8-1-08 Letting, Item 115

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	1
F.A.P. RTE.	SECTION	COUNTY		
132	102BR-1	MASSAC		
FED. ROAD DIST. NO. 7	ILLINOIS	CONTRACT NO. 78032		

D-99-012-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

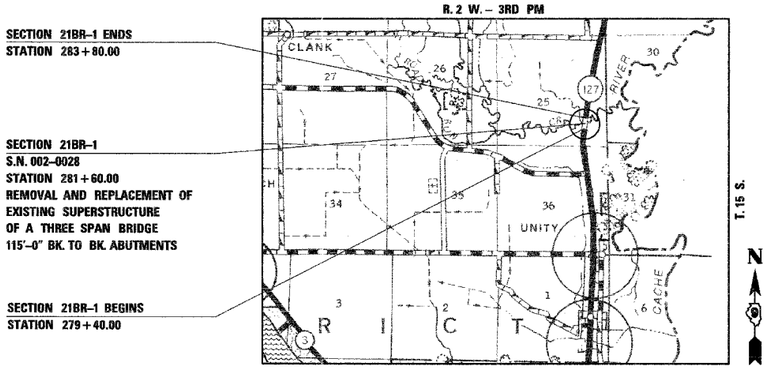
PROPOSED
HIGHWAY PLANS

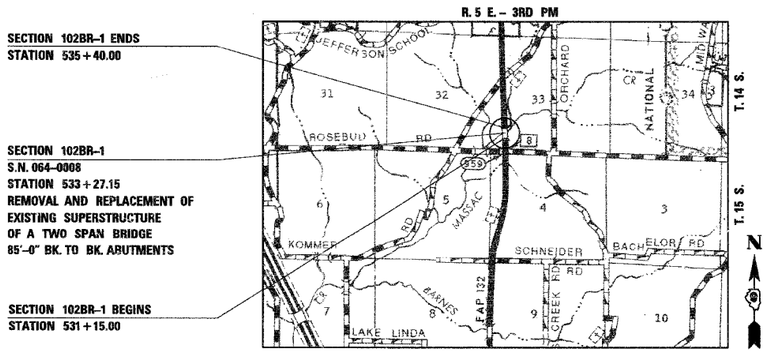
FAS ROUTE 1907 (IL ROUTE 127), FAP ROUTE 132 (IL ROUTE 145)
SECTION 21BR-1, 102BR-1
PROJECT: BHF-0005(598)
ALEXANDER AND MASSAC COUNTIES

C-99-012-08

PPC DECK BEAM SUPERSTRUCTURE REPLACEMENTS OVER HOGSKIN CREEK AND MASSAC CREEK

LOCATION OF SECTION INDICATED THUS: –





LOCATION MAPS

TOTAL LENGTH OF SECTION & PROJECT = 865.00 FEET = 0.164 MILES
NET LENGTH OF SECTION & PROJECT = 865.00 FEET = 0.164 MILES

DESIGN DESIGNATION
N.A.

FAS ROUTE 1907, FAP ROUTE 132
FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN),
MINOR ARTERIAL (NON-URBAN)
DESIGN SPEED: 55 MPH, 55 MPH
POSTED SPEED: 55 MPH, 55 MPH
ADT: 770 (2007), 2,030 (2007)
PV: 87%, 87%
TRUCKS: 13%, 13%

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

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

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

DISTRICT 9 NO. (618) 549-2171
PROJECT ENGINEER: DAVID PICHE

TOWNSHIPS: UNITY AND BENTON

CONTRACT NO. 78032

DAVID W. PETERMEIER 062-052553 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

David W. Petermeier 3/13/08

DAVID W. PETERMEIER
EDWARDSVILLE, ILLINOIS
ENGINEER NO. 062-052553
EXPIRES NOV. 30. 2009

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED April 8 20 08
Marc C Kanis
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
June 27, 2008
Eric E. Harm PE
Interim ENGINEER OF DESIGN AND ENVIRONMENT
June 27, 2008
Christine M. Reed PE
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

MARCH 2008

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

GENERAL NOTES:

EXCEPT AS NOTED ON THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES. ALL ELEVATIONS REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.

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

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

AT ALL LOCATIONS WHERE THE PROPOSED HOT MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT MIX ASPHALT OR CONCRETE PAVEMENT, A FULL DEPTH SAWED JOINT SHALL BE CONSTRUCTED. ALL SAWCUTTING OF EXISTING PAVEMENT SHALL BE CONSIDERED INCLUDED IN THE PAY ITEMS INVOLVED.

THE ENGINEER SHALL BE THE SOLE JUDGE CONCERNING CURING TIME FOR THE VARIOUS HMA LIFTS. 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.	BITUMINOUS MATERIALS:		
ALL AGGREGATE	2.05 TONS/CU.YD.		ON PAVEMENT	0.09 GAL./SQ.YD.
AGGREGATE (PRIME COAT)	0.0015 TONS/SQ.YD.		INTERMEDIATE LIFTS (FOG COAT)	0.04 GAL./SQ.YD.
			ON AGGREGATE SURFACE	0.32 GAL./SQ.YD.

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

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 RE-ESTABLISH ANY SECTION OR SUBSECTION MONUMENTS DESTROYED BY HIS OPERATIONS.

QUANTITIES SHOWN IN THE PLANS FOR BRIDGE DECK GROOVING AND PROTECTIVE COAT INCLUDE ALL AREAS COVERED BY THE CONCRETE WEARING SURFACE, 5". PROTECTIVE COAT SHALL BE APPLIED, IN ACCORDANCE WITH ARTICLE 503.19 OF THE STANDARD SPECIFICATIONS. THE PROTECTIVE COAT SHALL BE APPLIED REGARDLESS OF THE CURING METHOD USED. THE RATE OF APPLICATION FOR EACH COAT ON SAW CUT GROOVED AREAS SHALL BE 25 SQUARE YARDS PER GALLON OF MIXTURE.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUBNUMBER LISTED.

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.

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

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 1-800-892-0123. A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED.

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

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

WHILE SIGNAL HEADS ARE MOUNTED IN PLACE, BUT NOT YET IN OPERATION, THEY SHALL BE SECURELY COVERED IN WHITE PLASTIC.

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

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

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

"NARROW BRIDGE" SIGNS WITH ADVISORY TAGS "11 FT 7 IN" (STAGE I) "12 FT 7 IN" (STAGE I) AND "12 FT 0 IN" (STAGE II) SHALL BE ERECTED BETWEEN THE ROAD CONSTRUCTION AHEAD AND THE SIGNAL AHEAD SIGNS. THIS WORK SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION, STANDARD 701321.

"11 FT 6 IN" (STAGE II)

THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION FOR THE INITIAL OPENING OF THE COMPLETED STRUCTURE TO TWO LANE TRAFFIC. THE QUANTITY OF TEMPORARY PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION FOR STAGE I AND STAGE II CONSTRUCTION.

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

COMMITMENTS:
NONE AS OF

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

INDEX OF SHEETS

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 SYSTEM
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

PREPARED BY: Joe Wlan Kiewicz
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: James Lewis Emery
DISTRICT LAND ACQUISITION ENGINEER

EXAMINED BY: Carrie Nelson
DISTRICT PROGRAM DEVELOPMENT ENGINEER

EXAMINED BY: Marvin Hammons
DISTRICT OPERATIONS ENGINEER

EXAMINED BY: Dwight Lewis
DISTRICT CONSTRUCTION ENGINEER

EXAMINED BY: Bruce W. Rabbitt
DISTRICT MATERIALS ENGINEER

EXAMINED BY: Jay Smithers
DISTRICT PROJECT IMPLEMENTATION ENGINEER

EXAMINED BY: Danny L. Clayton
ASSISTANT REGIONAL ENGINEER

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

April 8 20 08
DATE

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -	
		DRAWN - AEC	REVISED -	
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -	
	PLOT DATE = $DATE$	DATE - 03/13/08	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS AND GENERAL NOTES

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	2
F.A.P. RTE.	SECTION	COUNTY		
132	102BR-1	MASSAC		

CONTRACT NO. 78032

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ALEXANDER COUNTY F.A.S. 1907 S.N. 002-0028 HBP FUNDING 80% FEDERAL 20% STATE CONSTRUCTION TYPE CODE X080-2A	MASSAC COUNTY F.A.P. 132 S.N. 064-0008 HBP FUNDING 80% FEDERAL 20% STATE CONSTRUCTION TYPE CODE X080-2A
20200500	EARTH EXCAVATION (WIDENING)	CU YD	112	56	56
25000210	SEEDING, CLASS 2A	ACRE	0.4	0.2	0.2
25000350	SEEDING, CLASS 7	ACRE	0.4	0.2	0.2
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	36	18	18
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	36	18	18
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	36	18	18
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.8	0.4	0.4
25100115	MULCH, METHOD 2	ACRE	0.8	0.4	0.4
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	80	40	40
28000400	PERIMETER EROSION BARRIER	FOOT	1480	740	740
35300500	PORTLAND CEMENT CONCRETE BASE COURSE 10"	SQ YD	22	0	22
35600716	HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	396	200	196
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	221	129	92
40600300	AGGREGATE (PRIME COAT)	TON	3	2	1
40600645	LEVELING BINDER (MACHINE METHOD), N90	TON	30	30	0
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	456	220	236
40600990	TEMPORARY RAMP	SQ YD	143	143	0
40603320	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	117	58	59
44000100	PAVEMENT REMOVAL	SQ YD	22	0	22
48203100	HOT-MIX ASPHALT SHOULDERS	TON	26	26	0
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	2	1	1
50102400	CONCRETE REMOVAL	CU YD	9.9	4.4	5.5
50300225	CONCRETE STRUCTURES	CU YD	11.4	4.4	7.0
50300260	BRIDGE DECK GROOVING	SQ YD	421	421	0
50300300	PROTECTIVE COAT	SQ YD	421	421	0
50400105	PRECAST CONCRETE BRIDGE SLAB	SQ FT	366	0	366
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	3551	3551	0
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	2559	0	2559
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	7310	6110	1200
50800515	BAR SPLICERS	EACH	143	127	16
50901050	STEEL RAILING, TYPE SM	FOOT	487	223	264
51500100	NAME PLATES	EACH	2	1	1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	158	74	84

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ALEXANDER COUNTY F.A.S. 1907 S.N. 002-0028 HBP FUNDING 80% FEDERAL 20% STATE CONSTRUCTION TYPE CODE X080-2A	MASSAC COUNTY F.A.P. 132 S.N. 064-0008 HBP FUNDING 80% FEDERAL 20% STATE CONSTRUCTION TYPE CODE X080-2A
	58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	285	0	285
	58700300	CONCRETE SEALER	SQ FT	92	73	19
	59000200	EPOXY CRACK INJECTION	FOOT	23	0	23
*	63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	8	4	4
	63200310	GUARDRAIL REMOVAL	FOOT	360	180	180
	63300900	VERTICAL ADJUSTMENT OF GUARDRAIL	FOOT	240	240	0
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	3	3
	67100100	MOBILIZATION	L SUM	1	0.5	0.5
	70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	2	1	1
	70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0.5	0.5
	70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1	0.5	0.5
	70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	20	10	10
	70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	2	1	1
	70106700	TEMPORARY RUMBLE STRIP	EACH	6	3	3
	70106800	CHANGEABLE MESSAGE SIGN	CAL MO	12	6	6
	70300100	SHORT-TERM PAVEMENT MARKING	FOOT	1048	525	523
	70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	1887	964	923
	70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	1214	604	610
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	762.5	387.5	375
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	762.5	387.5	375
*	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1887	964	923
*	78200410	GUARDRAIL MARKERS, TYPE A	EACH	8	4	4
*	78200520	BARRIER WALL MARKERS, TYPE B	EACH	8	4	4
	78300100	PAVEMENT MARKING REMOVAL	SQ FT	471	236	235
	78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	8	5	3
	86200300	UNINTERRUPTIBLE POWER SUPPLY, EXTENDED	EACH	2	1	1
	X0324744	REMOVAL OF EXISTING PRECAST CONCRETE UNITS	SQ FT	366	0	366
	X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	92	73	19
	X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	421	421	0
	Z0001900	ASBESTOS BEARING PAD REMOVAL	EACH	96	56	40
	Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	4	2	2
	Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	4	2	2

*Specialty Items

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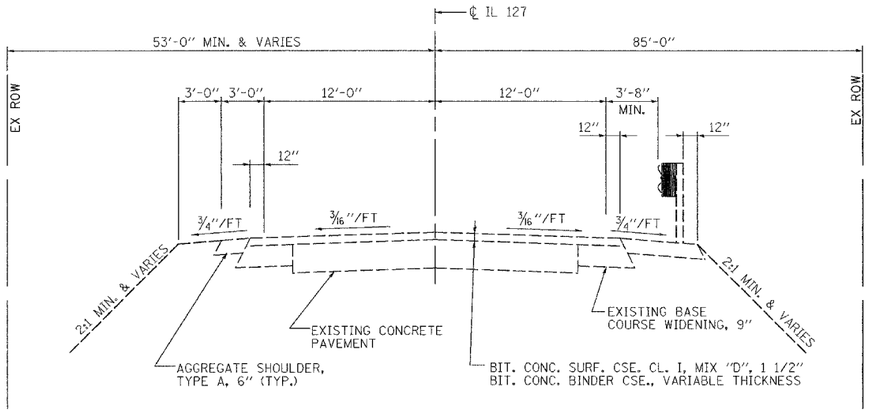
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/12/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NONE | SHEET NO. OF SHEETS | STA. | TO STA.

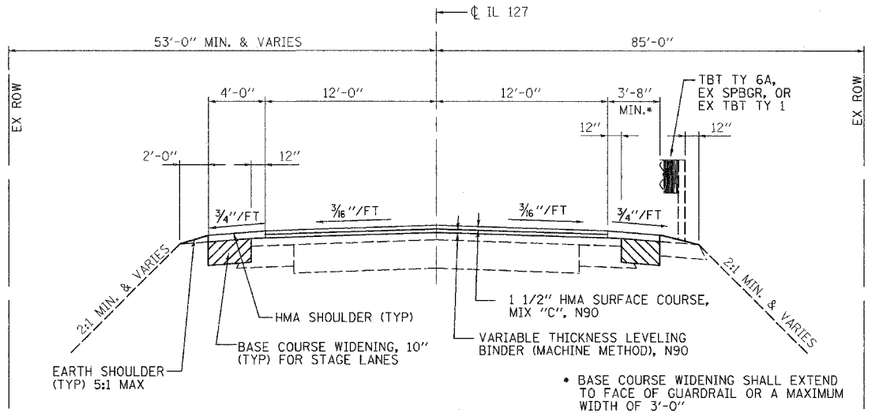
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	3
F.A.P. RTE.	SECTION	COUNTY		
132	102BR-1	MASSAC		
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



WITHOUT GUARDRAIL **WITH GUARDRAIL**

EXISTING TYPICAL ROADWAY SECTION

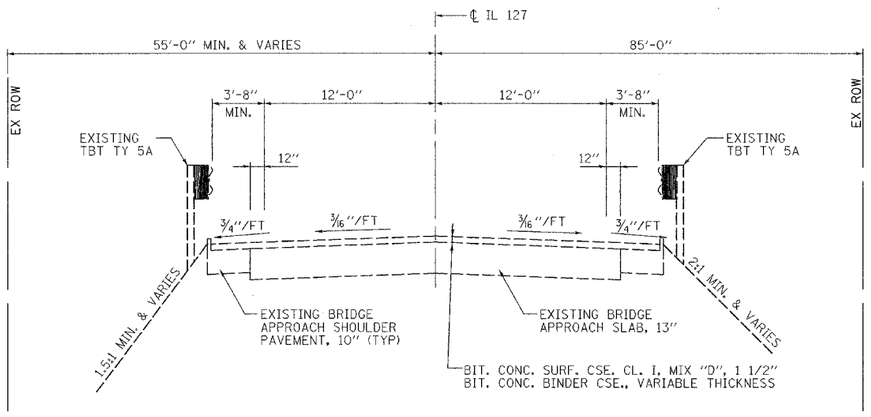
STA. 279+40 TO 280+79 LT
STA. 279+40 TO 280+98 RT
STA. 282+22 LT TO 283+80
STA. 282+41 RT TO 283+80



WITHOUT GUARDRAIL **WITH GUARDRAIL**

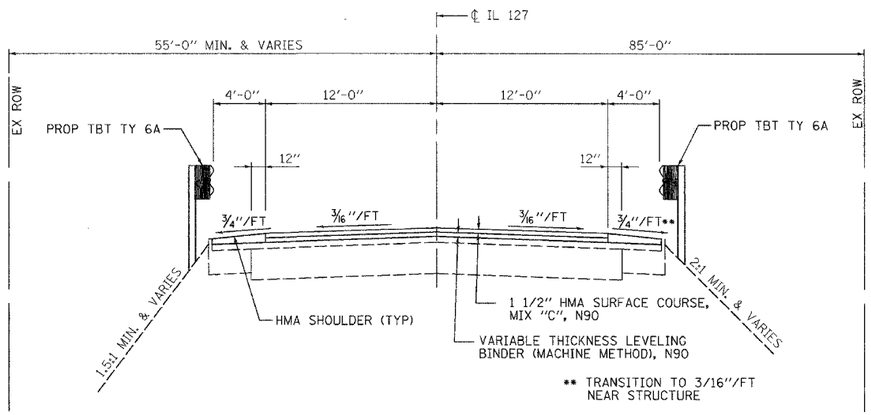
PROPOSED TYPICAL ROADWAY SECTION

STA. 279+40 TO 280+79 LT
STA. 279+40 TO 280+98 RT
STA. 282+22 LT TO 283+80
STA. 282+41 RT TO 283+80



EXISTING BRIDGE APPROACH SECTION

STA. 280+79 TO 280+91.5 LT
STA. 280+98 TO 281+10.0 RT
STA. 282+10.0 LT TO 282+22
STA. 282+28.5 RT TO 282+41



PROPOSED BRIDGE APPROACH SECTION

STA. 280+79 TO 280+91.5 LT
STA. 280+98 TO 281+10.0 RT
STA. 282+10.0 LT TO 282+22
STA. 282+28.5 RT TO 282+41

HMA MIXTURE 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 mm OR IL 12.5 mm	IL-19.0 mm	HMA SHOULDERS
FRICTION AGGREGATE:	C SURFACE	NONE	NONE

NOTE: BASE COURSE WIDENING SHALL EXTEND TO THE BRIDGE APPROACH SECTION AT EACH CORNER OF THE STRUCTURE. STATIONS GIVEN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) TYPICAL SECTION

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. 279+40 TO STA. 283+80

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	4
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING	PAINT PAVEMENT MARKING - LINE 4"	TEMP PAVEMENT MARKING - LINE 4"
		FOOT	FOOT	FOOT
STA. 277+89.25 TO STA. 279+66.35, CENTERLINE	SKIP DASH YELLOW CENTERLINE	177		
STA. 280+71.81 TO STA. 282+48.18, CENTERLINE	SKIP DASH YELLOW CENTERLINE	177		
STA. 283+53.70 TO STA. 285+24.75, CENTERLINE	SKIP DASH YELLOW CENTERLINE	171		
STA. 277+89.25 TO STA. 279+66.35, CENTERLINE	SKIP DASH YELLOW CENTERLINE		45	45
STA. 280+10 TO STA. 283+30, CENTERLINE	SKIP DASH YELLOW CENTERLINE		80	80
STA. 283+53.70 TO STA. 285+24.75, CENTERLINE	SKIP DASH YELLOW CENTERLINE		43	43
STA. 279+67.25 TO STA. 283+52.75, LT	SOLID WHITE EDGE LINE		386	386
STA. 279+55.25 TO STA. 283+64.75, RT	SOLID WHITE EDGE LINE		410	410
	TOTALS	**525**	**964**	**964**

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL TYPE 6A	GUARDRAIL MARKERS TYPE A	BARRIER WALL MARKERS, TYPE B	STEEL RAILING, TYPE SM	VERTICAL ADJUSTMENT OF GUARDRAIL
	EACH	EACH	EACH	FOOT	FOOT
STRUCTURE NO. 002-0028 - NE	1	1			60
STRUCTURE NO. 002-0028 - NW	1	1			80
STRUCTURE NO. 002-0028 - SE	1	1			60
STRUCTURE NO. 002-0028 - SW	1	1			40
STRUCTURE NO. 002-0028 - BRIDGE			4	223	
TOTALS	**4**	**4**	**4**	**223**	**240**

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
STRUCTURE NO. 002-0028 - NE	45*
STRUCTURE NO. 002-0028 - NW	45*
STRUCTURE NO. 002-0028 - SE	45*
STRUCTURE NO. 002-0028 - SW	45*
TOTAL	**180**

* QUANTITY MAY VARY DEPENDING ON LAYOUT PROPOSED BY THE CONTRACTOR. SEE SHEET NO. 11 FOR DETAILS.

PAVEMENT MARKER REMOVAL SCHEDULE

LOCATION	RRPM REMOVAL
	EACH
STA. 280+10	1
STA. 280+90	1
STA. 281+70	1
STA. 282+50	1
STA. 283+30	1
TOTALS	**5**

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
NE QUADRANT	170	10
NW QUADRANT	200	10
SE QUADRANT	200	10
SW QUADRANT	170	10
TOTALS	**740**	**40**

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	18	29
EDGELINES	TEMPORARY	586	
STA. 279+67.25 TO STA. 283+52.75, LT	EDGELINES		129
STA. 279+55.25 TO STA. 280+71.81, RT	EDGELINES		39
STA. 282+48.18 TO STA. 283+64.75, RT	EDGELINES		39
	TOTALS	**604**	**236**

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	0.05	0.05	4.5	4.5	4.5	0.1	0.1
NW QUADRANT	0.05	0.05	4.5	4.5	4.5	0.1	0.1
SE QUADRANT	0.05	0.05	4.5	4.5	4.5	0.1	0.1
SW QUADRANT	0.05	0.05	4.5	4.5	4.5	0.1	0.1
TOTALS	**0.2**	**0.2**	**18**	**18**	**18**	**0.4**	**0.4**

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT	3-1/8"
	SQ. YD	SQ. YD
STA. 280+10	110	
STA. 283+30	110	
NORTH ABUTMENT		9
SOUTH ABUTMENT		9
TOTALS	**220**	**18**

NOTE:
HMA SURFACE REMOVAL (3 1/8") IS INCLUDED IN THE COST OF REMOVAL OF EXISTING SUPERSTRUCTURE.

BASE COURSE SCHEDULE

LOCATION	BASE COURSE WIDENING, 10"
	SQ YD
NE QUADRANT	47
NW QUADRANT	53
SE QUADRANT	53
SW QUADRANT	47
TOTAL	**200**

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD
NE QUADRANT CUTS & FILLS	15	11	3	+8
NW QUADRANT CUTS & FILLS	13	10	2	+8
SE QUADRANT CUTS & FILLS	15	11	3	+8
SW QUADRANT CUTS & FILLS	13	10	2	+8
TOTALS	**56**	**42**	**10**	**+32**

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

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	HMA SURFACE COURSE, MIX "C", N90	LEVELING BINDER (MACHINE METHOD), N90	HMA SHOULDERS
	GALLON	TON	TON	TON	TON
NORTH APPROACH	68	1	29	24	14
SOUTH APPROACH	61	1	29	6	12
TOTALS	**129**	**2**	**58**	**30**	**26**

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

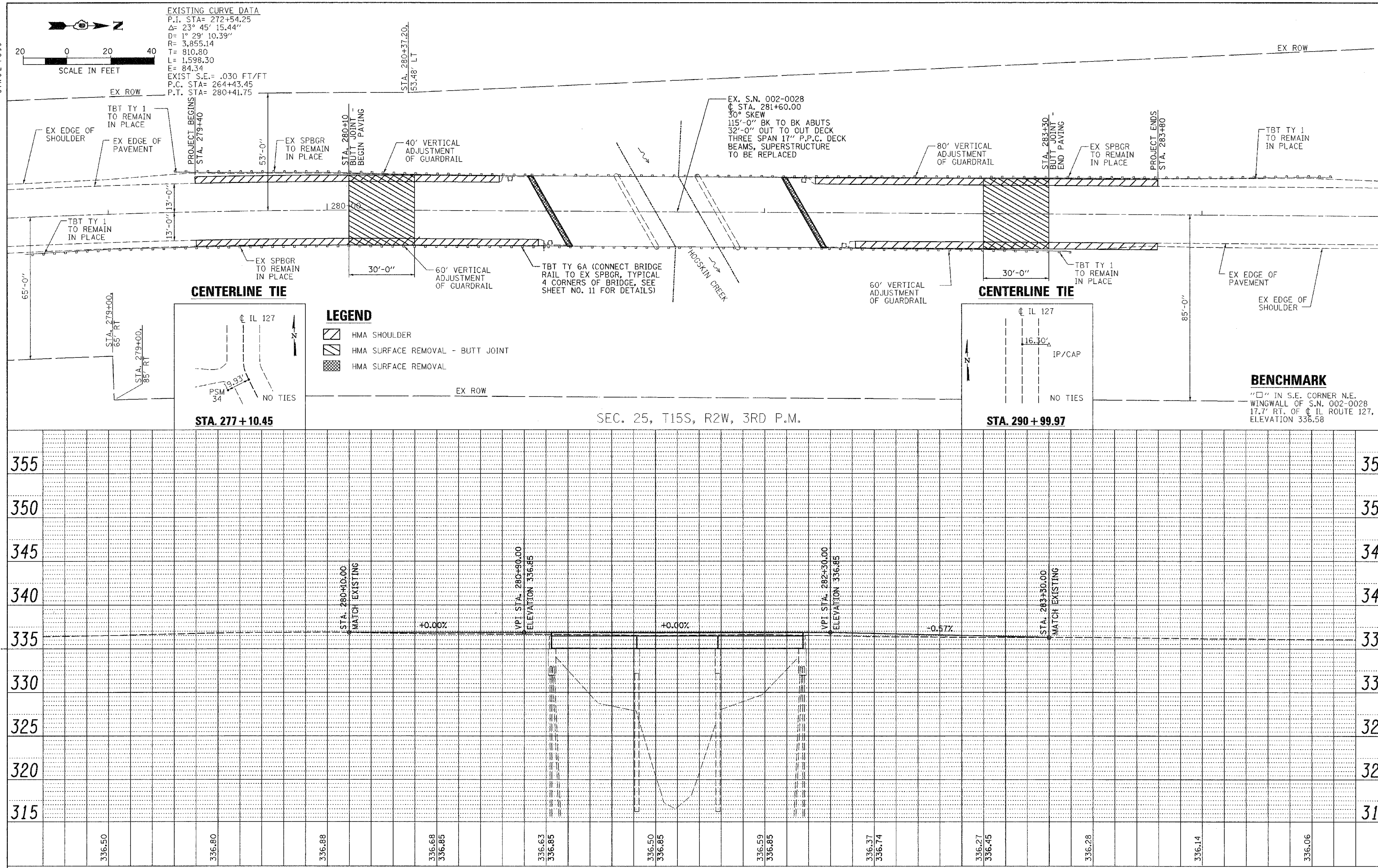
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/12/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) SCHEDULE OF QUANTITIES

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. --- | TO STA. ---

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	5
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



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		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) PLAN AND PROFILE

SCALE: 1"=20' | SHEET NO. 1 OF 1 SHEETS | STA. 278+70 TO STA. 284+70

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	6

CONTRACT NO. 78032

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
279+66.25		283+53.75	387.5
		TOTAL	387.5

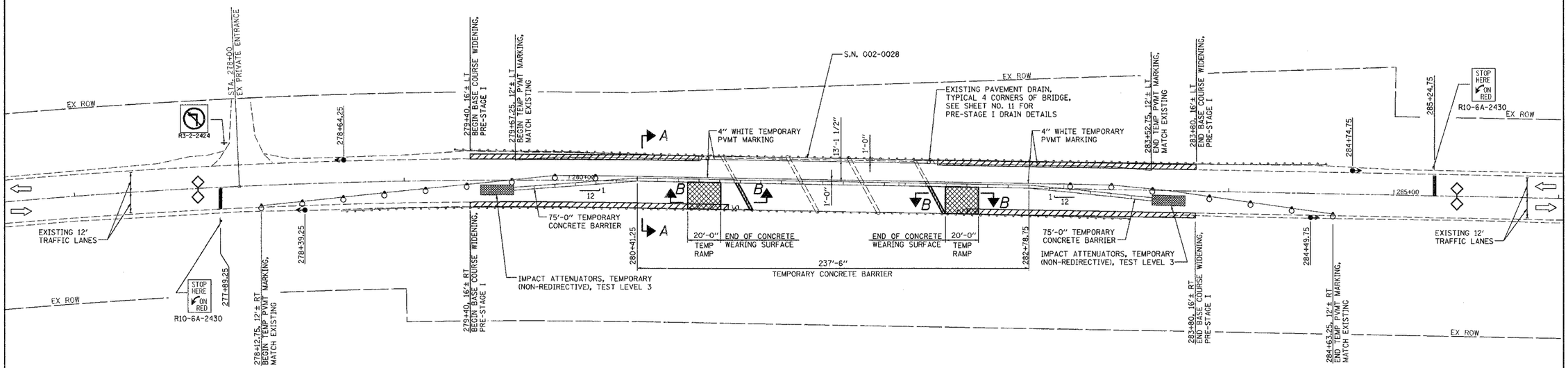
TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

TEMPORARY RUMBLE STRIPS - 3 EACH

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

NOTES

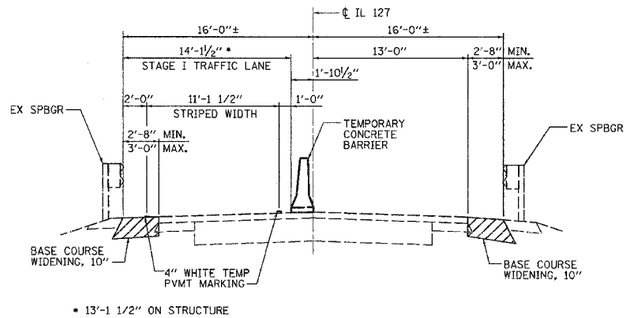
1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. CONSTRUCT TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321 AT SOUTH END OF PROJECT ONLY.



30 0 30 60
SCALE IN FEET

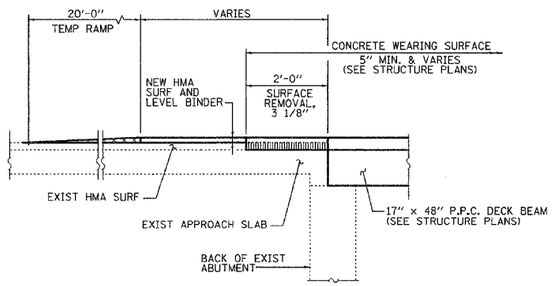
LEGEND

- TRAFFIC SIGNAL
- DRUM WITH STEADY BURNING LIGHT
- BASE COURSE WIDENING, 10"
- TEMPORARY RAMP
- HMA SURFACE REMOVAL



* 13'-1 1/2" ON STRUCTURE

SECTION A–A



SECTION B–B

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

FILE NAME = #FILE1#	USER NAME = #USER#	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = #SCALE#	CHECKED - JMH	REVISED -
	PLOT DATE = #DATE#	DATE - 03/12/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) STAGE I CONSTRUCTION

SCALE: 1"=30' | SHEET NO. 1 OF 2 SHEETS | STA. 276+60 TO STA. 286+00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	7
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SCHEDULE OF QUANTITIES

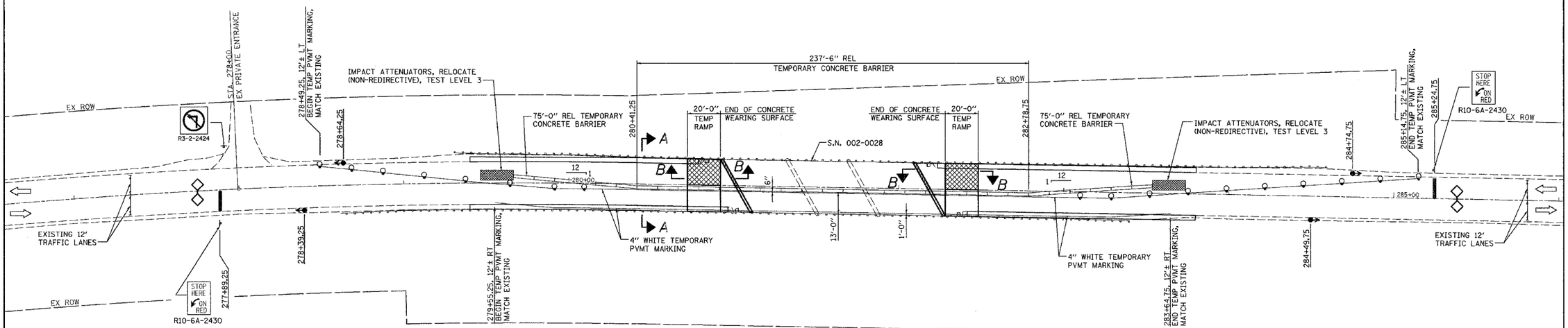
RELOCATE TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
279+66.25		283+53.75	387.5
		TOTAL	387.5

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

NOTES

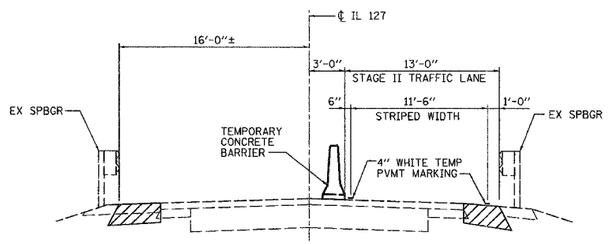
1. TRAFFIC CONTROL SHALL BE ERECTED AS SHOWN AND ACCORDING TO "TRAFFIC CONTROL AND PROTECTION, STANDARD 701321."
2. SEE SPECIAL PROVISIONS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.
3. COORDINATE LOCATION OF SIGNALS WITH FINAL WORK AS DIRECTED BY THE ENGINEER.
4. MAINTAIN TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321 AT SOUTH END OF PROJECT ONLY.



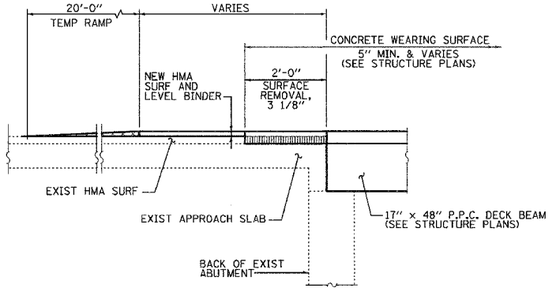
30 0 30 60
SCALE IN FEET

LEGEND

- TRAFFIC SIGNAL
- DRUM WITH STEADY BURNING LIGHT
- TEMPORARY RAMP
- HMA SURFACE REMOVAL



SECTION A–A



SECTION B–B

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

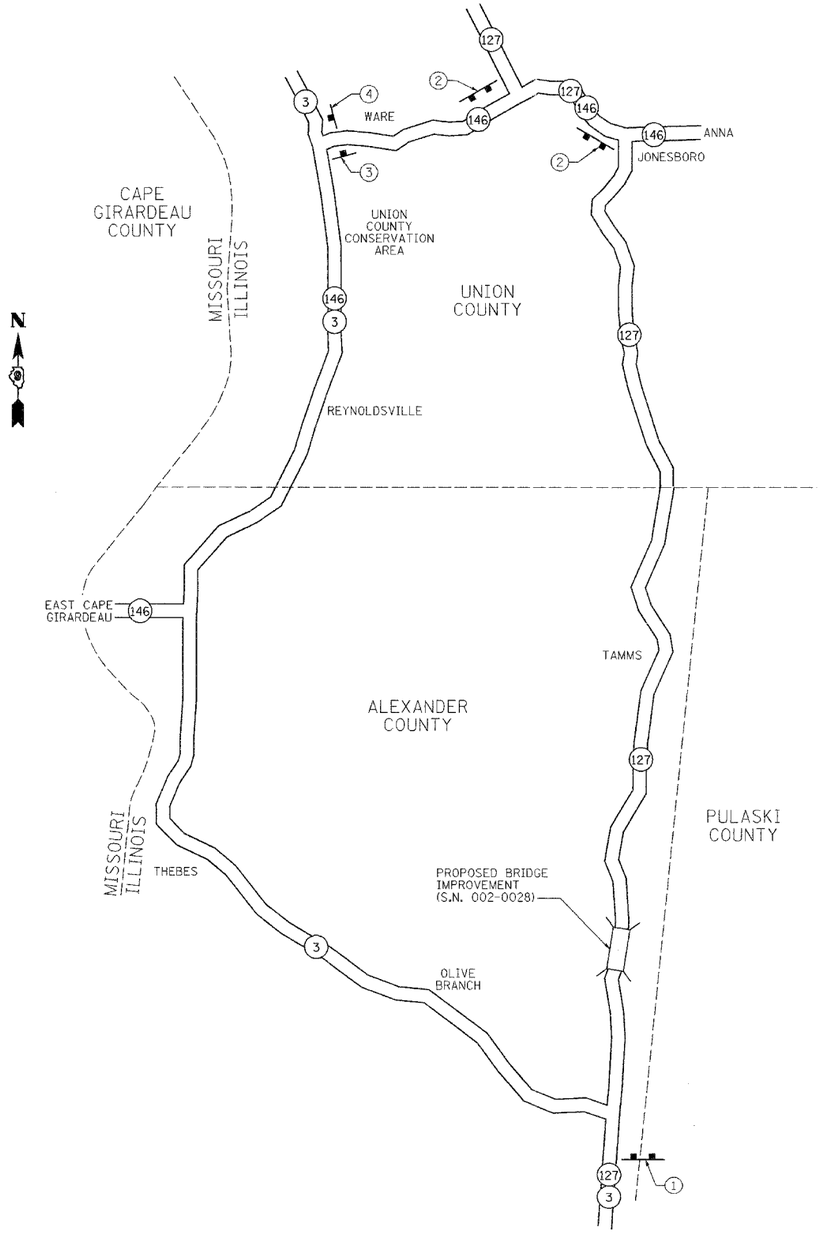
FILE NAME = #FILE1#	USER NAME = #USER#	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = #SCALE#	CHECKED - JMH	REVISED -
	PLOT DATE = #DATE#	DATE - 04/08/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) STAGE II CONSTRUCTION

SCALE: 1"=30' | SHEET NO. 2 OF 2 SHEETS | STA. 276+60 TO STA. 286+00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	8
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



DETOUR SIGNING PLAN

SIGN LEGEND STAGE I

① WIDE LOADS OVER 11'–7"
DETOUR VIA
NORTH ILLINOIS 3 | EAST ILLINOIS 146
60"x90"

② WIDE LOADS OVER 11'–7"
DETOUR VIA
WEST ILLINOIS 146 | SOUTH ILLINOIS 3
60"x90"

SIGN LEGEND STAGE II

① WIDE LOADS OVER 11'–6"
DETOUR VIA
NORTH ILLINOIS 3 | EAST ILLINOIS 146
60"x90"

② WIDE LOADS OVER 11'–6"
DETOUR VIA
WEST ILLINOIS 146 | SOUTH ILLINOIS 3
60"x90"

SIGN LEGEND STAGE I AND II

③ EAST / ILLINOIS / 146 / WIDE LOAD / DETOUR
30"x15" / 30"x24" / 21"x15" / 30"x24"

④ SOUTH / ILLINOIS / 3 / WIDE LOAD / DETOUR
30"x15" / 30"x24" / 21"x15" / 30"x24"

DETOUR NOTES:

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

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SINCE 1893

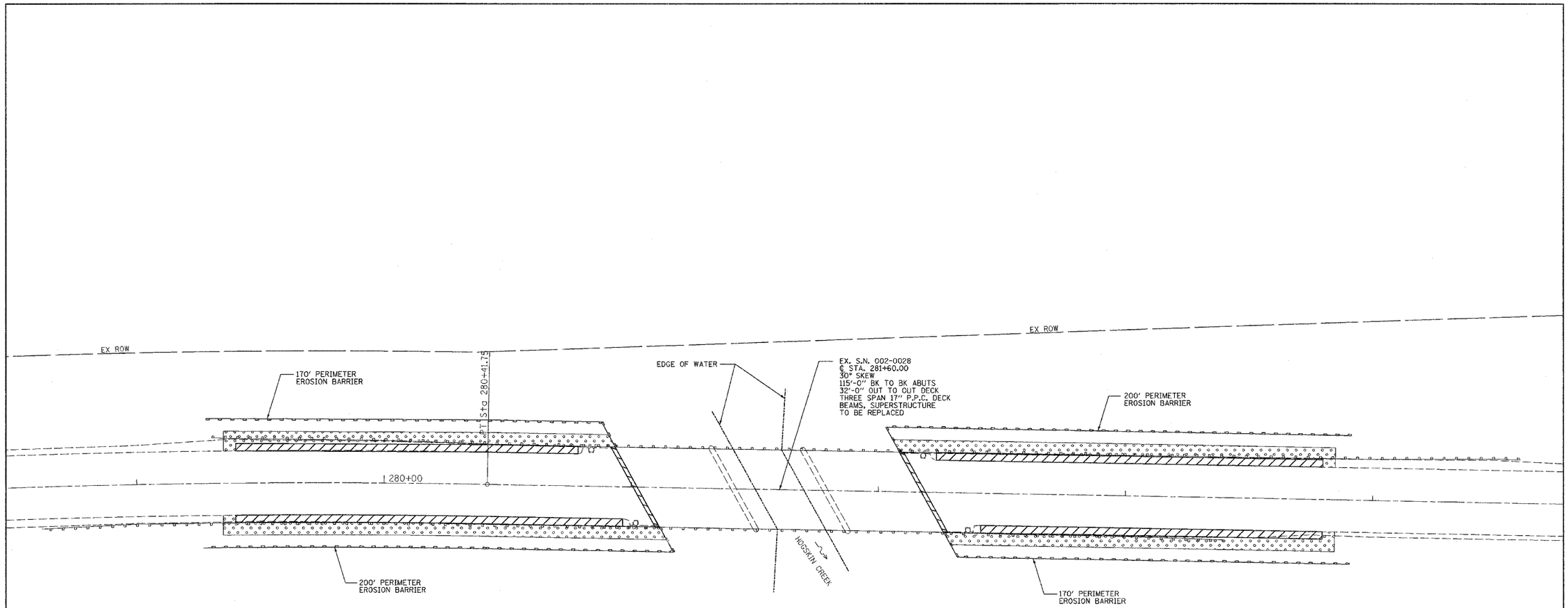
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 04/08/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) WIDE LOAD DETOUR

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. --- | TO STA. ---

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	9
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



LEGEND

- APPROXIMATE SEEDING AND MULCH AREAS
- PERIMETER EROSION BARRIER
- BASE COURSE WIDENING

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SINCE 1893

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - PRC	REVISED -
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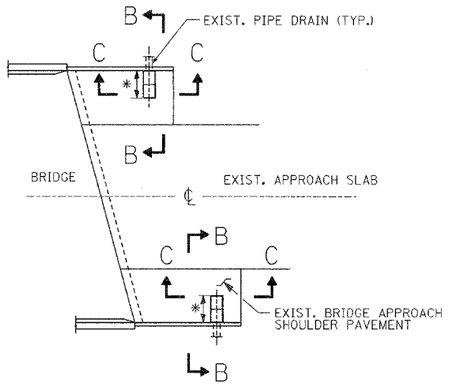
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) EROSION CONTROL

SCALE: 1"=20' | SHEET NO. OF SHEETS | STA. | TO STA.

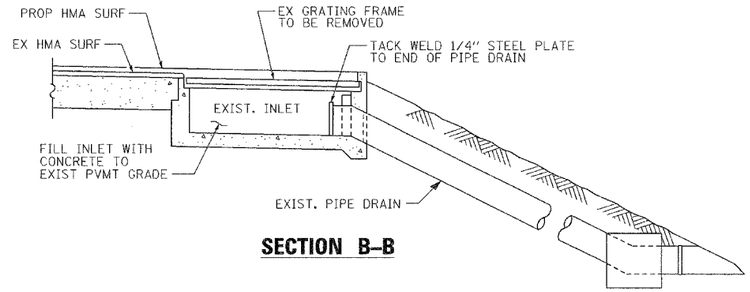
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	10
		CONTRACT NO. 78032		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



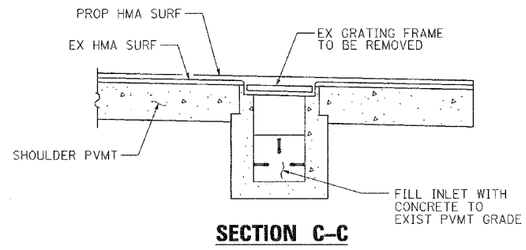
GENERAL PLAN

* EXIST. INLET TO BE PLUGGED

(NORTH APPROACH SHOWN, SOUTH APPROACH SIMILAR)



SECTION B–B

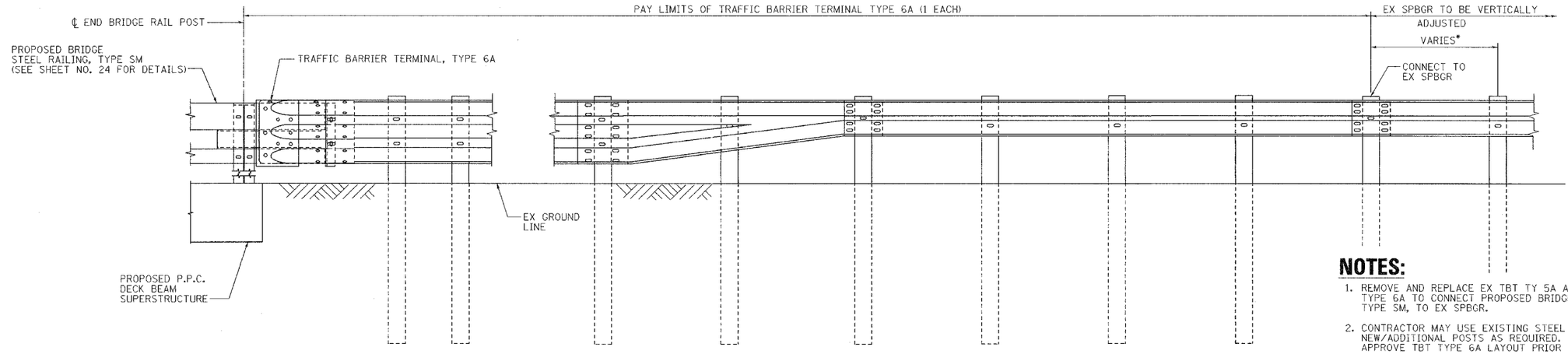


SECTION C–C

PRE–STAGE I
DRAIN DETAILS AT EXISTING
BRIDGE APPROACH SHOULDER PAVEMENT

NOTES:

1. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
2. WORK SHOWN IS INCLUDED IN THE COST OF REMOVAL OF EXISTING SUPERSTRUCTURES.



GUARDRAIL CONNECTION DETAIL

* POST SPACING AS REQUIRED TO MATCH TBT TYPE 6A TO EX SPBGR (6'-3" MAX.)

NOTES:

1. REMOVE AND REPLACE EX TBT TY 5A AND SPBGR WITH TBT TYPE 6A TO CONNECT PROPOSED BRIDGE STEEL RAILING, TYPE SM, TO EX SPBGR.
2. CONTRACTOR MAY USE EXISTING STEEL POSTS OR INSTALL NEW/ADDITIONAL POSTS AS REQUIRED. THE ENGINEER SHALL APPROVE TBT TYPE 6A LAYOUT PRIOR TO INSTALLATION.
3. GUARDRAIL HEIGHT SHALL BE SET TO THAT REQUIRED BY THE FINAL PROFILE.
4. UNLESS OTHERWISE NOTED, DETAILS SHALL BE AS SHOWN ON "TRAFFIC BARRIER TERMINAL, TYPE 6A, STANDARD 631032".
5. COST OF WORK SHOWN TO BE INCLUDED IN TRAFFIC BARRIER TERMINAL, TYPE 6A.

