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- STANDARD 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 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:

- PHONE: AT&T
210 N. LOCUST
CENTRALIA, IL 62801
ATTN: ART NALL
(618)533-3416
- CABLE: CHARTER COMMUNICATIONS
5111 LAKE TERR. N.E.
MT. VERNON, IL 62864
(618)242-5684
- POWER: AMEREN IP
2610 BROADWAY
PO BOX 868
MT. VERNON, IL 62864
ATTN: BRENT BARTLEY
(618)244-8220
- POWER: TRI-COUNTY ELECTRIC
1631 E. MAIN ST.
SALEM, IL 62881
(618)548-3508
- WATER: RACCOON WATER COMPANY
2640 STATE RTE. 161
CENTRALIA, IL 62801
(618)532-9201
- PIPELINE: ATMOS ENERGY CORPORATION
PO BOX 650205
DALLAS, TX 75265-0205
1-888-286-6700
- PIPELINE: BP AMERICA
501 WESTLAKE PARK BLVD.
HOUSTON, TX 77079-2604
(281)366-2000
- PIPELINE: COUNTRY MARK PIPELINE
225 SOUTH EAST ST.
SUITE 144
INDIANAPOLIS, IN 46202
1-800-808-3170
- PIPELINE: MISSISSIPPI RIVER TRANSMISSION
1111 LOUISIANA, 11th FLOOR
HOUSTON, TX 77002
(713)207-5184



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

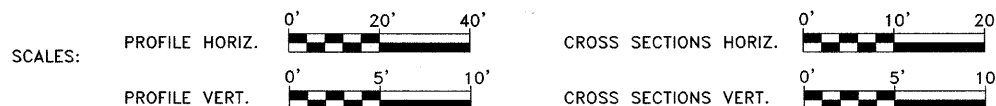


2524 South Broadway
Salem, Illinois 62881
t:618.548.3500
www.aecom.com
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IL Design Firm Reg.
No. 184003708

CLASS ROAD: LOCAL ROAD (NON-URBAN)
A.D.T. = 450
50 M.P.H.

DATE: JANUARY 20, 2010
AECOM JOB NO. 200705594

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



SECTION 06-14118-00-BR PROJECT NO. BROS-0121(052) SALEM ROAD DISTRICT MARION COUNTY JOB NO. C-98-378-09 T.R. 254

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 254	06-14118-00-BR	MARION	16	1
FEDERAL AID PROJECT		ILLINOIS	PROJECT	

CONTRACT NO. 97434



LOCATION OF PROJECT INDICATED THUS -

APPROVED 03-01-2010
John E. Cunningham
COUNTY ENGINEER

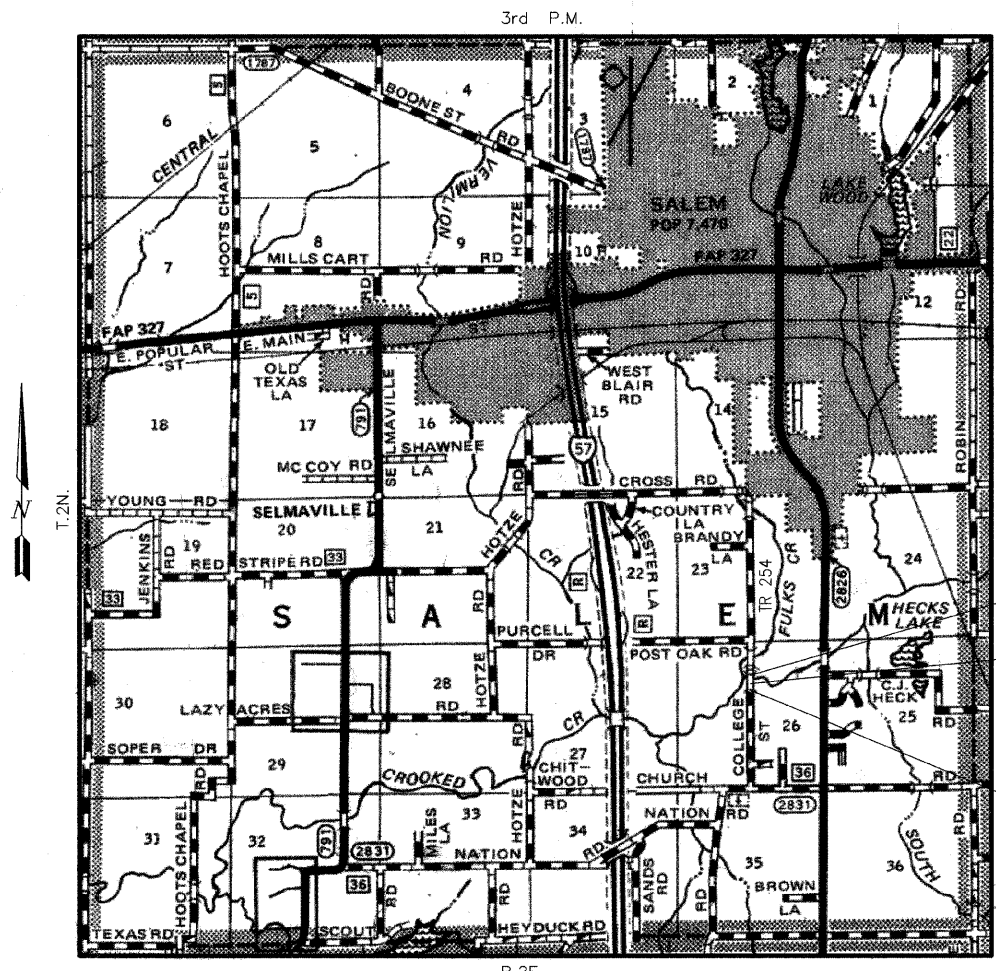
PASSED March 3, 2010.
Jana A. Lussig
DISTRICT ENGINEER OF
LOCAL ROADS & STREETS

Releasing For
Bid Based on
Limited Review March 3, 2010.
Mark C. Lamicas
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FIVE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



MICHAEL R. QUANDT, P.E.
SIGN: *Michael R. Quandt* 1/21/10
EXP. DATE: 11/30/11



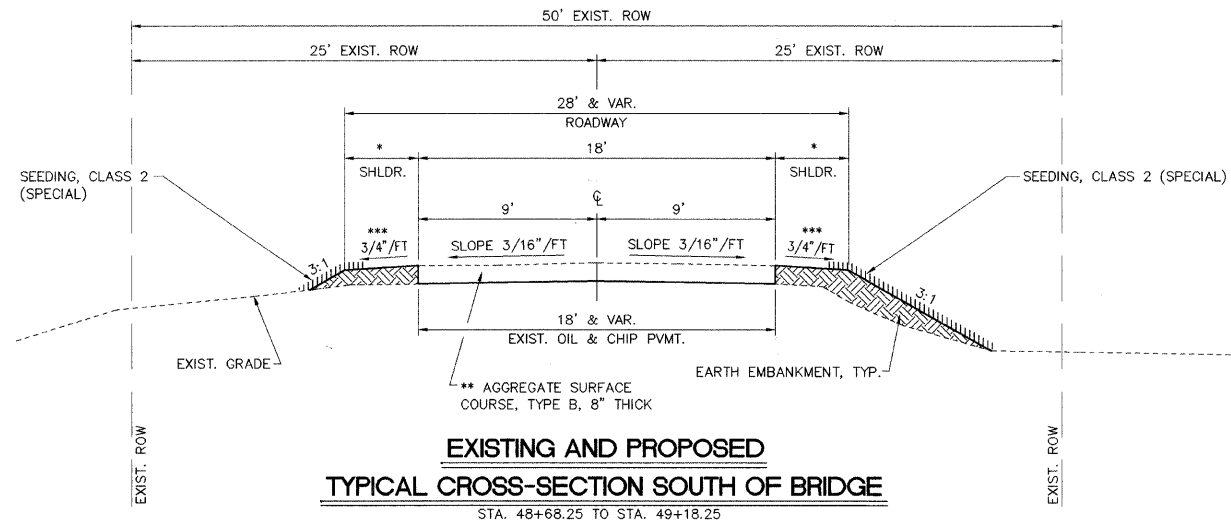
END SECTION 06-14118-00-BR
STA. 50+81.75

STA. 50+00 - CONSTRUCT THREE SPAN PRECAST
PRESTRESSED CONCRETE DECK BEAM BRIDGE
(163.50' BK. TO BK. ABUTMENTS) WITH
PILE BENT PIERS AND SPILL THRU ABUTMENTS
ON STEEL HP PILES, 0° SKEW, 28' ROADWAY
EXISTING STRUCTURE NO. 061-3122
PROPOSED STRUCTURE NO. 061-3310

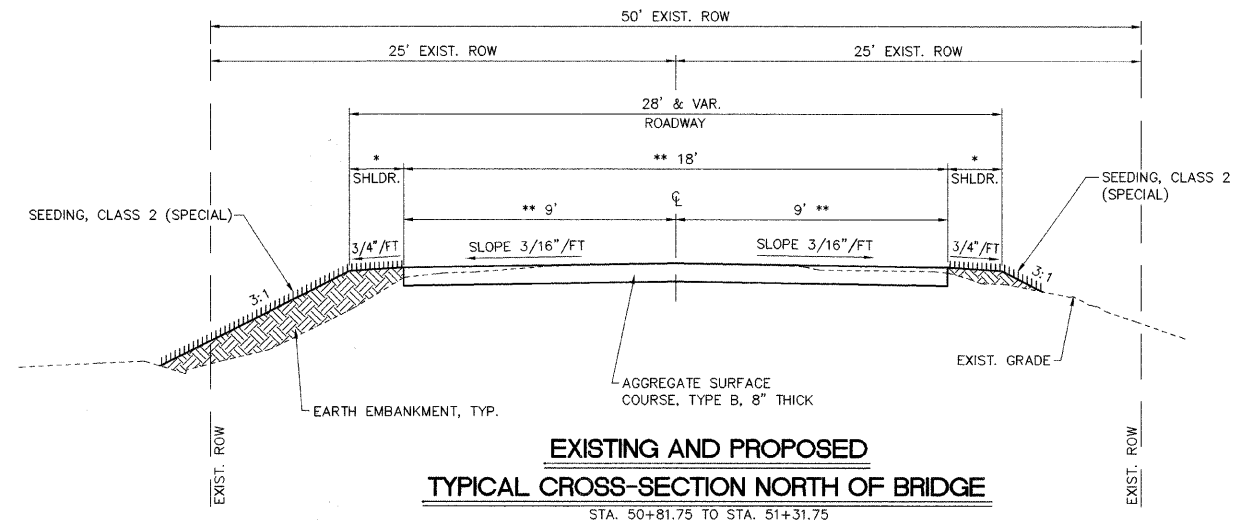
BEGIN SECTION 06-14118-00-BR
STA. 49+18.25

LOCATION MAP

APPROXIMATE SCALE - 1" = 0.60 MILE
NET LENGTH OF IMPROVEMENTS - 163.50 FEET = 0.031 MILE
GROSS LENGTH OF IMPROVEMENTS - 263.50 FEET = 0.050 MILE



- * EARTH SHOULDER WIDENING VARIES FROM 3' TO 5'
STA. 48+68.25 TO STA. 49+18.25
- ** STA. 49+14.25 TO STA. 49+18.25
- *** SHOULDER SLOPE VARIES FROM 3/4" TO 3/16" FROM STA. 49+08.25 TO STA. 49+18.25



- * EARTH SHOULDER WIDENING VARIES FROM 5' TO 3'
STA. 50+81.75 TO STA. 51+31.75
- ** VERTICAL TRANSITION FROM STA. 50+81.75 TO STA. 51+31.75
- *** SHOULDER SLOPE VARIES FROM 3/16" TO 3/4" FROM STA. 50+81.75 TO STA. 50+91.75

EXTRA BARS FOR TEST SAMPLES

BAR NO.	NO.	SIZE	LENGTH	SHAPE
V	1	#4	3'-2"	—
S ₂	1	#5	1'-10"	C
u	1	#6	11'-1"	—
p	1	#7	24'-9"	—

THESE BARS SHALL BE IDENTICAL TO AND DELIVERED WITH THE BARS OF THE SAME MARK LISTED ON THE BRIDGE SHEETS. ONE BAR OF EACH OF THESE MARKS WILL BE SELECTED BY THE ENGINEER TO BE USED AS A TEST SAMPLE. THIS CHART ASSUMES THAT ALL BARS OF THE SAME SIZE ON THE JOB WILL HAVE THE SAME HEAT NUMBERS. IF BARS OF THE SAME SIZE ON THE JOB HAVE DIFFERENT HEAT NUMBERS, THEN THE CONTRACTOR SHALL SUPPLY ADDITIONAL BARS FROM OTHER HEAT NUMBERS FOR SAMPLING BY THE ENGINEER AT NO ADDITIONAL COST.

THE COST TO FURNISH THESE EXTRA BARS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER POUND FOR REINFORCEMENT BARS AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

GENERAL NOTES

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

SUMMARY OF QUANTITIES

CODE NO.	ITEM	QUANTITY	UNIT
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	98	UNIT
20200100	EARTH EXCAVATION	30	CU. YD.
20300100	CHANNEL EXCAVATION	634	CU. YD.
25001000	SEEDING, CLASS 2 (SPECIAL)	0.1	ACRE
28100807	STONE DUMPED RIPRAP, CLASS A4	135	TON
40200800	AGGREGATE SURFACE COURSE, TYPE B	50	TON
50100100	REMOVAL OF EXISTING STRUCTURES	1	EACH
50300225	CONCRETE STRUCTURES	40.8	CU. YD.
50300280	CONCRETE ENCASEMENT	16.7	CU. YD.
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	4536	SQ. FT.
50800105	REINFORCEMENT BARS	4680	POUND
* 50900205	STEEL RAILING, TYPE S1	324	FOOT
51201400	FURNISHING STEEL PILES HP 10x42	838	FOOT
51202305	DRIVING PILES	838	FOOT
51203400	TEST PILE STEEL HP 10x42	1	EACH
51500100	NAME PLATES	1	EACH
67100100	MOBILIZATION	1	L. SUM
* 78201000	TERMINAL MARKER - DIRECT APPLIED	4	EACH

* SPECIALTY ITEM

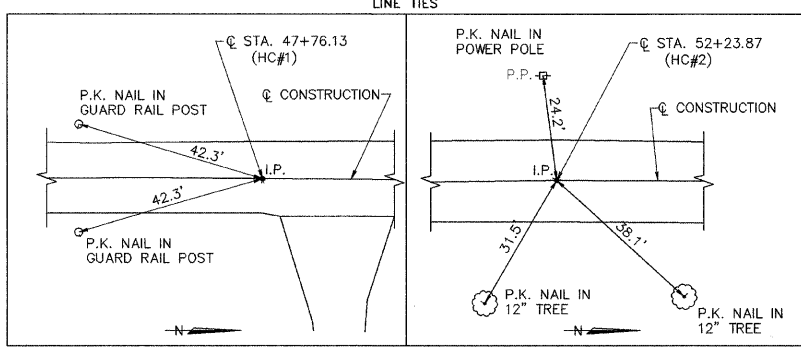
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 254	06-14118-00-BR	MARION	16	3
FEDERAL AID PROJECT		ILLINOIS	PROJECT	
CONTRACT NO. 97434				

