06-14-13 LETTING ITEM 125

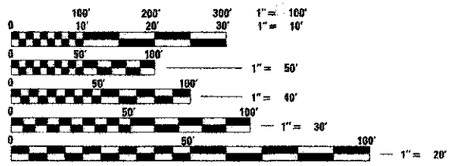
INDEX OF SHEETS

HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-03	NAME PLATE FOR BRIDGES
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
665001-02	WOVEN WIRE FENCE
701901-02	TRAFFIC CONTROL DEVICES
BLR 21-3	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SOIL BORINGS (SEE SPECIFICATIONS)

DESIGN CLASSIFICATION: RURAL LOCAL ROAD
ADT_{2011} : 150
ADT_{2031} : 200
DESIGN SPEED - 30 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 LOCATING INFORMATION FOR EXCAVATORS
1-800-892-0123 or 811 Website: http://www.illinois1call.com

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

Gary L. Hahn 02-21-2013
GARY L. HAHN
CENTRALIA, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL
ENGINEER NO. 62-42606
EXPIRES NOV. 30, 2013

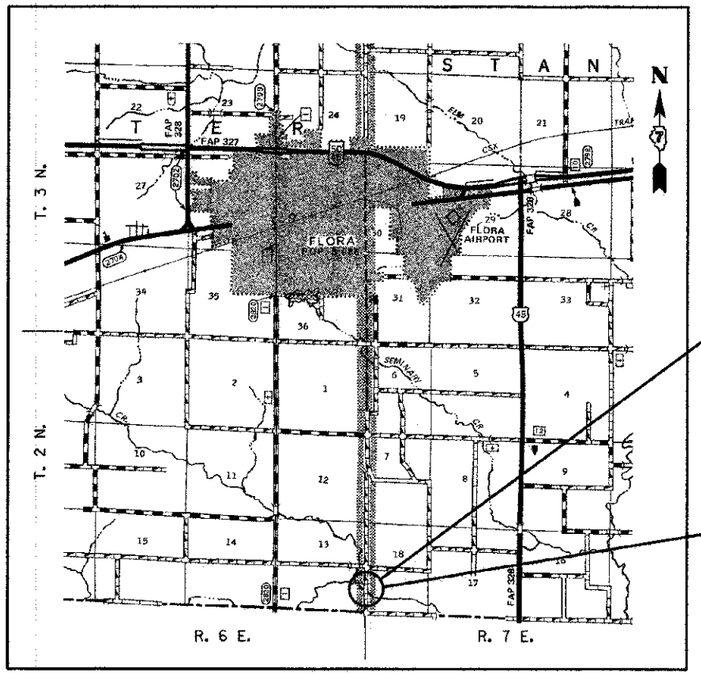
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

02/20/2013 RAAI #51611

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

TR 212A (SOUTH STANFORD ROAD)
RACCOON CREEK
SECTION 99-04125-00-BR
PROJECT NO. BROS-025(074)
HARTER ROAD DISTRICT
CLAY COUNTY
JOB NO. C-97-065-12

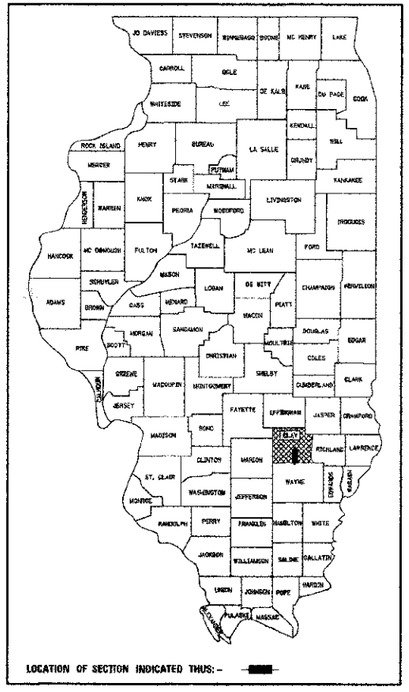


SECTION BEGINS
STA. 45+75.72

SECTION 99-04125-00-BR INCLUDES THE CONSTRUCTION OF A THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING TR 212A OVER RACCOON CREEK, 122'-8" BK. TO BK. ABUTMENTS X 24' WIDE. 0° SKEW.
EXISTING STRUCTURE NO. 013-3162
PROPOSED STRUCTURE NO. 013-3239

SECTION ENDS
STA. 53+80.00

LOCATION: NEAR THE NE CORNER, SE 1/4, SE 1/4, SECTION 13, T2N, R6E, 3RD P.M.
NET LENGTH OF PROJECT: 804.28 FT = 0.152 MI



LOCATION OF SECTION INDICATED THUS:-

CLAY COUNTY
HIGHWAY DEPARTMENT

APPROVED Feb 22, 2013
Michael R. Quandt
CLAY COUNTY, COUNTY ENGINEER

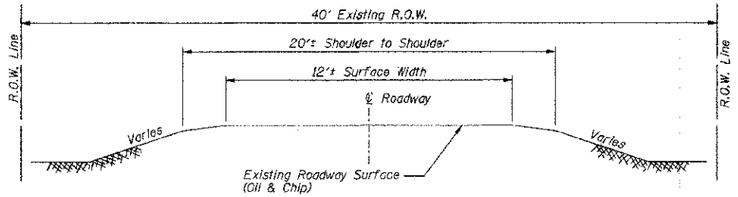
PASSED 2-28, 2013
Maureen Carl
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW 2-28, 2013
Roger L. Linsenmayer
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

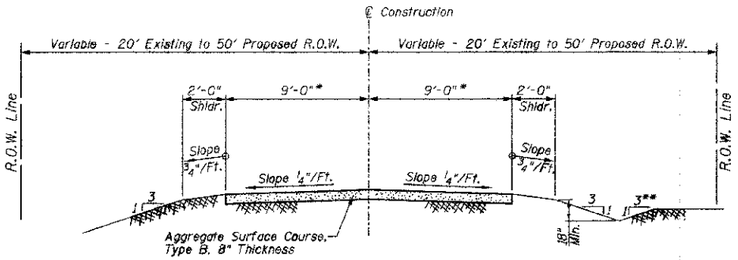
PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

CONTRACT NO. 95704

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	1
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS	FED. AID PROJECT		



TYPICAL SECTION
EXISTING APPROACH ROADWAY



TYPICAL SECTION
PROPOSED APPROACH ROADWAY

* Variable in transitions.
** Unless otherwise shown on Cross Sections

SUMMARY OF QUANTITIES

Location			
Code No.	Item	Unit	Quantity
20100500	TREE REMOVAL, ACRES	ACRE	0.5
20200100	EARTH EXCAVATION	CU YD	313
20300100	CHANNEL EXCAVATION	CU YD	613
20400800	FURNISHED EXCAVATION	CU YD	1276
28000305	TEMPORARY DITCH CHECKS	FOOT	40
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	536
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	610
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	49.0
50300280	CONCRETE ENCASEMENT	CU YD	28.0
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	2904
50800105	REINFORCEMENT BARS	POUND	6560
* 50900205	STEEL RAILING, TYPE S1	FOOT	246
51201800	FURNISHING STEEL PILES HP14X73	FOOT	713
51202305	DRIVING PILES	FOOT	713
51203800	TEST PILE STEEL HP14X73	EACH	1
51500100	NAME PLATES	EACH	1
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	47.4
67100100	MOBILIZATION	L SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.6
* X6650200	WOVEN WIRE FENCE (SPECIAL)	FOOT	245

* Specialty Item

UTILITIES

J.U.L.I.E.: Design Phase Locate
Dig No.: A0040691

Telephone: Frontier Communications
Darrell Senior
Phone: 309-827-1253

Electric: Wayne-White Counties Electric Coop.
Erin Hailey
Phone: 618-842-2196

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, 2012.
2. Roadway Centerline profiles refer to the finished surface.
3. If Ash trees are removed on the Project, the Contractor shall become familiar with and comply with measures specified by the Illinois Department of Agriculture (IDOA) to prevent the spread of the Emerald Ash Borer. The IDOA information for Ash tree removal can be found on the IDOA website at www.agr.state.il.us/eab .
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, 811, or by direct contact with non-members of J.U.L.I.E.
5. The Aggregate Surface Course, Type B gradation shall be CA 6 or CA 10. Only crushed stone will be approved for use on this project.
6. The nominal thickness for surface course is shown on the Typical Sections, Standards, Schedules, or Special Details. The constructed thickness of the above item shall not be less than 90 percent of the nominal thickness at any location.
7. Factors used for quantity calculations are as follows:
   Stone Dumped Riprap 130 pounds/cu. ft.
   Aggregate Surface Course 2.1 tons/cu. yd.
8. Commitments: None as of January 31, 2013.

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

DESIGNED	WDL	REVISED	-
CHECKED	BLT	REVISED	-
DRAWN	JN	REVISED	-
DATE	02/19/2013	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

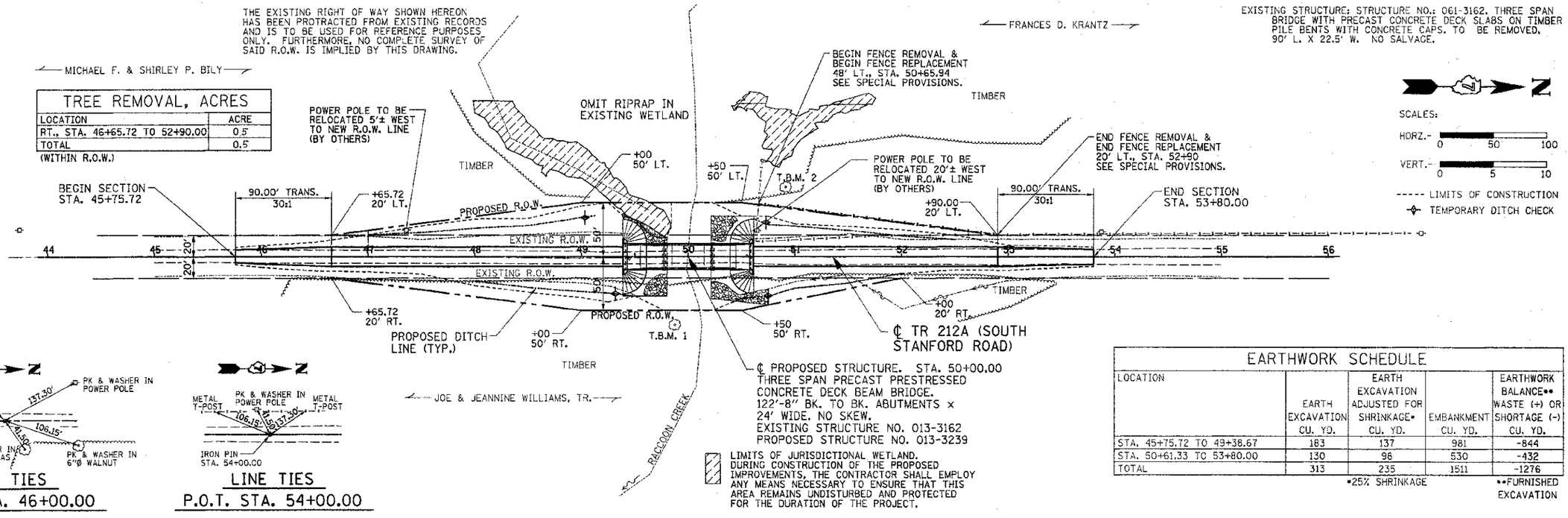
SUMMARY OF QUANTITIES, GENERAL NOTES, AND TYPICAL SECTIONS
STRUCTURE NO. 013-3239

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	2
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS	FED. AID PROJECT		

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.

EXISTING STRUCTURE: STRUCTURE NO.: 061-3162. THREE SPAN BRIDGE WITH PRECAST CONCRETE DECK SLABS ON TIMBER PILE BENTS WITH CONCRETE CAPS. TO BE REMOVED. 90' L. X 22.5' W. NO SALVAGE.

