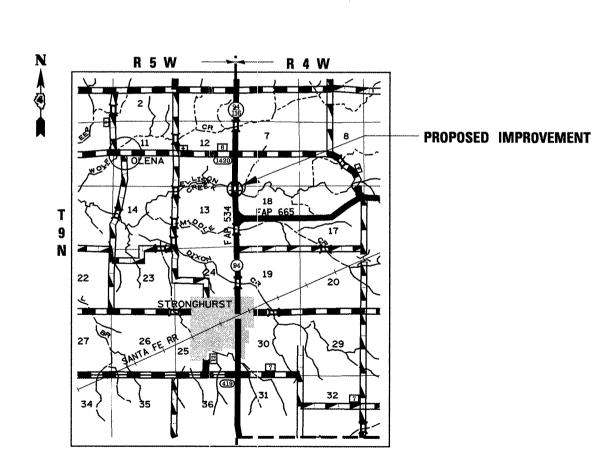
STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS**

PROPOSED HIGHWAY PLANS

FAP ROUTE 534 (IL 94/116) SECTION (109BR)I **HENDERSON COUNTY BRIDGE BEAM REPLACEMENTS** C-94-004-09

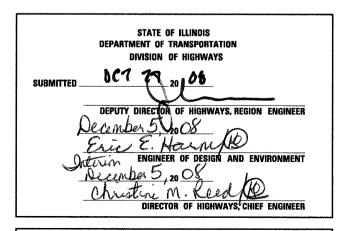


D-94-006-09

(109BR)I



DESCRIPTION: DECK BEAM REPLACEMENT ON STRUCTURE **CARRYING IL 94-116 OVER ELLISON CREEK** (SN 036-0004) 1.8 MILES NORTH OF **STRONGHURST**



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INDEX OF SHEETS

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- 1 COVER SHEET
- 2 COMMITMENTS & GENERAL NOTES
- 3 SUMMARY OF QUANTITIES
- **4 TYPICAL SECTIONS**
- **5 SCHEDULE OF QUANTITIES**
- **6 STAGE REMOVAL AND CONSTRUCTION**
- 7 PLAN VIEW
- 8 GENERAL PLAN VIEW
- 9-11 BRIDGE PLANS

LIST OF STANDARDS

635011-02 701321-10 701901-01

701301-03 704001-05

701901-01 780001-02

DESIGN DESIGNATION

1700 (2007)

MU = 100



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.

JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION 1-800-892-0123 OR 811

PROJECT LEADER: RICHARD DOTSON PROJECT DESIGNER: TERRISA WORSFOLD

CONTRACT NO. 68848 CATALOG NO. 033878-00D GROSS LENGTH OF PROJECT 80 FT (.02 MILES) **NET LENGTH OF PROJECT**

80 FT (.02 MILES)

COMMITMENTS

No commitments have been made for this project.

BITUMINOUS CONCRETE MIXTURE REQUIREMENTS

The following mixture requirements are applicable for this Project: Contract 68848

IL 94/IL 116 over Ellison Creek

Mixture Use(s):	Sand Mix/Leveling Binder	Surface
AC/PG:	SBS or SBR PB 70-22	64-22
RAP % (Max)**:	0%	15%
Design Air Voids:	2.5% @ N=50	4.0% @ N=50
Mixture Composition: (Gradation Mixture)	IL 4.75	IL 9.5 or 12.5
Friction Aggregate:	N/A	Mix D

^{**} If RAP option is selected, the asphalt cement grade may need to be adjusted; this will be determined by the Materials Engineer.

Notes: Individual lift thickness will be no less than 3 X nominal maximum aggregate size and no more than 6 X nominal maximum aggregate size.

The asphalt sand seal protection layer specified in Section 581 of the Standard Specifications shall be omitted and replaced with Leveling Binder (Hand Method), N50.

The Leveling Binder (Hand Method), N50 will be paid for separately by the ton.

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.

ENVIRONMENTAL REVIEWS

Prior to the use of any proposed borrow areas, use areas (temporary access roads, detours, run-arounds, etc.) and/or waste areas, the Contractor shall file the required environmental resource request surveys according to Section 107.22 of the Standard Specifications. These surveys are required in order for the Department to conduct cultural and biological resource surveys for the proposed site.

Prior to any waste materials being removed from the construction site the required environmental resource surveys will need to be obtained and filed by the Contractor. Excess waste products removed from the construction site shall be disposed of as required in Section 202.03 of the Standard Specifications.

Any protruding metal bars shall be removed prior to the disposal of broken concrete at approved disposal sites.

