

DESIGNER: CLARK JONES
PHONE: (309)671-3452

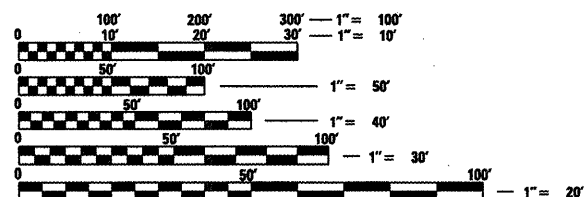
PROJECT ENGINEER: JIM MILLER
PHONE: (309)671-3451

INDEX OF SHEETS:

1. COVER SHEET
2. COMMITMENTS & GENERAL NOTES
3. SUMMARY OF QUANTITIES
4. EXISTING CROSS SECTIONS
5. SCHEDULE OF QUANTITIES
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7. PROPOSED SHLDR. REM, & REPL.
8. PROPOSED TRAFFIC CONTROL
9. WIDTH RESTRICTION SIGNING
- 10-13. REPAIR DETAILS

STANDARDS:

- | | | |
|-----------|-----------|-----------|
| 701001-02 | 701321-10 | 780001-02 |
| 701006-03 | 701901-01 | |
| 701201-03 | 704001-05 | |



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

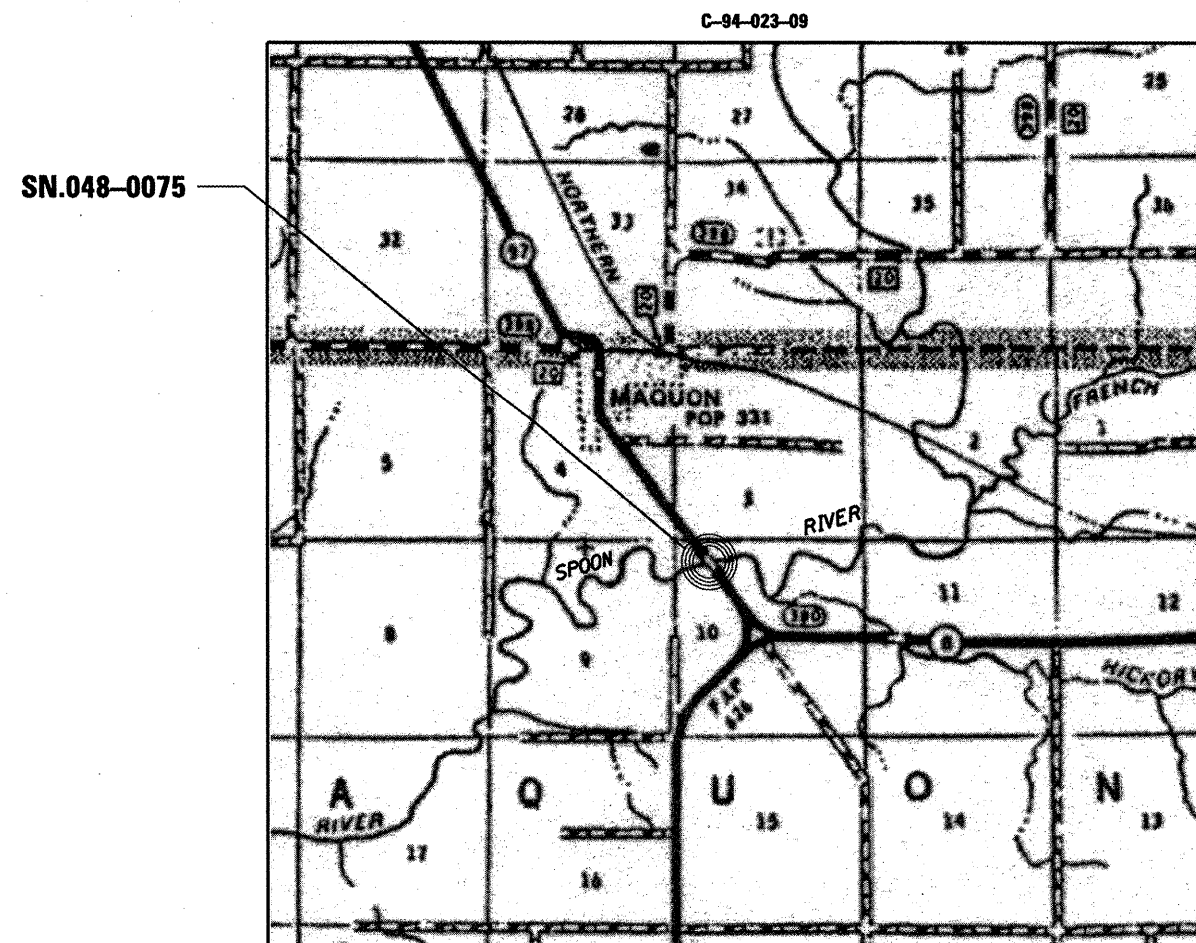
PROJECT ENGINEER- JIM MILLER
PROJECT MANAGER- MAUREEN ADDIS

CONTRACT NO. 68855

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**PROPOSED
HIGHWAY PLANS**

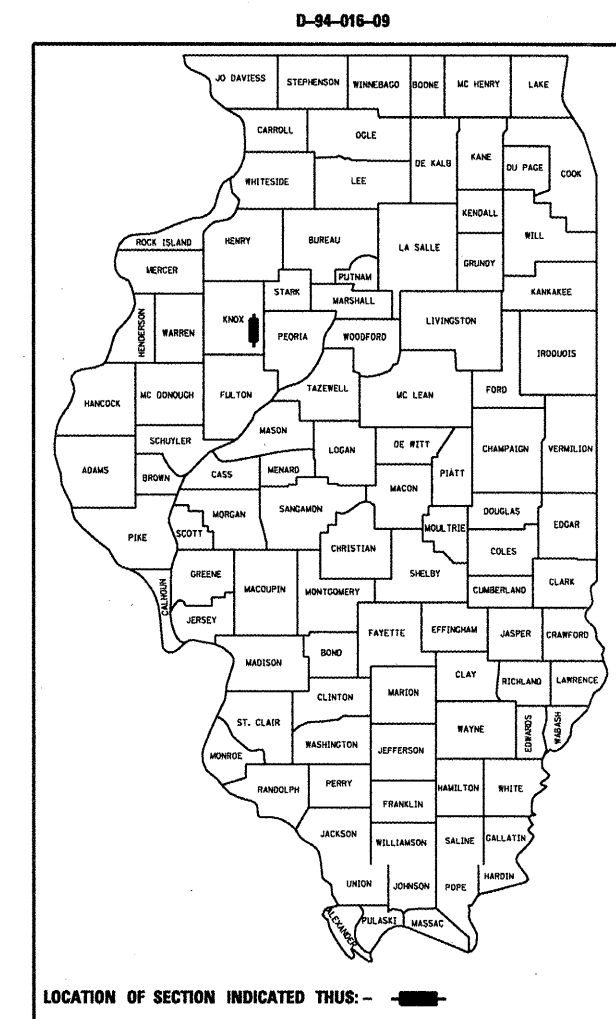
FAP 626 (IL.97)
SECTION (44-B-1)I
BRIDGE BEAM REPLACEMENT
KNOX COUNTY



LOCATION MAP

GROSS LENGTH = 1431.25 FT. = 0.271 MILE
NET LENGTH = 1431.25 FT. = 0.271 MILE

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
626	(44-B-1)I	KNOX	13	1
FED. ROAD DIST. NO. 4	ILLINOIS	CONTRACT NO. 68855		



LOCATION OF SECTION INDICATED THUS: - [black rectangle] -

PROJECT CONSISTS OF EMERGENCY BEAM REPLACEMENT OF (7) PPC DECK BEAMS ON STRUCTURE CARRYING IL.97 OVER SPOON RIVER (SN.048-0075), 1 MILE SE OF MAQUON.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED *Dre 15/00 pb*

DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

ENGINEER OF DESIGN AND ENVIRONMENT

DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

COMMITMENTS

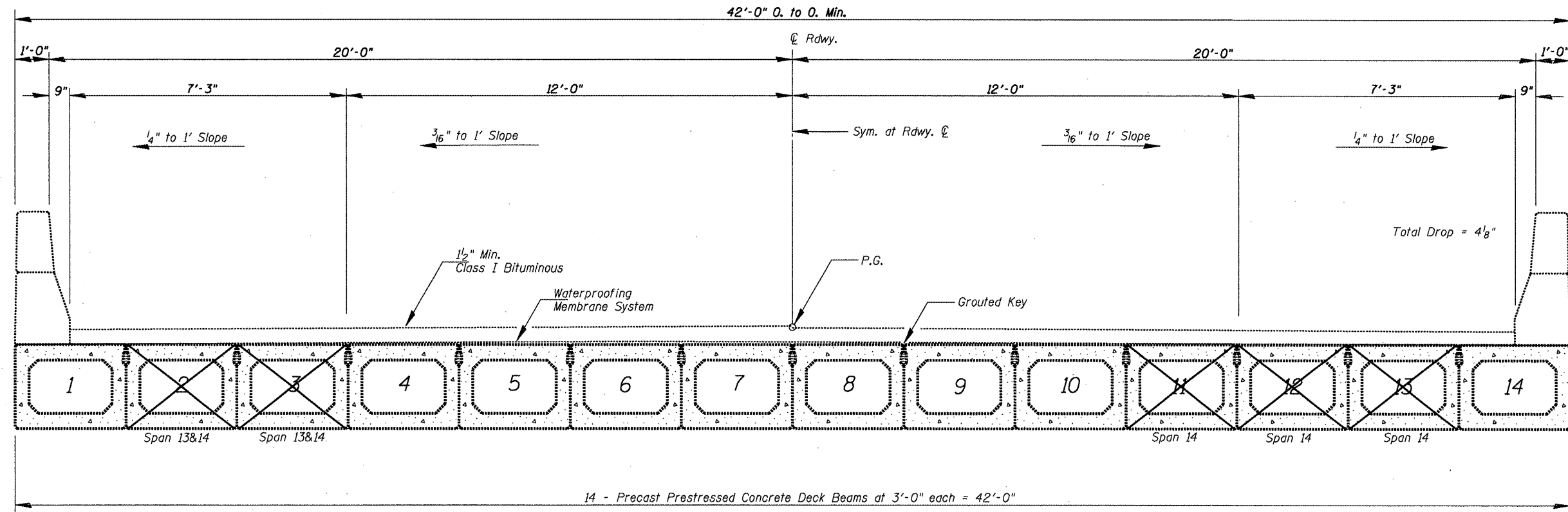
No commitments have been made for this project.

GENERAL NOTES

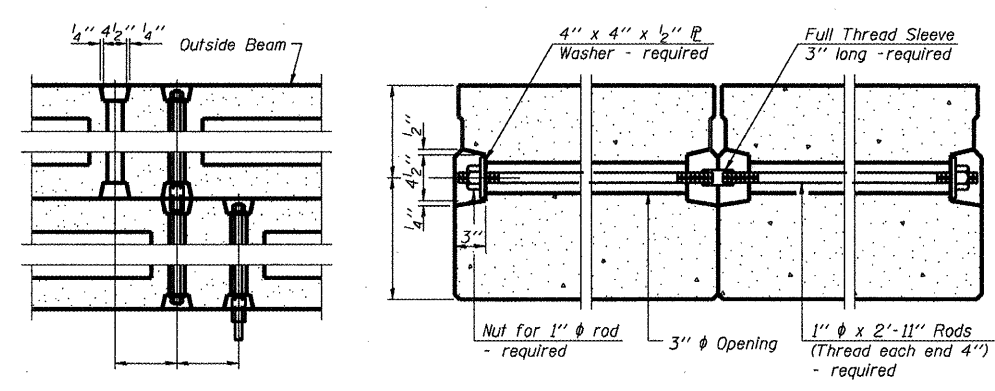
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction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

SN.048-0075 IL.97
over Spoon River

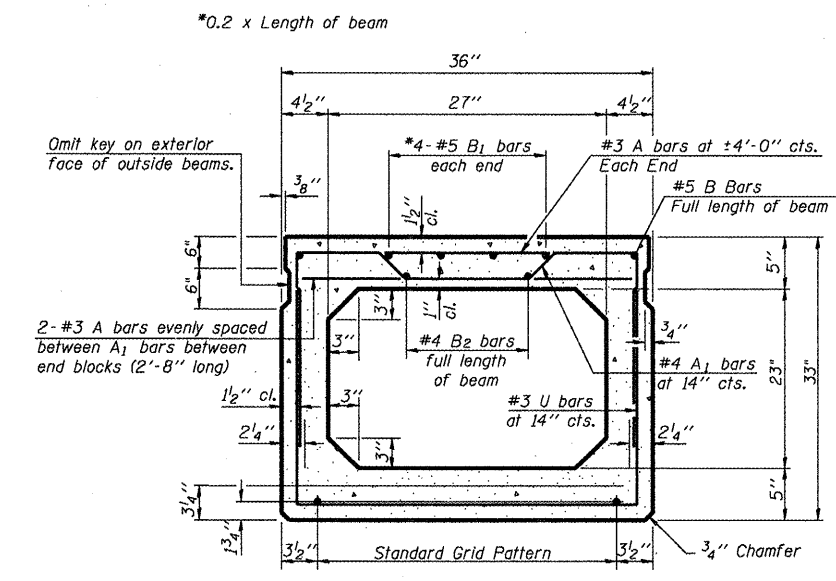
FILE NAME = SN048-0075 IL.97ovrSpoonRiv.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	COMMITMENTS & GENERAL NOTES	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 100.0000' / IN.	CHECKED - ---	REVISED - ---			626	(44-B-111)	KNOX	13	2
PLOT DATE = 12/9/2008	DATE - 12/03/2008	REVISED - ---	PPC BEAM REPLACEMENT		CONTRACT NO. 68855		FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT			
SCALE: _____ SHEET NO. ___ OF ___ SHEETS STA. _____ TO STA. _____										



ELEVATION
(Looking North)



TYPICAL TRANSVERSE TIE ASSEMBLY



TYPICAL SECTION

1/2" ϕ Strands, Each Strand Stressed to 30,900 Lbs.
- Strands 1 3/4" up. - Strands 3 1/4" up

Note:
Place strands symmetrically about ϕ of beam.

SN.048-0075 IL.97
over Spoon River

FILE NAME = SN048-0075 IL.97ovrSpoonRiv.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
		CHECKED - ---	REVISED - ---
		DATE - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING CROSS SECTIONS	
SCALE: _____	SHEET NO. ____ OF ____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE. 626	SECTION (44-B-III)	COUNTY KNOX	TOTAL SHEETS 13	SHEET NO. 4
PPC BEAM REPLACEMENT			CONTRACT NO. 68855	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SCHEDULE OF QUANTITIES

PAVEMENT MARKING LINE, 4" & PAVEMENT MARKING REMOVAL

LOCATION STA. TO STA.	PVMT. MRKG. LINE, 4"		PVMT. MRKG. REM.	
	WHITE EDGELINE (FOOT)	YELLOW SKIP DASH (FOOT)	WHITE EDGELINE (FOOT)	YELLOW SKIP DASH (FOOT)
JOBSITE		112.5	112.5	
STAGE I				
STAGE II	1687		1687	
TOTAL		1800		1800

