

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS
77	05-09111-00-BR	JERSEY	10 1
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 97344

INDEX OF SHEETS

- 1 - TITLE SHEET
- 2 - SUMMARY OF QUANTITIES, DETAILS, TYPICAL SECTIONS & GENERAL NOTES
- 3 - PLAN & PROFILE
- 4 - GENERAL PLAN & ELEVATION
- 5 - SUPERSTRUCTURE
- 6 - RAILING
- 7 - ABUTMENTS
- 8-10 - CROSS SECTIONS

STANDARDS

STANDARD 515001-02
STANDARD 701901
STANDARD BLR 21-7

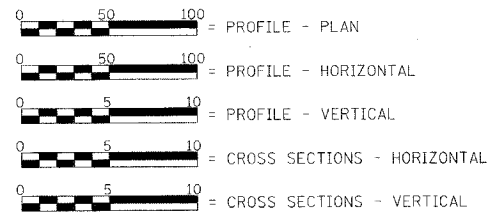
LIST OF UTILITIES

Frontier Communications
225 N. Broad Street
Carlinville, Illinois 62626
1-217-854-4013

M.J.M. Electric Cooperative, Inc.
P.O. Box 80
Carlinville, Illinois 62626
1-217-854-3137

Jersey County Rural Water
1009 E. Shipman Road
Jerseyville, Illinois 62052
1-618-498-9534

SCALE IN FEET



TOWNSHIP - RICHWOOD
LAND SECTION - 34
LAND QUARTER SECTION - N.W.
FUNCTIONAL CLASSIFICATION: LOCAL ROAD (NON-URBAN)
A.D.T. - 100 (2002)
A.D.T. - 180 (2023)
30 M.P.H. DESIGN SPEED

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

PROJECT NO. BROS-0083(040)

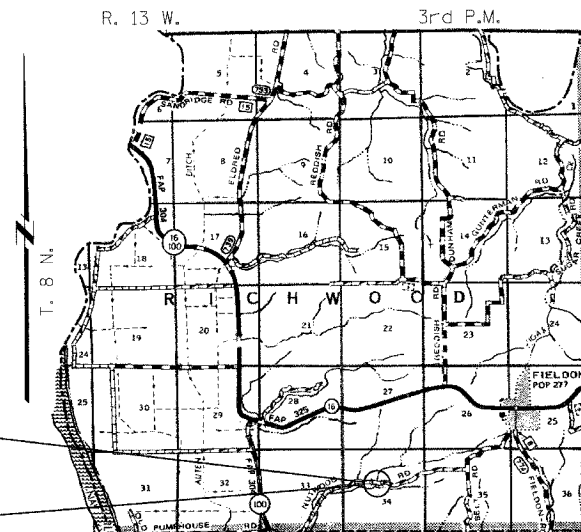
T.R. 77 OVER STREAM

SECTION 05-09111-00-BR

RICHWOOD TOWNSHIP

JERSEY COUNTY

JOB NO. C-98-357-06

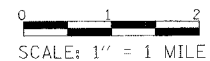


PROJECT ENDS
STA. 5+90.00

PROJECT BEGINS
STA. 10+00.00

LOCATION PLAN

LENGTH OF SECTION - 410.00 FEET = 0.078 MILES



EXISTING STRUCTURE:
SINGLE SPAN POURED CONCRETE DECK
BRIDGE FOUNDED ON CLOSED CONCRETE
ABUTMENTS. ±18'-9" OUT.-OUT. DECK,
±22'-0" BK.-BK. ABUTMENTS. CONCRETE
RAILING. 0° SKEW.
EXISTING STRUCTURE NO. 042-3062.

PROPOSED STRUCTURE:
SINGLE SPAN PRECAST CONCRETE DECK
BEAM (21") BRIDGE ON OPEN CONCRETE
ABUTMENTS. 24'-0" OUT.-OUT. DECK,
49'-0" BK.-BK. ABUTMENTS. STEEL
RAILING TYPE S-1. 0° SKEW.
PROPOSED STRUCTURE NO. 042-3145.



APPROVED 8/25, 2008
Harold Devenney
TOWNSHIP HIGHWAY COMMISSIONER

APPROVED 3/24, 2008
Thomas E. Klancy
COUNTY ENGINEER

PASSED 4/9, 2008
[Signature]
DISTRICT EIGHT ENGINEER OF
LOCAL ROADS & STREETS

Releasing For
Bid Based on
Limited Review 4/9, 2008
Wendy Harris
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FIVE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

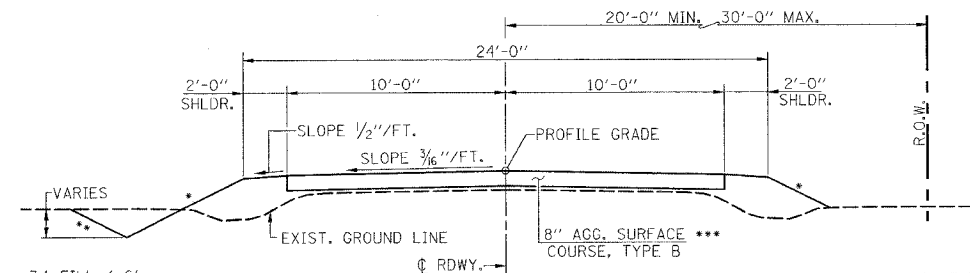


Christopher P. Hollman 3/27/08
EXPIRATION: 11/30/2009

TOLL FREE
"JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS"
(U.L.I.E.) TELEPHONE NUMBER
1-800-892-0123

FILE NAME	USER NAME - #USER#	DESIGNED -	REVISED -	<p>Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL 62708 Phone: (217)544-8033 IL Design Firm No. 184-001907</p>	<p>TITLE SHEET</p> <p>SCALE: 1" = 1 MILE SHEET-NO. 1 OF 10 SHEETS STA. 5+90.00 TO STA. 10+00.00</p>	T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS
#FILE#		DRAWN -	REVISED -			77	05-09111-00-BR	JERSEY	10 1
		CHECKED -	REVISED -			CONTRACT NO. 97344			
		DATE	REVISED			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			

