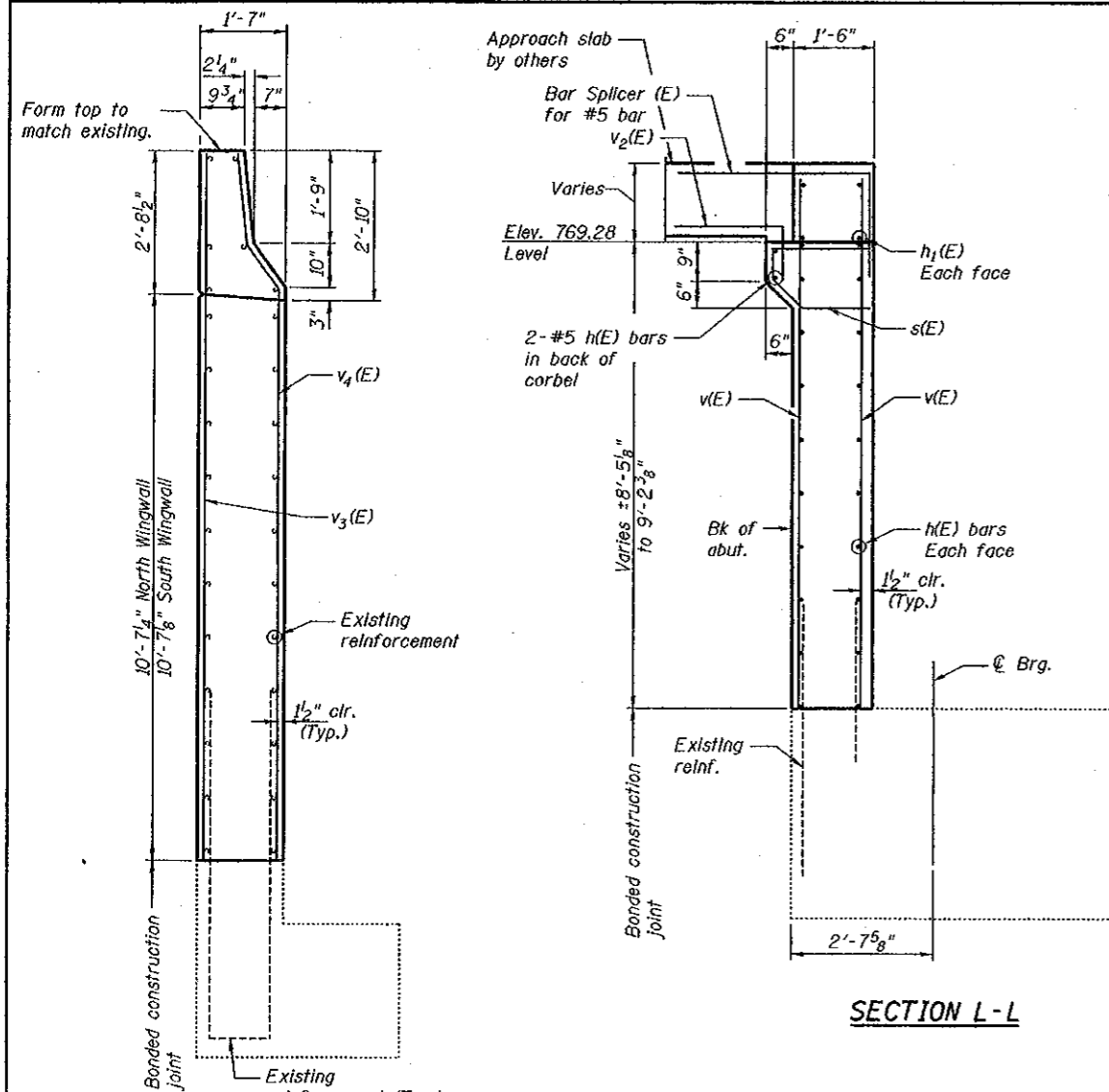
Notes:
For Bar Splicer details see sheet 9 of 10.
For sections of West abutment, bill of materials and bar bending diagrams see sheet 8 of 10.
Bars d1(E) and d3(E) are billed with the superstructure on sheet 4 of 10.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.

WEST ABUTMENT PLAN AND ELEVATION
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET
		Champaign	79	10
SHEET NO. 8 10 SHEETS				

Contract No. 70141

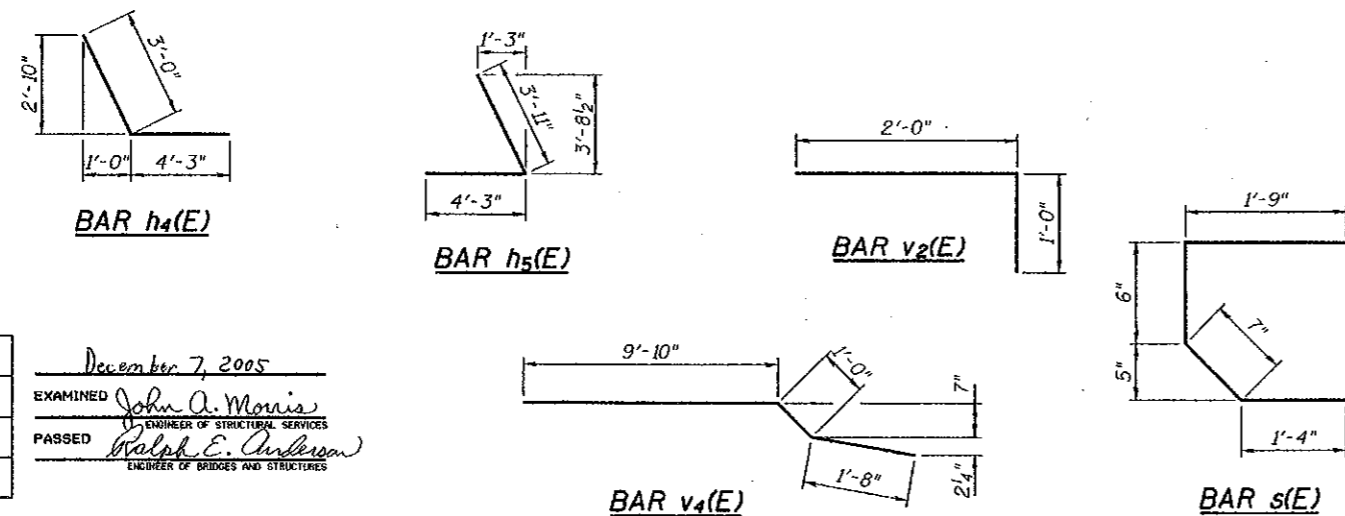


SECTION M-M
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	52	#5	31'-4"	—
h2(E)	8	#6	31'-4"	—
h3(E)	52	#5	32'-0"	—
h4(E)	8	#6	32'-4"	—
h5(E)	22	#6	7'-3"	—
h5(E)	22	#6	8'-2"	—
s(E)	126	#5	4'-2"	—
v(E)	250	#5	10'-5"	—
v1(E)	126	#5	3'-0"	—
v2(E)	126	#5	3'-0"	—
v3(E)	12	#6	13'-0"	—
v4(E)	12	#6	12'-6"	—
Concrete Structures			Cu. Yd.	69.8
Reinforcement Bars, Epoxy Coated			Lbs.	9220

Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.

WEST ABUTMENT DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021



MIN. BAR LAPS
#5 = 3'-0"
#6 = 3'-7"

Notes:
For Bar Splicer details see sheet 9 of 10.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.

DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T. D.A.B.

December 7, 2005
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE	SHEET
		Champaign		80
SHEET NO. 9 10 SHEETS				

Contract No. 70141

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

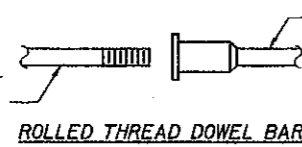
- ① Minimum Capacity = $1.25 \times f_y \times A_f$
(Tension in kips)
- ② Minimum *Pull-out Strength = $1.25 \times f_{s,allow} \times A_f$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_{s,allow}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_f = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

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

The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



** ONE PIECE

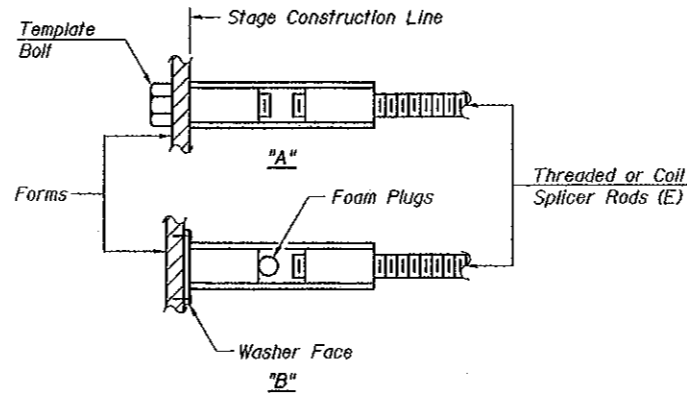
Wire Connector



WELDED SECTIONS

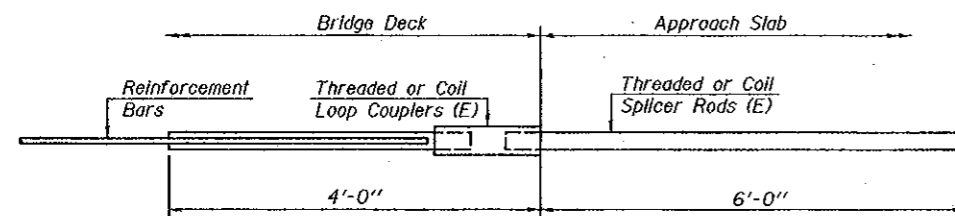
BAR SPLICER ASSEMBLY ALTERNATIVES

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



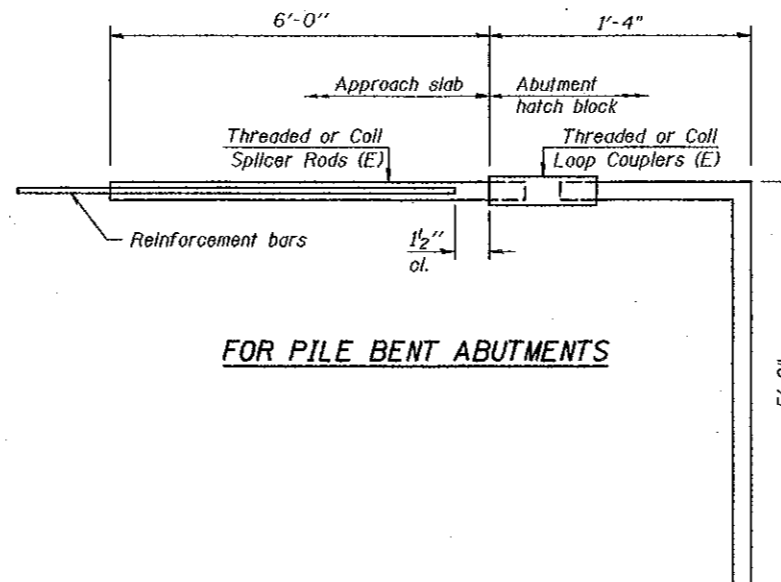
INSTALLATION AND SETTING METHODS

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



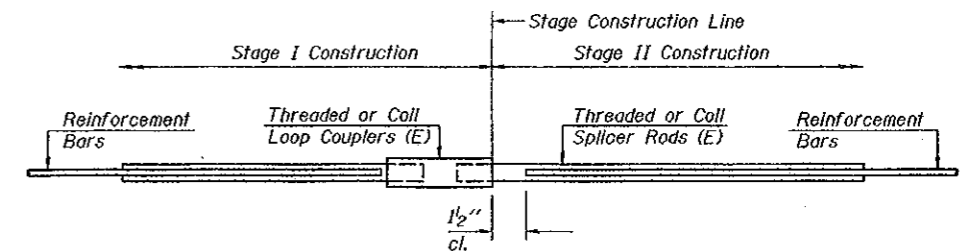
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 126



STANDARD

Bar Size	No. Assemblies Required	Location
#5	52	W. Abut.
#6	8	W. Abut.
#6	32	Deck

DESIGNED M.J.T.
CHECKED D.A.B.
DRAWN Drew Christopher
CHECKED M.J.T. D.A.B.

