4-23-10 LETTING ITEM 370

INDEX OF SHEETS

STANDARDS: 280001–05 – EROSION CONTROL
515001–03 – NAME PLATE
701901–01 – TRAFFIC
BLR 21–8 – TRAFFIC
BLR 22–6 – TRAFFIC

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL–AID HIGHWAY BRIDGE PROGRAM
T.R.622
WAYNE COUNTY
SECTION 08–15143–00–BR
STRUCTURE NO. 096–3451
PROJECT NO. BROS–0191(060)
JOB NO. C–97–014–10

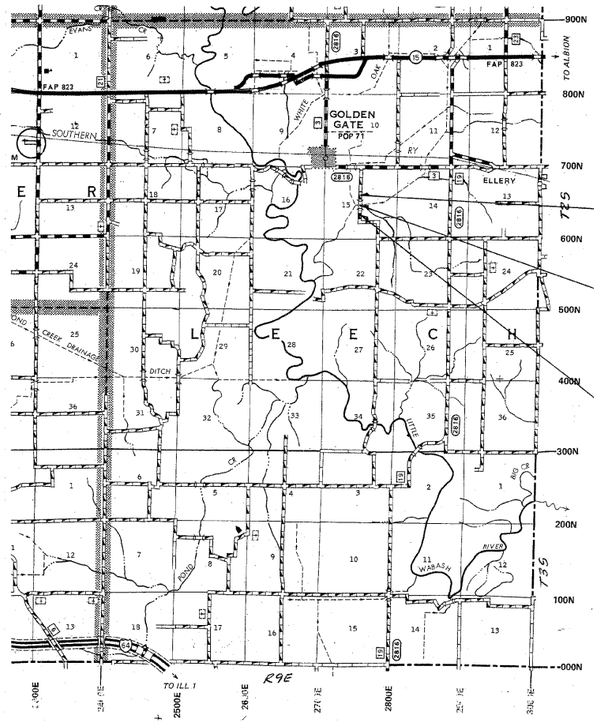
SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEMS	CODE NO.
596	CU YD	EARTH EXCAVATION	20200100
390	CU YD	CHANNEL EXCAVATION	20300100
0.6	ACRE	SEEDING, CLASS 2 (SPECIAL)	25001000
48	FOOT	TEMPORARY DITCH CHECKS	28000305
60	FOOT	PERIMETER EROSION BARRIER	28000400
140	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
48	TON	STONE RIPRAP DITCH	28102600
501	TON	AGGREGATE BASE COURSE, TYPE B	35101400
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
42	CU YD	CONCRETE STRUCTURES	50300225
14.6	CU YD	CONCRETE ENCASEMENT	50300280
1,800	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	50400305
4,390	POUND	REINFORCEMENT BARS	50800105
147	FOOT	STEEL RAILING, TYPE S1	50900205*
910	FOOT	FURNISHING STEEL PILES HP 10x42	51201400
910	FOOT	DRIVING PILES	51202305
2	EACH	TEST PILE STEEL HP 10x42	51203400
1	EACH	NAME PLATES	51500100
30	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 18"	542D0223
1	L SUM	MOBILIZATION	67100100
1	L SUM	TRAFFIC CONTROL AND PROTECTION	70101700

* SPECIALTY ITEMS

SCALES

PLAN	1 INCH = 50 FEET
PROFILE HORZ.	1 INCH = 50 FEET
PROFILE VERT.	1 INCH = 10 FEET
CROSS SECTION	1 INCH = 5 FEET



SECTION 08–15143–00–BR
ENDS STA. 8+00

STA. 4+89 – SPECIAL BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED
CONCRETE DECK BEAM BRIDGE.
3 SPANS @25' EACH ,24' RDWY., SKEW = 0°
PROP. STR. NO. 096–3451
EXIST. STR. NO. 096–3220

SECTION 08–15143–00–BR
BEGINS STA. 2+00

FUNCTIONAL CLASS: RURAL LOCAL ROAD
ADT = 75
DESIGN SPEED = 30MPH

LOCATION MAP
APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 600 L.F. = 0.114 MILES

TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1–800–892–0123 OR 811

CONTRACT NO. 95607

PROFESSIONAL DESIGN FIRM #184–000832

JOHN A. STONE 062-057472 REGISTERED PROFESSIONAL ENGINEER STATE OF ILLINOIS
10/06/2009
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
LICENSE EXPIRES NOVEMBER 30, 2009

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED: 10-7, 2009
Authorized Signature
WAYNE COUNTY ENGINEER

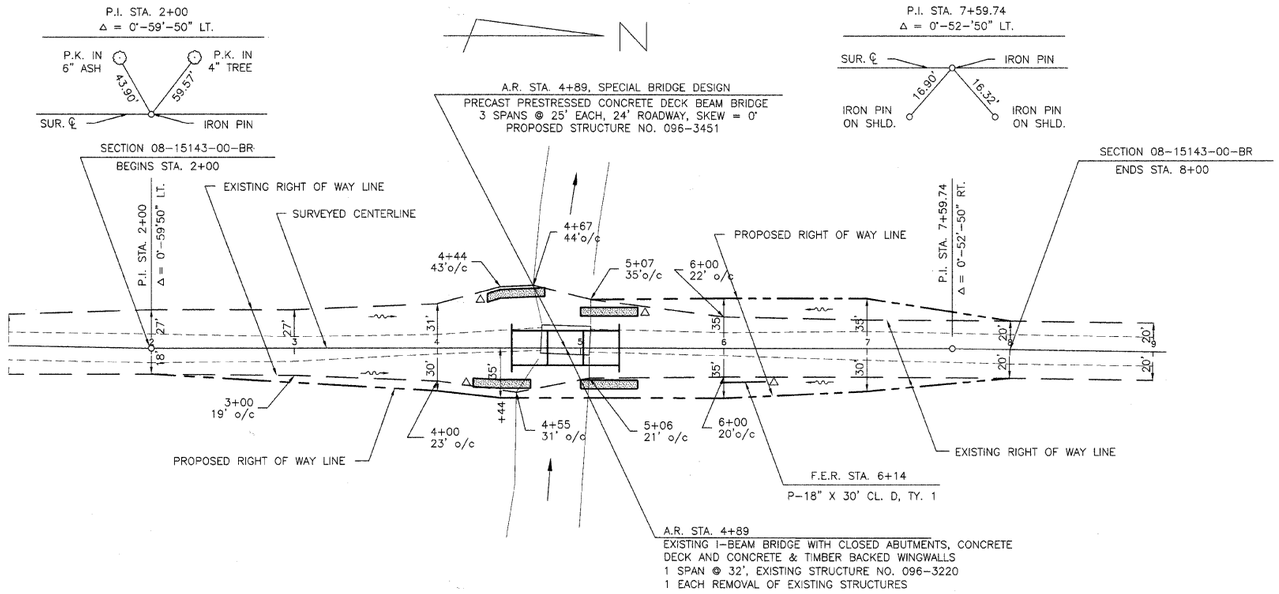
PASSED: 10/22, 2009
Maureen D. Kastl
DISTRICT SEVEN ENGINEER
OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW 10/22, 2009
Roger K. Rushcliff
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FOUR ENGINEER

SECTION	08-15143-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	WAYNE	14	2
ROAD DIST.	LEECH		
STA. 1+00	TO STA. 9+00		

