F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	•	MACON	31	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 74270		

• D7 BRIDGE REPAIRS 2008-2

3-7-08 Letting, Item 005

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

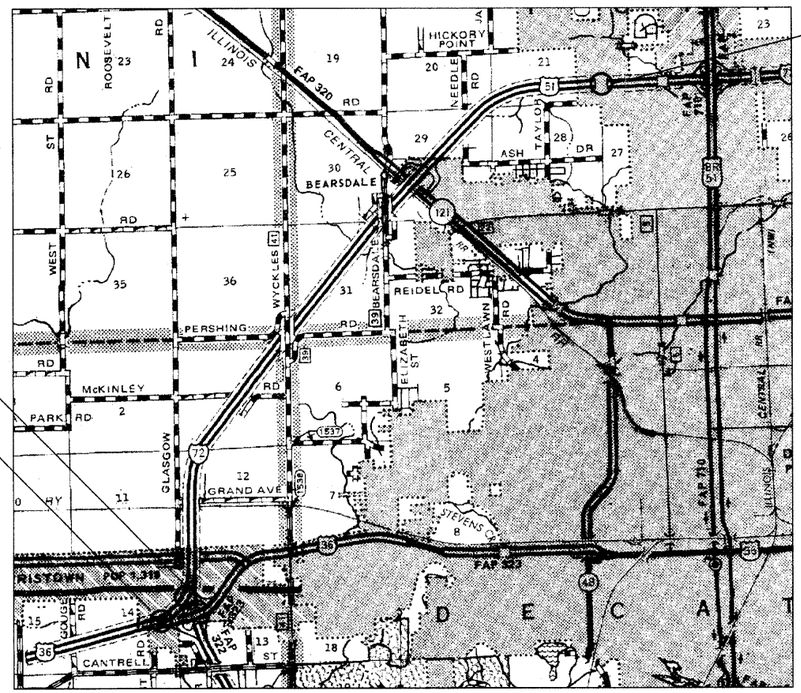
FAI ROUTE 72 (I–72)
D7 BRIDGE REPAIRS 2008–2
~~PROJECT~~
MACON COUNTY

C–97–103–07

FOR INDEX OF SHEETS, SEE SHEET NO. 2

D–97–063–07

LOCATION OF SECTION INDICATED THUS: –



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

PROJECT ENGINEER
PROJECT MANAGER

CONTRACT NO. 74270

058-0066 2008 ADT = 3989
058-0067 2008 ADT = 3989
058-0076 2008 ADT = 3750

GROSS LENGTH = 2.40 MILES
NET LENGTH = 0.20 MILES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED December 28 20 07
Christine M. Reed
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
February 1, 20 08
Eric E. Harm
Interim ENGINEER OF DESIGN AND ENVIRONMENT
February 1, 20 08
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

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2	INDEX OF SHEETS, HIGHWAY STANDARDS AND GENERAL NOTES
3	SUMMARY OF QUANTITIES
4	SCHEDULE OF QUANTITIES
5	OVERVIEW OF 058-0066 & 058-0067
6	BASE COURSE WIDENING 058-0067
7-10	STAGE CONSTRUCTION 058-0066 & 058-0067
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19-26	BRIDGE PLAN AND DETAILS 058-0067
27-31	BRIDGE PLAN AND DETAILS 058-0076

LIST OF HIGHWAY STANDARDS

000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-01	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
701006-02	OFF-ROAD OPERATIONS, 2L 2W, 15' TO 24" AWAY, SPEEDS > 45 MPH
701011-01	OFF-ROAD MOVING OPERATIONS, 2L 2W, DAY ONLY, FOR SPEEDS > 45 MPH
701400-02	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-04	LANE CLOSURE, FREEWAY/EXPRESSWAY
701402-06	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
701406-04	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAYTIME ONLY
701901	TRAFFIC CONTROL DEVICES
720001	SIGN PANEL MOUNTING DETAILS
720006-01	SIGN PANEL ERECTION DETAILS
780001-01	TYPICAL PAVEMENT MARKINGS
781001-02	TYPICAL APPLICATIONS OF RAISED REFLECTIVE PAVEMENT MARKERS
BLR21-7	TYPICAL APLLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS; THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ADOPTED JANUARY 1, 2007; THE SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS INDICATED ON THE CHECKSHEET; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THIS PROJECT IS LOCATED AROUND DECATUR ON I-72 MACON COUNTY. THE PROJECT INCLUDES THE STRUCTURE NUMBERS 058-0066 and 058-0067 ON EASTBOUND I-72 OVER THE WESTBOUND SPUR AND SOUTHBOUND FA-412 (US 51). THE PROJECT ALSO INCLUDES STRUCTURE NUMBER 058-0076 ON OAKLAND AVE OVER I-72.

THE WORK INCLUDED IN THIS PROJECT CONSISTS OF CONSTRUCTION OF PCC BASE COURSE WIDENING, REMOVAL OF THE EXISTING NON-ASBESTOS BITUMINOUS WEARING SURFACE AND WATERPROOFING MEMBRANE SYSTEM, REMOVAL OF THE EXISTING PREFORMED JOINT SEAL EXPANSION JOINTS AND REPLACING THEM WITH PREFORMED JOINT STRIP SEAL EXPANSION JOINTS, CONSTRUCTION OF THE WATERPROOFING MEMBRANE AND BITUMINOUS WEARING SURFACES, PAVEMENT STRIPING, AND ALL OTHER WORK NECESSARY TO COMPLETE THIS SECTION.

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 WORK HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR WORK.

ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF OFF THE RIGHT OF WAY. EXCAVATION AND DISPOSAL OF THE EXCAVATED MATERIAL WILL BE INCLUDED IN THE CONTRACT PRICE FOR PCC BASE CORSE WIDENING, 10".

THE TOTAL QUANTITY OF POLYUREA PAVEMENT MARKING TYPE I - LINE 4 INCH CONSISTS OF:

STR#	YELLOW FT	WHITE FT
058-0066	233	233
058-0067	370	370

THE TOTAL QUANTITY OF PAINT PAVEMENT MARKING - LINE 4 INCH CONSISTS OF:

STR#	YELLOW FT	WHITE FT
058-0076	529	528

THE REFLECTIVE LENSE OF ALL RAISED REFLECTIVE MARKERS LOCATED BETWEEN THE START OF TAPER AND THE ABUTMENT OF THE FIRST STRUCTURE SHALL BE REMOVED PRIOR TO STAGE I CONSTRUCTION. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL. REPLACEMENT OF THE DIRECTIONAL WHITE REFLECTORS AT THE COMPLETION OF STAGE II WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR REPLACEMENT REFLECTOR.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES:

BITUMINOUS CONCRETE 112 LBS/SQ YD - IN

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:

STRUCTURE 026-0076

MIXTURE USE:	ASPHALT WEARING SURFACE
APPLICATION:	HOT-MIX ASPHALT SURFACE COURSE, MIX "C" N70
PG GRADE:	SBS PG 64-22
RAP %:	0%
DESIGN AIR VOIDS:	4.0% @ NDESIGN = 70
MIXTURE COMPOSITION:	IL-9.5
FRICTION AGGREGATE:	MIXTURE C

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATION AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS. THE J.U.L.I.E. NUMBER IS 800-892-0123. A MINIMUM OF 96 HOURS ADVANCE NOTICE IS REQUESTED.

FILE NAME = *FILEL*	USER NAME = *USER*	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = *SCALE*	CHECKED - ___	REVISED - ___
	PLOT DATE = *DATE*	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS & GENERAL NOTES

SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	2
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES			100% STATE SFTY-4A TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		058-0066	058-0067	058-0076
35400500	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 10"	SQ YD	102		102	
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	66			66
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	778			778
44004250	PAVED SHOULDER REMOVAL	SQ YD	102		102	
50102400	CONCRETE REMOVAL	CU YD	52.3	24.6	27.7	
50157300	PROTECTIVE SHIELD	SQ YD	300			300
50300255	CONCRETE SUPERSTRUCTURE	CU YD	52.3	24.6	27.7	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	7920	3500	4420	
50800515	BAR SPLICERS	EACH	62	28	34	
52000110	PREFORMED JOINT STRIP SEAL	FOOT	294	154	140	
67100100	MOBILIZATION	L SUM	1	0.25	0.25	0.50
70100800	TRAFFIC CONTROL AND PROTECTION, STANDARD 701401	L SUM	1		1	
70103815	TRAFFIC CONTROL SURVEILLANCE	CALDA	4	2	2	
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1			1
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	15650	7380	8270	
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	2567	1218	1349	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	825	350	475	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	825	350	475	
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1057			1057
* 78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	1206	466	740	
78300500	PAVEMENT MARKING REMOVAL	SQ FT	358	114	244	
X0322050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	13	13		
X0325305	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	162	46	87	29
X7010820	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402 (SPECIAL)	L SUM	1	0.5	0.5	
X7012615	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	EACH	3	1	1	1
XX005494	WATERPROOFING MEMBRANE SYSTEM (SPECIAL)	SQ YD	778			778
Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	9			9
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	35			35
Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	108			108
Z0021400	EXPANSION JOINT (SPECIAL)	FOOT	60			60
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	1	1	
Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	1	1	
* 78100300	REPLACEMENT REFLECTOR	EACH	13	13		

*SPECIALTY ITEMS

Rev.

FILE NAME = $FILE1$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ___	REVISED - ___			72	07 BRIDGE REPAIRS 2008-2	MACON	31	3
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___		SCALE: 20_____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____			CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___			FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

PAVEMENT MARKING SCHEDULE

STA. TO STA.	PAVEMENT MARKING REMOVAL	TEMPORARY PAVEMENT MARKING - LINE 4"	WORK ZONE PAVEMENT MARKING REMOVAL	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	PAINT PAVEMENT MARKING - LINE 4"	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	RAISED PAVEMENT MARKER REFLECTOR REPLACEMENT
	SQ FT	FOOT	SQ FT	FOOT	FOOT	EACH	EACH
058-0066 463+50 to 474+00 473+92 to 476+25	113	7380	1218	466		13	13
058-0067 488+97 to 492+66	244	8270	1349	740			
058-0076 18+52 to 21+16					1057		

BRIDGE REPAIR SCHEDULE

STRUCTURE NUMBER	LENGTH	CONCRETE REMOVAL	CONCRETE SUPERSTRUCTURE	REINFORCEMENT BARS, EPOXY COATED	BAR SPLICERS	PREFORMED JOINT STRIP SEAL	STRUCTURAL REPAIR OF CONCRETE (DEPTH < OR = 5")	DECK SLAB REPAIR (PART. DEPTH, TYPE I)	DECK SLAB REPAIR (PART. DEPTH, TYPE II)	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	WATERPROOFING MEMBRANE SYSTEM (SPECIAL)	HOT-MIX ASPHALT SURFACE COURSE, MIXTURE C, N70	EXPANSION JOINT (SPECIAL)
	FEET	CU YD	CU YD	POUND	EACH	FEET	SQ FT	SQ YD	SQ YD	SQ YD	SQ YD	TON	FEET
058-0066													
Stage I Stage II		13.6 11.0	13.6 11.0	1900 1600		84.6 69.4							
TOTAL	227.79	24.6	24.6	3500	28	154	46						
058-0067													
Stage I Stage II		15.3 12.4	15.3 12.4	2480 1940		76.9 63.1							
TOTAL	211.79	27.7	27.7	4420	34	140.0	87						
058-0076													
TOTAL	264.17						29	9	35	108	778	66	60
GRAND TOTAL	703.75	52.3	52.3	7920	62	278	162	9	35	108	778	66	60

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	PLOT DATE = $DATE$	DATE - ---------	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULES

SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

Rev.

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	4
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

DETAIL OF TRAFFIC CONTROL

I-72 WB

I-72 EB

STR# 058-0066

STR# 058-0067

US 36 WB

US 36 EB

US 51 SB

US 51 NB

N

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
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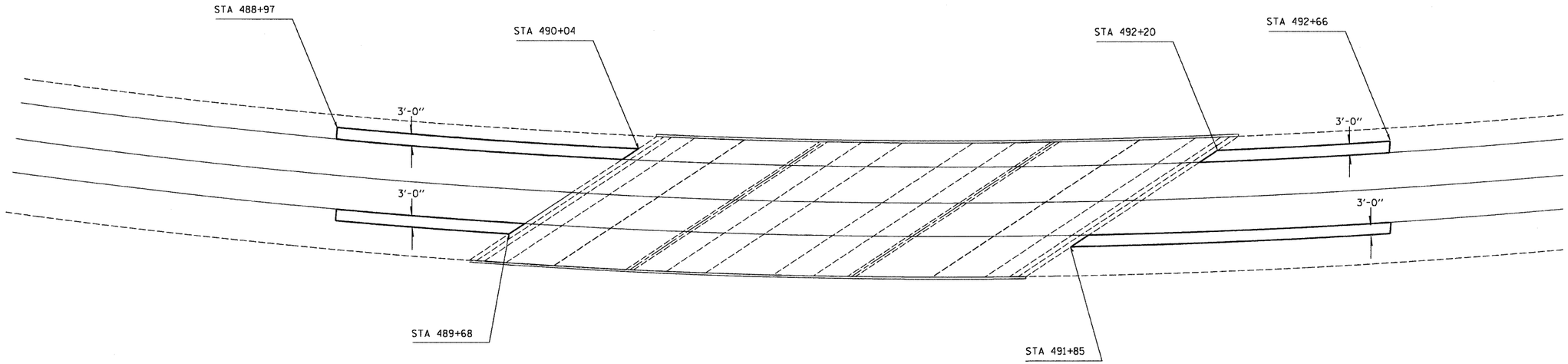
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

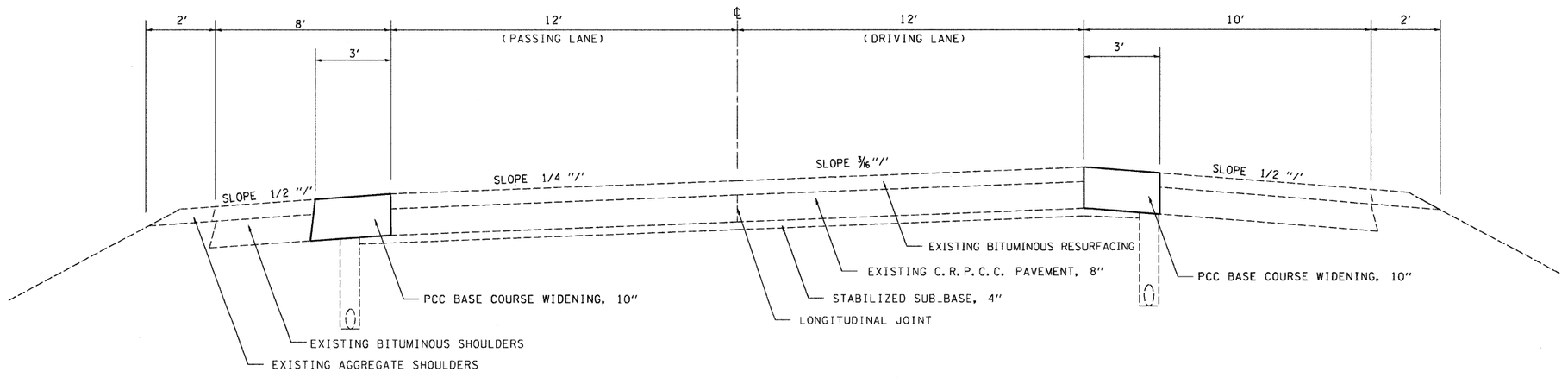
OVERVIEW OF STR# 058-0066 & 058-0067

SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	5
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



Base Course Widening
Station Left 488+97 to 490+04 = 35.7 SQ YDS
Station Right 488+97 to 489+68 = 23.7 SQ YDS
Station Left 492+20 to 492+66 = 15.3 SQ YDS
Station Right 491+85 to 492+66 = 27.3 SQ YDS



