6-12-09 Letting, Item 222

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	1
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95567

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

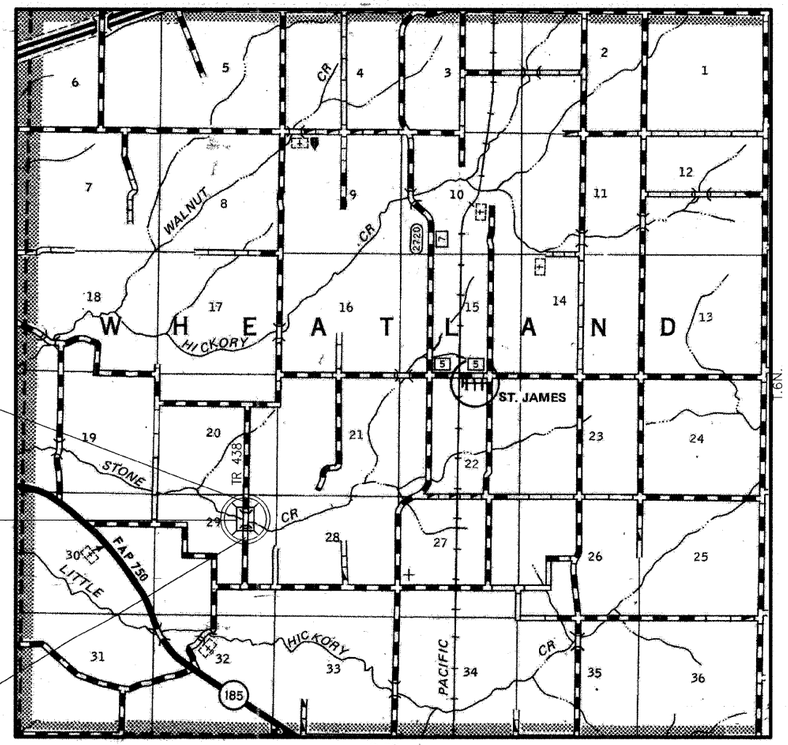
SCALES: PROFILE HORIZ. 0' 20' 40' — CROSS SECTIONS HORIZ. 0' 10' 20'
PROFILE VERT. 0' 2' 4' — CROSS SECTIONS VERT. 0' 5' 10'

SECTION 04-19123-00-BR
PROJECT NO. BROS-051(085)
WHEATLAND ROAD DISTRICT
FAYETTE COUNTY
JOB NO. C-97-048-09

LOCATION OF PROJECT INDICATED THUS —

INDEX OF SHEETS

1	COVER SHEET	
2	TYPICAL CROSS SECTIONS, GENERAL NOTES, AND SUMMARY OF QUANTITIES	
3	PLAN AND PROFILE	
4–12	BRIDGE PLANS	
13	CROSS SECTIONS	
	STANDARD 000001–05	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
	STANDARD 280001–04	TEMPORARY EROSION CONTROL SYSTEMS
	STANDARD 701901–01	TRAFFIC CONTROL DEVICES
	STANDARD B.L.R. 21–8	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS



END SECTION 04-19123-00-BR
STA. 51+30.75

STA. 50+00 – CONSTRUCT SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE (61.50' BK. TO BK. ABUTMENTS) WITH SPILL-THRU PILE BENT ABUTMENTS
0° SKEW, 24' ROADWAY
EXISTING STRUCTURE NO. 026-3202
PROPOSED STRUCTURE NO. 026-3441

BEGIN SECTION 04-19123-00-BR
STA. 48+91.19

Call Before You Dig
JULIE ILLINOIS ONE-CALL SYSTEM

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. = 100
30 M.P.H.

LOCATION MAP

APPROXIMATE SCALE – 1" = 0.60 MILE
LENGTH OF IMPROVEMENTS – 239.56 FEET = 0.045 MILE

APPROVED 12-17, 2008.
Michael A. Hutt
COUNTY ENGINEER

PASSED 1-06, 2008.
Maureen D. Kaal
DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review 1-06, 2008.
Roger L. Purchell
DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MICHAEL R. QUANDT
062-042893
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

MICHAEL R. QUANDT, P.E.
SIGN: Michael R. Quandt
DATE: 12/15/08
EXP. DATE: 11/30/09

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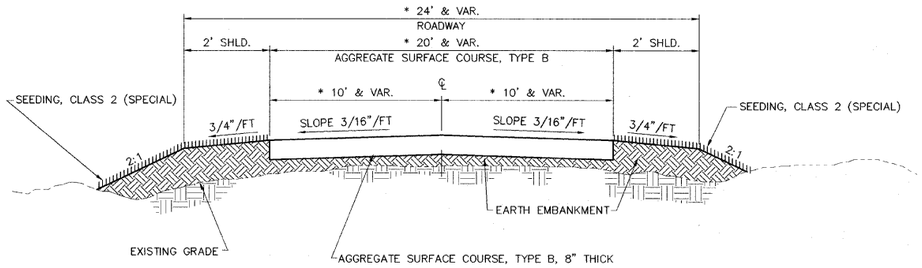
www.sts.aecom.com

DATE: DECEMBER 15, 2008
STS JOB NO. 200701116

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	2
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

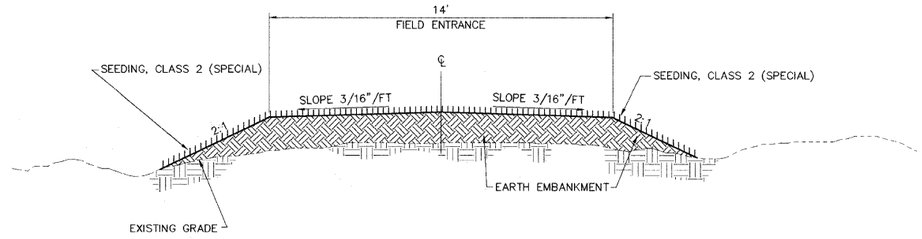
CONTRACT NO. 95567



TYPICAL ROADWAY CROSS-SECTION

* TRANSITION FROM 11.1' EXISTING TO 20' PROPOSED PAVEMENT STA. 48+91.19 TO STA. 49+69.25

* TRANSITION FROM 20' PROPOSED TO 11.2' EXISTING PAVEMENT STA. 50+30.75 TO STA. 51+30.75



TYPICAL FIELD ENTRANCE
LT. STA. 49+42

GENERAL NOTES

1. THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, THE SPECIAL PROVISIONS AND THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2007.
2. THE SHRINKAGE FACTOR FOR EMBANKMENT IS 25%.
3. ALL CLEARING AND GRUBBING IS TO BE INCLUDED IN THE UNIT PRICE BID FOR EARTH EXCAVATION.
4. BITUMINOUS SURFACE TREATMENT (A-2) WILL BE COMPLETED BY THE OWNER.

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	QUANTITY	UNIT
	20200100	EARTH EXCAVATION	7	CU. YD.
	20300100	CHANNEL EXCAVATION	174	CU. YD.
	20400800	FURNISHED EXCAVATION	217	CU. YD.
	25001000	SEEDING, CLASS 2 (SPECIAL)	0.1	ACRE
	28100807	STONE DUMPED RIPRAP, CLASS A4	97	TON
	40200800	AGGREGATE SURFACE COURSE, TYPE B	135	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)	1440	SQ. FT.
	50800105	REINFORCEMENT BARS	2300	POUND
*	50900205	STEEL RAILING, TYPE S1	120	FOOT
	51201400	FURNISHING STEEL PILES HP 10x42	210	FOOT
	51202305	DRIVING PILES	210	FOOT
	51203400	TEST PILE STEEL HP 10x42	1	EACH
	51500100	NAME PLATES	1	EACH
	66503400	BARBED WIRE FENCE REMOVAL	75	FOOT
	67100100	MOBILIZATION	1	L. SUM

* SPECIALTY ITEMS

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TR 438, SECTION 04-19123-00-BR
WHEATLAND ROAD DISTRICT
FAYETTE COUNTY, ILLINOIS

TYPICAL CROSS SECTIONS, GENERAL NOTES AND SUMMARY OF QUANTITIES

SURVEY	CHECKED	DATE
JAS		12/15/08
DESIGN	APPROVED	REVISED
DRAWN MLB,JSD		JOB NO. 200701116

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	3
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	

