8-1-08 Letting, Item 116

INDEX OF SHEETS

0 20 40 60
SCALE IN FEET – 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.

MICROFILMED _____
REEL NUMBER _____
AWARDED _____
RESIDENT ENGINEER _____
AS BUILT CHANGES WERE MADE ON THE FOLLOWING SHEETS _____

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

DISTRICT 9 NO. (217) 549-2171
PROJECT ENGINEER: DAVID PICHE
UNIT CHIEF:
TOWNSHIP: RALEIGH & HARRISBURG
CONTRACT NO: 78031

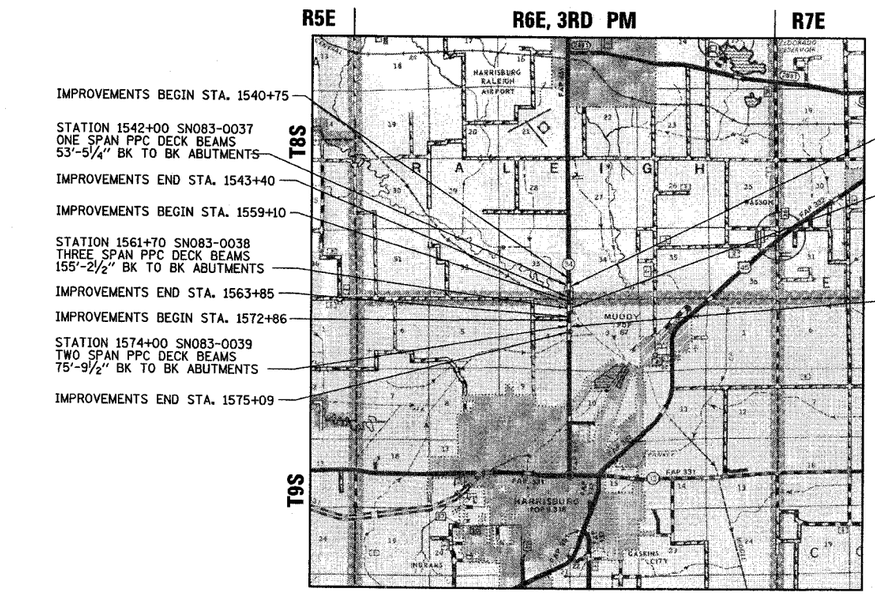
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
URBANA, ILLINOIS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAP RTE 869 (IL 34)
SECTIONS 105BR-1, 105BR-2, 105BR-3
PROJECT: BHF-0869(035)
SALINE COUNTY
C – 99 – 011 – 08

PPC DECK BEAM SUPERSTRUCTURE REPLACEMENTS
OVER MIDDLE FORK SALINE RIVER OVERFLOW, MIDDLE FORK SALINE RIVER, & BANKSTON FORK



LOCATION MAP
SCALE
0 2 4 6 MILES
0 10000 20000 30000 FEET

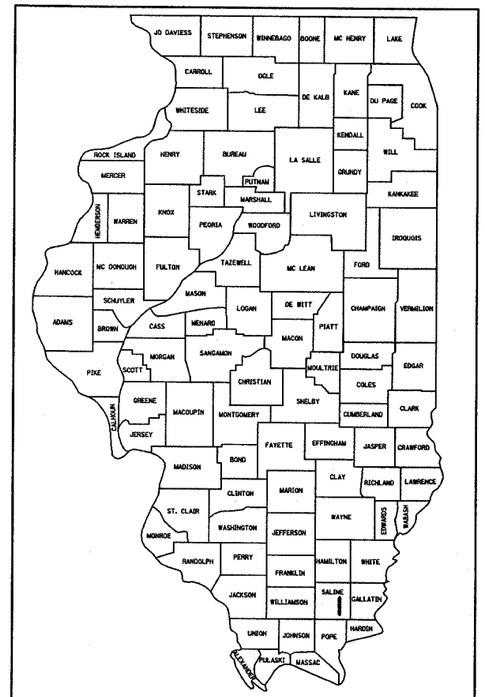
GROSS LENGTH = 3438.62 FT. = 0.65 MI.
NET LENGTH = 963 FT. = 0.18 MI.

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	*	SALINE	118	1

* 105BR-1, 105BR-2, 105BR-3

P-
D- 99-011-08



LOCATION OF SECTION INDICATED THUS: ▬

FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL (RURAL)
DESIGN SPEED: 55 mph
POSTED SPEED: 55 mph
ADT: 3970 @ SN083-0037, SN083-0038 (2007)
ADT: 4020 @ SN083-0039 (2007)
PV: 92%
SU: 6%
MU: 2%

DESIGN DESIGNATION N.A.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED May 1 20 08
Jon C. Zirwas
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
June 27, 2008
Eric E. Harm, P.E.
Interim ENGINEER OF DESIGN AND ENVIRONMENT
June 27, 2008
Christine M. Reed, P.E.
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

RICHARD D. PAYNE 37421 LICENSED PROFESSIONAL ENGINEER OF STATE OF ILLINOIS

Richard D. Payne DATE: 04/11/08
ILLINOIS PROFESSIONAL LICENSE NO. 37421
(EXPIRATION DATE: 11-30-09)

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	•	SALINE	118	2
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 105BR-1, 105BR-2, 105BR-3

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

STANDARD NO.	DESCRIPTION
000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-01	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-04	TEMPORARY EROSION CONTROL SYSTEMS
420001-07	PAVEMENT JOINTS
515001-02	NAME PLATE FOR BRIDGES
630001-07	STEEL PLATE BEAM GUARDRAIL
631032-03	TRAFFIC BARRIER TERMINAL, TYPE 6A
635001	DELINEATORS
635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-01	REFLECTOR MARKER AND MOUNTING DETAILS
701001-01	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 4.5 m (15') AWAY
701006-02	OFF-RD OPERATIONS, 2L, 2W, 4.5 m (15') TO 600 mm (24") FROM PAVEMENT EDGE
701011-01	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701201-02	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701301-02	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701311-02	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
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
720001	SIGN PANEL MOUNTING DETAILS
720006-01	SIGN PANEL ERECTION DETAILS
720011	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
729001	APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)
780001-01	TYPICAL PAVEMENT MARKINGS
781001-02	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS

GENERAL NOTES

1. THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING CURING TIME FOR THE VARIOUS HMA LIFTS.
2. EXCEPT AS NOTED ON THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES.
3. ALL SAWCUTTING OF EXISTING PAVEMENT SHALL BE CONSIDERED INCLUDED IN THE PAY ITEMS INVOLVED. THE MINIMUM SAW DEPTH IN THE PAVEMENT SHALL BE 1½" UNLESS OTHERWISE NOTED.
4. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL MONUMENTS UNTIL AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR REESTABLISH ANY SECTION OR SUBSECTION MONUMENTS DESTROYED BY HIS OPERATIONS.
5. THE THICKNESS OF HMA MIXTURES 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 HMA MIXTURE IS PLACED.
6. ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER LISTED ON THE INDEX OF SHEETS OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.
7. 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
BITUMINOUS MATERIALS:	
ON PAVEMENT	0.09 GAL/SQ YD
INTERMEDIATE LIFTS (FOG COAT)	0.04 GAL/SQ YD
ON AGGREGATE SURFACE	0.32 GAL/SQ YD
AGGREGATE (PRIME COAT)	0.0015 TONS/SQ YD

8. ABANDONED UNDERGROUND UTILITIES THAT CONFLICT WITH CONSTRUCTION SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY ACCORDING TO ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF PAVEMENT REMOVAL.
9. ALL DISTURBED AREAS WITHIN THE CONSTRUCTION LIMITS SHALL BE FERTILIZED AND SEEDED. SEEDING SHALL BE CLASS 2A ACCORDING TO THE APPLICABLE ARTICLES OF SECTION 250 OF THE STANDARD SPECIFICATIONS. SEEDING SHALL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION. LOCATIONS TO BE SEEDED WILL BE DETERMINED BY THE ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE JULIE NUMBER IS 800-892-0123. A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED.
11. EXISTING TRAFFIC BARRIER TERMINALS TO BE REMOVED SHALL BE PAID FOR AS GUARDRAIL REMOVAL.
12. FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR SANDBAGS PER BARRICADE.
13. ALL ELEVATIONS REFERRING TO U.S.G.S. MEAN SEA LEVEL DATUM.
14. TREES SHALL BE PRESERVED THROUGHOUT THIS SECTION AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER EXCEPT AS DESCRIBED IN NOTE 19. GENERALLY, TREES OUTSIDE THE CLEAR ZONE, AND WHICH DO NOT INTERFERE WITH CONSTRUCTION, SHALL NOT BE DISTURBED.
15. THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION EACH FOR THE INITIAL OPENING OF THE COMPLETED STRUCTURES TO TWO LANE TRAFFIC, THE PRIME COAT, BINDER COURSE, AND THE SURFACE COURSE.
16. THE ADVANCE DETECTOR LOOPS ARE TYPICALLY LOCATED 275 FEET IN ADVANCE OF THE STOP BAR. THE BUREAU OF OPERATIONS SHOULD APPROVE THE LOOP LOCATIONS PRIOR TO INSTALLATION.
17. 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.
18. ANY TIME THE CONCRETE BARRIER IS NOT IN THE PROPER POSITION, FLAGGERS SHALL BE IN PLACE TO CONTROL TRAFFIC AND THE TEMPORARY TRAFFIC SIGNALS SHALL BE TURNED OR COVERED.
19. ALL OBSTRUCTIONS WHICH ARE WITHIN 30' OF THE CENTERLINE OF IL 34 AND ARE NOT SHIELDED BY THE PROPOSED GUARDRAIL, SHALL BE REMOVED FROM STATION 1539+00 TO 1545+00, STATION 1559+00 TO 1565+00, AND STATION 1571+00 TO 1577+00. TYPICAL OBSTRUCTIONS ARE HEADWALLS, FOUNDATIONS, ETC. WHICH PROJECT 4 IN. OR MORE ABOVE THE GROUNDLINE; AND TREES WHICH WILL MATURE TO A DIAMETER OF 4 IN. OR GREATER.

COMMITMENTS

1. NONE AS OF MAY 9, 2008. REFER TO COMMITMENT FILE FOR ANY COMMITMENTS AFTER THIS DATE.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREPARED BY: Joe Zolan Lewis
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: James Travis Emery
DISTRICT LAND ACQUISITION ENGINEER

EXAMINED BY: Carrie Nelson
DISTRICT PROGRAM DEVELOPMENT ENGINEER

EXAMINED BY: Kevin Hammond
DISTRICT OPERATIONS ENGINEER

EXAMINED BY: Joseph Lenzini
DISTRICT CONSTRUCTION ENGINEER

EXAMINED BY: Bruce W. Peebles
DISTRICT MATERIALS ENGINEER

EXAMINED BY: Jim Smothers
DISTRICT PROJECT IMPLEMENTATION ENGINEER

EXAMINED BY: Darrell L. Clayton
ASSISTANT REGIONAL ENGINEER

APPROVED BY: Mary C. Hamil
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 1 2008
DATE

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJG/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

GENERAL NOTES
AND STANDARDS
FAP RTE 869 (IL 34)
SECTIONS 105BR-1,
105BR-2, 105BR-3
SALINE COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
GLEN ELLYN, ILLINOIS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	•	SALINE	118	3
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 105BR-1, 105BR-2, 105BR-3

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	HBP FUNDING 80% FEDERAL 20% STATE TOTAL	CONSTRUCTION TYPE CODE X080-2A SN 083-0037	SN 083-0038	SN 083-0039
20200500	EARTH EXCAVATION (WIDENING)	CU YD	150	50	50	50
20400800	FURNISHED EXCAVATION	CU YD	40	40	-	-
21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU YD	100	100	-	-
25000210	SEEDING, CLASS 2A	ACRE	0.4	0.2	0.1	0.1
25000350	SEEDING, CLASS 7	ACRE	0.4	0.2	0.1	0.1
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	36	18	9	9
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	36	18	9	9
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	36	18	9	9
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.8	0.4	0.2	0.2
25100115	MULCH, METHOD 2	ACRE	0.8	0.4	0.2	0.2
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	80	40	20	20
28000400	PERIMETER EROSION BARRIER	FOOT	1740	600	560	580
35301400	PORTLAND CEMENT CONCRETE BASE COURSE (VARIABLE DEPTH)	SQ YD	63	20	25	18
35650500	BASE COURSE WIDENING 10"	SQ YD	588	190	202	196
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	17	8	9	-
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	246	77	120	49
40600300	AGGREGATE (PRIME COAT)	TON	6	2	3	1
40600645	LEVELING BINDER (MACHINE METHOD), N90	TON	117	28	85	4
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	637	220	197	220
40600990	TEMPORARY RAMP	SQ YD	548	184	180	184
40603320	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	474	146	220	108
44000100	PAVEMENT REMOVAL	SQ YD	63	20	25	18
44000196	HOT-MIX ASPHALT SURFACE REMOVAL, SPECIAL	SQ YD	45	14	19	12
48203100	HOT-MIX ASPHALT SHOULDERS	TON	80	23	47	10
50101700	REMOVAL OF EXISTING SUPERSTRUCTURES NO. 1	EACH	1	1	-	-
50101800	REMOVAL OF EXISTING SUPERSTRUCTURES NO. 2	EACH	1	-	1	-
50101900	REMOVAL OF EXISTING SUPERSTRUCTURES NO. 3	EACH	1	-	-	1
50102400	CONCRETE REMOVAL	CU YD	4.7	0.9	2.2	1.6
50300225	CONCRETE STRUCTURES	CU YD	4.7	0.9	2.2	1.6
50300260	BRIDGE DECK GROOVING	SQ YD	1151	241	595	315
50300300	PROTECTIVE COAT	SQ YD	1246	264	641	341
50400105	PRECAST CONCRETE BRIDGE SLAB	SQ FT	1049	330	420	299

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	HBP FUNDING 80% FEDERAL 20% STATE TOTAL	CONSTRUCTION TYPE CODE X080-2A SN 083-0037	SN 083-0038	SN 083-0039
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	2473	-	-	2473
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	4586	1738	2848	-
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	2076	-	2076	-
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	16320	3400	8280	4640
50800515	BAR SPLICERS	EACH	305	60	159	86
• 50901050	STEEL RAILING, TYPE SM	FOOT	848	196	418	234
51500100	NAME PLATES	EACH	3	1	1	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	240	39	135	66
58700300	CONCRETE SEALER	SQ FT	299	60	142	97
59000200	EPOXY CRACK INJECTION	FOOT	532	118	302	112
* 63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	137.5	37.5	50	50
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	11	3	4	4
• 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, (SPECIAL) TANGENT	EACH	13	5	4	4
63200310	GUARDRAIL REMOVAL	FOOT	1152	352	400	400
63301000	REMOVE AND RE-ERECT STEEL PLATE BEAM GUARD RAIL	FOOT	15	15	-	-
63301990	REMOVE AND RE-ERECT TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	6	2	2	2
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	9	3	3	3
67100100	MOBILIZATION	L SUM	1	0.33	0.33	0.34
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	3	1	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.33	0.33	0.34
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	0.33	0.33	0.34
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	30	10	10	10
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	3	1	1	1
70106700	TEMPORARY RUMBLE STRIP	EACH	18	6	6	6
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	18	6	6	6
70300100	SHORT-TERM PAVEMENT MARKING	FOOT	520	152	224	144
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	2945	850	1185	910
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1155	334	470	351
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1200	350	475	375
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1100	350	375	375
• 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	2945	850	1185	910

* SPECIALTY ITEMS

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJB/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

SUMMARY OF QUANTITIES
FAP RTE 869 (IL 34)
SECTIONS 105BR-1,
105BR-2, 105BR-3
SALINE COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
O'FALLON, ILLINOIS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	•	SALINE	118	4
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 105BR-1, 105BR-2, 105BR-3

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	HBP FUNDING 80% FEDERAL 20% STATE TOTAL	CONSTRUCTION TYPE CODE X080-2A SN 083-0037	SN 083-0038	SN 083-0039
*	78200410	GUARDRAIL MARKERS, TYPE A	EACH	12	4	4	4
*	78200520	BARRIER WALL MARKERS, TYPE B	EACH	14	4	6	4
•	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	13	5	4	4
	78300100	PAVEMENT MARKING REMOVAL	SQ FT	746	230	277	239
	78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	2	-	-	2
	86200300	UNINTERRUPTIBLE POWER SUPPLY, EXTENDED	EACH	3	1	1	1
	X0324744	REMOVAL OF EXISTING PRECAST CONCRETE UNITS	SQ FT	1049	330	420	299
	X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	184	37	89	58
	X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	1246	264	641	341
	Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	132	22	66	44
	Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	6	2	2	2
	Z0030260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	1	-	1	-
	Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	6	2	2	2

• SPECIALTY ITEM

ESCA CONSULTANTS, INC.

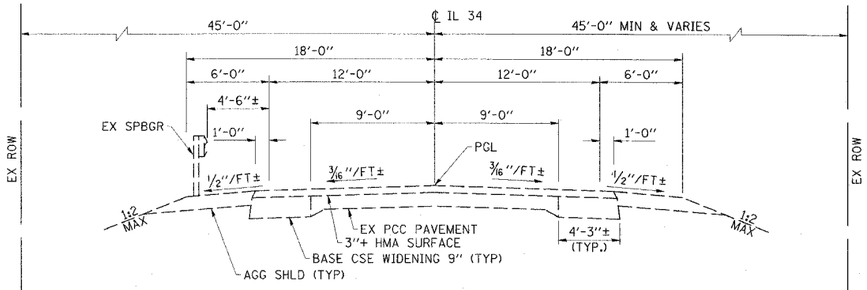
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

SUMMARY OF QUANTITIES
FAP RTE 869 (IL 34)
SECTIONS 105BR-1,
105BR-2, 105BR-3
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	*	SALINE	118	5
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

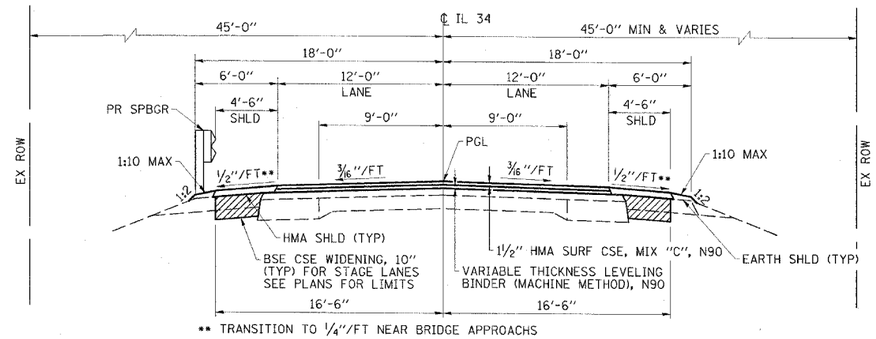
* 105BR-1, 105BR-2, 105BR-3



WITH GUARDRAIL **WITHOUT GUARDRAIL**

EXISTING TYPICAL ROADWAY SECTION

STA 1535+00.00 TO 1587+00.00
OMISSION STA 1541+52.59 TO 1542+46.35 (SN 083-0037)
OMISSION STA 1560+62.16 TO 1562+77.84 (SN 083-0038)
OMISSION STA 1573+41.56 TO 1574+58.44 (SN 083-0039)

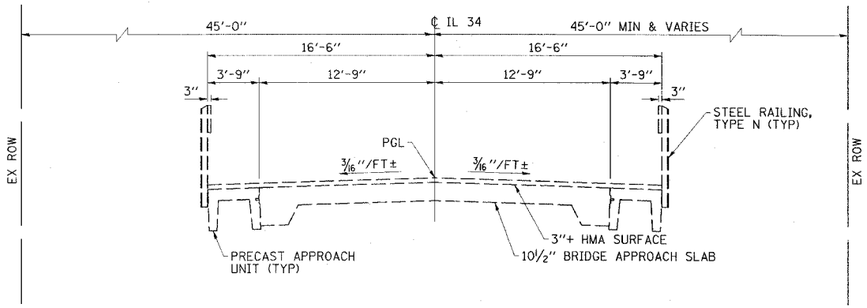


** TRANSITION TO 1/4"/FT NEAR BRIDGE APPROACHS

WITH GUARDRAIL **WITHOUT GUARDRAIL**

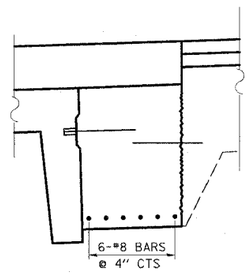
PROPOSED TYPICAL ROADWAY SECTION

STA 1540+75.00 TO 1541+52.59 AND STA 1542+46.35 TO 1543+40.00
STA 1559+10.00 TO 1560+62.16 AND STA 1562+77.84 TO 1563+85.00
STA 1572+86.00 TO 1573+41.56 AND 1574+58.44 TO 1575+09.00

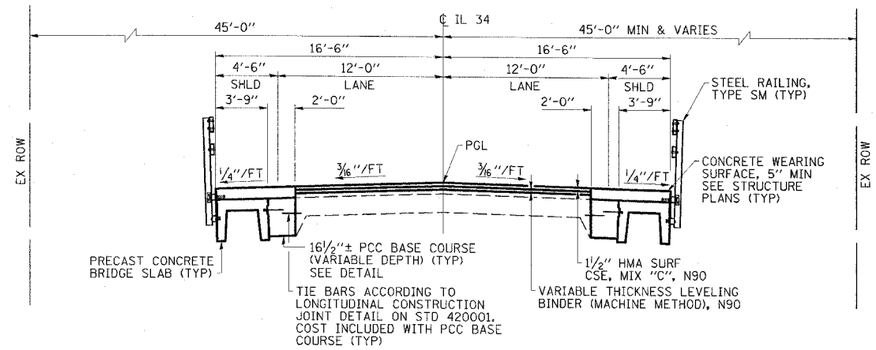


EXISTING BRIDGE APPROACH SECTION

STA 1541+52.59 TO 1542+46.35
BRIDGE OMISSION STA 1541+73.28 TO 1542+26.72
STA 1560+62.16 TO 1562+77.84
BRIDGE OMISSION STA 1560+62.16 TO 1562+77.84
STA 1573+41.56 TO 1574+58.44
BRIDGE OMISSION STA 1573+62.10 TO 1574+37.90



PCC BASE COURSE DETAIL



PROPOSED BRIDGE APPROACH SECTION

STA 1541+52.59 TO 1542+46.35
BRIDGE OMISSION STA 1541+73.28 TO 1542+26.72
STA 1560+62.16 TO 1562+77.84
BRIDGE OMISSION STA 1560+92.40 TO 1562+47.60
STA 1573+41.56 TO 1574+58.44
BRIDGE OMISSION STA 1573+62.10 TO 1574+37.90

HMA MIXTURES REQUIREMENTS

LOCATION(S):	HOT MIX ASPHALT SURFACE COURSE AND LEVELING BINDER	BASE COURSE WIDENING	HOT MIX ASPHALT SHOULDERS
MIXTURE USE(S):	HOT MIX ASPHALT SURFACE COURSE, MIX C, N90	HOT MIX ASPHALT BINDER COURSE, N90, IL-19.0	HOT MIX ASPHALT SHOULDERS
AC/PG:	PG64-22	PG64-22	PG58-22
RAP % (MAX): ***	10	10	50
DESIGN AIR VOIDS:	4.0%, 90 GYRATION DESIGN	4.0%, 90 GYRATION DESIGN	2.0%, 30 GYRATION DESIGN
MIXTURE COMPOSITION: (GRADATION MIXTURE)	IL-9.5 OR IL - 12.5	IL-19.0	HMA SHOULDERS
FRICTION AGGREGATE:	C SURFACE	NONE	NONE

*** IF RAP OPTION IS SELECTED, THE ASPHALT CEMENT GRADE MAY NEED TO BE ADJUSTED. THIS WILL BE DETERMINED BY THE ENGINEER.

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAG	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

TYPICAL SECTIONS
FAP RTE 869 (IL 34)
SECTIONS 105BR-1,
105BR-2, 105BR-3
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	6
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	SUITABLE INCIDENTAL EXCAVATION MATERIAL	SUITABLE INCIDENTAL EXC. MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NE QUADRANT CUTS & FILLS	13	9			16	-7
NW QUADRANT CUTS & FILLS	12	8			2	+6
SE QUADRANT CUTS & FILLS	12	8			40	-32
SW QUADRANT CUTS & FILLS	13	9			16	-7
TOTALS	50	34			74	-40

NOTES:
1. EXCAVATION USED AS EMBANKMENT = (SUITABLE EARTH EXCAVATION + SUITABLE INCIDENTAL EXCAVATION)*0.75

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
NE QUADRANT	175	16
NW QUADRANT	130	4
SE QUADRANT	135	10
SW QUADRANT	160	10
TOTALS	600	40

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2A	SEEDING, CLASS 7	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	AGRICULTURAL GROUND LIMESTONE	MULCH, METHOD 2
	ACRE	ACRE	POUND	POUND	POUND	TON	ACRE
NE QUADRANT	0.08	0.08	7.2	7.2	7.2	0.16	0.16
NW QUADRANT	0.02	0.02	1.8	1.8	1.8	0.04	0.04
SE QUADRANT	0.05	0.05	4.5	4.5	4.5	0.10	0.10
SW QUADRANT	0.05	0.05	4.5	4.5	4.5	0.10	0.10
TOTALS	0.20	0.20	18.0	18.0	18.0	0.40	0.40

AGGREGATE SURFACE COURSE, TYPE B SCHEDULE

LOCATION	TON
NE QUADRANT FE	8
TOTAL	8

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL
	SQ YD
NE QUADRANT	4.5
NW QUADRANT	5.5
SE QUADRANT	5.5
SW QUADRANT	4.5
TOTAL	20

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING ①	PAINT PAVEMENT MARKING - LINE	TEMP PAVEMENT MARKING - LINE
			4"	4"
		FOOT	FOOT	FOOT
STA 1538+65 TO 1545+35, CENTERLINE	SKIP-DASH YELLOW CENTERLINE	152	170	170
STA 1540+30 TO 1543+70, LT	SOLID WHITE EDGE LINE		340	340
STA 1540+30 TO 1543+70, RT	SOLID WHITE EDGE LINE		340	340
TOTALS		152	850	850

① INCLUDES 3 ADDITIONAL APPLICATIONS FROM STA 1540+75 TO STA 1543+40

TOPSOIL EXCAVATION AND PLACEMENT SCHEDULE

LOCATION	CU YD
NE QUADRANT	40
NW QUADRANT	-
SE QUADRANT	40
SW QUADRANT	20
TOTAL	100

BASE COURSE SCHEDULE

LOCATION	PCC BASE COURSE (VARIABLE DEPTH)	BASE COURSE WIDENING, 10"
	SQ YD	SQ YD
NE QUADRANT	4.5	51
NW QUADRANT	5.5	44
SE QUADRANT	5.5	44
SW QUADRANT	4.5	51
TOTALS	20	190

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	LEVELING BINDER (MACHINE METHOD), N90	HMA SURFACE COURSE, MIX "C", N90	HMA SHOULDERS
	GALLON	TON	TON	TON	TON
NORTH APPROACH	35	1	10	67.6	9
SOUTH APPROACH	42	1	18	78.4	14
TOTALS	77	2	28	146	23

WORK ZONE AND PAVEMENT MARKING REMOVAL SCHEDULE

LOCATION	PAVEMENT MARKING DESCRIPTION	WORK ZONE PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL
		SQ FT	SQ FT
CENTERLINE	SHORT-TERM	50.7	44
EDGELINE	TEMPORARY	226.7	
CENTERLINE	TEMPORARY	56.6	
STA 1540+37 TO 1543+63, RT	EDGELINE		109
STA 1540+37 TO 1541+62.1, LT	EDGELINE		42
STA 1542+59.9 TO 1543+63, LT	EDGELINE		35
TOTALS		334.0	230

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT	SPECIAL
	SQ YD	SQ YD
1540+75	110	
1543+40	110	
NORTH APPROACH		8
SOUTH APPROACH		6
TOTALS	220	14

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	SPBGR, TYPE A	TRAFFIC BARRIER TERMINAL, TYPE 6A	GUARDRAIL MARKERS, TYPE A	BARRIER WALL MARKERS, TYPE B	TERMINAL MARKER DIRECT APPLIED	STEEL RAILING, TYPE SM	REMOVE & RE-ERECT SPBGR	REMOVE & RE-ERECT TBT TYPE 1
	EACH	FOOT	EACH	EACH	EACH	EACH	FOOT	FOOT	EACH
STRUCTURE NO. 083-0037-NE	2			1		2		15	
STRUCTURE NO. 083-0037-NW	1	12.5	1	1		1			1
STRUCTURE NO. 083-0037-SE	1	12.5	1	1		1			
STRUCTURE NO. 083-0037-SW	1	12.5	1	1		1			1
STRUCTURE NO. 083-0037-BRIDGE					4		196		
TOTALS	5	37.5	3	4	4	5	196	15	2

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
STRUCTURE NO. 083-0037-NE	52
STRUCTURE NO. 083-0037-NW	100
STRUCTURE NO. 083-0037-SE	100
STRUCTURE NO. 083-0037-SW	100
TOTAL	352

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJG/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

SCHEDULES OF QUANTITIES
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	7
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	SUITABLE INCIDENTAL EXCAVATION MATERIAL	SUITABLE INCIDENTAL EXC. MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NE QUADRANT CUTS & FILLS	13	9			3	+6
NW QUADRANT CUTS & FILLS	11	8			2	+6
SE QUADRANT CUTS & FILLS	11	8			6	+2
SW QUADRANT CUTS & FILLS	15	11			2	+9
TOTALS	50	36			13	+23

NOTES:
1. EXCAVATION USED AS EMBANKMENT = (SUITABLE EARTH EXCAVATION + SUITABLE INCIDENTAL EXCAVATION)*0.75

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
NE QUADRANT	130	5
NW QUADRANT	130	5
SE QUADRANT	125	5
SW QUADRANT	175	5
TOTALS	560	20

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2A	SEEDING, CLASS 7	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	AGRICULTURAL GROUND LIMESTONE	MULCH, METHOD 2
	ACRE	ACRE	POUND	POUND	POUND	TON	ACRE
NE QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
NW QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
SE QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
SW QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
TOTALS	0.100	0.100	9.00	9.00	9.00	0.20	0.20

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	LEVELING BINDER (MACHINE METHOD), N90	HMA SURFACE COURSE, MIX "C", N90	HMA SHOULDERS
	GALLON	TON	TON	TON	TON
NORTH APPROACH	69	2	52	125	31
SOUTH APPROACH	51	1	33	95	16
TOTALS	120	3	85	220	47

AGGREGATE SURFACE COURSE, TYPE B SCHEDULE

LOCATION	TON
NE QUADRANT FE	9
TOTAL	9

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJG/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING ①	PAINT PAVEMENT MARKING - LINE	TEMP PAVEMENT MARKING - LINE
			4"	4"
		FOOT	FOOT	FOOT
STA 1557+72.5 TO 1565+67.5, CENTERLINE	SKIP-DASH YELLOW CENTERLINE	224	200	200
STA 1559+10 TO 1564+02.5, LT	SOLID WHITE EDGE LINE		492.5	492.5
STA 1559+10 TO 1564+02.5, RT	SOLID WHITE EDGE LINE		492.5	492.5
TOTALS		224	1185	1185

① INCLUDES 3 ADDITIONAL APPLICATIONS FROM STA 1559+10 TO STA 1563+85

WORK ZONE AND PAVEMENT MARKING REMOVAL SCHEDULE

LOCATION	PAVEMENT MARKING DESCRIPTION	WORK ZONE PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL
		SQ FT	SQ FT
CENTERLINE	SHORT-TERM	75	44
EDGELINE	TEMPORARY	328	
CENTERLINE	TEMPORARY	67	
STA 1559+44.5 TO 1563+95.5, RT	EDGELINE		151
STA 1559+44.5 TO 1560+89, LT	EDGELINE		49
STA 1562+97.2 TO 1563+95.5, LT	EDGELINE		33
TOTALS		470	277

BASE COURSE SCHEDULE

LOCATION	PCC BASE COURSE (VARIABLE DEPTH)	BASE COURSE WIDENING, 10"
	SQ YD	SQ YD
NE QUADRANT	4.5	59
NW QUADRANT	8	42
SE QUADRANT	8	42
SW QUADRANT	4.5	59
TOTALS	25	202

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT	SPECIAL
	SQ YD	SQ YD
1559+10	87	
1563+85	110	
NORTH APPROACH		9.5
SOUTH APPROACH		9.5
TOTALS	197	19.0

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL TYPE 1, (SPECIAL) TANGENT	SPBGR, TYPE A	TRAFFIC BARRIER TERMINAL, TYPE 6A	GUARDRAIL MARKERS, TYPE A	BARRIER WALL MARKERS, TYPE B	TERMINAL MARKER DIRECT APPLIED	STEEL RAILING, TYPE SM	REMOVE & RE-ERECT TBT TYPE 1
	EACH	FOOT	EACH	EACH	EACH	EACH	FOOT	EACH
STRUCTURE NO. 083-0038-NE	1	12.5	1	1		1		
STRUCTURE NO. 083-0038-NW	1	12.5	1	1		1		1
STRUCTURE NO. 083-0038-SE	1	12.5	1	1		1		
STRUCTURE NO. 083-0038-SW	1	12.5	1	1		1		1
STRUCTURE NO. 083-0038-BRIDGE					6		418	
TOTALS	4	50	4	4	6	4	418	2

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL
	SQ YD
NE QUADRANT	4.5
NW QUADRANT	8
SE QUADRANT	8
SW QUADRANT	4.5
TOTAL	25

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
STRUCTURE NO. 083-0038-NE	100
STRUCTURE NO. 083-0038-NW	100
STRUCTURE NO. 083-0038-SE	100
STRUCTURE NO. 083-0038-SW	100
TOTAL	400

SCHEDULES OF QUANTITIES
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	8
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	SUITABLE INCIDENTAL EXCAVATION MATERIAL	SUITABLE INCIDENTAL EXC. MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
NE QUADRANT CUTS & FILLS	13	9			4	+5
NW QUADRANT CUTS & FILLS	12	8			2	+6
SE QUADRANT CUTS & FILLS	12	8			2	+6
SW QUADRANT CUTS & FILLS	13	9			2	+7
TOTALS	50	34			10	+24

NOTES:
1. EXCAVATION USED AS EMBANKMENT = (SUITABLE EARTH EXCAVATION + SUITABLE INCIDENTAL EXCAVATION)*0.75

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
NE QUADRANT	150	5
NW QUADRANT	150	5
SE QUADRANT	150	5
SW QUADRANT	130	5
TOTALS	580	20

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2A	SEEDING, CLASS 7	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	AGRICULTURAL GROUND LIMESTONE	MULCH, METHOD 2
	ACRE	ACRE	POUND	POUND	POUND	TON	ACRE
NE QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
NW QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
SE QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
SW QUADRANT	0.025	0.025	2.25	2.25	2.25	0.05	0.05
TOTALS	0.100	0.100	9.0	9.0	9.0	0.20	0.20

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	LEVELING BINDER (MACHINE METHOD), N90	HMA SURFACE COURSE, MIX "C", N90	HMA SHOULDERS
	GALLON	TON	TON	TON	TON
NORTH APPROACH	26	0.5	4	54	6
SOUTH APPROACH	23	0.5		54	4
TOTALS	49	1	4	108	10

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING ①	PAINT PAVEMENT MARKING - LINE	TEMP PAVEMENT MARKING - LINE
			4"	4"
		FOOT	FOOT	FOOT
STA 1570+52.5 TO 1577+47.5, CENTERLINE	SKIP-DASH YELLOW CENTERLINE	144	180	180
STA 1572+17.5 TO 1575+82.5, LT	SOLID WHITE EDGE LINE		365	365
STA 1572+17.5 TO 1575+82.5, RT	SOLID WHITE EDGE LINE		365	365
TOTALS		144	910	910

① INCLUDES 3 ADDITIONAL APPLICATIONS FROM STA 1572+86 TO STA 1575+09

PAVEMENT MARKER REMOVAL SCHEDULE

LOCATION	RRPM REMOVAL
	EACH
STA 1573+01	1
STA 1574+61	1
TOTAL	2

WORK ZONE AND PAVEMENT MARKING REMOVAL SCHEDULE

LOCATION	PAVEMENT MARKING DESCRIPTION	WORK ZONE PAVEMENT MARKING REMOVAL	PAVEMENT MARKING REMOVAL
		SQ FT	SQ FT
CENTERLINE	SHORT-TERM	48	44
EDGELINE	TEMPORARY	243	
CENTERLINE	TEMPORARY	60	
STA 1572+24.5 TO 1575+75.5, RT	EDGELINE		117
STA 1572+24.5 TO 1573+41.6, LT	EDGELINE		39
STA 1574+58.4 TO 1575+75.5, LT	EDGELINE		39
TOTALS		351	239

BASE COURSE SCHEDULE

LOCATION	PCC BASE COURSE (VARIABLE DEPTH)	BASE COURSE WIDENING, 10"
	SQ YD	SQ YD
NE QUADRANT	4.5	49
NW QUADRANT	4.5	49
SE QUADRANT	4.5	49
SW QUADRANT	4.5	49
TOTALS	18	196

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT	SPECIAL
	SQ YD	SQ YD
1572+86	110	
1575+09	110	
NORTH APPROACH		6
SOUTH APPROACH		6
TOTALS	220	12

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	SPBGR, TYPE A	TRAFFIC BARRIER TERMINAL, TYPE 6A	GUARDRAIL MARKERS, TYPE A	BARRIER WALL MARKERS, TYPE B	TERMINAL MARKER DIRECT APPLIED	STEEL RAILING, TYPE SM	REMOVE & RE-ERECT TBT TYPE 1
	EACH	FOOT	EACH	EACH	EACH	EACH	FOOT	EACH
STRUCTURE NO. 083-0039-NE	1	12.5	1	1		1		
STRUCTURE NO. 083-0039-NW	1	12.5	1	1		1		1
STRUCTURE NO. 083-0039-SE	1	12.5	1	1		1		
STRUCTURE NO. 083-0039-SW	1	12.5	1	1		1		1
STRUCTURE NO. 083-0039-BRIDGE					4		234	
TOTALS	4	50	4	4	4	4	234	2

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL
	SQ YD
NE QUADRANT	4.5
NW QUADRANT	4.5
SE QUADRANT	4.5
SW QUADRANT	4.5
TOTAL	18

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
STRUCTURE NO. 083-0039-NE	100
STRUCTURE NO. 083-0039-NW	100
STRUCTURE NO. 083-0039-SE	100
STRUCTURE NO. 083-0039-SW	100
TOTAL	400

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJG/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

SCHEDULES OF QUANTITIES
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

CONTRACT NO. 78031

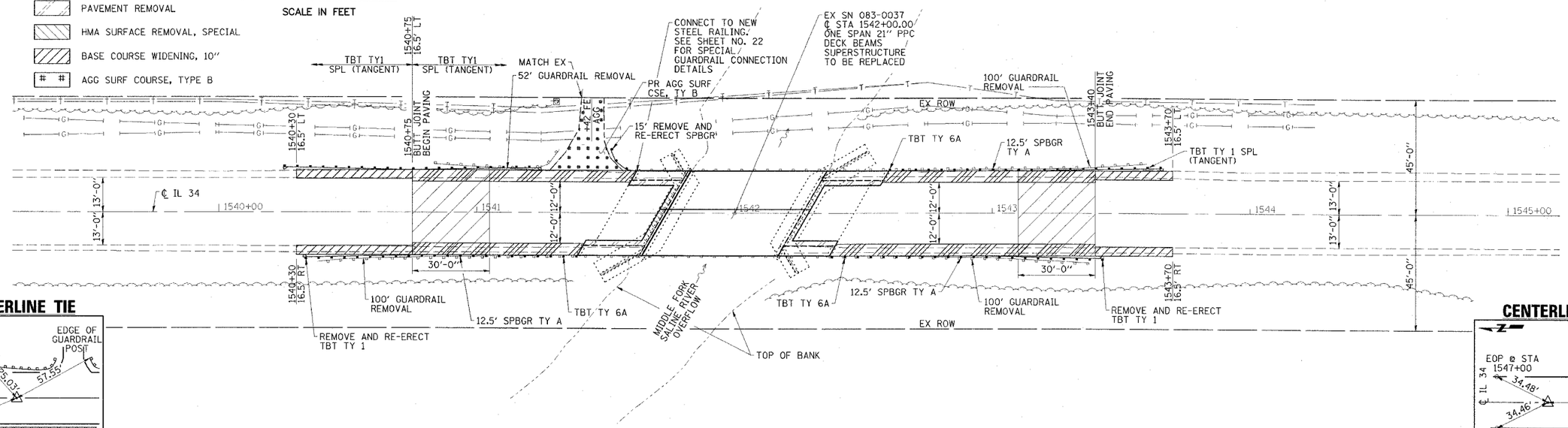
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	9
STA. 1539+00		TO STA. 1545+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT AID		

SEC. 34, T8S, R6E, 3RD P.M.

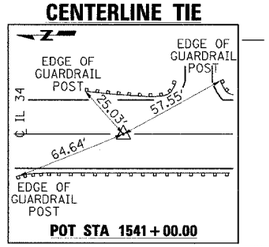
LEGEND

- HMA SHOULDER
- HMA SURF REMOVAL -BUTT JOINT
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL, SPECIAL
- BASE COURSE WIDENING, 10"
- # # AGG SURF COURSE, TYPE B

SCALE IN FEET: 20 0 20 40

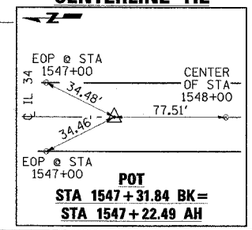


CENTERLINE TIE



POT STA 1541+00.00

CENTERLINE TIE

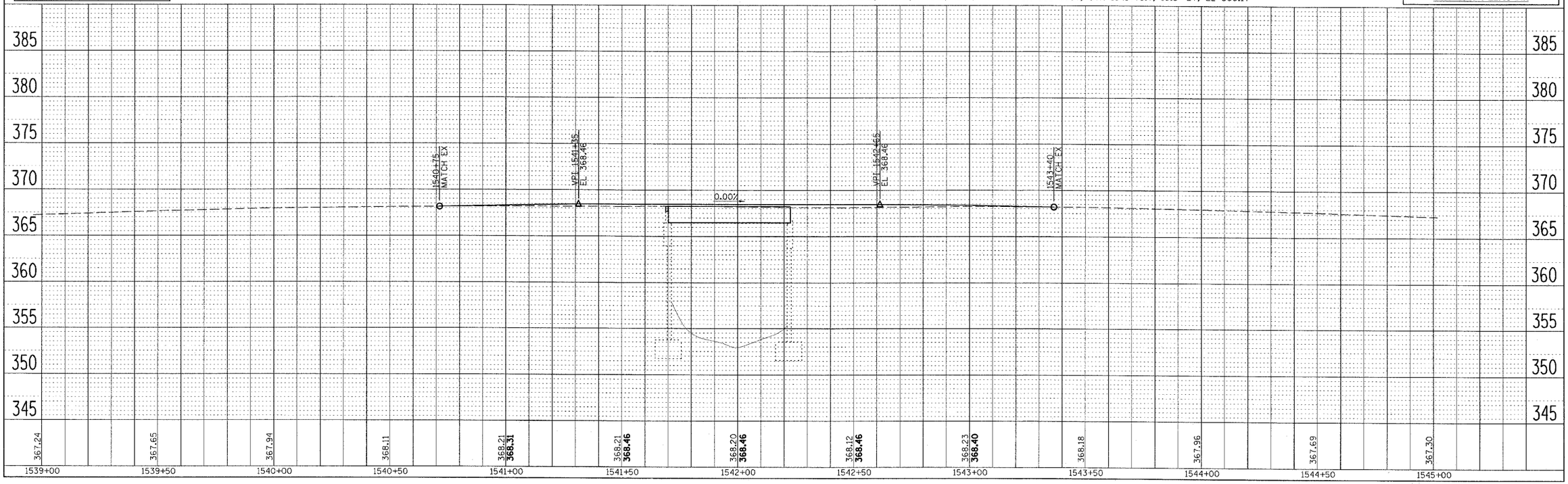


POT
STA 1547+31.84 BK=
STA 1547+22.49 AH

SEC. 33, T8S, R6E, 3RD P.M.

BENCHMARK

SAWED SQUARE ON TOP OF NORTHEAST WINGWALL, SN 083-0037, STA 1541+78.7, 18.5' LT, EL 366.17



PLOT DATE = #DATE#
FILE NAME = #FILE1#
PLOT SCALE = #SCALE#
REFERENCE = #REF#

FAP RTE 869 (IL 34) PLAN & PROFILE
STA. 1539+00 TO STA. 1545+00

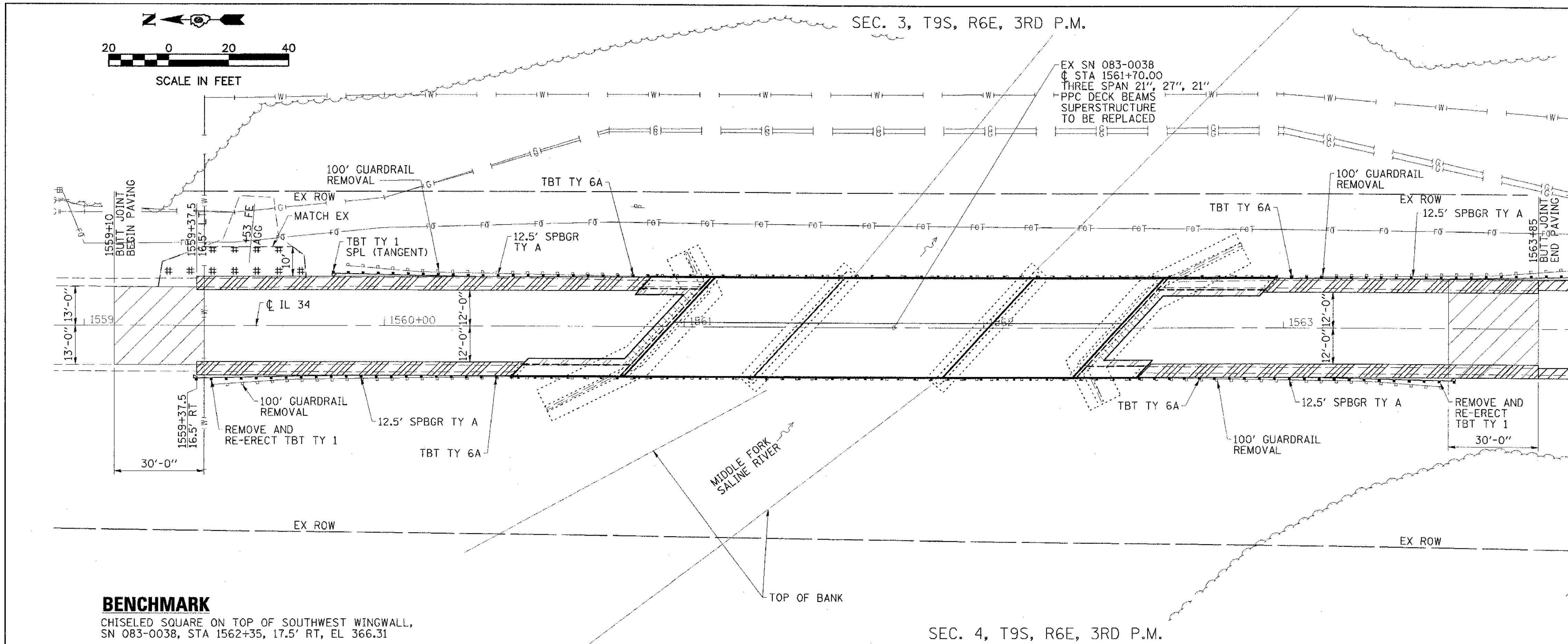
CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	10
STA. 1559+00		TO STA. 1565+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT AID		

ESCA CONSULTANTS, INC.

LEGEND

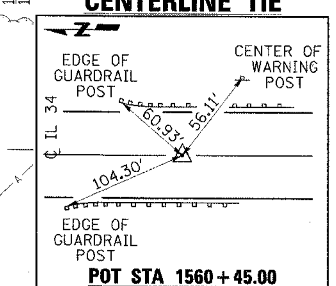
- HMA SHOULDER
- HMA SURF REMOVAL -BUTT JOINT
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL, SPECIAL
- BASE COURSE WIDENING, 10"



BENCHMARK

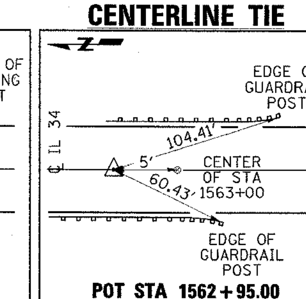
CHISELED SQUARE ON TOP OF SOUTHWEST WINGWALL, SN 083-0038, STA 1562+35, 17.5' RT, EL 366.31

CENTERLINE TIE

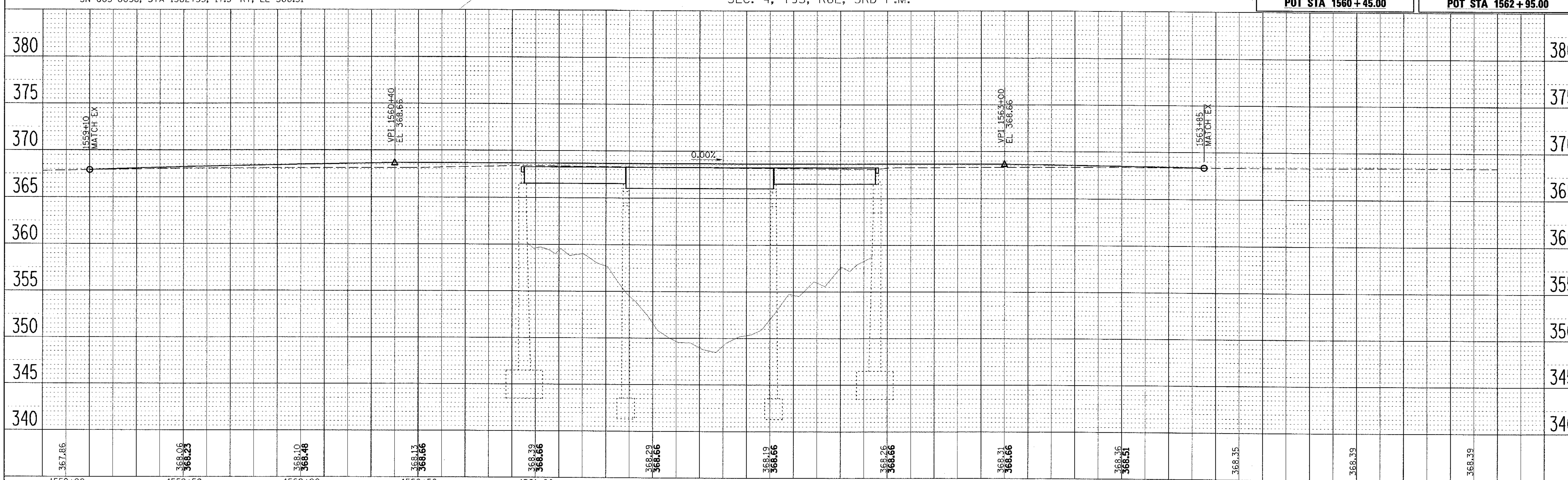


POT STA 1560+45.00

CENTERLINE TIE



POT STA 1562+95.00



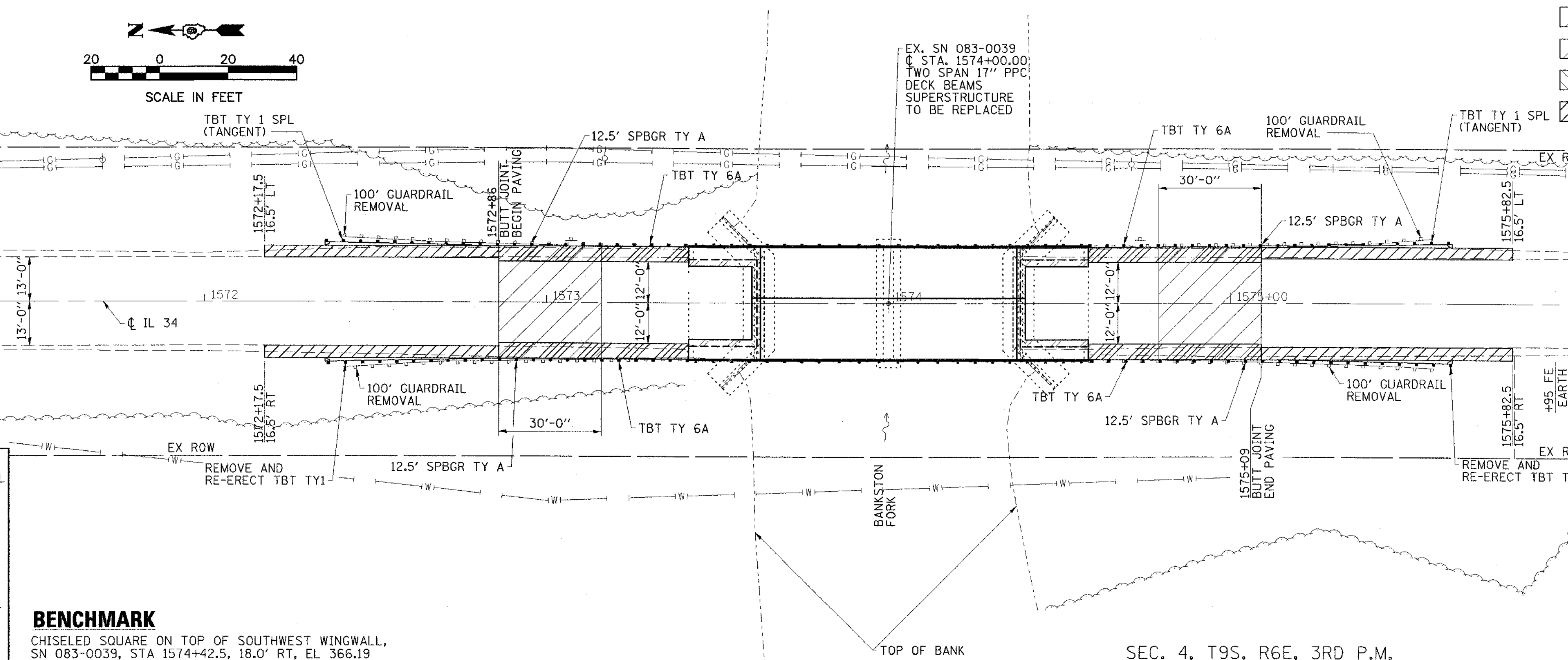
PLOT DATE = $DATE$ FILE NAME = $FILE$ PLOT SCALE = $SCALE$ REFERENCE = REF

FAP RTE 869 (IL 34) PLAN & PROFILE
STA. 1554+00 TO 1565+00

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
URBANA, ILLINOIS

LEGEND

- HMA SHOULDER
- HMA SURF REMOVAL -BUTT JOINT
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL, SPECIAL
- BASE COURSE WIDENING, 10"



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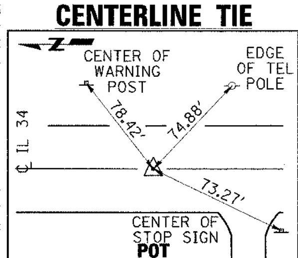
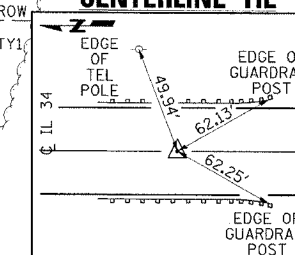


POT
STA 1568+01.50 BK=
STA 1568+06.25 AH

BENCHMARK

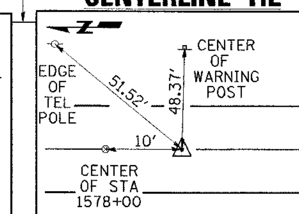
CHISELED SQUARE ON TOP OF SOUTHWEST WINGWALL,
SN 083-0039, STA 1574+42.5, 18.0' RT, EL 366.19

CENTERLINE TIE

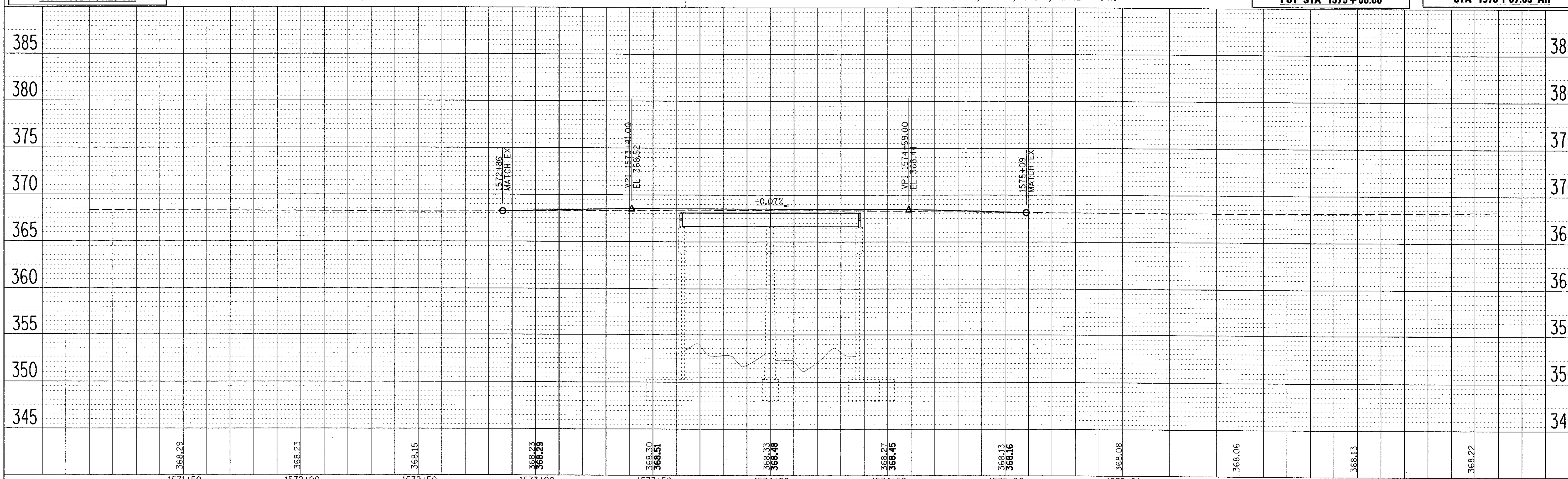


POT STA 1575+00.00

CENTERLINE TIE



POT
STA 1578+10.00 BK=
STA 1578+07.03 AH



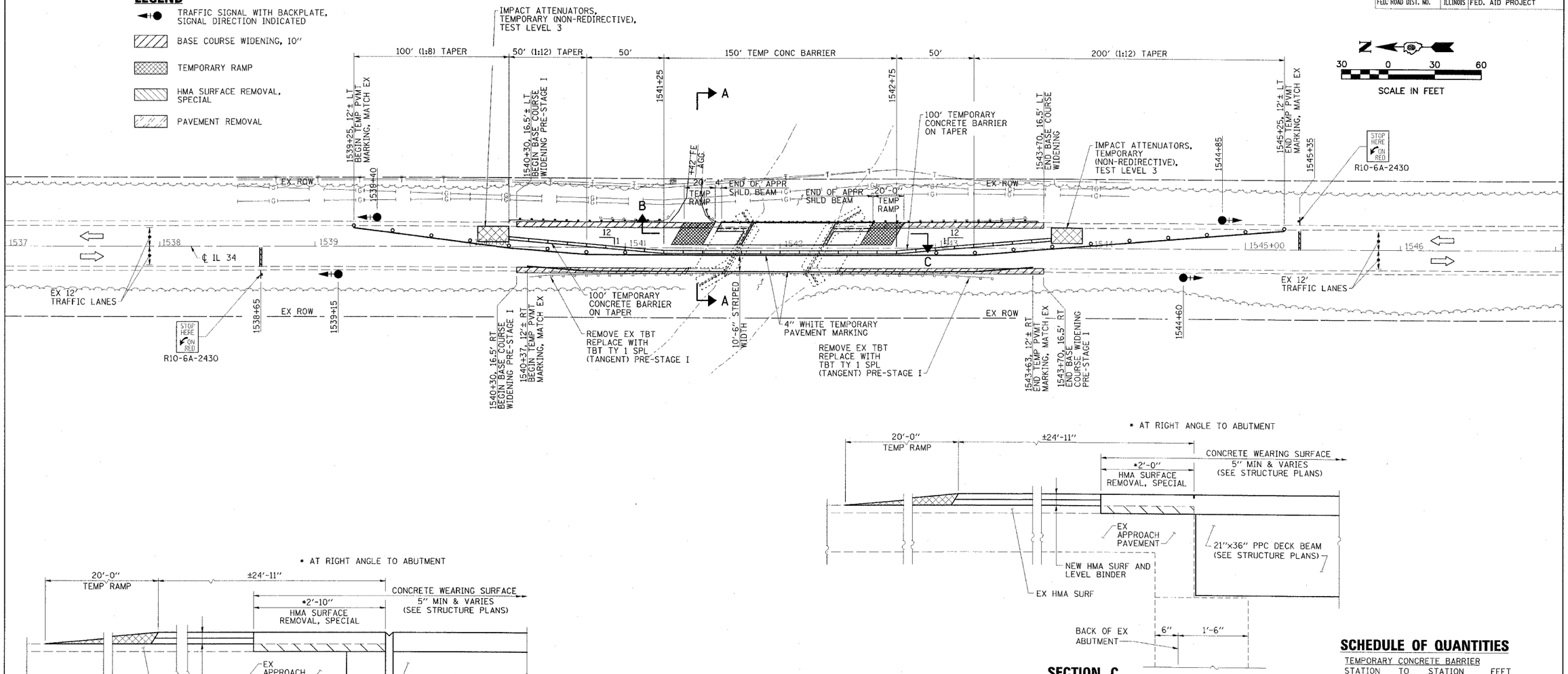
PLAN
PROFILE

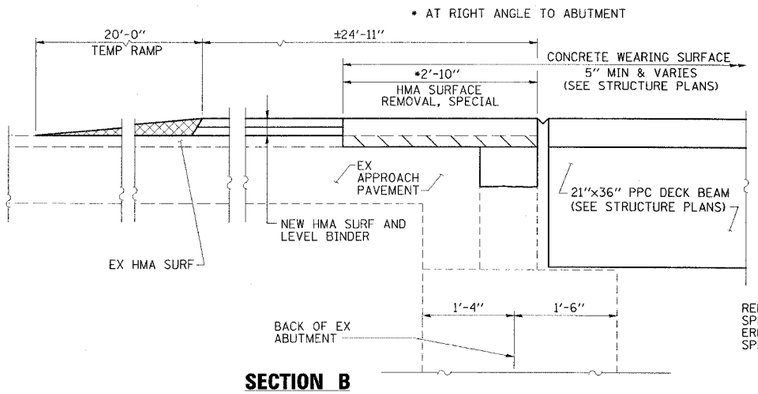
CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	12
STA. 1537+00		TO STA. 1547+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LEGEND

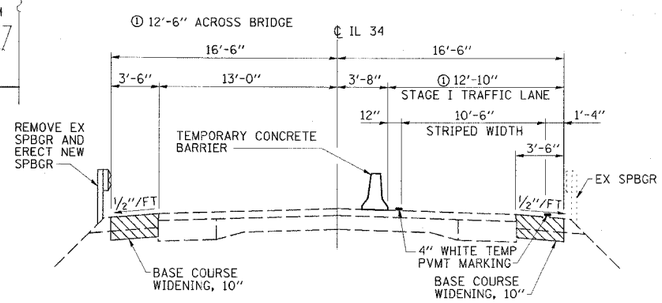
- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- BASE COURSE WIDENING, 10"
- TEMPORARY RAMP
- HMA SURFACE REMOVAL, SPECIAL
- PAVEMENT REMOVAL





SECTION B

SECTION C



SECTION A–A

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 11'-0" FOR STAGE I CONSTRUCTION.
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDEROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.
7. THE EXISTING 'TURNDOWN' TBT'S AT THE NW AND SW CORNERS OF THE BRIDGE MUST BE REMOVED AND REPLACED WITH NEW TBT'S TY 1 SPECIAL (TANGENT) PRIOR TO SHIFTING TRAFFIC TO THE STAGE I LANE.

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1540+25		1543+75	350
		TOTAL -	350

TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

TEMPORARY RUMBLE STRIPS - 6 EACH

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

STAGE I CONSTRUCTION
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJ/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

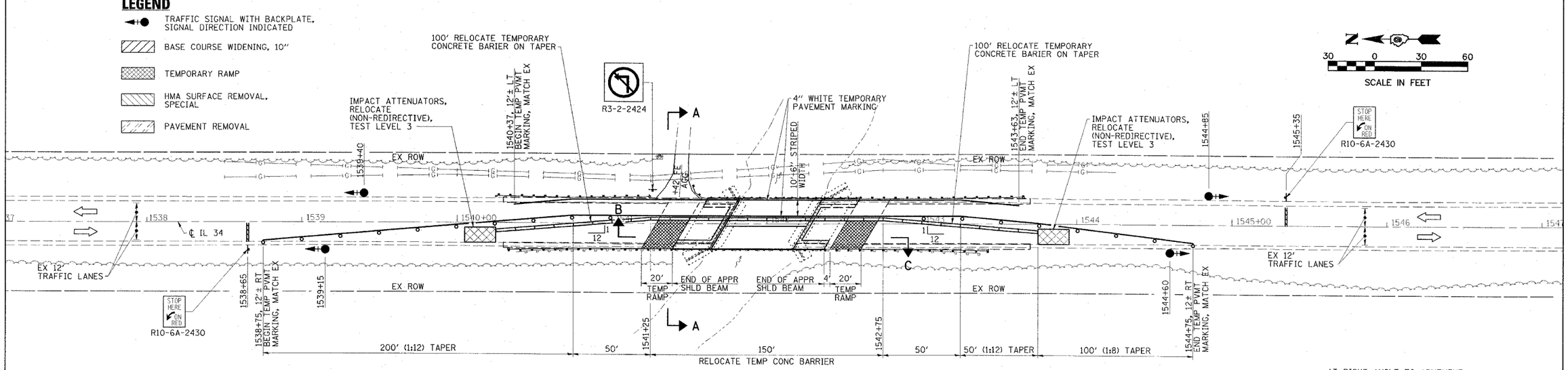
PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

CONTRACT NO. 78031

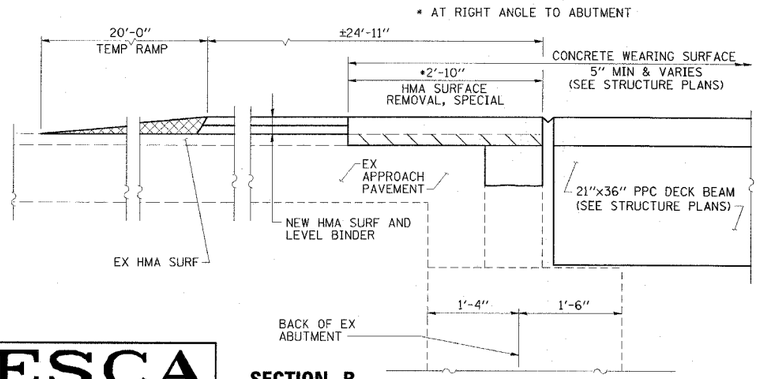
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	13
STA. 1537+00		TO STA. 1547+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LEGEND

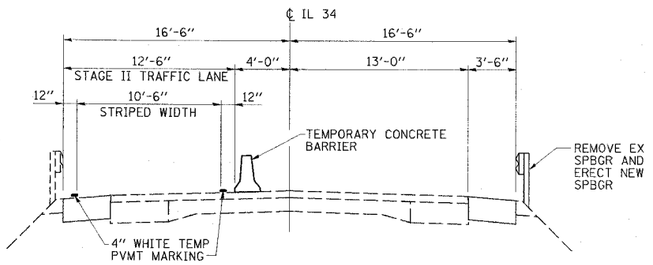
- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- BASE COURSE WIDENING, 10"
- TEMPORARY RAMP
- HMA SURFACE REMOVAL, SPECIAL
- PAVEMENT REMOVAL



* AT RIGHT ANGLE TO ABUTMENT

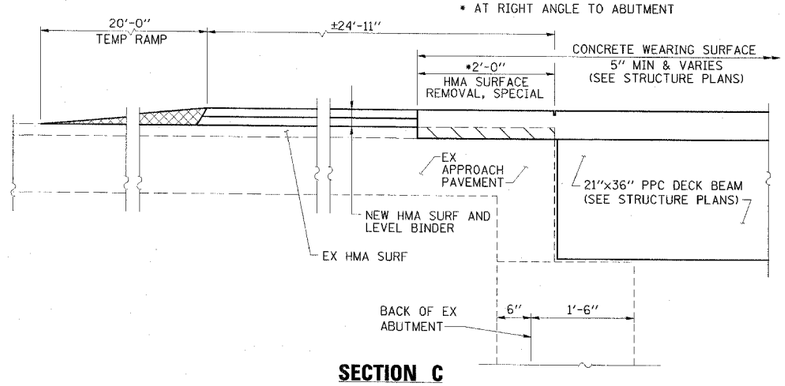


SECTION B



SECTION A-A

* AT RIGHT ANGLE TO ABUTMENT



SECTION C

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 11'-0" FOR STAGE II CONSTRUCTION.
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDEROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.

SCHEDULE OF QUANTITIES

RELOCATE TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1540+25		1543+75	350
		TOTAL -	350

IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

STAGE II CONSTRUCTION
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJG/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

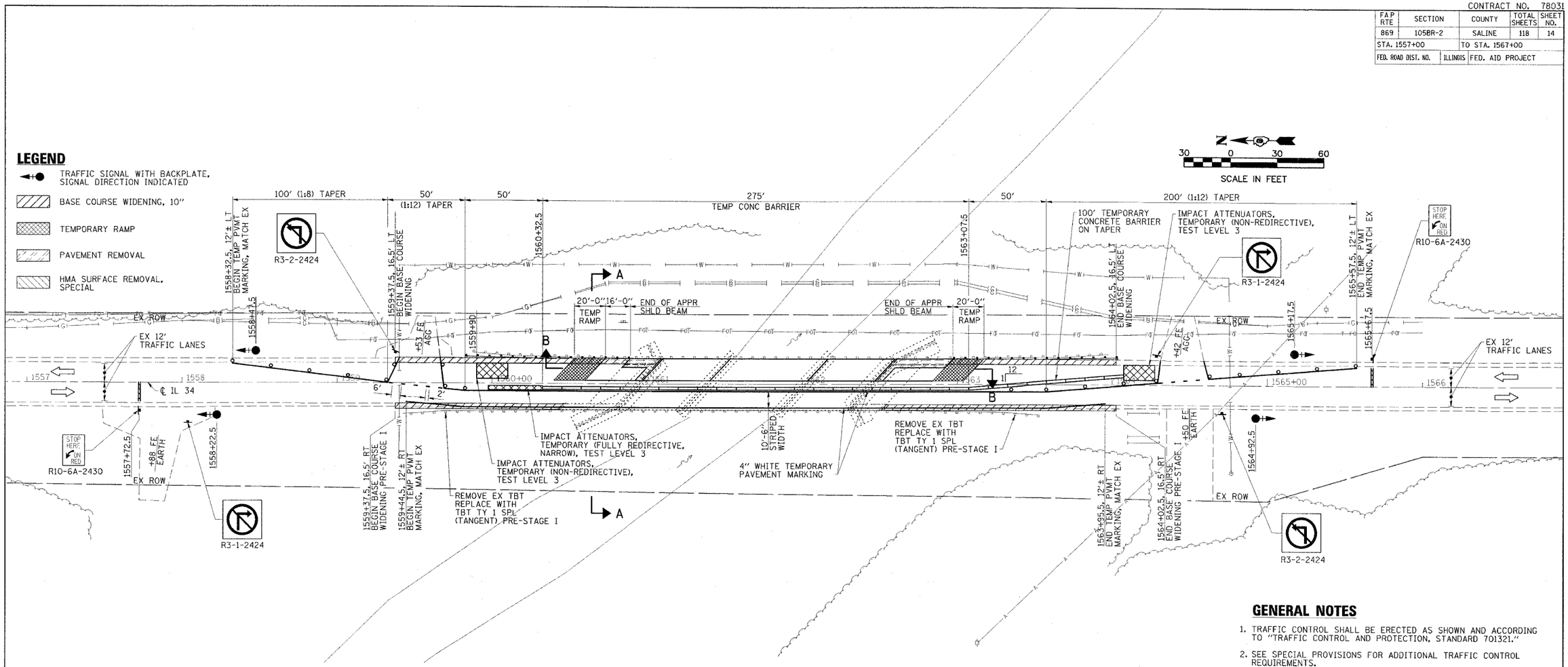
PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
REFERENCE = REF

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	14
STA. 1557+00		TO STA. 1567+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

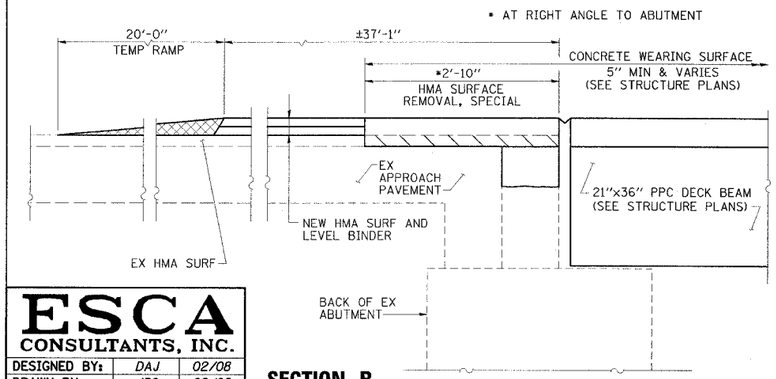
LEGEND

- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- BASE COURSE WIDENING, 10"
- TEMPORARY RAMP
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL, SPECIAL

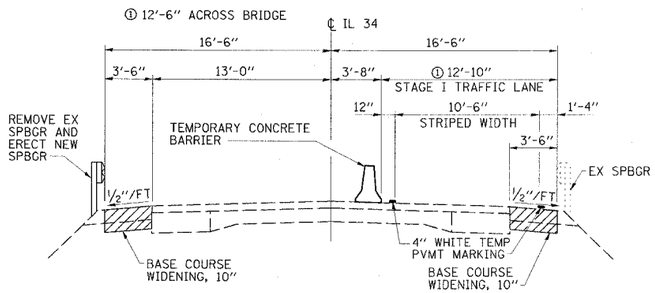


GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-11D20)-48) SHOWN ON STANDARD 701321 SHALL BE 11'-0" FOR STAGE I CONSTRUCTION.
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDEROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.
7. THE EXISTING 'TURNDOWN' TBT'S AT THE NW AND SW CORNERS OF THE BRIDGE MUST BE REMOVED AND REPLACED WITH NEW TBT'S TY 1 SPECIAL (TANGENT) PRIOR TO SHIFTING TRAFFIC TO THE STAGE I LANE.



