#### STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

**DIVISION OF HIGHWAYS** 

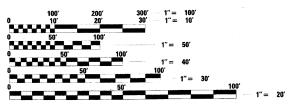
# PROPOSED HIGHWAY PLANS

FAP 377 /IL 58 (DEMPSTER ST.)
SECTION 2009–117I
OVER NORTH BR. CHICAGO RIVER (0.6 MI. E. OF IL 43)
BRIDGE DECK OVERLAY, BRIDGE JOINT
REPAIR AND BEARING REPLACEMENT
PROJECT NUMBER: NHF-0377(038)
COOK COUNTY

C-91-240-10

NILES TOWNSHIP R 13 E - 3rd PM

IMPROVEMENT LOCATION
IL 58 (DEMPSTER STREET) AT
NORTH BRANCH CHICAGO RIVER
STRUCTURE NO: 016-0942



FOR INDEX OF SHEETS, SEE SHEET NO. 2

**DESIGN DESIGNATION** 

ADT 41,100 (2007)

SPEED LIMIT 30 MPH

OTHER PRINCIPAL ARTERIAL

IMPROVEMENT LOCATED IN

THE VILLAGE OF MORTON GROVE

 $\sim 0^{\circ}$ 

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 MANAGER: MR. ISAAC KWARTENG (847) 705–4230 PROJECT ENGINEER: MR. ALIX BRICE (847) 705–4552

GROSS AND NET LENGTH OF IMPROVEMENT = 168.50 FT. = 0.032 MILE

LOCATION MAP

143





COLLECT ENGINEERS, INC.

NO. 062-056236 FXFIRES U1-30-2011 F.A.P SECTION

377 2009-1171

OUNTY TOTAL SHEET
SHEETS NO.
COOK 15
ONTRACT NO. 60550

#### D-91-240-10



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED FEBRUARY 1, 20 10

Dime M. O'Keste gr DEPUTY DIRECTOR OF HIGHWAYS, REGION ONE ENGINEER

March 19,20 10

Scott E Stitt P. P. D.
acting, ENGINEER OF DESIGN AND ENVIRONMEN

March 19, 20 10

Christie M-Roed Do DIRECTOR Nº 416H

OF THE STATE OF ILL NOIS

CONTRACT NO. 60J50

#### INDEX OF SHEETS

- Title Sheet
- Index of Sheets, State Standards, General Notes and Summary of Quantities
- 3 4 Maintenance of Traffic 5-13 Structure Plans S1-S9
- 14 · 15 District One Details
  - Highway Standards

#### INDEX OF HIGHWAY STANDARDS

Standard No.	Description
000001	Standard Symböls. Abbreviations And Patterns
001001	Areas Of Reinforcement Rebars
420001	Pavement Joints
515001	Name Plate For Bridge
630001	Steel Plate Beam Guardrail
701301	Lane Closure, 2L, 2W, Short Time Operations
701306	Lane Closure, 2L, 2W, Slow Moving Operations, Day Only
701321	Lane Closure, 2L, 2W, Bridge Repair with Barrier
701501	Urban Lane Closure, 2L, 2W, Undivided
701502	Urban Lane Closure, 2L, 2W, Bidirectional Left Turn
701602	Urban Lane Closure, Muitilane 2W. Bidirectional Left Turr
701606	Urban Lane Closure, Multilane 2W, with Mountable Median
701901	Traffic Control Devices
704001	Temporary Concrete Barrier
780001	Typical Pavement Markings
781001	Typical Applications Raised Reflective Pavement Markers

#### GENERAL NOTES

- 1. These plans have been prepared from notes received from IDOT Field Maintenance
- 10 ft (3 m) transitions shall be used to match proposed items of work to existing items in the field, unless otherwise shown. The transitions shall be paid for at the contract unit price for the proposed item of work specified.
- Where artificial lighting is utilized in night operations, the Contractor shall exercise the utmost precautions in preventing adverse visibility to the motoring public and
- 4. The engineer shall be the sole judge concerning curing time for the various hot-mix
- 5. For stabilization, all Type  $\coprod$  barricades shall require a minimum of four sandbags ner barricade.
- 6. The Resident Engineer must contact the Fraffic Control Supervisor at (847)705-4470 at least 72 hours prior to installation of the temporary control devices.
- The Resident Engineer shall contact the Area Traffic Field Engineer (Walter Czarny) at (847) 715-8419 at least two (2) weeks prior to the placement of permanent pavement markings.
- 8. All pavement markings and raised reflectors affected by the bridge repairs shall be uplaced. Nominal quantities have been included in the contract for this work.
- The Contractor will not be allowed to set up a yard or field office on State property without written permission from the Department.
- 10. Do not scale these plans for construction purposes.
- II. Plan dimensions and details relative to exists plans are subject to routine variations. The Contractor shall field verify listing dimensions and details affecting new construction and make necessary applied adjustments prior to construction or oldering of materials. Such variations shall of he cause for additional compensation For a change in scope of the work. Howeve, "the Contractor will be paid for the quantity actually furnished based upon the area wide bid for the work.

HOT-MIX ASPHALT MIXTURE REQUIREMENTS AIR VOIDS @ Ndes MIXTURE TYPE olymerized Hot-Mix Asphalt Surface Course, Mix "F", N90 (IL 9.5mm) 4% @ 70 Gvr.

The unit weight used to calculate all HMA Surface mixture quantities is 112 Lbs./Sq. Yd./In.

- 12. During construction operations, loose material deposits that obstruct the flow of water in draining the area shall be removed before the end of each work day. At the conclusion of construction operations, all drainage structures (new and existing) shall be free from all dirt and debris. This work will not be paid for separately but shall be considered incidental to the contract.
- 13. All Type I and Type II barricades shall have two (2) sandbags on the bottom rail.
- 14. The quantities for Hot-Mix Asphalt Surface Removal (Deck); Hot-Mix Asphalt Surface Removal,  $1_2''$ ; and Polymerized Hot-Mix Asphalt Surface Course, Mix "F", N90 have been prepared assuming  $1_2'$ -inch thick hot mix asphalt overlays. Removal and replacement of the entire thickness of existing overlay is required.
- 15. All raised reflective pavement markers (bridge) shall be low profile.
- 16. Special attention is called to Article 107.12 regarding railroad flaggers. The name and telephone number of the railroad engineer is
- 17. Before beginning any work, the Contractor shall retain and record for future reference, all existing povement marking lines, symbols and letters (and raised reflective markers) in order that these locations can be re-established for striping. Exact locations of all pavement markings and raised reflective pavement markers shall be as directed by the Engineer.

