

PLANS FOR PROPOSED FEDERAL-AID PROJECT

**F.A.S. 178 (C.H. 9) PAW PAW ROAD
PROPOSED STRUCTURE NO. 052-3513**

**SECTION 11-00317-00-BR
LEE COUNTY
PROJECT BRS-0178(105)**

JOB NO. C-92-101-12

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	1

ILLINOIS PROJECT BRS-0178(105)
* 11-00317-00-BR
CONTRACT NO. 85560

INDEX OF SHEETS

1. COVER SHEET
2. SUMMARY AND SCHEDULE OF QUANTITIES AND TYPICAL SECTIONS
3. PLAN AND PROFILE
- 4-5. ROADWAY CROSS SECTIONS
6. GENERAL PLAN AND ELEVATION OF BRIDGE
- 7-10. SUPERSTRUCTURE DETAILS
11. SUBSTRUCTURE - ABUTMENTS
12. STEEL BRIDGE RAIL, TYPE SM
13. PILING DETAILS
14. EROSION & SEDIMENT CONTROL PLAN

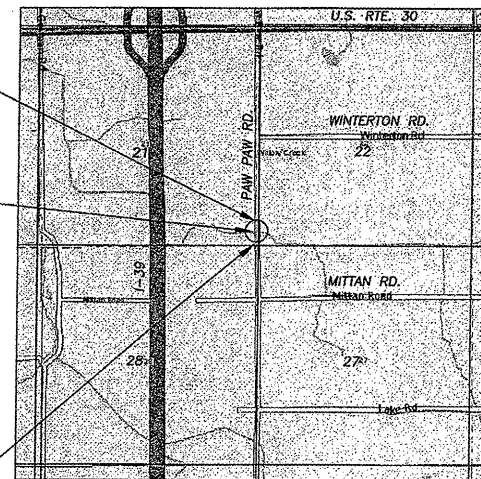
STANDARDS:

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 280001-06 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-03 NAME PLATE FOR BRIDGES
- 630301-05 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 635006-03 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 635011-02 REFLECTOR MARKER AND MOUNTING DETAILS
- 701006-03 OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
- 701301-04 LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
- 701901-02 TRAFFIC CONTROL DEVICES
- 720011-01 METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
- 728001-01 TELESCOPING STEEL SIGN SUPPORT
- 729001-01 APPLICATIONS OF TYPES A & B METAL POSTS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
- BLR 23-4 TRAFFIC BARRIER TERMINAL, TYPE 1
- BLR 27-1 TRAFFIC BARRIER TERMINAL, TYPE 5A

SECTION 11-00317-00-BR
ENDS AT STA. 12+50

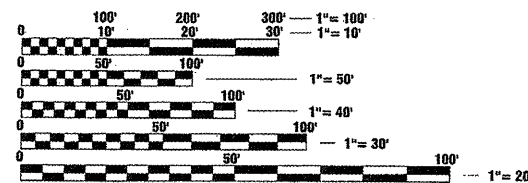
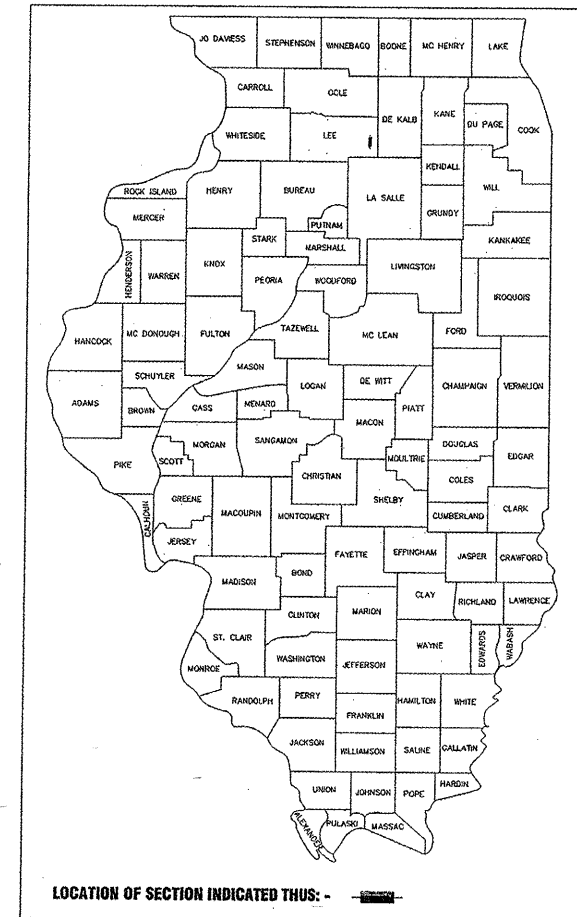
SECTION 11-00317-00-BR
INCLUDES THE REMOVAL OF AN EXISTING DOUBLE BARREL CULVERT (EXIST. SN 052-5026), AND REPLACEMENT WITH A SINGLE SPAN PPC DECK BEAM BRIDGE WITH CONCRETE WEARING SURFACE SPILL-THRU PILE BENT ABUTMENTS (PROP. SN 052-3513). 41'-8" BK-BK. ABUTS. ALSO INCLUDED IS NECESSARY ROADWAY APPROACH WORK.

SECTION 11-00317-00-BR
BEGINS AT STA. 7+50



LOCATION MAP

GROSS LENGTH OF SECTION = 500 FEET (0.09 MILE)
NET LENGTH OF SECTION = 500 FEET (0.09 MILE)



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

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

CONTRACT NO. 85560

ROADWAY	DESIGN CLASSIFICATION	ADT 2010	ADT 2030	DESIGN SPEED
PAW PAW	MAJOR COLLECTOR NON-URBAN	350	350	55



Richard A. Baumann
STERLING, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-035417
EXPIRES 11-30-2013

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Illinois Professional Design Firm No. 184-000848

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 3-27-2012
PASSED April 17 2012
RELEASED FOR BID BASED ON LIMITED REVIEW

RICHARD A. BAUMANN COUNTY ENGINEER
DISTRICT 2 ENGINEER OF LOCAL ROADS & STREETS
DEPUTY DIRECTOR OF HIGHWAYS, REGION 2 ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

SUMMARY OF QUANTITIES
FUNDING CODE: 0011

CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY
20400800	FURNISHED EXCAVATION	CU YD	260
20700220	POROUS GRANULAR EMBANKMENT	CU YD	52
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	200
28000305	TEMPORARY DITCH CHECKS	FOOT	80
28000400	PERIMETER EROSION BARRIER	FOOT	766
28100500	BROKEN CONCRETE RIPRAP	SQ YD	160
28200200	FILTER FABRIC	SQ YD	160
35101400	AGGREGATE BASE COURSE, TYPE B	TON	400
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GAL	478
40603310	HOT-MIX ASPHALT SURFACE COURSE MIX "C" N50	TON	282
48101200	AGGREGATE SHOULDERS, TYPE B	TON	42
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	30
50300260	BRIDGE DECK GROOVING	SQ YD	131.7
50300300	PROTECTIVE COAT	SQ YD	155
50400305	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	SQ FT	1185
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5888
50901050	STEEL RAILING, TYPE SM	FOOT	84
51200957	FURNISHING METAL SHELL PILES 12" X 0.250"	FOOT	308
51202305	DRIVING PILES	FOOT	308
51203200	TEST PILE METAL SHELLS	EACH	2
51500100	NAME PLATES	EACH	1
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	50
63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	4
63200310	GUARD RAIL REMOVAL	FOOT	252
67100100	MOBILIZATION	L SUM	1
78200200	BIDIRECTIONAL PRISMATIC BARRIER REFLECTORS	EACH	16
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2020410	EARTH EXCAVATION (SPECIAL)	CU YD	426
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.2
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	131.7
X7010216	TRAFFIC CONTROL & PROTECTION, (SPECIAL)	L SUM	1

QUANTITY NOTES:

- Δ SPECIALTY ITEMS
- * SEE SPECIAL PROVISIONS
- PERIMETER EROSION BARRIER IS AN ESTIMATED QUANTITY. LOCATIONS ARE TO BE DETERMINED IN FIELD BY THE ENGINEER

SCHEDULE OF QUANTITIES

STEEL PLATE BEAM GUARD RAIL, TYPE A			
LOCATION			
RT. STA. 9+40.75 TO RT. STA. 9+65.75			25
LT. STA. 10+34.25 TO LT. STA. 10+59.25			25
TOTAL		50	
TRAFFIC BARRIER TERMINAL, TYPE 5A			
LOCATION		EACH	
RT. STA. 9+65.75 TO RT. STA. 9+79			1
LT. STA. 9+65.75 TO LT. STA. 9+79			1
RT. STA. 10+21 TO RT. STA. 10+34.25			1
LT. STA. 10+21 TO LT. STA. 10+34.25			1
TOTAL		4	
TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)			
LOCATION		EACH	
RT. STA. 9+15.75 TO RT. STA. 9+65.75			1
LT. STA. 9+15.75 TO LT. STA. 9+65.75			1
RT. STA. 10+34.25 TO RT. STA. 10+84.25			1
LT. STA. 10+34.25 TO LT. STA. 10+84.25			1
TOTAL		4	
AGGREGATE BASE COURSE, TYPE B			
LOCATION		TON	
STA. 8+00 - STA. 9+79.25			200
STA. 10+20.75 - STA. 12+00			200
TOTAL		400	
BITUMINOUS MATERIALS (PRIME COAT)			
LOCATION		GAL	
STA. 8+00 - STA. 9+79.25			239
STA. 10+20.75 - STA. 12+00			239
TOTAL		478	
HOT-MIX ASPHALT SURFACE COURSE "C" N50			
LOCATION		TON	
STA. 8+00 - STA. 9+79.25			141
STA. 10+20.75 - STA. 12+00			141
TOTAL		282	
AGGREGATE SHOULDERS, TYPE B			
LOCATION		TON	
STA. 8+00 - STA. 9+79.25			21
STA. 10+20.75 - STA. 12+00			21
TOTAL		42	

MIXTURE USE:	
PG:	PG 64-22
DESIGN AIR VOIDS	3.0 @ N50
MIXTURE COMPOSITION	IL 9.5 OR 12.5
FRICTION AGGREGATE	C
20 YEAR ESAL	0.1
MIX UNIT WEIGHT	112 LBS/SY/IN
2" TOP LIFT, 3" BOTTOM LIFT	

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	2

ILLINOIS PROJECT BRS-0178(105)
* 11-00317-00-BR
CONTRACT NO. 85560

SCALE: 1"=

REVISIONS	DATE

DESIGNED BY	CHKD BY	DATE

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engineers - surveyors - scientists
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Illinois Professional Design Firm No. 164-000848

SUMMARY AND SCHEDULE OF QUANTITIES
OF
PAW PAW ROAD BRIDGE
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE

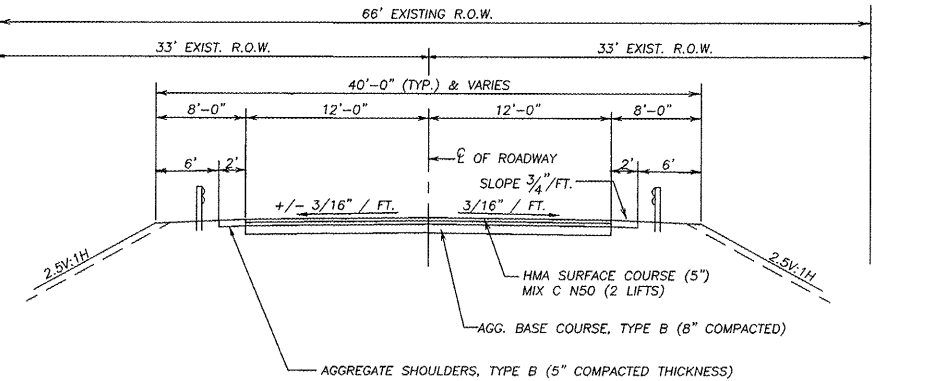
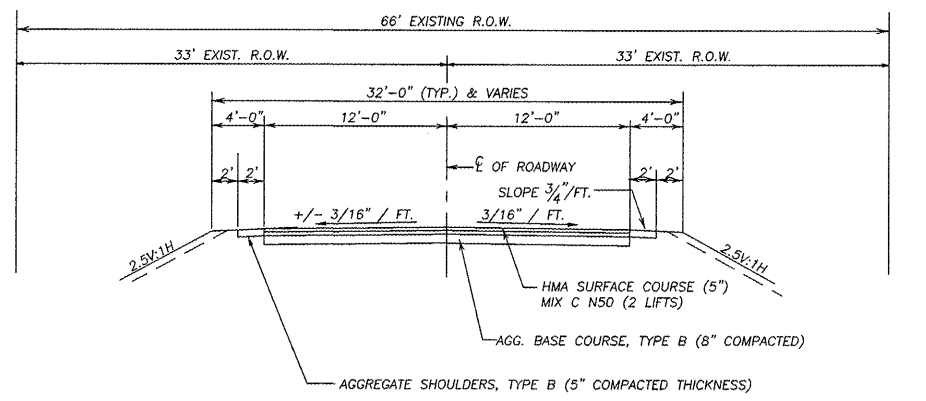
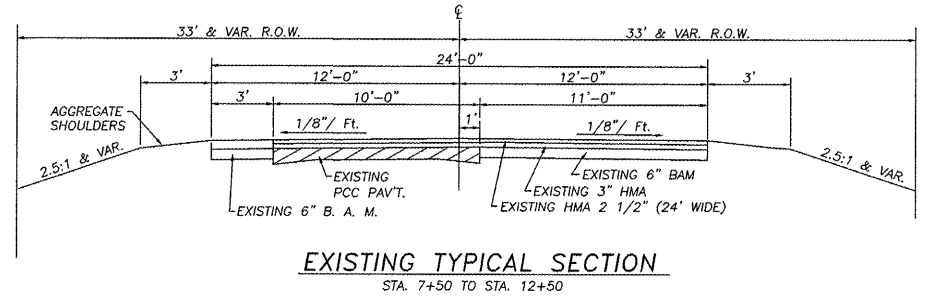
SUMMARY

JOB NUMBER
2110221

DATE
03/29/2012

SHEET NO.

