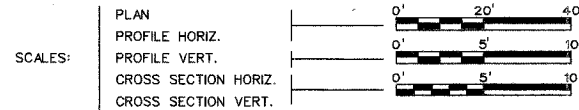


SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	1
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS	PROJECT	

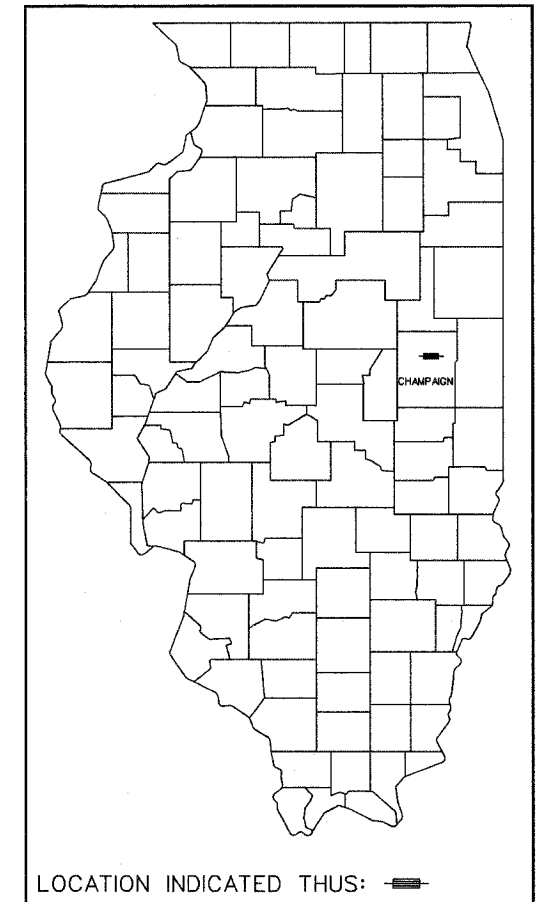
# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED BRIDGE REPLACEMENT

## INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	SUMMARY OF QUANTITIES AND TYPICAL CROSS SECTION
3	TIE POINTS
4	PLAN AND PROFILE
5	DETOUR PLAN AND PROFILE
6-9	BRIDGE PLANS
10	CROSS SECTIONS
11-12	CHANNEL CROSS SECTIONS

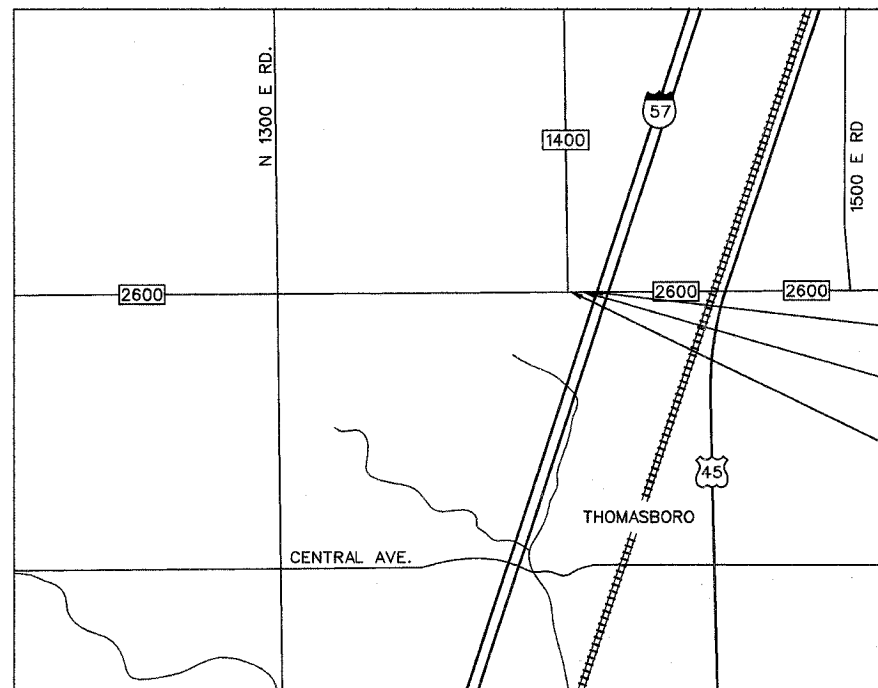


**ROUTE T.R. 87 (2600N)  
COUNTY SECTION 03-00894-00-BR  
VILLAGE SECTION 05-00006-00-BR  
CHAMPAIGN COUNTY  
PROJECT NO. BROS-019(121)  
STRUCTURE NO. 010-4516  
BRIDGE REPLACEMENT &  
REHABILITATION PROGRAM  
C-95-326-05**



## ILLINOIS DEPT. OF TRANSPORTATION STANDARD DRAWINGS

STANDARD NO.	DESCRIPTION
280001-02	TEMPORARY EROSION CONTROL SYSTEMS
515001-02	NAME PLATE FOR BRIDGES
542401	METAL END SECTIONS FOR PIPE CULVERTS
702001-06	TRAFFIC CONTROL DEVICES
BLR 21-6	TRAFFIC CONTROL ON RURAL LOCAL HIGHWAYS



LOCATION MAP  
NOT TO SCALE

FUNCTIONAL CLASS - LOCAL ROAD (0 - 250 ADT) CURRENT ADT - 225

FOR JOINT UTILITY INFORMATION  
CALL J.U.L.I.E.: 1-800-892-0123

NET LENGTH OF SECTION - 95 FEET

*Ellen B. Hedrick* 2-1-06  
ELLEN B. HEDRICK  
ILLINOIS REGISTERED PROFESSIONAL ENGINEER NUMBER 062-049131  
LICENSE EXPIRES 11-30-07



Sodemann and Associates, Inc.  
340 NORTH NEL STREET  
POST OFFICE BOX 557  
CHAMPAIGN, ILLINOIS 61824-0557  
TEL 217 352-7888 FAX 217 352-7922  
ENGINEERING / ANALYSIS / MANAGEMENT



APPROVED *2-6-06*  
*Robert J. Summers*  
MAYOR, VILLAGE OF THOMASBORO

APPROVED *2/27 20 06*  
*Jeff Blue*  
CHAMPAIGN COUNTY ENGINEER

PASSED *2/27 20 06*  
*David Hill*  
DISTRICT FIVE ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW *Feb 28 2006*  
*[Signature]*  
DEPUTY DIRECTOR OF HIGHWAYS,  
REGION THREE ENGINEER

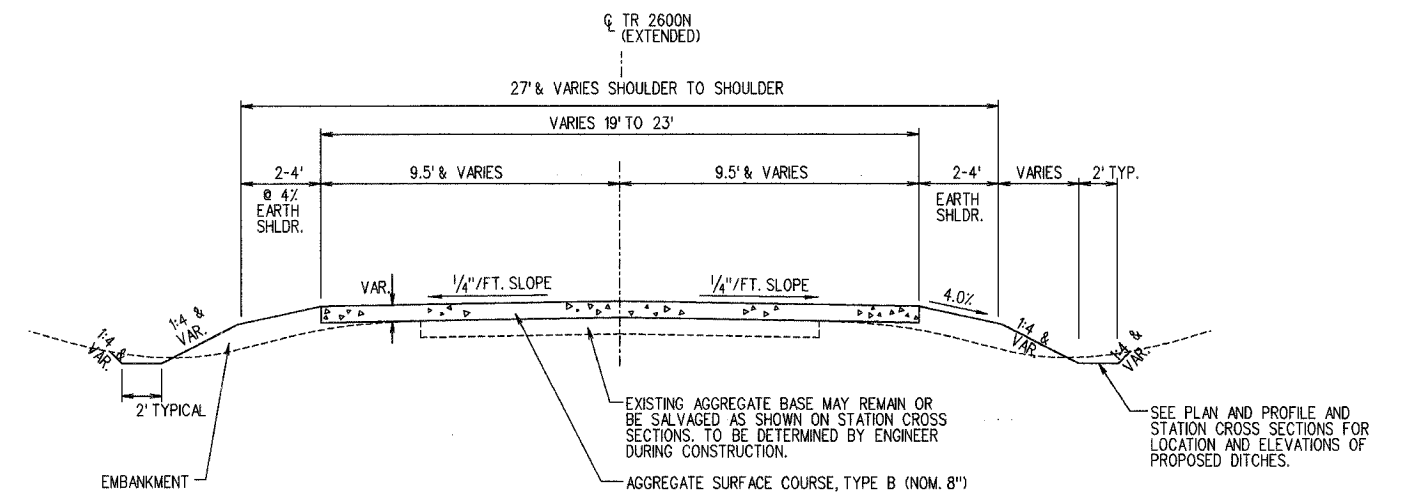
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	2
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS	PROJECT	

# SUMMARY OF QUANTITIES

ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD 118.0
20300100	CHANNEL EXCAVATION	CU YD 208.0
28000300	TEMPORARY DITCH CHECKS	EACH 4.0
28000500	INLET AND PIPE PROTECTION	EACH 1.0
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON 50.0
50100100	REMOVAL OF EXISTING STRUCTURES	EACH 1.0
50200100	STRUCTURE EXCAVATION	CU YD 102.0
50300225	CONCRETE STRUCTURES	CU YD 18.3
50300225	CONCRETE CUT-OFF WALL	CU YD 5.5
50400305	PREC. PRESTR.CONC. DECK BEAMS (17" DEEP)	SQ FT 1,008.0
50800105	REINFORCEMENT BARS	LB 2,080.0
50900205	STEEL RAILING, TYPE S-1	FOOT 75.0
51201400	FURNISHING STEEL PILES HP 10 X 42	FOOT 280.0
51202700	DRIVING STEEL PILES	FOOT 280.0
51204600	METAL SHOES	EACH 8.0
51203400	TEST PILE STEEL HP 10 X 42	EACH 2.0
51500100	NAME PLATES	EACH 1.0
54200220	TEMPORARY PIPE CULVERTS, CLASS D, TYPE 1 66"	FOOT 50.0
54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT 84.0
54215550	MET END SEC 15	EACH 1.0
67100100	TEMPORARY AGGREGATE DETOUR	TON 200.0
67100100	TEMPORARY CULVERT BACKFILL	TON 100.0
67100100	GROUTED RIPRAP	SQ YD 135.0
67100100	MOBILIZATION	1.0

## TYPICAL CROSS SECTION



NOTES:  
 FUNCTIONAL CLASS - LOCAL ROAD (0 - 250 ADT) CURRENT ADT - 225  
 SEE PLAN AND PROFILE SHEETS FOR PAVEMENT AND SHOULDER TAPERS.  
 SEEDING BY OTHERS UPON COMPLETION TO THE STATE OF ILLINOIS SPECIFICATIONS.

