8-1-08 Letting, Item 068

ROUTE	COUNTY	SECTION	SHEET/OF
FAS 863	RANDOLPH	06-00039-05-BR	1/14
FEDERAL AID PROJECT			
CONTRACT NO. 97355			

INDEX OF SHEETS

SHEET NO	CONTENT
1	COVER SHEET WITH LOCATION MAP
2	TYPICAL SECTIONS, GENERAL NOTES, SUMMARY OF QUANTITIES
3	POROUS GRANULAR EMBANKMENT DETAILS AND PAVEMENT SCHEDULE
4	PLAN AND PROFILE
5–14	BRIDGE SHEETS

HIGHWAY STANDARDS:
BLR 21-7, 515001-02, 631032-03, 701901

UTILITIES

EGYPTIAN TELEPHONE CO-OP
618-774-1000

VERIZON NORTH
309-663-3422

CHARTER COMMUNICATIONS
618-242-9512

AMEREN/IP
618-236-6210

J.U.L.I.E.
1-800-892-0123

EXISTNG STRUCTURE: 3 SPAN, 99'-10" LONG BRIDGE CONSISTING OF CAST IN PLACE CONCRETE DECK AND STEEL STRINGERS ON TIMBER PILES. STRUCTURE NO. 079-3192

PROPOSED STRUCTURE: 3 SPAN, 91' 6" LONG PPC DECK BEAM BRIDGE ON STEEL PILES. STRUCTURE NO. 079-3195

DESIGN INFORMATION

RURAL COLLECTOR
CLASS III ROADWAY
DESIGN SPEED 50 MPH
ADT (2008) – 1700
(2018) – 2000

PAVEMENT DESIGN INFORMATION

STRUCTURAL DESIGN TRAFFIC: 2000 (YEAR 2018) PV 1760, SU 140, MU 100

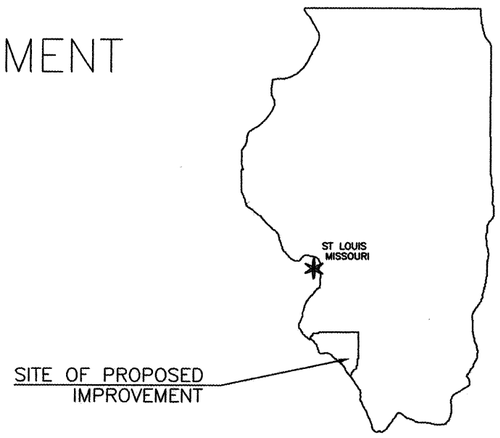
MINIMUM SOIL SUPPORT IBR = 3

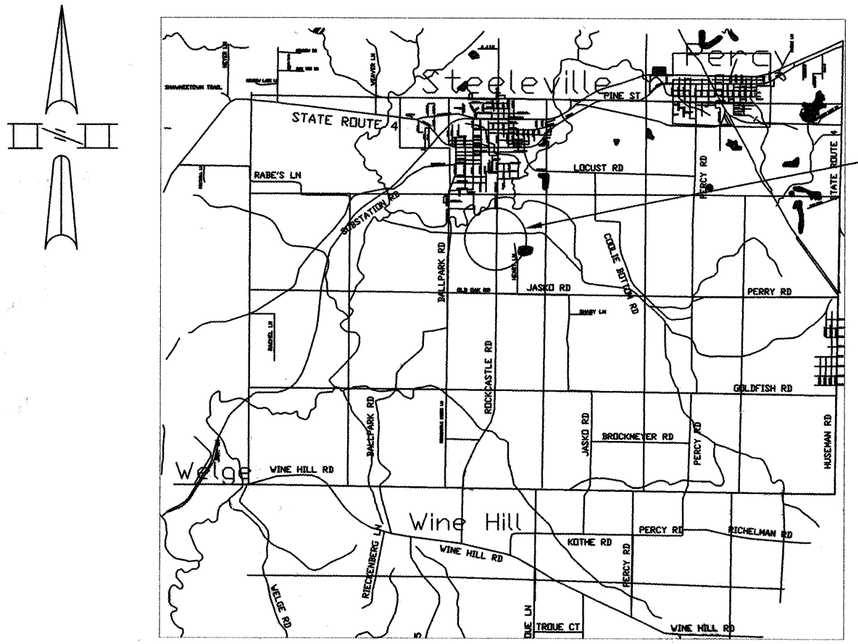
T.F. = 0.095 Eri = 3
PAVEMENT STRUCTURE MATERIALS: SURFACE: BITUMINOUS CONCRETE CLASS I
BASE COURSE: AGGREGATE TYPE A

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED LOCAL AGENCY IMPROVEMENT

RANDOLPH COUNTY
FAS 863 (COUNTY HIGHWAY 19)
SECTION 06-00039-05-BR
PROJECT NO. BRS-863(106)
JOB NO C-98-301-08
BRP PROGRAM





PROPOSED IMPROVEMENT
STA. 45+86 TO 49+00

1 MILE

NET LENGTH OF IMPROVEMENT
314 LIN FT. = 0.059 MILES

THESE PLANS WERE PREPARED BY ME OR A MEMBER OF MY STAFF WORKING UNDER MY PERSONAL SUPERVISION.

Michael Pribeling — COUNTY ENGINEER — 5/28/2008 DATE

MICHAEL R. PRIBELING
062-044850
REGISTERED PROFESSIONAL ENGINEER
OF
ILLINOIS
11/30/2009 EXPIRATION DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

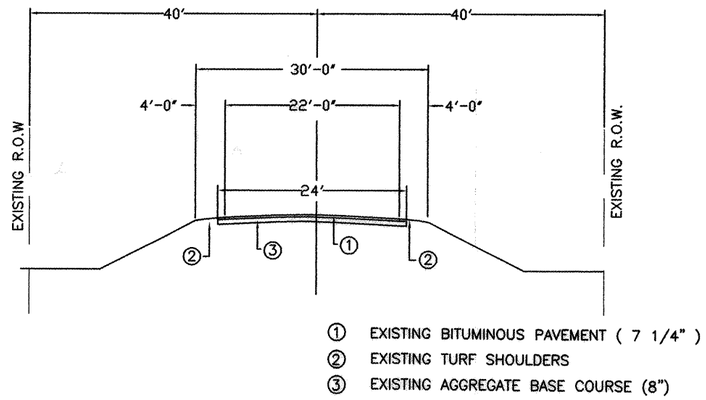
Approved May 28 20 08
Michael Pribeling
County Engineer

Passed 5-30 20 08
District 8 Local Roads & Streets Engineer

Releasing for Bid Based on Limited Review 5-30 20 08
Mary C. Lamie, P.E.
Deputy Director of Highways
Region Five Engineer

ROUTE	COUNTY	SECTION	SHEET/OF
FAS 863	RANDOLPH	06-00039-05-BR	2/14

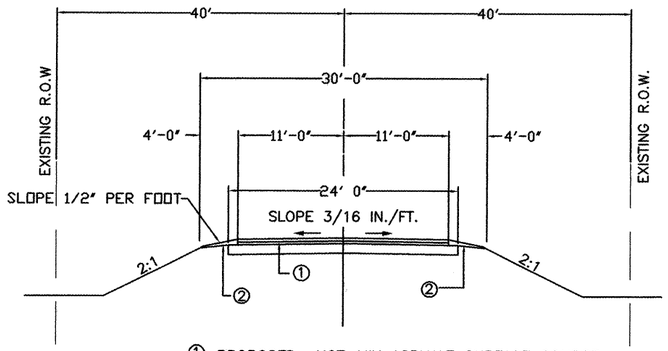
CONTRACT NO. 97355



① EXISTING BITUMINOUS PAVEMENT (7 1/4")
② EXISTING TURF SHOULDERS
③ EXISTING AGGREGATE BASE COURSE (8")

EXISTING TYPICAL SECTION

STA. 45+86 TO STA. 46+71.15
STA. 47+62.65 TO STA. 49+00



① PROPOSED HOT-MIX ASPHALT SURFACE COURSE, MIX "C" N70 (2")
② PROPOSED TURF SHOULDER

PROPOSED TYPICAL SECTION

STA. 45+86 TO STA. 46+71.15
STA. 47+62.65 TO STA. 49+00

QUANTITIES USED FOR ESTIMATING

BITUMINOUS MATERIALS (PRIME COAT) 0.07 GAL/SQ.YD.