CONTRACT NO. 95567

SEEDING, CLASS 2 (SPECIAL)
STA. 48+91.19 TO STA. 51+30.75 = 0.1 ACRE

PROPOSED ROW
0.011 ACRE

TEMPORARY USE PERMIT
0.019 ACRE

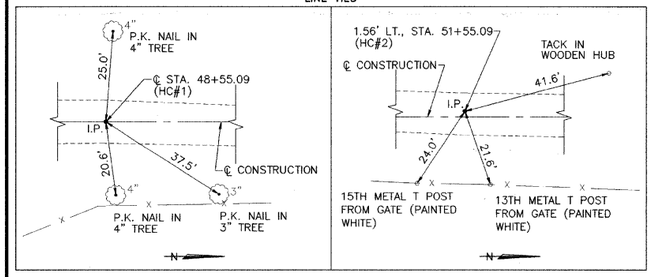
HORIZONTAL CONTROL COORDINATES

POINT	LOCATION	N. COOR.	E. COOR.	ELEV.
HC#1(IRON PIN)	℄ STA. 48+55.09	4659.72	3011.99	551.29
HC#2(IRON PIN)	1.56' LT., STA. 51+55.09	4959.72	3010.46	547.45

BENCH MARK COORDINATES

POINT	LOCATION	ELEV.
BM#1(R.R. SPIKE IN 12" TREE)	48.2' LT., STA. 50+28.86	548.02
BM#2(R.R. SPIKE IN 14" TREE)	32.2' LT., STA. 49+89.55	544.49

LINE TIES

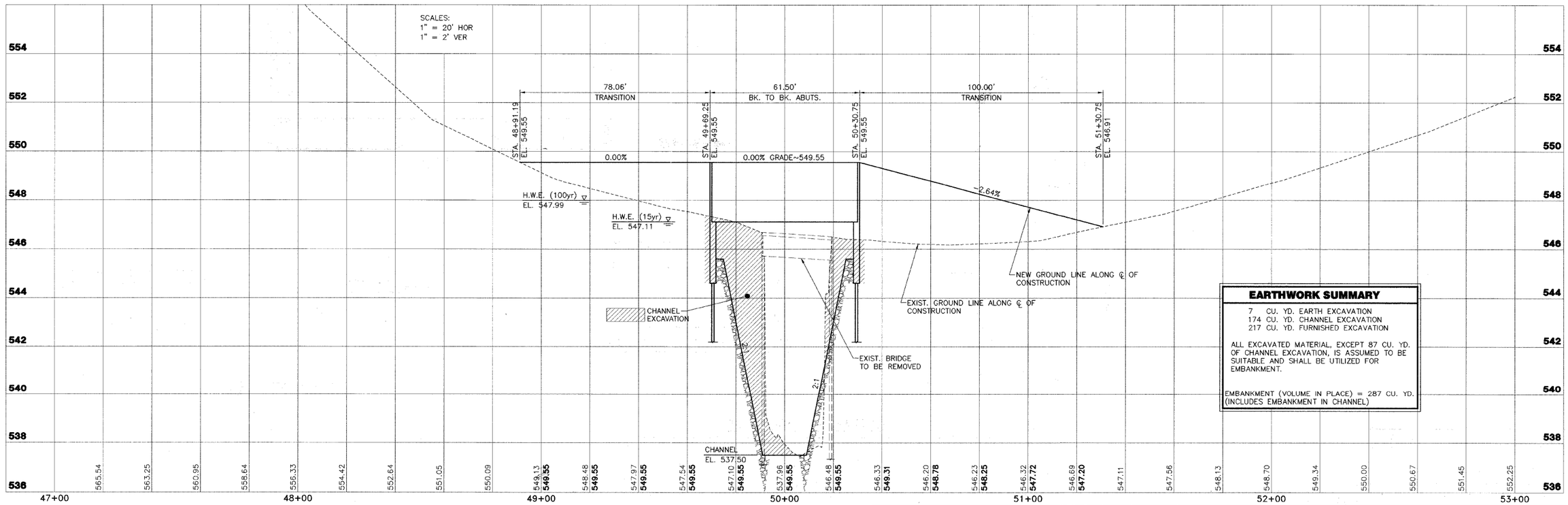


101 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 15
276 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 100
2 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 15
48 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 100
187 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
187 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100
362 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 15
362 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100

SCALE: 1" = 20'
0' 20' 40'

LEGEND

- EXISTING TREE
- EXISTING TREE LINE
- EXISTING SIGN
- I.P. EXISTING IRON PIN
- EXISTING BENCH MARK
- EXISTING SURFACE DRAINAGE
- EXISTING STREAM
- EXISTING FENCE



EARTHWORK SUMMARY

7 CU. YD. EARTH EXCAVATION
174 CU. YD. CHANNEL EXCAVATION
217 CU. YD. FURNISHED EXCAVATION

ALL EXCAVATED MATERIAL, EXCEPT 87 CU. YD. OF CHANNEL EXCAVATION, IS ASSUMED TO BE SUITABLE AND SHALL BE UTILIZED FOR EMBANKMENT.

EMBANKMENT (VOLUME IN PLACE) = 287 CU. YD. (INCLUDES EMBANKMENT IN CHANNEL)

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TR 438, SECTION 04-19123-00-BR
WHEATLAND ROAD DISTRICT
FAYETTE COUNTY, ILLINOIS

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

SURVEY	CHECKED	DATE
JAS		12/15/08
DESIGN MRQ	APPROVED	REVISED
DRAWN BLT,JSD		JOB NO. 200701116

B.M. - B.M. #1 R.R. spike in Power Pole, 34.6' RT., STA. 48+15.2, EL. 566.59
B.M. #2 R.R. spike in Power Pole, 29.4' RT., STA. 50+90.7, EL. 570.97

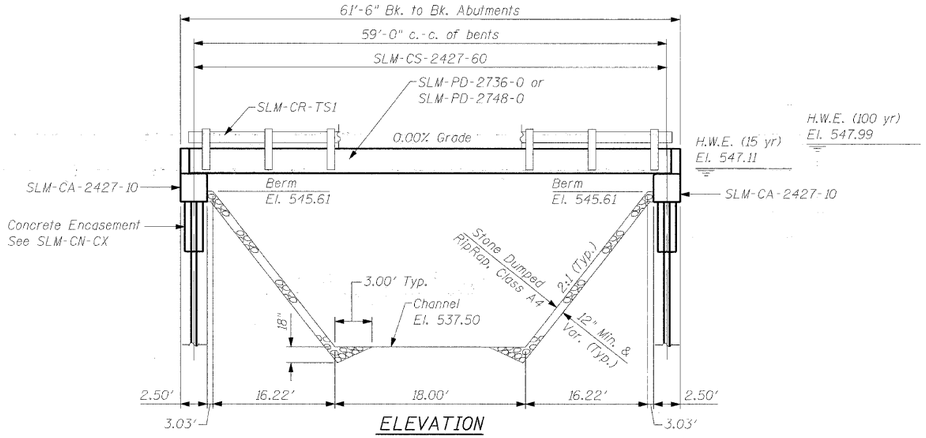
Existing Structure - The existing structure is single span pony trusses and steel stringers with timber deck and timber runners. Substructure is closed concrete abutments with timber cap and piling.

Salvage - Signs

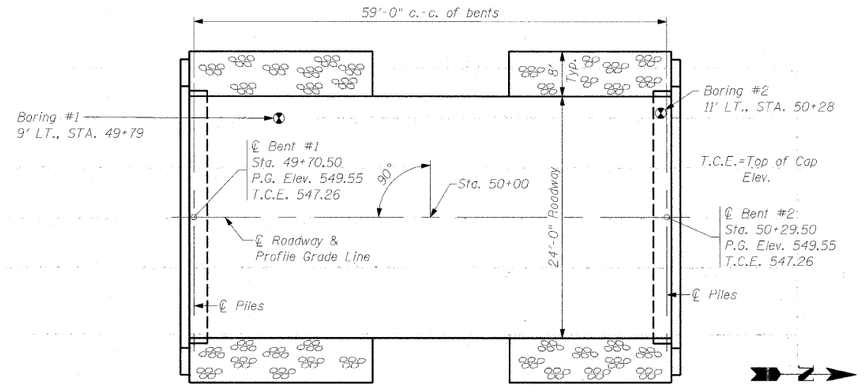
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	4
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95567



ELEVATION



PLAN

GENERAL NOTES

1. The contractor shall drive 1 test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
2. See Special Provisions for boring logs.
3. 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. Piers	Sub. Abuts.	Total
Removal of Existing Structures	Each				1
Concrete Structures	Cu. Yd.			18.2	18.2
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1440			1440
Steel Railing, Type S-1	Foot	120			120
Reinforcement Bars	Pound			2300	2300
Furnishing Steel Pile HP 10x42	Foot			210	210
Driving Piles	Foot			210	210
Test Pile Steel HP 10x42	Each			1	1
Name Plates	Each			1	1
Concrete Encasement	Cu. Yd.			2.1	2.1