CODE	ITEM DESCRIPTION	UNIT	QUANTITY	FEDERAL <b>80%</b> STATE <b>20%</b>
40603595	Polymerized Hot-Mix Asphalt Surface Course, Mix "F", N90	Ton	42	42
42001300	Protective Coat	Sq. d.	790	790
44000155	Hot-Mix Asphatt Surface Removal, 1 1/2"	Sq J.	500	500
50102400	Concrete Removal	Cu. d.	27	27
50300255	Concrete Superstructure	Cu,≅d.	27	27
50300260	Bridge Deck Grooving	Sq rd.	411	411
50500715	Jack and Remove Existing Bearings	Each	16	16
50800205	Reinforcement Bars, Epoxy Coated	Pound	8497	8497
50800515	Bar Splicers	Each	44	44
52000110	Preformed Joint Strip Seal	Foot	196	196
52100015	Elastomeric Bearing Assembly, <b>YFE</b> I (Special)	Each	16	16
52100520	ANCHOR Boits, I"	EACH	32	32
67000400	Engineer's Field Office, Type A	CAL MO	4	4
67100100	Mobilization	L SUM	1	
70101800	Traffic Control and Protection, (Special)	L SUM	1	1
70301000	Work Zone Pavement Marking Removal	SQFT	760	760
70400100	Temporary Concrete Barrier	FOOT	380	.380
70400200	Relocate Temporary Concrete Barrier	FOOT	380	380
78000200	Thermoplastic Pavement Marking-Line 4	FOOT	310	310
78008210	Polyurea Pavement Marking, Type I-Lin- 4	F007	40	. 40
78100100	Raised Reflective Pavement Marker	Each	25	25
78100105	Raised Reflective Pavement Marker (Bridge	Easti	25	25
78100200	Temporary, Raised Reflective Paveme <b>NT</b> hrker	Each	25	24
78300100	Pavement Marking Removal	Sq. H.	115	115
78300200	Raised Reflective Pavement Marker Removal	Erch	25	25
X0322256	Temporary Information Signing,	Sg.Ft.	50	50
X0325305	Structural Repair of Concrete (Depth Equal To or Less Than 5 Inches)	Sq.Ft.	28	28
X0325775	Wet Reflective Temporary Tape, Type III, 4 Inch	Foot	2300	2300
X0326346	Bridge Deck Latex Concrete Overlay, 3 INCHES	Sq.Yd.	396	396
X0326 <b>766</b>	Clean   Reseal Relief Joint	! Foot	110	110
Z0001800	Approach Slab Repair (Partial Depth)	Sq.Yd.	5	5
Z0006229	Bridge Deck Hydro-Scarification 3"	Sq.Yd.	444	444
Z0030250	Impact Attenuators, Temporary (Non-Redirective), Test Level 3	Each	2	. 2
Z0030350	Impact Attenuators, Relocate (Non Redirective), Test Level 3	Each	2	2
Z0048665	Railroad Protective Liability Insurance	LSum	1	1
40600100	Bituminous Materials (Prime Coat)	Gallon	50	50
			10 O T T T T T T T T T T T T T T T T T T	

SUMMARY OF QUANTITIES

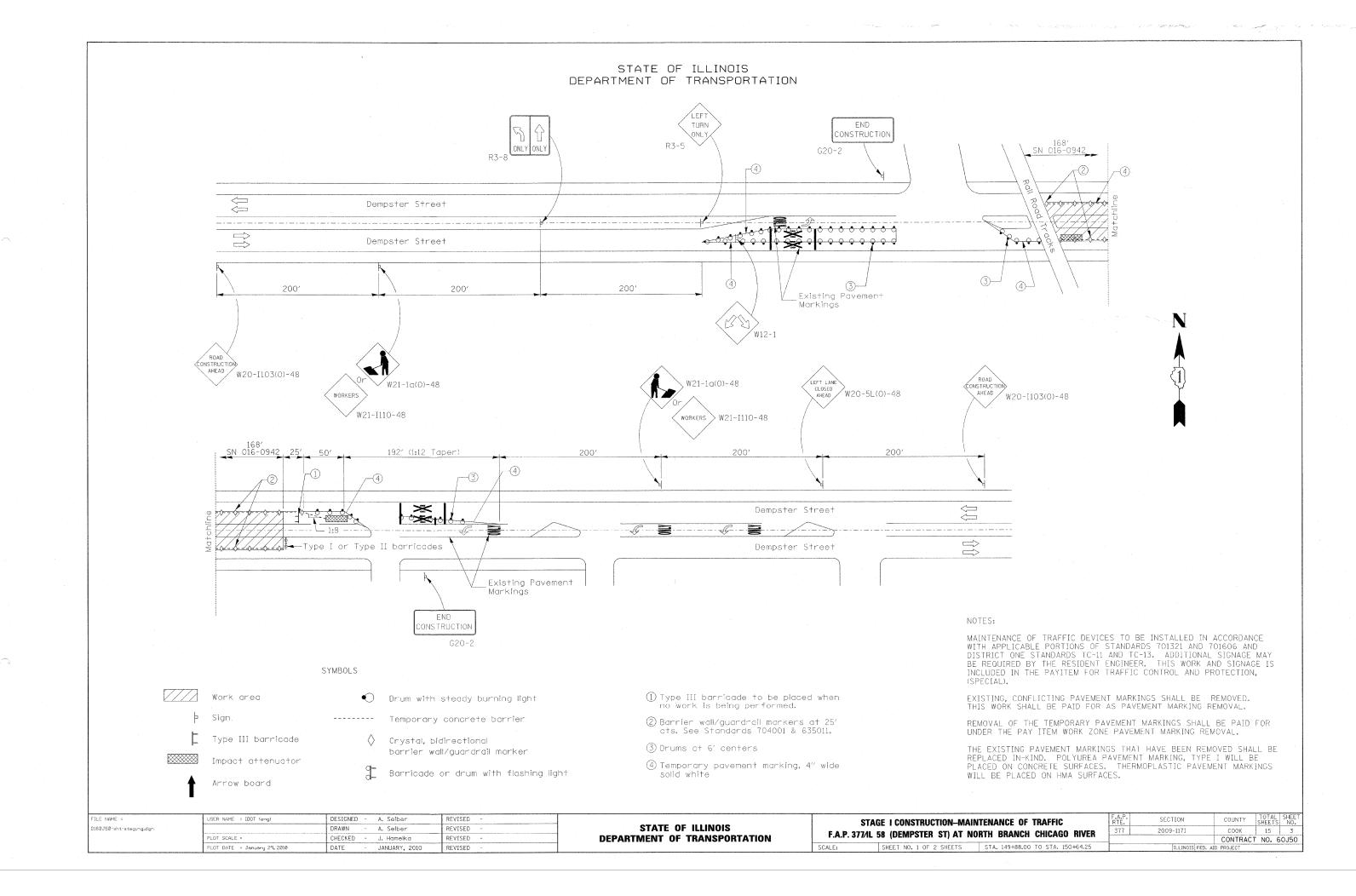
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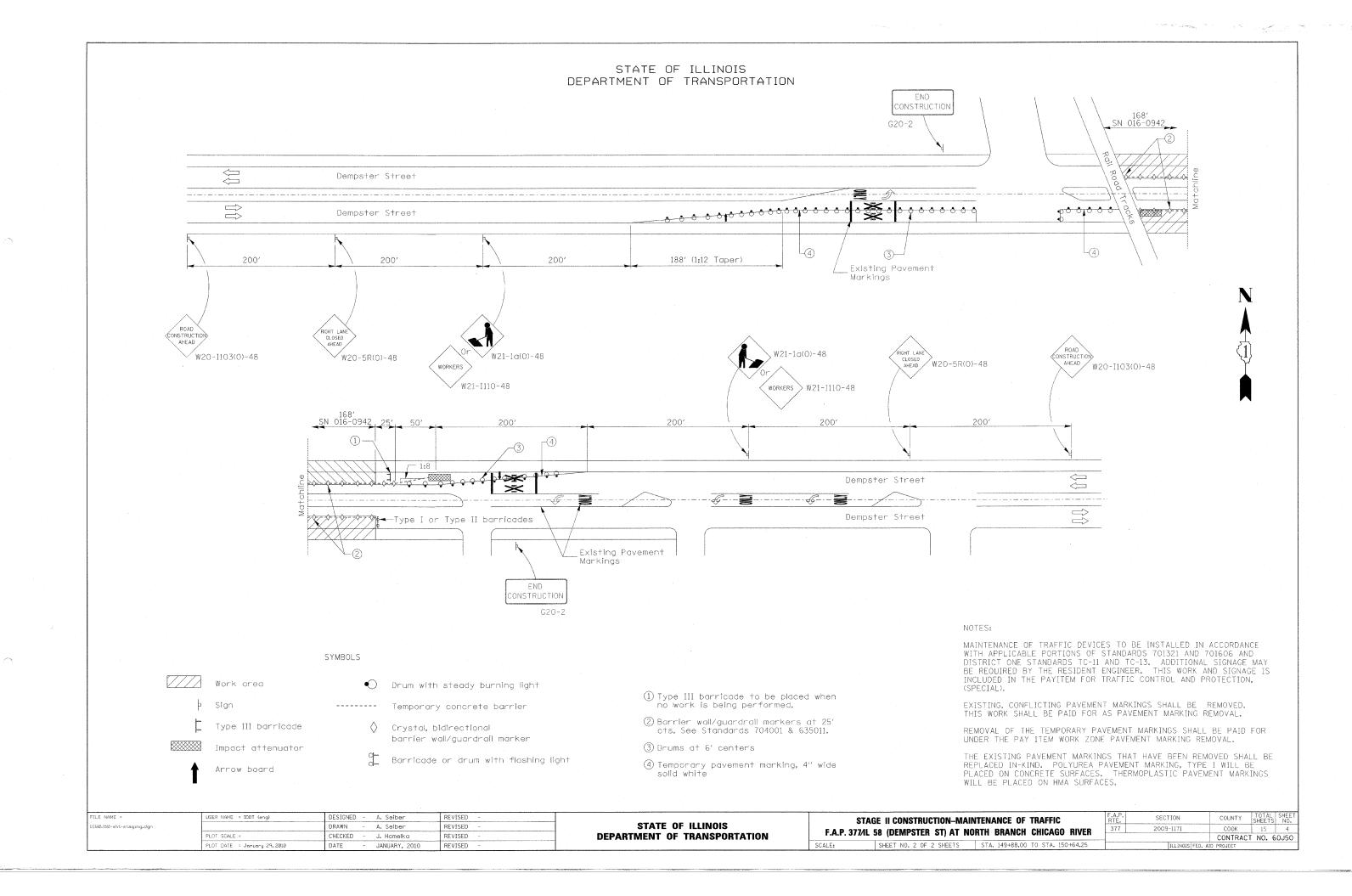
DE NOW	USER NAME 1997 (eng)	DESIGNED A. Setter	REVISED -
NickJSO ger motoudyn		DRAWN - A. Seiber	REVISED -
	PLOT SCALE	CHECKED - J. Hamelka	REVISED -
	PLOT DATE January 29, 2010	DATE - JANUARY, 2010	REVISED

