

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	1
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
**PLANS FOR PROPOSED  
SURFACE TRANSPORTATION PROGRAM**

SECTION 08-03110-00-BR LAWRENCE COUNTY

PROJECT BROS-0101(046)

JOB NO. C-97-049-12

BRIDGEPORT ROAD DISTRICT

T.R. 169

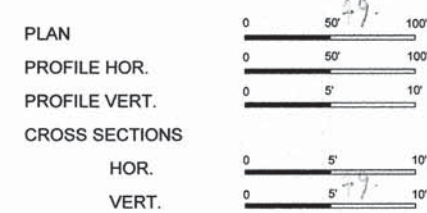
CONTRACT NO. 95710

Joint Utility Locating Information for Excavators

JULIE 1-800-892-0123

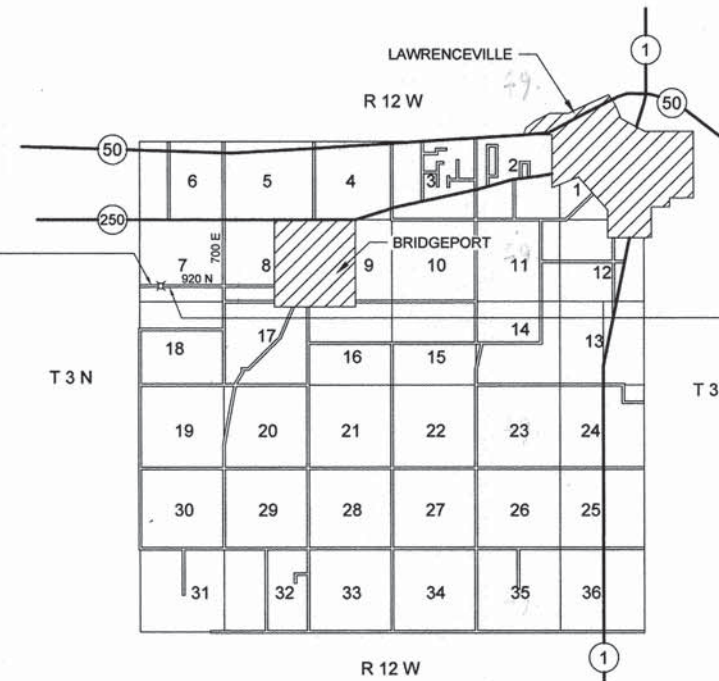


INDEX OF SHEETS	
SHEET	ITEM
1	COVER SHEET
2	SUMMARY OF QUANTITIES
3	ROADWAY PLAN AND PROFILE
4	EROSION CONTROL PLAN
5	GENERAL PLAN AND ELEVATION
6	SUPERSTRUCTURE
7	SUPERSTRUCTURE DETAILS
8	STEEL RAILING, TYPE S-1
9	WEST ABUTMENT DETAILS
10	EAST ABUTMENT DETAILS
11	PILE DETAILS
12	BORING LOGS
13-15	CROSS SECTIONS
STANDARD DRAWINGS	
	STANDARD 000001-06
	STANDARD 515001-03
	STANDARD 701901-03
	STANDARD BLR 21-9
	STANDARD BLR 22-7



SECTION 08-03110-00-BR BEGINS STA. 1+00.00

SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE  
64'-0" BK - BK ABUTMENTS  
STEEL H PILE / SPILLTHROUGH ABUTMENTS  
28' DECK  
EXISTING STRUCTURE NO. 051-3084  
PROPOSED STRUCTURE NO. 051-3301



SECTION 08-03110-00-BR ENDS STA. 7+00.00

FUNCTIONAL CLASSIFICATION - RURAL LOCAL ROAD  
ADT = 225  
DESIGN SPEED = 30 MPH

NET LENGTH SECTION 08-03110-00-BR = 600.00 Ft. = 0.114 Mi.



**CHARLESTON ENGINEERING, INC.**  
CONSULTING ENGINEERS  
105 NORTH KITCHELL  
P.O. BOX 397  
OLNEY, ILLINOIS 62450  
(618) 392-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

APPROVED 10-16 20 13  
*[Signature]*  
COUNTY ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
PASSED 11-5 20 13  
*[Signature]*  
DISTRICT SEVEN ENGINEER OF  
LOCAL ROADS AND STREETS

Releasing For  
Bid Based on  
Limited Review  
11-5 20 13  
*[Signature]*  
DEPUTY/DIRECTOR OF HIGHWAYS  
REGION FOUR ENGINEER

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	2
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	

**DESIGN DATA**

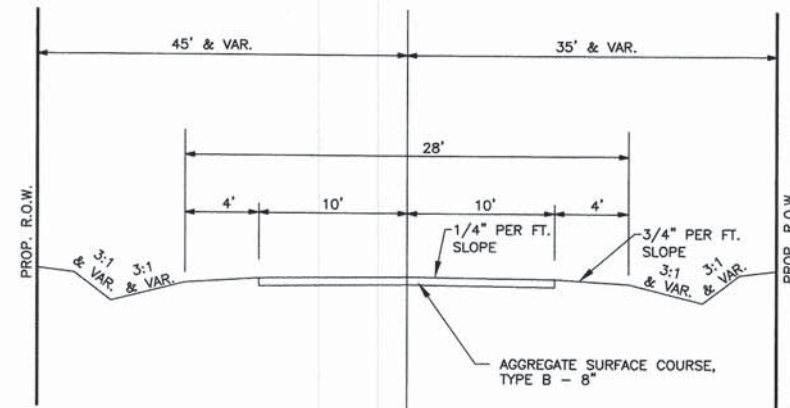
RURAL LOCAL ROAD  
ADT = 225

**GENERAL NOTES**

- SEEDING: THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 250 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR SEEDING, CLASS 2 (SPECIAL).
  - SPRING SEEDING SHALL EXTEND FROM JANUARY 1 TO JUNE 30  
FALL SEEDING SHALL EXTEND FROM JULY 1 TO DECEMBER 31
  - FERTILIZER NUTRIENTS SHALL BE APPLIED AT THE RATE OF 100 LB/ACRE
  - MULCHING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 251 OF THE STANDARD SPECIFICATIONS AND SHALL BE DONE BY METHOD 2, PROCEDURE 1 AT THE RATE OF 2 TONS PER ACRE.
- NO PAYMENT FOR OVERHAUL WILL BE MADE ON THIS SECTION.

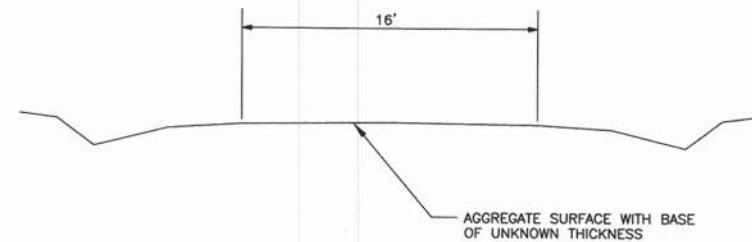
SUMMARY OF QUANTITIES			
CODE NO.	ITEM	UNIT	QUANTITY
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.50
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	82
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	222
20200100	EARTH EXCAVATION	CU YD	90
20300100	CHANNEL EXCAVATION	CU YD	445
20400800	FURNISHED EXCAVATION	CU YD	660
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	170
28300400	AGGREGATE DITCH	TON	85
35101400	AGGREGATE BASE COURSE, TYPE B	TON	80
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	650
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	24.6
50300280	CONCRETE ENCASEMENT	CU YD	3.6
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1750
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3380
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	125
51201600	FURNISHING STEEL PILES HP12X53	FOOT	480
51202305	DRIVING PILES	FOOT	480
51203600	TEST PILE STEEL HP12X53	EACH	2
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L. SUM	1

Δ SPECIALTY ITEMS



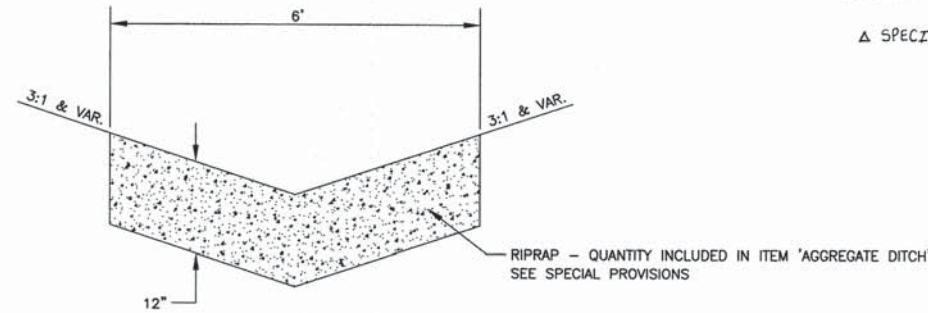
TYPICAL SECTION

PROPOSED



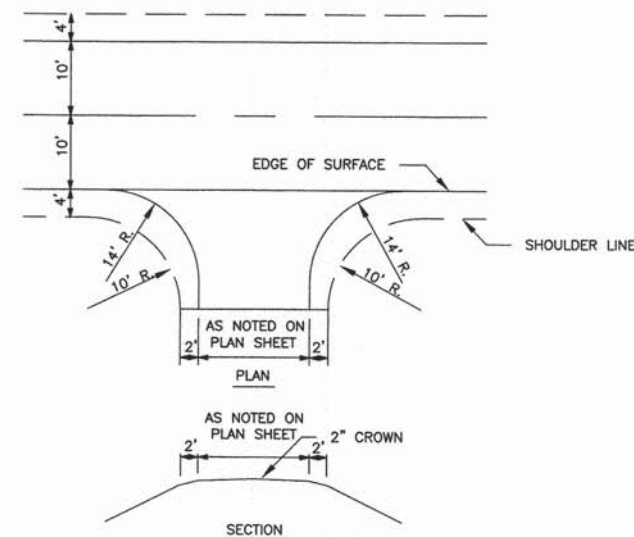
TYPICAL SECTION

EXISTING



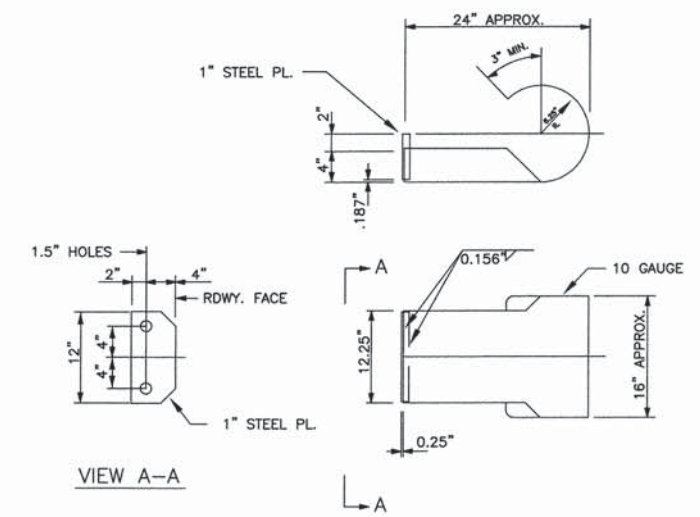
AGGREGATE DITCH DETAIL

LT. STA. 3+00 TO 3+61  
LT. STA. 4+06 TO 4+50 - SEE PLAN SHEET FOR LAYOUT



FIELD ENTRANCE DETAIL

LT. STA. 1+50  
LT. STA. 6+00

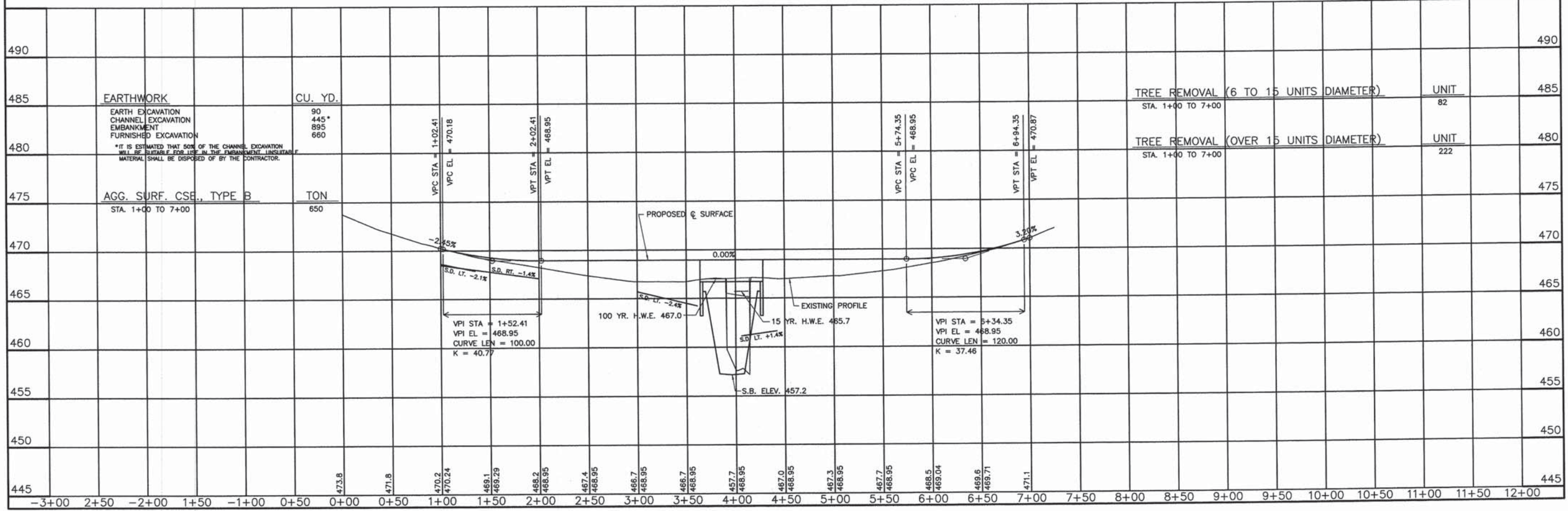
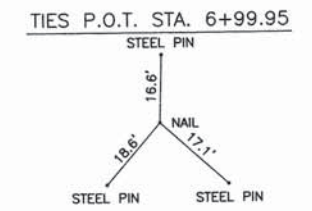
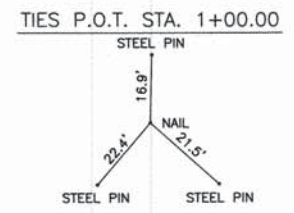
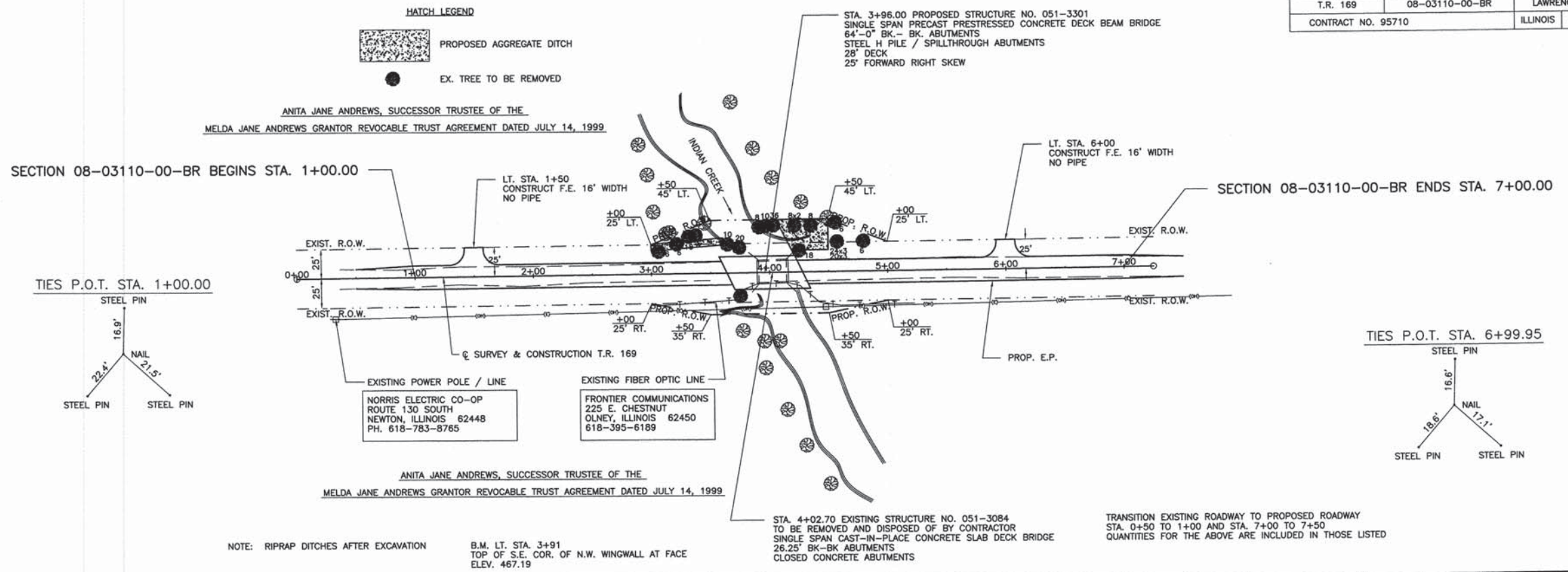


