STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

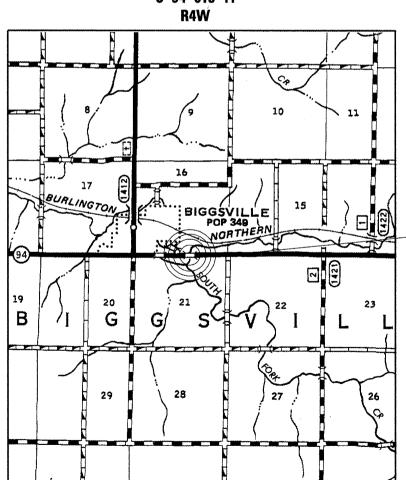
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

F.A.P. 313 US34 SECTION (6BR)I PROJECT BRIDGE BEAM REPLACEMENT

HENDERSON COUNTY

C-94-015-11



313 Fed. Road Dist. No. 4 ILLINOIS CONTRACT NO. 68A17

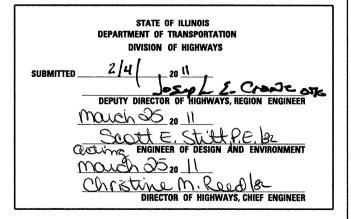
¥9+4=13

D-94-009-11



(6BR)I STRUCTURE OVER TOM'S CREEK

REPLACEMENT OF 1 DECK BEAM ON STUCTURE CARRYING US 34 OVER TOM'S CREEK (SN 036-0003), 0.5 MILE EAST OF IL94 JCT



PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS:

 \circ

0

0

0

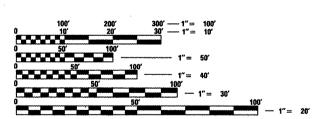
- 1. COVER SHEET
- 2. GENERAL NOTES & COMMITMENTS
- 3-4. SUMMARY OF QUANTITIES
- 5. TYPICAL SECTIONS
- 6. SCHEDULE OF QUANTITIES
- 7. GENERAL LAYOUT
- 8. PROPOSED TRAFFIC CONTROL
- 9. WIDTH RESTRICTION SIGNING

STANDARDS:

D4 STANDARDS:

630011-D4 701001--02 701901--01 701006-03 704001--06 630101-D4 701201-04 780001-02

701321-11



ADT: 4100

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

PROJECT ENGINEER: JIM MILLER (309) 671-3451 PROJECT DESIGNER: DANIEL CORP (309) 671-3473

CONTRACT NO. 68A17

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.

FILE NAME =	USER NAME = corpdm	DESIGNED	-	D CORP	REVISED	-	
SN 036-0003 US34ovrOldTomCrk.dgn		DRAWN	~	D CORP	REVISED	-	***
	PLOT SCALE = 100.0000 '/ IN.	CHECKED	-	C JONES	REVISED	-	
	PLOT DATE = 2/4/2011	DATE	-	2/03/2011	REVISED	-	

			F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHE
ITTMENTS & GE	NERAL NOTES		313	(6BR)1	HENDERSON	2	9
			PPC	BEAM REPL.	CONTRAC	NO. 1	68A1
. 2 OF 9 SHEETS	STA. 625+30.00	TO STA 625+73.00		THE THOUGHTON A	In non-cer		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

SUMMARY OF QUANTITIES

CONT. MAINT

SUMMARY OF QUANTITIES	1	100% STATE 0014 HENDERSON				
CODE NO. I TEM	UNIT	RURAL	TOTAL			
40603540 POLYMERIZED / SURFACE COURSE, MIX "D", N70	TON	1.4	1.4			
HOT- MIX ASPHALT						
50400405 PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQFT	129	129			
58100200 WATERPROOFING MEMBRANE SYSTEM	SQYD	17.1	17.1			
58300100 PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	43	43			
67100100 MOBILIZATION	LSUM	1	1			
70100405 TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1			
70100450 TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	LSUM	1	1			
70100500 TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	LSUM	1	1			
70106500 TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	1			
70300520 PAVEMENT MARKING TAPE, TYPE III 4"	FOOT	727	727			
70301000 WORKZONE PAVEMENT MARKING REMOVAL	SQFT	242	242			

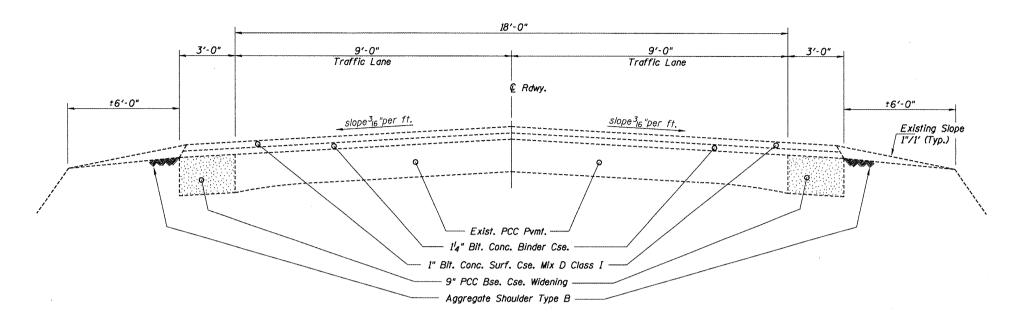
L	PLOT DATE = 2/4/2011	DATE -	2/03/2011	REVISED			SCALE:	SHEET NO. 3 OF 9 SHEETS	STA. 625+30.00 TO STA. 625+73.00		ILLINOIS FED.	AID PROJECT	
	PLOT SCALE = 100.0000 // IN.	CHECKED -	C JONES	REVISED		DEPARTMENT OF TRANSPORTATION		·	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	PPC BEAM	REPL.	CONTRACT NO. 6	A17
SN 836-8883 USS46VFOIGTORICFK.agn		DIAMIN	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	KENIZED				SUMMARY OF Q	UAN IIIIES	313	(6BR)I	HENDERSON 3	9
SN 036-0003 US34pvr01dTpmCrk.dop		DRAWN -	D CORP	DEVISED	-	STATE OF ILLINOIS	1	CHREEKADY OF O	IABITITICO	RIE.		SHEE 12	NO.
FILE NAME =	USER NAME = corpdm	DESIGNED -	D CORP	REVISED	-					F.A.P.	SECTION	COUNTY TOTAL	HEET

