

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	1

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**PROPOSED  
HIGHWAY PLANS**

FAP ROUTE 869 (IL 34)  
SECTION 101BR-1  
FRANKLIN COUNTY

PROJECT: ACBHF-0869(031)  
PPC DECK BEAM SUPERSTRUCTURE REPLACEMENT  
OVER EWING CREEK  
C-99-004-08

D-99-004-08



FOR INDEX OF SHEETS, SEE SHEET NO. 2  
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 3

TRAFFIC DATA

2008 ADT = 2930  
10.6% TRUCKS  
POSTED SPEED = 55 MPH

0 50' 100' 1" = 100' PLAN, CROSS SECTIONS

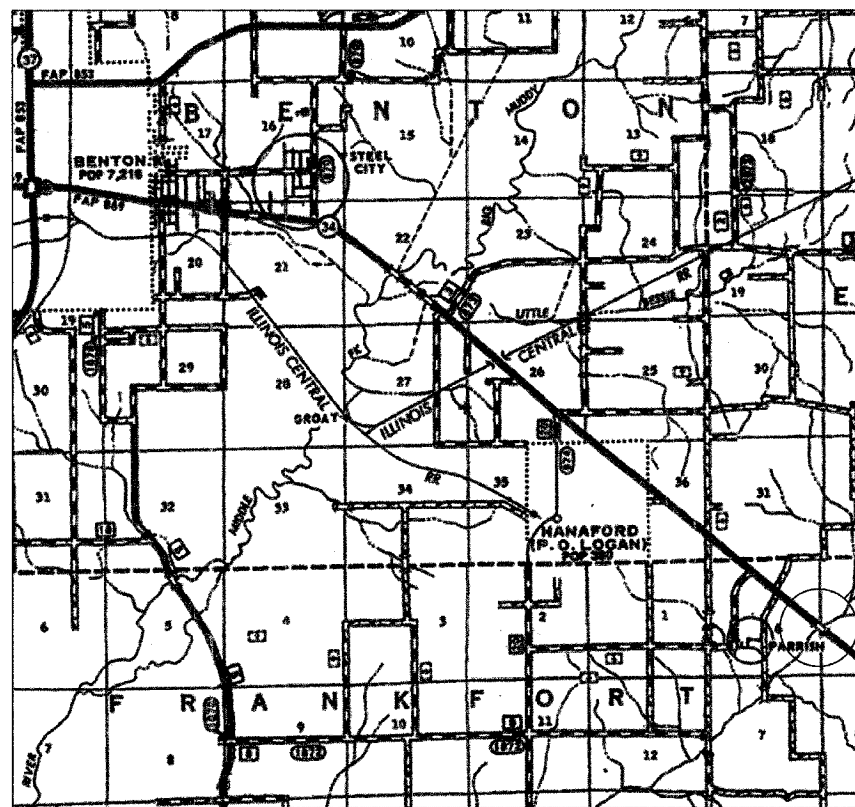
0 50' 100' 1" = 50' PLAN, PROFILE, CROSS SECTIONS

0 50' 100' 1" = 20' PLAN, PROFILE

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

J.U.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123 or www.julie1call.com

BENTON TOWNSHIP  
CONTRACT NO. 78024



PROJECT LOCATION:  
IL 34 OVER EWING CREEK  
STR NO. 028-0047(E)  
± STR STA 362+35.00

GROSS LENGTH = 168.79 FT  
NET LENGTH = 168.79 FT

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED Oct 11 20 07  
Man. C. Harris  
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

December 7, 2007  
Eric E. Harman  
ENGINEER OF DESIGN AND ENVIRONMENT

December 7, 2007  
Christie M. Reed  
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS**

10/11/2007  
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PORTER WC  
PROJECT ENGINEER: DAVID PICHE  
DESIGNER: BILL PORTER  
(618) 351-5227  
CENTREX 782-4554

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
869	101BR-1	FRANKLIN	28	2
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

**GENERAL NOTES**

PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS THE RESIDENT ENGINEER SHOULD CONTACT THE BUREAU OF OPERATIONS AND ARRANGE FOR INSPECTION AND APPROVAL OF THE PAVEMENT MARKING LAYOUT.

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE A CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK. THE CONTRACTOR, HOWEVER, WILL BE PAID FOR THE ACTUAL QUANTITY FURNISHED AT THE UNIT PRICE BID FOR THE WORK. CONSTRUCTION PLANS ARE AVAILABLE FOR REVIEW AT THE DISTRICT 9 OFFICE.

IN ADDITION TO THE REQUIREMENTS OF ARTICLE 107.16 THE CONTRACTOR SHALL PROTECT THE SURFACE OF ALL BRIDGE DECK AND BRIDGE APPROACH PAVEMENTS IN A MANNER SATISFACTORY TO THE ENGINEER BEFORE ANY EQUIPMENT IS ALLOWED TO CROSS THE STRUCTURE. PROTECTION SHALL BE PROVIDED FOR ALL EQUIPMENT AS DEFINED IN ARTICLE 101.17 REGARDLESS IF TRACK MOUNTED OR WHEELED.

AT ALL LOCATIONS WHERE PROPOSED HOT MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT MIX ASPHALT OR CONCRETE PAVEMENT, A SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT SHALL BE INCLUDED IN THE TYPE OF PAVEMENT BEING CONSTRUCTED.

QUANTITIES SHOWN IN THE PLANS FOR BRIDGE DECK GROOVING AND PROTECTIVE COAT INCLUDE ALL AREAS COVERED BY THE CONCRETE WEARING SURFACE, 5".

PROTECTIVE COAT SHALL BE APPLIED, TO ALL AREAS IN WHICH THE CONCRETE WEARING SURFACE, 5" IS CONSTRUCTED, IN ACCORDANCE WITH ARTICLE 503.19 OF THE STANDARD SPECIFICATIONS. THE PROTECTIVE COAT SHALL BE APPLIED REGARDLESS OF THE CURING METHOD USED. THE RATE OF APPLICATION FOR EACH COAT ON SAW CUT GROOVED AREAS SHALL BE 25 SQUARE YARDS PER GALLON OF MIXTURE.

TREES SHALL BE PRESERVED THROUGHOUT THIS SECTION AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. GENERALLY, TREES OUTSIDE THE CLEAR ZONE, AND WHICH DO NOT INTERFERE WITH CONSTRUCTION, SHALL NOT BE DISTURBED.

ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE LEFT IN PLACE UNTIL REMOVAL IS REQUIRED TO CONSTRUCT FINAL GRADE LINES.

THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION.

THE QUANTITY OF TEMPORARY PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION FOR STAGE I AND STAGE II CONSTRUCTION.

THE ADVANCE DETECTOR LOOPS ARE TYPICALLY LOCATED 300 FEET IN ADVANCE OF THE STOP BAR. THE BUREAU OF OPERATIONS SHOULD APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION.

THE CENTERLINE PAVEMENT MARKING SHOULD BE REMOVED FROM THE STOP BAR TO THE SAND ATTENUATORS OR DRUMS. EDGE LINE PAVEMENT MARKING SHOULD BE REMOVED IF A 10 FOOT LANE WIDTH CANNOT BE MAINTAINED. TEMPORARY EDGE LINES SHOULD BE INSTALLED WHEN THE EDGE LINES ARE REMOVED.

VERTICAL PANELS SHOWN ON STANDARD 701321 WILL NOT BE REQUIRED ON THE STAGE II NEW BRIDGE RAILING. THE BARRIER WALL REFLECTORS SHALL BE INSTALLED PRIOR TO OPENING TO TRAFFIC.

ANY TIME THE CONCRETE BARRIER IS NOT IN THE PROPER POSITION, FLAGGERS SHALL BE IN PLACE TO CONTROL TRAFFIC. THE TEMPORARY TRAFFIC SIGNALS SHALL BE SET TO FLASH ALL RED.

TRIM EDGES OF EXISTING HOT MIX ASPHALT SURFACE FLUSH WITH EXISTING PAVEMENT PRIOR TO CONSTRUCTING NEW BASE COURSE WIDENING.

FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

- ALL HOT-MIX ASPHALT 2.016 TONS/CU YD
- ALL AGGREGATE 2.05 TONS/CU YD
- HOT MIX ASPHALT MATERIALS:
- ON PAVEMENT 0.09 GAL/SQ YD
- AGGREGATE (PRIME COAT) 0.0015 TONS/SQ YD

"NARROW BRIDGE" SIGNS WITH ADVISORY TAGS " 11 FT 3 IN (STAGE I) AND 11 FT 0 IN (STAGE II)" SHALL BE ERECTED BETWEEN ONE ROAD CONSTRUCTION AHEAD AND THE SIGNAL AHEAD SIGNS.

COMMITMENTS: NONE AS OF OCTOBER 19, 2007, REFER TO COMMITMENT FILE FOR ANY COMMITMENTS AFTER THIS DATE.

**STANDARDS**

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-04 TEMPORARY EROSION CONTROL SYSTEMS
- 420001-07 PAVEMENT JOINTS
- 515001-02 NAME PLATE FOR BRIDGES
- 630001-07 STEEL PLATE BEAM GUARDRAIL
- 631011-04 TRAFFIC BARRIER TERMINAL, TYPE 2
- 631032-03 TRAFFIC BARRIER TERMINAL, TYPE 6A
- 635011-01 REFLECTOR MARKER & MOUNTING DETAILS
- 701001-01 OFF-ROAD OPERATIONS, 2L 2W, MORE THAN 4.5 m (15') AWAY
- 701006-02 OFF-ROAD OPERATIONS, 2L 2W, 4.5 m (15') TO PAVEMENT EDGE
- 701011-01 OFF-ROAD MOVING OPERATIONS, 2L 2W, DAY ONLY
- 701201-02 LANE CLOSURE, 2L 2W, DAY ONLY, ON-ROAD TO 600 mm (24") OFF-ROAD, FOR SPEEDS ≥ 45 MPH
- 701301-02 LANE CLOSURE, 2L 2W, SHORT TIME OPERATIONS
- 701321-09 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
- 701326-02 LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
- 701901 TRAFFIC CONTROL DEVICES
- 704001-04 TEMPORARY CONCRETE BARRIER
- 780001-01 TYPICAL PAVEMENT MARKINGS

**INDEX OF SHEETS**

- 1 COVER SHEET
- 2 INDEX OF SHEETS; GENERAL NOTES; STANDARDS
- 3 SUMMARY OF QUANTITIES
- 4 TYPICAL SECTION; SCHEDULES OF QUANTITIES; MIX REQ.
- 5 PLAN-PROFILE
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- 7 WIDE LOAD DETOUR
- 8 EROSION CONTROL PLAN
- 9 REFLECTOR AND TERMINAL MARKER
- 10 TEMPORARY HOT-MIX ASPHALT TRANSITIONS; BUTT JOINT
- 11-13 CROSS SECTIONS
- 14-28 STRUCTURE PLANS

Prepared By:	<i>Joe Blankinship</i>	DISTRICT STUDIES & PLANS ENGINEER
Examined By:	<i>James Daniel Gray</i>	DISTRICT LAND ACQUISITION ENGINEER
Examined By:	<i>Carrie Niles</i>	DISTRICT PROGRAM DEVELOPMENT ENGINEER
Examined By:	<i>Norman Hammer</i>	DISTRICT OPERATIONS ENGINEER
Examined By:	<i>Joseph Lewis</i>	DISTRICT CONSTRUCTION ENGINEER
Examined By:	<i>Bruce W. Miller</i>	DISTRICT MATERIALS ENGINEER
Examined By:	<i>Joe Blankinship</i>	DISTRICT PROJECT IMPLEMENTATION ENGINEER
Examined By:	<i>Joe Blankinship</i>	ASSISTANT REGIONAL ENGINEER
Approved By:	<i>Mark Corbin</i>	DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
	DATE	10/11 20 07

# SUMMARY OF QUANTITIES

RURAL - FRANKLIN COUNTY	
HBP FUNDING	
80% FEDERAL;	20% STATE
CONSTRUCTION TYPE CODE	
X080-2A	
SN 028-0047	

CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
20200500	EARTH EXCAVATION (WIDENING)	CU YD	29
25000210	SEEDING, CLASS 2A	ACRE	0.1
25000350	SEEDING, CLASS 7	ACRE	0.1
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	9
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	9
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	9
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.2
25100115	MULCH, METHOD 2	ACRE	0.1
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	20
28000400	PERIMETER EROSION BARRIER	FOOT	504
35600716	HOT - MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	105
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	49
40600300	AGGREGATE (PRIME COAT)	TON	1
40600982	HOT - MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	261
40600990	TEMPORARY RAMP	SQ YD	93
40603320	HOT - MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	52
42000500	PORTLAND CEMENT CONCRETE PAVEMENT 10"	SQ YD	21.3
42001200	PAVEMENT FABRIC	SQ YD	21.3
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1
50102400	CONCRETE REMOVAL	CU YD	3.8
50300225	CONCRETE STRUCTURES	CU YD	3.8
50300260	BRIDGE DECK GROOVING	SQ YD	357
50300300	PROTECTIVE COAT	SQ YD	357
50400105	PRECAST CONCRETE BRIDGE SLAB	SQ FT	359
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2499
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5440
50800515	BAR SPLICERS	EACH	96
50901050	STEEL RAILING, TYPE SM	FOOT	252
51500100	NAME PLATES	EACH	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	71
58700300	CONCRETE SEALER	SQ FT	22
59000200	EPOXY CRACK INJECTION	FOOT	3

RURAL - FRANKLIN COUNTY	
HBP FUNDING	
80% FEDERAL;	20% STATE
CONSTRUCTION TYPE CODE	
X080-2A	
SN 028-0047	

CODE NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
* 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	75
* 63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	1
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3
63200310	GUARDRAIL REMOVAL	FOOT	379
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	9
67100100	MOBILIZATION	L SUM	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	2
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	4
70300100	SHORT - TERM PAVEMENT MARKING	FOOT	65
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	1254
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	257
70400100	TEMPORARY CONCRETE BARRIER	FOOT	300
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	275
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	710
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	3
* 78200405	GUARDRAIL MARKERS	EACH	6
* 78200500	BARRIER WALL MARKERS	EACH	2
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	3
78300100	PAVEMENT MARKING REMOVAL	SQ FT	179
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	3
X0324744	REMOVAL OF EXISTING PRECAST CONCRETE UNITS	SQ FT	359
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	22
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	357
XX006661	UNINTERRUPTIBLE POWER SUPPLY	EACH	1
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	44
Z0030250	IMPACT ATTENUATORS, <sup>TEMPORARY</sup> NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2

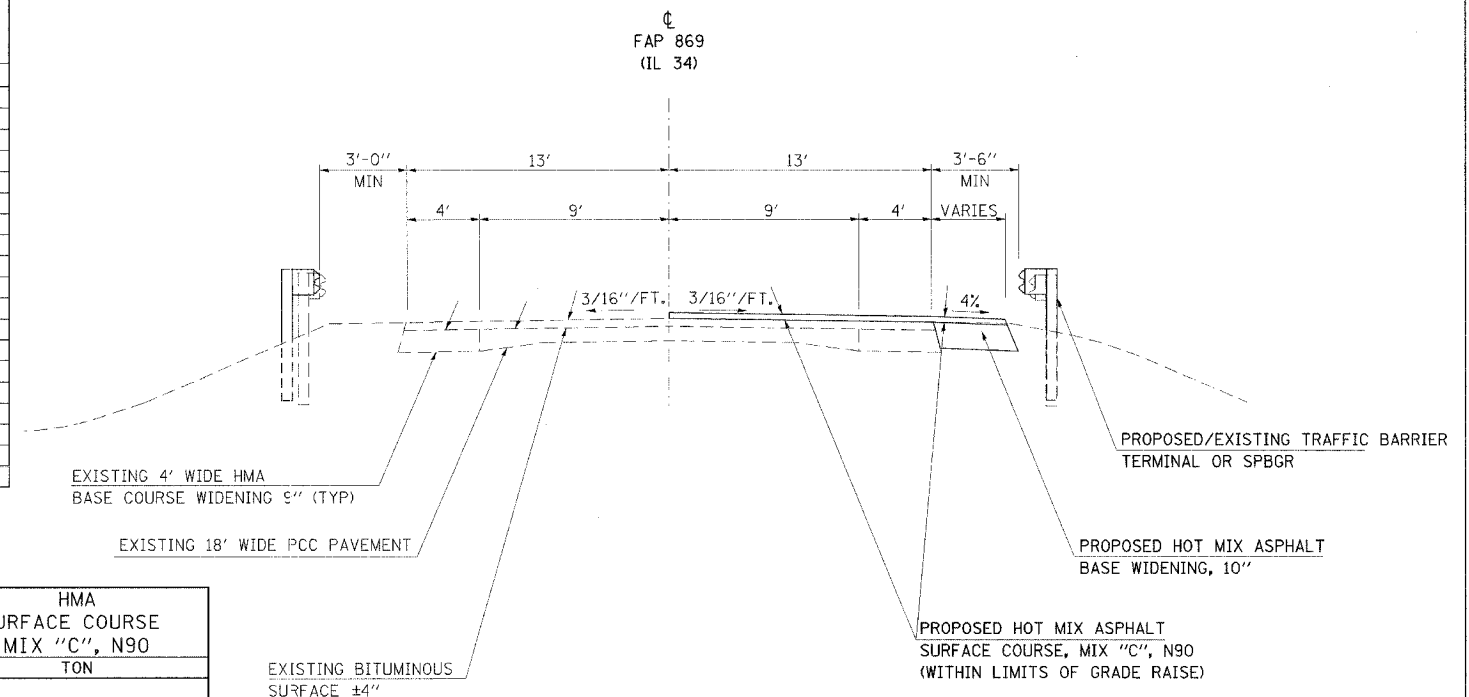
\* SPECIALTY ITEMS

# SUMMARY OF QUANTITIES

F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	4
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

### MARKING SCHEDULE

SN 028-0047 LOCATION STATION TO STATION	TEMP PVT MK LINE 4''		PAINT PVT MK LINE 4''		PAVEMENT MARKING REMOVAL SQ FT	SHORT -TERM PAVEMENT MARKING FOOT
	WHITE FOOT	YELLOW FOOT	WHITE FOOT	YELLOW FOOT		
<b>FAP 869 (IL 34)</b>						
<b>PRE STAGE I</b>						
STA 359+15 TO STA 361+45 CL SKIP DASH					20	
STA 363+30 TO STA 365+65 CL SKIP DASH					20	
STA 361+07 TO STA 363+70 LT					88	
STA 360+63 TO STA 364+20 CL		357				
STA 361+07 TO STA 363+70 LT	263					
<b>STAGE I</b>						
STA 360+90 TO STA 361+68 RT					26	
STA 362+92 TO STA 363+67 RT					25	
STA 360+63 TO STA 364+20 CL		357				
STA 360+90 TO STA 363+67 RT	277					
<b>POST STAGE II</b>						
STA 359+14 TO STA 365+65 CL						65
STA 359+15 TO STA 365+65 CL SKIP DASH						
STA 361+07 TO STA 363+70 LT			263	170		
STA 360+90 TO STA 363+67 RT			277			
<b>TOTALS</b>	<b>540</b>	<b>714</b>	<b>540</b>	<b>170</b>	<b>179</b>	<b>65</b>



### MISC. ROADWAY SCHEDULE

SN 028-0047 LOCATION STATION TO STATION	EARTH EXCAVATION (WIDENING) CU YD	HMA BASE COURSE WIDENING, 10'' SQ YD	TEMPORARY RAMP SQ YD	HMA SURFACE REMOVAL BUTT-JOINT SQ YD	HMA SURFACE COURSE MIX "C", N90 TON
<b>FAP 869 (IL 34)</b>					
<b>PRE STAGE I</b>					
STA 361+07 TO STA 361+78 LT	6.6	23			
STA 363+03 TO STA 363+70 LT	5.6	23			
<b>STAGE I</b>					
STA 360+90 TO STA 361+67 RT	7.2	31			
STA 362+92 TO STA 363+67 RT	9.6	28			
STA 361+64 TO STA 361+72 RT			13		
STA 362+97 TO STA 363+06 RT			14		
<b>STAGE 2</b>					
STA 361+64 TO STA 361+72 LT			15		
STA 362+97 TO STA 363+06 LT			15		
<b>POST STAGE 2</b>					
STA 361+12.25 TO STA 361+17.25			18		
STA 363+48.19 TO STA 363+53.19			18		
STA 361+12.25 TO STA 361+46.86				125	
STA 363+15.65 TO STA 363+53.19				136	
STA 361+12.25 TO STA 361+97.95					25
STA 362+71.99 TO STA 363+53.19					27
STA 361+12.25 TO STA 361+67.48 RT					
STA 361+12.25 TO STA 361+78.00 LT					
STA 362+91.98 TO STA 363+53.19 RT					
STA 363+03.93 TO STA 363+53.19 LT					
<b>TOTALS</b>	<b>29</b>	<b>105</b>	<b>93</b>	<b>261</b>	<b>52</b>

TYPICAL SECTION  
STA. 360+61 TO 361+78 & STA 362+92 TO 364+10  
SECTION LOOKING SOUTH

### MIXTURE REQUIREMENTS

LOCATION(S):	HOT-MIX ASPHALT BASE COURSE WIDENING, 10'
MIXTURE USE(S):	HOT-MIX ASPHALT BINDER COURSE, N90, IL-19.0
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0 %, 90 GYRATION
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-19.0
FRICTION AGGREGATE	NONE

LOCATION(S):	HOT-MIX ASPHALT SURFACE COURSE; HOT-MIX ASPHALT SHOULDERS
MIXTURE USE(S):	HOT-MIX ASPHALT SURFACE COURSE, MIX C, N90
AC/PG:	PG64-22
RAP % (MAX):	10
DESIGN AIR VOIDS:	4.0 %, 90 GYRATION
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5 mm or IL-12.5 mm
FRICTION AGGREGATE	C SURFACE