WILLIAM D. LUEKING
4341
LICENSED STRUCTURAL ENGINEER OF ILLINOIS

Date: 12/15/2008

Date of License Expiration: 11/30/2010

Signature: William D. Lueking

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

LOADING HL-93

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

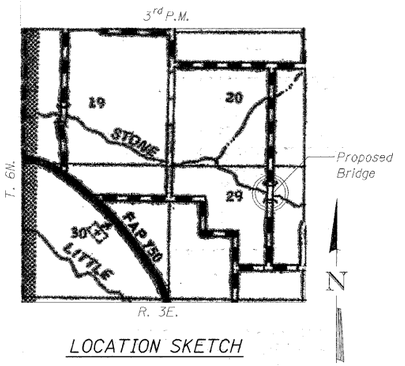
SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 23
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 50
Soil Site Class = D

STATION 50+00
STONE CREEK
SEC. 04-19123-00-BR BUILT 20__
PROJECT NO. BROS-051 (085)
FAYETTE COUNTY
LOADING HL93
STR. NO. 026-3441

LETTERING FOR NAME PLATE

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



LOCATION SKETCH

INDEX OF SHEETS

4. General Plan & Elevation
5. SLM-CS-2427-60
6. SLM-PD-2736-0
7. SLM-PD-2736-0D
8. SLM-PD-2748-0
9. SLM-PD-2748-0D
10. SLM-CA-2427-10
11. SLM-CR-TS1
12. SLM-CN-CX

PILE DATA (2-ABUTS.)

File Type and Size:	Steel Piles, HP10x42
Nominal Required Bearing:	285 kips
Allowable Resistance Available:	95 kips
Estimated Pile Length:	30 Feet Bent #1, 30 Feet Bent #2
Number of Production Piles:	7
Number of Test Piles:	1 (located in Bent #1)

WATERWAY INFORMATION

Drainage Area = 5.56 Sq. Mi. Low Grade Elev. 546.91 @ Sta. 51+30.75

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E. Ft.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater Elev. - Ft. Exist.	Headwater Elev. - Ft. Prop.
Design	15	1481	187	362	547.11	N/A	0.11	N/A	547.22
Base	100	2403	187	362	547.99	N/A	0.74	N/A	548.73
Overtopping									
Max. Calc.	500								

GENERAL PLAN & ELEVATION
TR 438
OVER STONE CREEK
SECTION 04-19123-00-BR
FAYETTE COUNTY
STATION 50+00

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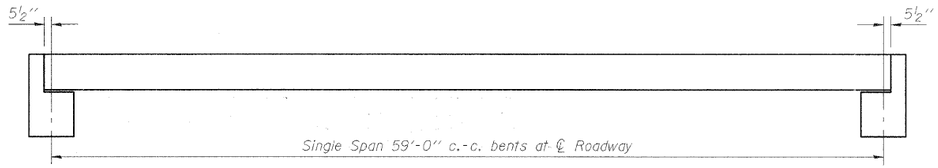
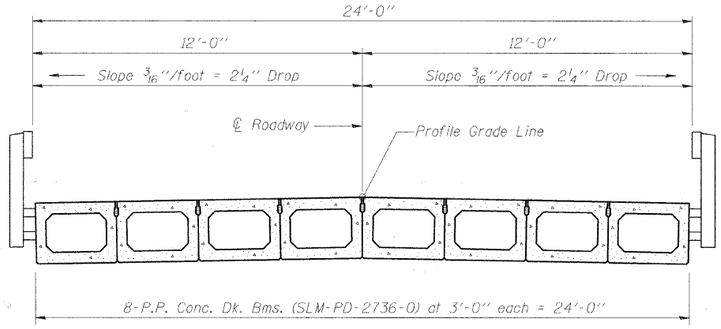
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	5
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

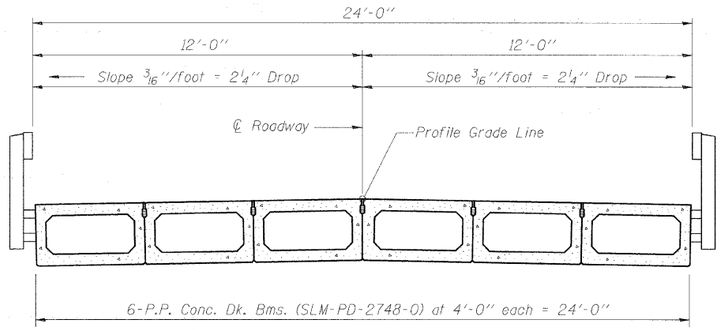
CONTRACT NO. 95567



TYPICAL ELEVATIONS



CROSS SECTION



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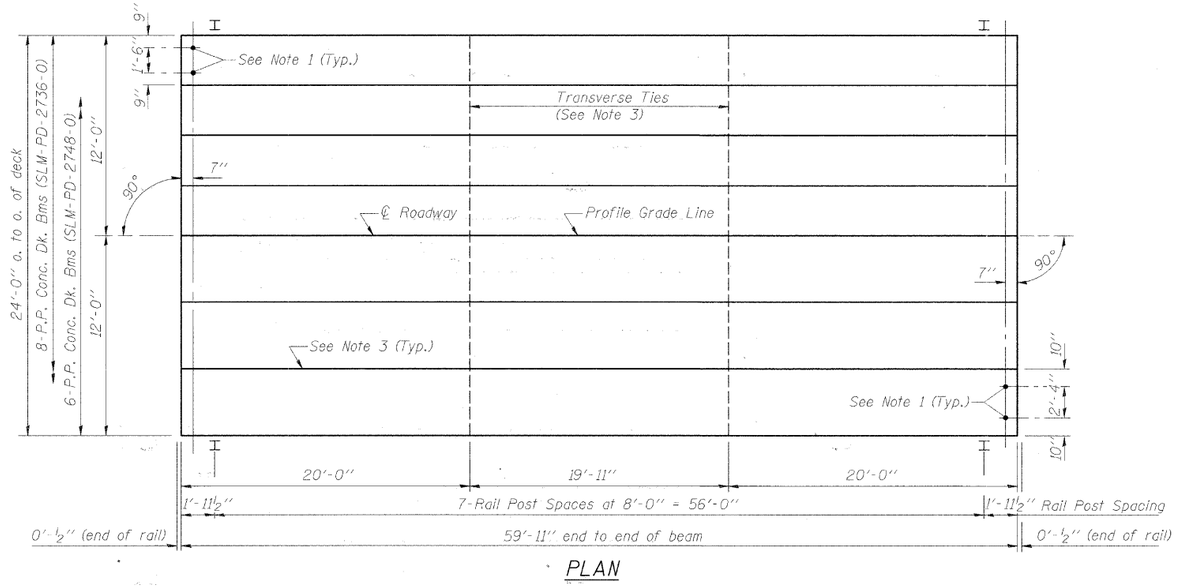
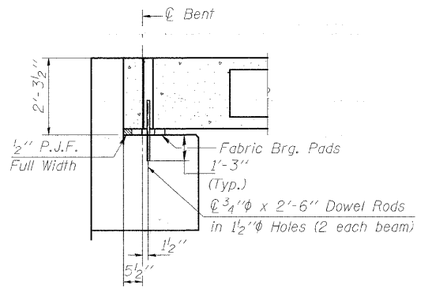


PLAN



SECTION AT ABUTS.
(Along ℄ Beams)

QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1440 Sq. Ft.
Steel Railing	120 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" ϕ 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.