SUMMARY OF QUANTITIES

BRIDGE CONSTR CODE – X080-2A

QUANTITY	UNIT	ITEM	ITEM NUMBER	
257	CU YD	CHANNEL EXCAVATION	20300100	
28	TON	POROUS GRANULAR EMBANKMENT	20700110	
242	TON	STONE DUMPED RIPRAP CLASS A4	28100807	
50	GALLON	BITUMINOUS MATERIAL (PRIME COAT)	40600100	
147	SQ YD	HOT-MIX ASPHALT SURFACE REMOVAL – BUTT JOINT	40600982	
111	TON	HOT-MIX ASPHALT SURFACE COURSE, MIX"C" N70	40603315	
1	L SUM	REMOVAL OF EXISTING STRUCTURES	50100200	
7.6	CU YD	CONCRETE REMOVAL	50102400	
37	CU YD	CONCRETE STRUCTURES	50300225	
17.4	CU YD	CONCRETE ENCASEMENT	50300280	
2513	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	50400305	
4300	POUND	REINFORCEMENT BARS	50800105	
180	FOOT	STEEL BRIDGE RAIL, TYPE SM	50901050	*
1029	FOOT	FURNISHING STEEL PILES HP10X42	51201400	
1029	FOOT	DRIVING PILES	51202305	
2	EACH	TEST PILE STEEL HP10X42	51203400	
18	EACH	PILE SHOES	51204650	
1	EACH	NAME PLATES	51500100	
280	SQ YD	WATERPROOFING MEMBRANE SYSTEM	58100200	
540	FOOT	PORTLAND CEMENT MORTAR FAIRING COURSE	58300100	
4	EACH	TRAFFIC BARRIER TERMINAL, TYPE 6A	63100087*	
4	EACH	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	63100167*	
1	L SUM	MOBILIZATION	67100100	
4	EACH	TERMINAL MARKER-DIRECT APPLIED	78201000*	
1	EACH	STRUCTURE EXCAVATION PROTECTION FOR PILE BENTS, NO. 1	X5020301	
1	EACH	STRUCTURE EXCAVATION PROTECTION FOR PILE BENTS, NO. 2	X5020302	

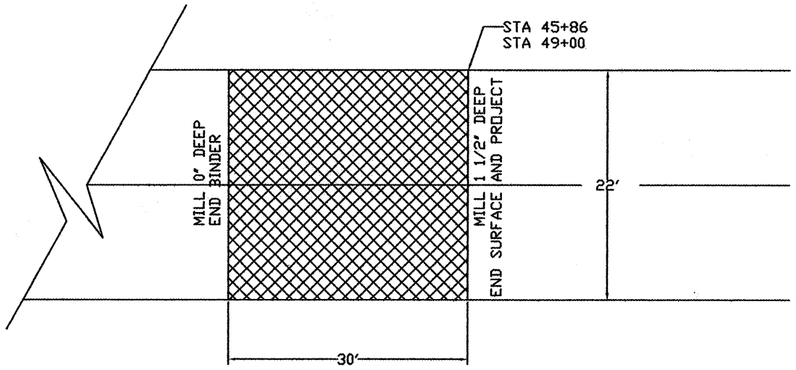
* DENOTES SPECIALTY ITEMS.

GENERAL NOTES

1. ALL CONSTRUCTION SIGNS SHALL BE 48 INCH FLUORESCENT ORANGE.
2. PAVEMENT MARKING TO BE DONE BY OTHERS.

ROUTE	COUNTY	SECTION	SHEET/OF
FAS 863	RANDOLPH	06-00039-05-BR	3/14

CONTRACT NO. 97355

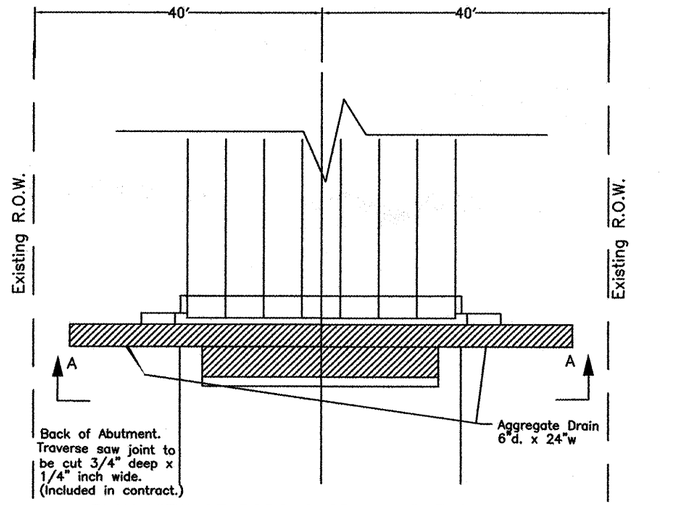


BUTT JOINT DETAIL

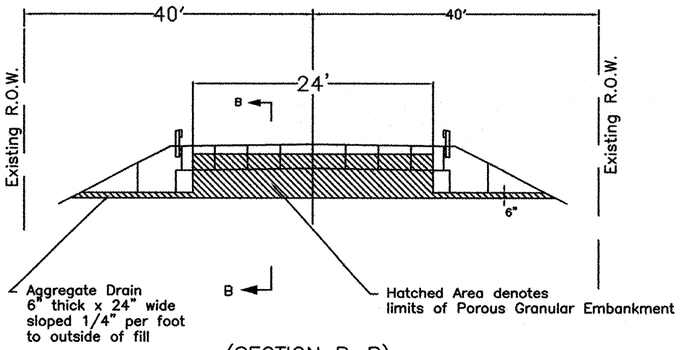
LOCATION	HOT MIX ASPHALT SURFACE TON	CONC. REMOV. CU YD	CHANNEL EXCAV CU YD	STONE DUMPED RIPRAP TON
STA. 45+86 TO STA. 46+71.15	26	3.8		
STA. 46+71.15 STA. 47+62.65	41		257	242
STA. 47+62.65 TO STA. 49+00	44	3.8		
TOTAL	111	7.6	257	242

MIXTURE REQUIREMENTS

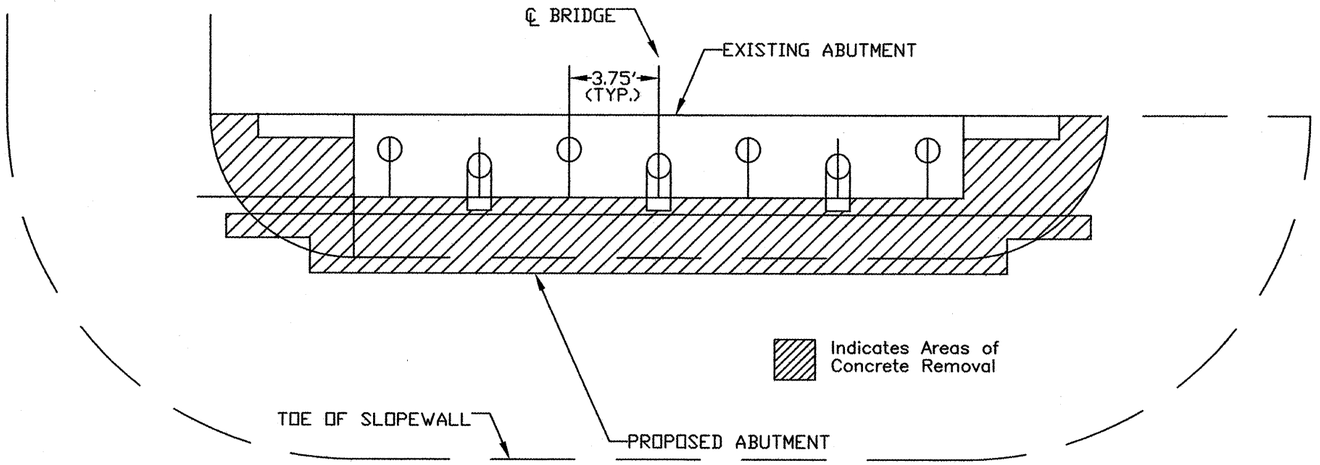
MIXTURE USE	SURFACE		
AC/PG	PG 64-22		
RAP % (MAX)	0		
DESIGN AIR VOIDS	4.0% @ Ndes=70		
MIX COMPOSITION (GRADATION MIXTURE)	9.5		
FRICTION AGG	MIXTURE C		