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

	GENERAL NOTES, INDEX OF SHEETS	F.A.P. RTE.
F.A.P. 377/	L 58 (DEMPSTER ST) AT NORTH BRANCH CHICAGO RIVER	377
SCALE: N/A	SHEET NO. 1 OF 1 SHEETS STA. 149+88.00 TO STA. 150+64.25	

		- 1	۷.
low .	COUNTY	TOTAL SHEETS	SH
-1175	COOK	15	
	CONTRAC	T NO. 6	CJ
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	DOO FOT		





#### STATE OF ILLINOIS Existing Structure: DEPARTMENT OF TRANSPORTATION The existing structure is a single span Precast Girder Bridge with a 7 inch reinforced concrete deck. The original structure was built 1966 and reconstructed in 1981. 71-0" Face to Face Abutments Staged construction shall be utilized to maintain traffic during construction. No salvage. Classification Line El. 606.2 -Creosated Piles -Stream Bed El. 605.2 El. 603.2 Creosated Piles —ЕІ 601**.**25 El. 600.9 -Creosated Piles --Creosated Piles ELEVATION 47'-6" Bridge Approach Slab Replace Elastomeric Remove existing Expansion Joint Bearings at West and replace with Preformed Joint Strip Seal Abutment, 16 total (Typ. Ea. Abut.) $\langle \Box$ -Staged Construction Line Back of W Abutment - $\langle \Box$ -Ç IL 58 (Dempster St) —Back of E Abutment 90°00′00" Bridge — $\qquad \qquad \Box >$ -Staged Construction Line ₽ Brg. W Abut. - € Brg. E Abut. 74'-0" Back to Back Abutments Bridge Approach Slab PLAN

DESIGNED A. Seiber

CHECKED J. Hamelka

DRAWN A. Seiber

CHECKED J. Hamelka

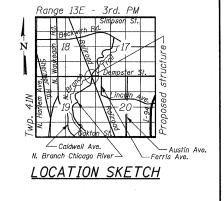
2010

ENGINEER OF STRUCTURAL SERVICES

NGINEER OF BRIDGES AND STRUCTURES

EXAMINED

PASSED



#### SCOPE OF WORK

- 1. Bridge deck hydro-scarification, 3 inch
- 2. Reconstruction of all transverse expansion joints
- 3. Latex concrete overlay, 3 inch
- 4. Patch and Overlay approaches
- 5. Clean and reseal pavement relief joints
- 6. Replace Elastomeric Bearings at West Abutment
- 7. Clean Deck Drains
- 8. Structural Repairs of Concrete to parapets and curbs.

#### DESIGN SPECIFICATION

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

#### DESIGN STRESSES

 $f'c = 3,500 \ psi$  $fy = 60,000 \ psi$ 



COLLINS ENGINEERS, INC. STAN-LEE KADERBEK NO. 081-004620 EXPIRES 11-30-2010 GENERAL PLAN AND ELEVATION

DEMPSTER ST AT

NORTH BRANCH CHICAGO RIVER

COOK COUNTY

STRUCTURE NO. 016-0942

SHEET NO. S1	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF	377	2009-117I	COOK	15	5 .
S9 SHEETS		· .	CONTRACT	NO. 60	J50
		ILLINOIS FED. A	D PROJECT	~	

#### GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60. See Special Provisions
- 2. Reinforcement bars designated (E) shall be epoxy coated
- 3. Plan dimensions and details relative to 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 scape of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- 4. Stage construction shall be utilized to maintain traffic during construction.
- 5. The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- 6. Protective Coat shall be applied to the new Bridge Deck Latex Concrete Overlay and Bridge Sidewalks and inside faces of Parapets.
- 7. Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.
- 8. The removal and reattachment of guardrail, hand rail, steel railings, traffic barrier terminal, and etcetera required for repair work (e.g. transverse joint replacement or structural repair of concrete) shall be included in the contract unit price of the work item being performed.