The required environmental resource documentation shall include the following:

- * BDE Form 2289 (Environmental Survey Request)
- * A location map showing the size limits and location of the use area
- * Signed property owner agreement form-D4 P10100
- * Color photographs depicting the use area
- * Borrow Area Entry Agreement form-D4 P10101

Please note that a minimum of two weeks shall be allowed for the District to obtain the required environmental clearances.

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	PLOT DATE = 10/23/2008	DATE -	REVISED -	l

STATE	: 01	FILLINOIS	
DEPARTMENT	0F	TRANSPORTATION	

	F.A.P RTE.			SE	CTIC	N		COUNTY	TOTAL	NC.
AGREEMETERT & OFFICE & FIGURE	534			(10	9BR)I		HENDERSON	11	2
COMMITMENTS & GENERAL NOTES								CONTRACT	NO.	6884
	FED. RO	AD D	IST.	NO.	IL S	4/116 FI	D. A	D PROJECT		

SUMMARY OF QUANTITIES

ITEM	UNIT	RURAL	TOTAL
BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1.1	1.1
LEVELING BINDER (HAND METHOD), N50	TON	3.0	3.0
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50	TON	4,3	4.3
HOT-MIX ASPHALT SURFACE REMOVAL	SQ YD	9.1	9.1
PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	232.5	232.5
WATERPROOFING MEMBRANE SYSTEM	SQ YD	35.7	35.7
PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	159.5	159.5
MOBILIZATION	L SUM	1	1
TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1
TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1
TEMPORARY RUMBLE STRIP	EACH	6	6
SHORT-TERM PAVEMENT MARKING	FOOT	160	160
PAVEMENT MARKING TAPE, TYPE III 4"	FOOT	988	988
	BITUMINOUS MATERIALS (PRIME COAT) LEVELING BINDER (HAND METHOD), N50 HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50 HOT-MIX ASPHALT SURFACE REMOVAL PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH) WATERPROOFING MEMBRANE SYSTEM PORTLAND CEMENT MORTAR FAIRING COURSE MOBILIZATION TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 TEMPORARY BRIDGE TRAFFIC SIGNALS TEMPORARY RUMBLE STRIP SHORT-TERM PAVEMENT MARKING	I TEM UNI T BITUMINOUS MATERIALS (PRIME COAT) GALLON LEVELING BINDER (HAND METHOD), N50 TON HOT- MIX ASPHALT SURFACE COURSE, TON MIX "D", N50 HOT-MIX ASPHALT SURFACE REMOVAL SQ YD PRECAST PRESTRESSED CONCRETE SQ FT DECK BEAMS (33" DEPTH) WATERPROOFING MEMBRANE SYSTEM SQ YD PORTLAND CEMENT MORTAR FAIRING COURSE MOBILIZATION L SUM TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 TEMPORARY BRIDGE TRAFFIC SIGNALS EACH SHORT-TERM PAVEMENT MARKING FOOT	BITUMINOUS MATERIALS (PRIME COAT) LEVELING BINDER (HAND METHOD), N50 TON 3.0 HOT-MIX ASPHALT SURFACE COURSE, TON 4,3 MIX "D", N50 HOT-MIX ASPHALT SURFACE REMOVAL SQ YD 9.1 PRECAST PRESTRESSED CONCRETE SQ FT 232.5 DECK BEAMS (33" DEPTH) WATERPROOFING MEMBRANE SYSTEM SQ YD 35.7 PORTLAND CEMENT MORTAR FAIRING FOOT 159.5 COURSE MOBILIZATION L SUM 1 TRAFFIC CONTROL AND PROTECTION, EACH 1 STANDARD 701321 TEMPORARY BRIDGE TRAFFIC SIGNALS EACH 1 TEMPORARY RUMBLE STRIP EACH 6 SHORT-TERM PAVEMENT MARKING FOOT 160

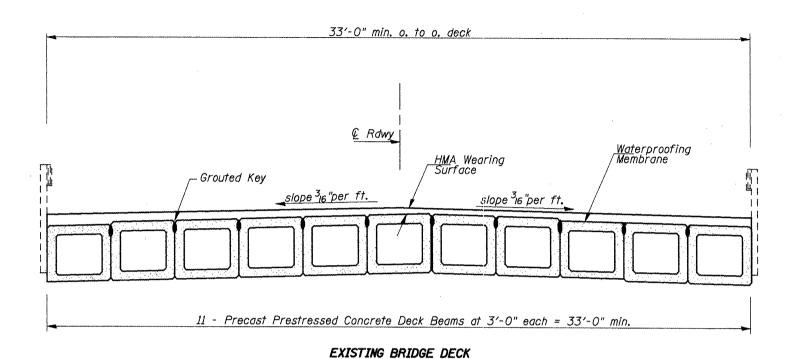
			TATE SF RSON COU	
CODE NO.	ITEM	UNI T	RURAL	TOTAL
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	384.6	384.6
70400100	TEMPORARY CONCRETE BARRIER	FOOT	237.5	237.5
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	568.0	568.0
78300100	PAVEMENT MARKING REMOVAL	SQ FT	161.4	161.4
X0320047	REMOVAL OF EXISTING PRECAST PRESTRESSED CONCRETE DECK BEAMS	SQ FT	239.2	239.2
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	14	14
Z000/900	ASBESTOS BEARING PAD REMOVAL	EACH	1	1
2'0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
V SDE				