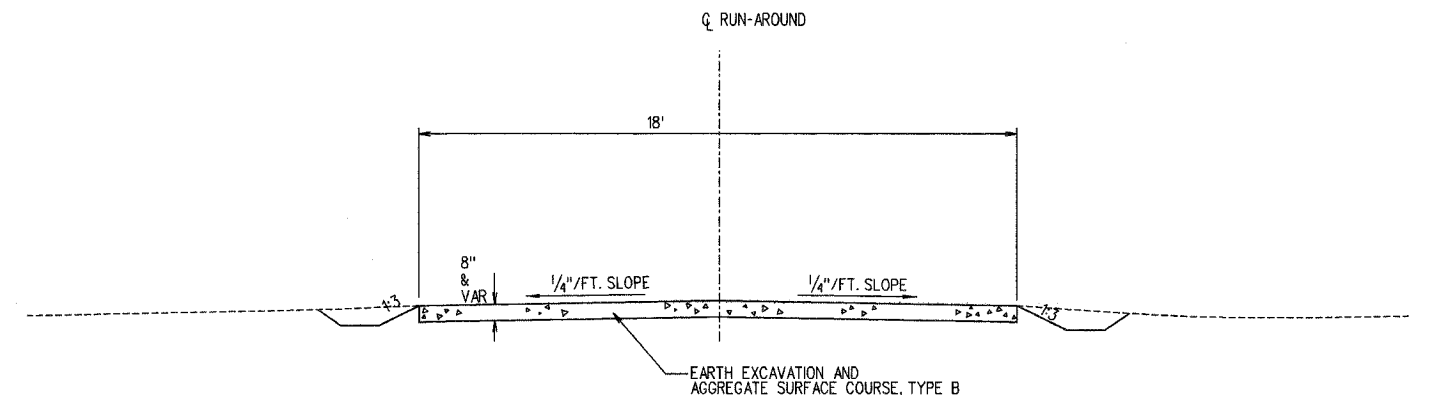
## EARTHWORK SUMMARY

LOCATION	EXCAVATION (CU. YD.)	EMBANKMENT * (CU. YD.)	WASTE * (CU. YD.)
ROADWAY - EARTH EX.	28	12	13
DETOUR - EARTH EX.	90	90 BY OTHERS	0
EXC. FOR CUT OFF WALL	5.5		5.5
STRUCTURE EXCAVATION	102		98
CHANNEL EXCAVATION	208		208
TOTALS	433.5	102	306

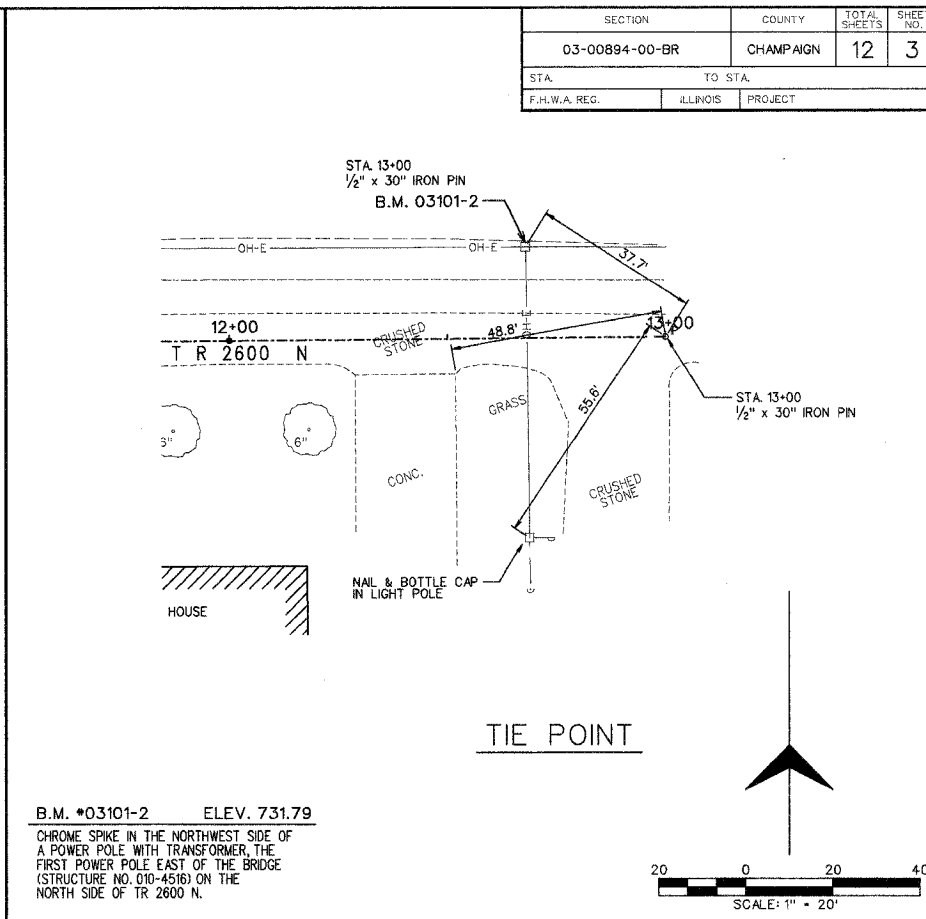
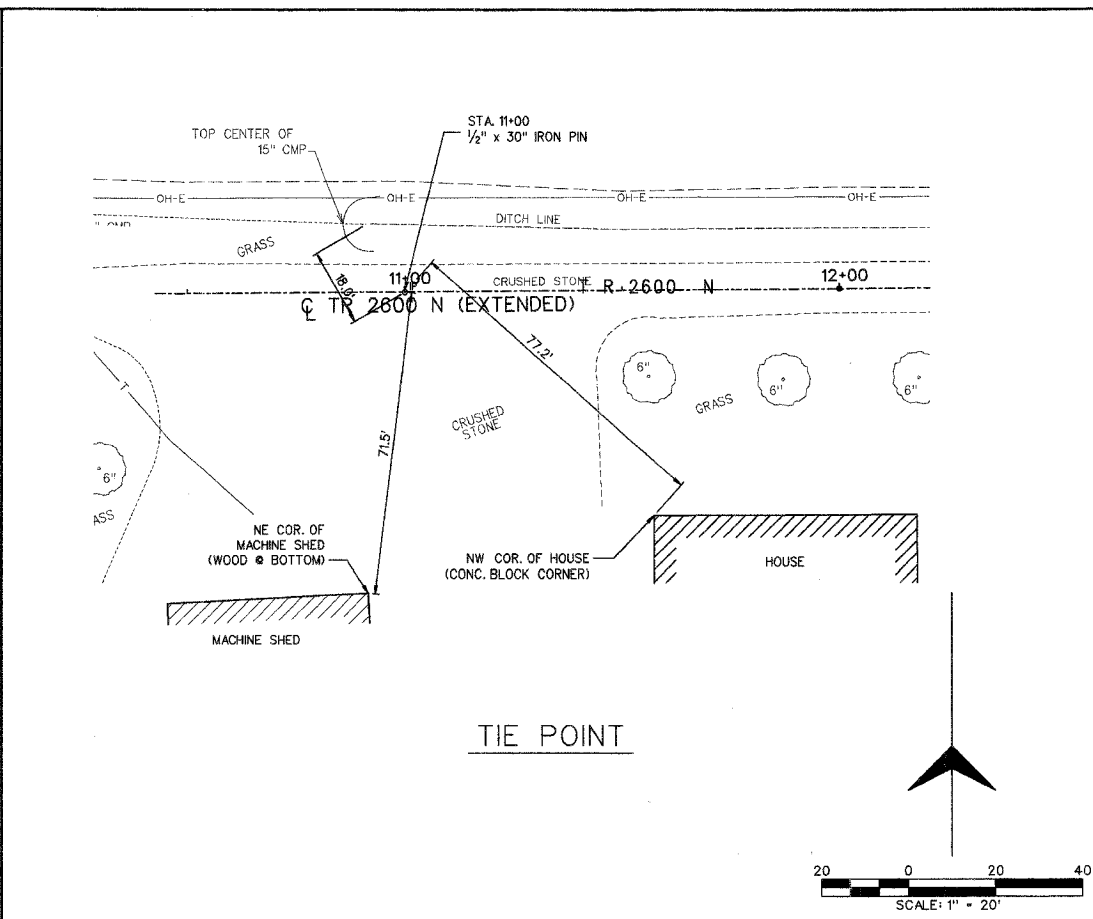
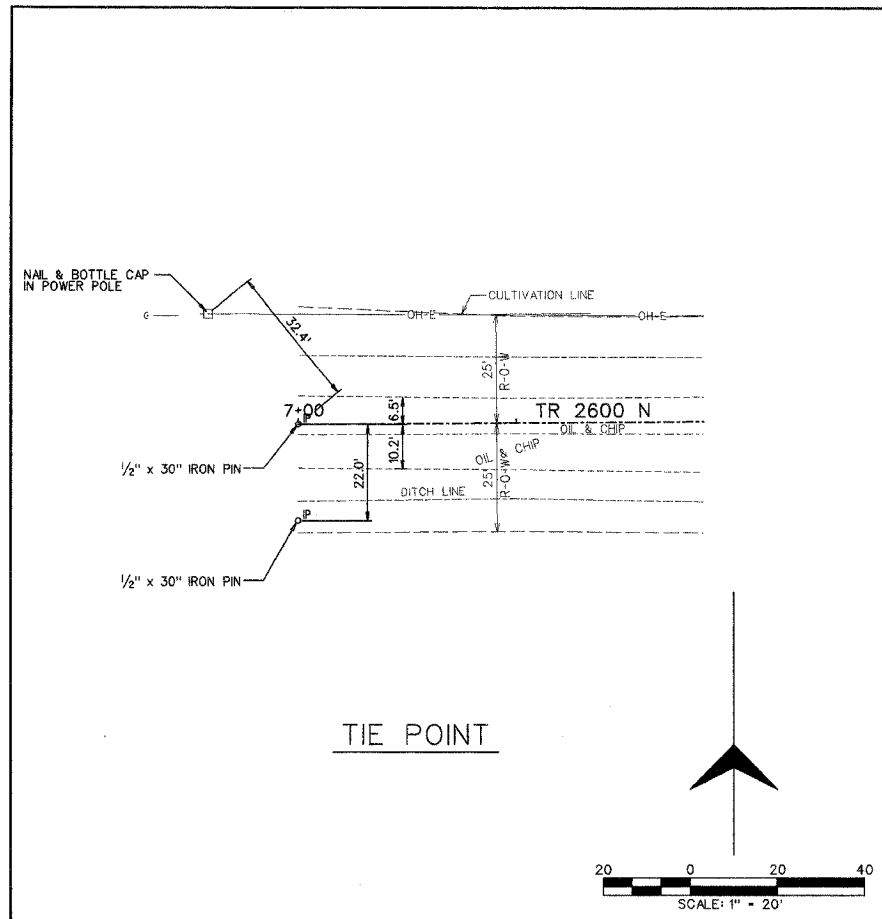
WASTE - EXCAVATION - (FILL x 1.25)  
 1.25 REPRESENTS 25% SHRINKAGE FACTOR  
 WASTE SHALL BECOME THE PROPERTY OF THE VILLAGE.

