

03-09-12 LETTING ITEM 054

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

F.A.P. 331 (IL 13) OVER PANKEY BRANCH
STRUCTURE NO. 083-0044

D9 CM BRIDGE REPAIR 2012-2
SALINE COUNTY

C-99-033-11

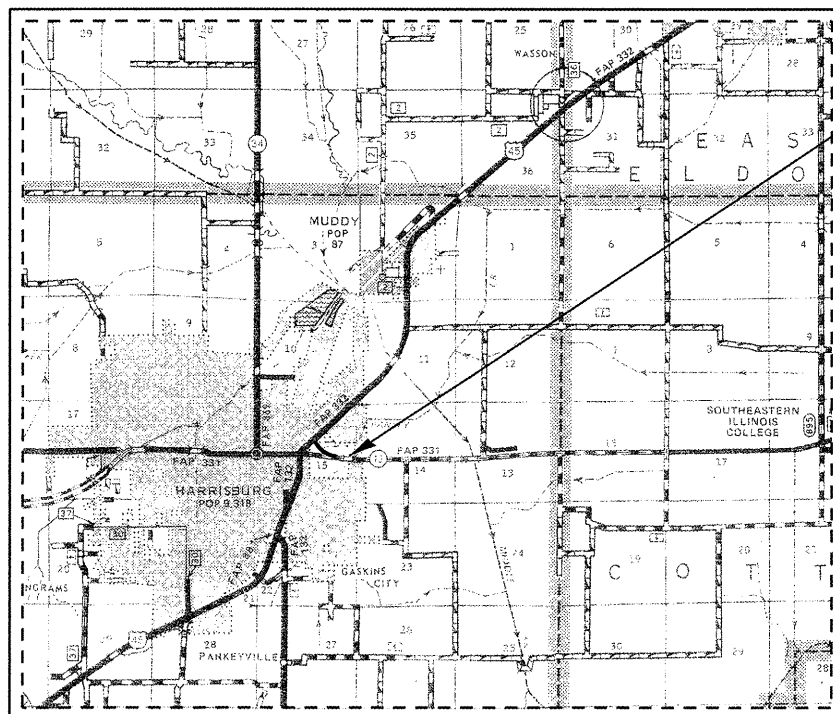
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	D9 CM BRIDGE REP 2012-2	SALINE	12	1
		ILLINOIS	CONTRACT NO. 78246	

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

TOWNSHIP
HARRISBURG

TRAFFIC DATA
2009 ADT = 4950
7% TRUCKS

D-99-023-11



IMPROVEMENT LOCATION
STRUCTURE NO. 083-0044
IL 13 OVER PANKEY BRANCH

GROSS LENGTH = 137'-3"

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. 78246

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Dec 16 2012
Omer Asman
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Feb 3 2012
John D. Baranzelli, P.E.
ENGINEER OF DESIGN AND ENVIRONMENT

Feb 3 2012
William R. Fryler
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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OF THE STATE OF ILLINOIS

GENERAL NOTES

- 1) 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.
- 2) 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: ON PAVEMENT	0.09 GAL /SQ YD
- 3) PRIOR TO PLACEMENT OF THE FINAL PAVEMENT MARKINGS THE RESIDENT ENGINEER SHOULD CONTACT THE BUREAU OF OPERATIONS AND ARRANGE FOR INSPECTION AND APPROVAL OF THE PAVEMENT MARKING LAYOUT.
- 4) 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 101.16 REGARDLESS IF TRACK MOUNTED OR WHEELED.
- 5) COMMITMENTS: NONE AS OF DECEMBER 16, 2011.

INDEX OF SHEETS

- 1 COVER SHEET
- 2 SIGNATURES, INDEX OF SHEETS, GENERAL NOTES, STANDARDS, AND MIXTURE REQUIREMENTS
- 3-5 SUMMARY OF QUANTITIES
- 6 GENERAL PLAN AND ELEVATION
- 7 STAGING DETAILS
- 8 DECK SLAB REPAIR & DRAIN EXTENSIONS / ELIMINATIONS
- 9 JOINT DETAILS
- 10 DRAIN DETAILS
- 11 BUTT JOINT DETAILS
- 12 EAST ABUTMENT WINGWALL DETAILS AND GUARDRAIL SCHEDULE

MIXTURE REQUIREMENTS

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

Location(s):	Hot-Mix Asphalt Base Course Widening
Mixture Use(s):	Hot-Mix Asphalt Binder Course, N90, IL-19.0
AC/PG:	PG64-22
RAP % (Max):	10
Design Air Voids:	4.0 %, 90 Gyration Design
Mixture Composition (Gradation Mixture):	IL-19.0 mm
Friction Aggregate:	None

STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 482001-02 HMA SHOULDER ADJACENT TO FLEXIBLE PAVEMENT
- 630001-10 STEEL PLATE BEAM GUARDRAIL
- 631031-10 TRAFFIC BARRIER TERMINAL, TYPE 6
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701001-02 OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
- 701006-03 OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
- 701011-02 OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
- 701201-04 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
- 701301-04 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
- 701311-03 LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
- 701316-06 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR, FOR SPEEDS > 45 MPH
- 701326-04 LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
- 701901-02 TRAFFIC CONTROL DEVICES
- 780001-03 TYPICAL PAVEMENT MARKINGS
- 781001-03 TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS

Prepared By: *[Signature]*
DISTRICT SURVEY & PLANS ENGINEER

Examined By: *[Signature]*
DISTRICT LAND ACQUISITION ENGINEER

Examined By: *[Signature]*
DISTRICT PROGRAM DEVELOPMENT ENGINEER

Examined By: *[Signature]*
DISTRICT OPERATIONS ENGINEER

Examined By: *[Signature]*
DISTRICT PROJECT IMPLEMENTATION ENGINEER

Examined By: *[Signature]*
DISTRICT CONSTRUCTION ENGINEER

Examined By: *[Signature]*
DISTRICT MATERIALS ENGINEER

Approved By: *[Signature]*
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER
 DEC 14 20 11
DATE

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	D9 CM BRIDGE REP 2012-2	SALINE	12	2
CONTRACT NO. 78246			ILLINOIS FED. AID PROJECT	

SCALE: _____ SHEET NO. _____ OF _____ SHEETS STA. _____ TO STA. _____

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		SN 083-0044	
		100% STATE - SALINE COUNTY	
		CONSTRUCTION TYPE CODE - 0014	
CODE NUMBER	PAY ITEM	UNIT	TOTAL QUANTITY
35600716	HOT-MIX ASPHALT BASE COURSE WIDENING, 10"	SQ YD	259
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	27
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	294
40600990	TEMPORARY RAMP	SQ YD	48
40603345	HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90	TON	14
48203100	HOT-MIX ASPHALT SHOULDERS	TON	12
50300255	CONCRETE SUPERSTRUCTURE	CU YD	0.5
50300260	BRIDGE DECK GROOVING	SQ YD	604
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	70
50102400	CONCRETE REMOVAL	CU YD	0.1
X 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	62.5
X 63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	2
X 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2
63200310	GUARDRAIL REMOVAL	FOOT	186