CONT. MAINT

	SUMMARY OF QUANTITIES	1	L STATE C HENDERSON	
CODE NO.	ITEM	UNIT	RURAL	TOTAL
70400100	TEMPORARY CONCRETE BARRIER	FOOT	213	213
* 78005110	EPOXY PAVEMENT MARKING-LINE 4"	FOOT	366	366
78300100	PAVEMENT MARKING REMOVAL	SQFT	109	109
	PRECAST PRESTRESSED CONCRETE			
X0320047	REMOVAL OF EXISTING DECK BEAMS	SQFT	129	129
Z0004556	HOT-MIX ASPHALT SURFACE REMOVAL (DECK)	SQYD	16.7	16.7
Z0007122	REMOVING AND RE-ERECTING EXISTING RAILING	FOOT	43	43
Z0030250	IMPACT ATTENUATORS, TEMPORARY(NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2
*SPECIALTY I				

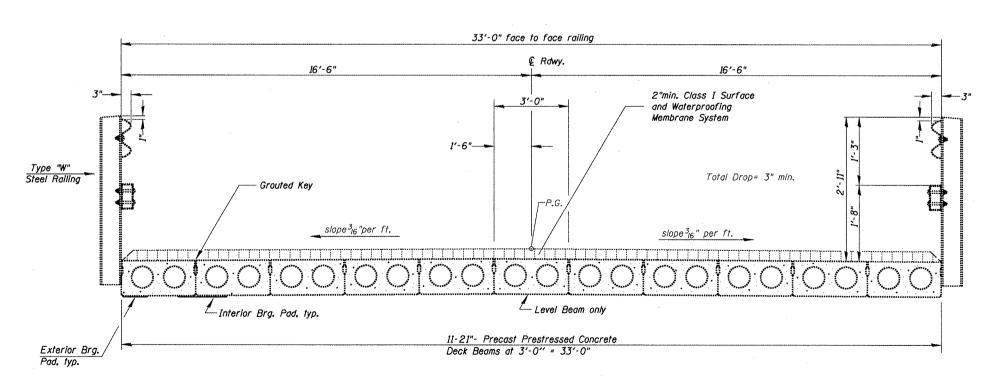
^{*}SPECIALTY ITEM

L		PLOT DATE = 2/4/2011	DATE - 10/18/10	REVISED -		SCALE:	SHEET NO. 4 OF 9 SHEETS	STA. 625+30.00 TO STA. 625+73.00		ILLINOIS FED.	AID PROJECT	
		PLOT SCALE = 100.0000 '/ IN.	CHECKED	REVISED	DEPARTMENT OF TRANSPORTATION				PPC BEAM	REPL.	CONTRAC	T NO. 68A17
SN 036-0003 US3	334ovrOldTomCrk.dgn	***************************************	DRAWN - D CORP	REVISED -	STATE OF ILLINOIS		SUMMARY OF Q	UANTITIES	313	(6BR)I	HENDERSON	4 9
FILE NAME =		USER NAME = corpdm	DESIGNED - D CORP	REVISED					F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEET



ROADWAY SECTION

*NOTE Plan dimensions and details relative to the existing structure have been taken from existing plans and are subject to nominal variations. Field inspections have revealed an existing overlay/shoulder thickness of up to 6" on top of the PPC deck beams.



BRIDGE CROSS SECTION

FILE NAME = DESIGNED - D CORP USER NAME = corpdm REVISED -_____ SN 036-0003 US34ovr01dTomCrk.dgn DRAWN - D CORP REVISED -_____ PLOT SCALE = 100.0000 '/ IN. CHECKED - C JONES REVISED ---- ------PLOT DATE = 2/4/2011 - 2/03/2011 REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECITONS

SHEET NO. 5 OF 9 SHEETS STA. 625+30.00 TO STA. 625+73.00

| F.A.P. | SECTION | COUNTY | SHEET |

EXISTING DECK SURFACING DETAIL

P.P.C. Deck Beam

O<u>utside of</u> Deck Beam 14" Bituminous Concrete

Surface Cse, Mix D, Class I)
Asphalt Sand Seal

Protection Layer (1/2")

Coal Tar Emulsion Slurry w/0.3 Gal./Sq.Yd. (Cure 24hrs.)

Coal Tar Emulsion

w/0.8-0.10 Gal./Sq.Yd.

Fiberglass Fabric
w/1.65 Oz./Sq.Yd.

Coal Tar Emulsion

w/0.08-0.10 Gal./Sq.Yd.

Coal Tar Emulsion w/0.08-0.10
Gal./Sq.Yd. (Cure 4hrs.)
Penetrating Primer w/0.01
Gal./Sq.Yd. (Cure 24hrs.)

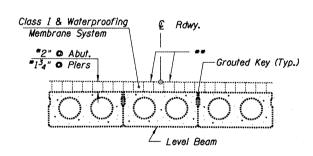
--- Clean Concrete Surface

- Cure 4 hrs.

- Cure 4 hrs.

on of Deck Beam

Fiberglass Fabric w/1.65 Oz./Sq.Yd.



