

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR16A	07-09123-00-BR	COLES	11	1
FED. ROAD DIST. NO.	ILLINOIS	CONTRACT NO. 95624		

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**

**PLANS FOR PROPOSED  
HIGHWAY BRIDGE PROGRAM**  
**SECTION 07-09123-00-BR**  
**NORTH OKAW TOWNSHIP**  
**TR 16A**  
**COLES COUNTY**

JOB NO. C-97-046-10  
PROJECT NO. BROS-0029 (287)

**INDEX OF SHEETS**

- 1 COVER SHEET
- 2 SUMMARY OF QUANTITIES
- 3 PLAN AND PROFILE
- 4 BRIDGE PLAN AND ELEVATION
- 5 PRECAST CONCRETE BRIDGE SLAB
- 6 TYPE S-1 STEEL RAILING
- 7 ABUTMENT DETAILS
- 8 PILING SPICE DETAILS
- 9 EROSION CONTROL PLAN
- 10-11 CROSS SECTIONS

**HIGHWAY STANDARDS**

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-05 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATES FOR BRIDGES
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 701901-01 TRAFFIC CONTROL DEVICES
- BLR 21-8 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

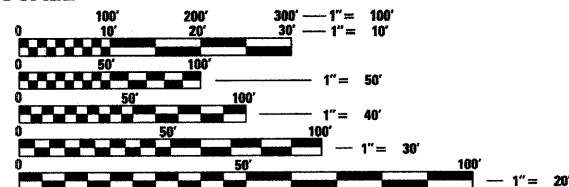
**UTILITIES**

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

**COOKS MILLS WATER ASSOCIATION**  
14040 COOKS MILLS ROAD  
HUMBOLDT, IL 61931-7924

**ADT-CURRENT <100 DESIGN ADT 125**  
**CLASS-RURAL LOCAL ROAD**  
**DESIGN SPEED-30 MPH**  
**DESIGN YEAR 2030**

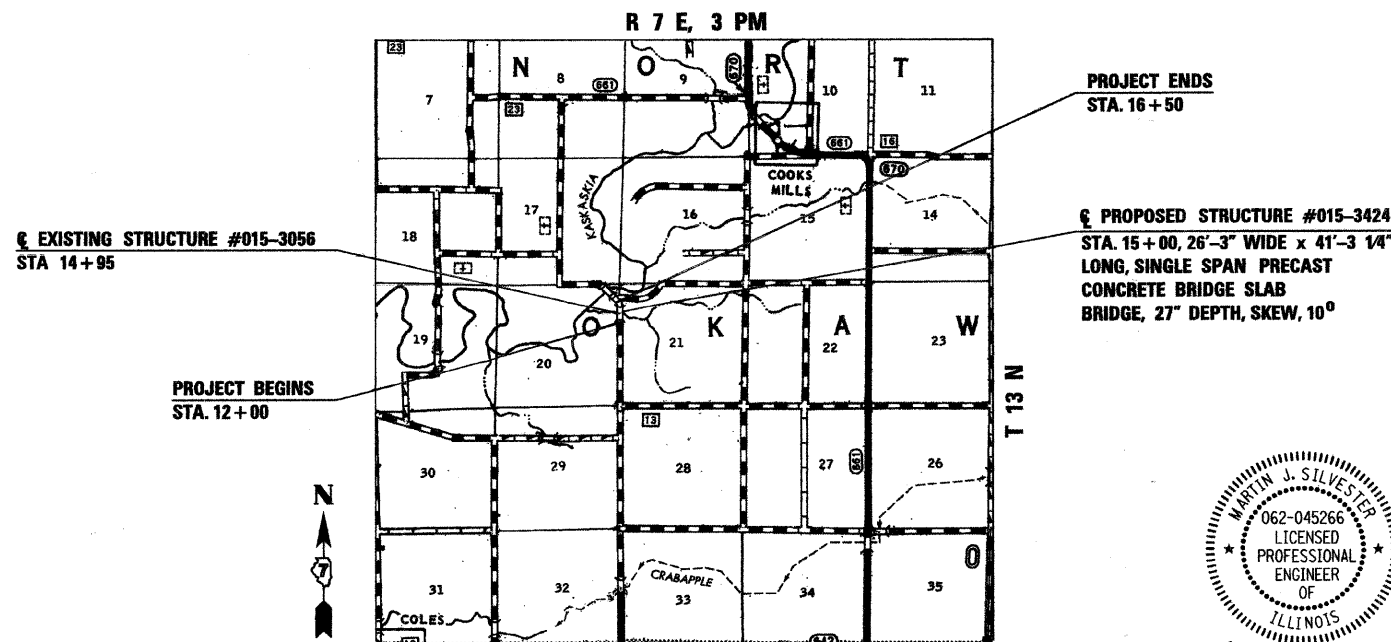
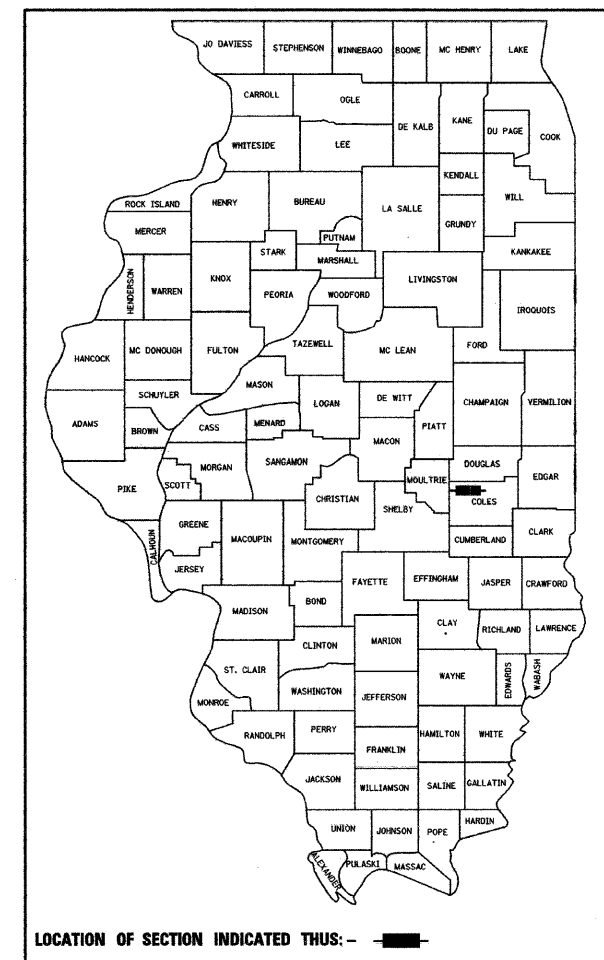
**SCALE**



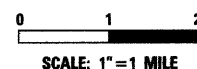
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

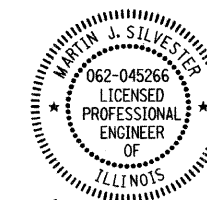
**CONTRACT NO. 95624**



**LOCATION MAP**



TOTAL AND NET LENGTH OF PROJECT = 450 FT. = 0.09MI.



