### 04-27-12 LETTING ITEM 120

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FOR INDEX OF SHEETS, SEE SHEET NO. 2 FOR SUMMARY OF QUANTITES, SEE SHEETS NO. 3 & 4

## STATE OF ILLINOIS

**DEPARTMENT OF TRANSPORTATION** 

**DIVISION OF HIGHWAYS** 

# PROPOSED HIGHWAY PLANS

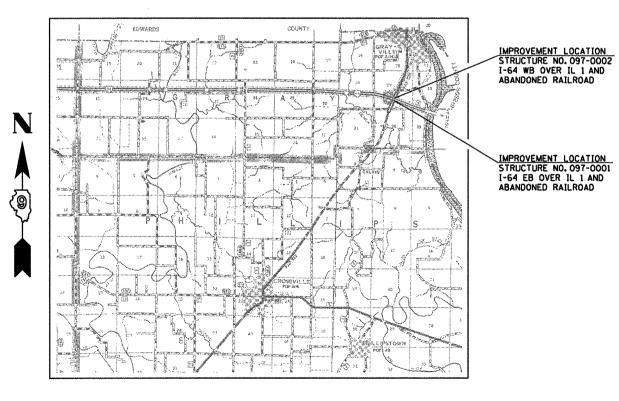
ROUTE F.A.I. 64 (I-64)

INTERSTATE 64 E.B. (I–64) OVER IL 1 AND ABANDONED RR STRUCTURE NO. 097–0001

INTERSTATE 64 W.B. (I–64) OVER IL 1 AND ABANDONED RR STRUCTURE NO. 097–0002

> D9 CM BRIDGE REPAIR 2012-4 JOINT REPAIR /REPLACEMENT WHITE COUNTY

> > C-99-042-11



 $GROSS \ LENGTH = 295'-1'' \ FT$ 

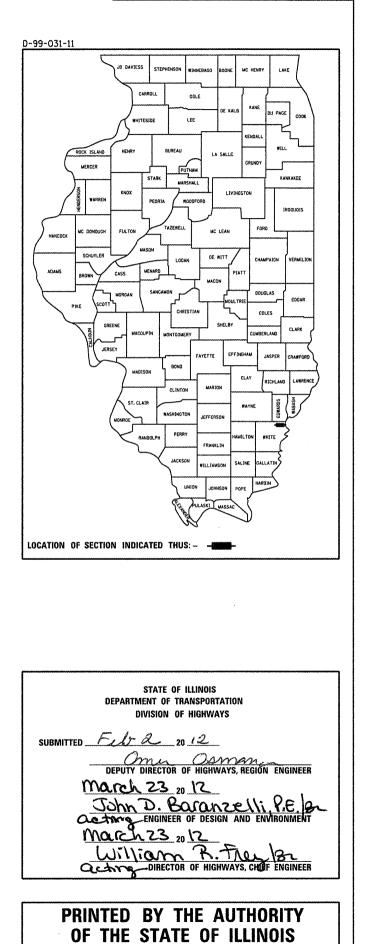
TRAFFIC DATA 2011 ADT FOR IG4 = 6750 (ONE WAY) 33.3% TRUCKS

J.U.L.I.E. Joint Utility Location Information for Excavation 1–800–892–0123 Or 811

PROJECT MANAGER: DAVID PICHE (618) 351–5227 PROJECT ENGINEER: ADRIAN ADAMS (618) 351–5225

### CONTRACT NO. 78254

					ILLINOIS	CONTRAC	T NO. 78	3254
64	D9	СМ	BRIDGE	REP	2012-4	WHITE	13	1
F.A.I. RTE.			SECT	ION		COUNTY	TOTAL	SHEET NO.



#### **GENERAL NOTES**

1) FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS:

ALL HOT-MIX ASPHALT 2.016 TONS/CU YD	ALL	HOT-MIX	ASPHALT	2.016 TONS/CU YD
--------------------------------------	-----	---------	---------	------------------

BITUMINOUS MATERIALS ON PAVEMENT 0.09 GAL/SO YD

2) REMOVAL OF ALL EXISTING DECK DRAIN EXTENSIONS SHALL BE INCLUDED IN THE COST OF PLUG EXISTING DECK DRAINS. EXISTING DECK DRAIN EXTENSIONS SHALL NOT BE RE-USED.

- 3) EXISTING NAME PLATES IN THE SW QUAD OF SN 097-0001 AND NE QUAD OF SN 097-0002 SHALL BE SALVAGED AND RE-USED. COST IS INCIDENTAL TO THE CONTRACT.
- 4) COST OF REMOVING AND REINSTALLING EXISTING GUARDRAIL TERMINALS ATTACHED TO THE BRIDGES IS INCLUDED IN CONCRETE REMOVAL.

5) COMMITMENTS: NONE AS OF FEBRUARY 3, 2012.

### INDEX OF SHEETS

COVER SHEET

1

- 2
- 3-4 SUMMARY OF QUANTITIES
- 5 PLAN AND ELEVATION SN 097-0001 & SN 097-0002
- 6 STAGING DETAILS
- 7
- 8 JOINT REPLACEMENT DETAILS SN 097-0001
- 9 JOINT REPLACEMENT DETAILS SN 097-0002
- 10 DRAIN AND RAILING DETAILS
- 11 PREFORMED JOINT STRIP SEAL
- 12 BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
- 13

### MIXTURE REQUIREMENTS

Location(s):	Driving Lane Shoulders on Each Structure
Mixture Use(s):	Hot-Mix Asphalt Surface Course, Mix C. N90
AC/PG:	PG64-22
RAP % (Max):	10
Design Air Voids:	4.0%, 90 Gyration Design
Mixture	IL-9.5 mm ör IL12.5 mm
Composition:	
(Gradation Mixture)	
Friction Aggregate:	C Surface

#### **STANDARDS**

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
701101-02	OFF-RD OPERATIONS, MULTILANE, 15' TO 24" FROM PAVEMENT I
701106-02	OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' AWAY
701400-05	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701402-09	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
701411-08	LANE CLOSURE, MULTILANE AT ENTRANCE OR EXIT RAMP,FOR SPI
701451-01	RAMP CLOSURE FREEWAY/EXPRESSWAY
701901-02	TRAFFIC CONTROL DEVICES
704001-07	TEMPORARY CONCRETE BARRIER

	USER NAME = walkerra	DESIGNED -	REVISED -		SIG	NATURES, INDEX OF SHE	
		DRAWN ~	REVISED -	 STATE OF ILLINOIS	210	· · · ·	
[	PLOT SCALE = 100.0013 '/ in.	CHECKED -	REVISED	 DEPARTMENT OF TRANSPORTATION		AND STANE	JARDS
	PLOT DATE = 1/26/2012	DATE ~	REVISED		SCALE:	SHEET NO OF SHEETS	STA