TREE REMOVAL, ACRES	
LOCATION	ACRE
RT., STA. 46+65.72 TO 52+90.00	0.5
TOTAL	0.5
(WITHIN R.O.W.)	

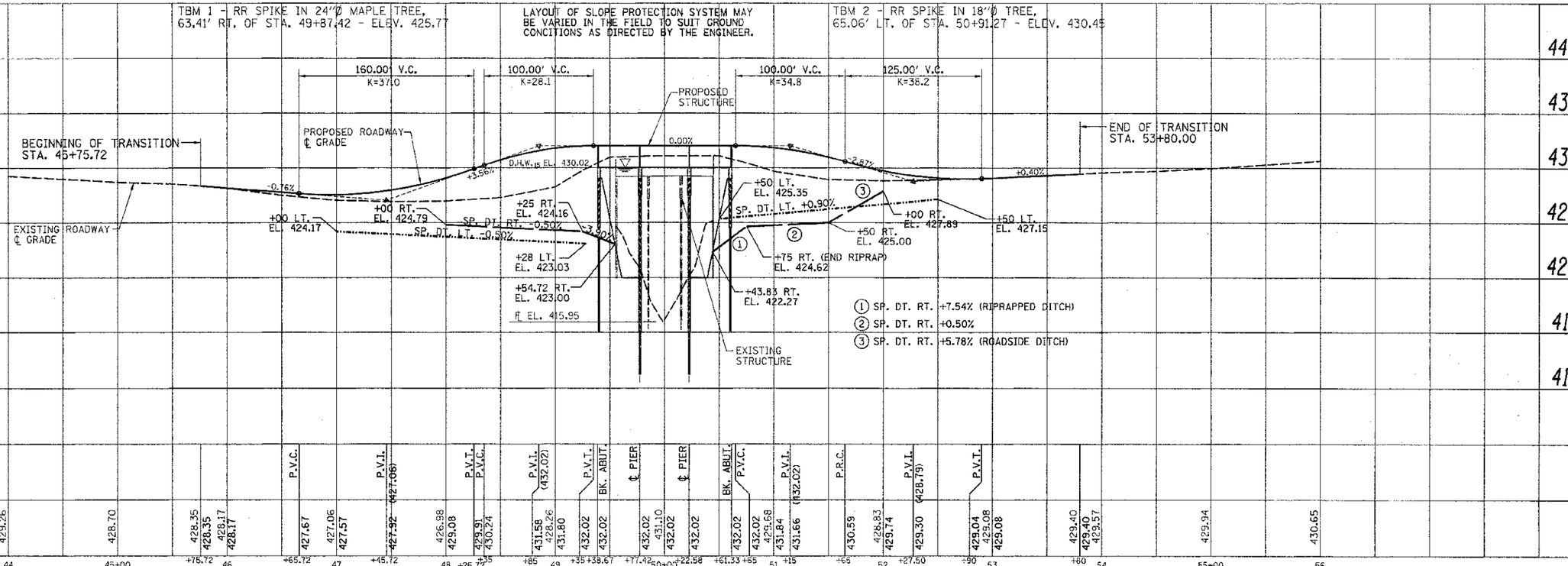


LINE TIES
P.O.T. STA. 46+00.00

LINE TIES
P.O.T. STA. 54+00.00

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. 45+75.72 TO 49+38.67	183	137	981	-844
STA. 50+61.33 TO 53+80.00	130	96	530	-432
TOTAL	313	235	1511	-1276

*25% SHRINKAGE **FURNISHED EXCAVATION



RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

DESIGNED - GLH		REVISED -
DRAWN - JN		REVISED -
CHECKED - BLT		REVISED -
DATE - 02/20/2013		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF ROADWAY
STRUCTURE NO. 013-3239
STA. 44+00 TO STA. 56+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	3
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			

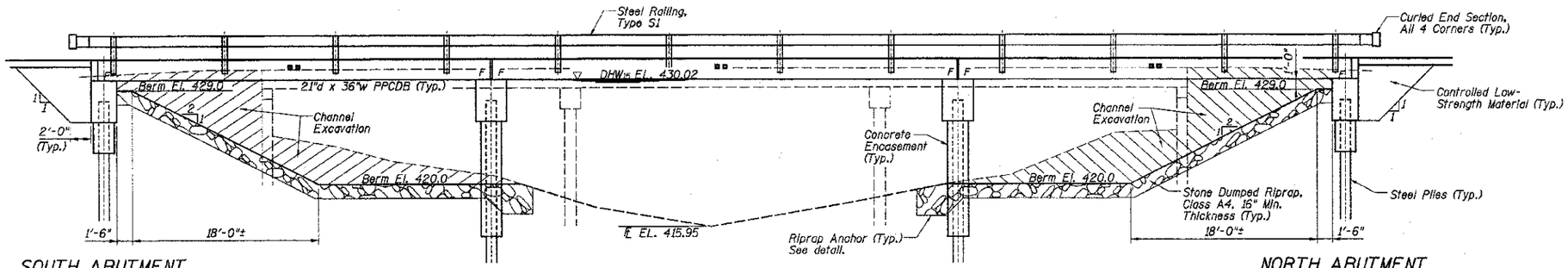
TBM 1 - RR spike in 24"ϕ Maple tree,
63.41' Rt. of Sta. 49+87.42 - Elev. 425.77

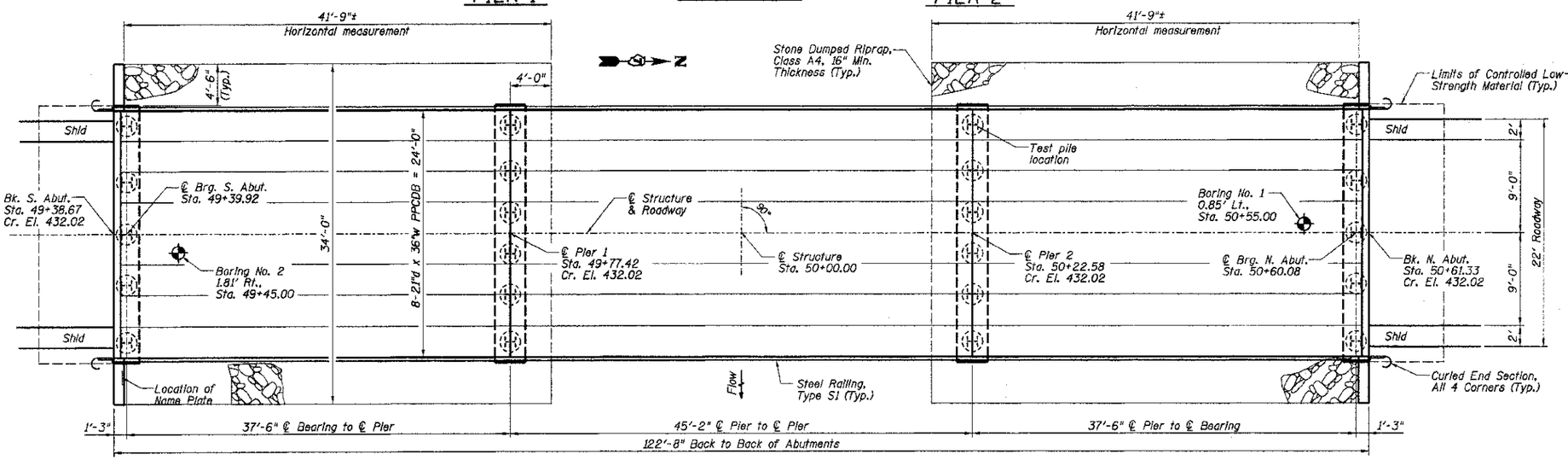
TBM 2 - RR spike in 18"ϕ tree,
65.06' Lt. of Sta. 50+91.27 - Elev. 430.45

Existing Structure: Three span bridge with precast concrete deck slabs on timber pile bents with concrete caps. To be removed. No salvage. 90'L. x 22.5'W.

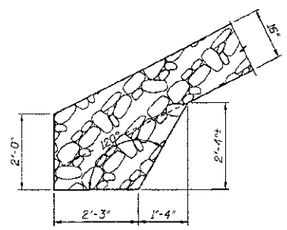
BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	TOTAL
Channel Excavation	Cu Yd	613
Stone Dumped Riprap, Class A4	Ton	536
Removal of Existing Structures	Each	1
Concrete Structures	Cu Yd	49.0
Concrete Encasement	Cu Yd	28.0
PPCDB (21" Depth)	Sq Ft	2904
Reinforcement Bars	Pound	6560
Steel Railing, Type S1	Foot	246
Furnishing Steel Piles HP14X73	Foot	713
Driving Piles	Foot	713
Test Pile Steel HP14X73	Each	1
Name Plates	Each	1
Controlled Low-Strength Material	Cu Yd	47.4
Terminal Marker - Direct Applied	Each	4

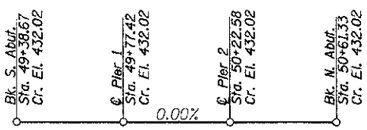




PLAN



RIPRAP ANCHOR DETAIL



PROFILE GRADE ACROSS STRUCTURE
Along ℄ Roadway

WATERWAY DATA

Drainage Area = 58.89 Sq. Mi. Low Grade Elev. 426.98 @ Sta. 48+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	15	5530	780	1080	430.02	0.23	0.23	430.25	430.25
Base	100	8880	780	1080	431.01	0.29	0.47	431.30	431.48
Max. Calc.	500	11800	780	1080	431.68	0.30	0.55	431.98	432.23

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 (½" ϕ low lax. strands)
f_{pbt} = 201,960 psi (½" ϕ low lax. strands)
f_y = 60,000 psi (reinforcement)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Soil Site Classification = E
S_{D1} = 0.388 S_{DS} = 0.830

DESIGN SCOUR TABLE

Location	Design Scour Elevation
S. Abut.	425.9
Pier 1	416.5
Pier 2	416.5
N. Abut.	425.9

DESIGN SPECIFICATIONS

2010 AASHTO LRFD
Bridge Design Specifications

LOADING HL-93

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

GENERAL NOTES

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.

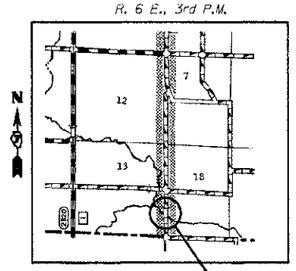
See Specifications for Soil Borings.

Do not scale these drawings.

The 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.

RACCOON CREEK
BUILT 201_ BY
CLAY COUNTY
SEC. 99-04125-00-BR
LOADING HL-93
STRUCTURE NO. 013-3239

NAME PLATE
(See State Standard 515001 for details)



LOCATION SKETCH

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.