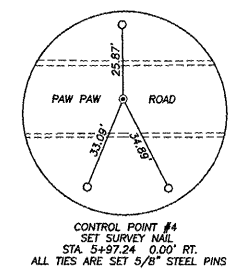
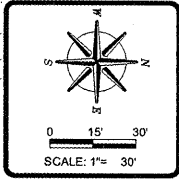
2 of 14



SUMMARY OF QUANTITIES
SECTION 11-00317-00-BR
PAW PAW ROAD
LEE COUNTY

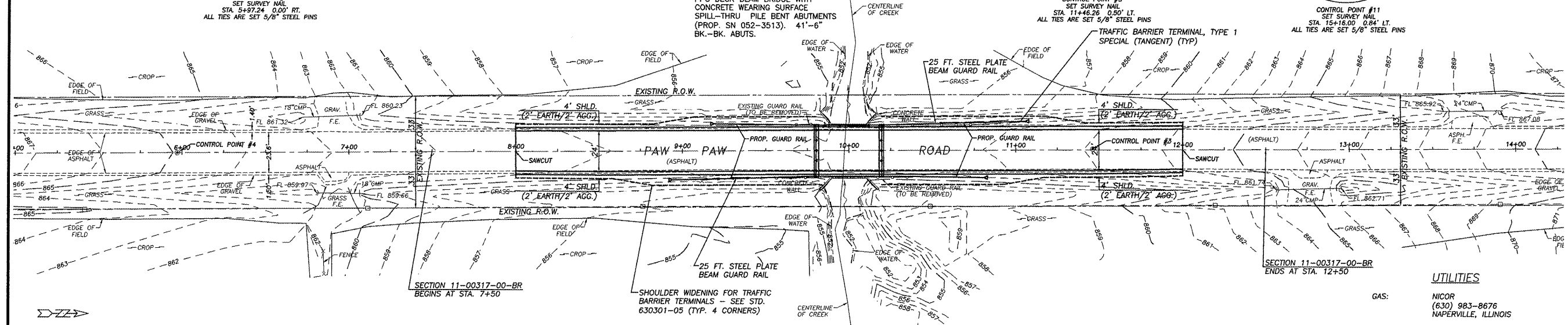
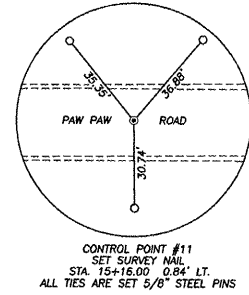
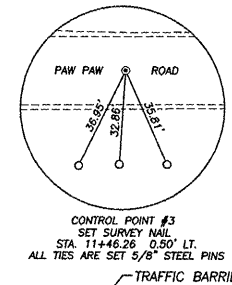
FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	3

ILLINOIS PROJECT BRS-0178(105)
 * 11-00317-00-BR
 CONTRACT NO. 85560



BENCHMARK INFORMATION
 B.M. "A" - SET R.R. SPIKE IN WEST FACE OF 1ST. POWER POLE NORTH OF STRUCTURE, EAST SIDE OF PAW PAW ROAD. ELEV=858.48
 B.M. "B" - SET CHISELED "C" AT NORTH END OF WEST HEADWALL OF EXISTING STRUCTURE. ELEV=860.89
 B.M. "C" - SET SHIP SPIKE IN WEST FACE OF 1ST. POWER POLE SOUTH OF STRUCTURE, EAST SIDE OF PAW PAW ROAD. ELEV=857.23

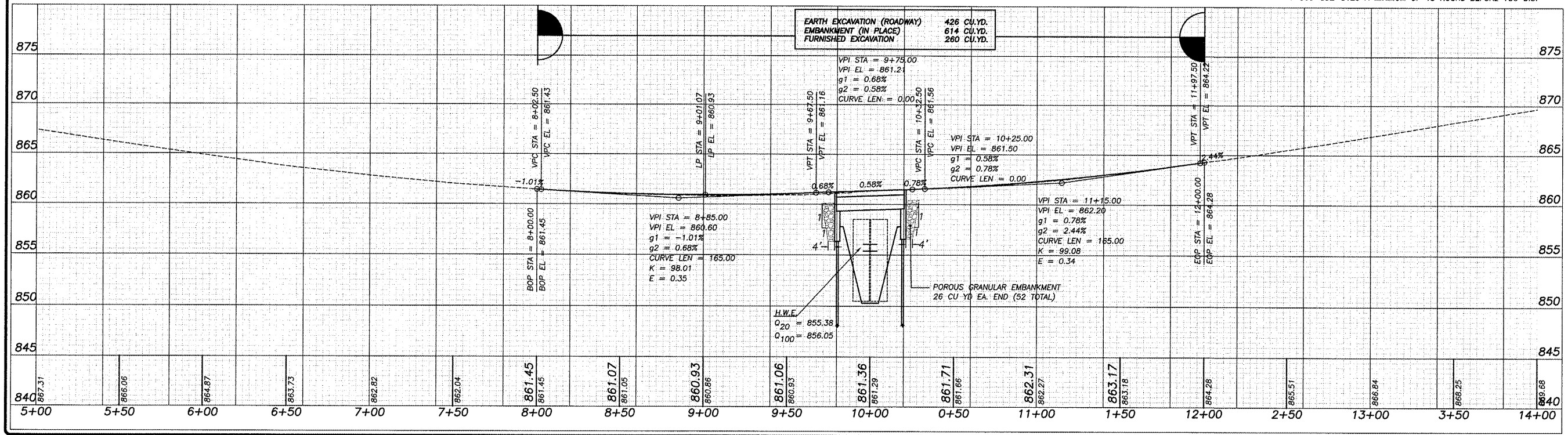
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SCALES:
 1" = 30' HOR
 1" = 5' VER

UTILITIES
 GAS: NICOR (630) 983-8676 NAPERVILLE, ILLINOIS
 ELECTRIC: COMED (815) 756-9541 DEKLAB, ILLINOIS
 TELEPHONE: FRONTIER COMMUNICATIONS (815) 895-1445 SYCAMORE, ILLINOIS

THE LOCATION AND SIZE OF UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE BASED UPON INFORMATION PROVIDED BY OTHERS. WENDLER ENGINEERING SERVICES, INC. MAKES NO GUARANTEE OR WARRANTY, EXPRESSED OR IMPLIED, FOR THE ACCURACY AND LOCATION OF THE UNDERGROUND UTILITIES. CONTACT J.U.L.I.E. AT 1-800-892-0123 A MINIMUM OF 48 HOURS BEFORE YOU DIG.



REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 DATE: _____

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 wendler engineering services, inc.
 1000 1001 Ave
 Naperville, IL 60563
 (630) 256-8800
 www.wendlereng.com
 Illinois Professional Design Firm No. 184-C00848

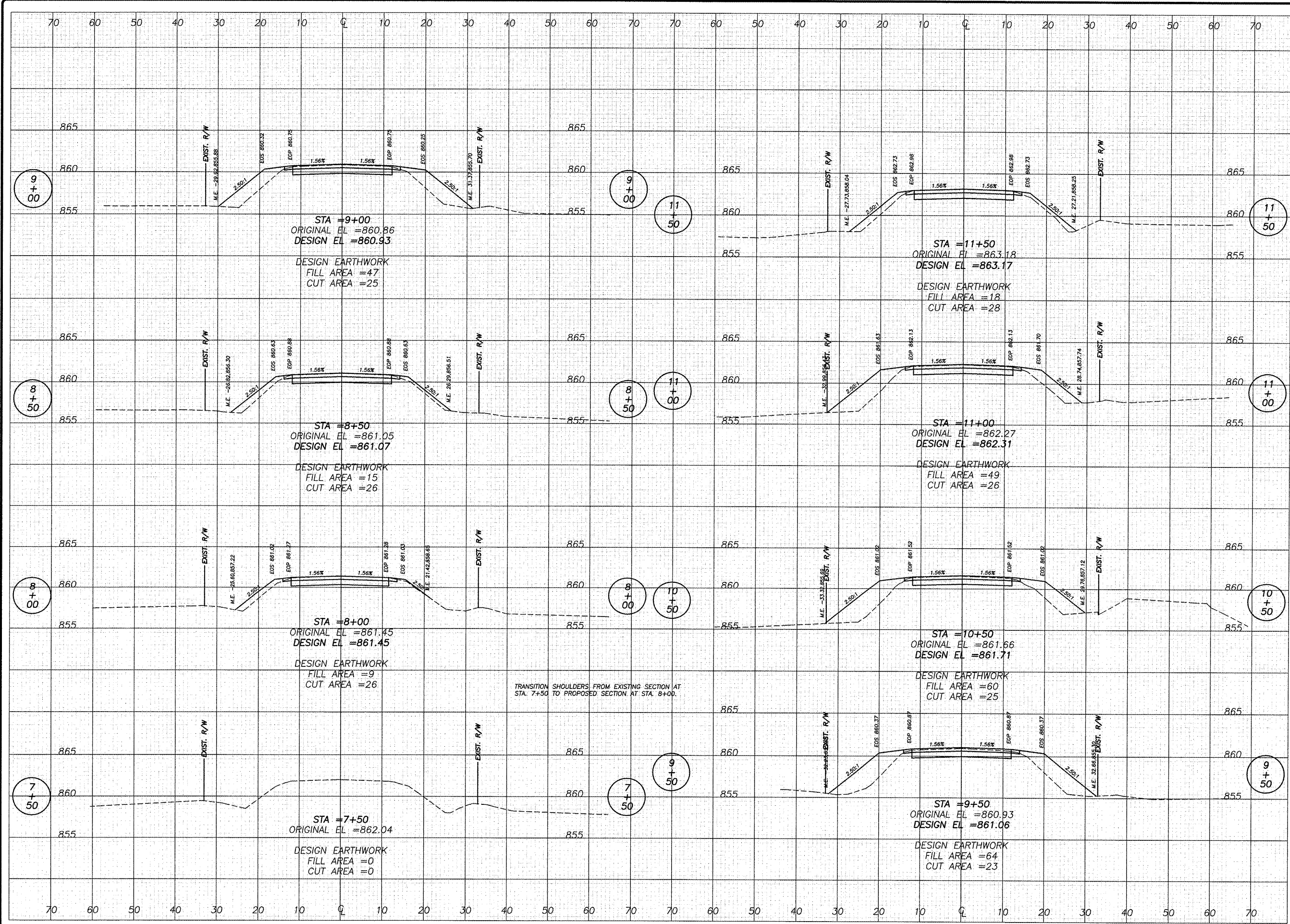
PLAN AND PROFILE OF PAW PAW ROAD BRIDGE FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
PLAN AND PROFILE