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SLM-CS-2427-60

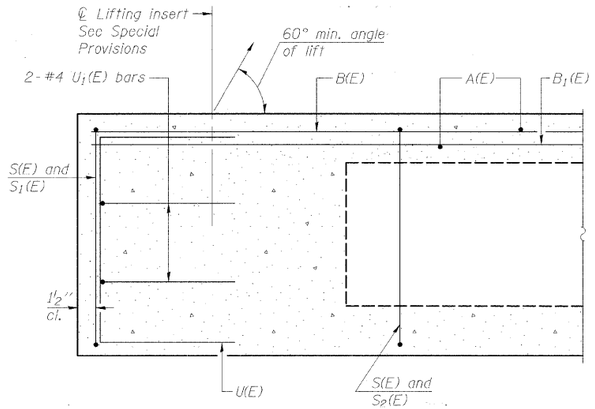
P.P.C. DECK BEAM
SUPERSTRUCTURE

24' ROADWAY
27" BEAMS
60' SPAN - 0° SKEW

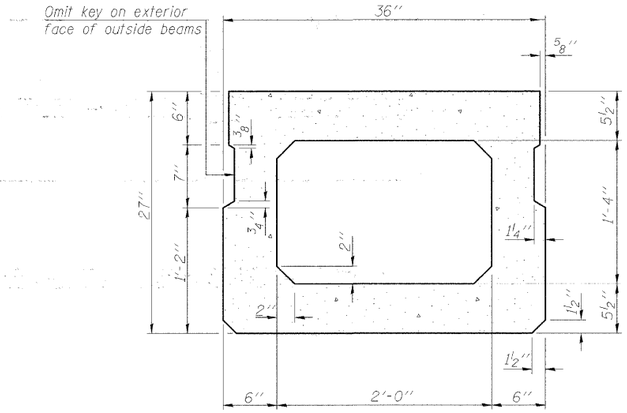
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	6
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

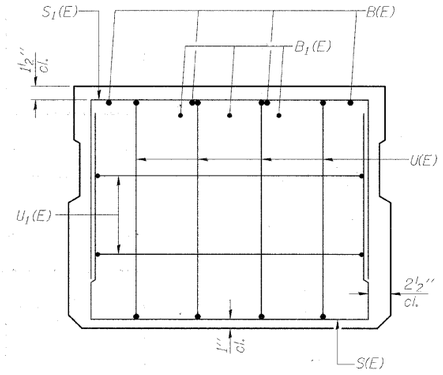
CONTRACT NO. 95567



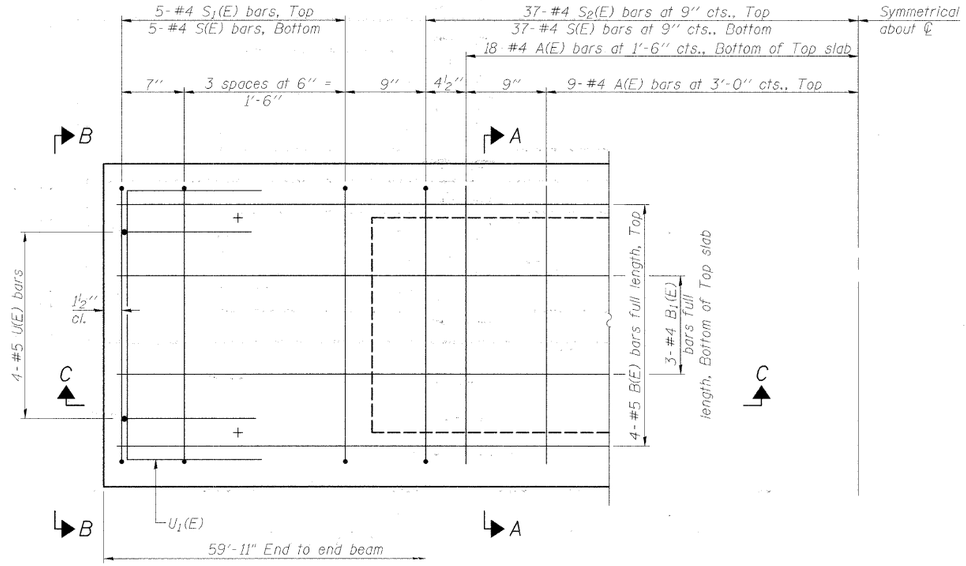
SECTION C-C



SECTION A-A
(Showing dimensions)

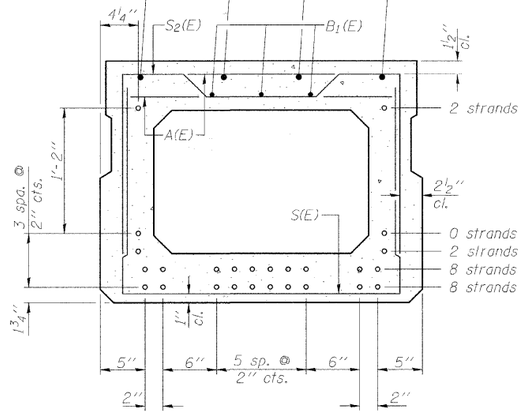


VIEW B-B



PLAN VIEW

Note: Spacing of S(E) and S_2(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: 20 - ½"ϕ strands.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	54	#4	2'-7"	—
B(E)	4	#5	59'-7"	—
B_1(E)	3	#4	59'-7"	—
S(E)	84	#4	6'-5"	⌴
S_1(E)	10	#4	5'-11"	⌐¬
S_2(E)	74	#4	6'-2"	⌐¬
U(E)	8	#5	4'-6"	⊏
U_1(E)	4	#4	5'-0"	⌐¬

Note: See sheet SI M-PD-2736-0D for additional details.
See sheet SLM-CS-2427-60 for Bill of Material.

SLM-PD-2736-0

P.P.C. DECK BEAM
DETAILS AND SECTIONS

24' ROADWAY
27" x 36" BEAMS
0° SKEW

STS | AECOM
2524 S. Broadway
Salem, Illinois 62881
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IL Design Firm Reg.
No. 184-001518
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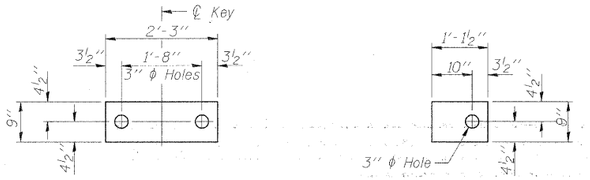
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	7
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95567

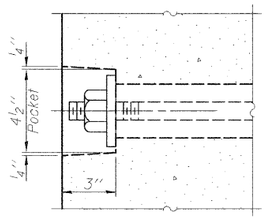


FABRIC BEARING PAD
(Interior)

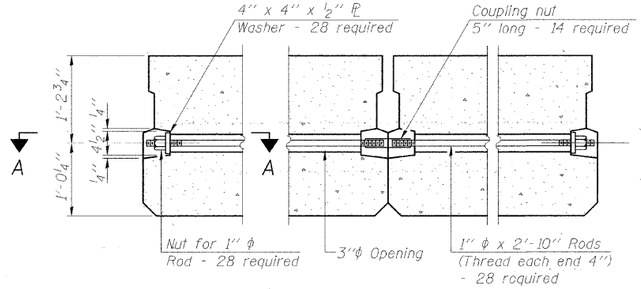
FABRIC BEARING PAD
(Exterior)

FIXED

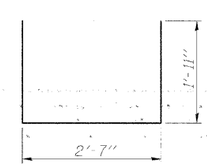
Note: Omit holes when using expansion bearings.



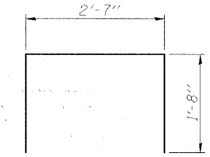
SECTION A-A



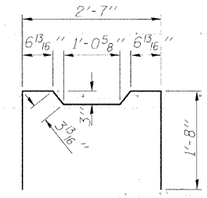
TYPICAL TRANSVERSE TIE ASSEMBLY



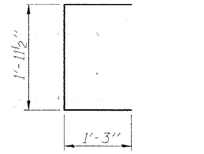
BAR S(E)



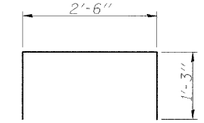
BAR S_1(E)



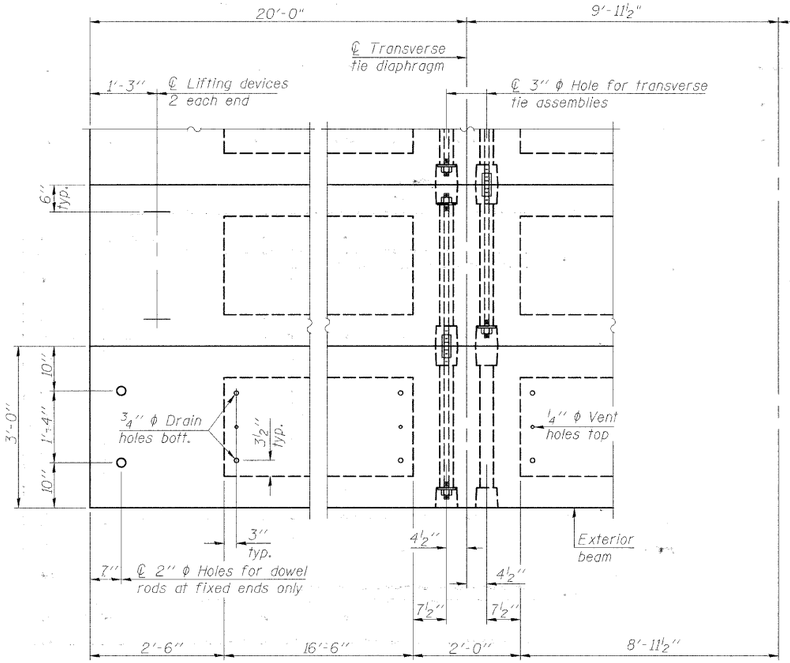
BAR S_2(E)



BAR U(E)



BAR U_1(E)



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 ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" ϕ 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 ⅛" 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. (½" ϕ Strand)
f_{si} = 201,960 p.s.i. (½" ϕ 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-2427-60 for Bill of Material.