HORIZONTAL CONTROL COORDINATES

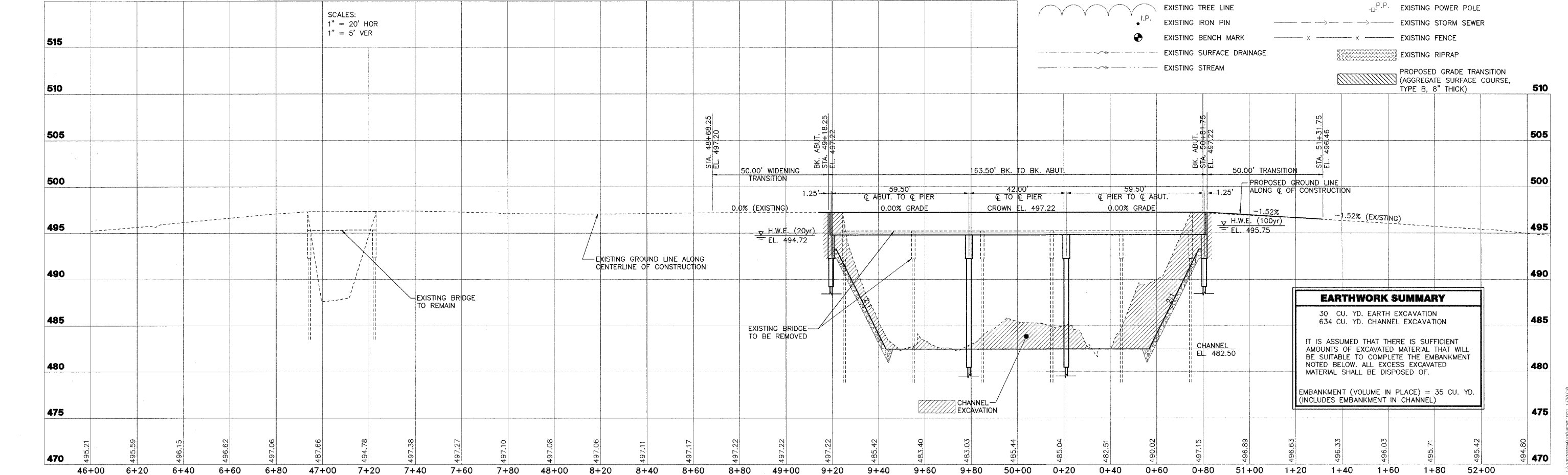
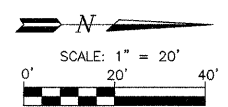
POINT	LOCATION	N. COOR.	E. COOR.
HC#1 (IRON PIN)	Q STA. 47+76.13	4608.36	5013.60
HC#2 (IRON PIN)	Q STA. 52+23.87	5056.08	5012.62

BENCH MARK COORDINATES

POINT	LOCATION	ELEV.
BM#1 (R.R. SPIKE IN POWER POLE)	25.19' LT., STA. 49+24.71	495.06
BM#2 (R.R. SPIKE IN POWER POLE)	24.08' LT., STA. 52+20.58	492.83



- 3000 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 20
- 4500 SF EXISTING AREA OF OVER THE ROAD FLOW BELOW HWE 100
- 3000 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 20
- 4500 SF PROPOSED AREA OF OVER THE ROAD FLOW BELOW HWE 100
- 1400 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 20
- 1500 SF EXISTING BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100
- 1600 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 20
- 1750 SF PROPOSED BRIDGE OPENING (AT RIGHT ANGLES) BELOW HWE 100



LEGEND

	EXISTING TREE		EXISTING OVERHEAD ELECTRIC LINE
	EXISTING TREE LINE		EXISTING POWER POLE
	EXISTING IRON PIN		EXISTING STORM SEWER
	EXISTING BENCH MARK		EXISTING FENCE
	EXISTING SURFACE DRAINAGE		EXISTING RIPRAP
	EXISTING STREAM		PROPOSED GRADE TRANSITION (AGGREGATE SURFACE COURSE, TYPE B, 8" THICK)

EARTHWORK SUMMARY

30 CU. YD. EARTH EXCAVATION	
634 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) = 35 CU. YD. (INCLUDES EMBANKMENT IN CHANNEL)	

Existing Structure - The existing structure is five span structure with concrete deck beams and concrete caps on timber piles.

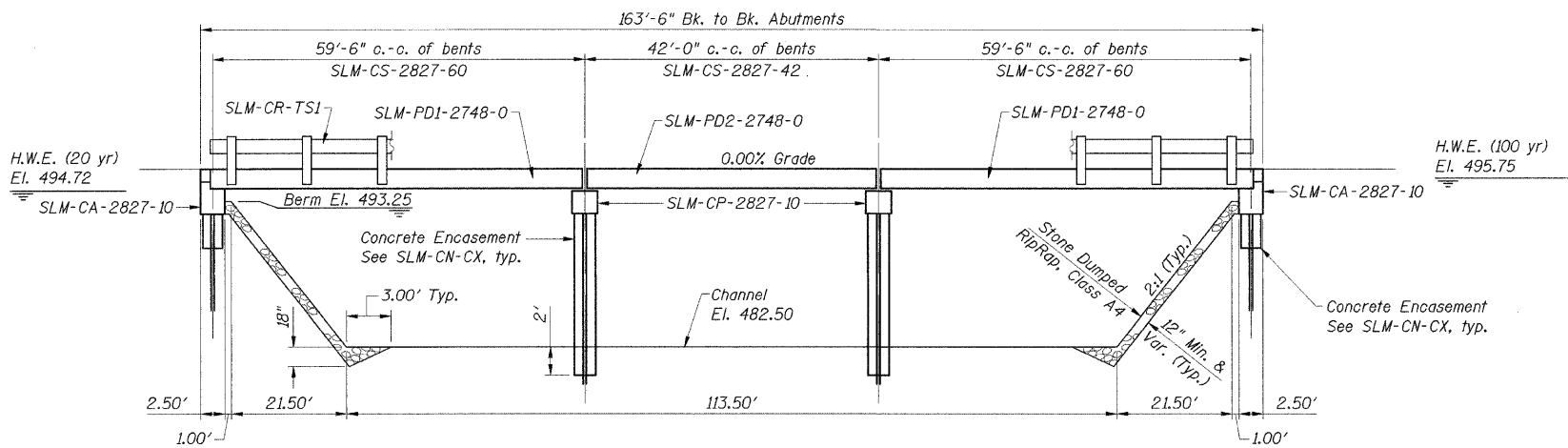
Salvage - None

GENERAL NOTES

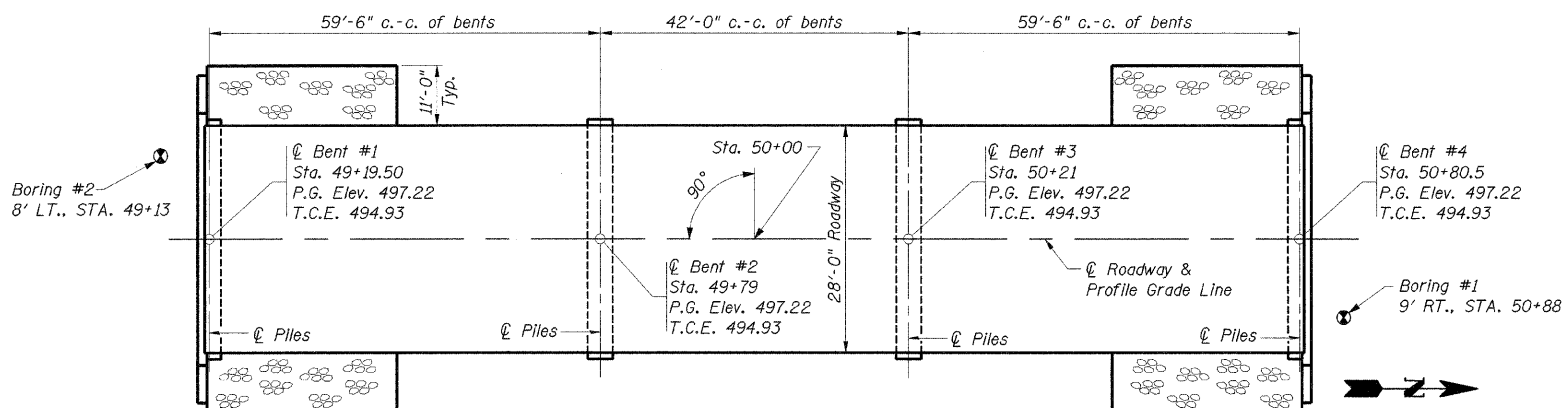
- The contractor shall drive 1 test pile, as specified, in a permanent location as directed by the Engineer before ordering the remaining piles.
- See Special Provisions for boring logs.
- A Calcium Nitrite Corrosion inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast 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.		20.0	20.8	40.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	4536			4536
Steel Railing, Type S-1	Foot	324			324
Reinforcement Bars	Pound		2020	2660	4680
Furnishing Steel Pile HP 10x42	Foot		511	327	838
Driving Piles	Foot		511	327	838
Test Pile Steel HP 10x42	Each			1	1
Name Plates	Each			1	1
Concrete Encasement	Cu. Yd.		14.1	2.6	16.7



ELEVATION

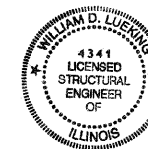


PLAN

Date of License 11/30/2010
 Expiration :

Date: 1/21/2010

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_{DI}) = 26
 Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 58
 Soil Site Class = D

PILE DATA (2-PIERS)

Pile Type and Size: Steel Piles, HP10x42
 Nominal Required Bearing: 255 kips
 Allowable Resistance Available: 85 kips
 Estimated Pile Length: 35 Feet Bent #2, 38 Feet Bent #3
 Number of Production Piles: 14
 Number of Test Piles: 0

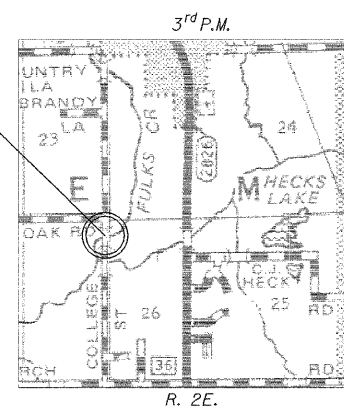
PILE DATA (2-ABUTS.)

Pile Type and Size: Steel Piles, HP10x42
 Nominal Required Bearing: 255 kips
 Allowable Resistance Available: 85 kips
 Estimated Pile Length: 35 Feet Bent #1, 38 Feet Bent #4
 Number of Production Piles: 9
 Number of Test Piles: 1 (located in Bent #4)

STATION 50+00
 CROOKED CREEK
 SEC. 06-14118-00-BR BUILT 20...
 PROJECT NO. _
 MARION COUNTY
 LOADING HL93
 STR. NO. 061-3310

LETTERING FOR NAME PLATE

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



LOCATION SKETCH

WATERWAY INFORMATION

Drainage Area = 60.6 Sq. Mi.		Low Grade Elev. 491.55 @ Sta. 41+20							
Flood Yr.	Freq. C.F.S.	Opening Sq. Ft.		Nat. H.W.E. Ft.		Headwater Elev. - Ft.			
		Exist.	Prop.	Exist.	Prop.	Exist.	Prop.		
Design	20	6690	1275	1550	494.72	0.05	0.04	494.77	494.76
Base	100	10020	1320	1560	495.75	0.03	0.03	495.78	495.78
Overtopping									
Max. Calc.	500	13360			496.43	0.03	0.03	496.46	496.46

INDEX OF SHEETS

- General Plan & Elevation
- SLM-CS-2827-60
- SLM-CS-2827-42
- SLM-PDI-2748-0
- SLM-PDI-2748-0D
- SLM-PD2-2748-0
- SLM-PD2-2748-0D
- SLM-CA-2827-10
- SLM-CP-2827-10
- SLM-CR-TS1
- SLM-CN-CX

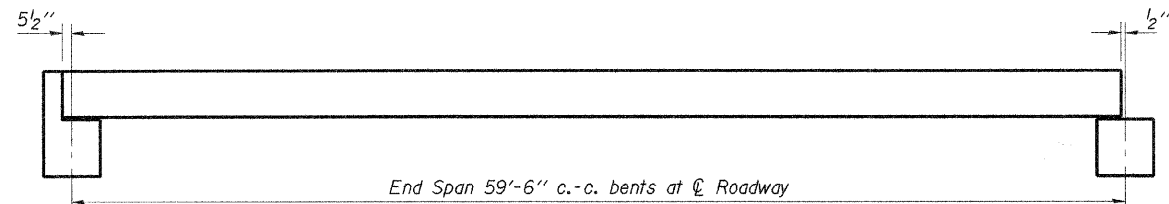
AECOM
 2524 S. Broadway
 Salem, Illinois 62881
 618.548.3500
 IL Design Firm Reg.
 No. 164-003706
 www.aecom.com

Date: 01/20/10
 Design:
 Drawn:
 Job No.: 200705594

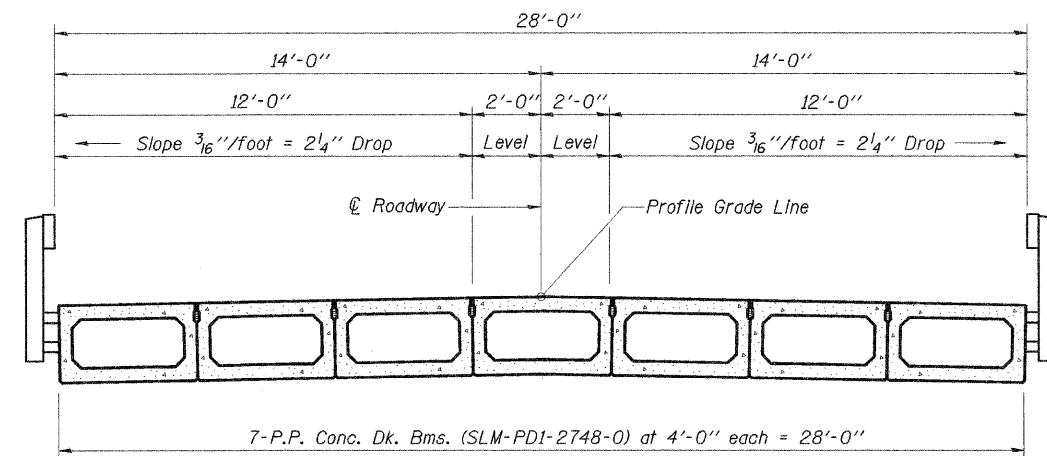
GENERAL PLAN & ELEVATION

**TR 254
 OVER CROOKED CREEK**

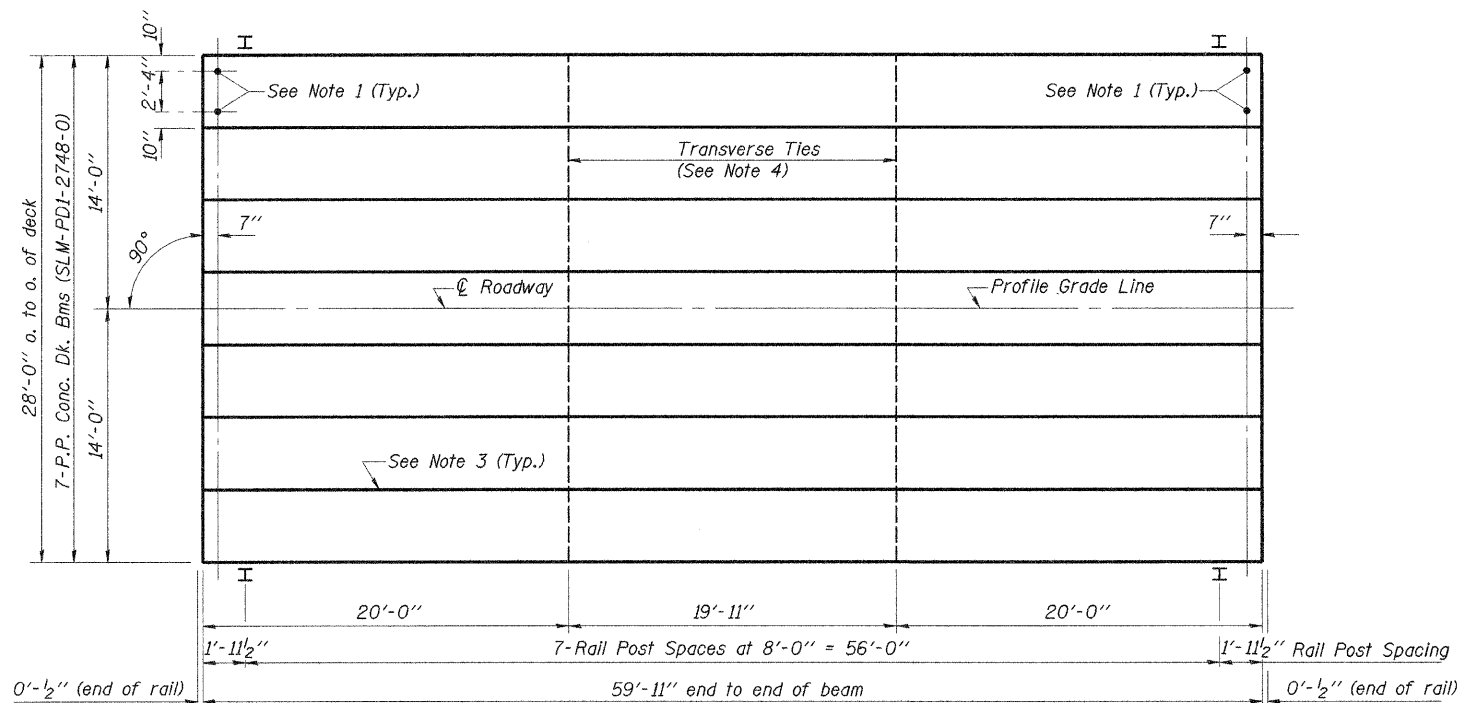
**SECTION 06-14118-00-BR
 MARION COUNTY
 STATION 50+00**