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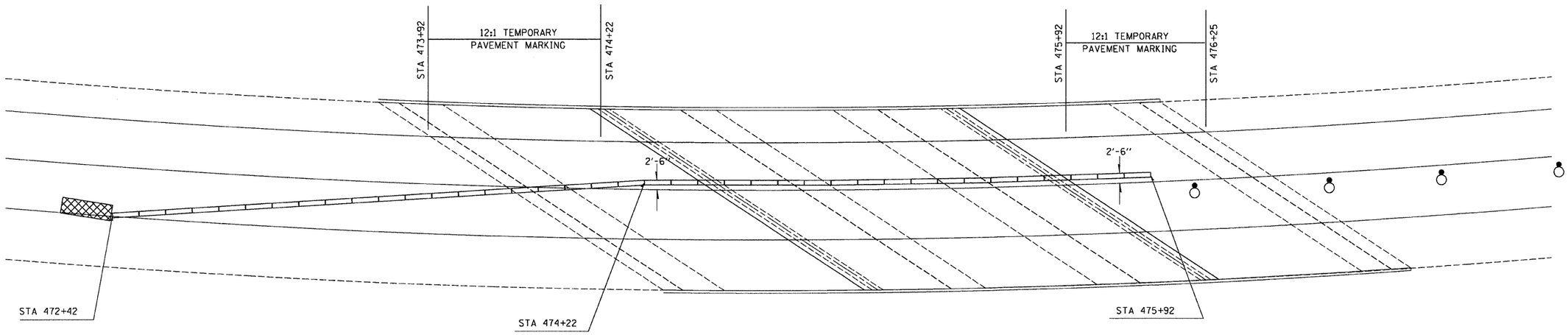
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BASE COURSE WIDENING 058-0067

SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

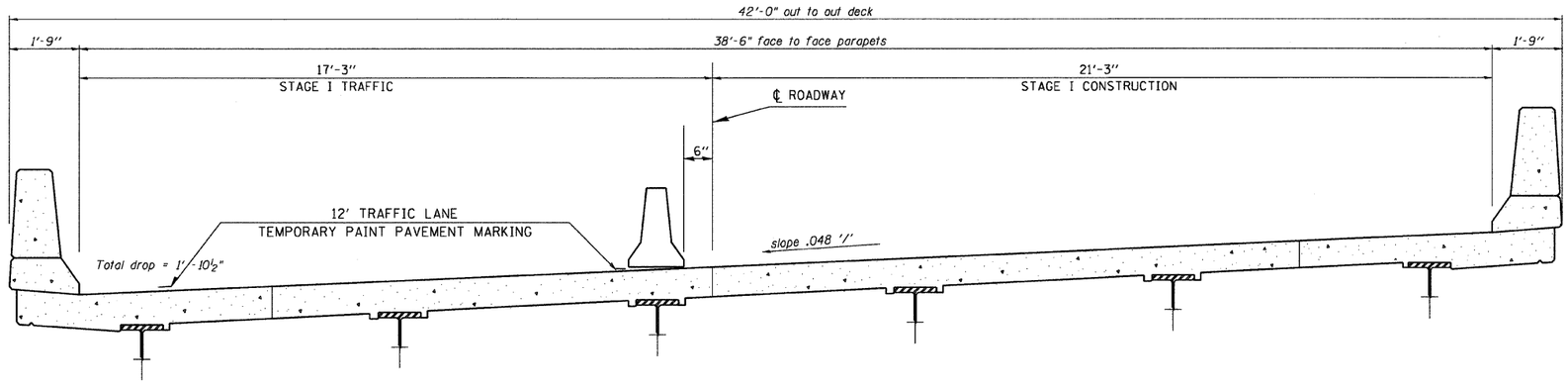
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	6
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



IMPACT ATTENUATOR, TEMPORARY

DRUM WITH STEADY BURNING LIGHT

TEMPORARY CONCRETE BARRIER STA 472+42 to 475+92 = 350 FT
IMPACT ATTENUATOR, TEMPORARY 1.0 EACH



CROSS SECTION

NEAR MIDSPAN

(Looking West)

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		DRAWN -	REVISED -			72	07 BRIDGE REPAIRS 2008-2	MACON	31	7
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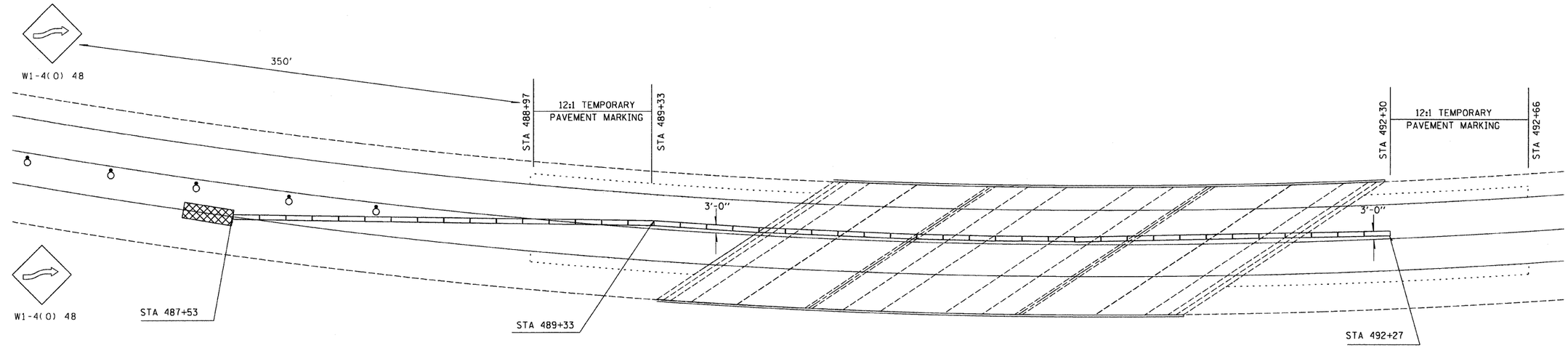
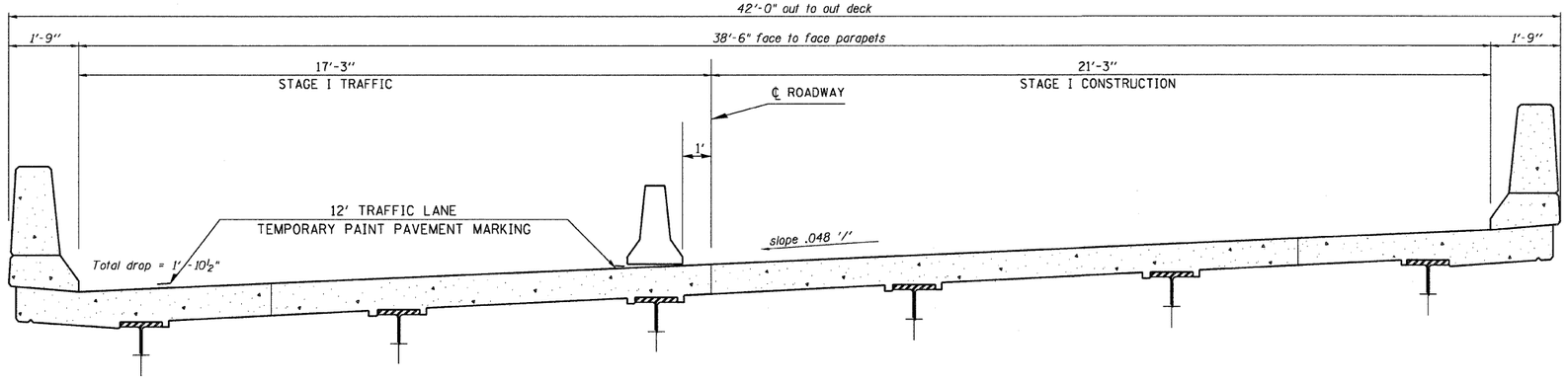
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE: 20 SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



DRUM WITH STEADY BURNING LIGHT

IMPACT ATTENUATOR, TEMPORARY

TEMPORARY CONCRETE BARRIER STA 487+53 to 492+27 = 475 FT
IMPACT ATTENUATOR, TEMPORARY 1.0 EACH



CROSS SECTION

NEAR MIDSPAN

(Looking West)

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		DRAWN -	REVISED -			72	07 BRIDGE REPAIRS 2008-2	MACON	31	8
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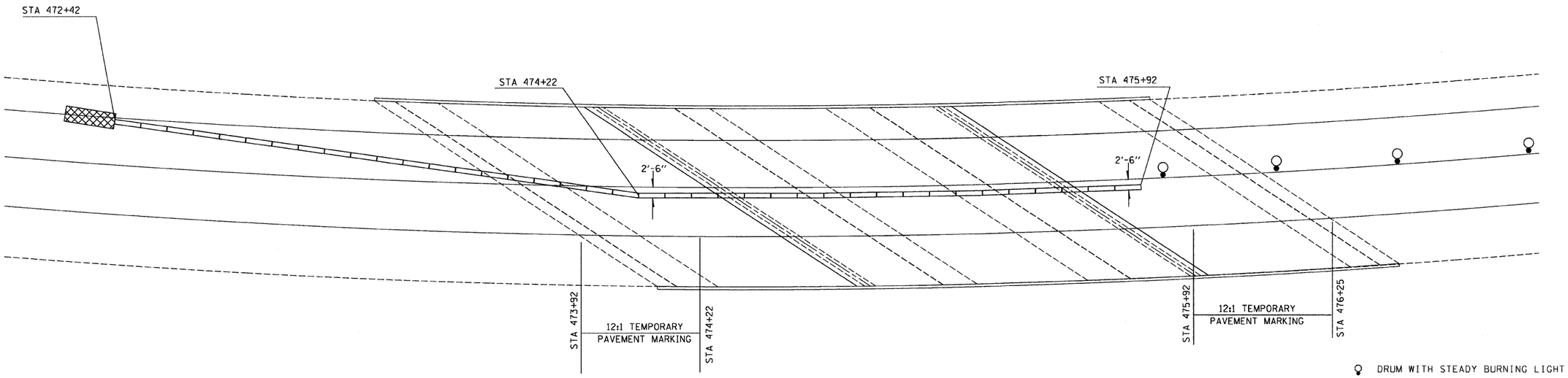
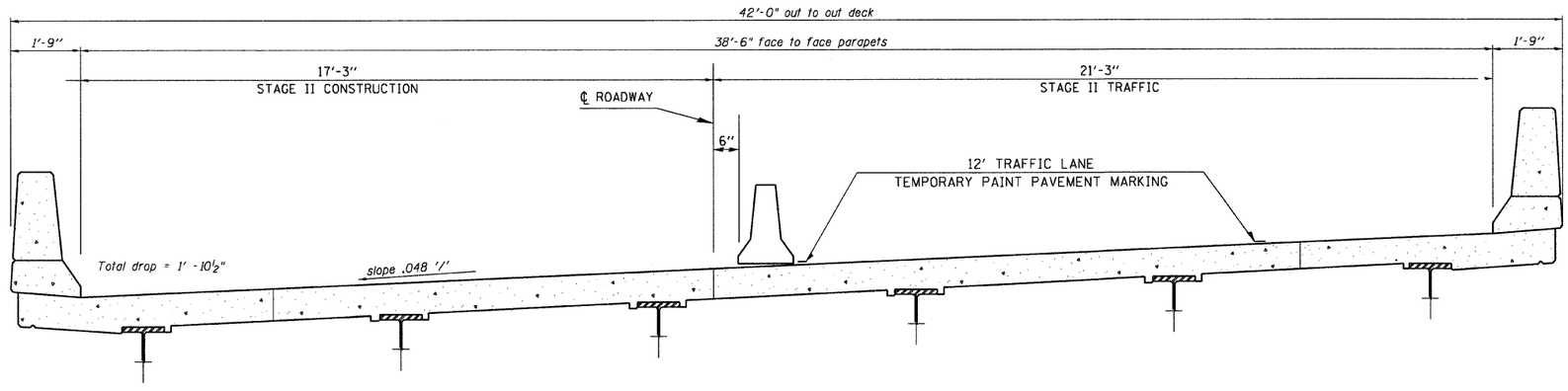
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE: 20 SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



IMPACT ATTENUATOR, TEMPORARY

DRUM WITH STEADY BURNING LIGHT

RELOCATE TEMPORARY CONCRETE BARRIER STA 472+42 to 475+92 = 350 FT
RELOCATE IMPACT ATTENUATOR, TEMPORARY 1.0 EACH



CROSS SECTION

NEAR MIDSPAN

(Looking West)

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		DRAWN - ___	REVISED - ___
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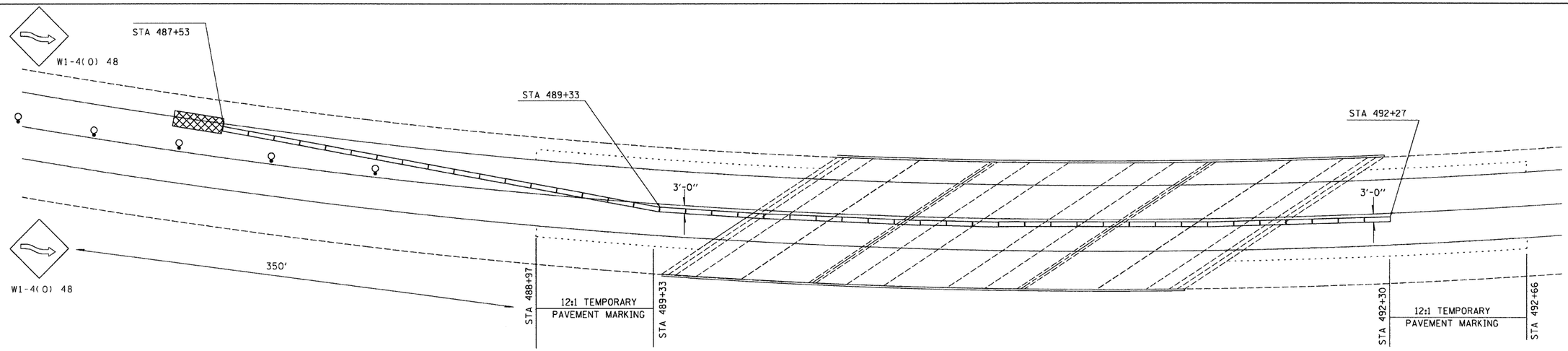
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE II CONSTRUCTION DETAILS 058-0066

SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

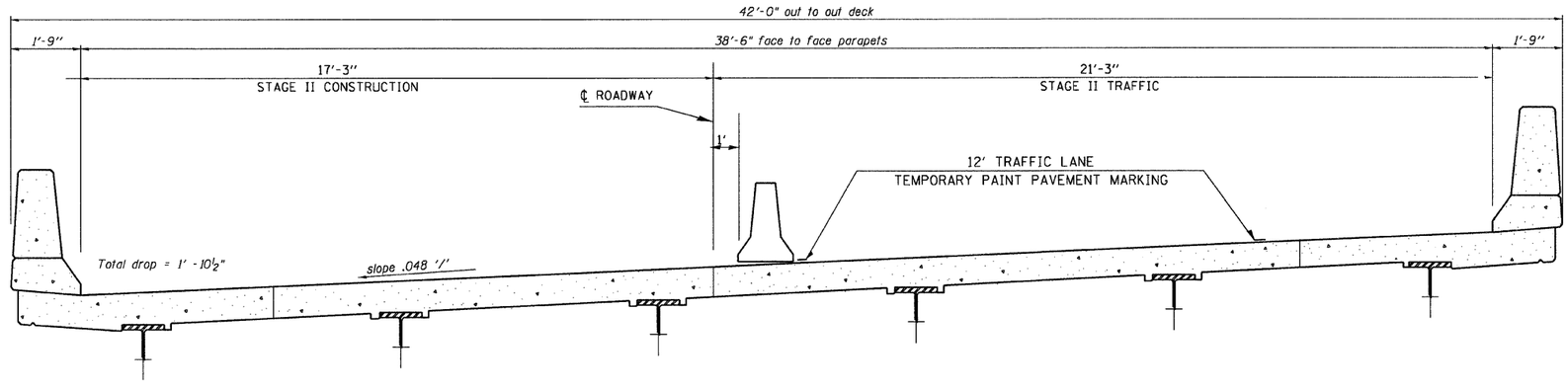
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	9
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



DRUM WITH STEADY BURNING LIGHT

IMPACT ATTENUATOR, TEMPORARY

RELOCATE TEMPORARY CONCRETE BARRIER STA 487+53 to 492+27 = 475 FT
RELOCATE IMPACT ATTENUATOR, TEMPORARY 1.0 EACH



CROSS SECTION

NEAR MIDSPAN

(Looking West)

