

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL-AID PROGRAM A.R.R.A
COUNTY HIGHWAY 7
WAYNE COUNTY
SECTION 07-00116-00-BR
STRUCTURE NO. 096-3446
PROJECT NO. ARA- 2821(108)
JOB NO. C-97-107-09

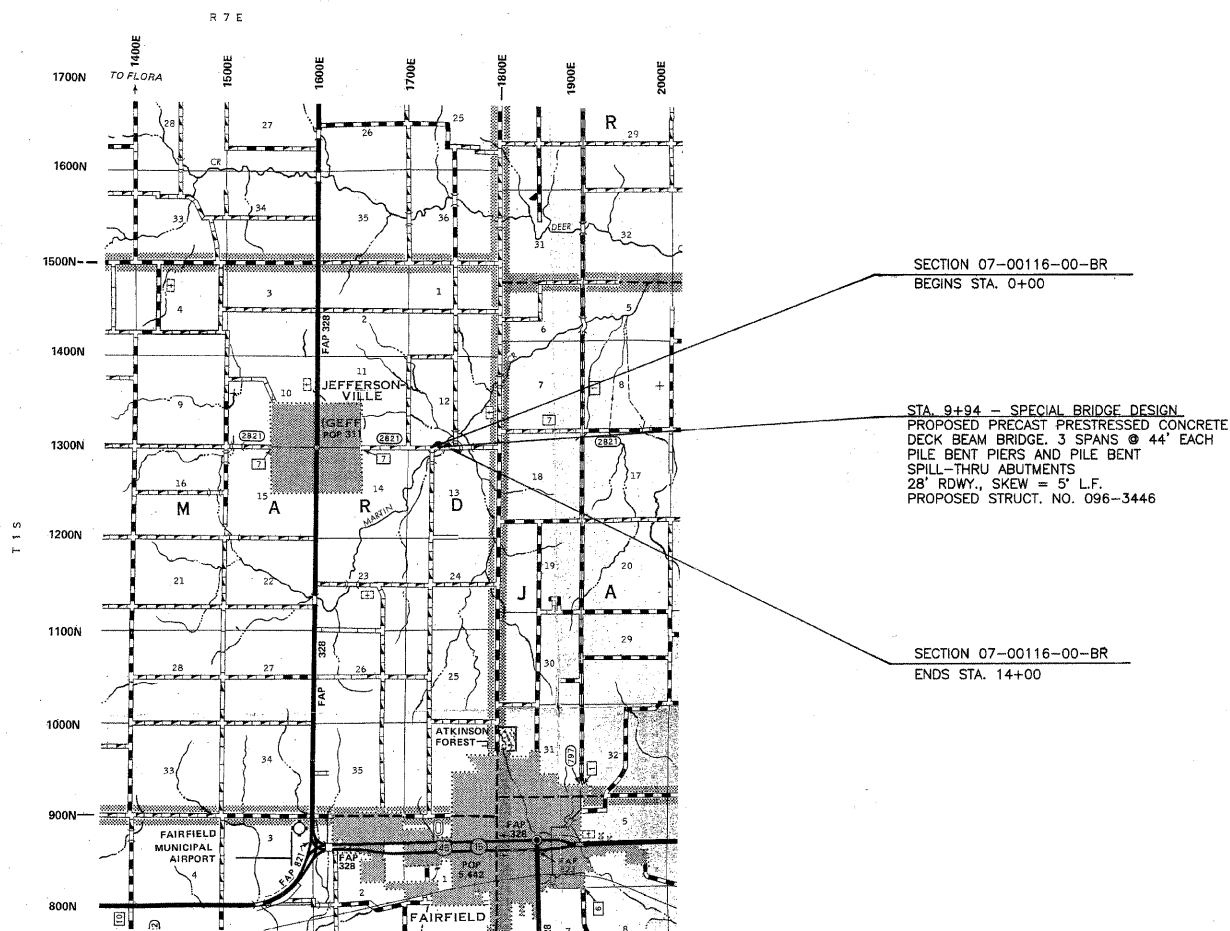
INDEX OF SHEETS

- 1 COVER SHEET
- 2 TYP. SEC'S & SUMMARY OF QUANTITIES
- 3 PLAN & PROFILE
- 4-6 CROSS SECTIONS
- 7-14 BRIDGE PLANS
- 15-16 BORINGS

- STANDARDS:
- 280001-05 - EROSION CONTROL
 - 515001-03 - NAME PLATE
 - 630301-05 - SHLD. WIDENING FOR TRAFFIC BARR. TERM.
 - 701901-01 - TRAFFIC CONTROL
 - BLR 21-8 - TRAFFIC CONTROL
 - BLR 22-6 - TRAFFIC CONTROL
 - BLR 27-1 - TRAFFIC BARR. TERM. TY. 5A

SCALES

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



FUNCTIONAL CLASS: RURAL MAJOR COLLECTOR
ADT = 550
DESIGN SPEED = 50 MPH

LOCATION MAP

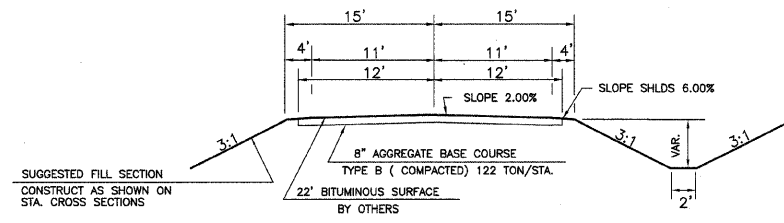
APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 1400 L.F. = 0.265 MILES

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

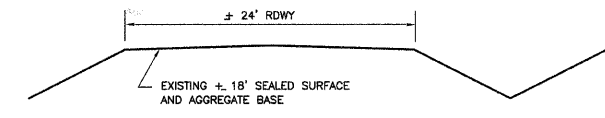
PROFESSIONAL DESIGN FIRM #184-000832

John A. Stone
 ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
 LICENSE EXPIRES NOVEMBER 30, 2009

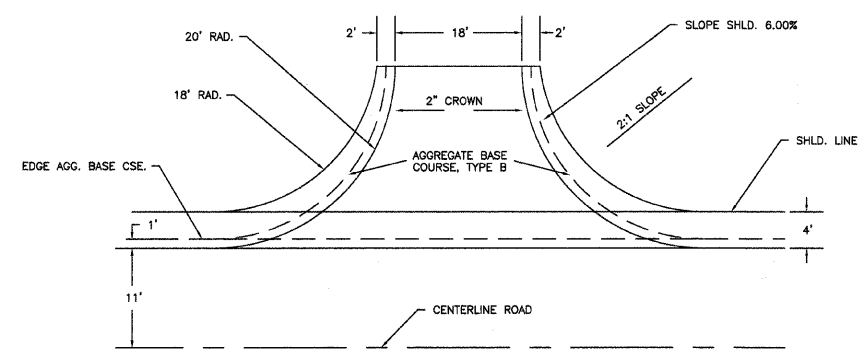
AGENCY RESPONSIBLE FOR LETTING
APPROVED: <u>6/19/09</u> 2009 <i>Arthur J. Roebach</i> LOCAL AGENCY/COUNTY ENGINEER
PASSED: <u>8/28</u> 2009 <i>Maurice E. Kasst</i> DISTRICT SEVEN ENGINEER OF LOCAL ROADS & STREETS
RELEASING FOR BID BASED ON LIMITED REVIEW <u>8/28</u> 2009 <i>Roger L. Anshel</i> DEPUTY DIRECTOR OF HIGHWAYS, REGION FOUR ENGINEER



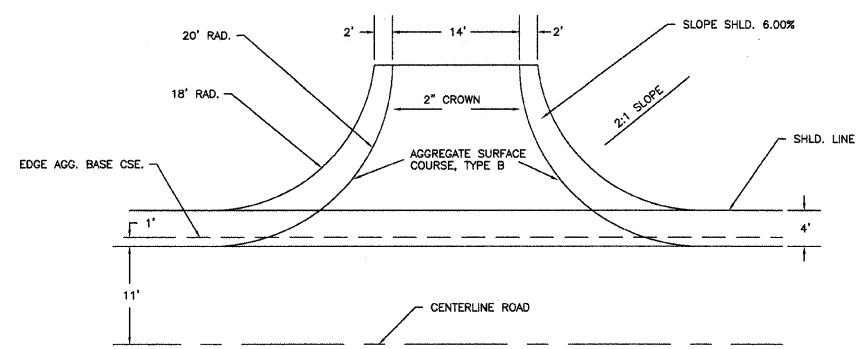
TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT



TYPICAL CROSS SECTION OF EXISTING ROADWAY



DETAIL OF SIDEROAD



DETAIL OF PRIVATE ENTRANCE

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEMS	CODE NO.
0.42	ACRE	TREE REMOVAL, ACRES	20100500
2074	CU YD	EARTH EXCAVATION	20200100
615	CU YD	CHANNEL EXCAVATION	20300100
940	CU YD	FURNISHED EXCAVATION	20400800
8	CU YD	POROUS GRANULAR EMBANKMENT	20700220
45	CU YD	TRENCH BACKFILL	20800150
1.7	ACRE	SEEDING, CLASS 2 (SPECIAL)	25001000
108	FOOT	TEMPORARY DITCH CHECKS	28000305
100	FOOT	PERIMETER EROSION BARRIER	28000400
33	TON	STONE DUMPED RIPRAP, CLASS A3	28100805
300	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
76	TON	STONE RIPRAP DITCH	28102600
1560	TON	AGGREGATE BASE COURSE, TYPE B	35101400
70	TON	AGGREGATE SURFACE COURSE, TYPE B	40200800
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
162	FOOT	PIPE CULVERT REMOVAL	50105220
48.6	CU YD	CONCRETE STRUCTURES	50300225
9.6	CU YD	CONCRETE ENCASMENT	50300280
3696	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	50400305
5020	POUND	REINFORCEMENT BARS	50800105
268	FOOT	STEEL RAILING, TYPE S1	50900205*
960	FOOT	FURNISHING STEEL PILES HP 12X53	51201600
960	FOOT	DRIVING PILES	51202305
2	EACH	TEST PILE STEEL HP 12X53	51203600
1	EACH	NAME PLATES	51500100
234	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 18"	542D0223
30	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 24"	542D0229
2	EACH	STEEL END SECTIONS 18"	54213873
10	FOOT	PIPE DRAINS, 4"	60100905
2	EACH	INLETS, TYPE A, TYPE 8 GRATE	60236200
2	EACH	TRAFFIC BARRIER TERMINAL, TYPE 5A	63100075*
2	EACH	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	63100167*
1	L SUM	MOBILIZATION	67100100
1	L SUM	TRAFFIC CONTROL AND PROTECTION	70101700
2	EACH	TERMINAL MARKER - DIRECT APPLIED	78201000*

* SPECIALTY ITEMS

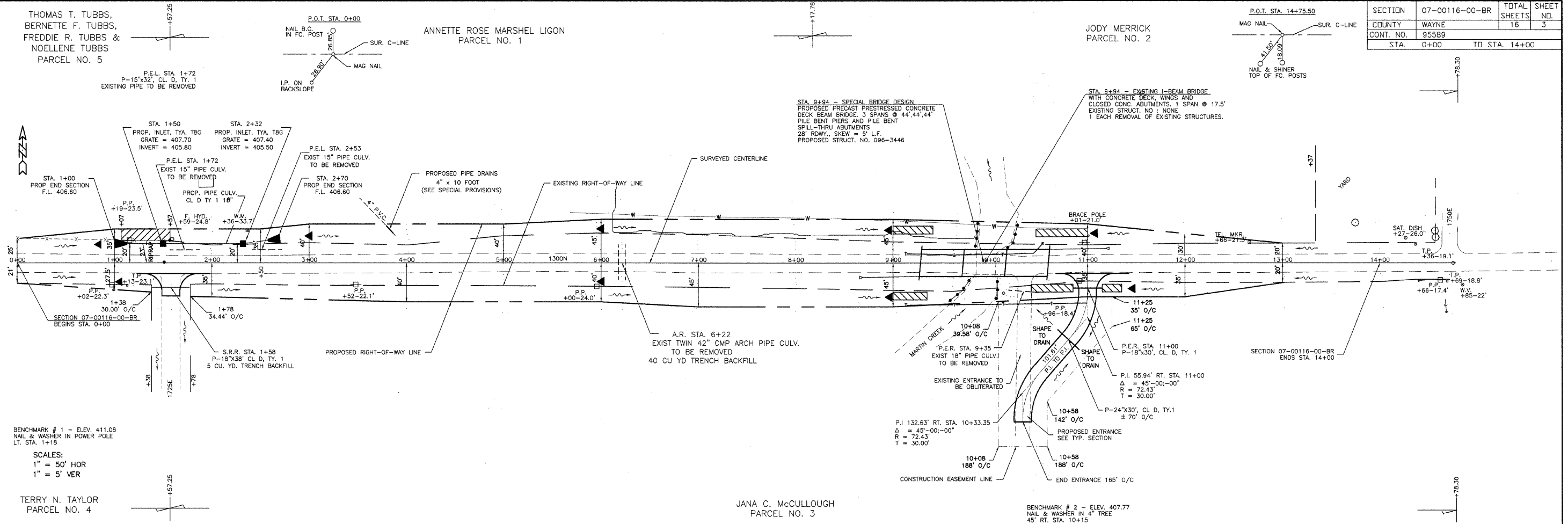
UTILITIES
 TELEPHONE : WABASH TELEPHONE CO.
 210 S. CHURCH STREET
 P.O. BOX 229
 LOUISVILLE, IL 62858
 PH. 618-665-3311
 ELECTRIC : WAYNE-WHITE ELECTRIC COOP.
 Rt. 45 WEST
 FAIRFIELD, IL 62837
 PH. 618-842-2186
 WATER : BOYLESTON WATER CORP.
 C/O BILL YOUNG
 PH. 618-516-3322
 WATER : JASPER WATER CORP.
 C/O BILL YOUNG
 PH. 618-516-3322

