6-12-09 Letting, Item 075

HIGHWAY BRIDGE REPLACEMENT & REHABILITATION PROGRAM
DETAIL PLANS FOR
PROPOSED BRIDGE
T.R. 137 (SAND RIDGE ROAD) OVER LOST CREEK
SECTION 03-10115-00-BR
CLINTON COUNTY - MERIDIAN ROAD DISTRICT
PROJECT ~~AM~~BROS-027-(038)
JOB NO: C-98-341-09

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 137 SAND RIDGE ROAD	03-10115-00-BR	CLINTON	15	1

FEDERAL AID PROJECT BROS-027-(038)
CONTRACT NO. 97374

INDEX OF SHEETS

HIGHWAY STANDARDS

280001-04
515001-03
701901-01
BLR 21-7

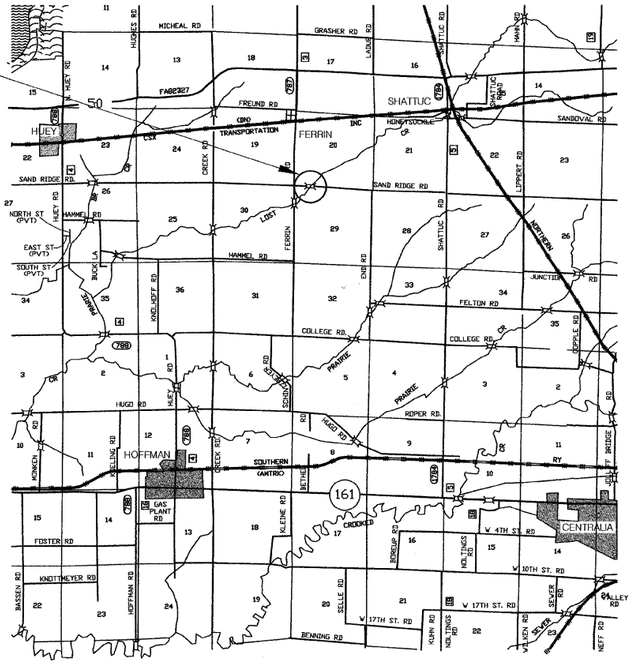
DESIGN CLASSIFICATION

LOCAL ROAD
CURRENT A.D.T. = 150
DESIGN SPEED = 30 MPH
DESIGN A.D.T. = 150 (2009)

PROJECT LOCATION

PROPOSED STRUCTURE NO. 014-4055 @ STATION 19+95. TRIPLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAMS, (21" DEPTH) ON SPILL THRU PILE BENT ABUTMENTS AND PILE BENT PIERS MEASURING 131'- 10 5/8" BACK TO BACK OF ABUTMENTS WITH 28'-0" CLEAR ROADWAY WIDTH.

BEGIN CONSTRUCTION STA. 17+00
END CONSTRUCTION STA. 22+85



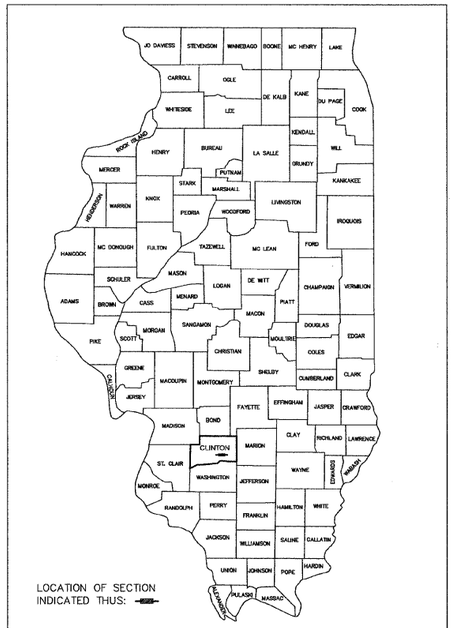
LOCATION MAP

NET LENGTH OF PROJECT = 585 FEET OR 0.11 MILES

GRAPHIC SCALE

0 1 2 4

1 INCH = 1 MILE



LOCATION OF SECTION INDICATED THUS:

WARNING

CALL J.U.L.I.E. TOLL FREE 1-800-892-0123

CALL BEFORE YOU DIG

UTILITIES:

CALL J.U.L.I.E. BEFORE YOU DIG
800-892-0123

ELECTRIC:

AMEREN IP
2610 BROADWAY
MT. VERNON, IL. 62864
PHONE: 1-800-755-5000

TELEPHONE:

FRONTIER COMMUNICATIONS
801 W. JACKSON ST.
ALTAMONT, IL. 62411
PHONE: (618)483-6205

WATER:

HOFFMAN RURAL WATER
924 CODY RD.
CENTRALIA, IL. 62801
PHONE: (618)532-8569

FIBER OPTIC CABLE

AT&T
210 N. LOCUST ST.
CENTRALIA, IL. 62801
PHONE: (618)533-3418

DANIEL L. BEHRENS 050860 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

Daniel L. Behrens DATE 3-12-09
COUNTY ENGINEER
ILLINOIS P.E. # 62-050860 EXPIRES 11/30/2009

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED March 12, 2009
Daniel L. Behrens
CLINTON COUNTY, COUNTY ENGINEER

APPROVED March 12 2009
Robert K. Worrall
MERIDIAN ROAD DISTRICT HIGHWAY COMMISSIONER

PASSED 3/18 2009
DISTRICT 8 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW 3/18 2009
Mary C. Lamie pm
DEPUTY DIRECTOR OF HIGHWAYS, REGION 5 ENGINEER

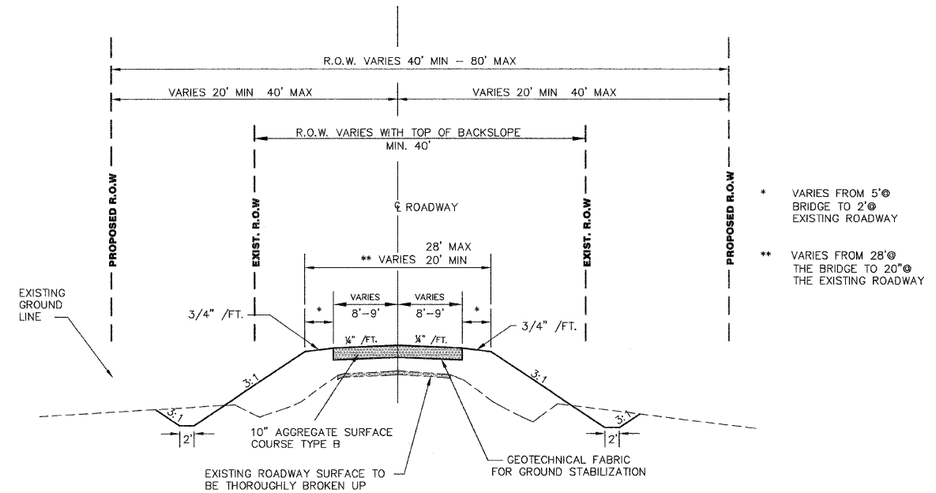
WRK
3/12/2009
09TR20CO.dwg

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 137 SAND RIDGE ROAD	03-10115-00-BR	CLINTON	15	2

CONTRACT NO. 97374

LOCATION OF WORK				ROAD STA. 17+00 TO 22+85	BRIDGE STA. 19+95		
SUMMARY OF QUANTITIES							
CODE NO.	ITEM	UNIT	QUANTITY	E000	X080-2A		
20100500	TREE REMOVAL, ACRES	ACRE	0.14	0.14			
20200100	EARTH EXCAVATION	CU. YD.	190	190			
20300100	CHANNEL EXCAVATION	CU. YD.	874		874		
21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	S.Y.	906	906			
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	238		238		
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	500	500			
50100100	REMOVAL OF EXISTING STRUCTURE	EACH	1		1		
50200100	STRUCTURE EXCAVATION	CU. YD.	73		73		
50300225	CONCRETE STRUCTURES	CU. YD.	61.8		61.8		
50300280	CONCRETE ENCASEMENT	CU. YD.	22.2		22.2		
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ. FT.	3647		3647		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	7080	180	6900		
*50900205	STEEL RAILING, TYPE S1	FOOT	264		264		
51201400	FURNISHING STEEL PILES, HP 10X42	FOOT	275		275		
51201600	FURNISHING STEEL PILES, HP 12X53	FOOT	275		275		
51202305	DRIVING STEEL PILES	FOOT	550		550		
51203600	TEST PILE STEEL HP 12X53	EACH	2		2		
51500100	NAME PLATES	EACH	1		1		
58300100	PORLAND CEMENT MORTAR FAIRING COURSE	FOOT	780		780		
67100100	MOBILIZATION	L. SUM	1	1			

* SPECIALTY ITEMS



STATION 17+00 TO STATION 22+85
PROPOSED ROADWAY TYPICAL SECTION

LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (–)
	CUBIC YARD	CUBIC YARD	CUBIC YARD	CUBIC YARD
STA.17+00 TO STA. 22+85	190	142	609	–457
ALLOWANCE FOR CHANNEL EXCAVATION	874	655	0	+655
TOTAL				+198

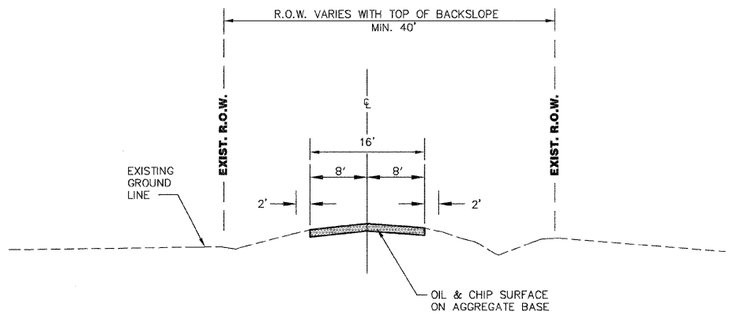
PAY ITEMS

EARTH EXCAVATION = 190 C.Y.
CHANNEL EXCAVATION = 874 C.Y.

EXCESS MATERIAL TO BE WASTED OR HAULED OFF AS DIRECTED BY THE ENGINEER. COST TO BE INCLUDED PER CU. YD. FOR CHANNEL EXCAVATION.

EXTRA BARS FOR TEST SAMPLES
BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	SHAPE
h (E)	1	#4	7'–0"	———
p (E)	1	#7	33'–9"	———
p (1)	1	#8	34'–2"	———
u (E)	1	#6	11'–1"	⌐¬



EXISTING ROADWAY TYPICAL SECTION

GENERAL NOTES

1. ALL ELEVATION REFER TO U.S.G.S. MEAN SEA LEVEL
2. UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION AND THEIR TRUE LOCATION IS NOT GUARANTEED TO BE AS SHOWN ON THE PLANS. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND CARRY ON HIS OPERATIONS ACCORDINGLY.
3. ALL FENCE REMOVAL, TEMPORARY SEEDING AND FINAL SEEDING OF DISTURBED AREAS WILL BE DONE BY OTHERS.

