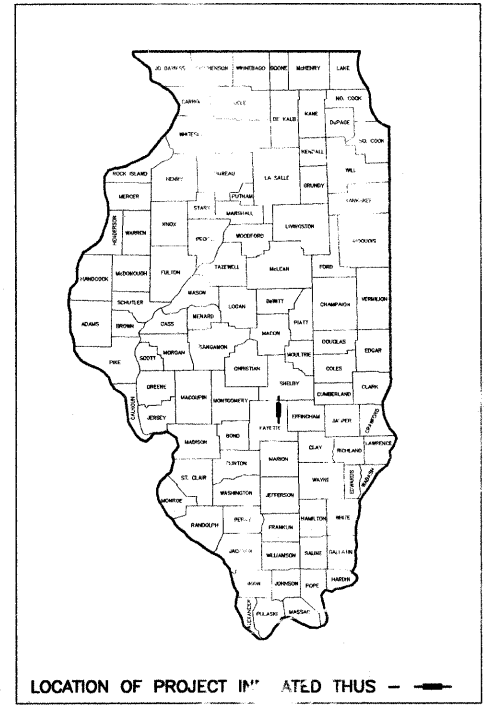
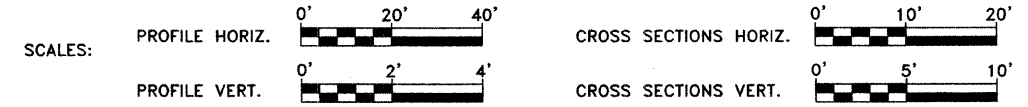


# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANS FOR PROPOSED HIGHWAY BRIDGE PROGRAM

ROUTE NO. TR 512	SECTION 08-08123-00-BR	COUNTY FAYETTE	TOTAL SHEETS 14	SHEET NO. 1
FED. ROAD DIST. NO.		ILLINOIS PROJECT	CONTRACT NO. 95595	



INDEX OF SHEETS	
1	COVER SHEET
2	TYPICAL CROSS SECTION, GENERAL NOTES, AND SUMMARY OF QUANTITIES
3	PLAN AND PROFILE
4-12	BRIDGE PLANS
13-14	CROSS SECTIONS



## SECTION 08-08123-00-BR PROJECT NO. BROS-051 (087) LOUDON ROAD DISTRICT FAYETTE COUNTY JOB NO. C-97-110-09 TR 512

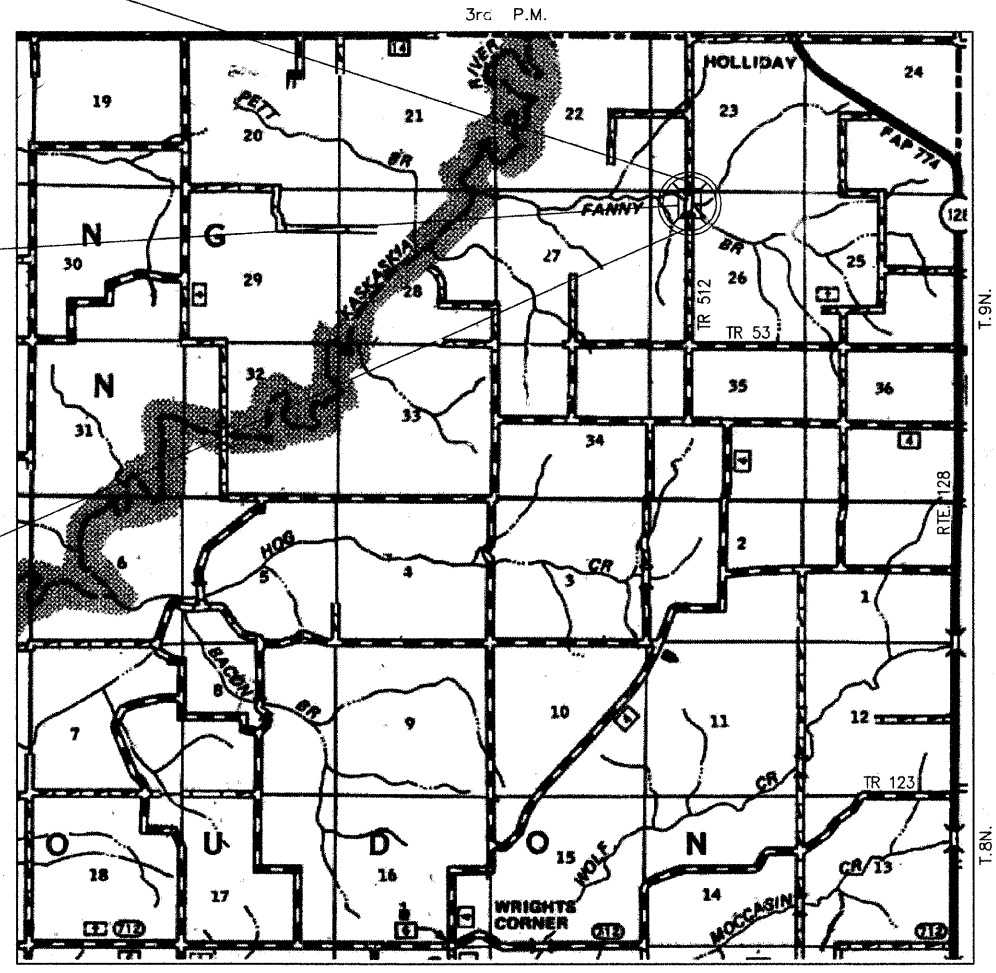
STANDARDS	
STANDARD 000001-05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
STANDARD 701901-01	TRAFFIC CONTROL DEVICES
STANDARD B.L.R. 21-8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

UTILITIES:	
POWER:	SOUTHWESTERN ELECTRIC CO-OP P.O. BOX 549 GREENVILLE, IL 62246 PHONE: 618-664-1025
PHONE:	FRONTIER COMMUNICATIONS 801 W JACKSON MANTON, IL 62441 PHONE: 618-483-6391
WATER:	WASTE WATER COMPANY P.O. BOX 71-A WINSTON, IL 62418 PHONE: 618-347-2430

END SECTION 08-08123-00-BR  
STA. 50+99.75

STA. 50+00 - CONSTRUCT SINGLE SPAN PRECAST  
PRESTRESSED CONCRETE DECK BEAM BRIDGE  
(63.50' BK. TO BK. ABUTMENTS) WITH  
SPILL-THRU PILE BENT ABUTMENTS  
0' SKEW, 24' ROADWAY  
EXISTING STRUCTURE NO. 026-3233  
PROPOSED STRUCTURE NO. 026-3446

BEGIN SECTION 08-08123-00-BR  
STA. 49+00.25



R.3E.  
**LOCATION MAP**  
APPROXIMATE SCALE - 1" = 0.58 MILE  
LENGTH OF IMPROVEMENTS - 199.50 FEET = 0.038 MILE

APPROVED 8-03, 2009  
*Michael A. Hest*  
COUNTY ENGINEER

PASSED 8-20, 2009  
*Michael A. Hest*  
DISTRICT SEVEN ENGINEER OF  
LOCAL ROADS & STREETS

Releasing For  
Bid Based on  
Limited Review 8/22, 2009  
*Doreen L. Smith*  
DEPUTY DIRECTOR OF HIGHWAYS,  
REGION FOUR ENGINEER

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION



MICHAEL R. QUANDT, P.E.  
SIGN: *Michael R. Quandt*  
DATE: 7/28/09  
EXP. DATE: 11/30/09



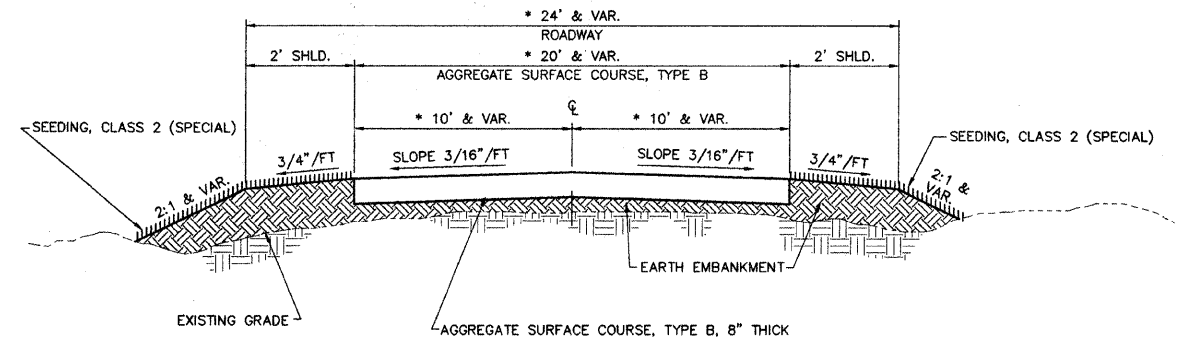
48 HOURS PRIOR TO EXCAVATION CALL J.U.L.I.E.:  
811 OR 1-800-892-0123

CLASS ROAD: RURAL LOCAL ROAD  
A.D.T. = 75  
30 M.P.H.

### AECOM

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Salem, Illinois 62881  
618.548.3600  
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Ill. Design Firm Reg.  
No. 104003706

DATE: 7/27, 2009  
AECOM PROJECT NO. 200804643



**TYPICAL ROADWAY CROSS-SECTION**

- \* 24' & VAR. ROADWAY
  - \* 20' & VAR. AGGREGATE SURFACE COURSE, TYPE B
  - \* 10' & VAR. SLOPE 3/16"/FT
  - \* 10' & VAR. SLOPE 3/16"/FT
  - \* 2' SHLD.
  - \* 2' SHLD.
  - SEEDING, CLASS 2 (SPECIAL)
  - SEEDING, CLASS 2 (SPECIAL)
  - EXISTING GRADE
  - AGGREGATE SURFACE COURSE, TYPE B, 8" THICK
  - EARTH EMBANKMENT
- \* TRANSITION FROM 12' EXISTING TO 20' PROPOSED PAVEMENT  
STA. 49+00.25 TO STA. 49+68.25
- \* TRANSITION FROM 20' PROPOSED TO 13' EXISTING PAVEMENT  
STA. 50+31.75 TO STA. 50+99.75

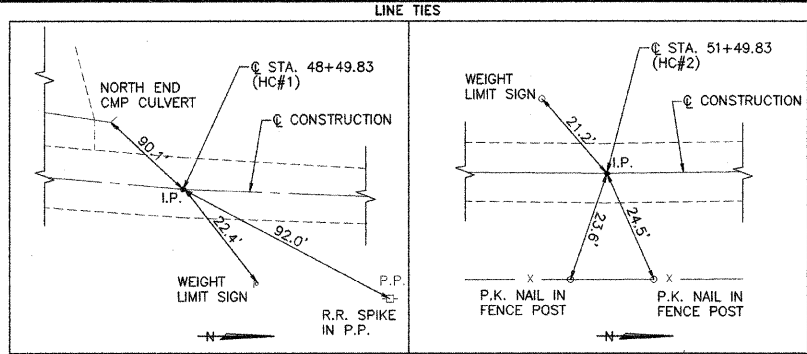
**GENERAL NOTES**

1. THE SHRINKAGE FACTOR FOR EMBANKMENT IS 25%.
2. ALL CLEARING AND GRUBBING IS TO BE INCLUDED IN THE UNIT PRICE BID FOR EARTH EXCAVATION.
3. BITUMINOUS SURFACE TREATMENT (A-2) WILL BE COMPLETED BY THE OWNER.

**SUMMARY OF QUANTITIES**

CODE NO.	ITEM	QUANTITY	UNIT
20200100	EARTH EXCAVATION	93	CU. YD.
20300100	CHANNEL EXCAVATION	168	CU. YD.
25001000	SEEDING, CLASS 2 (SPECIAL)	0.1	ACRE
28100807	STONE DUMPED RIPRAP, CLASS A4	90	TON
40200800	AGGREGATE SURFACE COURSE, TYPE B	104	TON
50100100	REMOVAL OF EXISTING STRUCTURES	1	EACH
50300225	CONCRETE STRUCTURES	18.2	CU. YD.
50300280	CONCRETE ENCASEMENT	2.1	CU. YD.
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	1488	SQ. FT.
50800105	REINFORCEMENT BARS	2300	POUND
*50900205	STEEL RAILING, TYPE S1	124	FOOT
51201400	FURNISHING STEEL PILES HP 10x42	182	FOOT
51202305	DRIVING PILES	182	FOOT
51203400	TEST PILE STEEL HP 10x42	1	EACH
51500100	NAME PLATES	1	EACH
67100100	MOBILIZATION	1	L. SUM

\* SPECIALTY ITEMS



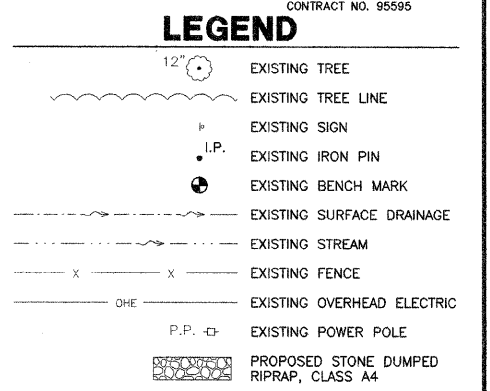
POINT	LOCATION	N. COOR.	E. COOR.	ELEV.
HC#1(IRON PIN)	Q STA. 48+49.83	8952.05	10031.51	534.24
HC#2(IRON PIN)	Q STA. 51+49.83	9251.94	10039.68	537.65

POINT	LOCATION	ELEV.
BM#1(R.R. POWER POLE)	26.9' RT., STA. 49+37.76	533.34
BM#2(R.R. SPIKE IN 10" TREE)	28.5' LT., STA. 50+35.37	533.06