WILLIAM D. LUEKING
81-4341
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

William D. Lueking
William D. Lueking

02-21-2013
Date of Signing

11-30-2014
Date of License Expiration

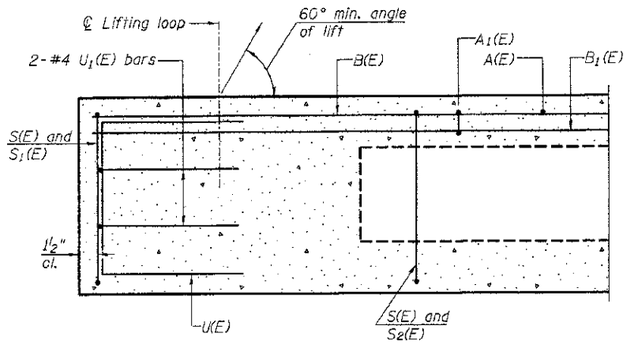
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-003287

DESIGNED	BLT	REVISED -
DRAWN	JN	REVISED -
CHECKED	WDL	REVISED -
DATE	02/20/2013	REVISED -

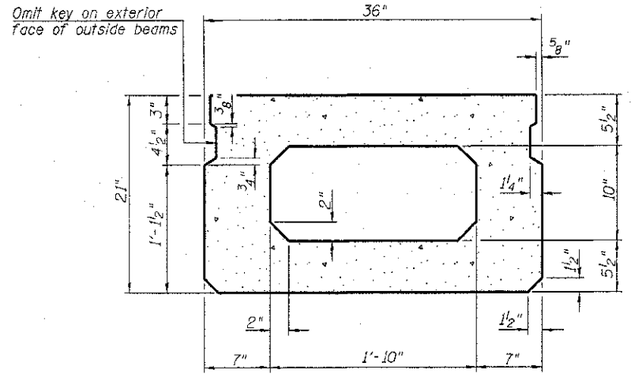
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 013-3239

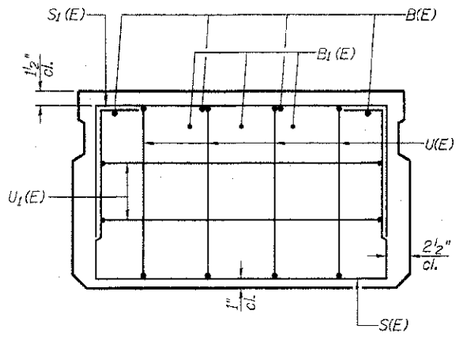
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	4
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



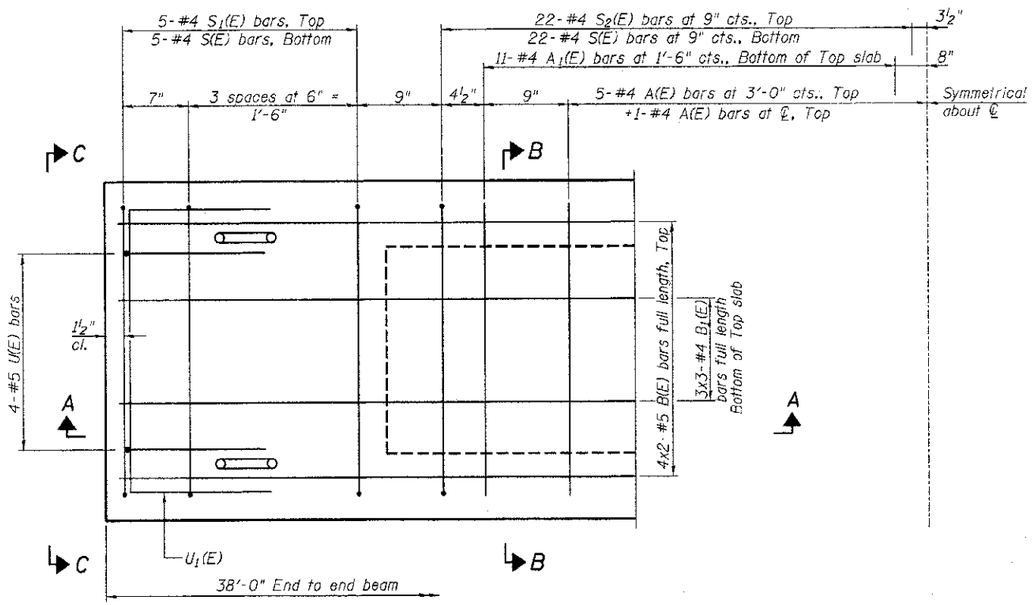
SECTION A-A



SECTION B-B
(Showing dimensions)

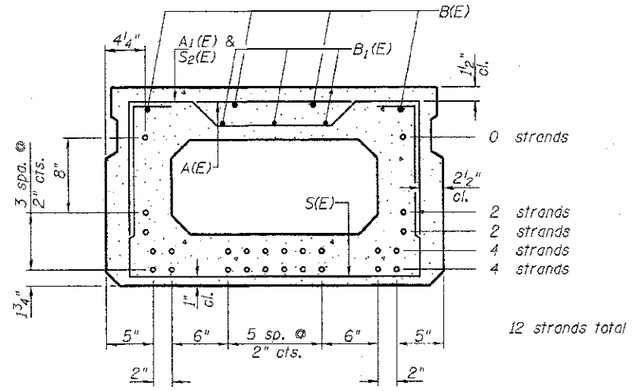


VIEW C-C



PLAN VIEW

Note: Spacing of S(E) and S2(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 B-B
(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.

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	11	#4	2'-7"	
A1(E)	22	#4	2'-10"	
B(E)	8	#5	20'-2"	
B1(E)	9	#4	13-11"	
S(E)	54	#4	6'-5"	
S1(E)	10	#4	4'-11"	
S2(E)	44	#4	5'-2"	
U(E)	8	#5	4'-0"	
U1(E)	4	#4	5'-0"	

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

SPAN 1 AND 3

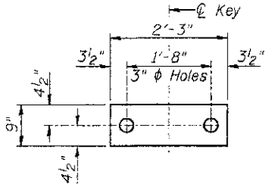
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT	REVISED -	
CHECKED - WDL	REVISED -	
DRAWN - JN	REVISED -	
DATE - 02/20/2013	REVISED -	

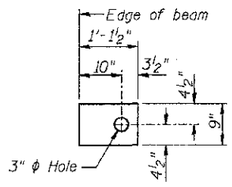
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM
STRUCTURE NO. 013-3239

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	5
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



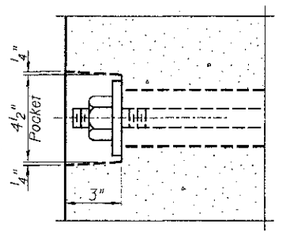
FABRIC BEARING PAD
(Interior)



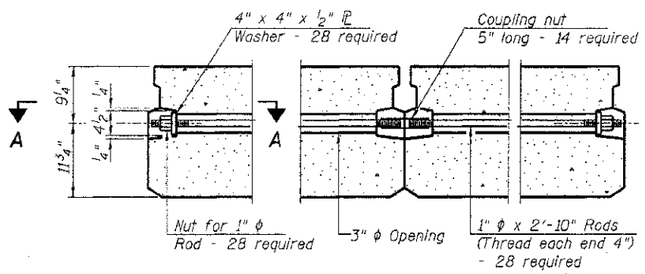
FABRIC BEARING PAD
(Exterior)

FIXED

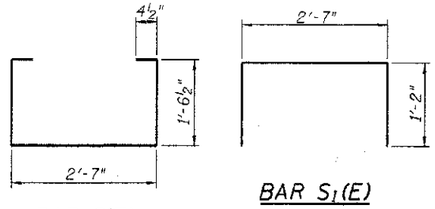
Notes:
All bearing pads shall be 1" thick.



SECTION A-A

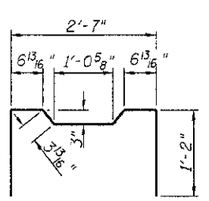


TYPICAL TRANSVERSE TIE ASSEMBLY
Number required for hardware items includes both Spans 1 and 3.

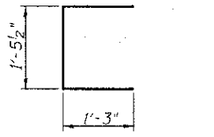


BAR S(E)

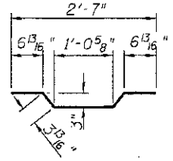
BAR S_1(E)



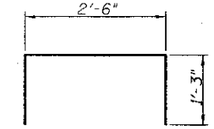
BAR S_2(E)



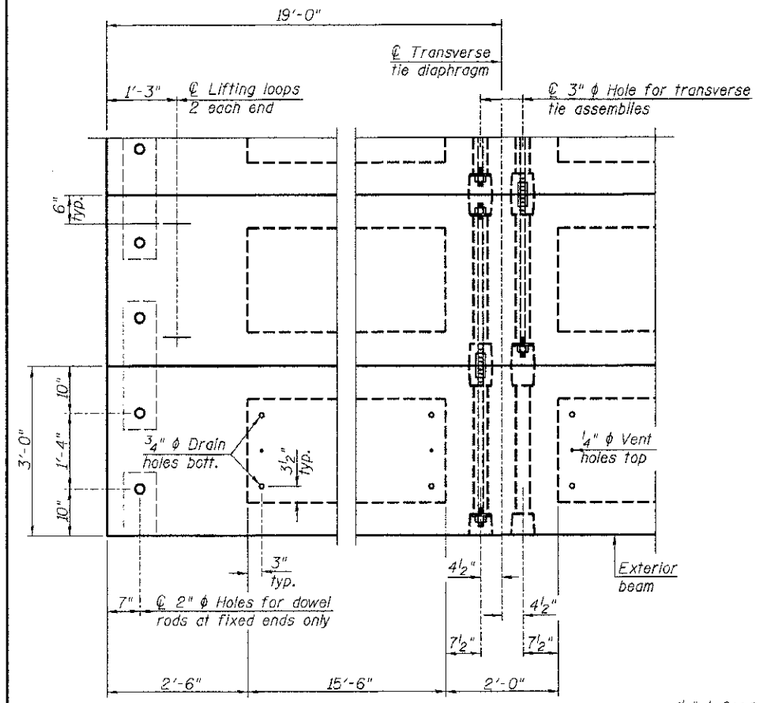
BAR U(E)



BAR A_1(E)

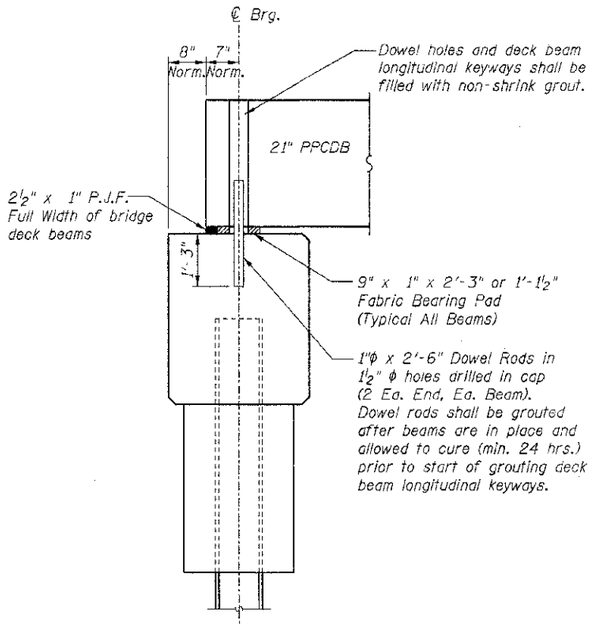


BAR U_1(E)

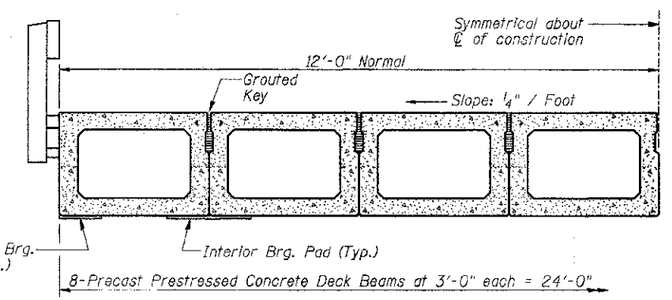


PLAN VIEW

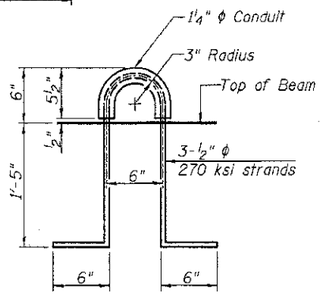
Note: Connect beams in pairs with the transverse tie configuration shown.



FIXED BEARING
ABUTMENT



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



LIFTING LOOP DETAIL

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.

