3-5-10 Letting, Item 264

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	1
	ILLINOIS	CONTRACT NO. 95613		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED AMERICAN RECOVERY and REINVESTMENT ACT

F.A.S. ROUTE 801 (C.H. 16)
SECTION 09-00082-00-BR
PROJECT ARA-BRS-0801(231)
BRIDGE REPLACEMENT
CLAY COUNTY

C-97-031-10

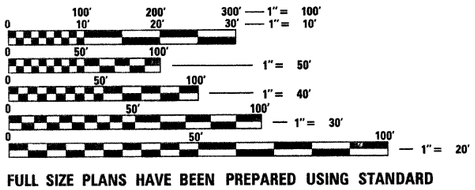
INDEX OF SHEETS

HIGHWAY STANDARDS (SEE SPECIFICATIONS)

000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-05	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
630001-08	STEEL PLATE BEAM GUARDRAIL
630301-05	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631032-05	TRAFFIC BARRIER TERMINAL, TYPE 6A
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
701901-01	TRAFFIC CONTROL DEVICES
BLR 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

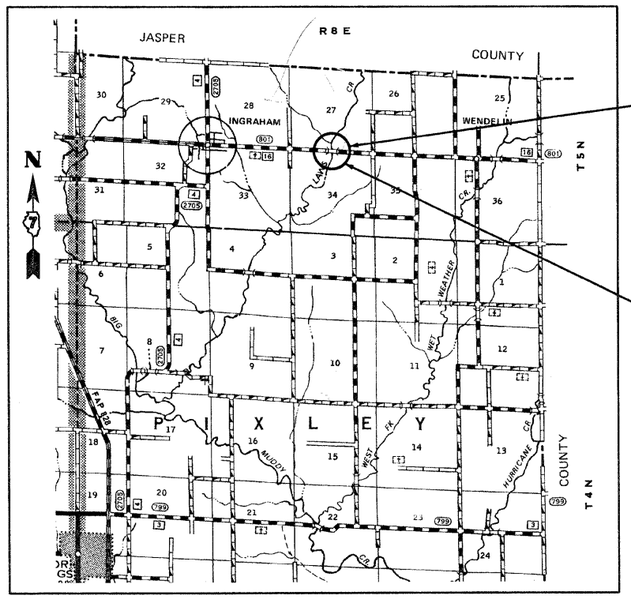
SOIL BORINGS (SEE SPECIFICATIONS)

DESIGN CLASSIFICATION: RURAL MAJOR COLLECTOR
ADT$_{2008}$: 700
ADT$_{2028}$: 850
DESIGN SPEED - 50 MPH



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



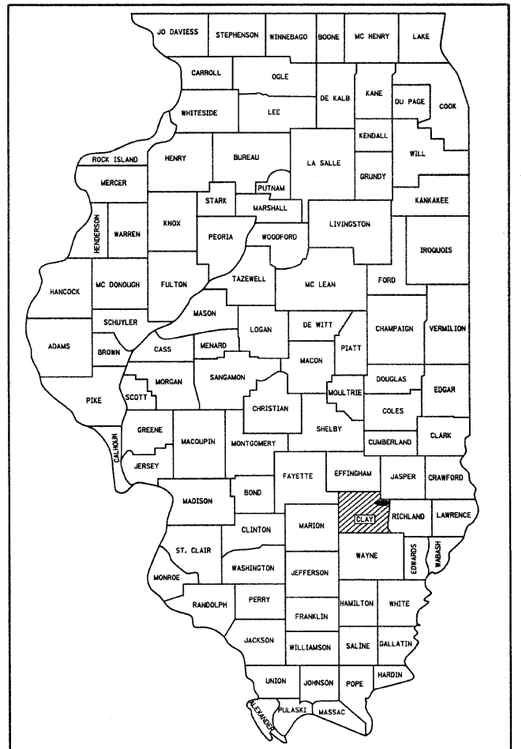
SECTION BEGINS
STA. 130+60.83

SECTION 09-00082-00-BR

INCLUDES THE CONSTRUCTION OF A THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING CH 16 OVER LAWS CREEK, 169'-8" BK. TO BK. ABUTMENTS x 28'-0" WIDE NO SKEW.
EXISTING STRUCTURE NO. 013-3014
PROPOSED STRUCTURE NO. 013-3234

SECTION ENDS
STA. 132+89.16

LOCATION: NEAR THE NW CORNER, NE 1/4, SECTION 34, T5N, R8E, 3rd P.M.
NET LENGTH OF PROJECT: 228.33 FT = 0.043 MI



LOCATION OF SECTION INDICATED THUS:-

CLAY COUNTY
HIGHWAY DEPARTMENT

APPROVED DECEMBER 23, 2009
CLAY COUNTY, COUNTY ENGINEER

PASSED 12-31, 2009
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW 12/31, 2009
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

GARY L. HAHN 62-42606 LICENSED PROFESSIONAL ENGINEER STATE OF ILLINOIS

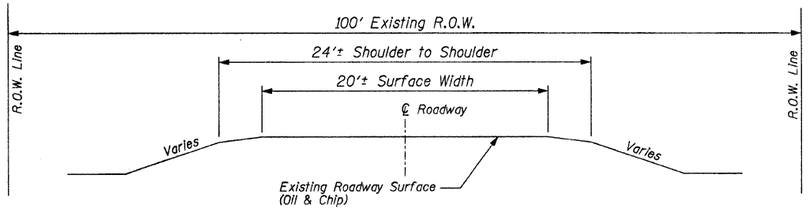
Gary L. Hahn 12.21.2009
GARY L. HAHN
CENTRALIA, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL
ENGINEER NO. 62-42606
EXPIRES NOV. 30, 2011

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

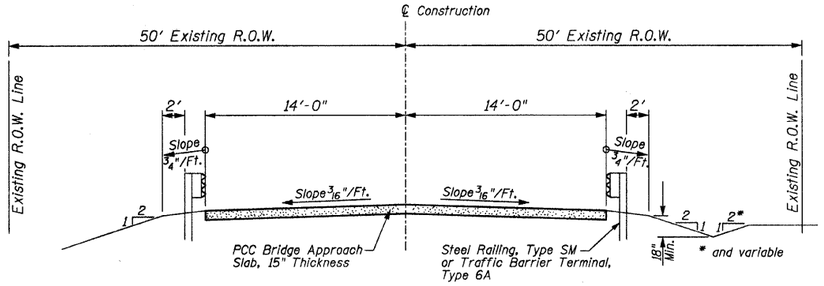
CONTRACT NO. 95613

12/15/2009 RAAI #50609

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

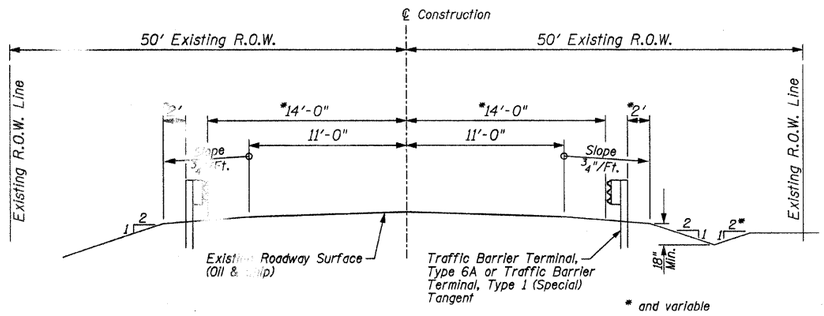


TYPICAL SECTION
EXISTING APPROACH ROADWAY



TYPICAL SECTION
PROPOSED APPROACH ROADWAY

Sta. 130+60.83 to Sta. 130+90.83
Sta. 132+59.16 to Sta. 132+89.16



TYPICAL SECTION
PROPOSED APPROACH ROADWAY

SUMMARY OF QUANTITIES

	Location			Bridge Sta. Sta. 130+90.17 to Sta. 132+59.83	Road Sta. 129+29 - 130+90.17 132+59.83 - 134+21
				Construct.	Type Code
Code No.	Item	Unit	Quantity	X081-2A	
20200100	EARTH EXCAVATION	CU YD	384	-	384
20300100	CHANNEL EXCAVATION	CU YD	102	102	-
20400800	FURNISHED EXCAVATION	CU YD	834	-	834
20700110	POROUS GRANULAR EMBANKMENT	TON	80	80	-
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.4	-	0.4
28000305	TEMPORARY DITCH CHECKS	FOOT	40	-	40
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	1325	1325	-
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1	-
50300225	CONCRETE STRUCTURES	CU YD	41.4	41.4	-
50300255	CONCRETE SUPERSTRUCTURE	CU YD	81.2	81.2	-
50300280	CONCRETE ENCASEMENT	CU YD	18.8	18.8	-
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	4704	4704	-
50800105	REINFORCEMENT BARS	POUND	5220	5220	-
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	18,380	18,380	-
* 50901050	STEEL RAILING, TYPE SM	FOOT	400	400	-
51201600	FURNISHING STEEL PILES HP12X53	FOOT	480	480	-
51202305	DRIVING PILES	FOOT	480	480	-
51203600	TEST PILE STEEL HP12X53	EACH	2	2	-
51500100	NAME PLATES	EACH	1	1	-
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4	-	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	-	4
67100100	MOBILIZATION	L SUM	1	-	1
70103700	TRAFFIC CONTROL COMPLETE	L SUM	1	-	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	-	4

* Specialty Item

UTILITIES

Telephone:
Verizon North, Inc.
Contact: Mary Ruth Willis
Phone: 309-827-1617

Electric:
Norris Electric Co-op
Contact: Tim Huber
Phone: 877-783-8765

Water:
EJ Water Co-op, Inc.
Contact: Lee Beckman
Phone: 217-347-7262

GENERAL NOTES

1. This section shall be constructed according to the plans, the Special Provisions, and the "Standard Specifications for Road and Bridge Construction", adopted January 1, 2007.
2. Any reference to a Standard in these plans shall be interpreted to mean the edition as indicated by the sub-number listed in the Index of Sheets or the copy of the Standard included in these plans.
3. Roadway Centerline profiles refer to the finished surface.
4. Existing utilities shown are located from surface observations or information provided by the respective utilities and must be considered approximate. There may be others, the exact location of which are unknown and not shown. The Contractor will be responsible for notifying the respective utilities before work is begun. Field marking of underground utilities may be obtained by providing a minimum of 48 hours advance notice through the J.U.L.I.E. system by calling 1-800-892-0123, or by direct contact with non-members of J.U.L.I.E.
5. Factors used for quantity calculations are as follows:

   Porous Granular Embankment 2.1 tons/cu. yd.
   Stone Dumped Riprap 130 pounds/cu. ft.