TREE REMOVAL, ACRES

LOCATION	ACRES
STA. 19+00 TO STA 19+75 LT	0.05
STA. 20+50 TO STA 22+85 LT	0.09
TOTAL	0.14

SUMMARY OF QUANTITIES
TYPICAL ROADWAY CROSS SECTIONS

T.R.137 (SAND RIDGE ROAD)
OVER LOST CREEK
SECTION 03-10115-00-BR
CLINTON COUNTY

WRK
3/12/2009
09TR205Q.dwg

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T.R. 137 SAND RIDGE ROAD	03-10115-00-BR	CLINTON	15	3

CONTRACT NO. 97374

GRAPHIC SCALE
0 30 60
(IN FEET)
1 inch = 30 ft.

BENCHMARK 1: STA. 17+70.70, 22.03' RT
SPIKE SET IN POWER POLE
ELEV. = 449.42

BENCHMARK 2: STA. 22+68.60, 24.86' RT
SPIKE SET IN POWER POLE
ELEV. = 460.28

MARVIN & LINDA WESSELMANN
(PT. S.1/2, S.W.1/4, SEC. 20, T.2N.,R.1W.)

MICHAEL & KAREN GHERARDINI
(PT. S.1/2, S.W.1/4, SEC. 20, T.2N.,R.1W.)

JOAN P. WESSELMANN
(W.1/2, N.W.1/4, SEC. 29, T.2N.,R.1W.)

LUTHER REDEKER
(E.1/2, N.W.1/4, SEC. 29, T.2N.,R.1W.)

PROPOSED STRUCTURE
℄ BRIDGE STA. 19+95

LOST CREEK

30° SKEW

BEGIN CONSTRUCTION STA. 17+00

END CONSTRUCTION STA. 22+85

PROPOSED R.O.W. & CONSTRUCTION LIMITS

TRANSITION TAPER TO EXISTING R.O.W. AS DIRECTED BY THE ENGINEER

STA. 17+00 20' LT.

STA. 17+00 20' RT.

4' SHOULDER

STA. 18+50 40' LT.

PHONE LINE

100' TRANS.

STA. 21+00 40' LT.

STA. 21+50 35' LT.

STA. 22+85 35' LT.

STA. 22+85 20' LT.

FIBER OPTIC LINE

EXISTING R.O.W.

15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

4' SH. 18' P.V. 4' SH.

℄ SANDRIDGE ROAD

SECTION LINE

EXISTING 6' X 2.5' CONCRETE DRAINAGE STRUCTURE

WATER LINE

STA. 19+00 40' RT.

PHONE LINE

FLOW

OUTLINE OF EXISTING STRUCTURE

STA. 20+50 35' RT.

PROPOSED R.O.W. & CONSTRUCTION LIMITS

STA. 22+85 35' RT.

STA. 22+85 20' RT.

PHONE LINE

℄

LEGEND

= POWER POLE
= PROPOSED ROW & CONSTRUCTION LIMITS
= EXIST ROW LINE
= FIBER OPTIC LINE
= WATER LINE
= PHONE LINE
= TREE LINE
= SHOULDER

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
R.O.W. ADDED
NOTE BOOK
NO.
STRUCTURE NOTATING CHKD.
BY
DATE

120.00' VC
K = 39.05

100.00' VC
K = 27.23

131'-10 5/8"
BK/BK ABUTS.

116.66' VC
K = 38.88

PVC STA. 13+20
ELEV. = 451.96

PI STA. 17+60
ELEV. = 449.76

PI STA. 18+70
ELEV. = 453.80

PT STA. 19+20
ELEV. = 453.80

PC STA. 21+68.34
ELEV. = 453.80

PI STA. 22+26.67
ELEV. = 453.80

PT STA. 22+85
ELEV. = 455.65

0.00%

3.10%

-1.08%

-0.29%

-0.3%

-0.3%

+2.3%

+3.2%

SP DITCH LT. @ +1.08%
SP DITCH RT. @ +0.29%
SP DITCH LT. @ +0.3%
SP DITCH RT. @ +0.3%
SP DITCH RT. @ +2.3%
SP DITCH LT. @ +3.2%

2:1 @ LT.
2:1 @ RT.

15 YR. DHW ELEV. 450.8
100 YR. HW ELEV. 451.9

STREAMBED EL. 440.0

SP DITCH LT. ELEV 446.92
SP DITCH RT. ELEV 447.06
SP DITCH LT. ELEV 446.93
SP DITCH RT. ELEV 449.58
SP DITCH LT. ELEV 454.10
SP DITCH RT. ELEV 454.30

+75 — SP DITCH RT. ELEV 447.4

+29.06 — SP DITCH LT.

+60.94 — SP DITCH RT.

+85 — SP DITCH LT.

	LT.	RT.
+50	447.06	447.18
16+00	447.60	447.34
+50	447.45	447.31
17+00	447.30	447.16
+50	447.15	447.10
18+00	448.18	450.48
+50	449.78	451.63
19+00	451.38	452.78
+50	452.98	453.93
20+00		
+50		
21+00		
+50		
22+00		
+50		
23+00		
+50		
24+00		
+50		

449.1 449.4 449.40 449.5 450.02 450.2 451.28 451.1 452.90 452.2 453.73 453.8 453.80 440.4 453.80 452.9 453.80 451.8 453.80 452.1 453.80 452.9 453.93 454.3 454.66 456.0

460 455 450 445 440

PLAN & PROFILE

EXISTING & PROPOSED ROADWAY
T.R. 137 OVER LOST CREEK
SECTION 03-10115-00-BR
CLINTON COUNTY

WRK
1/13/09
09TR20pp.dwg

0144055-01-GPEL.DGN MAR. 12, 2009

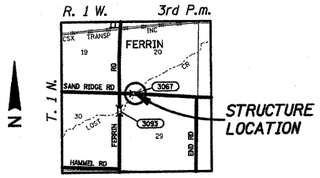
BENCHMARK: Spike set in Power Pole
Sta. 17+70.70, 22.03' Rt.
El. 449.42

EXISTING STRUCTURE S.N. 014-3067

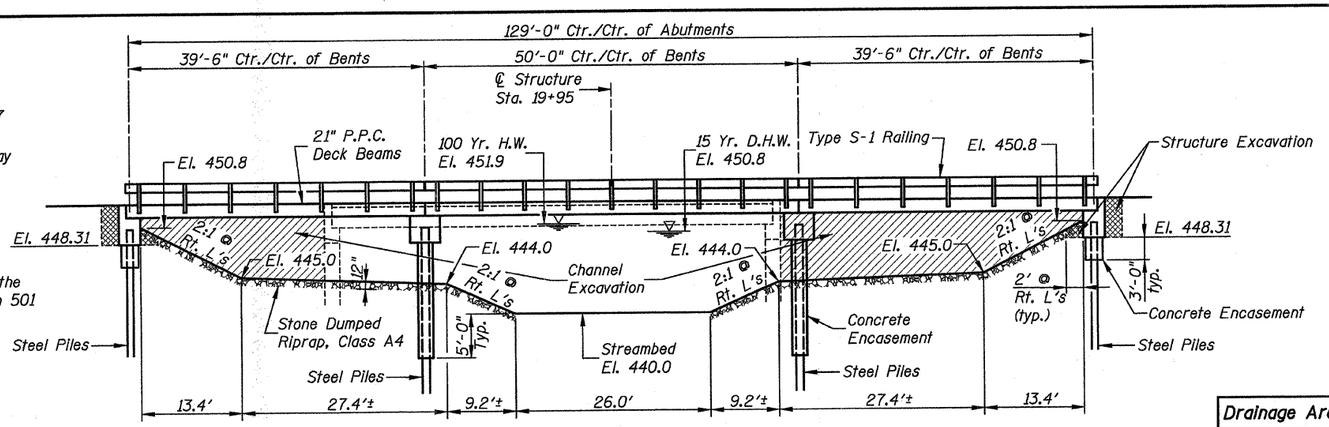
The existing structure consists of a single span bridge with 6" concrete deck and overlay supported on W33 steel beams on closed concrete abutments.
The structure measures 61.0' back to back of abutments and 18.0' out to out of bridge deck.

The Contractor shall remove and dispose of the existing structure in accordance with Section 501 of the Standard Specifications.

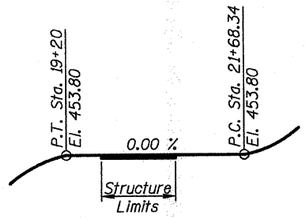
SALVAGE: No Salvage



LOCATION SKETCH

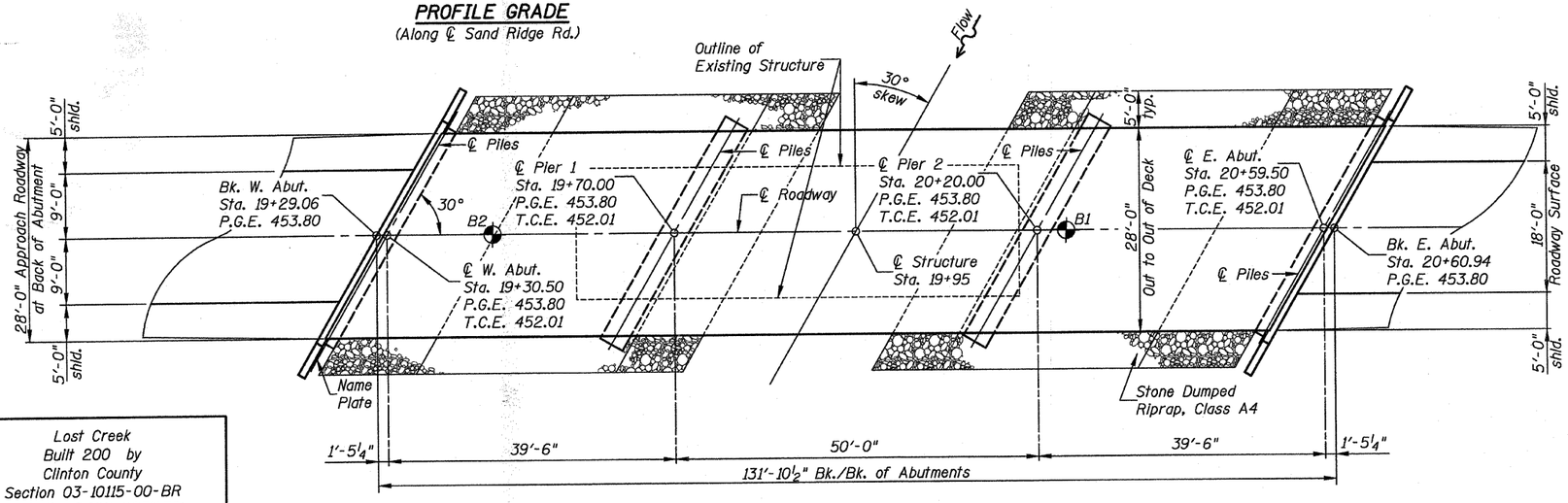


ELEVATION



PROFILE GRADE
(Along ℄ Sand Ridge Rd.)

Note:
Channel excavation shall be transitioned from the edge of the proposed deck to match the existing channel at the R.O.W. line.