#### INDEX OF SHEETS

- S1 General Plan and Elevation
- S2 General Notes, Bill of Material, and Index of Sheets
- S3 Stage Construction Details
- S4 Bridge Deck Repairs
- S5 Expansion Joint repairs
- S6 Expansion Joint Details
- S7 Preformed Joint Strip Seal
- S8 Bar Splicer Assembly Details
- S9 Bearing Details

#### TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Polymerized Hot-Mix Asphalt Surface Course, Mix "F", N90	Ton	42		42
Protective Coat	Sq.Yd.	790		790
Hot-Mix Asphalt Surface Removal, $I_2^{l}$	Sq.Yd.	500		500
Concrete Removal	Cu.Yd.	27		27
Concrete Superstructure	Cu.Yd.	27		27
Bridge Deck Grooving	Sq.Yd.	411		411
Elastomeric Bearing Assembly, TY I (Special)	Each	. 16		16
Reinforcement Bars, Epoxy Coated	Pound	8497		8497
Bar Splicers	Each	44.		44
Preformed Joint Strip Seal	Foot	196		196
Bridge Deck Latex Concrete Overlay, 3 Inches	Sq.Yd.	396		396
Structural Repair of Concrete (Depth <= 5 Inches)	Sq.Ft.	28		28
Approach Slab Repairs (Partial Depth)	Sq.Yd.	5		5
Bridge Deck Hydro-Scarification 3"	Sq.Yd.	444		444
Clean and Reseal Relief Joints	Foot	110		110
Jack & Remove Existing Bearings	Each	16		16
Anchor Bolts 1"	Each	32		32
Bituminous Materials (Prime Coat)	Gallon	50		50

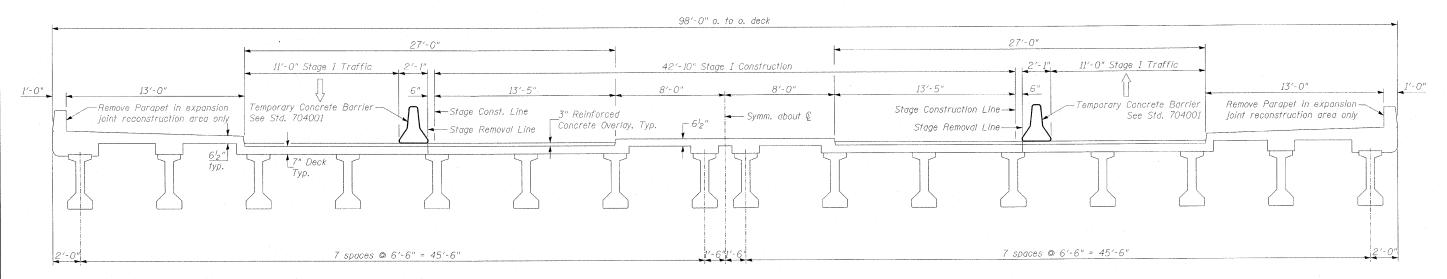
GENERAL NOTES, BILL OF MATERIAL,

AND INDEX OF SHEETS

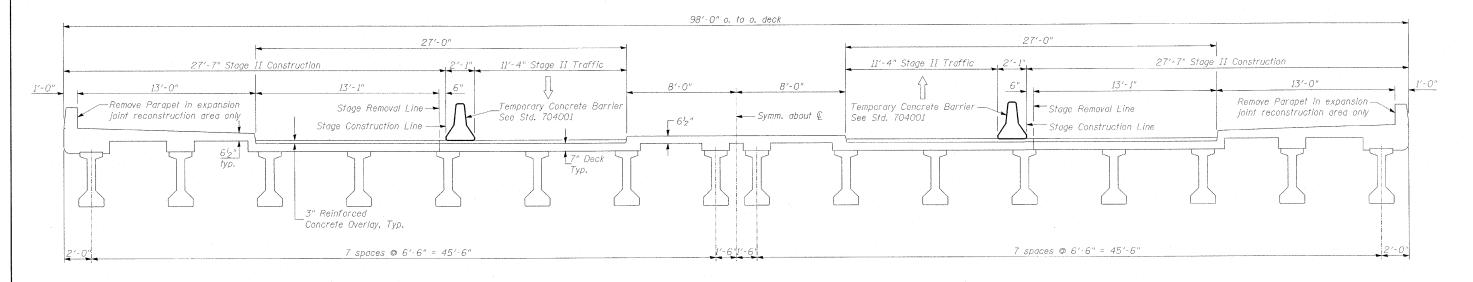
STRUCTURE NO. 016-0942

SHEET NO.S2	F.A.P. RTE.	SECTION	COUNTY	TOTAL	SHEET NO.
OF	377	2009-117I	COOK	15	6
S9 SHEETS			CONTRACT	NO. 60	J50
		ILLINOIS FED.	AID PROJECT		

DESIGNED A. Seiber	2010
CHECKED J. Hamelka	EXAMINED
drawn A. Seiber	ENGINEER OF STRUCTURAL SERVICE PASSED
CHECKED J. Hamelka	ENGINEER OF BRIDGES AND STRUCTUR



## STAGE I CROSS SECTION (Looking East)

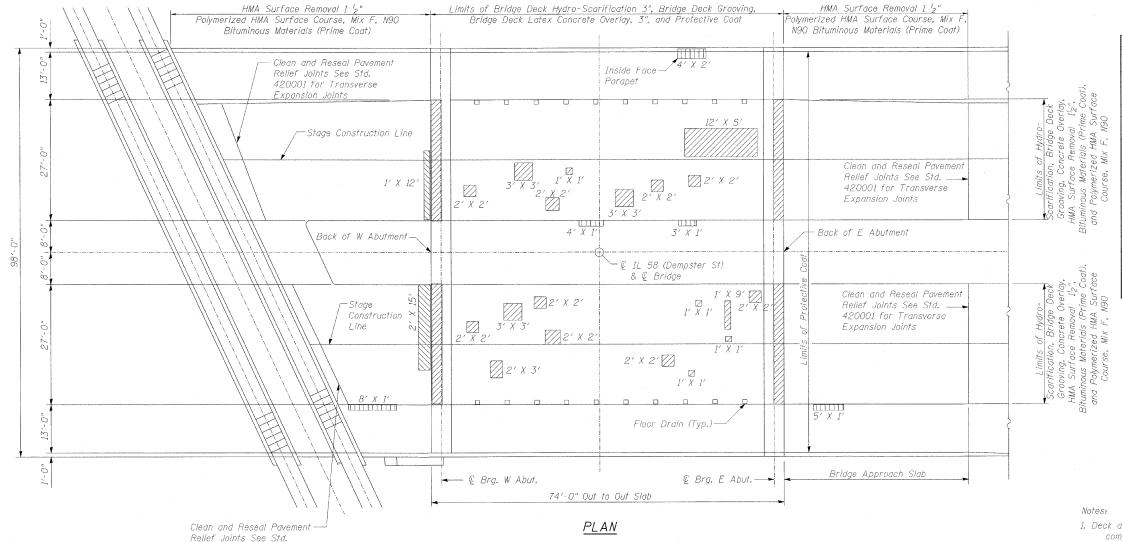


### STAGE II CROSS SECTION (Looking East)

# STAGE CONSTRUCTION DETAILS STRUCTURE NO. 016-0942

designed A. Seiber	2010
CHECKED J. Hamelka	EXAMINED
DRAWN A. Seiber	ENGINEER OF STRUCTURAL SERVICES PASSED
CHECKED J. Hamelka	ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. S3	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF	377	2009-117I	COOK	15	7
S9 SHEETS			CONTRACT	NO. 60	J50
		ILLINOIS FED. A	D PROJECT		



