

04-25-14 LETTING ITEM 088

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	1
FED. ROAD DIST. NO. 7		ILLINOIS	CONTRACT NO. 93612	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**PLANS FOR PROPOSED**  
**SURFACE TRANSPORTATION PROGRAM- BRIDGE**  
**PIKE COUNTY**  
**SECTION 13-00091-00-BR**  
**F.A.S. 597 (CH 4) OVER BULL RUN CREEK**  
**PROJECT NO. BRS-0597(104)**  
**JOB NUMBER C-96-219-13**

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	GENERAL NOTES, TYPICAL SECTIONS, PAVEMENT DESIGN INFORMATION
3.	TIE POINTS, DETAILS
4.	SUMMARY OF QUANTITIES, SCHEDULES OF QUANTITIES
5.	TRAFFIC CONTROL PLAN
6.	EROSION CONTROL PLAN
7.	PLAN AND PROFILE
8.-19.	STRUCTURE PLANS
20.-28.	CROSS SECTIONS

REQUIRED HIGHWAY STANDARDS

- 000001-06
- 280001-07
- 515001-03
- 630301-06
- 631032-08
- 635006-03
- 635011-02
- 701901-03
- 780001-04
- BLR 21-9



UTILITY COMPANIES

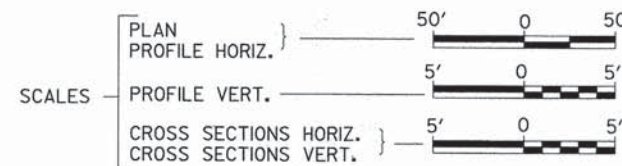
ILLINOIS RURAL ELECTRIC  
WINCHESTER, ILLINOIS

PIKE COUNTY WATER DISTRICT  
PITTSFIELD, ILLINOIS

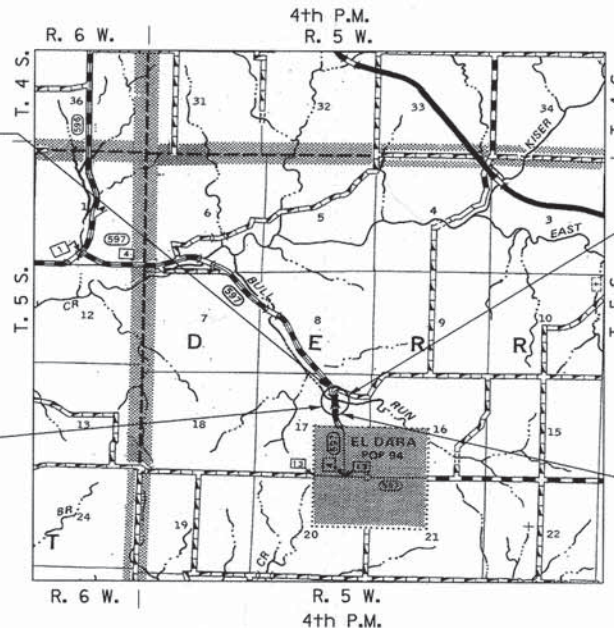
FRONTIER COMMUNICATIONS  
JACKSONVILLE, ILLINOIS

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

**CONTRACT NO. 93612**

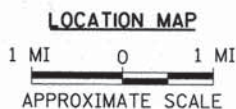


SECTION 13-00091-00-BR  
ENDS  
STATION 22+75.00



EXISTING STRUCTURE 075-3004  
THREE SPAN REINFORCED CONCRETE SLAB  
SUPERSTRUCTURE WITH CONCRETE RAIL ON  
EXPOSED PILE BENT PIERS AND CONCRETE PILE BENT  
ABUTMENTS, 115'-0" BK. TO BK., 28'-4" O. TO O.,  
SKEW 45° LT AH (TO BE REMOVED)

SECTION 13-00091-00-BR  
BEGINS  
STATION 17+75.00



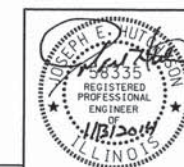
NET LENGTH OF PROJECT = 500.00 FEET = 0.095 MILES - CH 4 (MAINLINE)  
NET LENGTH OF PROJECT = 282.72 FEET = 0.054 MILES - TR 255 (SIDEROAD)

DESIGN CLASSIFICATION: MAJOR COLLECTOR (NON-URBAN) - CH 4  
DESIGN CLASSIFICATION: LOCAL ROAD (NON-URBAN) - TR 255  
DESIGN ADT = 375 (I4) - CH 4  
DESIGN ADT = 25 (I4) - TR 255  
DESIGN SPEED = 40 MPH - CH 4  
DESIGN SPEED = 30 MPH - TR 255

**Hutchison Engineering, Inc.**  
JACKSONVILLE-SHOREWOOD-PEORIA

2013

JOB#3303



Lic Exp 11/30/2014  
SIGNATURE

ENGINEER'S SEAL



APPROVED	<u>1-13</u>	2014
	<i>Ch. L. M.</i>	PIKE COUNTY ENGINEER
PASSED	<u>February 10,</u>	2014
	<i>Terrence H. Fountain</i>	DISTRICT SIX ENGINEER OF LOCAL ROADS & STREETS
PASSED	<u>February 10,</u>	2014
	<i>Tom Anderson</i>	DISTRICT SIX ENGINEER OF CONSTRUCTION
Released For		
Bid Based on	<u>February 10,</u>	2014
Limited Review		
	<i>Roger L. Driskell</i>	DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER
		STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

3303E001

**STRUCTURAL DESIGN INFORMATION  
COUNTY HIGHWAY 4**

ROAD CLASSIFICATION: CLASS IV 80,000 LB./20 YEAR DESIGN  
STRUCTURAL DESIGN TRAFFIC:  
PV = 332 SU = 34 MU = 11  
PERCENT OF STRUCTURAL DESIGN TRAFFIC IN DESIGN LANE:  
P = 88% S = 9% M = 3%  
DESIGN  $E_{rt}$ : 3 ksi  
ASPHALT PAVEMENT THICKNESS: 3 3/4"  
AGGREGATE BASE COURSE, TYPE A: 12"

**GENERAL NOTES**

THE REMOVAL OF EXISTING HOT-MIX ASPHALT SURFACE AND GRAVEL OR CRUSHED STONE BASE COURSE WHICH MAY BE NECESSARY FOR THE CONSTRUCTION OF THE PROJECT SHALL BE REMOVED AS EARTH EXCAVATION AND NO COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.

ALL WASTE OR UNDESIRABLE MATERIAL AS IDENTIFIED BY THE ENGINEER SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE RIGHT OF WAY AT THE CONTRACTOR'S EXPENSE.

ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENTS ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.

THE PROFILE GRADE ELEVATIONS SHOWN ON THE PLAN AND PROFILE SHEETS AND IN THE STATION CROSS SECTIONS ARE TO THE TOP OF THE FINISHED SURFACE.

ANY REFERENCE TO STANDARDS THROUGHOUT THE PLANS SHALL BE INTERPRETED TO BE THE LATEST STANDARDS OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION

THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE COUNTY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING AND TRENCHING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

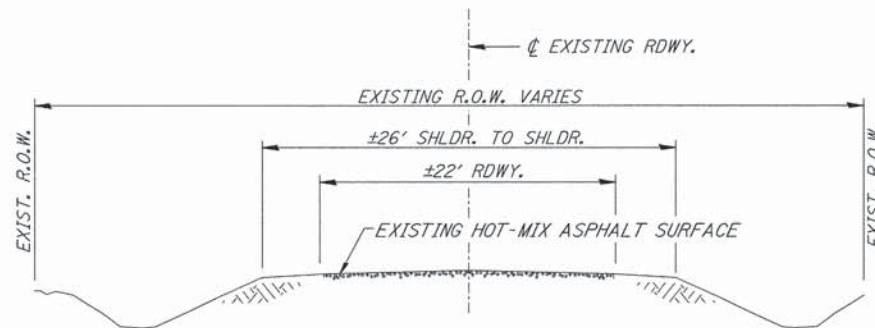
WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT, HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.

ALL ELEVATIONS SHOWN REFER TO U.S.G.S. MEAN SEA LEVEL DATUM.

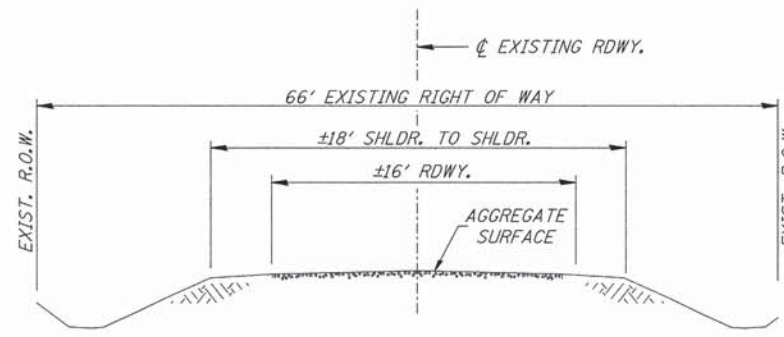
**HOT-MIX ASPHALT MIXTURE REQUIREMENTS**

MIXTURE USE	BINDER	SURFACE (MIX "C")
AC/PG	PG 64-22	PG 64-22
DESIGN AIR VOIDS	4% @ N50	4% @ N50
MIX COMPOSITION	IL-19.0	IL-9.5

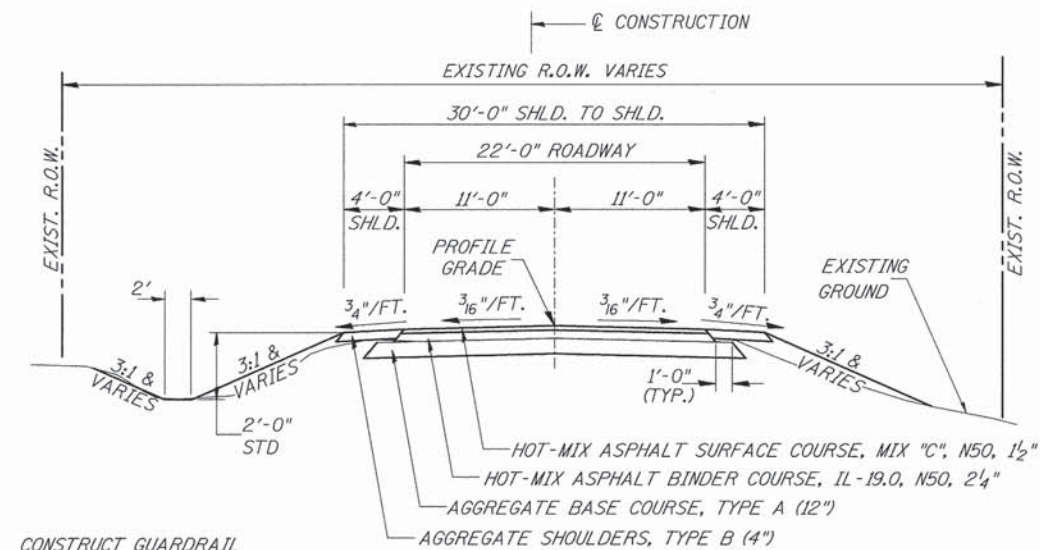
If RAP option is selected, the asphalt cement grade may need to be adjusted. This will be determined by the Engineer.



**EXISTING TYPICAL SECTION (CH 4)**



**EXISTING TYPICAL SECTION (TR 255)**

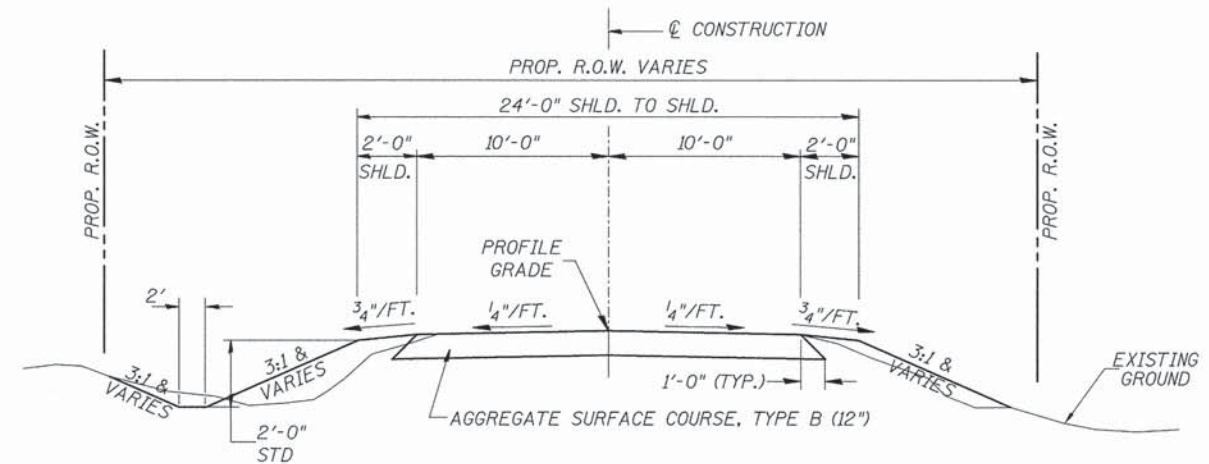


CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

**PROPOSED TYPICAL SECTION (CH 4)**

STA. 17+75.00 TO STA. 19+84.00  
STA. 21+14.03 TO STA. 22+75.00  
EXCEPT TRANSITIONS

BRIDGE OMISSION  
STA. 19+84.00 TO STA. 21+14.03



CONSTRUCT GUARDRAIL SHOULDER WIDENING IN ACCORDANCE WITH STD 630301

**PROPOSED TYPICAL SECTION (TR 255)**

STA. 40+37.93 TO STA. 43+00.00\*

\*THE PAVEMENT STRUCTURE OF T.R. 255 FROM STA. 40+17.28 TO STA. 40+37.93 SHALL MATCH THE PAVEMENT STRUCTURE OF COUNTY HIGHWAY 4.

FILE NAME =  
W:\Bridge\3303-Pike\3303t001.dgn

USER NAME = othomas  
PLOT SCALE = 1:8000 1/4" = 100'  
PLOT DATE = 1/10/2014

DESIGNED -  
DRAWN -  
CHECKED -  
DATE -

REVISED -  
REVISED -  
REVISED -  
REVISED -

**PIKE COUNTY  
COUNTY HIGHWAY 4 OVER  
BULL RUN CREEK**

**GENERAL NOTES, TYPICAL SECTIONS,  
PAVEMENT DESIGN INFORMATION**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. 17+75.00 TO STA. 22+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	2
CONTRACT NO. 93612				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT NO. BRS-0597(04)				



**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	630
20300100	CHANNEL EXCAVATION	CU YD	225
① 20400800	FURNISHED EXCAVATION	CU YD	315
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	500
28000305	TEMPORARY DITCH CHECKS	FOOT	108
28000400	PERIMETER EROSION BARRIER	FOOT	1,025
28000500	INLET AND PIPE PROTECTION	EACH	1
28200200	FILTER FABRIC	SQ YD	130
28300400	AGGREGATE DITCH	TON	67
35100100	AGGREGATE BASE COURSE, TYPE A	TON	781
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	495
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	648
① 40603080	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	142
① 40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	159
48101200	AGGREGATE SHOULDERS, TYPE B	TON	81
① 50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	24
50200100	STRUCTURE EXCAVATION	CU YD	105
50200300	COFFERDAM EXCAVATION	CU YD	90
① 50201101	COFFERDAM (TYPE 1) (LOCATION-1)	EACH	1
① 50201102	COFFERDAM (TYPE 1) (LOCATION-2)	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	169.1
50300280	CONCRETE ENCASEMENT	CU YD	4.8
① 50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SO FT	4,197
① 50800105	REINFORCEMENT BARS	POUND	15,470
51201400	FURNISHING STEEL PILES HP10X42	FOOT	800
51202305	DRIVING PILES	FOOT	800
51203400	TEST PILE STEEL HP10X42	EACH	4
51500100	NAME PLATES	EACH	1
① 54200229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	32
① 59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	31.8
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	3
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	3
① 63200310	GUARDRAIL REMOVAL	FOOT	304
67100100	MOBILIZATION	L SUM	1
* 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1,000
* ① 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
* ① 78202000	TERMINAL MARKER - POST MOUNTED	EACH	1
* ① 78203000	TERMINAL MARKER POSTS	EACH	1
① X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.7
① X2810208	STONE RIPRAP, CLASS A4 (SPECIAL)	TON	505
① X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1
* ① XX006199	STEEL BRIDGE RAIL, TYPE SM (SPECIAL)	FOOT	260

① SEE SPECIAL PROVISIONS  
\* SPECIALTY ITEMS

CONSTRUCTION CODE TYPE: 0011  
BRIDGE CODE TYPE: X080

**TEMPORARY DITCH CHECKS**

STATION	SIDE	FOOT
18+00	RIGHT	12
19+00	RIGHT	12
19+45	LEFT	12
19+50	RIGHT	12
19+65	LEFT	12
19+85	LEFT	12
20+05	LEFT	12
20+25	LEFT	12
20+43	LEFT	12
TOTAL		108

**AGGREGATE DITCH\***

STATION TO STATION	SIDE	WIDTH	TON	FILTER FABRIC (SQ YD)
17+75 - 18+29	RIGHT	6'	19	37
18+60 - 18+75	RIGHT	6'	5	10
19+25 - 20+43	LEFT	6'	43	83
TOTAL			67	130

\* Aggregate Ditch shall conform to material type B-3 of the Standard Specifications

**PAINT PAVEMENT MARKING - LINE 4"**

STATION TO STATION	SIDE	DESCRIPTION	FOOT
17+75 - 22+75	©	DOUBLE YELLOW	1,000
TOTAL			1,000

**TERMINAL MARKER POSTS**

© STATION	OFFSET	SIDE	EACH
20+97	17'	RIGHT	1
TOTAL			1

**EARTHWORK SUMMARY**

STATION TO STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	COFFERDAM EXCAVATION	FILL	WASTE (SHORTAGE)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
COUNTY HIGHWAY 4						
RDWY 17+75.00 - 19+84.00	299				111	113
RDWY 21+14.03 - 22+75.00	200				213	(63)
CHANNEL		225				
STRUCTURE			105			
COFFERDAM				90		
TOWNSHIP ROAD 255						
RDWY 40+17.28 - 43+00.00	129				462	(365)
TOTAL	628	225	105	90	786	(315)
USE	630	225	105	90	-	(315)

(© 25% SHRINKAGE)

**INLET & PIPE PROTECTION**

STATION	SIDE	EACH
18+29	RIGHT	1
TOTAL		1

**PIPE CULVERTS, CLASS D, TYPE 1 24"**

STATION	SIDE	FOOT
18+43	RIGHT	32
TOTAL		32

**GUARDRAIL REMOVAL**

STATION TO STATION	SIDE	FOOT
19+07 - 19+82	RIGHT	76
19+30 - 20+06	LEFT	76
20+94 - 20+99	RIGHT	76
21+23 - 21+99	LEFT	76
TOTAL		304

**PIPE CULVERT REMOVAL**

STATION	SIDE	SIZE	FOOT
18+43	RT	24"	24
TOTAL			24

**TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT**

SIDE	STATION TO STATION	EACH
COUNTY HIGHWAY 4		
RIGHT	18+76.43 - 19+25.65	1
LEFT	21+75.94 - 22+26.59	1
TOWNSHIP ROAD 255		
RIGHT	40+72.21 - 41+21.41	1
TOTAL		3

**TRAFFIC BARRIER TERMINAL, TYPE 6A**

SIDE	STATION TO STATION	EACH
COUNTY HIGHWAY 4		
RIGHT	19+25.65 - 19+68.71	1
LEFT	21+31.62 - 21+75.94	1
TOWNSHIP ROAD 255		
RIGHT	40+44.34 - 40+72.21	1
TOTAL		3

**PERIMETER EROSION BARRIER**

STATION TO STATION	SIDE	FOOT
17+75 - 19+25	LEFT	150
18+29 - 18+60	RIGHT	35
19+50 - 19+66	RIGHT	35
20+93 (C.H. 4) RT - 43+00 (T.R. 255) RT		265
43+00 (T.R. 255) LT - 22+75 (C.H. 4) RT		385
21+35 - 22+75	LEFT	155
TOTAL		1,025

**AGGREGATE SHOULDERS, TYPE B**

STATION TO STATION	SIDE	WIDTH	LENGTH	TON
COUNTY HIGHWAY 4				
17+75.00 - 18+25.00	LEFT	3.03' AVG.	50.00'	4
17+75.00 - 18+22.90	RIGHT	3.14' AVG.	47.90'	4
18+25.00 - 19+96.12	LEFT	4.00'	171.12'	16
18+60.22 - 18+66.43	RIGHT	10.78' AVG.	6.21'	2
18+66.43 - 19+01.43	RIGHT	10.87'	35.00'	9
19+01.43 - 19+02.93	RIGHT	10.75' AVG.	1.50'	1
19+02.93 - 19+50.31	RIGHT	10.62'	47.38'	12
19+50.31 - 19+71.44	RIGHT	8.94' AVG.	21.13'	4
21+29.53 - 21+53.24	LEFT	5.95' AVG.	23.71'	3
21+53.24 - 22+00.09	LEFT	7.75'	46.85'	8
21+92.11 - 22+08.78	RIGHT	2.00' AVG.	16.67'	1
22+08.78 - 22+25.00	RIGHT	4.00'	16.22'	2
22+00.09 - 22+01.59	LEFT	7.87' AVG.	1.50'	1
22+01.59 - 22+36.59	LEFT	8.00'	35.00'	7
22+25.00 - 22+75.00	RIGHT	2.79' AVG.	50.00'	3
22+36.59 - 22+75.00	LEFT	4.50' AVG.	38.41'	4
TOTAL				81

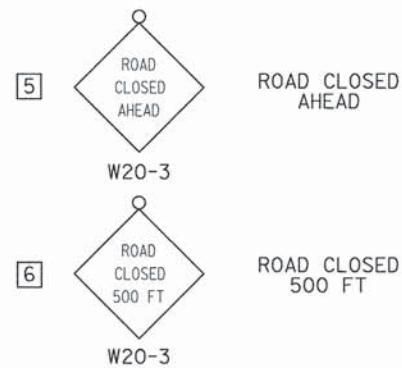
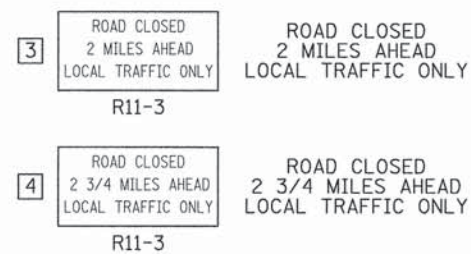
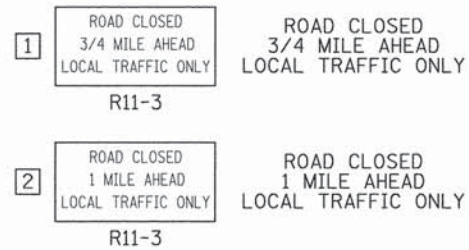
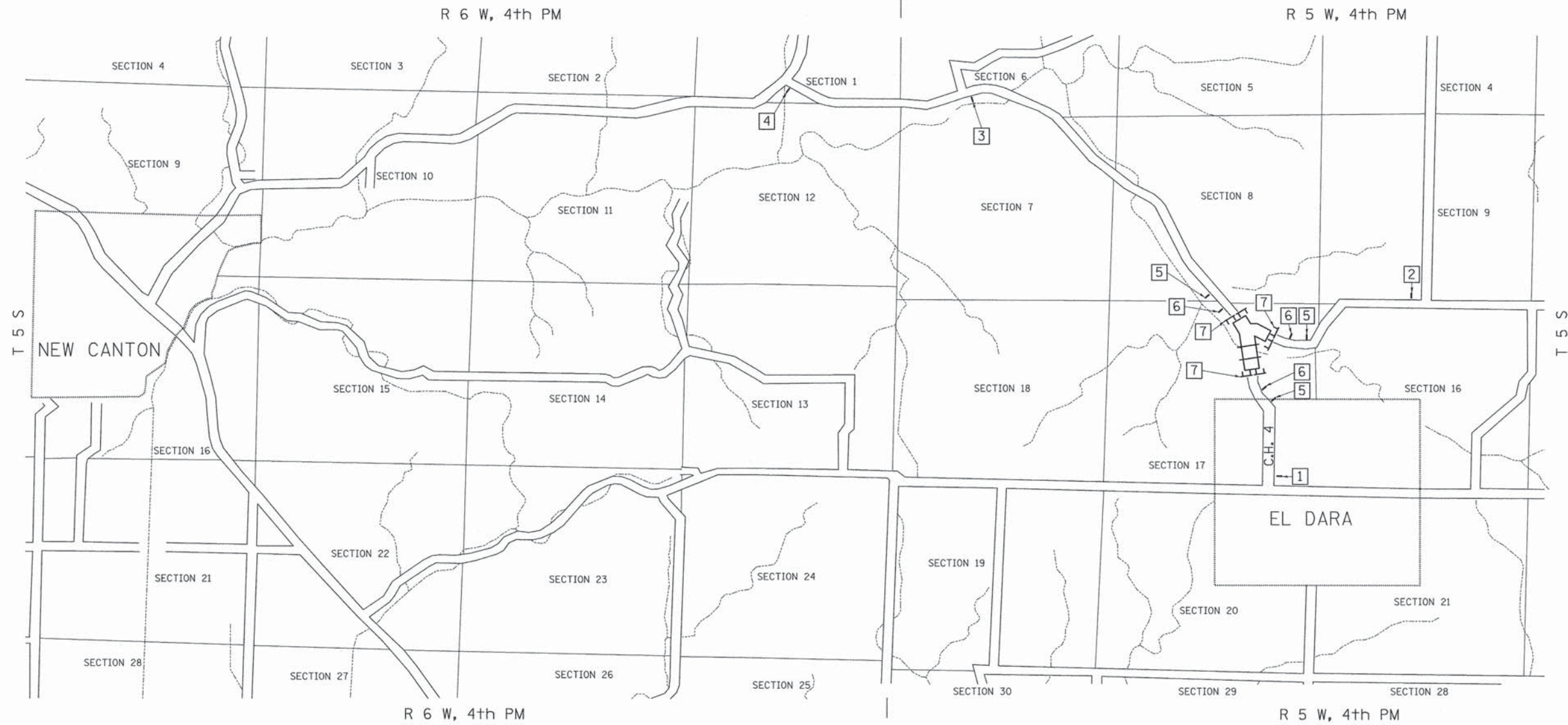
**AGGREGATE SURFACE COURSE, TYPE B**