JOB NUMBER
 2110221

DATE
 03/23/2012

SHEET NO.
3 of 14



REVISIONS	DATE	REVISION

DESIGNED BY:	RLR
DRAWN BY:	EDS
CHECKED BY:	EDS
DATE:	03/23/2012

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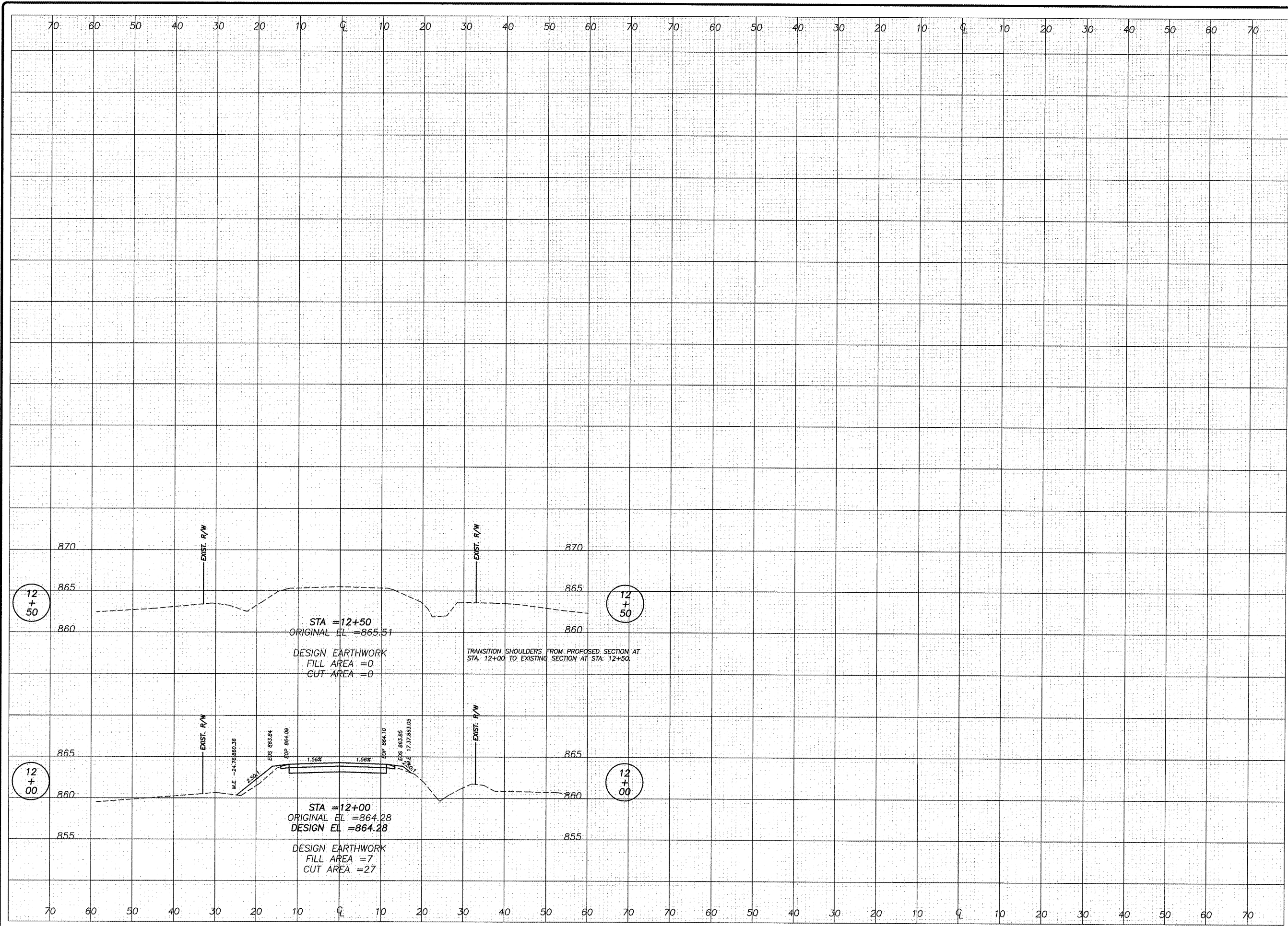
CROSS SECTIONS
 OF
PAW PAW ROAD BRIDGE
 FOR
 LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
CROSS SECTIONS

JOB NUMBER
 2110221

DATE
 03/23/2012

SHEET NO.
4 of 14



REVISIONS	DATE	REVISION

DESIGNED BY: RLK
 DRAWN BY: BCS
 CHECKED BY: PCC/03/01
 APPROVED BY: [Signature]
 BOOK NO: [Blank]

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CROSS SECTIONS
 OF
 PAW ROAD BRIDGE
 FOR
 LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
 CROSS SECTIONS

JOB NUMBER
 2110221

DATE
 03/23/2012

SHEET NO.
 5 of 14

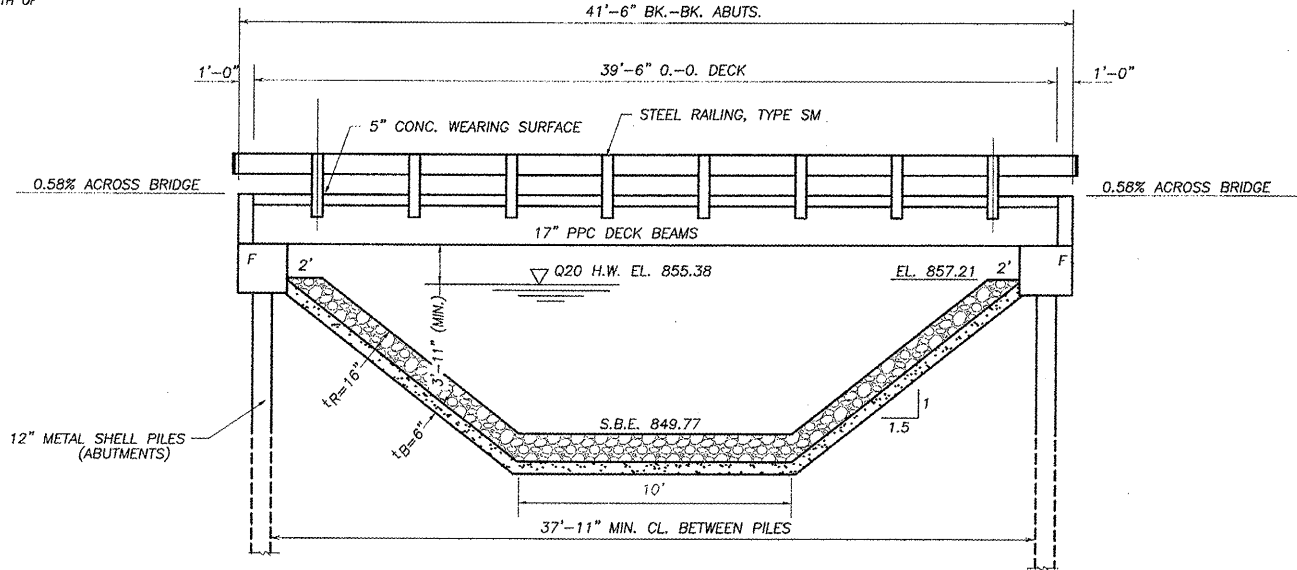
PAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	6
ILLINOIS PROJECT BRS-0178(105)				
* 11-00317-00-BR				
CONTRACT NO. 85560				

BENCHMARK INFORMATION

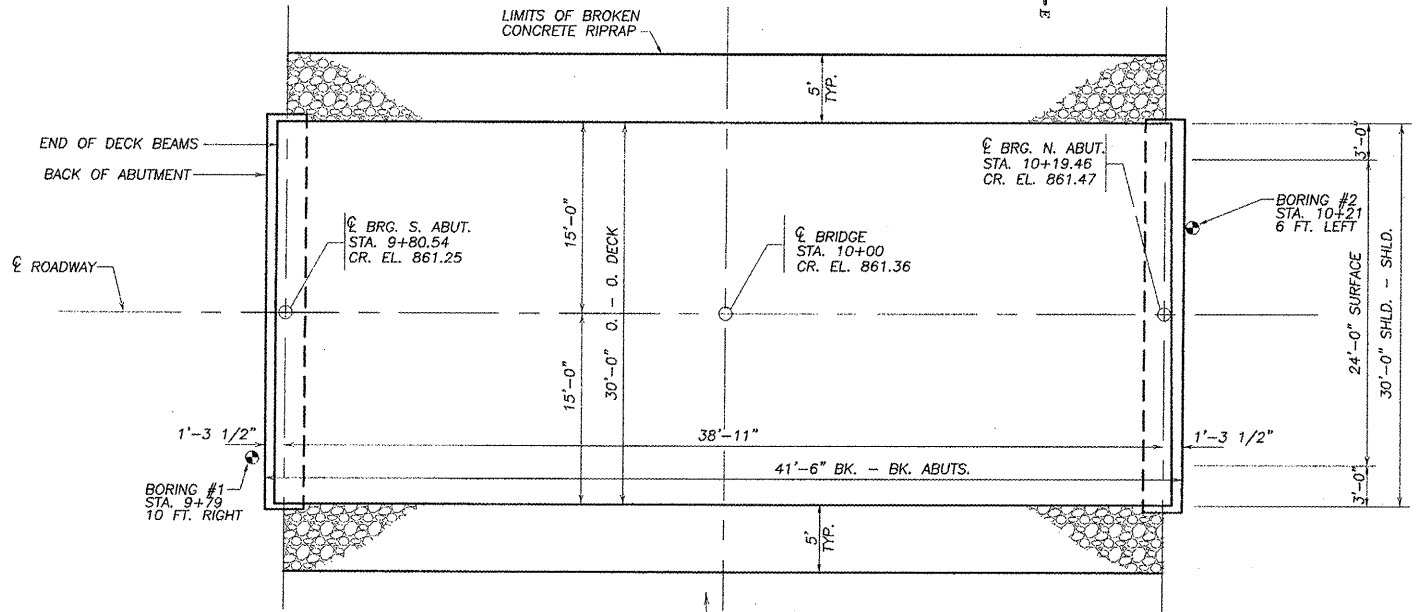
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 B.M. "B" - SET CHISELED "C" AT NORTH END OF WEST HEADWALL OF EXISTING STRUCTURE. ELEV=860.89
 B.M. "C" - SHIP SPIKE IN WEST FACE OF 1ST. POWER POLE SOUTH OF STRUCTURE, EAST SIDE OF ROAD. ELEV=857.23

EXISTING STRUCTURE:
DOUBLE BARREL BOX CULVERT
10' SPAN X 8' RISE

SALVAGE:
ALL ITEMS DEEMED SALVAGABLE
BY THE ENGINEER SHALL BE
STOCKPILED ON THE RIGHT
OF WAY.



ELEVATION



PLAN

WATERWAY INFORMATION

Drainage Area = 5.98 sq. miles		Low Grade Elev. = 861.29		at Roadway Sta. 10+00	
Flood Year	Frequency (cfs)	Opening Sq. Ft.	Natural H.W.E.	Head-Ft.	Headwater El.
Design	20	Existing	855.38	Existing	0.72
		Proposed		Proposed	
Base	100	Existing	856.05	Existing	1.25
		Proposed		Proposed	
Overtopping					
Max Calc.	500	1110	856.47	1.91	857.87

BRANCH OF WILLOW CREEK
BUILT 2012 BY
LEE COUNTY
SECTION 11-00317-00-BR
STATION 10+00
STR. NO. 052-3513 LOADING HL-93

LETTERING FOR NAME PLATE
SEE STD. 515001

DESIGN STRESSES

PRESTRESSED UNITS **FIELD UNITS**

$f'_c = 6000$ P.S.I. $f'_c = 3500$ P.S.I.

$f'_{ci} = 5000$ P.S.I. RELEASE $f_y = 60,000$ P.S.I. (REINFORCEMENT)

$f'_s = 270,000$ P.S.I. $F_y = 36,000$ P.S.I. (HARDWARE)

$f'_{si} = 201,960$ P.S.I.

DESIGN SPECIFICATIONS: 2007 AASHTO SPECIFICATIONS
(ALLOWED FOR 25 P.S.F. FOR FUTURE WEARING SURFACE.)

LOADING HL 93

GENERAL NOTES

SEE SPECIAL PROVISIONS FOR REMOVAL OF EXISTING STRUCTURE.
 AFTER THE EXISTING STRUCTURE IS REMOVED ANY SHAPING REQUIRED IN THE CHANNEL UNDER THE BRIDGE TO CONFORM TO THE ELEVATION VIEW SHALL BE CONSIDERED INCIDENTAL TO REMOVAL OF THE EXISTING STRUCTURE.
 BACKFILLING OF ABUTMENTS SHALL NOT BE DONE UNTIL THE DECK BEAMS ARE IN PLACE AND THE DOWELS ARE GROUTED AND CURED.
 A PROTECTIVE COAT HAS BEEN INCLUDED FOR THE TOP OF THE DECK AND OUTSIDE FACES OF THE OUTSIDE BEAMS.