X SPECIALTY ITEM

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PLOT DATE = 12/16/2011	DATE	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES			
SCALE:	SHEET NO.	OF SHEETS	STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	D9 CM BRIDGE REP 2012-2	SALINE	12	3
CONTRACT NO. 78246				
ILLINOIS FED. AID PROJECT				

SN 083-0044
 100% STATE - SALINE COUNTY
 CONSTRUCTION TYPE CODE - 0014

CODE NUMBER	PAY ITEM	UNIT	TOTAL QUANTITY
67000400	ENGINEERS FIELD OFFICE, TYPE A	CAL MO	2
67100100	MOBILIZATION	L SUM	1
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	L SUM	1
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	4
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70106700	TEMPORARY RUMBLE STRIPS	EACH	3
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	1
70300100	SHORT TERM PAVEMENT MARKING	FOOT	48
70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	454
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SO FT	16
X 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	454
X 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	1

X SPECIALTY ITEM

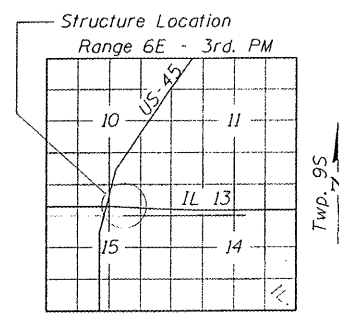
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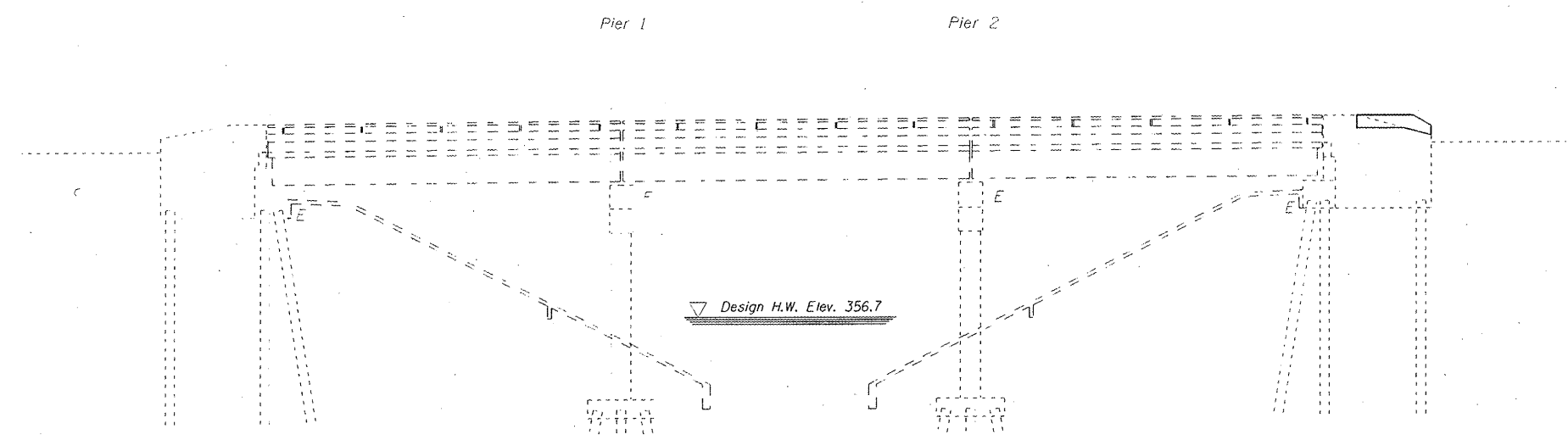
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES			
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	D9 CM BRIDGE REP 2012-2	SALINE	12	4
CONTRACT NO. 78246				
[ILLINOIS] FED. AID PROJECT				



LOCATION SKETCH



ELEVATION

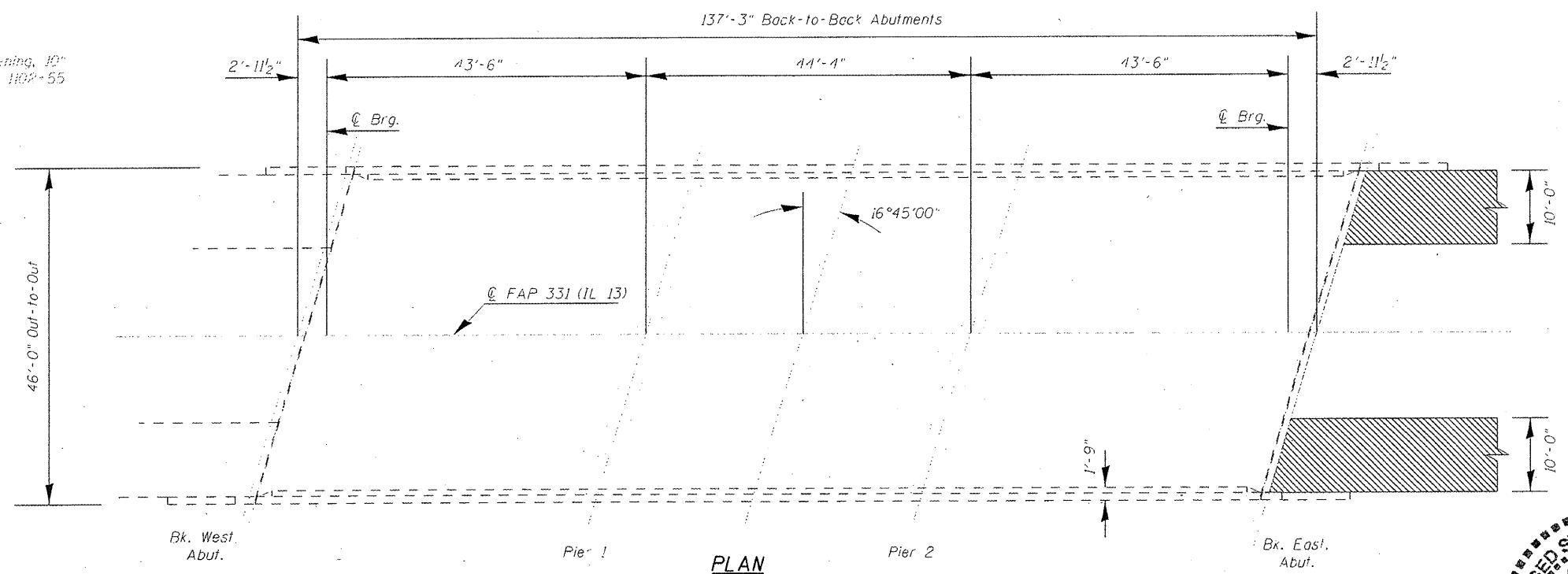
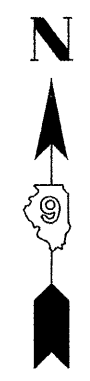
SCOPE OF WORK

1. Scarify Bridge Deck $\frac{3}{4}$ "
2. Perform full depth deck slab repair.
3. Place polymer concrete and silicone joint sealer.
4. Apply $2\frac{1}{4}$ " microsilica overlay.