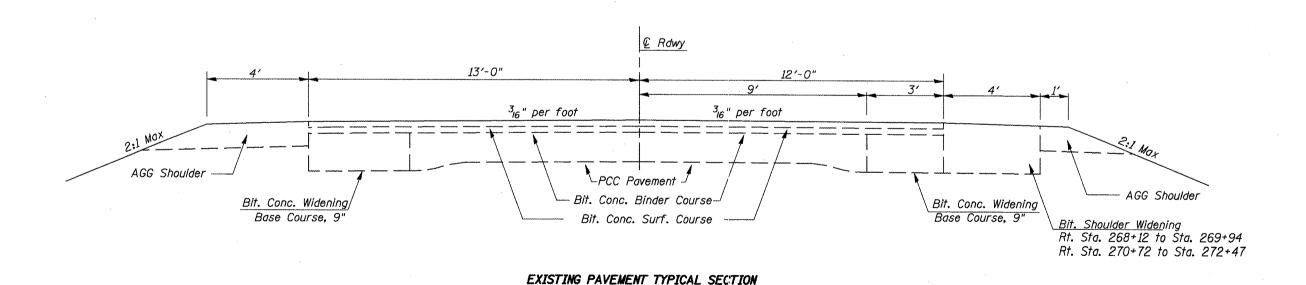
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTIES

TYPICAL SECTIONS





STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

SECTION

534

TYPICAL SECTIONS

SCALE: NONE

HENDERSON 11 4 CONTRACT NO. 68848

USER NAME = mcfaddenjk

PLDT DATE = 10/23/2008

PLDT SCALE = 100.0000 '/ IN.

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DATE

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SCHEDULE OF QUANTITIES

LOCATIONS STA. to STA.	HMA SURF CSE MIX "D" N50	HMA SURF REM	BIT MAT (PRIME COAT)	LEVELING BINDER (HAND METHOD), N50
Bridge Deck	TON	SQ YD	GALLON	TON
269+94 to 270+72	7.0	9.1	1.1	3.0
TOTAL	7.0	9.1	1.1	3.0

Note: Additional leveling binder quantity provided for scratch passes at beam ends to compensate for beam camber.

LOCATIONS STA. to STA.	P P CONC DECK BEAM (33' DEPTH)	REM OF EXIST P P CONC DECK BEAMS
Bridge Deck	SQ FT	SQ FT
269+94 to 270+72	232.5	239.2
TOTAL	232.5	239.2

LOCATIONS STA. to STA.	WATERPROOFING MEMBRANE SYSTEM
Bridge Deck	SQ YD
269+94 to 270+72	35.7
TOTAL	35.7

LOCATIONS STA. to STA.	P C MORTAR FAIRING COURSE
Bridge Deck	FOOT
269+94 to 270+72	159.5
TOTAL	159.5

LOCATIONS STA. to STA.	PAVEMENT MARKING REMOVAL
	SQ FT
Edgeline 268+83 to 271+83	100.0
Center skips 267+29 to 268+83	13.2
271+83 to 273+43	13.2
No Passing Stripe 272+37 to 273+43	35.0
TOTAL	161.4

LOCATIONS STA. to STA.	PAVEMENT MARKING TAPE, TYPE III, 4"
	FOOT
RT Edgeline 267+39 to 272+83	544.0
LT Edgeline 268+83 to 271+83	300.0
STOP BARS	144.0
TOTAL	988.0

LOCATIONS STA. to STA.	SHORT - TERM PAVEMENT MARKING	WORK ZONE PAVEMENT MARKING REMOVAL
	FOOT	SQ FT
267+29 to 273+43	160	384.6
TOTAL	160	384.6

LOCATIONS STA. to STA.	TEMPORARY CONCRETE BARRIER
	FOOT
269+19 to 271+47	237.5
TOTAL	237.5

LOCATIONS STA. to STA.	IMPACT ATT TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	TEMPORARY RUMBLE STRIP
	EACH	EACH
Jobsite	2	6
то	TAL 2	6

