

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM

TR 19 (ATHENS LANE)
LIMESTONE CREEK
SECTION 07-01116-00-BR
PROJECT NO. BROS-025(064)
BIBLE GROVE ROAD DISTRICT
CLAY COUNTY
JOB NO. C-97-093-10

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	1
ILLINOIS				



LOCATION OF SECTION INDICATED THUS: - ■ -

CLAY COUNTY
HIGHWAY DEPARTMENT

APPROVED April 4, 2011
Michael B. Quandt
CLAY COUNTY, COUNTY ENGINEER

PASSED 4-11, 2011
Maureen East
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW 4/11, 2011
Roger L. Diehl
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS



Gary L. Hahn 04.04.11
GARY L. HAHN
CENTRALIA, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL
ENGINEER NO. 62-42606
EXPIRES NOV. 30, 2011

INDEX OF SHEETS

- COVER SHEET
- SUMMARY OF QUANTITIES AND TYPICAL SECTIONS
- PLAN AND PROFILE OF ROADWAY
- GENERAL PLAN AND ELEVATION
- 5.-6. PRECAST PRESTRESSED CONCRETE DECK BEAM DETAILS
- STEEL RAILING, TYPE S1 DETAILS
- ABUTMENT DETAILS
- HP PILE DETAILS
- 10.-11. CROSS SECTIONS OF ROADWAY

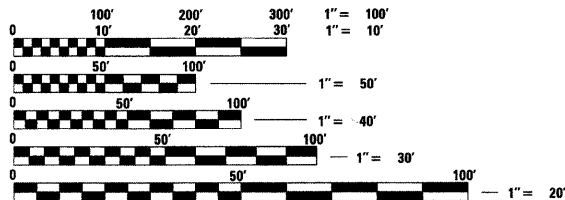
HIGHWAY STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-05 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATE FOR BRIDGES
- 631026-05 TRAFFIC BARRIER TERMINAL TYPE 5
- 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)

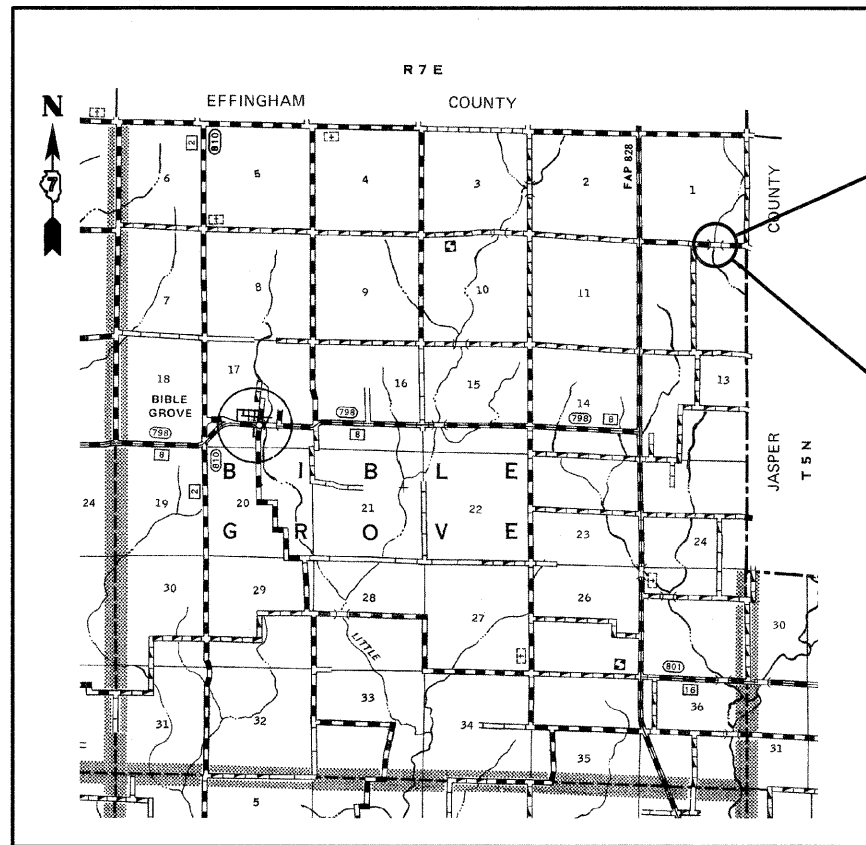
DESIGN CLASSIFICATION: RURAL LOCAL ROAD

ADT₂₀₁₀ : 225
ADT₂₀₃₀ : 300
DESIGN SPEED - 40 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 Website: <http://www.illinois1call.com>



SECTION BEGINS
STA. 46+65.17

SECTION 07-01116-00-BR INCLUDES THE CONSTRUCTION OF A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE CARRYING TR 19 OVER LIMESTONE CREEK, 75'-2" BK. TO BK. ABUTMENTS X 24' WIDE, 0° SKEW. EXISTING STRUCTURE NO. 013-3154 PROPOSED STRUCTURE NO. 013-3237

SECTION ENDS
STA. 53+55.61

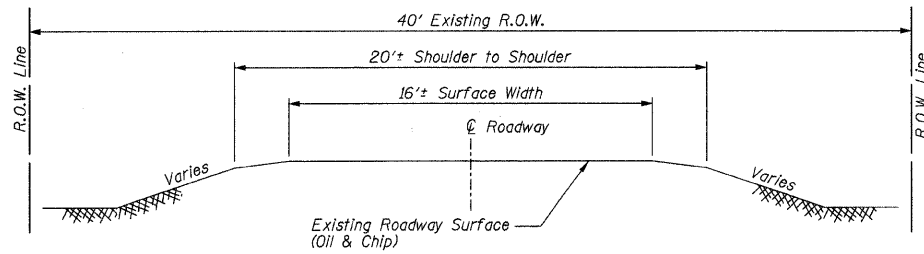
LOCATION: NEAR THE NW CORNER, NE 1/4, NE 1/4, SECTION 12, T5N, R7E, 3RD P.M.
NET LENGTH OF PROJECT: 690.44 FT = 0.131 MI

CONTRACT NO. 95651

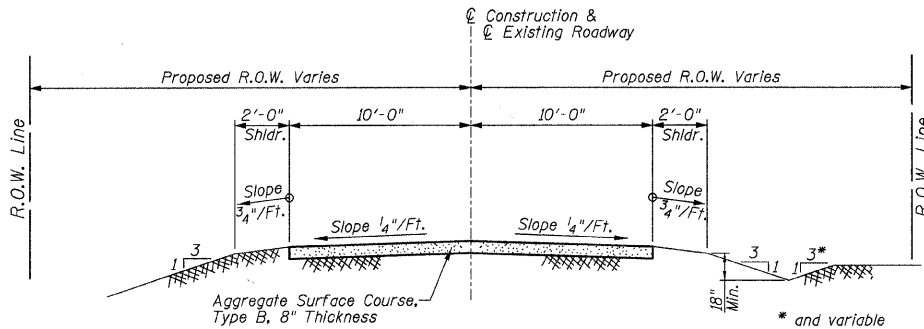
RHUTASEL and ASSOCIATES, INC.
CONSULTING ENGINEERS • LAND SURVEYORS
CENTRALIA, ILLINOIS FREEBURG, ILLINOIS
ILLINOIS DESIGN FIRM LICENSE NO. 184-000287

Sheet
1
of 11
Job No. 50410

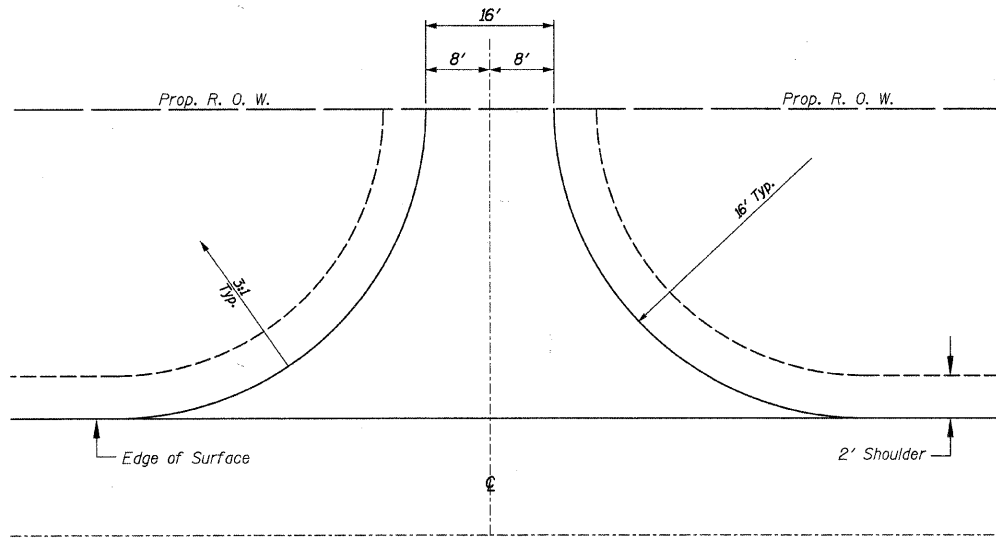
03/30/2011 RAAL #50410



**TYPICAL SECTION
EXISTING APPROACH ROADWAY**



**TYPICAL SECTION
PROPOSED APPROACH ROADWAY**



TYPICAL FIELD ENTRANCE
Aggregate Surface Course, Type B 6" Depth
Lt., Sta. 48+50 - 21 Ton Each
Lt., Sta. 52+00 - 21 Ton
(Included in Summary of Quantities)

UTILITIES

Telephone:
Wabash Telephone Coop.
Contact: Todd Fender
Phone: 618-665-3311

Electric:
Clay Electric Cooperative, Inc.
Contact: Sam Kessler
Phone: 618-662-2171

Water:
EJ Water Co-op, Inc.
Contact: Dean Swingler
Phone: 217-925-5566

SUMMARY OF QUANTITIES

		Location	
Code No.	Item	Unit	Quantity
20100500	TREE REMOVAL, ACRES	ACRE	0.1
20200100	EARTH EXCAVATION	CU YD	158
20300100	CHANNEL EXCAVATION	CU YD	451
20400800	FURNISHED EXCAVATION	CU YD	982
28000305	TEMPORARY DITCH CHECKS	FOOT	40
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	280
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	806
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	18.8
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	1772
50800105	REINFORCEMENT BARS	POUND	3420
* 50900205	STEEL RAILING, TYPE S1	FOOT	150
51201600	FURNISHING STEEL PILES HP12X53	FOOT	186
51202305	DRIVING PILES	FOOT	186
51203600	TEST PILE STEEL HP12X53	EACH	1
51500100	NAME PLATES	EACH	1
542C1060	PIPE CULVERTS, CLASS C, TYPE 2 15"	FOOT	64
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	38
67100100	MOBILIZATION	L SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.6

* SPECIALTY ITEM

GENERAL NOTES

- 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.
- 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.
- Roadway Centerline profiles refer to the finished surface.
- 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.
- 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.
- 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.
- 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.
- Factors used for quantity calculations are as follows:
Stone Dumped Riprap 130 pounds/cu. ft.
Aggregate Surface Course 2.1 tons/cu. yd.