CLASS I DETAIL & WATERPROOFING TREATMENT

(© Center Beam)

** Vary slopes over level beam as required to obtain equal thickness at adjacent beams.

SN.036-0003 US.34 over Old Tom Crk.

SCHEDULE OF QUANTITIES

PAVEMENT MARKING LINE,4" & PAVEMENT MARKING REMOVAL

		PVMT. MRK	G. LINE, 4"	PVMT. MR	KG. REM.
LOCATION STA. TO STA.		WHITE LENGTH (FOOT)	YELLOW LENGTH (FOOT)	WHITE EDGELINE (SQ.FT.)	YELLOW SKIP DASH (SQ.FT.)
Ct. C04.75 t. Ct. C0C. 4001		0.47			
Sta. 624+35 to Sta. 626+48Rt.		243		81	
Sta. 624+55 to Sta. 626+48 @			80		27
Sta. 624+10 to Sta. 627+11 LT.		43			
	TOTAL	36	66	10	09

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

LOCATION STA. TO STA.	TEMP. PVMT. MRKG. LINE-4" WHITE (FT.)	TEMP. PVMT. MRKG. LINE-4" WHITE (FT.)	WORK ZONE PVMT. MRKG. REM. (FT.)
Sta. 623+10 to Sta. 624+30 Sta. 624+55 to Sta. 625+98		124 (Taper) 193 (C)	124 (Taper) 193 (£)
Sta. 625+98 to Sta. 627+15 Sta. 624+30 to Sta. 625+30 Sta. 625+30 to Sta. 625+73	100 (Edge) 43 (Deck)	167 (Taper)	167 (Taper) 100 (Edge) 43 (Deck)
Sta. 625+73 to Sta. 626+73 SUB-TOTAL TOTAL	100 (Edge) 243	484	100 (Edge)

TEMPORARY TRAFFIC SIGNALS

LOCATION		TRAFFIC SIGNALS(EACH)
Jobsite Traffic Control		1
	TOTAL	1

TRAFFIC CONTROL

LOCATION STA. TO STA.		IMPACT ATTEN. TEMP. (EACH)		T,C,&P. STANDARD 701321 (EACH)	T,C,&P, STANDARD 701326 (EACH)
Sta. 623+89 to Sta. 627+10	213				
JOBSITE		2	1	1	1
TOTAL	213	2	1	<u> </u>	1

NOTE Additional pay items that may not be included in the SCHEDULE OF QUANTITIES pertain to the superstructure repair and are designated on the Bridge Office Repair Details, (pages 13-15). Width Restriction Signing is on Sheet 12.

PAVEMENT MIX SPECIFICATION

The following mixture requirements are applicable as replacement for the existing HMA Surface Removal quantity on the bridge deck.

-	MIXTURE USE(S):	**SURFACE COURSE
	AC/PG:	SBS or SBR 70-22
-	RAP% (MAX):	10% Max
	Design Air Voids:	4.0% @ N=70
	Mixture Composition:	II 95 or 125
ı	(Graduation Mixture)	11. 9.5 01 12.5
	Friction Aggregate:	Mixture D (dolomite only)
	Mixture Composition: (Graduation Mixture)	IL. 9.5 or 12.5

** Individual lift thickness will be no less than 3x nominal maximum and no more than 6x nominal maximum aggregate size.

BITUMINOUS WIDENING MIX SPECIFICATION

The following mixture requirements are applicable to this project:

	The renowing mixture requirements are applied to this project.							
M1	XTURE USE(S):	<i>SURFACE LIFT</i>	LOWER LIFTS					
A	C/PG:	PG 64-22	PG 64-22					
RA	AP% (MAX): **	15% Max	25% Max					
De	esign Air Voids:	4.0% @ N=50	4.0% @ N=50					
1	xture Composition: raduation Mixture)	IL. 9.5 or 12.5	IL 19.0					
Fr	riction 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.