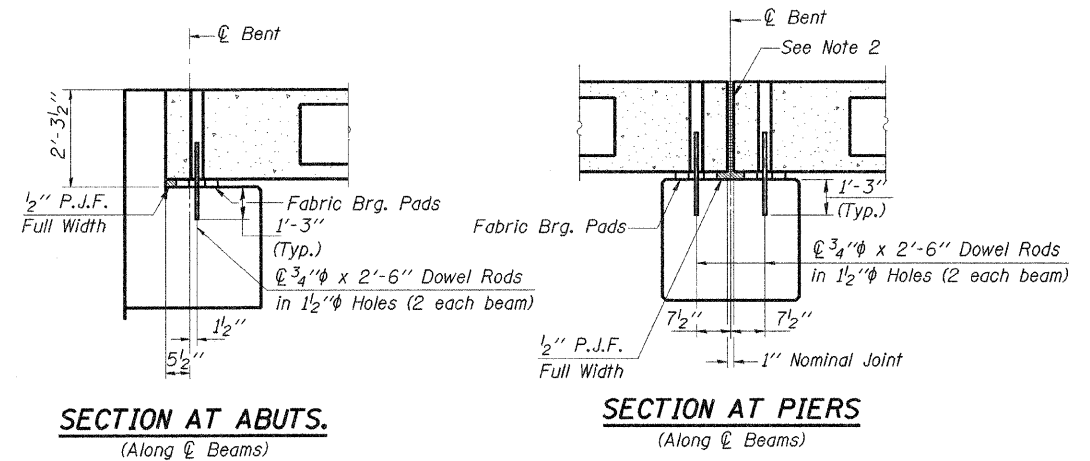
TYPICAL ELEVATION



CROSS SECTION



PLAN



SECTION AT ABUTS.

SECTION AT PIERS

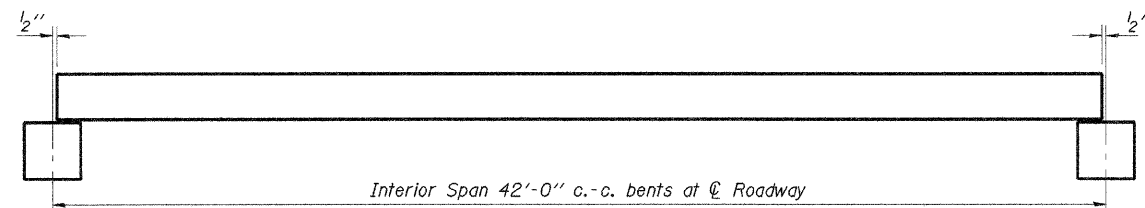
QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1680 Sq. Ft.
Steel Railing	120 Ft.

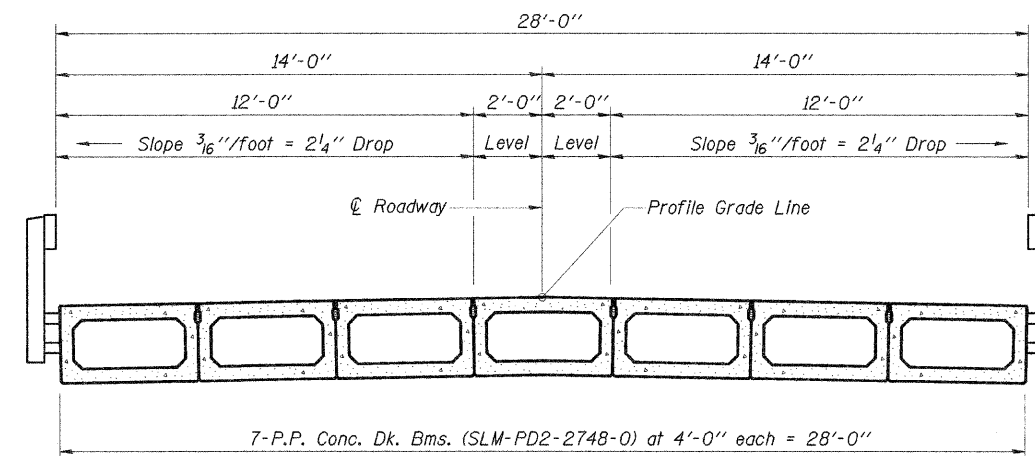
NOTES

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. Nominal 1" joint at CL Pier shall be filled with non-shrink grout.
3. Longitudinal keys shall be grouted.
4. 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.

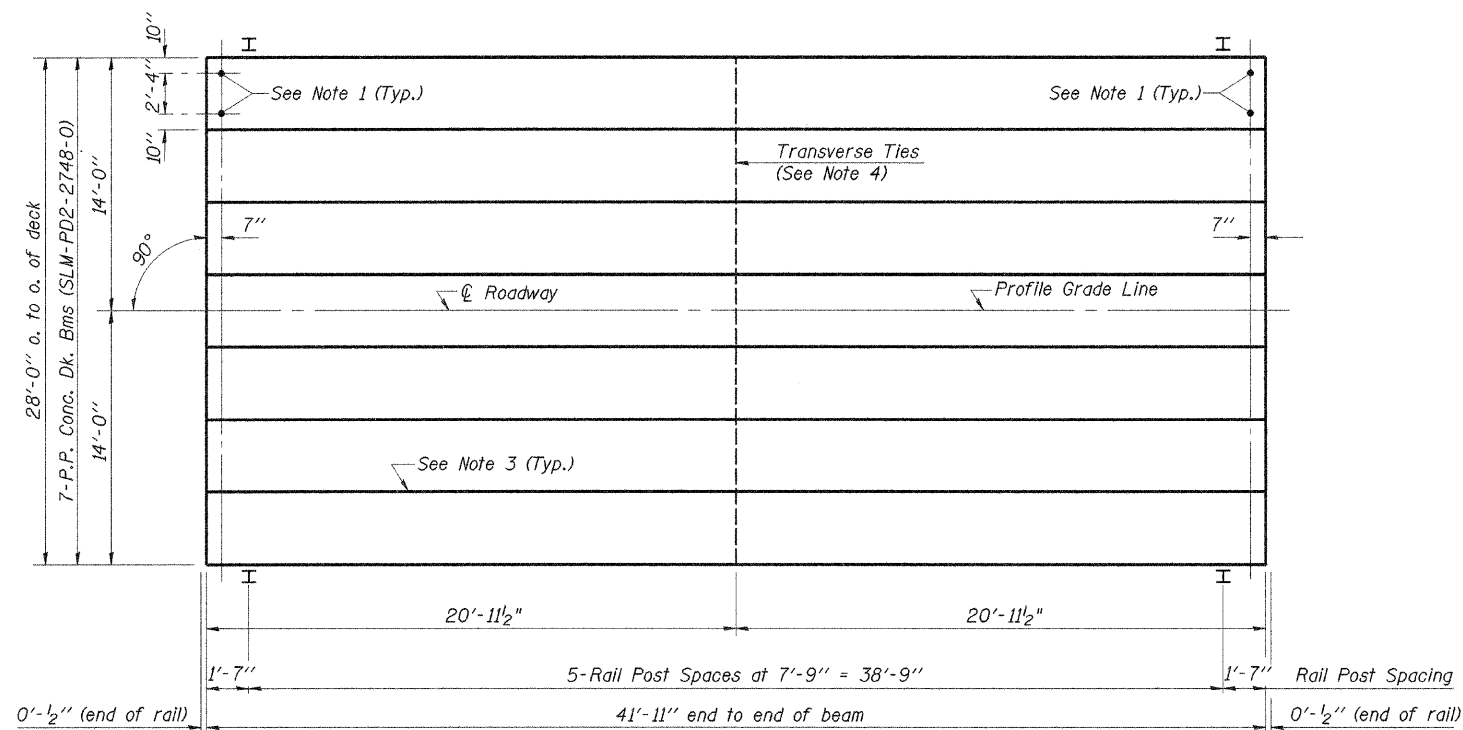
AECOM 2524 S. Broadway Salem, Illinois 62681 618.548.3500 IL Design Firm Reg. No. 184-003708 www.aecom.com	SLM-CS-2827-60 P.P.C. DECK BEAM SUPERSTRUCTURE
	28' ROADWAY 27" BEAMS 60' SPAN - 0° SKEW
Date: 01/20/10 Design: Drawn: Job No.: 200705594	



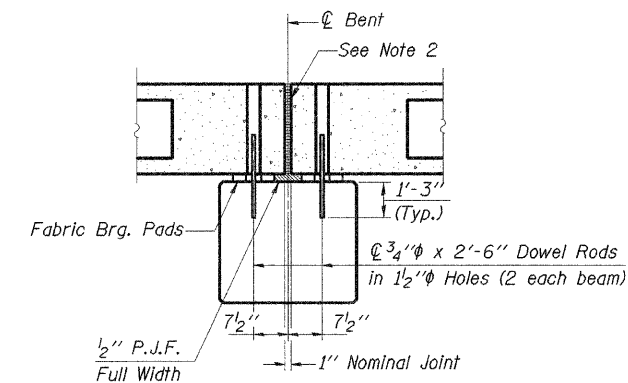
TYPICAL ELEVATION



CROSS SECTION



PLAN



SECTION AT PIERS
(Along \varnothing Beams)

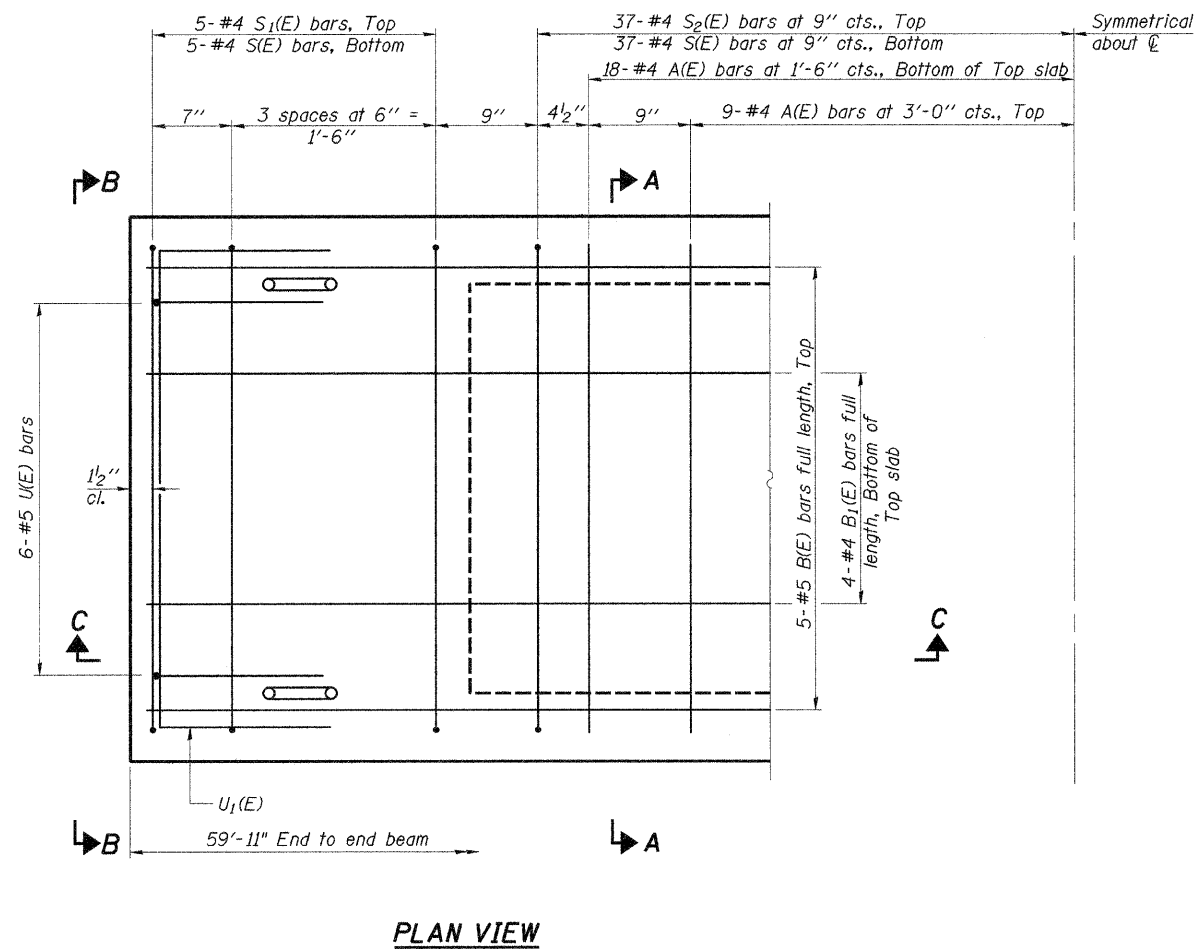
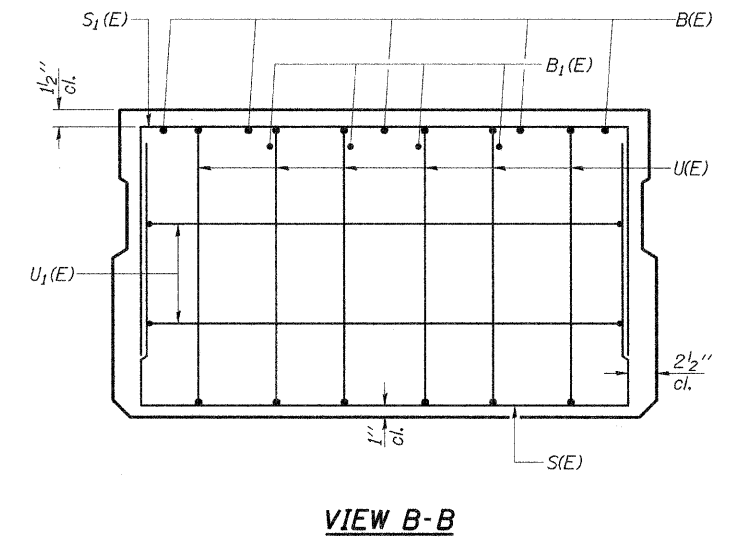
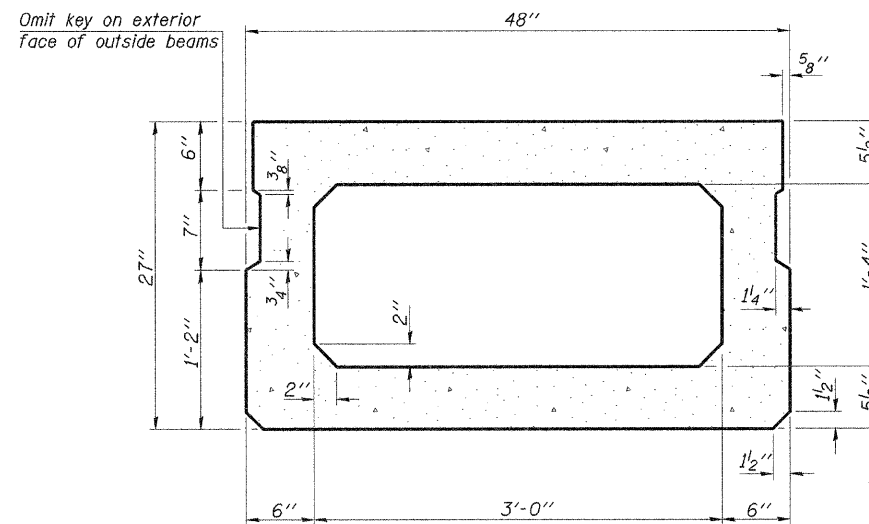
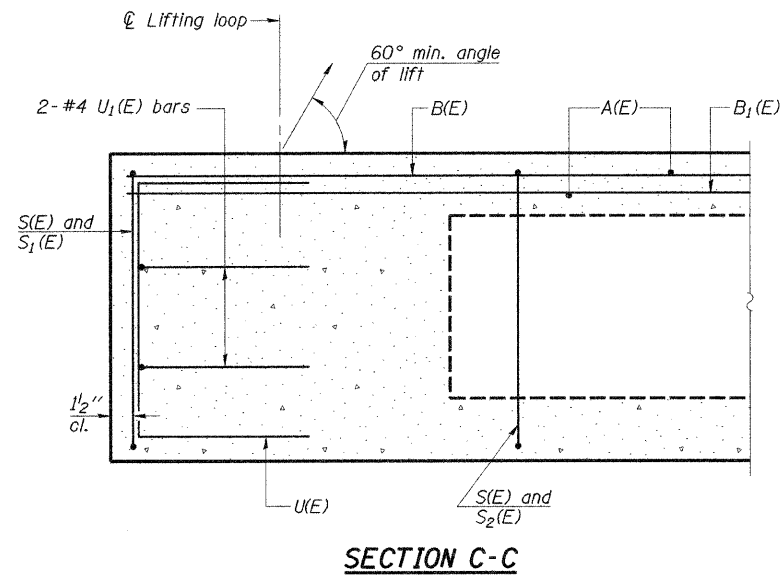
QUANTITIES FOR ONE SPAN