PAVEMENT MARKING TAPE TYPE III, 4" & WORKZONE PAVEMENT MARKING REMOVAL

LOCATION STA. TO STA.	PVMT. MRKG. TAPE 4" YELLOW (FT.)	PVMT. MRKG. TAPE 4" WHITE (FT.)	WORK ZONE PVMT. MRKG. REM. (SQFT)
	STAGE I	392 (Taper) 414 (C)	
STAGE II	236 (Taper) 414 (C)	576 (Edgeline)	192 (Edge) 79 (Taper) 138 (C)
SUB-TOTAL	1456	468 (Edgeline) 1044	156 (Edge)
TOTAL		2500	833

TRAFFIC CONTROL

LOCATION STA. TO STA.	TEMP. CONC. BARRIER (FT)	RELOCATE TCB (FT)	IMPACT ATTN. TEMP. (EACH)	T.C.&P. STANDARD 701321 (EACH)	T.C.&P. STANDARD 701201 (EACH)	TEMPORARY BRIDGE TRAFFIC SIGNALS	CHANGEABLE MESSAGE BOARD (Cal Mo)	WIDTH RESTRICTION SIGNING (LSUM)
JOBSITE			1	1	1	1	2	1
Stage I	575	156						
Stage II	643	156						
TOTAL	637.5	312.5	1	1	1	1	2	1

HMA WIDENING MIX SPECIFICATION

The following mixture requirements are applicable to this project:

MIXTURE USE(S):	SURFACE LIFT	LOWER LIFTS
AC/PG:	PG 64-22	PG 64-22
RAP% (MAX): **	15% Max	25% Max
Design Air Voids:	4.0% @ N=50	4.0% @ N=50
Mixture Composition: (Graduation Mixture)	IL. 9.5 or 12.5	IL 19.0
Friction Aggregate:	Mixture D (dolomite only)	N/A

** If RAP option is selected, the asphalt cement grade may need to be adjusted by the Materials Engineer.

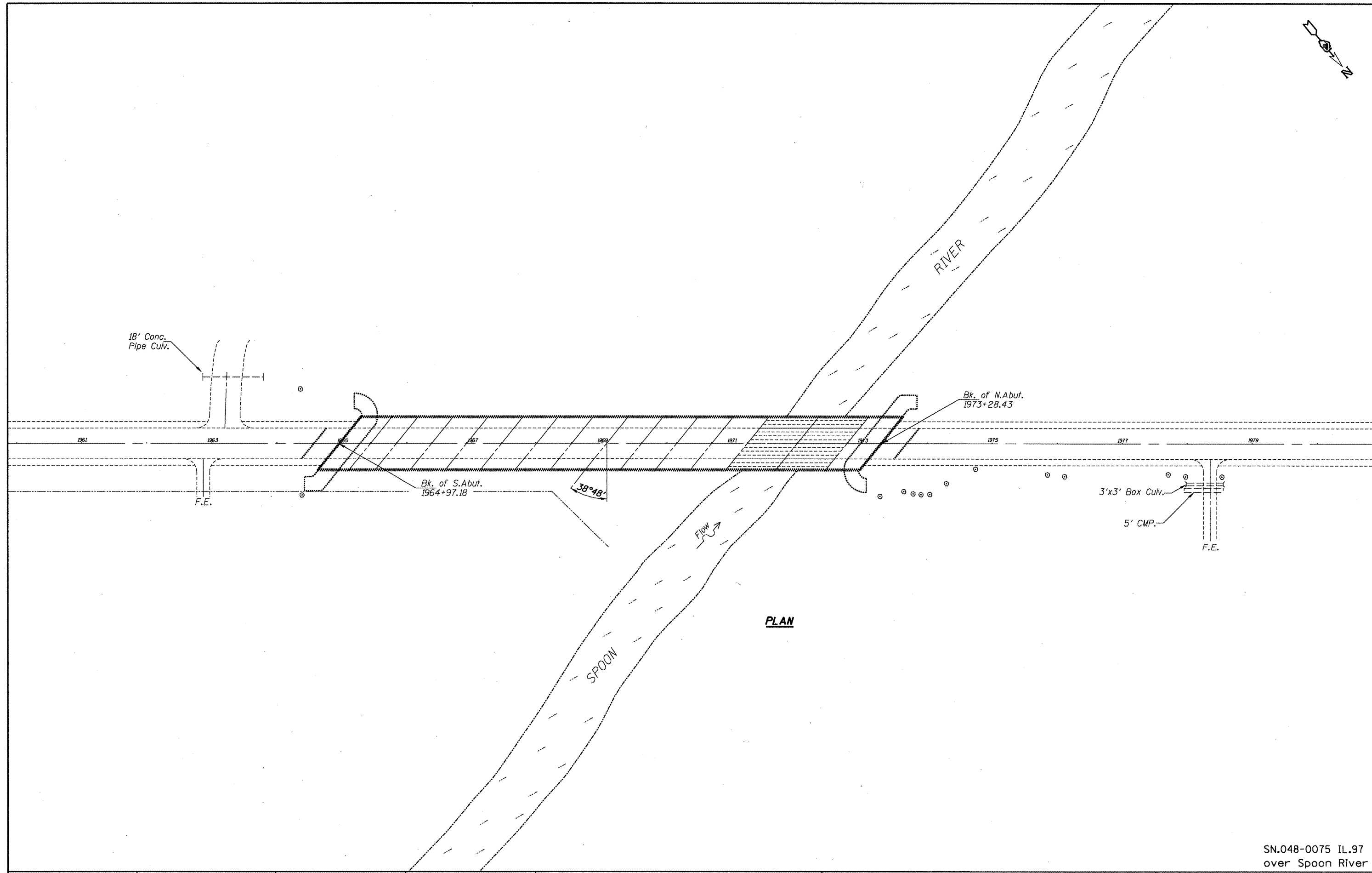
SHOULDER REMOVAL/REPLACEMENT

BITUMINOUS CONCRETE SHOULDER REMOVAL		HMA BASE COURSE WIDENING, 9"	
RIGHT NORTH APPROACH	SQ.YD.	RIGHT NORTH APPROACH	SQ.YD.
Sta. 1977+00 to Sta. 1973+50	311	Sta. 1977+00 to Sta. 1973+50	311
LEFT NORTH APPROACH		LEFT NORTH APPROACH	
Sta. 1976+58 to Sta. 1972+96	321.3	Sta. 1976+58 to Sta. 1972+96	321.3
TOTAL		TOTAL	
632		632	

NOTE
Additional pay items that may not be included in the SCHEDULE OF QUANTITIES pertain to the superstructure repair and are designated on the Plan and Elevation Sheet.

SN.048-0075 IL.97
over Spoon River

FILE NAME = SN048-0075 IL.97ovrSpoonRiv.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SCHEDULE OF QUANTITIES	F.A.P. RTE. 626	SECTION 44-B-111	COUNTY KNOX	TOTAL SHEETS 13	SHEET NO. 5
PLOT SCALE = 1/8" = 1' / IN.		CHECKED - ---	REVISED - ---	SCALE: _____ SHEET NO. ___ OF ___ SHEETS STA. _____ TO STA. _____		PPC BEAM REPLACEMENT		CONTRACT NO. 68855		
PLOT DATE = 12/9/2008		DATE - 12/03/2008	REVISED - ---			FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				