CURLED END SECTION DETAILS

4 REQUIRED - COST INCLUDED IN  
"STEEL RAILING, TYPE S-1"



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T.R. 169	08-03110-00-BR	LAWRENCE	15	3
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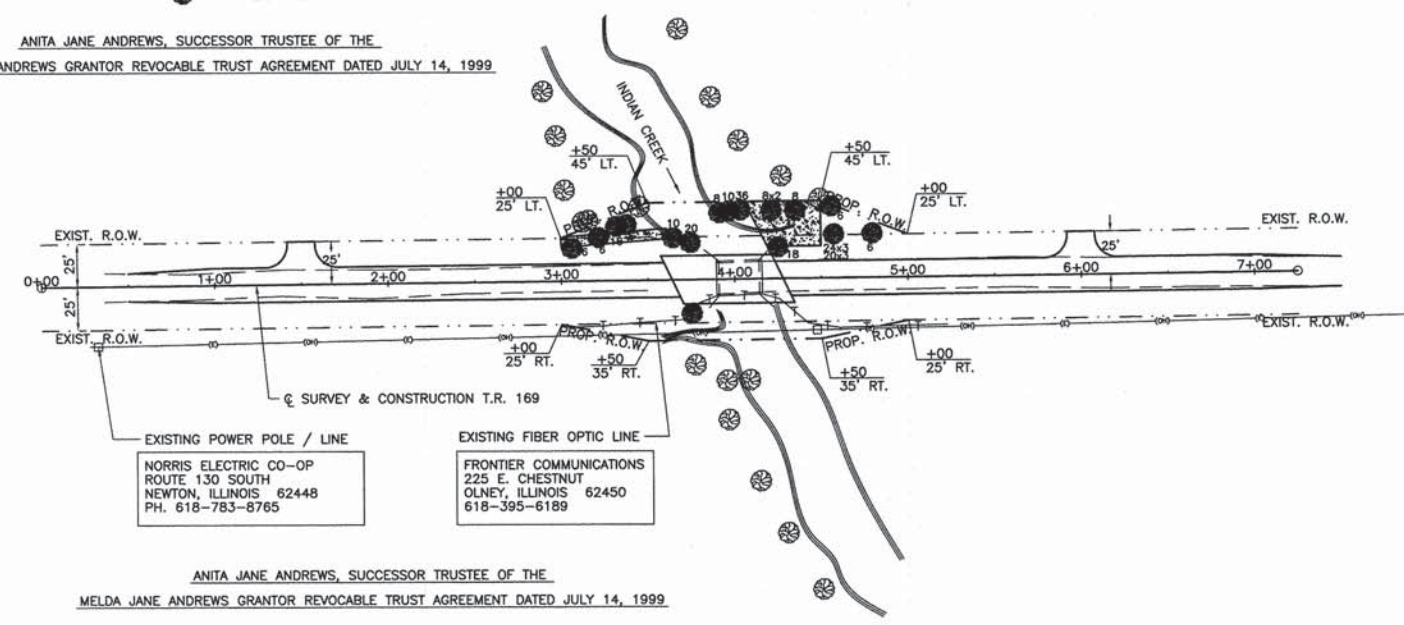


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	4
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	



SCALES:  
1" = 50' HOR  
1" = 5' VER

HATCH LEGEND  
 PROPOSED AGGREGATE DITCH  
 EX. TREE TO BE REMOVED  
 ANITA JANE ANDREWS, SUCCESSOR TRUSTEE OF THE  
 MELDA JANE ANDREWS GRANTOR REVOCABLE TRUST AGREEMENT DATED JULY 14, 1999



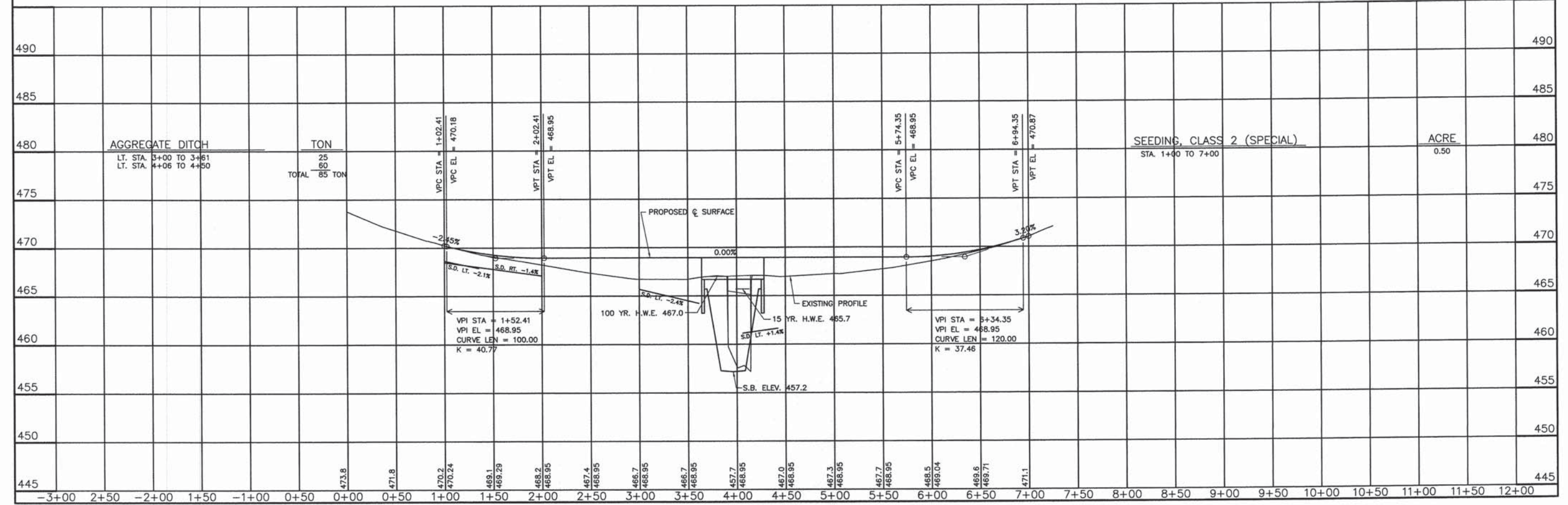
EXISTING POWER POLE / LINE  
 NORRIS ELECTRIC CO-OP  
 ROUTE 130 SOUTH  
 NEWTON, ILLINOIS 62448  
 PH. 618-783-8765

EXISTING FIBER OPTIC LINE  
 FRONTIER COMMUNICATIONS  
 225 E. CHESTNUT  
 OLNEY, ILLINOIS 62450  
 618-395-6189

ANITA JANE ANDREWS, SUCCESSOR TRUSTEE OF THE  
 MELDA JANE ANDREWS GRANTOR REVOCABLE TRUST AGREEMENT DATED JULY 14, 1999

NOTE: RIPRAP DITCHES AFTER EXCAVATION

EROSION CONTROL



AGGREGATE DITCH  
 LT. STA. 3+00 TO 3+61  
 LT. STA. 4+06 TO 4+50

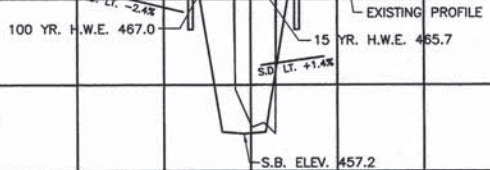
TON  
 25  
 60  
 TOTAL 85 TON

SEEDING, CLASS 2 (SPECIAL)  
 STA. 1+00 TO 7+00

ACRE  
 0.50

VPI STA = 1+52.41  
 VPI EL = 468.95  
 CURVE LEN = 100.00  
 K = 40.77

VPI STA = 3+34.35  
 VPI EL = 468.95  
 CURVE LEN = 120.00  
 K = 37.46



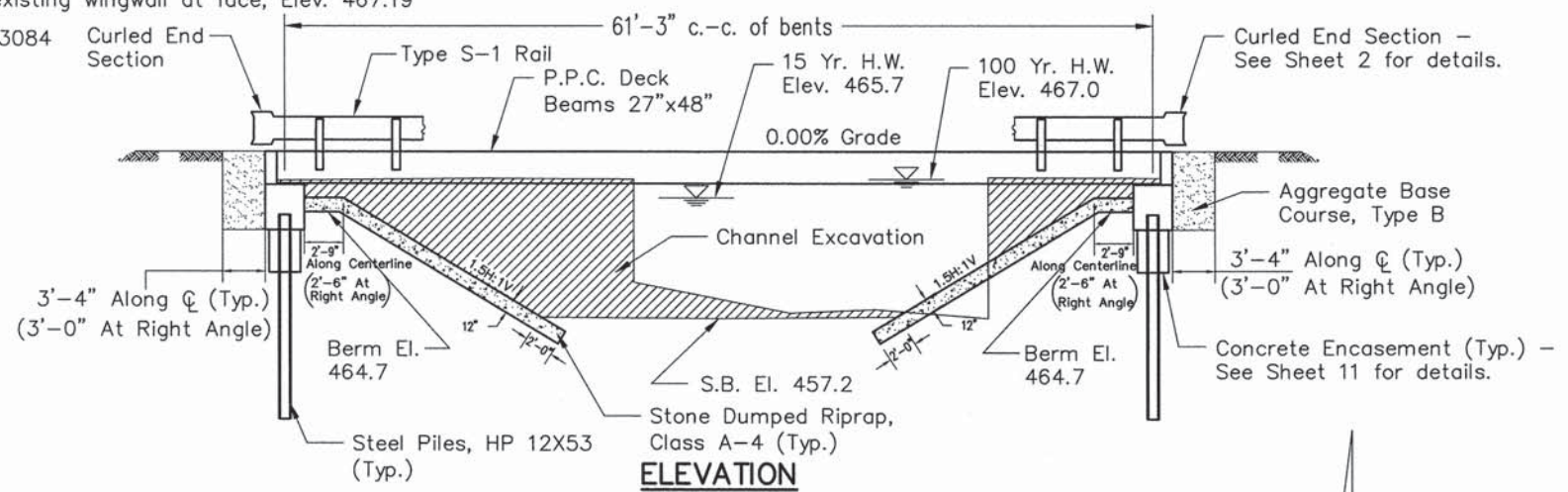


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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B.M.-Lt. Sta. 3+91, top of S.E. corner of N.W. existing wingwall at face, Elev. 467.19

Existing Structure - Existing structure No. 051-3084 consists of a single span cast-in-place concrete slab deck bridge bearing on closed concrete abutments. The bk. to bk. of abutments length is 26.25' and the out-to-out roadway width is 18.0'. The existing structure shall be completely removed. Road closure shall be used during construction.

No Salvage - See Special Provisions; "Removal of Existing Structures."



**GENERAL NOTES**

- The Contractor shall drive test piles to the nominal required bearing specified in production locations at the West Abutment and East Abutment or as approved by the Engineer before ordering the remainder of piles.
- See Bridge Plan Sheet 12 for boring logs.
- Concrete sealer shall be applied to exterior face of each fascia beam.
- The Steel H-Piles shall be according to AASHTO M270 Grade 50.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60.
- Reinforcement bars designated (E) shall be epoxy coated.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity.