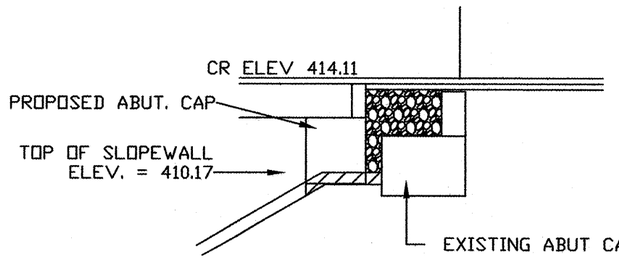


PLAN VIEW OF POROUS GRANULAR EMBANKMENT

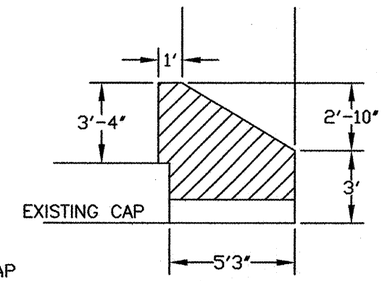


(SECTION B-B)
TYPICAL SECTION THRU
POROUS GRANULAR EMBANKMENT





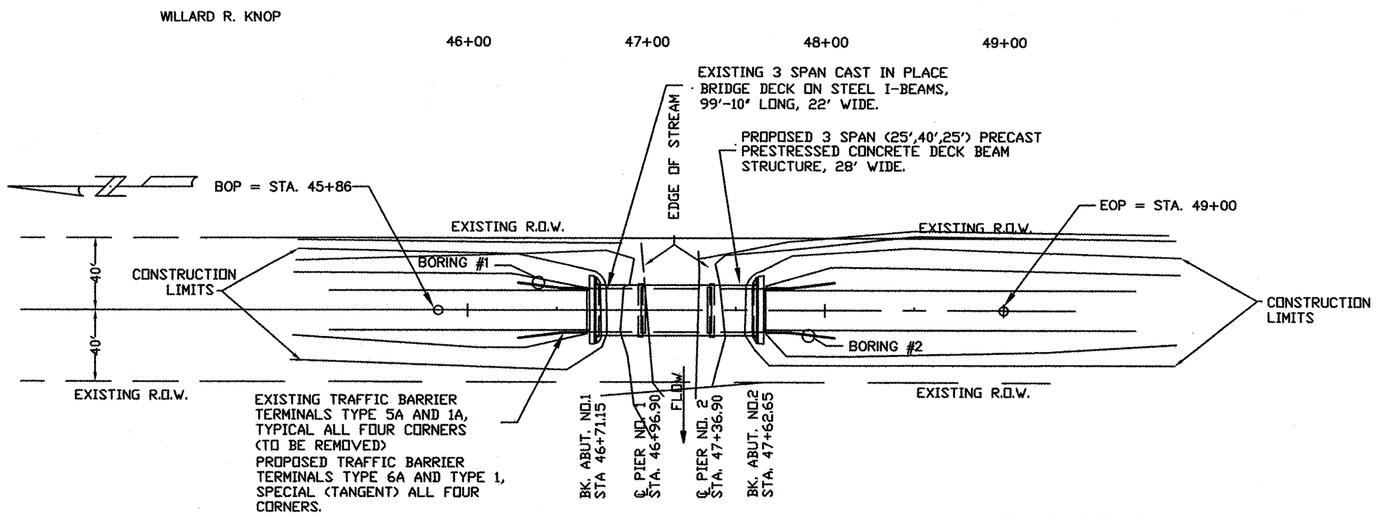
SECTION B-B



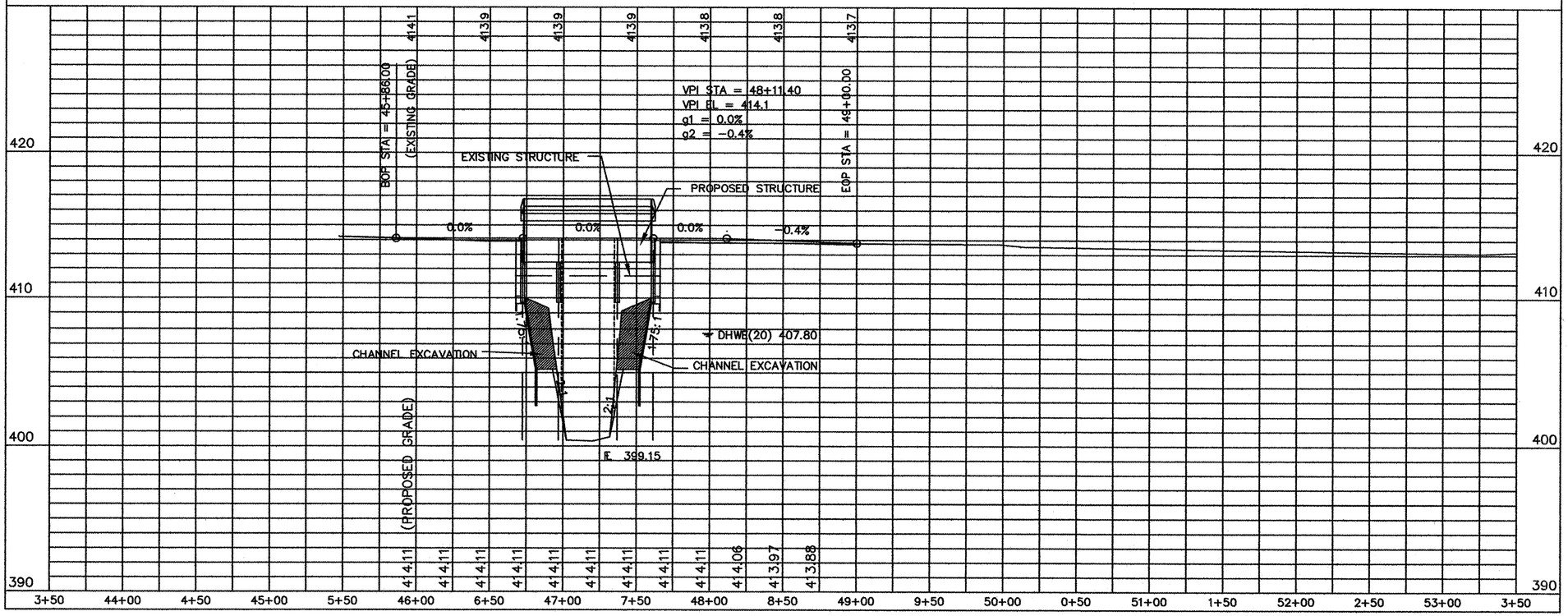
WING WALL REMOVAL

ROUTE	COUNTY	SECTION	SHEET/OF
FAS 863	RANDOLPH	06-00039-05-BR	4/14

CONTRACT NO. 97355



SCALES:
1" = 50' HOR
1" = 5' VER



Plan and Profile Sta 46+00 to Sta 49+00

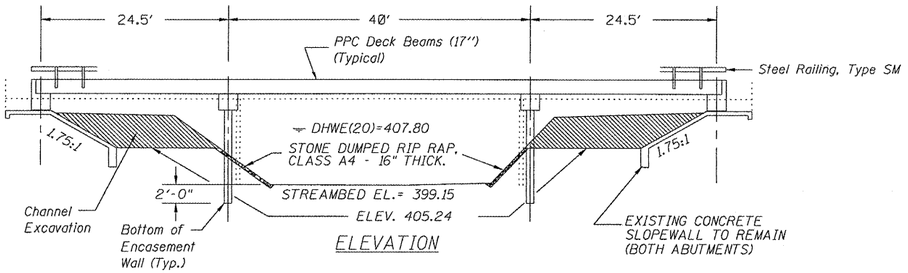
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	COUNTY	SECTION	SHEET/OF
FAS 863	RANDOLPH	06-00039-05-BR	5/14
CONTRACT NO. 97355			

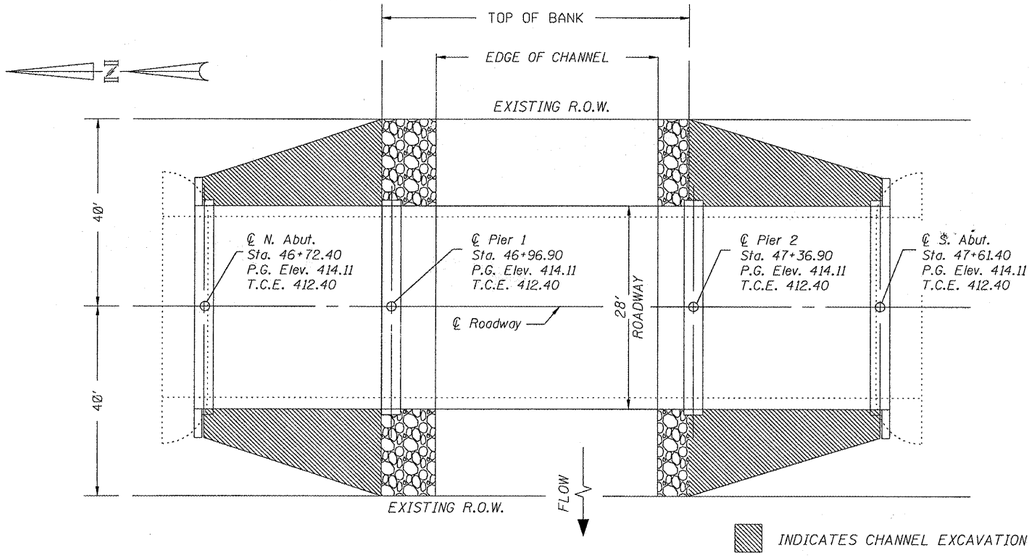
B.M.-
Square in top of N.E. Wing
Sta 46+67. Elev 413.95.

Existing Structure:
3- Span, 100 ft. long, 22 ft. wide Steel I-Beam Structure on wood piles, with concrete deck.