SN.048-0075 IL.97
over Spoon River

FILE NAME =
SN048-0075 IL.97ovrSpoonRiv.dgn

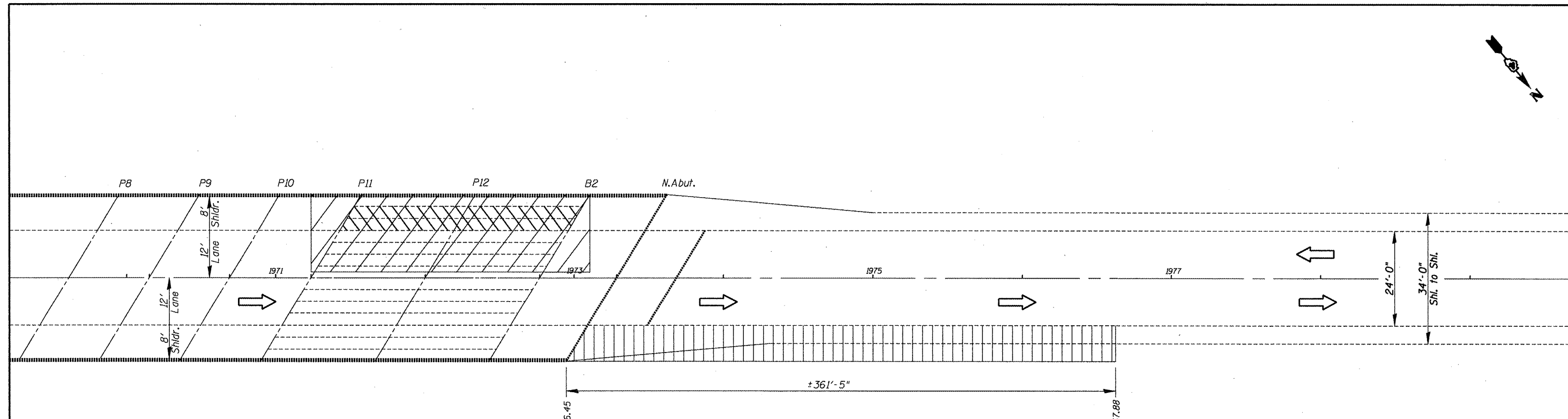
USER NAME = jonesco
DESIGNED - CEJ
DRAWN - CEJ
PLOT SCALE = 102.0149' / IN.
CHECKED -
PLOT DATE = 12/9/2008
DATE - 10-20-2008

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

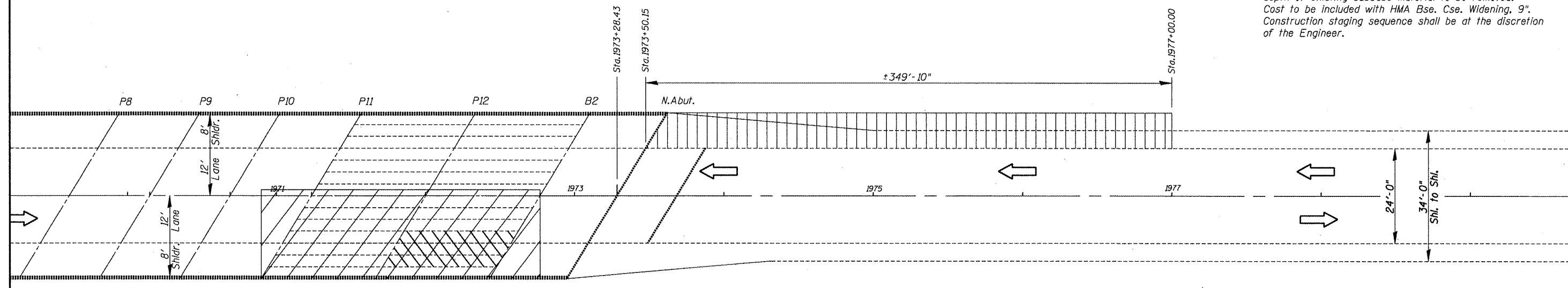
GENERAL LAYOUT
SCALE: _____ SHEET NO. ____ OF ____ SHEETS STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
626	(44-B-11)	KNOX	13	6
PPC BEAM REPLACEMENT			CONTRACT NO. 68855	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				



PLAN
(Stage I)

NOTES
Proposed shoulder excavation shall require necessary depth of existing subbase material to be removed. Cost to be included with HMA Bse. Cse. Widening, 9". Construction staging sequence shall be at the discretion of the Engineer.



PLAN
(Stage II)

BILL OF MATERIAL

Item	Unit	Total
Bituminous Concrete Shoulder Removal	Sq.Yd.	632
HMA Base Course Widening, 9"	Sq.Yd.	632

SYMBOLS

- Shoulder Rework
- Beam Rem/Repl

FILE NAME = SN048-0075 IL.97overSpoonRiv.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
		CHECKED - ---	REVISED - ---
		DATE - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED SHLDR. REM. & REPL.

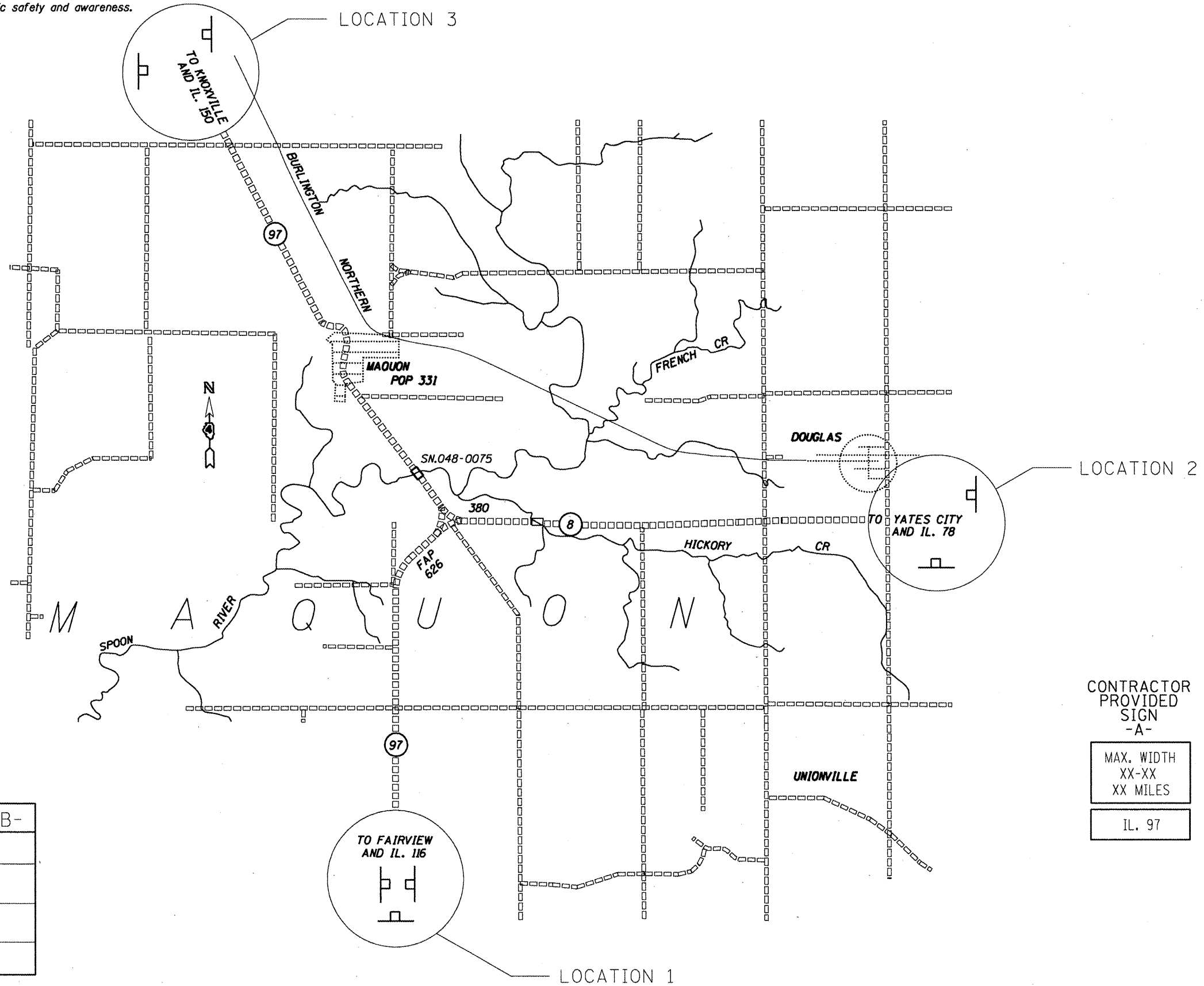
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F.A.P. RTE. 626	SECTION (44-B-III)	COUNTY KNOX	TOTAL SHEETS 13	SHEET NO. 7
PPC BEAM REPLACEMENT			CONTRACT NO. 68855	
FED. ROAD DIST. NO. 4 ILLINOIS FED. AID PROJECT				

SN.048-0075 IL.97
over Spoon River

NOTES

Notification signs shall be posted where shown indicating maximum width ahead of 16'-3" for stage construction. Changeable Message Boards shall be placed facing each traffic direction one week prior to work start date for public safety and awareness.