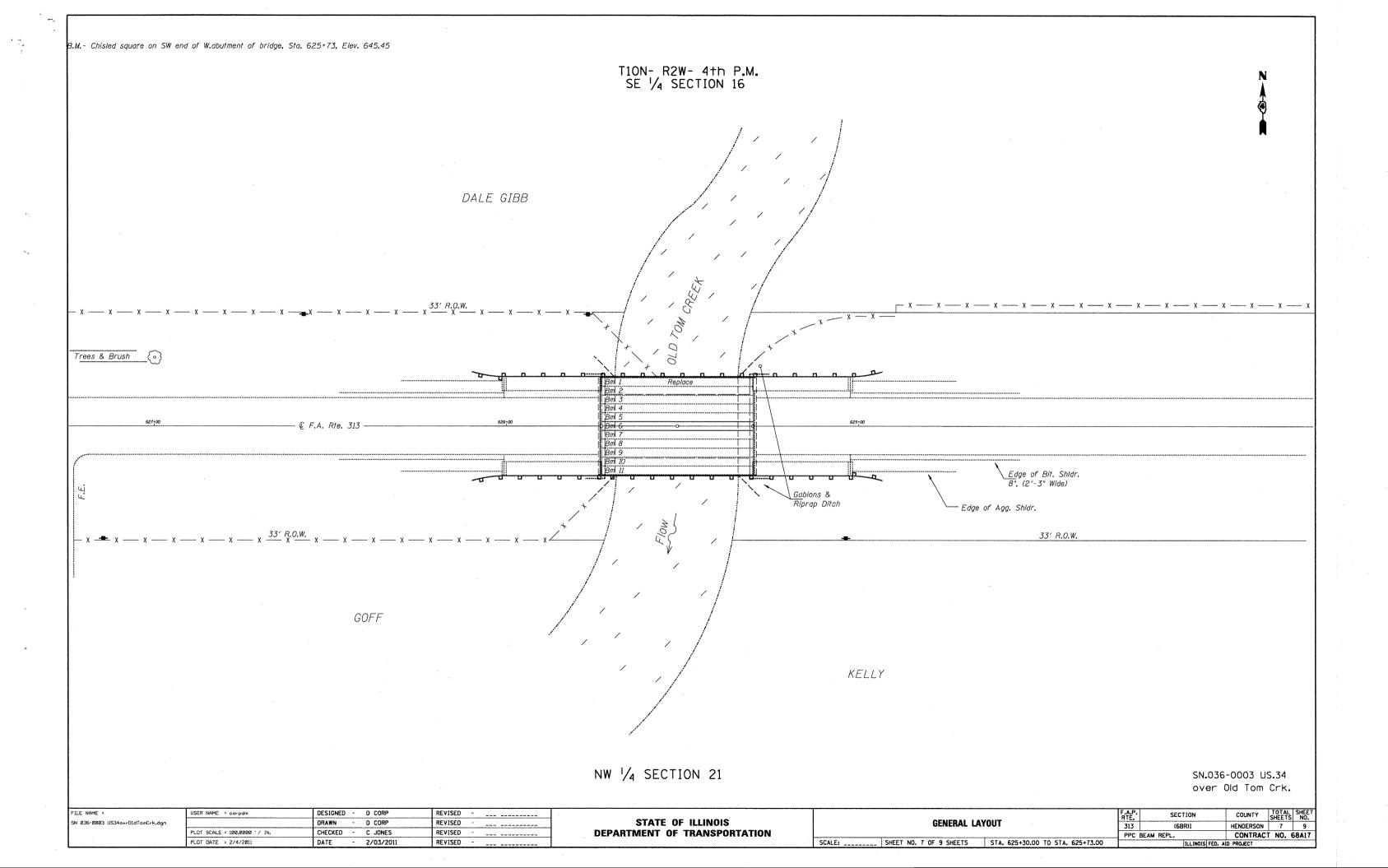
SHOULDER REMOVAL/REPLACEMENT

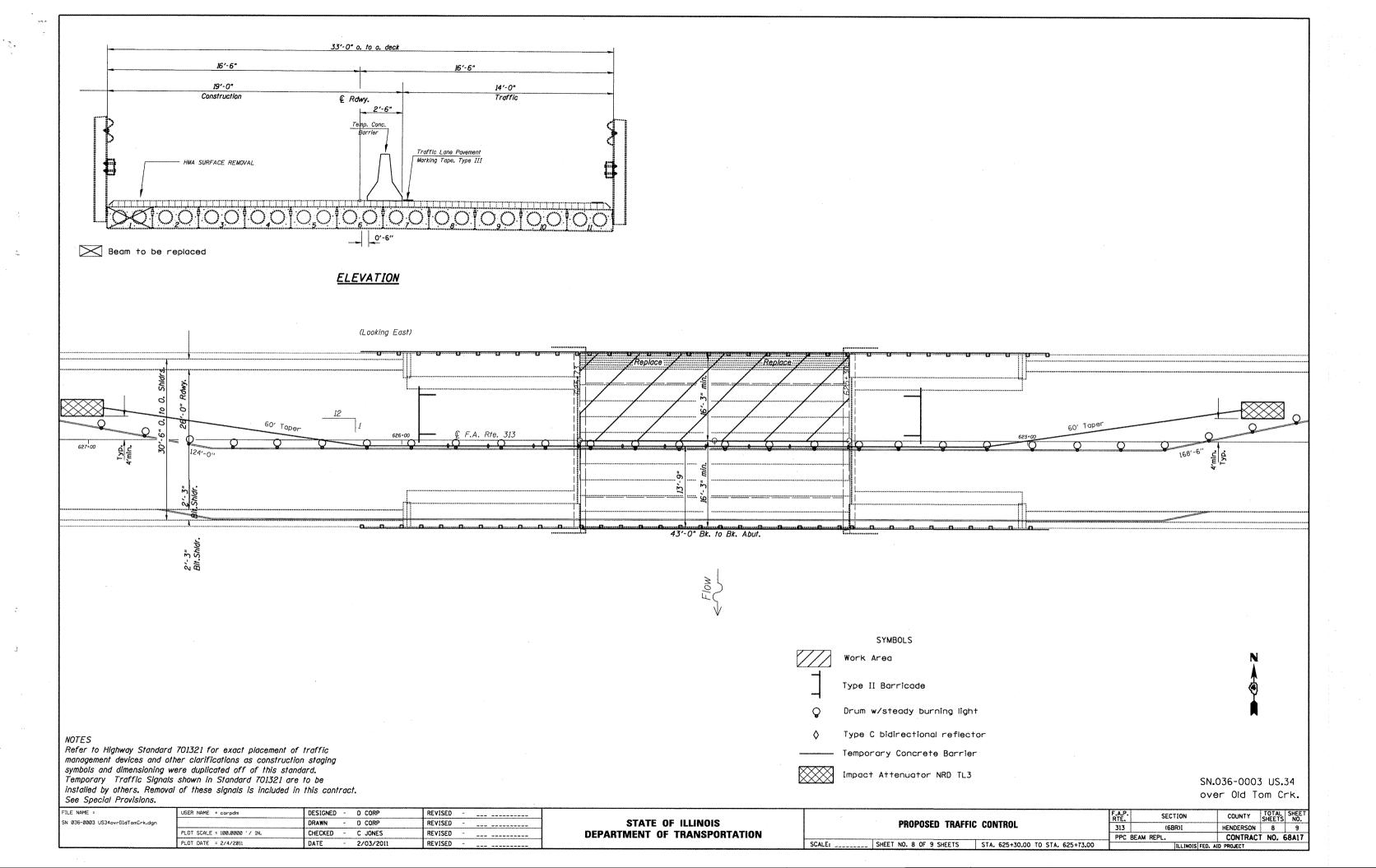
BITUMINOUS	CONCRETE	SHOULDER REMOVAL	
LEFT WEST APPROACH	SQ.YD.	LEFT EAST APPROACH	SQ.YD.
Sta. 626+94 to Sta. 626+03	22.5	Sta. 625+00 to Sta. 624+09	22.5
RIGHT WEST APPROACH		RIGHT EAST APPROACH	
· .	N/A		N/A
Sta. 626+94 to Sta. 626+03 RIGHT WEST APPROACH N/A TOTAL HMA BASE COURSE WIDENING, 9" LEFT WEST APPROACH SQ.YD. LEFT EAST APPROACH		45.0	
HMA BAS	SE COURSE	WIDENING, 9"	
LEFT WEST APPROACH	SQ.YD.	LEFT EAST APPROACH	SQ.YD.
Sta. 626+94 to Sta. 626+03	22.5	Sta. 625+00 to Sta. 624+09	22.5
RIGHT WEST APPROACH		RIGHT EAST APPROACH	
	N/A		N/A
		TOTAL	45.0