SUMMARY OF QUANTITIES AND TYPICAL SECTIONS STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	2
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

12/15/2009 RAAI *50609

EXISTING STRUCTURE: THREE SPAN CAST-IN-PLACE CONCRETE BRIDGE DECK ON STEEL BEAMS SUPPORTED ON SPILL-THRU ABUTMENTS AND PILE BENT PIERS. 159' L. x 26' W. NO SKEW. NO SALVAGE. EXISTING STRUCTURE NO. 013-3014 SEE SPECIAL PROVISIONS.

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION CU. YD.	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE• CU. YD.	EMBANKMENT CU. YD.	EARTHWORK BALANCE•• WASTE (+) OR SHORTAGE (-) CU. YD.
STA. 129+25.33 TO STA. 131+50.00	176	132	497	-365
STA. 132+00.00 TO STA. 134+24.77	208	156	625	-469
TOTAL	384	288	1122	-834

•25% SHRINKAGE ••FURNISHED EXCAVATION

N

GRAPHIC SCALE
50 0 50 100 150 200 250
FEET

FRED & BARBARA KESSLER

TALL GRASS

STONE DUMPED RIPRAP, CLASS A4, 16" MIN. THICK. (TYP. AS SHOWN)

℄ PROPOSED STRUCTURE
STA. 131+75.00
THREE SPAN PPCDB BRIDGE ON STEEL H-PILE SUPPORTED SPILL-THRU CONCRETE ABUTMENTS AND STEEL H-PILE PIER BENTS
169'-8" BK. TO BK. 28'-0" WIDE.
NO SKEW.
EXISTING STRUCTURE NO. 013-3014
PROPOSED STRUCTURE NO. 013-3234

BEGIN SECTION
STA. 130+60.83

END SECTION
STA. 132+89.16

STA. 133+44
STA. 133+79
STA. 134+21

EXISTING R.O.W.
50'
126 127 128 129 130 131 132 133 134 135 136
STA. 129+29
STA. 129+71
STA. 130+06
TBM
W
TBM
TBM EXISTING R.O.W.

SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINAL (TYPICAL ALL 4 CORNER OF BRIDGE) SEE STANDARD 630301 FOR DETAILS

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT (TYPICAL ALL 4 CORNER OF BRIDGE)

TRAFFIC BARRIER TERMINAL, TYPE 6A (TYPICAL ALL 4 CORNER OF BRIDGE)

LAWS CREEK

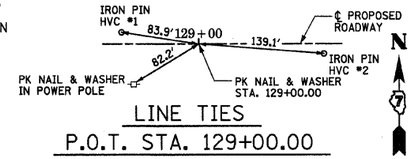
LEO & MARY IFFERT

NOTE: ALL TOPO SURVEY DATA FURNISHED BY CLAY COUNTY HIGHWAY DEPARTMENT.

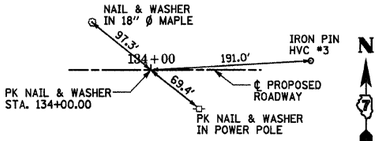
7 TEMPORARY DITCH CHECK

ALL ITEMS SHALL BE CONSTRUCTED AS SHOWN ON STANDARD 280001 AND AS DIRECTED BY THE ENGINEER. MAINTENANCE AND CLEANING OF THE EROSION CONTROL ITEMS SHALL BE INCLUDED IN THE RESPECTIVE EROSION CONTROL PAY ITEM.

THE EXISTING RIGHT OF WAY SHOWN HEREON HAS BEEN PROTRACTED FROM EXISTING RECORDS AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. FURTHERMORE, NO COMPLETE SURVEY OF SAID R.O.W. IS IMPLIED BY THIS DRAWING.



LINE TIES
P.O.T. STA. 129+00.00

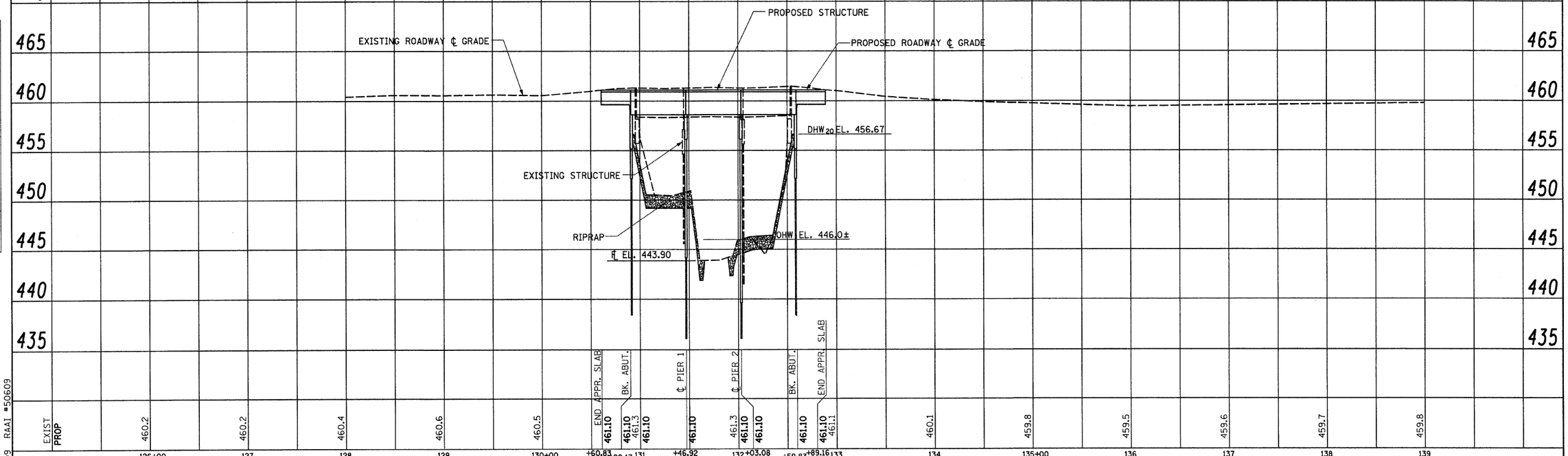


LINE TIES
P.O.T. STA. 134+00.00

TBM #1 - RR SPIKE IN POWER POLE, 41.75' RT., STA. 128+29.55 - ELEV. 454.33

TBM #2 - RR SPIKE IN 30"Ø MAPLE TREE, 72.33' RT., STA. 132+72.33 - ELEV. 456.17

TBM #3 - RR SPIKE IN POWER POLE, 42.55' RT., STA. 134+54.77 - ELEV. 454.57



RAAI #50609
12/15/2009

DESIGNED	- GLH	REVISED	-
DRAWN	- JN	REVISED	-
CHECKED	- GLH	REVISED	-
DATE	- OCTOBER 2009	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF ROADWAY
BRIDGE OVER LAWS CREEK

SCALE: AS NOTED — STA. 126+00 TO STA. 139+00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	3
		CONTRACT NO. 95613		
		ILLINOIS FED. AID PROJECT		

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, ALL ITEMS CHECKED, NOTE BOOK, NO., CADD FILE NAME, BY, DATE

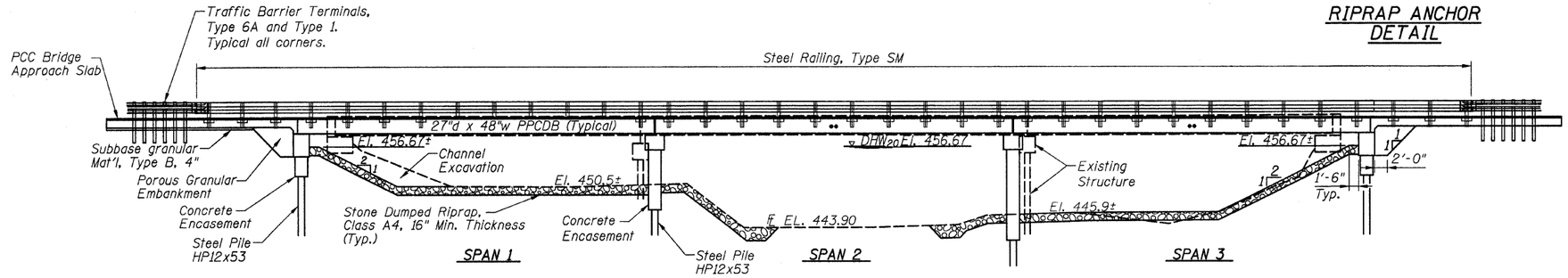
PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, ALL ITEMS CHECKED, NOTE BOOK, NO., STRUCTURE NO(S) CHKD, BY, DATE