SIGNATURES, INDEX OF SHEETS, GENERAL NOTES, MIXTURE REQUIREMENTS, AND STANDARDS

DECK DRAIN EXTENSIONS / ELIMINATIONS & STRUCTURAL REPAIR OF CONCRETE

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION

	~ ~ ~
ſ	Prepared By:
EDGE	Examined By:
	Examined By:
PEEDS ≥ 45 MPH	Examined By: Und Hand
	Examined By: During A nulling
	Examined By: Bunch Wachles DISTRICT MATERIALS ENGINEER
	Approved By: Ome Of Highwars, REGION 5 ENGINEER
	2/2/ 2012
TS, GENERAL NOTES,	F.A.I. SECTION COUNTY TOTAL SHEET NO.
ARDS	64 D9 CM BRIDGE REPAIR 2012-4 WHITE 13 2
	CONTRACT NO. 78254
STA TO STA	ILLINOIS FED. AID PROJECT

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ED - - D - -	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCALE:	SUMM	ARY OF QUANTIT	IES TO STA.	F.A.I. SECTION RTE. SECTION 64 D9 CM BRIDGE REP	COUNTY TOT SHEE 2012-4 WHITE 1: CONTRACT NO. S FED. AID PROJECT	AL SHEET TS NO. 3 78254
)100820	TRAFFIC CONTROL AND PROTECTION	N STANDARD, 701451	L SUM	1	1	0			
100420	TRAFFIC CONTROL AND PROTECTIO		EACH	2	1	1		:	
00207	TRAFFIC CONTROL AND PROTECTIO	N STANDARD, 701402	EACH	2	1	1			
100100	MOBILIZATION		LSUM	1	0.5	0.5			
000400	ENGINEERS FIELD OFFICE, TYPE A		CAL MO	2	1	1			
00105	FRAMES AND GRATES TO BE ADJUST	ED	EACH	2	1	1			
2000110	PREFORMED JOINT STRIP SEAL		FOOT	152	80	72			
800515	BAR SPLICERS		EACH	80	40	40			
0800205	REINFOCEMENT BARS, EPOXY COATE	D	POUND	5040	2630	2410			
0500505	STUD SHEAR CONNECTORS	· · · · · · · · · · · · · · · · · · ·	EACH	390	210	180			
0300255	CONCRETE SUPERSTRUCTURE		CU YD	35.5	18.3	17.2			
0102400	CONCRETE REMOVAL		CU YD	32. 7	16.9	15.8			
0603320	HOT-MIX ASPHALT SURFACE COURS	E. MIX "C". N90	TON	3	1.5	1.5			
0600100	BITUMINOUS MATERIALS (PRIME C	0AT)	GALLON	2	1	1			
CODE NUMBER		PAY ITEM	UNIT	TOTAL QUANTITY	FUNDING 100% STATE	FUNDING 100% STATE			
CODE			CONSTRUCT	ION TYPE CODE 0014	097-0001	097-0002			

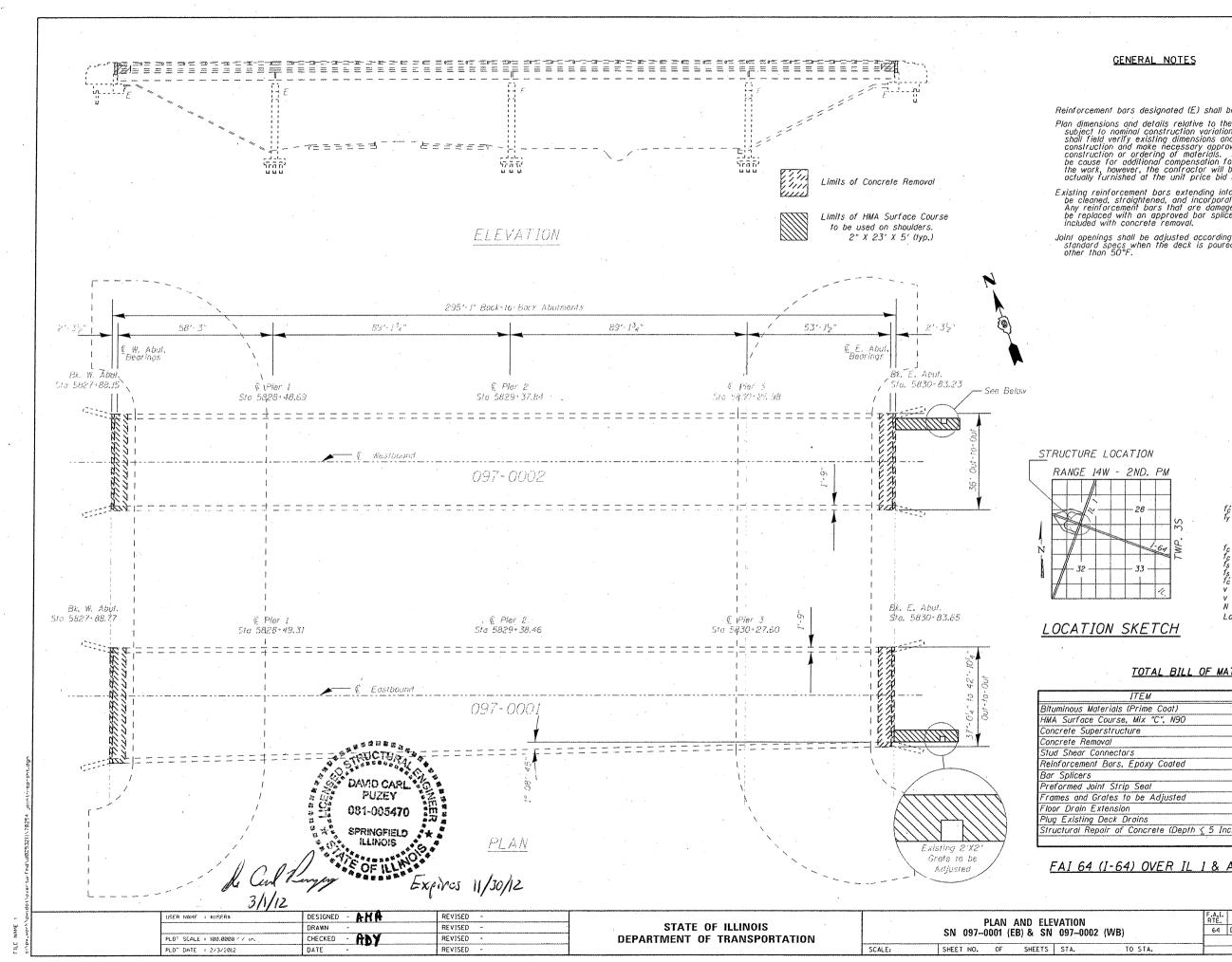
со			CONSTRUCTI	ON TYPE CODE 0014	097-0001	097-0002		
	BER	PAY ITEM	UNIT	TOTAL QUANTITY	FUNDING 100% STATE	FUNDING 100% STATE		
4060	0100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	2	1	1		
4060	3320	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90	TON	3	1.5	1.5		
5010								
5010	2400	CONCRETE REMOVAL	CU YD	32. 7	16.9	15.8	· · · · · · · · · · · · · · · · · · ·	
5030	0255	CONCRETE SUPERSTRUCTURE	CU YD	35.5	18.3	17.2		
5050	0505	STUD SHEAR CONNECTORS	EACH	390	210	180		
5080	0205	REINFOCEMENT BARS, EPOXY COATED	POUND	5040	2630	2410		
5080	0515	BAR SPLICERS	EACH	80	40	40		
5200	0110	PREFORMED JOINT STRIP SEAL	FOOT	152	80	72	· · · · · ·	
6030	0105	FRAMES AND GRATES TO BE ADJUSTED	EACH	2	1	1		
6700	0400	ENGINEERS FIELD OFFICE, TYPE A	CAL MO	2	1	1		
6710	0100	MOBILIZATION	L SUM	1	0.5	0.5		
7010	0207	TRAFFIC CONTROL AND PROTECTION STANDARD, 701402	EACH	2	1	1		
7010	0420	TRAFFIC CONTROL AND PROTECTION STANDARD, 701411	EACH	2	4	1	:	:
7010	0820	TRAFFIC CONTROL AND PROTECTION STANDARD, 701451	L SUM	1	1	0		