THOMAS T. TUBBS,
BERNETTE F. TUBBS,
FREDDIE R. TUBBS &
NOELLENE TUBBS
PARCEL NO. 5

ANNETTE ROSE MARSH LIGON
PARCEL NO. 1

JODY MERRICK
PARCEL NO. 2

SECTION	07-00116-00-BR	TOTAL SHEETS	16	SHEET NO.	3
COUNTY	WAYNE				
CONT. NO.	95589				
STA.	0+00	TO STA.	14+00		



BENCHMARK # 1 - ELEV. 411.08
NAIL & WASHER IN POWER POLE
LT. STA. 1+18

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

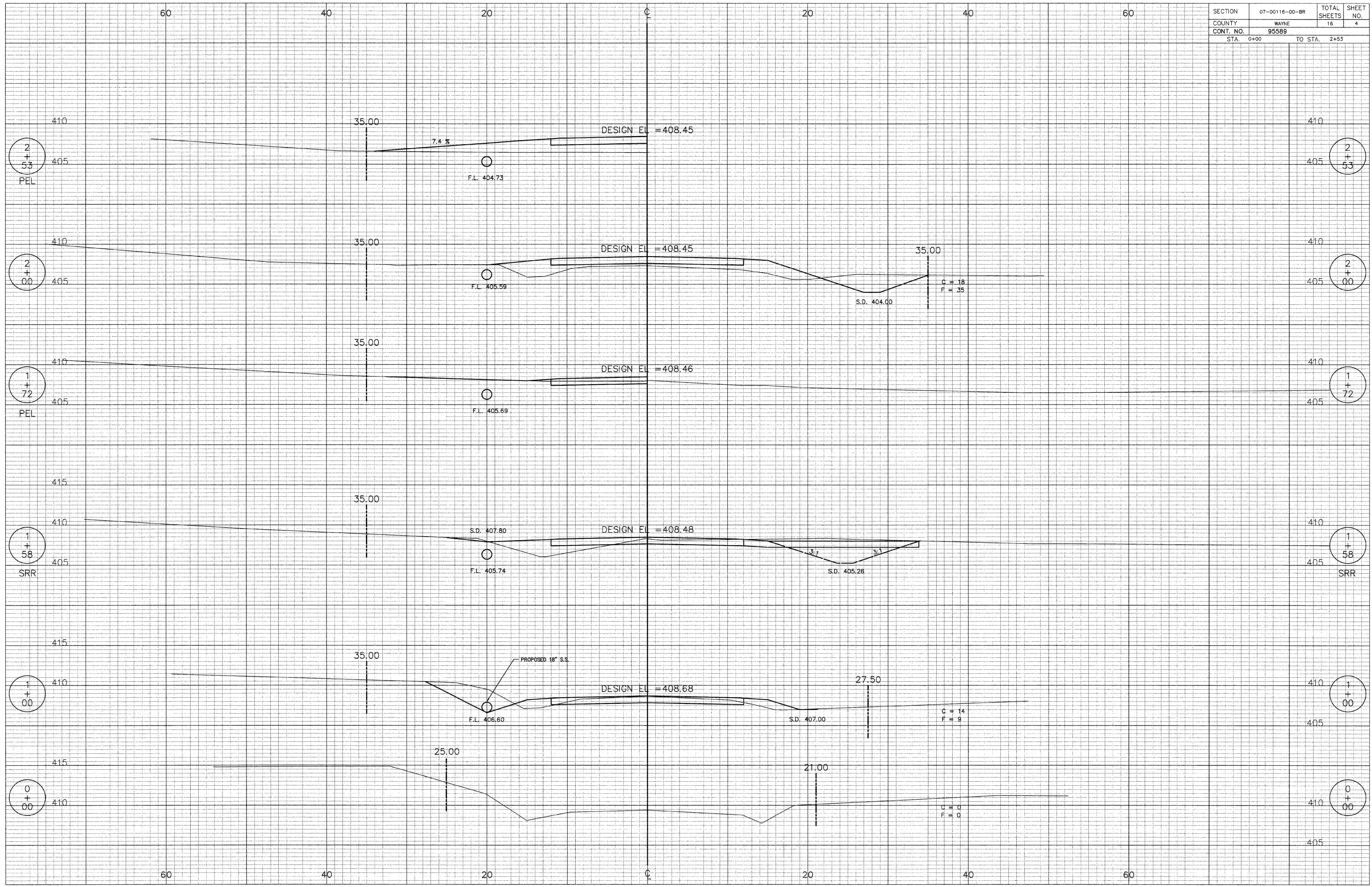
TERRY N. TAYLOR
PARCEL NO. 4

JANA C. McCULLOUGH
PARCEL NO. 3

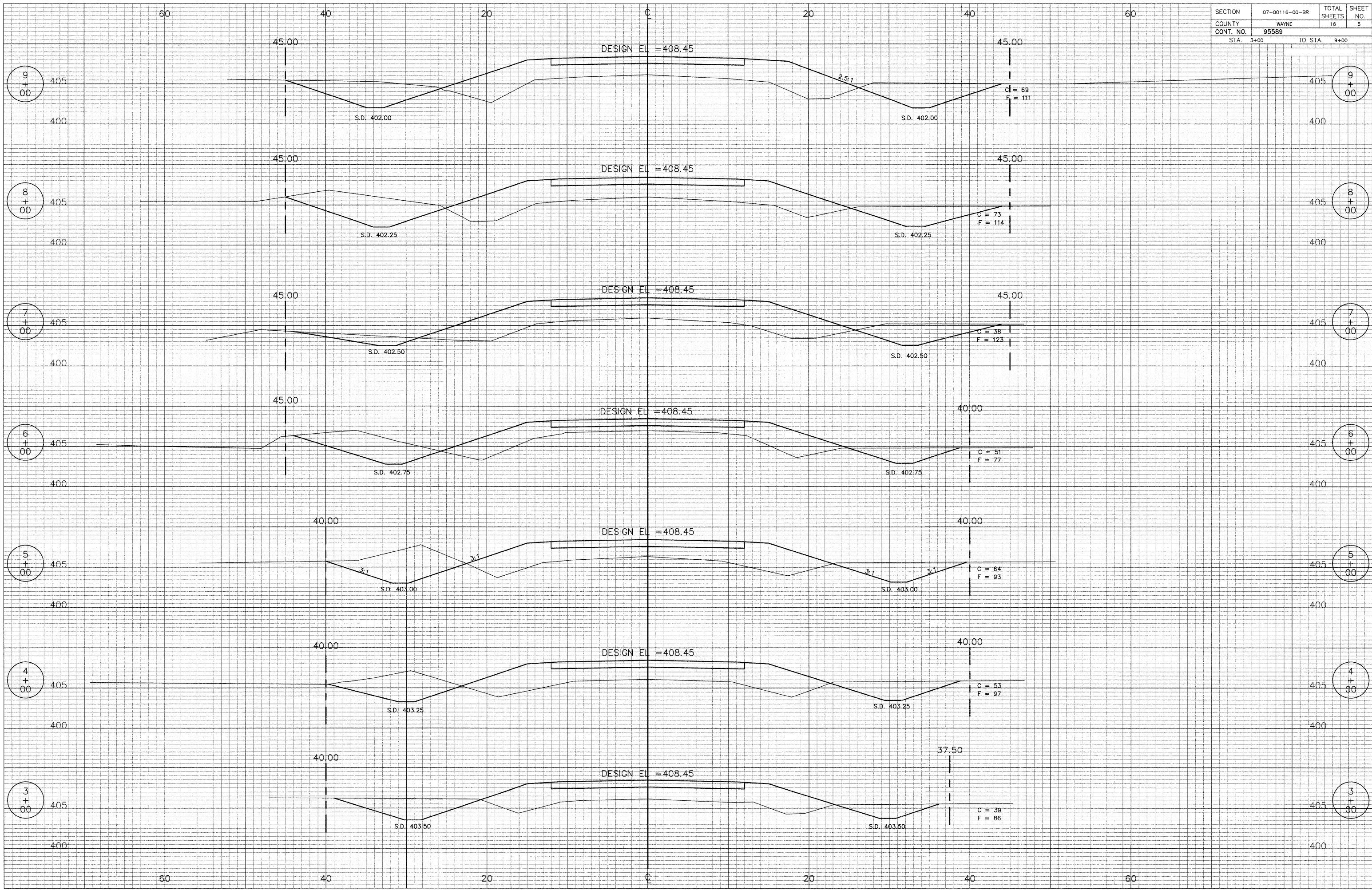
BENCHMARK # 2 - ELEV. 407.77
NAIL & WASHER IN 4" TREE
45' RT. STA. 10+15

430	AGGREGATE BASE COURSE, TYPE B STA. 0+00 TO STA. 9+23 = 1122 TONS STA. 10+59 TO STA. 14+00 = 412 TONS S.R.R. STA. 1+58 = 86 TONS TOTAL = 1560 TONS	POROUS GRANULAR BACKFILL P.E.L. STA. 1+72 = 4 CU YD P.E.L. STA. 2+53 = 4 CU YD TOTAL = 8 CU YD	EARTHWORK QUANTITIES EARTH EXCAVATION = 2074 CU. YD. EARTH EXCAVATION ADJ. 25% = 1556 CU. YD. CHANNEL EXCAVATION = 615 CU. YD. CHANNEL EXCAVATION ADJ. 25% = 461 CU. YD. EMBANKMENT = 2957 CU. YD. FURNISHED EXCAVATION = 940 CU. YD.	STONE RIPRAP DITCH LT. STA. 9+00 TO STA. 9+41 = 16 TONS RT. STA. 9+00 TO 9+35 = 14 TONS LT. STA. 10+47 TO STA. 11+00 = 21 TONS RT. STA. 10+42 TO 10+88 = 17 TONS RT. STA. 11+15 TO STA. 11+35 = 8 TONS TOTAL = 76 TONS	SEEDING, CLASS 2 (SPECIAL) STA. 0+00 TO STA. 14+00 = 1.7 ACRES	TRAFFIC BARRIER TERMINAL, TYPE 5A APPROACH CORNERS OF BRIDGE = 2 EACH TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL(TANGENT) APPROACH CORNERS OF BRIDGE = 2 EACH TERMINAL MARKER - DIRECT APPLIED APPROACH CORNERS OF BRIDGE = 2 EACH	CONSTRUCT TRANSITION FROM EXISTING ROW TO PROP. ROW. STA. 0+00 TO STA. 1+00 STA. 12+78 TO STA. 13+78 QUANTITIES INCLUDED IN THOSE LISTED.	430
425	AGGREGATE SURFACE COURSE, TYPE B P.E.L. STA. 1+72 = 10 TONS P.E.L. STA. 2+53 = 10 TONS P.E.R. STA. 11+00 = 50 TONS TOTAL = 70 TONS	PIPE CULVERTS, CLASS D, TYPE 1 18" LT. STA. 1+00 TO STA. 1+50 = 49 FOOT LT. STA. 1+50 TO STA. 2+32 = 80 FOOT LT. STA. 2+32 TO STA. 2+70 = 37 FOOT TOTAL = 166 FOOT	STEEL END SECTIONS 18" LT. STA. 1+00 = 1 EACH LT. STA. 2+70 = 1 EACH TOTAL = 2 EACH	STONE DUMPED RIPRAP, CL A3 LT. STA. 1+07 TO STA. 1+57 = 33 TON (SEE SPECIAL PROVISIONS)	TEMPORARY DITCH CHECKS LT. STA. 1+00 = 12 FT RT. STA. 1+45 = 12 FT LT. STA. 3+00 = 12 FT LT. & RT. STA. 6+00 = 24 FT LT. & RT. STA. 9+00 = 24 FT RT. STA. 11+40 = 12 FT LT. STA. 11+05 = 12 FT TOTAL = 108 FEET	EROSION CONTROL BARRIER TOE OF CHANNEL SLOPES @ 4 CORNERS OF BRIDGE = 100 FOOT	425	
420	PIPE CULVERT REMOVAL P.E.L. STA. 1+72 = 30 FOOT P.E.L. STA. 2+53 = 30 FOOT A.R. STA. 6+22 = 72 FOOT P.E.R. STA. 9+35 = 30 FOOT TOTAL = 162 FOOT						420	
415							415	
410							410	
405							405	
400							400	
395							395	
390							390	
385							385	

