

# HIGHWAY BRIDGE REPLACEMENT & REHABILITATION PROGRAM

## DETAIL PLANS FOR

# PROPOSED BRIDGE

T.R. 212 (HAHN ROAD) OVER LOST CREEK  
 SECTION 10-10117-00-BR  
 CLINTON COUNTY - MERIDIAN ROAD DISTRICT  
 PROJECT: BROS-027(039)  
 JOB NO: C-98-349-10

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 212 HAHN ROAD	10-10117-00-BR	CLINTON	16	1

FEDERAL AID PROJECT: BROS-027 (039)  
 CONTRACT NO. 97464

### INDEX OF SHEETS

- COVER SHEET
- SUMMARY OF QUANTITIES, GENERAL NOTES AND TYPICAL CROSS SECTIONS
- PLAN AND PROFILE OF EXISTING AND PROPOSED ROADWAY
- GENERAL PLAN AND ELEVATION
- P.P.C. DECK BEAM SUPERSTRUCTURE
- 21"x36" P.P.C. DECK BEAM SPANS 1 & 3
- 21"x36" P.P.C. DECK BEAM SPAN 2
- 21"x36" P.P.C. DECK BEAM DETAILS
- PILE BENT ABUTMENT
- PILE BENT PIER
- STEEL RAILING, TYPE S-1
- HP PILE DETAILS
- SOIL BORING LOGS
- 14-16. CROSS SECTIONS EXISTING AND PROPOSED ROADWAY

### HIGHWAY STANDARDS

280001-05  
 515001-03  
 701901-01  
 BLR 21-8

### DESIGN CLASSIFICATION

LOCAL ROAD  
 CURRENT A.D.T. = 50  
 DESIGN SPEED = 30 MPH  
 DESIGN A.D.T. = 50 (2010)

### UTILITIES:

CALL J.U.L.I.E. BEFORE YOU DIG  
 800-892-0123

### ELECTRIC:

CLINTON COUNTY ELEC. COOP.  
 475 N. MAIN ST.  
 BREESE, IL. 62230  
 PHONE: (618) 526-7282

### TELEPHONE:

FRONTIER COMMUNICATIONS  
 801 W. JACKSON ST.  
 ALTAMONT, IL. 62411  
 PHONE: (618)483-6205

### WATER:

CLINTON COUNTY EAST  
 PUBLIC WATER  
 891 Fairfax, Carlyle, IL. 62231  
 Phone: (618)594-3367

### GAS

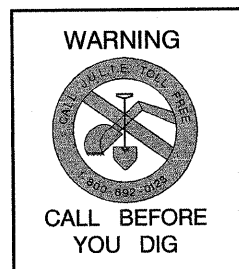
EXXON MOBILE PIPELINE  
 8328 US HWY 51  
 PATOKA, IL. 62875  
 PHONE: (618) 432-7372

NATURAL GAS PIPELINE CO.  
 OF AMERICA  
 7501 HUEY ROAD  
 HOFFMAN, IL. 62801  
 PHONE: 800-733-2490

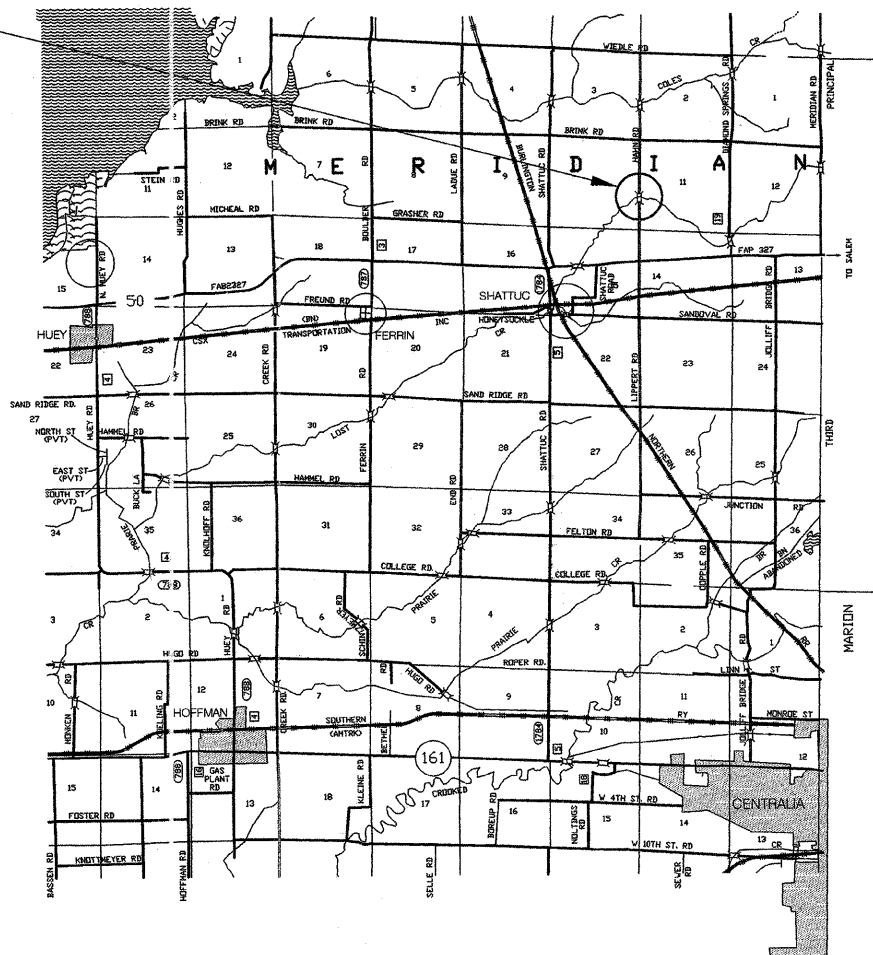
### PROJECT LOCATION

PROPOSED STRUCTURE NO. 014-4057 @ STATION 20+00  
 TRIPLE SPAN PRECAST PRESTRESSED CONCRETE DECK  
 BEAMS, (21" DEPTH) ON SPILL THRU PILE BENT ABUTMENTS  
 AND PILE BENT PIERS MEASURING 116'-10 5/8" BACK TO  
 BACK OF ABUTMENTS WITH 27'-0" CLEAR ROADWAY WIDTH.

BEGIN CONSTRUCTION STA. 16+50  
 END CONSTRUCTION STA. 23+00

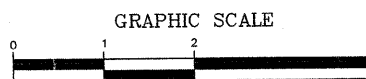


*Daniel L. Beahm* DATE 4-4-11  
 COUNTY ENGINEER  
 ILLINOIS P.E. # 62-050860 EXPIRES 11/30/2011

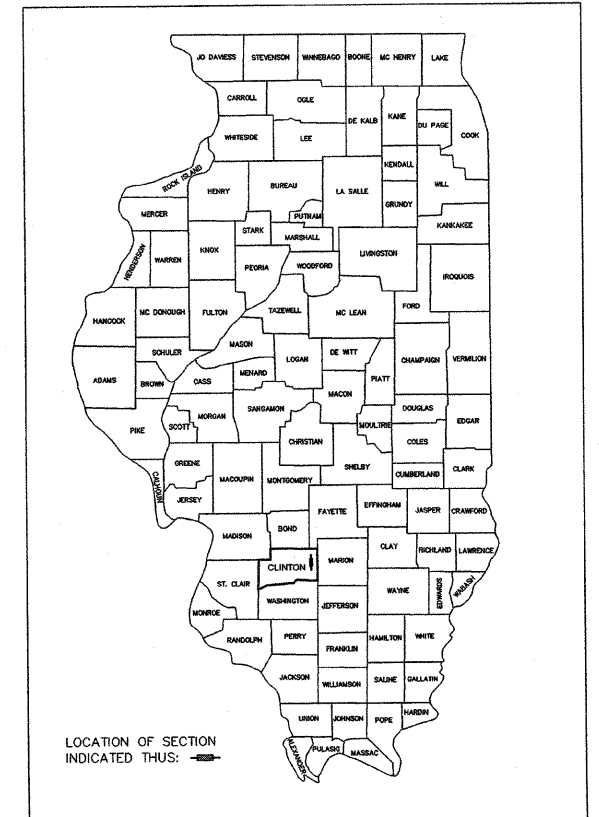


LOCATION MAP

NET LENGTH OF PROJECT = 650 FEET OR 0.123 MILES



1 INCH = 1 MILE



LOCATION OF SECTION INDICATED THUS: [Symbol]

ILLINOIS DEPARTMENT OF TRANSPORTATION	
APPROVED	April 4, 2011 <i>Daniel L. Beahm</i> CLINTON COUNTY, COUNTY ENGINEER
APPROVED	March 31, 2011 <i>Ruby Russell</i> MERIDIAN ROAD DISTRICT HIGHWAY COMMISSIONER
PASSED	April 5, 2011 <i>[Signature]</i> DISTRICT 6 ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW	April 5, 2011 <i>[Signature]</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

Printed by the Authority of the State of Illinois

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 212 HAHN ROAD	10-10117-00-BR	CLINTON	16	2

CONTRACT NO. 97464

LOCATION OF WORK

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.76
20200100	EARTH EXCAVATION	CU. YD.	476
20300100	CHANNEL EXCAVATION	CU. YD.	928
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	S.Y.	1185
28000315	AGGREGATE DITCH CHECKS	TON	24
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	198
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	800
50100100	REMOVAL OF EXISTING STRUCTURE	EACH	1
50300225	CONCRETE STRUCTURES	CU. YD.	60.4
50300280	CONCRETE ENCASEMENT	CU. YD.	19.8
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ. FT.	3115
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	7040
*50900205	STEEL RAILING, TYPE S1	FOOT	234
51201400	FURNISHING STEEL PILES, HP 10X42	FOOT	252
51201610	FURNISHING STEEL PILES, HP 12X63	FOOT	252
51202305	DRIVING STEEL PILES	FOOT	504
51203400	TEST PILE STEEL HP 10X42	EACH	2
51203610	TEST PILE STEEL HP 12X63	EACH	2
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	L. SUM	1

\* SPECIALTY ITEMS

LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA.16+50 TO STA. 23+00	476	357	1016	-659
ALLOWANCE FOR CHANNEL EXCAVATION	928	696	0	+696
TOTAL	1404	1053	1016	+37

PAY ITEMS  
 EARTH EXCAVATION = 476 C.Y.  
 CHANNEL EXCAVATION = 928 C.Y.

EARTHWORK TABLE IS INCLUDED FOR INFORMATION ONLY:

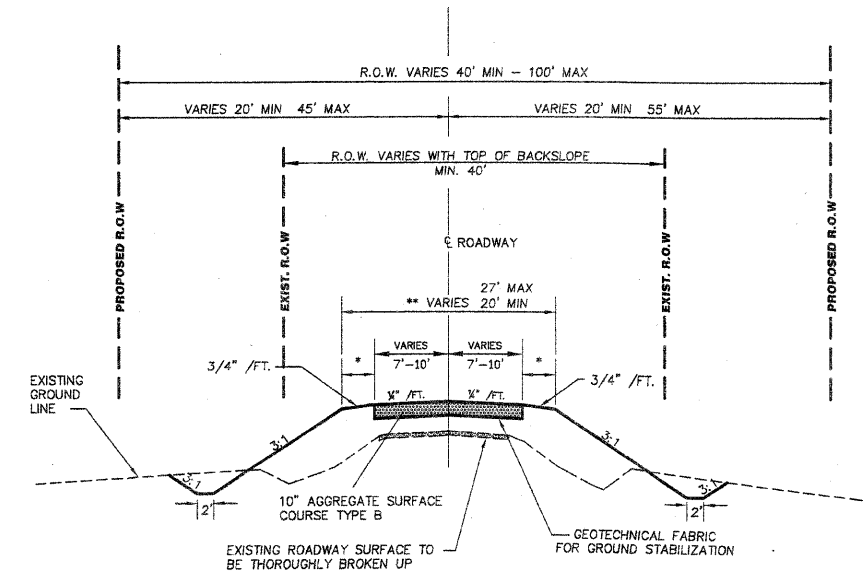
CONTRACTOR SHALL PLACE SUITABLE CHANNEL EXCAVATION MATERIAL ON SLOPES AS DIRECTED BY ENGINEER. ALL OTHER UNSUITABLE CHANNEL EXCAVATION MATERIAL SHALL BE DISPOSED OF AS PER ARTICLE 202.03 AT NO ADDITIONAL COST. THIS EARTHWORK TABLE INFORMATION IS BASED ON A 25% SHRINKAGE FACTOR OF MATERIAL. THERE WILL BE NO ADDITIONAL COMPENSATION ALLOWED TO THE CONTRACTOR IF THE ACTUAL SHRINKAGE FACTOR IS LESS THAN THE ASSUMED 25% AND IS REQUIRED TO PLACE SUITABLE EXCAVATED MATERIAL TO OTHER EMBANKMENT LOCATIONS THROUGHOUT THE LIMITS OF THE PROJECT OR IS REQUIRED TO REMOVE AND DISPOSE OF THE MATERIAL OFF OF THE PROJECT SITE.

GENERAL NOTES

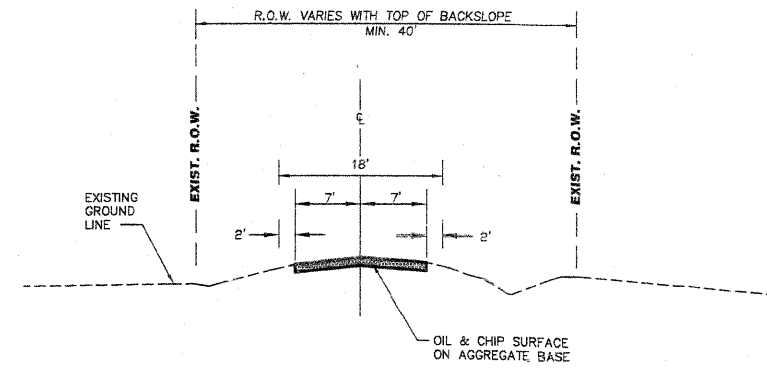
- ALL ELEVATION REFER TO U.S.G.S. MEAN SEA LEVEL
- UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION AND THEIR TRUE LOCATION IS NOT GUARANTEED TO BE AS SHOWN ON THE PLANS. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND CARRY ON HIS OPERATIONS ACCORDINGLY.
- ALL FENCE REMOVAL, TEMPORARY SEEDING AND FINAL SEEDING OF DISTURBED AREAS WILL BE DONE BY OTHERS.
- 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 BORDER. THE IDOA INFORMATION FOR ASH TREE REMOVAL CAN BE FOUND ON THE IDOA WEBSITE AT WWW.AGR.STATE.IL.US/EAB.