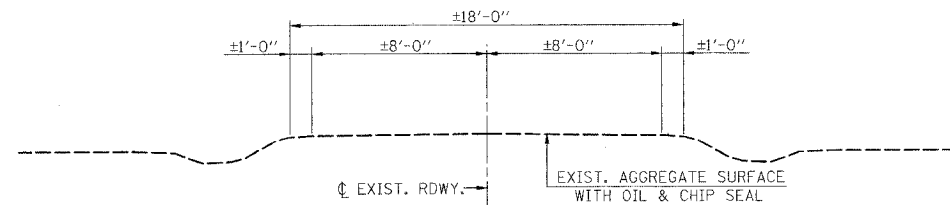
T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 97344				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



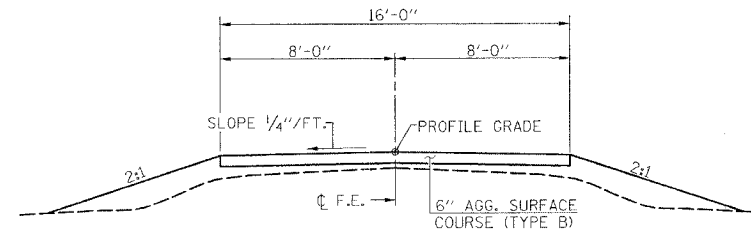
- 3:1 FILL < 6'
- 2:1 FILL > 6'
- 3:1 CUT < 10'
- 2:1 CUT > 10'

PROPOSED CROSS SECTION

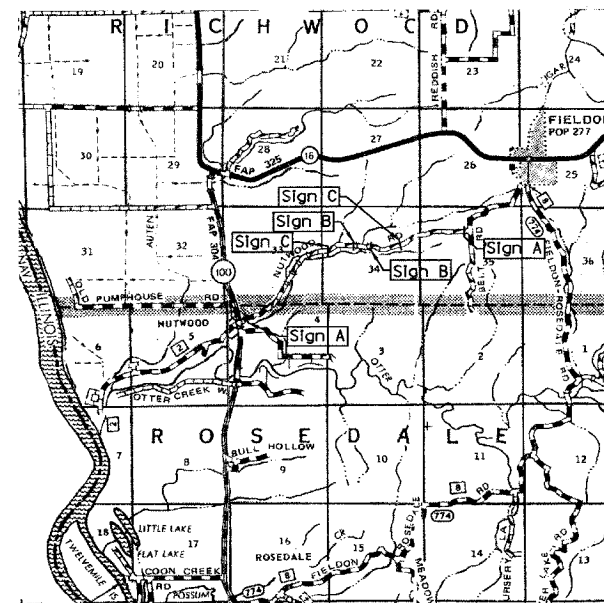
*** WORK TO BE PERFORMED BY COUNTY FORCES ESTIMATED AGGREGATE SURFACE COURSE, TYPE B - 357 TON



EXISTING CROSS SECTION



TYPICAL FIELD ENTRANCE (STA. 7+70 LT.)



BARRICADE LOCATION (Not to Scale)

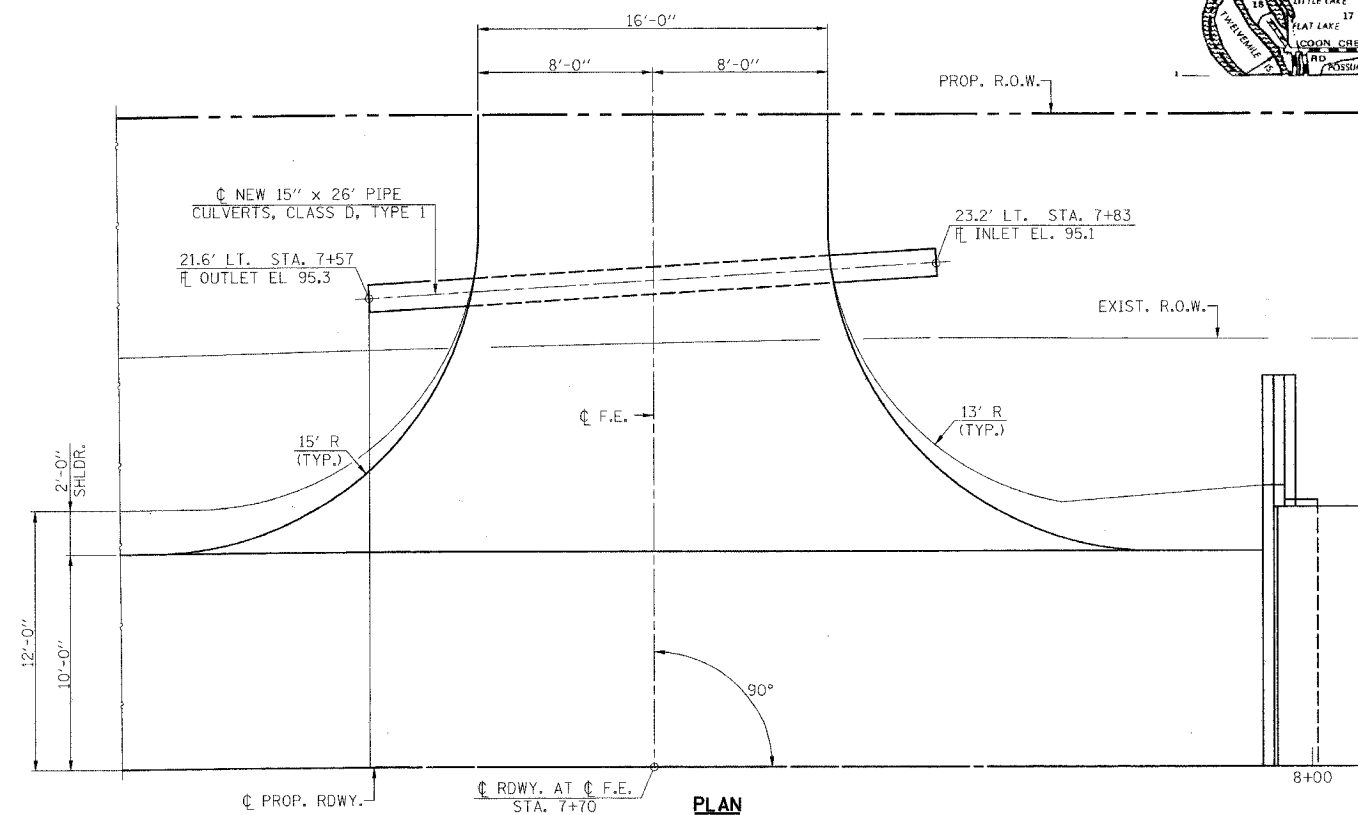
CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRES	0.1
20200100	EARTH EXCAVATION	CU. YD.	118
20300100	CHANNEL EXCAVATION	CU. YD.	136
20400800	FURNISHED EXCAVATION	CU. YD.	199
25001000	SEEDING CLASS 2 (SPECIAL)	ACRE	0.4
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	210
28200200	FILTER FABRIC	SQ. YD.	315
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU. YD.	75
50300225	CONCRETE STRUCTURES	CU. YD.	25.2
50300280	CONCRETE ENCASEMENT	CU. YD.	2.2
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ. FT.	1144
50800105	REINFORCEMENT BARS	POUND	2430
50900205	STEEL RAILING, TYPE S-1	FOOT	98
51201400	FURNISHING STEEL PILES HP 10X42	FOOT	364
51202305	DRIVING PILES	FOOT	364
51203400	TEST PILE, STEEL HP 10X42	EACH	1
51500100	NAME PLATES	EACH	1
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	26
67100100	MOBILIZATION	L.SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L.SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

GENERAL NOTES

SEEDING: FERTILIZER NUTRIENTS SHALL BE APPLIED AT A RATIO OF 1:1:1 AND AT A RATE OF 90 POUNDS PER ACRE FOR EACH NUTRIENT.
 MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE.
 AREAS TO BE SEEDDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.
 COUNTY FORCES WILL PLACE AGGREGATE SURFACE COURSE, TYPE B.
 NO COMMITMENTS.

LEGEND

- SIGN A - "ROAD CLOSED AHEAD" W20-3(O) 4848
- SIGN B - BLR STANDARD 21
- SIGN C - "ROAD CLOSED 500 FEET" W20-3(O) 4848



PLAN

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU. YD.	CU. YD.	CU. YD.	CU. YD.
STA. 5+90 TO STA. 6+00	1	1	1	0
STA. 6+00 TO STA. 6+50	16	12	26	-14
STA. 6+50 TO STA. 7+00	16	12	46	-34
STA. 7+00 TO STA. 7+50	18	13	56	-43
STA. 7+50 TO STA. 7+95.75	19	14	63	-49
BRIDGE OMISSION - STA. 7+95.75 TO STA. 8+46.75				
STA. 8+46.75 TO STA. 8+50	0	0	8	-8
STA. 8+50 TO STA. 9+00	19	14	70	-56
STA. 9+00 TO STA. 9+50	23	17	12	+5
STA. 9+50 TO STA. 10+00	6	5	5	0
TOTAL	118	88	287	-199

FILE NAME =	USER NAME = #USER#	DESIGNED	REVISED
SHEET #		DRAWN	REVISED
	PLOT SCALE = #SCALE#	CHECKED	REVISED
	PLOT DATE = #DATE#	DATE	REVISED

Allen Henderson & Associates, Inc.
 Civil and Structural Engineers Springfield, IL
 62703 Phone: (217)544-8033 IL Design Firm
 No. 184-001907

SUMMARY OF QUANTITIES, DETAILS, TYPICAL SECTIONS & GENERAL NOTES

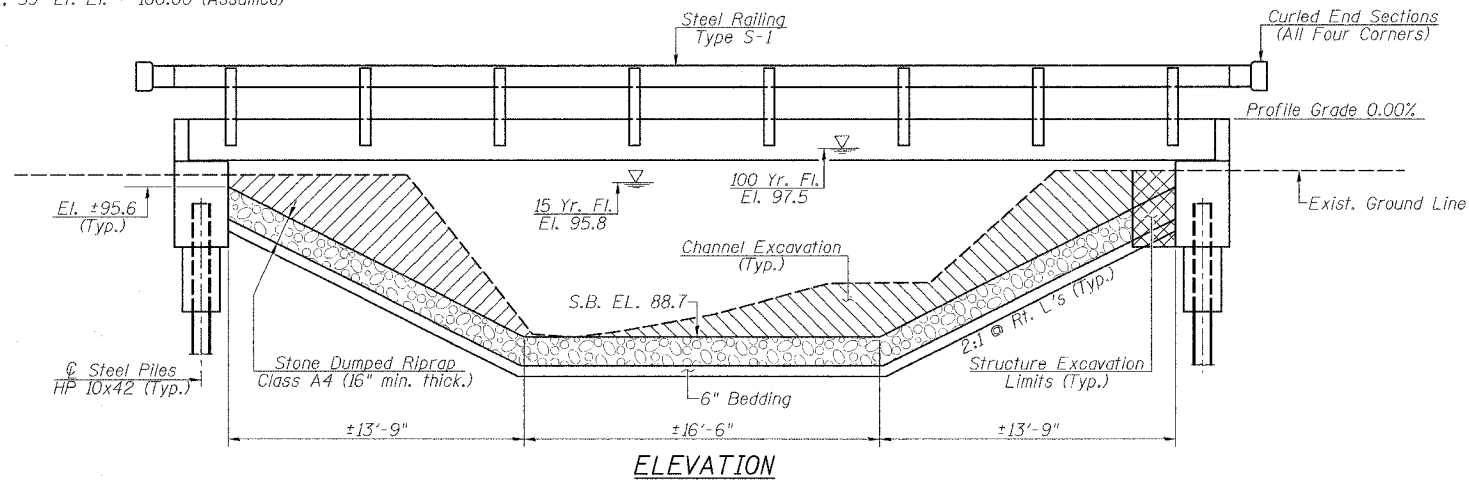
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T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
77	05-09111-00-BR	JERSEY	10	2
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Existing Structure: Single span poured concrete deck bridge founded on closed concrete abutments. $\pm 20'-0"$ Out.-Out. deck, $\pm 22'-0"$ Bk.-Bk. abutments. Concrete railing, 0° skew. Existing Structure No. 042-3062.

BM #1: 60d nail and washer in power pole. Sta. 8+52.39' Lt. El. = 100.00 (Assumed)

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
77	05-09111-00-BR	JERSEY	10	4
CONTRACT NO. 97344				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Dumped Riprap, Class A4	Ton		210	210
Filter Fabric	Sq. Yd.		315	315
Structure Excavation	Cu. Yd.		75	75
Concrete Structures	Cu. Yd.		25.2	25.2
Concrete Encasement	Cu. Yd.		2.2	2.2
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	1144		1144
Reinforcement Bars	Pound		2430	2430
Steel Railing, Type S-1	Foot	98		98
Furnishing Steel Piles HP 10x42	Foot		364	364
Driving Piles	Foot		364	364
Test Pile, Steel HP 10x42	Each		1	1
Name Plates	Each		1	1

WATERWAY INFORMATION

Drainage Area = 1.17 Sq. Mi. Pr. Low Grade Elev. 97.80 @ Sta. 05+00

Flood Yr.	Freq.	Q C.F.S.	Opening Exist.	Opening Prop.	Natural H.W.E.	Head - ft. Exist.	Head - ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1063	139	218	95.8	3.4	0.2	99.2	96.0
Base	100	1828	171	293	97.5	1.7	0.9	99.2	98.4
Exist. Overtop.	14	1100							
Prop. Overtop.	120	1910							
Max. Calc.	500	2496	171	293	98.6	1.2	1.6	99.8	100.2

DESIGN STRESSES

FIELD UNITS	PRECAST PRESTRESSED UNITS
$f_c = 1400$ psi	$f_c = 5000$ psi
$v_c = 56.2$ psi	$f'_{ci} = 4000$ psi
$f_s = 24000$ psi	$f'_s = 270000$ psi
$n = 9$	$f'_s = 201960$ psi
	$\frac{1}{2}" \phi$ Strands

GENERAL NOTES

See Proposal for Boring Data.
Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60. (Illinois Modified) See Special Provisions.
The layout of the riprap slope may be varied to suit conditions in the field as determined by the Engineer.
The contractor shall drive one test pile in a permanent location at the East abutment as directed by the Engineer in the field prior to ordering the remainder of piles.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications.

LOADING HS 20-44

Allow 50#/sq. ft. for future wearing surface.

STREAM BUILT 200 BY JERSEY COUNTY SECTION 05-09111-00-BR STA. 8+22.25 STR. NO. 042-3145 LOADING HS 20

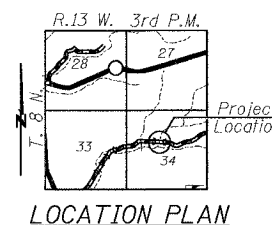
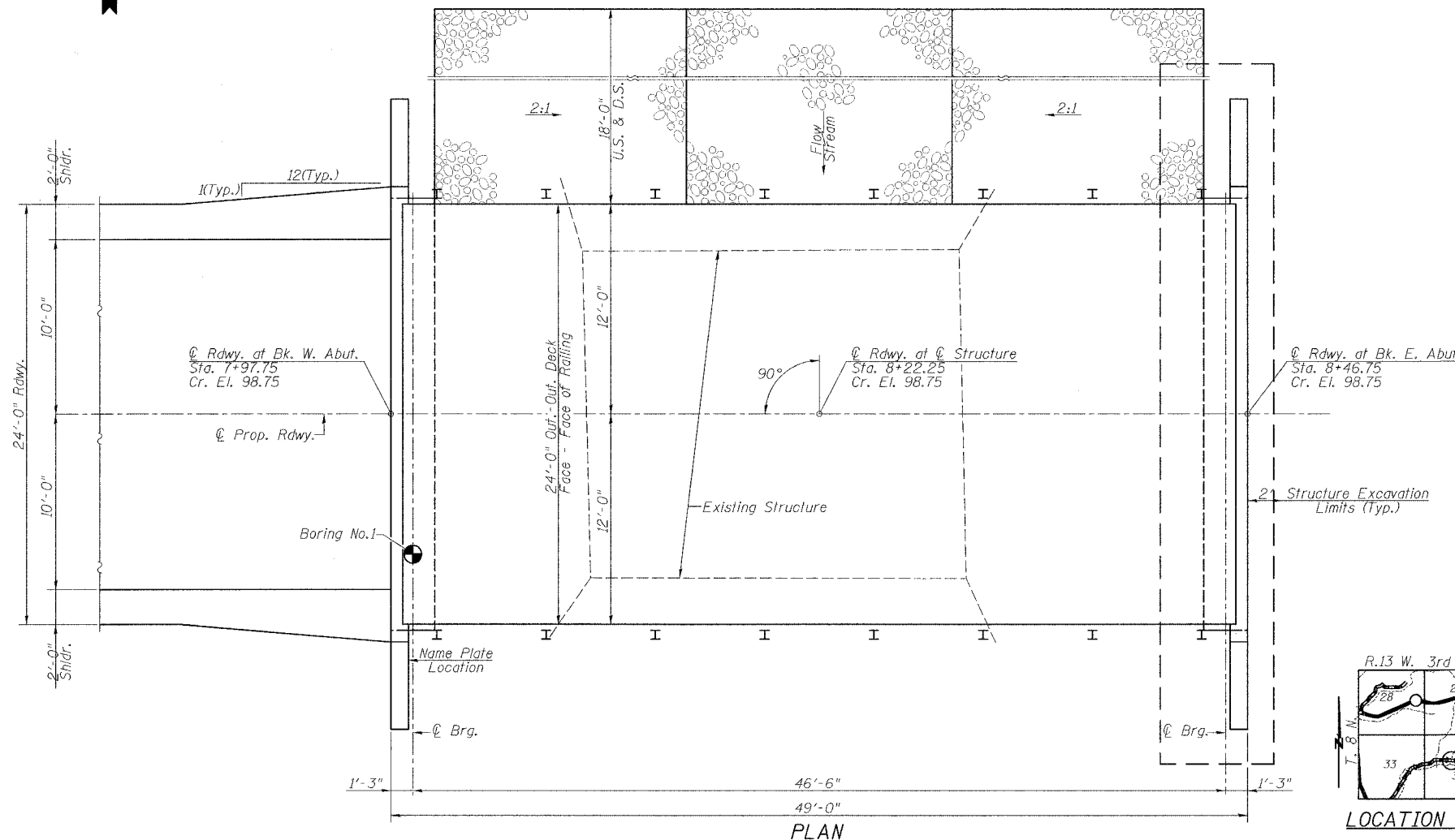
NAME PLATE
(Standard 515001)

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "A.A.S.H.T.O. Standard Specifications For Highway Bridges".