CONTRACT NO. 95607

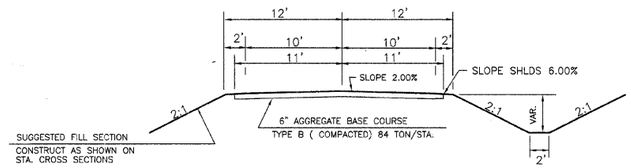
HERMAN M. KLEMICK III & CHRISTOPHER SIMPSON & JUANITA SIMPSON



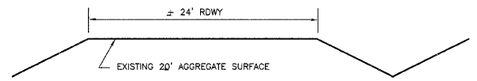
SCALES:
1" = 50' HOR
1" = 10' VER

INA LEE SAMPLE & DELMAR SAMPLE,
TRUSTEES OF REVOCABLE TRUST

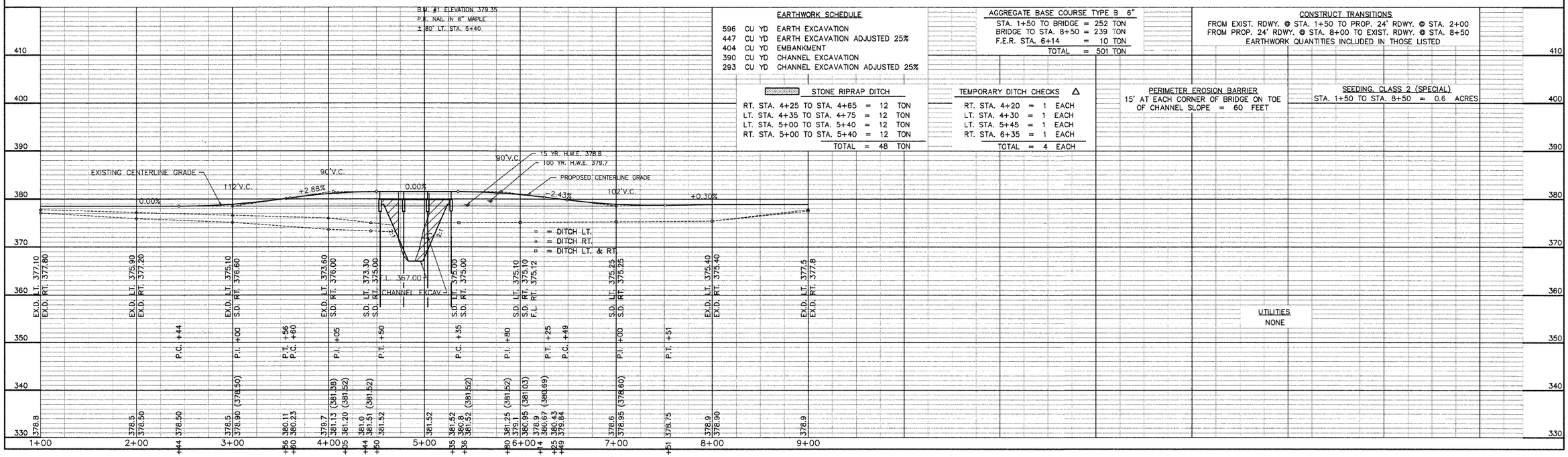
PAULINE FELIX, TRUSTEE OF THE
PAULINE FELIX REVOCABLE TRUST



TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT



TYPICAL CROSS SECTION OF EXISTING ROADWAY



EARTHWORK SCHEDULE

596	CU YD	EARTH EXCAVATION
447	CU YD	EARTH EXCAVATION ADJUSTED 25%
404	CU YD	EMBANKMENT
390	CU YD	CHANNEL EXCAVATION
293	CU YD	CHANNEL EXCAVATION ADJUSTED 25%

STONE RIPRAP DITCH

RT. STA. 4+25	TO STA. 4+65	= 12	TON
LT. STA. 4+35	TO STA. 4+75	= 12	TON
LT. STA. 5+00	TO STA. 5+40	= 12	TON
RT. STA. 5+00	TO STA. 5+40	= 12	TON
	TOTAL	= 48	TON

AGGREGATE BASE COURSE TYPE B 6"

STA. 1+50	TO BRIDGE	= 252 TON
BRIDGE	TO STA. 8+50	= 239 TON
F.E.R. STA. 6+14		= 10 TON
	TOTAL	= 501 TON

TEMPORARY DITCH CHECKS △

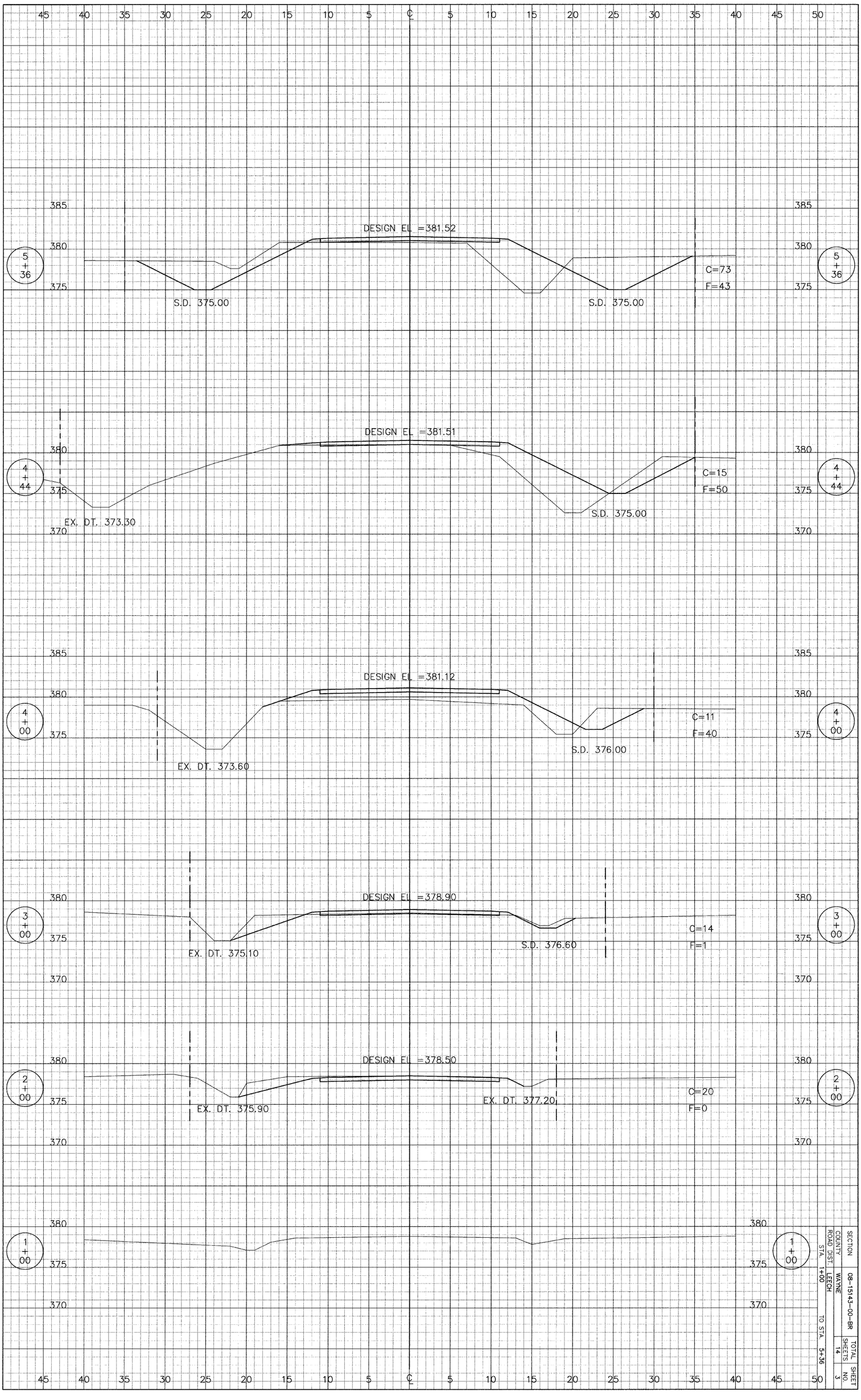
RT. STA. 4+20	= 1	EACH
LT. STA. 4+30	= 1	EACH
LT. STA. 5+45	= 1	EACH
RT. STA. 6+35	= 1	EACH
TOTAL	= 4	EACH

CONSTRUCT TRANSITIONS
FROM EXIST. RDWY. @ STA. 1+50 TO PROP. 24' RDWY. @ STA. 2+00
FROM PROP. 24' RDWY. @ STA. 8+00 TO EXIST. RDWY. @ STA. 8+50
EARTHWORK QUANTITIES INCLUDED IN THOSE LISTED

PERIMETER EROSION BARRIER
15' AT EACH CORNER OF BRIDGE ON TOE
OF CHANNEL SLOPE = 60 FEET

SEEDING, CLASS 2 (SPECIAL)
STA. 1+50 TO STA. 8+50 = 0.6 ACRES

UTILITIES
NONE

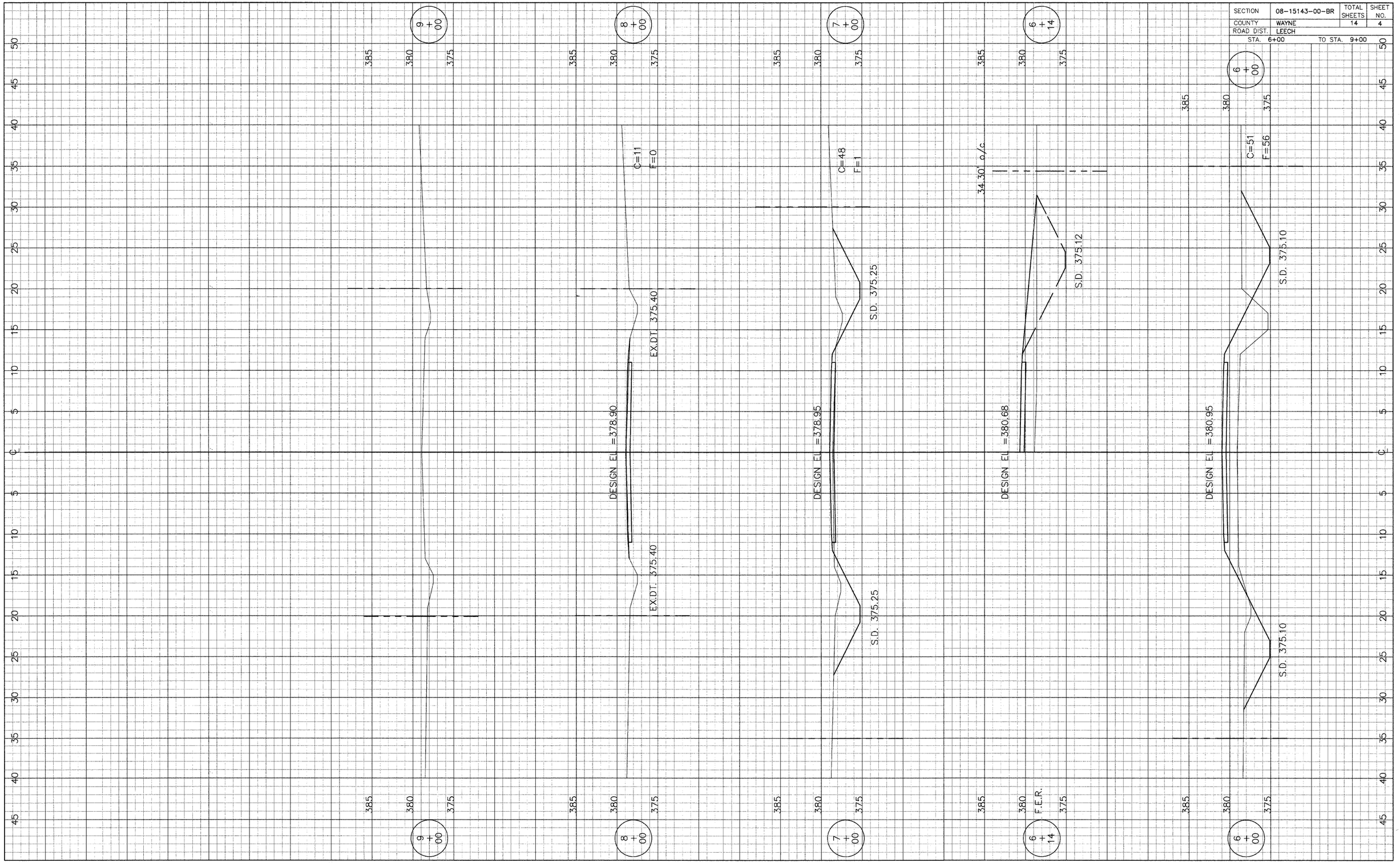


SECTION	08-15143-00-BR
COUNTY	WAYNE
ROAD DIST.	LEIGH
STA.	1+00
TO STA.	5+36
TOTAL SHEETS	14
SHEET NO.	3

CONTRACT NO. 95607

CONTRACT NO. 95607

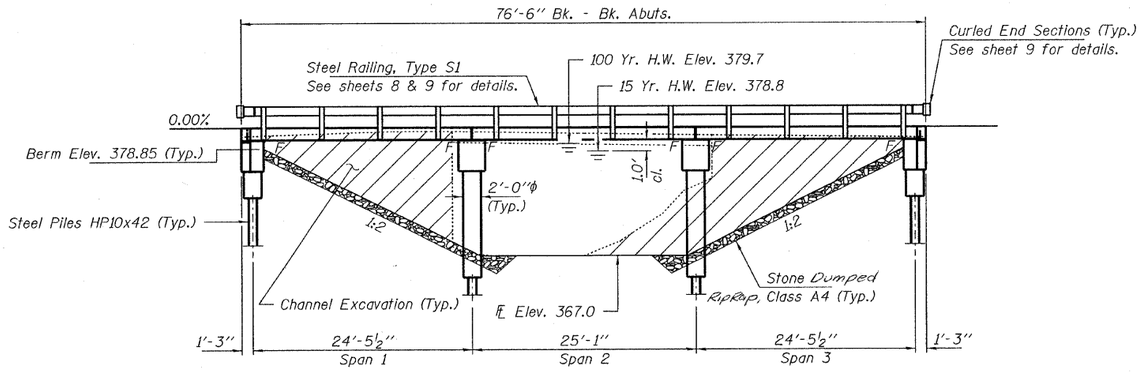
SECTION	08-15143-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	WAYNE	14	4
ROAD DIST.	LEECH		
STA. 6+00	TO STA. 9+00		



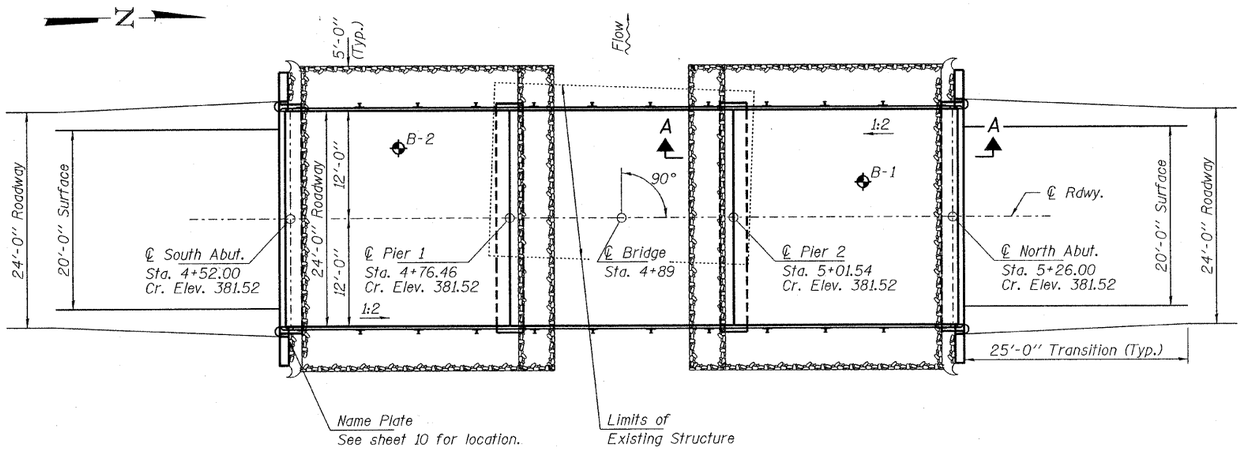
BENCHMARK: PK Nail in 8" maple tree. ±80' Lt., Sta. 5+40, Elev. 379.35

EXISTING STRUCTURE: A single span I-beam bridge on closed concrete abutments, concrete deck and concrete and timber backed wingwalls. Structure closed to traffic.

No Salvage



ELEVATION



PLAN

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at South Abutment or approved by the Engineer before ordering the remainder of piles.

Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60 (IL Modified). See Special Provisions.

Excavation required to construct the Abutments and Piers shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.

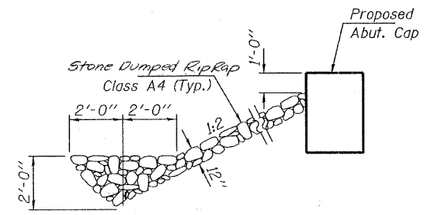
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.

See Sheets 13 & 14 for Borings.

BUILT 200_ BY
WAYNE COUNTY
SEC. 08-15143-00-BR
LEECH ROAD DISTRICT
STR. NO. 096-3451
LOADING HL-93

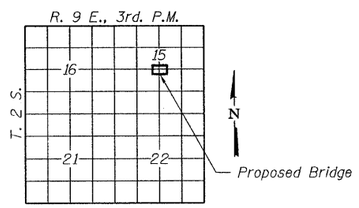
NAME PLATE

See Std. 515001



SECTION A-A

Note: See Special Provisions for Stone Dumped Riprap, Class A4



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			390
Stone Dumped Riprap, Class A4	Ton			140
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		42.0	42.0
Concrete Encasement	Cu. Yd.		14.6	14.6
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1,800		1,800
Reinforcement Bars	Pound		4,390	4,390
Steel Railing, Type S1	Foot	147		147
Furnishing Steel Piles HP10x42	Foot		910	910
Driving Piles	Foot		910	910
Test Pile Steel HP10x42	Each		2	2
Name Plates	Each		1	1

DESIGNED -	A.S.L.
CHECKED -	S.W.M.
DRAWN -	D.T.M.
CHECKED -	D.A.B.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinf.)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (½"ϕ low lax. strands)
fpbt = 201,960 psi (½"ϕ low lax. strands)
fy = 60,000 psi (Reinf.)

LOADING HL-93

Design Specifications: 2007 AASHTO LRFD with all applicable interims.
50#/Sq. Ft. included in dead load for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.278g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.666g
Soil Site Class = D

WATERWAY INFORMATION

Drainage Area = 6.20 Sq. Mi.
Existing Low Grade Elev. 378.5 @ Sta. 3+00
Proposed Low Grade Elev. 378.5 @ Sta. 2+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Natural H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	15	1,723	289	458	378.8	0.2	0.0	379.0	378.8
Base	100	2,960	316	510	379.7	0.0	0.1	379.7	379.8
Max. Calc.	500	4,060	321	528	380.0	0.0	0.1	380.0	380.1

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 Specifications."