SECTION B



SECTION A-A

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1560+32.5		1564+07.5	375
		TOTAL -	375

TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

TEMPORARY RUMBLE STRIPS - 6 EACH

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3 - 1 EACH

STAGE I CONSTRUCTION
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

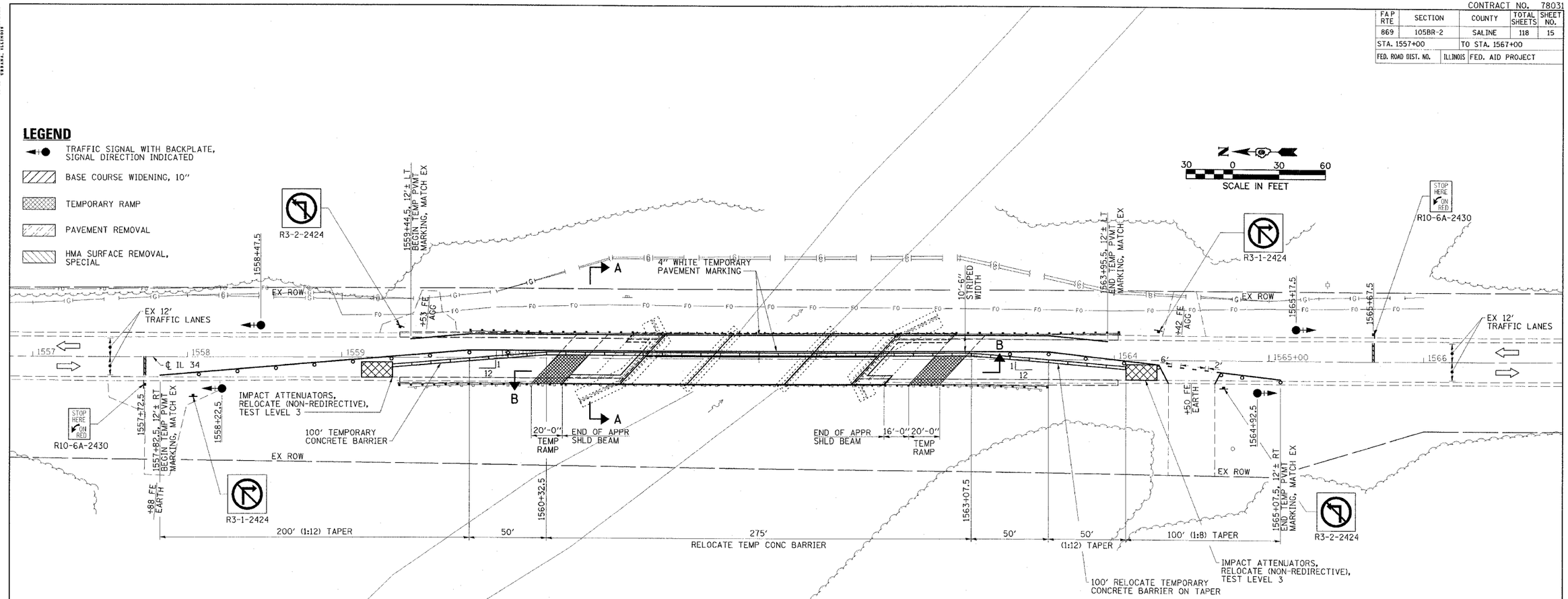
PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

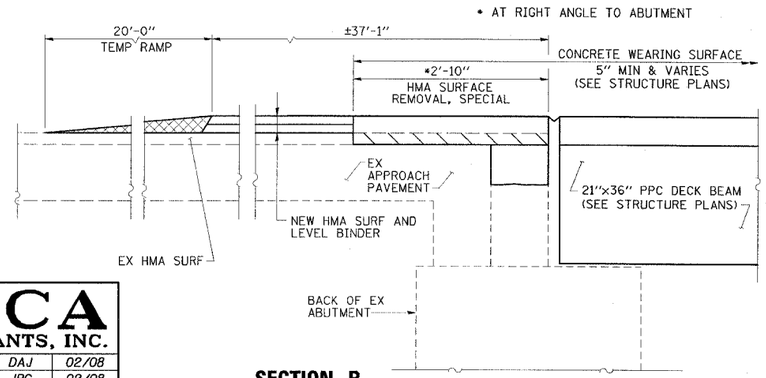
CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	15
STA. 1557+00		TO STA. 1567+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

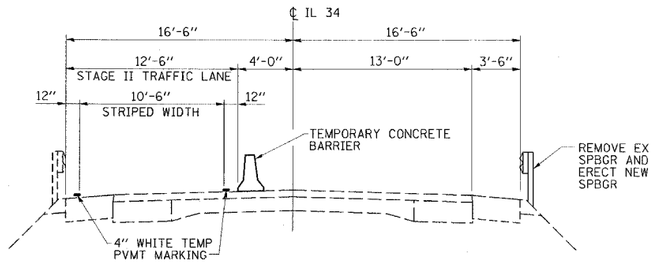
LEGEND

- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- BASE COURSE WIDENING, 10"
- TEMPORARY RAMP
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL, SPECIAL





SECTION B



SECTION A-A

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 11'-0" FOR STAGE II CONSTRUCTION.
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDEROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1559+32.5		1560+32.5	100
		TOTAL -	100

RELOCATE TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1560+32.5		1560+07.5	375
		TOTAL -	375

IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

STAGE II CONSTRUCTION
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

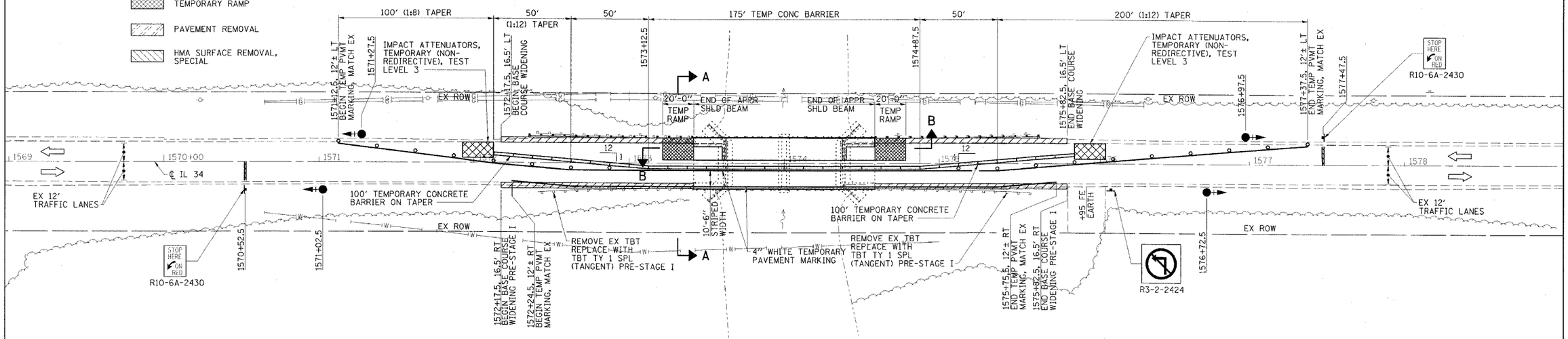
CONTRACT NO. 78031

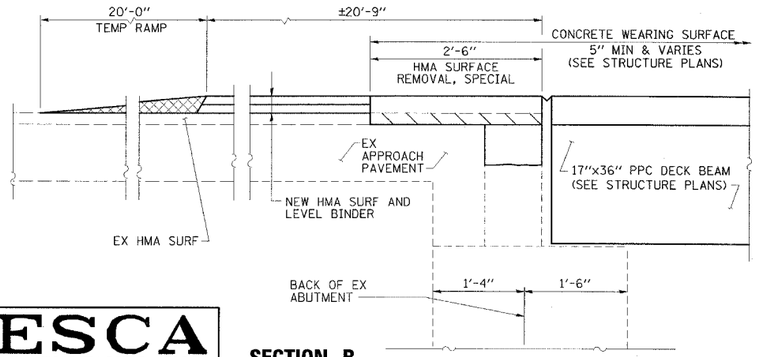
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	16
STA. 1569+00		TO STA. 1579+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

LEGEND

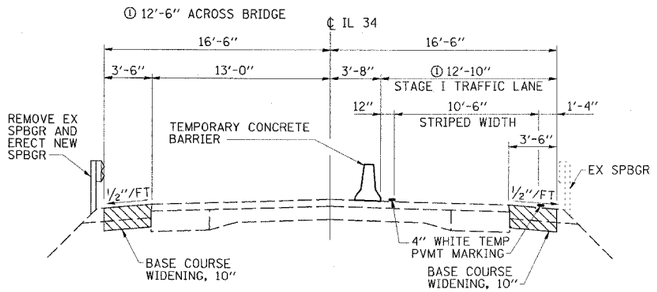
- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- BASE COURSE WIDENING, 10"
- TEMPORARY RAMP
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL, SPECIAL

30 0 30 60
SCALE IN FEET





SECTION B



SECTION A-A

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-I102(O)-48) SHOWN ON STANDARD 701321 SHALL BE 11'-0" FOR STAGE I CONSTRUCTION
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDEROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.
7. THE EXISTING 'TURNDOWN' TBT'S AT THE NW AND SW CORNERS OF THE BRIDGE MUST BE REMOVED AND REPLACED WITH NEW TBT'S TY 1 SPECIAL (TANGENT) PRIOR TO SHIFTING TRAFFIC TO THE STAGE I LANE.

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1572+12.5		1575+87.5	375
		TOTAL -	375

TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

TEMPORARY RUMBLE STRIPS - 6 EACH

IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

STAGE I CONSTRUCTION
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
REFERENCE = REF

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	17
STA. 1569+00		TO STA. 1579+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

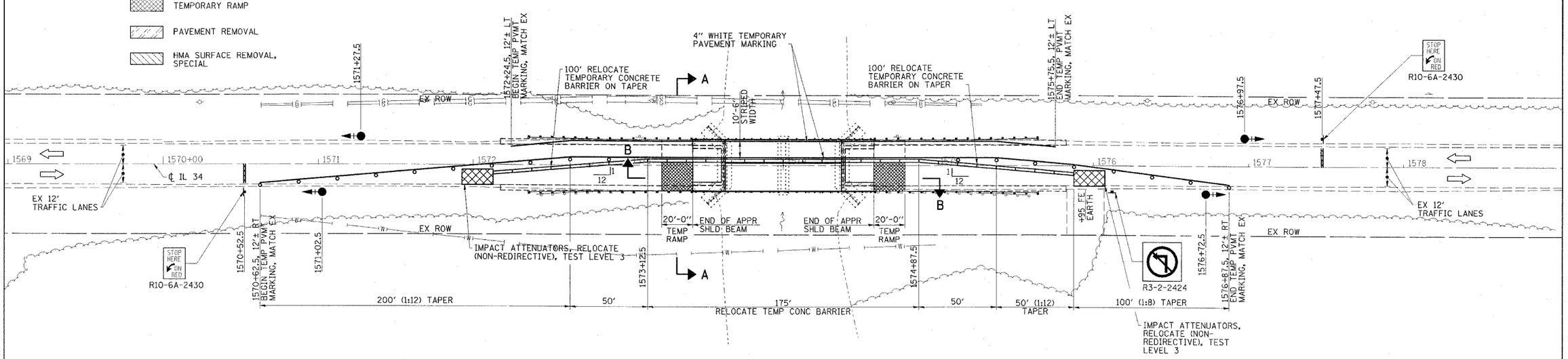
LEGEND

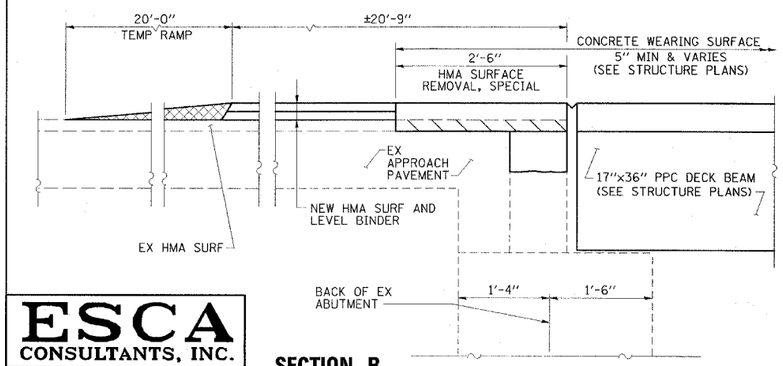
- TRAFFIC SIGNAL WITH BACKPLATE, SIGNAL DIRECTION INDICATED
- BASE COURSE WIDENING, 10"
- TEMPORARY RAMP
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL, SPECIAL

N

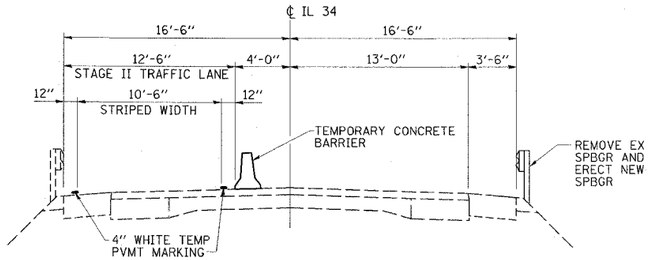
30 0 30 60

SCALE IN FEET





SECTION B



SECTION A–A

GENERAL NOTES

1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321.
5. THE DIMENSION SHOWN ON THE WIDTH RESTRICTION SIGN (W12-1102(0)-48) SHOWN ON STANDARD 701321 SHALL BE 11'-0" FOR STAGE II CONSTRUCTION.
6. ADDITIONAL SIGNAGE AND BARRICADES SHOWN FOR SIDEROADS AND ENTRANCES SHALL BE INCLUDED IN THE COST OF STANDARD 701321.

SCHEDULE OF QUANTITIES

RELOCATE TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
1572+12.5		1575+87.5	375
		TOTAL -	375

IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3 - 2 EACH

STAGE II CONSTRUCTION
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

ESCA CONSULTANTS, INC.

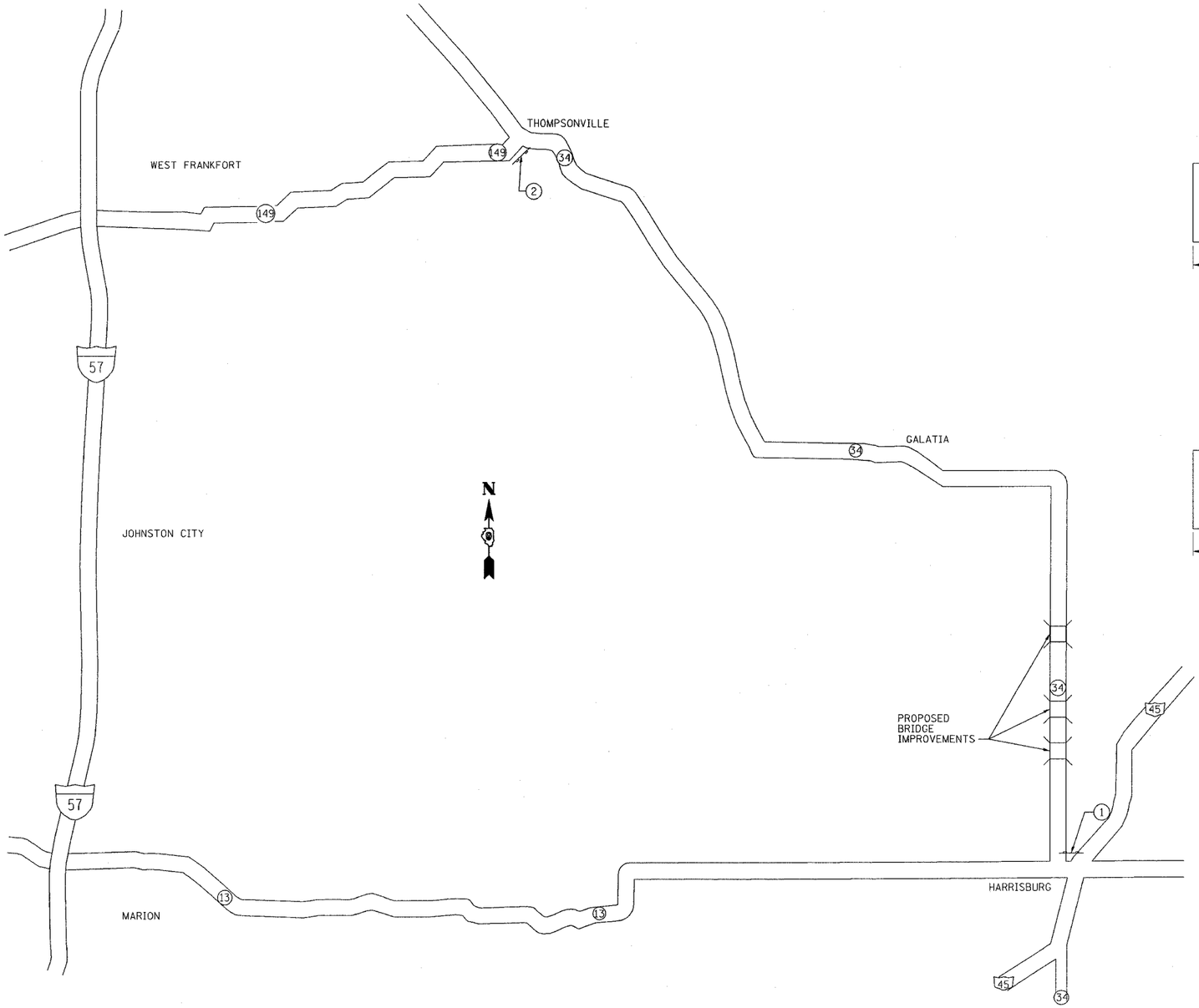
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

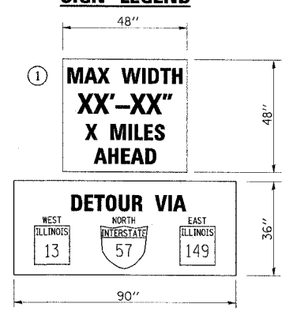
CONTRACT NO. 78031

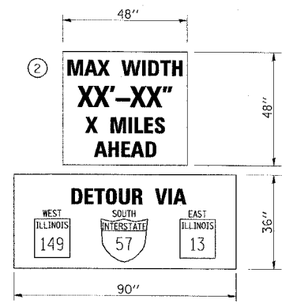
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	*	SALINE	118	18
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

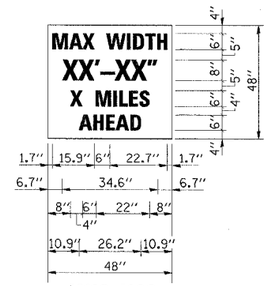
* 105BR-1, 105BR-2, 105BR-3



SIGN LEGEND







W12-1103

SERIES D ALPHABET. NO BORDER.
BLACK ON WHITE.

DETOUR NOTES

1. THE CONTRACTOR SHALL FURNISH THE POSTS AND ERECT THE SIGNS AT THE LOCATIONS DIRECTED BY THE ENGINEER. ALL SIGNS SHALL BE POST MOUNTED.
2. 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.
3. THE WIDTH SHOWN ON THE W12-1103 SIGN SHALL BE 11'-0" OR AS DIRECTED BY THE ENGINEER. THE 'X' MILES AHEAD WILL BE DETERMINED BY THE ENGINEER.

DETOUR SIGNING PLAN

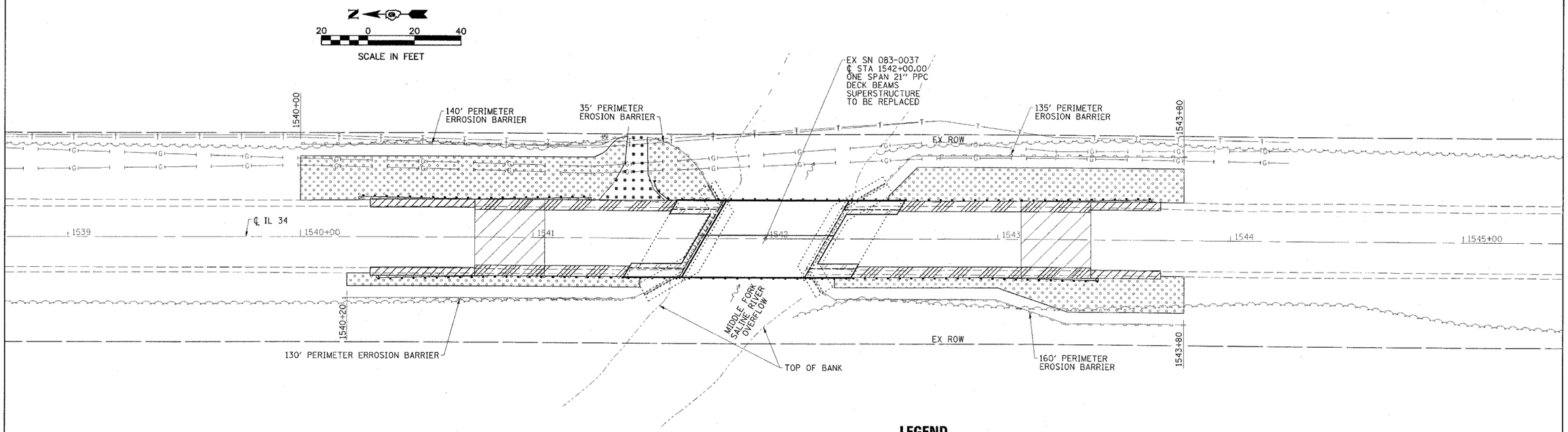
WIDE LOAD DETOUR
FAP RTE 869 (IL 34)
SECTIONS 105BR-1,
105BR-2, 105BR-3
SALINE COUNTY

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	19
STA. 1539+00		TO STA. 1545+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



LEGEND

APPROXIMATE SEEDING & MULCH AREAS

PERIMETER EROSION BARRIER

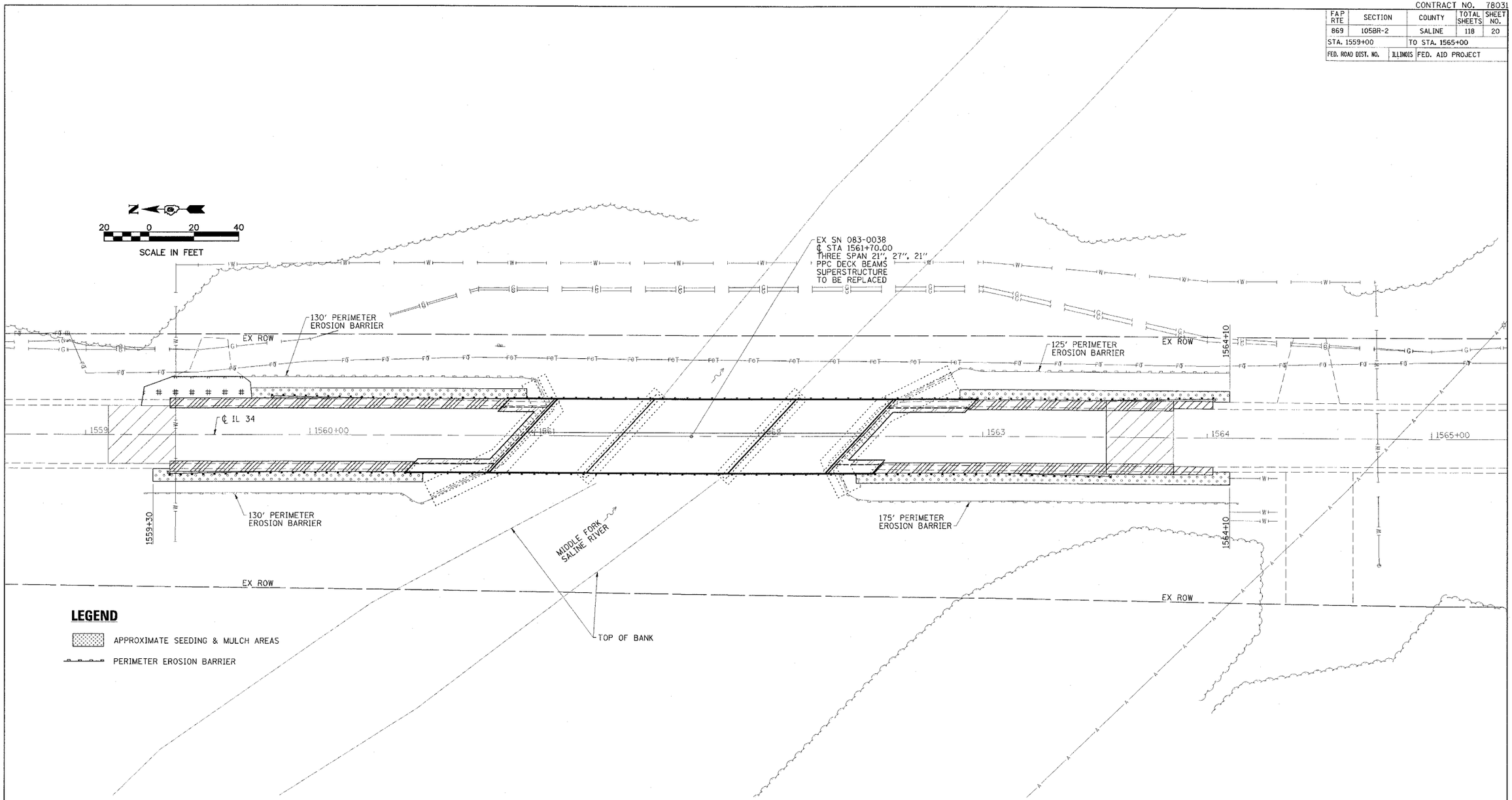
PLOT DATE = $DATE$
FILE NAME = $FILEL$
PEN TABLE = $PENTBL$
REFERENCE = REF

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

EROSION CONTROL
AND DRAINAGE PLAN
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	20
STA. 1559+00		TO STA. 1565+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



LEGEND

APPROXIMATE SEEDING & MULCH AREAS

PERIMETER EROSION BARRIER

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

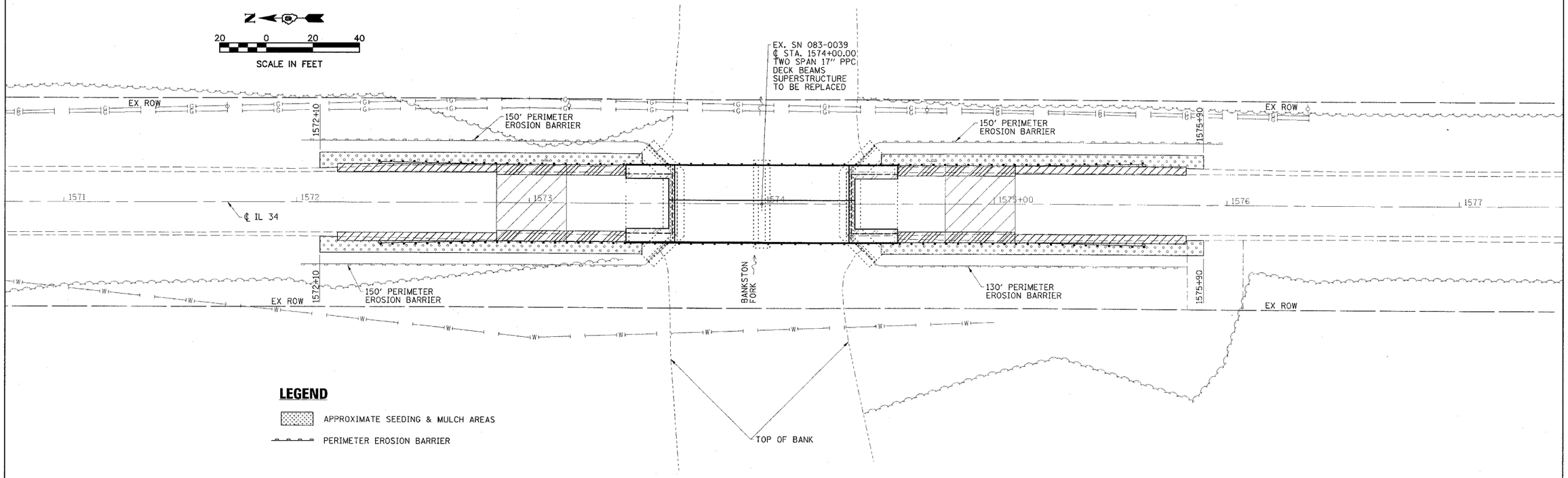
ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

EROSION CONTROL
AND DRAINAGE PLAN
FAP RTE 869 (IL 34)
SECTION 150BR-2
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	21
STA. 1571+00		TO STA. 1577+00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



LEGEND

APPROXIMATE SEEDING & MULCH AREAS

PERIMETER EROSION BARRIER

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
REFERENCE = REF

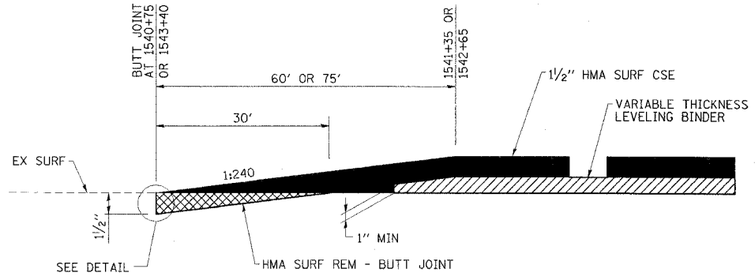
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

EROSION CONTROL AND DRAINAGE PLAN
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

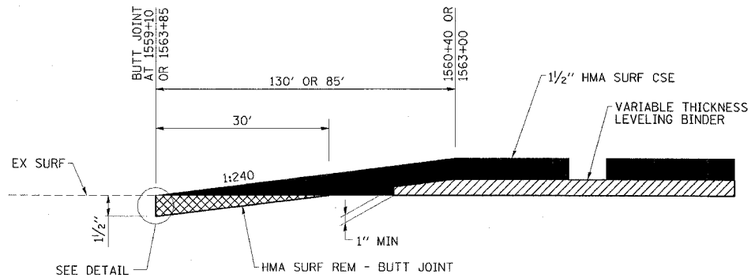
CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	*	SALINE	118	22
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

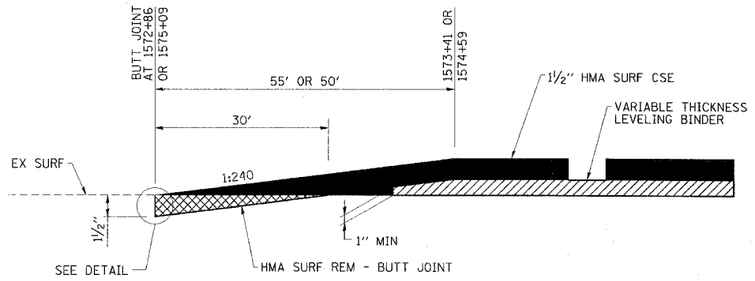
* 105BR-1, 105BR-2, 105BR-3



TYPICAL BUTT JOINT SECTION – SN 083-0037



TYPICAL BUTT JOINT SECTION – SN 083-0038



TYPICAL BUTT JOINT SECTION – SN 083-0039

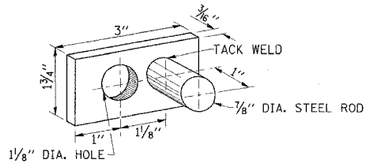
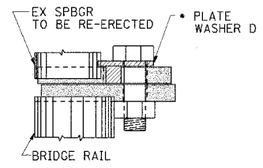


PLATE WASHER D

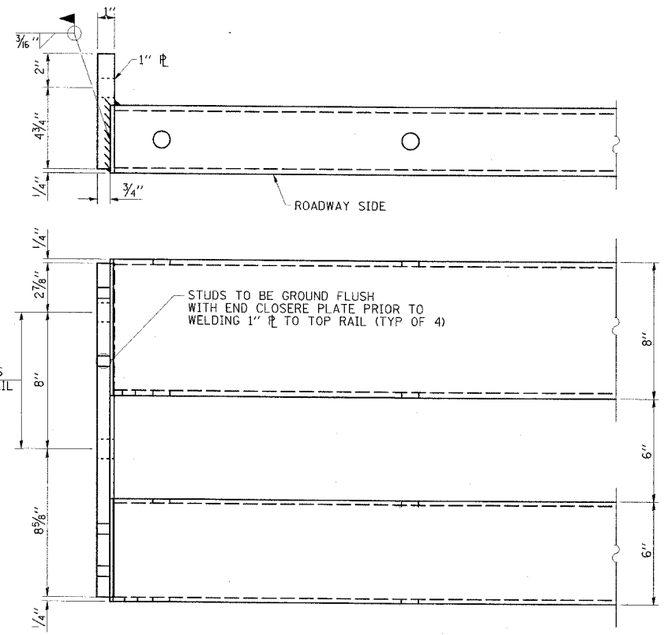


PLACEMENT OF PLATE WASHER D

(PLAN)

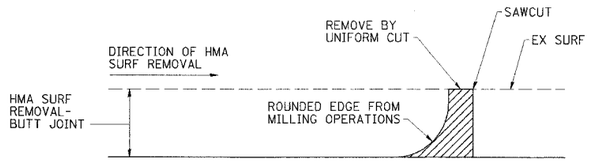
- INSTALL PLATE WASHER D SO THAT THE 1" PROJECTION FILLS THE REMAINDER OF THE SLOTTED HOLES IN THE 1" END PLATE AFTER THE 1" DIA. BOLTS ARE IN PLACE

1⅛" DIA. HOLES FOR 1" DIA. × 4" ROUND HEAD BOLTS PROVIDE 2 FLAT WASHERS & LOCKNUTS FOR GUARD RAIL CONNECTION



END OF BRIDGE RAIL DETAIL

SPECIAL GUARDRAIL CONNECTION DETAILS (REQ'D AT NE CORNER SN 083-0037 ONLY)



DETAIL AT BUTT JOINT

NOTE:
WHEN MILLING OPERATIONS PRODUCE A ROUNDED EDGE, THEN A SAWCUT SHALL BE USED TO MANUFACTURE A PERPENDICULAR EDGE AS SHOWN IN THE DETAIL. THE COST OF ALL WORK SHOWN IN THE DETAIL IS INCLUDED IN HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT. THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING THE USE OF THIS DETAIL.

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

DESIGNED BY:	DAJ	02/08
DRAWN BY:	CJG/JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
REFERENCE = REF

MISCELLANEOUS DETAILS
FAP RTE 869 (IL 34)
SECTIONS 105BR-1,
105BR-2, 105BR-3
SALINE COUNTY

BENCHMARK: Sawed Square on top of Northeast Wingwall,
SN 083-0037, Station 1541+78.70, 18.5' left, Elevation 366.17

EXISTING STRUCTURE: SN 083-0037 was originally built in 1932 as S.B.I. Route 143, Section 105B, Sta. 1542+00. The superstructure was replaced in 1972, and precast concrete bridge slabs were utilized to widen the approaches. The superstructure consists of one span, 21" PPC deck beams. The substructure consists of two reinforced concrete closed abutments on timber piles. The back-to-back abutments length is 53'-5¼", the out-to-out width is 33'-0". The existing superstructure and the existing bridge approach shoulders shall be removed and replaced utilizing stage construction.

No salvage.

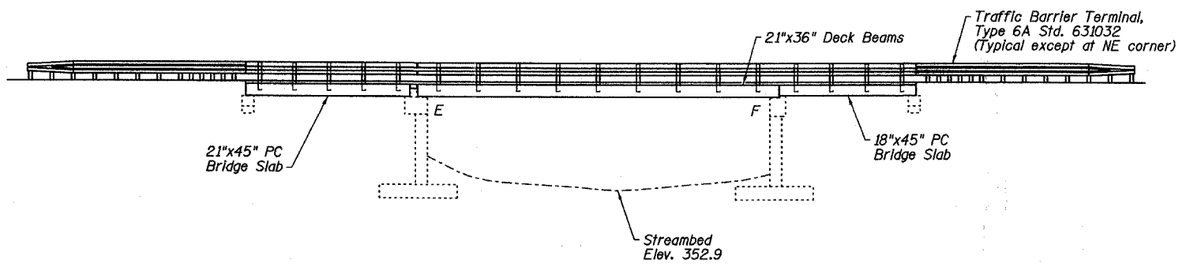
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	23
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 1
18 SHEETS

78031

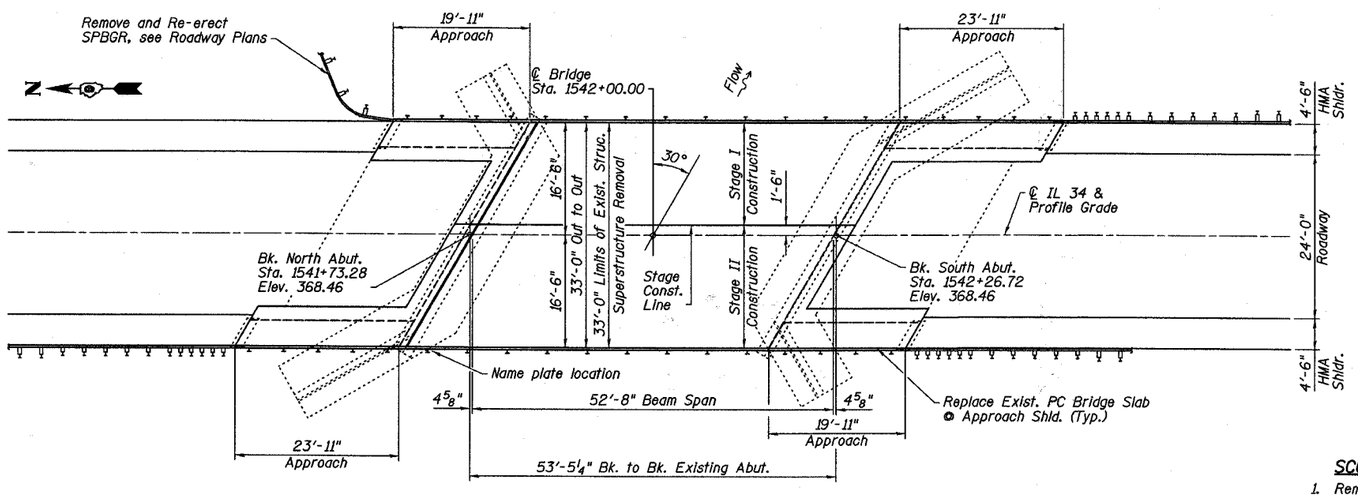
STRUCTURE INDEX OF SHEETS



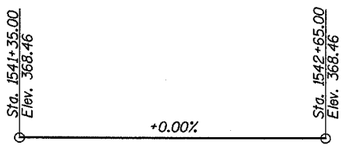
ELEVATION

STATION 1542+00.00
REBUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 869 SEC. 105BR-1
LOADING HS20
STR. NO. 083-0037

NAME PLATE
See Std. 515001



PLAN



PROFILE GRADE
(Along ℄ Roadway)

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

SCOPE OF WORK

1. Remove existing surfacing, steel railing, deck beams, and approach shoulder bridge slabs.
2. Repair beam bearing seats and perform other repairs at abutments as required.
3. Reconstruct a one-span PPCD beam superstructure with Concrete Wearing Surface and Steel Railing, Type SM. Reconstruct existing approach shoulders with Precast Concrete Bridge Slabs with Concrete Wearing Surface and Steel Railing, Type SM.

DESIGN SPECIFICATION
2002 AASHTO

LOADING HS20-44
No allowance for future wearing surface

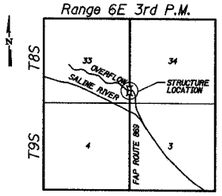
DESIGN STRESSES

FIELD UNITS
f'c = 5,000 psi (Concrete Wearing Surface)
f'c = 3,500 psi (All concrete except CWS)
fy = 60,000 psi (reinf.)

PRECAST PRESTRESSED UNITS
f'c = 6,000 psi
f'ci = 5,000 psi
f's = 270,000 psi (½"ø low lax strands)
fsi = 201,960 psi (½"ø low lax strands)

PRECAST UNITS
f'c = 4,500 psi
fy = 60,000 psi (reinf.)

STATE OF ILLINOIS
RICHARD D. PAYNE
No. 4647
REGISTERED STRUCTURAL ENGINEER
EXPIRES 11-30-08
SIGNATURE
04/04/08
DATE



LOCATION SKETCH

GENERAL PLAN
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

ESCA CONSULTANTS, INC.

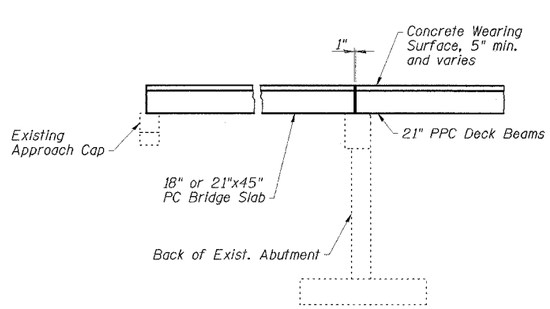
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

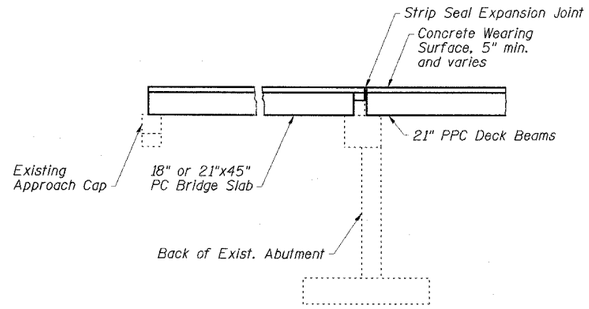
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	24
FED.ROAD DIST.NO. 9	ILLINOIS	FED. AID PROJECT- ABD		

SHEET NO. 2
18 SHEETS

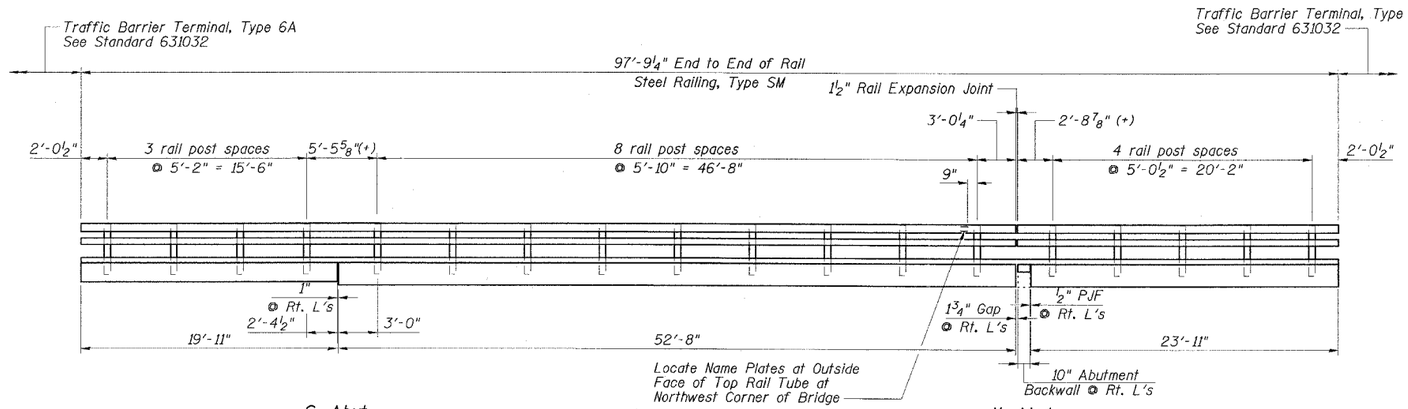
78031



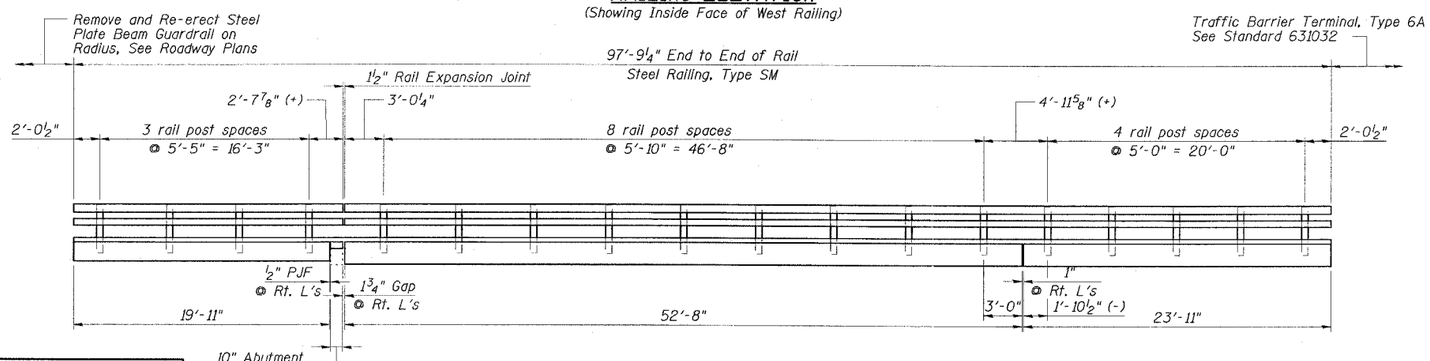
SECTION THRU SOUTH ABUTMENT
@ OUTSIDE BEAM



SECTION THRU NORTH ABUTMENT
@ OUTSIDE BEAM



RAILING ELEVATION
(Showing Inside Face of West Railing)



RAILING ELEVATION
(Showing Inside Face of East Railing)

See Dwg. No. 12 of 18 for Railing Details.

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A706 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 abutment bearing seats and backwalls where Structural Repair of Concrete is performed and also to the front face of the new concrete backwall.
4. All new structural steel shall be shop painted with an inorganic zinc rich primer per AASHTO M300 Type 1 unless noted otherwise.
5. Side retainers shall be AASHTO M270 Grade 36 minimum.
6. No in-stream work will be allowed on this project.
7. 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.
8. If the Contractor's procedure for existing beam removal or placement of new beams involves placement of heavy equipment on new or existing 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 that the structrual adequacy of the beams for the proposed loads. Cost included with Precast Prestressed Concrete Deck Beams (21" Depth).
9. The minimum thickness of the concrete overlay shall be 5" and varies as required to adjust for the new profile grade and beam camber. Modify to meet field conditions as directed by the Engineer.
10. Repair of the substructure and removal of the existing expansion joint, shall be completed prior to placement of the new deck beams. The cost of removing the existing expansion joint is included in Concrete Removal.
11. The existing expansion bearing pads contain ASBESTOS. See Special Provisions for Asbestos Bearing Pad Removal.
12. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures No. 1	Each	1	-	1
Bridge Deck Grooving	Sq. Yd.	241	-	241
Protective Coat	Sq. Yd.	264	-	264
Precast Concrete Bridge Slab	Sq. Ft.	330	-	330
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1738	-	1738
Reinforcement Bars, Epoxy Coated	Pound	3290	110	3400
Bar Splicers	Each	58	2	60
Steel Railing, Type SM	Foot	196	-	196
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	39	-	39
Concrete Sealer	Sq. Ft.	-	60	60
Epoxy Crack Injection	Foot	-	118	118
Asbestos Bearing Pad Removal	Each	-	22	22
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	-	37	37
Concrete Wearing Surface, 5"	Sq. Yd.	264	-	264
Concrete Removal	Cu. Yd.	-	0.9	0.9
Concrete Structures	Cu. Yd.	-	0.9	0.9
Removal of Existing Precast Concrete Units	Sq. Ft.	330	-	330

GENERAL DATA
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

ESCA CONSULTANTS, INC.

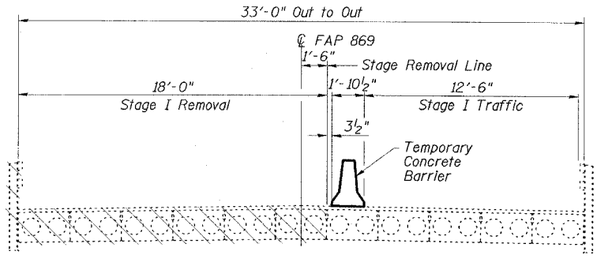
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

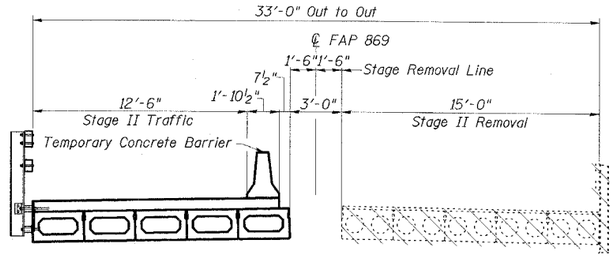
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	25
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 3
18 SHEETS

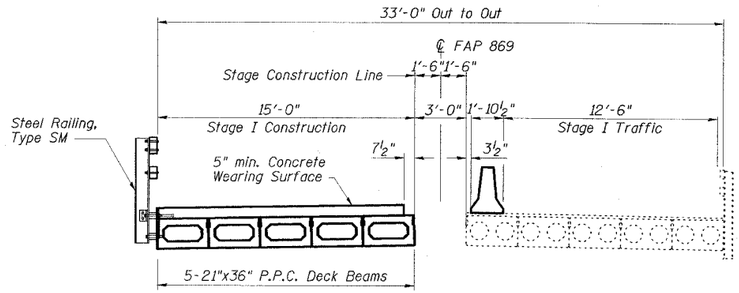
78031



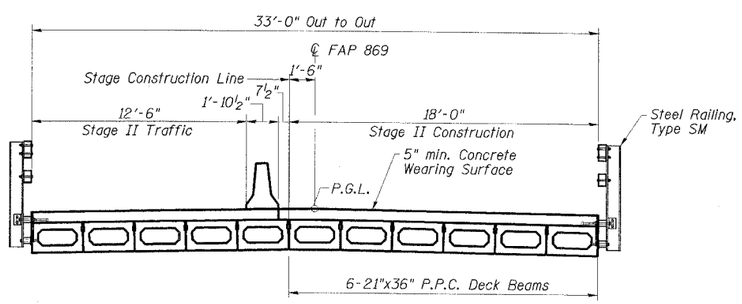
STAGE I REMOVAL



STAGE II REMOVAL



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

STAGE CONSTRUCTION NOTES

1. All staging sections are looking South.
2. See Dwg. No. 5 of 18 for shear key clamping details.
3. For quantity of Temporary Concrete Barrier, see Roadway Plans.

ESCA
CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

STAGE CONSTRUCTION DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

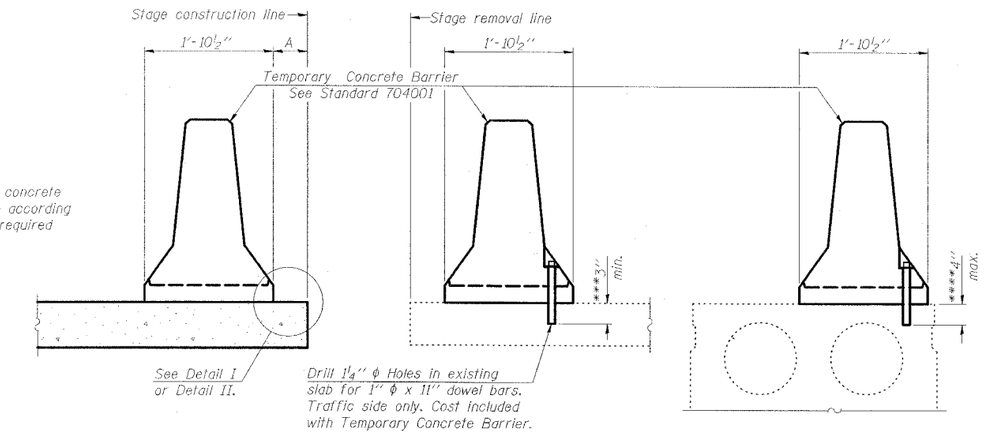
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	26
FED. ROAD DIST. NO. 11	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 4
18 SHEETS

78031

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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".



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℄ 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 ℄ to the concrete slab or concrete wearing surface with 2-⅝"ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

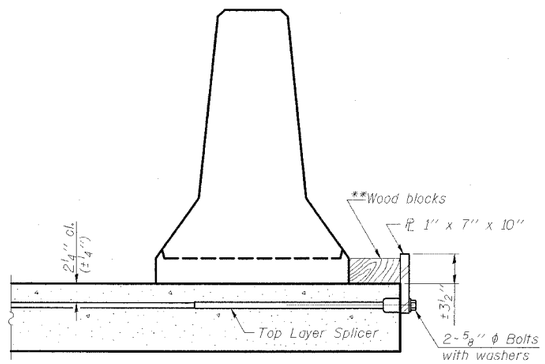
Cost of anchorage is included with Temporary Concrete Barrier.

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.

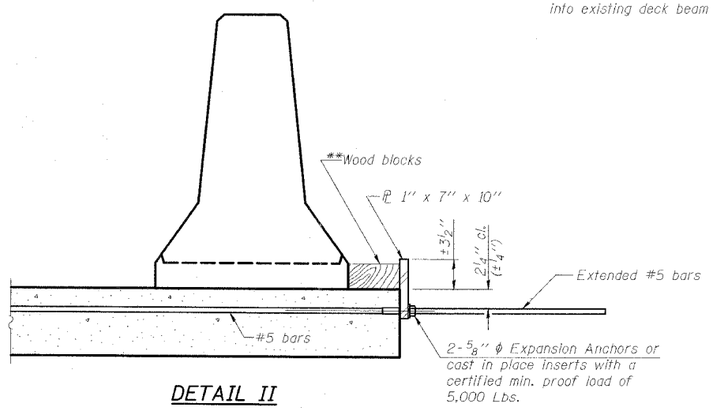
SECTIONS THRU SLAB OR DECK BEAM

***Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

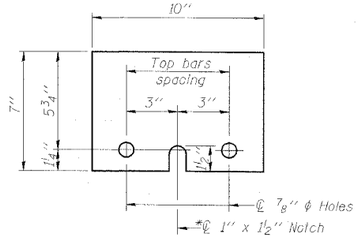


DETAIL I



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 ℄ 1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

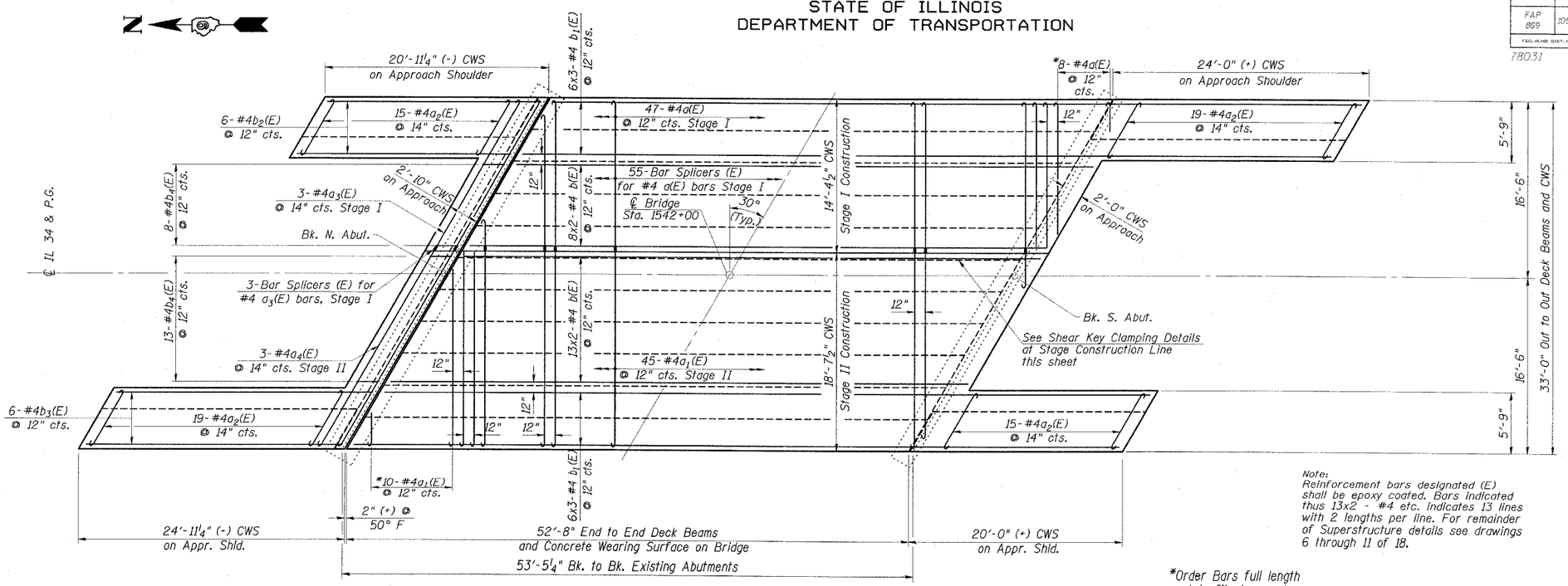
R-27 9-3-07

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR 1	SALINE	118	27
FED. HWAY DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

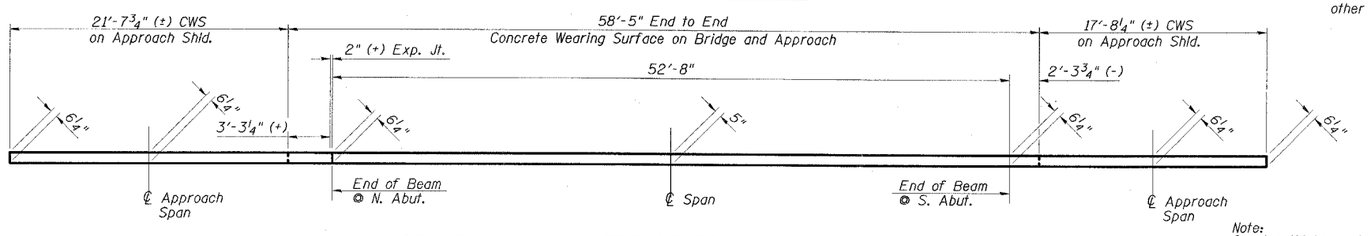
78031

SHEET NO. 5
18 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN - WEARING SURFACE



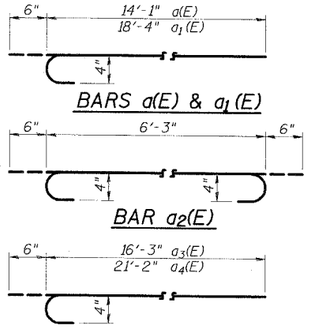
REINFORCED CONCRETE WEARING SURFACE PROFILE

(At west edge of bridge deck; east edge similar)

Note:
Reinforcement bars designated (E) shall be epoxy coated. Bars indicated thus 13x2 - #4 etc. indicates 13 lines with 2 lengths per line. For remainder of Superstructure details see drawings 6 through 11 of 18.

*Order Bars full length cut to fit skew and use remainder of bars at other end of deck.

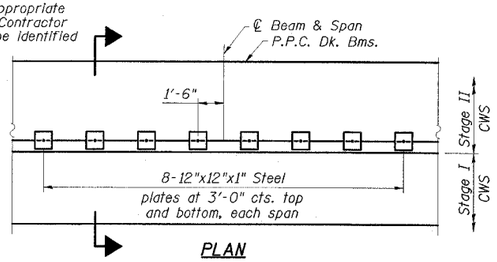
Note:
Greater thickness is required at centerline of superstructure to conform to cross section slopes shown on Dwg. 7 of 18.



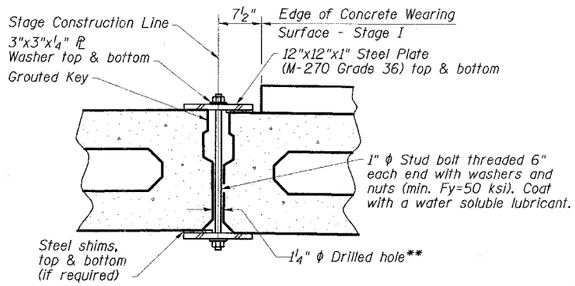
CONCRETE WEARING SURFACE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	55	#4	14'-7"	
a1(E)	55	#4	18'-10"	
a2(E)	68	#4	7'-3"	
a3(E)	3	#4	16'-9"	
a4(E)	3	#4	21'-8"	
b(E)	42	#4	28'-2"	
b1(E)	36	#4	26'-7"	
b2(E)	6	#4	20'-7"	
b3(E)	6	#4	24'-7"	
b4(E)	21	#4	2'-11"	
Reinforcement Bars, Epoxy Coated		Pound	3290	
Concrete Wearing Surface, 5"		Sq. Yd.	264	
Bridge Deck Grooving		Sq. Yd.	241	
Bar Splicers		Each	58	
Protective Coat		Sq. Yd.	264	

** 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 location for the clamping device bolts. If the Contractor elects to use this alternate, the details shall be identified on the shop drawings.

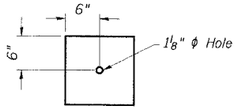


PLAN



SECTION

SHEAR KEY CLAMPING DETAILS



CLAMPING PLATE

Notes:
See Stage Construction Details for traffic lanes. Cost is included with Precast Prestressed Concrete Deck Beams.

MIN. BAR LAP
#4 BAR = 1'-8"

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
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CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

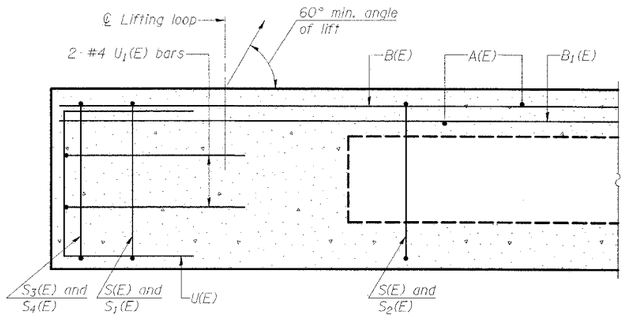
SUPERSTRUCTURE
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

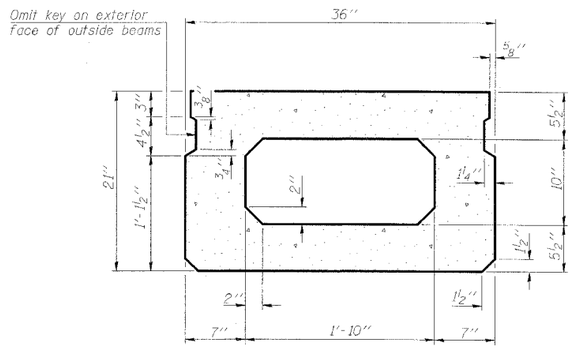
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	113	28
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 6
18 SHEETS

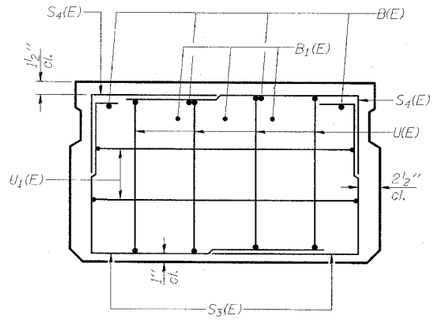
78031



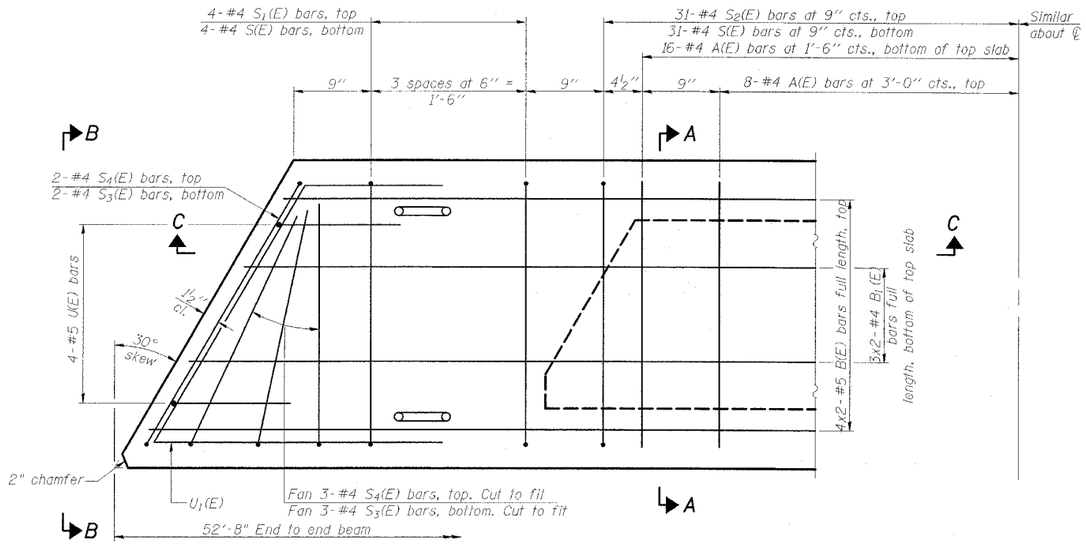
SECTION C-C



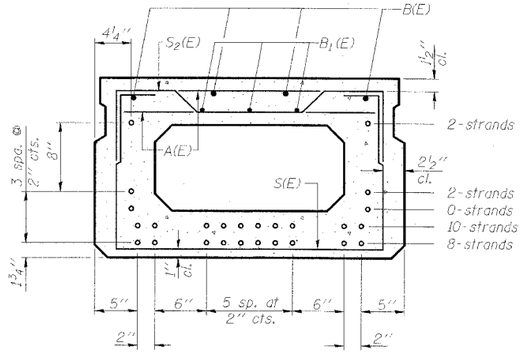
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A
(Showing reinforcement and permissible strand locations)

22-½" ϕ strands, each strand stressed to 30,900 lbs.

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

MIN. BAR LAP
#5 bar = 2'-2"

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	48	#4	2'-7"	
B(E)	8	#5	27'-3"	
B1(E)	6	#4	27'-0"	
S(E)	70	#4	6'-5"	
S1(E)	8	#4	5'-7"	
S2(E)	62	#4	5'-10"	
S3(E)	10	#4	4'-11"	
S4(E)	10	#4	4'-6"	
U(E)	8	#5	4'-0"	
U1(E)	4	#4	6'-10"	

Note: See sheet 7 of 18 for additional details and Bill of Material.

Notes:
1. Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.
2. Adjust reinforcement locations to clear dowel holes at fixed ends.

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DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

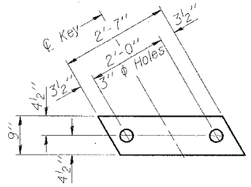
SUPERSTRUCTURE DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

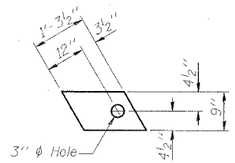
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	18	29
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT= AID		

SHEET NO. 7
18 SHEETS

78031

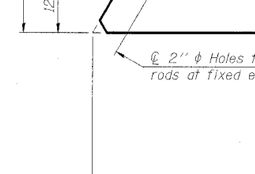


FABRIC BEARING PAD
(Interior)



FABRIC BEARING PAD
(Exterior)

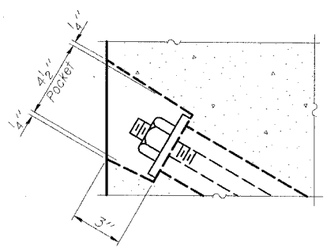
FIXED



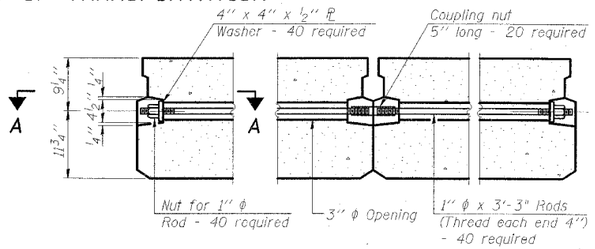
FABRIC BEARING PAD
(Interior)

FABRIC BEARING PAD
(Exterior)

EXPANSION



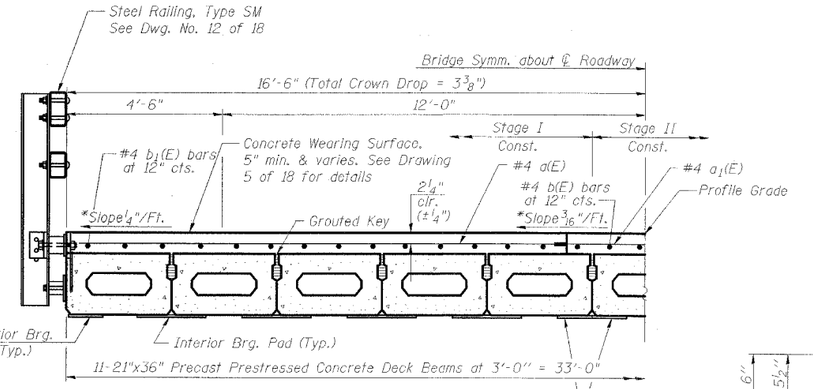
SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

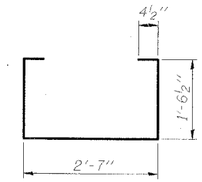
Note: Connect beams in pairs with the transverse tie configuration shown.

PLAN VIEW

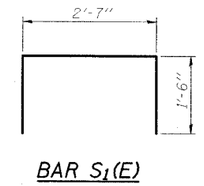


HALF CROSS SECTION
(Looking South)

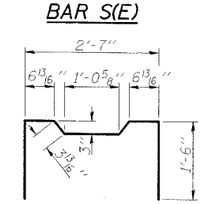
*Cross slopes shown are applicable to CWS



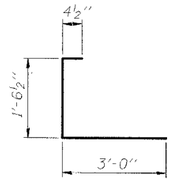
BAR S(E)



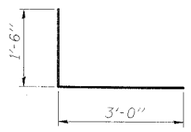
BAR S1(E)



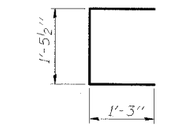
BAR S2(E)



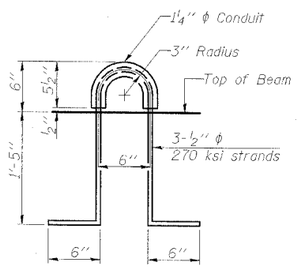
BAR S3(E)



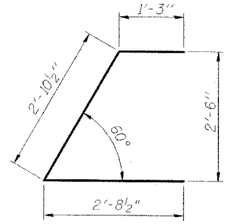
BAR S4(E)



BAR U(E)



LIFTING LOOP DETAIL



BAR U1(E)

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.