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SLM-PD-2736-0D

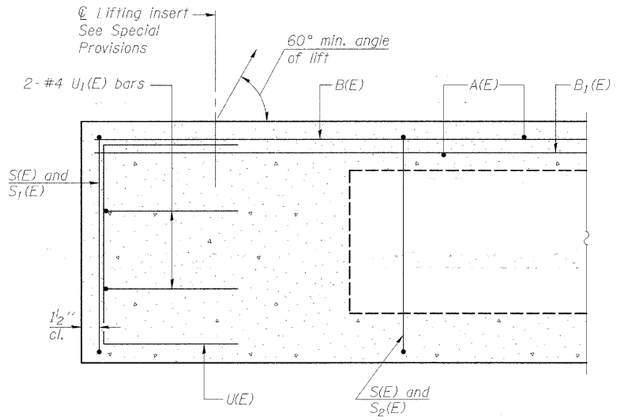
P.P.C. DECK BEAM
DETAILS AND NOTES

24' ROADWAY
27" x 36" BEAMS
0° SKEW

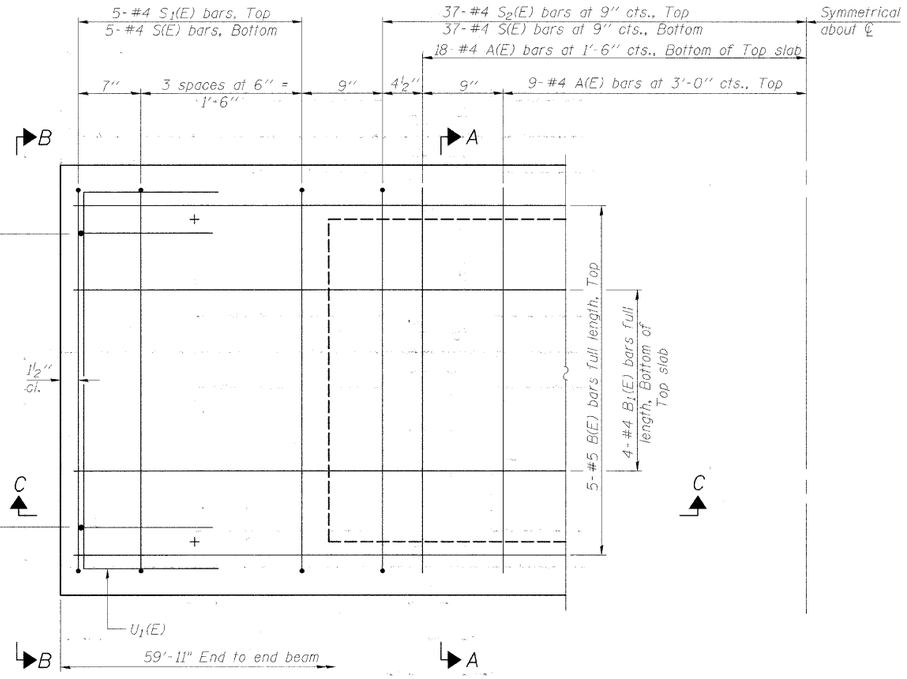
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	8
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95567

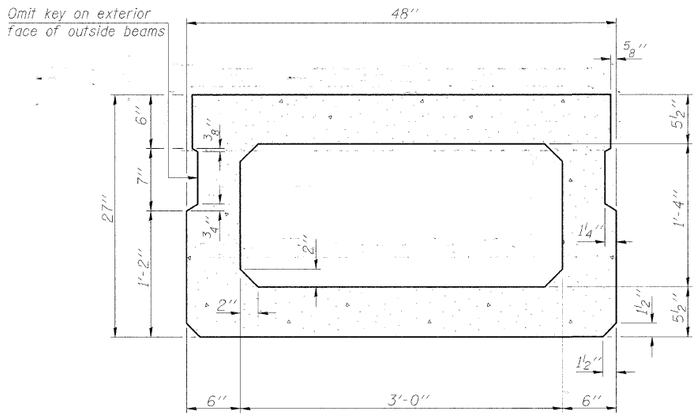


SECTION C-C

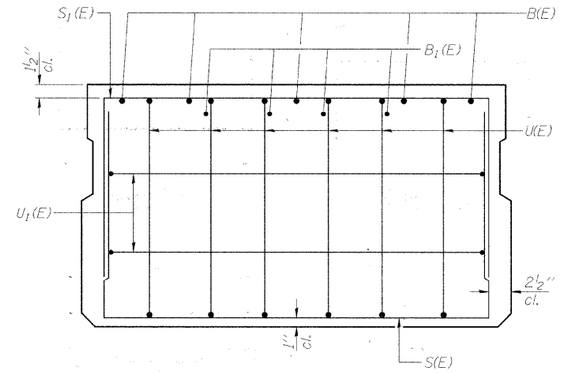


PLAN VIEW

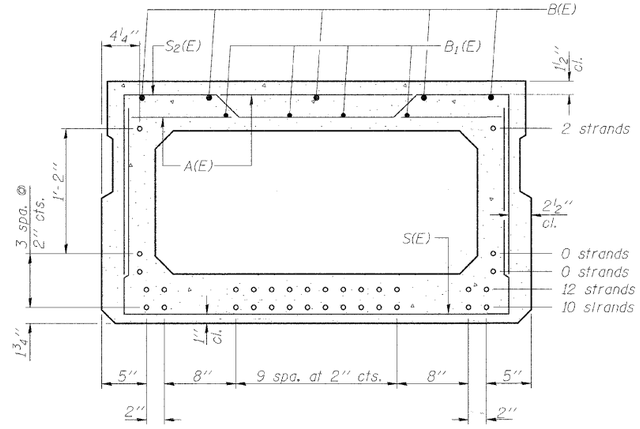
Note: Spacing of S(E) and S_2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A
(Showing dimensions)



VIEW B-B



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 - ½"ϕ strands.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	54	#4	3'-7"	—
B(E)	5	#5	59'-7"	—
B1(E)	4	#4	59'-7"	—
S(E)	84	#4	7'-5"	⊔
S1(E)	10	#4	6'-11"	⊓
S2(E)	74	#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-2427-60 for Bill of Material.

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SLM-PD-2748-0

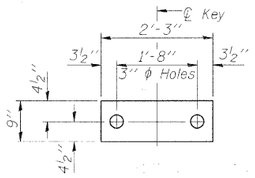
P.P.C. DECK BEAM
DETAILS AND SECTIONS

24' ROADWAY
27" x 48" BEAMS
0° SKEW

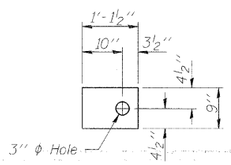
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	9
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95567



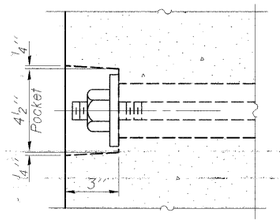
FABRIC BEARING PAD
(Interior)



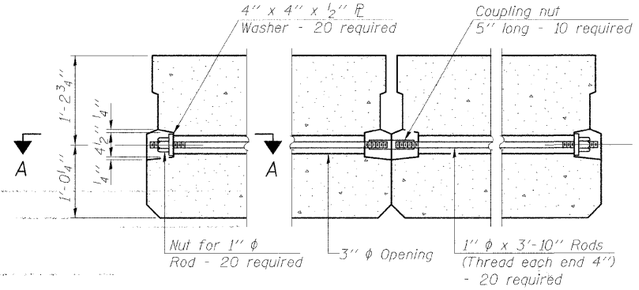
FABRIC BEARING PAD
(Exterior)

FIXED

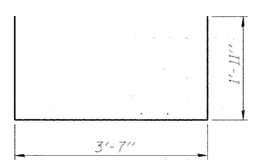
Note: Omit holes when using expansion bearings.