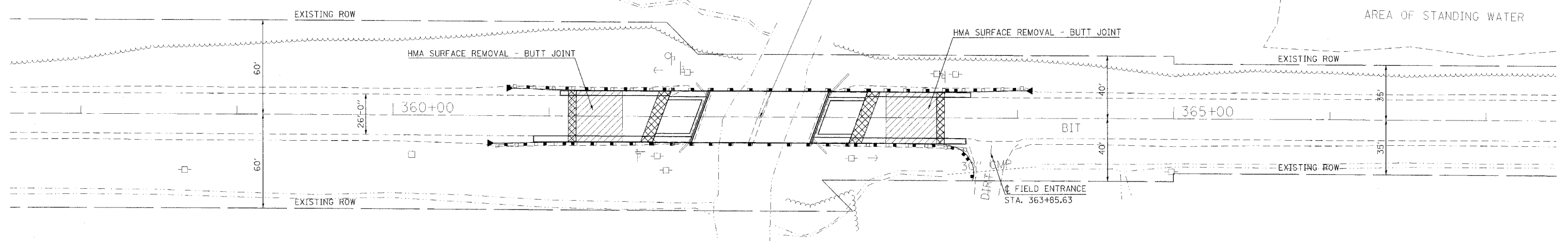
### TERMINALS AND GUARDRAIL SCHEDULE

SN 028-0047 LOCATION STATION TO STATION	TRAFFIC BARRIER TERMINALS			SPBGR TYPE A FOOT	BARRIER WALL MARKERS EACH	GUARDRAIL MARKER EACH	TERMINAL MARKER DIRECT APPLIED EACH
	TYPE 1 SPECIAL TANGENT EACH	TYPE 6A EACH	TYPE 2 EACH				
<b>FAP 869 (IL 34)</b>							
<b>STAGE 1</b>							
NW QUADRANT	1	1		12.5		2	1
SW QUADRANT		1	1	37.5		1	
BRIDGE					1		
<b>STAGE 2</b>							
NE QUADRANT	1	1		12.5		2	1
SE QUADRANT	1	1		12.5		1	1
BRIDGE					1		
<b>TOTALS</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>75</b>	<b>2</b>	<b>6</b>	<b>3</b>

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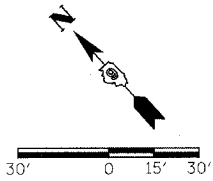
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	5
STA. 358+00		TO STA. 367+00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

EXISTING STRUCTURE  
 STRUCTURE NO. 028-0047  
 79'-3 1/2" BK TO BK ABUTS  
 33'-0" OUT TO OUT DECK  
 20° SKEW  
 STA. 362+35.00 (IL 34)

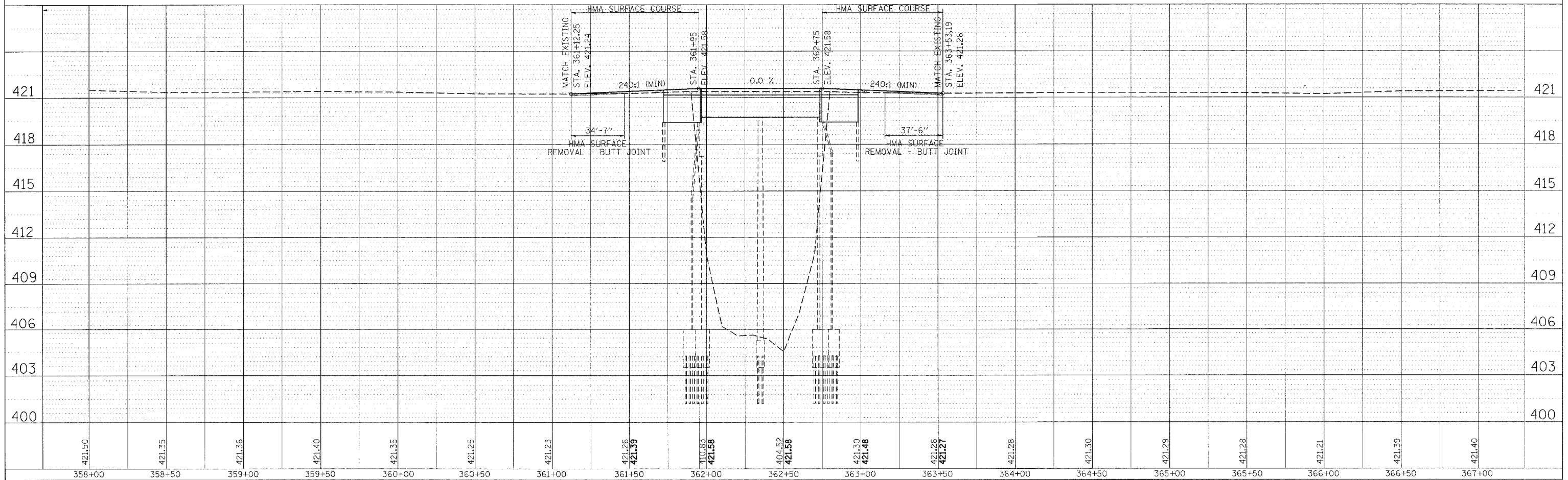


BM #207 - CHISELED SQUARE IN SOUTHWEST CORNER OF SOUTH ABUTMENT  
 OF EXISTING SN 028-0047 - ELEVATION 419.34

PLAN	SURVEYED	DATE
PLotted	BY	
NOTE BOOK	NO. OF WAY CHECKED	
NO.	NO.	



PROFILE	SURVEYED	DATE
PLotted	BY	
NOTE BOOK	NO. OF WAY CHECKED	
NO.	NO.	

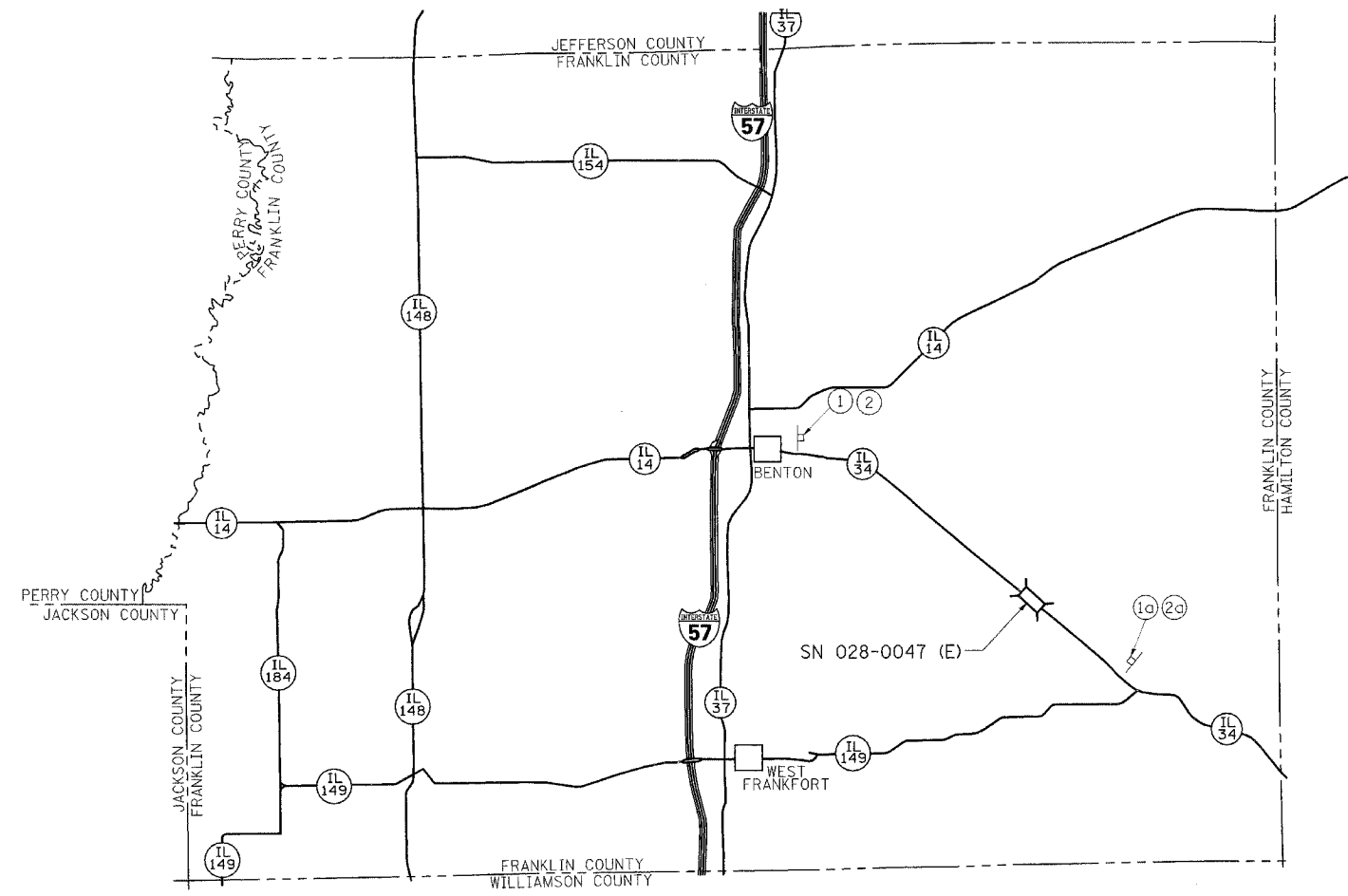
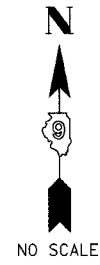




F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	7

FED ROAD DIST NO. 7 ILLINOIS FED AID PROJECT

## DETOUR SIGNING FOR LANE WIDTH RESTRICTION



### STAGE I ONLY

①

WIDE LOADS OVER 11'-0"	
DETOUR VIA	
SOUTH ILLINOIS	EAST ILLINOIS
37	149
60" x 60"	

### STAGE II ONLY

②

WIDE LOADS OVER 11'-0"	
DETOUR VIA	
SOUTH ILLINOIS	EAST ILLINOIS
37	149
60" x 60"	

①a

WIDE LOADS OVER 11'-0"	
DETOUR VIA	
WEST ILLINOIS	NORTH ILLINOIS
149	37
60" x 60"	

②a

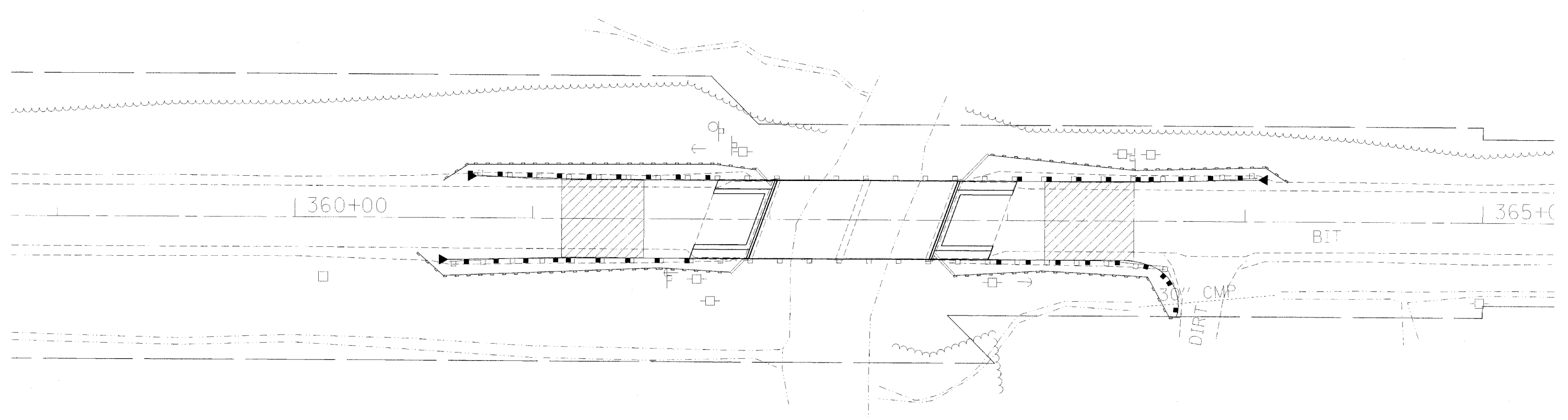
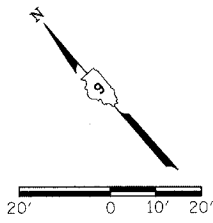
WIDE LOADS OVER 11'-0"	
DETOUR VIA	
WEST ILLINOIS	NORTH ILLINOIS
149	37
60" x 60"	

### NOTES

1. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN, AND REMOVE THE POSTS AND SIGNS AT THE LOCATIONS SHOWN AND AS DIRECTED BY THE RESIDENT ENGR./TECH. ALL SIGNS SHALL BE POST MOUNTED.
2. THE CONTRACTOR SHALL GIVE I.D.O.T. BUREAU OF OPERATIONS, PERMITS SECTION, TWO WEEKS NOTICE BEFORE IMPLEMENTING ANY LANE WIDTH RESTRICTIONS.
3. THE ABOVE NOTED WORK, INCLUDING SIGNS, POSTS, HARDWARE, AND LABOR SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE, EACH, FOR TRAFFIC CONTROL AND PROTECTION, STD 701321 AND NO OTHER COMPENSATION WILL BE ALLOWED.

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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	8
STA. 358+00		TO STA. 367+00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

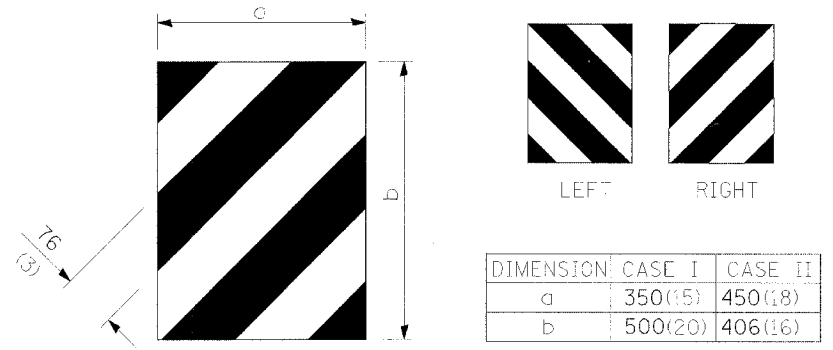
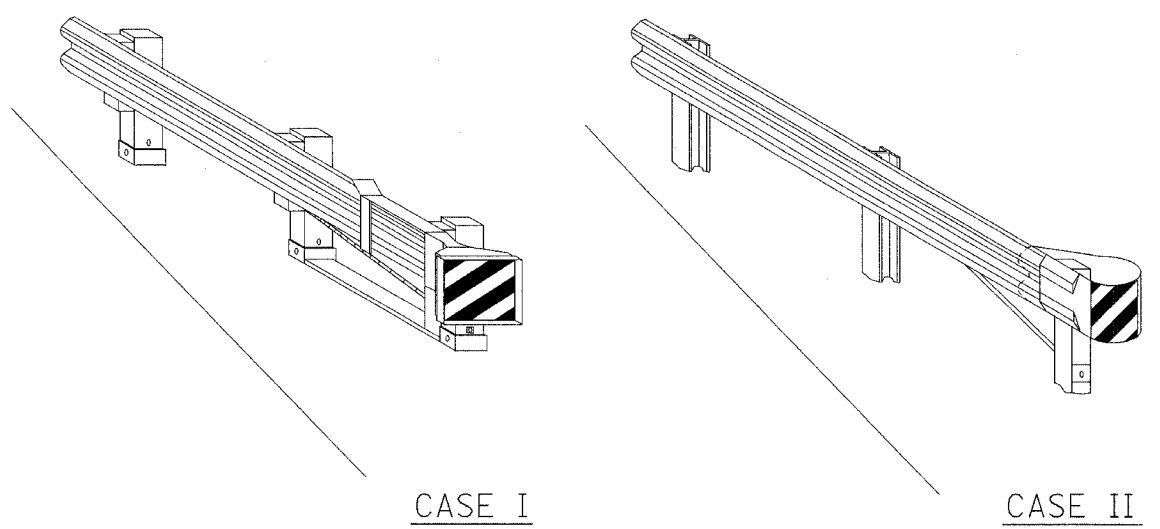


—□— PERIMETER EROSION BARRIER

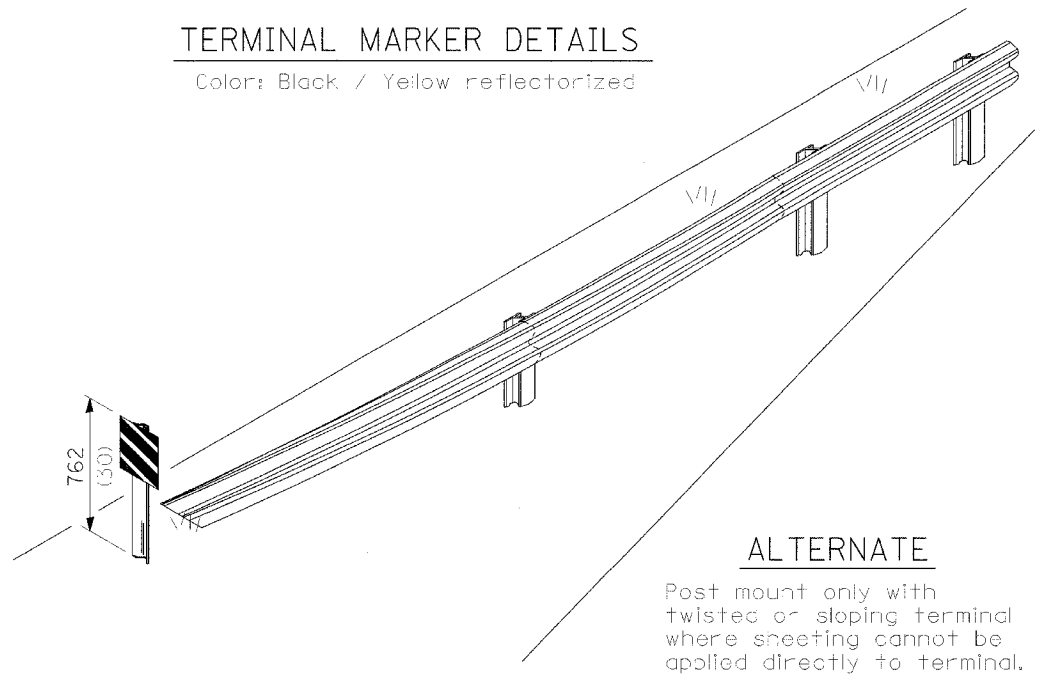
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 USER NAME = pbrtnc



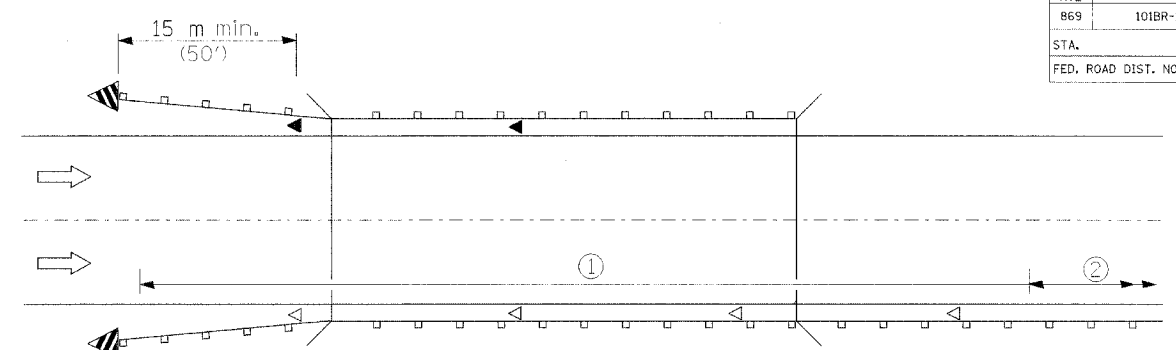
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
B69	101BR-1	FRANKLIN	28	9
STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	



**TERMINAL MARKER DETAILS**  
Color: Black / Yellow reflectorized

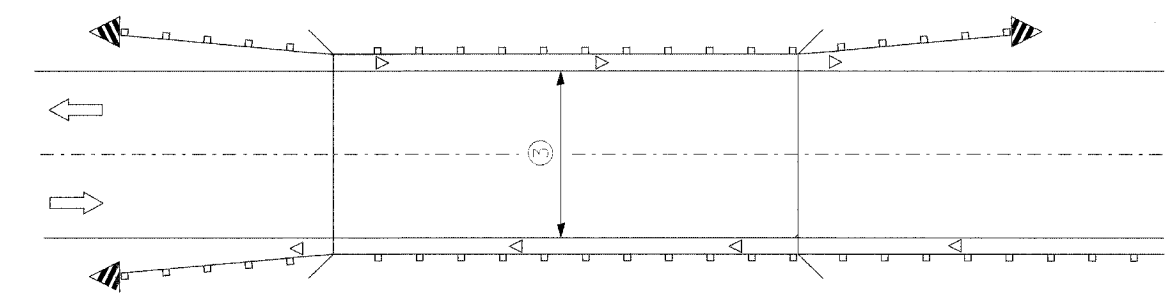


**ALTERNATE**  
Post mount only with twisted or sloping terminal where sheeting cannot be applied directly to terminal.



- ① Spacing 24 m (80 ft.) max. for first 122 m (400 ft.) or curve spacing shown in Standard 635001, whichever is less (min. 4 reflectors regardless of length).
- ② After 122 m (400 ft.), transition to normal delineator spacing shown in Standard 635001, and continue as required.

ONE-WAY TRAFFIC

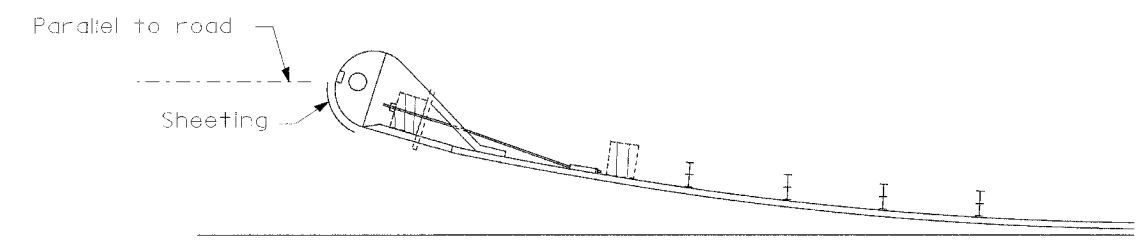


- ③ Bidirectional silver/silver should be used in lieu of monodirectional silver on both sides of two-lane bridges where the pavement is less than 610 (24) wider than the pavement approaching the bridge.

- ◁ Monodirectional silver
- ◀ Monodirectional amber
- ◀ Terminal Marker - Black/Yellow Left or Right as appropriate

TWO-WAY TRAFFIC

**GUARDRAIL / BARRIER WALL / BRIDGE RAIL REFLECTORS**



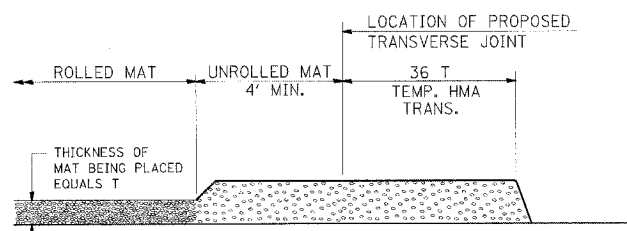
SHEETING POSITION: CASE II

All dimensions are in millimeters (inches) unless otherwise shown.

REFLECTOR AND TERMINAL MARKER PLACEMENT

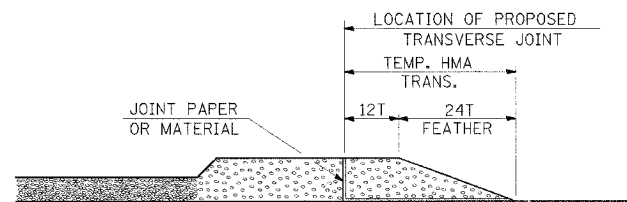
DETAIL

# TEMPORARY HOT-MIX ASPHALT TRANSITIONS



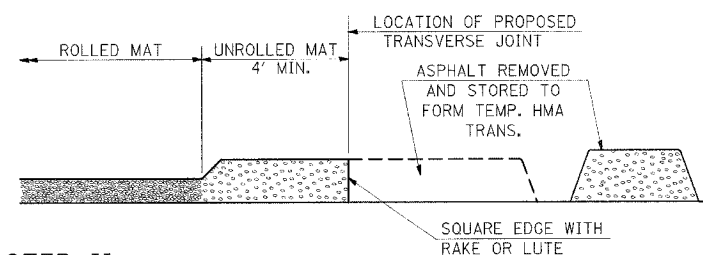
## STEP I

1. PLACE HOT-MIX ASPHALT MAT, LENGTH 36 TIMES THE THICKNESS OF THE MAT BEING PLACED PAST THE PROPOSED TRANSVERSE JOINT LOCATION USING NORMAL OPERATING PROCEDURES.
2. EXTREME CARE SHOULD BE TAKEN TO MAINTAIN ENOUGH MATERIAL IN FRONT OF THE SCREED TO MAINTAIN REQUIRED PAVING DEPTH.



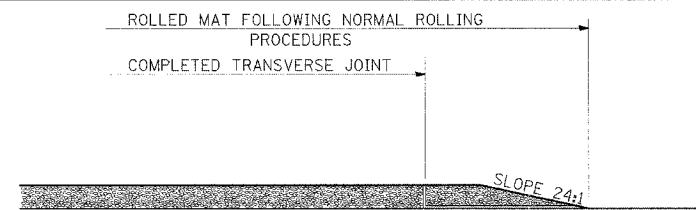
## STEP III

1. JOINT PAPER OR OTHER PRESELECTED JOINT MATERIAL IS THEN PLACED IN THE CLEARED AREA AND THE EXCESS ASPHALT USED TO HAND FORM A TRANSITION TO THE DIMENSIONS SHOWN ABOVE.
2. NOTE THAT IN CONSTRUCTING THE TRANSITION, THE MAT DEPTH IS CONTINUED AS PART OF THE TRANSITION BEFORE FORMING THE FEATHER.



## STEP II

1. MOVE THE PAVER OUT OF THE WAY AND REMOVE THE ASPHALT FROM THE AREA OF THE PROPOSED TEMPORARY HOT-MIX ASPHALT TRANSITION.
2. SQUARE UP THE END OF THE MAT WITH A RAKE OR LUTE.
3. NOTE THAT THE MAT WITHIN 4' OF THE END OF JOINT IS NOT TO BE ROLLED AT THIS TIME.



## STEP IV

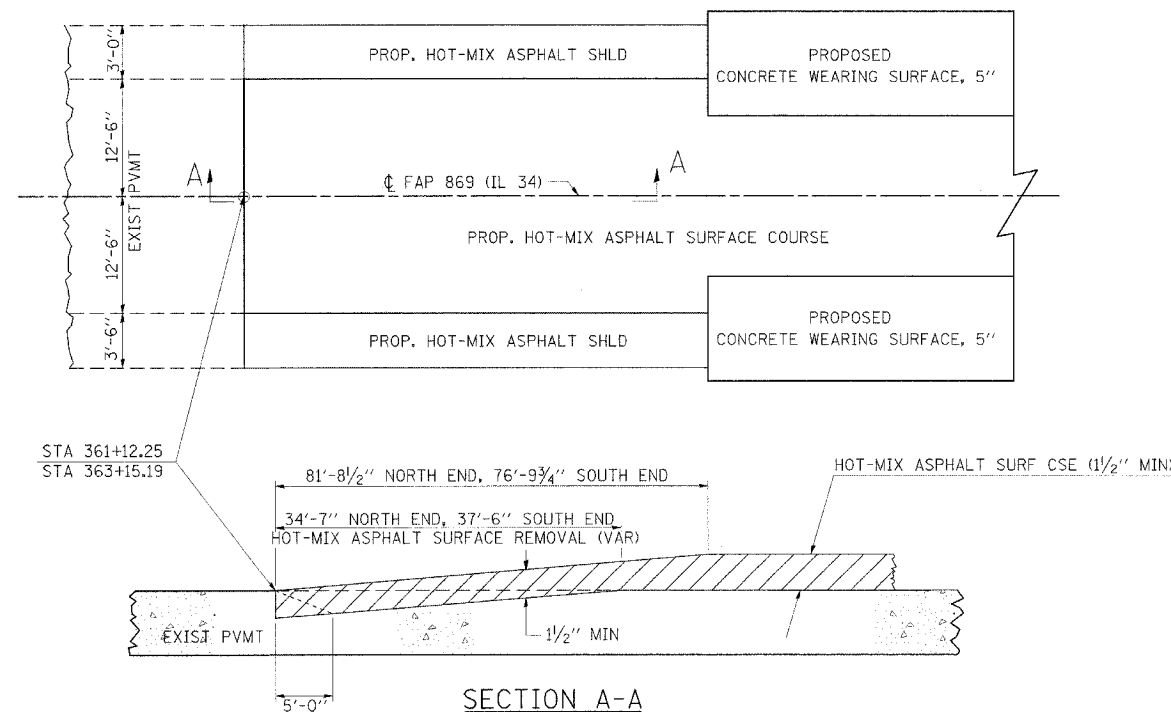
1. COMPLETE TEMPORARY TRANSITION BY ROLLING.
2. TO RESUME PAVING, AT THE JOINT, REMOVE TEMPORARY TRANSITION AND DISPOSE OF THE MATERIAL ACCORDING TO ART. 202.03 OF THE STD. SPECS. (COST INCLUDED IN THE CONTRACT).
3. CONSTRUCTING THE TEMPORARY TRANSITIONS WILL NOT BE PAID FOR SEPARATELY IN ACCORDANCE WITH ARTICLE 406.14 OF THE STANDARD SPECIFICATIONS.

STD. 9-26

REVISIONS	
REDRAWN	2-15-89
REVISED	8-16-94
REVISED	01-09-07
REVISED	

# BUTT JOINT

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.		TO STA.		
FED. ROAD DIST. NO. -		ILLINOIS	FED. AID PROJECT	

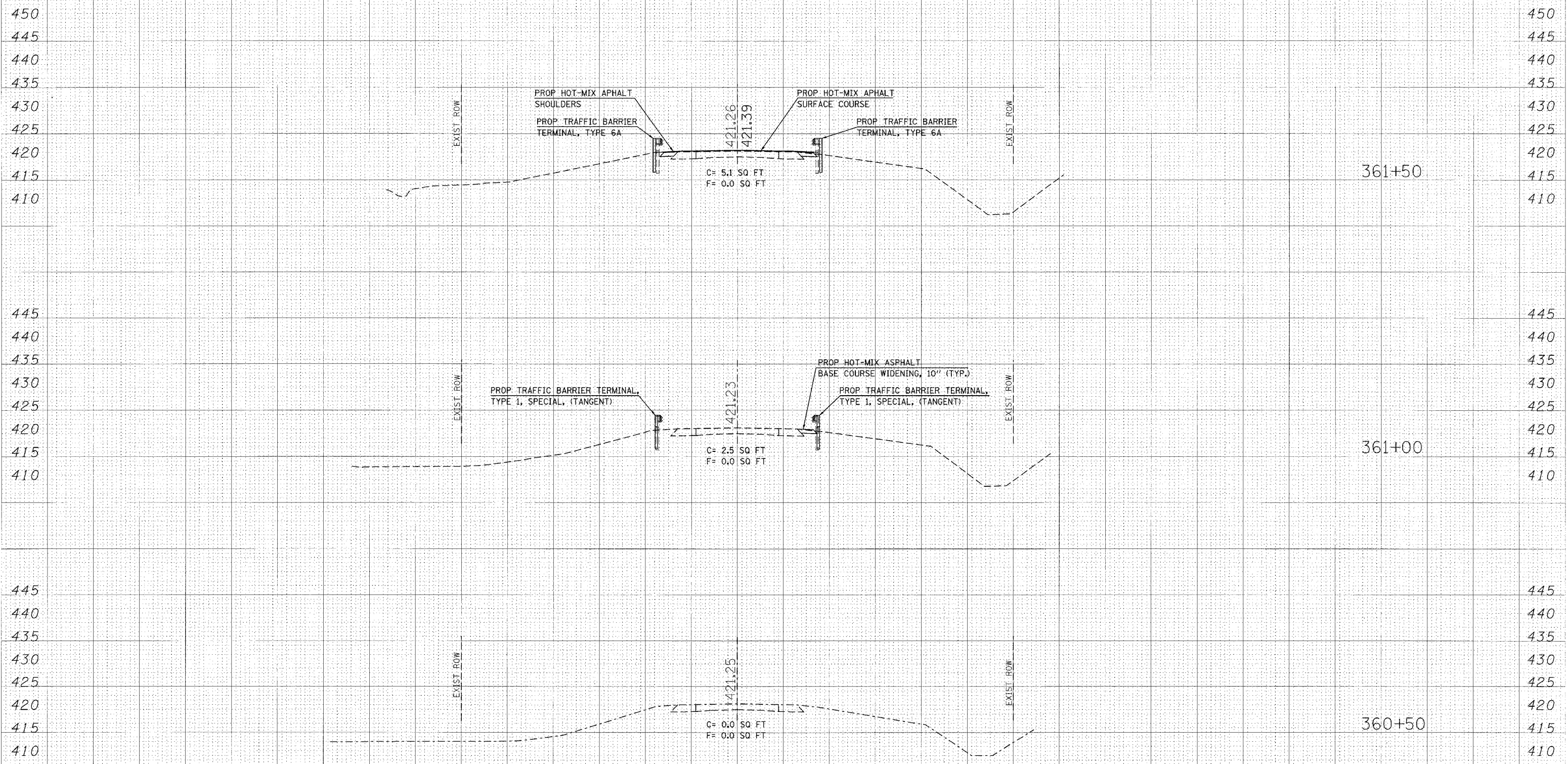


REVISIONS	
DRAWN	10-17-90
REVISED	01-11-07
REVISED	
REVISED	

STD. 9-86

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	11
STA. 360+50		TO STA. 361+50		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



DATE: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 AREAS CHECKED: \_\_\_\_\_

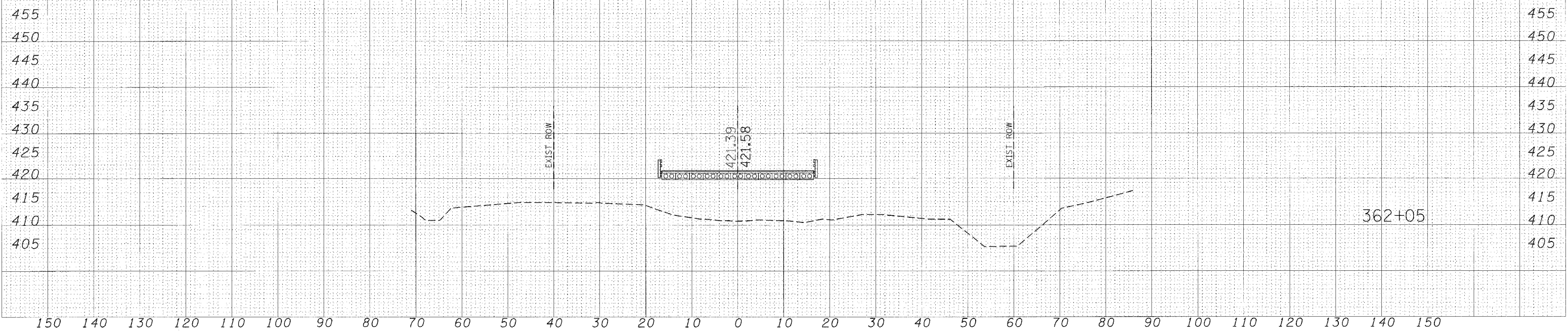
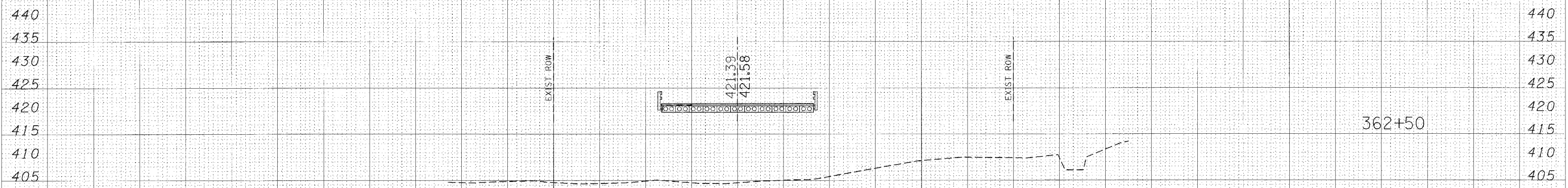
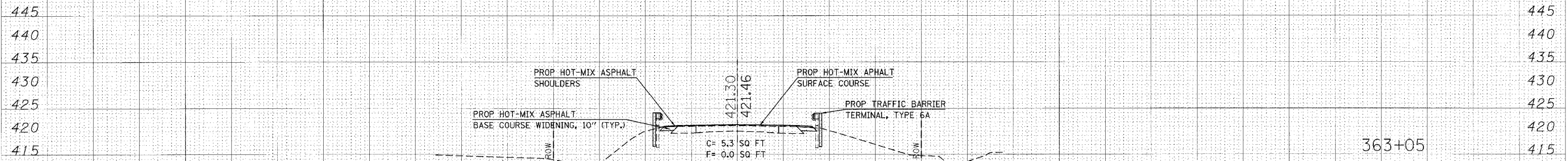
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 BY: \_\_\_\_\_  
 CHECKED: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_  
 PLOTTED: \_\_\_\_\_  
 AREAS CHECKED: \_\_\_\_\_

DATE: 10/1/2007  
 FILE NAME: c:\pwworkspace\78024\101BR-1\101BR-1.dwg  
 PLOT SCALE: 1/8" = 1'-0"  
 USER NAME: pparham

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	12
STA. 362+05		TO STA. 363+05		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 SURVEYED: \_\_\_\_\_ PLOTTED: \_\_\_\_\_  
 F.V.M. SURVEY NOTE BOOK NO. \_\_\_\_\_

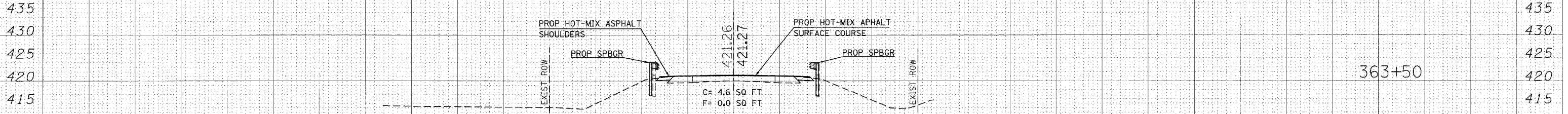
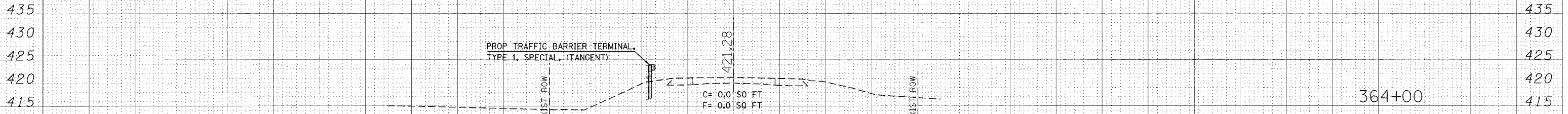
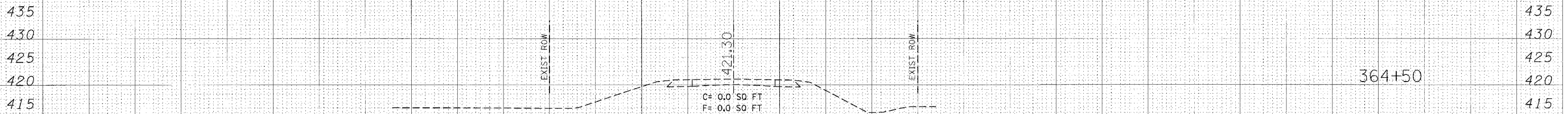
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 USER NAME = pcc-terrac



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	101BR-1	FRANKLIN	28	13
STA. 363+50 TO STA. 364+50				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY

DATE	BY

NO. \_\_\_\_\_

ORIGINAL SURVEY

DATE	BY

NO. \_\_\_\_\_

PLOT DATE = 10/1/2007  
 FILE NAME = c:\p\c\p\1178024\p78024-h\h\p78024.dwg  
 PLOT SCALE = 1/8"=1'-0" / IN.  
 USER NAME = port-ave

Bench Mark 206: Cut "x" in top northwest bolt of fire hydrant connection, northwest quadrant of ILL. Rte. 34 and Mace Rd. Elevation 435.457

Bench Mark 207: Chiseled square in southwest corner of south abutment of SN 028-0047. Elevation 419.341

Bench Mark 471: Existing railroad spike in power pole. Station 374+70, right of centerline. Elevation 421.603

Bench Mark 208: Chiseled square in southwest corner of south headwall of box culvert. Station 401+25. Elevation 460.603

Existing Structure: The original two-span structure was built in 1928 with a reinforced concrete deck girder on reinforced concrete closed abutments and pier with a length of 76'-1 1/4" back-to-back of abutments. The structure was widened in 1975. The superstructure was replaced with P.P.C. deck beams with a total width of 33'-0" out-to-out of superstructure and the substructure was modified accordingly.

Proposed Improvements: The existing superstructure is to be replaced with P.P.C. deck beams and a 5" concrete overlay. Minor substructure repairs are required. Traffic to be maintained at all times utilizing stage construction.

No Salvage

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	LENS	SHEET	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN		14	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #78024

**DESIGN SPECIFICATIONS**

2002 AASHTO Standard Specifications  
for Highway Bridges

**LOADING HS20-44**

No Allowance for Future Wearing Surface.