EXTRA BARS FOR TEST SAMPLES  
 BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	SHAPE
h (E)	1	#4	7'-11"	—
u (E)	1	#6	11'-1"	—
p (E)	1	#7	32'-8"	—
p1 (E)	1	#8	33'-3"	—



STATION 16+50 TO STATION 23+00  
 PROPOSED ROADWAY TYPICAL SECTION



EXISTING ROADWAY TYPICAL SECTION

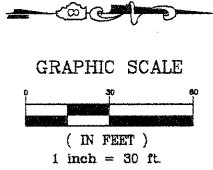
TREE REMOVAL, ACRES

LOCATION	ACRES
STA. 16+50 TO STA 20+50 LT	0.36
STA. 18+30 TO STA 21+85 LT	0.40
TOTAL	0.76

GENERAL NOTES  
 SUMMARY OF QUANTITIES  
 TYPICAL ROADWAY CROSS SECTIONS  
 T.R.212 (HAHN ROAD)  
 OVER LOST CREEK  
 SECTION 10-10117-00-BR  
 CLINTON COUNTY

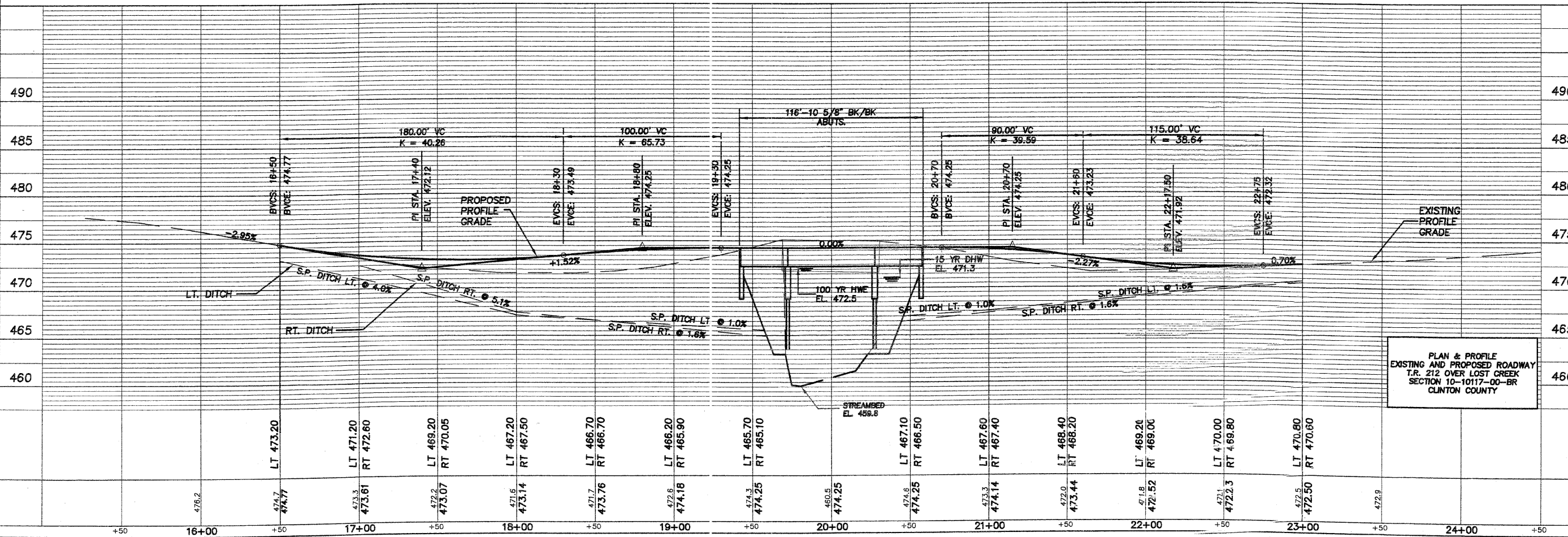
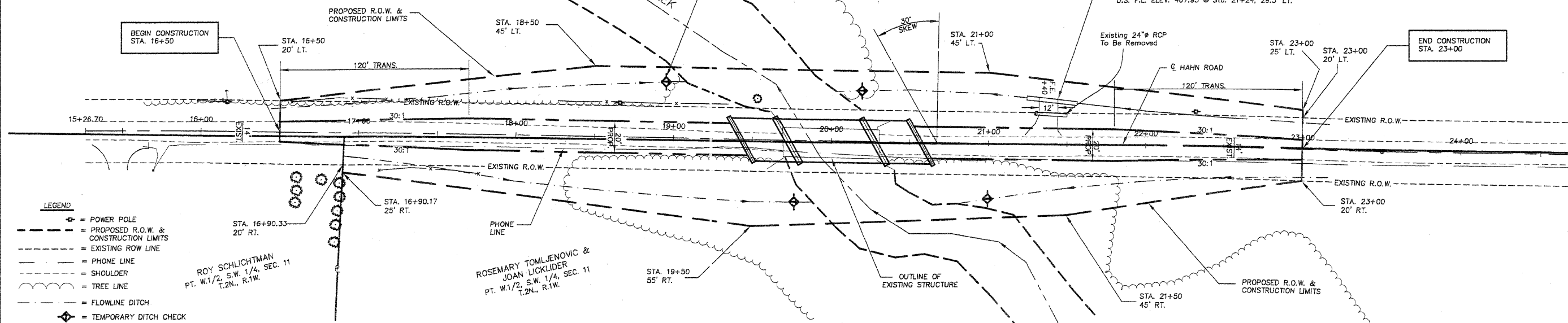
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 212 HAHN ROAD	10-10117-00-BR	CLINTON	16	3

CONTRACT NO. 97464



**BENCHMARK 1:** STA. 19+62.16, 16.64' RT. CHISELED SQUARE IN TOP OF WINGWALL ELEV. = 474.44

**BENCHMARK 2:** STA. 21+30.12, 18.96' LT. CHISELED SQUARE IN TOP OF HEADWALL ELEV. = 470.87



PLAN & PROFILE  
EXISTING AND PROPOSED ROADWAY  
T.R. 212 OVER LOST CREEK  
SECTION 10-10117-00-BR  
CLINTON COUNTY

DATE	
BY	
DESIGNED	
PLANNED	
NOTED	
NOTE BOOK	
NO.	

DATE	
BY	
DESIGNED	
PLANNED	
NOTED	
NOTE BOOK	
NO.	

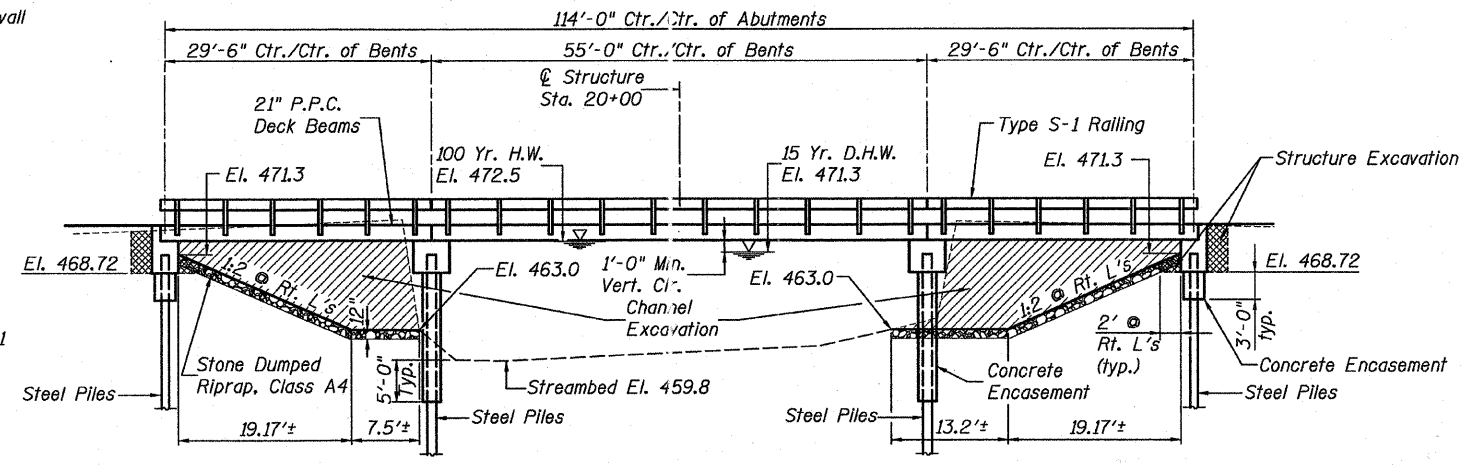
**BENCHMARK:** Chiseled Square in Top of Wingwall  
Sta. 19+62.16, 16.64' Rt.  
El. 474.44

**EXISTING STRUCTURE** S.N. 014-3107

The existing structure consists of a single span bridge with 6" concrete deck and overlay supported on steel beams on closed concrete abutments.  
The structure measures 62.0' back to back of abutments and 18.0' out to out of bridge deck.

The Contractor shall remove and dispose of the existing structure in accordance with Section 501 of the Standard Specifications.

**SALVAGE:** No Salvage



**GENERAL NOTES**

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
4. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
5. The Contractor shall drive test piles to 110% of the nominal required bearing specified in production location at substructures specified or approved by the Engineer before ordering remaining piles.

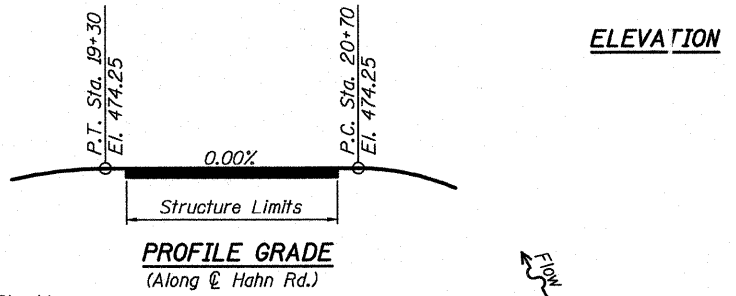
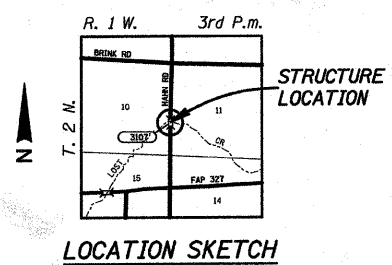
**DESIGN SCOUR ELEVATION TABLE**

Design Scour Elevation (Feet)	S. Abut.	Pier 1	Pier 2	N. Abut.
	465.72	454.8	454.8	465.72

**WATERWAY INFORMATION**

Drainage Area = 13.3 Sq. Mi. Low Grade El. = 472.23 @ Sta. 22+50

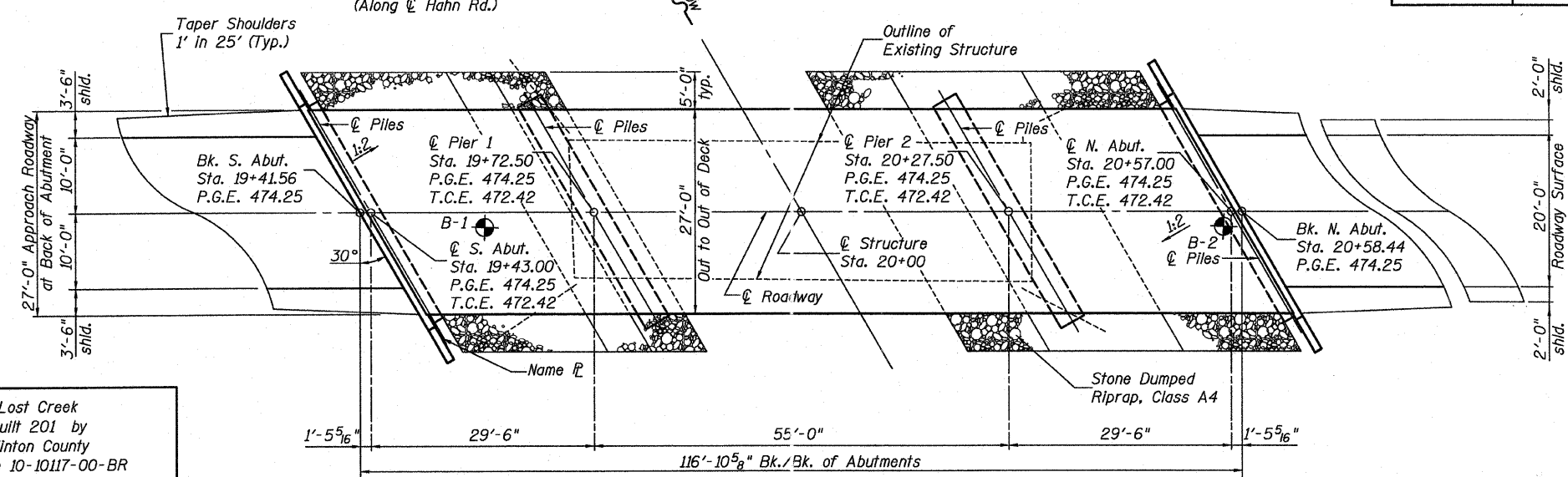
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exlst.	Prop.		Exlst.	Prop.	Exlst.	Prop.
Design	15	2,370	572	748	471.3	0.2	0.1	471.5	471.4
Base	100	3,790	600	860	472.5	0.4	0.4	472.9	472.9
Overtopping	50	3,250	600	823	472.1	0.4	0.2	472.5	472.3
Max. Calc.	500	N/A							



**Note:**  
Channel excavation shall be transitioned from the edge of the proposed deck to match the existing channel at the R.O.W. line.

**INDEX OF BRIDGE SHEETS**

1. General Plan & Elevation
2. P.P.C. Deck Beam Superstructure
3. 21" x 36" P.P.C. Deck Beam - Spans 1 & 3
4. 21" x 36" P.P.C. Deck Beam - Span 2
5. 21" x 36" P.P.C. Deck Beam Details
6. Abutments
7. Pile Bent Pier
8. Steel Railing, Type S-1
9. HP Pile Details
10. Soil Boring Logs



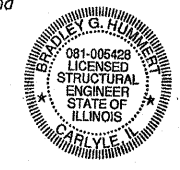
Lost Creek  
Built 201 by  
Clinton County  
Section 10-10117-00-BR  
Proj. No. BROS-0027(039)  
Station 20+00  
S.N. 014-4057 Loading HL-93

**NAME PLATE**

(See Std. 515001)  
Locate Name Plate as shown in Plan View.

"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 LRF Bridge Design Specifications' including seismic design."