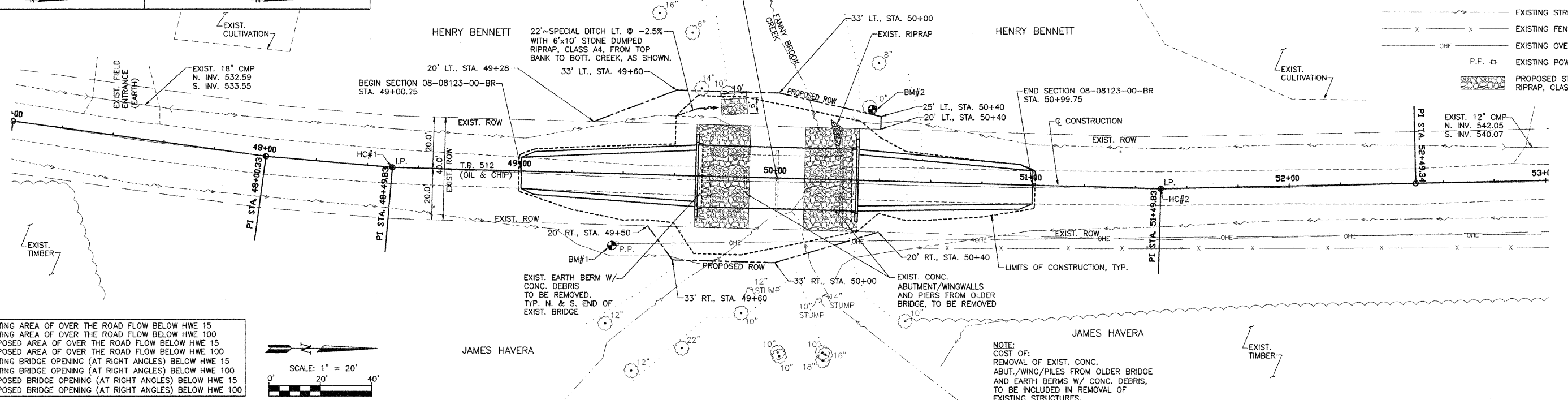
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	3

CONTRACT NO. 95595

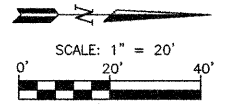


±1.5' RT., STA. 50+00 (EXIST. S.N. 026-3233) SECTION 08-08123-00-BR, EXIST. BRIDGE, TWO SPAN CONCRETE BEAMS ON TIMBER CAPS AND TIMBER PILES WITH STEEL RAILING AND CONCRETE CURBS, TO BE REMOVED.

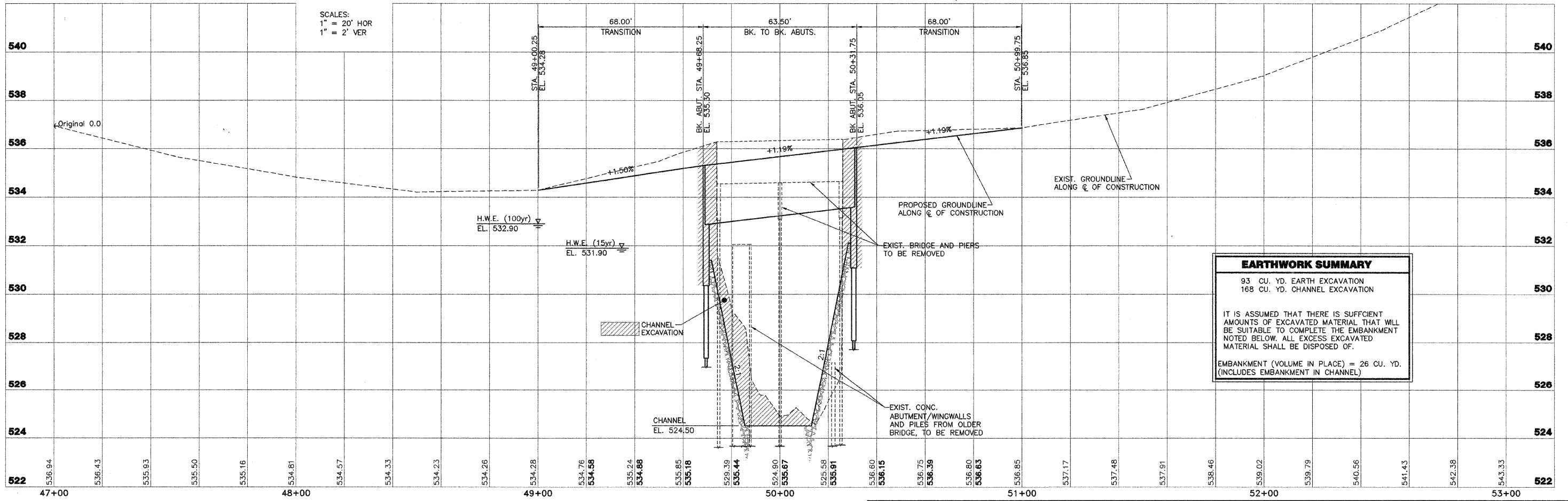
STA. 50+00 CONSTRUCT (PROP. S.N. 026-3446) SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (63.50' BK. TO BK. ABUTMENTS) WITH SPILL THRU ABUTMENTS ON STEEL HP PILES, 0' SKEW, 24' ROADWAY.



0	SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 15
0	SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 100
0	SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 15
0	SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 100
256	SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
305	SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100
317	SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
375	SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100



NOTE: COST OF REMOVAL OF EXIST. CONC. ABUT./WING/PILES FROM OLDER BRIDGE AND EARTH BERMS W/ CONC. DEBRIS, TO BE INCLUDED IN REMOVAL OF EXISTING STRUCTURES.



EARTHWORK SUMMARY	
93	CU. YD. EARTH EXCAVATION
168	CU. YD. CHANNEL EXCAVATION
IT IS ASSUMED THAT THERE IS SUFFICIENT AMOUNTS OF EXCAVATED MATERIAL THAT WILL BE SUITABLE TO COMPLETE THE EMBANKMENT NOTED BELOW. ALL EXCESS EXCAVATED MATERIAL SHALL BE DISPOSED OF.	
EMBANKMENT (VOLUME IN PLACE) = 26 CU. YD. (INCLUDES EMBANKMENT IN CHANNEL)	

**AECOM** 2524 South Broadway, Salem, Illinois 62881, t:618.548.3500, www.aecom.com, Copyright 2009, By: AECOM, I.L. Design Firm Reg. No. 184203706

**TR 512, SECTION 08-08123-00-BR LOUDON ROAD DISTRICT FAYETTE COUNTY, ILLINOIS**

**PLAN AND PROFILE STA. 47+00 TO STA. 53+00**

SURVEY	CHECKED	DATE
JAS	JAS	07-27-09
DESIGN	APPROVED	REVISED
MRQ	MRQ	
DRAWN	JSD, BLT	JOB NO.
		200804643

I:\Projects\200804643\EP\RC\p01001.dwg, 7/17/2009 2:26:51 PM

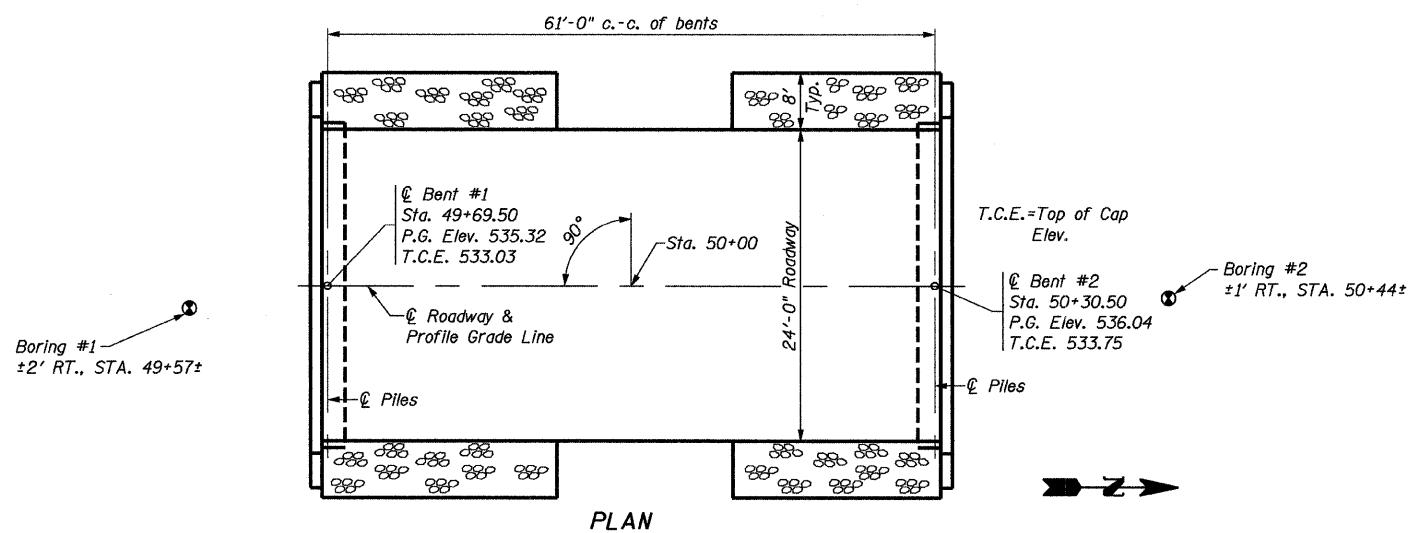
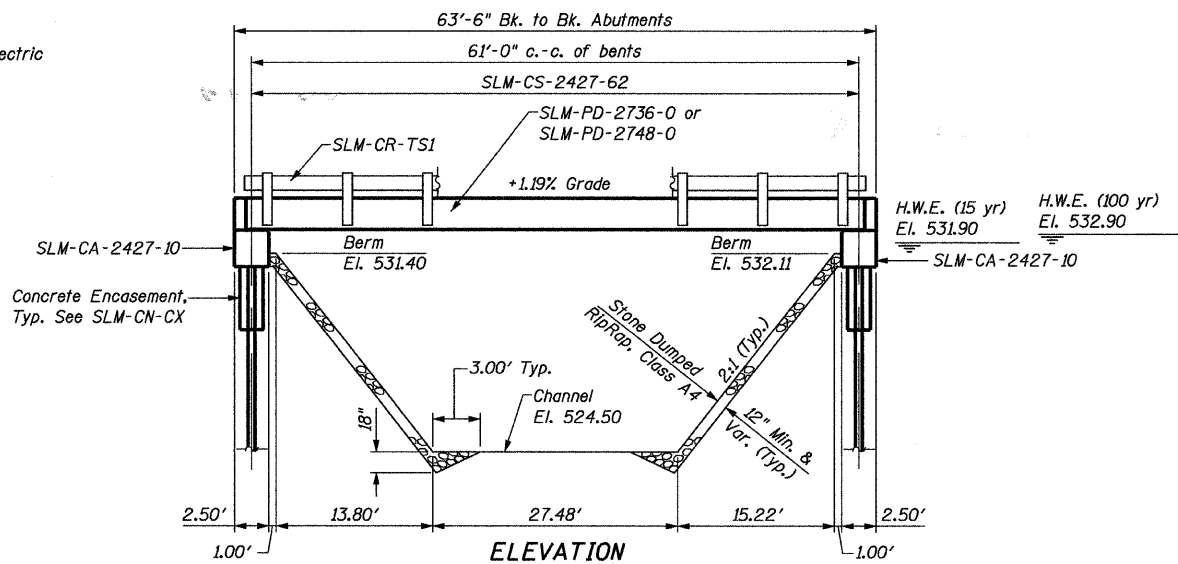
L:\200804643\EP\RC\p01001.dwg, 7-17-09

B.M. - B.M. #1 R.R. spike in Power Pole, 26.9' RT., STA. 49+37.76, EL. 533.34  
 B.M. #2 R.R. spike in 10" tree, 28.5' LT., STA. 50+35.37, EL. 533.06

Existing Structure - The existing structure is two span concrete beams on timber caps and timber piles with steel railing and concrete curbs. There is also existing concrete abutment, wingwalls, and steel piles from an older bridge to be removed.

Salvage - None.

Existing Known Utilities - Overhead Electric



**GENERAL NOTES**

- The contractor shall drive 1 test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Special Provisions for boring logs.
- A Calcium Nitrite Corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

**TOTAL BILL OF MATERIAL**

Item	Unit	Super	Sub.		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Concrete Structures	Cu. Yd.			18.2	18.2
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1488			1488
Steel Railing, Type S-1	Foot	124			124
Reinforcement Bars	Pound			2300	2300
Furnishing Steel Pile HP 10x42	Foot			182	182
Driving Piles	Foot			182	182
Test Pile Steel HP 10x42	Each			1	1
Name Plates	Each			1	1
Concrete Encasement	Cu. Yd.			2.1	2.1



Date: July 28, 2009

Date of License: 11-30-2010

Signature: *William D. Licking*

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

**DESIGN SPECIFICATIONS**

2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

**LOADING HL-93**

Allow 50# / Sq. Ft. for Future Wearing Surface.