*Martin J. Silvester*  
02-15-10  
THE UPCHURCH GROUP, INC.  
123 NORTH 15th STREET  
MATTOON, IL 61938  
MARTIN SILVESTER, S.E.  
LICENSE EXP. DATE 11-30-10

APPROVED 02-16 2010  
*Randy G. Jensen*  
COUNTY ENGINEER

PASSED 2-19 2010  
*Margaret East*  
DISTRICT SEVEN ENGINEER OF  
LOCAL ROADS AND STREETS

RELEASING FOR  
BID BASED ON  
LIMITED REVIEW 2-19 2010  
*Roger J. Dushoff*  
DEPUTY DIRECTOR OF HIGHWAYS  
REGION FOUR ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

CODE	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	96
20200100	EARTH EXCAVATION	CU. YD.	124
20300100	CHANNEL EXCAVATION	CU. YD.	106
20400800	FURNISHED EXCAVATION	CU. YD.	229
• 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	60
28000305	TEMPORARY DITCH CHECKS	FOOT	32
28000400	PERIMETER EROSION BARRIER	FOOT	850
28100107	STONE RIPRAP, CLASS A4	SQ. YD.	302
• 40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	416
• 50100200	REMOVAL OF EXISTING STRUCTURES	L. SUM	1
50200100	STRUCTURE EXCAVATION	CU. YD.	75
50300225	CONCRETE STRUCTURES	CU. YD.	19.7
50300280	CONCRETE ENCASEMENT	CU. YD.	3.4
• 50400105	PRECAST CONCRETE BRIDGE SLAB	SQ. FT.	1048
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2770
△ 50900205	STEEL RAILING, TYPE S1	FOOT	80
51201400	FURNISHING STEEL PILES HP10x42	FOOT	160
51202305	DRIVING PILES	FOOT	160
51203400	TEST PILE STEEL HP10x42	EACH	2
51500100	NAME PLATES	EACH	1
542D0223	PIPE CULVERTS, CLASS D, TYPE 1, 18"	FOOT	76
60100965	PIPE DRAINS 18"	FOOT	60
67100100	MOBILIZATION	L. SUM	1
△ 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4

• SEE SPECIAL PROVISIONS

△ SPECIALTY ITEMS

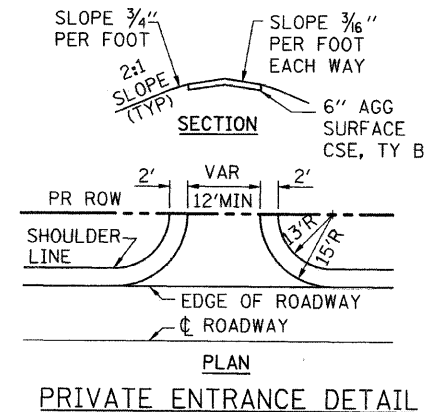
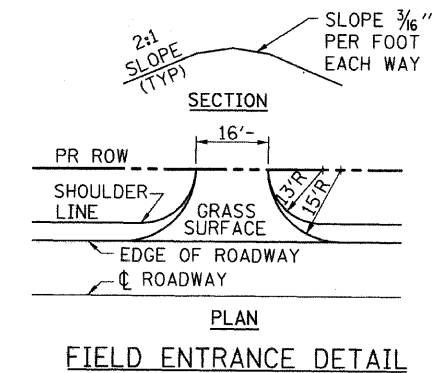
EARTHWORK SCHEDULE

1	2	3	4	5	6	7
LOCATION	EARTH EXCAVATION	STRUCTURE EXCAVATION	CHANNEL EXCAVATION	EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD	CU YD	CU YD
STA 12+00 TO STA 14+79.38	75	38	54	85	308	-223
STA 15+20.63 TO STA 16+50	49	37	52	65	71	-6
TOTAL	124	75	106	150	379	-229

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) TO BE WASTED.  
 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

TREE REMOVAL  
6 TO 15 UNITS DIAMETER

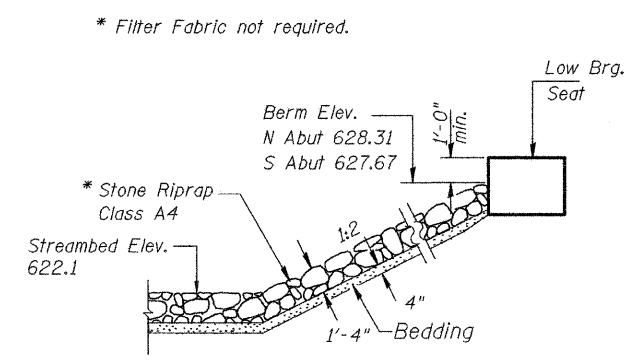
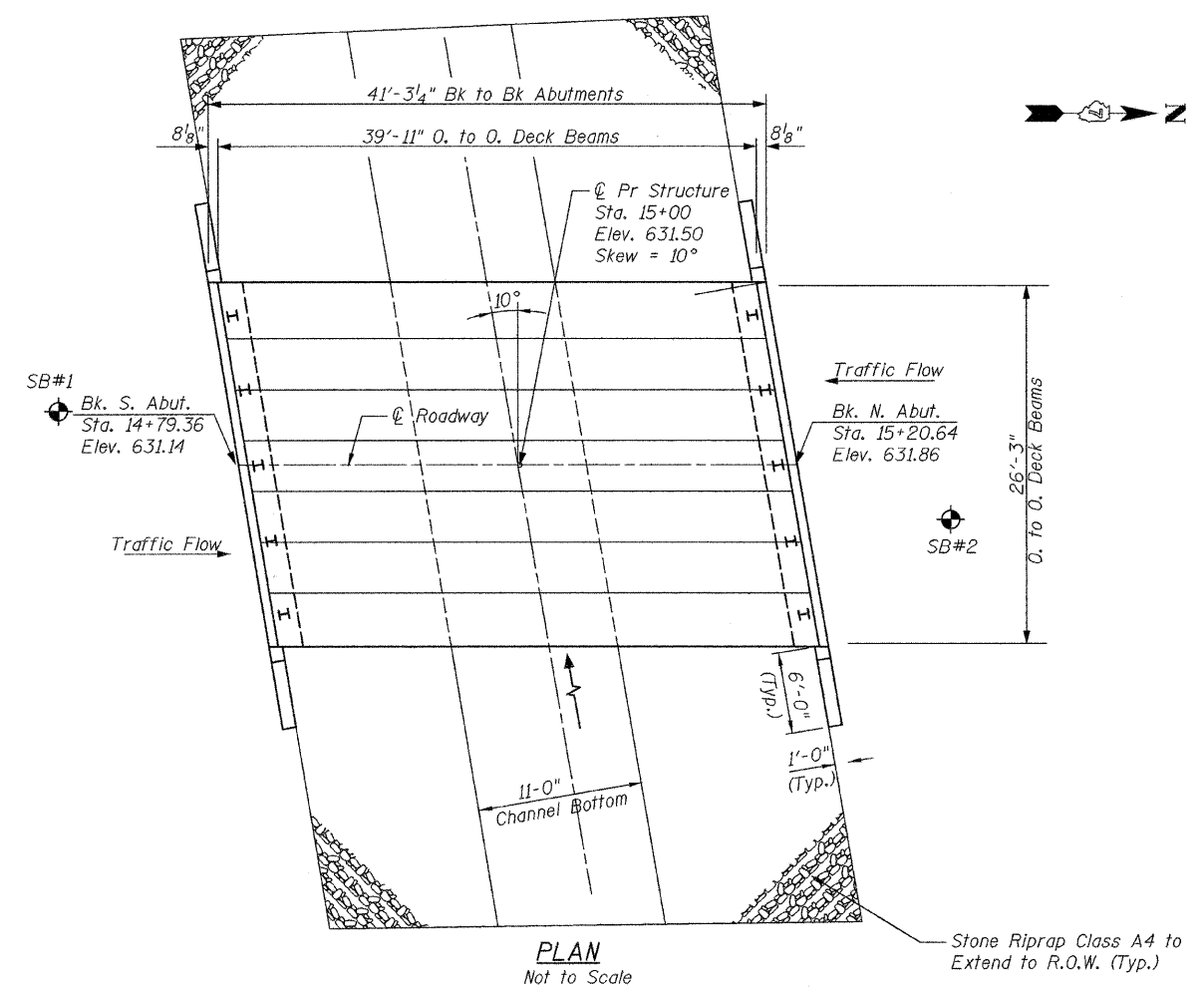
STA	OFFSET	RT/LT	UNITS
14+47	34	RT	10
14+72	29'	LT	6
14+88	27'	LT	15
14+88	27'	LT	15
14+95	32'	LT	10
15+15	29'	LT	8
15+15	29'	LT	8
15+15	29'	LT	8
15+15	29'	LT	8
15+16	27'	LT	8
TOTAL			96



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.
- THE SEEDING MIXTURE SHALL CONFORM TO ROADSIDE MIXTURE TYPE 2, DURING THE PERIOD BETWEEN NOVEMBER 1 AND DECEMBER 1. THE CONTRACTOR SHALL SUBSTITUTE 10 POUNDS OF PERENNIAL RYE FOR 48 POUNDS OF OATS, SPRING.
- ALL DISTURBED EARTH SURFACES WITHIN THE LIMITS OF THE R.O.W. AND EASEMENTS SHALL BE SEEDED AS DIRECTED BY THE ENGINEER.



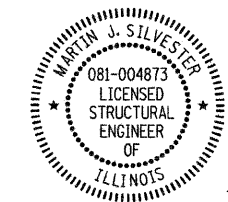


**GENERAL NOTES**

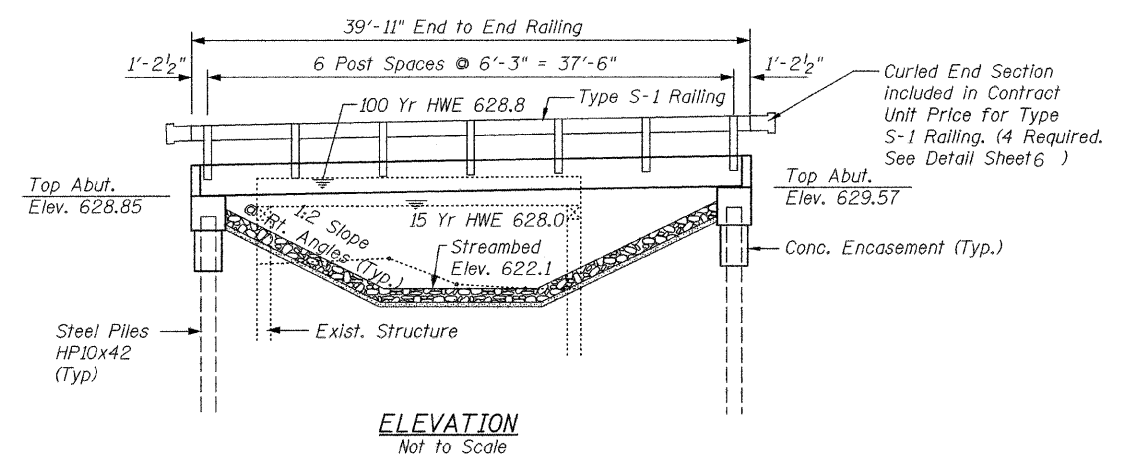
- The contractor shall drive (2) test piles of the nominal required bearing specified in production locations at substructures specified or approved by the engineer before ordering the remainder of the piles.
- Boring data is shown in the special provisions only as a guide to the bidders in estimating soil conditions that may be encountered.
- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See special provisions.
- 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* 02-15-10  
MARTIN J. SILVESTER, S.E.  
LICENSE EXP. DATE 11-30-10



**DESIGN STRESSES:**

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

**SUPERSTRUCTURE**  
 $f_y = 60,000$  p.s.i. (Reinforcement)  
 $f'_c = 4,500$  p.s.i.

**DESIGN LOADING**  
HL-93

**DESIGN SPECIFICATIONS**  
2007 LRFD AASHTO 4th Edition

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		302	302
Removal of Existing Structures	L. Sum		1	1
Structure Excavation	Cu. Yd.		75	75
Concrete Structures	Cu. Yd.		19.7	19.7
Concrete Encasement	Cu. Yd.		3.4	3.4
Precast Concrete Bridge Slab	Sq. Ft.	1048		1048
Reinforcement Bars, Epoxy Coated	Pound		2770	2770
Steel Railing, Type S-1	Foot	80		80
Furnishing Steel Piles, HP10x42	Foot		160	160
Driving Piles	Foot		160	160
Test Pile Steel HP10x42	Each		2	2
Name Plates	Each		1	1

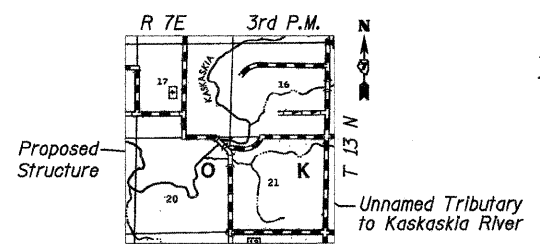
**WATERWAY INFORMATION**

Drainage Area = 3.5 Sq. Mi. - Pr. Low Grade Elev. = 629.19 @ Sta. 13+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater Elev.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	868	94	142	628.0	1.8	0.5	629.8	628.5
Base	100	1527	94	180	628.8	1.9	1.3	630.7	630.1
Overtopping									
Max. Calc.	500	2107	94	180	629.4	1.8	3.4	631.2	632.8

UNNAMED TRIBUTARY TO KASKASKIA RIVER  
BUILT 20\_\_ BY  
COLES COUNTY  
NORTH OKAW TOWNSHIP  
SEC. 07-09123-00-BR  
STATION 15+00 PROJECT NO. BR05-0029 (287)  
STR. NO. 015-3424 LOADING HL-93

**LETTERING FOR NAME PLATE**  
LOCATE ON THE SE WINGWALL



**GENERAL PLAN & ELEVATION**  
**TR 16A OVER UNNAMED TRIBUTARY TO KASKASKIA RIVER**  
**SECTION 07-09123-00-BR**  
**STATION 15+00**  
**COLES COUNTY**  
**STRUCTURE NO. 015-3424**

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR16A	07-09123-00-BR	COLES	11	4
CONTRACT NO. 95624				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

**THE UPCHURCH GROUP, INC.**

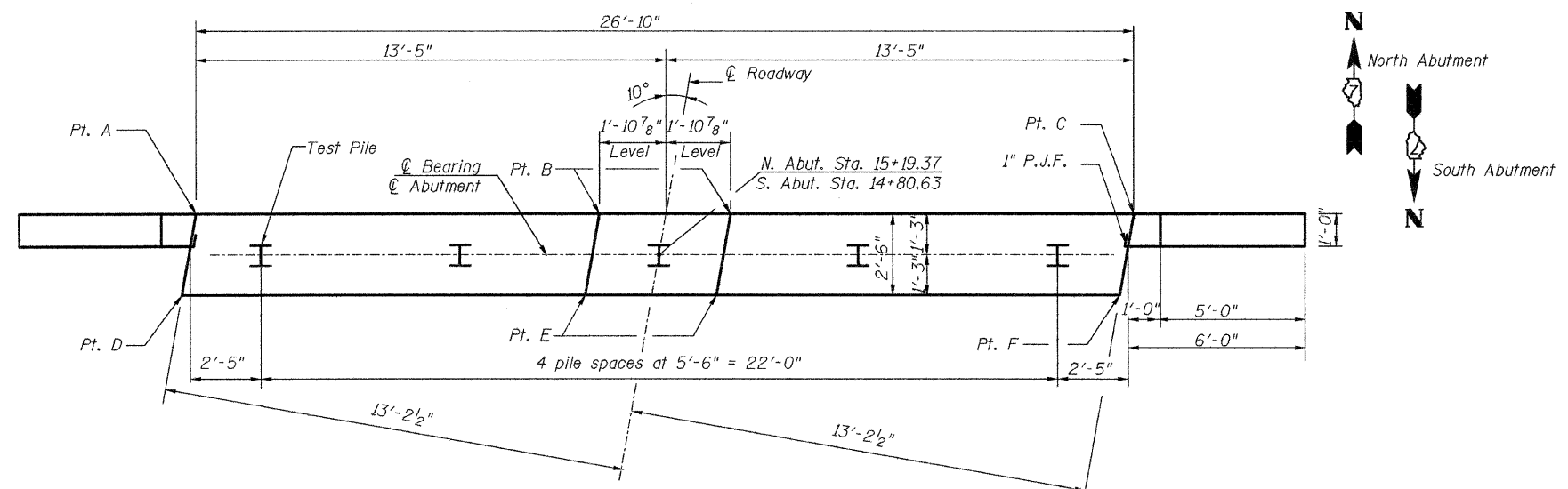




**BILL OF MATERIAL**

(BOTH ABUTMENTS AND FOUR WINGS)

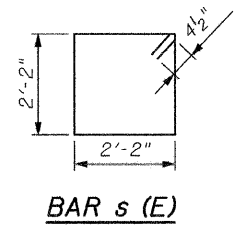
BAR	NO. REQ'D.	SIZE	LENGTH	SHAPE	
h (E)	48	#5	7'-9"	—	
h <sub>1</sub> (E)	6	#5	26'-6"	—	
p (E)	20	#7	26'-6"	—	
s (E)	60	#4	9'-5"	□	
u (E)	16	#6	12'-2"	—	
v (E)	28	#5	7'-2"	—	
v <sub>1</sub> (E)	54	#5	4'-5"	—	
Structure Excavation				Cu. Yd.	75
Concrete Structures				Cu. Yd.	19.7
Concrete Encasement				Cu. Yd.	3.4
Reinforcement Bars, Epoxy Coated				Pound	2770
Furnishing Steel Piles HPI0x42				Foot	160
Driving Piles				Foot	160
Test Steel Piles HPI0x42				Each	2



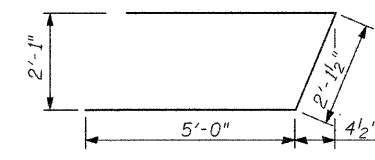
**PLAN**

**TABLE OF BEAM SEAT ELEVATIONS**

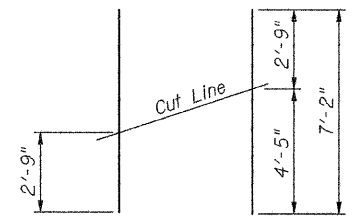
	Pt. A	Pt. B	Pt. C	Pt. D	Pt. E	Pt. F
N. Abut.	629.35	629.57	629.43	629.31	629.53	629.39
S. Abut.	628.71	628.85	628.63	628.75	628.89	628.67



**BAR s (E)**



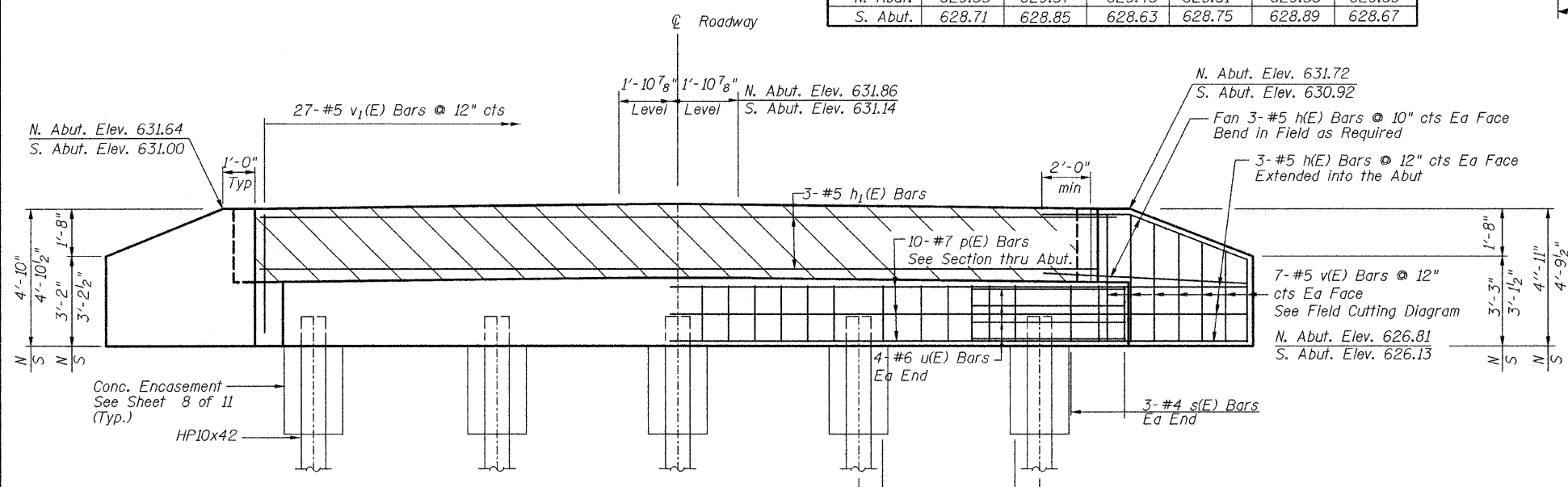
**BAR u (E)**



**FIELD CUTTING DIAGRAM**

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

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 hours) prior to grouting the shear keys.



**ELEVATION**

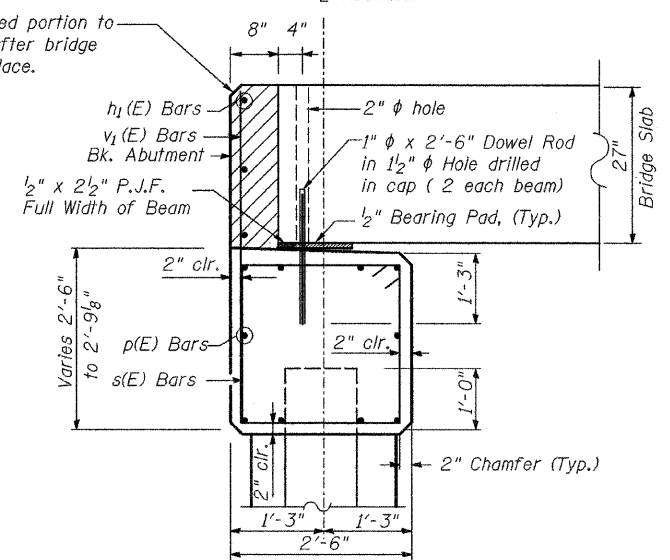
(N. Abut. looking North)  
(S. Abut. looking South)

**PILE DATA**

Type & Size:	HPI0x42
No. Required:	10*
Nominal Required Bearing:	250 kips
Allowable Resistance Available:	110 kips
Est. Length (N. Abut.):	20 Ft.
Est. Length (S. Abut.):	20 Ft.

\*Includes one Test Pile at North & South Abutments  
The test pile(s) shall be driven to 110% of the normal required bearing indicated in the pile data information.

Cross hatched portion to be poured after bridge slab is in place.



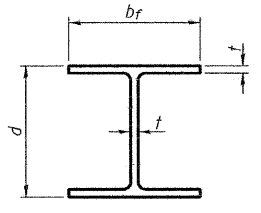
**SECTION THRU ABUT**

**ABUTMENT DETAILS**

**STRUCTURE NO. 015-3424**

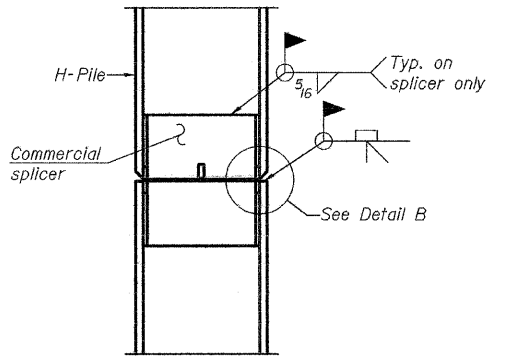
RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR16A	07-09123-00-BR	COLES	11	7
CONTRACT NO. 95624				

**THE UPCHURCH GROUP, INC.**

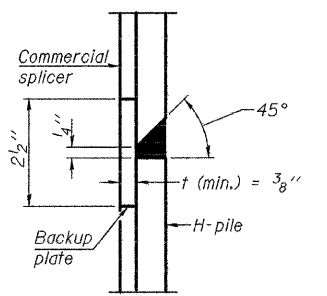


STEEL PILE TABLE

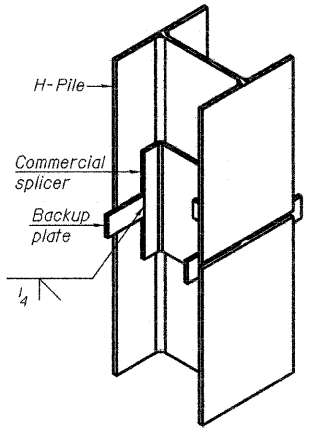
Designation	Depth d	Flange width b <sub>f</sub>	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/8"	30"
x102	14"	14 3/4"	1 1/8"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1 1/8"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

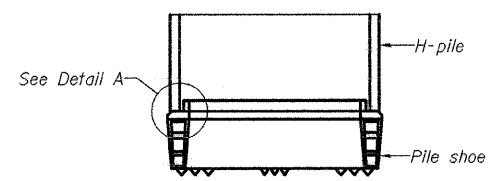


DETAIL "B"

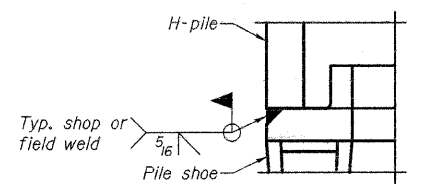


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE

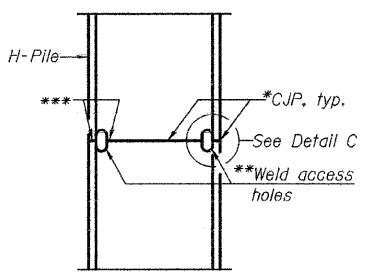


ELEVATION

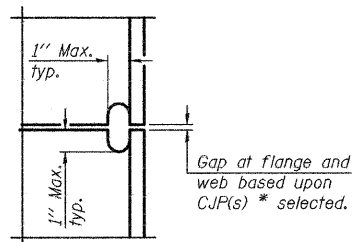


DETAIL A

H-PILE SHOE ATTACHMENT

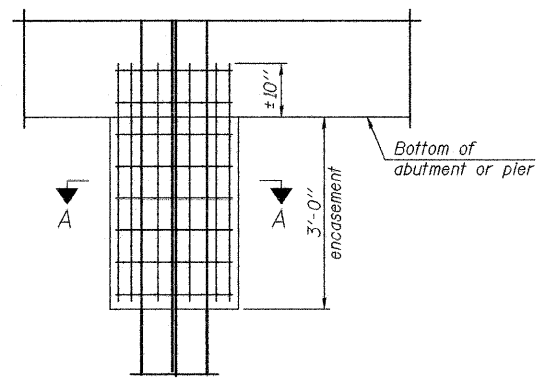


ELEVATION

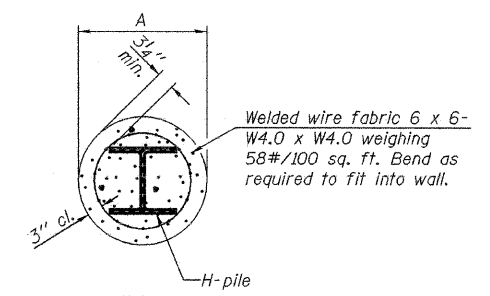


DETAIL C

COMPLETE PENETRATION WELD SPLICE



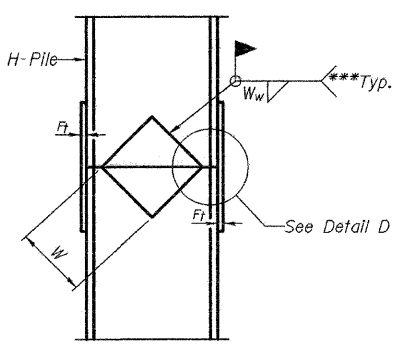
ELEVATION



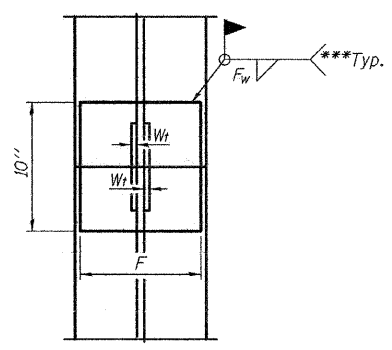
SECTION A-A

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

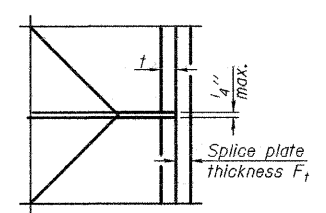
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

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 8/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 8/8"	1/2"
x89	12 1/2"	3/4"	1/2"	7 3/4"	5 8/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 8/8"	1/2"
HP 12x84	10"	7/8"	1/2"	6 1/2"	5 8/8"	1/2"
x74	10"	7/8"	1/2"	6 1/2"	5 8/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