#### BILL OF MATERIAL

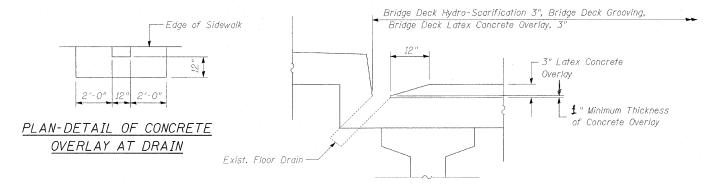
SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial) ∆	Sq. Yd.	28
	Approach Slab Repairs (Partial Depth)	Sq. Yd.	5
	Structural Repair of Concrete (Depth <= 5")	Sq. Ft.	28
	Protective Coat	Sq. Yd.	790
	Hot-Mix Asphalt Surface Removal, 1 <sup>l</sup> 2"	Sq. Yd.	500
	Polymerized Hot-Mix Asphalt Surface Course, Mix "F", N90	Ton	42
	Bridge Deck Grooving	Sq. Yd.	411
	Bridge Deck Latex Concrete Overlay 3"	Sq. Yd.	396
	Bridge Deck Hydro-Scarification 3"	Sq. Yd.	444
	Clean and Reseal Pavement Relief Joint	Foot	- 110
	Bituminous Materials (Prime Coat)	Gallon	50

△ For Information only to assist the Contractor in bidding. See Special Provision for "Bridge Deck Latex Concrete

- 1. Deck and approach repair areas are estimated based on visual inspection completed October 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- 2. Deck drains (downspouts, floor drains and scuppers) shall be cleaned prior to placement of Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification 3".
- 3. Gaps caused by distress around floor drains shall be filled with epoxy as specified in Section 590 of the Standard Specifications. Cost included with Bridge Deck Latex Concrete Overlay 3".
- 4. The Existing Concrete Overlay contains reinforcing bars. Cost for removal of the reinforcing bars shall be included with Bridge Deck Hydro~ Scarification 3".

BRIDGE DECK REPAIRS STRUCTURE NO. 016-0942

SHEET NO. S4	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF	377	2009-117I	COOK	15	8
S9 SHEETS			CONTRACT	NO. 60	J50
		ILLINOIS FED. A	D PROJECT		



CONCRETE OVERLAY AT FLOOR DRAIN

DESIGNED A. Seiber 2010 EXAMINED CHECKED J. Hamelka ENGINEER OF STRUCTURAL SERVICES PASSED DRAWN A. Seiber

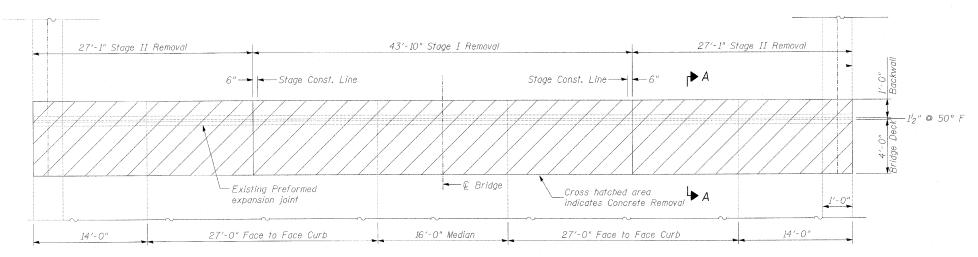
CHECKED J. Hamelka

420001 for Transverse

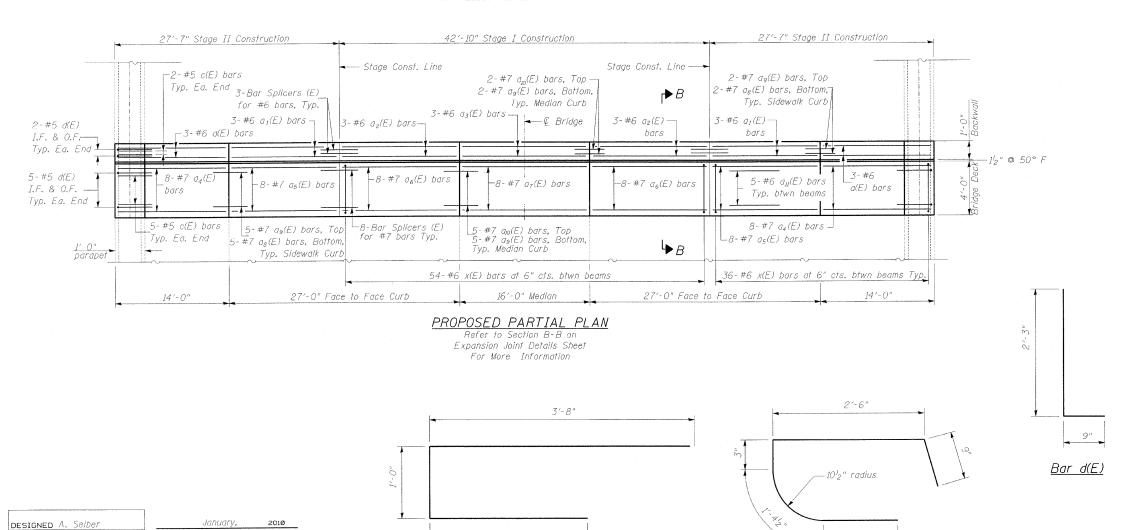
Expansion Joints

1'-10'2"

Bar c(E)



#### EXISTING PARTIAL PLAN



2'-3"

Bar x(E)