TBM #1 - RR spike in power pole
41.75' Rt., Sta. 128+29.55 - Elev. 454.33

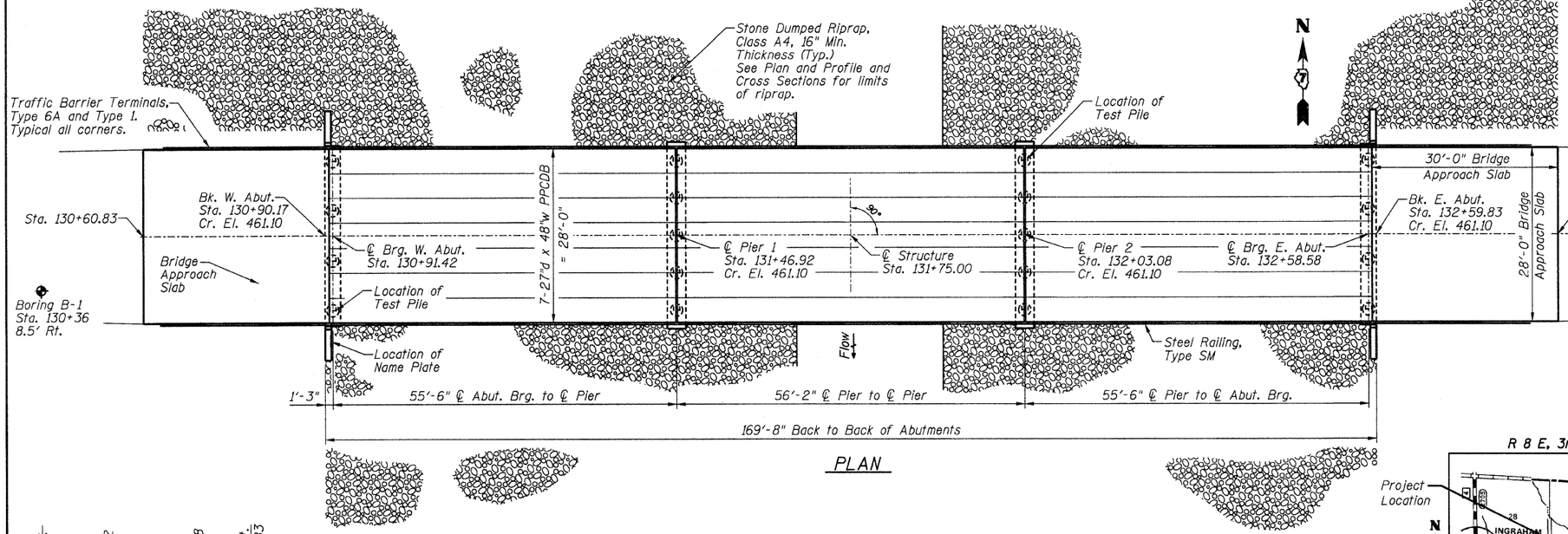
TBM #2 - RR spike in 30"ϕ Maple tree
72.33' Rt., Sta. 132+72.33 - Elev. 456.17

TBM #3 - RR spike in power pole
42.55' Rt., Sta. 134+54.77- Elev. 454.57

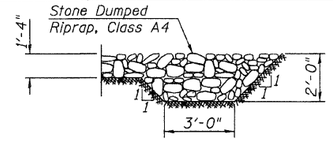
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN



RIPRAP ANCHOR DETAIL

Existing Structure: Three span cast-in-place concrete bridge deck on steel beams supported on spill-thru abutments and pile bent piers. 159' L. x 26' W. No Skew. No salvage. Existing Structure No. 013-3014. See Special Provisions.

BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	SUB	SUPER	TOTAL
CHANNEL EXCAVATION	CU YD	102	-	102
POROUS GRANULAR EMBANKMENT	TON	80	-	80
STONE DUMPED RIPRAP, CLASS A4	TON	1325	-	1325
REMOVAL OF EXISTING STRUCTURES	EACH	-	-	1
CONCRETE STRUCTURES	CU YD	41.4	-	41.4
CONCRETE SUPERSTRUCTURE	CU YD	-	81.2	81.2
CONCRETE ENCASEMENT	CU YD	18.8	-	18.8
PPC DECK BEAMS (27" DEPTH)	SQ FT	-	4704	4704
REINFORCEMENT BARS	POUND	5220	-	5220
REINFORCEMENT BARS, EPOXY COATED	POUND	-	18,380	18,380
STEEL RAILING, TYPE SM	FOOT	-	400	400
FURNISHING STEEL PILES HP 12x53	FOOT	480	-	480
DRIVING PILES	FOOT	480	-	480
TEST PILE STEEL HP 12X53	EACH	2	-	2
NAME PLATES	EACH	1	-	1

GENERAL NOTES

See Section 502 of the Standard Specifications for Structural Excavation.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Channel excavation shall be excavated as shown within the limits of the proposed bridge, then tapered to the existing channel at the ROW line. If the Engineer deems the material satisfactory, it may be used to construct the roadway embankment.

See Specifications for Soil Borings.

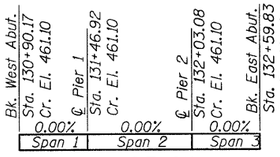
Do not scale these drawings.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

The Contractor shall drive a Steel HP12x53 Test Pile in a production location at the West Abutment and Pier 2 as directed by the Engineer before ordering the remainder of the piles.

See Sheet 6 of 14 for Precast Prestressed Concrete Deck Beam Corrosion Inhibitor requirements.

The abutment and pier bearing seat surfaces for the precast prestressed concrete deck beams shall be adjusted by shimming to assure firm and even bearing. As required, ⅛" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing.



GRADE ON STRUCTURE

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f'_c = 6,000 psi
f'_{ci} = 5,000 psi
f_{pu} = 270,000 psi ($\frac{1}{2}$" ϕ low lax. strands)
f_{pbt} = 201,960 psi ($\frac{1}{2}$" ϕ low lax. strands)
f_y = 60,000 psi (reinforcement)

SEISMIC DESIGN

Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 0.090g
Site Coefficient (S) = 1.5

DESIGN SPECIFICATIONS

2007 (4th ED.) AASHTO LRFD Bridge Design Specifications. With 2008 Interims.

LOADING HL-93

50#/sq. ft. included in dead load for future wearing surface.

WATERWAY DATA

Drainage Area = 59.526 Sq. Mi. Low Grade Elev. 495.5 @ Sta. 136+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	6,650	1314	1346	456.67	0.32	0.34	456.99	457.01
Base	100	10,300	1390	1429	457.19	0.89	0.82	458.08	458.01
Max. Calc.	500	13,800	1457	1500	457.64	1.80	2.36	459.44	460.00

I certify that to the best of 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 AASHTO Standard Specifications for Highway Bridges.

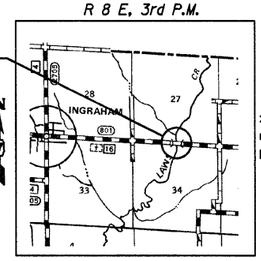
GARY L. HAHN 81-4853 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

Gary L. Hahn

12-21-2009
Date of Signing

11-30-2010
Date of License Expiration

RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287



LOCATION SKETCH

STATION 131+75.00
LAWS CREEK
BUILT 20__ BY
CLAY COUNTY
F.A.S. RTE. 801 SEC. 09-00082-00-BR
LOADING HL-93
STR. NO. 013-3234

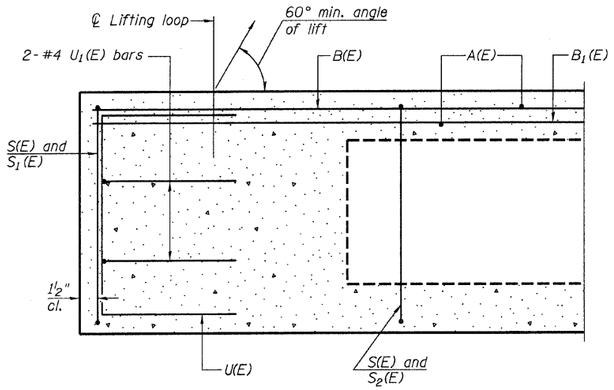
NAME PLATE
(See State Standard 515001 for details)

GENERAL PLAN AND ELEVATION
COUNTY HIGHWAY 16 OVER LAWS CREEK
F.A.S. ROUTE 801 - SECTION 09-00082-00-BR
CLAY COUNTY
STATION 131+75.00
STRUCTURE NO. 013-3234

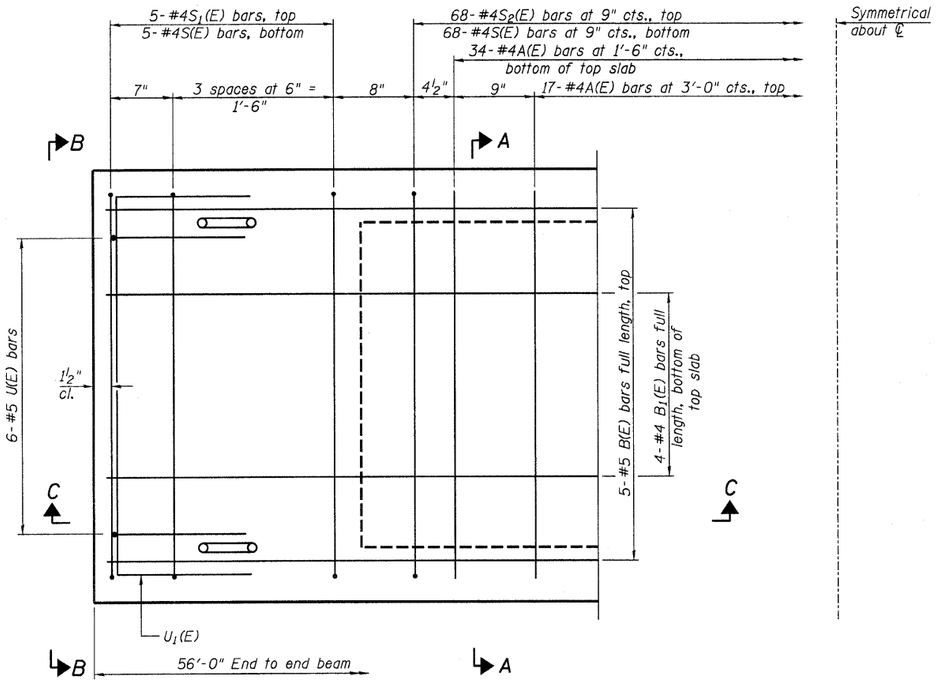
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	4
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