HP PILE DETAILS  
STRUCTURE NO. 015-3424

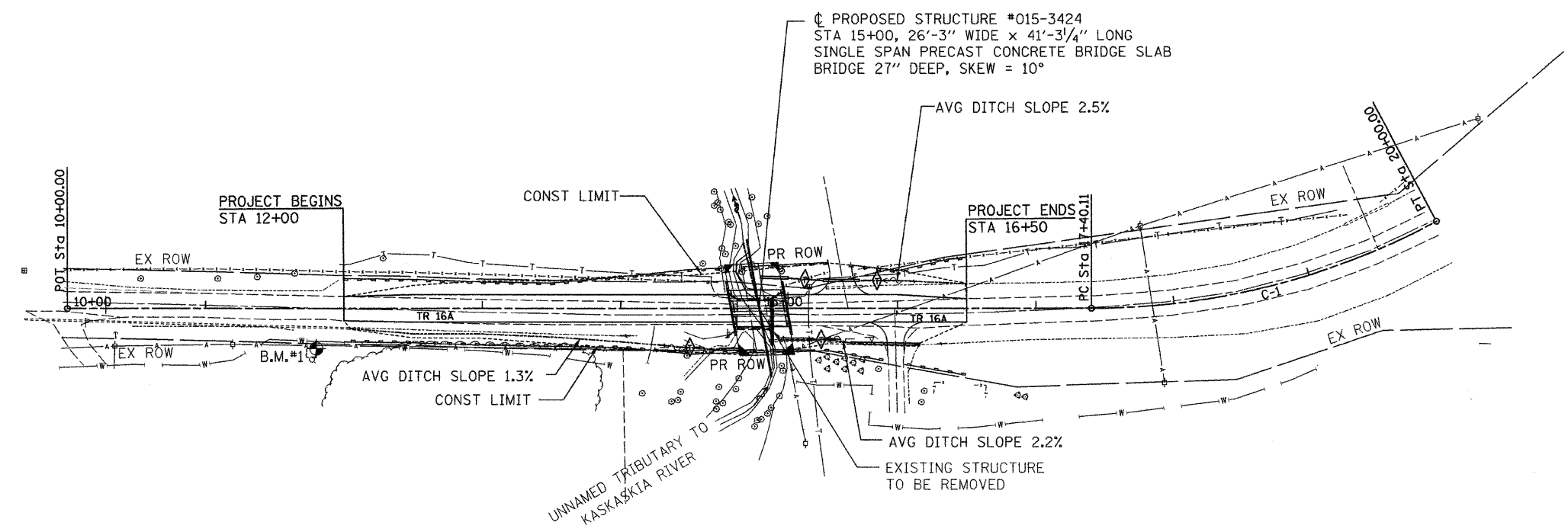
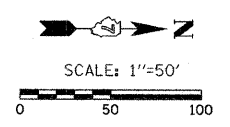
- \* Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- \*\* Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- \*\*\* Interrupt welds 1/4" from end of each pile.

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

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR16A	07-09123-00-BR	COLES	11	8
CONTRACT NO. 95624				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

THE UPCHURCH GROUP, INC.





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 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 : 0.7 ACRES

TOTAL AREA OF SEEDING : 0.3 ACRES

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

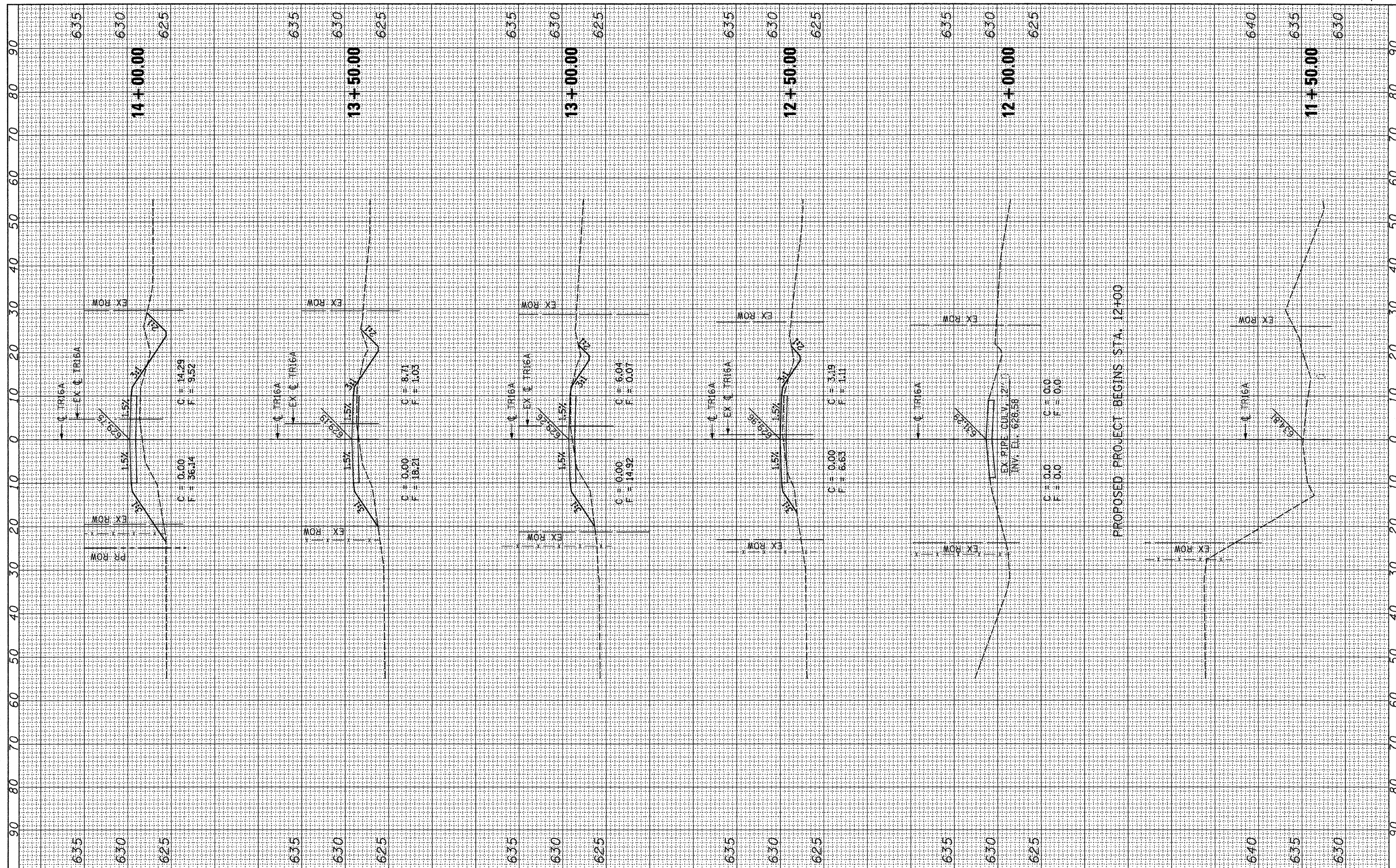
STATION	LT	RT
14+50	-	28'
15+35	22'	-
15+45	-	22'
15+85	20'	-