0.00 % Grade

STA 3+50.00	ELEV 468.95	STA 4+00.00	ELEV 468.95	STA 4+50.00	ELEV 468.95
-------------	-------------	-------------	-------------	-------------	-------------

**PROFILE GRADE**  
(along C roadway)

**DESIGN STRESSES**

**FIELD UNITS**  
f'c = 3,500 psi  
Fy = 60,000 psi (reinforcement)

**PRECAST PRESTRESSED UNITS**  
f'c = 6,000 psi  
f'ci = 5,000 psi  
F's = 270,000 psi (1/2" low relax. strands)  
Fsi = 201,960 psi (1/2" low relax. strands)

**DESIGN SPECIFICATIONS**

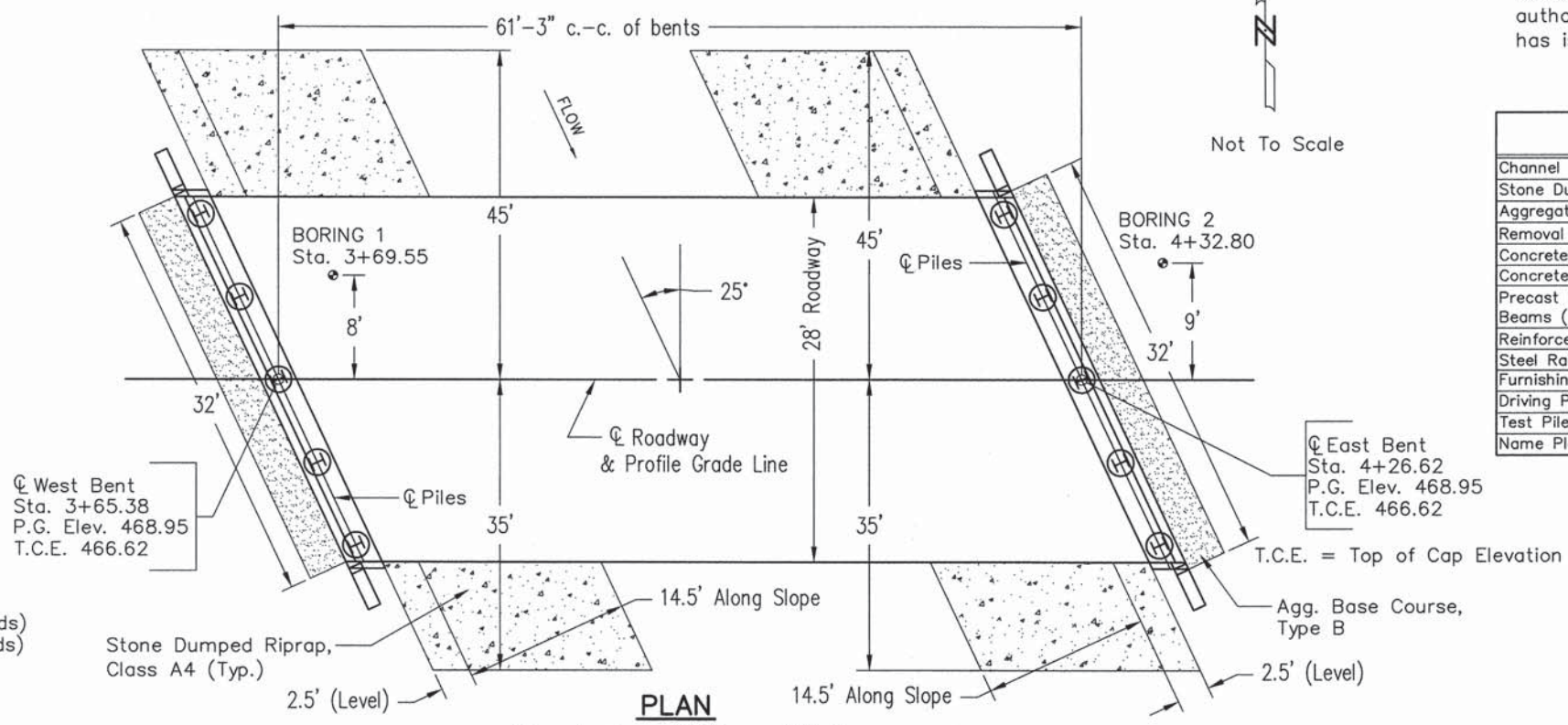
AASHTO LRFD Bridge Design Specifications - 6th ed.

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.234g  
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.540g  
Soil Site Class = D

**PILE DATA (2-ABUTS.)**

Type	HP 12 X 53
Nominal Required Bearing	419 kips
Factored Resistance Available	230 kips
Estimated Pile Length	50 Feet - West Abutment 70 Feet - East Abutment
Number of Production Piles	4 - West Abutment 4 - East Abutment
Number of Test Piles	1 - West Abutment 1 - East Abutment



**PLAN**

Skew Angle = 25° Forward Right

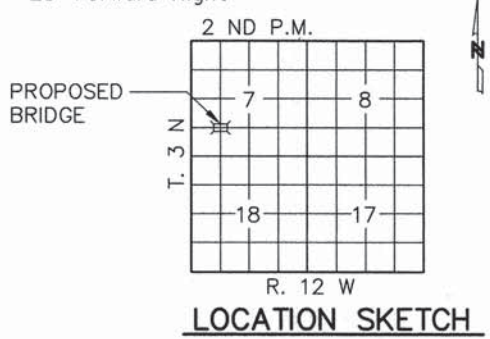
**LOADING HL-93**

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

STATION 3+96.00  
INDIAN CREEK  
SEC. 08-03110-00-BR BUILT 201-  
BRIDGEPORT ROAD DISTRICT  
LAWRENCE COUNTY  
LOADING HL-93  
STR. NO. 051-3301

**LETTERING FOR NAME PLATE**

Locate Name Plate at S.W. Corner of Bridge (See Std. 515001)



**WATERWAY INFORMATION**

Drainage Area = 3.00 SQ MI		Low Grade Elev = 468.95 @ Sta. 2+02 to 5+74							
Flood	Freq. Yr.	Q. C.F.S.	Exist.	Prop.	Nat. H.W.E.	Exist.	Prop.	Exist.	Prop.
Design	15	1260	169	352	465.7	0.6	0.0	466.3	465.7
Base	100	2255	169	352	467.0	1.9	0.3	468.9	467.3
Overtopping									
Max. Calc.	500								

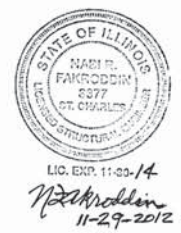
**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Channel Excavation	Cu. Yd.	-	-	445	445
Stone Dumped Riprap, Class A4	Tons	-	-	170	170
Aggregate Base Course, Type B	Tons	-	-	80	80
Removal of Existing Structures	Each	-	-	-	1
Concrete Structures	Cu. Yd.	-	-	24.6	24.6
Concrete Encasement	Cu. Yd.	-	-	3.6	3.6
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1750	-	-	1750
Reinforcement Bars, Epoxy Coated	Pound	-	-	3380	3380
Steel Railing, Type S-1	Foot	125	-	-	125
Furnishing Steel Piles HP 12 X 53	Foot	-	-	480	480
Driving Piles	Foot	-	-	480	480
Test Pile Steel HP 12 X 53	Each	-	-	2	2
Name Plates	Each	-	-	1	1

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

**INDEX OF SHEETS**

- General Plan & Elevation
- Superstructure
- Superstructure Details
- Steel Railing, Type S-1
- West Abutment Details
- East Abutment Details
- Pile Details
- Boring Logs



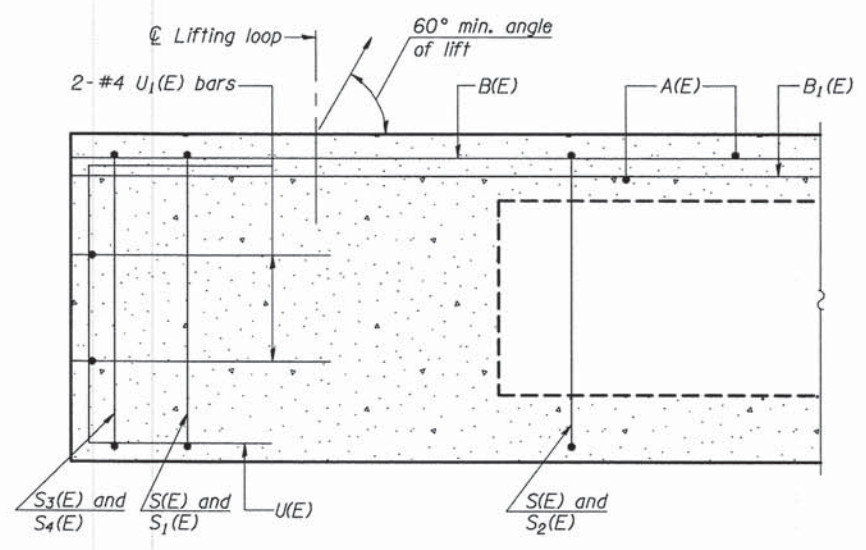
**CHARLESTON ENGINEERING, INC.**  
CONSULTING ENGINEERS  
105 NORTH KITCHELL  
P.O. BOX 397  
OLNEY, ILLINOIS 62450  
(618) 392-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184 003513

**GENERAL PLAN & ELEVATION**

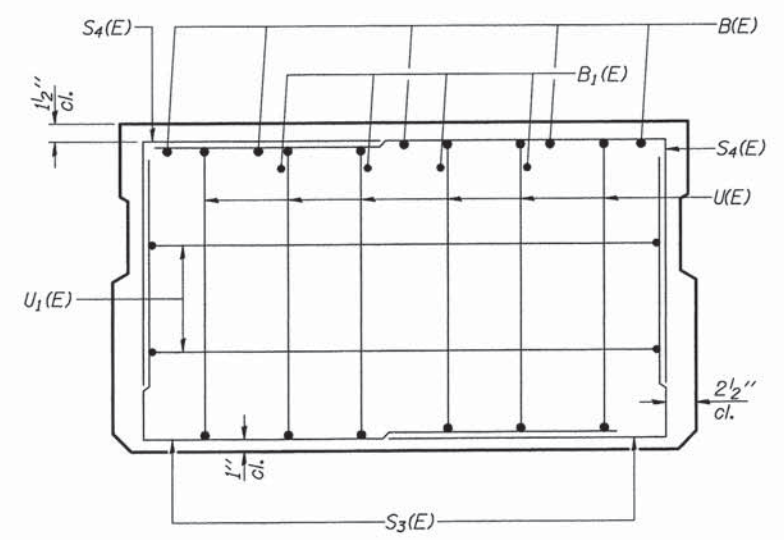
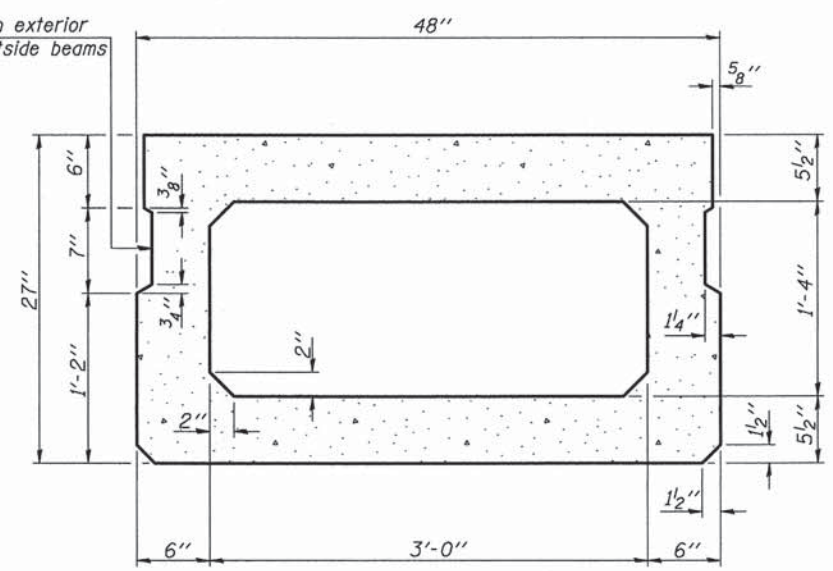
**STRUCTURE NO. 051-3301**  
**T.R. 169**  
**OVER INDIAN CREEK**  
**SECTION 08-03110-00-BR**  
**LAWRENCE COUNTY**  
**STATION 3+96.00**



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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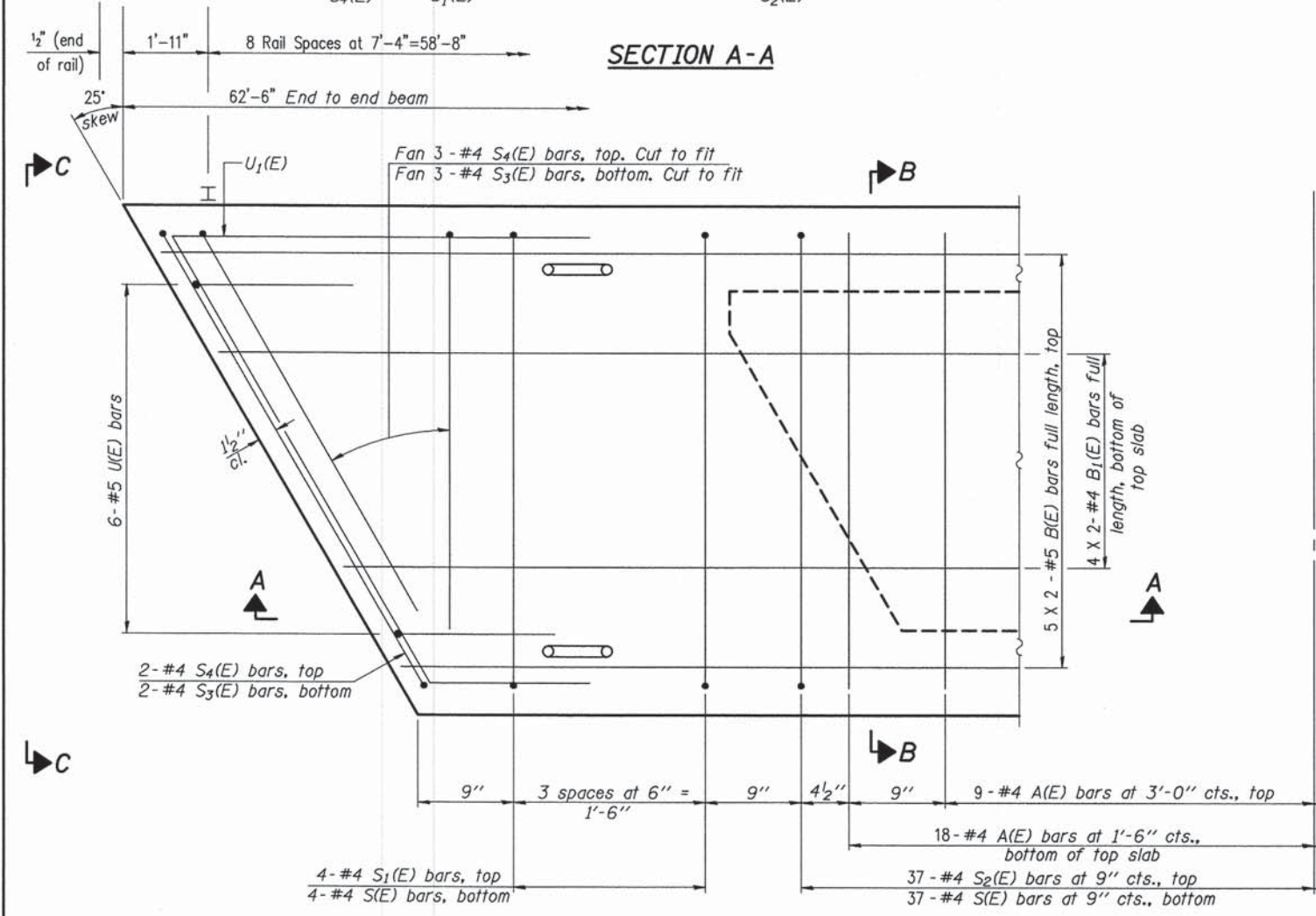
Omit key on exterior face of outside beams