DESIGN STRESSES

- ORIGINAL CONSTRUCTION**
FIELD UNITS
- $f_c = 1,200$ psi (Deck Slab)
 - $f_c = 1,400$ psi (Curb, Parapet, Sub)
 - $f_s = 20,000$ psi (Reinf. & Struct.)
 - $v_c = 75$ psi (Figs) $n = 10$
 - $f_c' = 5,000$ psi
 - $f_{ci} = 4,000$ psi
 - $f_s' = 248,000$ psi (Strands)
 - $f_{si} = 173,600$ psi (Strands)
 - Loading HS 20-44

■ HMA Base Course Widening, 10" Sta 1101+38.79 to Sta 1102+55



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Superstructure	Cu Yd	0.5
Bridge Deck Grooving	Sq Yd	604
Reinforcement Bars, Epoxy Coated	Pound	70
Concrete Removal	Cu Yd	0.1
Bridge Deck Microsilica Concrete Overlay $2\frac{1}{4}$ "	Sq Yd	631
Bridge Deck Scarification $\frac{3}{4}$ "	Sq Yd	631
Silicone Joint Sealer	Foot	94
Polymer Concrete	Cu Ft	7.7
Deck Slab Repair (Full Depth, Type II)	Sq Yd	5.3
Plug Existing Deck Drains	Each	24
Floor Drain Extensions	Each	18

GENERAL NOTES

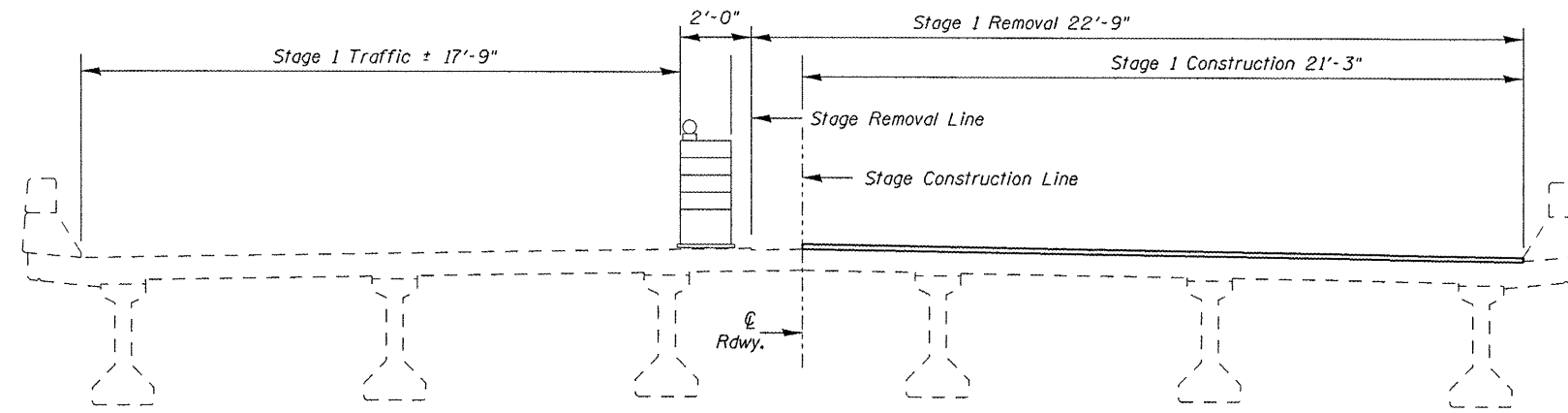
Plan dimensions and details relative to the existing plans are subject to nominal construction variations. The contractor shall field verify existing dimensions and details affecting new construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Reinforcement bars designated (E) shall be epoxy coated.

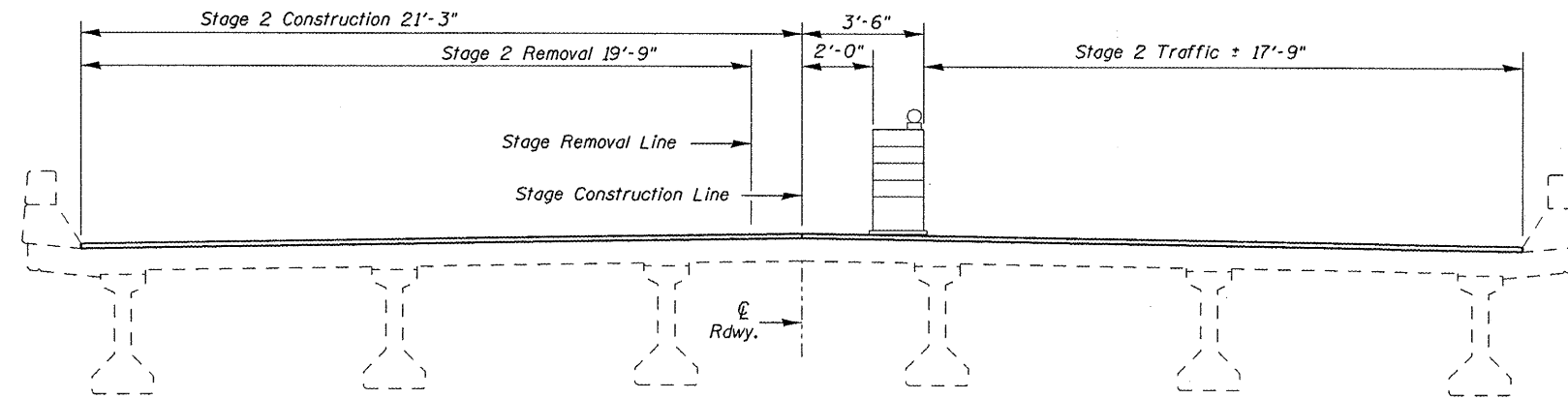
Joint openings shall be adjusted according to article 520.04 of the standard specs, when the deck is poured at an ambient temperature other than 50°F.