NAME FJLE

		CONSTRUCT	ION TYPE CODE 0014	097-0001
CODE NUMBER	PAY ITEM		ION TIFE CODE OUT4	FUNDING 10
NUMBER		UNIT	TOTAL QUANTITY	STATE
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	4	2
	1			
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1025	512.5
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1000	500
X5030530	FLOOR DRAIN EXTENSION	EACH	32	16
Z0015802	PLUG EXISTING DECK DRAINS	EACH	40	20
Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) TEST LEVEL 3	EACH	2	1
20030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE) TEST LEVEL 3	EACU	2	
20030350	IMPACT ATTENDATORS, RELOCATE (NON~REDIRECTIVE) TEST LEVEL 5	EACH	<u>۲</u>	1
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SO FT	185	75
			· · · · · · · · · · · · · · · · · · ·	

·	USER NAME = \$USER\$	DESIGNED -	REVISED ~							F.A.I. RTE.	SECTION	COUN	TY TOTAL SHEET SHEETS NO.
		DRAWN ~	REVISED -	STATE OF ILLINOIS		SUMMAR	KY UF UUA	NTITIES		64 D9	CM BRIDGE REP 2	012-4 WHIT	E 13 4
	PLOT SCALE = 100.0000 1/ 10.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								CONTR	ACT NO. 78254
	PLOT DATE = 2/3/2012	DATE -	REVISED ~		SCALE:	SHEET NO. OF	SHEETS	STA.	TO STA.		ILLINOIS	ED. AID PROJEC	

	1	097-0002
512.5 500 16 20 1 1	00%	FUNDING 100% STATE
512.5 500 16 20 1 1		
500 16 20 1 1		2
500 16 20 1 1		
16 20 1		512.5
16 20 1		
20		500
20		
1		16
1		
1		20
1		
		1
110		1
110		
		110



Reinforcement bars designated (E) shall be epoxy coated.

Plan dimensions and details relative to the existing plans are subject to nominal construction 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 at 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with concrete removal.

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

UNIT QUANITY 2 Gal Ton 35.5 Cu Yd 32.7 Cu Yd Each 390 Pound 5040 80 Each Foot 152 Each 32 Each Each 40 Structural Repair of Concrete (Depth < 5 Inches) Sq Ft 185

#### TOTAL BILL OF MATERIAL

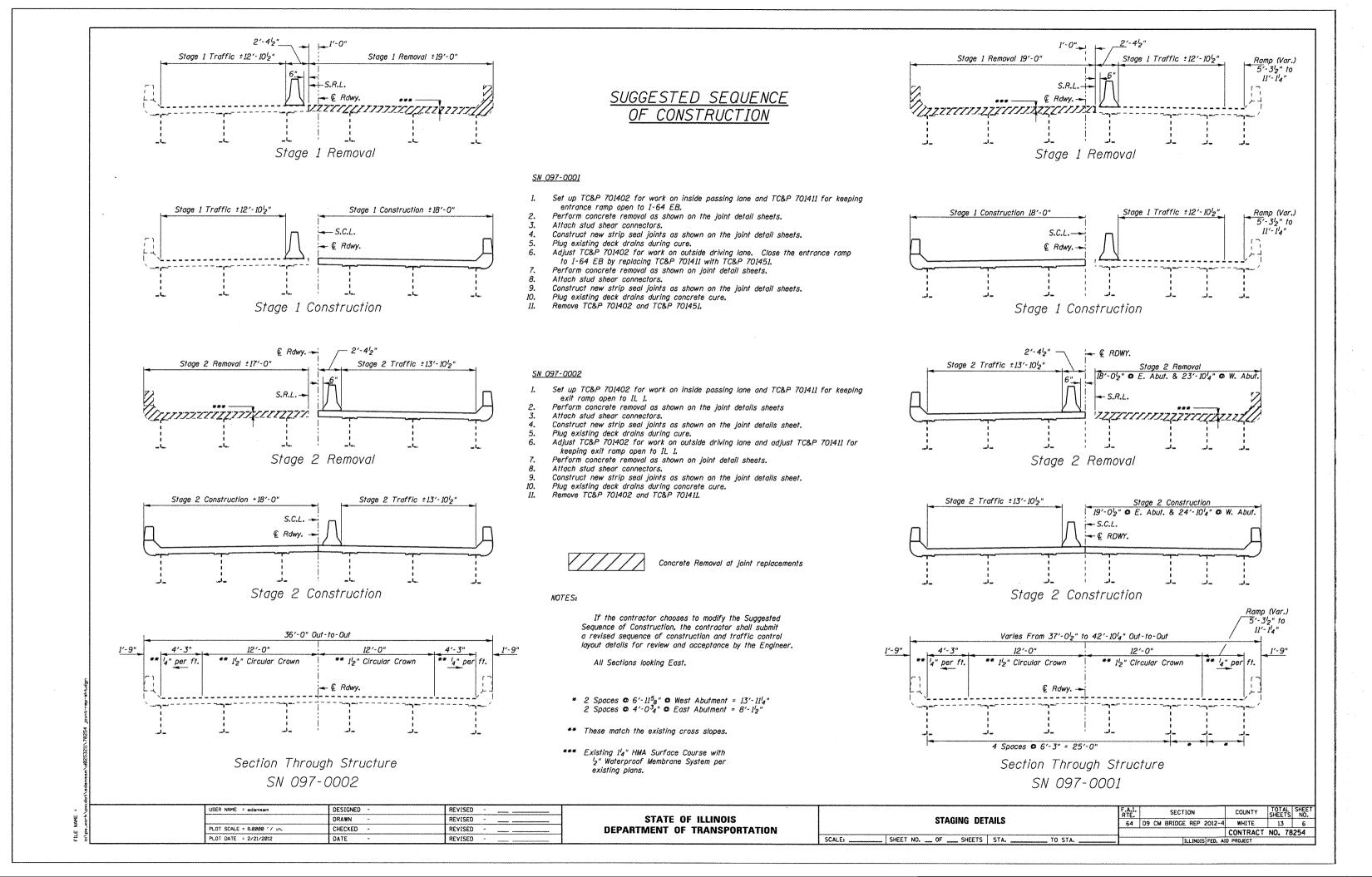
### FAI 64 (I-64) OVER IL 1 & ABANDONDED RR