**SECTION A-A**

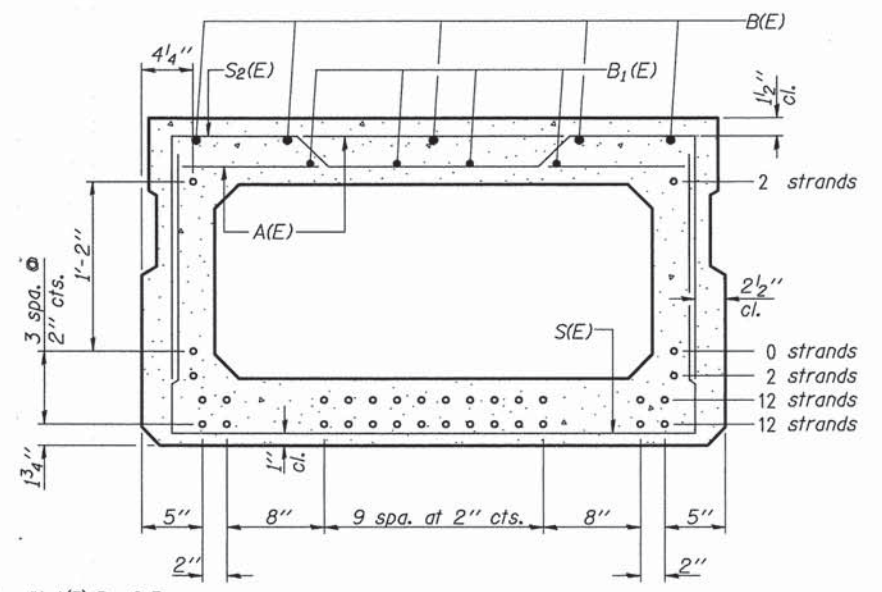
**SECTION B-B**  
(Showing dimensions)

**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**

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)	56	#4	3'-7"	—
B(E)	10	#5	32'-4"	—
B1(E)	8	#4	32'-4"	—
S(E)	82	#4	7'-5"	┘
S1(E)	8	#4	6'-11"	┘
S2(E)	74	#4	7'-2"	┘
S3(E)	10	#4	5'-10"	┘
S4(E)	10	#4	5'-7"	┘
U(E)	12	#5	4'-6"	┘
U1(E)	4	#4	8'-0"	┘

Note: See sheet 7 of 15 for additional details and Bill of Material.

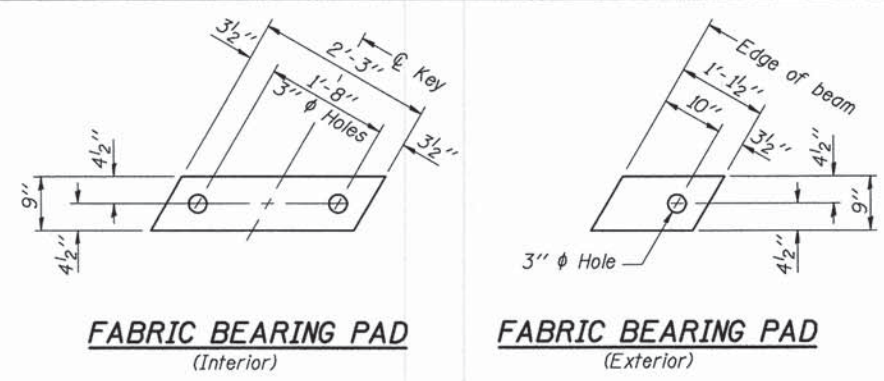
**MINIMUM BAR LAP**  
#4 bar = 2'-0"  
#5 bar = 2'-6"

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105 NORTH KITCHELL  
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ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #164-000513

**SUPERSTRUCTURE**  
**STRUCTURE NO. 051-3301**  
**T.R. 169**  
**OVER INDIAN CREEK**  
**SECTION 08-03110-00-BR**  
**LAWRENCE COUNTY**  
**STATION 3+96.00**

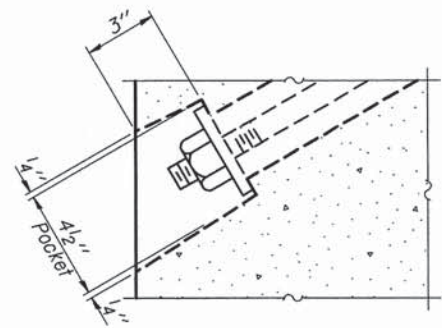


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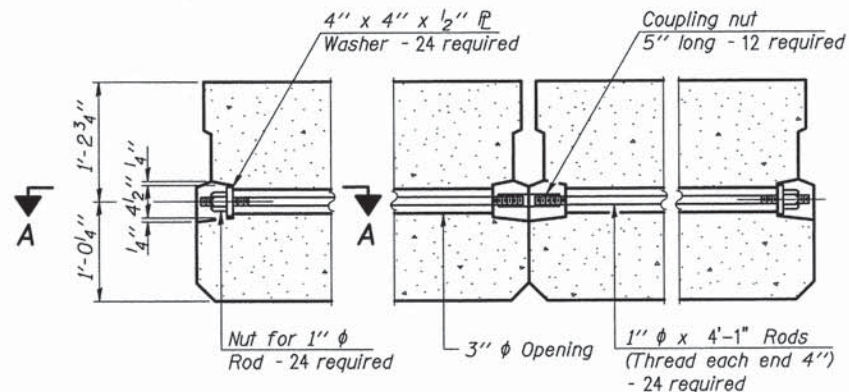


**FIXED**

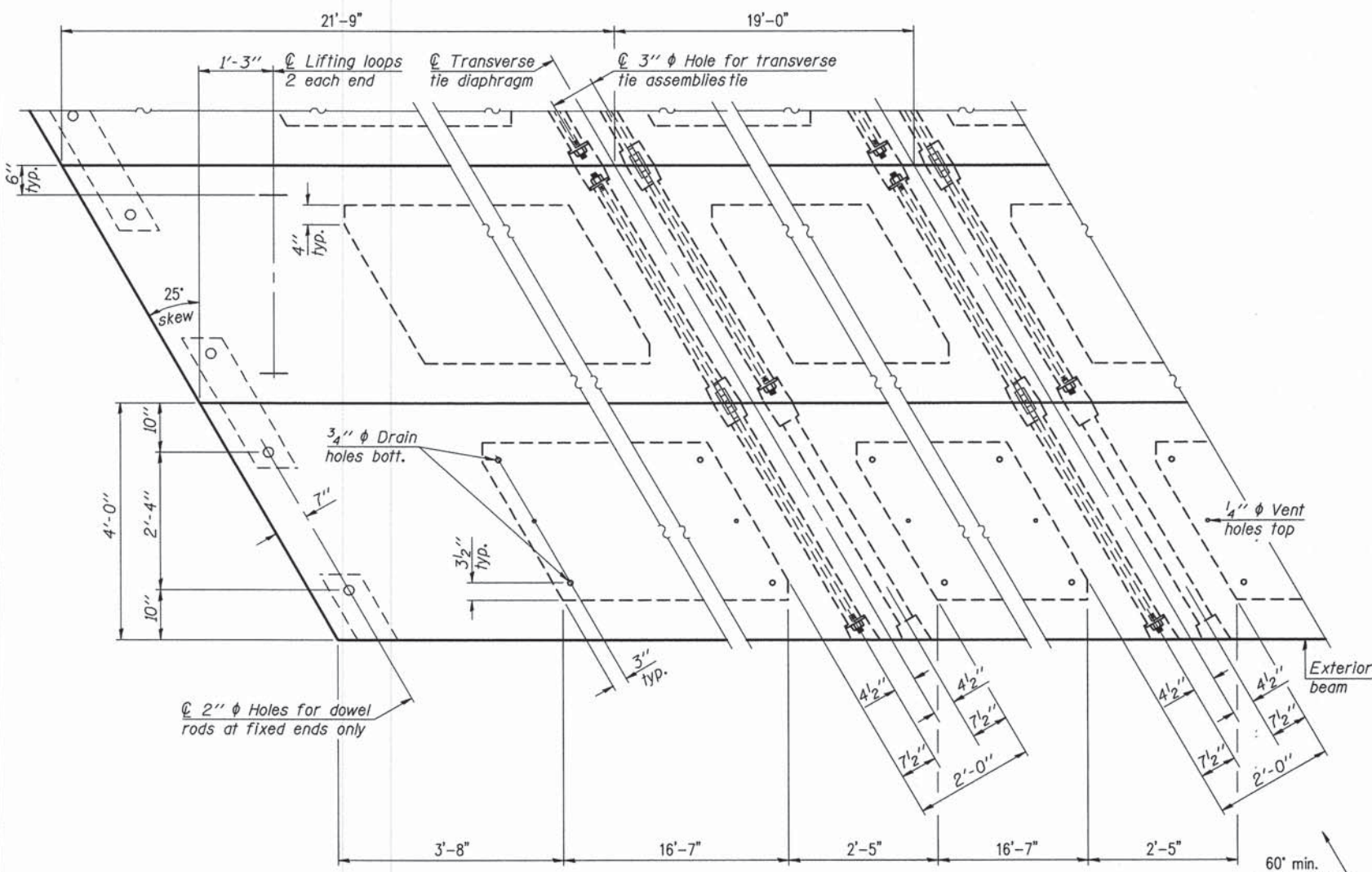
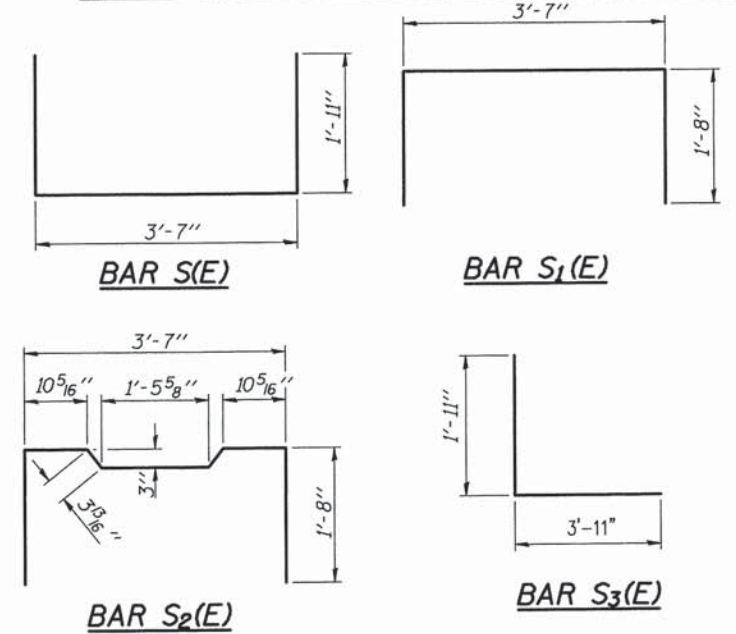
Notes:  
 All bearing pads shall be 1" thick.  
 Omit holes when using expansion bearings.  
 Expansion bearing pad shall be bonded to the substructure.



**SECTION A-A**



**TYPICAL TRANSVERSE TIE ASSEMBLY**



**PLAN VIEW**

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

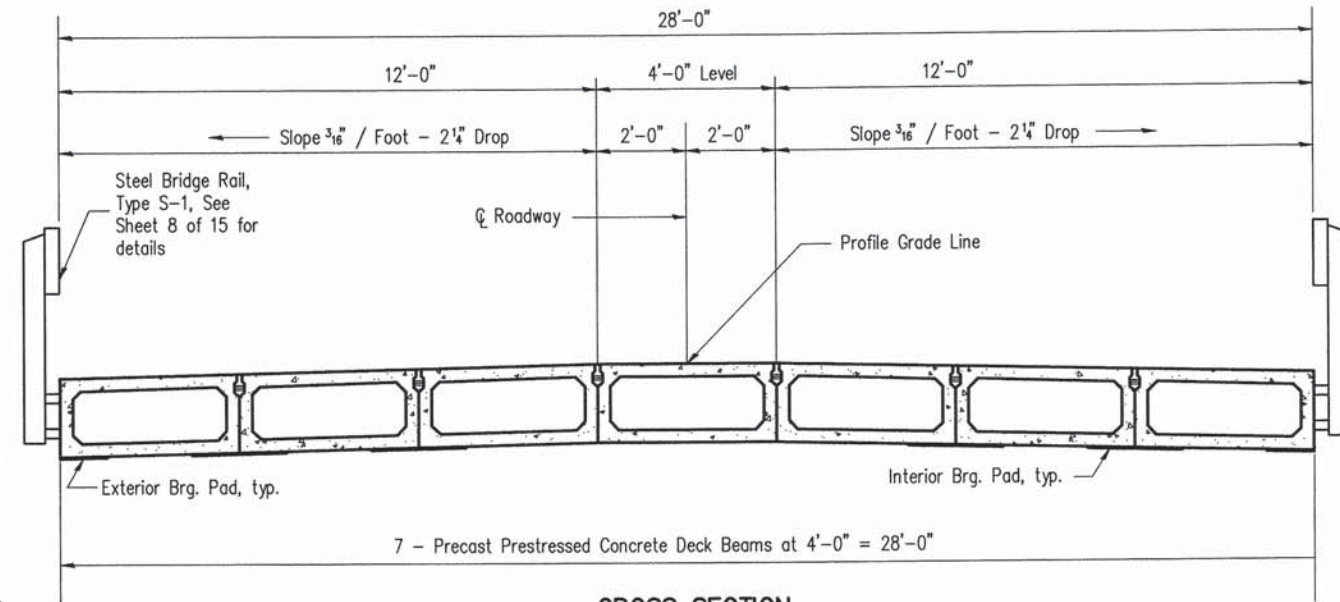
**NOTES**

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.