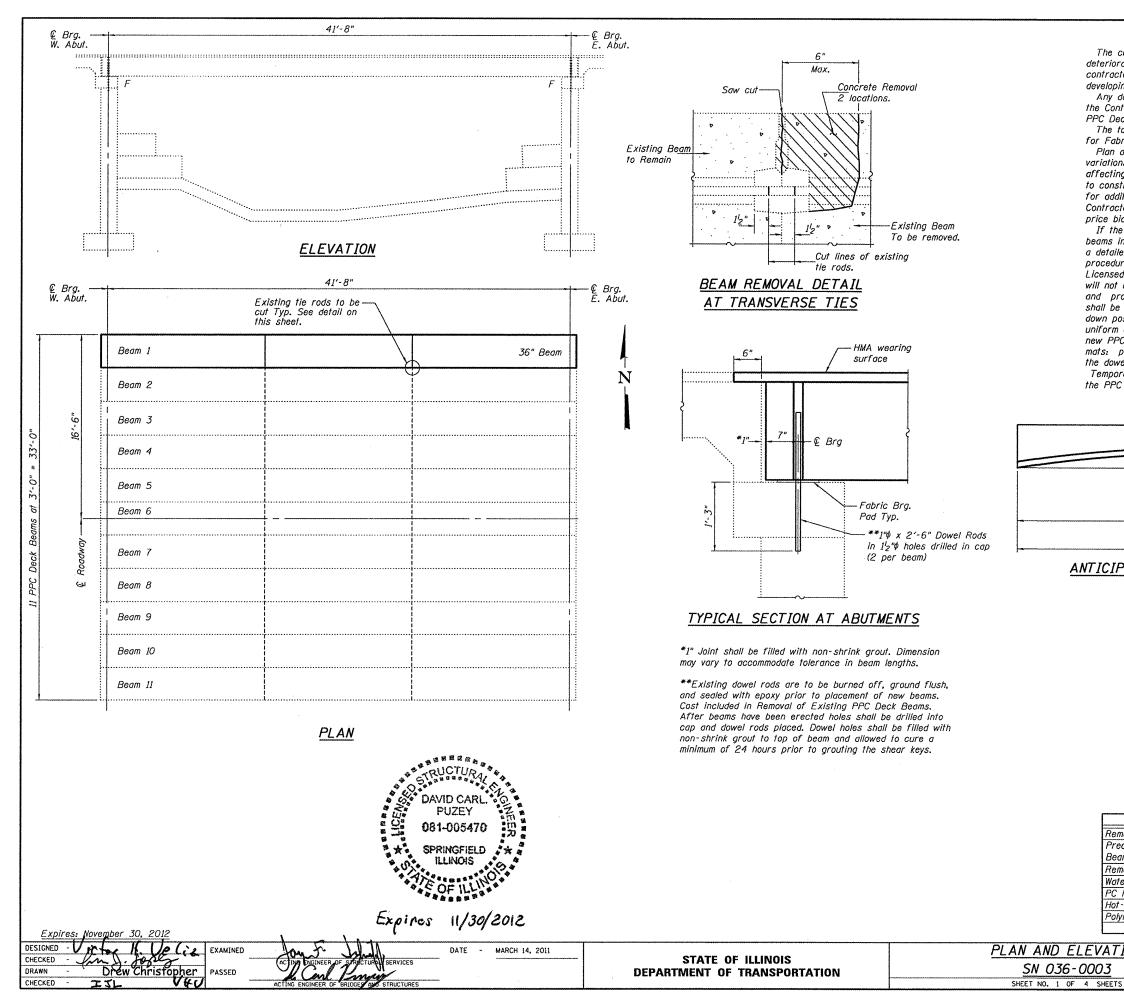
SCHEDULE OF QUANTITIES

PPC BEAM REPL.

LE NAME :	USER NAME = corpdm	DESIGNED -	D CORP			CTATE OF HUMOIC		SOUTHUE OF O	II A TITICO	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHE	EET
I 036-0003 US34ovrOldTomCrk.dgn	PLOT SCALE = 100.0000 '/ IN.	CHECKED -	D CORP C JONES	REVISED -	*** ********	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		SCHEDULE OF Q	UATITIES	313	(6BR)I	HENDERSON CONTRACT	6 C	9
	PLOT DATE = 2/4/2011	DATE -	2/03/2011	REVISED -	~~~ ~~~~~~~		SCALE:	SHEET NO. 6 OF 9 SHEETS	STA. 625+30.00 TO STA. 625+73.00		ILLINOIS FED. A			-







GENERAL NOTES

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.