SECTION	07-00116-00-BR	TOTAL SHEETS	16	SHEET NO.	4
COUNTY	WAYNE				
CONT. NO.	95589				
STA.	0+00	TO STA.	2+53		



SECTION	07-00116-00-BR	TOTAL SHEETS	16	SHEET NO.	5
COUNTY	WAYNE				
CONT. NO.	95589				
STA.	3+00	TO STA.	9+00		



60

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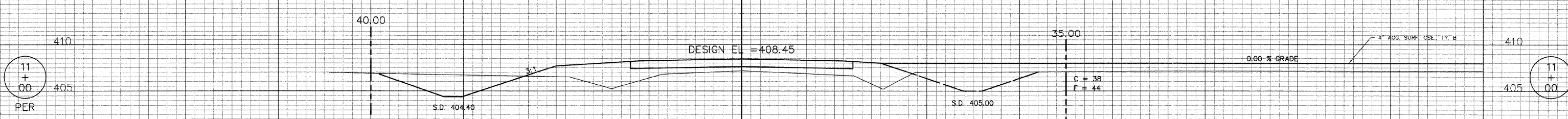
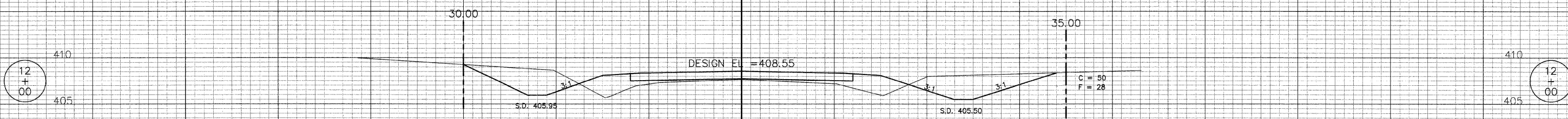
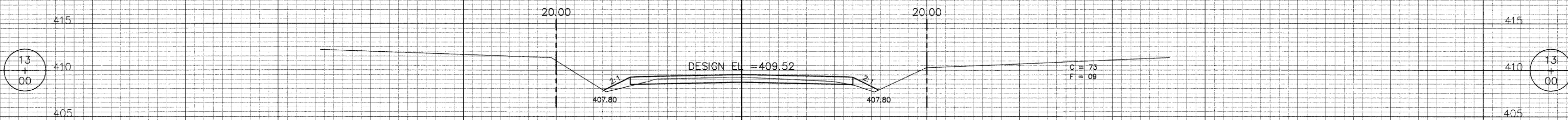
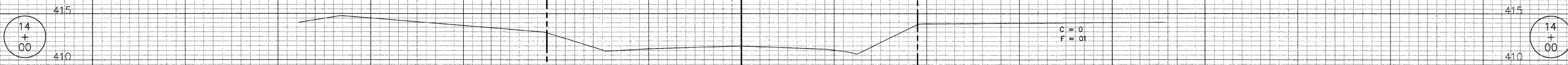
0

20

40

60

SECTION	07-00116-00-BR	TOTAL SHEETS	16	SHEET NO.	6
COUNTY	WAYNE				
CONT. NO.	95589				
STA.	11+00	TO STA.	14+00		



60

40

20

0

20

40

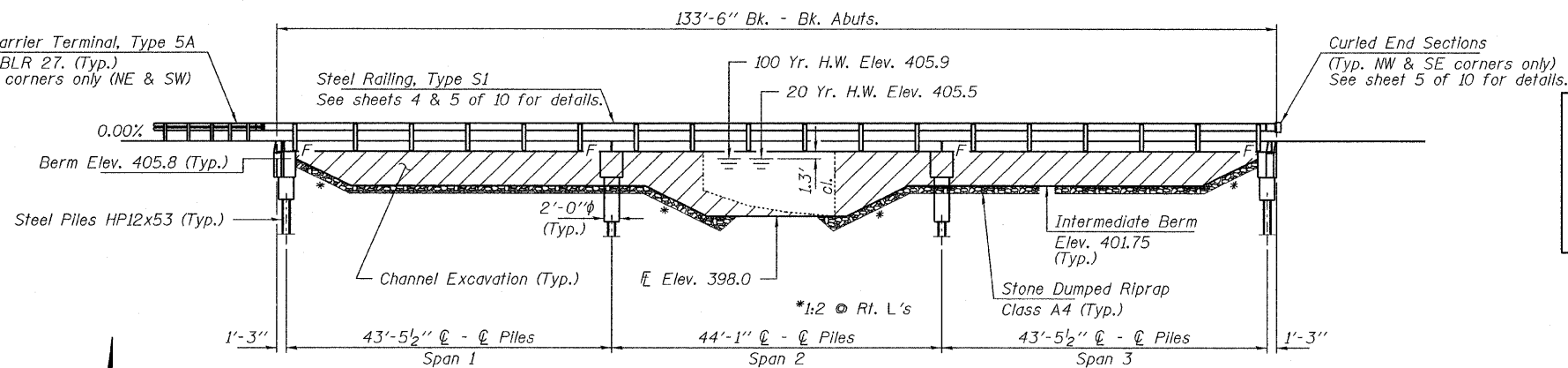
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BENCHMARK: Nail & Washer in 4" tree. 45' Rt., Sta. 10+15, Elev. 407.77

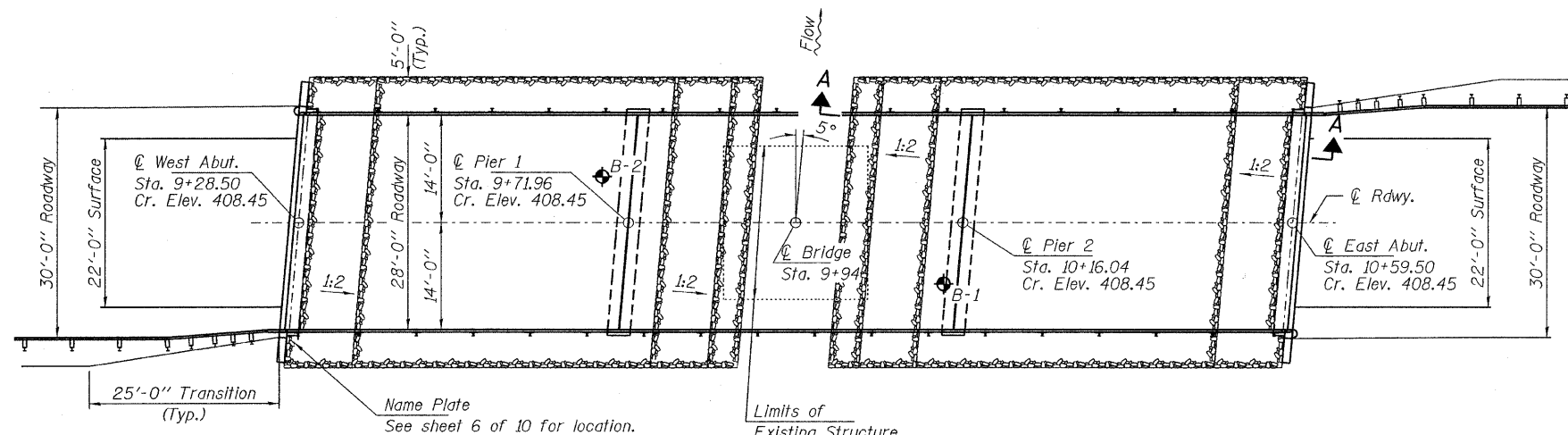
EXISTING STRUCTURE: Single span I-Beam bridge with a concrete deck on closed concrete abutments. 17.5' fc.-fc. abutts.; 20.0' o.-o. deck. Structure closed to traffic.

No Salvage

Traffic Barrier Terminal, Type 5A
See Std. BLR 27. (Typ.)
Approach corners only (NE & SW)



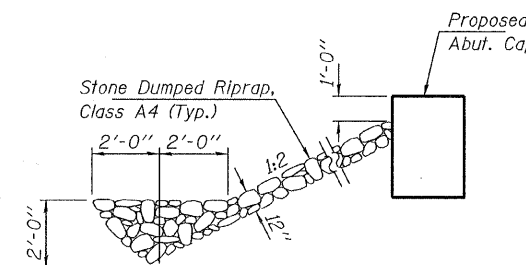
ELEVATION



PLAN

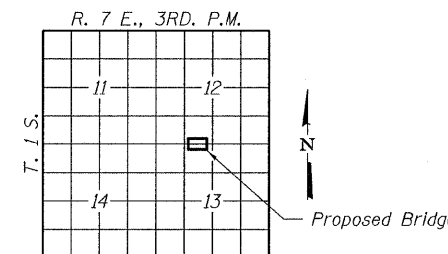
MARTIN CREEK
BUILT 200_ BY
WAYNE COUNTY
SEC. 07-00116-00-BR
FAS 2821 (C.H. 7)
STR. NO. 096-3446
LOADING HL-93

NAME PLATE
See Std. 515001



SECTION A-A

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



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			615
Stone Dumped Riprap, Class A4	Ton			300
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		48.6	48.6
Concrete Encasement	Cu. Yd.		9.6	9.6
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	3,696		3,696
Reinforcement Bars	Pound		5,020	5,020
Steel Railing, Type S1	Foot	268		268
Furnishing Steel Piles HP12x53	Foot		960	960
Driving Piles	Foot		960	960
Test Pile Steel HP12x53	Each		2	2
Name Plates	Each		1	1

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 (1/2" low lax. strands)
fpbt = 201,960 psi (1/2" 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.