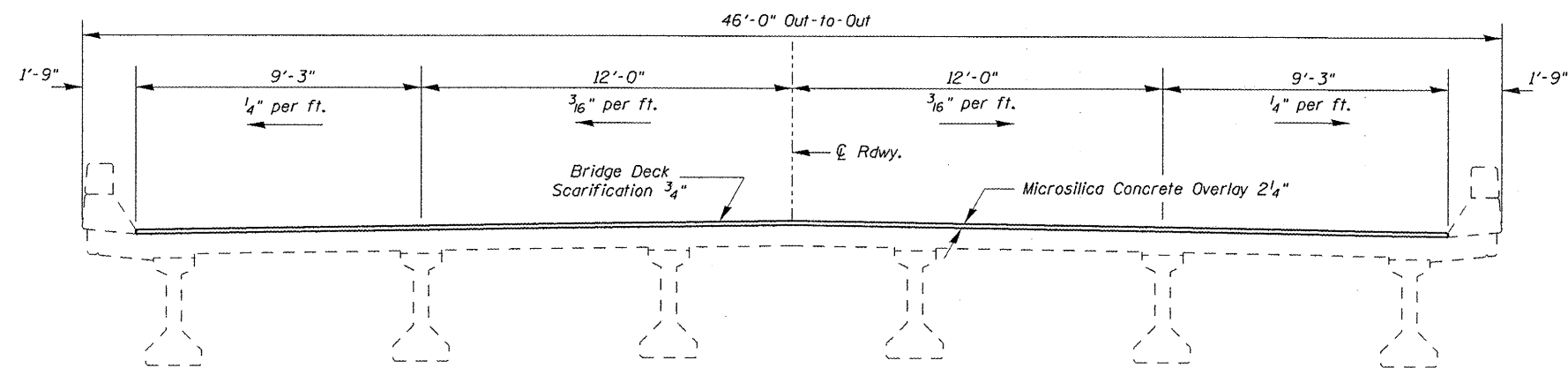
Dr. Carl Puzey 1/25/12
Expires 11/30/12



STAGE 1 CONSTRUCTION



STAGE 2 CONSTRUCTION



SECTION THROUGH OVERLAY

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PLOT DATE = 12/14/2011		DATE	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGING DETAILS
SN 083-0044**




SCALE: SHEET NO. OF SHEETS STA. TO STA.

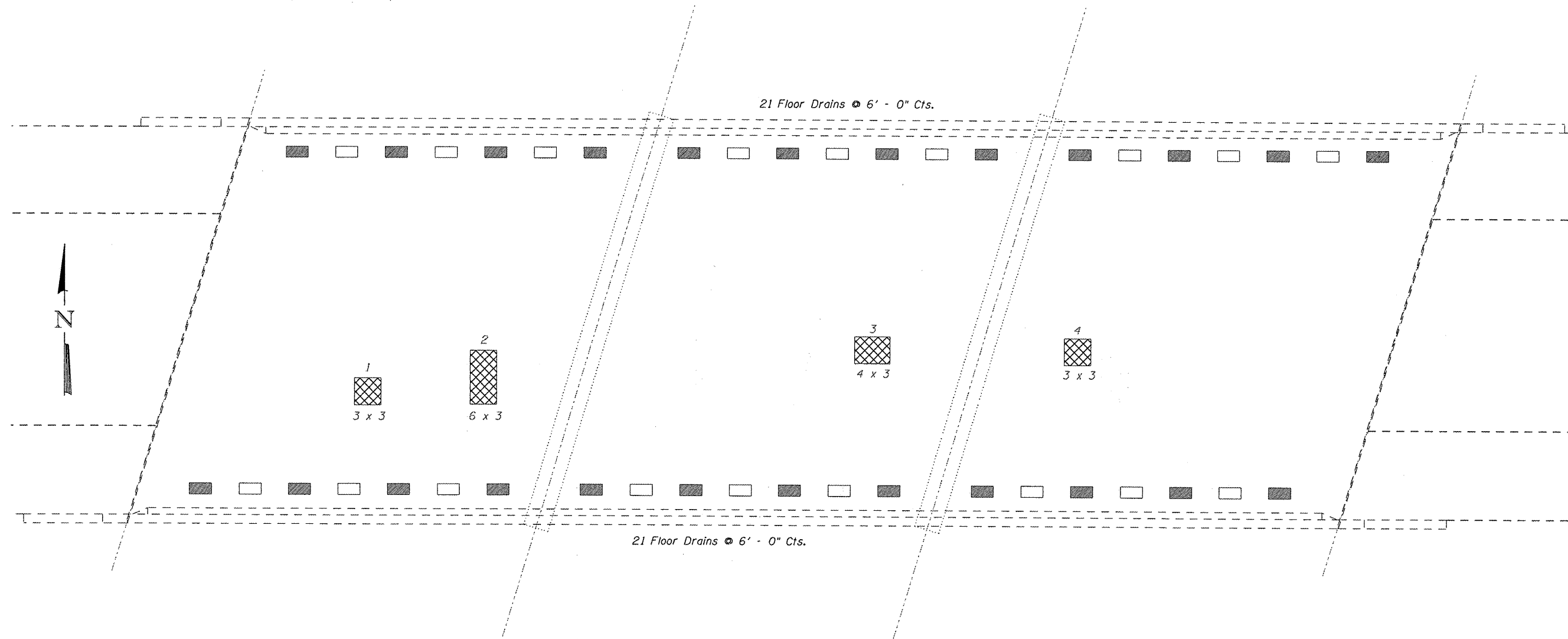
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	D9 CM BRIDGE REP 2012-2	SALINE	12	7
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78246	

NOTES:

The resident engineer will determine final patch locations and quantities in the field before bridge deck patching operations begin.

Area of deck repairs shown are estimates. The engineer shall show actual locations for deck repairs on as-built plans.

-  Full Depth Deck Slab Repair
-  Plug Existing Deck Drains
-  Floor Drain Extensions



FULL DEPTH DECK REPAIR			
NUMBER	LENGTH (FT)	WIDTH (FT)	AREA (SQ YD)
1	3	3	1
2	3	6	2
3	4	3	1.3
4	3	3	1

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type II)	Sq Yd	5.3
Plug Existing Deck Drains	Each	24
Floor Drain Extensions	Each	18