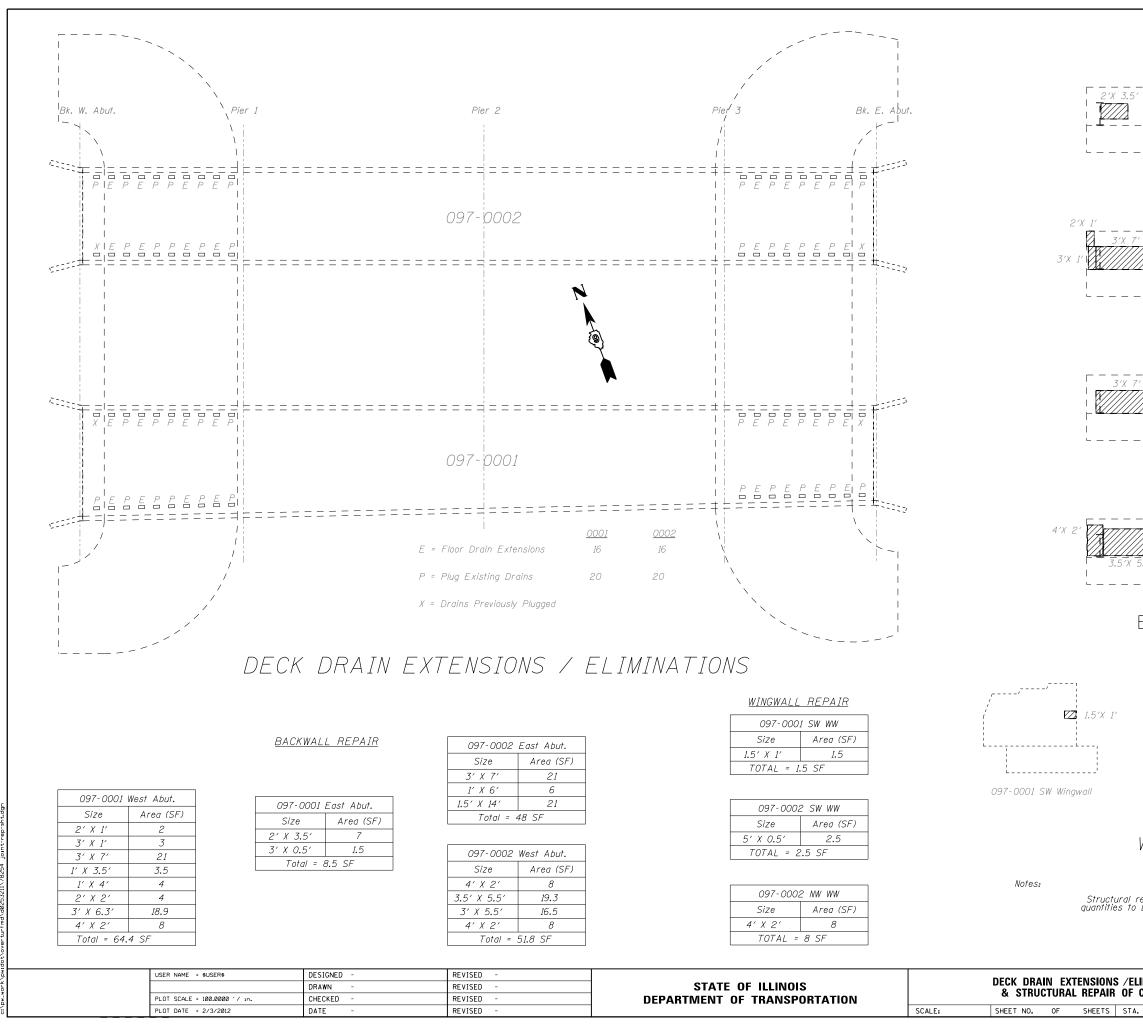
ATION	F.A.I. RTE.			SECTI	ON		COUNTY	TOTAL SHEETS	SHEET NO.
097-0002 (WB)	64	D9 (	СМ	BRIDGE	REP	2012-4	WHITE	13	5
00, 0002 (110)				,			CONTRACT	NO. 78	3254
STA. TO STA.	ILLINOIS FED. AID PROJECT								

DESIGN STRESSES NEW CONSTRUCTION FIELD UNITS = 3,500 psi = 60,000 psi (Reinforcement)

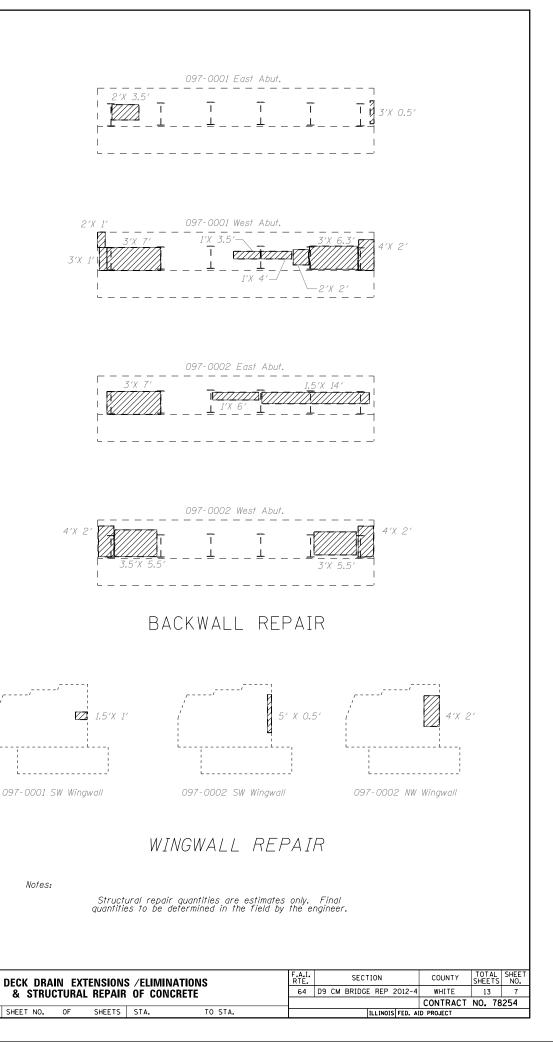
- ORIGINAL CONSTRUCTION FIELD UNITS
- 1.400 psi (without earth pressure)