**SUMMARY OF QUANTITIES
AND TYPICAL SECTIONS**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	2
CONTRACT NO. 95651				
ILLINOIS FED. AID PROJECT				

03/30/2011 RAAT #50410

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. 46+05.17 TO 49+55.42	95	71	766	-695
STA. 50+30.58 TO 54+15.61	63	47	504	-457
SUB-TOTAL	158	118	1270	-1152
50% SUITABLE CHANNEL EXC.	226	170		170
TOTAL FURNISHED EXCAVATION				-982

*25% SHRINKAGE
**FURNISHED EXCAVATION

PROPOSED STRUCTURE. 0.07' RT., STA. 49+93.00 SINGLE SPAN PRECAST PRESSED CONCRETE DECK BEAM BRIDGE. 75'-2" BK. TO BK. ABUTMENTS x 24' WIDE, 0° SKEW.
EXISTING STRUCTURE NO. 013-3154 PROPOSED STRUCTURE NO. 013-3237

EXISTING STRUCTURE: STRUCTURE NO. 013-3154: SINGLE SPAN STEEL I-BEAM AND CONCRETE DECK STRUCTURE ON CLOSED CONCRETE ABUTMENTS. 34' L. X 22' W. NO SALVAGE.

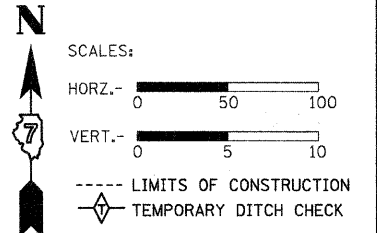
CONSTRUCT FIELD ENTRANCE AND INSTALL PIPE CULVERTS, CLASS C, ALUMINIZED STEEL TYPE 2 CORRUGATED PIPE. STA. 48+50 LT., 15"Ø X 32 FOOT U.S. F.L. ELEV. 500.01 D.S. F.L. ELEV. 498.19

STONE DUMPED RIPRAP, CLASS A4

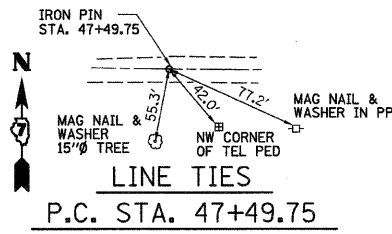
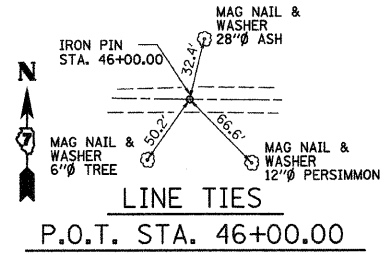
PLACE 10'X20' AREA OF STONE DUMPED RIPRAP, CLASS A4, AS DIRECTED BY ENGINEER

CONSTRUCT NEW DITCH AS DIRECTED BY THE ENGINEER. INSURE POSITIVE DRAINAGE TO CREEK.

CONSTRUCT FIELD ENTRANCE AND INSTALL PIPE CULVERTS, CLASS C, ALUMINIZED STEEL TYPE 2 CORRUGATED PIPE. STA. 52+00 LT., 15"Ø X 32 FOOT U.S. F.L. ELEV. 502.55 D.S. F.L. ELEV. 501.53

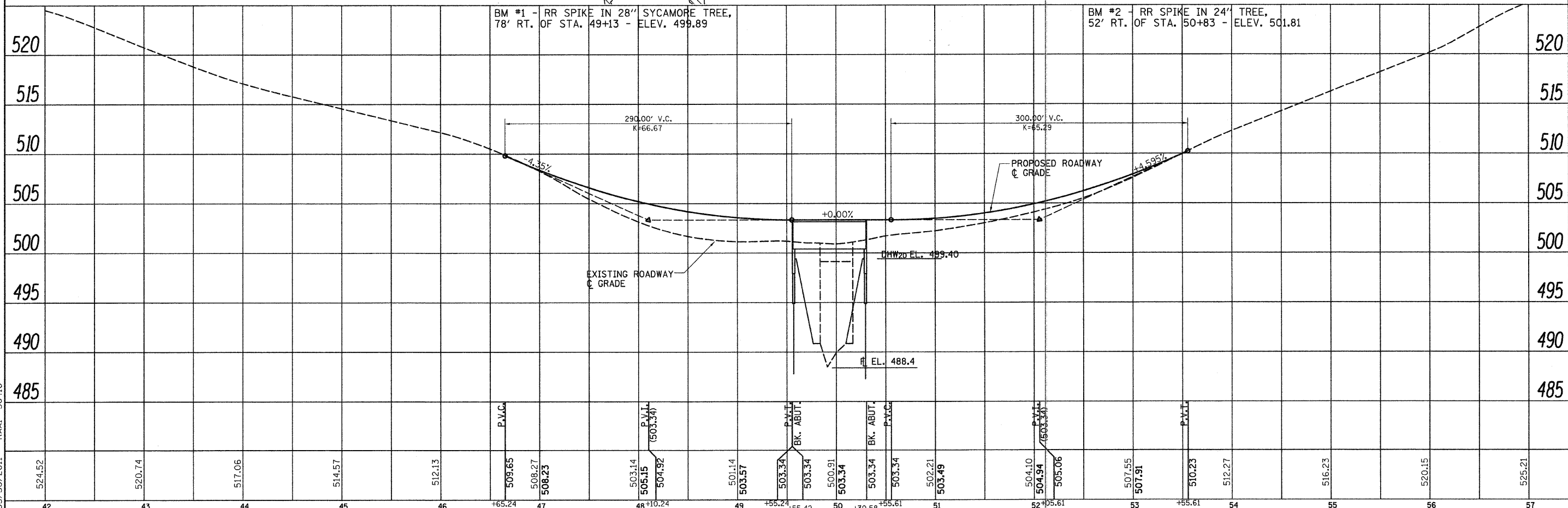
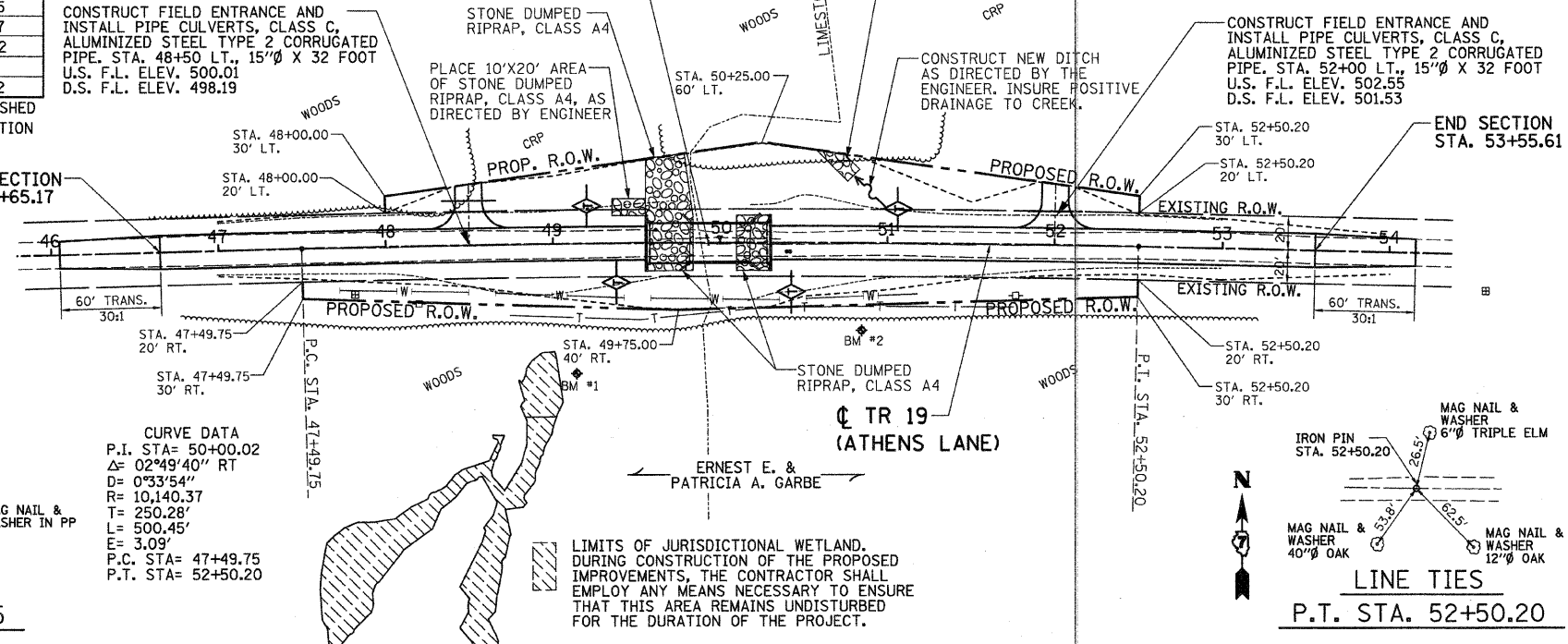
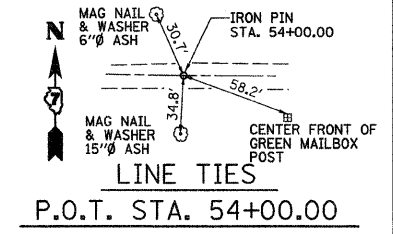
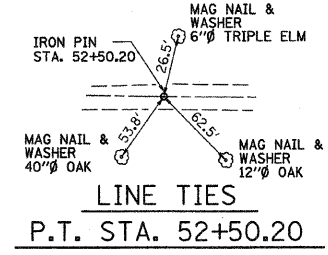


THE EXISTING RIGHT OF WAY SHOWN HEREON HAS BEEN PROTRACTED FROM EXISTING RECORDS AND IS TO BE USED FOR REFERENCE PURPOSES ONLY. FURTHERMORE, NO COMPLETE SURVEY OF SAID R.O.W. IS IMPLIED BY THIS DRAWING.



CURVE DATA
P.I. STA= 50+00.02
Δ= 02°49'40" RT
D= 0°33'54"
R= 10,140.37
T= 250.28'
L= 500.45'
E= 3.09'
P.C. STA= 47+49.75
P.T. STA= 52+50.20

LIMITS OF JURISDICTIONAL WETLAND. DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS, THE CONTRACTOR SHALL EMPLOY ANY MEANS NECESSARY TO ENSURE THAT THIS AREA REMAINS UNDISTURBED FOR THE DURATION OF THE PROJECT.