*Bradley G. Hammert* Date: 3/29/2011  
Bradley G. Hammert  
Licensed Structural Engineer  
in Illinois No. 081-005428 Expires: November 30, 2012



**DESIGN SPECIFICATIONS**

2007 AASHTO LRF Bridge Design Specifications with 2009 Interims

**DESIGN STRESSES**

- FIELD UNITS**  
f<sub>c</sub> = 3,500 psi  
f<sub>y</sub> = 60,000 psi (Reinforcement)  
f<sub>y</sub> = 50,000 psi (M20 Grade 50)
- PRECAST UNITS**  
f<sub>c</sub> = 6,000 psi  
f<sub>c</sub>' = 5,000 psi  
f<sub>c</sub> = 270,000 psi (1/2" Strands)  
f<sub>c</sub>' = 201,960 psi (1/2" Strands)

**LOADING HL-93**

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

**SEISMIC DATA**

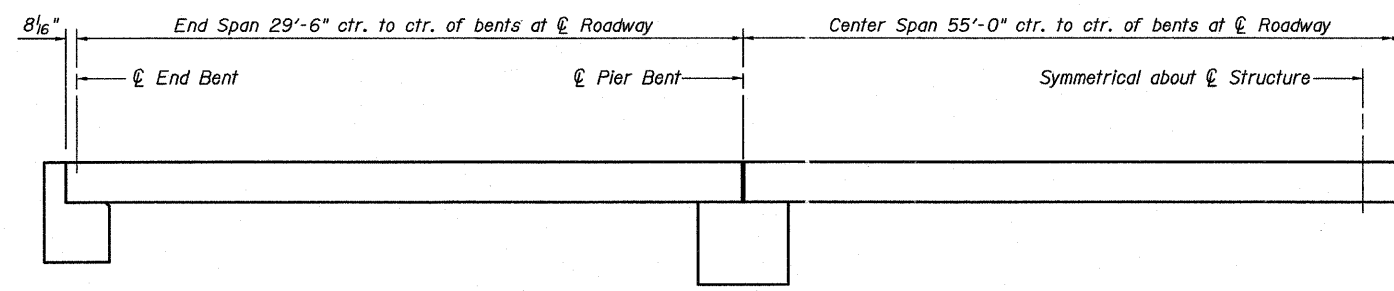
Seismic Performance Zone (SPZ) = 2  
Design Spectral Acceleration at 1.0 sec. (S<sub>D1</sub>) = 0.262 g  
Design Spectral Acceleration at 0.2 sec. (S<sub>D5</sub>) = 0.612 g  
Soil Site Class = D

**TOTAL BILL OF MATERIALS**

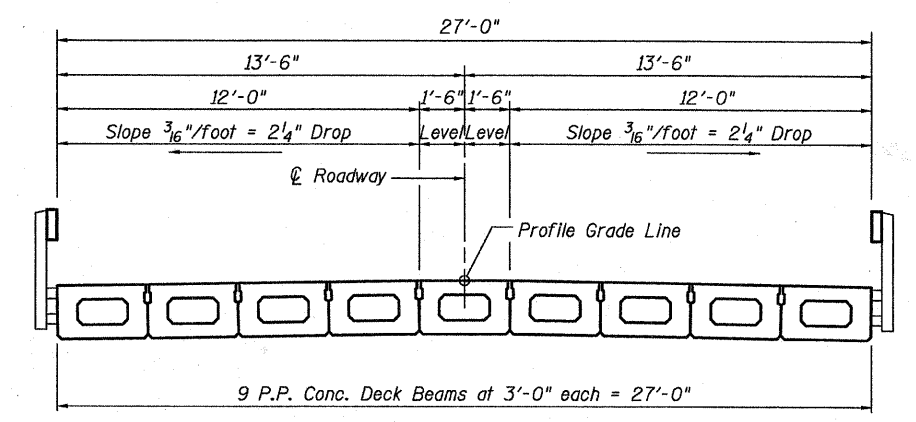
ITEM	UNIT	SUPER.	SUB.	Total
Channel Excavation	Cu. Yd.			928
Stone Dumped Riprap, Class A4	Ton			198
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		60.4	60.4
Concrete Encasement	Cu. Yd.		19.8	19.8
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	3,115		3,115
Reinforcement Bars, Epoxy Coated	Pound		6,860	6,860
Steel Railing, Type S-1	Foot	234		234
Furnishing Steel Piles HP 10x42	Foot		252	252
Furnishing Steel Piles HP 12x63	Foot		268	268
Driving Steel Piles	Foot		520	520
Test Piles Steel HP 10x42	Each		2	2
Test Piles Steel HP 12x63	Each		2	2
Name Plates	Each			1

**GENERAL PLAN & ELEVATION**

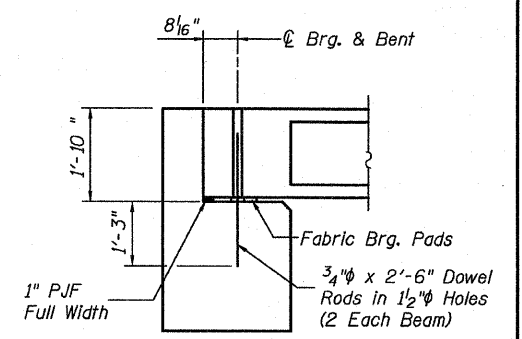
T.R. 212 (HAHN ROAD) OVER LOST CREEK  
SECTION 10-10117-00-BR  
CLINTON COUNTY  
STATION 20+00  
STRUCTURE NO. 014-4057



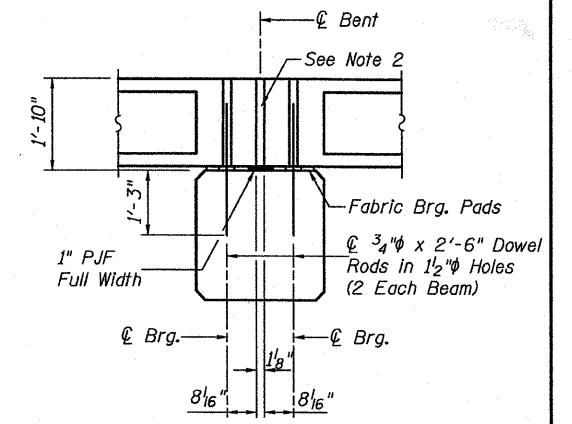
**TYPICAL ELEVATION**



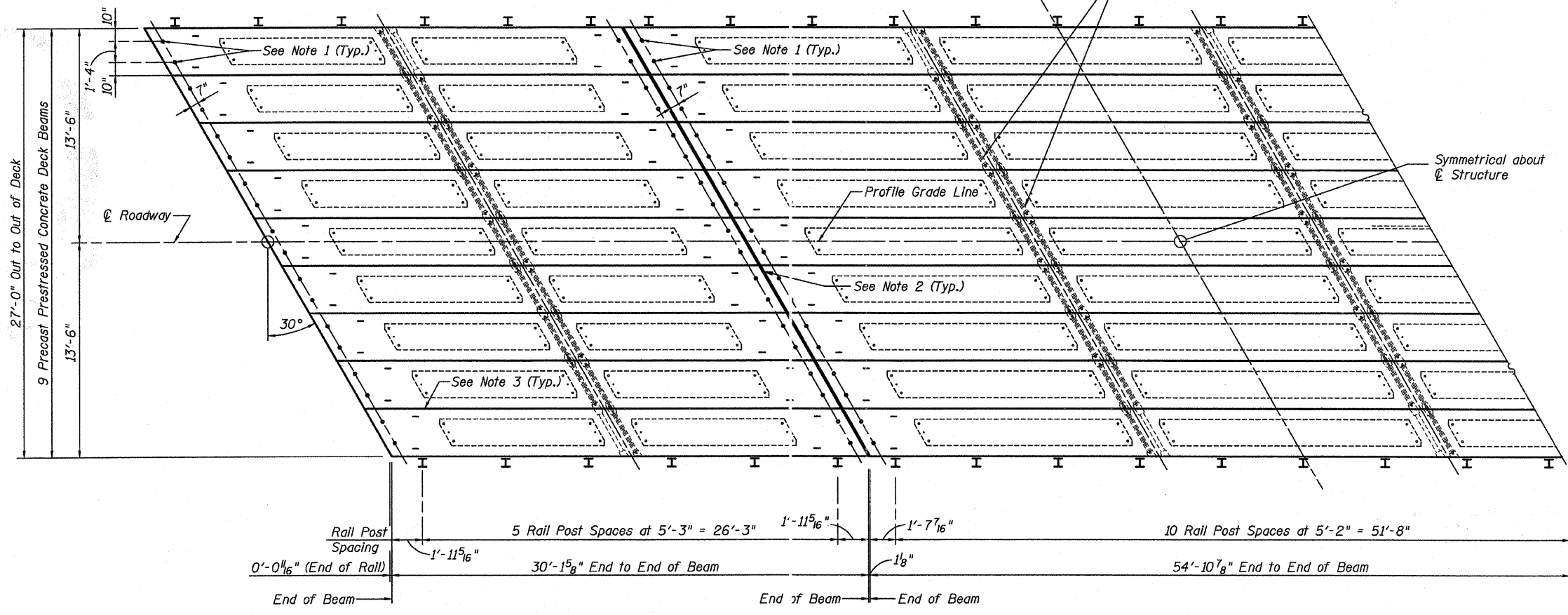
**CROSS SECTION**



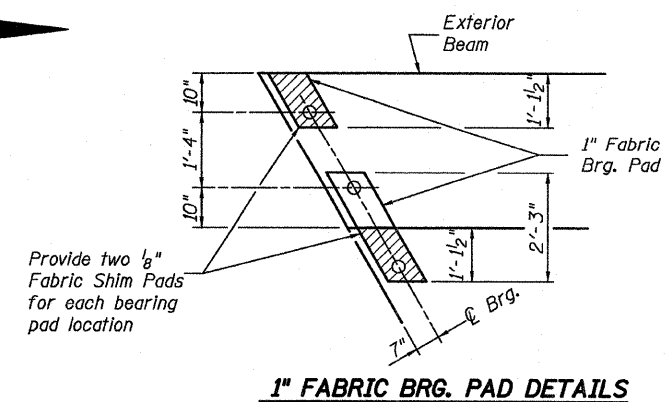
**SECTION AT ABUTS.**  
 (Along  $\text{CL}$  Beams)



**SECTION AT PIERS**  
 (Along  $\text{CL}$  Beams)



**PLAN** N

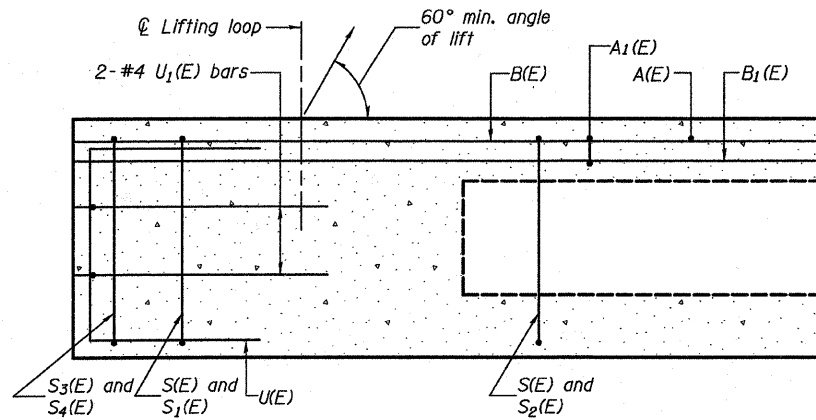


**1" FABRIC BRG. PAD DETAILS**

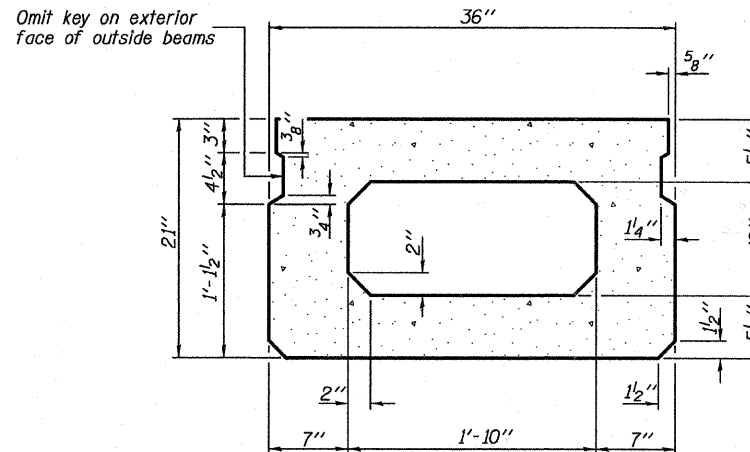
**NOTES**

- After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
- Nominal 1" joint at  $\text{CL}$  Pier shall be filled with non-shrink grout.
- Longitudinal keys shall be grouted.

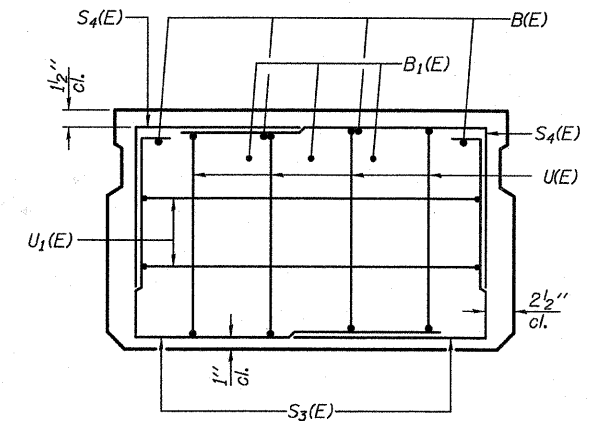
FILE NAME = ht\6466\0144857-02-sstr.dgn	USER NAME = _USERDESCR_	DESIGNED - K.M.M.	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>P.P.C. DECK BEAM SUPERSTRUCTURE</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = 4.0000 Ft / IN.	CHECKED - L.D.G.	REVISED -			212	10-10117-00-BR	CLINTON	16	5	
	PLOT DATE = 3/29/2011	DRAWN - K.H.L.	REVISED -			SHEET NO. 2 OF 10 SHEETS		S.N. 014-4057		CONTRACT NO.	
		CHECKED - B.G.H.	REVISED -			HENRY MEISENHEIMER & GENDE, INC. LAKE ROAD, P.O. BOX 70 CARLYLE, ILL. 62231 (618) 594-3711 WWW.HMGENGINEERS.COM		ILLINOIS FED. AID PROJECT			



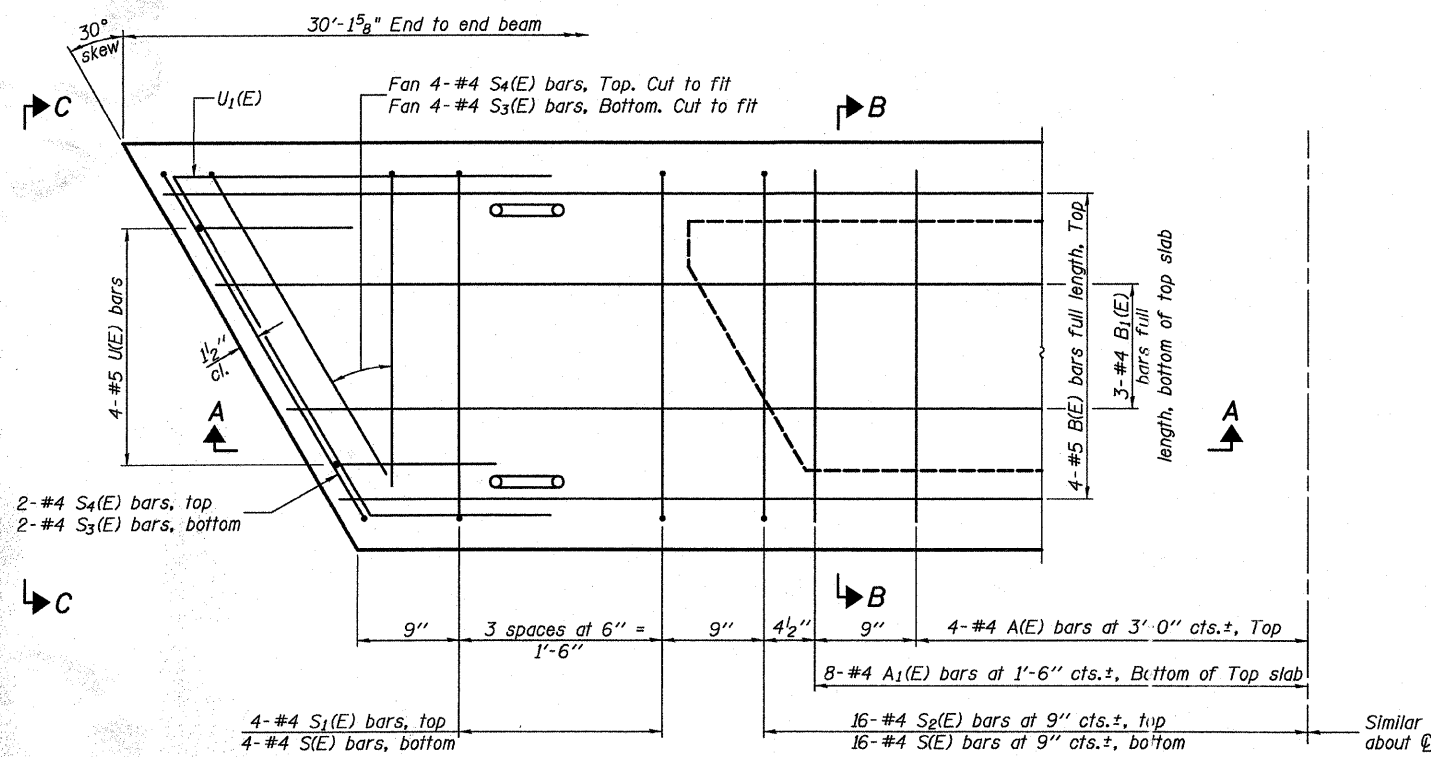
**SECTION A-A**



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

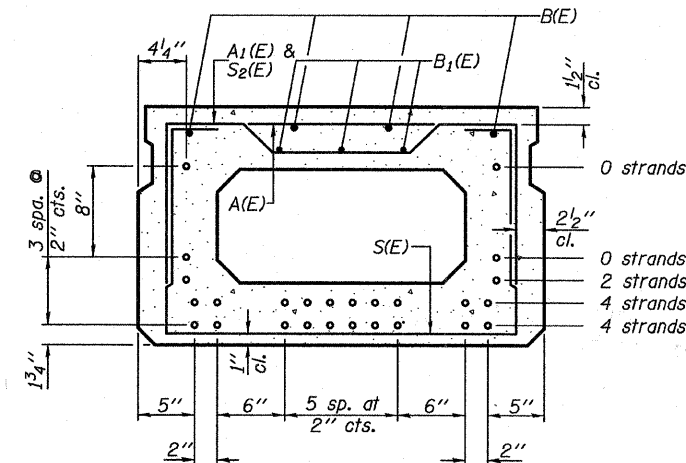


**VIEW C-C**



**PLAN VIEW**

Note: Spacing of S(E) and S<sub>2</sub>(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block cuts for the transverse ties.