STATION TO STATION	THICKNESS	WIDTH	LENGTH	TON
TOWNSHIP ROAD 255				
ENTR. - 18+43.00 RT	0.50'	16' & VAR.	33.2'	27
40+37.93 - 41+64.82	1.00'	31.07' AVG.	126.89'	276
41+64.82 - 42+50.00	1.00'	21.00'	85.18'	125
42+50.00 - 43+00.00	1.00'	19.07' AVG.	50.00'	67
TOTAL				495

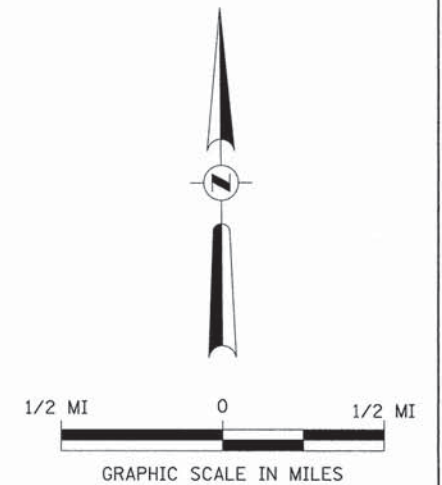
**PAVEMENT SCHEDULE**

STATION TO STATION	WIDTH	LENGTH	PRIME COAT GALLON 0.50 GAL/SQ YD	HOT-MIX ASPHALT SURF CSE TON 112#/SQ YD/IN	HOT-MIX ASPHALT BINDER CSE TON 112#/SQ YD/IN	AGGREGATE BASE COURSE, TYPE A TON
COUNTY HIGHWAY 4						
17+75.00 - 18+25.00	24.62' AVG.	50.00'	68			
18+25.00 - 19+84.00	24.62'	159.00'	217			
21+14.03 - 22+25.00	23.32'	110.97'	144			
22+25.00 - 22+75.00	24.40' AVG.	50.00'	68			
17+75.00 - 18+25.00	22.13' AVG.	50.00'		10		
18+25.00 - 19+84.00	22.13'	159.00'		33		
BRIDGE DECK	33.00'	130.00'	48*		66	
21+14.03 - 22+25.00	22.07'	110.97'		23		
22+25.00 - 22+75.00	21.91' AVG.	50.00'		10		
17+75.00 - 18+25.00	22.44' AVG.	50.00'			16	
18+25.00 - 19+84.00	22.44'	159.00'			50	
21+14.03 - 22+25.00	22.22'	110.97'			35	
22+25.00 - 22+75.00	22.22' AVG.	50.00'			16	
17+75.00 - 18+25.00	25.63' AVG.	50.00'				90
18+25.00 - 19+84.00	25.63'	159.00'				285
21+14.03 - 22+25.00	23.82'	110.97'				185
22+25.00 - 22+75.00	25.41' AVG.	50.00'				89
TOWNSHIP ROAD 255						
40+12.68 - 40+37.93	73.23' AVG.	25.25'	103			
40+12.68 - 40+37.93	69.74' AVG.	25.25'		17		
40+12.68 - 40+37.93	70.22' AVG.	25.25'			25	
40+12.68 - 40+37.93	74.57' AVG.	25.25'				132
TOTAL			648	159	142	781

\* 0.10 GAL/SQ YD



SEE STANDARD BLR 21 AND SPECIAL PROVISIONS



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		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE - 06/19/13	REVISED -

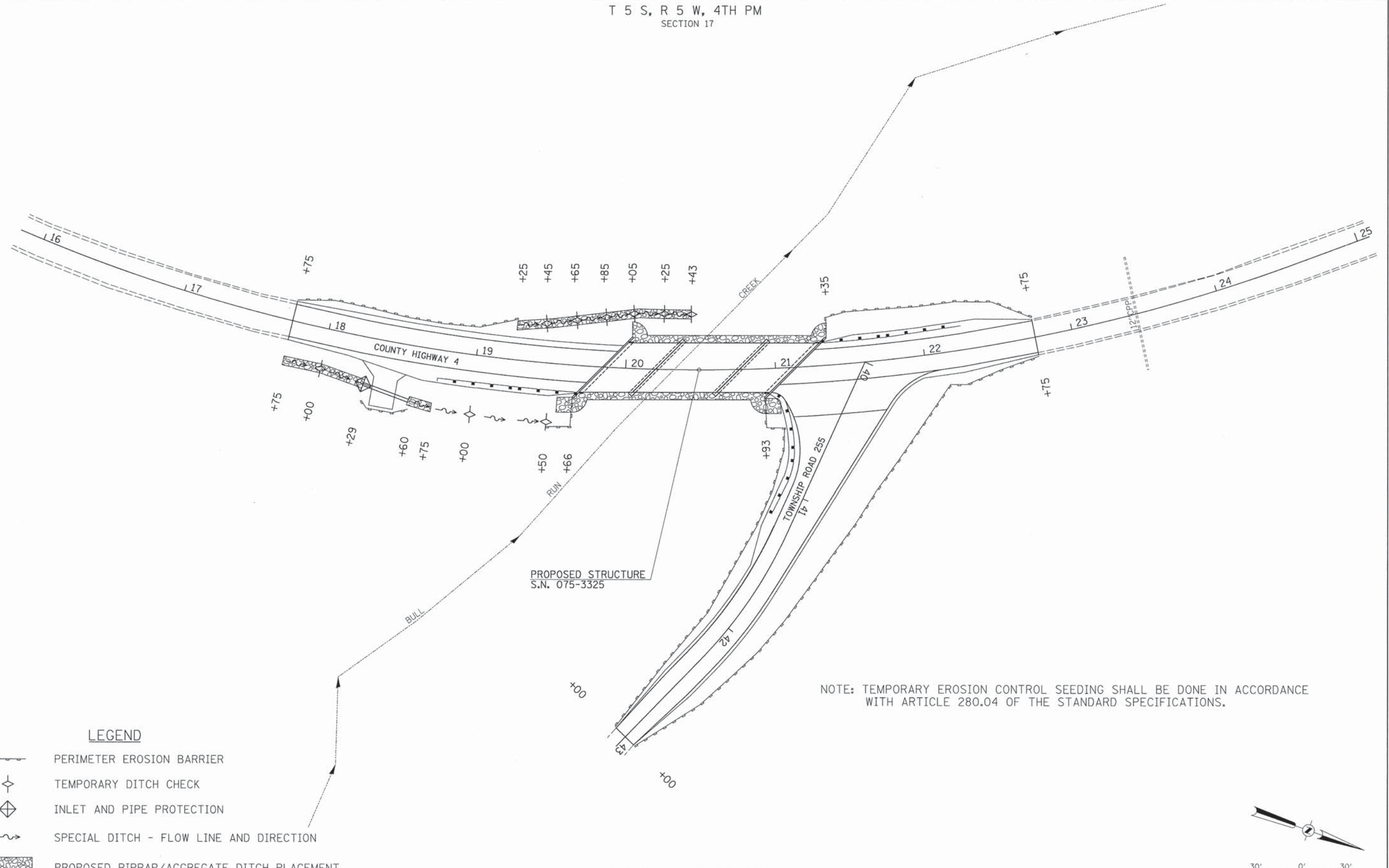
**PIKE COUNTY  
COUNTY HIGHWAY 4 OVER  
BULL RUN CREEK**

**TRAFFIC CONTROL PLAN**

SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. 17+75.00 TO STA. 22+75.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	5
FED. ROAD DIST. NO. 7 (ILLINOIS)			CONTRACT NO. 93612	
FED. AID PROJECT BRS-0597(04)				

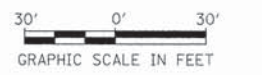
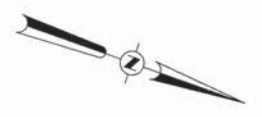
T 5 S, R 5 W, 4TH PM  
SECTION 17



NOTE: TEMPORARY EROSION CONTROL SEEDING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 280.04 OF THE STANDARD SPECIFICATIONS.

**LEGEND**

- PERIMETER EROSION BARRIER
- TEMPORARY DITCH CHECK
- INLET AND PIPE PROTECTION
- SPECIAL DITCH - FLOW LINE AND DIRECTION
- PROPOSED RIPRAP/AGGREGATE DITCH PLACEMENT



T 5 S, R 5 W, 4TH PM  
SECTION 17

**PIKE COUNTY  
COUNTY HIGHWAY 4 OVER  
BULL RUN CREEK**

**EROSION CONTROL PLAN**

FILE NAME = V:\Bridges\3303-Pike\3303S001.dgn	USER NAME = ethomas	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 30.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 1/10/2014	DATE -	REVISED -






SCALE: 1" = 30' SHEET NO. 1 OF 1 SHEETS STA. 17+75.00 TO STA. 22+75.00

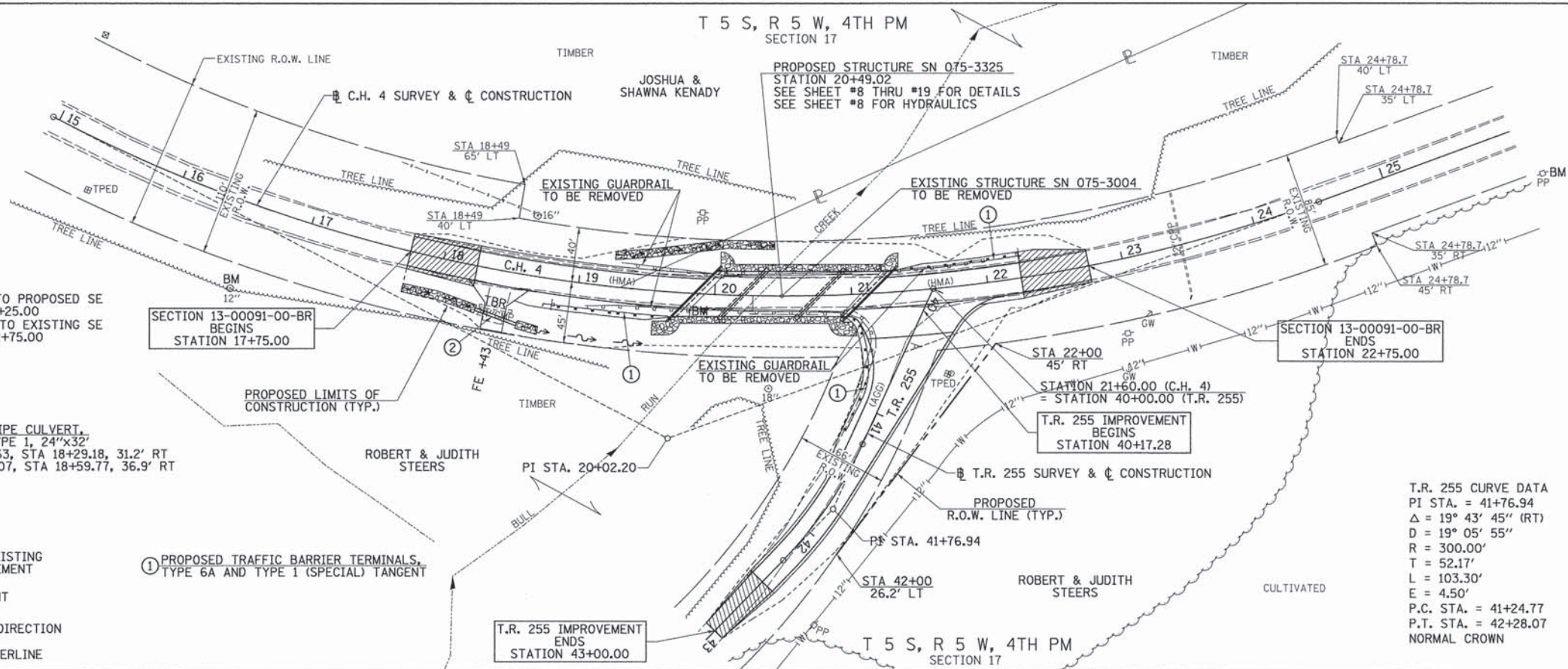
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	6
FED. ROAD DIST. NO. 7 [ILLINOIS]			CONTRACT NO. 93612	
FED. AID PROJECT BRS-05971104				

COUNTY HIGHWAY 4 CURVE DATA  
 PI STA. = 20+02.20  
 $\Delta = 47^\circ 35' 56''$  (LT)  
 $D = 4^\circ 58' 56''$   
 $R = 1,150.00'$   
 $T = 507.20'$   
 $L = 955.37'$   
 $E = 106.88'$   
 $e = 6.0\%$   
 P.C. STA. = 14+95.00  
 P.T. STA. = 24+50.37  
 S.E. = TRANSITION EXISTING SE TO PROPOSED SE  
 STA. 17+75.00 TO STA. 18+25.00  
 S.E. = TRANSITION PROPOSED SE TO EXISTING SE  
 STA. 22+25.00 TO STA. 22+75.00

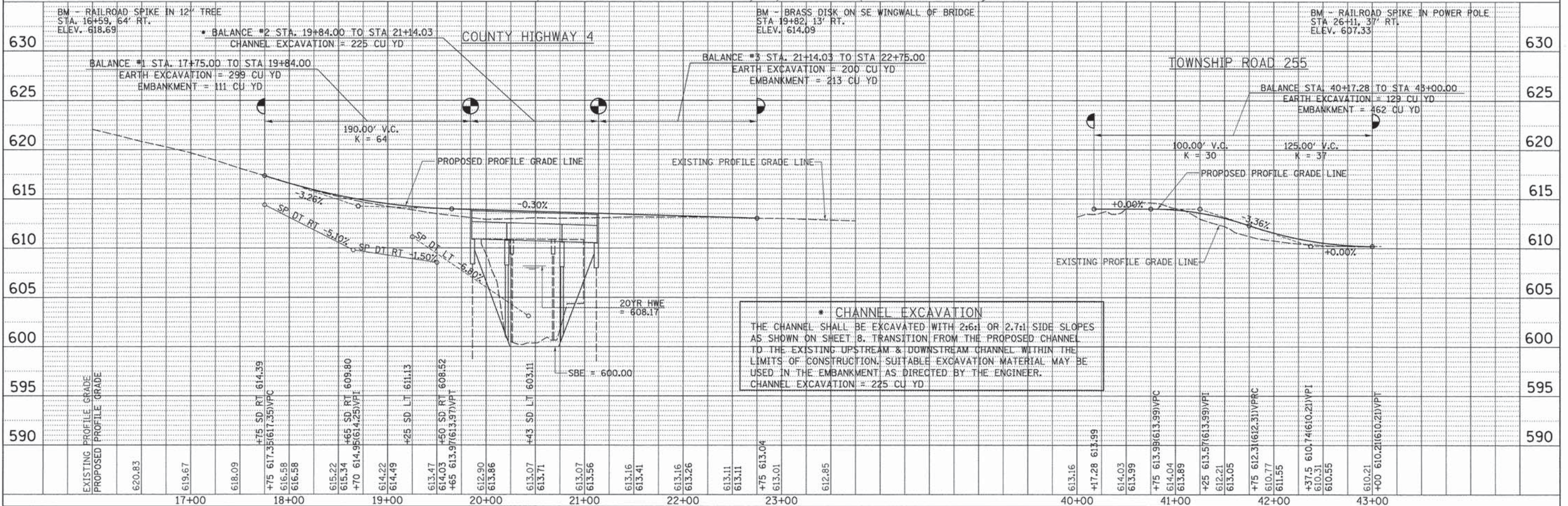
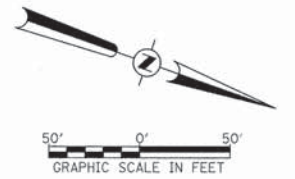
② PROPOSED PIPE CULVERT,  
 CLASS D, TYPE 1, 24"x32"  
 USFL = 611.63, STA 18+29.18, 31.2' RT  
 DSFL = 610.07, STA 18+59.77, 36.9' RT

**LEGEND**

-  TRANSITION TO OR FROM EXISTING TO PROPOSED TYPICAL PAVEMENT
-  PROPOSED RIPRAP PLACEMENT
-  SPECIAL DITCH WITH FLOW DIRECTION
-  EXISTING UNDERGROUND WATERLINE
-  PROPOSED TRAFFIC BARRIER TERMINALS, TYPE 6A AND TYPE 1 (SPECIAL) TANGENT



T.R. 255 CURVE DATA  
 PI STA. = 41+76.94  
 $\Delta = 19^\circ 43' 45''$  (RT)  
 $D = 19^\circ 05' 55''$   
 $R = 300.00'$   
 $T = 52.17'$   
 $L = 103.30'$   
 $E = 4.50'$   
 P.C. STA. = 41+24.77  
 P.T. STA. = 42+28.07  
 NORMAL CROWN



FILE NAME = V:\Bridge\3383-Pike\3383p001.dgn	USER NAME = cthomas	DESIGNED -	REVISED -	<b>PIKE COUNTY COUNTY HIGHWAY 4 OVER BULL RUN CREEK</b>	<b>PLAN AND PROFILE</b>	F.A.S. RTE. 597	SECTION 13-00091-00-BR	COUNTY PIKE	TOTAL SHEETS 28	SHEET NO. 7
PLOT SCALE = 50.0000' / in.	CHECKED -	REVISED -	SCALE: 1"=50'			SHEET NO. 1 OF 1 SHEETS	STA. 17+75.00 TO STA. 22+75.00	FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0597104I	
PLOT DATE = 1/18/2014	DATE -	REVISED -				CONTRACT NO. 93612				

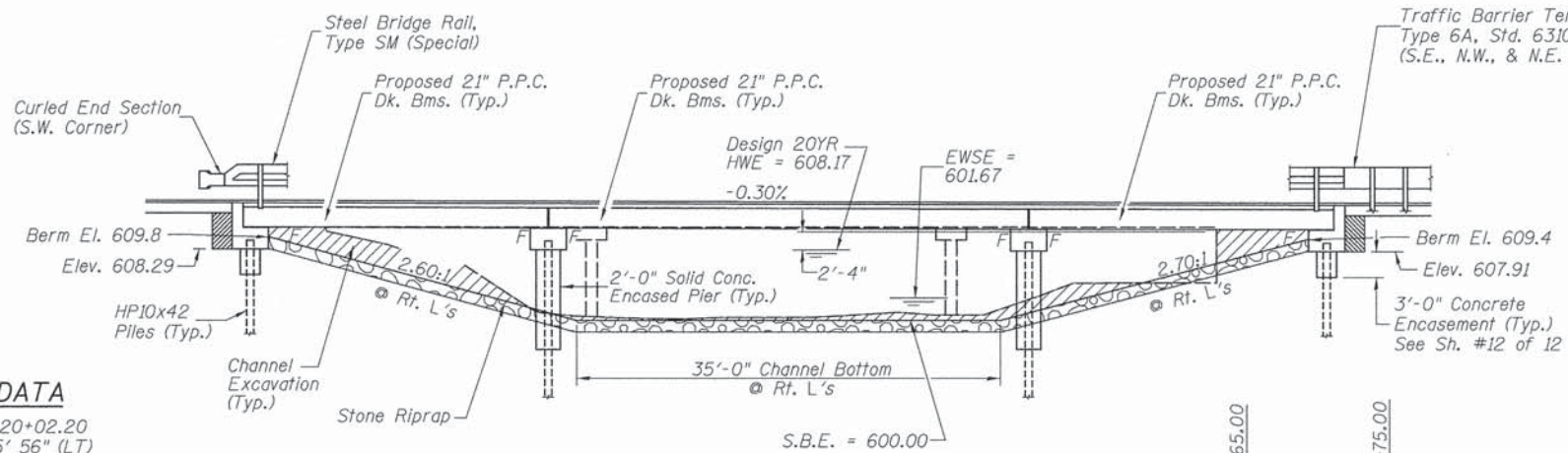
B.M.: RR Spike in 12" Tree  
Sta. 16+59, 64' Rt.  
Elev. 618.69

RR Spike in Power Pole  
Sta. 26+11, 37' Rt.  
Elev. 607.33

Existing Structure:  
Three span concrete slab superstructure on exposed pile bent piers and concrete pile bent abutments. The structure is 115'-0" back to back of abutments, 28'-4" out to out deck, and is skewed 45°.

Str. No. 075-3004

Salvage: None  
Road to be closed to traffic during construction.



**CURVE DATA**

PI STA. = 20+02.20  
 $\Delta = 47^\circ 35' 56''$  (LT)  
 $D = 4^\circ 58' 56''$   
 $R = 1,150.00'$   
 $T = 507.20'$   
 $L = 955.37'$   
 $E = 106.88'$   
 $e = 6.0\%$   
 P.C. STA. = 14+95.00  
 P.T. STA. = 24+50.37  
 S.E. = STA. 17+75.00 TO STA. 18+25.00  
 S.E. = STA. 22+25.00 TO STA. 22+75.00

\* Terminal Marker-Direct Applied to be placed on Curled End Sections in accordance with Std. 635006

**BULL RUN CREEK  
 BUILT 20L BY  
 PIKE COUNTY  
 SEC. 13-00091-00-BR  
 C.H. 4 STATION 20+49.02  
 F.A. PROJ. BRS-0597(104)  
 STR. NO. 075-3325 LOADING HL-93**

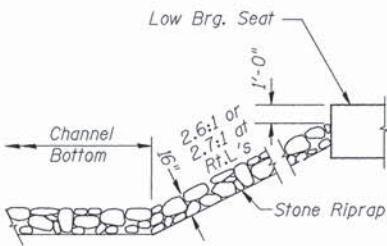
**NAME PLATE**

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

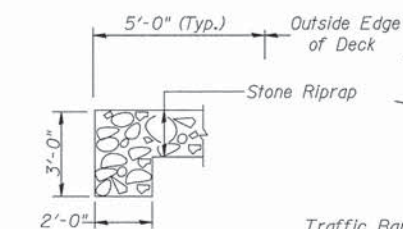
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	CU YD	—	225	225
Stone Riprap, Class A4 (Special)	TON	—	505	505
Removal of Existing Structures	EACH	—	—	1
Structure Excavation	CU YD	—	105	105
Cofferdam Excavation	CU YD	—	90	90
Concrete Structures	CU YD	—	169.1	169.1
Precast Prestressed Concrete Deck Beams (21" Depth)	SQ FT	4,197	—	4,197
Reinforcement Bars	POUND	—	15,470	15,470
Steel Bridge Rail, Type SM (Special)	FOOT	260	—	260
Furnishing Steel Piles HP10x42	FOOT	—	800	800
Driving Piles	FOOT	—	800	800
Test Pile Steel HP10x42	EACH	—	4	4
Concrete Encasement	CU YD	—	4.8	4.8
Name Plates	EACH	—	1	1
Bituminous Materials (Prime Coat)	GALLON	48	—	48
Controlled Low-Strength Material	CU YD	—	31.8	31.8
Cofferdam (Type I) (Location-1) (Pier #1)	EACH	—	1	1
Cofferdam (Type I) (Location-2) (Pier #2)	EACH	—	1	1
Hot-Mix Asphalt Surface Course, Mix "C", N50	TON	66	—	66
Terminal Marker-Direct Applied	EACH	1	—	1