LOCATIONS STA. to STA.	PAINT PAVEMENT MARKING LINE 4"
	FOOT
White Edgeline 268+83 to 271+83	302.0
Yellow skipdash 267+29 to 273+43	160.0
Yellow solid no passing stripe 272+37 to 273+43	106.0
TOTAL	568.0

LOCATIONS STA. to STA.	MOBILIZATION	T C & PROT STANDARD 701321	CHANGEABLE MESSAGE SIGN	TEMPORARY BRIDGE TRAFFIC SIGNAL
	L SUM	EACH	CAL DA	EACH
Jobsite	1	1	14	1
TOTAL	1	1	14	1

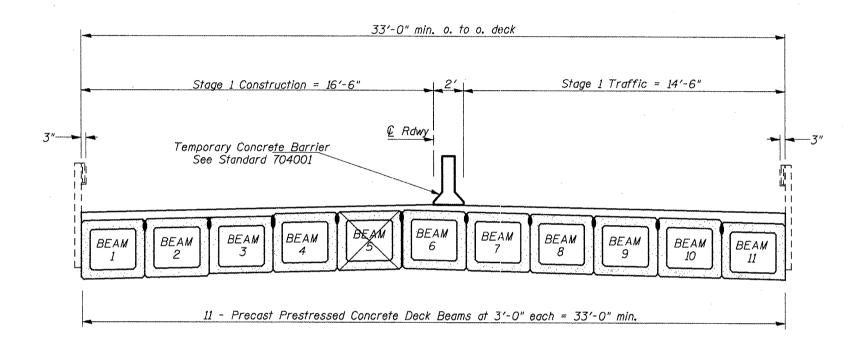
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DEPARTMENT	OF	TRANSPORTATION

	F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SCHEDULE OF QUANTITIES		(109BR)I	HENDERSON	11	5
			CONTRACT		8848
	FED. RO	DAD DIST. NO. IL 94/116 FED. AI			

STAGE REMOVAL AND CONSTRUCTION

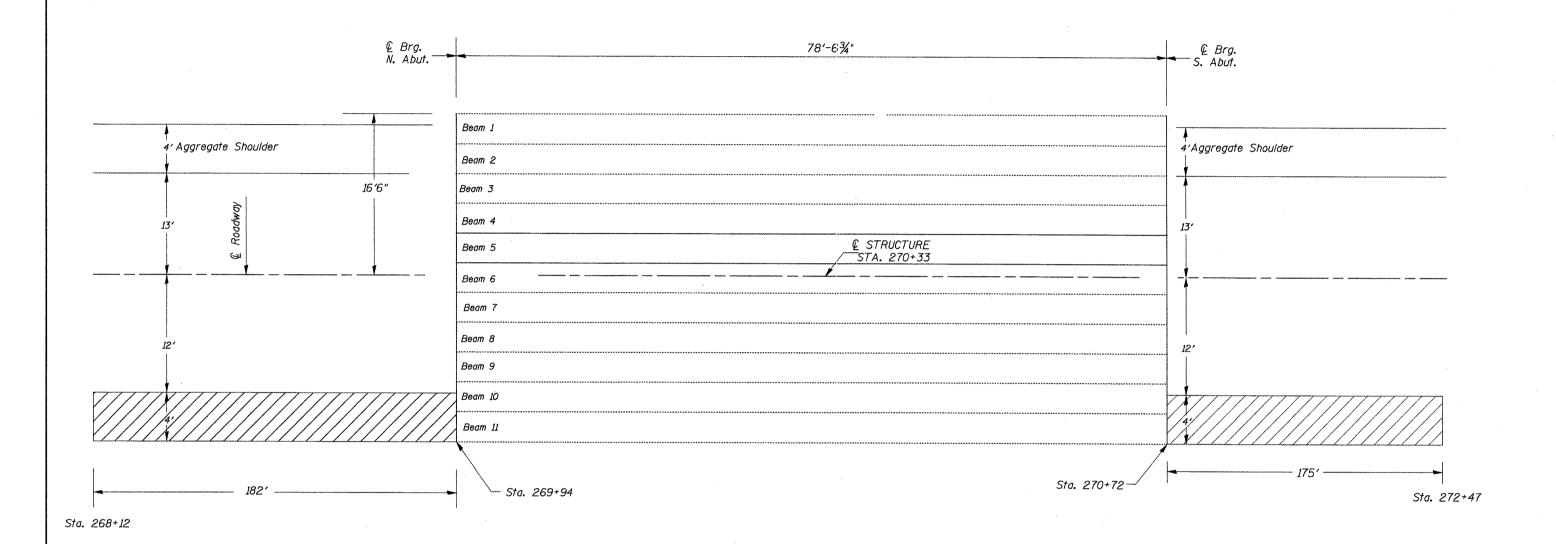


Note: Four W12-I103 signs, as described in the width restriction signing Special Provision, will be required. Two signs shall be placed at the intersection of IL 94 and IL 116, and two signs shall be placed at the intersection of IL 94 and US 34. These signs shall be located at the direction of the Engineer. The cost shall be included in the cost of TRAFFIC CONTROL AND PROTECTION STANDARD 701321.

The max width dimension for the signs is 13'-0".

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	PLOT DATE = 10/24/2008	DATE -	REVISED -		SCALE: NONE	FED. ROAD DIST. NO. IL 94/116 FED. AID PROJECT	CT NO. 68848

PLAN VIEW



Existing Shoulder Widening placed in 2007

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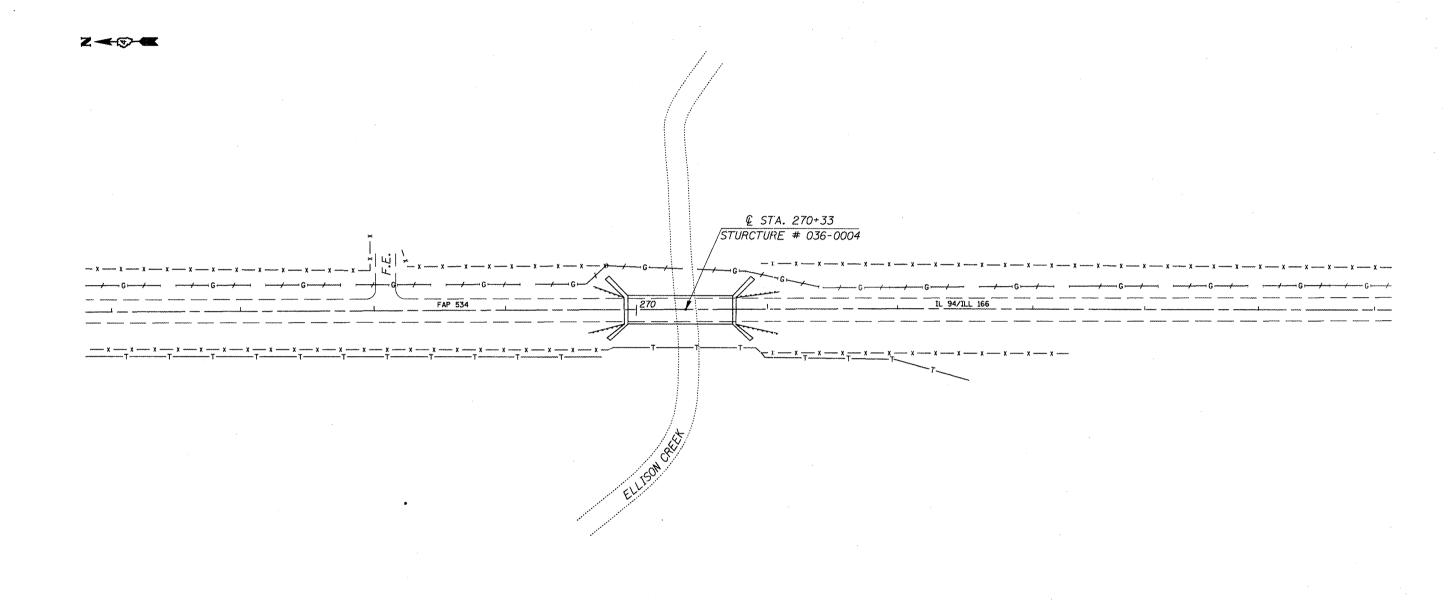
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PLOT DATE = 10/23/2008	DATE -	REVISED -

STATE	OF	ILLINOIS
DEPARTMENT	OF .	TRANSPORTATION

SCALE: NONE

	F.A.P RTE.	SECTI	ON	COUNTY	SHEETS	SHEE NO.
PLAN VIEW	534	(1098	R)I	HENDERSON	11	7
				CONTRACT	NO.	68848
Structure Number 036-0004 STA. 270+33	FED. R	DAD DIST. NO. IL	94/116 FED. A			

GENERAL PLAN VIEW

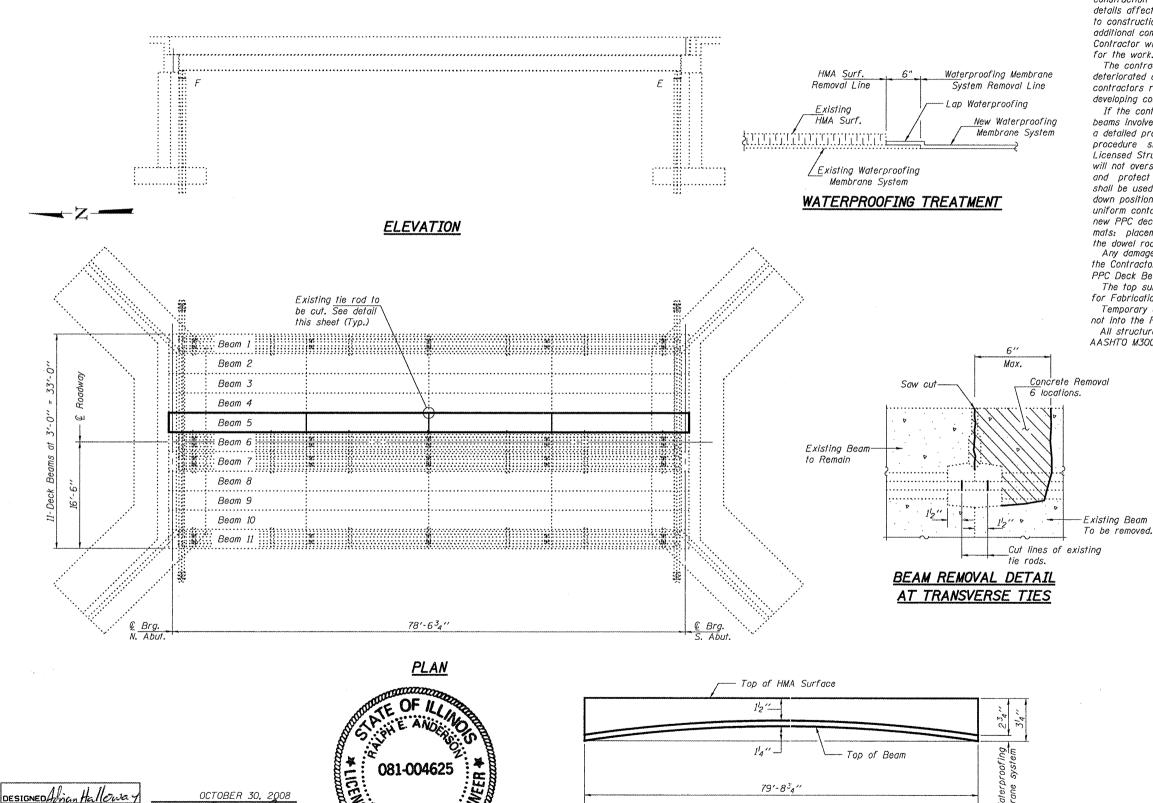


ı.		120. 27.12	LUATE	NEVIOLO		SCALES NONE	311 00 TOTA NUMBER 036-0004 51A. 210+33	FED. R	OAD DIST. NO.	. IL 94/116 FED. AI	PROJECT		
- 1		PLOT DATE = 10/23/2008	DATE -	REVISED -		SCALE: NONE	Structure Number 036-0004 STA. 270+33				~	1 1402 000	370
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STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

End of Beam

ANTICIPATED INITIAL CAMBER DIAGRAM



SARINGFIEL

STRUCTURA

Expires: November 30, 2010

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 contractors 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.

DESIGN STRESSES

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi f'ci = 5,000 psi

 $f's = 270,000 \text{ psi } (^1_2\text{''}\phi \text{ low lax strands})$ $f'si = 201,960 \text{ psi } (^1_2\text{''}\phi \text{ low lax strands})$

TOTAL BILL OF MATERIAL

TOTAL DILL OF MATE	-111VL	
ITEM	UNIT	QUANTITY
Removal of Existing PPC Deck Beams	Sq. Ft.	239
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	233
Hot-Mix Asphalt Surface Removal	Sq. Yd.	9.1
HMA Surface Course Mix "D" N50	Tons	4.3
PC Mortar Fairing Course	Foot	160
Waterproofing Membrane System	Sq. Yd.	35.7
Asbestos Bearing Pad Removal	Each	1

PLAN & ELEVATION
IL ROUTES 94 & 116
OVER ELLISON CREEK
SN 036-0004

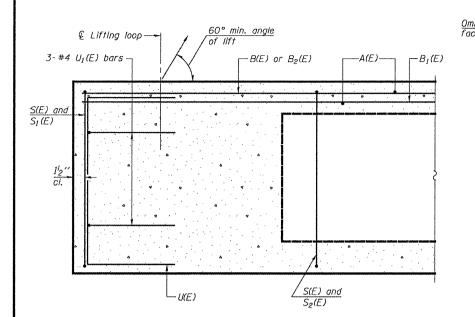
SHEET NO.1	F.A.P. RTE.	SEC.	TION	COUNTY	TOTAL SHEETS	SHEE NO.
	534	(109	BRI	HENDERSON	11	9
3 SHEETS				CONTRACT	NO. 68	848
	FED. RO.	AD DIST. NO.	ILLINOIS FED. AI	D PROJECT		

\dock beams fun0\0360004a den 30-0ct-08 40: 30: 40

Kyle M. Steffen

CHECKED ATH 41B

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION



SECTION C-C

Omit key on exterior face of outside beams 12

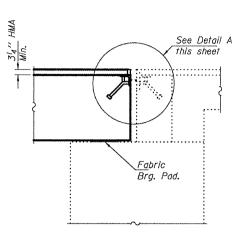
SECTION A-A

S1(E)- $B_1(E)$ -U(E) $U_1(E)$ 1". Cl.

