

06-14-13 LETTING ITEM 124

RTF.	SECTION	COUNTY	TOTAL SHEETS
TR217	07-01125-00-BR	SHELBY	15
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO.	95655

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

# PLANS FOR PROPOSED STP BRIDGE

## SECTION 07-01125-00-BR ASH GROVE TOWNSHIP TR 217 SHELBY COUNTY

**INDEX OF SHEETS**

- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES
- 3 PLAN AND PROFILE
- 4 BRIDGE PLAN AND ELEVATION
- 5-6 DECK BEAM DETAILS
- 7 TYPE S-1 STEEL RAILING
- 8 ABUTMENT DETAILS
- 9 PIER DETAILS
- 10 PILING SPLICE DETAILS
- 11 EROSION CONTROL PLAN
- 12-15 CROSS SECTIONS

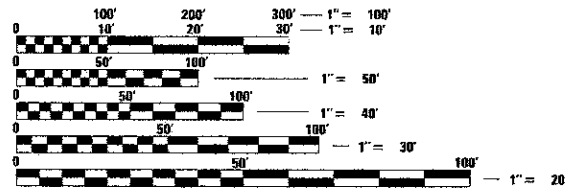
**HIGHWAY STANDARDS**

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATES FOR BRIDGES
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701901-02 TRAFFIC CONTROL DEVICES
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS



ADT-CURRENT 100 DESIGN ADT 125  
CLASS-RURAL LOCAL ROAD  
DESIGN SPEED-30 MPH  
DESIGN YEAR 2033

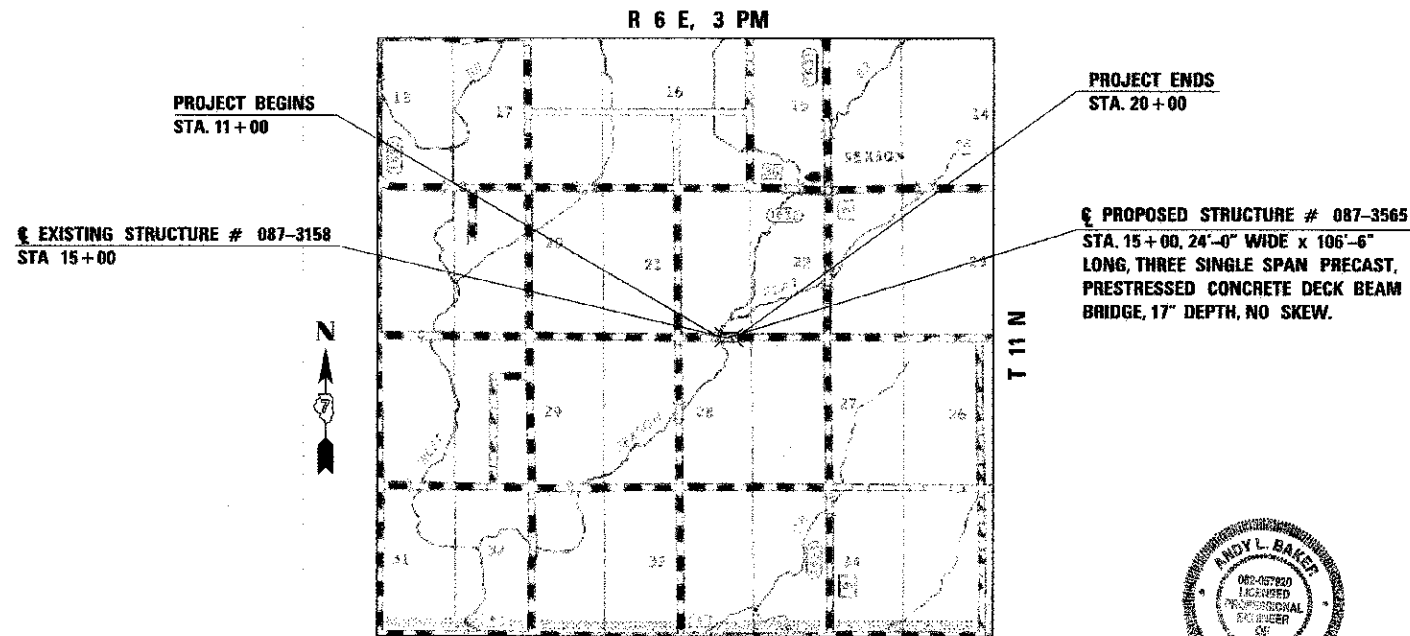
**SCALE**



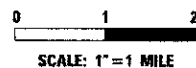
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123  
OR 811

**CONTRACT NO. 95655**



**LOCATION MAP**



TOTAL AND NET LENGTH OF PROJECT = 900 FT. = 0.17 MI.

PROJECT ENDS  
STA. 20+00

PROJECT BEGINS  
STA. 11+00

EXISTING STRUCTURE # 087-3158  
STA 15+00

PROPOSED STRUCTURE # 087-3565  
STA. 15+00, 24'-0" WIDE x 106'-6" LONG, THREE SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, 17" DEPTH, NO SKEW.



Andy L. Baker, P.E.  
LICENSE EXP. DATE 11-30-13

APPROVED	4-2 2013	 COUNTY ENGINEER
APPROVED	4-2 2013	 HIGHWAY COMMISSIONER
PASSED	4-15 2013	 DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW	4/15 2013	 DEPUTY DIRECTOR OF HIGHWAYS REGION FOUR ENGINEER STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

**SUMMARY OF QUANTITIES**

CODE	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	1.5
20200100	EARTH EXCAVATION	CU. YD.	2037
20300100	CHANNEL EXCAVATION	CU. YD.	484
* 25000200	SEEDING, CLASS 2	ACRE	1.5
* 25000400	NITROGEN FERTILIZER NUTRIENT	POUND	135
* 25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	135
* 25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	135
* 25100115	MULCH, METHOD 2	ACRE	1.5
* 28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	150
28000305	TEMPORARY DITCH CHECKS	FOOT	72
28000400	PERIMETER EROSION BARRIER	FOOT	1598
28100207	STONE RIPRAP, CLASS A4	TON	857
28200200	FILTER FABRIC	SQ. YD.	940
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	835
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU. YD.	72
50200300	COFFERDAM EXCAVATION	CU. YD.	59
50201121	COFFERDAM (TYPE 2)(LOCATION-1)	EACH	1
50201122	COFFERDAM (TYPE 2)(LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU. YD.	84.4
50300280	CONCRETE ENCASEMENT	CU. YD.	7.7
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ. FT.	2520
50800105	REINFORCEMENT BARS	POUND	6607
50800530	MECHANICAL SPICERS	EACH	32
* 50900205	STEEL RAILING, TYPE S1	FOOT	214
51201400	FURNISHING STEEL PILES HP 10 x 42	FOOT	420
51202305	DRIVING PILES	FOOT	420
51203400	TEST PILE STEEL HP 10 x 42	EACH	4
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	30
542D1069	PIPE CULVERTS, CLASS D, TYPE 2 24"	FOOT	40
67100100	MOBILIZATION	L. SUM	1
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
* D2012202	EVERGREEN, PINUS STROBUS (EASTERN WHITE PINE), 2" CALIPER, BALLED AND BURLAPPED	EACH	30

\* SPECIALTY ITEM

**UTILITIES**

CONSOLIDATED TELEPHONE  
121 SOUTH 17TH STREET  
MATTOON, IL. 61938  
(217) 235-331

**GENERAL NOTES**

- TEMPORARY EROSION CONTROL TO BE IMPLEMENTED PER THE PLANS AND AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREAS AND PREVENT DRAINAGE OR PONDING OF WATER ONTO PRIVATE PROPERTY.
- ONLY TREES OR SHRUBS MARKED FOR REMOVAL BY THE ENGINEER SHALL BE REMOVED BY THE CONTRACTOR.
- ALL DISTURBED EARTH SURFACES WITHIN THE LIMITS OF THE R.O.W. AND EASEMENTS SHALL BE SEEDED AS DIRECTED BY THE ENGINEER.
- WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

**TREE REMOVAL SCHEDULE**

STA 11+00 TO STA 20+00 LT = 0.75 ACRE  
STA 11+00 TO STA 20+00 RT = 0.75 ACRE  
  
TOTAL = 1.5 ACRES

**EARTHWORK SCHEDULE**

1 LOCATION	2 FARTH EXCAVATION	3 STRUCTURE EXCAVATION	4 CHANNEL EXCAVATION	5 TOTAL EXCAVATION ADJUSTED FOR SHRINKAGE	6 EMBANKMENT	7 EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
STA 11+00 TO STA 14+46.75	788	36	244	801	561	+240
STA 15+53.25 TO STA 20+00	1249	36	240	1144	1359	-215
<b>TOTAL</b>	<b>2037</b>	<b>72</b>	<b>484</b>	<b>1945</b>	<b>1920</b>	<b>+25</b>

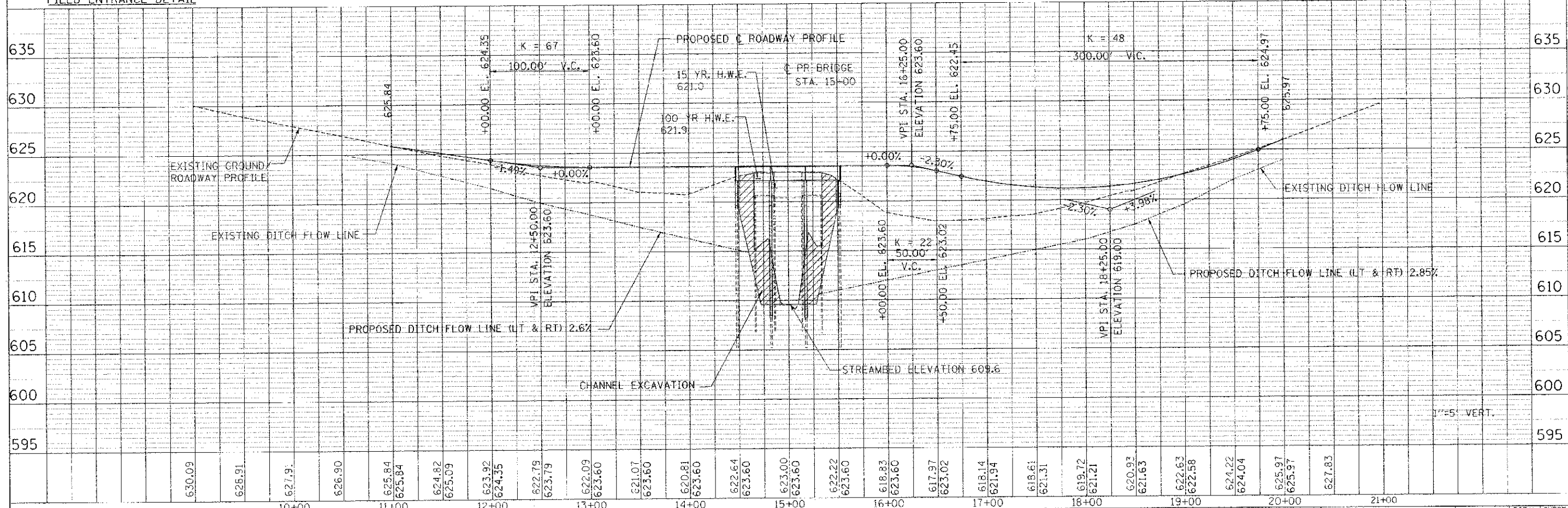
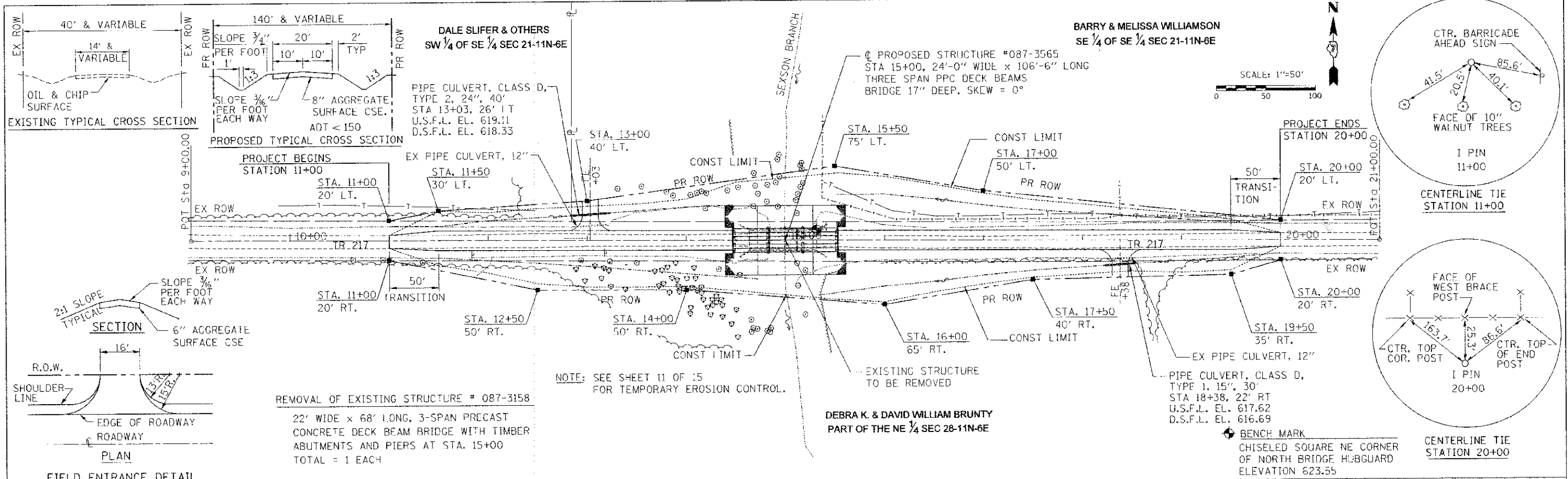
COLUMN 1,2,&6 - LOCATION AND QUANTITIES FROM CROSS SECTIONS.  
CUT = EARTH EXCAVATION FILL = EMBANKMENT

COLUMN 3 - QUANTITIES OF STRUCTURAL EXCAVATION (CUT) FROM BRIDGE PLANS

COLUMN 4 - QUANTITY OF CHANNEL EXCAVATION (CUT) REDUCED 10% FOR UNSUITABLE MATERIAL FOR USE AS FILL

COLUMN 5 - QUANTITY OF EARTH EXCAVATION (CUT) ADJUSTED FOR A SHRINKAGE FACTOR OF 25%

COLUMN 7 - EARTHWORK BALANCE (-) = QUANTITY OF FURNISHED EXCAVATION NEEDED EARTHWORK BALANCE  
(+) = QUANTITY OF EARTH EXCAVATION ADJUSTED FOR SHRINKAGE TO BE WASTED.