P.P. Conc. Dk. Bm. 27" Dp.	1176 Sq. Ft.
Steel Railing	84 Ft.

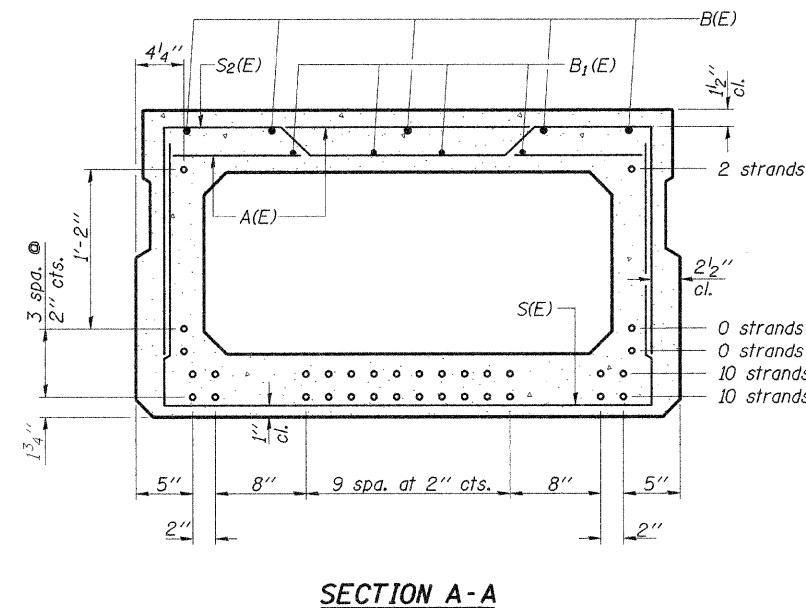
NOTES

- After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
- Nominal 1" joint at \varnothing Pier shall be filled with non-shrink grout.
- Longitudinal keys shall be grouted.
- 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.

AECOM <small>2524 S. Broadway Salem, Illinois 62861 618.548.3500 IL Design Firm Reg. No. 184-003706 www.aecom.com</small>	SLM-CS-2827-42
	P.P.C. DECK BEAM SUPERSTRUCTURE
Date: 01/20/10 Design: Drawn: Job No.: 200705594	28' ROADWAY 27" BEAMS 42' SPAN - 0° SKEW



Note: Spacing of S1(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.



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

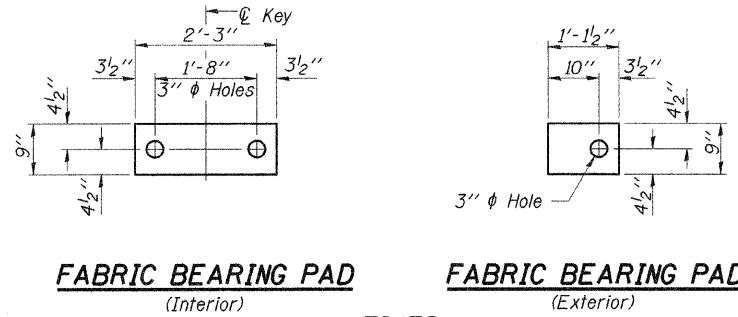
Strands: 22 - 1/2" ϕ strands.

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-PD1-2748-0D for additional details.
See sheet SLM-CS-2827-60 for Bill of Material.

<p>2524 S. Broadway Salem, Illinois 62881 618.548.3500</p> <p>IL Design Firm Reg. No. 184-003706 www.aecom.com</p>	<p>SLM-PD1-2748-0</p> <p>P.P.C. DECK BEAM DETAILS AND SECTIONS</p>
	<p>28' ROADWAY 27" x 48" BEAMS 0° SKEW</p>
<p>Date: 01/20/10 Design: Drawn: Job No.: 200705594</p>	

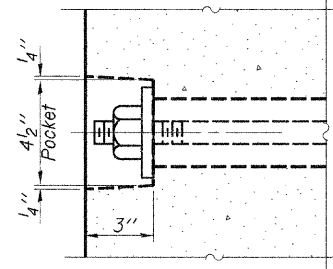


FABRIC BEARING PAD
(Interior)

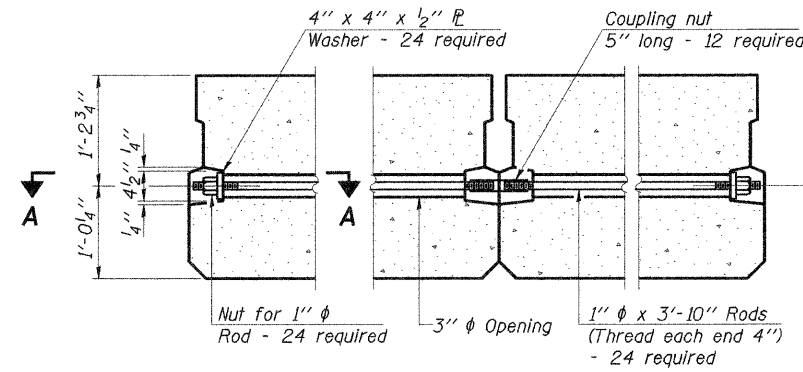
FABRIC BEARING PAD
(Exterior)

FIXED

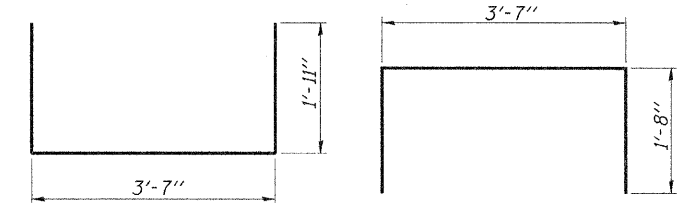
Note: Omit holes when using expansion bearings.



SECTION A-A

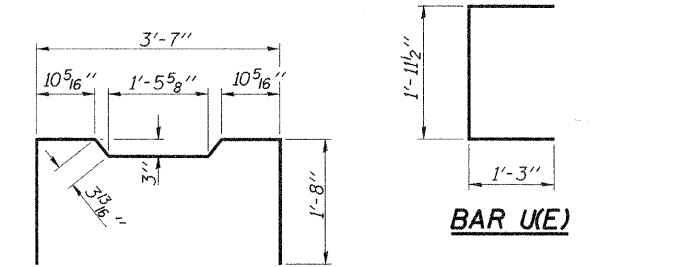


TYPICAL TRANSVERSE TIE ASSEMBLY



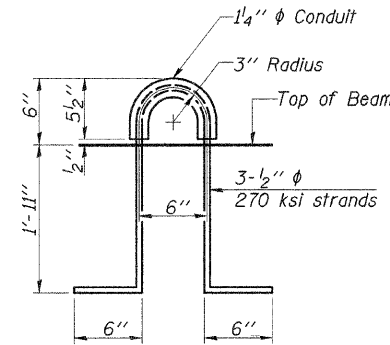
BAR S(E)

BAR S1(E)

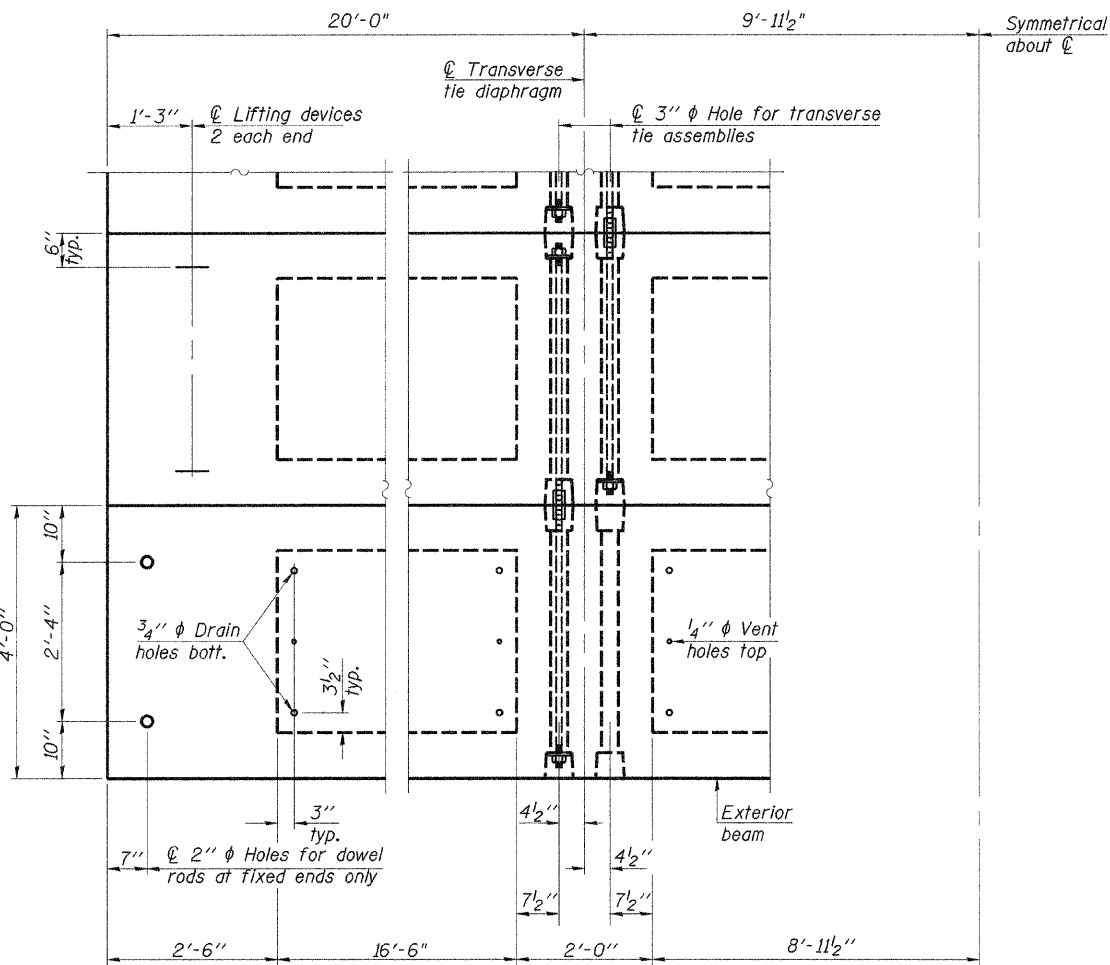


BAR U(E)

BAR U1(E)



LIFTING LOOP DETAIL



PLAN VIEW

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

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" 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). A minimum 2 1/2" ϕ lifting pin shall be used to engage the lifting loops during handling. Two 1/2" 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.