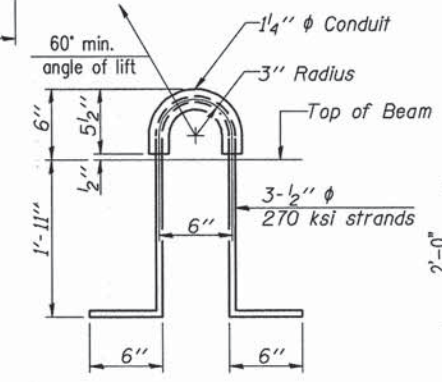
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions). Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

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.



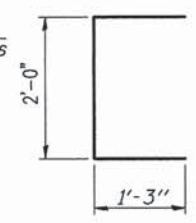
**CROSS SECTION**



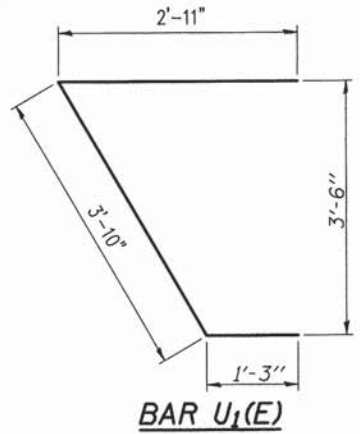
**LIFTING LOOP DETAIL**



**BAR S4(E)**



**BAR U1(E)**



**BAR U2(E)**

**BILL OF MATERIAL**

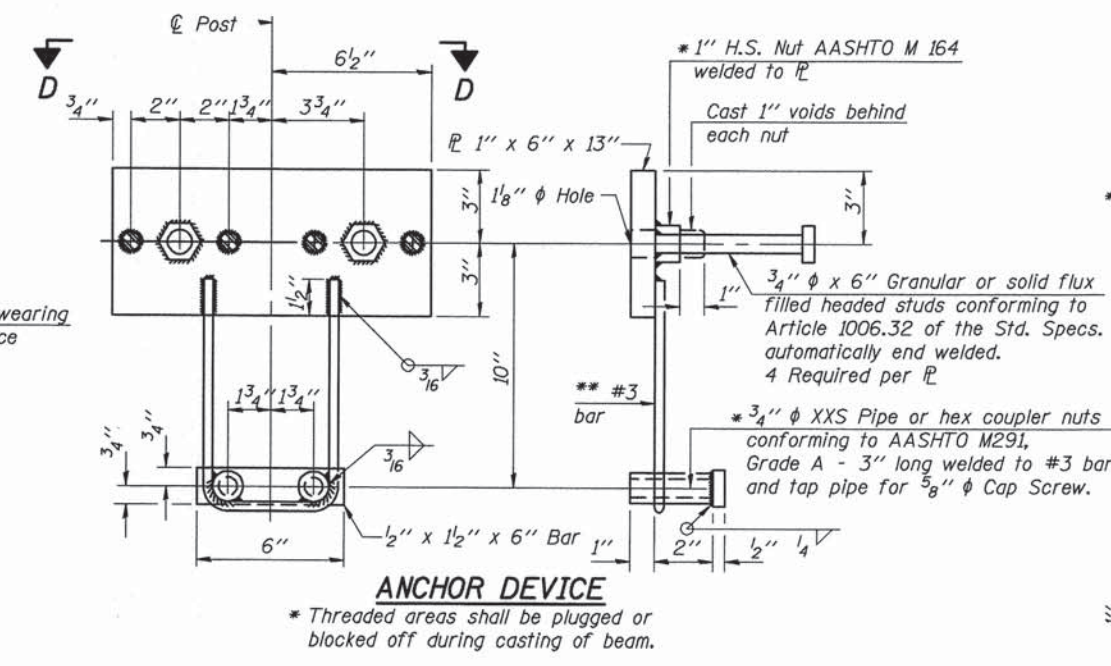
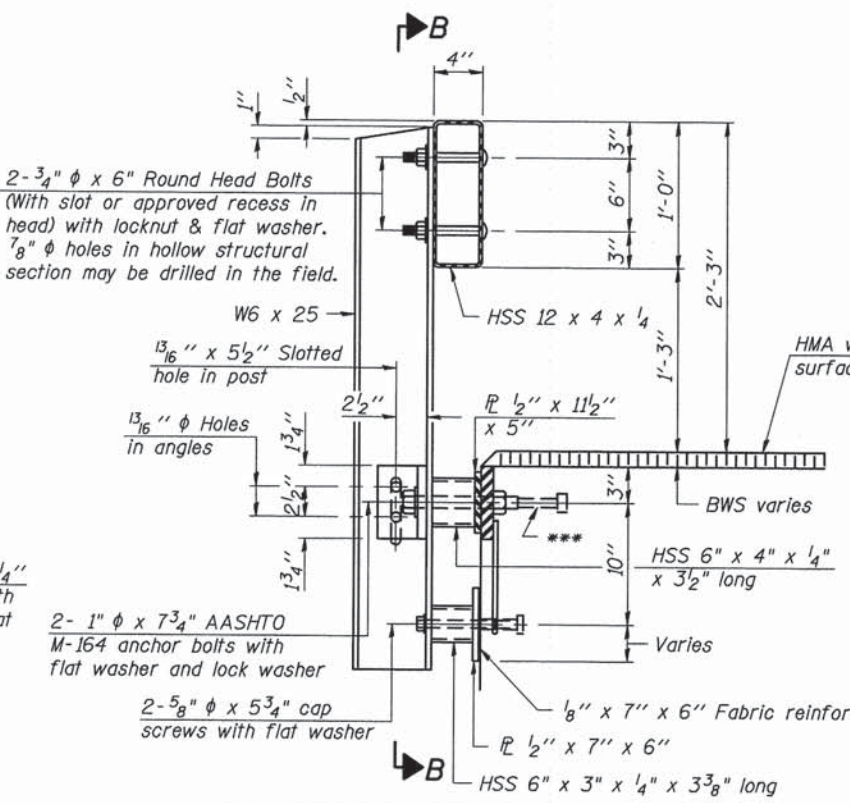
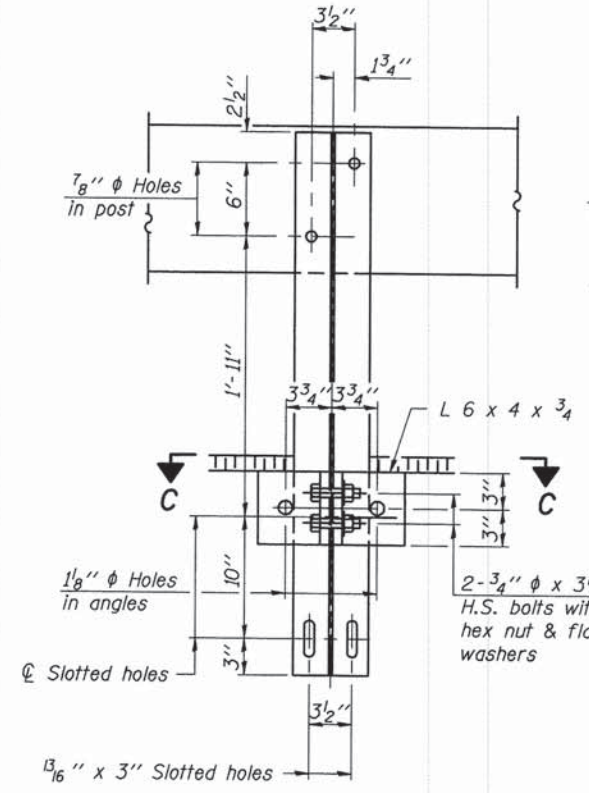
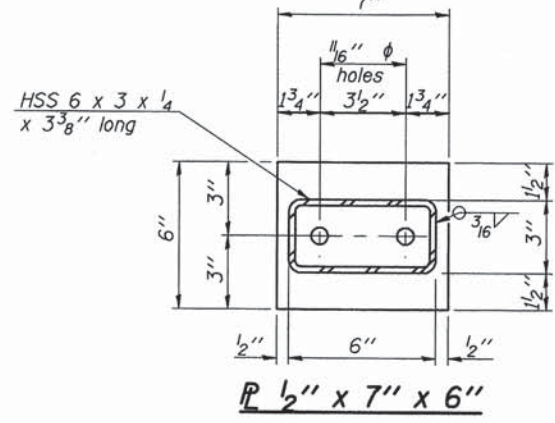
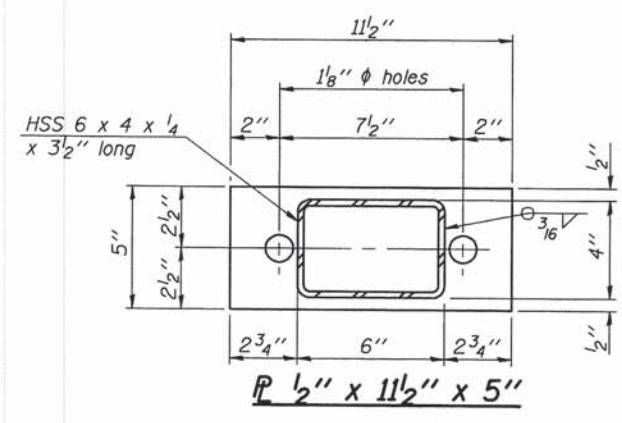
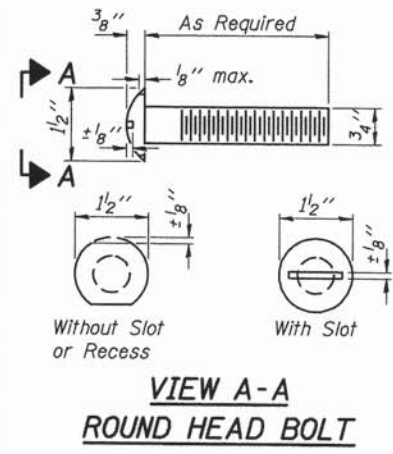
Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1750
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 105 NORTH KITCHELL  
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 OLNEY, ILLINOIS 62450  
 (618) 392-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

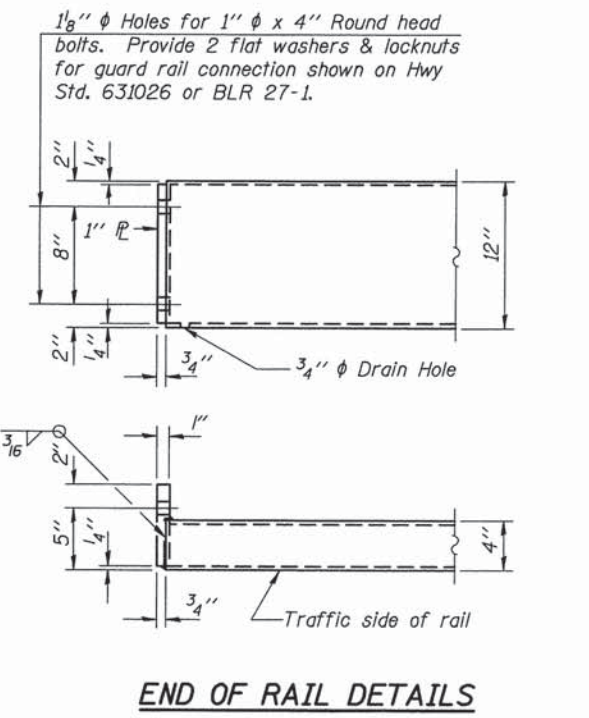
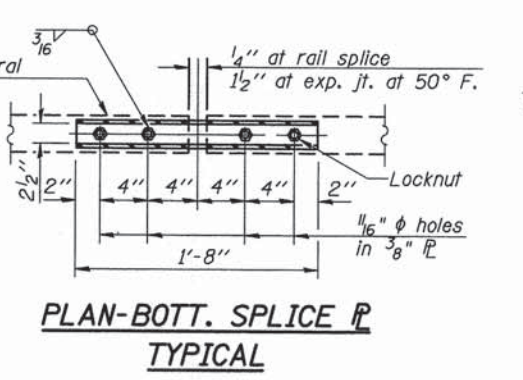
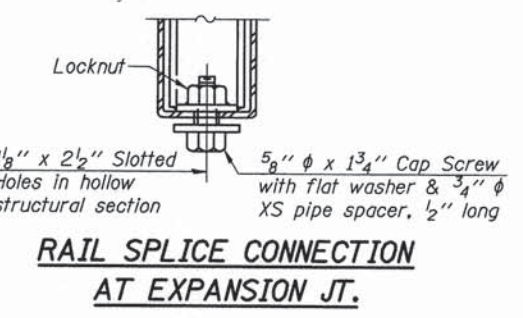
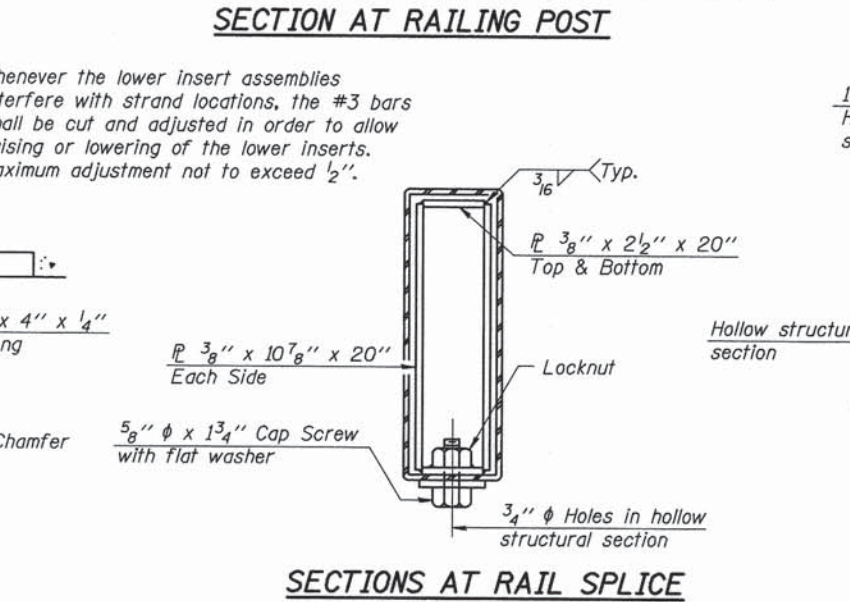
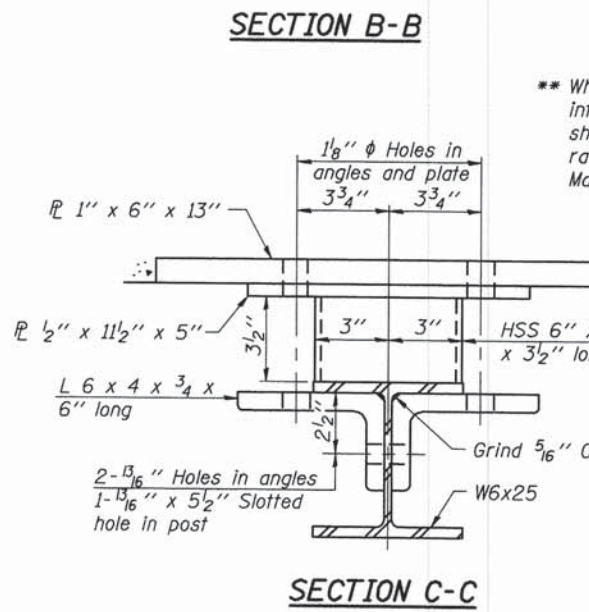
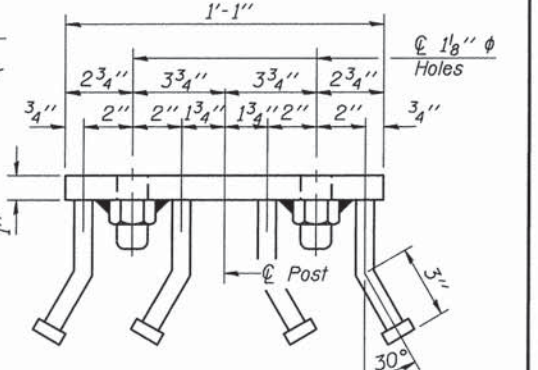
**SUPERSTRUCTURE DETAILS**  
 STRUCTURE NO. 051-3301  
 T.R. 169  
 OVER INDIAN CREEK  
 SECTION 08-03110-00-BR  
 LAWRENCE COUNTY  
 STATION 3+96.00