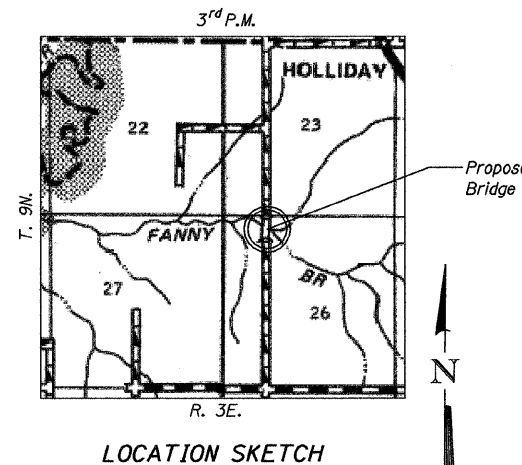
**SEISMIC DATA**

Seismic Performance Zone (SPZ) = 2  
 Design Spectral Acceleration at 1.0 sec. ( $S_{D1}$ ) = 2.15  
 Design Spectral Acceleration at 0.2 sec. ( $S_{D5}$ ) = 47  
 Soil Site Class = D

STATION 50+00  
 FANNY BROOK  
 SEC. 08-08123-00-BR BUILT 20  
 PROJECT NO. BROS-051 (087)  
 FAYETTE COUNTY  
 LOADING HL93  
 STR. NO. 026-3446

**LETTERING FOR NAME PLATE**

Locate Name Plate at Northeast Corner of Bridge (See SLM-CN-CX)



**WATERWAY INFORMATION**

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E. Ft.	Head - Ft.		Headwater Elev. - Ft.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	1864	256	317	531.90	0.88	0.26	532.78	532.16
Base	100	3306	305	375	532.90	2.41	0.97	535.31	533.87
Overtopping									
Max. Calc.	500								

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

Pile Type and Size: Steel Piles, HP10x42  
 Nominal Required Bearing: 297 kips  
 Allowable Resistance Available: 99 kips  
 Estimated Pile Length: 26 Feet Bent #1, 26 Feet Bent #2  
 Number of Production Piles: 7  
 Number of Test Piles: 1 (located in Bent #1)

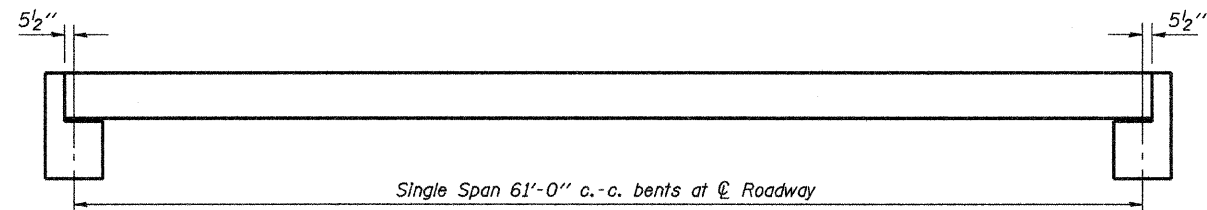
**INDEX OF SHEETS**

- General Plan & Elevation
- SLM-CS-2427-62
- SLM-PD-2736-0
- SLM-PD-2736-0D
- SLM-PD-2748-0
- SLM-PD-2748-0D
- SLM-CA-2427-10
- SLM-CR-TS1
- SLM-CN-CX

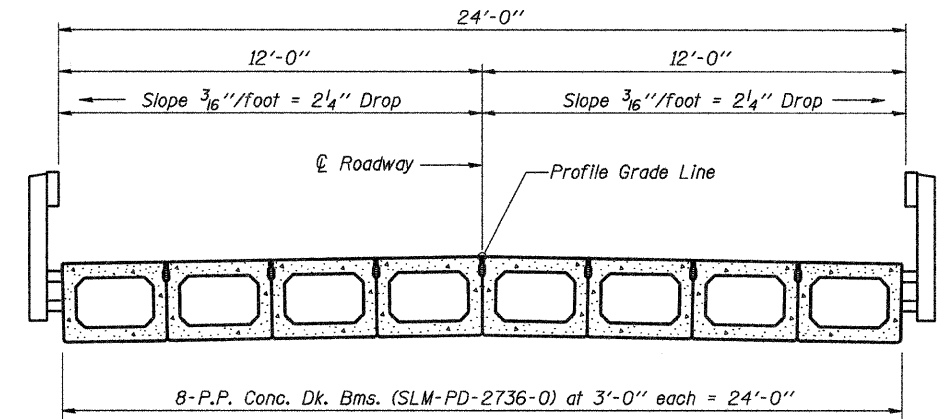
<b>AECOM</b> 2524 S. Broadway Salem, Illinois 62881 618.548.3500 IL Design Firm Reg. No. 184-003706 www.aecom.com	<b>GENERAL PLAN &amp; ELEVATION</b> <b>TR 512</b> <b>OVER FANNY BROOK</b>
	<b>SECTION 08-08123-00-BR</b> <b>FAYETTE COUNTY</b> <b>STATION 50+00</b>
Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	5
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

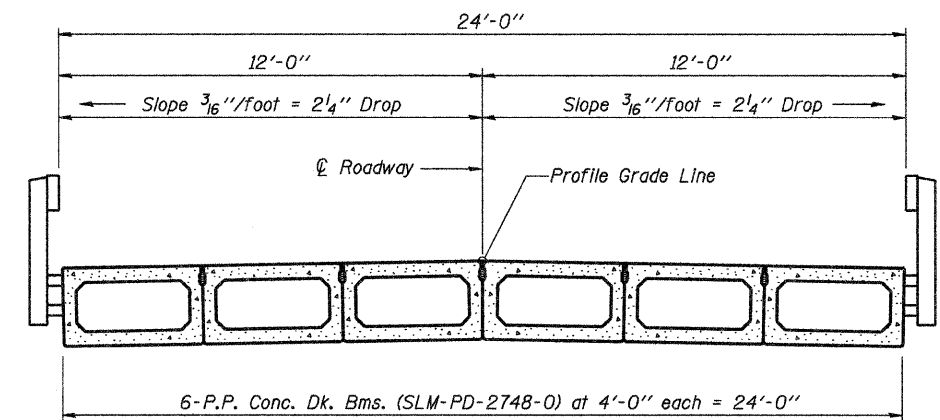
CONTRACT NO. 95595



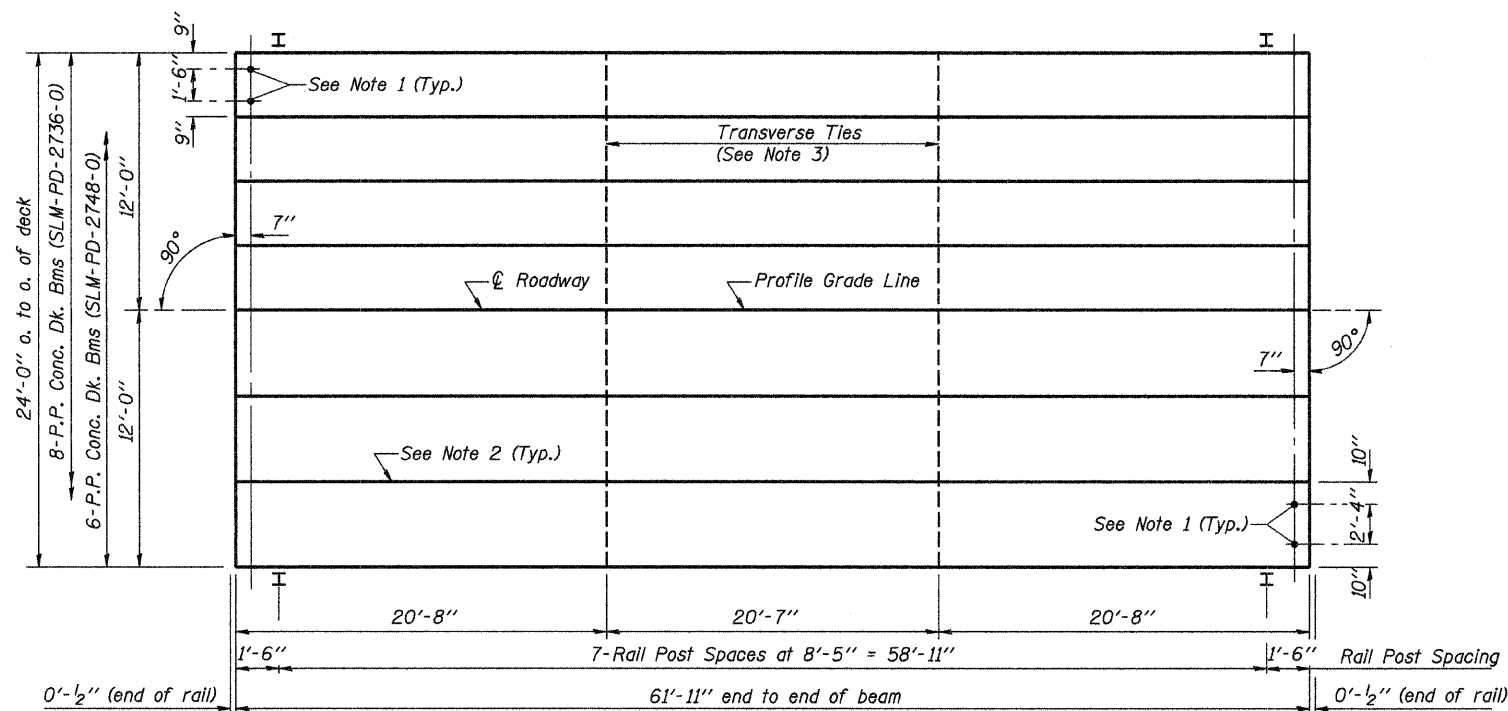
**TYPICAL ELEVATIONS**



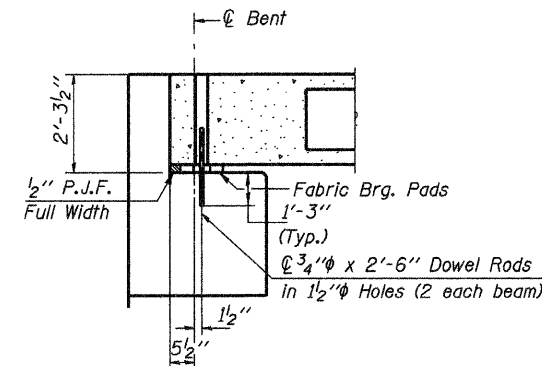
**CROSS SECTION**



**CROSS SECTION**



**PLAN**



**SECTION AT ABUTS.**  
(Along  $\varnothing$  Beams)

**QUANTITIES FOR ONE SPAN**

P.P. Conc. Dk. Bm. 27" Dp.	1488 Sq. Ft.
Steel Railing	124 Ft.

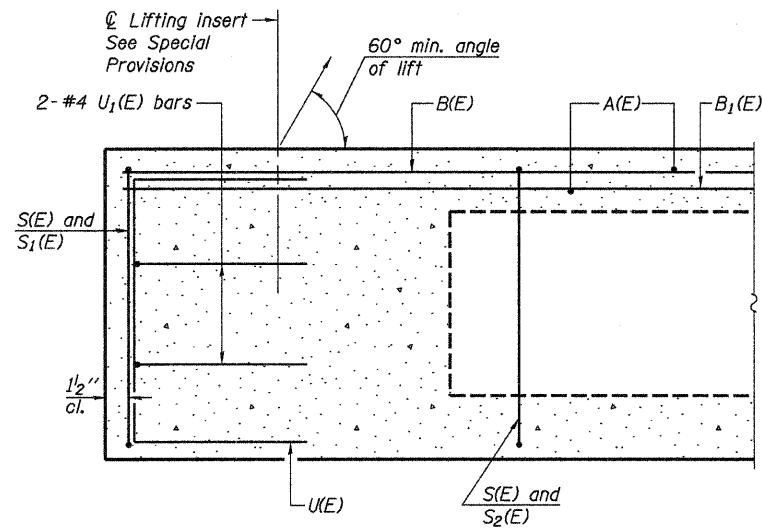
**NOTES**

1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Longitudinal keys shall be grouted.
3. The 1"  $\varnothing$  rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar outside shall be filled with grout after transverse tie assembly is in place.

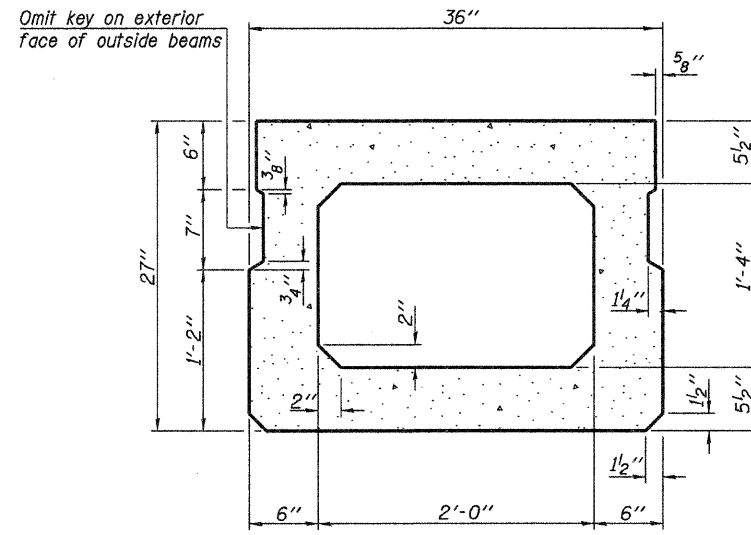
<b>AECOM</b>	2524 S. Broadway Salem, Illinois 62881 618.548.3500	<b>SLM-CS-2427-62</b>
	IL Design Firm Reg. No. 184-003708 www.aecom.com	<b>P.P.C. DECK BEAM SUPERSTRUCTURE</b>
Date: 07/27/09	Design: MRQ	<b>24' ROADWAY</b>
Drawn: BLT	Job No.: 200804643	<b>27" BEAMS</b>
		<b>61.0' SPAN - 0° SKEW</b>

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	6
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