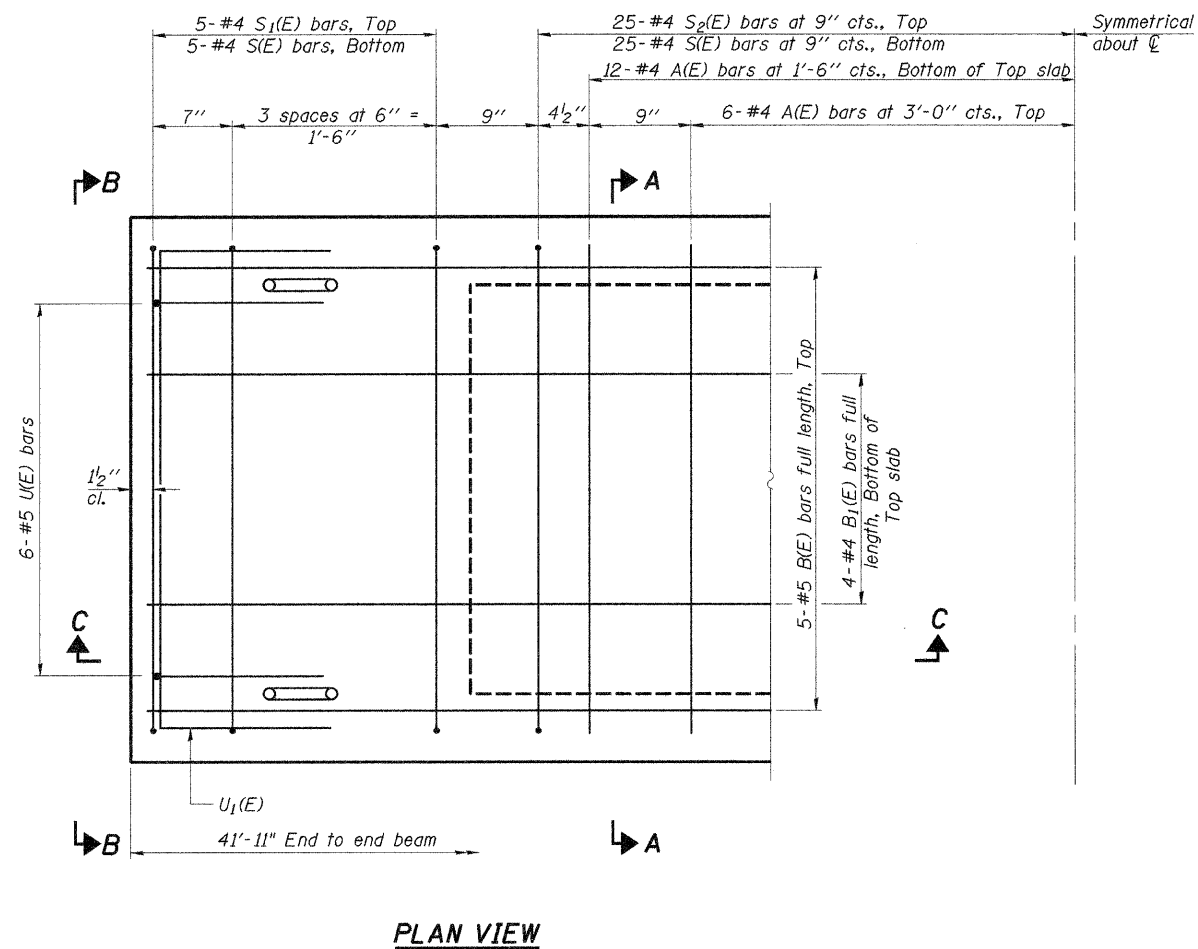
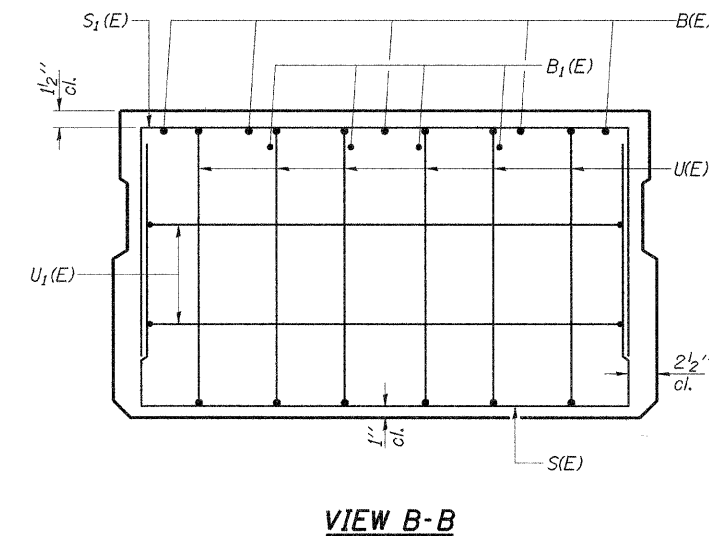
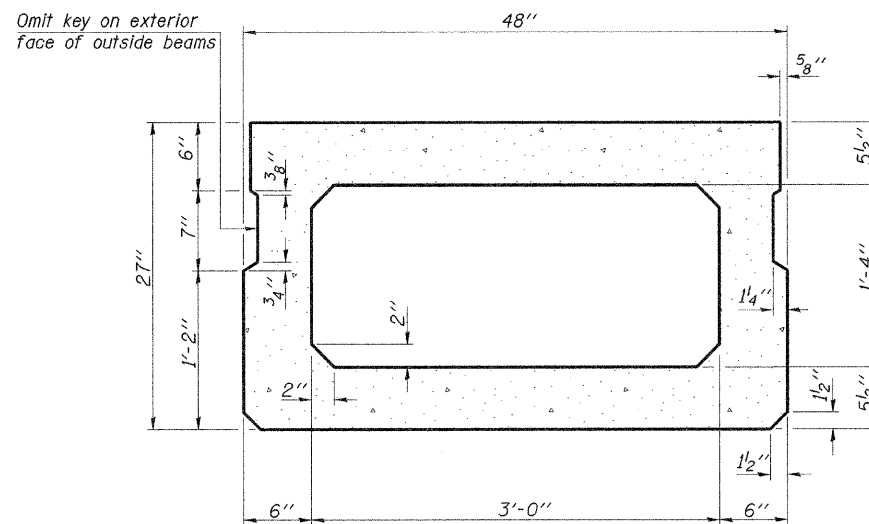
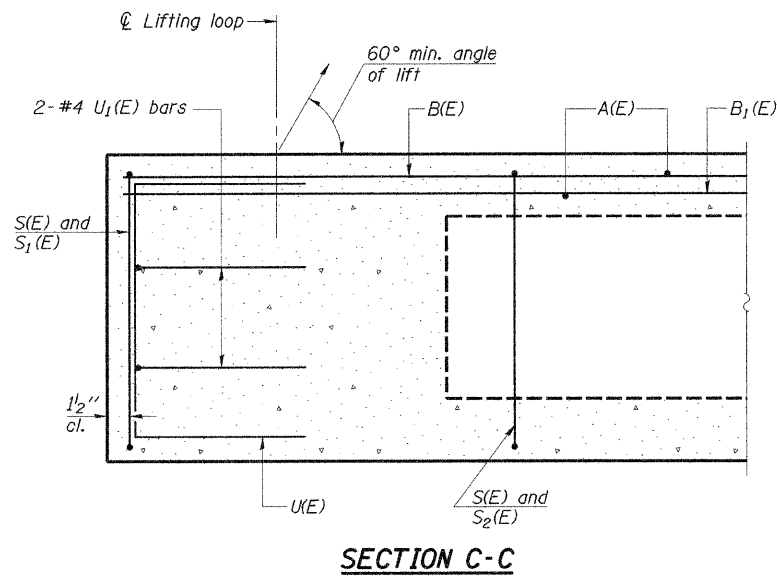
Keyway surfaces shall be cleaned to remove form oil or other bond breaking material prior to shipment of the beams. Cleaning shall be done by sandblasting the keyway areas between the top of the beam and the bottom edge of the key.

DESIGN STRESSES

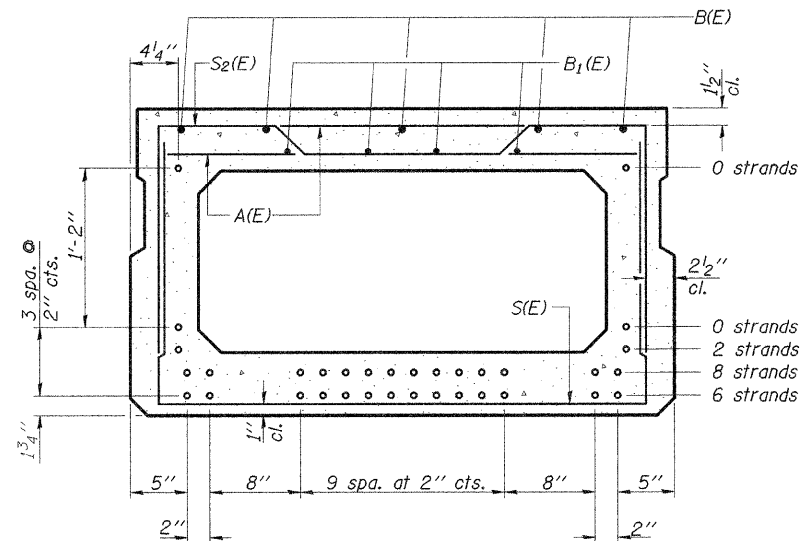
$f'_s = 270,000$ p.s.i. (1/2" ϕ Strand)
 $f'_{si} = 201,960$ p.s.i. (1/2" ϕ Strand)
 $F_1 = 30,900$ lbs per strand
 $f_y = 60,000$ p.s.i. Reinf. bars
 $f'_c = 6,000$ p.s.i.
 $f'_{ci} = 5,000$ p.s.i.

Note: See sheet SLM-CS-2827-60 for Bill of Material.

AECOM 2524 S. Broadway Salem, Illinois 62881 618.548.3500 IL Design Firm Reg. No. 184-003708 www.aecom.com	SLM-PDI-2748-0D P.P.C. DECK BEAM DETAILS AND NOTES
	28' ROADWAY 27" x 48" BEAMS 0° SKEW
Date: 01/20/10 Design: Drawn: Job No.: 200705594	



SECTION A-A
(Showing dimensions)



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: 16 - 1/2" strands.

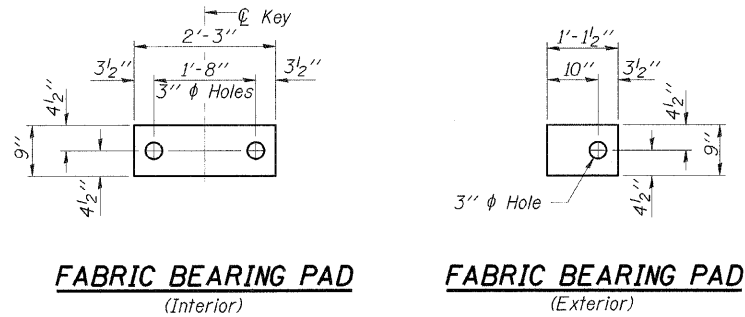
BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	36	#4	3'-7"	—
B(E)	5	#5	41'-7"	—
B1(E)	4	#4	41'-7"	—
S(E)	60	#4	7'-5"	⌈
S1(E)	10	#4	6'-11"	⌈
S2(E)	50	#4	7'-2"	⌈
U(E)	12	#5	4'-6"	⌈
U1(E)	4	#4	6'-0"	⌈

Note: See sheet SLM-PD2-2748-0D for additional details.
See sheet SLM-CS-2827-42 for Bill of Material.

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.

<p>AECOM</p> <p>2524 S. Broadway Salem, Illinois 62861 618.548.3500</p> <p>IL Design Firm Reg. No. 164-003706 www.aecom.com</p>	<p>SLM-PD2-2748-0</p> <p>P.P.C. DECK BEAM DETAILS AND SECTIONS</p>
	<p>Date: 01/20/10</p> <p>Design:</p> <p>Drawn:</p> <p>Job No.: 200705594</p>

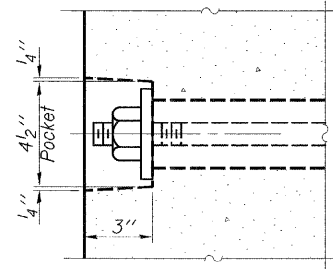


FABRIC BEARING PAD
(Interior)

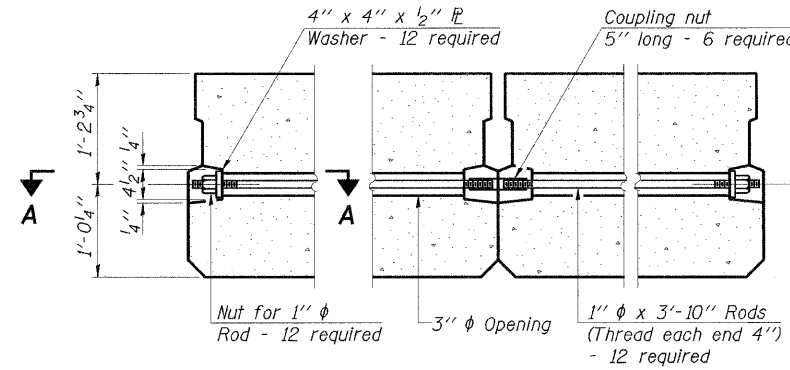
FABRIC BEARING PAD
(Exterior)

FIXED

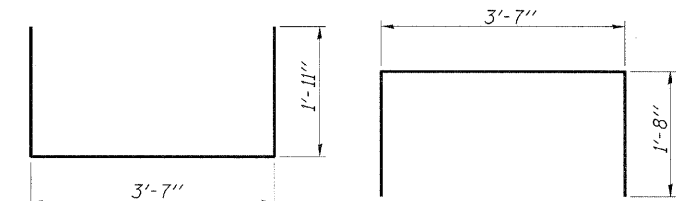
Note: Omit holes when using expansion bearings.



SECTION A-A

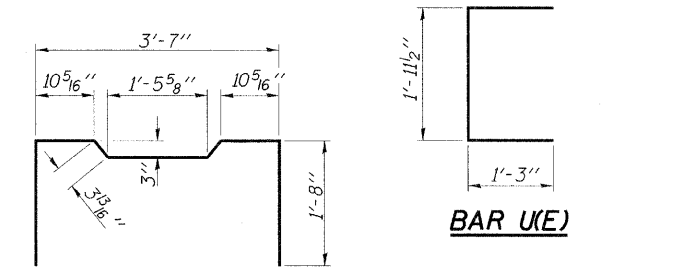


TYPICAL TRANSVERSE TIE ASSEMBLY



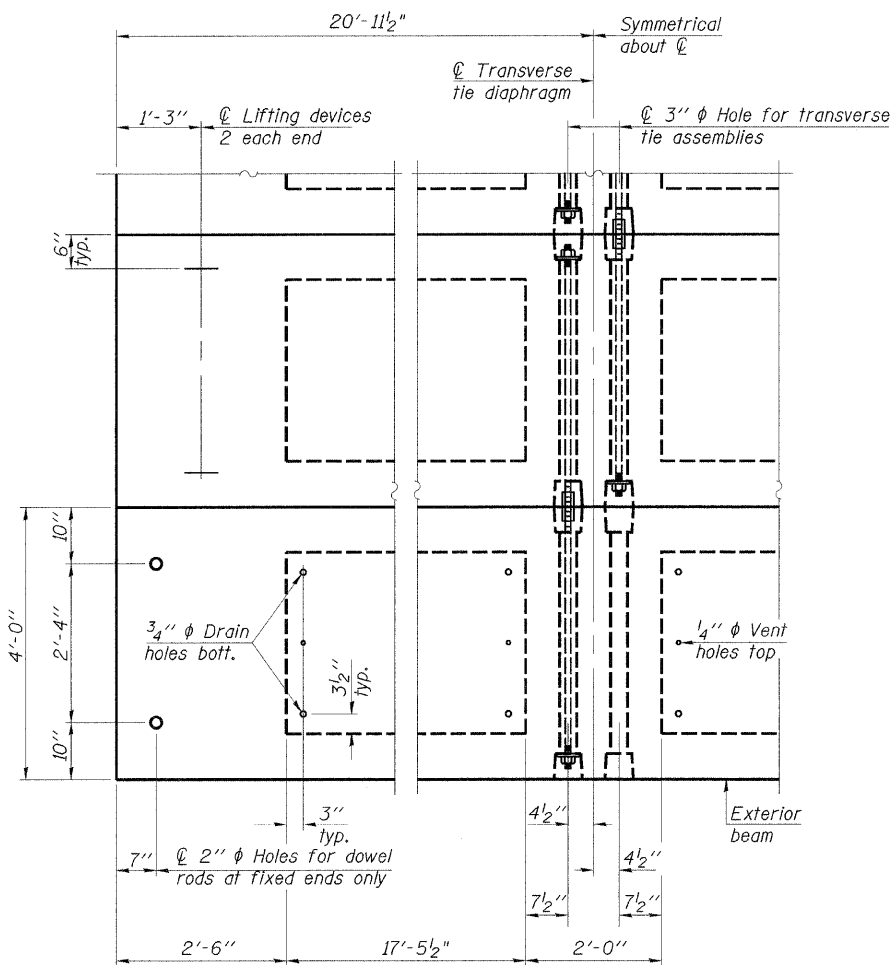
BAR S(E)

BAR S1(E)



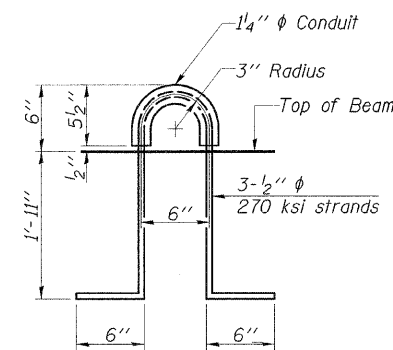
BAR S2(E)

BAR U1(E)