ILLINOIS STRUCTURAL NO. 081-6064 Expires 11-30-2010

LICENSED STRUCTURAL ENGINEER
STEVEN W. MEGGINSON
081-6064
SPRINGFIELD, IL
STATE OF ILLINOIS

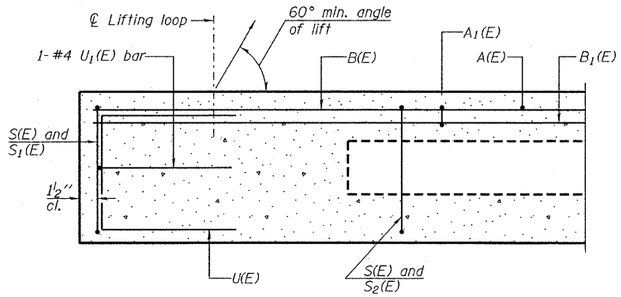
GENERAL PLAN AND ELEVATION STRUCTURE NO. 096-3451

HAMPTON, LENZINI AND RENWICK, INC.
CIVIL ENGINEERS - STRUCTURAL ENGINEERS - LAND SURVEYORS
3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

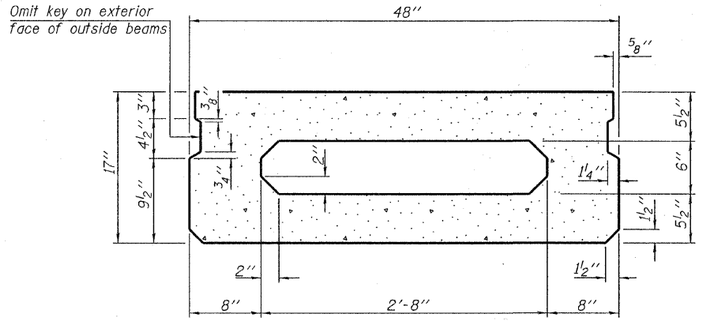
PROJECT NUMBER: 09.0060.130 DATE: 06/22/09

SHEET NO. 1
10 SHEETS

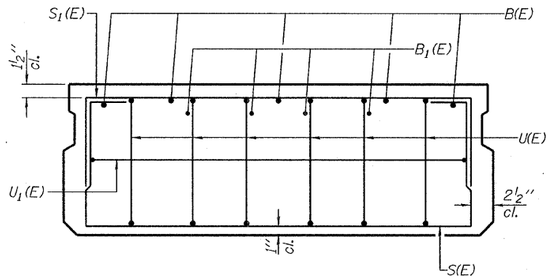
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	5
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



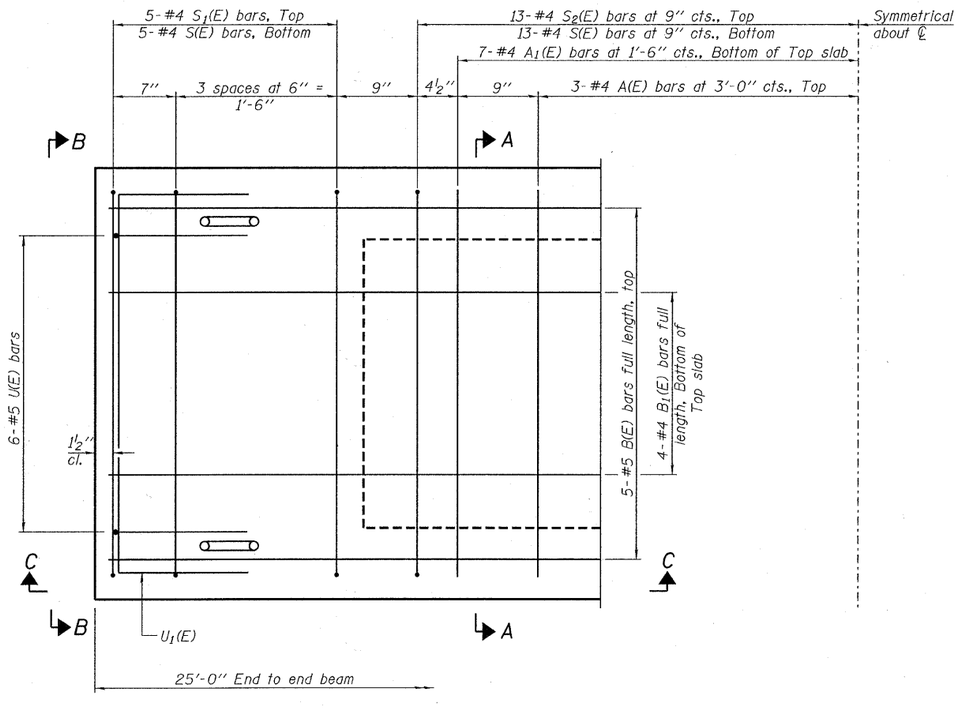
SECTION C-C



SECTION A-A
(Showing dimensions)

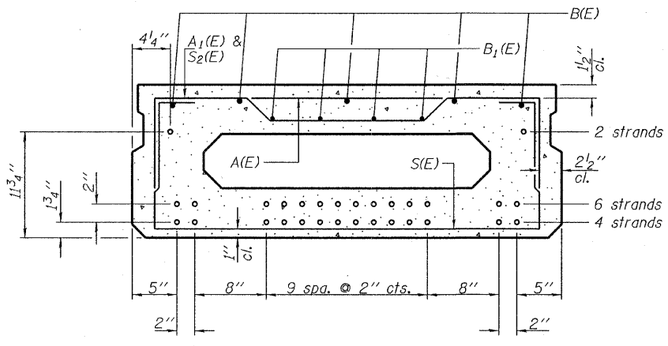


VIEW B-B



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)	6	#4	3'-7"	—
$A_1(E)$	14	#4	3'-10"	~
B(E)	5	#5	24'-8"	—
$B_1(E)$	4	#4	24'-8"	—
S(E)	36	#4	6'-9"	⊔
$S_1(E)$	10	#4	5'-3"	⊓
$S_2(E)$	26	#4	5'-6"	⊓
U(E)	12	#5	3'-8"	⊏
$U_1(E)$	2	#4	6'-0"	⊓

Note: See sheets 3 & 4 of 10 for additional details and Bill of Material.

DESIGNED -	A.S.L.
CHECKED -	S.W.M.
DRAWN -	D.T.M.
CHECKED -	D.A.B.

PD-1748-0 10-1-08

SUPERSTRUCTURE
17" X 48" PPC DECK BEAM
STRUCTURE NO. 096-3451

HAMPTON, LENZINI AND RENWICK, INC.
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3085 STEVENSON DRIVE, SUITE 201
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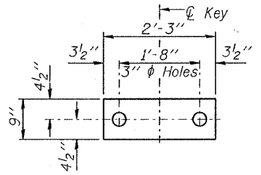
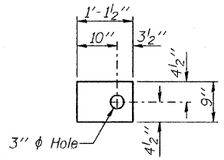
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
PROJECT NUMBER: 09.0060.130 DATE: 06/22/09

SHEET NO. 2
1Ø SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	6
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



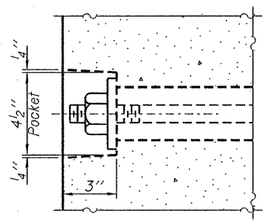
FABRIC BEARING PAD
(Interior 30 - Req'd.)



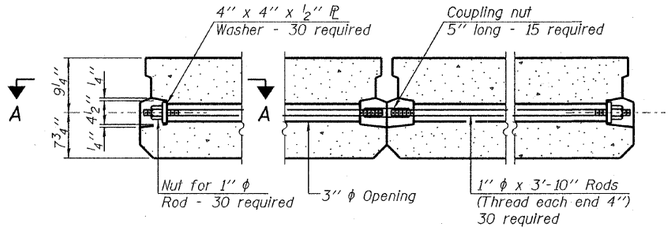
FABRIC BEARING PAD
(Exterior - 12 Req'd.)

FIXED

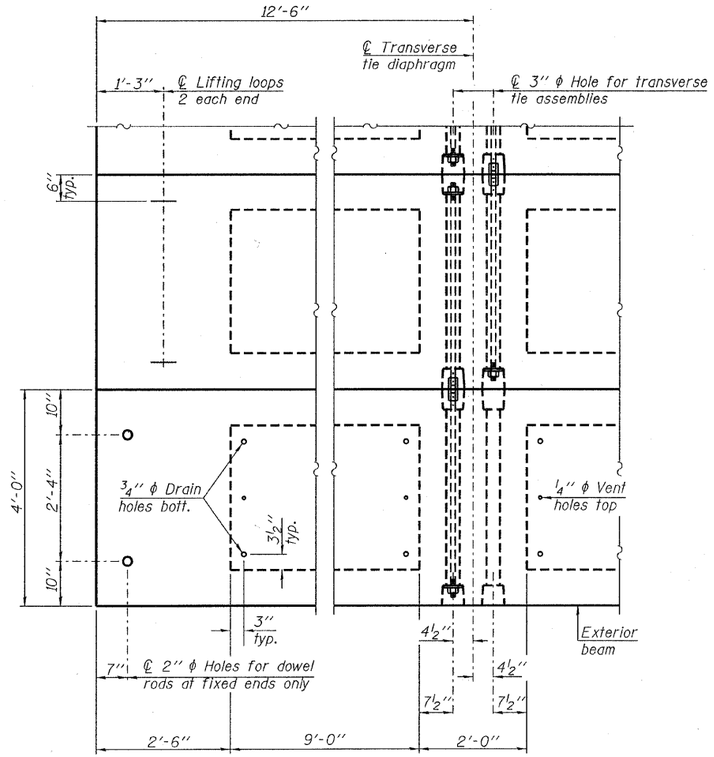
Note: Omit holes when using expansion bearings.



SECTION A-A

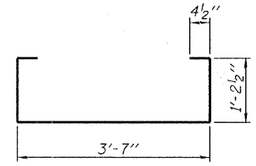


TYPICAL TRANSVERSE TIE ASSEMBLY

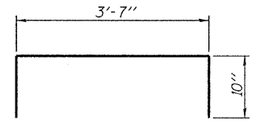


PLAN VIEW

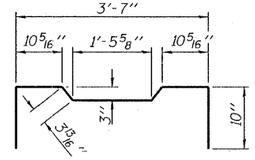
Note: Connect beams in pairs with the transverse tie configuration shown.



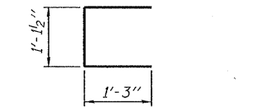
BAR S(E)



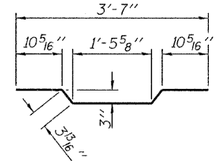
BAR S_1(E)



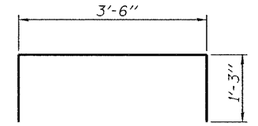
BAR S_2(E)



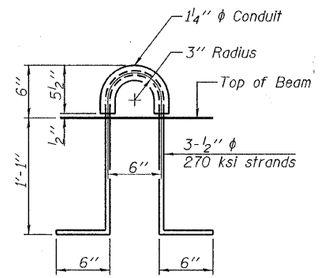
BAR U(E)



BAR A_1(E)



BAR U_1(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. (17" depth)	Sq. Ft.	1,800

DESIGNED - A.S.L.	
CHECKED - S.W.M.	
DRAWN - D.T.M.	
CHECKED - D.A.B.	

PD-1748-0D 10-1-08

SUPERSTRUCTURE
17" X 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 096-3451

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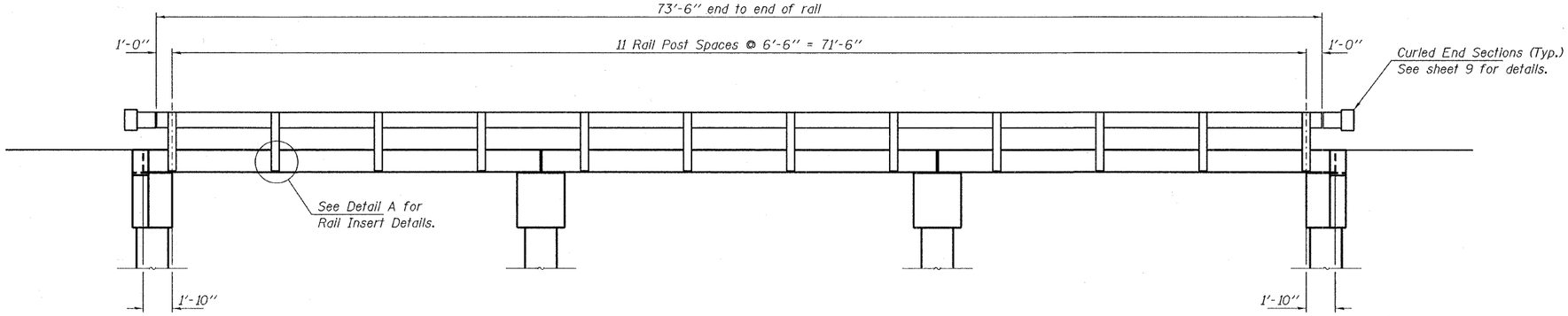
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0060.130 DATE: 06/22/09

SHEET NO. 3

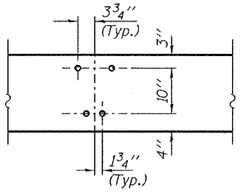
10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	7
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

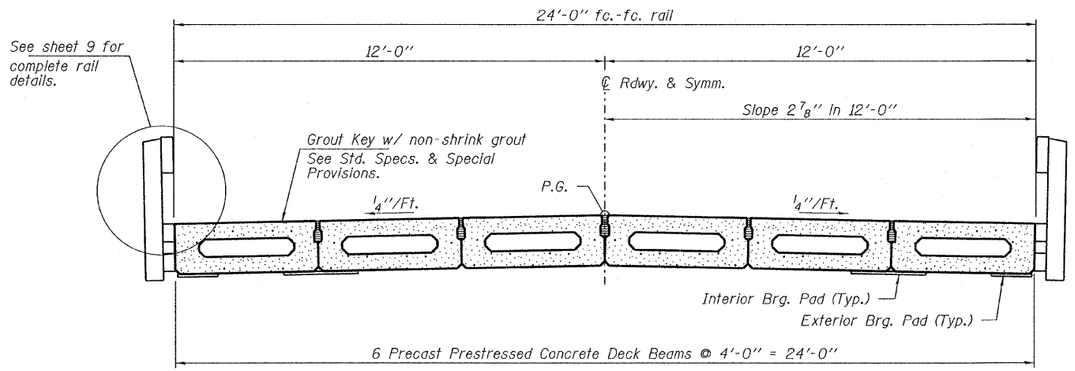


ELEVATION
Showing Rail Post Spaces

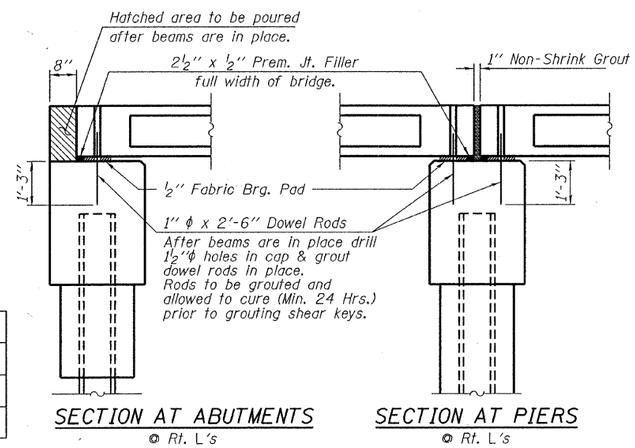
See sheet 5 of 10 for Railing Details.



DETAIL A



CROSS SECTION
See sheets 2 & 3 of 10 for Superstructure.



SECTION AT ABUTMENTS
@ Rt. L's

SECTION AT PIERS
@ Rt. L's

DESIGNED	A.S.L.
CHECKED	S.W.M.
DRAWN	D.T.M.
CHECKED	D.A.B.

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 096-3451

HAMPTON, LENZINI AND RENWICK, INC.
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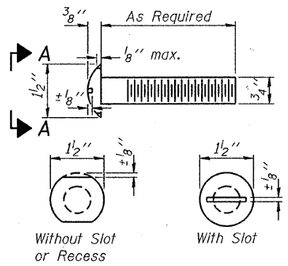
PROJECT NUMBER: 09.0060.130 | DATE: 06/22/09

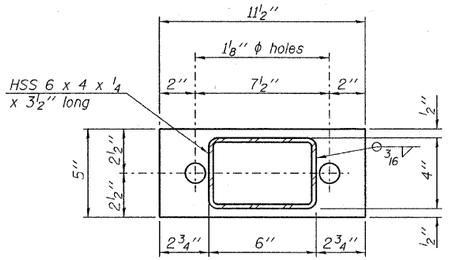
SHEET NO. 4

10 SHEETS

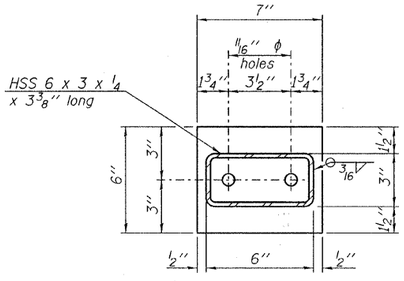
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	8
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



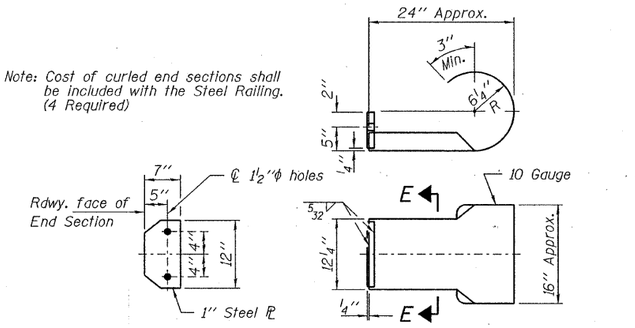
VIEW A-A
ROUND HEAD BOLT



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

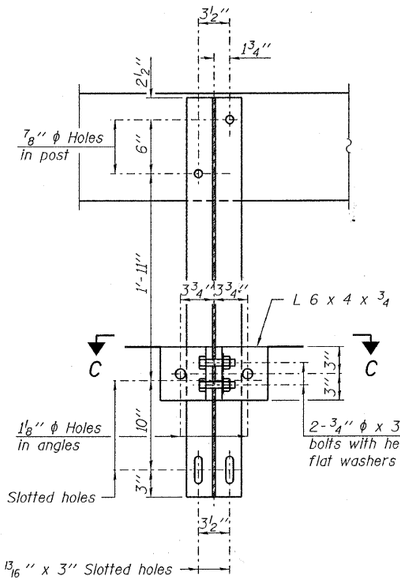


PL 1/2" x 7" x 6"