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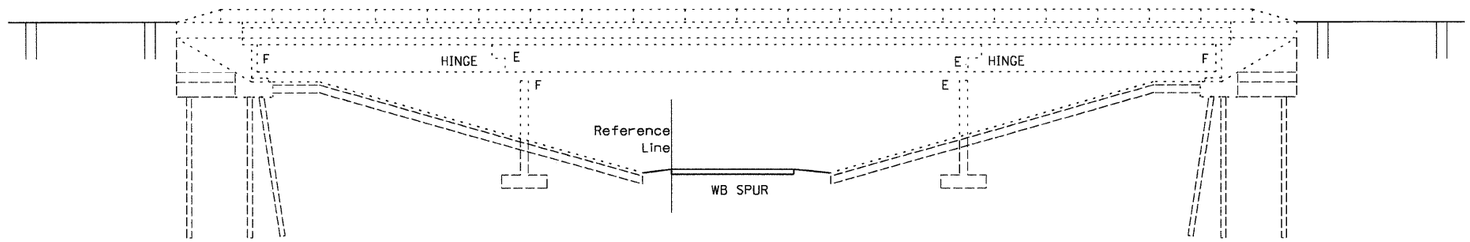
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

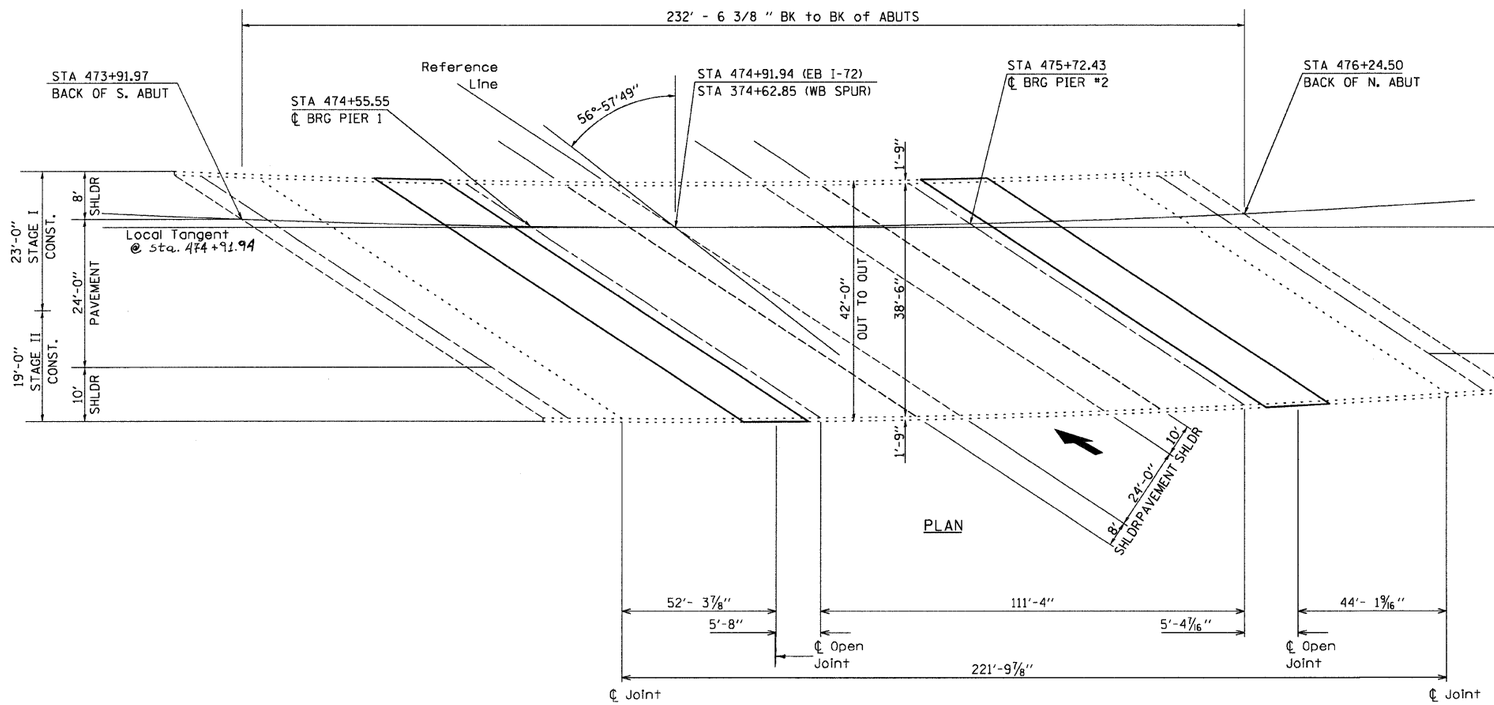
STAGE II CONSTRUCTION DETAILS 058-0067

SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	10
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



ELEVATION



GENERAL NOTES

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

Reinforcement bars designated (E) shall be epoxy coated.

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 compensations 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.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included in concrete removal).

Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50 F.

Prior to pouring thw new concrete deck, all heavy or loos rust, loose mill scale, or other loose potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

TOTAL BILL OF MATERIALS

ITEM DESCRIPTION	UNIT	QUANTITY
Concrete Removal	CU YD	24.6
Concrete Superstructure	CU YD	24.6
Preformed Joint Strip Seal	FOOT	154
Reinforcement Bars, Epoxy Coated	POUND	3500
Bar Splicers	EACH	28
Structural Repair of Concrete (Depth <= 5")	SQ FT	46

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

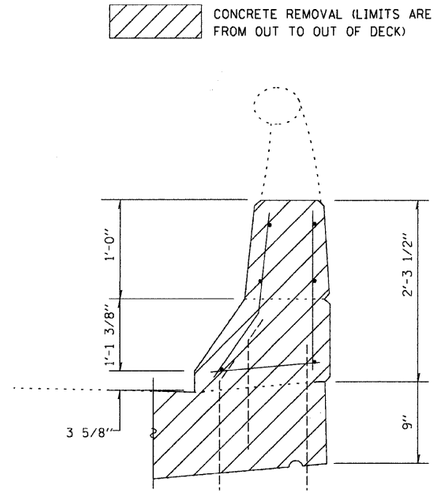
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELEVATION AND PLAN VIEW SN 058-0066 over WB SPUR

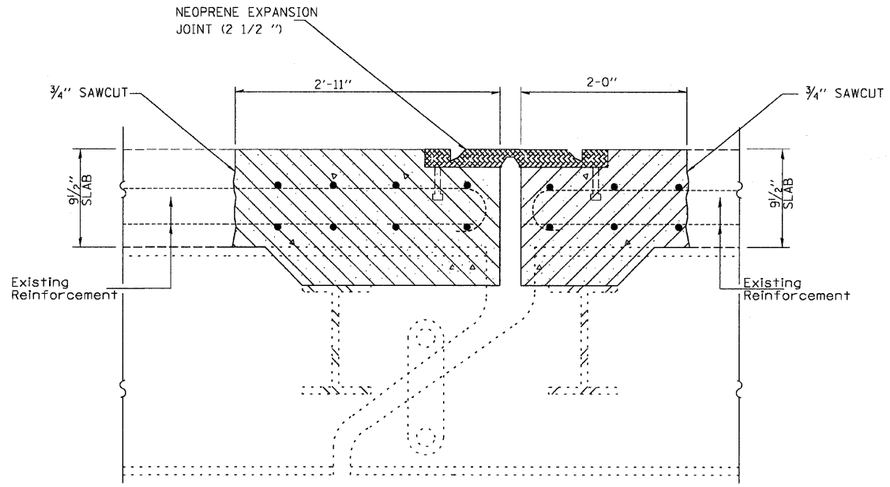
SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	11
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

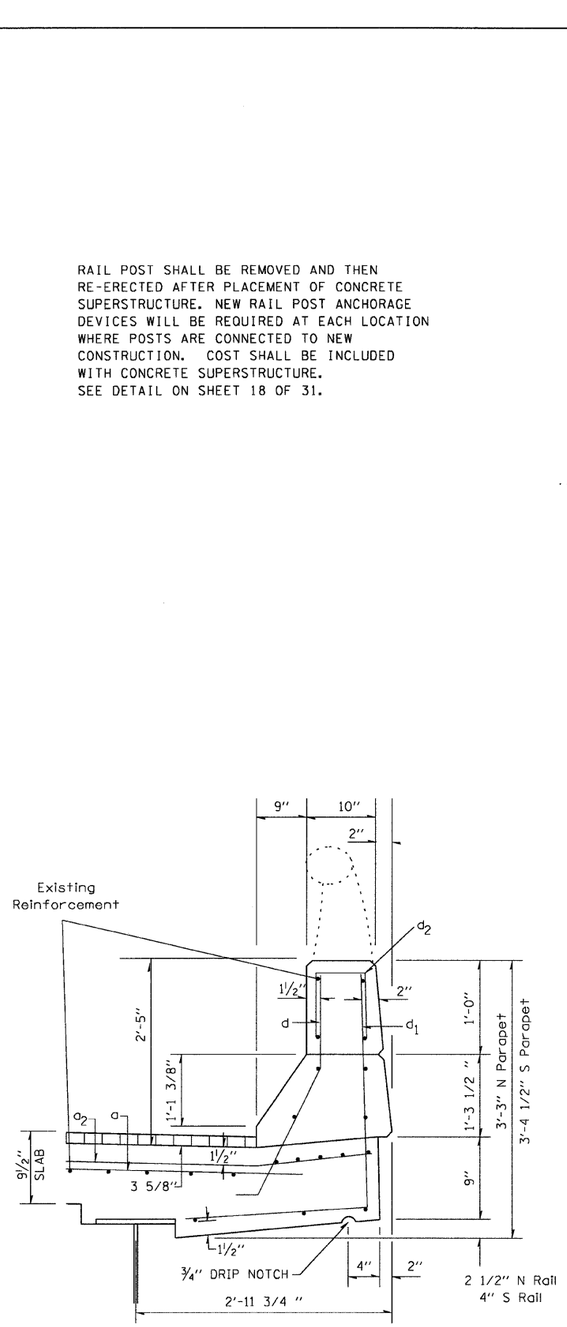
RAIL POST SHALL BE REMOVED AND THEN RE-ERECTED AFTER PLACEMENT OF CONCRETE SUPERSTRUCTURE. NEW RAIL POST ANCHORAGE DEVICES WILL BE REQUIRED AT EACH LOCATION WHERE POSTS ARE CONNECTED TO NEW CONSTRUCTION. COST SHALL BE INCLUDED WITH CONCRETE SUPERSTRUCTURE. SEE DETAIL ON SHEET 18 OF 31.



PARAPET DETAIL



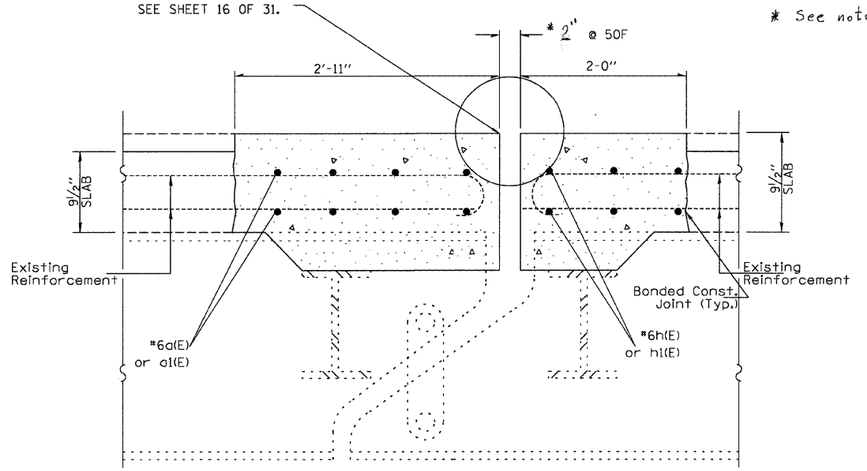
EXISTING EXPANSION JOINTS AT HINGES



PARAPET DETAIL

PREFORMED JOINT STRIP SEAL FOR DETAIL OF EXPANSION JOINT SEE SHEET 16 OF 31.

* See notes on sheet 16 of 31.



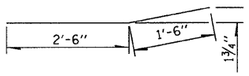
PROPOSED EXPANSION JOINTS AT HINGES
(Dimensions at Right Angles)

FILE NAME = $FILE1$	USER NAME = $USER$	DESIGNED - ---	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXPANSION JOINT & REBAR DETAILS 058-0066	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ---	REVISED - ---			72	D7 BRIDGE REPAIRS 2008-2	MACON	31	12
	PLOT SCALE = $SCALE$	CHECKED - ---	REVISED - ---					CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - ---------	REVISED - ---		SCALE: ---------- SHEET NO. -- OF --- SHEETS STA. ---------- TO STA. ----------	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

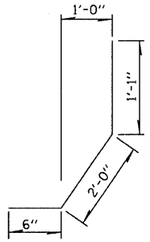
BAR LIST - PER JOINT - STR #026-0066

BAR	NUMBER OF BARS		TOTAL	SIZE	LENGTH	SHAPE
	STAGE I	STAGE II				
a(E)	28		28	6	20'-9"	
a1(E)		14	14	6	34'-6"	
a2(E)	7	7	14	6	4'-0"	
d(E)	4	4	8	5	3'-7"	
d1(E)	4	4	8	4	4'-7"	
d2(E)	4	4	8	4	2'-1"	
CONCRETE REMOVAL					CU YD	12.3
REINFORCEMENT BARS (EPOXY COATED)					POUND	1750
CONCRETE SUPERSTRUCTURE					CU YD	12.3

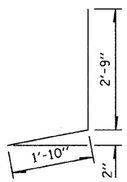
MINIMUM LAP #6 - 2'7"



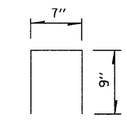
BAR a_2 (E)



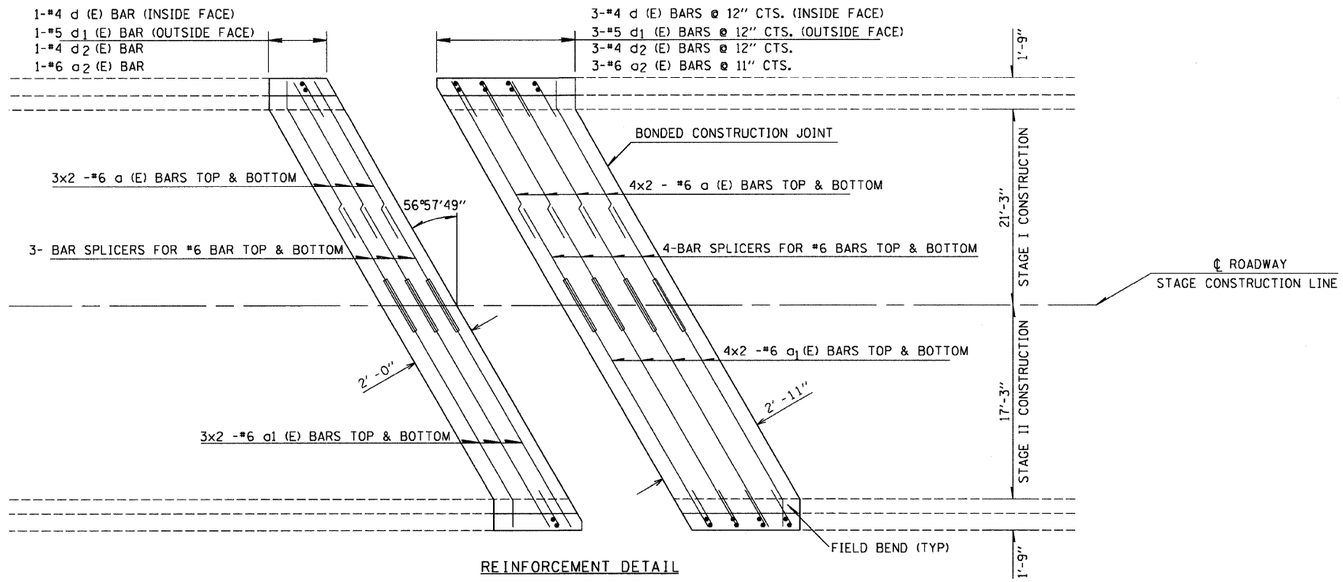
BAR d(E)



BAR d_1 (E)