**SECTION B-B**  
(Showing reinforcement and permissible strand locations)  
10-1/2" Φ Strands  
(4 Strands 1 3/4" Up, 4 Strands 3 3/4" Up, 2 Strands 5 3/4" Up)

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)	8	#4	2'-7"	—
A <sub>1</sub> (E)	16	#4	2'-10"	—
B(E)	4	#5	29'-10"	—
B <sub>1</sub> (E)	3	#4	29'-10"	—
S(E)	40	#4	6'-5"	□
S <sub>1</sub> (E)	8	#4	4'-11"	□
S <sub>2</sub> (E)	32	#4	5'-2"	□
S <sub>3</sub> (E)	12	#4	4'-11"	□
S <sub>4</sub> (E)	12	#4	4'-2"	□
U(E)	8	#5	4'-0"	□
U <sub>1</sub> (E)	4	#4	7'-2"	□

Note: See sheet 5 of 10 for additional details and Bill of Material.

**MINIMUM BAR LAP**

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

PD-2136-R

7-1-10

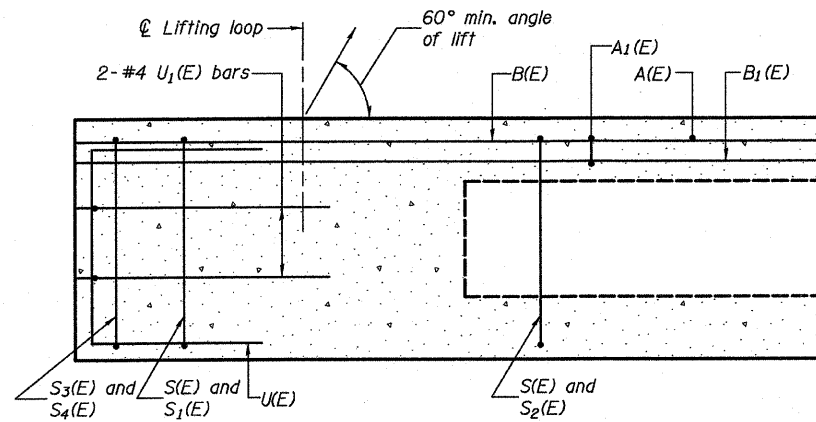
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
ht:\6466\0144057-03-beam.dgn	_USERDESCR.	K.M.M.	-
		CHECKED -	REVISED -
		L.D.G.	-
		DRAWN -	REVISED -
		K.H.L.	-
		CHECKED -	REVISED -
		B.G.H.	-

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

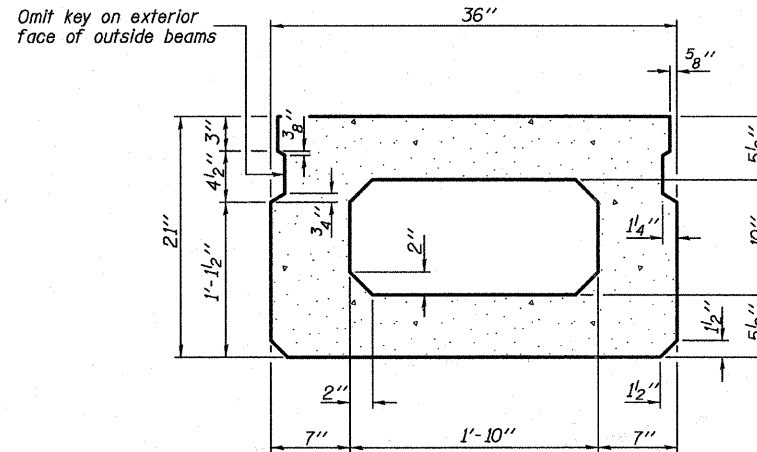
**21" X 36" PPC DECK BEAM**  
**SPANS 1 & 3**

SHEET NO. 3 OF 10 SHEETS

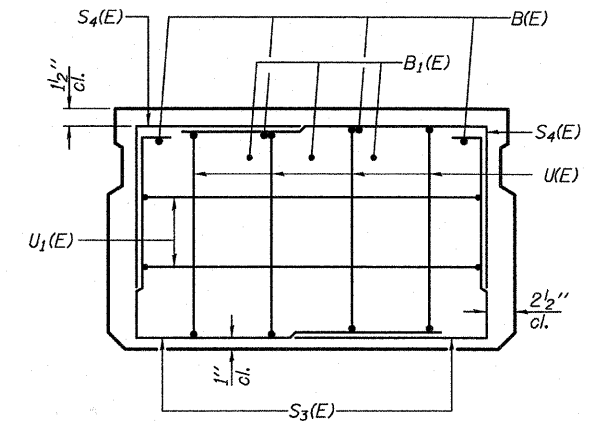
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
212	10-10117-00-BR	CLINTON	16	6
S.N. 014-4057		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				



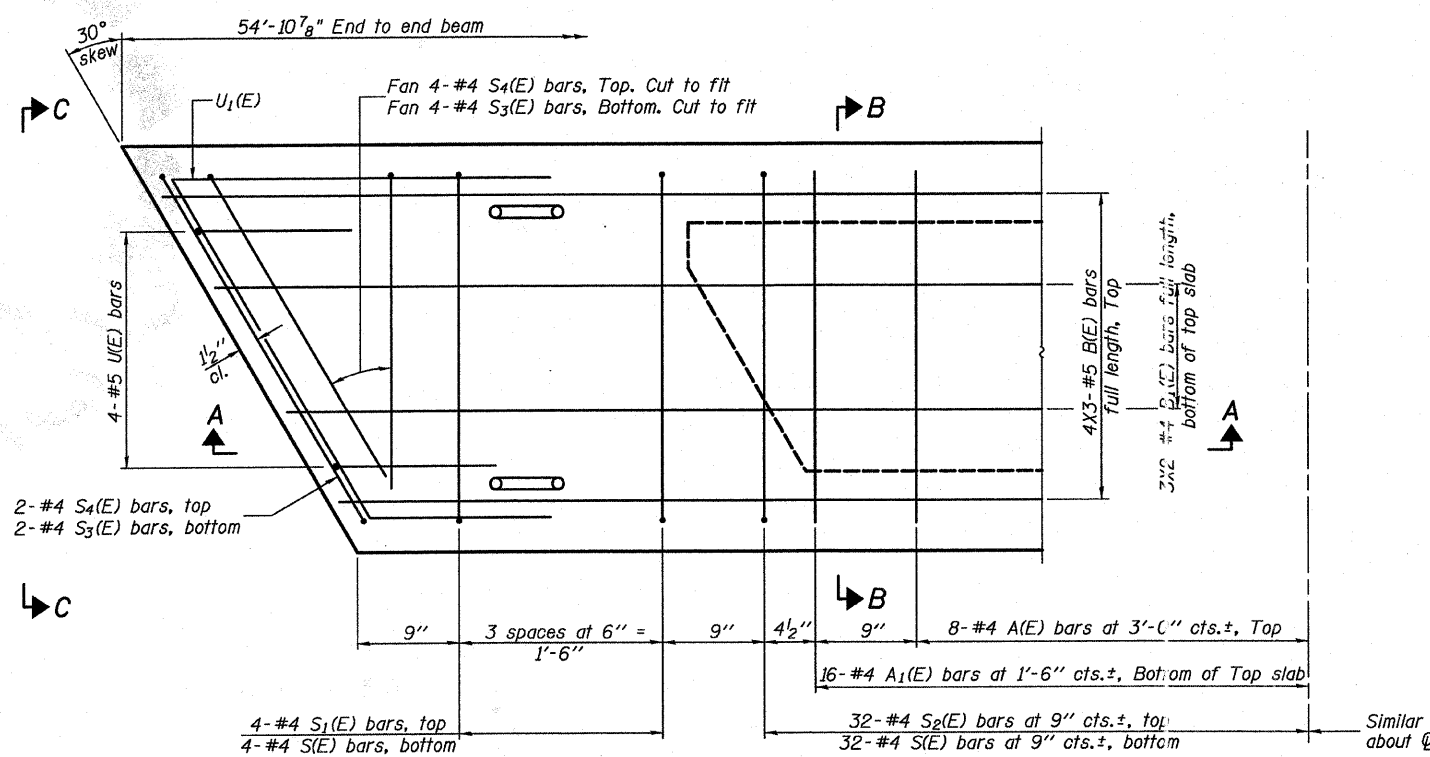
**SECTION A-A**



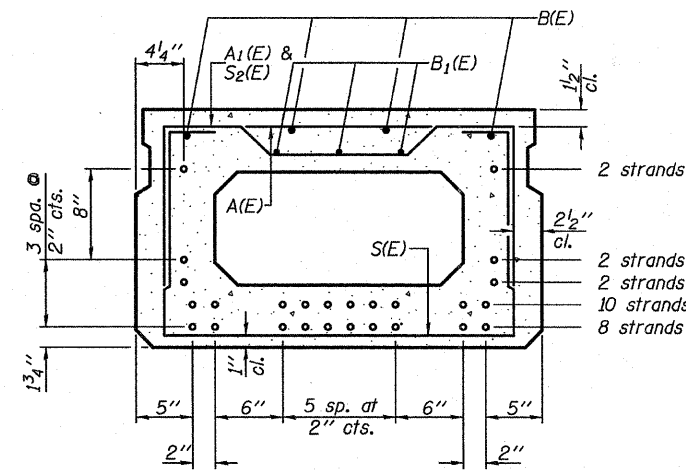
**SECTION B-B**  
(Showing dimensions)



**VIEW C-C**



**PLAN VIEW**



**SECTION B-B**  
(Showing reinforcement and permissible strand locations)  
24 - 1/2" Strands  
(8 Strands 1 3/4" Up, 10 Strands 3 3/4" Up,  
2 Strands 5 3/4" Up, 2 Strands 7 3/4" Up,  
2 Strands 15 3/4" Up)

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)	16	#4	2'-7"	—
A1(E)	32	#4	2'-10"	—
B(E)	12	#5	19'-11"	—
B1(E)	6	#4	28'-4"	—
S(E)	72	#4	6'-5"	□
S1(E)	8	#4	4'-11"	□
S2(E)	64	#4	5'-2"	□
S3(E)	12	#4	4'-11"	□
S4(E)	12	#4	4'-2"	□
UK(E)	8	#5	4'-0"	□
U1(E)	4	#4	7'-2"	□

Note: See sheet 5 of 10 for additional details and Bill of Material.

**MINIMUM BAR LAP**

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

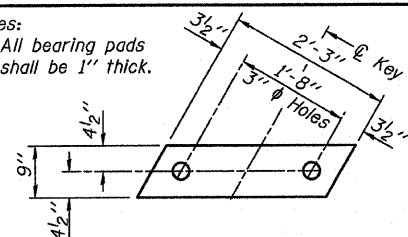
Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

PD-2136-R

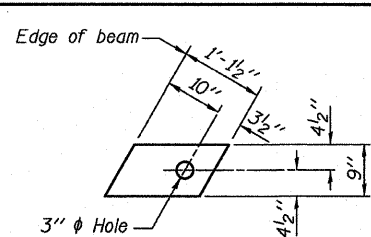
7-1-10

FILE NAME = h:\6466\B144857-04-beam.dgn	USER NAME = _USERDESCR_	DESIGNED - K.M.M.	REVISIONS -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>21" X 36" PPC DECK BEAM</b> <b>SPAN 2</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
PLOT SCALE = 4:0.0000 ' / IN.	DRAWN - K.H.L.L.	CHECKED - L.D.G.	REVISIONS -			212	10-10117-00-BR	CLINTON	16	7	
PLOT DATE = 3/29/2011	CHECKED - B.G.H.	DRAWN - K.H.L.L.	REVISIONS -			<b>S.N. 014-4057</b>		<b>CONTRACT NO.</b>		<b>ILLINOIS FED. AID PROJECT</b>	
SHEET NO. 4 OF 10 SHEETS											

Notes:  
All bearing pads shall be 1" thick.