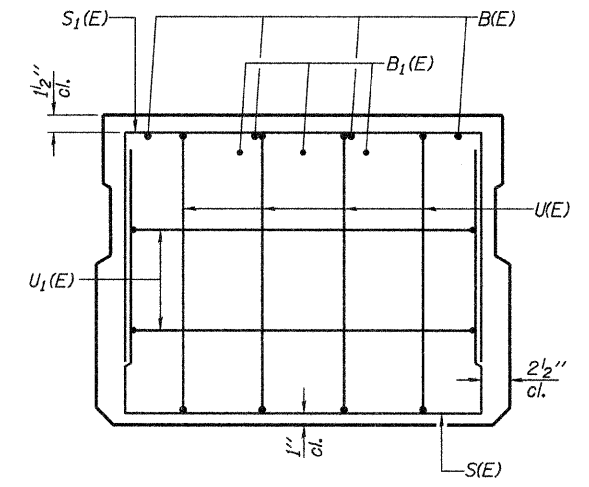
CONTRACT NO. 95595



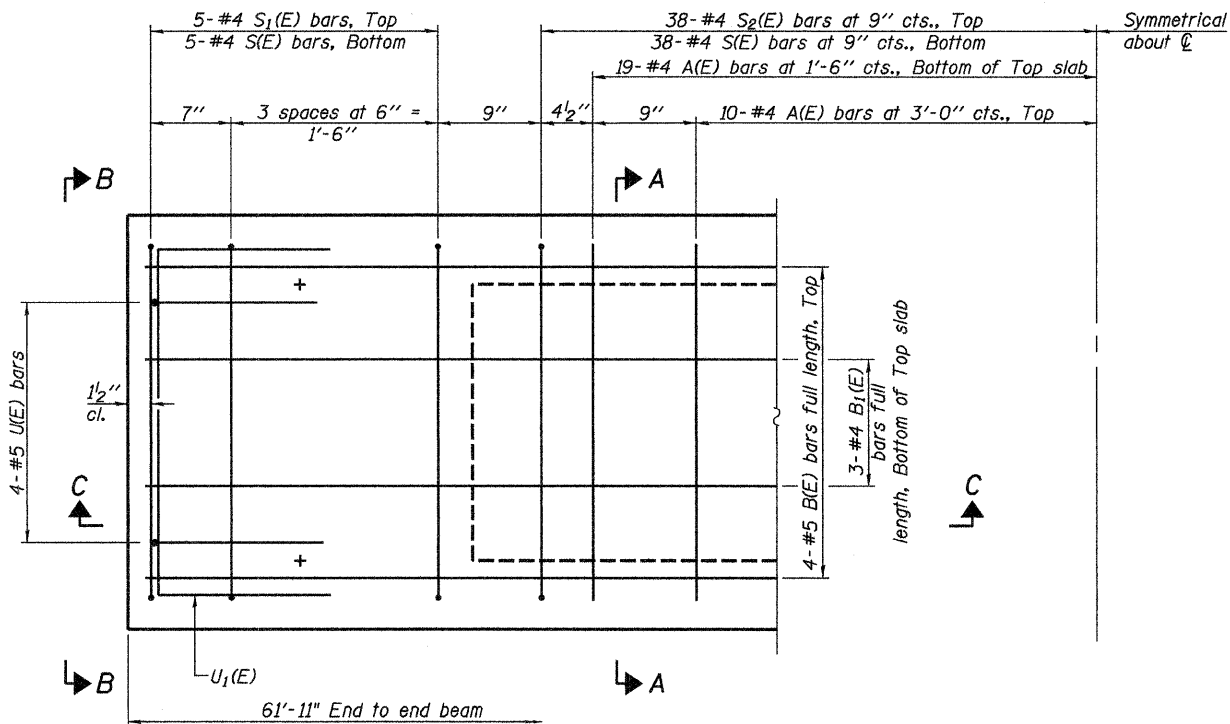
SECTION C-C



SECTION A-A  
(Showing dimensions)

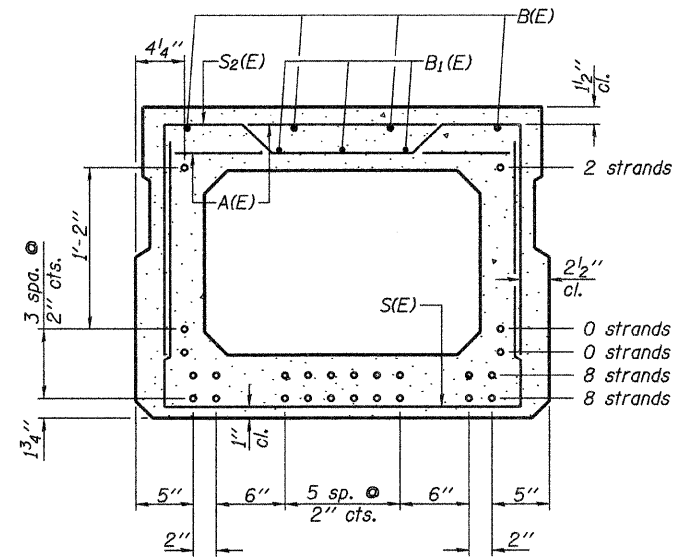


VIEW B-B



PLAN VIEW

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



SECTION A-A

(Showing reinforcement and permissible strand locations)

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

Strands: 18 - 1/2" φ strands.

**BAR LIST**  
**ONE BEAM ONLY**

(For information only)

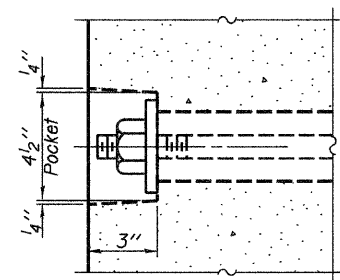
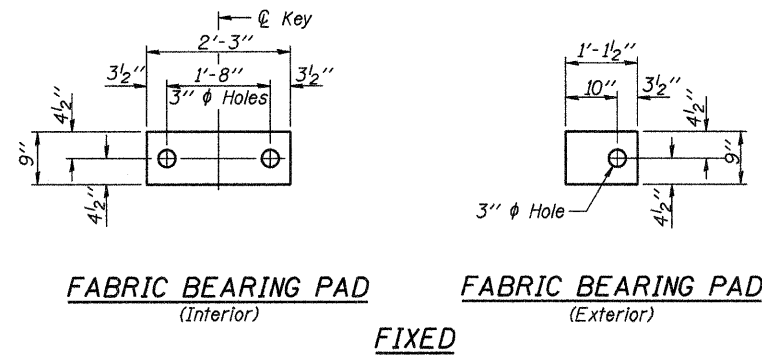
Bar	No.	Size	Length	Shape
A(E)	58	#4	2'-7"	—
B(E)	4	#5	61'-8"	—
B <sub>1</sub> (E)	3	#4	61'-8"	—
S(E)	86	#4	6'-5"	⌊
S <sub>1</sub> (E)	10	#4	5'-11"	⌊
S <sub>2</sub> (E)	76	#4	6'-2"	⌊
U(E)	8	#5	4'-6"	⌊
U <sub>1</sub> (E)	4	#4	5'-0"	⌊

Note: See sheet SLM-PD-2736-0D for additional details. See sheet SLM-CS-2427-62 for Bill of Material.

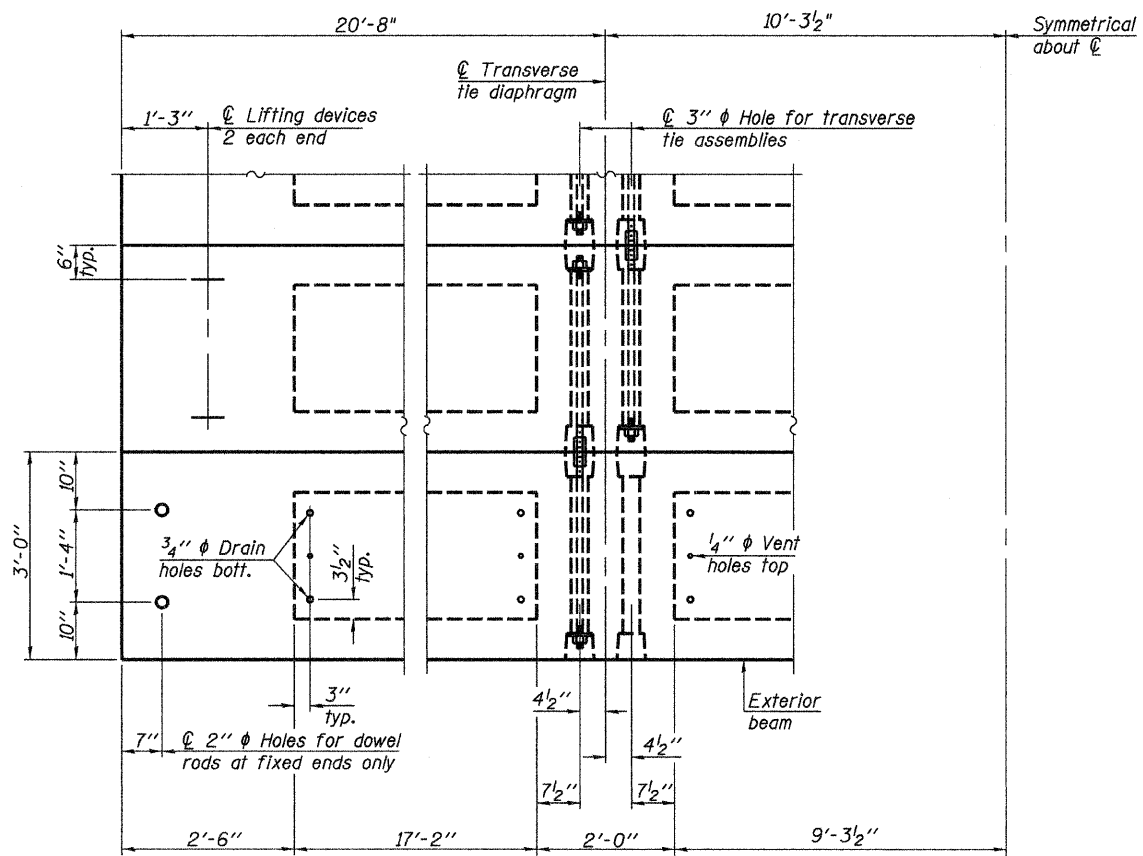
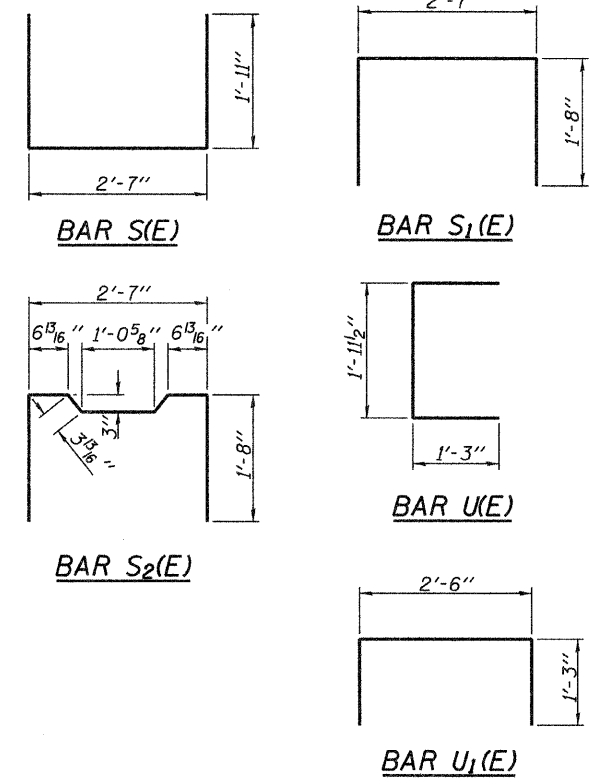
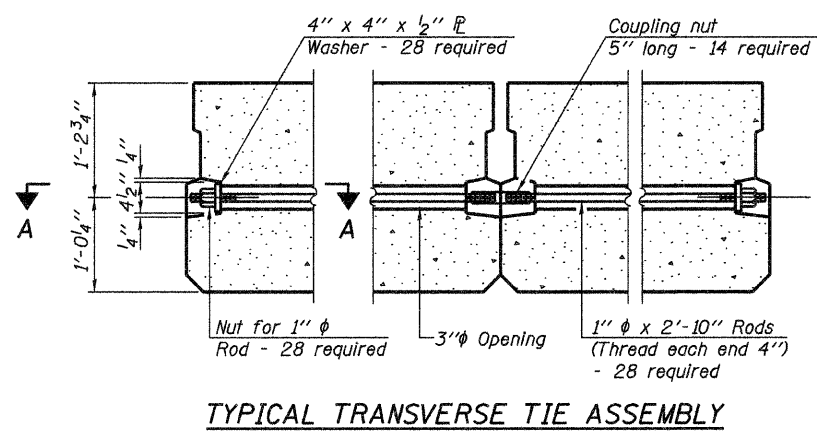
<b>AECOM</b> <small>2524 S. Broadway Salem, Illinois 62661 618.648.3500</small> <small>IL Design Firm Reg. No. 184-003708 www.aecom.com</small>	<b>SLM-PD-2736-0</b> <b>P.P.C. DECK BEAM</b> <b>DETAILS AND SECTIONS</b>
	<b>24' ROADWAY</b> <b>27" x 36" BEAMS</b> <b>0° SKEW</b>
Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	7
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95595



SECTION A-A



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 inch and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1 inch diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
- Two 1/8 inch fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete,  $f'_c$ , shall be 6000 psi.
- Compressive strength of prestressed concrete at release,  $f'_{ci}$ , shall be 5000 psi.
- Rail post anchor devices shall be cast into outside beam as elsewhere specified.
- Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.

- DESIGN STRESSES**
- $f'_s = 270,000$  p.s.i. (1/2 inch diameter Strand)
  - $f'_{s1} = 201,960$  p.s.i. (1/2 inch diameter Strand)
  - $F_i = 30,900$  lbs per strand
  - $f_y = 60,000$  p.s.i. Reinf. bars
  - $f'_c = 6,000$  p.s.i.
  - $f'_{ci} = 5,000$  p.s.i.