12/15/2009 RAA1 #50609

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

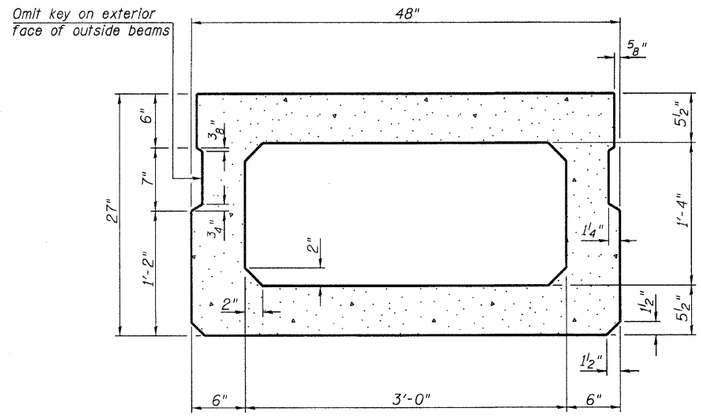


SECTION C-C

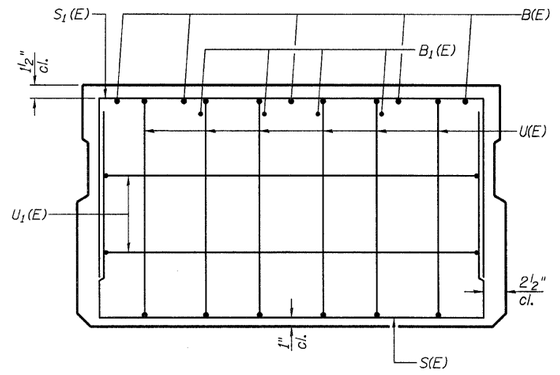


PLAN VIEW

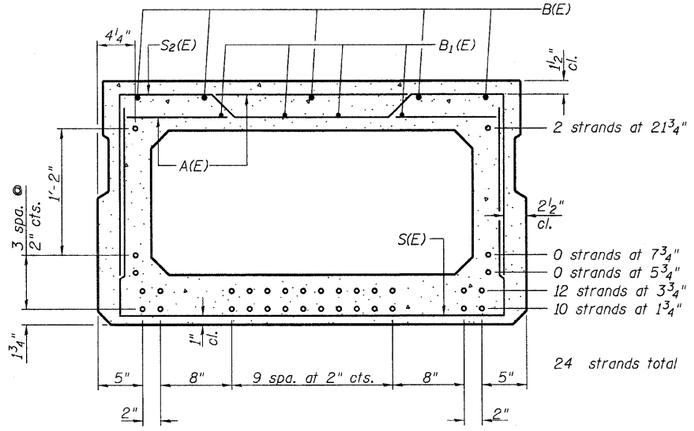
Note: Spacing of S(E) and $S_2(E)$ bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A
(Showing dimensions)



VIEW B-B



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)	51	#4	3'-7"	—
B(E)	10	#5	29'-8"	—
$B_1(E)$	12	#4	20'-6"	—
S(E)	78	#4	7'-5"	⌐¬
$S_1(E)$	10	#4	6'-11"	⌐¬
$S_2(E)$	68	#4	7'-2"	⌐¬
U(E)	12	#5	4'-6"	⌐¬
$U_1(E)$	4	#4	6'-0"	⌐¬

Note: See Sheet 6 of 14 for additional details and Bill of Material.

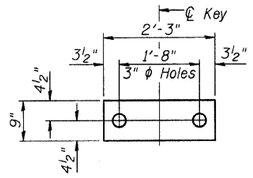
12/15/2009 RAAI #50609

PD-2748-0 10-1-08

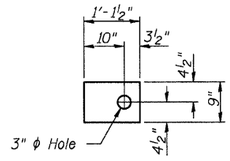
27" X 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	5
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

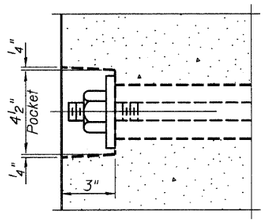


FABRIC BEARING PAD
(Interior)

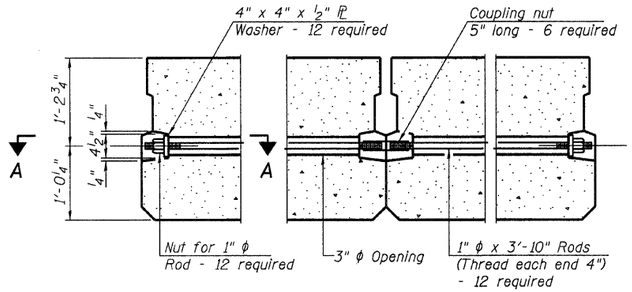


FABRIC BEARING PAD
(Exterior)

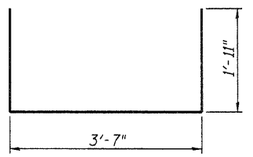
FIXED



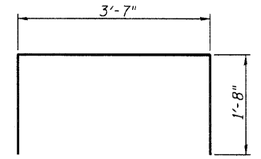
SECTION A-A



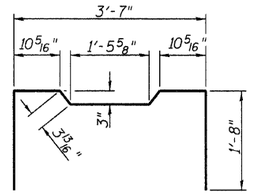
TYPICAL TRANSVERSE TIE ASSEMBLY



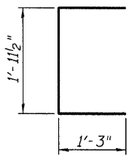
BAR S(E)



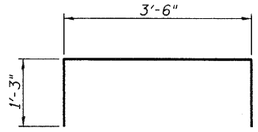
BAR S1(E)



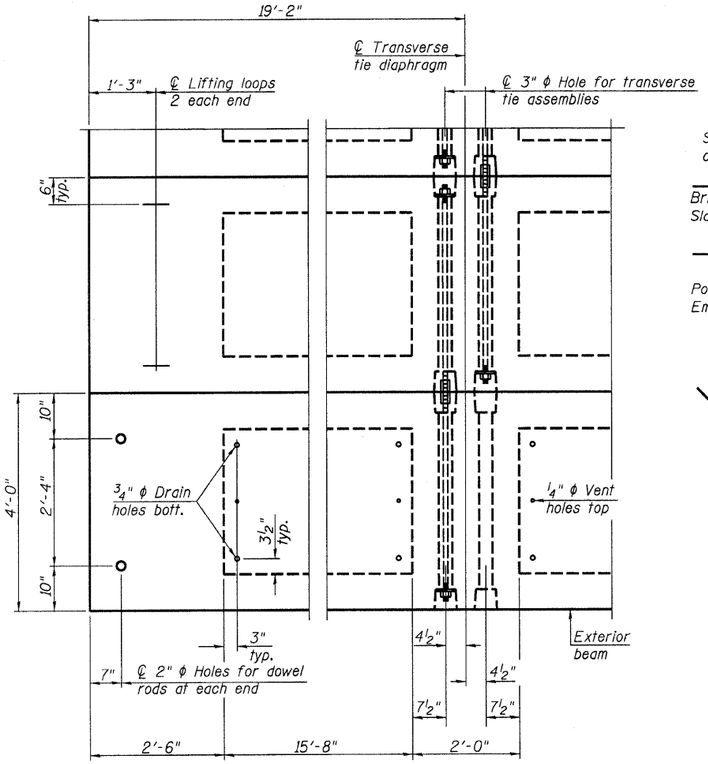
BAR S2(E)



BAR U(E)

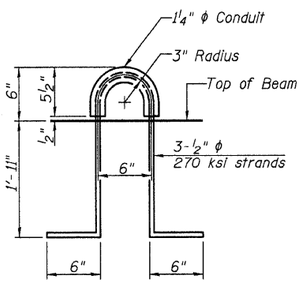


BAR U1(E)

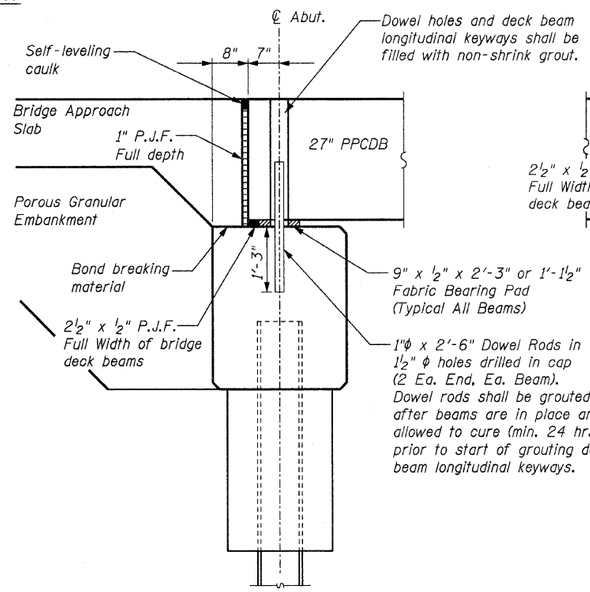


PLAN VIEW

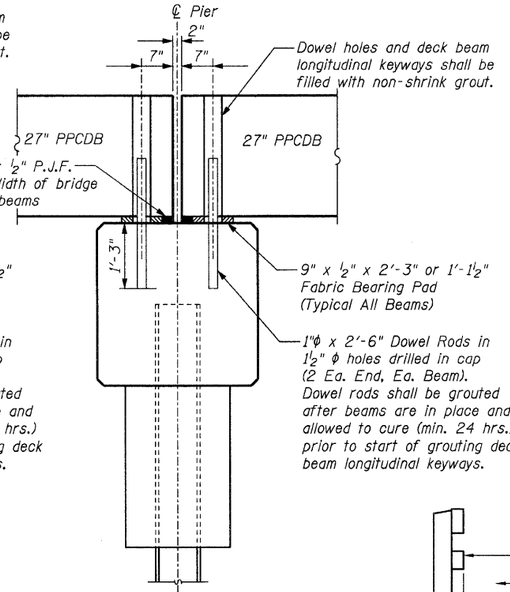
Note: Connect beams in pairs with the transverse tie configuration shown.



LIFTING LOOP DETAIL



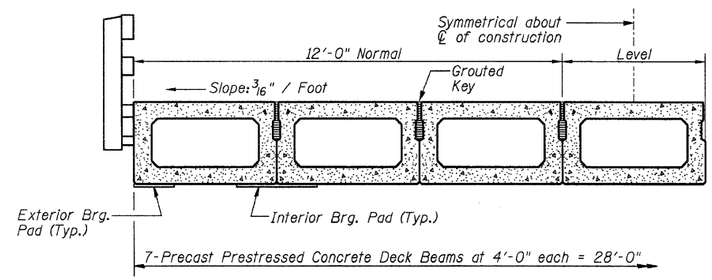
FIXED BEARING
ABUTMENT



FIXED BEARING
PIER

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	4704



HALF CROSS SECTION

See Sheet 9 of 14 for the details showing the spacing and mounting of posts and rails to the PPCDB.