EXAMINED

PASSED

ENCINCED OF BRIDGES AND STRUCTURES

CHECKED J. Hamelka

DRAWN A. Seiber

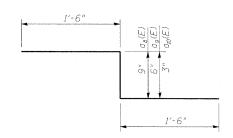
CHECKED J. Hamelka

#### BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	12	#6	13'-8"	
a1(E)	12	#6	13′-9"	
a2(E)	12	#6	14 '- 1"	
a3(E)	6	#6	15′-8"	
a4(E)	32	#7	13′-8"	
a5(E)	32	#7	13'-9"	
a6(E)	32	#7	14 '- 1"	
a7(E)	16	#7	15′-8"	
as(E)	28	#5	3'-9"	
a9(E)	56	#5	3'-6"	
a10(E)	28	#5	3'-3"	
a <u>u</u> (E)	140	#6	4'-8"	
c(E)	28	#5	6′-9"	
d(E)	56	#5	3'-0"	
x(E)	252	#6	6'-11"	
Concrete			Cu. Yd.	27
	Superstr		Cu. Yd.	27
Reinforce Epoxy Co		S,	Pound	8497

#### Note:

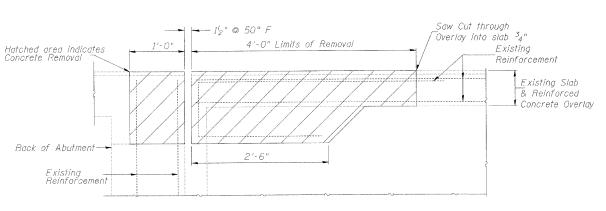
- 1. Work this sheet with Expansion Joint Details and Bar Splicer Assembly Details Sheet.
- 2. I.F. denotes Inside Face. 0.F. denotes Outside Face.



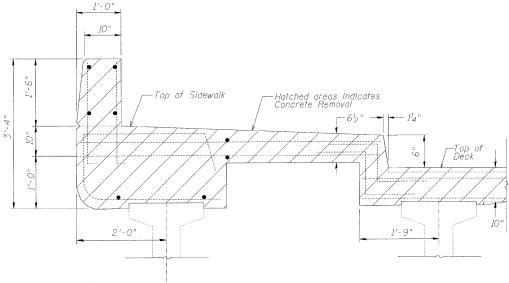
Bar a8(E), a9(E) & a10(E)

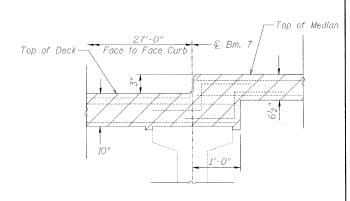
# EXPANSION JOINT REPAIRS STRUCTURE NO. 016-0942

SHEET NO. S5	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF	377	2009-1171	COOK	15	9
S9 SHEETS			CONTRACT	NO. 60	J50
		ILLINOIS FED. A	D PROJECT		