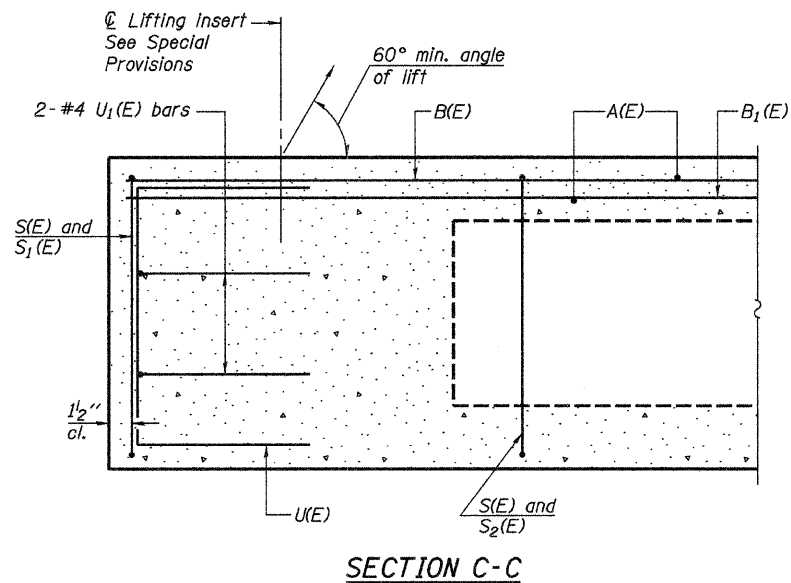
Note: See sheet SLM-CS-2427-62 for Bill of Material.

<b>AECOM</b> <small>2524 S. Broadway          Salem, Illinois 62261          618.548.3500          IL Design Firm Reg.          No. 194-003706          www.aecom.com</small>	<b>SLM-PD-2736-0D</b>
	<b>P.P.C. DECK BEAM          DETAILS AND NOTES</b>
Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643	<b>24' ROADWAY          27" x 36" BEAMS          0° SKEW</b>



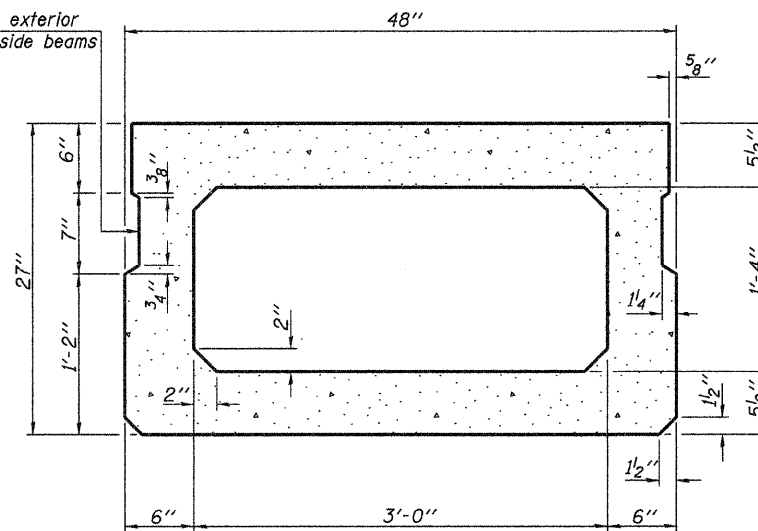
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	8
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95595

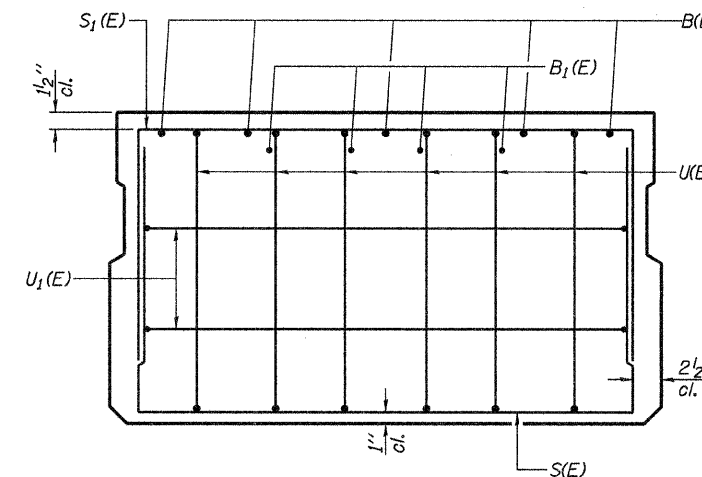


SECTION C-C

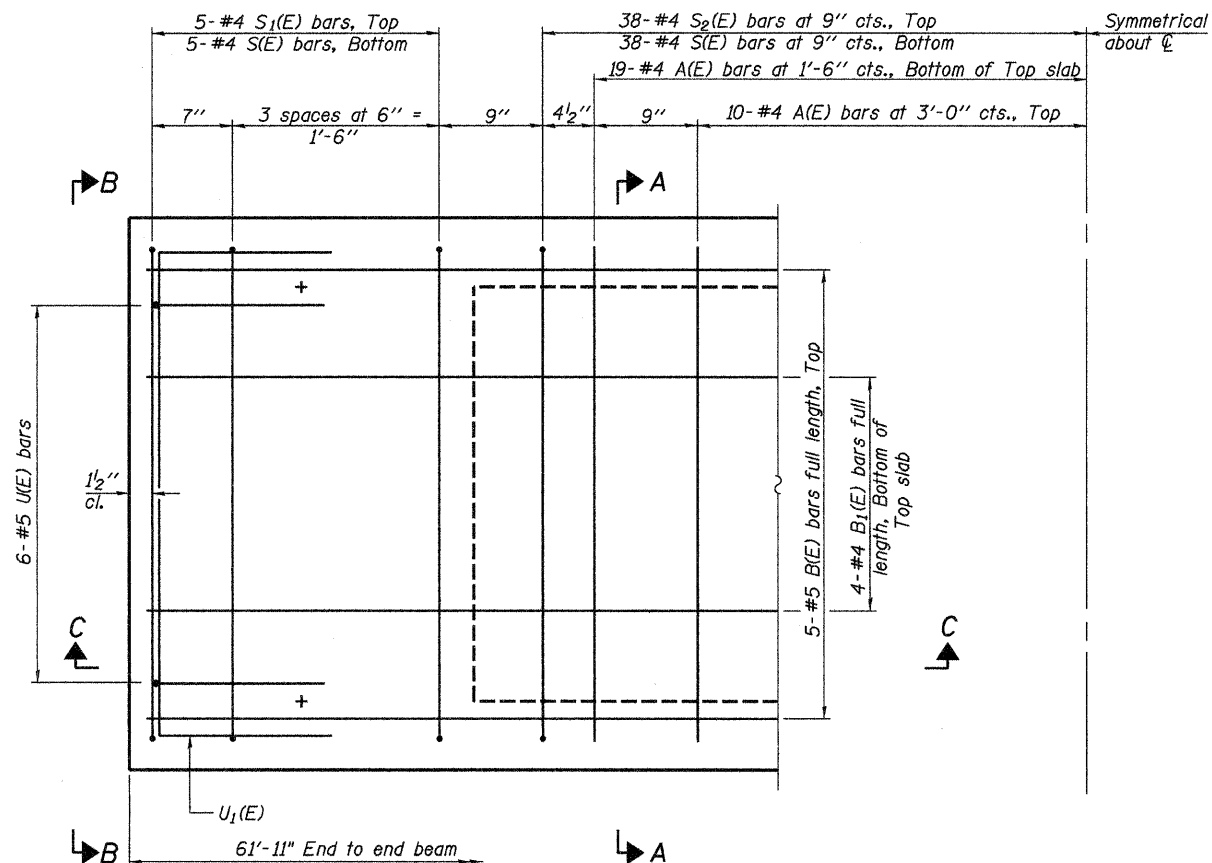
Omit key on exterior face of outside beams



SECTION A-A  
(Showing dimensions)

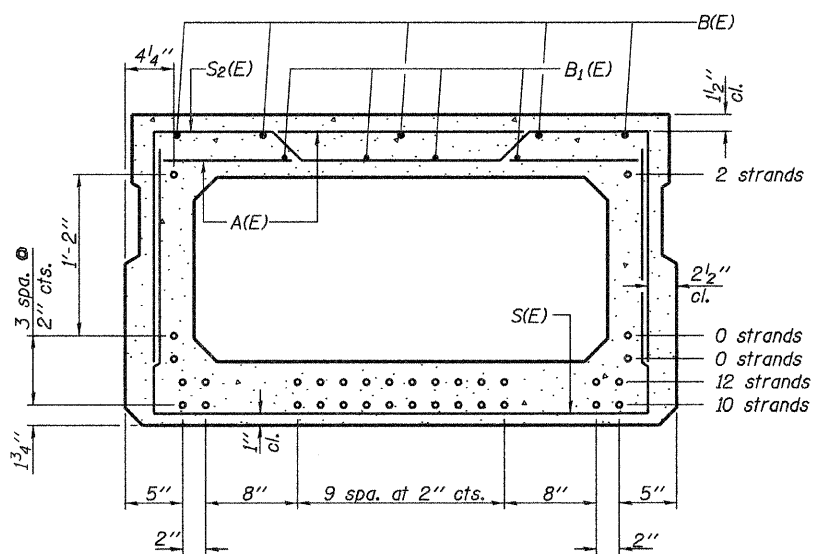


VIEW B-B



PLAN VIEW

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



SECTION A-A

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

Strands: 24 - 1/2" strands.

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

Bar	No.	Size	Length	Shape
A(E)	58	#4	3'-7"	—
B(E)	5	#5	61'-8"	—
B1(E)	4	#4	61'-8"	—
S(E)	86	#4	7'-5"	⌊
S1(E)	10	#4	6'-11"	⌊
S2(E)	76	#4	7'-2"	⌊
U(E)	12	#5	4'-6"	⌊
U1(E)	4	#4	6'-0"	⌊

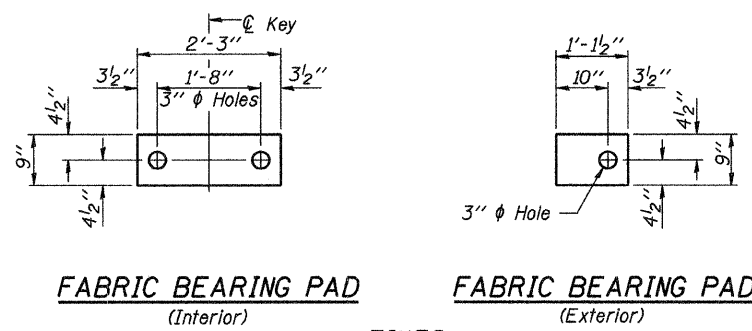
Note: See sheet SLM-PD-2748-0D for additional details.  
See sheet SLM-CS-2427-62 for Bill of Material.

<b>AECOM</b> <small>2524 S. Broadway Salem, Illinois 62881 618.548.3500 IL Design Firm Reg. No. 184-003705 www.aecom.com</small>	<b>SLM-PD-2748-0</b> <b>P.P.C. DECK BEAM</b> <b>DETAILS AND SECTIONS</b>
	<b>24' ROADWAY</b> <b>27" x 48" BEAMS</b> <b>0° SKEW</b>
Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643	