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" ϕ 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 ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" ϕ 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.

27" X 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	6
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

12/15/2009 RAAI #50609

PD-2748-0D 10-1-08

STATE OF ILLINOIS
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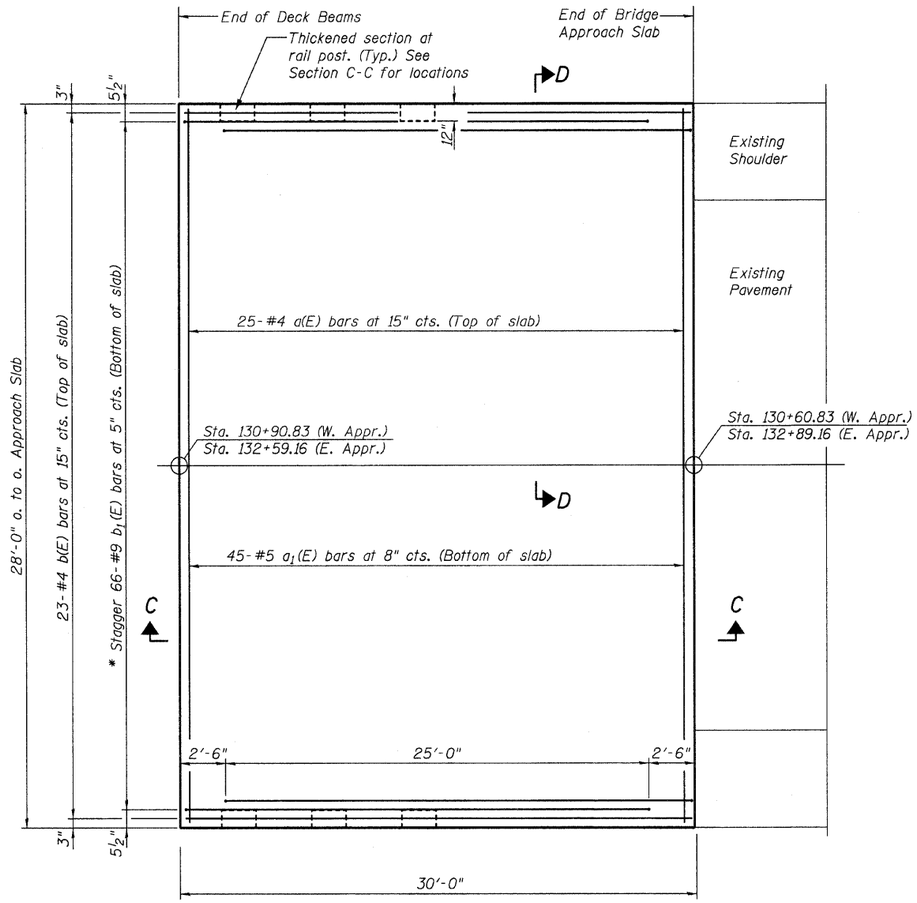
Notes:
See Sheet 8 of 14 for Sections C-C & D-D.
a(E) and a_1(E) bar spacings measured perpendicular to ℄ Rdwy.
See Sheet 10 of 14 for layout of #5v_1(E) bars.



PLAN

* Tilt #9 b_1(E) bars as required to maintain clearance.

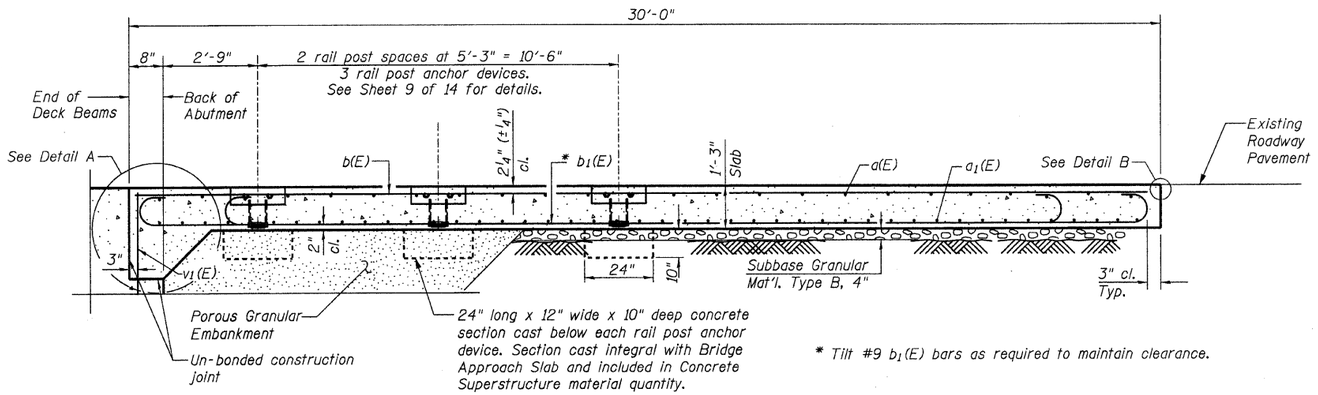
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	7
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

12/15/2009 RAAI #50609

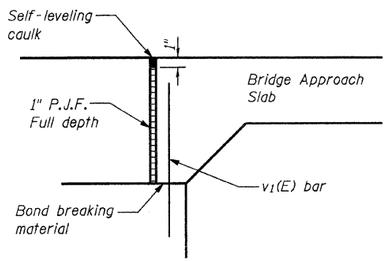
BA-0 10-31-08

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

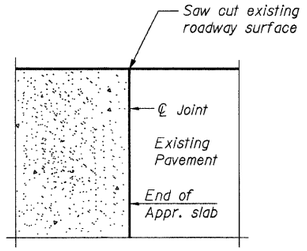


* Tilt #9 $b_1(E)$ bars as required to maintain clearance.

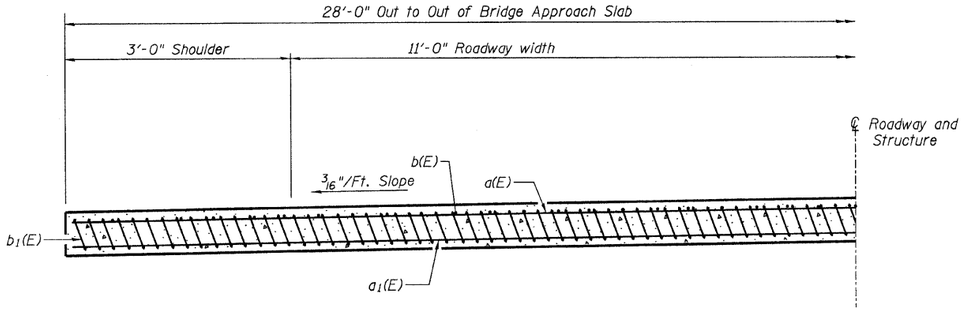
SECTION C-C



DETAIL A



DETAIL B



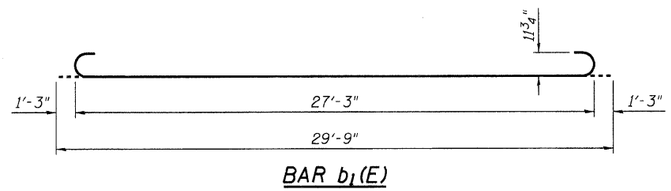
SECTION D-D

(See Plan for dimensions not shown)

BILL OF MATERIAL
FOR ONE BRIDGE APPROACH SLAB

Bar	No.	Size	Length	Shape
a(E)	25	#4	27'-8"	———
$a_1(E)$	45	#5	27'-8"	———
b(E)	23	#4	29'-8"	———
$b_1(E)$	66	#9	29'-9"	⌐——¬
$v_1(E)$	66	#5	4'-4"	———
Concrete Superstructure			Cu. Yd.	40.6
Reinforcement Bars, Epoxy Coated			Pound	9190

Notes:
Bridge approach slab concrete shall be paid for as Concrete Superstructure.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
Cost of excavation for approach slab included with Concrete Superstructure.
For Porous Granular Embankment, see Sheet 4 of 14.
See Sheet 10 of 14 for layout of #5$v_1(E)$ bars.
Cost of subbase granular material, saw cutting of existing roadway surface, bond breaking material, 1" P.J.F. and self-leveling caulk, shall be included in Concrete Superstructure and no additional compensation will be allowed.



BAR $b_1(E)$

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 013-3234

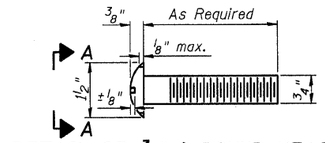
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	8
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

12/15/2009 RAAI #50609

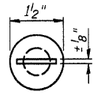
BA-0

10-31-08

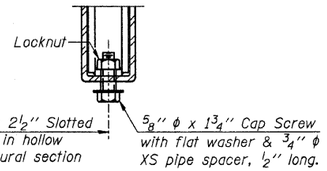
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



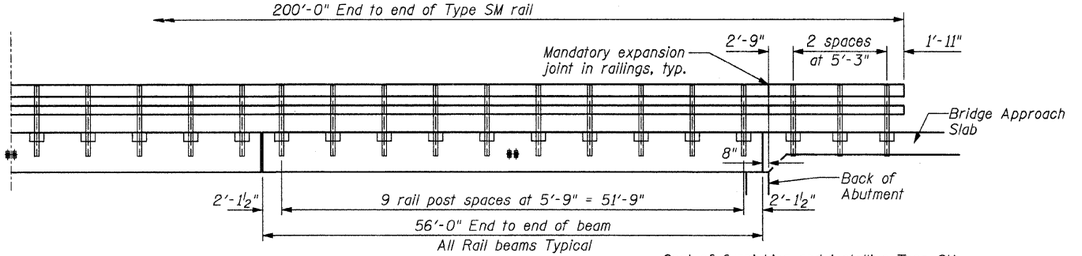
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



VIEW A-A

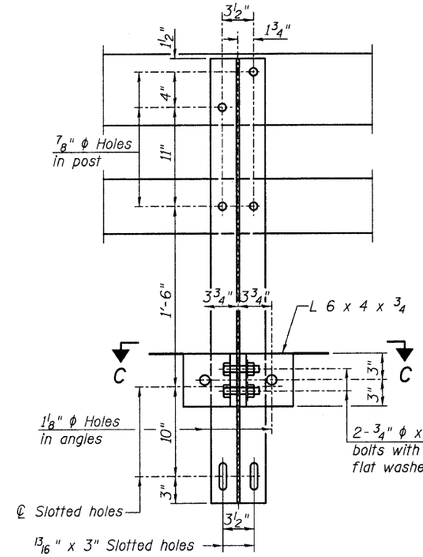


RAIL SPLICE CONNECTION AT EXPANSION JT.