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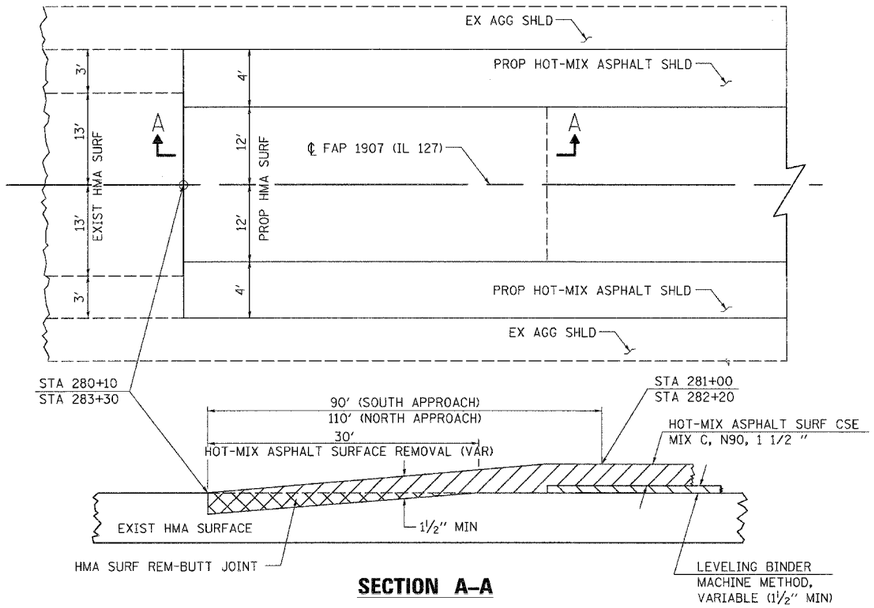
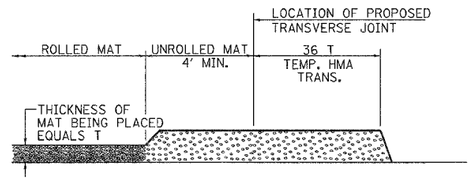
		DRAWN - AEC	REVISED -			1907	21BR-1	ALEXANDER	82	11
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -					CONTRACT NO. 78032		
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. --- TO STA. ---	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

BUTT JOINT



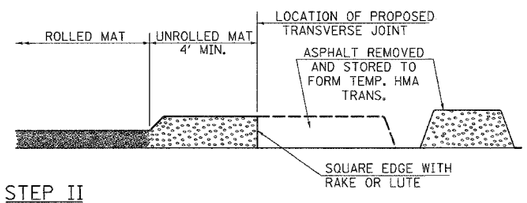
SECTION A-A

TEMPORARY HOT-MIX ASPHALT TRANSITIONS



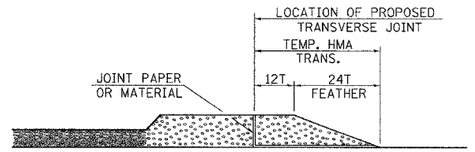
STEP I

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



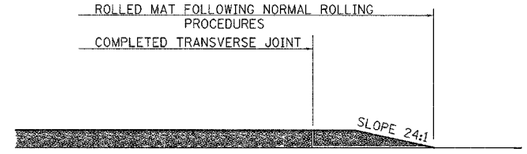
STEP II

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



STEP III

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



STEP IV

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

REVISIONS	
REDRAWN	2-15-89
REVISED	8-16-94
REVISED	01-09-97
REVISED	

STD. 9-26

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SINCE 1893

FILE NAME = ®FILEL®	USER NAME = ®USER®	DESIGNED - JMH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FAS ROUTE 1907 (IL 127) MISCELLANEOUS DETAILS – 2	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - AEC	REVISED -			1907	21BR-1	ALEXANDER	82	12
	PLOT SCALE = ®SCALE®	CHECKED - JMH	REVISED -					CONTRACT NO. 78032		
	PLOT DATE = ®DATE®	DATE - 03/04/08	REVISED -		SCALE: NONE / SHEET NO. 1 OF 1 SHEETS / STA. --- TO STA. ---	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Bench Mark: Chiseled square in S.E. corner of Northeast wingwall of SN 002-0028. Elevation 336.58.

Existing Structure: The original three-span structure was built in 1983 with P.P.C. deck beams on pile supported stub abutments and solid wall encased pile bent piers with a length of 115'-0" back to back of abutments. The structure was resurfaced and keyways were repaired in 2003.

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

No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	13
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
16 SHEETS

Contract #78032

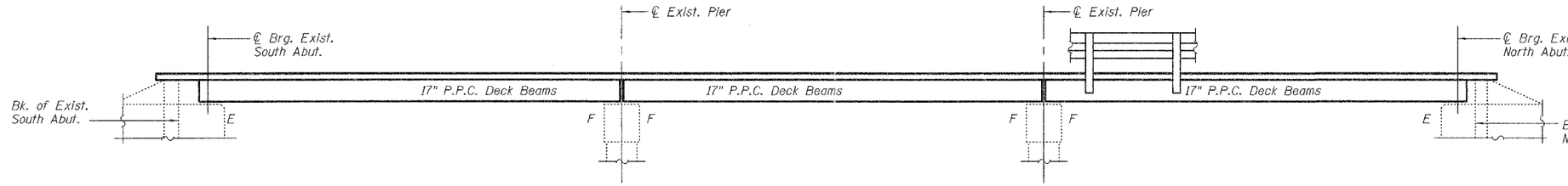
DESIGN SPECIFICATIONS
2007 AASHTO LRFD
Bridge Design Specification, 4th Edition

LOADING HL-93
No allowance for Future Wearing Surface.

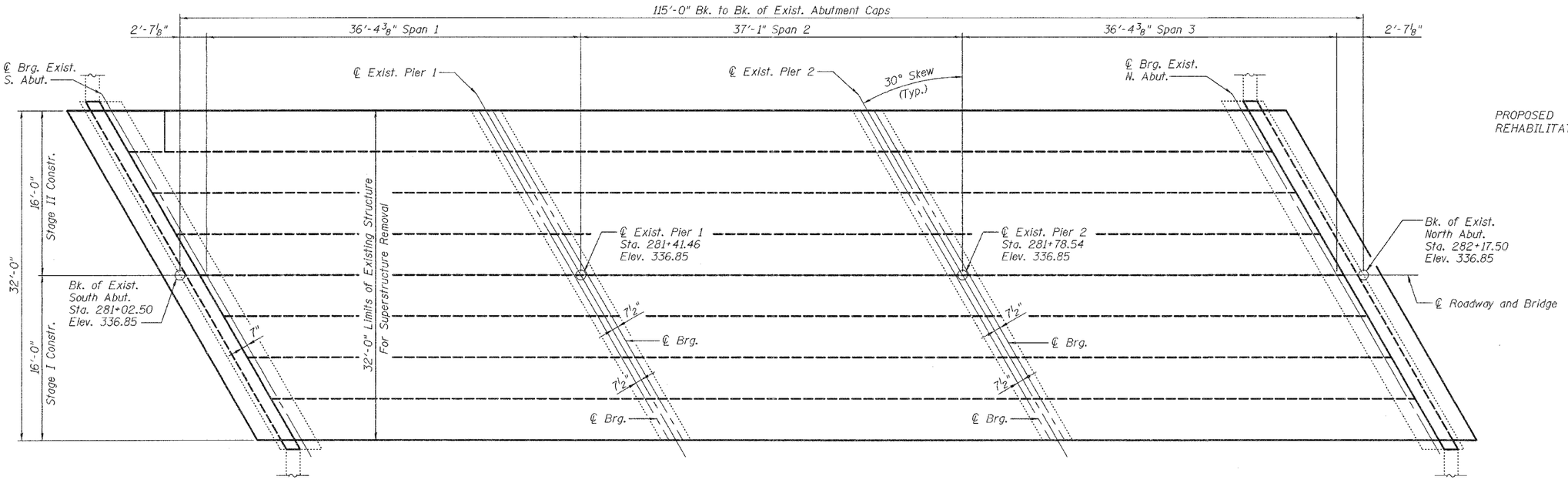
DESIGN STRESSES

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

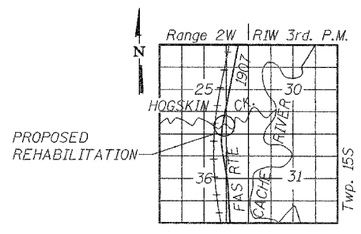
PRECAST PRESTRESSED UNITS
f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f_{pu} = 270,000 psi ($\frac{1}{2}$"ϕ low lax. strands)
f_{pbt} = 201,960 psi ($\frac{1}{2}$"ϕ low lax strands)



ELEVATION



PLAN



LOCATION SKETCH

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

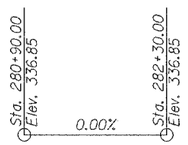
DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/04/08

STATION 281+60
REBUILT 200_ BY
STATE OF ILLINOIS
F.A.S. RT. 1907 SEC. 21BR-1
LOADING HL93
STR. NO. 002-0028

NAME PLATE
See Std. 515001

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



PROFILE GRADE
(Along ℄ Roadway)

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph W. Anderson (TDD)
ENGINEER OF BRIDGES AND STRUCTURES

DAVID W. PETERMEIER 081-005642 LICENSED STRUCTURAL ENGINEER OF ILLINOIS

David W. Petermeier 3/13/08

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

GENERAL PLAN & ELEVATION
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
16 SHEETS

Contract #78032

SCOPE OF WORK

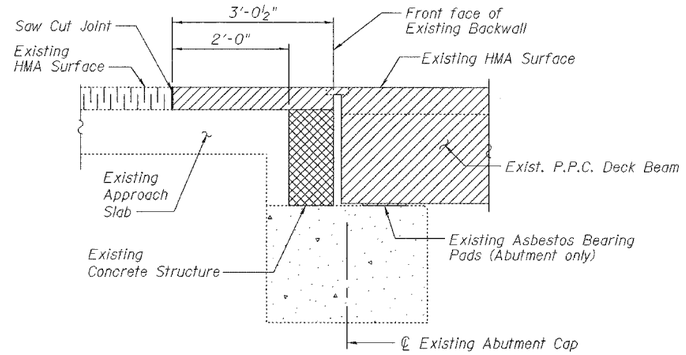
1. Remove existing surface, steel railing, deck beams and bearing pads.
2. Repair bearing seats and perform other repairs at piers as required.
3. Reconstruct a three-span P.P.C. deck beam superstructure with concrete wearing surface and steel railing, Type SM.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	Each	1	-	1
Concrete Removal	Cu. Yd.	4.4	-	4.4
Concrete Structures	Cu. Yd.	4.4	-	4.4
Bridge Deck Grooving	Sq. Yd.	421	-	421
Protective Coat	Sq. Yd.	421	-	421
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3,551	-	3,551
Reinforcement Bars, Epoxy Coated	Pound	6,110	-	6,110
Bar Splicers	Each	127	-	127
Steel Railing, Type SM	Foot	223	-	223
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	74	-	74
Concrete Sealer	Sq. Ft.	-	73	73
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	-	73	73
Concrete Wearing Surface, 5"	Sq. Yd.	421	-	421
Asbestos Bearing Pad Removal	Each	-	56	56

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Concrete Sealer shall be applied to the piers where concrete repairs are performed.
5. No in-stream work will be allowed on this project.
6. 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.
7. If the Contractor's procedures for existing beam removal or placement of new beams involves placement of heavy equipment on the new deck beams, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, sealed by an Illinois Licensed Structural Engineer, verifying the structural adequacy of the beams for the proposed loads. Cost included with Precast Prestressed Concrete Deck Beams (17" Depth).
8. The minimum thickness of the concrete wearing surface shall be 5" and varies as required to adjust for the existing profile grade and beam camber.
9. Repair of the substructure shall be completed prior to placement of the new deck beams.



TYPICAL SECTION

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

LIMITS OF EXISTING STRUCTURE FOR SUPERSTRUCTURE REMOVAL

Notes:
HMA removal over approach slab included in the cost of Removal of Existing Superstructures.
Removal of concrete structure indicated by crosshatch included in the cost of Concrete Removal.
Removal of asbestos bearing pads included in the cost of Asbestos Bearing Pad Removal.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/13/08

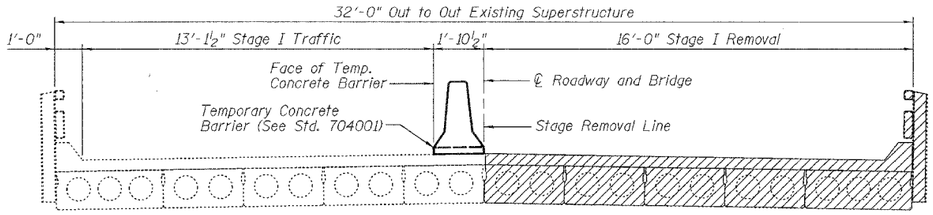
GENERAL STRUCTURE DATA
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	15
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

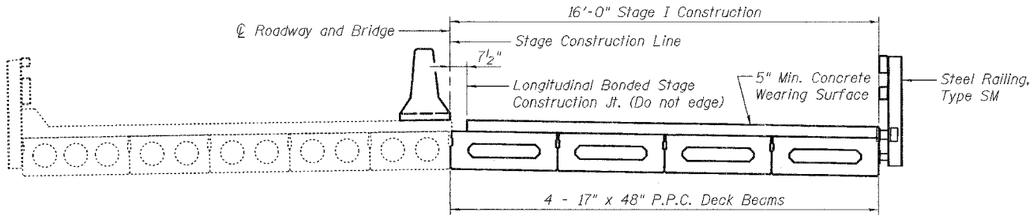
SHEET NO. 3
16 SHEETS

Contract #78032

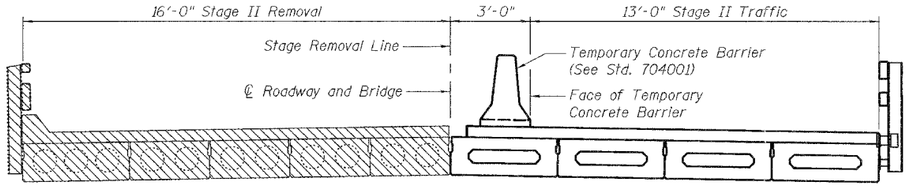
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



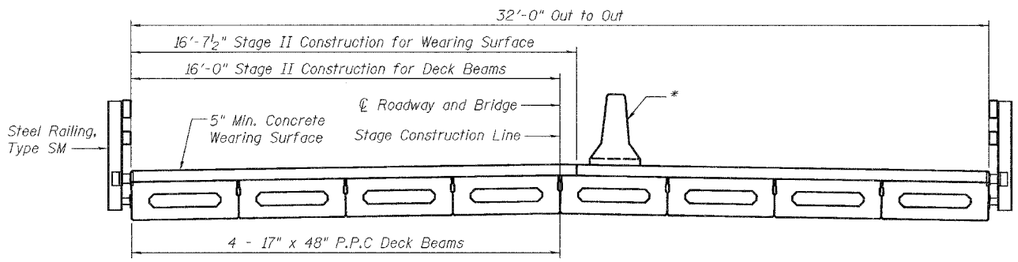
STAGE I REMOVAL
(Looking Upstation)



STAGE I CONSTRUCTION
(Looking Upstation)

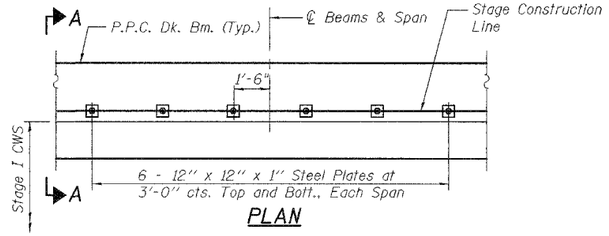


STAGE II REMOVAL
(Looking Upstation)

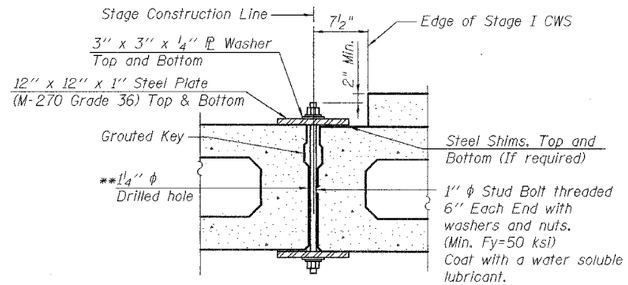


STAGE II CONSTRUCTION
(Looking Upstation)

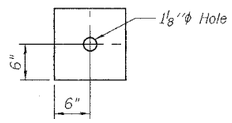
* Temporary Concrete Barrier to be removed with Stage II Traffic Control upon completion of Stage II construction.



PLAN



SECTION A-A



CLAMPING PLATE

SHEAR KEY CLAMPING DETAILS

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

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

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

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Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

04/08/08

STAGE CONSTRUCTION DETAILS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

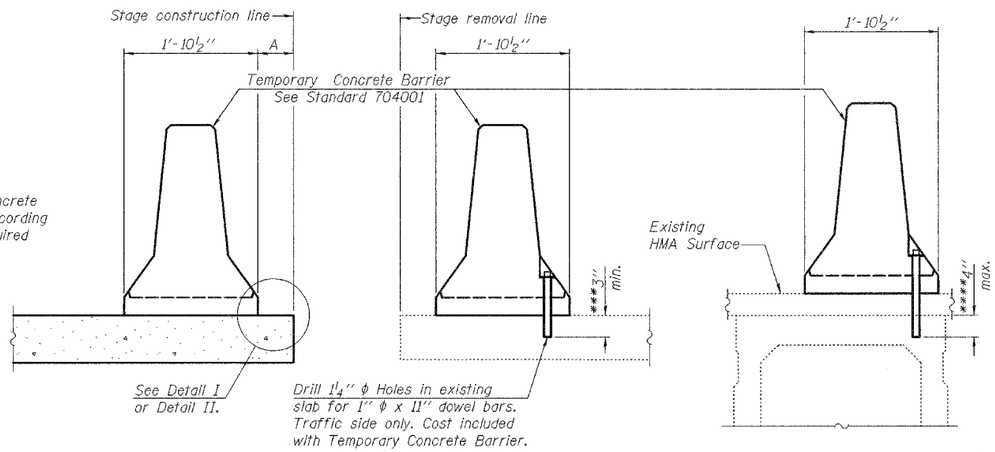
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	62	16
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 4
16 SHEETS

Contract #78032

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

SECTIONS THRU SLAB OR DECK BEAM

NOTES

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

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel ℙ to the concrete slab 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.

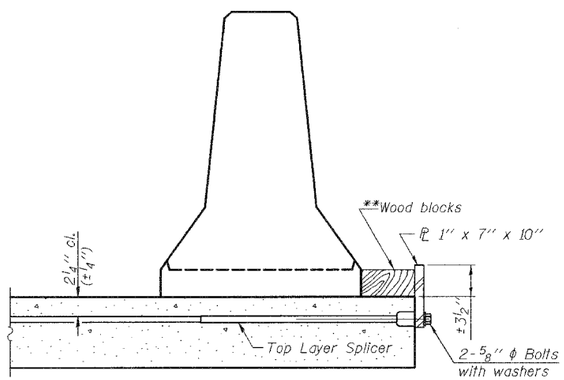
Cost of anchorage is included with Temporary Concrete Barrier.

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.

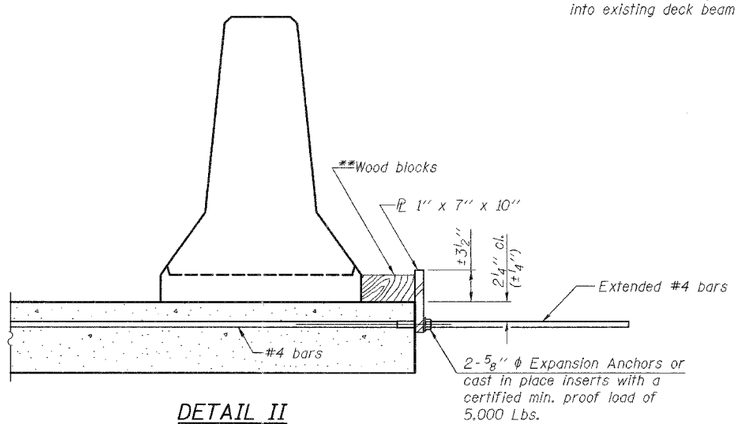
See Roadway Plans for quantity of Temporary Concrete Barrier.

***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.

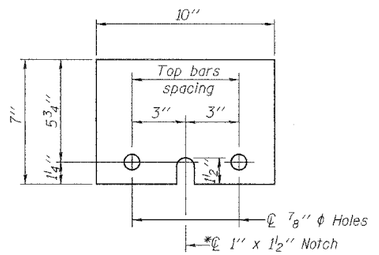
****If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



STEEL RETAINER ℙ 1" x 7" x 10"

* Required only with Detail II

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

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

04/08/08

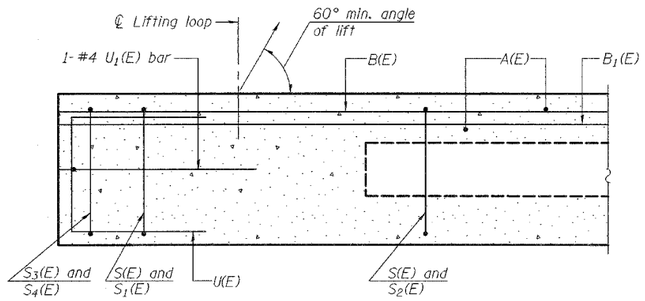
TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

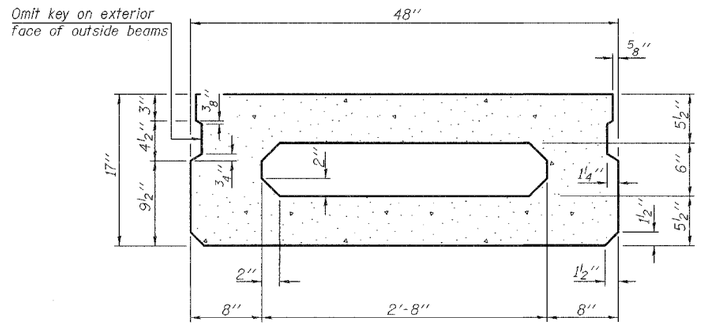
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
16 SHEETS

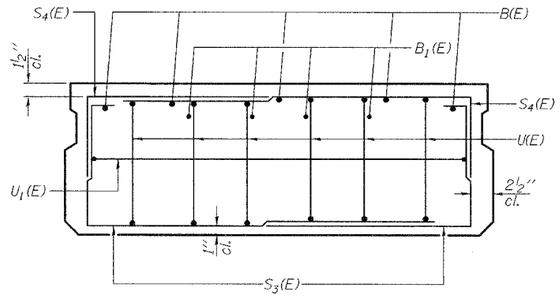
Contract #78032



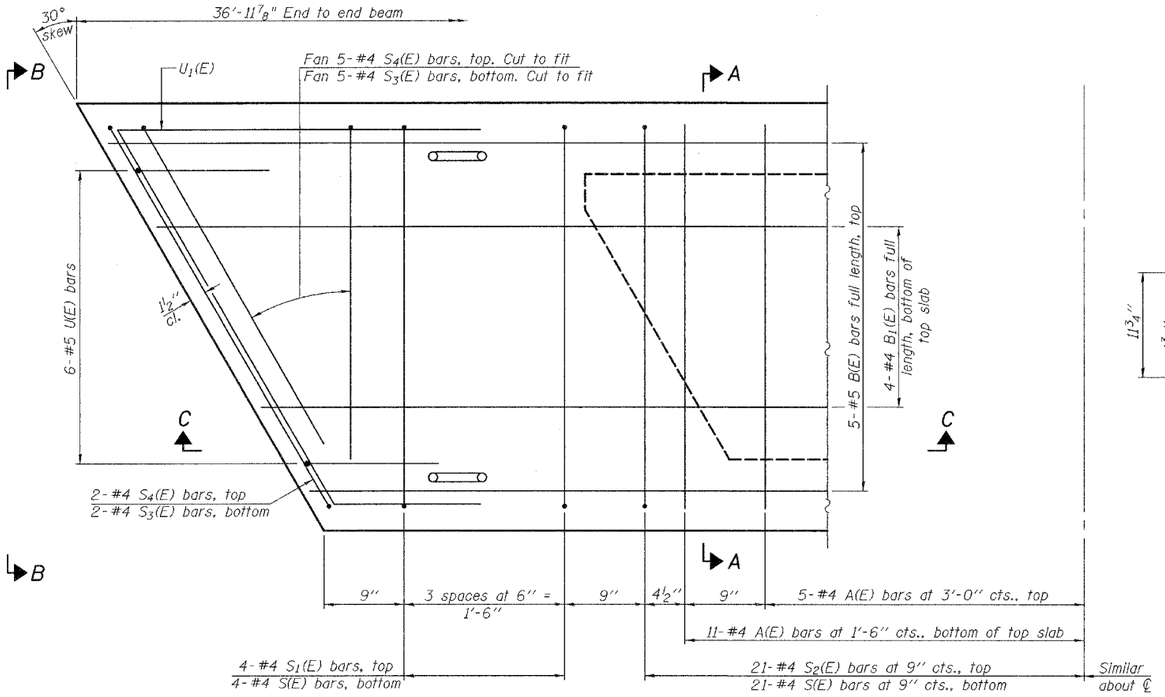
SECTION C-C



SECTION A-A
(Showing dimensions)

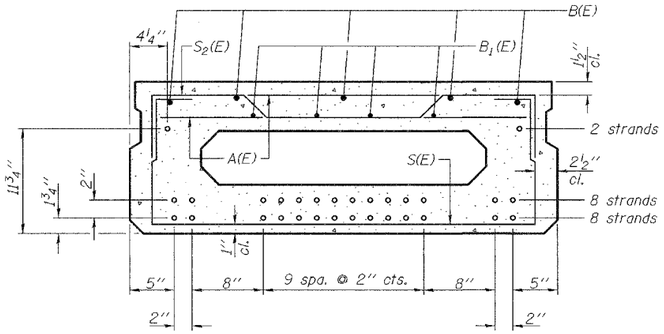


VIEW B-B



PLAN VIEW
(24 Required)

Note: 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.



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

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	3'-7"	—
B(E)	5	#5	36'-8"	—
$B_1(E)$	4	#4	36'-8"	—
S(E)	50	#4	6'-9"	⊔
$S_1(E)$	8	#4	5'-11"	⊓
$S_2(E)$	42	#4	6'-2"	⊓
$S_3(E)$	14	#4	5'-8"	⊔
$S_4(E)$	14	#4	5'-3"	⊔
U(E)	12	#5	3'-8"	⊏
$U_1(E)$	2	#4	7'-8"	⊽

Note: See Sheet 6 of 16 for additional details and Bill of Material.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/04/08

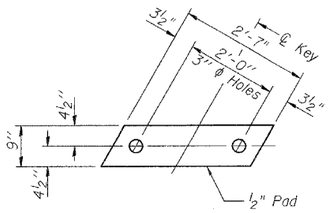
17" X 48" DECK BEAM
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

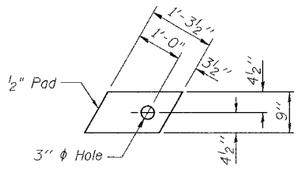
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 6
16 SHEETS

Contract #78032

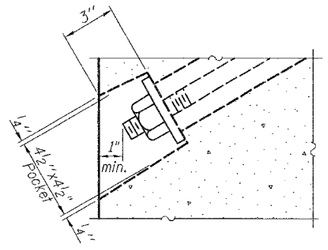


FABRIC BEARING PAD
(Interior)
(24 Required)

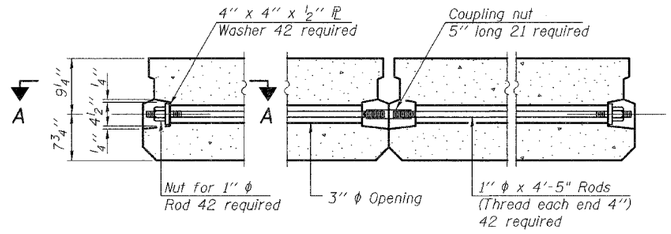


FABRIC BEARING PAD
(Exterior and Stage Constr. Line)
(16 Required)

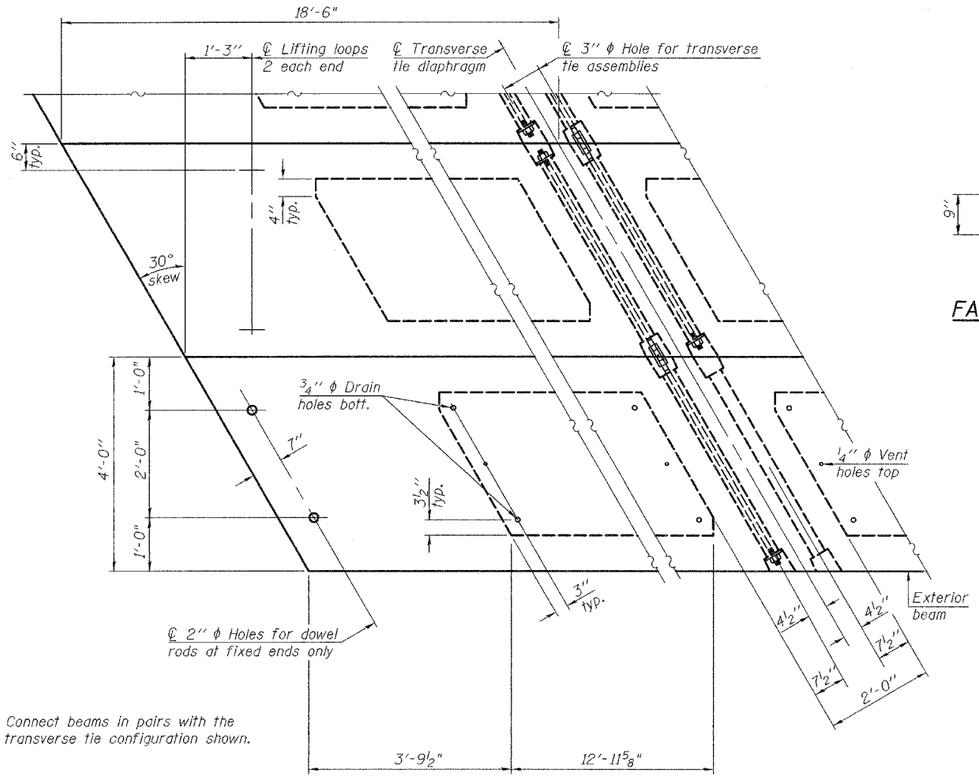
FIXED



SECTION A-A

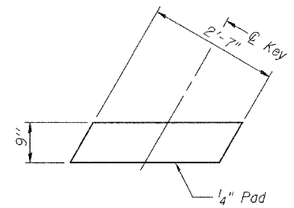


TYPICAL TRANSVERSE TIE ASSEMBLY

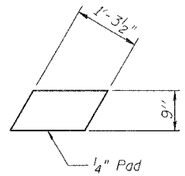


Note: Connect beams in pairs with the transverse tie configuration shown.

PLAN VIEW

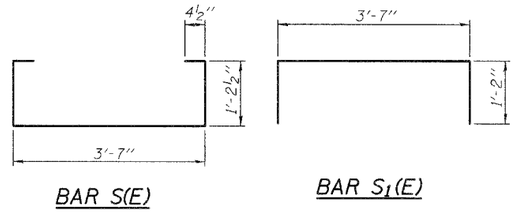


FABRIC BEARING PAD
(Interior)
(24 Required)



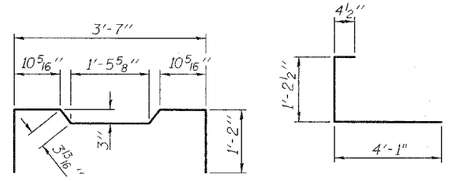
FABRIC BEARING PAD
(Exterior and Stage Constr. Line)
(16 Required)

EXPANSION



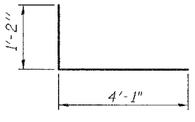
BAR S(E)

BAR S_1(E)

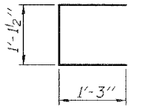


BAR S_2(E)

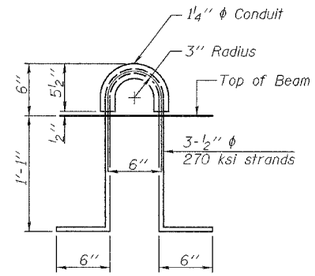
BAR S_3(E)



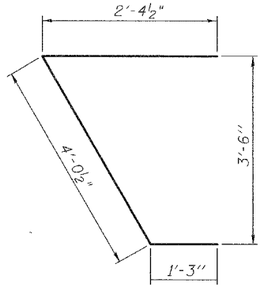
BAR S_4(E)



BAR U(E)



LIFTING LOOP DETAIL



BAR U_1(E)

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" Depth)	Sq. Ft.	3,551

NOTES

See Sheets 11 and 12 of 16 for fascia beam modifications for rail post anchorage.
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.

17" X 48" DECK BEAM DETAILS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

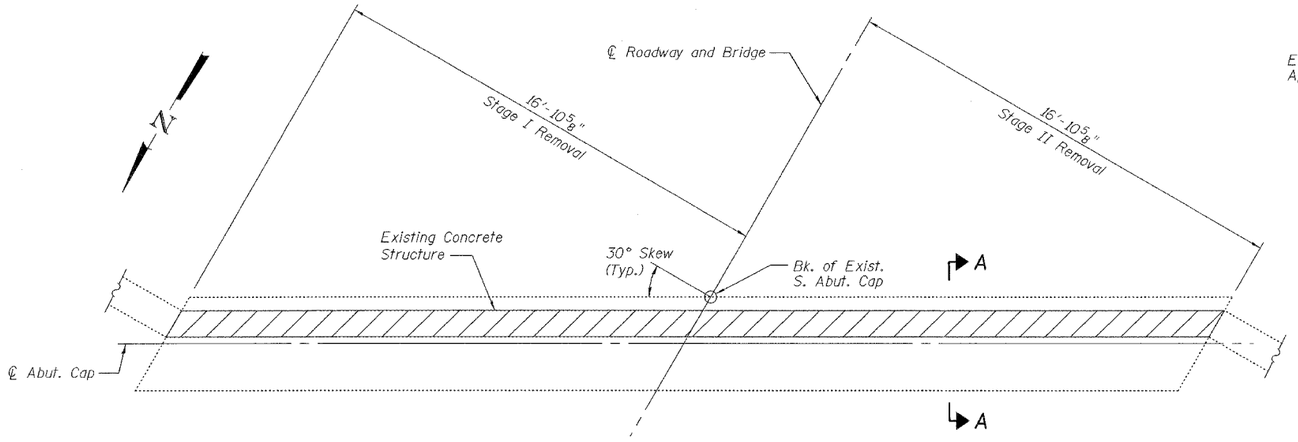
03/04/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
16 SHEETS

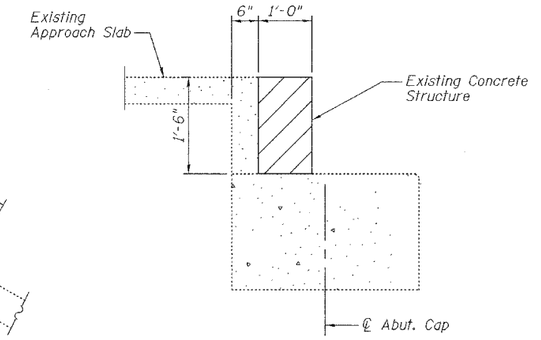
Contract #78032



PLAN - CONCRETE REMOVAL AT ABUTMENT

(South Abutment shown, North Abutment similar)

Removal of existing wearing surface and deck beams included with Removal of Existing Superstructures. These items not shown for clarity.

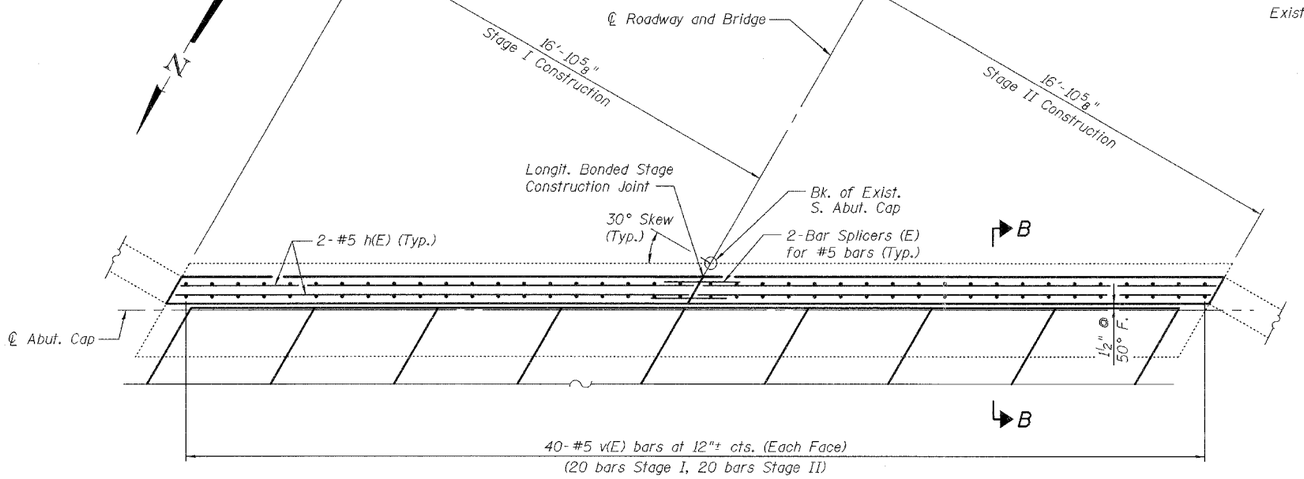


SECTION A-A

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

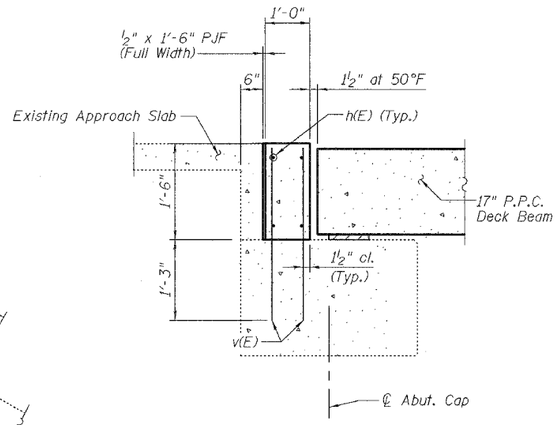
BILL OF MATERIAL
TWO ABUTMENTS

Bar	No.	Size	Length	Shape
h(E)	16	#5	19'-3"	
v(E)	160	#5	2'-6"	
Reinforcement Bars, Epoxy Coated			Pound	740
Concrete Removal			Cu. Yd.	4.4
Concrete Structures			Cu. Yd.	4.4



PLAN - CONCRETE STRUCTURE AT ABUTMENT

(South Abutment shown, North Abutment similar)



SECTION B-B

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

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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

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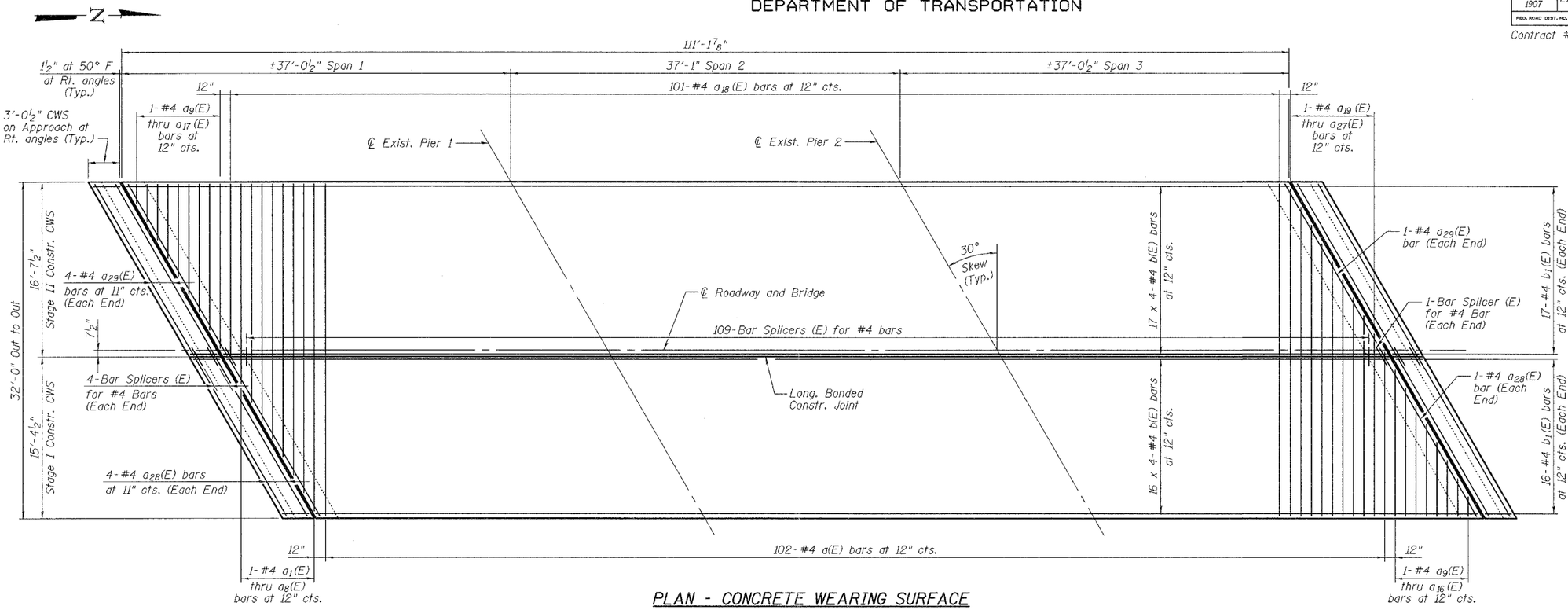
CONCRETE DETAILS AT EXPANSION ENDS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 8
16 SHEETS

Contract #78032

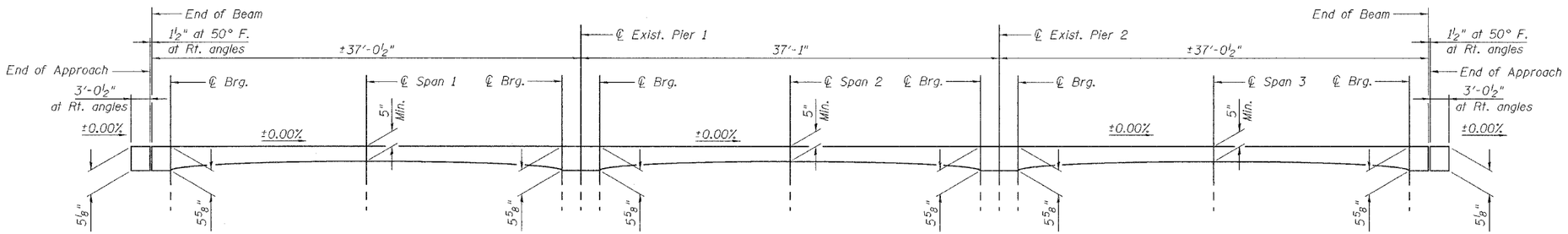
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN - CONCRETE WEARING SURFACE

Min. Bar Lap: #4 Bars - 1'-4"

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



CONCRETE WEARING SURFACE PROFILE

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	102	#4	15'-7"	
a1(E)	1	#4	3'-2"	
a2(E)	1	#4	4'-11"	
a3(E)	1	#4	6'-8"	
a4(E)	1	#4	8'-4"	
a5(E)	1	#4	10'-1"	
a6(E)	1	#4	11'-10"	
a7(E)	1	#4	13'-7"	
a8(E)	1	#4	15'-4"	
a9(E)	2	#4	3'-0"	
a10(E)	2	#4	4'-9"	
a11(E)	2	#4	6'-5"	
a12(E)	2	#4	8'-2"	
a13(E)	2	#4	9'-11"	
a14(E)	2	#4	11'-8"	
a15(E)	2	#4	13'-5"	
a16(E)	2	#4	15'-1"	
a17(E)	1	#4	16'-10"	
a18(E)	101	#4	16'-10"	
a19(E)	1	#4	2'-8"	
a20(E)	1	#4	4'-5"	
a21(E)	1	#4	6'-2"	
a22(E)	1	#4	7'-11"	
a23(E)	1	#4	9'-7"	
a24(E)	1	#4	11'-4"	
a25(E)	1	#4	13'-1"	
a26(E)	1	#4	14'-10"	
a27(E)	1	#4	16'-7"	
a28(E)	10	#4	18'-0"	
a29(E)	10	#4	19'-5"	
b(E)	132	#4	29'-0"	
b1(E)	66	#4	3'-3"	
Reinforcement Bars, Epoxy Coated		Pound	5370	
Concrete Wearing Surface, 5"		Sq. Yd.	421	
Bridge Deck Grooving		Sq. Yd.	421	
Protective Coat		Sq. Yd.	421	

Bars indicated thus 1 x 3-#4 etc. indicates 1 line of bars with 3 lengths per line.

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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

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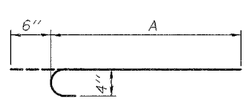
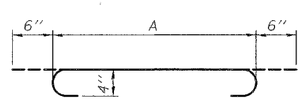
Bar	A	Bar	A	Bar	A
d(E)	15'-1"	a10(E)	3'-9"	a20(E)	3'-11"
a1(E)	2'-8"	a11(E)	5'-5"	a21(E)	5'-8"
a2(E)	4'-5"	a12(E)	7'-2"	a22(E)	7'-5"
a3(E)	6'-2"	a13(E)	8'-11"	a23(E)	9'-1"
a4(E)	7'-10"	a14(E)	10'-8"	a24(E)	10'-10"
a5(E)	9'-7"	a15(E)	12'-5"	a25(E)	12'-7"
a6(E)	11'-4"	a16(E)	14'-1"	a26(E)	14'-4"
a7(E)	13'-1"	a17(E)	15'-10"	a27(E)	16'-1"
a8(E)	14'-10"	a18(E)	16'-4"	a28(E)	17'-6"
a9(E)	2'-0"	a19(E)	2'-2"	a29(E)	18'-11"



BARS d(E) THRU a8(E) and BARS a18(E) THRU a29(E)



BARS a9(E) THRU a17(E)

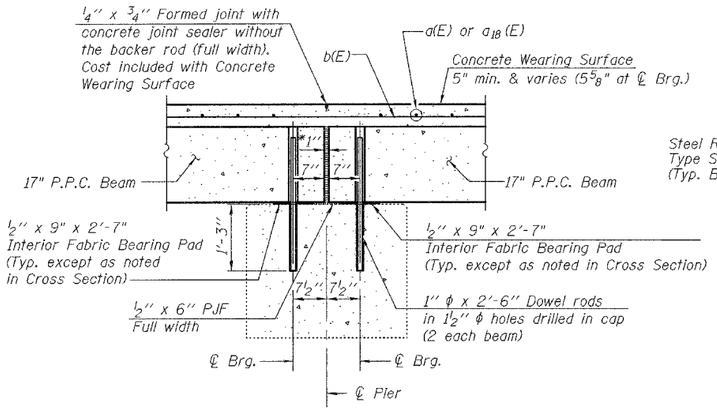
SUPERSTRUCTURE DETAILS
CONCRETE WEARING SURFACE
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	21
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

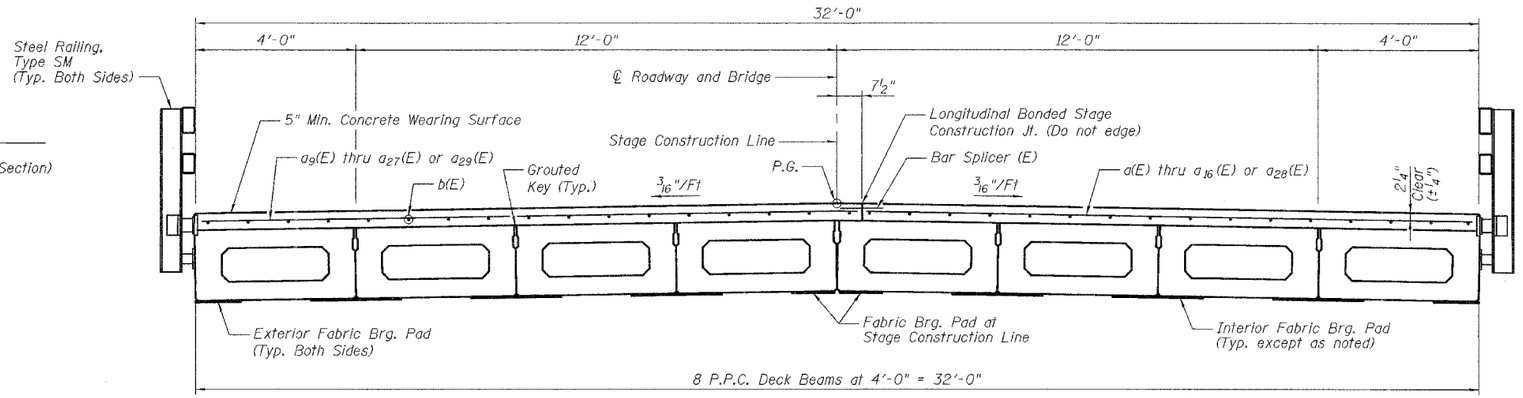
SHEET NO. 9
16 SHEETS

Contract #78032



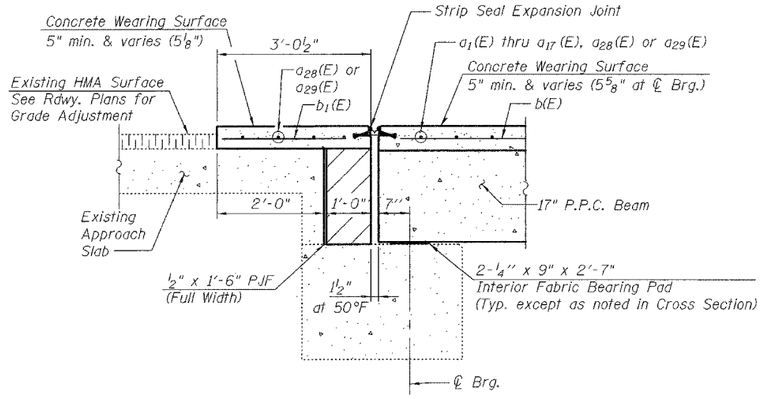
SECTION THRU PIER

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



CROSS SECTION

(Looking Upstation)



SECTION THRU ABUTMENT AT APPROACH SLAB

(South Abutment shown, North Abutment similar)

Notes:

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

All horizontal dimensions are at right angles to beam ends.