T.C.E. = Top of Cap Elevation

PLAN

Lost Creek
Built 200 by
Clinton County
Section 03-10115-00-BR
Proj. No. BROS-027(038)
Station 19+95
S.N. 014-4055 Loading HL-93

NAME PLATE

(See Std. 515001)
Locate Name Plate as shown in Plan View.

DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO LRFD Bridge Design Specifications' including seismic design."

Bradley G. Hummert Date: 3/12/09
Bradley G. Hummert
Licensed Structural Engineer
in Illinois No. 081-005428 Expires: November 30, 2010

BRADLEY G. HUMMERT 081-005428 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS CARLYLE

GENERAL NOTES

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.
2. Reinforcement bars designated (E) shall be epoxy coated.
3. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
4. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
5. The Contractor shall drive test piles to 110% of the nominal required bearing specified in production location at substructures specified or approved by the Engineer before ordering remaining piles.

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation	W. Abut.	Pier 1	Pier 2	E. Abut.
(Feet)	445.31	435.00	435.00	445.31

WATERWAY INFORMATION

Drainage Area = 21.1 Sq. Mi. Low Grade El. = 449.0 @ Sta. 16+00

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 El. Exist.	Headwater El. Prop.
Design	15	3,220	426	750	450.8	0.1	0.4	451.0	451.2
Base	100	5,140	426	828	451.9	0.1	0.1	452.0	452.0
Overtopping	2	1,180	388	527	448.9	1.0	0.1	449.9	449.0
Max. Calc.	500	N/A							

INDEX OF BRIDGE SHEETS

TOTAL BILL OF MATERIALS

ITEM	UNIT	SUPER	SUB.	Total
Channel Excavation	Cu. Yd.	———	———	874
Stone Dumped Riprap, Class A4	Ton	———	———	238
Removal of Existing Structures	Each	———	———	1
Structure Excavation	Cu. Yd.	———	73	73
Concrete Structures	Cu. Yd.	———	61.8	61.8
Concrete Encasement	Cu. Yd.	———	22.2	22.2
Precast Prestressed Concrete Deck Beams (21" Depth)	Sq. Ft.	3,647	———	3,647
Reinforcement Bars, Epoxy Coated	Pound	———	6,900	6,900
Steel Railing, Type S-1	Foot	264	———	264
Furnishing Steel Piles HP 10x42	Foot	———	275	275
Furnishing Steel Piles HP 12x53	Foot	———	275	275
Driving Steel Piles	Foot	———	550	550
Test Piles Steel HP 12x53	Each	———	2	2
Name Plates	Each	———	———	1
Portland Cement Mortar Fairing Course	Foot	780	———	780

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications with 2008 Interims

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

PRECAST UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
f's = 270,000 psi (½"ϕ Strands)
f'si = 201,960 psi (½"ϕ Strands)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

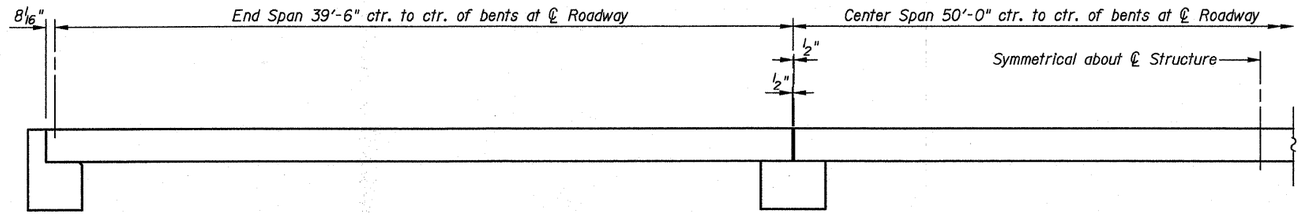
SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.191 g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.510 g
Soil Site Class = C

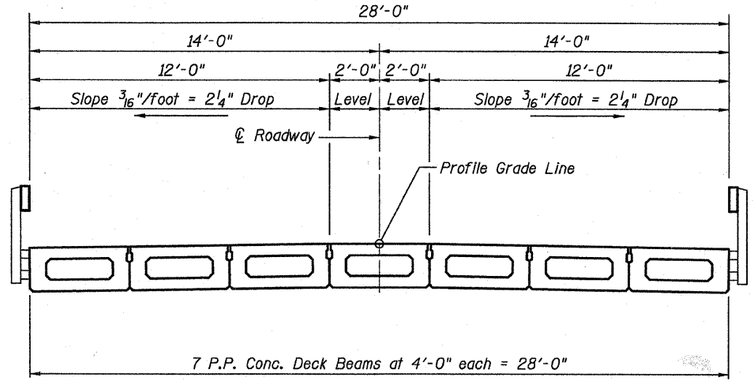
GENERAL PLAN & ELEVATION
T.R. 137 (SAND RIDGE ROAD) OVER LOST CREEK
SECTION 03-10115-00-BR
CLINTON COUNTY
STATION 19+95
STRUCTURE NO. 014-4055

SHEET NO. 1 10 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	137	03-10115-00-BR	CLINTON	15	4
	S.N. 014-4055		CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

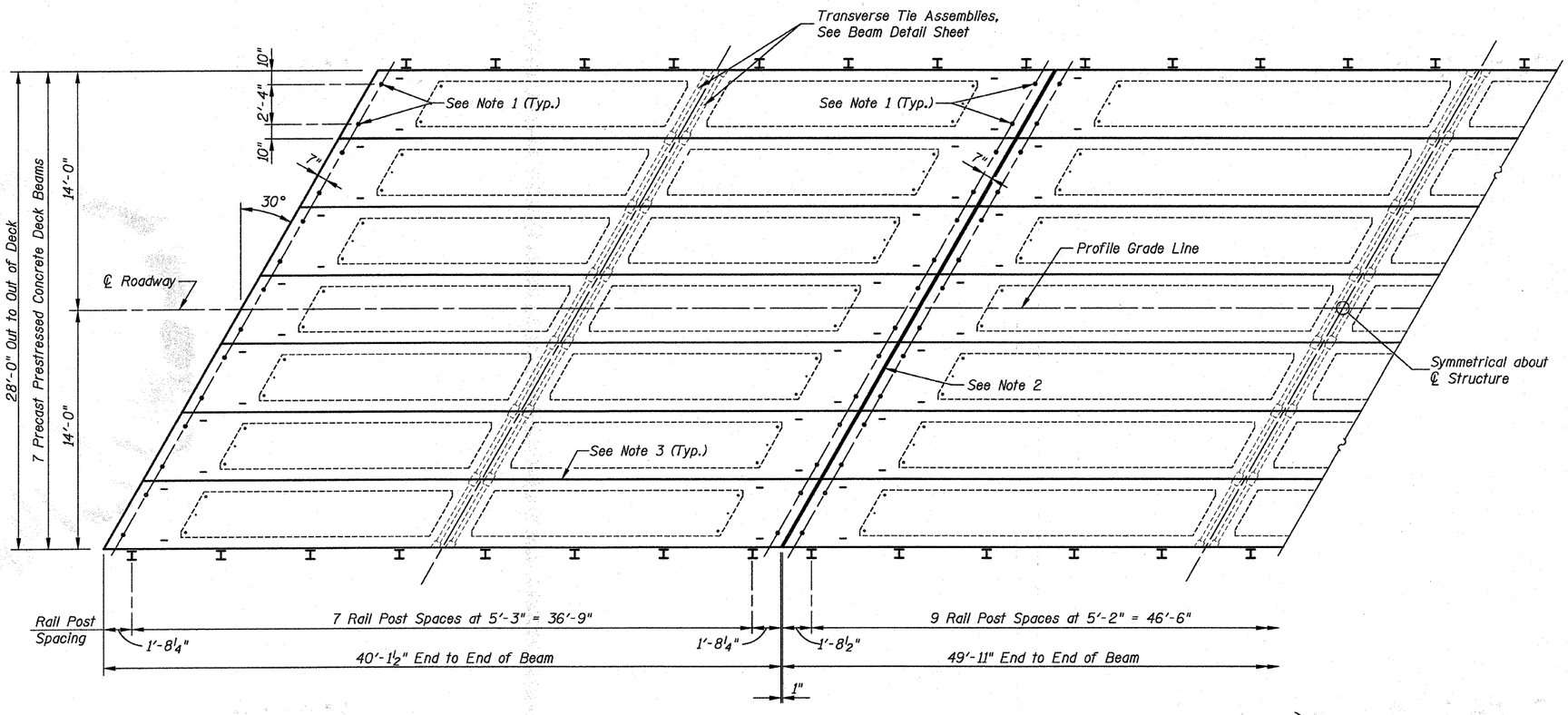
H.M. & G. NO. 6236



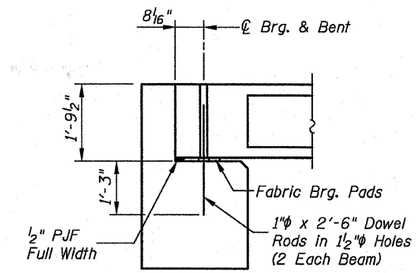
TYPICAL ELEVATION



CROSS SECTION

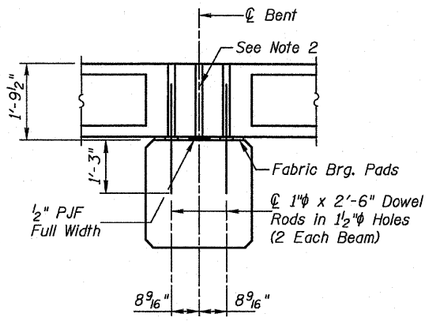


PLAN



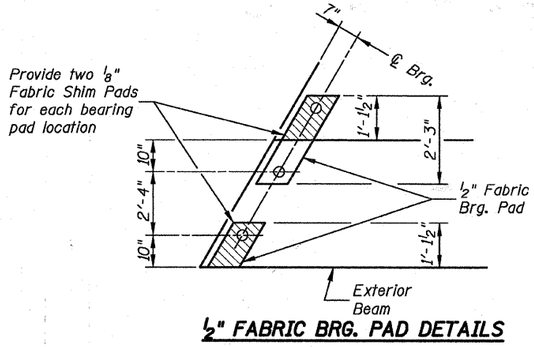
SECTION AT ABUTS.

(Along ℄ Beams)



SECTION AT PIERS

(Along ℄ Beams)



1/2" FABRIC BRG. PAD DETAILS

BILL OF MATERIAL

Steel Railing, Type S-1	264 Lin. Ft.
Portland Cement Mortar Fairing Course	780 Lin. Ft.