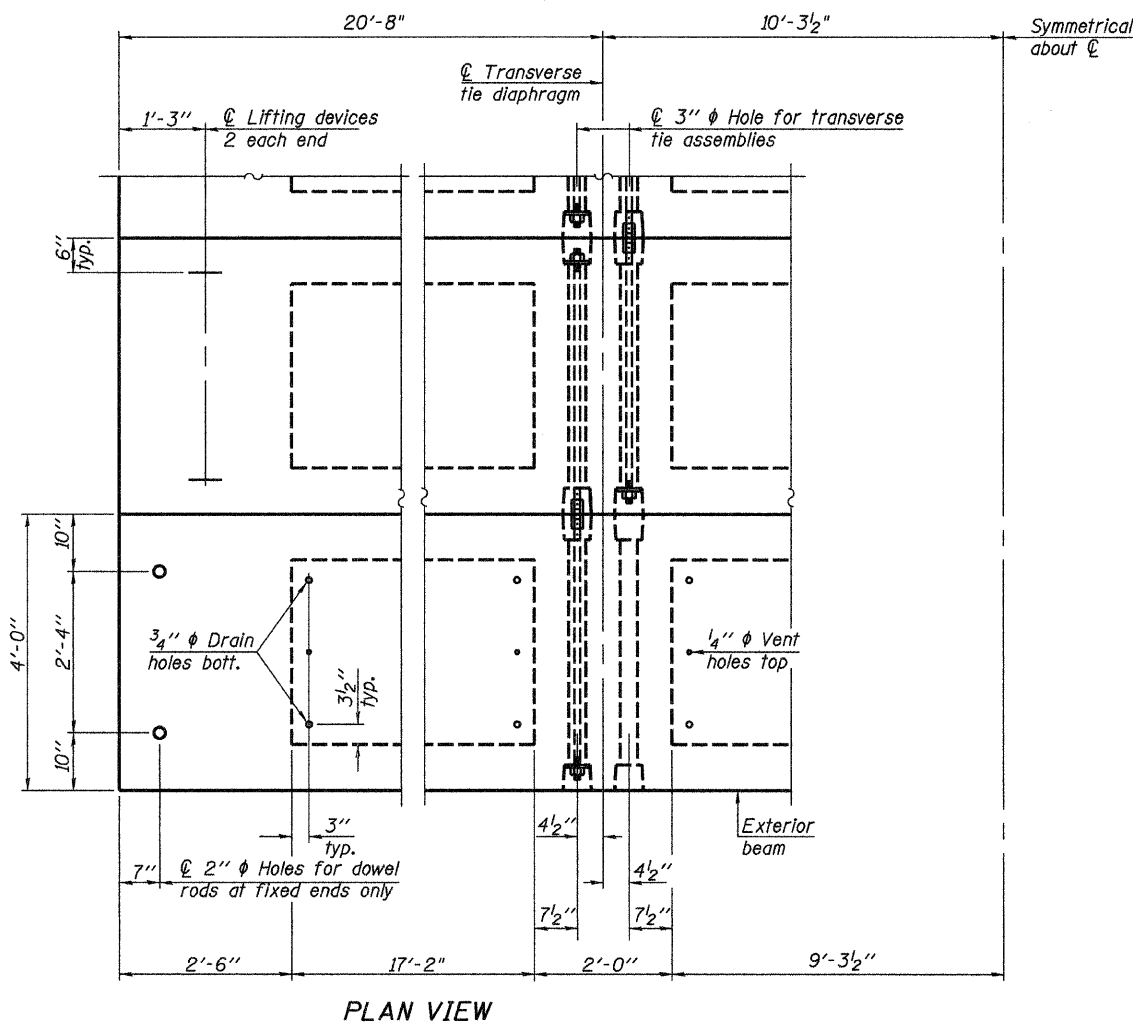
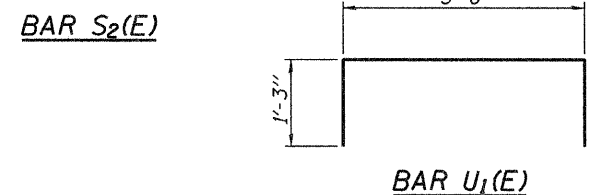
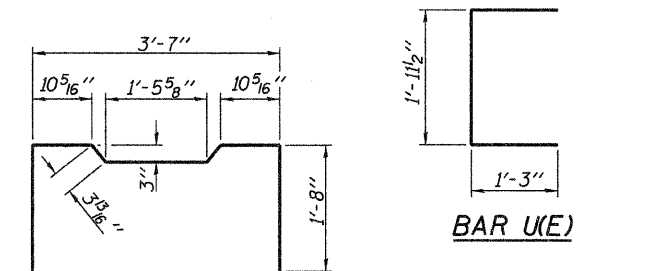
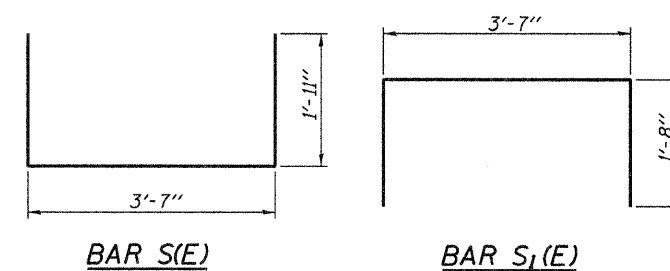
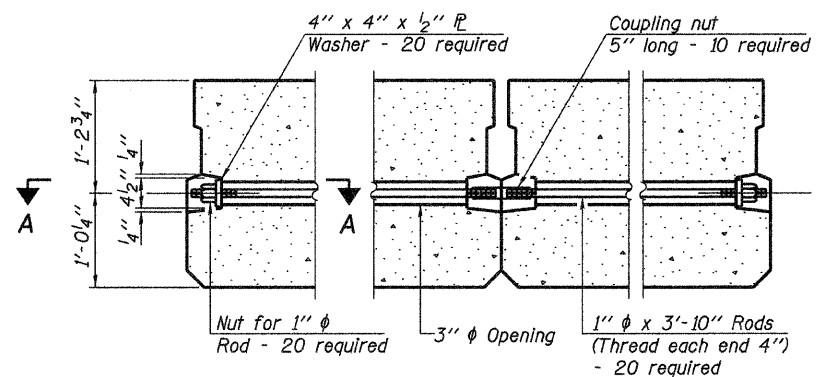
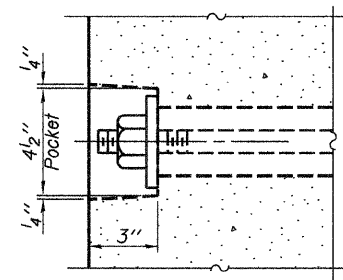


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	9
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95595



**FIXED**



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

**NOTES**

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).

Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Rail post anchor devices shall be cast into outside beam as elsewhere specified.

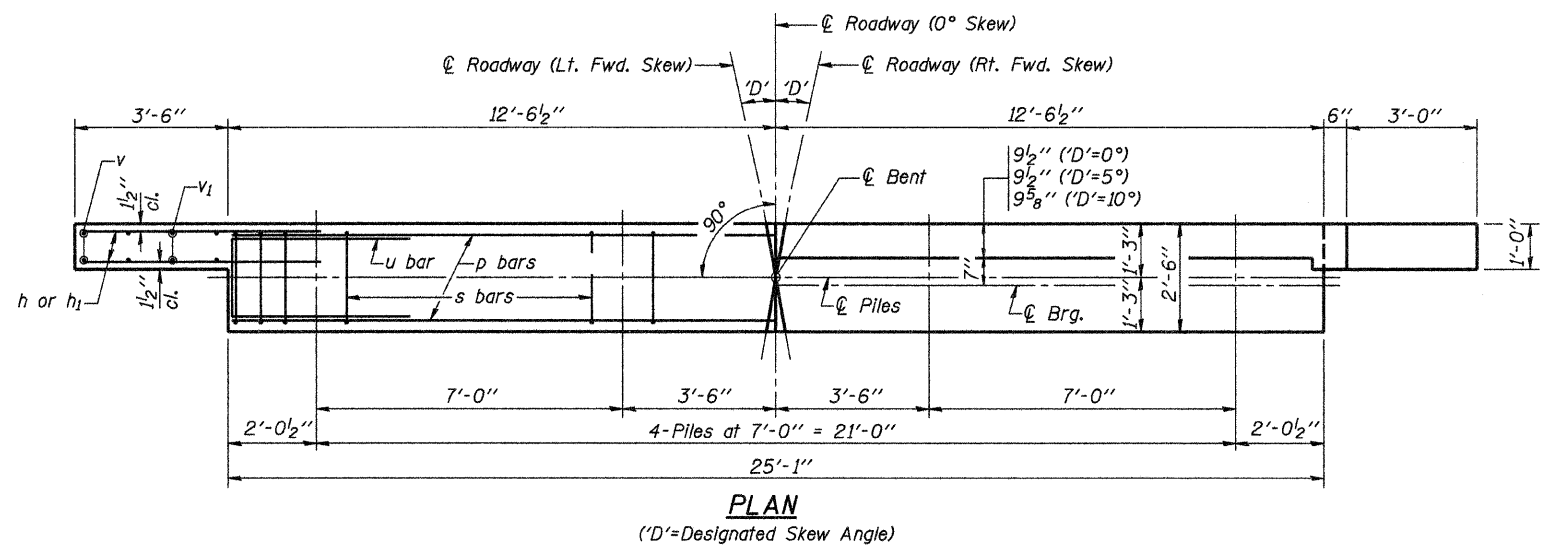
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.

**DESIGN STRESSES**

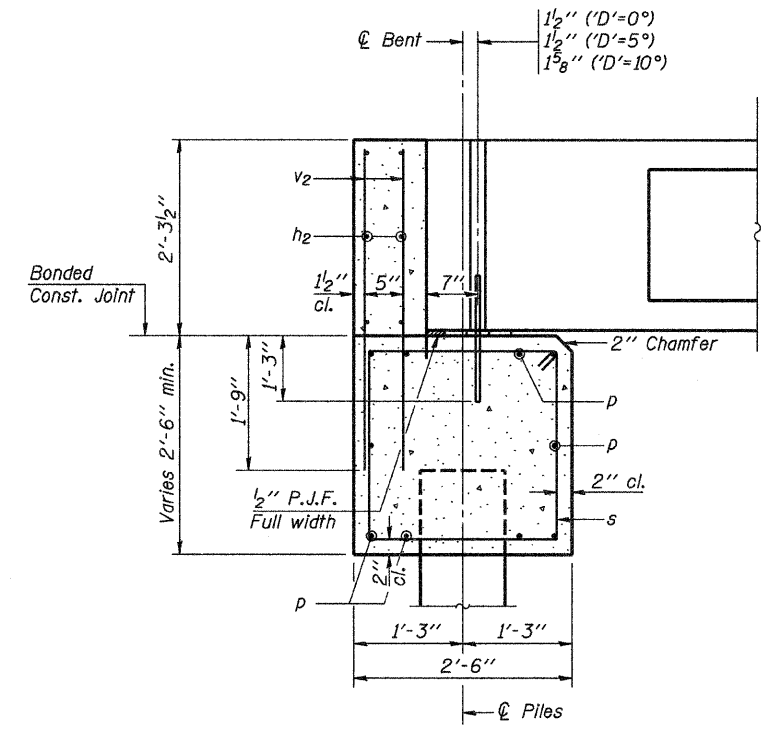
f's = 270,000 p.s.i. (1/2" diameter Strand)  
 f'sl = 201,960 p.s.i. (1/2" diameter Strand)  
 F1 = 30,900 lbs per strand  
 fy = 60,000 p.s.i. Reinf. bars  
 f'c = 6,000 p.s.i.  
 f'ci = 5,000 p.s.i.

Note: See sheet SLM-CS-2427-62 for Bill of Material.

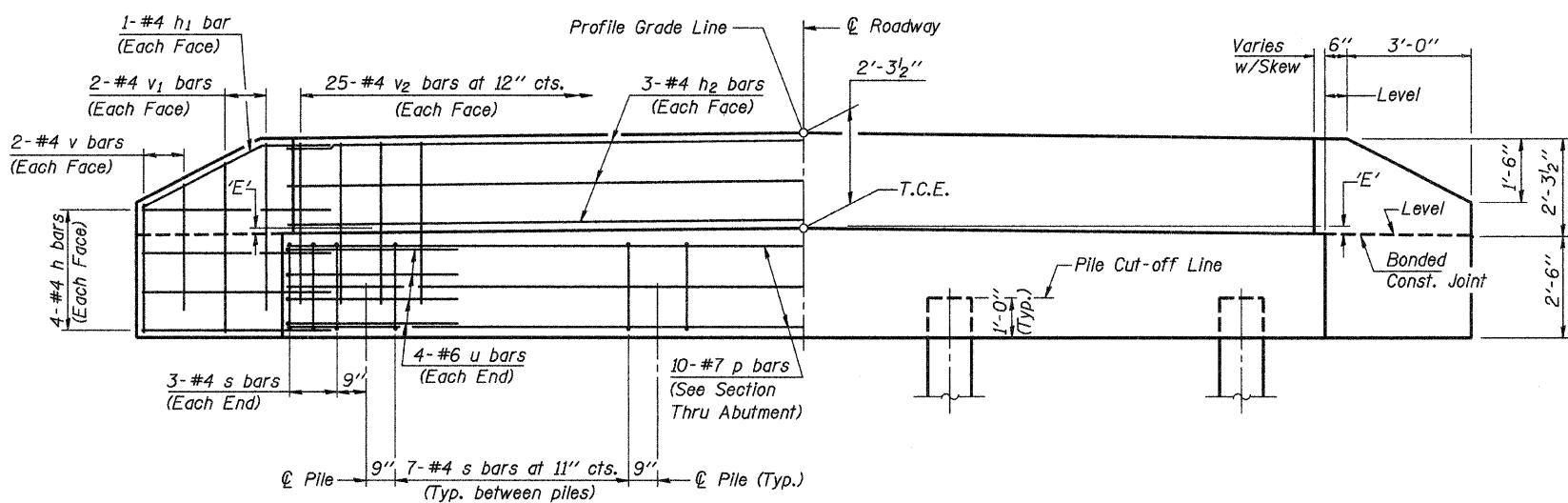
<b>AECOM</b> 2524 S. Broadway Salem, Illinois 62281 618.548.3500 IL Design Firm Reg. No. 194-003706 www.aecom.com	<b>SLM-PD-2748-0D</b> <b>P.P.C. DECK BEAM</b> <b>DETAILS AND NOTES</b>
	Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643



**PLAN**  
(D'=Designated Skew Angle)



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



**ELEVATION**

**DIMENSION 'E'**

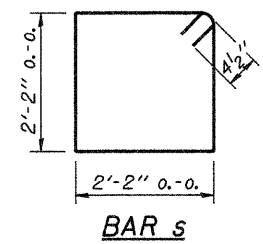
GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 3/8"	2 3/8"	2 1/4"	2 3/8"	2 1/8"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/8"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"	1 5/8"	3"
Over 3% to 4%	2 3/8"	2 3/8"	1 7/8"	2 3/4"	1 3/8"	3 1/4"

**NOTES**

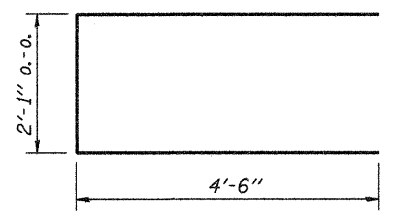
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss anchor bolts.