Hatched area to be poured after P.P.C. deck beams are in place. See Sheet 7 of 16 for concrete structures details.

See Sheet 6 of 16 for bearing pad details.

See Sheet 8 of 16 for concrete wearing surface details.

See Sheet 10 of 16 for strip seal expansion joint details.

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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

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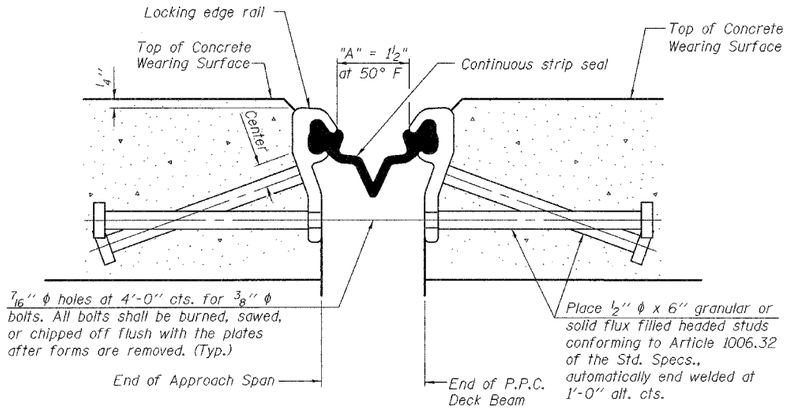
SUPERSTRUCTURE DETAILS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	22
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

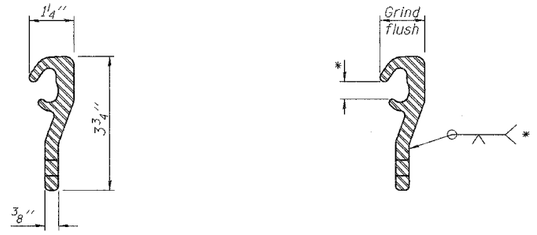
SHEET NO. 10
16 SHEETS

Contract #78032

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION THRU STRIP SEAL JOINT



LOCKING EDGE RAIL

LOCKING EDGE RAIL SPLICE

* Omit weld at seal opening.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.

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

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

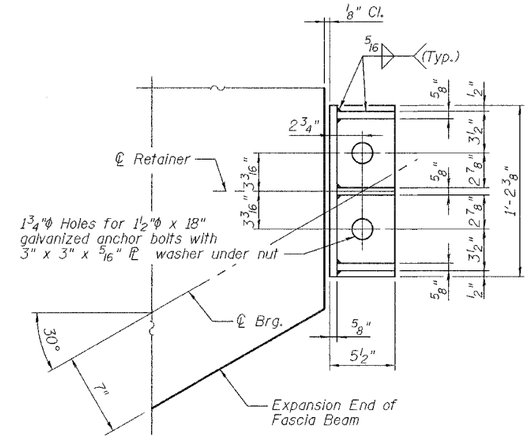
The inside of the Locking Edge Rail groove shall be free of weld residue.

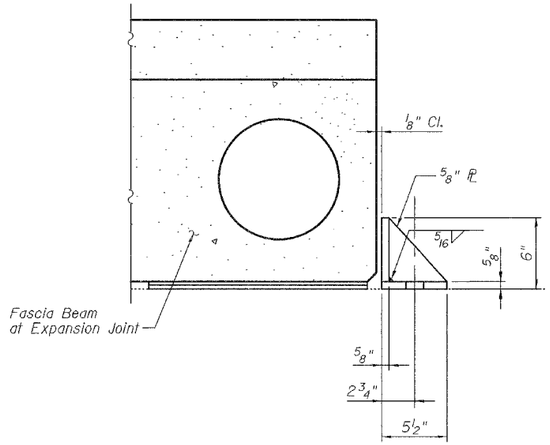
Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed.

BILL OF MATERIAL

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	74





SIDE RETAINER

(4 Required)

Notes:

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

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

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

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

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

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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

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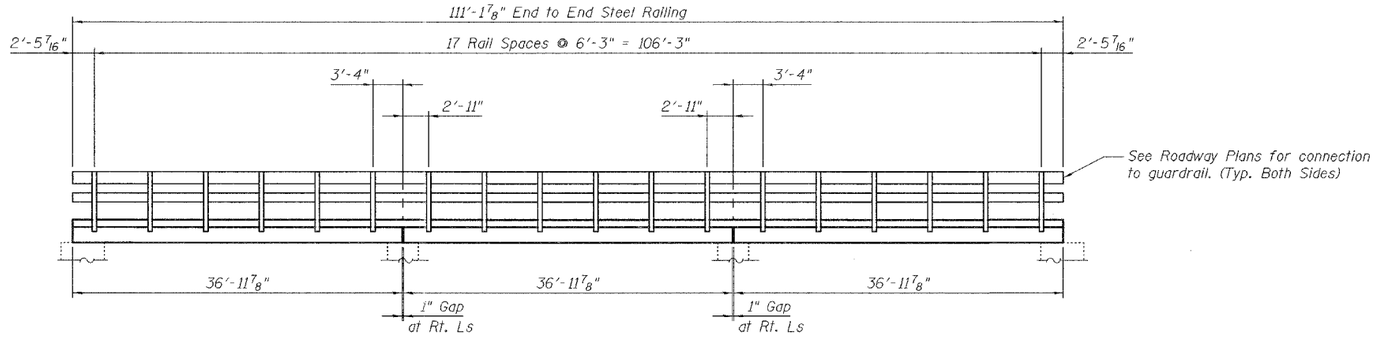
EXPANSION JOINT AND SIDE RETAINER DETAILS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

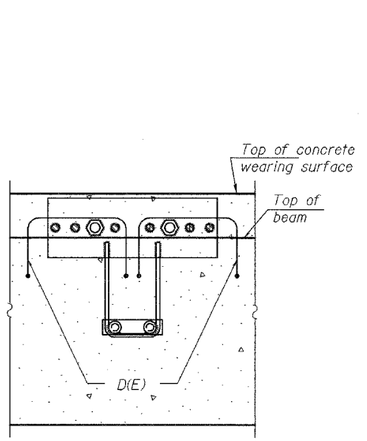
SHEET NO. 11
16 SHEETS

Contract #78032

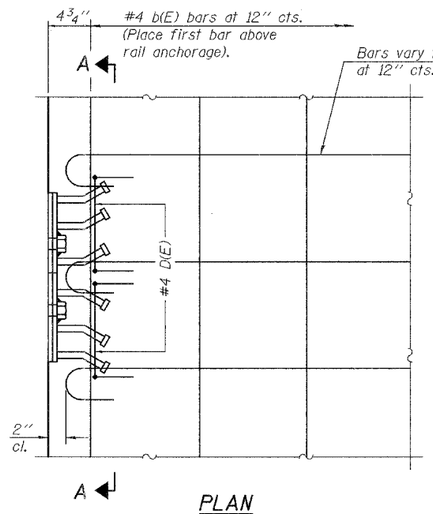
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



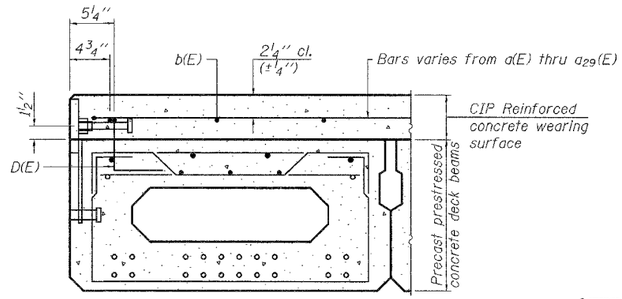
RAIL POST SPACING DETAIL



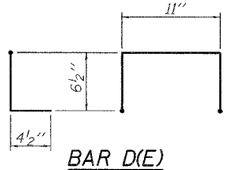
SECTION A-A



PLAN



FASCIA BEAM CROSS SECTION



BAR D(E)
(72 Required)

CONCRETE WEARING SURFACE AND FASCIA DECK BEAM MODIFICATIONS FOR RAIL ANCHORAGE

Notes:
See Sheet 12 of 16 for rail anchorage details.
The rail anchorage shall be cast with the deck beam and cast in the field with the wearing surface. Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam. Drilling into the beam or CWS will not be permitted.
Concrete wearing surface to be poured after grouting the shear keys.
Cost of D(E) bars are included with Steel Railing, Type SM.

RAIL POST SPACING AND CONNECTION DETAILS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

MODJESKI and MASTERS
Consulting Engineers
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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/04/08

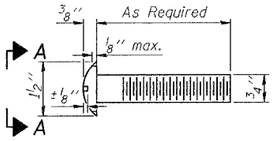
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

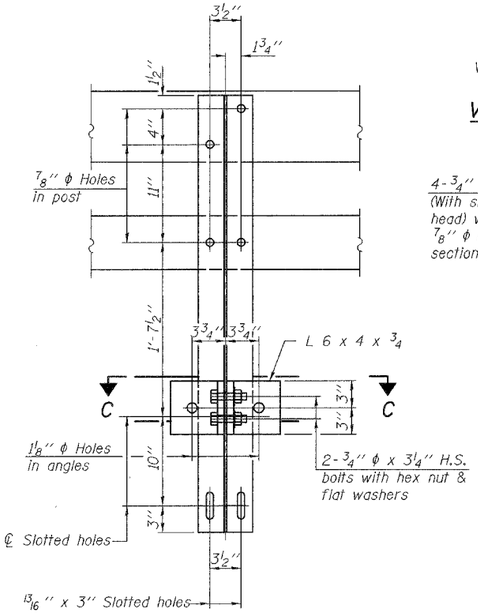
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 12
16 SHEETS

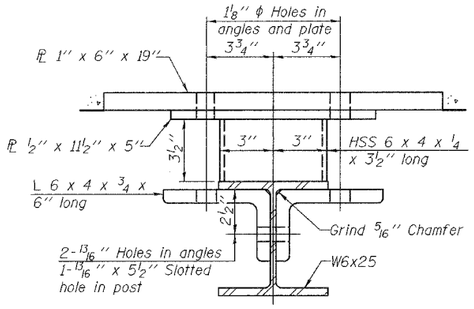
Contract #78032

DETAIL OF $\frac{3}{4}$" ϕ ROUND HEAD BOLT

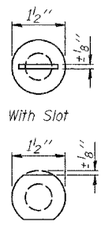




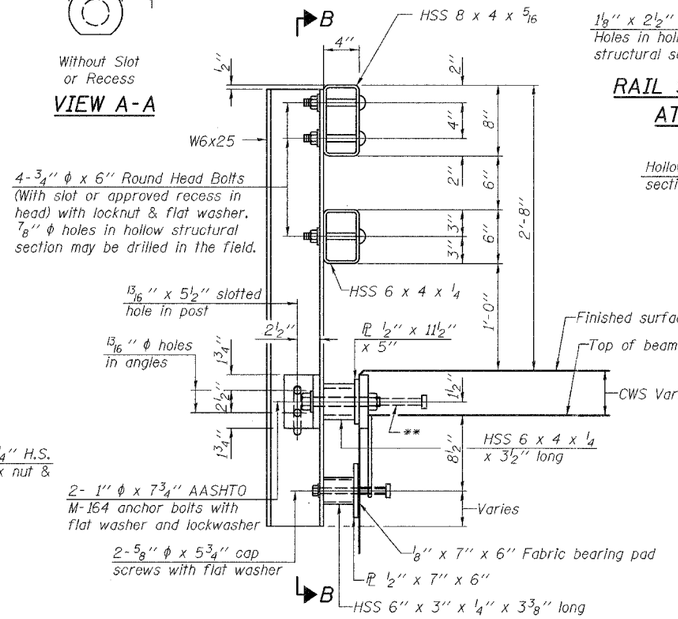
SECTION B-B



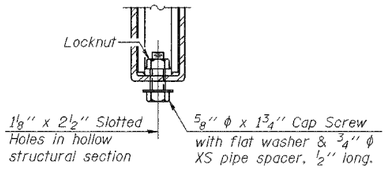
SECTION C-C



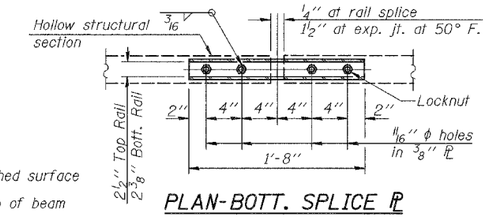
VIEW A-A



SECTION AT RAIL POST

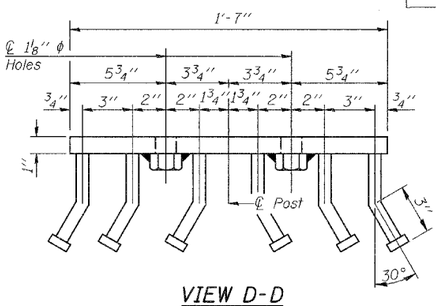


RAIL SPLICE CONNECTION AT EXPANSION JT.

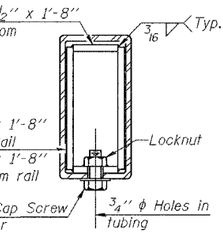


PLAN-BOTT. SPLICE ℄ TYPICAL

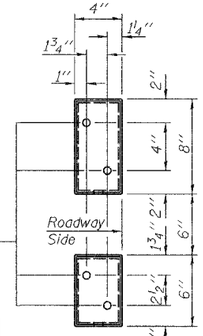
℄ -5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



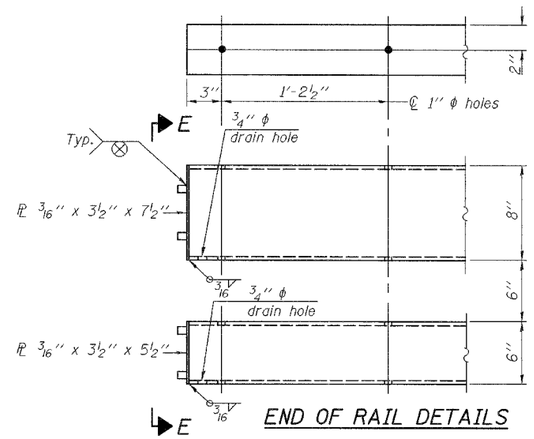
VIEW D-D



SECTION AT RAIL SPLICE

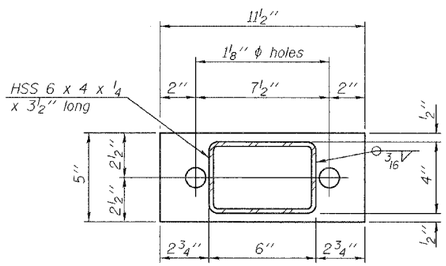


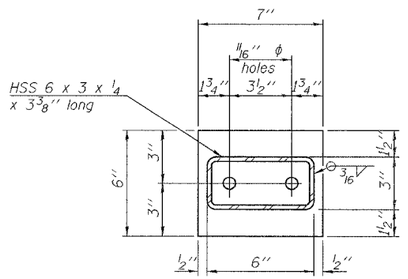
VIEW E-E

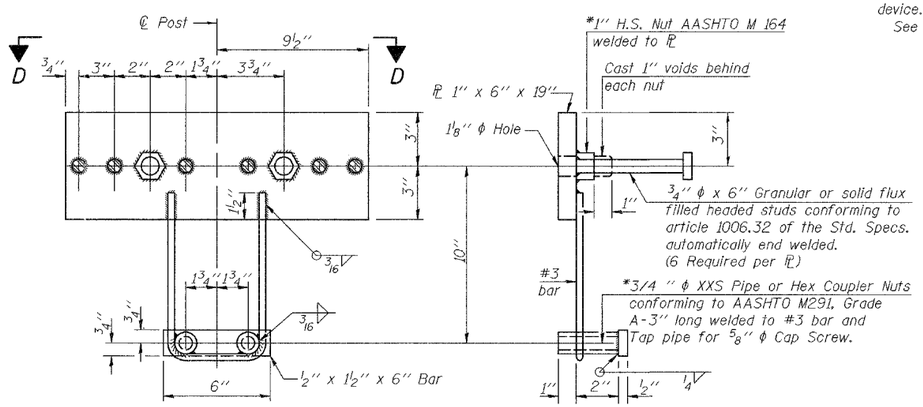


END OF RAIL DETAILS

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.
See Sheet 11 of 16 for rail post spacing.







ANCHOR DEVICE

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

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	223

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Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

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

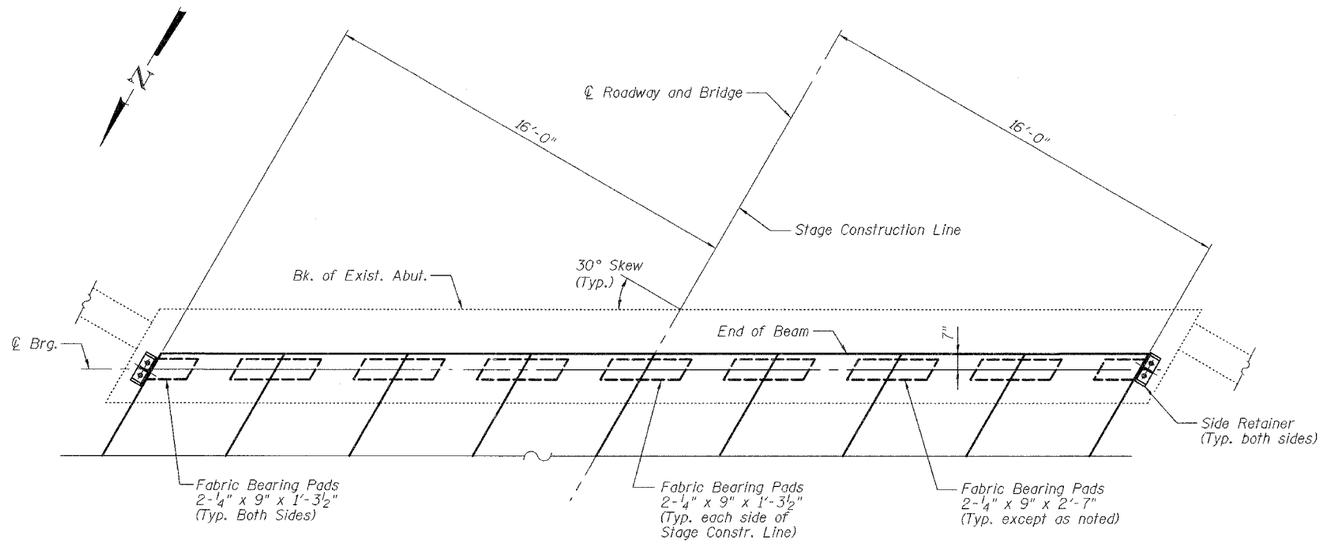
STEEL RAILING, TYPE SM WITH CONCRETE WEARING SURFACE
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	25
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 13
16 SHEETS

Contract #78032

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN - ABUTMENT BEARING SEAT

(South Abutment shown, North Abutment similar)

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

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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

03/04/08

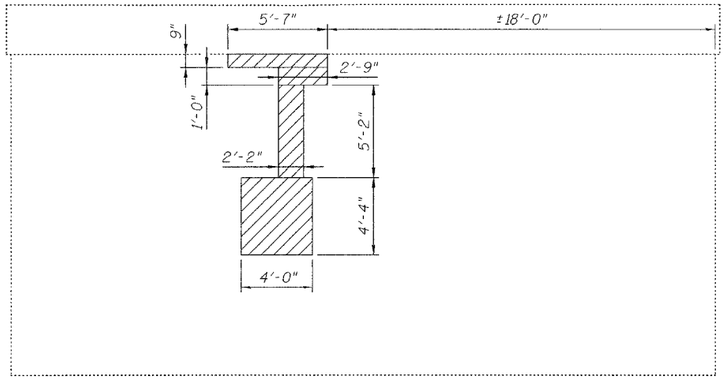
ABUTMENT BEARING SEAT
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

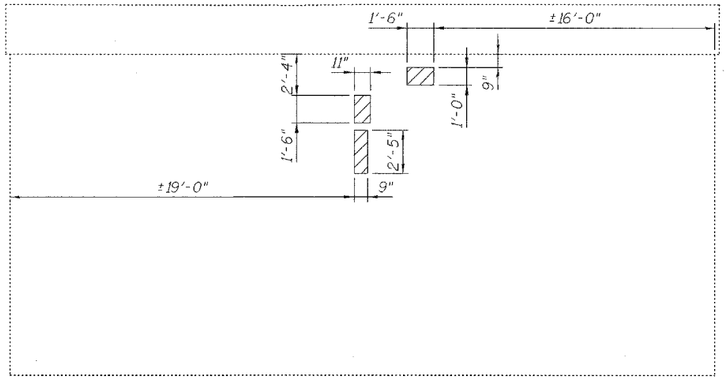
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	26
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 14
16 SHEETS

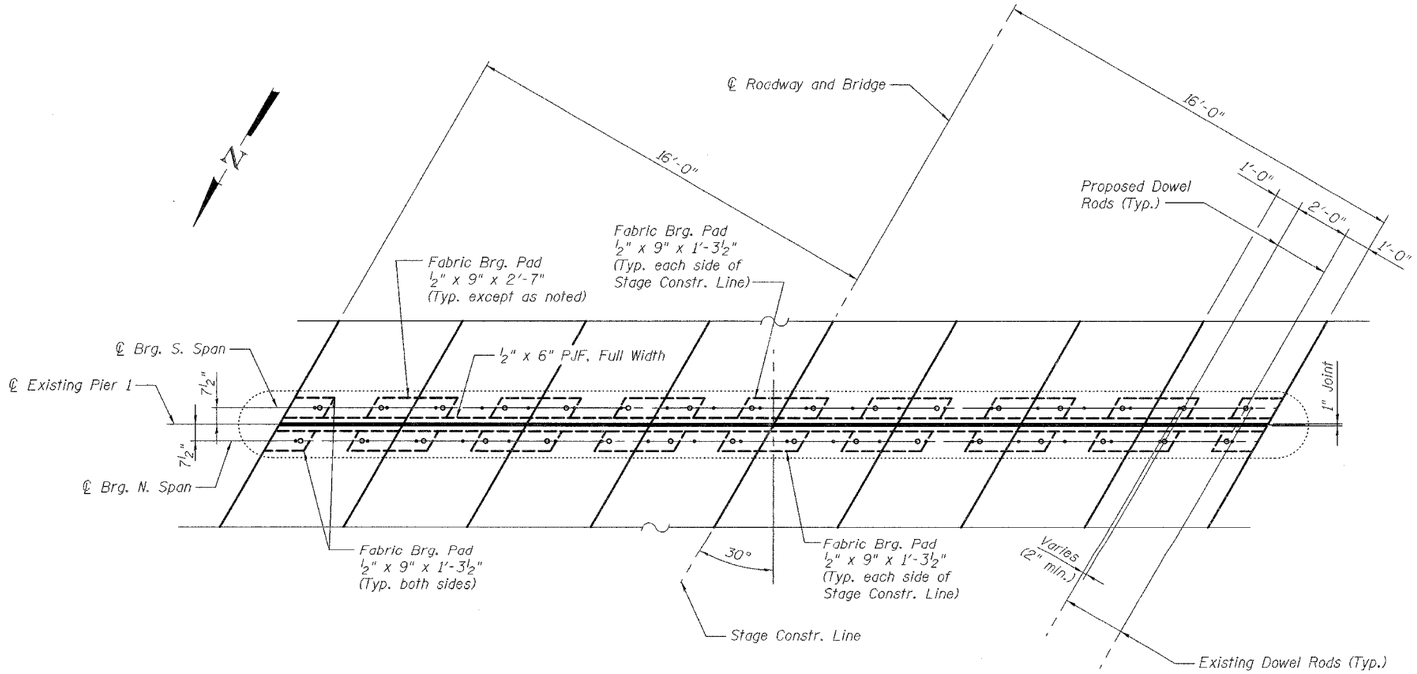
Contract #78032



ELEVATION - NORTH FACE
(Looking South)



ELEVATION - SOUTH FACE
(Looking North)



PLAN - PIER 1 BEARING SEAT
Concrete wearing surface not shown for clarity.

LEGEND

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

Notes:
Existing dowel rods shall be burned off flush with the existing concrete face, ground smooth, and sealed with epoxy. Cost is included with Removal of Existing Superstructures.
Concrete sealer shall be applied to concrete repair areas.
See Sheet 15 of 16 for Substructure Repair Bill of Material.

PIER 1 REPAIRS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

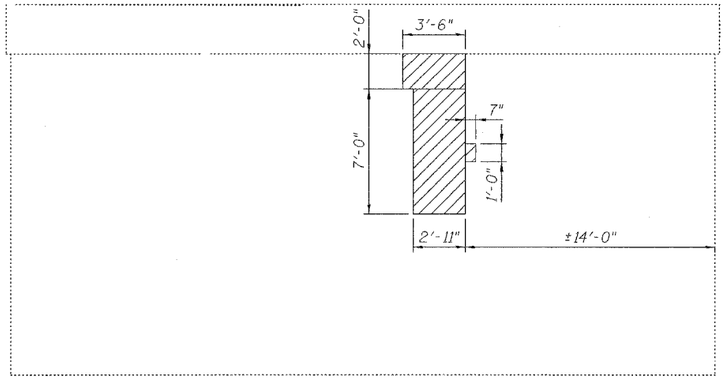
03/04/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

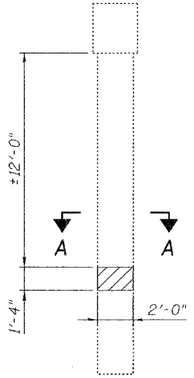
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 15
16 SHEETS

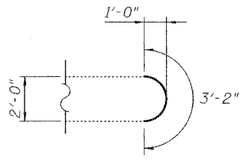
Contract #78032



ELEVATION - NORTH FACE
(Looking South)



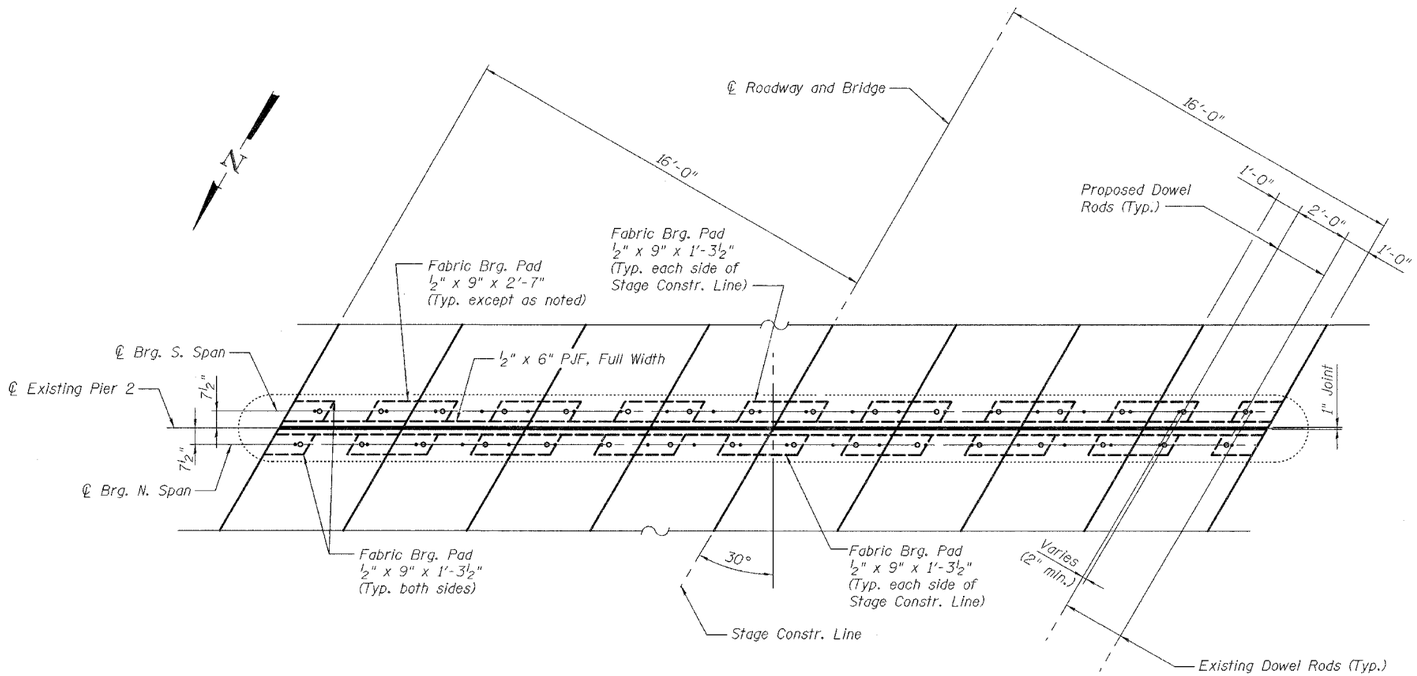
END VIEW
West End
(Looking East)



SECTION A-A

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or less than 5 inches)	Sq. Ft.	73
Concrete Sealer	Sq. Ft.	73



PLAN - PIER 2 BEARING SEAT
Concrete wearing surface not shown for clarity.

LEGEND

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

Notes:
Existing dowel rods shall be burned off flush with the existing concrete face, ground smooth, and sealed with epoxy. Cost is included with Removal of Existing Superstructures.
Concrete sealer shall be applied to concrete repair areas.

PIER 2 REPAIRS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

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SINCE 1893

DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

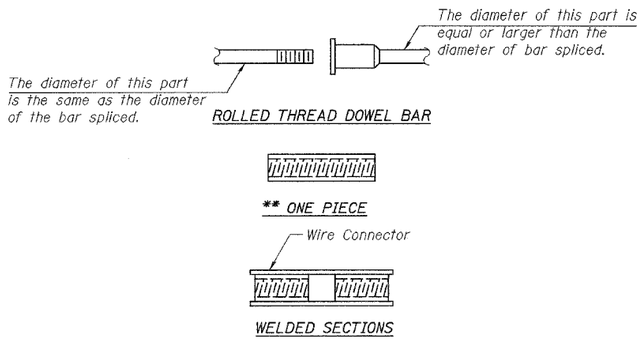
03/04/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21BR-1	ALEXANDER	82	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

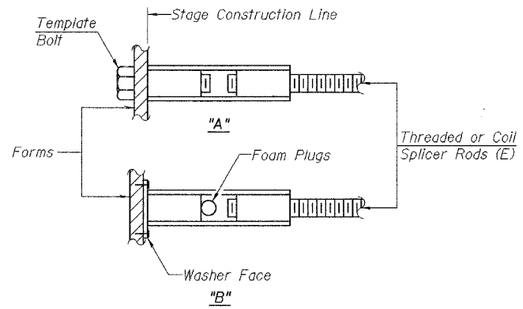
SHEET NO. 16
16 SHEETS

Contract #78032



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:

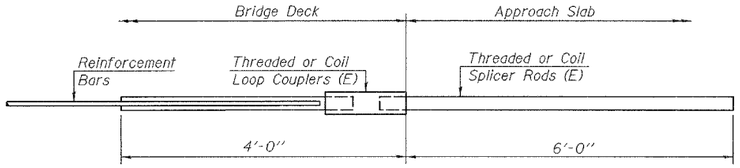
① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_t$

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

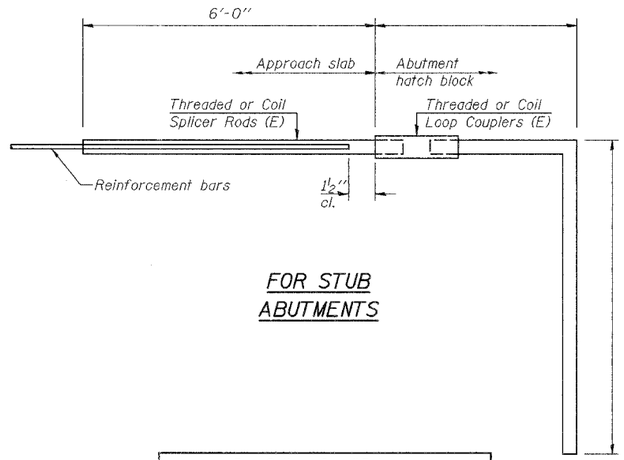
BAR SPLICER ASSEMBLIES

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



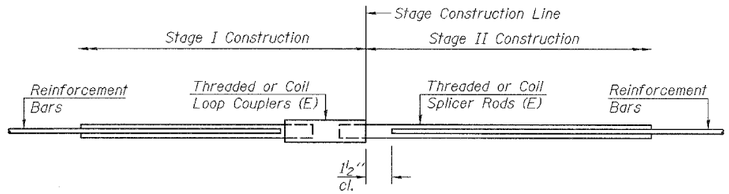
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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	119	Wearing surface
#5	8	Concrete Structures

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DESIGNED	YSS
CHECKED	RLM
DRAWN	PRC
CHECKED	YSS

BSD-1 11-1-06

BAR SPLICER ASSEMBLY DETAILS
ILL. ROUTE 127 OVER HOGSKIN CREEK
F.A.S. ROUTE 1907 - SECTION 21BR-1
ALEXANDER COUNTY
STATION 281+60.00
STRUCTURE NO. 002-0028

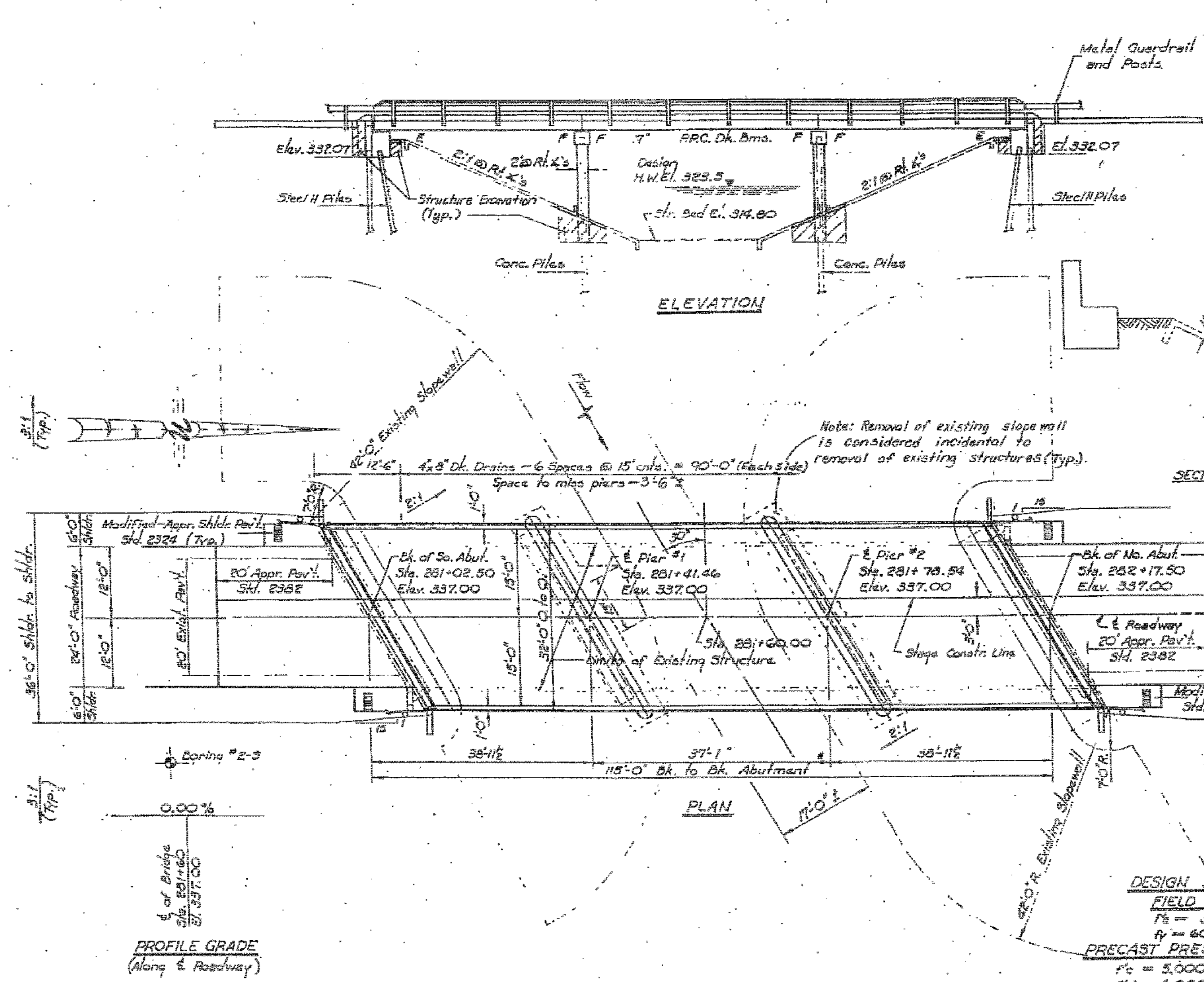
B.M.: "□" Cut on S.W. corner of S.E. end of bumper guard on existing bridge, Elev. 337.17.

Existing Structure: #002-0019 Built as F.A. Rte. 144, Section 21-B at Station 281+60 in 1940. 3 Spans, Bk. to Bk. of Abuts. 115'-7⅝", R.C. Slab on I-beams superstructure, Roadway width 24'-0". Contractor shall remove the entire structure in stages to maintain one way traffic at all times. The existing slopewall should remain in place.
No Salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1907	21B-1	ALEXANDER	24	11

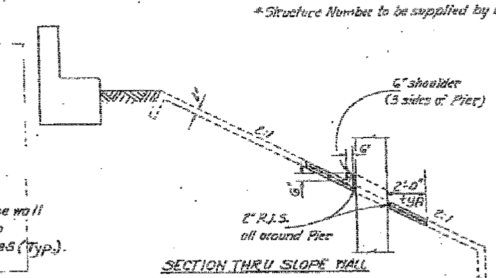
SHEET NO. 1
14 SHEETS



STATION 281+60
HOGSKIN CREEK
BUILT 198
F.A.S. RT. 1907 SEC. 21B-1
PROJ. BR-S-1907(104)
LOADING HS20
*STR. NO.

NAME PLATE
See Std. 2113

* Structure Number to be supplied by District.



GENERAL NOTES

See Proposal for Boring Data.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of ¼".

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60

The contractor shall drive 1 steel HP10x42 test pile at the South Abutment and 1 concrete test pile at Pier #2 in a permanent location as directed by the Engineer before ordering the remainder of piles.

A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provision, shall be used in the concrete for precast prestressed concrete deck beams.

The existing slopewall and embankment shall remain in place.

Slope wall shall be reinforced with welded wire fabric, 6"x6" - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Bituminous Concrete Surface Course, Class I	Ton	32		32
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		128	128
Protective Coat	Sq. Yd.	38		38
Class X Concrete	Cu. Yd.	8.8	152.4	161.2
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3552		3552
Steel Railing, Type T-1	Lin. Ft.	222		222
Reinforcement Bars	Pound	590	12040	12630
Concrete Piles	Lin. Ft.		1209	1209
Test Pile (Concrete)	Each		1	1
Name Plates	Each			1
Neoprene Expansion Joint (2")	Lin. Ft.	73		73
Portland Cement Mortar Fairing Course	Lin. Ft.	999		999
Waterproofing Membrane System	Sq. Yd.	390		390
Temporary Bridge Rail	Lin. Ft.	169		169
Slope Wall (4")	Sq. Yd.		56	56
Steel Piles HP10x42	Lin. Ft.		1056	1056
Test Pile (Steel HP10x42)	Each		1	1

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi

f_y = 60,000 psi

PRECAST PRESTRESSED UNITS

f'_c = 5,000 psi

f'_{ci} = 4,000 psi (17"x36" Bms.) f'_{ci} = 4,300 psi (17"x48" Bms.)

f'_s = 270,000 psi (½" ϕ Strands)

f_{si} = 189,000 psi (½" ϕ Strands)

LOADING HS 20-44

Allow 25#/sq. ft. for future wearing surface.

Design Specifications: 1977 AASHTO; 1978, 1979, 1980 and 1981 Interim Specifications.

WATERWAY INFORMATION

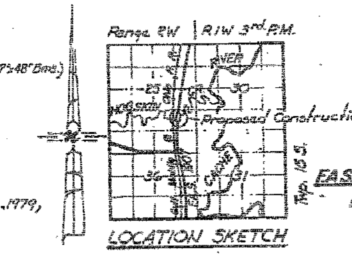
Drainage Area 6.77 sq. mi. Low Grade Elev. 335.2 @ Sta. 289+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	30	1495	*286	286	323.5	0.44	0.44	323.94	323.94
Base	100	1927	300	300	323.8	0.74	0.74	324.54	324.54
Overtopping									
Max. Calc.	500	2486	315	315	324.0	0.95	0.95	324.95	324.95

* This area doesn't include the 87.5 ft.² available in the adjacent 10'x10' R.C. box culvert.

DESIGNED	Patrick M. Patrone
CHECKED	Doug L. Brown
DRAWN	pws / ste
CHECKED	A. L. B.

July 9 1982
EXAMINED James T. Rayburn, Engineer of Bridges and Structures
PASSED
APPROVED



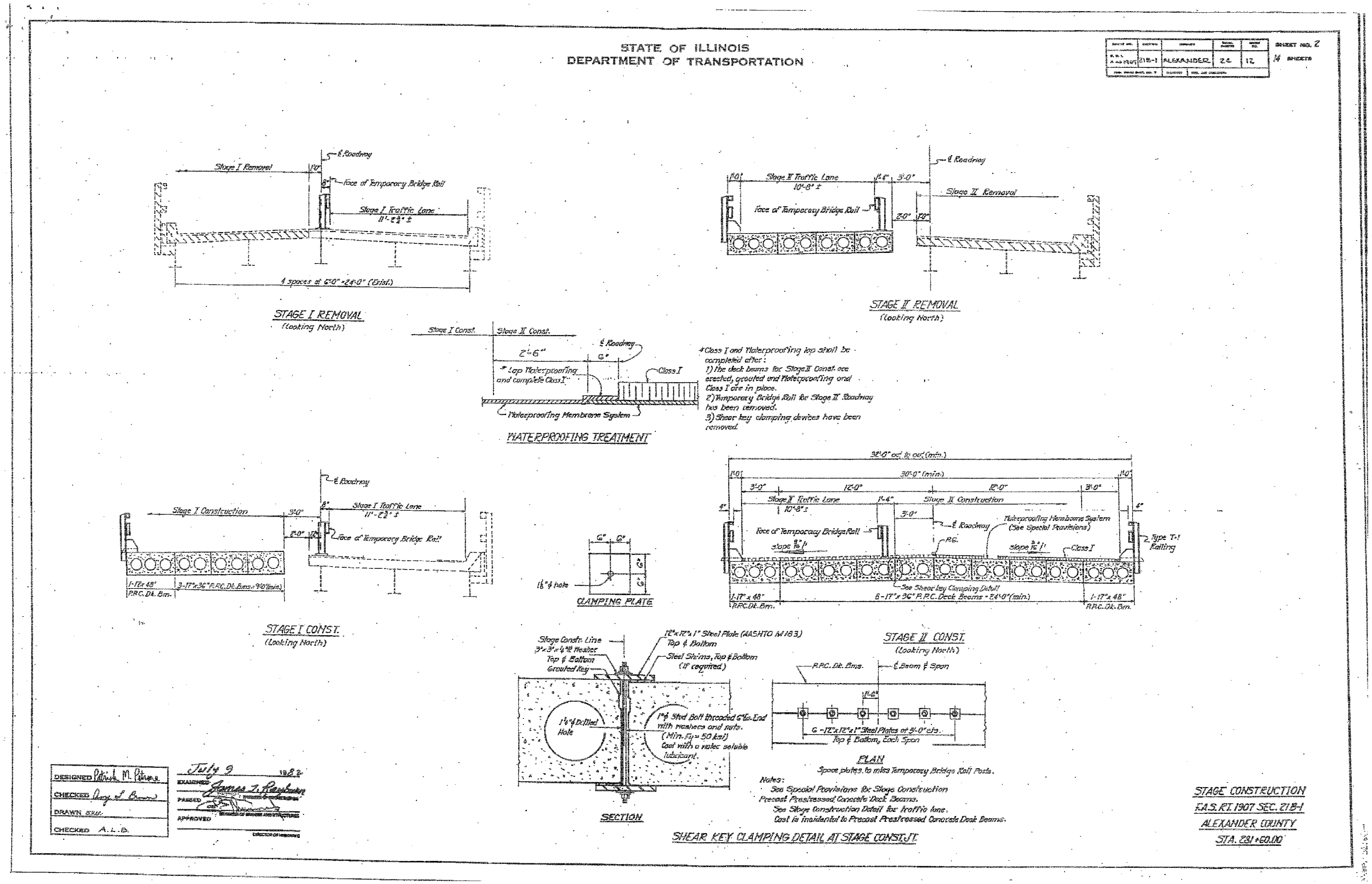
GENERAL PLAN
F.A.S. Rte. 1907 (I.L. 127) Over HOGSKIN CR.
F.A.S. Rte. 1907 Section 21 B-1
ALEXANDER COUNTY
Sta. 281+60.00

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

FOR INFORMATION ONLY

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS
		DRAWN - AEC	REVISED -		
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -		
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -		SCALE: NONE · SHEET NO. OF SHEETS · STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	29
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



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SINCE 1893

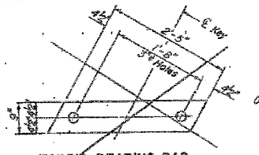
FOR INFORMATION ONLY

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS	F.A.S. RTE. 1907	SECTION 21BR-1	COUNTY ALEXANDER; TOTAL SHEETS 82; SHEET NO. 30
		DRAWN - AEC	REVISED -				CONTRACT NO. 78032	
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -		SCALE: NONE; SHEET NO. OF SHEETS; STA. TO STA.	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -					

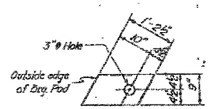
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHED. NO.	SECTION	COUNTY	SHEET NO.
F.A.S. 1907	21B-1	ALEXANDER	13

SHEETS 14

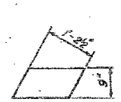


FABRIC BEARING PAD
(Interior)

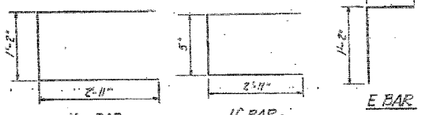


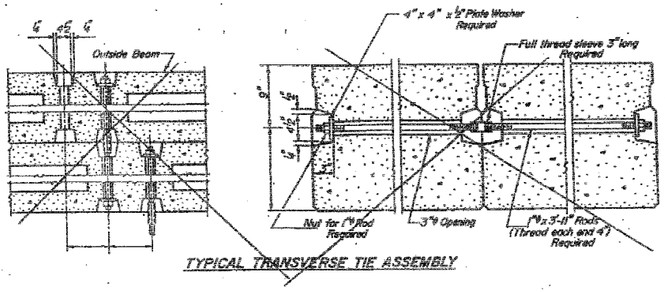
FABRIC BEARING PAD
(Exterior)
8 Required

GRAPHITED ASBESTOS BEARING PAD
(Interior)

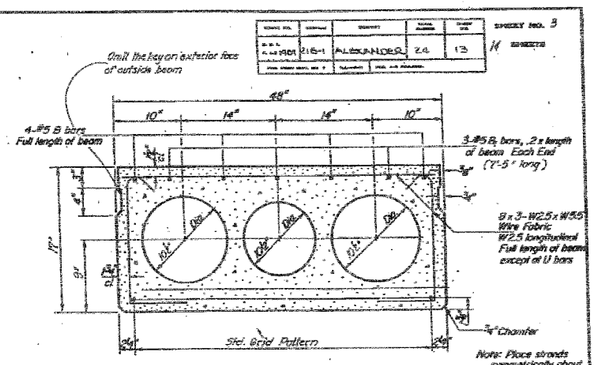


GRAPHITED ASBESTOS BEARING PAD
(Exterior)
8 Required

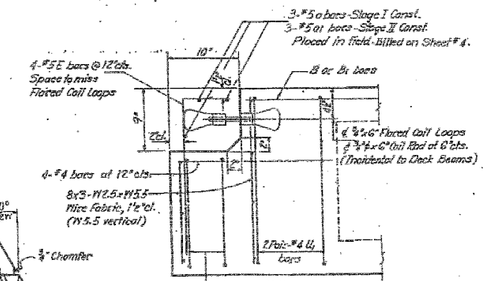




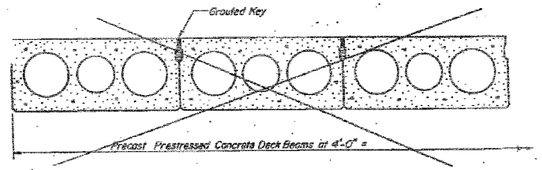
TYPICAL TRANSVERSE TIE ASSEMBLY



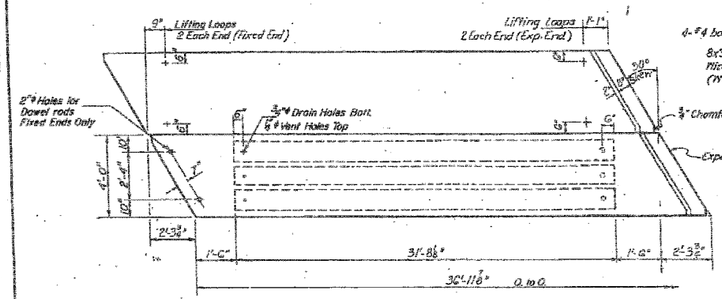
TYPICAL SECTION
12 - ½"ø Strands, Each Strand Stressed to 28,900 Lbs.
12 - Strands 1'-6" up



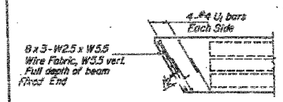
END OF BEAM (EXP. END)
(Dimensions are at right angles)



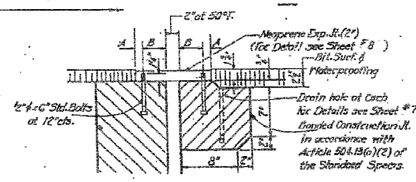
HALF CROSS SECTION



PLAN
Spans 1 & 3



END PLAN-FIXED



NEOPRENE EXP. JOINT
Dimensions are at right angles.
Notched 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.