PLAN VIEW

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



LIFTING LOOP DETAIL

NOTES

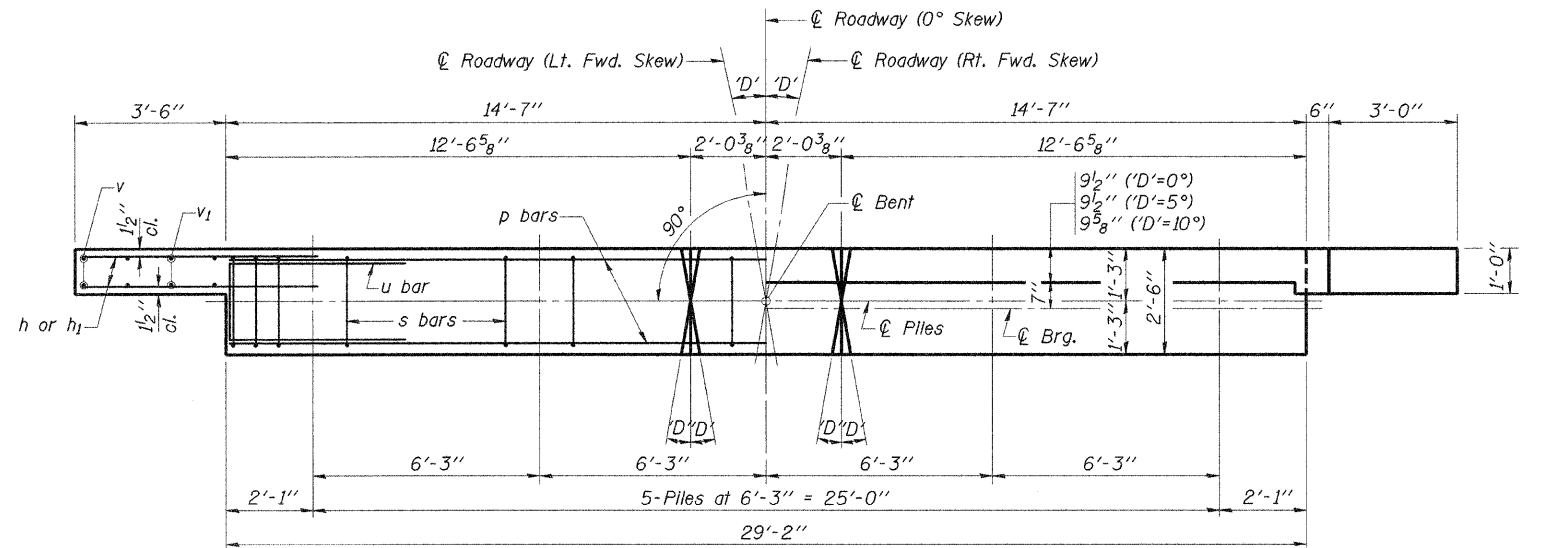
- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2 inch and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1 inch diameter rods in the transverse tie assembly shall be tightened to a snug fit and the threads 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).
- A minimum 2 1/2 inch diameter lifting pin shall be used to engage the lifting loops during handling.
- Two 3/8 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

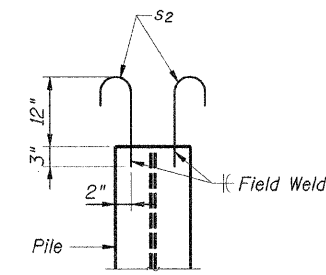
- f's = 270,000 p.s.i. (1/2 inch diameter Strand)
- f's1 = 201,960 p.s.i. (1/2 inch diameter Strand)
- F1 = 30,900 lbs per strand
- f'y = 60,000 p.s.i. Reinf. bars
- f'c = 6,000 p.s.i.
- f'ci = 5,000 p.s.i.

Note: See sheet SLM-CS-2827-42 for Bill of Material.

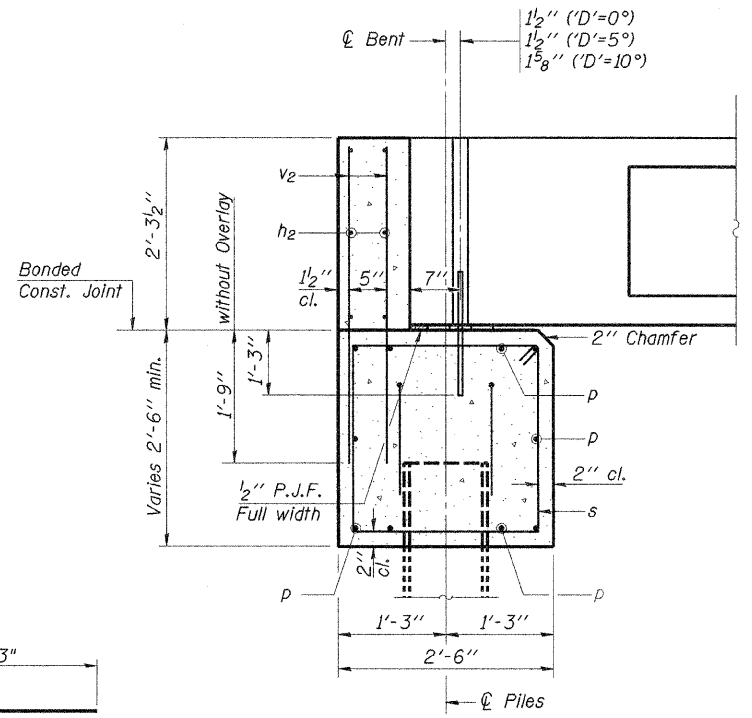
AECOM 2524 S. Broadway Salem, Illinois 62661 618.548.3500 IL Design Firm Reg. No. 184-003706 www.aecom.com	SLM-PD2-2748-0D
	P.P.C. DECK BEAM DETAILS AND NOTES
Date: 01/20/10 Design: Drawn: Job No.: 200705594	28' ROADWAY 27" x 48" BEAMS 0° SKEW



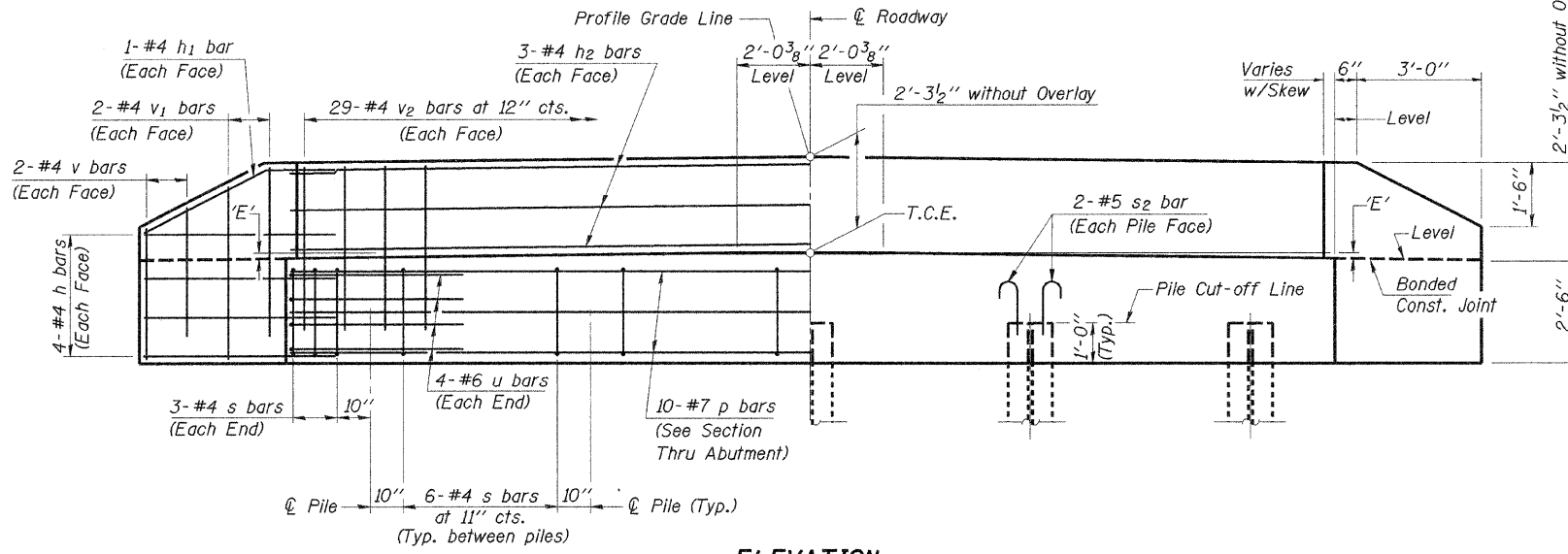
PLAN
(D'=Designated Skew Angle)



PILE ANCHOR DETAIL
(Welding included in cost of reinforcement)



SECTION THRU ABUTMENT
(At Right Angles)



ELEVATION

DIMENSION 'E'

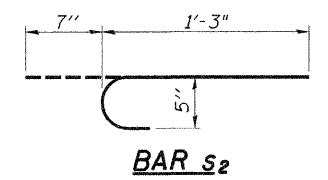
GRADE	'D'=0°		'D'=5°		'D'=10°	
	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END	UPGRADE END	DOWNGRADE END
0%	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"	2 3/8"
Over 0% to 1%	2 3/8"	2 3/8"	2 1/4"	2 3/8"	2 5/8"	2 1/2"
Over 1% to 2%	2 3/8"	2 3/8"	2 1/8"	2 1/2"	1 7/8"	2 3/4"
Over 2% to 3%	2 3/8"	2 3/8"	2"	2 5/8"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

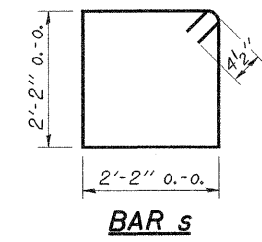
- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
- Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
- Space reinforcement in cap to miss dowel rods.
- For clarity, concrete encasement is not pictorially shown on elevation or section.

DESIGN STRESSES

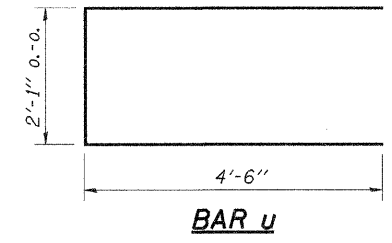
f'c = 3,500 psi
fy = 60,000 psi



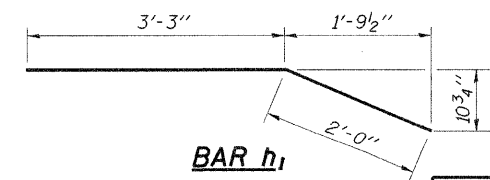
BAR s2



BAR s



BAR u

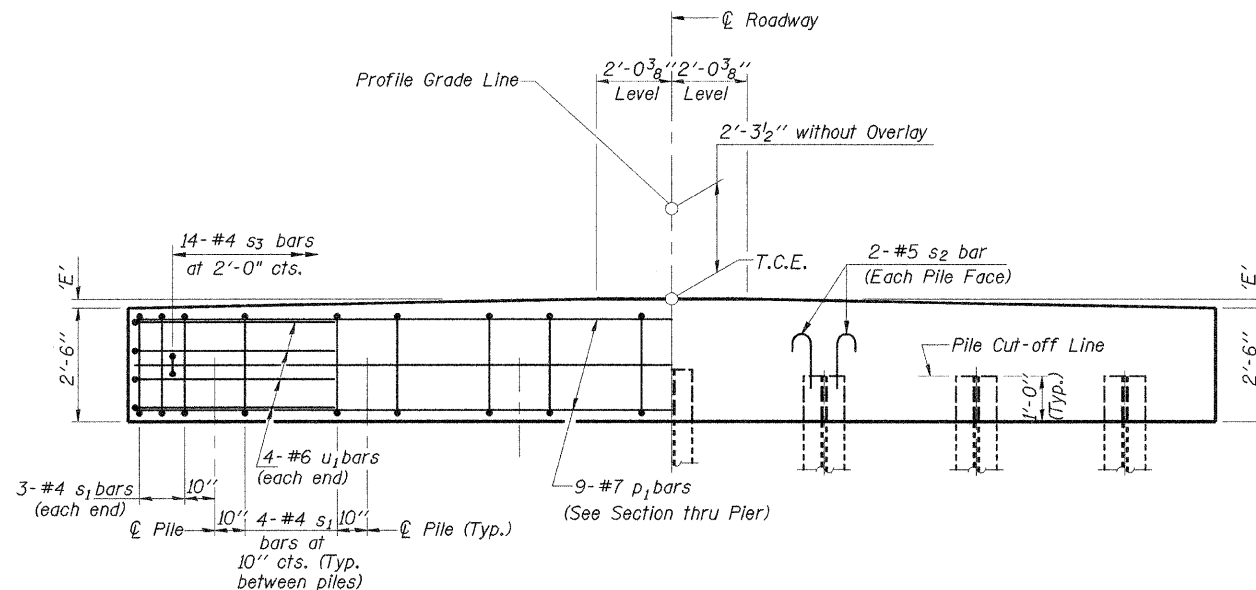
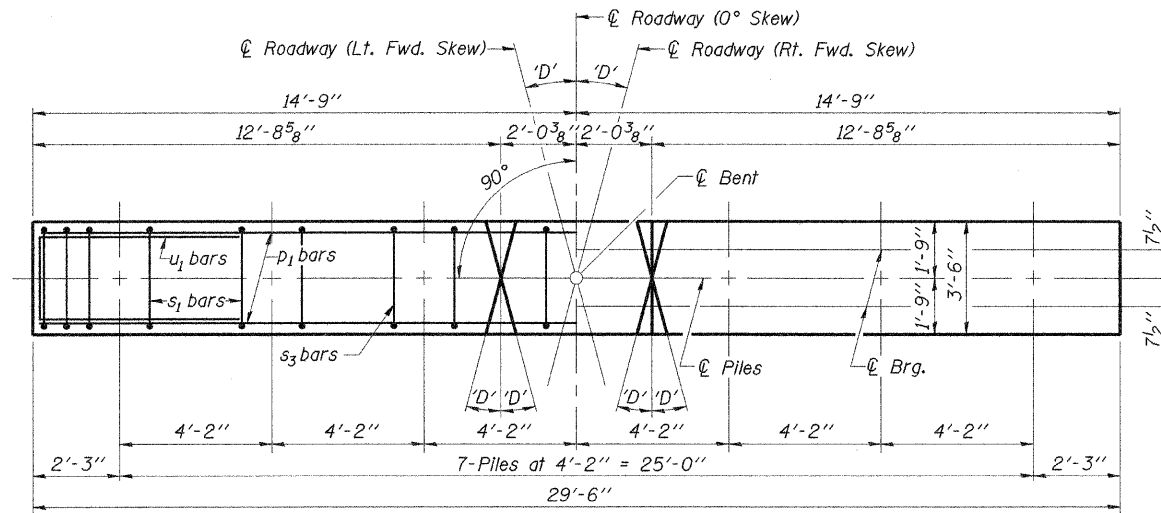


BAR h1

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	16	#4	5'-0"	—
h1	4	#4	5'-3"	—
h2	6	#4	28'-10"	—
p	10	#7	28'-10"	—
s	30	#4	9'-5"	□
s2	20	#5	1'-10"	U
u	8	#6	11'-1"	□
v	8	#4	3'-2"	—
v1	8	#4	4'-2"	—
v2	58	#4	3'-11"	—
Concrete Structures			10.4 Cu. Yds.	
Reinforcement Bars			1330 Lb.	