SN.048-0075 SIGNING

	SIGN -A-	SIGN -B-
LOCATION 1	3 EA.	NA
LOCATION 2	2 EA.	
LOCATION 3	2 EA.	
LOCATION 4		

CONTRACTOR PROVIDED SIGN -A-

MAX. WIDTH
XX-XX
XX MILES

IL. 97

SEE SPECIAL PROVISIONS FOR SIGNING DETAILS

SN.048-0075 IL.97
over Spoon River

FILE NAME = SN048-0075 IL.97ovrSpoonRiv.dgn	USER NAME = jonesce	DESIGNED - CEJ	REVISED - ---
		DRAWN - CEJ	REVISED - ---
	PLOT SCALE = 102.0149' / IN.	CHECKED - ---	REVISED - ---
	PLOT DATE = 12/9/2008	DATE - ---	REVISED - ---

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WIDTH RESTRICTION SIGNING

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
626	(44-B-1)I	KNOX	13	9
PPC BEAM REPLACEMENT			CONTRACT NO. 68855	
FED. ROAD DIST. NO. 4 (ILLINOIS) FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.

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 scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

The contractor is advised that the existing PPC Deck Beams are in a deteriorated condition with reduced load carrying capacity. It is the contractor's responsibility to account for the condition of the beams when developing construction procedures.

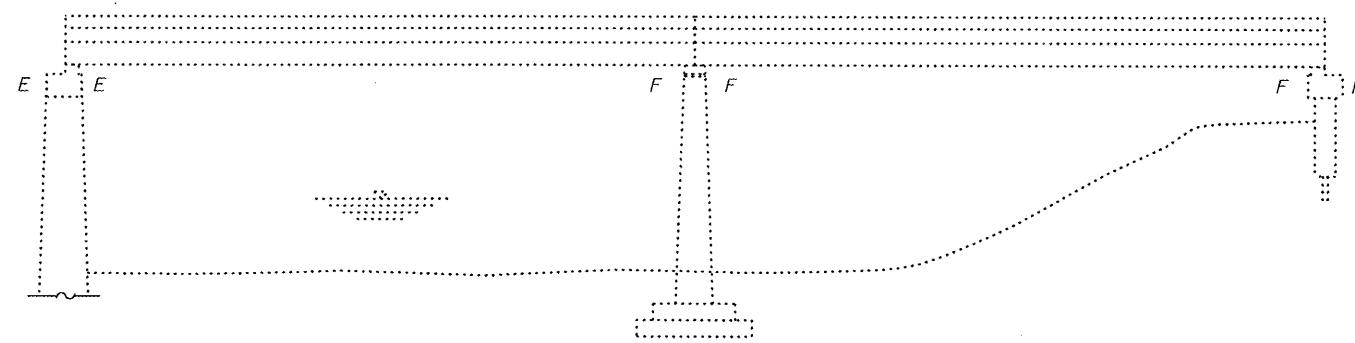
If the contractor's procedure for existing beam removal or placement of new beams involves placement of cranes or other heavy equipment on the bridge, a detailed procedure shall be submitted to the Engineer for approval. The procedure shall include calculations, prepared and sealed by an Illinois Licensed Structural Engineer, verifying that the equipment and procedure used will not overstress the new or existing beams. To distribute load to multiple beams and protect the existing surface, in all cases a double layer mat of heavy timbers shall be used at all times under crane tracks or wheels and any outriggers in the down position. If necessary, shims shall be used under the crane mat to ensure uniform contact with the underlying beams. If heavy equipment will be placed on new PPC deck beams, the following shall be done prior to placement of the timber mats: placement and tightening of transverse tie assemblies, grouting and curing the dowel rods 24 hours minimum and grouting and curing the shear keys.

Any damage done to the bridge during beam removal shall be repaired by the Contractor. Cost to be included in the cost of Removal of Existing PPC Deck Beams.

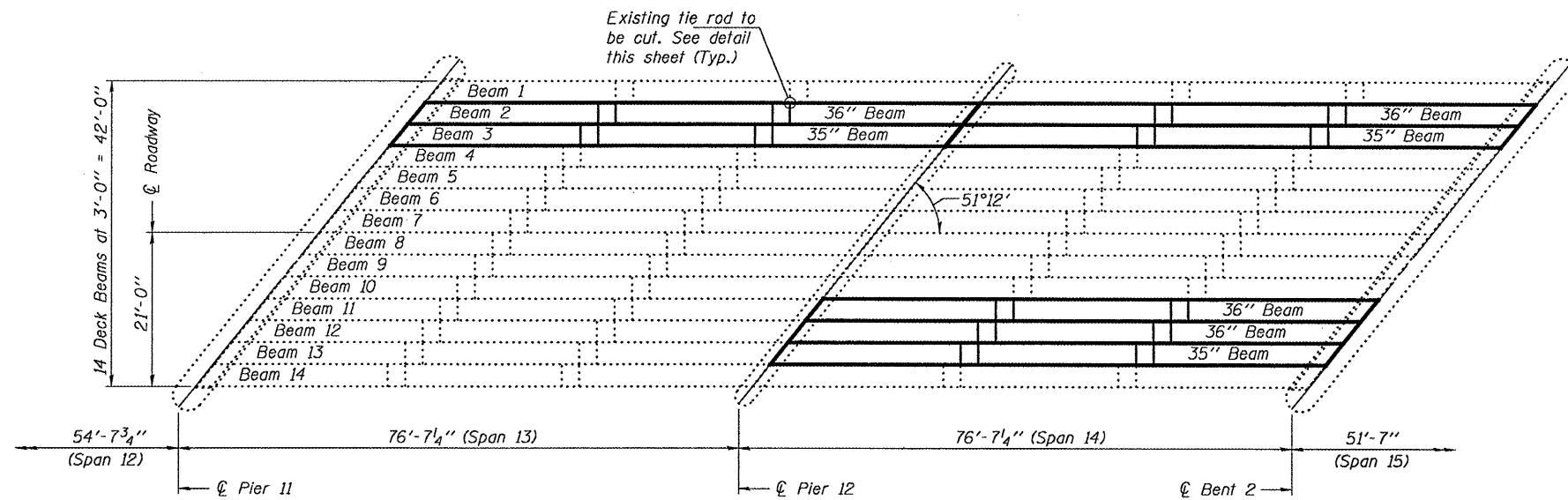
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.

Temporary concrete barrier shall only be anchored into the overlay and not into the PPC Deck Beams.

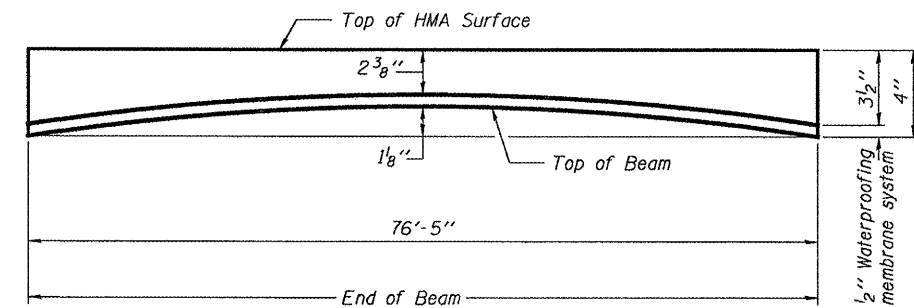
All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with PPC Deck Beams.