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	8
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	



**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 S-1.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 \*\*\* The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	125

**STEEL RAILING, TYPE S-1**

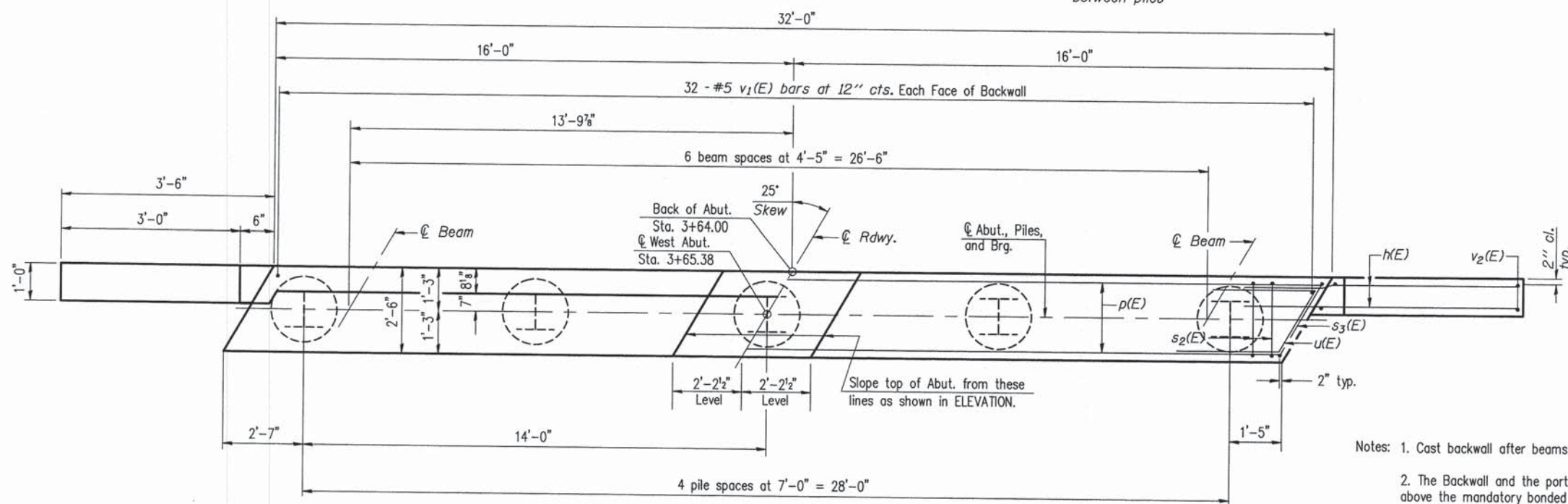
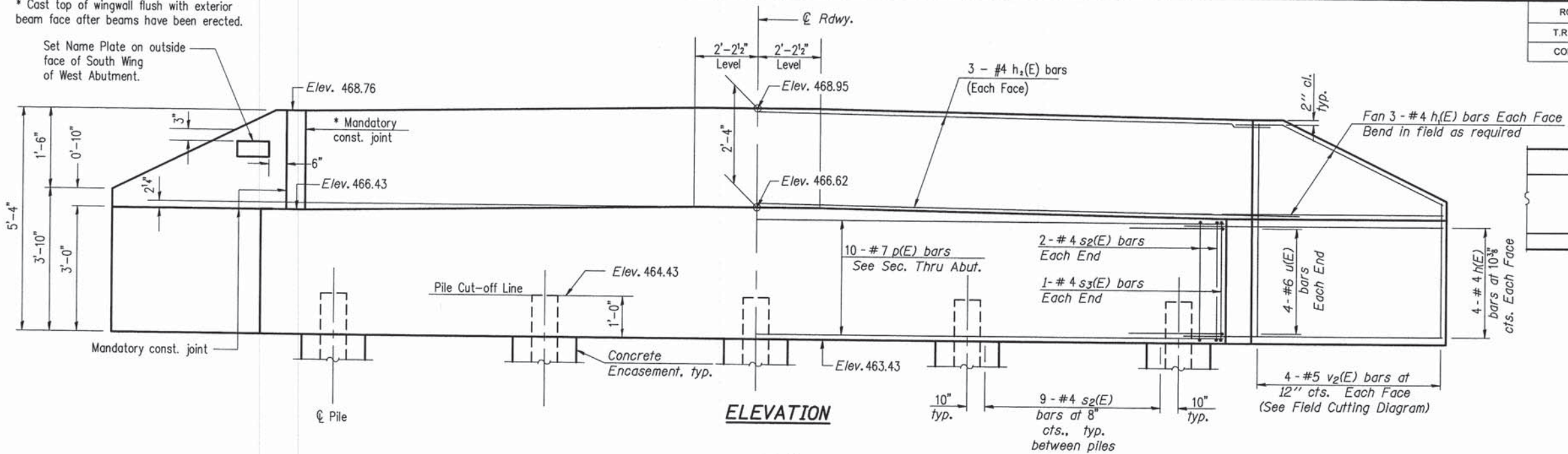
CHARLESTON ENGINEERING, INC.  
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 P.O. BOX 397  
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 ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

**STEEL RAILING, TYPE S-1**  
 STRUCTURE NO. 051-3301  
 T.R. 169  
 OVER INDIAN CREEK  
 SECTION 08-03110-00-BR  
 LAWRENCE COUNTY  
 STATION 3+96.00



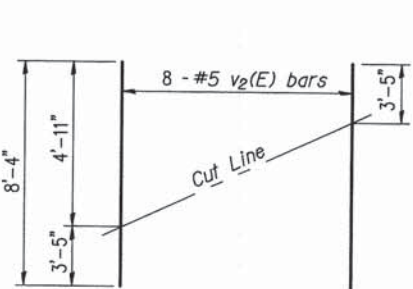
\* Cast top of wingwall flush with exterior beam face after beams have been erected.

Set Name Plate on outside face of South Wing of West Abutment.



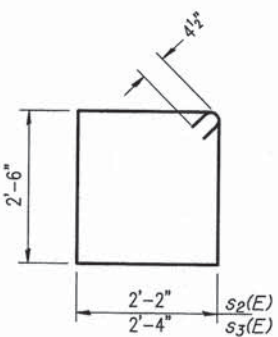
**PILE DATA**

Type: HP 12 X 53  
 Nominal Required Bearing: 419 kips  
 Factored Resistance Available: 230 kips  
 Est. Length: 50 Feet  
 No. Production Piles: 4

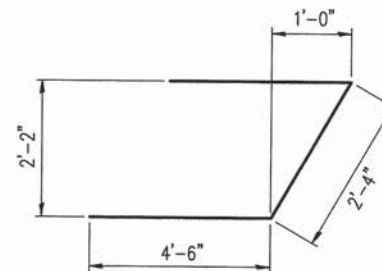


**FIELD CUTTING DIAGRAM**

Order v<sub>2</sub>(E) full length. Cut as shown and use remainder of bars in opposite face.



**BARS s<sub>2</sub>(E) & s<sub>3</sub>(E)**

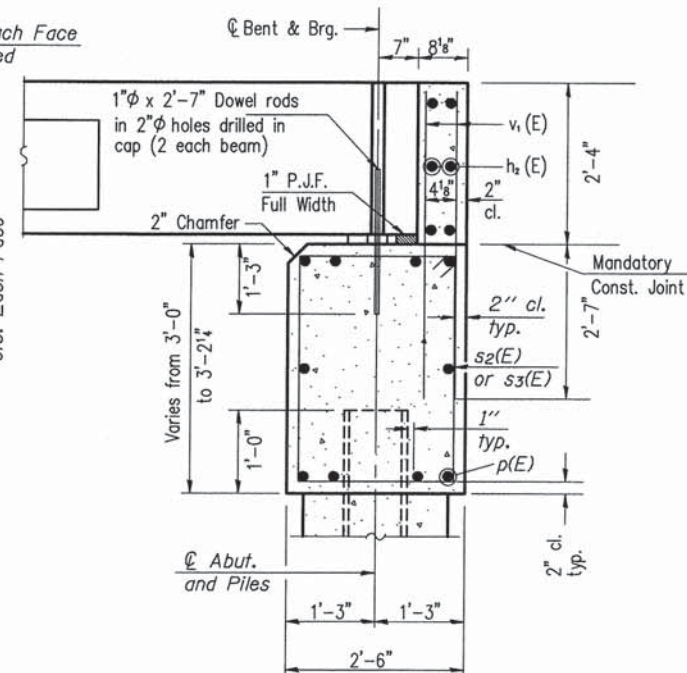


**BAR u(E)**

- Notes:
1. Cast backwall after beams have been erected.
  2. The Backwall and the portion of the Wingwalls above the mandatory bonded construction joint shall be cast against the in-place beam.
  3. Extend "h" bars into abutment cap.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	9

CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	
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**SEC. THRU ABUT.**  
(At Right Angles)

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	16	#4	5'-0"	—
h <sub>1</sub> (E)	12	#4	5'-3"	—
h <sub>2</sub> (E)	6	#4	31'-8"	—
p(E)	10	#7	31'-8"	—
s <sub>2</sub> (E)	40	#4	10'-1"	□
s <sub>3</sub> (E)	2	#4	10'-5"	□
u(E)	8	#6	11'-4"	∟
v <sub>1</sub> (E)	64	#5	4'-11"	—
v <sub>2</sub> (E)	8	#5	8'-4"	—
Concrete Structures			Cu. Yd.	12.3
Reinforcement Bars, Epoxy Coated			Pound	1690
Furnishing Steel Piles HP 12 X 53			Foot	200
Driving Piles			Foot	200
Test Pile			Each	1
Concrete Encasement			Cu. Yd.	1.8

For details of piles and Concrete Encasement, see sheet 11 of 15.

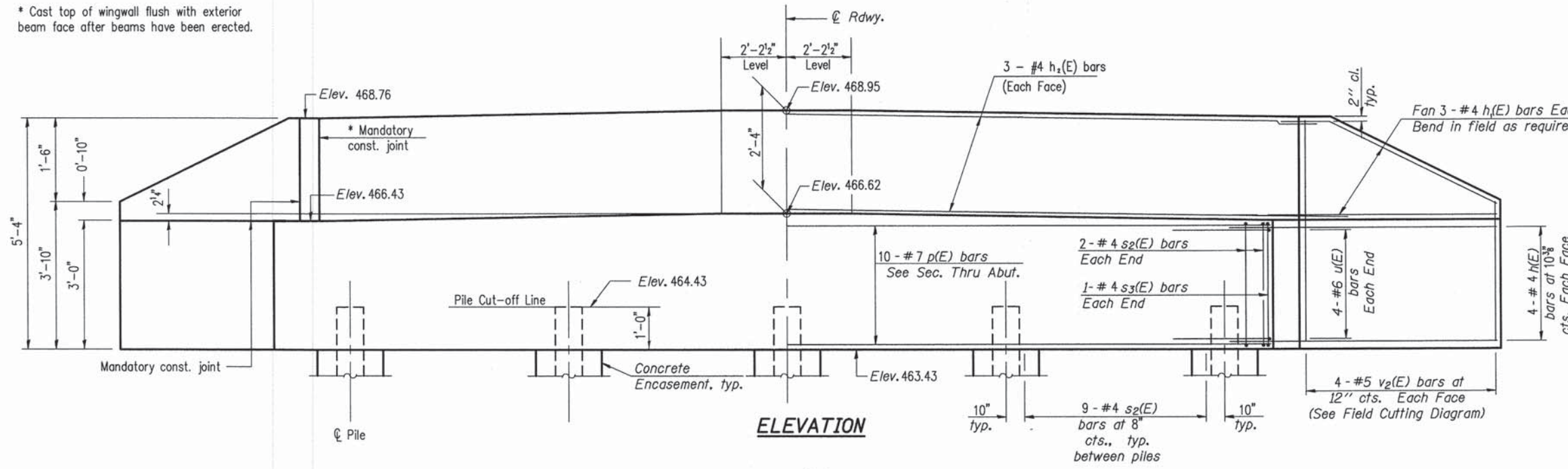
**CHARLESTON ENGINEERING, INC.**  
 CONSULTING ENGINEERS  
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**WEST ABUTMENT DETAILS**  
 STRUCTURE NO. 051-3301  
 T.R. 169  
 OVER INDIAN CREEK  
 SECTION 08-03110-00-BR  
 LAWRENCE COUNTY  
 STATION 3+96.00