Salvage: None



ELEVATION



PLAN

INDICATES CHANNEL EXCAVATION

INDICATES STONE DUMPED RIP RAP

COX CREEK DRAINAGE DITCH
BUILT 2008 BY
RANDOLPH COUNTY
SEC 06-00039-05-BR
F.A.S. RT. 863 STA. 47+16.90
STR NO 079-3195 LOADING HS20

LETTERING FOR NAME PLATE

Locate Name Plate at Northwest Corner of Bridge (See Sht. 10 of 10)

GENERAL NOTES

1. The contractor shall drive test piles, as specified, in permanent locations as directed by the Engineer before ordering the remaining piles.
2. See Special Provisions for boring data.
3. A corrosion inhibitor shall be used in the concrete for the precast prestressed deck beams, according to Article 1020.05(b)(12) of the Standard Specifications.
4. All pile splices shall be accomplished by a complete joint penetration (CJP) weld of the entire cross-section.
5. Reinforcement Bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified). See Special Provisions. This note supercedes notes on the Pier sheet.
6. The Steel H-Piles shall be according to AASHTO M270 Grade 50.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

Item	Item	Super	Sub		Total
			Piers	Abuts.	
Removal of Existing Structures	Each				1
Hot-Mix Asphalt Surface Course, Mix "C", N70	Ton	41.8			41.8
Waterproof Membrane System	Sq. Yd	280			280
Concrete Structures	Cu. Yd.		17.2	19.8	37.0
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	2513			2513
Steel Bridge Railing, Type SM	Foot	180			180
Reinforcement Bars	Pound		1780	2520	4300
Furnishing Steel Piles HP10X42	Foot		580	449	1029
Driving Steel Piles	Foot		580	449	1029
Test Pile Steel HP10X42	Each		1	1	2
Name Plates	Each			1	1
Concrete Encasement	Cu. Yd.		14.6	2.8	17.4
Portland Cement Mortar Fairing Course	Foot	540			540
Stone Dumped Rip Rap Class A4	Ton				242
Channel Excavation	Cu.Yd.				257
Piles Shoes	Each		10	8	18
Structure Excavation Protection For Pile Bents	Each		2		2

NORTH ABUTMENT

Pile Type: Steel HP10x42 with pile shoes
Allowable Resistance Available: 63 kips
Nominal Required Bearing: 335 kips
Estimated Length: 63 Ft
Number of Production Piles: 3
Number of Test Piles: 1

PIER #1

Pile Type: Steel HP10x42 with pile shoes
Allowable Resistance Available: 80 kips
Nominal Required Bearing: 335 kips
Estimated Length: 64 Ft
Number of Production Piles: 5

PIER #2

Pile Type: Steel HP10x42 with pile shoes
Allowable Resistance Available: 80 kips
Nominal Required Bearing: 335 kips
Estimated Length: 65 Ft
Number of Production Piles: 4
Number of Test Piles: 1

SOUTH ABUTMENT

Pile Type: Steel HP10x42 with pile shoes
Allowable Resistance Available: 63 kips
Nominal Required Bearing: 335 kips
Estimated Length: 65 Ft
Number of Production Piles: 4

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications - 17th ed.

LOADING HS20-44

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 0.129g
Site Coefficient (S) = 1.0

DESIGNED
CHECKED
DRAWN Shane Summer
CHECKED

EXAMINED May 1, 2008
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
LICENSED STRUCTURAL ENGINEER
SPRINGFIELD

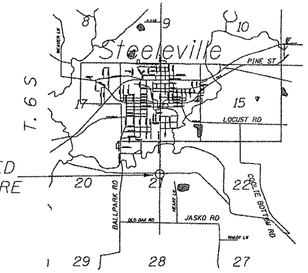
Expires: November 30, 2008

WATERWAY INFORMATION

Drainage Area = 46.7 sq. mi. Low Grade Elev = 413.10 @ Sta. 53+25.89

Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft. Exist.	Opening Sq.Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater Elev. Exist.	Headwater Elev. Prop.
Design	20	4046	413	413	407.80	0.79	0.79	408.59	408.59
Base	100	5794	457	457	408.37	1.05	1.05	409.42	409.42
Overtopping									
Max. Calc	500								

3 rd P.M.



R. 5 W.

LOCATION SKETCH

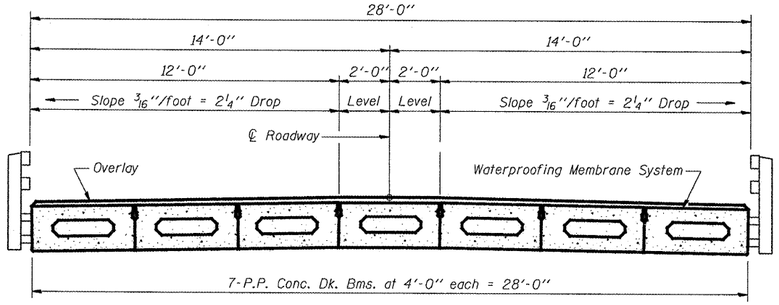
GENERAL PLAN & ELEVATION
FAS 863
OVER COX CREEK DRAINAGE DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STATION 47+16.90

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

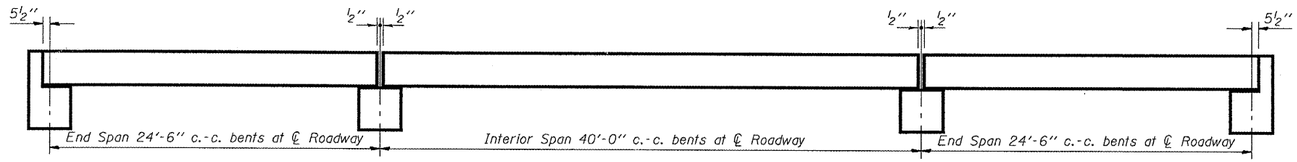
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 6
14 SHEETS

* 06-00039-05-BR



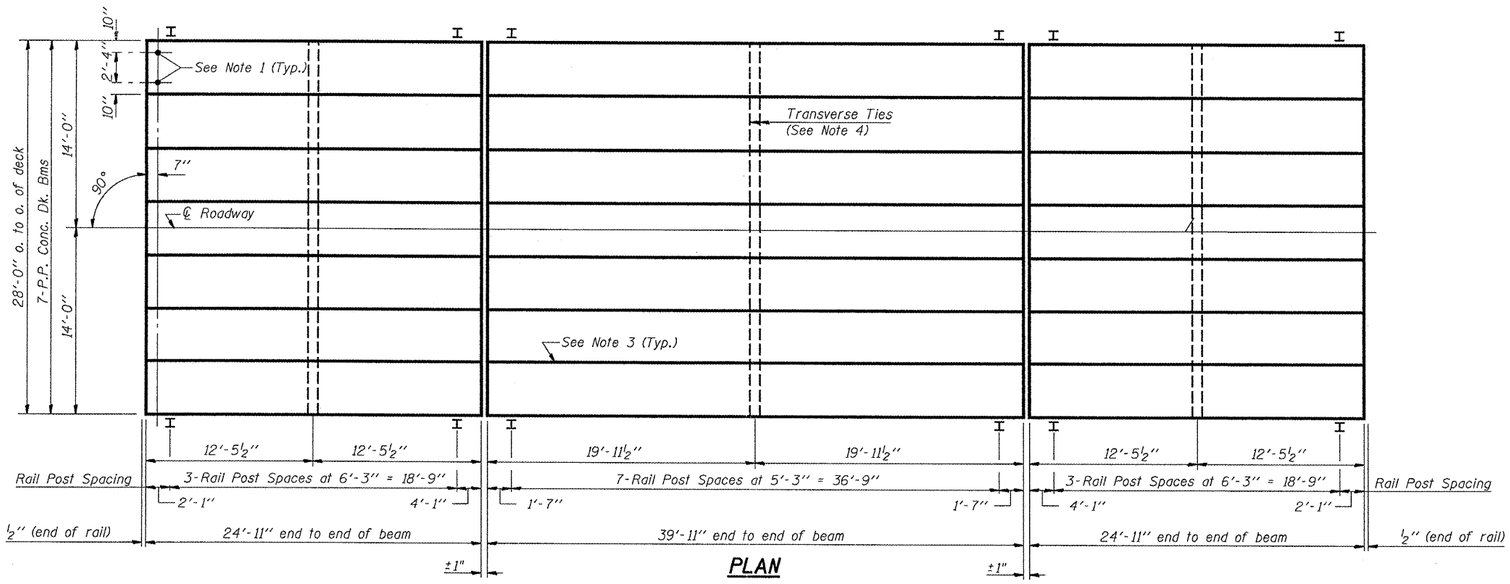
CROSS SECTION



ELEVATION

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 ℄ 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.



PLAN

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

May 1, 2008

EXAMINED *A. Carl Tripp*
ENGINEER OF STRUCTURAL SERVICES

PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

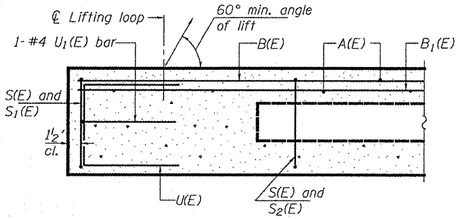
17" X 48" PPC DECK BEAM
PLAN AND ELEVATION
STR. NO. 079-3195
F.A.S. ROUTE 863 OVER
COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STA. 47+16.90

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

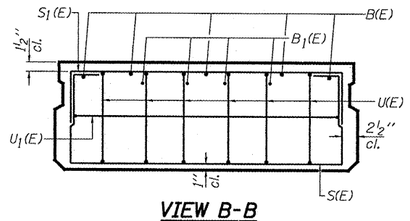
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 7
14 SHEETS