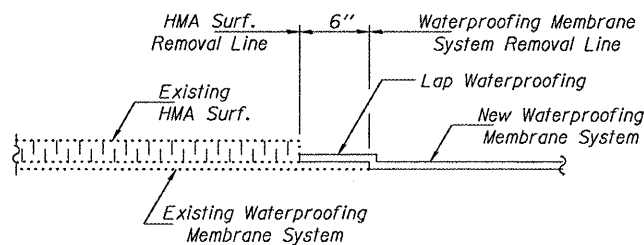
PARTIAL ELEVATION



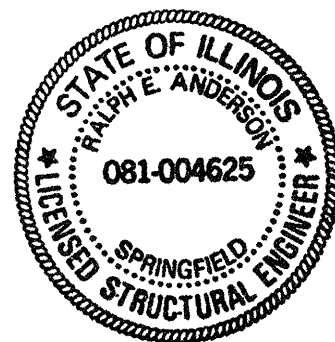
PARTIAL PLAN



ANTICIPATED INITIAL CAMBER DIAGRAM



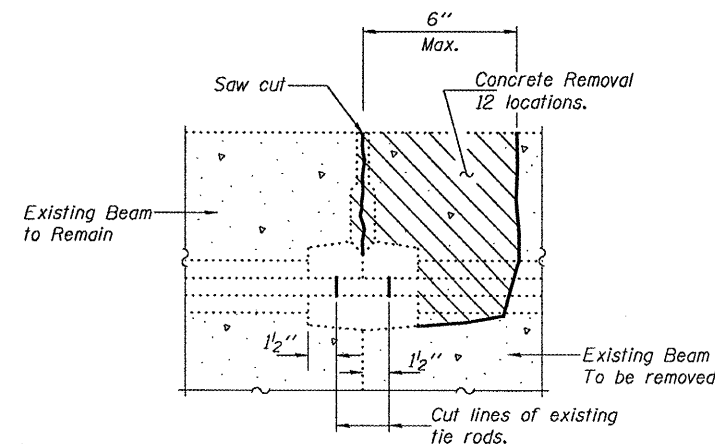
WATERPROOFING TREATMENT



DESIGN STRESSES

PRECAST PRESTRESSED UNITS

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



BEAM REMOVAL DETAIL AT TRANSVERSE TIES

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Removal of Existing PPC Deck Beams	Sq. Ft.	1605
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1586
Hot-Mix Asphalt Surface Removal	Sq. Yd.	47.0
HMA Surface Course Mix "D" N50	Tons	37.2
PC Mortar Fearing Course	Foot	783
Waterproofing Membrane System	Sq. Yd.	225.3
Asbestos Bearing Pad Removal	Each	2

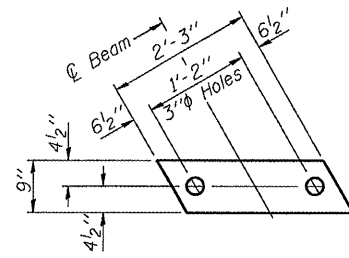
**PLAN & ELEVATION
IL ROUTE 97 OVER SPOON RIVER
SN 048-0075**

DESIGNED	<i>[Signature]</i>	EXAMINED	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>	PASSED	<i>[Signature]</i>
DRAWN	Kyle M. Steffen		
CHECKED	MB ATH		

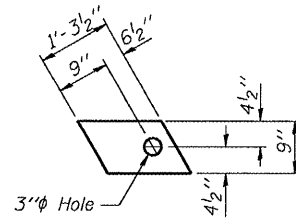
Expires: November 30, 2010

SHEET NO. 1 4 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	626	(44-B-1)I	KNOX	13	10
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 68855		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



FABRIC BEARING PAD



FABRIC ADJUSTING SHIM

FIXED

Note: Omit holes when using expansion bearings.

1/2" x 6" x Full width of beam cast into beam. (Expansion end only)
Cost included with PPC Deck Beams.

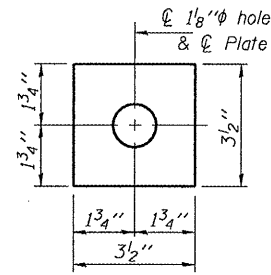
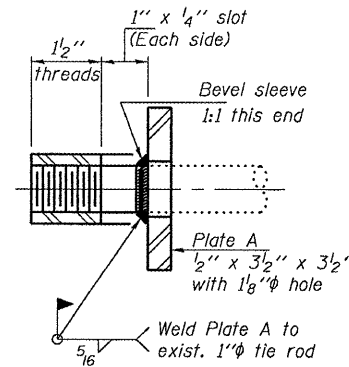
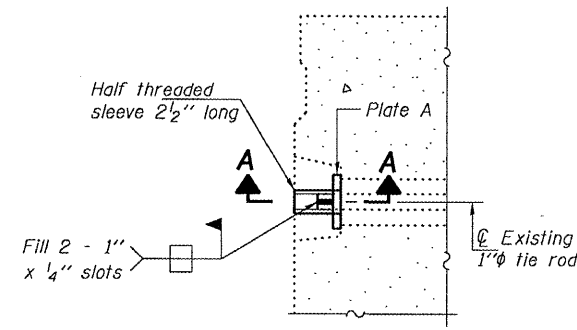


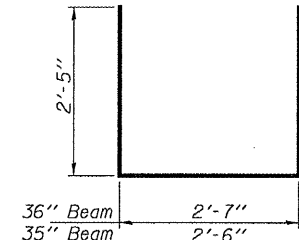
PLATE A
(10 Required)



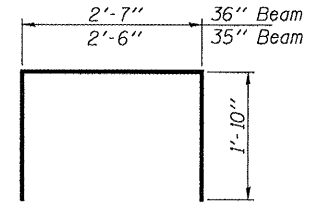
SECTION A-A
(10 Required)



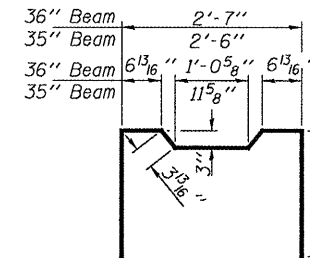
DETAIL A



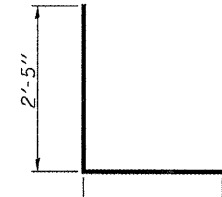
BAR S(E)



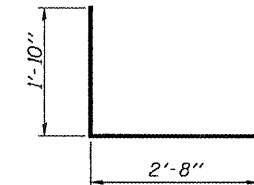
BAR S1(E)



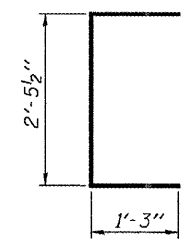
BAR S2(E)



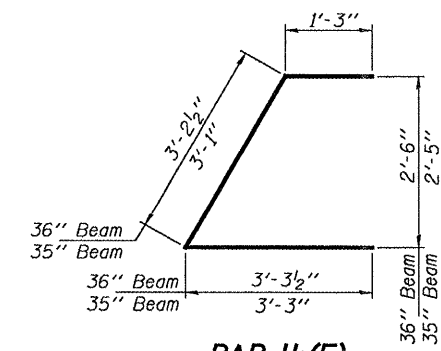
BAR S3(E)