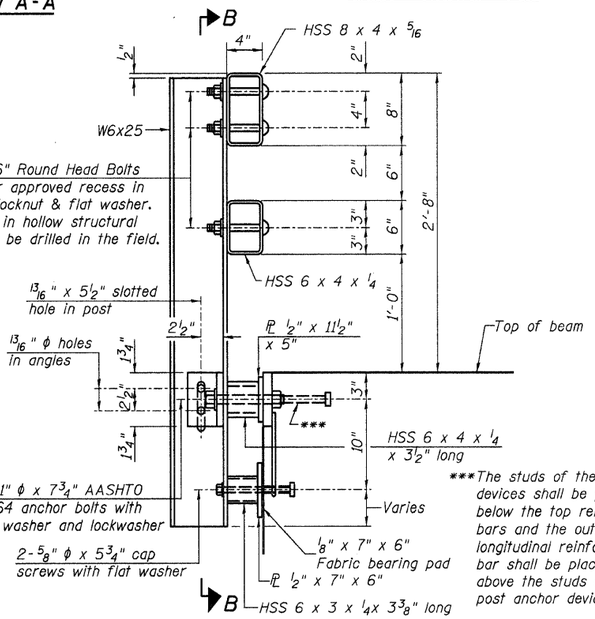


RAIL POST SPACING

Cost of furnishing and installing Type SM rail post Anchor Devices in Bridge Approach Slab shall be included in the cost for Concrete Superstructure and no additional compensation will be allowed.

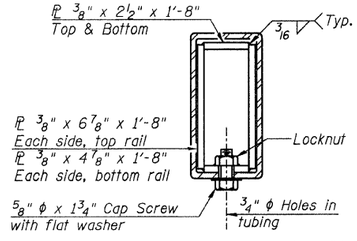


SECTION B-B



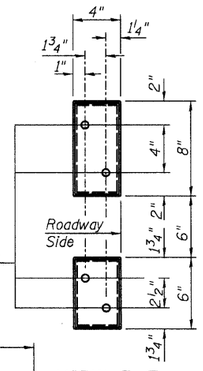
SECTION AT RAIL POST

***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.

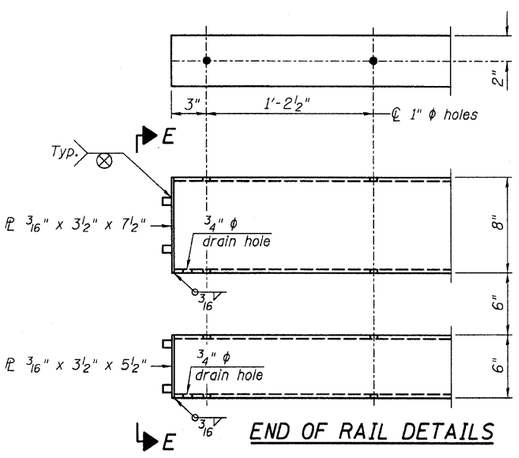


SECTION AT RAIL SPLICE

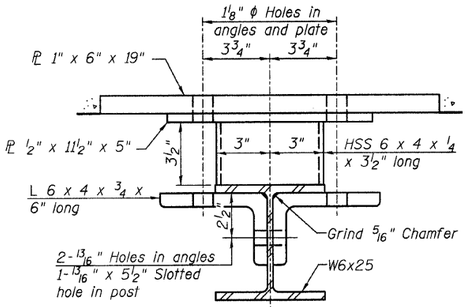
℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



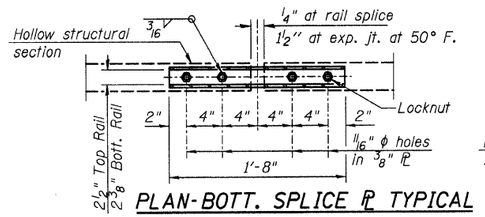
VIEW E-E



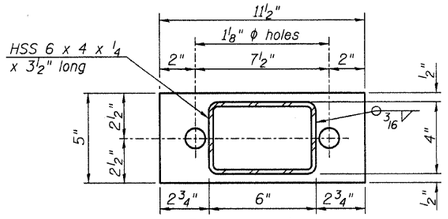
END OF RAIL DETAILS



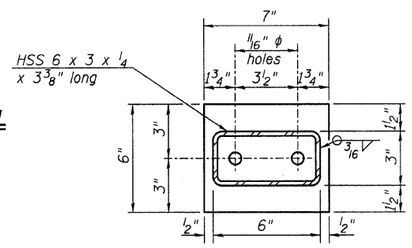
SECTION C-C



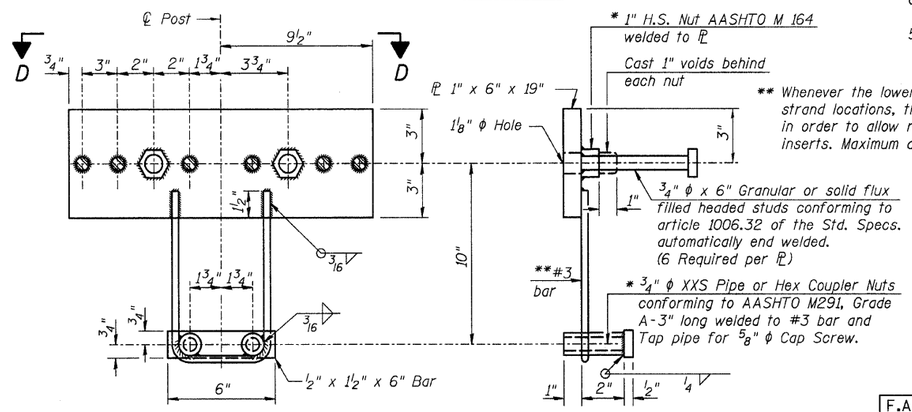
PLAN-BOTT. SPLICE PL TYPICAL



PL 1/2" x 11 1/2" x 5"



PL 1/2" x 7" x 6"



ANCHOR DEVICE

** 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".

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

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

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	400

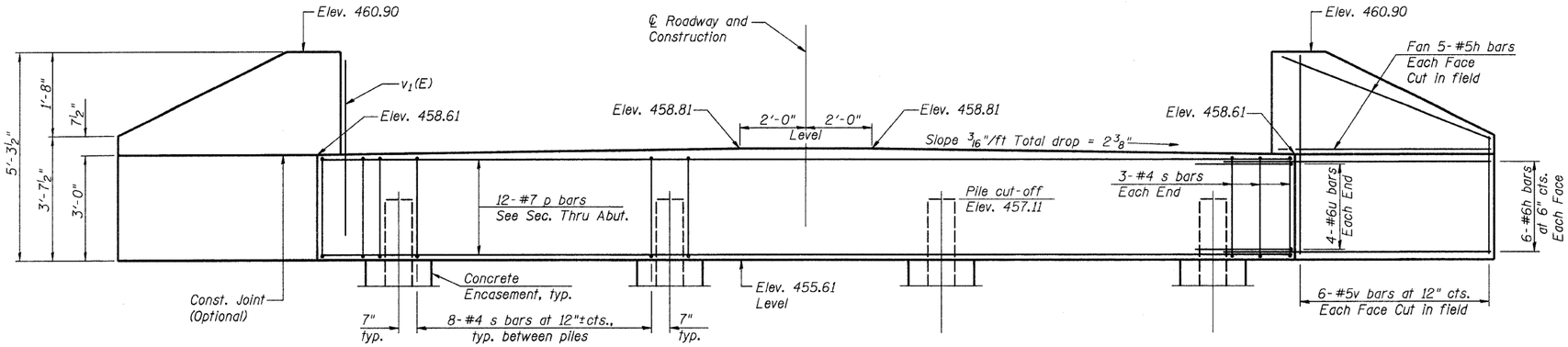
STEEL RAILING, TYPE SM DETAILS
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	9
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

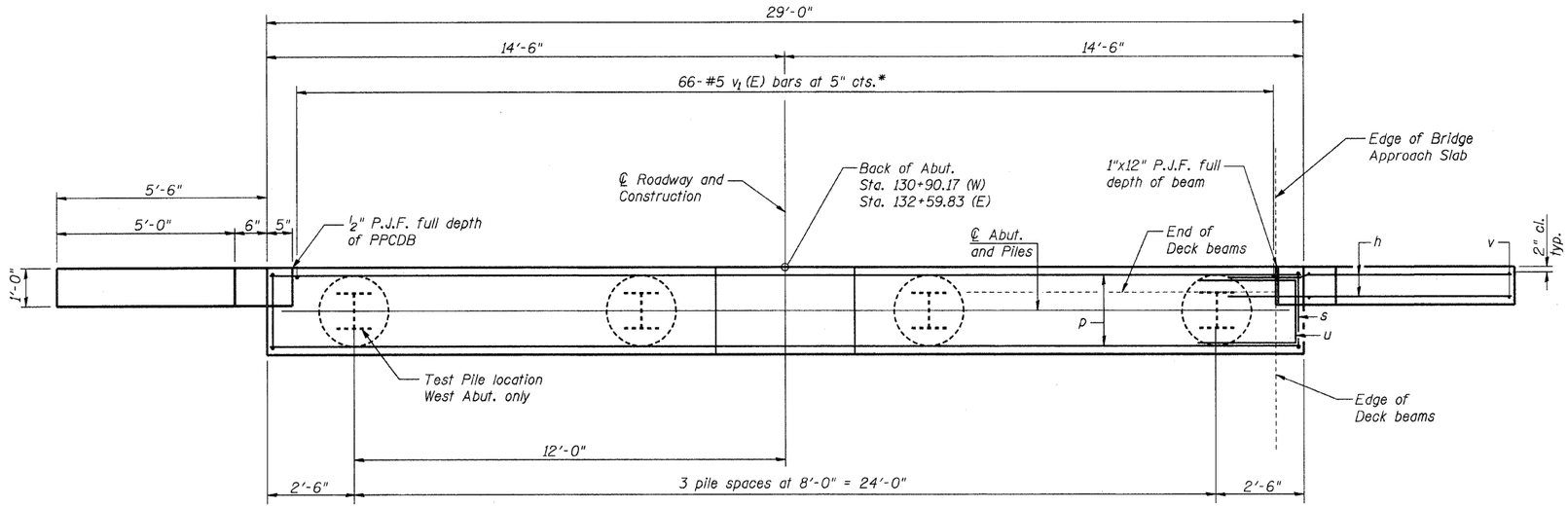
12/15/2009 RAAI #50609

R-34 10-1-08 (6'-3" Maximum Post Spacing) (1 1/4" minimum to 3 1/8" maximum HMA thickness)