**DESIGN STRESSES**

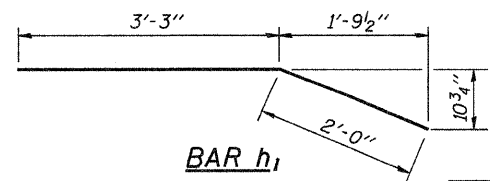
f'c = 3,500 psi  
fy = 60,000 psi



**BAR s**



**BAR u**



**BAR h1**

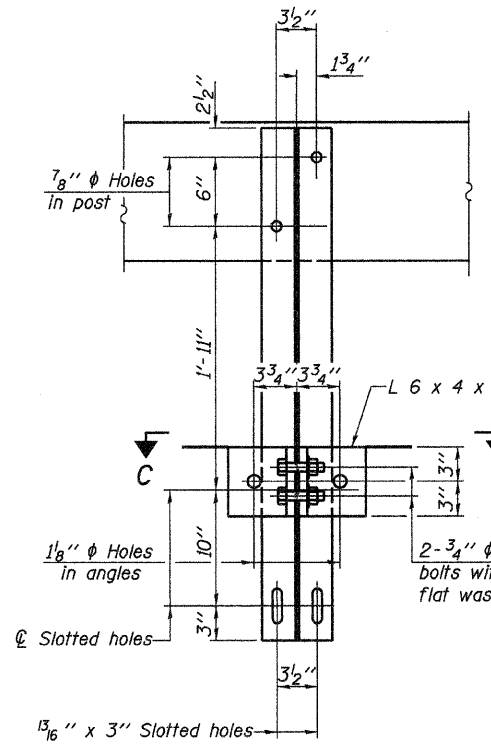
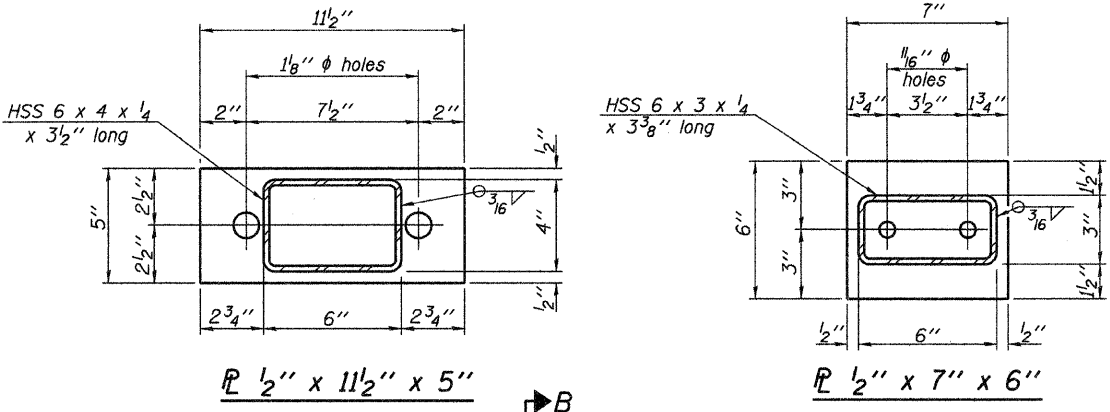
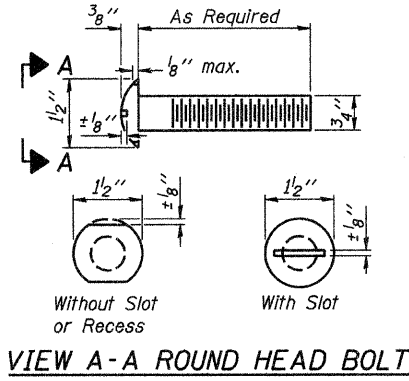
**BILL OF MATERIAL FOR ONE ABUTMENT**

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	24'-9"	—
p	10	#7	24'-9"	—
s	27	#4	9'-5"	□
u	8	#6	11'-1"	□
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	50	#4	3'-11"	—
Concrete Structures			9.1 Cu. Yds.	
Reinforcement Bars			1150 Lb.	

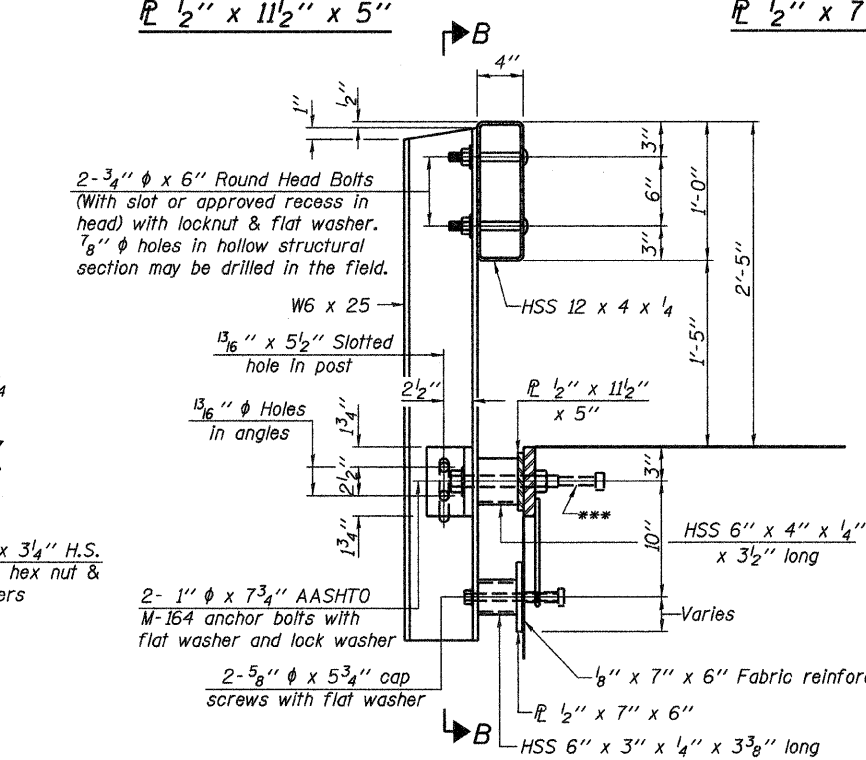
<b>AECOM</b> <small>2524 S. Broadway Salem, Illinois 62811 618.248.3500</small> <small>IL Design Firm Reg. No. 184-003708 www.aecom.com</small>	<b>SLM-CA-2427-10</b> <b>P.P.C. DECK BEAMS</b> <b>PILE BENT ABUTMENT</b>
	<b>24' ROADWAY</b> <b>27" BEAMS</b> <b>'D'=0°, 5°, OR 10°</b>
Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	11
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

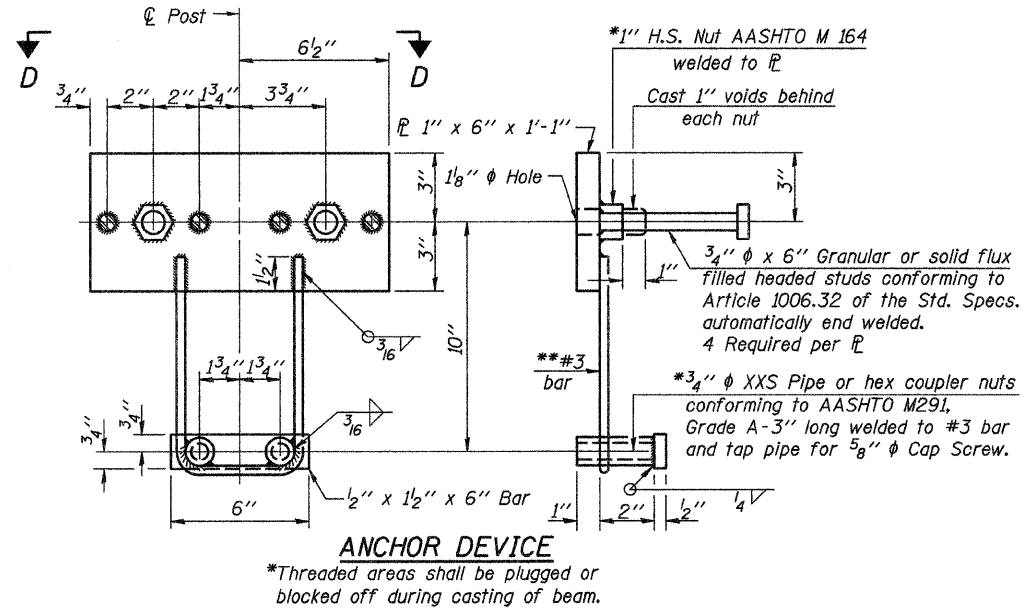
CONTRACT NO. 95595



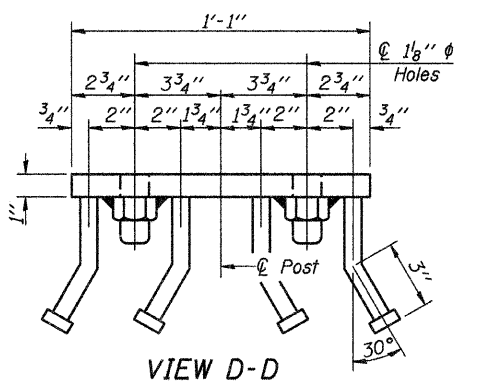
SECTION B-B



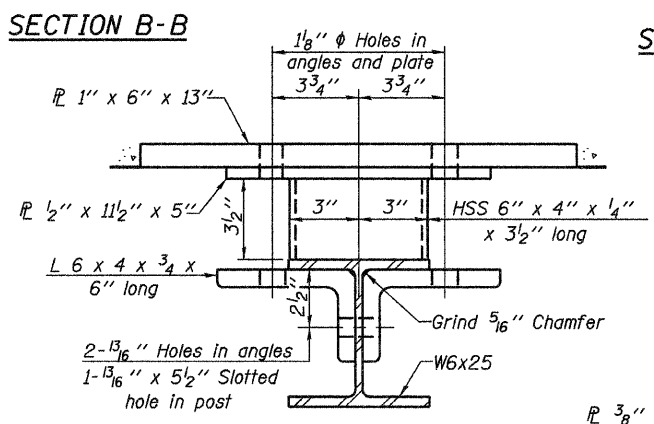
SECTION AT RAILING POST



ANCHOR DEVICE

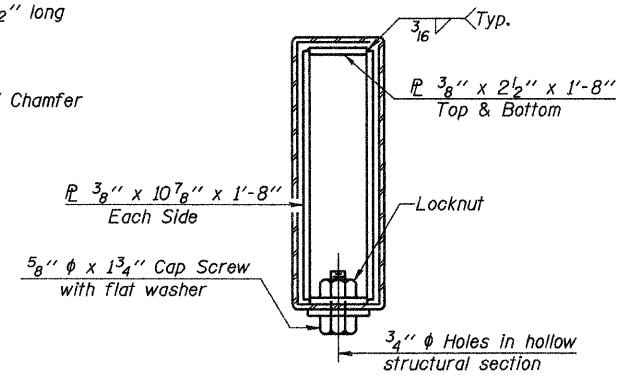


VIEW D-D

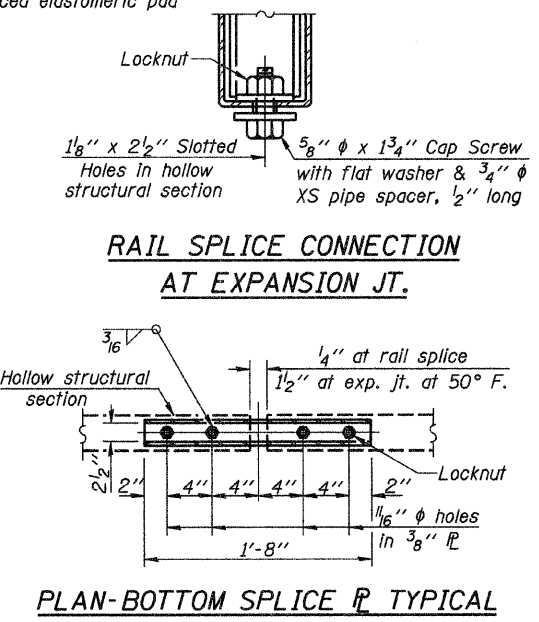


SECTION C-C

\*\*\*Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2 inch.

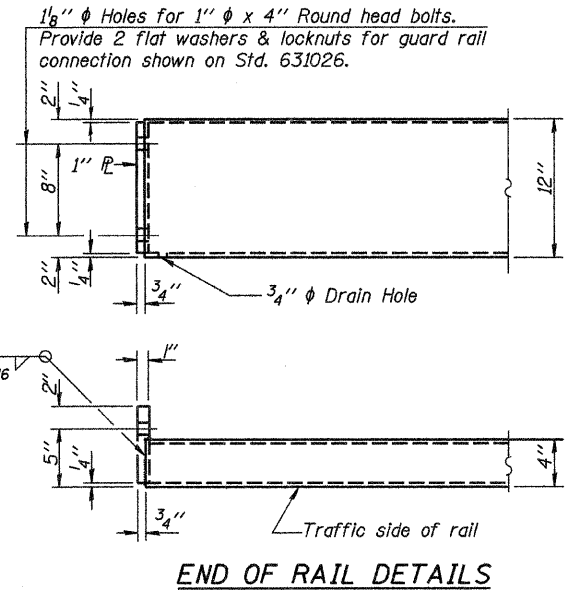


SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.