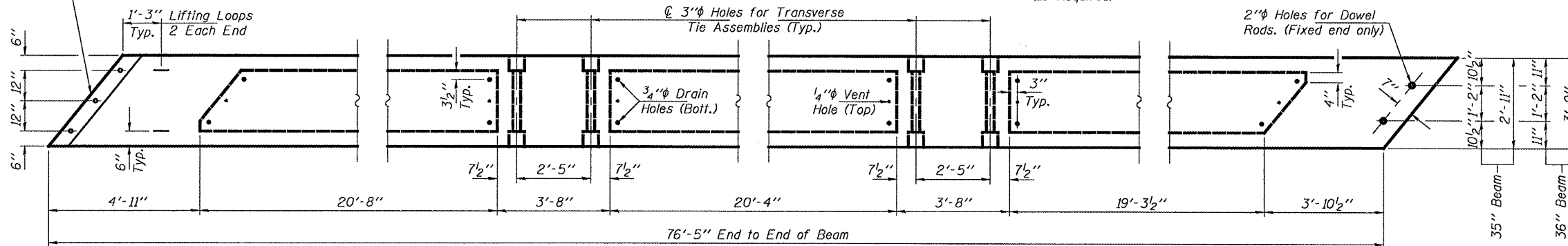
BAR S4(E)



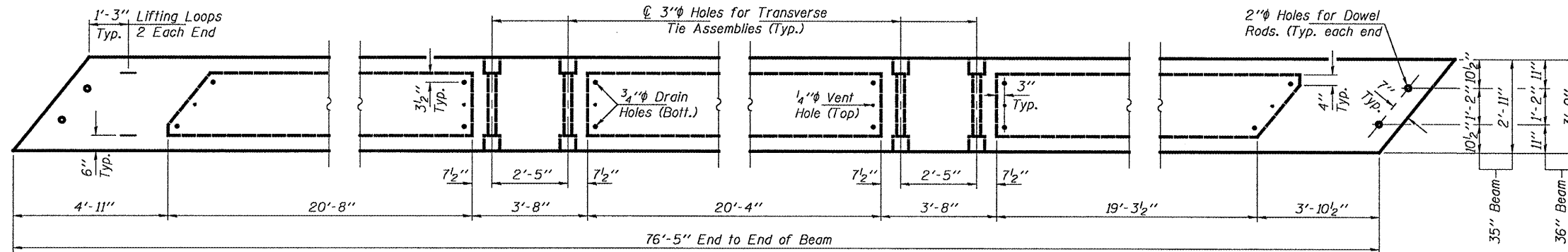
BAR U(E)



BAR U1(E)



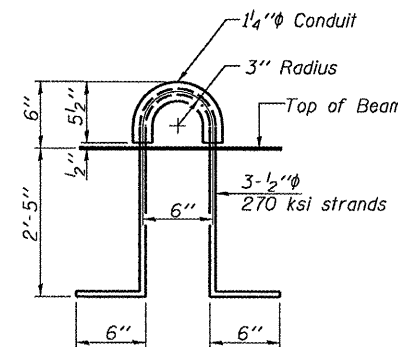
BEAM PLAN - SPAN 13



BEAM PLAN - SPAN 14

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/2" fabric adjusting shims of the dimensions shown shall be provided for each bearing pad location. A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling. Corrosion inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1586
---	---------	------

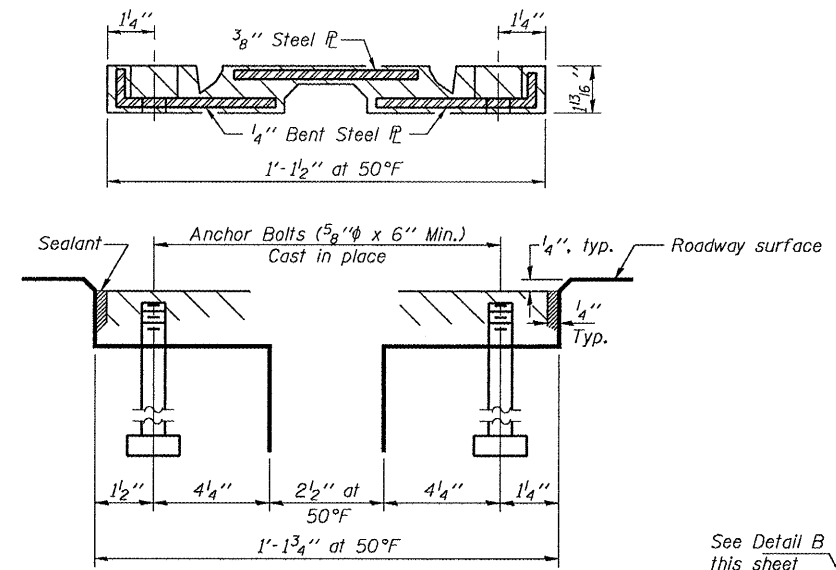
**BEAM DETAILS
IL ROUTE 97 OVER SPOON RIVER
SN 048-0075**

DESIGNED	AJB
CHECKED	ATH
DRAWN	Kyle M. Steffen
CHECKED	AJB ATH

JANUARY 8, 2009
EXAMINED *Carl Proyer*
ENGINEER OF STRUCTURAL SERVICES
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

SHEET NO. 3 4 SHEETS	F.A.P. RTE. 626	SECTION (44-B-1)I	COUNTY KNOX	TOTAL SHEETS 13	SHEET NO. 12
	CONTRACT NO. 68855				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



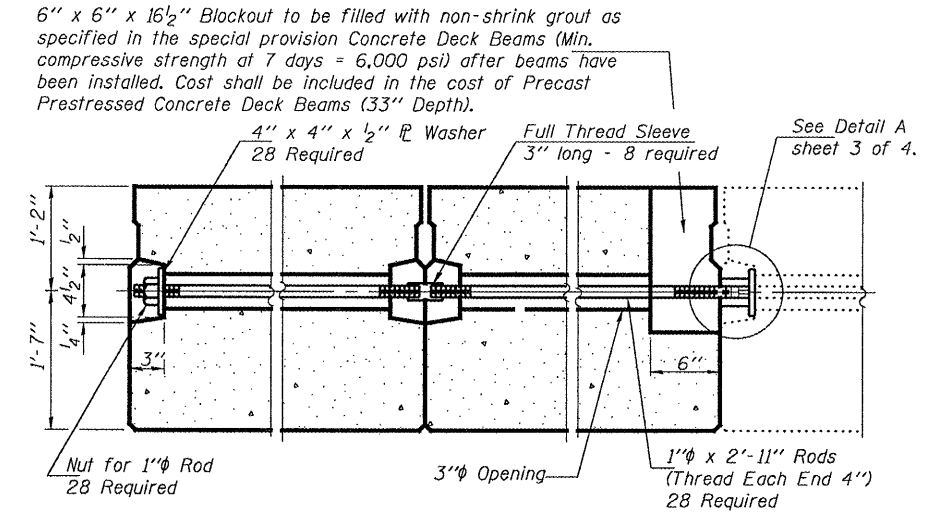
Polymer Concrete
(Cost included with
HMA Surface Course)

Existing Neoprene Exp. Joint
to be removed and reinstalled.
See Detail C. Cost included
with HMA Surface Course.

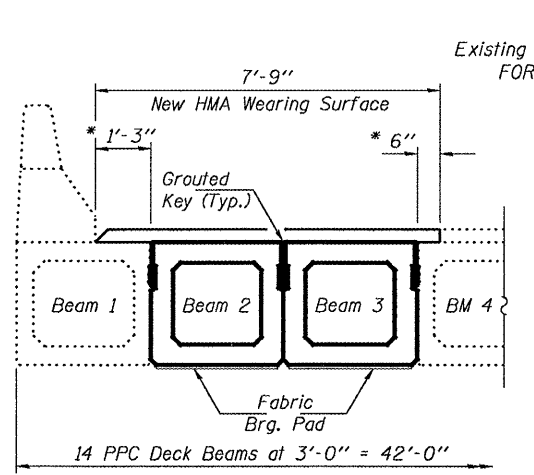
5/8" ϕ Threaded Stainless Steel
Anchor Studs automatically end
welded to \bar{R} . (Space to match
existing Neoprene Joint). Cost
included with HMA Surface Course.