① See Special Provisions

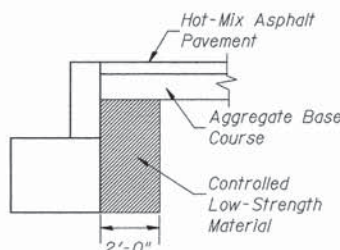


**STONE RIPRAP DETAIL**

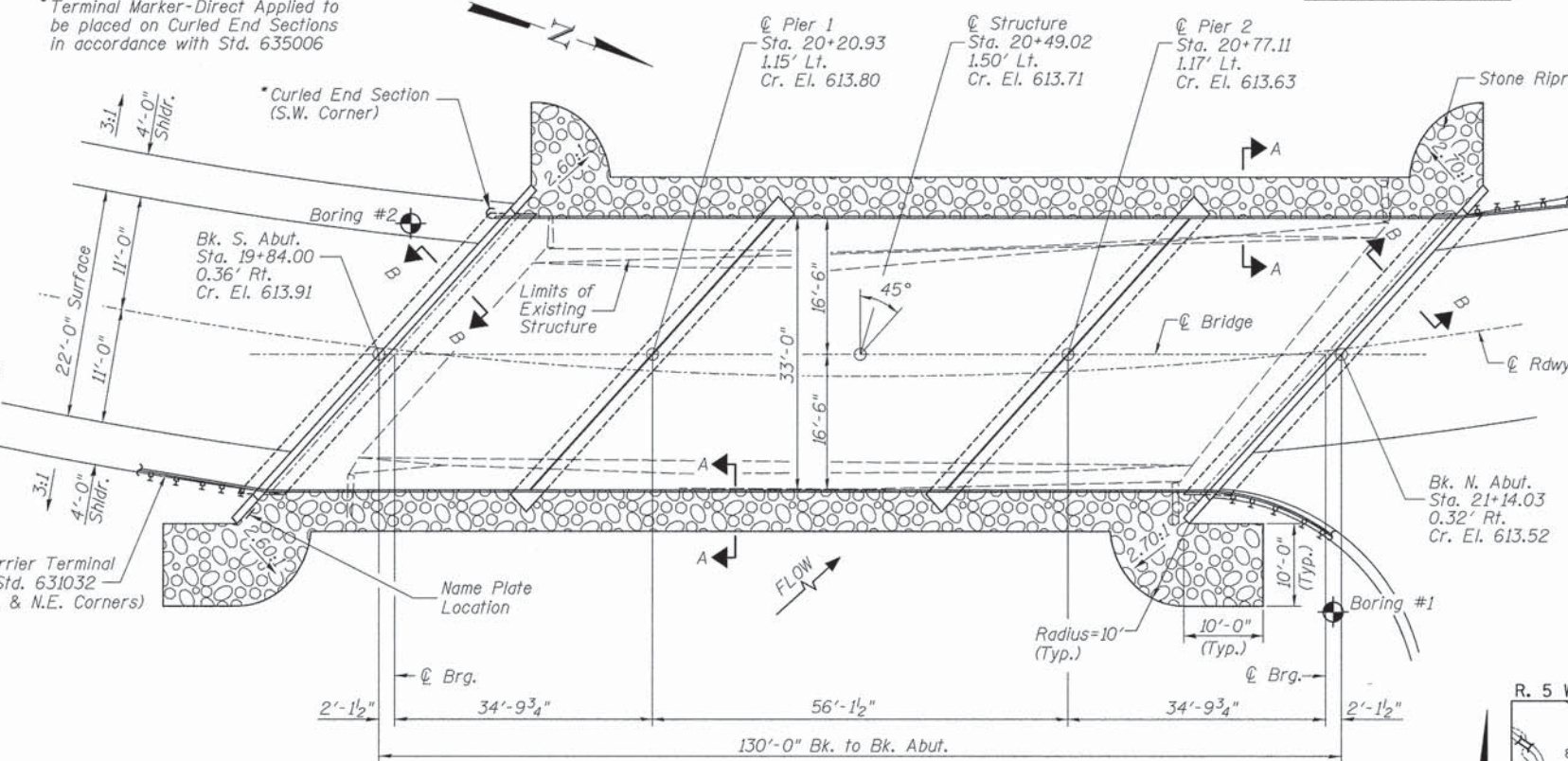


**SECTION A-A**

Traffic Barrier Terminal Type 6A, Std. 631032 (S.E., N.W., & N.E. Corners)



**SECTION B-B**



**PLAN**

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design Specifications  
 6th Edition with 2013 Interims

**DESIGN STRESSES**

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

(PRECAST PRESTRESSED UNITS)  $f'_c = 6,000$  p.s.i.  $f'_{ci} = 5,000$  p.s.i.  $f'_s = 270,000$  p.s.i. ( $1/2$ " Strands)  $f'_{si} = 201,960$  p.s.i. ( $1/2$ " Strands)

**LOADING HL-93**

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

**DESIGN SCOUR TABLE**

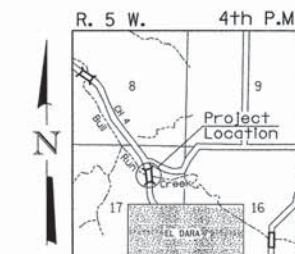
Location	S. Abut	Pier 1	Pier 2	N. Abut
Design Scour Elevation	608.29	595.75	595.73	607.91

**WATERWAY INFORMATION**

Drainage Area = 4.11 Sq. Mi. Low Grade Elev. = 610.75 @ Sta. 25+98.59

Flood Yr.	Freq.	Q	C.F.S.	Opening	Sq. Ft.	Nat. H.W.E.	Head - Ft.	Headwater El.	
		Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	20	1,811	387	433	608.17	0.00	0.00	608.17	608.17
Base	100	2,710	401	449	608.39	0.74	0.67	609.13	609.06

DESIGNED	S.T.M.
CHECKED	C.T.M./J.E.H.
DRAWN	S.T.M.
CHECKED	C.T.M./J.E.H.



**LOCATION SKETCH**



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 Specification for Highway Bridges. This design complies with all requirements of the current AASHTO Guide Specifications for Seismic Design of highway bridges.

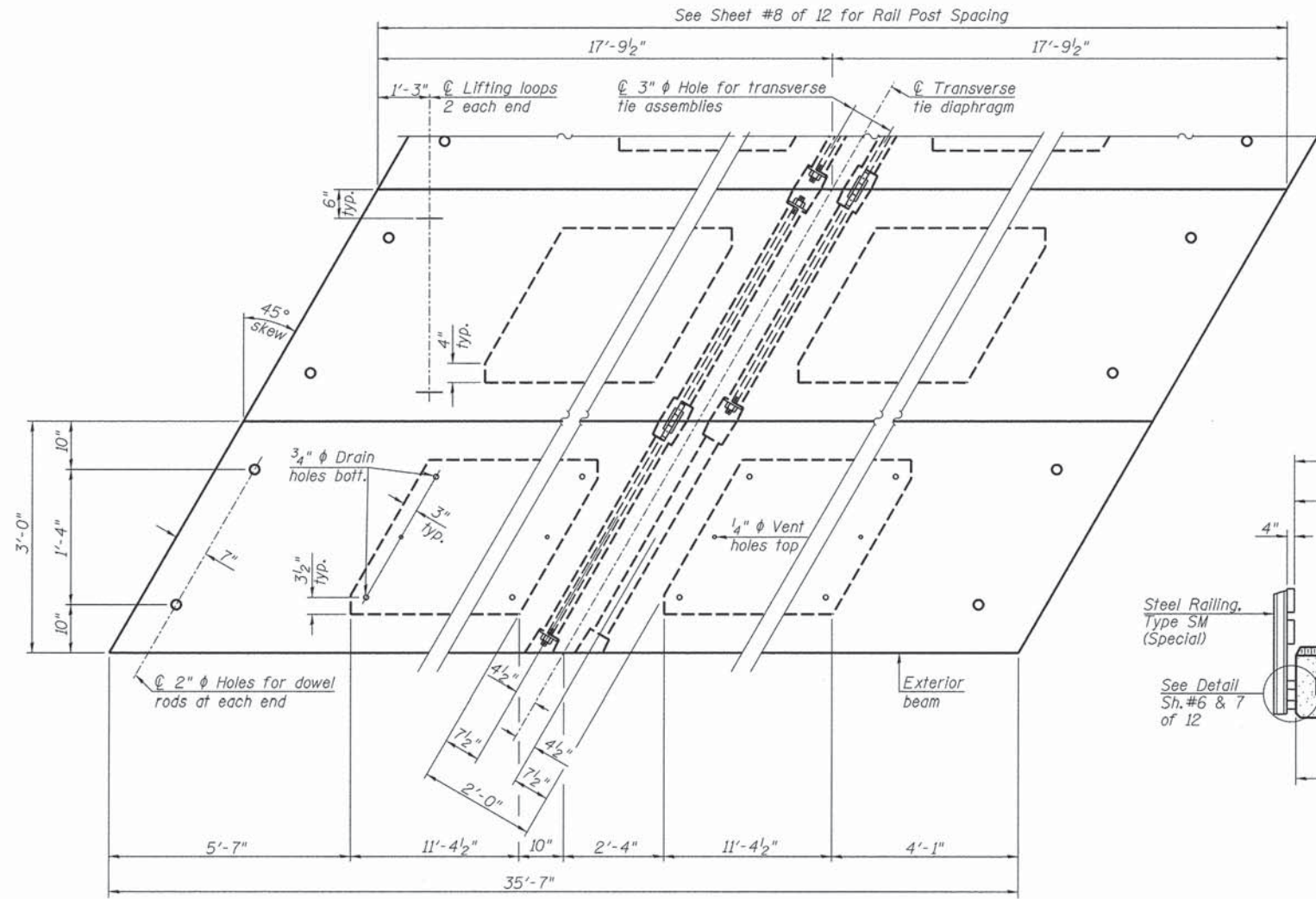
*[Signature]* 11/3/2014  
 Illinois Structural No. 6440  
 Expires 11/30/2014

**GENERAL PLAN & ELEVATION  
 PIKE COUNTY  
 SECTION 13-00091-00-BR  
 C.H. 4 OVER BULL RUN CREEK**

SHEET NO. 1	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	597	13-00091-00-BR	PIKE	28	8
S.N. 075-3325			CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		



See Sheet #8 of 12 for bearing pad and grout bed details and rail post spacing.

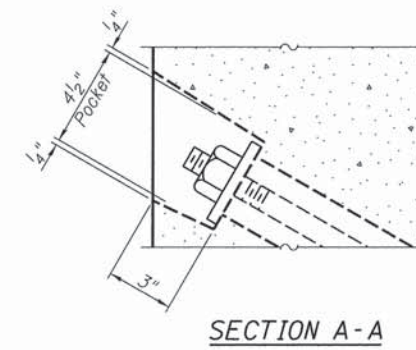


PLAN VIEW

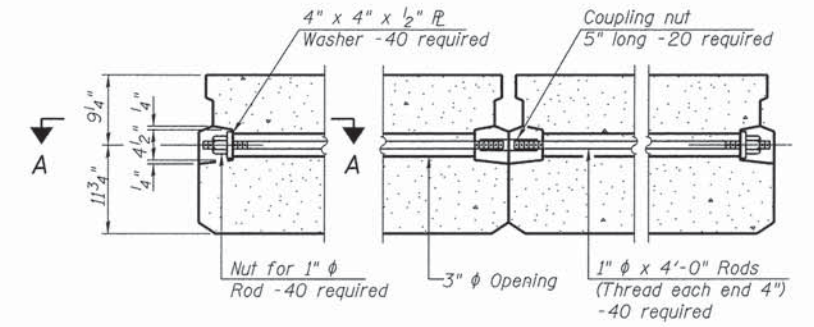
Note: Connect beams in pairs with the transverse tie configuration shown.

**NOTES**

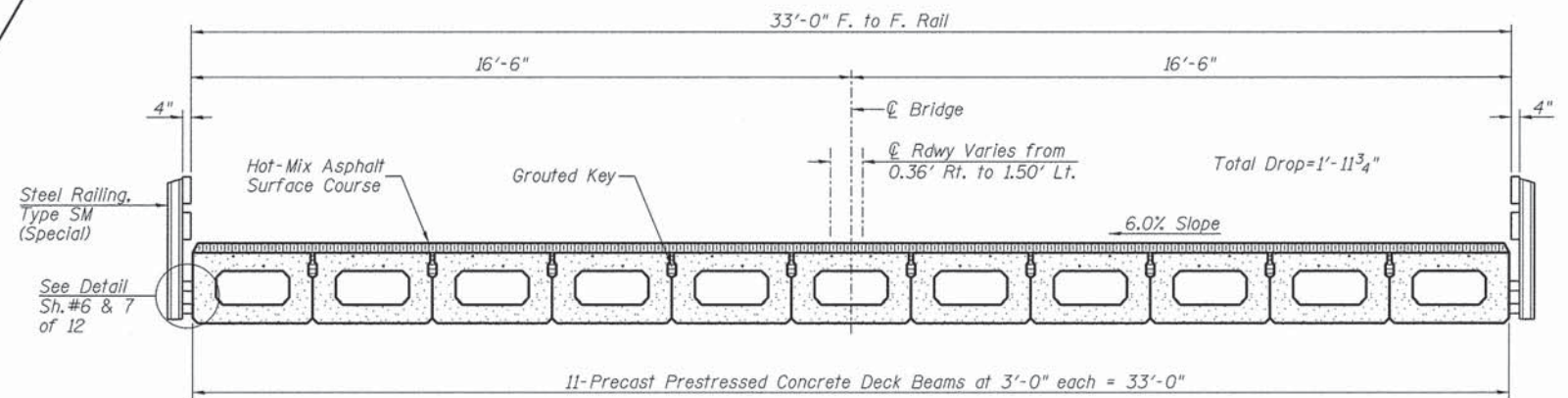
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1"  $\phi$  rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets 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.  
 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"  $\phi$  lifting pin shall be used to engage the lifting loops during handling.  
 Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 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.



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY



CROSS SECTION  
(Looking Upstation)

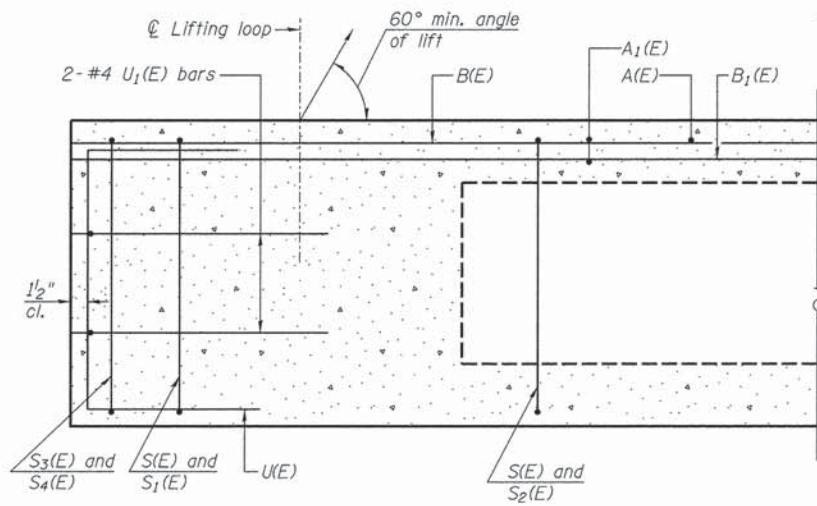
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
① Precast Prestressed Concrete Deck Beams (21" Depth)	SQ FT	2,349

① See Special Provisions

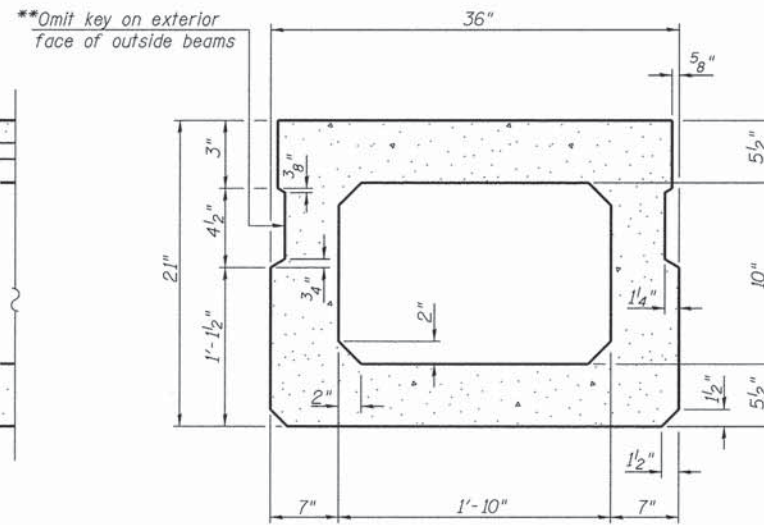
**SUPERSTRUCTURE - SPANS 1 & 3**  
**PIKE COUNTY**  
**SECTION 13-00091-00-BR**  
**C.H. 4 OVER BULL RUN CREEK**

SHEET NO. 2	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	597	13-00091-00-BR	PIKE	28	9
S.N. 075-3325			CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		

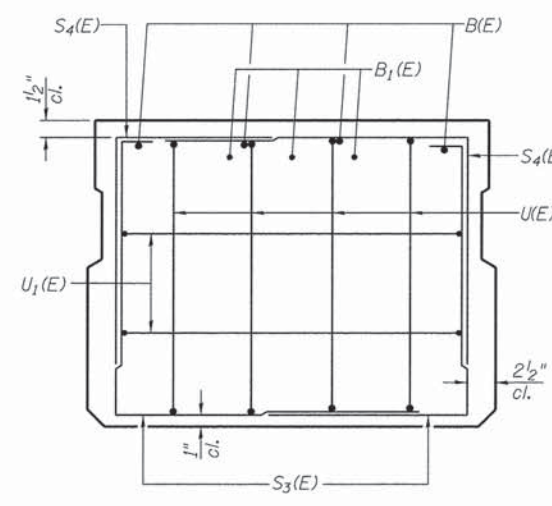


**SECTION C-C**

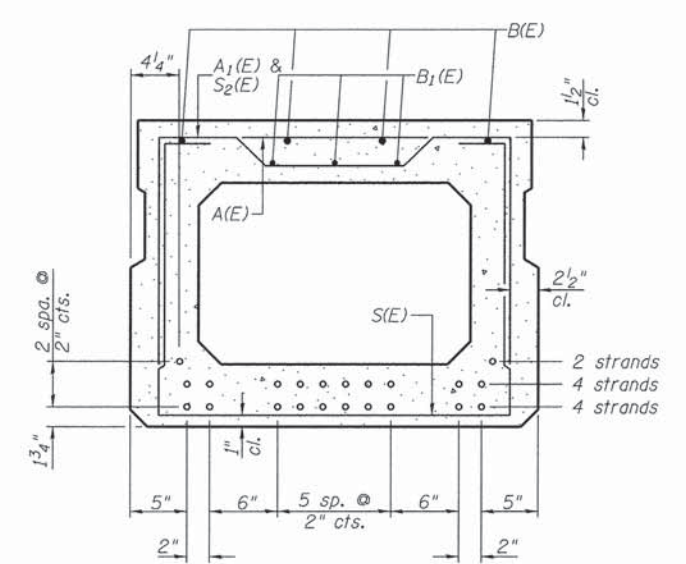
\*\*Rail post anchor devices (Sheet 6 of 12) to be cast into exterior face of outside beams.



**SECTION A-A**  
(Showing Dimensions)



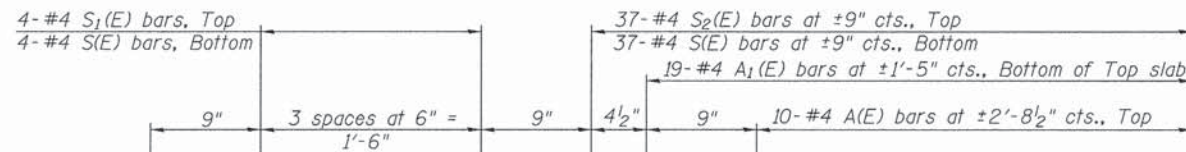
**VIEW B-B**



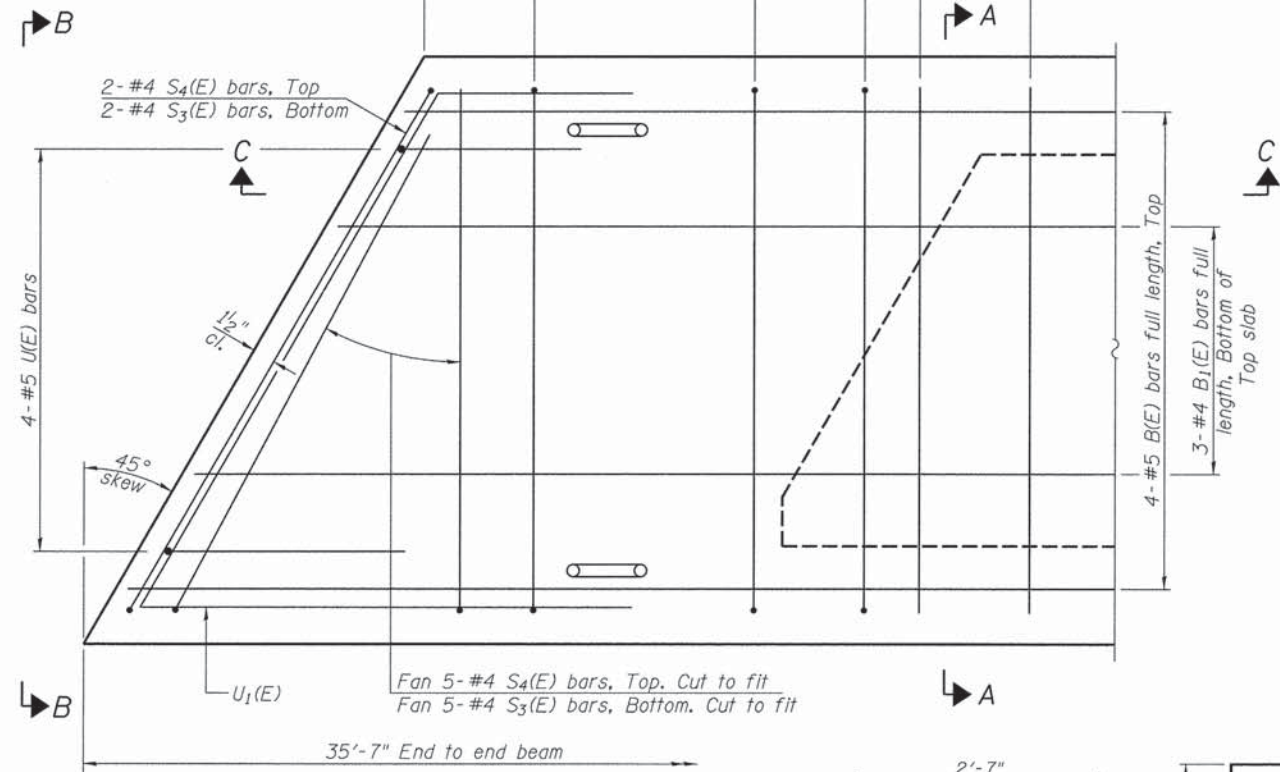
**SECTION A-A**

10-1/2" Strands Each Strand Stressed to 30,900 Lbs.  
4-Strands 1 3/4" up, 4-Strands 3 3/4" up,  
2-Strands 5 3/4" up

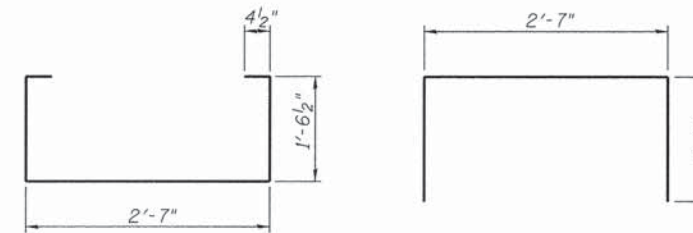
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



**PLAN VIEW**

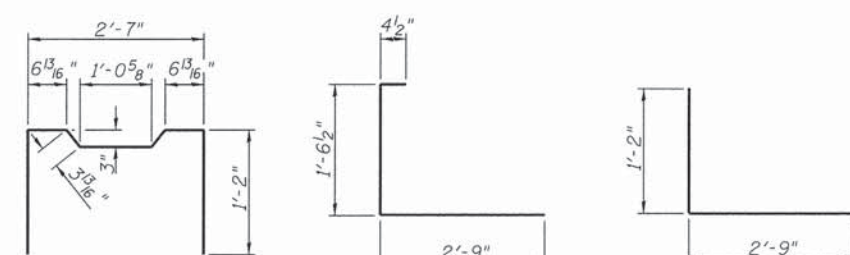


Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



**BAR S(E)**

**BAR S1(E)**



**BAR S2(E)**

**BAR S3(E)**

**BAR S4(E)**

**BAR LIST-ONE BEAM ONLY**

(For information only)

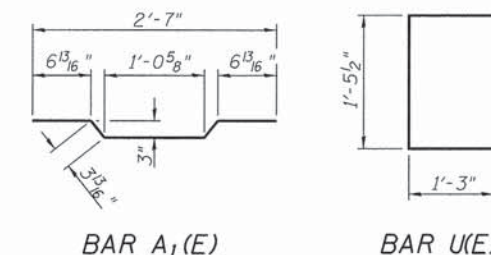
Bar	No.	Size	Length	Shape
A(E)	10	#4	2'-7"	—
A1(E)	19	#4	2'-10"	—
B(E)	4	#5	*35'-4"	—
B1(E)	3	#4	*35'-4"	—
S(E)	45	#4	6'-5"	⌈
S1(E)	8	#4	4'-11"	⌈
S2(E)	37	#4	5'-2"	⌈
S3(E)	14	#4	4'-8"	⌈
S4(E)	14	#4	3'-11"	⌈
U(E)	8	#5	4'-0"	⌈
U1(E)	4	#4	8'-7"	⌈

Note: See sheet 2 of 12 for additional details and Bill of Material.

\*Total Length, Lap as Necessary.