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.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	2904*

*Total for 3 spans

SPAN 1 AND 3

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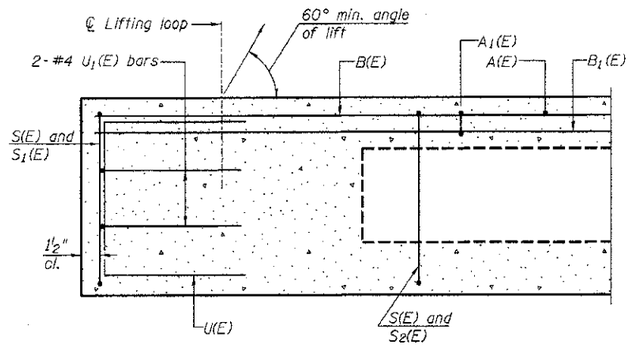
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED - BLT		REVISED -
CHECKED - WDL		REVISED -
DRAWN - JN		REVISED -
DATE - 02/20/2013		REVISED -

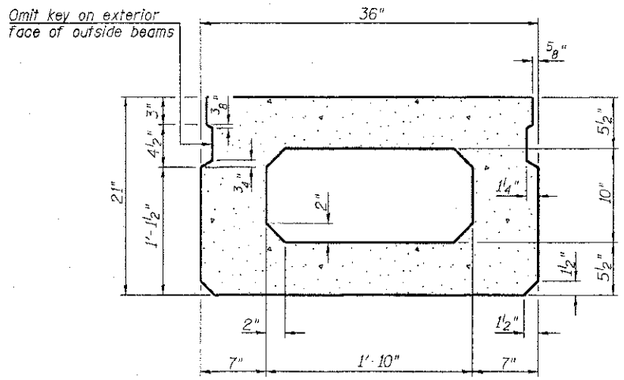
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 013-3239

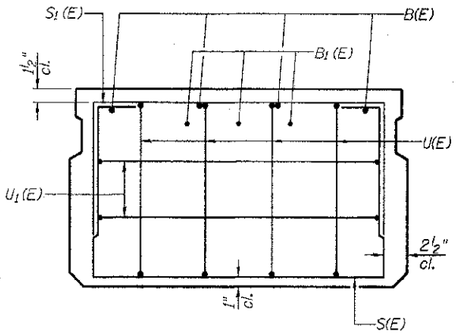
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	6
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



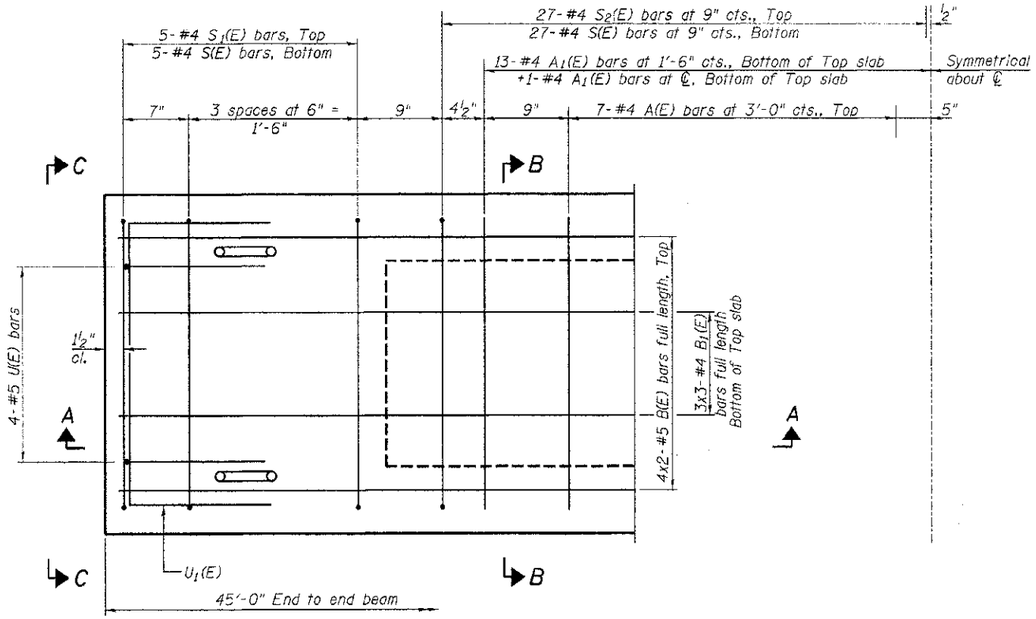
SECTION A-A



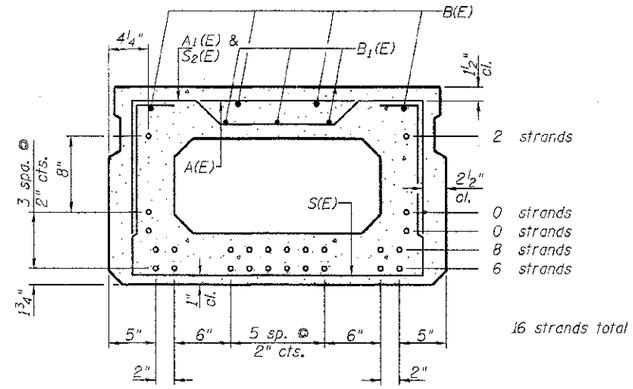
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B
(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)	14	#4	2'-7"	—
$A_1(E)$	27	#4	2'-10"	⌐¬
B(E)	8	#5	23'-8"	—
$B_1(E)$	9	#4	16'-3"	—
S(E)	64	#4	6'-5"	□
$S_1(E)$	10	#4	4'-11"	⊐□⊏
$S_2(E)$	54	#4	5'-2"	⊐⊏
U(E)	8	#5	4'-0"	⊏⊐
$U_1(E)$	4	#4	5'-0"	⊐⊏

Note: See Sheet 8 for additional details and Bill of Material.

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.

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

SPAN 2

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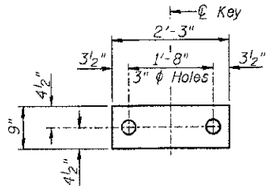
DRAWN	JN	REVISED	-
DATE	02/20/2013	REVISED	-

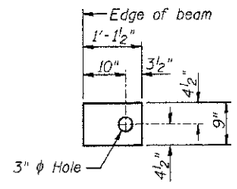
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM
STRUCTURE NO. 013-3239

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	7
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



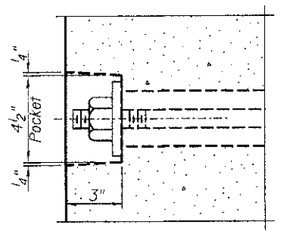
FABRIC BEARING PAD
(Interior)



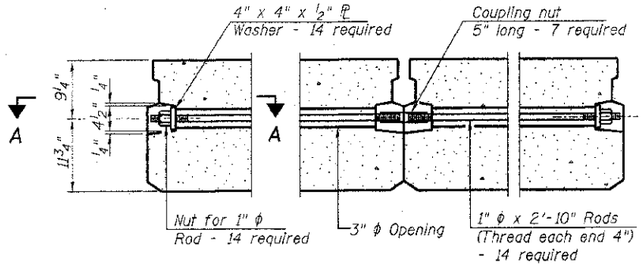
FABRIC BEARING PAD
(Exterior)

FIXED

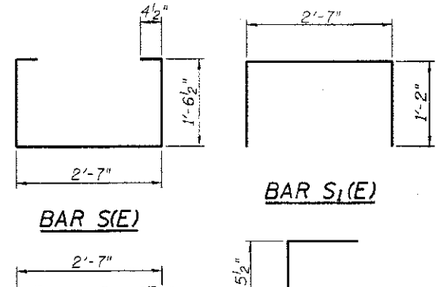
Notes:
All bearing pads shall be 1" thick.

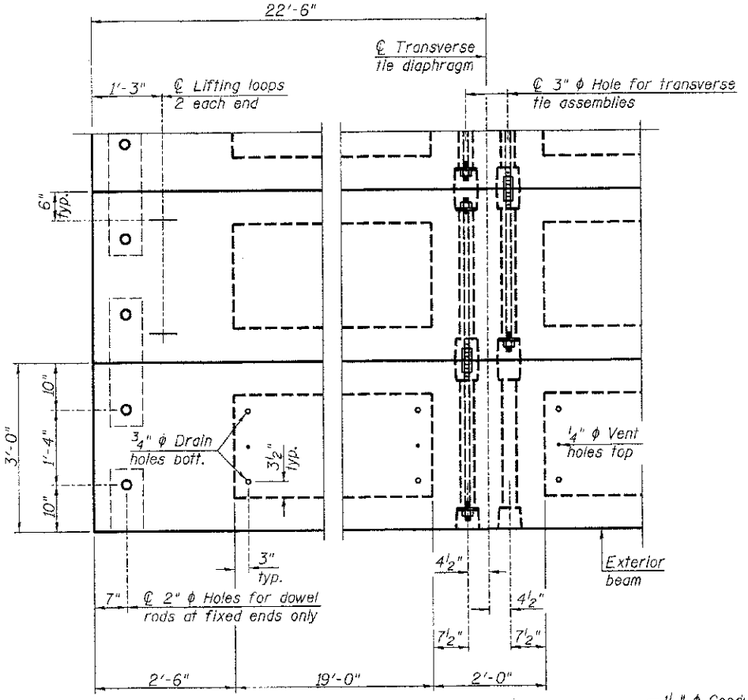


SECTION A-A



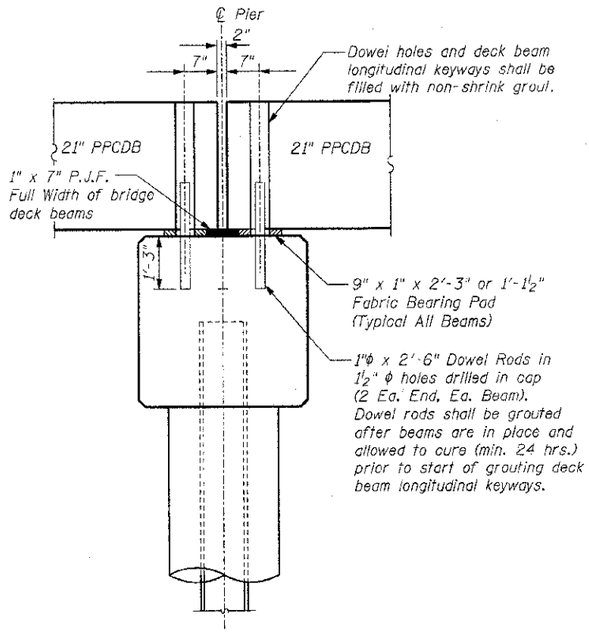
TYPICAL TRANSVERSE TIE ASSEMBLY



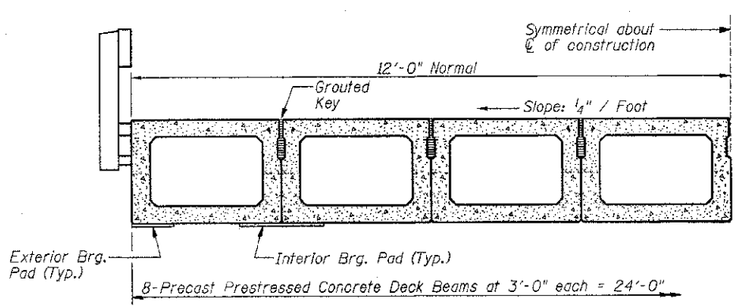


PLAN VIEW

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

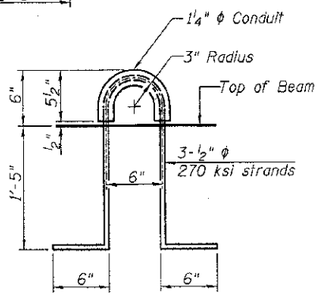


FIXED BEARING
PIER



HALF CROSS SECTION

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



LIFTING LOOP DETAIL

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.

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.