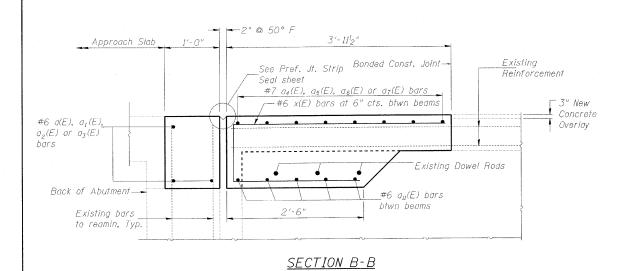


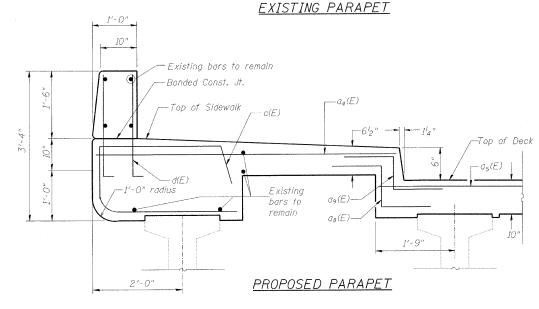
SECTION A-A

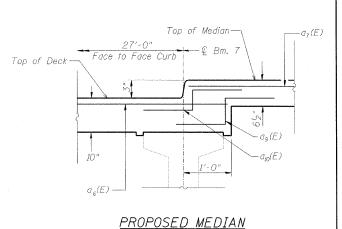




EXISTING MEDIAN







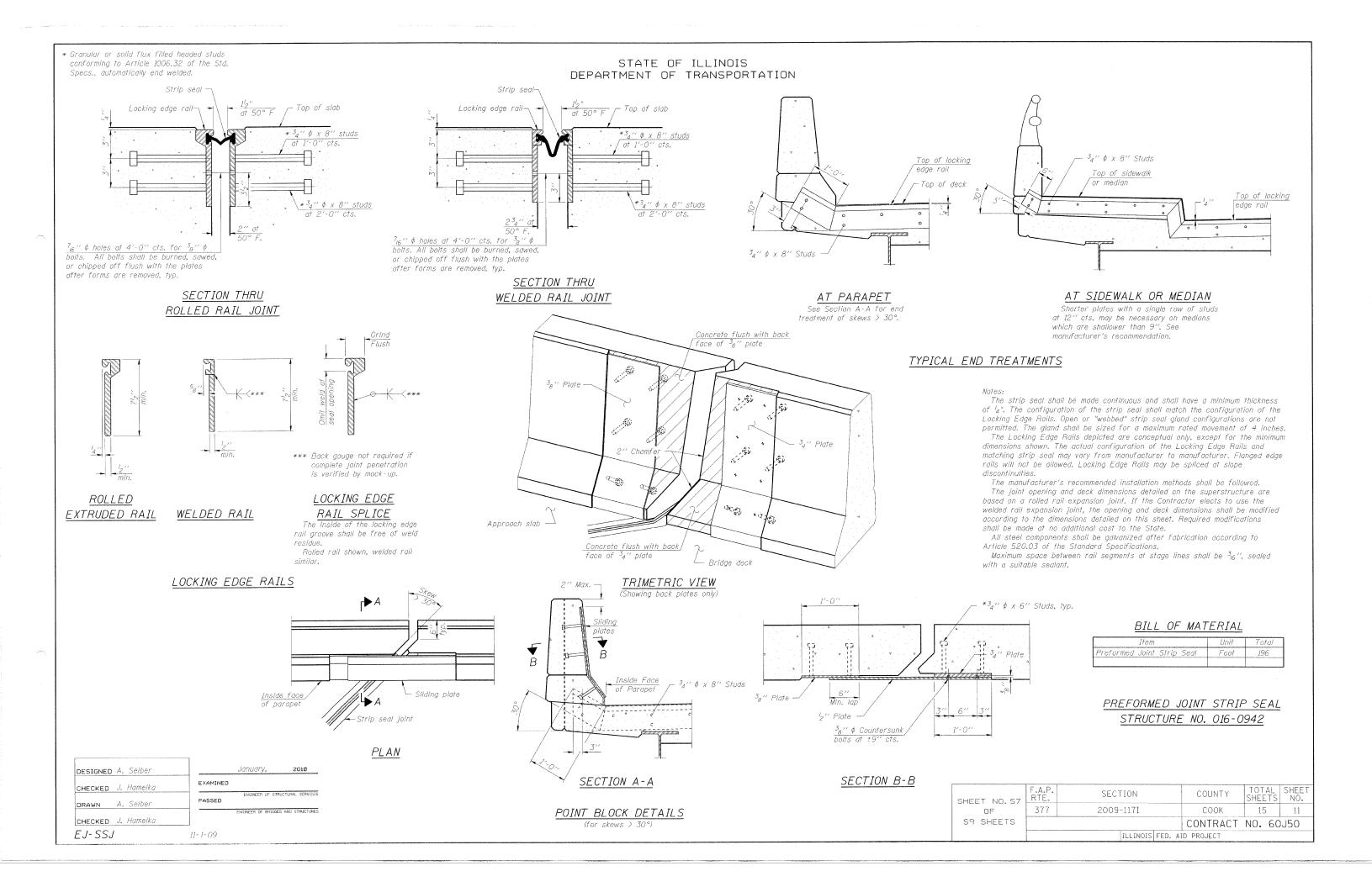
#### Notes

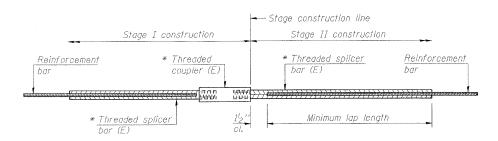
- Existing reinforcement bars extending into the concrete removal area shall be cleaned, straightened and incorporated
  into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with
  an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- 2. Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- 3. Removal and disposal of the exiting expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- 4. If existing name plate falls within the limits of Concrete Removal, it shall be removed and reinstalled in its original location in accordance with IDOT Std. 515001. Cost included with Concrete Superstructure.
- 5. If existing traffic barrier terminal, guardrail and/or end shoe fall within the limits of Concrete Removal, it shall be removed and reinstalled in their original locations in accordance with District 1 Std. BM-21. Cost included with Concrete Superstructure.
- 6. The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- 7. Work this sheet with Expansion Joint Repairs sheet.

EXPANSION JOINT DETAILS STRUCTURE NO. 016-0942

SHEET NO.S6	F.A.P. RTE.	SECTION	COUNTY	TOTAL	SHEET NO.
OF OF	377	2009-117I	COOK	15	10
S9 SHEETS			CONTRACT	NO. 60	)J50
		ILLINOIS FED. A	ID PROJECT		

designed A. Seiber	January, 2010
CHECKED J. Hamelka	EXAMINED
DRAWN A. Seiber	ENGINEER OF STRUCTURAL SERVICE PASSED
CHECKED J. Hamelka	ENGINEER OF BRIDGES AND STRUCTURE





#### STANDARD BAR SPLICER ASSEMBLY

	Minim	um Lap Leng	ths	
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4
3, 4	1'-5''	1'-11''	2'-1"	2'-4"
5	1'-9''	2'-5"	2'-7''	2'-11''
6	2'-1"	2'-11''	3'-1"	3'-6''
7	2'-9"	3'-10''	4'-2"	4'-8''
8	3'-8''	5'-1"	5′-5′′	6'-2"
.9	4'-7"	6'-5''	6'-10''	7'-9"

Table 1: Black bar, 0.8 Class C Table 2: Black bar, Top bar lap, 0.8 Class C

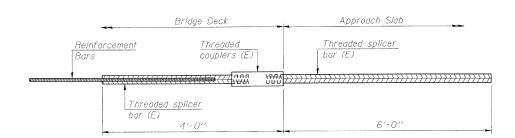
Table 3: Epoxy bar, 0.8 Class C

Table 4: Epoxy bar, Top bar lap, 0.8 Class C

Threaded splicer bar length = min. lap length +  $I_2^{l}$ " + thread length

\* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Backwall	6	12	3
Deck	7	32	3

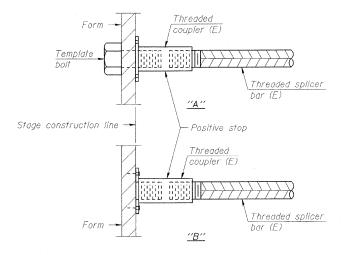


# BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =

designed A. Seiber		January.	2010
CHECKED J. Hamelka	EXAMINED		
drawn A. Seiber	PASSED	ENGINEER OF ST	RUCTURAL SERVICES
CHECKED J. Hamelka		ENGINEER OF BRIDG	ES AND STRUCTURES
BSD-1	 11- 1- 09		

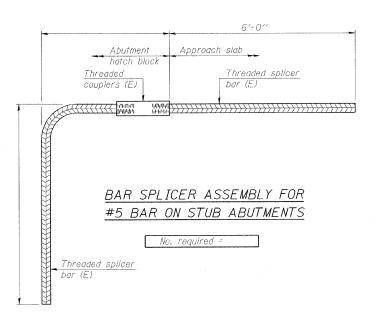
# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

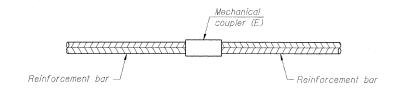


#### INSTALLATION AND SETTING METHODS

"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.





#### STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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.

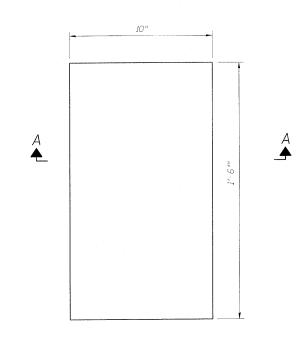
See special provision for Mechanical Splicers.

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

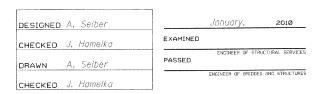
#### BAR SPLICER ASSEMBLY DETAILS STRUCTURE NO. 016-0942

SHEET NO. S8	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF	377	2009-1171	COOK	15	12
S9 SHEETS			CONTRACT	NO. 60	J50
		ILLINOIS FED. AI	ID PROJECT		

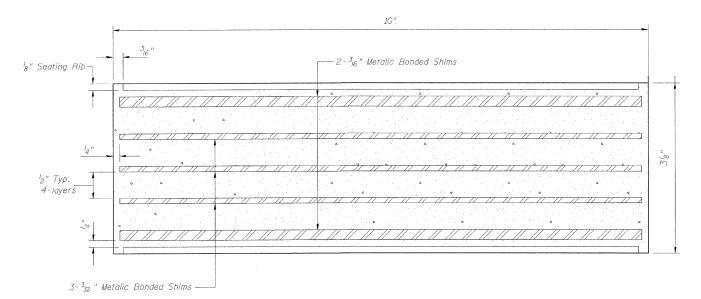
#### SECTION AT WEST ABUTMENT



PLAN



#### STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION



Elastomeric Bearing Pads shall be grade 50. Side Retainers and other steel members required for bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, TY I (Special).

All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles

shall be galvanized according to AASHTO M111 or M232 as applicable.