BILL OF MATERIAL

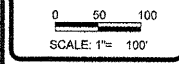
ITEM	UNIT	SUPERSTR.	SUBSTR.	TOTAL
CONCRETE STRUCTURES	CU. YD.		30.0	30.0
REINFORCEMENT BARS, EPOXY COATED	POUND	1698	4190	5888
PRECAST PRESTRESSED CONCRETE DECK BEAMS (17")	SQ. FT.	1185		1185
PROTECTIVE COAT	SQ. YD.	155.2		155.2
FURNISHING METAL SHELL PILES, 12" X 0.250	FOOT	308		308
DRIVING PILES	FOOT	308		308
TEST PILE METAL SHELLS	EACH		2	2
NAME PLATES	EACH			1
REMOVAL OF EXISTING STRUCTURES	EACH			1
STEEL RAILING, TYPE SM	FOOT	84		84
CONCRETE WEARING SURFACE, 5"	SQ. YD.	131.7		131.7
BRIDGE DECK GROOVING	SQ. YD.	131.7		131.7
BROKEN CONCRETE RIPRAP	SQ. YD.		160	160
FILTER FABRIC	SQ. YD.		160	160



Richard A. Baumann 3-29-12
 DATE
 RICHARD A. BAUMANN
 STERLING, ILLINOIS
 ILLINOIS LICENSED STRUCTURAL
 ENGINEER NO. 081-004732
 EXPIRES 11-30-2012

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF THE STRUCTURE AND COMPLIES WITH REQUIREMENTS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES".

S.N. 052-3513
GENERAL PLAN AND ELEVATION
SECTION 11-00317-00-BR
LEE COUNTY



REVISION	DATE

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 www.wendlergs.com phone: 815.238.2281
 Illinois Professional Design Firm No. 18-002849

GENERAL PLAN AND ELEVATION
 OF
PAW PAW ROAD BRIDGE
 FOR
LEE COUNTY

SHEET TITLE	GPE
JOB NUMBER	2110221
DATE	03/29/2012
SHEET NO.	6 of 14

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	7
ILLINOIS PROJECT BRS-0178(105)				
* 11-00317-00-BR				
CONTRACT NO. 85560				

SCALE: 1" = 1'-0"

REVISION	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR, BEH
CHECKED BY:	RLR, BEH
SUPERVISOR:	RLR
DATE:	03/23/2012

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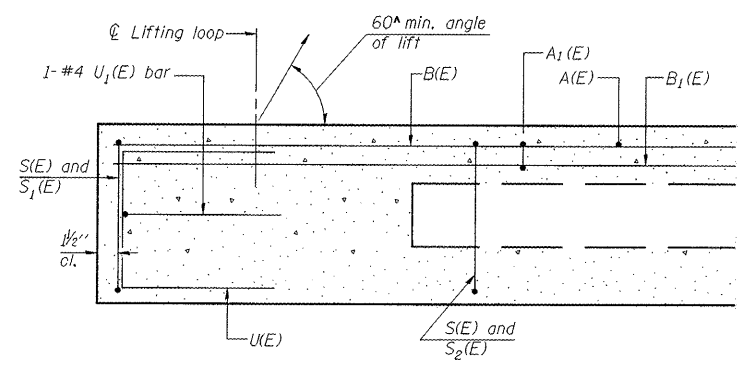
BEAM DETAILS OF PAW PAW ROAD BRIDGE FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
DETAILS

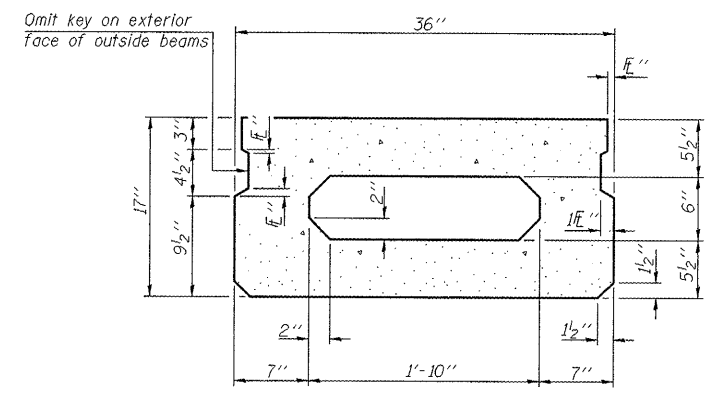
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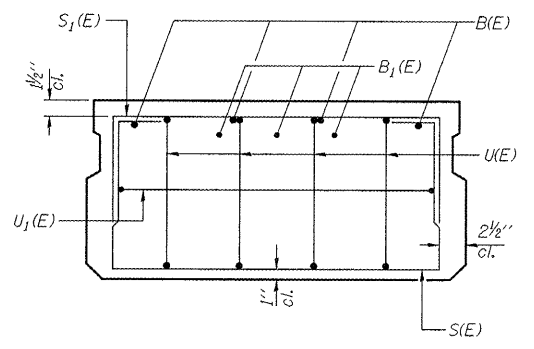
SHEET NO.
7 of 14



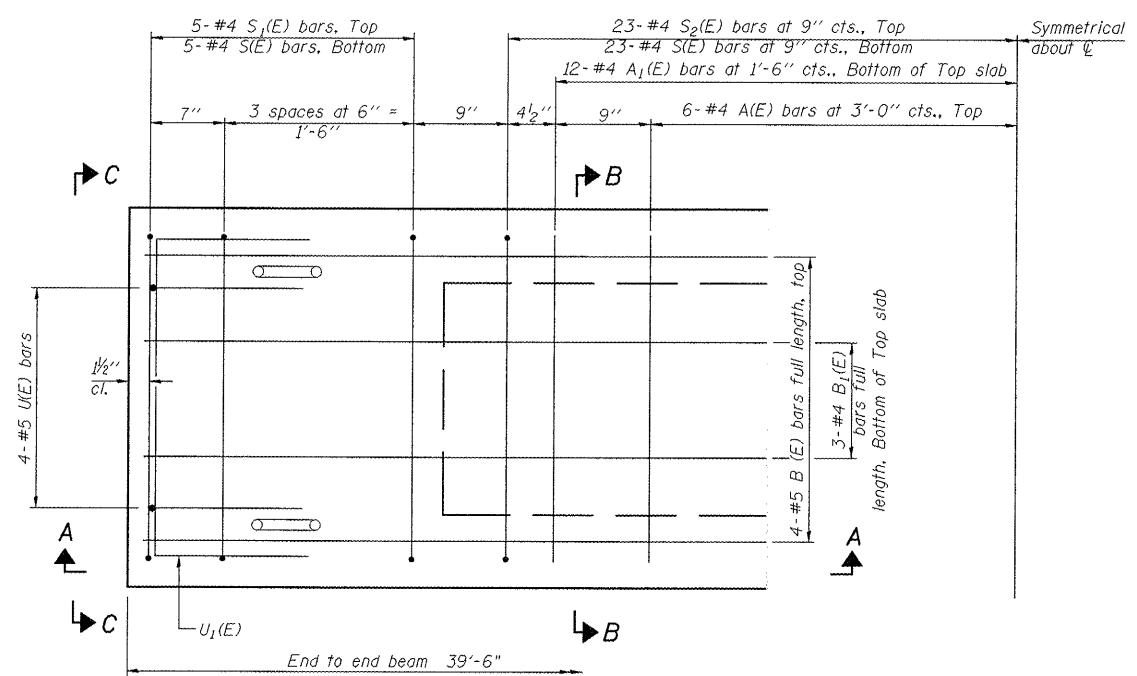
SECTION A-A



SECTION B-B
(Showing dimensions)

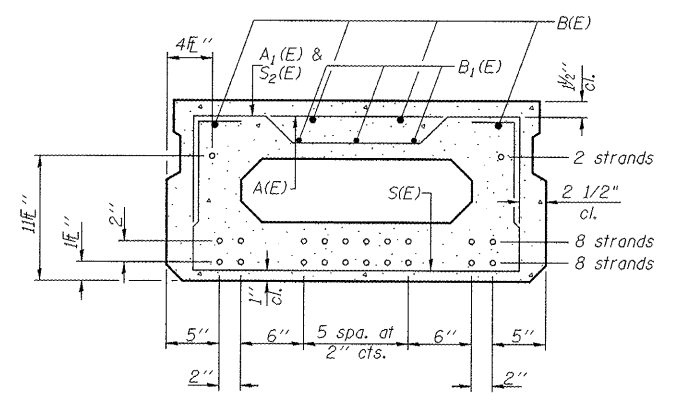


VIEW C-C



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 B-B
(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.

MINIMUM BAR LAP
 #4 bar = 2'-0"
 #5 bar = 2'-6"

BAR LIST
ONE BEAM ONLY
 (For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	2'-7"	—
A1(E)	24	#4	2'-10"	—
B(E)	4	#5	39'-3"	—
B1(E)	3	#4	39'-3"	—
S(E)	56	#4	5'-9"	U
S1(E)	10	#4	4'-3"	U
S2(E)	46	#4	4'-6"	U
U(E)	8	#5	3'-8"	U
U1(E)	2	#4	5'-0"	U

Note: See sheet 8 of 14 for additional details and Bill of Material.

D(E)	28	#4	2'-9"	U
------	----	----	-------	---

See sheets 9 & 10 of 14 for additional details.

PD-1736-0 7-1-10

S.N. 052-3513
 17" X 36" PPC DECK BEAM
 PPC DECK BEAM DETAILS
 SECTION 11-00317-00-BR
 LEE COUNTY

FAS ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	8

ILLINOIS PROJECT BR5-0178(105)
 • 11-00317-00-BR
 CONTRACT NO. 85560

SCALE: 1" = 1'-0"

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR
CHECKED BY:	RLR
SUPERVISOR:	RLR
BOOK NO.:	

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BEAM DETAILS OF PAW PAW ROAD BRIDGE FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE

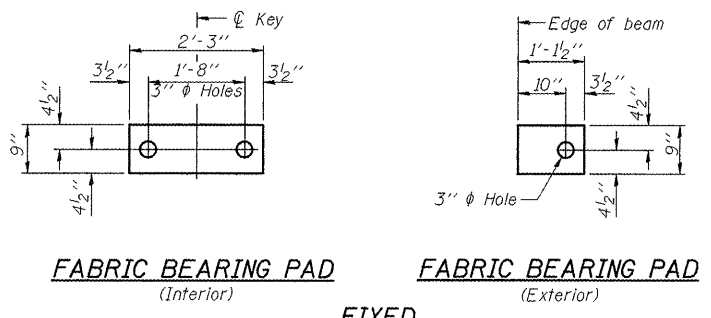
DETAILS

JOB NUMBER
2110221

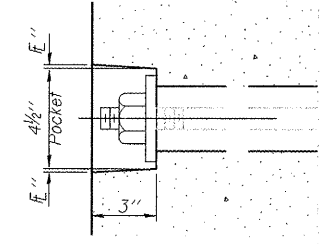
DATE
03/23/2012

SHEET NO.

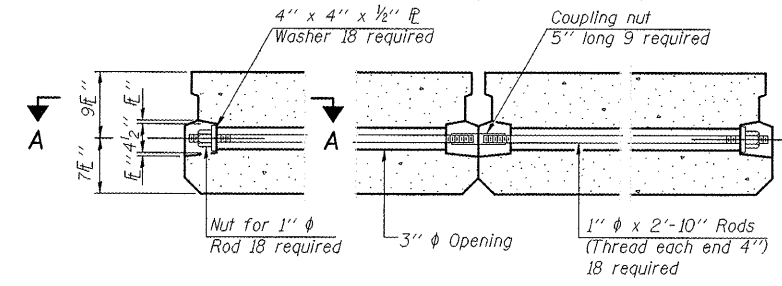
8 of 14



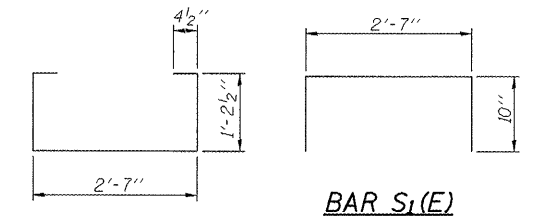
Notes:
 All bearing pads shall be 1" thick.
 Omit holes when using expansion bearings.
 Expansion bearing pad shall be bonded to the substructure.