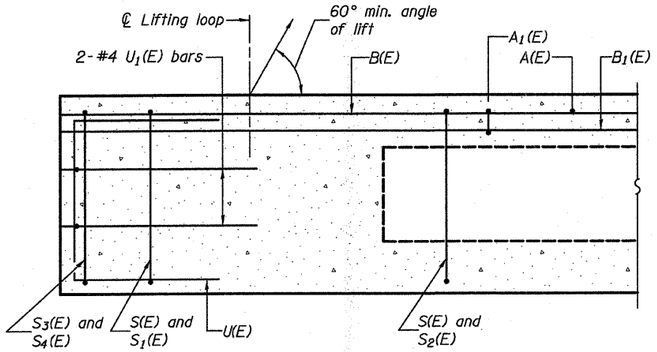
DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

NOTES

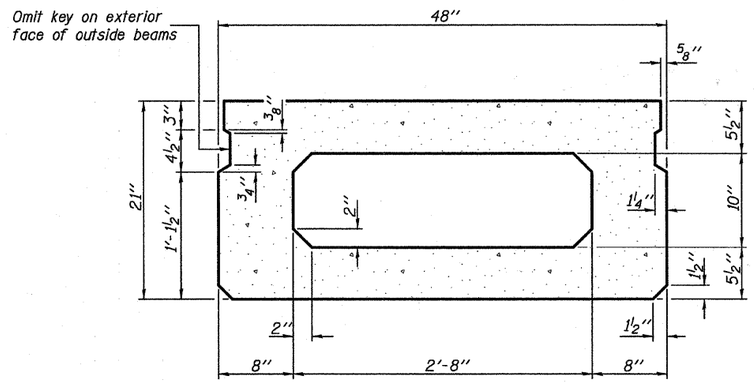
1. After beams have been erected, holes shall be drilled into substructure and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of beam and allowed to cure min. 24 hrs. prior to grouting the shear keys.
2. Nominal 1" joint at ℄ Pier shall be filled with non-shrink grout.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

P.P.C. DECK BEAM SUPERSTRUCTURE

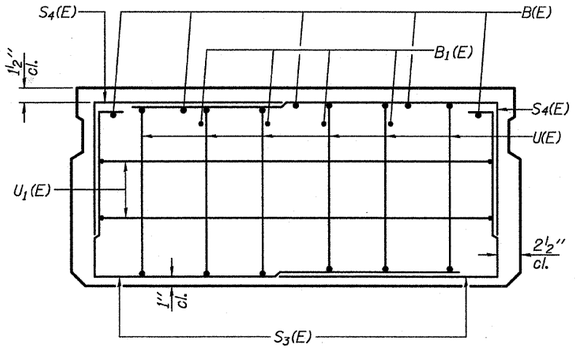
SHEET NO. 2	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	137	03-10115-00-BR	CLINTON	15	5
	S.N. 014-4055		CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



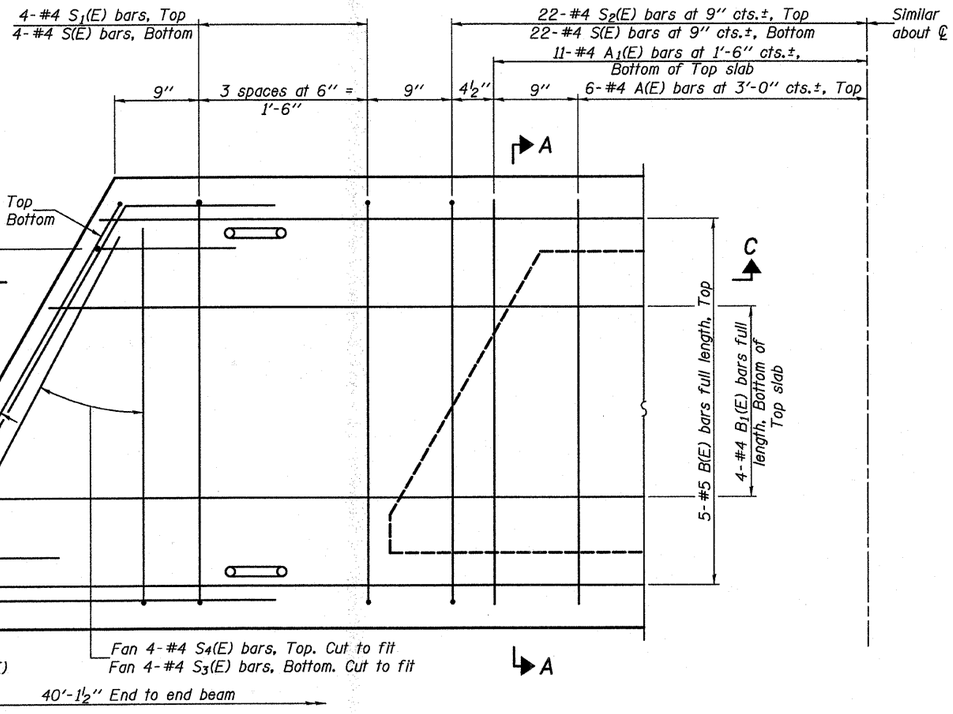
SECTION C-C



SECTION A-A
(Showing dimensions)

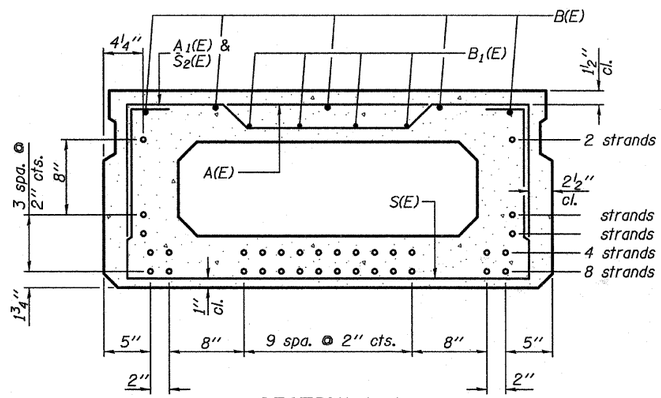


VIEW B-B



PLAN VIEW

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



SECTION A-A
(Showing reinforcement and permissible strand locations)

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	12	#4	3′-7″	—
A_1(E)	22	#4	3′-10″	~
B(E)	5	#5	39′-10″	—
B_1(E)	4	#4	39′-10″	—
S(E)	52	#4	7′-5″	⊔
S_1(E)	8	#4	5′-11″	⊓
S_2(E)	44	#4	6′-2″	⊓
S_3(E)	12	#4	5′-11″	⊔
S_4(E)	12	#4	5′-2″	⊔
U(E)	12	#5	4′-0″	⊏
U_1(E)	4	#4	8′-7″	⊏

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

DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

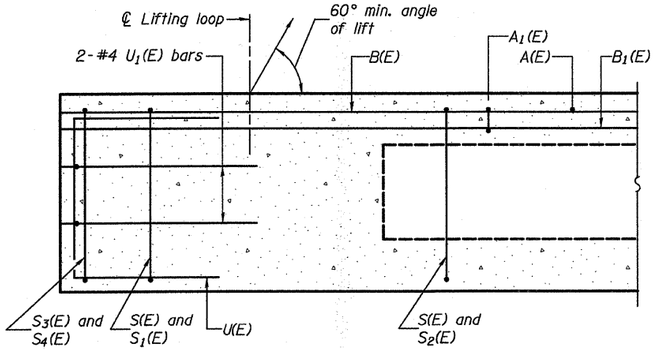
PD-2148-L 10-1-08

21″ X 48″ PPC DECK BEAM
SPANS 1 & 3

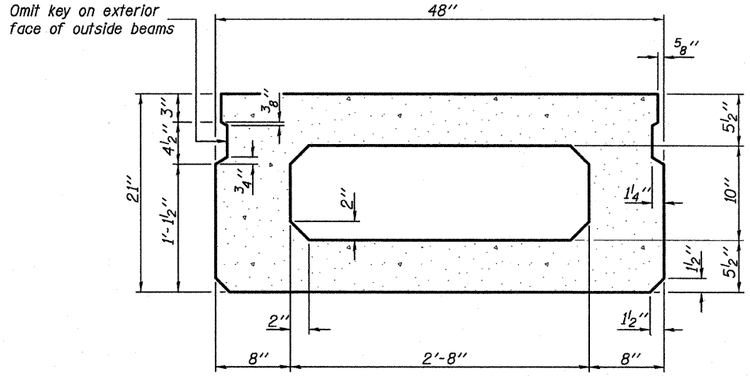
SHEET NO. 3 / 10 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
	137	03-10115-00-BR	CLINTON	15 / 6
	S.N. 014-4055		CONTRACT NO. 97374	
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	

H.M. & G. NO. 6236

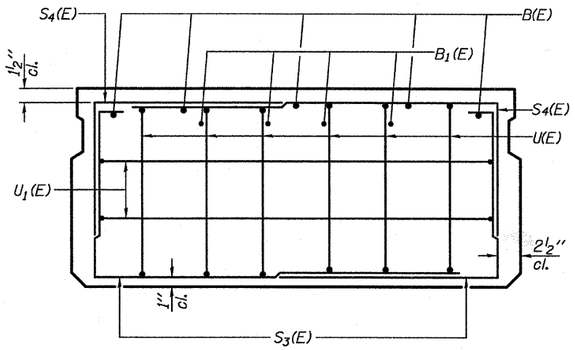
0144055-03-BEAM.DGN MAR. 12, 2009



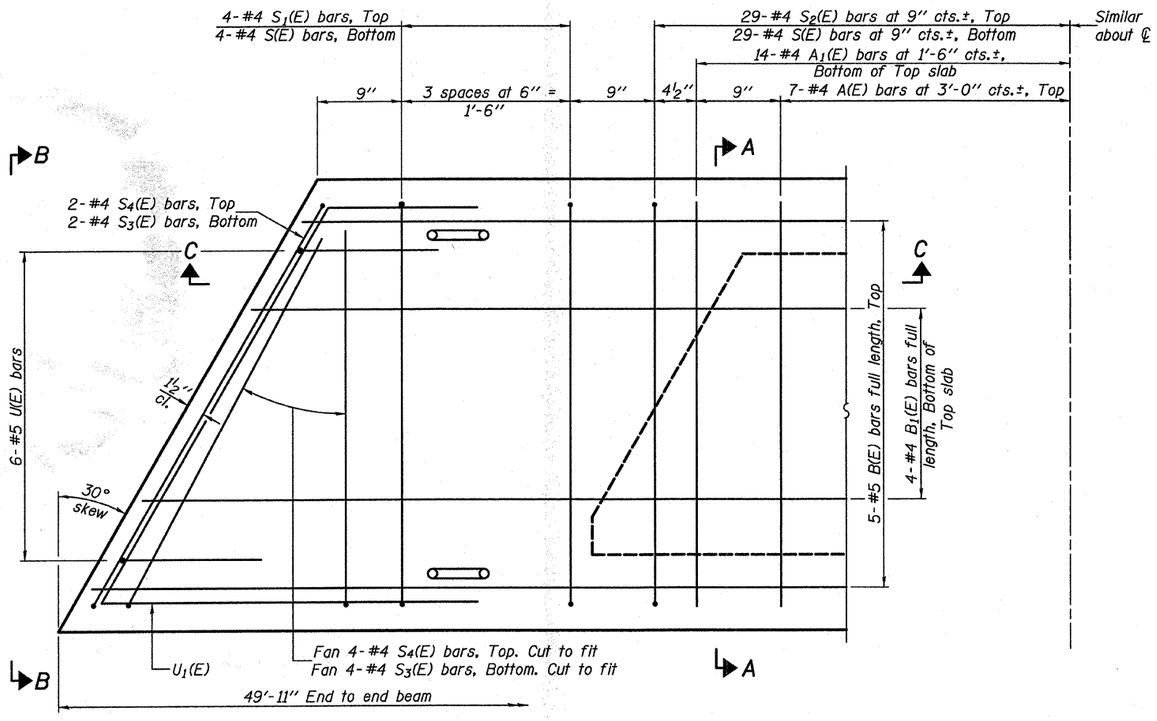
SECTION C-C



SECTION A-A
(Showing dimensions)