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

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

Cost of materials and labor to fabricate and install the elastomeric bearing is included in the contract unit price each for Elastomeric Bearing Assembly, Type I (Special)

# 

SIDE RETAINER

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

#### ELASTOMERIC BEARING DETAIL SECTION A-A

#### BEAM REACTIONS

RDL	46.2 Kips
R <sub>SDL</sub>	7.9 Kips
R <sub>LL</sub>	37.1 Kips
RIMP	9.4 Kips
R <sub>TOTAL</sub>	100.6 Kips

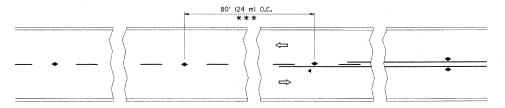
Minimum Jack Size = 58 Tons

#### BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I (Special)	Each	16
Jack & Remove Existing Bearings	Each	16
Anchor Bolts, 1"	Each	32

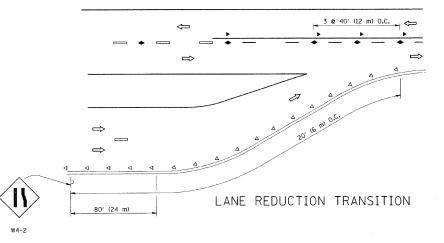
BEARING DETAILS STRUCTURE NO. 016-0942

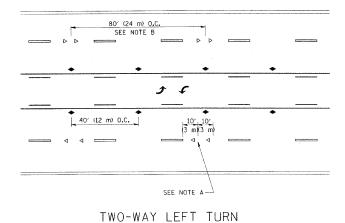
SHEET NO. S9	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF	377	2009-1171	COOK	15	13
S9 SHEETS			CONTRACT	NO. 60	J50
 		ILLINOIS FED. AI	D PROJECT		



\*\*\* REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

TWO-LANE/TWO-WAY





MULTI-LANE/UNDIVIDED

80' (24 m) 0,C.

SEE NOTE B

D

G

G

MR3 m)

G

SEE NOTE A

MULTI-LANE/DIVIDED

#### GENERAL NOTES

- 1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
- 2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
- MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

#### LANE MARKER NOTES

- A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.
- B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.

#### SYMBOLS

- ---- YELLOW STRIPE
- WHITE STRIPE
- ONE-WAY AMBER MARKER
- ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

#### DESIGN NOTES

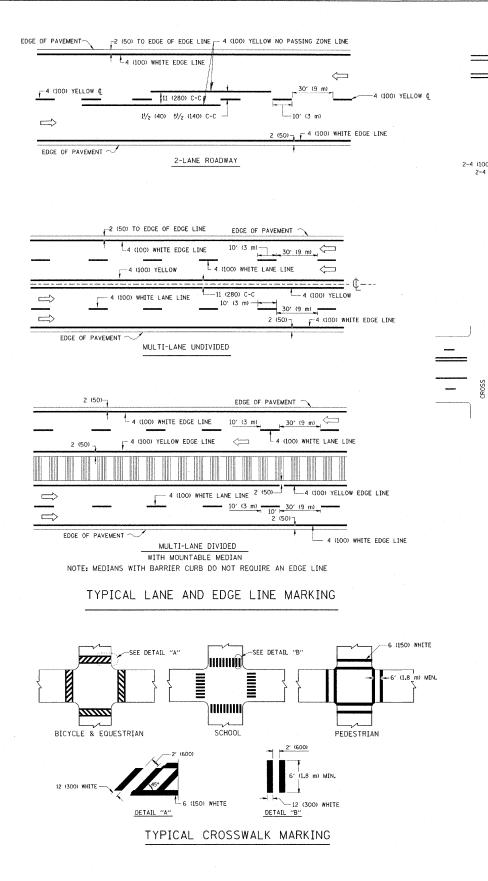
- 1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
- 2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
- 3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHOULD BE INCLUDED IN THE PLANS.
- MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.

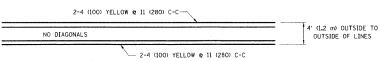
# # SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE \*\* WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

LEFT TURN

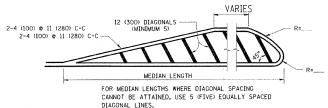
All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = drivakosgn	DESIGNED -	REVISED -T. RAMMACHER 09-19-94		TYPICAL APPLICATIONS		SECTION	COUNTY	SHEETS SH	HEET NO.
c:\pw_work\pwidot\drivakosgn\dØ108315\to	alidge -	DRAWN -	REVISED -T. RAMMACHER 03-12-99	STATE OF ILLINOIS	RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)	377	2009-117I	COOK	15	1.4
	PLOT SCALE = 50,000 '/ IN.	CHECKED -	REVISED -T. RAMMACHER 01-06-00	DEPARTMENT OF TRANSPORTATION		_	TC-11	CONTRACT	NO. 60J	0 دُ
	PLOT DATE = 9/9/2009	DATE -	REVISED - C. JUCIUS 09-09-09		SCALE: NONE   SHEET NO. 1 OF 1 SHEETS   STA. TO STA.	FED. ROAD DI	ST. NO. 1 ILLINOIS	FED. AID PROJECT		



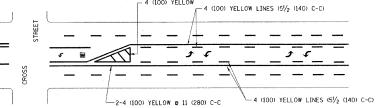


#### 4' (1.2 m) WIDE MEDIANS ONLY

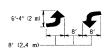


DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

#### MEDIANS OVER 4' (1,2 m) WIDE

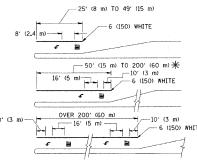


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR, ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS



MEDIAN WITH TWO-WAY LEFT TURN LANE

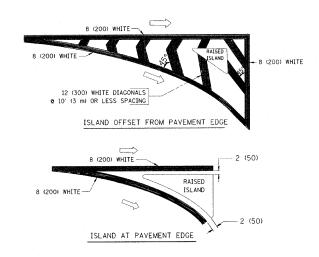
#### TYPICAL PAINTED MEDIAN MARKING



\* TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

#### TYPICAL TURN LANE MARKING



#### TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION 4 (100) FOR BOTH DIRECTIONS 2 0 4 (100)		SOLID SOLID	YELLOW YELLOW	5½ (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW: EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION	SKIP-DASH AND SOLID	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5½ (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE
	8' (2.4m) LEFT ARROW	IN PAIRS	WHITE	SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EDUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 © 6 (150) 12 (300) © 45° 12 (300) © 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT, OTHERNISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR. 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4,5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) T0 45MPH (70 km/h)) 30' (9 m) C-C (0VER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m! LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"33.6 SO. FT. (0.33 m <sup>2</sup> ) EACH "X"=54.0 SO. FT. (5.0 m <sup>2</sup> )
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (0VER 45MPH (70 km/h))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME =	USER NAME = drivakosgn	DESIGNED -	EVERS	REVISED	-T. RAMMACHER	10-27-9
c:\pw_work\pwidot\drivakosgn\d0108315\tc	13.dgn	DRAWN -		REVISED	-C. JUCIUS	09-09-0
	PLOT SCALE = 50.000 '/ IN.	CHECKED -		REVISED	-	
	PLOT DATE = 9/9/2009	DATE -	03-19-90	REVISED	-	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

		DISTRICT ON	IE .		F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TYDICAL DAVEMENT MANDYINGS					2009-1171	COOK	15	15
TYPICAL PAVEMENT MARKINGS						TC-13	CONTRACT	NO. 60	J50
SCALE: NONE	SHEET NO. 1 OF 1	SHEETS	STA.	TO STA.	FED. ROA	FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT			