11-16-07 Letting, Item 065

CONTRACT NO. 94968

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	1

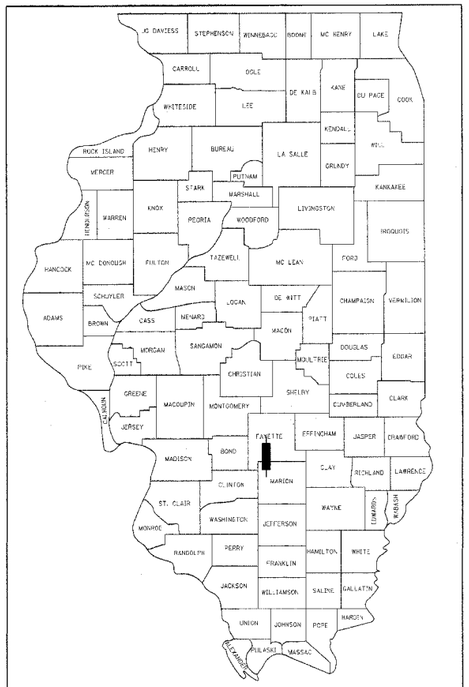
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

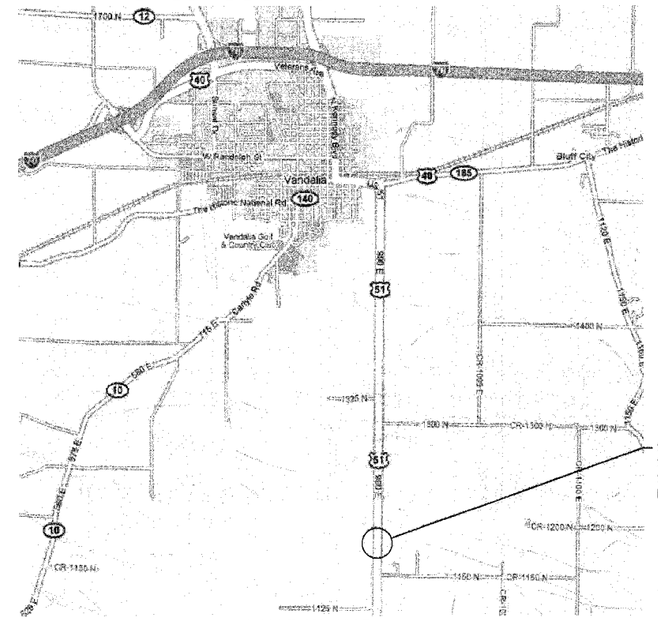
FAP ROUTE 322 (US ROUTE 51)
SECTION (23-BR-2)BR
PROJECT: ACBHF-0322(081)
FAYETTE COUNTY
C-97-008-03

FOR INDEX OF SHEETS, SEE SHEET NO. 2

D-97-004-03



LOCATION OF SECTION INDICATED THUS: –■–



N

LOCATION MAP

NOT TO SCALE

TOTAL LENGTH OF PROJECT = 232 FT (0.044 MI)
NET LENGTH OF PROJECT = 232 FT (0.044 MI)

HIGHWAY CLASSIFICATION

ROUTE: F.A.P. 322 (US 51)
CLASSIFICATION: OTHER PRINCIPAL ARTERIAL
A.D.T.: 3950
A.D.T.T.: 727
D.H.V.: 474
DESIGN SPEED: 55 M.P.H.

0 100' 200' 300' — 1"= 100'
0 10' 20' 30' — 1"= 10'
0 50' 100' — 1"= 50'
0 50' 100' — 1"= 40'
0 50' 100' — 1"= 30'
0 50' 100' — 1"= 20'

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

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

CONTRACT NO. 94968

REGINALD H. BENTON 062326 ILLINOIS

Reginald H. Benton 8/23/2007 EXP 11/30/07

BENTON & ASSOCIATES, INC.
Consulting Engineers / Land Surveyors
1970 West Lafayette Ave. Jacksonville, IL 62650
Phone: 217-245-4146 Fax: 217-245-4149
IL Design Firm Registration No. 184-000852
BENTON & ASSOCIATES INC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED August 24 2007
Christine M. Reed
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
October 12, 2007
Eric E. Harm
Interim ENGINEER OF DESIGN AND ENVIRONMENT
October 12, 2007
Milton R. Sees, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 94968

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	2
STA. 195+73.21		TO STA. 197+80.79		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

1. WHERE SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

2. ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION, AS INDICATED BY THE SUB-NUMBER LISTED IN THE INDEX OF SHEETS, OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.

3. ALL ELEVATIONS SHOWN REFER TO THE U.S.G.S. DATUM AT MEAN SEA LEVEL, UNLESS OTHERWISE NOTED.

4. UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION AND THEIR TRUE LOCATION IS NOT GUARANTEED AS SHOWN ON THE PLANS. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND CARRY OUT CONSTRUCTION ACTIVITES ACCORDINGLY.

5. ILLINOIS STATE LAW REQUIRES A 48-HOUR NOTICE BE GIVEN TO ALL UTILITIES WITHIN THE PROJECT AREA BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E. OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:

MEMBERS OF J.U.L.I.E. CALL TOLL FREE (800)892-0123 AND ARE INDICATED BY "•". NON-MEMBERS MUST BE NOTIFIED INDIVIDUALLY.

6. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.

7. SAW CUTTING ON ALL EDGES FOR REMOVAL ITEMS SHALL BE INCLUDED IN THE COST OF THE REMOVAL ITEMS AS INDICATED AND IN ACCORDANCE WITH SECTION 440 OF THE STANDARD SPECIFICATIONS.

8. IF ANY UNSUITABLE MATERIAL IS ENCOUNTERED DURING CONSTRUCTION, IT WILL BE NECESSARY TO REMOVE THE UNSUITABLE MATERIAL AND REPLACE IT WITH SUITABLE MATERIAL AS APPROVED BY THE ENGINEER.

9. THE THICKNESS OF THE HOT-MIX ASPHALT SHOWN ON THE PLANS IS THE NOMINAL THICKNESS. DEVIATIONS FROM THE NOMINAL THICKNESS WILL BE PERMITTED WHEN SUCH DEVIATIONS OCCUR DUE TO IRREGULARITIES IN THE EXISTING SURFACE OR BASE ON WHICH THE HOT-MIX ASPHALT IS PLACED.

10. THE CONTRACTOR WILL PROVIDE INTERNET ACCESSIBILITY TO THE BITUMINOUS PLANT QUALITY CONTROL LAB SO THAT BITUMINOUS PLANT REPORTS CAN BE E-MAILED TO THE DISTRICT HEADQUARTERS. THIS WORK SHALL BE INCLUDED IN THE COST OF ALL BITUMINOUS ITEMS.

11. AGGREGATE SHOULDERS, TYPE B, SHALL BE CRUSHED STONE, CRUSHED CONCRETE, OR RAP.

12. FOR THE PAY ITEM BITUMINOUS MATERIALS (PRIME COAT), THE CONTRACOTR SHALL USE EITHER RC-70 OR AN EMULSIFIED POLYMER PRIME SS-1HP.

HIGHWAY STANDARDS

000001-04	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-01	AREAS OF REINFORCEMENT REBARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-03	TEMPORARY EROSION CONTROL SYSTEMS
420401-05	BRIDGE APPROACH PAVEMENT
515001-02	NAME PLATE FOR BRIDGES
630001-07	STEEL PLATE BEAM GUARDRAIL
631032-03	TRAFFIC BARRIER TERMINAL, TYPE 6A
635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
701006-02	OFF-ROAD OPERATIONS 15' FT TO PAVEMENT EDGE
701011-01	OFF-ROAD MOVING OPERATONS
701201-02	LANE CLOSURE, 2 LANE, 2 WAY, DAY ONLY FOR SPEEDS <= 45 MPH
701301-02	LANE CLOSURE, SHORT TIME OPERATONS
701306-01	LANE CLOSURE, 2L, 2W SLOW MOVING OPERATONS - DAY ONLY
701321-08	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
702001-06	TRAFFIC CONTROL DEVICES
704001-03	TEMPORARY CONCRETE BARRIER
780001-01	TYPICAL PAVEMENT MARKINGS
781001-02	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
886001	DETECTOR LOOP INSTALLATIONS

THE FOLLOWING HOT-MIX ASPHALT REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:

HOT-MIX ASPHALT REQUIREMENTS		
MIXTURE USES	FLEXIBLE CONNECTOR	SURFACE
APPLICATION	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, N50
AC/PG	PG 64-22	PG 64-22
DESIGN AIR VOIDS	4.0% @ NDes = 70	4.0% @ NDes = 50
MIXTURE COMPOSITION (GRADATION MIXTURE)	IL - 19.0	IL - 9.5
FRICTION AGGREGATE	N/A	MIX "C"

APPLICATION RATES	
AGGREGATE (SURFACE, BASE, SUBBASE, OR BACKFILL)	2.05 TON / CU YD
BITUMINOUS MATERIALS (PRIME COAT)	0.10 GAL / SQ YD
AGGREGATE (PRIME COAT)	0.002 TON / SQ YD
HOT-MIX ASPHALT SURFACE / BINDER (112 LBS)	0.056 TON / SQ YD * IN
HOT-MIX ASPHALT SURFACE MIX C (120 LBS)	0.060 TON / SQ YD * IN

INDEX OF SHEETS

COMMITMENTS

NONE

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

F.A.P. ROUTE 322 (IL 51)
SECTION (23-BR-2)BR
FAYETTE COUNTY

SCALE: VERT. NONE HORIZ. DRAWN BY WJS
DATE 08/23/07 CHECKED BY AJD

PLOT DATE = 8/23/2007
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USER NAME = wjscits

CONTRACT NO. 94968

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	3
STA. 195+73.21	TO STA. 197+80.79			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNITS	TOTAL	CONSTRUCTION TYPE CODE 20% STATE / 80% FEDERAL	
				ROADWAY	BRIDGE
				I000-2A	X080-2A
28100109	STONE RIP RAP, CLASS A5	SQ YD	384	384	
28200200	FILTER FABRIC	SQ YD	384	384	
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	14	14	
40600982	HOT-MIX SURFACE REMOVAL, BUTT JOINT	SQ YD	176	176	
40600990	TEMPORARY RAMP	SY YD	54	54	
40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX 'C', N50	TON	16	16	
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	294	294	
42001430	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	59	59	
44000100	PAVEMENT REMOVAL	SQ YD	200	200	
44004250	PAVED SHOULDER REMOVAL	SQ YD	190	190	
501.01600	REMOVAL OF EXISTING SUPERSTRUCTURES	L SUM	1		1
50102400	CONCRETE REMOVAL	CU YD	6.6		6.6
50300225	CONCRETE STRUCTURES	CU YD	10.3		10.3
50300260	BRIDGE DECK GROOVING	SQ YD	620		620
50300300	PROTECTIVE COAT	SQ YD	944	294	650
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	5827		5827
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	9780		9780
50800515	BAR SPLICERS	EACH	252		252
5090150	STEEL RAILING, TYPE SM	FOOT	270		270
51500100	NAME PLATES	EACH	1		1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	153		153
* 63000000	STEEL PLATE BEAM GUARD RAIL, TYPE A	FOOT	187.5	187.5	
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4	4	
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	4	4	
63200305	STEEL PLATE BEAM GUARD RAIL REMOVAL	FOOT	550	550	
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	6	6	

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNITS	TOTAL	CONSTRUCTION TYPE CODE 20% STATE / 80% FEDERAL	
				ROADWAY	BRIDGE
				I000-2A	X080-2A
67100100	MOBILIZATION	L SUM	1	1	
70100405	TRAFFIC CONTROL AND PROTECTION,STANDARD 701321	EACH	1	1	
70100460	TRAFFIC CONTROL AND PROTECTION,STANDARD 701306	L SUM	1	1	
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	10	10	
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1	
70106700	TEMPORARY RUMBLE STRIP	EACH	6	6	
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	140	140	
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	450	450	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	412.5	412.5	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	412.5	412.5	
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1212	1212	
* 78200410	GUARD RAIL MARKERS, TYPE A	EACH	12	12	
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4	
78300100	PAVEMENT MARKING REMOVAL	SQ FT	335	335	
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	29		29
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	650		650
Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	78		78
Z0030265	IMPACT ATTENUATORS,TEMPORARY (FULLY REDIRECTIVE, WIDE), TEST LEVEL 2	EACH	2	2	
Z0030320	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE),TEST LEVEL 2	EACH	2	2	
Z0037300	PAVEMENT GROOVING	SQ YD	294	294	