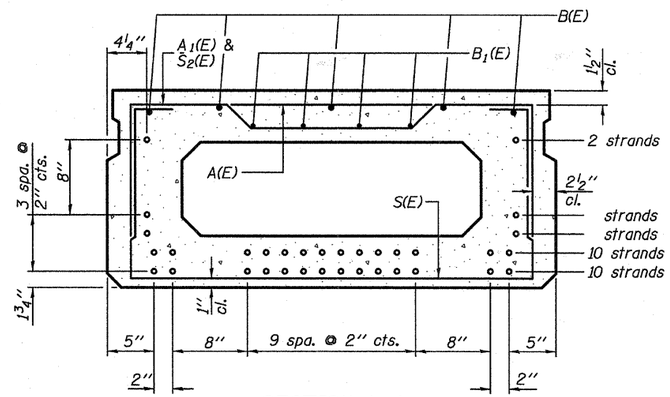


VIEW B-B



PLAN VIEW

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



SECTION A-A
(Showing reinforcement and permissible strand locations)

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

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	14	#4	3′-7″	—
$A_1(E)$	28	#4	3′-10″	⌣
B(E)	5	#5	49′-8″	—
$B_1(E)$	4	#4	49′-8″	—
S(E)	66	#4	7′-5″	⊐
$S_1(E)$	8	#4	5′-11″	⊐
$S_2(E)$	58	#4	6′-2″	⊐
$S_3(E)$	12	#4	5′-11″	⌐
$S_4(E)$	12	#4	5′-2″	⌐
U(E)	12	#5	4′-0″	⊏
$U_1(E)$	4	#4	8′-7″	⊏

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

DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

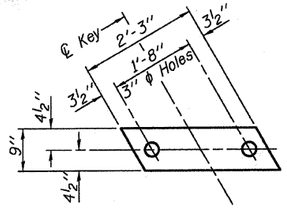
PD-2148-L 10-1-08

21″ X 48″ PPC DECK BEAM
SPAN 2

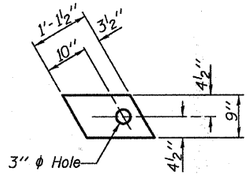
SHEET NO. 4	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	137	03-10115-00-BR	CLINTON	15	7
	S.N. 014-4055		CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

H.M. & G. NO. 6236

OH4055-05-BMDT.DGN MAR. 10, 2009



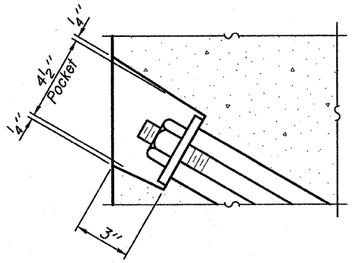
FABRIC BEARING PAD
(Interior)



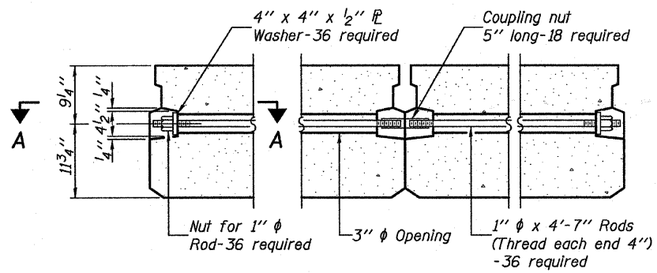
FABRIC BEARING PAD
(Exterior)

FIXED

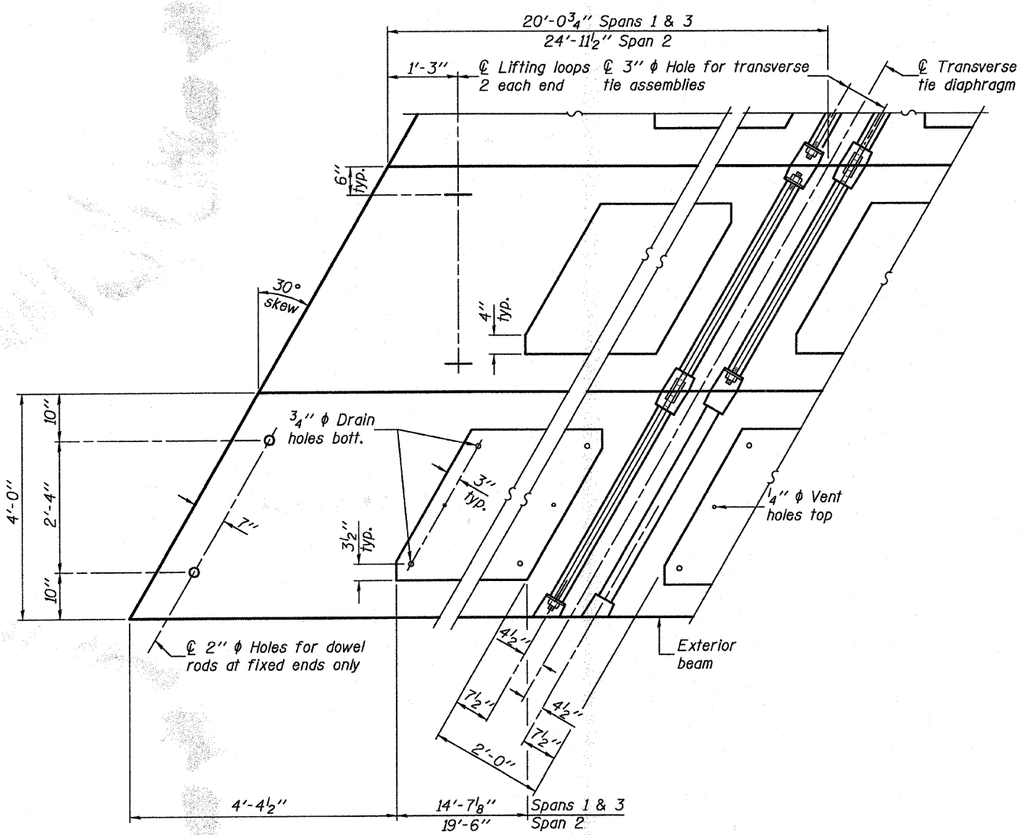
Note: Omit holes when using expansion bearings.



SECTION A-A

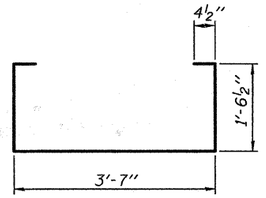


TYPICAL TRANSVERSE TIE ASSEMBLY

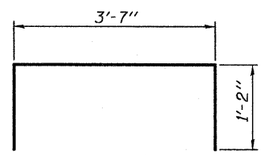


PLAN VIEW

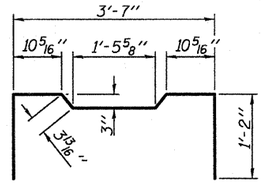
Note: Connect beams in pairs with the transverse tie configuration shown.



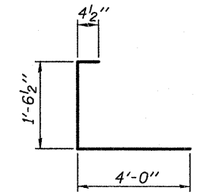
BAR S(E)



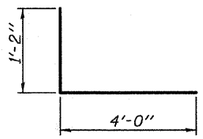
BAR S1(E)



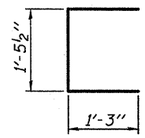
BAR S2(E)



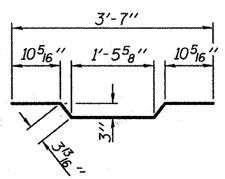
BAR S3(E)



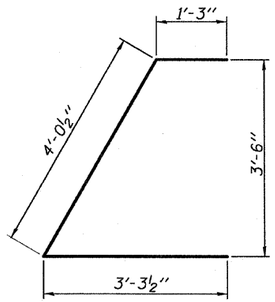
BAR S4(E)



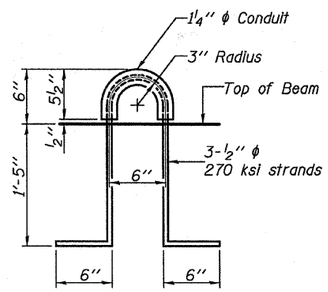
BAR U(E)



BAR A1(E)



BAR U1(E)



LIFTING LOOP DETAIL

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

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

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

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½" 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.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (21" depth)	Sq. Ft.	3,647

DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

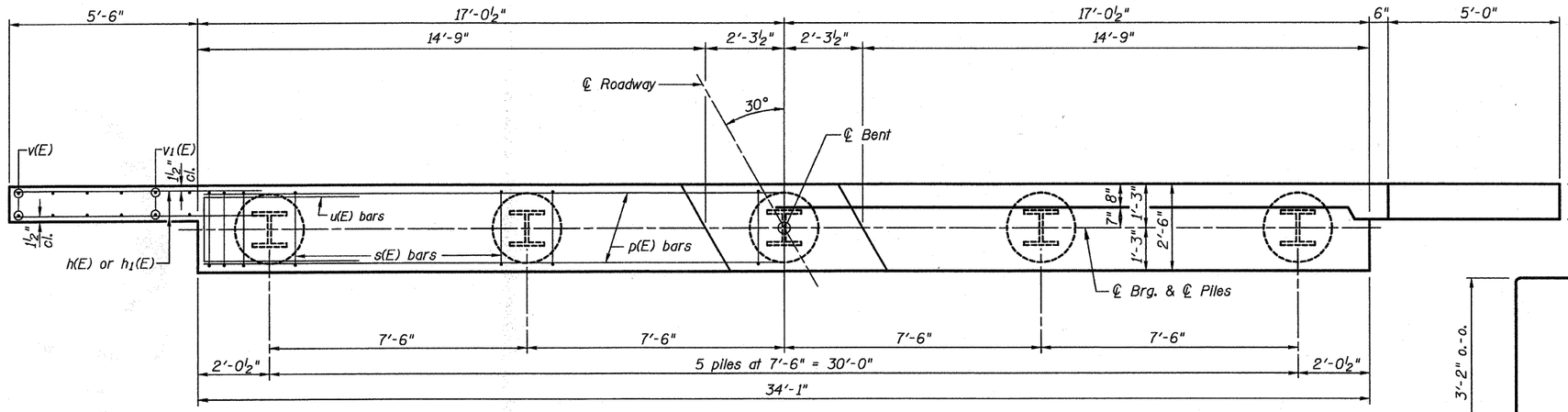
PD-2148-LD 10-1-08

21" X 48" PPC DECK BEAM DETAILS

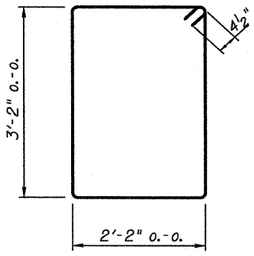
SHEET NO. 5	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	137	03-10115-00-BR	CLINTON	15	8
	S.N. 014-4055		CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