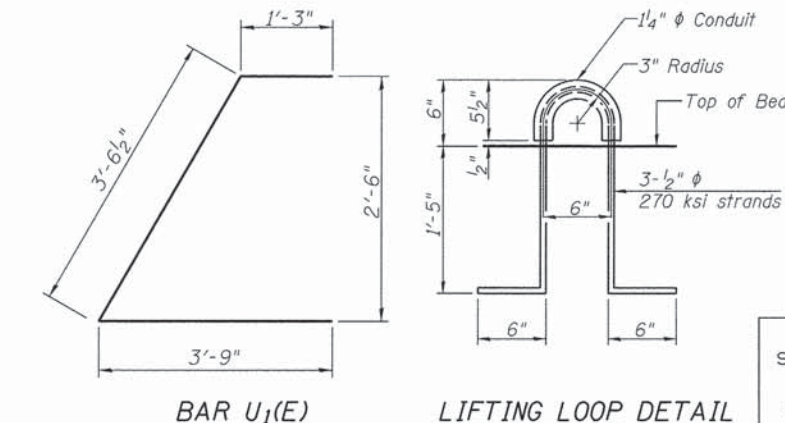
**MIN. BAR LAP**

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



**BAR A1(E)**

**BAR U(E)**



**BAR U1(E)**

**LIFTING LOOP DETAIL**

**SUPERSTRUCTURE DETAILS - SPANS 1 & 3**

PIKE COUNTY

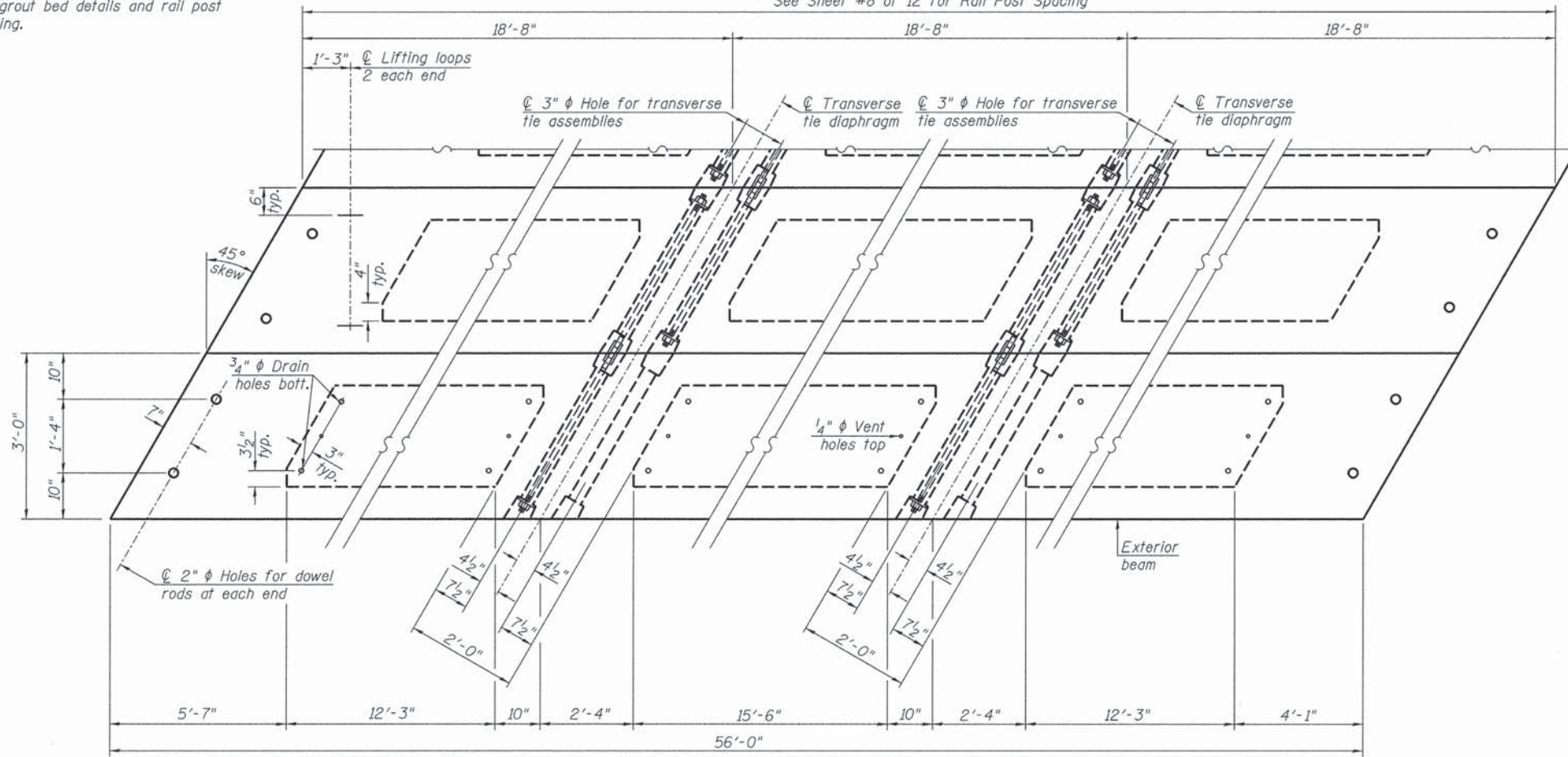
SECTION 13-00091-00-BR

C.H. 4 OVER BULL RUN CREEK

SHEET NO. 3 12 SHEETS	F.A.S. RTE. 597	SECTION 13-00091-00-BR	COUNTY PIKE	TOTAL SHEETS 28	SHEET NO. 10
	S.N. 075-3325		CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT BRS-0597(104)		

See Sheet #8 of 12 for bearing pad and grout bed details and rail post spacing.

See Sheet #8 of 12 for Rail Post Spacing

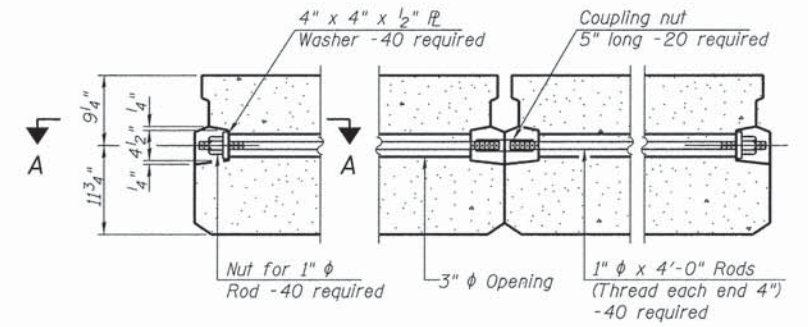


PLAN VIEW

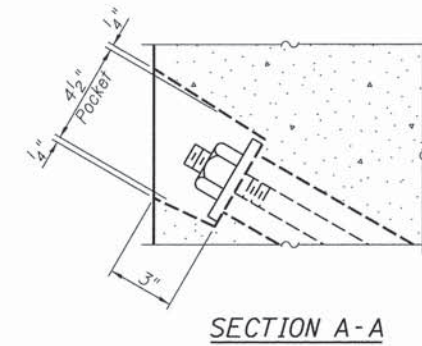
Note: Connect beams in pairs with the transverse tie configuration shown.

NOTES

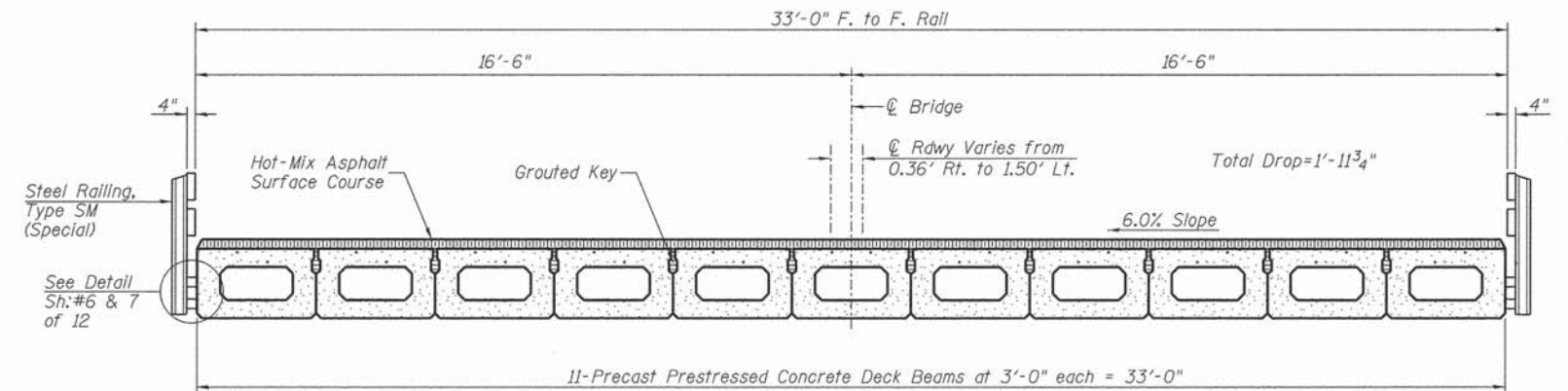
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior 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.
- 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)(10) and 1021.07 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.



TYPICAL TRANSVERSE TIE ASSEMBLY



SECTION A-A



CROSS SECTION

(Looking Upstation)

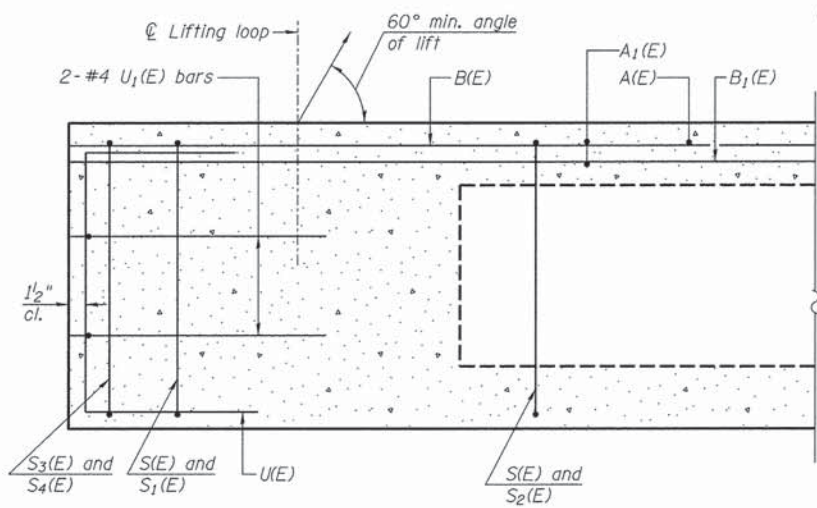
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
① Precast Prestressed Concrete Deck Beams (21" Depth)	SQ FT	1,848

① See Special Provisions

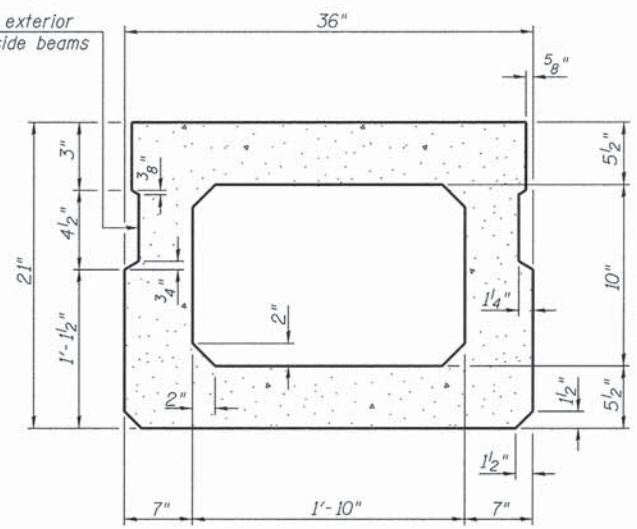
SUPERSTRUCTURE - SPAN 2  
PIKE COUNTY  
SECTION 13-00091-00-BR  
C.H. 4 OVER BULL RUN CREEK

SHEET NO. 4	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	597	13-00091-00-BR	PIKE	28	11
S.N. 075-3325			CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		

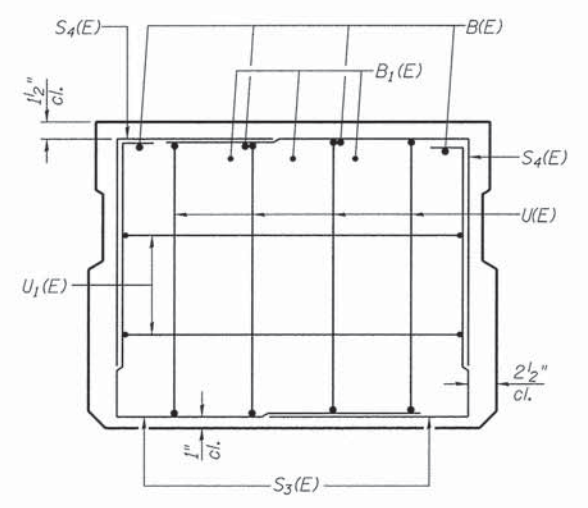


**SECTION C-C**

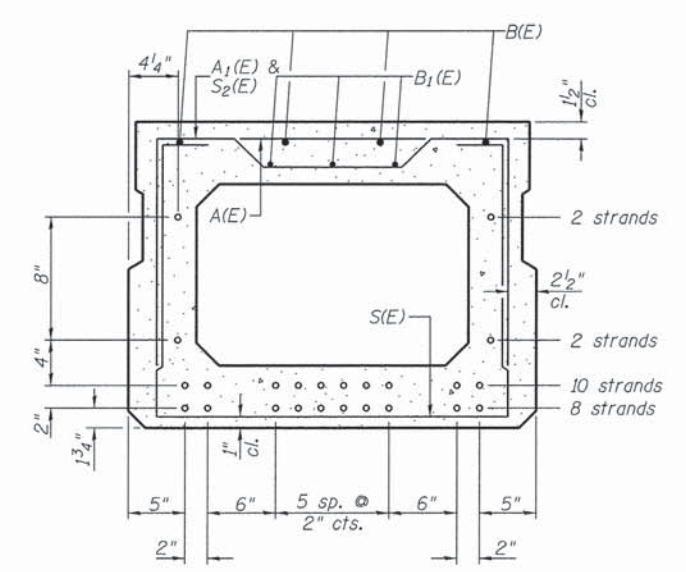
\*\*Rail post anchor devices (Sheet 6 of 12) to be cast into exterior face of outside beams.



**SECTION A-A (Showing Dimensions)**

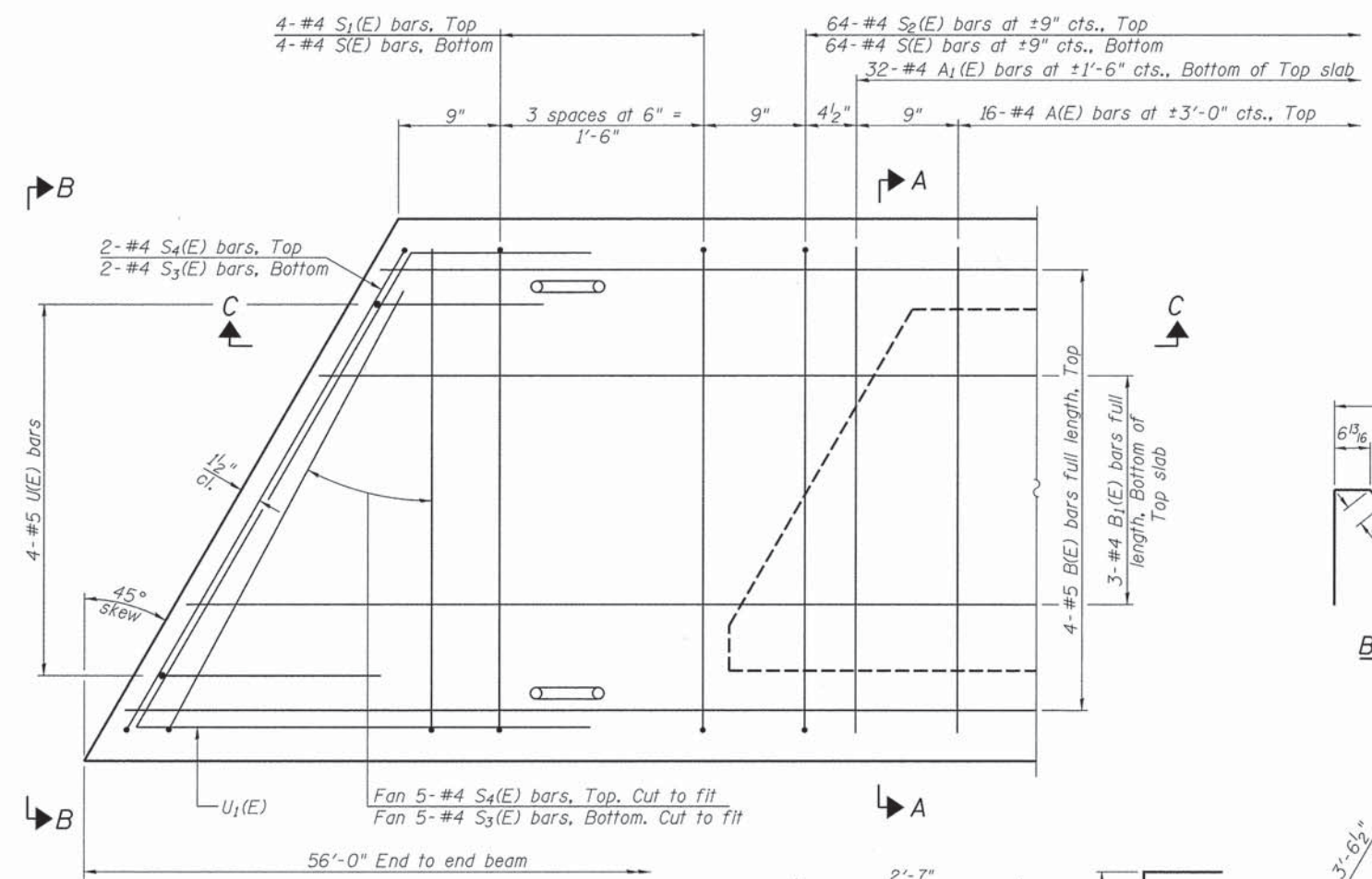


**VIEW B-B**

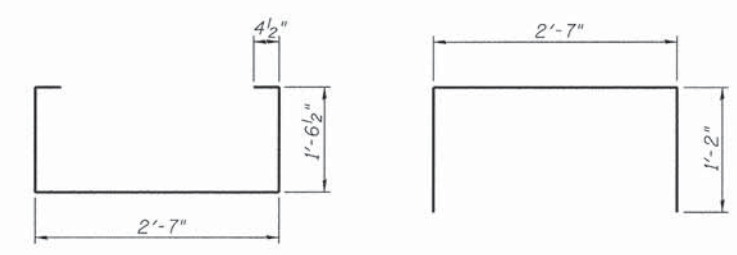


**SECTION A-A**

22-1/2"φ Strands Each Strand Stressed to 30,900 Lbs.  
 8-Strands 1 3/4" up, 10-Strands 3 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.

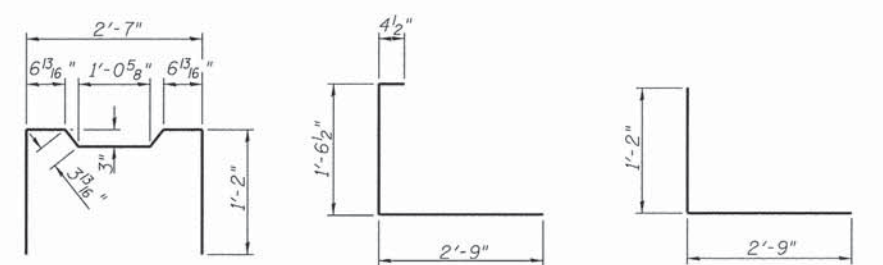


**PLAN VIEW**



**BAR S(E)**

**BAR S1(E)**



**BAR S2(E)**

**BAR S3(E)**

**BAR S4(E)**

**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)	4	#5	*55'-9"	—
B1(E)	3	#4	*55'-9"	—
S(E)	72	#4	6'-5"	⌈
S1(E)	8	#4	4'-11"	⌈
S2(E)	64	#4	5'-2"	⌈
S3(E)	14	#4	4'-8"	⌈
S4(E)	14	#4	3'-11"	⌈
U(E)	8	#5	4'-0"	⌈
U1(E)	4	#4	8'-7"	⌈

Note: See sheet 4 of 12 for additional details and Bill of Material.

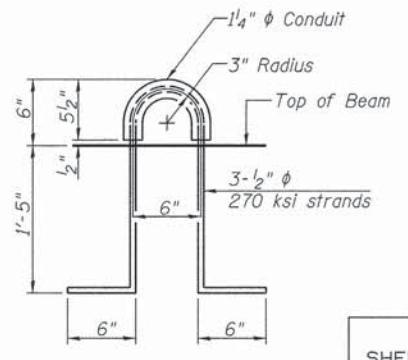
\*Total Length, Lap as Necessary.

**MIN. BAR LAP**

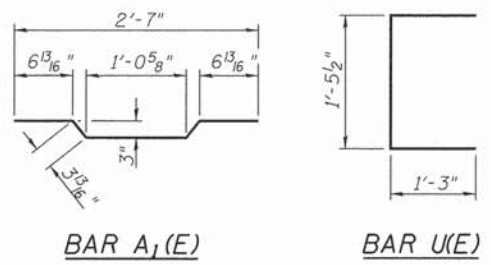
#4 bar = 2'-0"  
 #5 bar = 2'-6"

**SUPERSTRUCTURE DETAILS - SPAN 2**  
**PIKE COUNTY**  
**SECTION 13-00091-00-BR**  
**C.H. 4 OVER BULL RUN CREEK**

SHEET NO. 5 12 SHEETS	F.A.S. RTE. 597	SECTION 13-00091-00-BR	COUNTY PIKE	TOTAL SHEETS 28	SHEET NO. 12
	S.N. 075-3325		CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		

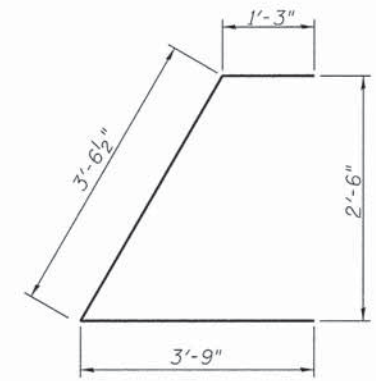


**LIFTING LOOP DETAIL**



**BAR A1(E)**

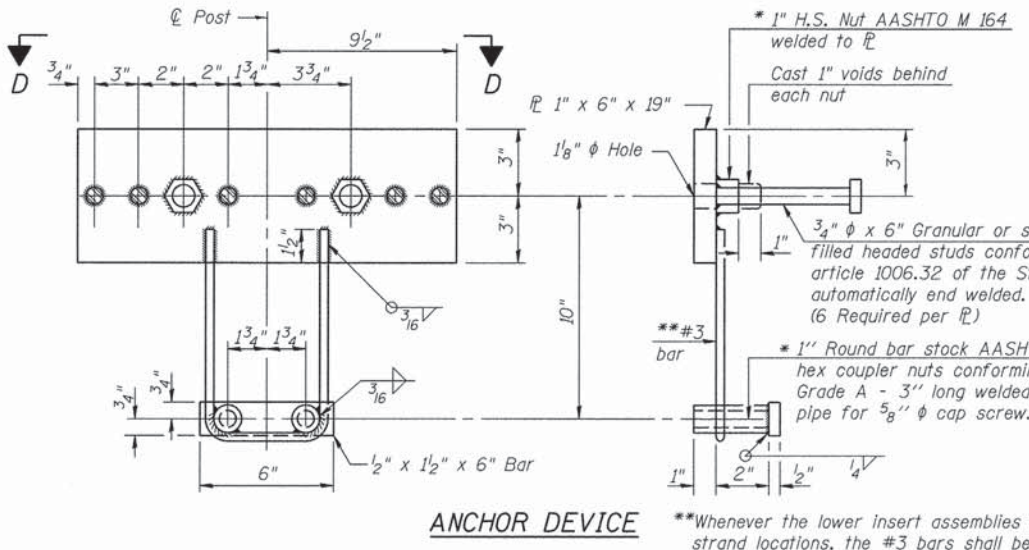
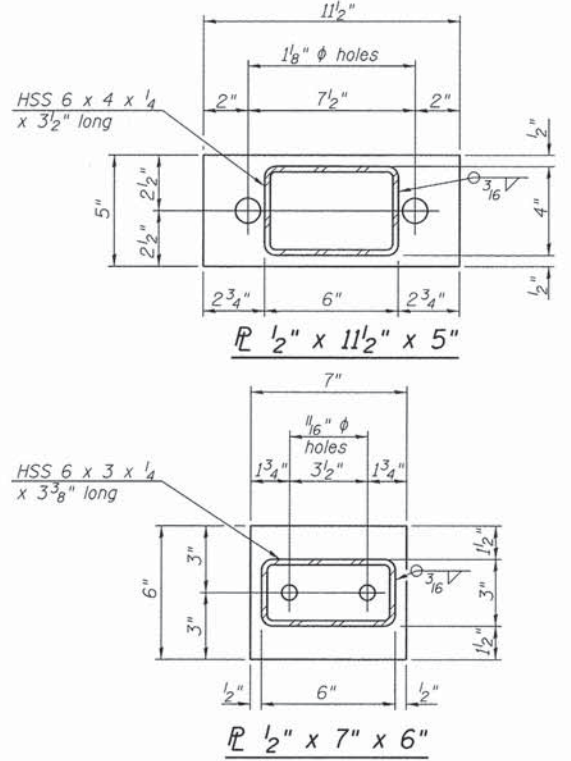
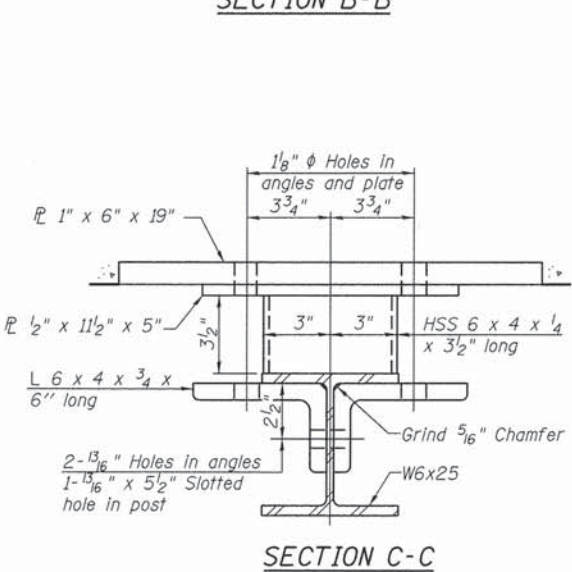
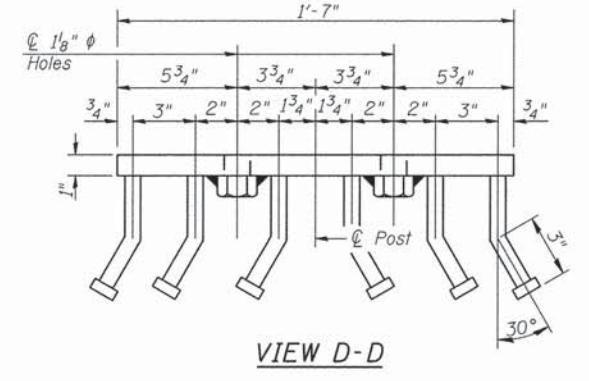
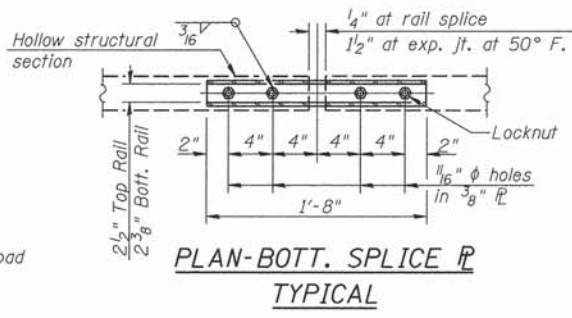
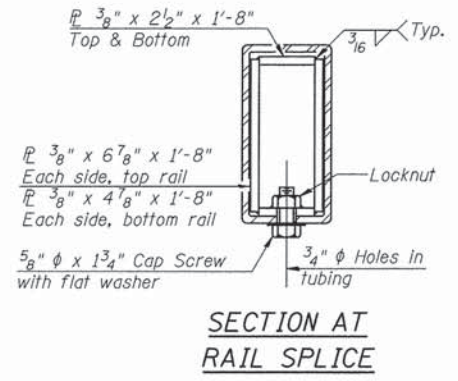
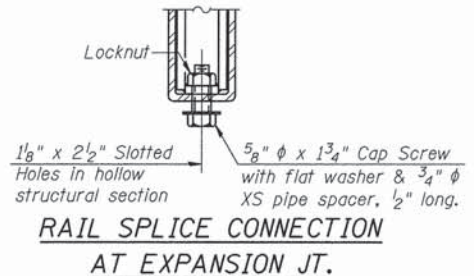
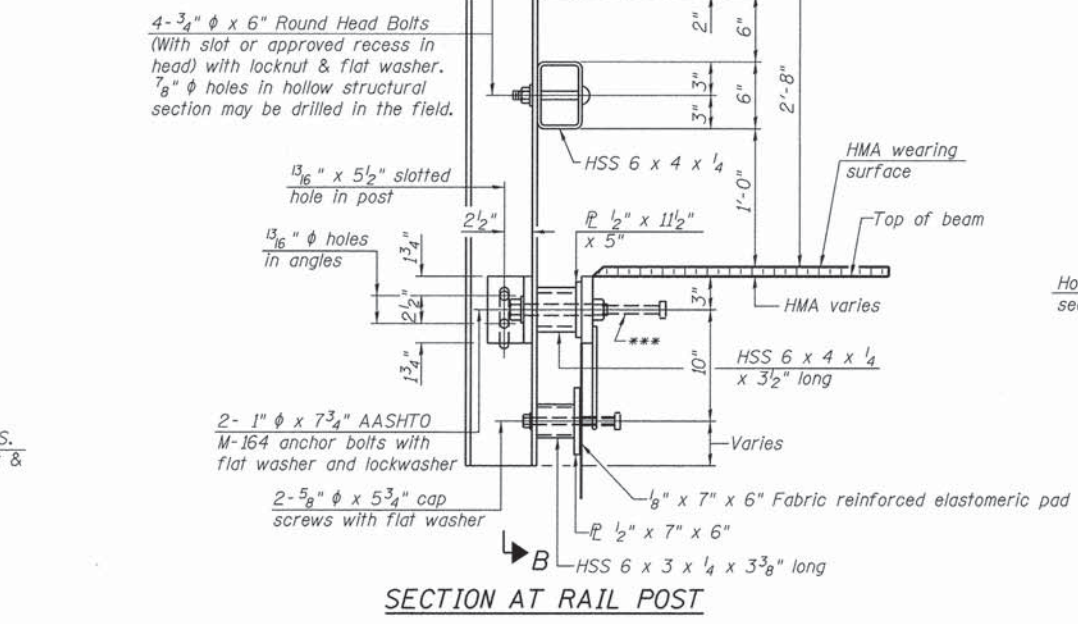
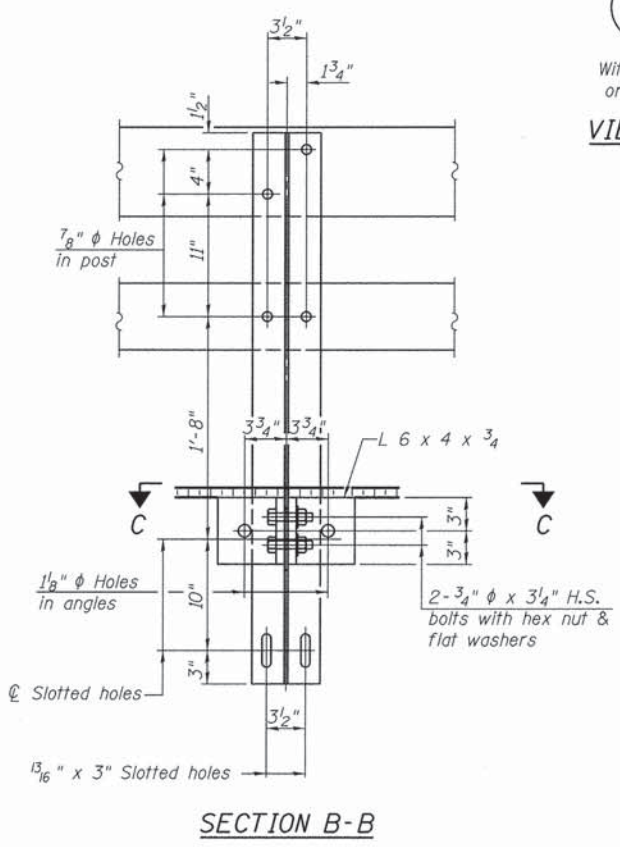
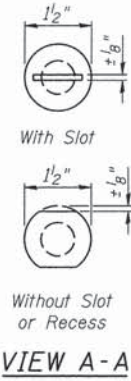
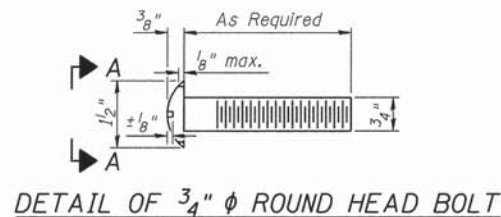
**BAR U(E)**



**BAR U1(E)**

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.

FOR RAIL POST SPACING SEE SH.#8 OF 12



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 Bridge Rail, Type SM (Special).  
 All steel rail members 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 Bridge Rail, Type SM (Special)	FOOT	260

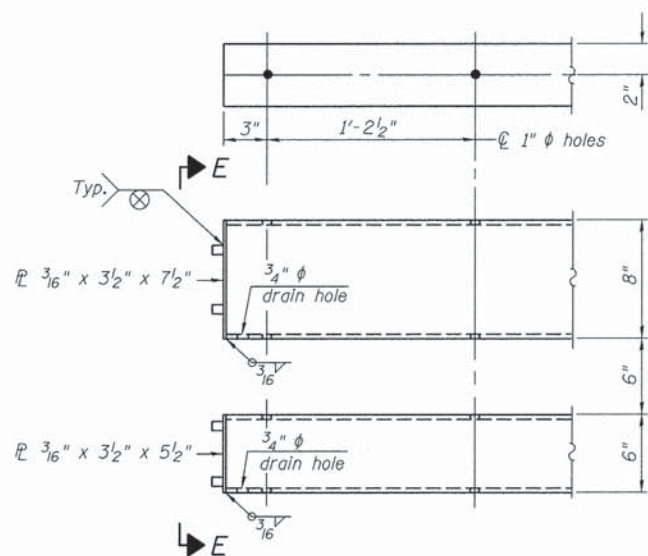
① See Special Provisions

**STEEL BRIDGE RAIL, TYPE SM (SPECIAL)  
 PIKE COUNTY  
 SECTION 13-00091-00-BR  
 C.H. 4 OVER BULL RUN CREEK**

SHEET NO. 6	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	597	13-00091-00-BR	PIKE	28	13
S.N. 075-3325			CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		

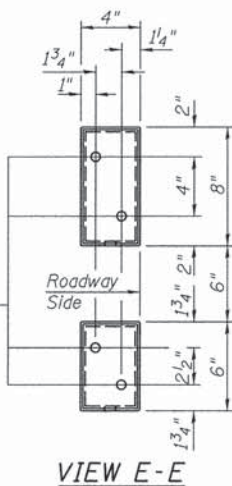
(Sheet 1 of 2)

FOR RAIL POST SPACING SEE SH.#8 OF 12

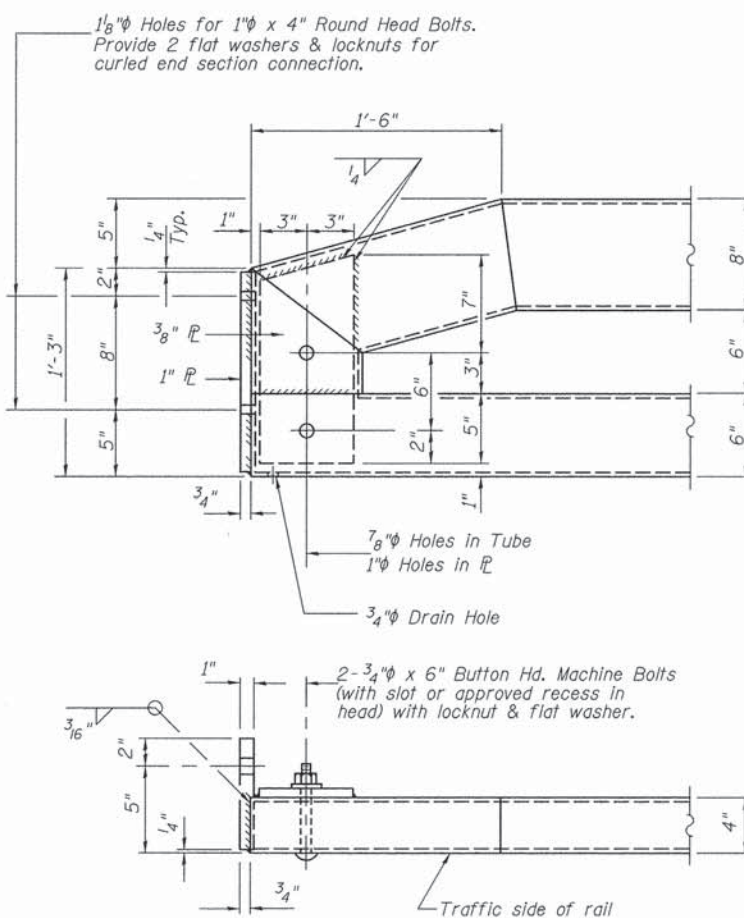


END OF RAIL DETAILS  
ENDS WITH TERMINALS

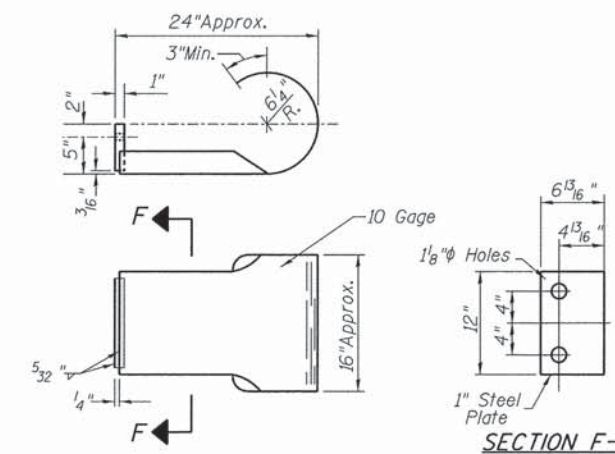
5/8" reduced base welded studs. Provide 4-5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032.



VIEW E-E



END OF RAIL DETAILS  
ENDS WITH CURLED END SECTIONS



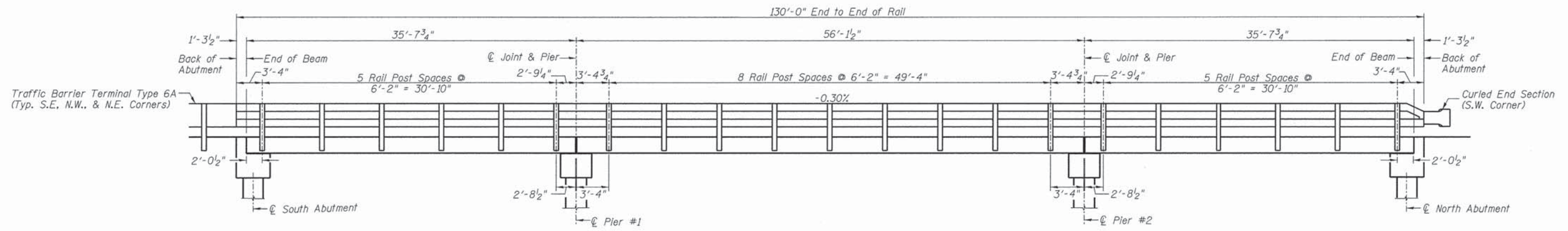
CURLED END SECTION

(1 Req'd) Cost Included with Steel Bridge Rail, Type SM (Special).  
Terminal Markers - Direct Applied shall be placed on end of each Curled End Section. (S.W. Corner)

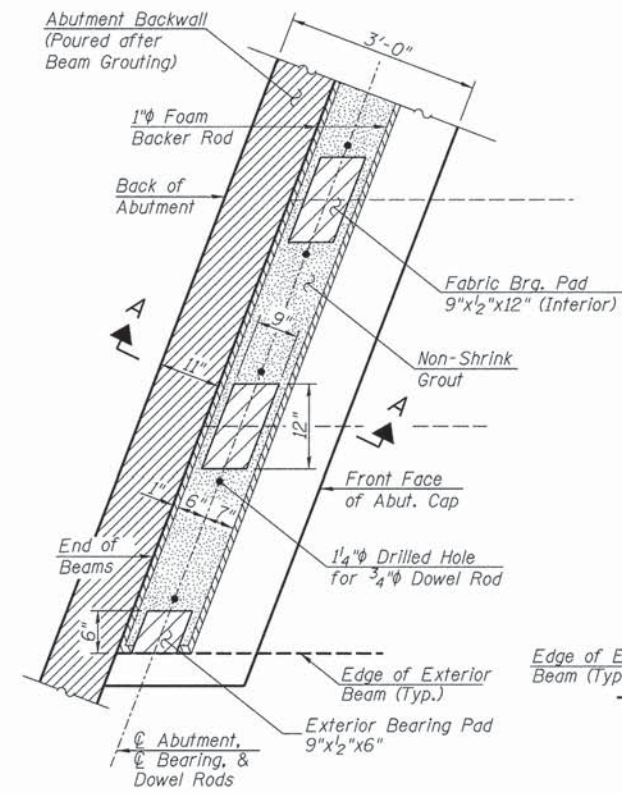
(Sheet 2 of 2)

STEEL BRIDGE RAIL, TYPE SM (SPECIAL)  
PIKE COUNTY  
SECTION 13-00091-00-BR  
C.H. 4 OVER BULL RUN CREEK

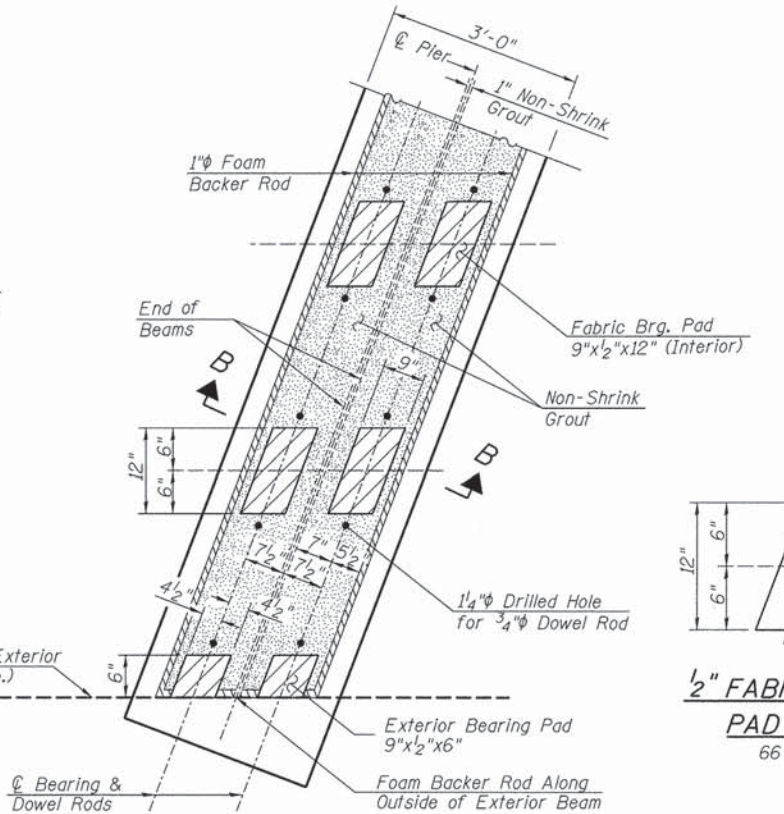
SHEET NO. 7	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	597	13-00091-00-BR	PIKE	28	14
S.N. 075-3325			CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT BRS-0597(104)		



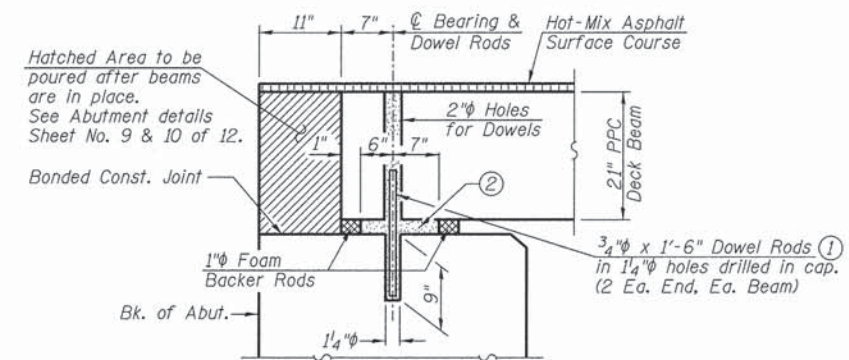
**RAIL POST SPACING**



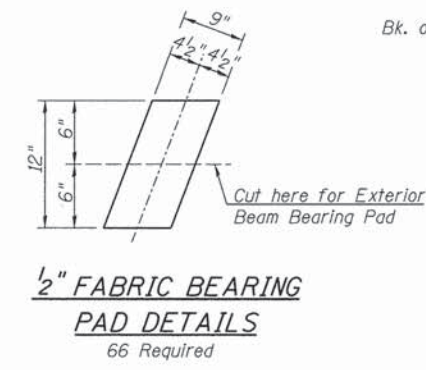
**ABUTMENT BEARING DETAILS**



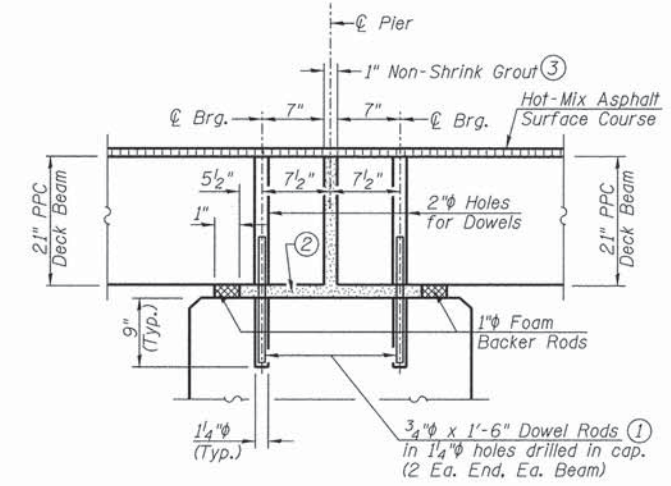
**PIER BEARING DETAILS**



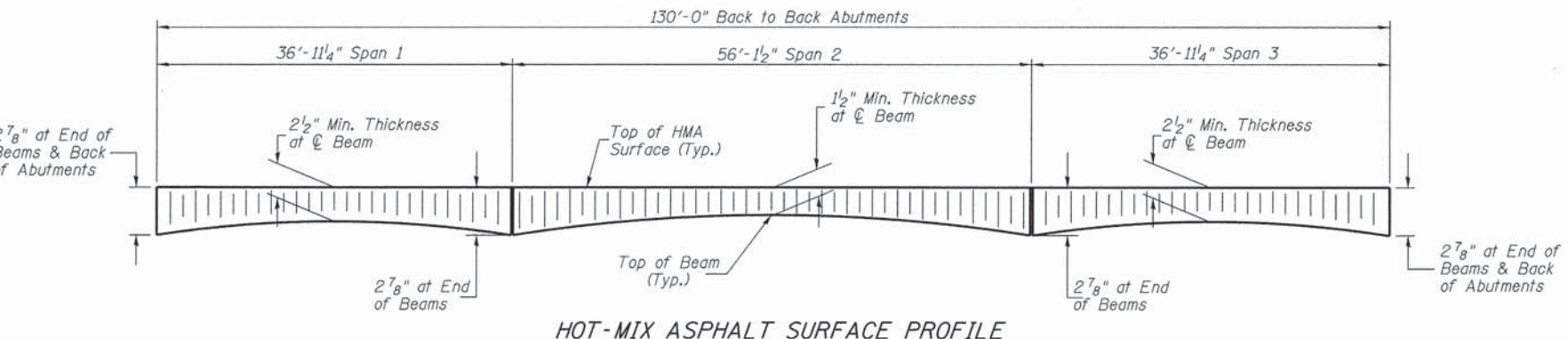
**SECTION A-A**  
(At Right Angles)



**1/2" FABRIC BEARING PAD DETAILS**  
66 Required



**SECTION B-B**  
(At Right Angles)

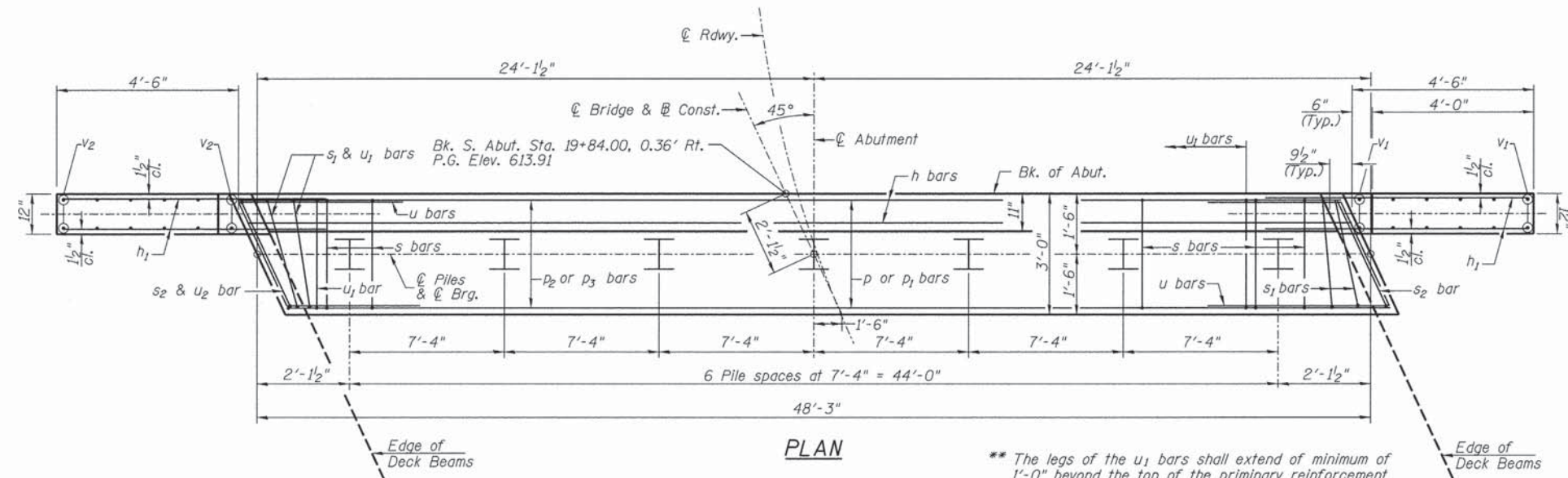


**HOT-MIX ASPHALT SURFACE PROFILE**

- ① Dowel Rods to be grouted after beams are in place and allowed to cure (Min. 24 hr.) prior to grouting the shear keys.
  - ② The area between the top of substructure caps and the bottom of the beams shall be filled with non-shrink grout as detailed to prevent the beams from rocking.
  - ③ 1" Joint shall be packed with a very dry mix of 2:1 sand and P.C. mortar. 1" Dimension may vary plus or minus to accommodate tolerance in beam lengths.
- The cost of all grouting items and bearing pads shall be included with Precast Prestressed Concrete Deck Beams (21" Depth).

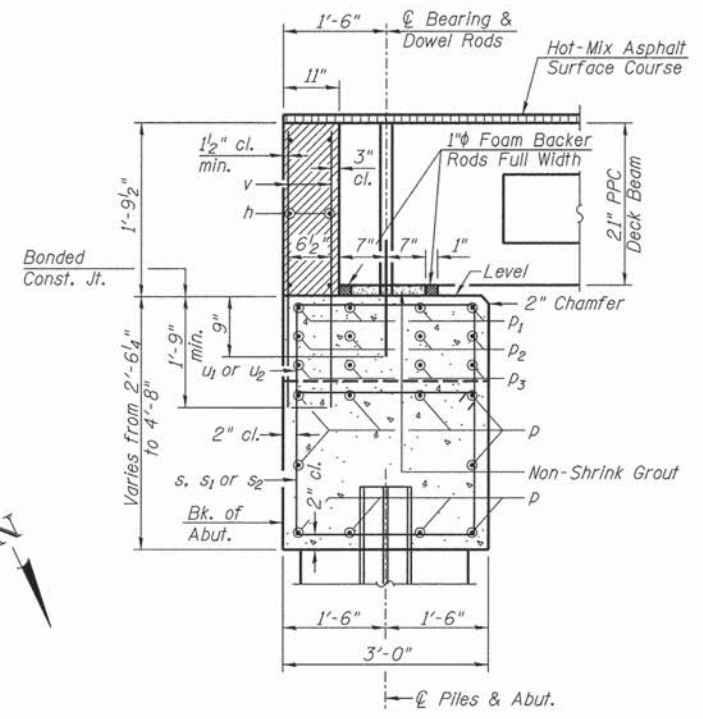
**RAIL POST SPACING AND SUPERSTRUCTURE DETAILS**  
**PIKE COUNTY**  
**SECTION 13-00091-00-BR**  
**C.H. 4 OVER BULL RUN CREEK**

SHEET NO. 8 12 SHEETS	F.A.S. RTE. 597	SECTION 13-00091-00-BR	COUNTY PIKE	TOTAL SHEETS 28	SHEET NO. 15
	S.N. 075-3325		CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		

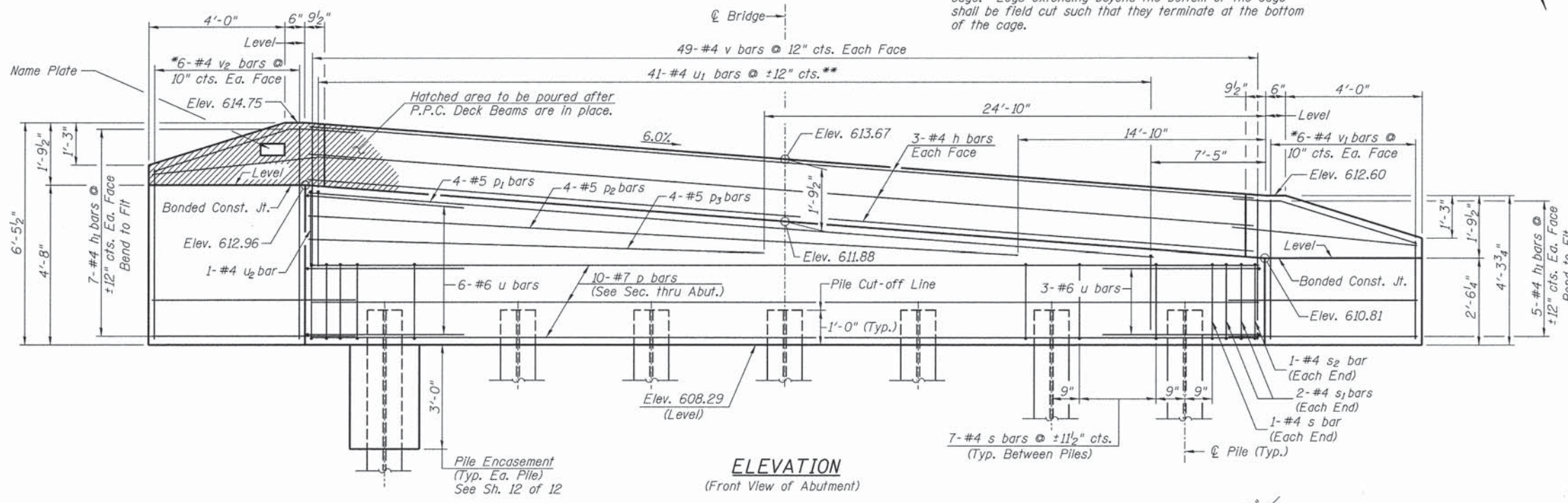


**PLAN**

\*\* The legs of the  $u_1$  bars shall extend of minimum of 1'-0" beyond the top of the primary reinforcement cage. Legs extending beyond the bottom of the cage shall be field cut such that they terminate at the bottom of the cage.



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



**ELEVATION**  
(Front View of Abutment)

**SOUTH ABUTMENT**  
**BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
h	6	#4	48'-0"	—
h <sub>1</sub>	24	#4	6'-6"	—
p	10	#7	48'-0"	—
p <sub>1</sub>	4	#5	40'-9"	—
p <sub>2</sub>	4	#5	33'-4"	—
p <sub>3</sub>	4	#5	23'-4"	—
s	44	#4	10'-5"	□
s <sub>1</sub>	4	#4	7'-10"	□
s <sub>2</sub>	2	#4	9'-8"	□
u	9	#6	12'-8"	□
u <sub>1</sub>	41	#4	8'-8"	□
u <sub>2</sub>	1	#4	9'-9"	□
v	98	#4	3'-6"	—
v <sub>1</sub>	6	#4	6'-9"	—
v <sub>2</sub>	6	#4	11'-1"	—
Concrete Structures			CU YD	23.8
Reinforcement Bars			POUND	2,740
Name Plates			EACH	1
Structure Excavation			CU YD	50
Furnishing Steel Piles			FOOT	162
HP10x42				
Driving Piles			FOOT	162
Test Pile Steel HP10x42			EACH	1
Concrete Encasement			CU YD	2.4

① See Special Provisions

**DESIGN STRESSES**

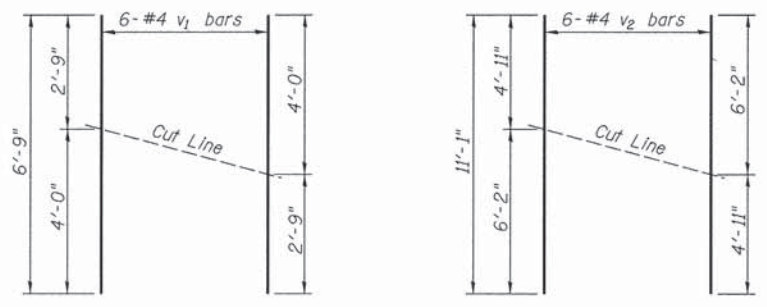
$f'_c = 3,500$  p.s.i.  
 $f_y = 60,000$  p.s.i.

**PILE DATA**

Type & Size: Steel HP10x42  
Nominal Required Bearing: 335 kips  
Factored Resistance Available: 184 kips  
Est. Length: 27'  
No. Req'd.: 7 (Includes 1 Test Pile)

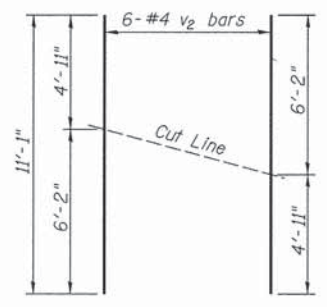
**NOTES**

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to ASTM A706 Grade 60.



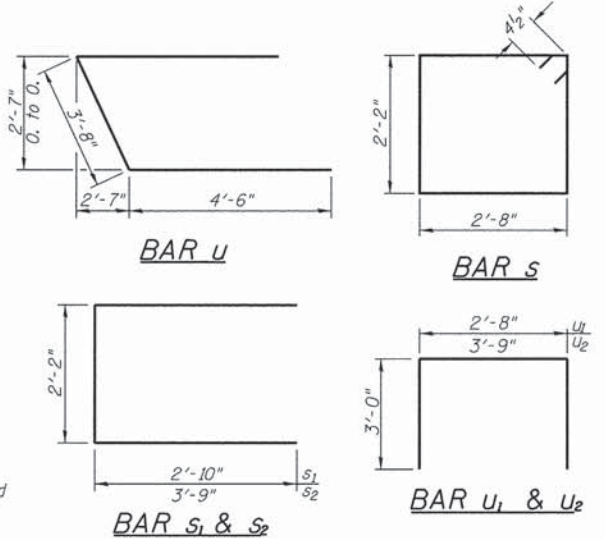
**BAR CUTTING DIAGRAM**

\*Order  $v_1$  bars full length. Cut as shown and use remainder of bars in opposite face.



**BAR CUTTING DIAGRAM**

\*Order  $v_2$  bars full length. Cut as shown and use remainder of bars in opposite face.



**BAR u**

**BAR s**

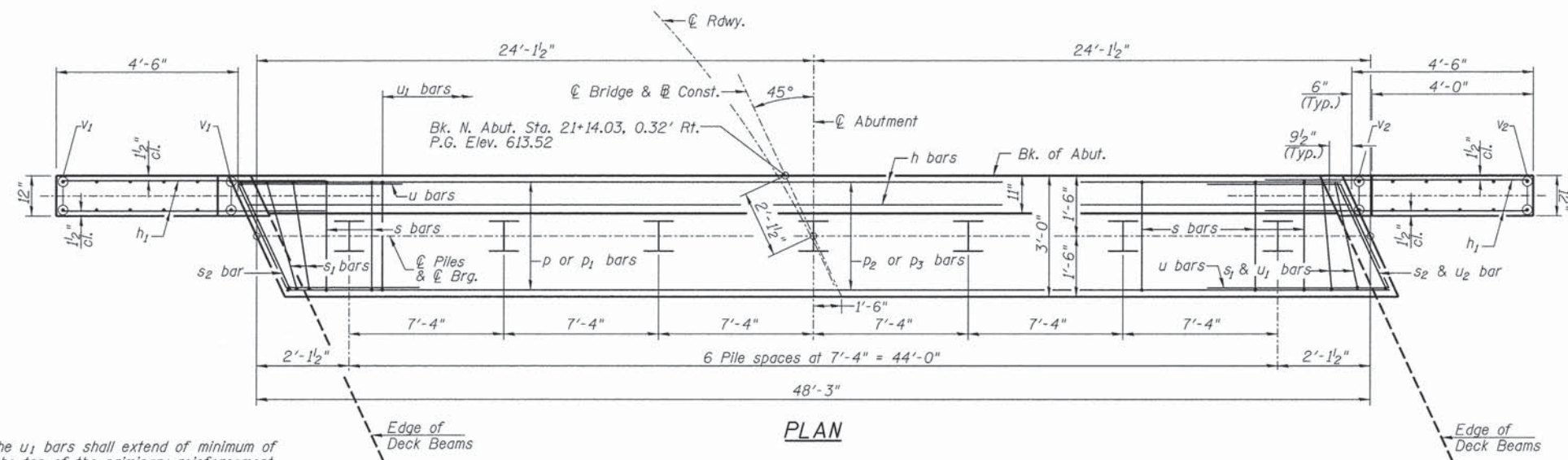
**BAR s<sub>1</sub> & s<sub>2</sub>**

**BAR u<sub>1</sub> & u<sub>2</sub>**

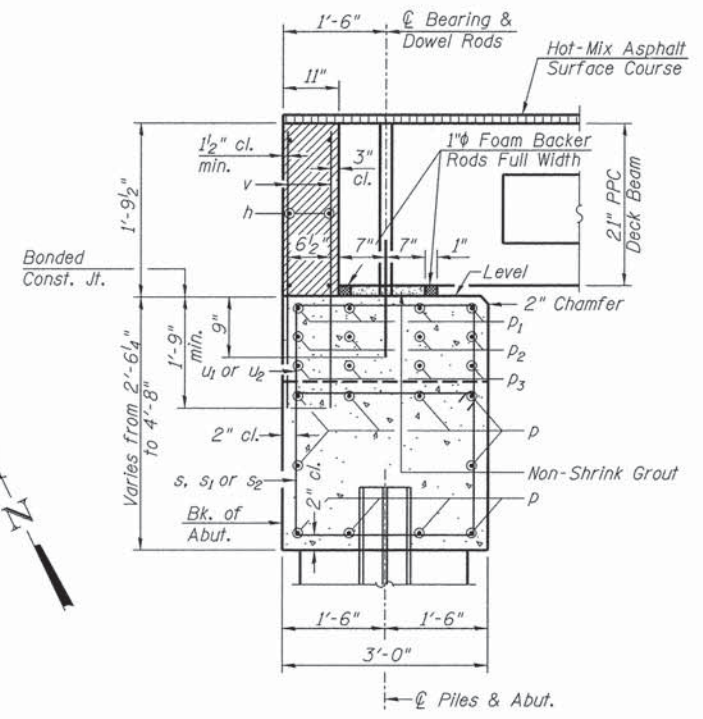
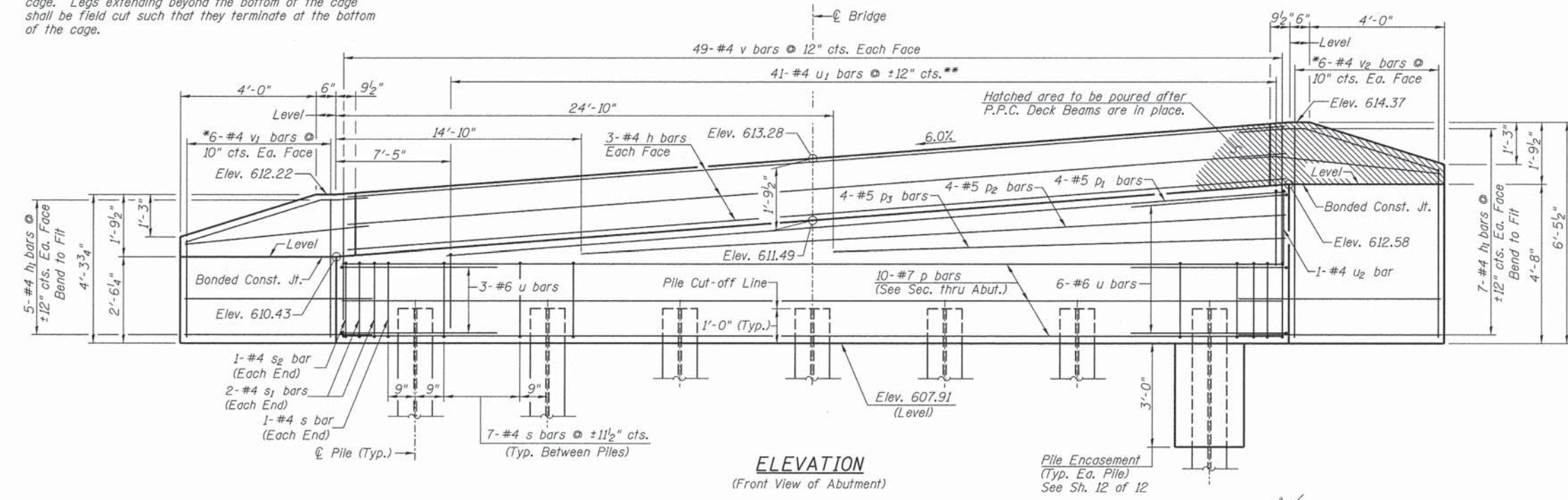
**SOUTH ABUTMENT**  
**PIKE COUNTY**  
**SECTION 13-00091-00-BR**  
**C.H. 4 OVER BULL RUN CREEK**

SHEET NO.	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9	597	13-00091-00-BR	PIKE	28	16
12 SHEETS		S.N. 075-3325	CONTRACT NO. 93612		
		FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0597(104)		





\*\* The legs of the  $u_1$  bars shall extend of minimum of 1'-0" beyond the top of the primary reinforcement cage. Legs extending beyond the bottom of the cage shall be field cut such that they terminate at the bottom of the cage.



SECTION THRU ABUTMENT  
(At Right Angles)

**NORTH ABUTMENT  
BILL OF MATERIAL**

BAR	NO.	SIZE	LENGTH	SHAPE
h	6	#4	48'-0"	—
h <sub>1</sub>	24	#4	6'-6"	—
p	10	#7	48'-0"	—
p <sub>1</sub>	4	#5	40'-9"	—
p <sub>2</sub>	4	#5	33'-4"	—
p <sub>3</sub>	4	#5	23'-4"	—
s	44	#4	10'-5"	□
s <sub>1</sub>	4	#4	7'-10"	□
s <sub>2</sub>	2	#4	9'-8"	□
u	9	#6	12'-8"	□
u <sub>1</sub>	41	#4	8'-8"	□
u <sub>2</sub>	1	#4	9'-9"	□
v	98	#4	3'-6"	—
v <sub>1</sub>	6	#4	6'-9"	—
v <sub>2</sub>	6	#4	11'-1"	—

Concrete Structures	CU YD	23.8
Reinforcement Bars	POUND	2,740
Structure Excavation	CU YD	55
Furnishing Steel Piles	FOOT	204
HP10x42		
Driving Piles	FOOT	204
Test Pile Steel HP10x42	EACH	1
Concrete Encasement	CU YD	2.4

① See Special Provisions

**DESIGN STRESSES**

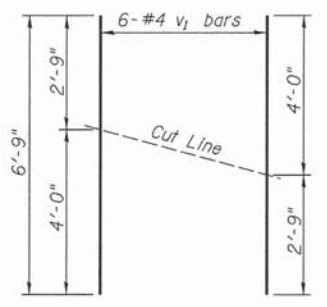
$f'_c = 3,500$  p.s.i.  
 $f_y = 60,000$  p.s.i.

**PILE DATA**

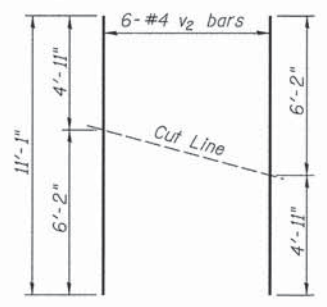
Type & Size: Steel HP10x42  
Nominal Required Bearing: 335 kips  
Factored Resistance Available: 184 kips  
Est. Length: 34'  
No. Req'd.: 7 (Includes 1 Test Pile)

**NOTES**

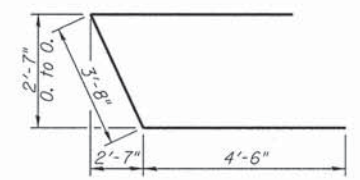
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to ASTM A706 Grade 60.



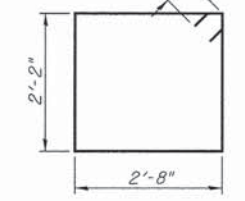
**BAR CUTTING DIAGRAM**  
\*Order  $v_1$  bars full length. Cut as shown and use remainder of bars in opposite face.



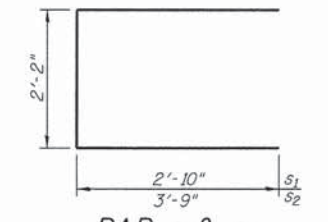
**BAR CUTTING DIAGRAM**  
\*Order  $v_2$  bars full length. Cut as shown and use remainder of bars in opposite face.



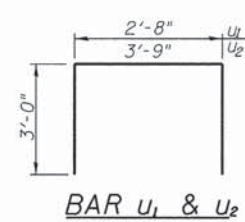
**BAR u**



**BAR s**



**BAR s<sub>1</sub> & s<sub>2</sub>**



**BAR u<sub>1</sub> & u<sub>2</sub>**

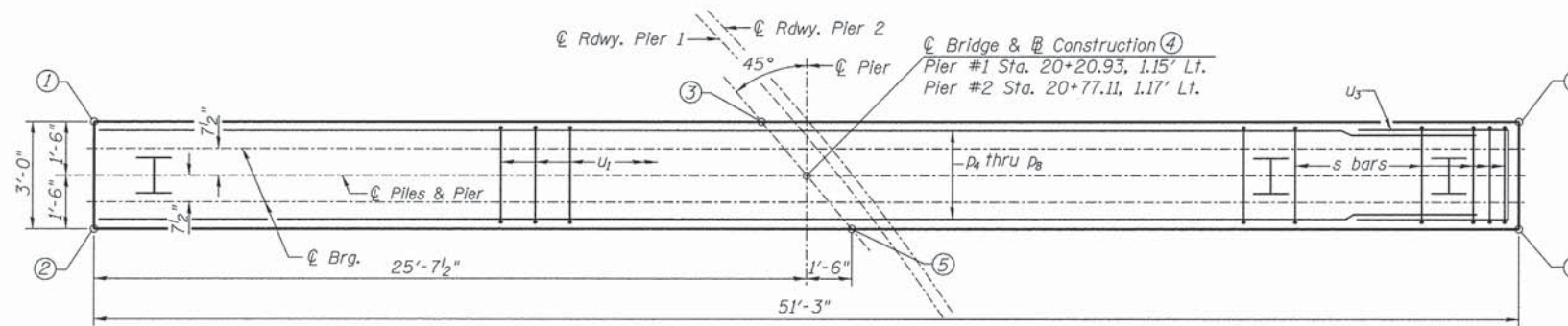
**NORTH ABUTMENT  
PIKE COUNTY  
SECTION 13-00091-00-BR  
C.H. 4 OVER BULL RUN CREEK**

SHEET NO. 10 12 SHEETS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	597	13-00091-00-BR	PIKE	28	17
S.N. 075-3325			CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS		FED. AID PROJECT BRS-0597(104)			

NOTES:  
All edges shall have standard 3/4" chamfer.

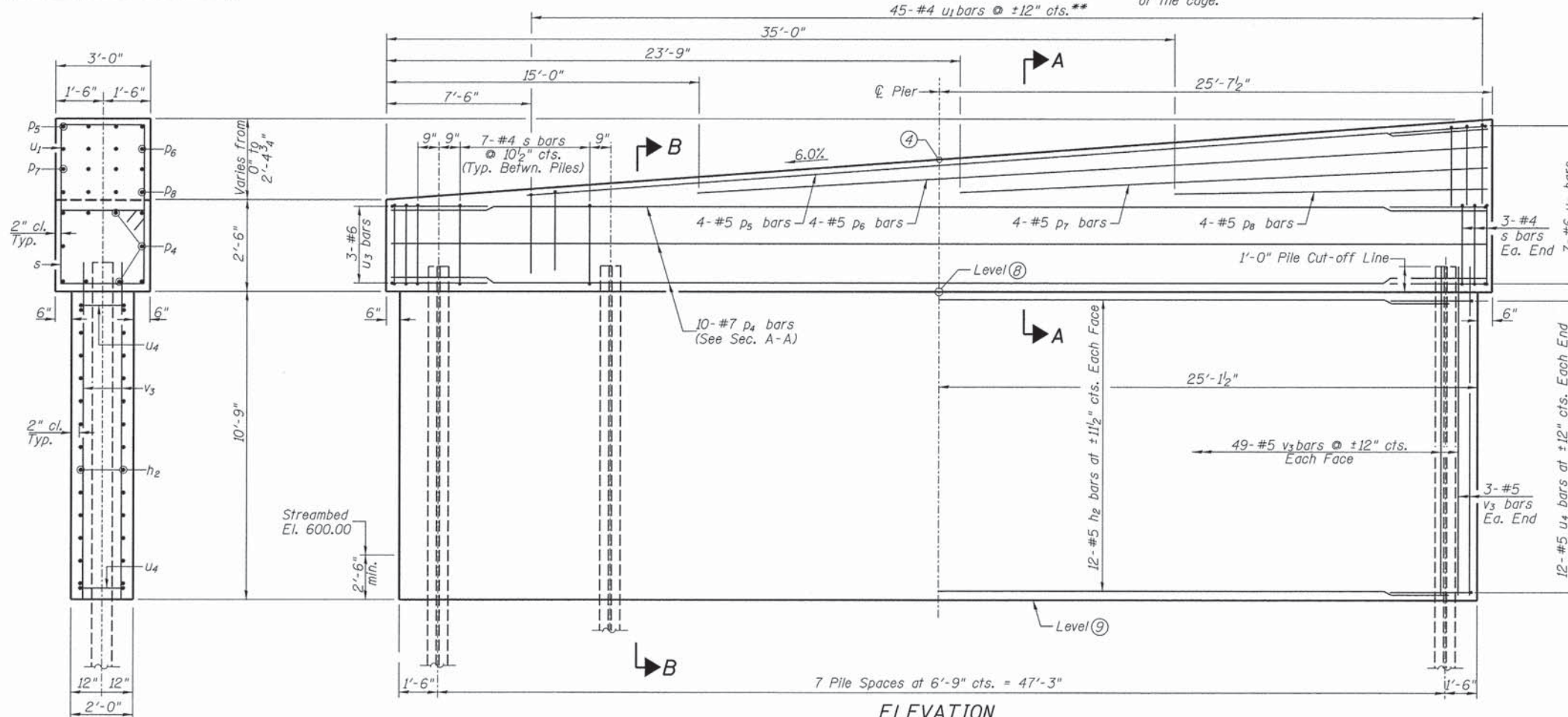
TABLE OF ELEVATIONS

LOCATION	PIER #1	PIER #2
①	610.69	610.52
②	610.57	610.40
③	611.77	611.60
④	611.77	611.60
⑤	611.77	611.60
⑥	612.97	612.80
⑦	612.85	612.68
⑧	608.07	607.90
⑨	597.32	597.15



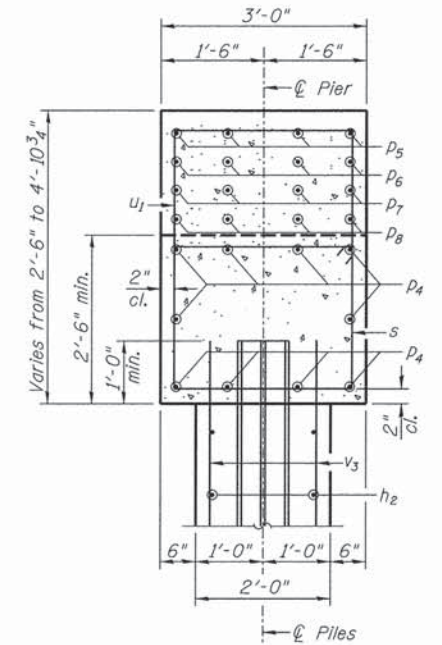
TOP PLAN

\*\* The legs of the  $u_1$  bars shall extend of minimum of 1'-0" beyond the top of the primary reinforcement cage. Legs extending beyond the bottom of the cage shall be field cut such that they terminate at the bottom of the cage.



ELEVATION  
(Looking Upstation)

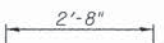
SECTION B-B



SECTION A-A

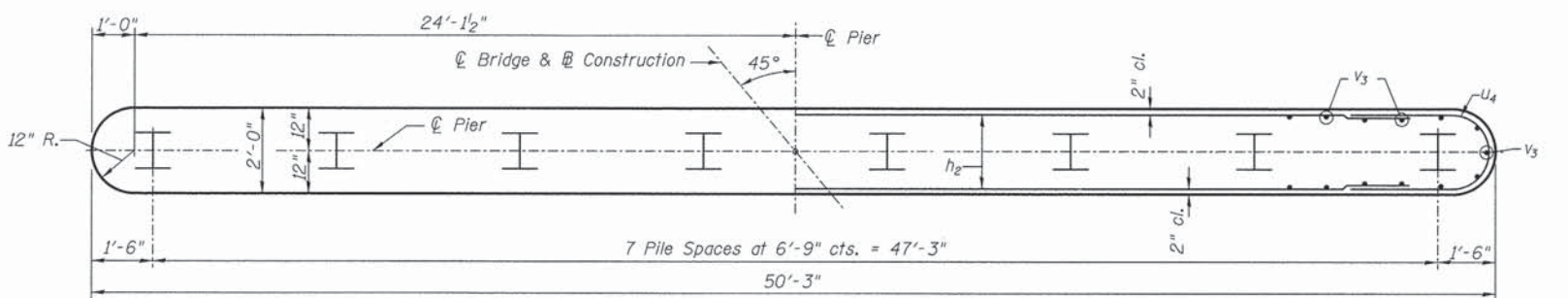
TWO PIERS  
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
$h_2$	48	#5	47'-11"	—
$p_4$	20	#7	51'-0"	—
$p_5$	8	#5	43'-8"	—
$p_6$	8	#5	36'-2"	—
$p_7$	8	#5	27'-5"	—
$p_8$	8	#5	16'-1"	—
$s$	110	#4	10'-5"	□
$u_1$	90	#4	8'-8"	□
$u_2$	20	#6	11'-7"	□
$u_3$	48	#5	6'-8"	□
$v_3$	208	#5	11'-7"	—
Concrete Structures		CU YD	121.5	
① Reinforcement Bars		POUND	9,990	
Cofferdam Excavation		CU YD	90	
Furnishing Steel Piles		FOOT	434	
HP10x42				
Driving Piles		FOOT	434	
Test Pile Steel HP10x42		EACH	2	
① Cofferdam (Type 1)		EACH	1	
(Location-1)				
① Cofferdam (Type 1)		EACH	1	
(Location-2)				
① See Special Provisions				



PILE DATA

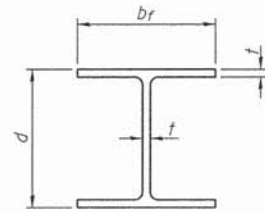
Type & Size: Steel HP10x42  
Nominal Required Bearing: 335 kips  
Factored Resistance Available: 184 kips  
Est. Length: 28' Pier #1  
34' Pier #2  
No. Req'd.: 16 (Includes 1 Test Pile at Each Pier)



FOOTING PLAN

PIERS  
PIKE COUNTY  
SECTION 13-00091-00-BR  
C.H. 4 OVER BULL RUN CREEK

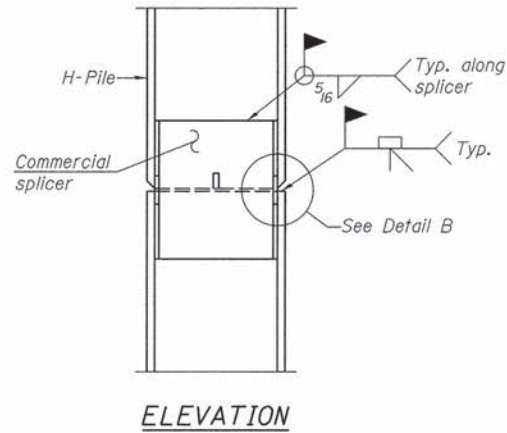
SHEET NO. 11 12 SHEETS	F.A.S. RTE. 597	SECTION 13-00091-00-BR	COUNTY PIKE	TOTAL SHEETS 28	SHEET NO. 18
	S.N. 075-3325		CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		



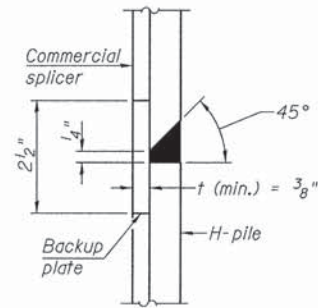
**STEEL PILE TABLE**

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter
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 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

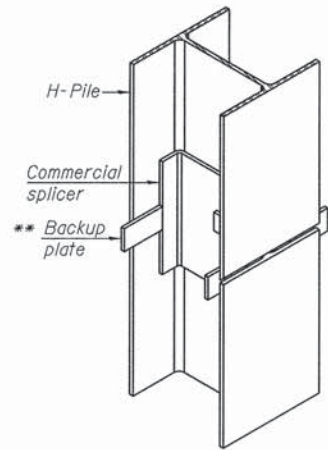
Note:  
The steel H-piles shall be according to AASHTO M270 Grade 50.



**ELEVATION**

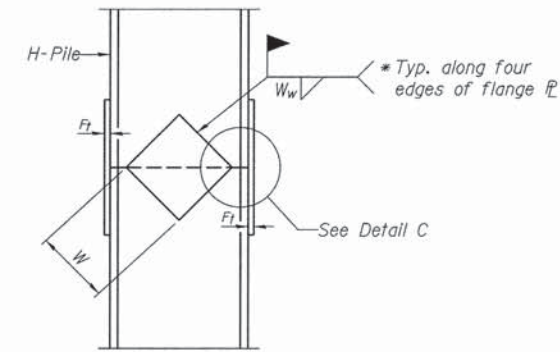


**DETAIL "B"**

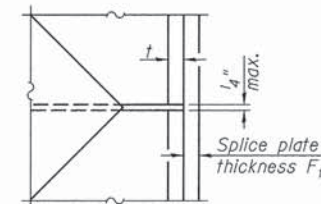


**ISOMETRIC VIEW**

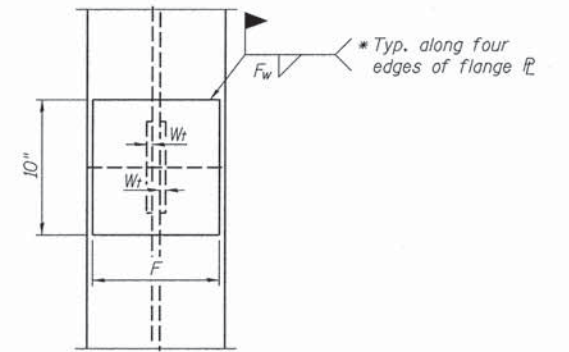
**WELDED COMMERCIAL SPLICE**



**ELEVATION**

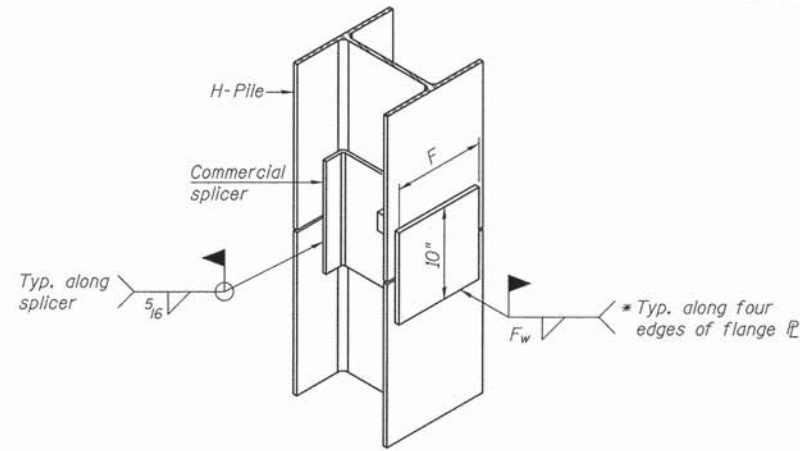


**DETAIL C**



**END VIEW**

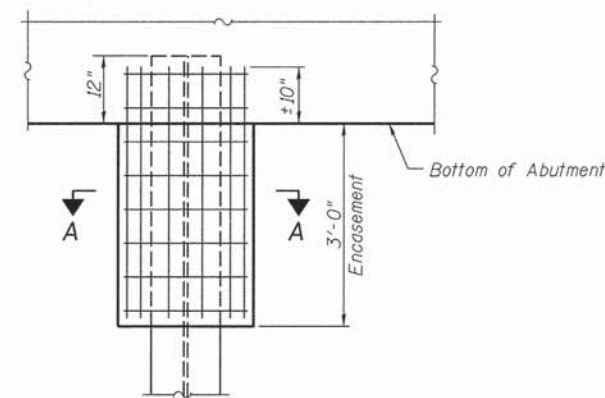
Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 1/2"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 1/2"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5 1/2"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 1/2"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5 1/2"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	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"



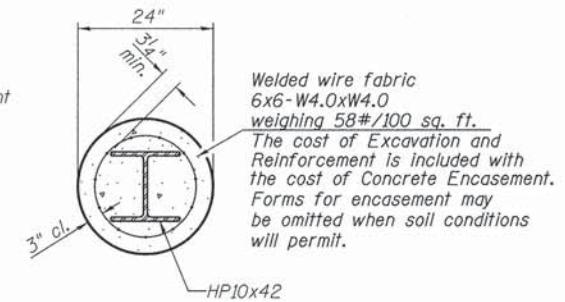
**ISOMETRIC VIEW**

**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.



**ABUTMENT ELEVATION**

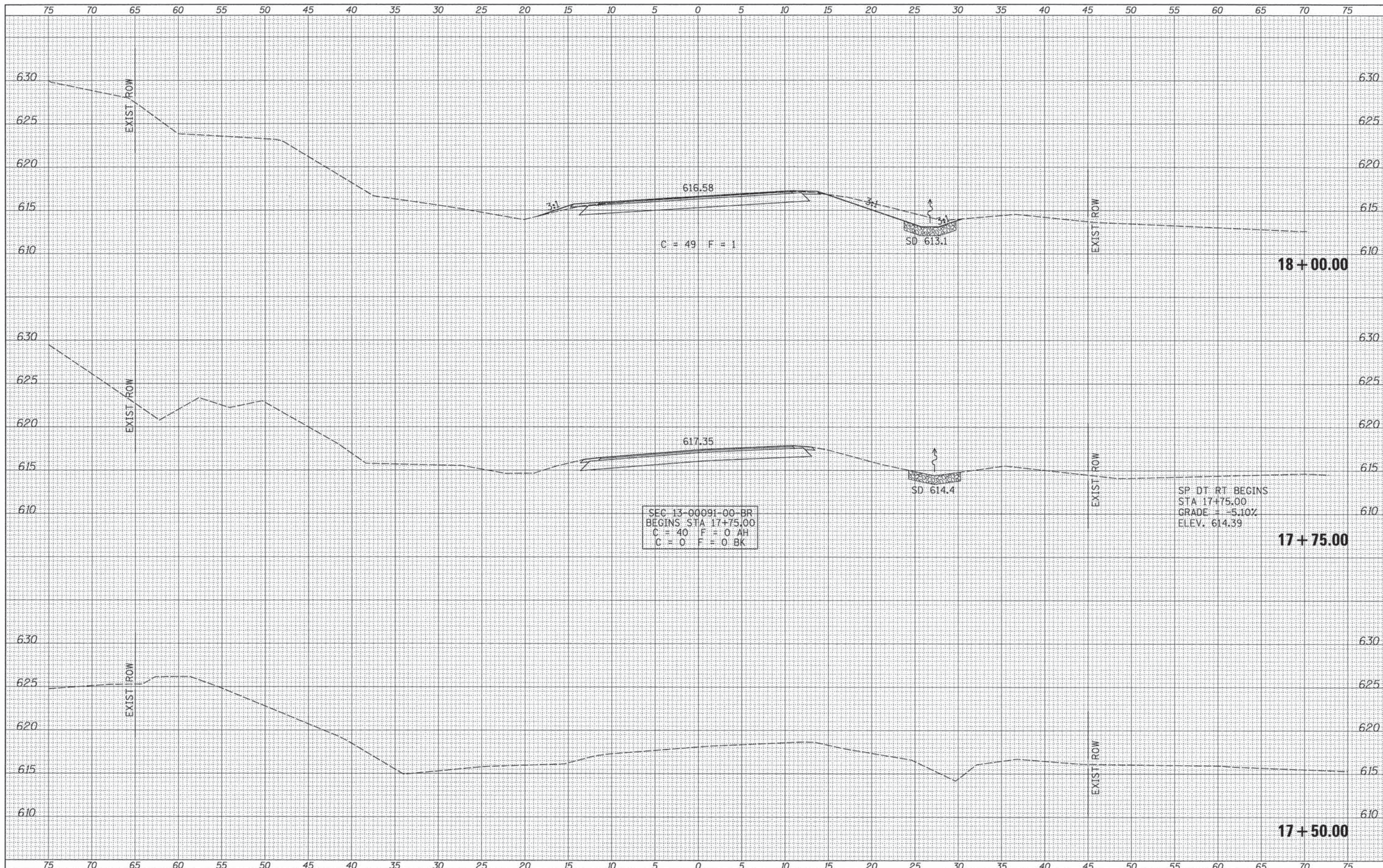


**SECTION A-A**

**PILE ENCASEMENT**

**PILE DETAILS**  
**PIKE COUNTY**  
**SECTION 13-00091-00-BR**  
**C.H. 4 OVER BULL RUN CREEK**

SHEET NO. 12	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12 SHEETS	597	13-00091-00-BR	PIKE	28	19
S.N. 075-3325			CONTRACT NO. 93612		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-0597(104)		



DATE	
BY	
FINAL SURVEY	SUBMITTED
NOTE BOOK NO.	PLOTTED
	TEMPLATE
	AREAS CHECKED

DATE	
BY	
ORIGINAL SURVEY	SUBMITTED
NOTE BOOK NO.	PLOTTED
	TEMPLATE
	AREAS CHECKED

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 PLOT SCALE = 5.0000' / 1"  
 PLOT DATE = 1/10/2014

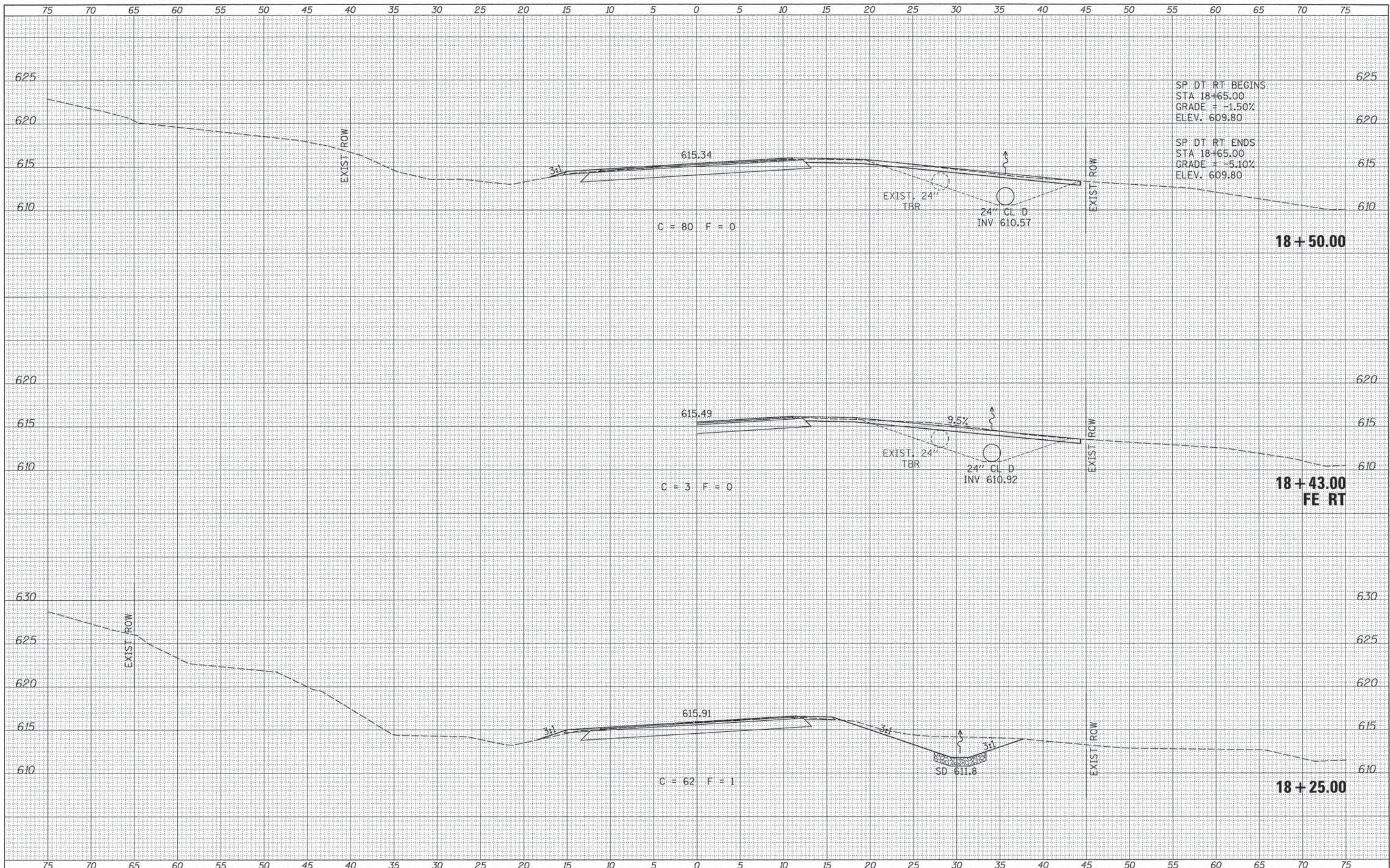
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DRAWN -	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

**PIKE COUNTY  
 COUNTY HIGHWAY 4 OVER  
 BULL RUN CREEK**

**COUNTY HIGHWAY 4  
 CROSS SECTIONS**

SCALE: 1"=5' SHEET 1 OF 6 SHEETS STA. 17+50.00 TO STA. 18+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	20
CONTRACT NO. 93612			FED. ROAD DIST. NO. 7 ILLINOIS	
FED. AID PROJECT BRS-0597(104)				



SP DT RT BEGINS  
 STA 18+65.00  
 GRADE = -1.50%  
 ELEV. 609.80

SP DT RT ENDS  
 STA 18+65.00  
 GRADE = -5.10%  
 ELEV. 609.80

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

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

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USER NAME = othomas

PLOT SCALE = 5.0000' / in.

PLOT DATE = 1/10/2014

DESIGNED -	REVISED -
DRAWN -	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

**PIKE COUNTY  
 COUNTY HIGHWAY 4 OVER  
 BULL RUN CREEK**

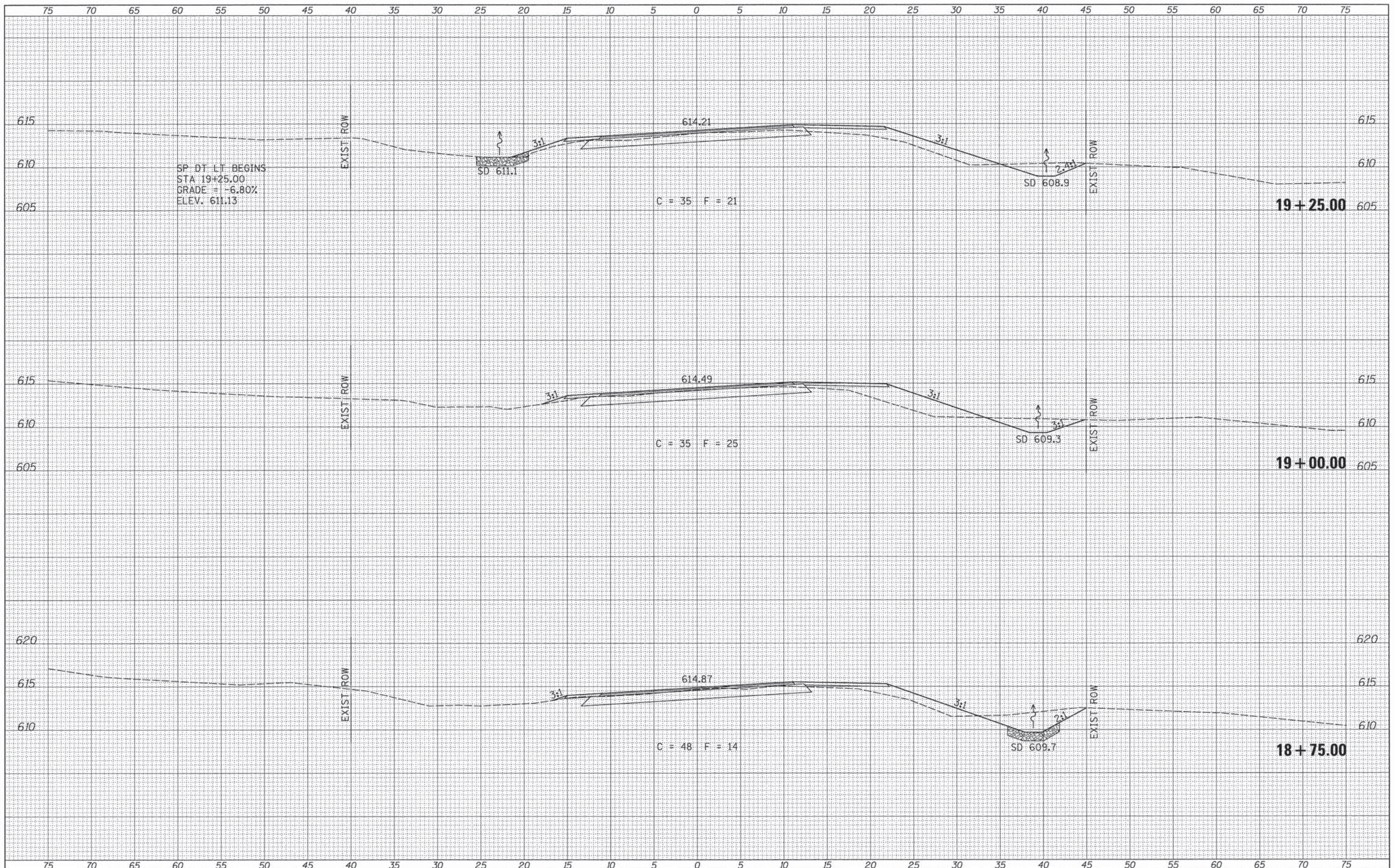
**COUNTY HIGHWAY 4  
 CROSS SECTIONS**

SCALE: 1"=5' SHEET 2 OF 6 SHEETS STA. 18+25.00 TO STA. 18+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	21
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93612	
FED. AID PROJECT BRS-05971040				

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

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

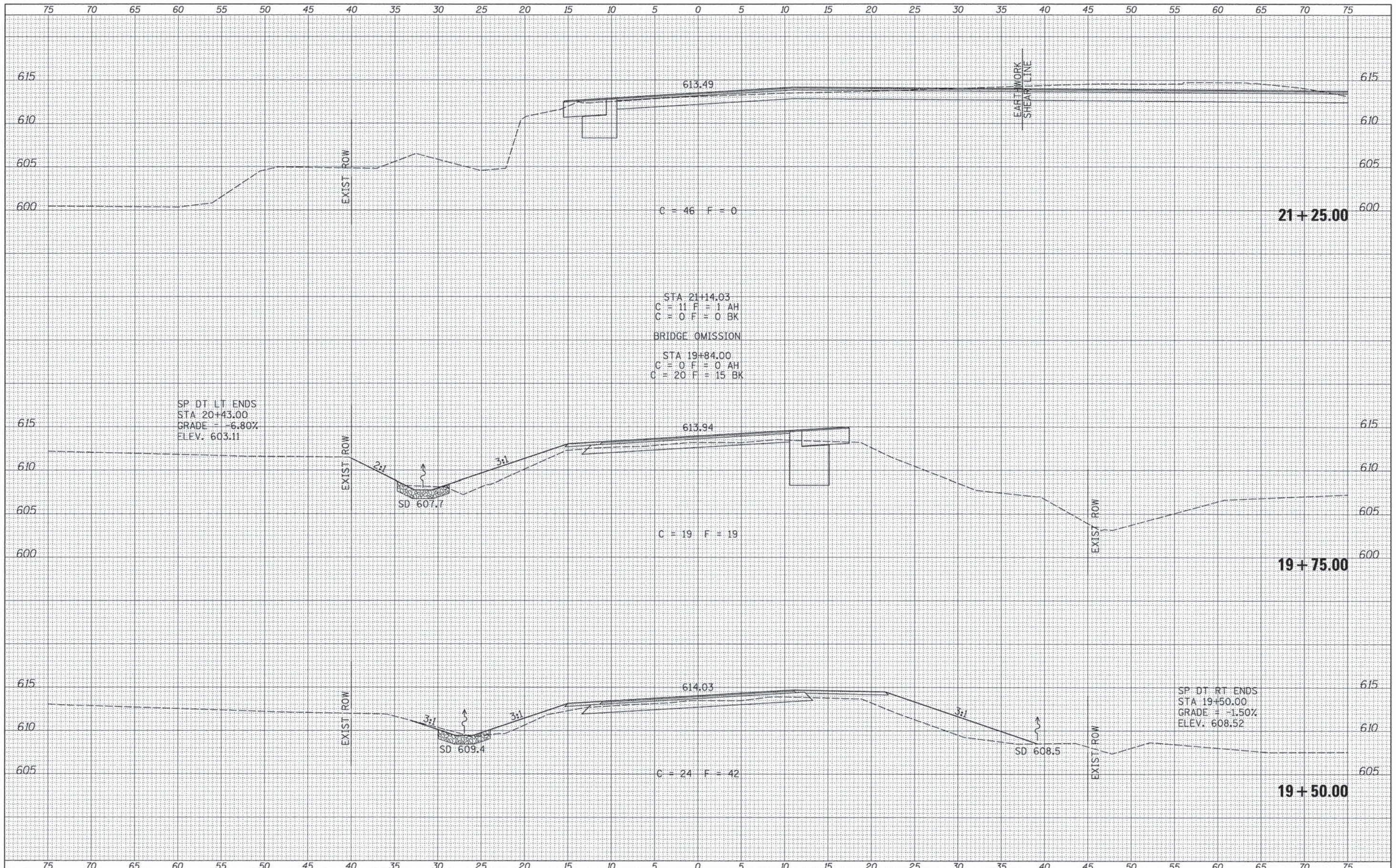


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PLOT SCALE = 5.0000' / 1" =	CHECKED -	REVISED -	CONTRACT NO. 33612							
PLOT DATE = 1/10/2014	DATE -	REVISED -	FED. ROAD DIST. NO. 7 ILLINOIS							
Default			FED. AID PROJECT BRS-0597(104)							

SCALE: 1"=5' SHEET 3 OF 6 SHEETS STA. 18+75.00 TO STA. 19+25.00

DATE	
BY	
FINISHED	
SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL	
SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
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NO.	