DATE	
BY	
PLAN	
DATE	
BY	
PROFILE	
DATE	
BY	

DATE	
BY	
PROFILE	
DATE	
BY	

RAA1 #50410
03/30/2011

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

DESIGNED - GLH	REVISED -
DRAWN - JN	REVISED -
CHECKED - GLH	REVISED -
DATE - JANUARY 2011	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF ROADWAY
STRUCTURE NO. 013-3237

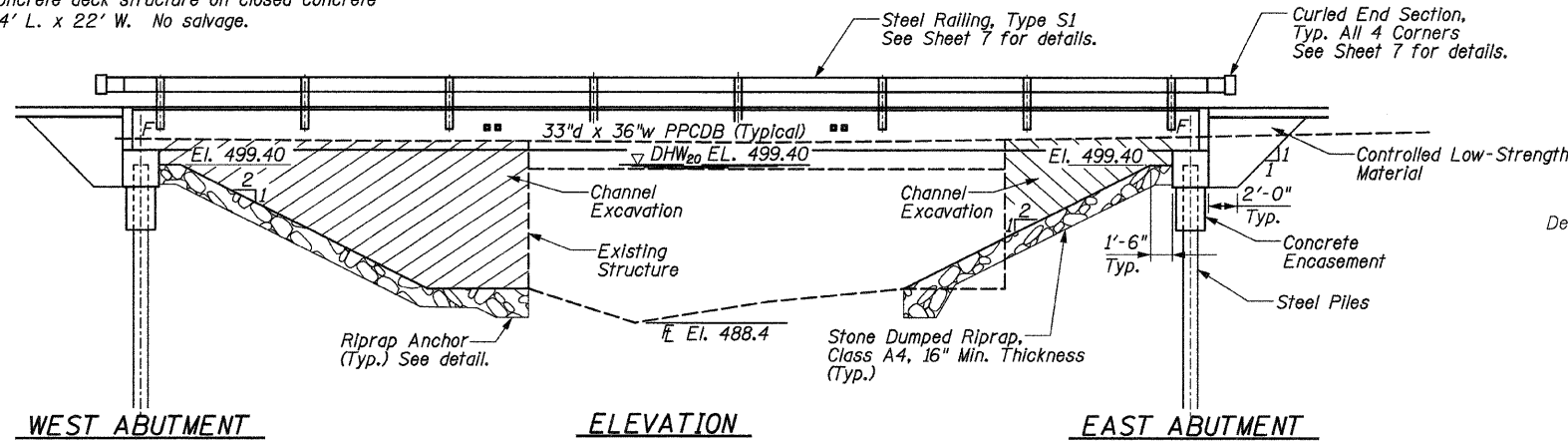
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-0116-00-BR	CLAY	11	3
CONTRACT NO. 95651			[ILLINOIS] FED. AID PROJECT	

STA. 42+00 TO STA. 57+00

BM #1 - RR spike in 28" Sycamore tree,
78' Rt. of Sta. 49+13 - Elev. 499.89

BM #2 - RR spike in 24" tree,
52' Rt. of Sta. 50+83 - Elev. 501.81

Existing Structure: Structure No.: 013-3154. Single span steel
I-beam and concrete deck structure on closed concrete
abutments. 34' L. x 22' W. No salvage.



LOADING HL-93

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

DESIGN SPECIFICATIONS

2007 (4th ED.) AASHTO LRFD Bridge
Design Specifications. With 2008 & 2009 Interims.

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 DATA

Seismic Performance Zone (SPZ) = 2
Soil Site Classification = D
 $S_{D1} = 0.235$ $S_{D5} = 0.540$

BILL OF MATERIALS (BRIDGE ONLY)

ITEM	UNIT	TOTAL
Channel Excavation	Cu Yd	451
Stone Dumped Riprap, Class A4	Ton	280
Removal of Existing Structures	Each	1
Concrete Structures	Cu Yd	18.8
Concrete Encasement	Cu Yd	2.8
PPCDB (33" Depth)	Sq Ft	1772
Reinforcement Bars	Pound	3420
Steel Railing, Type S1	Foot	150
Furnishing Steel Piles HP12x53	Foot	186
Driving Piles	Foot	186
Test Pile Steel HP12x53	Each	1
Name Plates	Each	1
Controlled Low-Strength Material	Cu Yd	38
Terminal Marker - Direct Applied	Each	4

GENERAL NOTES

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

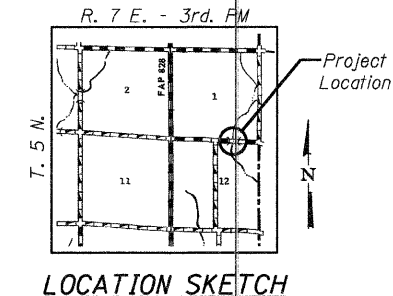
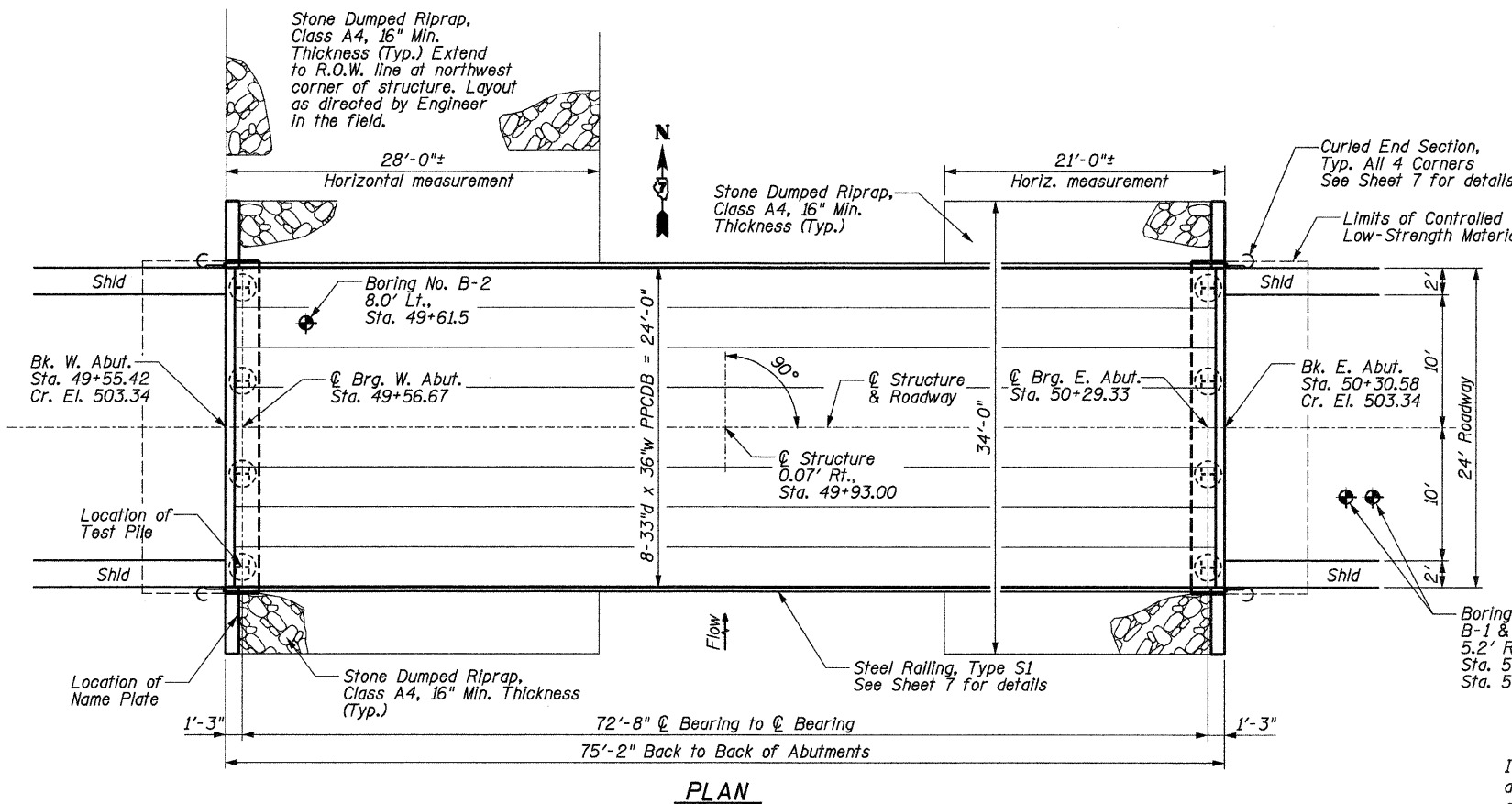
See Section 502 of the Standard Specifications for Structural Excavation.

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 Special Provisions for Soil Borings.

Do not scale these drawings.

The abutment bearing seat surfaces for the precast prestressed concrete
deck beams shall be adjusted by shimming to assure firm and even bearing.
As required, $\frac{1}{8}$ " fabric adjusting shims of the dimensions of the Exterior
Bearing Pad shall be provided for each bearing. The top surface of the
beams shall be finished according to the IDOT Manual for Fabrication of
Precast Prestressed Concrete Products.



STATION 49+93.00
BUILT 201 BY
CLAY COUNTY
TR 19 SEC. 07-01116-00-BR
LOADING HL-93
STRUCTURE NO. 013-3237

NAME PLATE
See Std. 515001

I certify that to the best of knowledge, information
and belief, this bridge/box culvert 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.



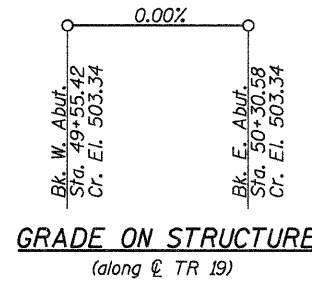
Gary L. Hahn
Gary L. Hahn
04-04-2011
Date of Signing
11/30/2012
Date of License Expiration

GENERAL PLAN AND ELEVATION
ATHENS LANE OVER LIMESTONE CREEK
TR 19 - SECTION 07-01116-00-BR
CLAY COUNTY
STATION 49+93.00
STRUCTURE NO. 013-3237

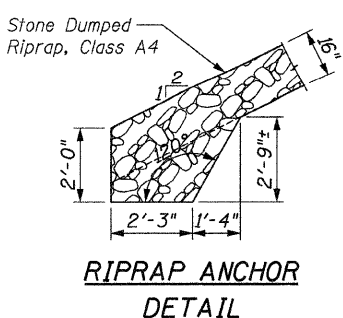
WATERWAY INFORMATION

Drainage Area = 5.84 sq. mi. Low Grade Elev. 500.9 @ Sta. 50+00

Flood	Freq. Yr.	Q C.F.S.	Opening	Sq. Ft.	Nat. Exist.	Prop.	H.W.E. Exist.	Prop.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	20	1610	301	456	499.40	0.57	0.05	499.97	499.45			
Base	100	2540	301	526	500.85	1.12	0.34	501.97	501.19			
Overtopping												
Max. Calc.	500	3450	301	526	502.02	0.91	0.82	502.93	502.84			