\* EMBANKMENT AND WASTE ARE NOT PAY ITEMS. SHOWN FOR INFORMATION ONLY.

## DETOUR TYPICAL CROSS SECTION



SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	3
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS	PROJECT	



TIE POINT COORDINATES

Point	Station	offset	Northing	Easting
IP	7+00.0	0	25019.4690	13427.9428
IP	11+00.0	0	25022.6542	13827.9301
IP	13+00.0	0	25024.2474	14027.9943

LAYOUT FOR DETOUR (SHEET 5)

Point	Station	offset	Northing	Easting
TS 10			25000.7137	13681.4749
	9+63.7	81.6 LT	25103.1882	13691.0224
R 40	9+99.4	28.5' LT	25050.3928	13727.1495
R 92	9+96.3	14.3' RT	25007.4858	13724.3229
R 50	10+15.5	135.4' LT	25157.4056	13742.3526
	10+08.0	76.9' LT	25098.8276	13735.3079
	10+85.9	6.5' LT	25029.0867	13813.7511
R 10	11+03.0	16.4' LT	25039.0395	13830.7436

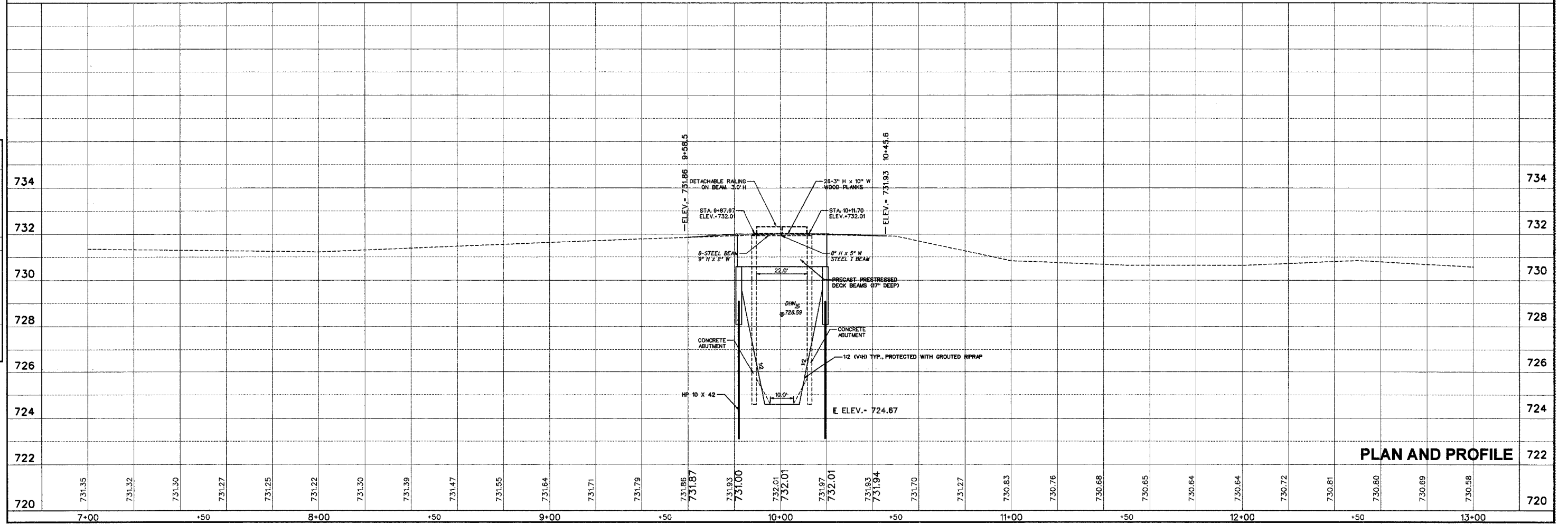
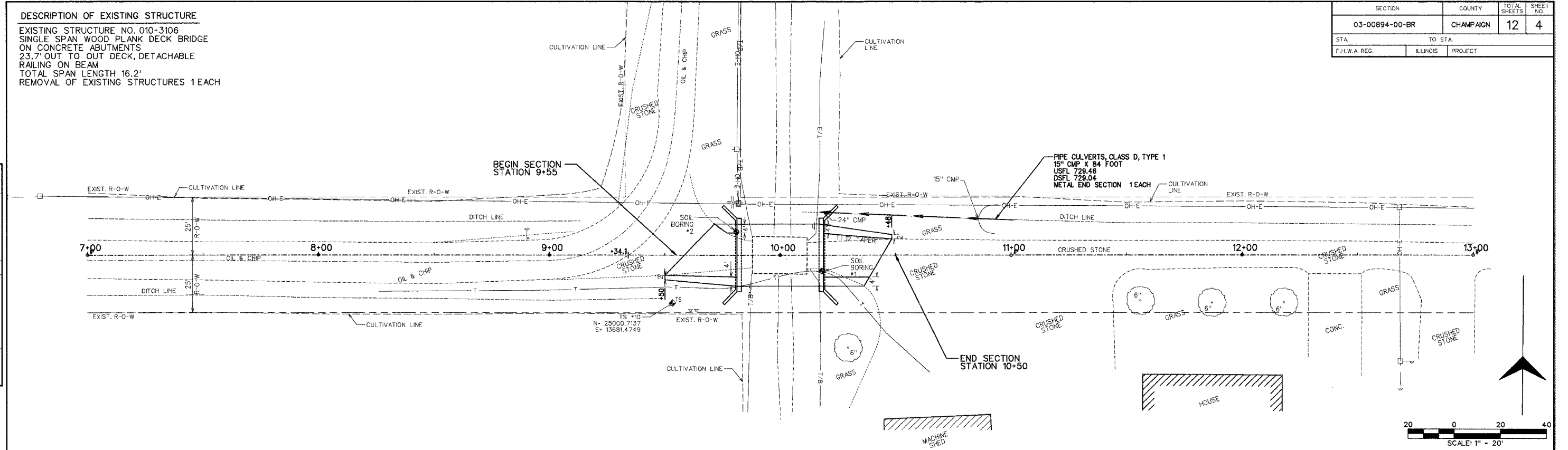
**DESCRIPTION OF EXISTING STRUCTURE**