SECTION A-A

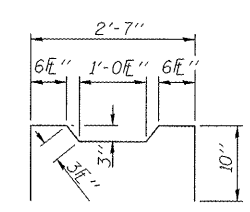


TYPICAL TRANSVERSE TIE ASSEMBLY

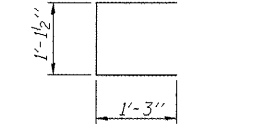


BAR S1(E)

BAR S(E)

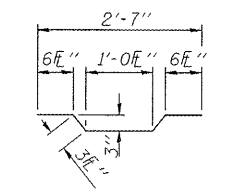


BAR S2(E)

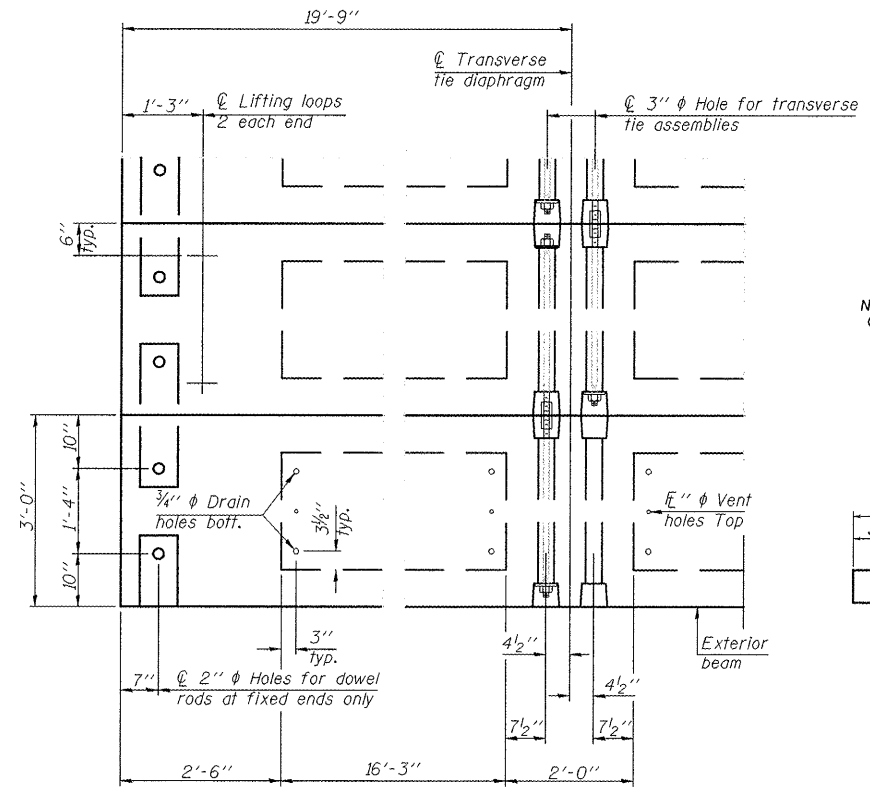


BAR U1(E)

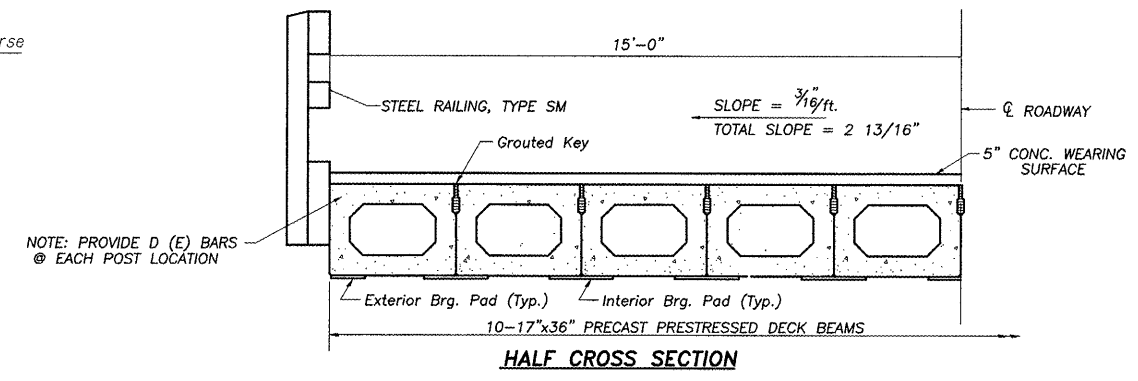
BAR U(E)



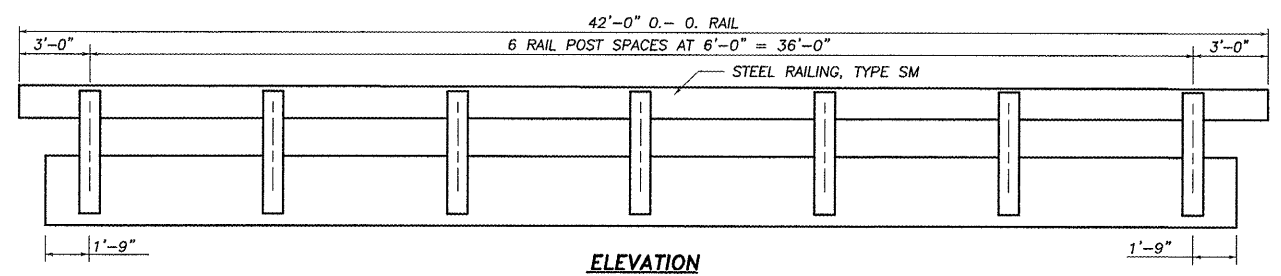
BAR A1(E)



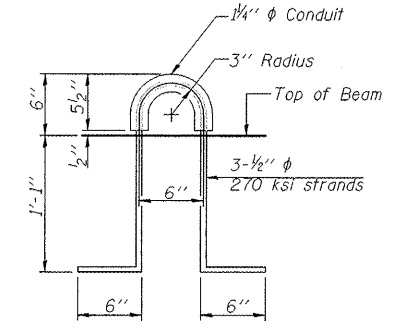
PLAN VIEW



HALF CROSS SECTION



ELEVATION



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1185
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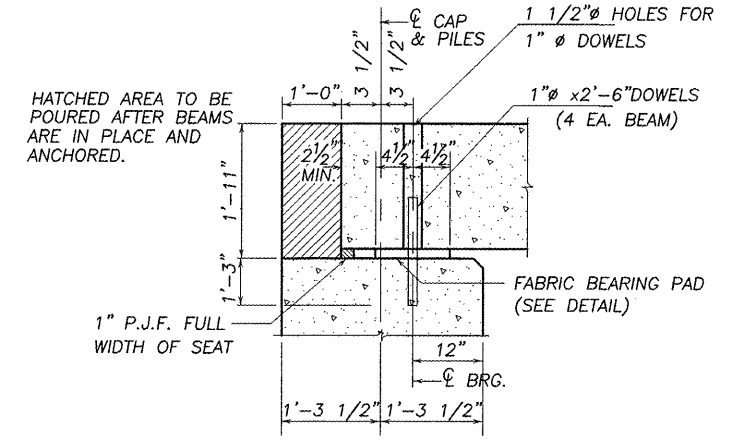
S.N. 052-3513
 17" X 36" PPC DECK BEAM
 PPC DECK BEAM DETAILS
 SECTION 11-00317-00-BR
 LEE COUNTY

NOTE: PROVIDE D (E) BARS @ EACH POST LOCATION

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

NOTES

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
- Reinforcement bars shall conform to ASTM A 706, Grade 60. (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.
- A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.
- 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.

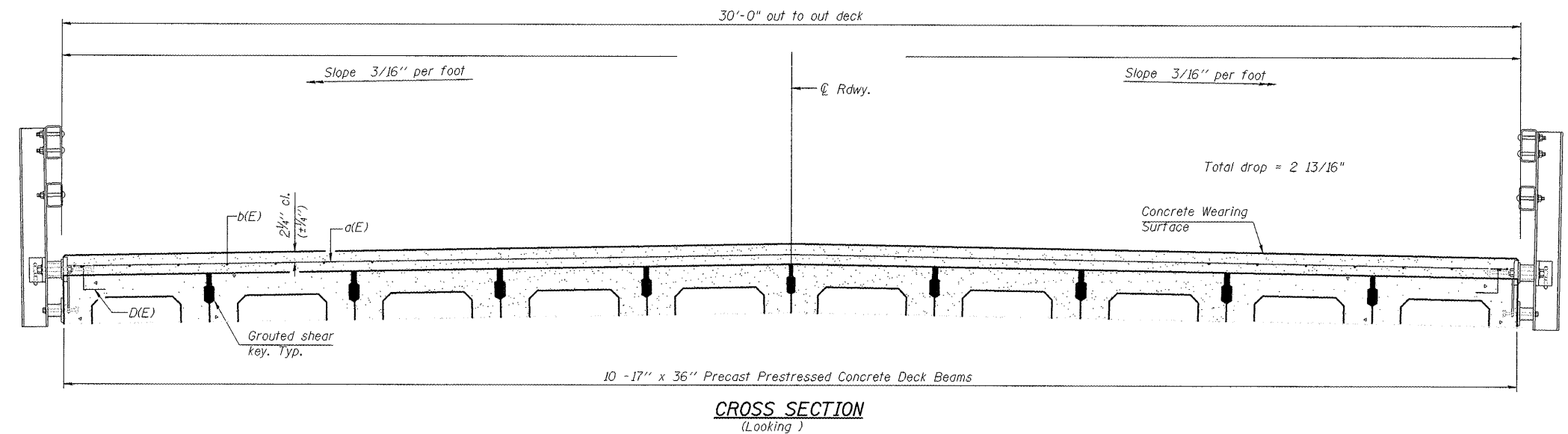
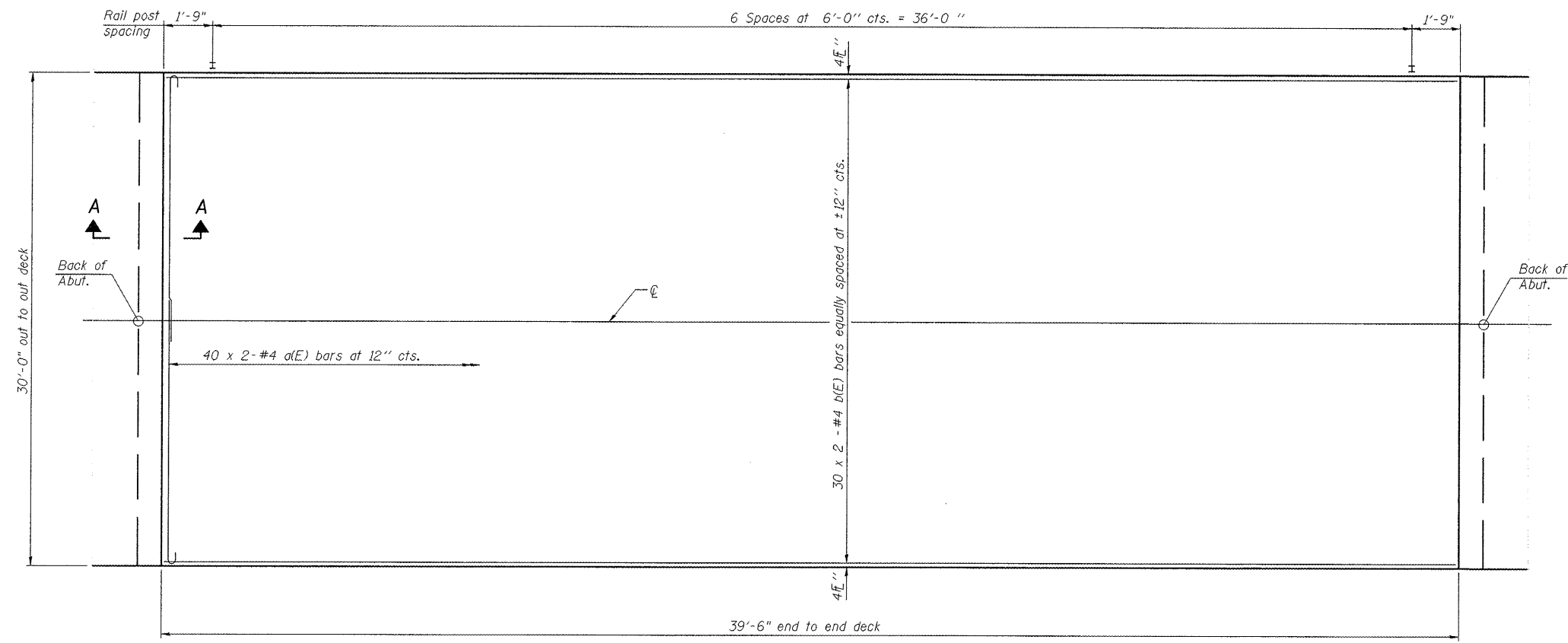


SECTION THRU ABUTMENTS AT RT. L'S

PD-1736-OD 7-1-10

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	9

ILLINOIS PROJECT BRS-0178(105)
 * 11-00317-00-BR
 CONTRACT NO. 85560



SECTION A-A

Notes:
 All concrete wearing surfaces shall be placed prior to casting a backwall and/or approach slab.
 See sheet of for fabric bearing pad details.