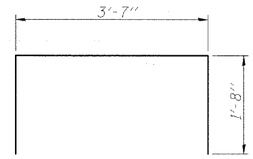
SECTION A-A



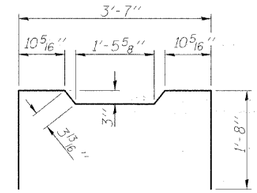
TYPICAL TRANSVERSE TIE ASSEMBLY



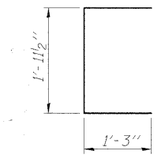
BAR S(E)



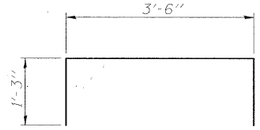
BAR S_1(E)



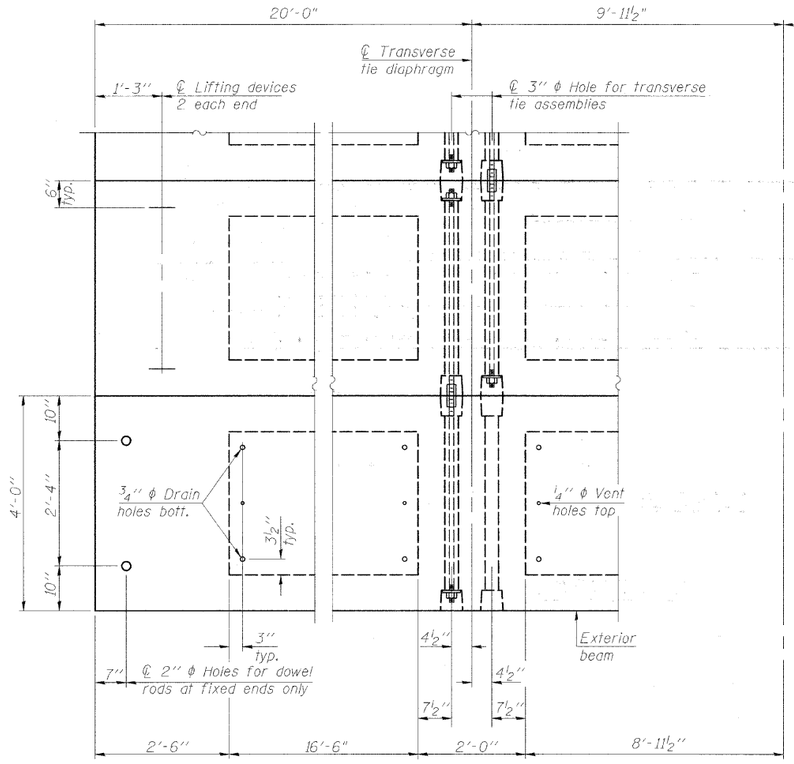
BAR S_2(E)



BAR U(E)



BAR U_1(E)



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 ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1" ϕ 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 ⅛" 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. (½" ϕ Strand)
f_{si} = 201,960 p.s.i. (½" ϕ 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-2427-60 for Bill of Material.

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SLM-PD-2748-0D

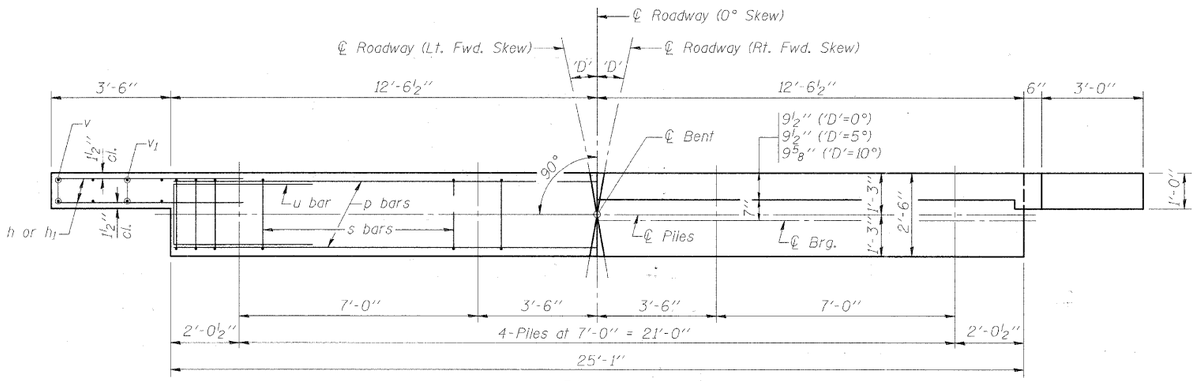
P.P.C. DECK BEAM
DETAILS AND NOTES

24' ROADWAY
27" x 48" BEAMS
0° SKEW

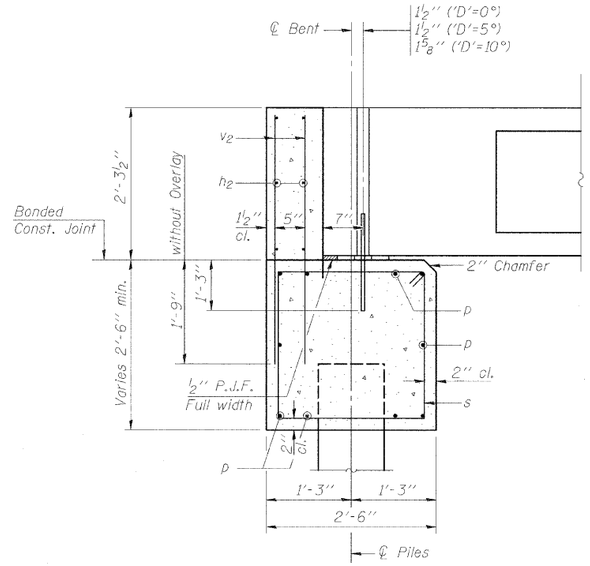
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	10
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

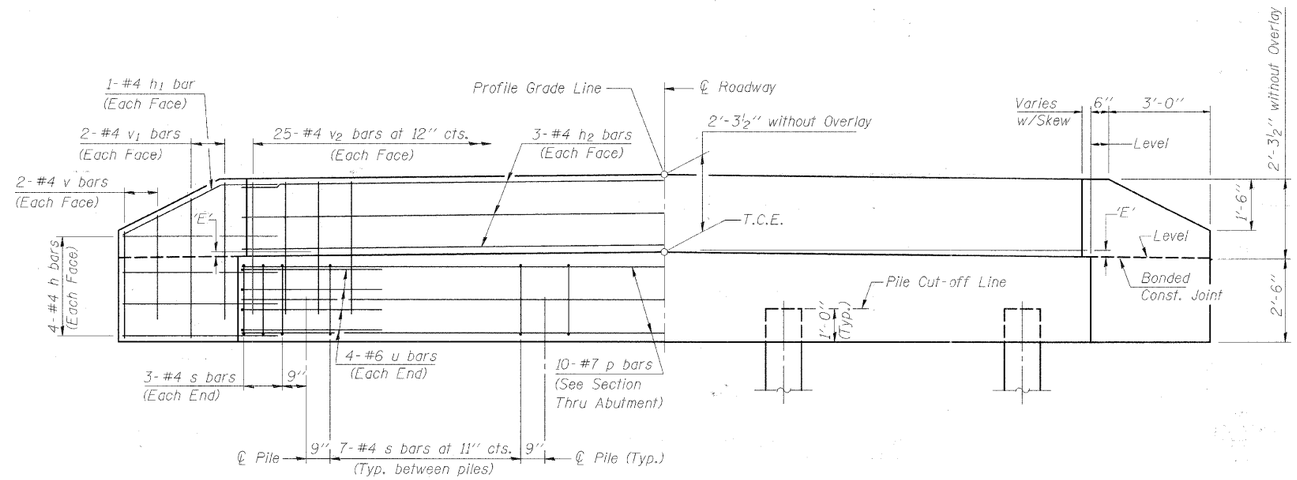
CONTRACT NO. 95567



PLAN
('D'=Designated Skew Angle)



SECTION THRU ABUTMENT
(At Right Angles)



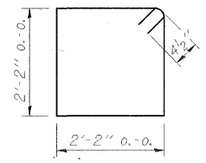
ELEVATION

DIMENSION 'E'

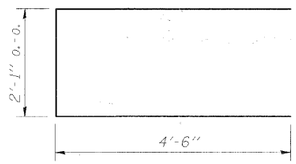
GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 3/8"	2 3/8"	2 1/4"	2 3/8"	2 1/8"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/8"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"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

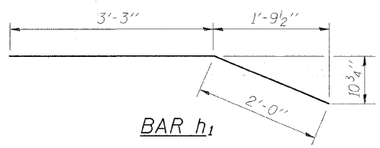
1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
3. Space reinforcement in cap to miss anchor bolts.



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.	