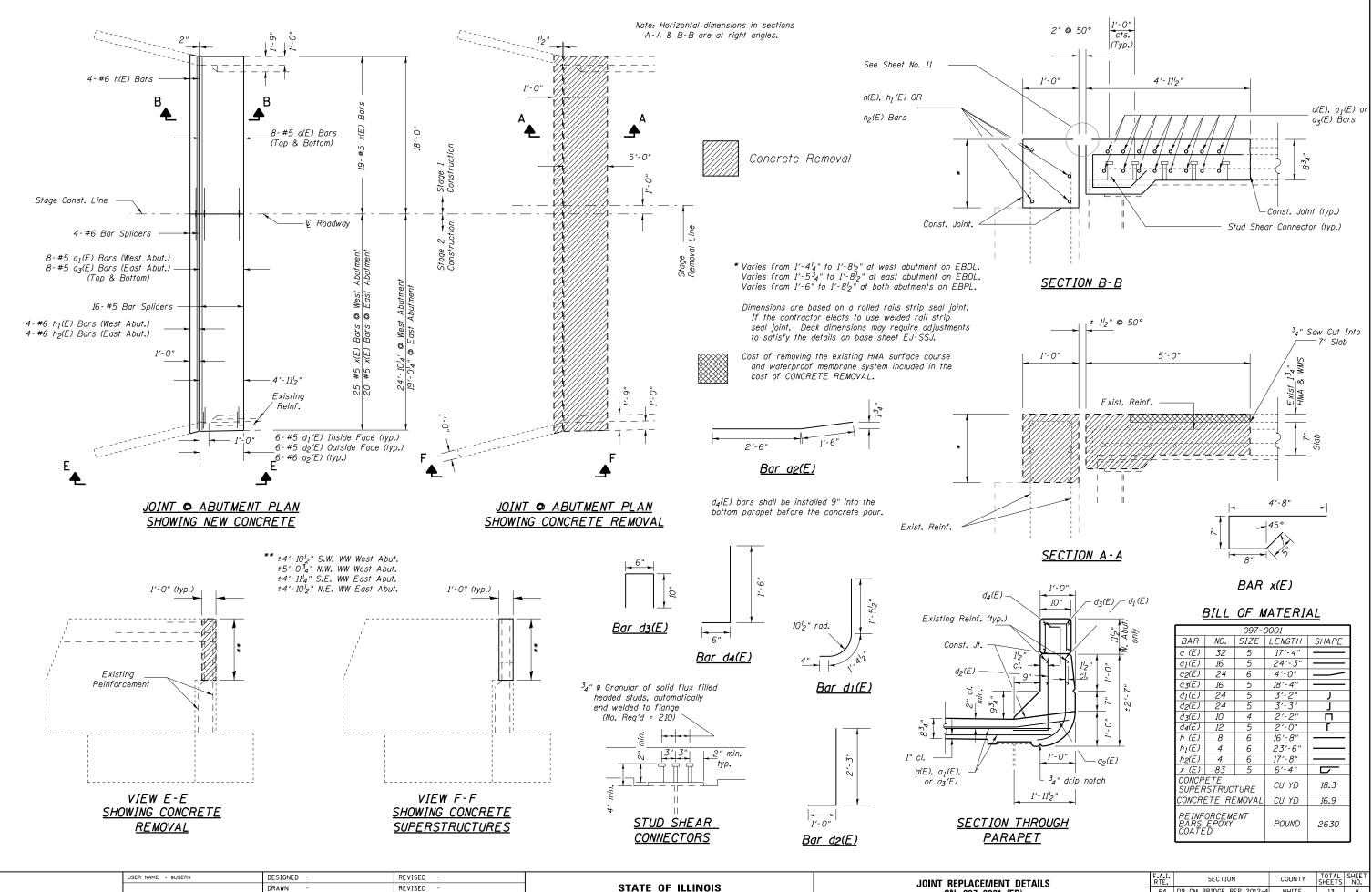
- 1,000 psi (with earth pressure) 1,000 psi (with earth pressure) 20,000 psi (ASTM A36) 20,000 psi (Intermediate & Hard Grade) = 3,500 psi
- = 90 psi (Longitudinal Bars Anchored) = 75 psi (Pier Footings)
- N = 10 (Modular Ratio)
- Loading HS 20-44 & Alt.





NAME =

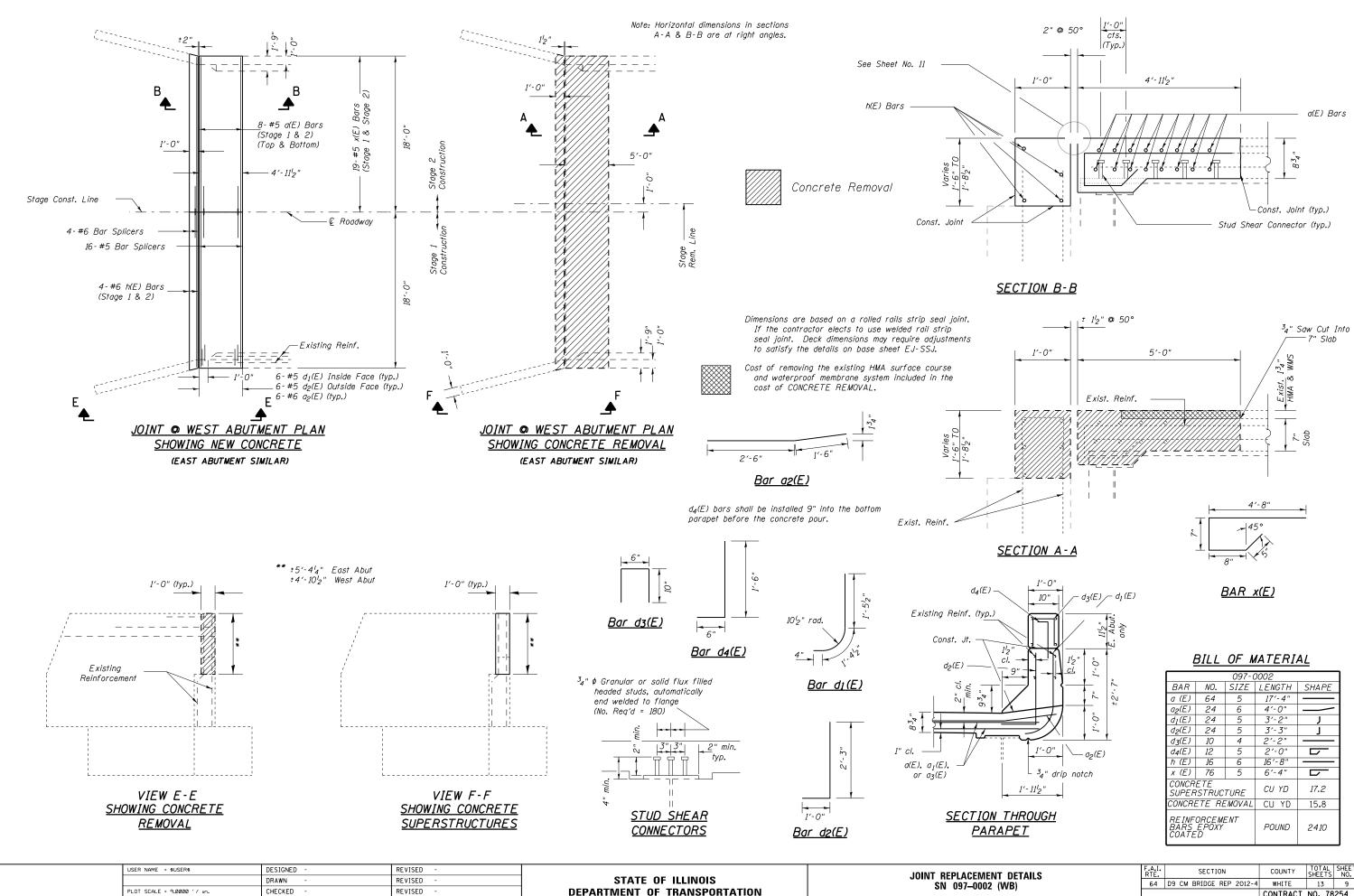




STATE OF ILLINOIS SN 097-0001 PLOT SCALE = 9.0000 ′ / in. CHECKED REVISED **DEPARTMENT OF TRANSPORTATION** SCALE: SHEET NO. OF SHEETS PLOT DATE = 2/3/2012 DATE REVISED