The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706 (IL MOD), Grade 60. (See Special Provisions)

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

See Dwg. No. 2 of 18 for location of rail anchors and additional notes.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Prestressed Conc. Deck Bms. (21" Depth)	Sq. Ft.	1738

ESCA
CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
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CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

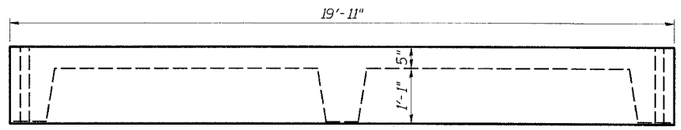
SUPERSTRUCTURE DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

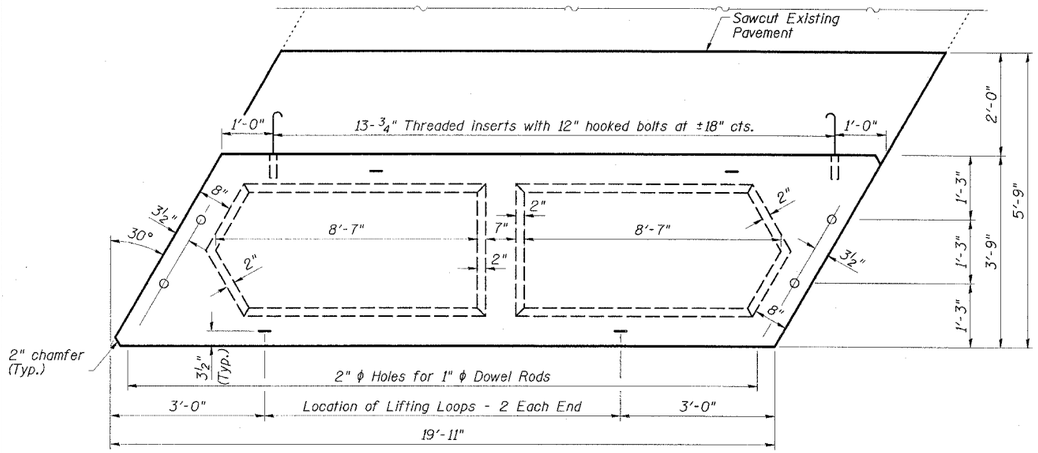
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	30
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- 483		

SHEET NO. 8
18 SHEETS

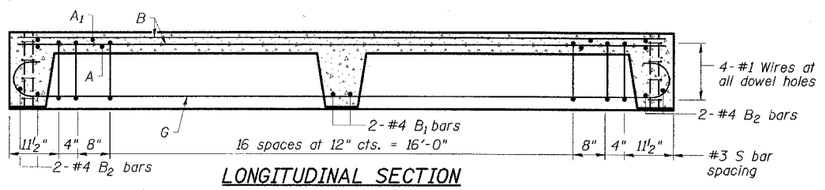
78031



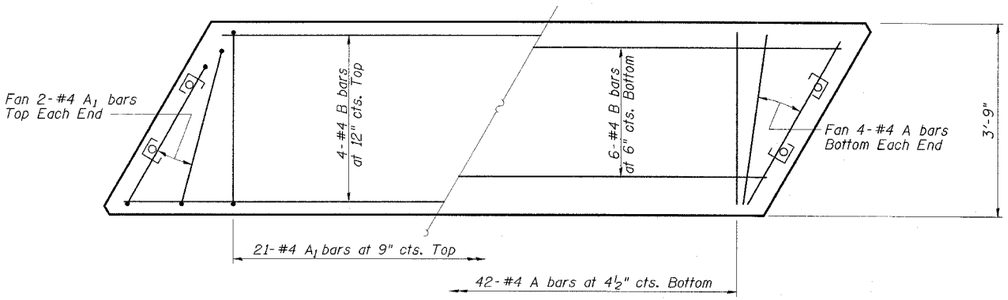
ELEVATION



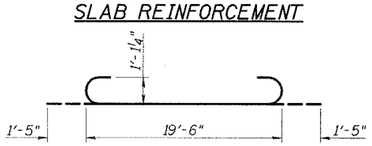
PARTIAL PLAN OF APPROACH
(CWS not shown)



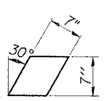
LONGITUDINAL SECTION



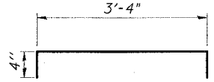
SLAB REINFORCEMENT



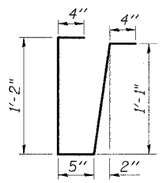
BAR G



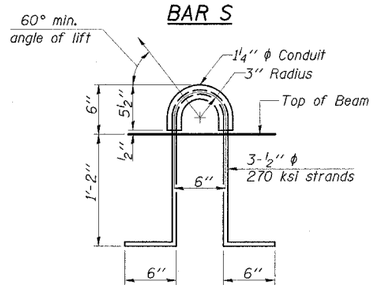
FABRIC BEARING PAD



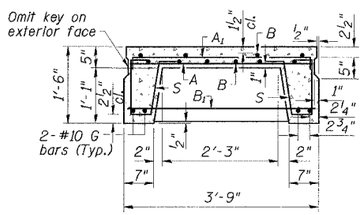
BAR A1



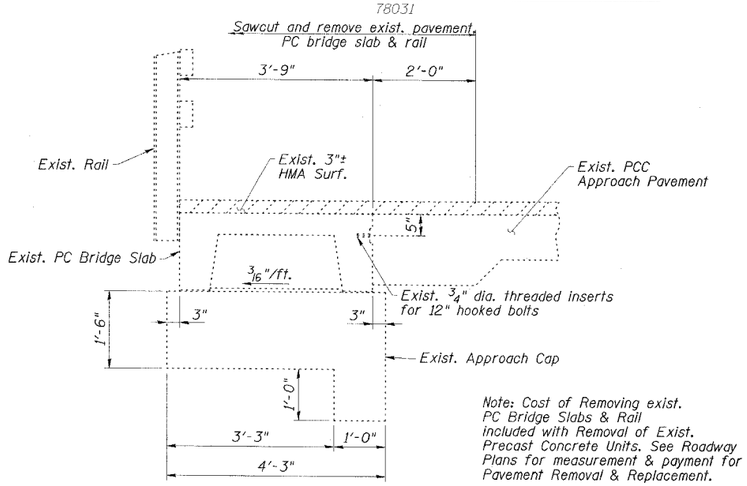
BAR S



LIFTING LOOP DETAIL

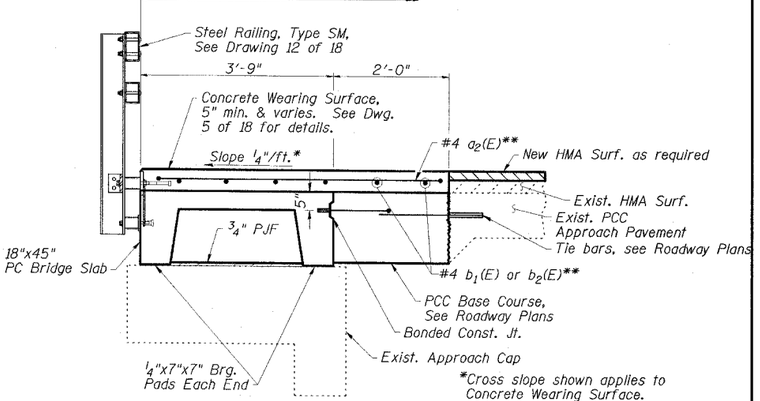


SECTION THRU PRECAST UNIT



Note: Cost of Removing exist. PC Bridge Slabs & Rail included with Removal of Exist. Precast Concrete Units. See Roadway Plans for measurement & payment for Pavement Removal & Replacement.

EXISTING CROSS SECTION



PROPOSED CROSS SECTION

NOTES

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 ⅛" 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 slabs. Cleaning shall be done by sandblasting the keyway areas between top of the slab 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.

Required Strength, f'c, shall be 4500 p.s.i.

See Dwg. No. 2 of 18 for location of rail anchors and additional notes.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor rods and ¾" ϕ hooked bolts is included in contract Unit Price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	150

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

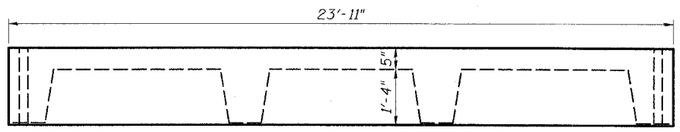
APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

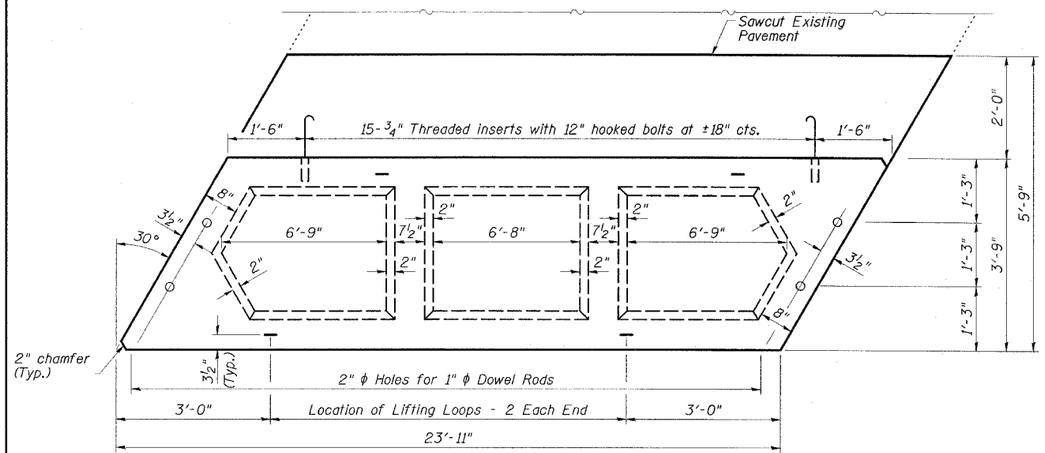
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	31
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ACD		

SHEET NO. 9
18 SHEETS

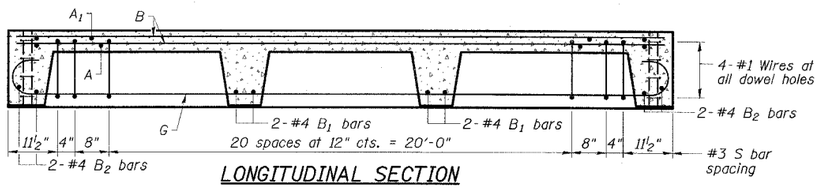
78031



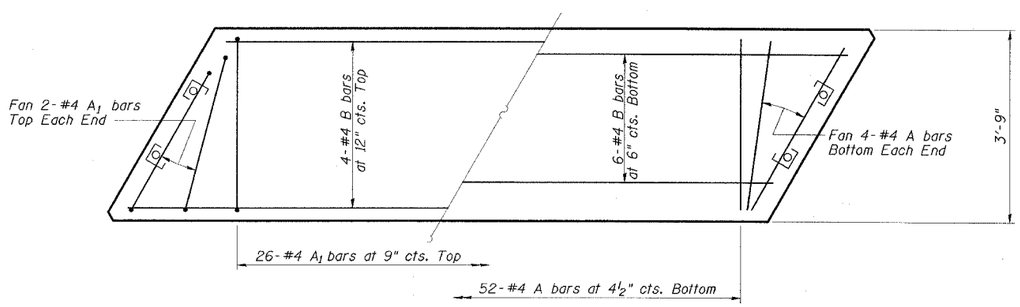
ELEVATION



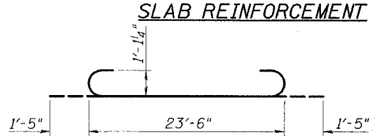
PARTIAL PLAN OF APPROACH
(CWS not shown)



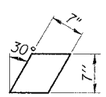
LONGITUDINAL SECTION



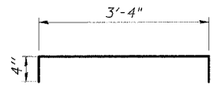
SLAB REINFORCEMENT



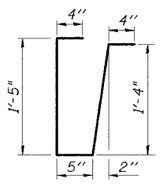
BAR G



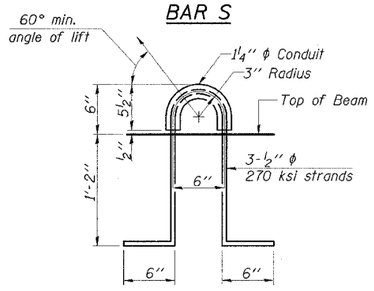
FABRIC BEARING PAD



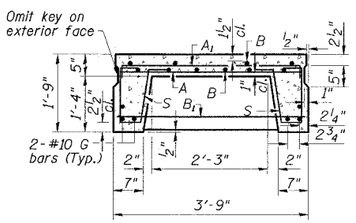
BAR A1



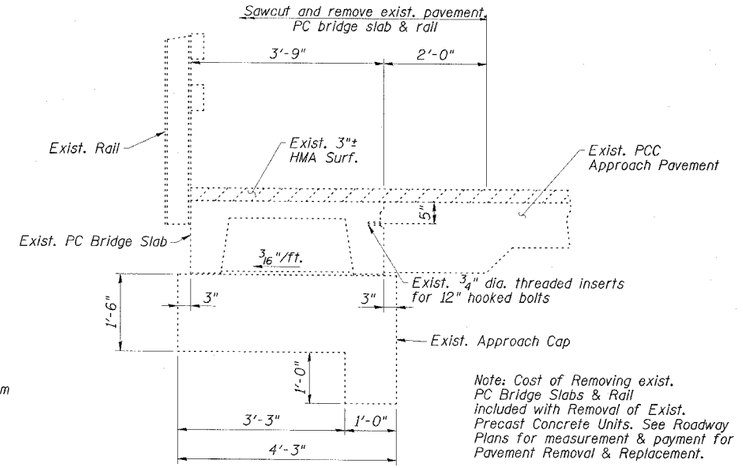
BAR S



LIFTING LOOP DETAIL

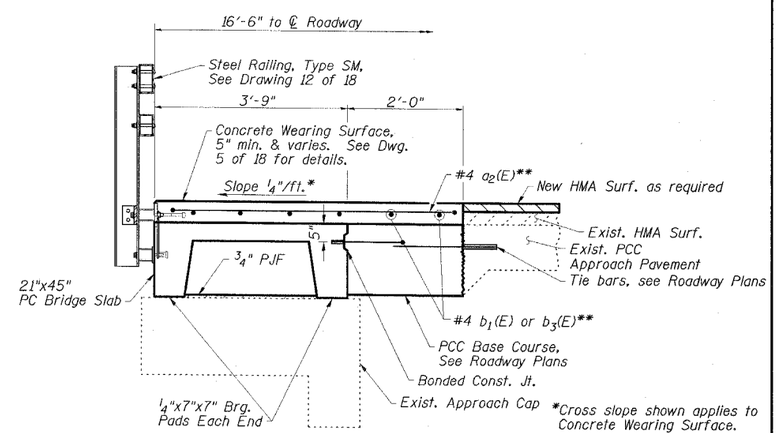


SECTION THRU PRECAST UNIT



Note: Cost of Removing exist. PC Bridge Slabs & Rail included with Removal of Exist. Precast Concrete Units. See Roadway Plans for measurement & payment for Pavement Removal & Replacement.

EXISTING CROSS SECTION



*Cross slope shown applies to Concrete Wearing Surface.
**See Dwg. 5 of 18.

PROPOSED CROSS SECTION

NOTES

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 ⅛" 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 slabs. Cleaning shall be done by sandblasting the keyway areas between top of the slab 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.

Required Strength, f'c, shall be 4500 p.s.i.

See Dwg. No. 2 of 18 for location of rail anchors and additional notes.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor rods and ¾" ϕ hooked bolts is included in contract Unit Price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	180

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

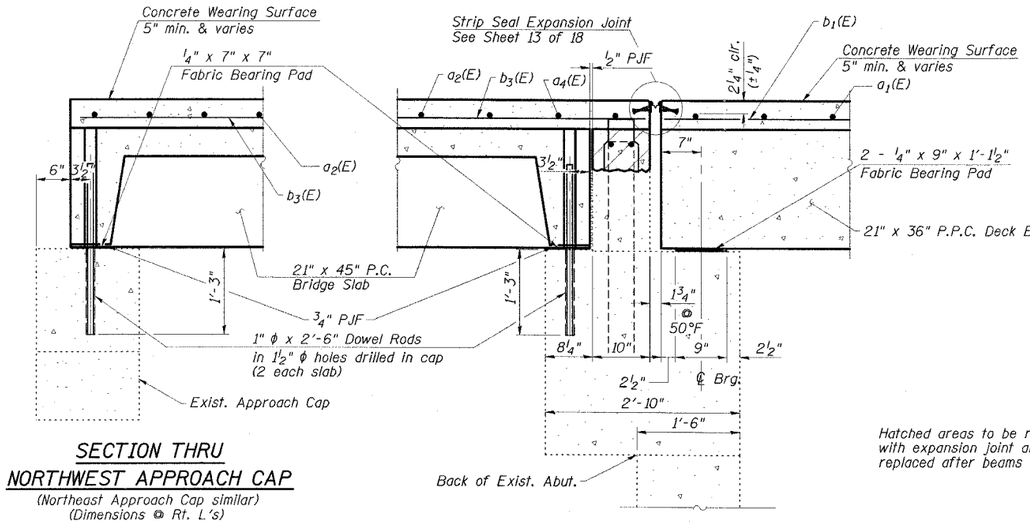
APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	32
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 10
18 SHEETS

78031



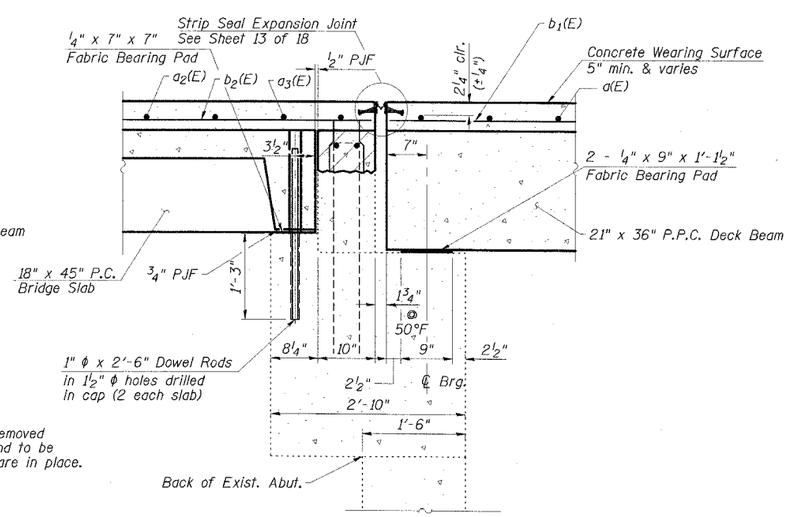
SECTION THRU NORTHWEST APPROACH CAP

(Northeast Approach Cap similar)
(Dimensions @ Rt. L's)

SECTION THRU NORTH ABUTMENT @ WEST OUTSIDE BEAM

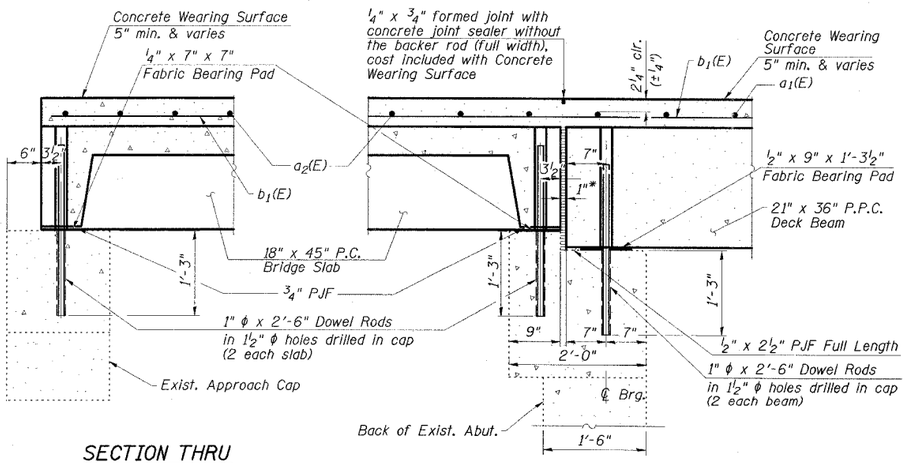
(Dimensions @ Rt. L's)

Hatched areas to be removed with expansion joint and to be replaced after beams are in place.



SECTION THRU NORTH ABUTMENT @ EAST OUTSIDE BEAM

(Dimensions @ Rt. L's)



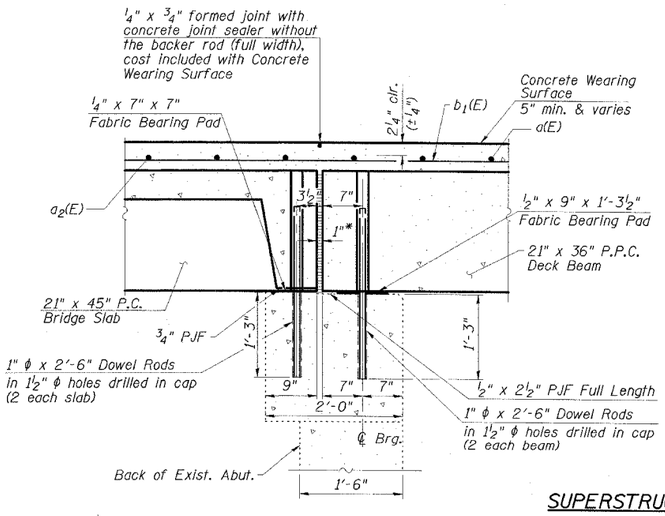
SECTION THRU SOUTHWEST APPROACH CAP

(Southeast Approach Cap similar)
(Dimensions @ Rt. L's)

SECTION THRU SOUTH ABUTMENT @ WEST OUTSIDE BEAM

(Dimensions @ Rt. L's)

*1" Joint shall be filled w/ non-shrink grout, 1 " dimension may vary to accommodate variation in beam lengths.



SECTION THRU SOUTH ABUTMENT @ EAST OUTSIDE BEAM

(Dimensions @ Rt. L's)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

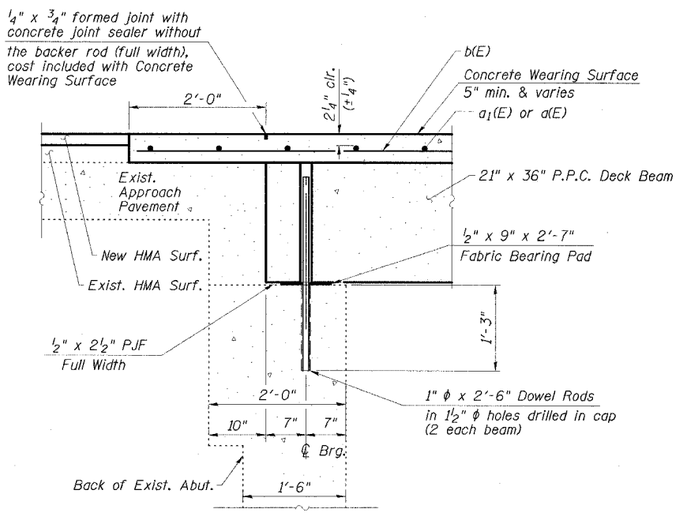
SUPERSTRUCTURE AND APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

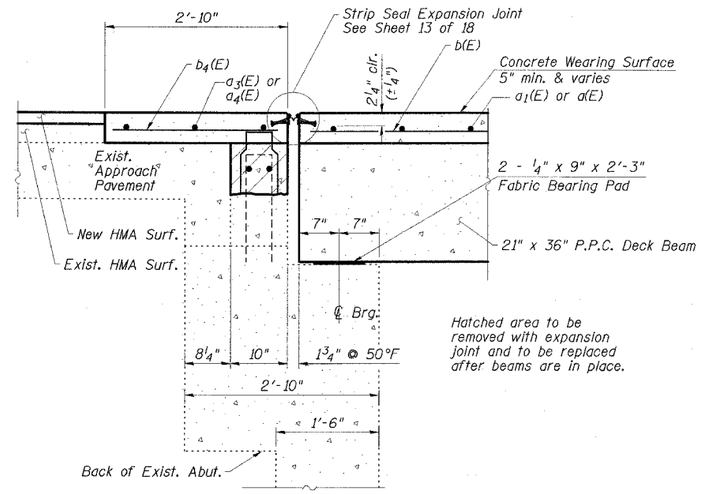
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR 1	SALINE	118	33
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- NO.		

SHEET NO. 11
18 SHEETS

78031



SECTION THRU SOUTH ABUTMENT
@ ℄ ROADWAY
(Dimensions @ Rt. L's)



SECTION THRU NORTH ABUTMENT
@ ℄ ROADWAY
(Dimensions @ Rt. L's)

NOTES

After beams have been erected, holes shall be drilled into substructure and dowels rods 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.

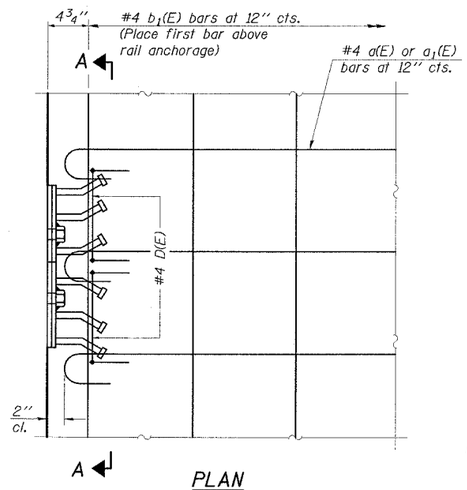
Concrete Wearing Surface to be poured after grouting the shear keys.

Dowel rods drilled in cap are included in the cost of Precast Prestressed Concrete Deck Beams (21" Depth) or Precast Concrete Bridge Slabs.

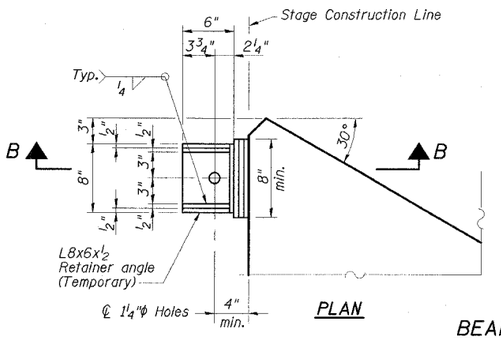
The rail anchorage shall be cast with the beam or slab and the wearing surface shall be cast in the field. Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam or slab. Drilling into the beam or slab will not be permitted.

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 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

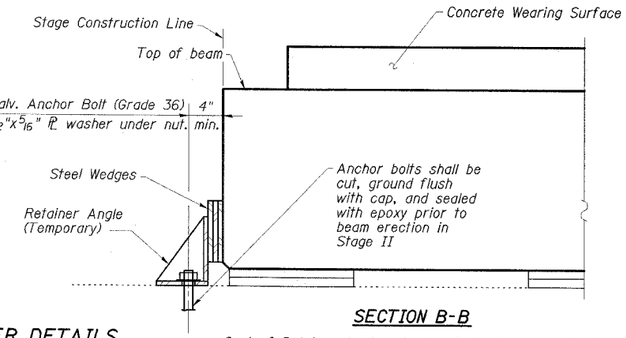
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.



PLAN



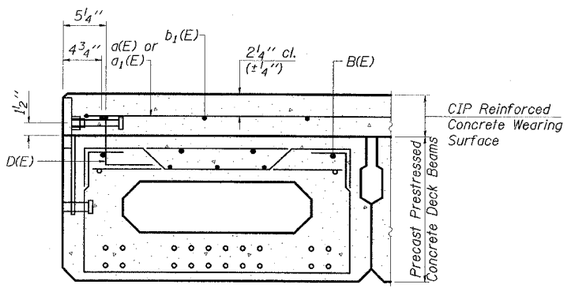
PLAN



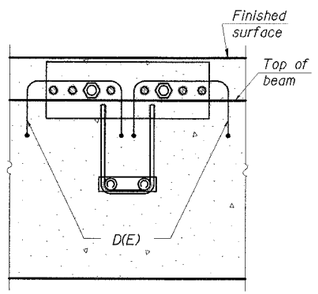
SECTION B-B

BEAM RETAINER DETAILS AT STAGE CONSTRUCTION LINE
(1 Required at North Abutment)

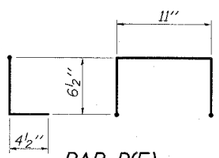
Cost of Retainer Angles, Anchor Bolts & accessories is included with Precast Prestressed Concrete Deck Beams.



CROSS SECTION
(Deck beam shown; PC bridge slab similar)



SECTION A-A



BAR D(E)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JWS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

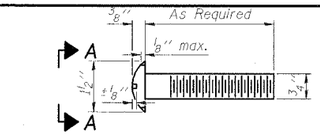
SUPERSTRUCTURE AND APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

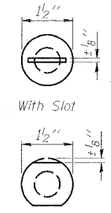
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	34
FED. ROAD DIST. NO. 9	ILLINOIS	FED. NO. PROJECT- AID		

SHEET NO. 12
18 SHEETS

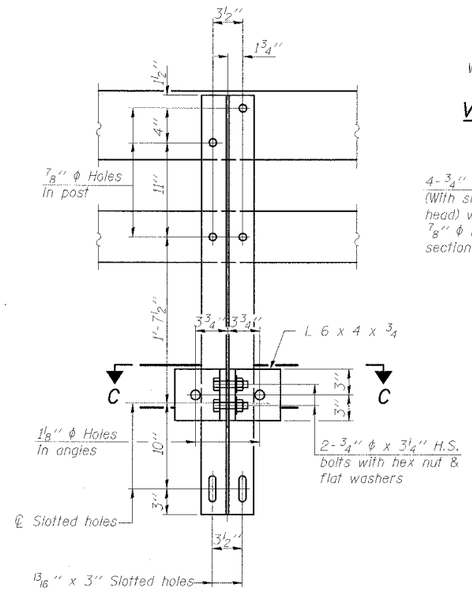
78031



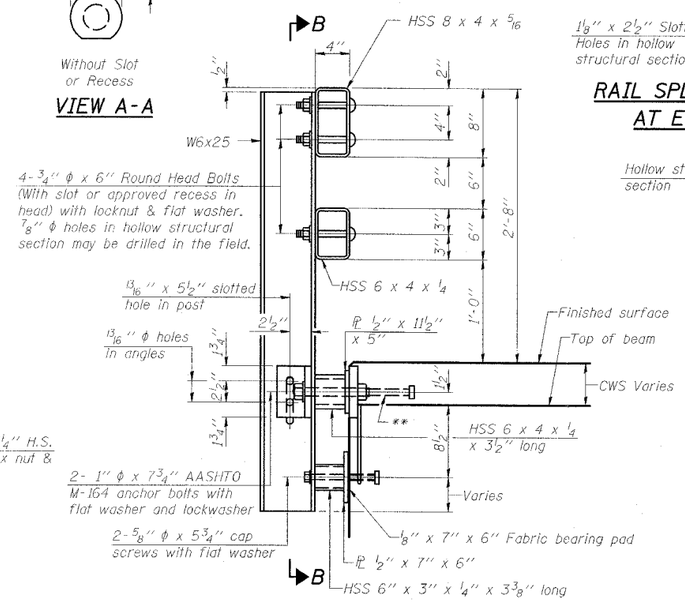
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



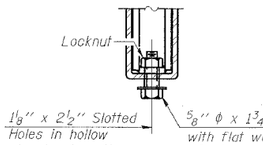
VIEW A-A



SECTION B-B

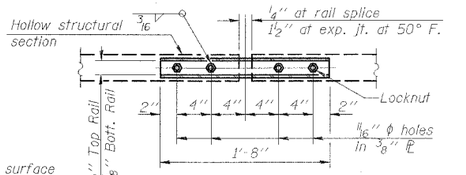


SECTION AT RAIL POST

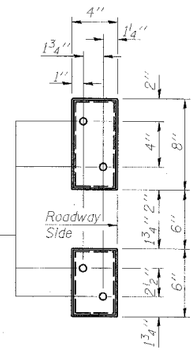


RAIL SPLICE CONNECTION AT EXPANSION JT.

SECTION AT RAIL SPLICE

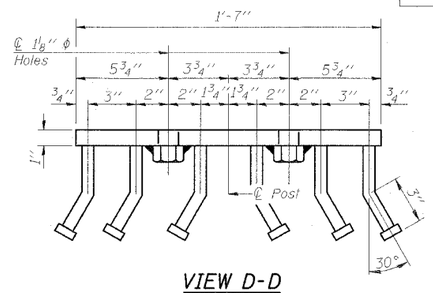


PLAN-BOTT. SPLICE Pl TYPICAL

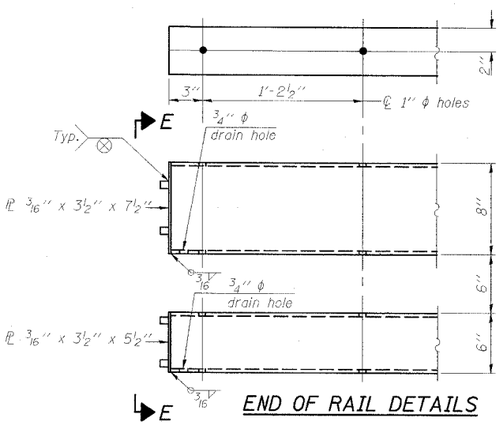


VIEW E-E

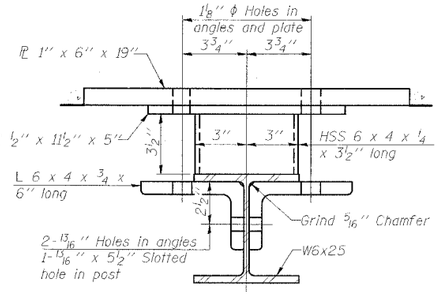
℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



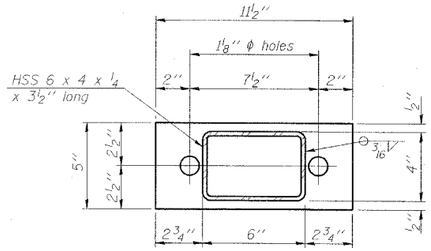
VIEW D-D



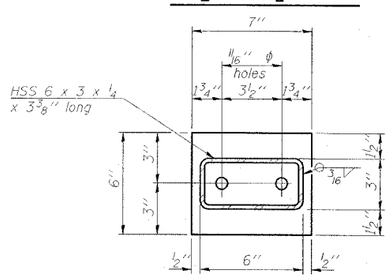
END OF RAIL DETAILS



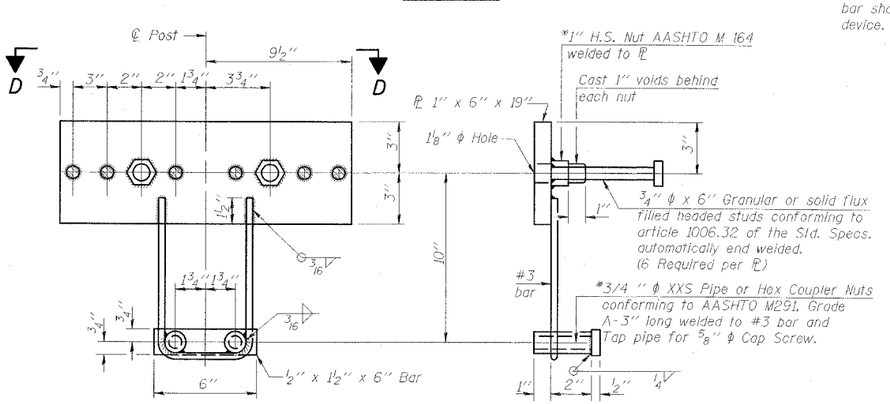
SECTION C-C



Pl 1/2" x 11 1/2" x 5"



Pl 1/2" x 7" x 6"



ANCHOR DEVICE

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

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 Railing, 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.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	196

STEEL RAILING, TYPE SM
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

ESCA CONSULTANTS, INC.

DESIGNED BY:	JWS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

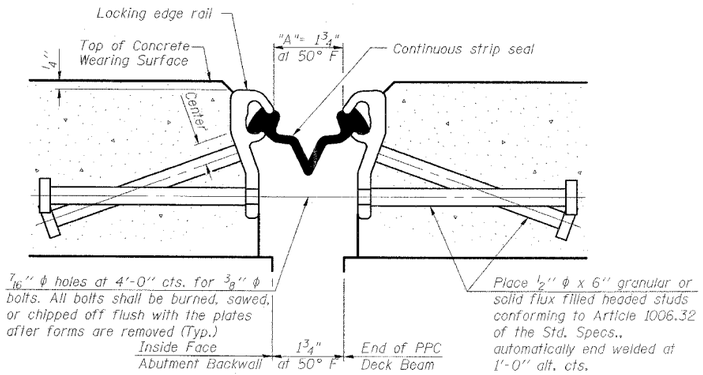
R-34CWS 9-3-07 (6'-3" Maximum Post Spacing) (5" minimum to 7 1/8" maximum CWS thickness)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	35
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AED		

SHEET NO. 13
18 SHEETS

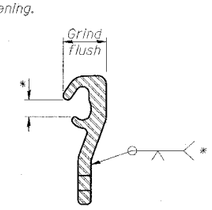
78031



SECTION THRU STRIP SEAL JOINT
FOR OVERLAY OVER DECK BEAMS

* Omit weld at seal opening.

LOCKING EDGE RAIL



LOCKING EDGE RAIL SPLICE

GENERAL 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.

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.

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

BILL OF MATERIAL

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	39

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

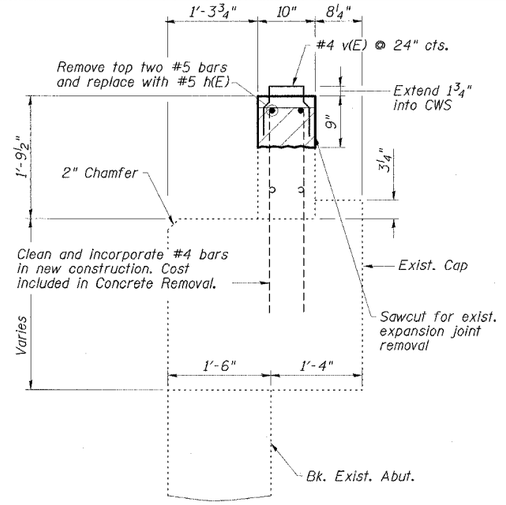
STRIP SEAL EXPANSION JOINT
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	36
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

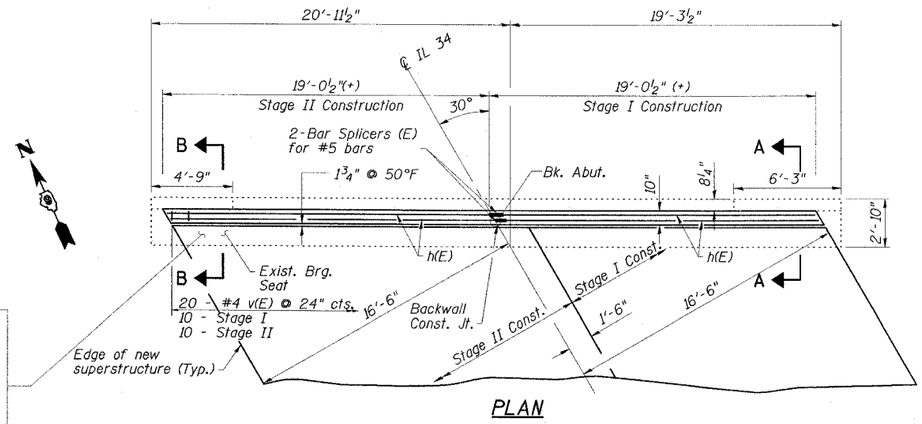
SHEET NO. 14
18 SHEETS

78031

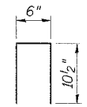


SECTION A-A

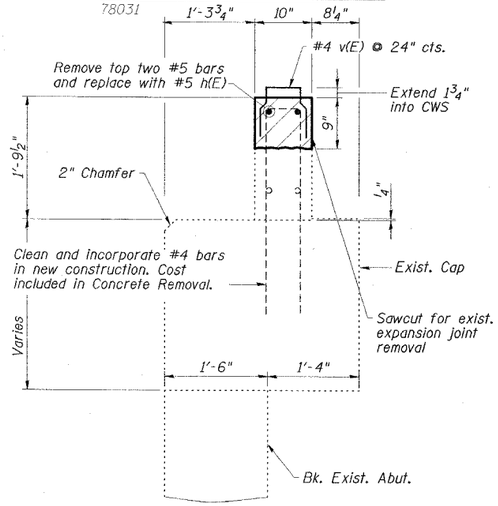
EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.



PLAN



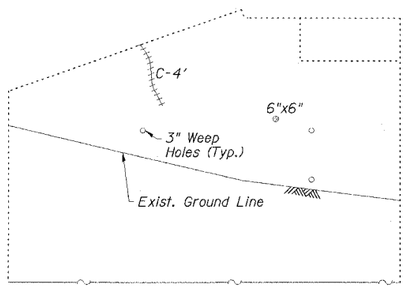
BAR v(E)



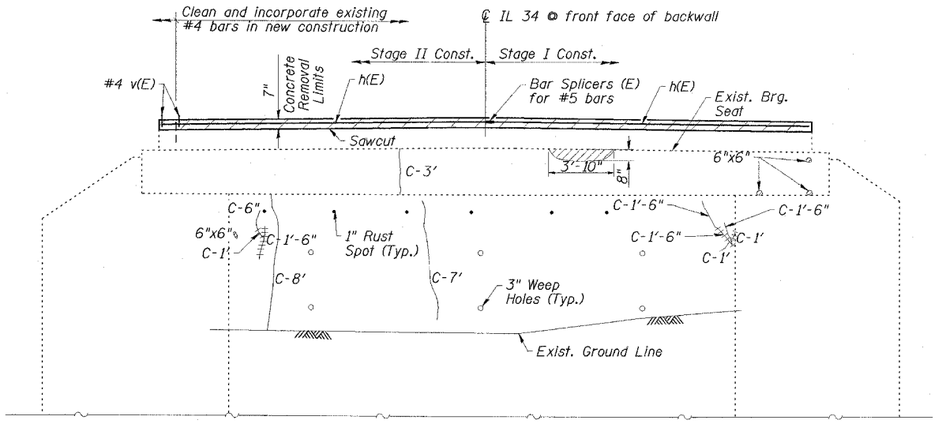
SECTION B-B

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#5	18'-8"	———
v(E)	20	#4	2'-3"	⊓
Concrete Sealer			Sq. Ft.	45
Epoxy Crack Injection			Foot	71
Structural Repair of Concrete (Depth Equal to or Less Than 5")			Sq. Ft.	19
Concrete Removal			Cu. Yd	0.9
Concrete Structures			Cu. Yd.	0.9
Reinforcement Bars, Epoxy Coated			Pound	110
Asbestos Bearing Pad Removal			Each	22
Bar Splicers			Each	2

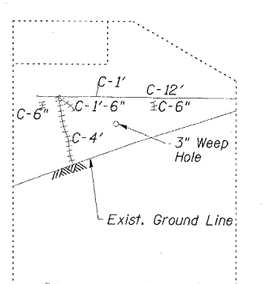


NORTHWEST WINGWALL



ELEVATION

NOTE: ABUTMENT CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-17-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.



NORTHEAST WINGWALL

REPAIR LEGEND

Inspection Date: 12/17/07

- C-6' — Crack to be epoxy injected
- Delaminated or Spalled Area - Use Structural Repair of Concrete
- Efflorescent Crack
- Rust Spot

NORTH ABUTMENT
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

ESCA CONSULTANTS, INC.

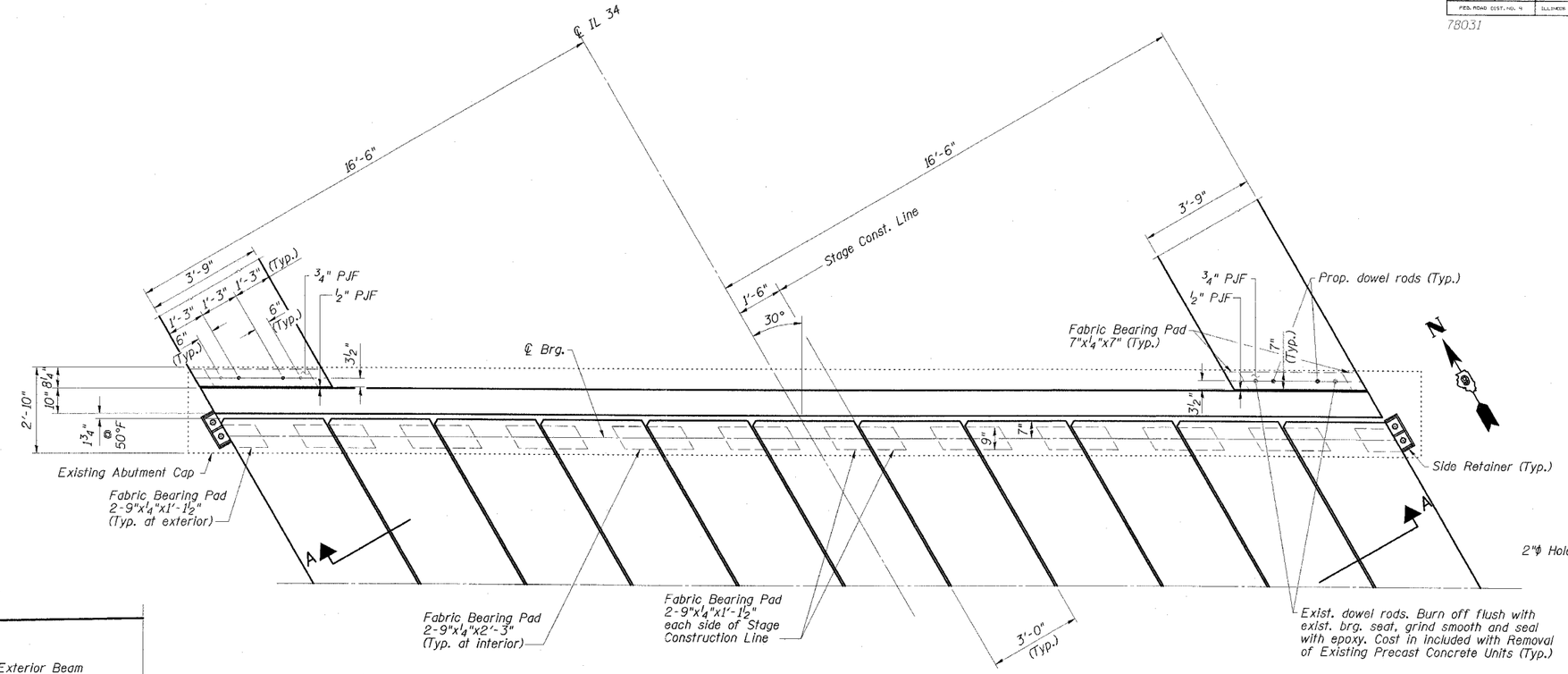
DESIGNED BY:	JWS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	37
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT: AID		

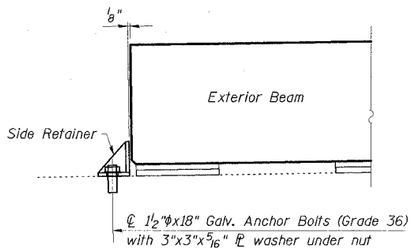
SHEET NO. 15
18 SHEETS

78031



ABUTMENT BEARING SEAT PLAN

(Concrete Wearing Surface and approach pavement not shown)



EXTERIOR BEAM RETAINER DETAILS

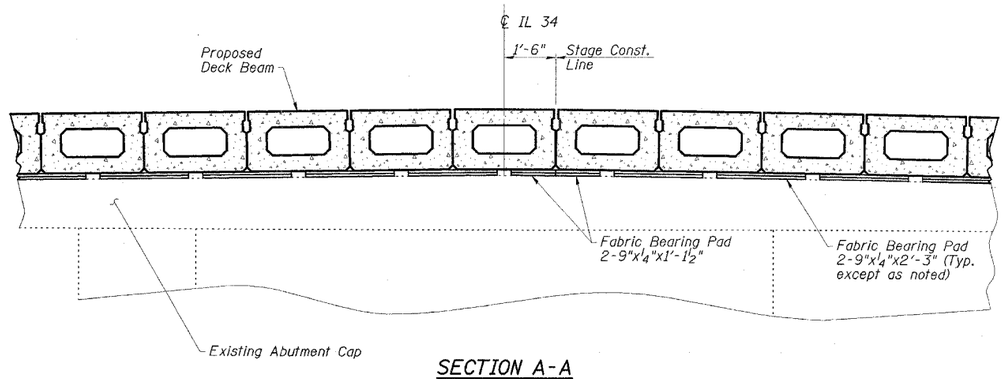
(2 Required)

Cost of Retainer Angles, Anchor Bolts & accessories are included with Precast Prestressed Concrete Deck Beams.

Fill ⅛" gap with shim ℄ to provide temporary lateral support until shear keys have been grouted and concrete wearing surface has been placed.

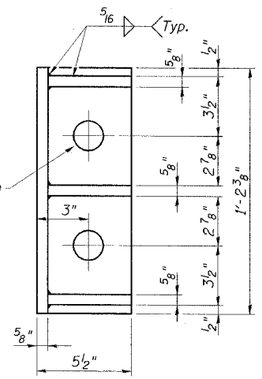
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

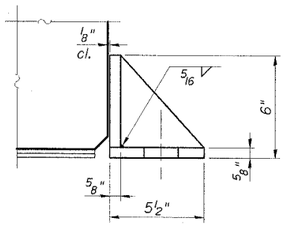
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.



SECTION A-A

(Concrete Wearing Surface not shown)





SIDE RETAINER

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

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

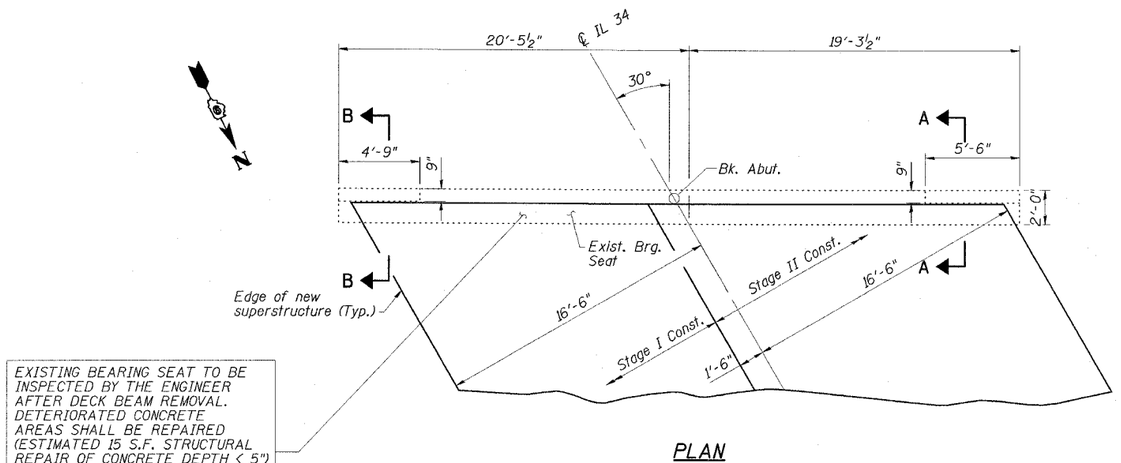
NORTH ABUTMENT DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	38
FED. HIGHWAY DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

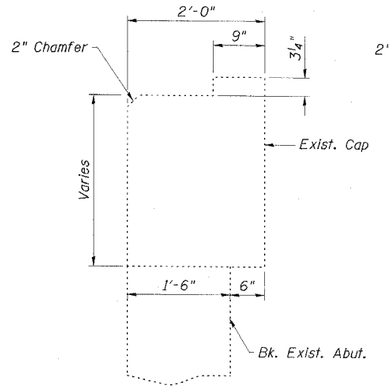
SHEET NO. 16
18 SHEETS

78031

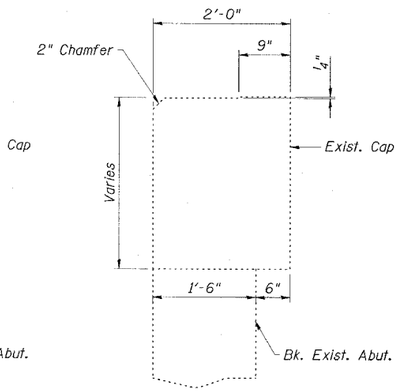


PLAN

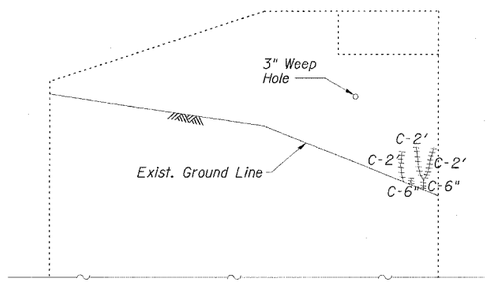
EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.



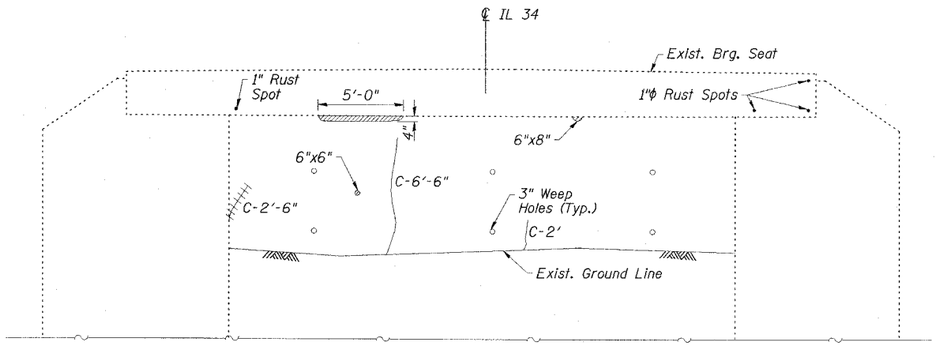
SECTION A-A



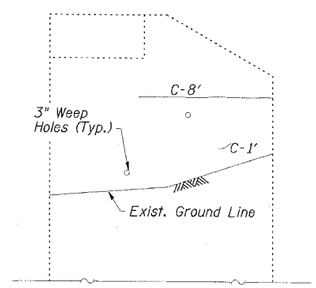
SECTION B-B



SOUTHEAST WINGWALL



ELEVATION



SOUTHWEST WINGWALL

NOTE: ABUTMENT CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-17-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

SOUTH ABUTMENT BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Sealer	Sq. Ft.	15
Epoxy Crack Injection	Foot	47
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	18

REPAIR LEGEND

Inspection Date: 12/17/07

- C-6' — Crack to be epoxy injected
- Delaminated or Spalled Area - Use Structural Repair of Concrete
- Efflorescent Crack
- Rust Spot

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

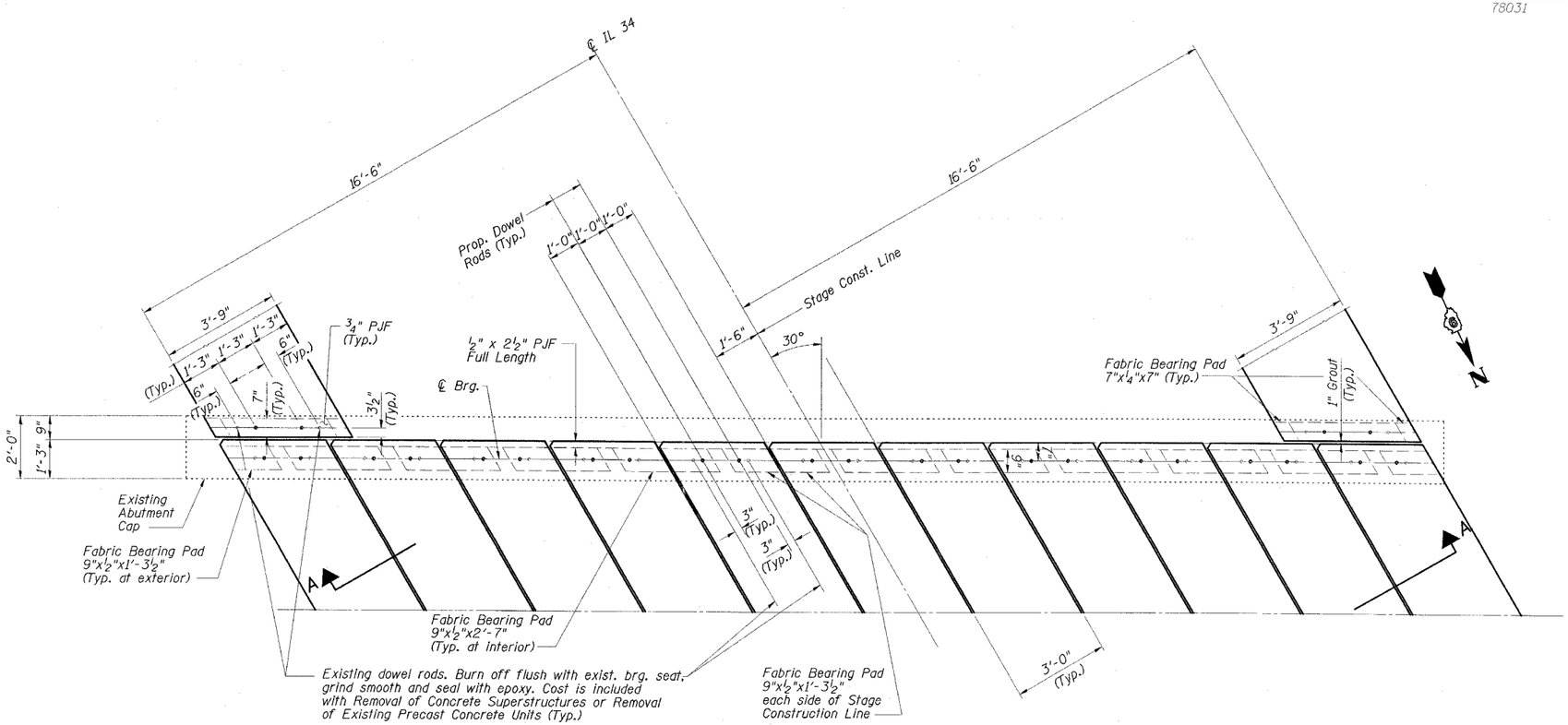
SOUTH ABUTMENT
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

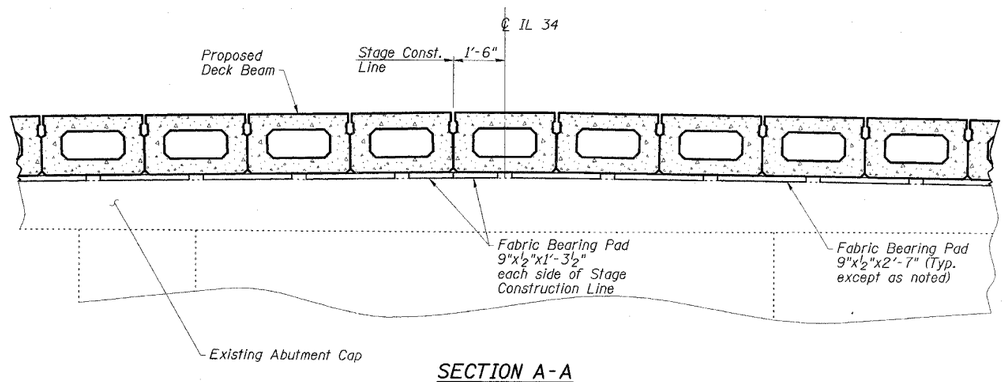
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	39
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 17
18 SHEETS

78031



ABUTMENT BEARING SEAT PLAN
(Concrete Wearing Surface and approach pavement not shown)



SECTION A-A
(Concrete Wearing Surface not shown)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

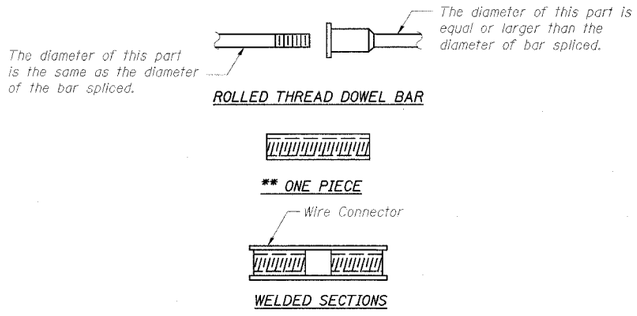
SOUTH ABUTMENT DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-1	SALINE	118	40
FED. ROAD DIST. NO. 4		ILLINOIS	FED. AID PROJECT- AGD	

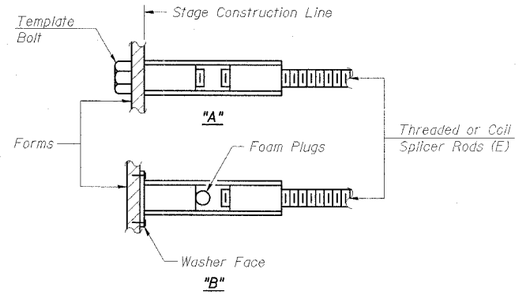
SHEET NO. 18
18 SHEETS

78031



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:

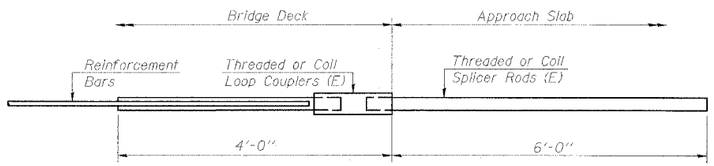
① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

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

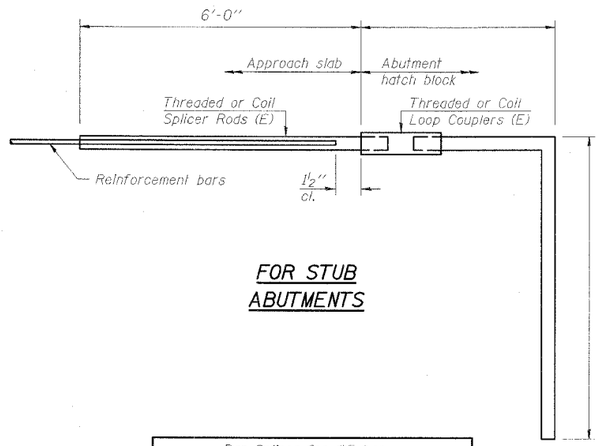
BAR SPLICER ASSEMBLIES

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



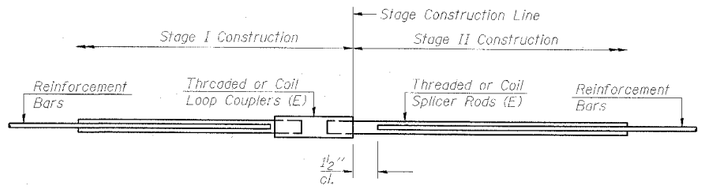
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 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	58	Concrete Wearing Surface
#5	2	North Abutment

BAR SPLICER ASSEMBLY DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-1
SALINE COUNTY
STATION 1542+00.00
STRUCTURE NO. 083-0037

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

BSD-1 11-1-06

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	41
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

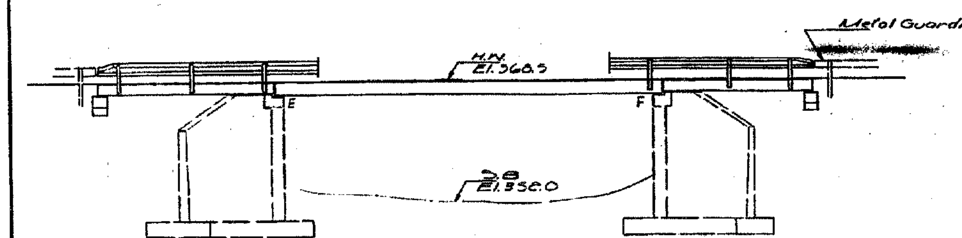
BM-Spike & Washer in Root 28" Twin Oak 47' Rt. Sta.1542+08 El. 359.10
Exist Structure-Built in 1938 as SBI Rte.143, Sec.105B Sta.1542+00
Superstructure-RC Deck Girder Substructure-RC closed Abuts.
Superstructure to be removed, abuts. widened and new deck constructed utilizing Stage Construction. No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

*105(B-DR, B-DR-1, B-DR-2, B-DR-3, B-DR-4)

143	*	SALINE	68	10

SHEET NO. 1
9 SHEETS

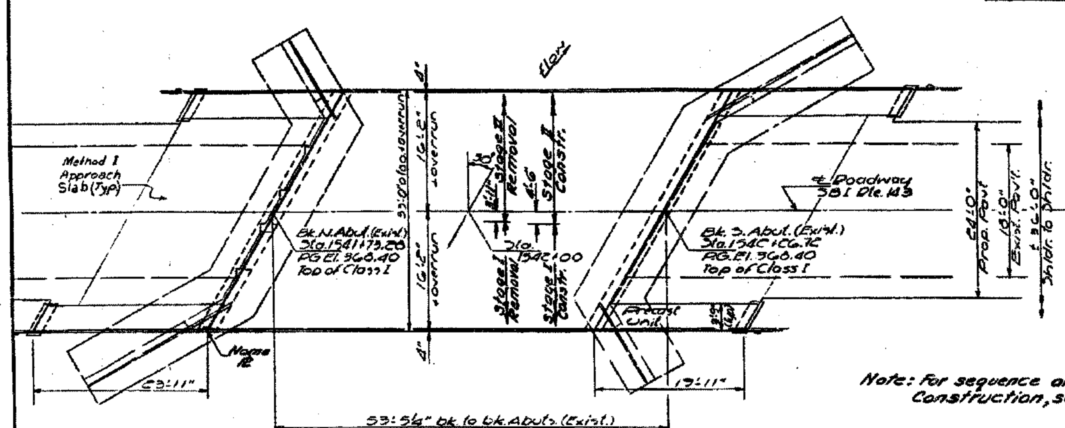


ELEVATION

STATION 1542+00
REBUILT 19 BY
STATE OF ILLINOIS
FA RTE 126 SPR SEC.105B-DR
FA PROJ. RF-375(10)
LOADING HS20

NAME PLATE
See Std. 2113

N



PLAN

Note: For sequence and details of Stage Construction, see sheet #4

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

All structural steel shall be shop painted with two coats of basic lead silico chromate paint.

Expansion bolts shall consist of self drilling expansion anchors and ¾"ϕ x 12" hooked bolts.

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

Hooked bolts shall extend a minimum of 12" into new concrete except as otherwise shown.

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners.

Expansion guards which are not cast in the precast unit shall be fabricated and erected in accordance with Article 503.07(E) in the Standard Specifications and are included in the quanity of structural steel.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Concrete Removal	Cu.Yds.		10	10
Expansion Bolts (¾"ϕ)	Ea.		40	40
Class X Concrete	Cu.Yds.	2.7	21.1	23.8
Precast Concrete Bridge Slab	Sq.Ft.	330		330
Precast Prestr. Conc. Deck Bm.(21")	Sq.Ft.	1738		1738
Reinforcement Bars	Lbs.	120	2810	2930
Structural Steel	Lbs.	2670		2670
Removal of Existing Superstructure	Ea.	1		1
Steel Railing Type N	Lin.Ft.	195		195
* Waterproofing Membrane System	Sq.Yds.	204		204
Bit. Concrete Surface Course Cl. I	Tons	28		28
* Temporary Guardrail	Lin.Ft.	87.5		87.5
Name Plates	Ea.	1		1
Preformed Joint Sealer (2½")	Lin.Ft.	38		38
* Portland Cement Fairing Course	Lin.Ft.	527		527

* See Special Provisions

DESIGN STRESSES

FIELD UNITS
f'c=1000 psi
fs=20,000 psi-Reinf.
n=10

PRECAST UNITS
f'c=4500 psi
fc=1800 psi
fs=20,000 psi
n=8

PRECAST PRESTRESSED UNITS
f'c=5000 psi
f'ci=4000 psi
f's=270,000 psi - 7/16"ϕ Strands
fsi=188,300 - 7/16"ϕ Strands
Allow 25#/Sq.Ft. for future W.S.