FILE NAME =	USER NAME = .USER.	DESIGNED -	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN PROFILE</b> <b>TR 217 OVER SEXSON BRANCH</b>	RTE. SECTION COUNTY TOTAL SHEETS SHEET NO. TR217 07-01125-00-BR SHELBY 15 3
...\\0873565-001-PlanP-of.dgn		DRAWN -	REVISED -			
		CHECKED -	REVISED -			
		DATE -	REVISED -			
THE UPCHURCH GROUP, INC.	PLU SCALE = #SCALE#			SCALE: 1"=50'	SHEET NO. OF SHEETS	STA. 9+00 TO STA. 21+00
	PLOT DATE = 4/1/2013 8:41:27 AM					FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT

**GENERAL NOTES**

- The contractor shall drive (4) test piles of the nominal required bearing specified in production locations of substructures specified or approved by the engineer before ordering the remainder of the piles.
- Boring data is shown in the special provisions only as a guide to the bidders in estimating soil conditions that may be encountered.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (II Modified).
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the engineer.
- Reinforcement bars designated (E) shall be epoxy coated.

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 the 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.



MARTIN J. SILVESTER  
STRUCTURAL ENGINEER  
LICENSE EXP. DATE 11-30-14

**TOTAL BILL OF MATERIAL**

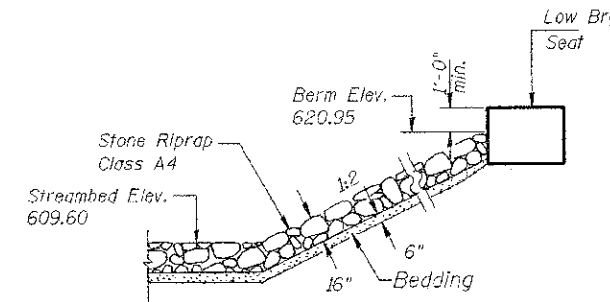
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		857	857
Filter Fabric	Sq. Yd.		940	940
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		72	72
Cofferdam Excavation	Cu. Yd.		59	59
Concrete Structures	Cu. Yd.		84.4	84.4
Concrete Encasement	Cu. Yd.		7.7	7.7
Precast Prestressed Concrete Deck Beam (17" Depth)	Sq. Ft.	2520		2520
Reinforcement Bars	Pounds		6607	6607
Mechanical Splicers	Each		32	32
Steel Railing, Type S-1	Foot	214		214
Furnishing Steel Piles HP 10X42	Foot		420	420
Driving Piles	Foot		420	420
Test Pile Steel HP 10X42	Each		4	4
Name Plate	Each		1	1
Cofferdam (Type2) (Location-1)	Each		1	1
Cofferdam (Type2) (Location-2)	Each		1	1

**GENERAL PLAN & ELEVATION  
TR 217 OVER SEXSON CREEK  
SECTION 07-01125-00-BR  
STATION 15+00  
SHELBY COUNTY  
STRUCTURE NO. 087-3565**

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	4
CONTRACT NO. 95655				

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

THE UPCHURCH GROUP, INC.



**STONE RIPRAP DETAIL**

Not to Scale

Note:  
Layout of the Riprap Protection System may be varied to suit ground conditions in the field as directed by the Engineer.

**DESIGN STRESSES:**

**SUBSTRUCTURE**

$f_y = 60,000$  p.s.i. (Reinforcement)  
 $f'_c = 3,500$  p.s.i.

**P.P.C. SUPERSTRUCTURE**

$f_y = 60,000$  p.s.i. (Reinforcement)  
 $f'_c = 6,000$  p.s.i.  
 $f'_{ci} = 5,000$  p.s.i.  
 $f'_s = 270,000$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)  
 $f_{sr} = 204,960$  psi ( $\frac{1}{2}$ "  $\phi$  low lax. strands)

**DESIGN LOADING**

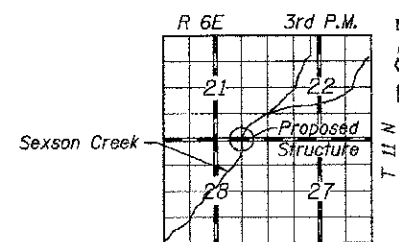
HL 93  
25 p.s.f. Future Wearing Surface

**DESIGN SPECIFICATIONS**

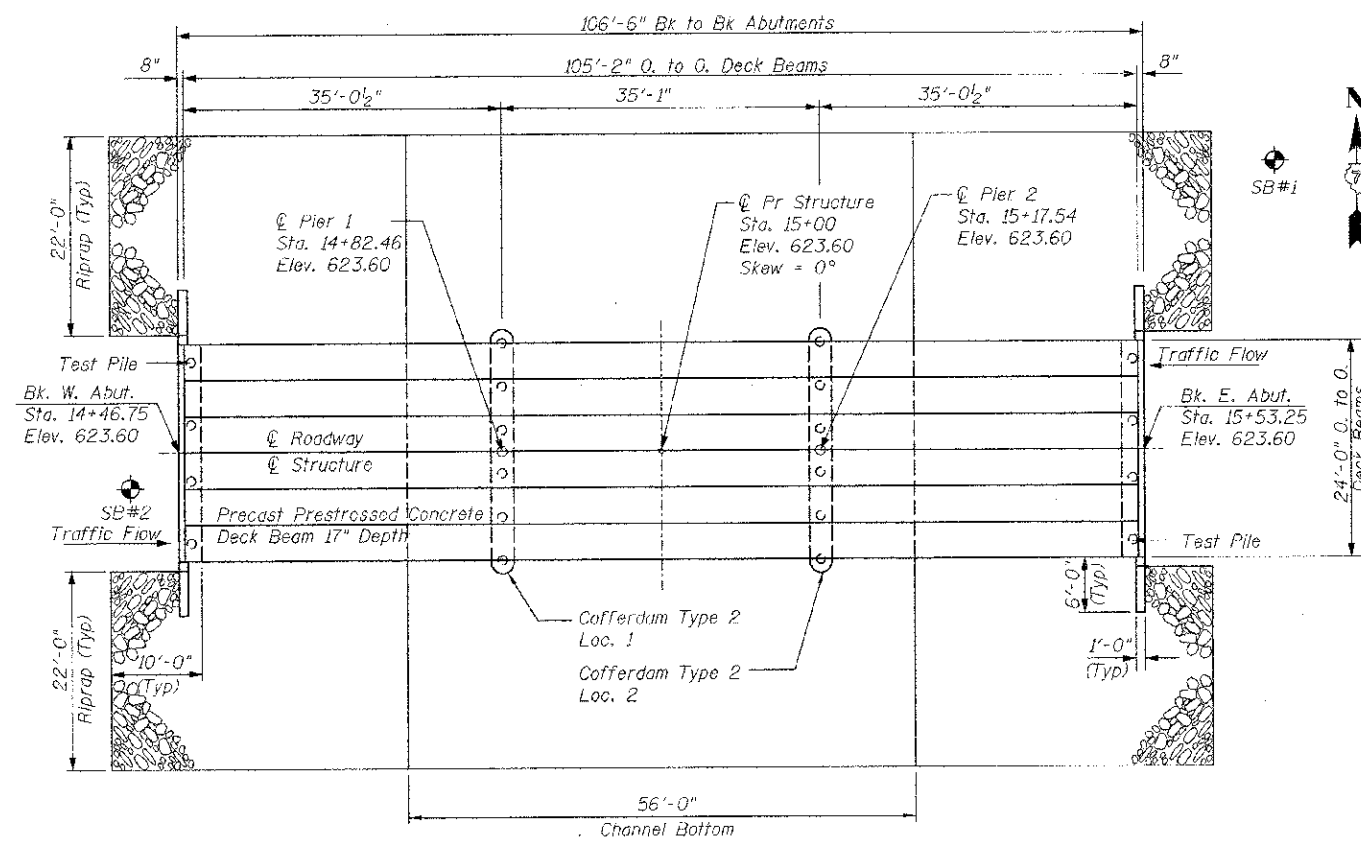
2010 AASHTO LRFD Bridge Design Specifications, 5th Edition, with 2010 Interims

**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 1  
Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 0.132g  
Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 0.295g  
Soil Site Class = C

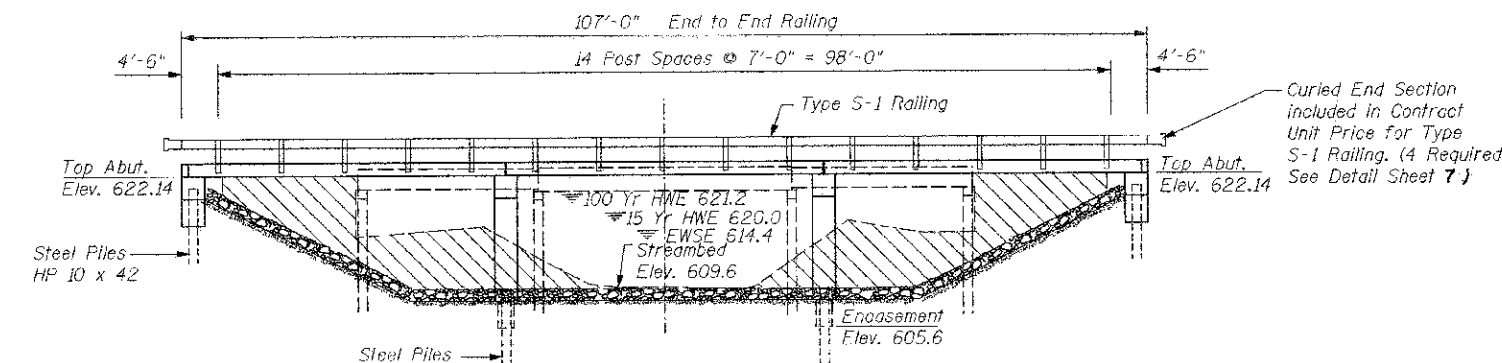


**LOCATION SKETCH**



**PLAN**

Not to Scale



**ELEVATION**

Not to Scale

**WATERWAY INFORMATION**

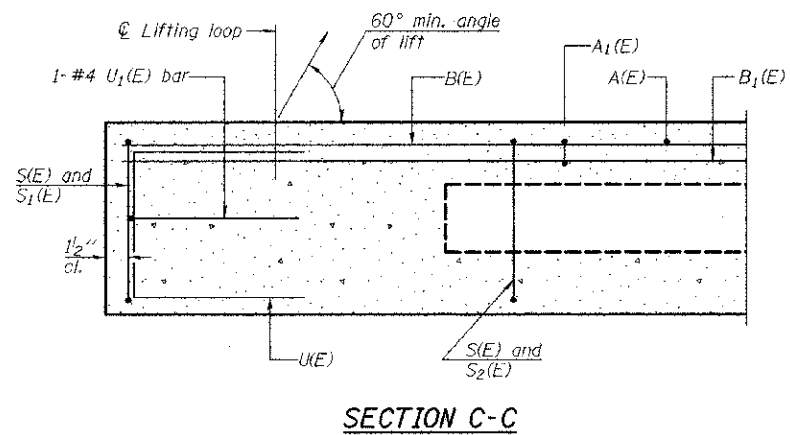
Drainage Area = 15.5 Sq. Mi. - Pr. Low Grade Elev. = 621.21 @ Sta. 18+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Prop.	Not. H.W.E. Exist.	Prop.	Head - Ft. Exist.	Prop.	Headwater El. Exist.	Prop.
Design	15	2619	468	820	620.0	0.5	1.0	620.5	621.0	
Base	100	4201	515	917	621.2	0.2	0.7	621.4	621.9	
Overtopping										
Max. Calc.	500	5489	515	940	622.1	0.1	0.5	622.2	622.6	