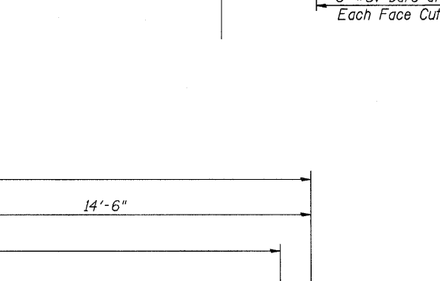
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

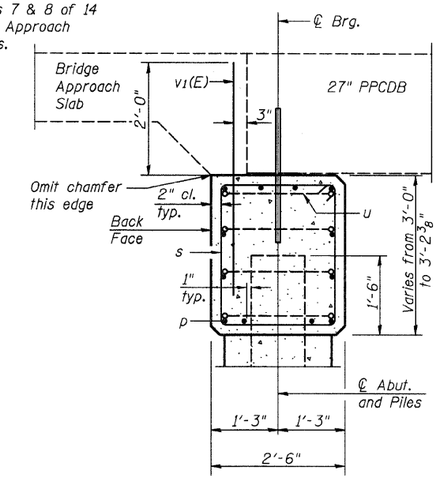


PLAN



BAR s BAR u

See Sheets 7 & 8 of 14 for Bridge Approach Slab details.



SEC. THRU ABUT.

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	44	#5	9'-0"	——
p	12	#7	28'-8"	——
s	30	#4	10'-5"	□
u	8	#6	8'-3"	▭
v	24	#5	5'-0"	——

Concrete Structures		Cu Yd	10.3
Reinforcement Bars		Pound	1550
Furnishing Steel Piles, HP12x53	Foot	W. Abut.	90
		E. Abut.	120
Driving Piles	Foot	W. Abut.	90
		E. Abut.	120
Test Pile, Steel HP12x53	Each	W. Abut.	1
		E. Abut.	0
Concrete Encasement		Cu Yd	1.4

For details of piles and Concrete Encasement, see Sheet 12 of 14.

* #5v_1(E) bars included with Bridge Approach Slab

PILE DATA (2 ABUTMENTS)

Type:	Steel HP12x53
Nominal Required Bearing:	419 kips
Factored Resistance Available:	210 kips
Est. Length:	30 foot/pile
No. Production Piles:	7
No. Test Piles:	1

GENERAL NOTES

All exposed edges shall have standard ¾" chamfer, unless otherwise noted.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

Space reinforcement in cap to miss PPCDB dowel rods.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at the West abutment as directed by the Engineer before ordering the remainder of the piles.

The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

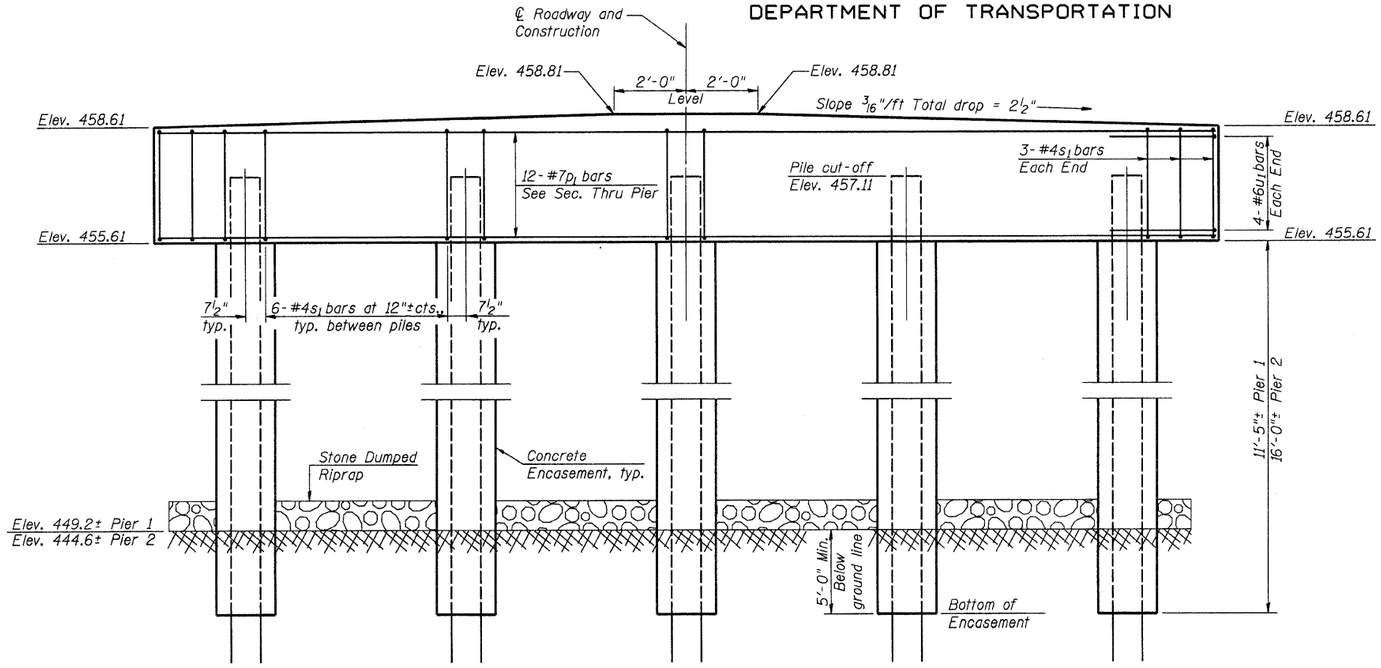
ABUTMENT DETAILS
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	10
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

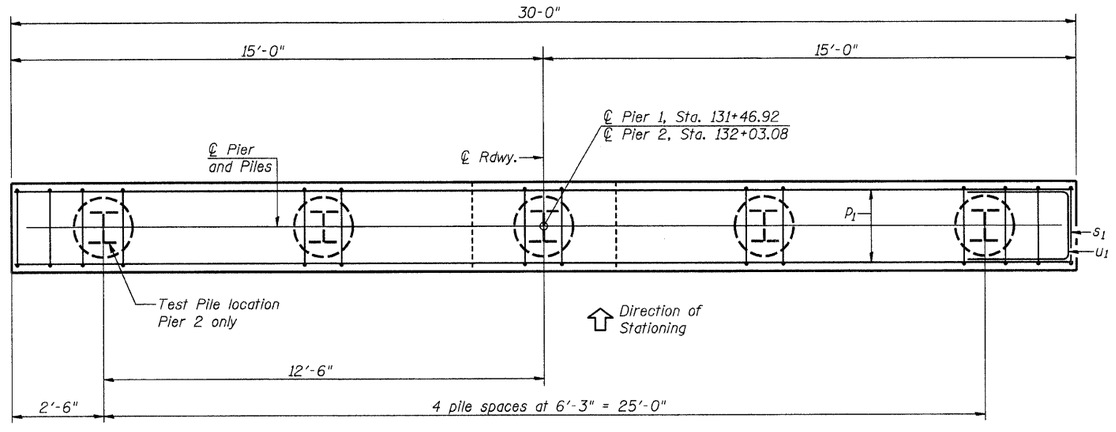
12/15/2009 RAAI #50609

AI-0 10-1-08

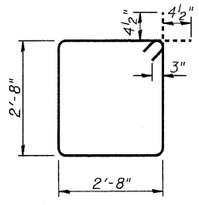
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



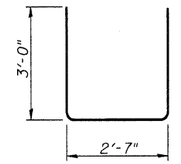
ELEVATION



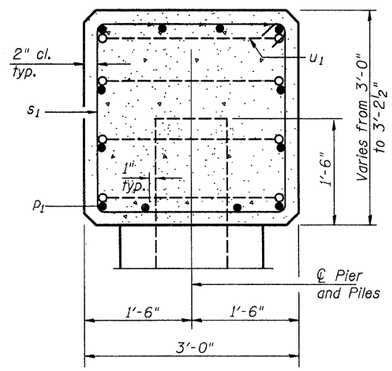
PLAN



BAR s_1



BAR u_1



SEC. THRU PIER

GENERAL NOTES

All exposed edges shall have standard 3/4" chamfer, unless otherwise noted.

All clearances between rebar and form surface shall be 2", unless otherwise noted.

Space reinforcement in cap to miss PPCDB dowel rods.

The Steel H-piles shall be according to AASHTO M270 Grade 50.

The Contractor shall drive one (1) Steel HP12x53 Test Pile in a permanent location at Pier 2 as directed by the Engineer before ordering the remainder of the piles.