November 7, 2005
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

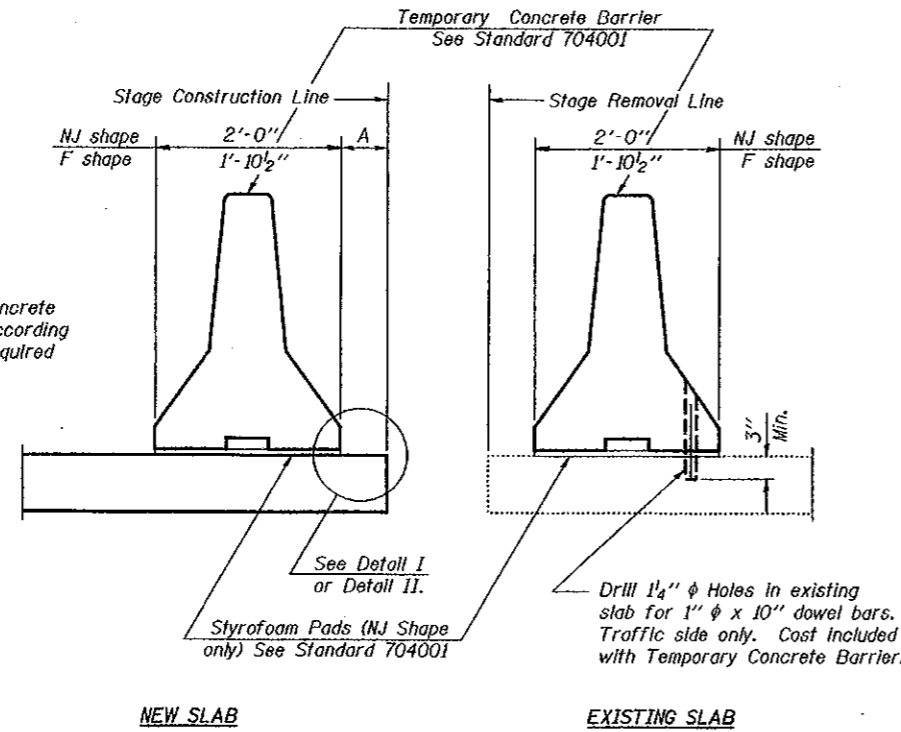
BSD-1 9-01-03

BAR SPLICERS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET
		Champaign	81	10
FED. RD. DIST. NO. 7	BLDG. NO.	FED. PROJ. NO.		

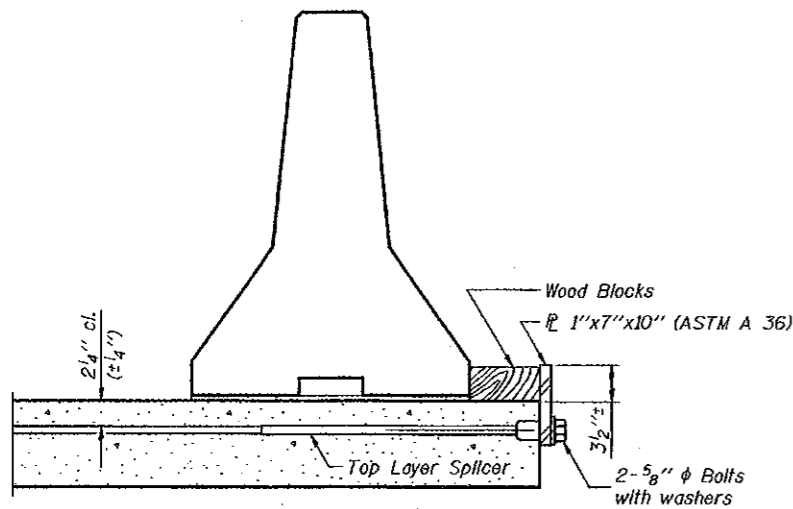
Contract No. 70141



SECTIONS THRU SLAB

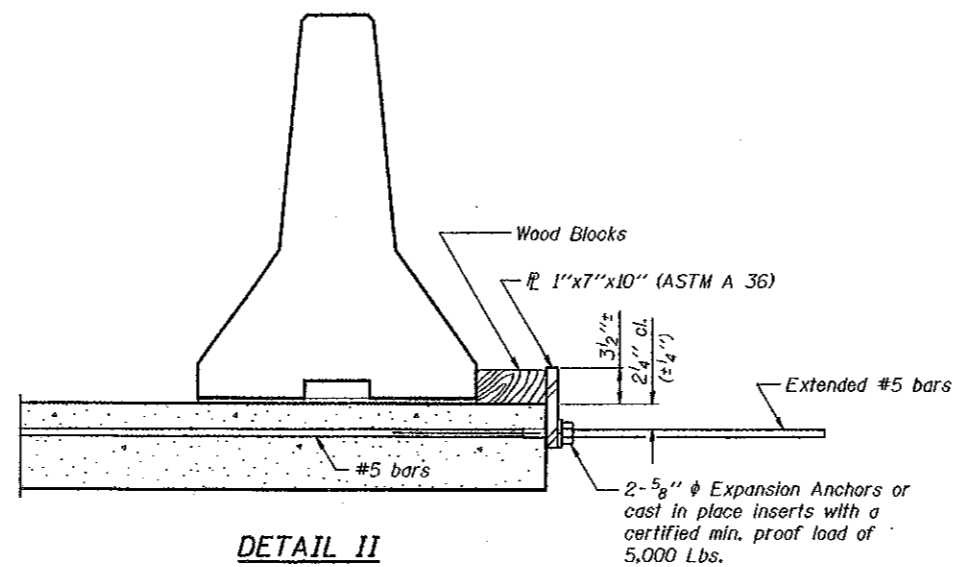
NOTES

- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{r} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{c} of each barrier panel.
- Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{r} to the concrete slab with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{c} of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier.



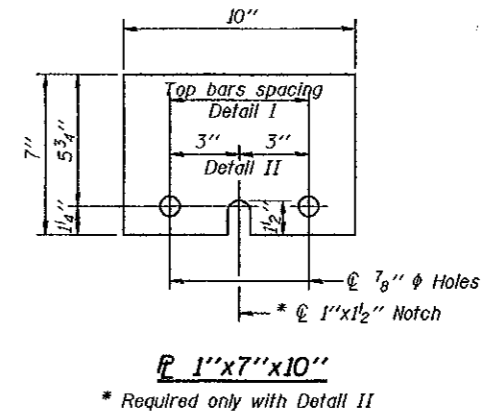
DETAIL I

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 1"x7"x10" 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.



DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T. D.A.B.

December 7, 2005
EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

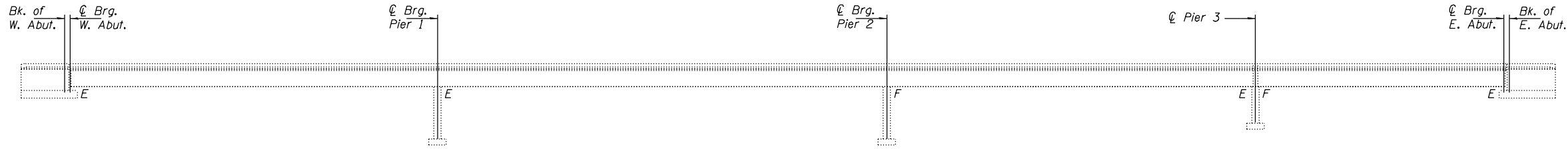
R-27 9-01-03

TEMPORARY CONCRETE BARRIER
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

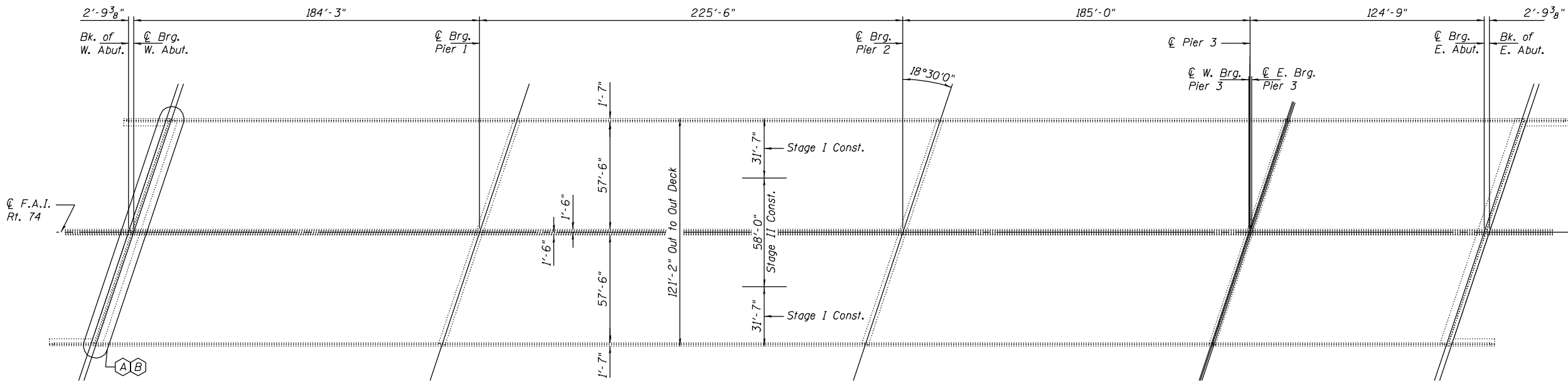
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Champaign		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 1
10 SHEETS



ELEVATION



PLAN

- (A) Remove and Replace Finger Plate
- (B) Remove and Replace Abutment Backwall

GENERAL NOTES

All finger plates and stools shall conform to AASHTO M270 Gr. 50.
All other structural steel shall conform to AASHTO Classification M270 Gr. 36.

Calculated weight of new structural steel Grade 36 = 4770
Grade 50 = 45,930

Fasteners shall be high strength bolts. Bolts 3/4" φ, open holes 13/16" φ, unless noted otherwise.

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M322 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.

Finger Plate Expansion Joints shall be assembled in the proper position with the ends in place and shall be left assembled for shop inspection. The finger plates shall be flame cut as provided in Article 505.04(k) of the Standard Specifications.

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

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Furnishing and Erecting Structural Steel.

Prior to pouring the new concrete deck, all loose rust, loose mill scale and other loose potentially detrimental foreign material shall be removed from the surface of the girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.

Cost of removal and/ or re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included in the cost of Furnishing and Erecting Structural Steel.

The existing structural steel coating contains lead. The contractor should take appropriate precautions to deal with the presence of lead on the project. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Removal	Pound	43,270
Furnishing and Erecting Structural Steel	L.S.	1
Concrete Removal	Cu. Yd.	371.3
Concrete Superstructure	Cu. Yd.	22.7
Reinforcement Bars, Epoxy Coated	Pound	13,560
Bar Splicers	Each	218
Fabric Reinforced Elastomeric Trough	Foot	131
Concrete Structures	Cu. Yd.	69.8
Temporary Sheet Piling	Sq. Ft.	430
Structure Excavation	Cu. Yd.	420
Porous Granular Embankment	Cu. Yd.	420
Mechanical Splicers	Each	248

PRE-FINAL

DATE: 03/07/2005

DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

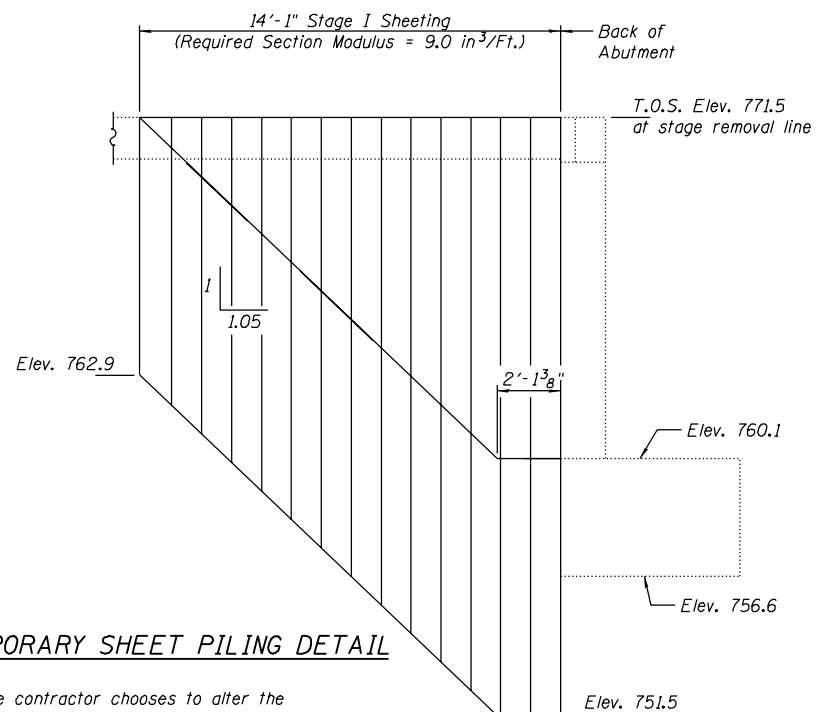
EXAMINED	
PASSED	ENGINEER OF STRUCTURAL SERVICES
	ENGINEER OF BRIDGES AND STRUCTURES