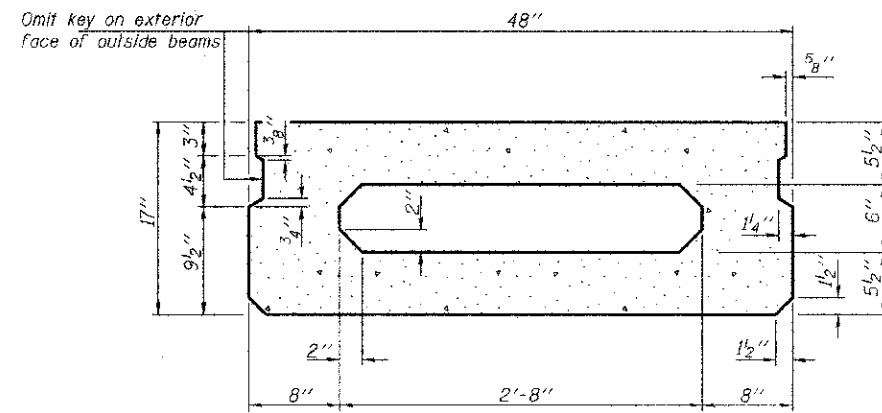
SEXSON BRANCH  
BUILT 20\_\_ BY  
SHELBY COUNTY  
ASH GROVE TOWNSHIP  
SEC. 07-01125-00-BR  
STATION 15+00 PROJ. NO. BR05-173 (173)  
STR. NO. 087-3565 LOADING HL 93

**LETTERING FOR NAME PLATE**

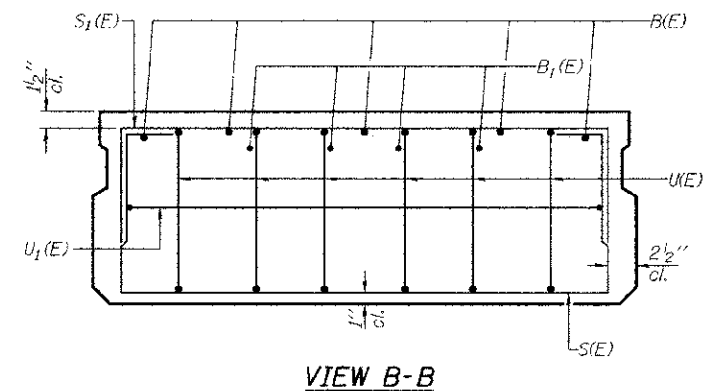
LOCATE ON THE SW WINGWALL



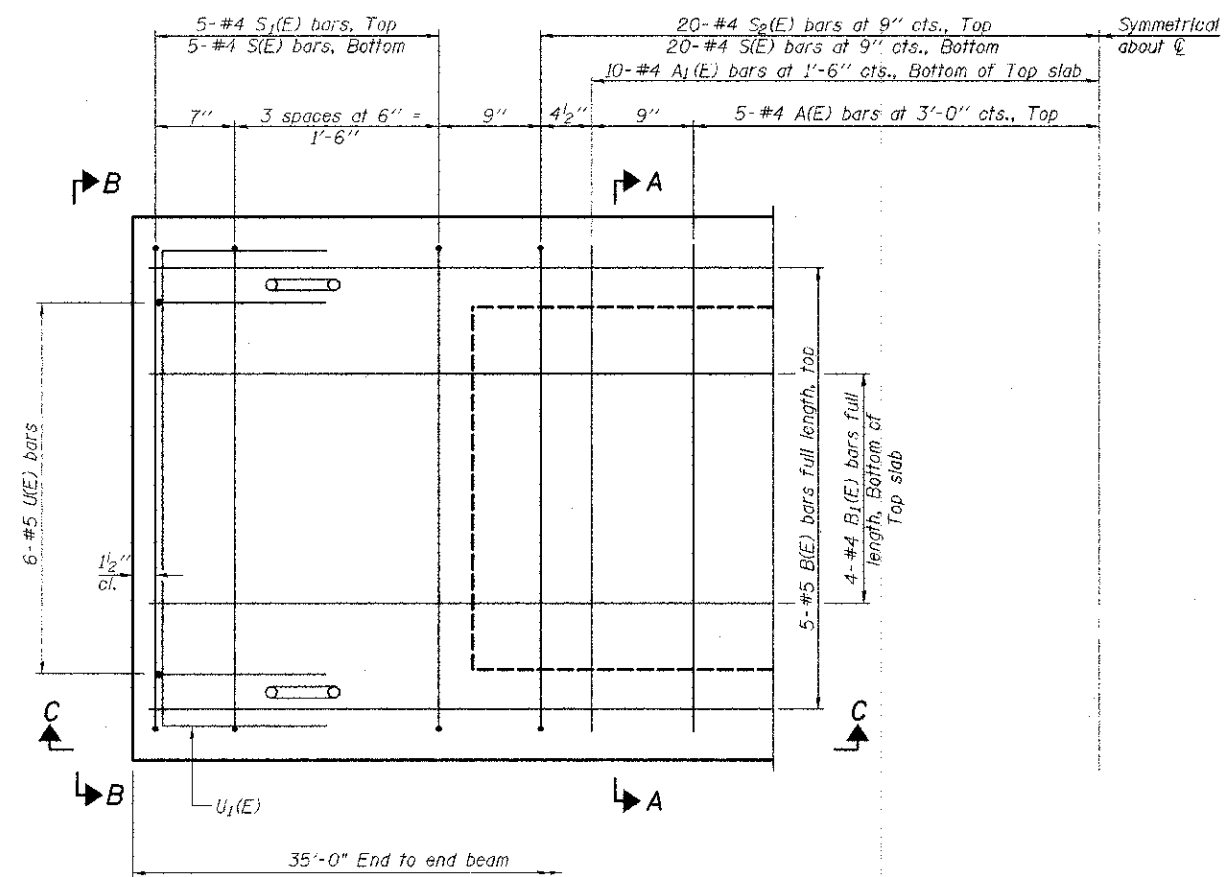
**SECTION C-C**



**SECTION A-A**  
(Showing dimensions)

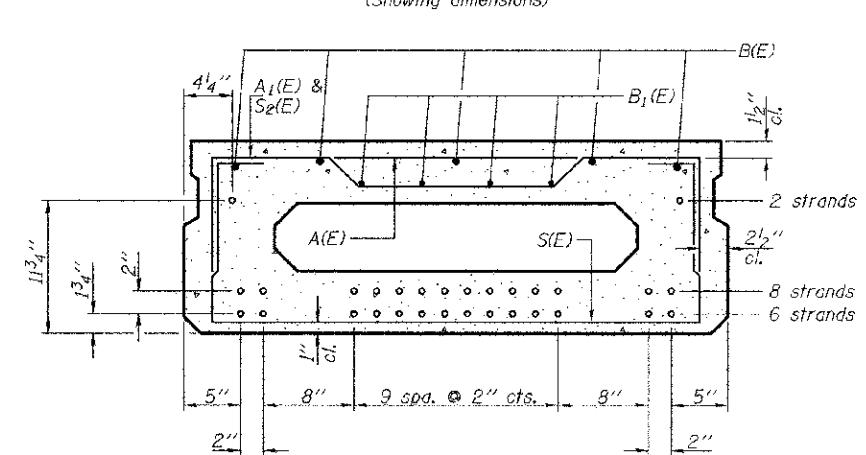


**VIEW B-B**



**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 outs for the transverse ties.



**SECTION A-A**  
(Showing reinforcement and permissible strand locations)

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

**BAR LIST**  
**ONE BEAM ONLY**  
(For information only)

Bar	No.	Size	Length	Shape
A(E)	10	#4	3'-7"	—
A <sub>1</sub> (E)	20	#4	3'-10"	—
B(E)	5	#5	34'-9"	—
B <sub>1</sub> (E)	4	#4	34'-9"	—
S(E)	50	#4	6'-9"	—
S <sub>1</sub> (E)	10	#4	5'-3"	—
S <sub>2</sub> (E)	40	#4	5'-6"	—
U(E)	12	#5	3'-8"	—
U <sub>1</sub> (E)	2	#4	6'-0"	—

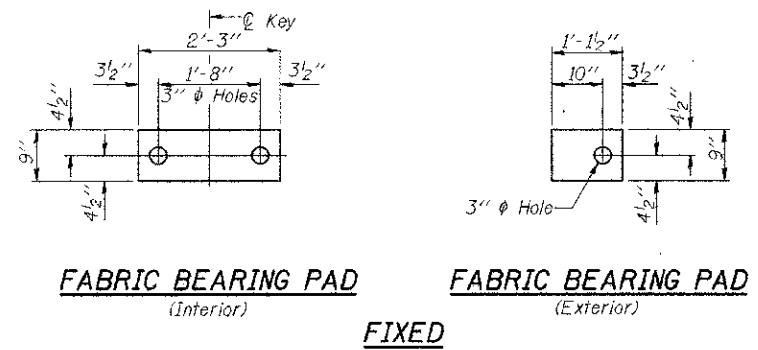
Note: See sheet 6 of 15 for additional details and Bill of Material.

**17" X 48" PCC DECK BEAM**  
**STRUCTURE NO. 087-3565**

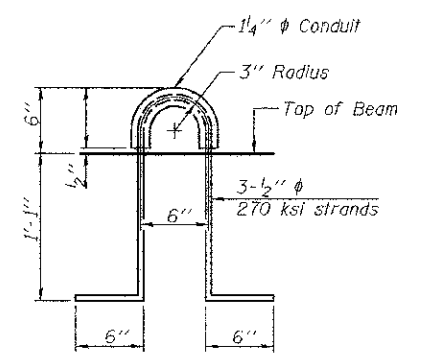
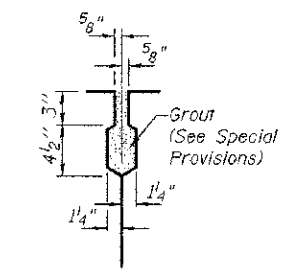
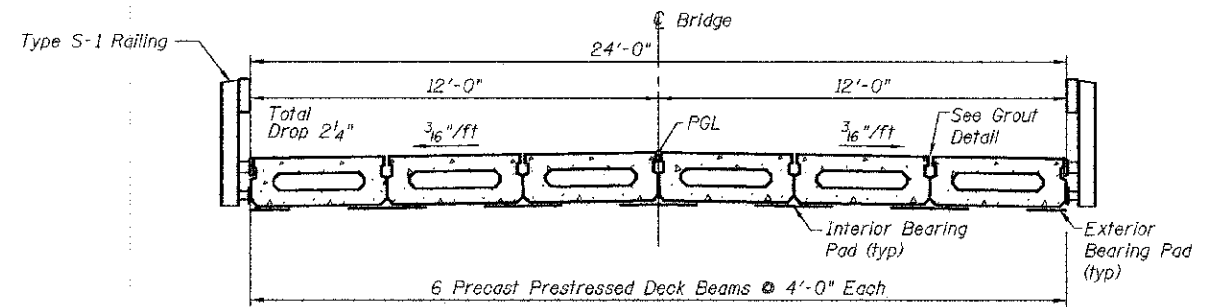
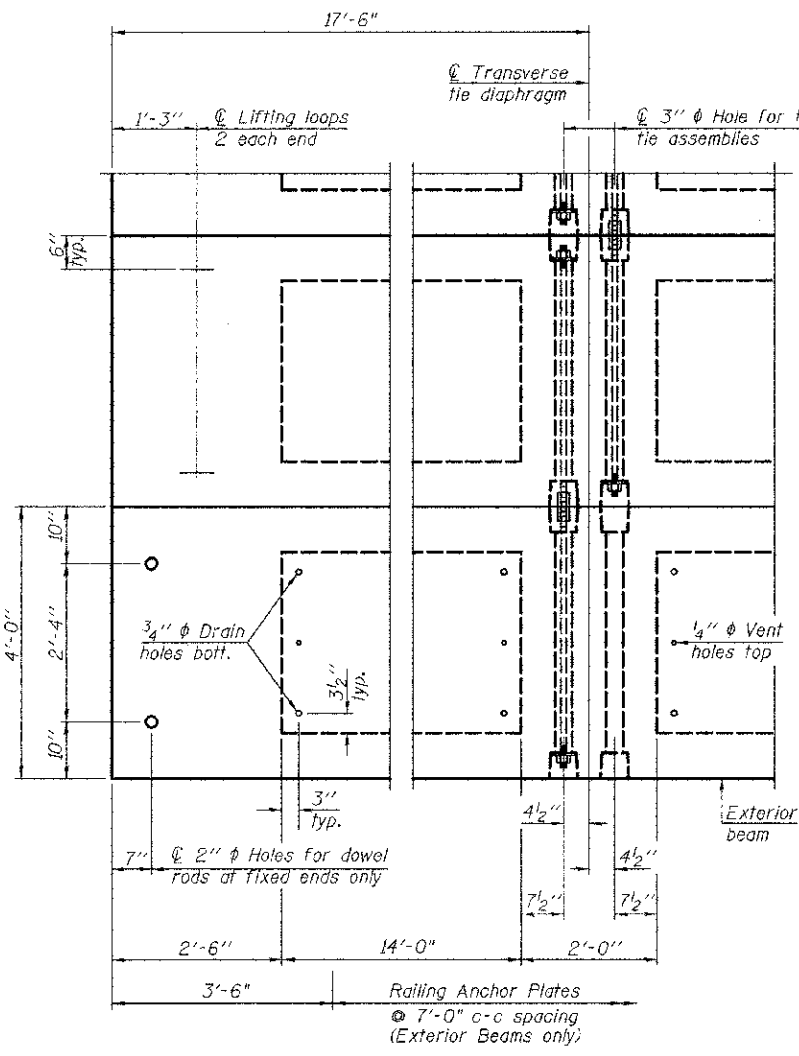
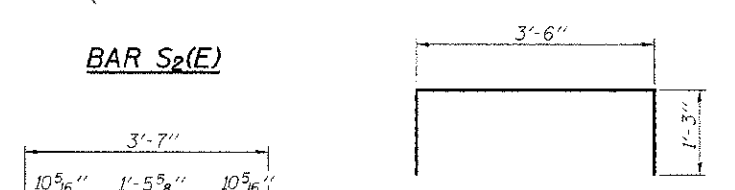
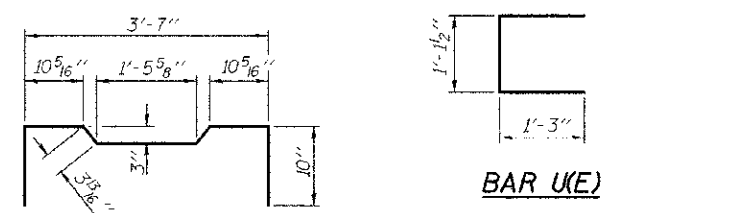
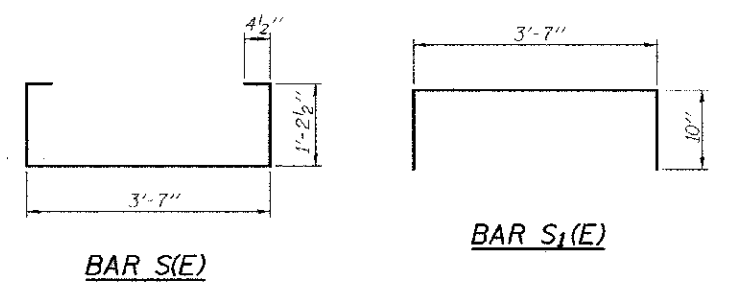
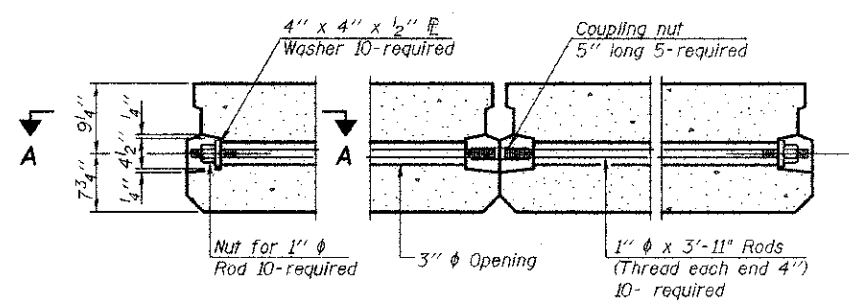
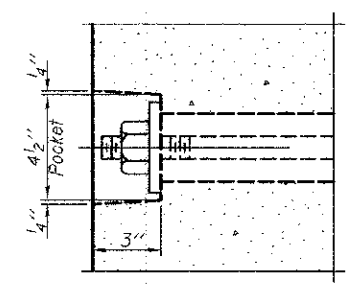
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	5
CONTRACT NO. 95655				

**THE UPCHURCH GROUP, INC.**

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT



**FIXED**



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.

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	2520
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**DECK BEAM DETAILS  
STRUCTURE NO. 087-3565**

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	6
CONTRACT NO. 95655				

**THE UPCHURCH GROUP, INC.**

**NOTES**

Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted.

Railing shall be according to Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL RAILING, TYPE S-1.

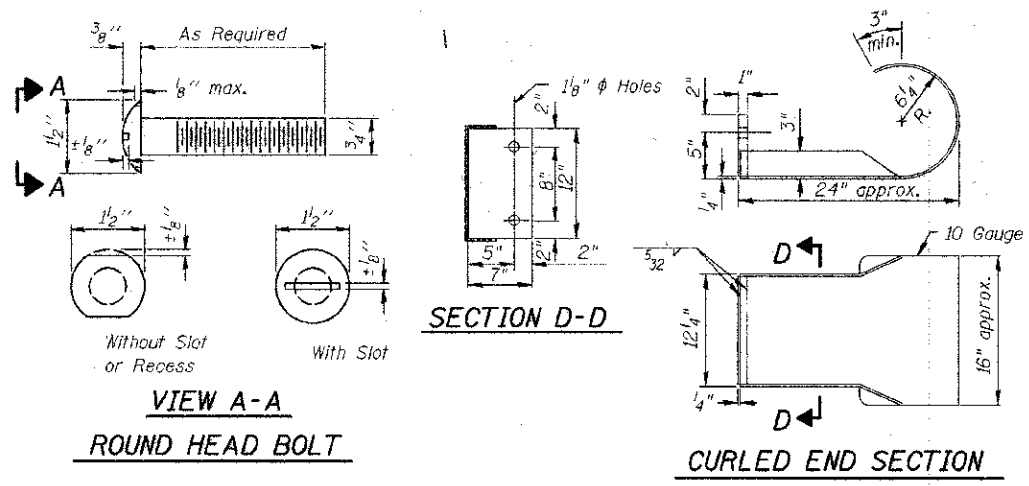
All field drilled holes shall be coated with an approved zinc rich paint before erection.

The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/2" fabric bearing pad between the post and concrete.

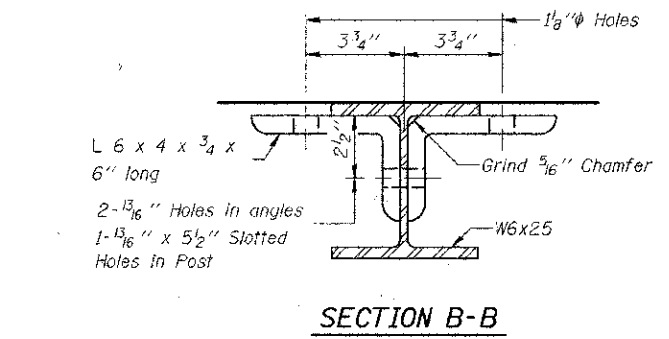
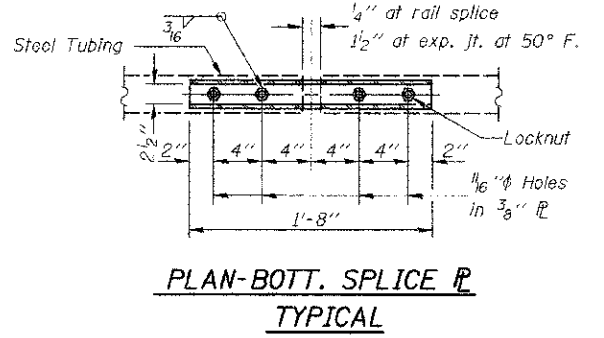
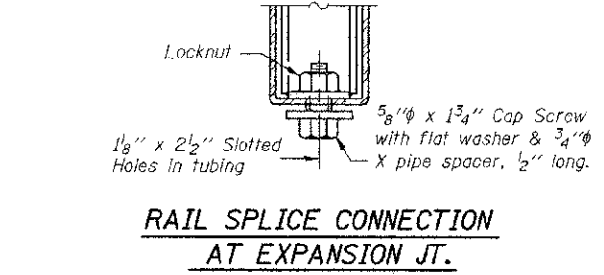
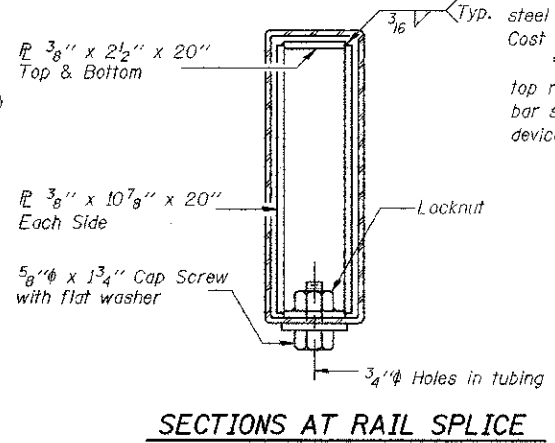
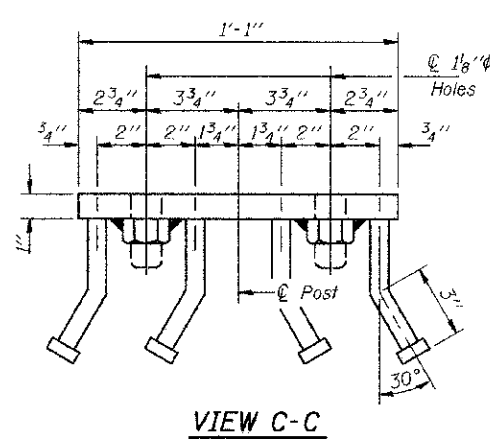
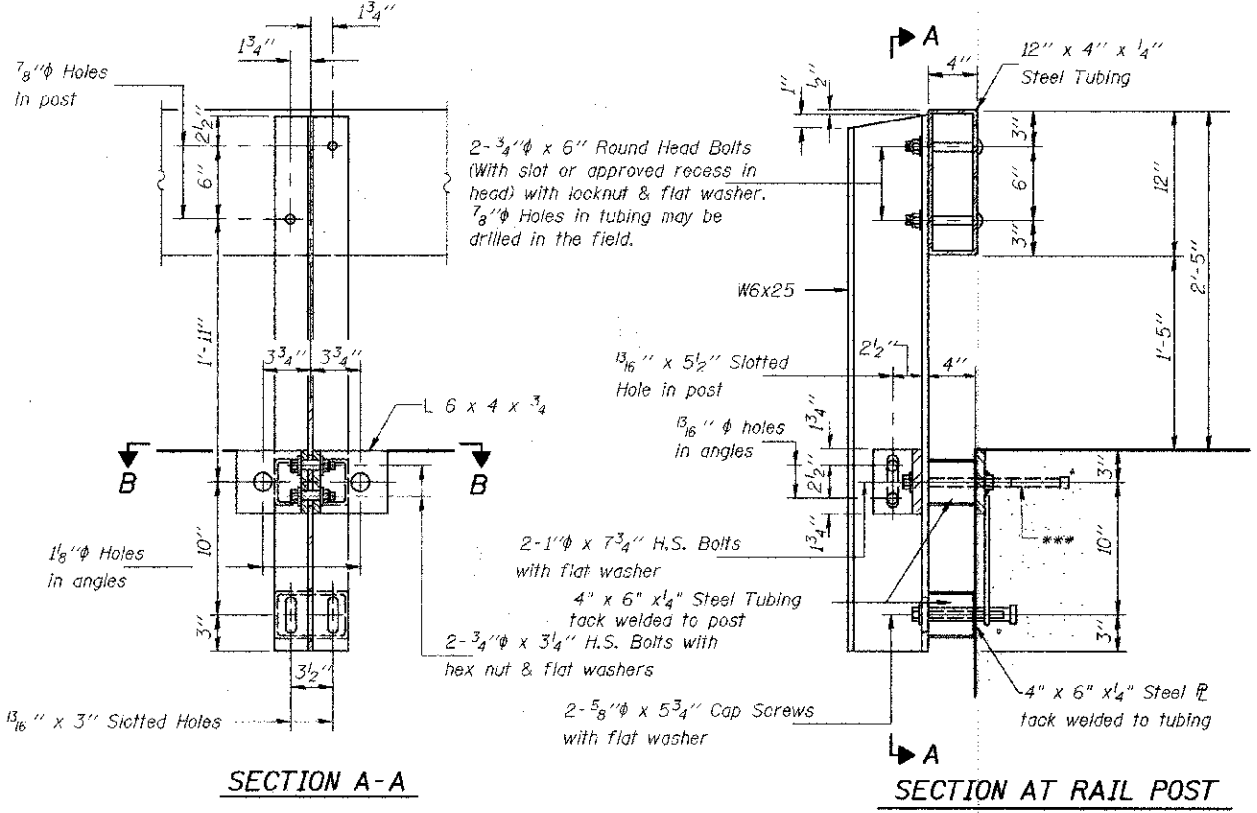
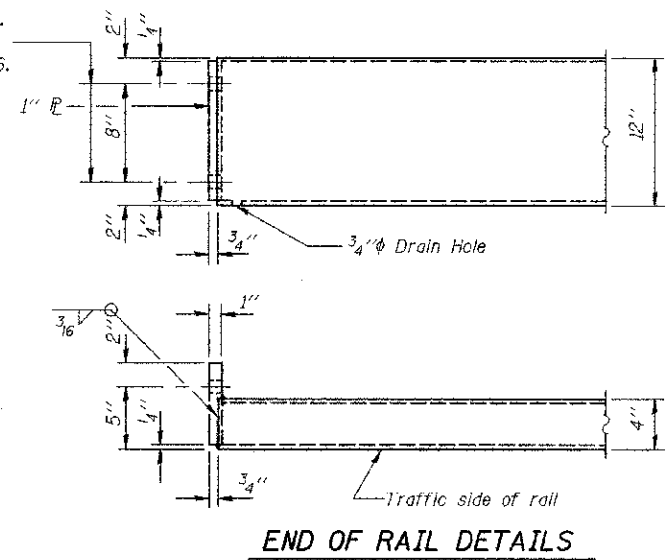
The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(F)(2) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

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.

\*\*\* 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 devices.