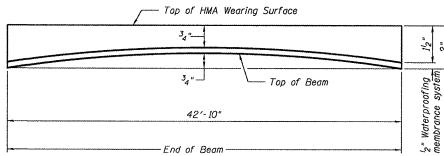
Any damage done to the bridge during beam removal shall be repaired by the Contractor. Cost to be included in the cost of Removal of Existing PPC Deck Beams.

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

Plan dimensions and details relative to existing plans are subject to routine 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 based upon the unit price bid for the work.

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.

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



ANTICIPATED INITIAL CAMBER DIAGRAM

DESIGN STRESSES PRECAST UNITS

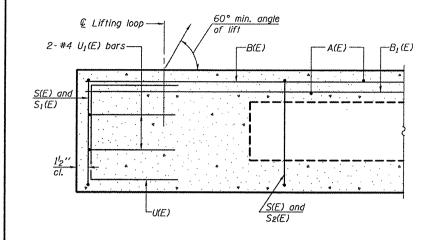
f'c = 5,000 psi f'ci = 4,000 psi $f's = 270,000 \text{ psi } (\frac{1}{2}\text{"} \phi \text{ low lax strands})$ $f'si = 201,960 \text{ psi } (\frac{1}{2}\text{"} \phi \text{ low lax strands})$

TOTAL BILL OF MATERIAL

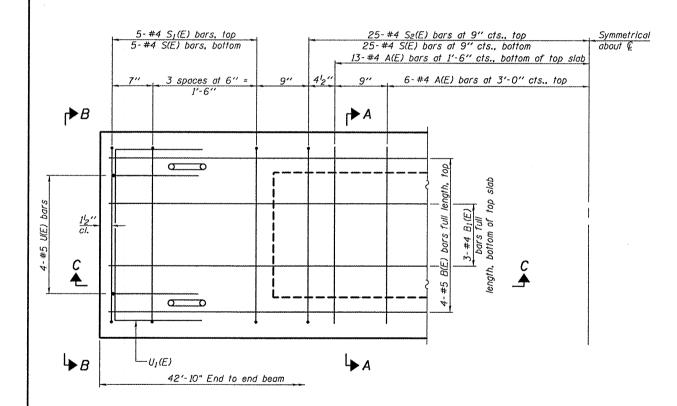
ITEM	UNIT	QUANTITY									
Removal of Existing PPC Deck Beams	Sq. Ft.	129									
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	129									
Removing and Re-Erecting Existing Railing	Foot	43									
Waterproofing Membrane System	Sq. Yd.	17.1									
PC Mortar Fairing Course	Foot	43									
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	2.4									
Polymerized HMA Surface Course Mix "D" N70	Tons	1.4									

PLAN AND ELEVATION SN 036-0003

SECTION COUNTY Henderson 9 8/ CONTRACT NO. 68A17

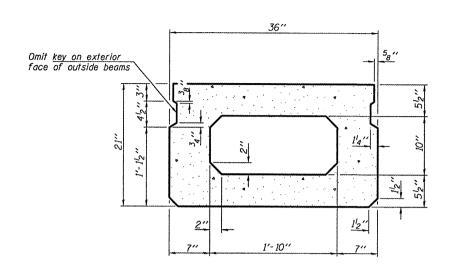


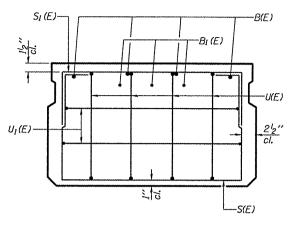
SECTION C-C



PLAN VIEW

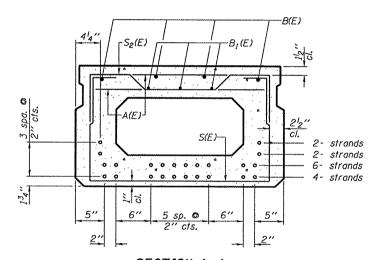
Note: Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4'' in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.





VIEW B-B

<u>SECTION A - A</u> (Showing dimensions)



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 (For information only)

Bar	No.	Size	Length	Shape
A(E)	37	#4	2'-7"	
B(E)	4	#5	42'-7"	
$B_1(E)$	3	#4	42'-7"	
S(E)	60	#4	6'-5"	ш
$S_1(E)$	10	#4	5'-7"	
$S_2(E)$	50	#4	5'-10''	
U(E)	8	#5	4'-0"	
$U_1(E)$	4	#4	5′-0′′	

Note: See sheet 3 of 4 for additional details and Bill of Material.