PLAN AND ELEVATION
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Champaign		10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

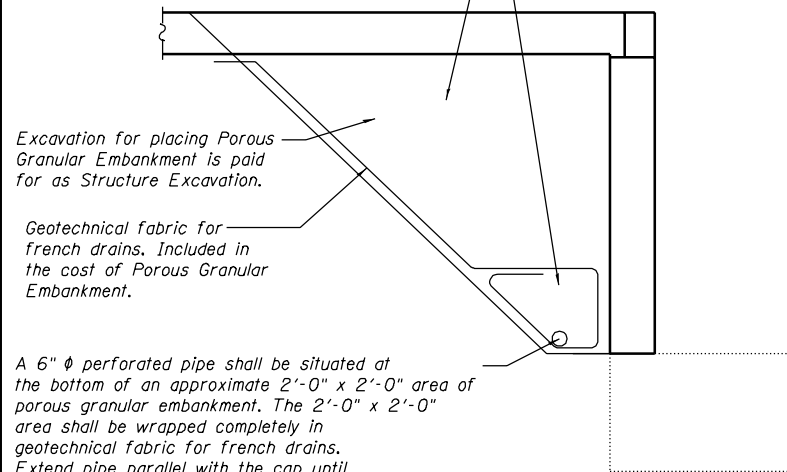
SHEET NO. 2
10 SHEETS



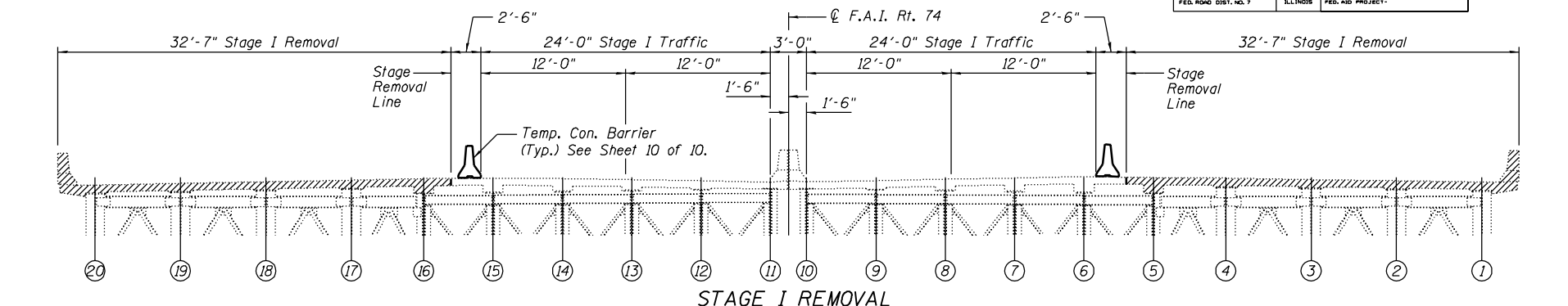
TEMPORARY SHEET PILING DETAIL

Notes:
If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

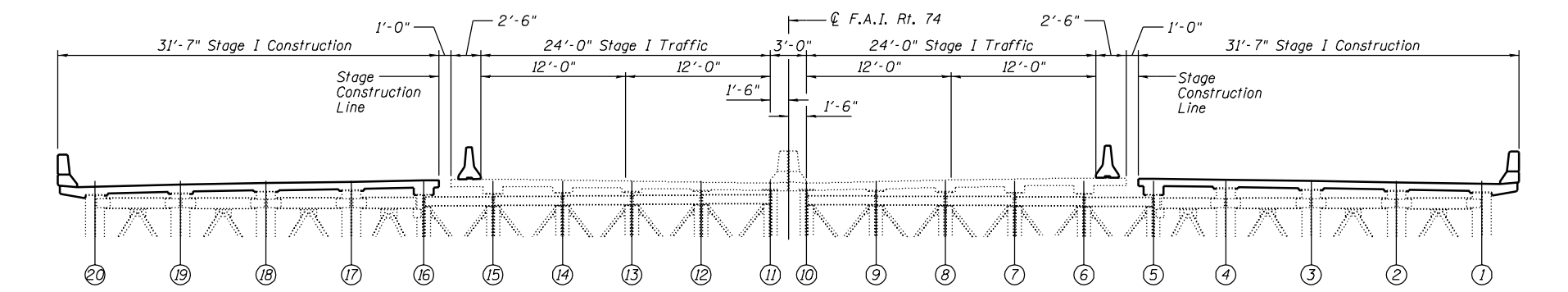
Backfill with uncompacted porous granular embankment with a gradation of CA-5 or CA-7 by Bridge Contractor after superstructure is in place. Limits shall be 1'-0" from the end of each wingwall.



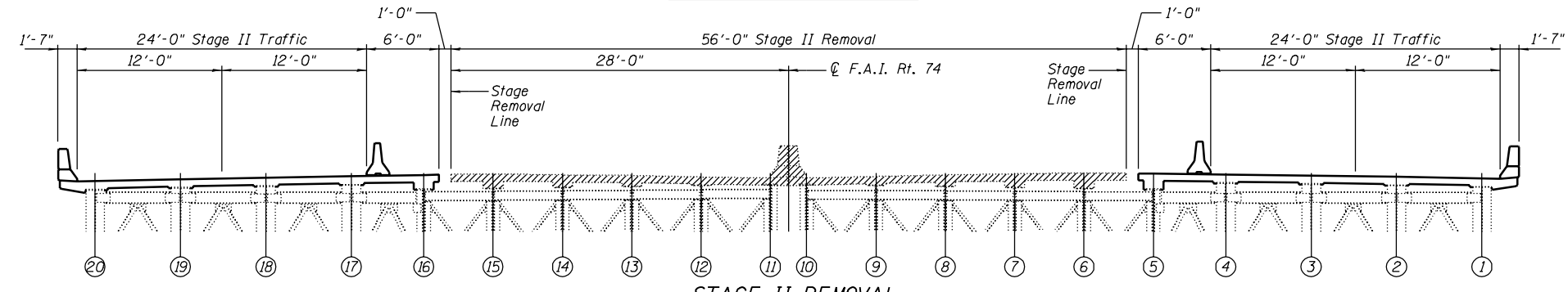
DRAIN DETAIL AT ABUTMENT



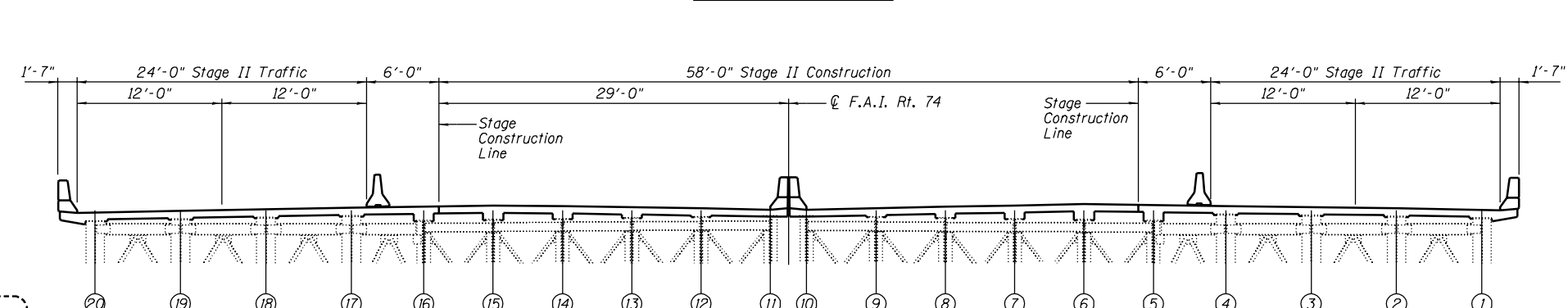
STAGE I REMOVAL



STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION

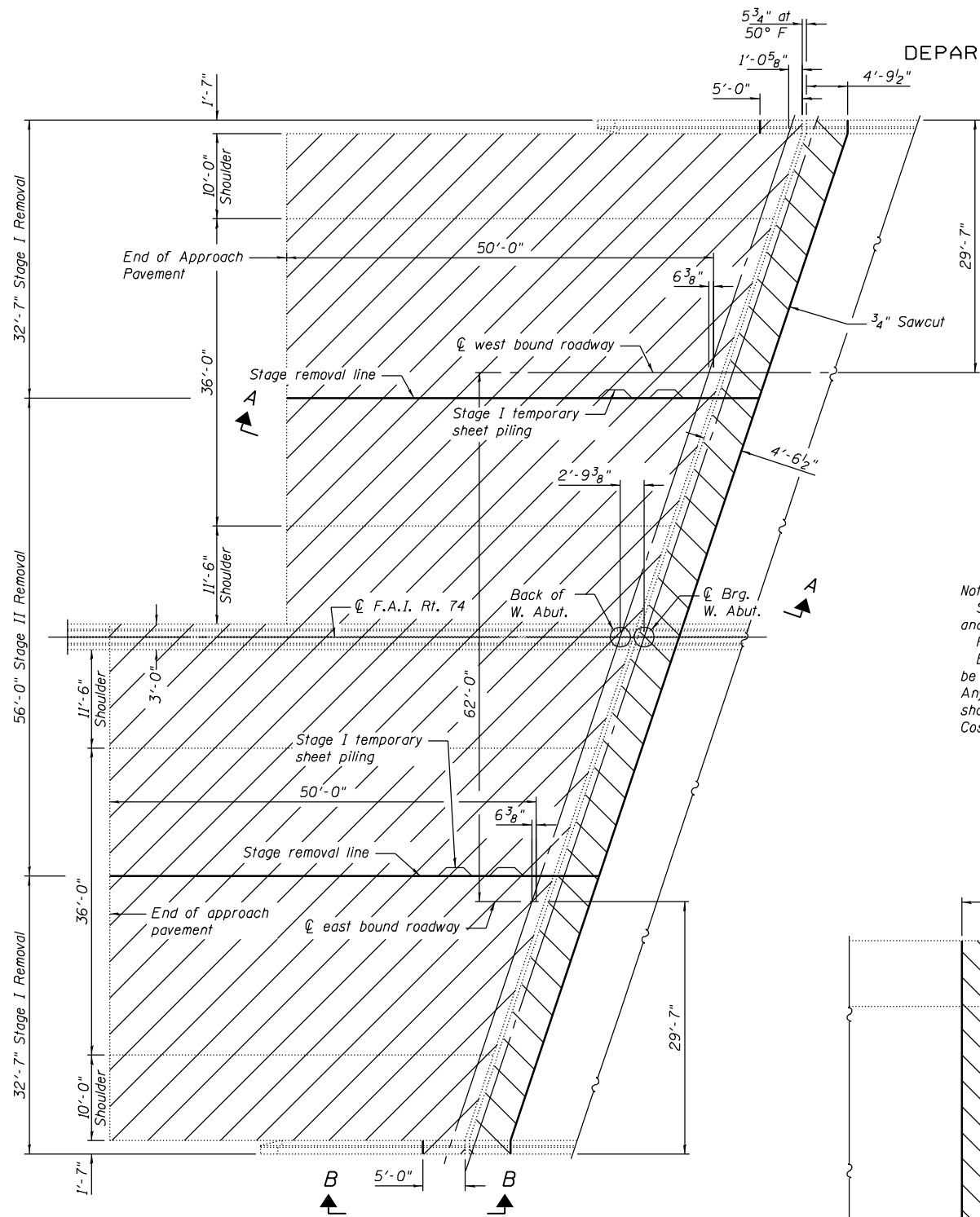
DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

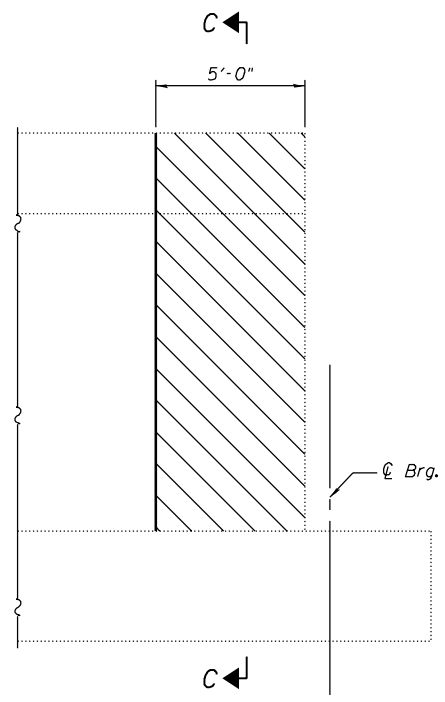
PRE-FINAL
DATE: 03/07/2005

Notes:
All stage sections looking west.