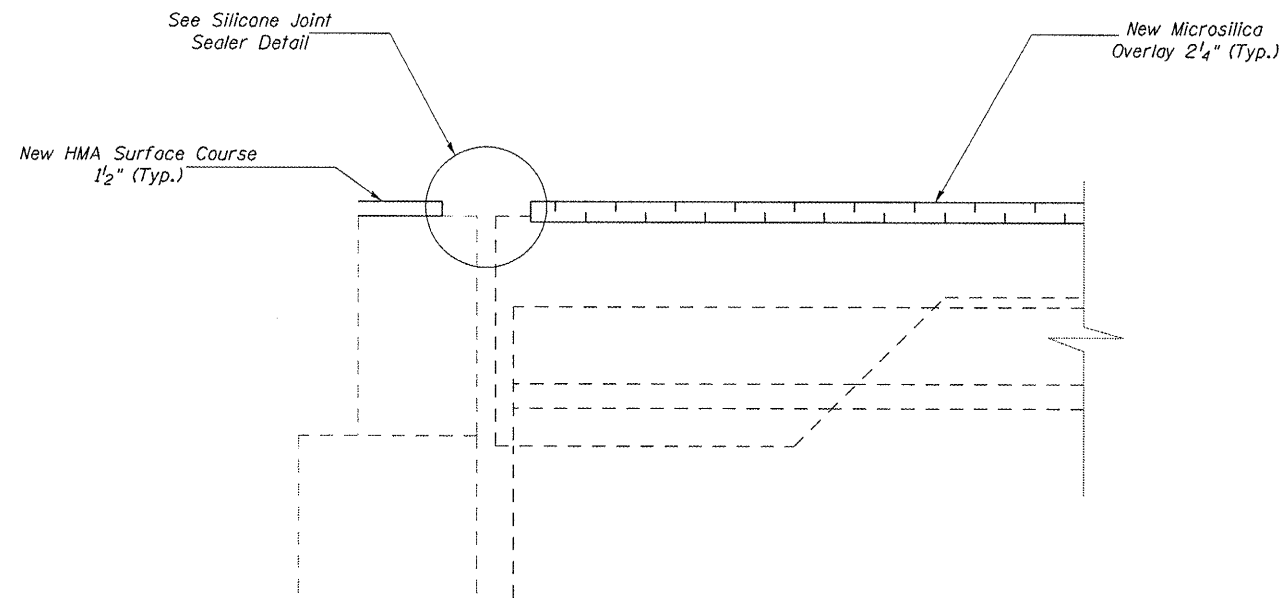
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR & DRAIN EXTENSIONS / ELIMINATIONS
SN 083-0044

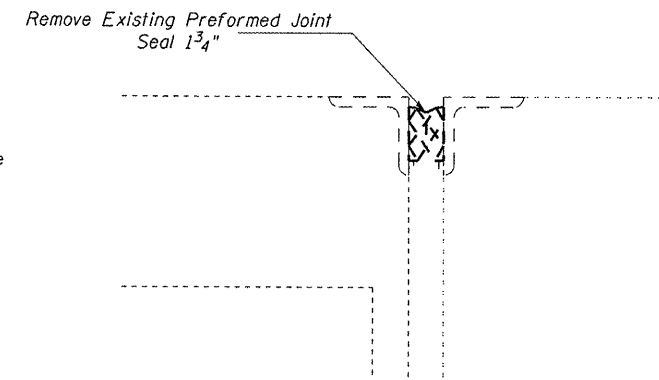
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CONTRACT NO. 78246				
ILLINOIS FED. AID PROJECT				

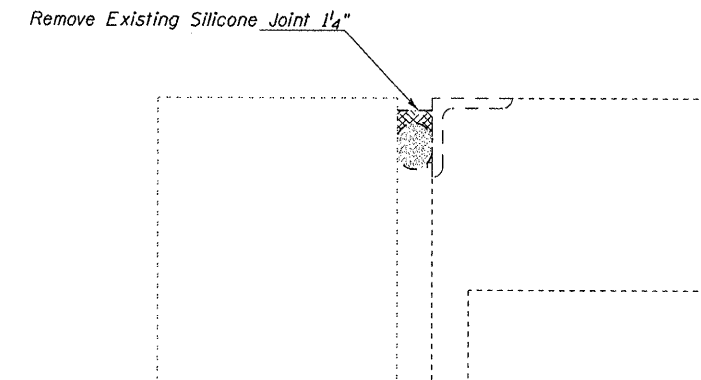


SECTION • ABUTMENTS

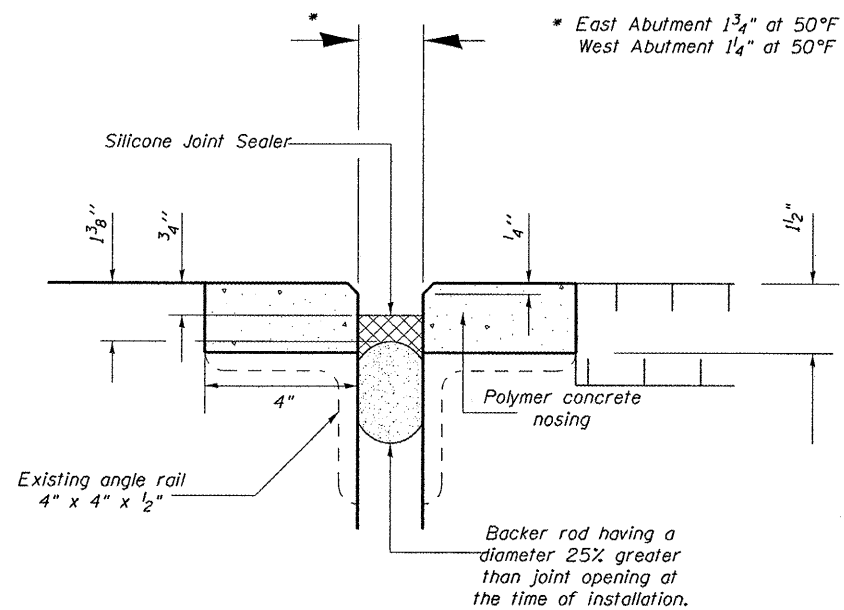
All welds shall be ground smooth from the existing angles prior to placing the polymer concrete nosing.
Any broken or loose angle pieces shall be removed and the polymer nosing shall be bonded to the concrete.



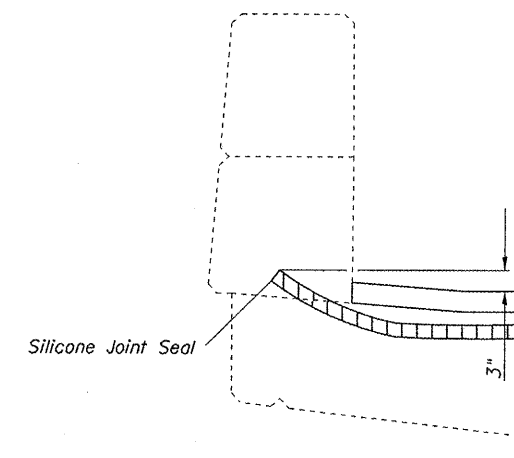
EXISTING JOINT • EAST ABUTMENT



EXISTING JOINT • WEST ABUTMENT



SILICONE JOINT SEALER DETAIL



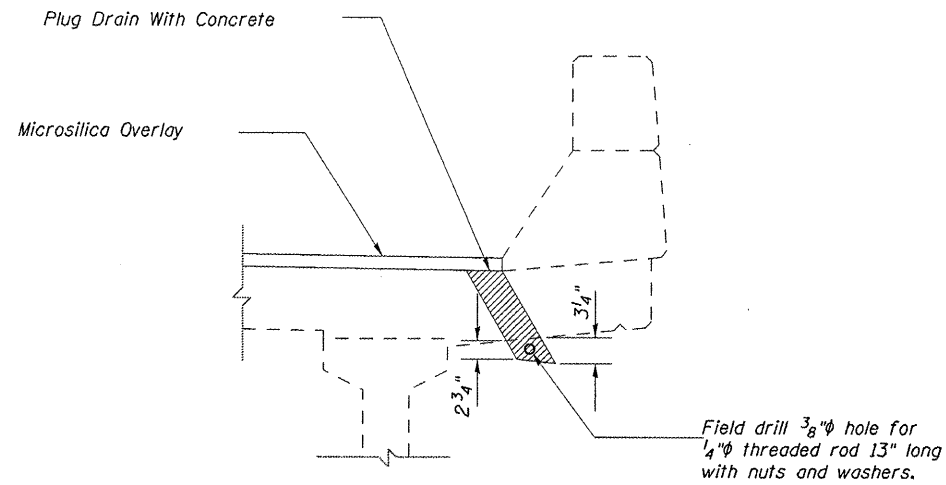
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