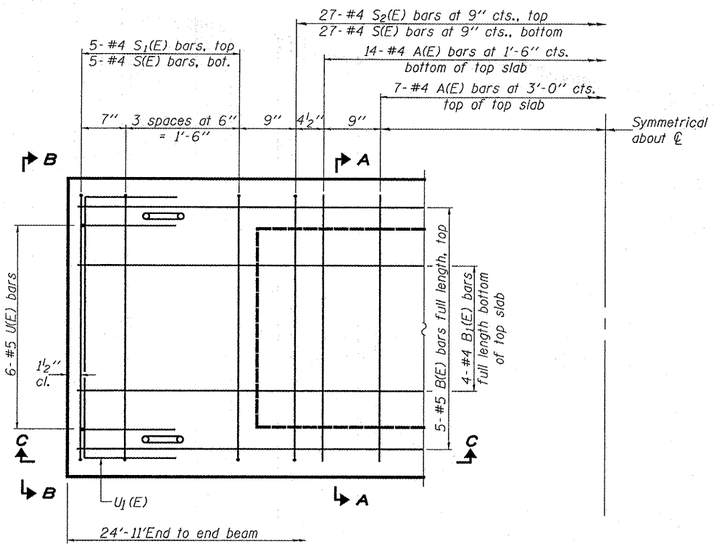
* 06-00039-05-BR



SECTION C-C

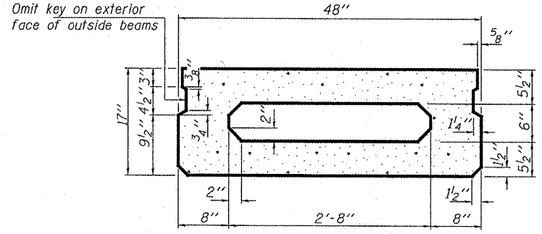


VIEW B-B

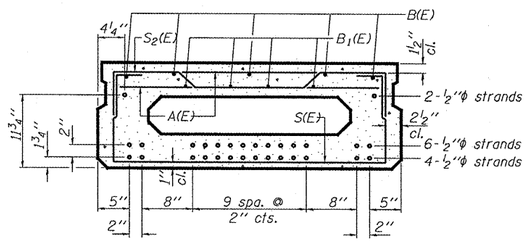


PLAN VIEW

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 dimensions)



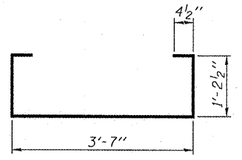
SECTION A-A

(Showing reinforcement and permissible strand locations)

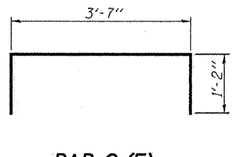
12-½"ϕ Strands Each Strand Stressed to 30,900 lbs.
4 strands $1^3/_4$" up, 6 strands $3^3/_4$" up, 2 strands $11^3/_4$" up.

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

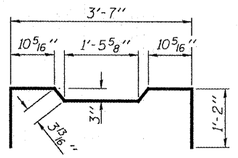
Note: See sheet 5 of 10 for additional details and Bill of Material.



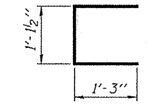
BAR S(E)



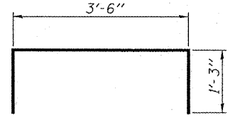
BAR S_1(E)



BAR S_2(E)



BAR U(E)



BAR U_1(E)

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	21	#4	3'-7"	—
B(E)	5	#5	24'-8"	—
B_1(E)	4	#4	24'-8"	—
S(E)	37	#4	6'-9"	□
S_1(E)	10	#4	5'-11"	⊓
S_2(E)	27	#4	6'-2"	⊓
U(E)	12	#5	3'-8"	⊓
U_1(E)	2	#4	6'-0"	⊓

Reinforcement bars designated (E) shall be epoxy coated.

SPANS 1 AND 3
17" X 48" PPC DECK BEAM
STR. NO. 079-3195
F.A.S. ROUTE 863 OVER
COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STA. 47+16.90

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

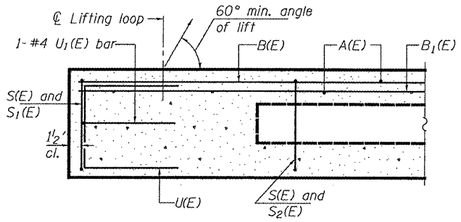
May 1, 2008
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

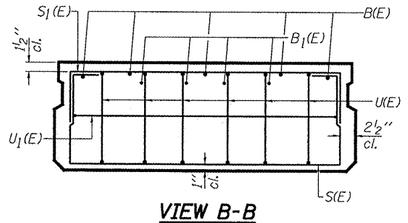
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 8
14 SHEETS

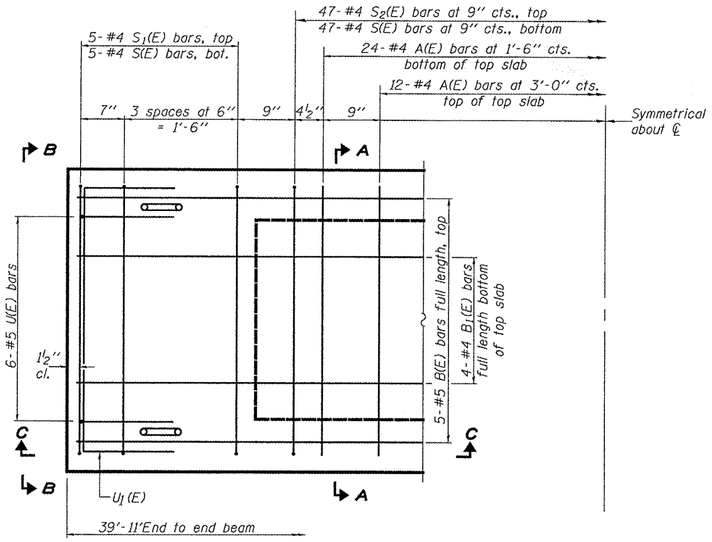
* 06-00039-05-BR



SECTION C-C

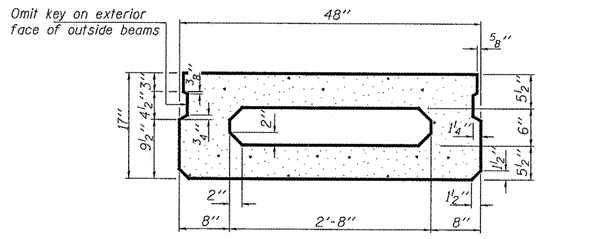


VIEW B-B

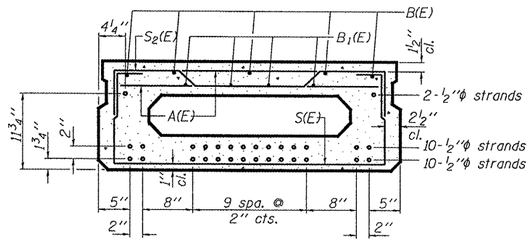


PLAN VIEW

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 dimensions)



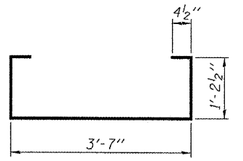
SECTION A-A

(Showing reinforcement and permissible strand locations)

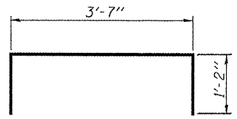
22-½"ϕ Strands Each Strand Stressed to 30.900 lbs.
10 strands 1¾" up, 10 strands 3¾" up, 2 strands 11¾" up.

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

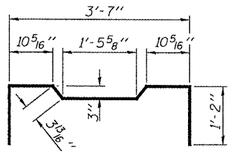
Note: See sheet 5 of 10 for additional details and Bill of Material.



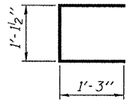
BAR S(E)



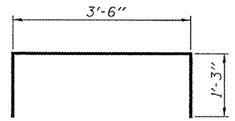
BAR S_1(E)



BAR S_2(E)



BAR U(E)



BAR U_1(E)

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	36	#4	3'-7"	—
B(E)	5	#5	39'-8"	—
B_1(E)	4	#4	39'-8"	—
S(E)	57	#4	6'-9"	⊔
S_1(E)	10	#4	5'-11"	⊓
S_2(E)	47	#4	6'-2"	⊓
U(E)	12	#5	3'-8"	⊏
U_1(E)	2	#4	6'-0"	⊓

Reinforcement bars designated (E) shall be epoxy coated.