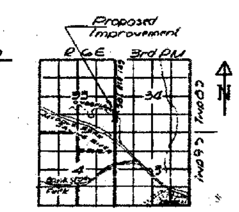
LOADING HS20-44

WATERWAY INFORMATION

Drainage Area -------- 103 Sq.Miles
Character -- rolling, clay, wooded, cultivated
Present Opening ---------- 2220 Sq.Ft.
Required Opening ---------- 2220 Sq.Ft.
Proposed Opening -
Overflow Struct.@ Sta.1542+00 -- 577 Sq.Ft.
Saline River @ Sta.1561+70 -- 1143 Sq.Ft.
Part of overflow Struct.@ Sta.1574+00 -- 362 Sq.Ft.
12'x11'-6" Box Culvert ------ 138 Sq.Ft.
Q(50) = 8550 cfs

DESIGNED	John A. Morris	
CHECKED	Prakash S. Li	
DRAWN		
CHECKED	PSL	JAM

September 1971
EXAMINED
PASSED
APPROVED
ENGINEER OF BRIDGES
DIRECTOR OF HIGHWAYS



LOCATION SKETCH

GENERAL PLAN & ELEVATION
FA Route 126 Spur OVER
MIDDLE FORK SALINE RIVER
OVERFLOW
FA ROUTE 126 SPUR
SECTION 105B-DR
SALINE COUNTY
STATION 1542+00

Rev. 2-20-71 STD & E.N.
16.30
Revised 9-19-75

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

ESCA CONSULTANTS, INC.
CIVIL · STRUCTURAL · ENVIRONMENTAL
TRANSPORTATION · SURVEYING

CONTRACT NO. 78031

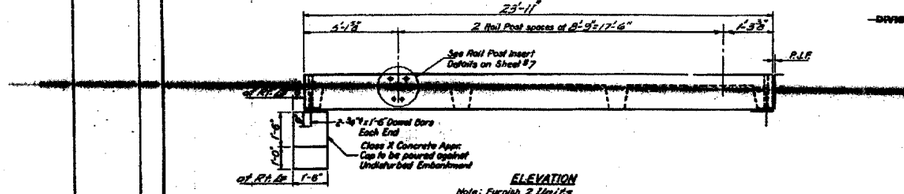
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	42
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*105(8-DR, 8-DR-1, 8-DR-2, 8-DR-3, 8-DR-4)

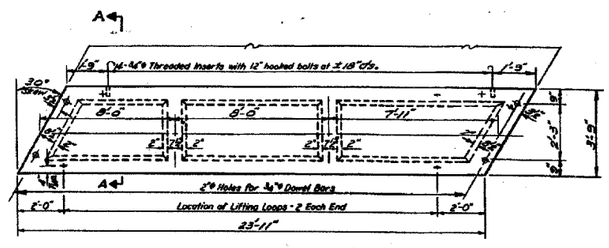
STATE OF ILLINOIS
DIVISION OF HIGHWAYS

143	*	SALINE	68	11

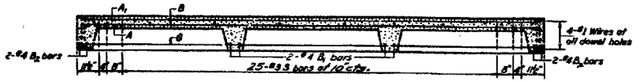
SHEET NO. 2 OF 9 SHEETS



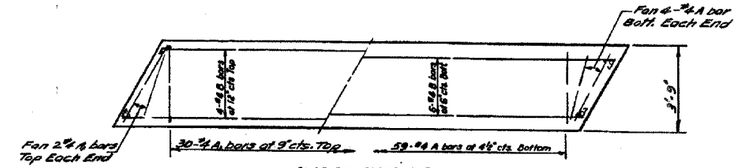
ELEVATION
Note: Furnish 2 Units



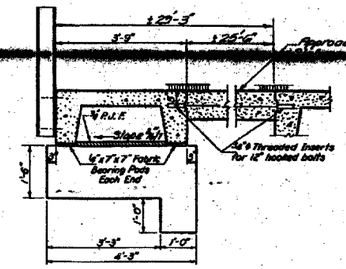
PARTIAL PLAN OF APPROACH



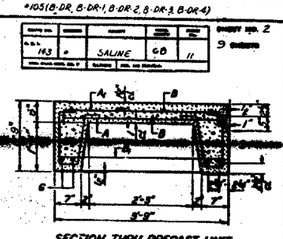
LONGITUDINAL SECTION



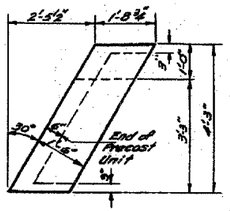
SLAB REINFORCEMENT



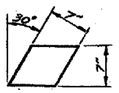
SECTION A-A



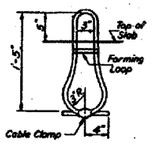
SECTION THRU PRECAST UNIT



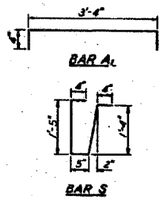
PLAN-APPR. CAP



FABRIC BRG. PAD



LIFTING LOOP DETAIL



BAR A1

BAR S

BAR LIST - ONE UNIT
Reinforcement to be cast into slab

Bar	No.	Size	Length	Shape
A	47	6	4'-0"	
A1	34	6	2'-6"	
B	10	6	23'-8"	
B1	3	6	24'-0"	
B2	3	6	24'-1"	
C	4	6/10	23'-8"	
S	58	6	5'-10"	

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be ¾", 6 x 19 class wire rope with fiber core and shall have a minimum ultimate strength of 15,700 lbs. Loops shall be burned off after slab has been erected. Holes shall be drilled and anchor sleeves grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor sleeves and ¾"ø bolted bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

TWO UNITS
BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	190
Class X Concrete	Cu. Yds.	0.9

STRESSES
fc = 4,500 psi.
Fc = 1,800 psi.
Fs = 20,000 psi.
n = 8
LOADING HS-20

APPROACH DETAILS
S.B.I. RT. 143 SEC. 105 B-DR
SALINE COUNTY
STATION 154+2.00

DESIGNED	John A. Morris	
CHECKED	Richard S. Lis	LH
DRAWN	PSL	
CHECKED		JAM
EXAMINED		
PASSED		
APPROVED		

AP-4 (20 Precast Appr. Unit (Rt. L) (5-15-71)

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

CONTRACT NO. 78031

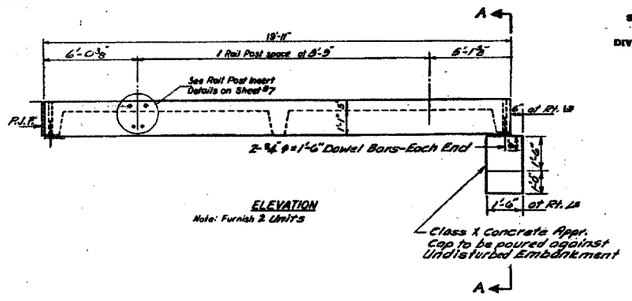
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	43
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DIVISION OF HIGHWAYS

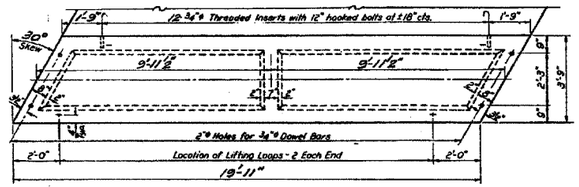
*105 (B-DR, B-DR-1, B-DR-2, B-DR-3, B-DR-4)

SECTION NO.	DISTRICT	COUNTY	ROUTE	SHEET NO.
143	9	SALINE	68	12

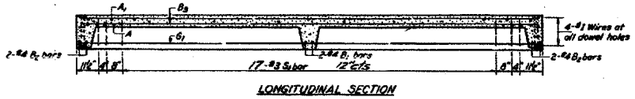
SHEET NO. 3 OF 9 SHEETS



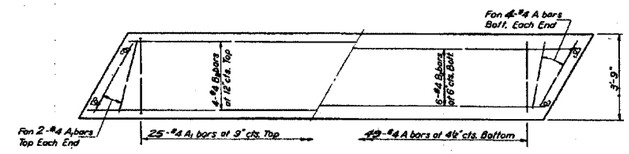
ELEVATION
Note: Furnish 2 Units



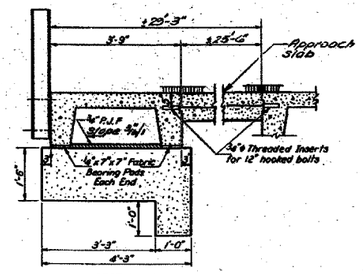
PARTIAL PLAN OF APPROACH



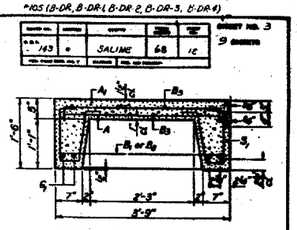
LONGITUDINAL SECTION



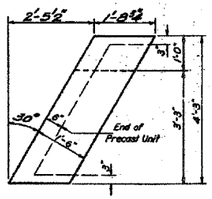
SLAB REINFORCEMENT



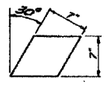
SECTION A-A



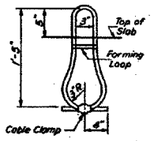
SECTION THRU PRECAST UNIT



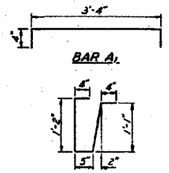
PLAN-APPR CAP



FABRIC BRG. PAD



LIFTING LOOP DETAIL



BAR A1

BAR S

BAR LIST - ONE UNIT
Reinforcement to be cast into slab

Bar	No	Size	Length	Shape
A1	51	#4	8'-9"	
A2	23	#4	6'-0"	
B1	2	#6	3'-5"	
B2	1	#6	2'-7"	
B3	10	#6	18'-8"	
G1	4	#10	19'-8"	
S1	42	#3	5'-4"	

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be 3/4", 6 x 19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor sleeves grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor sleeves and 3/4"ø hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

TWO UNITS
BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq Ft	150
Class X Concrete	Cu Yds	0.3

STRESSES
f'_c = 4,500 psi.
f_c = 1,800 psi.
f_s = 20,000 psi.
n = 8

LOADING HS-20

APPROACH DETAILS
SBI RT 143 SEC 105B-DR
SALINE COUNTY
STATION 1342+00

AP-3 20' Precast Appr. Unit (Skewed L.F.) (5-15-11)

DESIGNED	John A. Morris	
CHECKED	Richard S. Lee	
DRAWN	Leona Heeren PSL	JAM
CHECKED		

EXAMINED Sept 17, 19[illegible]
PASSED
APPROVED

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

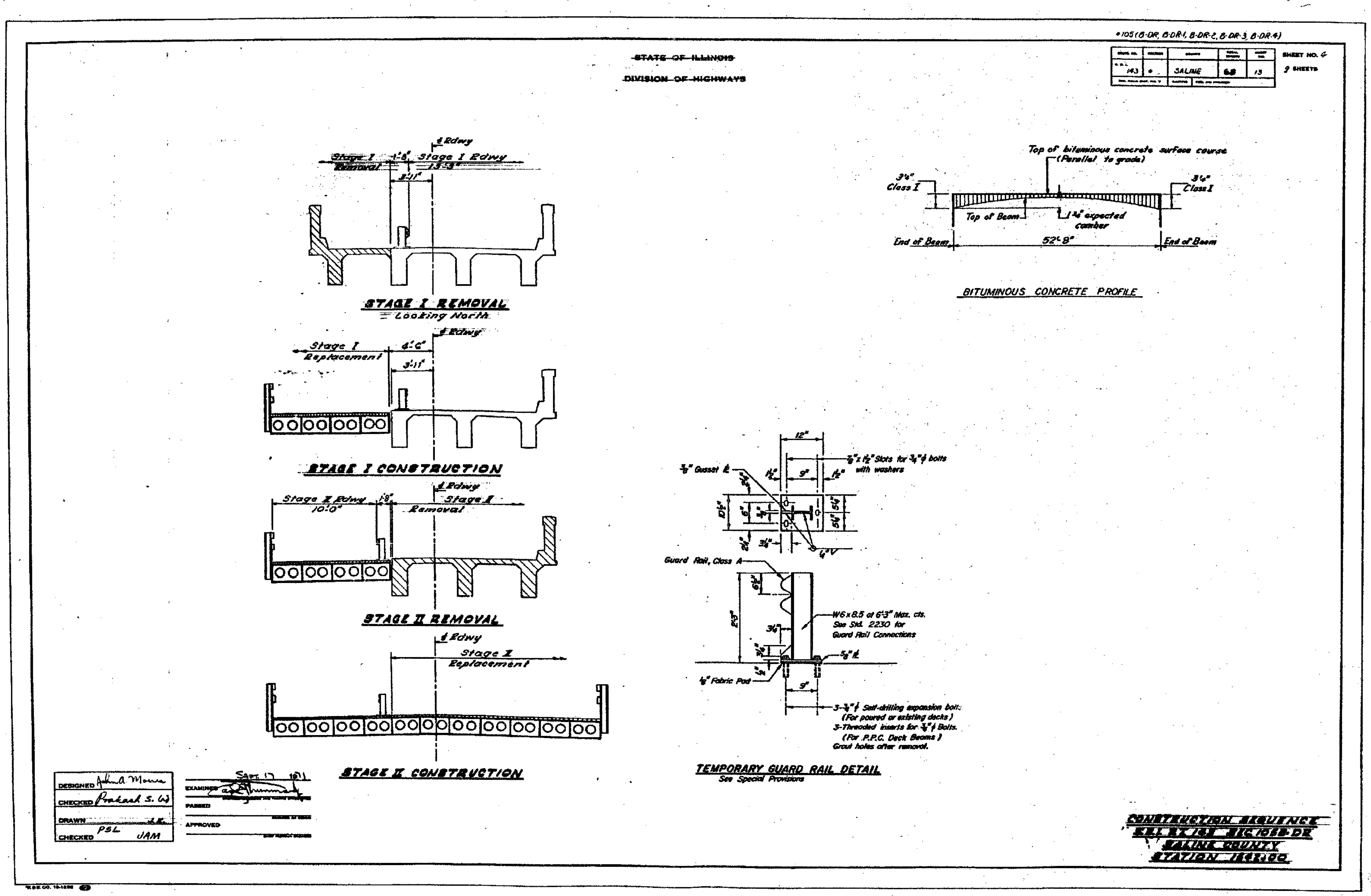
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	44

CONTRACT NO. 78031

STA. TO STA.

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

ESCA CONSULTANTS, INC.



ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

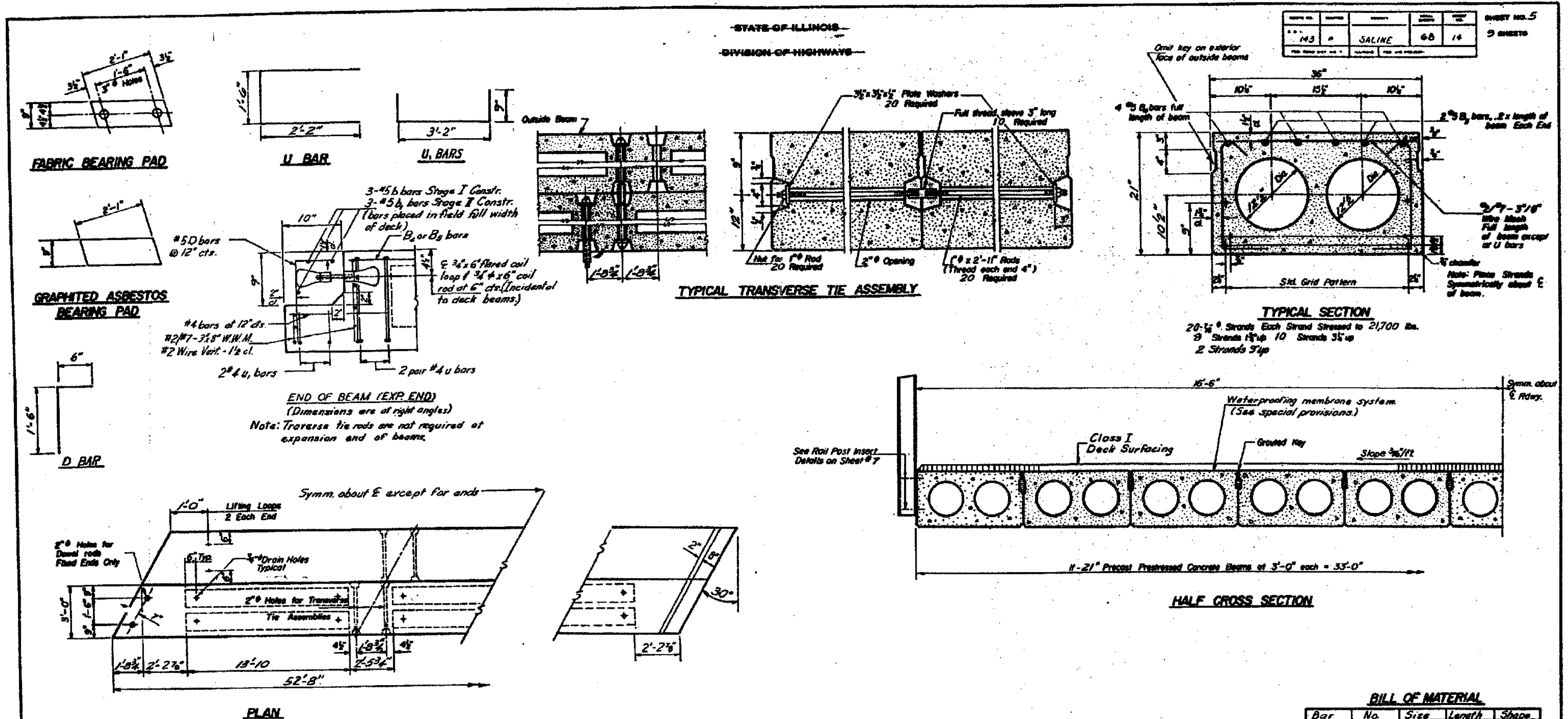
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	45

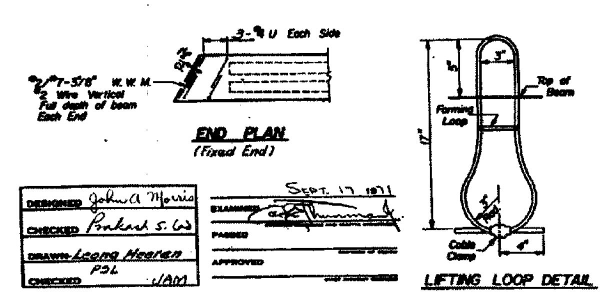
CONTRACT NO. 78031

STA. TO STA.

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

STATE OF ILLINOIS
DIVISION OF HIGHWAYS





GENERAL NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.115 sq. in.. Lifting loops shall be ⅝" diameter, 6x25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 3300 lbs.

The 1" Ø 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 beam shall be filled with grout after transverse tie assembly is in place.

Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar. After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.

Dowel rods shall be A.A.S.H.T.O. M227 or A.A.S.H.T.O. M31. Transverse tie rods shall be A.A.S.H.T.O. M227 Grade 70-80.

After fabrication the transverse tie assemblies (tie rods, nuts, washers and sleeves) shall be hot-dipped galvanized in accordance with A.A.S.H.T.O. Designation: M232.

Cost of reinforcement and accessories cast into the beam, of bearing pads, of dowel rods, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams."

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
b	3	#5	15'-0"	——
b_1	3	#5	24'-0"	——
Precast Prestressed Concrete Deck Beams			Sq. Ft.	1738
Reinforcement Bars			Lbs.	120
Class X Concrete			Cu. Yds.	0.9

SUPERSTRUCTURE
S.B.I. RT. 143 SEC. 105B-DR
SALINE COUNTY
STATION 1542+00

DESIGNED John A. Morris
CHECKED Prakash S.
DRAWN Leona Mearan
CHECKED PSL JAM
EXAMINED SEPT. 17 1971

SR-2 (5-15-71)

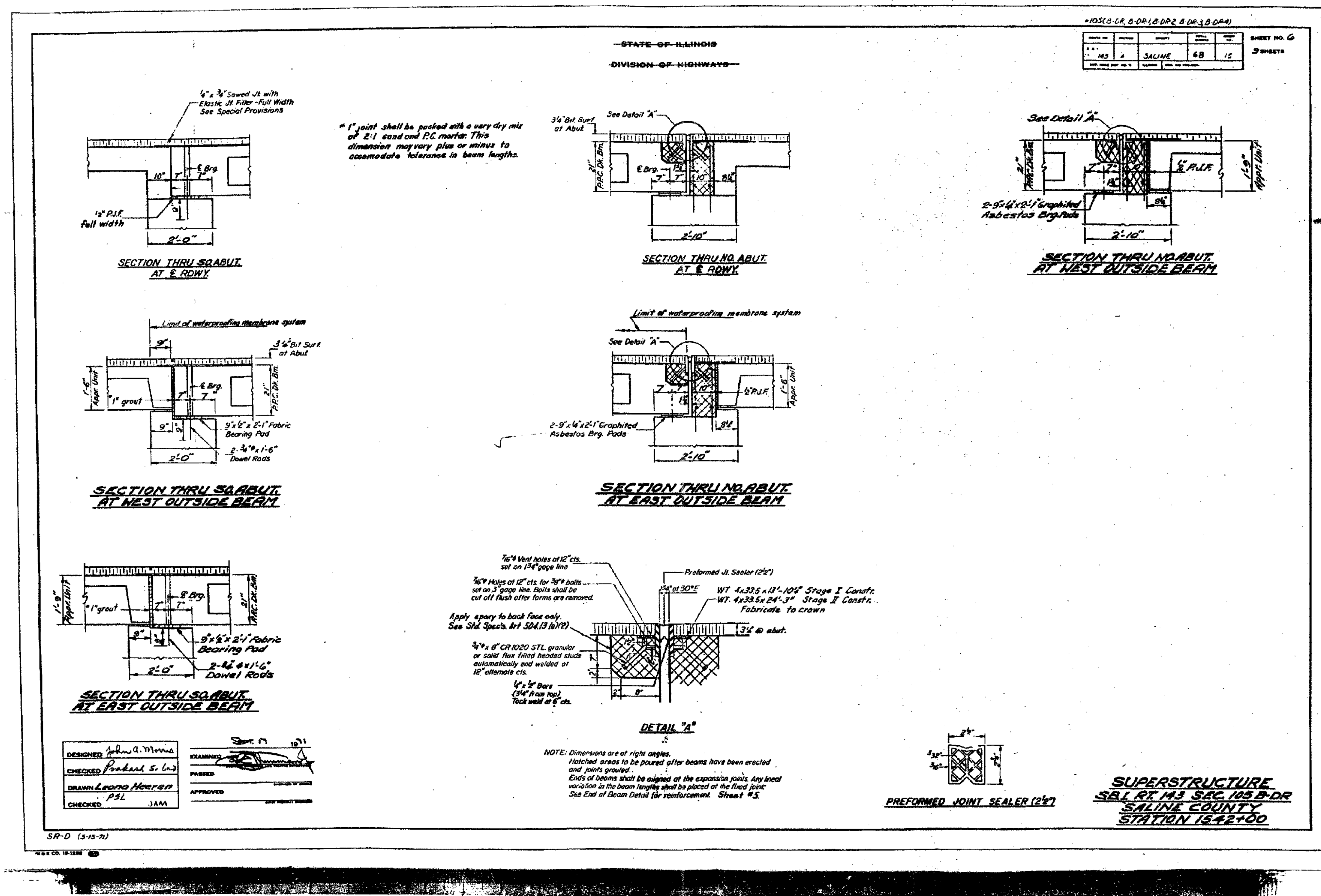
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	46

CONTRACT NO. 78031



EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

FOR INFORMATION ONLY

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	47
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

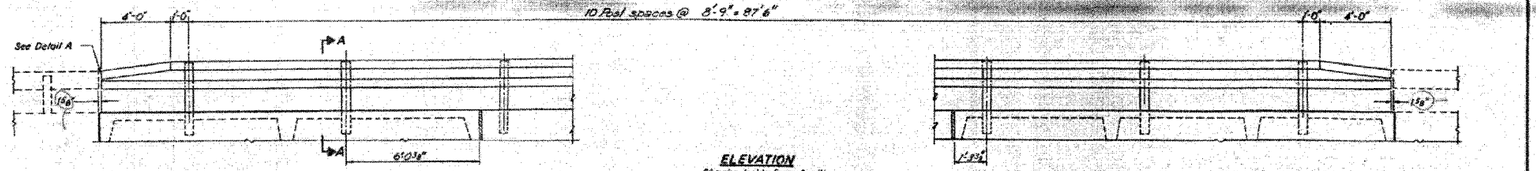
#105(B-DR, B-DR 1, B-DR 2, B-DR 3, B-DR 4)

			TOTAL SHEETS	SHEET NO.
A.B.S. 1-143	*	SALINE	68	16

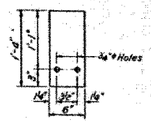
DIST NO. 7
9 SHEETS

STATE OF ILLINOIS
DIVISION OF HIGHWAYS

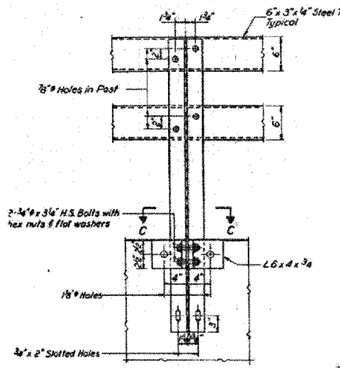
10 Rail spaces @ 8'-9" = 87'-6"



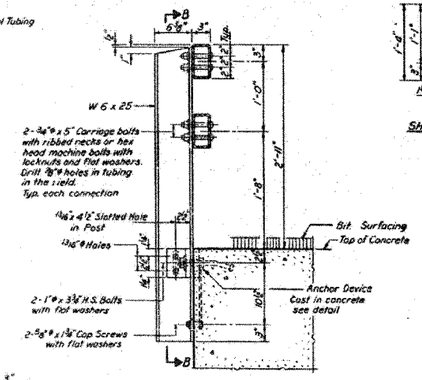
ELEVATION
Showing inside face of railing



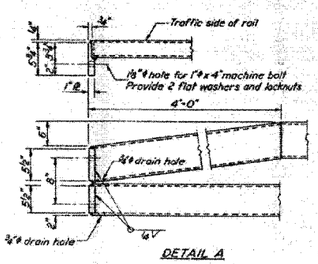
SHIM DETAIL



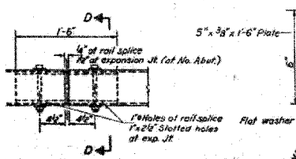
SECTION B-B



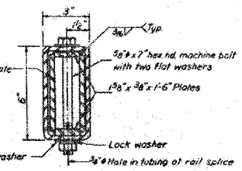
SECTION A-A



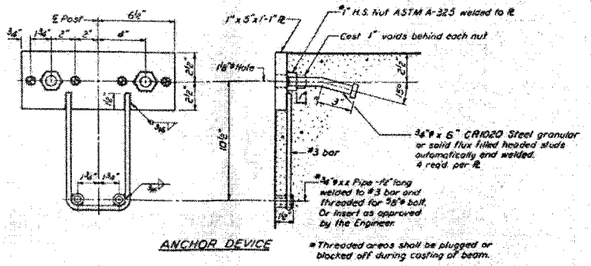
DETAIL A



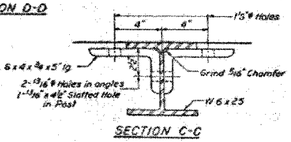
RAIL SPLICE



SECTION D-D



ANCHOR DEVICE



SECTION C-C

NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-501 "Hot Formed Welded and Seamless Carbon Steel Structural Tubing."

All other steel shapes and plates shall conform to the requirements of ASTM designation A-36 except posts shall conform to ASTM A-441.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to ASTM designation A-325.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with ASTM designation A-153.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with ASTM designation A-123 and A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per linear foot for STEEL RAILING, TYPE N.

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place 6" Fabric bearing pad between the post and concrete.

The 3/4"ø high strength bolts used to connect the 6 x 6 x 3/4 angles to the post shall be tightened in accordance with Article 710.11 of the Standard Specifications. The 1"ø high strength bolts connecting the angles to the concrete beam shall be tightened to a snug fit and given an additional 1/2 turn.

For multi-span bridges, sufficient 1/4" x 6" x 1'-4" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

BILL OF MATERIAL

Item	Unit	Quantity
STEEL RAILING, TYPE N	Lin. Ft.	19.5

TYPE N
STEEL RAILING
S.B.I. RT. 169 SEC. 105B-DR
SALINE COUNTY
STATION 1342+00

DESIGNED	John A. Williams	
CHECKED	Richard S. Lee	
DRAWN	FAC	
CHECKED		
EXAMINED	Sept 17, 1971	
PASSED		
APPROVED		

(9'-0" Max. Post Spacing)

R-2 (8-19-71)

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

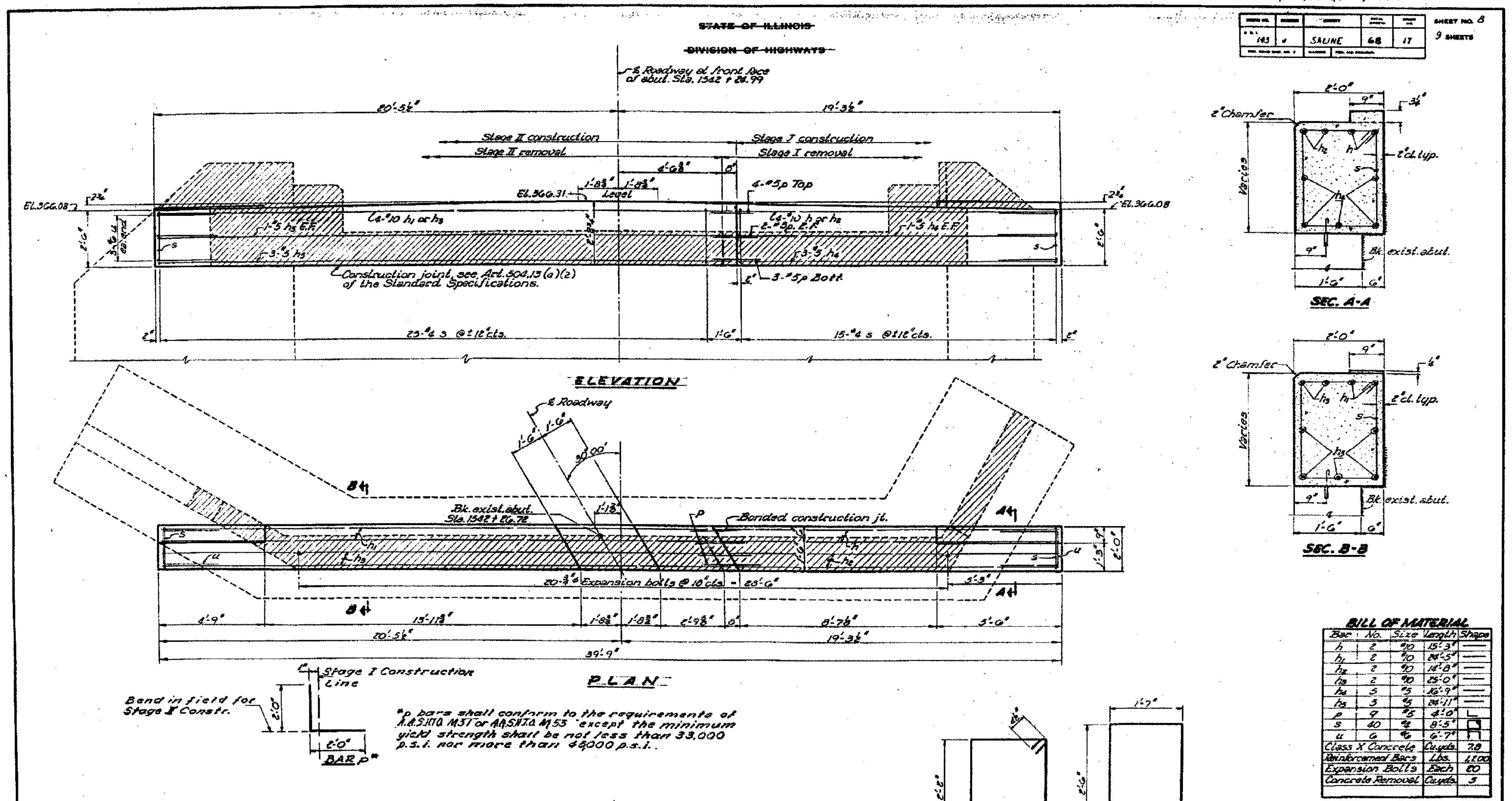
EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	48

CONTRACT NO. 78031

STA. | TO STA.

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



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	2	#10	15'-3"	—
h_1	2	#10	24'-5"	—
h_2	2	#10	14'-8"	—
h_3	2	#10	25'-0"	—
h_4	5	#5	16'-9"	—
h_5	5	#5	24'-11"	—
p	9	#5	4'-0"	L
s	40	#4	8'-5"	
u	6	#6	6'-7"	
Class X Concrete			Cu.yds.	7.8
Reinforcement Bars			Lbs.	1,100
Expansion Bolts			Each	20
Concrete Removal			Cu.yds.	5

*p bars shall conform to the requirements of A.A.S.H.O. M31 or A.A.S.H.O. M53 except the minimum yield strength shall be not less than 33,000 p.s.i. nor more than 45,000 p.s.i.

Notes-

Hatched area indicates concrete removal.

Reinforcement extending into removed area shall be cleaned and incorporated into new construction.

Expansion bolts shall be anchored in sound concrete.

All edges shall have standard ¾" chamfers except as noted.

Concrete to be poured against undisturbed earth embankment.

DESIGNED John A. Morris
CHECKED Ponkard S. W.
DRAWN J. Mullenix
CHECKED PSL JAM

EXAMINED
PASSED
APPROVED
Sept. 17 1971

SOUTH ABUTMENT
S.B.I. RT. 143 SEC. 105 B-DR
SALINE COUNTY
STATION 1542+00

ESCA CONSULTANTS, INC.

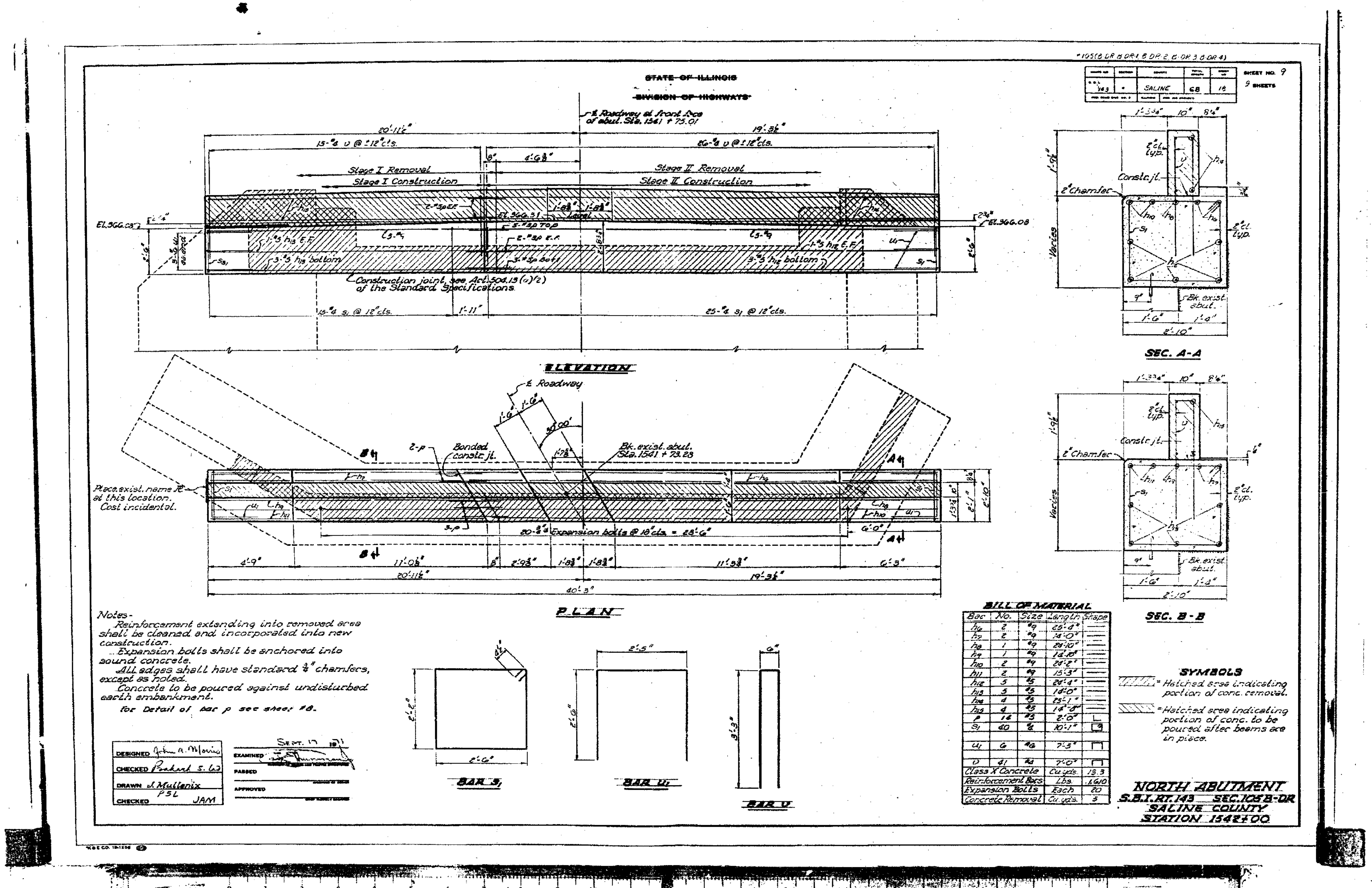
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	49
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_6	2	#9	25'-4"	—
h_7	2	#9	14'-0"	—
h_8	1	#9	28'-10"	—
h_9	1	#9	14'-10"	—
h_{10}	2	#9	24'-2"	—
h_{11}	2	#9	15'-3"	—
h_{12}	5	#5	24'-4"	—
h_{13}	5	#5	14'-0"	—
h_{14}	4	#5	25'-1"	—
h_{15}	4	#5	14'-8"	—
p	14	#5	2'-0"	L
s_1	40	#4	10'-1"	▭
u_1	6	#6	7'-5"	⊓
v	41	#4	7'-0"	⊓
Class X Concrete		Cu. yds.	13.3	
Reinforcement Bars		Lbs.	1,610	
Expansion Bolts		Each	20	
Concrete Removal		Cu. yds.	5	

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-1
SALINE COUNTY

BENCHMARK: Chiseled Square in top of southwest wingwall of SN 083-0038, Sta. 1562+35.00, 17.5' Rt., Elev. 366.31.

EXISTING STRUCTURE: SN 083-0038 was originally built in 1932 as S.B.I. Rte. 143, Section 105BC at Sta. 1561+70. The superstructure was replaced in 1972 and precast concrete bridge slabs were utilized to widen the approaches. The superstructure consists of three spans. The outer spans, Spans 1 & 3, consist of 21"x36" PPC deck beams. The interior span, Span 2 consists of 27"x36" PPC deck beams. The substructure consists of two reinforced concrete closed abutments and two reinforced concrete piers on timber piles. The back-to-back abutments length is 155'-2½", the out-to-out width is 33'-0". The existing superstructure and the existing bridge approach shoulders shall be removed and replaced utilizing stage construction.

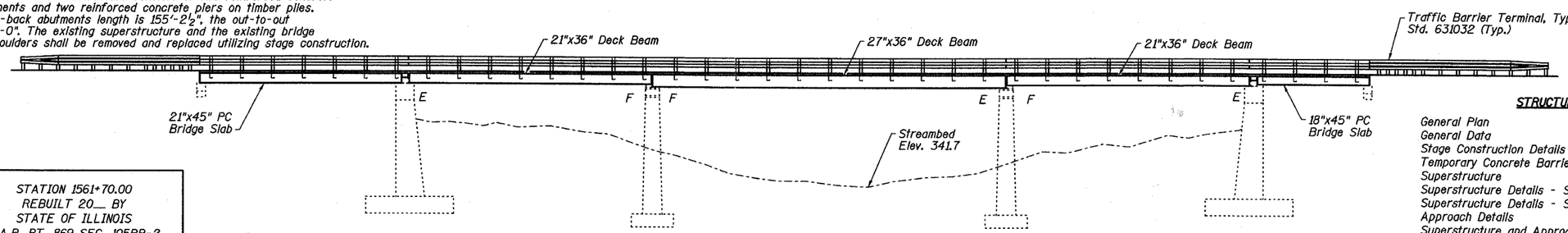
No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	50
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AGD		

SHEET NO. 1
23 SHEETS

78031

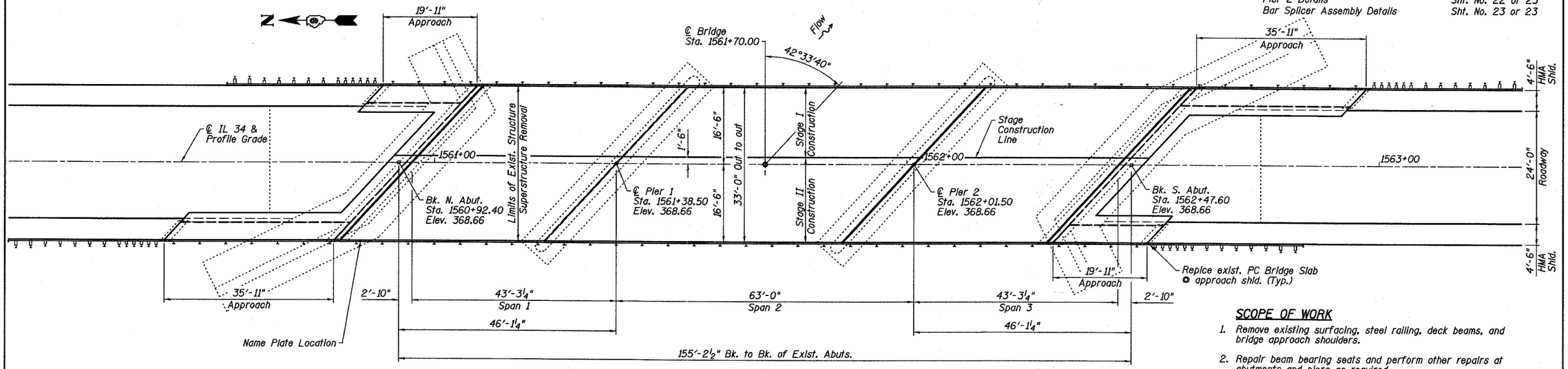


ELEVATION

STATION 1561+70.00
REBUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 869 SEC. 105BR-2
LOADING HS20
STR. NO. 083-0038

NAME PLATE
See Std. 515001

STRUCTURE INDEX OF SHEETS



PLAN

SCOPE OF WORK

1. Remove existing surfacing, steel railing, deck beams, and bridge approach shoulders.
2. Repair beam bearing seats and perform other repairs at abutments and piers as required.
3. Reconstruct a three-span PPCD beam superstructure with Concrete Wearing Surface and Steel Railing, Type SM. Reconstruct existing approach shoulders with Precast Concrete Bridge Slab with Concrete Wearing Surface and Steel Railing Type SM.

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

STATE OF ILLINOIS
RICHARD D. PAYNE
No. 4647
LICENSED STRUCTURAL ENGINEER
EXPIRES 11-30-08
R.D.P.
SIGNATURE
04/04/08
DATE

DESIGN SPECIFICATION
2002 AASHTO

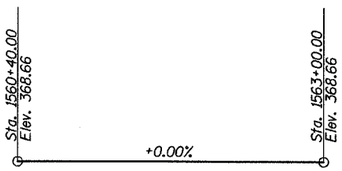
LOADING HS20-44
No allowance for future wearing surface

DESIGN STRESSES

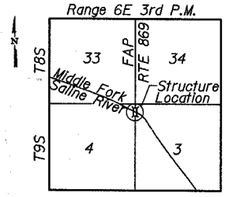
FIELD UNITS
f'c = 5,000 psi (Concrete Wearing Surface)
f'c = 3,500 psi (All concrete except CWS)
fy = 60,000 psi (reinf.)

PRECAST PRESTRESSED UNITS
f'c = 6,000 psi
f'ci = 5,000 psi
f's = 270,000 psi (½"ϕ low lax strands)
fsi = 201,960 psi (½"ϕ low lax strands)

PRECAST UNITS
f'c = 4,500 psi
fy = 60,000 psi (reinf.)



PROFILE GRADE
(Along ℄ Roadway)

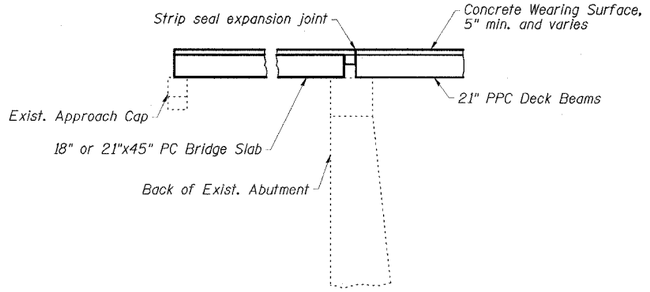


LOCATION SKETCH

GENERAL PLAN
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	KAH/HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08



SECTION THRU ABUTMENTS @ OUTSIDE BEAM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	51
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AED		

SHEET NO. 2
23 SHEETS

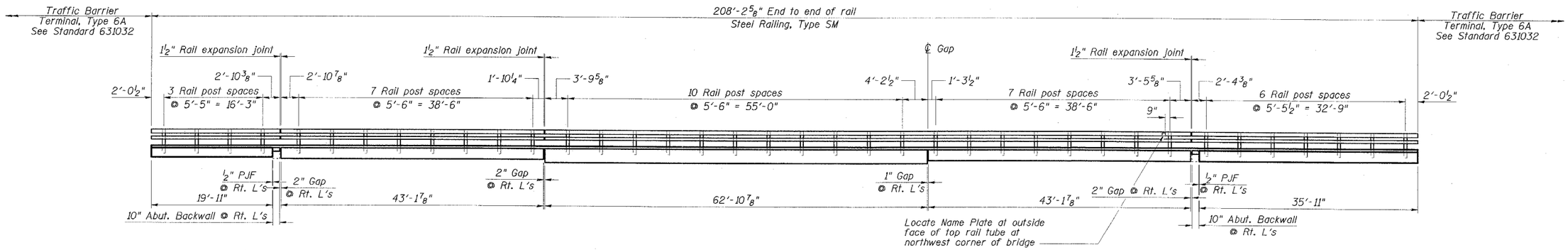
78031

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A706 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 bearing seats where Structural Repair of Concrete is performed and also to the front face of the new concrete backwalls.
4. All new structural steel shall be shop painted with an inorganic zinc rich primer per AASHTO M300 Type 1 unless noted otherwise.
5. Side Retainers shall be AASHTO M270 Grade 36 minimum.
6. No in-stream work will be allowed on this project.
7. 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.
8. If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the new or existing 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.
9. The minimum thickness of the concrete overlay shall be 5" and varies as required to adjust for the new profile grade and beam camber. Modify to meet field conditions as directed by the Engineer.
10. Repair of the substructure and removal of the existing expansion joints shall be completed prior to placement of the new deck beams. The cost of removing the existing expansion joints is included in Concrete Removal.
11. The existing expansion bearing pads contain asbestos. See Special Provisions for Asbestos Bearing Pad Removal.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures No. 2	Each	1	-	1
Bridge Deck Grooving	Sq. Yd.	595	-	595
Protective Coat	Sq. Yd.	641	-	641
Precast Concrete Bridge Slab	Sq. Ft.	420	-	420
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	2848	-	2848
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	2076	-	2076
Reinforcement Bars, Epoxy Coated	Pound	8020	260	8280
Bar Splicers	Each	155	4	159
Steel Railing, Type SM	Foot	418	-	418
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	135	-	135
Concrete Sealer	Sq. Ft.	-	142	142
Epoxy Crack Injection	Foot	-	302	302
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	-	89	89
Asbestos Bearing Pad Removal	Each	-	66	66
Concrete Wearing Surface, 5"	Sq. Yd.	641	-	641
Concrete Removal	Sq. Yd.	-	2.2	2.2
Concrete Structures	Sq. Yd.	-	2.2	2.2
Removal of Existing Precast Concrete Units	Sq. Ft.	420	-	420



See Sheet No. 14 of 23 for railing details.

RAILING ELEVATION

(Showing inside face of west railing; east railing similar)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

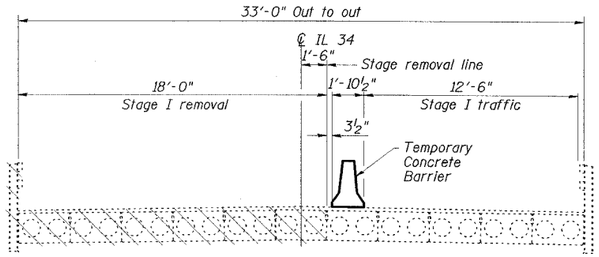
GENERAL DATA
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

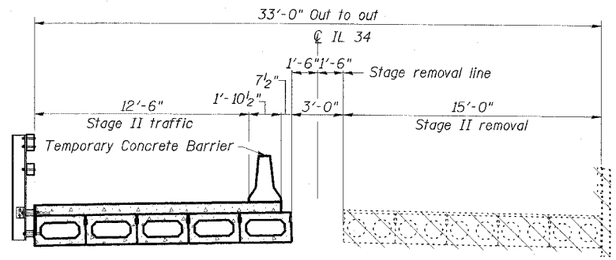
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	52
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 3
23 SHEETS

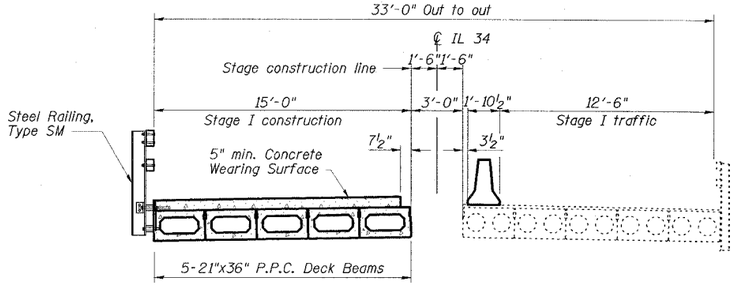
78031



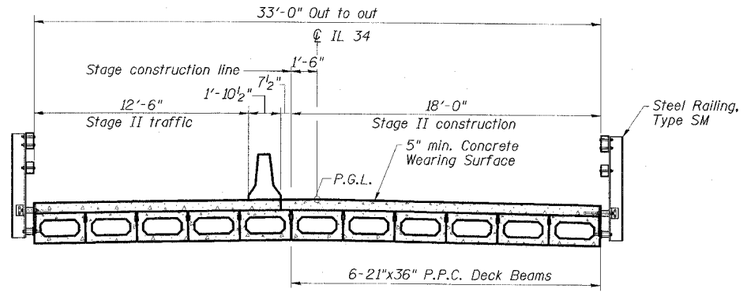
STAGE I REMOVAL



STAGE II REMOVAL



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

STAGE CONSTRUCTION NOTES

1. Beams from Spans 1 and 3 shown; Span 2 similar.
2. All staging sections are looking south.
3. See Sheet No. 5 of 23 for shear key clamping details.
4. For quantity of Temporary Concrete Barrier, see Roadway Plans.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

STAGE CONSTRUCTION DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

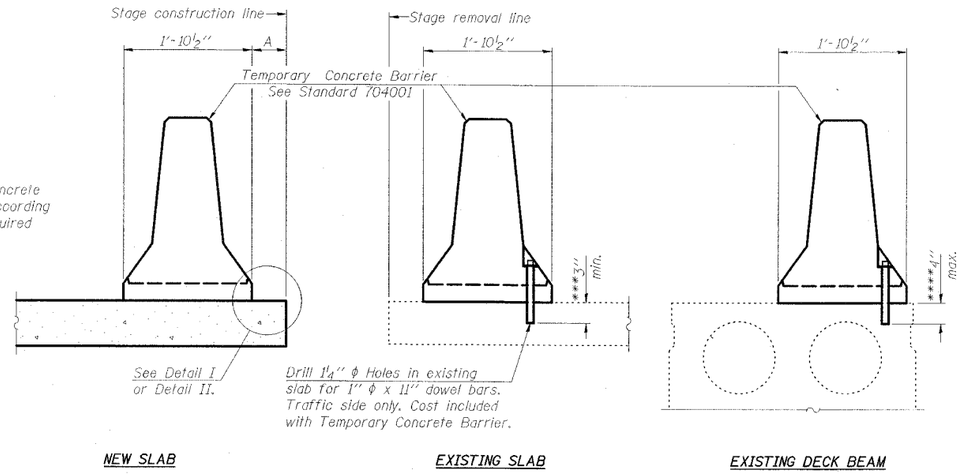
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	53
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 4
23 SHEETS

78031

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".



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℄ 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 ℄ to the concrete slab or concrete wearing surface with 2-⅝"ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

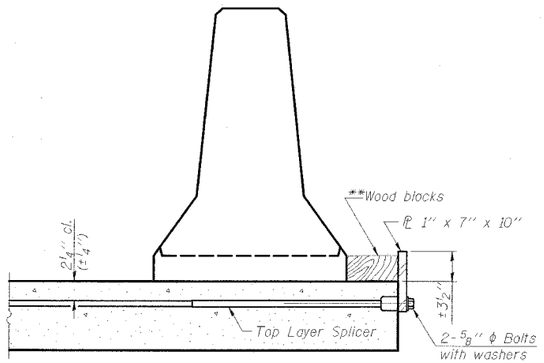
Cost of anchorage is included with Temporary Concrete Barrier.

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.

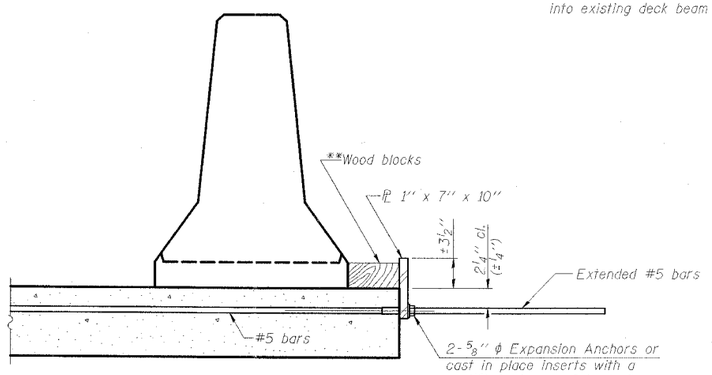
SECTIONS THRU SLAB OR DECK BEAM

***Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

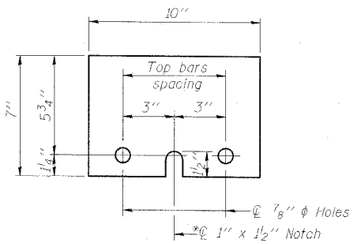


DETAIL I



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 ℄ 1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

R-27

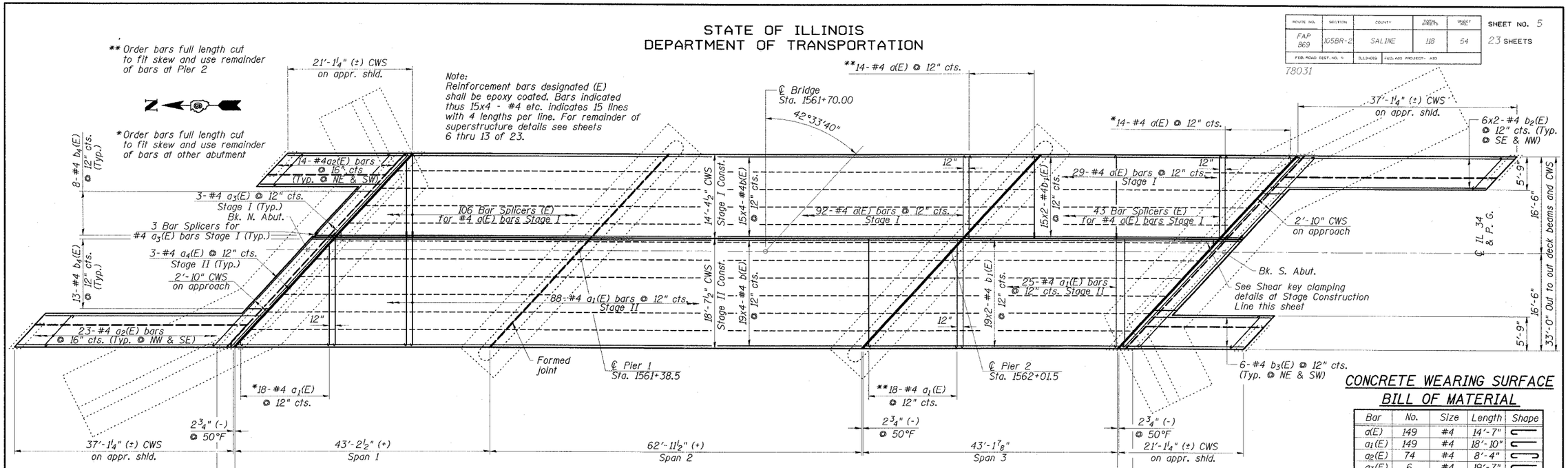
9-3-07

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	54
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- A30		

SHEET NO. 5
23 SHEETS

78031

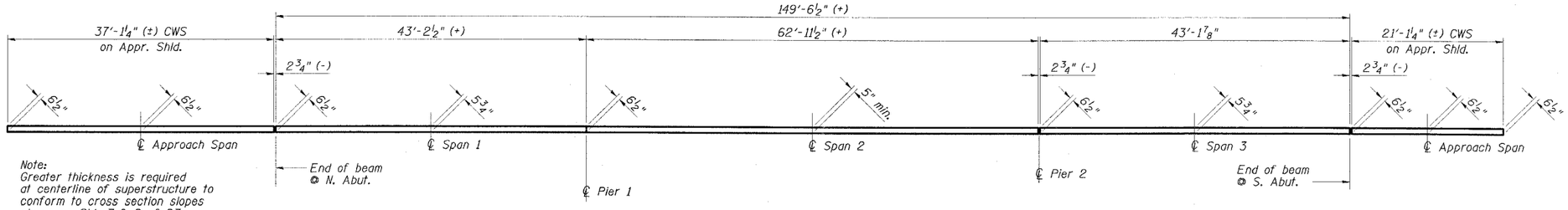
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN - WEARING SURFACE

MIN. BAR LAP

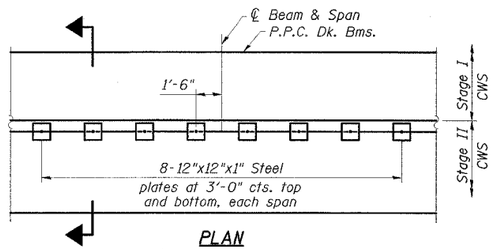
#4 bar = 1'-8"



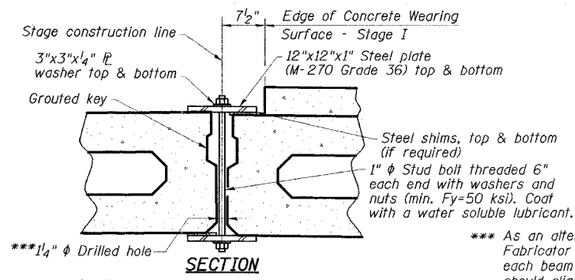
Note: Greater thickness is required at centerline of superstructure to conform to cross section slopes shown on Sht. 7 & 9 of 23.

REINFORCED CONCRETE WEARING SURFACE PROFILE

(At west edge of bridge deck; east edge similar)

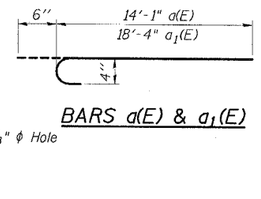


PLAN

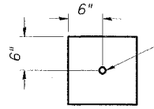


SECTION

SHEAR KEY CLAMPING DETAILS



BARS a(E) & a1(E)



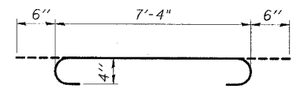
CLAMPING PLATE

Note: See Stage Construction Details for traffic lanes. Cost is included with Precast Prestressed Concrete Deck Beams.

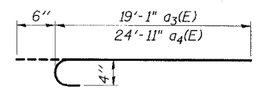
*** As an alternate to the drilled holes, the Contractor may request the Fabricator to cast 2" diameter semi-circular recesses in the sides of each beam adjacent to the stage construction line. These recesses should align to form a hole at the appropriate location for the clamping device bolts. If the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

CONCRETE WEARING SURFACE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	149	#4	14'-7"	
a1(E)	149	#4	18'-10"	
a2(E)	74	#4	8'-4"	
a3(E)	6	#4	19'-7"	
a4(E)	6	#4	25'-5"	
b(E)	136	#4	27'-9"	
b1(E)	68	#4	22'-1"	
b2(E)	24	#4	19'-3"	
b3(E)	12	#4	20'-9"	
b4(E)	42	#4	3'-6"	
Reinforcement Bars, Epoxy Coated			Pound	8020
Concrete Wearing Surface, 5"			Sq. Yd.	641
Bridge Deck Grooving			Sq. Yd.	595
Bar Splicers			Each	155
Protective Coat			Sq. Yd.	641



BAR a2(E)



BAR a3(E) & a4(E)

SUPERSTRUCTURE
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

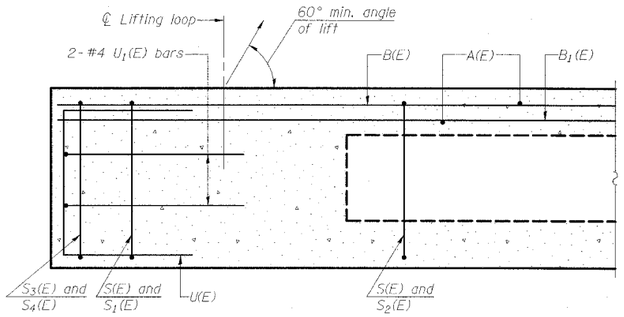
ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

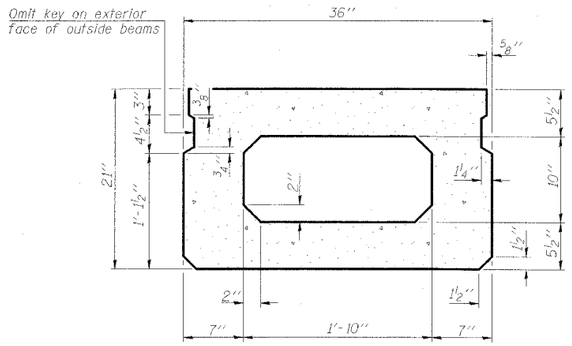
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	55
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT: AID		

SHEET NO. 6
23 SHEETS

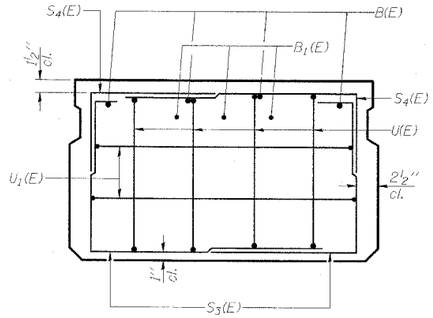
78031



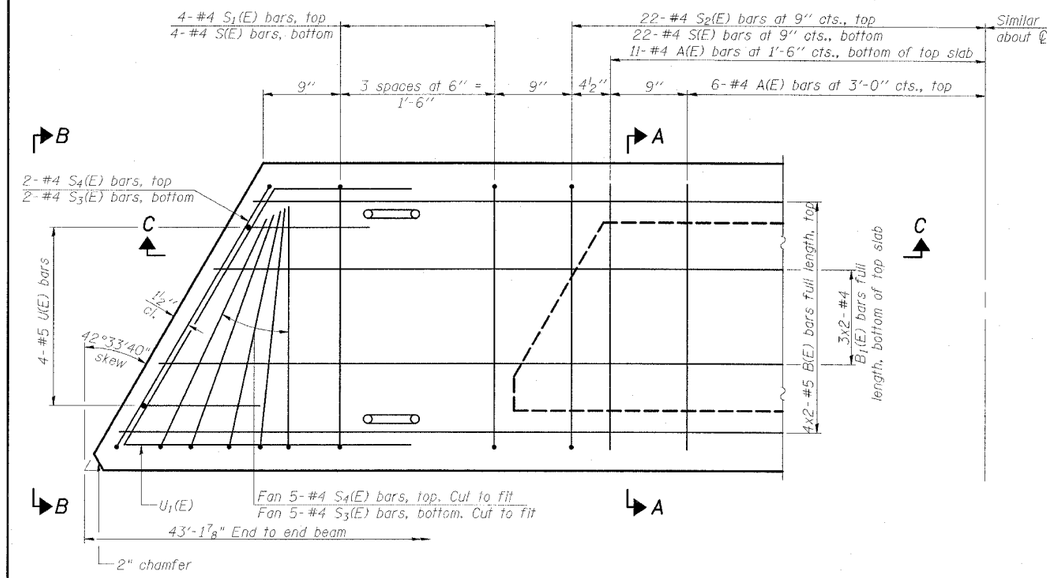
SECTION C-C



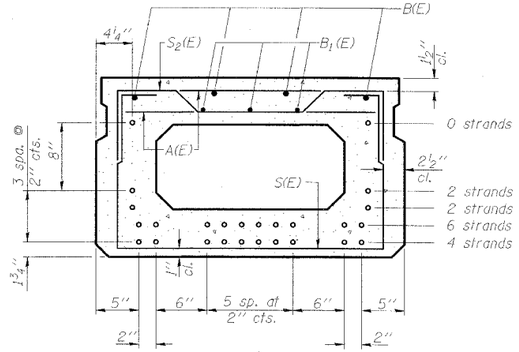
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A
(Showing reinforcement and permissible strand locations)

14 - ½" ϕ Strands, each stressed to 30.900 lbs.

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

21"x36"
BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	34	#4	2'-7"	—
B(E)	8	#5	22'-7"	—
$B_1(E)$	6	#4	22'-4"	—
S(E)	52	#4	6'-5"	⌐ ⌐
$S_1(E)$	8	#4	5'-7"	⌐ ⌐
$S_2(E)$	44	#4	5'-10"	⌐ ⌐
$S_3(E)$	14	#4	5'-5"	⌐ ⌐
$S_4(E)$	14	#4	5'-0"	⌐ ⌐
U(E)	8	#5	4'-0"	⌐ ⌐
$U_1(E)$	4	#4	8'-2"	⌐ ⌐

Note: See sheet 7 of 23 for additional details and Bill of Material.

MIN. BAR LAP
#5 bar = 2'-2"

Notes:
1. Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.
2. Adjust reinforcement locations to clear dowel holes at fixed ends.

ESCA
CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08

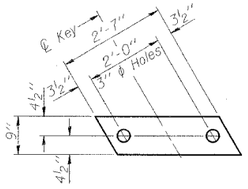
SUPERSTRUCTURE DETAILS - SPAN 1 & 3
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

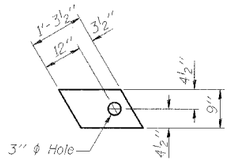
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR 2	SALINE	118	56
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ACD		

SHEET NO. 7
23 SHEETS

73031

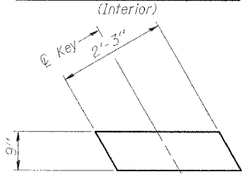


FABRIC BEARING PAD
(Interior)

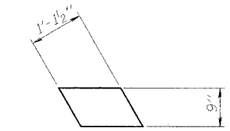


FABRIC BEARING PAD
(Exterior)

FIXED

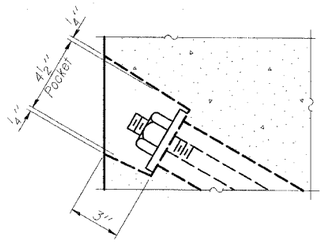


FABRIC BEARING PAD
(Interior)

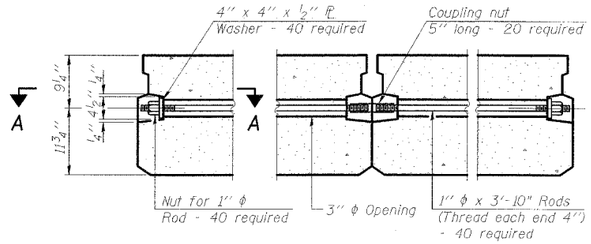


FABRIC BEARING PAD
(Exterior)

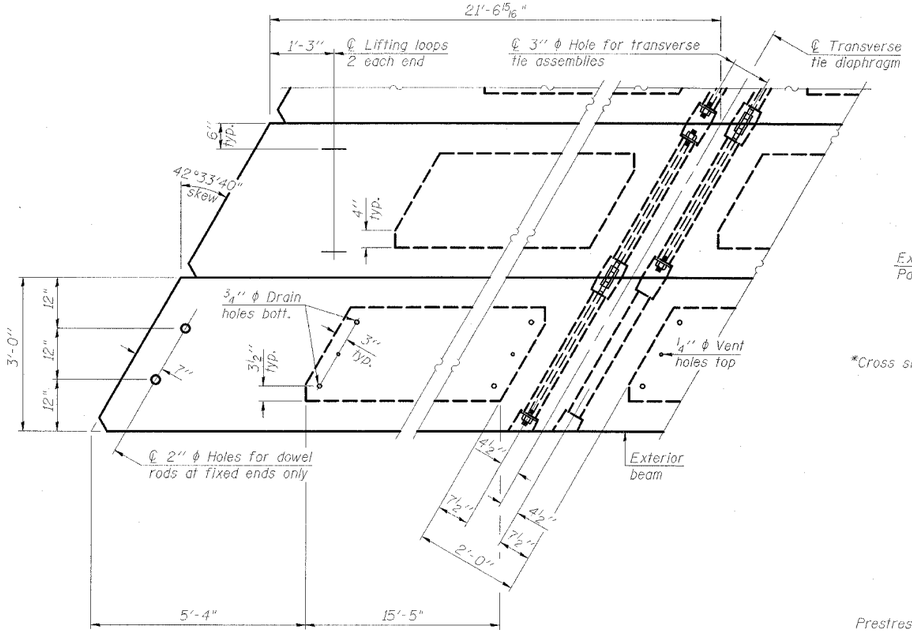
EXPANSION



SECTION A-A

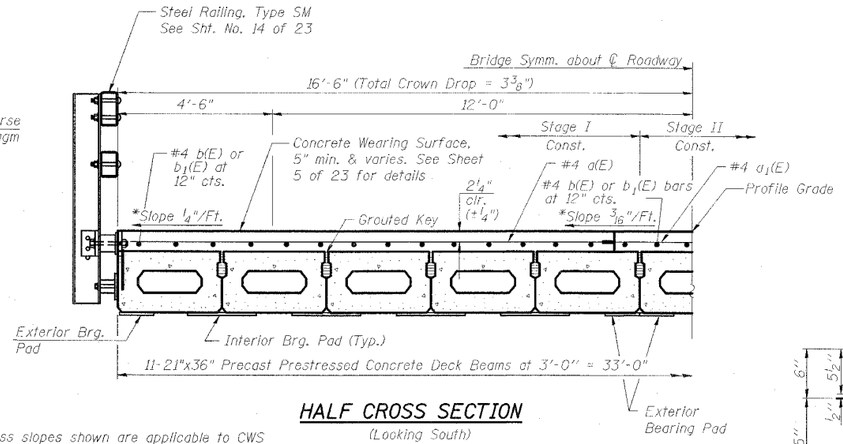


TYPICAL TRANSVERSE TIE ASSEMBLY



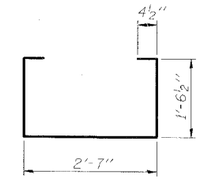
PLAN VIEW

Note: Connect beams in pairs with the transverse tie configuration shown.

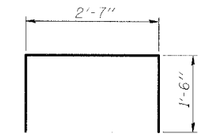


HALF CROSS SECTION
(Looking South)

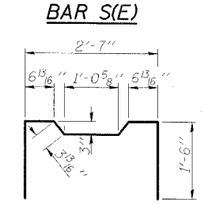
*Cross slopes shown are applicable to CWS



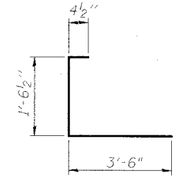
BAR S(E)



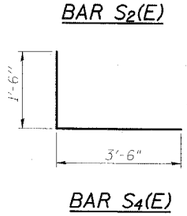
BAR S1(E)



BAR S2(E)



BAR S3(E)



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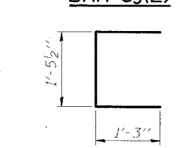
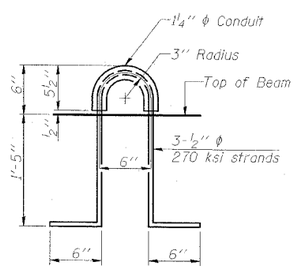
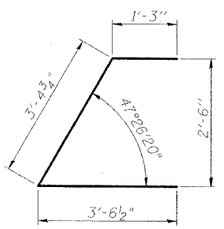


BAR U(E)



LIFTING LOOP DETAIL



BAR U1(E)

BILL OF MATERIAL

Item	Unit	Quantity
Precast Prestressed Conc. Deck Bms. (21" Depth)	Sq. Ft.	2848

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.
The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Reinforcement bars shall conform to ASTM A 706 (IL MOD), Grade 60. (See Special Provisions)
Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.
See Sht. No. 2 of 23 for location of rail anchors and additional notes.

SUPERSTRUCTURE DETAILS - SPAN 1 & 3
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ESCA
CONSULTANTS, INC.

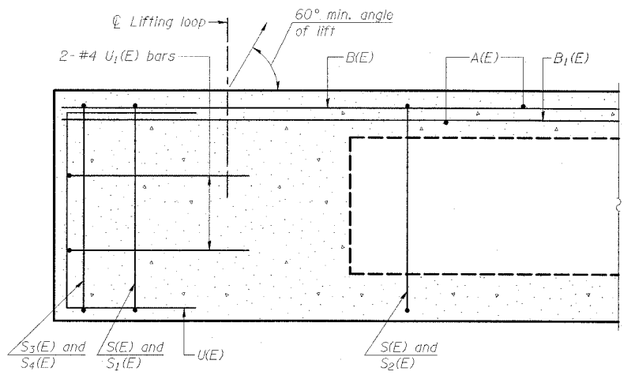
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

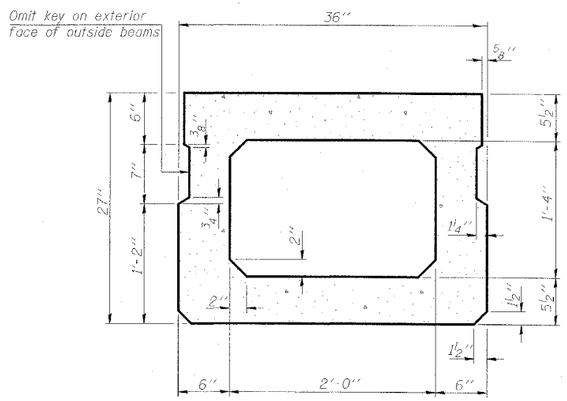
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	57
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ACC.		

SHEET NO. 8
23 SHEETS

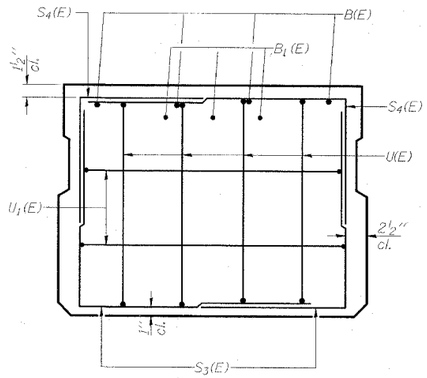
78031



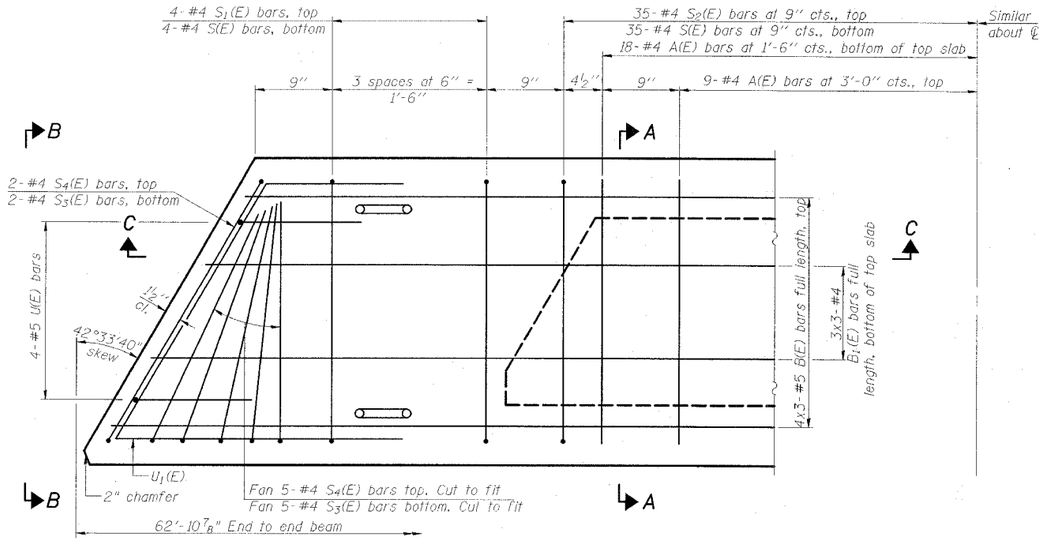
SECTION C-C



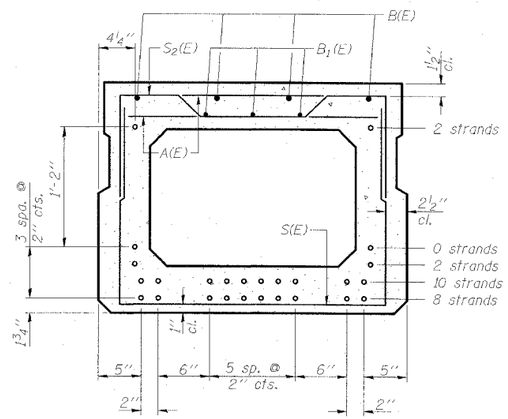
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A

(Showing reinforcement and permissible strand locations)

22 - ½" ϕ Strands, each strand stressed to 30,900 lbs

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

MIN. BAR LAP
#5 bar = 2'-2"

27"x36"
BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	54	#4	2'-7"	—
B(E)	12	#5	22'-4"	—
$B_1(E)$	9	#4	22'-0"	—
S(E)	78	#4	6'-5"	⊏⊐
$S_1(E)$	8	#4	6'-3"	⊏⊐
$S_2(E)$	70	#4	6'-6"	⊏⊐
$S_3(E)$	14	#4	5'-5"	⌊⌋
$S_4(E)$	14	#4	5'-0"	⌊⌋
U(E)	8	#5	4'-6"	⊏⊐
$U_1(E)$	4	#4	8'-2"	⊏

Note: See sheet 9 of 23 for additional details and Bill of Material.