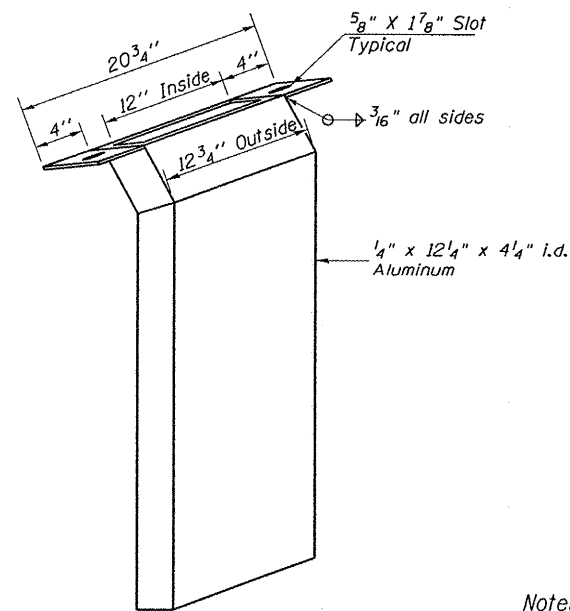
JOINT DETAILS			
SN 083-0044			
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DRAIN ELIMINATION DETAIL

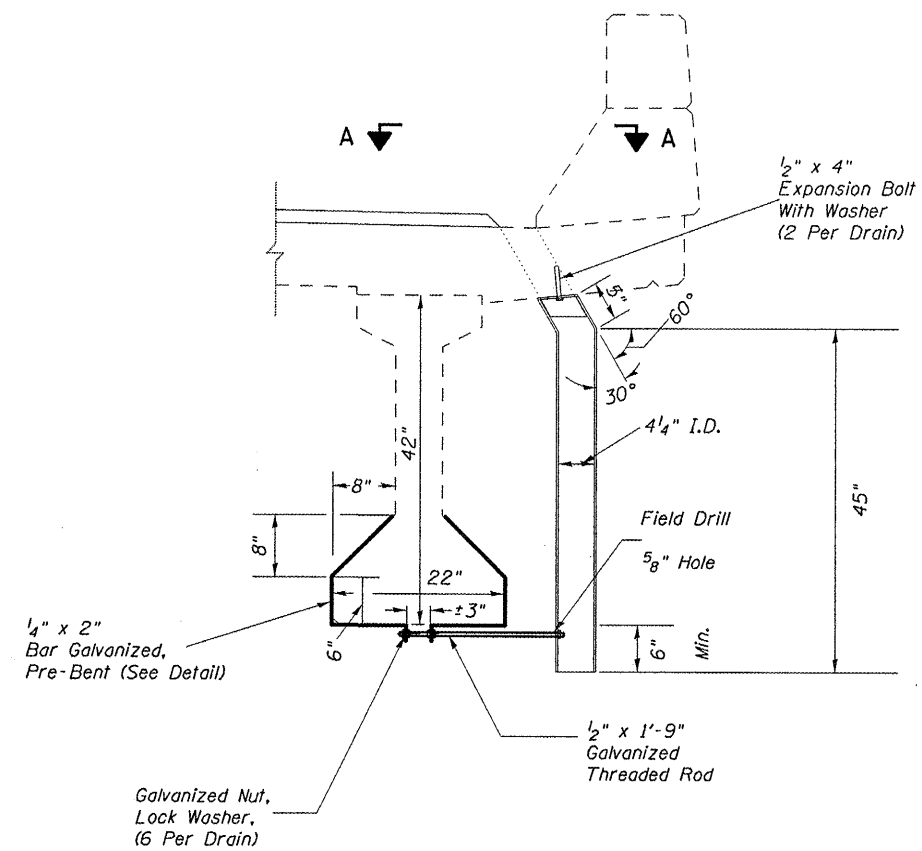
24 Locations



FLOOR DRAIN EXTENSION DETAIL

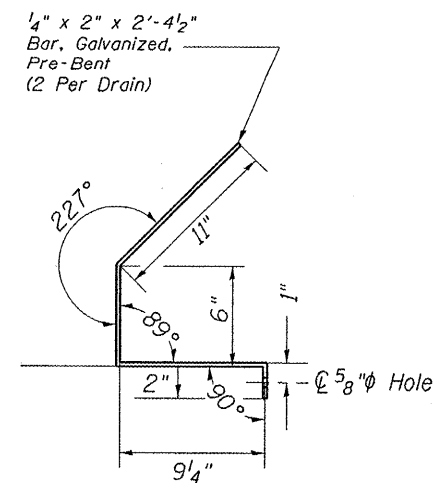
Notes:

Plug every other existing deck drain and all that are within ±10' of the existing substructure. Locations shall be subject to the approval of Engineer.