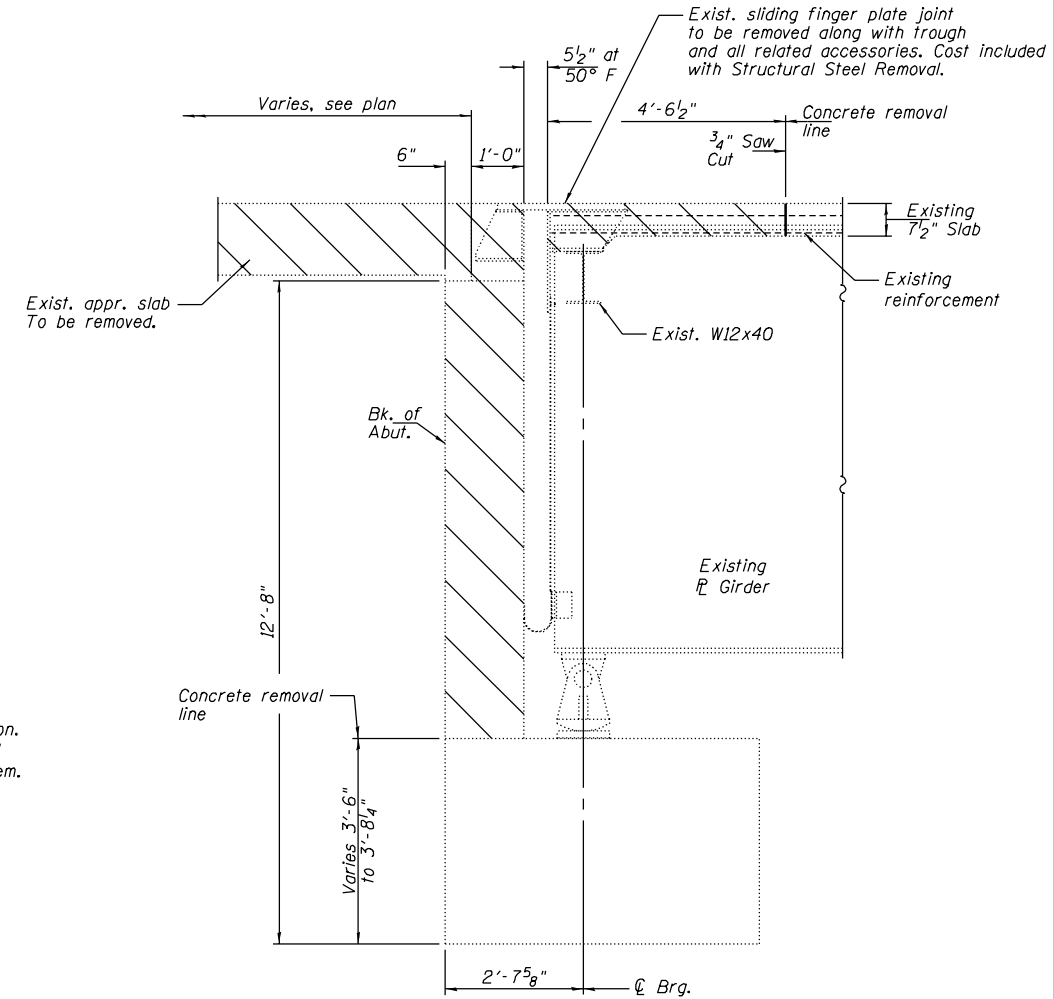
STAGE CONSTRUCTION DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021



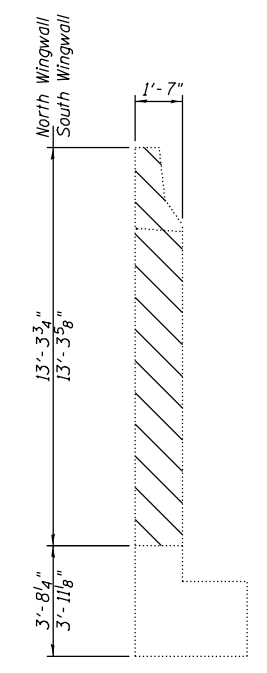
Note:
See roadway plans for details and quantities of new approach, and approach median parapets.
Hatched area indicates area of concrete removal.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.



VIEW B-B



SECTION A-A



SECTION C-C

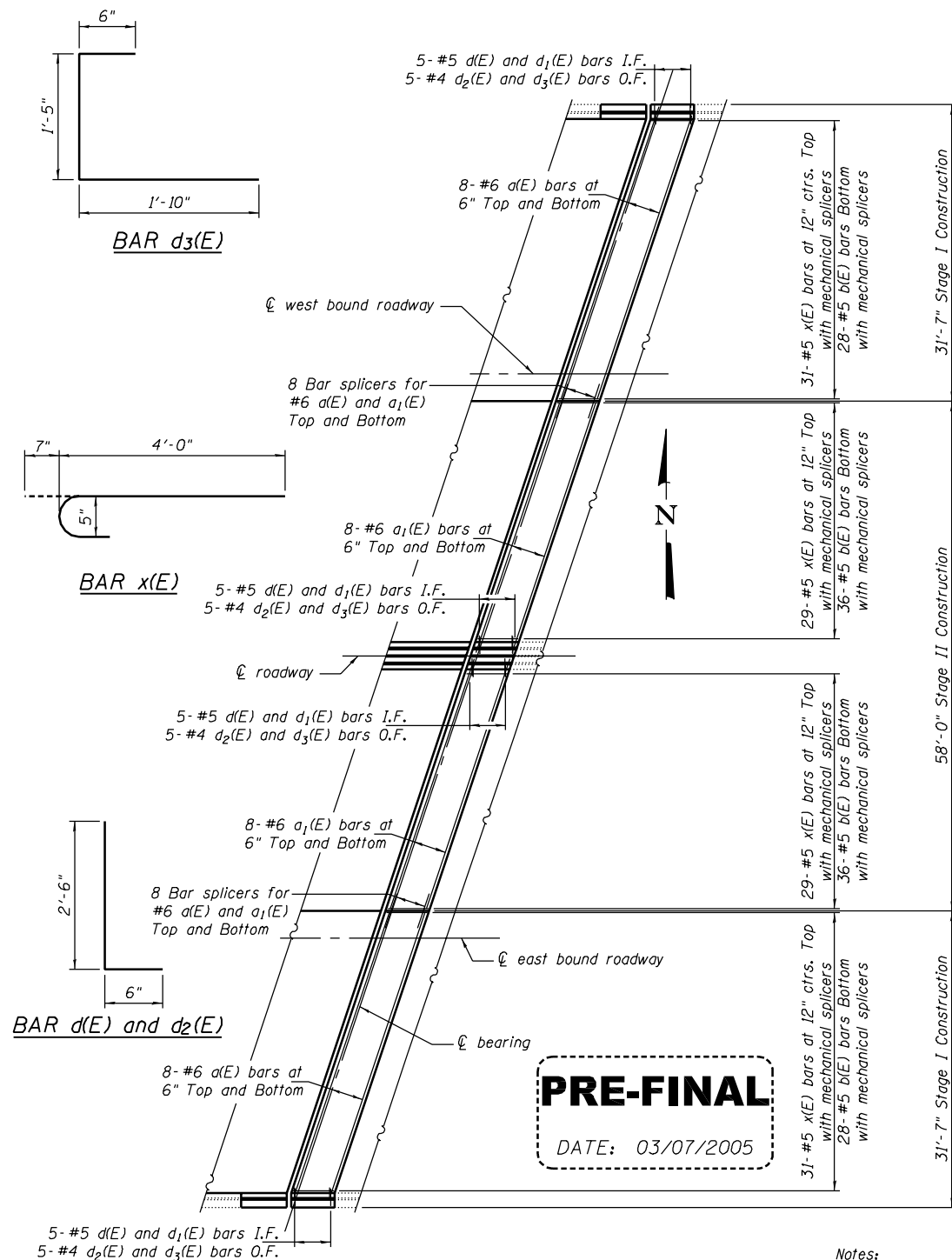
WEST ABUTMENT AND APPROACH PLAN

DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

PRE-FINAL
DATE: 03/07/2005

WEST ABUTMENT FINGER PLATE AND
APPROACH SLAB REMOVAL DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

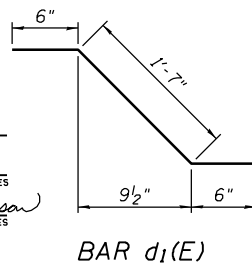


PRE-FINAL
DATE: 03/07/2005

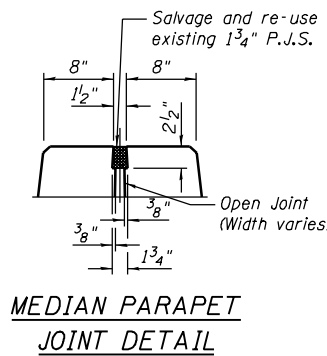
DECK PLAN AT WEST ABUTMENT

DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

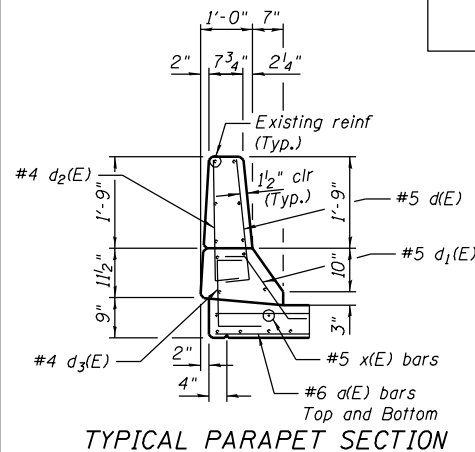
EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES



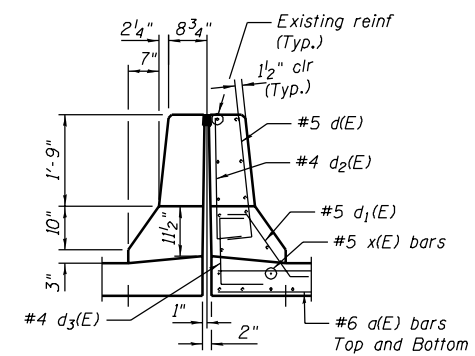
BAR d1(E)