DESIGN STRESSES

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

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SLM-CA-2427-10

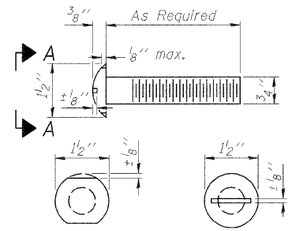
P.P.C. DECK BEAMS
PILE BENT ABUTMENT

24' ROADWAY
27" BEAMS
'D'=0°, 5°, OR 10°

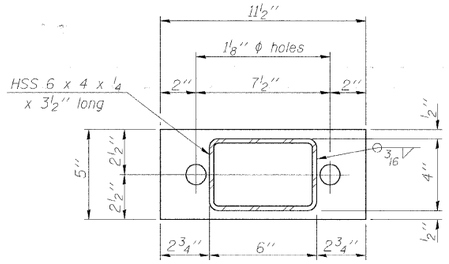
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 138	04-19123-00-BR	FAYETTE	13	11
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

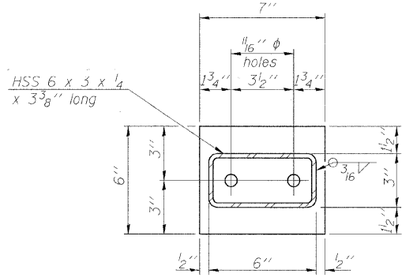
CONTRACT NO. 95567



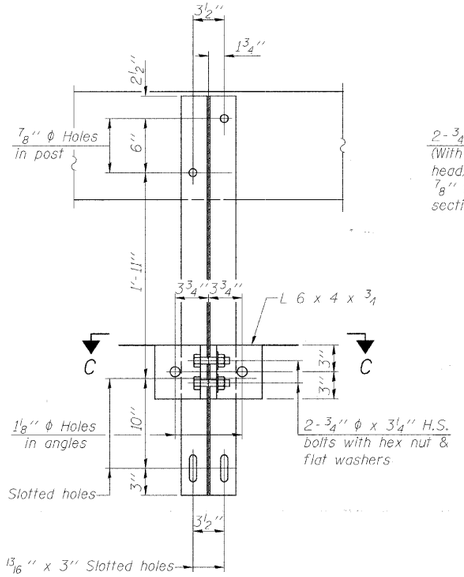
VIEW A-A ROUND HEAD BOLT



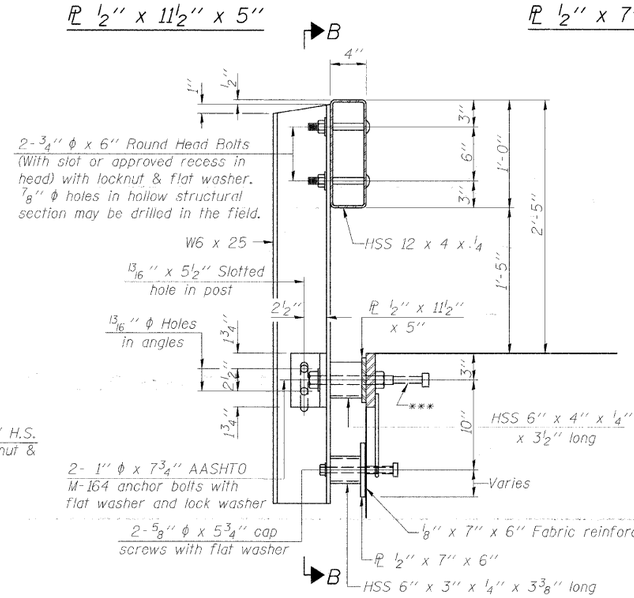
PL 1/2" x 11 1/2" x 5"



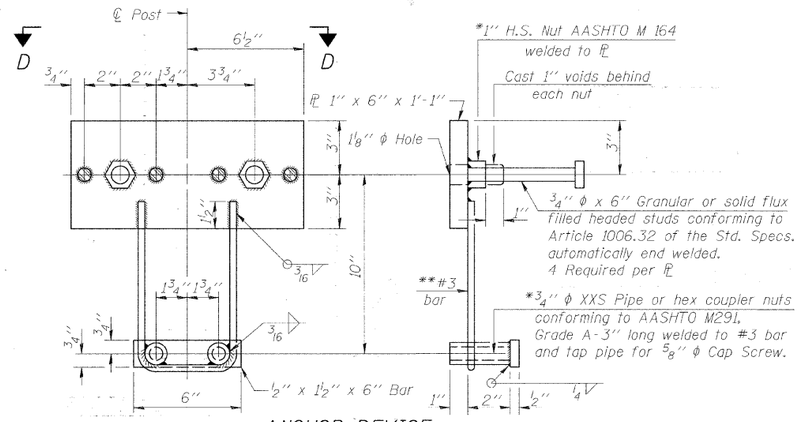
PL 1/2" x 7" x 6"



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

Notes:

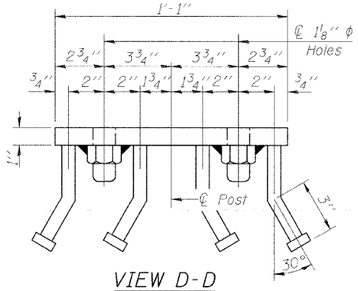
All field drilled holes shall be coated with an approved zinc rich paint before erection.

For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.

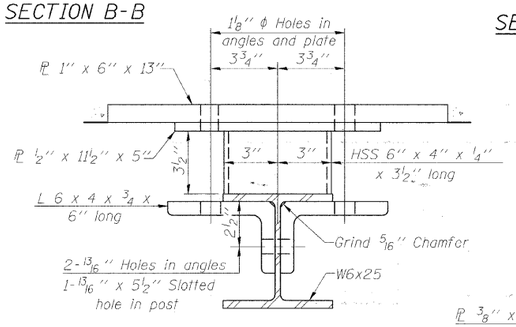
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

***The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

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.



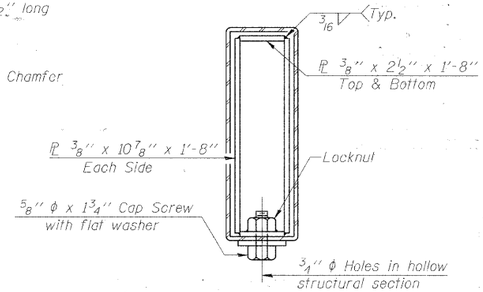
VIEW D-D



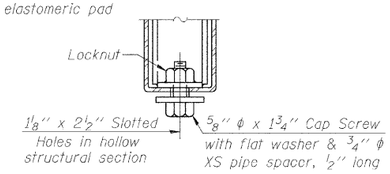
SECTION C-C

(10'-9" Maximum Post Spacing)

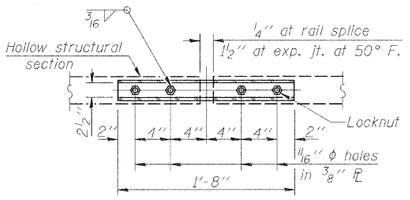
**Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



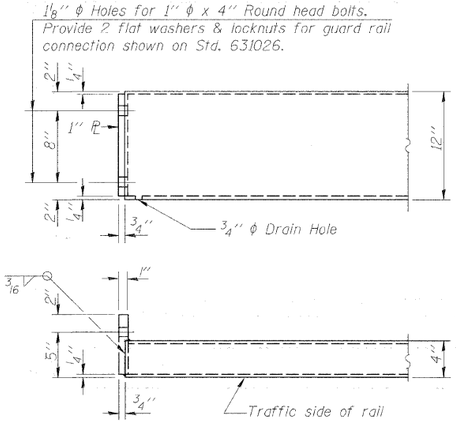
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTTOM SPLICE PL TYPICAL



END OF RAIL DETAILS

See SLM-CS-2427-60 for Steel Railing Quantities.