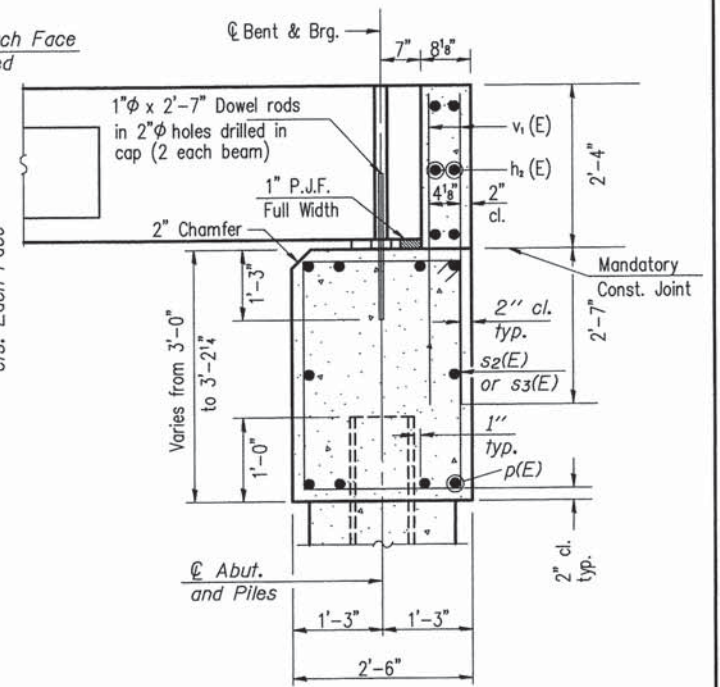


\* Cast top of wingwall flush with exterior beam face after beams have been erected.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	10
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	



**ELEVATION**

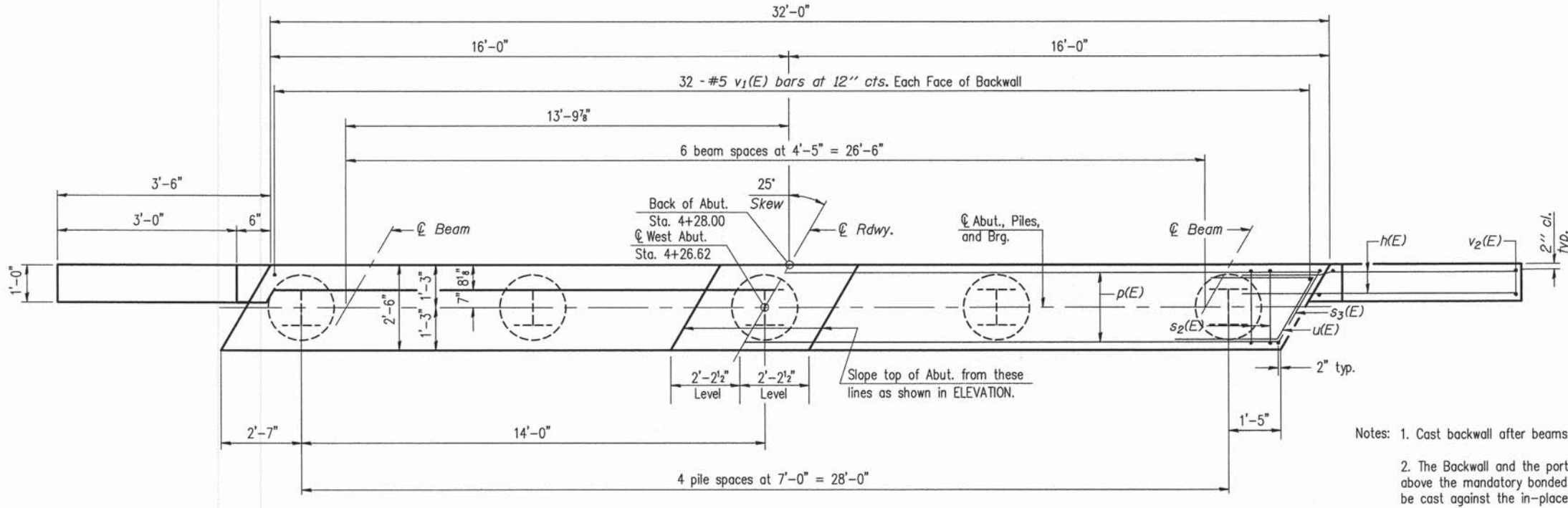


**SEC. THRU ABUT.**  
(At Right Angles)

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h(E)	16	#4	5'-0"	—
h1(E)	12	#4	5'-3"	—
h2(E)	6	#4	31'-8"	—
p(E)	10	#7	31'-8"	—
s2(E)	40	#4	10'-1"	□
s3(E)	2	#4	10'-5"	□
u(E)	8	#6	11'-4"	┘
v1(E)	64	#5	4'-11"	—
v2(E)	8	#5	8'-4"	—
Concrete Structures			Cu. Yd.	12.3
Reinforcement Bars, Epoxy Coated			Pound	1690
Furnishing Steel Piles HP 12 X 53			Foot	280
Driving Piles			Foot	280
Test Pile			Each	1
Concrete Encasement			Cu. Yd.	1.8

For details of piles and Concrete Encasement, see sheet 11 of 15.

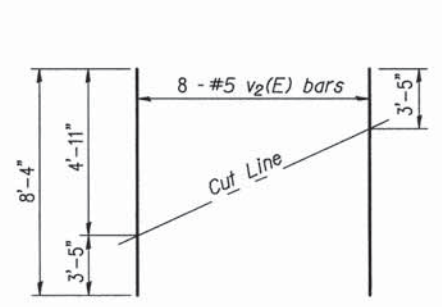


**PLAN**

- Notes:
1. Cast backwall after beams have been erected.
  2. The Backwall and the portion of the Wingwalls above the mandatory bonded construction joint shall be cast against the in-place beam.
  3. Extend "h" bars into abutment cap.

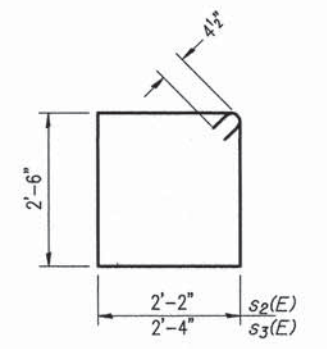
**PILE DATA**

Type: HP 12 X 53  
 Nominal Required Bearing: 419 kips  
 Factored Resistance Available: 230 kips  
 Est. Length: 70 Feet  
 No. Production Piles: 4

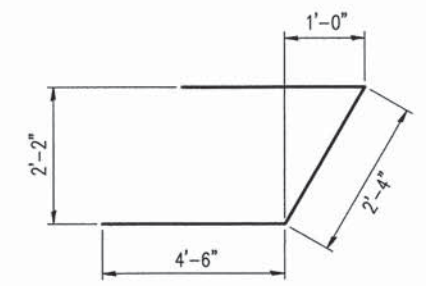


**FIELD CUTTING DIAGRAM**

Order v2(E) full length. Cut as shown and use remainder of bars in opposite face.



**BARS s2(E) & s3(E)**



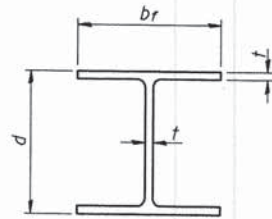
**BAR u(E)**

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ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184 003513

**EAST ABUTMENT DETAILS**  
 STRUCTURE NO. 051-3301  
 T.R. 169  
 OVER INDIAN CREEK  
 SECTION 08-03110-00-BR  
 LAWRENCE COUNTY  
 STATION 3+96.00

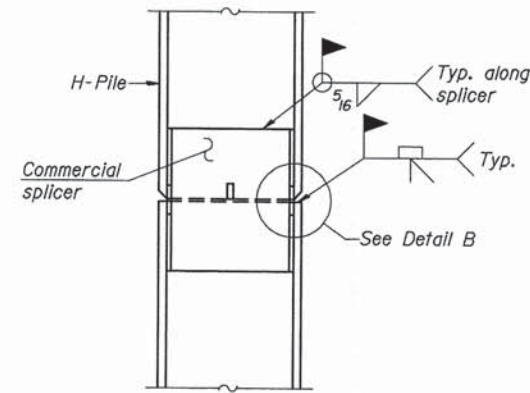


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	11
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	

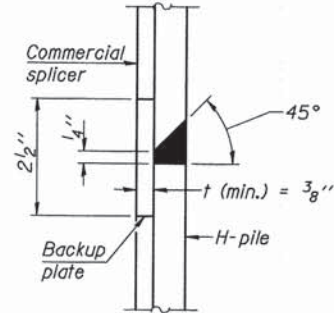


**STEEL PILE TABLE**

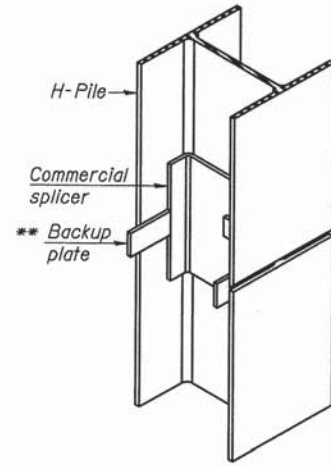
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 12x53	11 <sup>3</sup> / <sub>4</sub> "	12"	7 <sup>1</sup> / <sub>16</sub> "	24"



**ELEVATION**

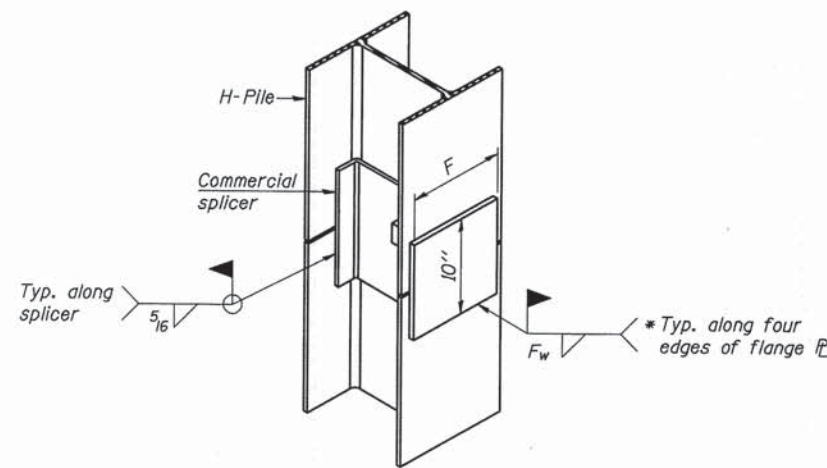


**DETAIL "B"**



**ISOMETRIC VIEW**

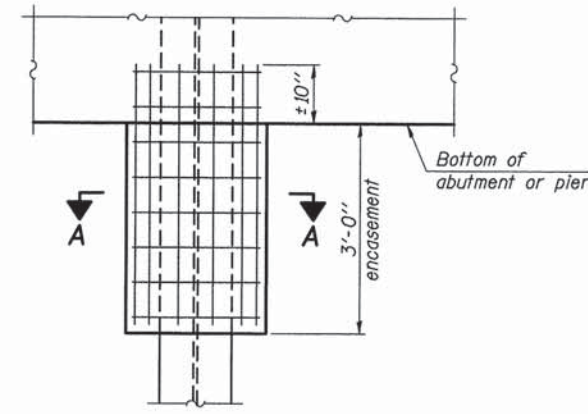
**WELDED COMMERCIAL SPLICE**



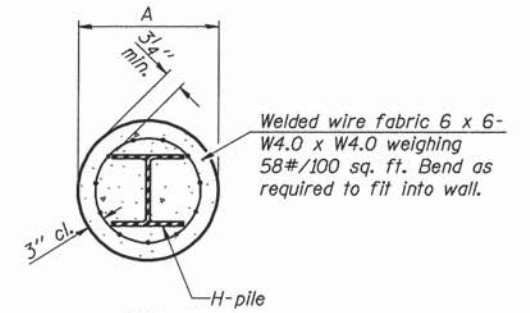
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* Interrupt welds 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 (5/16" min.).



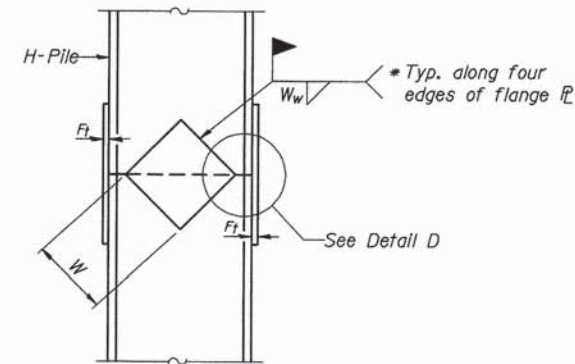
**ELEVATION**



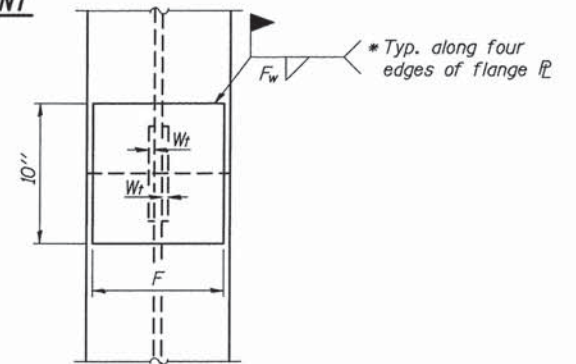
Note:  
Forms for encasement may be omitted when soil conditions permit.