SCALE: 1" = 1'

REVISION	DATE

DESIGNED BY:	
CHECKED BY:	
DRAWN BY:	
SUPERVISOR:	
DATE:	

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SUPERSTRUCTURE DETAILS
 OF
PAW PAW ROAD BRIDGE
 FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
DETAILS

JOB NUMBER
 2110221

DATE
 03/23/2012

SHEET NO.
9 of 14

PDS-S-R34-0 7-1-10

Notes:
 See sheet 10 of 14 for Superstructure Details and Bill of Material.
 Bars indicated thus 20 x 2- #4 etc. indicates 20 lines of bars with 2 lengths per line.

MINIMUM BAR LAP
 #4 bar = 2'-0"

S.N. 052-3513
**17" X 36" PPC DECK BEAM
 CONCRETE OVERLAY DETAILS
 SECTION 11-00317-00-BR
 LEE COUNTY**

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	10
ILLINOIS PROJECT BRS-0178(105)				
* 11-00317-00-BR				
CONTRACT NO. 85560				

SCALE: 1" = 12"

REVISION	DATE

DESIGNED BY:	
CHECKED BY:	
APPROVED BY:	
DATE:	

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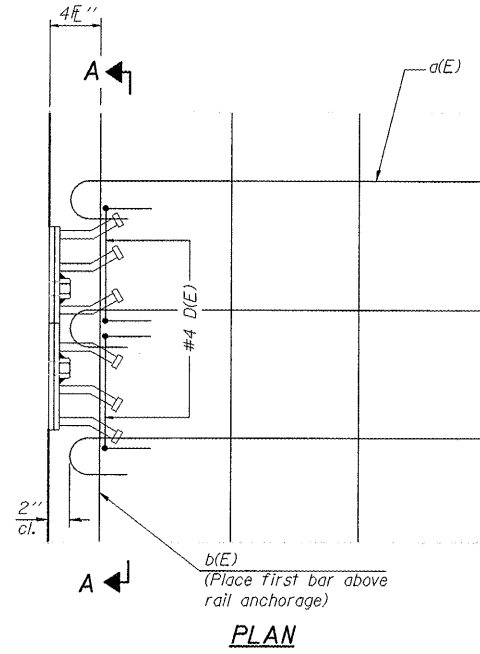
**SUPERSTRUCTURE DETAILS
 OF
 PAW PAW ROAD BRIDGE
 FOR
 LEE COUNTY HIGHWAY DEPARTMENT**

SHEET TITLE
DETAILS

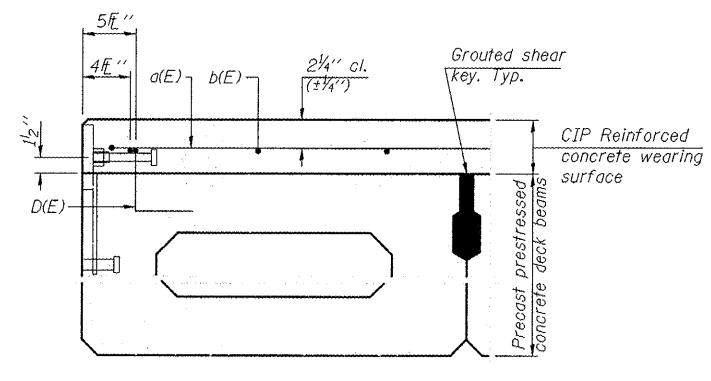
JOB NUMBER
 2110221

DATE
 03/23/2012

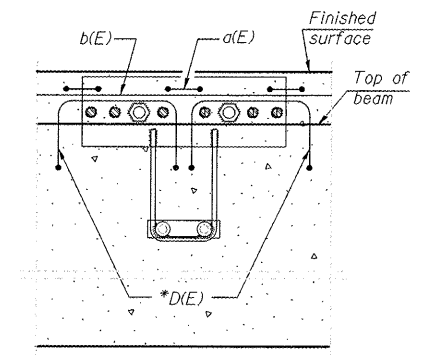
SHEET NO.
10 of 14



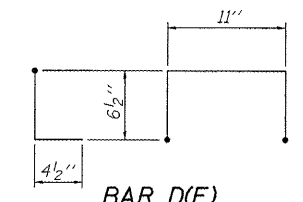
Notes:
 Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam.



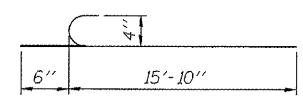
SECTION THRU FASCIA BEAM



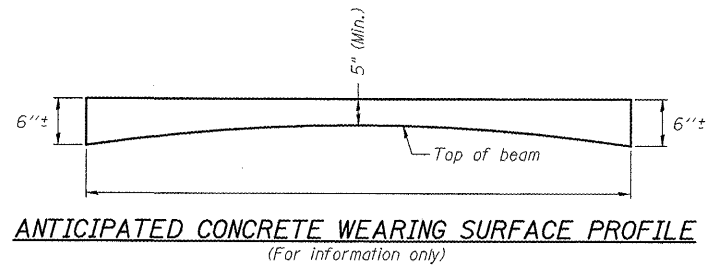
SECTION A-A



* Place 2-#4 D(E) bars in beam at each post location as shown. D(E) bar included in cost of beam.



MINIMUM BAR LAP
 #4 bar = 2'-0"



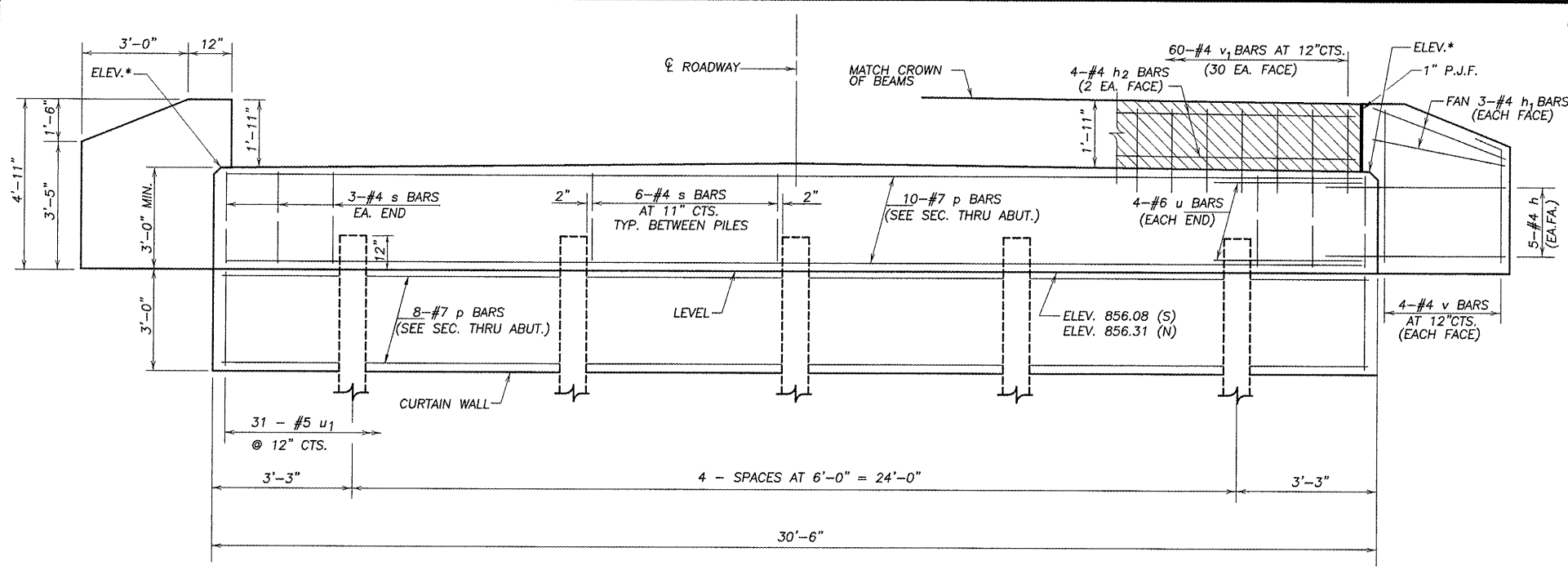
**SUPERSTRUCTURE
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	80	#4	16'-4"	C
b(E)	60	#4	20'-7"	—
Reinforcement Bars, Epoxy Coated			Pound	1698
Concrete Wearing Surface, 5"			Sq. Yd.	131.7

S.N. 052-3513
 17" X 36" PPC DECK BEAM
 BEAM DETAILS
 SECTION 11-00317-00-BR
 LEE COUNTY

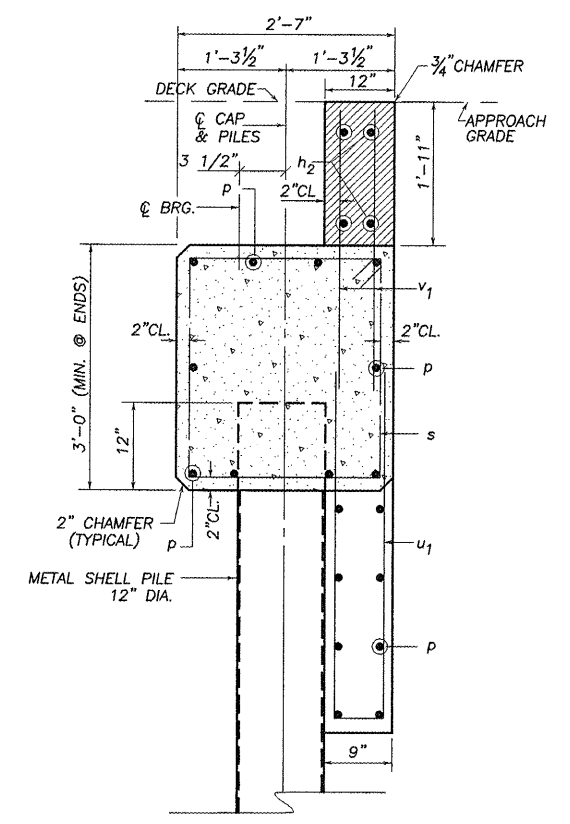
FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	11
ILLINOIS PROJECT BRS-0178(105)				
* 11-00317-00-BR				
CONTRACT NO. 85560				

NOTE: WINGWALLS ABOVE TOP OF CAP SHALL NOT BE POURED UNTIL THE DECK BEAMS ARE IN PLACE AND FASTENED.
 HATCHED AREA SHALL BE POURED AFTER DECK BEAMS ARE SET AND ANCHORED.
 WIDTH SHALL BE THE LIMITS OF THE CAP.