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 0.153 sq. in.
Lifting loops shall be ¾" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,900 lbs. or 2-⅝"ø or 1-¾"ø 270 ksi strands as shown on Sheet #6.
~~The 1"ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads oil. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place.~~
Reinforcement bars shall conform to AASHTO M-31 or M-53, Grade 60.
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of key.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
Precast Prestressed Concrete Deck Beams (17"x 48)		Sq. Ft.	592	

SUPERSTRUCTURE - SPANS 1 & 3
F.A.S. RT. 1907 SEC. 21B-1
ALEXANDER COUNTY
STA. 281+60.00

DESIGNED	Patrick M. Johns	July 9	1982
CHECKED	Danny L. Brown	EXAMINED	James T. Rankin
DRAWN	C.J.U.	PASSED	
CHECKED	A.L.B.	APPROVED	

PD-4-R 6-15-80

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

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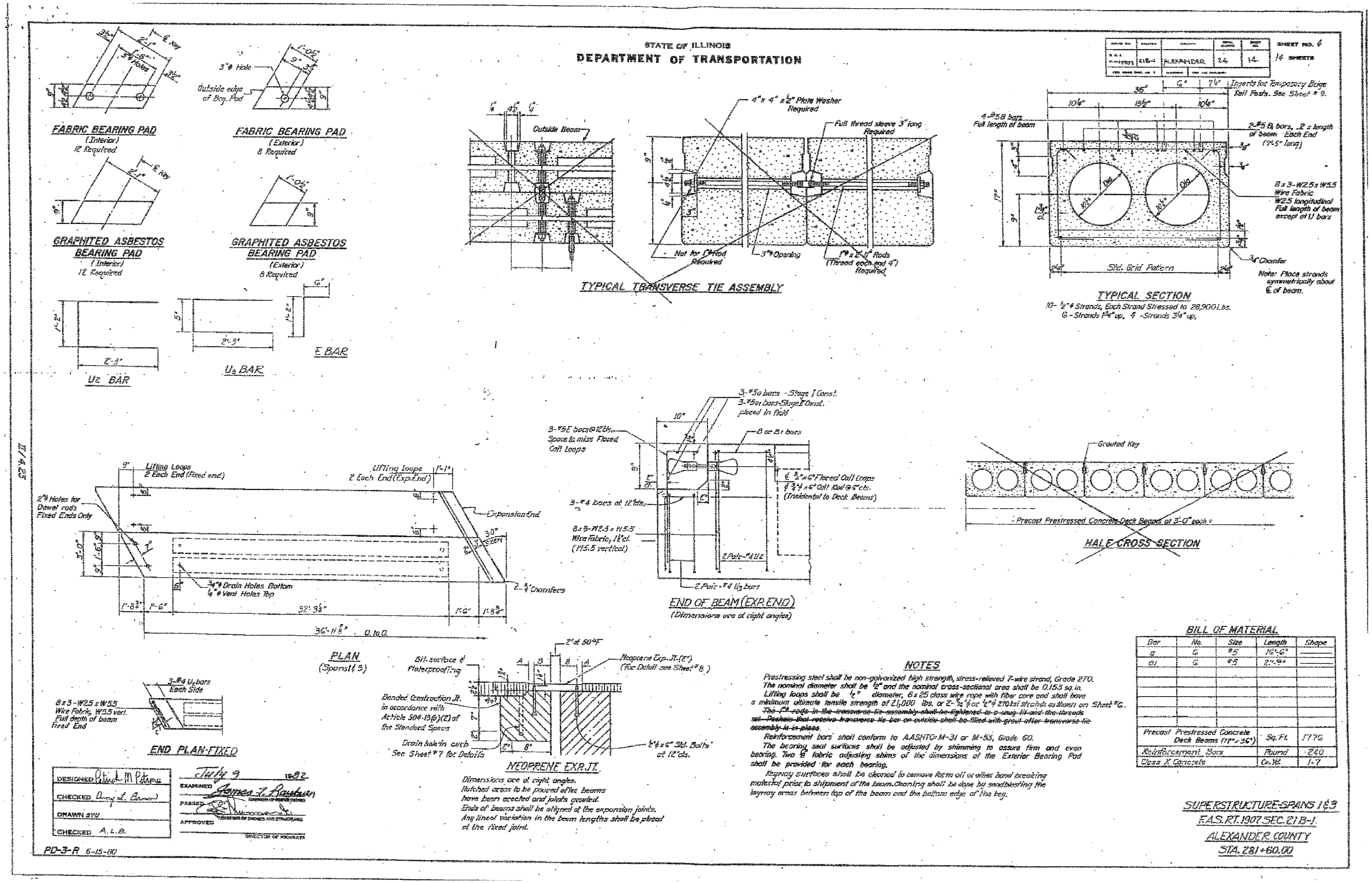
		DRAWN - AEC	REVISED -
	PLOT SCALE = #SCALE#	CHECKED - JMH	REVISED -
	PLOT DATE = #DATE#	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	31
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

Lifting loops shall be 1/2" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,000 lbs. or 2 - 7/16" ϕ or 1/2" ϕ 270 ksi strands as shown on Sheet # 6.

Reinforcement bars shall conform to AASHTO: M-31 or M-53, Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beam. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	6	#5	16'-6"	———
a1	6	#5	2'-9"	———
Precast Prestressed Concrete Deck Beams (17" x 36")			Sq. Ft.	1776
Reinforcement Bars			Pound	240
Class X Concrete			Cu. Yd.	1.7

SUPERSTRUCTURE-SPANS 1 & 3
F.A.S. RT. 1907 SEC. 21 B-1.
ALEXANDER COUNTY
STA. 281+60.00

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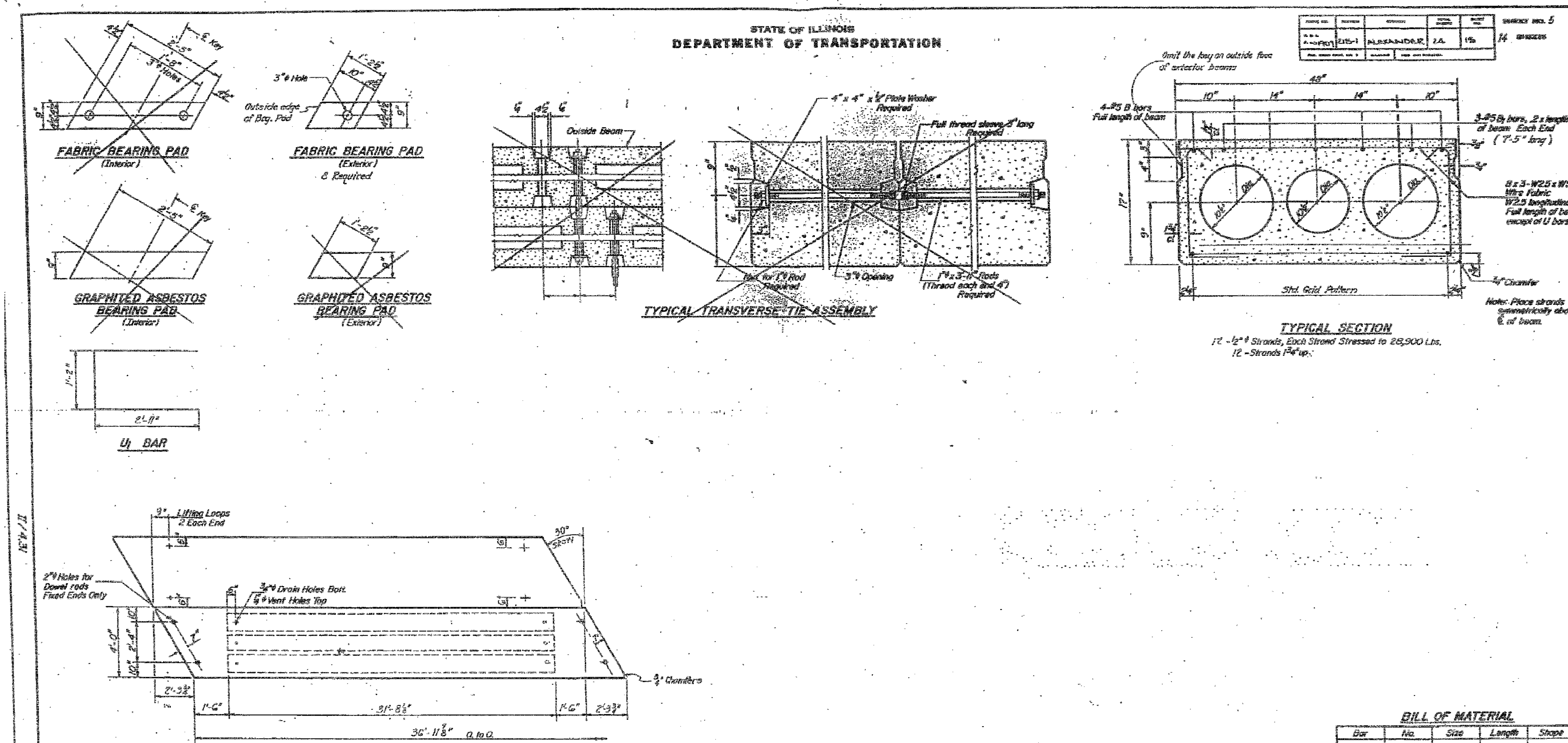
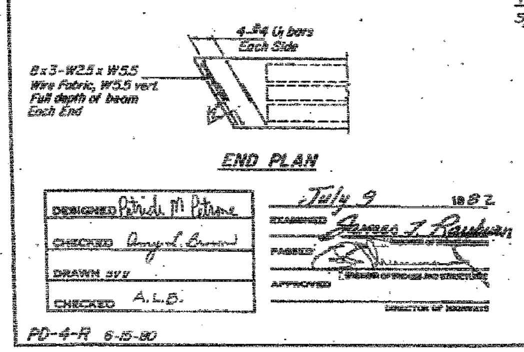
		DATE - 03/04/08	REVISED -		STA. TO STA.					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN
Span 2



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 0.153 sq. in.

Lifting loops shall be ½" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,000 lbs. or 2-⅜"ø or ½"ø 270ksi strands as shown on Sheet #6.

~~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 shall be filled with grout after transverse tie assembly is in place.~~

Reinforcement bars shall conform to AASHTO M-31 or M-53, Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛ fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
Precast Prestressed Concrete Deck Beams (17" x 48")			Sq. Ft.	296

SUPERSTRUCTURE SPAN 2
F.A.S. RT. 1907 SEC. 21 B-1
ALEXANDER COUNTY
STA. 281+60.00

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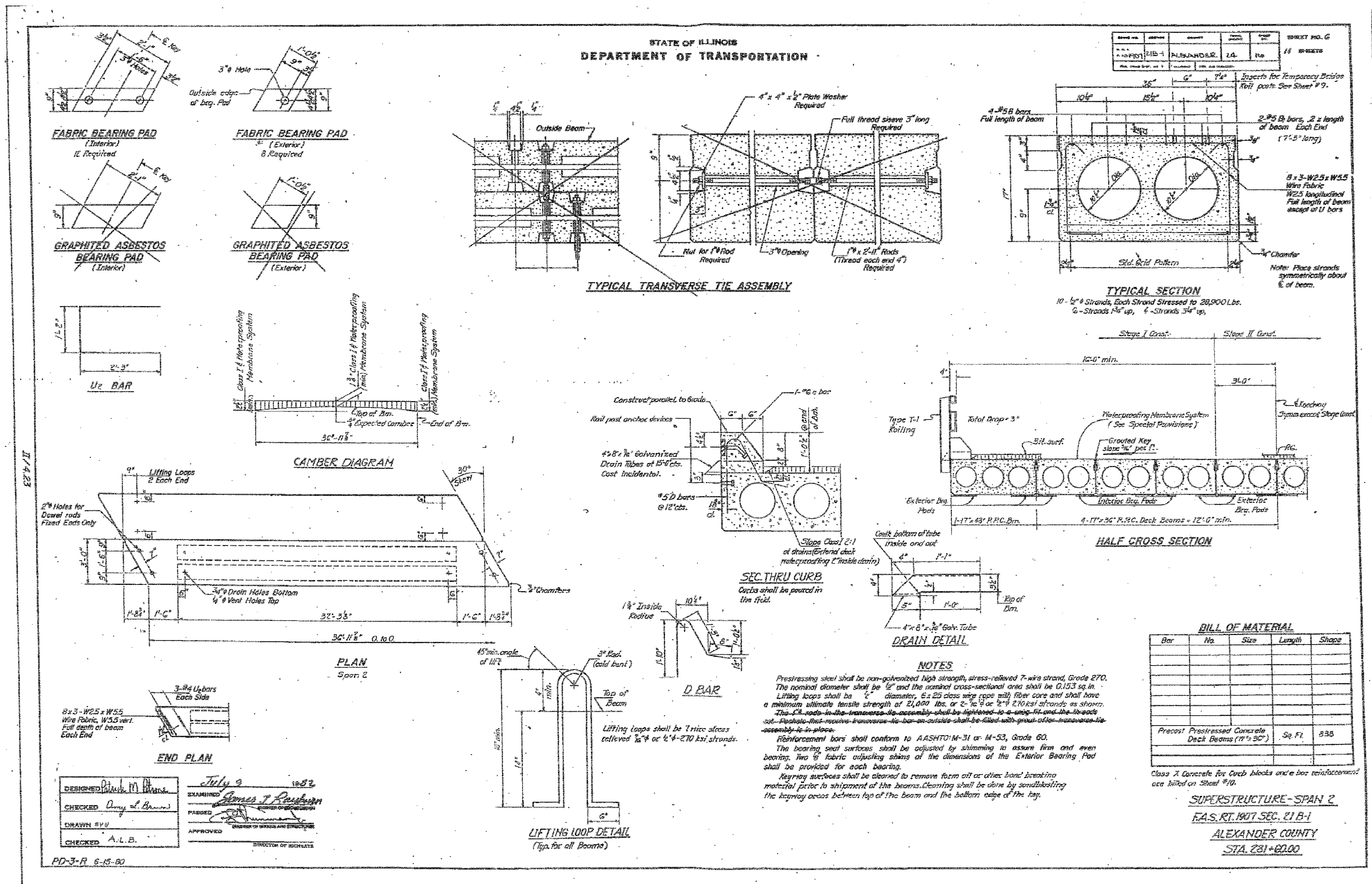
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -		SCALE: NONE · SHEET NO. OF SHEETS · STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	33
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



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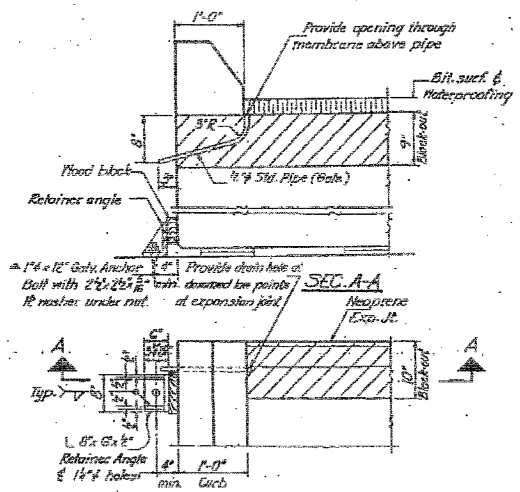
	PLOT DATE = $DATE$	CHECKED - JMH	REVISED -		
		DATE - 03/04/08	REVISED -		

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	34
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.S. 1907	21B-1	ALEXANDER	24	17

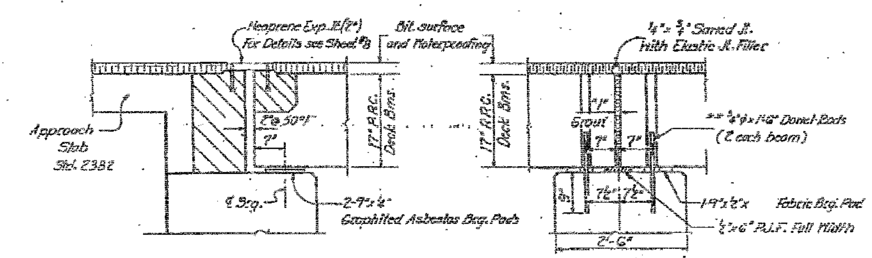
SHEET NO. 7
14 SHEETS



PLAN
(Drain hole and retainer angle at exp. joint)

* Anchor bolts may be cast into the masonry or placed in drilled holes and grouted in place. Cost including Retainer Angle and Accessories Incidental to Beams.

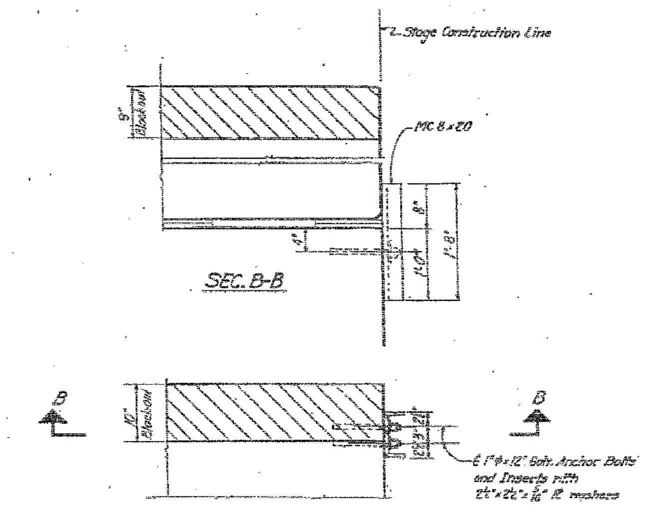
After block-outs are poured and cured the retainer angles shall be removed. Anchor bolts may be left in place.



SEC. AT ABUTMENTS

SEC. AT PIERS 1 & 2

Notes:
Hatched area to be poured after beams are in place.
* 1" Joint shall be packed with a very dry mix of 2:1 sand and PC-mortar.
1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.
** Dowel Rods to be grouted after beams are in place and allowed to cure a min. 24 hrs. prior to grouting the shear keys.
All dimensions are at right angles.



PLAN
(Retainer Channel for Exp. Jt. at Stage Const.)
Cost of Retainer Channel and Accessories incidental to beams. The Retainer Channel shall be removed. Anchor bolts may be left in place.

DESIGNED	Patrick M. Petrone
CHECKED	Amy L. Brown
DRAWN	
CHECKED	A.L.B.

July 9 1982
EXAMINED
PASSED
APPROVED

SUPERSTRUCTURE DETAILS
F.A.S. RT. 1907 SEC. 21B-1
ALEXANDER COUNTY
STA. 281+60.00

MODJESKI and MASTERS
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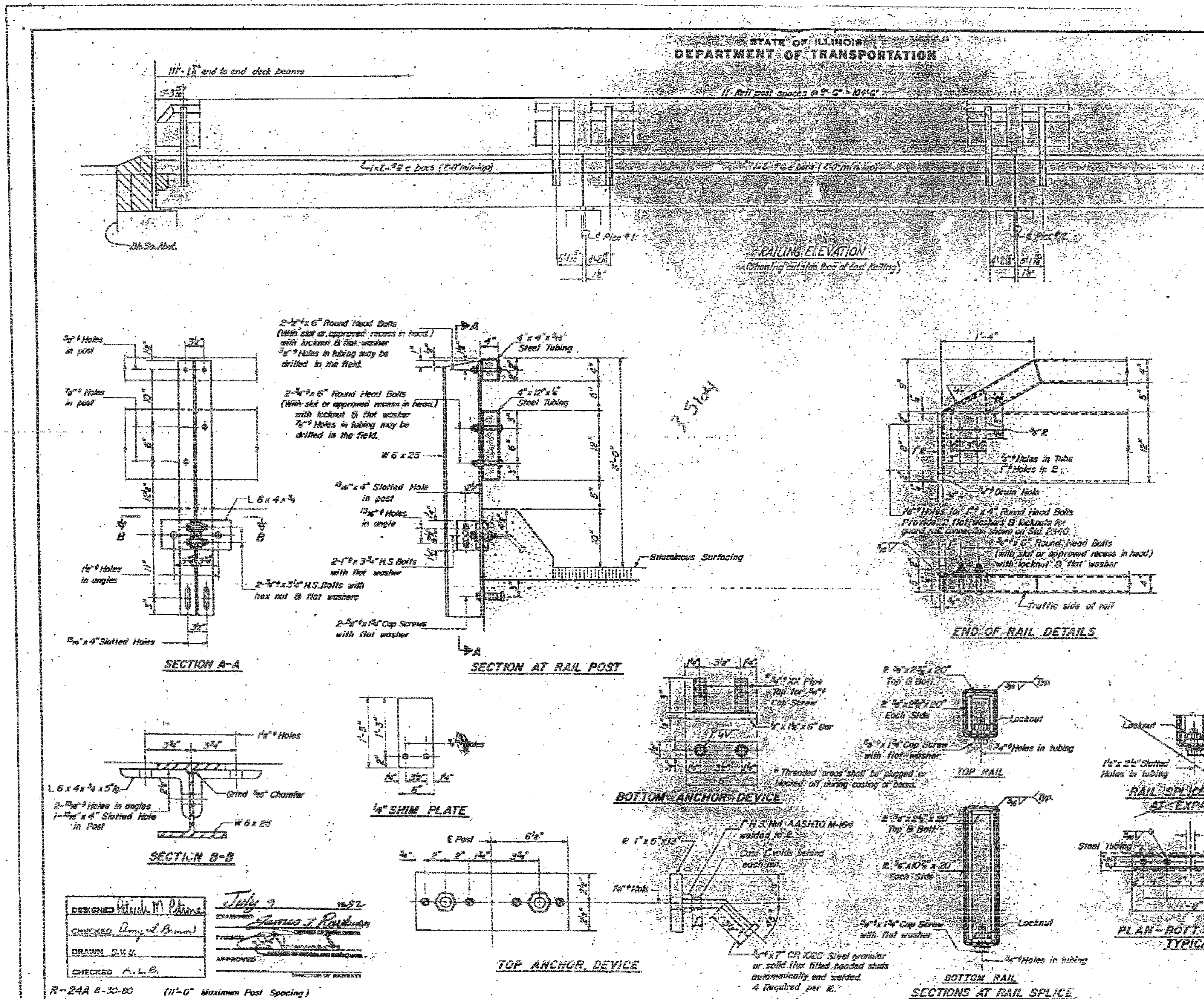
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -		SCALE: NONE / SHEET NO. OF SHEETS / STA. TO STA.	FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				



NOTES

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.

All other steel shapes and plates shall conform to the requirements of AASHTO M-183 except posts and angles shall conform to AASHTO M-223, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and 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 T-1.

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 6 x 4 x 3/4 angles to the post shall be tightened in accordance with Article 507.04(g)(3) of the Standard Specifications. The 1" ϕ high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" ϕ cap screws in bottom of posts shall be tightened to a snug fit only.

For multi-span bridges, sufficient 1/8" x 6" x 1'-5" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to Steel Railing.

CURB & RAIL BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	12	#6	19'-3"	——
Reinforcement Bars			Lbs.	350
Class X Concrete			Cu. Yd.	7.1
Steel Railing, Type T-1			Lin. Ft.	222

TYPE T-1 STEEL RAILING

F.A.S. RT. 1907 SEC. 21B-1

ALEXANDER COUNTY

STA. 281+60.00

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		DRAWN - AEC	REVISED -					CONTRACT NO. 78032		
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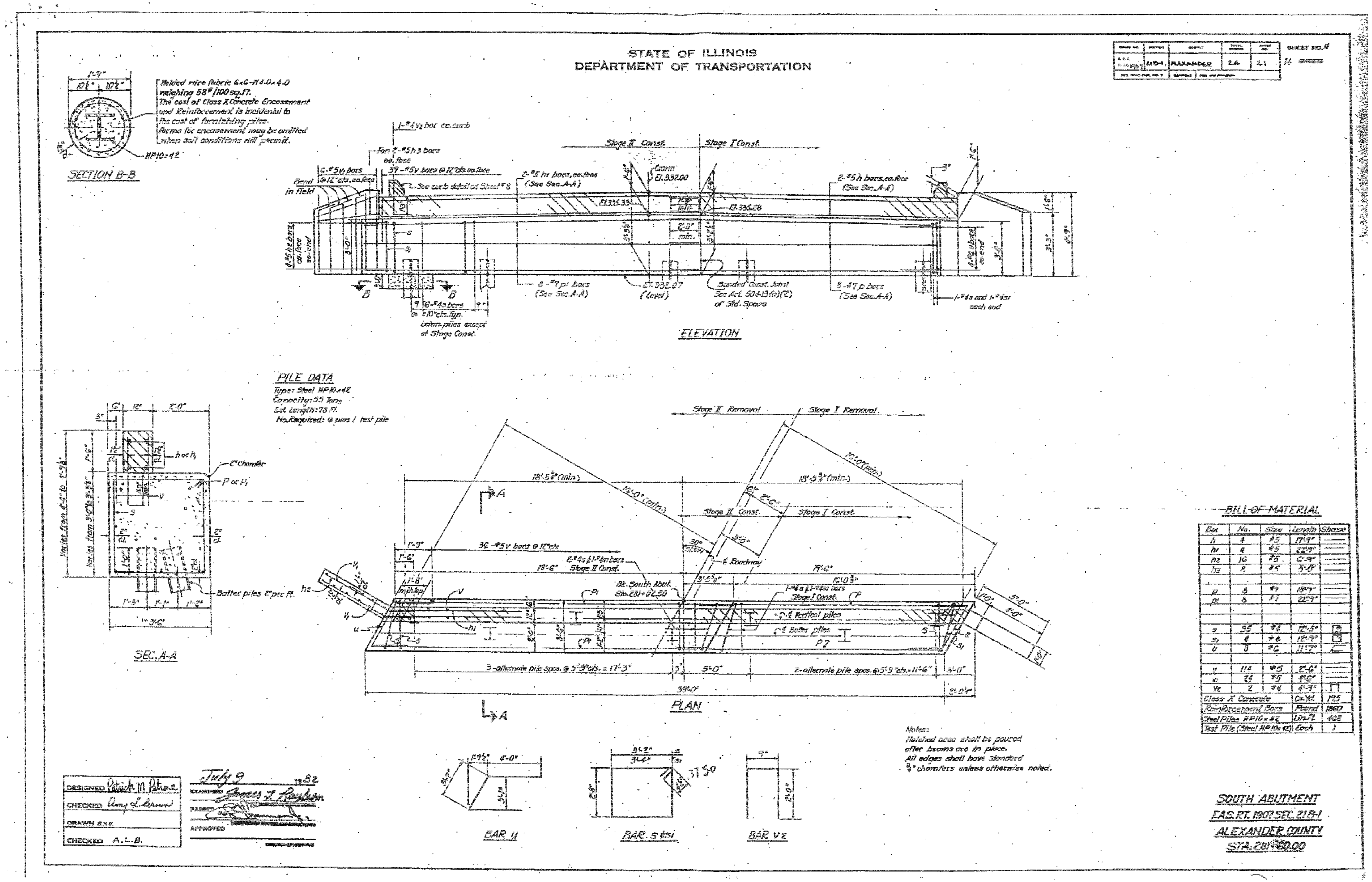
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -			FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	4	#5	17'-9"	—
h1	4	#5	22'-9"	—
h2	16	#5	6'-9"	—
h3	8	#5	5'-0"	—
p	8	#7	18'-9"	—
p1	8	#7	22'-9"	—
s	35	#4	12'-5"	◻
s1	4	#4	12'-9"	◻
u	8	#6	11'-7"	∠
v	114	#5	2'-6"	—
v1	24	#5	4'-0"	—
v2	2	#4	4'-9"	⊓
Class X Concrete			Cu. Yd.	125
Reinforcement Bars			Pound	1860
Steel Piles HP10x42			Lin. Ft.	468
Test Pile (Steel HP10x42)			Each	1

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

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		DRAWN - AEC	REVISED -			TOTAL SHEETS 82	SHEET NO. 37	CONTRACT NO. 78032
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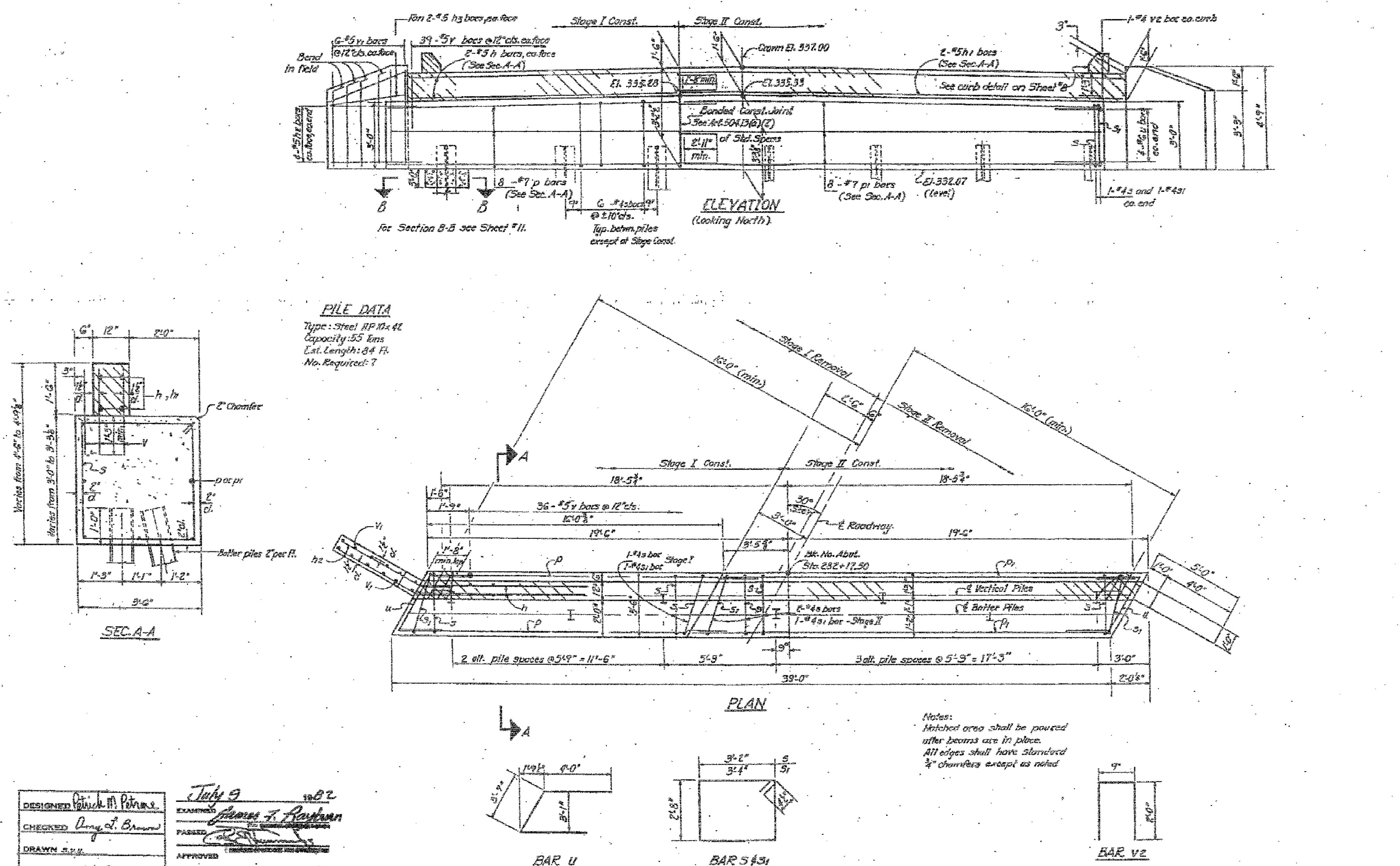
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -			FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 12
14 SHEETS



Notes:
Hatched area shall be poured after beams are in place.
All edges shall have standard ¾" chamfers except as noted.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	4	#5	17'-9"	—
h1	4	#5	22'-9"	—
h2	16	#5	6'-9"	—
h3	8	#5	5'-0	—
p	8	#7	18'-9"	—
p1	8	#7	22'-9"	—
s	35	#4	12'-5"	
s1	4	#4	12'-9"	
u	8	#6	11'-7"	
v	114	#5	2'-6"	—
v1	24	#5	6'-6"	—
v2	2	#4	6'-7"	
Class X Concrete			Cu. Yd.	19.5
Reinforcement Bars			Pound	1660
Steel Piles HP10x42			Lin. Ft.	588

NORTH ABUTMENT
F.A.S. RT. 1907 SEC. 21B-1
ALEXANDER COUNTY
STA. 281+60.00

DESIGNED Patrick M. Petrone
CHECKED Doug L. Brown
DRAWN
CHECKED A.L.B.

July 9 1982
EXAMINED James L. [illegible]
PASSED
APPROVED

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

FOR INFORMATION ONLY

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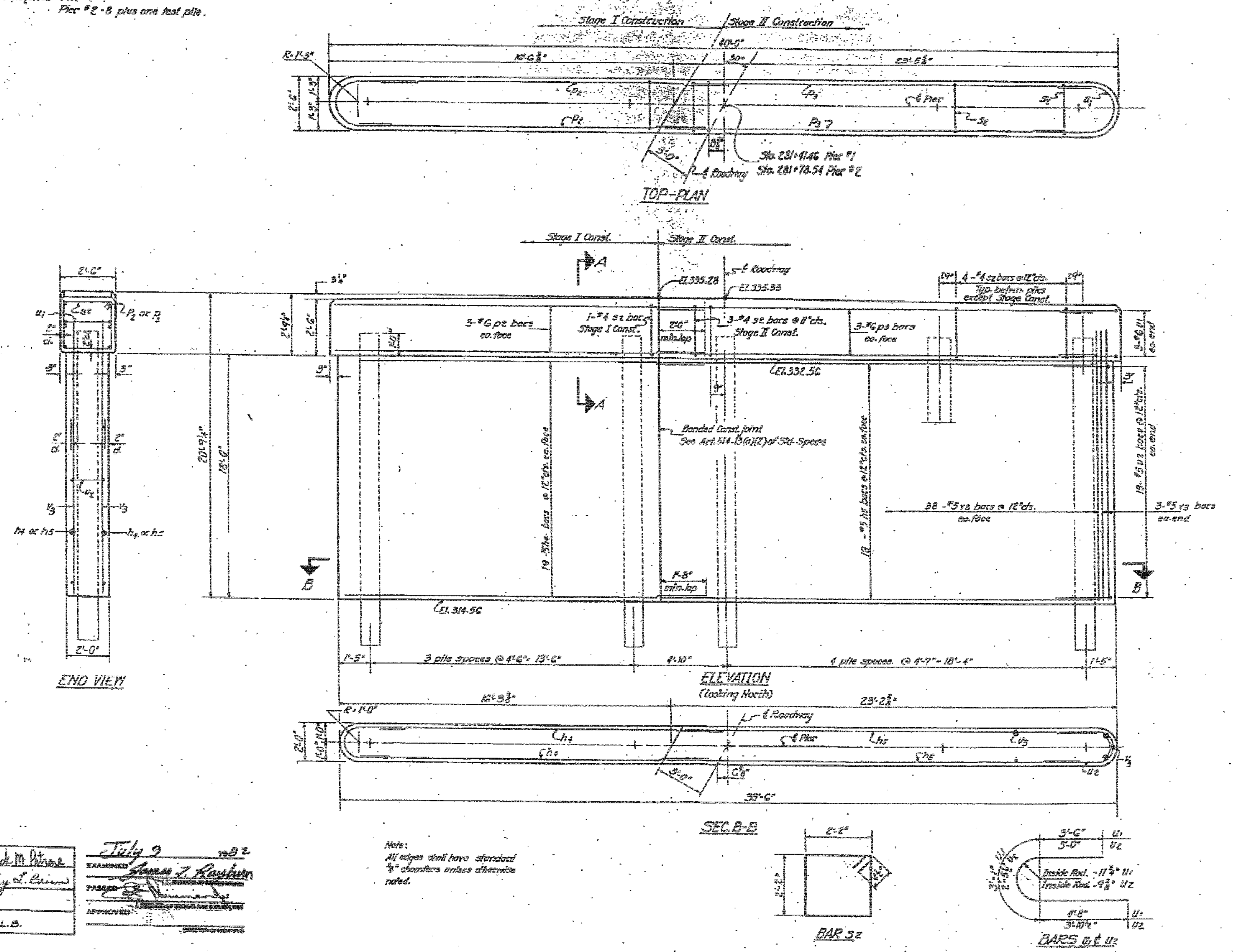
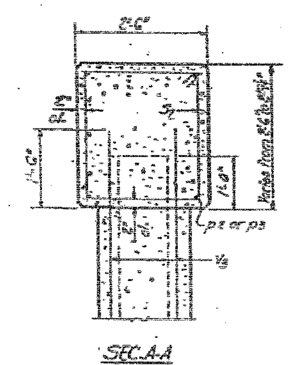
	PLOT DATE = *DATE*	CHECKED - JMH	REVISED -							
		DATE - 03/04/08	REVISED -					FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PILE DATA

Type: Concrete
Capacity: Pier #1-35 Tons, Pier #2-35 Tons
Est. Length: Pier #1-73 Ft., Pier #2-69 Ft.
No. Required: Pier #1-9
Pier #2-8 plus one test pile.





TWO PIERS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h4	76	#5	16'-3"	—
h5	76	#5	21'-6"	—
P2	12	#6	16'-9"	—
P3	12	#6	21'-3"	—
s2	64	#4	9'-5"	▭
u1	12	#6	11'-3"	⊃
u2	76	#5	9'-8"	⊃
v3	164	#5	19'-3"	—
Class X Concrete			Cu. Yd.	113.4
Reinforcement Bars			Pound	8320
Concrete Piles			Lin. Ft.	1209
Test Pile (Concrete)			Each	1

PIERS
F.A.S. RT. 1907 SEC. 21 B-1
ALEXANDER CO.
STA. 281+60.00

DESIGNED
CHECKED
DRAWN
CHECKED A.L.B.

July 9 1982
EXAMINED
PASSED
APPROVED

MODJESKI and MASTERS
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SINCE 1893

FOR INFORMATION ONLY

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	39

CONTRACT NO. 78032

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

MODJESKI and MASTERS
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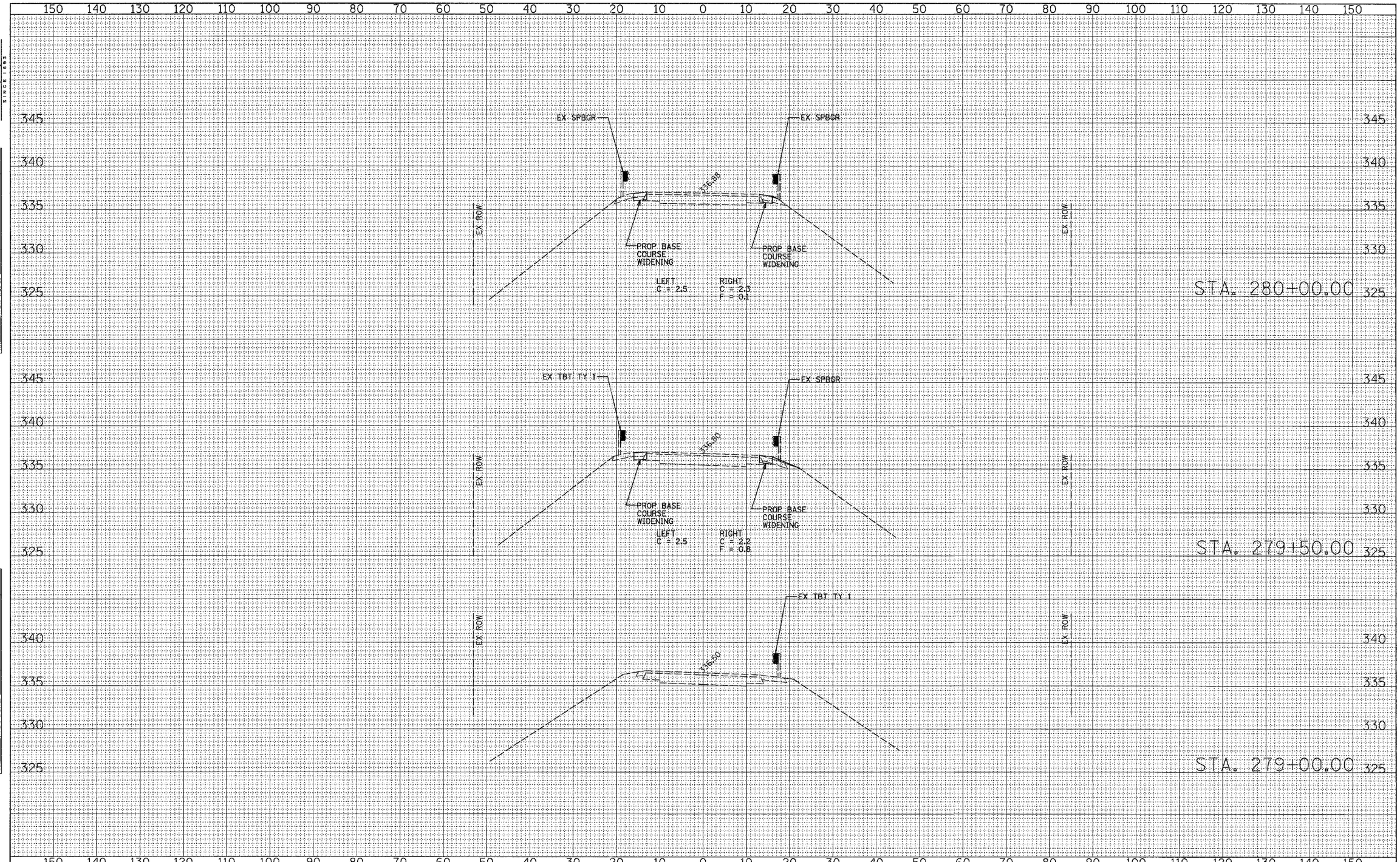
FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT DATE = #DATE#	DATE - 03/04/08	REVISED -

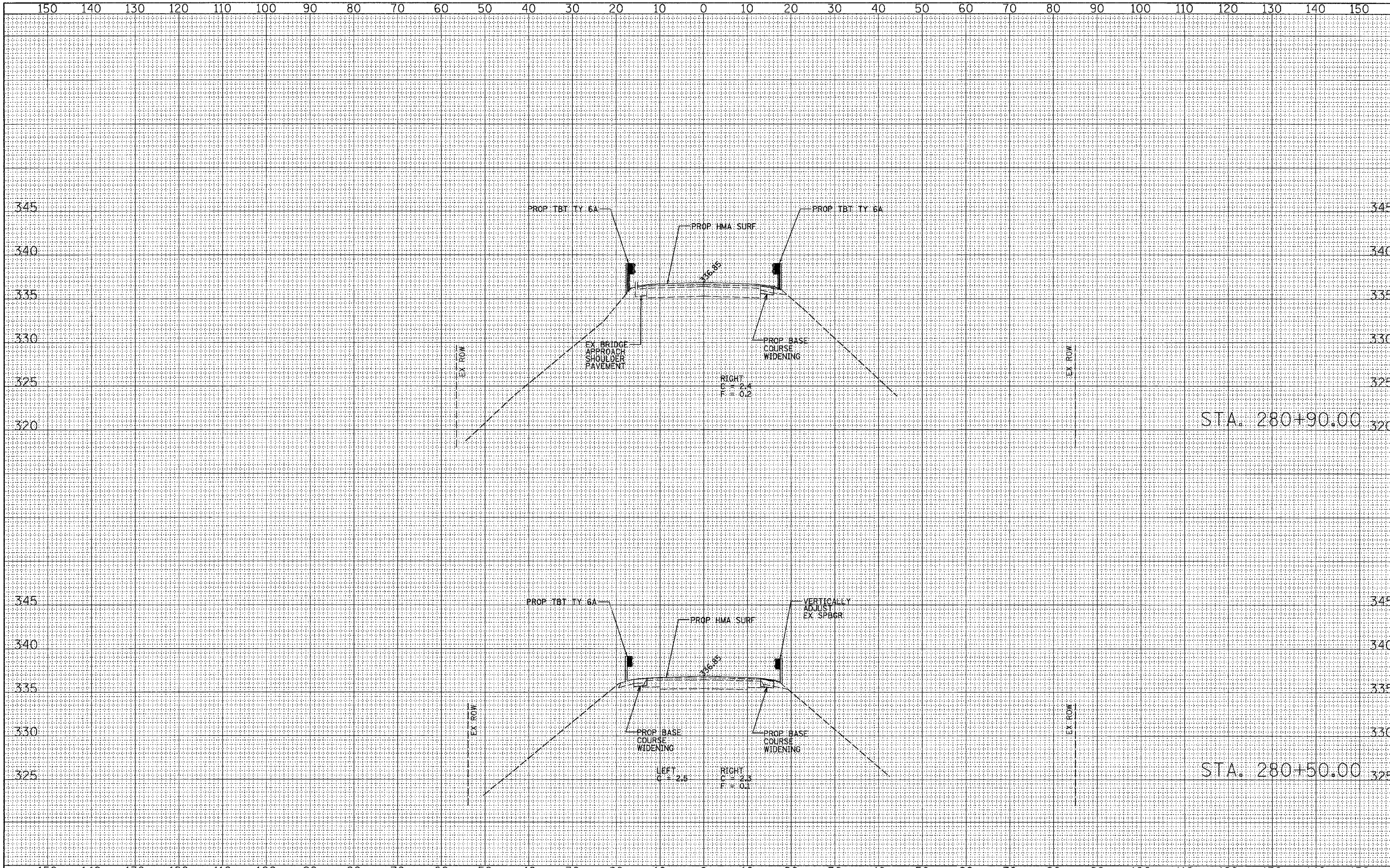
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) CROSS SECTIONS