MEDIAN PARAPET JOINT DETAIL

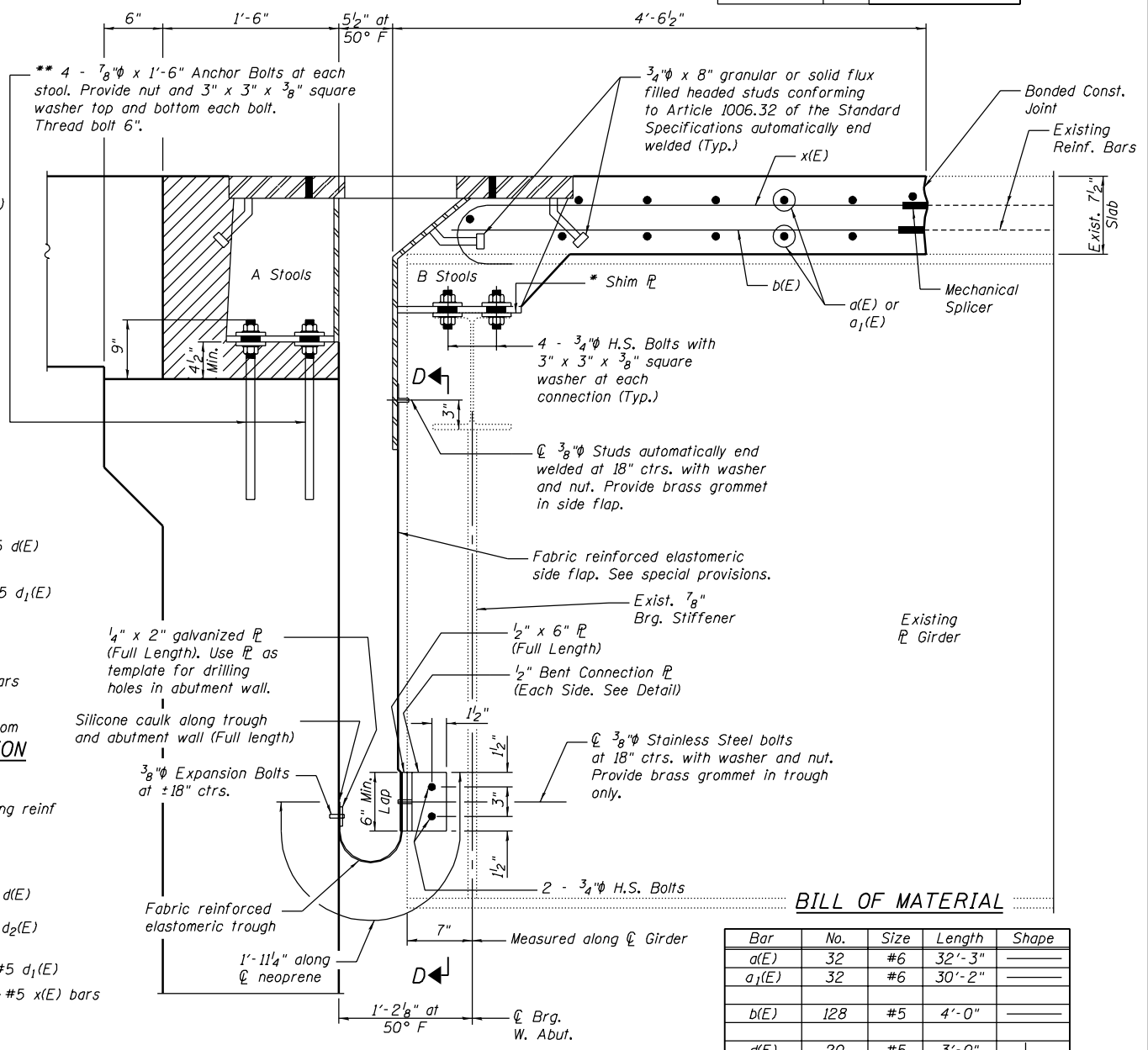


TYPICAL PARAPET SECTION



TYPICAL SECTION THRU MEDIAN PARAPET

Notes:
For stool details see sheet 6 of 9.
For stool locations, see sheet 5 of 10.
For view D-D see sheet 6 of 10.
For concrete removal details for the deck, approach and at the abutment see sheet 3 of 10.
For approach pavement details, median parapet details and quantities see roadway plans.
For bar splicer details see sheet 9 of 10.
Existing shear studs that interfere with the finger plate stools shall be removed using the air - arc method and grind smooth all weld material remaining on the top flange. Cost included with Furnishing and Erecting Structural Steel.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.



SECTION THROUGH WEST ABUTMENT

Horizontal dimensions are measured normal to backwall of W. Abut. except as noted.

* Provide 1/2" normal shim, one 1/4" shim, one 1/8" shim and one 1/16" shim for height adjustment. Tapered shims shall be added under the stools as required by the engineer to make a smooth finger joint. Cost shall be included with Furnishing and Erecting Structural Steel.
** 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 (9" Min. depth) 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 pre measured amounts of the adhesive chemical.
The anchor rods, furnished and installed 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.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	32	#6	32'-3"	—
a1(E)	32	#6	30'-2"	—
b(E)	128	#5	4'-0"	—
d(E)	20	#5	3'-0"	L
d1(E)	24	#5	2'-7"	L
d2(E)	20	#4	3'-0"	L
d3(E)	24	#4	3'-9"	L
x(E)	120	#5	4'-7"	—
Concrete Removal		Cu. Yd.	371.3	
Concrete Superstructure		Cu. Yd.	22.7	
Bar Splicers		Each	32	
Mechanical Splicers		Each	248	
Reinforcement Bars, Epoxy Coated		Lbs.	4340	

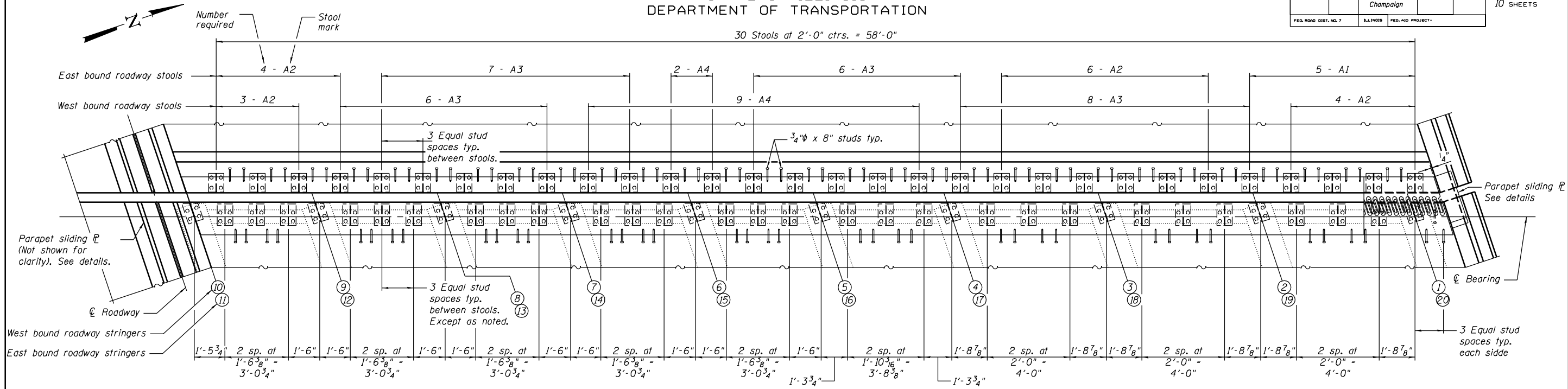
Reinforcement bars designated (E) shall be epoxy coated.

FINGER PLATE DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

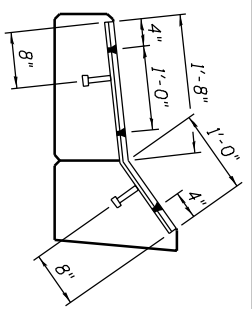
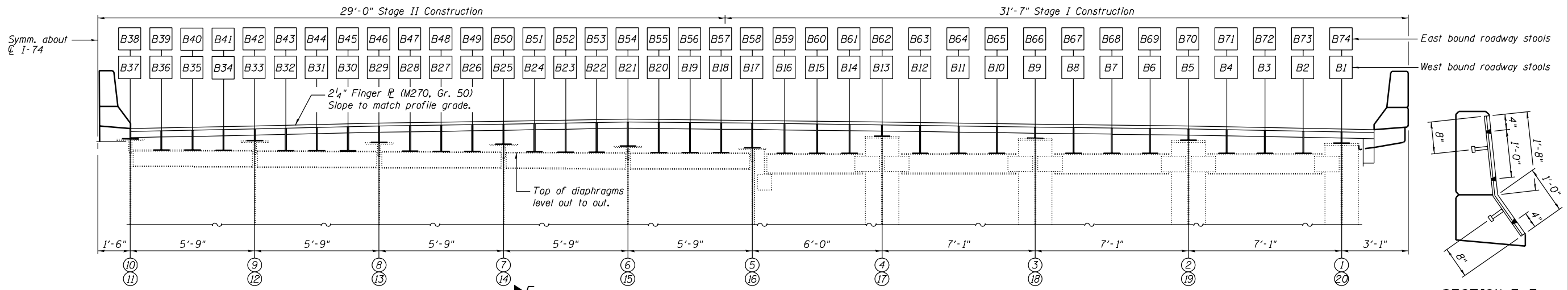
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Champaign		5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

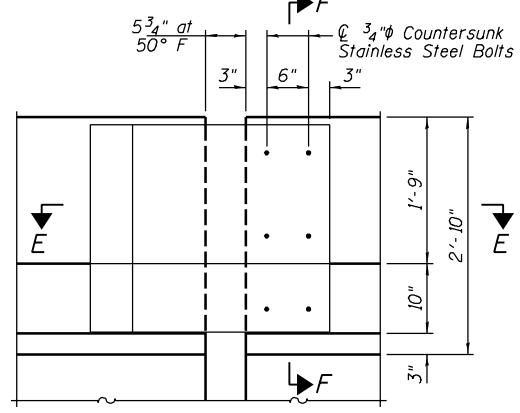
SHEET NO. 5
10 SHEETS



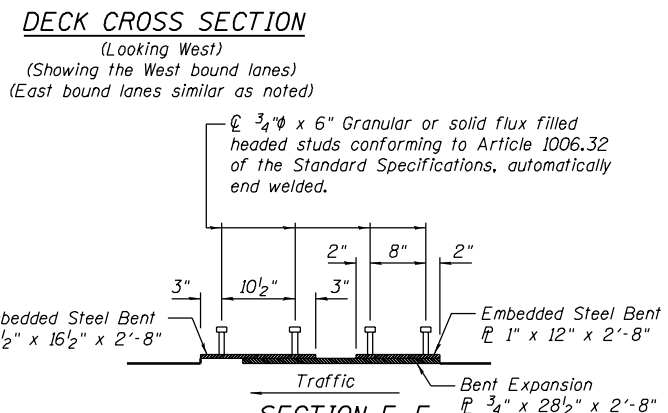
JOINT PLAN
(Showing the West bound lanes)
(East bound lanes similar as noted)



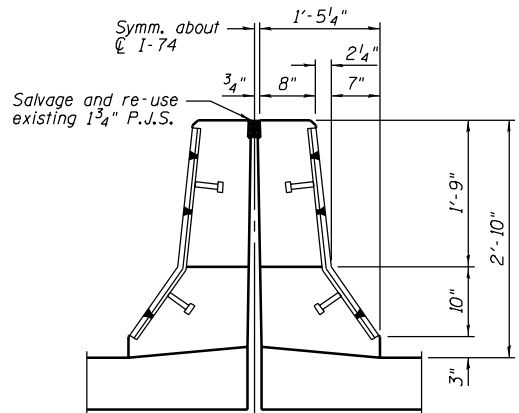
SECTION F-F



ELEVATION - PARAPET SLIDING PLATE



SECTION E-E
Expansion Plate and Embedded Plates shall be galvanized according to AASHTO M111. Cost included with Furnishing and Erecting Structural Steel.



SECTION THRU MEDIAN PARAPET

Note:
See sheet 6 of 10 for
Stool dimensions.