Notes:
1. Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.
2. Adjust reinforcement locations to clear dowel holes at fixed ends.

ESCA
CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08

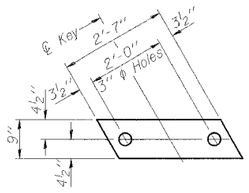
SUPERSTRUCTURE DETAILS - SPAN 2
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

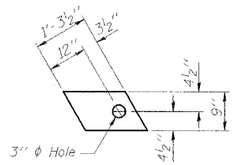
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	58
RTE. ROAD DIST. NO. 11	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 9
23 SHEETS

78031

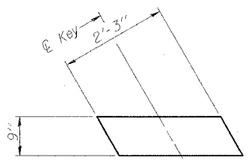


FABRIC BEARING PAD
(Interior)

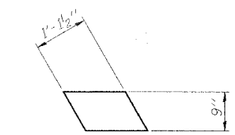


FABRIC BEARING PAD
(Exterior)

FIXED

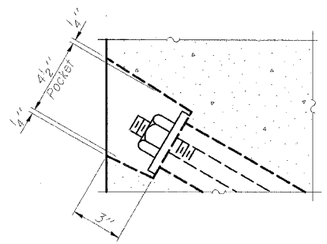


FABRIC BEARING PAD
(Interior)

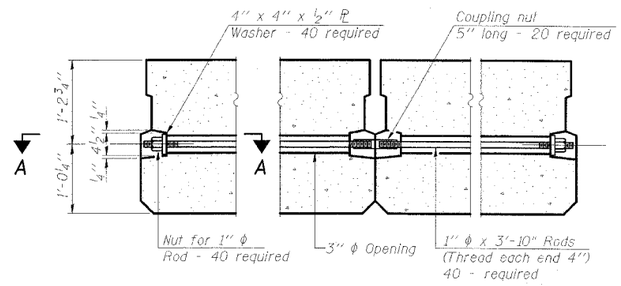


FABRIC BEARING PAD
(Exterior)

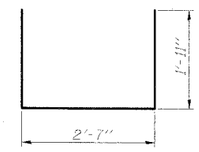
EXPANSION



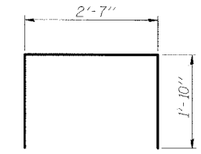
SECTION A-A



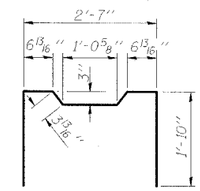
TYPICAL TRANSVERSE TIE ASSEMBLY



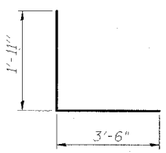
BAR S(E)



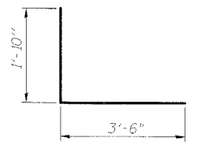
BAR S_1(E)



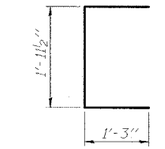
BAR S_2(E)



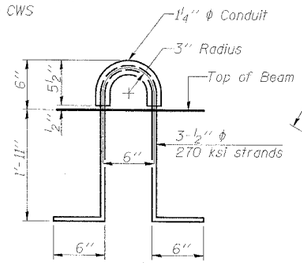
BAR S_3(E)



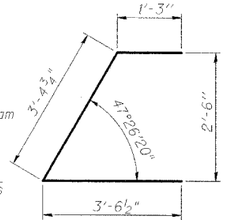
BAR S_4(E)



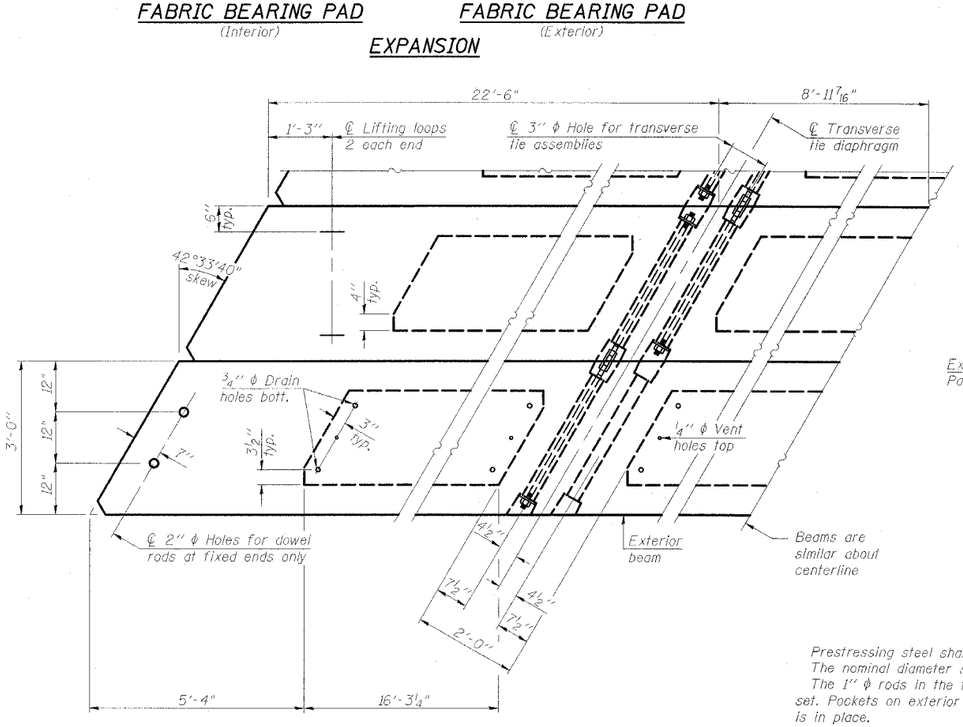
BAR U(E)



LIFTING LOOP DETAIL

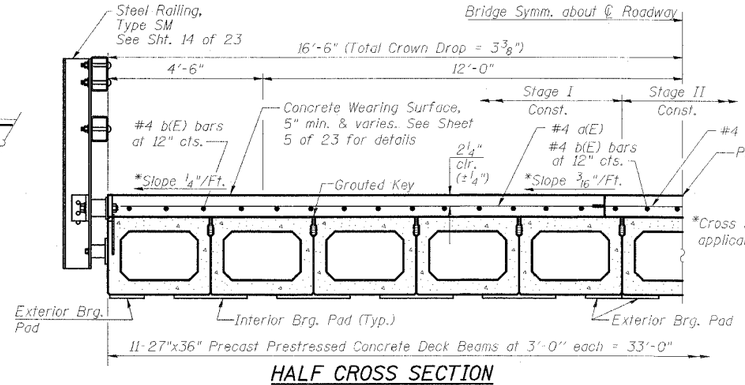


BAR U_1(E)



Note: Connect beams in pairs with the transverse tie configuration shown.

PLAN VIEW



HALF CROSS SECTION
(Looking South)

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.
The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Reinforcement bars shall conform to ASTM A 706 (IL MOD), Grade 60. (See Special Provisions)
Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.
See Sht. No. 2 of 23 for location of rail anchors and additional notes.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Prestressed Conc. Deck Bms. (27" Depth)	Sq. Ft.	2076

ESCA
CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08

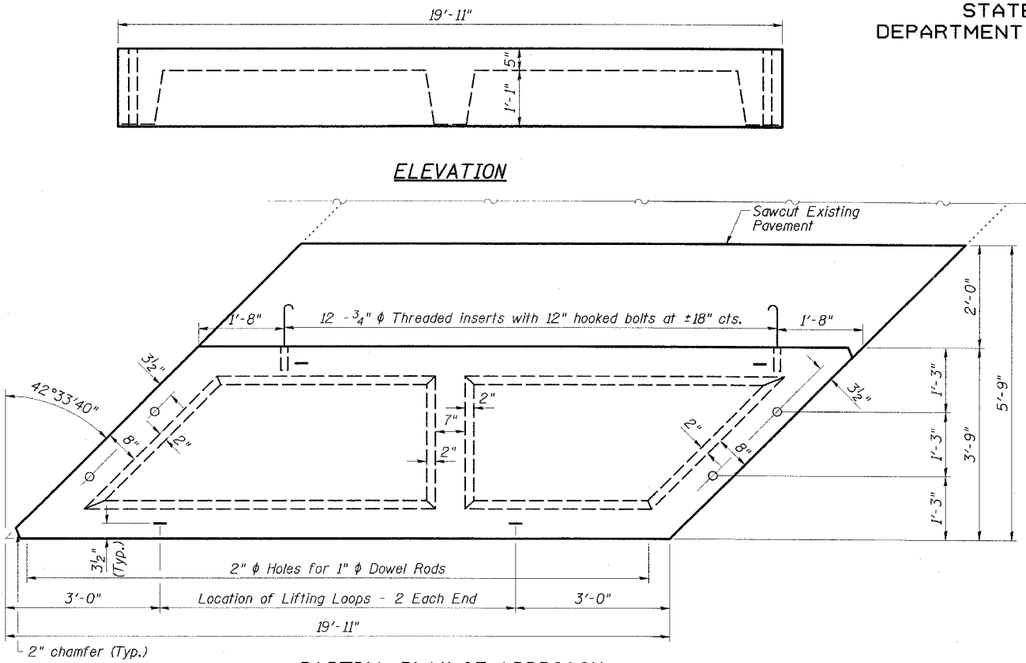
SUPERSTRUCTURE DETAILS - SPAN 2
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

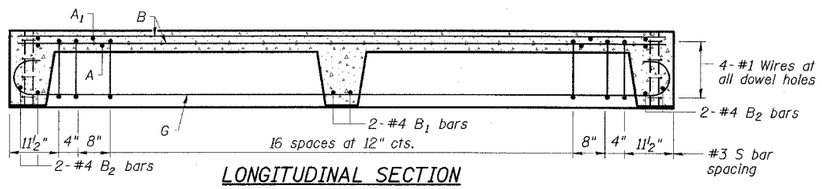
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

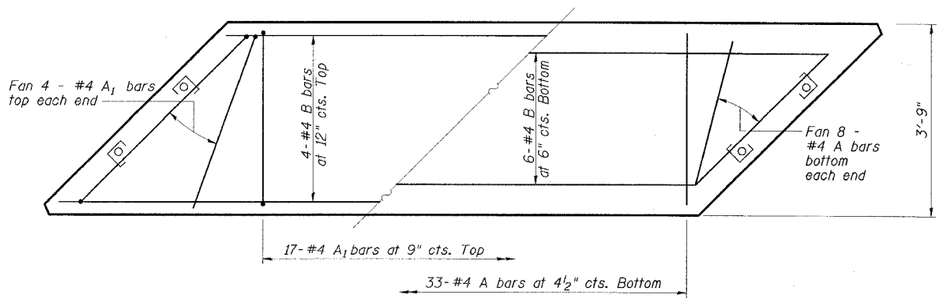
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	59
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

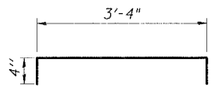
SHEET NO. 10
23 SHEETS

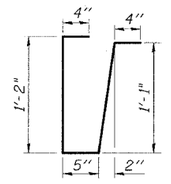
78031

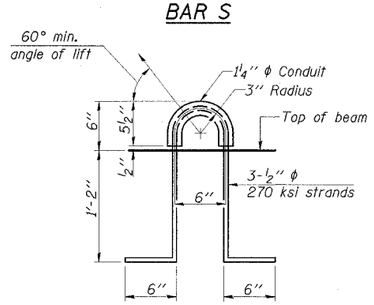


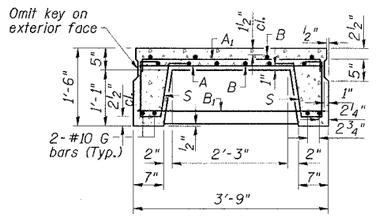


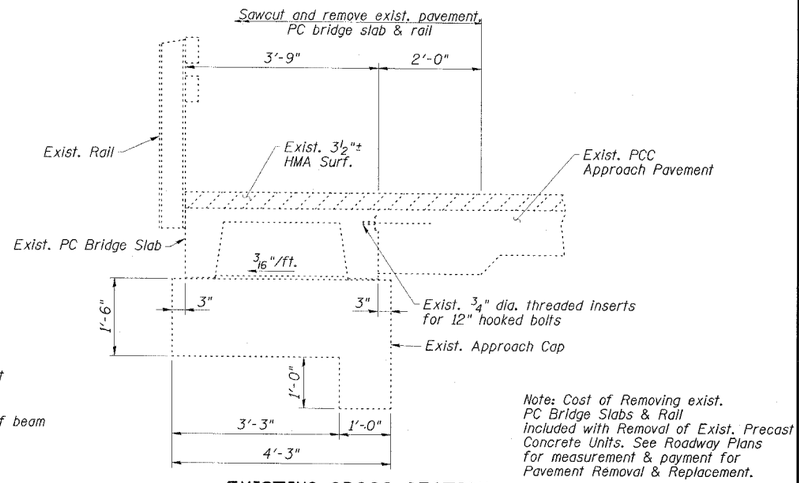




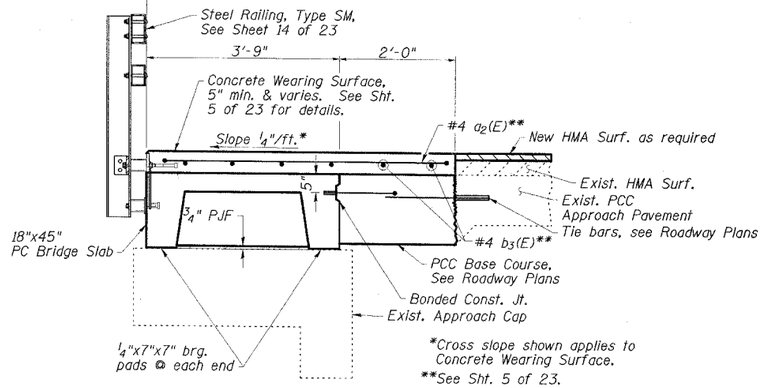


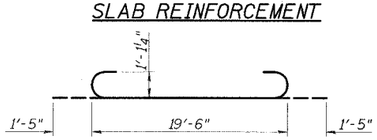


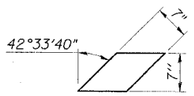




Note: Cost of Removing exist. PC Bridge Slabs & Rail included with Removal of Exist. Precast Concrete Units. See Roadway Plans for measurement & payment for Pavement Removal & Replacement.







NOTES

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 ⅛" 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 slabs. Cleaning shall be done by sandblasting the keyway areas between top of the slab 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.

Required Strength, f'c, shall be 4500 p.s.i.

See Sht. No. 2 of 23 for location of rail anchors and additional notes.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor rods and ¾" ϕ hooked bolts is included in contract Unit Price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

A minimum of 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	150

APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ESCA
CONSULTANTS, INC.

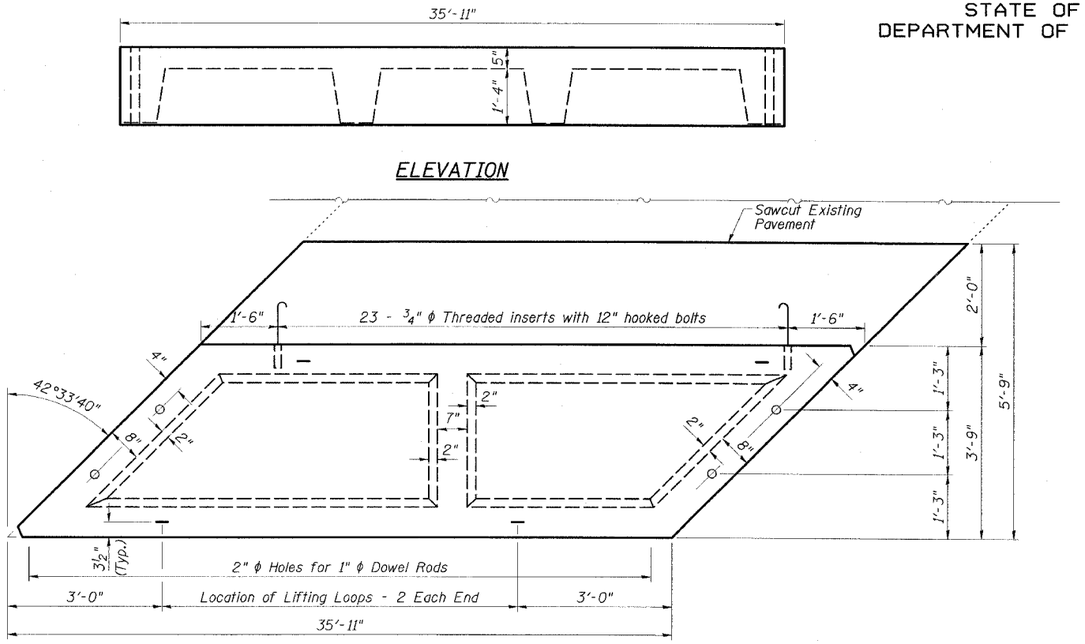
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

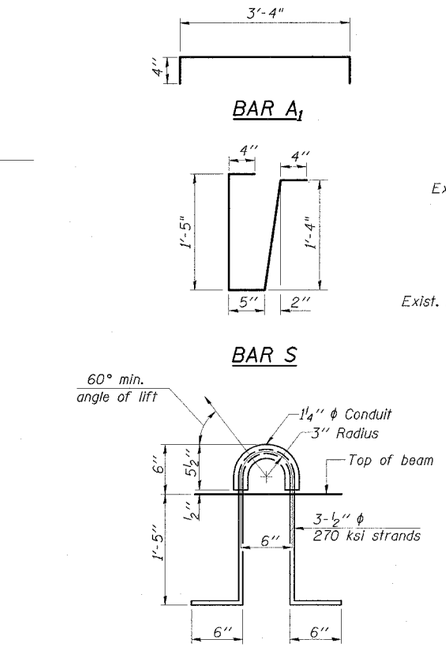
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

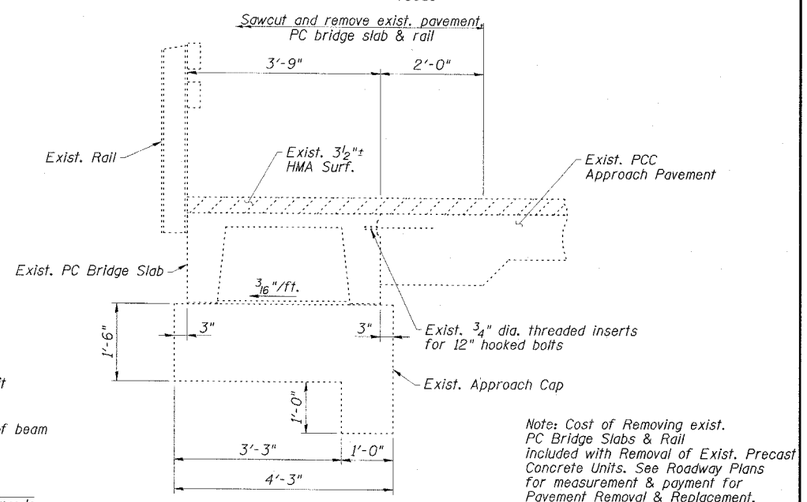
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	PROJECT NO.
FAP 869	105BR-2	SALINE	118	60
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

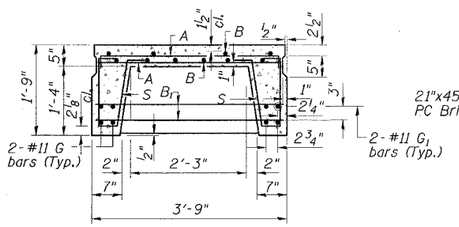
SHEET NO. 11
23 SHEETS

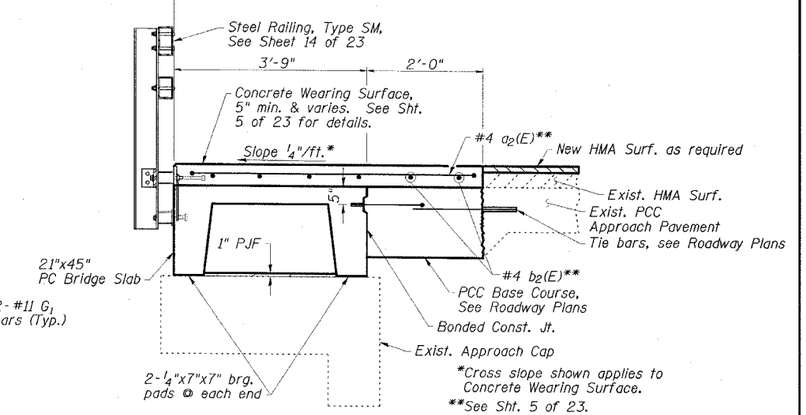
78031











NOTES

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 ⅛" 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 slabs. Cleaning shall be done by sandblasting the keyway areas between top of the slab 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.

Required Strength, f'c, shall be 4500 p.s.i.

See Sht. No. 2 of 23 for location of rail anchors and additional notes.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor rods and ¾" ϕ hooked bolts is included in contract Unit Price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

A minimum of 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	270

APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ESCA CONSULTANTS, INC.

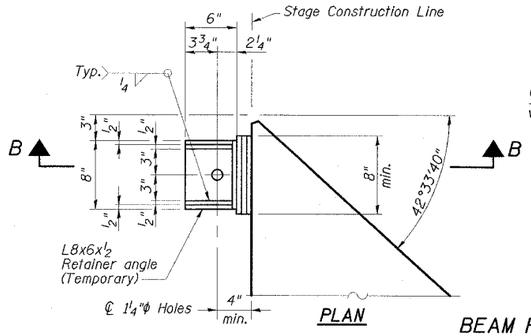
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

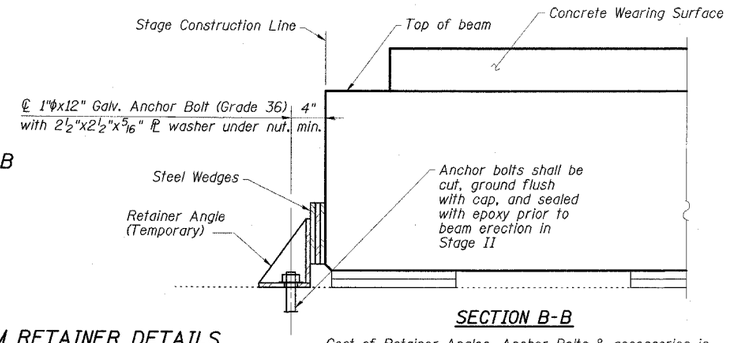
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	61
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- 401		

SHEET NO. 12
23 SHEETS

78031





BEAM RETAINER DETAILS AT STAGE CONSTRUCTION LINE

(3 Required at expansion ends of beams)

Cost of Retainer Angles, Anchor Bolts & accessories is included with Precast Prestressed Concrete Deck Beams.

NOTES

After beams have been erected, holes shall be drilled into substructure and dowels rods 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.

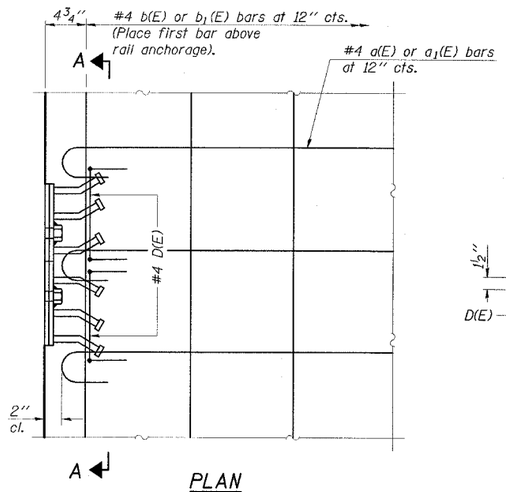
Concrete wearing surface to be poured after grouting the shear keys.

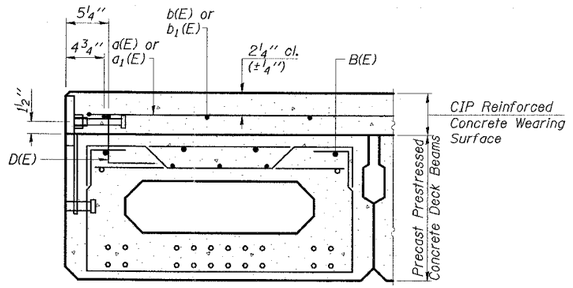
Dowel rods drilled in cap are included in the cost of Precast Prestressed Concrete Deck Beams or Precast Concrete Bridge Slabs.

The rail anchorage shall be cast with the beam or slab 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 or slab. Drilling into the beam or slab will not be permitted.

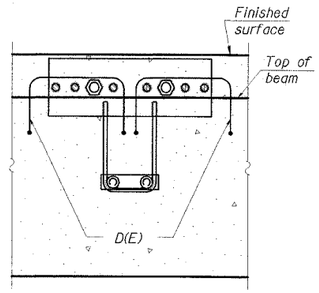
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

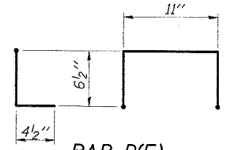




CROSS SECTION
(Deck beam shown; PC Bridge Slab similar)



SECTION A-A



BAR D(E)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JWS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

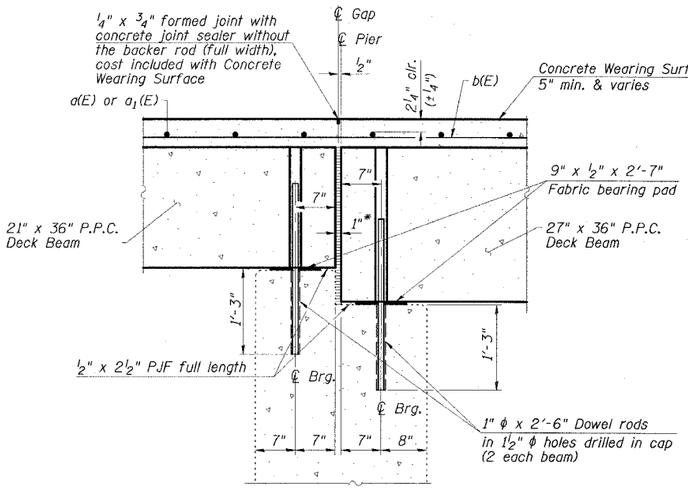
SUPERSTRUCTURE AND APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	62
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

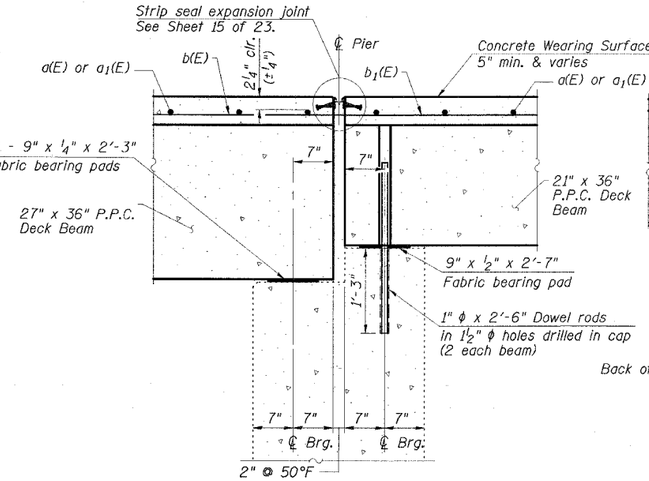
SHEET NO. 13
23 SHEETS

78031

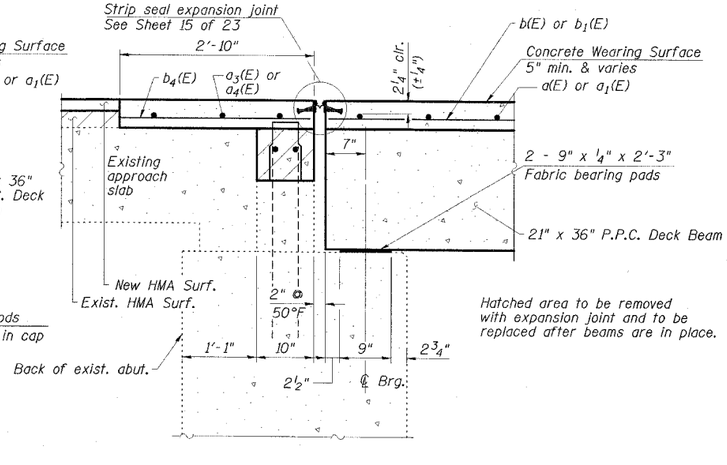


SECTION THRU PIER 1
(Dimensions @ Rt. L's)

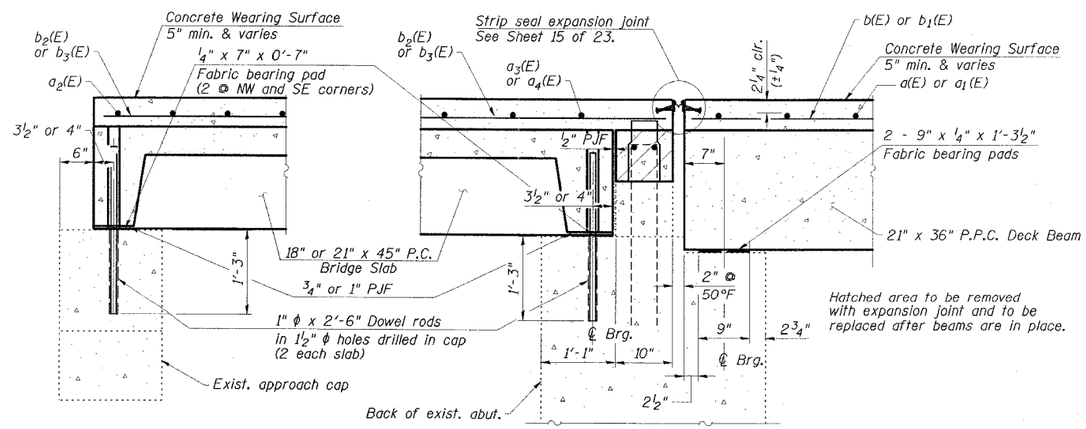
*1" Jt. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.



SECTION THRU PIER 2
(Dimensions @ Rt. L's)



SECTION THRU ABUTMENT
@ ℄ ROADWAY
(Dimensions @ Rt. L's)



SECTION THRU APPROACH CAP
(Dimensions @ Rt. L's)

SECTION THRU ABUTMENT
@ OUTSIDE BEAM
(Dimensions @ Rt. L's)

ESCA
CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

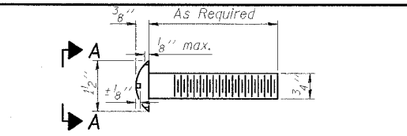
SUPERSTRUCTURE AND APPROACH DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

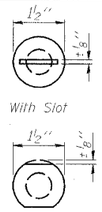
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	63
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 14
23 SHEETS

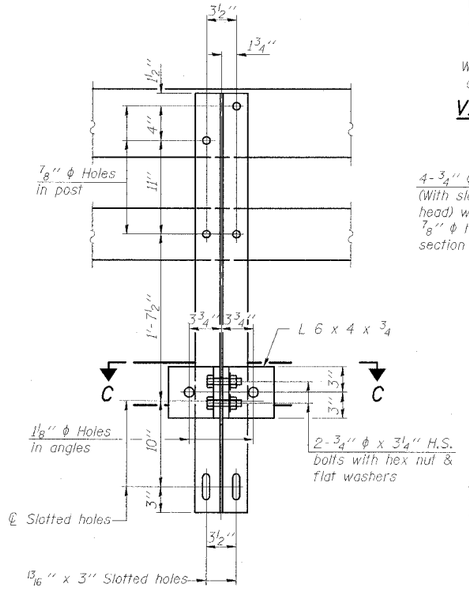
78031



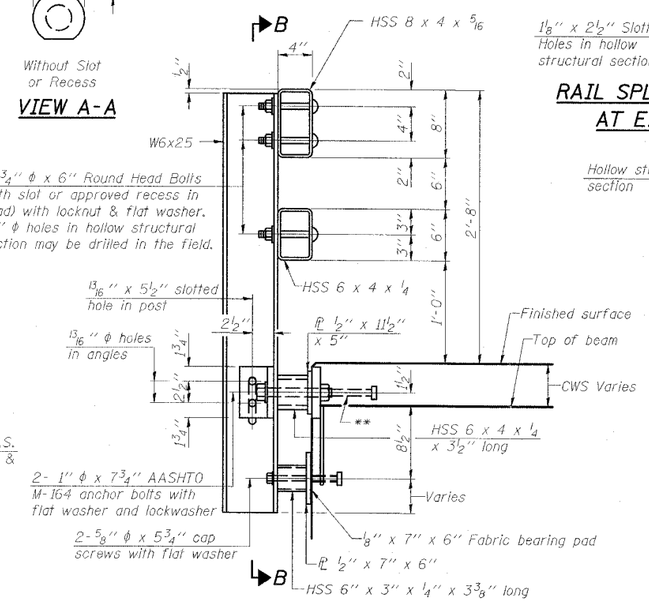
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



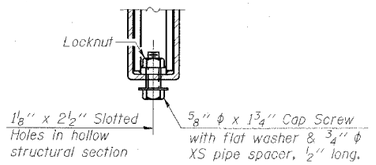
VIEW A-A



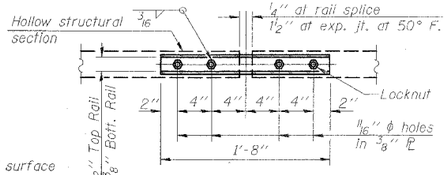
SECTION B-B



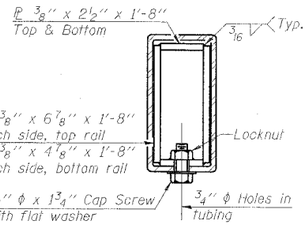
SECTION AT RAIL POST



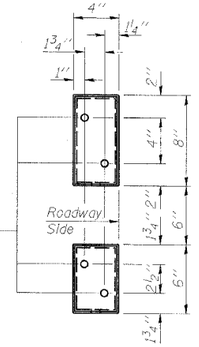
RAIL SPLICE CONNECTION AT EXPANSION JT.



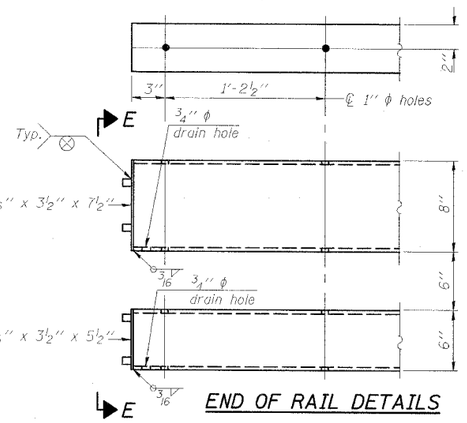
PLAN-BOTT. SPLICE Pℓ TYPICAL



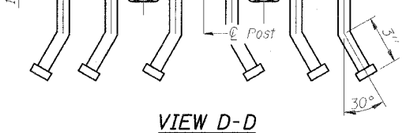
SECTION AT RAIL SPLICE



VIEW E-E

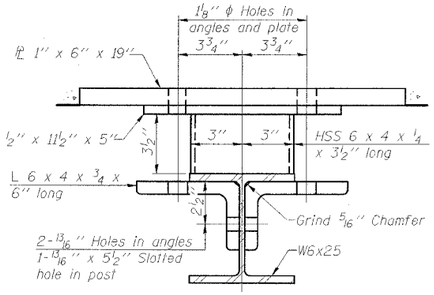


END OF RAIL DETAILS

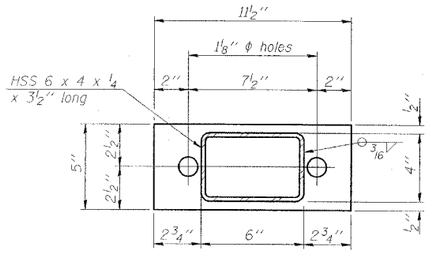


VIEW D-D

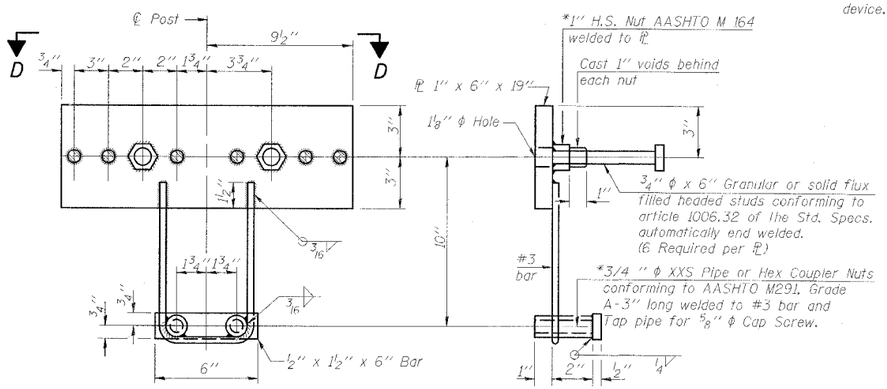
℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



SECTION C-C



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



ANCHOR DEVICE

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

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 Railing, 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.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	418

STEEL RAILING, TYPE SM
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

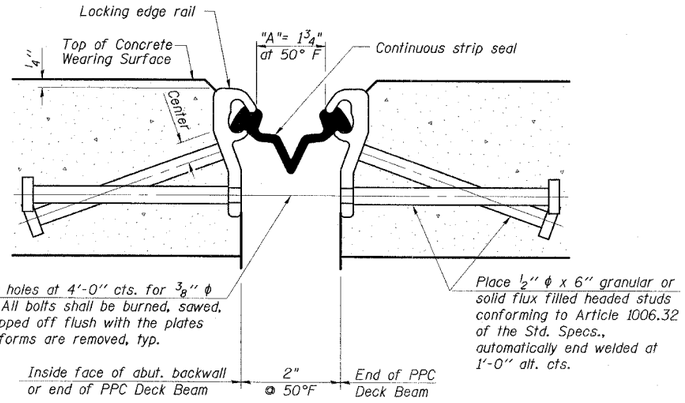
R-34CWS 9-3-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	64
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 15
23 SHEETS

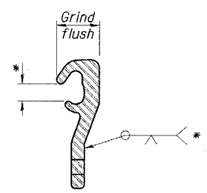
78031



SECTION THRU STRIP SEAL JOINT FOR OVERLAY OVER DECK BEAMS

* Omit weld at seal opening.

LOCKING EDGE RAIL



LOCKING EDGE RAIL SPLICE

GENERAL 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.

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.

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

BILL OF MATERIAL

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	135

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

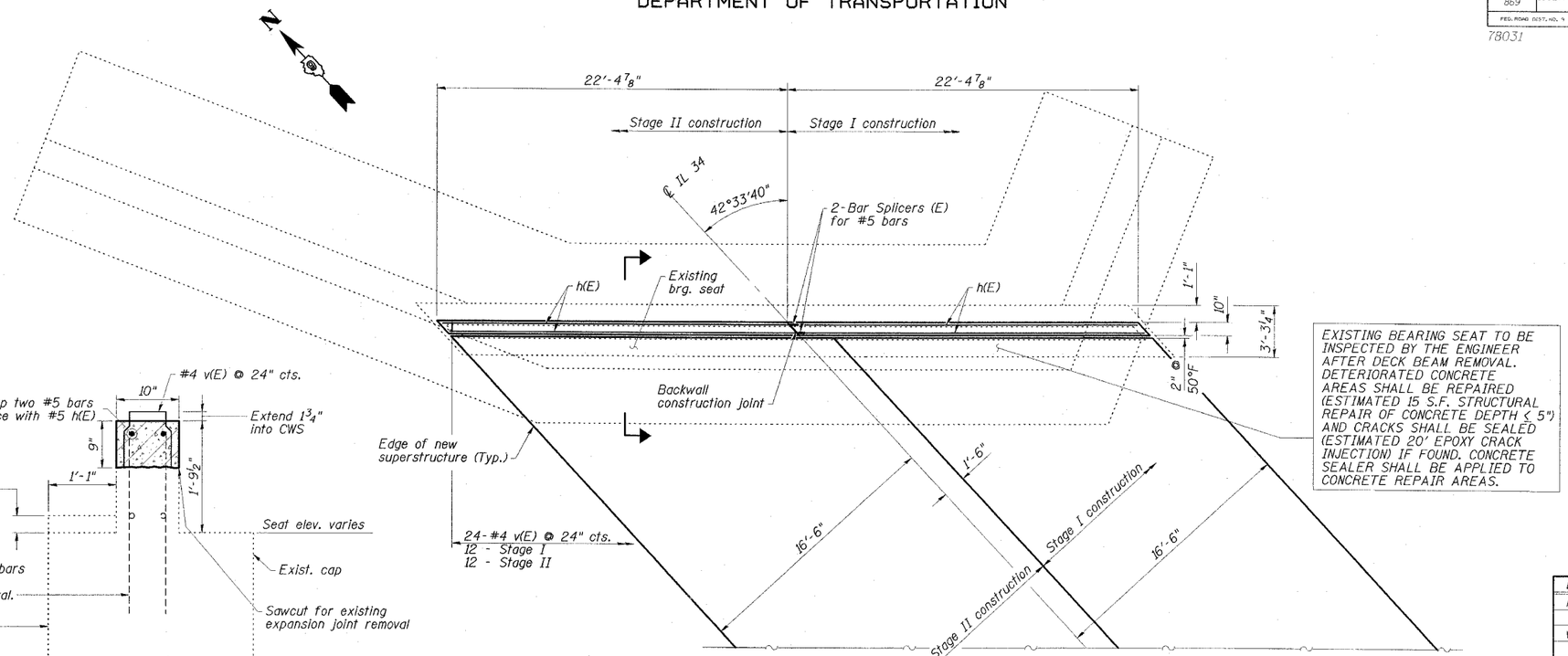
STRIP SEAL EXPANSION JOINT
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	65
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 16
23 SHEETS

78031

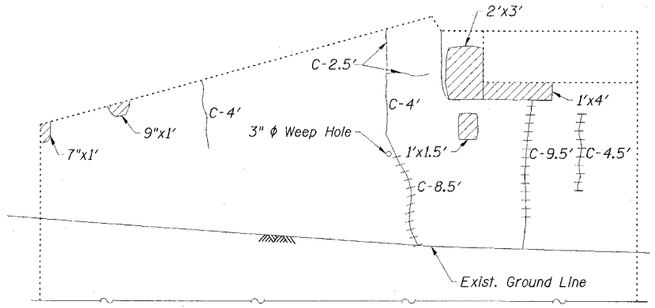
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



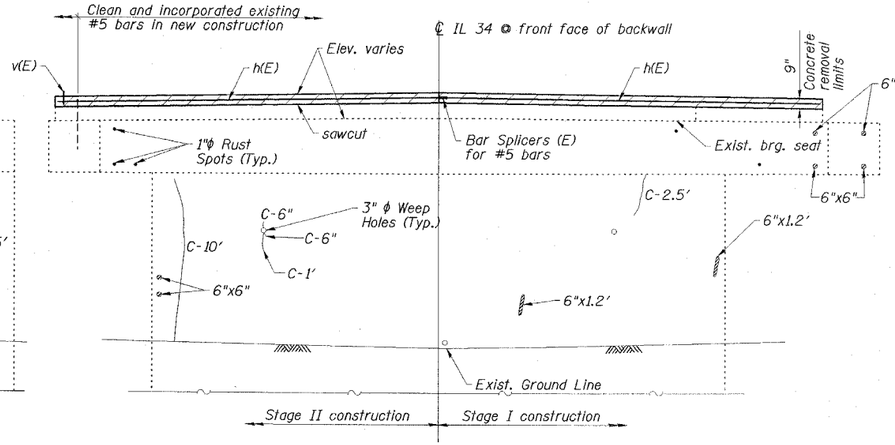
EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.

PLAN

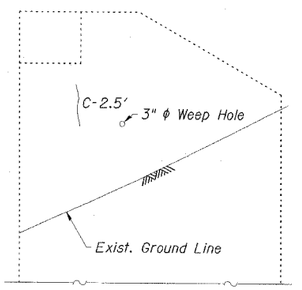
SECTION THRU ABUTMENT



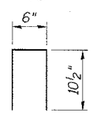
NORTHWEST WING ELEVATION



NORTH ELEVATION



NORTHEAST WING ELEVATION



BAR v(E)

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#5	22'-0"	———
v(E)	24	#4	2'-3"	⊓
Concrete Sealer			Sq. Ft.	56
Epoxy Crack Injection			Foot	73
Structural Repair of Concrete (Depth Equal to or Less Than 5")			Sq. Ft.	31
Concrete Removal			Cu. Yd	1.1
Concrete Structures			Cu. Yd.	1.1
Reinforcement Bars, Epoxy Coated			Pound	130
Asbestos Bearing Pad Removal			Each	22
Bar Splicers			Each	2

REPAIR LEGEND

Inspection Date: 12/10/07

- C-6' — Crack to be epoxy injected
- Delaminated or spalled area - use Structural Repair of Concrete
- Rust spot

NOTE: ABUTMENT CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-10-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS/JPC	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

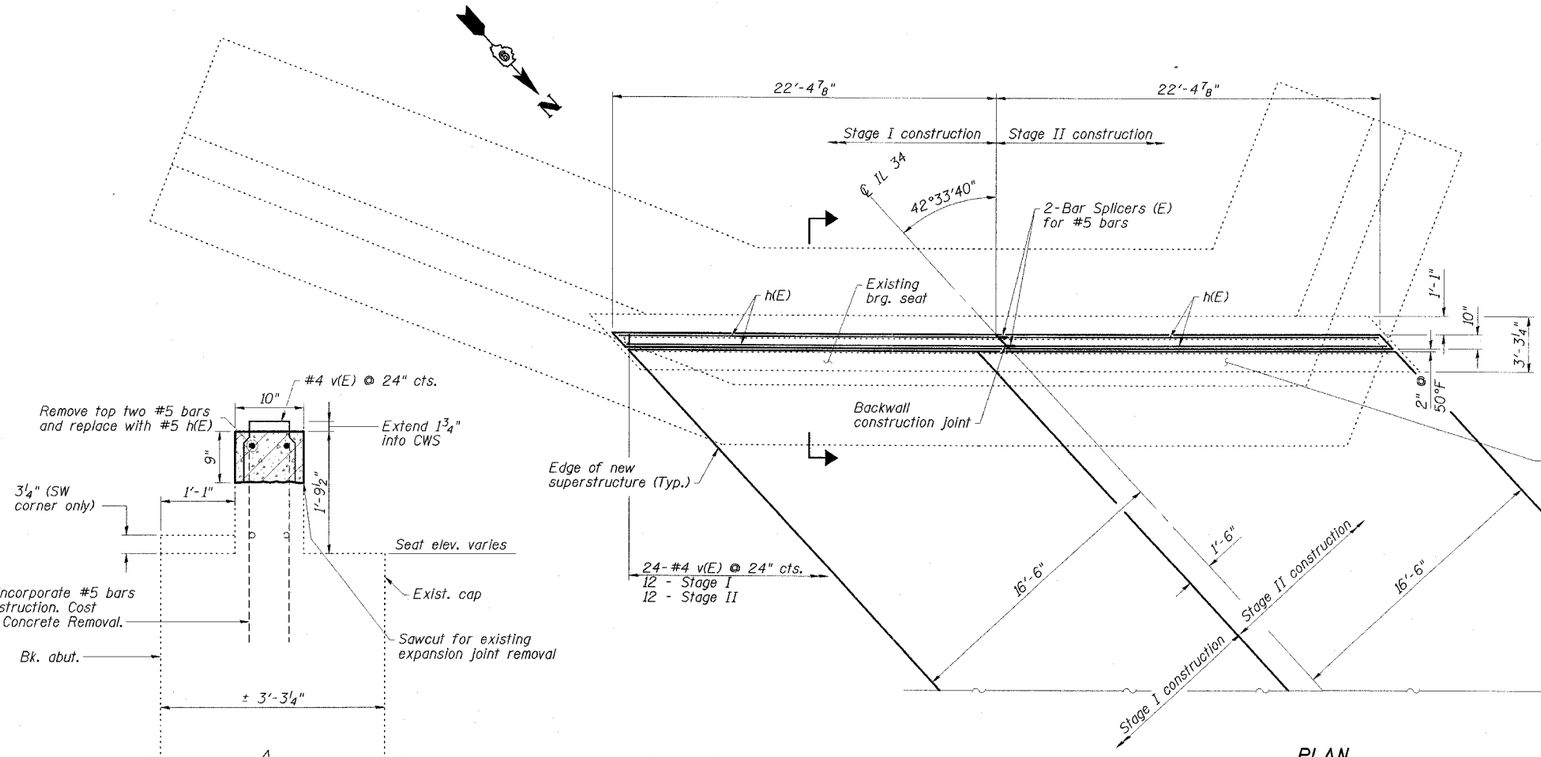
NORTH ABUTMENT
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	66
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AED		

78031

SHEET NO. 17
23 SHEETS

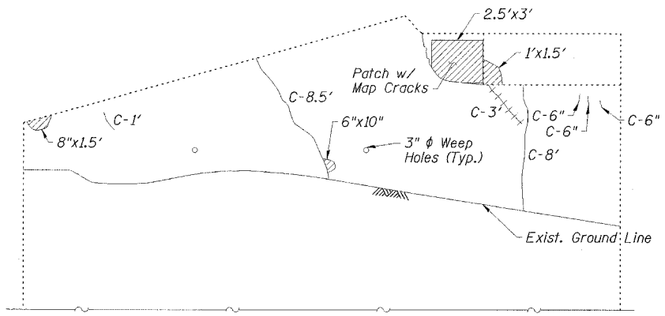


EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.

SOUTH ABUTMENT
BILL OF MATERIAL

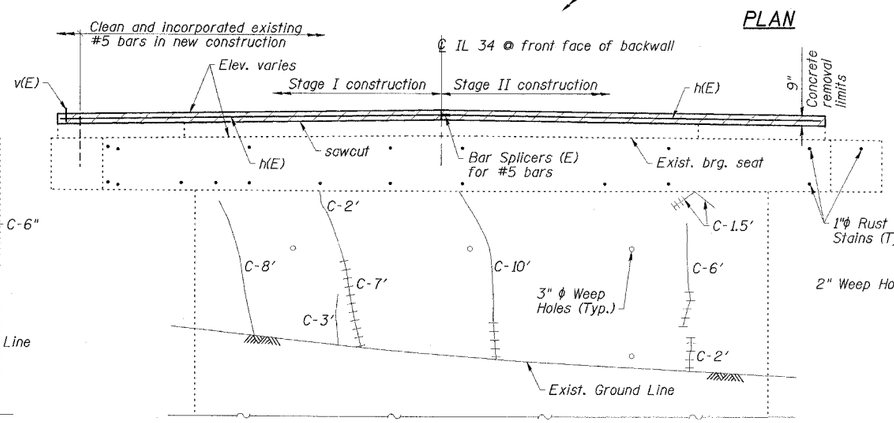
Bar	No.	Size	Length	Shape
h(E)	4	#5	22'-0"	
v(E)	24	#4	2'-3"	
Concrete Sealer			Sq. Ft.	56
Epoxy Crack Injection			Foot	98
Structural Repair of Concrete (Depth Equal to or Less Than 5")			Sq. Ft.	28
Concrete Removal			Cu. Yd	1.1
Concrete Structures			Cu. Yd.	1.1
Reinforcement Bars, Epoxy Coated			Pound	130
Asbestos Bearing Pad Removal			Each	22
Bar Splicers			Each	2

SECTION THRU ABUTMENT

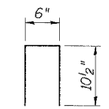


SOUTHEAST WING ELEVATION

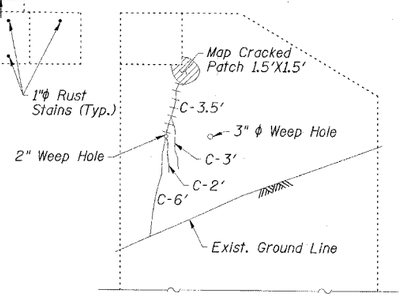
PLAN



SOUTH ELEVATION



BAR v(E)



SOUTHWEST WING ELEVATION

REPAIR LEGEND

Inspection Date: 12/10/07

- C-6' — Crack to be epoxy injected
- Delaminated or spalled area - use Structural Repair of Concrete
- Rust spot

NOTE: ABUTMENT CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-10-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

ESCA
CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	KAH/HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

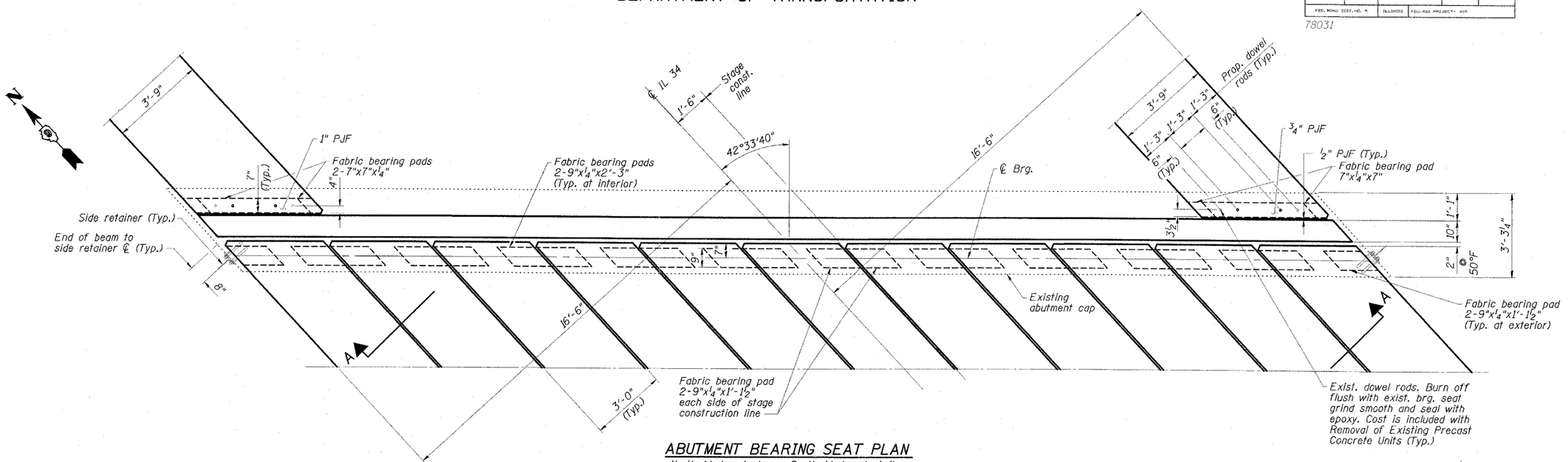
SOUTH ABUTMENT
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	67
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AIR		

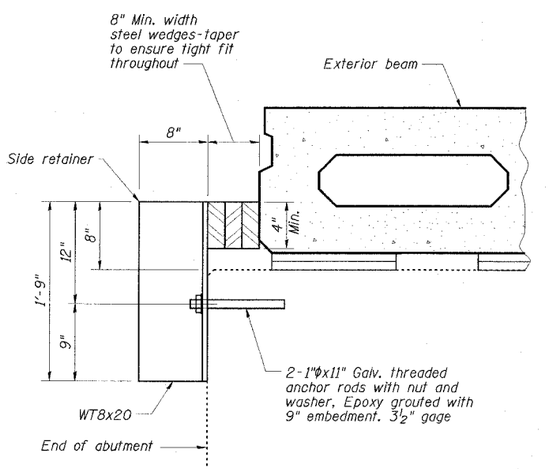
SHEET NO. 18
23 SHEETS

78031



ABUTMENT BEARING SEAT PLAN

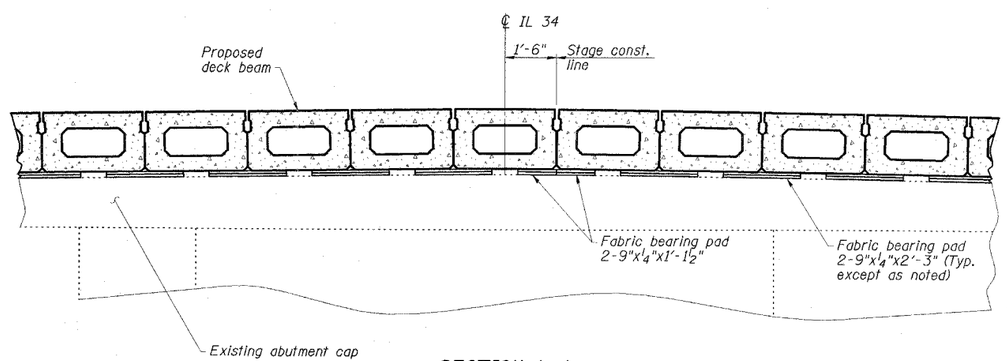
North Abutment shown; South Abutment similar
(Concrete Wearing Surface and approach pavement not shown)



EXTERIOR BEAM SIDE RETAINER DETAILS

(4 Required at abutments)

Cost of retainer & accessories are included with Precast Prestressed Concrete Deck Beams.



SECTION A-A

(Concrete Wearing Surface not shown)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

ABUTMENT DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	68
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ACD		

78031

SHEET NO. 19
23 SHEETS

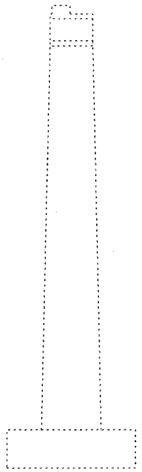
PIER 1
BILL OF MATERIAL

Item	Unit	Total
Concrete Sealer	Sq. Ft.	15
Epoxy Crack Injection	Foot	79
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	15

REPAIR LEGEND
Inspection Date: 12/10/07

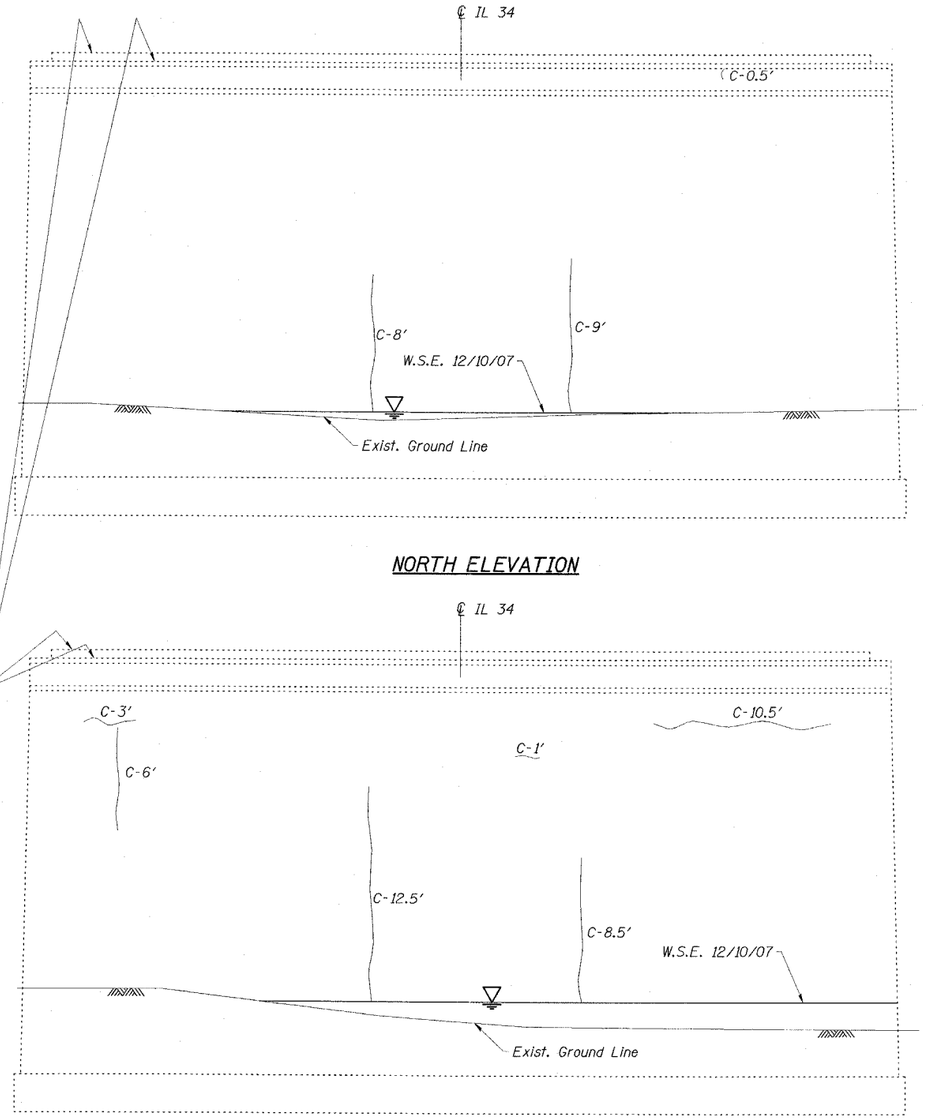
C-6' Crack to be epoxy injected

Delaminated or spalled area - use Structural Repair of Concrete



END VIEW

EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.



NORTH ELEVATION

SOUTH ELEVATION

NOTE: PIER CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-10-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	KAH/HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

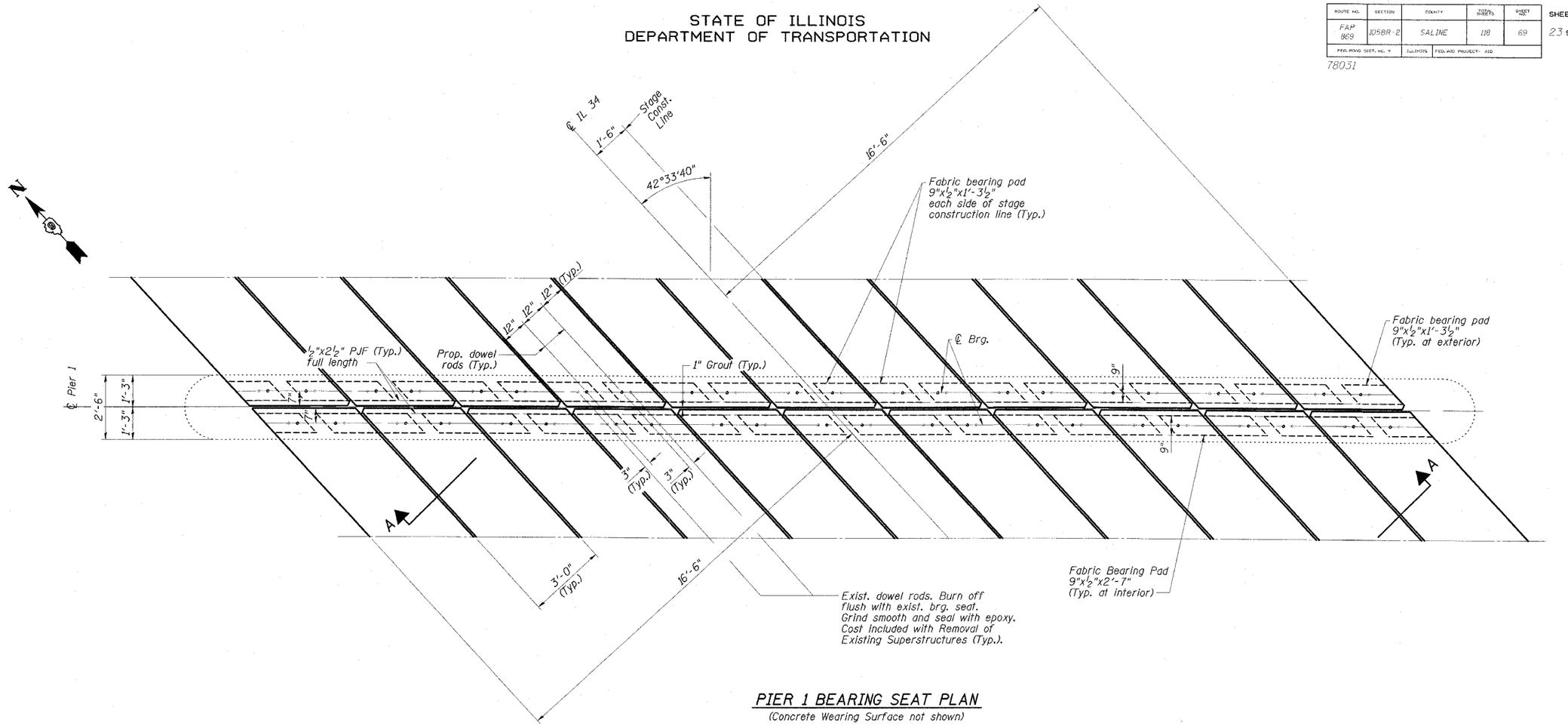
PIER 1
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

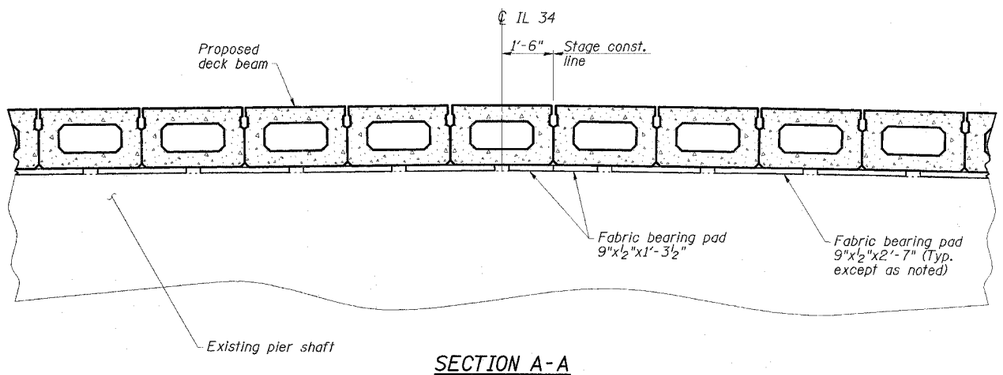
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	69
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AED		

SHEET NO. 20
23 SHEETS

78031



PIER 1 BEARING SEAT PLAN
(Concrete Wearing Surface not shown)



SECTION A-A
(Concrete Wearing Surface not shown)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

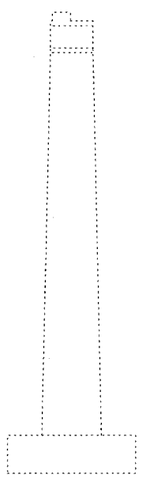
PIER 1 DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

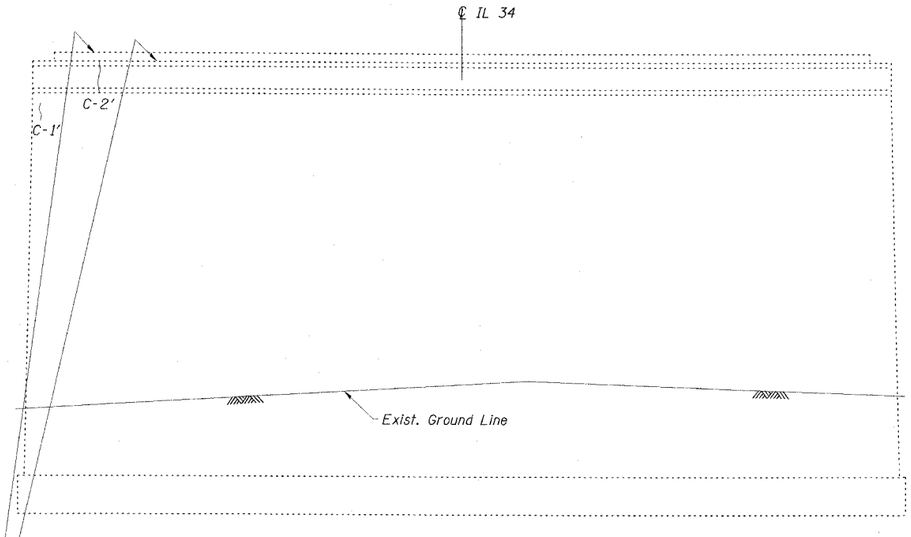
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	70
FED. ROAD DIST. NO. 9		ILLINOIS	FED. AID PROJECT- AID	

SHEET NO. 21
23 SHEETS

78031

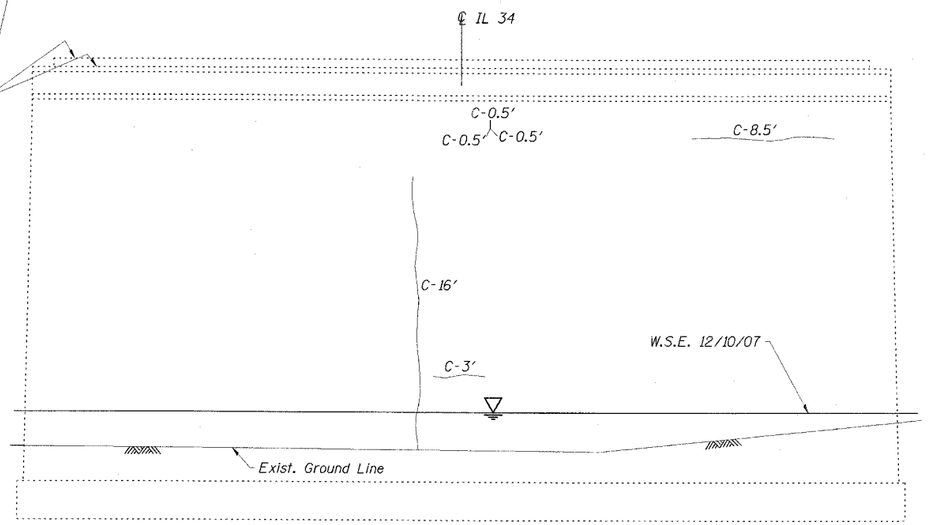


END VIEW



SOUTH ELEVATION

EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.