SPAN 2

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ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

DESIGNED	BLT	REVISED	-
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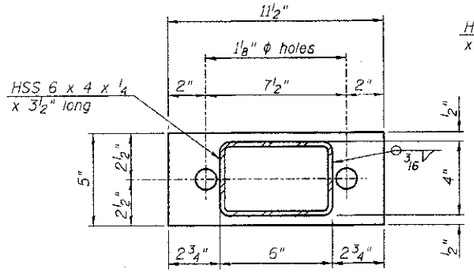
DRAWN	JN	REVISED	-
DATE	02/20/2013	REVISED	-

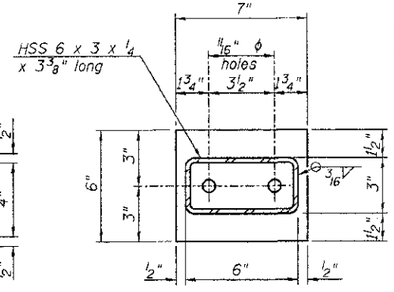
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 013-3239

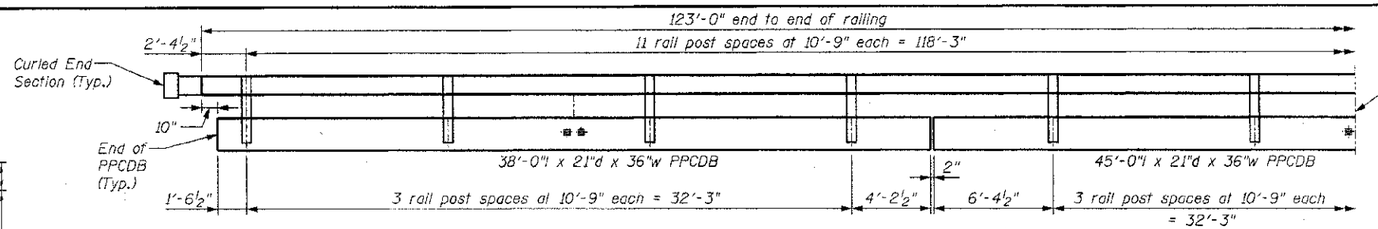
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	8
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS	FED. AID PROJECT		



PL ½" x 11½" x 5"

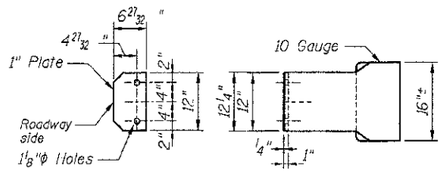


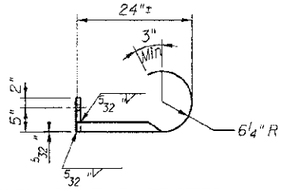
PL ½" x 7" x 6"



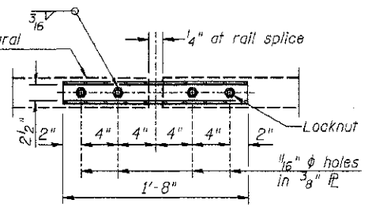
RAIL POST SPACING

Note: The cost of the Curled End Sections shall be included in the contract unit price per foot for "STEEL RAILING, TYPE S1", and no additional compensation will be allowed.

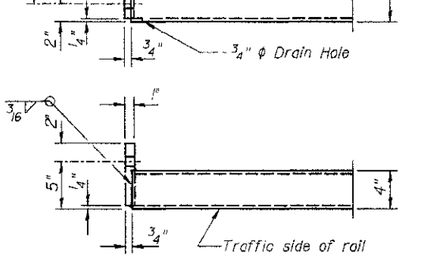


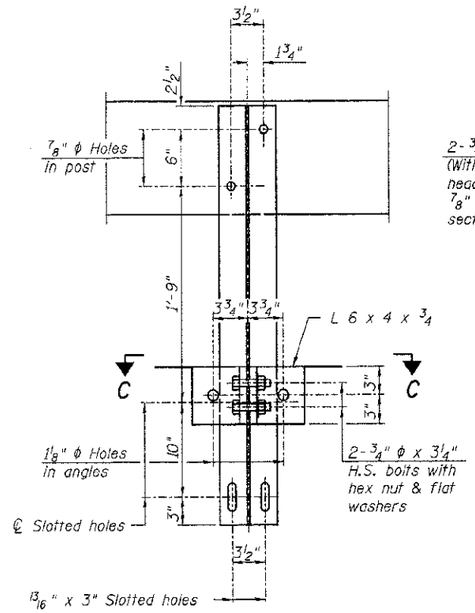


CURLED END SECTION

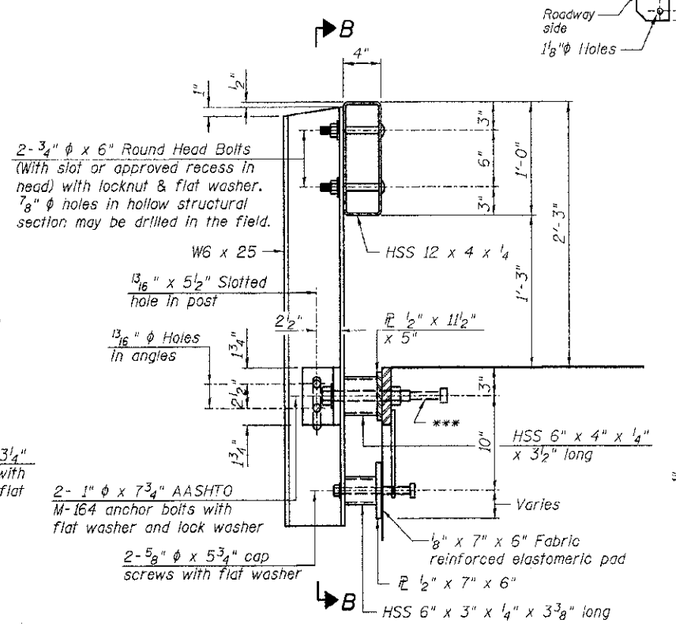


PLAN-BOTT. SPLICE PL TYPICAL

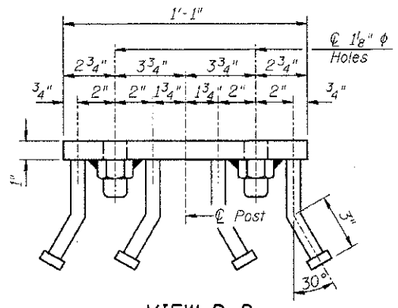




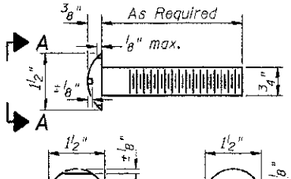
SECTION B-B



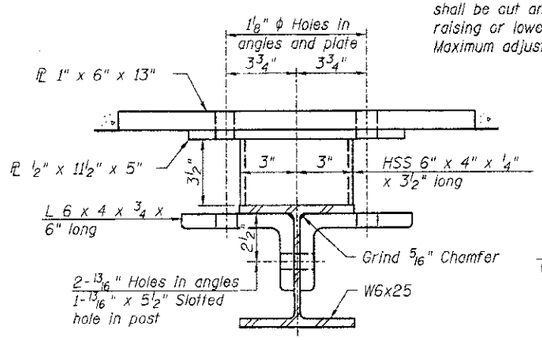
SECTION AT RAILING POST



VIEW D-D

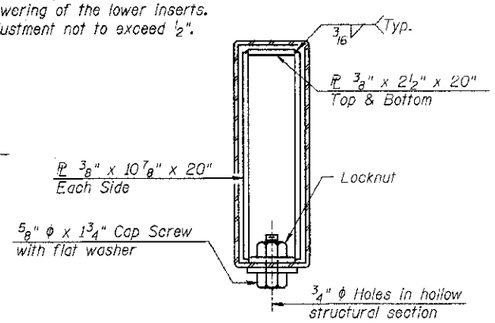


VIEW A-A ROUND HEAD BOLT

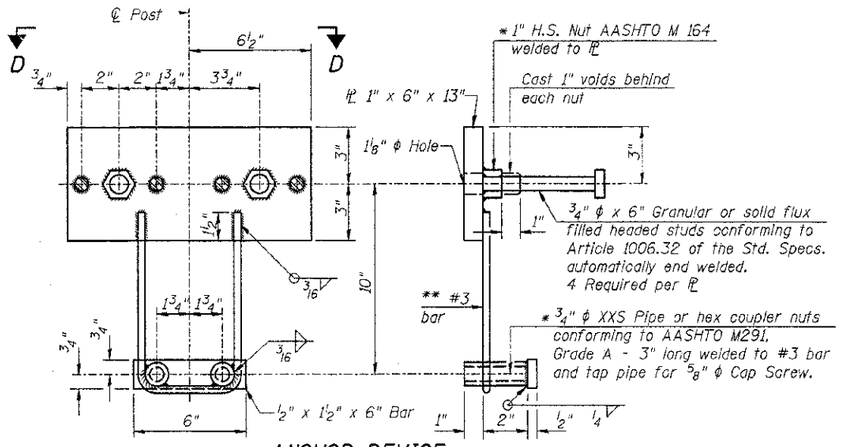


SECTION C-C

** 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 ½".



SECTIONS AT RAIL SPLICE



ANCHOR DEVICE

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

*** 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.

Notes:

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

For multi-span bridges, sufficient ¼" 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.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	246

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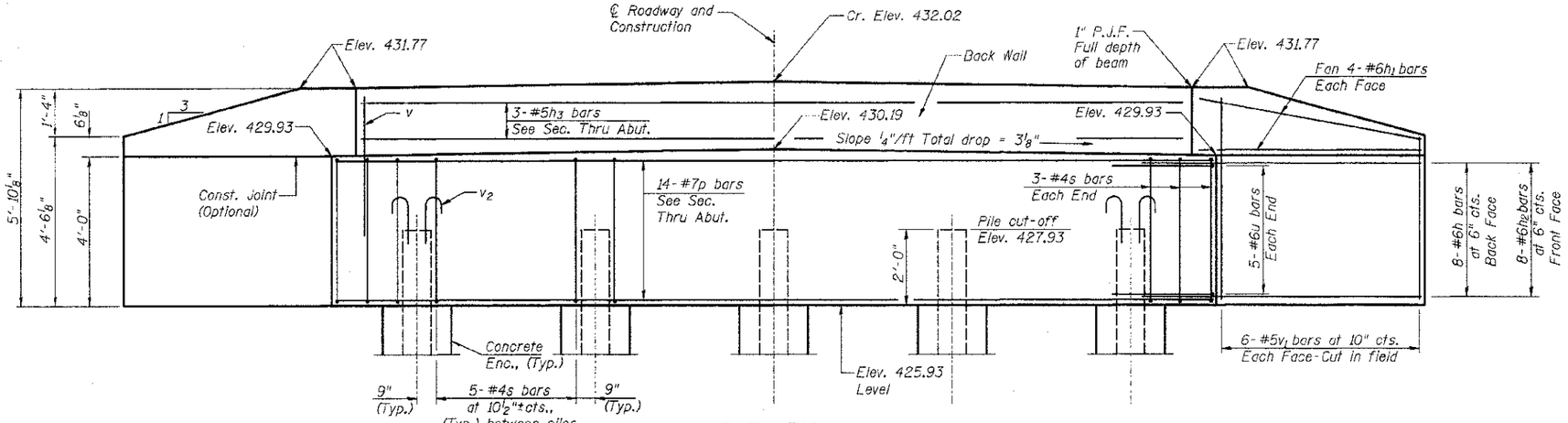
DATE	02/20/2013	REVISED	-