SCALE: | SHEET NO. 1 OF 6 SHEETS | STA. 279+00.00 TO STA. 280+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	40
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT



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FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) CROSS SECTIONS

SCALE: | SHEET NO. 2 OF 6 SHEETS | STA. 280+50.00 TO STA. 280+90.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	41
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

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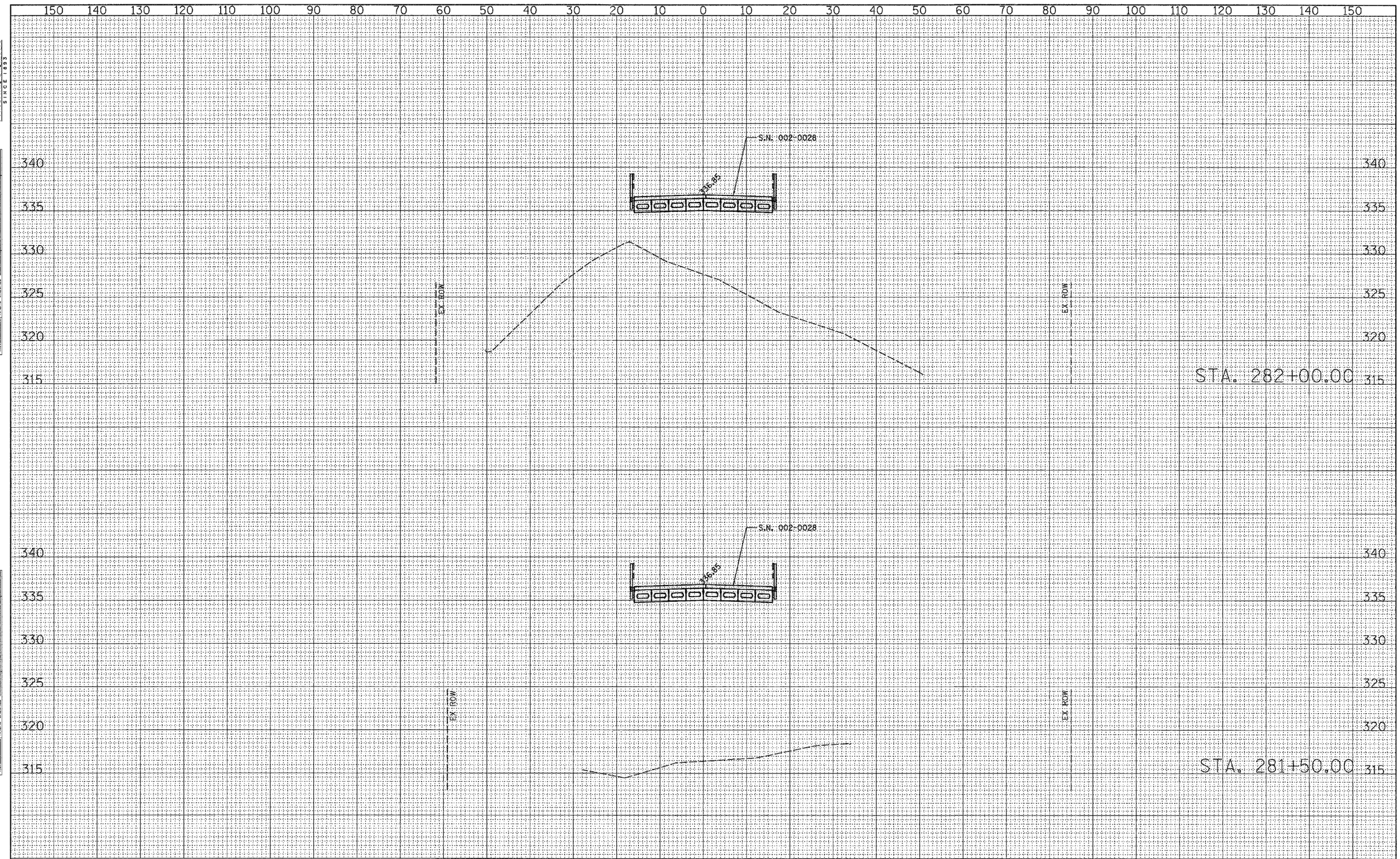
FINAL SURVEY		DATE
NOTE BOOK	SURVEYED	BY
NO.	PLOTTED	
	TEMPLATE	
	AREAS CHECKED	



ORIGINAL SURVEY		DATE
NOTE BOOK	SURVEYED	BY
NO.	PLOTTED	
	TEMPLATE	
	AREAS CHECKED	

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	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) CROSS SECTIONS

SCALE: | SHEET NO. 3 OF 6 SHEETS | STA. 281+50.00 TO STA. 282+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	42
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

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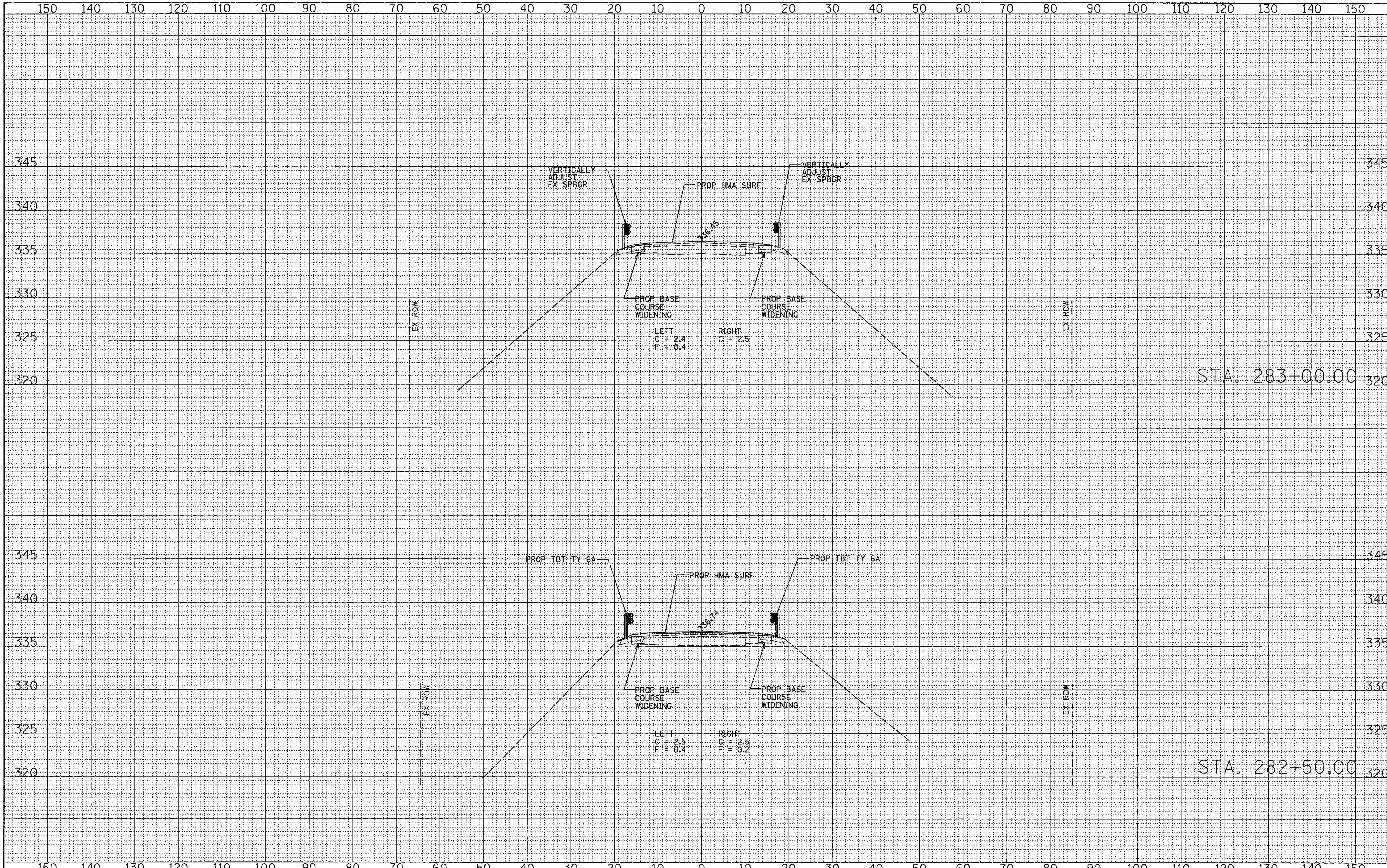
FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) CROSS SECTIONS

SCALE: | SHEET NO. 4 OF 6 SHEETS | STA. 282+50.00 TO STA. 283+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	43
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

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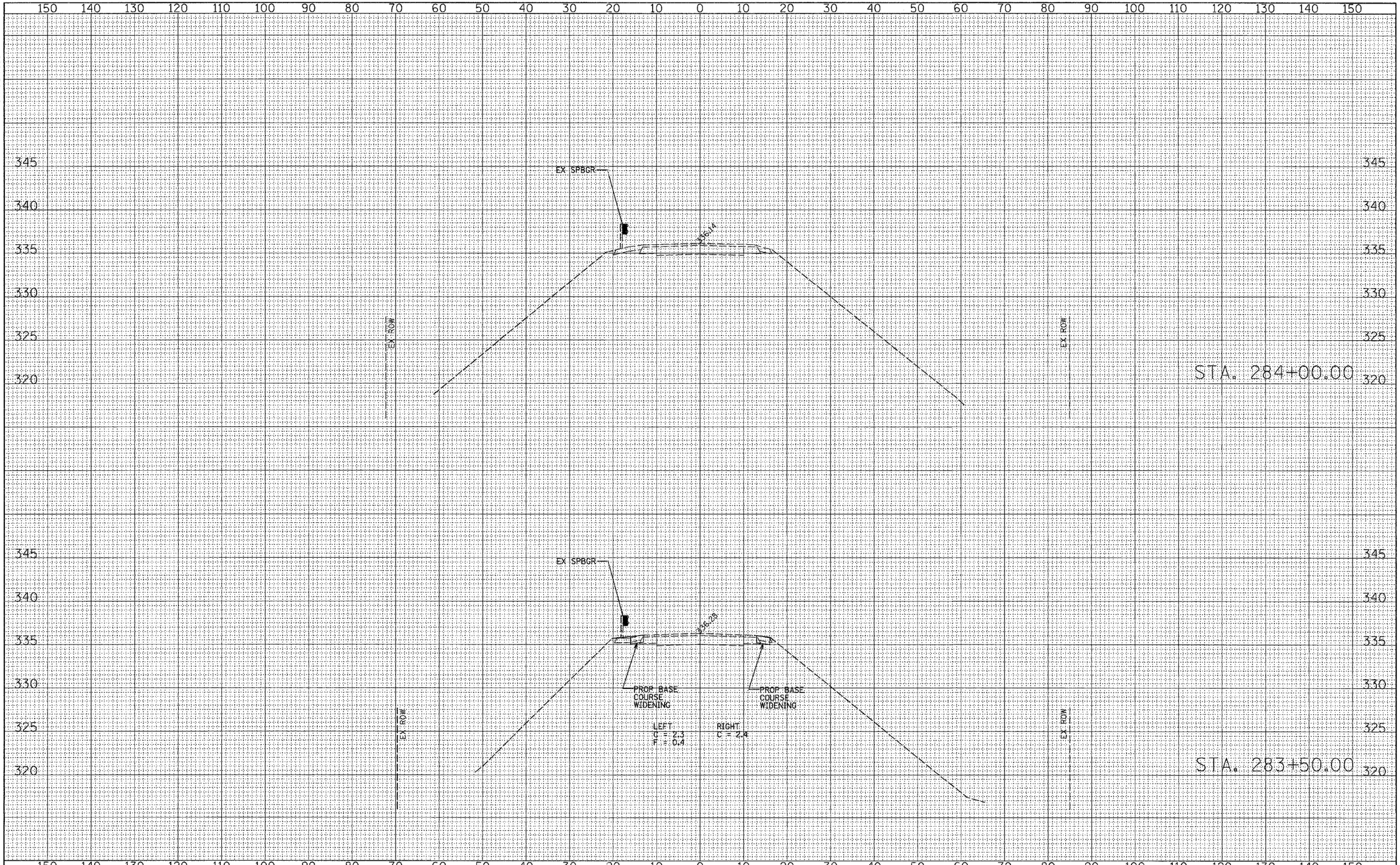
FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAS ROUTE 1907 (IL 127) CROSS SECTIONS

SCALE: | SHEET NO. 5 OF 6 SHEETS | STA. 283+50.00 | TO STA. 284+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	44
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

MODJESKI and MASTERS
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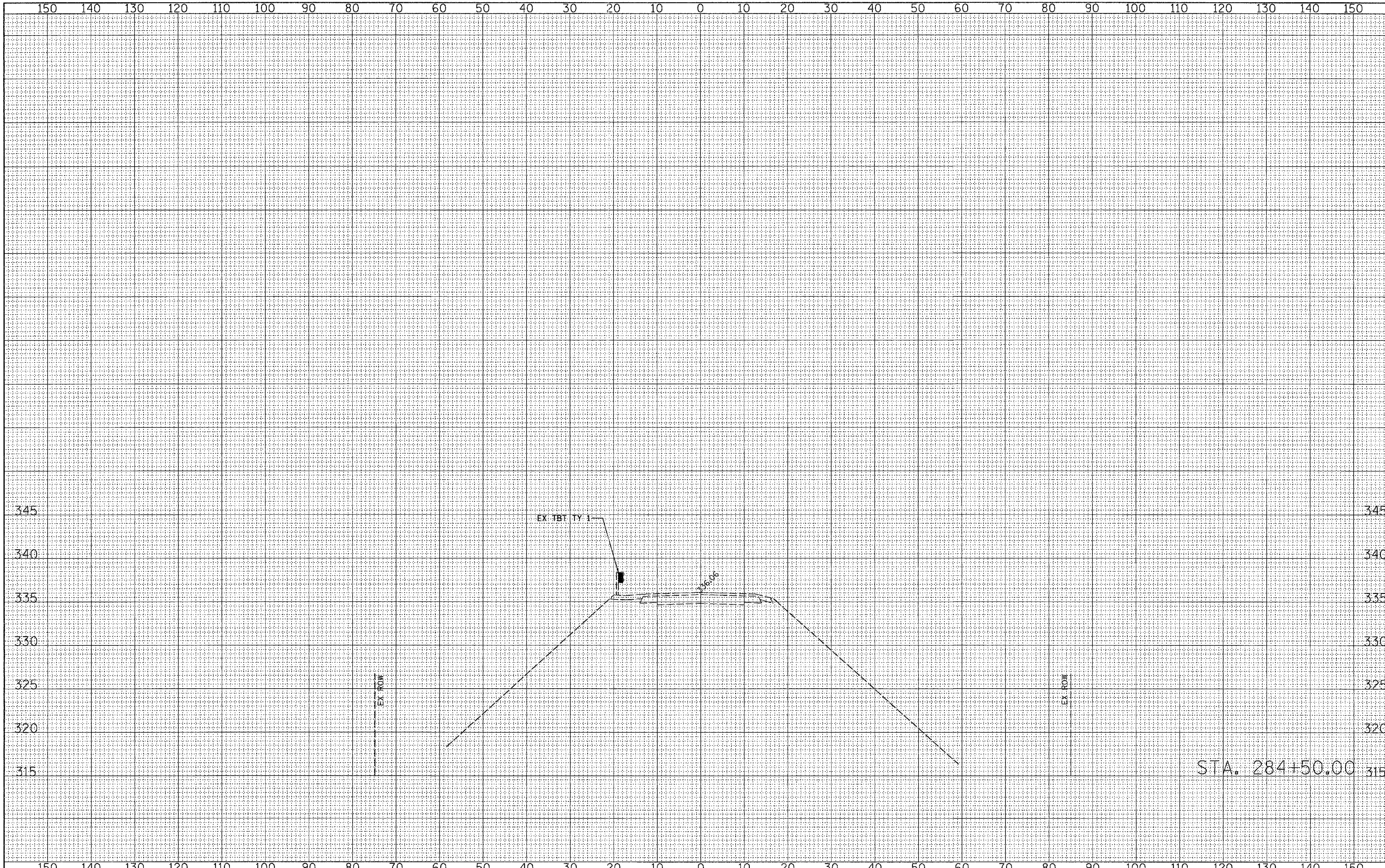
FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	DATE
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	DATE
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		



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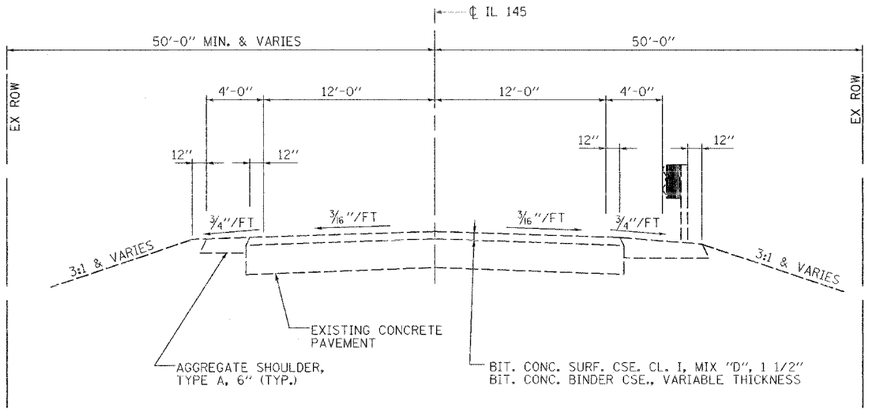
	PLOT DATE = $DATE$	DATE - 03/04/08	REVISED -	

FAS ROUTE 1907 (IL 127) CROSS SECTIONS

SCALE: | SHEET NO. 6 OF 6 SHEETS | STA. 284+50.00 TO STA. 284+50.00

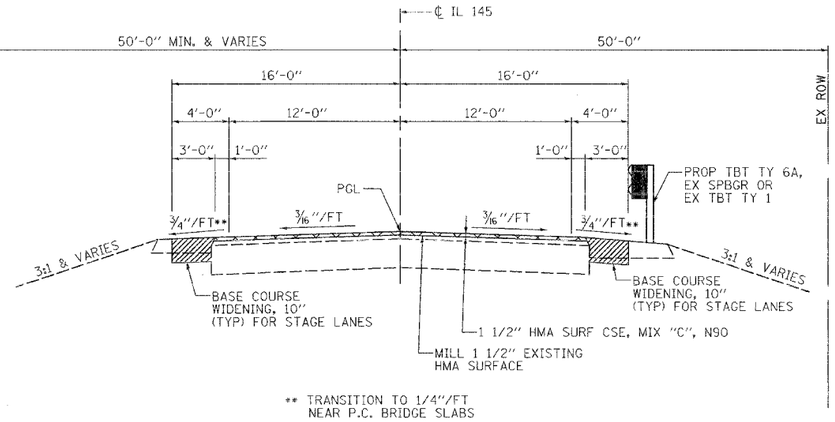
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1907	21BR-1	ALEXANDER	82	45
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



WITHOUT GUARDRAIL **WITH GUARDRAIL**

EXISTING TYPICAL ROADWAY SECTION

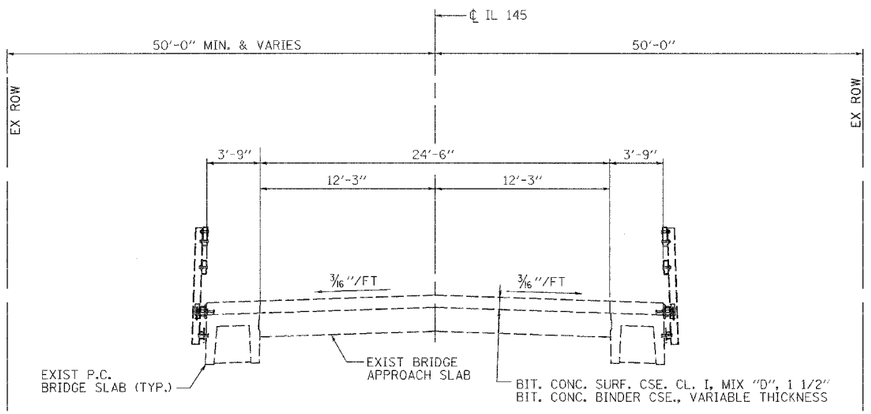
STA. 531+15 TO 532+50 LT
STA. 531+15 TO 532+73 RT
STA. 533+81 LT TO 535+40
STA. 534+05 RT TO 535+40



WITHOUT GUARDRAIL **WITH GUARDRAIL**

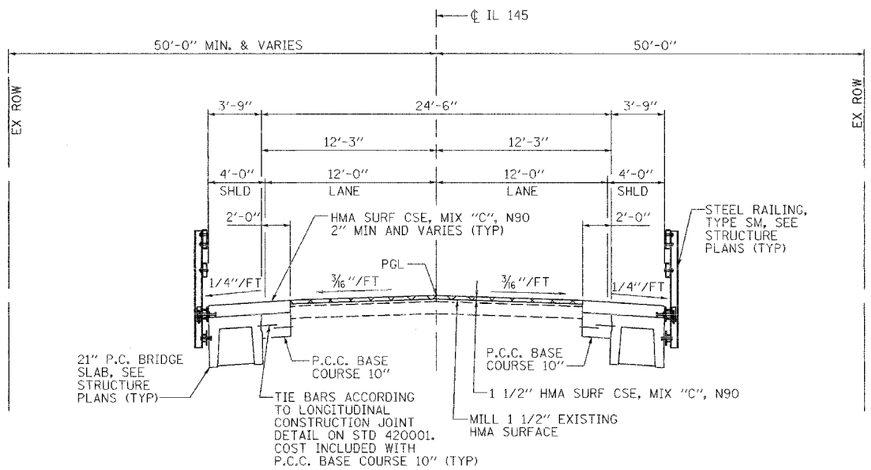
PROPOSED TYPICAL ROADWAY SECTION

STA. 531+15 TO 532+50 LT
STA. 531+15 TO 532+73 RT
STA. 533+81 LT TO 535+40
STA. 534+05 RT TO 535+40



EXISTING BRIDGE APPROACH SECTION

STA. 532+50 LT TO 532+72 LT
STA. 532+73 RT TO 532+99 RT
STA. 533+55 LT TO 533+81 LT
STA. 533+82 RT TO 534+05 RT



PROPOSED BRIDGE APPROACH SECTION

STA. 532+50 LT TO 532+72 LT
STA. 532+73 RT TO 532+99 RT
STA. 533+55 LT TO 533+81 LT
STA. 533+82 RT TO 534+05 RT

NOTE: BASE COURSE WIDENING SHALL EXTEND TO THE P.C. BRIDGE SLAB AT EACH CORNER OF THE STRUCTURE. STATIONS GIVEN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED.

HMA MIXTURE REQUIREMENTS

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

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FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
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	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) TYPICAL SECTIONS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. 531+15 TO STA. 535+40

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	46
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

PAVEMENT MARKING SCHEDULE

LOCATION	DESCRIPTION	SHORT-TERM PAVEMENT MARKING	PAINT PAVEMENT MARKING - LINE 4"	TEMP PAVEMENT MARKING - LINE 4"
		FOOT	FOOT	FOOT
STA. 529+63 TO STA. 531+40, CENTERLINE	SKIP DASH YELLOW CENTERLINE	177		
STA. 532+40 TO STA. 534+15, CENTERLINE	SKIP DASH YELLOW CENTERLINE	175		
STA. 535+15 TO STA. 536+86, CENTERLINE	SKIP DASH YELLOW CENTERLINE	171		
STA. 529+63 TO STA. 531+40, CENTERLINE	SKIP DASH YELLOW CENTERLINE		45	45
STA. 532+40 TO STA. 534+15, CENTERLINE	SKIP DASH YELLOW CENTERLINE		44	44
STA. 535+15 TO STA. 536+86, CENTERLINE	SKIP DASH YELLOW CENTERLINE		43	43
STA. 531+30.50 TO STA. 535+24.50, LT	SOLID WHITE EDGE LINE		394	394
STA. 531+29 TO STA. 535+26, RT	SOLID WHITE EDGE LINE		397	397
	TOTALS	**523**	**923**	**923**

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL TYPE 6A	GUARDRAIL MARKERS TYPE A	BARRIER WALL MARKERS, TYPE B	STEEL RAILING, TYPE SM
	EACH	EACH	EACH	FOOT
STRUCTURE NO. 064-0008 - NE	1	1		
STRUCTURE NO. 064-0008 - NW	1	1		
STRUCTURE NO. 064-0008 - SE	1	1		
STRUCTURE NO. 064-0008 - SW	1	1		
STRUCTURE NO. 064-0008 - BRIDGE			4	264
TOTALS	**4**	**4**	**4**	**264**

GUARDRAIL REMOVAL SCHEDULE

LOCATION	FOOT
STRUCTURE NO. 064-0008 - NE	45*
STRUCTURE NO. 064-0008 - NW	45*
STRUCTURE NO. 064-0008 - SE	45*
STRUCTURE NO. 064-0008 - SW	45*
TOTAL	**180***

* QUANTITY MAY VARY DEPENDING ON LAYOUT PROPOSED BY THE CONTRACTOR. SEE SHEET NO. 53 FOR DETAILS.

BASE COURSE SCHEDULE

LOCATION	PPC BASE COURSE, 10"	BASE COURSE WIDENING, 10"
	SQ YD	SQ YD
NE QUADRANT	6	45
NW QUADRANT	5	53
SE QUADRANT	5	53
SW QUADRANT	6	45
TOTALS	**22**	**196**

PAVEMENT MARKER REMOVAL SCHEDULE

LOCATION	RRPM REMOVAL
	EACH
STA. 532+50	1
STA. 533+30	1
STA. 534+10	1
TOTALS	**3**

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER	TEMPORARY EROSION CONTROL SEEDING (2 APPLICATIONS)
	FOOT	POUND
NE QUADRANT	165	10
NW QUADRANT	205	10
SE QUADRANT	205	10
SW QUADRANT	165	10
TOTALS	**740**	**40**

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	18	29
EDGELINES	TEMPORARY	592	
STA. 531+30.50 TO STA. 535+24.50, LT	EDGELINES		132
STA. 531+29 TO STA. 532+40, RT	EDGELINES		37
STA. 534+15 TO STA. 535+26, RT	EDGELINES		37
	TOTALS	**610**	**235**

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	0.05	0.05	4.5	4.5	4.5	0.1	0.1
NW QUADRANT	0.05	0.05	4.5	4.5	4.5	0.1	0.1
SE QUADRANT	0.05	0.05	4.5	4.5	4.5	0.1	0.1
SW QUADRANT	0.05	0.05	4.5	4.5	4.5	0.1	0.1
TOTALS	**0.2**	**0.2**	**18**	**18**	**18**	**0.4**	**0.4**

HMA SURF REMOVAL SCHEDULE

LOCATION	BUTT JOINT
	SQ. YD
STA. 532+40 TO SOUTH ABUTMENT	117
NORTH ABUTMENT TO STA. 534+15	119
TOTAL	**236**

REMOVAL SCHEDULE

LOCATION	PAVEMENT REMOVAL
	SQ YD
NE QUADRANT	6
NW QUADRANT	5
SE QUADRANT	5
SW QUADRANT	6
TOTAL	**22**

EARTHWORK SCHEDULE

LOCATION	SUITABLE EARTH EXCAVATION (WIDENING)	SUITABLE EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT (NOT A PAY ITEM)	EARTHWORK BALANCE WASTER (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD
NE QUADRANT	13	10	2.5	+7.5
NW QUADRANT	15	11	3	+8.0
SE QUADRANT	15	11	3	+8.0
SW QUADRANT	13	10	2.5	+7.5
TOTALS	**56**	**42**	**11**	**+31**

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

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (PRIME COAT)	AGGREGATE (PRIME COAT)	HMA SURFACE COURSE, MIX "C", N90
	GALLON	TON	TON
NORTH APPROACH	46	0.5	15
SOUTH APPROACH	46	0.5	15
TOTALS	**92**	**1**	**30**

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FILE NAME = $FILE1$	USER NAME = $USER$	DESIGNED - JMH	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**FAP ROUTE 132 (IL 145) SCHEDULE OF QUANTITIES**		
		DRAWN - AEC	REVISED -				
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. --- TO STA. ---
	PLOT DATE = $DATE$	DATE - 03/12/08	REVISED -				

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	47
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

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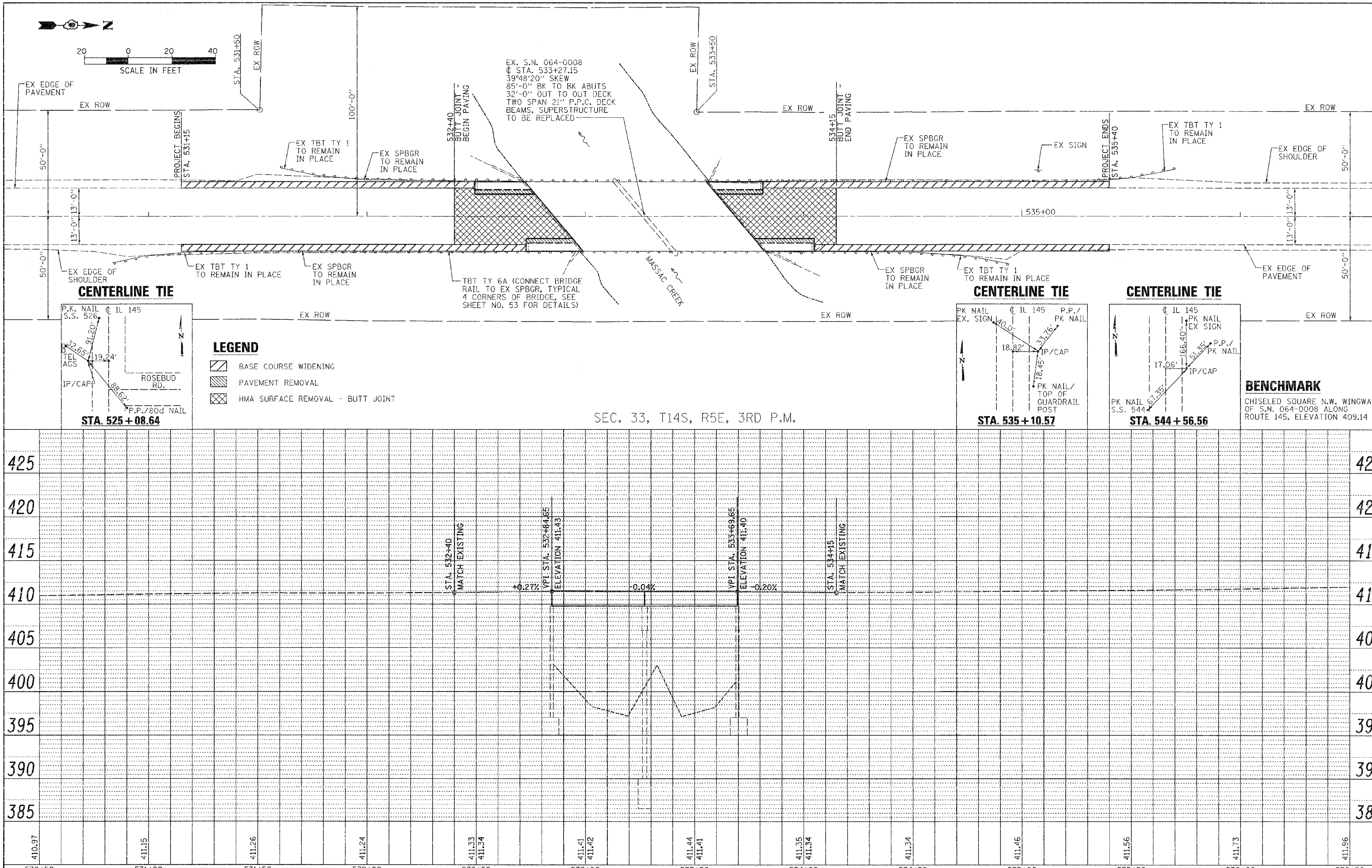

PLAN: SURVEYED / PLOTTED / ALIGNMENT CHECKED / R.E. OF WAY CHECKED / CADD FILE NAME; NOTE BOOK; NO.; BY; DATE

PROFILE: SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTATIONS CHKD; NOTE BOOK; NO.; BY; DATE

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		DRAWN - AEC	REVISED -
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	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) PLAN AND PROFILE

SCALE: 1"=20' | SHEET NO. 1 OF 1 SHEETS | STA. 530+50 TO STA. 536+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	48

CONTRACT NO. 78032

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

SCHEDULE OF QUANTITIES

TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
531+40		535+15	375
		TOTAL	375

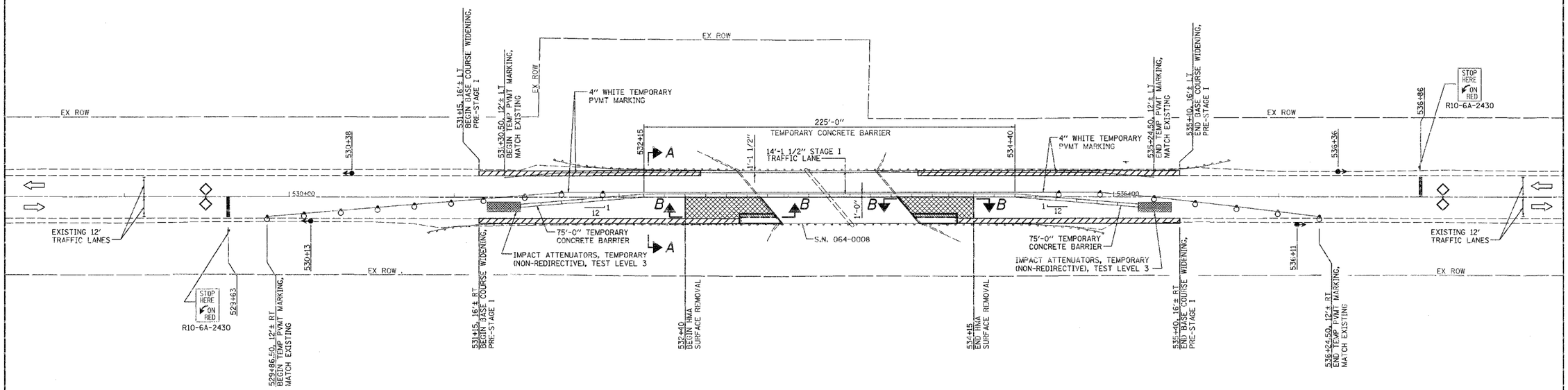
TEMPORARY BRIDGE TRAFFIC SIGNALS - 1 EACH

TEMPORARY RUMBLE STRIPS - 3 EACH

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

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 AT SOUTH END OF PROJECT ONLY.



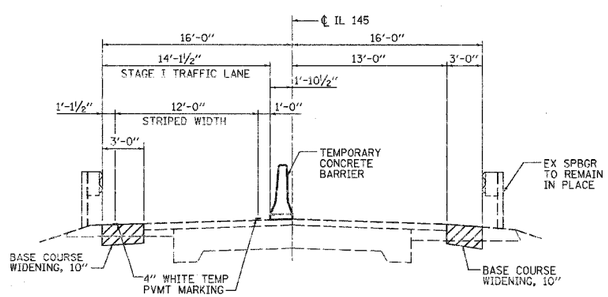
N

30 0 30 60

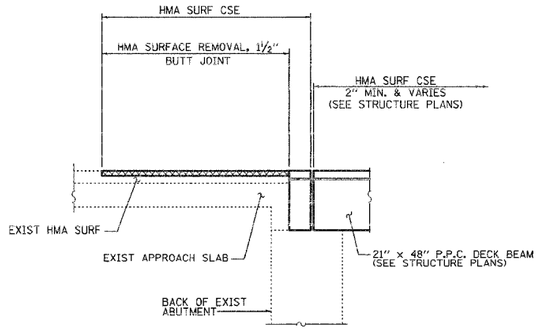
SCALE IN FEET

LEGEND

- TRAFFIC SIGNAL
- DRUM WITH STEADY BURNING LIGHT
- BASE COURSE WIDENING, 10"
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL - BUTT JOINT



SECTION A-A



SECTION B-B

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		DRAWN - AEC	REVISED -
	PLOT SCALE = #SCALE#	CHECKED - JMH	REVISED -
	PLOT DATE = #DATE#	DATE - 03/12/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) STAGE I CONSTRUCTION

SCALE: 1"=30' | SHEET NO. 1 OF 2 SHEETS | STA. 528+30 | TO STA. 537+70

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	49
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SCHEDULE OF QUANTITIES

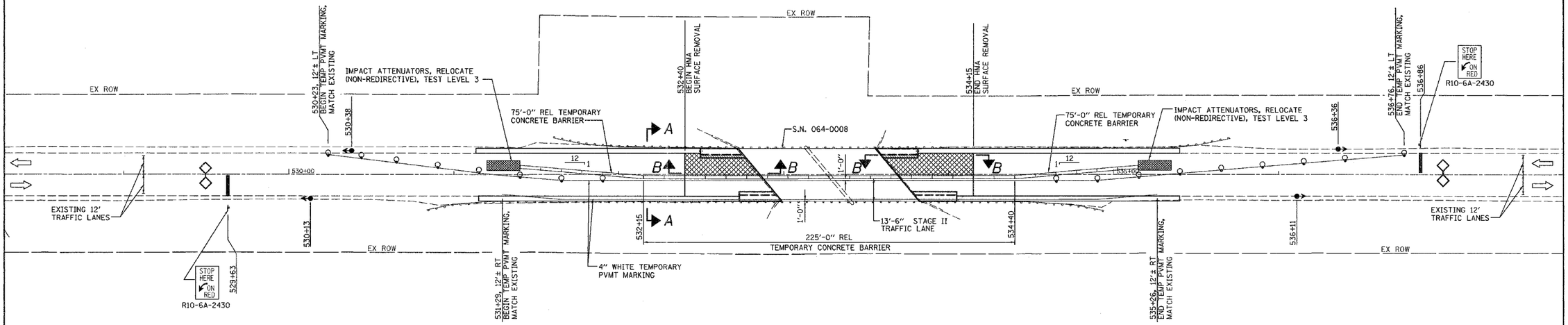
RELOCATE TEMPORARY CONCRETE BARRIER

STATION	TO	STATION	FEET
531+40		535+15	375
		TOTAL	375

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

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. MAINTAIN TEMPORARY RUMBLE STRIPS AT LOCATIONS SHOWN ON STANDARD 701321 AT SOUTH END OF PROJECT ONLY.



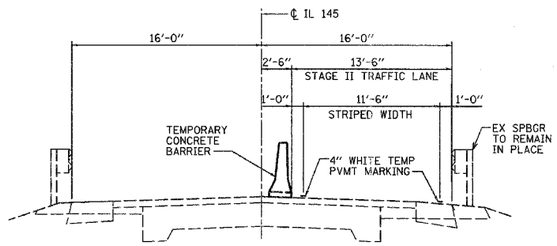
N

30 0 30 60

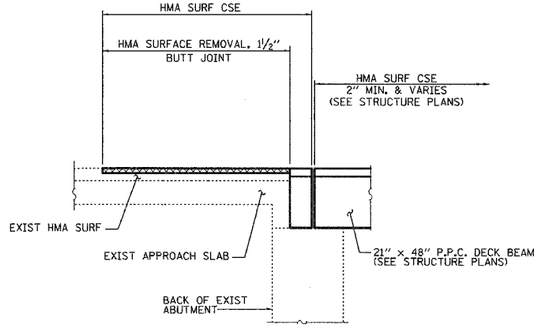
SCALE IN FEET

LEGEND

- TRAFFIC SIGNAL
- DRUM WITH STEADY BURNING LIGHT
- PAVEMENT REMOVAL
- HMA SURFACE REMOVAL - BUTT JOINT



SECTION A–A



SECTION B–B

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

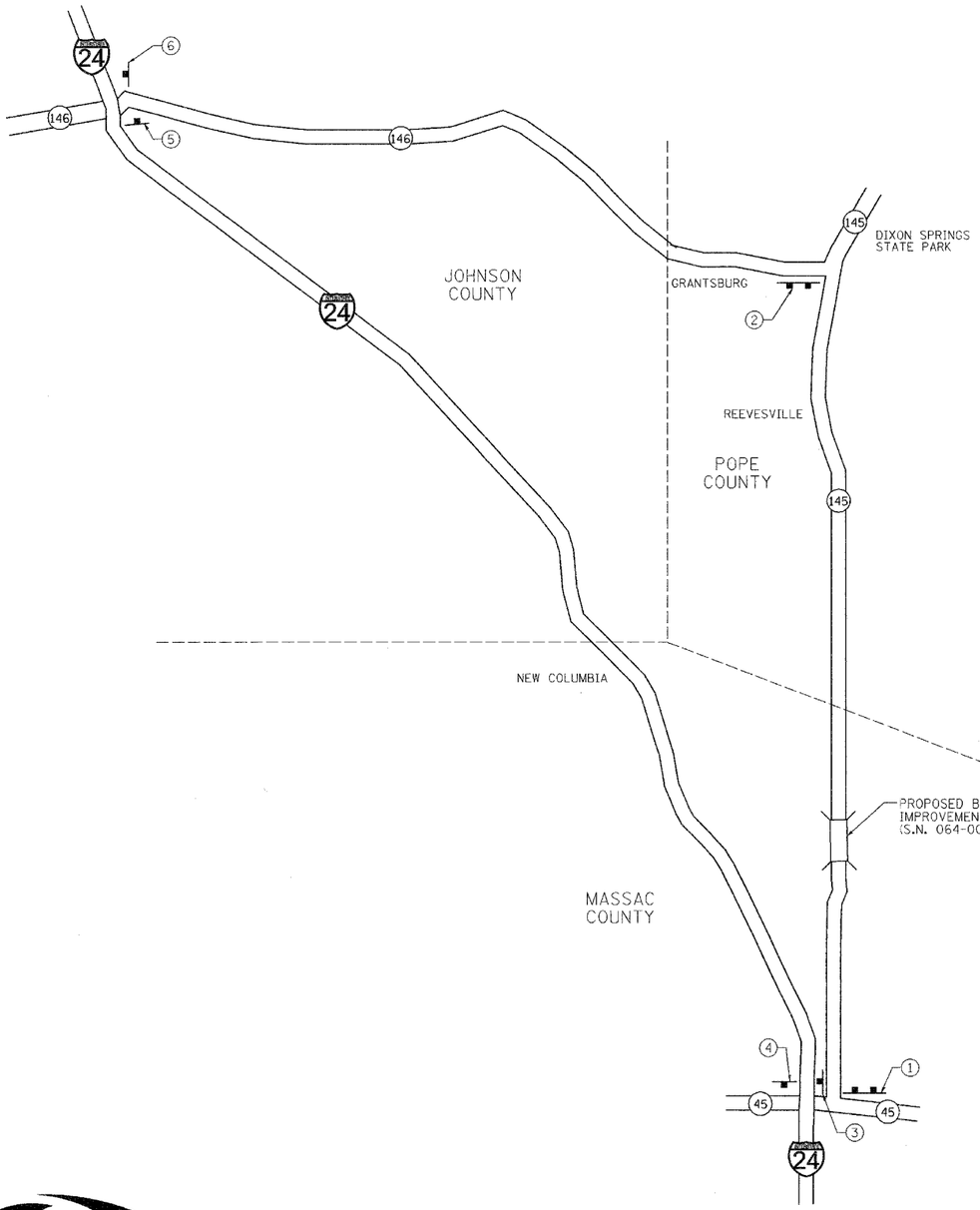
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JHM	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 03/12/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) STAGE II CONSTRUCTION

SCALE: 1'=30' | SHEET NO. 2 OF 2 SHEETS | STA. 528+30 TO STA. 537+70

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	50
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



DETOUR SIGNING PLAN

DETOUR NOTES:

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

SIGN LEGEND STAGE I

① WIDE LOADS OVER 12'-7"
DETOUR VIA
WEST: US 45 | WEST: 24 | EAST: ILLINOIS 146
60"x90"

② WIDE LOADS OVER 12'-7"
DETOUR VIA
WEST: ILLINOIS 146 | EAST: 24 | EAST: US 45
60"x90"

SIGN LEGEND STAGE II

① WIDE LOADS OVER 12'-0"
DETOUR VIA
WEST: US 45 | WEST: 24 | EAST: ILLINOIS 146
60"x90"

② WIDE LOADS OVER 12'-0"
DETOUR VIA
WEST: ILLINOIS 146 | EAST: 24 | EAST: US 45
60"x90"

SIGN LEGEND STAGE I AND II

③ WEST 30"x15" / 24 30"x24" / WIDE LOAD 21"x15" / DETOUR 30"x24"

④ EAST 30"x15" / US 45 30"x24" / WIDE LOAD 21"x15" / DETOUR 30"x24"

⑤ EAST 30"x15" / ILLINOIS 146 30"x24" / WIDE LOAD 21"x15" / DETOUR 30"x24"

⑥ EAST 30"x15" / 24 30"x24" / WIDE LOAD 21"x15" / DETOUR 30"x24"

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FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -

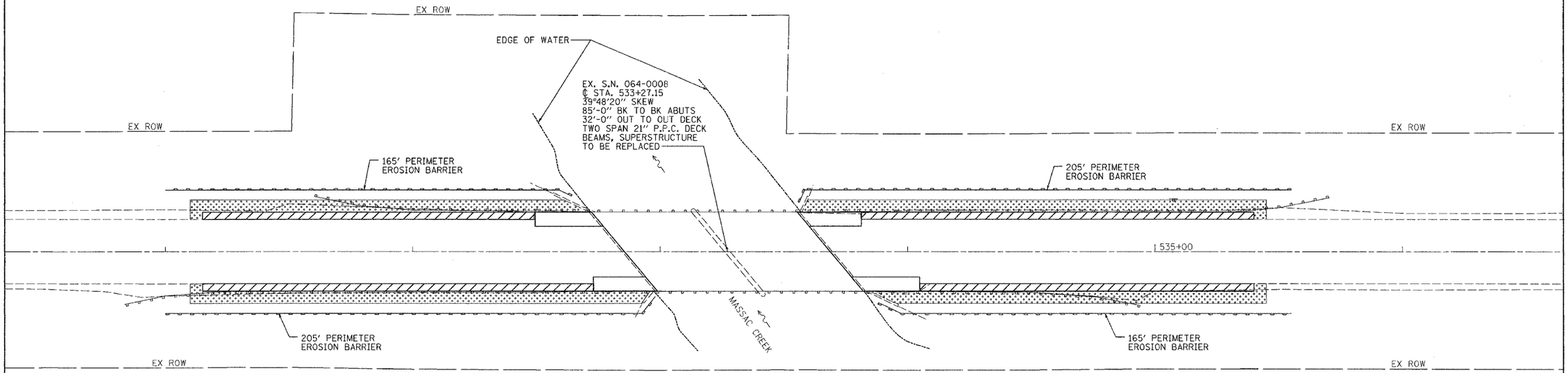
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) WIDE LOAD DETOUR

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. --- | TO STA. ---

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	51
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT



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20 0 20 40

SCALE IN FEET

LEGEND

- APPROXIMATE SEEDING AND MULCH AREAS
- PERIMETER EROSION BARRIER
- BASE COURSE WIDENING

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FILE NAME = ⊕FILE1⊕	USER NAME = ⊕USER⊕	DESIGNED - JMH	REVISED -
		DRAWN - PRC	REVISED -
	PLOT SCALE = ⊕SCALE⊕	CHECKED - JMH	REVISED -
	PLOT DATE = ⊕DATE⊕	DATE - 02/04/08	REVISED -

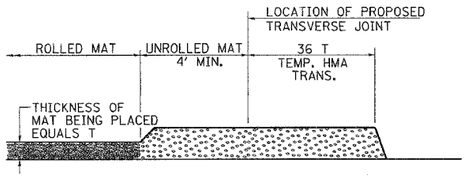
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) EROSION CONTROL PLAN

SCALE: 1"=20' | SHEET NO. 1 OF 1 SHEETS | STA. 530+50 | TO STA. 536+50

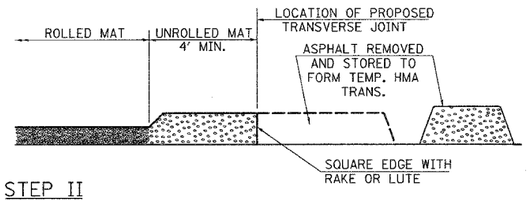
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	52
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

TEMPORARY HOT-MIX ASPHALT TRANSITIONS



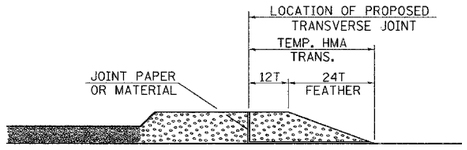
STEP I

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



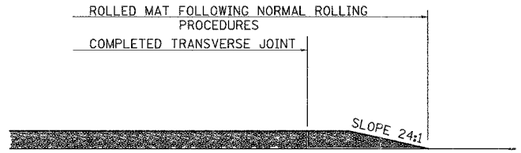
STEP II

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



STEP III

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



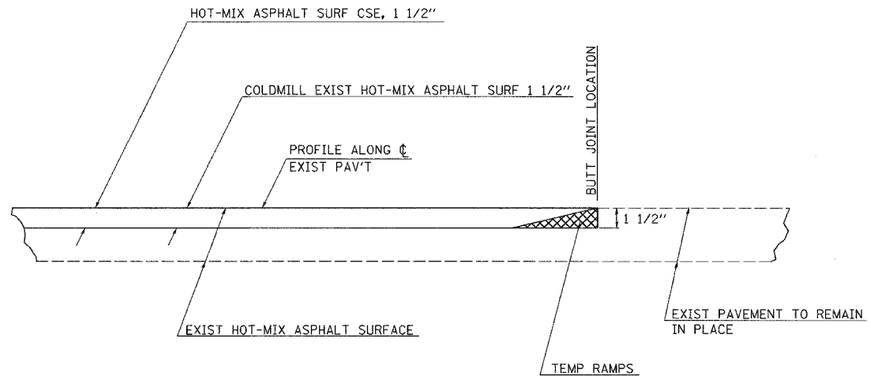
STEP IV

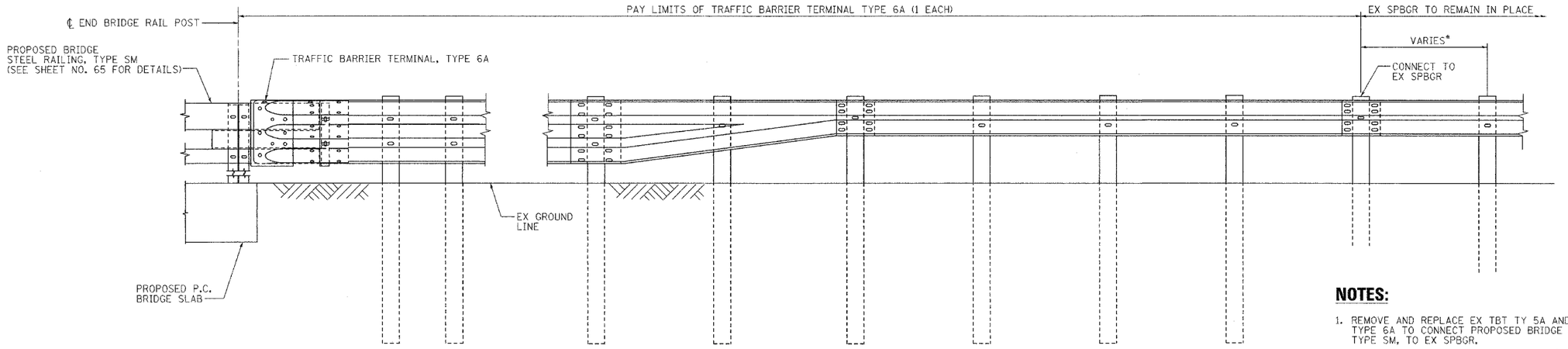
1. COMPLETE TEMPORARY TRANSITION BY ROLLING.
2. TO RESUME PAVING, AT THE JOINT, REMOVE TEMPORARY TRANSITION AND DISPOSE OF THE MATERIAL ACCORDING TO ART. 202.03 OF THE STD. SPECS. (COST INCLUDED IN THE CONTRACT).
3. CONSTRUCTING THE TEMPORARY TRANSITIONS WILL NOT BE PAID FOR SEPARATELY IN ACCORDANCE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

STD. 9-26

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

BUTT JOINT DETAIL





GUARDRAIL CONNECTION DETAIL

* POST SPACING AS REQUIRED TO MATCH TBT TYPE 6A TO EX SPBGR (6'-3" MAX.)