EXISTING STRUCTURE NO. 010-3106  
 SINGLE SPAN WOOD PLANK DECK BRIDGE  
 ON CONCRETE ABUTMENTS  
 23.7' OUT TO OUT DECK, DETACHABLE  
 RAILING ON BEAM  
 TOTAL SPAN LENGTH 16.2'  
 REMOVAL OF EXISTING STRUCTURES 1 EACH

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	4
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS	PROJECT	

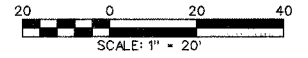
DATE	
BY	
CHECKED	
APPROVED	
DESIGNED	
NOTED	
REVISIONS	

DATE	
BY	
CHECKED	
APPROVED	
DESIGNED	
NOTED	
REVISIONS	



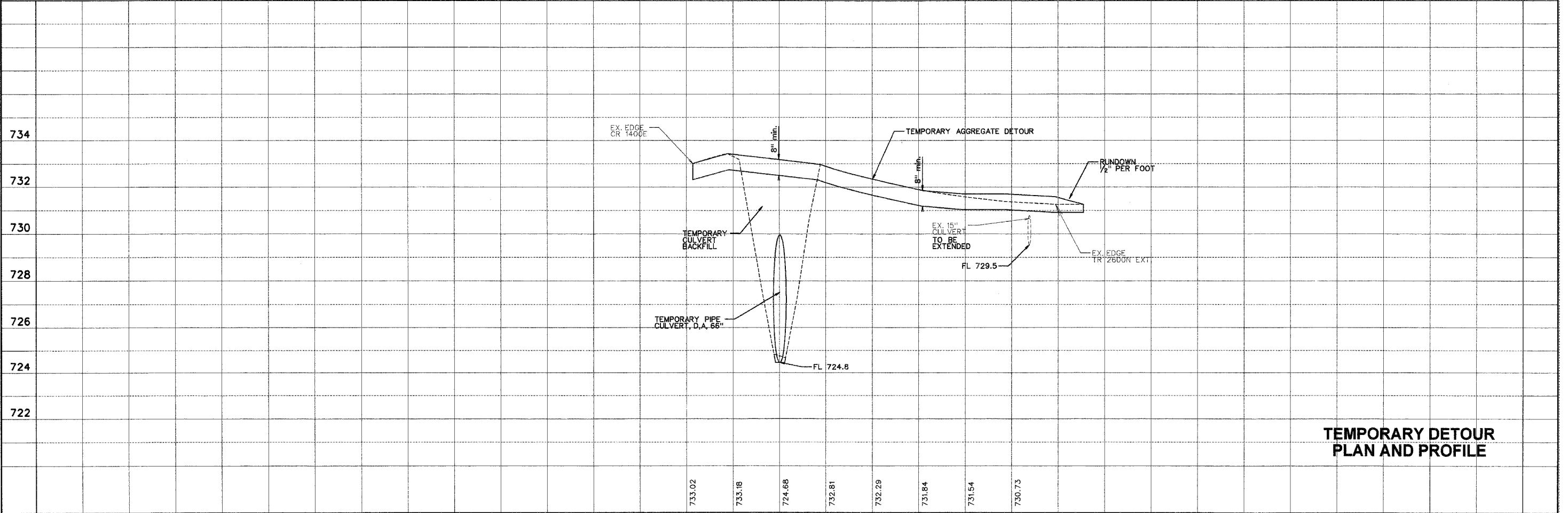
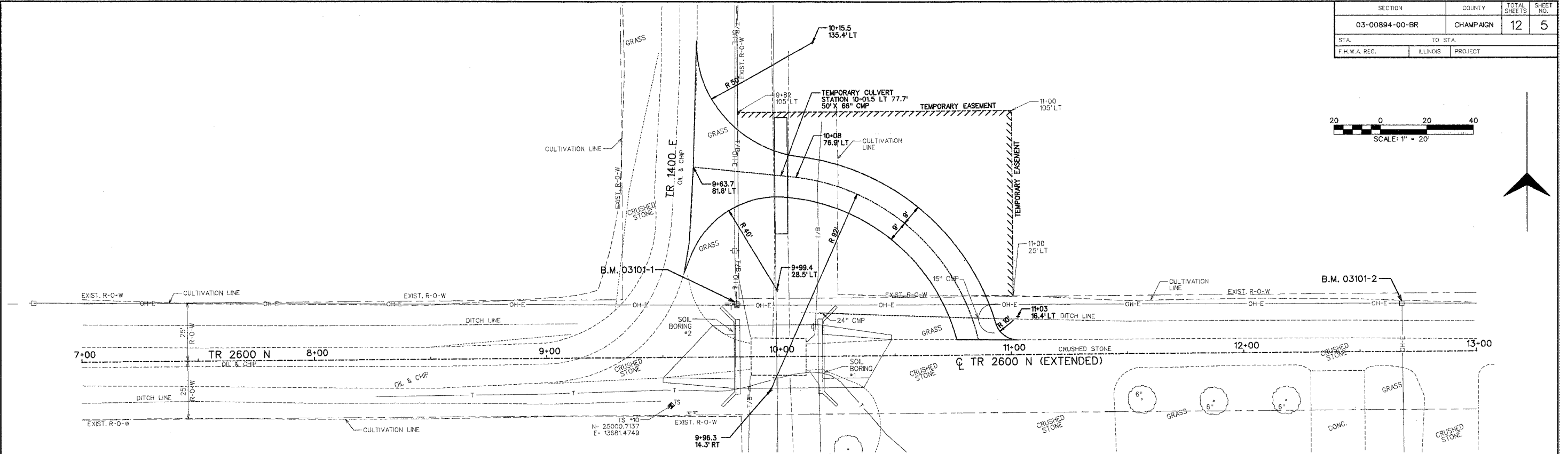
**PLAN AND PROFILE**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	5
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS	PROJECT	



PLAN SURVEYED BY DATE  
 PLOTTED BY DATE  
 NOTE BOOK NO. RT. OF WAY CHECKED BY DATE  
 NO. STRUCTURE NOTATIONS CHKD.

PROFILE SURVEYED BY DATE  
 PLOTTED BY DATE  
 NOTE BOOK NO. GRADES CHECKED BY DATE  
 NO. STRUCTURE NOTATIONS CHKD.



**TEMPORARY DETOUR  
 PLAN AND PROFILE**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	6
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS	PROJECT	

**BORING DATA**

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140 lb. hammer falling 30"  
 Qu - Unconfined Compression Strength - Tons/Sq.Ft.  
 Mc - Water Content - Percentage of oven dry weight - %  
 D - Depth

Surface	D	N	Qu	Mc	Soil Description
Surface 732.21					SILTY CLAY LOAM- Dark Brown, moist, little sand, little limestone gravel, tr. organics
	5	9	1.0	15.3	LOAM- Mottled brown moist, stiff, some sand, tr. organic stain
		5		30.6	SILTY CLAY LOAM- Dark Grey, very moist, firm, tr. sand, tr. organic stains
	10	10	1.1	21.8	SILTY CLAY LOAM- Dark Grey, moist, stiff, little sand
		13		20.2	
	15	15		21.0	SAND- Grey, saturated, medium dense, fine
		20	4.8	12.5	SILTY LOAM- Grey, moist, very stiff, little sand, tr. gravel
	20	8		31.0	-Stiff
		4		21.4	SAND- Grey, saturated, loose, fine
	25	12		20.5	SILTY LOAM- Grey, very moist, firm, some sand, tr. gravel
		19		9.5	SAND- Grey, saturated, medium dense, fine to coarse, little gravel
	30	44		17.0	
		18	2.8	14.6	SILTY LOAM- Grey, moist, very stiff some sand, tr. gravel
	35	27	3.1	13.0	-Hard
		30	4.1	12.9	
	40	44	4.3	11.2	
		38	4.9	12.8	
	45	38	3.0	12.8	
		47	2.0	12.4	
	50	30	2.3	13.2	
		66		10.9	
	55	98		10.3	

END OF BORING 55.6'

BORING NO. B-1  
Sta. 10+18.23 Rt. 7'

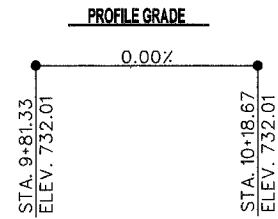
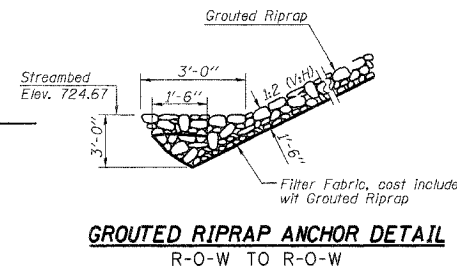
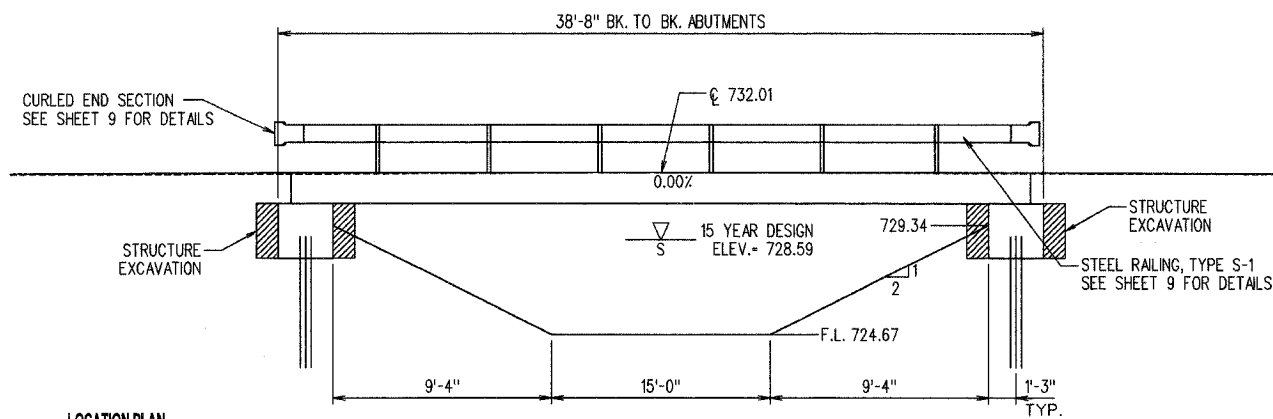
BORING NO. B-2  
Sta. 9+80.99 Lt. 10'