BILL OF MATERIAL

ITEM	UNIT	QTY
TEMPORARY EROSION CONTROL SEEDING	POUND	60
TEMPORARY DITCH CHECKS	FOOT	32
PERIMETER EROSION BARRIER	FOOT	850

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

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



PROPOSED PROJECT BEGINS STA. 12+00

FILE NAME = ...\\153056-001-XS-SHT.dgn  
 USER NAME = \_USER\_

DESIGNED *RH*  
 DRAWN *LP*  
 CHECKED *MJS*  
 DATE *2/15/2010*

REVISIONS:  
 REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

**NORTH OKAW TOWNSHIP  
 COLES COUNTY  
 STATE OF ILLINOIS**

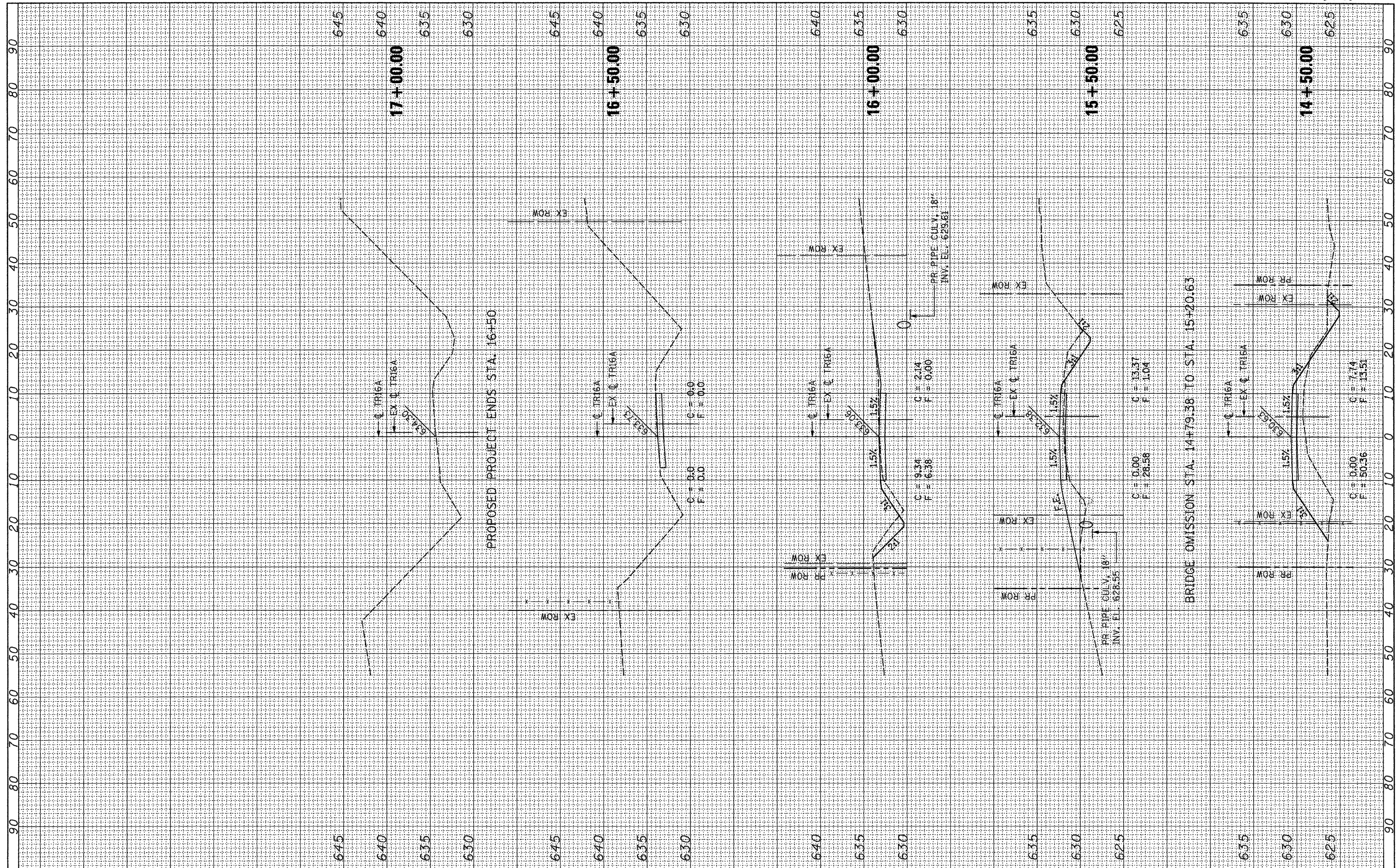
**CROSS SECTIONS  
 TR16A OVER UNNAMED TRIBUTARY TO KASKASKIA RIVER**

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR16A	07-09123-00-BR	COLES	11	10
CONTRACT NO. 95624				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

SCALE: SHEET NO. OF SHEETS STA. 11+50 TO STA. 14+00

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
NOTE BOOK		
AREAS		
AREAS CHECKED		



FILE NAME = ...\\0153056-001-XS-SHT.dgn

USER NAME = \_USER\_

DESIGNED *RH*

DRAWN *LP*

CHECKED *MJS*

DATE *2/15/2010*

REVISIONS:

REVISIONS	REVISIONS
REVISIONS	REVISIONS
REVISIONS	REVISIONS
REVISIONS	REVISIONS

**NORTH OKAW TOWNSHIP  
COLES COUNTY  
STATE OF ILLINOIS**

**CROSS SECTIONS  
TR16A OVER UNNAMED TRIBUTARY TO KASKASKIA RIVER**

SCALE: SHEET NO. OF SHEETS STA. 14+50 TO STA. 17+00

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR16A	07-09123-00-BR	COLES	11	11
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT			CONTRACT NO. 95624	