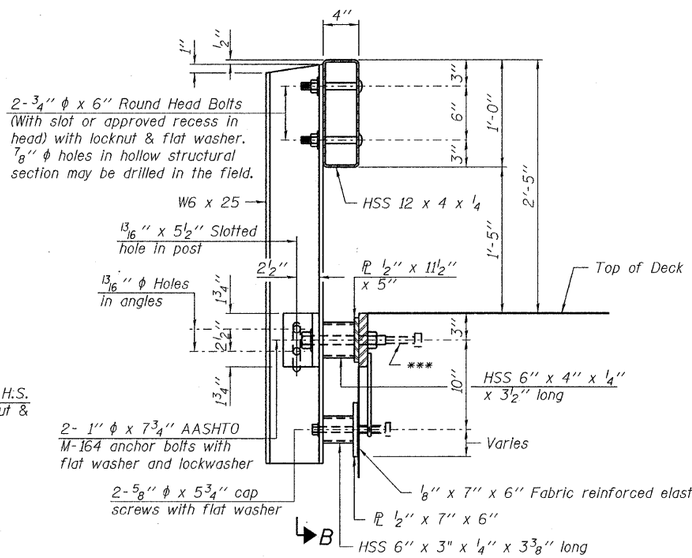


SECTION E-E

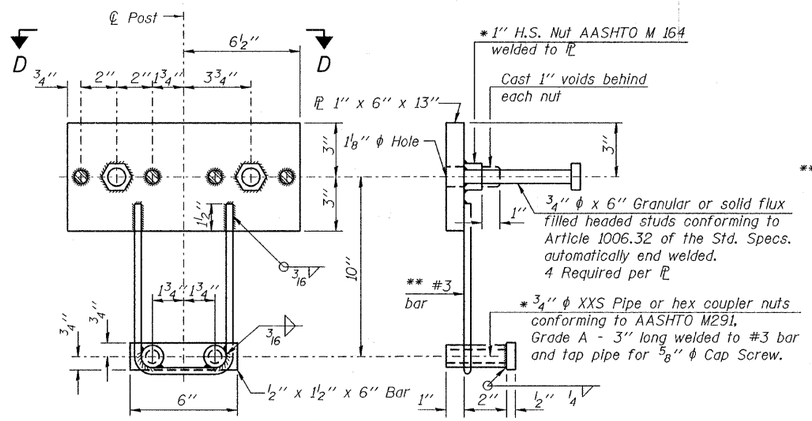
CURLED END SECTION DETAILS



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

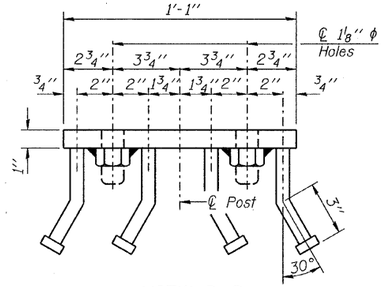
Notes:

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

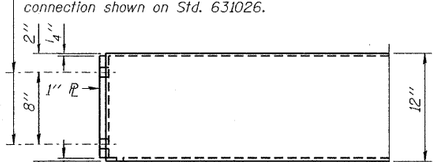
For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.

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

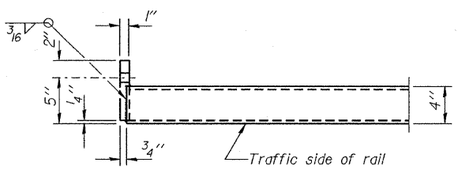
*** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.



VIEW D-D



RAIL SPLICE CONNECTION AT EXPANSION JT.

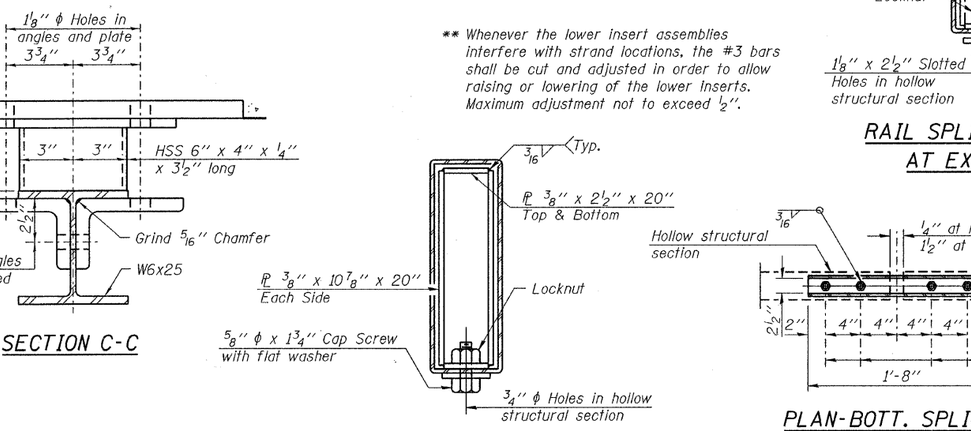


END OF RAIL DETAILS

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	147

STEEL RAILING, TYPE S-1
STRUCTURE NO. 096-3451



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

PLAN-BOTT. SPLICE PL TYPICAL

DESIGNED -	A.S.L.
CHECKED -	S.W.M.
DRAWN -	D.T.M.
CHECKED -	D.A.B.

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

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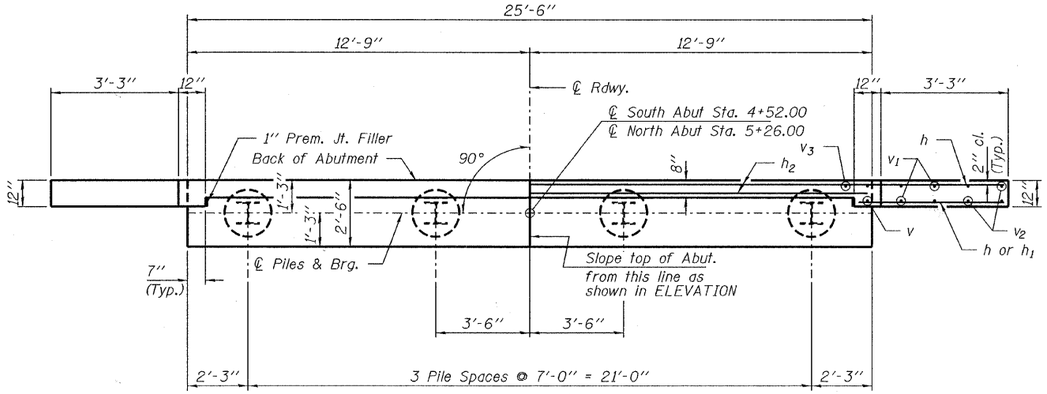
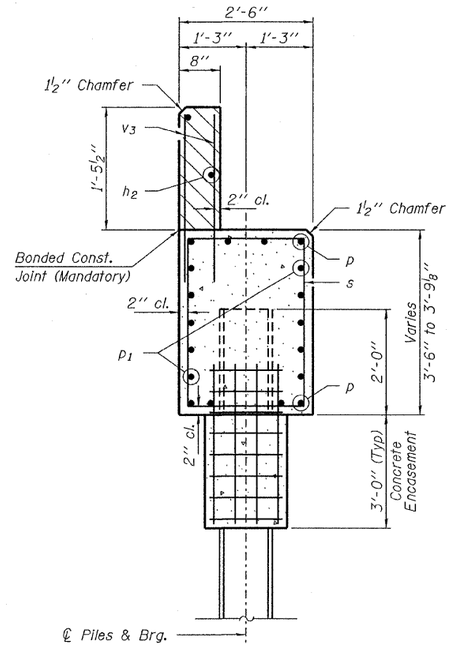
PROJECT NUMBER: 09.0060.130 DATE: 06/22/09

SHEET NO. 5
10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	9
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

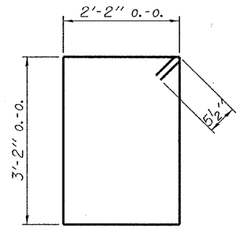


PLAN

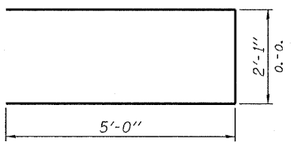


SECTION A-A

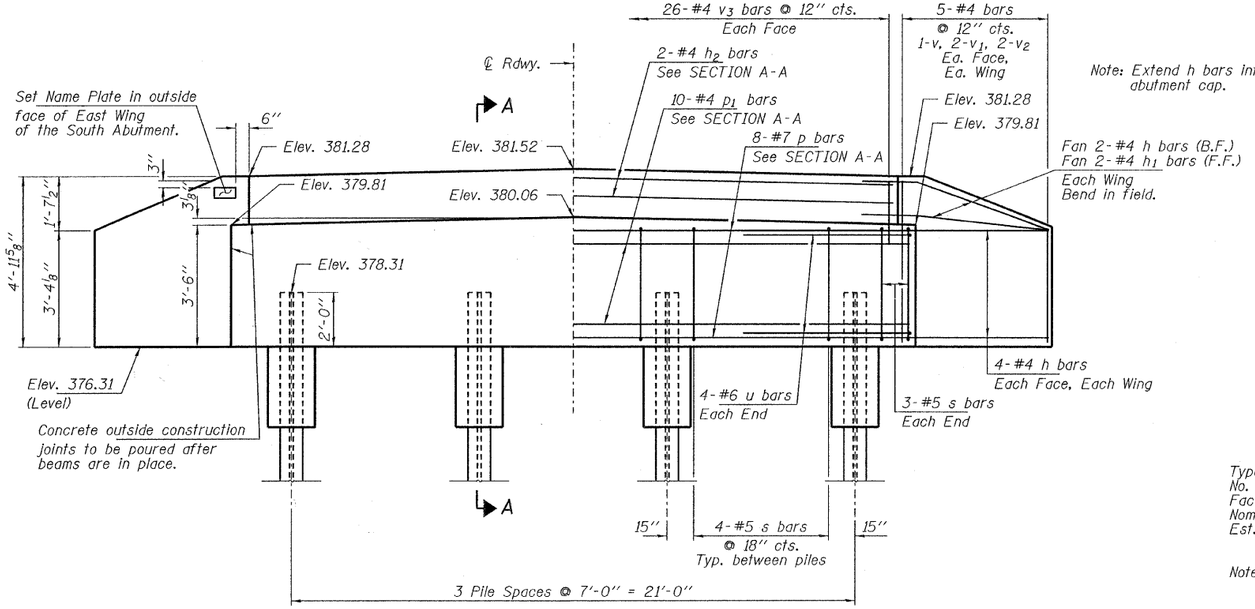
Hatched area to be poured after beams are in place.