**FINGER PLATE JOINT PLAN
AND ELEVATION**
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

PRE-FINAL
DATE: 03/07/2005

DESIGNED	M.J.T.
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DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Champaign		10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 6
10 SHEETS

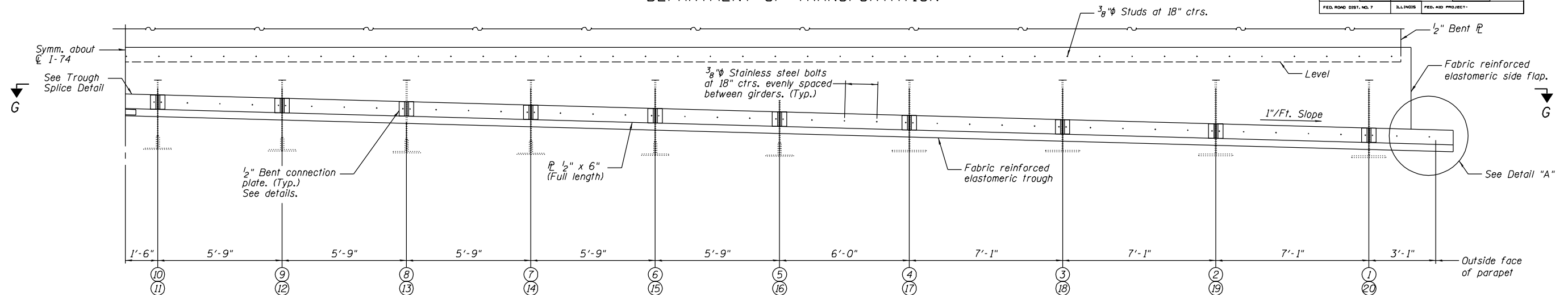
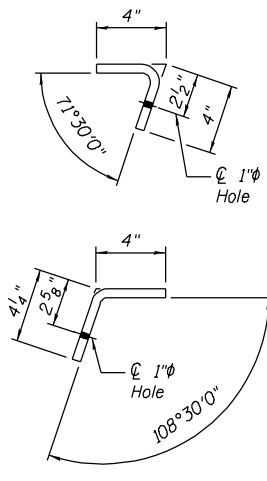


TABLE OF "B" DIMENSIONS TABLE OF "A" DIMENSIONS

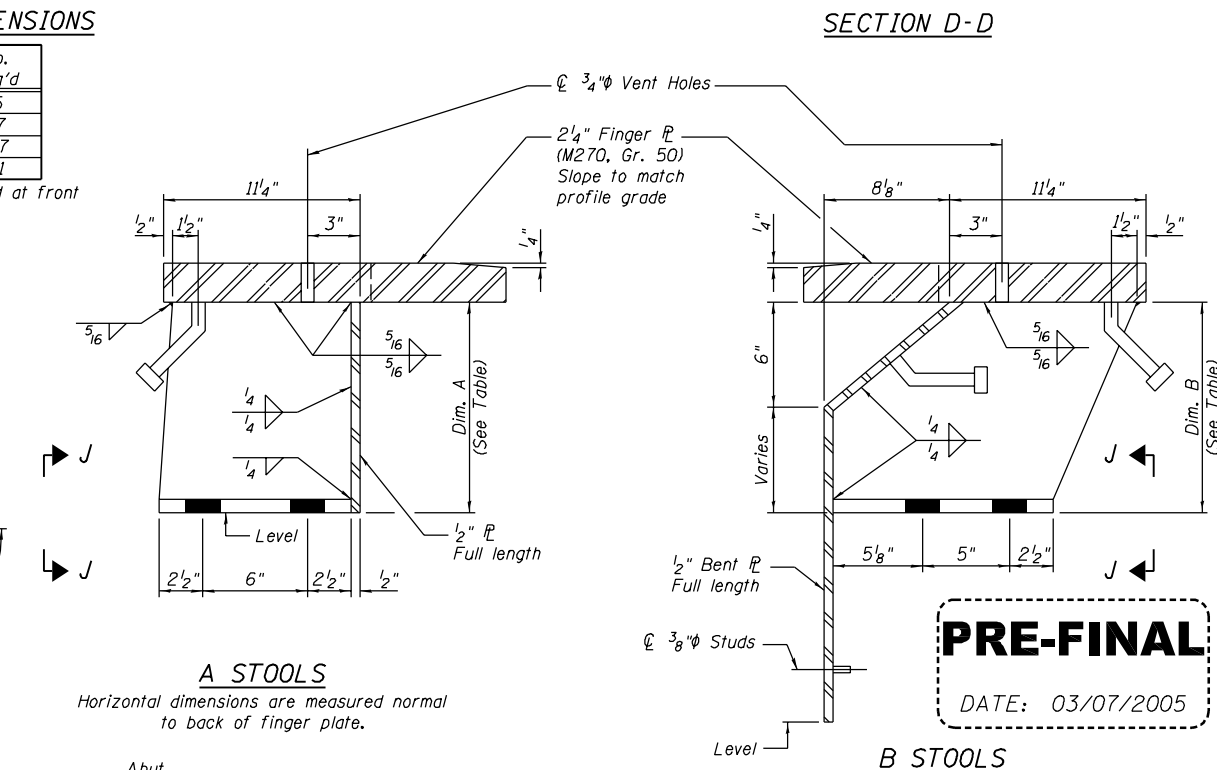
Stool No.	Dim. B	Stool No.	Dim. B
B1	6 1/4"	B38	6 3/8"
B2	12 3/8"	B39	12 5/16"
B3	12 13/16"	B40	12 5/8"
B4	13 5/16"	B41	12 15/16"
B5	6 1/4"	B42	8 1/16"
B6	14"	B43	13 9/16"
B7	14 5/16"	B44	13 3/8"
B8	14 5/8"	B45	14 1/4"
B9	6 1/4"	B46	9 13/16"
B10	15 3/8"	B47	14 3/4"
B11	15 1/16"	B48	15"
B12	15 3/4"	B49	15 1/4"
B13	6 1/4"	B50	11 1/16"
B14	16 3/16"	B51	15 1/16"
B15	16 1/2"	B52	15 15/16"
B16	16 3/4"	B53	16 3/16"
B17	13 15/16"	B54	12 1/4"
B18	17 1/8"	B55	16 3/8"
B19	17 5/16"	B56	16"
B20	17 9/16"	B57	15 1/16"
B21	14 1/16"	B58	12 3/8"
B22	17 1/4"	B59	15 3/8"
B23	16 15/16"	B60	14 3/4"
B24	16 1/16"	B61	14 5/16"
B25	12 3/8"	B62	6 1/4"
B26	16 1/8"	B63	13 3/4"
B27	15 13/16"	B64	13 5/16"
B28	15 1/2"	B65	12 1/8"
B29	10 5/16"	B66	6 1/4"
B30	14 13/16"	B67	12 3/16"
B31	14 1/16"	B68	11 3/4"
B32	14"	B69	11 3/8"
B33	8 1/16"	B70	6 1/4"
B34	13 3/16"	B71	10 1/2"
B35	12 13/16"	B72	10"
B36	12 3/8"	B73	9 1/16"
B37	6 1/8"	B74	6 1/4"

Stool No.	Dim. A	No. Req'd
A1	11"	5
A2	13 1/2"	17
A3	16"	27
A4	18 1/2"	11

Dimension "A" is measured at front face of backwall.



BENT CONNECTION PLATE DETAILS



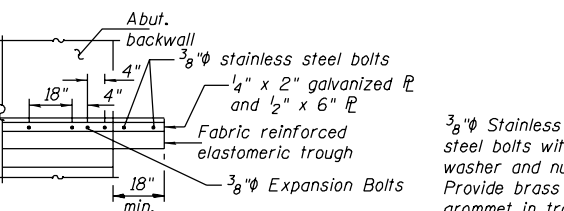
A STOOLS

Horizontal dimensions are measured normal to back of finger plate.

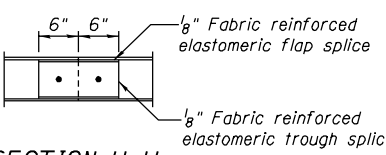
B STOOLS

Horizontal dimensions are measured normal to back of finger plate.

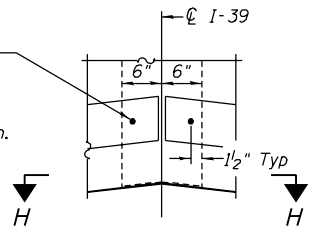
PRE-FINAL
DATE: 03/07/2005



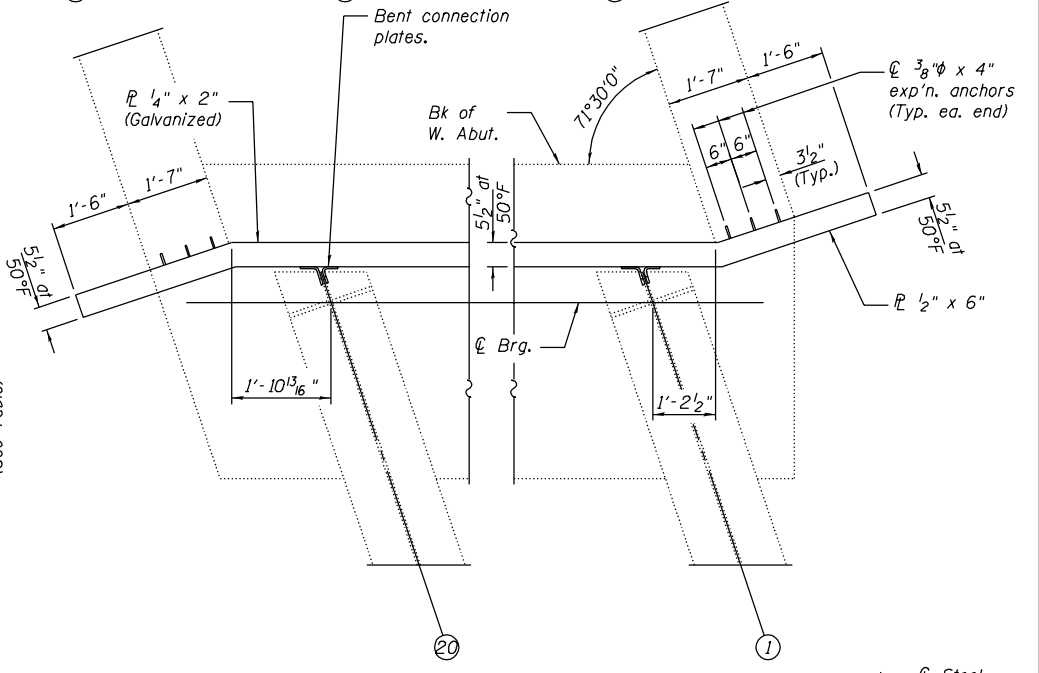
DETAIL A



SECTION H-H

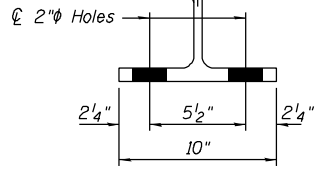


TROUGH SPLICE DETAIL

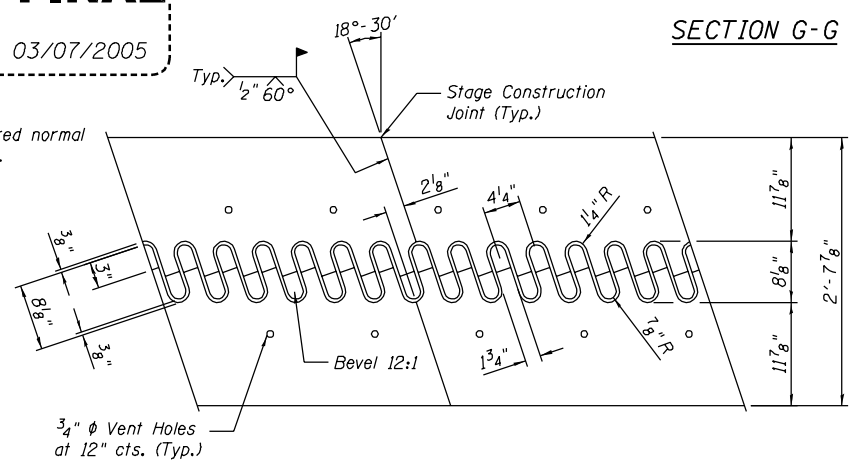


SECTION G-G

Cut stools from W27x84 (M270, Gr. 50)



VIEW J-J



FLAME CUTTING DIAGRAM

Cut from 2 R's 2 1/4" x 2'-7 7/8" x 60'-7 1/8" (M270 - Gr. 50)

FINGER PLATE DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

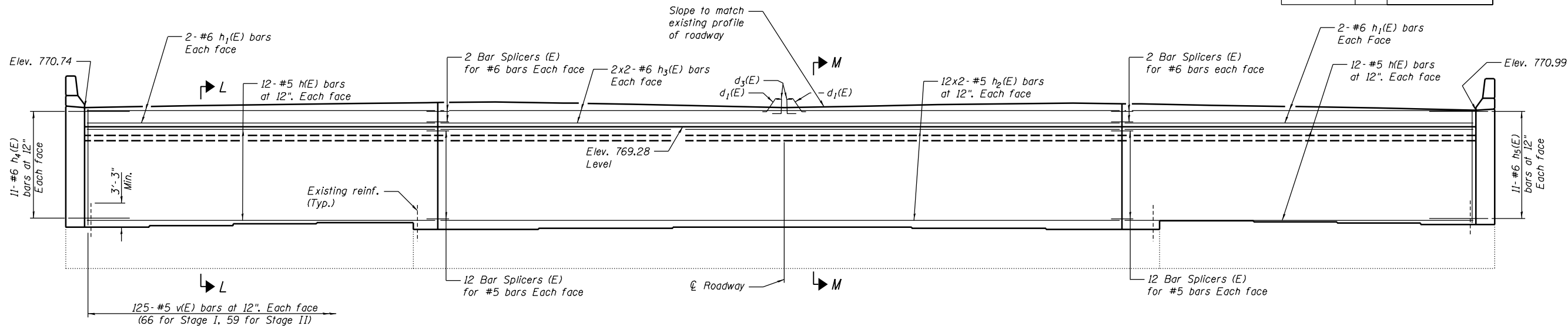
DESIGNED	M.J.T.
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CHECKED	M.J.T., D.A.B.