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu.Yd.		102	102
Removal of Existing Structures	Each			1
Concrete Structures	Cu.Yd.		18.3	18.3
Concrete Cut-Off Wall	Cu. Yd.		5.5	5.5
Precast Prestressed Conc. Deck Beams (17" Deep)	Sq.Ft.	1008		1008
Reinforcement Bars	Pounds		2080	2080
Steel Railing, Type S-1	Foot	75		75
Furnishing Steel Piles HP 10 x 42	Foot		280	280
Driving Steel Piles	Foot		280	280
Metal Shoes	Each		8	8
Test Pile Steel HP 10 x 42	Each		2	2
Name Plate	Each		1	1
Grouted Riprap	Sq. Yd.		135	135

**GENERAL PLAN AND ELEVATION**

SECTION 03-00894-00-BR  
 CHAMPAIGN COUNTY  
 STATION 10+00



**NAME PLATE**

STRUCTURE NO. 4516  
 SEC. 03-00894-00-BR  
 BUILT 2006 BY  
 CHAMPAIGN COUNTY  
 LOADING HS 20-44  
 SEE STANDARD 515001

**DESIGN STRESSES**

Design Loading  
 HS 20-44 and Allowance for  
 25 P.S.F. Future Wearing Surface

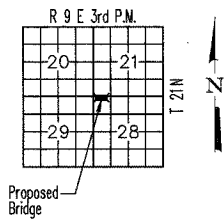
Design Stresses  
 F<sub>c</sub> = 3,500 P.S.I. Cast-in-Place Concrete  
 F<sub>y</sub> = 60,000 P.S.I. Reinforcement Steel  
 F<sub>c</sub> = 5,000 P.S.I. P.P.C. Units  
 F<sub>ci</sub> = 4,000 P.S.I. P.P.C. Units  
 F<sub>s</sub> = 270,000 P.S.I. 1/2" Ø Strands  
 F<sub>si</sub> = 189,000 P.S.I. 1/2" Ø Strands

Design Specifications AASHTO 2002

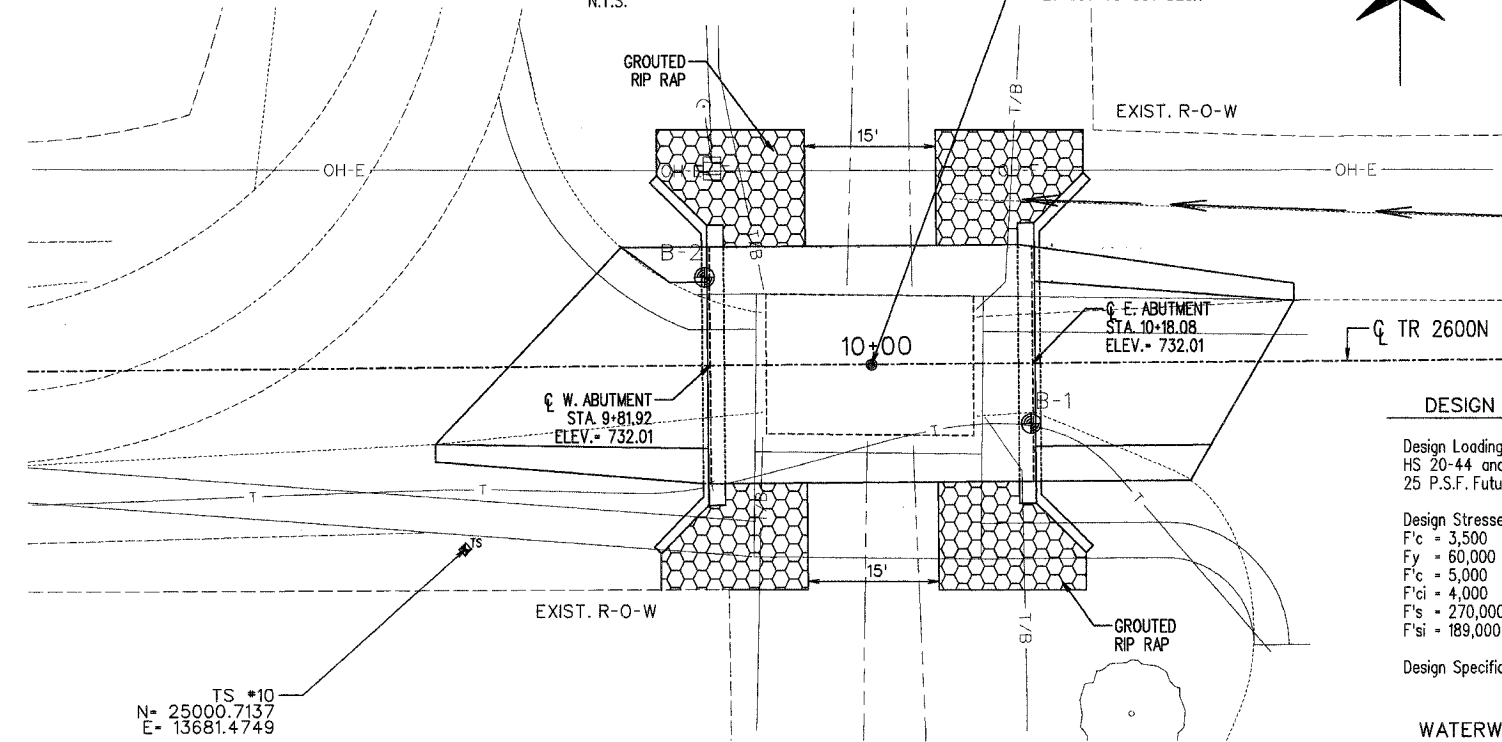
**WATERWAY DATA**

Drainage Area	1.11	Sq.Mi.
Existing Opening (15 Yr.)	86	Sq.Ft.
Proposed Opening (15 Yr.)	90	Sq.Ft.
Existing Opening (100 Yr.)	107	Sq.Ft.
Proposed Opening (100 Yr.)	120	Sq.Ft.

**LOCATION PLAN**



**ELEVATION**  
N.T.S.



TS #10  
 N= 25000.7137  
 E= 13681.4749

**PLAN**  
 SCALE: 1"=10'

**GENERAL NOTES**

Class MS or SI Concrete shall be used in the Abutments.

Boring Data is shown only as a guide to bidders in estimating soil conditions which may be encountered during construction.

Masonry material salvaged from the existing structure shall not be reused and shall be disposed of off the site by the Contractor.

Riprap required to meet the limits shown on the plan shall be paid for as Grouted Riprap and shall be grouted. See Special Provisions.

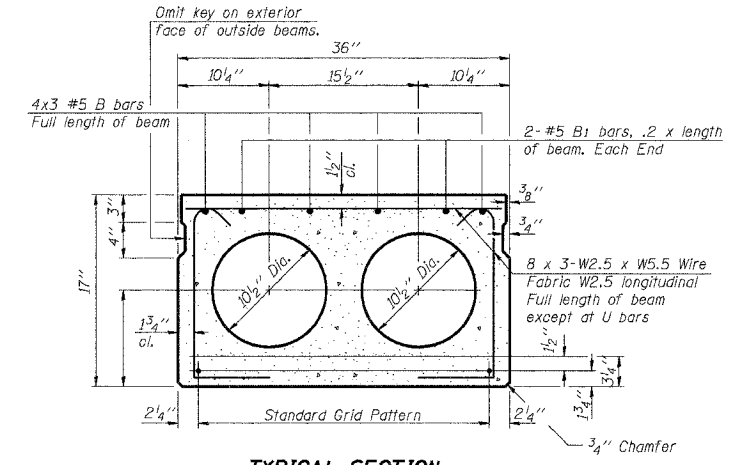
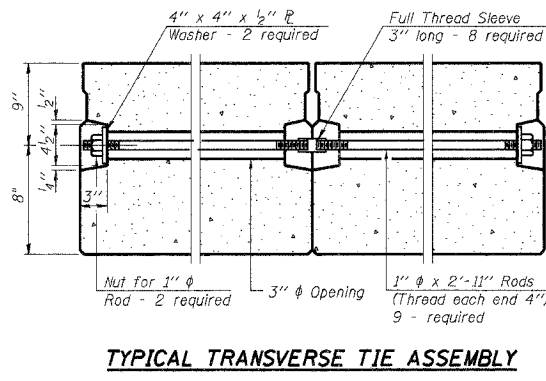
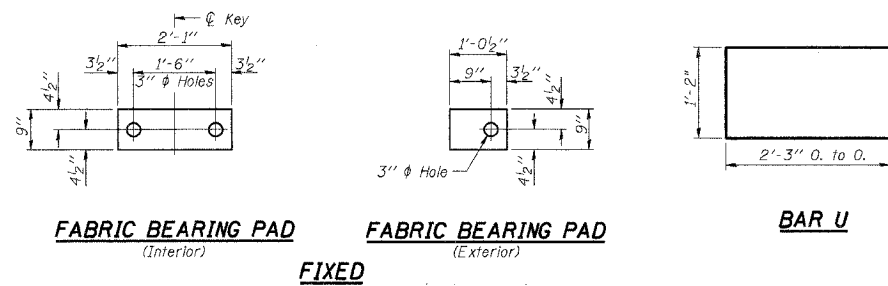
"This structure has been designed to be stable for scour conditions in accordance with the FHWA Technical Advisory - T 5140.23, "Evaluating Scour at Bridges" and Hydraulic Engineering Circular 18 - Evaluating Scour at Bridges.