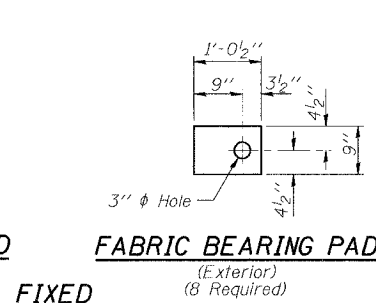
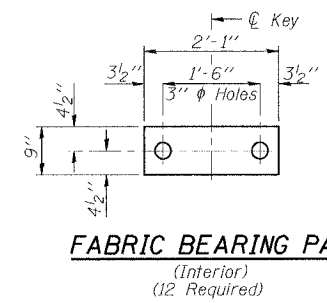
Mark A. Henderson 3/4/08

Expiration Date 11/30/2008

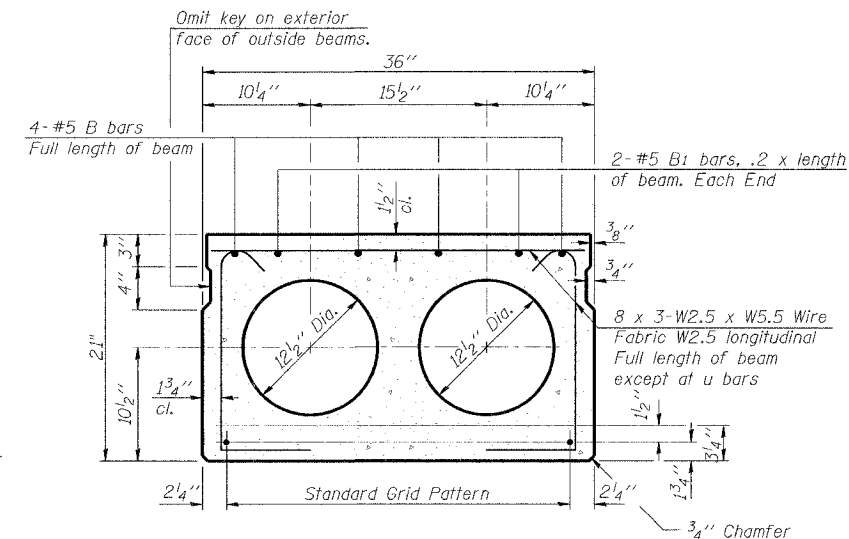
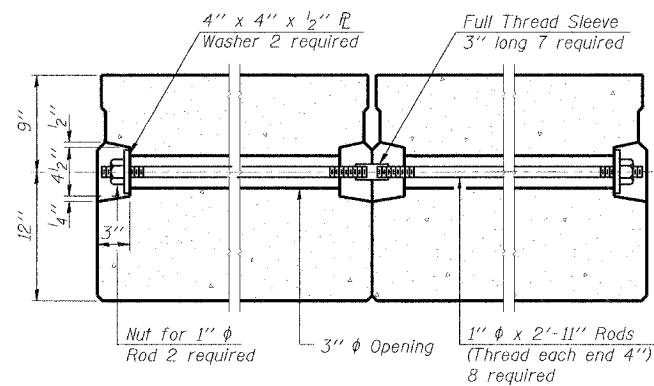


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	PLOT DATE: 8/24/08	CHECKED: -	REVISED: -			CONTRACT NO. 97344				
		DATE: -	REVISED: -			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

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77	05-09111-00-BR	JERSEY	10	5
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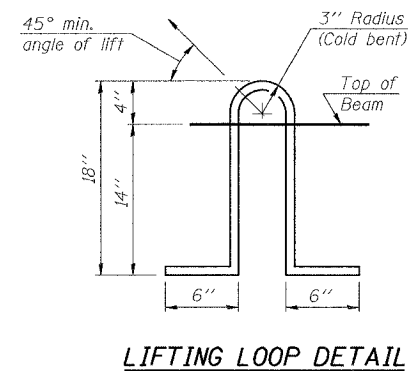
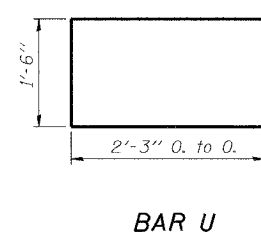
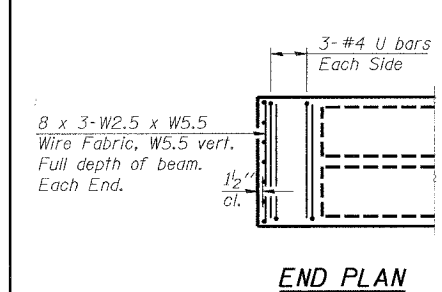
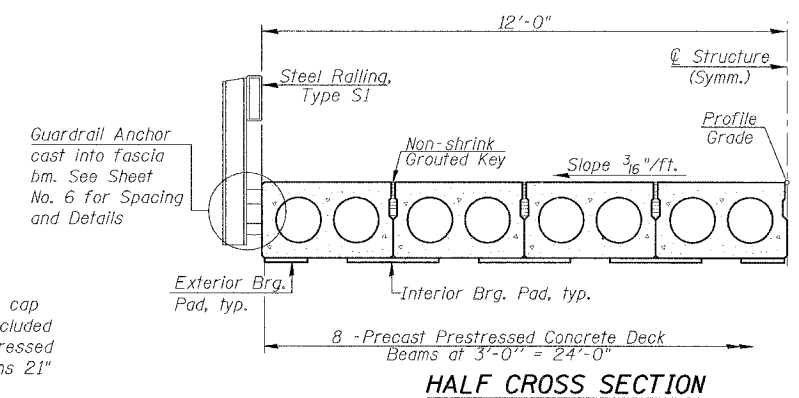
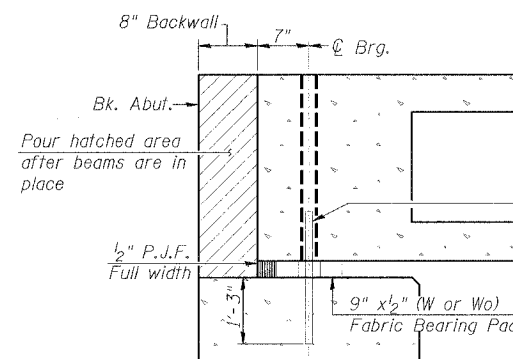
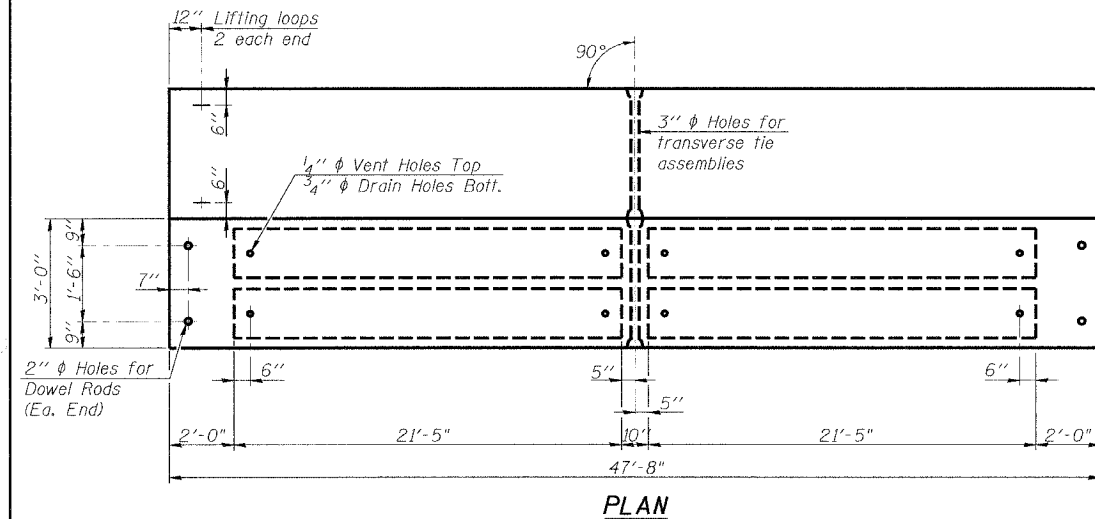