EXAMINED *John A. Morris*
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PASSED *Ralph E. Anderson*
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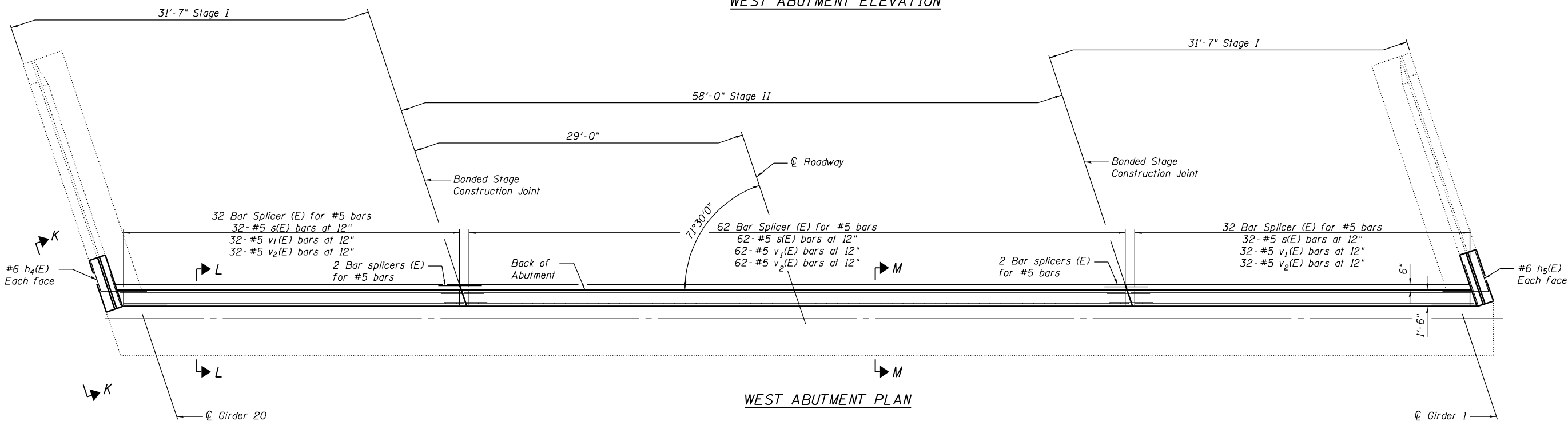
Notes:
For stool locations, see sheet 5 of 10.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Champaign		SHEET NO. 7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-	10 SHEETS	



WEST ABUTMENT ELEVATION



WEST ABUTMENT PLAN

DESIGNED	M.J.T.
CHECKED	D.A.B.
DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

EXAMINED *John A. Morris*
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ENGINEER OF BRIDGES AND STRUCTURES

PRE-FINAL
DATE: 03/07/2005

MIN. BAR LAPS
#5 = 3'-0"
#6 = 3'-7"

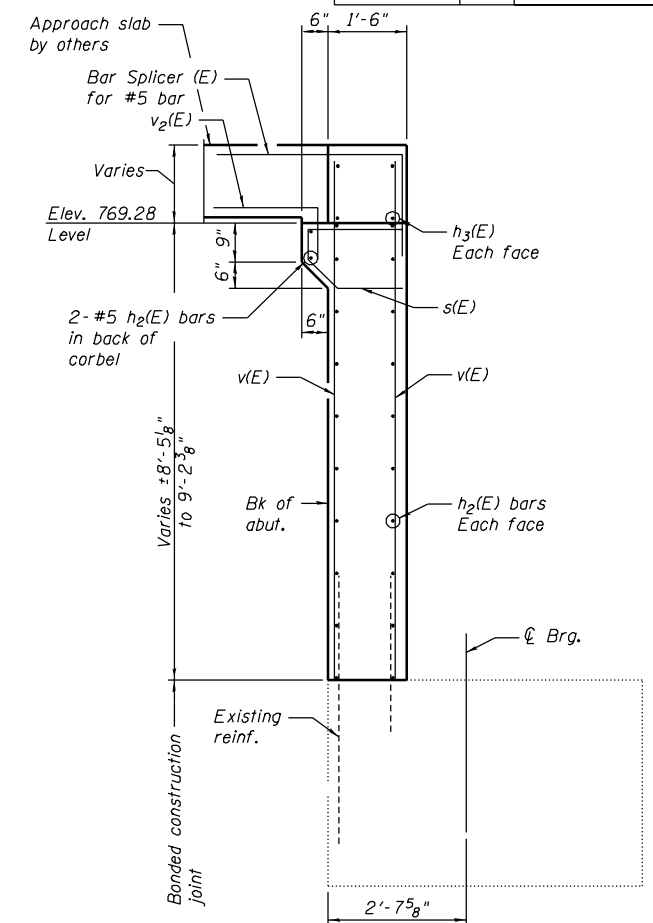
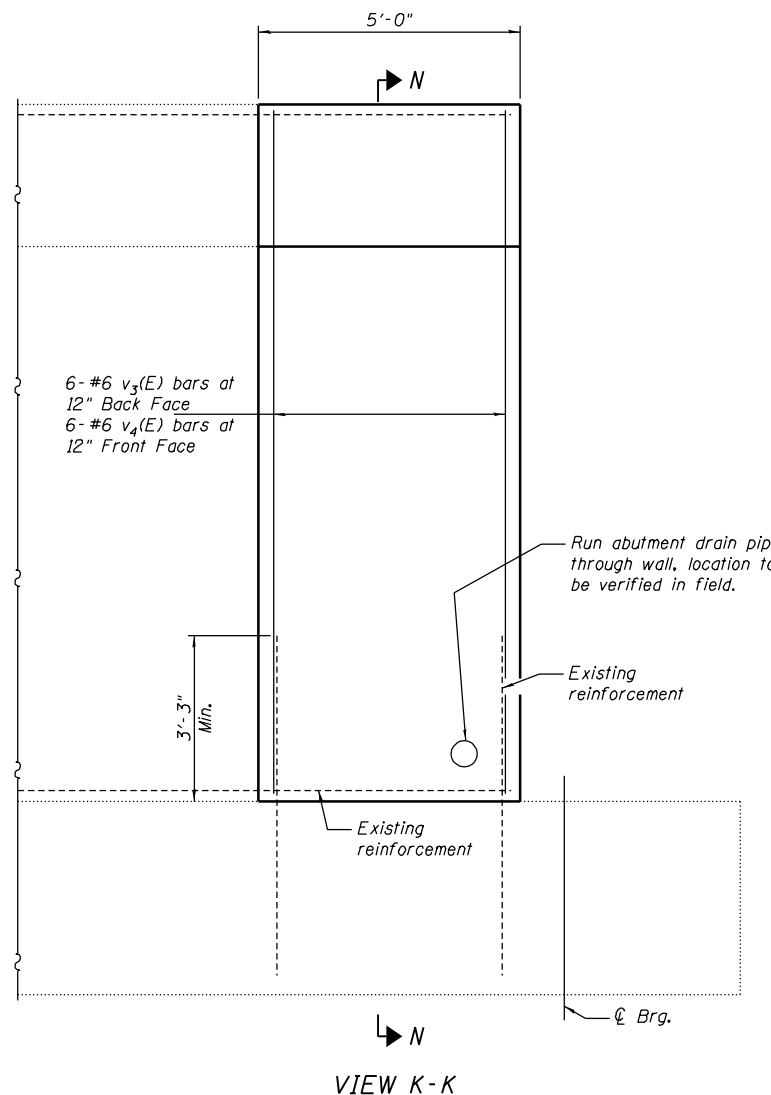
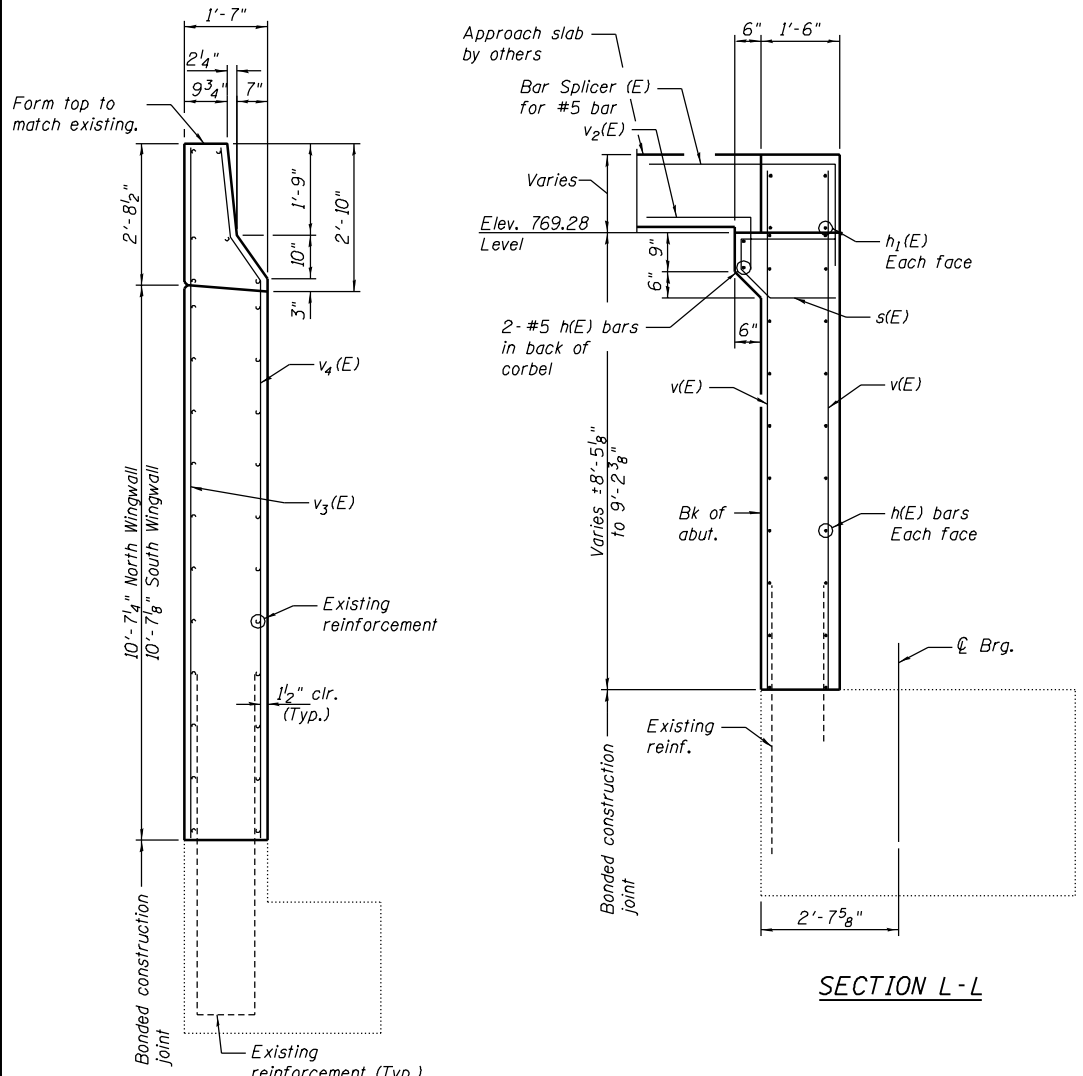
Notes:
For Bar Splicer details see sheet 9 of 10.
For sections of West abutment, bill of materials and bar bending diagrams see sheet 8 of 10.
Bars $d_1(E)$ and $d_3(E)$ are billed with the superstructure on sheet 4 of 10.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.