NORTH ELEVATION

PIER 2
BILL OF MATERIAL

Item	Unit	Total
Concrete Sealer	Sq. Ft.	15
Epoxy Crack Injection	Foot	52
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	15
Asbestos Bearing Pad Removal	Each	22

REPAIR LEGEND

Inspection Date: 12/10/07

C-6' Crack to be epoxy injected

Delaminated or spalled area - use Structural Repair of Concrete

NOTE: PIER CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-10-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	KAH/HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

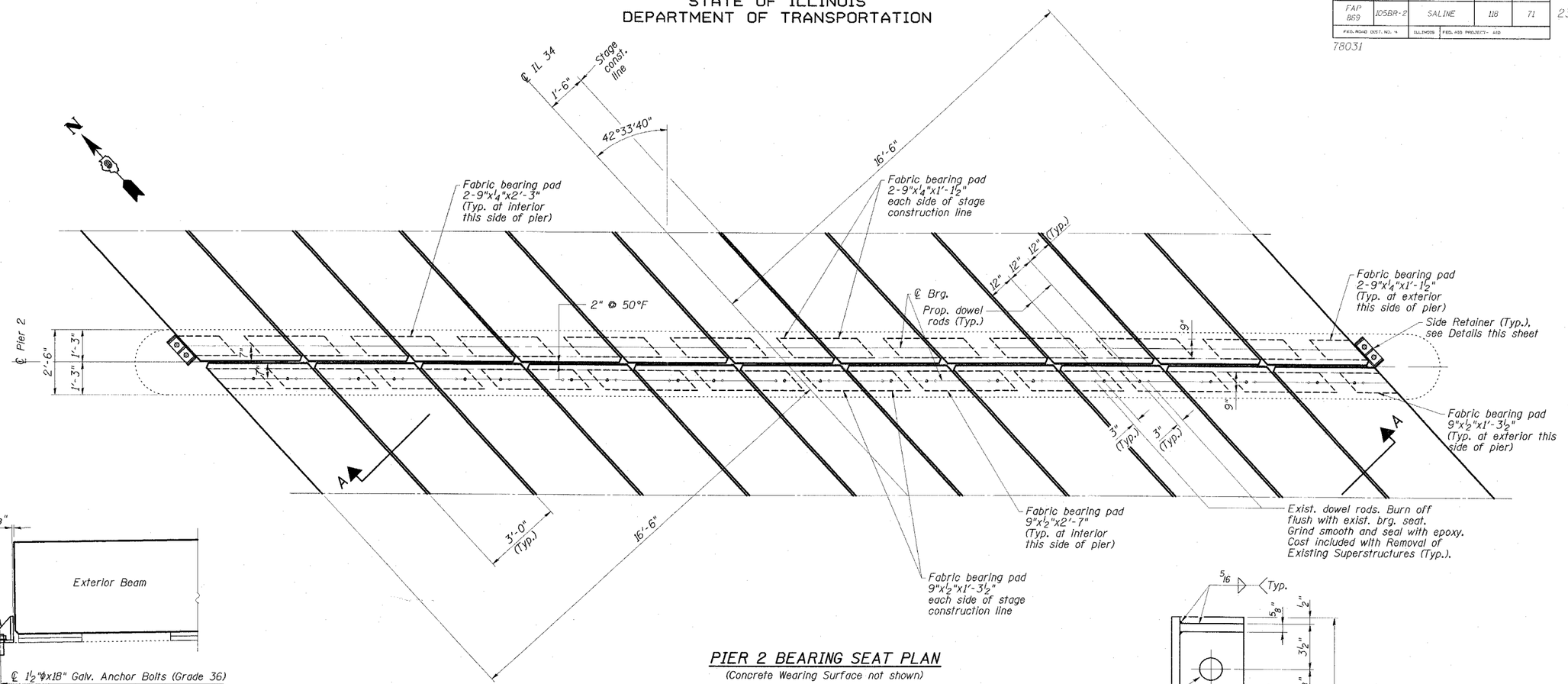
PIER 2
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	71
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 22
23 SHEETS

78031



PIER 2 BEARING SEAT PLAN
(Concrete Wearing Surface not shown)

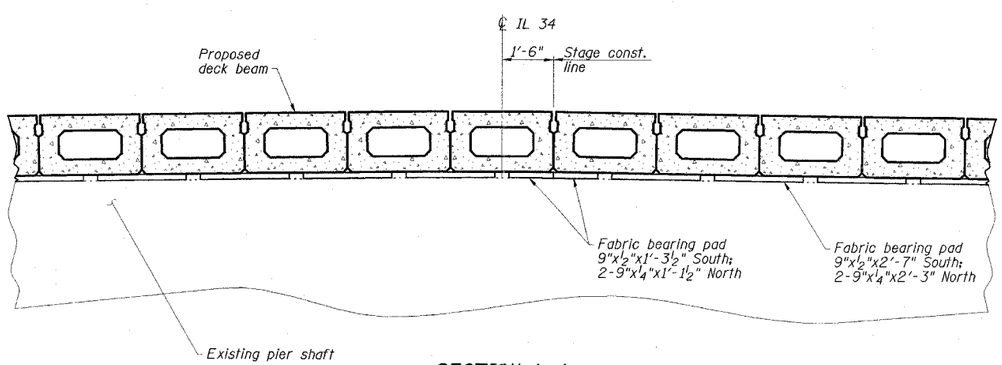
EXTERIOR BEAM RETAINER DETAILS
(2 Required)

Cost of Retainer Angles, Anchor Bolts & accessories are included with Precast Prestressed Concrete Deck Beams.

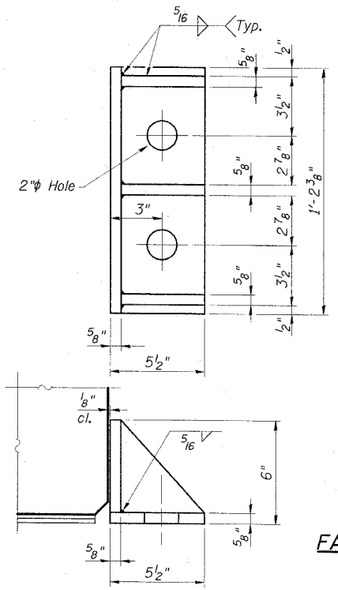
Fill 1/8" gap with shim ℄ to provide temporary lateral support until shear keys have been grouted and concrete wearing surface has been placed.

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 be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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



SECTION A-A
South side shown
(Concrete Wearing Surface not shown)



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

ESCA CONSULTANTS, INC.		
DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

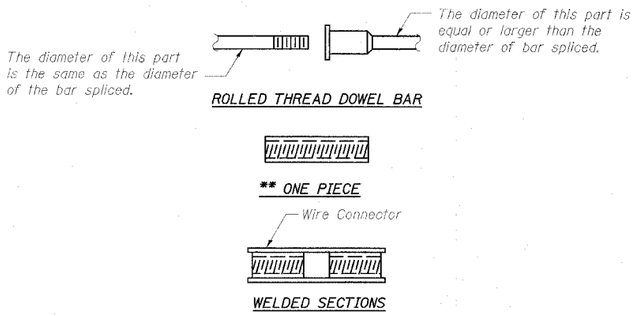
PIER 2 DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-2	SALINE	118	72
FED. ROAD DIST. NO. 4	ILLINOIS	FED. AID PROJECT- AID		

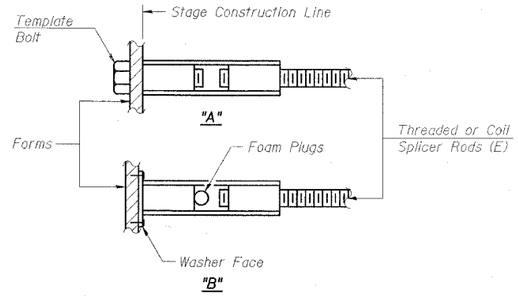
SHEET NO. 23
23 SHEETS

78031



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:

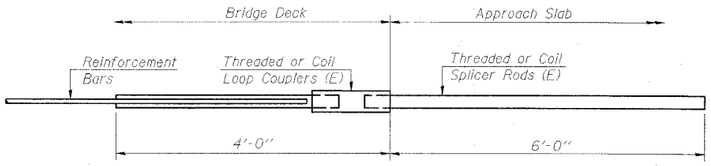
① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

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

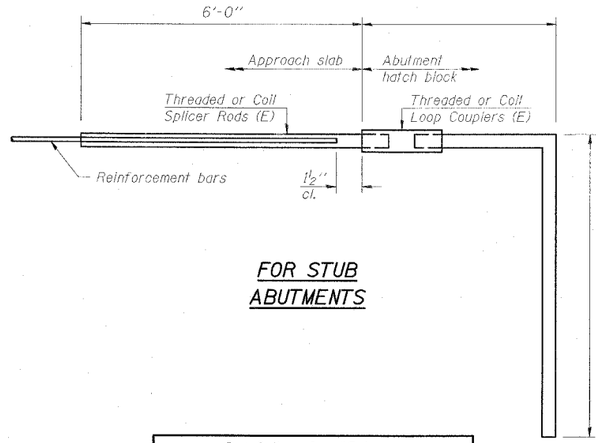
BAR SPLICER ASSEMBLIES

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



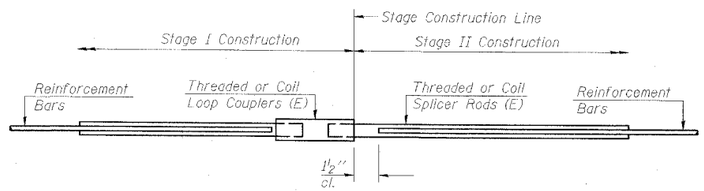
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 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	155	Concrete Wearing Surface
#5	2	North Abutment
#5	2	South Abutment

BAR SPLICER ASSEMBLY DETAILS
IL 34 OVER
MIDDLE FORK SALINE RIVER
FAP ROUTE 869 - SECTION 105BR-2
SALINE COUNTY
STATION 1561+70.00
STRUCTURE NO. 083-0038

ESCA CONSULTANTS, INC.

DESIGNED BY:	JMS	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

BSD-1 11-1-06

ESCA CONSULTANTS, INC.
CIVIL • STRUCTURAL • ENVIRONMENTAL
TRANSPORTATION

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	73
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

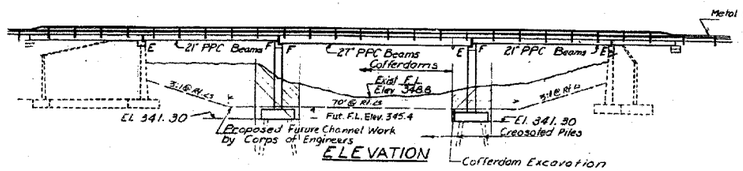
B.M. - Sq. cut in top S.W. Wingwall 15' Rt. Sta. 1562+36 Elev. 368.15
Exist. Structure: Built 1932 as S.B.I. Rt. 143 Sec. 105BC at Sta 1561+70 1 Span Penn. Truss on R.C. Closed Abuts.
Superstructure to be removed by Bridge Contractor.
Traffic detoured over Temporary Bridge.
Floor Stringers & Handrail Channels to be Salvaged (See Special Provisions)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* 105 (B-DR, B-DR-1, B-DR-2, B-DR-3, B-DR-4)

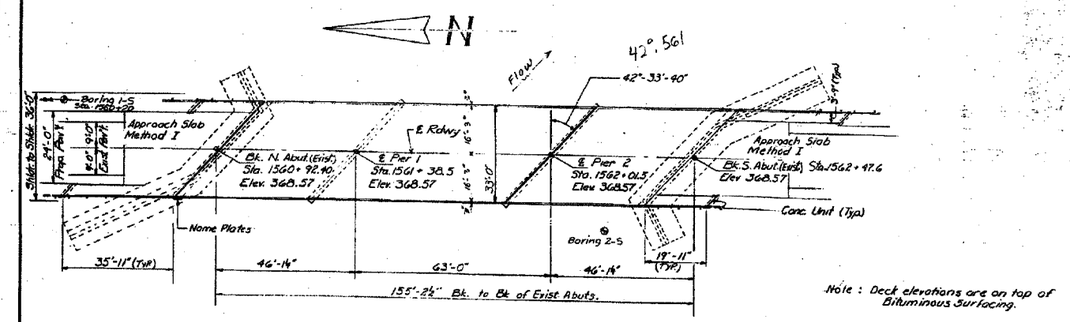
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
143 B	SALINE	68	23

SHEET NO. 1
10 SHEETS



ELEVATION

STATION 1561+70
REBUILT 19 BY
STATE OF ILLINOIS
FA RTE 126 SPUR SEC. 105B-DR-1
F.A. PROJ. RF-375 (10)
LOADING HS20
NAME PLATE
See Std. 2113



Note: Deck elevations are on top of Bituminous Surfacing.

PLAN

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

Expansion bolts shall consist of self drilling expansion anchors and ¾"ø x 12" hooked bolts.

The Contractor shall drive 1 timber test pile in a permanent location at Pier 1 or directed by the Engineer before ordering the remainder of piles. The Contractor is cautioned not to overdrive the piling.

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

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Bit. Conc. Surf. Course Class I	Tons	62		62
Removal of Existing Superstructure	Ea.	1		1
Concrete Removal	Cu. Yds.		26	26
Cofferdams	Each		2	2
Cofferdam Excavation	Cu. Yds.		620	620
P.P.C. Deck Beams (27")	Sq. Ft.	2077		2077
P.P.C. Deck Beams (21")	Sq. Ft.	2848		2848
Steel Railing, Type N	Lin. Ft.	417		417
Reinforcement Bars	Lbs.	570	19370	19940
Name Plates	Ea.	1		1
Waterproofing Membrane System	Sq. Yds.	567		567
Neoprene Expansion Joint 8"	Lin. Ft.	134		134
Precast Concrete Bridge Slab	Sq. Ft.	418		418
Test Pile (Timber)	Ea.		1	1
Temporary Bridge Complete	Ea.	1		1
Class X Concrete	Cu. Yds.	6.2	335.2	361.4
Creosoted piles up to 20'	Lin. Ft.		1806	1806
Portland Cement Mortar Fairing Coat	Lin. Ft.	1492		1092

* See Special Provisions.

DESIGN STRESSES

FIELD UNITS
fc = 1400 p.s.i. sub
vc = 75 p.s.i. footings
fs = 20,000 p.s.i. reinf
n = 10

PRECAST UNITS
f'c = 4,500 p.s.i.
fc = 1,800 p.s.i.
fs = 20,000 p.s.i.
n = 8

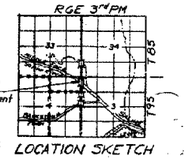
PRECAST PRESTRESSED UNITS
f'c = 5000 p.s.i.
f'ci = 4000 p.s.i.
f's = 270,000 p.s.i. - ⅜"ø Strands
fsi = 189,000 p.s.i. - ⅜"ø Strands
Allow 25#/sf for fut wearing surface

LOADING HS20-44

DESIGNED	J. J. Hauck
CHECKED	D A Ryan
DRAWN	J.R.B.
CHECKED	D A Ryan JPC

EXAMINED November 11 19 71
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

WATERWAY INFORMATION
Drainage Area: 103 Sq. Mi.
Character: Rolling, Clay, Wooded, Cultivated
Required Opening: 2220 Sq. Ft.
Present Opening: 2220 Sq. Ft.
Proposed Opening:
Overflow Struct. @ Sta. 1542+00: 577 Sq. Ft.
Saline River @ Sta. 1561+70: 1143 Sq. Ft.
Overflow Struct. @ Sta. 1579+00: 904 Sq. Ft.
12'-0"x11'-6" Box Culvert: 138 Sq. Ft.
Q100 8550 c.f.s.



FA Rt. 126 Spur OVER
MIDDLE FORK SALINE RIVER
SEC. 105B-DR-1
SALINE COUNTY
STA. 1561+70

Rev. 2-17-75 F.M.

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

CONTRACT NO. 78031

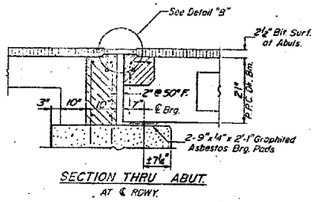
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	74
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*105(B-DR, B-DP-1, B-DR-2, B-DR-3, B-DR-4)

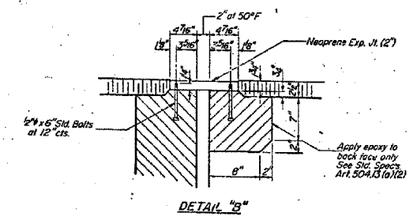
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

COUNTY NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. 143	N	SALINE	68	24
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

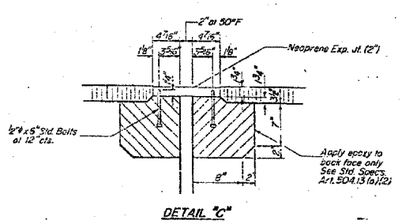
SHEET NO. 2
10 SHEETS



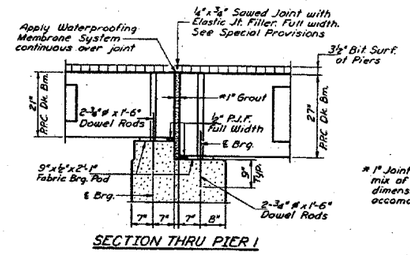
SECTION THRU ABUT.
AT ℄ ROWY.



DETAIL "B"



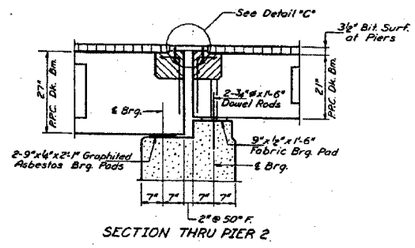
DETAIL "C"



SECTION THRU PIER 1

* 1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar. This dimension may very plus or minus to accomodate tolerance in beam lengths.

NOTE: Dimensions are at right angles.
Hatched areas to be poured after beams have been erected and joints grouted.
Ends of beams shall be aligned at the expansion joints. Any lineal variation in the beam lengths shall be placed at the fixed joint.
See End of Beam Detail for reinforcement.



SECTION THRU PIER 2

DESIGNED		EXAMINED	
CHECKED		PASSED	
DRAWN		APPROVED	
CHECKED			

DIRECTOR OF HIGHWAYS

SUPERSTRUCTURE DETAILS
S.B.I. RT. 143 - SEC. 105DR-1
SALINE COUNTY
STA. 1561 + 70

E.D.C. Dr. 10-1999

ESCA CONSULTANTS, INC.

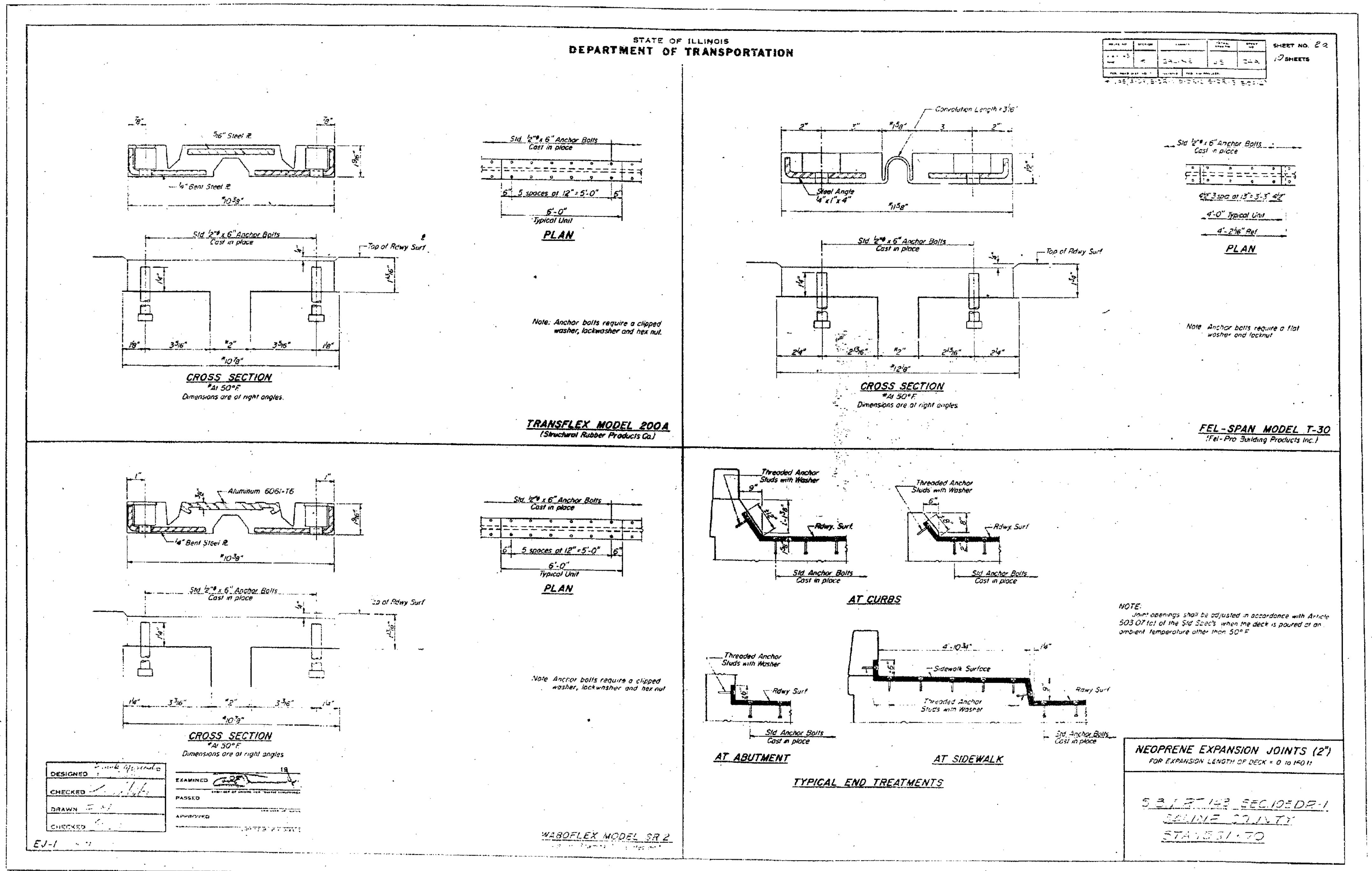
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

CONTRACT NO. 78031

F.A.P. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	75
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



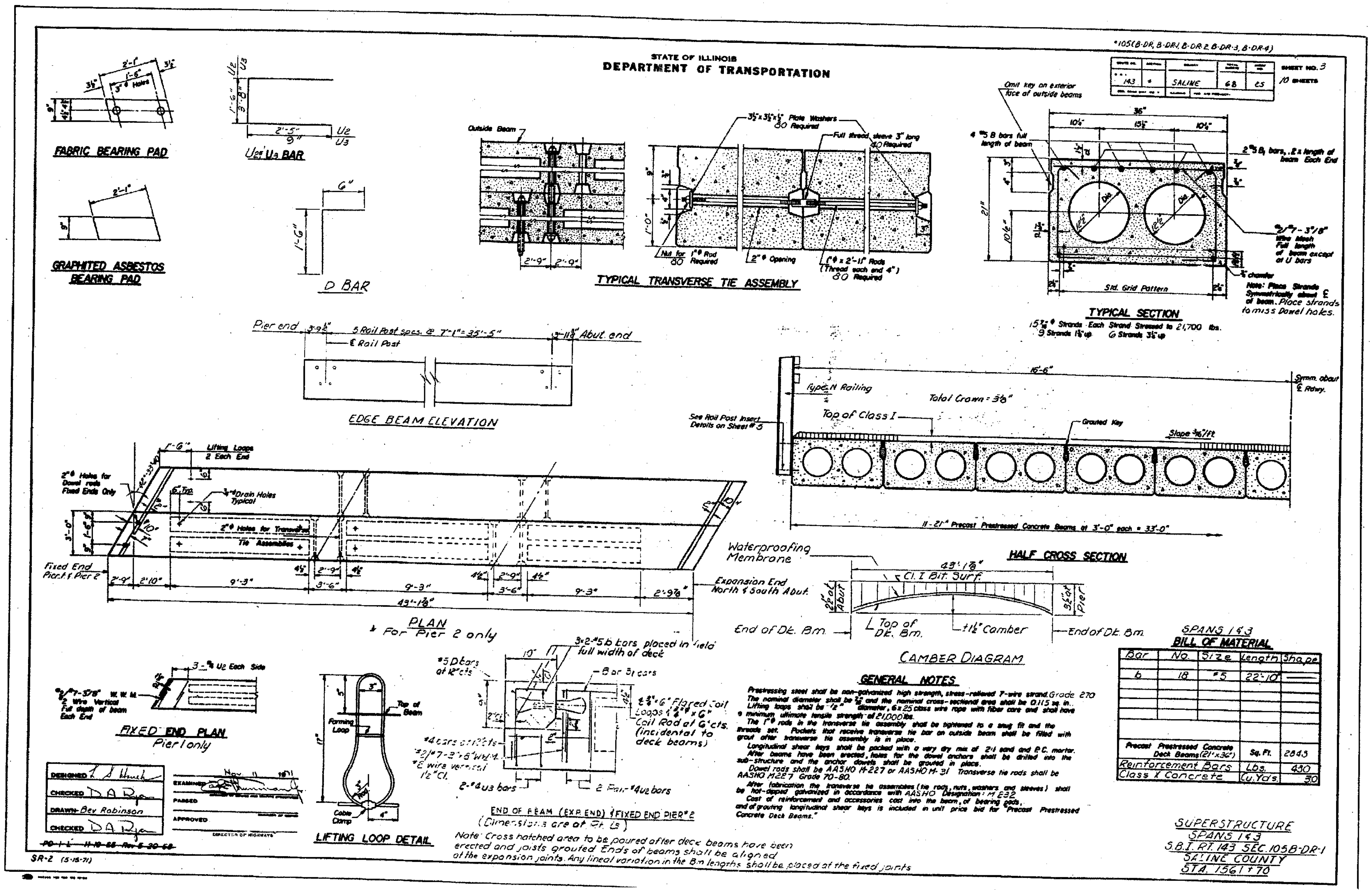
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	76
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
FABRIC BEARING PAD
U2 & U3 BAR
GRAPHITED ASBESTOS BEARING PAD
D BAR
TYPICAL TRANSVERSE TIE ASSEMBLY
TYPICAL SECTION
EDGE BEAM ELEVATION
HALF CROSS SECTION
PLAN
* For Pier 2 only
CAMBER DIAGRAM
FIXED END PLAN
Pier 1 only
LIFTING LOOP DETAIL
END OF BEAM (EXP END) & FIXED END PIER 2
GENERAL NOTES
Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand. Grade 270
The nominal diameter shall be 7/16" and the nominal cross-sectional area shall be 0.115 sq. in..
Lifting loops shall be 1/2" diameter, 6x25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,000 lbs.
The 1" Ø 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 beam shall be filled with grout after transverse tie assembly is in place.
Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar.
After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.
Dowel rods shall be AASHO M-227 or AASHO M-31 Transverse tie rods shall be AASHO M227 Grade 70-80.
After fabrication the transverse tie assemblies (tie rods, nuts, washers and sleeves) shall be hot-dipped galvanized in accordance with AASHO Designation: M 232
Cost of reinforcement and accessories cast into the beam, of bearing pads, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams."
SPANS 1 & 3
BILL OF MATERIAL
Bar | No. | Size | Length | Shape
6 | 18 | #5 | 22'-10"
Precast Prestressed Concrete Deck Beams (21"x36") | Sq. Ft. | 2843
Reinforcement Bars | Lbs. | 430
Class X Concrete | Cu. Yds. | 30
Note: Cross hatched area to be poured after deck beams have been erected and joints grouted. Ends of beams shall be aligned at the expansion joints. Any lineal variation in the Bm lengths shall be placed at the fixed joints
SUPERSTRUCTURE
SPANS 1 & 3
S.B.I. RT. 143 SEC. 105B-DR-1
SALINE COUNTY
STA. 1561+70

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	77
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

+105 (B-DR, B-DR-1, B-DR-2, B-DR-3, B-DR-4)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

143	F	SALINE	68	26

SHEET NO. 4
10 SHEETS

FABRIC BEARING PAD

A1 BAR

GRAPHITED ASBESTOS BEARING PAD

U & U1 BAR

TYPICAL TRANSVERSE TIE ASSEMBLY

* .2 x length of beam

TYPICAL SECTION

21 - 7/16" ϕ Strands Each Strand Stressed to 21,700 lbs.
9 - Strands 1¾ up 10 Strands 3¼ up 2 Strands 7½" up

D BAR

EDGE BEAM ELEVATION

U4 Bar

HALF CROSS SECTION

CAMBER DIAGRAM

FIXED END ELEVATION
For detail of Expansion End see Sh. #3

PLAN

LIFTING LOOP DETAIL

END OF BEAM (EXP. END)
(Dimensions are at Rt. ∠s)

GENERAL NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand Grade 270. The nominal diameter shall be 7/16" and the nominal cross-sectional area shall be 0.1159 sq. in.. Lifting loops shall be 5/8" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 33,000 lbs.
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 beam shall be filled with grout after transverse tie assembly is in place.
Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar. After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.
Dowel rods shall be AASHO M227 or AASHO M-31 Transverse tie rods shall be AASHO M-227 Grade 70-80.
After fabrication the transverse tie assemblies (tie rods, nuts, washers and sleeves) shall be hot-dipped galvanized in accordance with AASHO Designation M 232.
Cost of reinforcement and accessories cast into the beam, of bearing pads, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams."

SPAN 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
b	6	#5	22'-10"	
Precast Prestressed Concrete Deck Beams (27"x36")			Sq. Ft.	2077
Reinforcement Bars			Lbs.	140
Class Y Concrete			Cu. Yds.	10

SUPERSTRUCTURE
SPAN 2
S.B.I. RT. 143 SEC. 105B-DR-1
SALINE COUNTY
STA. 1561+70

PD-3-L 11-18-66 Rev. 5-20-68
SA-5 (5-15-71)

DESIGNED	J. J. Hunt	EXAMINED
CHECKED	D.A. Rye	PASSED
DRAWN	Bev Robinson	APPROVED
CHECKED	D.A. Rye	DIRECTOR OF HIGHWAYS

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

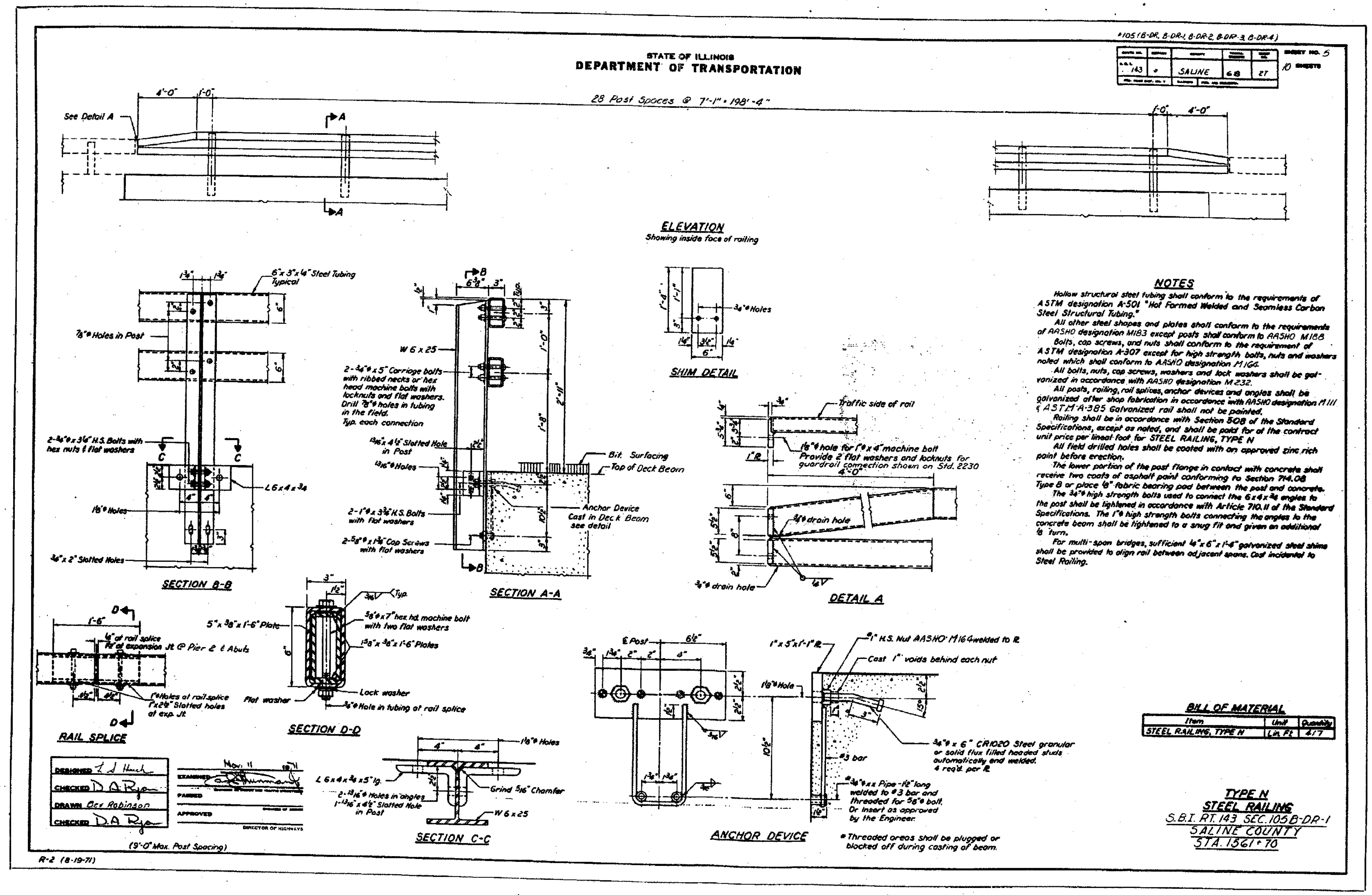
EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	78

CONTRACT NO. 78031

STA. | TO STA.

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



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
28 Post Spaces @ 7'-1" = 198'-4"
ELEVATION
Showing inside face of railing
SHIM DETAIL
SECTION B-B
SECTION A-A
DETAIL A
RAIL SPLICE
SECTION D-D
SECTION C-C
ANCHOR DEVICE
NOTES
Hollow structural steel tubing shall conform to the requirements of ASTM designation A-501 "Hot Formed Welded and Seamless Carbon Steel Structural Tubing."
All other steel shapes and plates shall conform to the requirements of AASHO designation M183 except posts shall conform to AASHO M188
Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to AASHO designation M164.
All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHO designation M232.
All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHO designation M111 & ASTM A-385 Galvanized rail shall not be painted.
Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE N
All field drilled holes shall be coated with an approved zinc rich paint before erection.
The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place 1/8" fabric bearing pad between the post and concrete.
The 3/4"Φ high strength bolts used to connect the 6x4x3/4 angles to the post shall be tightened in accordance with Article 710.11 of the Standard Specifications. The 1"Φ high strength bolts connecting the angles to the concrete beam shall be tightened to a snug fit and given an additional 1/8 turn.
For multi-span bridges, sufficient 1/4"x 6"x 1'-4" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.
BILL OF MATERIAL
STEEL RAILING, TYPE N Lin. Ft. 417
TYPE N
STEEL RAILING
S.B.I. RT. 143 SEC. 105B-DR-1
SALINE COUNTY
STA. 1361+70
(9'-0" Max. Post Spacing)
R-2 (8-19-71)

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

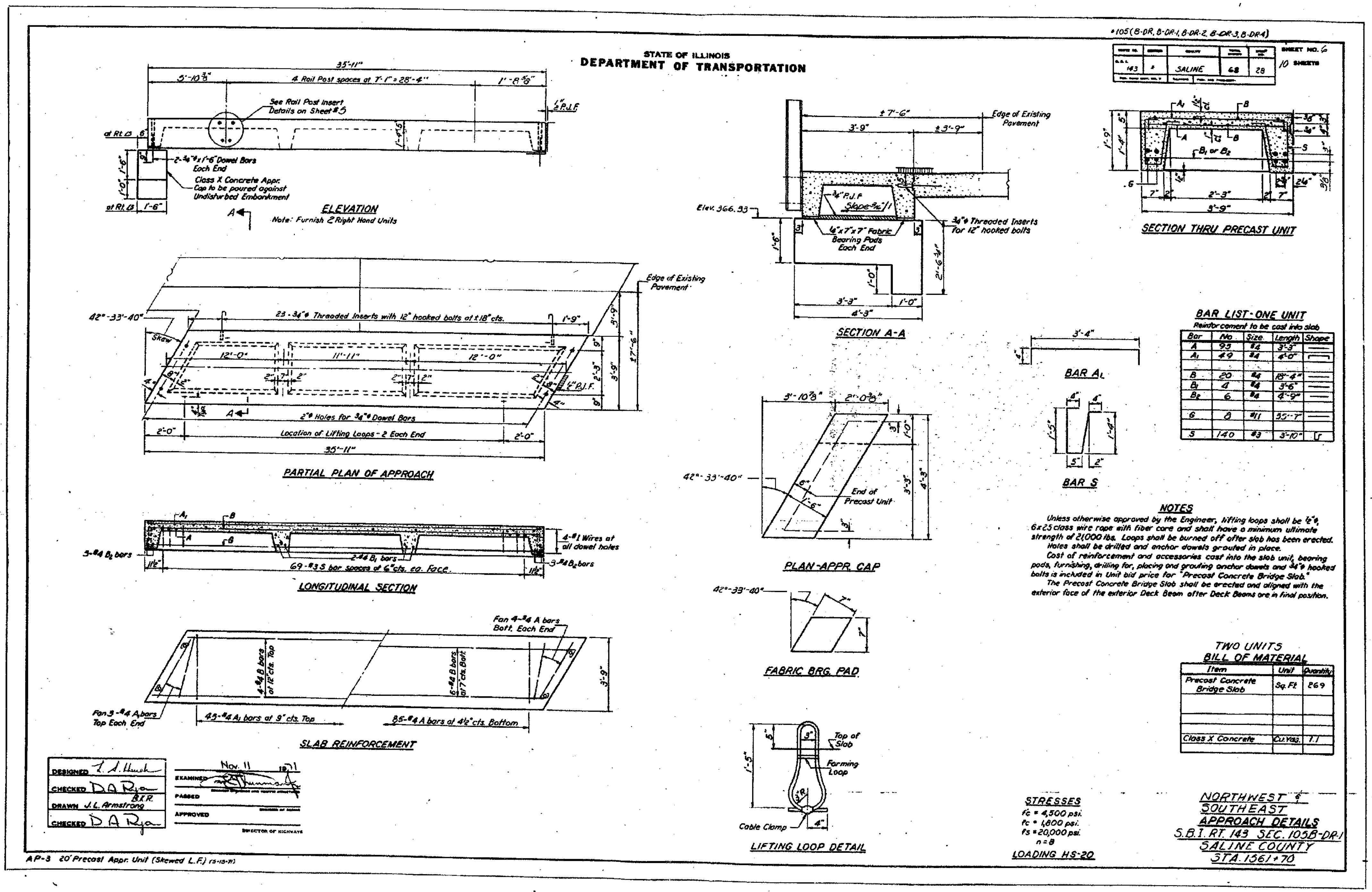
EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	79

CONTRACT NO. 78031

STA. TO STA.

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



BAR LIST - ONE UNIT

Reinforcement to be cast into slab

Bar	No	Size	Length	Shape
A	93	#4	3'-3"	—
A1	49	#4	4'-0"	⊓
B	20	#4	18'-4"	—
B1	4	#4	3'-6"	—
B2	6	#4	4'-9"	—
6	8	#11	35'-7"	—
S	140	#3	3'-10"	⊓

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be ½"φ, 6x25 class wire rope with fiber core and shall have a minimum ultimate strength of 21,000 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4"φ hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

TWO UNITS BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	269
Class X Concrete	Cu. Yds.	7.1

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

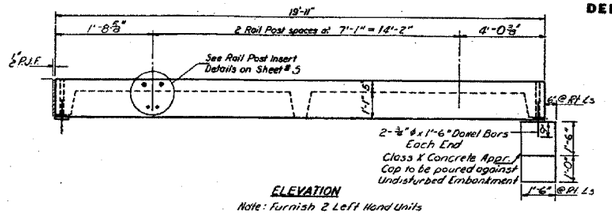
CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	80
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

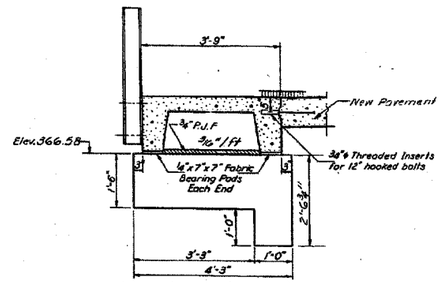
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

=105(B-DR,B-DR1,B-DR2,B-DR3,B-DR4)

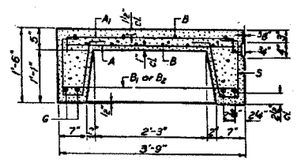
					SHEET NO. 7
143	B	SALINE	68	29	10 SHEETS



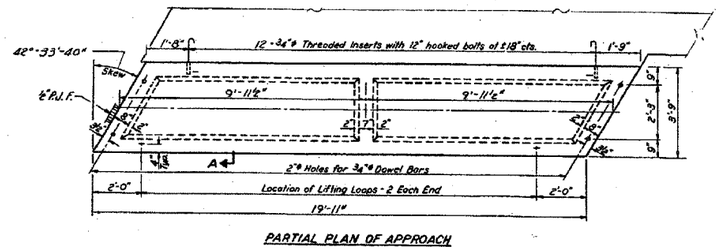
ELEVATION
Note: Furnish 2 Left Hand Units



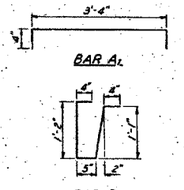
SECTION A-A

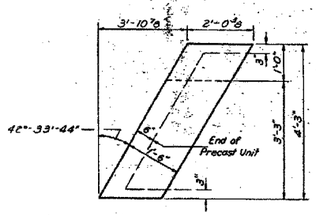


SECTION THRU PRECAST UNIT



PARTIAL PLAN OF APPROACH



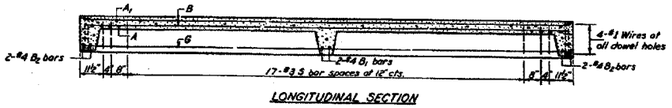


PLAN-APPR. CAP

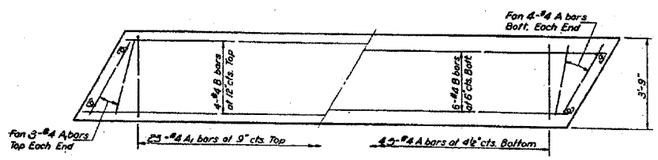
BAR S

BAR LIST - ONE UNIT
Reinforcement to be cast into slab

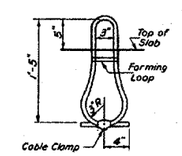
Bar	No	Size	Length	Shape
A	33	#4	3'-3"	
A_1	29	#4	4'-0"	
B	10	#4	10'-6"	
B_1	2	#4	3'-6"	
B_2	4	#4	8'-9"	
C	4	#10	19'-6"	
S	44	#3	3'-4"	



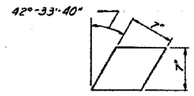
LONGITUDINAL SECTION



SLAB REINFORCEMENT



LIFTING LOOP DETAIL



FABRIC BRG. PAD

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be 5/8"ø, 6x25 class wire rope with fiber core and shall have a minimum ultimate strength of 21,000 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/8"ø bolted bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

TWO UNITS
BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	149
Class X Concrete	Cu. Yds.	1.1

STRESSES
fc = 4,500 psi.
fc = 1,800 psi.
fs = 20,000 psi
n = 8

LOADING HS-20-44

NORTH EAST & SOUTHWEST
APPROACH DETAILS
S.B.I. RT. 143 SEC. 105B-DR-1
SALINE COUNTY
STA. 1561+70

DESIGNED	J. J. Hauck	
CHECKED	D.A.Rye	
DRAWN	J.L.Armstrong	B.K.R.
CHECKED	D.A.Rye	
EXAMINED		Nov. 11 1971
PASSED		
APPROVED		
		DIRECTOR OF HIGHWAYS

AP-3 20' Precast Appr. Unit (Skewed L.F.) (8-15-71)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

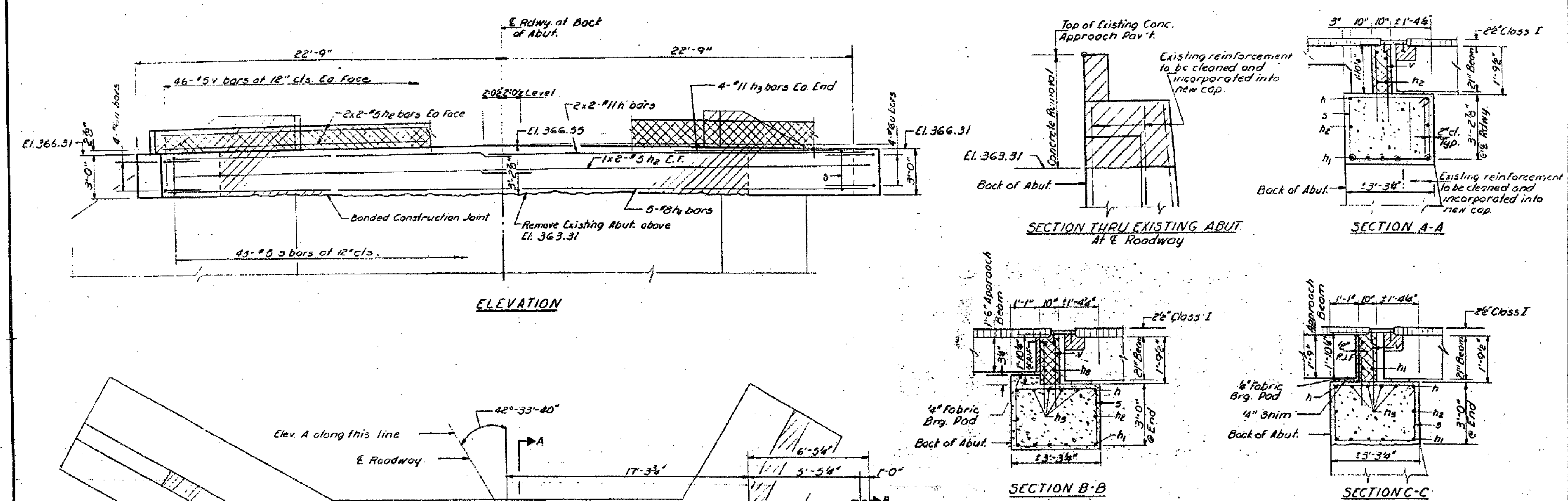
FOR INFORMATION ONLY

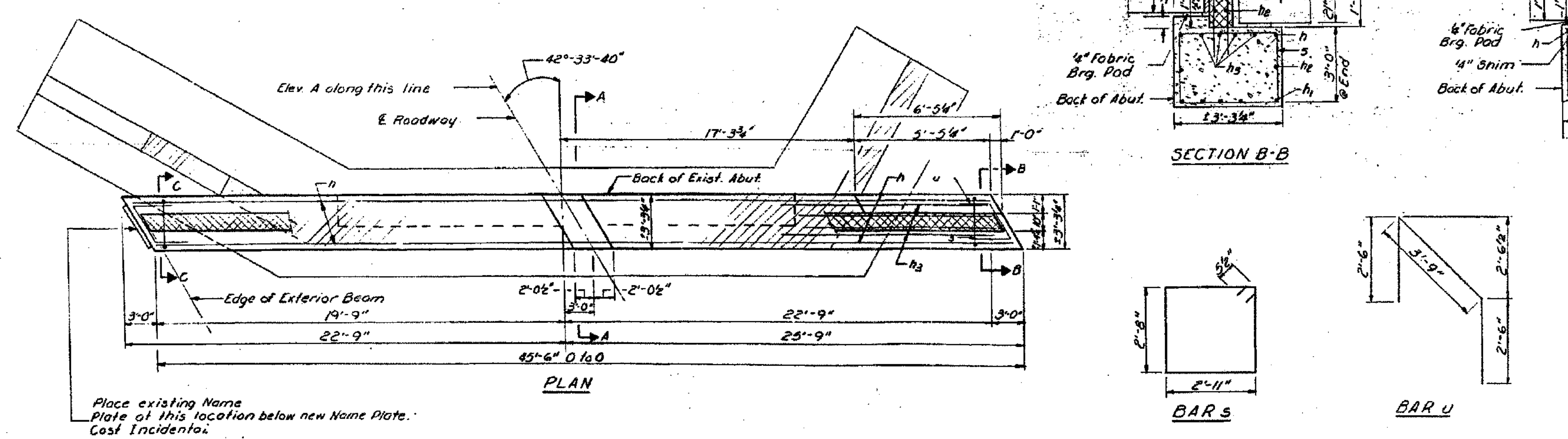
EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	81
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION





TWO ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	8	#11	23'-7"	——
h1	10	#8	45'-0"	——
h2	24	#5	22'-10"	——
h3	16	#11	12'-0"	——
s	86	#5	12'-1"	
u	16	#6	8'-9"	
v	184	#5	3'-6"	——
Class X Concrete			Cu. Yds	39.8
Reinforcement Bars			lbs	5760
Concrete Removal			Cu Yds	26

Notes:
Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.

All edges shall have standard 3/4" chamfers.
Cross hatched area shall be poured after beams are in place. Quantities are included in the Abutment Bill of Material.

DESIGNED / CHECKED D.A. Rya / DRAWN Bev Robinson / CHECKED D.A. Rya
EXAMINED / PASSED / APPROVED — DIRECTOR OF HIGHWAYS

ABUTMENTS
S.B.I. RT 143 SEC 105B-DR-1
SALINE COUNTY
STA. 1561+70

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	82
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

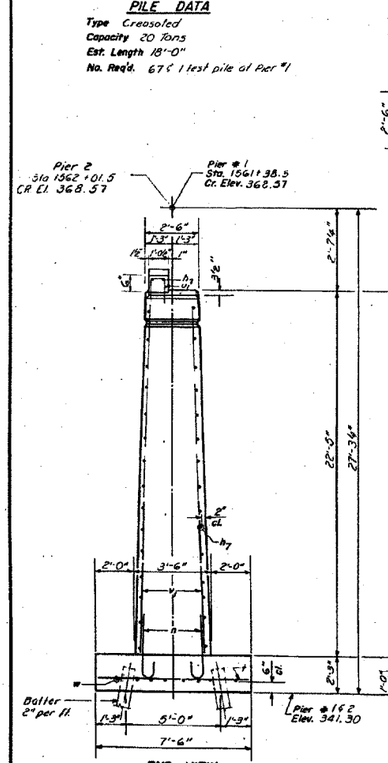
(*105 B-DR, B-DR-1, B-DR-2, B-DR-3, B-DR-4)

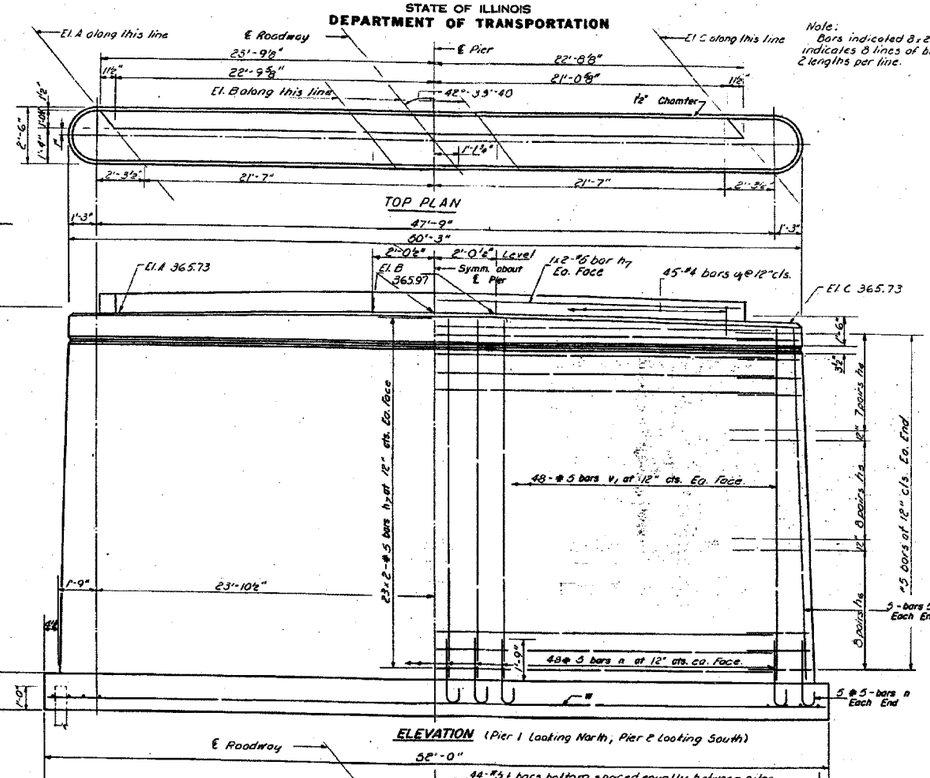
COUNTY NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
143	a	SALINE	65	31
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT		

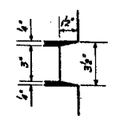
SHEET NO. 9
10 SHEETS

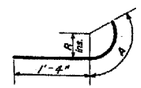
Note: Bars indicated 8 x 2-#6 etc. indicates 8 lines of bars with 2 lengths per line.

PILE DATA
Type Creosoted
Capacity 20 Tons
Est. Length 18'-0"
No. Req'd. 67 & 1 test pile at Pier #1



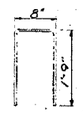


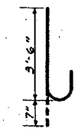




Bar	R	A
h_6	1'-1"	2'-4"
h_5	1'-3"	2'-7"
h_4	1'-5"	2'-10"

DETAIL OF BARS





TWO PIERS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_4	36	#5	3'-8"	
h_5	64	#5	3'-11"	
h_6	64	#5	4'-2"	
h_7	192	#5	24'-6"	
n	212	#5	4'-1"	C
v	88	#5	7'-3"	
u_1	90	#4	8'-2"	
y	212	#5	21'-11"	
w	32	#6	26'-9"	
Class X Concrete		Cu. Yds.	315.4	
Reinforcement Bars		Lbs.	13616	
Creosoted Piles up to 40'		Lin. Ft.	1206	
Test Piles Timber		Ea.	1	

DESIGNED	T. A. Hunek	
CHECKED	D.A.R.	
DRAWN	W. A. Sausaman	
CHECKED	D.A.R.	

EXAMINED Nov. 11 19 59
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

P-1 Re-drawn 7-21-59 Rev. 11-25-59

PIERS 1 & 2
S.B.I. RT. 143 SEC. 105 B-DR-1
SALINE COUNTY
STA 1561 + 70

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-2
SALINE COUNTY

BENCHMARK: Chiseled square on the southwest wingwall of SN 083-0039, Station 1574+42.5, 18.0' Rt., Elev. 366.19

EXISTING STRUCTURE: SN 083-0039 was originally built in 1932 as S.B.I. Route 143, Section 105B. The superstructure was replaced in 1972, and precast concrete bridge slabs were utilized to widen the approaches. The superstructure consists of two simple spans, 17" PPC deck beams. The substructure consists of two reinforced concrete closed abutments on timber piles, and a single solid concrete pier supported on timber piles. The back-to-back abutments length is 75'-9½", the out-to-out width is 33'-0". The existing superstructure and the existing approach shoulder bridge slabs shall be removed and replaced utilizing stage construction.

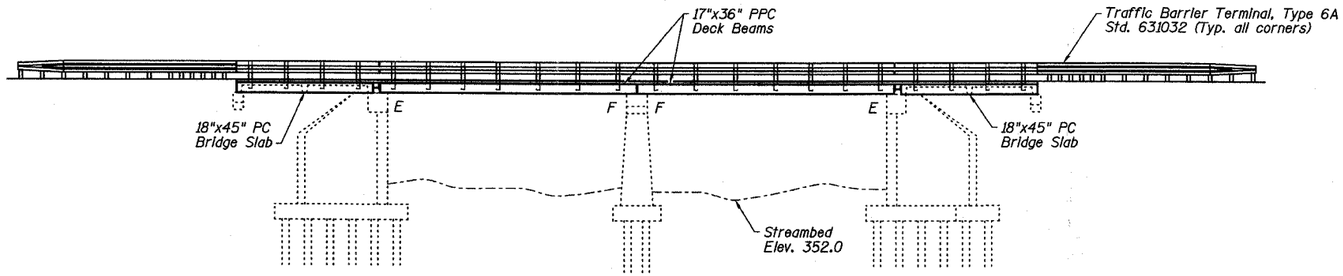
No salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

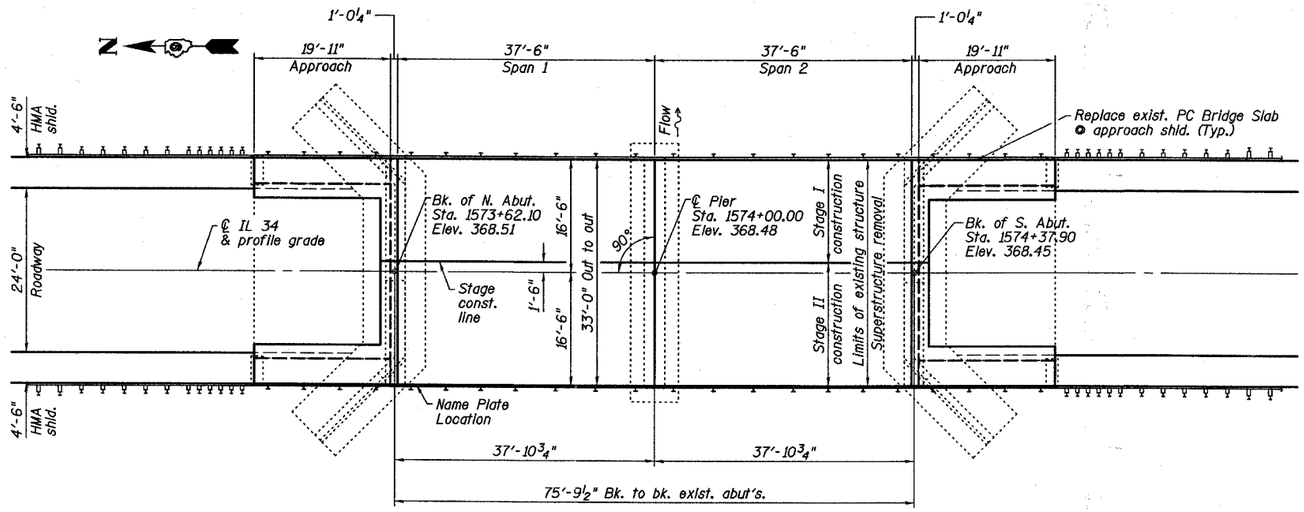
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	83
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ASD		

SHEET NO. 1
17 SHEETS

78031



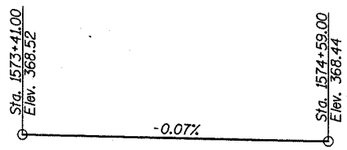
ELEVATION



PLAN

STATION 1574+00.00
REBUILT 200_ BY
STATE OF ILLINOIS
F.A.P. RT. 869 SEC. 105BR-3
LOADING HS20
STR. NO. 083-0039

NAME PLATE
See Std. 515001



PROFILE GRADE
(Along ℄ Roadway)

ESCA CONSULTANTS, INC.

DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08

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

STATE OF ILLINOIS No. 4647 REGISTERED STRUCTURAL ENGINEER
EXPIRES 11-30-08
Ralph D. Pope
SIGNATURE
04/04/08
DATE

DESIGN SPECIFICATION
2002 AASHTO

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)
fy = 60,000 psi (reinf.)

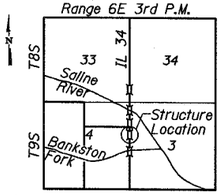
PRECAST PRESTRESSED UNITS
f'c = 6,000 psi
f'ci = 5,000 psi
f's = 270,000 psi (½"ø low lax strands)
fsi = 201,960 psi (½"ø low lax strands)

PRECAST UNITS
f'c = 4,500 psi
fy = 60,000 psi (reinf.)

STRUCTURE INDEX OF SHEETS

SCOPE OF WORK

1. Remove existing surfacing, steel railing, deck beams, and approach shoulder bridge slabs.
2. Repair beam bearing seats and perform other repairs at abutments and pier as required.
3. Reconstruct a two-span PPCD beam superstructure with Concrete Wearing Surface and Steel Railing, Type SM. Reconstruct existing approach shoulders with Precast Concrete Bridge Slabs with Concrete Wearing Surface and Steel Railing, Type SM.



LOCATION SKETCH

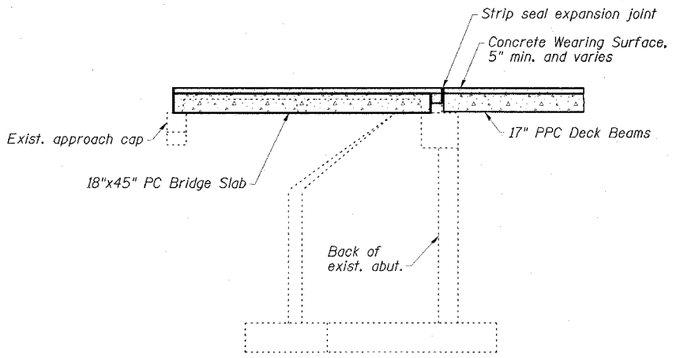
GENERAL PLAN
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	84
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AES		

SHEET NO. 2
17 SHEETS

78031

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



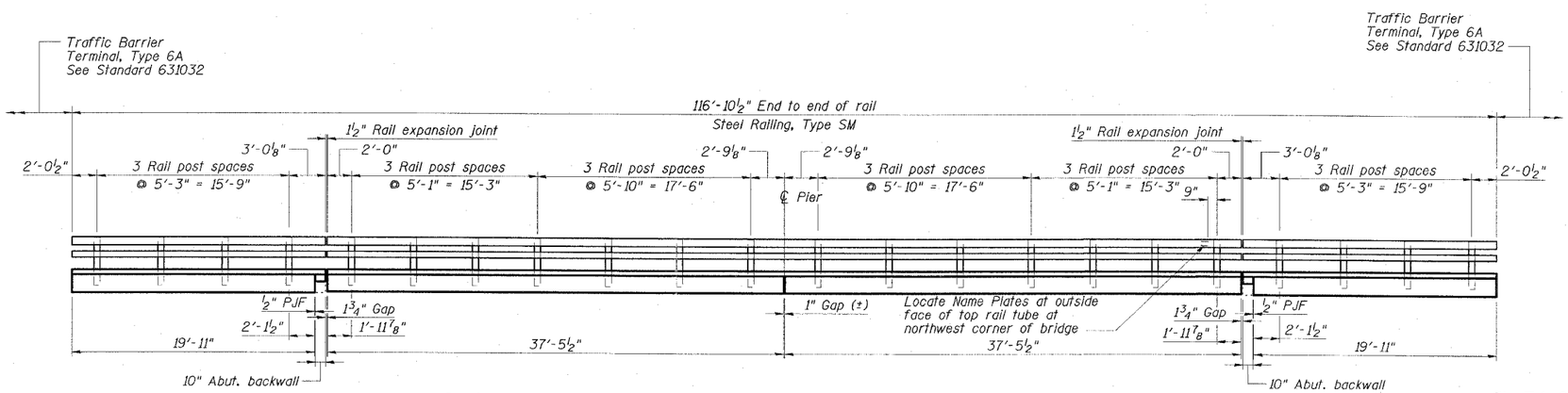
SECTION THRU ABUTMENTS @ OUTSIDE BEAM

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A706 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 abutment bearing seats and backwalls where Structural Repair of Concrete is performed and also to the front faces and ends of new concrete backwalls.
4. All new structural steel shall be shop painted with an inorganic zinc rich primer per AASHTO M300 Type 1 unless noted otherwise.
5. Side retainers shall be AASHTO M270 Grade 36 minimum.
6. No in-stream work will be allowed on this project.
7. 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.
8. If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the new or existing 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" Depth).
9. The minimum thickness of the concrete overlay shall be 5" and varies as required to adjust for the new profile grade and beam camber. Modify to meet field conditions as directed by the Engineer.
10. Repair of the substructure and removal of the existing expansion joints shall be completed prior to placement of the new deck beams. The cost of removing the existing expansion joints is included in Concrete Removal.
11. The existing expansion bearing pads contain asbestos. See Special Provisions for Asbestos Bearing Pad Removal.
12. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures No. 3	Each	1	-	1
Bridge Deck Grooving	Sq. Yd.	315	-	315
Protective Coat	Sq. Yd.	341	-	341
Precast Concrete Bridge Slab	Sq. Ft.	299	-	299
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2473	-	2473
Reinforcement Bars, Epoxy Coated	Pound	4480	160	4640
Bar Splicers	Each	82	4	86
Steel Railing, Type SM	Foot	234	-	234
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	66	-	66
Concrete Sealer	Sq. Ft.	-	97	97
Epoxy Crack Injection	Foot	-	112	112
Asbestos Bearing Pad Removal	Each	-	44	44
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	-	58	58
Concrete Wearing Surface, 5"	Sq. Yd.	341	-	341
Concrete Structures	Cu. Yd.	-	1.6	1.6
Concrete Removal	Cu Yd.	-	1.6	1.6
Removal of Existing Precast Concrete Units	Sq. Ft.	299	-	299



See Sheet No. 10 of 17 for railing details.

RAILING ELEVATION

(Showing Inside Face of East Railing; West Railing Similar)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

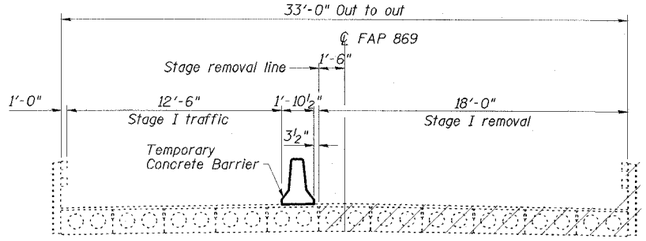
GENERAL DATA
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

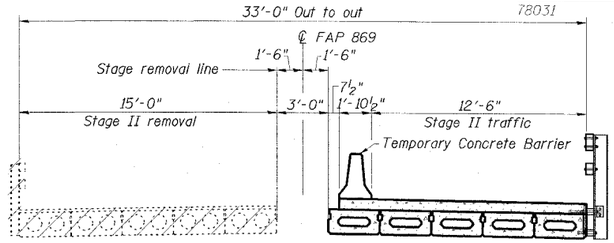
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	85
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 3
17 SHEETS

78031



STAGE I REMOVAL



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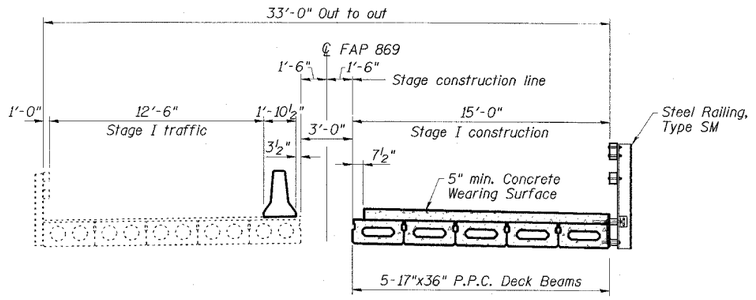
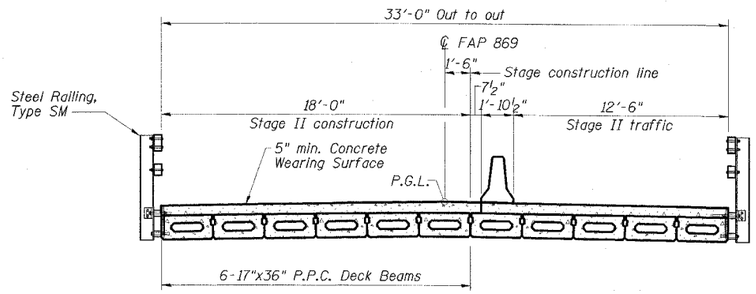


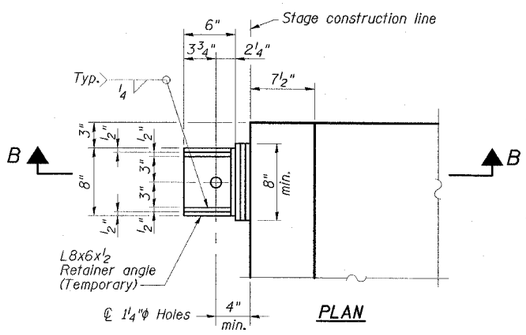
STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

STAGE CONSTRUCTION NOTES

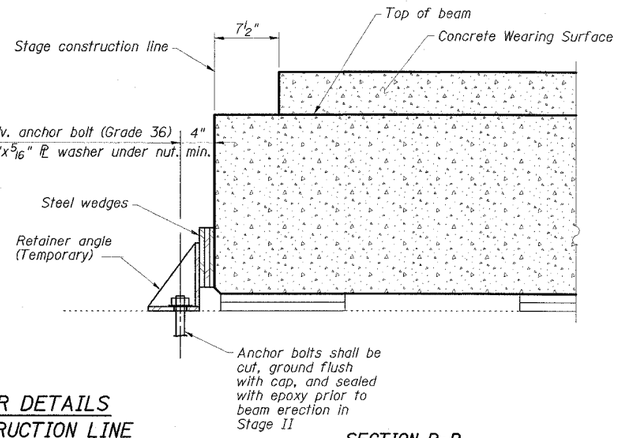
1. All staging sections are looking north.
2. See Sheet No. 5 of 17 for shear key clamping details.
3. For quantity of Temporary Concrete Barrier, see Roadway Plans.



PLAN

BEAM RETAINER DETAILS AT STAGE CONSTRUCTION LINE

(2 Required)



SECTION B-B

Cost of retainer angles, anchor bolts & accessories is included with Precast Prestressed Concrete Deck Beams.

STAGE CONSTRUCTION DETAILS
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

ESCA CONSULTANTS, INC.

DESIGNED BY:	ELH	02/08
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CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

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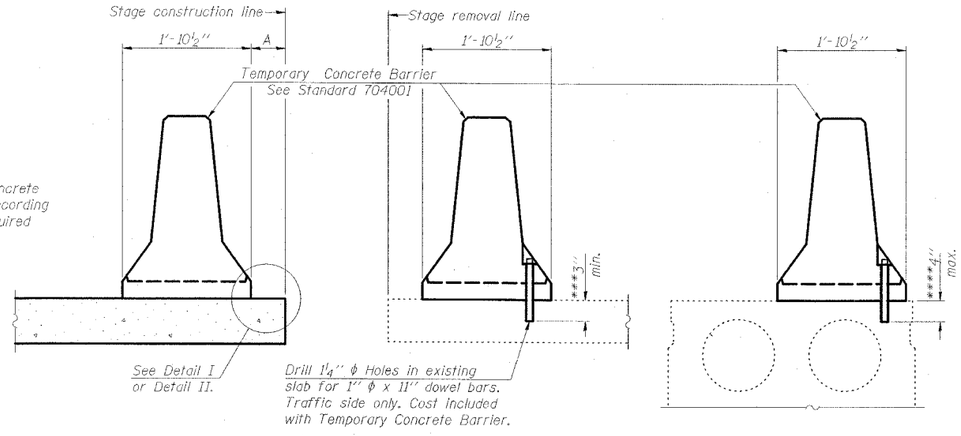
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	86
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ASD		

SHEET NO. 4
17 SHEETS

78031

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".



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel ℄ 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 ℄ to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

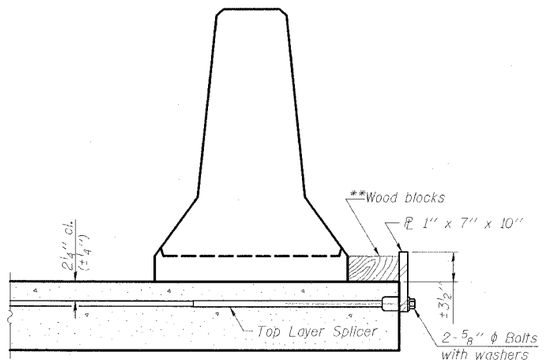
Cost of anchorage is included with Temporary Concrete Barrier.

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.