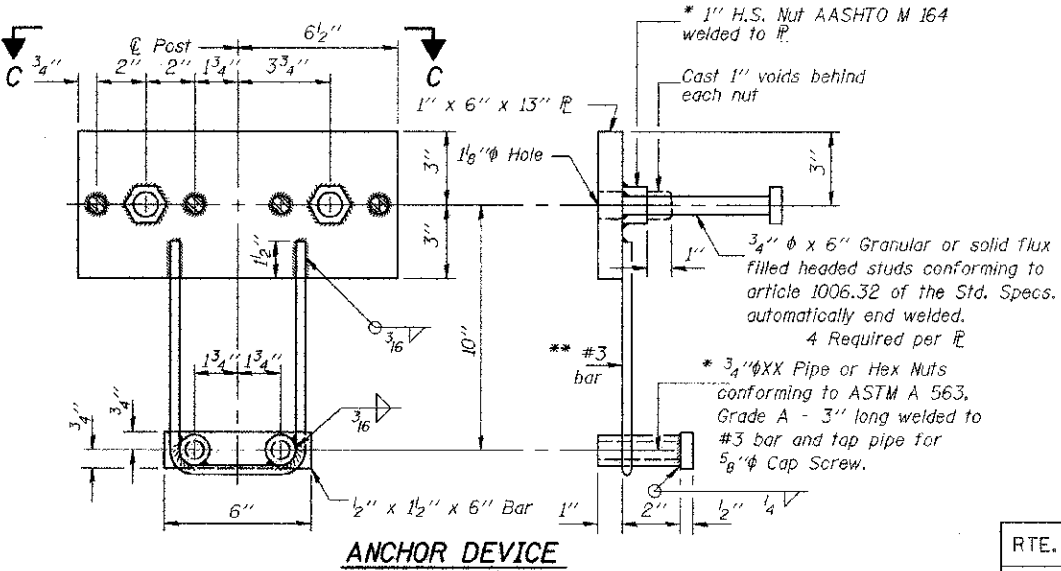
1 1/8"  $\phi$  Holes for 1"  $\phi$  x 4" Round Head Bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Std. 631026.



**BILL OF MATERIAL**

Item	Unit	Quantity
Steel Railing Type S-1	Foot	214

\*\* Whenever the lower insert assemblies interfere with diaphragm locations, the #3 bars shall be cut and adjusted.

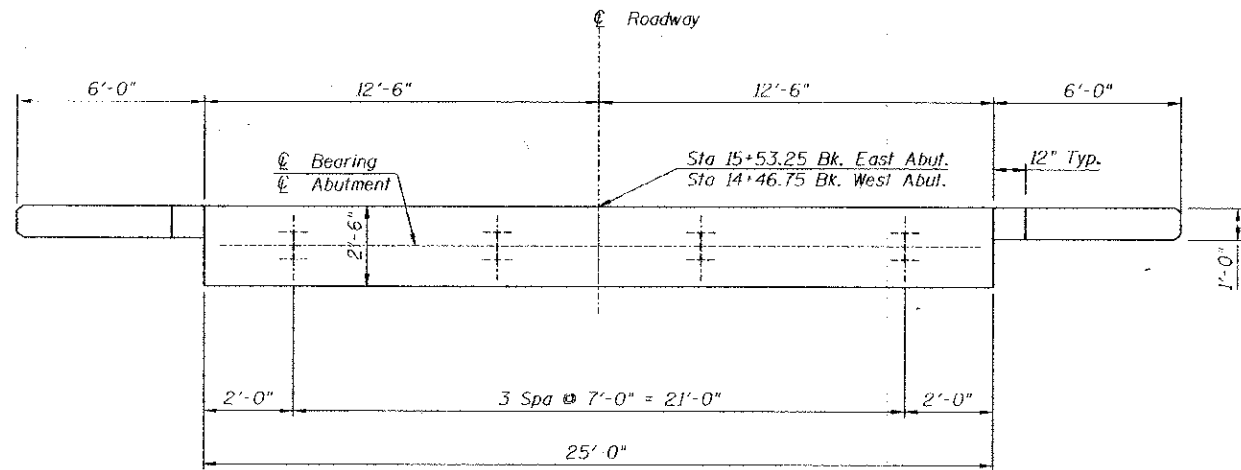


\* Threaded areas shall be plugged or blocked off during casting of beam.

**TYPE S-1 STEEL RAILING STRUCTURE NO. 087-3565**

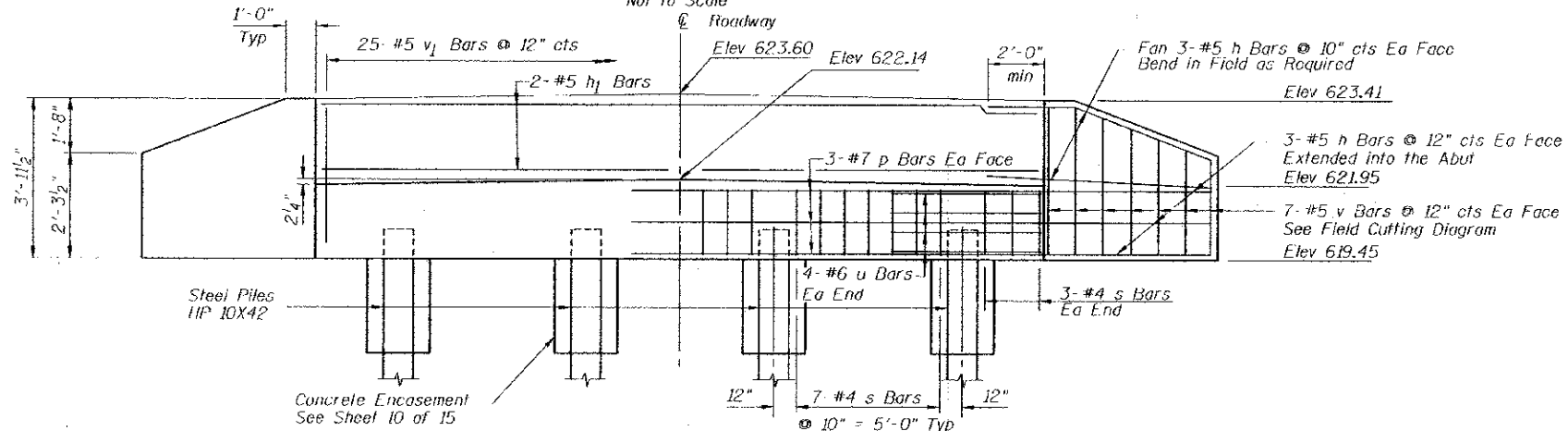
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	7
CONTRACT NO. 95655				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

**THE UPCHURCH GROUP, INC.**



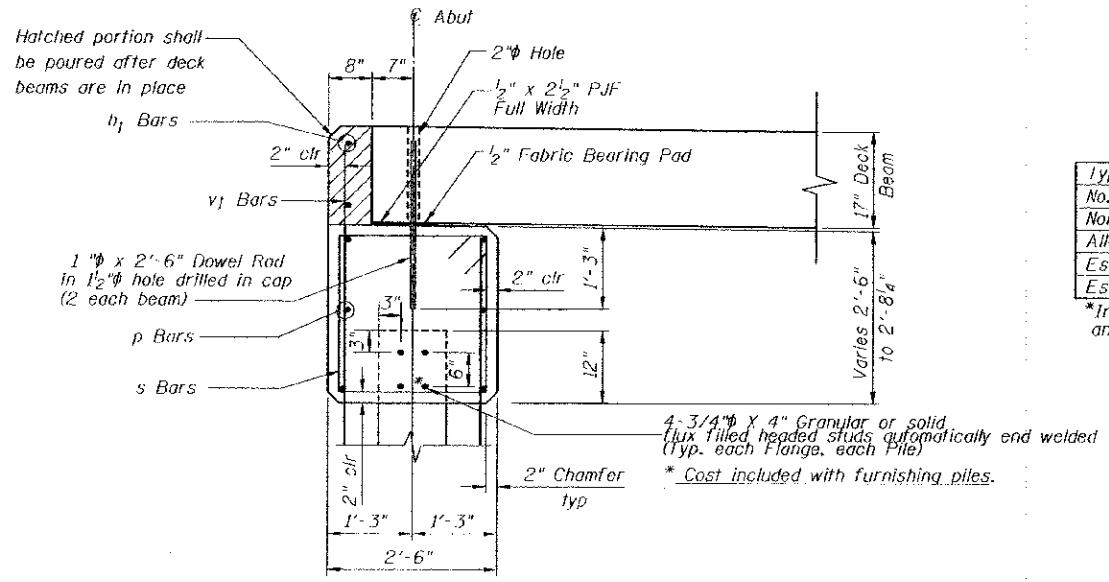
**PLAN**

Not to Scale



**ELEVATION**

(East and West Abutments Similar)



**SECTION THRU ABUTMENT**

Not to Scale

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.  
 All horizontal dimensions are at right angles to beam ends.  
 Hatched area to be poured after beams are in place.  
 See sheet 6 of 15 for bearing pad details.

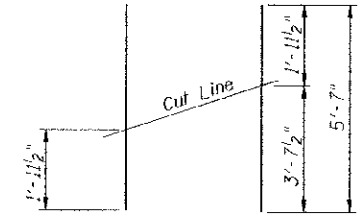
**PILE DATA**

Type: Steel Pile HP 10X42
No. Required: 8*
Nominal Required Bearing: 300 kips
Allowable Resistance Available: 100 kips
Est. Length (E. Abut.): 23 Ft.
Est. Length (W. Abut.): 21 Ft.

\*Includes one Test Pile at East Abutment and one Test Pile at West Abutment

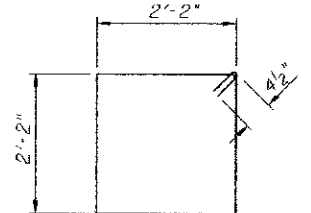
**BILL OF MATERIAL**

BOTH ABUTMENTS AND FOUR WINGS				
BAR	SIZE	NO. REQ'D.	LENGTH	SHAPE
h	#5	48	8'-4"	—
h <sub>1</sub>	#5	4	24'-8"	—
p	#7	12	24'-8"	—
s	#4	54	9'-5"	□
u	#6	16	12'-1"	—
v	#5	28	5'-7"	—
v <sub>1</sub>	#5	50	3'-6"	—
Structure Excavation			Cu. Yd.	58
Concrete Structures			Cu. Yd.	16.7
Reinforcement Bars			Pound	2100
Furnishing Steel Piles HP 10X42			Foot	132
Driving Piles			Foot	132
Test Pile Steel HP 10X42			Each	2
Concrete Encasement			Cu. Yd.	2.8

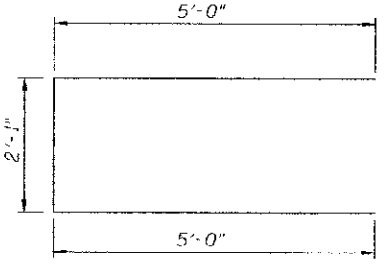


**FIELD CUTTING DIAGRAM**

Order v bars full length. Cut as shown and use remainder of bars in opposite face.



**BAR s**



**BAR u**

**ABUTMENT DETAILS**

STRUCTURE NO. 087-3565

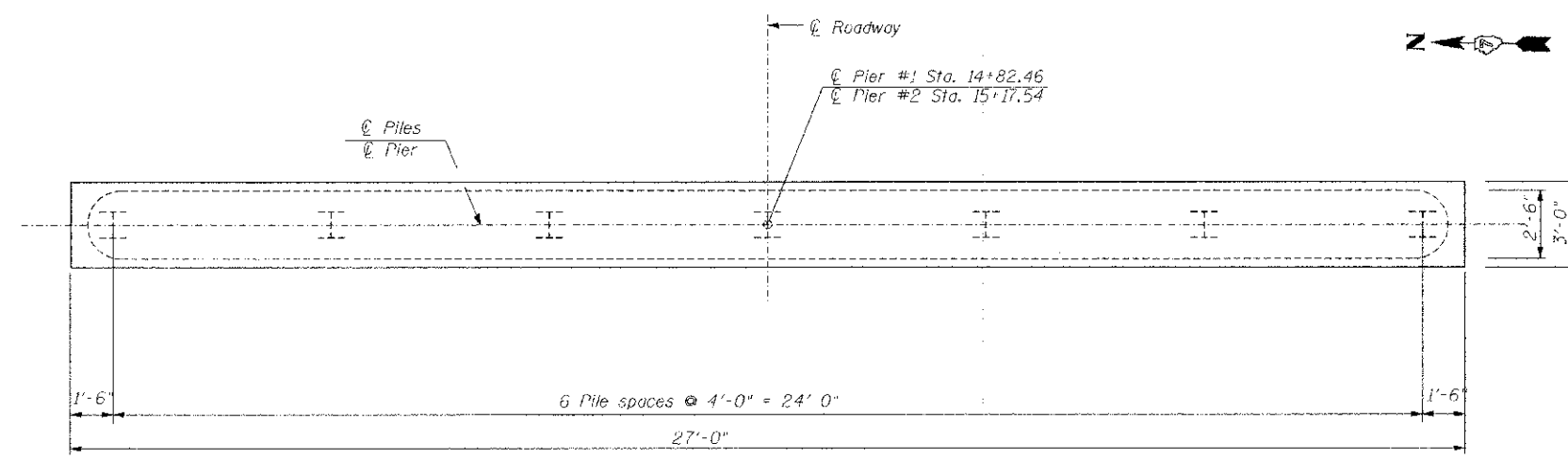
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	8

CONTRACT NO. 95655

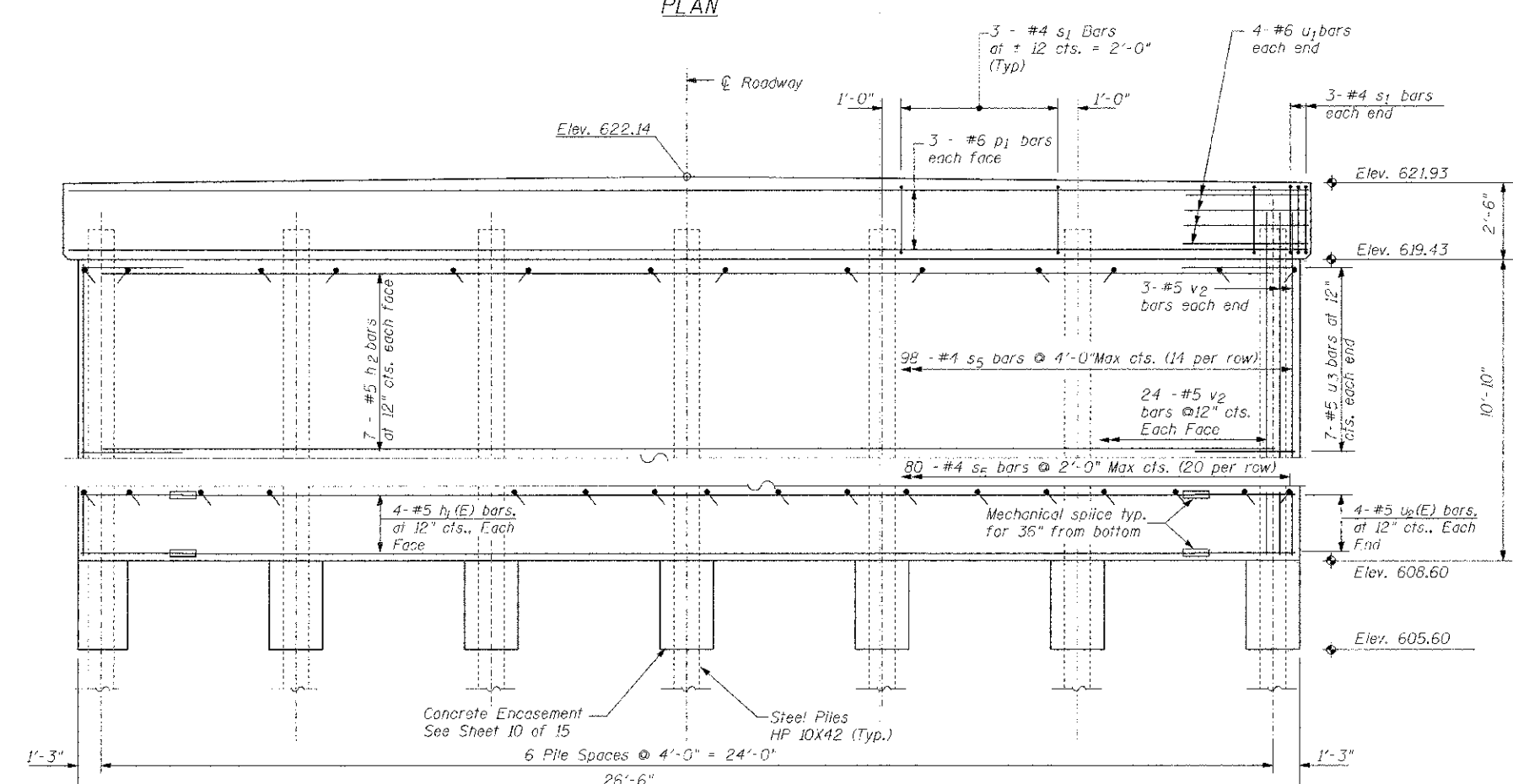
THE UPCHURCH GROUP, INC.

FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT
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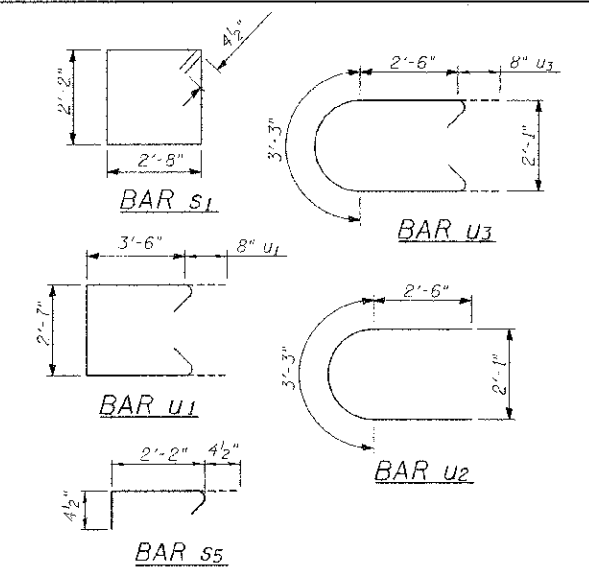




PLAN

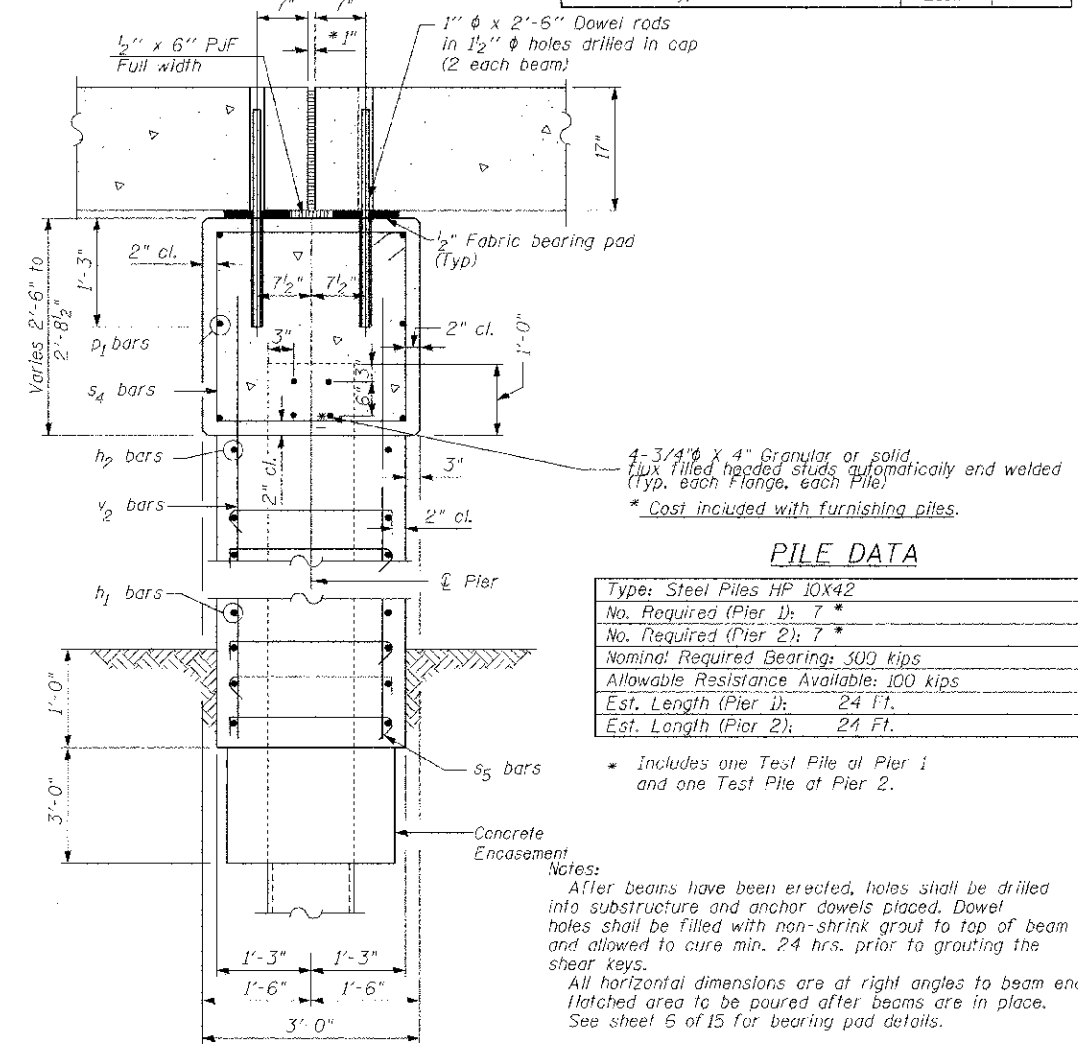


ELEVATION  
(Looking East)



BILL OF MATERIAL

BOTH PIERS				
Bar	No.	Size	Length	Shape
h <sub>1</sub>	16	#5	19'-2"	—
h <sub>2</sub>	28	#5	23'-8"	—
p <sub>1</sub>	12	#6	24'-0"	—
s <sub>1</sub>	48	#4	10'-5"	□
s <sub>2</sub>	356	#4	2'-11"	□
u <sub>1</sub>	16	#6	10'-11"	□
u <sub>2</sub>	16	#5	8'-3"	□
u <sub>3</sub>	28	#5	9'-7"	□
v <sub>2</sub>	108	#5	12'-0"	□
Structure Excavation		Cu.Yd.	14	
Cofferdam Excavation		Cu.Yd.	59	
Concrete Structures		Cu.Yd.	67.7	
Concrete Encasement		Cu.Yd.	4.9	
Reinforcement Bars		Lbs.	4507	
Mechanical Splicers		Each	32	
Furnishing Steel Piles HP 10X42		Ft.	288	
Driving Piles		Ft.	288	
Test Pile Steel HP 10X42		Each	2	
Cofferdam (Type 2) (Location-1)		Each	1	
Cofferdam (Type 2) (Location-2)		Each	1	



SECTION THRU PIER

\* 1" J.I. shall be filled with non-shrink grout. 1" dimension may vary to accommodate tolerance in beam lengths.

PILE DATA

Type: Steel Piles HP 10X42
No. Required (Pier 1): 7 *
No. Required (Pier 2): 7 *
Nominal Required Bearing: 500 kips
Allowable Resistance Available: 100 kips
Est. Length (Pier 1): 24 Ft.
Est. Length (Pier 2): 24 Ft.

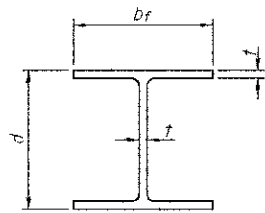
\* Includes one Test Pile at Pier 1 and one Test Pile at Pier 2.

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.  
All horizontal dimensions are at right angles to beam ends. Hatched area to be poured after beams are in place. See sheet 5 of 15 for bearing pad details.

PIER DETAILS

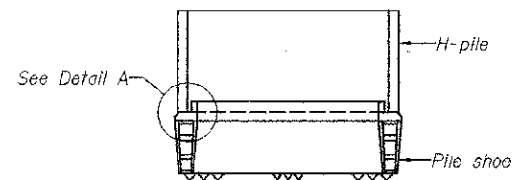
STRUCTURE NO. 087-3565

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	9
CONTRACT NO. 95655				
THE UPCHURCH GROUP, INC.		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT

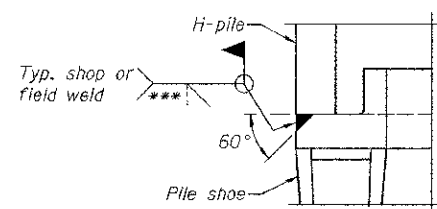


**STEEL PILE TABLE**

Designation	Depth d	Flange width b <sub>f</sub>	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/8"	30"
x102	14"	14 3/4"	1 1/8"	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 1/8"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	3/8"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