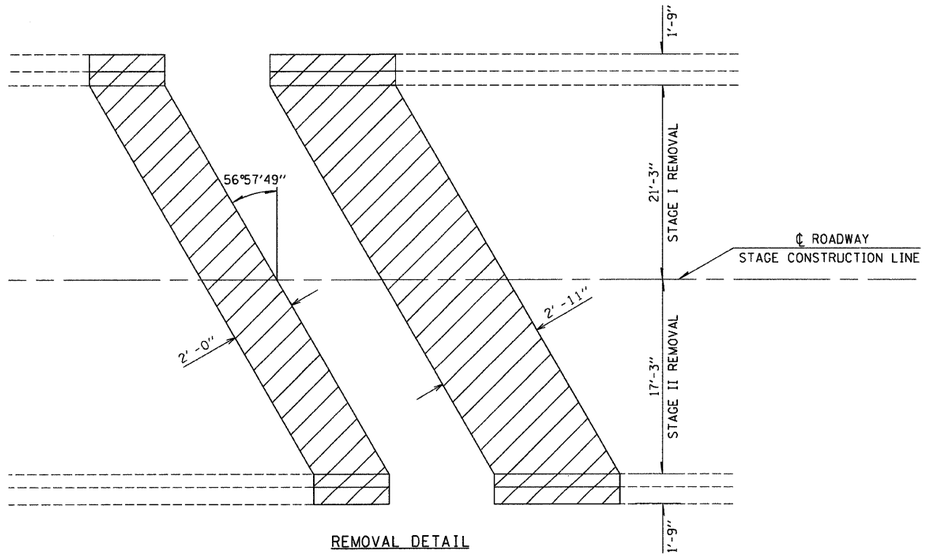


BAR d_2 (E)



REINFORCEMENT DETAIL

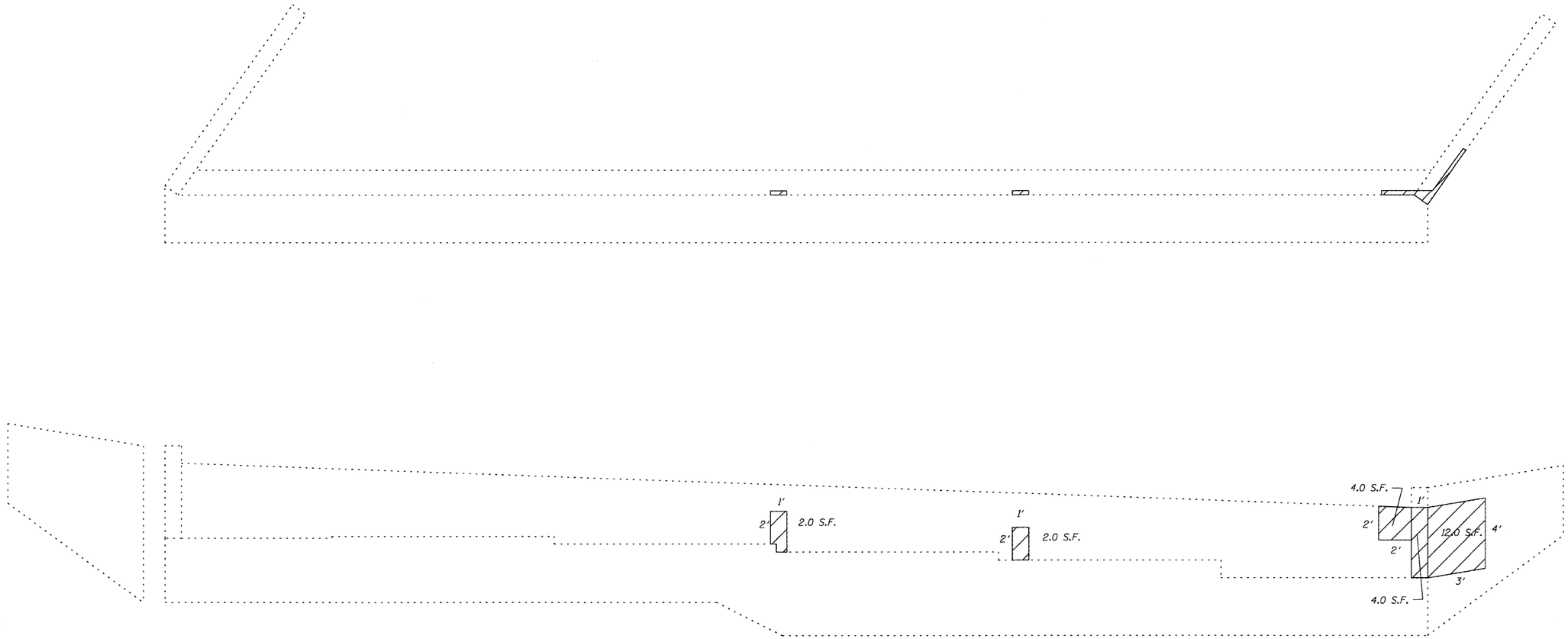
℄ Hinges- Looking N ℄ Pier 2
Pier 1 Similar by 180 degrees



REMOVAL DETAIL

CONCRETE REMOVAL

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**EXPANSION JOINT & REBAR DETAILS SN 058-0066**	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ___	REVISED - ___			72	07 BRIDGE REPAIRS 2008-2	MACON	31	13
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___					CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___		SCALE: 20_____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____		FED. ROAD DIST. NO. _ ILLINOIS	FED. AID PROJECT		



WEST ABUTMENT

NOTE: QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES TO BE DETERMINED BY THE RESIDENT ENGINEER.

STRUCTURAL REPAIR OF CONCRETE <= 5"

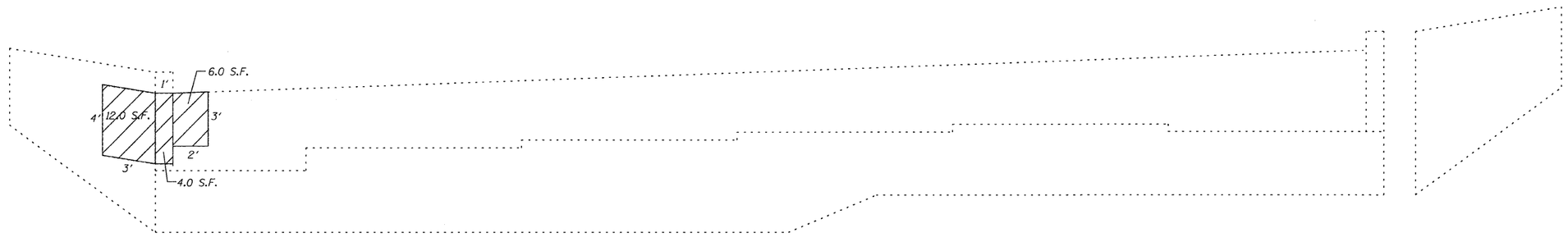
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL REPAIR OF CONCRETE 058-0066

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	14
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



EAST ABUTMENT

NOTE: QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES TO BE DETERMINED BY THE RESIDENT ENGINEER.

STRUCTURAL REPAIR OF CONCRETE <= 5"

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

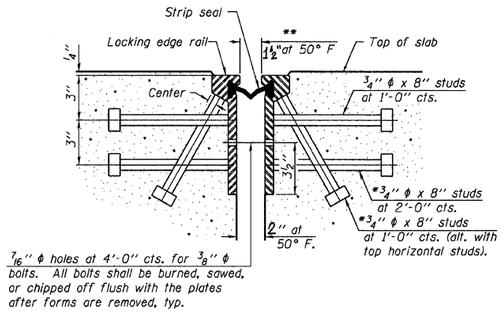
STRUCTURAL REPAIR OF CONCRETE 058-0066

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

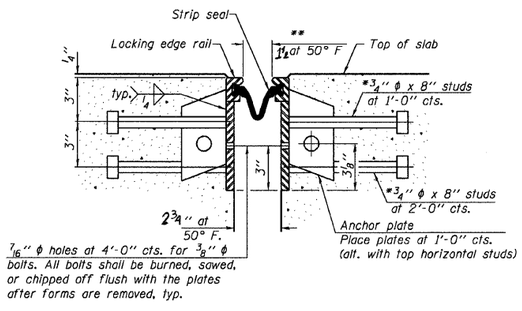
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	15
		CONTRACT NO. 74270		

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

*Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.
**When joint is fixed, dimension is set at 1½".



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



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

Notes:

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

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

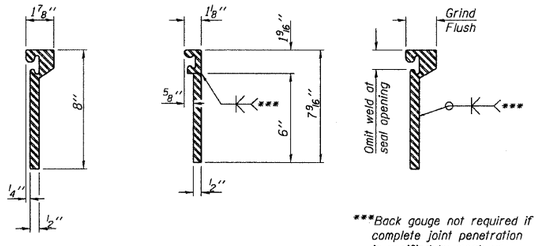
The manufacturer's recommended installation methods shall be followed.

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

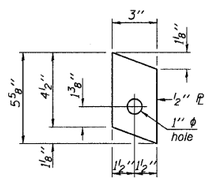
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

SECTION THRU ROLLED RAIL JOINT

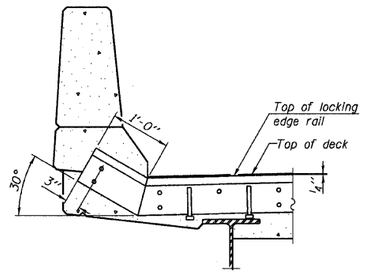
SECTION THRU WELDED RAIL JOINT



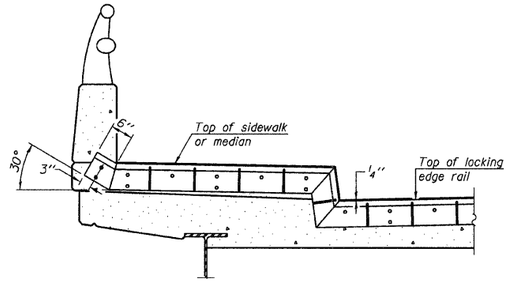
***Back gouge not required if complete joint penetration is verified by mock-up.



ANCHOR PL (for welded rail)



AT PARAPET



AT SIDEWALK OR MEDIAN

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

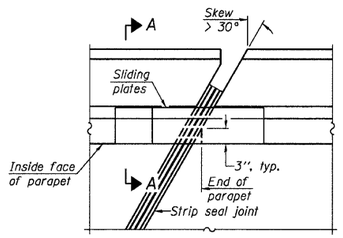
ROLLED (EXTRUDED) RAIL

WELDED RAIL

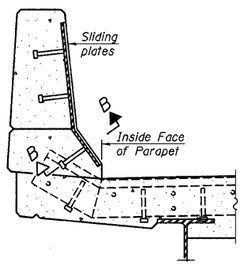
LOCKING EDGE RAIL SPLICE

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

LOCKING EDGE RAILS



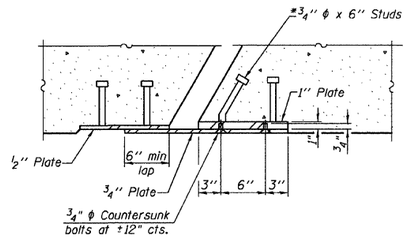
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

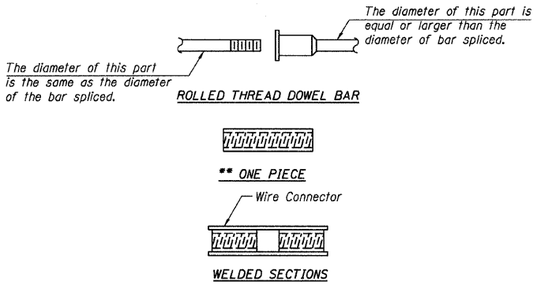
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	154

PREFORMED JOINT STRIP SEAL

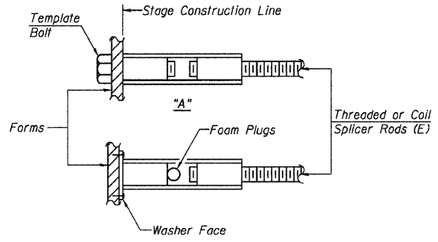
EJ-SSJ 9-3-07

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ---	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EJ-SSJ 058-0066		F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ---	REVISED - ---				72	07 BRIDGE REPAIRS 2008-2	MACON	31	16
	PLOT SCALE = $SCALE$	CHECKED - ---	REVISED - ---						CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - ---	REVISED - ---		SCALE: 20	SHEET NO. __ OF ___ SHEETS	STA. _____ TO STA. _____	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT	



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.

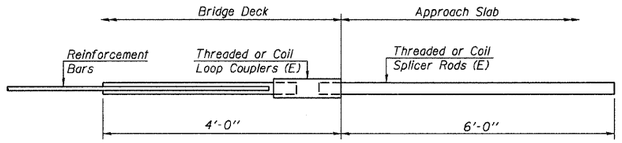
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

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

② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_t$

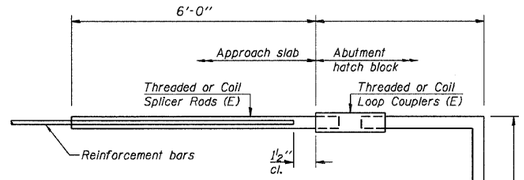
Where f_y = Yield strength of lapped reinforcement bars in ksi.
A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

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



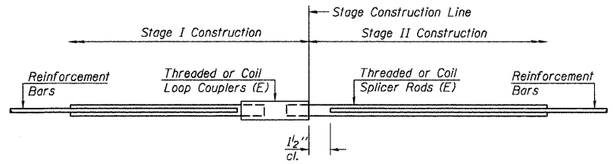
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR STUB ABUTMENTS

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



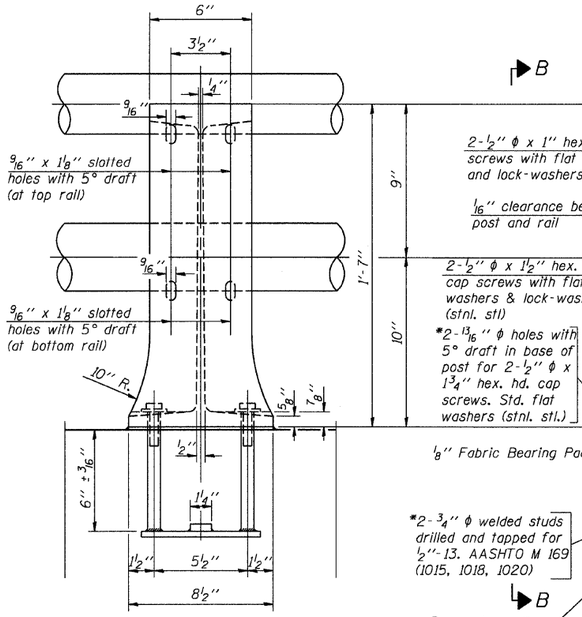
STANDARD

Bar Size	No. Assemblies Required	Location
#6	28	058-0066

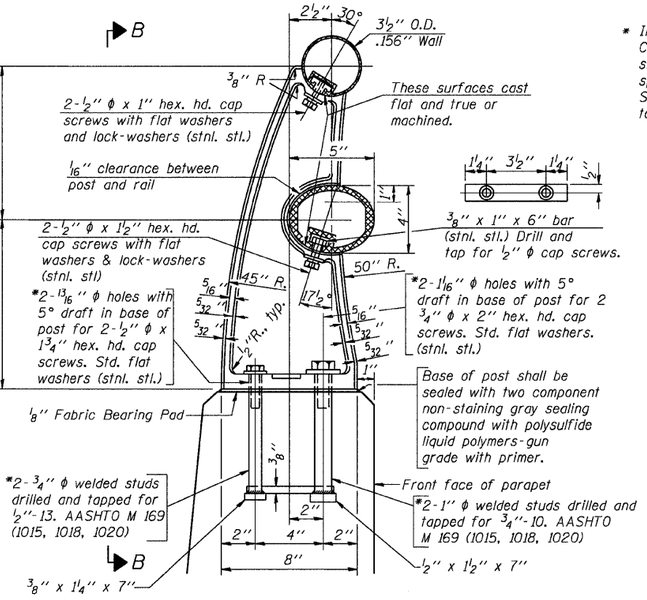
BAR SPLICER ASSEMBLY DETAILS

BSD-1 11-1-06

FILE NAME = *FILEL*	USER NAME = *USER*	DESIGNED - ___	REVISED - ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BSD-1 058-0066	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ___	REVISED - ___			72	07 BRIDGE REPAIRS 2008-2	MACON	31	17
	PLOT SCALE = *SCALE*	CHECKED - ___	REVISED - ___						CONTRACT NO. 74270	
	PLOT DATE = *DATE*	DATE - _____	REVISED - ___		SCALE: 2Q_____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____		FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT	