SPAN 2
17" X 48" PPC DECK BEAM
STR. NO. 079-3195
F.A.S. ROUTE 863 OVER
COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STA. 47+16.90

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

May 1, 2008

EXAMINED D. Carl Purvis
ENGINEER OF STRUCTURAL SERVICES

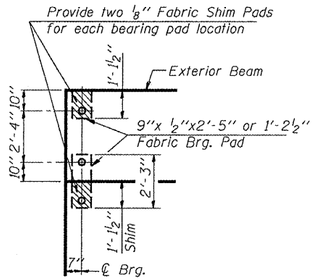
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

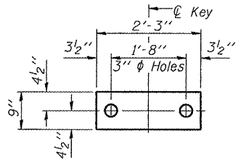
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 9
14 SHEETS

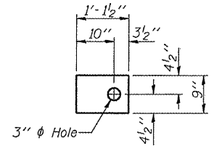
* 06-00039-05-BR



PAD PLACEMENT PLAN

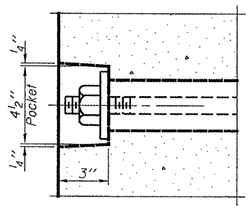


FABRIC BEARING PAD
(Interior)

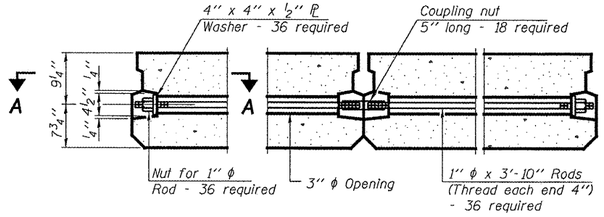


FABRIC BEARING PAD
(Exterior)

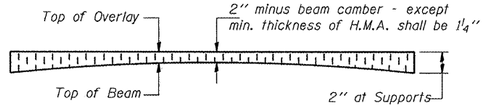
FIXED



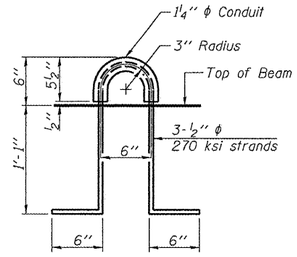
SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY

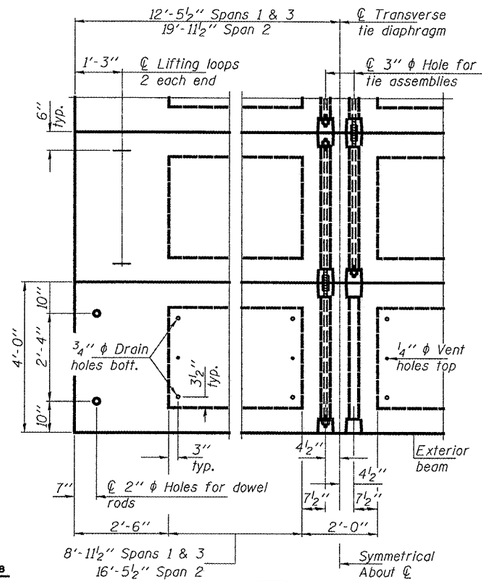


PROFILE OF OVERLAY
(Thickness of Hot-Mix Asphalt and Waterproofing Membrane)

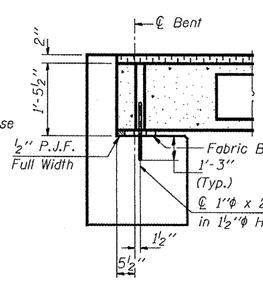


LIFTING LOOP DETAIL

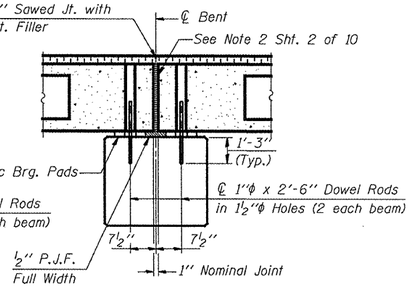
Note: Connect beams in pairs with the transverse tie configuration shown.



PLAN VIEW



SECTION AT ABUTS.
(Along ℄ Beams)



SECTION AT PIERS
(Along ℄ Beams)

QUANTITIES

P.P. Conc. Dk. Bm. 17" Dp.	2513 Sq. Ft.
Waterproofing Membrane System	280 Sq. Yds.
Portland Cement Mortar Fairing Course	540 Ft.

Note: Quantity of overlay = 41.8 Tons

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 (IL MOD), 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" ϕ 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.
The top surface of the beams shall be finished according to the IDOT Manual for Fabrication of Precast Prestressed Concrete Products.
Work this sheet with sheets 3 and 4 of 10

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

May 1, 2008
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

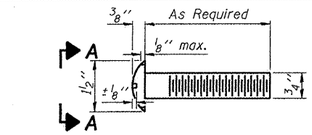
17" X 48" PPC DECK BEAM DETAILS
STR. NO. 079-3195
F.A.S. ROUTE 863 OVER
COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STA. 47+16.90

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

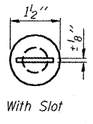
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
14 SHEETS

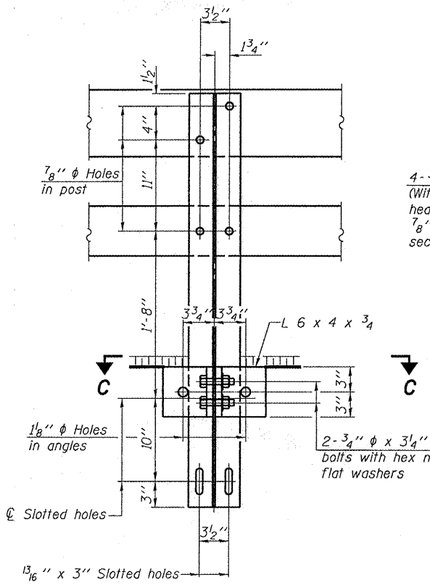
* 06-00039-05-BR



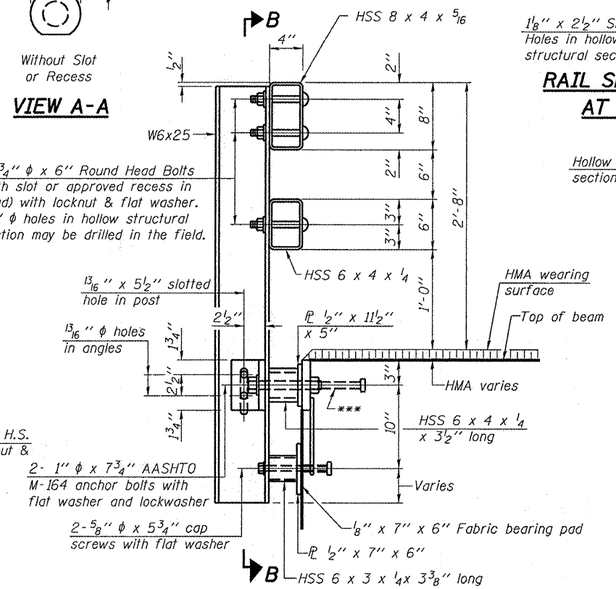
DETAIL OF 3/4" ϕ ROUND HEAD BOLT



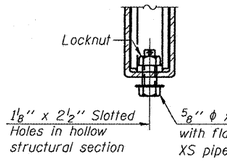
VIEW A-A



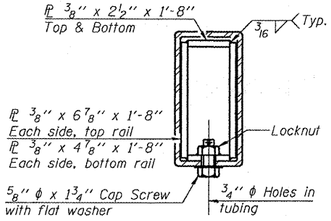
SECTION B-B



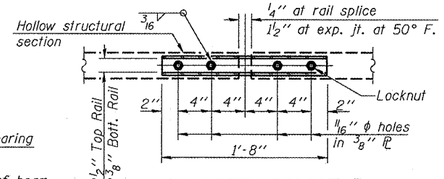
SECTION AT RAIL POST



RAIL SPLICE CONNECTION AT EXPANSION JT.

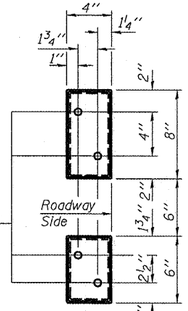


SECTION AT RAIL SPLICE

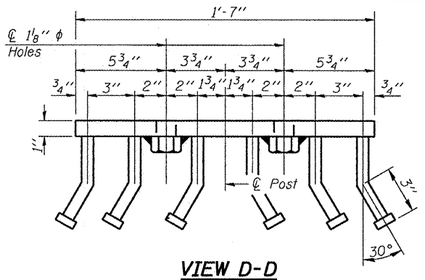


PLAN-BOTT. SPLICE PL TYPICAL

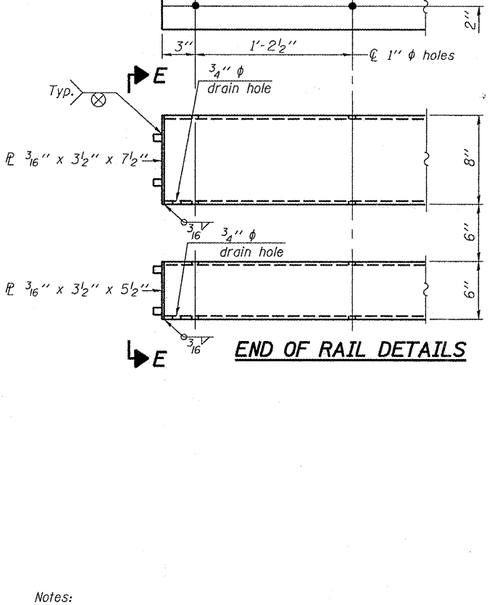
℄ - 5/8" reduced base welded studs. Provide 4 - 5/8" washers and self-locking nuts or nuts and jam nuts for guardrail connection shown on Std. 631032



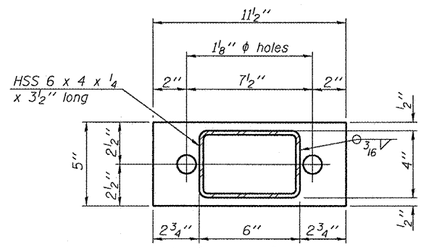
VIEW E-E



VIEW D-D



ANCHOR DEVICE



SECTION C-C

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

PL 1/2" x 7" x 6"

*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".