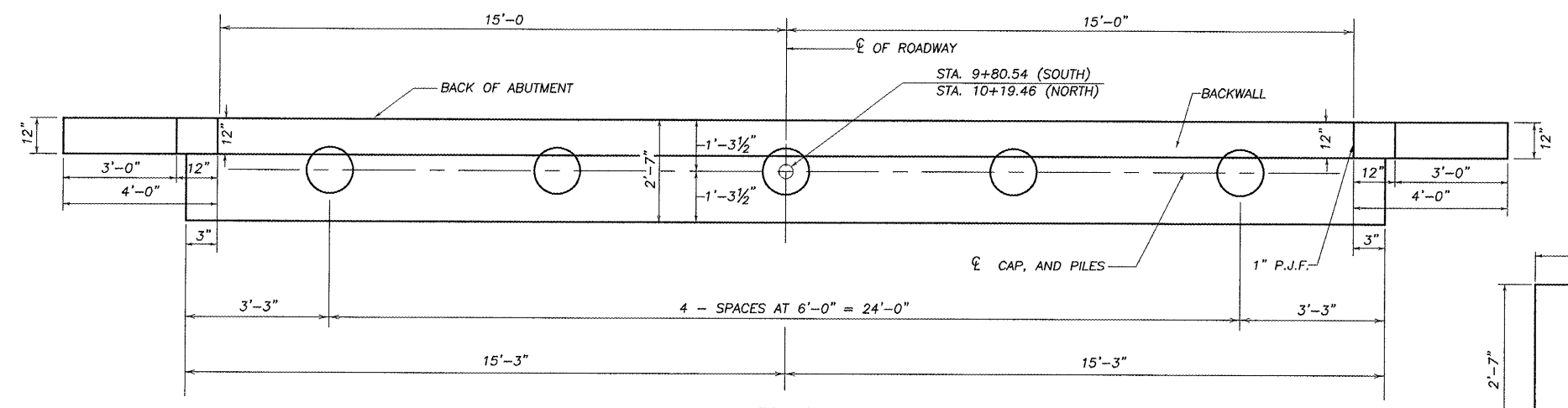


ELEVATION

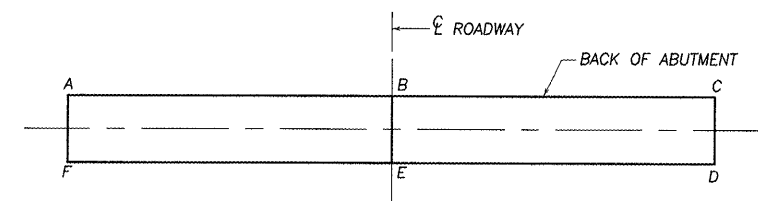
* FOR CAP ELEVATIONS SEE TABLE BELOW



SEC. THRU ABUT. (AT RIGHT ANGLES)

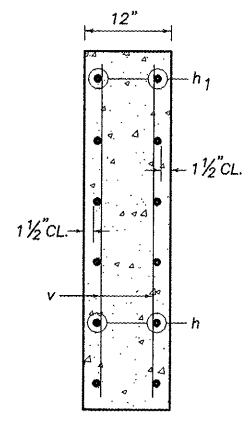


PLAN



ABUTMENT	A	B	C	D	E	F
S	859.08	859.32	859.08	859.09	859.33	859.09
N	859.32	859.56	859.32	859.31	859.55	859.31

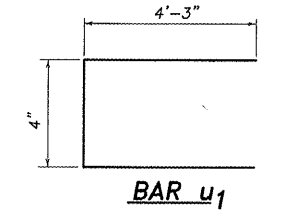
ELEVATION TOP OF ABUTMENTS



SECTION THRU WINGWALL

PILE DATA INFORMATION

TYPE AND SIZE: METAL SHELL - 12 IN. DIA. X 0.25 IN. WALLS
 NOMINAL REQUIRED BEARING: 252 KIPS
 ALLOWABLE RESISTANCE AVAILABLE: 84 KIPS
 NO. REQUIRED : 8+2 TEST PILES
 EST. LENGTH: 36' - S. ABUT. ; 41' - N. ABUT.
 MIN. PENETRATION 10' BELOW TOP OF RAIL
 THE METAL SHELL PILES SHALL BE ACCORDING TO ASTM A 252 GRADE 3.



BILL OF MATERIAL 2 ABUTMENTS

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	5'-6"	—
h1	24	#4	3'-8"	—
h2	8	#4	29'-6"	—
p	30	#7	30'-0"	—
s	60	#4	10'-3"	□
u	16	#6	10'-2"	□
u1	62	#5	8'-10"	□
v	32	#4	4'-6"	—
v1	120	#4	3'-8"	—
CONCRETE STRUCTURES			CU. YD.	30.0
REINFORCEMENT BARS (EPOXY CTD.)			POUND	4190
FURNISHING METAL SHELL PILES 12" x 0.25"			FOOT	308
DRIVING PILES			FOOT	308
TEST PILE METAL SHELLS			EACH	2

SN 052-3513
 SUBSTRUCTURE-ABUTMENTS
 SECTION 11-00317-00-BR
 LEE COUNTY

REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY: RLR
 DRAWN BY: RLR/DJV
 DRAWING NAME: abutment
 SURVEYED BY:
 CHECKED BY:
 BOOK NO.:

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 Illinois Professional Design Firm No. 184-000848

SUBSTRUCTURE OF PAW PAW ROAD BRIDGE FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
ABUTMENTS

JOB NUMBER
 2110221

DATE
 03/29/2012

SHEET NO.
11 of 14

PAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	12
ILLINOIS PROJECT BRS-0178(105)				
* 11-00317-00-BR				
CONTRACT NO. 85560				

SCALE: 1" = 1'-0"

NO.	DATE	REVISIONS

DESIGNED BY	RLR
DRAWN BY	RLR
CHECKED BY	SM-Raj
DATE	
BOOK NO.	

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TYPE SM RAIL DETAILS
 OF
 PAW PAW ROAD BRIDGE
 FOR
 LEE COUNTY HIGHWAY DEPARTMENT

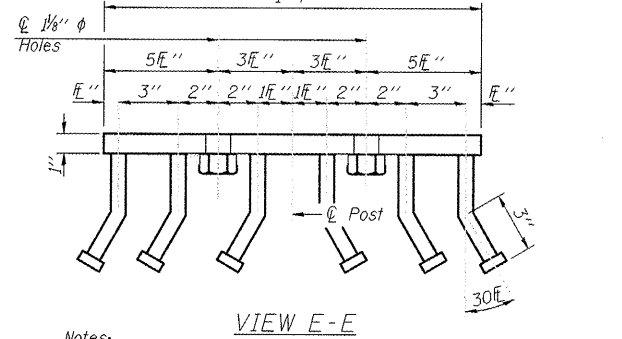
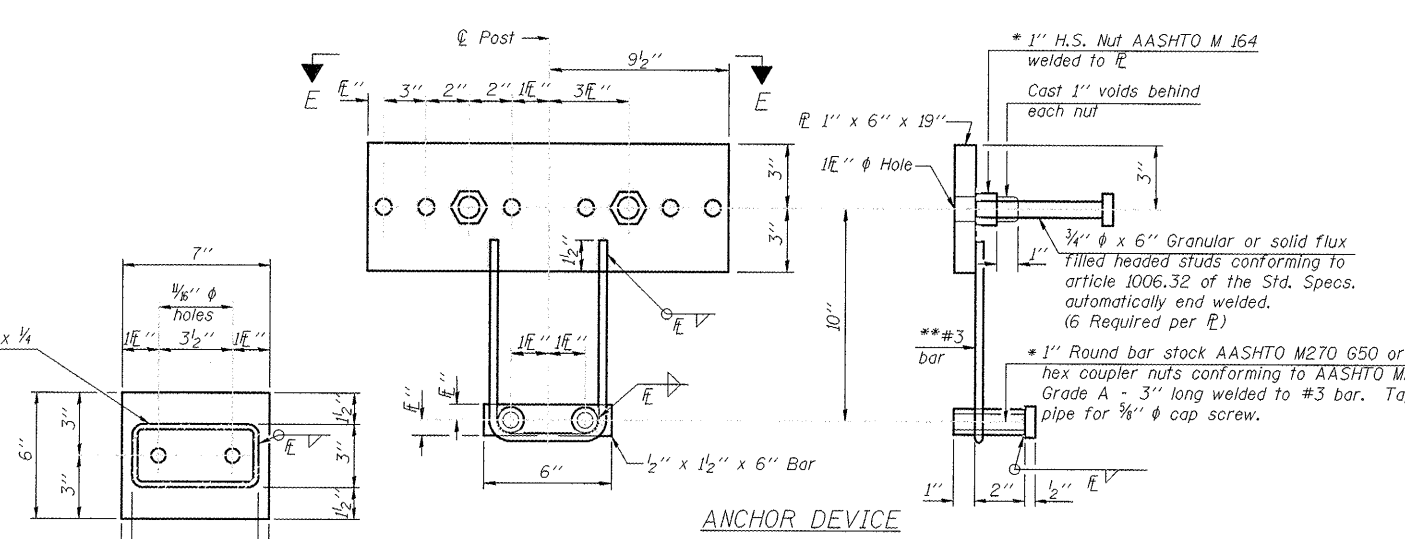
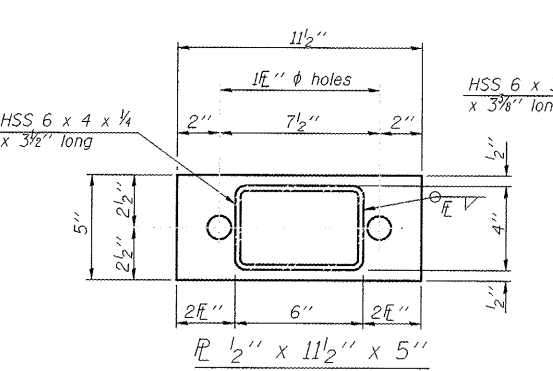
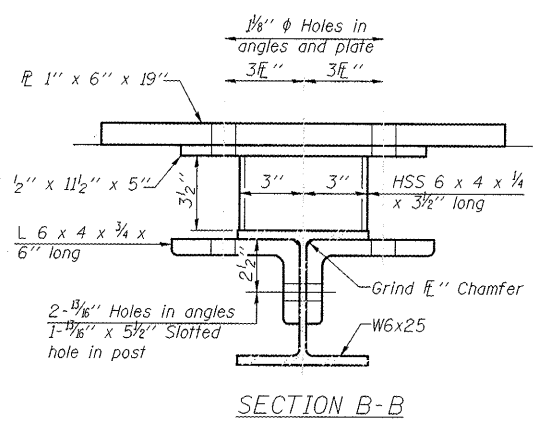
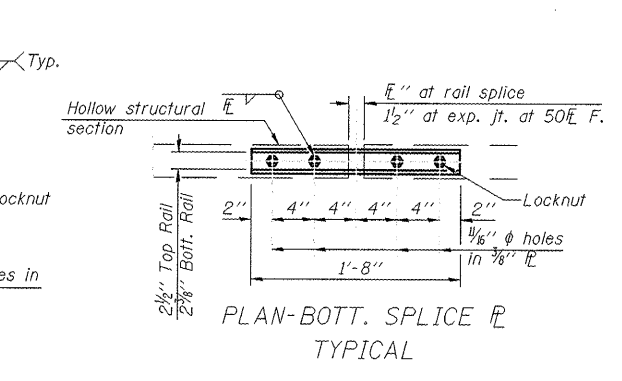
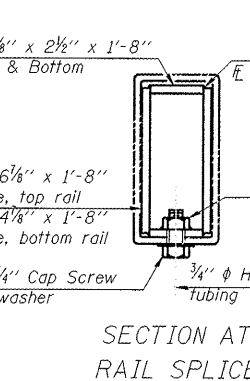
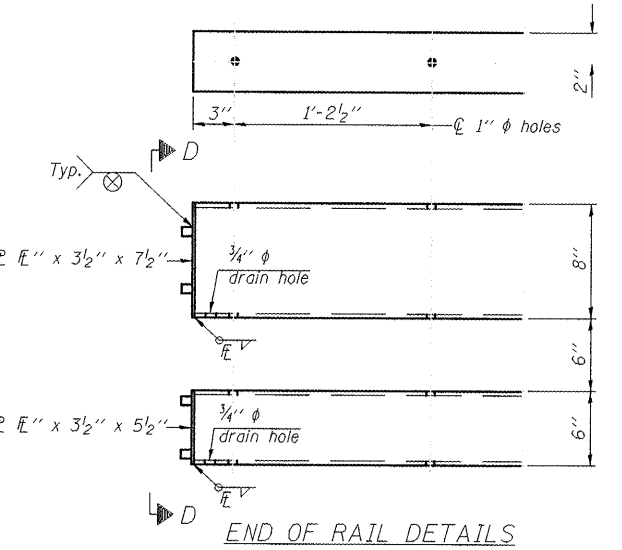
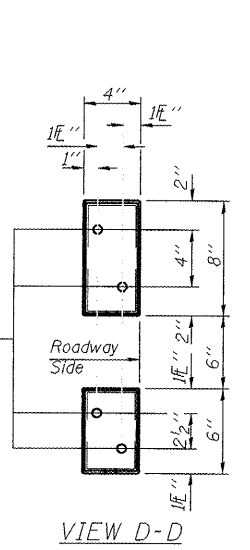
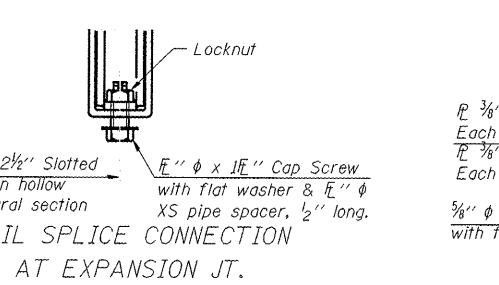
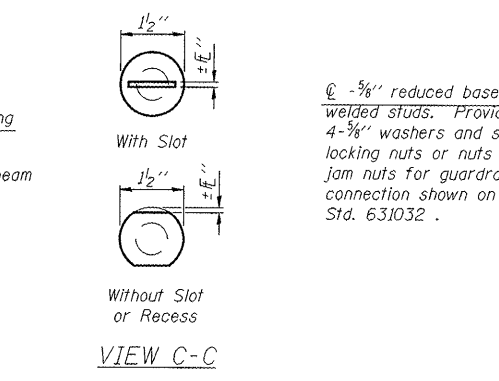
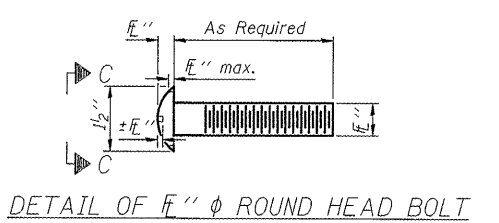
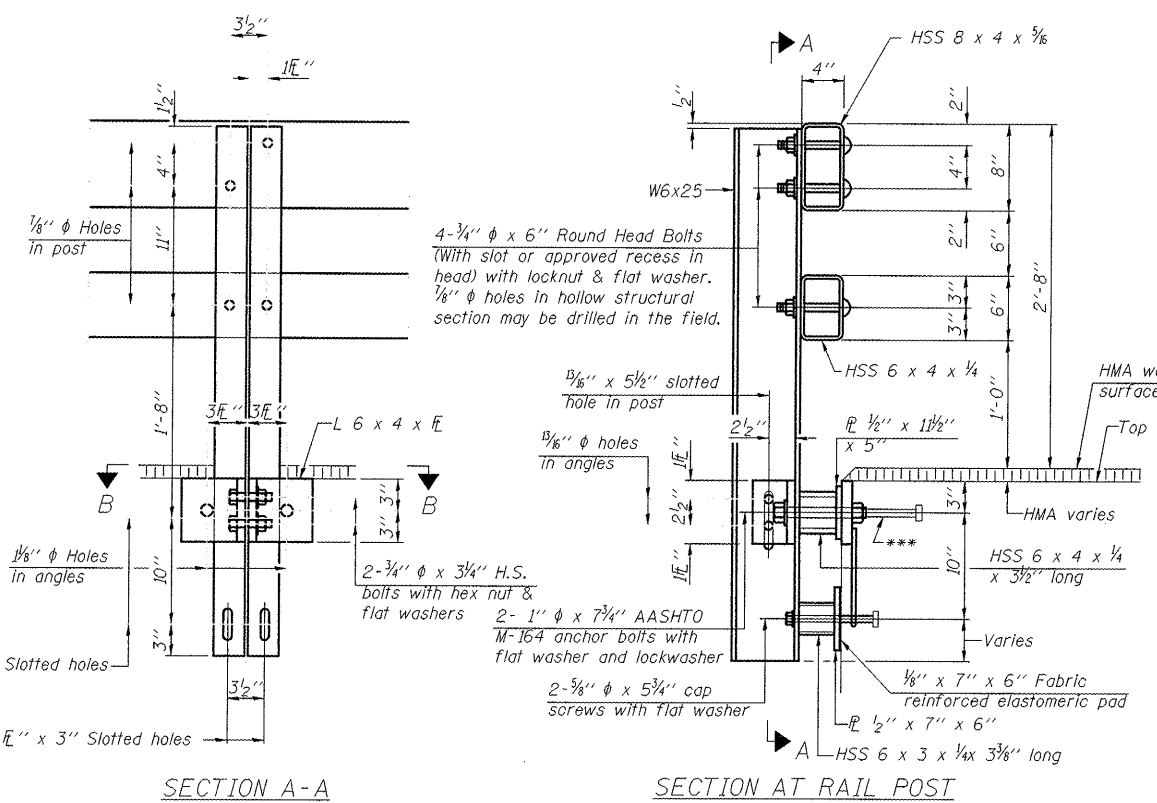
SHEET TITLE