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.277g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.669g
Soil Site Class = D

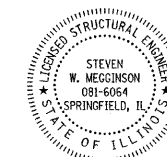
WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	20	2,032	111	515	405.5	1.5	0.5	407.0	406.0	
Overtopping	100	2,962	122	565	405.9	1.4	0.9	407.3	406.8	
Max. Calc.	500	3,843	122	606	406.2	1.3	1.2	407.5	407.4	

Drainage Area = 12.64 Sq. Mi. Existing Low Grade Elev. 406.00 @ Sta. 8+00
Proposed Low Grade Elev. 408.45 @ Sta. 9+94

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."

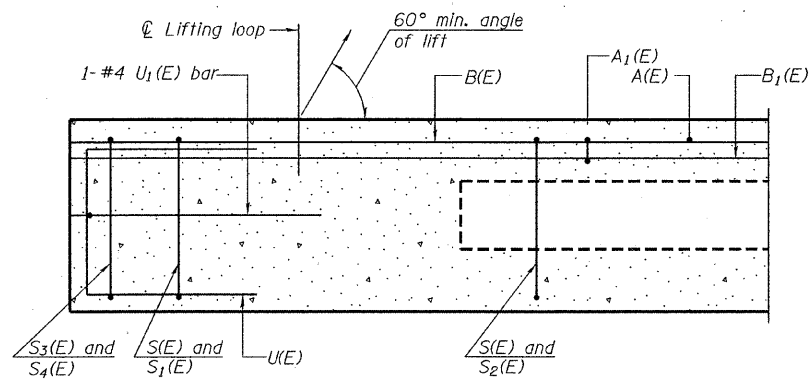
Steven W. McQuinn 1/22/2009
ILLINOIS STRUCTURAL NO. 081-6064



Expires 11-30-2010

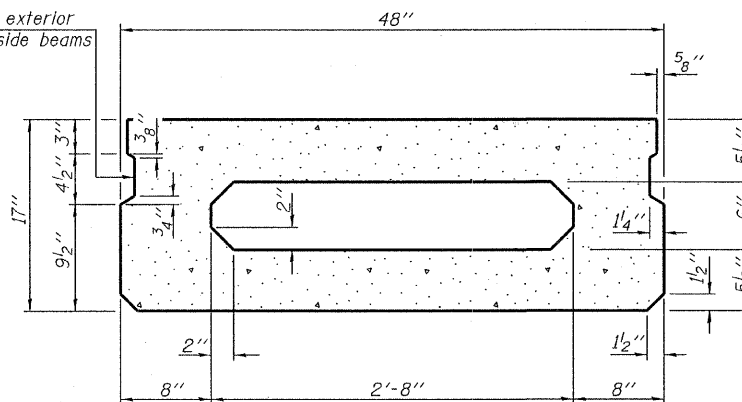
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 096-3446

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400	SHEET NO. 1 10 SHEETS	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		7	07-00116-00-BR	WAYNE	16	7
PROJECT NUMBER: 08.0219.130 DATE: 06/17/09		FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
		CONTRACT NO. 95589				

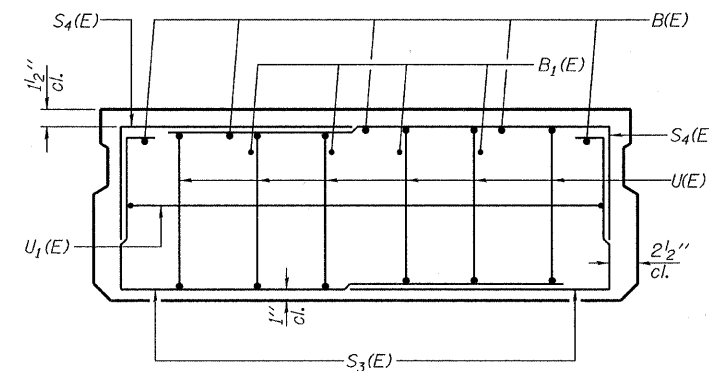


SECTION C-C

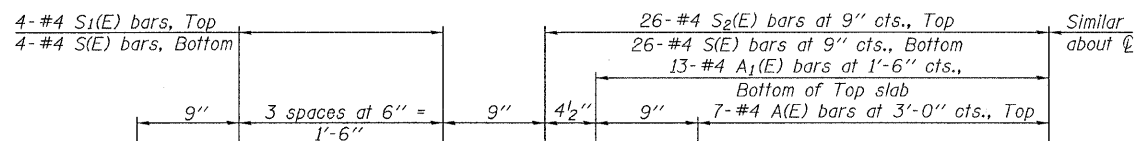
Omit key on exterior face of outside beams



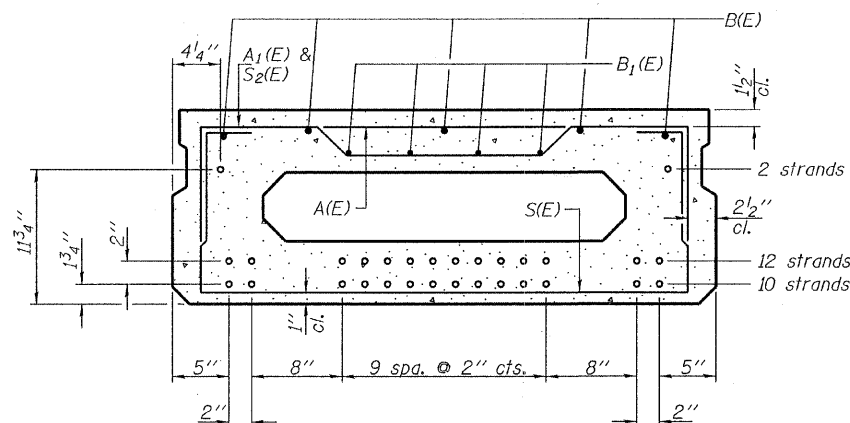
SECTION A-A
(Showing dimensions)



VIEW B-B



PLAN VIEW



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"	—
A1(E)	26	#4	3'-10"	—
B(E)	5	#5	43'-8"	—
B1(E)	4	#4	43'-8"	—
S(E)	60	#4	6'-9"	⌌
S1(E)	8	#4	5'-3"	⌌
S2(E)	52	#4	5'-6"	⌌
S3(E)	6	#4	4'-4"	⌌
S4(E)	6	#4	3'-7"	⌌
U(E)	12	#5	3'-8"	⌌
U1(E)	2	#4	6'-4"	⌌

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

Note: Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.

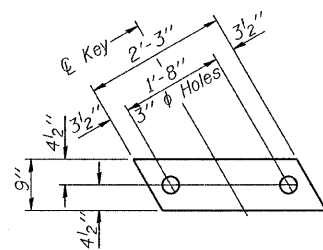
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

PD-1748-L

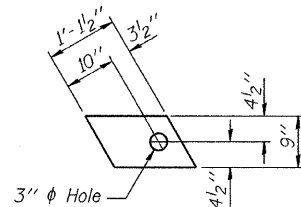
10-1-08

SUPERSTRUCTURE
17" X 48" PPC DECK BEAM
STRUCTURE NO. 096-3446

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400	SHEET NO. 2 10 SHEETS	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		7	07-00116-00-BR	WAYNE	16	8
PROJECT NUMBER: 08.0219.130		DATE: 06/17/09		CONTRACT NO. 95589		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT		



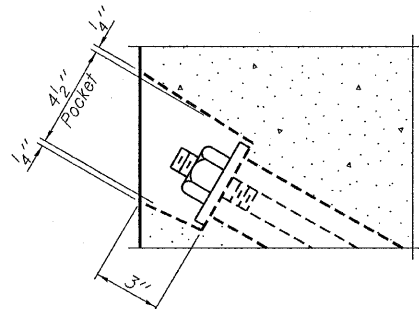
FABRIC BEARING PAD
(Interior - 30 Req'd.)



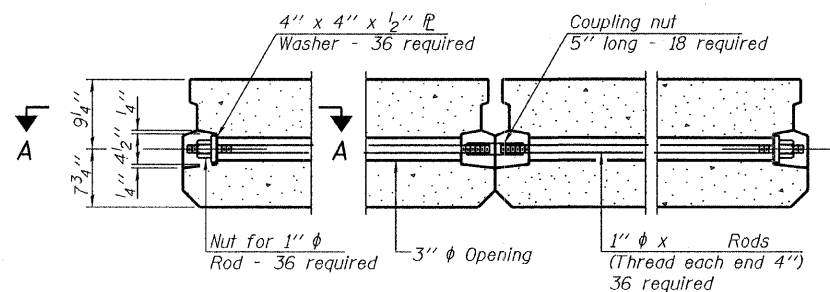
FABRIC BEARING PAD
(Exterior - 12 Req'd.)