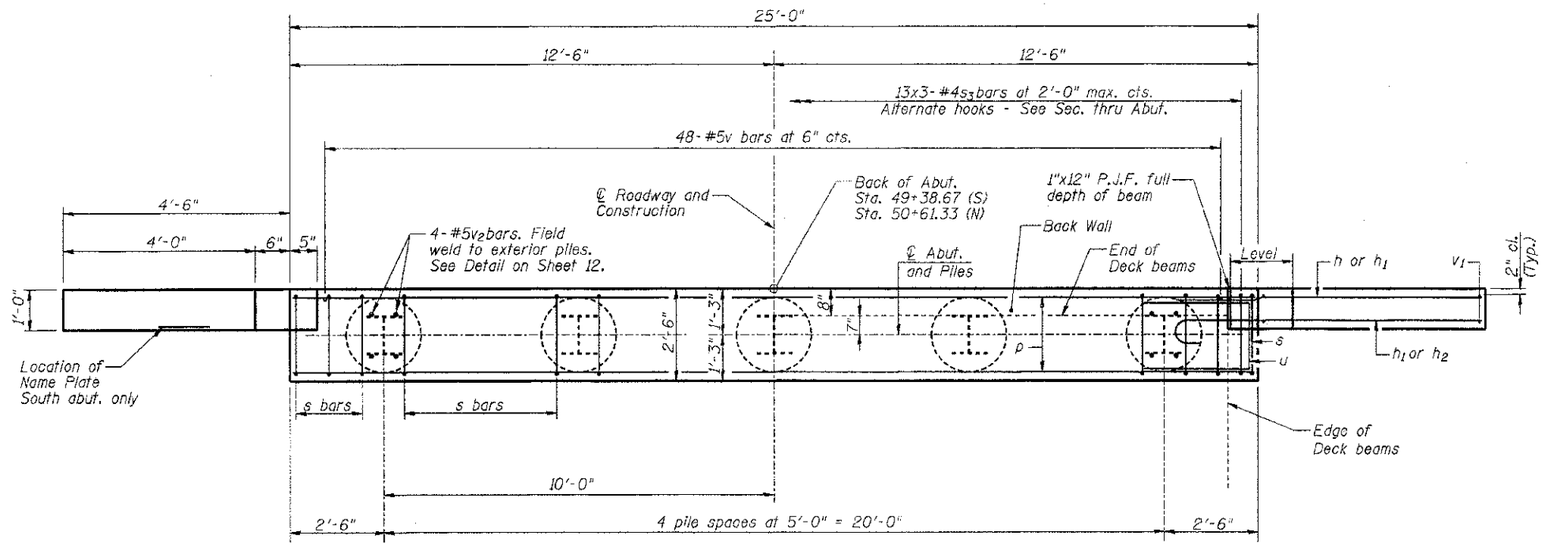
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE S-1 DETAILS
STRUCTURE NO. 013-3239

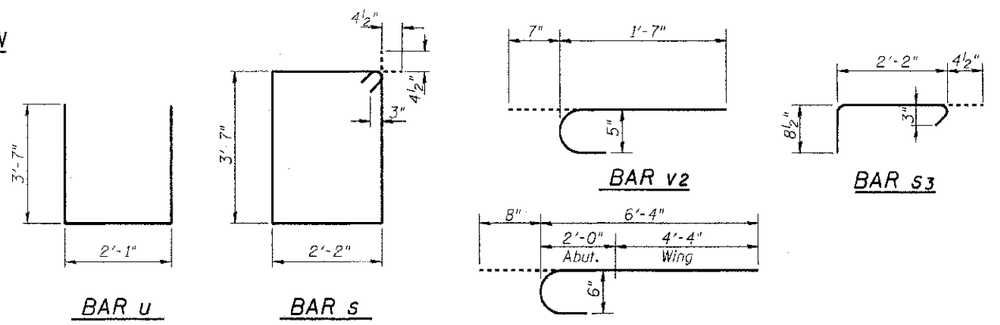
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	9
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



ELEVATION



PLAN



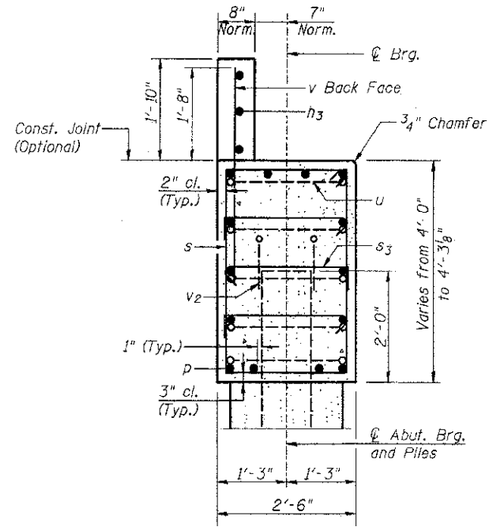
The Contractor shall provide temporary support for the piles after driving until the caps and superstructure are set. The weak soils as shown on the borings provide minimal resistance for lateral loads to the piles. This work shall be included in the unit price per foot for Driving Piles and no additional compensation will be allowed.

PILE DATA SOUTH ABUTMENT

Type:	Steel HP14x73
Nominal Required Bearing:	500 kips
Factored Resistance Available:	275 kips
Estimated Length:	33'/plie
No. Production Piles:	5
No. Test Piles:	0

PILE DATA NORTH ABUTMENT

Type:	Steel HP14x73
Nominal Required Bearing:	500 kips
Factored Resistance Available:	275 kips
Estimated Length:	35'/plie
No. Production Piles:	5
No. Test Piles:	0



SEC. THRU ABUT.
(Normal to ℄)

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified).

All exposed edges shall have standard 3/4" chamfer, unless otherwise noted or as directed by the Engineer.

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 position of the 90° & 135° hooked ends of the s_3 bar shall be alternated between adjacent bars as shown, both vertically and horizontally.

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#6	8'-0"	
h_1	16	#6	4'-7"	
h_2	16	#6	7'-0"	
h_3	3	#5	23'-8"	
p	14	#7	24'-8"	
s	26	#4	12'-3"	
s_3	39	#4	3'-3"	
u	10	#6	9'-3"	
v	48	#5	3'-9"	
v_1	24	#5	5'-6"	CUT IN FIELD
v_2	8	#5	2'-2"	
Concrete Structures			Cu. Yd.	12.5
Reinforcement Bars			Pound	2030
Furnishing Steel Piles, HP14x73	Foot	S. Abut.		165
		N. Abut.		175
Driving Piles	Foot	S Abut.		165
		N Abut.		175
Concrete Encasement		Cu Yd		2.8

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

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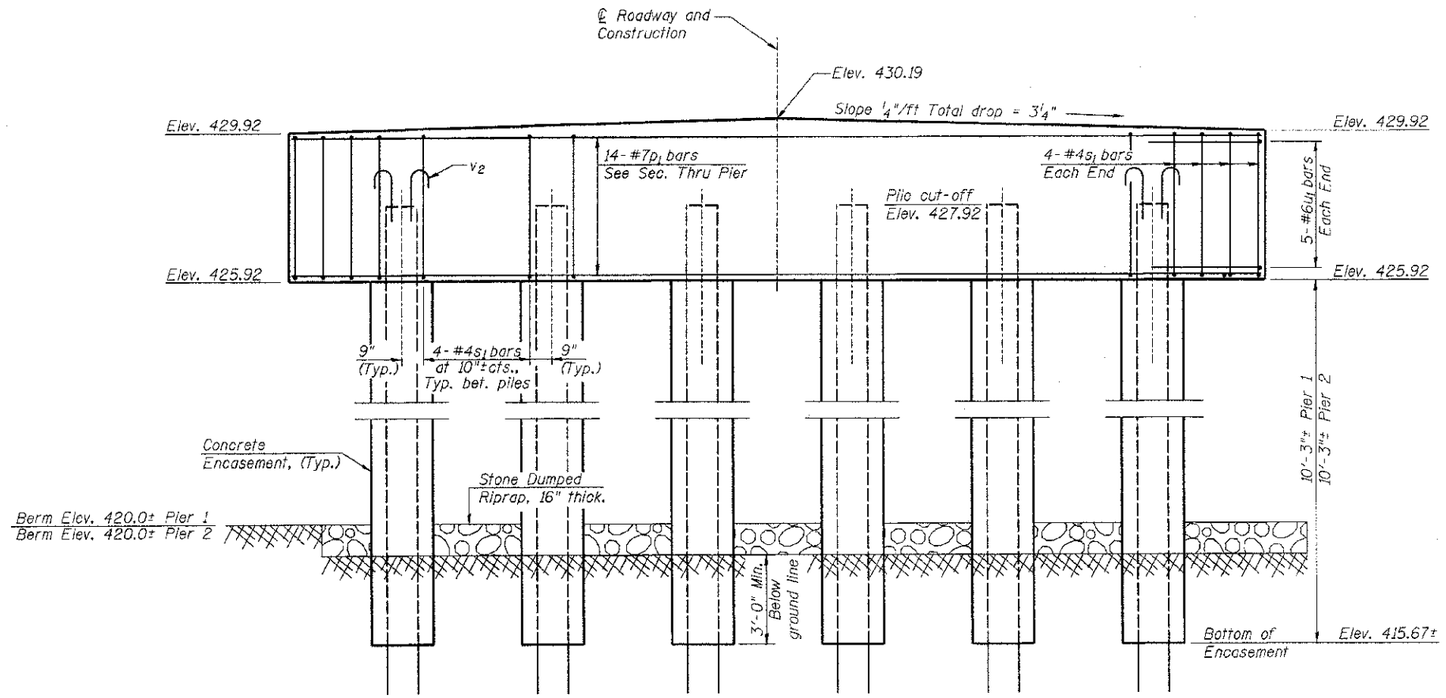
CHECKED - WDL		REVISED -
DRAWN - JN		REVISED -
DATE - 02/20/2013		REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS
STRUCTURE NO. 013-3239

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	10
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



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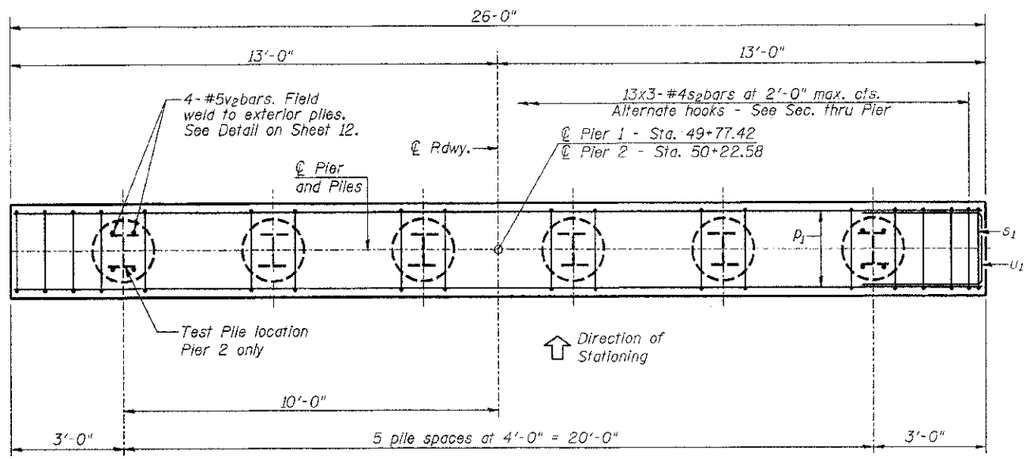
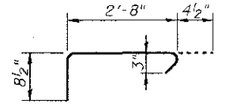
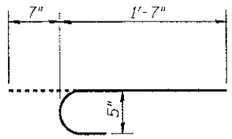


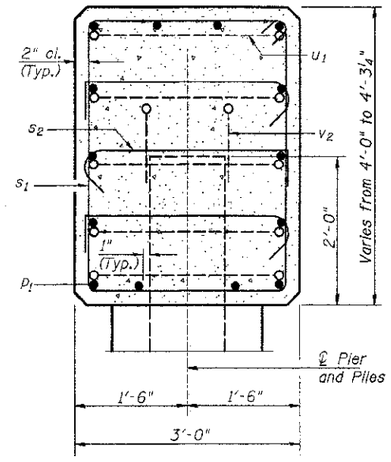
PLAN



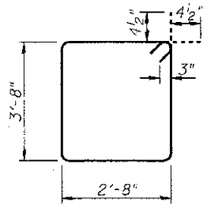
BAR s_2



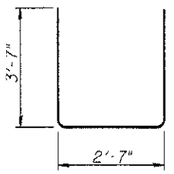
BAR v_2



SEC. THRU PIER



BAR s_1



BAR u_1

GENERAL NOTES

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

Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified).