FIXED



15-1/2" ϕ Strands, Each Strand Stressed to 30,900 Lbs.
7-Strands 1 3/4" up, 6-Strands 3 1/4" up, 2-Strands 9" up

Note:
Place strands symmetrically about ϕ of beam.



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. Lifting loops shall be 2-1/2" ϕ -270 ksi strands, as shown. The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Non prestressing steel shall conform to ASTM A 706 (IL MOD), Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/8" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. Corrosion Inhibitor, per Article 1020.05(b)(12) of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'ci, shall be 4000 p.s.i.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms.(21" Depth)	Sq. Ft.	1144
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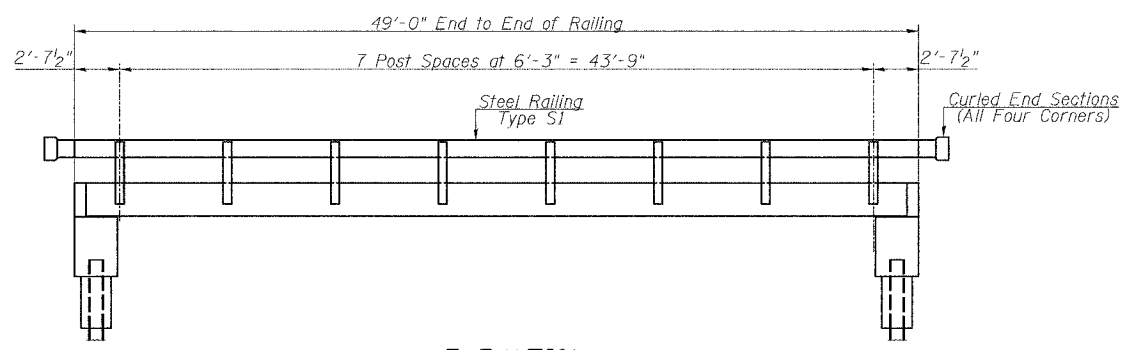
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		CHECKED	REVISED
		DATE	REVISED

Allen Henderson & Associates, Inc.
Civil and Structural Engineers Springfield, IL.
62703 Phone: (217)544-8033 IL. Design Firm
No. 184-001907

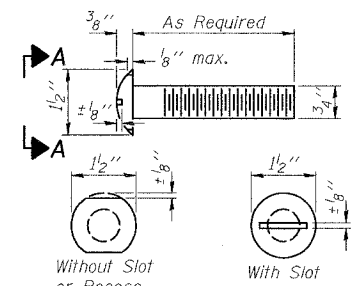
SUPERSTRUCTURE		
SCALE: VARIES	SHEET NO. 5 OF 10 SHEETS	STA. 590+00 TO STA. 10+00.00

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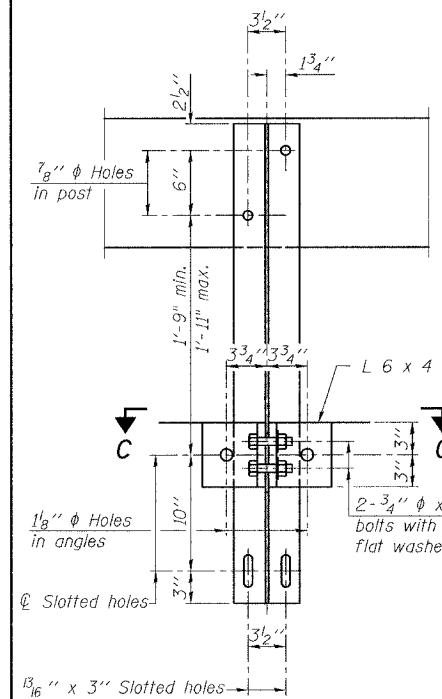
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77	05-09111-00-BR	JERSEY	10	6
CONTRACT NO. 97344				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