FIXED

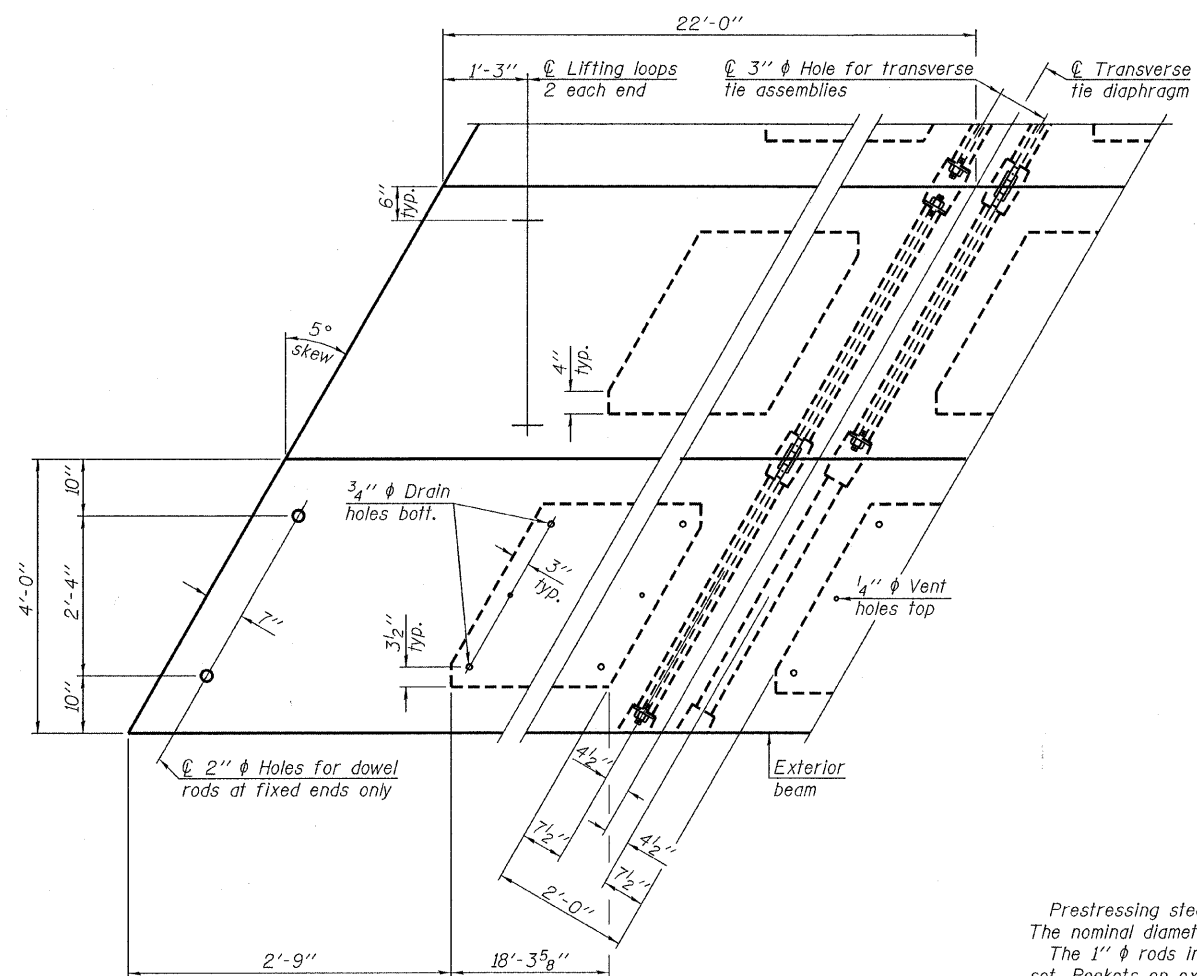
Note: Omit holes when using expansion bearings.



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY



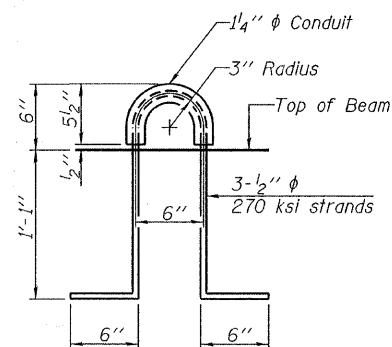
PLAN VIEW

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

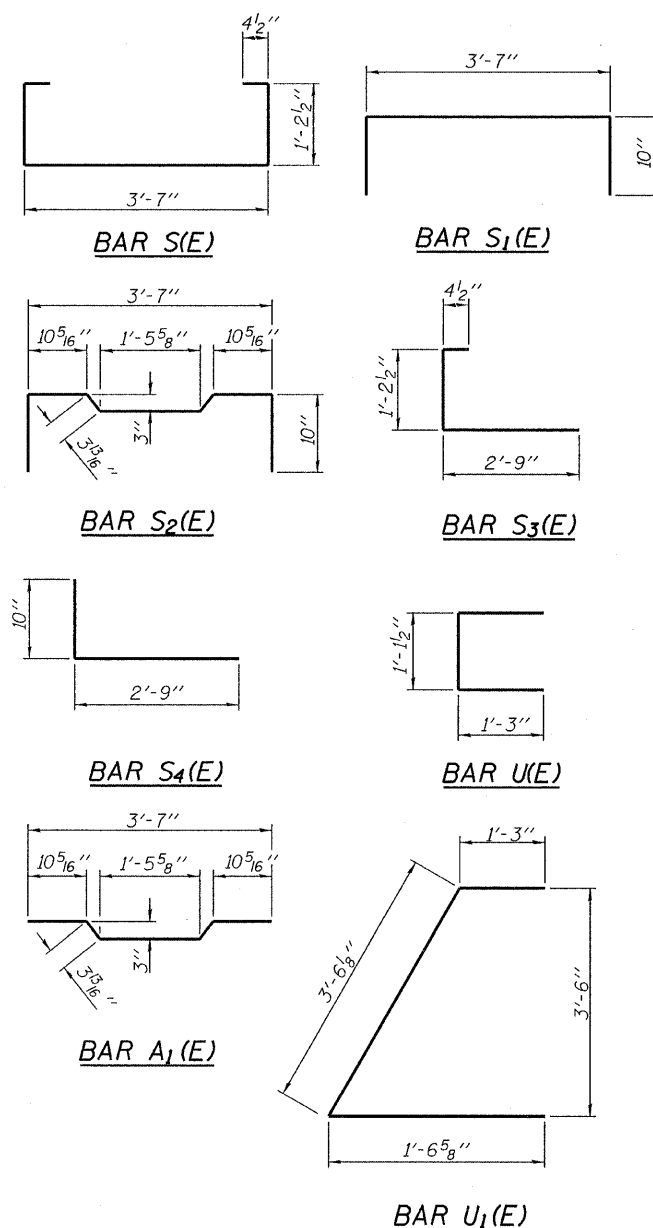
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

PD-1748-LD

10-1-08



LIFTING LOOP DETAIL



BILL OF MATERIAL

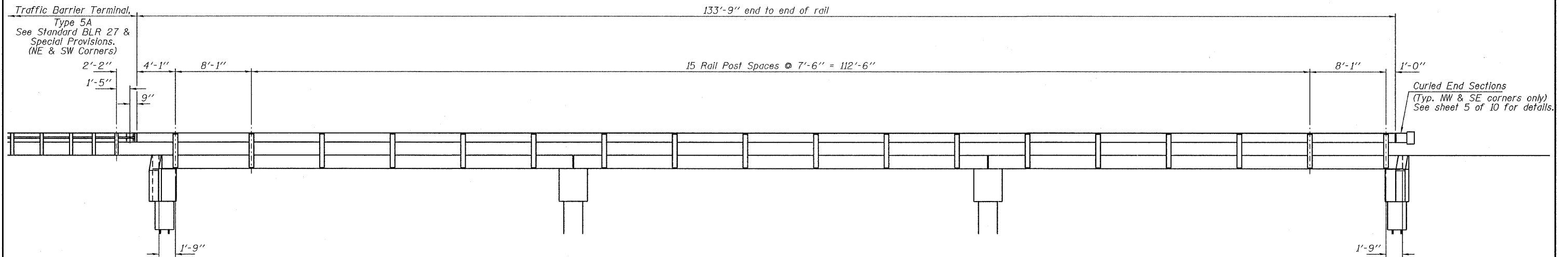
Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	3,696
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NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions).
Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.
A minimum 2 1/2" lifting pin shall be used to engage the lifting loops during handling.
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

SUPERSTRUCTURE DETAILS
17" X 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 096-3446

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 548-3400	SHEET NO. 3 10 SHEETS	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		7	07-00116-00-BR	WAYNE	16	9
PROJECT NUMBER: 08 0219.130		DATE: 06/17/09		CONTRACT NO. 95589		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT		