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 HP14x73 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.

The position of the 90° & 135° hooked ends of the s2 bar shall be alternated between adjacent bars as shown, both vertically and horizontally.

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p_1	14	#7	25'-8"	
s_1	28	#4	13'-5"	
s_2	39	#4	3'-9"	
u_1	10	#6	9'-9"	
v_2	8	#5	2'-2"	
Concrete Structures			Cu Yd	12.0
Reinforcement Bars			Pound	1250
Furnishing Steel Piles, HP14x73	Foot		Pier 1	198
			Pier 2	175
Driving Piles	Foot		Pier 1	198
			Pier 2	175
Test Pile, Steel HP14x73	Each		Pier 1	0
			Pier 2	1
Concrete Encasement	Cu Yd		Pier 1	11.2
			Pier 2	11.2

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

PILE DATA PIER 1

Type:	Steel HP14x73
Nominal Required Bearing:	500 kips
Factored Resistance Available:	275 kips
Est. Length:	33 foot/pile
No. Production Piles:	6
No. Test Piles:	0

PILE DATA PIER 2

Type:	Steel HP14x73
Nominal Required Bearing:	500 kips
Factored Resistance Available:	275 kips
Est. Length:	35 foot/pile
No. Production Piles:	5
No. Test Piles:	1

The Contractor shall provide temporary support for the piles after driving until the caps and superstructure are set. The weak soils as shown on the borings provide minimal resistance for lateral loads to the piles. This work shall be included in the unit price per foot for Driving Piles and no additional compensation will be allowed.

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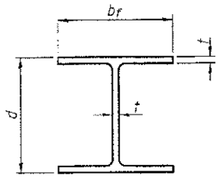
CHECKED - 02/20/2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

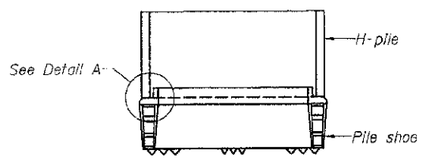
PIER DETAILS
STRUCTURE NO. 013-3239

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	11
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			

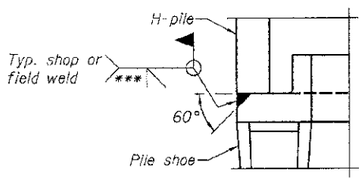


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30"
x102	14"	$14\frac{3}{4}''$	$\frac{11}{16}''$	30"
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30"
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30"
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24"
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24"
x63	12"	$12\frac{1}{8}''$	$\frac{1}{2}''$	24"
x53	$11\frac{3}{4}''$	12"	$\frac{7}{16}''$	24"
HP 10x57	10"	$10\frac{1}{4}''$	$\frac{9}{16}''$	24"
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24"
HP 8x36	8"	$8\frac{1}{8}''$	$\frac{7}{16}''$	18"

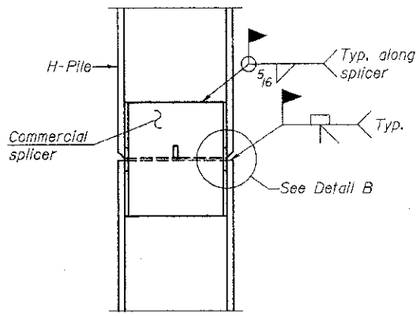


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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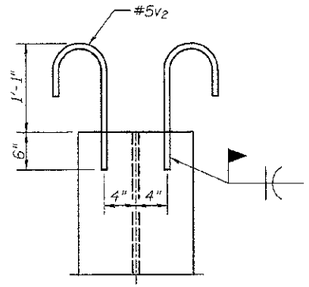
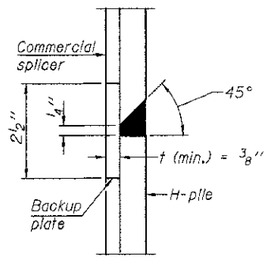
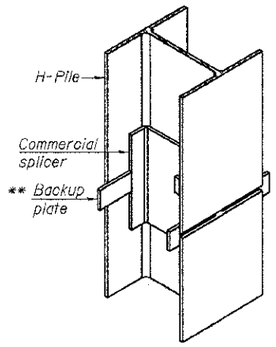


SEISMIC PILE DETAILS
Typical each flange, each exterior pile

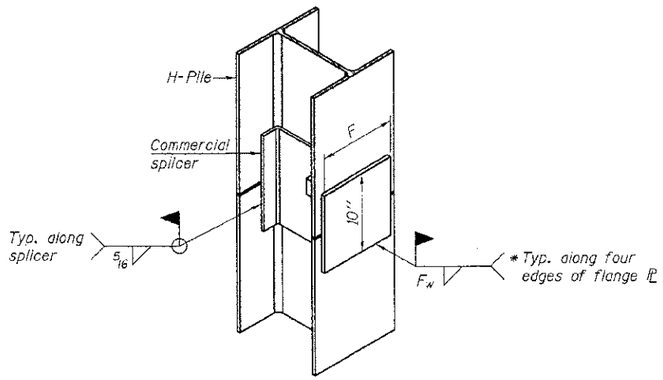


DETAIL "B"



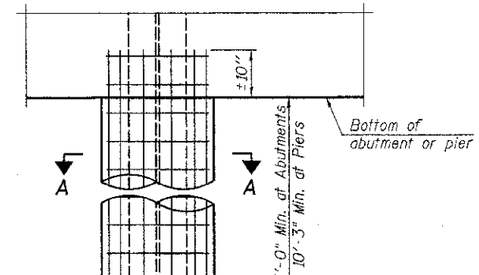
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE



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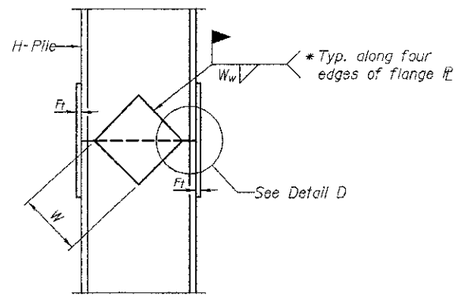

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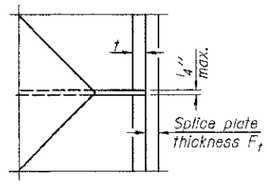
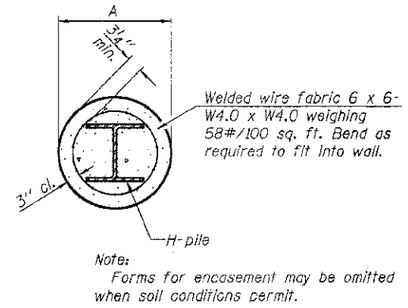


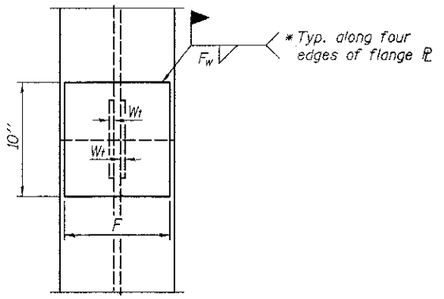
DETAIL D

PILE ENCASEMENT



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

SECTION A-A



END VIEW

Designation	F	F_f	F_w	W	W_f	W_w
HP 14x117	$12\frac{1}{2}''$	1"	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10"	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10"	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10"	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10"	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8"	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8"	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7"	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

* Interrupt welds $\frac{1}{4}''$ from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).

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

F-HP 7-1-10

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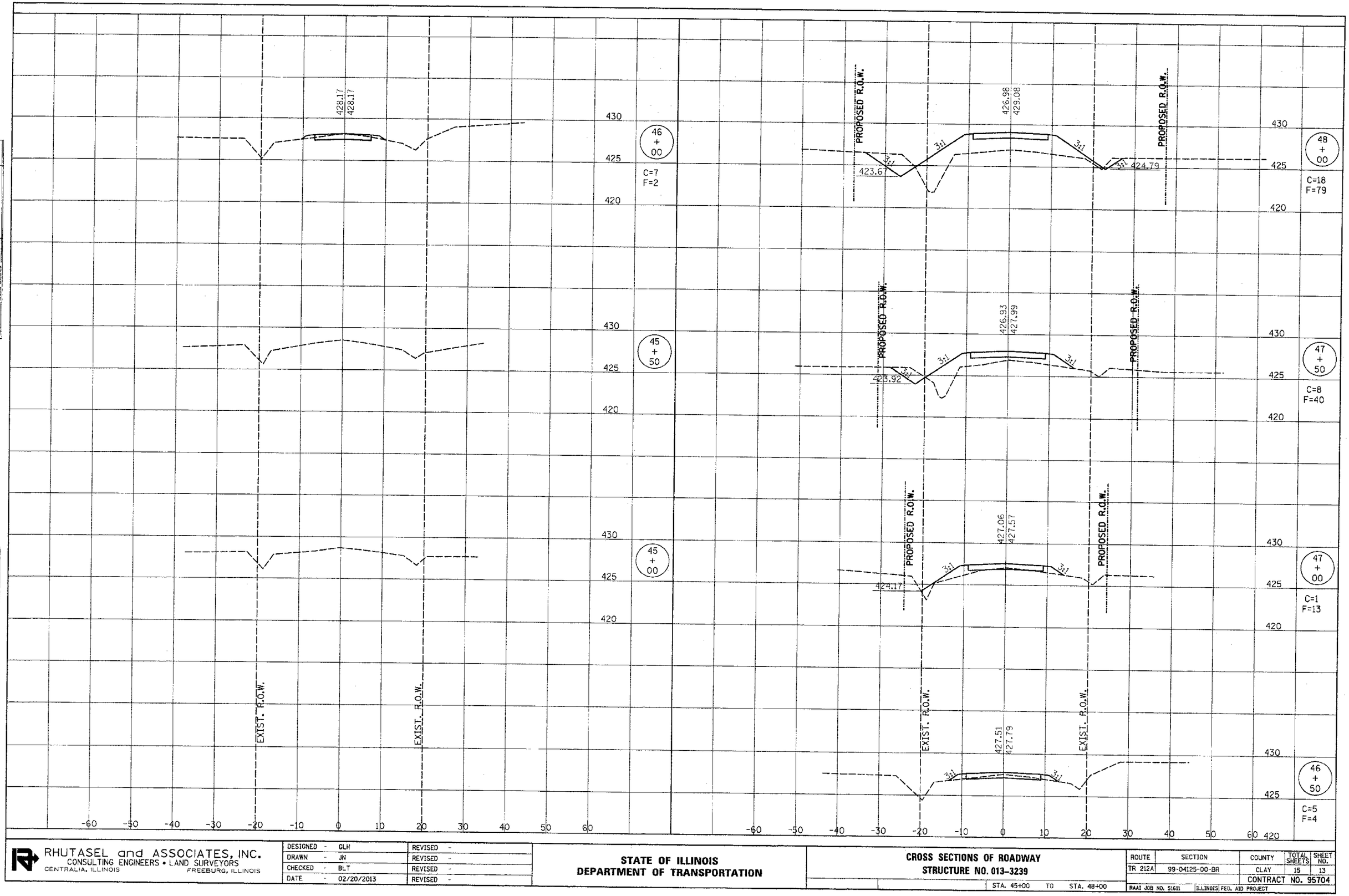
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 013-3239

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	12
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