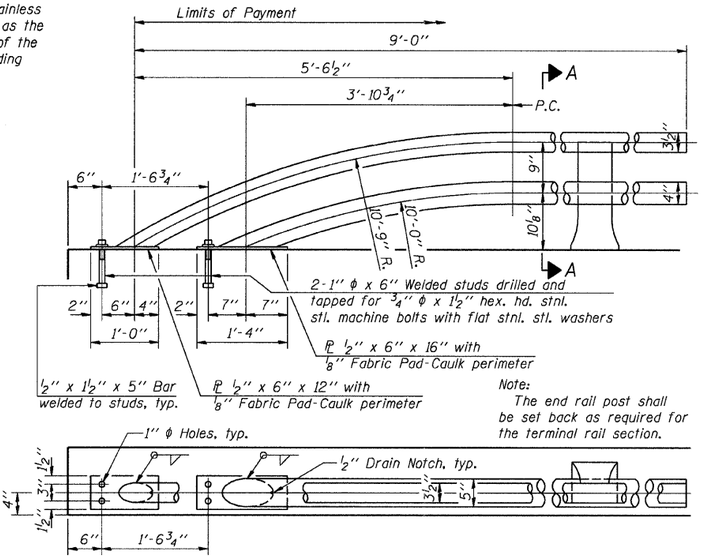


VIEW B-B



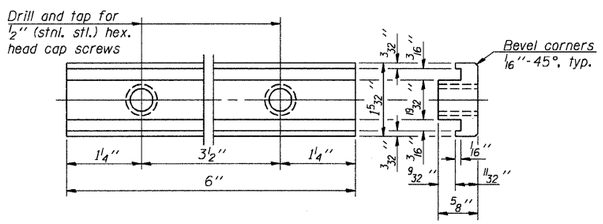
SECTION A-A

* *In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.*

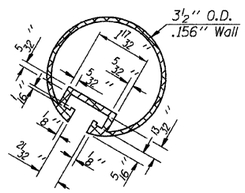


RAIL TERMINAL SECTION

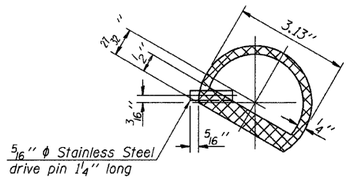
RAIL POST DETAILS



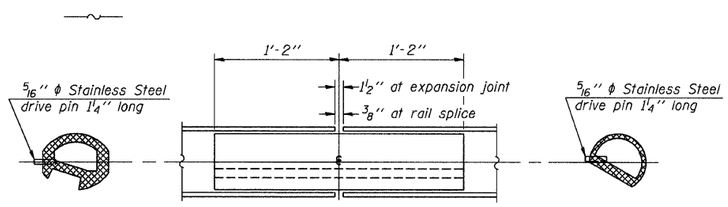
RAIL POST CLAMP BAR
For Top Rail



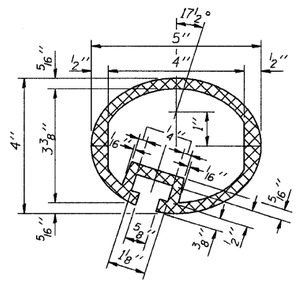
SECTION THRU TOP RAIL



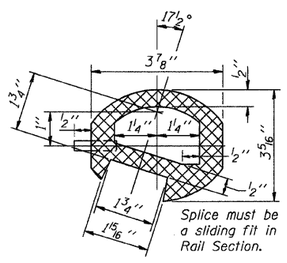
SECTION THRU SPLICE
For Top Rail



BOTTOM RAIL — RAIL SPLICE — TOP RAIL



SEC. THRU ELLIPTICAL RAIL SECTION



SEC. THRU SPLICE

Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
Provide 1-⅛" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheet of for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	

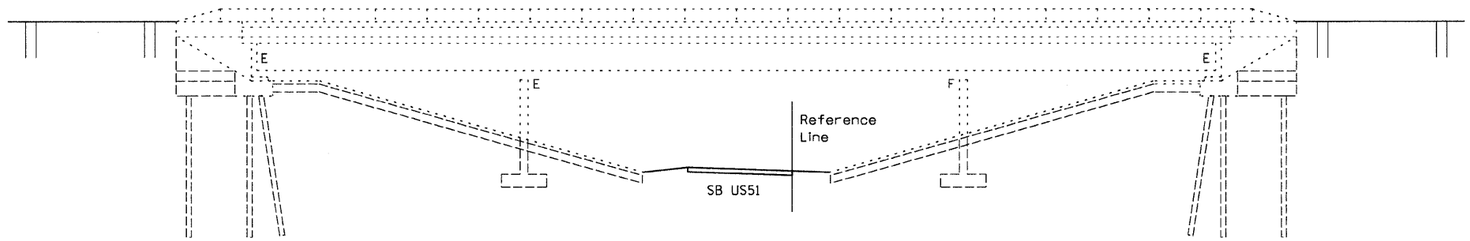
ALUMINUM RAILING, TYPE L

R-20 9-3-07 (7'-0" to 10'-0" Post spacing)

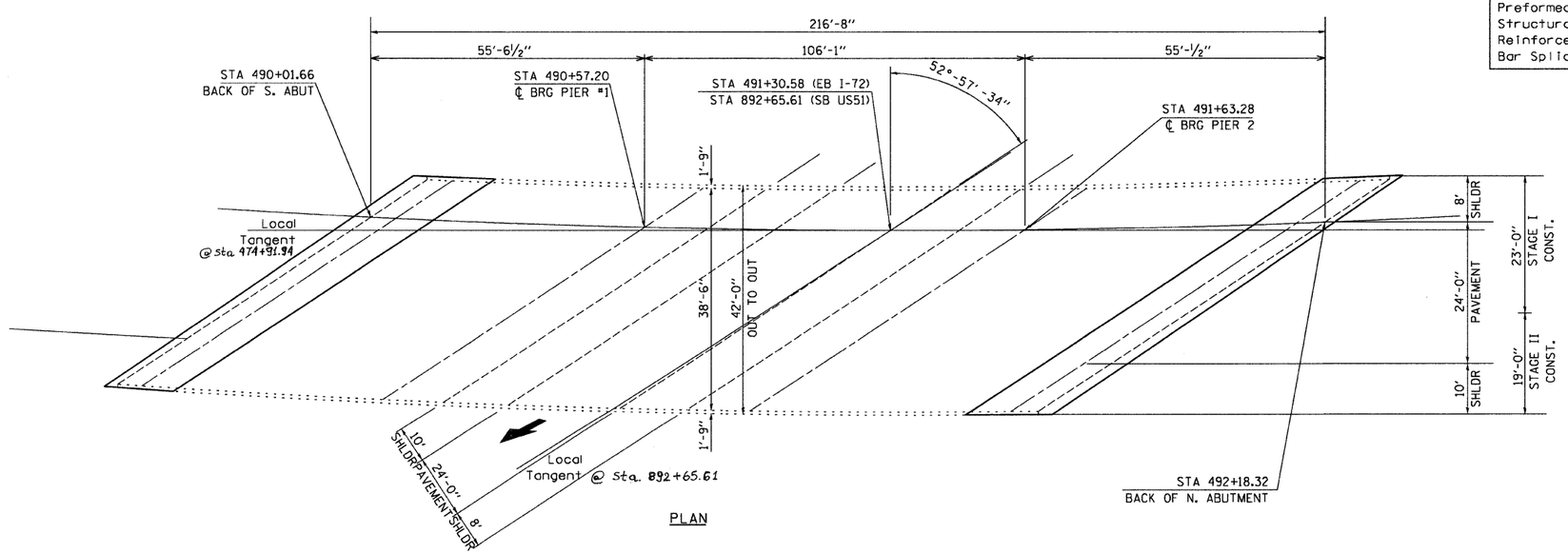
FOR INFORMATION ONLY

(Cost for this work will be included with concrete superstructures)

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ---	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ANCHOR BASKET FOR ALUMINUM RAILING DETAIL 058-0066	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ---	REVISED - ---			72	07 BRIDGE REPAIRS 2008-2	MACON	31	18
	PLOT SCALE = $SCALE$	CHECKED - ---	REVISED - ---					CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - ---------	REVISED - ---		SCALE: 20 SHEET NO. __ OF ___ SHEETS STA. ---------- TO STA. ----------	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



ELEVATION



PLAN

GENERAL NOTES

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

Reinforcement bars designated (E) shall be epoxy coated.

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 compensations 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.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included in concrete removal).

Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50 F.

Prior to pouring thw new concrete deck, all heavy or loos rust, loose mill scale, or other loose potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

TOTAL BILL OF MATERIALS

ITEM DESCRIPTION	UNIT	QUANTITY
Concrete Removal	CU YD	27.7
Concrete Superstructure	CU YD	27.7
Preformed Joint Strip Seal	FOOT	140
Structural Repair of Concrete (Depth <= 5")	SQ FT	69
Reinforcement Bars, Epoxy Coated	POUND	4420
Bar Splicers	EACH	34

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

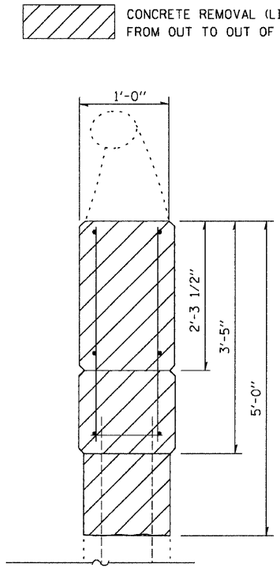
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELEVATION AND PLAN VIEW **SN 058-0067 over SB US51**

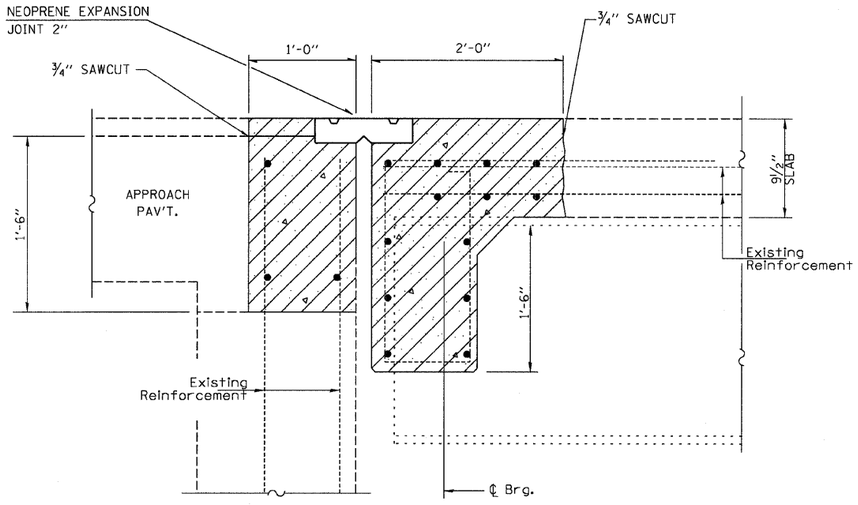
SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	19
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

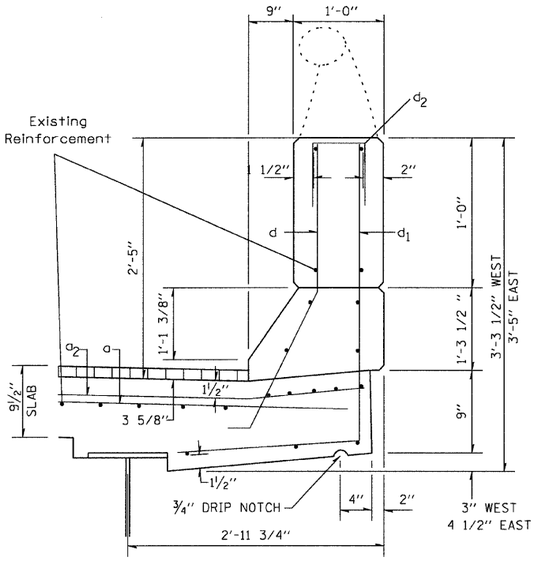
RAIL POST SHALL BE REMOVED AND THEN RE-ERECTED AFTER PLACEMENT OF CONCRETE SUPERSTRUCTURE. NEW RAIL POST ANCHORAGE DEVICES WILL BE REQUIRED AT EACH LOCATION WHERE POSTS ARE CONNECTED TO NEW CONSTRUCTION. COST SHALL BE INCLUDED WITH CONCRETE SUPERSTRUCTURE. SEE DETAIL ON SHEET 26 OF 31.



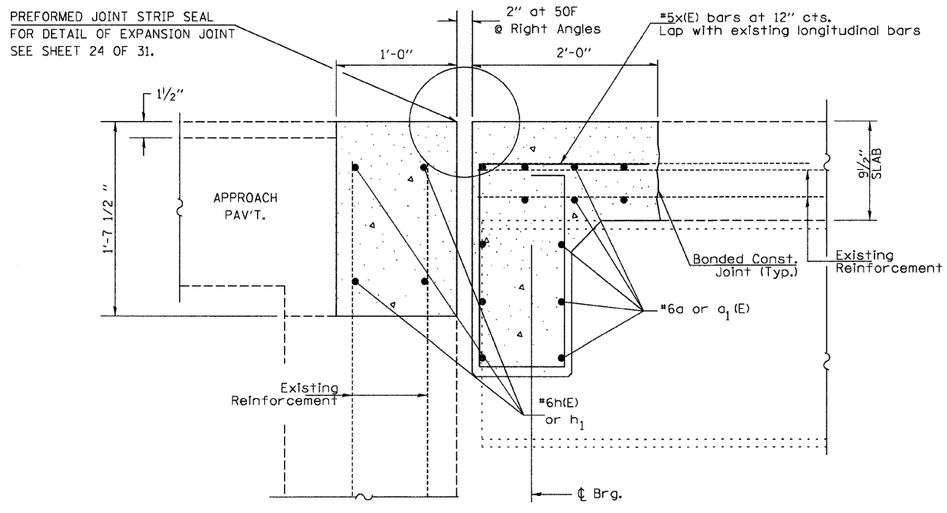
WINGWALL DETAIL



EXISTING EXPANSION JOINTS AT ABUTMENTS



PARAPET DETAIL



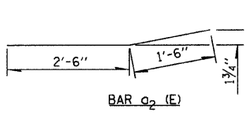
PROPOSED EXPANSION JOINTS AT ABUTMENTS

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXPANSION JOINT & REBAR DETAILS 058-0067	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -			72	07 BRIDGE REPAIRS 2008-2	MACON	31	20
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -					CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE -	REVISED -		SCALE: 20 SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

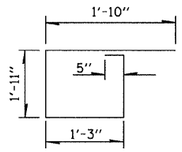
BAR LIST - PER ABUTMENT - STR #058-0067

BAR	NUMBER OF BARS		TOTAL	SIZE	LENGTH	SHAPE
	STAGE I	STAGE II				
a(E)	26		26	6	20'-2"	——
a1(E)		13	13	6	31'-2"	——
a2(E)	2	2	4	6	4'-0"	——
h(E)	8		8	6	20'-2"	——
h1(E)		4	4	6	31'-2"	——
x(E)	37	29	66	4	7'-4"	⊓
d(E)	2	2	4	5	3'-11"	⌐
d1(E)	2	2	4	4	4'-7"	⌐
d2(E)	2	2	4	4	2'-1"	⊓
CONCRETE REMOVAL					CU YD	13.9
REINFORCEMENT BARS (EPOXY COATED)					POUND	2210
CONCRETE SUPERSTRUCTURE					CU YD	13.9

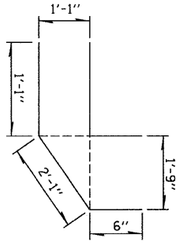
MINIMUM LAP #6 - 2'7"



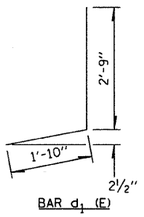
BAR a_2 (E)



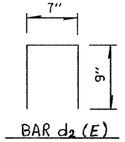
BAR x(E)