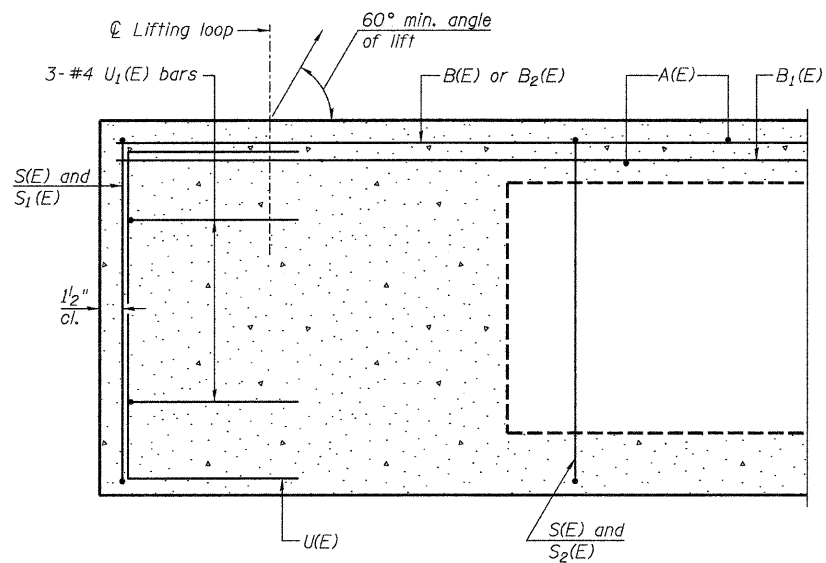


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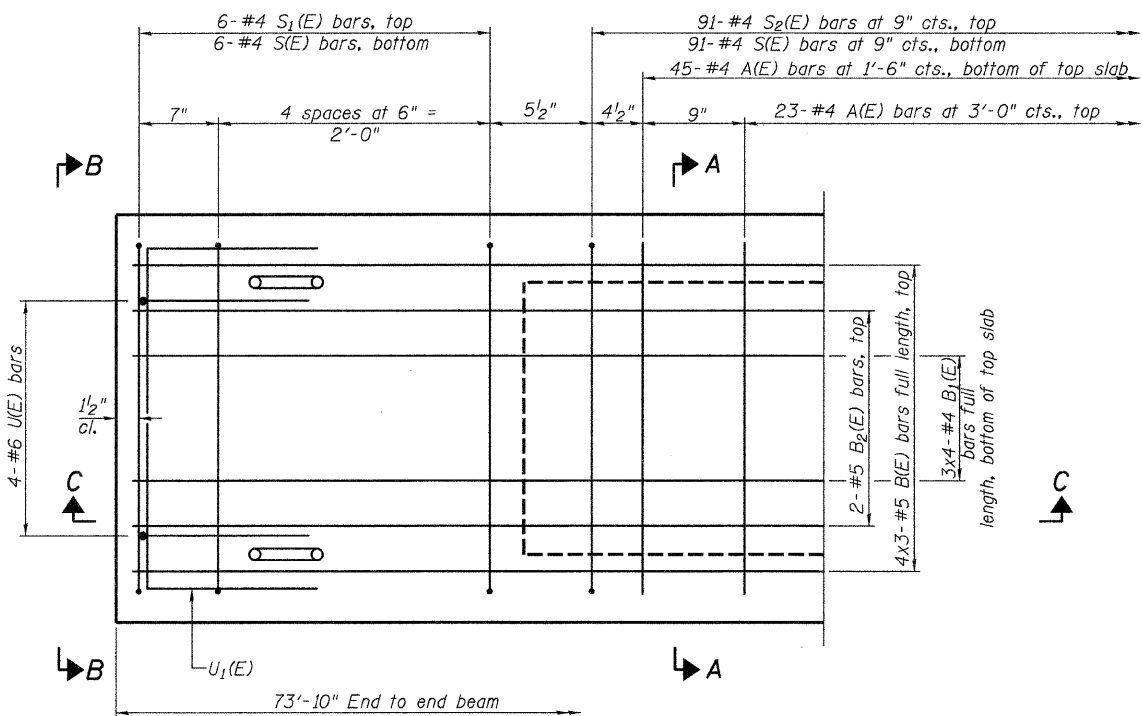


03/30/2011 RAAI #50410

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	4
CONTRACT NO. 95651				
ILLINOIS FED. AID PROJECT				



SECTION C-C



PLAN VIEW

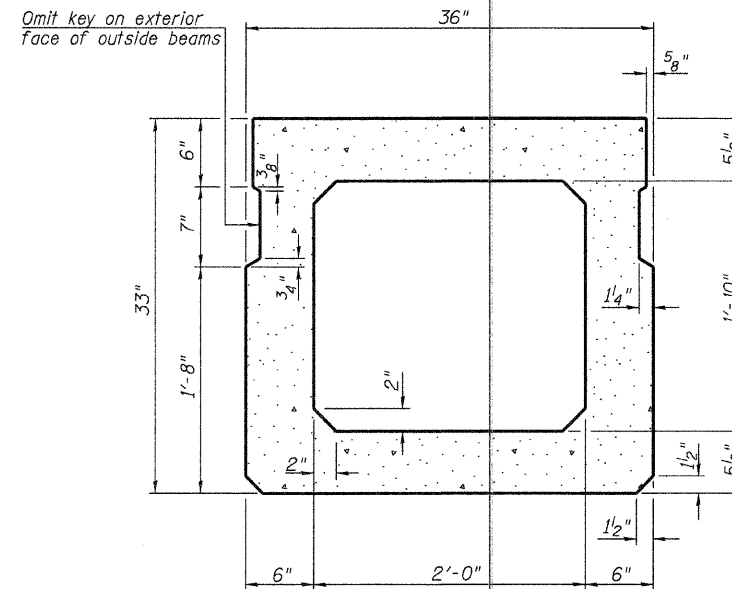
Notes: Spacing of S(E) and S₂(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

Bars indicated thus: 4x3-#5 etc. indicates 4 lines of bars with 3 lengths per line.

Symmetrical about \bar{C}

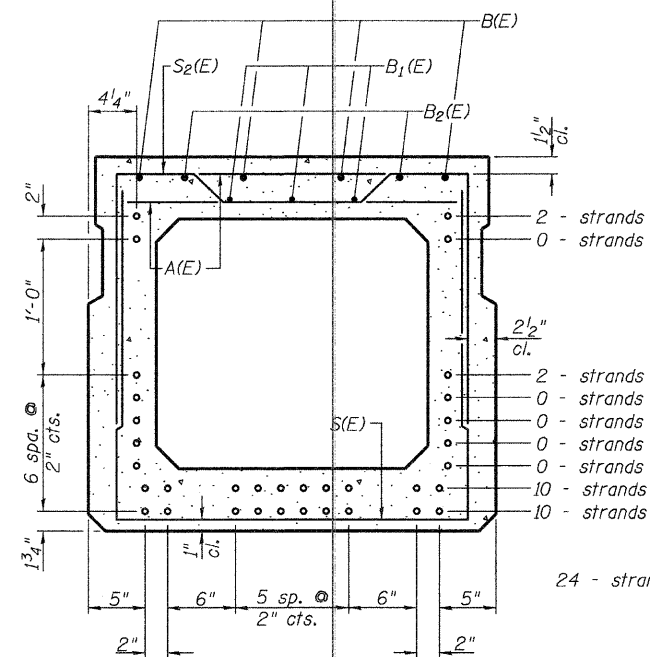
MINIMUM BAR LAP

#4 bar = 2'-0"
#5 bar = 2'-6"



SECTION A-A

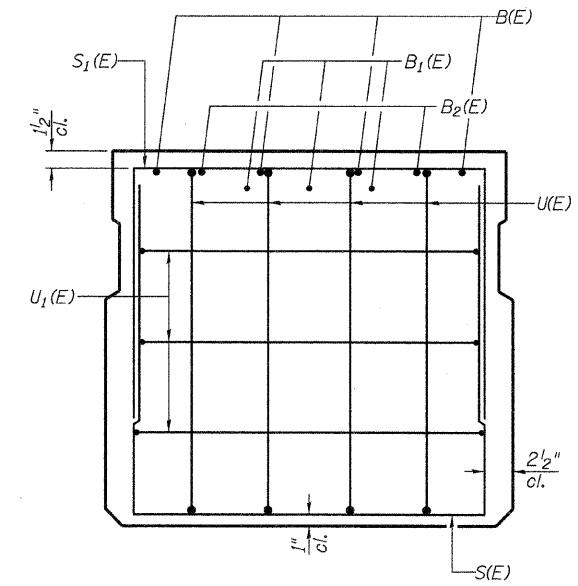
(Showing dimensions)



SECTION A-A

(Showing reinforcement and permissible strand locations)

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



VIEW B-B

BAR LIST
ONE BEAM ONLY

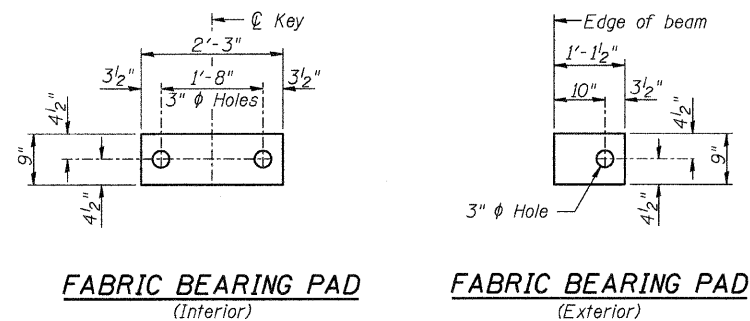
(For information only)

Bar	No.	Size	Length	Shape
A(E)	68	#4	2'-7"	—
B(E)	12	#5	26'-3"	—
B ₁ (E)	12	#4	20'-0"	—
B ₂ (E)	4	#5	10'-0"	—
S(E)	103	#4	7'-5"	┌
S ₁ (E)	12	#4	6'-3"	┌
S ₂ (E)	91	#4	6'-6"	┌
U(E)	8	#6	5'-0"	┌
U ₁ (E)	6	#4	5'-0"	┌

Note: See sheet 6 of 11 for additional details and Bill of Material.