* SPECIALTY ITEMS

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

F.A.P. ROUTE 322 (IL 51)
SECTION (23-BR-2)BR
FAYETTE COUNTY

SCALE: VERT. NONE
HORIZ.
DATE 08/23/07

DRAWN BY WJS
CHECKED BY AJD

PLOT DATE = 8/23/2007
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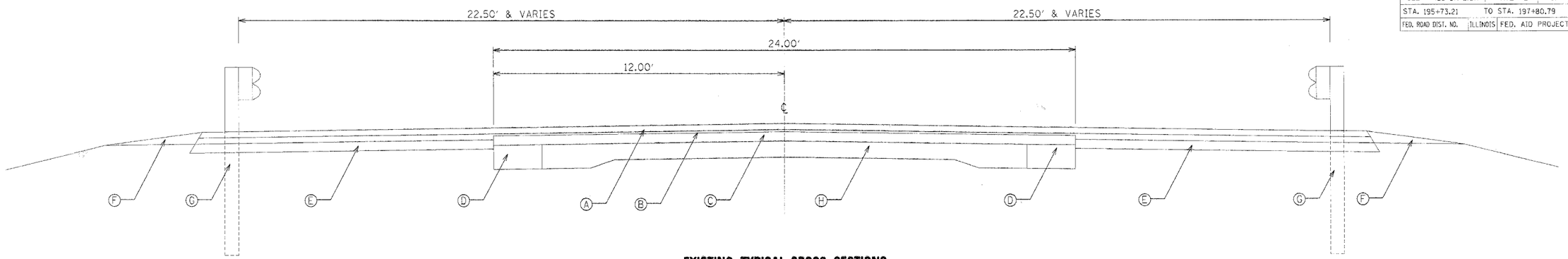
PLOT SCALE = 1.2000 '/ IN.
USER NAME = BUSER6

CONTRACT NO. 94968

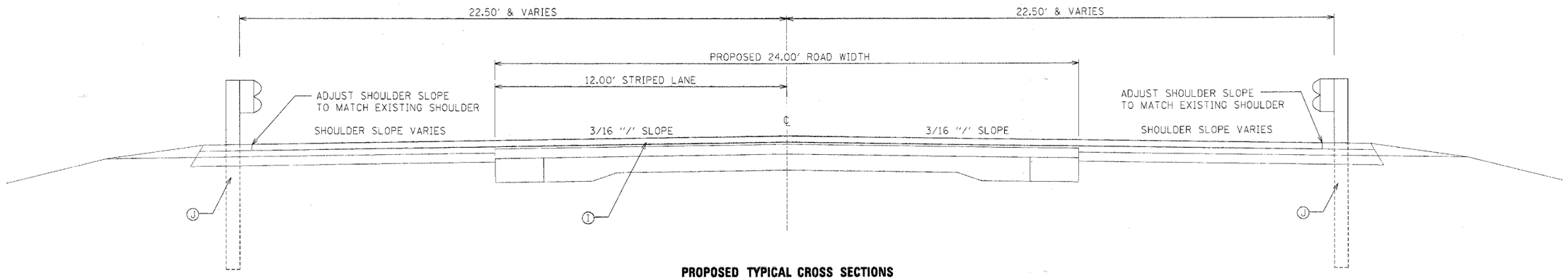
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	4
STA. 195+73.21		TO STA. 197+80.79		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



EXISTING TYPICAL CROSS SECTIONS

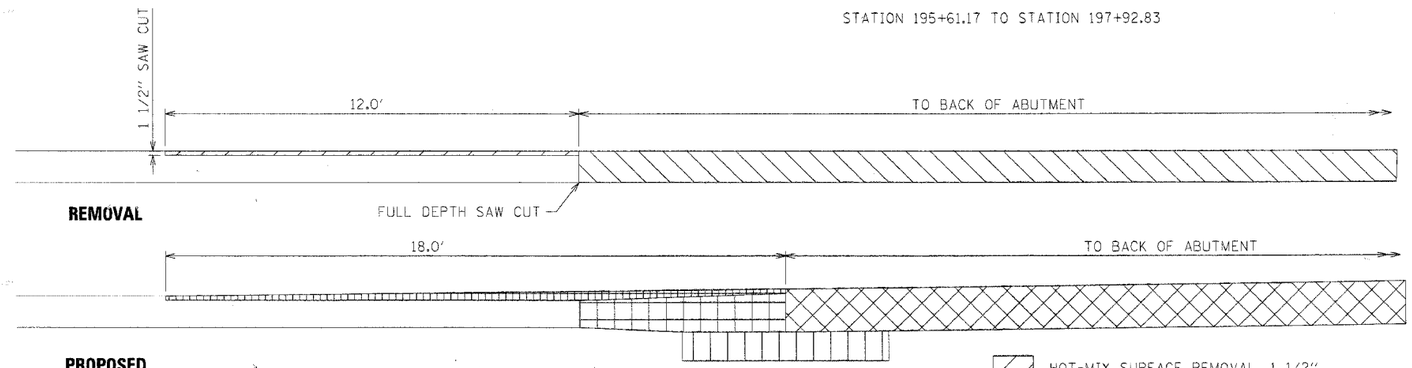
STATION 195+61.17 TO STATION 197+92.83

BRIDGE OMMISSION
STATION 196+08.71 TO STATION 197+45.29



PROPOSED TYPICAL CROSS SECTIONS

STATION 195+61.17 TO STATION 197+92.83



BUTT JOINT DETAIL

STATION 195+61.17 TO STATION 195+79.21
STATION 197+74.79 TO STATION 197+92.83

- HOT-MIX SURFACE REMOVAL, 1 1/2"
- PAVEMENT REMOVAL
- PROPOSED HMA SURFACE 1 1/2" & VARIES
- BRIDGE APROACH PAVEMENT CONNECTOR (FLEXIBLE)
- CONCRETE PAD
- BRIDGE APPROACH PAVEMENT

- (A) EXISTING HMA SURFACE COURSE, 1 1/2"
- (B) EXISTING HMA BINDER COURSE, 1/2"
- (C) EXISTING HMA SURFACE COURSE, 3"
- (D) EXISTING PCC WIDENING, 9"
- (E) EXISTING HMA BINDER FOR SHOULDERS, 4 1/2"*
- (F) EXISTING AGGREGATE SHOULDERS
- (G) EXISTING SPBGR
- (H) EXISTING PCC PAVEMENT, 9-6-9
- (I) PROPOSED HMA SURFACE COURSE, 1 1/2" & VARIABLE
- (J) PROPOSED SPBGR

* SEE PLANS FOR LOCATION OF PCC SHOULDER / WIDENING

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TYPICAL CROSS SECTIONS

F.A.P. ROUTE 322 (IL 51)
SECTION (23-BR-2)BR
FAYETTE COUNTY

SCALE: VERT. NONE
HORIZ.
DATE 08/23/07

DRAWN BY WJS
CHECKED BY AJD

PLOT DATE = 8/23/2007
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USER NAME = 4USERS

CONTRACT NO. 94968

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	5
STA. 195+73.21	TO STA. 197+80.79			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STAGE I CONSTRUCTION SCHEDULE			TEMPORARY RUMBLE STRIP	IMPACT ATTENUATORS, TEMPORARY	TEMPORARY CONCRETE BARRIER	PAVEMENT MARKING REMOVAL
STATION	to STATION	SIDE	EACH	EACH	FOOT	SQ FT
170+89.5		RT.	1			
180+89.5		RT.	1			
185+89.5		RT.	1			
192+89.5	200+68.1	CL.				162.7
194+49.5		LT.		1		
194+74.5	195+08.3	LT.			35.7	
195+00.7	198+53.0	RT.				117.3
195+08.3	198+48.3	RT.			341.1	
198+48.3	198+83.1	LT.			35.7	
199+08.1		LT.		1		
207+68.1		LT.	1			
212+68.1		LT.	1			
222+68.1		LT.	1			
		TOTAL	6	2	412.5	280.0

STAGE II CONSTRUCTION SCHEDULE			IMPACT ATTENUATORS, RELOCATE	RELOCATE TEMPORARY CONCRETE BARRIER	PAVEMENT MARKING REMOVAL
STATION	to STATION	SIDE	EACH	FOOT	SQ FT
194+49.5		RT.	1		
194+74.5	195+08.3	RT.		35.7	
194+96.2	195+66.4	LT.			23.4
195+08.3	198+48.3	LT.		341.1	
197+73.8	198+67.3	LT.			31.1
198+48.3	198+83.1	RT.		35.7	
199+08.1		RT.	1		
		TOTAL	2	412.5	54.5

MISCELLANEOUS REMOVAL ITEMS			GUARDRAIL REMOVAL	PAVEMENT REMOVAL	PAVED SHOULDER REMOVAL	HMA SURFACE REMOVAL BUTT JOINT
STATION	to STATION	SIDE	FOOT	SQ YD	SQ YD	SQ YD
194+43.4	196+21.4	RT.	178			
194+92.0	195+96.0	LT.	104			
195+61.2	195+79.2	LT. & RT.				88
195+73.2	196+09.2	LT. & RT.		100	98	
197+32.6	198+97.6	LT.	165			
197+44.8	197+80.8	LT. & RT.		100	92	
197+58.0	198+61.0	RT.	103			
197+74.8	197+92.8	LT. & RT.				88
		TOTAL	550	200	190	176

GUARDRAIL SCHEDULE			TERMINAL MARKER DIRECTLY APPLIED	TRAFFIC BARRIER TERMINAL, TYPE I, SPECIAL, (TANGENT)	STEEL PLATE BEAM GUARDRAIL TYPE A	TRAFFIC BARRIER TERMINAL, TYPE 6A	GUARDRAIL MARKERS, TYPE A
STATION	to STATION	SIDE	FOOT	EACH	FOOT	EACH	EACH
194+39.9	194+89.9	RT.	1	1			
194+89.5	195+39.5	LT.	1	1			
194+89.9	195+77.4	RT.			87.5		
195+39.5	195+52.0	LT.			12.5		
195+52.0	195+97.2	LT.				1	
195+77.4	196+22.6	RT.				1	
197+31.4	197+76.6	LT.				1	
197+56.8	198+02.0	RT.				1	
197+76.6	198+51.6	LT.			75.0		
198+02.0	198+14.5	RT.			12.5		
198+14.5	198+64.5	RT.	1	1			
198+51.6	199+01.6	LT.	1	1			
194+39.9	198+64.5	RT.					6
194+89.5	199+01.6	LT.					6
		TOTAL	4	4	187.5	4	12

PAVEMENT MARKING SCHEDULE			PAINT PAVEMENT MARKING - LINE 4" (YELLOW - SKIP DASH)	PAINT PAVEMENT MARKING - LINE 4" (WHITE - SOLID)	PAINT PAVEMENT MARKING - LINE 4" (YELLOW - DBL. SOLID)	SHORT TERM PAVEMENT MARKING	WORK ZONE PAVEMENT MARKING REMOVAL
STATION	TO STATION	SIDE	FOOT	FOOT	FOOT	FOOT	SQ FT
192+89.5	199+03.8	CL.	160.0			60	72.6
194+96.2	198+67.3	LT.		371.1		20	130.2
195+00.7	198+53.0	RT.		352.3		20	124.0
199+03.8	200+68.1	CL.			328.6	40	122.7
		TOTAL	160.0	723.4	328.6	140	449.5

PAVING SCHEDULE			BITUMINOUS MATERIALS (PRIME COAT)	HOT-MIX ASPHALT SURFACE COURSE MIX "C", N50	TEMPORARY RAMP	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	BRIDGE APPROACH PAVEMENT	PAVEMENT GROOVING	PROTECTIVE COAT
STATION	to STATION	SIDE	GAL	TON	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD
195+61.2	195+79.2	LT. & RT.	6.6	7.9	26.7				
195+73.2	195+79.2	LT. & RT.				29.3			
195+79.2	196+09.2	LT. & RT.					146.7	146.7	146.7
197+44.8	197+74.8	LT. & RT.					146.7	146.7	146.7
197+74.8	197+80.8	LT. & RT.				29.3			
197+74.8	197+92.8	LT. & RT.	6.6	7.9	26.7				
		TOTAL	13.2	15.8	53.4	58.6	293.4	293.4	293.4