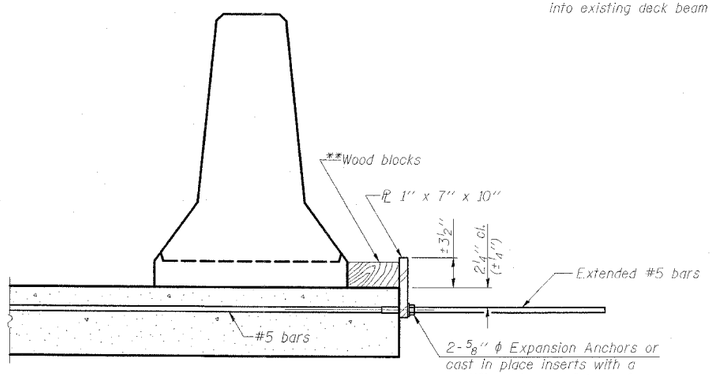
SECTIONS THRU SLAB OR DECK BEAM

***Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

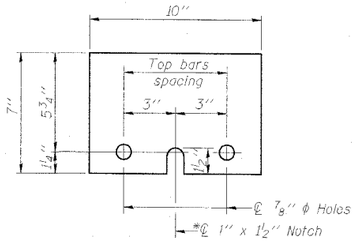


DETAIL I



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 ℄ 1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

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APPROVED BY:	RDP	02/08

R-27

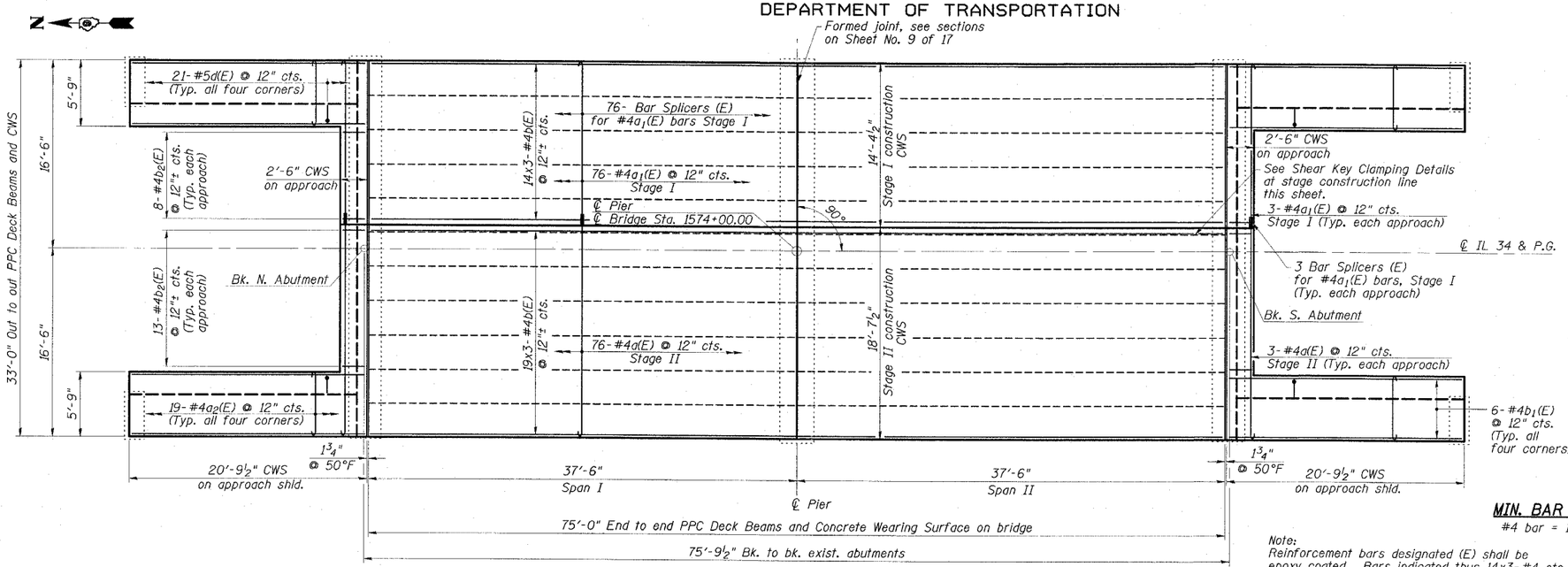
9-3-07

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	87
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

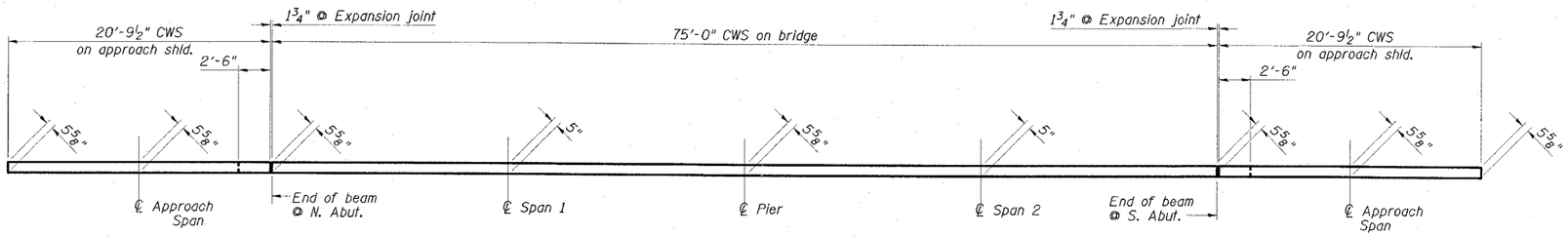
SHEET NO. 5
17 SHEETS

78031

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN - WEARING SURFACE



REINFORCED CONCRETE WEARING SURFACE PROFILE

(At edge of bridge deck)

Note:
Greater thickness is required at centerline of superstructure to conform to cross section slopes shown on Sheet No. 7 of 17.

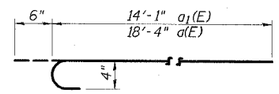
CONCRETE WEARING SURFACE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	82	#4	18'-10"	⊂
a_1(E)	82	#4	14'-7"	⊂
a_2(E)	76	#4	6'-5"	⊂⊃
b(E)	99	#4	26'-0"	—
b_1(E)	24	#4	20'-5"	—
b_2(E)	42	#4	2'-2"	—
d(E)	84	#5	2'-4"	⌐
Reinforcement Bars, Epoxy Coated			Pound	4480
Concrete Wearing Surface, 5"			Sq. Yd.	341
Bridge Deck Grooving			Sq. Yd.	315
Bar Splicers			Each	82
Protective Coat			Sq. Yd.	341

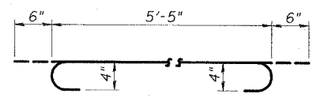
MIN. BAR LAP

#4 bar = 1'-8"

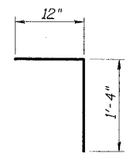
Note:
Reinforcement bars designated (E) shall be epoxy coated. Bars indicated thus 14x3-#4 etc. indicates 14 lines of bars with 3 lengths per line. For remainder of superstructure details, see Sheet Nos. 6 thru 9 of 17.



BARS a(E) & a_1(E)

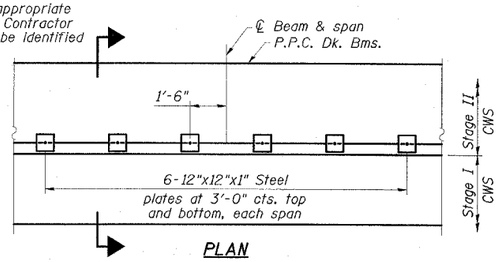


BAR a_2(E)

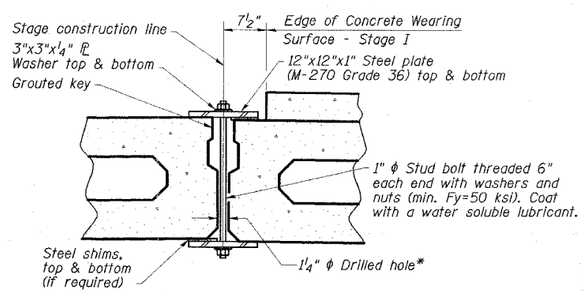


BAR d(E)

* 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 location for the clamping device bolts. If the Contractor elects to use this alternate, the details shall be identified on the shop drawings.

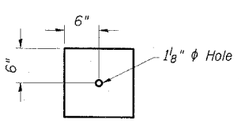


PLAN



SECTION

SHEAR KEY CLAMPING DETAILS



CLAMPING PLATE

Notes:
See Stage Construction Details for traffic lanes.
Cost is included with Precast Prestressed Concrete Deck Beams.

ESCA CONSULTANTS, INC.		
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CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

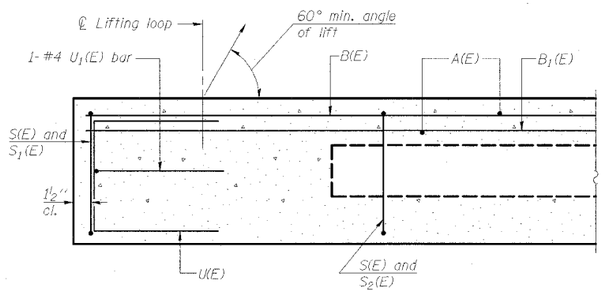
SUPERSTRUCTURE
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

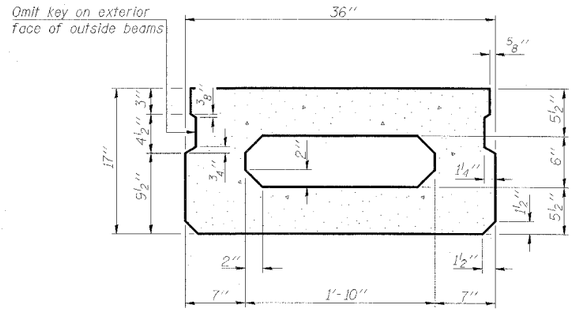
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	88
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AID		

SHEET NO. 6
17 SHEETS

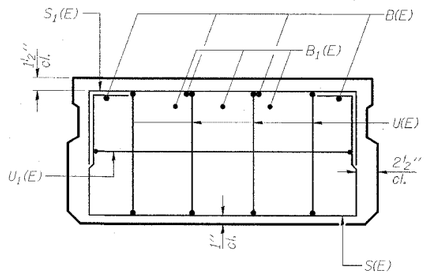
78031



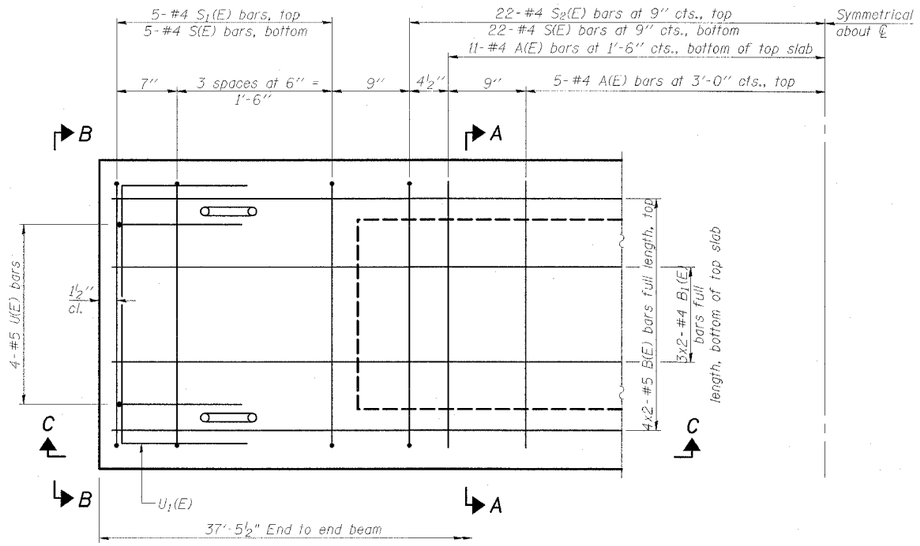
SECTION C-C



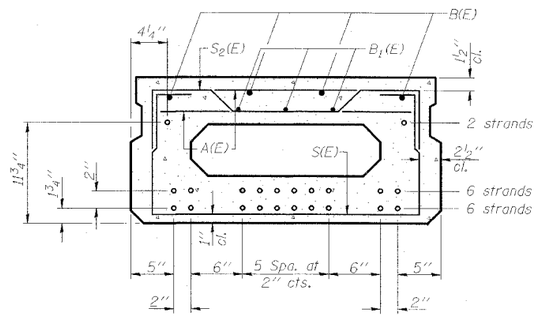
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



SECTION A-A
(Showing reinforcement and permissible strand locations)

14 - ½" ϕ Strands, each strand stressed to 30,900 lbs

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	32	#4	2'-7"	—
B(E)	8	#5	19'-9"	—
B1(E)	6	#4	19'-6"	—
S(E)	54	#4	5'-9"	⊐3"⊏
S1(E)	10	#4	4'-11"	⊐3"⊏
S2(E)	44	#4	5'-2"	⊐3"⊏
U(E)	8	#5	3'-8"	⊐⊏
U1(E)	2	#4	5'-0"	⊐⊏

Note: See Sheet No. 7 of 17 for additional details and Bill of Material.

MIN. BAR LAP
#4 bar = 1'-8"
#5 bar = 2'-2"

Notes:
1. Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.
2. Adjust reinforcement locations to clear dowel holes at fixed ends.

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APPROVED BY:	RDP	02/08

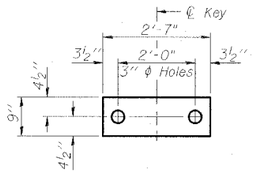
SUPERSTRUCTURE DETAILS
IL 34 OVER BANKSTON FORK AND
SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

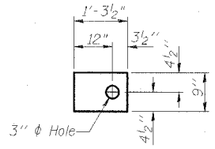
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	89
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AED		

SHEET NO. 7
17 SHEETS

78031



FABRIC BEARING PAD
(Interior)



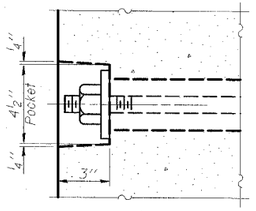
FABRIC BEARING PAD
(Exterior)

FIXED

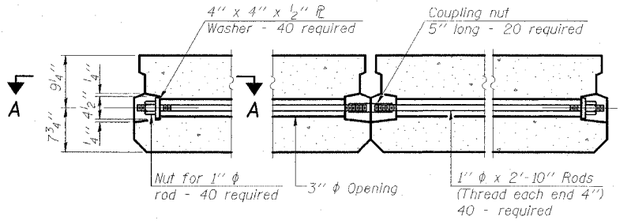
FABRIC BEARING PAD
(Interior)

FABRIC BEARING PAD
(Exterior)

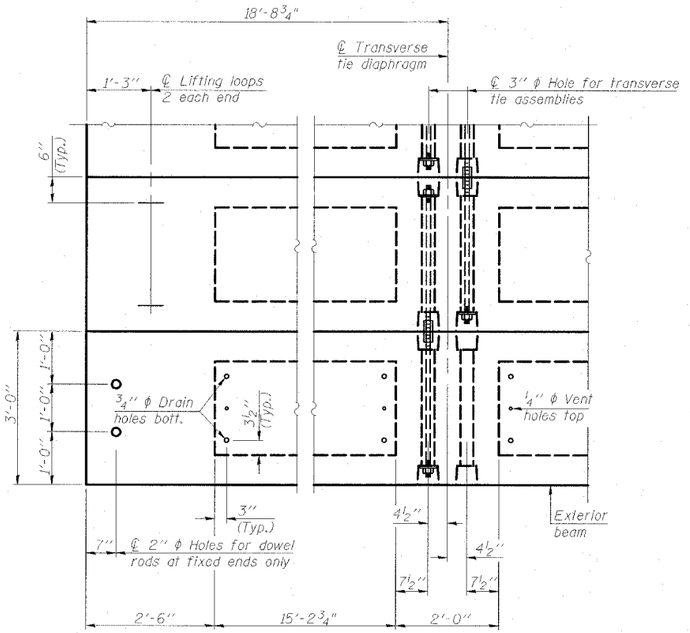
EXPANSION



SECTION A-A

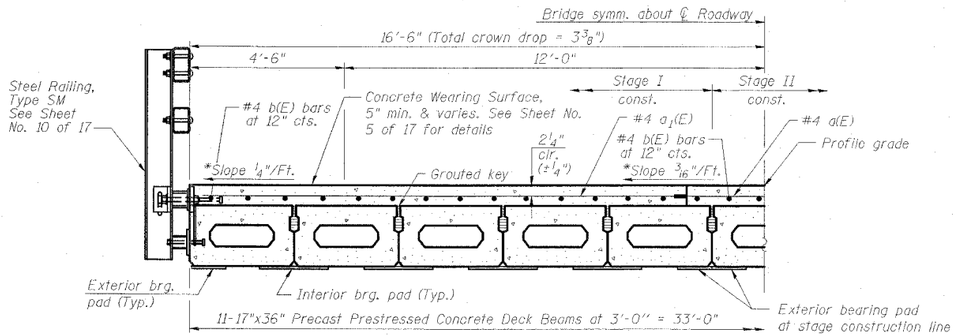


TYPICAL TRANSVERSE TIE ASSEMBLY



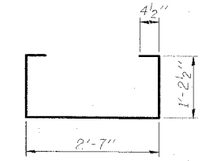
PLAN VIEW

Note: Connect beams in pairs with the transverse tie configuration shown.

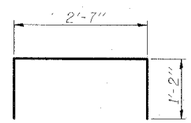


HALF CROSS SECTION
(Looking South)

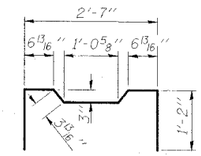
*Cross slopes shown are applicable to CWS



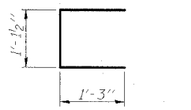
BAR S(E)



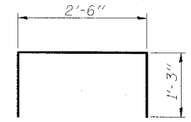
BAR S1(E)



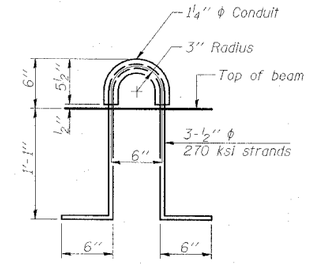
BAR S2(E)



BAR U(E)



BAR U1(E)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Quantity
Precast Prestressed Conc. Deck Bms. (17" Depth)	Sq. Ft.	2473

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.

The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706 (IL MOD), Grade 60. (See Special Provisions)

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" ϕ lifting pin shall be used to engage the lifting loops during handling.

Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

See Sheet No. 2 of 17 for location of rail anchors and additional notes.

SUPERSTRUCTURE DETAILS
IL 34 OVER BANKSTON FORK AND
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FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
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STRUCTURE NO. 083-0039

ESCA
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APPROVED BY:	RDP	02/08

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	90
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ASD		

SHEET NO. 8
17 SHEETS

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STATE OF ILLINOIS
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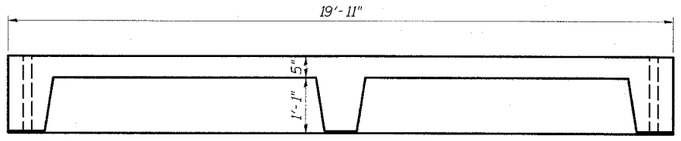
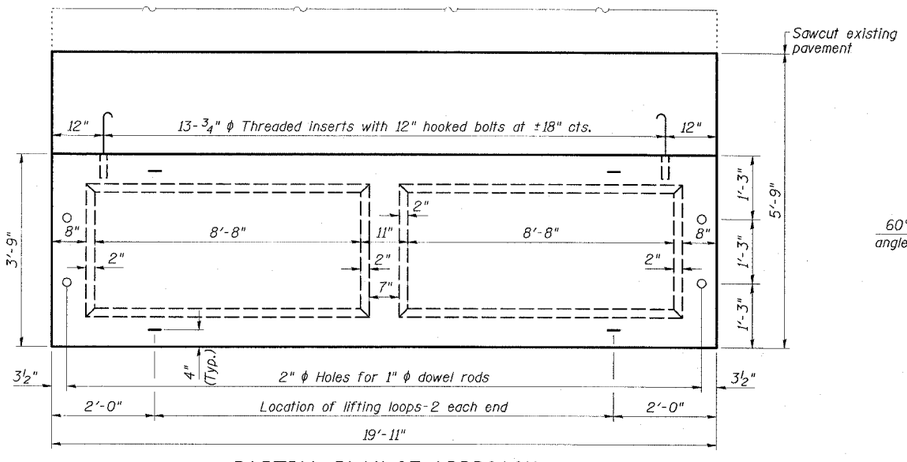
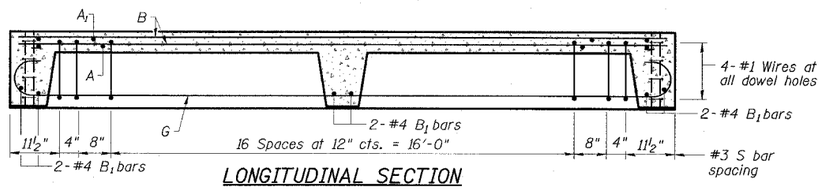


ELEVATION

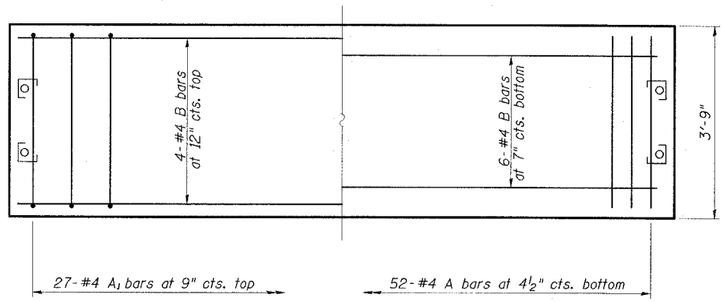


PARTIAL PLAN OF APPROACH

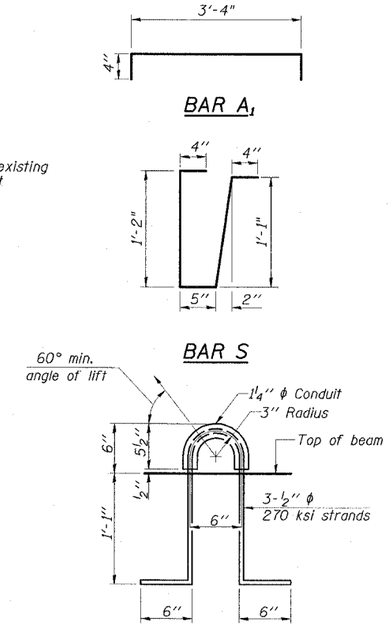
(CWS not shown)



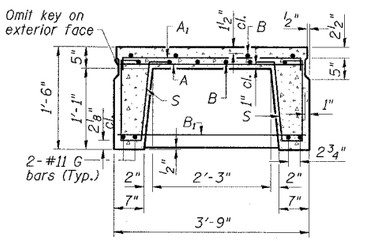
LONGITUDINAL SECTION



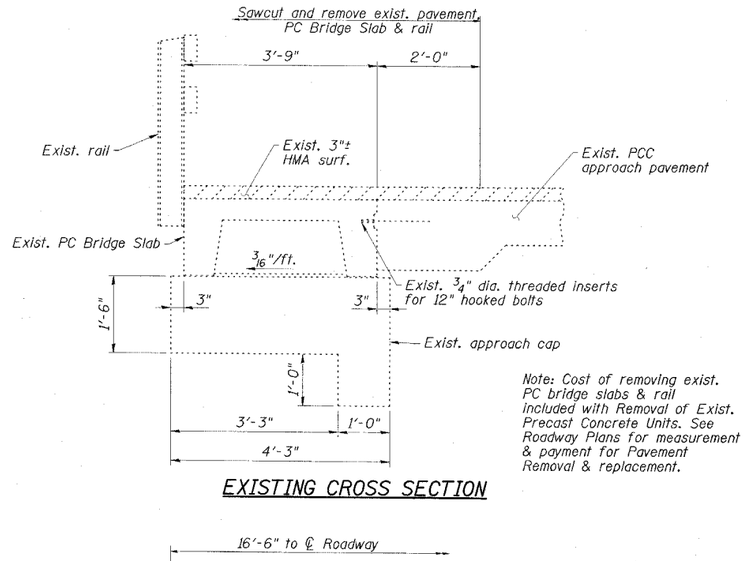
SLAB REINFORCEMENT



LIFTING LOOP DETAIL

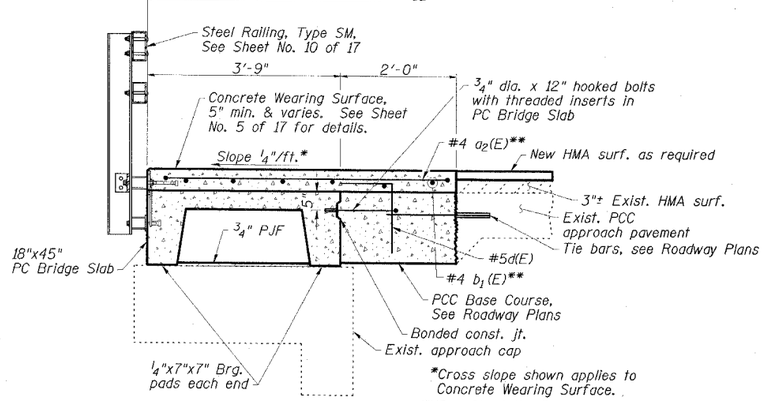


SECTION THRU PRECAST UNIT



Note: Cost of removing exist. PC bridge slabs & rail included with Removal of Exist. Precast Concrete Units. See Roadway Plans for measurement & payment for Pavement Removal & replacement.

EXISTING CROSS SECTION



PROPOSED CROSS SECTION

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	299

NOTES

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 ⅛" 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 slabs. Cleaning shall be done by sandblasting the keyway areas between top of the slab and the bottom edge of the key.

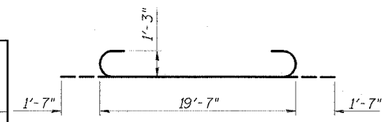
Corrosion inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast concrete bridge slabs.

Required strength, f'c, shall be 4500 p.s.i.

See Sheet No. 2 of 17 for location of rail anchors and additional notes.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor rods and ¾" ϕ hooked bolts is included in contract unit price for Precast Concrete Bridge Slab.

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior deck beam after deck beams are in final position.



BAR G

FABRIC BEARING PAD

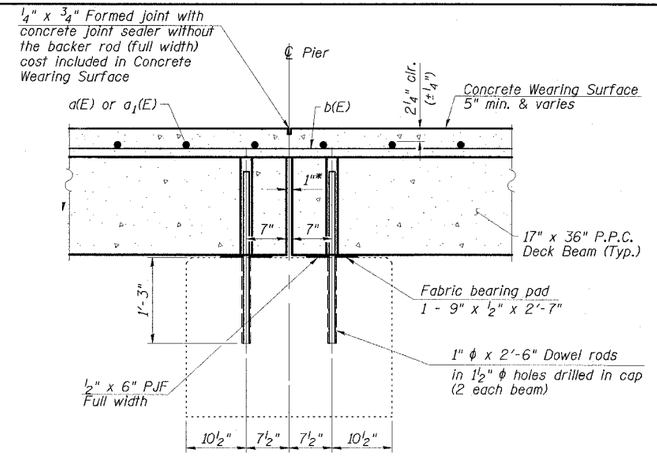
ESCA CONSULTANTS, INC.		
DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	04/08
APPROVED BY:	RDP	04/08

APPROACH DETAILS
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

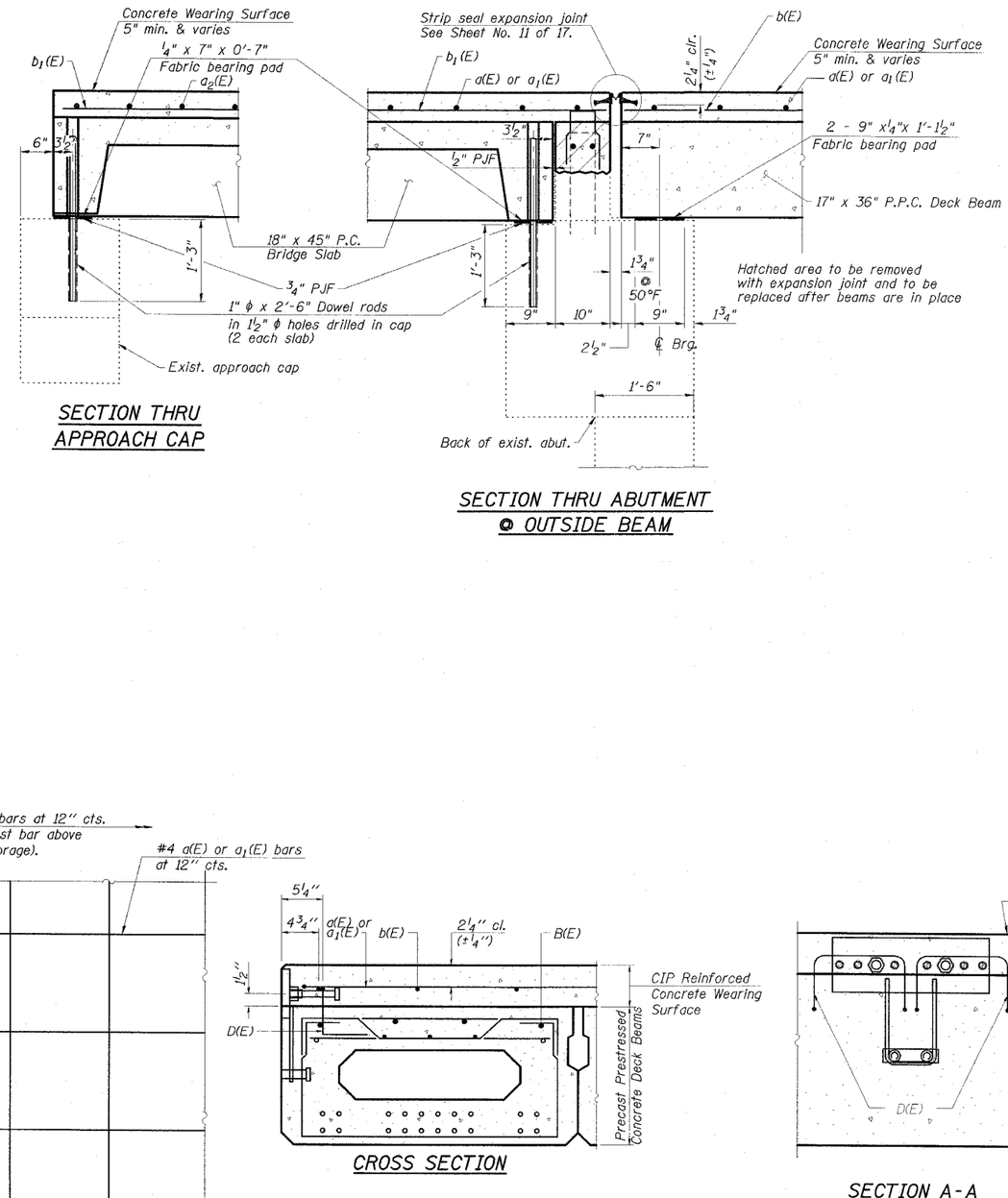
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	91
FED.ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ACD		

SHEET NO. 9
17 SHEETS



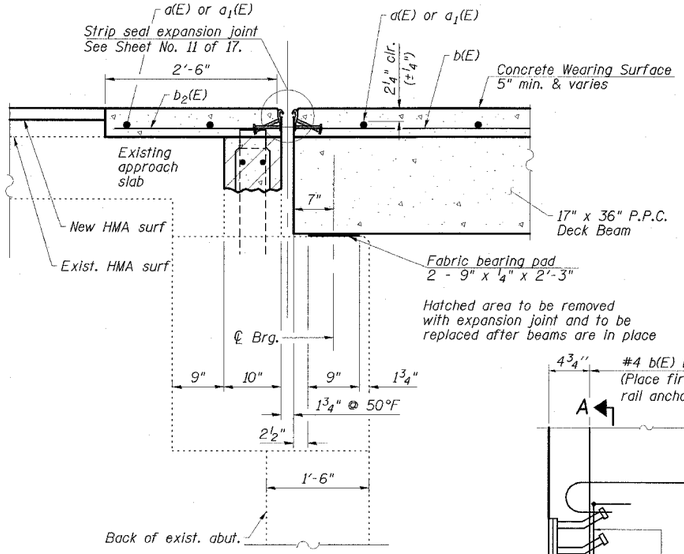
SECTION THRU FIXED PIER

*1" Jt. shall be filled with non-shirink grout, cost included in PPC Deck Beams, 1" dimension may vary to accommodate tolerance in beam lengths.



SECTION THRU APPROACH CAP

SECTION THRU ABUTMENT @ OUTSIDE BEAM



SECTION THRU ABUTMENT @ ℄ ROADWAY

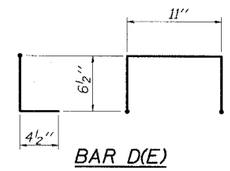
PLAN

CROSS SECTION

CONCRETE OVERLAY DETAILS AT RAIL ANCHORAGE

(Bridge shown; approach similar)

SECTION A-A



BAR D(E)

NOTES

78031

After beams have been erected, holes shall be drilled into substructure and dowels rods 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.

Concrete wearing surface to be poured after grouting the shear keys.

Dowel rods drilled in cap are included in the cost of Precast Prestressed Concrete Deck Beams (17" Depth) or Precast Concrete Bridge Slabs.

The rail anchorage shall be cast with the beam or slab 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 or slab. Drilling into the beam or slab will not be permitted.

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 (Fy=ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

ESCA CONSULTANTS, INC.

DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

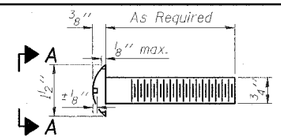
SUPERSTRUCTURE & APPROACH DETAILS
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

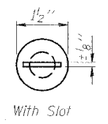
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	92
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT= HED		

SHEET NO. 10
17 SHEETS

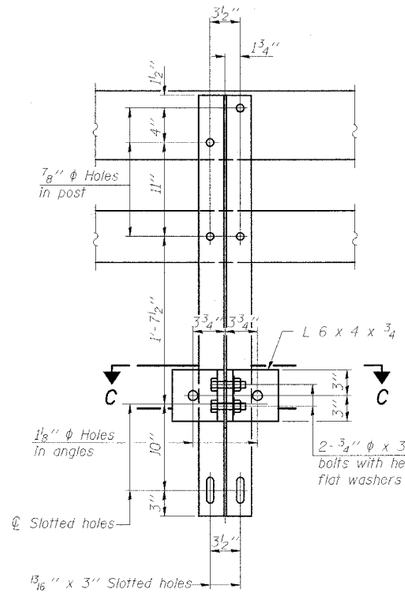
78031



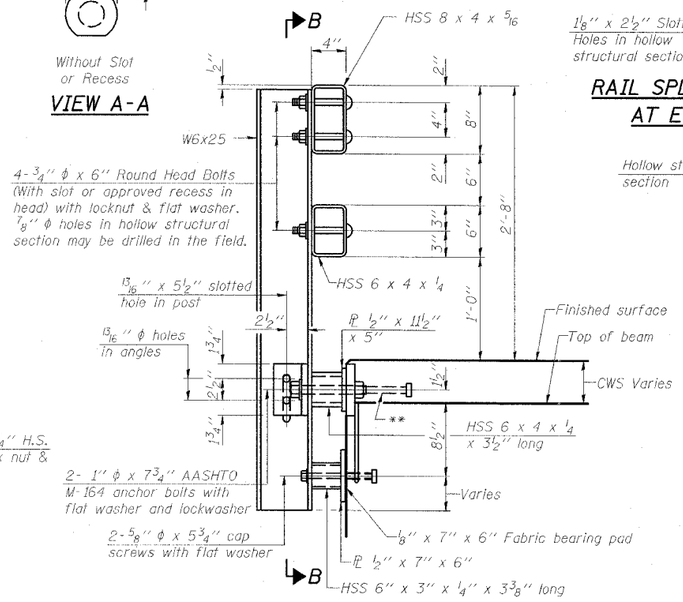
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



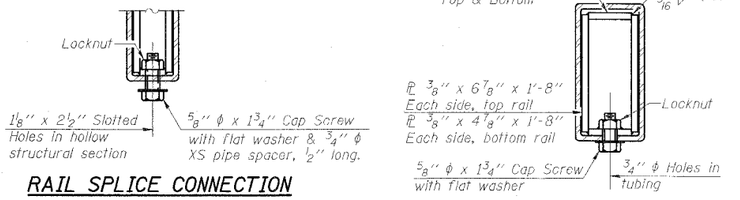
VIEW A-A



SECTION B-B

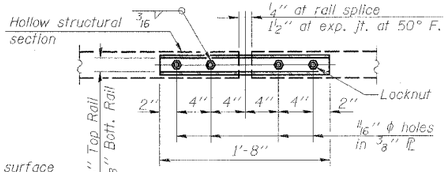


SECTION AT RAIL POST

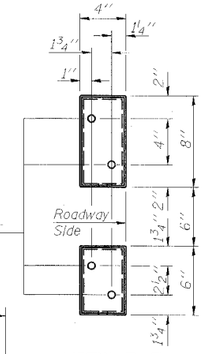


RAIL SPLICE CONNECTION AT EXPANSION JT.

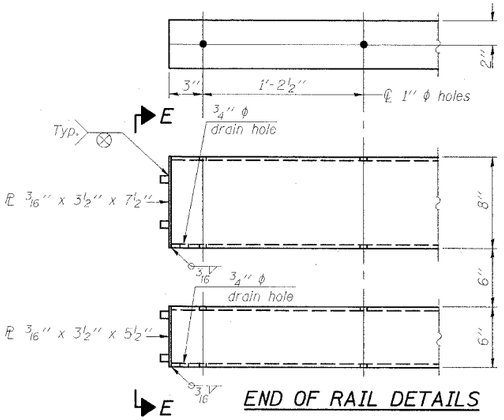
SECTION AT RAIL SPLICE



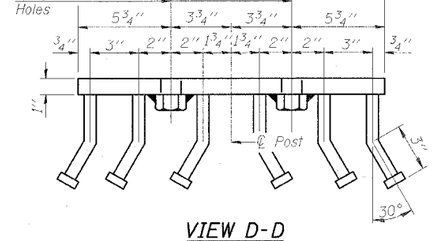
PLAN-BOTT. SPLICE PL TYPICAL



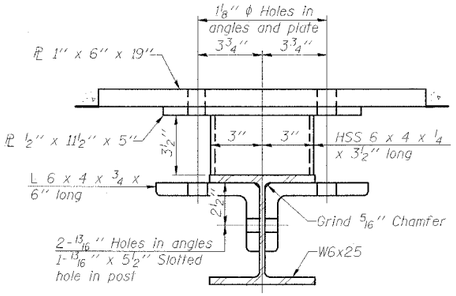
VIEW E-E



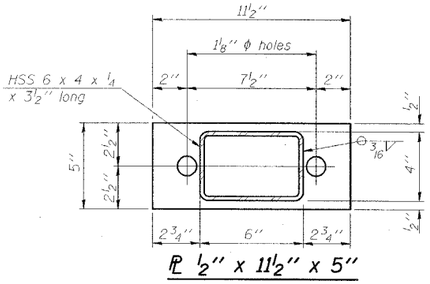
END OF RAIL DETAILS



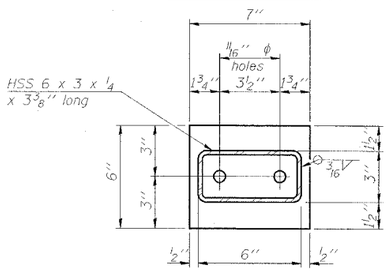
VIEW D-D



SECTION C-C

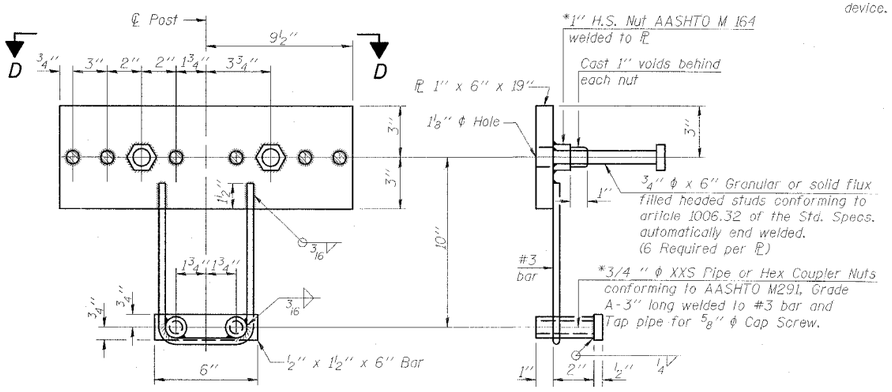


PL 1/2" x 11 1/2" x 5"



PL 1/2" x 7" x 6"

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



*1" H.S. Nut AASHTO M 164
welded to PL

Cast 1" voids behind
each nut

3/4" ϕ x 6" Granular or solid flux
filled headed studs conforming to
article 1006.32 of the Std. Specs.
automatically end welded.
(6 Required per PL)

*3/4" ϕ XXS Pipe or Hex Coupler Nuts
conforming to AASHTO M291, Grade
A-3" long welded to #3 bar and
Tap pipe for 5/8" ϕ Cap Screw.

ANCHOR DEVICE

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

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 Railing, 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.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	234

STEEL RAILING, TYPE SM
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

ESCA CONSULTANTS, INC.		
DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

R-34CWS 9-3-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	93
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AIE		

SHEET NO. 11
17 SHEETS

78031

GENERAL NOTES

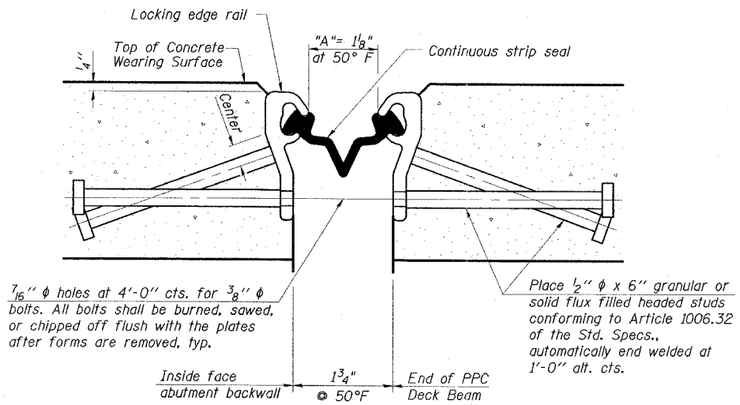
The strip seal shall be made continuous and shall have a minimum thickness of $\frac{1}{4}$''. The configuration of the strip seal shall match the configuration of the locking edge rails.

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.

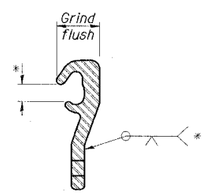
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



SECTION THRU STRIP SEAL JOINT
FOR OVERLAY OVER DECK BEAMS

* Omit weld at seal opening.

LOCKING EDGE RAIL



LOCKING EDGE RAIL SPLICE

BILL OF MATERIAL

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	66

ESCA CONSULTANTS, INC.		
DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

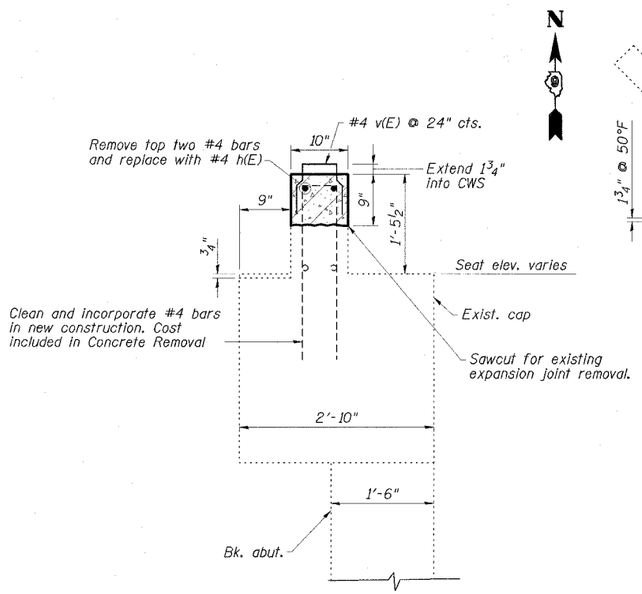
STRIP SEAL EXPANSION JOINT
IL 34 OVER BANKSTON FORK AND
SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

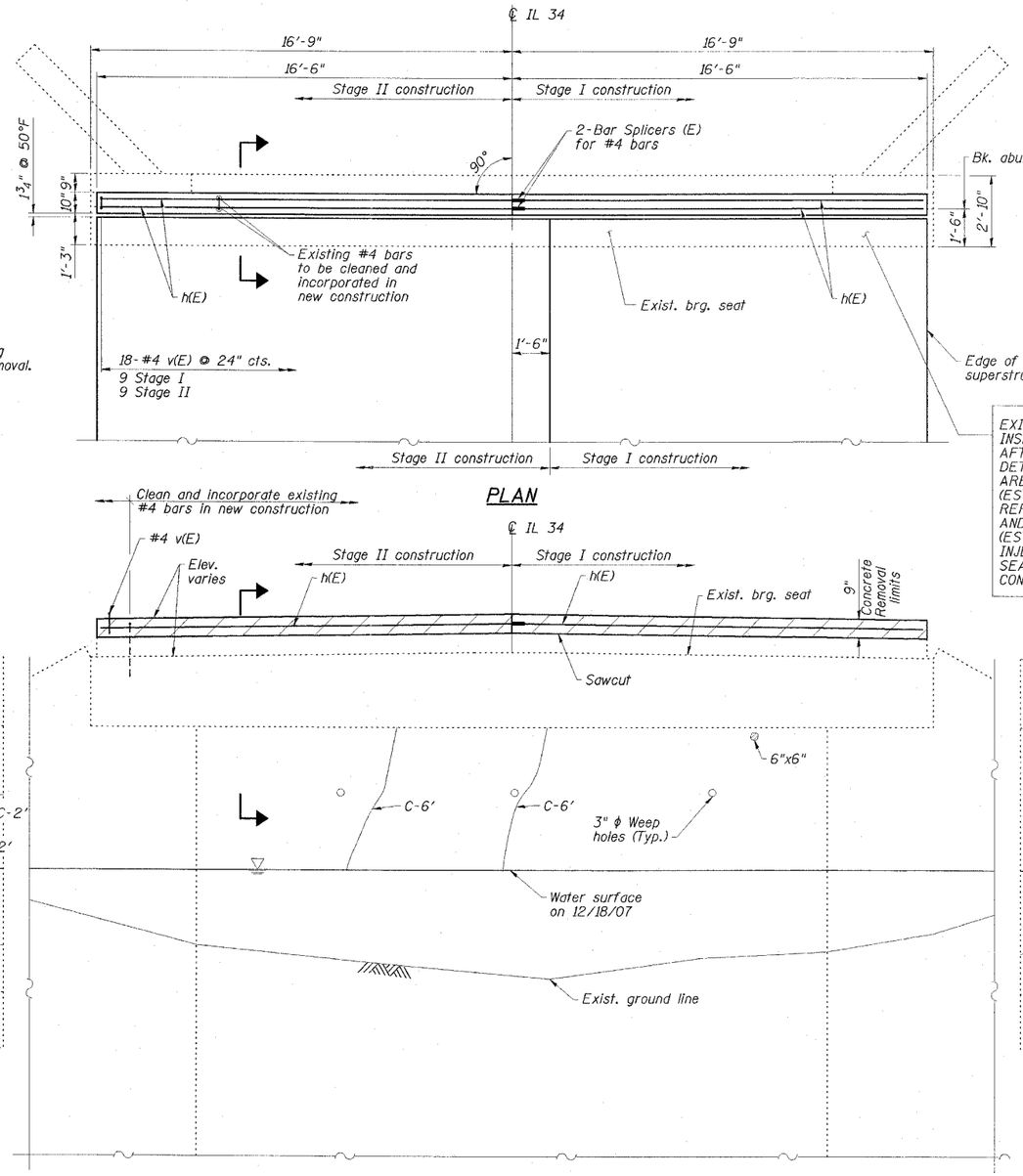
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	94
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ASD		

SHEET NO. 12
17 SHEETS

78031



SECTION THRU ABUTMENT

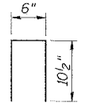


PLAN

ELEVATION
WEST WING

ELEVATION

ELEVATION
EAST WING



BAR v(E)

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#4	16'-2"	——
v(E)	18	#4	2'-3"	⊓
Concrete Sealer			Sq. Ft.	41
Epoxy Crack Injection			Foot	47
Structural Repair of Concrete (Depth Equal to or Less Than 5")			Sq. Ft.	17
Concrete Removal			Cu. Yd	0.8
Concrete Structures			Cu. Yd.	0.8
Reinforcement Bars, Epoxy Coated			Pound	80
Asbestos Bearing Pad Removal			Each	22
Bar Splicers			Each	2

EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.

REPAIR LEGEND

Inspection Date: 12/18/07

- C-6' — Crack to be epoxy injected
- Delaminated or spalled area - Use Structural Repair of Concrete
- Efflorescent crack

NOTE: ABUTMENT CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-18-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

ESCA CONSULTANTS, INC.

DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

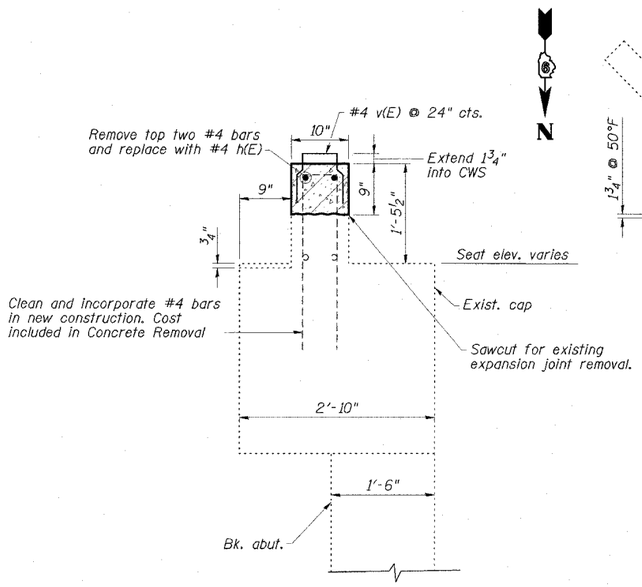
ELEVATION
EAST WING NORTH ABUTMENT
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	95
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT NO.		

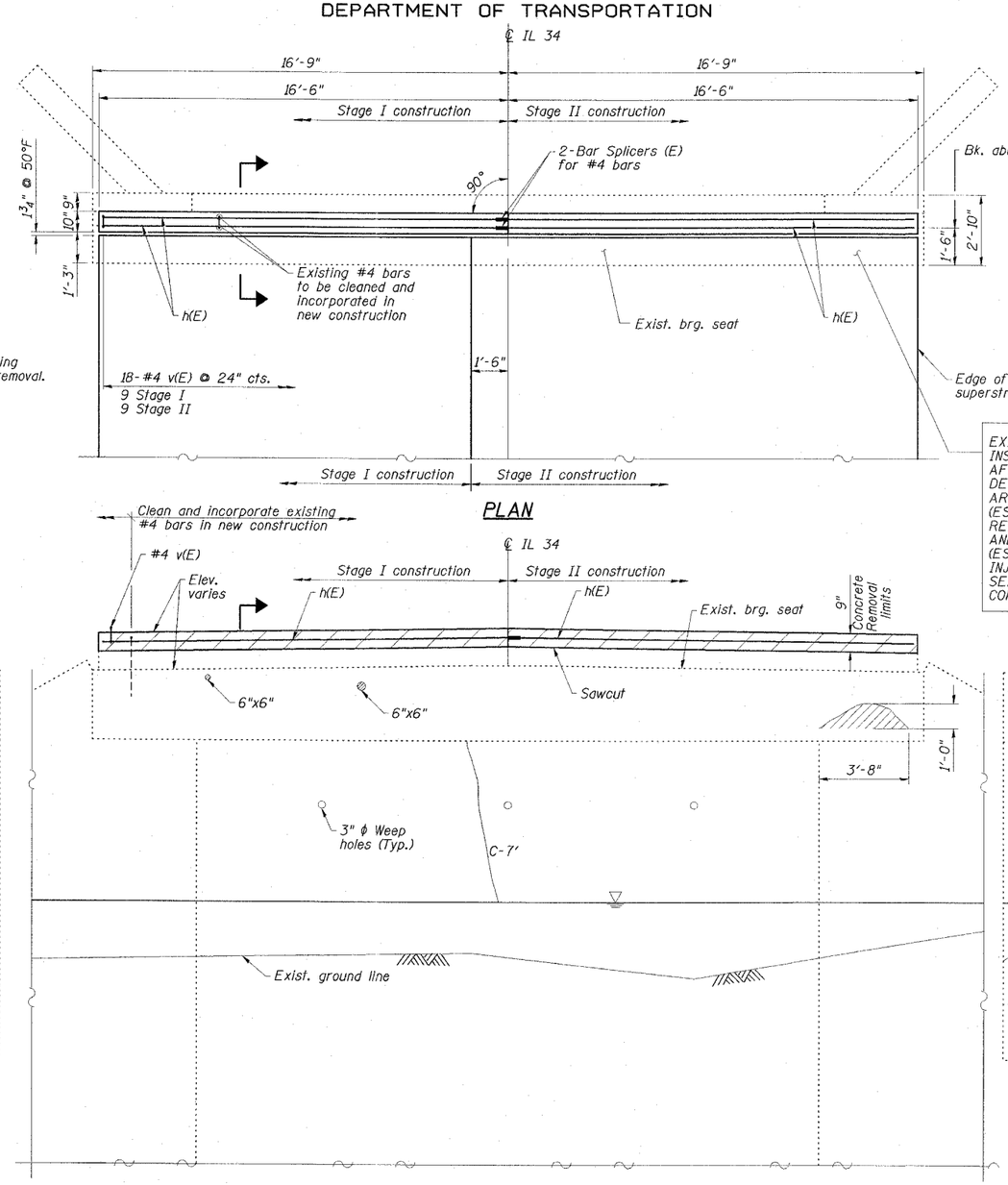
SHEET NO. 13
17 SHEETS

78031

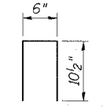
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION THRU ABUTMENT



PLAN



BAR v(E)

EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO CONCRETE REPAIR AREAS.

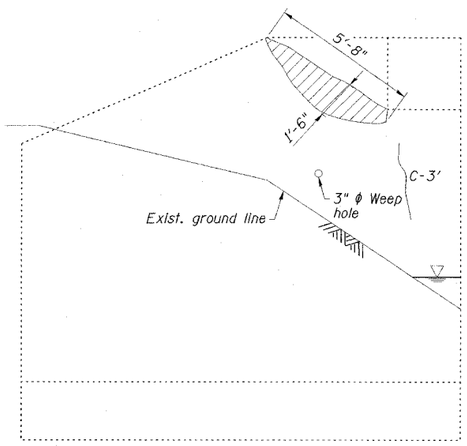
SOUTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#4	16'-2"	
v(E)	18	#4	2'-3"	
Concrete Sealer			Sq. Ft.	41
Epoxy Crack Injection			Foot	34
Structural Repair of Concrete (Depth Equal to or Less Than 5")			Sq. Ft.	25
Concrete Removal			Cu. Yd	0.8
Concrete Structures			Cu. Yd.	0.8
Reinforcement Bars, Epoxy Coated			Pound	80
Asbestos Bearing Pad Removal			Each	22
Bar Splicers			Each	2

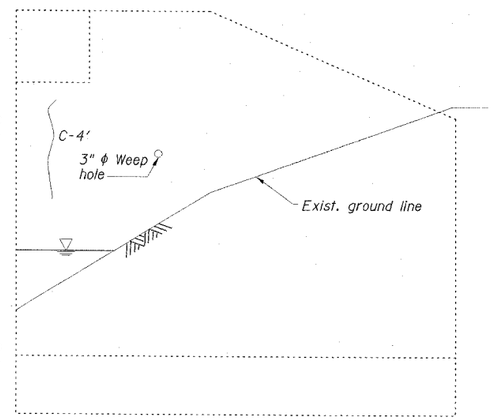
REPAIR LEGEND

Inspection Date: 12/18/07

- C-6' — Crack to be epoxy injected
- Delaminated or spalled area - Use Structural Repair of Concrete
- Efflorescent crack



ELEVATION EAST WING



ELEVATION WEST WING

ELEVATION

NOTE: ABUTMENT CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-18-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

ESCA CONSULTANTS, INC.

DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

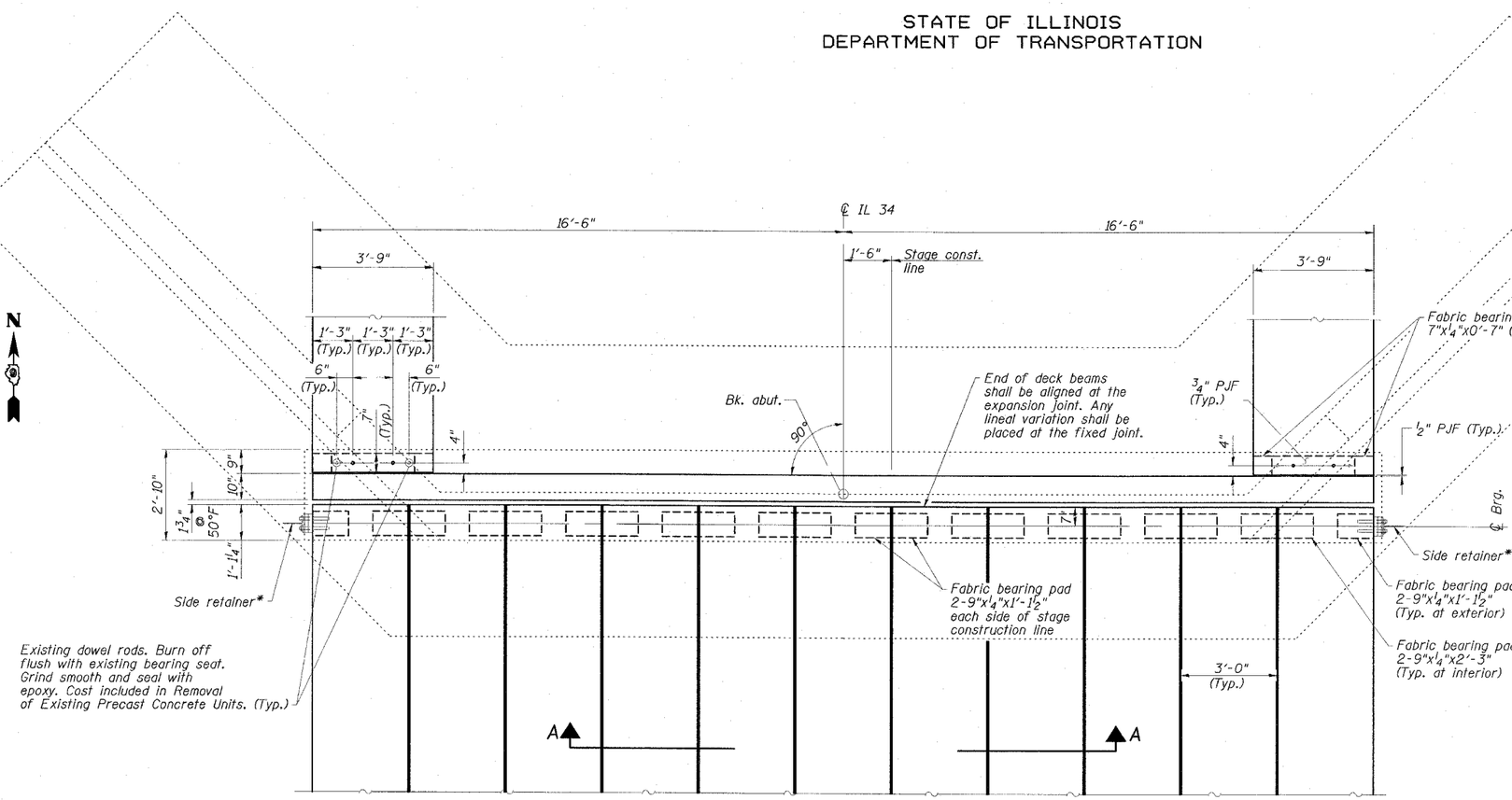
SOUTH ABUTMENT
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	96
FED. HIGHWAY DIST. NO. 9	ILLINOIS	FED. AID PROJECT: AIG		

SHEET NO. 14
17 SHEETS

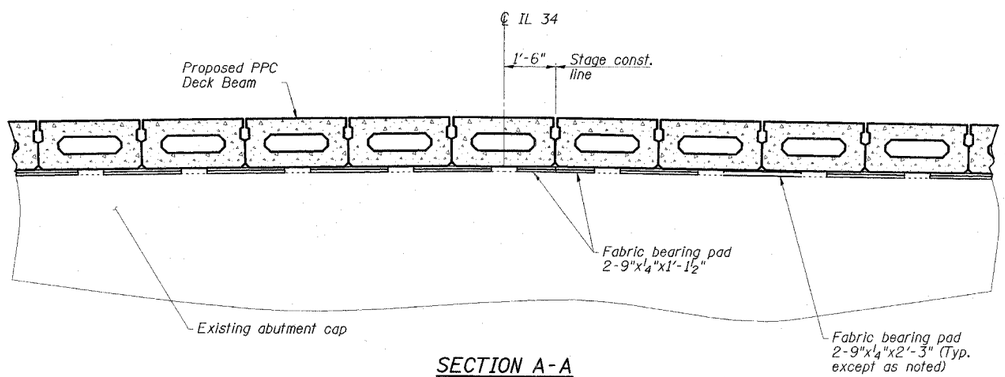
78031



ABUTMENT BEARING SEAT PLAN

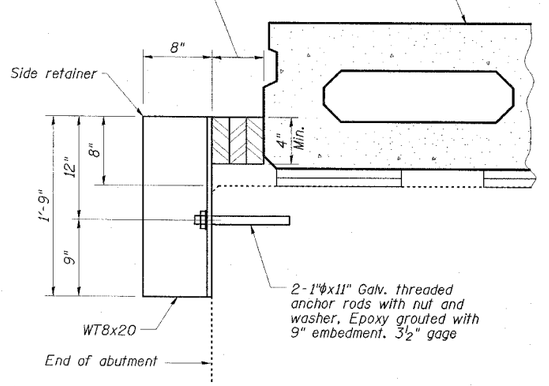
N. Abut. shown; S. Abut. similar
(Concrete Wearing Surface and approach pavement not shown)

* Locate side retainers at ℄ bearing, except adjust location as directed by the Engineer to clear existing name plate.



SECTION A-A

(Concrete Wearing Surface not shown)



EXTERIOR BEAM SIDE RETAINER DETAILS

(4 Required)

Cost of retainer & accessories are included with Precast Prestressed Concrete Deck Beams.

ABUTMENT DETAILS
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

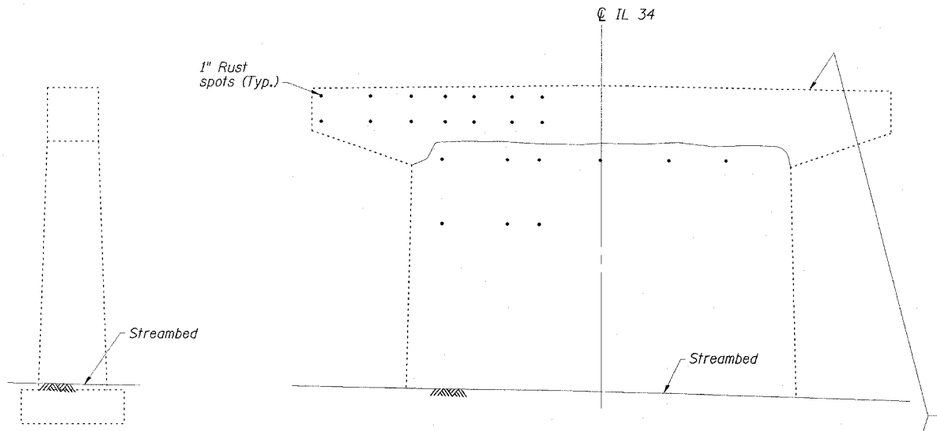
ESCA CONSULTANTS, INC.		
DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	97
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ACD		

SHEET NO. 15
17 SHEETS

78031



WEST END

SOUTH ELEVATION

EXISTING BEARING SEAT TO BE INSPECTED BY THE ENGINEER AFTER DECK BEAM REMOVAL. DETERIORATED CONCRETE AREAS SHALL BE REPAIRED (ESTIMATED 15 S.F. STRUCTURAL REPAIR OF CONCRETE DEPTH ≤ 5") AND CRACKS SHALL BE SEALED (ESTIMATED 20' EPOXY CRACK INJECTION) IF FOUND. CONCRETE SEALER SHALL BE APPLIED TO STRUCTURAL REPAIR OF CONCRETE AREAS.

PIER
BILL OF MATERIAL

Item	Unit	Total
Epoxy Crack Injection	Foot	31
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq. Ft.	16
Concrete Sealer	Sq. Ft.	15

REPAIR LEGEND

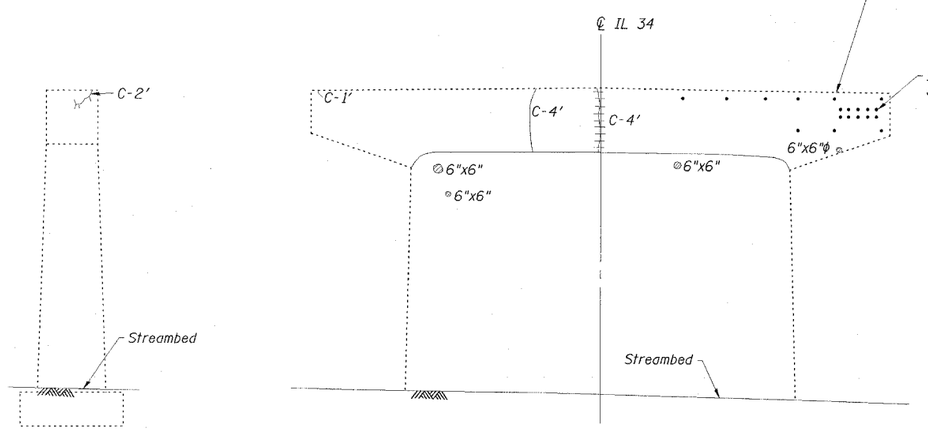
Inspection Date: 12/18/07

C-6' Crack to be epoxy injected

Delaminated or spalled area - Use Structural Repair of Concrete

Efflorescent crack

Rust spot



EAST END

NORTH ELEVATION

NOTE: PIER CRACK REPAIR LENGTHS AND STRUCTURAL REPAIR OF CONCRETE AREAS ARE ESTIMATED FROM 12-18-07 SURVEY WORK. ACTUAL LOCATIONS AND QUANTITIES OF REPAIRS SHALL BE SHOWN BY THE ENGINEER ON THE AS-BUILT PLANS FOR THIS SECTION.

ESCA
CONSULTANTS, INC.

DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

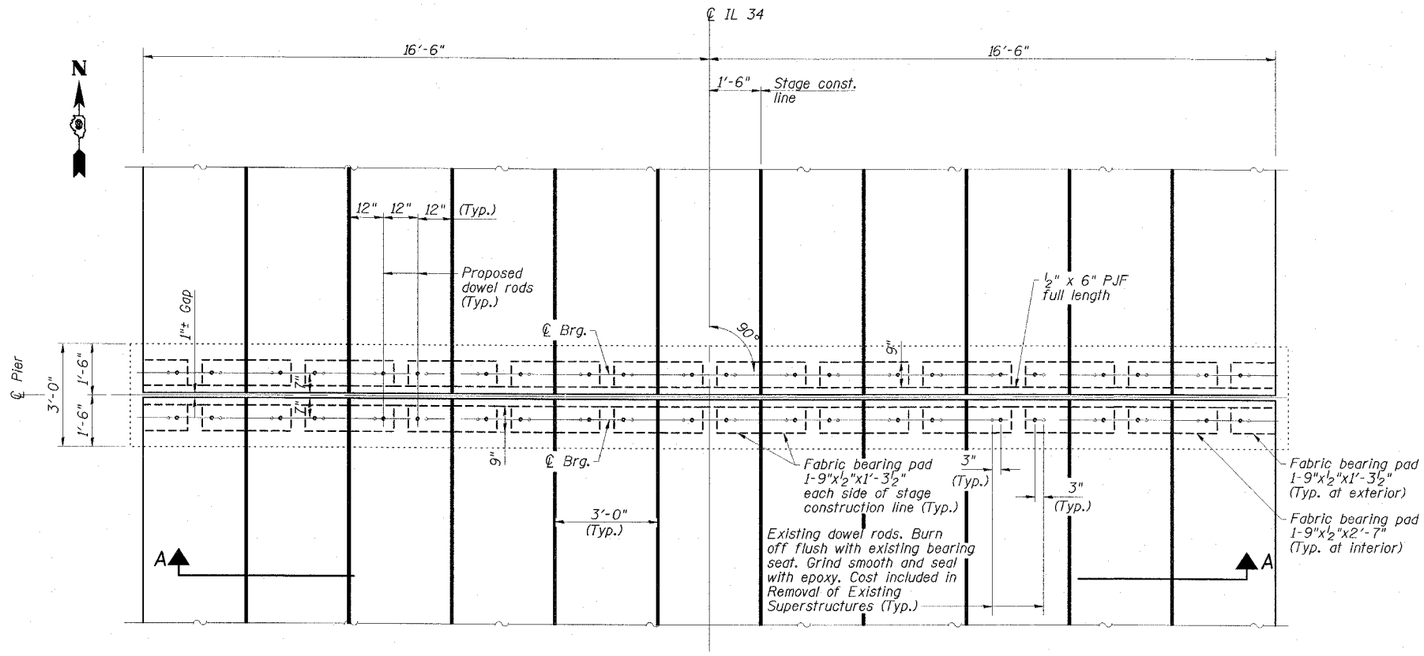
PIER
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	98
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- ADD		

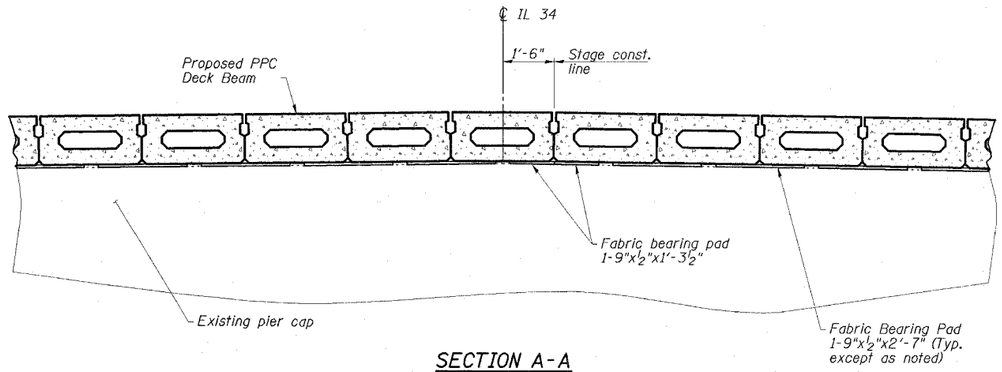
SHEET NO. 16
17 SHEETS

78031

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PIER BEARING SEAT PLAN
(Concrete Wearing Surface not shown)



SECTION A-A
(Concrete Wearing Surface not shown)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

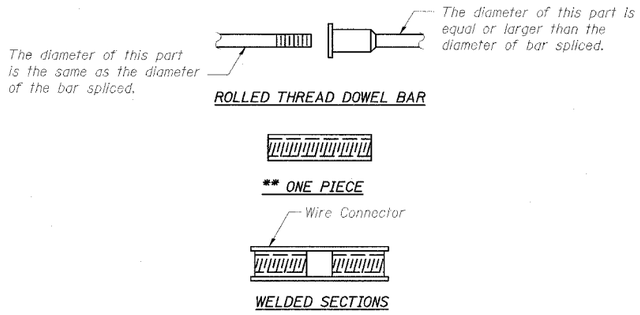
PIER DETAILS
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 869	105BR-3	SALINE	118	99
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT- AND		

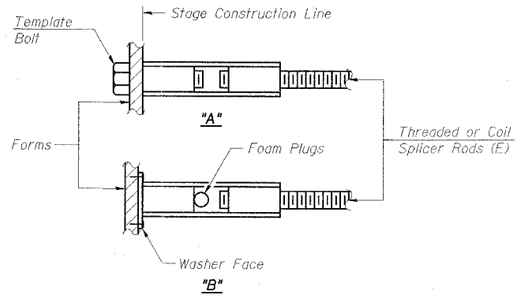
SHEET NO. 17
17 SHEETS

78031



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:

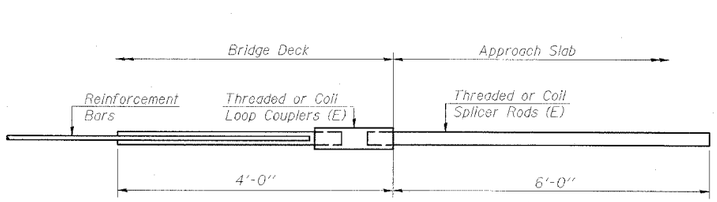
① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

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

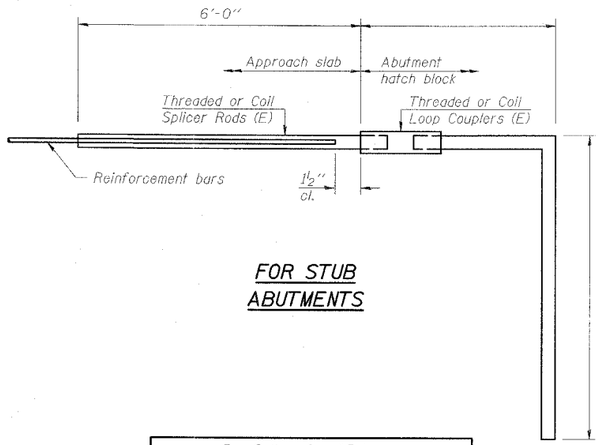
BAR SPLICER ASSEMBLIES

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



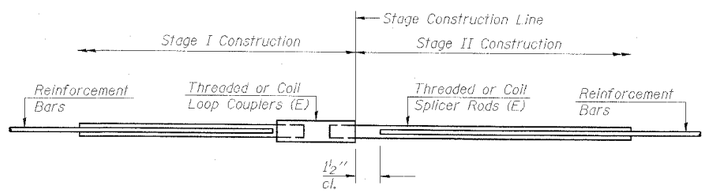
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 12.3 kips - tension
No. Required = 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	82	Concrete Wearing Surface
#4	2	North Abutment
#4	2	South Abutment

BAR SPLICER ASSEMBLY DETAILS
IL 34 OVER BANKSTON FORK AND SALINE RIVER OVERFLOW
FAP ROUTE 869 - SECTION 105BR-3
SALINE COUNTY
STATION 1574+00.00
STRUCTURE NO. 083-0039

ESCA CONSULTANTS, INC.