33" X 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 013-3237

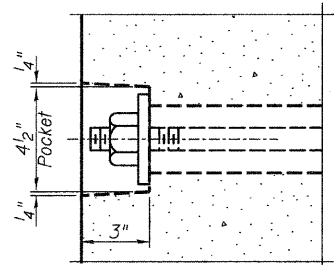
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	5
CONTRACT NO. 95651				
ILLINOIS FED. AID PROJECT				



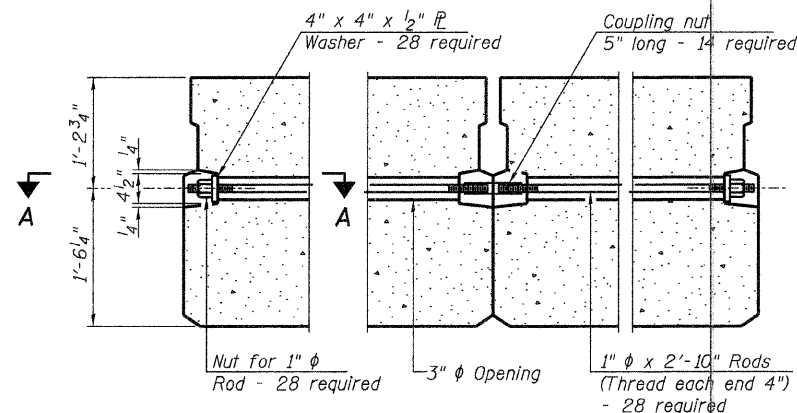
FABRIC BEARING PAD (Interior) **FABRIC BEARING PAD (Exterior)**

FIXED

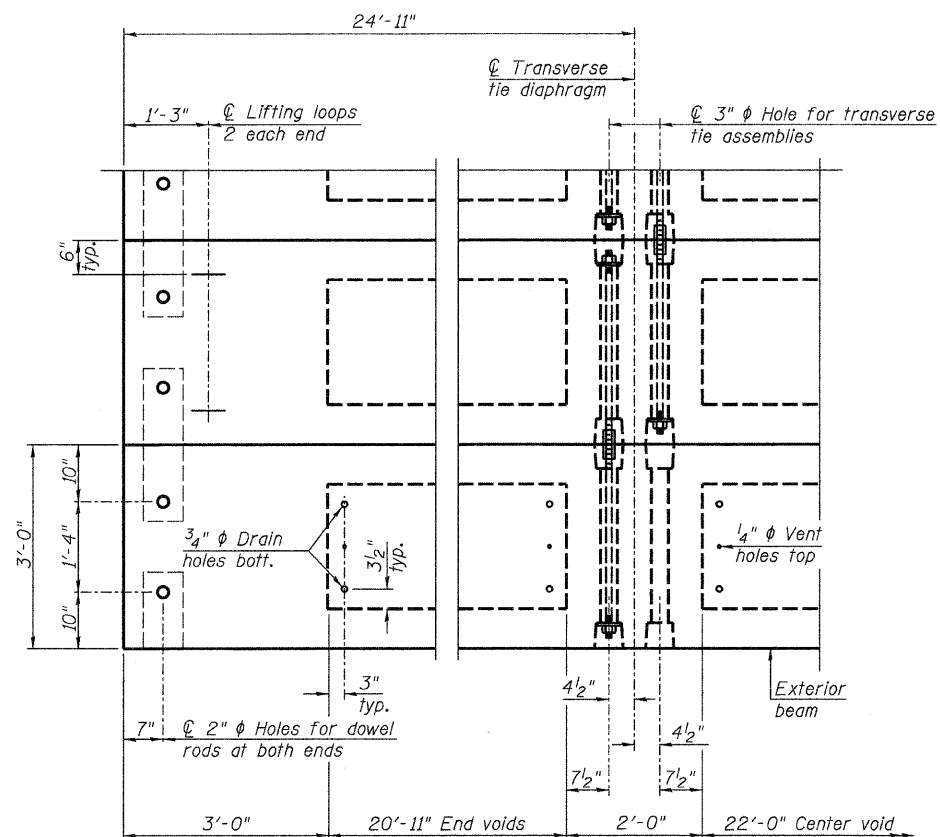
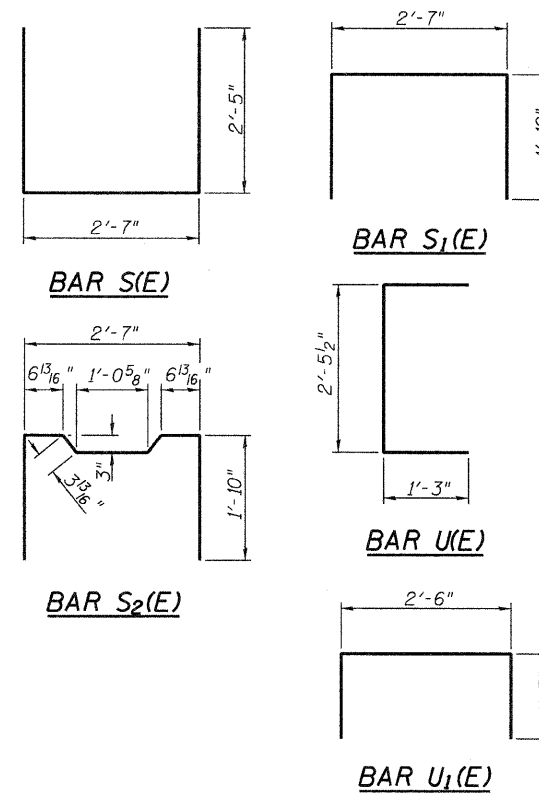
Note: All bearing pads shall be 1" thick.



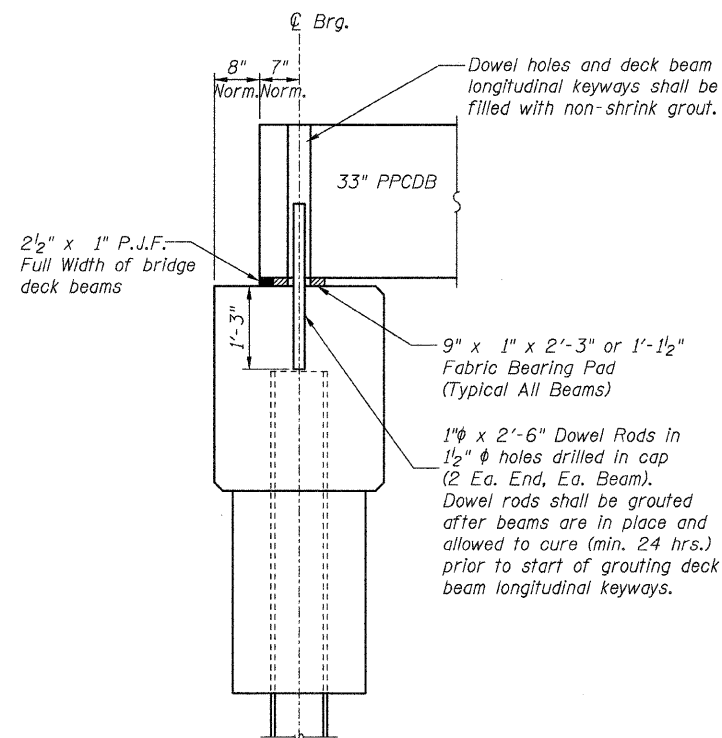
SECTION A-A



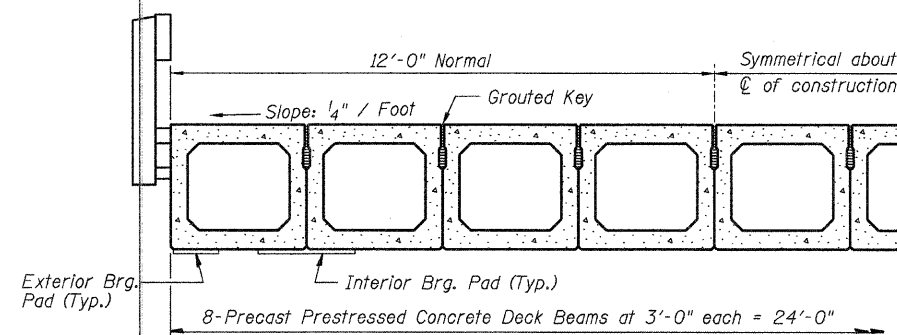
TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW



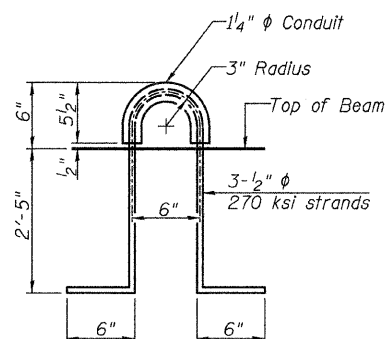
FIXED BEARING ABUTMENT



HALF CROSS SECTION

See Sheet 7 for the details showing the spacing and mounting of posts and rails to the PPCDB.

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



LIFTING LOOP DETAIL

NOTES

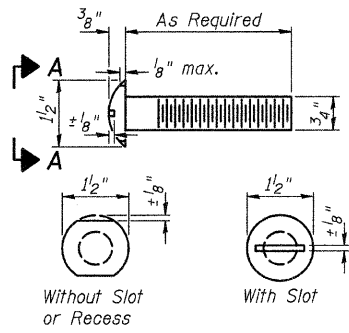
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (IL Modified).
- Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2" diameter 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

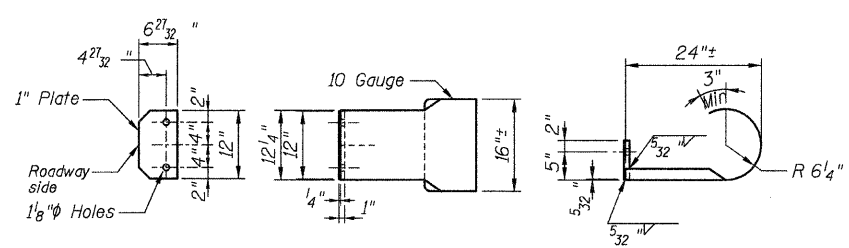
Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1772
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**33" X 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 013-3237**

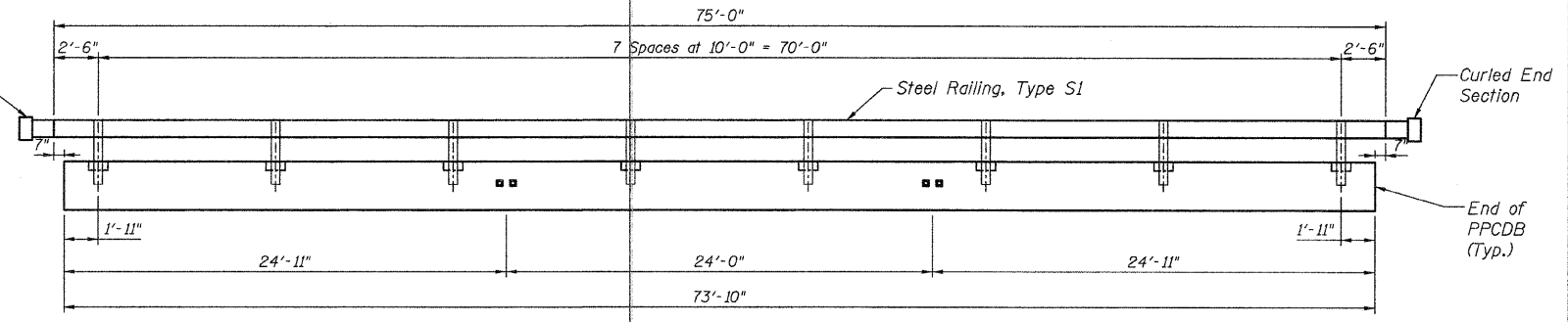
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	6
CONTRACT NO. 95651				
ILLINOIS FED. AID PROJECT				