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



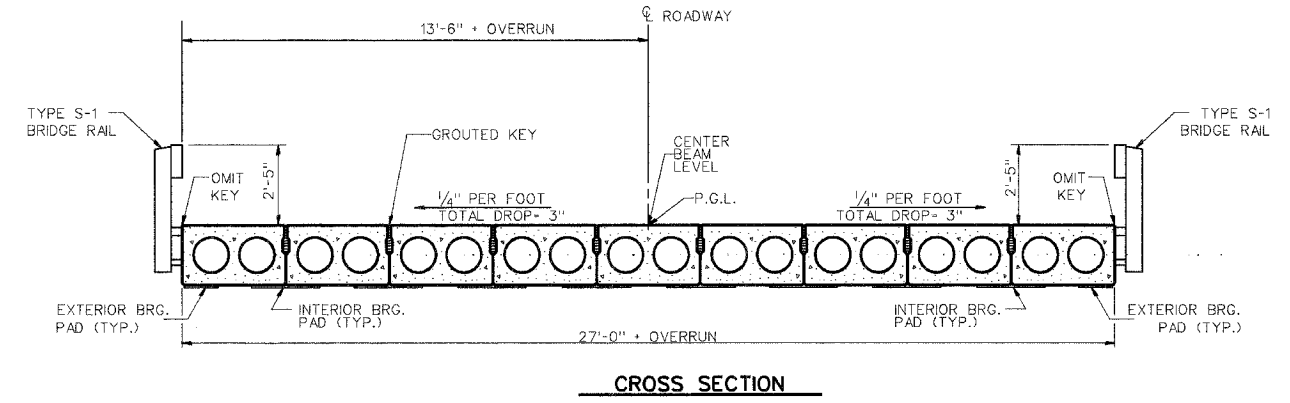
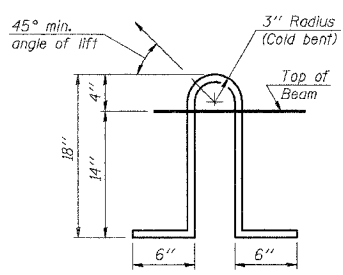
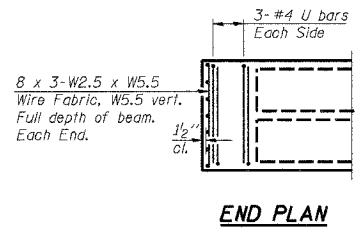
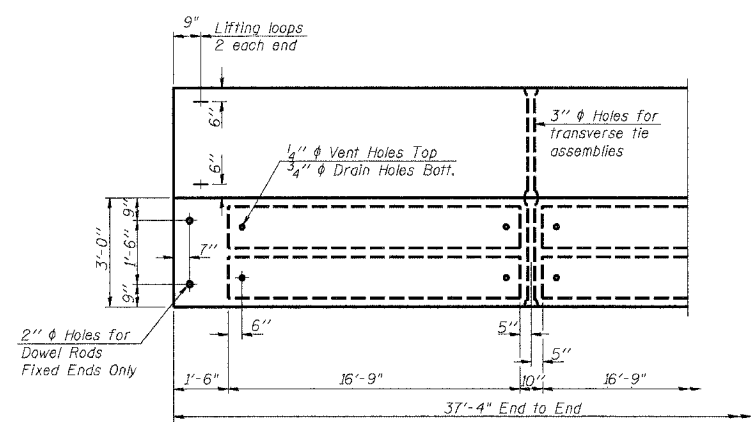
*Keith E. Brandau* 2/1/06  
 KEITH E. BRANDAU DATE  
 Illinois Licensed Structural Engineer Number 4905  
 License Expires 11/30/06

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	7
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS	PROJECT	



11 - 1/2"  $\phi$  Strands, Each Strand Stressed to 30,900 Lbs.  
 9 - Strands 1 3/4" up, 2 - Strands 12" up

Note:  
 Place strands symmetrically about  $\phi$  of beam.



**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. Lifting loops shall be 2-1/2"  $\phi$  270 ksi strands, as shown. The 1"  $\phi$  rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside shall be filled with grout after transverse tie assembly is in place. Non prestressing steel shall conform to AASHTO M-31, M-42 or M-53 Grade 60. The bearing seat surfaces shall be adjusted by shimming to assure firm and even bearing. Two 1/2" fabric adjusting shims of the dimensions of the Exterior Bearing Pad shall be provided for each bearing. Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between top of the beam and the bottom edge of the key. Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams. Required Release Strength, f'ci, shall be 4,000 p.s.i.

**BILL OF MATERIAL - One Beam**

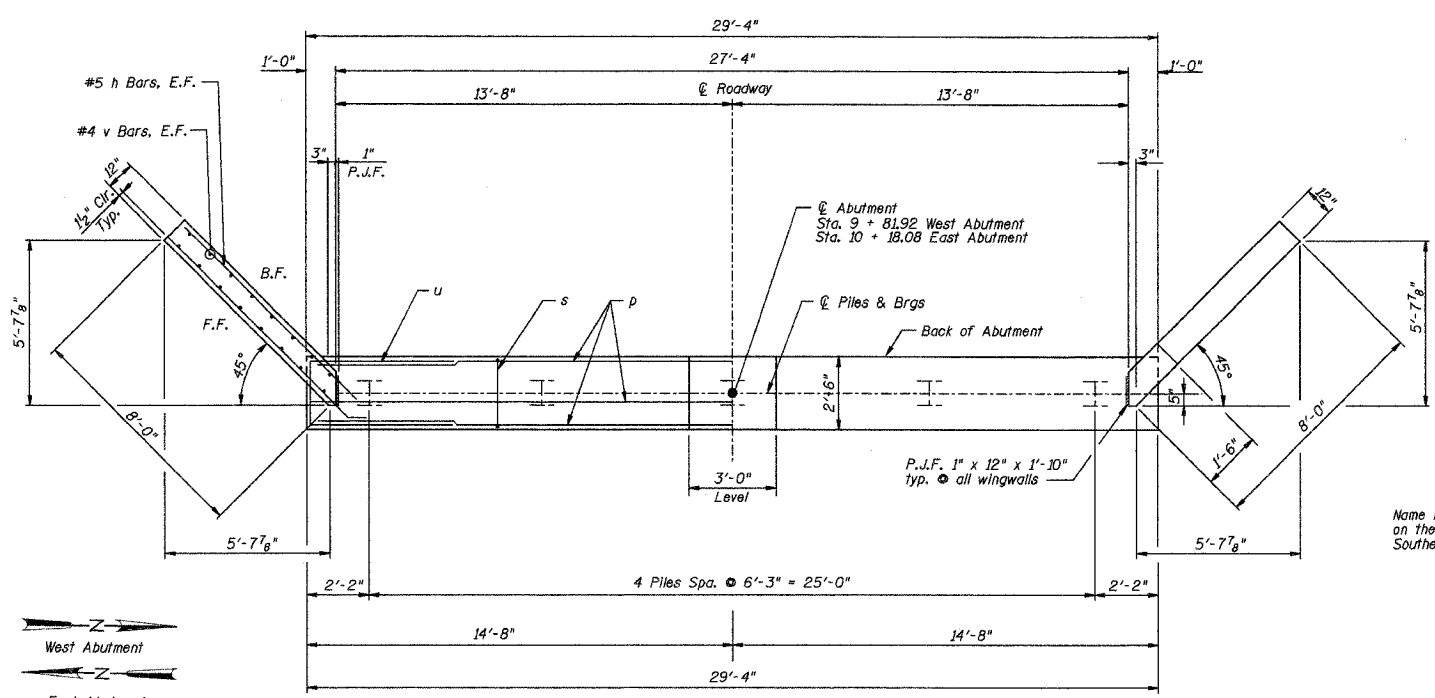
Bar	No.	Size	Length	Shape
B	12	#5	14'-0"	—
B <sub>i</sub>	4	#5	7'-6"	—
U	12	#4	5'-8"	—
Precast Prestressed Conc. Deck Bms. Sq. Ft. 1008 *				