DESIGNED BY:	ELH	02/08
DRAWN BY:	HAS	02/08
CHECKED BY:	ELH	02/08
APPROVED BY:	RDP	02/08

BSD-1 11-1-06

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	100
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

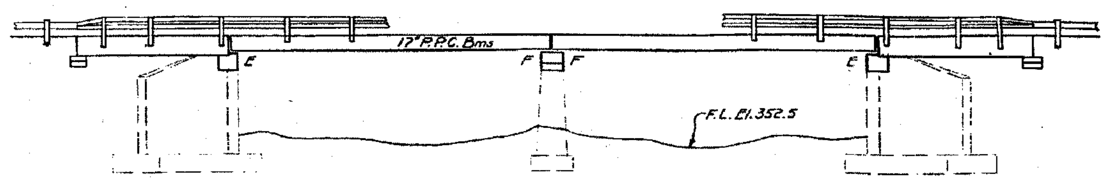
*105(B-DR, B-DR-1, B-DR-2, B-DR-3, B-DR-4)

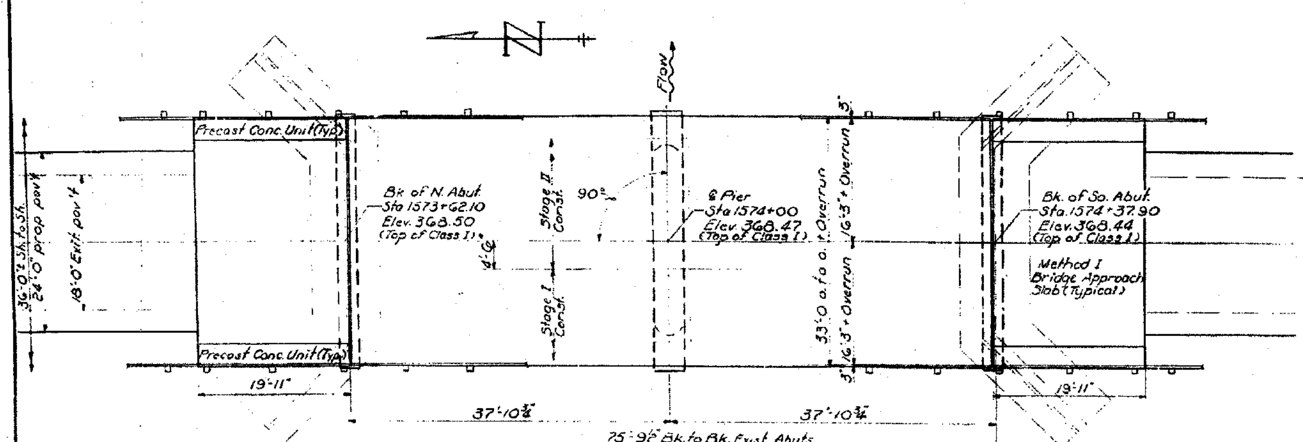
S.B.I. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
143	*	SALINE	68	34

SHEET NO. 1
7 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Exist. Struct. Built in 1932 as S.B.I. Rte 143 Sec. 105B at Sta. 1574+00. 2 Span R.C. Deck Girders on R.C. closed abuts. & solid R.C. Pier. Superstructure to be removed, substructure widened and new deck constructed utilizing stage construction. No salvage.
S.M.-Spike & washer in root 10" Elm 66' Lt. Sta. 1574+60 Elev. 358.73





TOTAL BILL OF MATERIAL

	Item	Unit	Super.	Sub.	Total
	Bituminous Concrete Surface Cse., Class I	Tons			36
	Structural Steel	Lbs			4680
	Concrete Removal	Cu. Yds.		12	12
	Expansion Bolts (¾"φ)	Each		54	54
	Class X Concrete	Cu. Yds.	1.5	33.5	35.0
	Precast Concrete Bridge Slab	Sq. Ft.			299
	Precast Prestressed Concrete Deck Beams (17")	Sq. Ft.	2472		2472
	Steel Railing, Type N	Lin. Ft.			234
	Reinforcement Bars	Lbs.	220	4220	4440
	Removal of Existing Superstructures	Each	1		1
*	Waterproofing Membrane System	Sq. Yds.			276
	Name Plates	Each			1
	Preformed Joint Sealer 2½"	Lin. Ft.			66
	Temporary Guard Rail	Lin. Ft.			100
*	Portland Cement Mortar Fairing Course	Lin. Ft.	749		749

* See Special Provisions

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of material.

Expansion bolts shall consist of self drilling expansion anchors and [illegible] hooked bolts. Hooked bolts shall extend a minimum of 12" into new concrete unless otherwise shown.

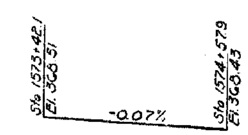
Shoulder transition to wingwall shall be sloped with broken concrete. Cost Incidental.

The top surface of the bms. shall be finished in accordance with Art. 505.06 of the Std. Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of deppression or high spots with sharp corners.

All structural steel shall be shop painted with two coats of basic lead silico chromate point.

WATERWAY INFORMATION

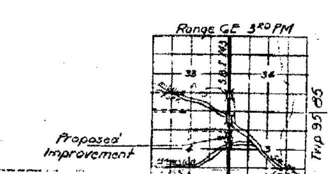
Drainage Area Saline River 103 Sq. Miles
Bankston Fork 79 Sq. Miles
Character - Rolling, clay, wooded, cultivated
Present Opening for Overflow 904 Sq. Ft.
Req'd Opening for Overflow 904 Sq. Ft.
Proposed Opening for Overflow 904 Sq. Ft.
Q(50) Saline River 8550 cfs
Q(50) Bankston Fork 7000 cfs



PROPOSED PROFILE GRADE
S.B.I. 143

STATION 1574+00
REBUILT 197 BY
STATE OF ILLINOIS
FA RTE 126 Spur. SEC. 105B-DR-2
FA PROJ. RF-373(10)
LOADING HS20

NAME PLATE
See Std. 2115



LOCATION SKETCH

DESIGNED	[signature]
CHECKED	[signature]
DRAWN	Jacobs
CHECKED	[illegible]

SEPTEMBER 14 1971
EXAMINED [signature]
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

PRECAST PRESTRESSED UNITS

f'c = 5000 psi
f'ci = 4000 psi
fs = 270,000 psi 7/16" Strands
fsi = 183,700 psi 7/16" Strands
Allow for 25#/Sq. Ft. for Fut. W.S.
Design Specification 1969 AASHO (as applicable)
LOADING HS20-44

FIELD UNITS

Fc = 1400 psi (Sub)
fs = 20000 psi (Reinf)
n = 10

PRECAST UNITS

Fc = 4500 psi
Fc = 1800 psi
Fs = 20000 psi
n = 8

GENERAL PLAN & ELEVATION
BANKSTON FORK & SALINE RIVER OVERFLOW
FA RTE 126 Spur SEC. 105B-DR-2
SALINE COUNTY
STA. 1574+00

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
URBANA, ILLINOIS

ESCA
CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

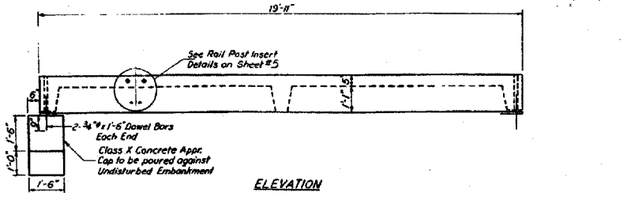
CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	101
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

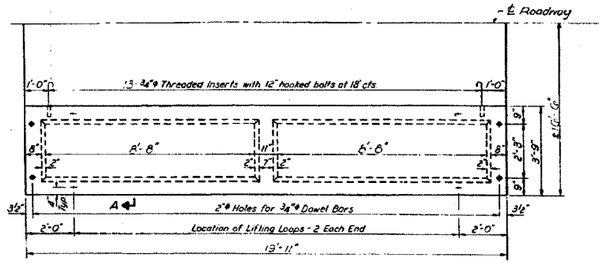
STATE OF ILLINOIS
DIVISION OF HIGHWAYS

*105(8-DR, 8-DR1, 8-DR2, 8-DR3, 8-DR4)

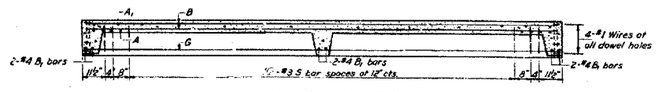
					SHEET NO. 2 OF 7 SHEETS
D.H.S. 143	*	SALINE	68	35	
FED. ROAD DIST. NO. 5	ILLINOIS	FED. AID PROJECT			



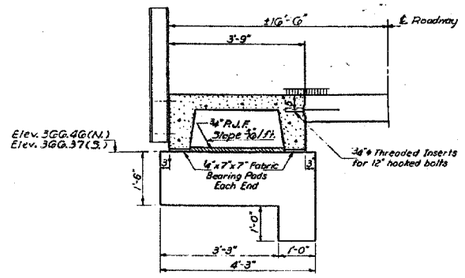
ELEVATION



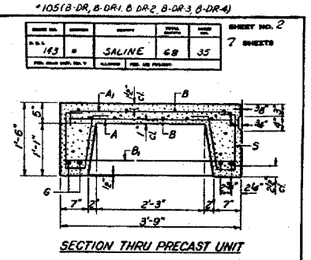
PARTIAL PLAN OF APPROACH



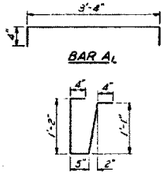
SLAB REINFORCEMENT



SECTION A-A



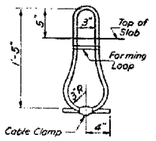
SECTION THRU PRECAST UNIT



BAR LIST - ONE UNIT

Reinforcement to be cast into slab

Bar	No.	Size	Length	Shape
A	33	#4	3'-9"	
A_1	27	#4	4'-0"	
B	10	#4	19'-0"	
B_1	6	#4	3'-6"	
G	4	#10	19'-0"	
S	12	#3	3'-4"	



LIFTING LOOP DETAIL

NOTES

Unless otherwise approved by the Engineer, lifting loops shall be ½", 6x19 class wire rope with fiber core and shall have a minimum ultimate strength of 18,700 lbs. Loops shall be burned off after slab has been erected.

Holes shall be drilled and anchor dowels grouted in place.

Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and ¾"ø hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab."

The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	293
Class X Concrete	Cu.Yds.	1.6

STRESSES

f_c = 4,500 psi.
f_c = 1,800 psi.
f_s = 20,000 psi
n = 8

LOADING H S-20

APPROACH DETAILS

S.B.I. Route SEC. 105B-DR-2
SALINE COUNTY
STA. 1473+00

DESIGNED	
CHECKED	
DRAWN	JACOBS
CHECKED	JP

EXAMINED
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

AP-1 20' Precast Appr Unit (Rt. L.) 5-5-11

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

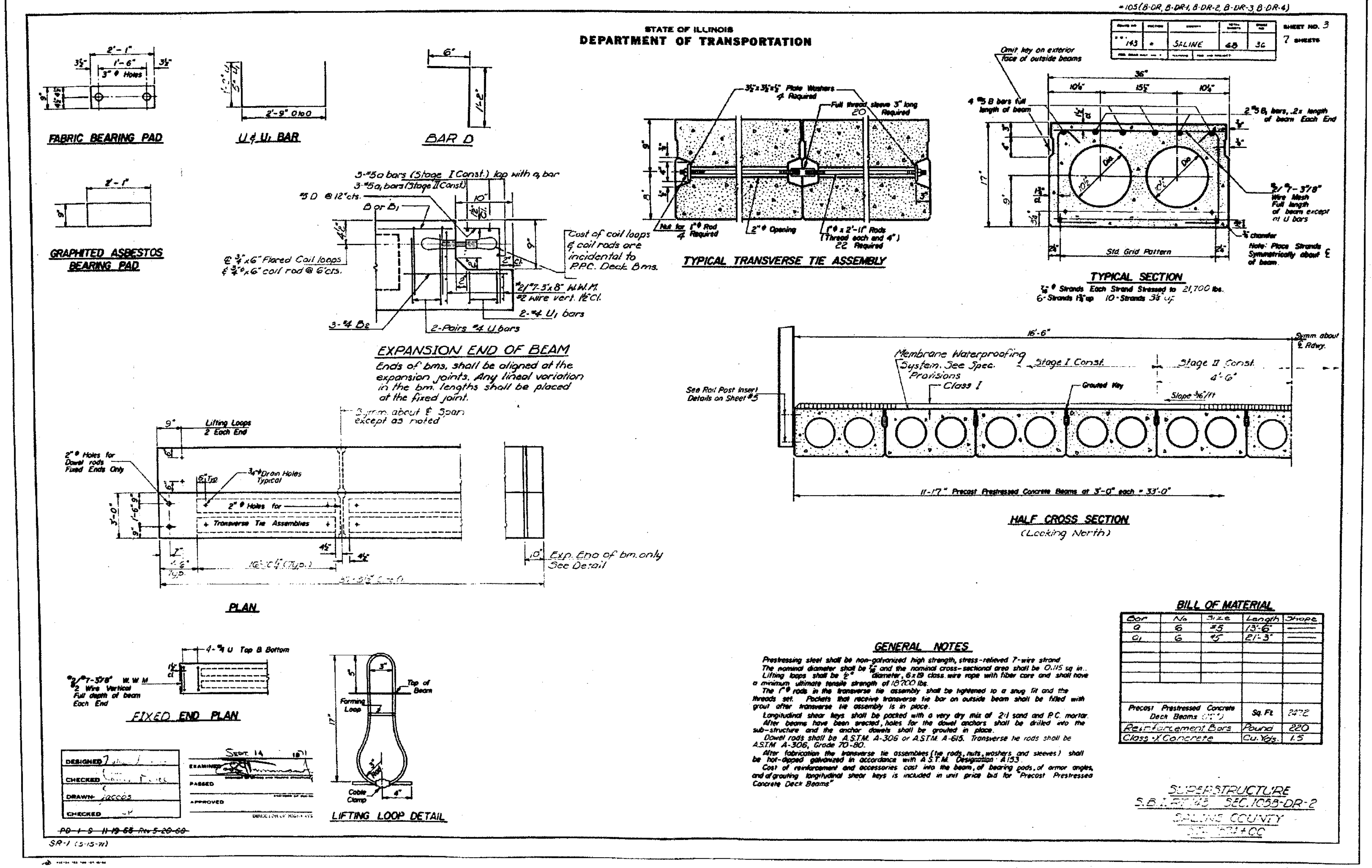
FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	102
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 78031

ESCA CONSULTANTS, INC.



GENERAL NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand. The nominal diameter shall be 7/16" and the nominal cross-sectional area shall be 0.115 sq in..

Lifting loops shall be 1/2" diameter, 6x19 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 18700 lbs.

The 1"⌀ 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 beam shall be filled with grout after transverse tie assembly is in place.

Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar.

After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.

Dowel rods shall be A.S.T.M. A-306 or A.S.T.M. A-615. Transverse tie rods shall be A.S.T.M. A-306, Grade 70-80.

After fabrication the transverse tie assembles (tie rods, nuts, washers and sleeves) shall be hot-dipped galvanized in accordance with A.S.T.M. Designation A153.

Cost of reinforcement and accessories cast into the beam, of bearing pads, of armor angles, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	6	#5	13'-6"	——
a1	6	#5	21'-3"	——
Precast Prestressed Concrete Deck Beams			Sq. Ft.	2472
Reinforcement Bars			Pound	220
Class X Concrete			Cu. Yds.	1.5

SUPERSTRUCTURE
S.B.I. RT. 45 SEC. 105B-DR-2
SALINE COUNTY

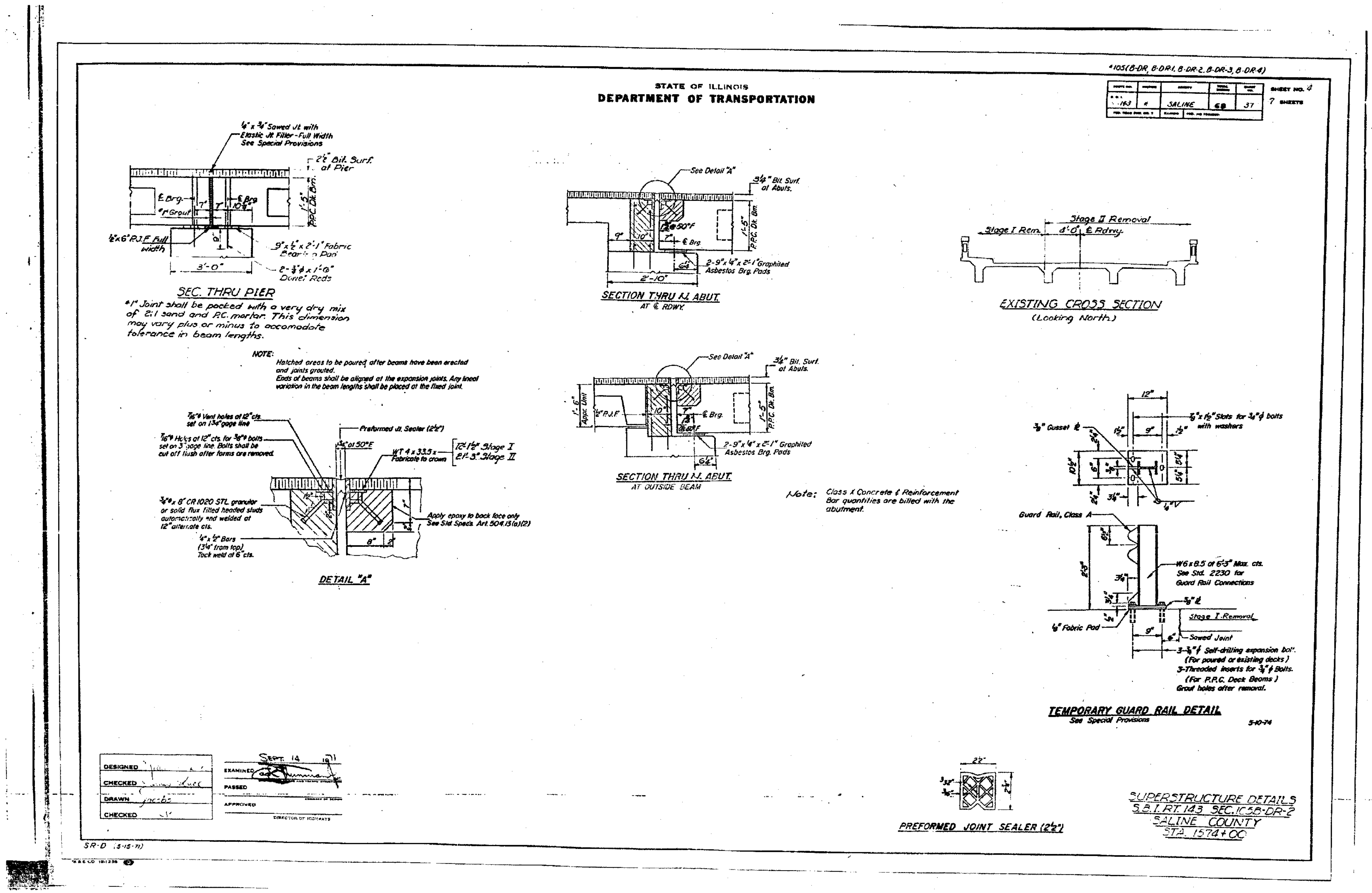
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	103
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



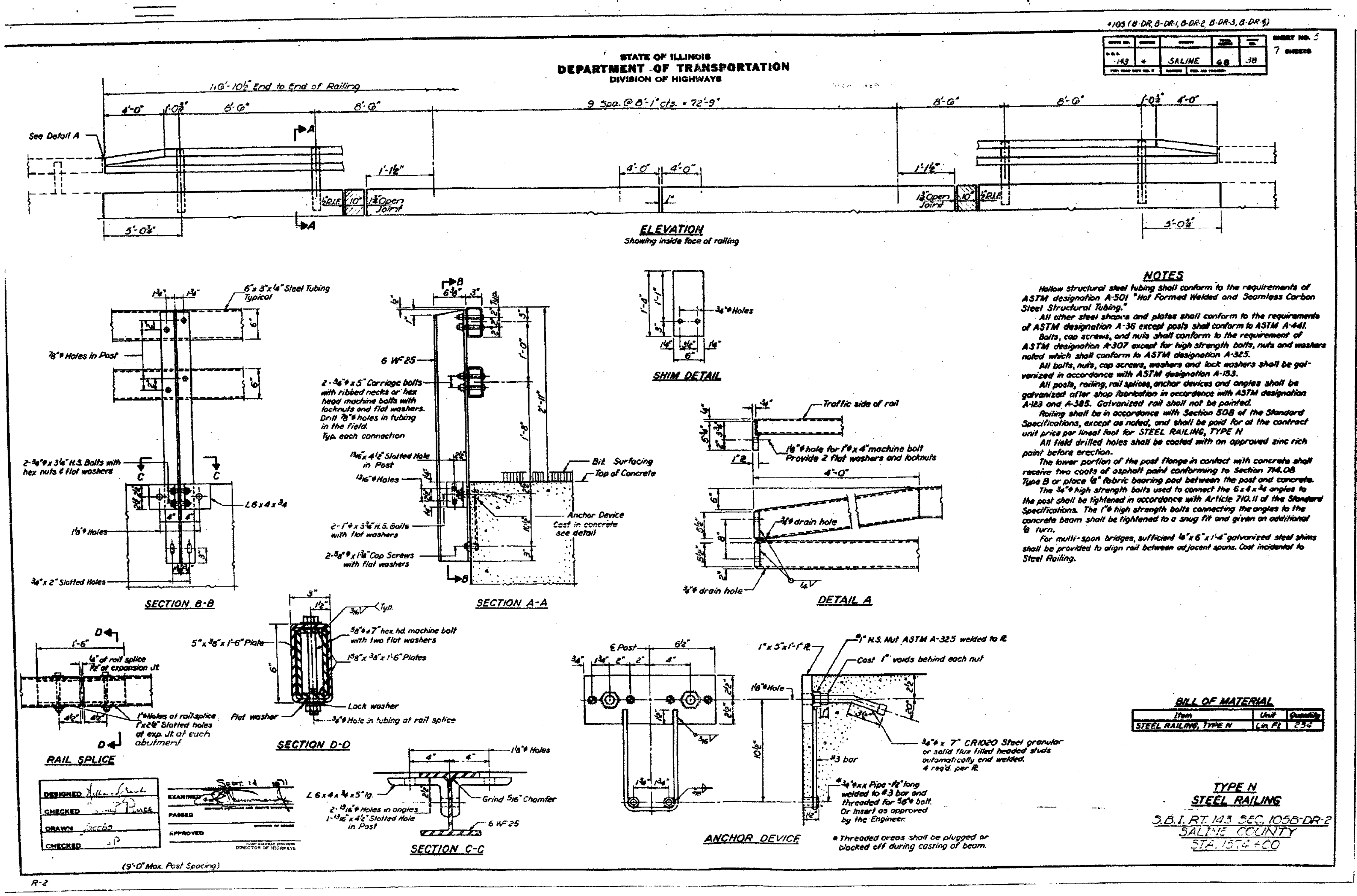
ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	104
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-501 "Hot Formed Welded and Seamless Carbon Steel Structural Tubing."

All other steel shapes and plates shall conform to the requirements of ASTM designation A-36 except posts shall conform to ASTM A-441.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to ASTM designation A-325.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with ASTM designation A-153.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with ASTM designation A-123 and A-385. Galvanized rail shall not be painted.

Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and shall be paid for at the contract unit price per lineal foot for STEEL RAILING, TYPE N

All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place ⅛" fabric bearing pad between the post and concrete.

The ¾"⌀ high strength bolts used to connect the 6 x 4 x ¾ angles to the post shall be tightened in accordance with Article 710.11 of the Standard Specifications. The 1"⌀ high strength bolts connecting the angles to the concrete beam shall be tightened to a snug fit and given an additional ⅛ turn.

For multi-span bridges, sufficient ¼" x 6" x 1'-4" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

BILL OF MATERIAL

Item	Unit	Quantity
STEEL RAILING, TYPE N	Lin. Ft.	234

ESCA CONSULTANTS, INC.

DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

ESCA CONSULTANTS, INC.
CIVIL STRUCTURAL TRANSPORTATION

CONTRACT NO. 78031

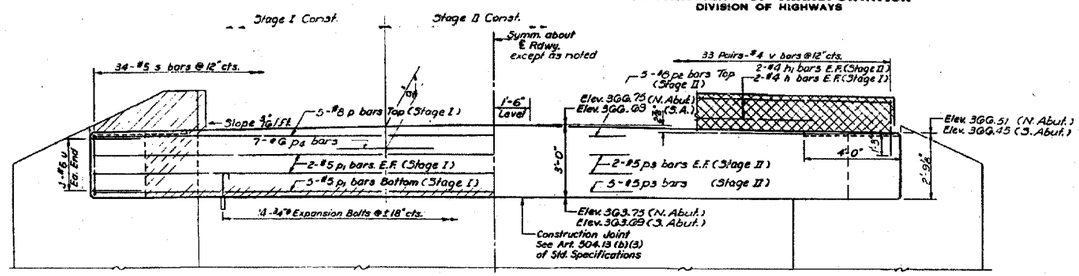
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	105
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

*105(B-DR, B-DR-1, B-DR-2, B-DR-3, B-DR-4)

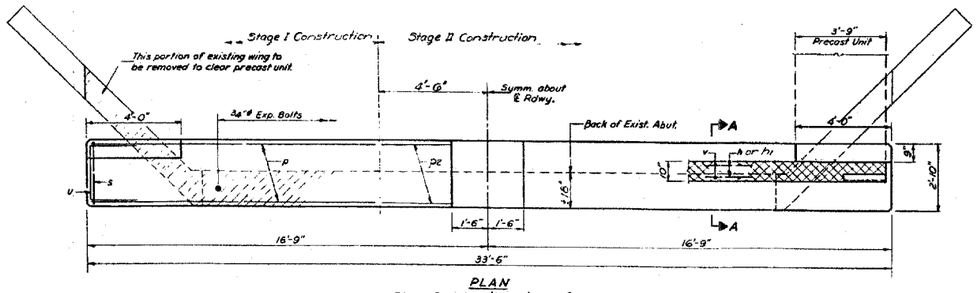
143	b	SALINE	62	39

SHEET NO. 2 OF 7 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

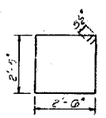


ELEVATION

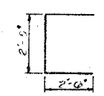


PLAN
Stage Construction shown for North Abutment

NOTES:
Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
Cross hatched area shall be poured after beams are in place.
Expansion bolts shall be anchored in sound concrete.
All edges shall have standard ¾" chamfers except as noted.



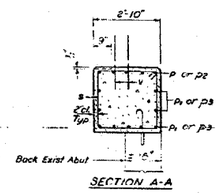
BAR s



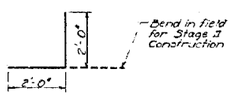
BAR u

2 ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	8	#4	19'0"	—
h1	8	#4	21'0"	—
p	10	#8	12'0"	—
p1	16	#5	12'0"	—
p2	10	#8	21'0"	—
p3	16	#5	21'0"	—
p4	14	#6	8'0"	L
s	68	#5	10'9"	□
u	16	#6	7'5"	⊏
v	132	#4	2'6"	—
Class X Concrete			Cu Yds.	20.3
Reinforcement Bars			Lbs.	3920
Expansion Bolts ¾"ø			Each	28
Concrete Removal			Cu Yds.	7



SECTION A-A



BAR p4 *

* p4 bars shall conform to the requirements of A.S.T.M. A-615 or A-617, except the minimum yield strength shall be not less than 33,000 p.s.i. nor more than 45,000 p.s.i..

DESIGNED
CHECKED
DRAWN Jacobs
CHECKED JP

Sept. 14 19 71
EXAMINED
PASSED
APPROVED
Director of Highways

ABUTMENTS
S.B.I. PT. 143 SEC. 105B-DR-2
SALINE COUNTY
STA. 157d + 00

A-2 (1-15-71) Expansion

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

CONTRACT NO. 78031

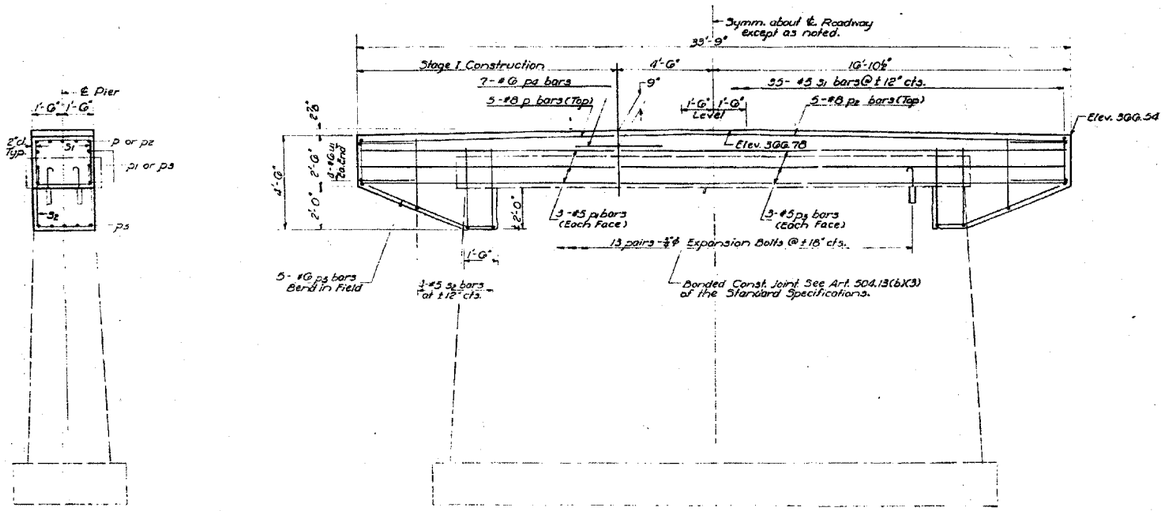
FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	106
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

4105(B-DR, B-DR1, B-DR-2, B-DR-3, B-DR-4)

COUNTY NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
A.A.I. 143	a	SALINE	68	40
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
7 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



END VIEW

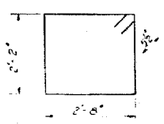
ELEVATION
(Looking North)

BILL OF MATERIAL

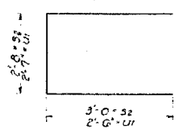
Bar	No.	Size	Length	Shape
p	5	#8	12'-0"	
p1	6	#5	12'-0"	
p2	5	#8	31'-0"	
p3	6	#5	21'-0"	
p4	7	#6	4'-0"	
p5	10	#6	6'-3"	
s1	33	#5	10'-7"	
s2	8	#5	6'-8"	
u1	8	#6	7'-7"	
Concrete Remova*		Cu.Yds.	5	
Expansion Bolts (⅞ ϕ)		Each	20	
Class X Concrete		Cu.Yds.	11.0	
Reinforcement Bars		Lbs.	1300	

* p4 bars shall conform to the requirements of A.S.T.M. A-615 or A-617, except the minimum yield strength shall be not less than 33,000 p.s.i. nor more than 45,000 p.s.i.

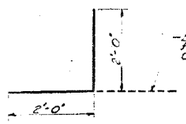
NOTES:
Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction.
Expansion bolts shall be anchored in sound concrete.
All edges shall have standard ¾" chamfers except as noted.



BAR s1



BARS s2 & u1



BAR p4

DESIGNED		
CHECKED		
DRAWN		
CHECKED		

Sept. 14, 21

EXAMINED
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

PIER
S.B.I. PT. 143 SEC. 105B-DR-2
SALINE COUNTY
STA. 34+CO

ESCA CONSULTANTS, INC.		
DESIGNED BY:	DAJ	02/08
DRAWN BY:	JPC	02/08
CHECKED BY:	MTD	02/08
APPROVED BY:	RDP	04/08

FOR INFORMATION ONLY

EXISTING STRUCTURE PLANS
FAP RTE 869 (IL 34)
SECTION 105BR-3
SALINE COUNTY

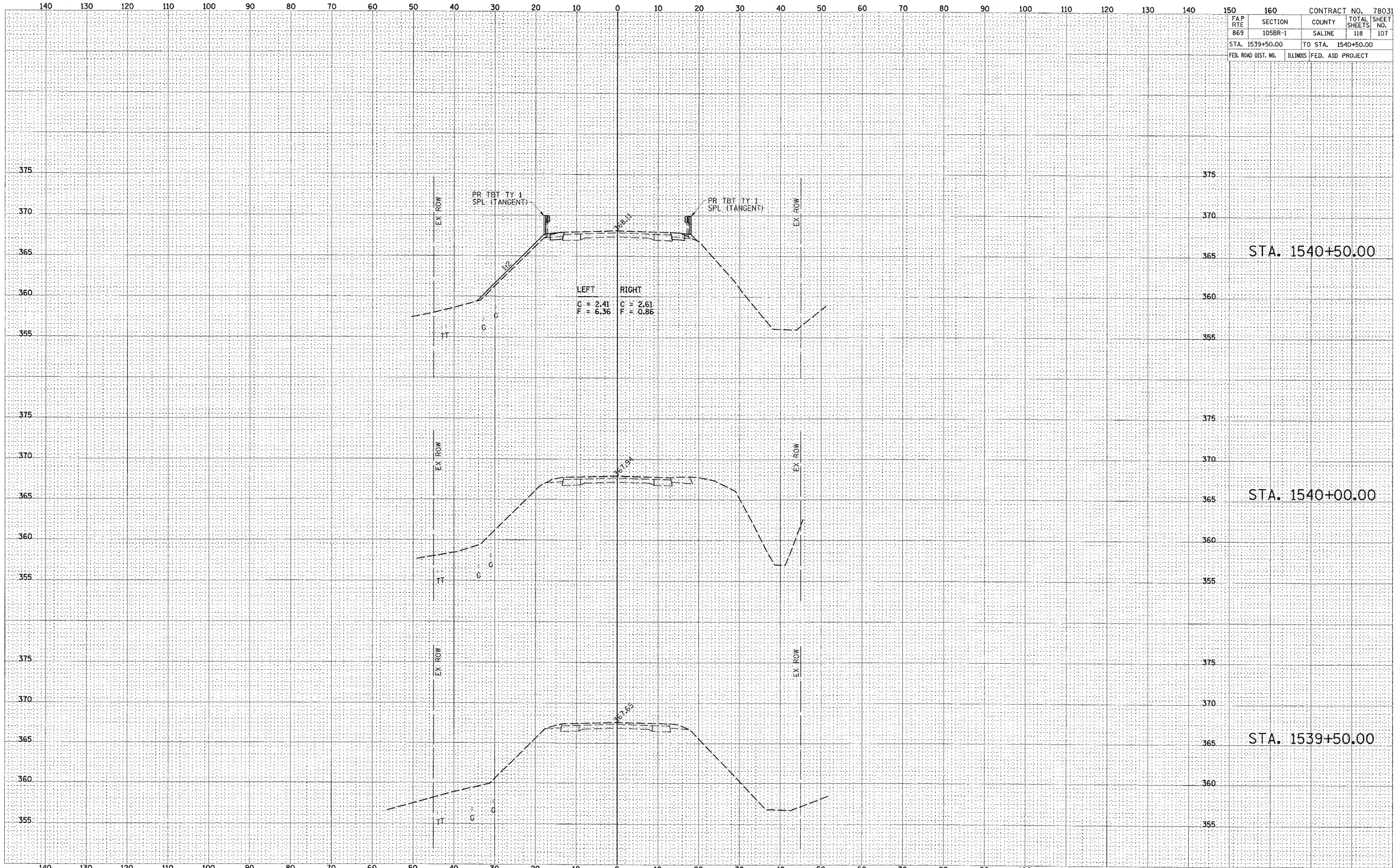
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	107
STA. 1539+50.00		TO STA. 1540+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
	PLOTTED	
	TRIANGULATE	
	AREAS	
NO.	AREAS CHECKED	

PRTIONL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
	PLOTTED	
	TRIANGULATE	
	AREAS	
NO.	AREAS CHECKED	



FAP RTE 869 (IL 34) CROSS SECTIONS

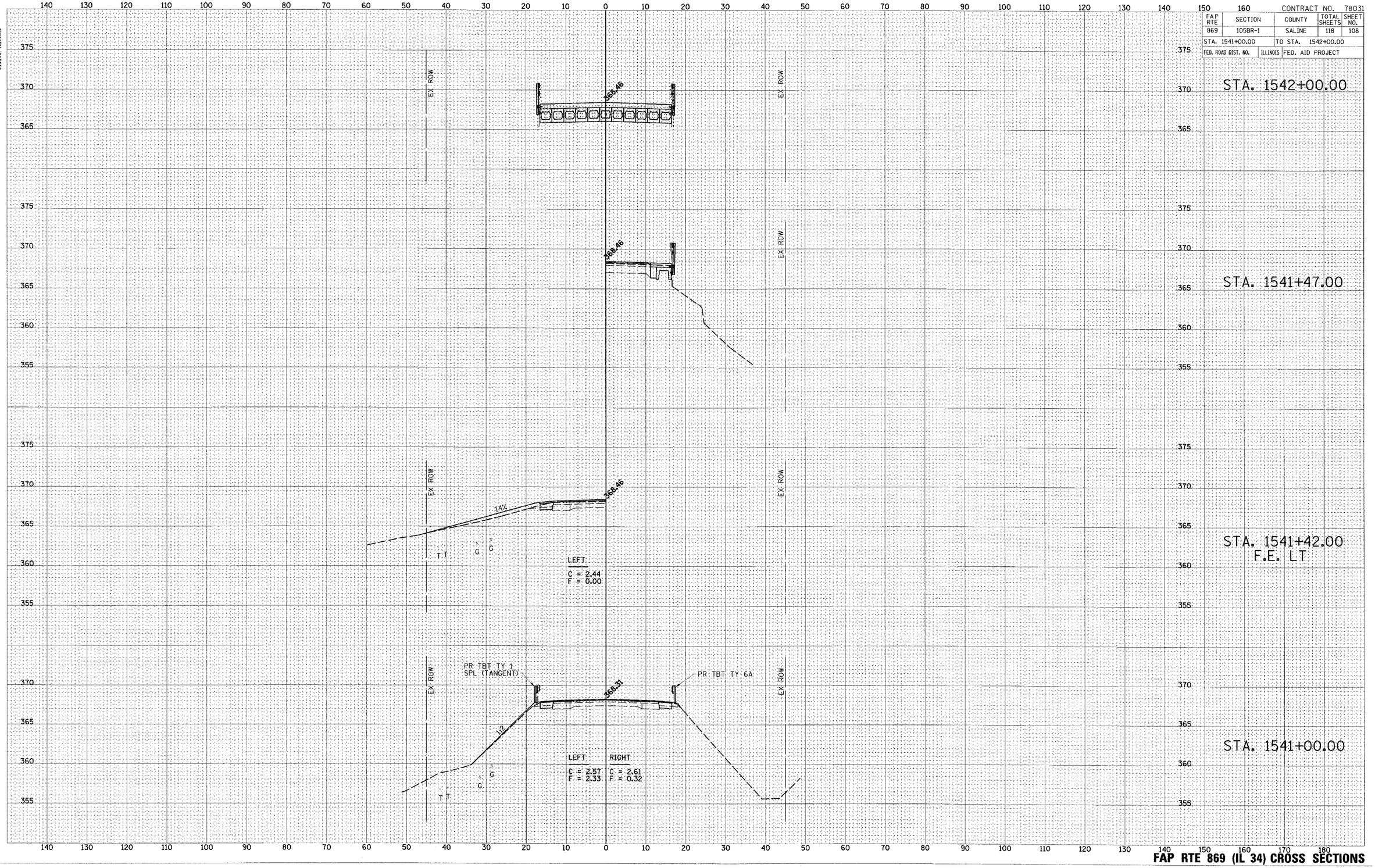
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS
SPRINGFIELD, ILLINOIS

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	108
STA. 1541+00.00		TO STA. 1542+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FAP RTE 869 (IL 34) CROSS SECTIONS

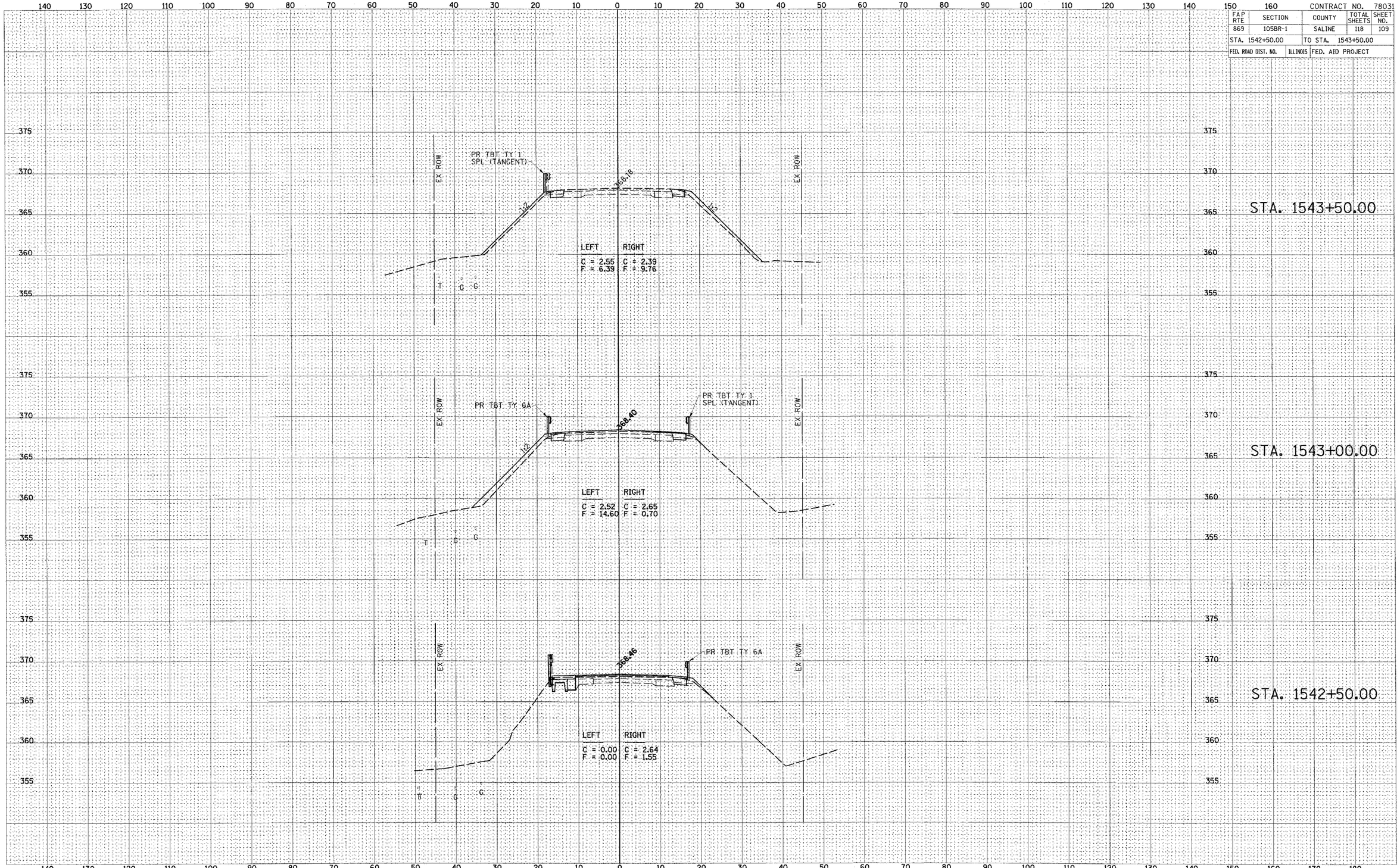
ESCA CONSULTANTS, INC.
CIVIL • STRUCTURAL • TRANSPORTATION

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	109
STA. 1542+50.00		TO STA. 1543+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FAP RTE 869 (IL 34) CROSS SECTIONS

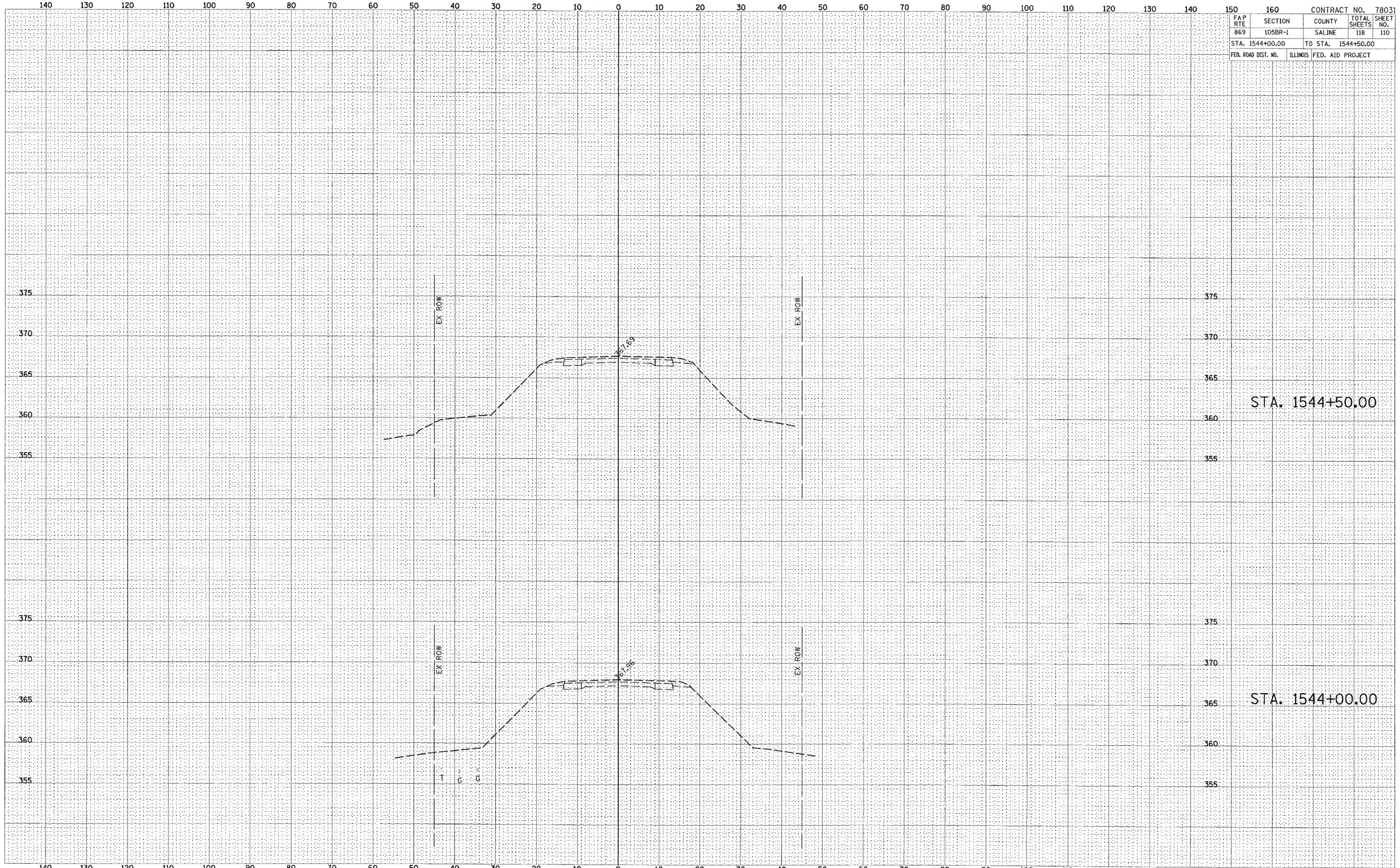
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-1	SALINE	118	110
STA. 1544+00.00		TO STA. 1544+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



FAP RTE 869 (IL 34) CROSS SECTIONS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	111
STA. 1558+50.00		TO STA. 1559+53.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

STA. 1559+53.00
F.E. LT

STA. 1559+50.00

STA. 1559+00.00

STA. 1558+50.00

EX ROW
8.4%
368.24
T FO
C
W
LEFT
C = 2.10
F = 0.00
PR TBT TY 1
SPL (TANGENT)
368.23
RIGHT
C = 2.43
F = 0.50
C = 2.06
F = 0.00
367.86
367.58

FAP RTE 869 (IL 34) CROSS SECTIONS

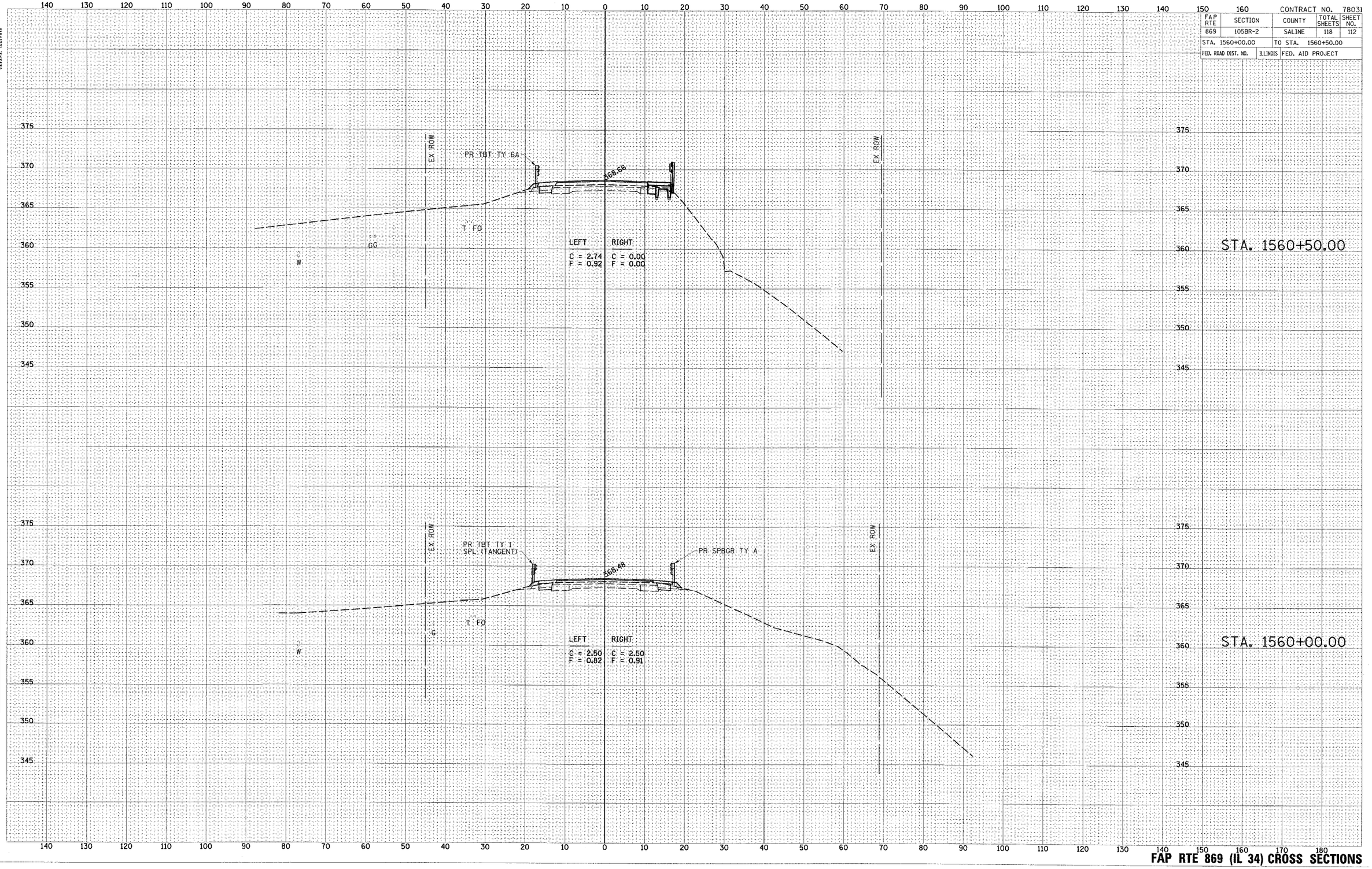
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	112
STA. 1560+00.00		TO STA. 1560+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TRACED		
	AREAS		
NO.	AREAS CHECKED		

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
	TRACED		
	AREAS		
NO.	AREAS CHECKED		



FAP RTE 869 (IL 34) CROSS SECTIONS

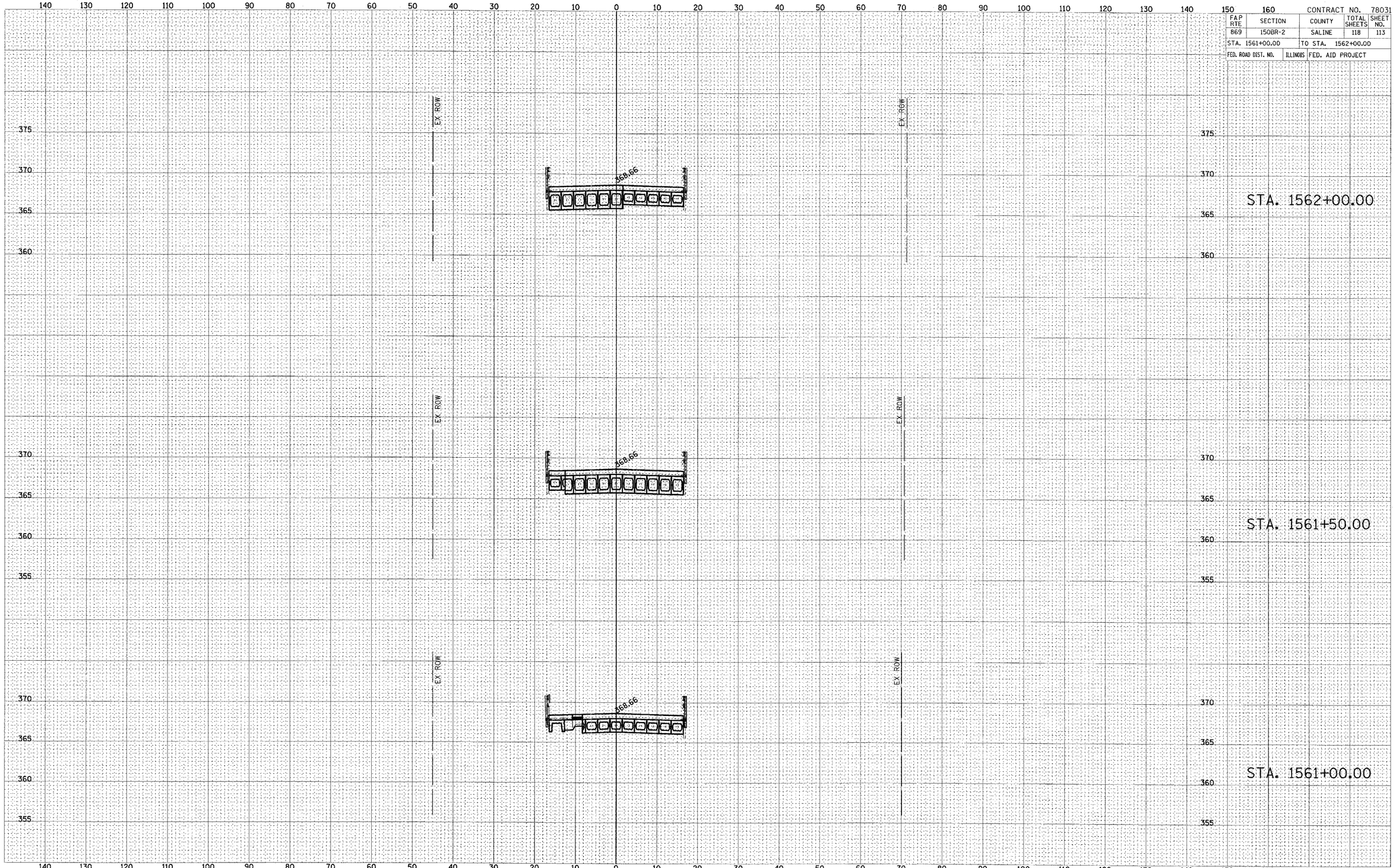
ESCA CORPORATION
CIVIL & STRUCTURAL ENGINEERS
BLOOMINGTON, ILLINOIS

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	150BR-2	SALINE	118	113
STA. 1561+00.00		TO STA. 1562+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 78031

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	DATE
PLOTTED		
TEMPLATE		
HECS		
AREAS CHECKED		

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	DATE
PLOTTED		
TEMPLATE		
HECS		
AREAS CHECKED		



FAP RTE 869 (IL 34) CROSS SECTIONS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	114

STA. 1562+50.00 TO STA. 1563+50.00

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

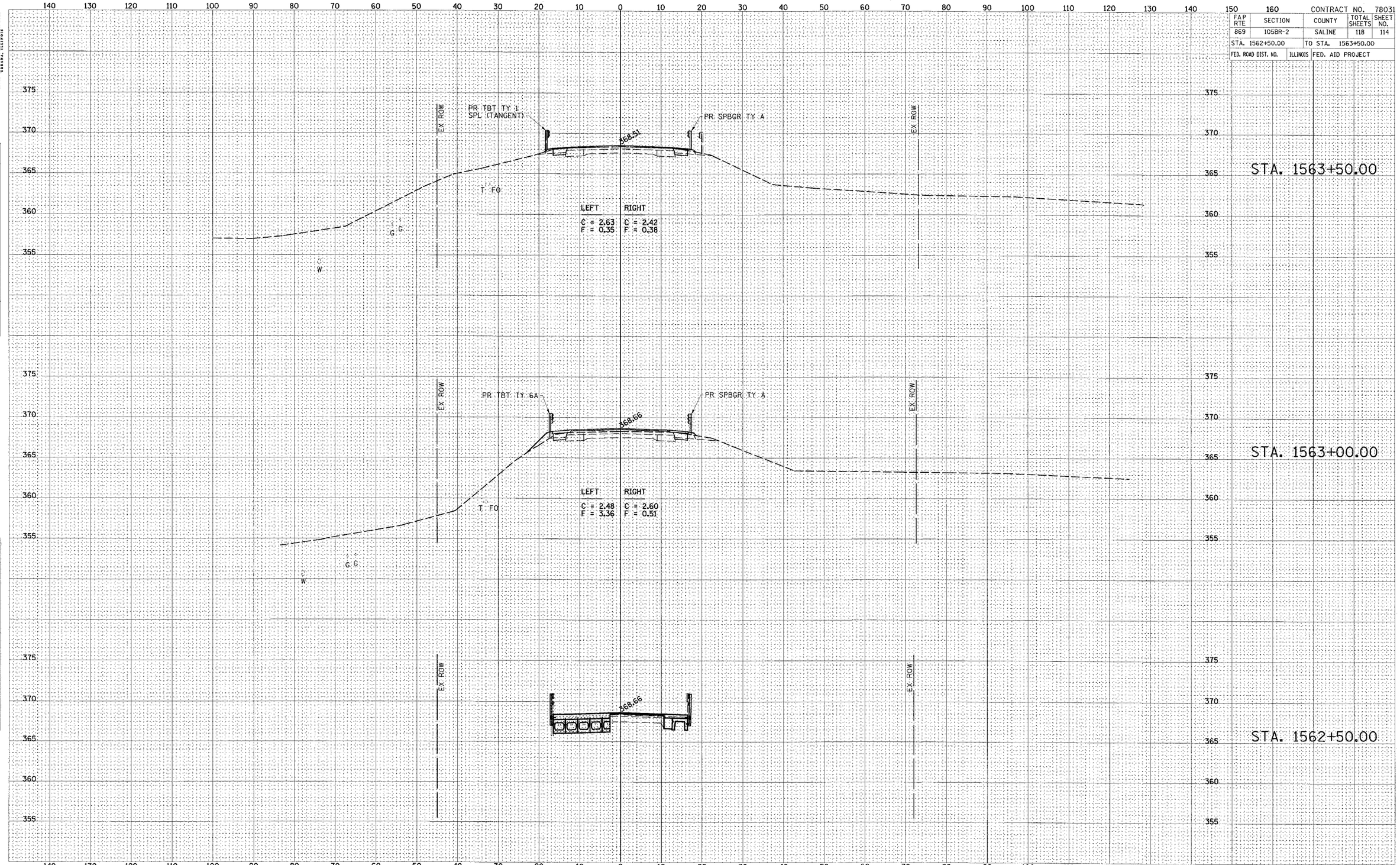
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

FINAL SURVEY NOTE BOOK

NO.	BY	DATE
SURVEYED		
PLOTTED		
TRIANGULATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY NOTE BOOK

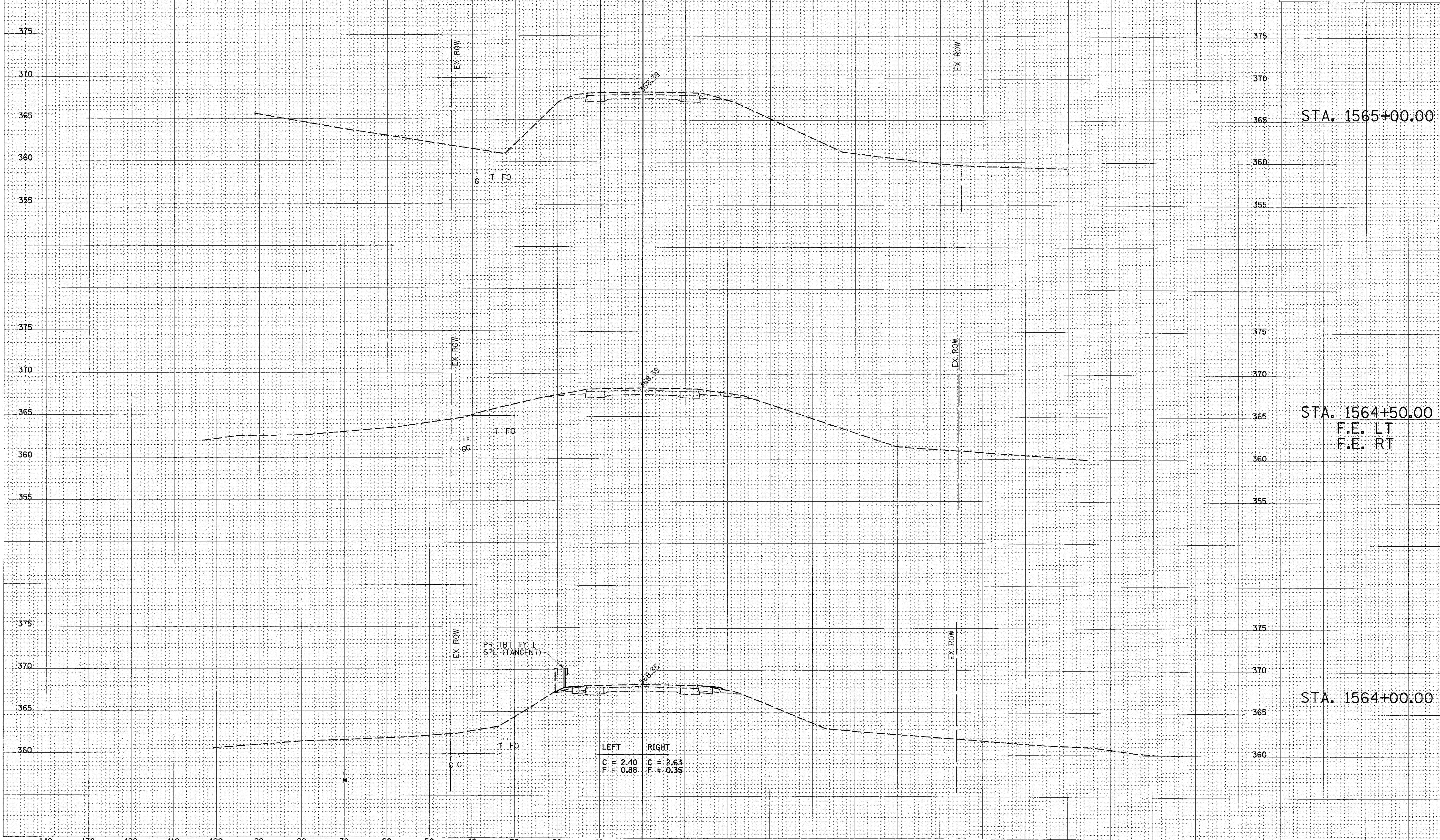
NO.	BY	DATE
SURVEYED		
PLOTTED		
TRIANGULATE		
AREAS		
AREAS CHECKED		



FAP RTE 869 (IL 34) CROSS SECTIONS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-2	SALINE	118	115
STA. 1564+00.00		TO STA. 1565+00.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



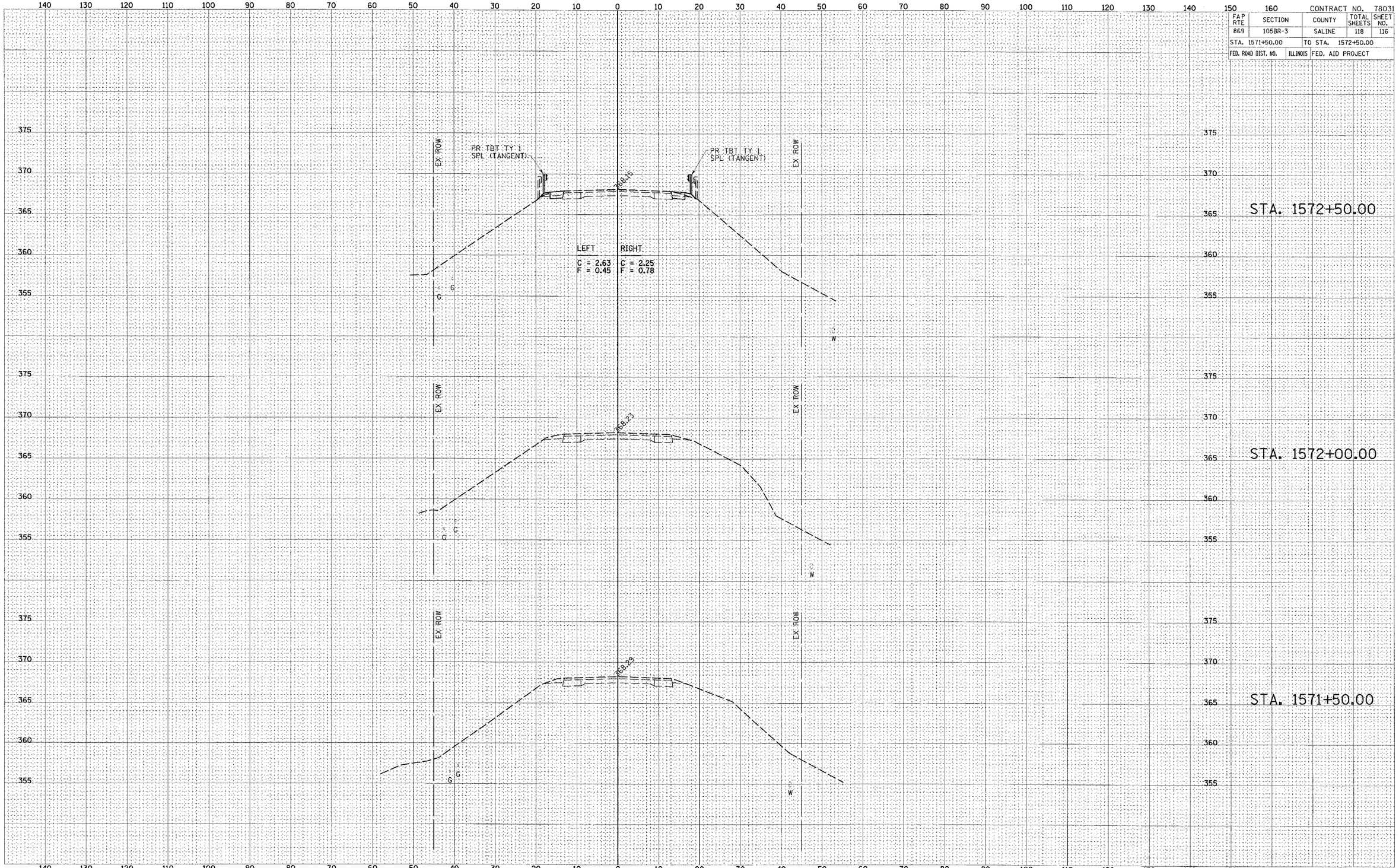
FAP RTE 869 (IL 34) CROSS SECTIONS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	116

STA. 1571+50.00 TO STA. 1572+50.00

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



FAP RTE 869 (IL 34) CROSS SECTIONS

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	117
STA. 1573+00.00		TO STA. 1574+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY NOTE BOOK NO.
SURVEYED BY
PLOTTED BY
TEMPLATE
AREAS
AREAS CHECKED
DATE

ORIGINAL SURVEY NOTE BOOK NO.
SURVEYED BY
PLOTTED BY
TEMPLATE
AREAS
AREAS CHECKED
DATE

STA. 1574+50.00

STA. 1574+00.00

STA. 1573+50.00

STA. 1573+00.00

EX. ROW

368.45

368.48

368.51

368.23

PR TBT TY 6A

PR TBT TY 6A

LEFT	RIGHT
C = 2.53	C = 2.55
F = 1.40	F = 0.35

FAP RTE 869 (IL 34) CROSS SECTIONS

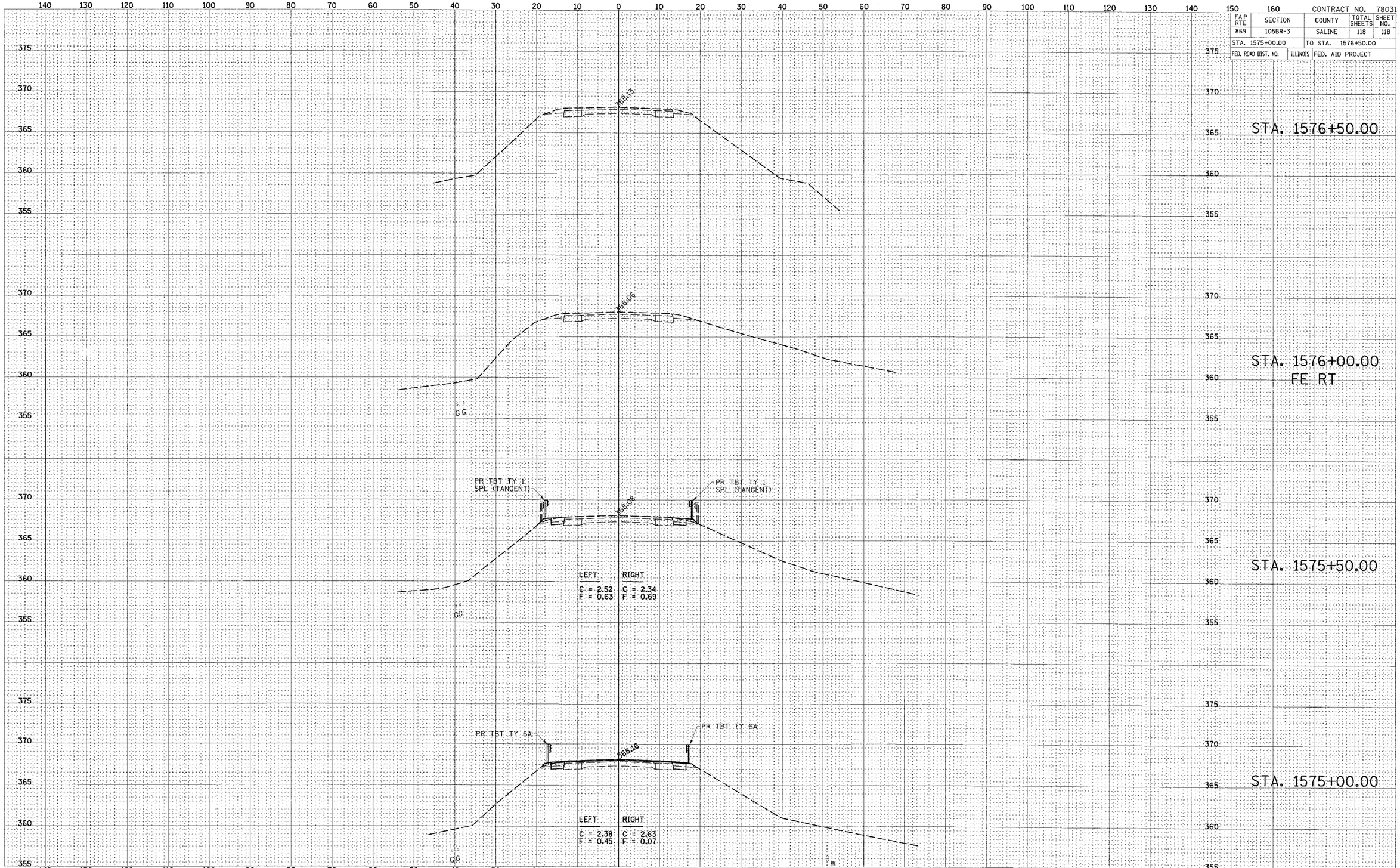
ESCA CONSULTANTS, INC.
CIVIL, STRUCTURAL, TRANSPORTATION ENGINEERS
CHESTERFIELD, MISSOURI

FINAL SHEET	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK	CROSS SECTIONS	
NO.	AREAS	AREAS CHECKED

ORIGINAL SHEET	SURVEYED	DATE
	PLOTTED	BY
NOTE BOOK	CROSS SECTIONS	
NO.	AREAS	AREAS CHECKED

CONTRACT NO. 78031

FAP RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
869	105BR-3	SALINE	118	118
STA. 1575+00.00		TO STA. 1576+50.00		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



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