WEST ABUTMENT PLAN AND ELEVATION
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Champaign		8
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 8
10 SHEETS



SECTION M-M
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	52	#5	31'-4"	—
h1(E)	8	#6	31'-4"	—
h2(E)	52	#5	32'-0"	—
h3(E)	8	#6	32'-4"	—
h4(E)	22	#6	7'-3"	↘
h5(E)	22	#6	8'-2"	↘
s(E)	126	#5	4'-2"	┌
v(E)	250	#5	10'-5"	—
v1(E)	126	#5	3'-0"	—
v2(E)	126	#5	3'-0"	┌
v3(E)	12	#6	13'-0"	—
v4(E)	12	#6	12'-6"	—
Concrete Structures			Cu. Yd.	69.8
Reinforcement Bars, Epoxy Coated			Lbs.	9220

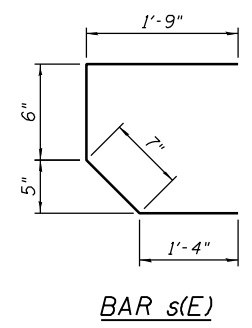
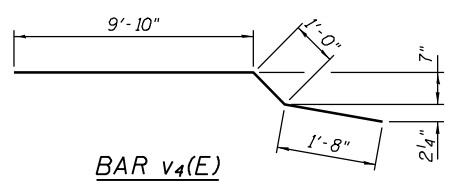
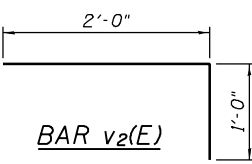
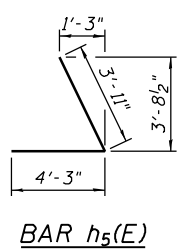
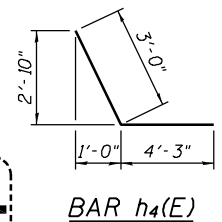
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.

PRE-FINAL

DATE: 03/07/2005

DESIGNED	M.J.T.
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DRAWN	Drew Christopher
CHECKED	M.J.T., D.A.B.

EXAMINED *John A. Morris*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES



MIN. BAR LAPS
#5 = 3'-0"
#6 = 3'-7"

Notes:
For Bar Splicer details see sheet 9 of 10.
For sections of West abutment, bill of materials and bar bending diagrams see sheet 8 of 10.
Bars d1(E) and d3(E) are billed with the superstructure on sheet 4 of 10.
Existing reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost shall be included with Concrete Removal.

WEST ABUTMENT DETAILS
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

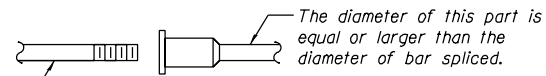
- ① Minimum Capacity = $1.25 \times f_y \times A_l$
(Tension in kips)
- ② Minimum *Pull-out Strength = $1.25 \times f_{s,allow} \times A_l$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 $f_{s,allow}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_l = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

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

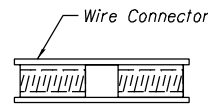
The diameter of this part is the same as the diameter of the bar spliced.



ROLLED THREAD DOWEL BAR



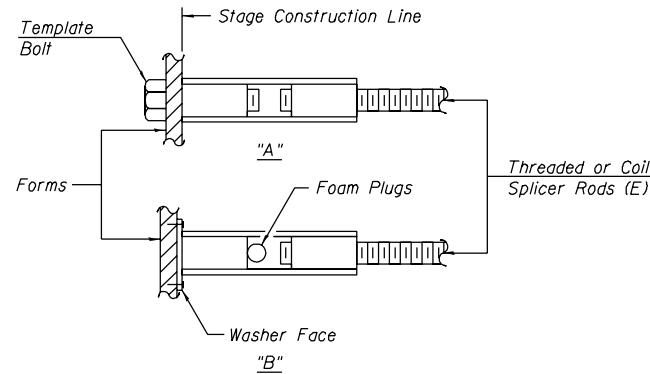
** ONE PIECE



WELDED SECTIONS

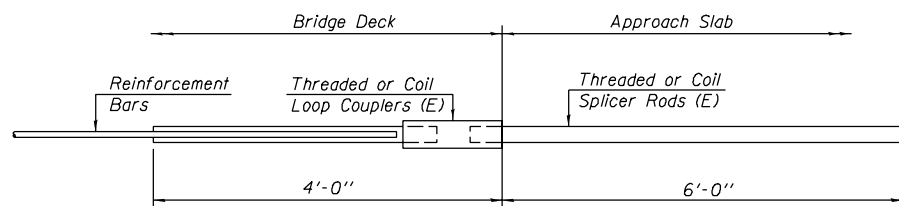
BAR SPLICER ASSEMBLY ALTERNATIVES

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



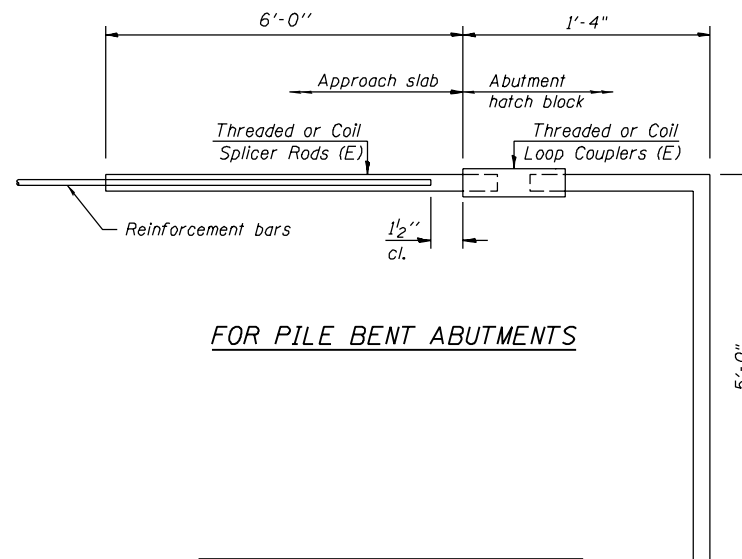
INSTALLATION AND SETTING METHODS

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



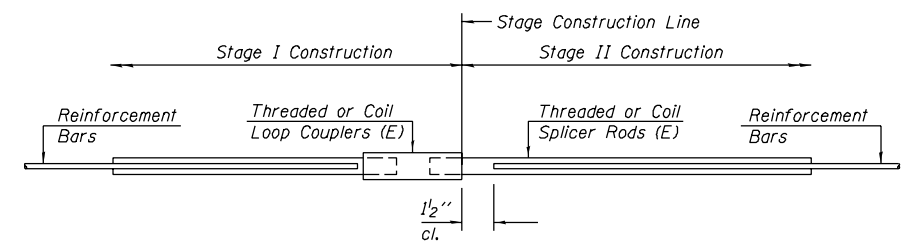
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 126



STANDARD

Bar Size	No. Assemblies Required	Location
#5	52	W. Abut.
#6	8	W. Abut.
#6	32	Deck

DESIGNED M.J.T.
CHECKED D.A.B.
DRAWN Drew Christopher
CHECKED M.J.T., D.A.B.

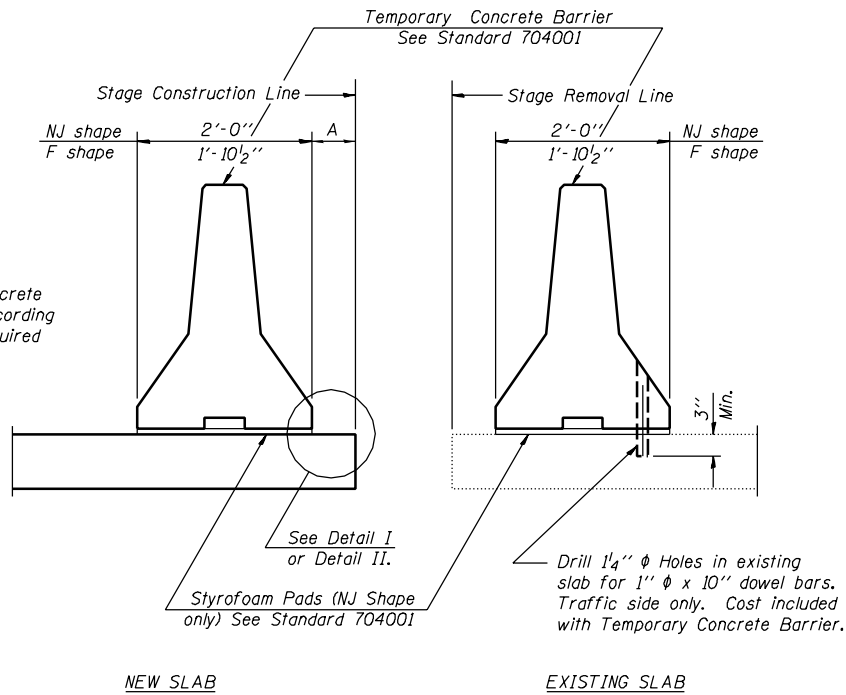
EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

PRE-FINAL
DATE: 03/07/2005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Champaign		10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 10
10 SHEETS

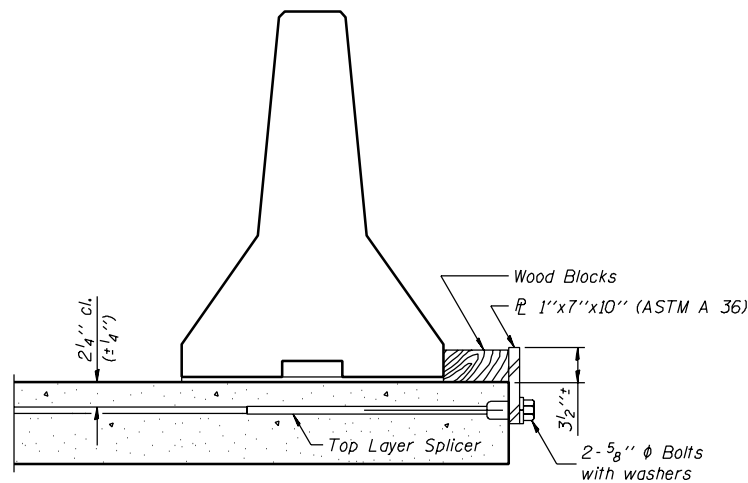


When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".

NOTES

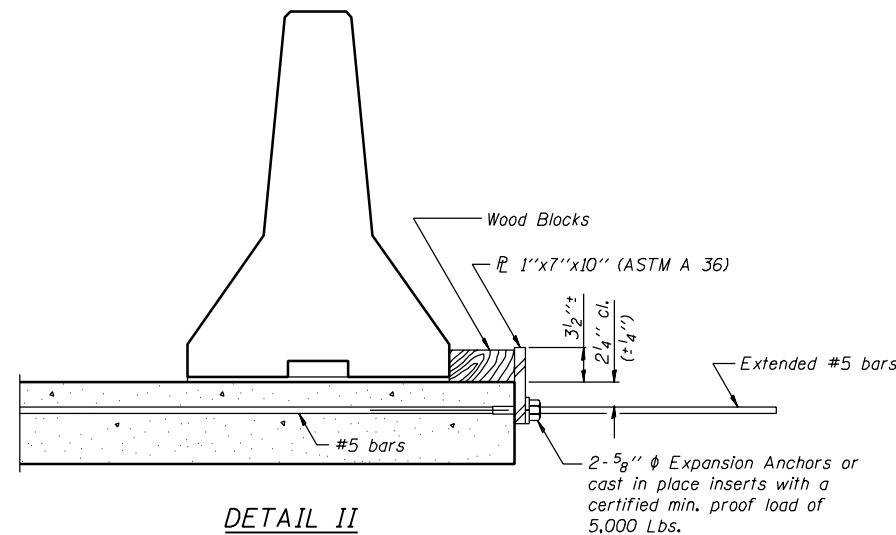
- Detail I - With Bar Splicer or Couplers:**
Connect one (1) 1"x7"x10" steel plate to the top layer of couplers with 2-5/8" diameter bolts screwed to coupler at approximate center of each barrier panel.
- Detail II - With Extended Reinforcement Bars:**
Connect one (1) 1"x7"x10" steel plate to the concrete slab with 2-5/8" diameter Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate center of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier.

SECTIONS THRU SLAB



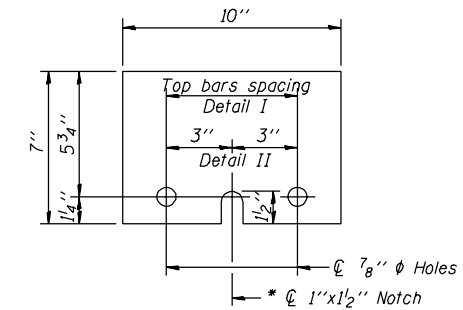
DETAIL I

The 1"x7"x10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 1"x7"x10" 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.



1"x7"x10" steel plate

* Required only with Detail II

DESIGNED	M.J.T.
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CHECKED	M.J.T., D.A.B.

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ENGINEER OF BRIDGES AND STRUCTURES

PRE-FINAL

DATE: 03/07/2005

R-27 9-01-03

TEMPORARY CONCRETE BARRIER
F.A.I. RT. 74
CHAMPAIGN COUNTY
SN 010-0021