\* TOTAL QUANTITY OF BEAMS

PD-3-S 10-22-04

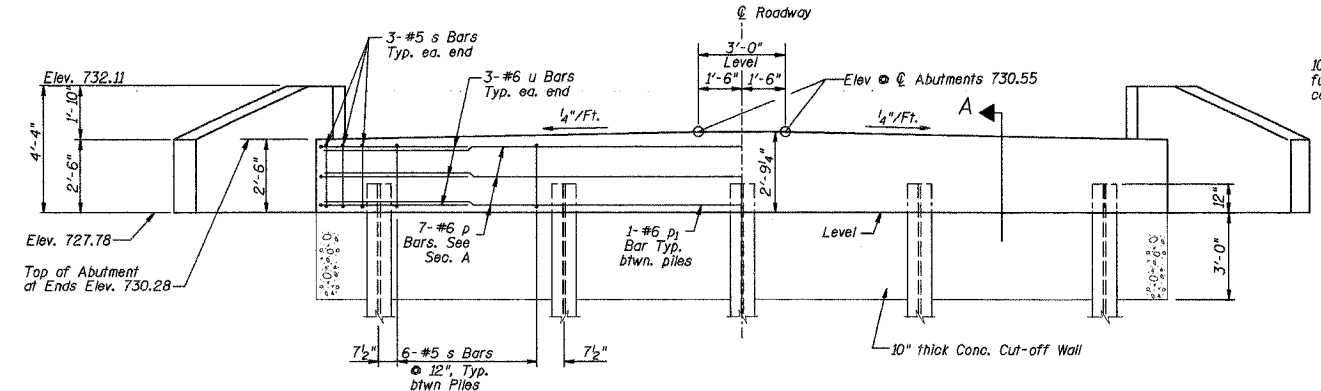
**SUPER STRUCTURE**  
 SECTION 03-00894-00-BR  
 CHAMPAIGN COUNTY  
 $\phi$  STATION 10+00

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	8
STA.	TO STA.		
F.H.W.A. REG.	ILLINOIS PROJECT		

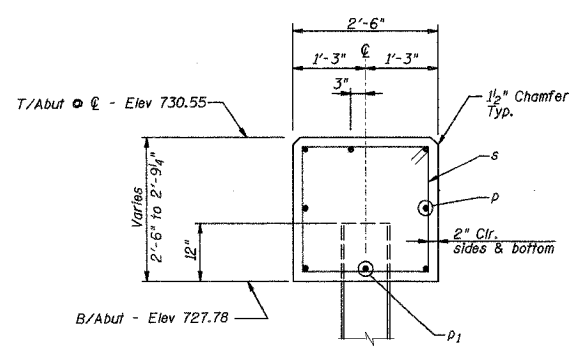


TOP PLAN

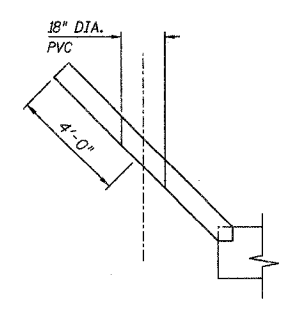
NOTE: All edges shall have Standard 3/4" Chamfer, except as noted.



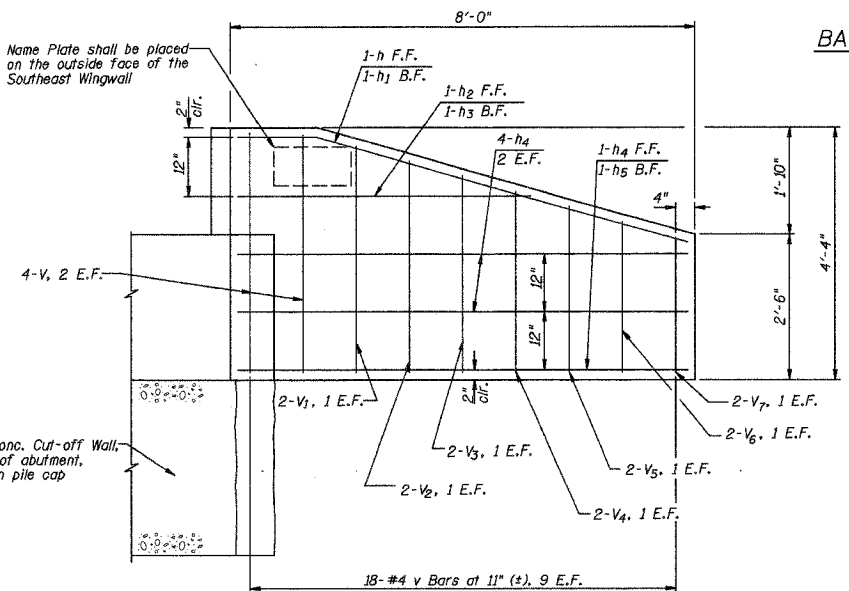
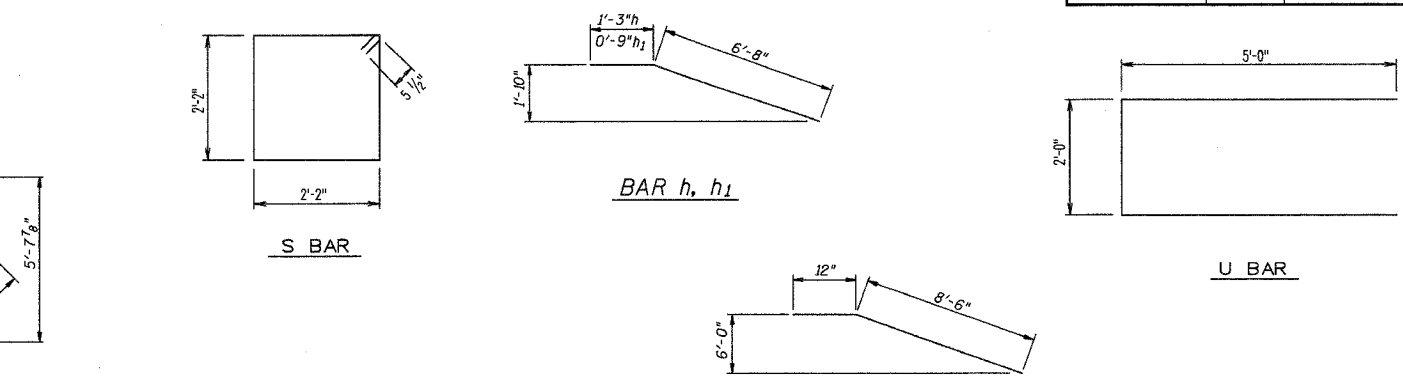
ELEVATION



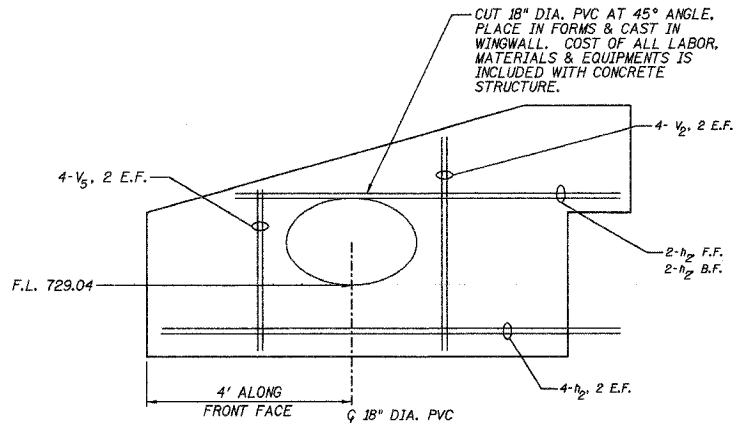
SECTION A



NORTHEAST WINGWALL PLAN



NORTHWEST, SOUTHEAST & SOUTHWEST WINGWALL ELEVATION



NORTHEAST WINGWALL ELEVATION

NOTE: ONLY ADDITIONAL REINFORCEMENT IS SHOWN. THE REINFORCEMENT SHOWN FOR THE NW, SE & SW WINGWALLS SHALL ALSO BE PLACED IN THE NE WINGWALL, AT THE DIRECTION OF THE ENGINEER.

PILE DATA

TYPE:	STEEL HP 10 X 42
NO. REQ.:	4 E. ABUTMENT 4 W. ABUTMENT
CAPACITY:	25 TONS/PILE
EST. LENGTH:	35 FEET/PILE E. ABUTMENT 35 FEET/PILE W. ABUTMENT
TEST PILES:	1 E. ABUTMENT 1 W. ABUTMENT

BILL OF MATERIAL - 2 ABUTS.