NOTES:

1. REMOVE AND REPLACE EX TBT TY 5A AND SPBGR WITH TBT TYPE 6A TO CONNECT PROPOSED BRIDGE STEEL RAILING, TYPE SM, TO EX SPBGR.
2. CONTRACTOR MAY USE EXISTING STEEL POSTS OR INSTALL NEW/ADDITIONAL POSTS AS REQUIRED. THE ENGINEER SHALL APPROVE TBT TYPE 6A LAYOUT PRIOR TO INSTALLATION.
3. GUARDRAIL HEIGHT SHALL BE SET TO THAT REQUIRED BY THE FINAL PROFILE.
4. UNLESS OTHERWISE NOTED, DETAILS SHALL BE AS SHOWN ON "TRAFFIC BARRIER TERMINAL, TYPE 6A, STANDARD 631032".
5. COST OF WORK SHOWN TO BE INCLUDED IN TRAFFIC BARRIER TERMINAL, TYPE 6A.

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Consulting Engineers
SINCE 1893

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) MISCELLANEOUS DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. --- | TO STA. ---

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	53
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

Bench Mark 640008: Chiseled square in northwest wingwall of SN 064-0008. Elevation 409.14

Existing Structure: The original structure was built in 1933 as a single span pony truss on reinforced concrete closed abutments with a length of 85'-0" back-to-back of abutments. The structure was rehabilitated in 1981. A pier was constructed at midspan and the abutments were modified to accomodate a wider superstructure. The truss was replaced with a two-span P.P.C. deck beam superstructure with a total width of 32'-0" out-to-out of superstructure.

Proposed Improvements: The existing superstructure is to be replaced with P.P.C. deck beams and a HMA surface course and waterproofing. Minor substructure repairs are required. Traffic to be maintained at all times utilizing stage construction.

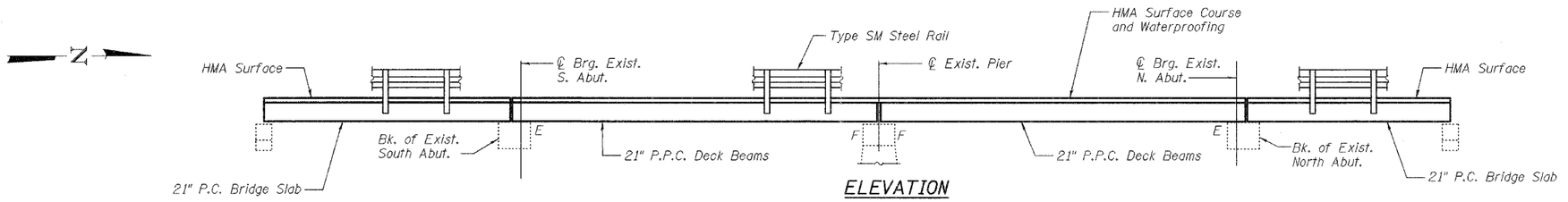
No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

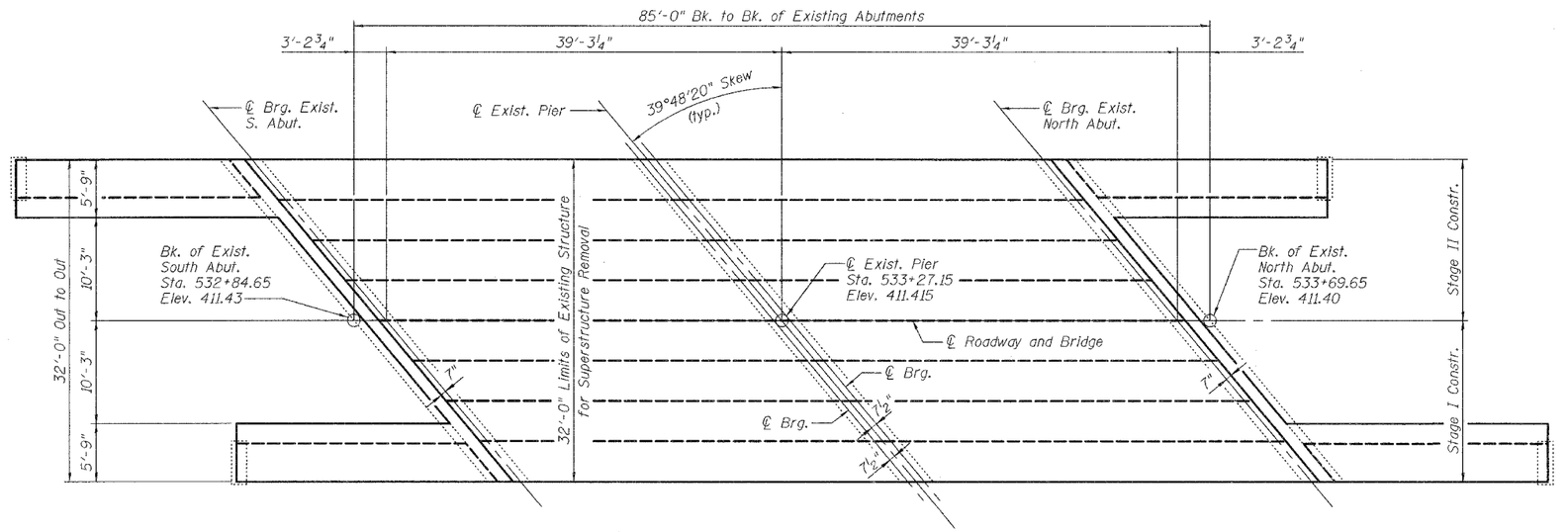
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	54
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
16 SHEETS

Contract #78032



ELEVATION



PLAN

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications, 4th Edition

LOADING HL-93

No allowance for Future Wearing Surface.

DESIGN STRESSES

FIELD UNITS

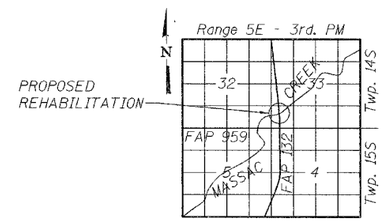
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f_{pu} = 270,000 psi ($\frac{1}{2}$"ϕ low lax. strands)
f_{pbt} = 201,960 psi ($\frac{1}{2}$"ϕ low lax strands)

PRECAST UNITS

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

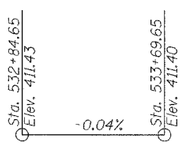


LOCATION SKETCH

STATION 533+27.15
REBUILT 200_ BY
STATE OF ILLINOIS
F.A.P. RT. 132 SEC. 102BR-1
LOADING HL93
STR. NO. 064-0008

NAME PLATE
See Std. 515001

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



PROFILE GRADE
(Along ℄ Roadway)

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E Anderson (TJD)
ENGINEER OF BRIDGES AND STRUCTURES

DAVID W. PETERMEIER
081-005642
LICENSED STRUCTURAL ENGINEER OF
ILLINOIS

David W Petermeier 3/13/08

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

GENERAL PLAN & ELEVATION
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	55
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 2
16 SHEETS

Contract #78032

SCOPE OF WORK

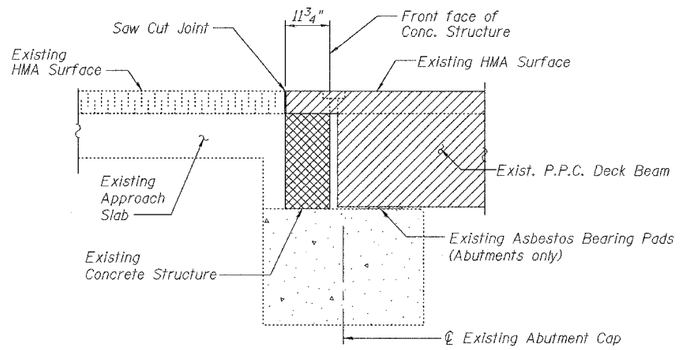
1. Remove existing surface, steel railing, deck beams, concrete structures, approach shoulder channel beams, and bearing pads.
2. Repair bearing seats and perform other repairs at abutments and pier as required.
3. Reconstruct a two-span P.P.C. deck beam superstructure with bituminous wearing surface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

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Hot-Mix Asphalt Surface Course, Mix "C", N90	Ton	29	-	29
Removal of Existing Superstructures	Each	1	-	1
Concrete Removal	Cu. Yd.	5.5	-	5.5
Concrete Structures	Cu. Yd.	7.0	-	7.0
Precast Concrete Bridge Slab	Sq. Ft.	366	-	366
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	2,559	-	2,559
Reinforcement Bars, Epoxy Coated	Pound	1,200	-	1,200
Bar Splicers	Each	16	-	16
Steel Railing, Type SM	Foot	264	-	264
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	84	-	84
Waterproofing Membrane System	Sq. Yd.	285	-	285
Concrete Sealer	Sq. Ft.	-	19	19
Epoxy Crack Injection	Foot	-	23	23
Removal of Existing Precast Concrete Units	Sq. Ft.	366	-	366
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	-	19	19
Asbestos Bearing Pad Removal	Each	-	40	40

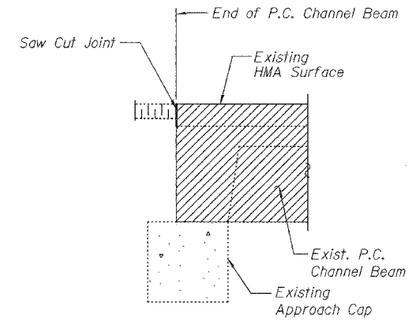
GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. 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.
4. Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.
5. Concrete Sealer shall be applied to the abutments and pier where concrete repairs are performed.
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 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 (21" Depth).
9. The minimum thickness of the HMA surface course shall be $1\frac{1}{2}$" and varies as required to adjust for the existing profile grade and beam camber.
10. Repair of the substructure shall be completed prior to placement of the new deck beams.



SECTION AT CENTERLINE ROADWAY

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



SECTION AT APPROACH SHOULDER

LIMITS OF EXISTING STRUCTURE FOR SUPERSTRUCTURE REMOVAL

Notes:
HMA removal over concrete structure included in the cost of Removal of Existing Superstructures.
Removal of concrete structure indicated by crosshatch included in the cost of Concrete Removal.
HMA removal over approach shoulder channel beam and removal of P.C. channel beams included in the cost of Removal of Existing Precast Concrete Units.
Existing bearing pads at abutments are made of graphited asbestos. The Contractor shall take appropriate precautions during the removal and disposal of these bearing pads.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

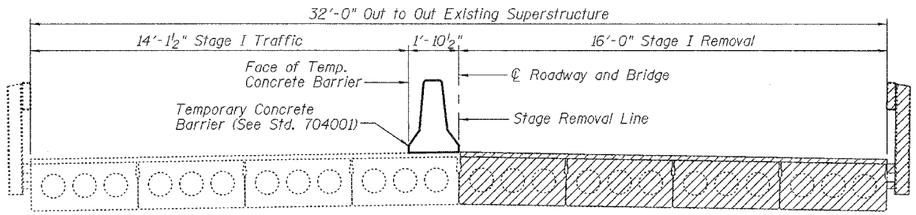
GENERAL STRUCTURE DATA
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

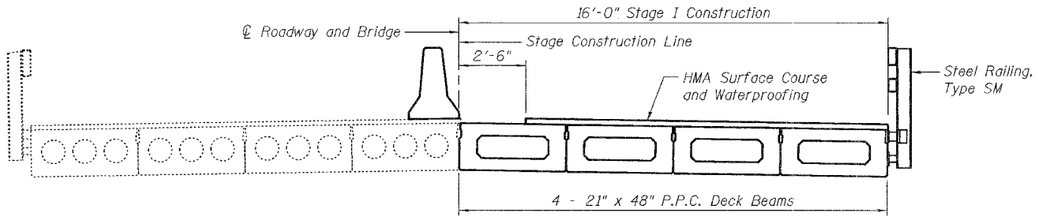
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	56
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 3
16 SHEETS

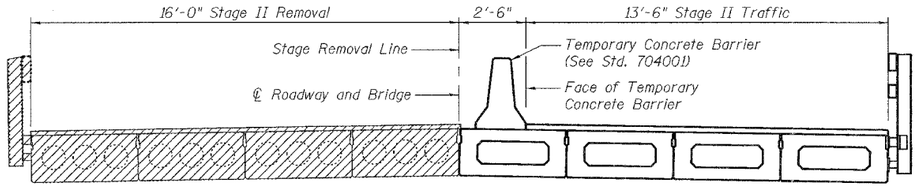
Contract #78032



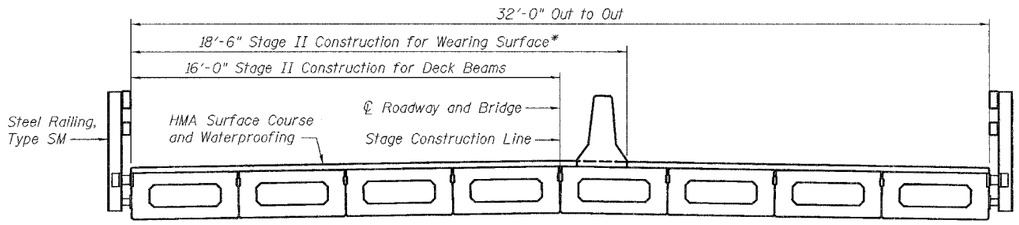
STAGE I REMOVAL
(Looking Upstation)



STAGE I CONSTRUCTION
(Looking Upstation)

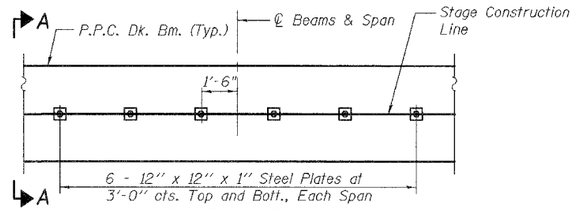


STAGE II REMOVAL
(Looking Upstation)

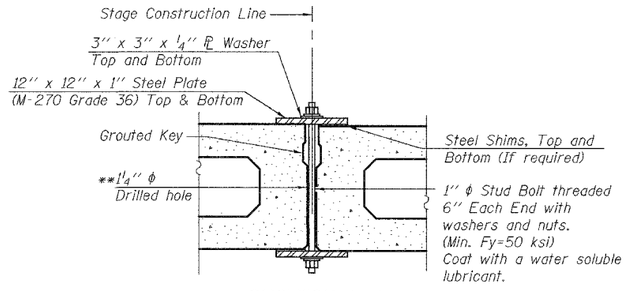


STAGE II CONSTRUCTION
(Looking Upstation)

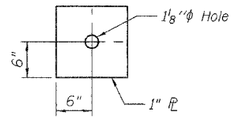
* Temporary concrete barrier to be removed immediately prior to placement of HMA wearing surface.



PARTIAL PLAN



SECTION A-A



CLAMPING PLATE

SHEAR KEY CLAMPING DETAILS

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

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

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

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

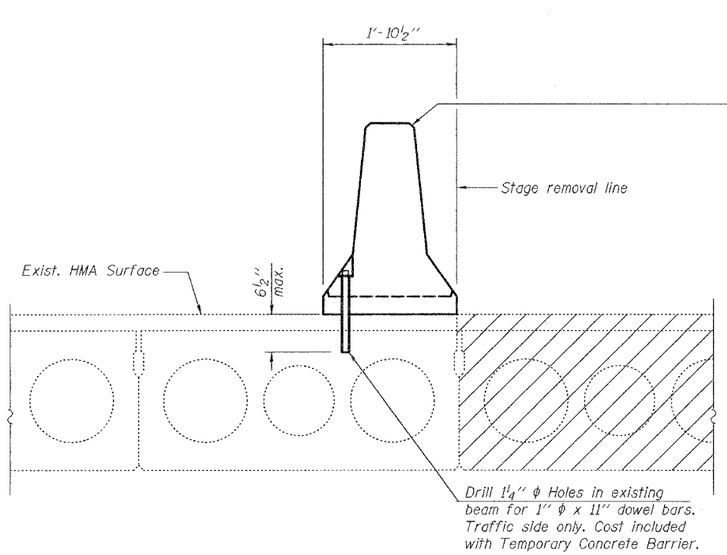
STAGE CONSTRUCTION DETAILS
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

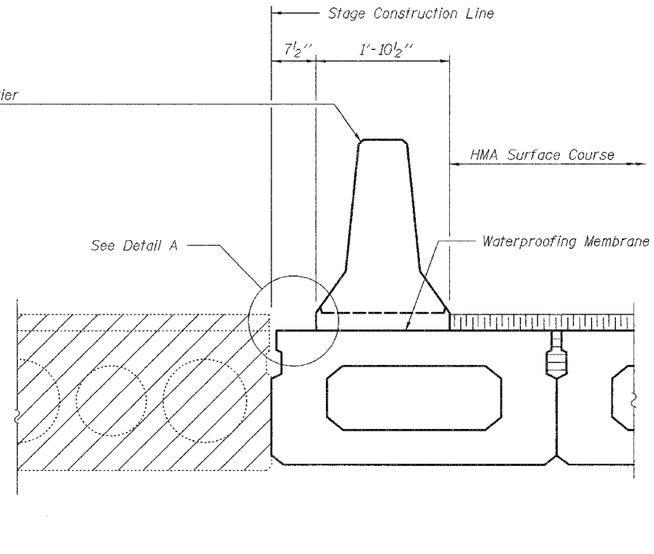
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	57
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 4
16 SHEETS

Contract #78032

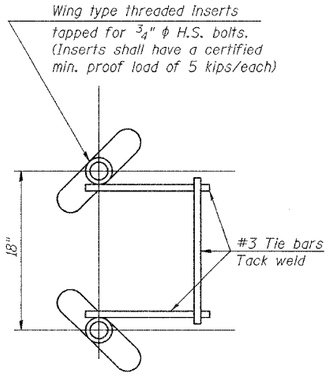


EXISTING PPC DECK BEAM

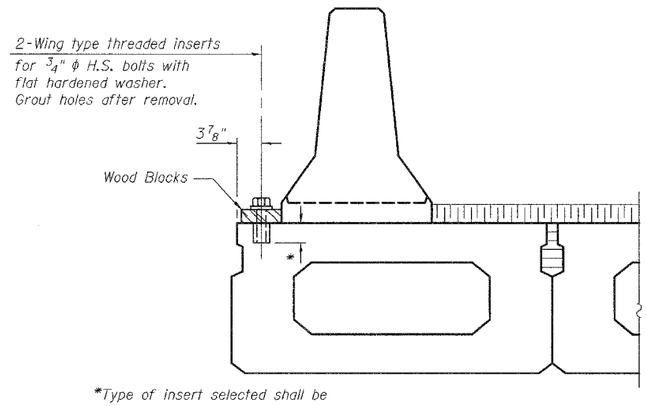


NEW PPC DECK BEAM

SECTIONS THRU PPC DECK BEAMS



INSERT DETAIL



*Type of insert selected shall be such that insert depth does not interfere with void.

DETAIL A

The Temporary Concrete Barrier and wood blocks shall not be removed until Stage II Construction PPC Deck Beams have been placed, shear keys grouted, and block-outs poured and cured.

NOTES

The ¾" high strength bolts used to connect the wood blocks shall be tightened to a snug fit without crushing the wood block.

The wing type threaded insert assembly shall be spaced 6'-0" longitudinally.

The Waterproofing Membrane shall extend under the Temporary Concrete Barrier without the asphalt sand seal protection layer. Once the Temporary Concrete Barrier has been removed and the penetrating primer, coal tar emulsion membrane, fiber-glass fabric and coal tar emulsion slurry layers of the Waterproofing Membrane is lapped 6", the asphalt sand seal protection layer shall be applied according to Section 581 of the Standard Specifications.

The cost for H.S. bolts, flat headed washers and wood block is included with Temporary Concrete Barrier.

The cost for wing type threaded inserts is included with Precast Prestressed Concrete Deck Beams (21" Depth).

See Roadway Plans for quantity of Temporary Concrete Barrier.

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Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

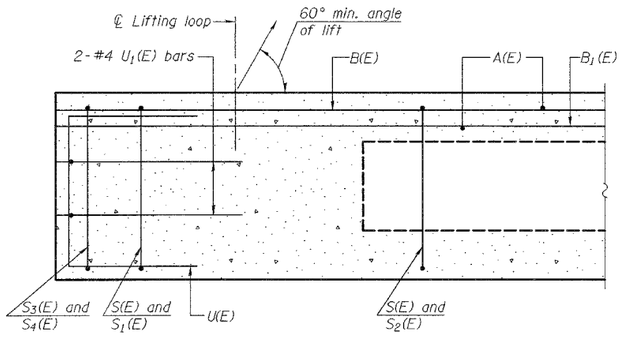
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION ILL. ROUTE 145 OVER MASSAC CREEK F.A.P. ROUTE 132 - SECTION 102BR-1 MASSAC COUNTY STATION 533+27.15 STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

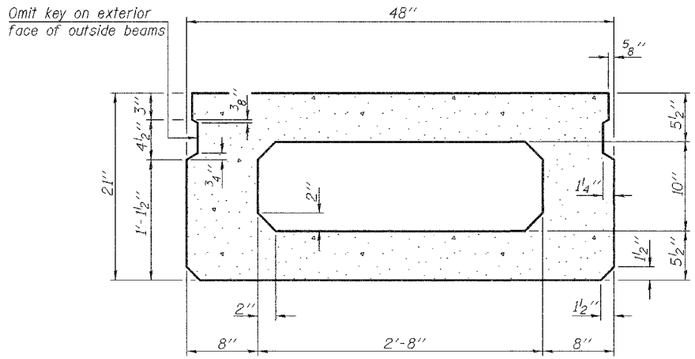
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	58
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
16 SHEETS

Contract #78032

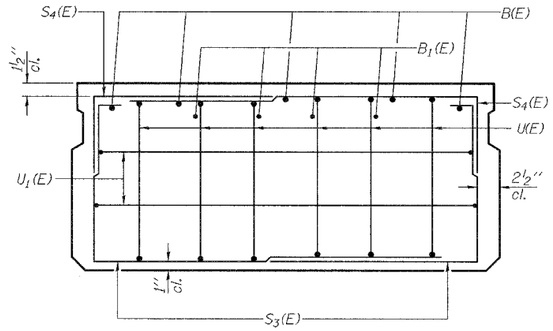


SECTION C-C

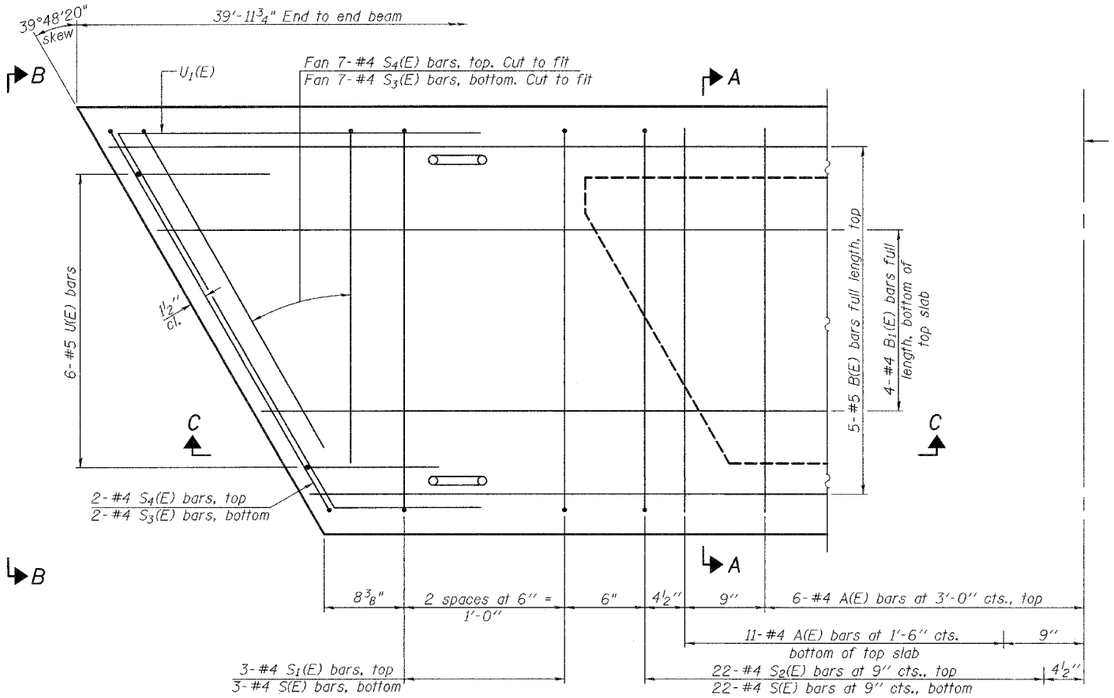


(16 Beams Required)

SECTION A-A
(Showing dimensions)

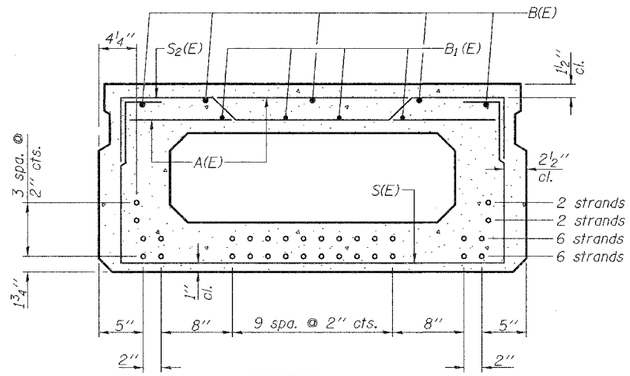


VIEW B-B



PLAN VIEW AT FIXED END
See Sheet 6 of 16 for Expansion End Detail

Note: 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.



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

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)	33	#4	3'-7"	—
B(E)	5	#5	38'-10"	—
$B_1(E)$	4	#4	38'-10"	—
C(E)	7	#5	2'-8"	⊃
E(E)	4	#5	2'-0"	⊏
S(E)	48	#4	7'-5"	⊏
$S_1(E)$	4	#4	6'-7"	⊏
$S_2(E)$	44	#4	6'-10"	⊐
$S_3(E)$	18	#4	4'-7"	⊐
$S_4(E)$	18	#4	4'-2"	⊐
$S_5(E)$	4	#4	3'-10"	⊐
$S_6(E)$	4	#4	3'-5"	⊐
U(E)	6	#5	4'-0"	⊏⊐
$U_1(E)$	4	#4	10'-0"	⊏⊐
$U_2(E)$	6	#5	3'-3"	⊏

Notes:
See Sheets 6 and 7 of 16 for additional details.
See Sheet 7 of 16 for Bill of Material.

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Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/98

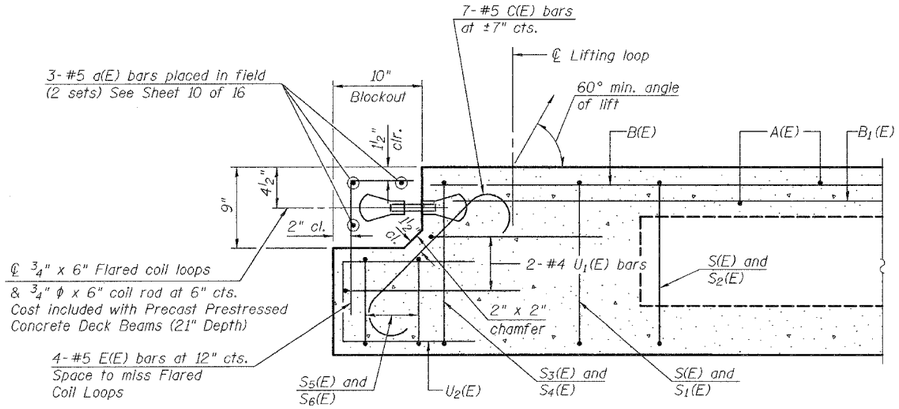
SUPERSTRUCTURE DETAILS
21" X 48" DECK BEAM
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	59
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

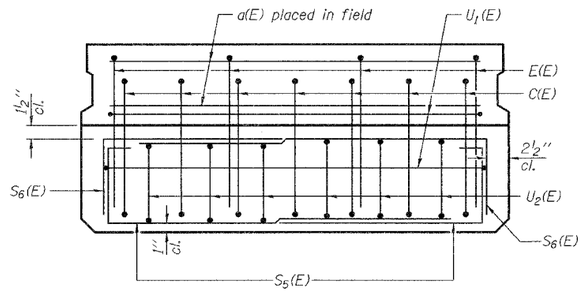
SHEET NO. 6
16 SHEETS

Contract #78032



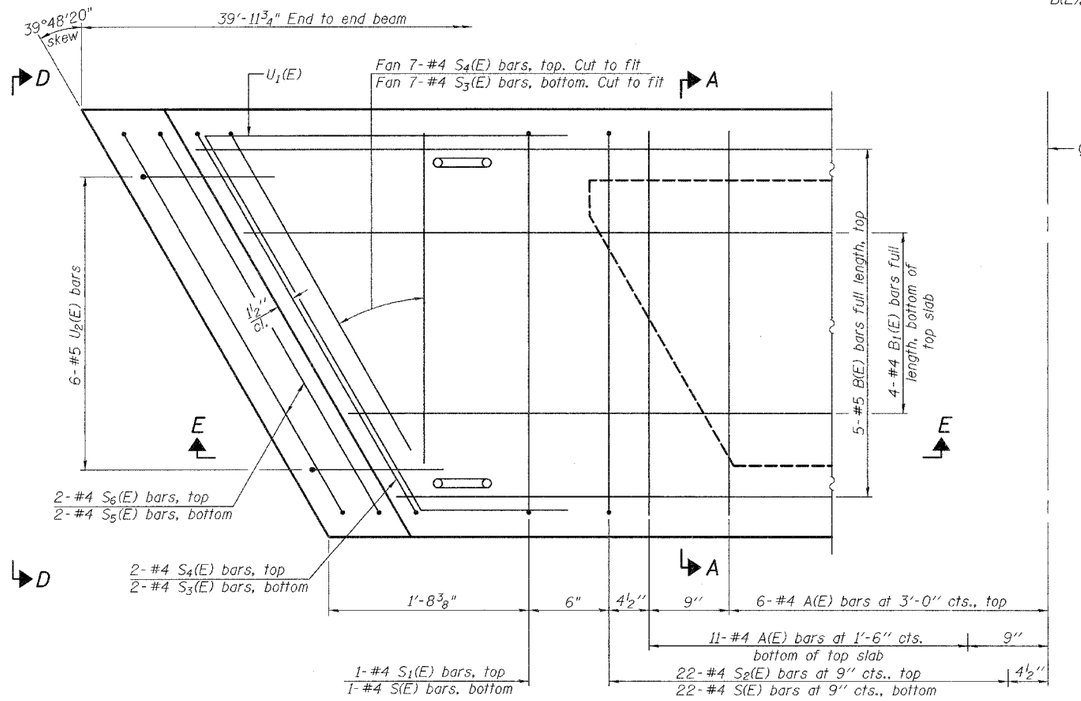
SECTION E-E

Horizontal dimensions at right angles.



VIEW D-D

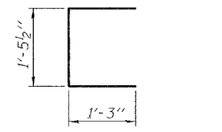
B(E), B1(E), S3(E) and S4(E) bars not shown, see Sheet 5 of 16.



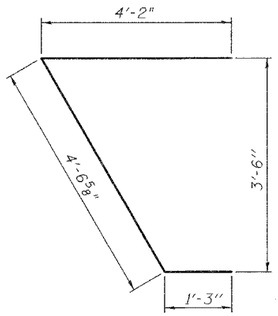
PLAN VIEW AT EXP. END

See Sheet No. 5 of 16 for Section A-A

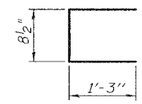
Note: Spacing of S(E) and S_2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



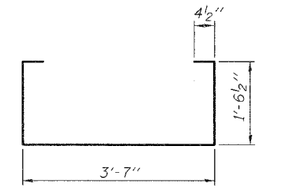
BAR U(E)



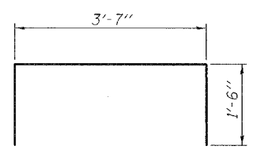
BAR U_1(E)



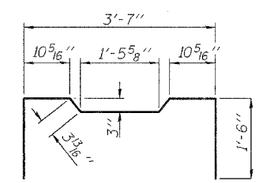
BAR U_2(E)



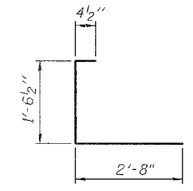
BAR S(E)



BAR S_1(E)



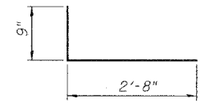
BAR S_2(E)



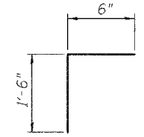
BAR S_3(E)

BAR S_4(E)

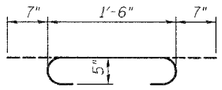
BAR S_5(E)



BAR S_6(E)



BAR E(E)



BAR C(E)

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Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

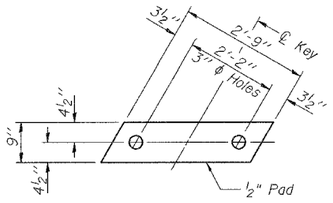
SUPERSTRUCTURE DETAILS
21" X 48" DECK BEAM DETAILS - 1
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

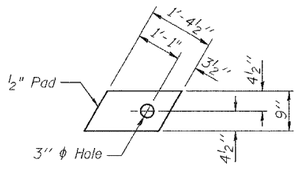
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	60
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

SHEET NO. 7
16 SHEETS

Contract #78032

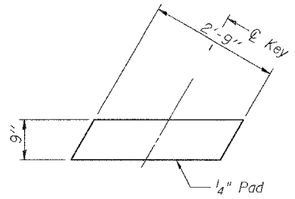


FABRIC BEARING PAD
(Interior)
(12 Required)

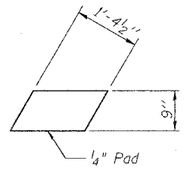


FABRIC BEARING PAD
(Exterior and Stage Constr. Line)
(8 Required)

FIXED

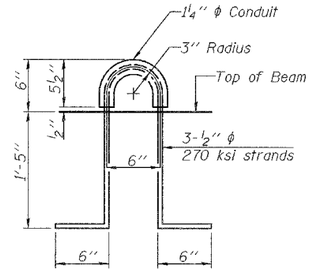


FABRIC BEARING PAD
(Interior)
(24 Required)

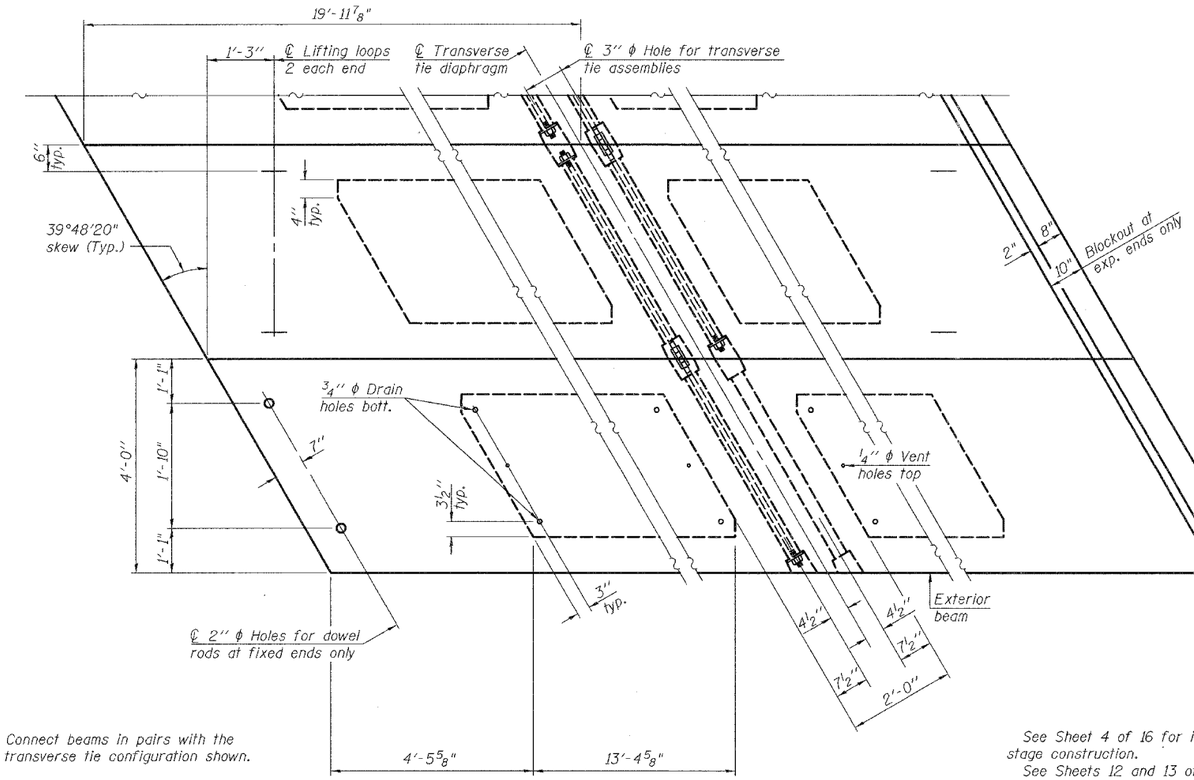


FABRIC BEARING PAD
(Exterior and Stage Constr. Line)
(16 Required)

EXPANSION

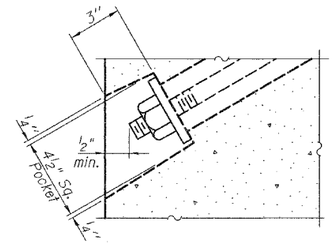


LIFTING LOOP DETAIL

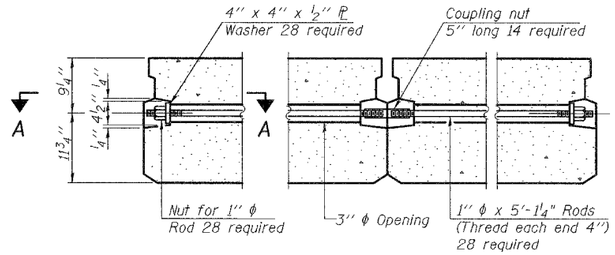


PLAN VIEW

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



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

NOTES

See Sheet 4 of 16 for insert details for temporary concrete barrier anchorage during stage construction.

See Sheets 12 and 13 of 16 for fascia beam modifications for rail post anchorage.

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.

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.

Lifting loops shall be burned off after beams have been erected.

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.

The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" Depth)	Sq. Ft.	2,559

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

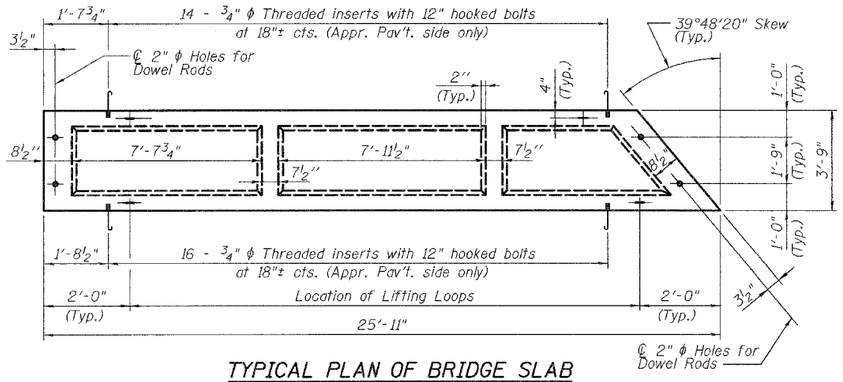
SUPERSTRUCTURE DETAILS
21" x 48" DECK BEAM DETAILS - 2
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	61
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT=		

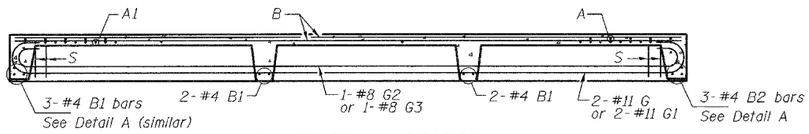
SHEET NO. 8
16 SHEETS

Contract #78032

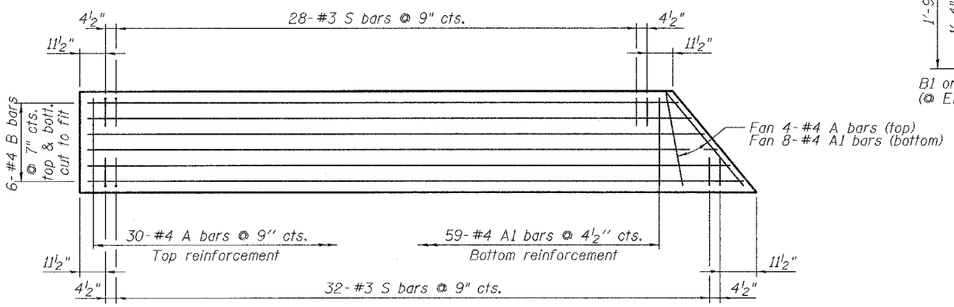


TYPICAL PLAN OF BRIDGE SLAB

(4 Required: 2 Right Hand Units and 2 Left Hand Units)

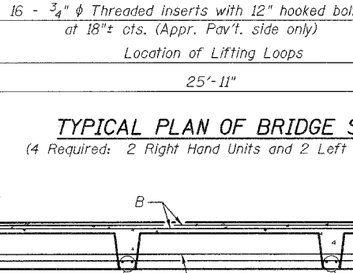


LONGITUDINAL SECTION

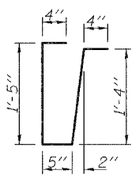


PLAN

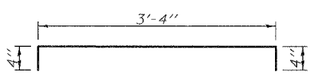
Showing Slab Reinforcement



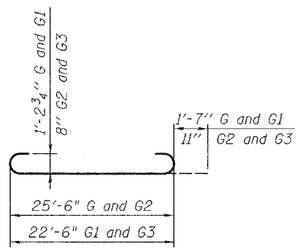
LIFTING LOOP DETAIL



BAR S

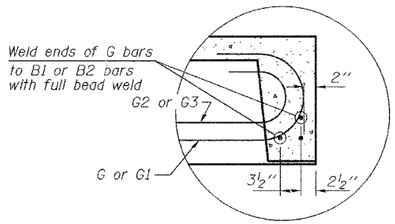


BAR A



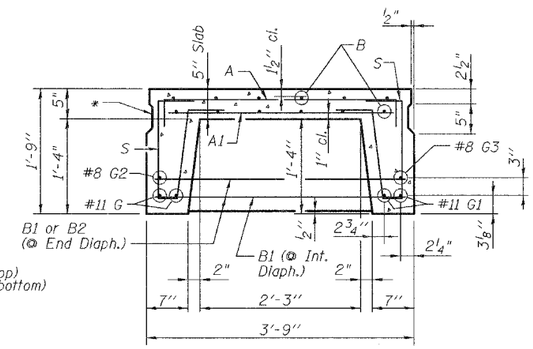
BARS G, G1, G2 and G3

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



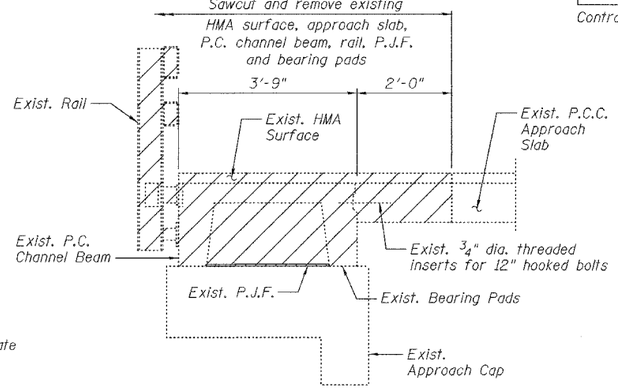
DETAIL A

Notes:
Horizontal dimensions are at right angles to slab ends.
The surface of the member shall not deviate more than 1/1200 of the full length of the member from a straight line connecting the two end points on the member's surface.