**DESIGN STRESSES**

**FIELD UNITS**

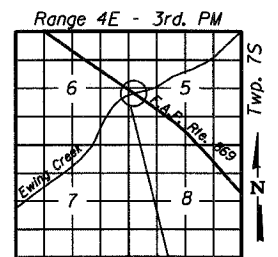
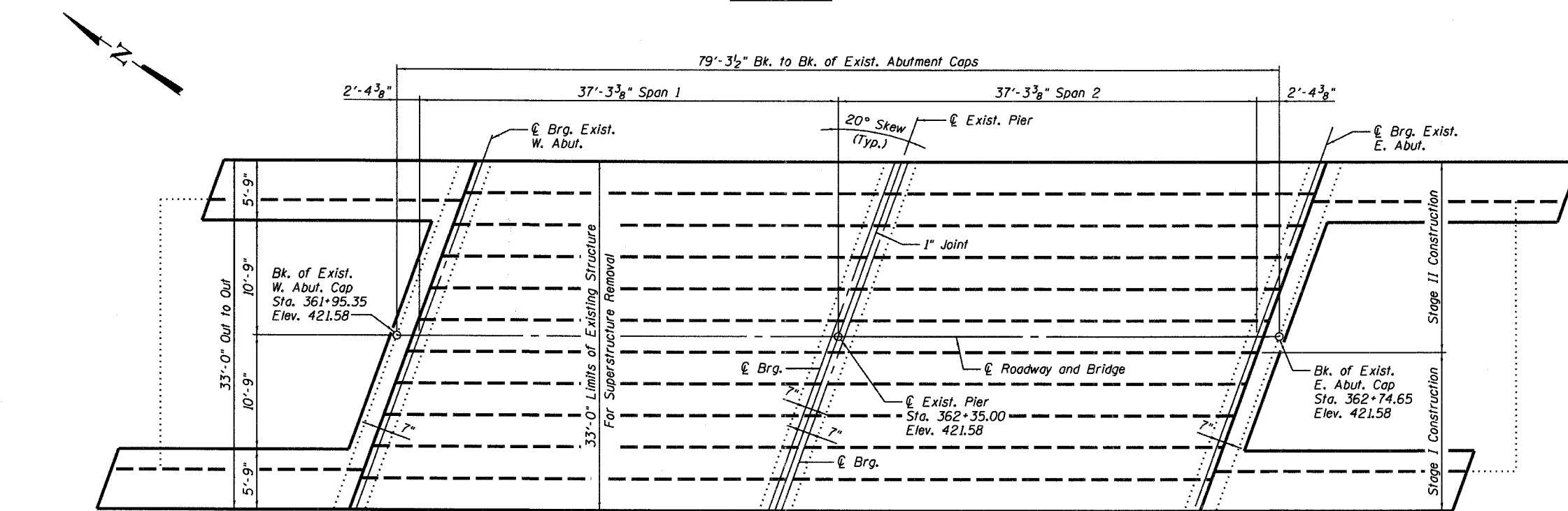
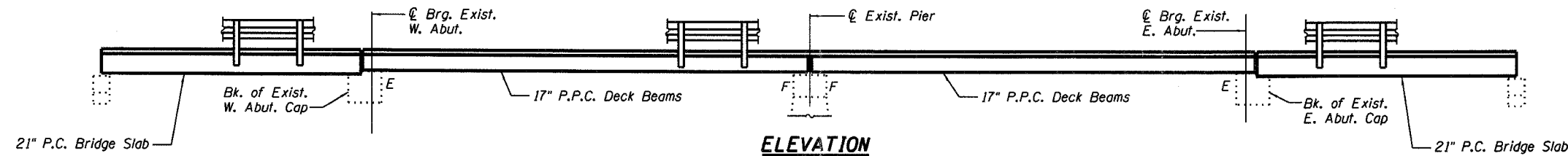
$f'_c = 5,000$  psi (Concrete Wearing Surface)  
 $f'_c = 3,500$  psi (All concrete except CWS)  
 $f_y = 60,000$  psi (reinforcement)

**PRECAST PRESTRESSED UNITS**

$f'_c = 5,000$  psi  
 $f'_{ci} = 4,000$  psi  
 $f'_s = 270,000$  psi (1/2" low lax. strands)  
 $f_{si} = 201,960$  psi (1/2" low lax strands)

**PRECAST UNITS**

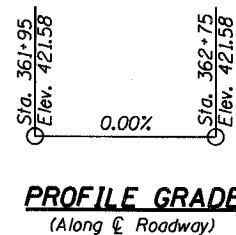
$f'_c = 4,500$  psi  
 $f_y = 60,000$  psi (reinforcement)



PROPOSED REHABILITATION  
**LOCATION SKETCH**



DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM



APPROVED  
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson  
ENGINEER OF BRIDGES AND STRUCTURES



DAVID W. PETERMEIER  
EDWARDSVILLE, ILLINOIS  
ILLINOIS LICENSED STRUCTURAL  
ENGINEER NO. 081-005642  
EXPIRES NOV. 30, 2008

**GENERAL PLAN & ELEVATION**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
F.A.P. 869	101BR-1	FRANKLIN	15	2
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract #78024

**SCOPE OF WORK**

1. Remove existing surface, steel railing, deck beams, approach shoulder channel beams, and bearing pads.
2. Repair bearing seats and perform other repairs at abutments and pier as required.
3. Reconstruct a two-span P.P.C. deck beam superstructure with concrete wearing surface and steel railing, Type SM. Reconstruct approach shoulders with P.C. bridge slabs with concrete wearing surface and steel railing, Type SM.

STATION 362+35  
REBUILT 200\_ BY  
STATE OF ILLINOIS  
F.A.P. RT. 869 SEC. 101BR-1  
LOADING HS20  
STR. NO. 028-0047

**NAME PLATE**  
See Std. 515001

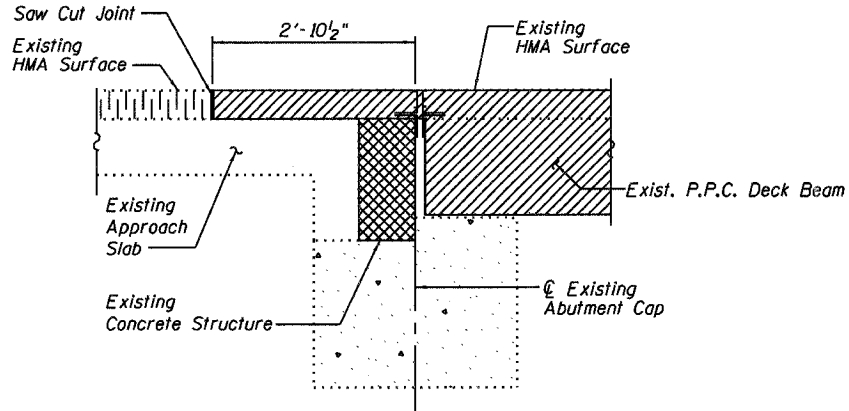
Notes:  
Existing name plate shall be cleaned and relocated adjacent to the new name plate. Cost included with Name Plates.  
Locate name plates at outside face of top steel railing tube at southwest corner of bridge.

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	Each	1	-	1
Concrete Removal	Cu. Yd.	3.8	-	3.8
Concrete Structures	Cu. Yd.	3.8	-	3.8
Bridge Deck Grooving	Sq. Yd.	357	-	357
Protective Coat	Sq. Yd.	357	-	357
Precast Concrete Bridge Slab	Sq. Ft.	359	-	359
Precast Prestressed Concrete Deck Beams (17")	Sq. Ft.	2,499	-	2,499
Reinforcement Bars, Epoxy Coated	Pound	5,440	-	5,440
Bar Splicers	Each	96	-	96
Steel Railing, Type SM	Foot	252	-	252
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	71	-	71
Concrete Sealer	Sq. Ft.	-	22	22
Epoxy Crack Injection	Foot	-	3	3
Asbestos Bearing Pad Removal	Each	-	44	44
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	-	22	22
Concrete Wearing Surface, 5"	Sq. Yd.	357	-	357
Removal of Existing Precast Concrete Units	Sq. Ft.	359	-	359

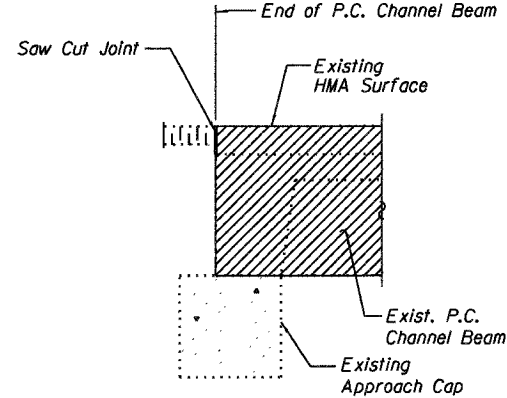
**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
2. Plan dimensions and details relative to existing plans are subject to routine variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based upon the unit price bid for the work.
3. Concrete Sealer shall be applied to the abutments and pier where concrete repairs are performed.
4. No in-stream work will be allowed on this project.
5. The Contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the Contractor's responsibility to account for the condition of the beams when developing construction procedures for removal and replacement of the superstructure.
6. If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the new deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included with Precast Prestressed Concrete Deck Beams (17").
7. The minimum thickness of the concrete wearing surface shall be 5" and varies as required to adjust for the existing profile grade and beam camber.
8. Repair of the substructure shall be completed prior to placement of the new deck beams.



**SECTION AT CENTERLINE ROADWAY**

Note:  
Horizontal dimension shown is at right angles to beam ends.



**SECTION AT APPROACH SHOULDER**

**LIMITS OF EXISTING STRUCTURE FOR SUPERSTRUCTURE REMOVAL**

Notes:  
HMA removal over approach slab included in the cost of Removal of Existing Superstructures.  
Removal of concrete structure indicated by crosshatch included in the cost of Concrete Removal.  
HMA removal over approach shoulder channel beam and removal of P.C. channel beams included in the cost of the Removal of Existing Precast Concrete Units.



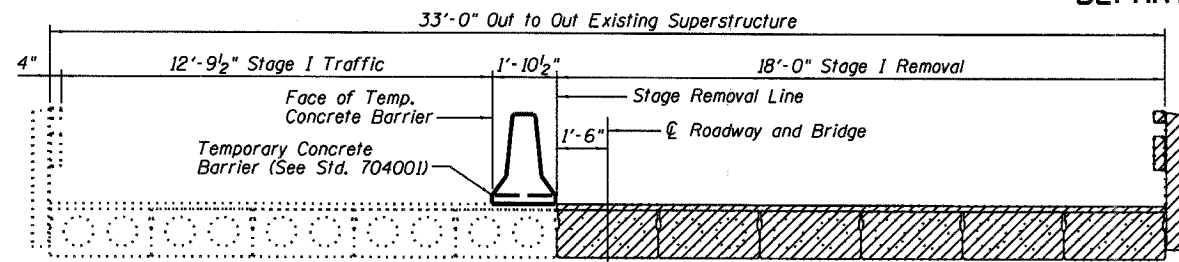
DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

**GENERAL STRUCTURE DATA  
ILL. ROUTE 34 OVER EWING CREEK  
F.A.P. ROUTE 869 SECTION 101BR-1  
FRANKLIN COUNTY  
STATION 362+35.00  
STRUCTURE NO. 028-0047**

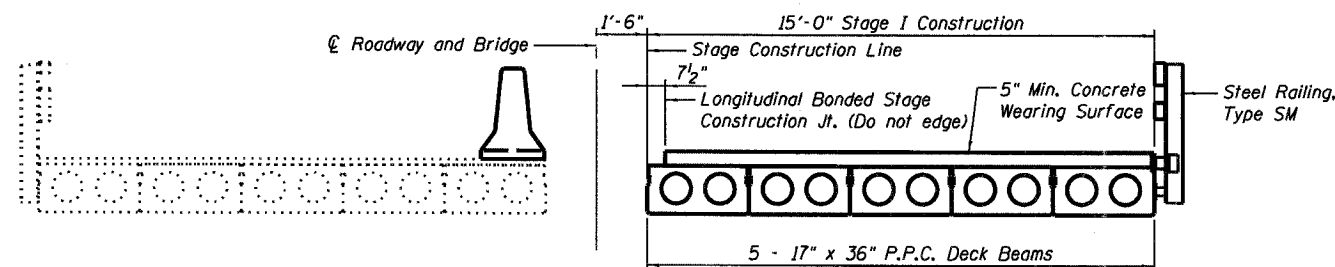
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO. F.A.P. 869	SECTION 10IBR-1	COUNTY FRANKLIN	SHEET NO. 14	SHEET NO. 3 15 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		

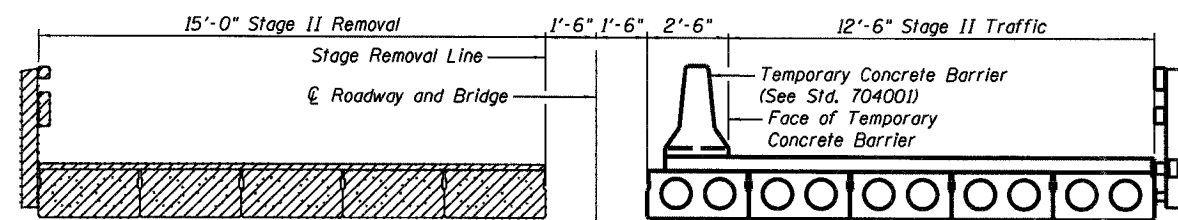
Contract #78024



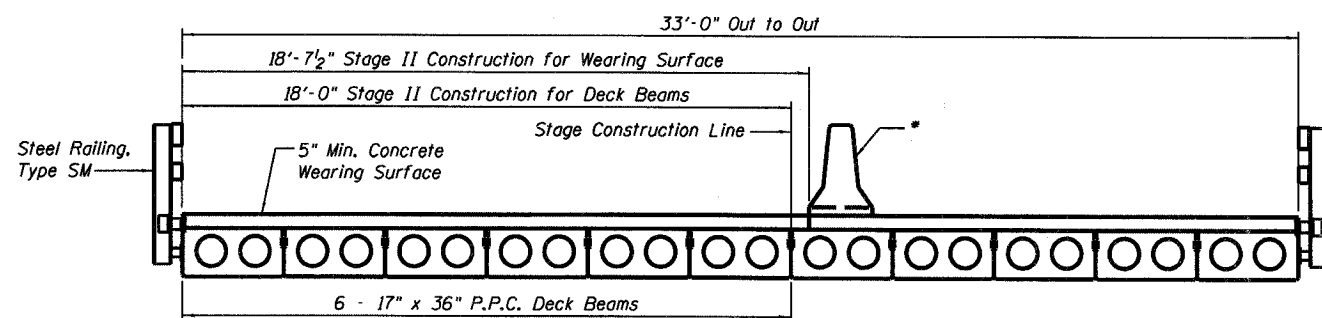
**STAGE I REMOVAL**  
(Looking Upstation)



**STAGE I CONSTRUCTION**  
(Looking Upstation)

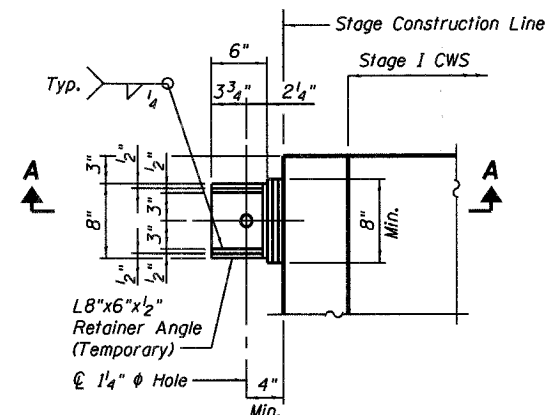


**STAGE II REMOVAL**  
(Looking Upstation)

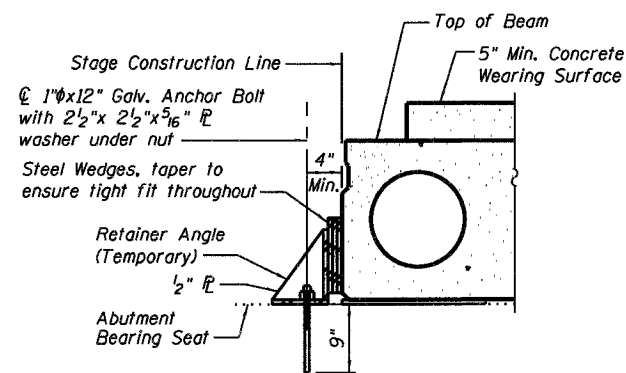


**STAGE II CONSTRUCTION**  
(Looking Upstation)

\* Temporary Concrete Barrier to be removed with Stage II Traffic Control upon completion of Stage II construction.



**PLAN**



**SECTION A-A**

**TEMPORARY RETAINER DETAILS  
AT STAGE CONSTRUCTION LINE**

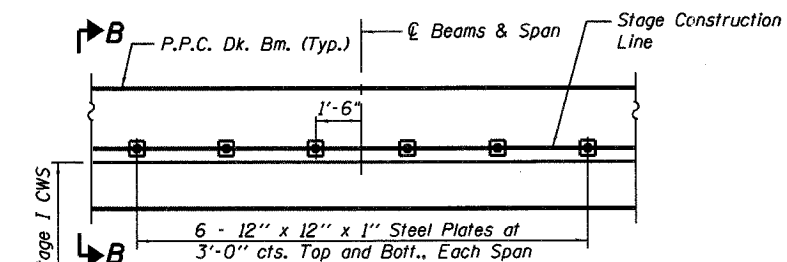
Temporary retainer angles are required at the expansion bearing ends of the beams to provide temporary lateral support during stage construction. Retainer angles shall be installed prior to forming the concrete wearing surface. Temporary retainer angles shall be removed prior to beam erection in Stage II Construction.

Anchor bolts shall be ASTM A 307 Gr. C or ASTM F1554 Gr. 36 All-thread.

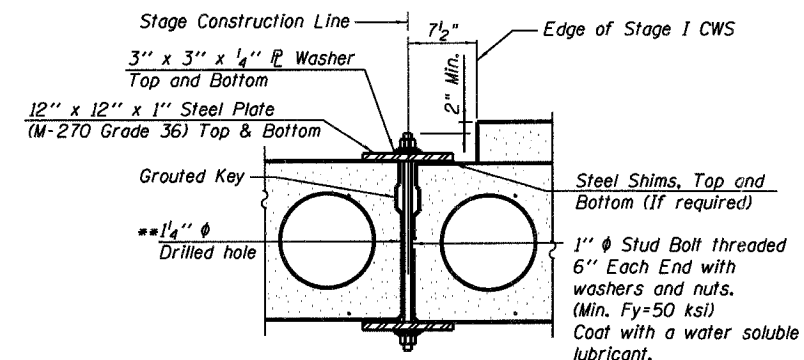
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Anchor bolts shall be burned off flush with the bearing seat, ground smooth, and sealed with epoxy during removal.

Cost to furnish, install, and remove temporary retainer angles, anchor bolts and accessories is included with Precast Prestressed Concrete Deck Beams (17").



**PLAN**



**SECTION B-B**

**CLAMPING PLATE**

**SHEAR KEY CLAMPING DETAILS**

See Article 504.06 of the Standard Specifications for Stage Construction of Precast Prestressed Concrete Deck Beams.

Cost included with Precast Prestressed Concrete Deck Beams (17").

\*\* As an alternate to the drilled holes, the Contractor may request the Fabricator to cast 2" diameter semi-circular recesses in the sides of each beam adjacent to the stage construction line. These recesses should align to form a hole at the appropriate locations for the clamping device bolts. If the Contractor elects to use this alternate, the details shall be identified on the shop drawings.

**STAGE CONSTRUCTION DETAILS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**



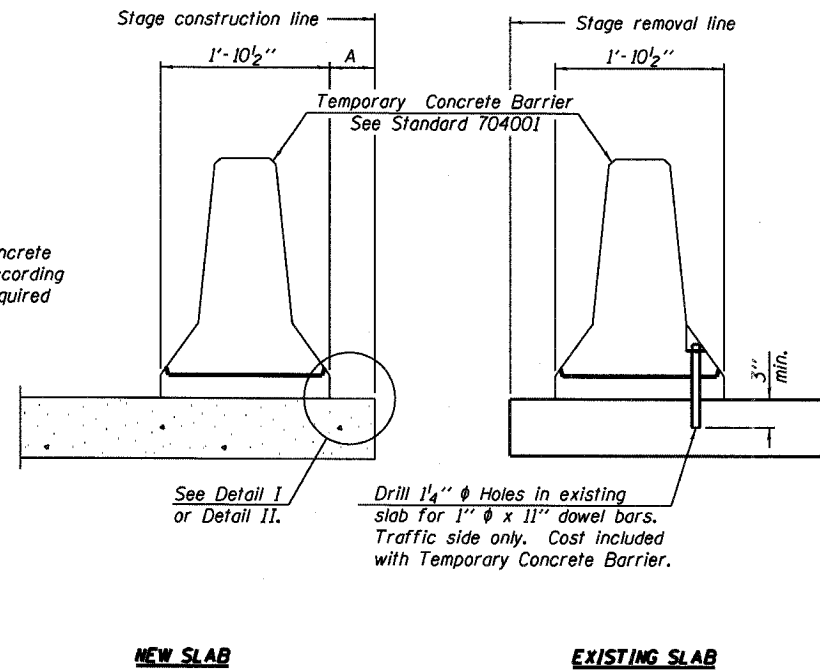
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CHECKED	MEL
DRAWN	AEC
CHECKED	RLM



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO. 4
F.A.P. 869	10IBR-1	FRANKLIN		17	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #78024



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**

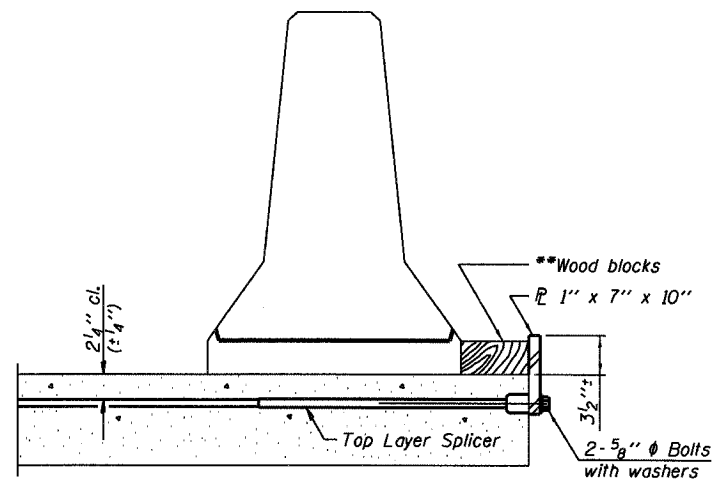
Detail I - With Bar Splicer or Couplers:  
Connect one (1) 1"x7"x10" steel  $\bar{L}$  to the top layer of couplers with 2- $\frac{5}{8}$ "  $\phi$  bolts screwed to coupler at approximate  $\bar{C}$  of each barrier panel.

Detail II - With Extended Reinforcement Bars:  
Connect one (1) 1"x7"x10" steel  $\bar{L}$  to the concrete slab with 2- $\frac{5}{8}$ "  $\phi$  Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate  $\bar{C}$  of each barrier panel.

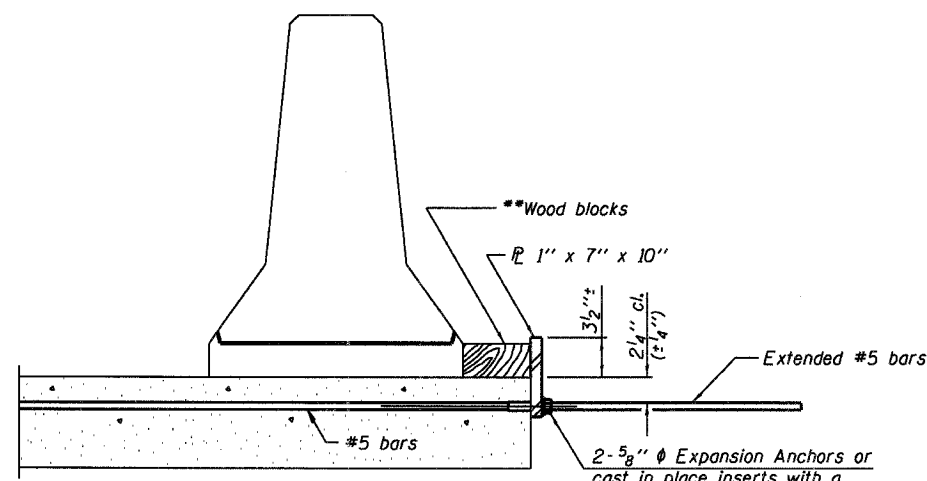
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

See Roadway Plans for quantity of Temporary Concrete Barrier.