**VIEW A-A
ROUND HEAD BOLT**

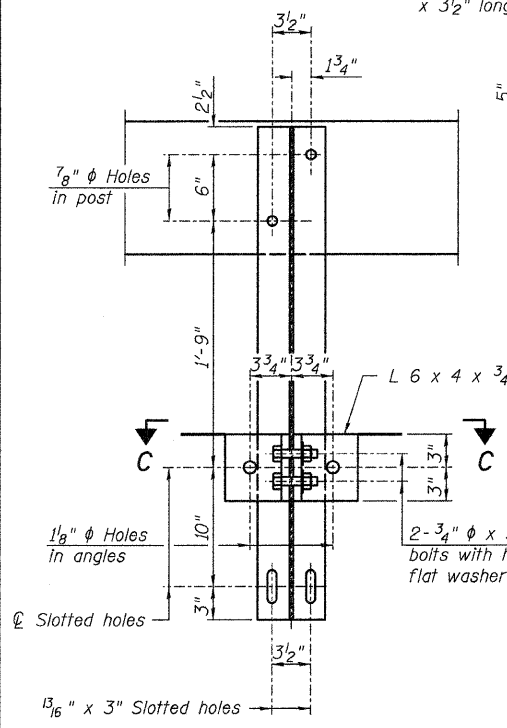
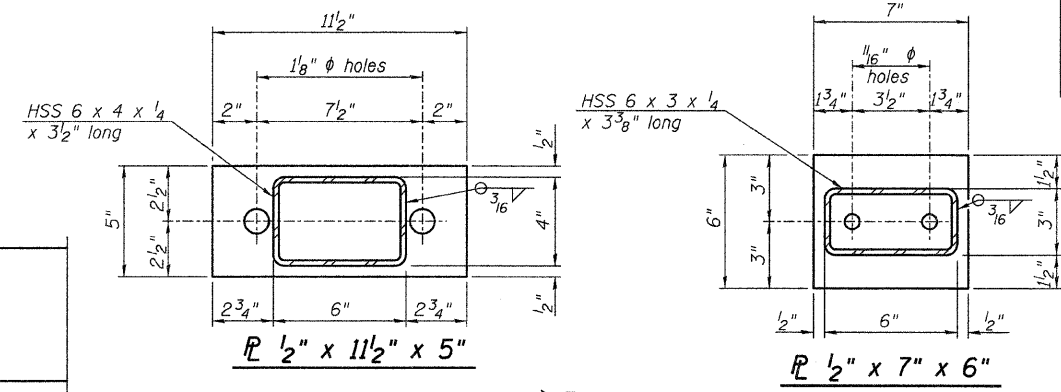


CURLED END SECTION DETAILS



ELEVATION

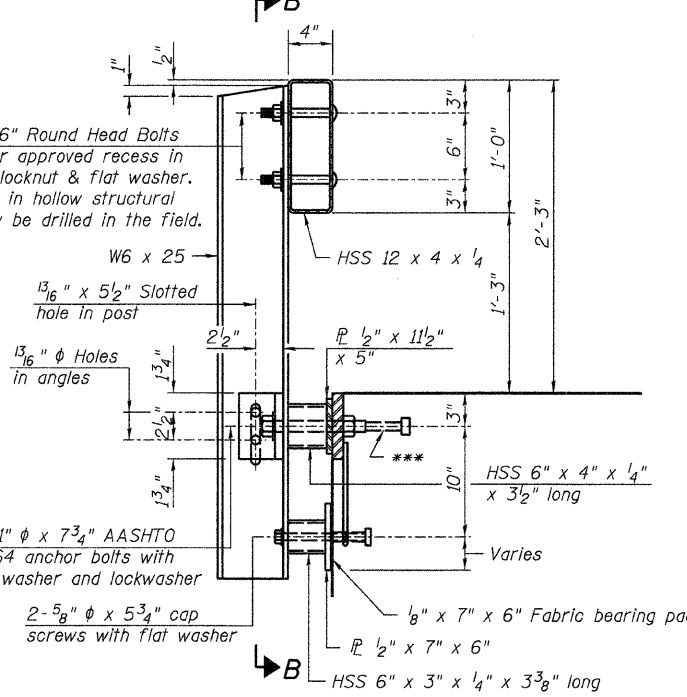
Note: The cost of the Curled End Sections shall be included in the contract unit price per foot for "STEEL RAILING, TYPE S1", and no additional compensation will be allowed.



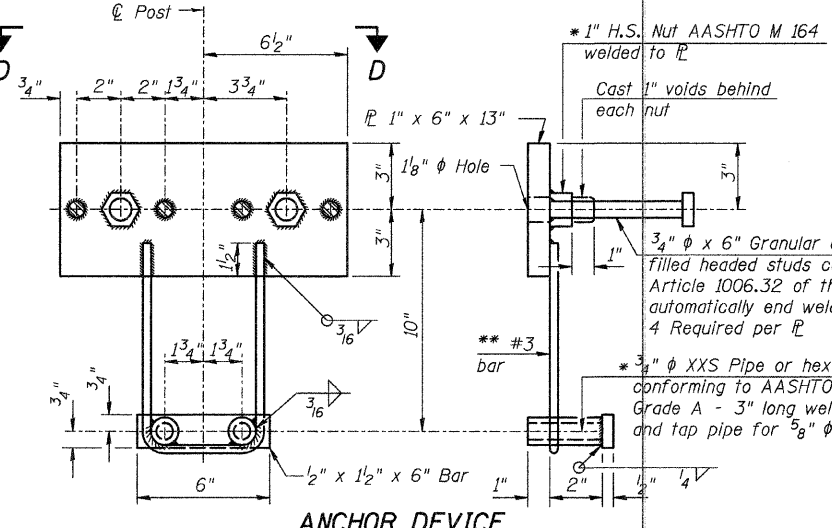
SECTION B-B

2- 3/4 inch x 6 inch Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. 7/8 inch holes in hollow structural section may be drilled in the field.

2- 3/4 inch x 3 1/4 inch H.S. bolts with hex nut & flat washers



SECTION AT RAILING POST



ANCHOR DEVICE

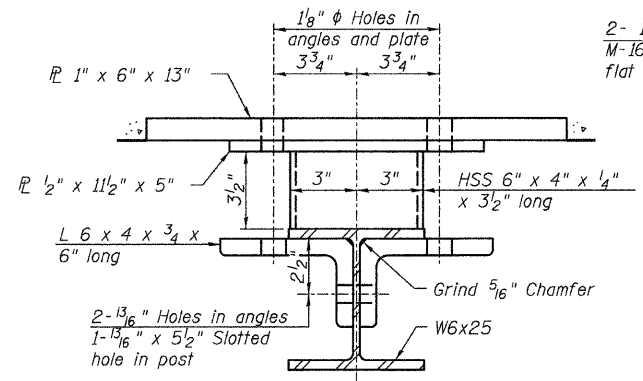
* Threaded areas shall be plugged or blocked off during casting of beam.

1/8 inch Holes for 1 inch x 4 inch Round head bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Std. 631026.

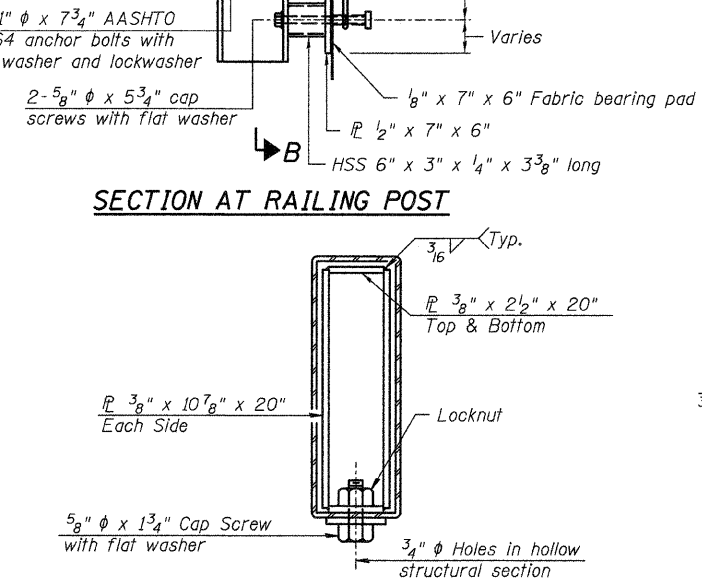
* 1" H.S. Nut AASHTO M 164 welded to P
Cast 1" voids behind each nut
3/4 inch x 6 inch Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs. automatically end welded. 4 Required per P
* 3/4 inch XXS Pipe or hex coupler nuts conforming to AASHTO M291, Grade A - 3" long welded to #3 bar and tap pipe for 5/8 inch Cap Screw.

** 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 inch.

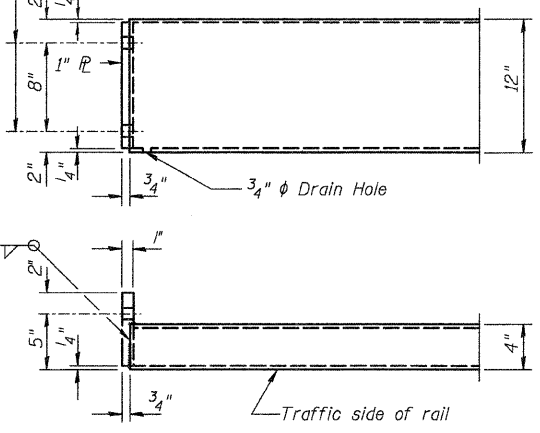
Notes:
All field drilled holes shall be coated with an approved zinc rich paint before erection. For multi-span bridges, sufficient 1/4 inch x 6 inch x 1'-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S1. All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