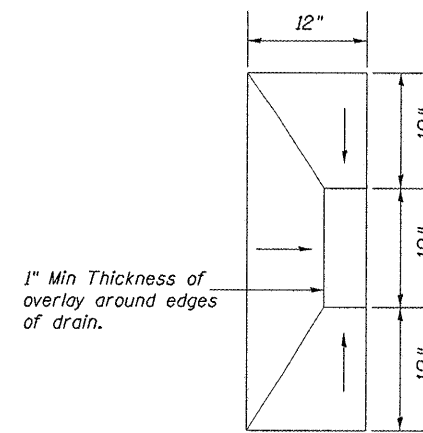


FLOOR DRAIN EXTENSIONS

18 Locations



BRACKET DETAIL



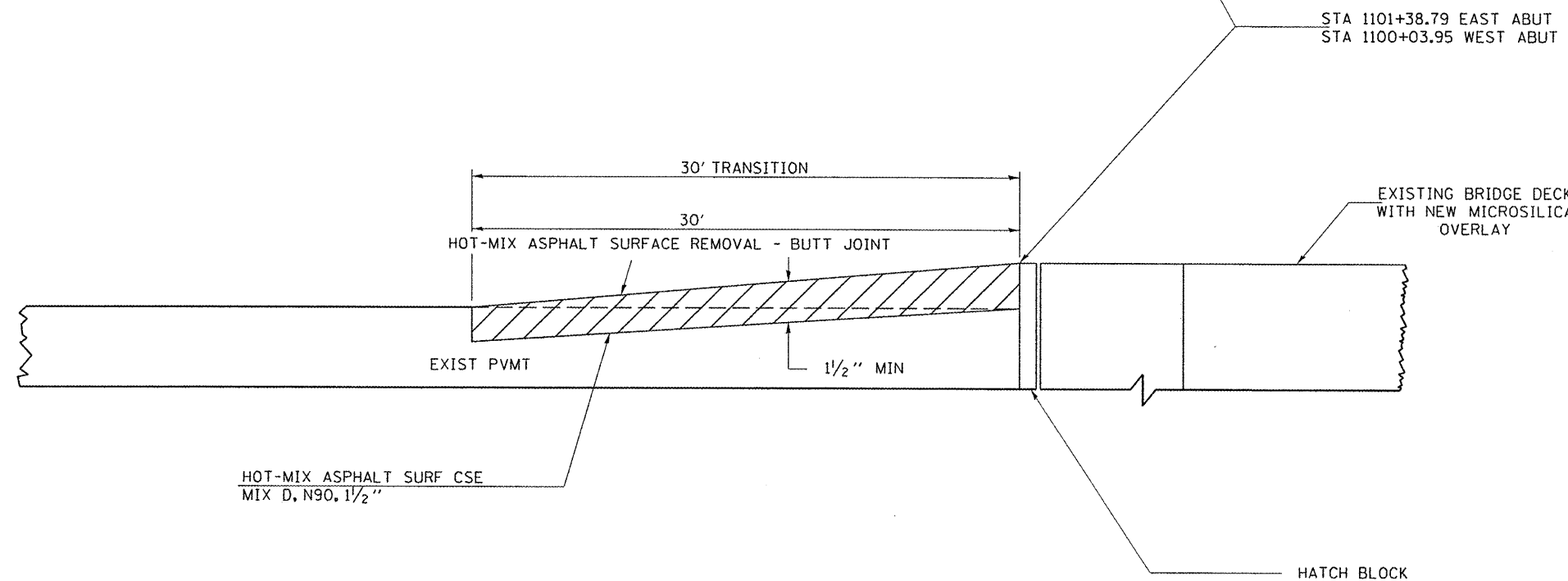
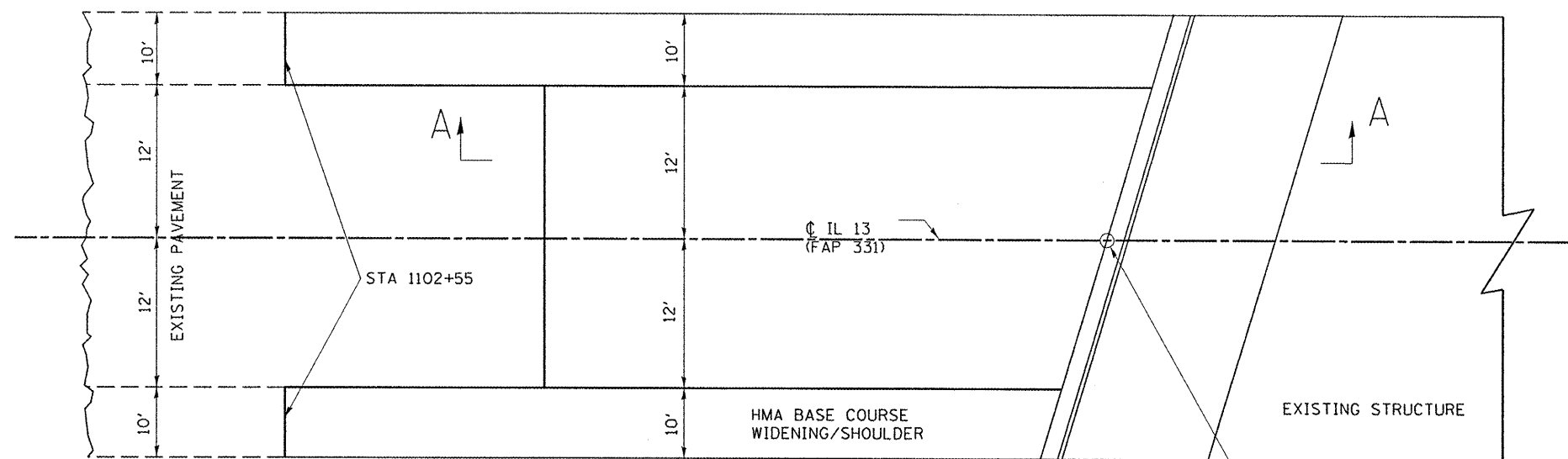
VIEW A-A

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DRAIN DETAILS			
SN 083-0044			
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ILLINOIS FED. AID PROJECT				