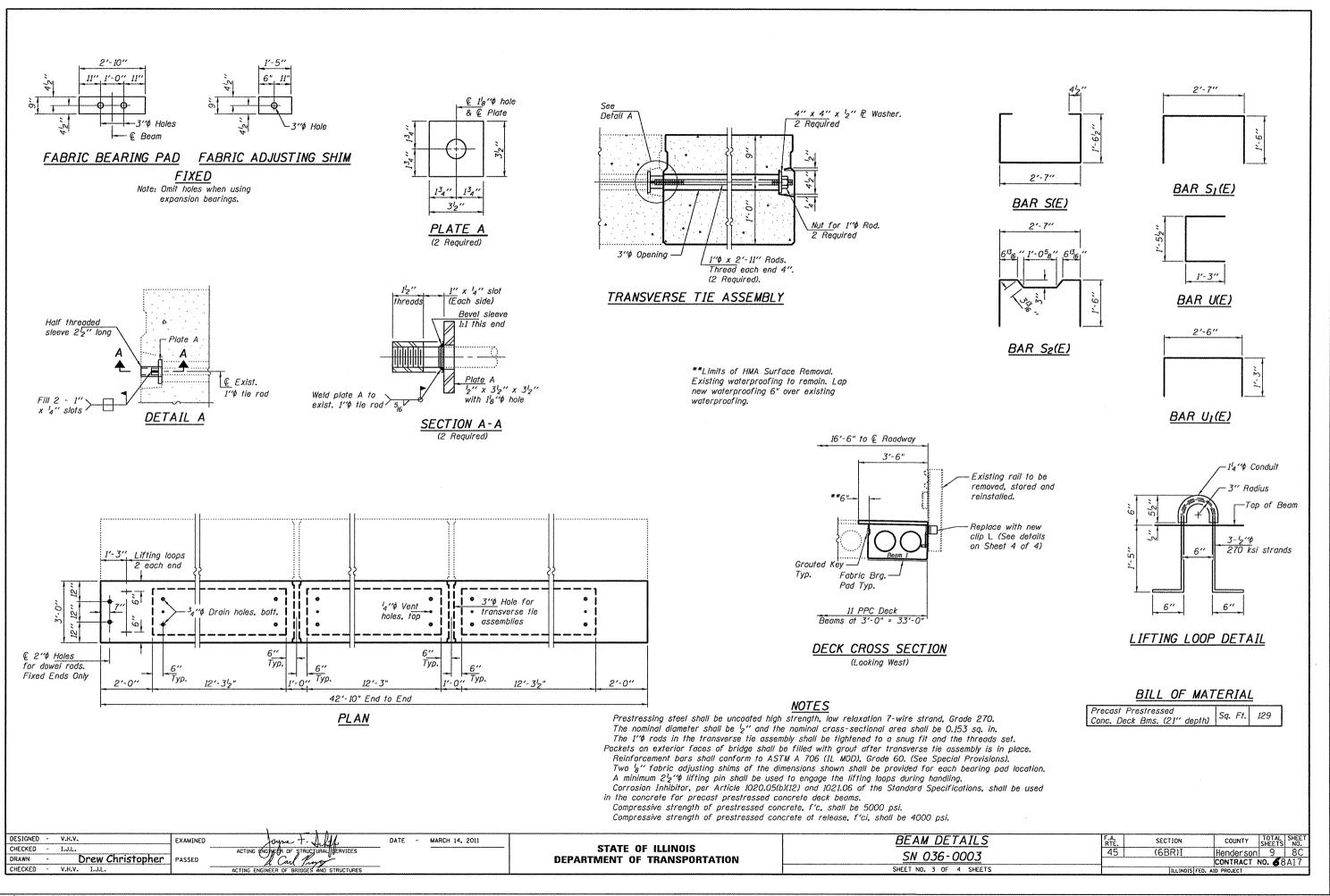
-					\\\\\				
	DESIGNED	-	V.H.V.	EXAMINED	Joune F. J. H.	DATE	-	MARCH 14, 2011	Γ
ļ	CHECKED	-	I.J.L.		ACTING ENGINEER OF STRUCTURAL BERVICES			***************************************	1
	DRAWN	-	Drew Christopher	PASSED	a Carl Program				
	CHECKED	-	V.H.V. I.J.L.		ACTING ENGINEER OF BRIDGES AND STRUCTURES				

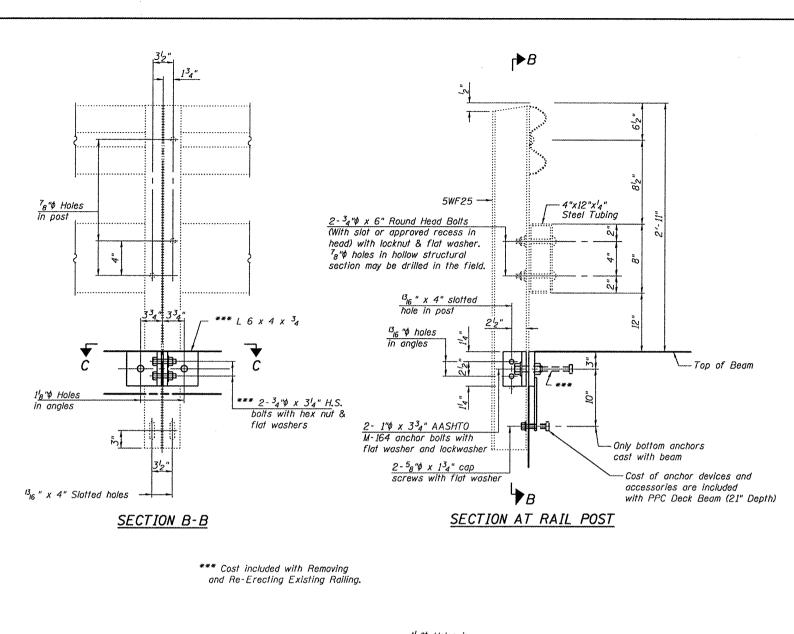
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM DETAILS
SN 036-0003
SHEET NO. 2 OF 4 SHEETS

FA. SECTION COUNTY TOTAL SHEET NO. 45 (6BR)I Henderson 9 8B

CONTRACT NO. 68A17





1/4" - 3/2" - 1/4"

4" SHIM PE

Note

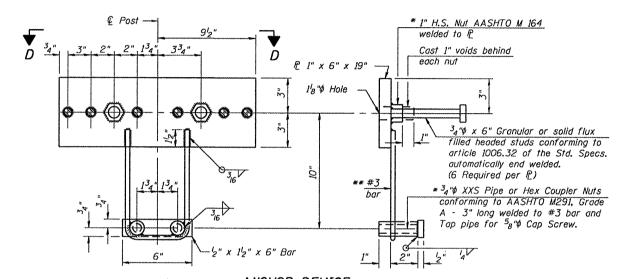
All field drilled holes shall be coated with an approved zinc rich paint before erection.