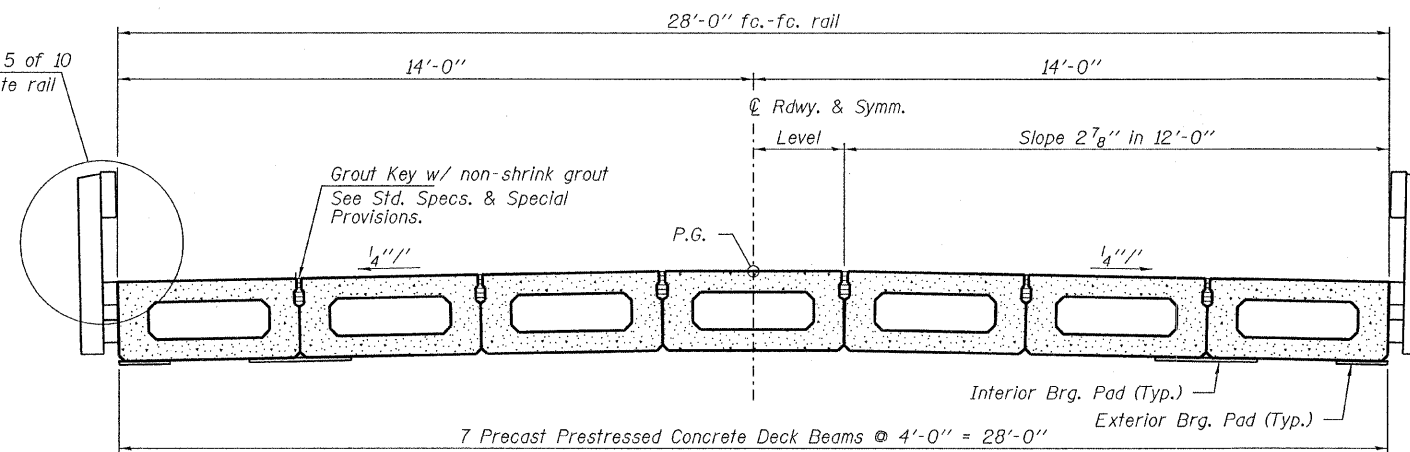


ELEVATION

Showing Rail Post Spaces

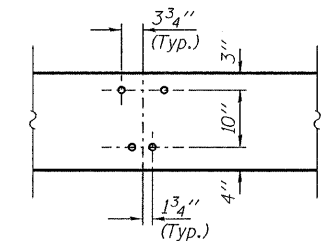
See sheet 5 of 10 for Railing Details.

See sheet 5 of 10 for complete rail details.

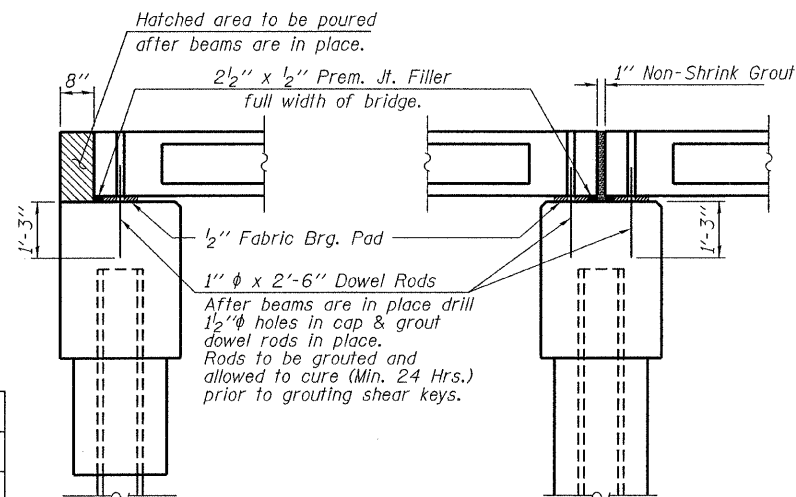


CROSS SECTION

See sheets 2 & 3 of 10 for Superstructure.



DETAIL A



SECTION AT ABUTMENTS

@ Rt. L's

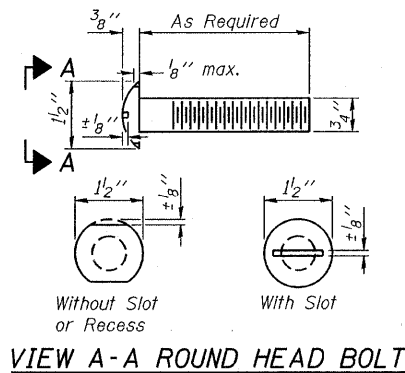
SECTION AT PIERS

@ Rt. L's

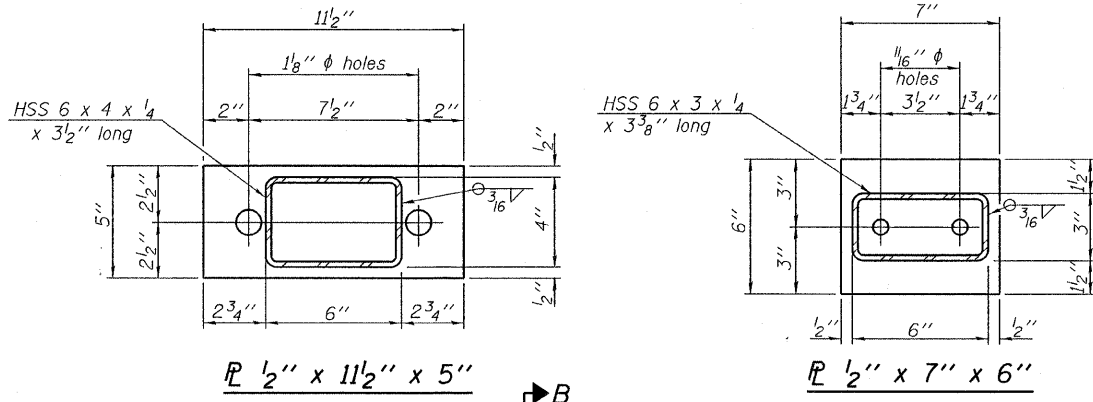
DESIGNED	- A.S.L.
CHECKED	- S.W.M.
DRAWN	- D.A.B.
CHECKED	- D.T.M.

**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 096-3446**

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400	SHEET NO. 4	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	10 SHEETS	7	07-00116-00-BR	WAYNE	16	10
PROJECT NUMBER: 08.0219.130	DATE: 06/17/09	CONTRACT NO. 95589				
		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



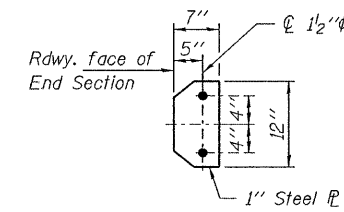
VIEW A-A ROUND HEAD BOLT



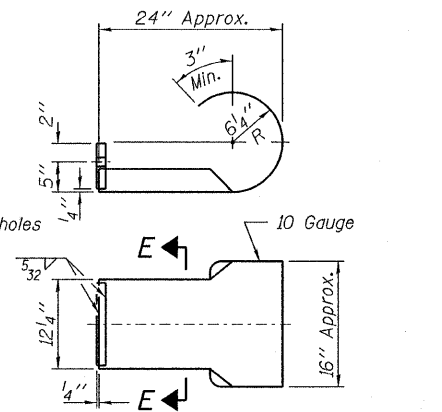
SECTION B-B

SECTION AT RAILING POST

Note: Cost of curled end sections shall be included with the Steel Railing. (2 Required)