SECTION A-A

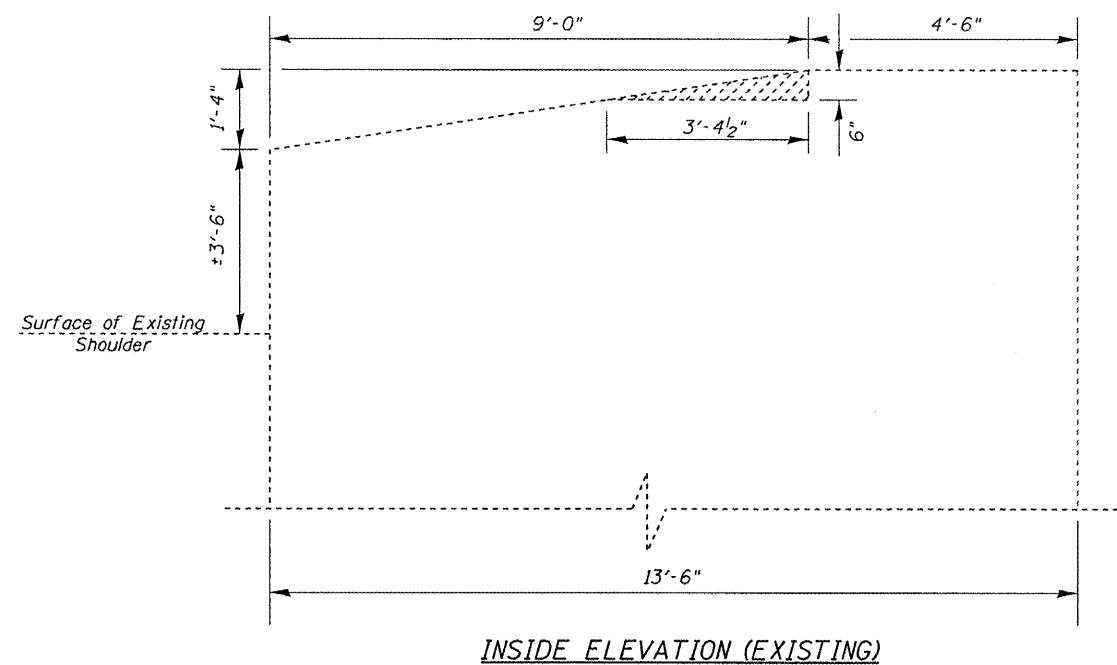
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STATE OF ILLINOIS
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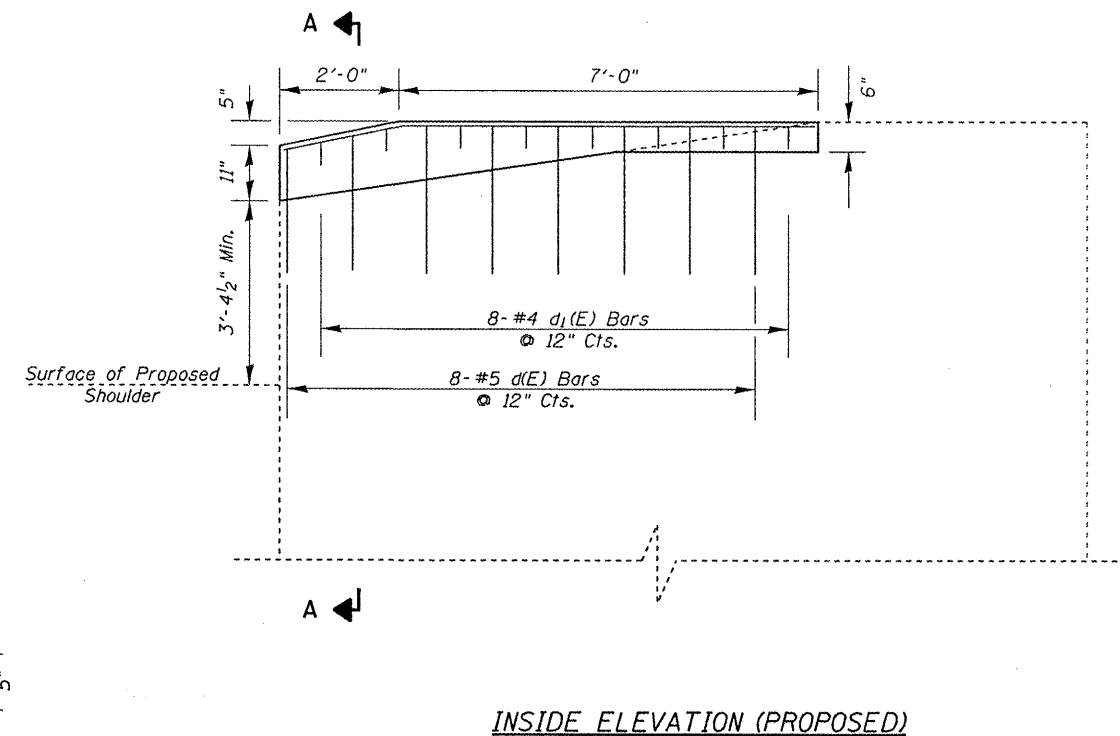
BUTT JOINT DETAILS
SN 083-0044

SCALE: SHEET NO. OF SHEETS STA. TO STA.

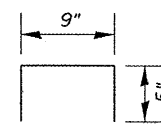
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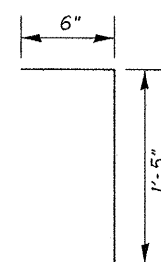
INSIDE ELEVATION (EXISTING)



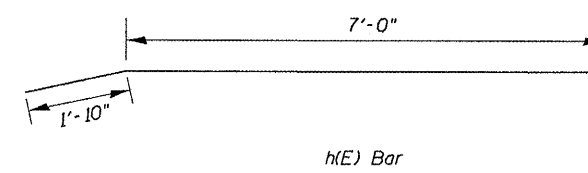
INSIDE ELEVATION (PROPOSED)



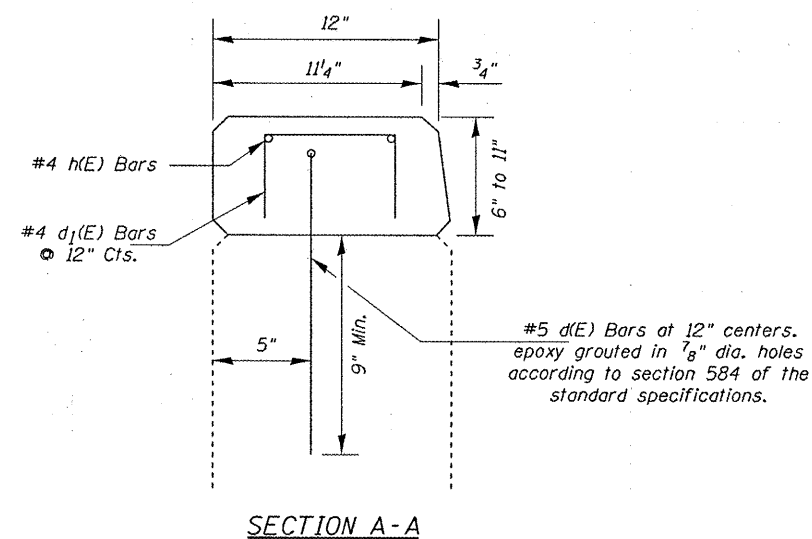
$d_1(E)$ Bar



$d(E)$ Bar



$h(E)$ Bar



SECTION A-A

GUARDRAIL SCHEDULE						
STATION			GUARDRAIL REMOVAL	TRAFFIC BARRIER TERMINAL, TY 1 SPL TANGENT	TRAFFIC BARRIER TERMINAL, TYPE 6	STEEL PLATE BEAM GUARDRAIL
			FOOT	EACH	EACH	FOOT
1101+51.40	TO	1102+44.50	93.1			
1101+51.40	TO	1101+95.15			1	
1101+95.15	TO	1102+57.65		1		62.5
1102+57.65	TO	1103+07.65				
1101+51.40	TO	1102+44.50	93.1			
1101+51.40	TO	1101+95.15			1	
1101+95.15	TO	1102+45.15		1		
TOTALS			186.2	2	2	62.5

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
$d(E)$	16	5	1'-11"	┌
$d_1(E)$	16	4	1'-7"	┌
$h(E)$	4	4	8'-10"	┌
Concrete Removal		Cu Yd	0.2	
Concrete Superstructure		Cu Yd	0.6	
Reinforcement Bars, Epoxy Coated		Pound	70	

FILE NAME :	USER NAME : #USER#	DESIGNED	REVISED -
c:\pwwork\pwwid\lavenderba\0253199\83-0944smart-shr-plan.dgn		DRAWN	REVISED -
		CHECKED	REVISED -
		DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT WINGWALL DETAILS
AND GUARDRAIL SCHEDULE, SN 083-0044

SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	D9 CM BRIDGE REP 2012-2	SALINE	12	12
CONTRACT NO. 78246				
ILLINOIS FED. AID PROJECT				