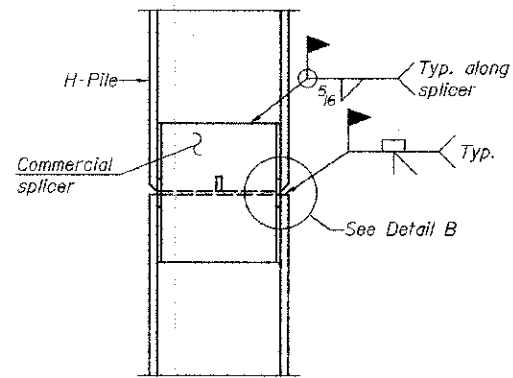


**ELEVATION**

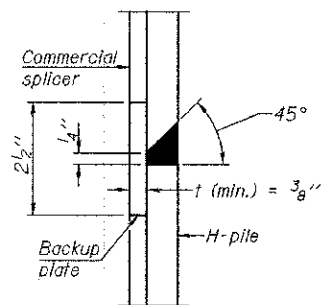


**DETAIL A**

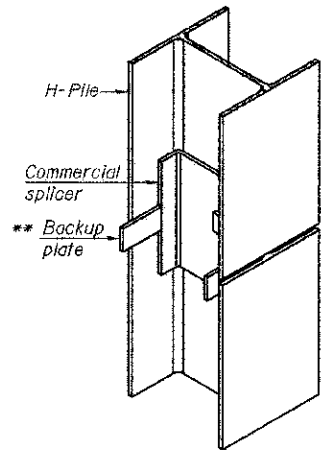
**H-PILE SHOE ATTACHMENT**



**ELEVATION**

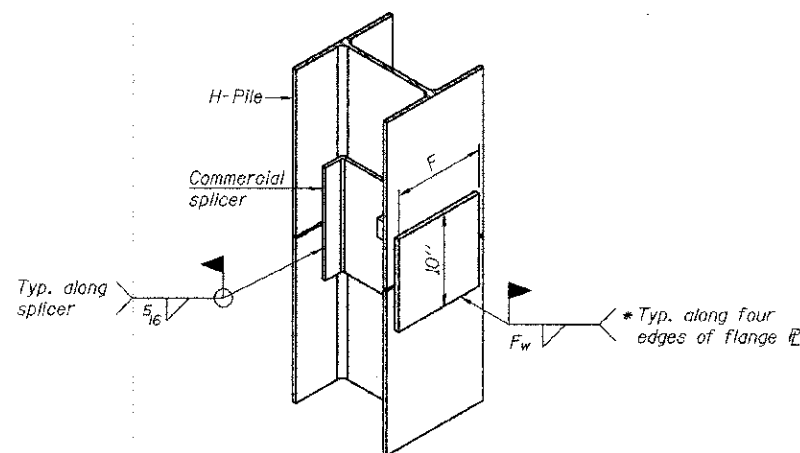


**DETAIL "B"**



**ISOMETRIC VIEW**

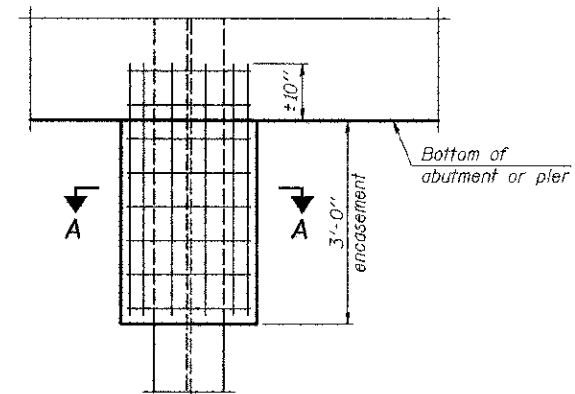
**WELDED COMMERCIAL SPLICE**



**ISOMETRIC VIEW**

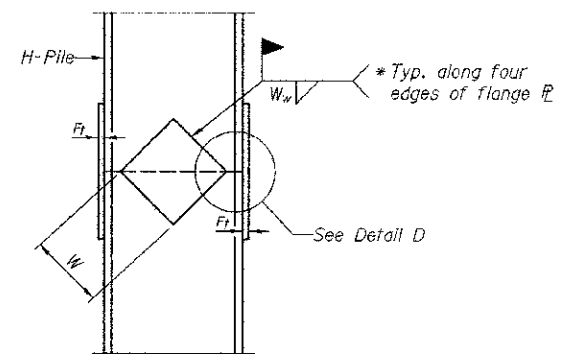
**WELDED COMMERCIAL SPLICE ALTERNATE**

- \* 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.).

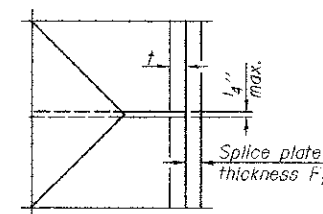


**ELEVATION**

**PILE ENCASEMENT**

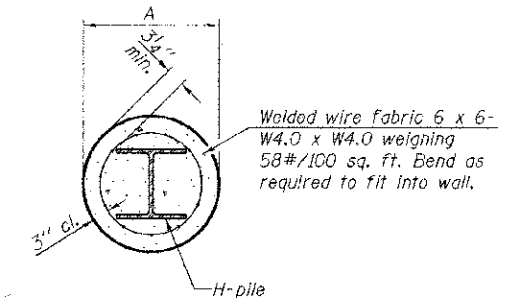


**ELEVATION**



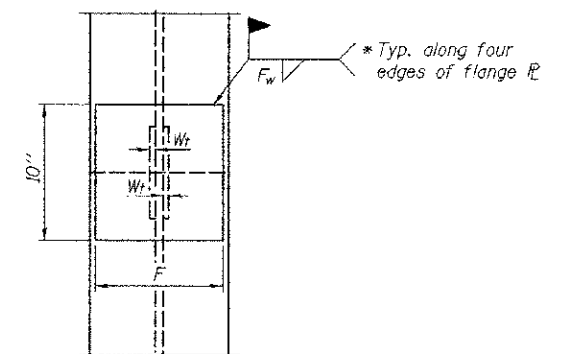
**DETAIL D**

**WELDED PLATE FIELD SPLICE**



**SECTION A-A**

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



**END VIEW**

Designation	F	F <sub>t</sub>	F <sub>w</sub>	W	W <sub>t</sub>	W <sub>w</sub>
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

**HP PILE DETAILS  
STRUCTURE NO.**

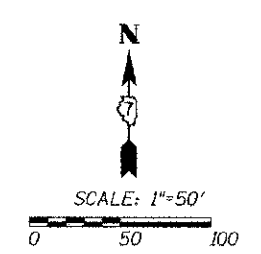
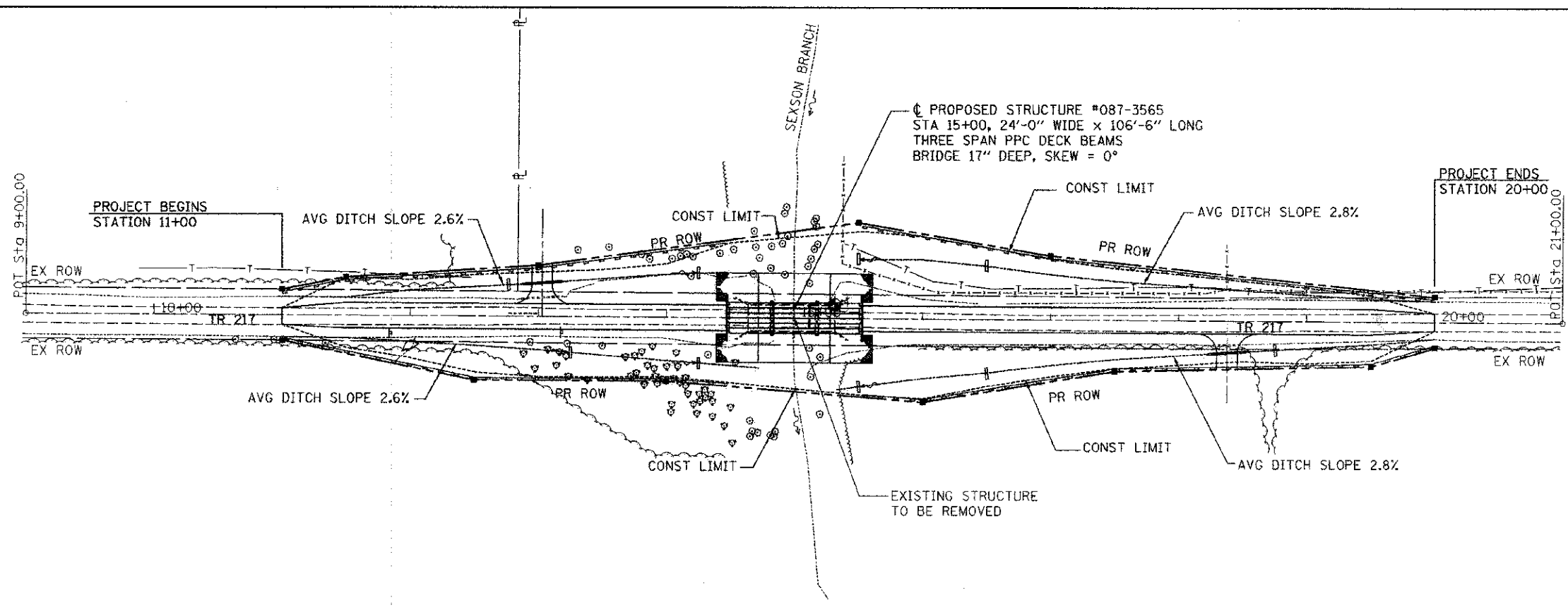
Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	10
CONTRACT NO. 95655				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

**THE UPCHURCH GROUP, INC.**

F-HP

11-1-09



**GENERAL NOTES:**

1. SEE STANDARD 280001.
2. SEEDING CL.2 WITH FERTILIZER AND MULCH WITHIN CONSTRUCTION LIMITS AND ALL DISTURBED AREAS.
3. PERIMETER EROSION BARRIER NEEDS TO BE ERECTED AS DIRECTED BY THE ENGINEER BEFORE ANY WORK BEGINS SEE STD. 280001.
4. MAINTENANCE OF ALL EROSION CONTROL DEVICES WILL BE PERFORMED IMMEDIATELY AFTER A RAIN EVENT OR ANY DISTURBANCE OF THE CONTROL.
5. REMOVAL AND PROPER CLEAN UP OF ALL TEMPORARY EROSION DEVICES WILL BE REQUIRED AFTER PERMANENT EROSION CONTROL IS IN PLACE AND FUNCTIONING.

TOTAL AREA OF CONSTRUCTION : 65,340 S.F.

ESTIMATED RUNOFF COEFFICIENT AFTER CONSTRUCTION:  
 COURSE TEXTURED GRASS  
 SOIL GREATER THAN 40% CLAY  
 MODERATE SLOPE  
 C=0.25

**LEGEND**

	PERIMETER EROSION BARRIER
	DITCH CHECK

**TEMPORARY DITCH CHECK SCHEDULE**

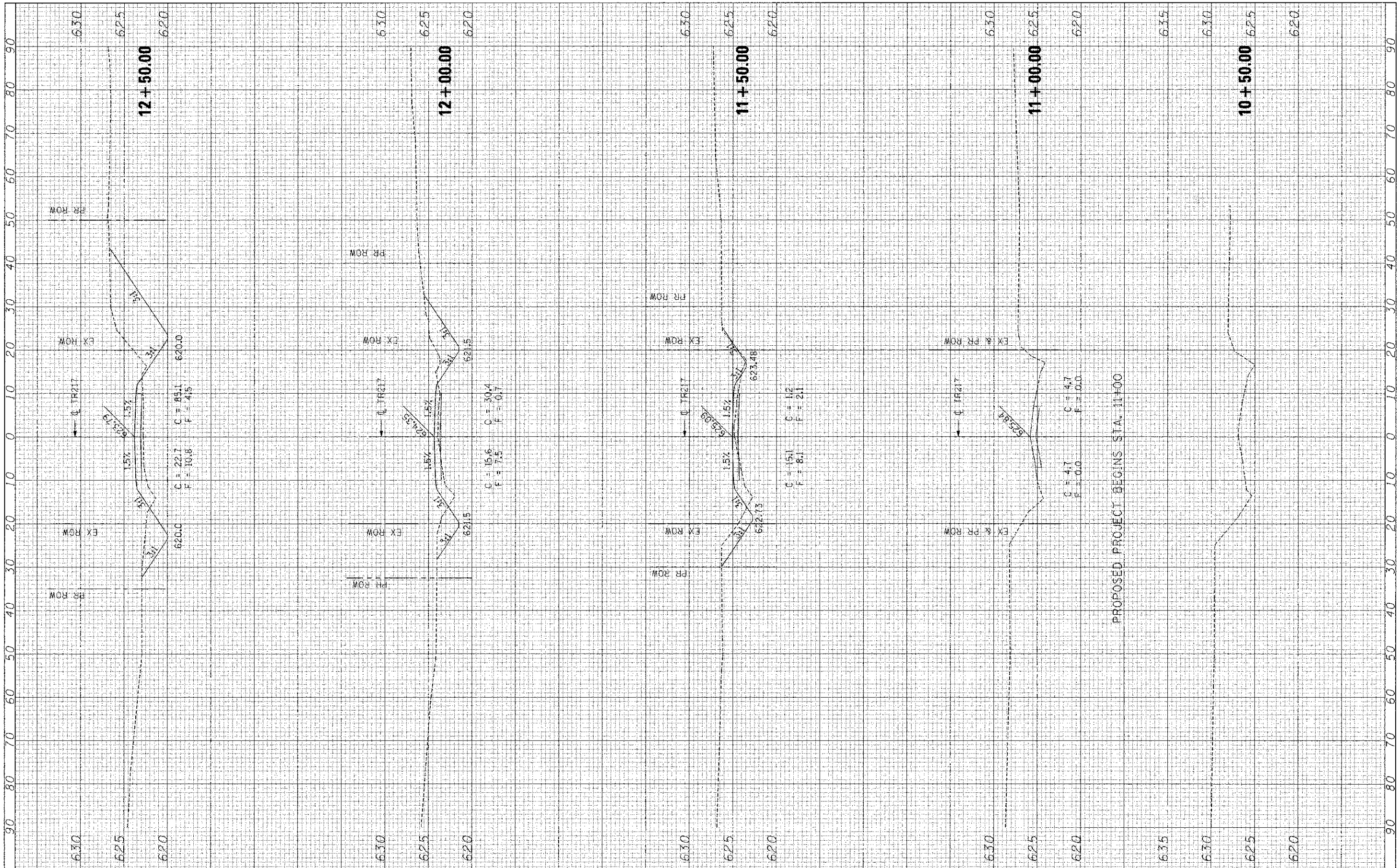
STATION	LT	RT	LENGTH
12+75	25'		8'
13+25		28'	8'
13+75		23'	8'
14+25	35'	36'	8'
15+50	45'	53'	8'
16+50	42'	42'	8'

**BILL OF MATERIAL**

ITEM	UNIT	QTY
TEMPORARY EROSION CONTROL SEEDING	POUND	150
TEMPORARY DITCH CHECKS	FOOT	72
PERIMETER EROSION BARRIER	FOOT	1598

FINAL SURVEY	PLANNED	DATE
NOTED	TEMPLATE	
NO.	AREAS CHECKED	

ORIGINAL SURVEY	PLANNED	DATE
NOTED	TEMPLATE	
NO.	AREAS CHECKED	



FILE NAME : ...\\0873605 P.op.X\Section.dgn  
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 DRAWN -  
 CHECKED -  
 DATE -