For multi-span bridges, sufficient $^{1}_{4}$ " x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with with PPC Deck Beam (21" Depth).

All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.

*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

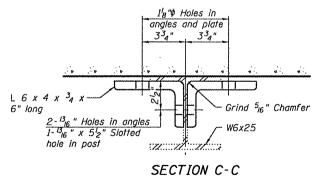
The cost of all labor and materials for removing, storing and reinstalling the existing posts and railing is included in the cost per foot for Removing and Re-Erecting Existing Railing.

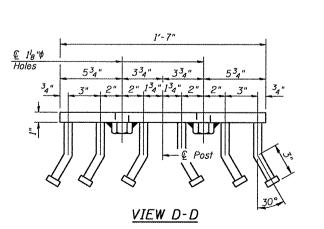


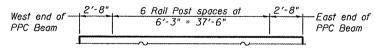
ANCHOR DEVICE

* Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.

** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed \(\frac{1}{2} \)".





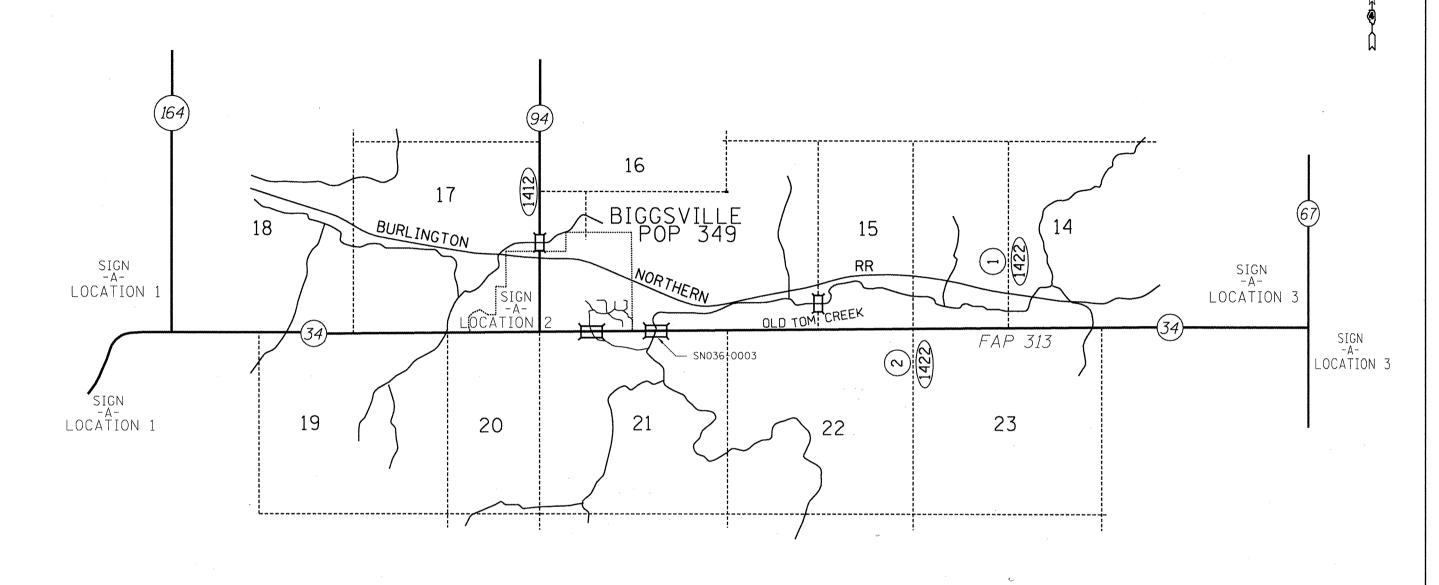


EXISTING RAIL POST SPACING

L					
DESIGNED	-	V.H.V.	EXAMINED	Jame 7. 1. 1/1, DATE - MARCH 14, 2011	Γ
CHECKED		I.J.L.		ACTING ENGINEER OF STRUCTURAL HERVICES	
DRAWN	-	Drew Christopher	PASSED	A Carl Vanney	
CHECKED	-	V.H.V. I.J.L.	1	ACTING ENGINEER OF BRIDGES AND STRUCTURES	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

<u>RAIL DETAILS</u> <u>SN 036-0003</u> SHEET NO. 4 OF 4 SHEETS



SN.036-0003 SIGNING DISTANCES

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

CONTRACTOR PROVIDED MAX. WIDTH XX-XX XX MILES IDOT PROVIDED US. 34

SEE SPECIAL PROVISIONS FOR SIGNING DETAILS.

	PLOT DATE = 2/4/2011	DATE ~ 2/03/2011	REVISED		SCALE:	SHEET NO. 9 OF 9 SHEETS	STA. 625+30.00 TO STA. 625+73.00	<u> </u>	ILLINOIS FED.	AID PROJECT	
	2.07.0475					T = === : = = = = = = = = = = = = = = =	7-22	PPC BEAM I			T NO. 68A17
	PLOT SCALE = 100.0000 '/ IN.	CHECKED - C JONES	REVISED -	MANTATEMENT OF TEAMERAMENTATION					100171		
SN 036-0003 US34ovr0ldTomCrk.c	gn	DRAWN - D CORP	REVISED -	State of Illinois	}	WIDTH RESTRICTS	ON SIGNATO	313	(CRD)!	HENDERSON	9 9
FILE NAME =	USER NAME = corpdm	DESIGNED - D CORP	REVISED					F.A.P.	SECTION	COUNTY	TOTAL SHEET