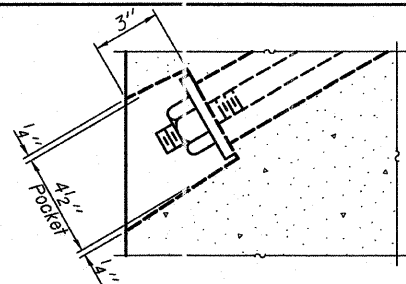


**FABRIC BEARING PAD**  
(Interior)

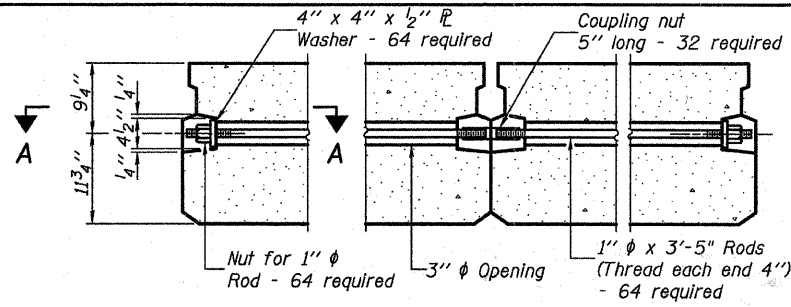


**FABRIC BEARING PAD**  
(Exterior)

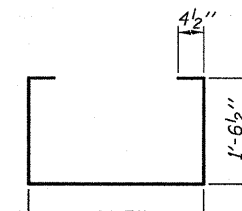
**FIXED**



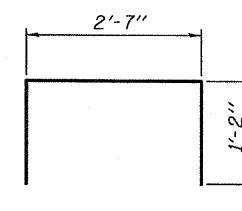
**SECTION A-A**



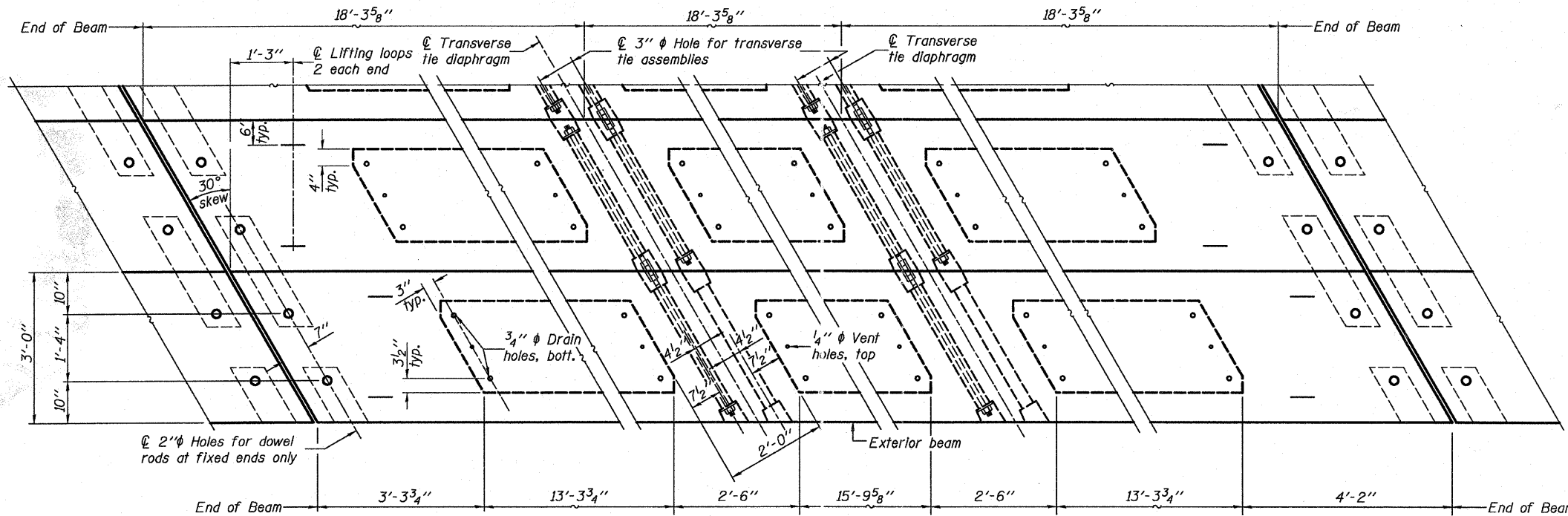
**TYPICAL TRANSVERSE TIE ASSEMBLY**



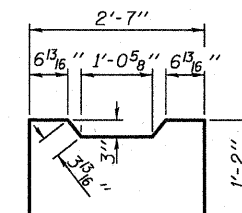
**BAR S(E)**



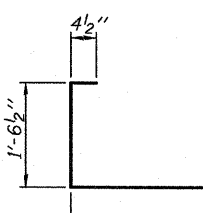
**BAR S1(E)**



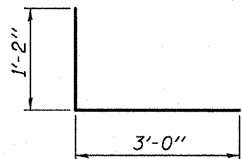
**PLAN VIEW - SPAN 2**



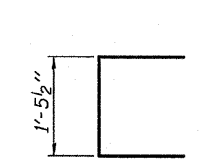
**BAR S2(E)**



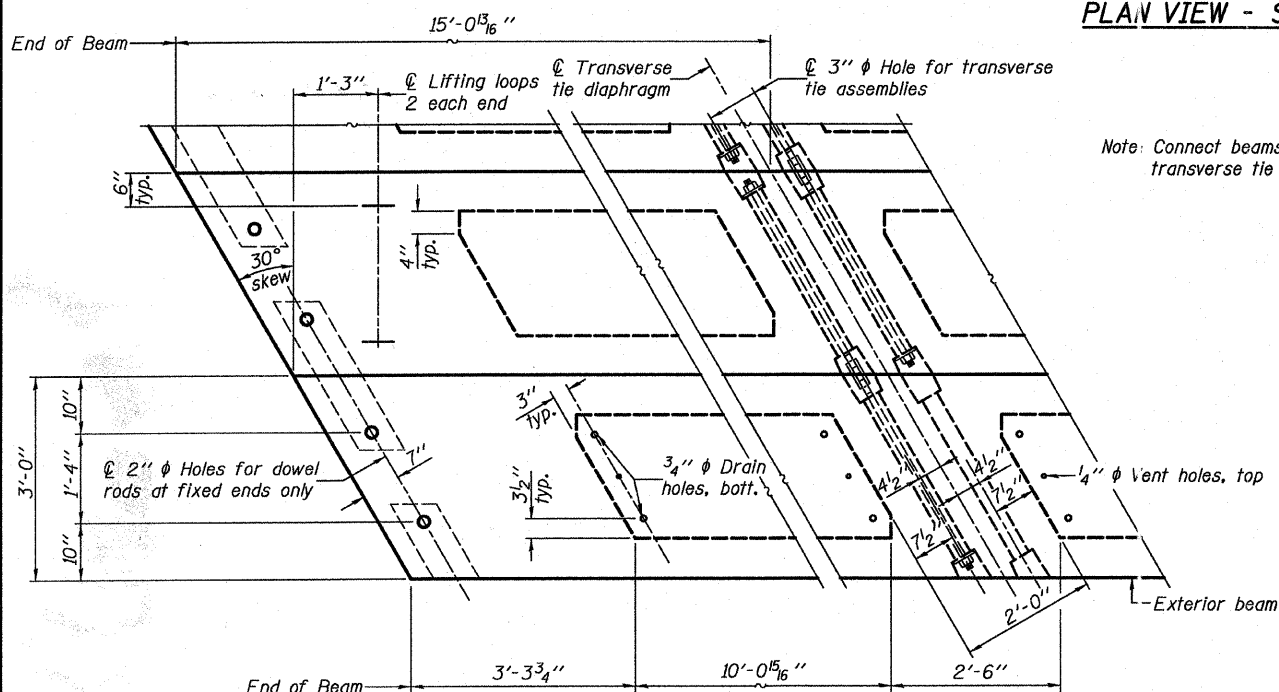
**BAR S3(E)**



**BAR S4(E)**

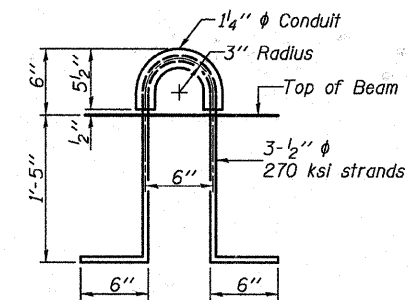


**BAR U(E)**



**PLAN VIEW - SPANS 1 & 3**

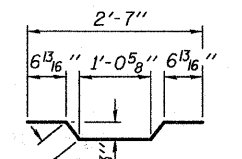
Note: Connect beams in pairs with the transverse tie configuration shown.



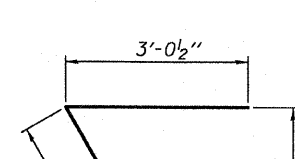
**LIFTING LOOP DETAIL**

**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 ASTM A 706, Grade 60. (See Special Provisions).
- Two 3/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- A minimum 2 1/2" 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'cl, shall be 5000 psi.



**BAR A1(E)**



**BAR U1(E)**

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	3,115
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PD-2136-RD

7-1-10

FILE NAME =	USER NAME =	DESIGNED -	REVISED -
h:\6466\0144057-05-bmdt.dgn	_USERDESCR.	K.M.M.	
		CHECKED -	REVISED -
		L.D.G.	
		DRAWN -	REVISED -
		K.H.L.L.	
		CHECKED -	REVISED -
		B.G.H.	

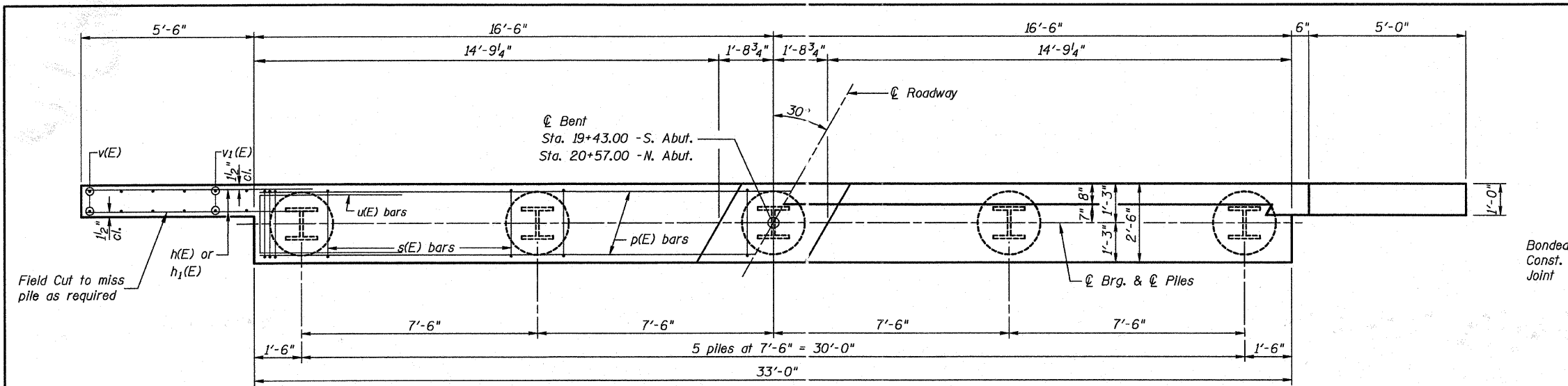
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

21" x 36" PPC DECK BEAM DETAILS

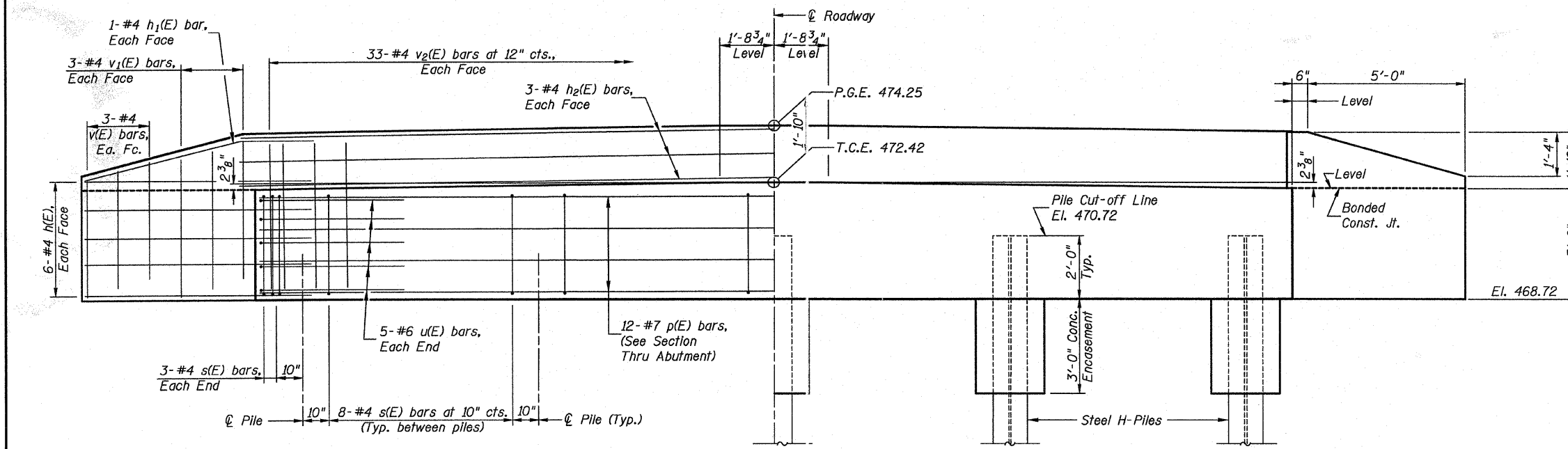
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
212	10-10117-00-BR	CLINTON	16	8
S.N. 014-4057		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

SHEET NO. 5 OF 10 SHEETS

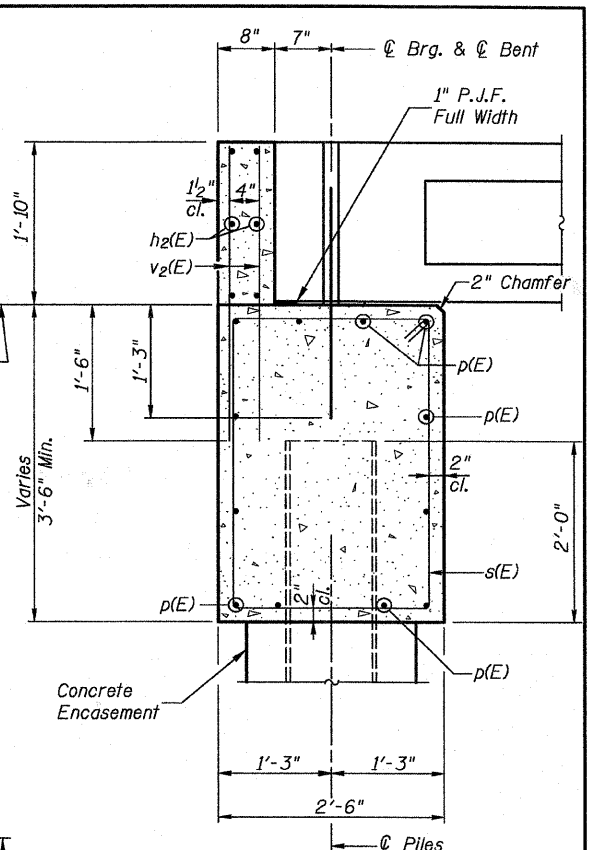




**PLAN**



**ELEVATION**



**SECTION THRU ABUTMENT**  
(at Right Angles)

**BILL OF MATERIAL FOR ONE ABUTMENT**

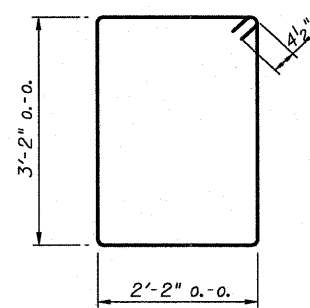
Bar	No.	Size	Length	Shape
h(E)	24	#4	7'-11"	—
h <sub>1</sub> (E)	4	#4	8'-3"	—
h <sub>2</sub> (E)	6	#4	32'-8"	—
p(E)	12	#7	32'-8"	—
s(E)	38	#4	11'-5"	□
u(E)	10	#6	11'-1"	—
v(E)	12	#4	3'-0"	—
v <sub>1</sub> (E)	12	#4	4'-0"	—
v <sub>2</sub> (E)	66	#4	3'-2"	—
Concrete Structures			Cu. Yd.	14.4
Reinforcement Bars, Epoxy Coated			Pound	1,740
Concrete Encasement			Cu. Yd.	1.8

**NOTES**

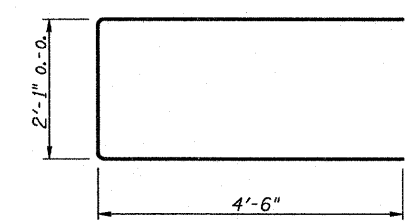
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Space reinforcement in pile cap to miss dowel rods.