AECOM 2524 S. Broadway Salem, Illinois 62861 618.548.3500 IL Design Firm Reg. No. 184-003706 www.aecom.com	SLM-CA-2827-10 P.P.C. DECK BEAMS PILE BENT ABUTMENT
	28' ROADWAY 27" BEAMS D'=0°, 5°, OR 10°
Date: 01/20/10 Design: Drawn: Job No.: 200705594	

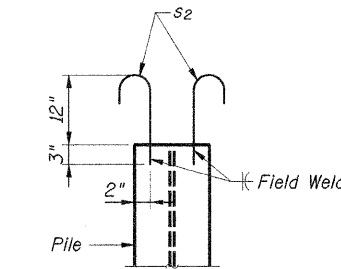


DIMENSION 'E'

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 "

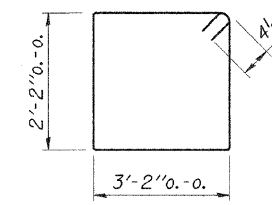
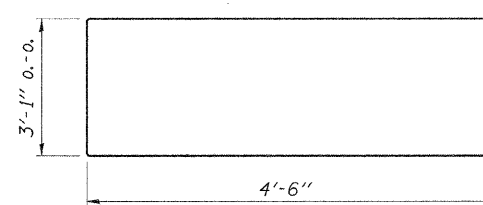
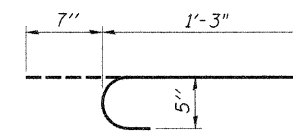
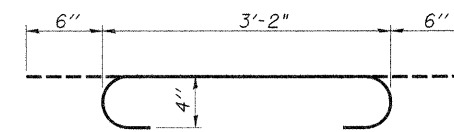
DESIGN STRESSES

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



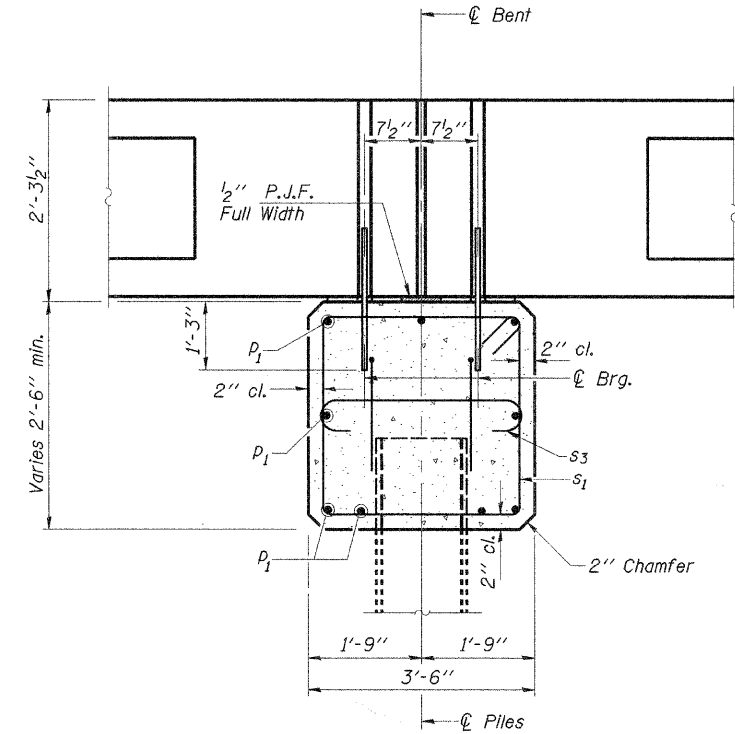
SECTION THRU PIER

(At Right Angles)



NOTE

1. Reinforcement bars shall conform to the requirements of A.A.S.H.T.O. M-31 or M-322, Grade 60.
2. Space reinforcement in cap to miss dowel rods.
3. For clarity, concrete encasement is not pictorially shown on elevation or section.



BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p1	9	#7	29'-2"	—
s1	30	#4	11'-5"	□
s2	28	#5	1'-10"	U
s3	14	#4	4'-2"	U
u1	8	#6	12'-1"	□
Concrete Structures			10.0	Cu. Yds.
Reinforcement Bars			1010	Lb.

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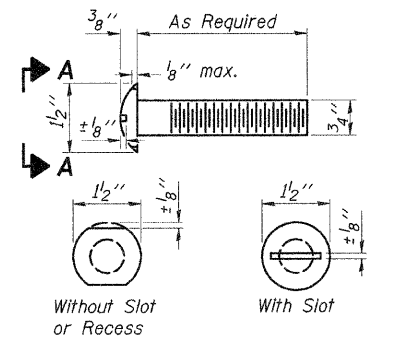
SLM-CP-2827-10
P.P.C. DECK BEAMS
PILE BENT PIER

Date: 01/20/10
Design:
Drawn:
Job No.: 200705594

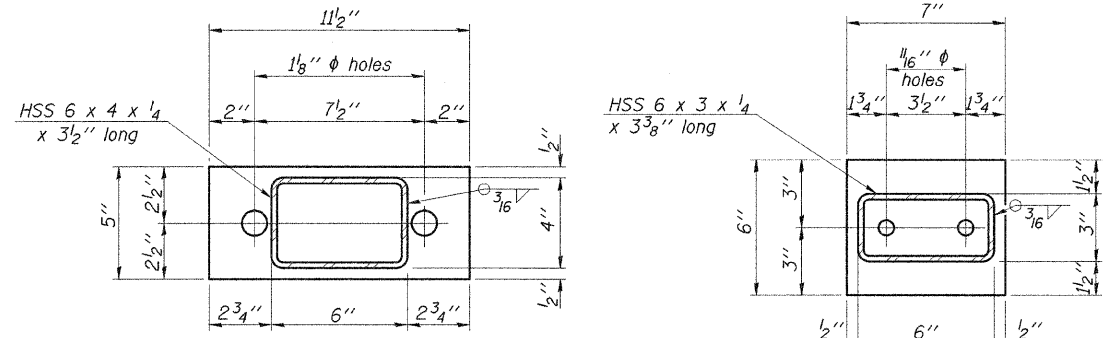
28' ROADWAY
27" BEAMS
'D'=0°, 5°, OR 10°

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
TR 254	06-1418-00-BR	MARION	16	13
FEDERAL AID PROJECT		ILLINOIS	PROJECT	

CONTRACT NO. 97434

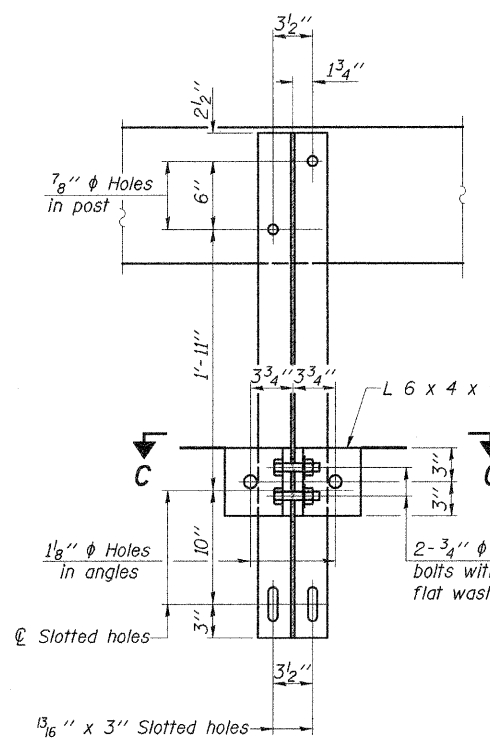


VIEW A-A ROUND HEAD BOLT

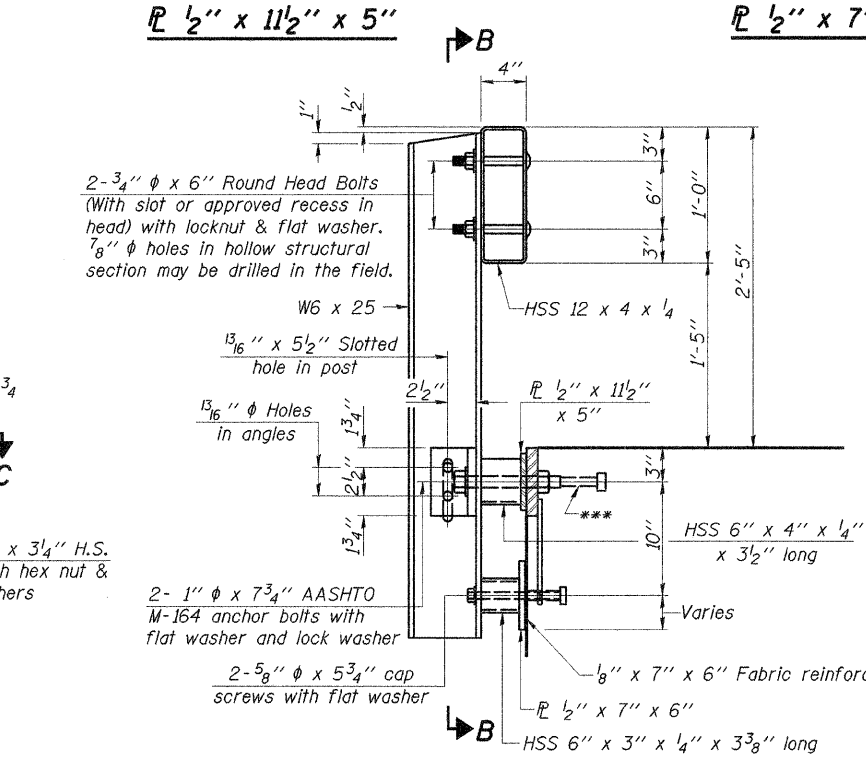


PL 1/2" x 11 1/2" x 5"

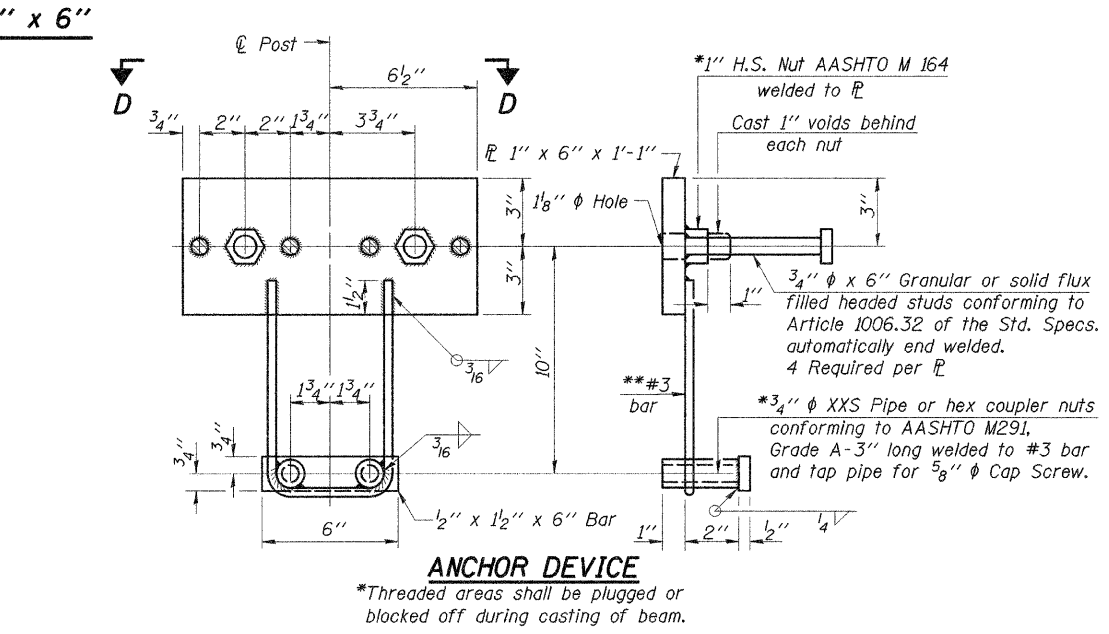
PL 1/2" x 7" x 6"



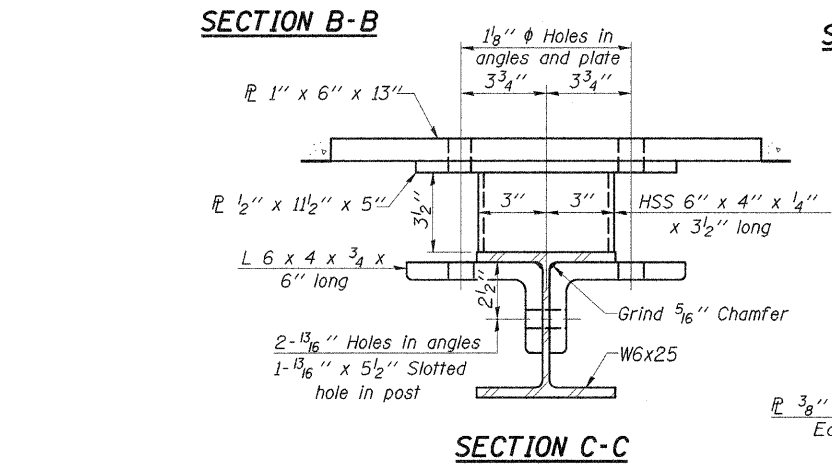
SECTION B-B



SECTION AT RAILING POST

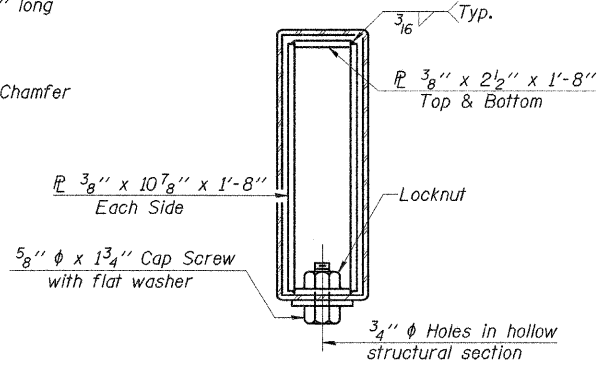


ANCHOR DEVICE

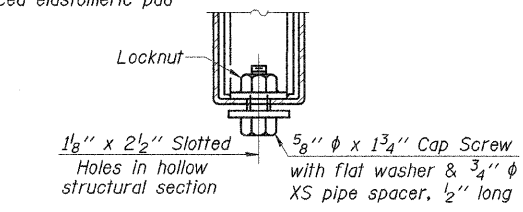


SECTION C-C

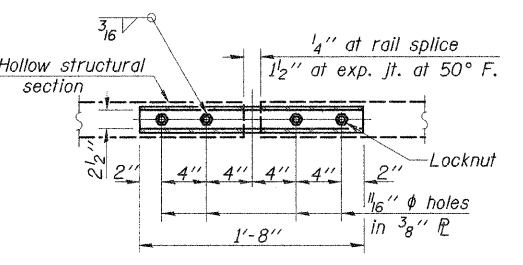
**Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



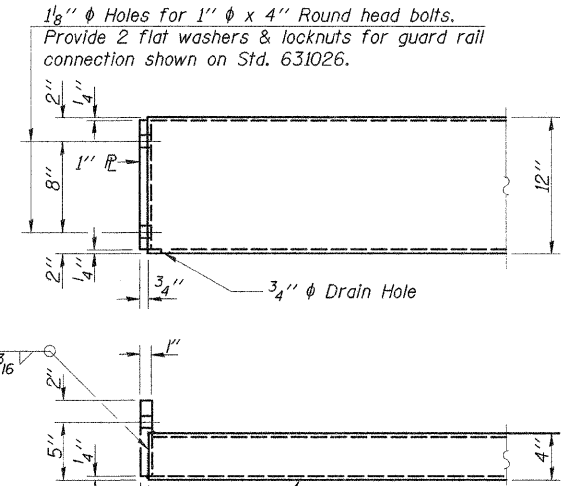
SECTIONS AT RAIL SPLICE



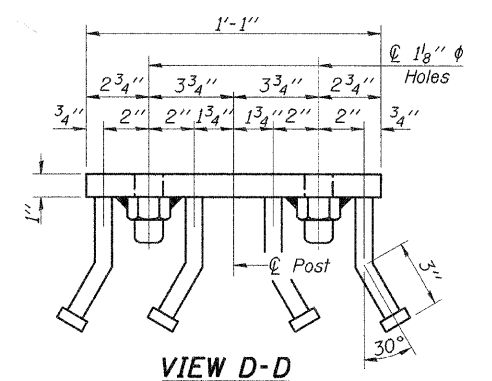
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTTOM SPLICE PL TYPICAL