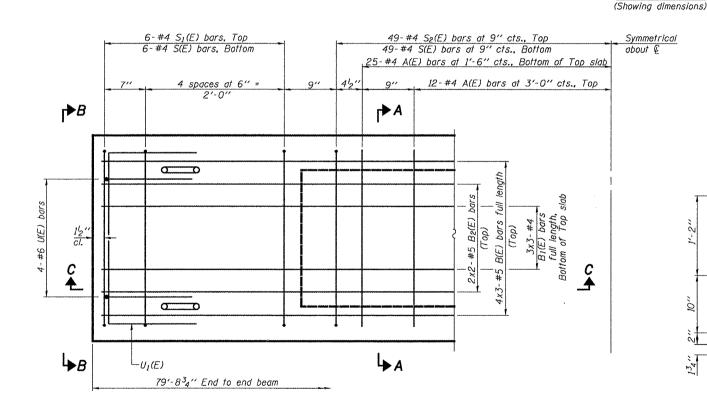
VIEW B-B

ELEVATION NEW JOINT P

TO EXISTNIG JOINT P.

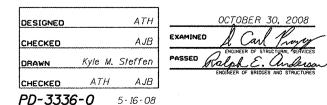


SECTION THRU SOUTH ABUTMENT

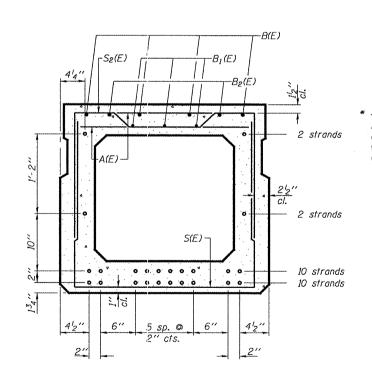




Note: Spacing of S(E) and $S_2(E)$ bars may be adjusted tie diaphragms to miss the block outs for the



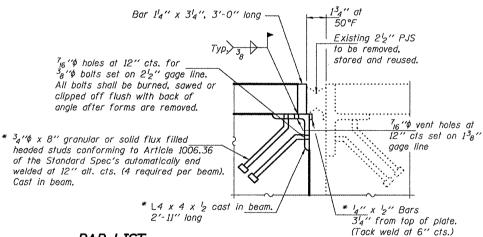
up to 4" in the immediate area of the transverse transverse ties.



SECTION A-A

(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



BAR LIST ONE BEAM ONLY

	(i or information only)									
Bar	No.	Size	Length	Shape						
A(E)	74	#4	2'-7"							
B(E)	12	#5	28'-0"							
$B_1(E)$	9	#4	27'-8"							
$B_2(E)$	4	#5	16'-0''							
S(E)	110	#4	7'-4"							
$S_1(E)$	12	#4	6'-2"							
$S_2(E)$	98	#4	6'-5"	}						
U(E)	8	#6	5'-0"							
11.(F)	6	#1	11-1111							

Bars indicated thus 4 x 3-#5 etc. indicates 4 lines of bars with 3 lengths per line.

Note: See sheet 3 of 3 for additional details and Bill of Material.

DETAIL A

(Cost included with PPC Deck Beams)

* Need not be galvanized.

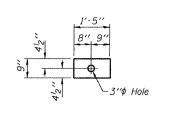
MIN. BAR LAPS

#4 Bar = 1'-8" #5 Bar = 2'-2"

> BEAM DETAILS IL ROUTES 94 & 116 OVER ELLISON CREEK SN 036-0004

SHEET NO. 2	F.A.P. RTE.	SECTION			COUNTY	TOTAL SHEETS	SHEET NO.
	534	(109BR)I			HENDERSON	11	10
3 SHEETS					CONTRACT	NO. 68	3848
	FED. RO	AD DIST. NO.	ILLINOIS	FED. AII	D PROJECT		





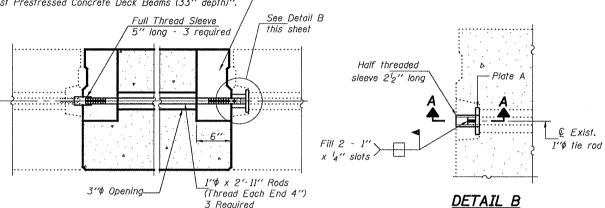
FABRIC ADJUSTING SHIM

FIXED

Note: Omit holes when using expansion bearings.