**PILE DATA**

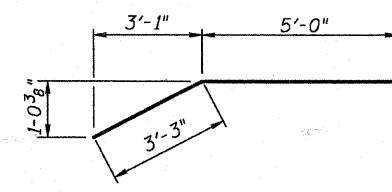
	S. ABUT.	N. ABUT.
Type:	Steel HP 10X42	Steel HP 10X42
Nominal Required Bearing:	335 k	335 k
Factored Resistance Available:	168 k	168 k
Est. Length:	32 ft.	31 ft.
No. Production Piles:	4	4
No. Test Piles:	1	1



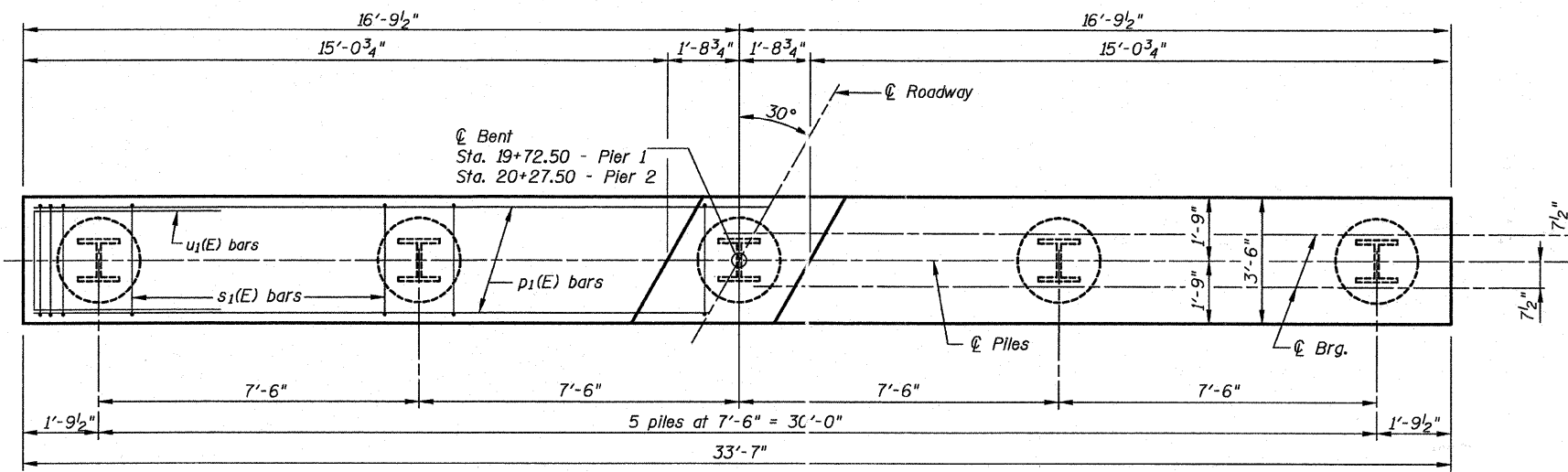
**BAR s(E)**



**BAR u(E)**



**BAR h<sub>1</sub>(E)**



PLAN

PILE DATA

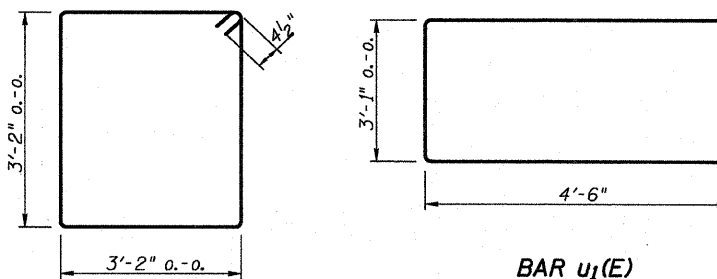
PIER 1

Steel HP 12X63  
 Nominal Required Bearing: 497 k  
 Factored Resistance Available: 248 k  
 Est. Length: 34 ft.  
 No. Production Piles: 4  
 No. Test Piles: 1

PIER 2

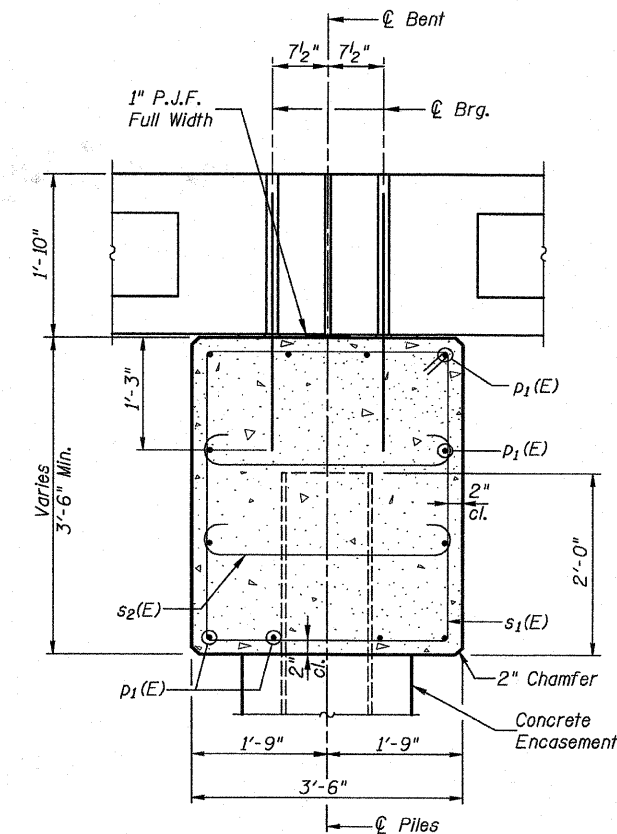
Steel HP 12X63  
 Nominal Required Bearing: 497 k  
 Factored Resistance Available: 248 k  
 Est. Length: 33 ft.  
 No. Production Piles: 4  
 No. Test Piles: 1

Type:  
 Nominal Required Bearing:  
 Factored Resistance Available:  
 Est. Length:  
 No. Production Piles:  
 No. Test Piles:

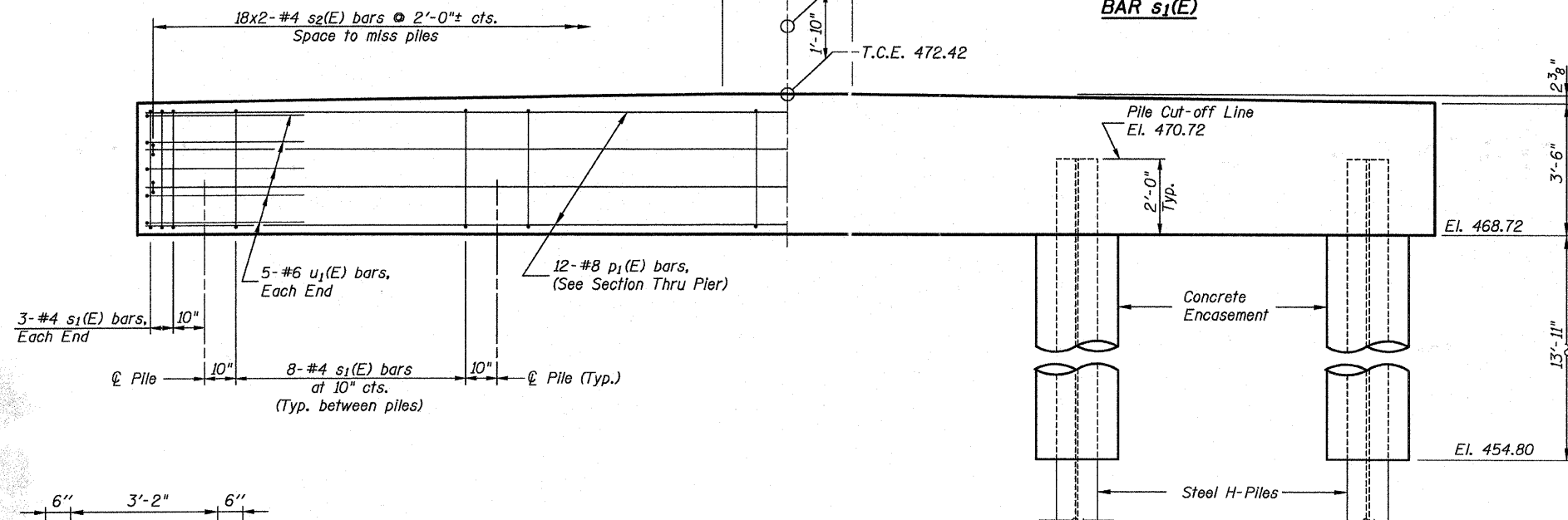


BAR s1(E)

BAR u1(E)



SECTION THRU PIER  
 (at Right Angles)



ELEVATION

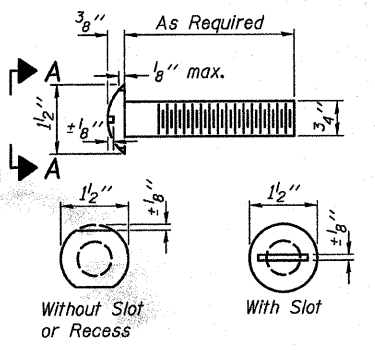
BAR s2(E)

BILL OF MATERIAL  
 FOR ONE PIER

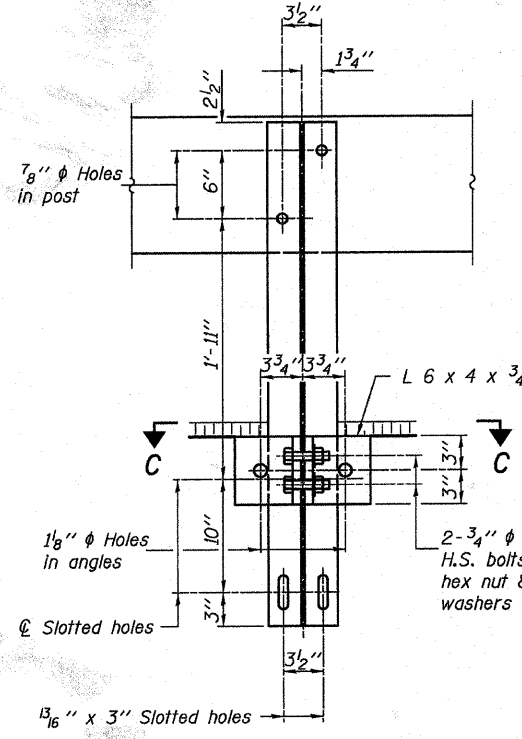
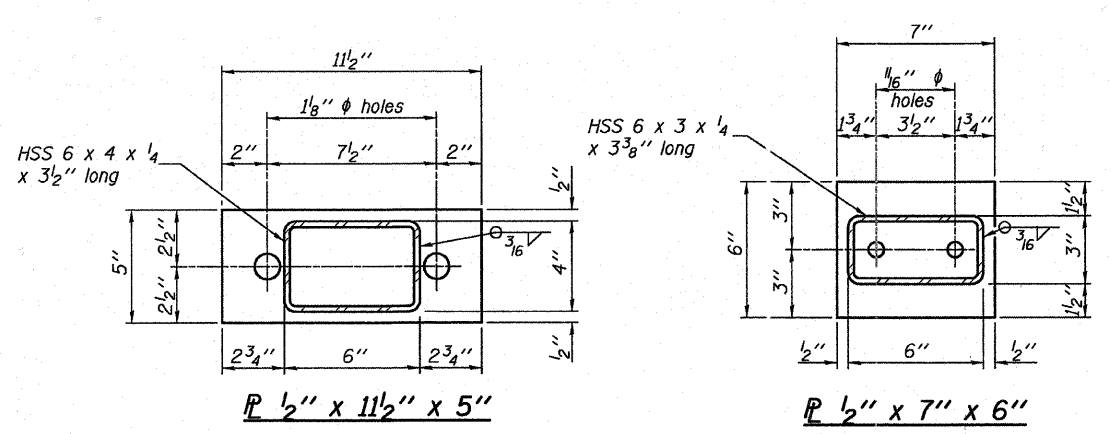
Bar	No.	Size	Length	Shape
p1(E)	12	#8	33'-3"	—
s1(E)	38	#4	13'-5"	□
s2(E)	36	#4	4'-2"	U
u1(E)	10	#6	12'-1"	—
Concrete Structures			Cu. Yd.	15.8
Reinforcement Bars, Epoxy Coated			Pound	1,690
Concrete Encasement			Cu. Yd.	8.1

NOTES

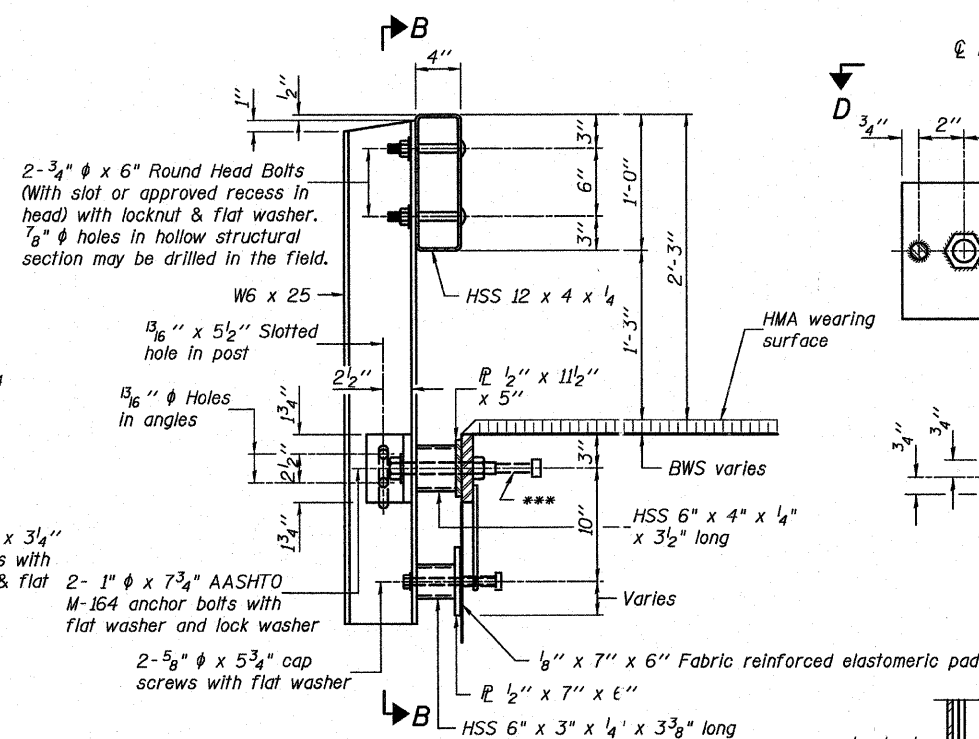
1. Space reinforcement in pile cap to miss dowel rods.