END OF RAIL DETAILS



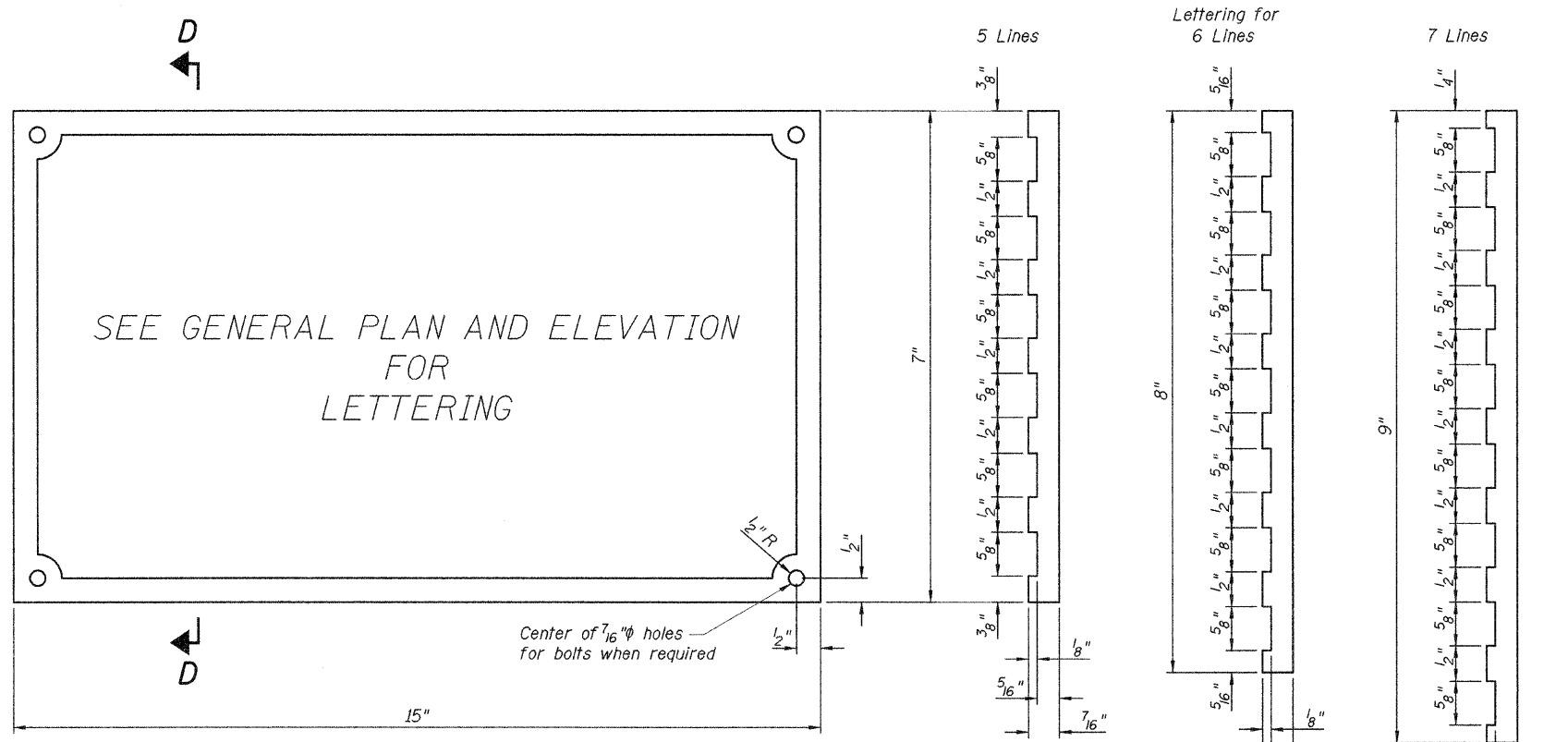
VIEW D-D

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.
See Special Provisions for curled end section.

See SLM-CS-2827-60 and SLM-CS-2827-42 for Steel Railing Quantities.

(10'-9" Maximum Post Spacing)

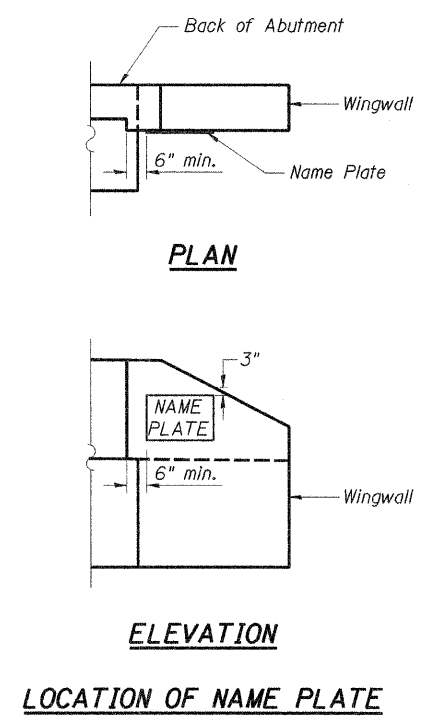
AECOM 2524 S. Broadway Salem, Illinois 62261 618.548.3500 IL Design Firm Reg. No. 194-003706 www.aecom.com	SLM-CR-TS1 STEEL RAILING TYPE S-1
	Date: 01/20/10 Design: Drawn: Job No.: 200705594



DETAIL OF NAME PLATE

SECTIONS D-D

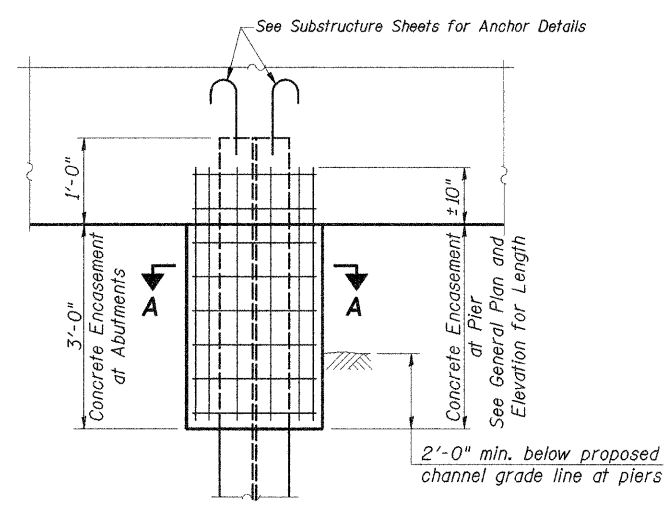
Material: Best quality brass or bronze.
Border and Lettering: Raised $\frac{1}{8}$ inch. Square cut and not tapered. Top surface polished.
Fastenings: Four lugs at least three inches long, cast on back of plate.



PLAN

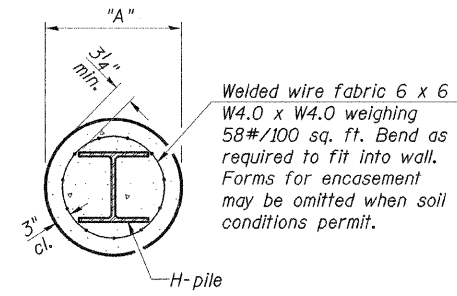
ELEVATION

LOCATION OF NAME PLATE



ELEVATION

PILE ENCASEMENT



SECTION A-A

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

PILE ENCASEMENT QUANTITIES
(Steel Piles)

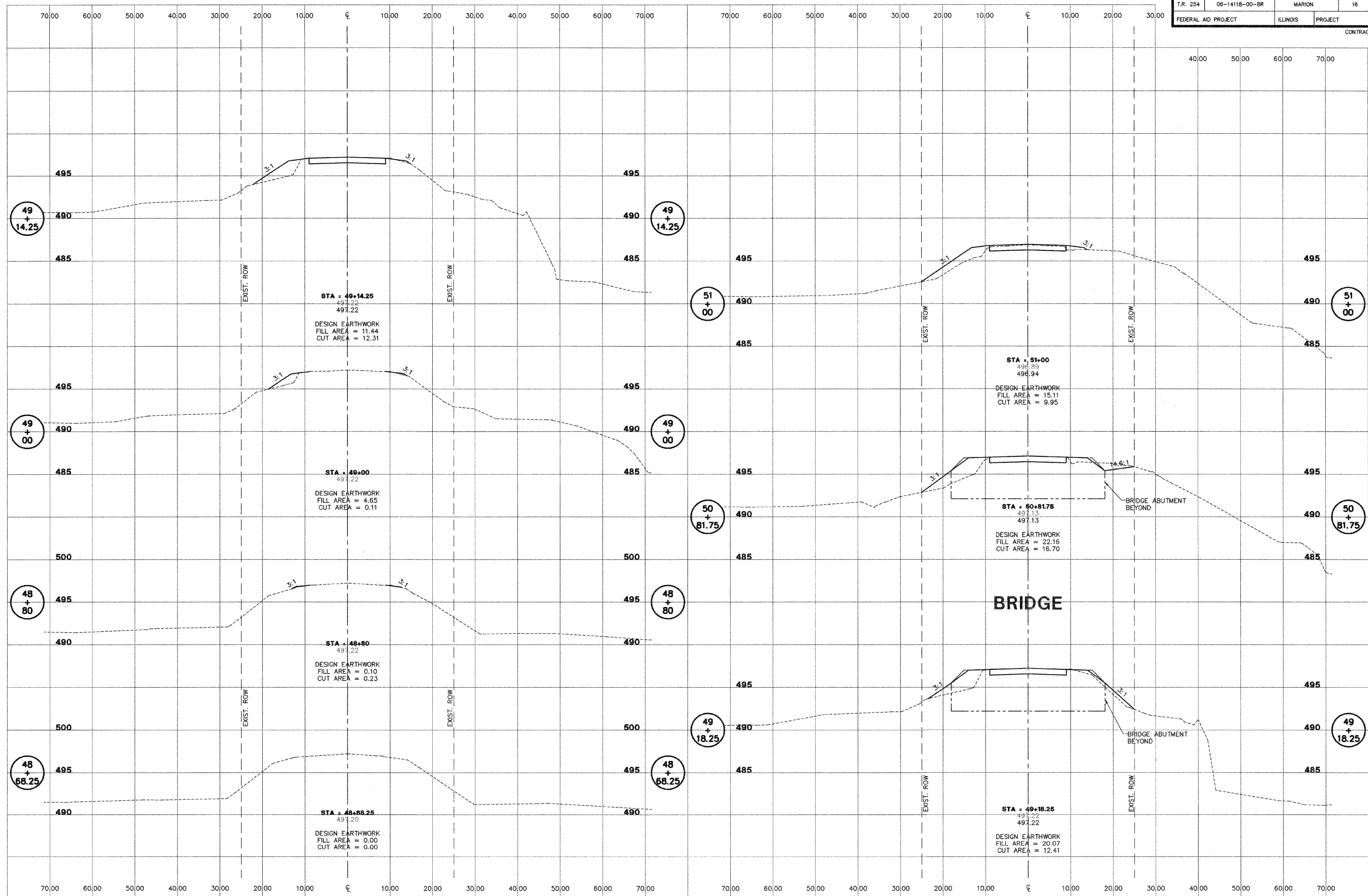
Pile Size	Item	Unit	Quantity
HP10	Concrete Encasement	Cu Yd.	0.086

Quantities per foot of Encasement.

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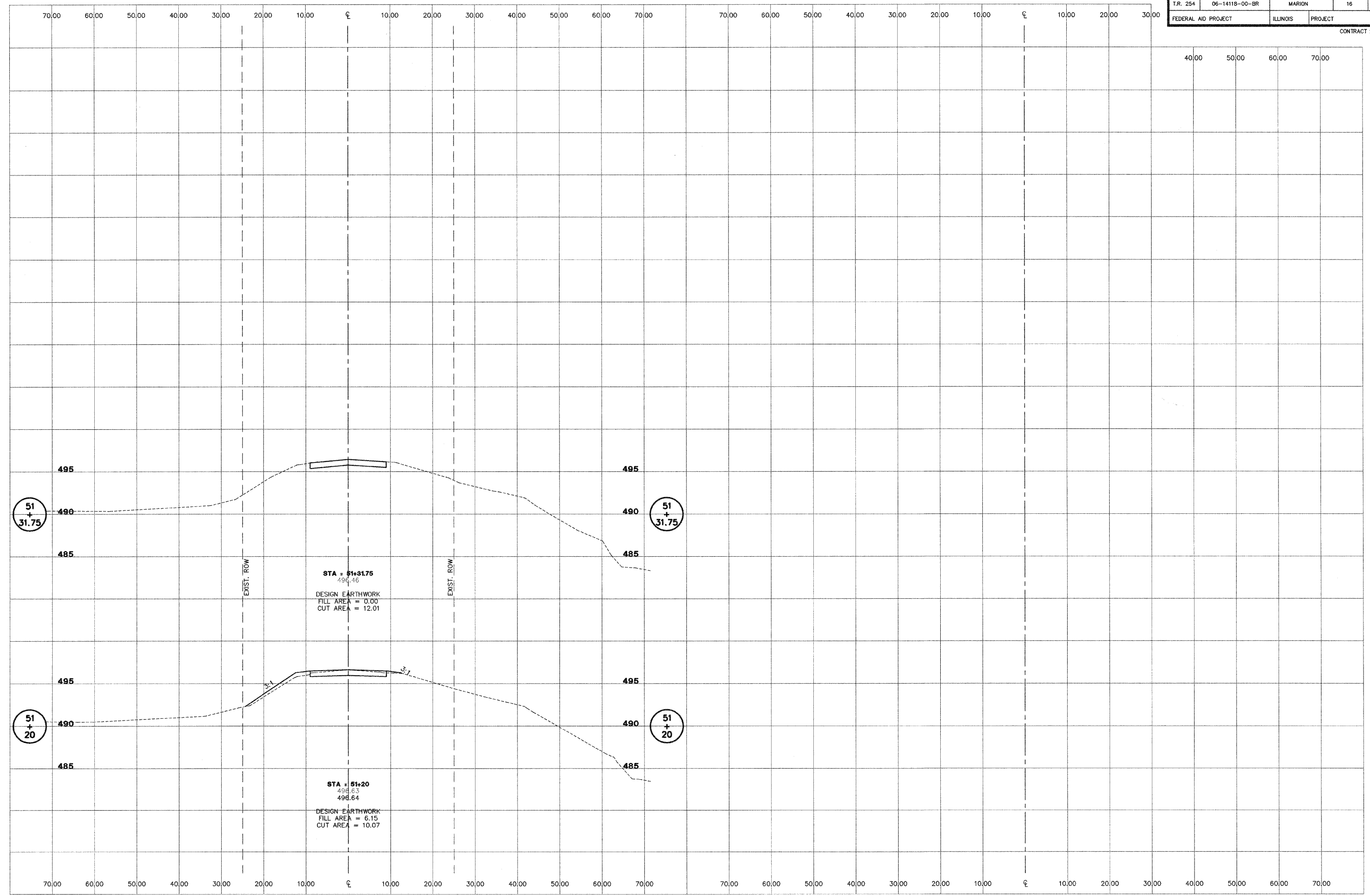
SLM-CN-CX
**NAME PLATE &
PILE ENCASEMENT DETAILS**

Date: 01/20/10
Design:
Drawn:
Job No.: 200705594



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 254	06-14118-00-BR	MARION	16	16
FEDERAL AID PROJECT		ILLINOIS	PROJECT	

CONTRACT NO. 97434



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TR 254 CROOKED CREEK BRIDGE
SALEM ROAD DISTRICT
MARION COUNTY, ILLINOIS

CROSS SECTIONS		DATE
STA. 51+20 TO STA. 51+31.75		01/20/10
SURVEY	CHECKED	DATE
JAS	APPROVED	REVIS
DESIGN	MRQ	JOB NO.
DRAWN	BLT	200705594

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