		097-0	2001	
BAR	NO.	SIZE	LENGTH	SHAPE
a (E)	32	5	17′-4″	
a1(E)	16	5	24′-3"	
а <u>г</u> (Е)	24	6	4'-0"	
аз(Е)	16	5	18′-4″	
d1(E)	24	5	3′-2"	L ا
d2(E)	24	5	3′-3″	J
d3(E)	10	4	2'-2"	
d4(E)	12	5	2'-0"	ſ
h (E)	8	6	16′-8″	
$h_I(E)$	4	6	23′-6″	
h2(Ε)	4	6	17′-8″	
x (E)	83	5	6′-4″	Γ
CONCR SUPER	ETE STRUC	TURE	CU YD	18.3
CONCRL	ete re	MOVAL	CU YD	16.9
RE INF BARS COATE	ORCEME EPOXY D	ENT	POUND	2630

ΕN	ENT DETAILS		F.A.I. RTE.			SECTI	ON		COUNTY	TOTAL SHEETS	SHEET NO.
D1 (EB)		64	64 D9 CM BRIDGE REP 2012-4 WHITE 13						13	8	
		_						CONTRACT	NO. 78	254	
5	STA.	TO STA.	ILLINOIS FED. AID PROJECT								



PLOT DATE = 2/3/2012

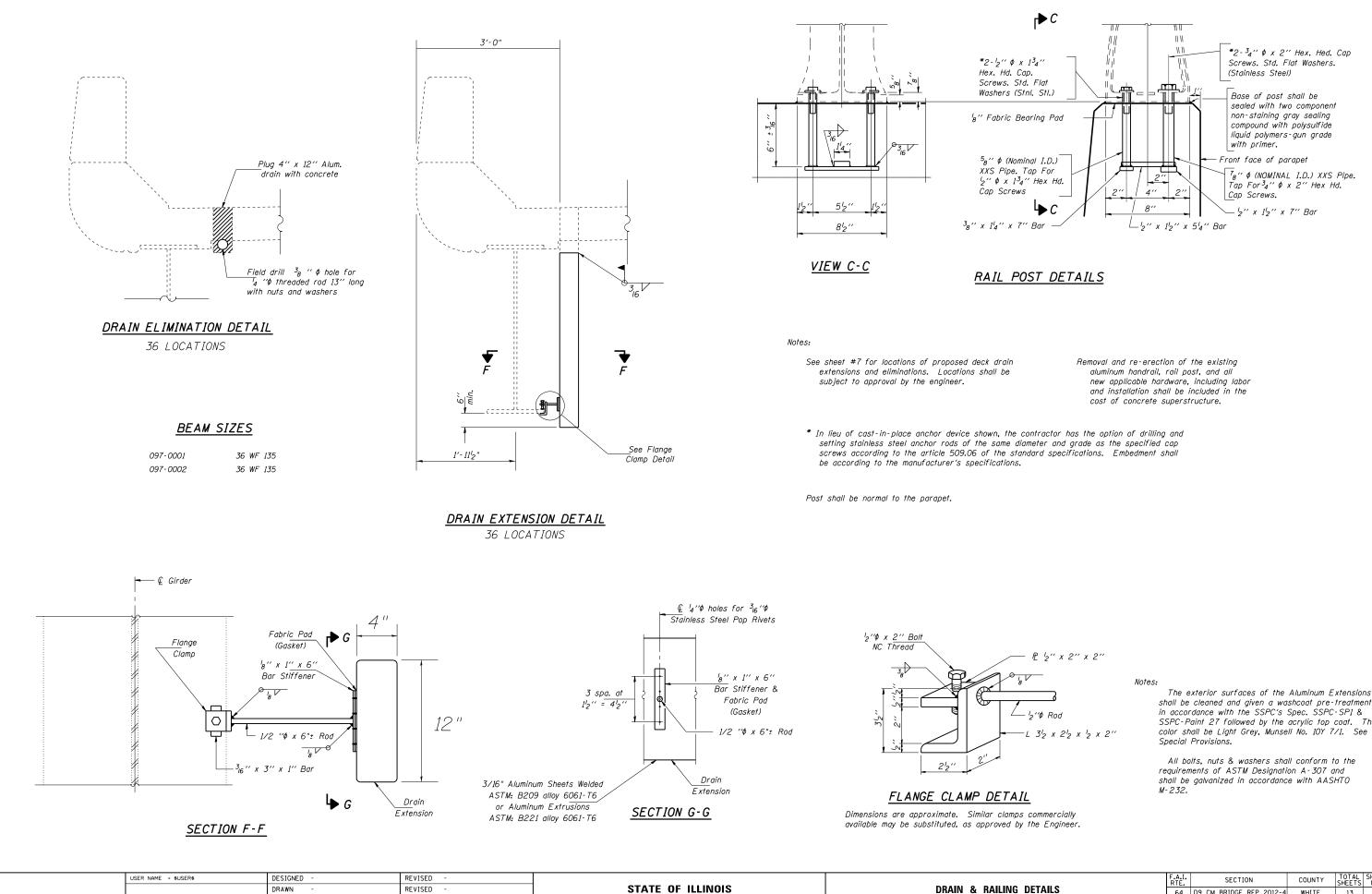
DATE

REVISED

SCALE: SHEET NO. OF SHEETS

		097-0	0002	
BAR	NO.	SIZE	LENGTH	SHAPE
a (E)	64	5	17′-4″	
а <sub>2</sub> (Е)	24	6	4'-0"	_
$d_I(E)$	24	5	3′-2"	J
d <sub>2</sub> (E)	24	5	3′-3″	J
d3(E)	10	4	2'-2"	
d4(E)	12	5	2'-0"	Ц
h (E)	16	6	16′-8″	
x (E)	76	5	6′-4″	Г
CONCR SUPEF	ETE STRUC	TURE	CU YD	17.2
CONCRI	ete re	MOVAL	CU YD	15.8
	ORCEME EPOXY D	ENT	POUND	2410

ENT DETAILS 2 (WB)		F.A.I. RTE.			SECTI	ON		COUNTY	TOTAL SHEETS	SHEET NO.	
		64	64 D9 CM BRIDGE REP 2012-4 WHITE 1						13	9	
2 (112)								CONTRACT	NO. 78	3254	
s s	STA.	TO STA.				II	LIN01	S FED. AI	D PROJECT		