BAR s



BAR u



ELEVATION

BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	5'-6"	——
h_1	8	#4	4'-0"	——
h_2	4	#4	25'-2"	——
p	16	#7	25'-2"	——
p_1	20	#4	25'-2"	——
s	36	#5	11'-7"	□
u	16	#6	12'-1"	▭
v	8	#4	4'-6"	——
v_1	16	#4	4'-0"	——
v_2	16	#4	3'-0"	——
v_3	104	#4	2'-4"	——
Concrete Structures			Cu. Yd.	21.4
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,380
Steel Piles HP10x42			Foot	455
Test Pile Steel HP10x42			Each	1
Name Plates			Each	1

PILE DATA

Type _____ Steel HP10x42
No. Req'd. (2 Abuts.) _____ *8
Factored Resistance Available (Rf) _____ 167 Kips/Pile
Nominal Required Bearing (Rn) _____ 335 Kips/Pile
Est. Length _____ 65 Ft/Pile

Notes: * Includes one test pile to be driven in permanent location at the South Abutment.

The Steel H-Piles shall be according to AASHTO M270 Grade 50.

The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

ABUTMENTS
STRUCTURE NO. 096-3451

DESIGNED -	A.S.L.
CHECKED -	S.W.M.
DRAWN -	D.T.M.
CHECKED -	D.A.B.

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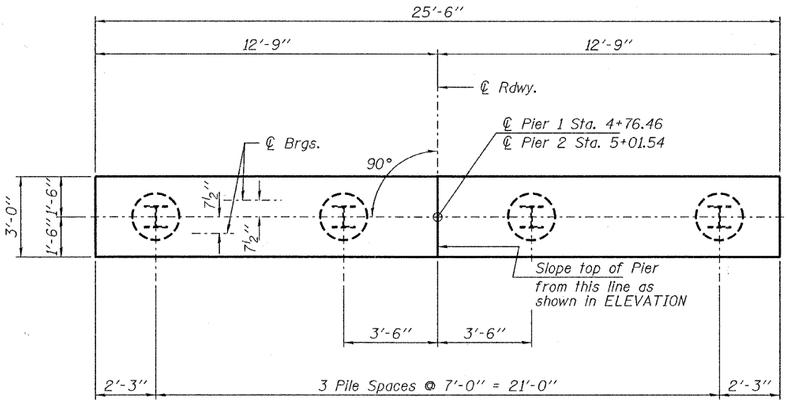
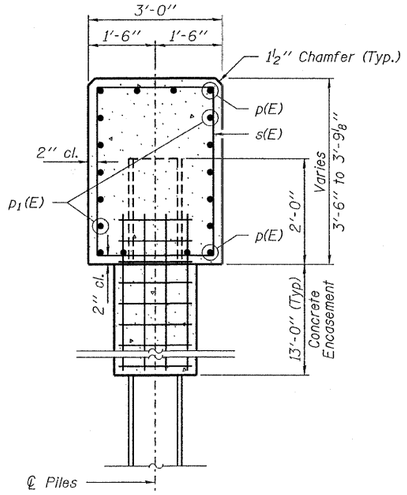
PROJECT NUMBER: 09.0060.130 | DATE: 06/22/09

SHEET NO. 6
10 SHEETS

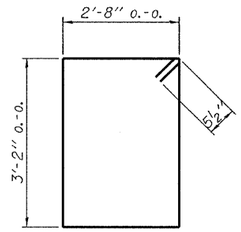
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	10
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



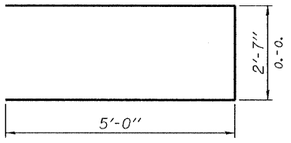
PLAN



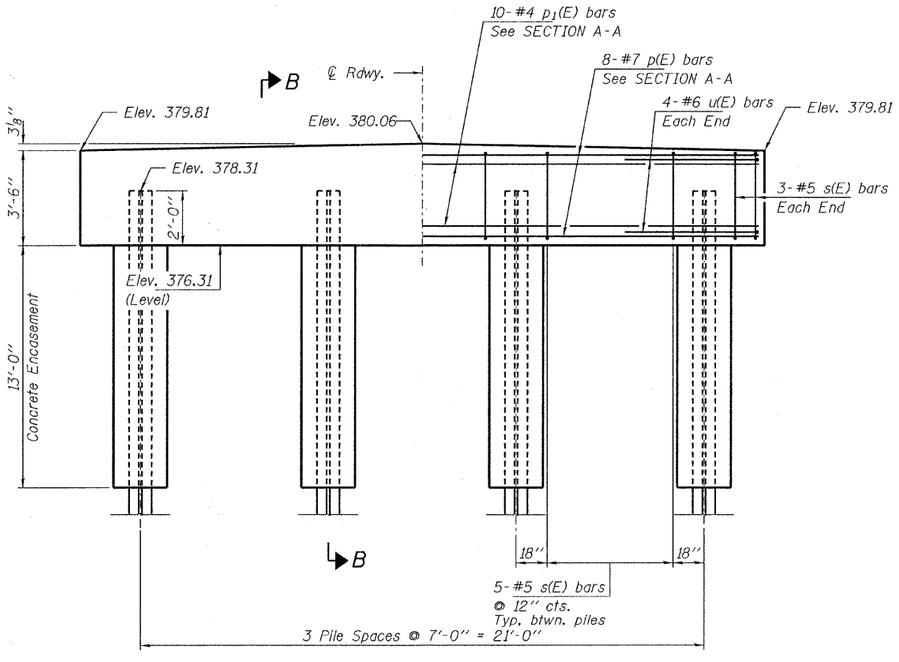
SECTION A-A



BAR s(E)



BAR u(E)



ELEVATION

PILE DATA

Type_____ Steel HP10x42
No. Req'd. (2 Piers)_____ *8
Factored Resistance Available (Rf)____ 167 Kips/Pile
Nominal Required Bearing (Rn)_____ 335 Kips/Pile
Est. Length_____ 65 Ft/Pile

Notes: * Includes one test pile to be driven in permanent location at Pier 2.

The Steel H-Piles shall be according to AASHTO M270 Grade 50.

The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

BILL OF MATERIAL - 2 PIERS

BAR	NO.	SIZE	LENGTH	SHAPE
p(E)	16	#7	25'-2"	———
p₁(E)	20	#4	25'-2"	———
s(E)	42	#5	12'-7"	□
u(E)	16	#6	12'-7"	▭
Concrete Structures			Cu. Yd.	20.6
Concrete Encasement			Cu. Yd.	11.8
Reinforcement Bars			Pound	2,010
Steel Piles HP10x42			Foot	455
Test Pile Steel HP10x42			Each	1

PIERS
STRUCTURE NO. 096-3451

DESIGNED -	A.S.L.
CHECKED -	S.W.M.
DRAWN -	D.T.M.
CHECKED -	D.A.B.