SLM-CR-TS1

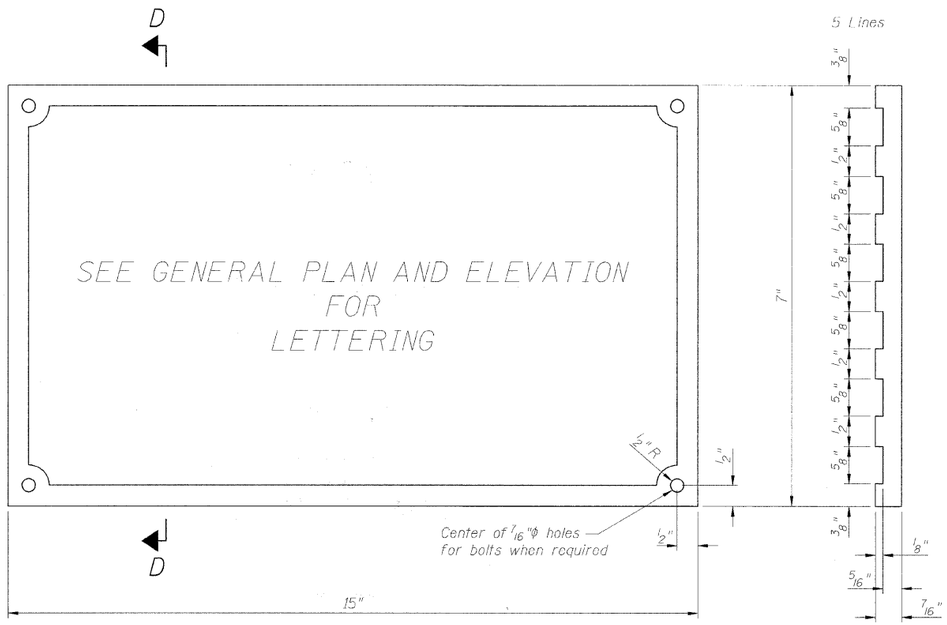
STEEL RAILING
TYPE S-1

STS | AECOM
2524 S. Broadway
Salem, Illinois 62881
618.548.3500
IL Design Firm Reg. No. 184-001518
www.aecom.com

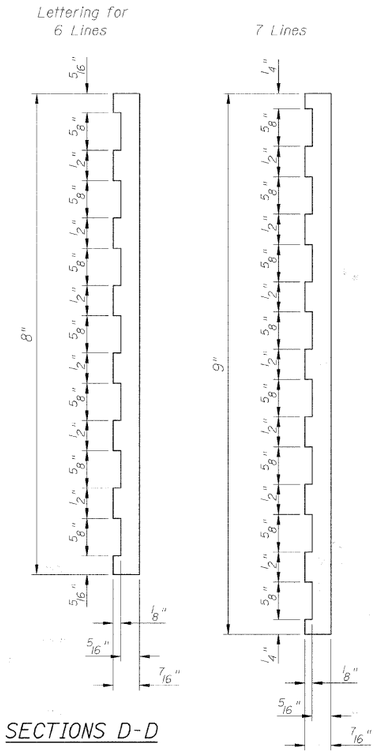
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 438	04-19123-00-BR	FAYETTE	13	12
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		

CONTRACT NO. 95567

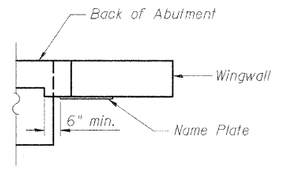


DETAIL OF NAME PLATE

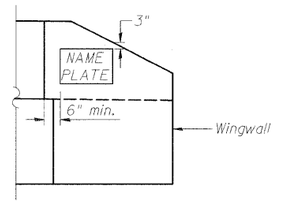


SECTIONS D-D

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.

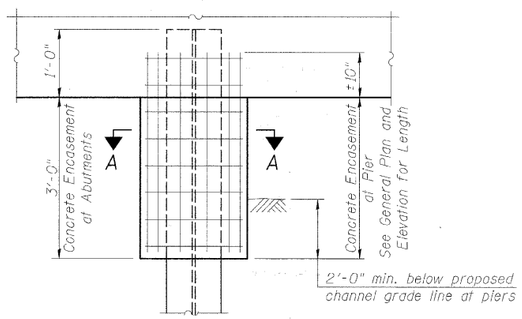


PLAN

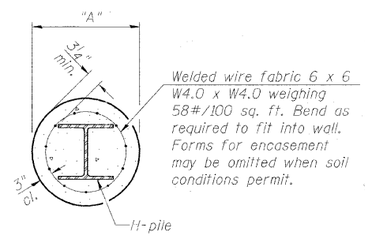


ELEVATION

LOCATION OF NAME PLATE



ELEVATION



SECTION A-A

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

PILE ENCASEMENT

PILE ENCASEMENT QUANTITIES
(Steel Piles)

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

Quantities per foot of Encasement.

SLM-CN-CX

NAME PLATE &
PILE ENCASEMENT DETAILS

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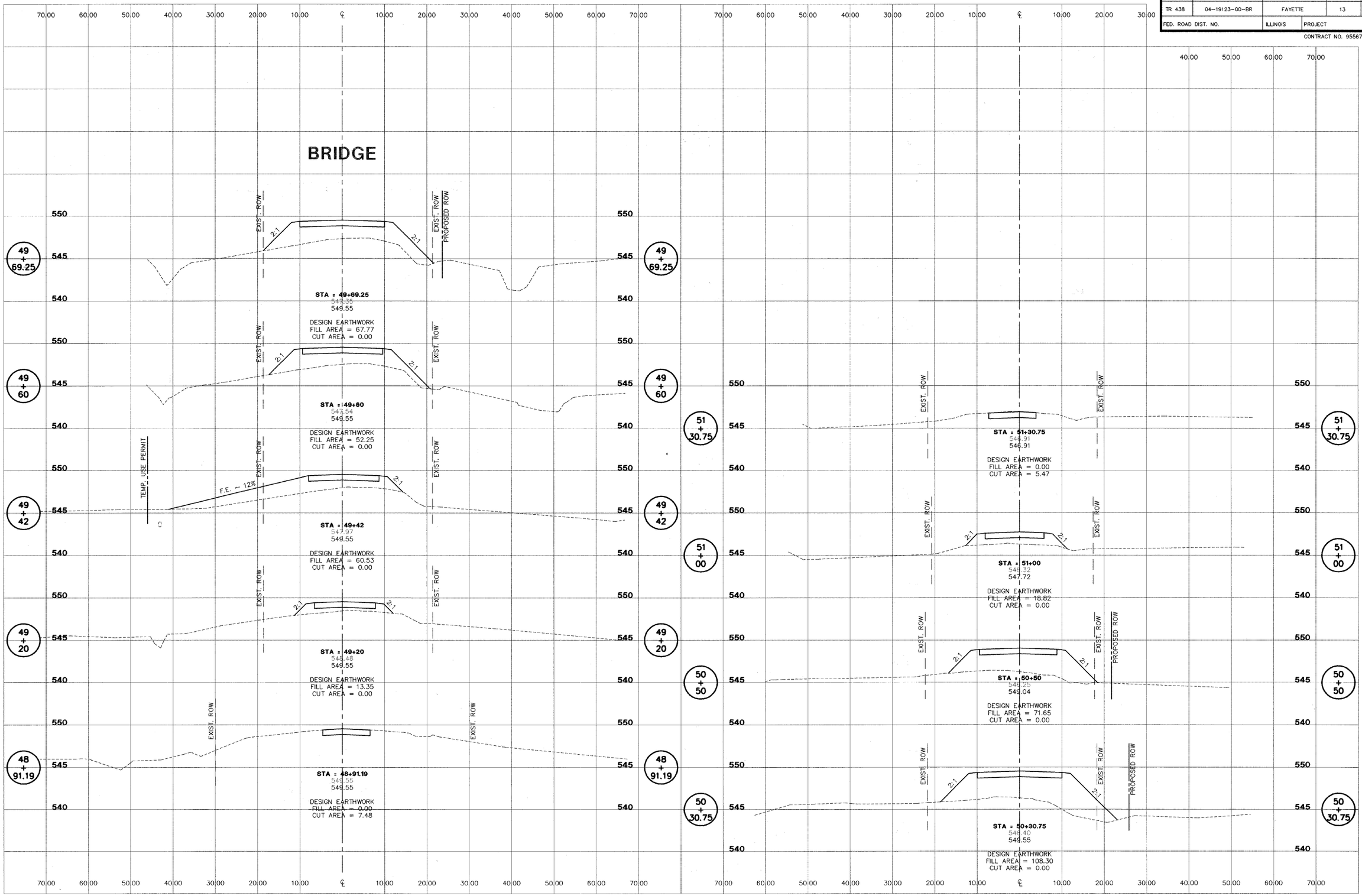

STS | AECOM	2524 S. Broadway Salem, IL 62881 618.548.3500 www.sts.aecom.com Copyright © 2008, By: STS	TR 438, SECTION 04-19123-00-BR WHEATLAND ROAD DISTRICT FAYETTE COUNTY, ILLINOIS	CROSS SECTIONS STA. 48+91.19 TO 51+30.75

SURVEY: JAS	CHECKED	DATE: 12/15/08	
DESIGN: MRQ	APPROVED	REVISED	
DRAWN: BLT,JSD		JOB NO. 200701116	