DESIGNED -	REVISED -
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DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

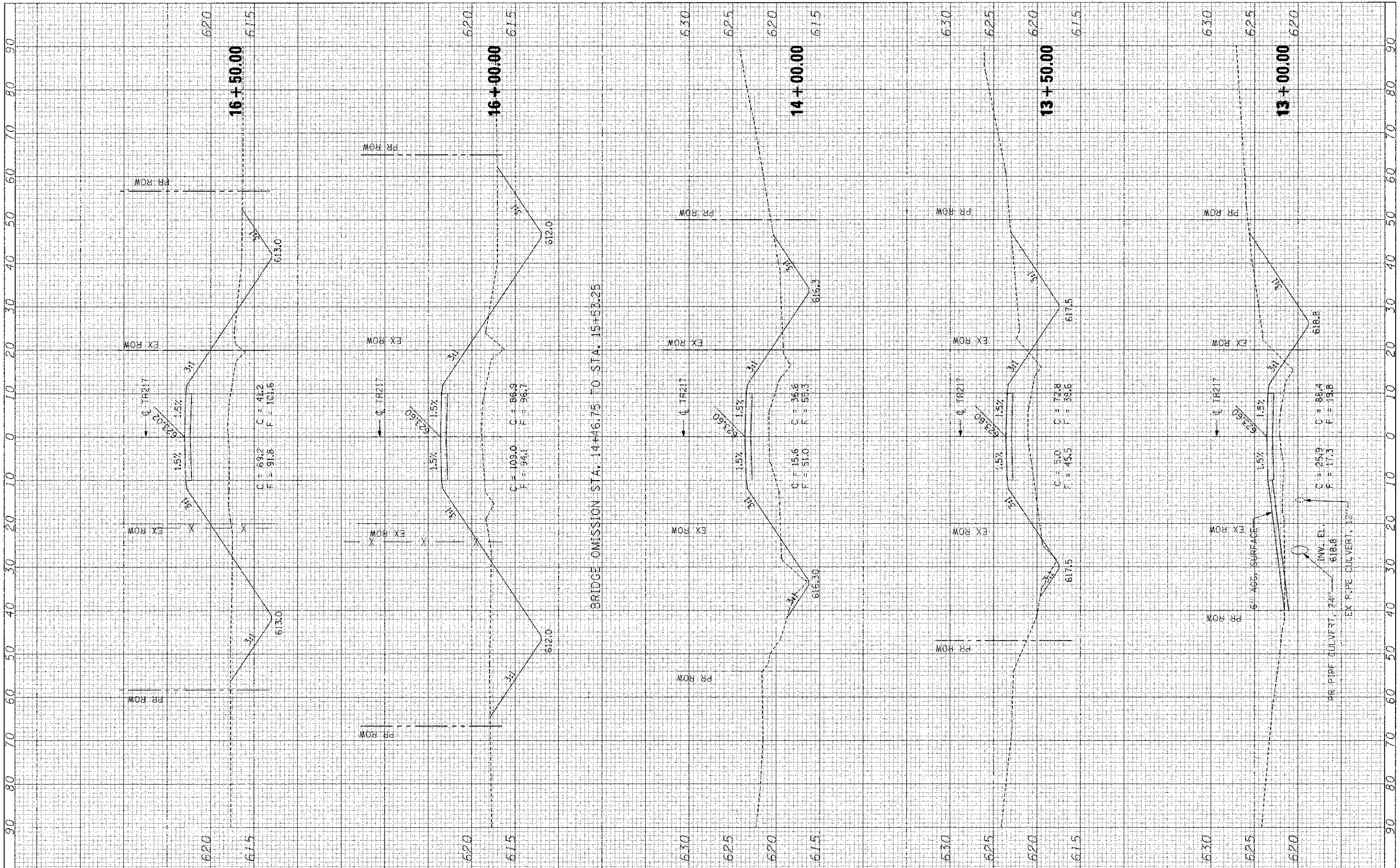
**CROSS SECTIONS  
 TR217 OVER SEXSON BRANCH**

SCALE: SHEET NO. OF SHEETS STA. 10+50.00 TO STA. 12+50.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	12
CONTRACT NO. 95655				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

FINISH SURVEY	SURVEY	BY	DATE
NO.	NO.		
PLANNED	PLANNED		
PLANNED	PLANNED		
PLANNED	PLANNED		

ORIGINAL SURVEY	SURVEY	BY	DATE
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PLANNED	PLANNED		
PLANNED	PLANNED		
PLANNED	PLANNED		



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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

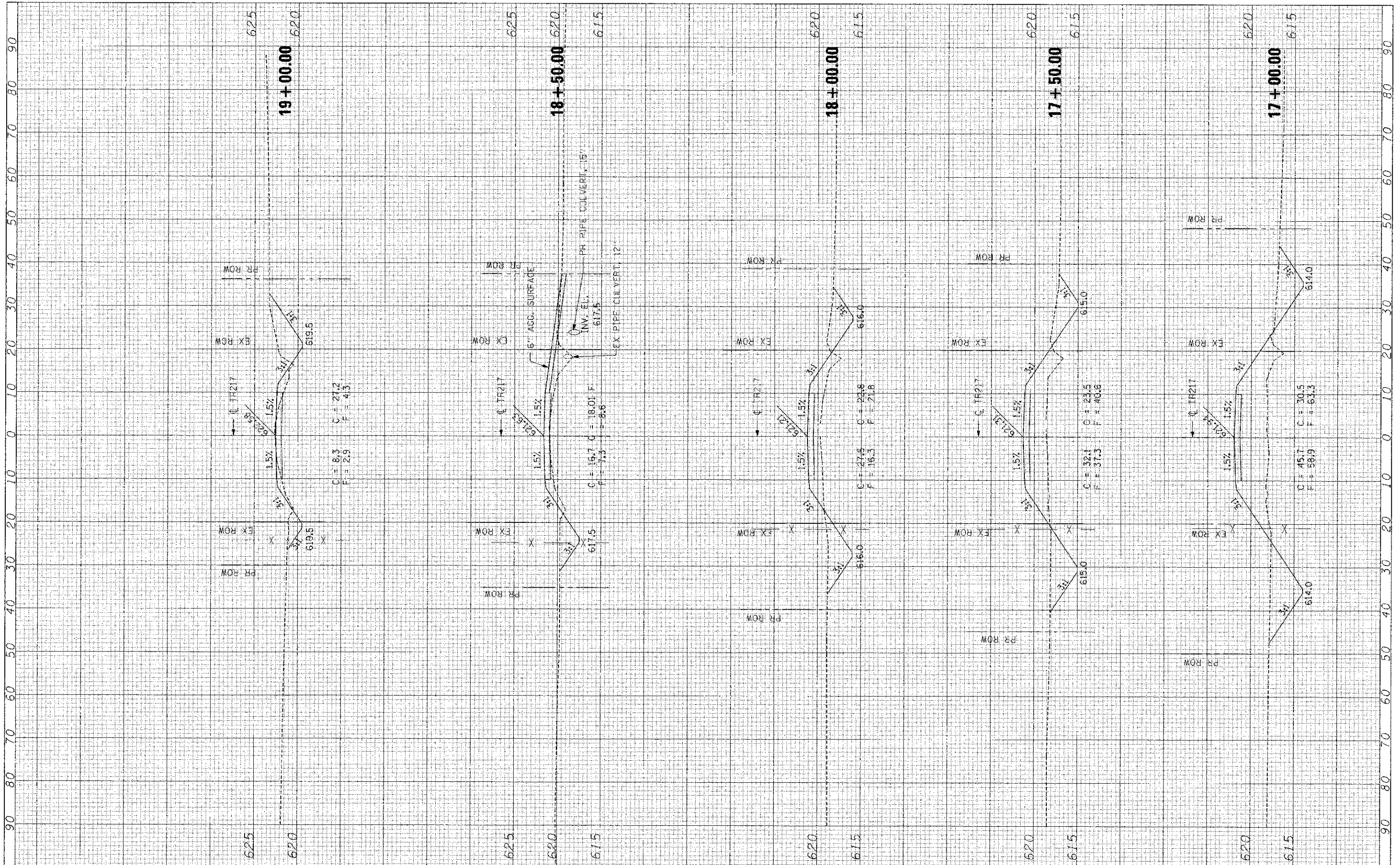
**CROSS SECTIONS  
TR217 OVER SEXSON BRANCH**

SCALE: SHEET NO. OF SHEETS STA. 13+00.00 TO STA. 15+50.00

RTF.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-3R	SHELBY	15	13
FED. ROAD DIST. NO. 7 ILL. AID PROJECT			CONTRACT NO. 95655	

FINAL SURVEY NO.	DATE
SURVEYED	BY
NOTED	
AREAS CHECKED	

ORIGINAL SURVEY NO.	DATE
SURVEYED	BY
NOTED	
AREAS CHECKED	



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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

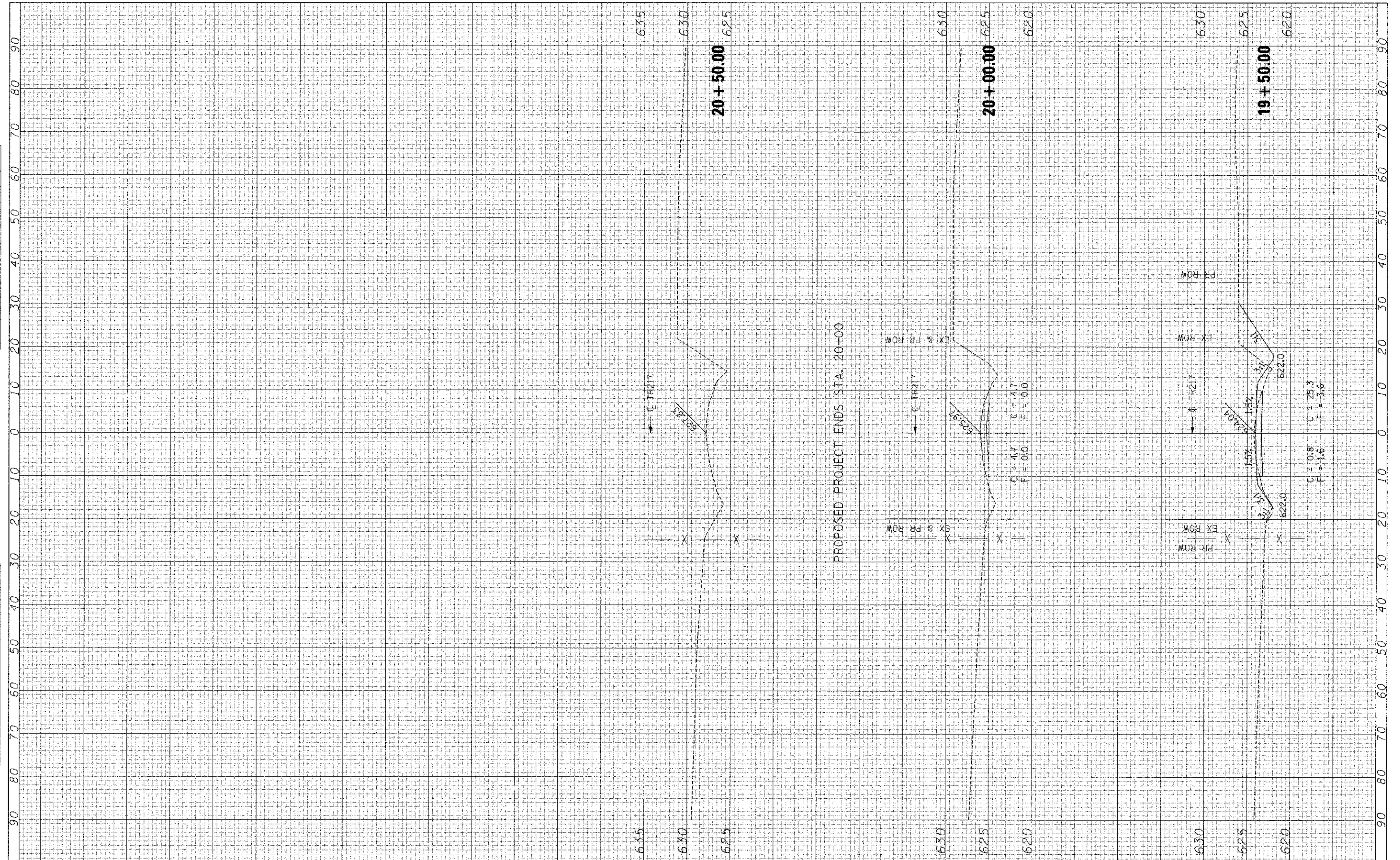
**CROSS SECTIONS  
TR217 OVER SEXSON BRANCH**

SCALE: SHEET NO. OF SHEETS STA. 17+00.00 TO STA. 19+00.00

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	14
CONTRACT NO. 95655			FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT	

DATE	BY	FINISHED	DATE
		SAVED	
		PLOTTED	
		NOTE BOOK	
		AREAS CHECKED	

DATE	BY	ORIGINAL	DATE
		SURVEY	
		PLOTTED	
		NOTE BOOK	
		AREAS CHECKED	



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CHECKED -	REVISED -
DATE -	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 TR217 OVER SEXSON BRANCH**

SCALE: SHEET NO. OF SHEETS STA. 19+50.00 TO STA. 20+50.00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR217	07-01125-00-BR	SHELBY	15	15
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT			CONTRACT NO. 95655	