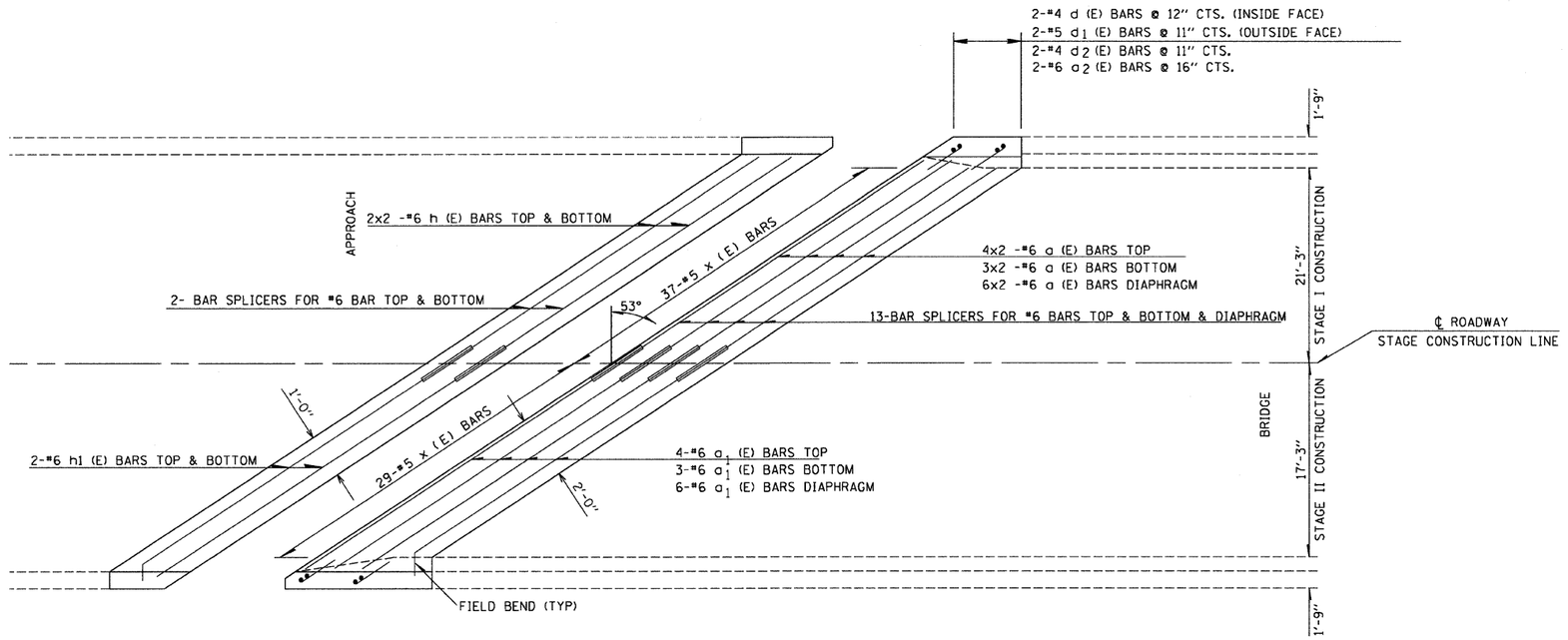
BAR d(E)



BAR d_1 (E)

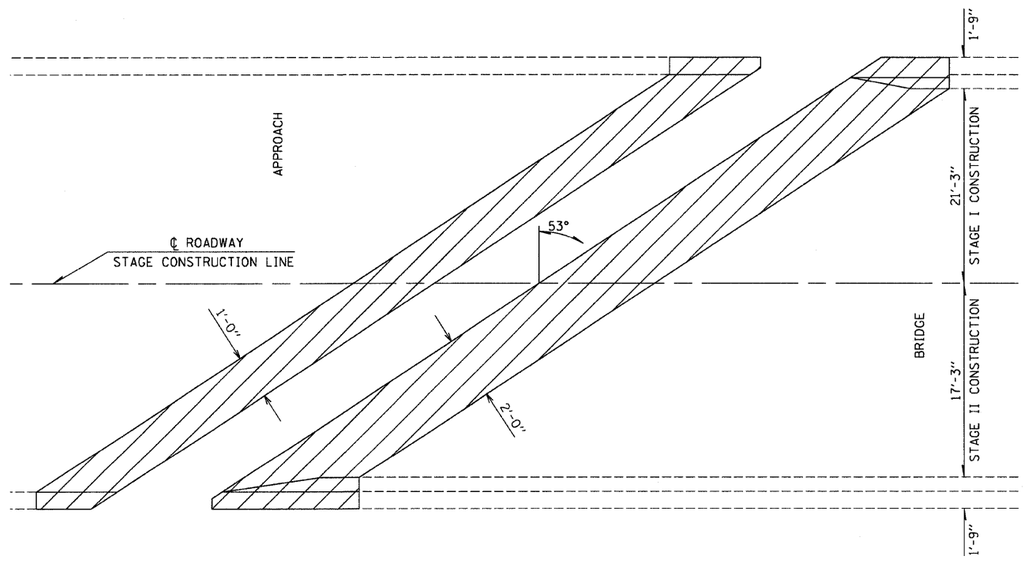


BAR d_2 (E)



REINFORCEMENT DETAIL

WEST ABUTMENT (EAST ABUTMENT SIMILAR)

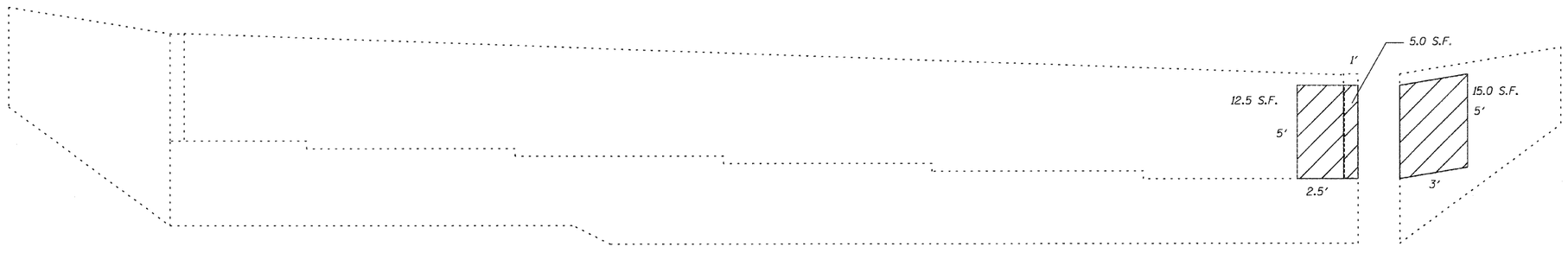


REMOVAL PLAN VIEW

WEST ABUTMENT (EAST ABUTMENT SIMILAR)

CONCRETE REMOVAL

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXPANSION JOINT & REBAR DETAILS 058-0067	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ___	REVISED - ___			72	07 BRIDGE REPAIRS 2008-2	MACON	31	21
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___					CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___		SCALE: 20_____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____		FED. ROAD DIST. NO. _ ILLINOIS	FED. AID PROJECT		



WEST ABUTMENT

NOTE: QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES TO BE DETERMINED BY THE RESIDENT ENGINEER.

STRUCTURAL REPAIR OF CONCRETE <= 5"

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

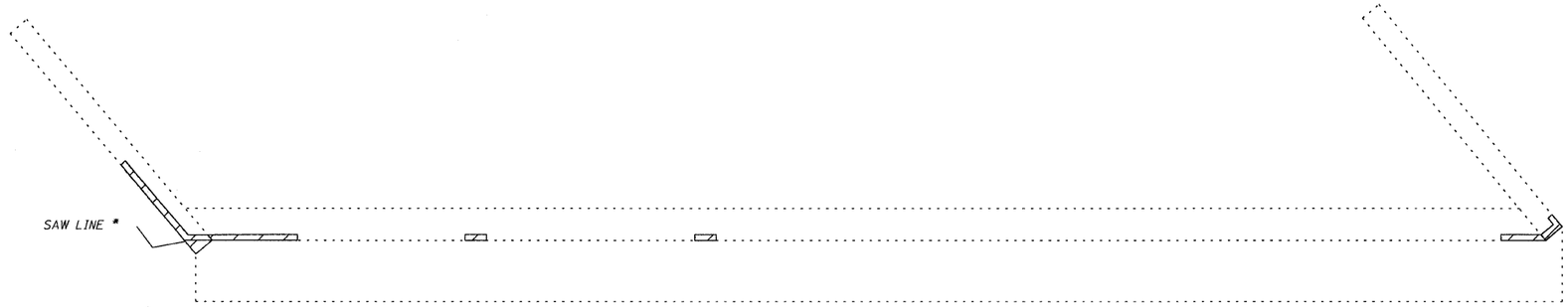
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL REPAIR OF CONCRETE 058-0067

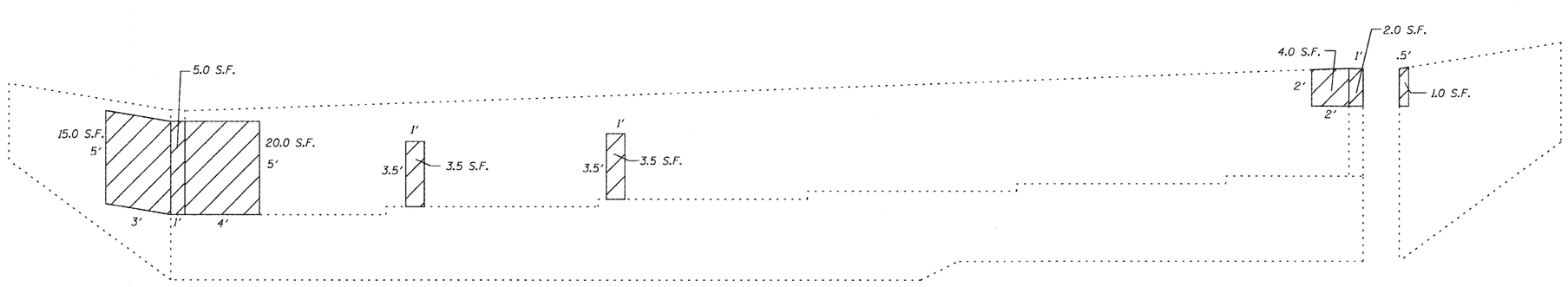
SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	22
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

058-0067



* REMOVE CORNER DUE TO
DETERIORATION AND FOR
EASIER PLACEMENT OF
STRIP SEAL JOINT.



EAST ABUTMENT

NOTE: QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES TO BE DETERMINED BY THE RESIDENT ENGINEER.

STRUCTURAL REPAIR OF CONCRETE < = 5"

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

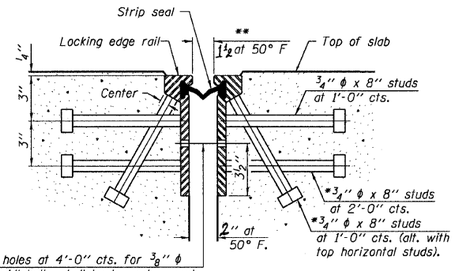
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL REPAIR OF CONCRETE 058-0067

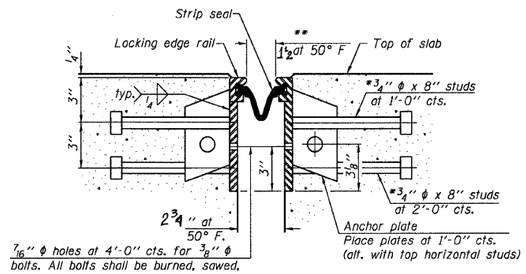
SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	D7 BRIDGE REPAIRS 2008-2	MACON	31	23
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

*Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.
**When joint is fixed, dimension is set at 1½".



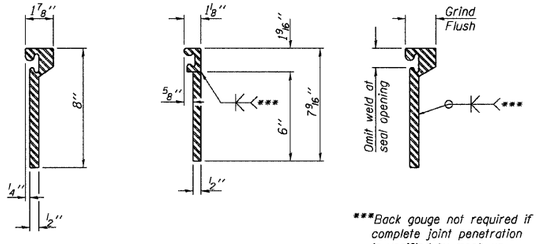
7/16" ϕ holes at 4'-0" cts. for ⅜" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.



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

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.
The manufacturer's recommended installation methods shall be followed.
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

SECTION THRU ROLLED RAIL JOINT

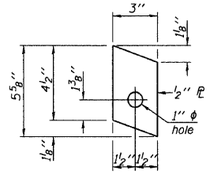


***Back gouge not required if complete joint penetration is verified by mock-up.

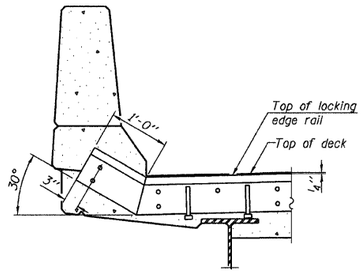
ROLLED (EXTRUDED) RAIL

WELDED RAIL

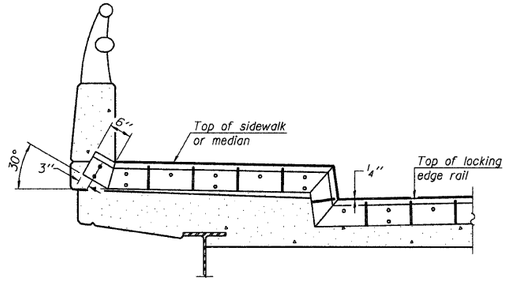
SECTION THRU WELDED RAIL JOINT



ANCHOR PL (for welded rail)



AT PARAPET



AT SIDEWALK OR MEDIAN

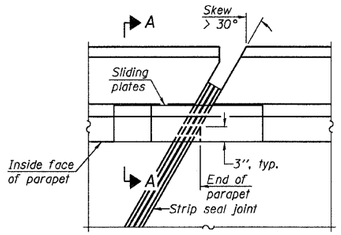
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

LOCKING EDGE RAIL SPLICE

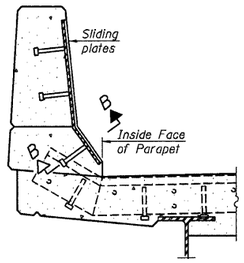
The inside of the locking edge rail groove shall be free of weld residue.

TYPICAL END TREATMENTS

LOCKING EDGE RAILS

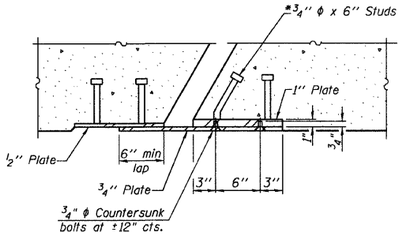


PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	140

PREFORMED JOINT STRIP SEAL

EJ-SSJ 9-3-07

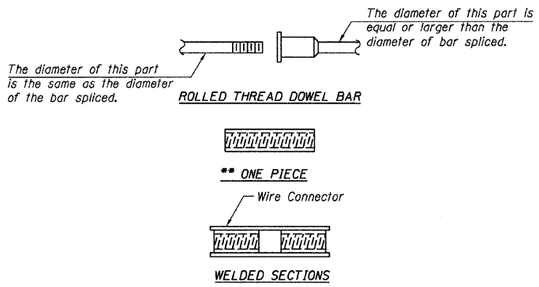
FILE NAME = *FILEL*	USER NAME = *USER*	DESIGNED - ---	REVISED - ---
		DRAWN - ---	REVISED - ---
	PLOT SCALE = *SCALE*	CHECKED - ---	REVISED - ---
	PLOT DATE = *DATE*	DATE - ---------	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EJ-SSJ 058-0067

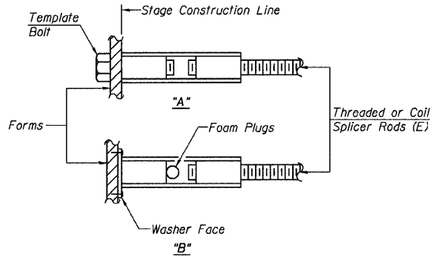
SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	24
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



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) = $1.25 \times fy \times A_f$

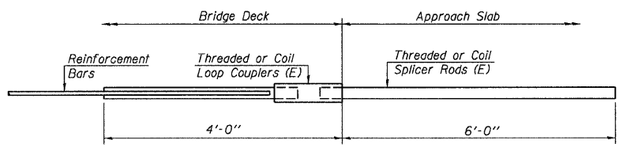
② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times fy \times A_f$

Where fy = Yield strength of lapped reinforcement bars in ksi.