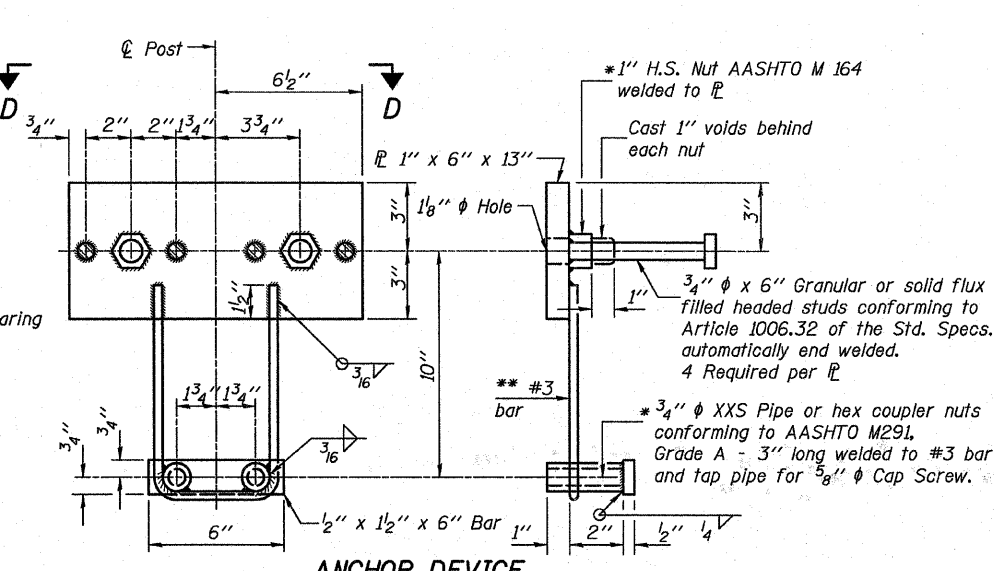
**VIEW A-A  
ROUND HEAD BOLT**



**SECTION B-B**

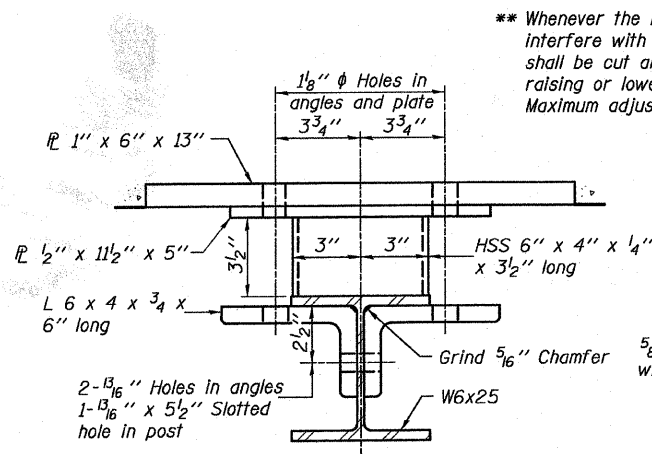


**SECTION AT RAILING POST**

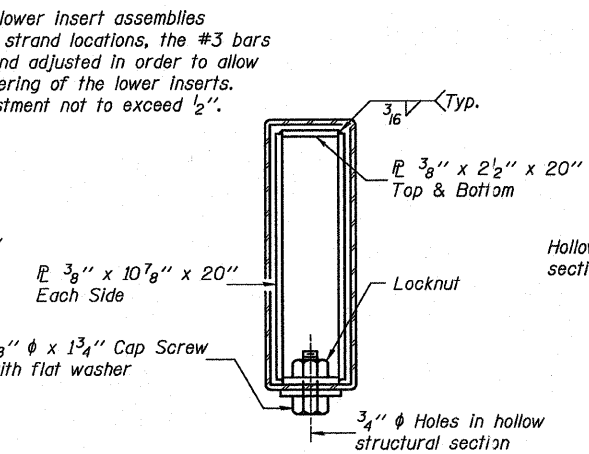


**ANCHOR DEVICE**  
\* Threaded areas shall be plugged or blocked off during casting of beam.

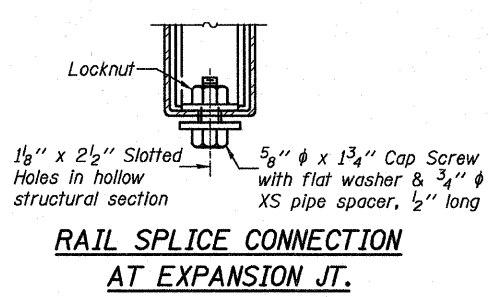
**Notes:**  
All field drilled holes shall be coated with an approved zinc rich paint before erection. For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1. All steel rail elements 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.



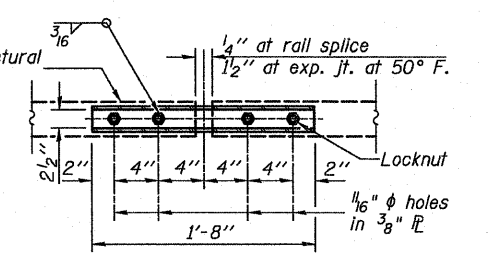
**SECTION C-C**



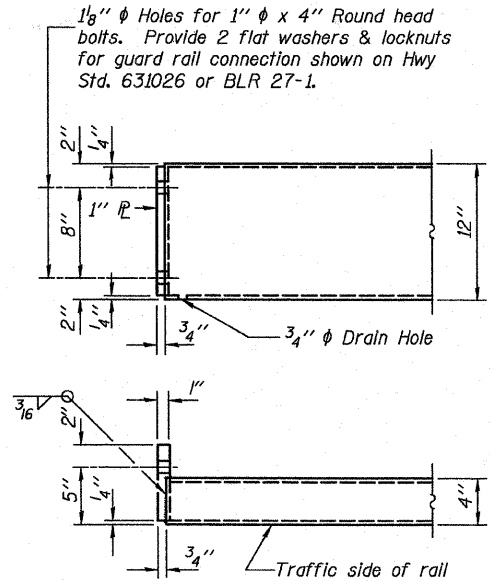
**SECTIONS AT RAIL SPLICE**



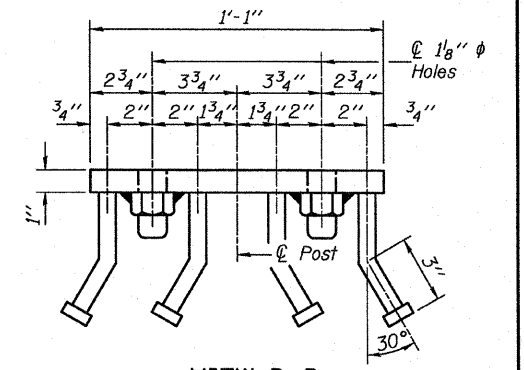
**RAIL SPLICE CONNECTION  
AT EXPANSION JT.**



**PLAN-BOTT. SPLICE P  
TYPICAL**



**END OF RAIL DETAILS**



**VIEW D-D**

**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	234

R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = h:\6466\0144057-08-1rdt.dgn

USER NAME = \_USERDESCR\_

DESIGNED - K.M.M.  
CHECKED - L.D.G.  
DRAWN - K.H.L.  
CHECKED - B.G.H.

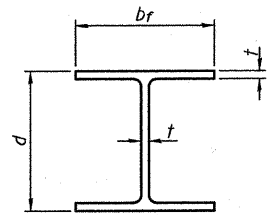
REVISED -  
REVISED -  
REVISED -  
REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**STEEL RAILING, TYPE S-1**

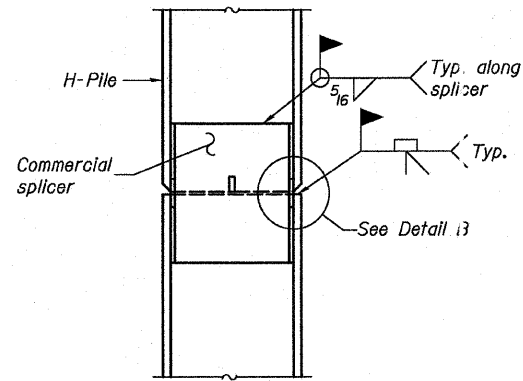
SHEET NO. 8 OF 10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
212	10-10117-00-BR	CLINTON	16	11
<b>S.N. 014-4057</b>		<b>CONTRACT NO.</b>		
ILLINOIS FED. AID PROJECT				

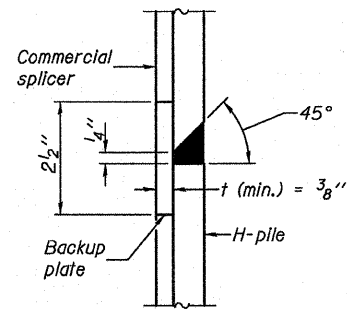


**STEEL PILE TABLE**

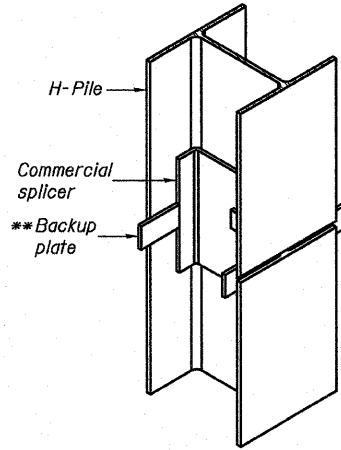
Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/2"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11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

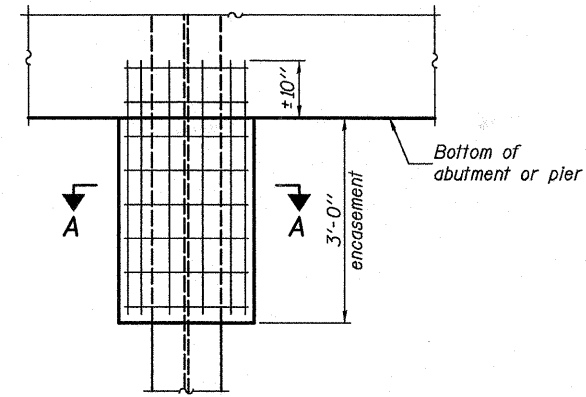


**DETAIL "B"**



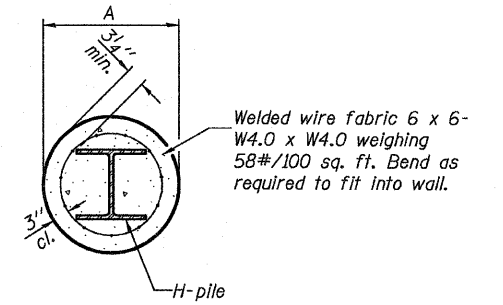
**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE**



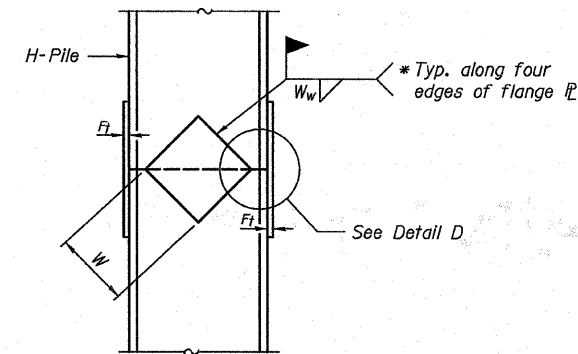
**ELEVATION**

**PILE ENCASEMENT**

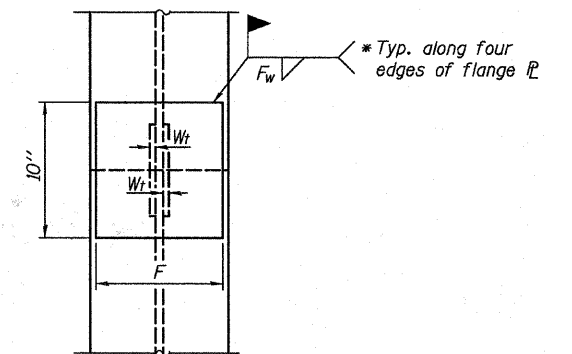


**SECTION A-A**

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

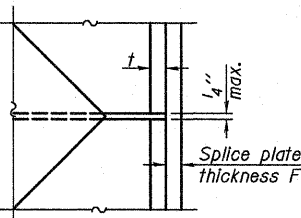


**ELEVATION**



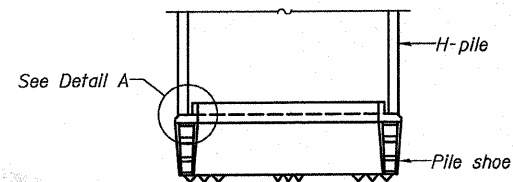
**END VIEW**

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"	1/16"	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"	1/16"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	1/16"	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"

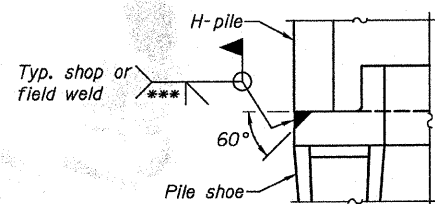


**DETAIL D**

**WELDED PLATE FIELD SPLICE**

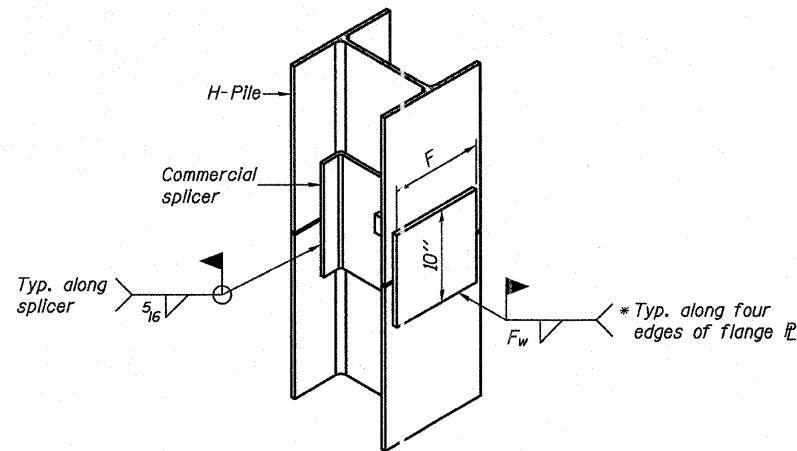


**ELEVATION**



**DETAIL A**

**H-PILE SHOE ATTACHMENT**



**ISOMETRIC VIEW**

**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* Interrupt welds 1/4" from end of web and/or each flange.
- \*\* Remove portions of backup plate that extend outside the flanges.
- \*\*\* Weld size per pile shoe manufacturer (5/16" min.).

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

F-HP

7-1-10

FILE NAME = h:\5466\0144257-09-pile.dgn	USER NAME = USERDESCR.	DESIGNED - K.M.M.	REVISED -	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>HP PILE DETAILS</b>	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE = 1/8"=0'00" / IN.	CHECKED - L.D.G.	REVISED -			212	10-10117-00-BR	CLINTON	16	12	
	PLOT DATE = 3/29/2011	DRAWN - K.H.L.	REVISED -			SHEET NO. 9 OF 10 SHEETS		S.N. 014-4057		CONTRACT NO.	
		CHECKED - B.G.H.	REVISED -			ILLINOIS FED. AID PROJECT					



SOIL BORING LOG

Page 1 of 1

Date 03/18/2010

ROUTE T.R. 212 DESCRIPTION Hahn Road over Lost Creek LOGGED BY CK
SECTION 08-10117-00-BR LOCATION SEC.11 TWP. 2N RNG. 1W PM
COUNTY Clinton STRUCTURE NO. (Exst.) (Prop.)