PLOT SCALE = 100.0000 '/ in. PLOT DATE = 2/3/2012

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DATE

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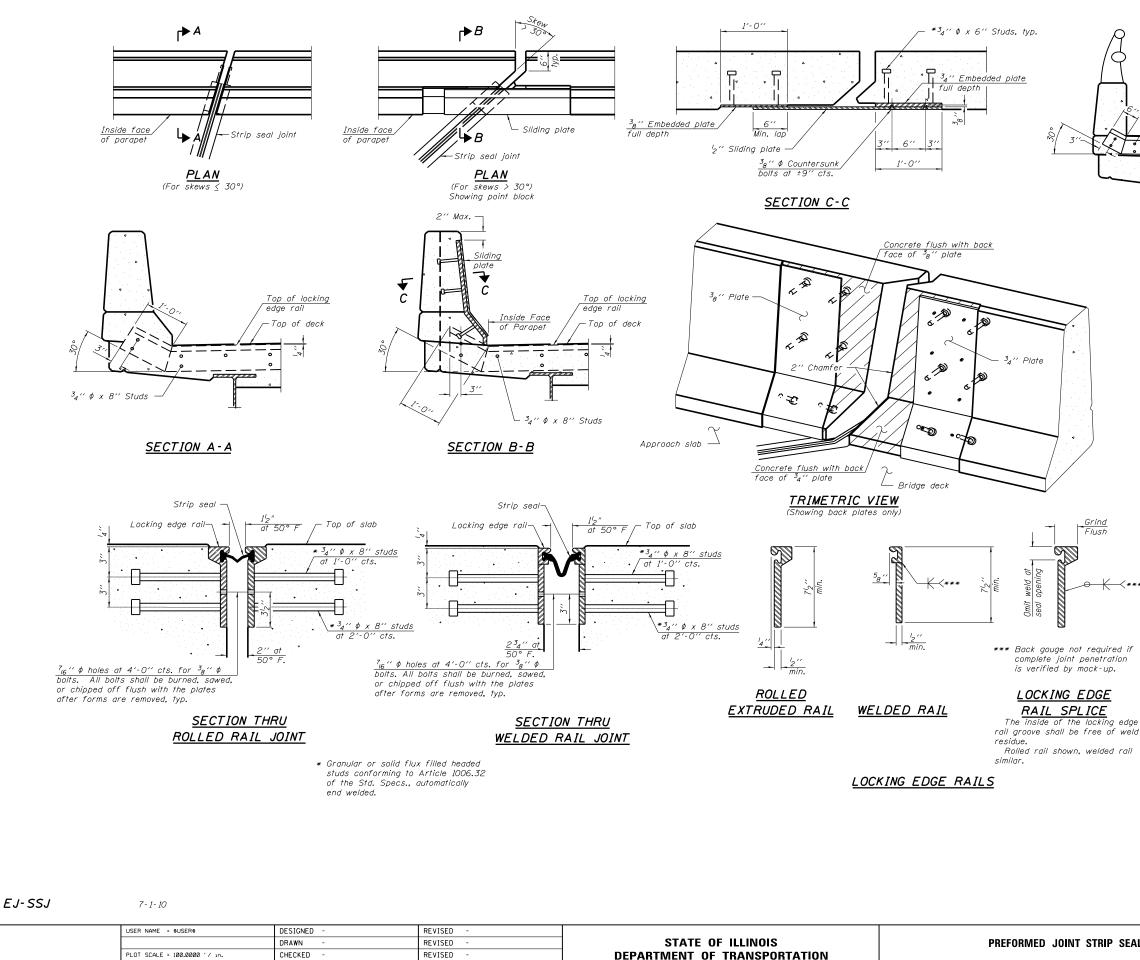
**DEPARTMENT OF TRANSPORTATION** 

SHEET NO. OF SHEETS

SCALE:

shall be cleaned and given a washcoat pre-treatment in accordance with the SSPC's Spec. SSPC-SP1 & SSPC-Paint 27 followed by the acrylic top coat. The color shall be Light Grey, Munsell No. 10Y 7/1. See

		F.A.I. RTE.			SECTI	ON		COUNTY	TOTAL SHEETS	SHEET NO.
NG	NG DETAILS		64	D9 (	СМ	BRIDGE	REP	WHITE	13	10
									CONTRACT	NO. 78
S	STA.	TO STA.	ILLINOIS FED. AID PROJECT							



PLOT DATE = 2/3/2012

DATE

REVISED

A		
	$3_4$ " $\phi$ x 8" Studs <u>Top of sidewalk</u> or median	Top of locking
		edge rail



at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of  ${}^{I}_{4}{}^{\prime\prime}\!.$  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 Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.

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. Maximum space between rail segments at stage lines shall be  ${}^3_{16}$ '', sealed with a suitable sealant. Parpet plates and anchorage studs for skews > 30°

included in the cost of Preformed Joint Strip Seal.

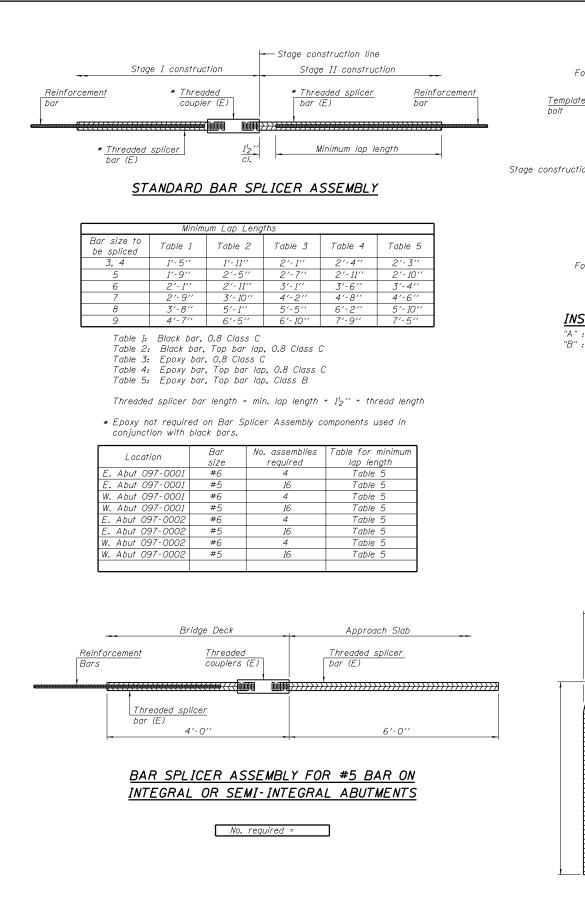
BILL OF MATERIAL

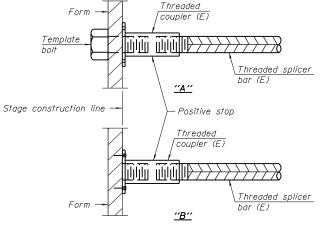
Item	Unit	Total
Preformed Joint Strip Seal	Foot	152

									F.A.I. RTE. SECTION				
PREFORMED JOINT STRIP SEAL				64	D9 CM BR	IDGE REP	2012-4	WHITE	13	11			
						_				CONTRACT	NO. 78	254	
SHEET	NO.	OF	SHEETS	STA.	TO STA.			ILL INOI	S FED. AI	D PROJECT			