H.M. & G. NO. 6236

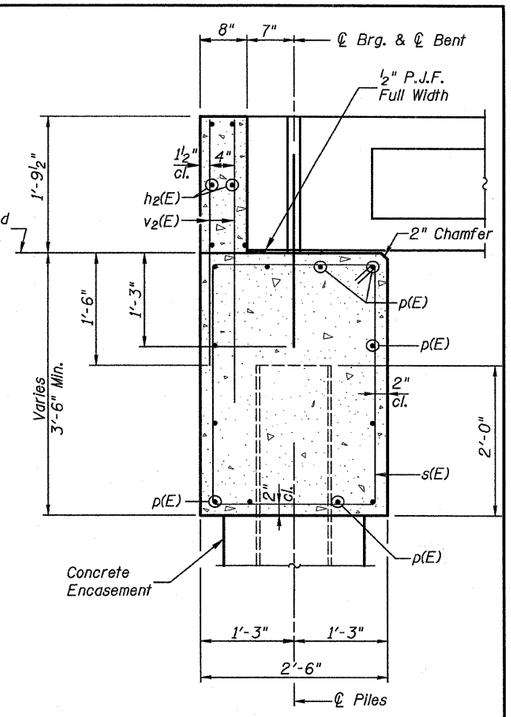
0144055-06-ABUT.DGN MAR. 12, 2009



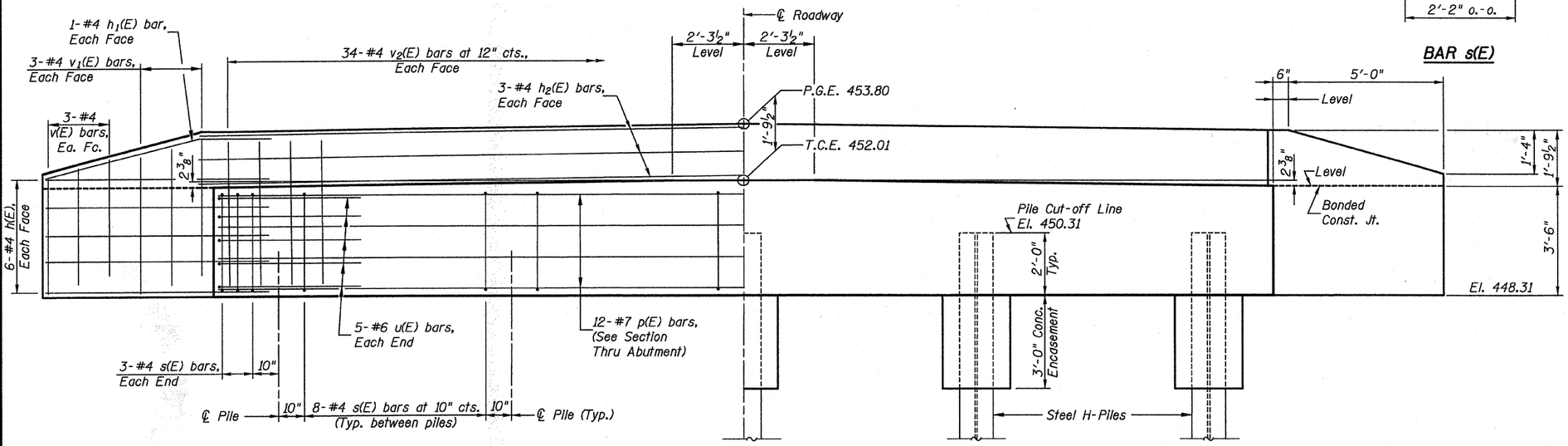
PLAN



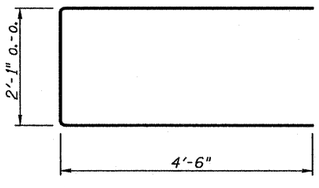
BAR s(E)



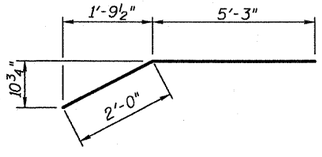
SECTION THRU ABUTMENT
(at Right Angles)



ELEVATION



BAR u(E)



BAR h1(E)

BILL OF MATERIAL FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	24	#4	7'-0"	——
h_1(E)	4	#4	7'-3"	⟍
h_2(E)	6	#4	33'-9"	——
p(E)	12	#7	33'-9"	——
s(E)	38	#4	11'-5"	⌐
u(E)	10	#6	11'-1"	▭
v(E)	12	#4	3'-0"	——
v_1(E)	12	#4	4'-0"	——
v_2(E)	68	#4	3'-2"	——
Concrete Structures			Cu. Yd.	14.7
Reinforcement Bars, Epoxy Coated			Pound	1,750
Concrete Encasement			Cu. Yd.	1.8

Reinforcement Bars designated (E) shall be Epoxy Coated.

NOTES

1. The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beam.
2. Space reinforcement in pile cap to miss dowel rods.

DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

PILE DATA

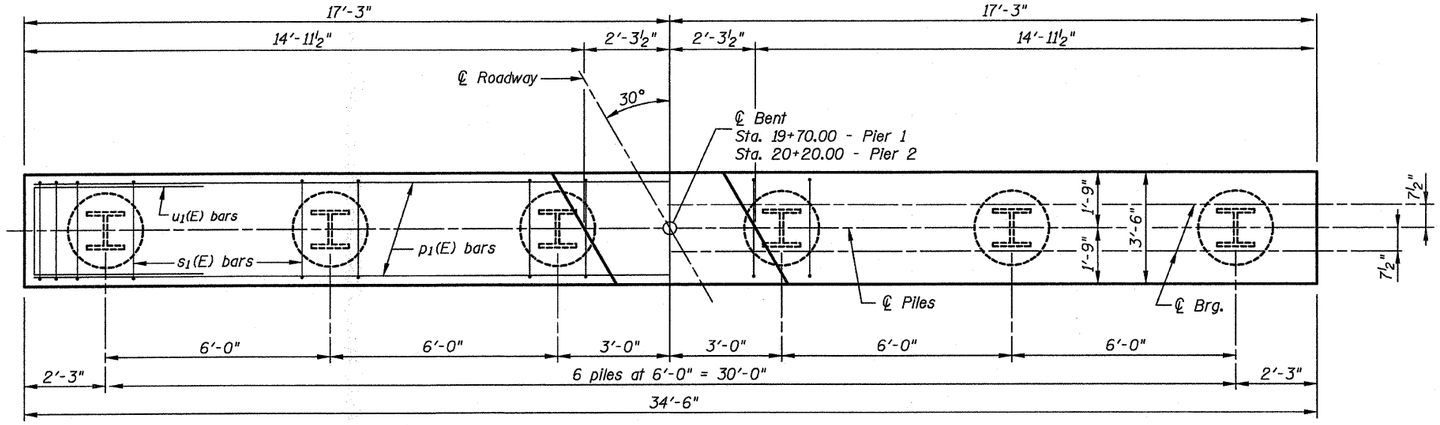
	W. ABUT.	E. ABUT.
Type:	Steel HP 10x42	Steel HP 10x42
Nominal Required Bearing:	335 k	335 k
Factored Resistance Available:	168 k	168 k
Est. Length:	34 ft.	21 ft.
No. Production Piles:	5	5
No. Test Piles:	0	0

PILE BENT ABUTMENT

SHEET NO. 6	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	137	03-10115-00-BR	CLINTON	15	9
	S.N. 014-4055		CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

H.M. & G. NO. 6236

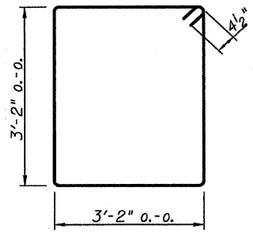
0144055-07-PIER.DGN MAR. 12, 2009



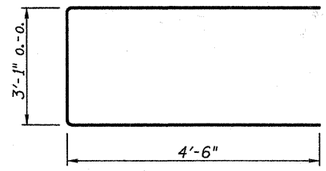
PLAN

PILE DATA

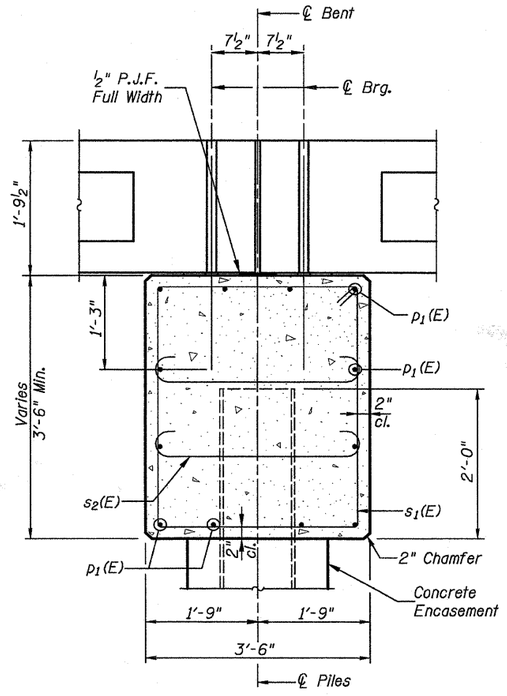
	PIER 1	PIER 2
Type:	Steel HP 12x53	Steel HP 12x53
Nominal Required Bearing:	419 k	419 k
Factored Resistance Available:	210 k	210 k
Est. Length:	34 ft.	21 ft.
No. Production Piles:	5	5
No. Test Piles:	1	1



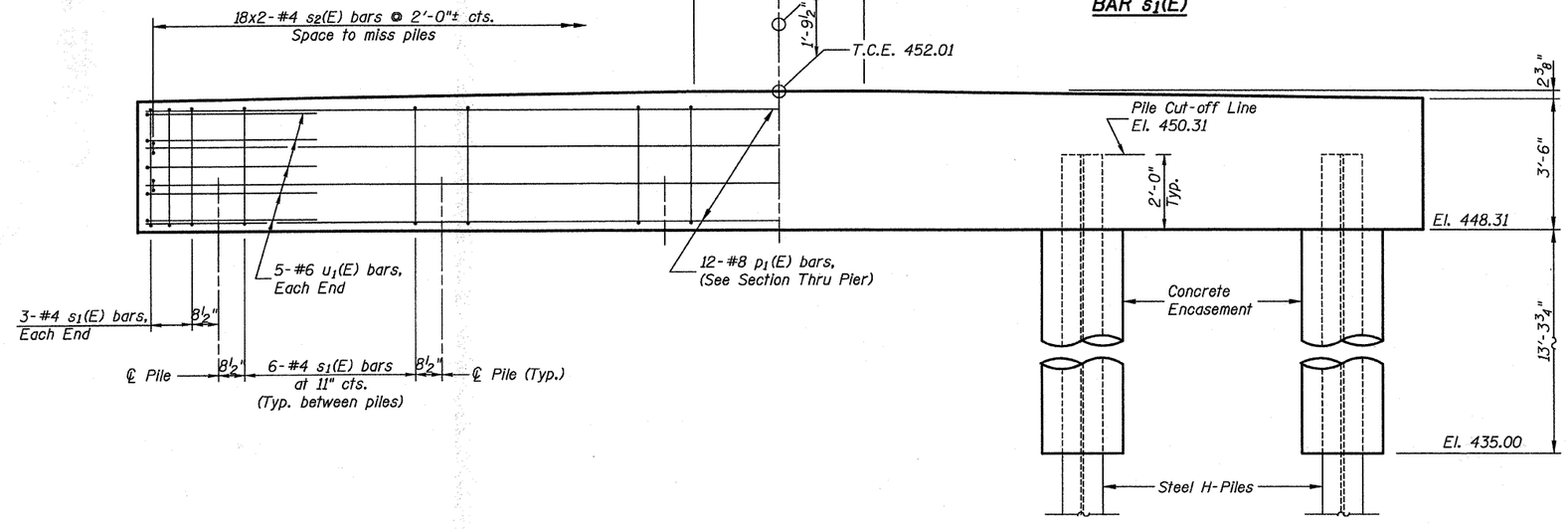
BAR s_1(E)