Bar	No.	Size	Length	Shape
h	4	#5	7'-11"	—
h1	4	#5	7'-5"	—
h2	6	#5	5'-0"	—
h3	6	#5	4'-5"	—
h4	24	#5	9'-6"	—
h5	4	#5	8'-0"	—
p	14	#6	29'-0"	—
p1	10	#6	4'-6"	—
s	62	#5	9'-7"	□
u	12	#6	12'-0"	□
v	16	#4	4'-0"	—
v1	8	#4	3'-9"	—
v2	12	#4	3'-6"	—
v3	8	#4	3'-3"	—
v4	8	#4	3'-0"	—
v5	12	#4	2'-9"	—
v6	8	#4	2'-6"	—
v7	8	#4	2'-2"	—
Concrete Structures		Cu. Yds.	18.3	
Reinforcement Bars		Lbs.	2080	
Test Pile, Steel HP10x42		Each	2	
Furnish Steel Piles, HP10x42		Foot	280	
Driving Steel Piles		Foot	280	
Metal Shoes		Each	8	
Name Plate		Each	1	
Concrete Cut-off Wall		Cu. Yds.	5.5	
Structure Excavation		Cu. Yds.	102	

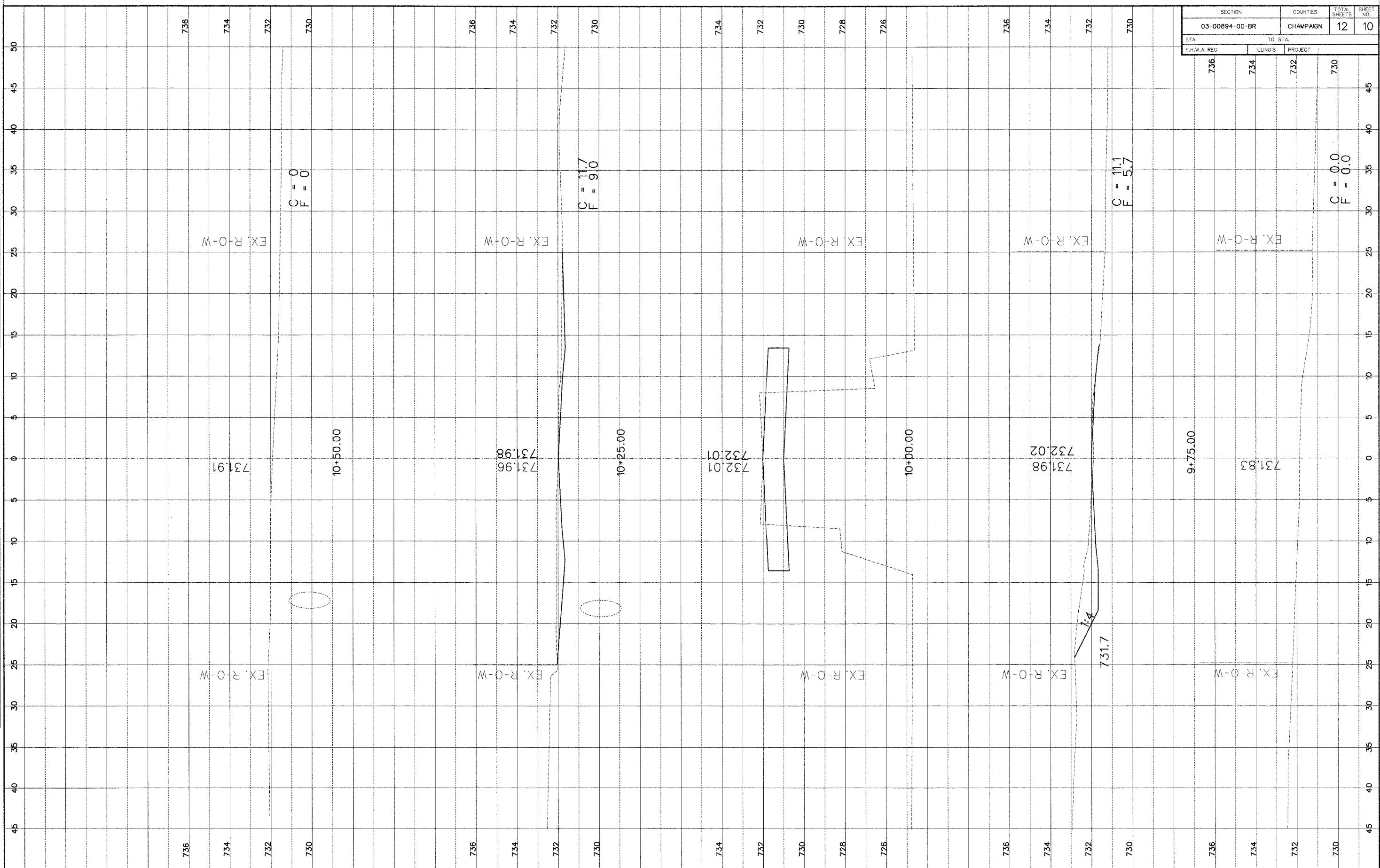
ABUTMENTS  
SECTION 03-00894-00-BR  
CHAMPAIGN COUNTY  
@ STATION 10+00





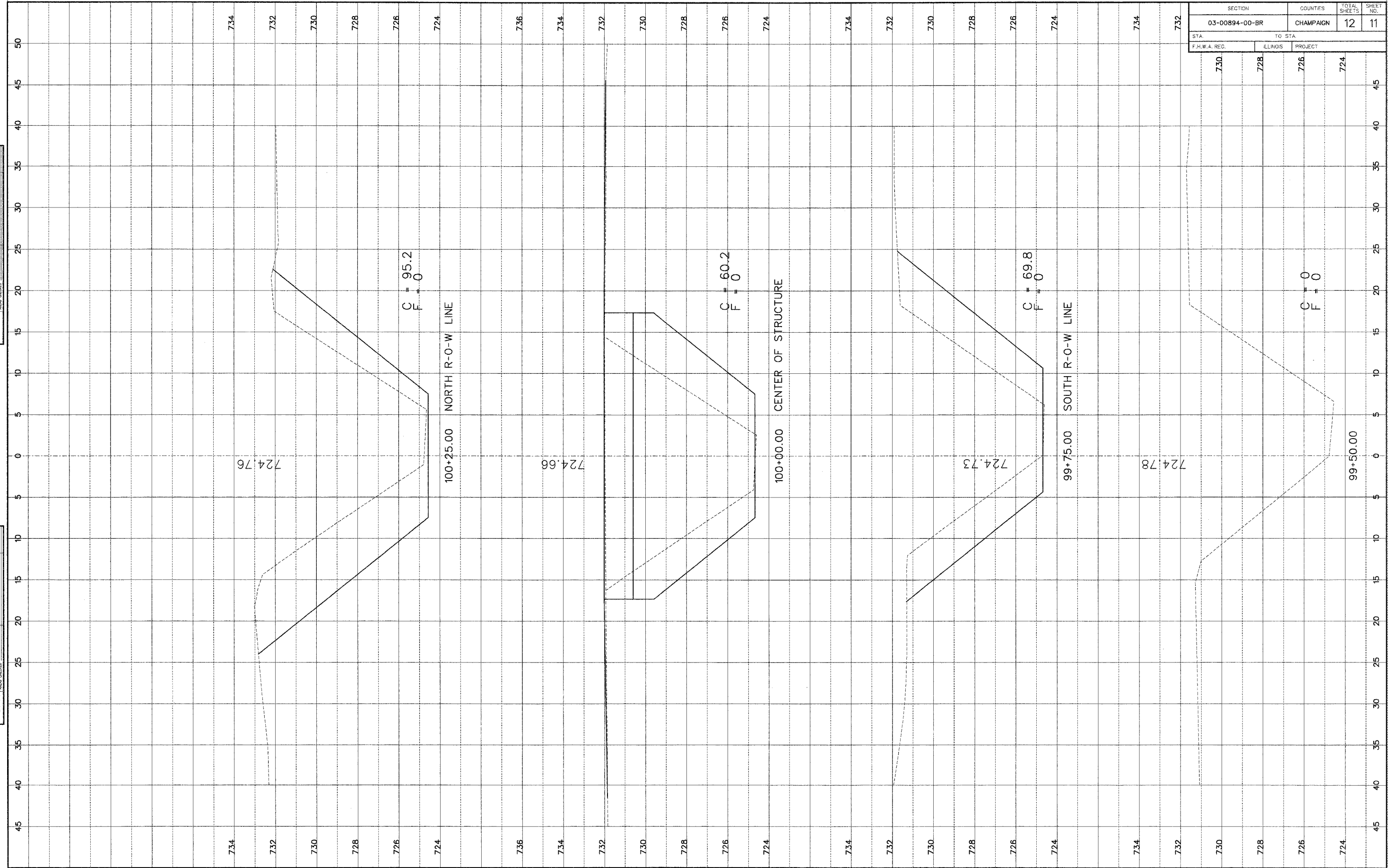
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SECTION		COUNTIES	TOTAL SHEETS	SHEET NO.
03-00894-00-BR		CHAMPAIGN	12	10
STA.	TO STA.			
F.H.W.A. REG.	ILLINOIS	PROJECT		
736	734	732	730	

SECTION		COUNTIES	TOTAL SHEETS	SHEET NO.
03-00894-00-BR		CHAMPAIGN	12	11
STA.	TO STA.			
F.H.W.A. REG.	ILLINOIS	PROJECT		
730	728	726	724	



FINAL SURVEY  
 SURVEYED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 AREA CHECKED BY: \_\_\_\_\_

ORIGINAL SURVEY  
 SURVEYED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 AREA CHECKED BY: \_\_\_\_\_

**FINAL SURVEY**

DATE: \_\_\_\_\_ BY: \_\_\_\_\_

NO. \_\_\_\_\_

NOTE BOOK NO. \_\_\_\_\_

FIELD BOOK NO. \_\_\_\_\_

**ORIGINAL SURVEY**

DATE: \_\_\_\_\_ BY: \_\_\_\_\_

NO. \_\_\_\_\_

NOTE BOOK NO. \_\_\_\_\_

FIELD BOOK NO. \_\_\_\_\_

SECTION	COUNTIES	TOTAL SHEETS	SHEET NO.
03-00894-00-BR	CHAMPAIGN	12	12
STA.	TO STA.		
730	728	726	724
F.H.W.A. REG.		ILLINOIS PROJECT	