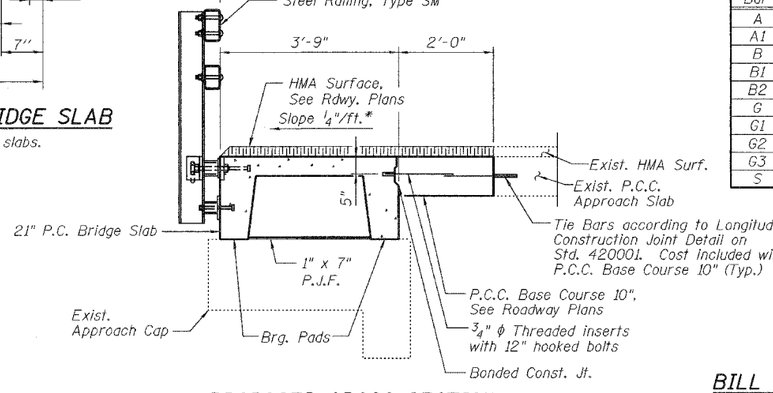


TYPICAL SECTION THRU BRIDGE SLAB

* Omit key on exterior face of slabs.

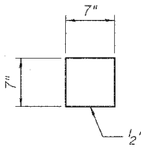


LIMITS OF REMOVAL AT APPROACH SHOULDERS



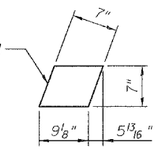
PROPOSED CROSS SECTION

* Cross slope shown applies to HMA Surface



BEARING PAD

(Approach Cap)
(8 Required)



BEARING PAD

(Abutment)
(8 Required)

NOTES

Lifting loops shall be 2-1/2" ϕ-270 ksi strands, as shown.
Lifting loops shall be burned off after bridge slabs have been erected.
The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Bearing Pad shall be provided for each bearing.
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of bridge slabs. Cleaning shall be done by sandblasting the keyway areas between the top of the bridge slabs and the bottom edge of the key.
Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast concrete bridge slabs.
See Sheets 12 and 13 of 16 for required modifications for rail anchorage.
The precast concrete bridge slab shall be erected and aligned with the exterior face of the fascia deck beam after deck beams are in final position.
Cost of removing exist. P.C. channel beam, HMA Surface, and rail included with Removal of Exist. Precast Concrete Units. See Roadway Plans for measurements and payment for Approach Slab Removal and Replacement.

BAR LIST
ONE BRIDGE SLAB ONLY

(For information only)

Bar	No.	Size	Length	Shape
A	34	#4	4'-0"	⌐¬
A1	67	#4	3'-3"	—
B	12	#4	25'-8"	—
B1	6	#4	3'-6"	—
B2	2	#4	4'-7"	—
G	2	#11	28'-8"	⌐¬
G1	2	#11	27'-4"	⌐¬
G2	1	#8	25'-8"	⌐¬
G3	1	#8	24'-4"	⌐¬
S	64	#3	3'-10"	⌐¬

BILL OF MATERIAL

Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	366

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

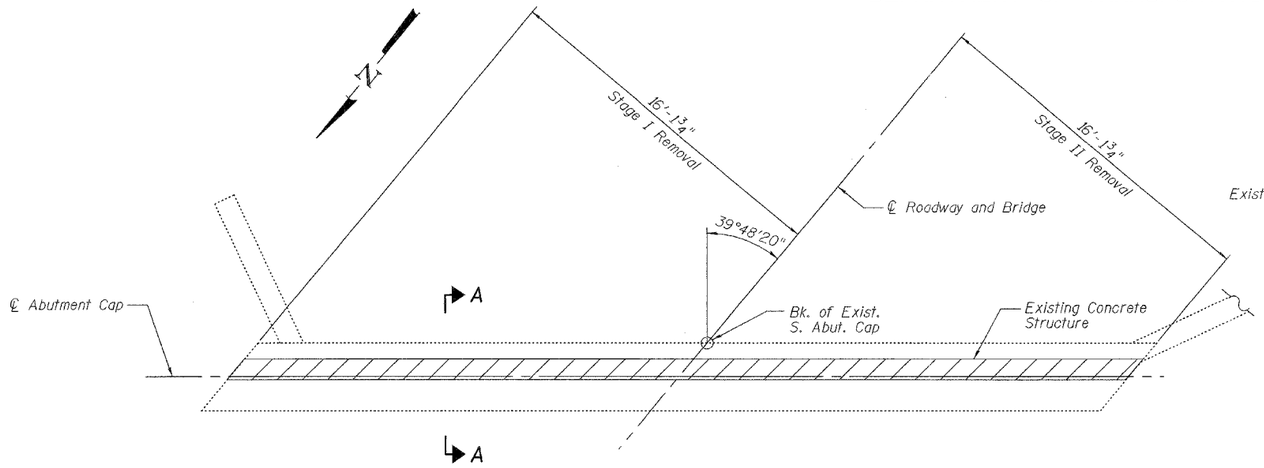
PRECAST CONCRETE BRIDGE SLAB
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	62
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
16 SHEETS

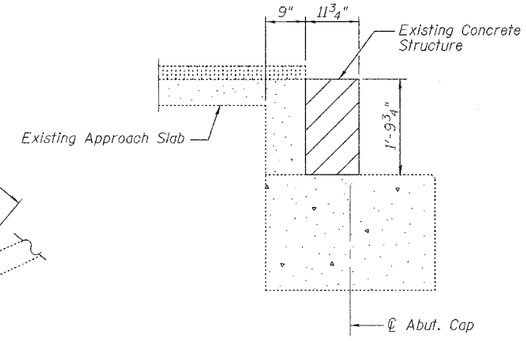
Contract #78032



PLAN - CONCRETE REMOVAL AT ABUTMENT

(South Abutment shown, North Abutment similar)

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

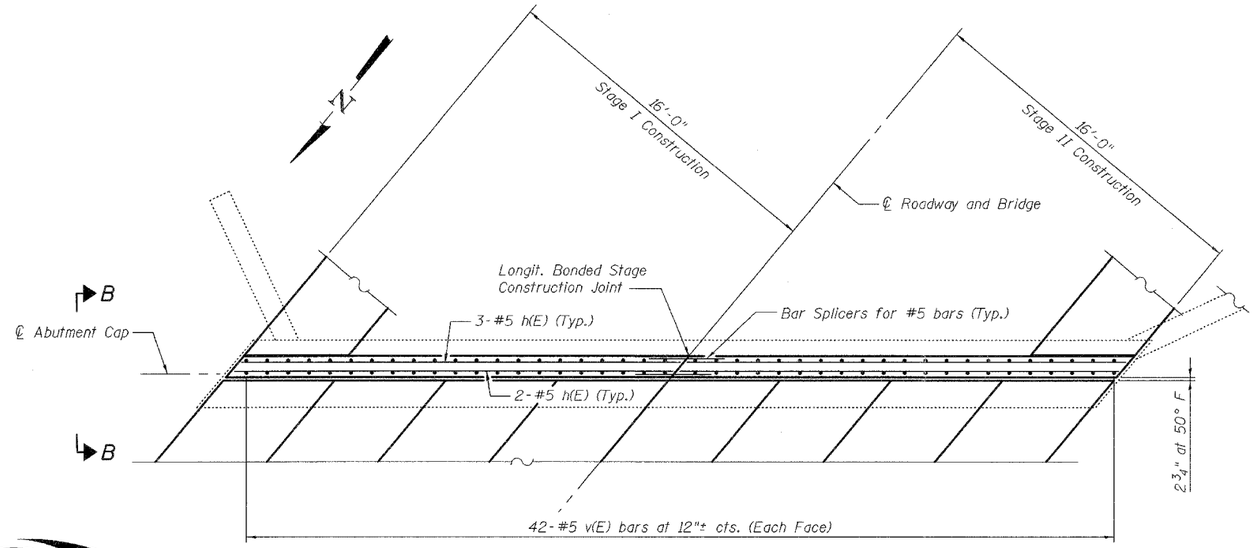


SECTION A-A

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

BILL OF MATERIAL

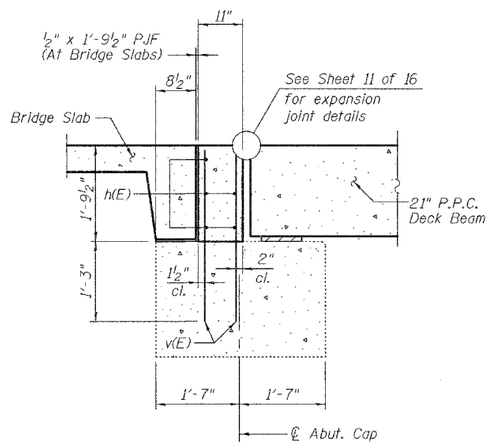
Bar	No.	Size	Length	Shape
h(E)	20	#5	20'-6"	
v(E)	168	#5	2'-11"	
Reinforcement Bars, Epoxy Coated			Pound	940
Concrete Removal			Cu. Yd.	5.5
Concrete Structures			Cu. Yd.	5.1



PLAN - CONCRETE STRUCTURE AT ABUTMENT

(South Abutment shown, North Abutment similar)

Concrete structure to be poured after P.P.C. deck beams and P.C. bridge slabs are in place and shear keys are grouted and cured.



VIEW B-B

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

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

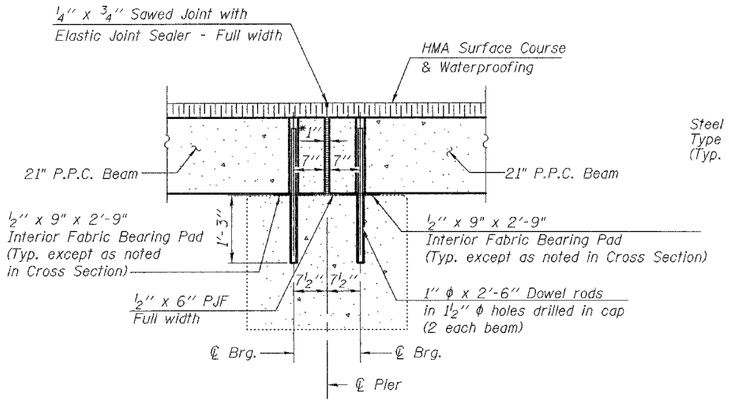
CONCRETE DETAILS AT EXPANSION ENDS
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	63
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

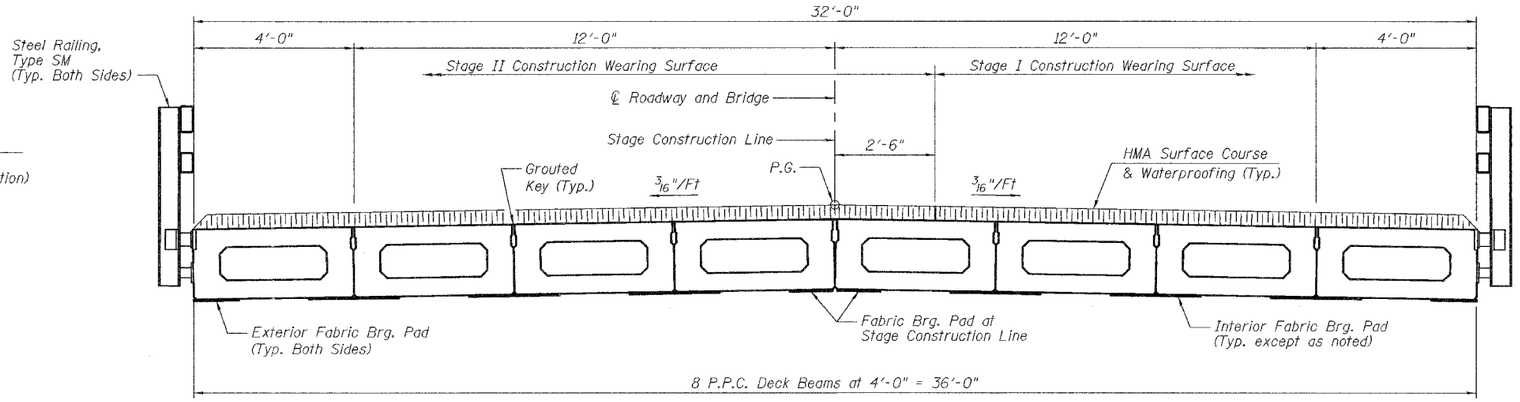
SHEET NO. 10
16 SHEETS

Contract #78032



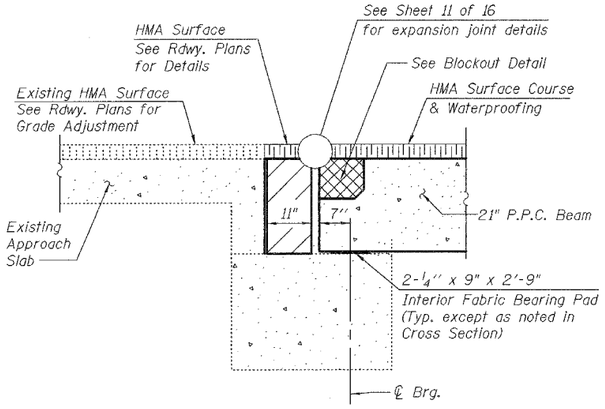
SECTION THRU PIER

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

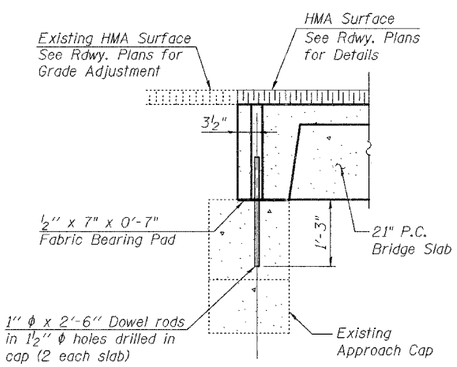


CROSS SECTION

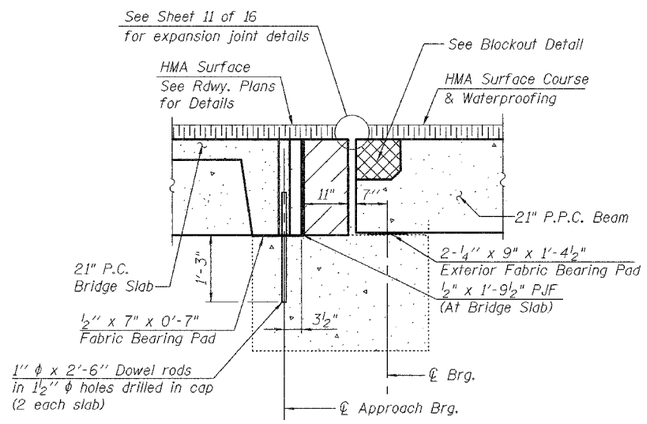
(Looking Upstation)



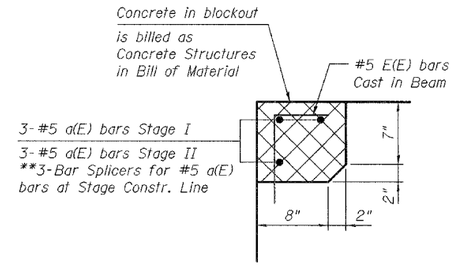
SECTION THRU ABUTMENT AT APPROACH SLAB



SECTION THRU APPROACH CAP



SECTION THRU ABUTMENT AT SHOULDER

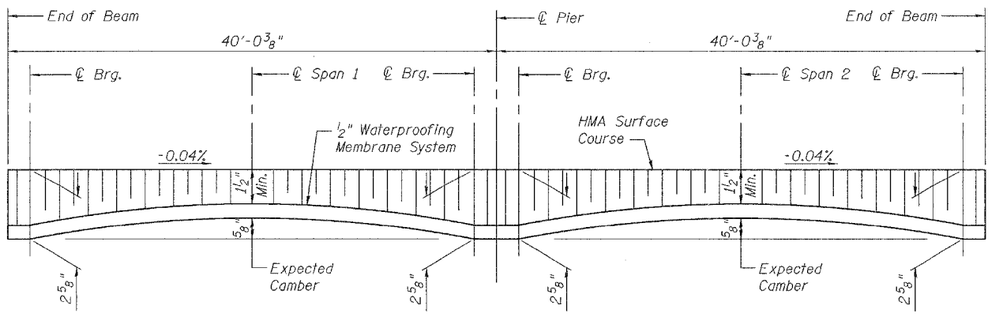


BLOCKOUT DETAIL

**At Each Abutment

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	12	#5	20'-6"	——
Reinforcement Bars, Epoxy Coated			Pound	260
Concrete Structures			Cu. Yd.	1.9
Hot-Mix Asphalt Surface Course, Mix "C", N90			Ton	29
Waterproofing Membrane System			Sq. Yd.	285



HMA WEARING SURFACE PROFILE

Notes:

After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.

All horizontal dimensions are at right angles to beam ends.

Hatched and crosshatched areas to be poured after P.P.C. deck beams and P.C. bridge slab are in place and shear keys are grouted and cured. See Sheet 9 of 16 for concrete structures details.

See Sheets 7 and 8 of 16 for bearing pad details.

See Sheet 11 of 16 for strip seal expansion joint details.

See Section 581 for Waterproofing Membrane System.

See Roadway Plans for HMA surface course, Mix "C", N90 mixture requirements. The HMA surface course shall be placed according to Section 582 of the Standard Specifications.

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

03/04/08

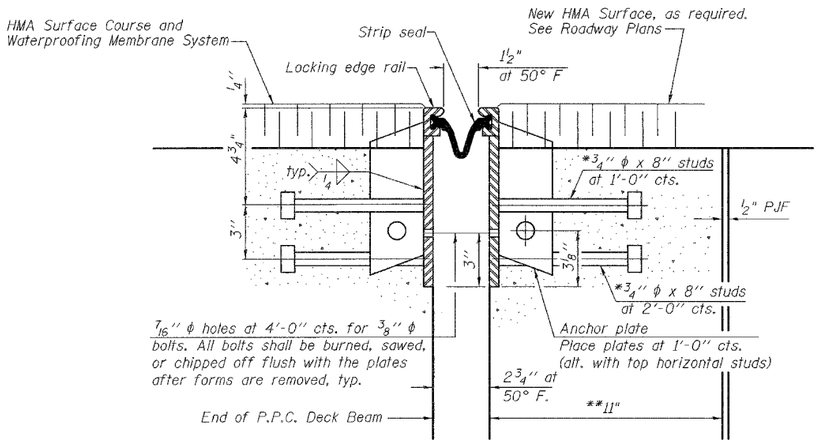
SUPERSTRUCTURE DETAILS
SECTIONS AND JOINT DETAILS
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	64
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

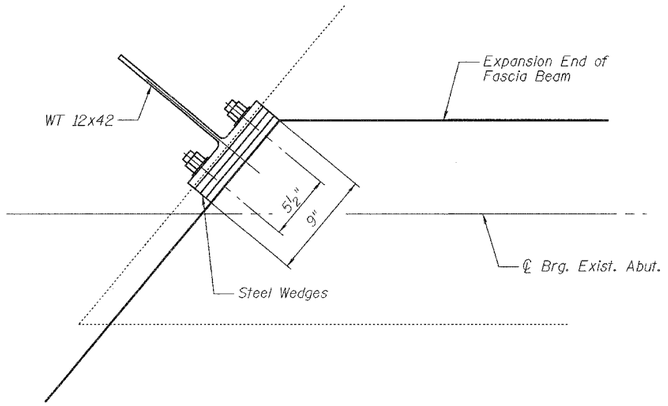
SHEET NO. 11
16 SHEETS

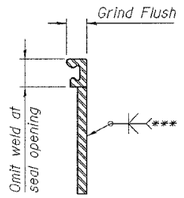
Contract #78032



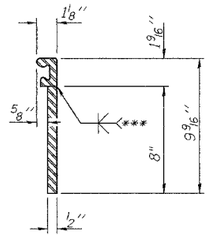
SECTION THRU STRIP SEAL JOINT

*Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.
**See Sheet 9 of 16 for Concrete Structure Removal and Replacement Details.

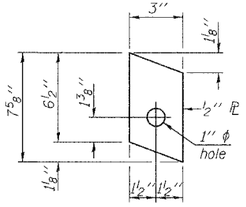




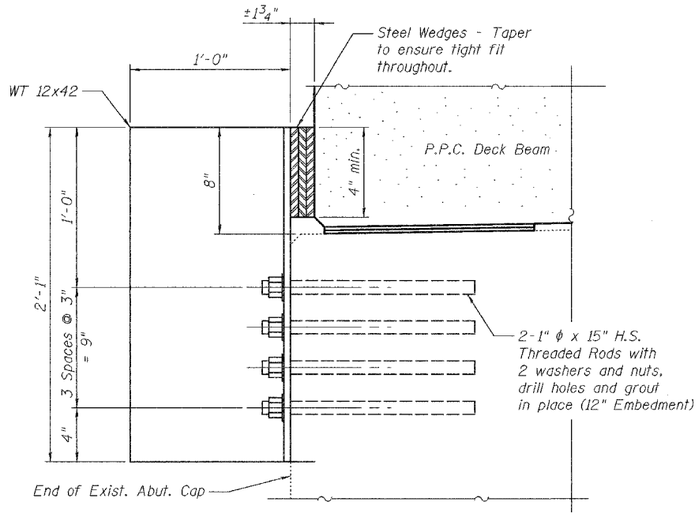
LOCKING EDGE RAIL SPLICE DETAIL



LOCKING EDGE RAIL



ANCHOR ℄



SIDE RETAINER
(4 Required)

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

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "Webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.
The inside of the Locking Edge Rail groove shall be free of weld residue.
Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.
The manufacturer's recommended installation methods shall be followed.

Notes:
Fill gap with steel wedges to provide temporary lateral support until shear keys have been grouted and block-out has been poured and cured.
Side retainers, threaded rods, nuts and washers shall be galvanized according to AASHTO M 111 or M 232 (as applicable).
See Section 584 of the Standard Specifications for epoxy grouting of threaded rods.
Cost of side retainers and accessories are included with Precast Prestressed Concrete Deck Beams (21" Depth).

BILL OF MATERIAL

Item	Unit	Quantity
Preformed Joint Strip Seal	Foot	84

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

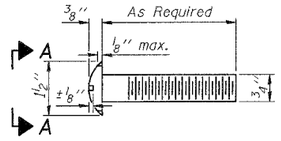
EXPANSION JOINT AND SIDE RETAINER DETAILS
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

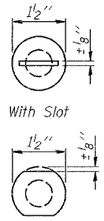
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	65
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 12
16 SHEETS
Contract #78032

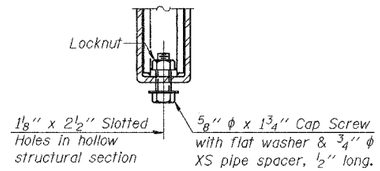
DETAIL OF $\frac{3}{4}$" ϕ ROUND HEAD BOLT



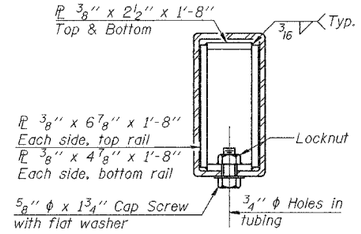
VIEW A-A



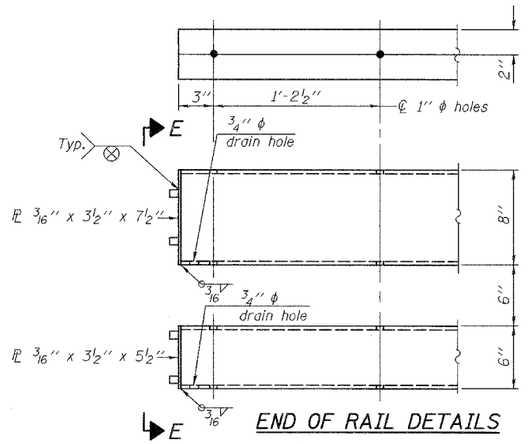
RAIL SPLICE CONNECTION AT EXPANSION JT.



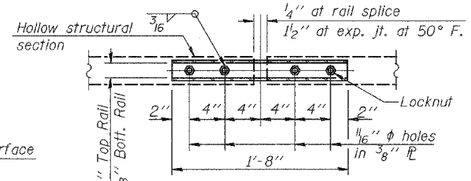
SECTION AT RAIL SPLICE



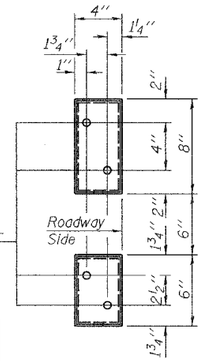
END OF RAIL DETAILS



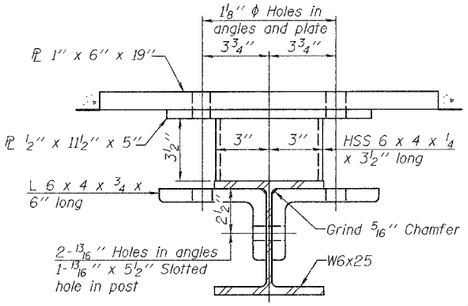
PLAN-BOTT. SPLICE ℄ TYPICAL



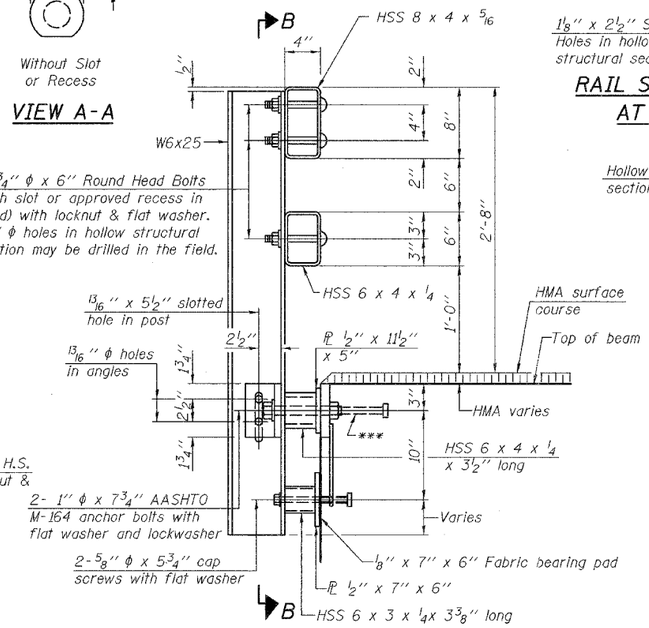
VIEW E-E



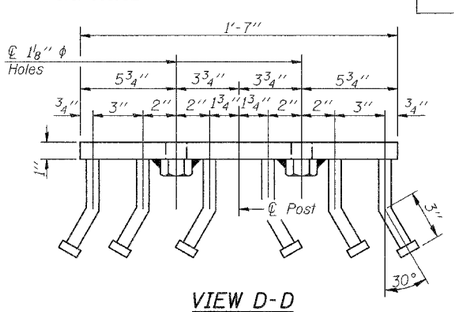
SECTION B-B



SECTION AT RAIL POST

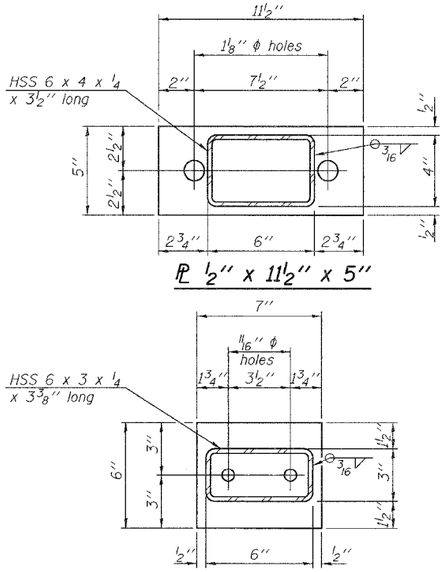


VIEW D-D

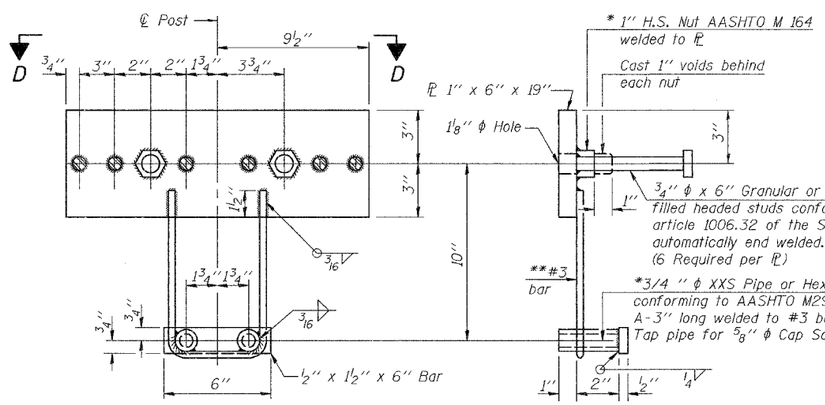


SECTION C-C

SECTION AT RAIL POST



ANCHOR DEVICE



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

**Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

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.
All steel rail members 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.
See Sheet 13 of 16 for rail post locations.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	264

STEEL RAILING, TYPE SM
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

R-34HMAWS 9-3-07

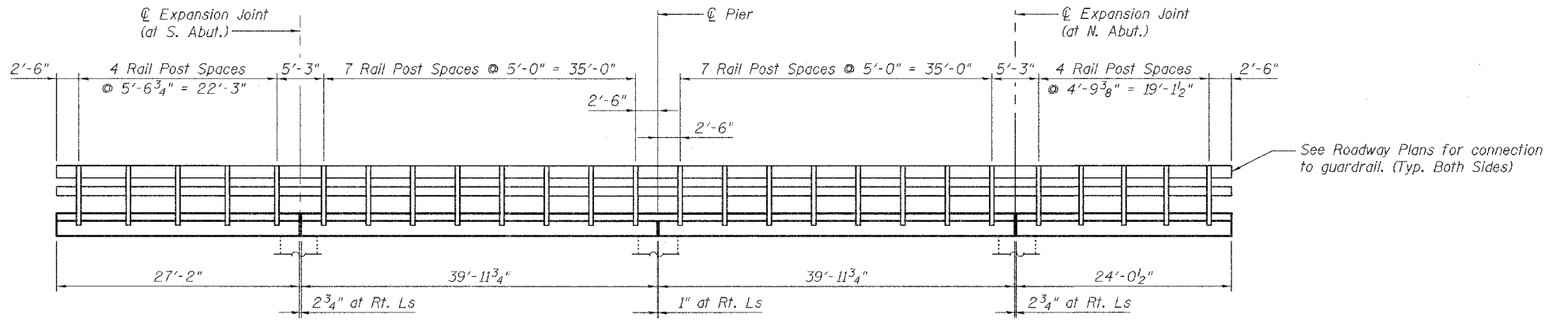
(6'-3" Maximum Post Spacing) (1/4" minimum to 3/8" maximum HMA thickness)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	66
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 13
16 SHEETS

Contract #78032



RAIL POST SPACING DETAIL

East Elevation shown, West Elevation opposite hand

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

02/04/08

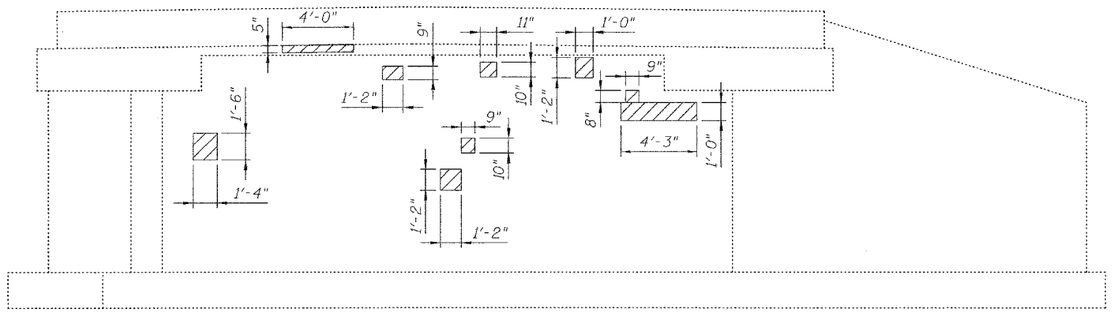
RAIL POST SPACING
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

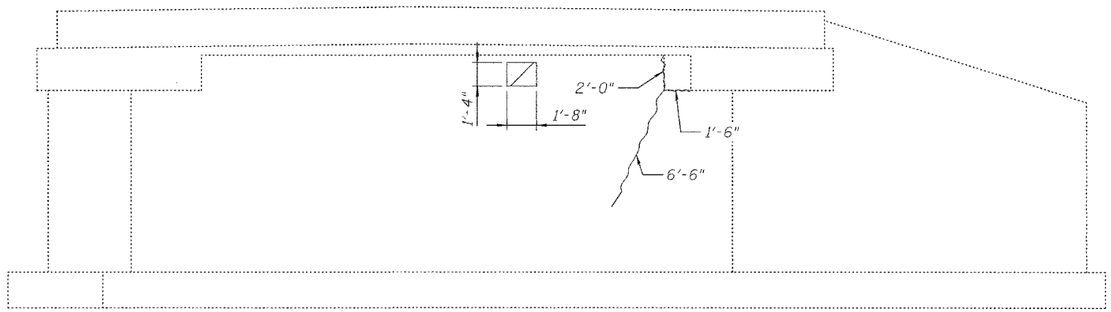
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	67
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 14
16 SHEETS

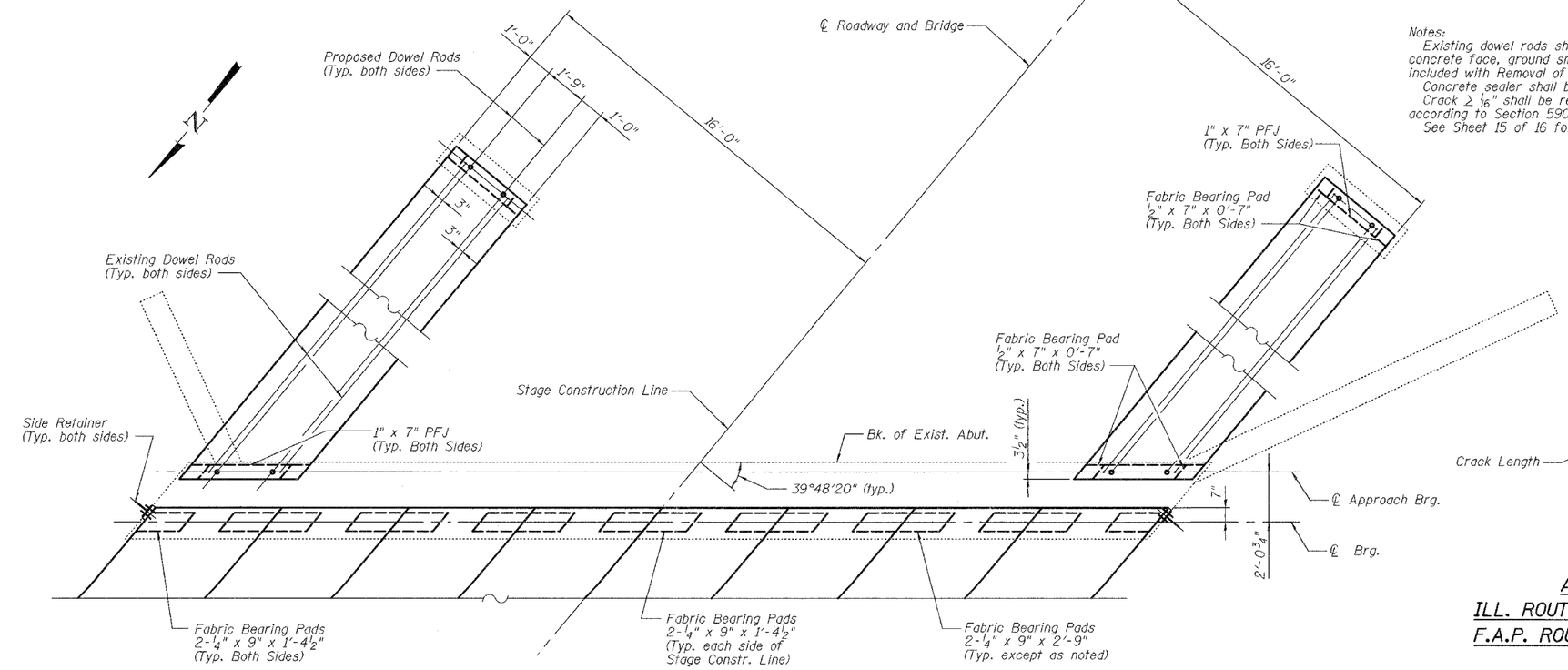
Contract #78032



ELEVATION - SOUTH ABUTMENT
(Looking South)



ELEVATION - NORTH ABUTMENT
(Looking North)



PLAN - SOUTH ABUTMENT BEARING SEAT
(South Abutment shown, North Abutment similar)

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

Notes:
Existing dowel rods shall be burned off flush with the existing concrete face, ground smooth, and sealed with epoxy. Cost is included with Removal of Existing Precast Concrete Units.
Concrete sealer shall be applied to concrete repair areas.
Crack ≥ 1/16" shall be repaired by epoxy crack injection according to Section 590 of the Standard Specifications.
See Sheet 15 of 16 for Substructure Repair Bill of Material.

LEGEND

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

ABUTMENT REPAIRS
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

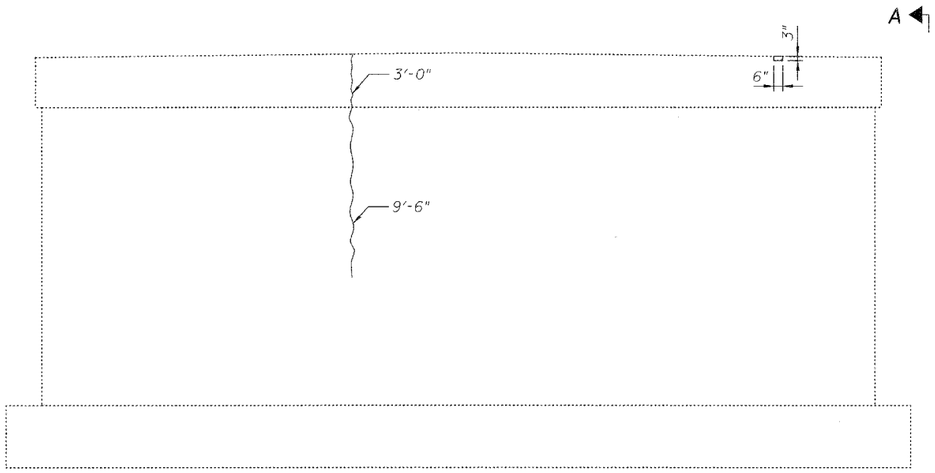
03/04/08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

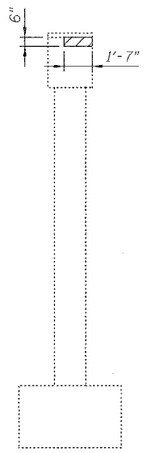
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	68
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 15
16 SHEETS

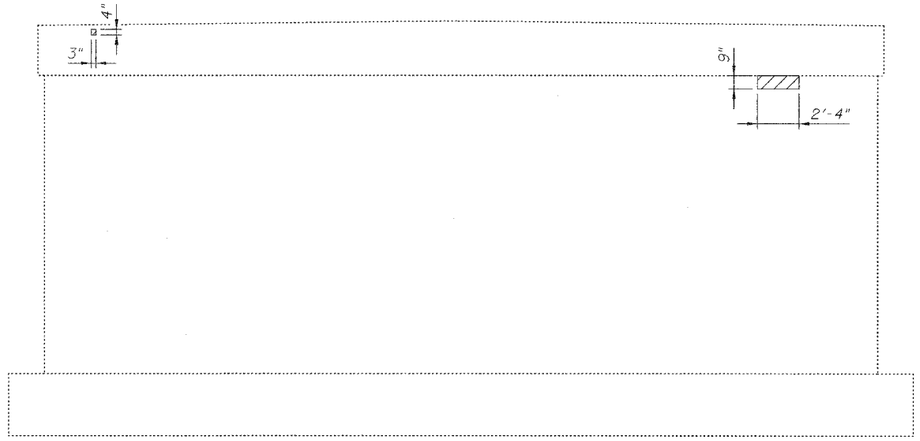
Contract #78032



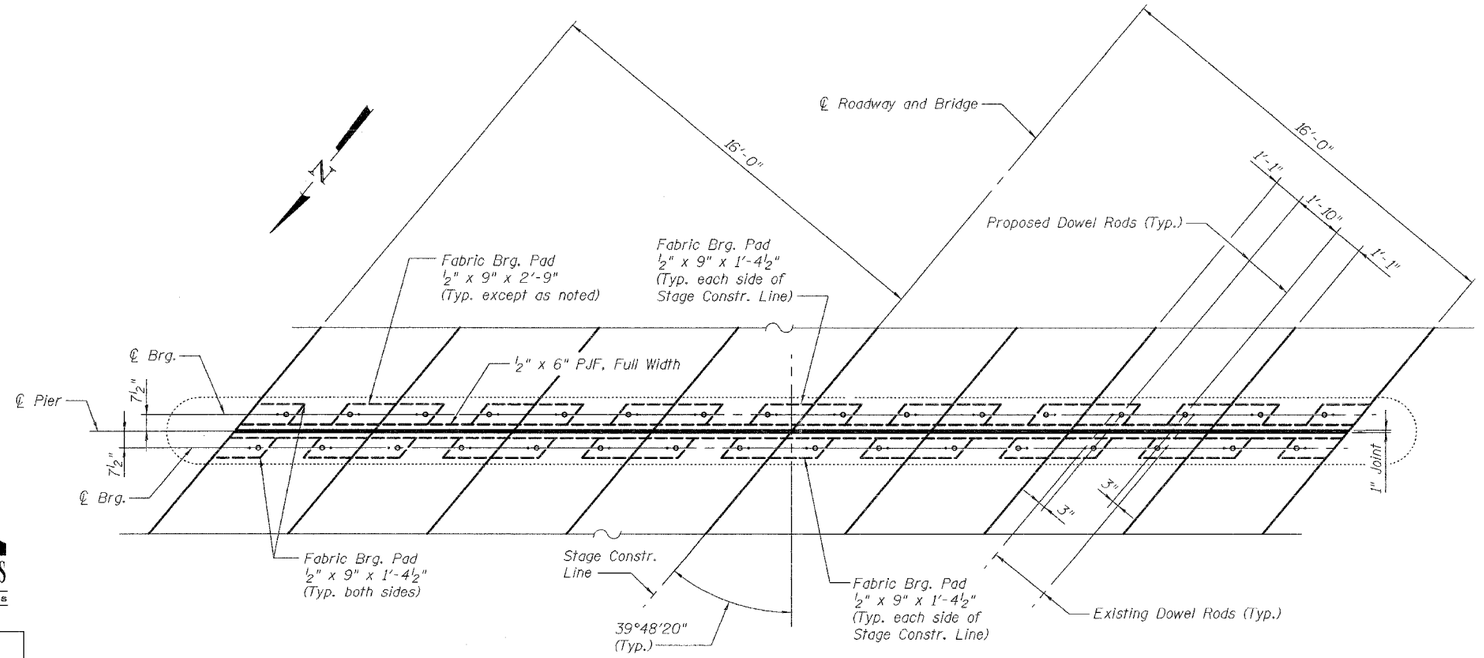
ELEVATION - PIER - NORTH FACE
(Looking South)



VIEW A-A
(West Face)



ELEVATION - PIER - SOUTH FACE
(Looking North)



PLAN - PIER BEARING SEAT
Bituminous wearing surface not shown for clarity.

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete (Depth Equal to or less than 5 inches)	Sq. Ft.	19
Concrete Sealer	Sq. Ft.	19
Epoxy Crack Injection	Foot	23

LEGEND

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

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

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Consulting Engineers
SINCE 1893

DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

03/04/08

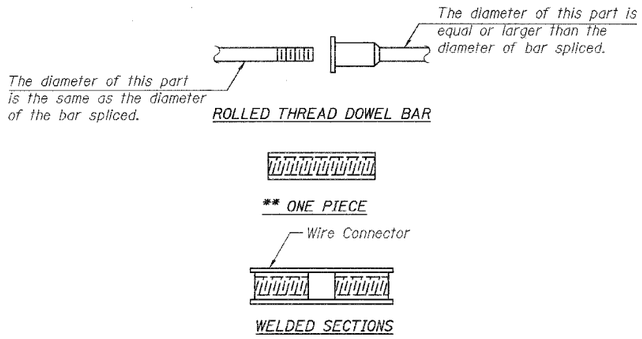
PIER REPAIRS
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 132	102BR-1	MASSAC	82	69
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

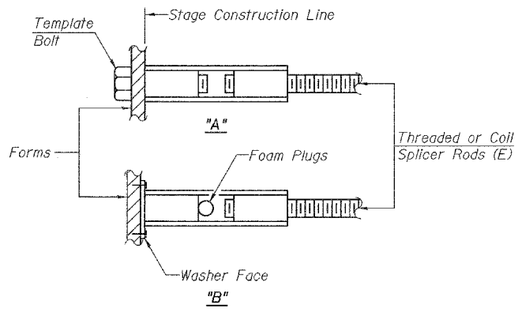
SHEET NO. 16
16 SHEETS

Contract #78032



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.