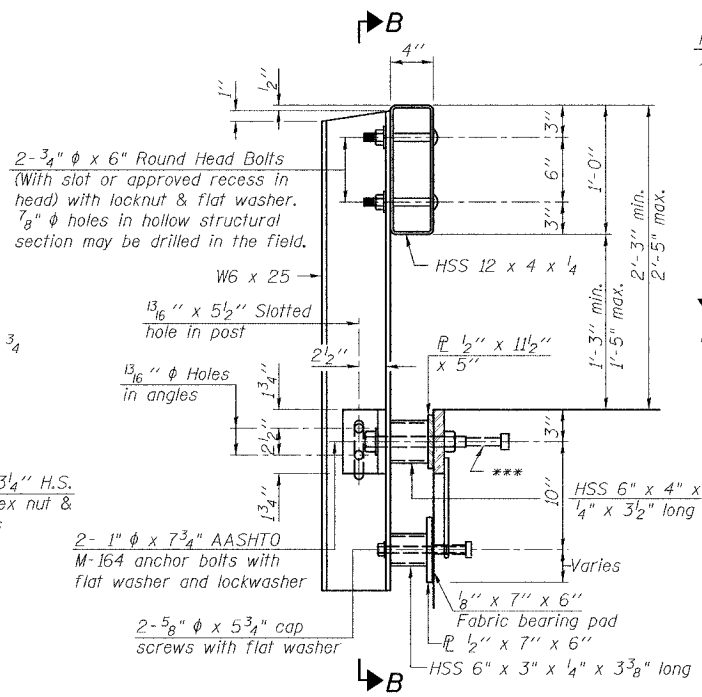
ELEVATION
(Showing Outside Face)



VIEW A-A
ROUND HEAD BOLT

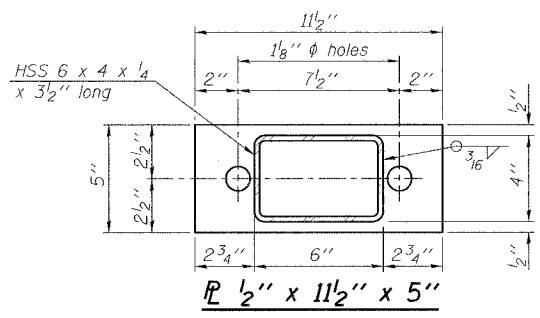


SECTION B-B

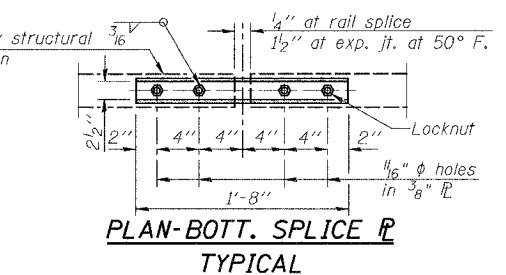
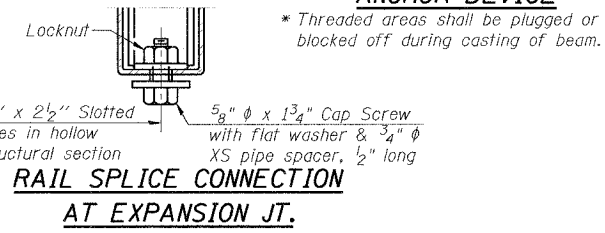
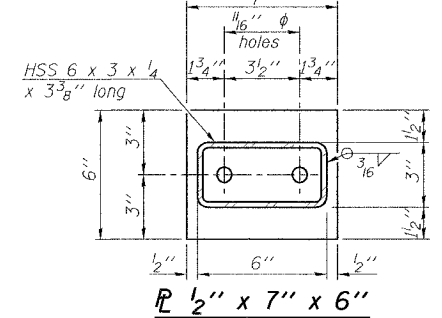


SECTION AT RAILING POST

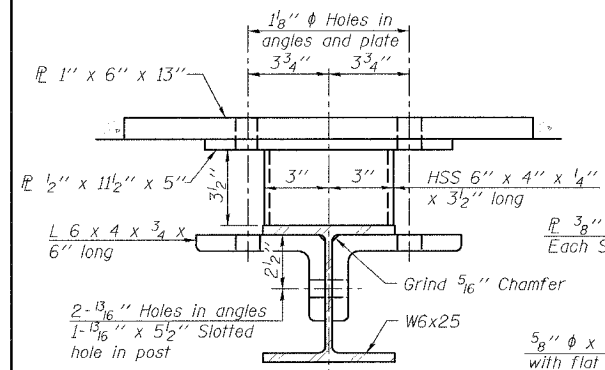
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



ANCHOR DEVICE

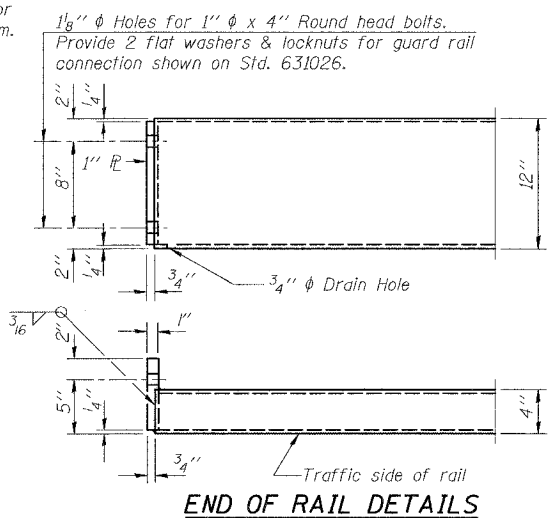


PLAN-BOTT. SPLICE TYPICAL

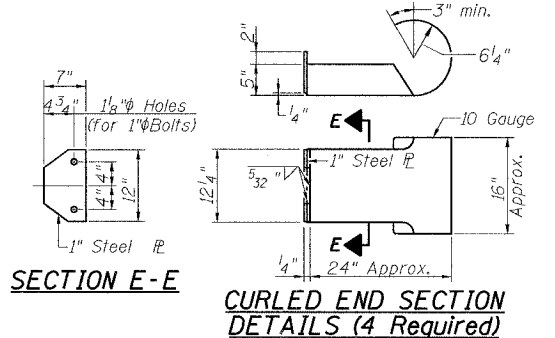


SECTION C-C

SECTIONS AT RAIL SPLICE

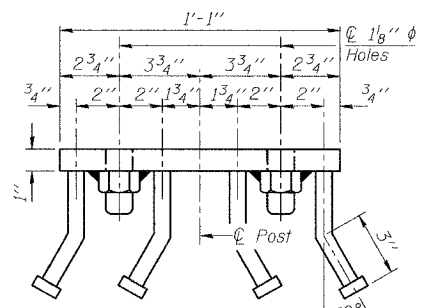


END OF RAIL DETAILS



SECTION E-E
CURLED END SECTION DETAILS (4 Required)

Notes:
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 Steel Railing, Type S-1.
All steel rail elements 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.
Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Steel Railing, Type S-1.
The cost of curled end sections shall be included in the cost of Steel Railing, Type S1.