**SECTION A-A**

**PILE ENCASEMENT**

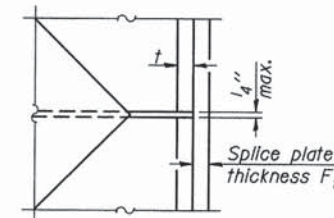


**ELEVATION**



**END VIEW**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 12x53	10"	5 <sup>5</sup> / <sub>8</sub> "	1 <sup>1</sup> / <sub>2</sub> "	6 <sup>1</sup> / <sub>2</sub> "	1 <sup>1</sup> / <sub>2</sub> "	3 <sup>3</sup> / <sub>8</sub> "



**DETAIL D**

**WELDED PLATE FIELD SPLICE**

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

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ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184-003513

**PILE DETAILS**

STRUCTURE NO. 051-3301  
T.R. 169  
OVER INDIAN CREEK  
SECTION 08-03110-00-BR  
LAWRENCE COUNTY  
STATION 3+96.00



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	12
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	

HOLCOMB FOUNDATION ENGINEERING INC.  
P.O. Box 88 618-529-5262  
Carbondale, IL 62903 618-457-8991 fax Page 1 of 2

**Bridge Foundation Boring Log**

Project: H-11244 Bridge: Ca. Rd. 920N Date: 1/3/2012  
Section: 08-03110-00-BR Station: Bored by: R. Schwartz  
Structure: Checked By: J. Holcomb  
County: Lawrence

Boring No. 1  
Station: Sta 3+69.55  
Offset: #LL

Elevation	N	Q <sub>u</sub>	TSF	ft	ft	ft	ft	Surface Water Elev.	
								During Drilling	Upon Completion
467.1									
5" Crushed Stone/Clay Mix									
460.6									
Brown Silty CLAY (A-6)									
440.6									
Gray Silty CLAY (A-6)									
460.6									
Brown Clayey SAND (A-2-4)									
458.1									
Brown Silty CLAY (A-6)									
455.6									
Gray Mottled Brown Silty CLAY (A-6) with trace sand									
450.1									
Gray Silty CLAY (A-6)									
445.6									
Gray Mottled Brown Silty CLAY (A-6) with pebbles									

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"  
Q<sub>u</sub> - Unconfined Compressive Strength in tons/sq.ft.  
w - Water Content - percentage of oven dry weight-%  
B = Bulge Failure S = Shear Failure E = Estimated Value P = Penetrometer

HOLCOMB FOUNDATION ENGINEERING INC.  
P.O. Box 88 618-529-5262  
Carbondale, IL 62903 618-457-8991 fax Page 1 of 2

**Bridge Foundation Boring Log**

Project: H-11244 Bridge: Ca. Rd. 920N Date: 1/3/2012  
Section: 08-03110-00-BR Station: Bored by: R. Schwartz  
Structure: Checked By: J. Holcomb  
County: Lawrence

Boring No. 2  
Station: Sta 4+32.80  
Offset: #LL

Elevation	N	Q <sub>u</sub>	TSF	ft	ft	ft	ft	Surface Water Elev.	
								During Drilling	Upon Completion
466.9									
5" Crushed Stone/Clay Mix									
440.9									
Gray Mottled Brown Silty CLAY (A-6) with sand									
440.9									
Gray Mottled Brown Silty CLAY (A-6) with pebbles									
458.4									
Brown Mottled Gray Silty CLAY (A-6)									
455.4									
Gray Silty CLAY to Clayey SILT (A-6 to A-4) with pebbles									
422.9									
Gray Silty CLAY (A-6) with trace sand									

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"  
Q<sub>u</sub> - Unconfined Compressive Strength in tons/sq.ft.  
w - Water Content - percentage of oven dry weight-%  
B = Bulge Failure S = Shear Failure E = Estimated Value P = Penetrometer

HOLCOMB FOUNDATION ENGINEERING INC.  
P.O. Box 88 618-529-5262  
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**Bridge Foundation Boring Log**

Project: H-11244 Bridge: Ca. Rd. 920N Date: 1/3/2012  
Section: 08-03110-00-BR Station: Bored by: R. Schwartz  
Structure: Checked By: J. Holcomb  
County: Lawrence

Boring No. 1  
Station: Sta 3+69.55  
Offset: #LL

Elevation	N	Q <sub>u</sub>	TSF	ft	ft	ft	ft	Surface Water Elev.	
								During Drilling	Upon Completion
457.6									
Silty clay (continued)									
418.6									
Gray SHALE									
413.1									
End of Boring @ -54.0'									

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"  
Q<sub>u</sub> - Unconfined Compressive Strength in tons/sq.ft.  
w - Water Content - percentage of oven dry weight-%  
B = Bulge Failure S = Shear Failure E = Estimated Value P = Penetrometer

HOLCOMB FOUNDATION ENGINEERING INC.  
P.O. Box 88 618-529-5262  
Carbondale, IL 62903 618-457-8991 fax Page 2 of 2

**Bridge Foundation Boring Log**

Project: H-11244 Bridge: Ca. Rd. 920N Date: 1/3/2012  
Section: 08-03110-00-BR Station: Bored by: R. Schwartz  
Structure: Checked By: J. Holcomb  
County: Lawrence

Boring No. 2  
Station: Sta 4+32.80  
Offset: #LL

Elevation	N	Q <sub>u</sub>	TSF	ft	ft	ft	ft	Surface Water Elev.	
								During Drilling	Upon Completion
457.6									
Silty clay (continued)									
398.4									
Gray SHALE									
392.9									
End of Boring @ -74.0'									
412.9									
Gray Mottled Brown Silty CLAY (A-6) with organics and fine sand									
407.9									
Gray Silty CLAY (A-6) with organics and fine sand									
402.9									
Gray Weathered SHALE									

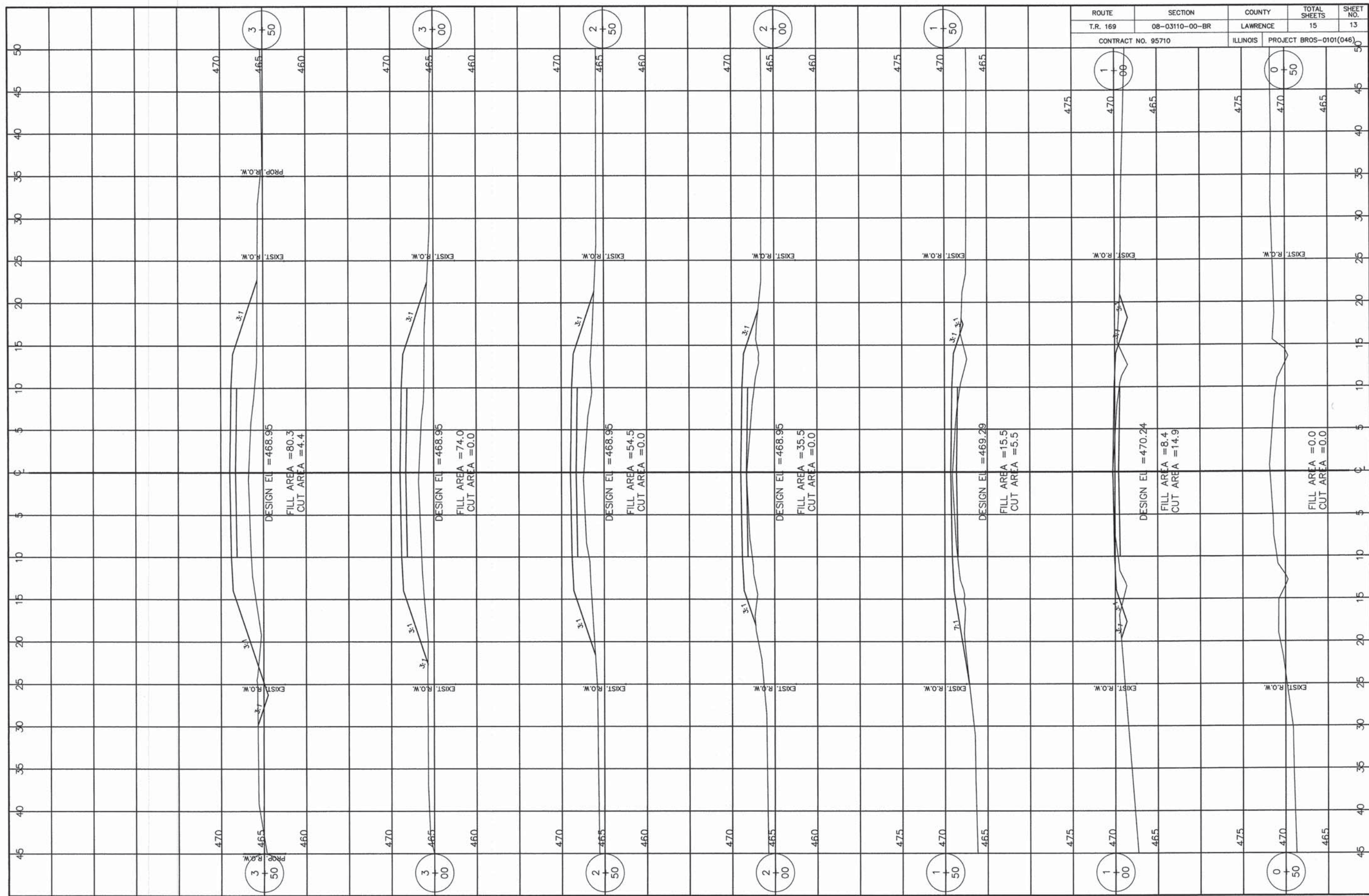
N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"  
Q<sub>u</sub> - Unconfined Compressive Strength in tons/sq.ft.  
w - Water Content - percentage of oven dry weight-%  
B = Bulge Failure S = Shear Failure E = Estimated Value P = Penetrometer

**CHARLESTON ENGINEERING, INC.**  
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(618) 392-0736  
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

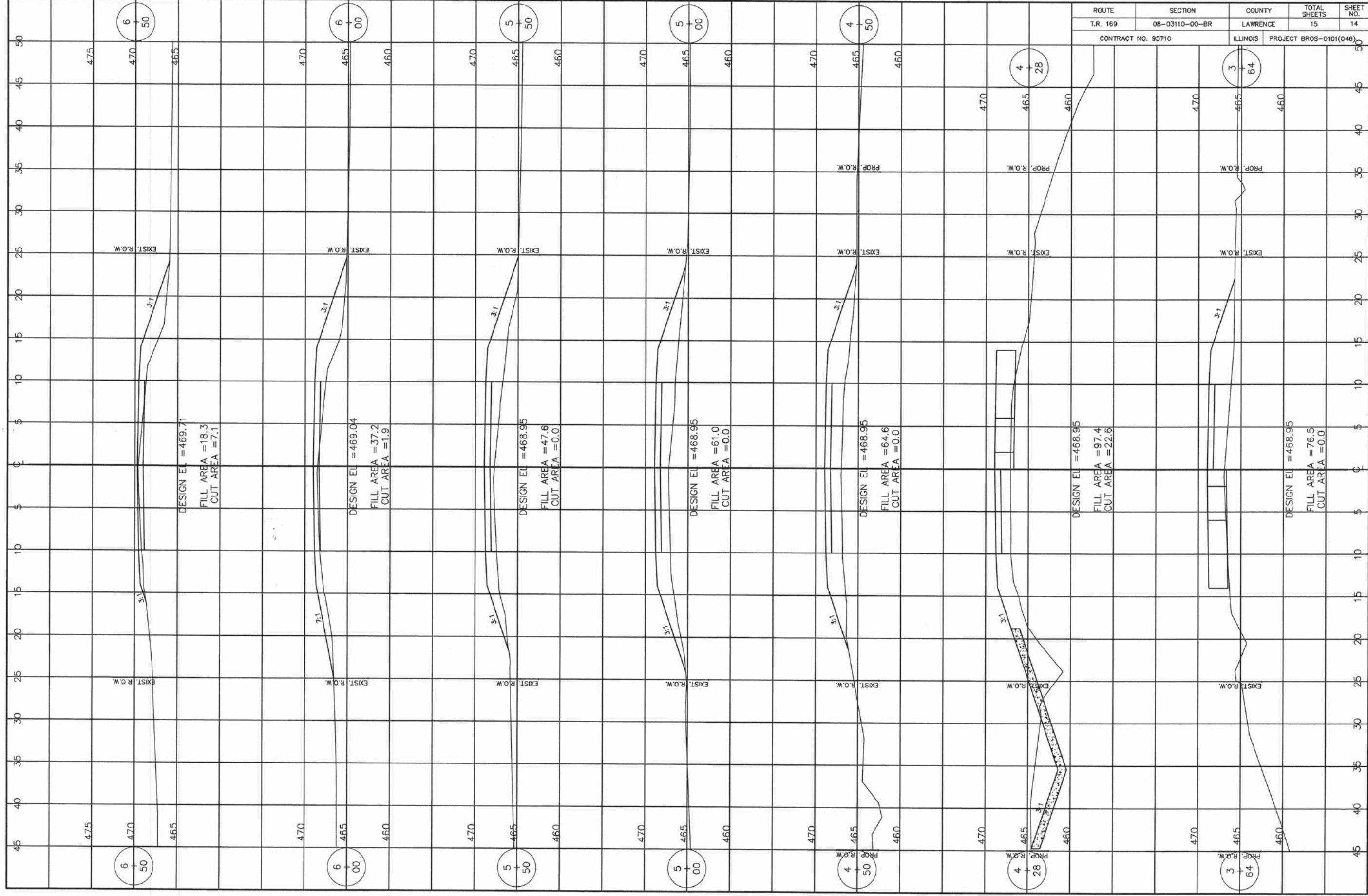
**BORING LOGS**  
STRUCTURE NO. 051-3301  
T.R. 169  
OVER INDIAN CREEK  
SECTION 08-03110-00-BR  
LAWRENCE COUNTY  
STATION 3+96.00



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	13
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	







ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	14
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	

DESIGN EL = 469.71  
 FILL AREA = 18.3  
 CUT AREA = 7.1

DESIGN EL = 469.04  
 FILL AREA = 37.2  
 CUT AREA = 1.9

DESIGN EL = 468.95  
 FILL AREA = 47.6  
 CUT AREA = 0.0

DESIGN EL = 468.95  
 FILL AREA = 61.0  
 CUT AREA = 0.0

DESIGN EL = 468.95  
 FILL AREA = 64.6  
 CUT AREA = 0.0

DESIGN EL = 468.95  
 FILL AREA = 97.4  
 CUT AREA = 22.6

DESIGN EL = 468.95  
 FILL AREA = 76.5  
 CUT AREA = 0.0

6  
50

6  
00

5  
50

5  
00

4  
50

4  
28

3  
64

6  
50

6  
00

5  
50

5  
00

4  
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ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 169	08-03110-00-BR	LAWRENCE	15	15
CONTRACT NO. 95710		ILLINOIS	PROJECT BROS-0101(046)	