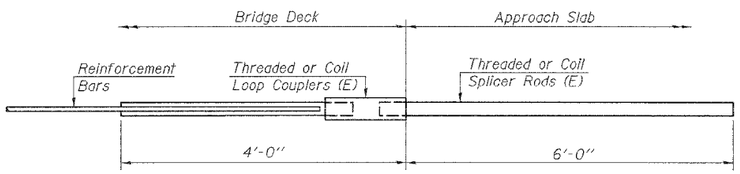
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

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 x fy x A_t
2. Minimum *Pull-out Strength (Tension in kips) = 0.66 x fy x A_t

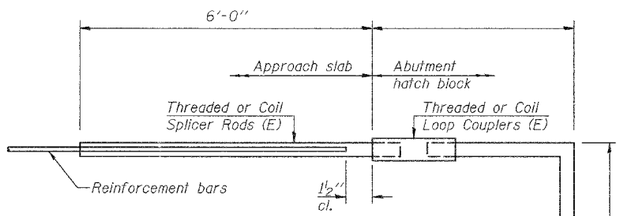
Where fy = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



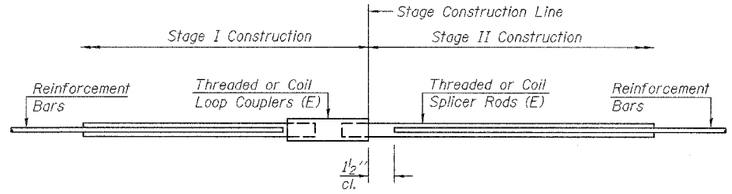
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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
#5	6	Blockouts
#5	10	Abutments

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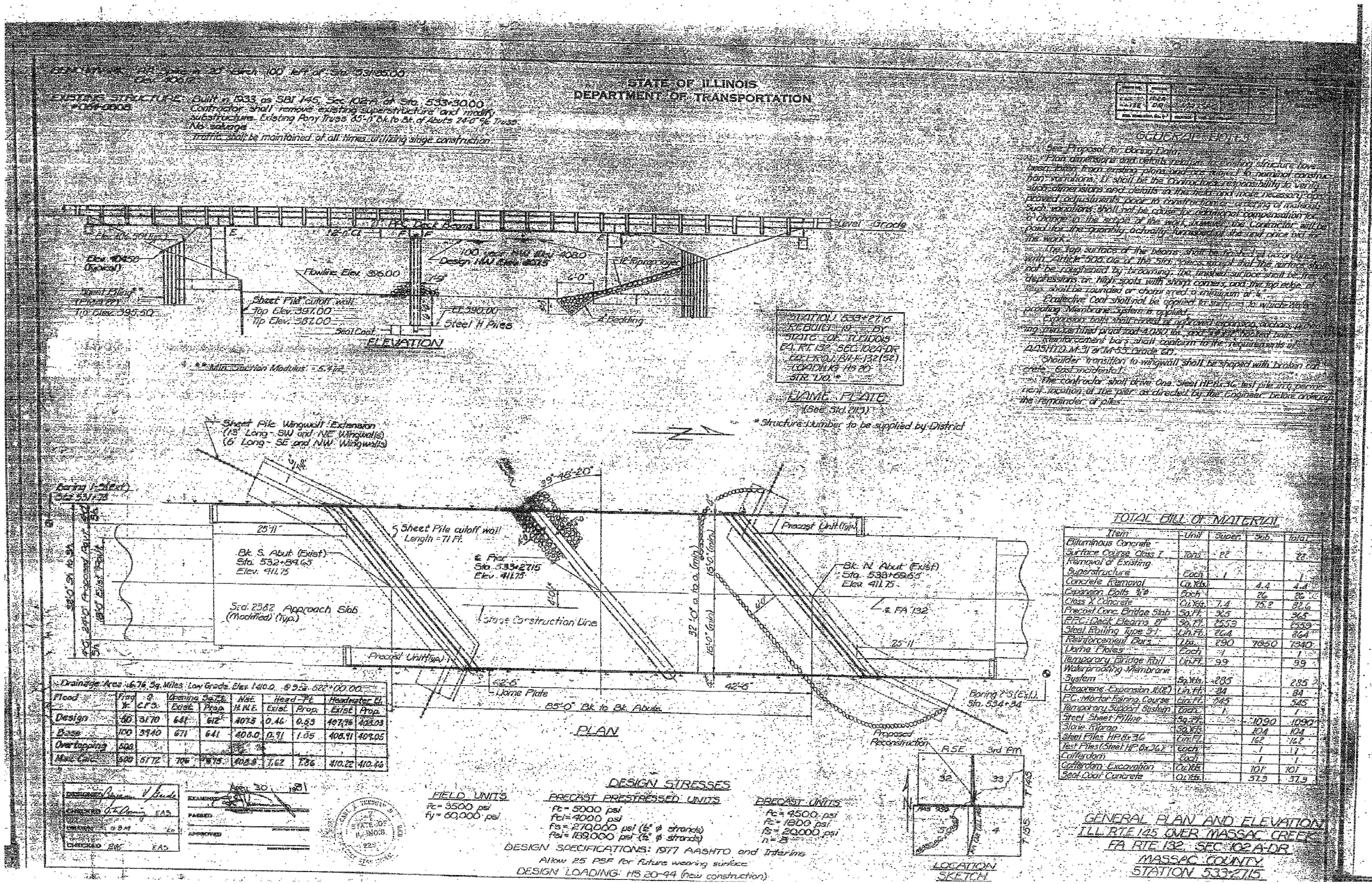
DESIGNED	RLM
CHECKED	YSS
DRAWN	PRC
CHECKED	RLM

BSD-1 11-1-06

BAR SPLICER ASSEMBLY DETAILS
ILL. ROUTE 145 OVER MASSAC CREEK
F.A.P. ROUTE 132 - SECTION 102BR-1
MASSAC COUNTY
STATION 533+27.15
STRUCTURE NO. 064-0008



TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Bituminous Concrete Surface Course Class I	Tons	22		22
Removal of Existing Superstructure	Each	1		1
Concrete Removal	Cu. Yds.		4.4	4.4
Expansion Bolts ¾"φ	Each		26	26
Class X Concrete	Cu. Yds.	7.4	75.2	82.6
Precast Conc. Bridge Slab	Sq. Ft.	365		365
P.P.C. Deck Beams 21"	Sq. Ft.	2559		2559
Steel Railing Type S-1	Lin. Ft.	264		264
Reinforcement Bars	Lbs.	290	7050	7340
Name Plates	Each	1		1
Temporary Bridge Rail	Lin. Ft.	99		99
Waterproofing Membrane System	Sq. Yds.	285		285
Neoprene Expansion Jt. (2")	Lin. Ft.	84		84
P.C. Mortar Fairing Course	Lin. Ft.	545		545
Temporary Support System	Each	1		1
Steel Sheet Piling	Sq. Ft.		1090	1090
Stone Riprap	Sq. Yds.		104	104
Steel Piles HP 8x36	Lin. Ft.		122	122
Test Piles (Steel HP 8x36)	Each		1	1
Cofferdam	Each		1	1
Cofferdam Excavation	Cu. Yds.		101	101
Seal Coat Concrete	Cu. Yds.		37.3	37.3

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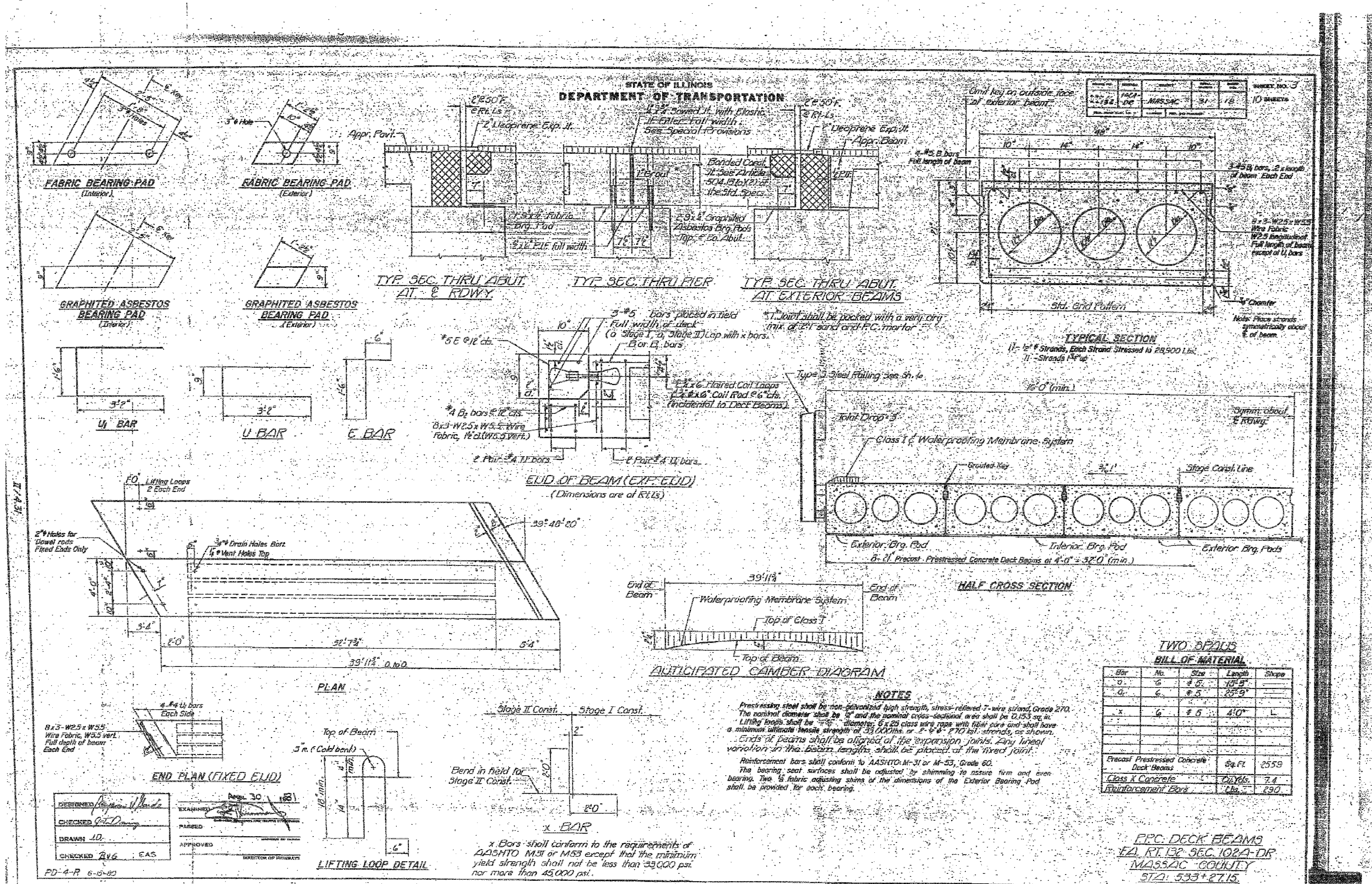
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS
		DRAWN - AEC	REVISED -		
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -		
	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -		SCALE: NONE · SHEET NO. OF SHEETS · STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	70
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



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 0.153 sq. in.

Lifting loops shall be ⅝" diameter, 6 x 25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 33,000 lbs. or 2-½"∅-270 ksi. strands, as shown.

Ends of beams shall be aligned at the expansion joints. Any lineal variation in the beam lengths shall be placed at the fixed joint.

Reinforcement bars shall conform to AASHTO M-31 or M-53, Grade 60.

The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.

TWO SPANS

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	6	# 5	15'-5"	—
a₁	6	# 5	25'-9"	—
x	6	# 5	4'-0"	L
Precast Prestressed Concrete Deck Beams			Sq. Ft.	2559
Class X Concrete			Cu. Yds.	7.4
Reinforcement Bars			Lbs.	290

PPC. DECK BEAMS
F.A. RT. 132 SEC. 102A-DR
MASSAC COUNTY
STA. 533+27.15

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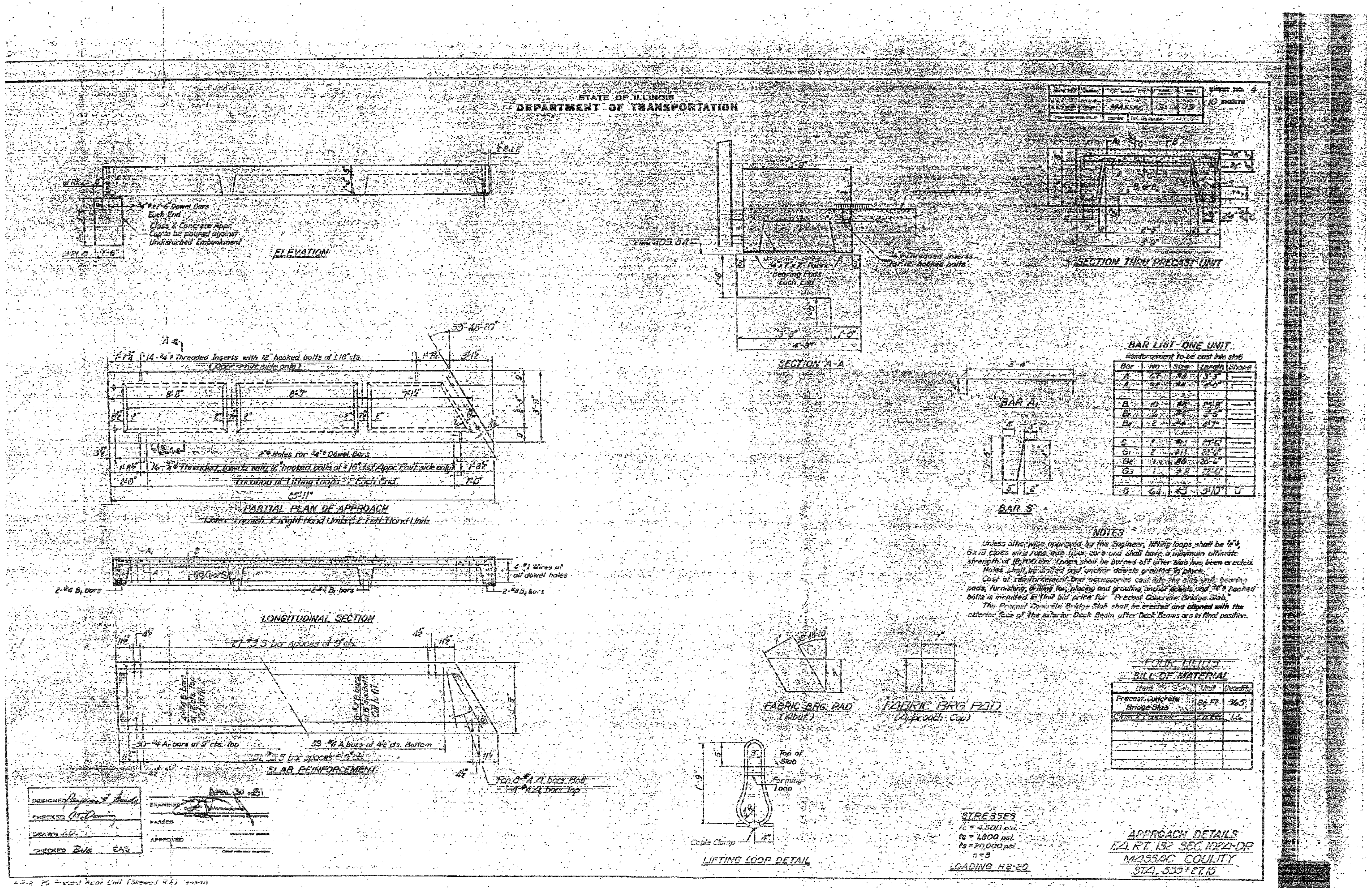
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	71
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



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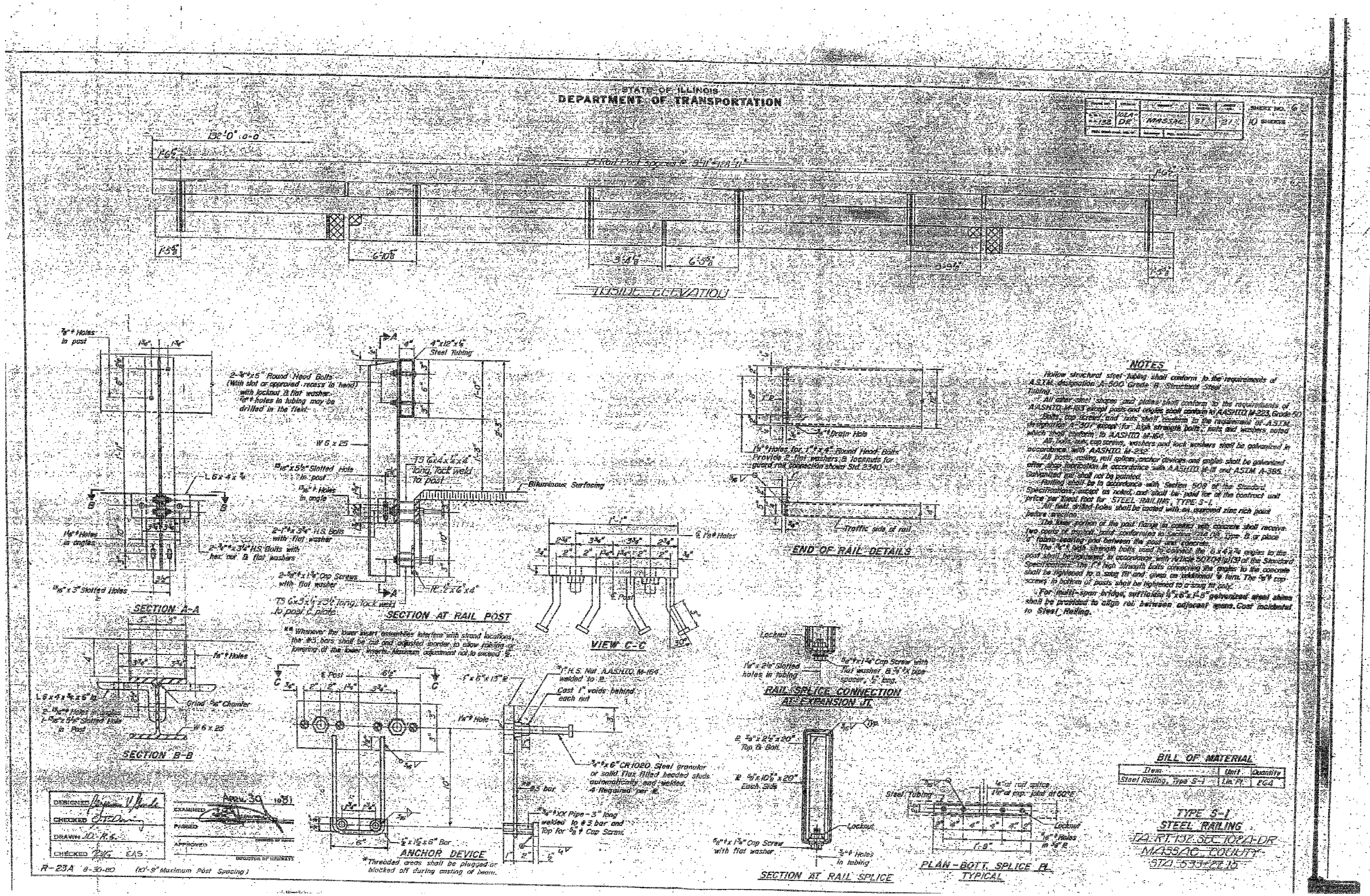

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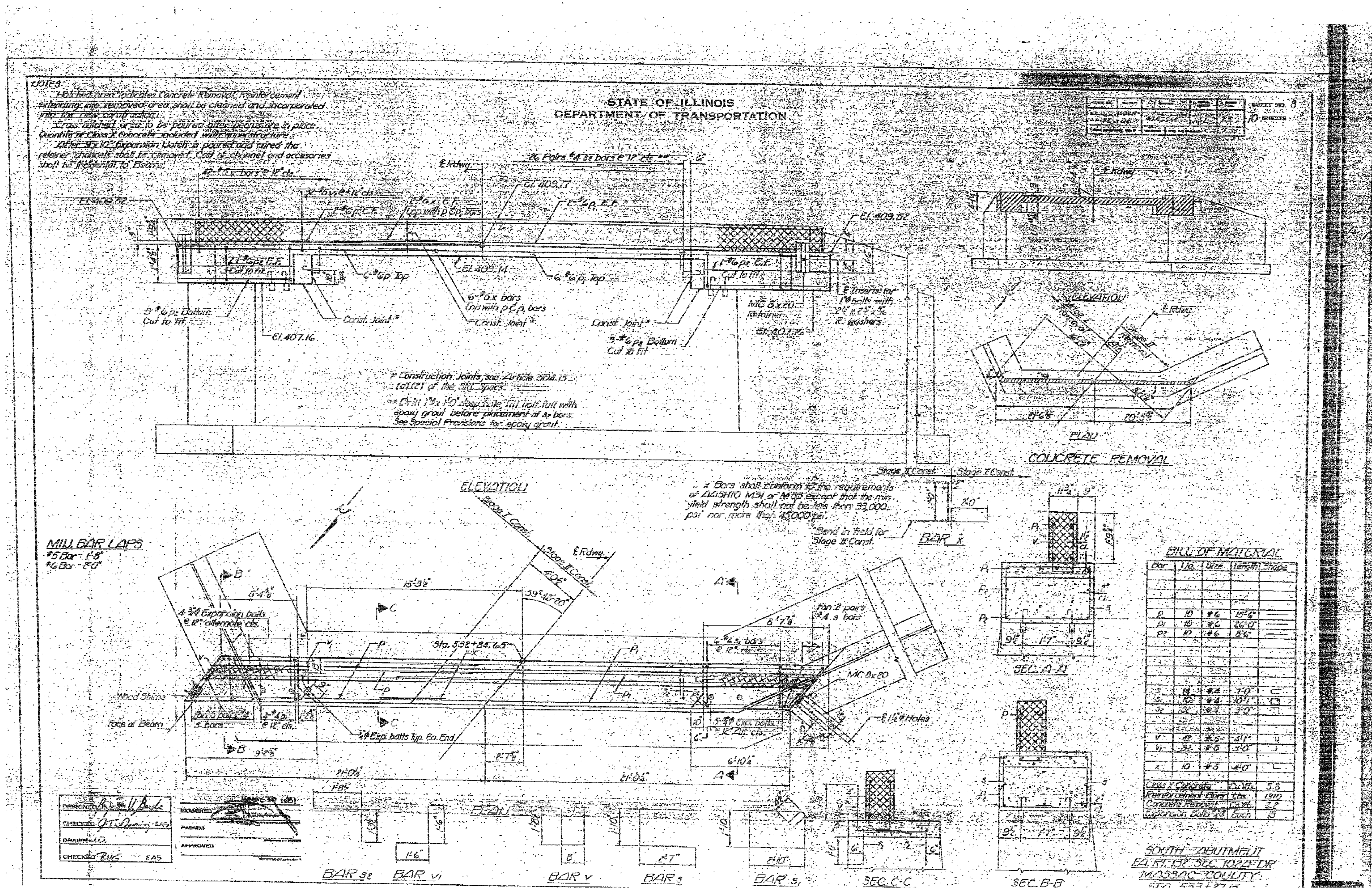
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	73
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



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		DRAWN - AEC	REVISED -			TOTAL SHEETS 82	SHEET NO. 74	
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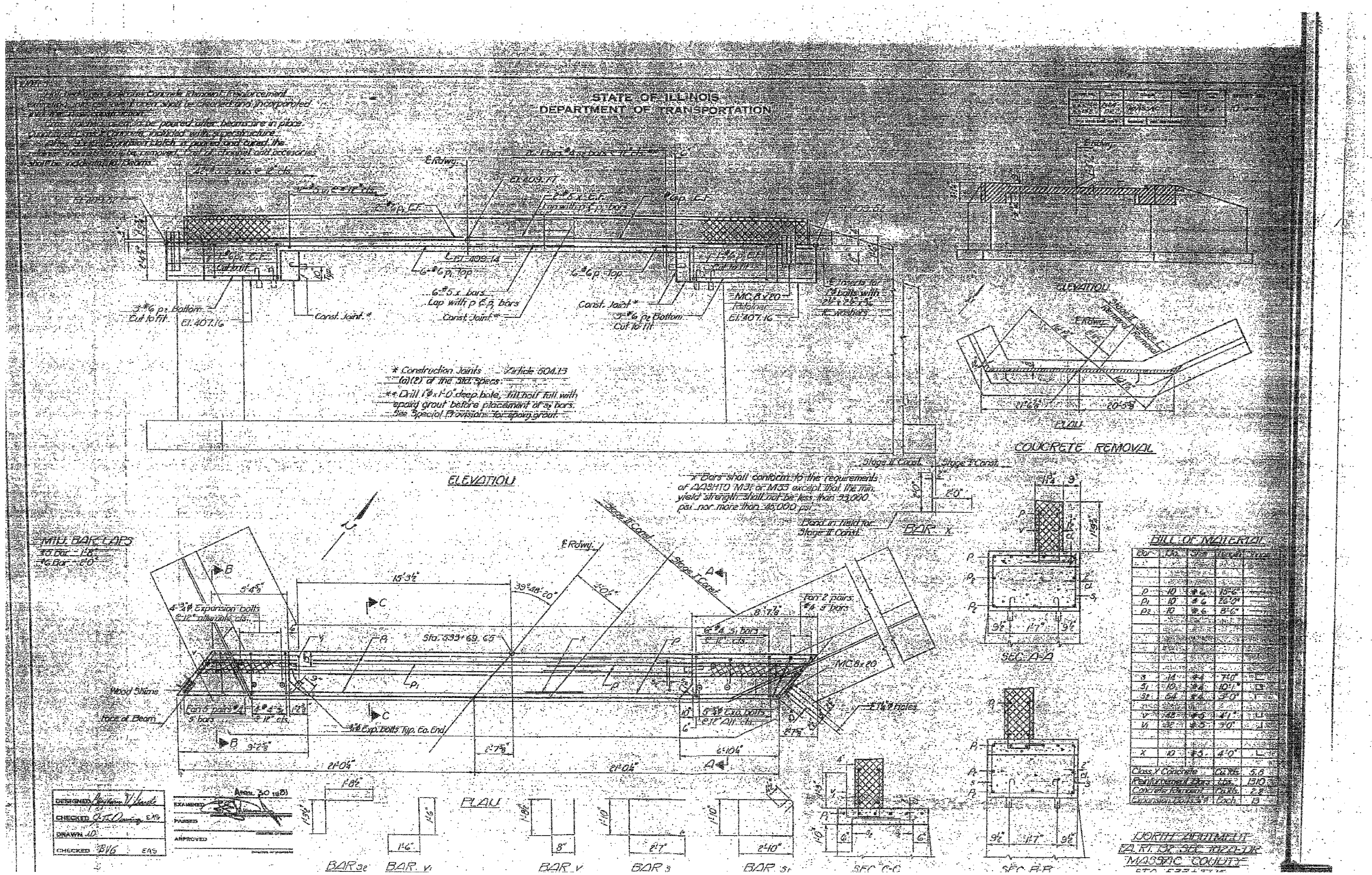

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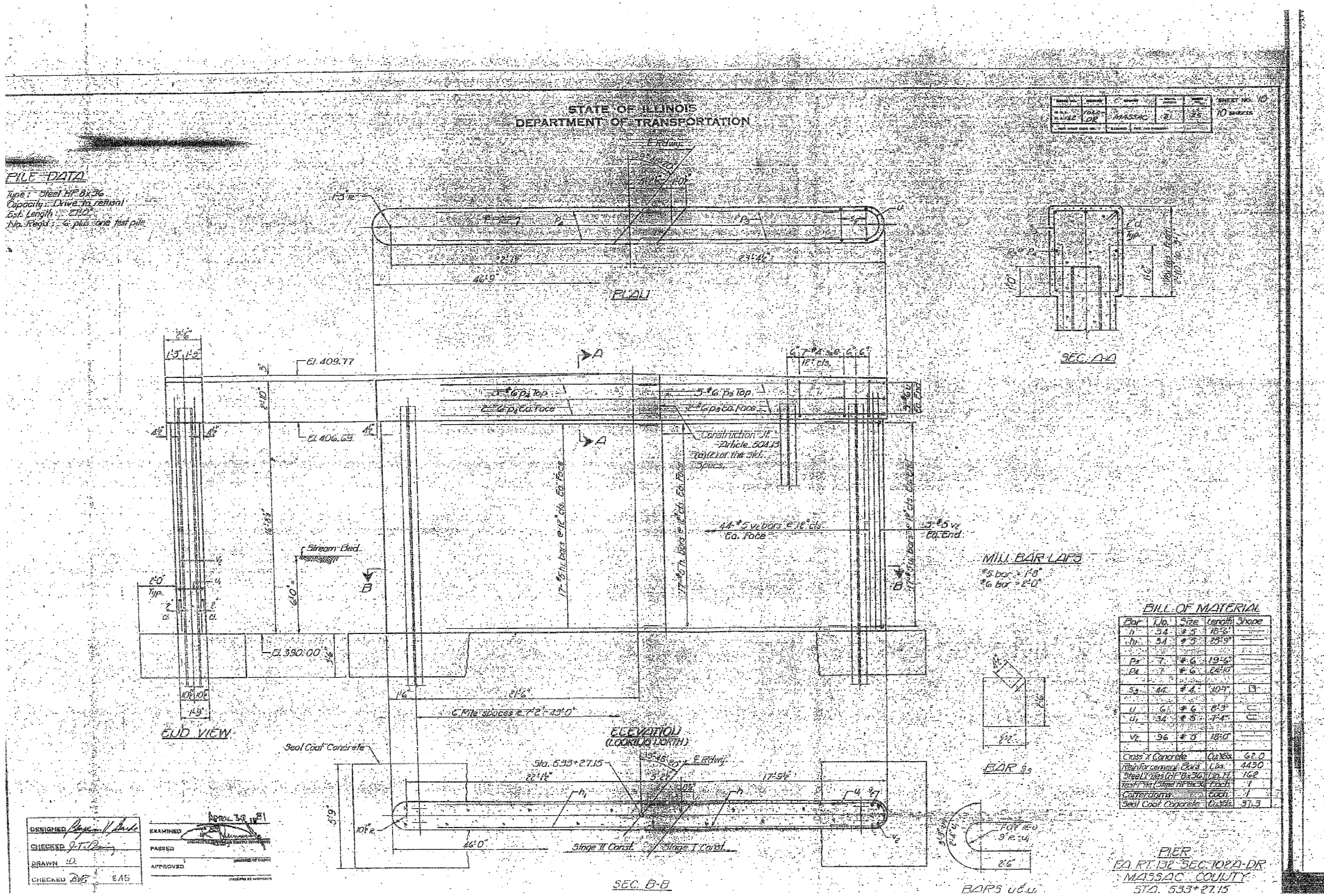
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS

SCALE: NONE | SHEET NO. OF SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	75
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	34	#5	18'6"	
h1	34	#5	25'9"	
p3	7	#6	19'6"	
p4	7	#6	24'10"	
s3	44	#4	10'7"	
u	6	#6	8'3"	
u1	34	#5	7'4"	
v2	96	#5	18'0"	
Class X Concrete			Cu.Yds.	62.0
Reinforcement Bars			Lbs.	4430
Steel Piles (HP 8x36)			Lin.Ft.	162
Test Pile (Steel HP 8x36)			Each	1
Cofferdams			Each	1
Seal Coat Concrete			Cu.Yds.	37.3

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SINCE 1893

FOR INFORMATION ONLY

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		DRAWN - AEC	REVISED -		
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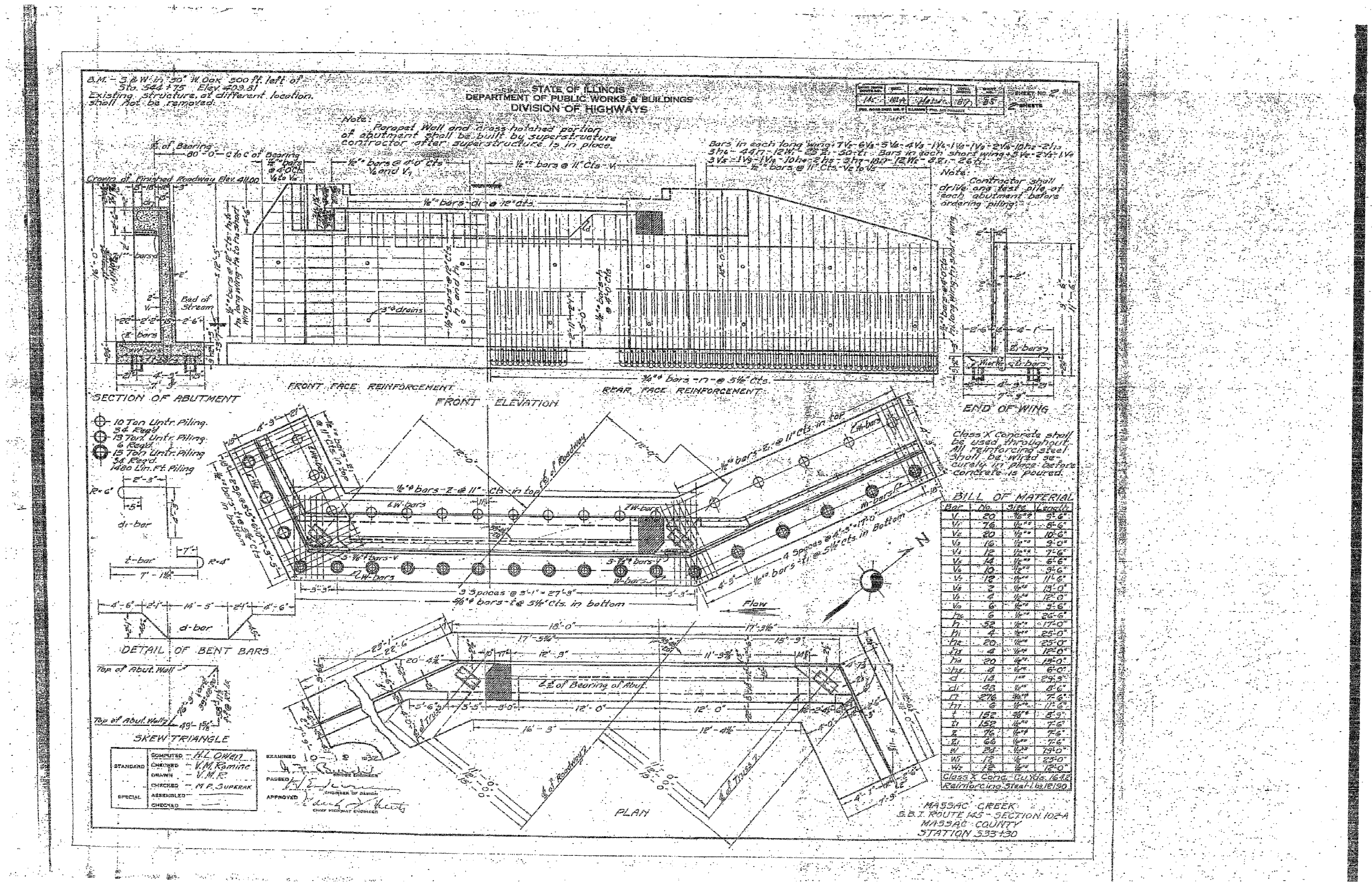
	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -		SCALE: NONE / SHEET NO. OF SHEETS / STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	76
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		


STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS
B.M. - 3 & W in 30" W. Oak 300 ft. left of Sta. 544+75 Elev. 409.81
Existing structure at different location shall not be removed.
Note: Parapet Wall and cross hatched portion of abutment shall be built by superstructure contractor after superstructure is in place.
Note: Contractor shall drive one test pile at each abutment before ordering piling.
SECTION OF ABUTMENT
FRONT FACE REINFORCEMENT
FRONT ELEVATION
REAR FACE REINFORCEMENT
END OF WING
10 Ton Untr. Piling 34 Reqd.
13 Ton Untr. Piling 6 Reqd.
15 Ton Untr. Piling 34 Reqd.
1480 Lin. Ft. Piling
d1-bar
t-bar
d-bar
DETAIL OF BENT BARS
SKEW TRIANGLE
Class X Concrete shall be used throughout. All reinforcing steel shall be wired securely in place before concrete is poured.
BILL OF MATERIAL
Bar | No. | Size | Length
V | 20 | 5/8" | 9'-6"
V1 | 76 | ½" | 8'-6"
V2 | 20 | ½" | 10'-6"
V3 | 16 | ½" | 9'-0"
V4 | 12 | ½" | 7'-6"
V5 | 14 | ½" | 6'-6"
V6 | 10 | ½" | 9'-6"
V7 | 12 | ½" | 11'-6"
V8 | 2 | ½" | 13'-0"
V9 | 4 | ½" | 12'-0"
V10 | 6 | ½" | 9'-6"
h6 | 6 | ½" | 26'-6"
h | 52 | ½" | 17'-0"
h1 | 4 | ½" | 25'-0"
h2 | 20 | ½" | 25'-0"
h3 | 4 | ½" | 12'-0"
h4 | 20 | ½" | 13'-0"
h5 | 4 | ½" | 6'-0"
d | 12 | 1" | 29'-3"
d1 | 48 | ½" | 8'-6"
n | 276 | ¾" | 7'-6"
n1 | 6 | ½" | 11'-6"
t | 152 | ⅝" | 8'-9"
t1 | 152 | ½" | 7'-6"
z | 76 | ½" | 7'-6"
z1 | 66 | ½" | 7'-6"
w | 24 | ½" | 19'-0"
w1 | 12 | ½" | 23'-0"
w2 | 12 | ½" | 12'-0"
Class X Conc. - Cu. Yds. 164.2
Reinforcing Steel - Lbs. 12190
PLAN
Flow
N
MASSAC CREEK
S.B.I. ROUTE 145 - SECTION 102-A
MASSAC COUNTY
STATION 533+30
COMPUTED - H.L. Owen
CHECKED - V.M. Ramine
DRAWN - V.M.R.
CHECKED - M.P. Superak

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FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - JMH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING STRUCTURE PLANS
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		DATE - 02/04/08	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	77
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

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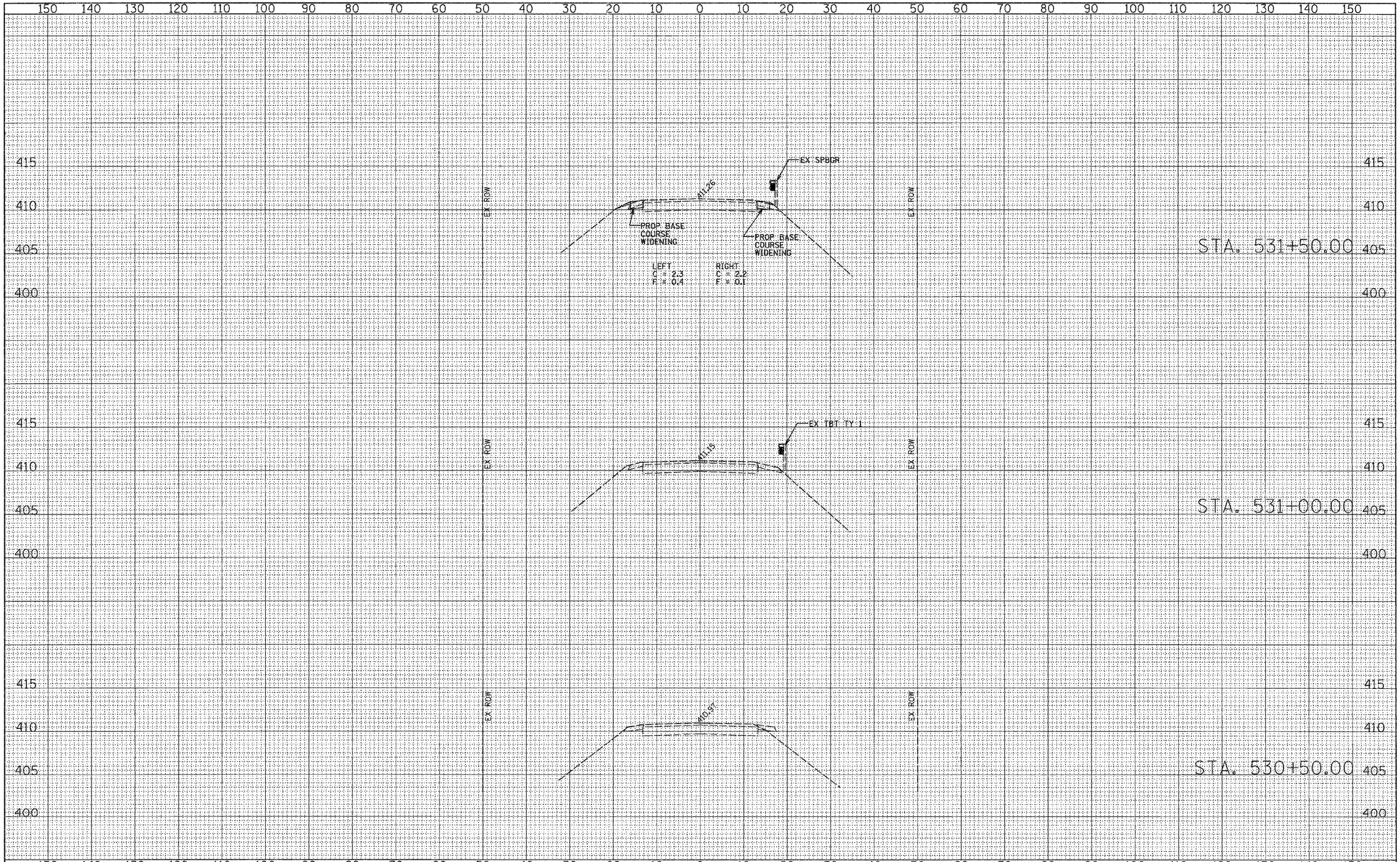
FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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$FILEL$		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) CROSS SECTIONS

SCALE: | SHEET NO. 1 OF 5 SHEETS | STA. 530+50.00 TO STA. 531+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	78
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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

415
410
405
400

EX. ROW

PROP BRIDGE RAIL

PROP HMA SURFACE

PROP TBT TY 6A

4"/1'-0"

PROP P.C. BRIDGE SLAB

PROP BASE COURSE WIDENING

RIGHT
C = 2.2
F = 0.1

EX. ROW

STA. 532+50.00

EX SPBGR

EX SPBGR

4"/1'-0"

PROP BASE COURSE WIDENING

PROP BASE COURSE WIDENING

LEFT
C = 2.4

RIGHT
C = 2.4

EX. ROW

STA. 532+00.00

FILE NAME = #FILEL#	USER NAME = $USER$	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - JMH	REVISED -
	PLOT DATE = $DATE$	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) CROSS SECTIONS

SCALE: | SHEET NO. 2 OF 5 SHEETS | STA. 532+00.00 TO STA. 532+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	79
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

MODJESKI and MASTERS
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FINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

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

415 410 405 400 395

EX. ROW

EX. ROW

S.N. 064-0008

MILL 4"

STA. 533+50.00

EX. ROW

EX. ROW

S.N. 064-0008

MILL 2"

STA. 533+00.00

FILE NAME = #FILEL#	USER NAME = #USER#	DESIGNED - JMH	REVISED -
		DRAWN - AEC	REVISED -
	PLOT SCALE = #SCALE#	CHECKED - JMH	REVISED -
	PLOT DATE = #DATE#	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) CROSS SECTIONS

SCALE: | SHEET NO. 3 OF 5 SHEETS | STA. 533+00.00 TO STA. 533+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	80
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

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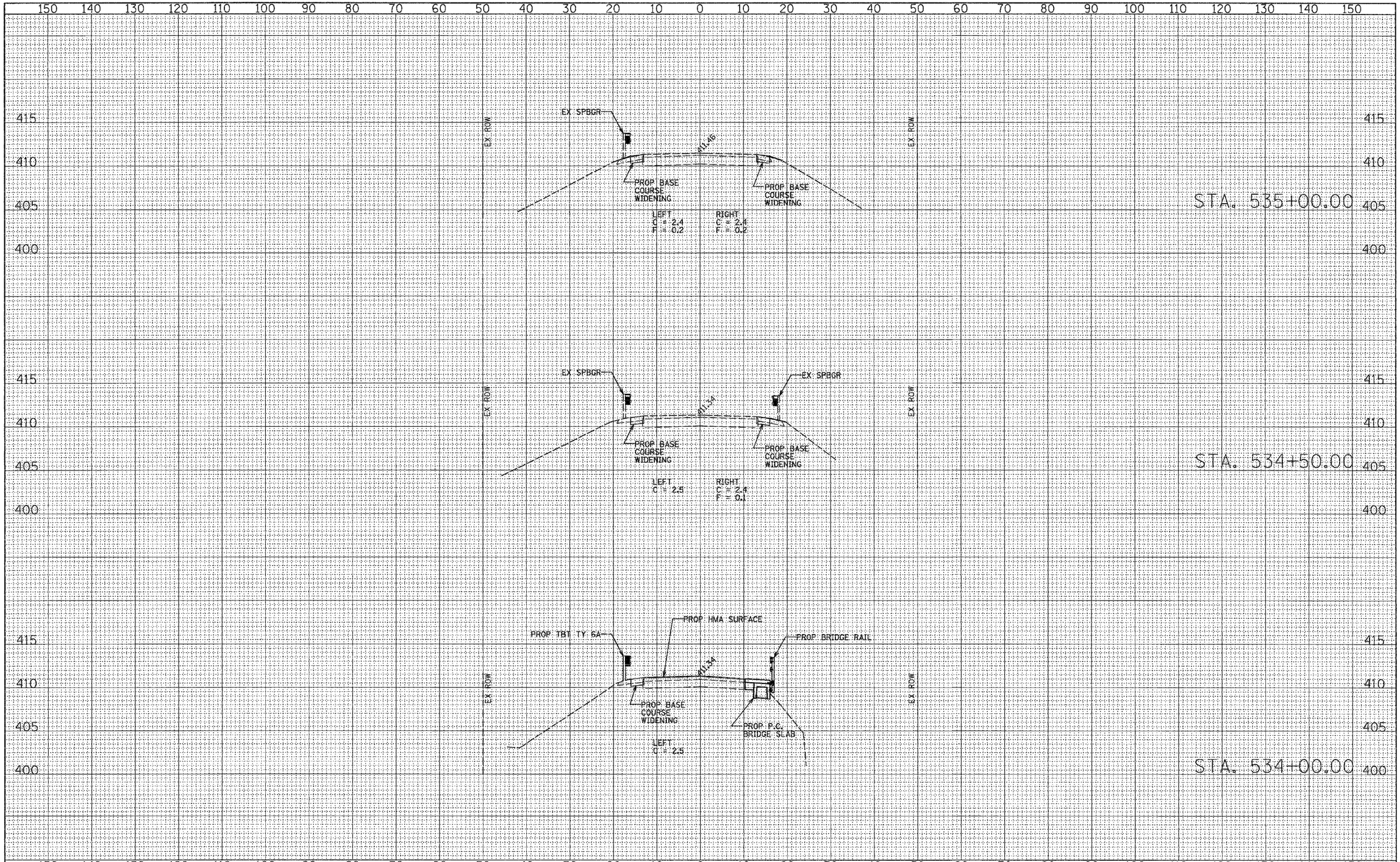
FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		



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	PLOT SCALE = #SCALE#	CHECKED - JMH	REVISED -
	PLOT DATE = #DATE#	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) CROSS SECTIONS

SCALE: | SHEET NO. 4 OF 5 SHEETS | STA. 534+00.00 TO STA. 535+00.00

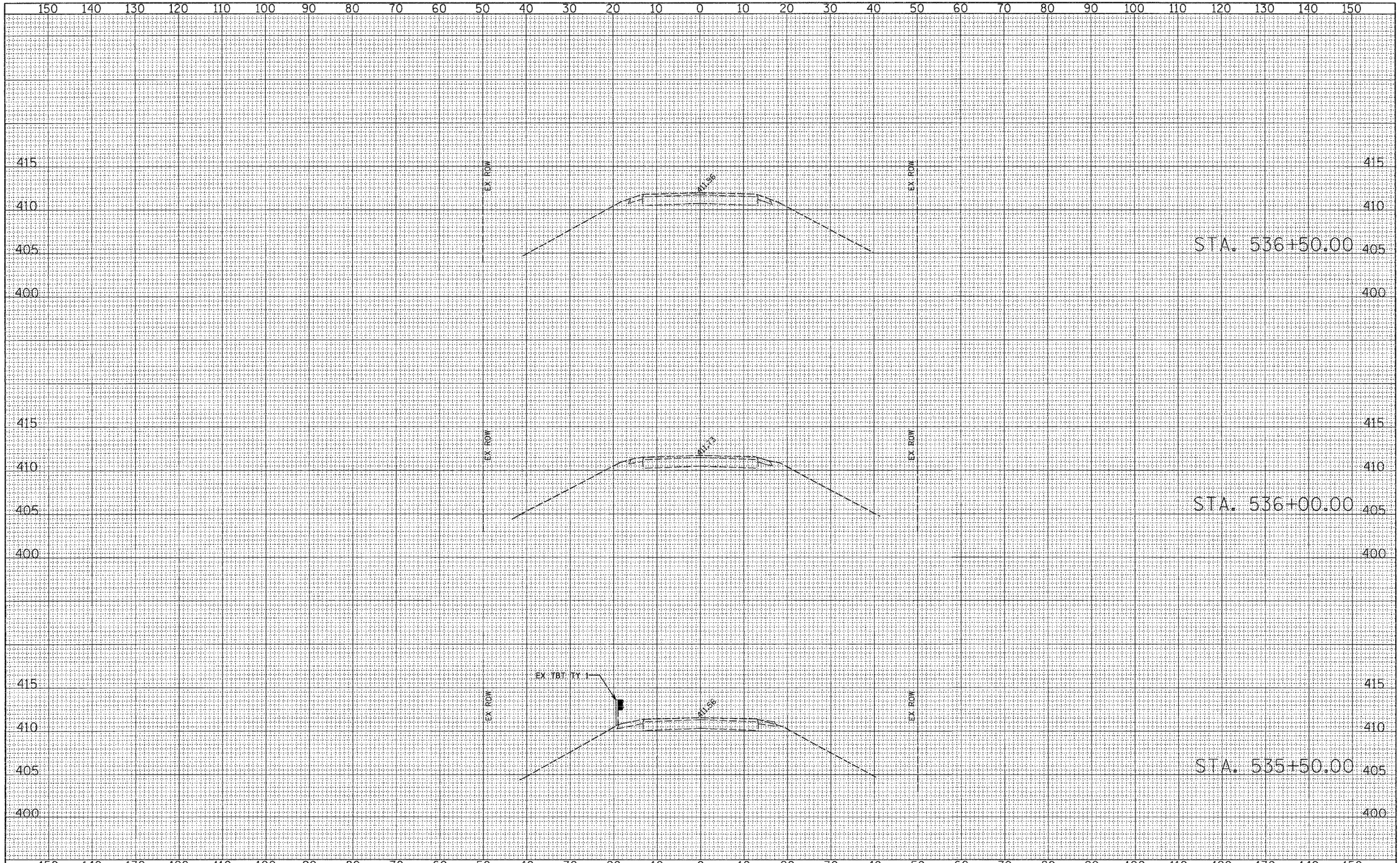
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	81
		CONTRACT NO. 78032		

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

MODJESKI and MASTERS
Consulting Engineers
SINCE 1893

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	PLANIMETER AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	PLANIMETER AREAS		
	AREAS CHECKED		



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	PLOT DATE = #DATE#	DATE - 02/04/08	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAP ROUTE 132 (IL 145) CROSS SECTIONS

SCALE: | SHEET NO. 5 OF 5 SHEETS | STA. 535+50.00 TO STA. 536+50.00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
132	102BR-1	MASSAC	82	82
		CONTRACT NO. 78032		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		