PLAN-BOTTOM SPLICE TYPICAL



END OF RAIL DETAILS

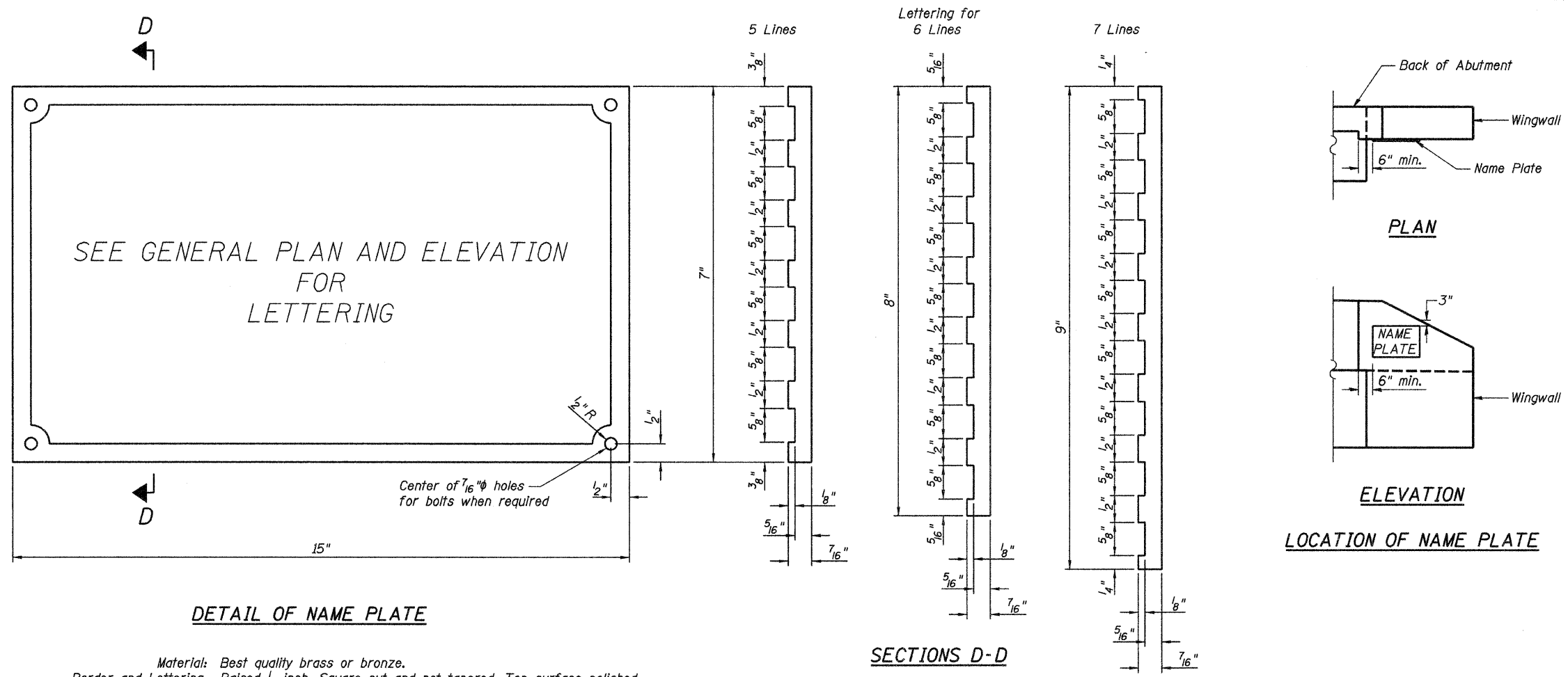
Notes:  
 All field drilled holes shall be coated with an approved zinc rich paint before erection.  
 For multi-span bridges, sufficient 1/4 inch x 6 inch x 1-2 inch galvanized steel shims shall be provided to align rail between adjacent spans. Cost Included with Steel Railing, Type S-1.  
 All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.  
 \*\*\*The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.  
 The maximum allowable rail post spacing shall be 10'-9". The rail post spacing shown elsewhere in the plans is based on the allowable spacing for another type of rail. When this type of rail is used, the number of posts may be decreased and the post spacing increased to provide equal post spaces of 10'-9" or less.

(10'-9" Maximum Post Spacing)

<b>AECOM</b> 2524 S. Broadway Salem, Illinois 62681 618.548.3500 IL Design Firm Reg. No. 184-003708 www.aecom.com	<b>SLM-CR-TS1</b> <b>STEEL RAILING</b> <b>TYPE S-1</b>
	Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	12
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95595



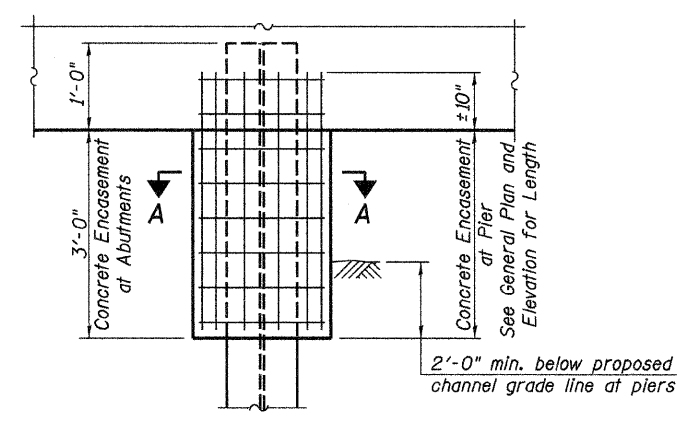
SEE GENERAL PLAN AND ELEVATION FOR LETTERING

**DETAIL OF NAME PLATE**

**SECTIONS D-D**

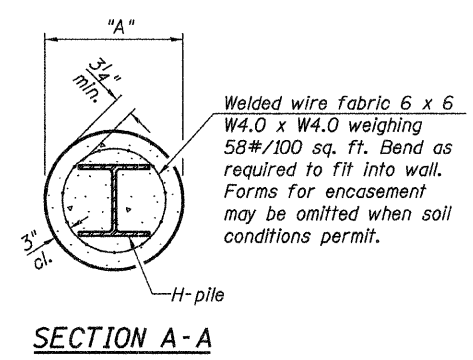
**ELEVATION  
LOCATION OF NAME PLATE**

Material: Best quality brass or bronze.  
 Border and Lettering: Raised 1/8 inch. Square cut and not tapered. Top surface polished.  
 Fastenings: Four lugs at least three inches long, cast on back of plate.



**ELEVATION**

**PILE ENCASEMENT**



**SECTION A-A**

Pile	"A"
HP8	1'-6"
HP10	1'-9"
HP12	2'-0"

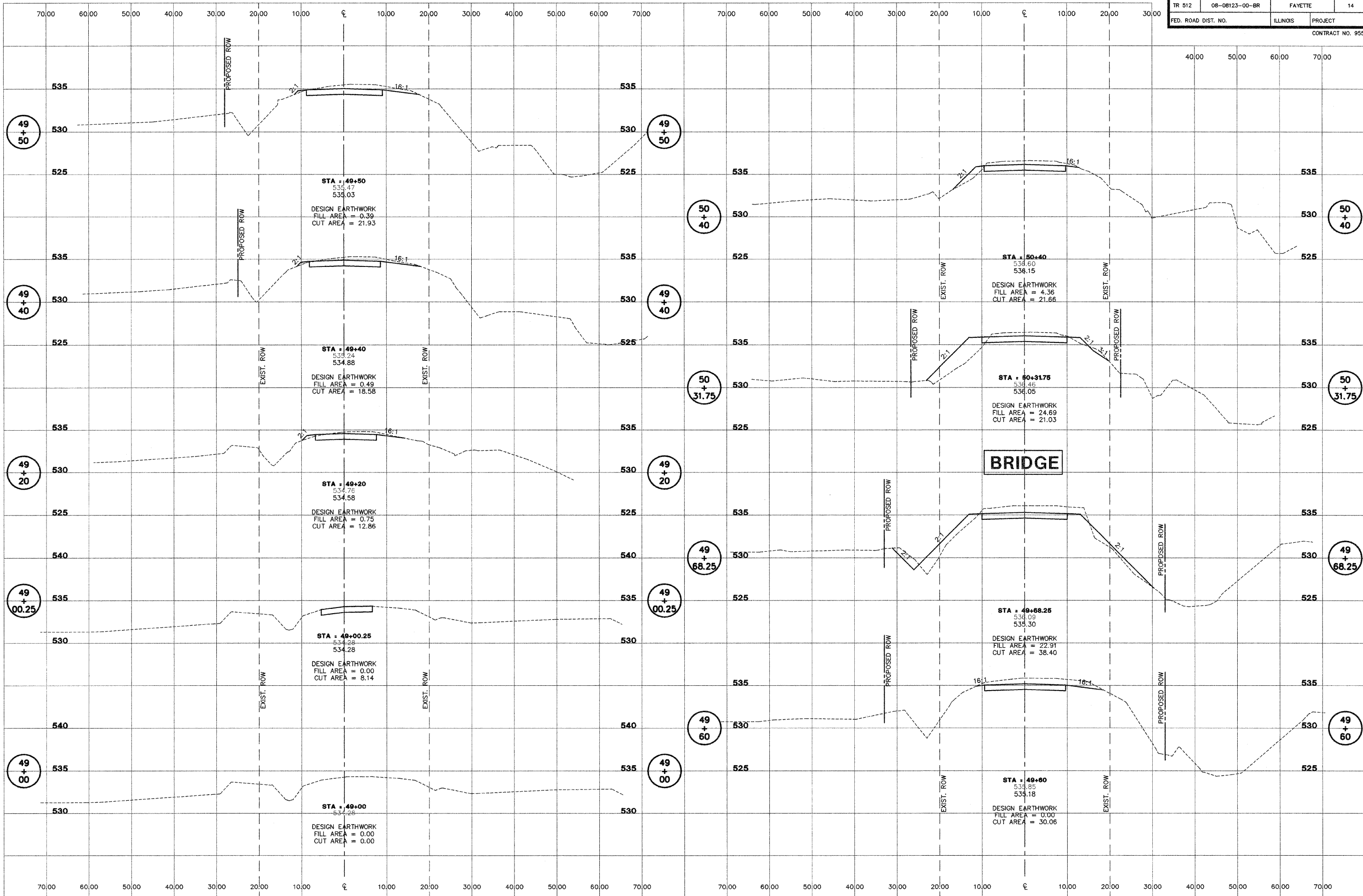
**PILE ENCASEMENT QUANTITIES**  
(Steel Piles)

Pile Size	Item	Unit	Quantity
HP10	Concrete Encasement	Cu Yd.	0.086

Quantities per foot of Encasement.

<b>AECOM</b> 2524 S. Broadway Salem, Illinois 62881 618.548.3500 IL Design Firm Reg. No. 194-003705 www.aecom.com	SLM-CN-CX <b>NAME PLATE &amp;          PILE ENCASEMENT DETAILS</b>
	Date: 07/27/09 Design: MRQ Drawn: BLT Job No.: 200804643

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	13
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	CONTRACT NO. 95595	



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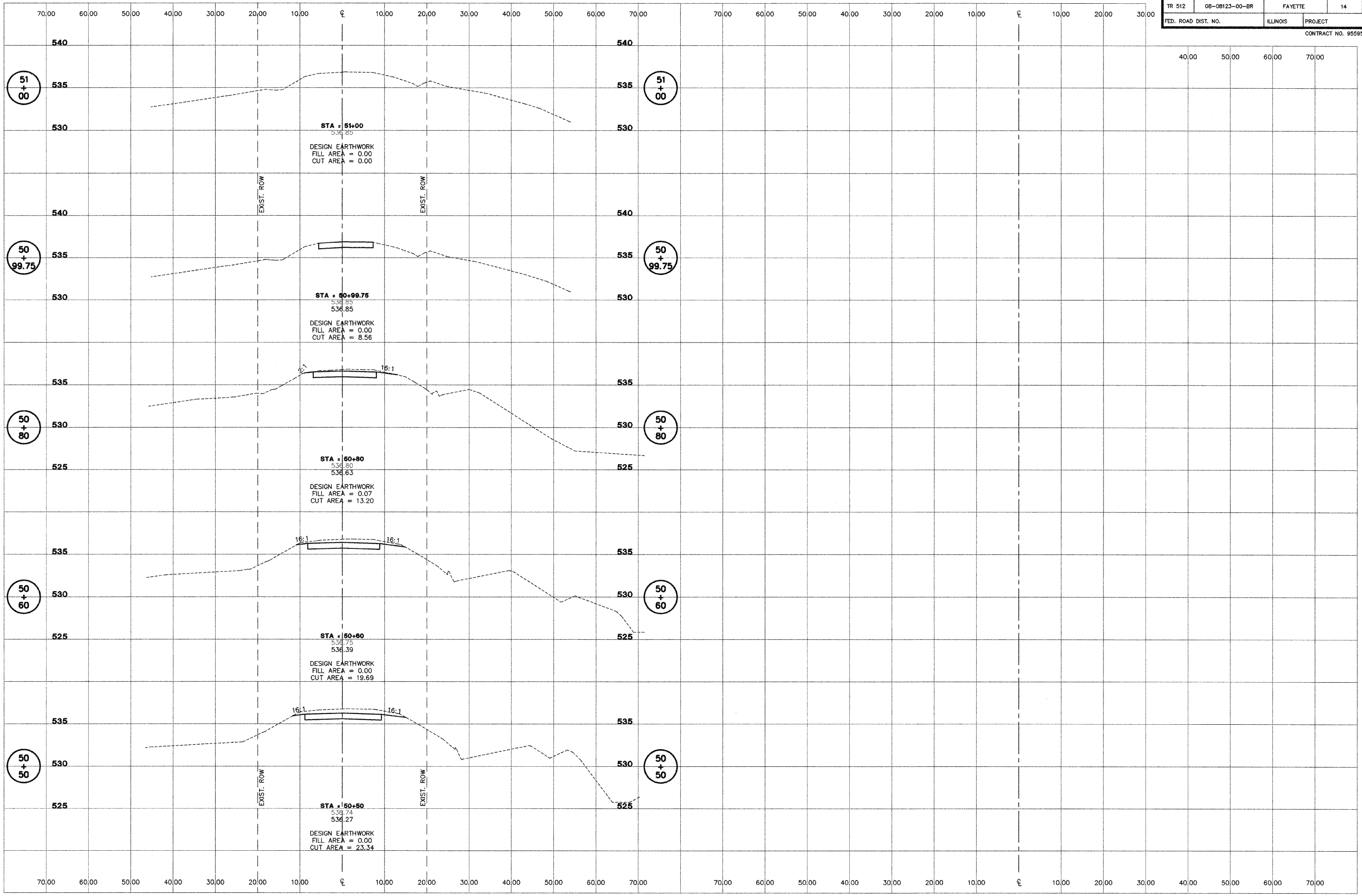
**TR 512, SECTION 08-08123-00-BR**  
**LOUDON ROAD DISTRICT**  
**FAYETTE COUNTY, ILLINOIS**

<b>CROSS SECTIONS</b>		DATE	
STA. 49+00 TO STA. 50+40		07-27-09	
SURVEY	JAS	CHECKED	APPROVED
DESIGN	MRQ	DATE	REVISED
DRAWN	JSD, BLT	JOB NO.	200804643

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 512	08-08123-00-BR	FAYETTE	14	14
FED. ROAD DIST. NO.	ILLINOIS	PROJECT	CONTRACT NO. 95595	



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	SURVEY	JAS	CHECKED	DATE
	DESIGN	MRQ	APPROVED	REVIS
	DRAWN	JSD, BLT		JOB NO. 200804543

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