A_f = Tensile stress area of lapped reinforcement bars.

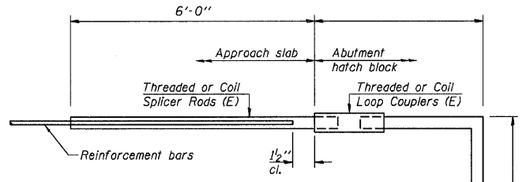
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	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



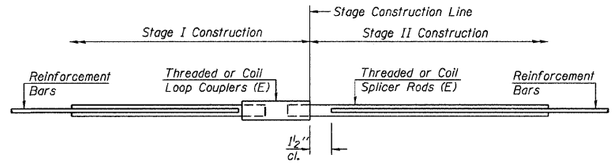
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

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



FOR STUB ABUTMENTS

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



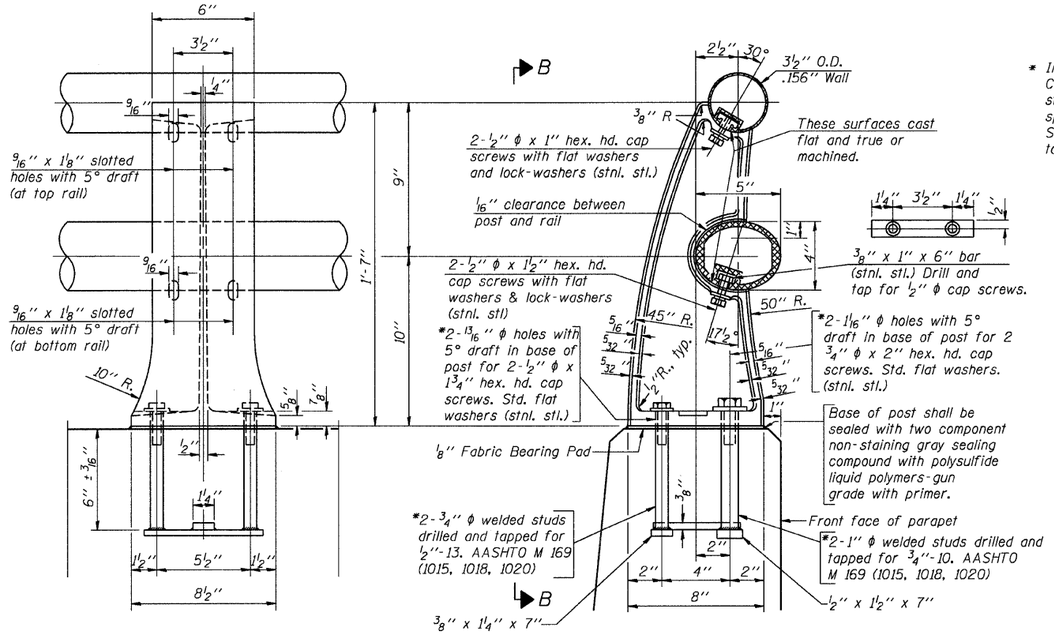
STANDARD

Bar Size	No. Assemblies Required	Location
#6	34	058-0067

BAR SPLICER ASSEMBLY DETAILS

BSD-1 11-1-06

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BSD-1 058-0067	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ___	REVISED - ___			72	07 BRIDGE REPAIRS 2008-2	MACON	31	25
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___					CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___		SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____		FED. ROAD DIST. NO. _ | ILLINOIS | FED. AID PROJECT			

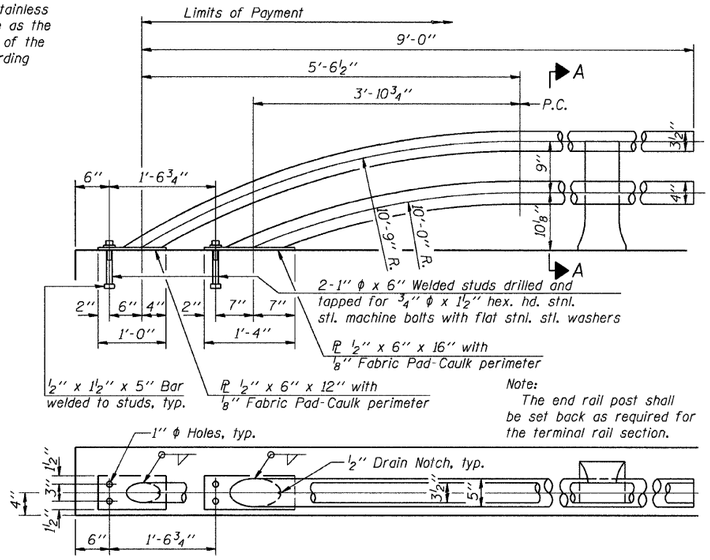


VIEW B-B

SECTION A-A

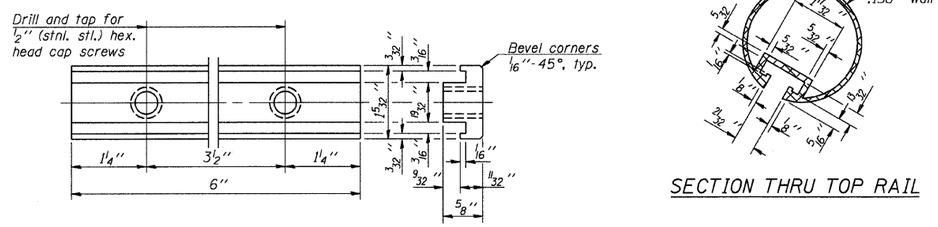
RAIL POST DETAILS

* *In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting stainless steel anchor rods of the same diameter and grade as the specified cap screws according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.*



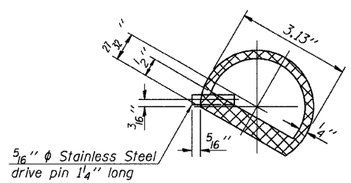
RAIL TERMINAL SECTION

Note:
The end rail post shall be set back as required for the terminal rail section.

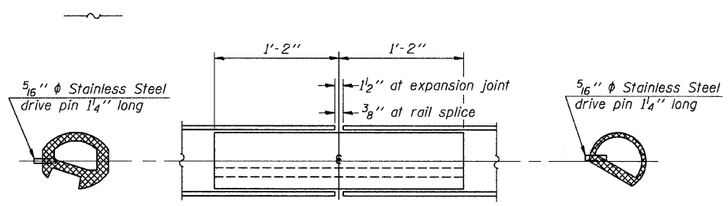


RAIL POST CLAMP BAR
For Top Rail

SECTION THRU TOP RAIL



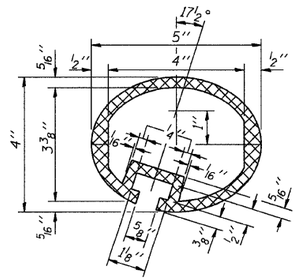
SECTION THRU SPLICE
For Top Rail



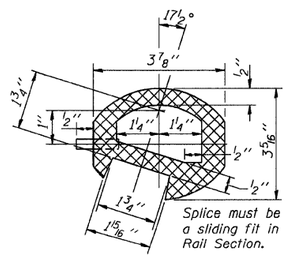
BOTTOM RAIL

TOP RAIL

RAIL SPLICE



SEC. THRU ELLIPTICAL RAIL SECTION



SEC. THRU SPLICE

Notes:
All Posts shall be normal to parapet.
All joints in rail shall be spliced per detail.
Provide 1-⅛" and 2-1/16" Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade-high spots will be ground and low spots shimmed.
See sheet of for rail post spacing.

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Railing, Type L	Foot	

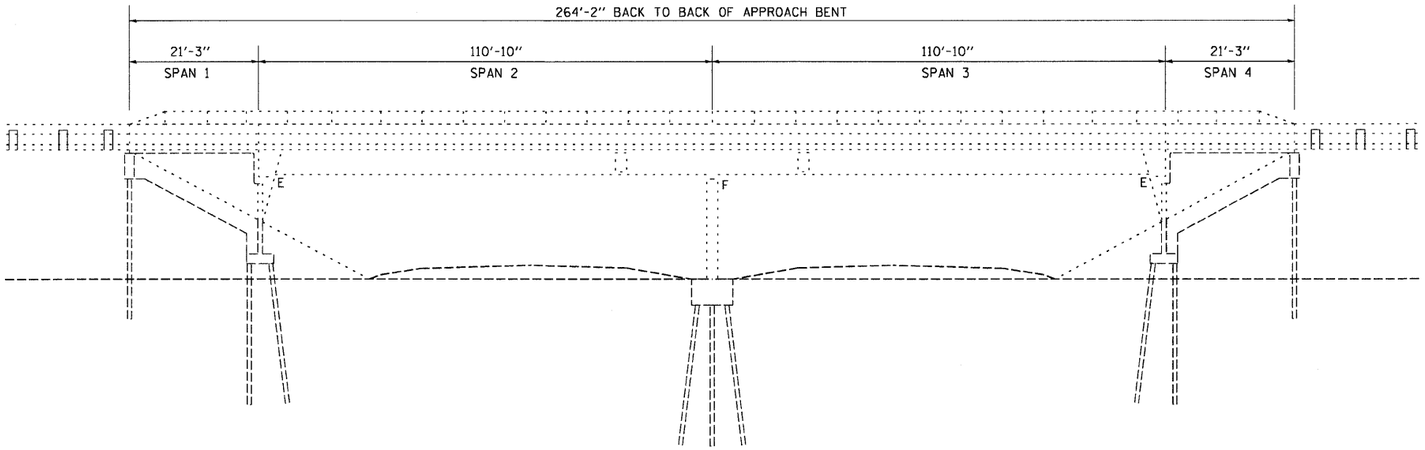
ALUMINUM RAILING, TYPE L

R-20 9-3-07 (7'-0" to 10'-0" Post spacing)

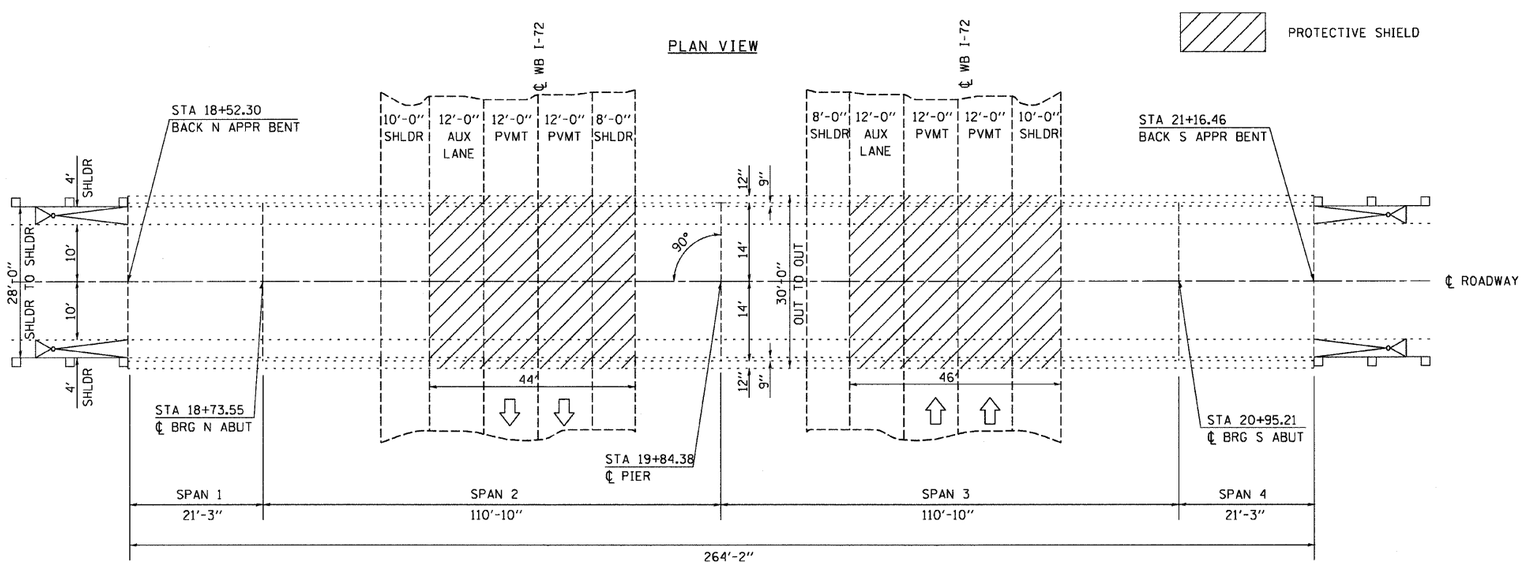
FOR INFORMATION ONLY

(Cost for this work will be included with concrete superstructures)

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ANCHOR BASKET FOR ALUMINUM RAILING DETAIL 058-0067	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN - ___	REVISED - ___			72	D7 BRIDGE REPAIRS 2008-2	MACON	31	26
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___					CONTRACT NO. 74270		
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___		SCALE: 20_____ SHEET NO. __ OF ___ SHEETS STA. _____ TO STA. _____	FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



ELEVATION



GENERAL NOTES

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 compensations 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.

TOTAL BILL OF MATERIALS

ITEM DESCRIPTION	UNIT	QUANTITY
Expansion Joint (Special)	FOOT	60
Structural Repair of Concrete (Depth <= 5in)	SQ FT	29
Hot-Mix Asphalt Surface Removal, 1 1/2"	SQ YD	778
Deck Slab Repair (Full Depth, Type I)	SQ YD	9
Deck Slab Repair (Full Depth, Type II)	SQ YD	35
Deck Slab Repair (Partial)	SQ YD	108*
Waterproofing Membrance System (Special)	SQ YD	778
Hot-Mix Asphalt Surface Course, Mixture C, N70	TON	66
Protective Shield	SQ YD	300

* The quantity is estimated. Actual quantity and locations to be determined by the Engineer after the existing HMA overlay as been removed. Actual locations to be included in the AS BUILT plans.