TYPICAL TRANSVERSE TIE ASSEMBLY

 $6^{\prime\prime\prime}$ x $6^{\prime\prime\prime}$ x $16^{l_2}^{l_2}^{\prime\prime\prime}$ Blockout to be filled with non-shrink grout as specified in the special provision Concrete Deck Beams (Min. compressive strength at 7 days = 6000 psi) after Beams have been installed. Cost shall be included in the cost of "Precast Prestressed Concrete Deck Beams (33" depth)".



STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

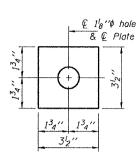
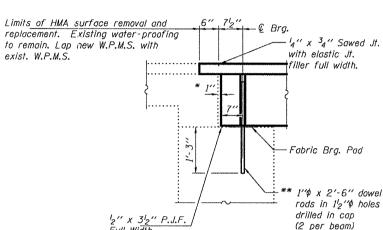
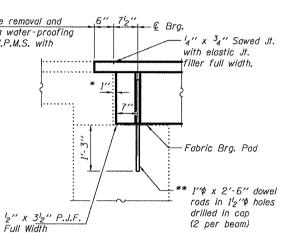
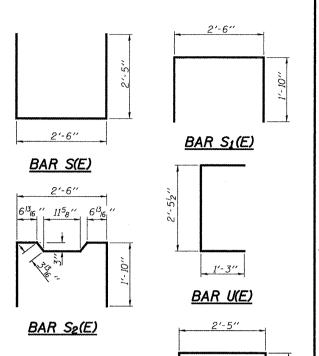


PLATE A (3 Required)

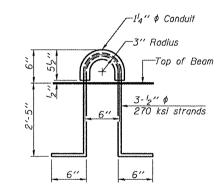
- * 1" Joint shall be filled with non-shrink grout. Dimension may vary to accommodate tolerance in beam lengths.
- ** Existing dowel rods are to be burned off, ground flush, and sealed with epoxy prior to placement of new beams. Cost included in Removal of Existing PPC Deck Beams. After beams have been 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.







BAR U1(E)



LIFTING LOOP DETAIL

Exist. Transverse Existing Under Beam Supports

Remove existing anchor bolt. (Typ. at all transverse tie P locations under Beam 5). Bolts to be reinstalled after Beam 5 is replaced. Cost included with Removal of Existing PPC Deck Beams.

PARTIAL CROSS SECTION

Grouted Key (Typ.)

4'-0"

New HMA Surf.

Limits of HMA Removal

BM 5

Looking South

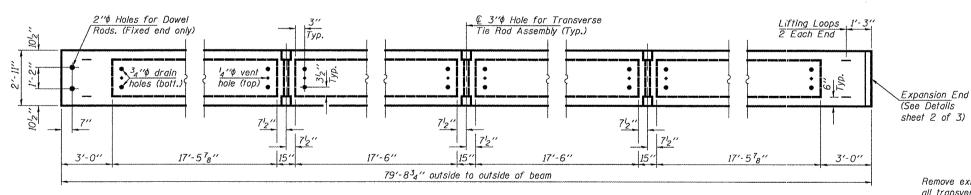
Conc. Deck Bms. (33" depth) Sq. Ft. 233 BEAM DETAILS

BILL OF MATERIAL

IL ROUTES 94 & 116 OVER ELLISON CREEK SN 036-0004

						-
SHEET NO. 3	F.A.P. SECTI		TION COUNT		TOTAL SHEETS	SHEET NO.
	534	(109	BR)I	HENDERSON	11	11
3 SHEETS				CONTRACT	NO. 68	848
		AD DIST. NO.	ILLINOIS FED. A	ID PROJECT		

SECTION THRU NORTH ABUTMENT



1" x 1/4" slot

(Each side)

Revel sleeve

1:1 this end

Plate A 2" x 32" x 32"

with 118 0 hole

Weld Plate A to

SECTION A-A

(3 Required)

exist. I'' tie rod

BEAM PLAN

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be $\frac{1}{2}$ " and the nominal cross-sectional area shall be 0.153 sq. in. The 1"\$\phi\$ 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 arout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two l_{8} " fabric adjusting shims of the dimensions shown shall be provided for each bearing pad location. A minimum 2^{l_2} " fifting 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.

ATHDESIGNED AJB CHECKED PASSED Kyle M. Steffen ATHCHECKED