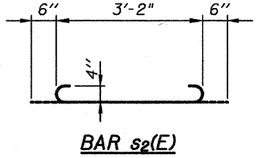
BAR u_1(E)



SECTION THRU PIER
(at Right Angles)



ELEVATION



BAR s_2(E)

BILL OF MATERIAL
FOR ONE PIER

Bar	No.	Size	Length	Shape
p_1(E)	12	#8	34'-2"	——
s_1(E)	36	#4	13'-5"	
s_2(E)	36	#4	4'-2"	
u_1(E)	10	#6	12'-1"	
Concrete Structures			Cu. Yd.	16.2
Reinforcement Bars, Epoxy Coated			Pound	1,700
Concrete Encasement			Cu. Yd.	9.3

Reinforcement Bars designated (E) shall be Epoxy Coated.

NOTES

1. Space reinforcement in pile cap to miss dowel rods.

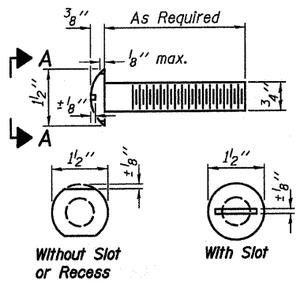
DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

PILE BENT PIER

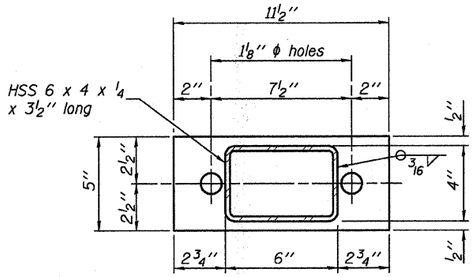
SHEET NO. 7	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	137	03-10115-00-BR	CLINTON	15	10
	S.N. 014-4055		CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

H.M. & G. NO. 6236

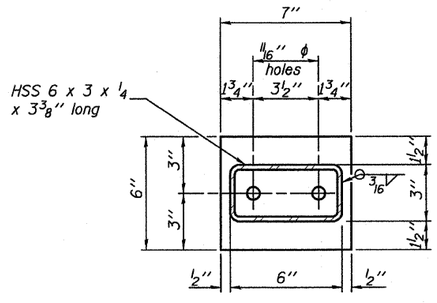
0144055-08-RLDT.DGN MAR. 12, 2009



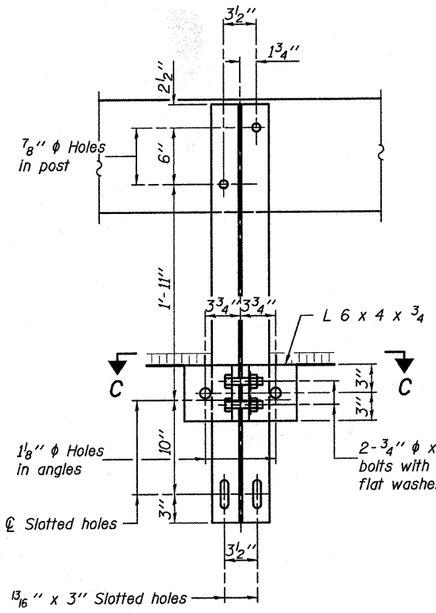
VIEW A-A
ROUND HEAD BOLT



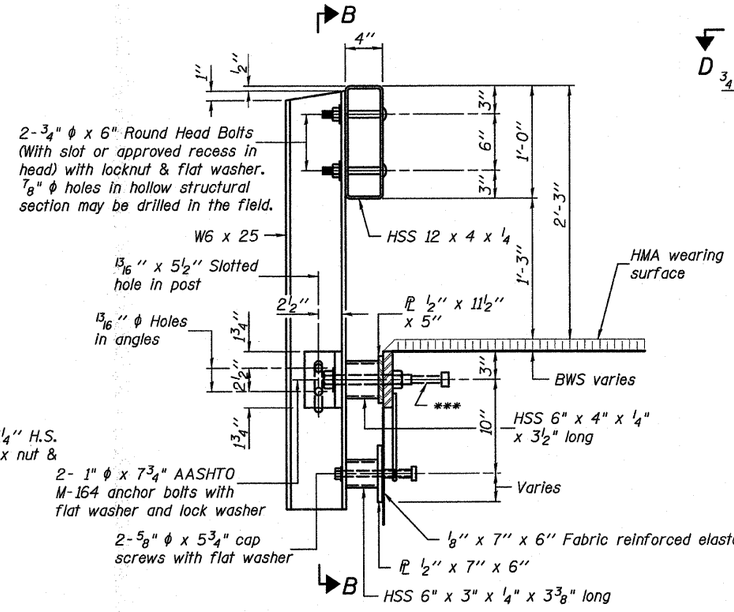
PL 1/2" x 11 1/2" x 5"



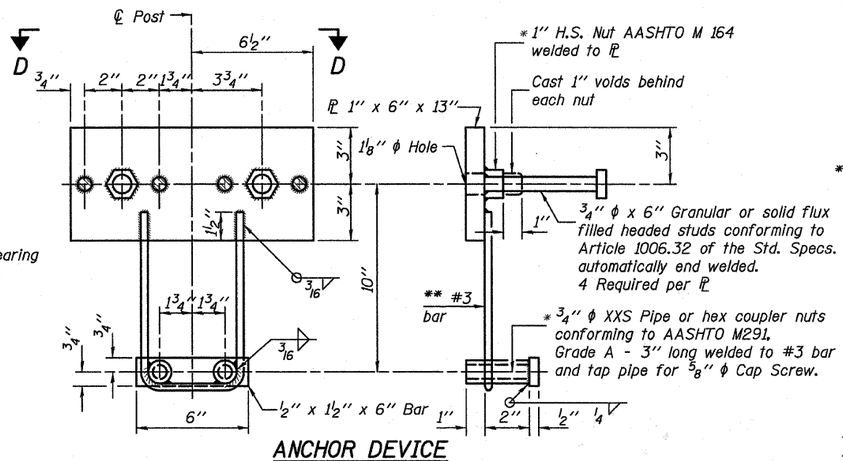
PL 1/2" x 7" x 6"



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

Notes:

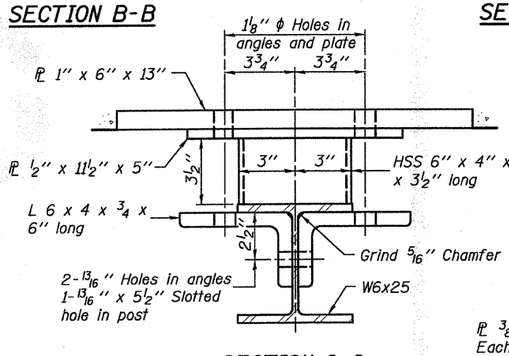
All field drilled holes shall be coated with an approved zinc rich paint before erection.

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

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

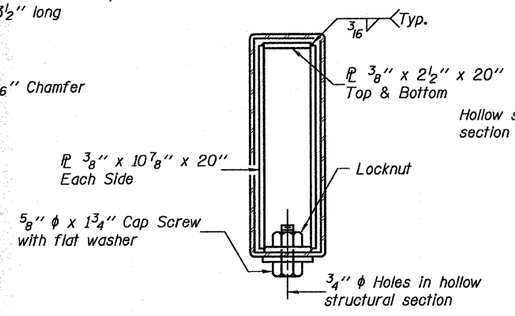
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

VIEW D-D

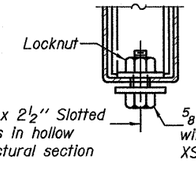


SECTION C-C

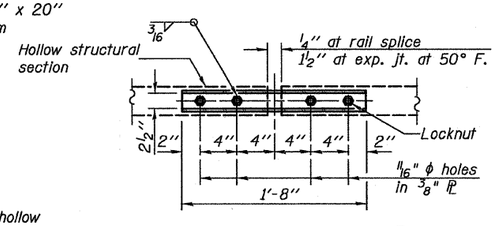
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



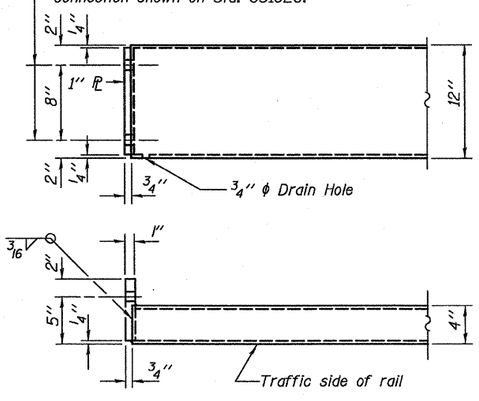
SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE PL TYPICAL



END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	264

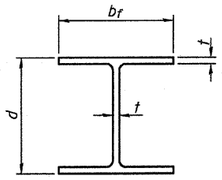
DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

R-23A 10-1-08 (10'-9" Maximum Post Spacing)

STEEL RAILING, TYPE S-1

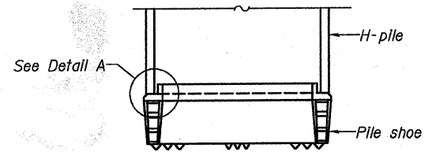
SHEET NO. 8	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	137	03-10115-00-BR	CLINTON	15	11
		S.N. 014-4055	CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

H.M. & G. NO. 6236

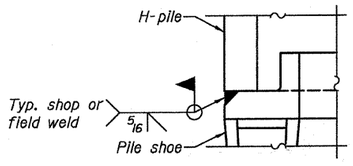


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

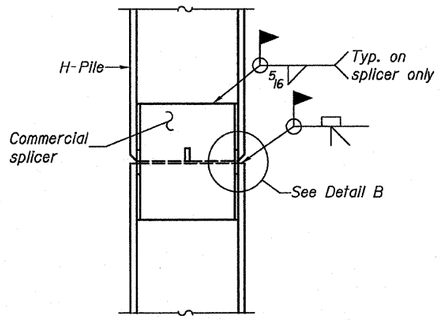


ELEVATION

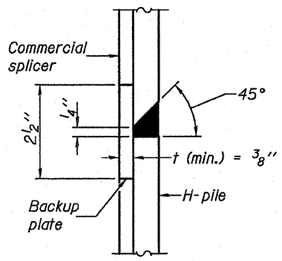


DETAIL A

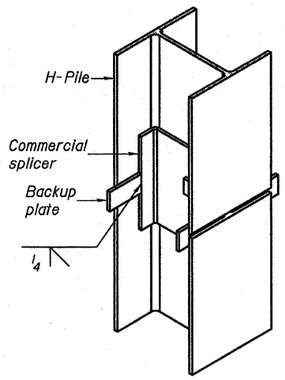
H-PILE SHOE ATTACHMENT



ELEVATION

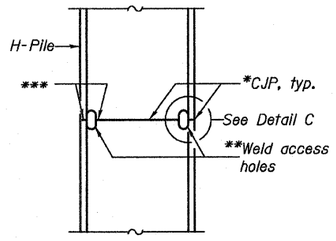


DETAIL "B"