Table with columns for SOIL DESCRIPTION, DRILLING METHOD CFA, and HAMMER TYPE Automatic. Includes data for various soil layers like 'Chip & Oil 1/2"', 'FILL - Crushed rock, cinders 2.5"', 'Brown low plastic SILTY CLAY', etc.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer). The Standard Penetration Test (SPT) N Value is per (AASHTO T208) BBS 137 (9/05)



SOIL BORING LOG

Page 1 of 1

Date 03/25/2010

ROUTE T.R. 212 DESCRIPTION Hahn Road over Lost Creek LOGGED BY CK
SECTION 08-10117-00-BR LOCATION SEC.11 TWP. 2N RNG. 1W PM
COUNTY Clinton STRUCTURE NO. (Exst.) (Prop.)

Table with columns for SOIL DESCRIPTION, DRILLING METHOD CFA, and HAMMER TYPE Automatic. Includes data for various soil layers like 'Chip & Oil 3/4"', 'FILL - Cinders, slag, crushed rock', 'Gray high plastic CLAY, trace gravel', etc.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer). The Standard Penetration Test (SPT) N Value is per (AASHTO T208) BBS 137 (9/05)

Table with columns: FILE NAME, USER NAME, DESIGNED, REVISIONS, CHECKED, DRAWN, PLOT DATE.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS

SHEET NO. 10 OF 10 SHEETS

Table with columns: T.R., SECTION, COUNTY, TOTAL SHEETS, SHEET NO., CONTRACT NO., ILLINOIS FED. AID PROJECT

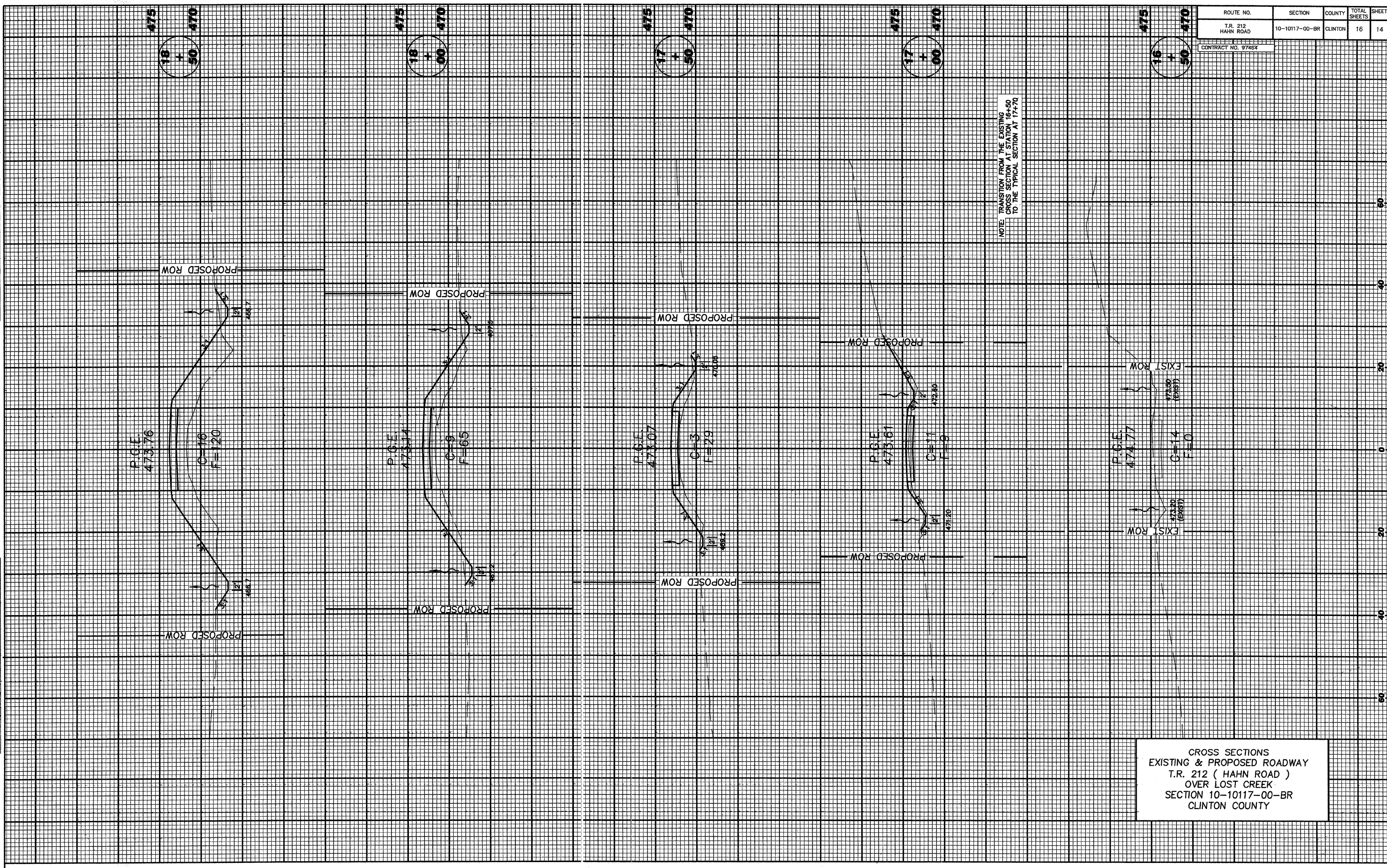
FLM.G. NO. 6465

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
T.R. 212 HAHN ROAD	10-10117-00-BR	CLINTON	16	14

CONTRACT NO. 97454

PLAN  
 SURVEYED BY \_\_\_\_\_  
 ALIGNED CHECKED BY \_\_\_\_\_  
 RT. OF WAY CHECKED BY \_\_\_\_\_  
 NO. \_\_\_\_\_

PROFILE  
 SURVEYED BY \_\_\_\_\_  
 GRADES CHECKED BY \_\_\_\_\_  
 B.M.'S NOTED BY \_\_\_\_\_  
 STRUCTURE NOTATIONS CHECKED BY \_\_\_\_\_



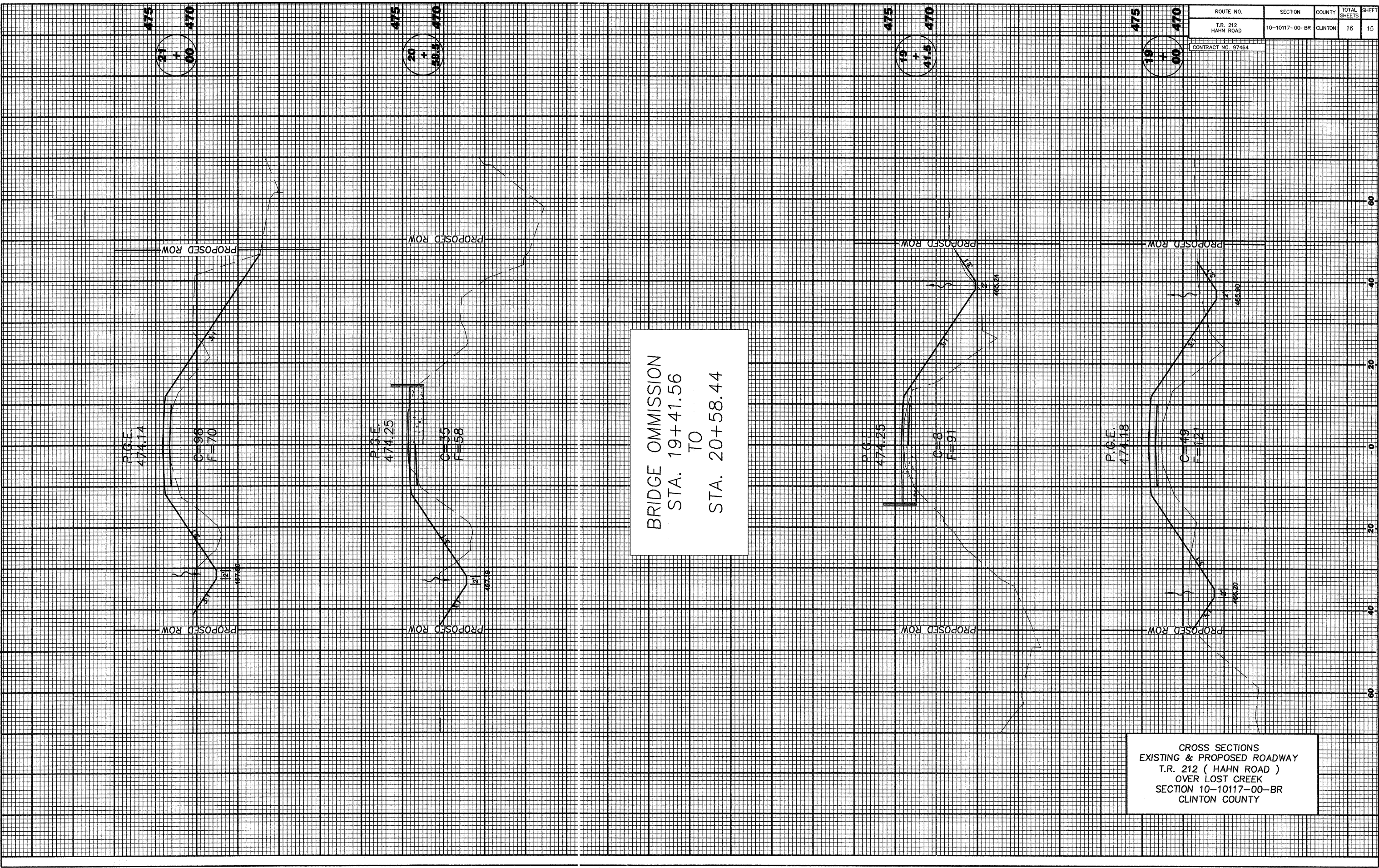
NOTE: TRANSITION FROM THE EXISTING CROSS SECTION AT STATION 16+50 TO THE TYPICAL SECTION AT 17+70

CROSS SECTIONS  
 EXISTING & PROPOSED ROADWAY  
 T.R. 212 ( HAHN ROAD )  
 OVER LOST CREEK  
 SECTION 10-10117-00-BR  
 CLINTON COUNTY

PLAN  
 SURVEYED  
 PLOTTED  
 ALIGNMENT CHECKED  
 RT. OF WAY CHECKED  
 NOTE BOOK NO. \_\_\_\_\_ BY \_\_\_\_\_

PROFILE  
 SURVEYED  
 PLOTTED  
 GRADES CHECKED  
 ELEV. INTERFERED  
 STRUCTURE NOTATIONS OK'D  
 NOTE BOOK NO. \_\_\_\_\_ BY \_\_\_\_\_

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
T.R. 212 HAHN ROAD	10-10117-00-BR	CLINTON	16	15
CONTRACT NO. 97464				



BRIDGE OMISSION  
 STA. 19+41.56  
 TO  
 STA. 20+58.44

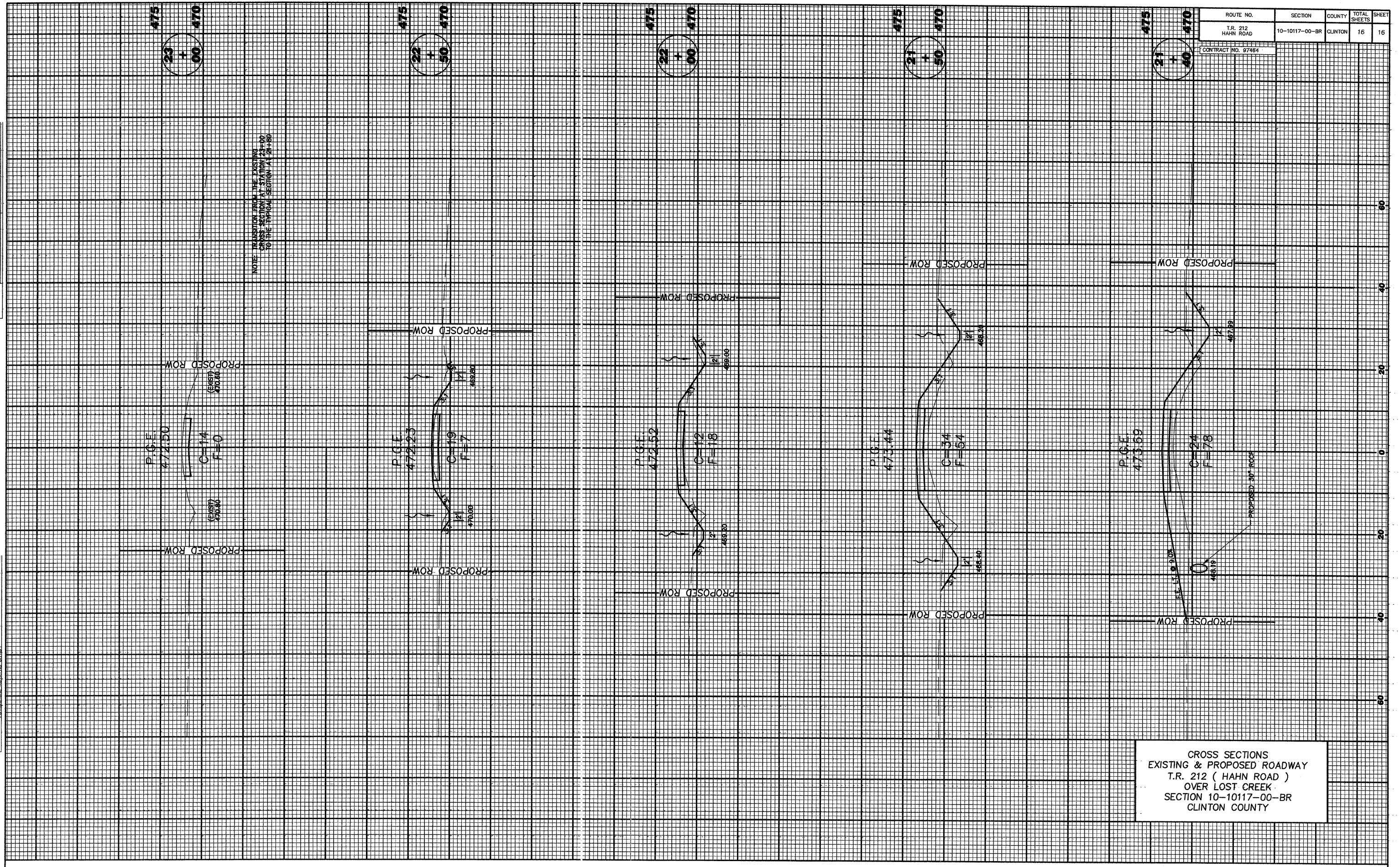
CROSS SECTIONS  
 EXISTING & PROPOSED ROADWAY  
 T.R. 212 ( HAHN ROAD )  
 OVER LOST CREEK  
 SECTION 10-10117-00-BR  
 CLINTON COUNTY

PLAN  
 SURVEYED BY \_\_\_\_\_  
 PLOTTED BY \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 BY \_\_\_\_\_

PROFILE  
 SURVEYED BY \_\_\_\_\_  
 PLOTTED BY \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 BY \_\_\_\_\_

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
T.R. 212 HAHN ROAD	10-10117-00-BR	CLINTON	16	16

CONTRACT NO. 97464



CROSS SECTIONS  
 EXISTING & PROPOSED ROADWAY  
 T.R. 212 ( HAHN ROAD )  
 OVER LOST CREEK  
 SECTION 10-10117-00-BR  
 CLINTON COUNTY