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

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

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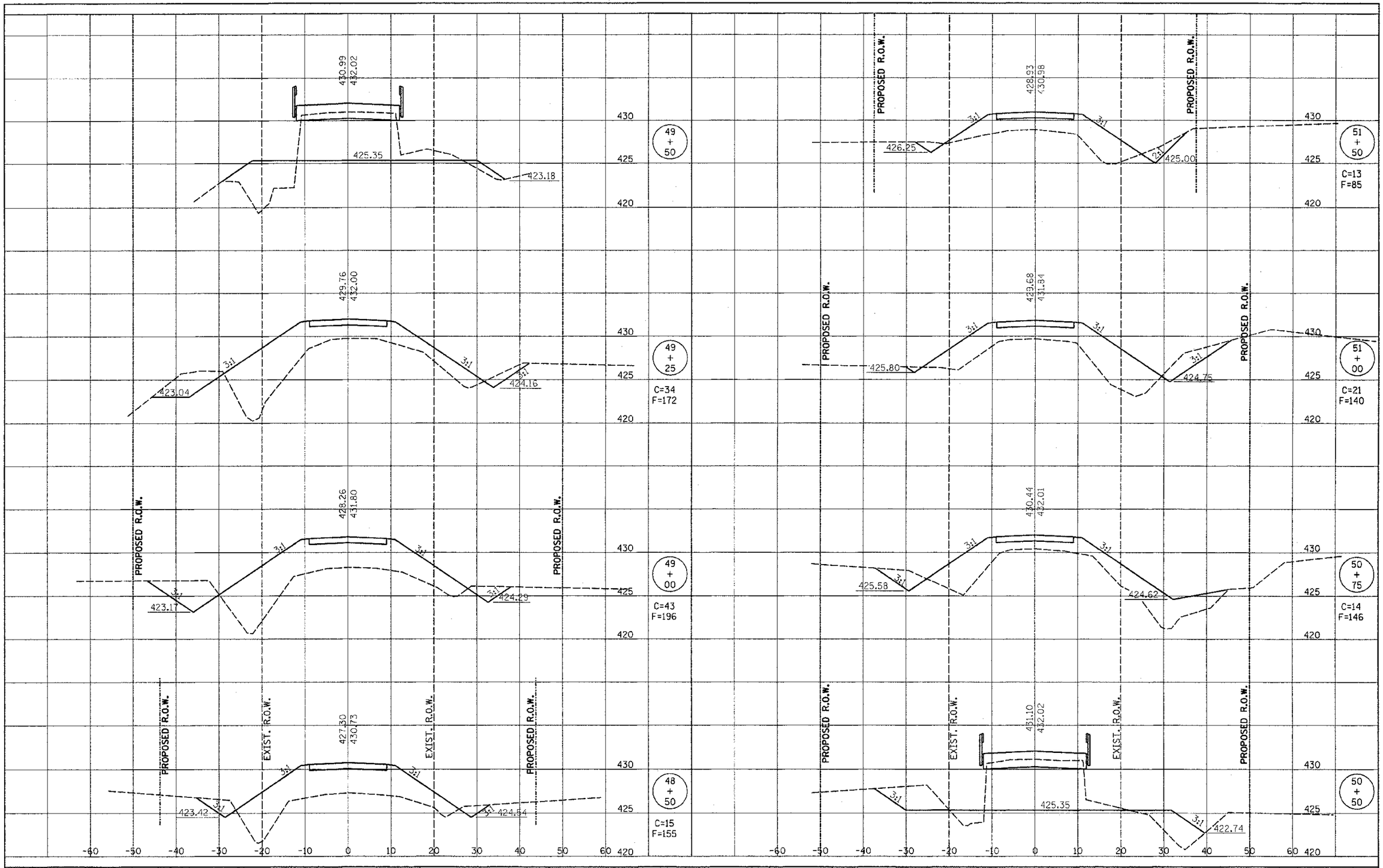
CHECKED - BLT	REVISED -	
DATE - 02/20/2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY
STRUCTURE NO. 013-3239
STA. 45+00 TO STA. 48+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	13
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS FED. AID PROJECT			



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

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

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CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS

DESIGNED	GLH	REVISED -
DRAWN	JN	REVISED -
CHECKED	BLT	REVISED -
DATE	02/20/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY
STRUCTURE NO. 013-3239
STA. 48+50 TO STA. 51+50

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	14
RAAI JOB NO. 51811	ILLINOIS FED. AID PROJECT	CONTRACT NO. 95704		

FINAL SURVEY	SURVEYED	BY
NOTE BOOK	PLOTTED	DATE
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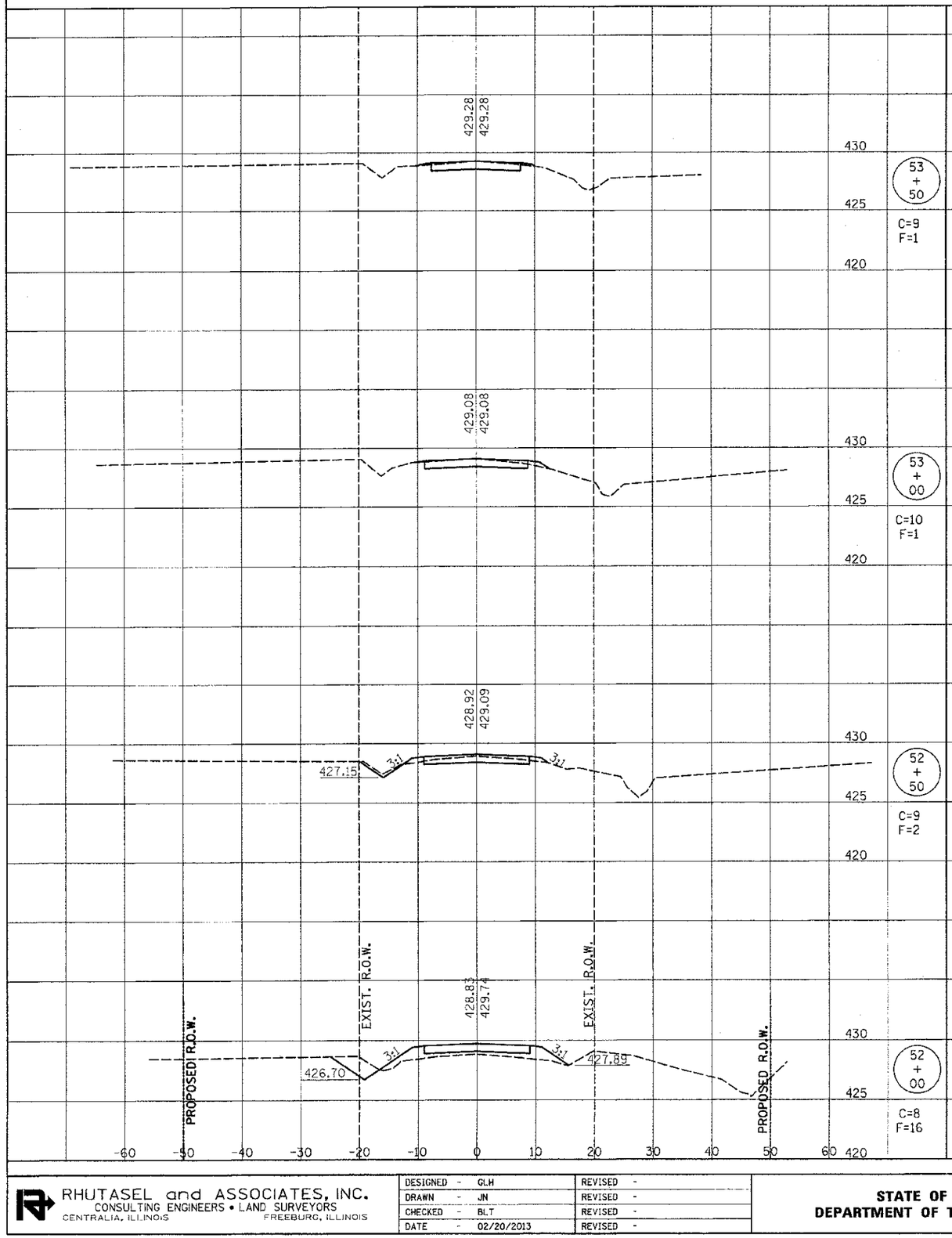
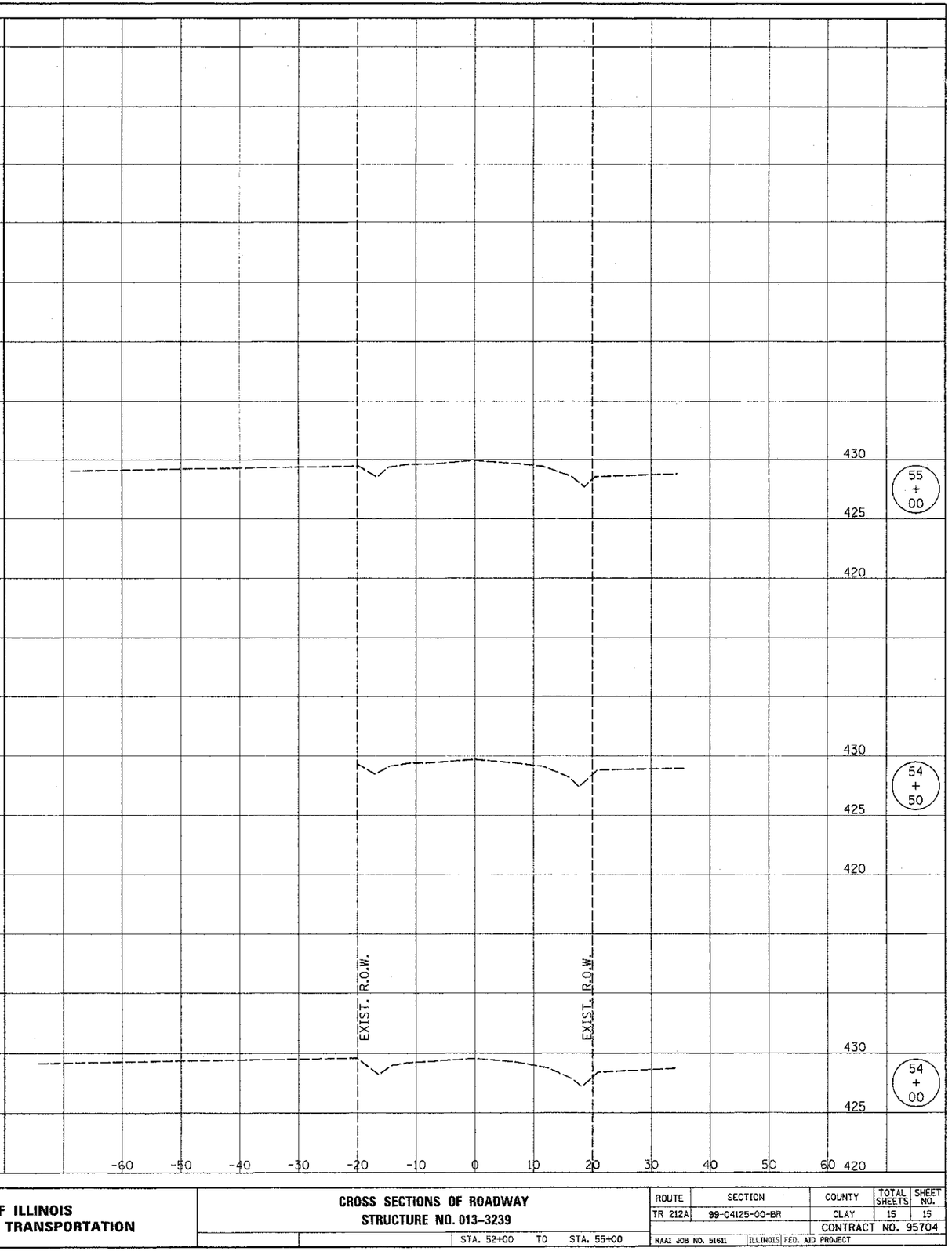
	AREAS	
	AREAS CHECKED	



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



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY
STRUCTURE NO. 013-3239
STA. 52+00 TO STA. 55+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 212A	99-04125-00-BR	CLAY	15	15
		CONTRACT NO. 95704		
RAAI JOB NO. 51611	ILLINOIS	FED. AID PROJECT		