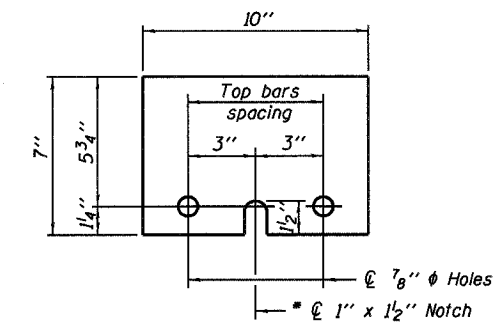
**SECTIONS THRU SLAB**



**DETAIL I**



**DETAIL II**



**STEEL RETAINER  $\bar{L}$  1" x 7" x 10"**  
\* Required only with Detail II

\*\* Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

R-27

11-1-06

**TEMPORARY CONCRETE BARRIER  
FOR STAGE CONSTRUCTION  
ILL. ROUTE 34 OVER EWING CREEK  
F.A.P. ROUTE 869 SECTION 10IBR-1  
FRANKLIN COUNTY  
STATION 362+35.00  
STRUCTURE NO. 028-0047**

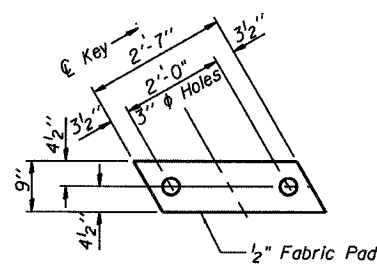
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
F.A.P. 869	101BR-1	FRANKLIN	18	5
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		15 SHEETS

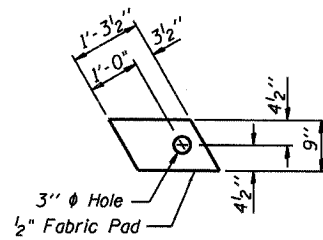
Contract #78024

**NOTES**

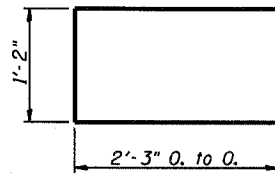
1. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270.
2. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
3. Lifting loops shall be 2-1/2"  $\phi$ -270 ksi strands, as shown.
4. Lifting loops shall be burned off after beams have been erected.
5. The 1"  $\phi$  rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.
6. Non prestressing steel shall conform to ASTM A 706 (IL MOD), Grade 60.
7. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
8. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.
9. Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
10. Required Release Strength, f'ci, shall be 4,000 p.s.i.
11. See Sheet No. 11 of 15 for required fascia beam modifications for rail anchorage.



**FABRIC BEARING PAD**  
(Interior)  
(18 Required)

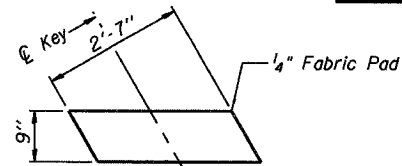


**FABRIC BEARING PAD**  
(Exterior and Stage Const. Line)  
(8 Required)

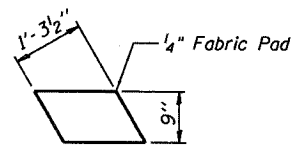


**BAR U**

**FIXED**

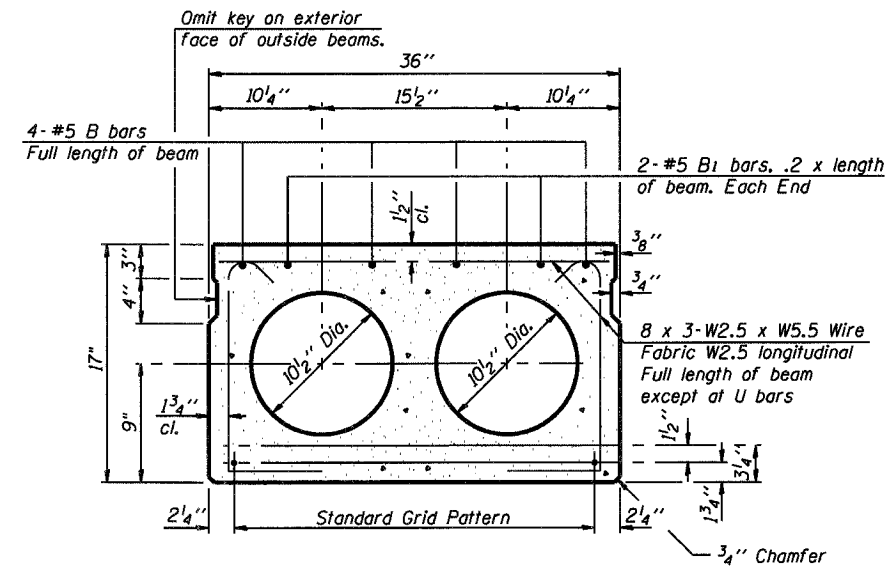


**FABRIC BEARING PAD**  
(Interior)  
(36 Required)



**FABRIC BEARING PAD**  
(Exterior and Stage Const. Line)  
(16 Required)

**EXPANSION**



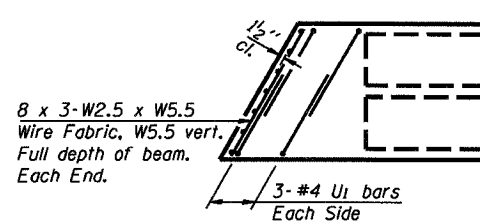
**TYPICAL SECTION - 36" BEAM**

15-1/2"  $\phi$  Strands, Each Strand Stressed to 30,900 Lbs.  
9-Strands 1 3/4" up, 4-Strands 3/4" up, 2-Strands 12" up

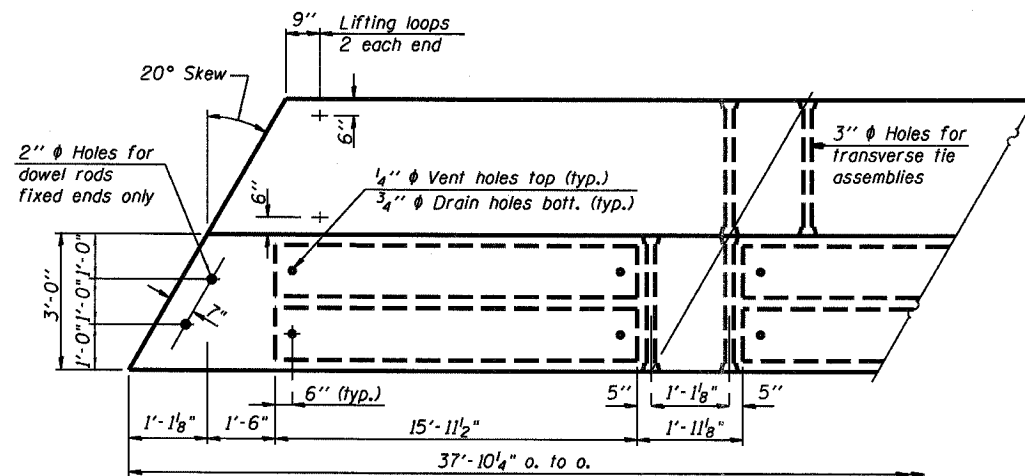
Note: Place strands symmetrically about  $\phi$  of beam.

**BILL OF MATERIAL - 36" BEAM**

Item	Unit	Quantity
Precast Prestressed Conc. Deck Bms. (17")	Sq. Ft.	2,499

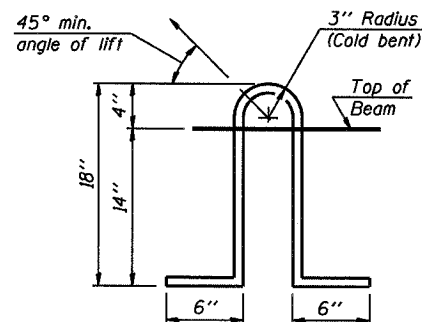


**END PLAN**

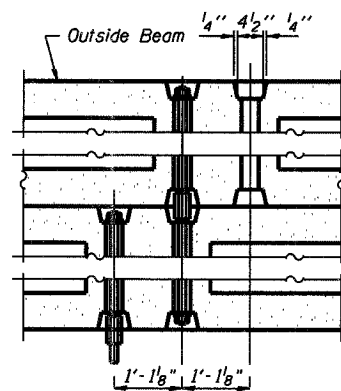


**PLAN - 36" BEAM**

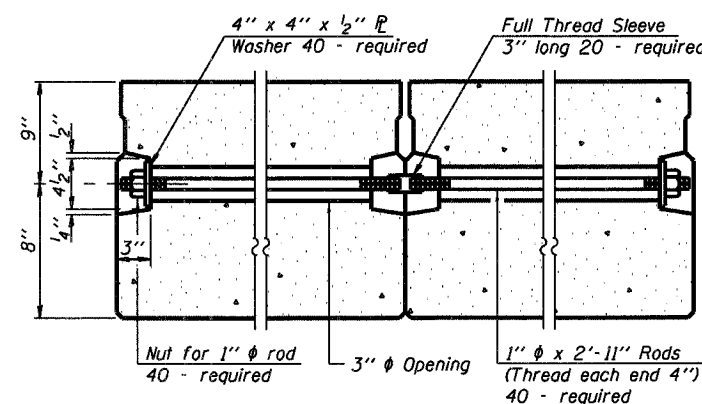
(22 Required)



**LIFTING LOOP DETAIL**



**TYPICAL TRANSVERSE TIE ASSEMBLY**



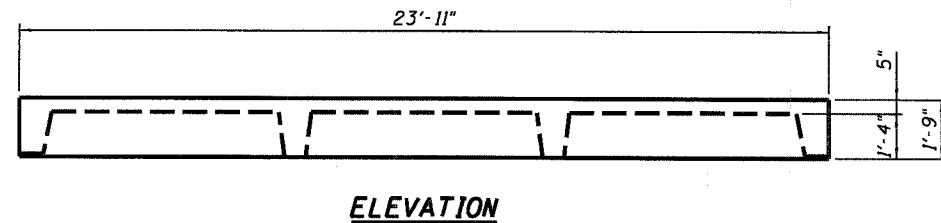
DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

**SUPERSTRUCTURE DETAILS**  
**17" DECK BEAMS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 101BR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

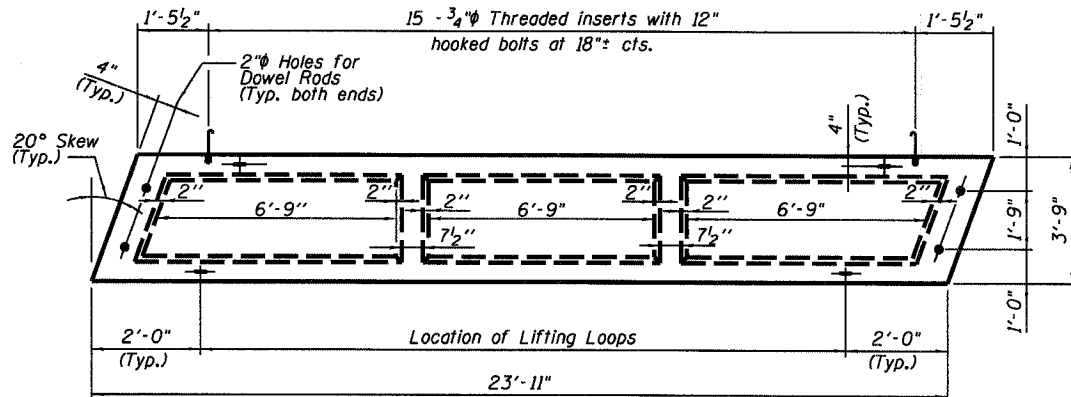
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN	19	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

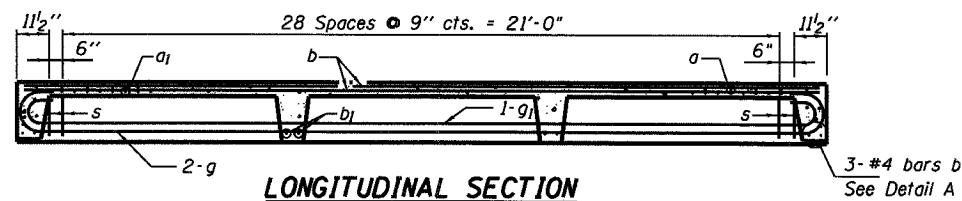
Contract #78024



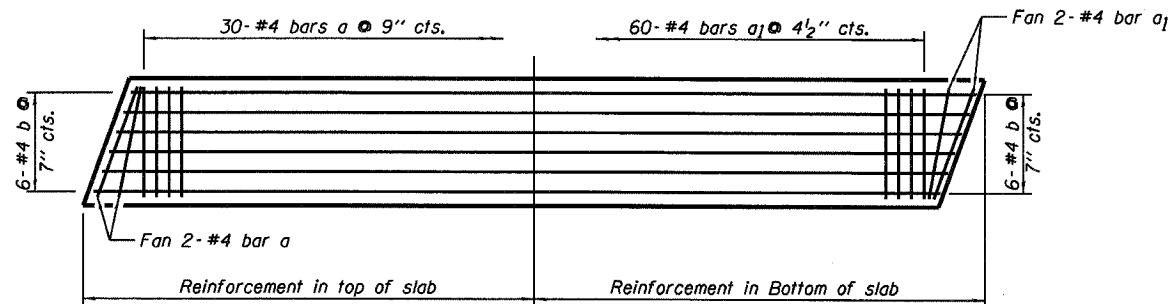
**ELEVATION**



**TYPICAL PLAN OF BRIDGE SLAB**  
(4 Required)

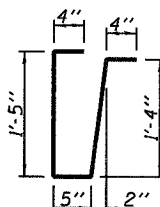


**LONGITUDINAL SECTION**

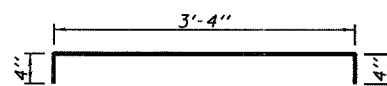


**PLAN**

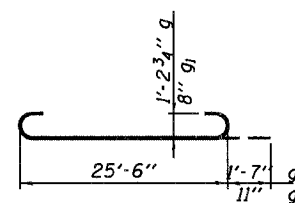
Showing Slab Reinforcement



**BAR s**

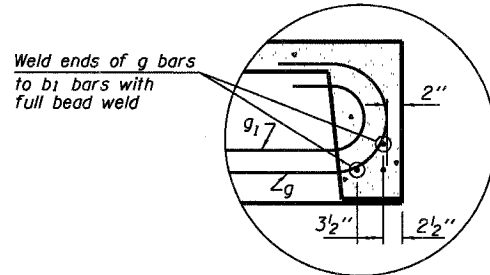


**BAR a**



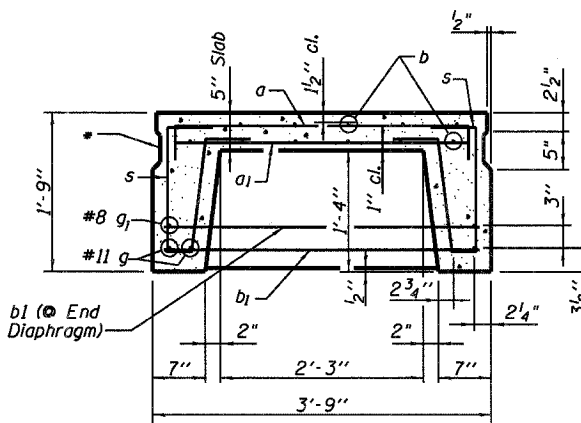
**BARS g and g1**

Note:  
Tack welding of stirrups to bottom longitudinal reinforcement bars will not be permitted except as otherwise authorized in writing by the Engineer.



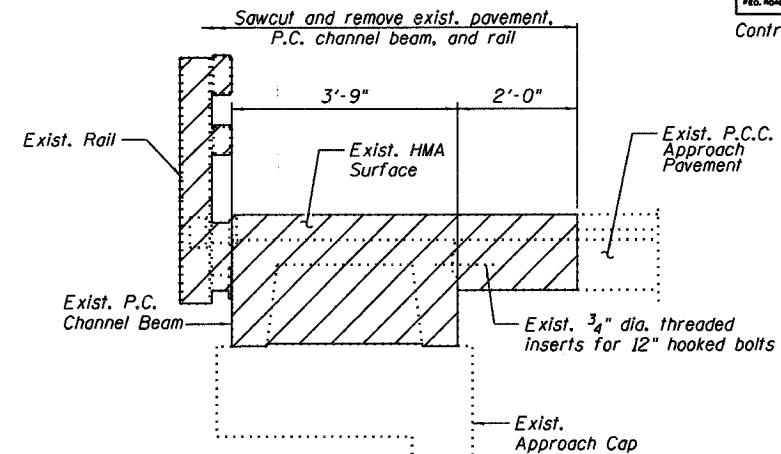
**DETAIL A**

Note:  
The surface of the member shall not deviate more than 1/1200 of the full length of the member from a straight line connecting the two end points on the member's surface.

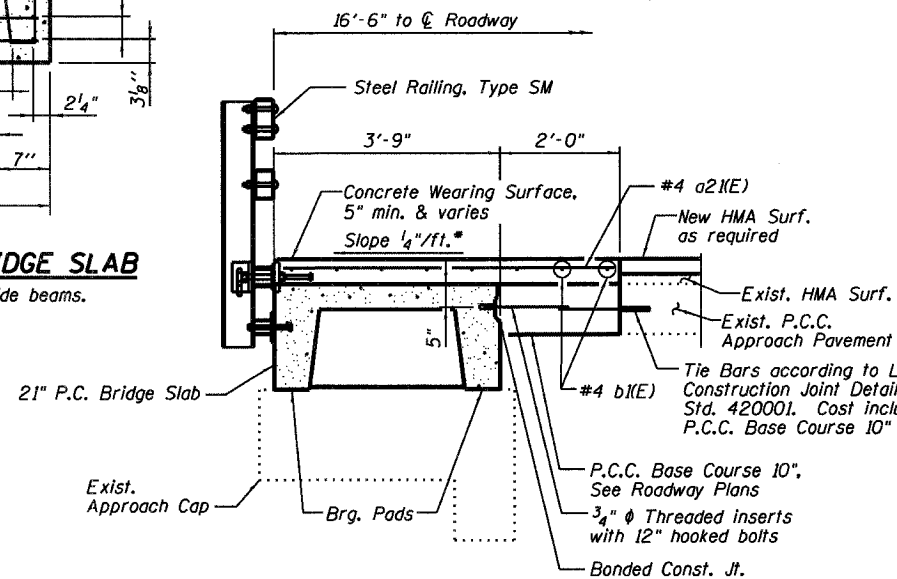


**TYPICAL SECTION THRU BRIDGE SLAB**

\* Omit key on exterior face of outside beams.

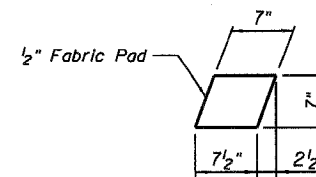


**LIMITS OF REMOVAL AT APPROACH SHOULDERS**



**PROPOSED CROSS SECTION**

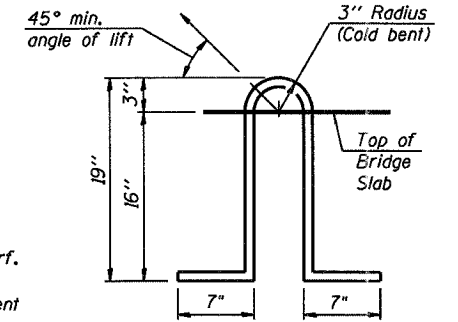
\* Cross slope shown applies to Concrete Wearing Surface



**BEARING PAD**  
(16 Required)

**NOTES**

Lifting loops shall be 2-1/2"  $\phi$ -270 ksi strands, as shown.  
Lifting loops shall be burned off after bridge slabs have been erected.  
Reinforcing steel shall conform to ASTM A 706 (IL MOD), Grade 60.  
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Bearing Pad shall be provided for each bearing.  
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the bridge slabs. Cleaning shall be done by sandblasting the keyway areas between top of the bridge slabs and the bottom edge of the key.  
Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast concrete bridge slabs.  
See Sheet No. 11 of 15 for required modifications for rail anchorage.  
The precast concrete bridge slab shall be erected and aligned with the exterior face of the fascia deck beam after deck beams are in final position.  
Cost of removing exist. P.C. channel beam, HMA Surface, and rail included with Removal of Exist. Precast Concrete Units. See Roadway Plans for measurements and payment for Pavement Removal and Replacement.



**LIFTING LOOP DETAIL**

**BILL OF MATERIAL**

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	359

**PRECAST CONCRETE BRIDGE SLAB**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

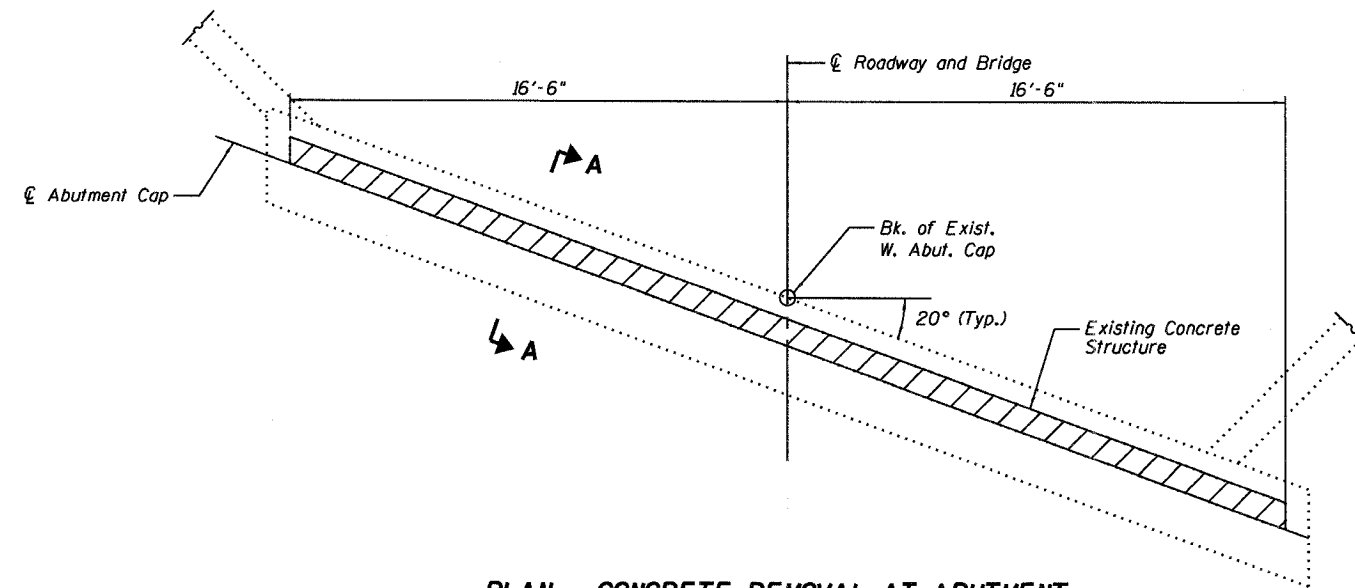


DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

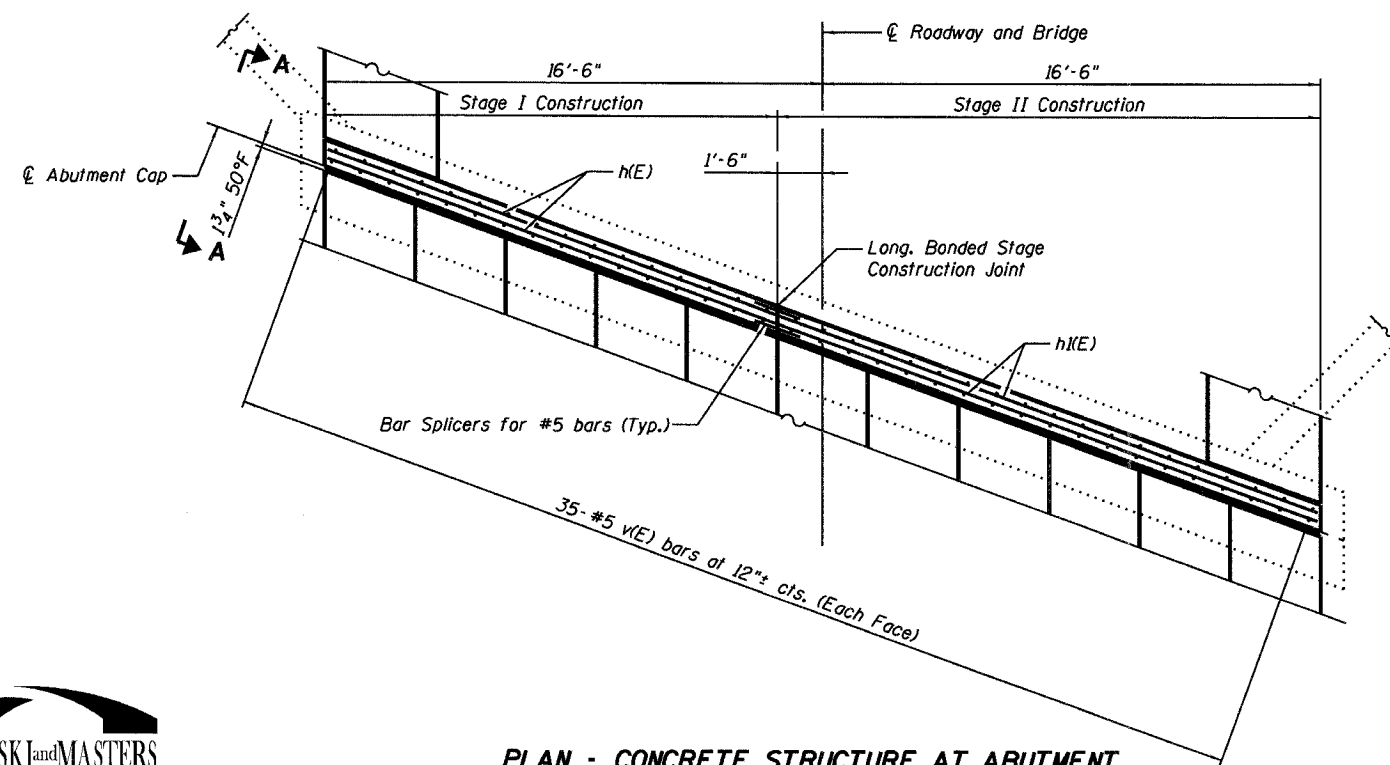
ROUTE NO.	SECTION	COUNTY	POST MILES	SHEET NO.
F.A.P. 869	101BR-1	FRANKLIN	20	7
FED. ROAD DIST. NO. 7				ILLINOIS
FED. AID PROJECT				15 SHEETS

Contract #78024

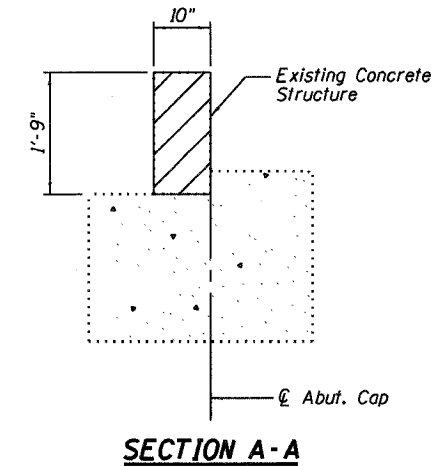


**PLAN - CONCRETE REMOVAL AT ABUTMENT**  
(West Abutment shown, East Abutment similar)

Removal of existing wearing surface and deck beams included with Removal of Existing Superstructures. Removal of existing P.C. channel beams included with Removal of Existing Precast Concrete Units. These items not shown for clarity.



**PLAN - CONCRETE STRUCTURE AT ABUTMENT**  
(West Abutment shown, East Abutment similar)



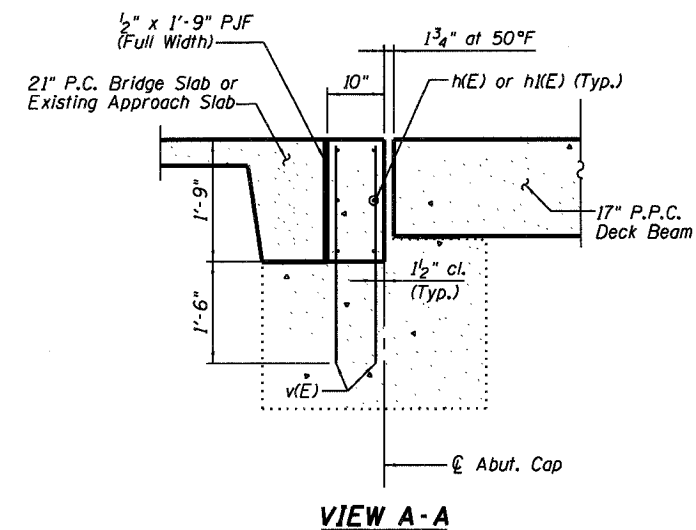
**SECTION A-A**

Note:  
Hatched areas indicate Concrete Removal.  
Existing reinforcement extending into new construction shall be cut off flush. Cost included with Concrete Removal.

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	12	#5	15'-7"	---
h(K)	12	#5	18'-11"	---
v(E)	140	#5	3'-0"	---
Reinforcement Bars, Epoxy Coated			Pound	870
Bar Splicers			Each	12
Concrete Removal			Cu. Yd.	3.8
Concrete Structures			Cu. Yd.	3.8

Reinforcement bars designated (E) shall be epoxy coated.



**VIEW A-A**

Note:  
Epoxy grout v(E) bars in drilled holes according to Section 584 of the Standard Specifications. Cost included with Concrete Structures.

**CONCRETE DETAILS AT EXPANSION ENDS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 101BR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

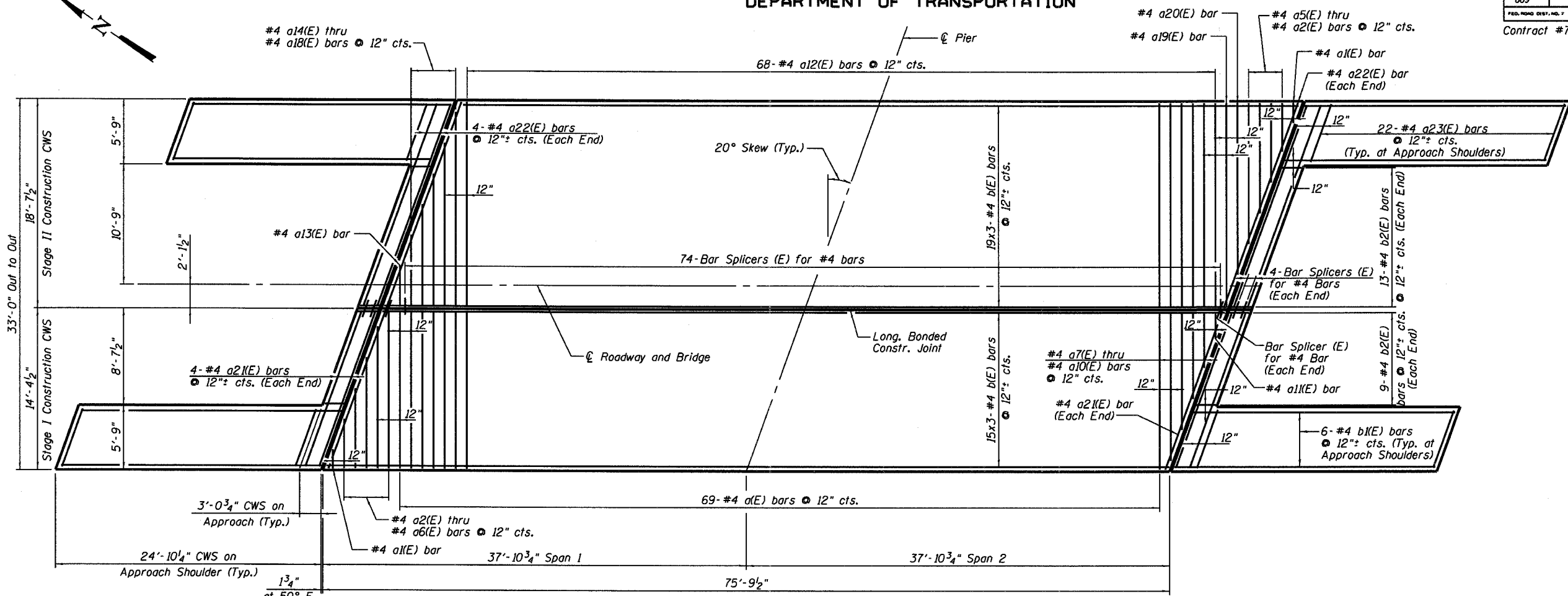


DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

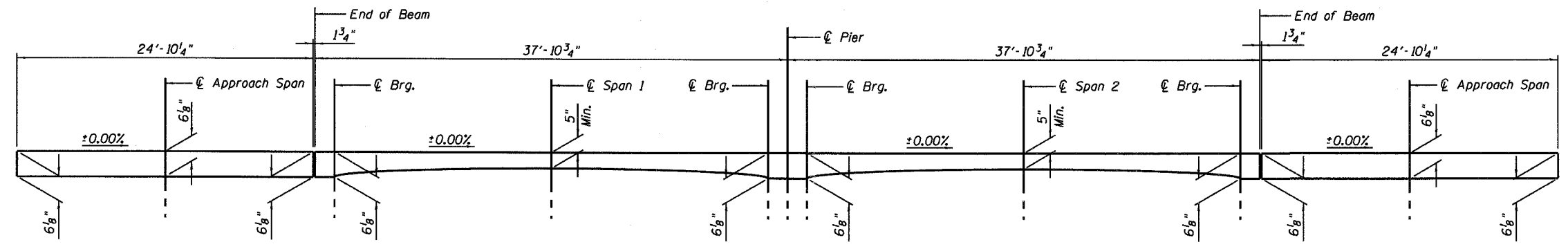
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN	21	15	15 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

Contract #78024



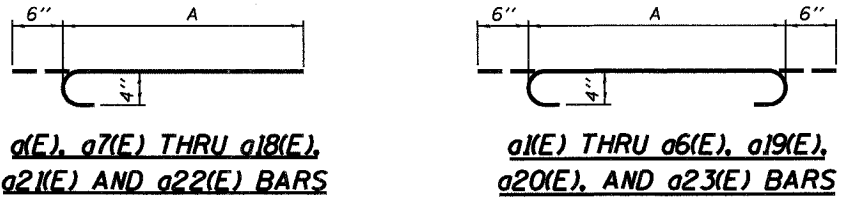
**PLAN - CONCRETE WEARING SURFACE**

Min. Bar Lap: #4 Bars - 1'-4"  
Note: Concrete wearing surface to be poured after grouting the shear keys.



**CONCRETE WEARING SURFACE PROFILE**

Note: Thickness shown for bridge spans is for all deck beams except the center deck beam. Thickness for the center deck beam will vary from those shown at beam edges to 1/4" additional at Roadway.



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a1(E)	69	#4	14'-5"	U
a1(E)	2	#4	2'-7"	U
a2(E)	2	#4	5'-4"	U
a3(E)	2	#4	8'-1"	U
a4(E)	2	#4	10'-10"	U
a5(E)	2	#4	13'-7"	U
a6(E)	1	#4	15'-1"	U
a7(E)	1	#4	13'-7"	U
a8(E)	1	#4	10'-10"	U
a9(E)	1	#4	8'-1"	U
a10(E)	1	#4	5'-4"	U
a11(E)	1	#4	2'-7"	U
a12(E)	68	#4	18'-10"	U
a13(E)	1	#4	4'-3"	U
a14(E)	1	#4	7'-0"	U
a15(E)	1	#4	9'-9"	U
a16(E)	1	#4	12'-6"	U
a17(E)	1	#4	15'-3"	U
a18(E)	1	#4	18'-0"	U
a19(E)	1	#4	19'-1"	U
a20(E)	1	#4	16'-4"	U
a21(E)	10	#4	15'-4"	U
a22(E)	10	#4	20'-0"	U
a23(E)	88	#4	6'-10"	U
b1(E)	102	#4	26'-0"	U
b1(E)	24	#4	24'-6"	U
b2(E)	44	#4	2'-9"	U
Reinforcement Bars, Epoxy Coated		Pound	4,570	
Concrete Wearing Surface, 5"		Sq. Yd.	357	
Bridge Deck Grooving		Sq. Yd.	357	
Bar Splicers		Each	84	
Protective Coat		Sq. Yd.	357	

Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 1 x 3-#4 etc. indicates 1 line of bars with 3 lengths per line.

Bar	A	Bar	A
a1(E)	13'-11"	a12(E)	18'-4"
a1(E)	1'-7"	a13(E)	3'-9"
a2(E)	4'-4"	a14(E)	6'-6"
a3(E)	7'-1"	a15(E)	9'-3"
a4(E)	9'-10"	a16(E)	12'-0"
a5(E)	12'-7"	a17(E)	14'-9"
a6(E)	14'-1"	a18(E)	17'-6"
a7(E)	13'-1"	a19(E)	18'-1"
a8(E)	10'-4"	a20(E)	15'-4"
a9(E)	7'-7"	a21(E)	14'-10"
a10(E)	4'-10"	a22(E)	19'-6"
a11(E)	2'-1"	a23(E)	5'-10"

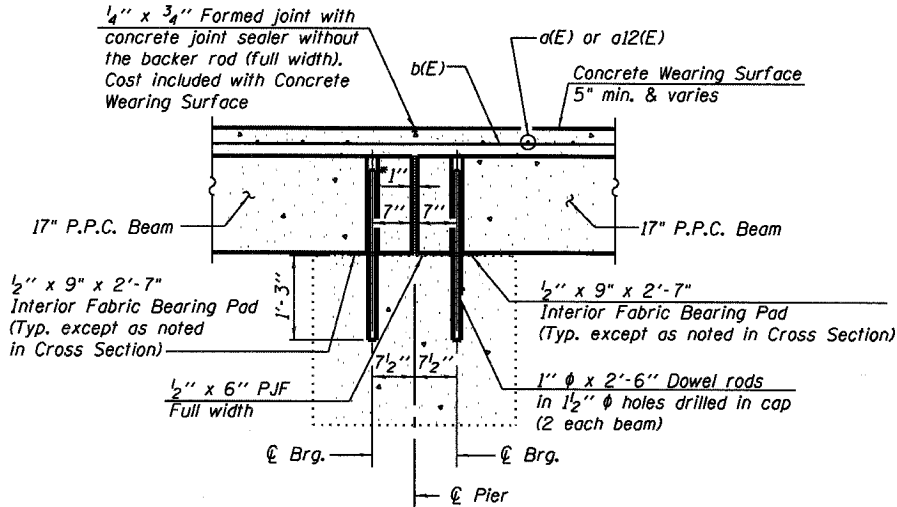
**SUPERSTRUCTURE DETAILS**  
**CONCRETE WEARING SURFACE**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

DESIGNED RLM  
CHECKED MEL  
DRAWN AEC  
CHECKED RLM

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

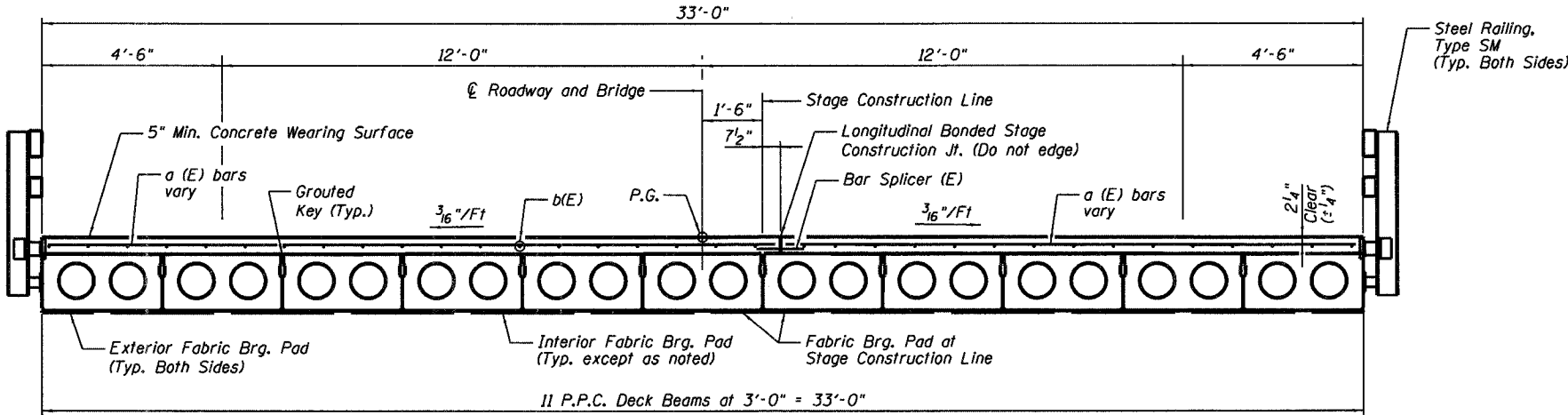
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN	22	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		15 SHEETS

Contract #78024

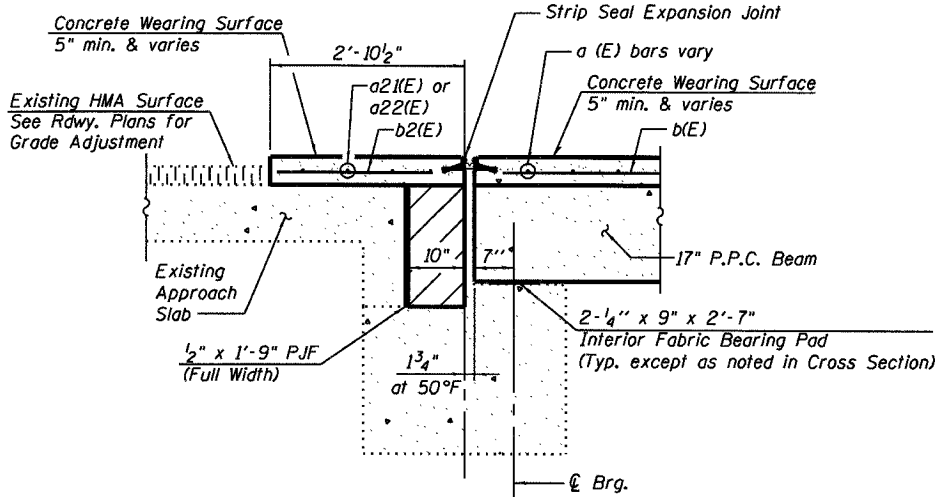


**SECTION THRU PIER**

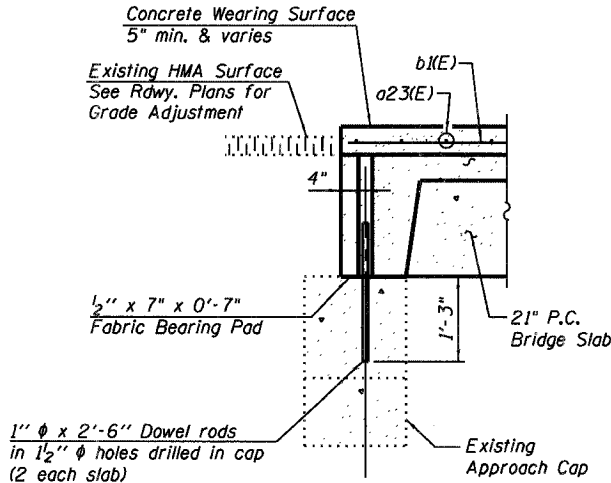
• 1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.



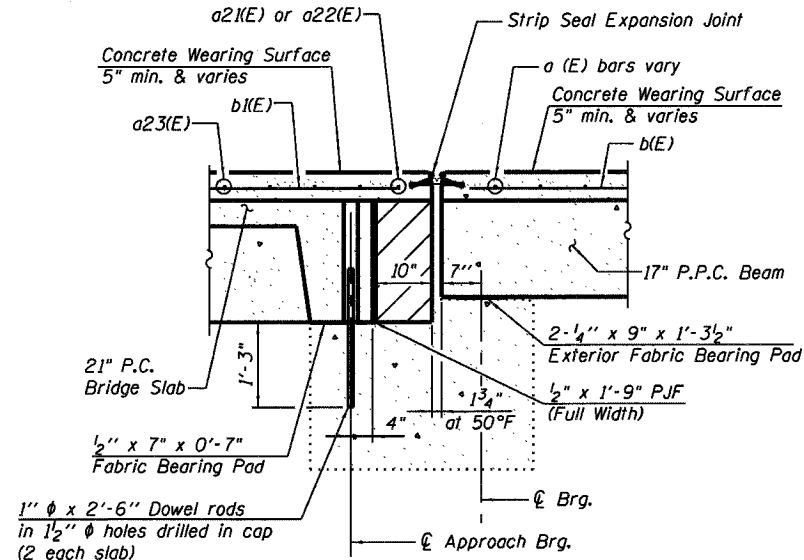
**CROSS SECTION**  
(Looking Upstation)



**SECTION THRU ABUTMENT AT APPROACH SLAB**



**SECTION THRU APPROACH CAP**



**SECTION THRU ABUTMENT AT SHOULDER**



DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

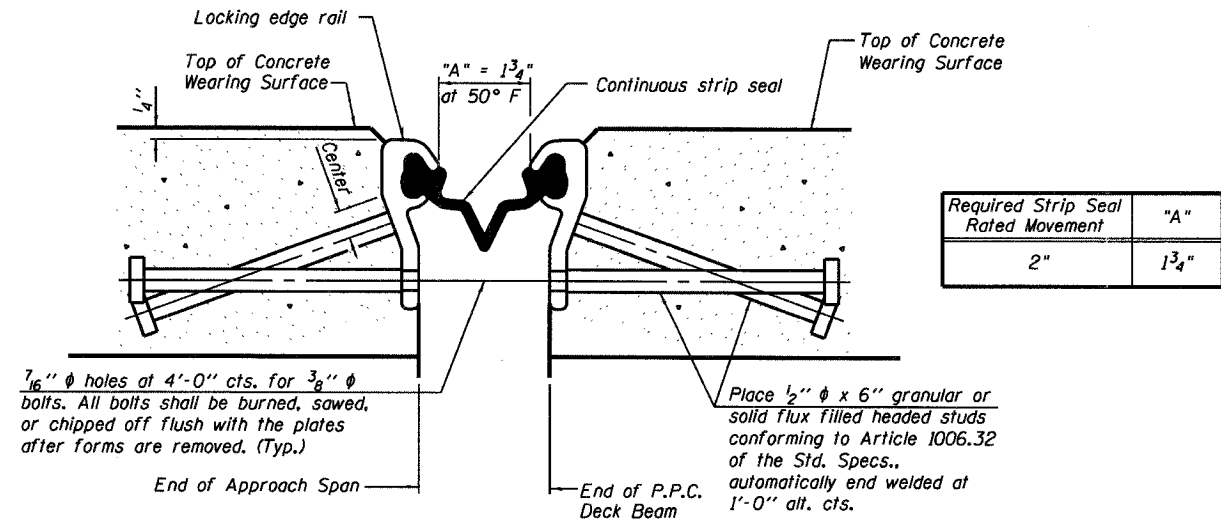
Notes:  
After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.  
All horizontal dimensions are at right angles to beam ends.  
Hatched area to be poured after P.P.C. deck beams and P.C. bridge slab are in place. See Sheet No. 7 of 15 for concrete structures details.  
See Sheet Nos. 5 and 6 of 15 for bearing pad details.  
See Sheet No. 8 of 15 for concrete wearing surface details.  
See Sheet No. 10 of 15 for strip seal expansion joint details.

**SUPERSTRUCTURE DETAILS**  
**SECTIONS AND JOINT DETAILS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

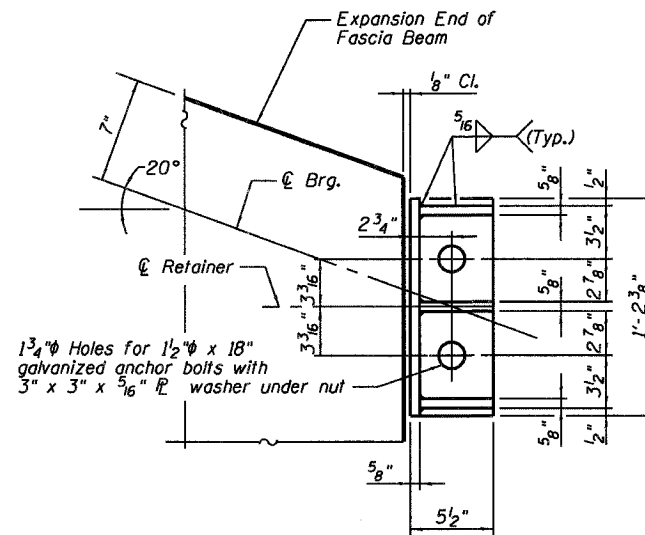
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET	SHEET NO. 10
F.A.P. 869	10IBR-1	FRANKLIN		23	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

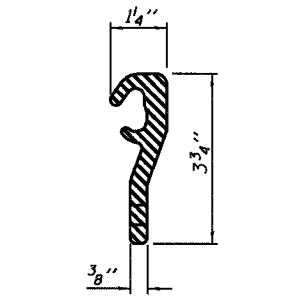
Contract #78024



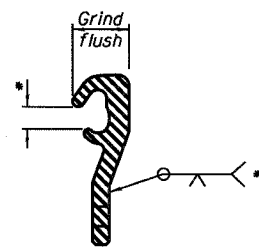
Required Strip Seal Rated Movement	"A"
2"	1 3/4"



**SECTION THRU STRIP SEAL JOINT**



**LOCKING EDGE RAIL**



**LOCKING EDGE RAIL SPLICE**

\* Omit weld at seal opening.

**Notes:**

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

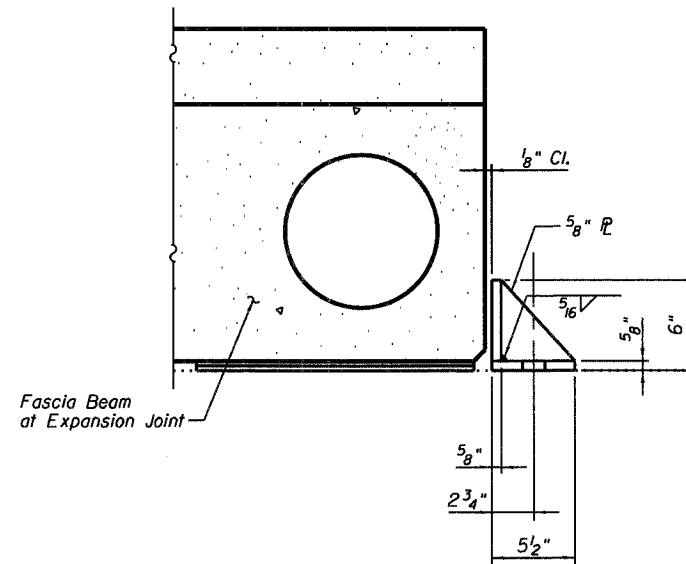
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.

The inside of the Locking Edge Rail groove shall be free of weld residue. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed.

**BILL OF MATERIAL**

Item	Unit	Quantity
Preformed Joint	Foot	71
Strip Seal		



**SIDE RETAINER**

(4 Required)

**Notes:**

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Fill 1/8" gap with shim P to provide temporary lateral support until shear keys have been grouted and concrete wearing surface has been placed.

Anchor bolts shall be ASTM A 307 Gr. C or ASTM F1554 Gr. 36 all-thread. The corresponding specified grade of AASHTO M 314 anchor bolts may be used in lieu of ASTM F1554.

Side retainers, anchor bolts, nuts and washers shall be galvanized according to AASHTO M 111 or M 232 (as applicable).

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Cost of retainer angles, anchor bolts, and accessories are included with Precast Prestressed Concrete Deck Beams (17").

**EXPANSION JOINT AND  
SIDE RETAINER DETAILS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

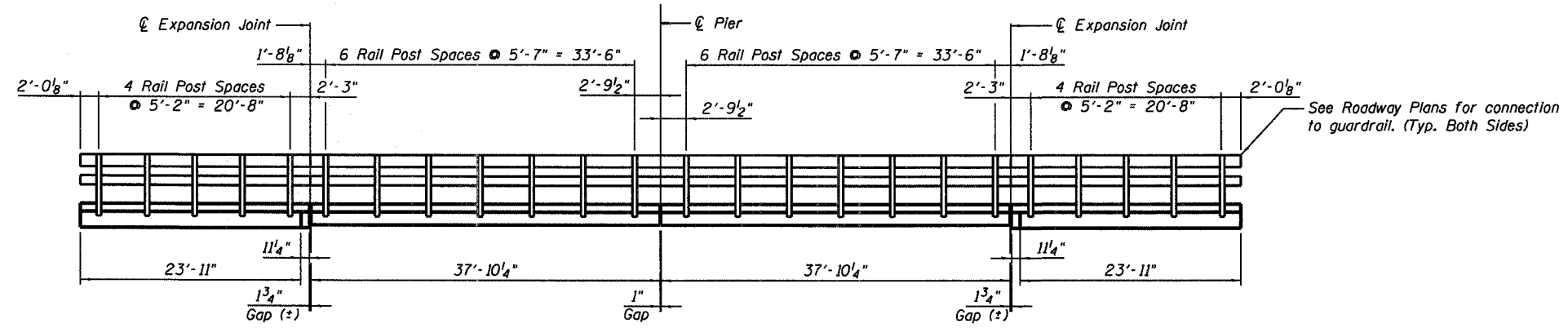


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CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

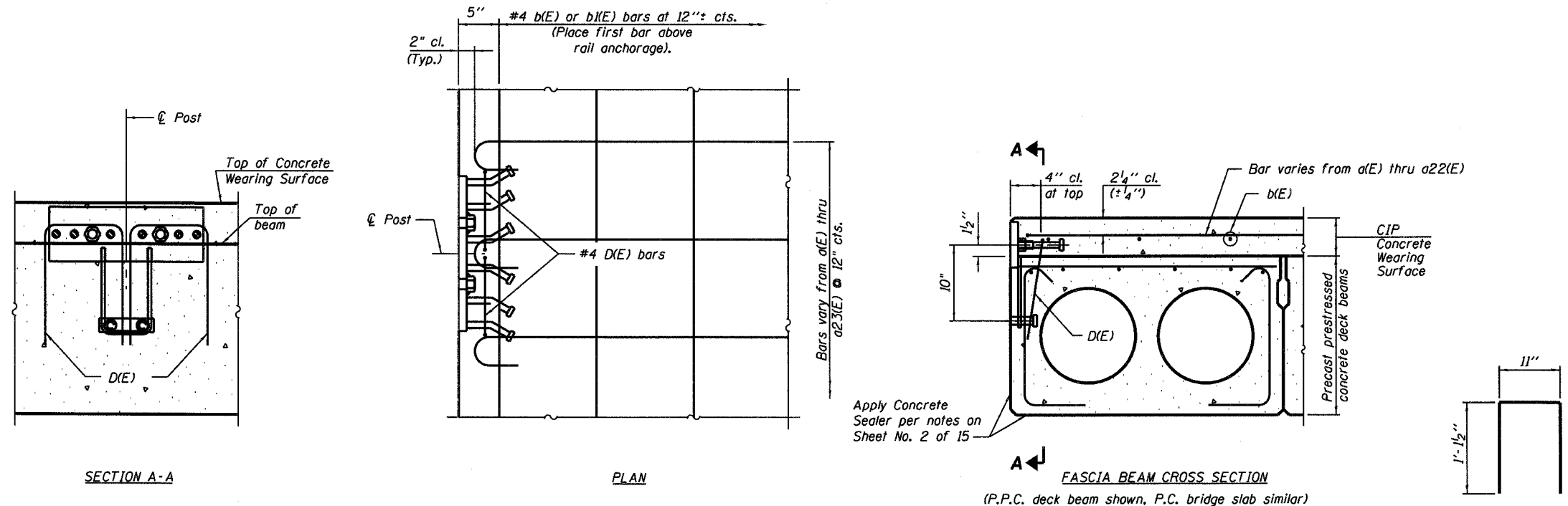
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	LIST SHEETS	SHEET NO.	SHEET NO. 11
F.A.P. 869	10IBR-1	FRANKLIN		24	15 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #78024



**RAIL POST SPACING DETAIL**



**CONCRETE WEARING SURFACE, FASCIA DECK BEAM, AND P.C. BRIDGE SLAB MODIFICATIONS FOR RAIL ANCHORAGE**

Notes:  
See Sheet No. 12 of 15 for rail anchorage details.  
The rail anchorage shall be cast with the deck beam/bridge slab and cast in the field with the wearing surface. Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam/bridge slab. Drilling into the beam, slab, or CWS will not be permitted.  
Concrete wearing surface to be poured after grouting the shear keys.

**D(E) BAR**  
(96 Required)

**RAIL POST SPACING AND CONNECTION DETAILS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**



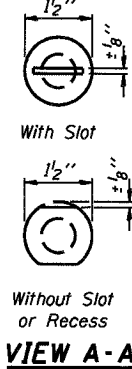
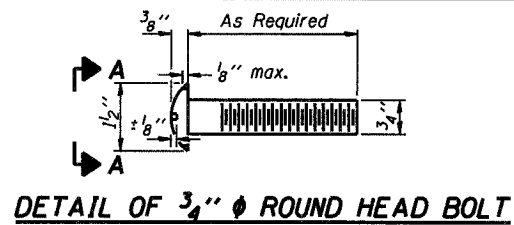
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CHECKED	MEL
DRAWN	AEC
CHECKED	RLM



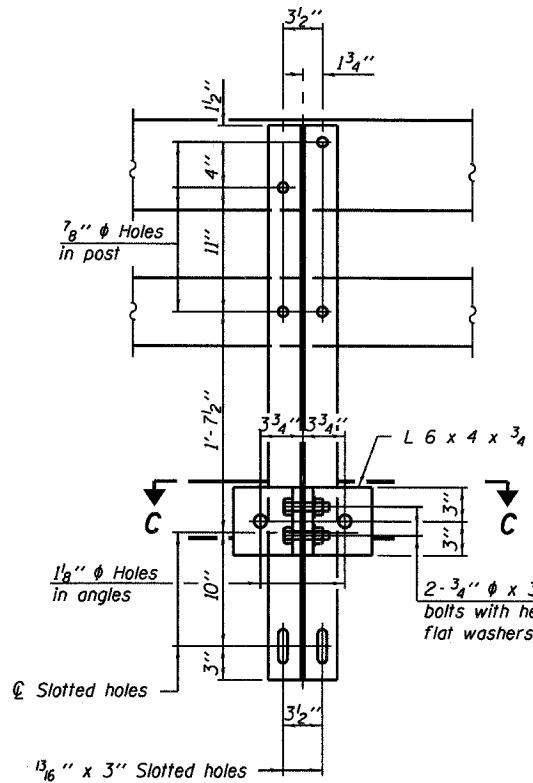
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN	25	15	15 SHEETS
FED. ROAD DIST. NO. 7					
ILL. PROJ. FED. AID PROJECT					

Contract #78024

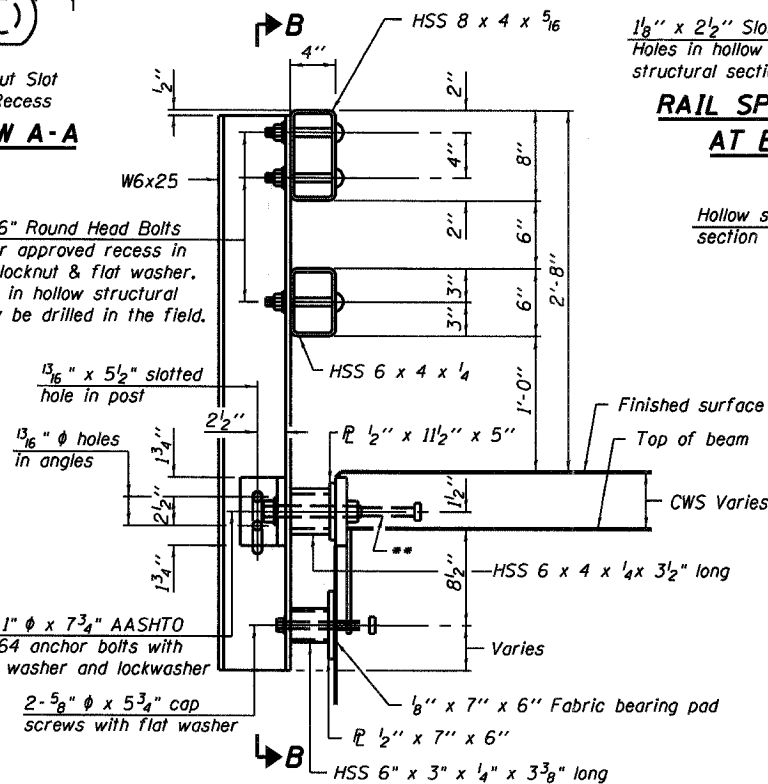


4-3/4"  $\phi$  x 6" Round Head Bolts  
(With slot or approved recess in head) with locknut & flat washer.  
7/8"  $\phi$  holes in hollow structural section may be drilled in the field.



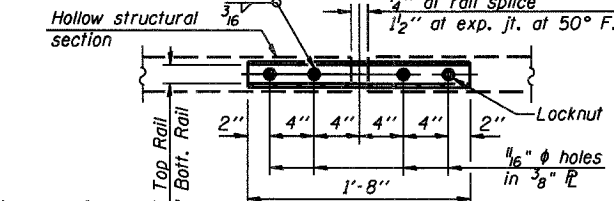
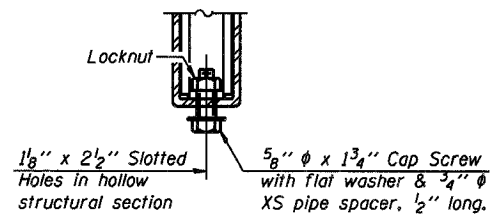
SECTION B-B

SECTION C-C

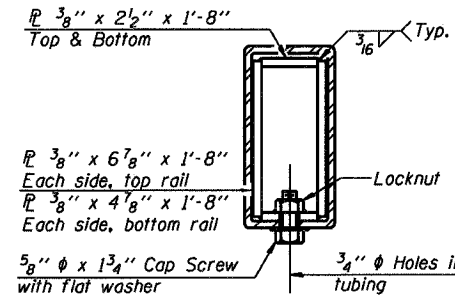


SECTION AT RAIL POST

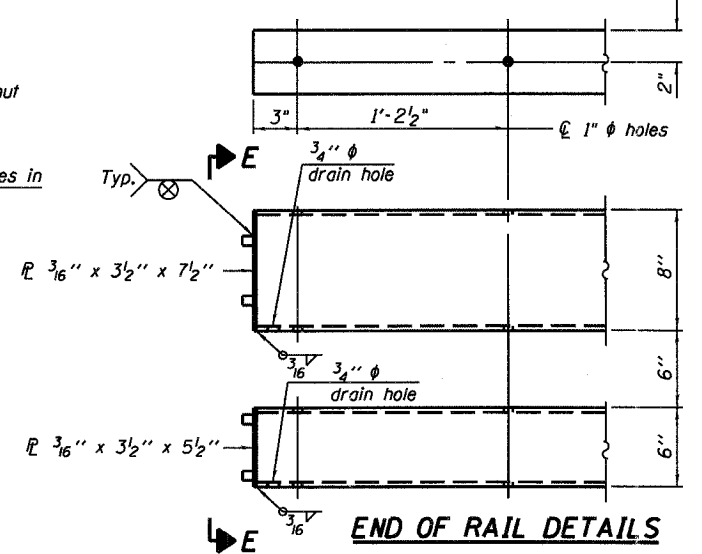
RAIL SPLICE CONNECTION  
AT EXPANSION JT.



PLAN-BOTT. SPLICE R  
TYPICAL



SECTION AT  
RAIL SPLICE



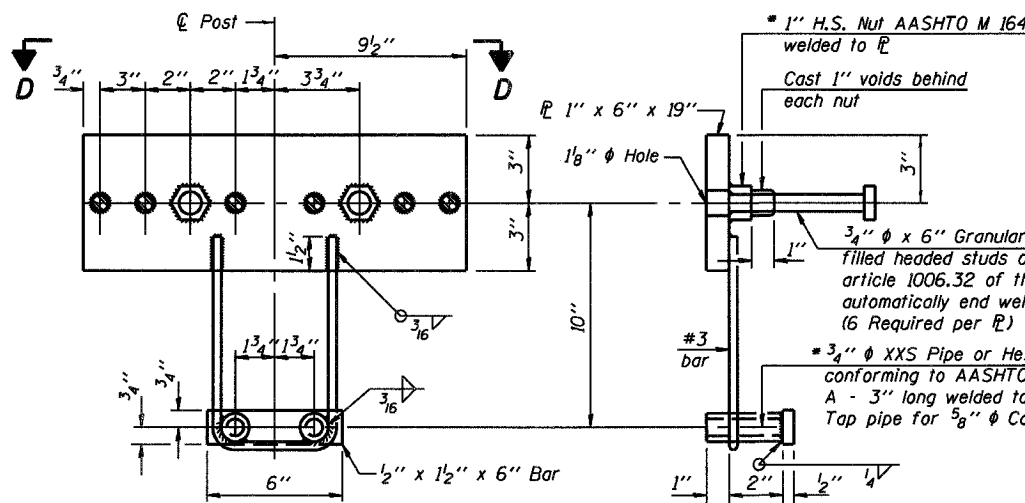
END OF RAIL DETAILS

Hollow structural section  
1/8" x 2 1/2" Slotted Holes in hollow structural section  
5/8"  $\phi$  x 1 3/4" Cap Screw with flat washer & 3/4"  $\phi$  XS pipe spacer, 1/2" long.  
Locknut  
1/8" x 2 1/2" Slotted Holes in hollow structural section  
5/8"  $\phi$  x 1 3/4" Cap Screw with flat washer  
3/4"  $\phi$  Holes in tubing  
Locknut  
5/8"  $\phi$  x 1 3/4" Cap Screw with flat washer

1/4" at rail splice  
1/2" at exp. jt. at 50° F.  
Locknut  
1/8"  $\phi$  holes in 3/8"  $\phi$

1-7" Holes  
5 3/4" 3 3/4" 3 3/4" 5 3/4"  
3 3/4" 3" 2" 2" 1 3/4" 1 3/4" 2" 2" 3" 3 3/4"  
1" Post  
30°

VIEW D-D



ANCHOR DEVICE

Notes:  
Hollow structural sections shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.  
All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.  
Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.  
All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.  
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.  
Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Railing, Type SM.  
All field drilled holes shall be coated with an approved zinc rich paint before erection.  
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.  
The 3/4"  $\phi$  high strength bolts used to connect the 6" x 4" x 3/4" angles to the post shall be tightened according to the Article 505.04(FX2) of the Standard Specifications. The 1"  $\phi$  high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/2 turn. The 5/8"  $\phi$  cap screws in bottom of the post shall be tightened to snug fit only.  
See Sheet No. 11 of 15 for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	252

STEEL RAILING, TYPE SM  
WITH CONCRETE WEARING SURFACE  
ILL. ROUTE 34 OVER EWING CREEK  
F.A.P. ROUTE 869 SECTION 10IBR-1  
FRANKLIN COUNTY  
STATION 362+35.00  
STRUCTURE NO. 028-0047



DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

R-34CWS

11-1-06

(6'-3" Maximum Post Spacing) (5" minimum to 7 1/8" maximum CWS thickness)

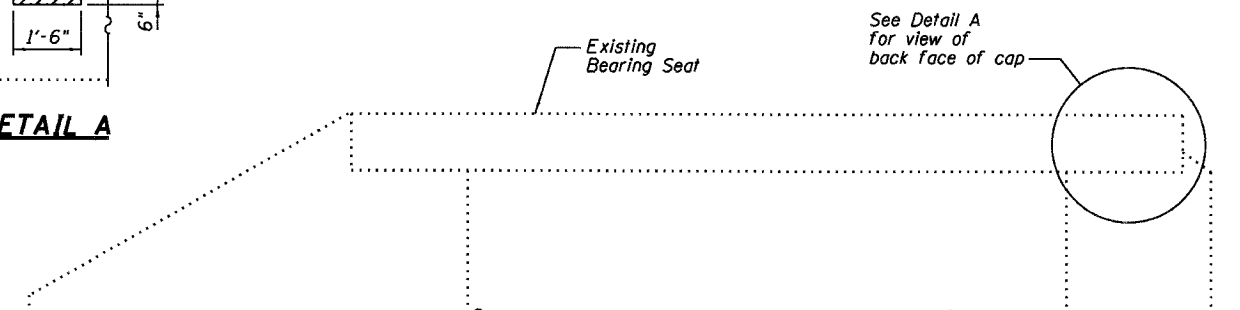
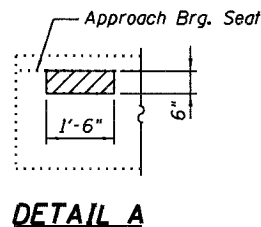
\* Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

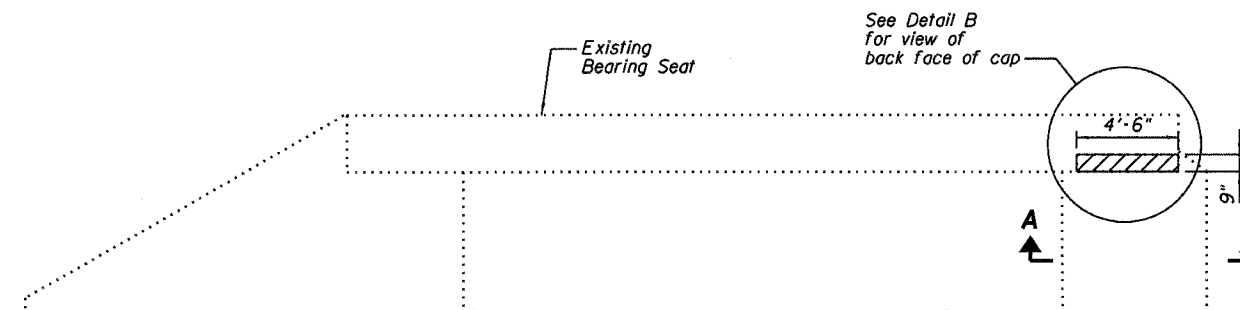
ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN	26	13
FED. ROAD DIST. NO. 7				ILLINOIS
FED. AID PROJECT				

Contract #78024

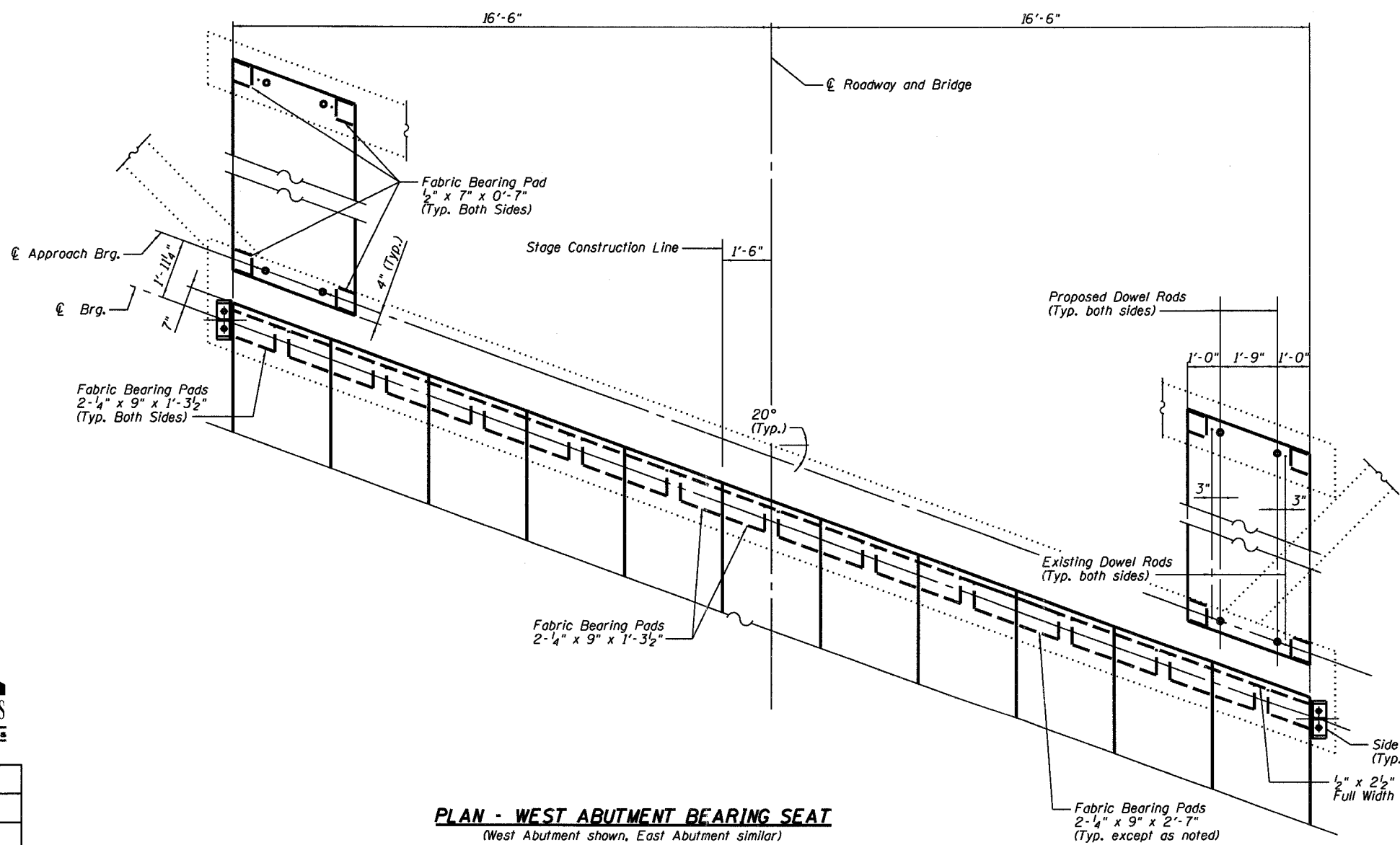
15 SHEETS



**ELEVATION - WEST ABUTMENT**  
(Looking Northwest)

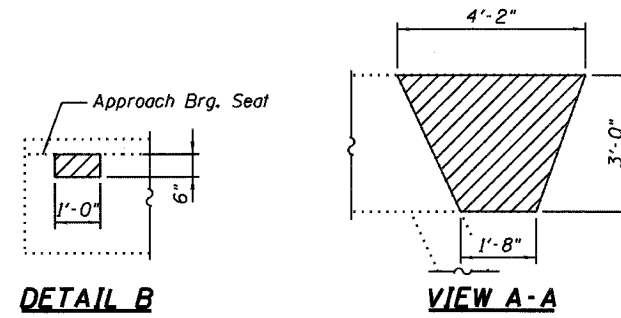


**ELEVATION - EAST ABUTMENT**  
(Looking Southeast)



**PLAN - WEST ABUTMENT BEARING SEAT**  
(West Abutment shown, East Abutment similar)

Concrete structure, concrete wearing surface, and existing approach pavement not shown for clarity.



**DETAIL B**

**VIEW A-A**

**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5")
- Existing Dowel Rod
- Proposed Dowel Rod

Notes:  
Existing dowel rods shall be burned off flush with the existing concrete face, ground smooth, and sealed with epoxy. Cost is included with Removal of Existing Precast Concrete Units.  
Concrete sealer shall be applied to concrete repair areas.  
See Sheet No. 14 of 15 for Substructure Repair Bill of Material.

**ABUTMENT REPAIRS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**

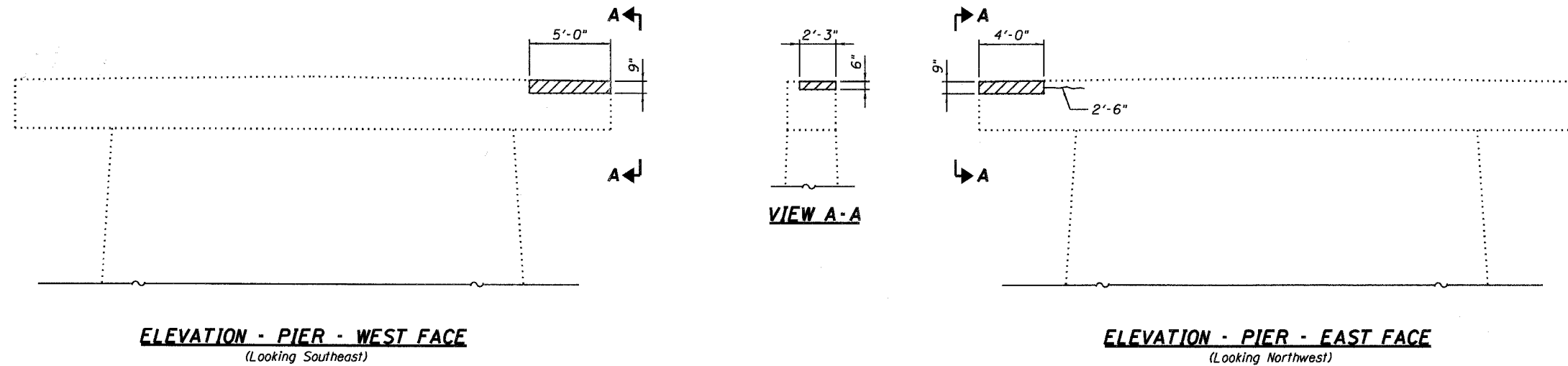


DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

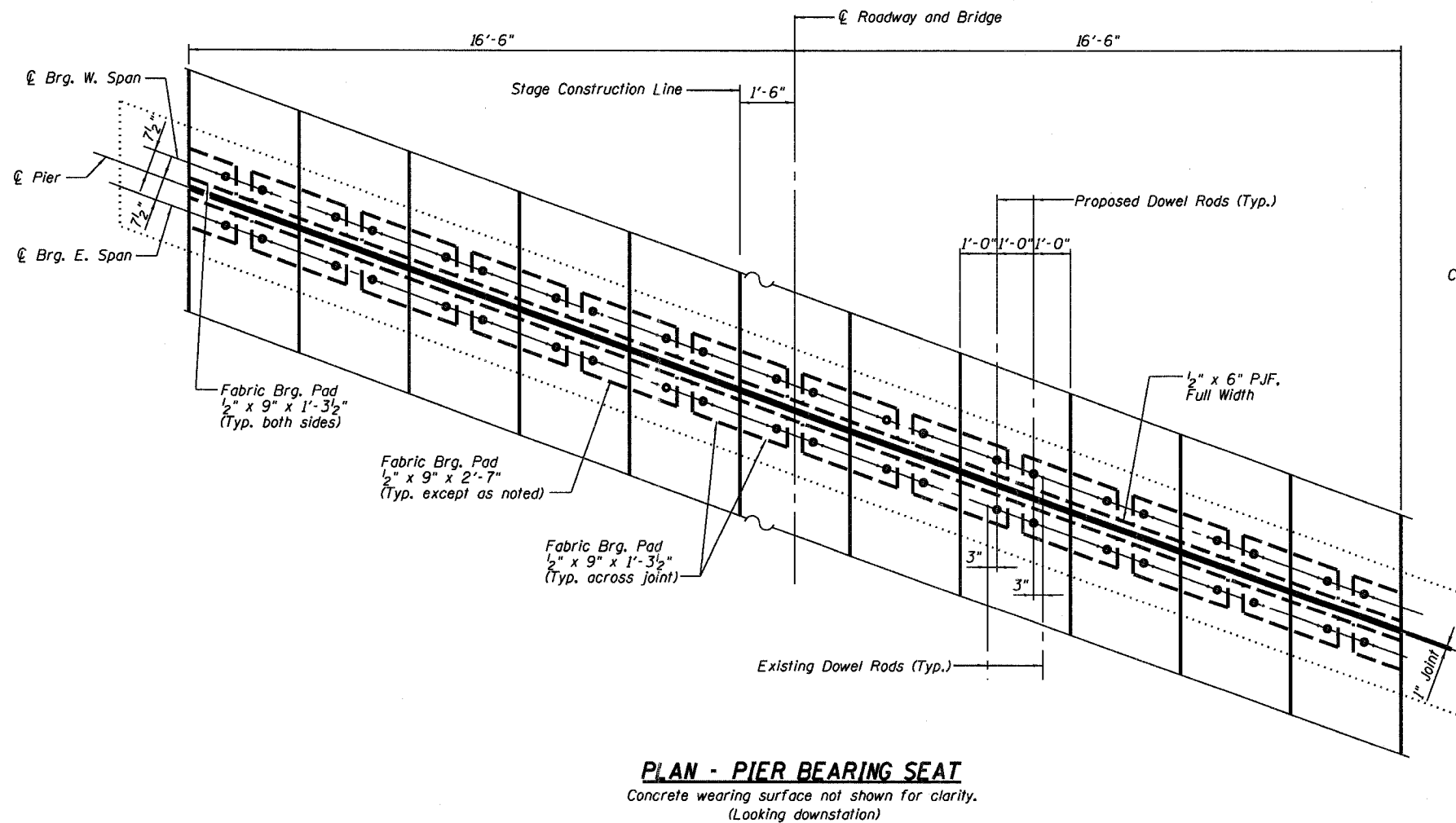
ROUTE NO.	SECTION	COUNTY	SHEETS	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN	27	14
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Contract #78024



**BILL OF MATERIAL**

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or less than 5 inches)	Sq. Ft.	22
Concrete Sealer	Sq. Ft.	22
Epoxy Crack Injection	Foot	3



**LEGEND**

- Structural Repair of Concrete (Depth equal to or less than 5")
- Epoxy Crack Injection
- Existing Dowel Rod
- Proposed Dowel Rod

Notes:  
Existing dowel rods shall be burned off flush with the existing concrete face, ground smooth, and sealed with epoxy. Cost is included with Removal of Existing Superstructures.  
Concrete sealer shall be applied to concrete repair areas.  
Cracks > 1/16" shall be repaired by epoxy crack injection according to Section 590 of the Standard Specifications.

**PIER REPAIRS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**



DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
F.A.P. 869	10IBR-1	FRANKLIN	26	15 SHEETS
FED. ROAD DIST. NO. 7	ILL. ROAD	FED. AID PROJECT		

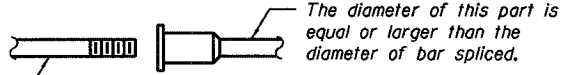
Contract #78024

**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 (Tension in kips) =  $1.25 \times f_y \times A_t$
  - ② Minimum \*Pull-out Strength (Tension in kips) =  $0.66 \times f_y \times A_t$
- Where  $f_y$  = Yield strength of lapped reinforcement bars in ksi.  
 $A_t$  = Tensile stress area of lapped reinforcement bars.  
\* = 28 day concrete

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



**ROLLED THREAD DOWEL BAR**



\*\* ONE PIECE

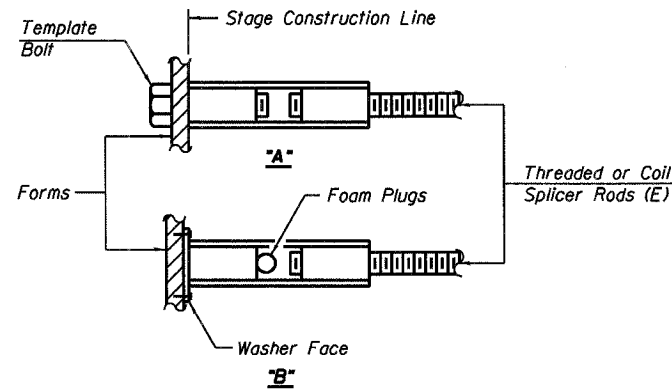
Wire Connector



**WELDED SECTIONS**

**BAR SPLICER ASSEMBLY ALTERNATIVES**

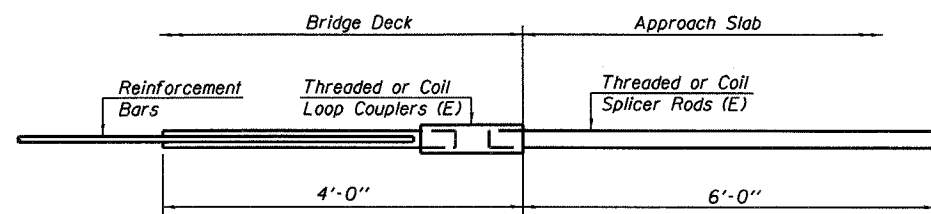
\*\* Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



**INSTALLATION AND SETTING METHODS**

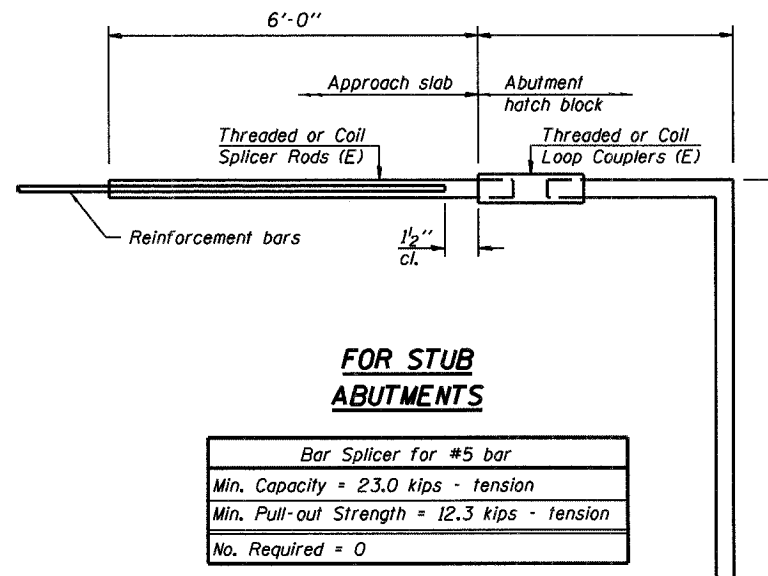
"A" : Set bar splicer assembly by means of a template bolt.  
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.  
(E) : Indicates epoxy coating.

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	7.9
#5	2'-0"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



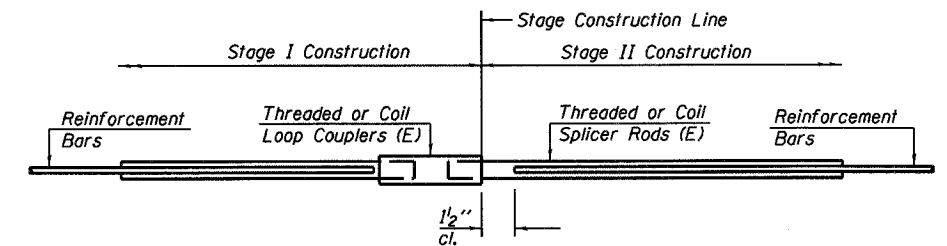
**FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



**FOR STUB ABUTMENTS**

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 0



**STANDARD**

Bar Size	No. Assemblies Required	Location
#4	84	Wearing Surface
#5	12	Concrete Structures

**BAR SPLICER ASSEMBLY DETAILS**  
**ILL. ROUTE 34 OVER EWING CREEK**  
**F.A.P. ROUTE 869 SECTION 10IBR-1**  
**FRANKLIN COUNTY**  
**STATION 362+35.00**  
**STRUCTURE NO. 028-0047**



DESIGNED	RLM
CHECKED	MEL
DRAWN	AEC
CHECKED	RLM

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11-1-06