The Test Pile shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p_1	12	#7	29'-8"	
s_1	30	#4	11'-5"	
u_1	8	#6	8'-7"	
Concrete Structures			Cu Yd	10.4
Reinforcement Bars			Pound	1060
Furnishing Steel Piles, HP12x53		Foot	Pier 1	150
			Pier 2	120
Driving Piles		Foot	Pier 1	150
			Pier 2	120
Test Pile, Steel HP12x53		Each	Pier 1	0
			Pier 2	1
Concrete Encasement		Cu Yd	Pier 1	6.7
			Pier 2	9.3

For details of piles and Concrete Encasement, see Sheet 12 of 14.

PILE DATA (2 PIERS)

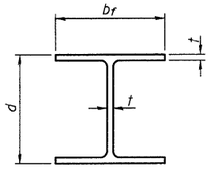
Type:	Steel HP12x53
Nominal Required Bearing:	419 kips
Factored Resistance Available:	210 kips
Est. Length:	30 foot/pile
No. Production Piles:	9
No. Test Piles:	1

PIER DETAILS
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	11
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

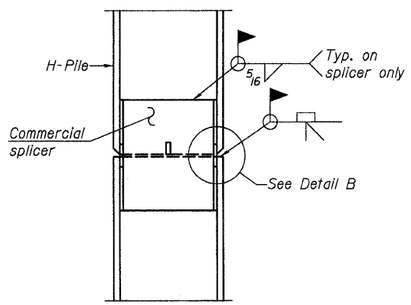
12/15/2009 RAAI #50609

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

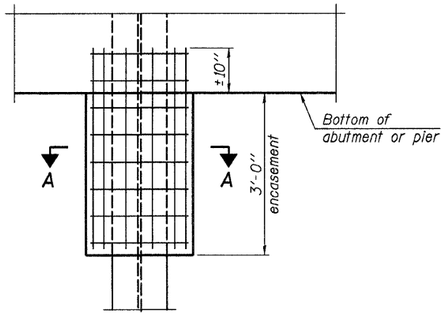


STEEL PILE TABLE

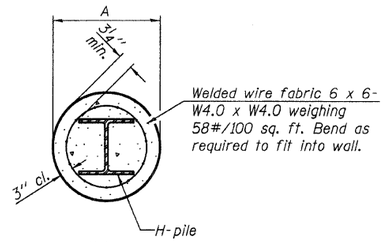
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION



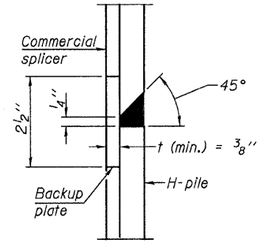
ELEVATION



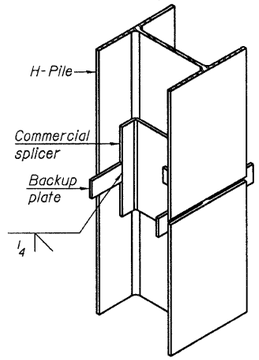
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT

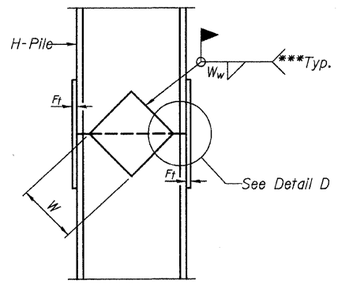


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



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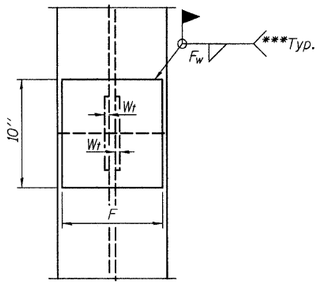
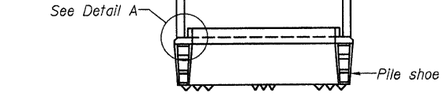


END VIEW



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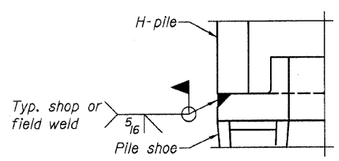
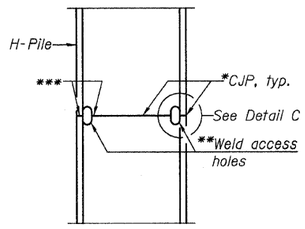


DETAIL A

H-PILE SHOE ATTACHMENT



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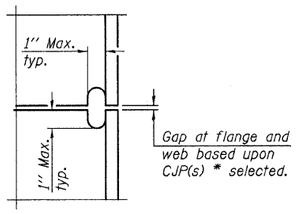
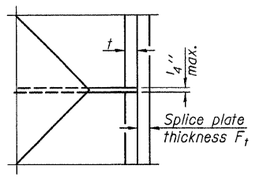


DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

* Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.

** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.

*** Interrupt welds 1/4" from end of each pile.

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

DESIGNED	-
CHECKED	-
DRAWN	-
CHECKED	-

F-HP 10-1-08

12/15/2009 RAAI #50609

HP PILE DETAILS
STRUCTURE NO. 013-3234

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	12
		CONTRACT NO. 95613		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

12/15/2009 RAAI #50609

131 + 45 — C=31 F=0
131 + 25 — C=48 F=0
130 + 96 — C=127 F=0
130 + 75 — C=0 F=91
130 + 50 — C=0 F=75
130 + 00 — C=0 F=122
129 + 50 — C=0 F=65
129 + 00

460 455 450

461.30
461.10
VAR
450.75
461.25
461.10
VAR
450.47
461.31
461.10
455.75
461.24
461.10
2:1

STONE DUMPED RIPRAP, CLASS A4, 16" MIN. THICK. (TYP.)

EXISTING R.O.W.

0 10 20 30 40 50 60 70 80 90

DESIGNED	- GLH	REVISED	-
DRAWN	- JN	REVISED	-
CHECKED	- GLH	REVISED	-
DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

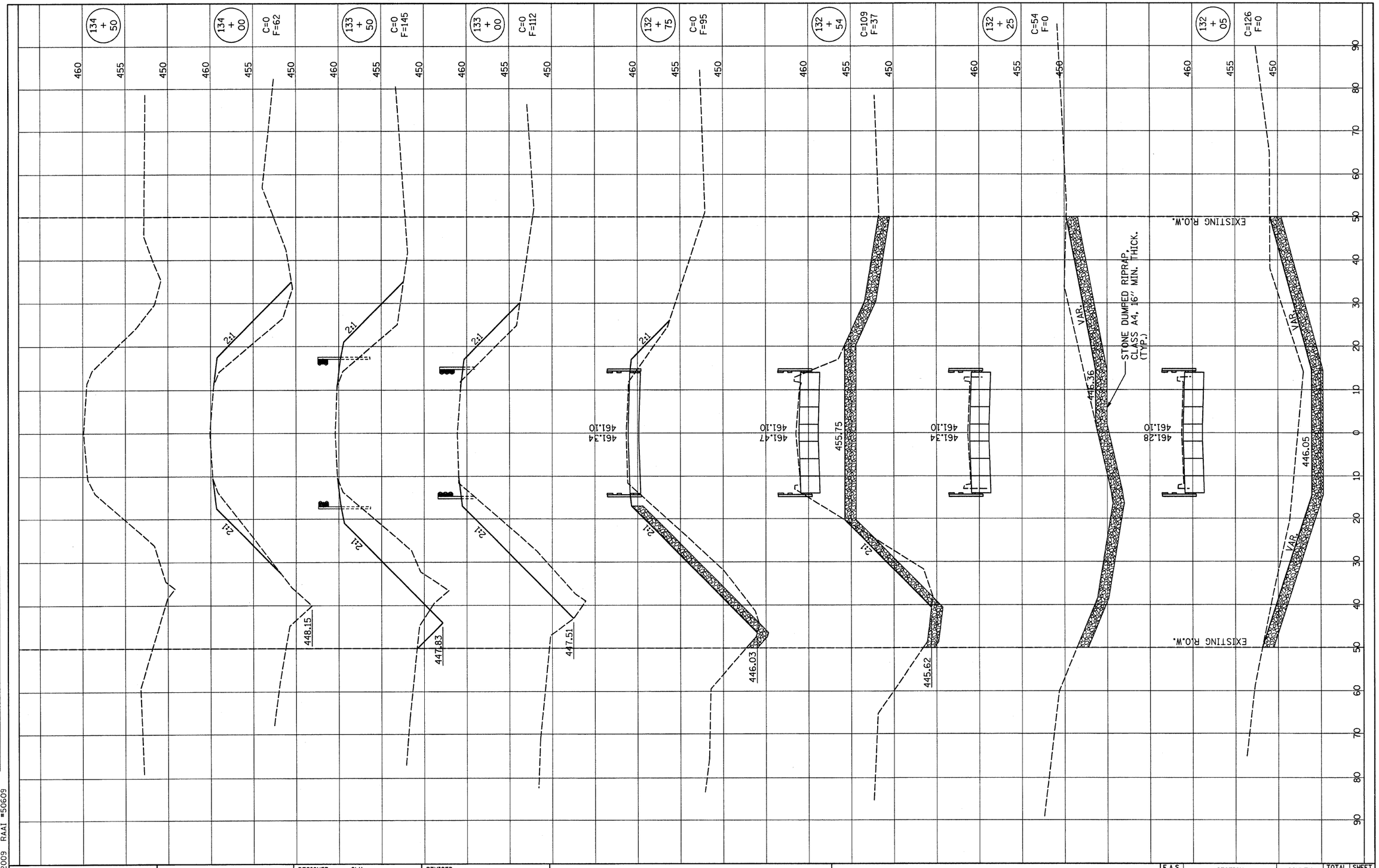
CROSS SECTIONS OF ROADWAY
BRIDGE OVER LAWS CREEK

SCALE: AS NOTED — STA. 129+00 TO STA. 131+45

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	13
		CONTRACT NO. 95613		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TOPO MAP		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TOPO MAP		
	AREAS		
	AREAS CHECKED		



12/15/2009 RAAI #50609

DESIGNED - GLH	REVISED -	
DRAWN - JN	REVISED -	
CHECKED - GLH	REVISED -	
DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY
BRIDGE OVER LAWS CREEK

SCALE: AS NOTED | STA. 132+05 TO STA. 134+50

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
801	09-00082-00-BR	CLAY	14	14
		CONTRACT NO. 95613		
	ILLINOIS FED. AID PROJECT			