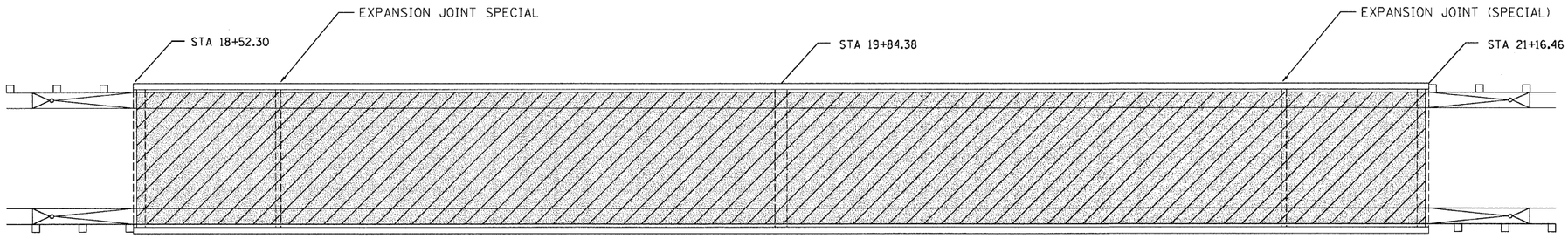
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELEVATION AND PLAN VIEW SN 058-0076 over I-72

SCALE: 20_____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

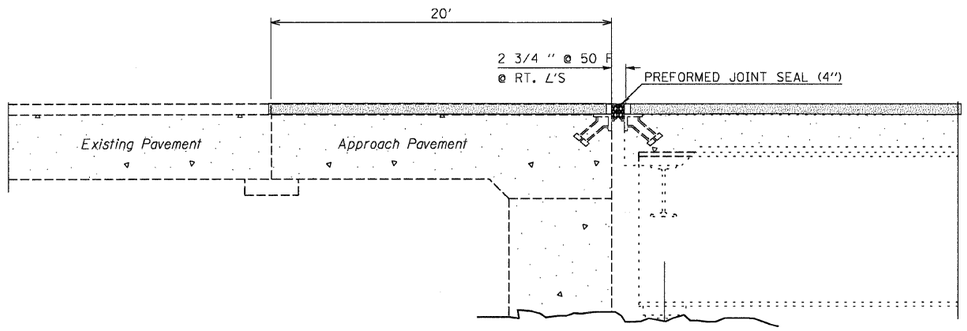
F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	27
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



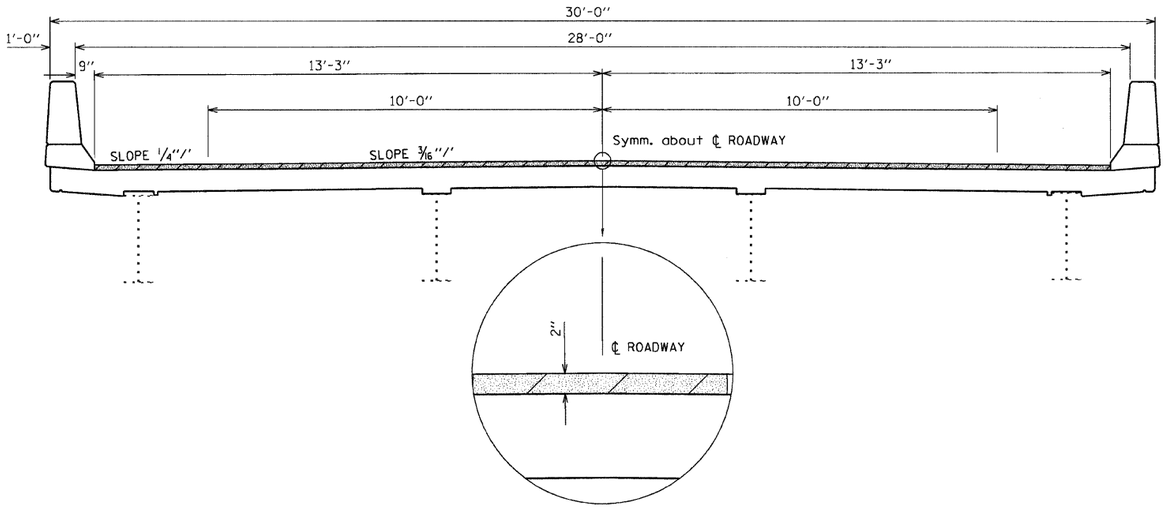
PLAN VIEW

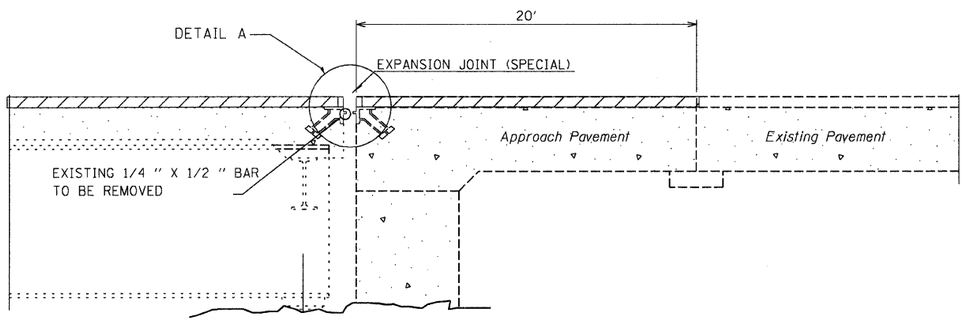
HOT-MIX ASPHALT SURFACE REMOVAL, 2"

WATERPROOFING MEMBRANE SYSTEM (SPECIAL)
HOT-MIX ASPHALT SURFACE COURSE, MIXTURE C, N70

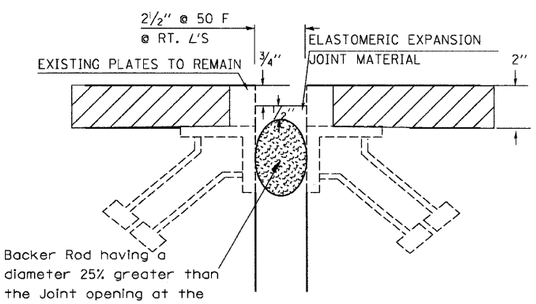


CROSS-SECTION
EXISTING JOINTS





CROSS-SECTION
PROPOSED JOINTS



DETAIL A
PROPOSED JOINT

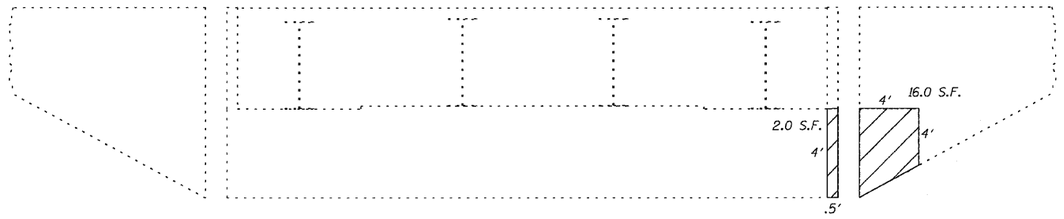
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

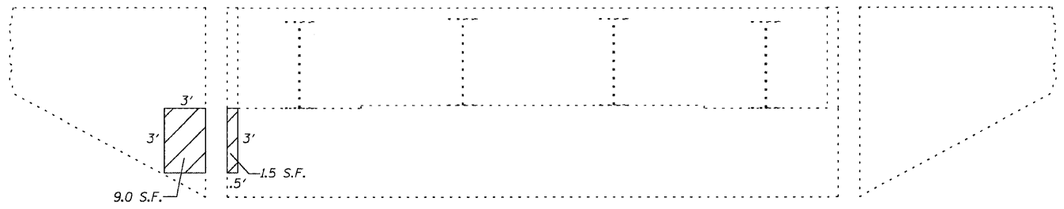
OVERLAY AND JOINT DETAILS 058-0076

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	28
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



NORTH ABUTMENT



SOUTH ABUTMENT

NOTE: QUANTITIES ARE ESTIMATED. ACTUAL QUANTITIES TO BE DETERMINED BY THE RESIDENT ENGINEER.

STRUCTURAL REPAIR OF CONCRETE <= 5"

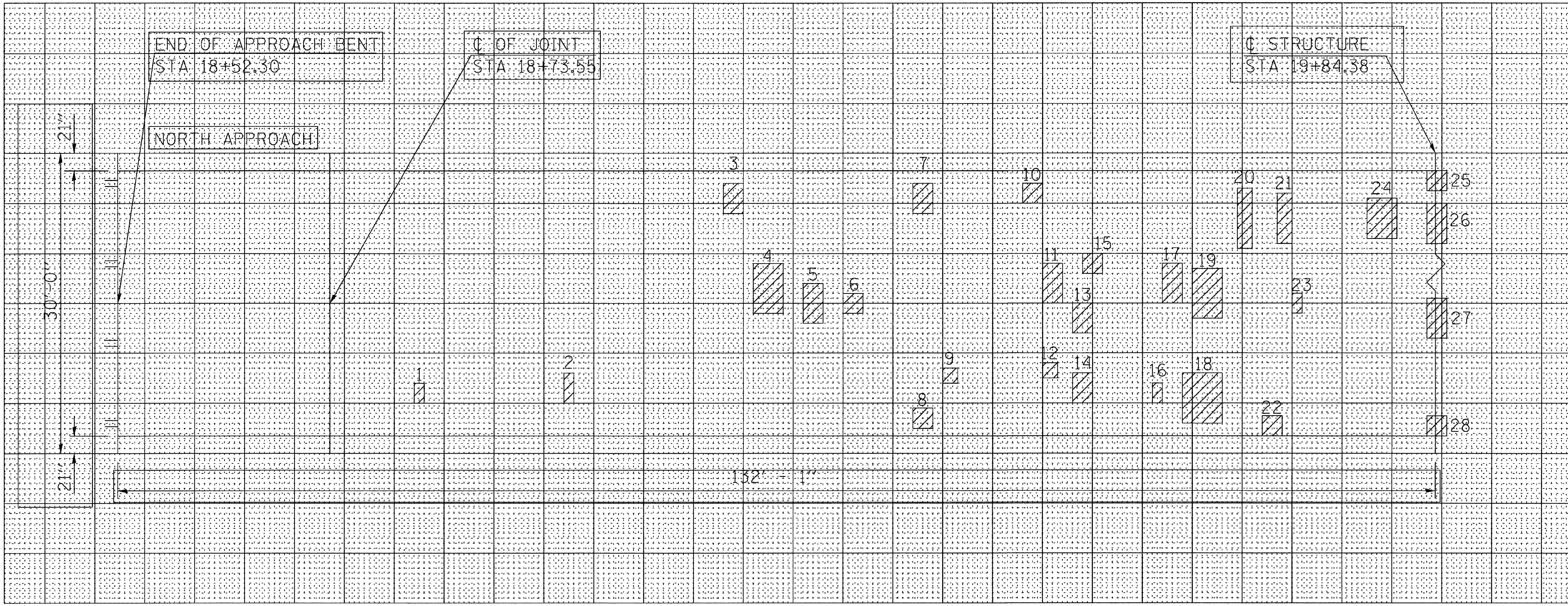
FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL REPAIR OF CONCRETE 058-0076

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	D7 BRIDGE REPAIRS 2008-2	MACON	31	29
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
1	1 × 2		2.0		
2	1 × 3		3.0		
3	2 × 3			6.0	
4	3 × 5			15.0	
5	2 × 4			8.0	
6	2 × 2		4.0		
7	2 × 3			6.0	
8	2 × 2		4.0		
9	1.5 × 1.5		2.3		
10	2 × 2		4.0		
11	2 × 4			8.0	
12	1.5 × 1.5		2.3		
13	2 × 3			6.0	
14	2 × 3			6.0	
15	2 × 2		4.0		
16	1 × 2		2.0		
17	2 × 4			8.0	
18	5 × 4			20.0	
19	3 × 5			15.0	
20	1.5 × 6			9.0	
21	1.5 × 5			7.5	
22	2 × 2		4.0		
23	1 × 2		2.0		
24	3 × 4			12.0	
25	2 × 2		4.0		
26	2 × 4			8.0	
27	2 × 4			8.0	
28	2 × 2		4.0		

THE LOCATIONS AND SIZES SHOWN GRAPHICALLY ABOVE ARE APPROXIMATE. SEE THIS TABLE FOR ACTUAL SIZES.

PATCHING LEGEND

- PARTIAL DEPTH
- FULL DEPTH
- FLOOR DRAIN TO BE REPLACED
- FLOOR DRAIN TO BE PLUGGED

DATE OF SURVEY: 11/20/07
SURVEY BY: ALEC D. RING
METHOD OF SURVEY:

BRIDGE DECK PATCHING
MACON COUNTY

SN 058-0076

076

FILE NAME = $FILEL$	USER NAME = $USER$	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = $SCALE$	CHECKED - ___	REVISED - ___
	PLOT DATE = $DATE$	DATE - ________	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR SN 058-0076

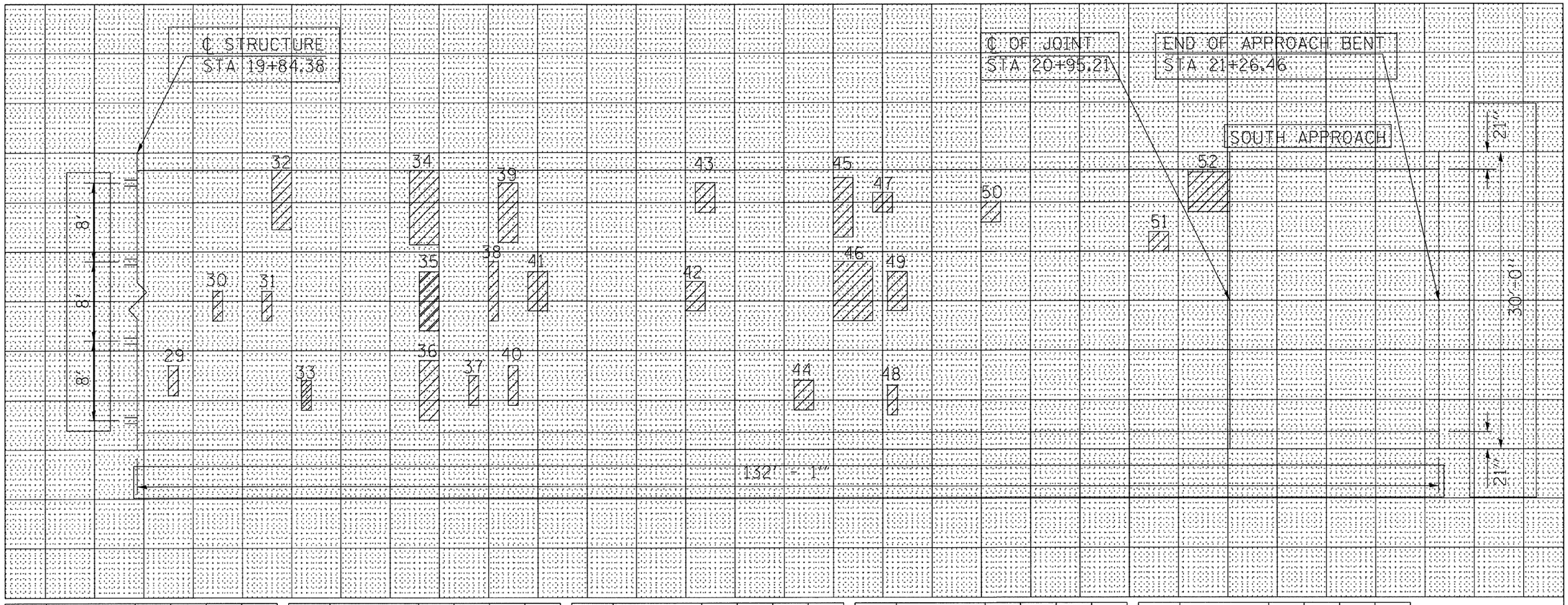
SCALE: ________ SHEET NO. __ OF ___ SHEETS STA. _________ TO STA. _________

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	D7 BRIDGE REPAIRS 2008-2	MACON	31	30

CONTRACT NO. 74270

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

BRIDGE DECK PATCHING



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
29	1 x 3		3.0		
30	1 x 3		3.0		
31	1 x 3		3.0		
32	2 x 6			12.0	
33	1 x 3		3.0		
34	3 x 8			24.0	
35	2 x 6			12.0	
36	2 x 6			12.0	
37	1 x 3		3.0		
38	1 x 6			6.0	
39	2 x 6			12.0	
40	1 x 4		4.0		
41	2 x 4			8.0	
42	2 x 3			6.0	
43	2 x 3			6.0	
44	2 x 3			6.0	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
45	2 x 6			12.0	
46	4 x 6			24.0	
47	2 x 2		4.0		
48	1 x 3		3.0		
49	2 x 4			8.0	
50	2 x 2		4.0		
51	2 x 2		4.0		
52	4 x 5			20.0	
	TOTAL	0	76	311	

PARTIAL DEPTH			
0 / 9 =	0.0		
USE	108	SQ YD	
FULL DEPTH, TYPE 1			
76 / 9 =	8.4		
USE	9	SQ YD	
FULL DEPTH, TYPE 2			
311 / 9 =	34.5		
USE	35	SQ YD	
BRIDGE SIDEWALK REPAIR			
USE	0	SQ FT	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)	DECK SLAB REPAIR (FD TY 1)	DECK SLAB REPAIR (FD TY 2)	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH)	DECK SLAB REPAIR (FD TY 1)	DECK SLAB REPAIR (FD TY 2)	

THE LOCATIONS AND SIZES SHOWN GRAPHICALLY ABOVE ARE APPROXIMATE. SEE THIS TABLE FOR ACTUAL SIZES.

PATCHING LEGEND

- PARTIAL DEPTH
- FULL DEPTH
- FLOOR DRAIN TO BE REPLACED
- FLOOR DRAIN TO BE PLUGGED

DATE OF SURVEY: 11/20/07
SURVEY BY: ALEC D. RING
METHOD OF SURVEY:

BRIDGE DECK PATCHING
MACON COUNTY

SN 058-0076

076

FILE NAME = *FILE*	USER NAME = *USER*	DESIGNED - ___	REVISED - ___
		DRAWN - ___	REVISED - ___
	PLOT SCALE = *SCALE*	CHECKED - ___	REVISED - ___
	PLOT DATE = *DATE*	DATE - _____	REVISED - ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR SN 058-0076

SCALE: _____ | SHEET NO. __ OF ___ SHEETS | STA. _____ TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	07 BRIDGE REPAIRS 2008-2	MACON	31	31
		CONTRACT NO. 74270		
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		