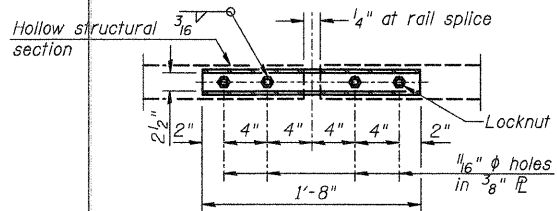
SECTION C-C



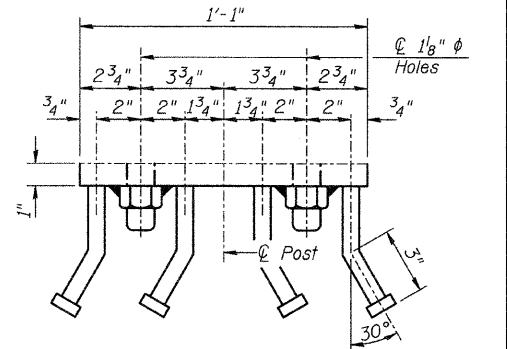
SECTIONS AT RAIL SPLICE



END OF RAIL DETAILS



**PLAN-BOTT. SPLICE P
TYPICAL**



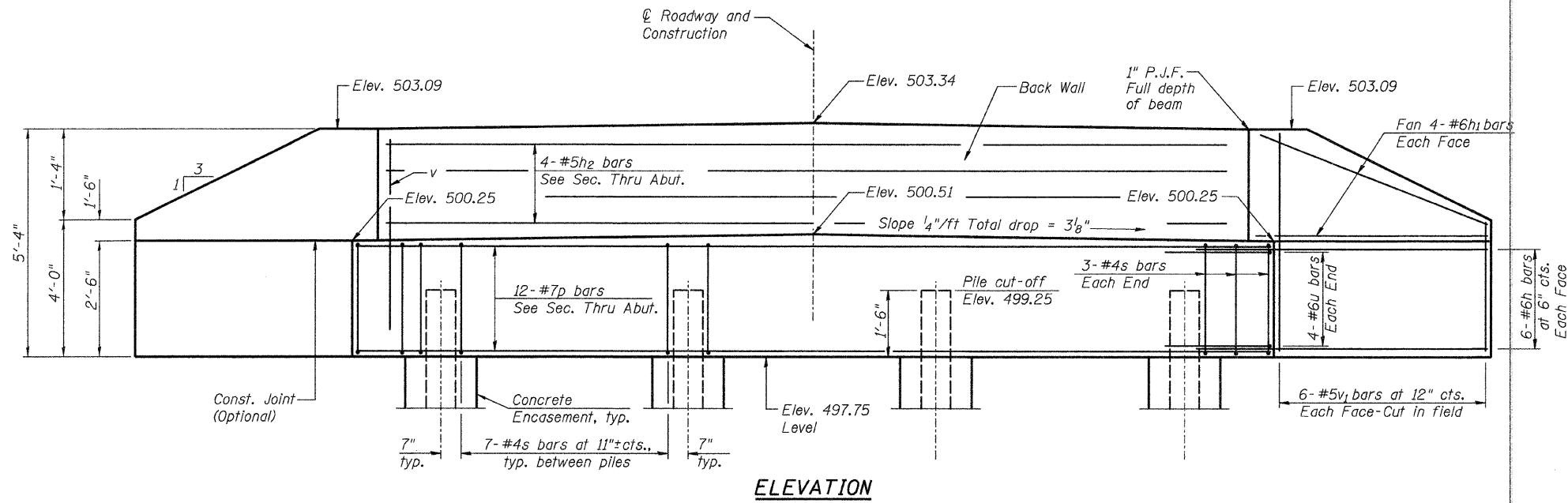
VIEW D-D

BILL OF MATERIAL

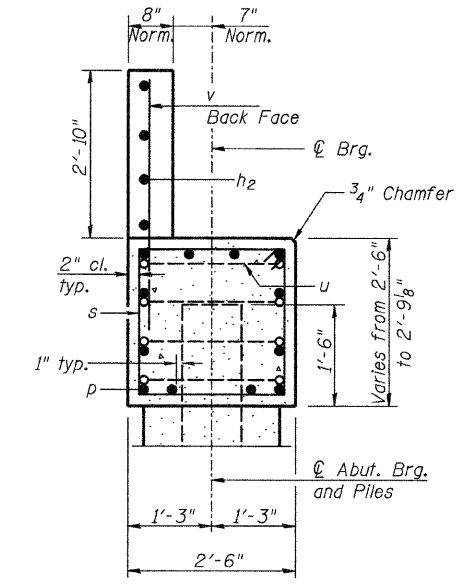
Item	Unit	Quantity
Steel Railing, Type S1	Foot	150

**STEEL RAILING, TYPE S1 DETAILS
STRUCTURE NO. 013-3237**

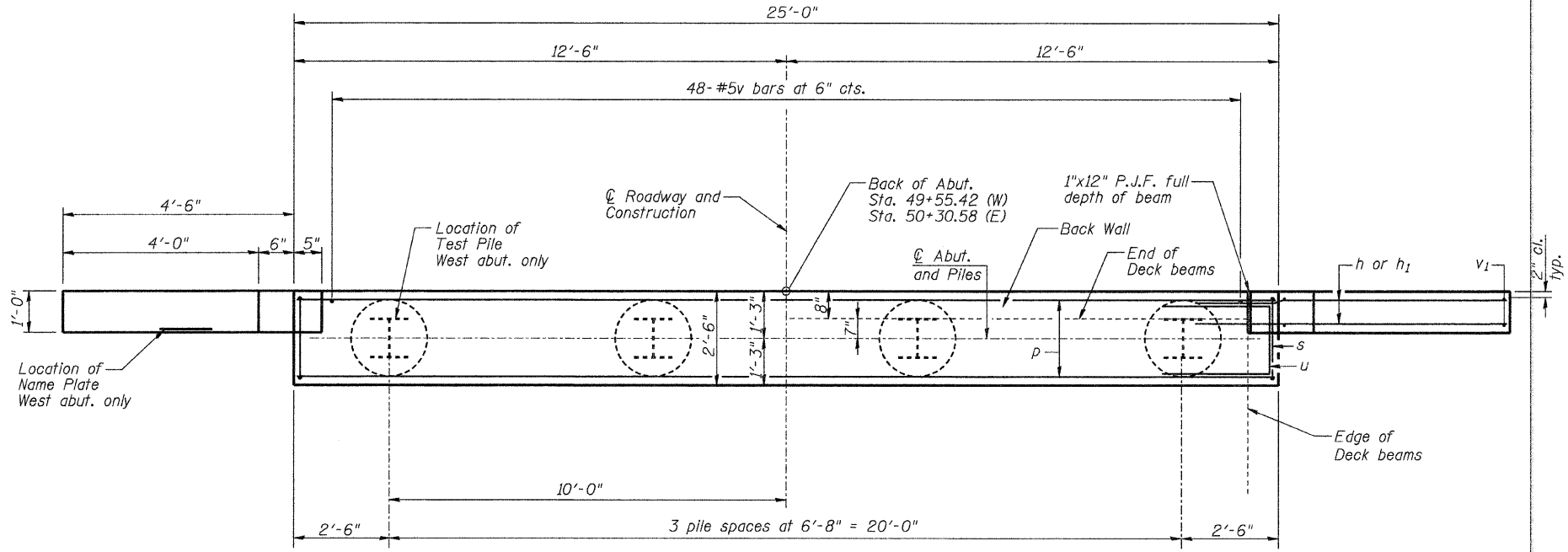
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	7
CONTRACT NO. 95651				
ILLINOIS FED. AID PROJECT				



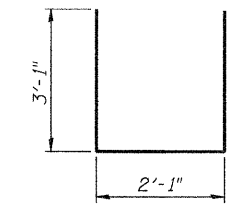
ELEVATION



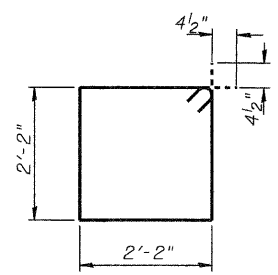
SEC. THRU ABUT.
(Normal to \bar{C})



PLAN



BAR u



BAR s

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	24	#6	8'-0"	—
h ₁	16	#6	4'-9"	—
h ₂	4	#5	23'-8"	—
p	12	#7	24'-8"	—
s	27	#4	9'-5"	□
u	8	#6	8'-3"	□
v	48	#5	4'-3"	—
v ₁	24	#5	5'-0"	—
			CUT IN FIELD	
Concrete Structures		Cu. Yd.	9.4	
Reinforcement Bars		Pound	1710	
Furnishing Steel	Foot	W. Abut.	90	
Piles, HP12x53	Foot	E. Abut.	96	
Driving Piles	Foot	W Abut.	90	
		E Abut.	96	
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 9 of 11.

PILE DATA WEST ABUTMENT

Type: Steel HP12x53
 Nominal Required Bearing: 419 kips
 Allowable Resistance Available: 139 kips
 Estimated Length: 30'/pile
 No. Production Piles: 3
 No. Test Piles: 1

PILE DATA EAST ABUTMENT

Type: Steel HP12x53
 Nominal Required Bearing: 419 kips
 Allowable Resistance Available: 139 kips
 Estimated Length: 24'/pile
 No. Production Piles: 4
 No. Test Piles: 0

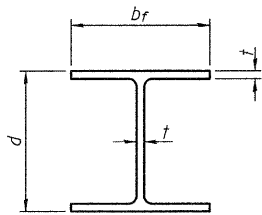
GENERAL NOTES

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 Contractor shall drive one (1) Steel HP12x53 Test Pile in a production 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. 013-3237

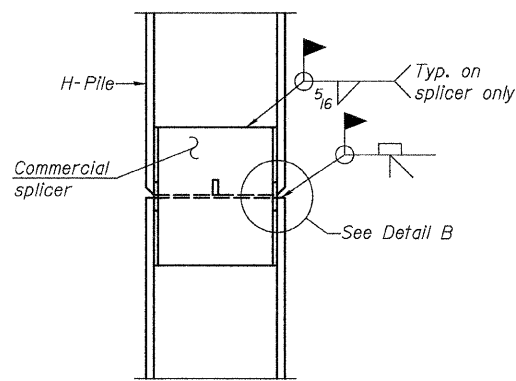
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	8
CONTRACT NO. 95651				
ILLINOIS FED. AID PROJECT				

03/30/2011 RAAI #50410

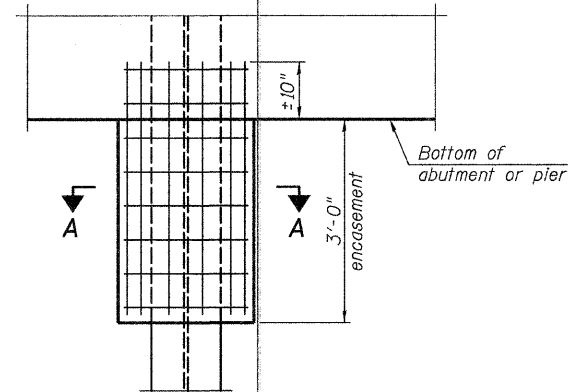


STEEL PILE TABLE

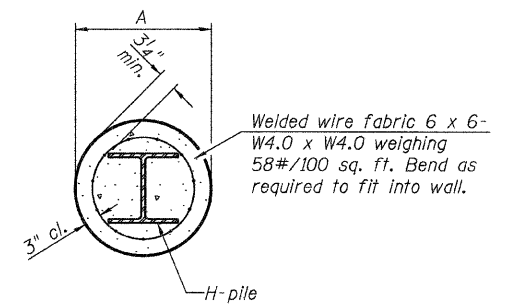
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53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

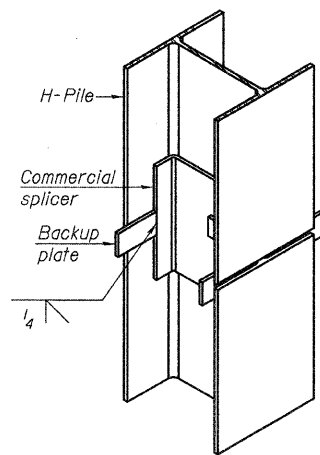


ELEVATION

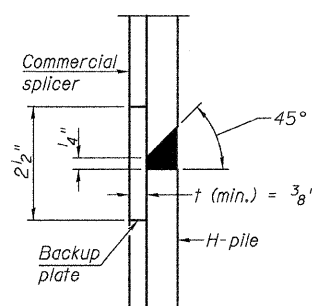


SECTION A-A

PILE ENCASEMENT

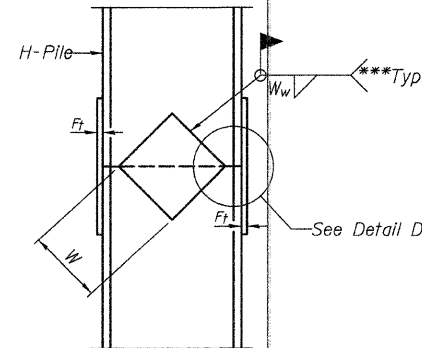


ISOMETRIC VIEW

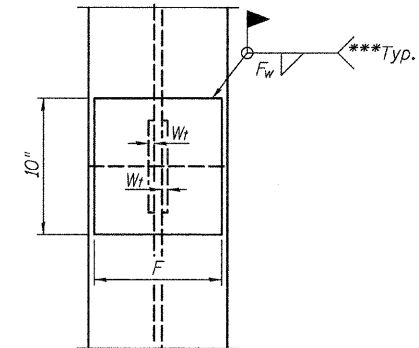


DETAIL "B"