Grind Flush

SCALE:





#### 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.

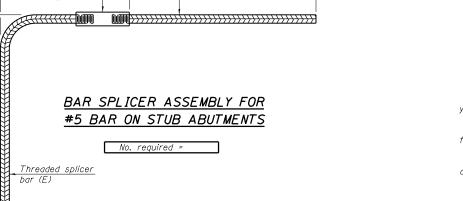
Abutment

hatch block Threaded

couplers (E)

Threaded splicer

bar (E)



### BSD-1

7 - 1 - 10

USER NAME = \$USER\$	DESIGNED -	REVISED -		BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.			
	DRAWN -	REVISED -	STATE OF ILLINOIS	BAR	SPLICER ASSEMBLY A	AND MEC	HANICAL		64	D9 CM BRIDGE REP 2012-4	WHITE	13	12
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION								CONTRACT	T NO. 782	
PLOT DATE = 2/3/2012	DATE -	REVISED -		SCALE:	SHEET NO. OF	SHEETS	STA.	TO STA.		ILLINOIS FED. A	ID PROJECT		

6'-0''

Threaded splicer

bar (E)

Approach <u>slab</u>

BAR SPLICER ASSEMBLY FOR

#5 BAR ON STUB ABUTMENTS

No. required =

/	Mechanical Coupler (E)
844444444444444444	<u>}}}}</u>
Reinforcement bar _	Reinforcement bar

### STANDARD MECHANICAL SPLICER

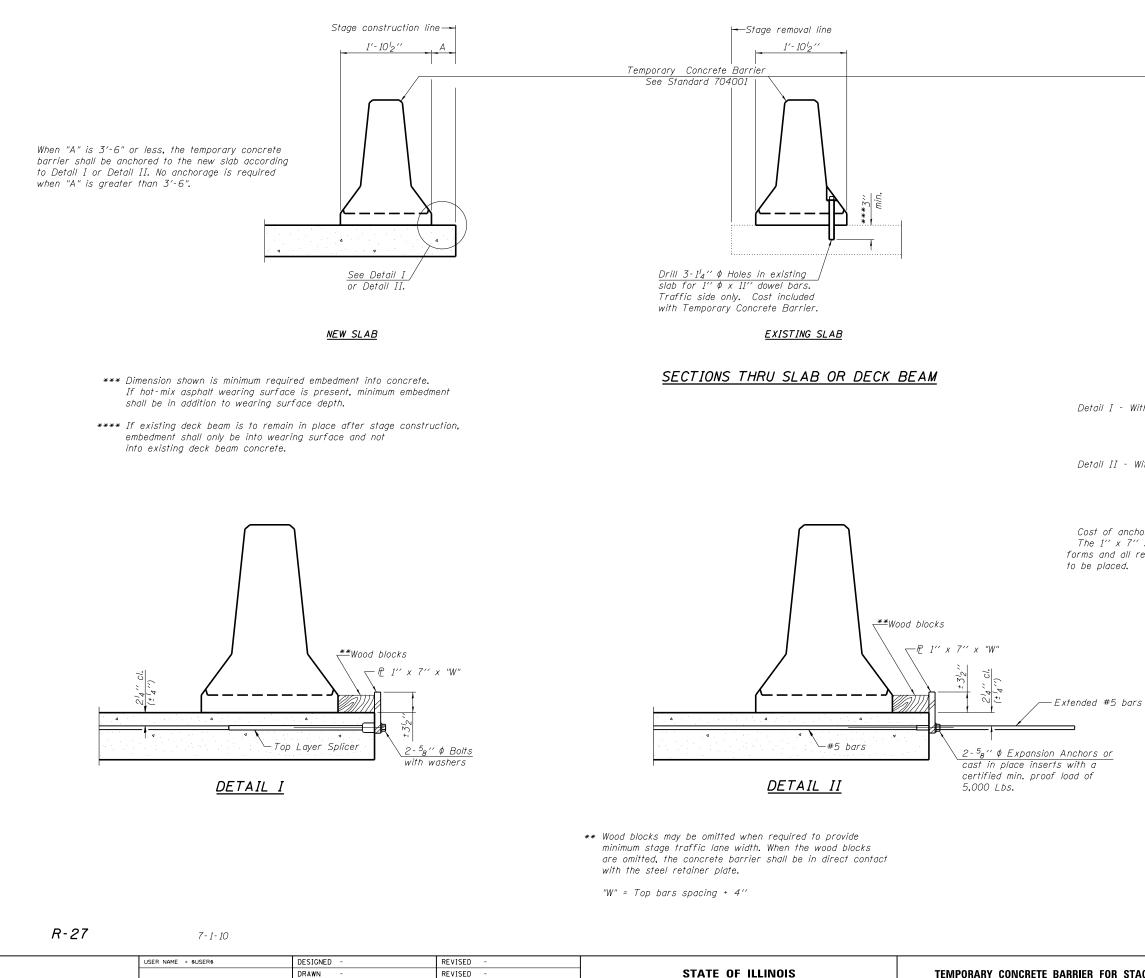
Location	Bar size	No. assemblies required
097-0001	#5	16
097-0001	#6	4
097-0002	#5	16
097-0002	#6	4

#### NOTES

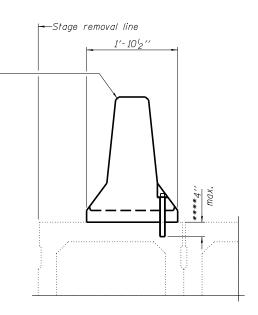
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi

yield strength. All reinforcement shall be lapped and tied to the splicer bars. Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications. See special provision for Mechanical Splicers.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.



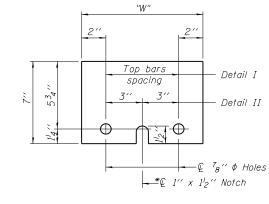
USER NAME = \$USER\$	DESIGNED -	REVISED -				F.A.I.	SECTION	COUNTY	TOTAL SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS	TEM	PORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION	64	D9 CM BRIDGE REP 2012-4	WHITE	13 13
PLOT SCALE = 100.0000 '/ in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION					CONTRACT	NO. 78254
PLOT DATE = 2/3/2012	DATE -	REVISED -		SCALE:	SHEET NO. OF SHEETS STA. TO STA.		ILLINOIS FED. AI		



EXISTING DECK BEAM

### NOTES

- Detail I With Bar Splicer or Couplers: Connect one (1) 1'' x 7' 'x ''W'' steel P to the top layer of couplers with  $2 - \frac{5}{8}$ "  $\phi$  bolts screwed to coupler at approximate Q of each barrier panel.
- Detail II With Extended Reinforcement Bars: Connect one (1) 1" x 7" x "W" steel P to the concrete slab or concrete wearing surface with  $2 - \frac{5}{8}$  "  $\phi$ 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  $I'' \times T'' \times 'W''$  plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready



STEEL RETAINER P 1" x 7" x "W" \* Required only with Detail II