RAIL

JOB NUMBER
2110221

DATE
03/23/2012

SHEET NO.
12 of 14



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 SM.
 All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.
 *** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

BILL OF MATERIAL

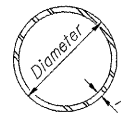
Item	Unit	Quantity
Steel Railing, Type SM	Foot	84

S.N. 052-3513
 TYPE SM RAIL DETAILS
 SECTION 11-00317-00-BR
 LEE COUNTY

R-34HMAWS 7-1-10 (6'-3" Maximum Post Spacing) (1E" minimum to 3E" maximum HMA thickness)

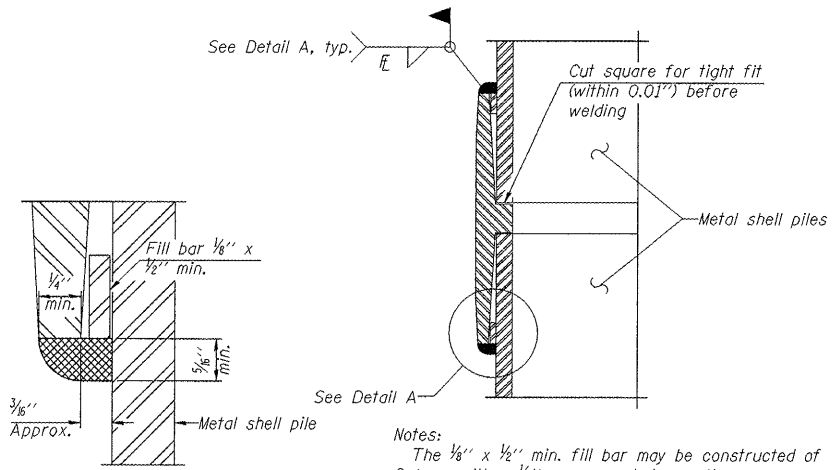
*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.

** 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".



METAL SHELL PILE TABLE

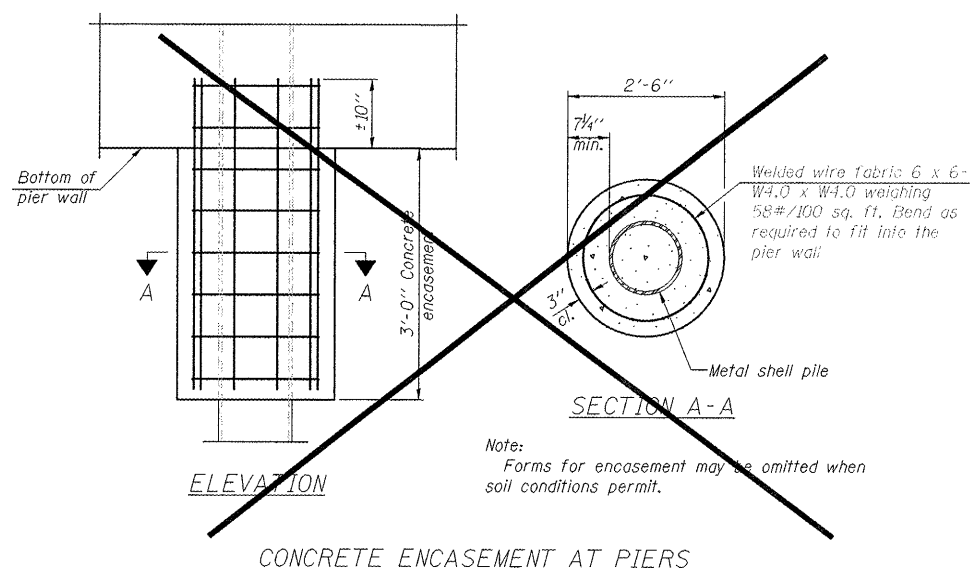
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.3 /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



DETAIL A

WELDED COMMERCIAL SPLICE

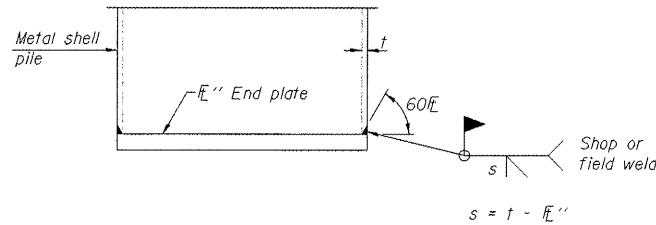
Notes:
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.



SECTION A-A

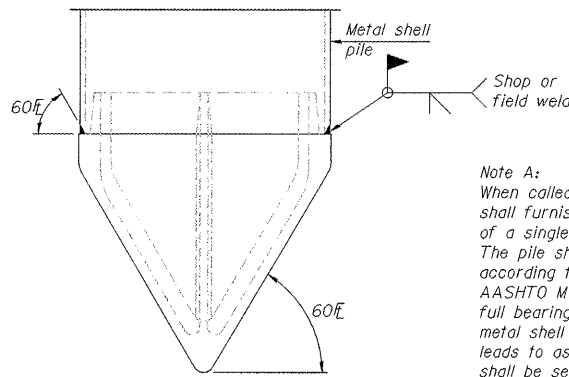
CONCRETE ENCASEMENT AT PIERS

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



END PLATE ATTACHMENT

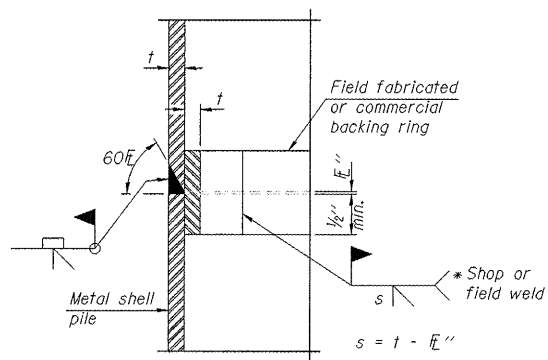
$s = t - E$



METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

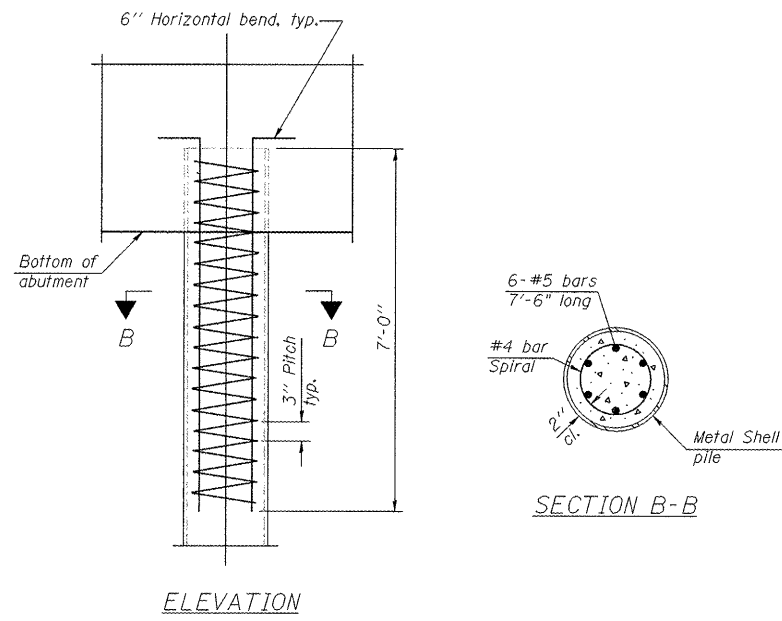
Note A:
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.



COMPLETE PENETRATION WELD SPLICE

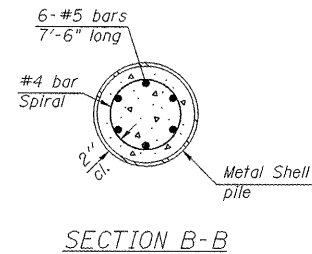
* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.

Note:
 The metal shell piles shall be according to ASTM A 252 Grade 3.



ELEVATION

METAL SHELL REINFORCEMENT AT ABUTMENTS



SECTION B-B

SCALE: 1" = 1'

REVISIONS	DATE

DESIGNED BY	CHECKED BY
DRAWN BY	DATE
SCALE	

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PILE DETAILS OF PAW PAW ROAD BRIDGE FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE

PILE DETAILS

JOB NUMBER
2110221

DATE
03/23/2012

SHEET NO.

13 of 14

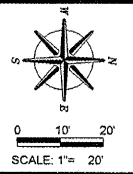
SN 052-3513
 PILING DETAILS
 SECTION 11-00317-00-BR
 LEE COUNTY

F-MS

7-1-10

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
178	*	LEE	14	14

ILLINOIS PROJECT BRS-0178(105)
 * 11-00317-00-BR
 CONTRACT NO. 85560



REVISIONS	DATE

DESIGNED BY	RLR	DRYAN BY	BDS	DRAWING NAME	DATE
				2110221.AWG	

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PLANS FOR PROPOSED
 OF
PAW PAW ROAD BRIDGE
 FOR
 LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE

**SWPP
 PLAN**

JOB NUMBER
 2110221

DATE
 03/23/2012

SHEET NO.

14 of 14