VIEW D-D
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	98

FILE NAME -	USER NAME -	DESIGNED -	REVISED -
#FILE.#	#USER#	DRAWN -	REVISED -
	PLOT SCALE - #SCALE#	CHECKED -	REVISED -
	PLOT DATE - #DATE#	DATE -	REVISED -

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No. 184-001907

RAILING
SCALE: VARIES SHEET NO. 6 OF 10 SHEETS STA. 5+90.00 TO STA. 10+00.00

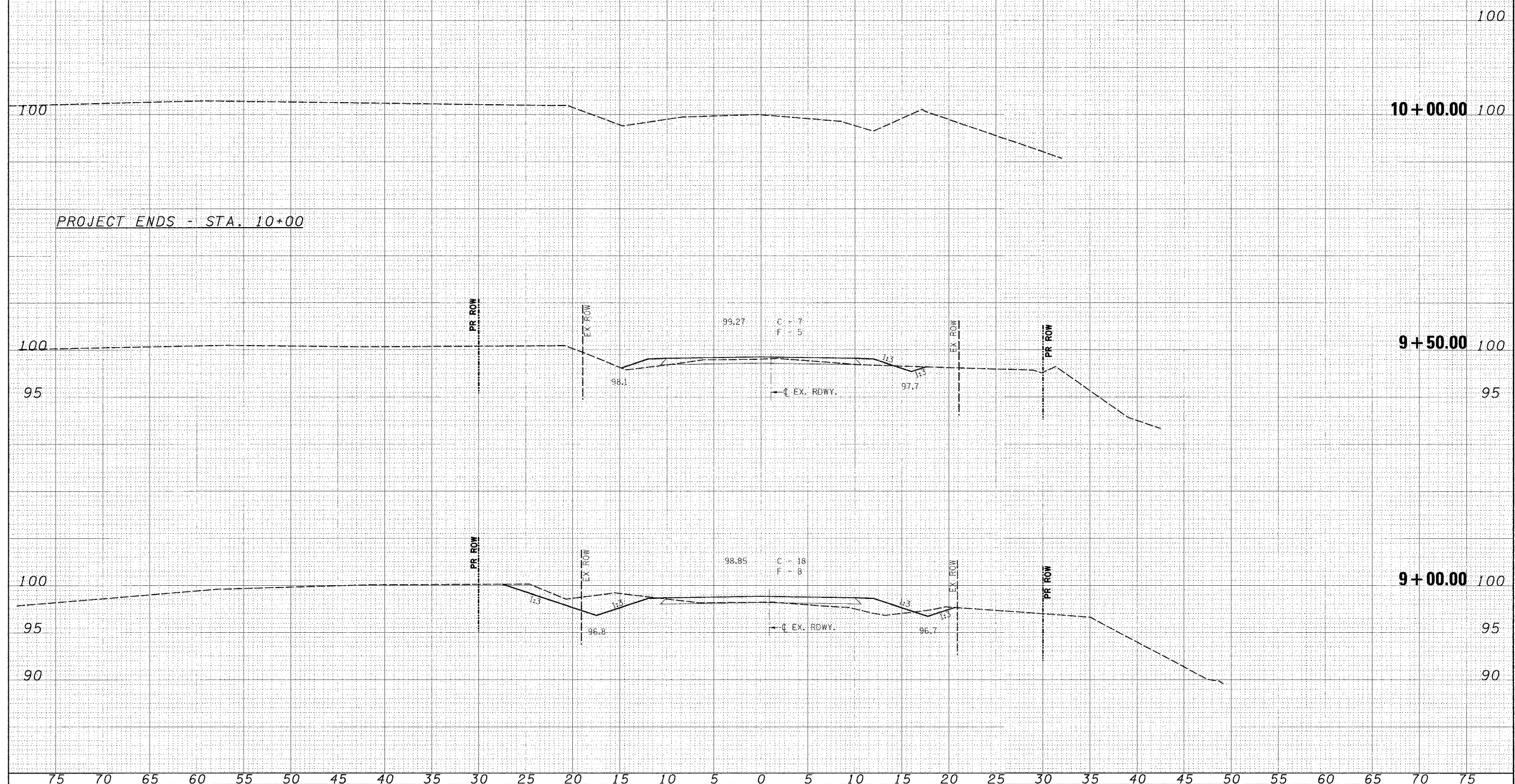
T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
77	05-09111-00-BR	JERSEY	10	6
CONTRACT NO. 97344				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
77	05-09111-00-BR	JERSEY	10	10
CONTRACT NO. 97344				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

FINAL SHEET	DATE
NO. 1	
DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
DATE	

ORIGINAL SHEET	DATE
NO. 1	
DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
DATE	



PROJECT ENDS - STA. 10+00

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

FILE NAME	USER NAME	DESIGNED	REVISED
SP1018	BUSPER	-	-
		DRAWN	REVISED
		-	-
		CHECKED	REVISED
		-	-
		DATE	REVISED
		-	-

DESIGNED	REVISED
DRAWN	REVISED
CHECKED	REVISED
DATE	REVISED

DESIGNED	REVISED
DRAWN	REVISED
CHECKED	REVISED
DATE	REVISED

Allen Henderson & Associates, Inc.
 Civil and Structural Engineers Springfield, IL.
 62703 Phone: (217)544-8033 IL. Design Firm
 No. 184-001907

CROSS SECTIONS

SCALE: 1" = 5' SHEET NO. 10 OF 10 SHEETS STA. 9+00.00 TO STA. 10+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
77	05-09111-00-BR	JERSEY	10	10
CONTRACT NO. 97344				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				