WELDED COMMERCIAL SPLICE

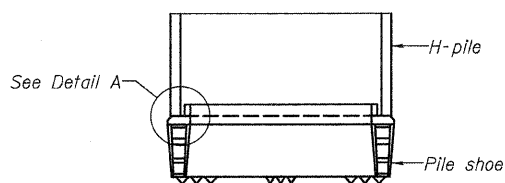


ELEVATION

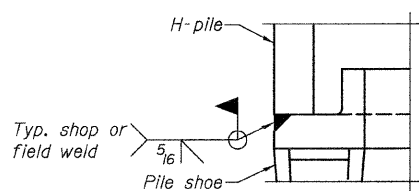


END VIEW

WELDED PLATE FIELD SPLICE

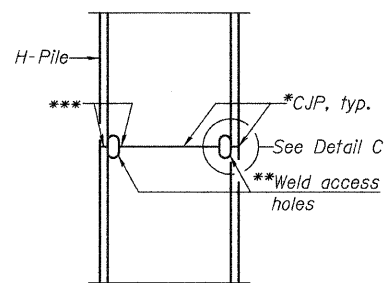


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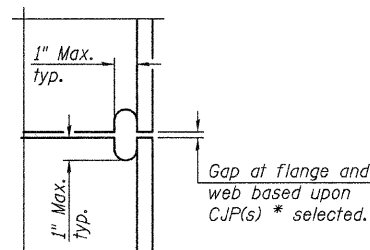


DETAIL A

H-PILE SHOE ATTACHMENT

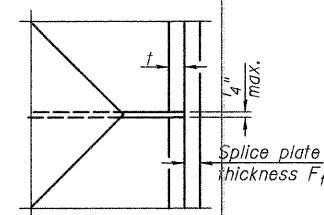


ELEVATION



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 8/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 8/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5 8/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 8/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5 8/8"	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"

**HP PILE DETAILS
STRUCTURE NO. 013-3237**

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	9
CONTRACT NO. 95651				

ILLINOIS FED. AID PROJECT

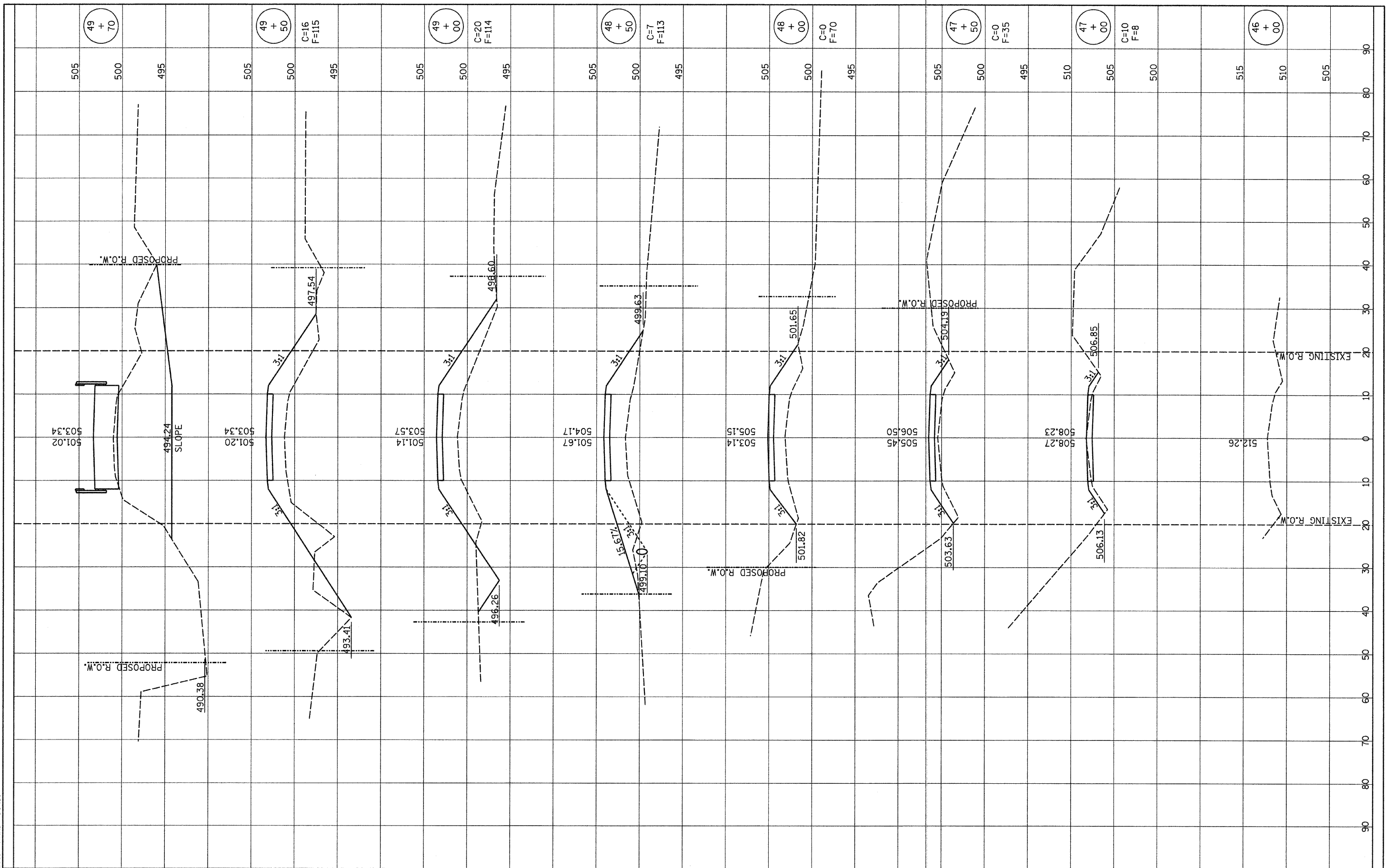
- * Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.

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

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

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

03/30/2011 RAAI #50410



DESIGNED -	GLH	REVISED -	
DRAWN -	JN	REVISED -	
CHECKED -	GLH	REVISED -	
DATE -	MAY 2010	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY
STRUCTURE NO. 013-3237

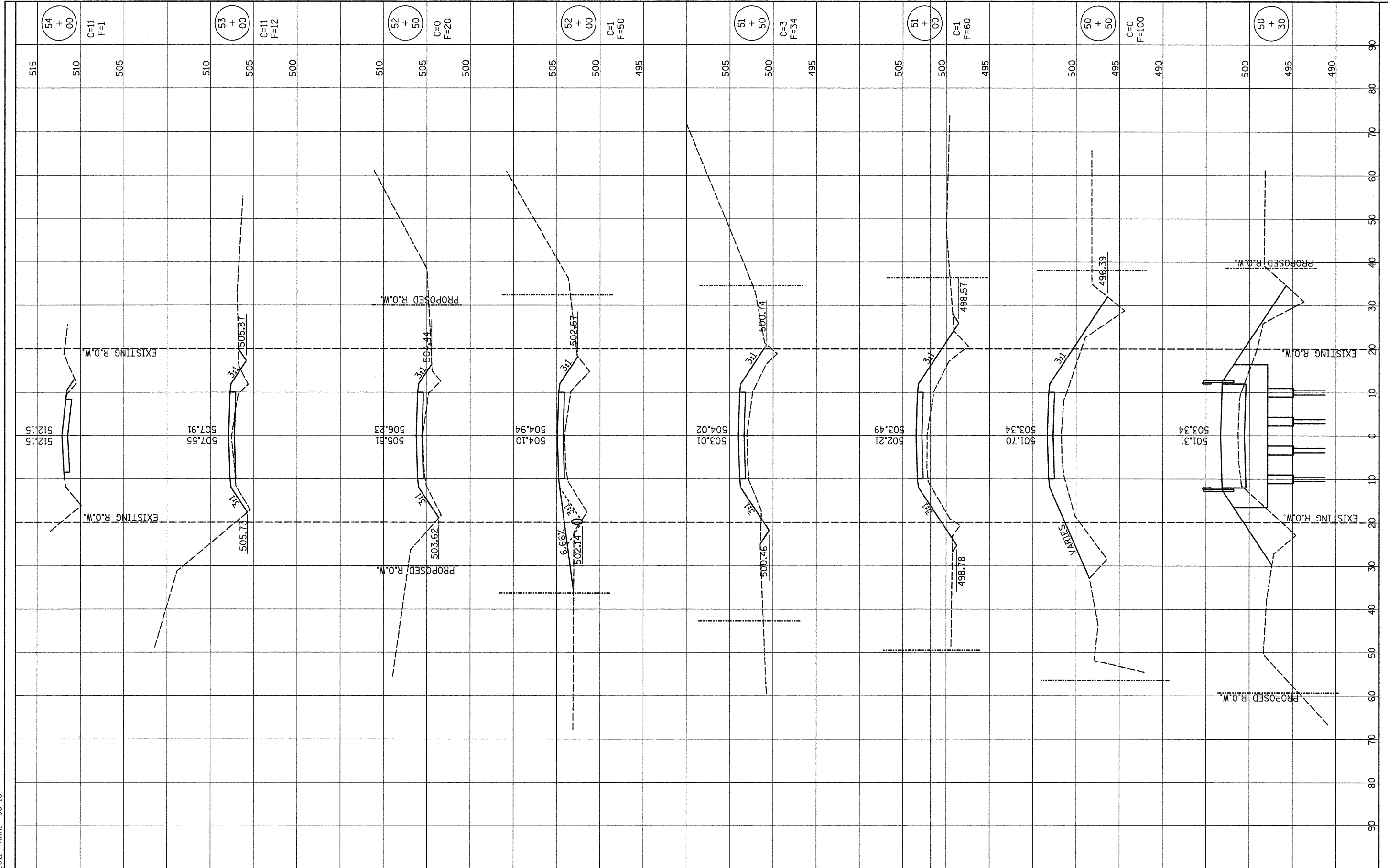
STA. 46+00 TO STA. 49+70

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	10
				CONTRACT NO. 95651
ILLINOIS FED. AID PROJECT				

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

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

03/30/2011 RAAI #50410



DESIGNED -	GLH	REVISED -	
DRAWN -	JN	REVISED -	
CHECKED -	GLH	REVISED -	
DATE -	MAY 2010	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS OF ROADWAY
STRUCTURE NO. 013-3237

STA. 50+30 TO STA. 54+00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 19	07-01116-00-BR	CLAY	11	11
CONTRACT NO. 95651			[ILLINOIS] FED. AID PROJECT	