1/2" x 6" \bar{R}
(\bar{R} need not
be galvanized)

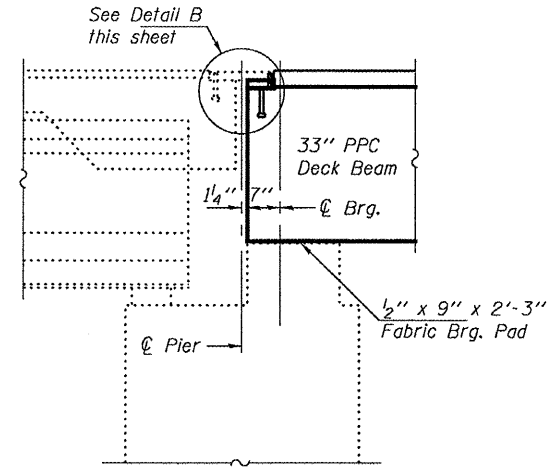
3/4" ϕ X 8" Granular or solid flux
filled headed studs conforming to
Article 1006.32 of the Std. Specs.,
automatically end welded. See sheet
3 of 4 for spacing.



TYPICAL TRANSVERSE TIE ASSEMBLY

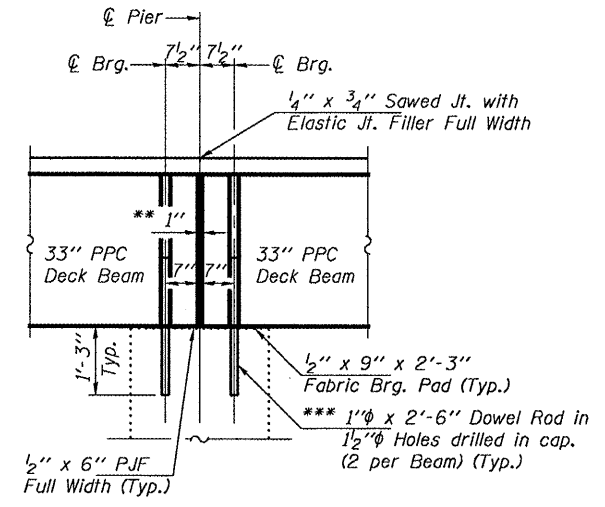


PARTIAL CROSS SECTION - SPAN 13

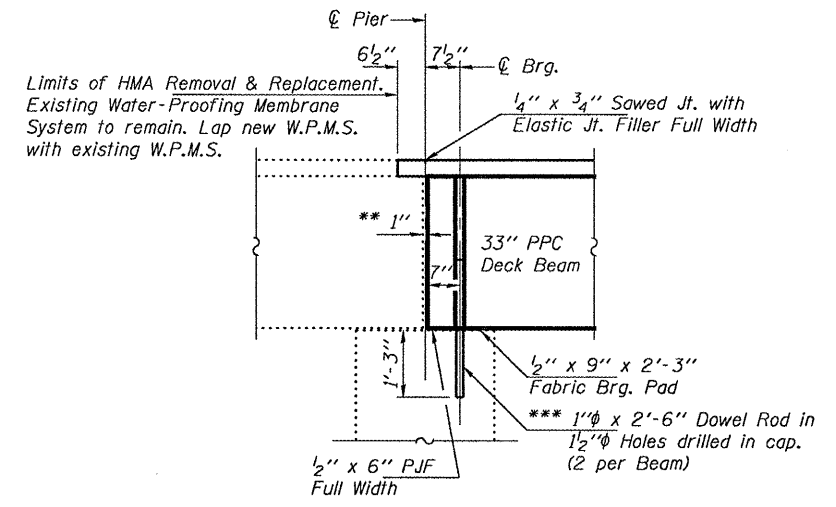


SECTION THRU PIER 11

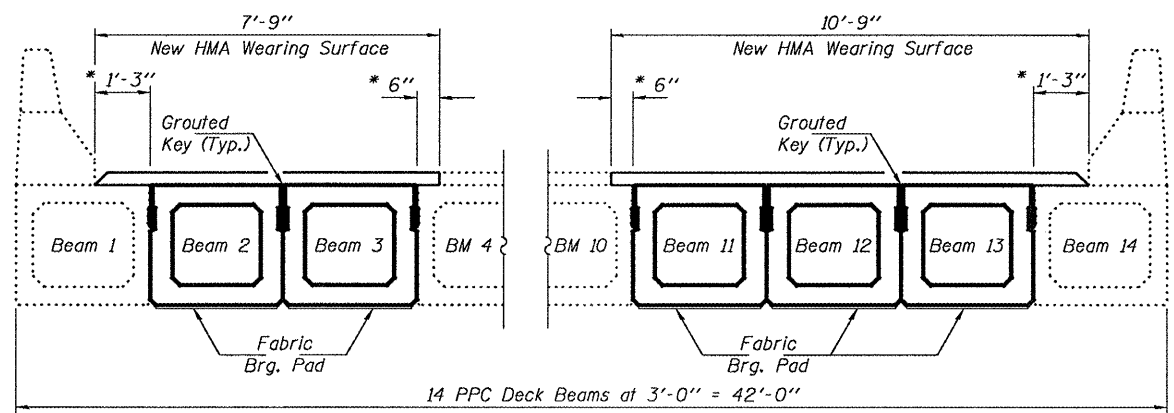
DETAIL B



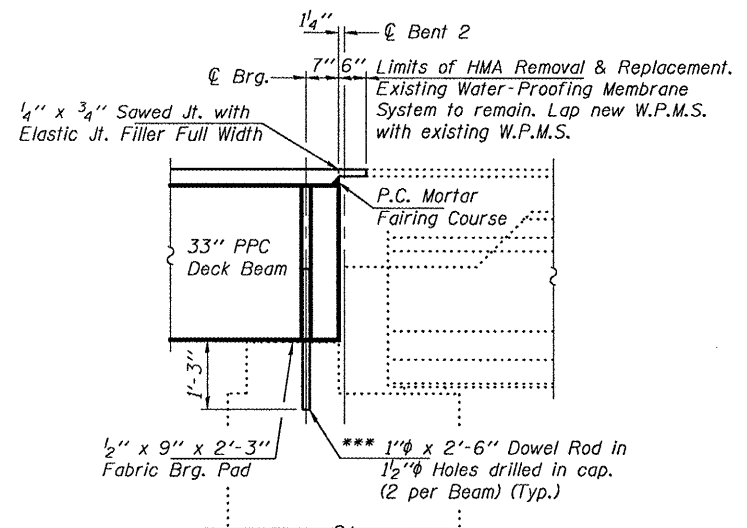
SECTION THRU PIER 12 AT BEAMS 2 & 3



SECTION THRU PIER 12 AT BEAMS 11, 12, & 13



PARTIAL CROSS SECTION - SPAN 14



SECTION THRU BENT 2

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

*** Existing dowel rods are to be burned off, ground flush, and sealed with epoxy prior to placement of new beams. Cost included in Removal of Existing PPC Deck Beams. After beams have been erected holes shall be drilled into cap and dowel rods placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure a minimum of 24 hours prior to grouting the shear keys.

REPAIR DETAILS
IL ROUTE 97 OVER SPOON RIVER
SN 048-0075

DESIGNED	AJB	JANUARY 8, 2009
CHECKED	ATH	EXAMINED <i>Carl Perry</i> ENGINEER OF STRUCTURAL SERVICES
DRAWN	Kyle M. Steffen	PASSED <i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES
CHECKED	AJB ATH	

SHEET NO. 4 4 SHEETS	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	626	(44-B-1)I	KNOX	13	13
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		CONTRACT NO. 68855	