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

F.A.P. ROUTE 322 (IL 51)
SECTION (23-BR-2)BR
FAYETTE COUNTY

SCALE: VERT. NONE
HORIZ.
DATE 08/23/07

DRAWN BY WJS
CHECKED BY AJD

PLOT DATE = 8/23/2007
FILE NAME = c:\projects\11-A\IDOT-Dist7-Ver\Ver\Design\Plans\QS+schedulesofquantities.dgn
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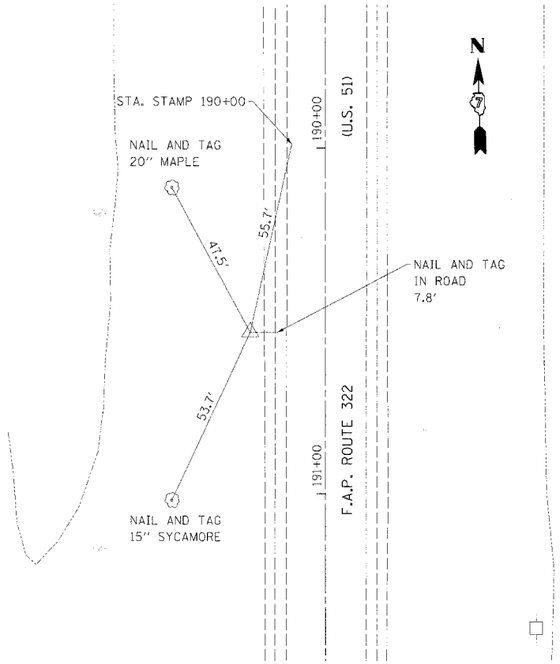
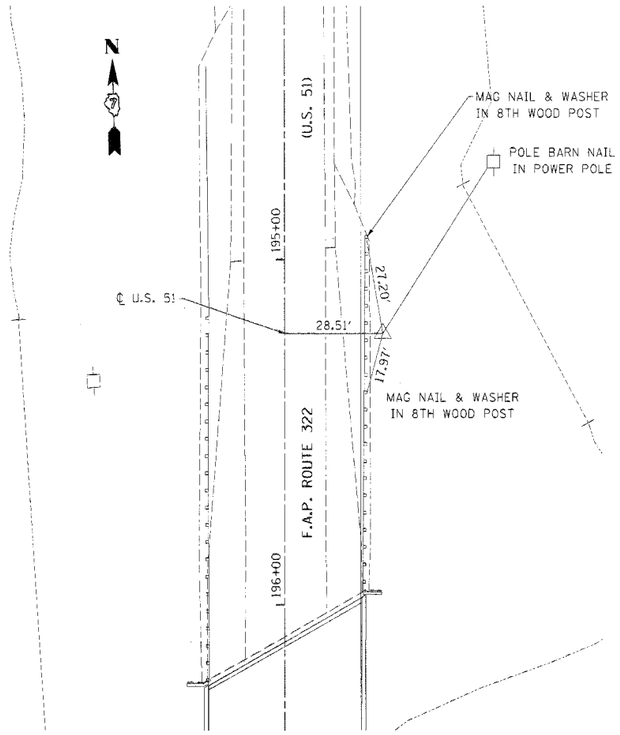
CONTRACT NO. 94968

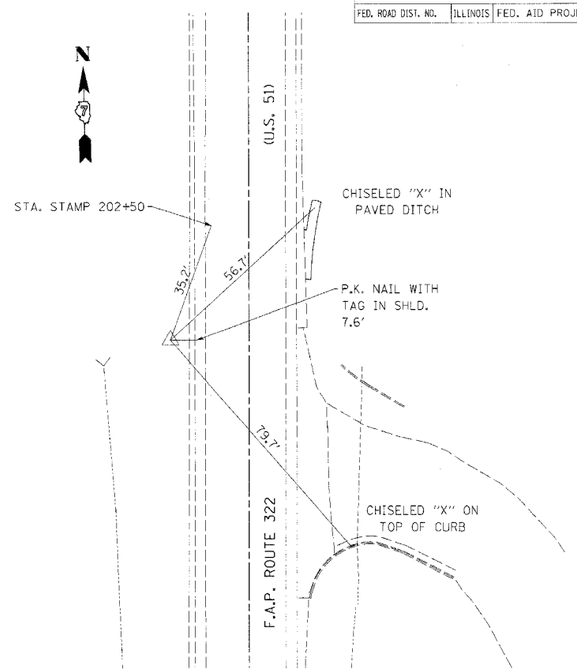
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	6
STA. 195+73.21	TO STA. 197+80.79			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



IRON PIN WITH CAP
STATION 190+53.26
21.68' RT.



IRON PIN WITH CAP
STATION 195+21.39
28.37' LT.



IRON PIN WITH CAP
STATION 202+84.70
22.70' RT.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

TIE POINTS

F.A.P. ROUTE 322 (IL 51)
SECTION (23-BR-2)BR
FAYETTE COUNTY

SCALE: VERT. HORIZ. NONE
DATE 08/23/07
DRAWN BY WJS
CHECKED BY AJD

PLOT DATE = 9/23/2007
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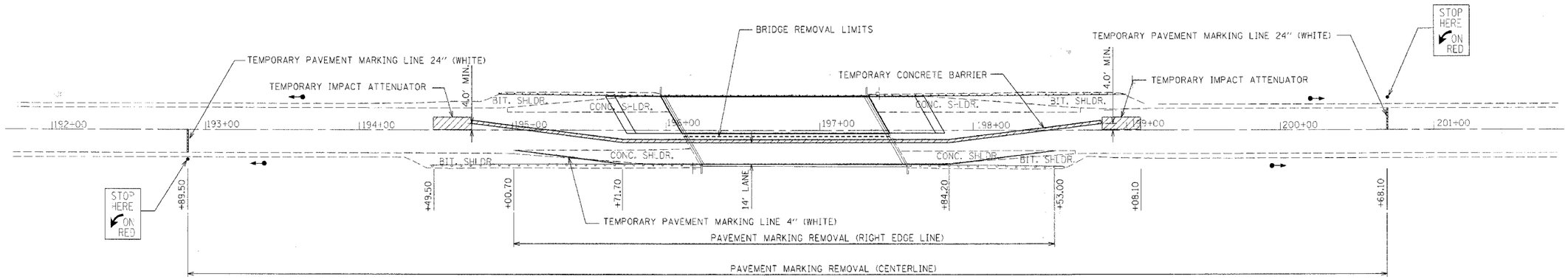
PLOT SCALE = 2.000000 / IN.
USER NAME = &USER&

CONTRACT NO. 94968

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	7
STA. 195+73.21		TO STA. 197+80.79		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

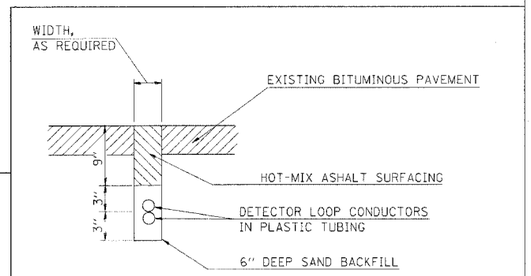


NOTES:

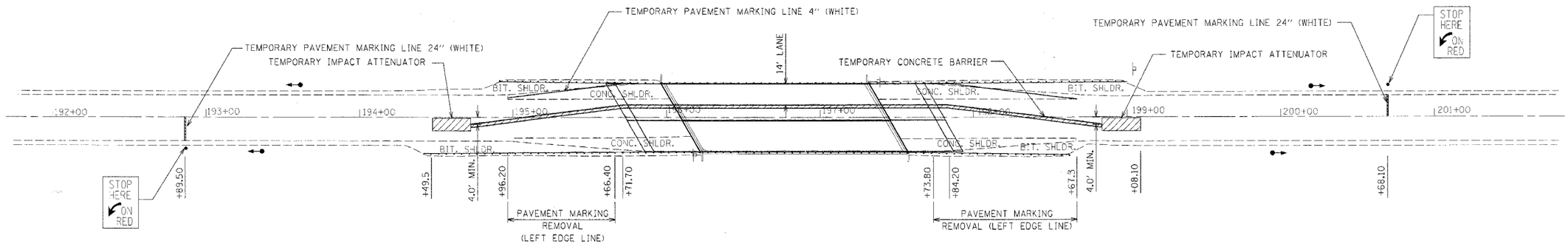
1. ALL DIMENSIONS, BARRICADES, SIGNS, ETC. AS SHOWN ON TRAFFIC CONTROL AND PROTECTION STANDARD 701321 SHALL APPLY.
2. ALL TEMPORARY PAVEMENT MARKING NECESSARY TO COMPLY WITH THIS DETAIL SHALL BE CONSIDERED INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS IN THE PLANS.
3. CONTRACTOR SHALL FILL EXISTING GUARD RAIL POST AFTER REMOVING AND SHALL BE CONSIDERED INCIDENTAL TO STEEL PLATE BEAM GUARD RAIL REMOVAL.

STAGE I TRAFFIC CONTROL

SEE STANDARD 701321



DETAIL
DETECTOR LOOP INSTALLED IN TRENCH



STAGE II TRAFFIC CONTROL

SEE STANDARD 701321

PLOT DATE = 8/23/2007
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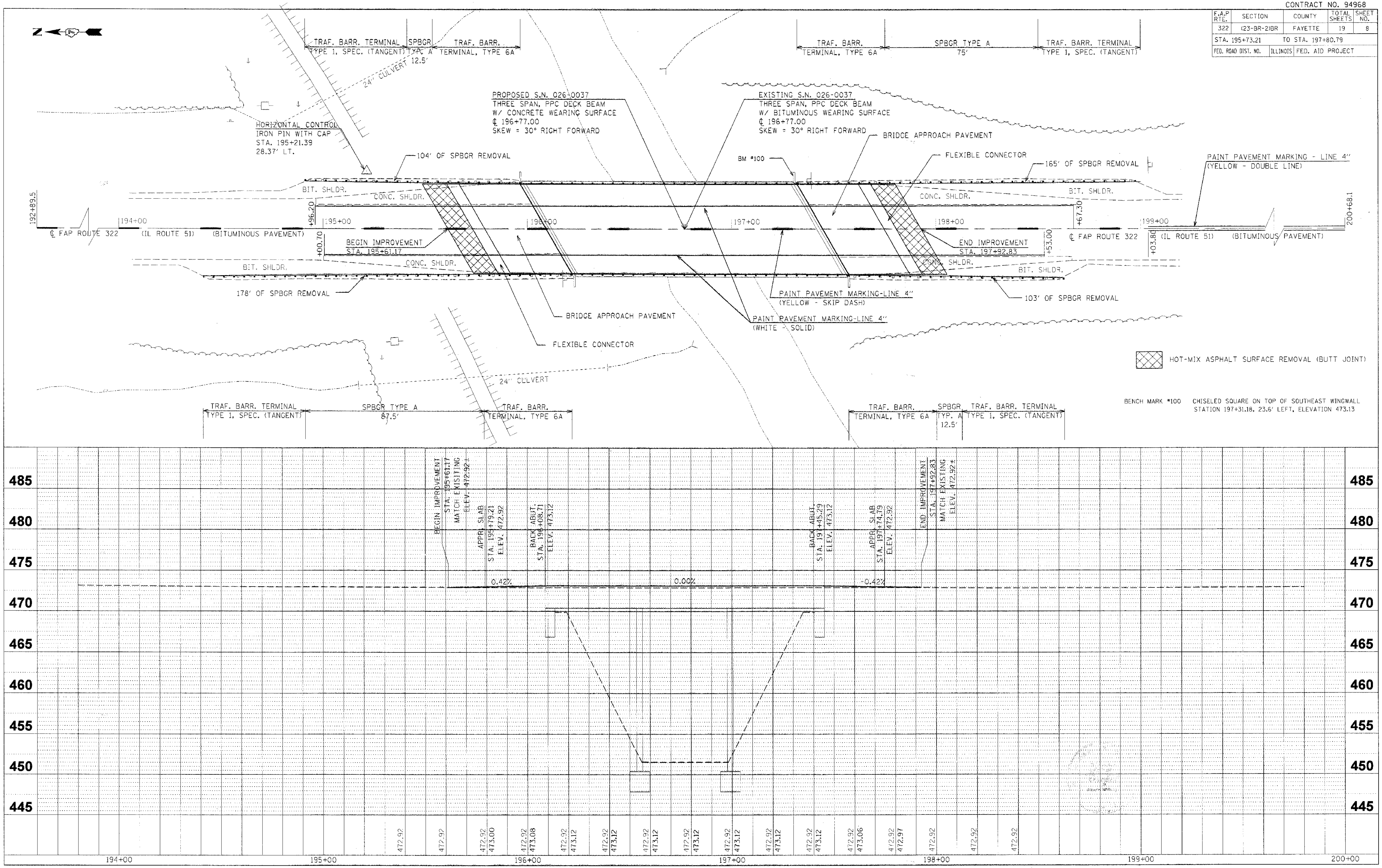
PLOT SCALE = 1.0000 '/ IN.
USER NAME = #USER#

CONTRACT NO. 94968

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	(23-BR-2)BR	FAYETTE	19	8

STA. 195+73.21 TO STA. 197+80.79

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



Bench Mark: Chiseled square on top southeast wingwall.
Station 197+31.18, 23.6' left. Elevation 473.13

Existing Bridge: The existing bridge is a three span PPC deck beam bridge built in 1965 as F.A. F-14(59), Section 23-BR-2. The substructure consists of pile cap abutments and solid wall piers, supported on concrete piles and timber piles, respectively. The back to back abutment length is 136'-7" and the out to out bridge width is 46'-0". The existing superstructure is to be removed and replaced. Traffic to be maintained with staged construction.

No salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

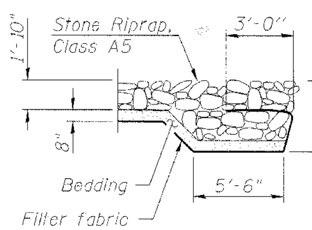
APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR-2)BR	FAYETTE	19	9
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

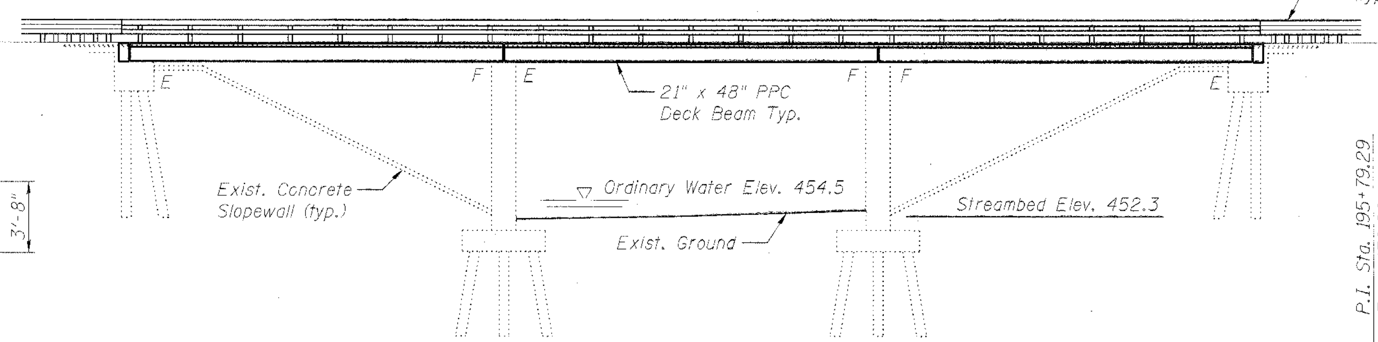
SHEET NO. 1
11 SHEETS

Contract # 94968

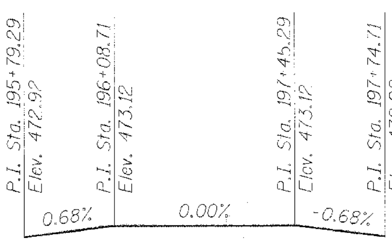
Kaskaskia River High Water
July 1957 Elev. 454.5



SECTION A-A



ELEVATION



PROFILE GRADE

GENERAL NOTES

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.

The minimum thickness of the Concrete overlay shall be 5" and varies as required to adjust for the new profile grade and beam camber.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

Existing name plate shall be cleaned and relocated adjacent to the new name plate. Cost included with Name Plates.

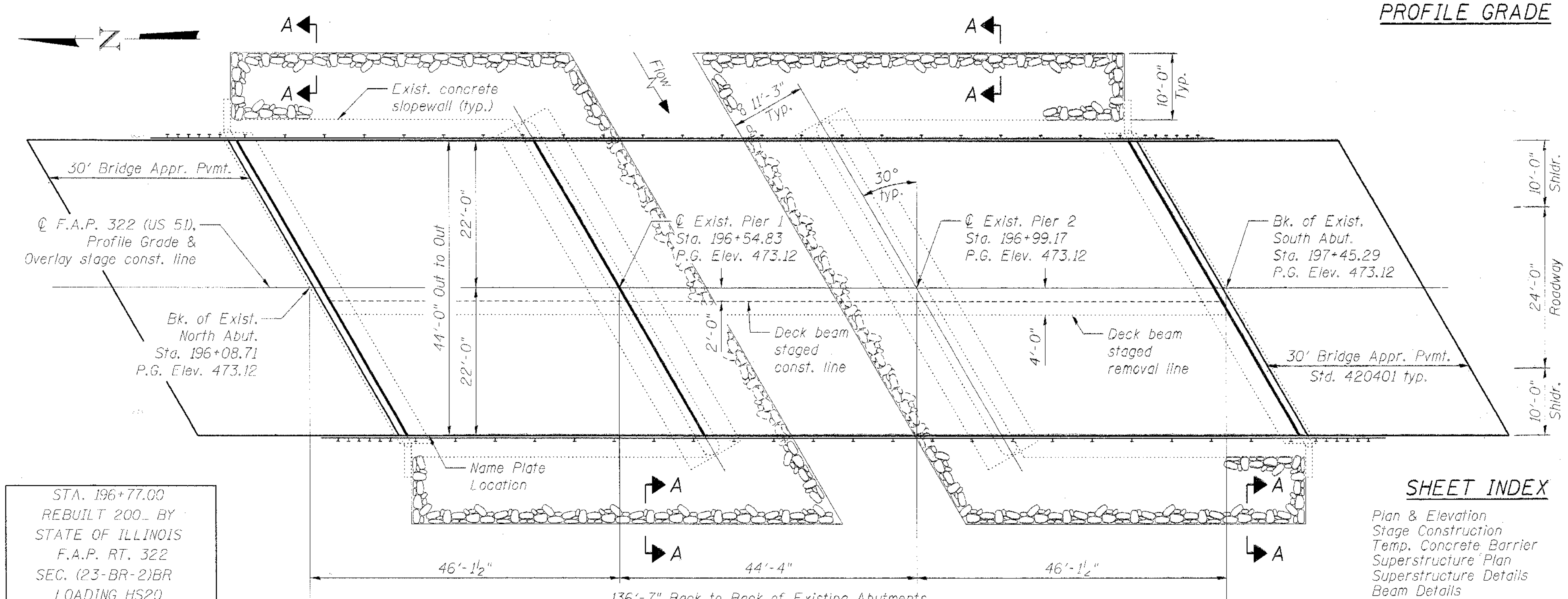
Concrete sealer shall be applied to the exterior vertical face of each fascia beam. Cost included with Precast Prestressed Concrete Deck Beams (21" Depth).

All construction joints shall be bonded.

~~No work shall be allowed in the stream.~~

Repair of the substructure shall be completed prior to placement of the new deck beams.

If the contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on new beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new beams. To distribute load to multiple beams and protect the concrete. In all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. If cranes or other heavy equipment will be placed on the new beams prior to placement of the concrete wearing surface, it shall be done after the dowel rods are grouted and cured for 24 hours minimum and prior to grouting the shear keys. A temporary means of lateral restraint will be required for fascia beams at expansion ends of beams to prevent movement of the beams.



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	L. Sum	1		1
Concrete Removal	Cu. Yd.		6.6	6.6
Concrete Structures	Cu. Yd.		10.3	10.3
Bridge Deck Grooving	Sq. Yd.	620		620
Protective Coat	Sq. Yd.	650		650
Concrete Wearing Surface, 5"	Sq. Yd.	650		650
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	5827		5827
Reinforcement Bars, Epoxy Coated	Pound	8430	1350	9780
Steel Railing, Type SM	Foot	270		270
Name Plates	Each	1		1
Preformed Joint Strip Seal	Foot	153		153
Stone Riprap Class A5	Sq. Yd.			384
Filter Fabric	Sq. Yd.			384
Structural Repair of Concrete (Depths Equal to or Less than 5 Inches)	Sq. Ft.		29	29
Bar Splicers	Each	136	116	252
Asbestos Bearing Pad Removal	Each	78		78

STA. 196+77.00
REBUILT 200_ BY
STATE OF ILLINOIS
F.A.P. RT. 322
SEC. (23-BR-2)BR
LOADING HS20
STR. NO. 026-0037

NAME PLATE
See Std. 515001

SHEET INDEX

LOADING HS20-44

Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications

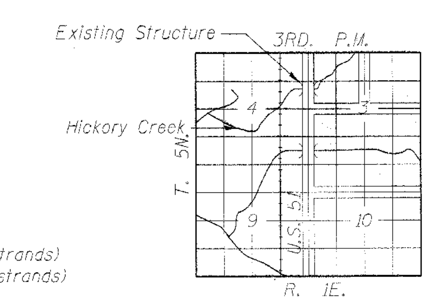
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (reinf.)

PRECAST PRESTRESSED UNITS

f'c = 5000 psi
f'ci = 4000 psi
f's = 270,000 psi (1/2" ϕ low relax strands)
f'si = 202,000 psi (1/2" ϕ low relax strands)



LOCATION SKETCH

WATERWAY INFORMATION

High water and ordinary water elevations taken from existing bridge plans dated August 18, 1964.

DESIGNED MBH	
CHECKED NRF	
DRAWN MBH	
CHECKED NRF	

200
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = .075
Site Coefficient (S) = 1.0

PLAN AND ELEVATION
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
SEC. (23-BR-2)BR
FAYETTE COUNTY
STA. 196+77.00
SN 026-0037

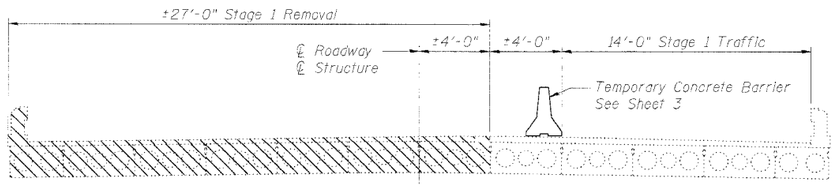
Reginald H Benton
8/23/2007 EXP 11/30/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

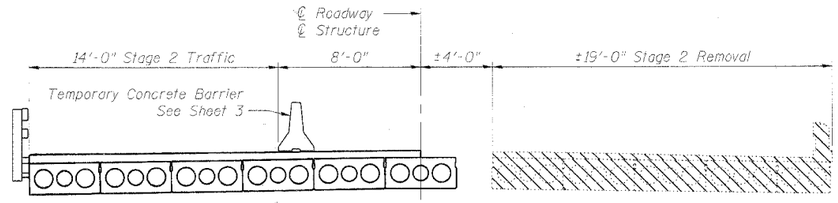
SHEET NO. 2
11 SHEETS

Contract # 94968



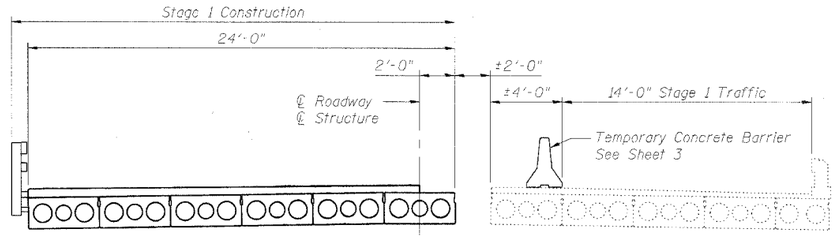
STAGE 1 REMOVAL

(Looking South)



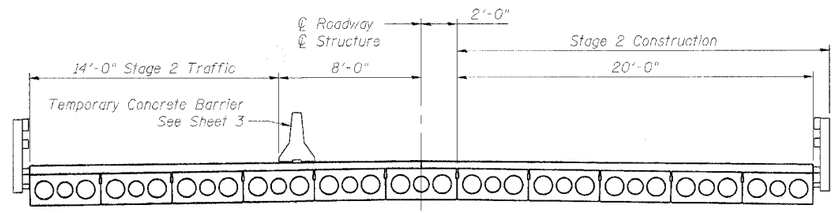
STAGE 2 REMOVAL

(Looking South)



STAGE 1 CONSTRUCTION

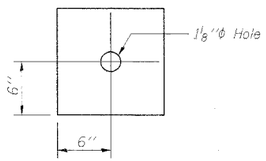
(Looking South)



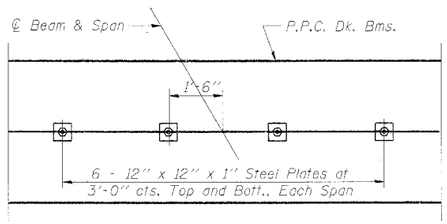
STAGE 2 CONSTRUCTION

(Looking South)

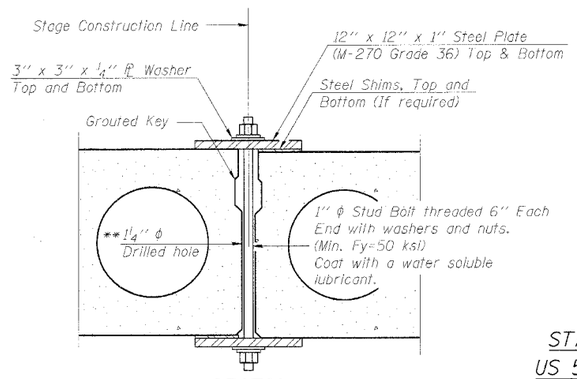
** As an alternate to the drilled holes, the Contractor may request the Fabricator to cast 2" diameter semi-circular recesses in the sides of each beam adjacent to the stage construction line. These recesses should align to form a hole at the appropriate locations for the clamping device bolts. If the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



CLAMPING PLATE



PLAN



SECTION

SHEAR KEY CLAMPING DETAILS AT STAGE CONST. JT.

Cost included with Precast Prestressed Concrete
Deck Beams (21" depth)

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES

STAGE CONSTRUCTION
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

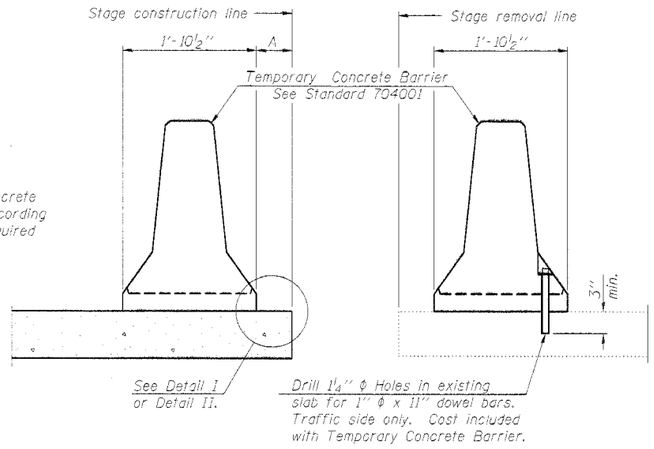
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	123-BR -2)BR	FAYETTE	19	11
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 3

11 SHEETS

Contract # 94968



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".

SECTIONS THRU SLAB

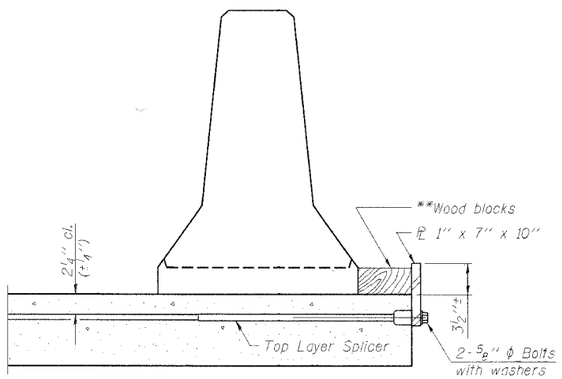
NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

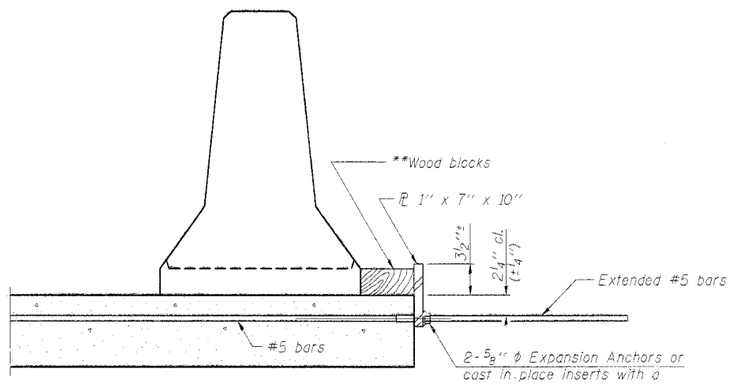
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel ℙ to the concrete slab with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

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.

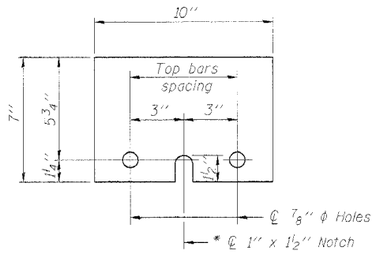


DETAIL I



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.



STEEL RETAINER ℙ 1" x 7" x 10"

* Required only with Detail II

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES

R-27

11-1-06

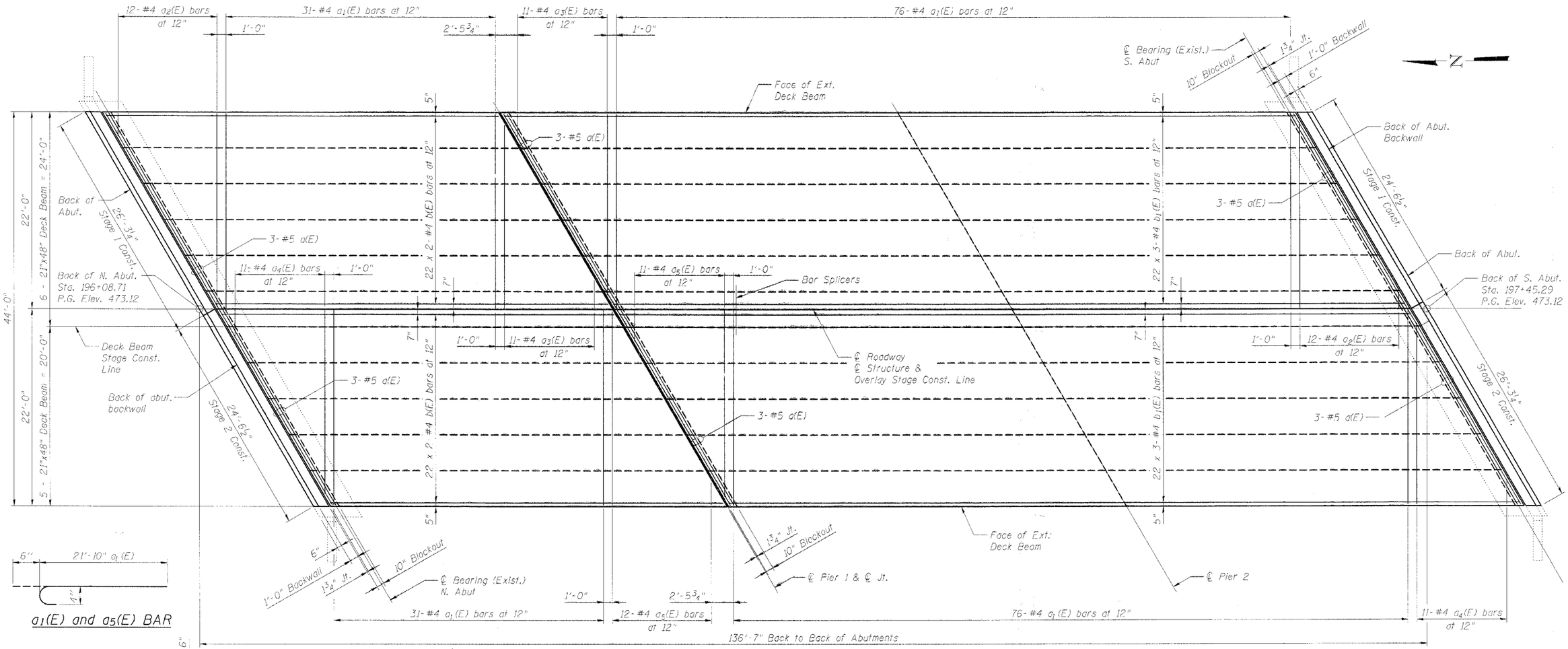
TEMP. CONCRETE BARRIER
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

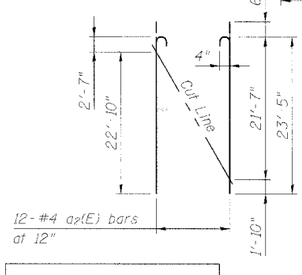
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	12
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

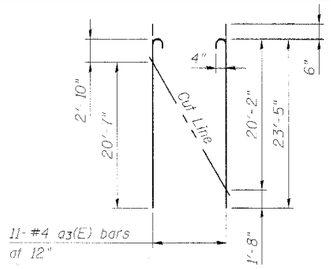
SHEET NO. 4
11 SHEETS

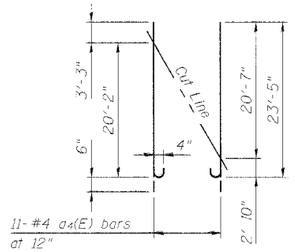
Contract # 94968

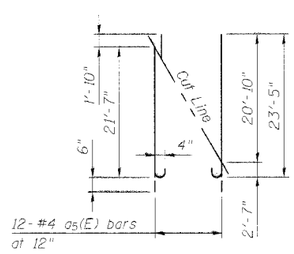


a1(E) and a5(E) BAR









FIELD CUTTING DIAGRAM

Field cutting will result in one unused a_5 bar of 1'-10" in length.

Bars indicated thus 1 x 2 - #5 etc. indicates 1 line of bars with 2 lengths per line.

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	18	#5	25'-3"	
a1(E)	214	#4	22'-4"	
a2(E)	12	#4	23'-11"	
a3(E)	11	#4	23'-11"	
a4(E)	11	#4	23'-11"	
a5(E)	12	#4	23'-11"	
b(E)	88	#4	22'-9"	
b1(E)	132	#4	30'-6"	
Reinforcement Bars, Epoxy Coated			Pound	8,430
Concrete Wearing Surface, 5"			Sq. Yds.	650

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES

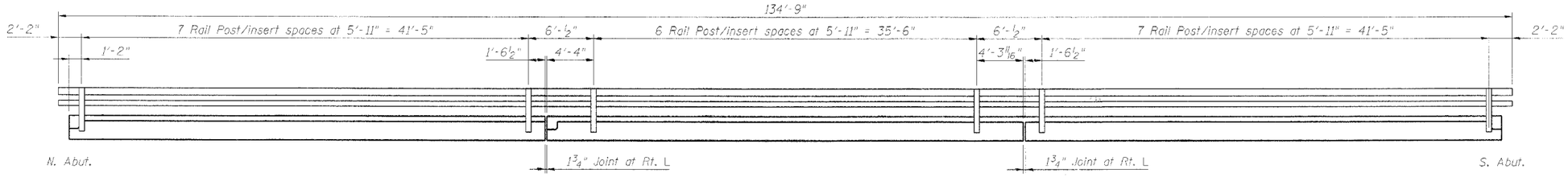
SUPERSTRUCTURE PLAN
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

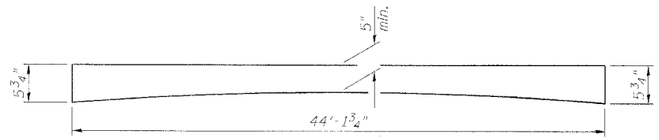
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	123-BR -2)BR	FAYETTE	19	13
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
11 SHEETS

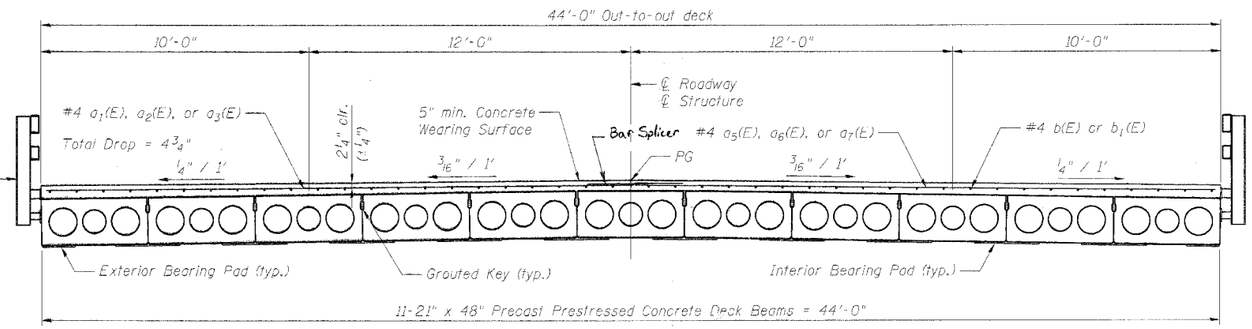
Contract #94968



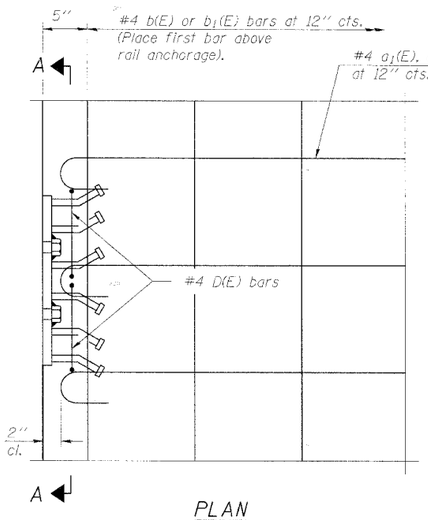


REINFORCED CONCRETE WEARING SURFACE PROFILE

RAIL POST SPACING

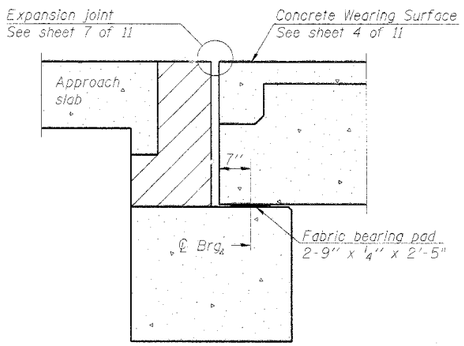


CROSS SECTION



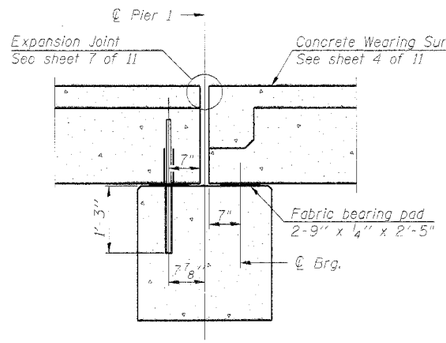
PLAN

Notes:
The rail anchorage shall be cast with the beam and the wearing surface shall be cast in the field. Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam. Drilling into the beam will not be permitted.
See sheet 6 for location of Section A-A



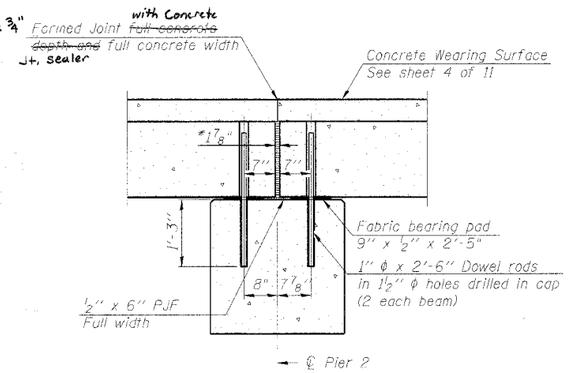
SECTION THRU ABUTMENT

Notes :
All horizontal dimensions are at right angles to beam ends.
Hatched area to be poured after concrete wearing surface is in place.
See sheet 6 of 11 for bearing pad details.



SECTION THRU EXPANSION PIER

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 beams are in place.
See sheet 6 of 11 for bearing pad details.



SECTION THRU FIXED PIER

*1⅞" Jt. shall be filled with non-shrink grout. 1⅞" dimension may vary to accommodate tolerance in beam lengths.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED
ENGINEER OF BRIDGE DESIGN

PASSED
ENGINEER OF BRIDGES AND STRUCTURES

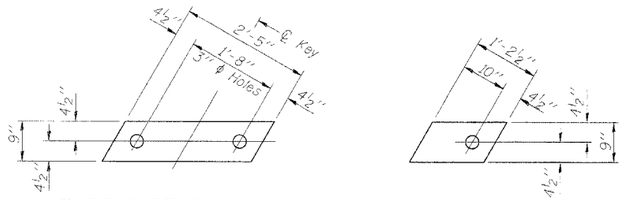
SUPERSTRUCTURE DETAILS
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 6
11 SHEETS

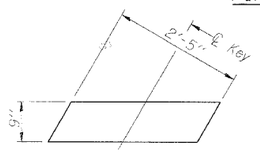
Contract #94968



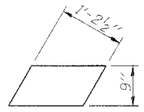
FABRIC BEARING PAD
(Interior)

FABRIC BEARING PAD
(Exterior)

FIXED

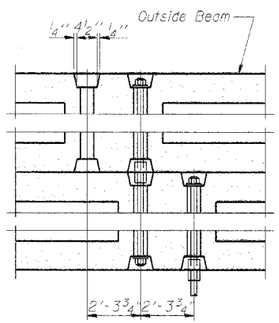


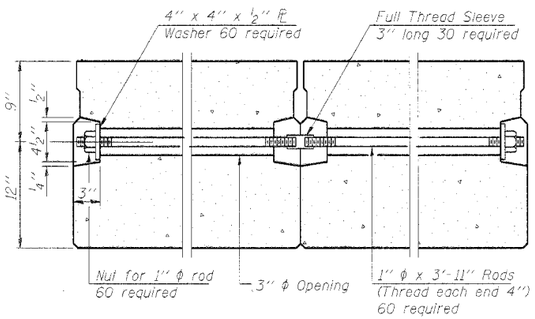
FABRIC BEARING PAD
(Interior)



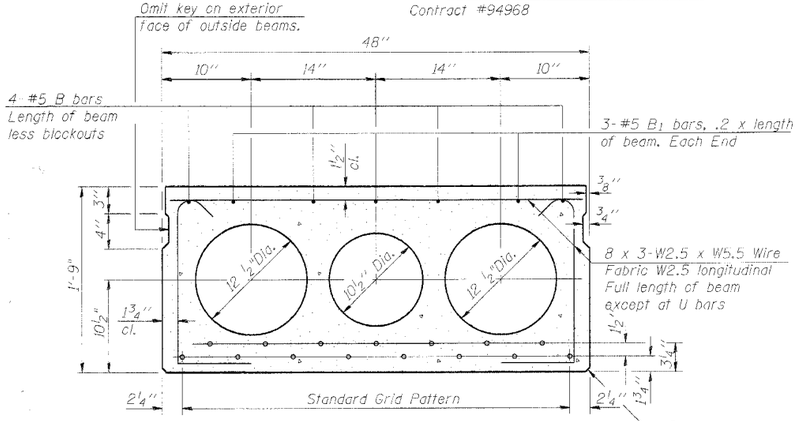
FABRIC BEARING PAD
(Exterior)

EXPANSION





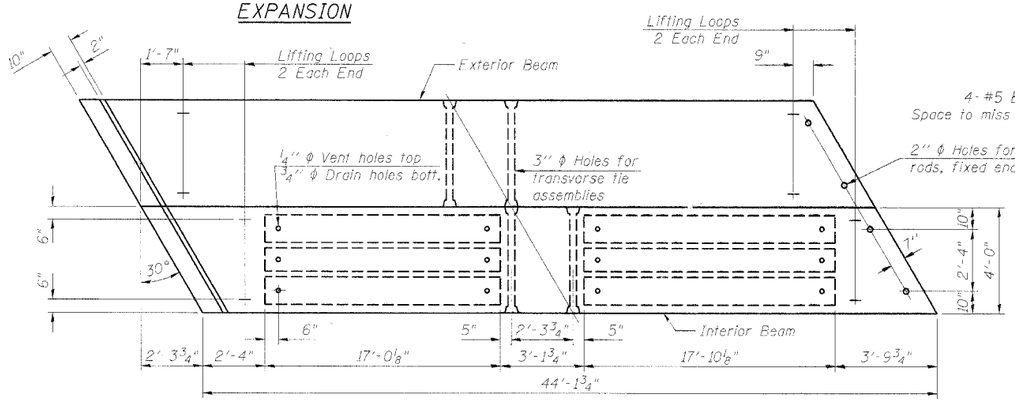
TYPICAL TRANSVERSE TIE ASSEMBLY



TYPICAL SECTION

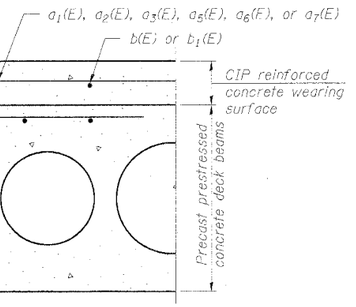
½" φ Strands. Each Strand Stressed to 30,900 Lbs.
8-Strands 1¾" up, 7-Strands 3¼" up

Note:
Place strands symmetrically about ℄ of beam.



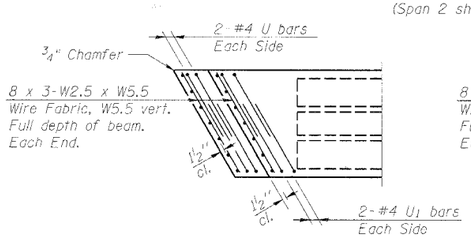
PLAN

(Span 2 shown, Span 3 opposite hand, Span 1 similar)



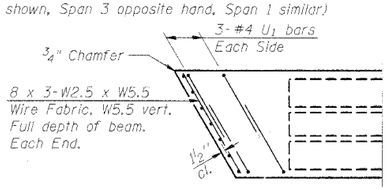
FASCIA BEAM CROSS SECTION

* Tilt D(E) bar to miss bottom rail anchorage.



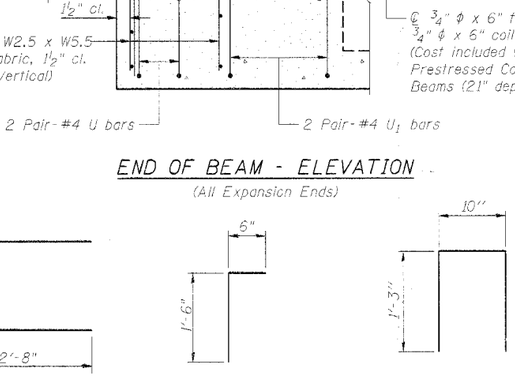
END PLAN

(All Expansion Ends)



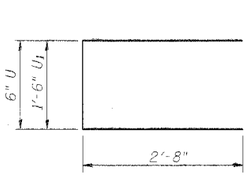
END PLAN

(Fixed Ends)



END OF BEAM - ELEVATION

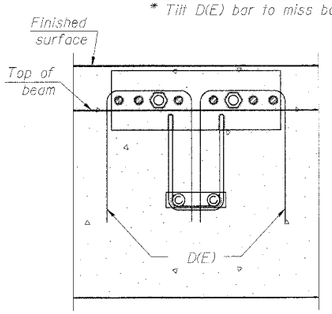
(All Expansion Ends)



BAR U & U1

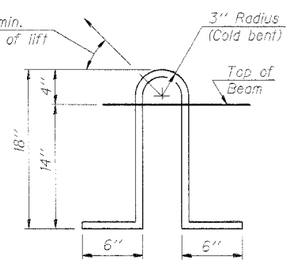
BAR E

D(E) BAR



SECTION A-A

See sheet 5 for location of Section A-A



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2-½" φ-270 ksi strands, as shown.

The 1" φ 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.

Non prestressing 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 ⅛" fabric adjusting shims of the dimensions of the Exterior 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 beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam 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 prestressed concrete deck beams.

Required Release Strength, f'ci, shall be 4000 p.s.i.

BILL OF MATERIAL

Precast Prestressed Concrete Deck Beams (21" depth)	Sq. Ft.	5827

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

- 200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES

BEAM DETAILS
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

PD-4-R

11-1-06

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

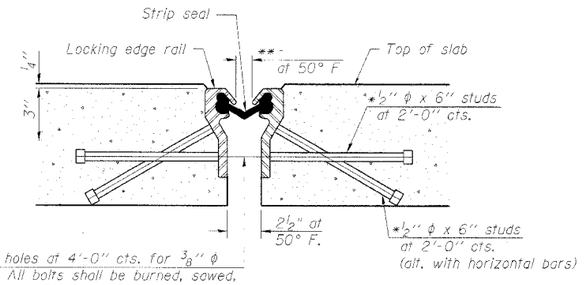
** When joint is fixed, dimension is set at 1½".

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

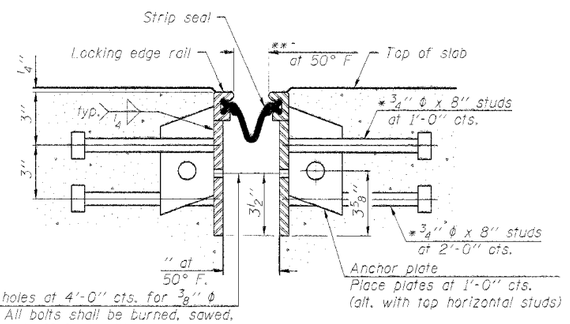
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
11 SHEETS

Contract # 94968



7/16" ϕ holes at 4'-0" cts. for ⅜" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



7/16" ϕ holes at 4'-0" cts. for ⅜" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

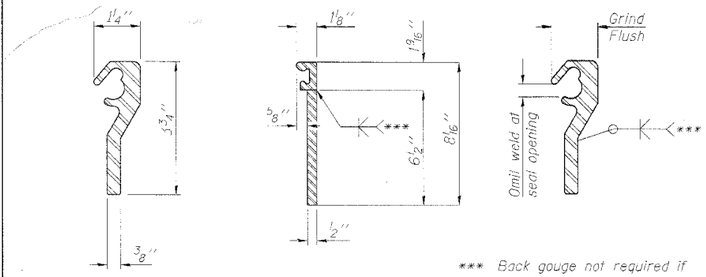
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and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

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

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

SECTION THRU ROLLED RAIL JOINT



*** Back gouge not required if complete joint penetration is verified by mock-up.

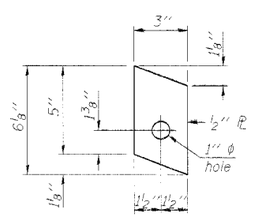
ROLLED (EXTRUDED) RAIL

WELDED RAIL

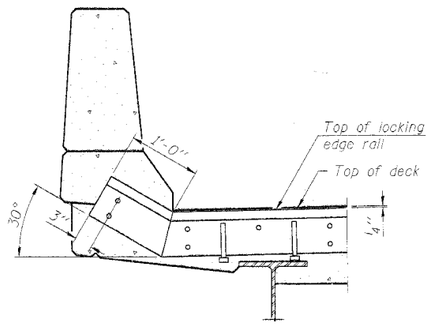
LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

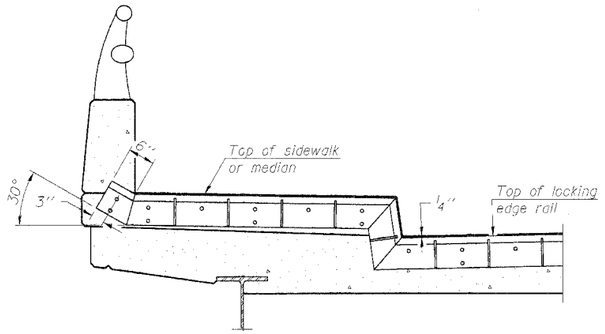
SECTION THRU WELDED RAIL JOINT



ANCHOR R
(for welded rail)



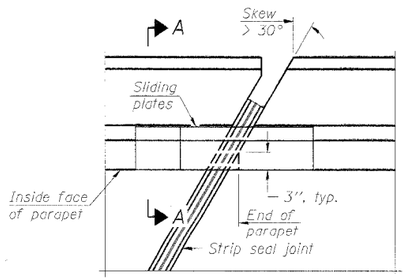
AT PARAPET



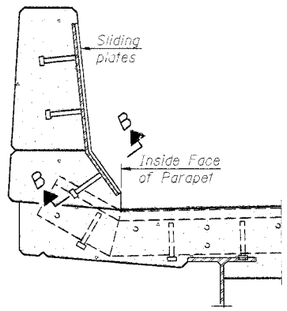
AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

LOCKING EDGE RAILS



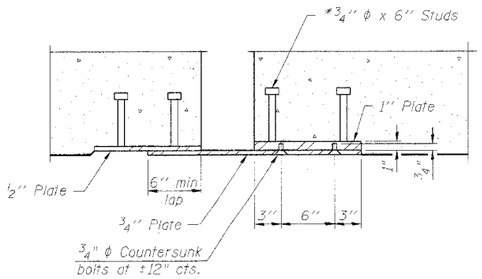
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	153

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED

PASSED

ENGINEER OF BRIDGE DESIGN

ENGINEER OF BRIDGES AND STRUCTURES

EJ-SSJ 11-1-06

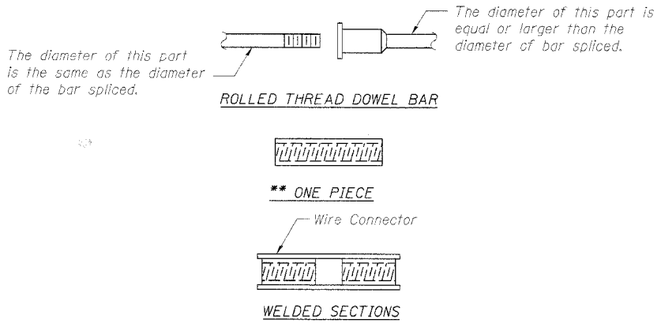
PREFORMED JOINT STRIP SEAL
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

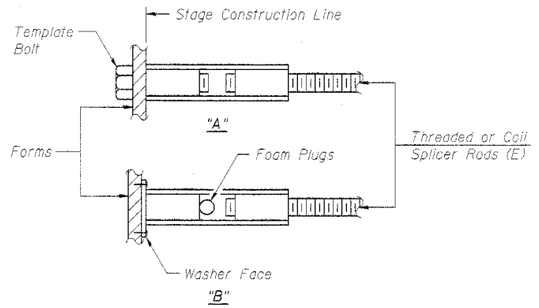
SHEET NO. 8
11 SHEETS

Contract # 94968



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.

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:

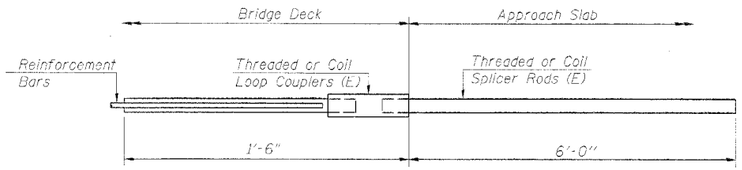
① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

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

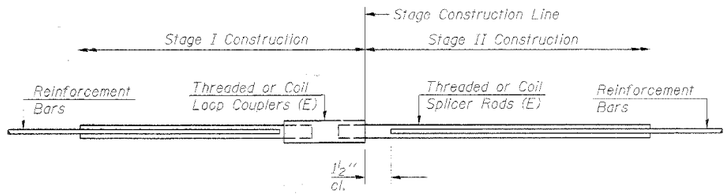
BAR SPLICER ASSEMBLIES

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 = 102



STANDARD

Bar Size	No. Assemblies Required	Location
#4	127	Superstructure
#5	9	Superstructure
#4	2	Substructure
#5	12	Substructure

BENTON & ASSOCIATES, INC.

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES

BSD-1 11-1-06

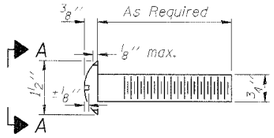
BAR SPLICER DETAILS
US 45 / DEER CREEK
F.A.P. RT. 328
WAYNE COUNTY
SN. 096-0068

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

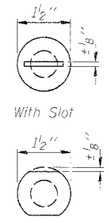
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	17
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
11 SHEETS

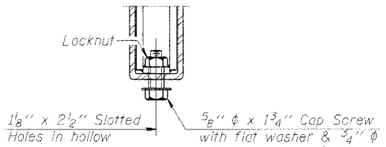
Contract # 94968



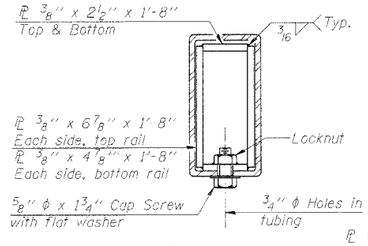
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



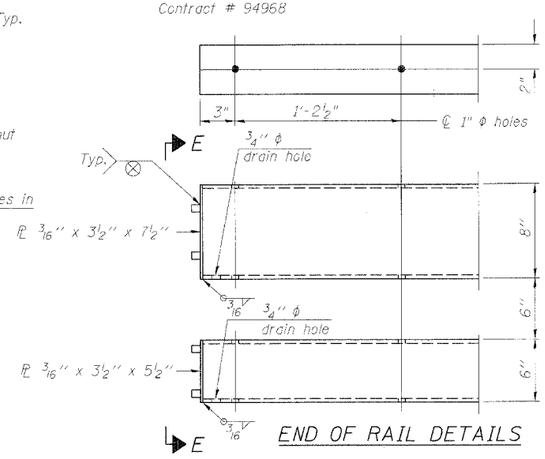
VIEW A-A



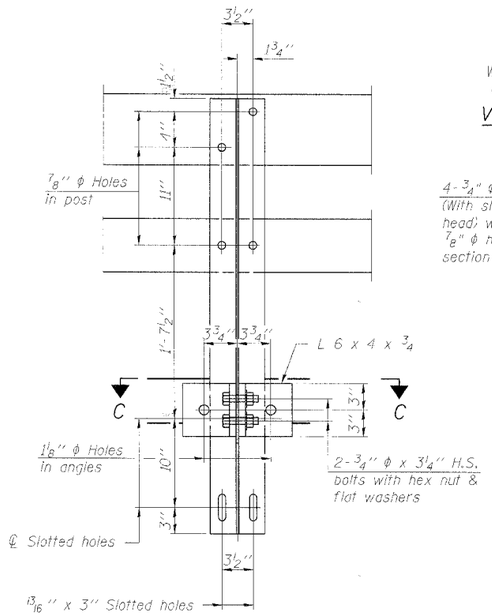
RAIL SPLICE CONNECTION AT EXPANSION JT.



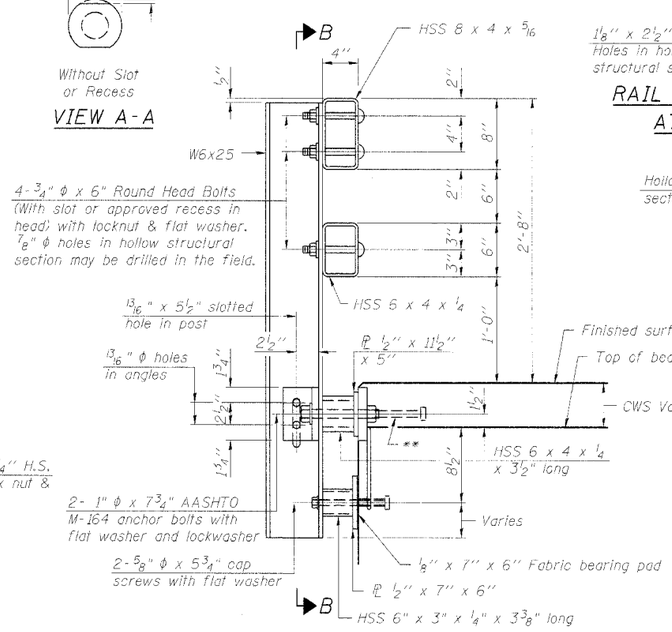
SECTION AT RAIL SPLICE



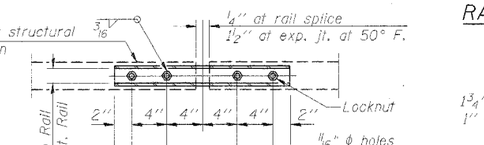
END OF RAIL DETAILS



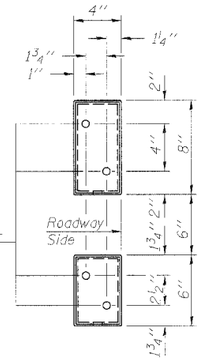
SECTION B-B



SECTION AT RAIL POST

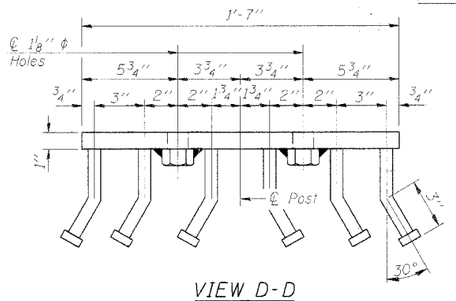


PLAN-BOTT. SPLICE PL TYPICAL

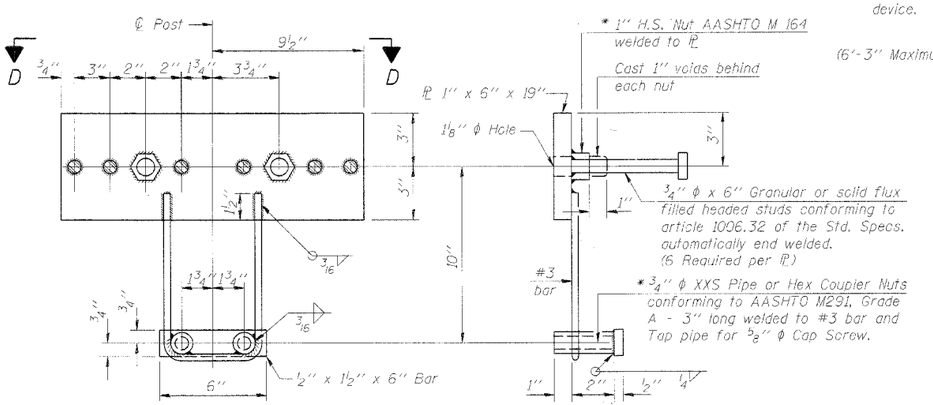


VIEW E-E

℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032

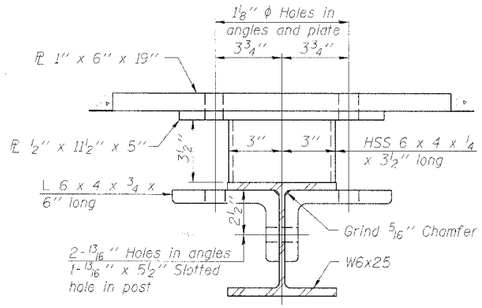


VIEW D-D

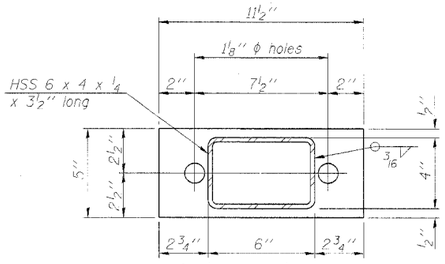


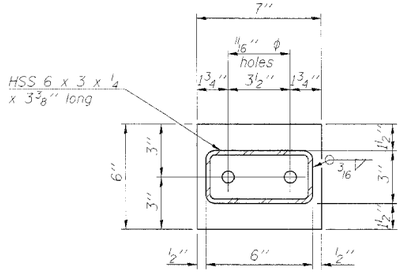
ANCHOR DEVICE

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



SECTION C-C





Notes:
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 Bridge Rail, Type SM.
Steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

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

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Railing, Type SM	Foot	270

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED
ENGINEER OF BRIDGE DESIGN

PASSED
ENGINEER OF BRIDGES AND STRUCTURES

STEEL RAILING, TYPE SM
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

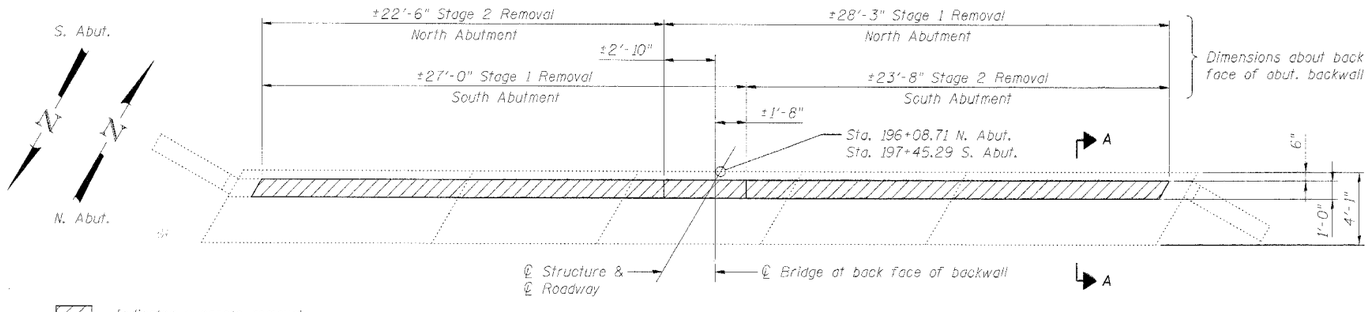
R-34CWS 11-1-06

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

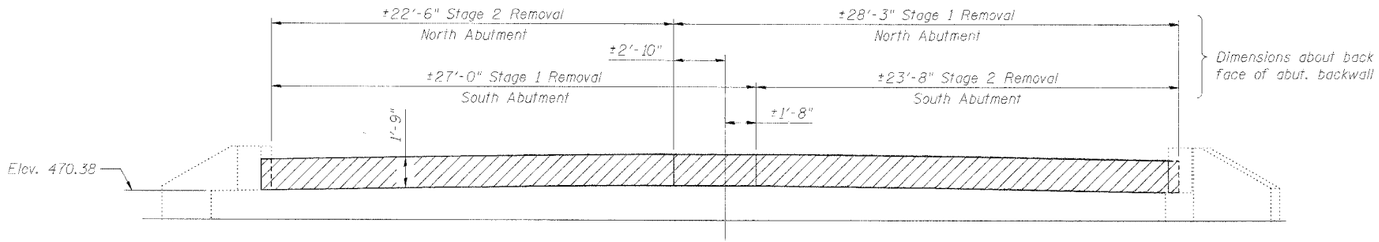
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
11 SHEETS

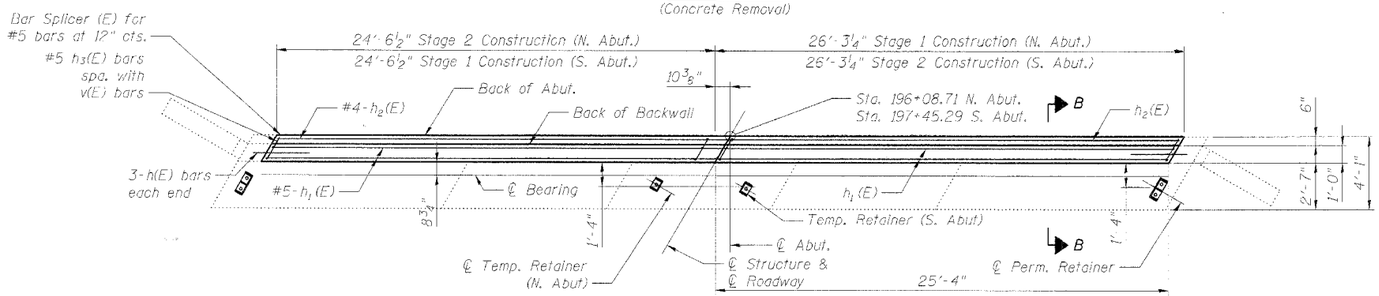
Contract # 94968



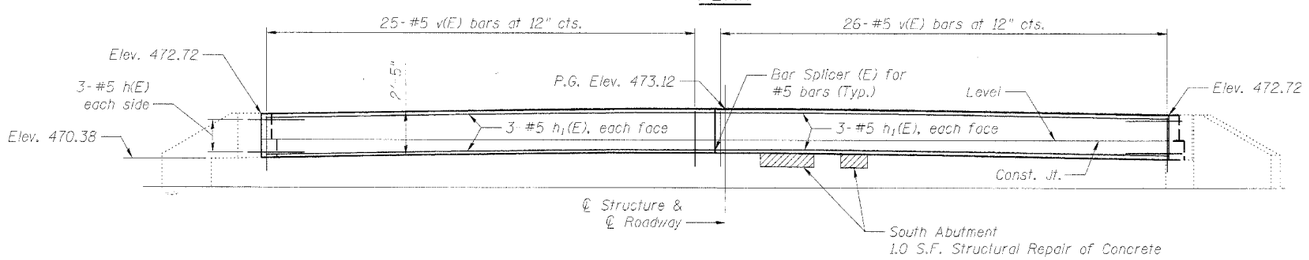
PLAN
(Concrete Removal)



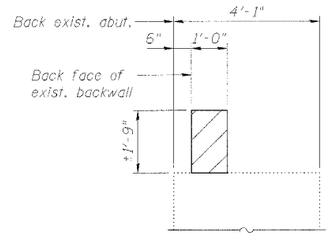
ELEVATION
(Concrete Removal)



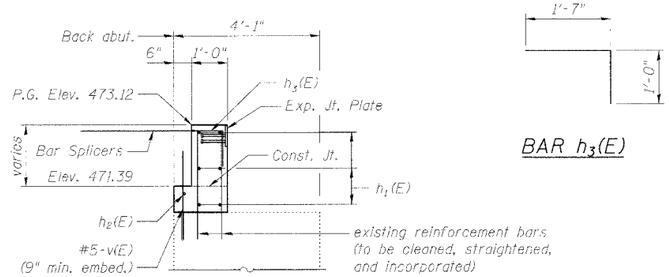
PLAN



ELEVATION



SECTION A-A



SECTION B-B

BAR $h_3(E)$

Note:
Concrete backwall to be poured after deck beams are erected.

All v(E) Bars are to be drilled and grouted according to Setion 584 of the Standard Specifications.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	12	#5	3'-0"	——
h1(E)	24	#5	25'-5"	——
h2(E)	4	#4	25'-5"	——
h3(E)	102	#5	2'-7"	⌐
v(E)	102	#5	3'-1"	——
Concrete Removal		Cu. Yd.	6.6	
Concrete Structures		Cu. Yd.	10.3	
Reinforcement bars, Epoxy Coated		Pound	1350	
Structural Repair of Concrete (Depths Equal to or Less than 5 Inches)		Sq. Ft.	1	

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

- 200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES

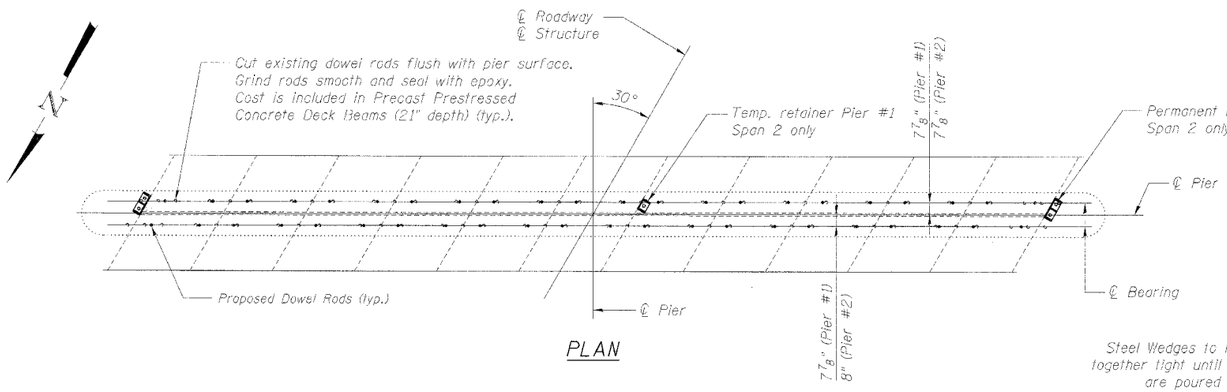
ABUTMENT DETAILS
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RT. OR TE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 322	(23-BR -2)BR	FAYETTE	19	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

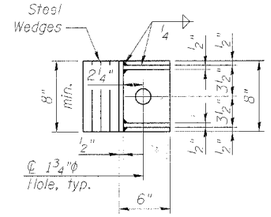
SHEET NO. 11
11 SHEETS

Contract # 94968



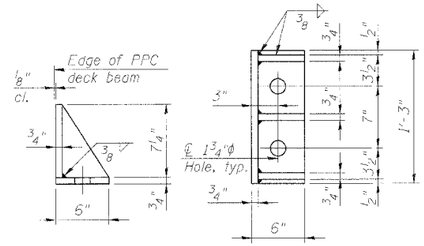
PLAN

Steel Wedges to hold beams together tight until block-outs are poured and cured.



TEMPORARY RETAINER

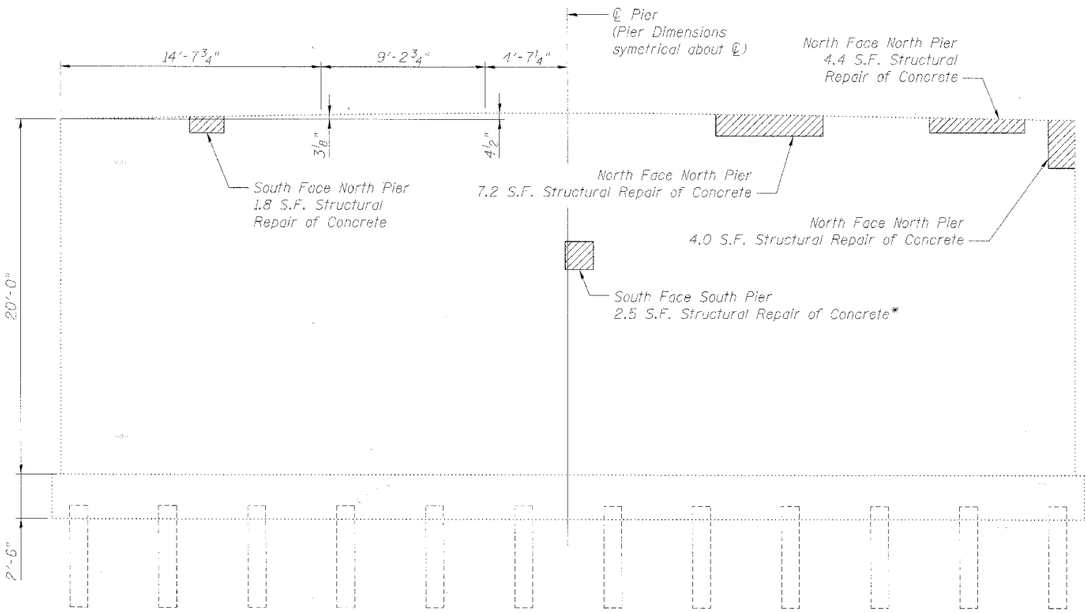
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



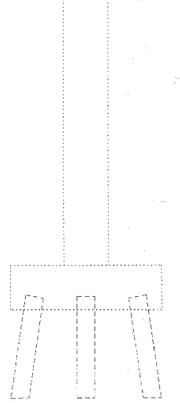
PERMANENT RETAINER

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

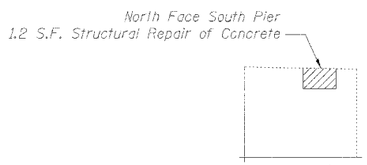
Premanent Retainer to be galvanized steel.



ELEVATION



END ELEVATION



PART ELEVATION

ANCHOR BOLTS FOR RETAINERS

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

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

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for Precast Prestressed Concrete Deck Beams (21" Depth).

The Contractor may use, at his option, the capsule of 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 drilled holes according to the manufacturer's recommencations and precedures.

Cost of anchor bolts and side retainers are included with the deck beams.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554. Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

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

ITEM	TYPE	SIZE	EMBEDDED DEPTH
Anchor Bolts for Retainers	F1554 Grade 36	1½" ϕ	9¼"

AASHTO M314 Grade 36, ASTM F1554 Grade 55, or AASHTO M314 Grade 55 anchor bolts may be substituted for the anchor bolts shown above.

BILL OF MATERIAL

Item	Unit	Quantity
Structural Repair of of Concrete (Depths Equal to or Less than 5 Inches)	Sq. Ft.	28

DESIGNED	MBH
CHECKED	NRF
DRAWN	MBH
CHECKED	NRF

200

EXAMINED

ENGINEER OF BRIDGE DESIGN

PASSED

ENGINEER OF BRIDGES AND STRUCTURES

PIER DETAILS
US 51 / HICKORY CREEK
F.A.P. ROUTE 322
FAYETTE COUNTY
SN 026-0037