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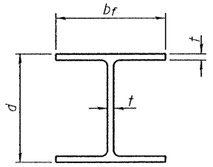
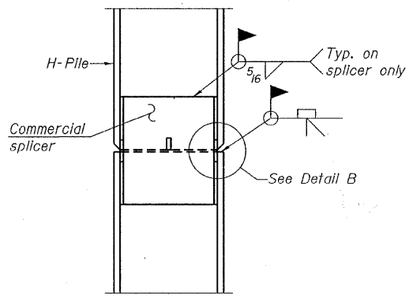
SHEET NO. 7
10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	11
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

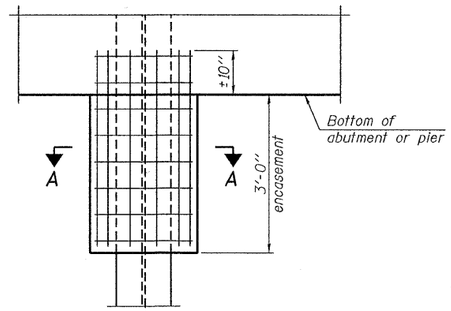


STEEL PILE TABLE

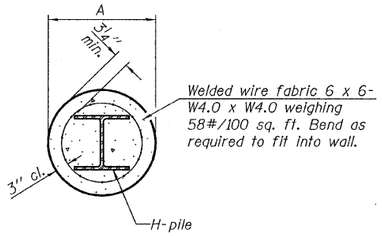
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53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



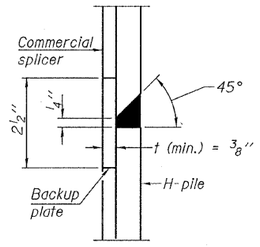
ELEVATION



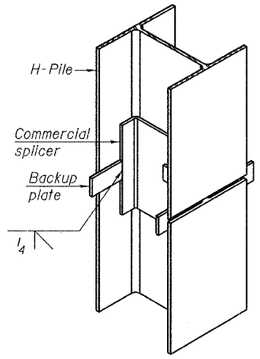
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT

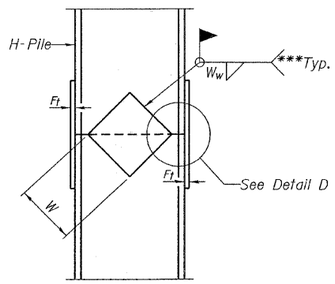


DETAIL "B"

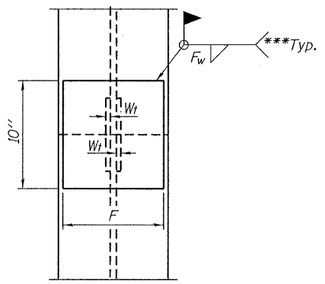


ISOMETRIC VIEW

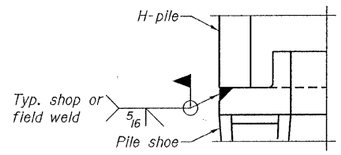
WELDED COMMERCIAL SPLICE



ELEVATION



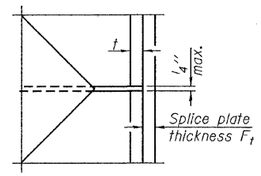
END VIEW



ELEVATION

DETAIL A

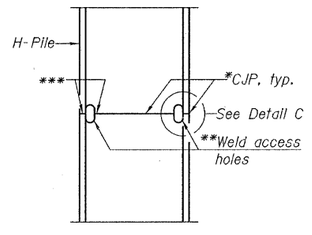
H-PILE SHOE ATTACHMENT



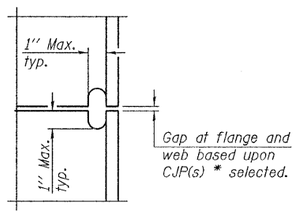
DETAIL D

Designation	F	F_t	F_w	W	W_f	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



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.

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

DESIGNED - A.S.L.	
CHECKED - S.W.M.	
DRAWN - D.T.M.	
CHECKED - D.A.B.	

F-HP 10-1-08

HAMPTON, LENZINI AND RENWICK, INC.
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217.546.3400 www.hlrengineering.com
184.000959
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION

PROJECT NUMBER: 09.0060.130 DATE: 06/22/09

SHEET NO. 8

10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	12
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

HP PILE DETAILS
STRUCTURE NO. 096-3451

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 Carbondale, Il. 62903
618-529-5262
618-457-8991 fax

Page 1 of 2

Bridge Foundation Boring Log

Project: H-08274
Section: 08-15143-00-BR
Structure: 096-3220
County: Wayne
Bridge on CR 2750 E
Station 4+89
Date: 12/19/08
Bored by: D. Russell
Checked By: T. Holcomb

Boring No: 1
Station: 5+16
Offset: 0'

Surface Water Elev.
Ground Water Elev. During Drilling 343.6
Upon Completion 350.6

Elevation	N	Qu tsf	w %	
381.6				Ground Surface 0
381.2				5" Crushed Stone
	24	3.7S	15	Gray Sandy CLAY (A-6)
377.6				
	13	--	12	Gray Mottled Brown Sandy CLAY (A-6)
	6	1.7B	22	
	7	1.4B	22	
	4	1.3S	25	
	2	0.4B	27	
365.1				
	5	1.2S	39	Gray Mottled Brown CLAY (A-7-6)
	3	1.3S	47	
	2	1.4B	37	

clayey sand (continued)

Elevation	N	Qu tsf	w %	
357.6				
	2	0.9B	37	Gray Sandy CLAY (A-6)
	3	1.0S	28	
	0	0.7S	34	
	6	1.0B	27	
342.6				
	2	0.6B	28	Gray Clayey SAND (A-2-4)
337.6				Gray Fine to Medium SAND

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"

Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%

B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

HOLCOMB FOUNDATION ENGINEERING INC.
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Page 2 of 2

Bridge Foundation Boring Log

Project: H-08274
Section: 08-15143-00-BR
Structure: 096-3220
County: Wayne
Bridge on CR 2750 E
Station 4+96
Date: 12/19/08
Bored by: D. Russell
Checked By: T. Holcomb

Boring No: 1
Station: 5+16
Offset: 0'

Surface Water Elev.
Ground Water Elev. During Drilling 343.6
Upon Completion 350.6

Elevation	N	Qu tsf	w %	
	45	6	--	22 (A-2-4) continued
	19	--	24	
	33	--	19	
322.6				
	40	3.1B	21	Gray Silty CLAY (A-6) to Highly Weathered SHALE
318.1				
	100/5"	--	16	Gray Mottled Brown SANDSTONE
	100/5"	--	18	

Elevation	N	Qu tsf	w %	
	100/3"	--	17	
312.6				End of Boring @ -69.0'

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"

Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%

B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

DESIGNED	A.S.L.
CHECKED	S.W.M.
DRAWN	D.T.M.
CHECKED	D.A.B.

BORING 1

BORINGS
STRUCTURE NO. 096-3451

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217.546.3400 www.hlrengineering.com
184.000950
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORPORATION
PROJECT NUMBER: 09.0060.130 DATE: 06/22/09

SHEET NO. 9
10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	13
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

HOLCOMB FOUNDATION ENGINEERING INC.
P.O. Box 88 618-529-5262
Carbondale, Il. 62903 618-457-8991 fax

Bridge Foundation Boring Log

Project: H-08274 Bridge on CR 2750 E Date: 12/23/08
Section: 08-15143-00-BR Station 4+89 Bored by: D. Russell
Structure: 096-3220 Checked By: T. Holcomb
County: Wayne

Boring No: 2
Station: 4+64
Offset: 2' LT.

Surface Water Elev. ---
Ground Water Elev. During Drilling 337.8
Upon Completion ---

Elevation	N	Qu tsf	w %	Description
381.8				Ground Surface
381.3				6" Crushed Stone
	14	1.9S	13	Gray Mottled Brown Sandy CLAY (A-6)
-5	9	---	20	
373.8	4	0.2B	26	
				Gray Mottled Brown Silty CLAY (A-6)
-10	4	0.9B	22	
360.3	4	0.7B	41	Gray Sandy CLAY (A-6)
	4	1.3B	23	Gray Silty CLAY (A-6) with sand
-15	5	1.2B	26	
	5	0.6B	24	Gray Sandy CLAY (A-6)
-20	4	0.8B	38	
				sandy clay (continued)
-25	3	0.6B	32	
355.8				Gray Clayey SILT (A-4)
-30	2	0.3S	36	
	1	0.3S	36	
347.8				Gray Silty CLAY (A-6) with sand
-35	5	0.5B	27	
342.8				Gray Sandy CLAY (A-6)
-40	3	0.7B	24	
337.8				Gray Silty SAND (A-2-4)

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

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Bridge Foundation Boring Log

Project: H-08274 Bridge on CR 2750 E Date: 12/23/08
Section: 08-15143-00-BR Station 4+89 Bored by: D. Russell
Structure: 096-3220 Checked By: T. Holcomb
County: Wayne

Boring No: 2
Station: 4+64
Offset: 2' LT.

Surface Water Elev. ---
Ground Water Elev. During Drilling 337.8
Upon Completion ---

Elevation	N	Qu tsf	w %	Description
				(silty sand continued)
-45	8	---	25	
327.8				Gray Fine to Medium SAND (A-2-4)
-55	16	---	21	
-60	25	0.5B	18	
318.3	100/6"	-	20	Gray SANDSTONE
-65	100/7"	-	17	
-70				
312.8	100/3"	-	18	End of Boring @ -69.0'
-75				
-80				
-85				

N = Standard Penetration Test Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with a 140 lbs. hammer falling 30"
Qu-Unconfined Compressive Strength in tons/sq.ft.
w-Water Content-percentage of oven dry weight-%
B = Bulge Failure
S = Shear Failure
E = Estimated Value
P = Penetrometer

BORING 2

DESIGNED	A.S.L.
CHECKED	S.W.M.
DRAWN	D.T.M.
CHECKED	D.A.B.

BORINGS
STRUCTURE NO. 096-3451

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PROJECT NUMBER: 09.0060.130 DATE: 06/22/09

SHEET NO. 10
10 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
622	08-15143-00-BR	WAYNE	14	14
LEECH ROAD DISTRICT		CONTRACT NO. 95607		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		