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DRAWN -	REVISED -
CHECKED -	REVISED -
DATE -	REVISED -

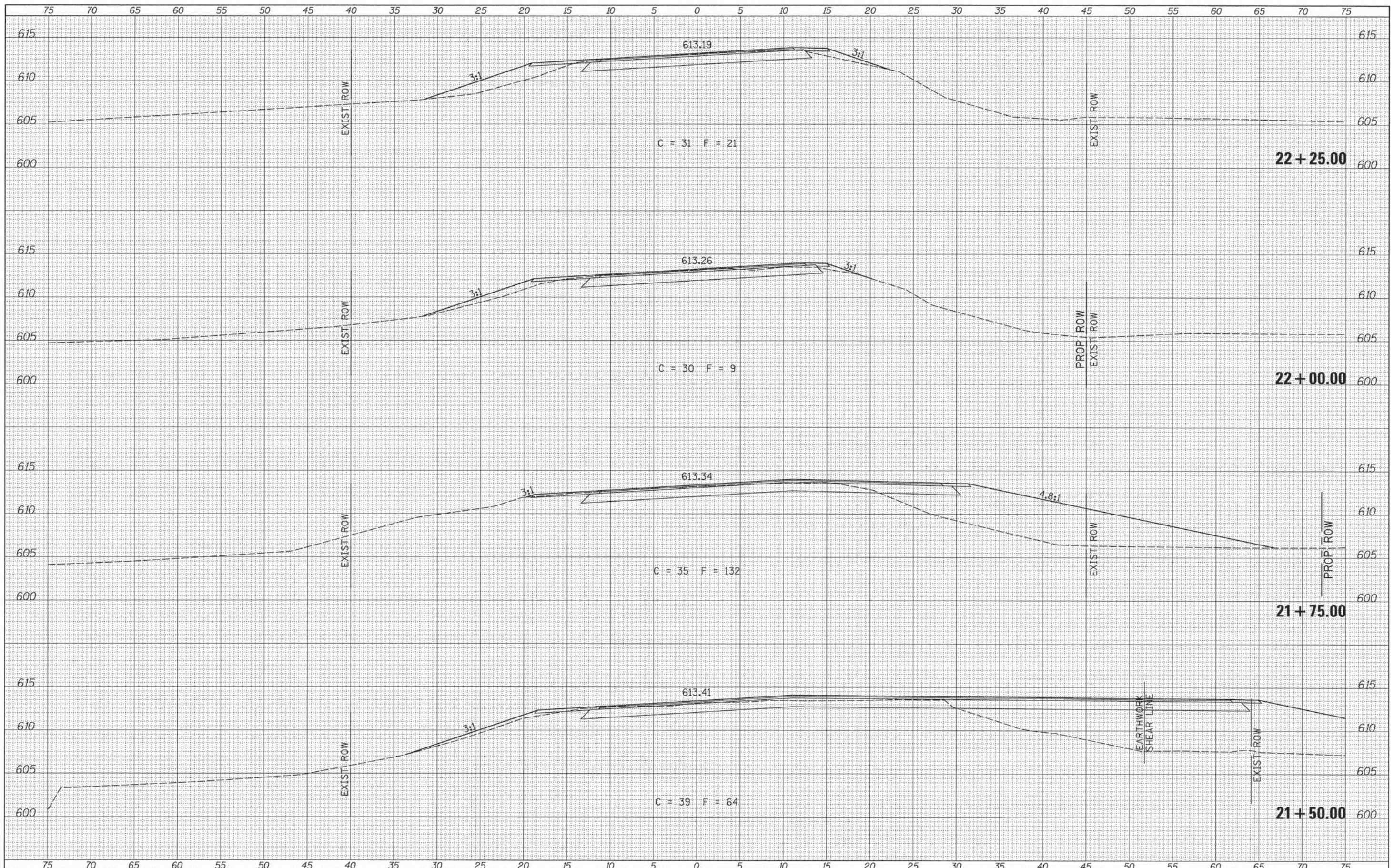
**PIKE COUNTY  
 COUNTY HIGHWAY 4 OVER  
 BULL RUN CREEK**

**COUNTY HIGHWAY 4  
 CROSS SECTIONS**  
 SCALE: 1"=5' SHEET 4 OF 6 SHEETS STA. 19+50.00 TO STA. 21+25.00

F.A.S. RTE. 597	SECTION 13-00091-00-BR	COUNTY PIKE	TOTAL SHEETS 28	SHEET NO. 23
FED. ROAD DIST. NO. 7 (ILLINOIS)			FED. AID PROJECT BRS-0597(104)	

DATE	
BY	
FINAL SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
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DATE	
BY	
ORIGINAL SURVEY	
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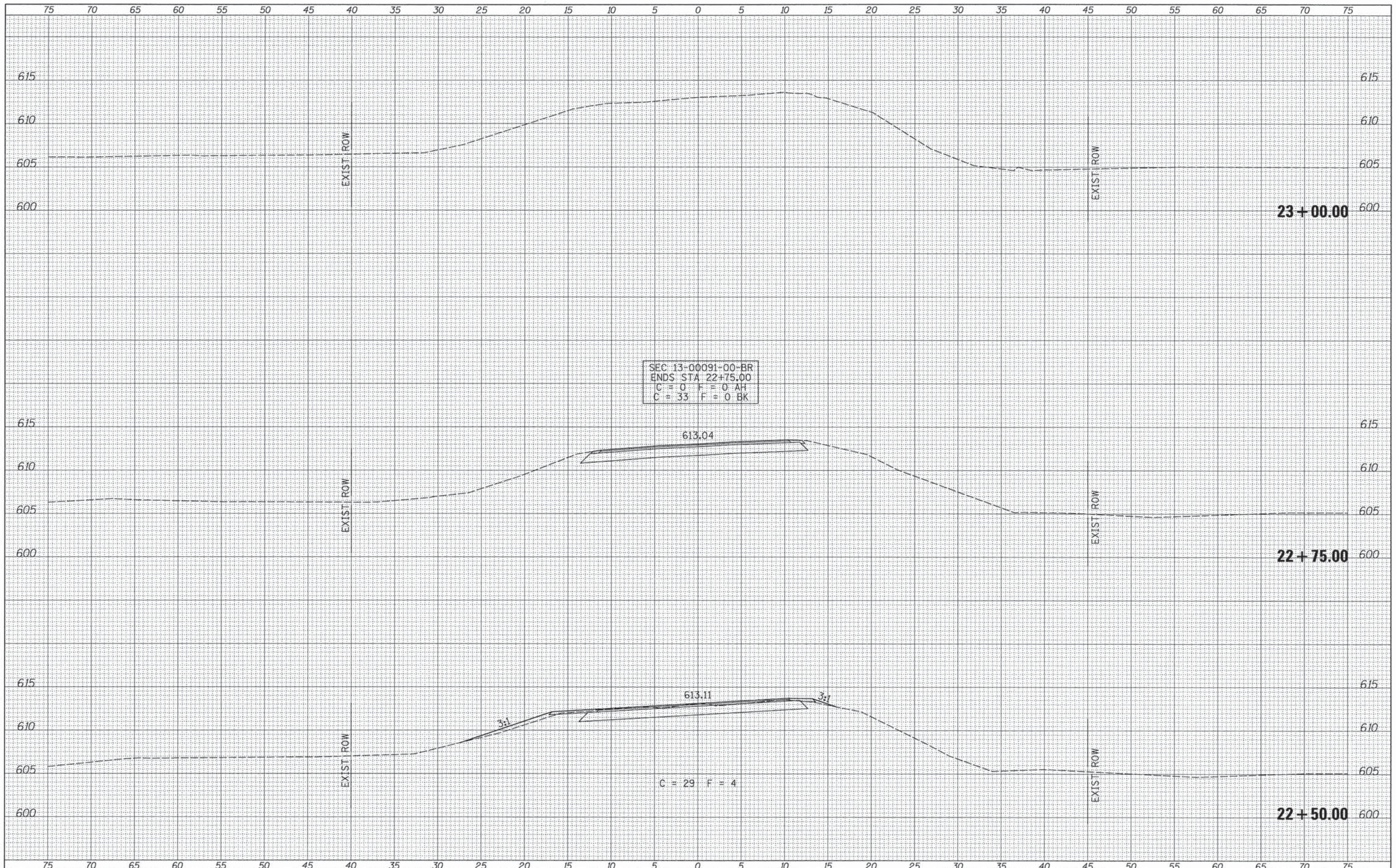


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PLOT SCALE = 5.0000' / in.	PLOT DATE = 1/10/2014	DRAWN -	REVISED -			SCALE: 1"=5'	SHEET 5 OF 6 SHEETS	STA. 21+50.00 TO STA. 22+25.00	FED. ROAD DIST. NO. 7 ILLINOIS	FED. AID PROJECT BRS-0597(04)
CONTRACT NO. 93612		CHECKED -	REVISED -							
		DATE -	REVISED -							



DATE	
BY	
FINISHED	
SURVEY	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
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ORIGINAL	
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NOTE BOOK	
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PLOT DATE = 1/10/2014	

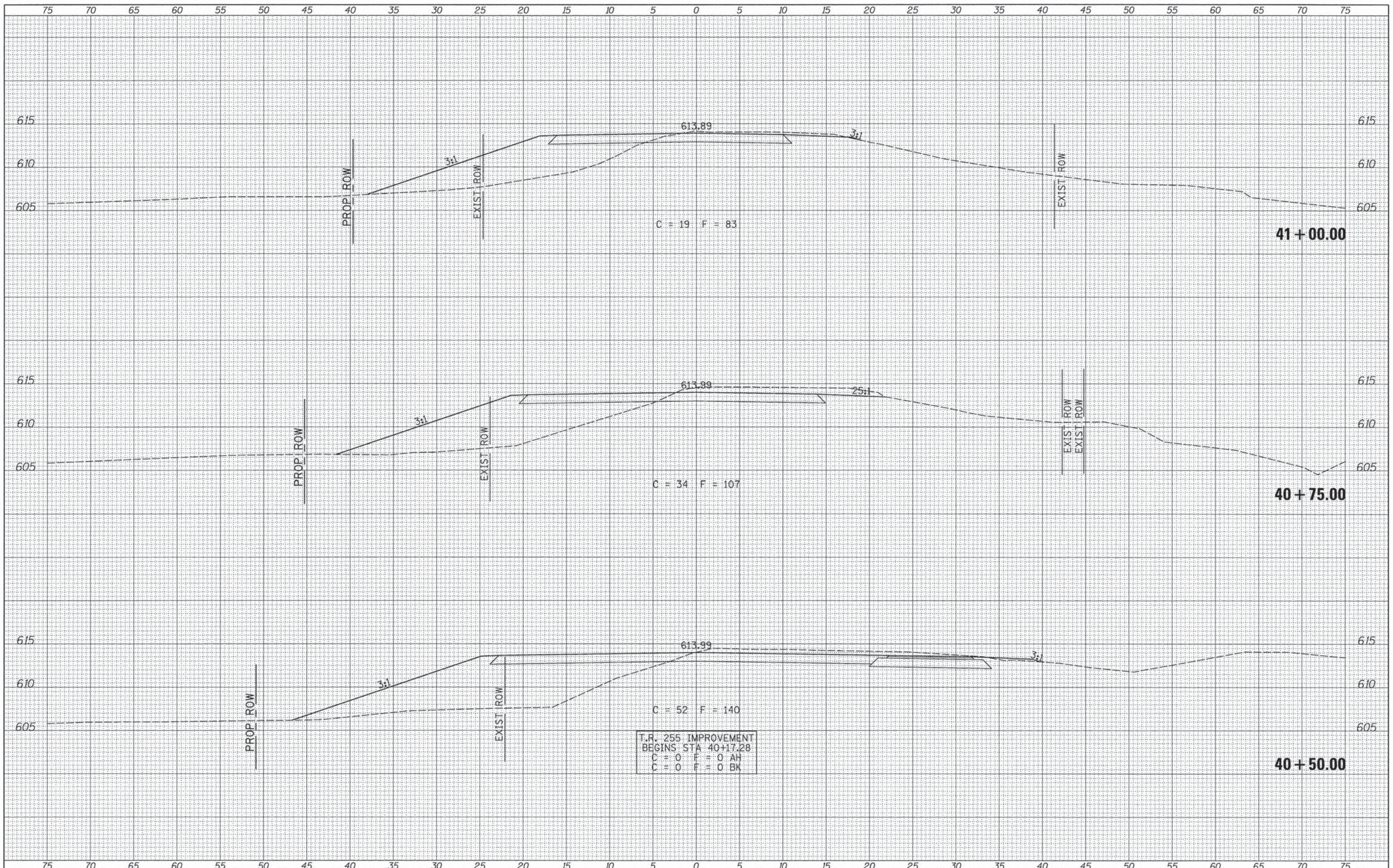
**PIKE COUNTY  
 COUNTY HIGHWAY 4 OVER  
 BULL RUN CREEK**

**COUNTY HIGHWAY 4  
 CROSS SECTIONS**  
 SCALE: 1"=5'  
 SHEET 6 OF 6 SHEETS STA. 22+50.00 TO STA. 23+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	25
CONTRACT NO. 93612			FED. ROAD DIST. NO. 7 ILLINOIS	
FED. AID PROJECT BRS-0597(04)				

DATE	
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DESIGNED	
DRAWN	
CHECKED	
DATE	
REVISIONS	
NO.	
DESCRIPTION	

DATE	
BY	
DESIGNED	
DRAWN	
CHECKED	
DATE	
REVISIONS	
NO.	
DESCRIPTION	



T.R. 255 IMPROVEMENT  
 BEGINS STA 40+17.28  
 C = 0 F = 0 AH  
 C = 0 F = 0 BK

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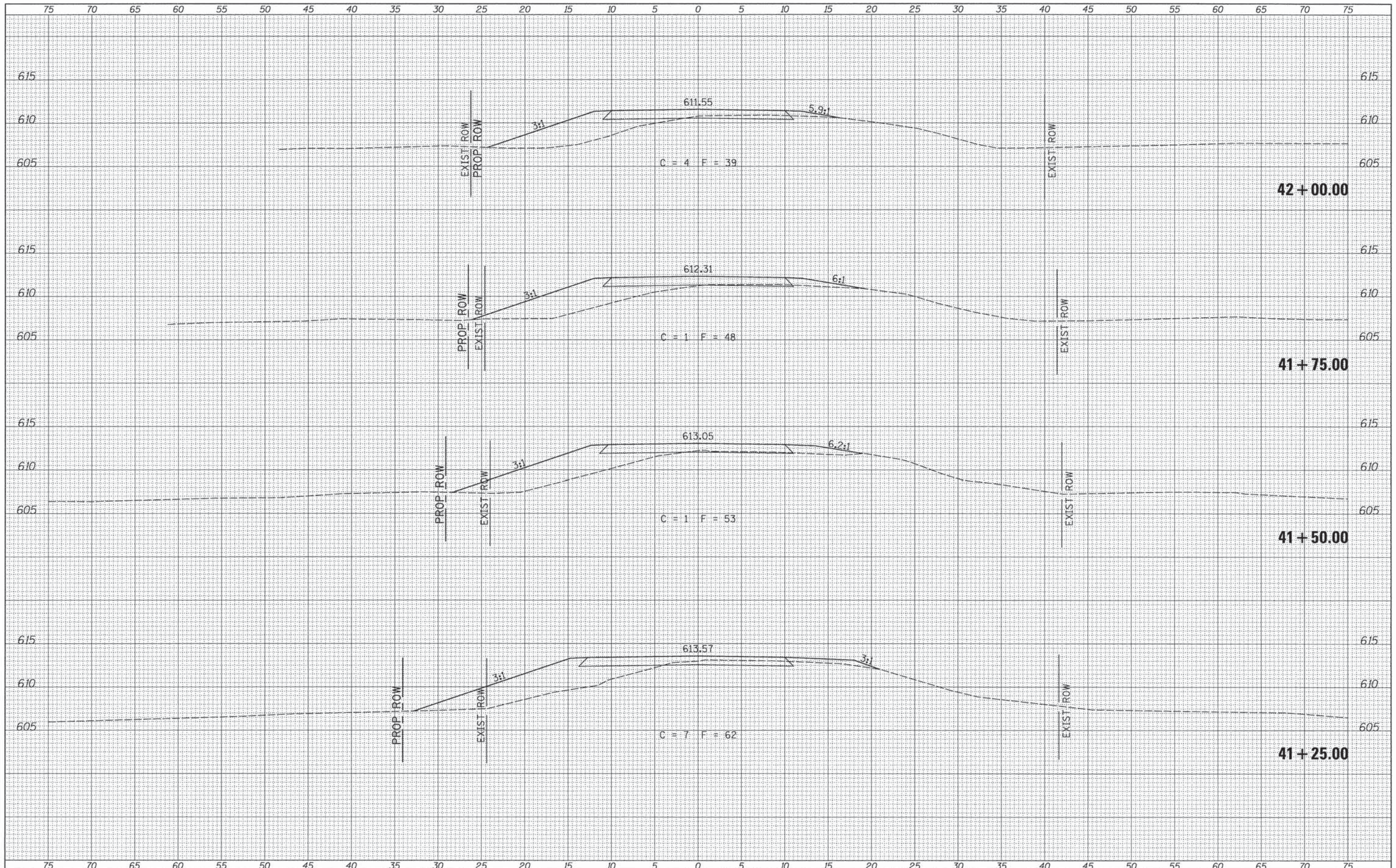
**PIKE COUNTY  
 COUNTY HIGHWAY 4 OVER  
 BULL RUN CREEK**

**TOWNSHIP ROAD 255  
 CROSS SECTIONS**  
 SCALE: 1"=5'  
 SHEET 1 OF 3 SHEETS STA. 40+50.00 TO STA. 41+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
597	13-00091-00-BR	PIKE	28	26
FED. ROAD DIST. NO. 7 ILLINOIS			CONTRACT NO. 93612	
FED. AID PROJECT BR5-0597(104)				

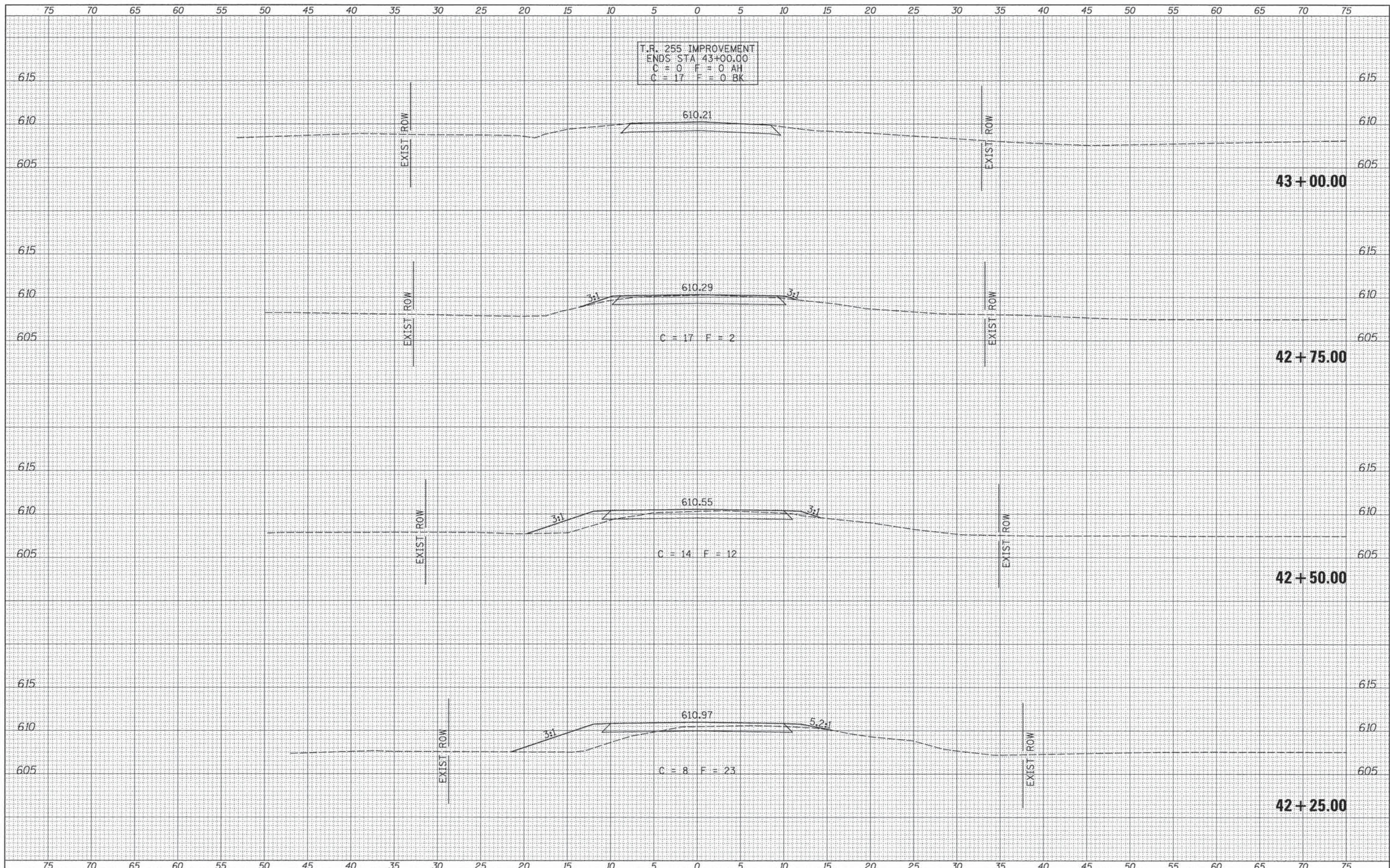
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BY	
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SURVEY	
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TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL	
SURVEY	
PLOTTED	
TEMPLATE	
AREAS	
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PLOT SCALE = 5.0000' / 1"	CHECKED -	REVISED -	CONTRACT NO. 93612							
PLOT DATE = 1/10/2014	DATE -	REVISED -	FED. ROAD DIST. NO. 7 ILLINOIS							
Default			FED. AID PROJECT BR5-0597004							

SCALE: 1"=5' SHEET 2 OF 3 SHEETS STA. 41+25.00 TO STA. 42+00.00



T.R. 255 IMPROVEMENT  
 ENDS STA 43+00.00  
 C = 0 F = 0 AH  
 C = 17 F = 0 BK

DATE	
BY	
FINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
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W:\bridge\3303-Pike\3303\cmts\stdr.dgn		DRAWN -	REVISED -			597	13-00091-00-BR	PIKE	28	28
PLOT SCALE = 5.00000 ' / in.		CHECKED -	REVISED -			CONTRACT NO. 3612				
PLOT DATE = 1/10/2014		DATE -	REVISED -			FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT BRS-0597(104)				

SCALE: 1"=5' SHEET 3 OF 3 SHEETS STA. 42+25.00 TO STA. 43+00.00