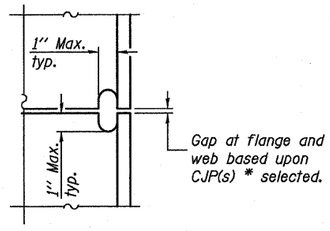


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ELEVATION



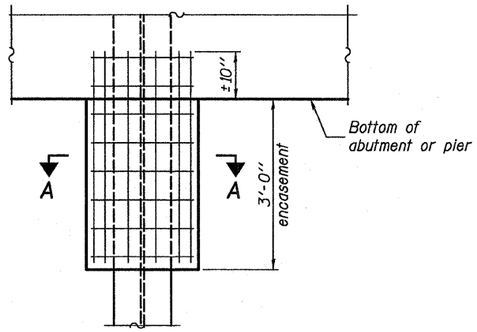
DETAIL C

COMPLETE PENETRATION WELD SPLICE

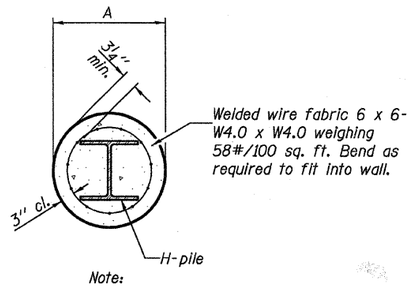
* Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.

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

*** Interrupt welds 1/4" from end of each pile.



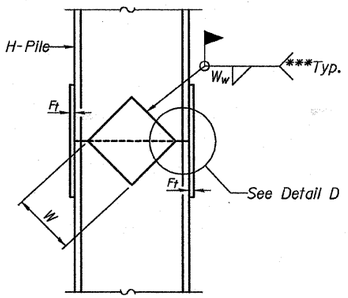
ELEVATION



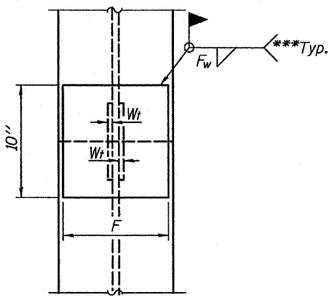
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

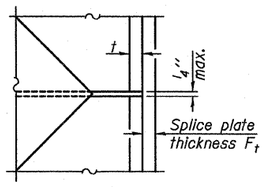
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

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

DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

F-HP 10-1-08

HP PILE DETAILS

SHEET NO. 9 / 10 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	137	03-10115-00-BR	CLINTON	15	12
	S.N. 014-4055		CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

H.M. & G. NO. 6236

NW 1/4, Section 29, T 2 N, R 1 W, 3rd P.M.

Illinois Department of Transportation

NOTE:
Assumed Elevation 100.0
@ Assumed Station 10+00
Center Existing Structure.

Bridge Foundation Boring Log

Sh. 1 of 1 Sh.

PROJECT SN 027-3067 BRIDGE Township Road 137 Date 1-29-89
ROUTE TR 137 Over Lost Creek Bored By Larry Ford
SEC. 89-10110-00-BR STA. 10+00 Checked By Robert Nebelsick
COUNTY Clinton

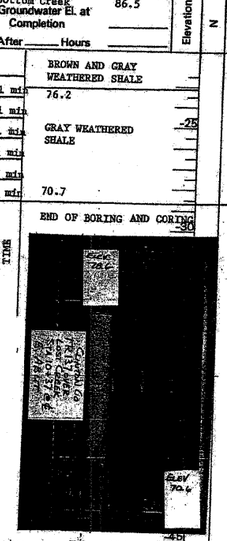
Boring No. 1, E.Abut.
Station 10+37
Offset @ ℄

Surface Water El. Bottom Creek 87.5
Groundwater El. at Completion 86.5
After ____ Hours

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 99.3 (453.5)			
BROWN AND GRAY SILTY CLAY	1 min		
	1 min		
	7	S/10 1.5	21
	1 min		
	2 min		
92.8±	1	S/5 1.0	20
BROWN AND GRAY GRAVELLY VERY SILTY CLAY	1 min		
	1/2	S/10 0.8	30
(SOME WOOD)	1/2	S/15 0.7	41
87.8±	5/5	S/10 0.4	31
GRAY SANDY CLAY 86.1 F.W.	10	NC	–
GRAY CLAYEY SAND (WITH WOOD)	3/3	NC	–
82.8±	50/ .45	5.2	14
BROWN AND GRAY SHALE WEATHERED	7	S/15	
78.7	50/ .4	6.9	11
3 min. GRAY LIMESTONE 77.7			
1 min. BR.SAND STONE BROKEN & WEATHERED			

Elevation	N	Qu t/s.f.	w (%)
BROWN AND GRAY WEATHERED SHALE			
76.2			
GRAY WEATHERED SHALE			
70.7			
END OF BORING AND CORING			

CORING TIMES



N-Standard Penetration Test-
Blows per foot to drive 2"
O.D. Split Spoon Sampler 12" with
140 No. hammer falling 30".

Qu-Unconfined Compressive Strength - t/sf

w - Water Content - percentage of oven dry weight %

Type failure:
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer

BD 137 (Rev. 4-78)

NW 1/4, Section 29, T 2 N, R 1 W, 3rd P.M.

Illinois Department of Transportation

Bridge Foundation Boring Log

Sh. 1 of 1 Sh.

PROJECT SN 027-3067 BRIDGE Township Road 137 Date 1-29-89
ROUTE TR 137 Over Lost Creek Bored By Larry Ford
SEC. 89-10110-00-BR STA. 10+00 * Checked By Robert Nebelsick
COUNTY Clinton

Boring No. 2, W.Abut.
Station 9+58 *
Offset @ ℄

Surface Water El. Bottom Creek 87.5
Groundwater El. at Completion 86.5
After ____ Hours

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 453.7 99.5 *			
BROWN AND GRAY SANDY SILT WITH LIMESTONE ROCK	6 9 12	S/0 0.7	9
95.5±			
GRAY SANDY SILTY CLAY	8 15 10	S/5 3.9	12
93.0±			
BROWN SANDY SILT	3 7 6	S/5 1.0	6
90.5± (ORIGINAL GROUND)			
GRAY SILTY CLAY	1 1 2	S/10 0.6	23
88.5 F.W.			
88.0			
GRAY SANDY SILTY CLAY WITH GRAVEL	3 5 4	S/10 1.4	18
85.5±			
BROWN AND GRAY SILTY CLAY	1 2 2	S/10 1.5	25
	2 3 4	S/10 1.0	23
79.0 F.W.	2 2 4	S/10 1.6	19
GRAY SILT			
BROWN AND GRAY SILTY CLAY			

Elevation	N	Qu t/s.f.	w (%)
77.5			
GRAY AND BROWN SILT WITH BROKEN WEATHERED SHALE	1 2 6	S/5 1.6	17
75.5±			
GRAY WEATHERED SANDSTONE	8 12 12	NC	13
73.0±			
GRAY WEATHERED SHALE	7 16 23	S/5 3.1	11
	8 12 18	S/5 2.7	14
66.5	3 36	S/5 1.8	15
GRAY SHALE 65.5	50/ .2	NC	–
GRAY SHALEY SANDSTONE	50/ .2	–	–
	50/ .1	–	–
59.9	50/ .1	–	–
END OF BORING			

NOTE:
Assumed Elevation 100.0 @
Assumed Station 10+00
Center Existing Structure.

N-Standard Penetration Test-
Blows per foot to drive 2"
O.D. Split Spoon Sampler 12" with
140 No. hammer falling 30".

Qu-Unconfined Compressive Strength - t/sf

w - Water Content - percentage of oven dry weight %

Type failure:
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer

BD 137 (Rev. 4-78)

DESIGNED	K.M.M.
CHECKED	L.D.G.
DRAWN	K.H.L.
CHECKED	B.G.H.

SOIL BORING LOGS

SHEET NO. 10	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	137	03-10115-00-BR	CLINTON	15	13
		S.N. 014-4055	CONTRACT NO. 97374		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

H.M. & G. NO. 6236

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
T.R. 137 SAND RIDGE ROAD	03-10115-00-BR	CLINTON	15	14

CONTRACT NO. 97374

BRIDGE OMMISSION
STA. 19+29.06
TO
STA. 20+60.94

NOTE: TRANSITION FROM THE EXISTING CROSS SECTION AT STATION 17+06.00 TO THE TYPICAL SECTION AT 17+50

PLAN
SURVEYED BY
PLOTTED
NOTE BOOK ALIGNMENT CHECKED
NO. RT. OF WAY CHECKED

PROFILE
SURVEYED BY
PLOTTED
GRADES CHECKED
NOTE BOOK STRUCTURE NOTATIONS CHKD
NO.

CROSS SECTIONS
EXISTING & PROPOSED ROADWAY
T.R. 137 (SAND RIDGE ROAD)
OVER TRIB. TO LOST CREEK
SECTION 03-10115-00-BR
CLINTON COUNTY

WRK
07/01/08
0560202pp.dwg

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET
T.R. 137 SAND RIDGE ROAD	03-10115-00-BR	CLINTON	15	15

CONTRACT NO. 97374

NOTE: TRANSITION FROM THE TYPICAL SECTION AT STATION 22+50 TO THE EXISTING CROSS SECTION AT 22+85

455 450

22 + 85 | 22 + 50 | 22 + 00 | 21 + 50 | 21 + 00 | 20 + 60.94

PROPOSED ROW

P.G.E. 455.55 | C=12 F=0 | 454.50 (EXIST) | 454.10 (EXIST)

P.G.E. 454.66 | C=23 F=7 | 453.93 | 452.98

P.G.E. 453.93 | C=3 F=28 | 452.78 | 451.38

P.G.E. 453.80 | C=6 F=52 | 451.63 | 449.78

P.G.E. 453.80 | C=6 F=74 | 450.48 | 448.18

P.G.E. 453.80 | C=12 F=65 | 449.58 | 446.93

0 20 40 60 20 40 60

CROSS SECTIONS
EXISTING & PROPOSED ROADWAY
T.R. 137 (SAND RIDGE ROAD)
OVER TRIB. TO LOST CREEK
SECTION 03-10115-00-BR
CLINTON COUNTY

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R/W & WAY CHECKED
BY

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
CROSS CHECKED
R/W & WAY CHECKED
STRUCTURE NOTATNS CHKD
BY

WRK
07/01/08
0560202pp.dwg