END OF RAIL DETAILS

Notes:

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

For multi-span bridges, sufficient 1/4" 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	180

STEEL RAILING, TYPE SM WITH HOT-MIX ASPHALT WEARING SURFACE

STR. NO. 079-3195
F.A.S. ROUTE 863 OVER COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STA. 47+16.90

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

May 1, 2006
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

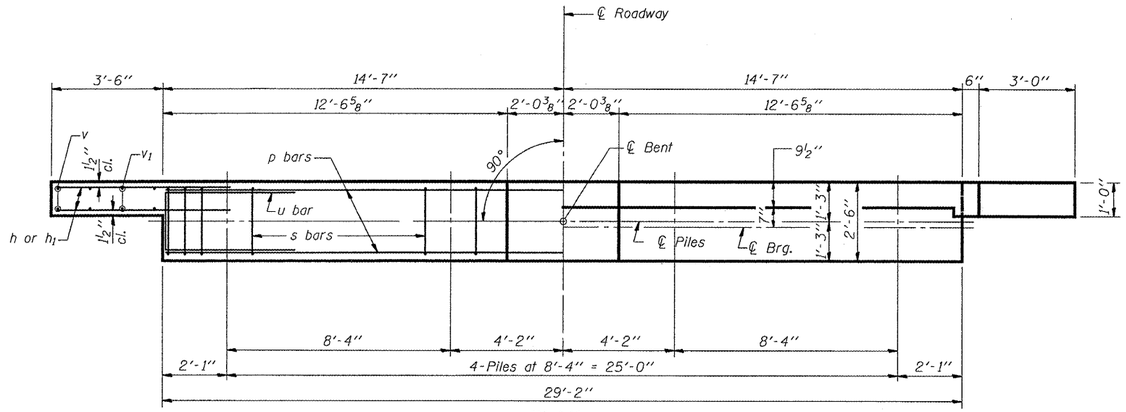
R-34HMAWS 9-3-07 (6'-3" Maximum Post Spacing) (1 1/4" minimum to 3 1/8" maximum HMA thickness)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

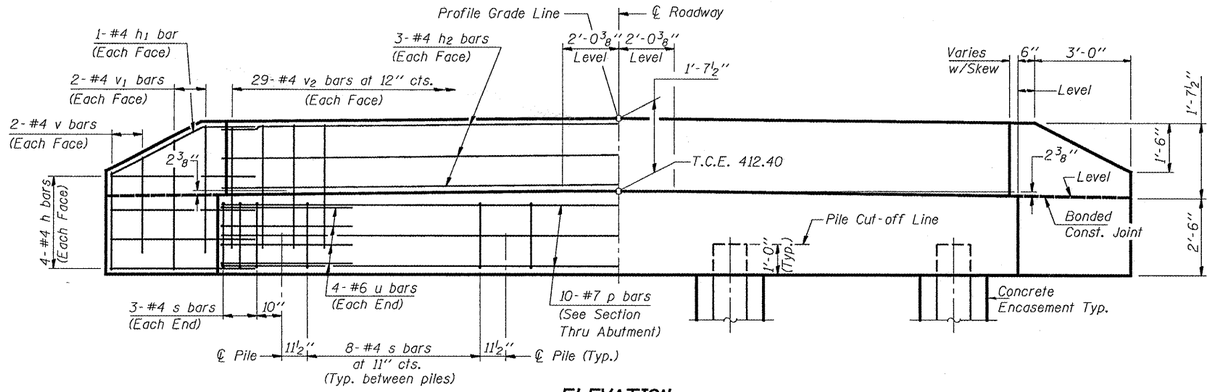
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 11
14 SHEETS

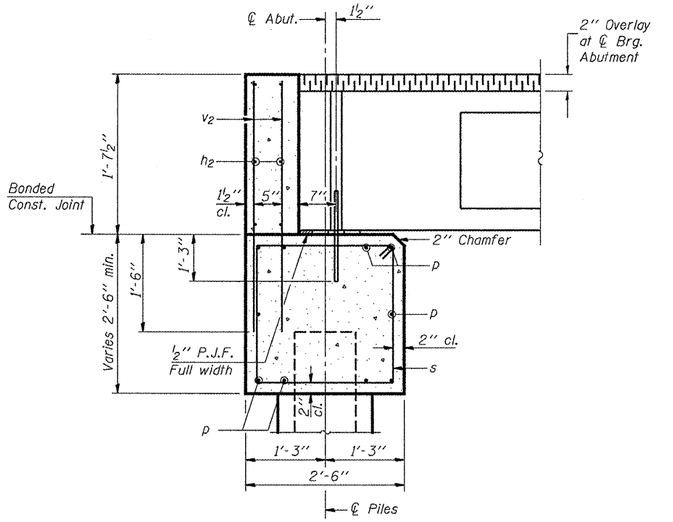
* 06-00039-05-BR



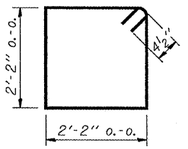
PLAN



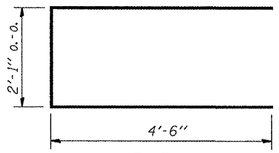
ELEVATION



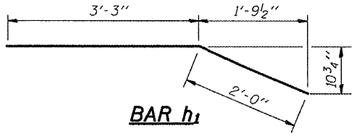
SECTION THRU ABUTMENT
(At Right Angles)



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"	
u	8	#6	11'-1"	
v	8	#4	2'-8"	
v1	8	#4	3'-9"	
v2	58	#4	3'-5"	
Concrete Structures			9.9 Cu. Yds.	
Reinforcement Bars			1260 Lb.	
Concrete Encasement			1.4 Cu. Yds.	

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 ASTM A706 Grade 60 (IL Modified)
3. Space reinforcement in cap to miss anchor bolts.
4. For details of piles and concrete encasement, see Sheet 9 of 10.

DESIGN STRESSES

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

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

May 1, 2008
EXAMINED — ENGINEER OF STRUCTURAL SERVICES
PASSED — ENGINEER OF BRIDGES AND STRUCTURES

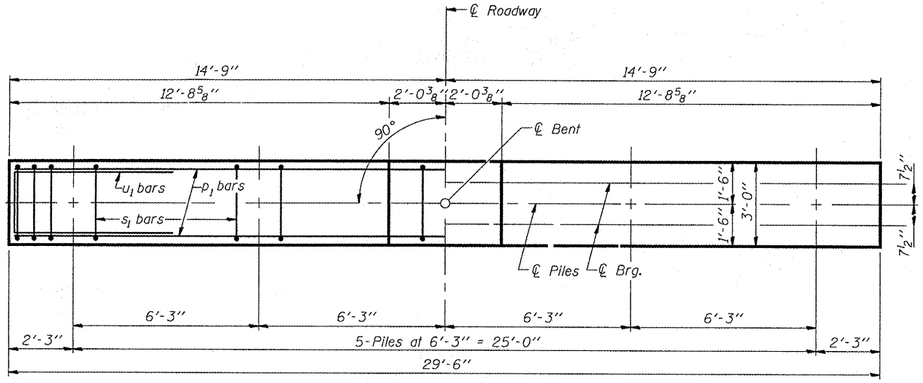
ABUTMENTS
STR. NO. 079-3195
F.A.S. ROUTE 863 OVER
COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STA. 47+16.90

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

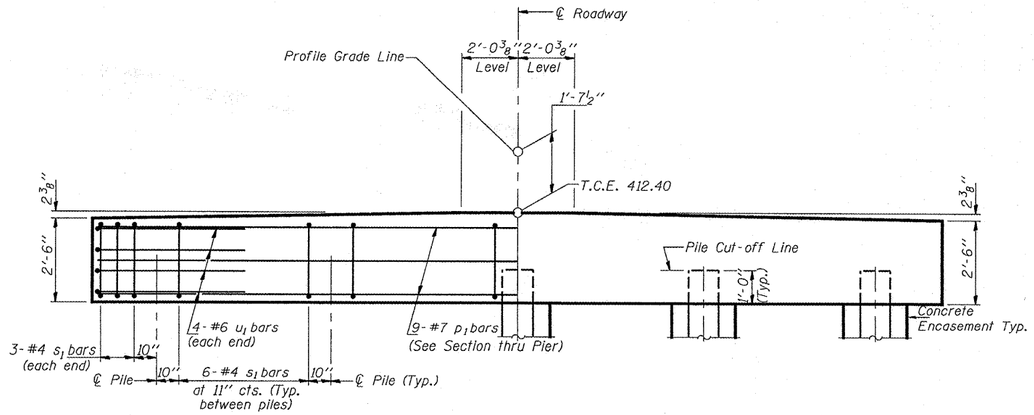
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 12
14 SHEETS

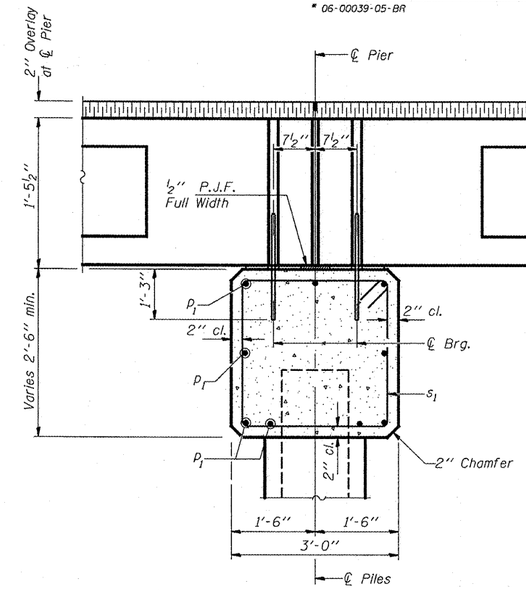
* 06-00039-05-BR



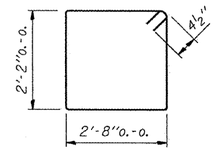
PLAN



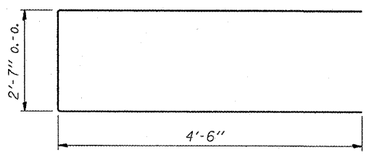
ELEVATION



SECTION THRU PIER
(At Right Angles)



BAR s_1



BAR u_1

BILL OF MATERIAL FOR ONE PIER

Bar	No.	Size	Length	Shape
p_1	9	#7	29'-2"	——
s_1	30	#4	10'-5"	□
u_1	8	#6	11'-7"	⊏⊐
Concrete Structures			8.6	Cu. Yds.
Reinforcement Bars			890	Lb.
Concrete Encasement			7.3	Cu. Yds.

NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified)
2. For details of piles and concrete encasement, see Sheet 9 of 10.

DESIGN STRESSES

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

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

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PIERS
STR. NO. 079-3195
F.A.S. ROUTE 863 OVER
COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
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DEPARTMENT OF TRANSPORTATION

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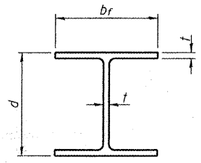
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT=	

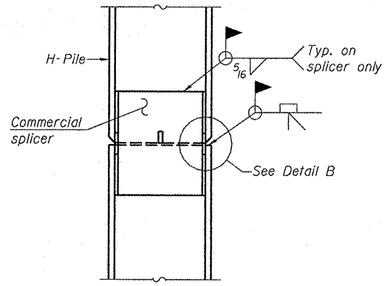
SHEET NO. 13
14 SHEETS

* 06-00039-05-BR

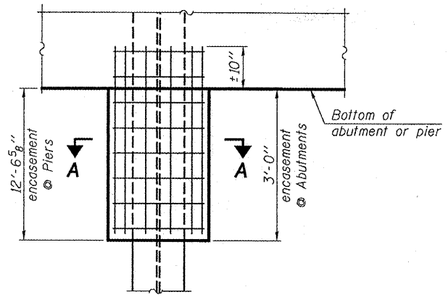


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30″
x102	14″	$14\frac{3}{4}''$	$\frac{11}{16}''$	30″
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30″
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30″
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24″
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24″
x63	12″	$12\frac{1}{8}''$	$\frac{1}{2}''$	24″
x53	$11\frac{3}{4}''$	12″	$\frac{7}{16}''$	24″
HP 10x57	10″	$10\frac{1}{4}''$	$\frac{9}{16}''$	24″
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24″
HP 8x36	8″	$8\frac{1}{8}''$	$\frac{7}{16}''$	18″



ELEVATION



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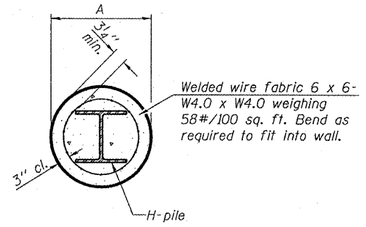
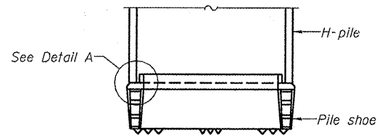


Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT



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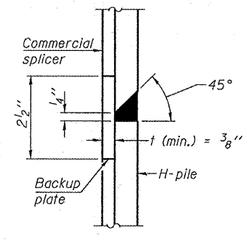
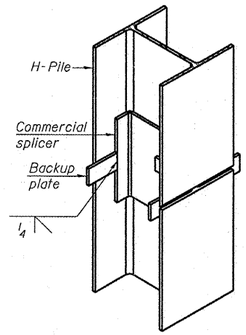
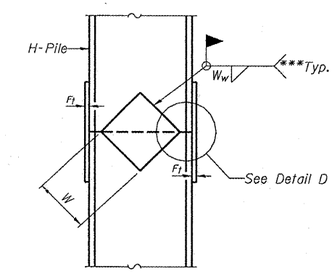


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



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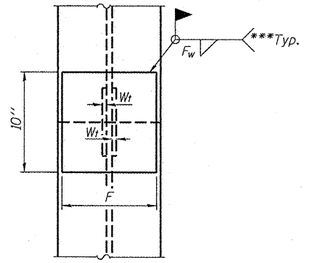
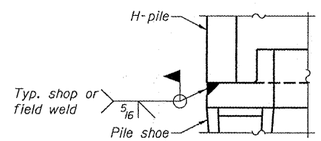
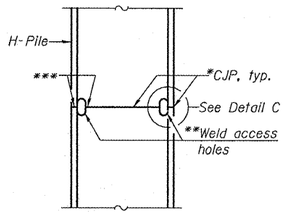


END VIEW

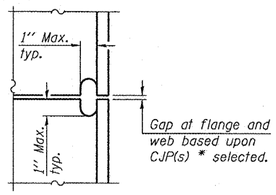


DETAIL A

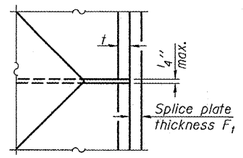
H-PILE SHOE ATTACHMENT



ELEVATION



DETAIL C



DETAIL D

Designation	F	F_t	F_w	W	W_1	W_w
HP 14x117	$12\frac{1}{2}''$	1″	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10″	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10″	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10″	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10″	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8″	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8″	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7″	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

COMPLETE PENETRATION WELD SPLICE

*Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.

**Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.

***Interrupt welds ¼″ from end of each pile.

WELDED PLATE FIELD SPLICE

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

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

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F-HP 9-3-07

PILES
STR. NO. 079-3195
F.A.S. ROUTE 863 OVER
COX CREEK DRAIN DITCH
SECTION 06-00039-05-BR
RANDOLPH COUNTY
STA. 47+16.90

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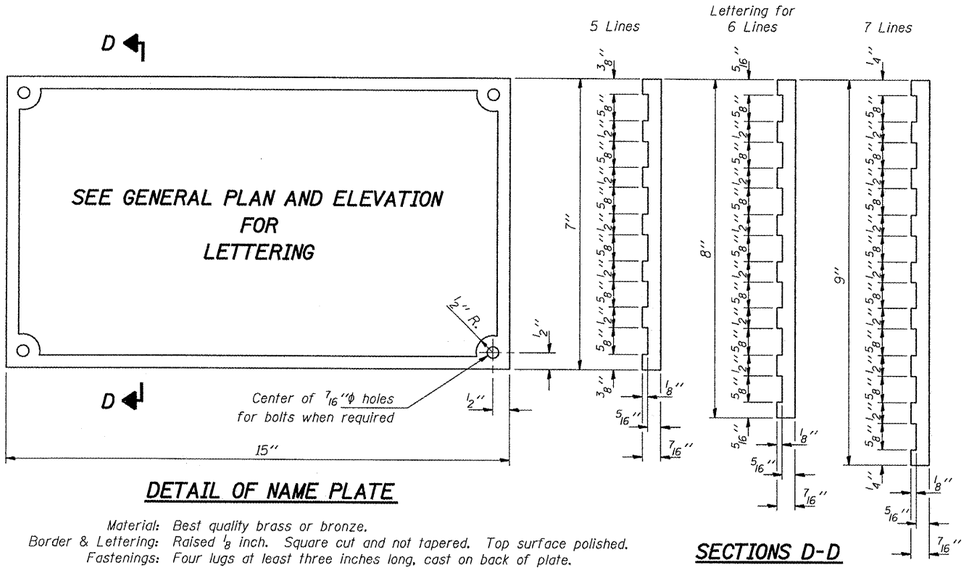
F.A.S. 863	*	RANDOLPH		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 14
14 SHEETS

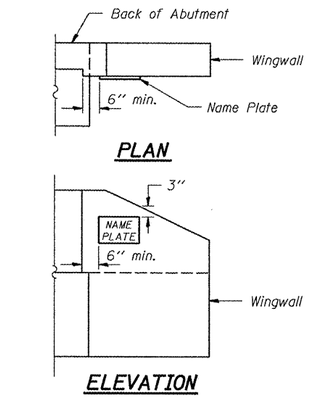
* 06-00039-05-BR



DETAIL OF NAME PLATE

Material: Best quality brass or bronze.
Border & 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.

SECTIONS D-D



PLAN

ELEVATION

LOCATION OF NAME PLATE

DESIGNED	MJT
CHECKED	JSB
DRAWN	SMS
CHECKED	JSB

May 1, 2008
EXAMINED _____ ENGINEER OF STRUCTURAL SERVICES
PASSED _____ ENGINEER OF BRIDGES AND STRUCTURES

NAME PLATE
STR. NO. 079-3195
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COX CREEK DRAIN DITCH
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