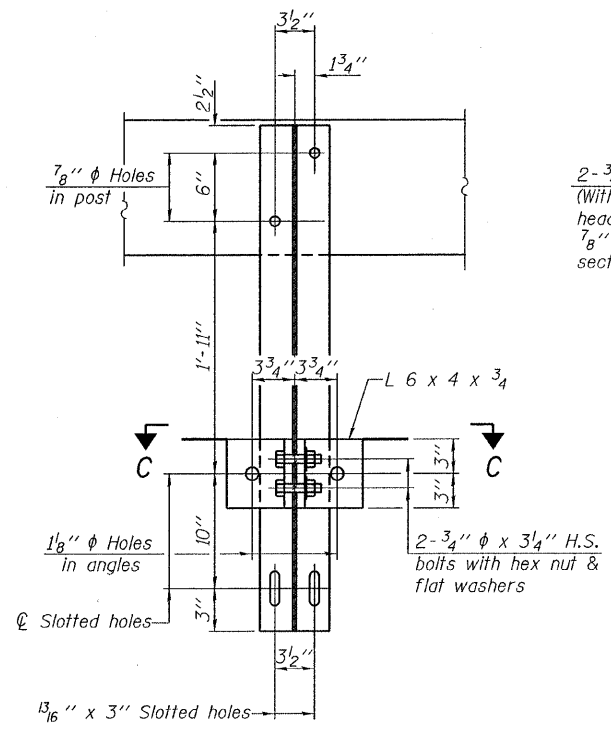


SECTION E-E

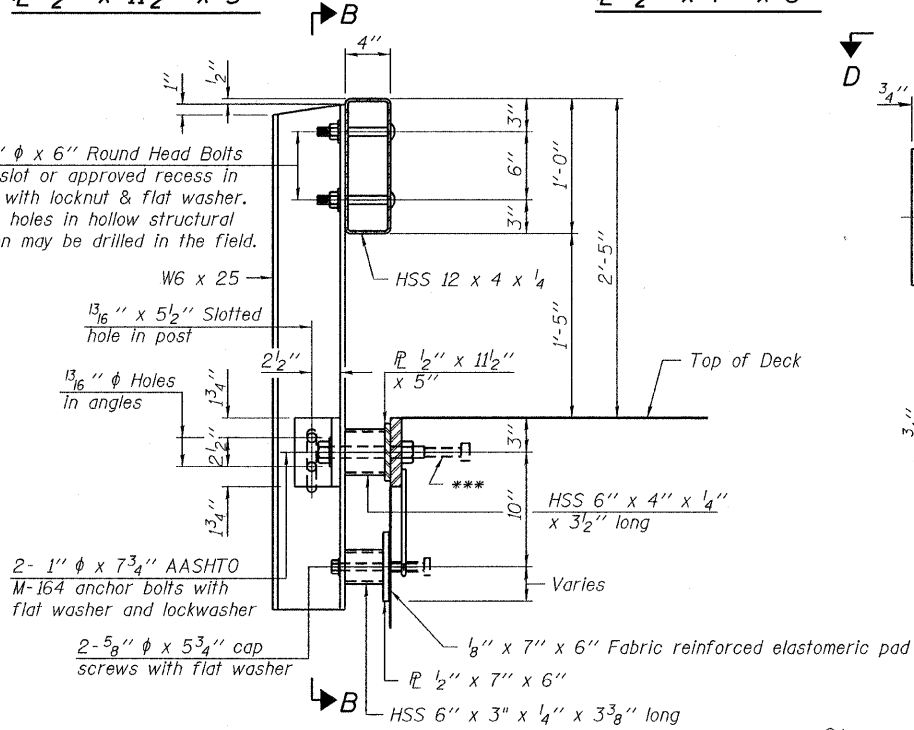


CURLED END SECTION DETAILS

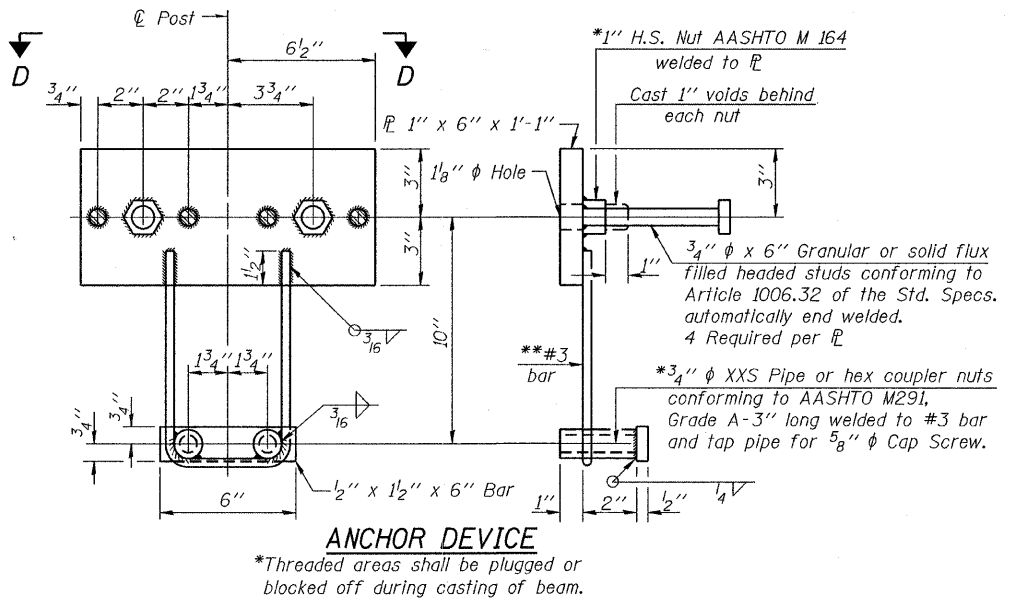
Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type S-1.
 All steel rail elements shall 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.



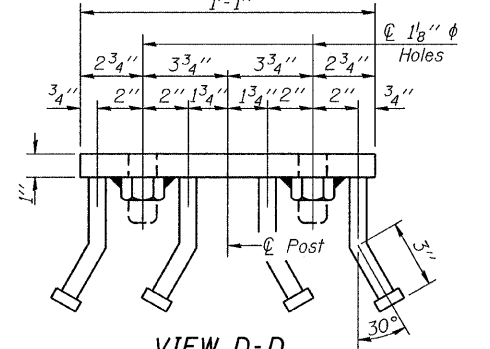
SECTION B-B



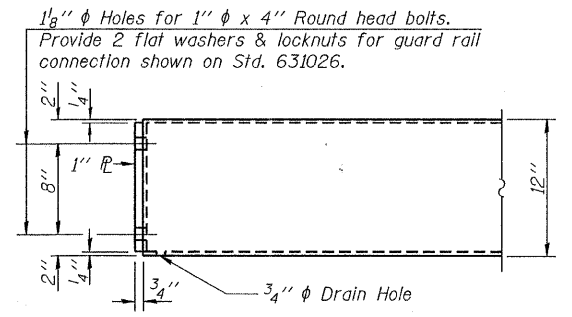
SECTION AT RAILING POST



ANCHOR DEVICE



VIEW D-D

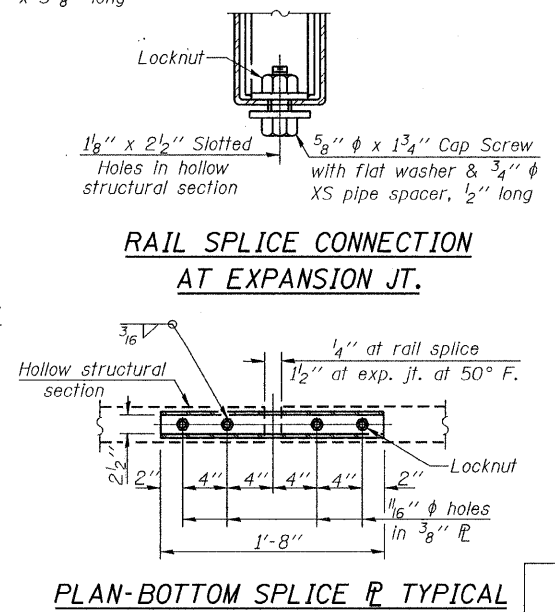


END OF RAIL DETAILS

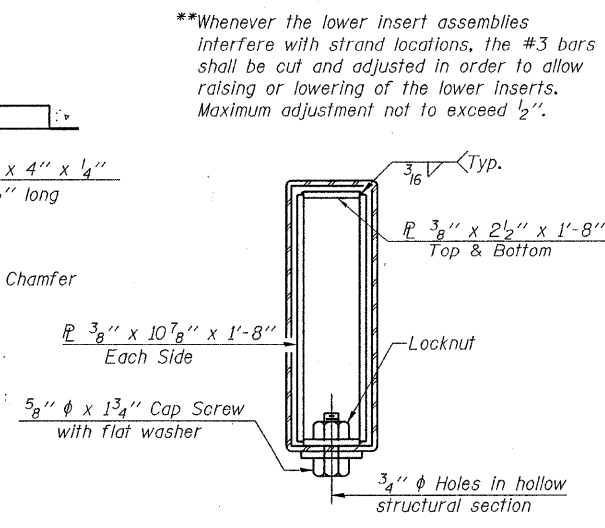
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	268

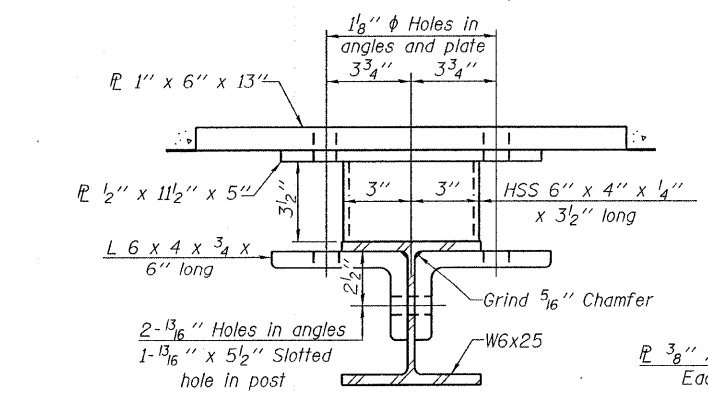
STEEL RAILING, TYPE S-1
 STRUCTURE NO. 096-3446



PLAN-BOTTOM SPLICE TYPICAL



SECTIONS AT RAIL SPLICE



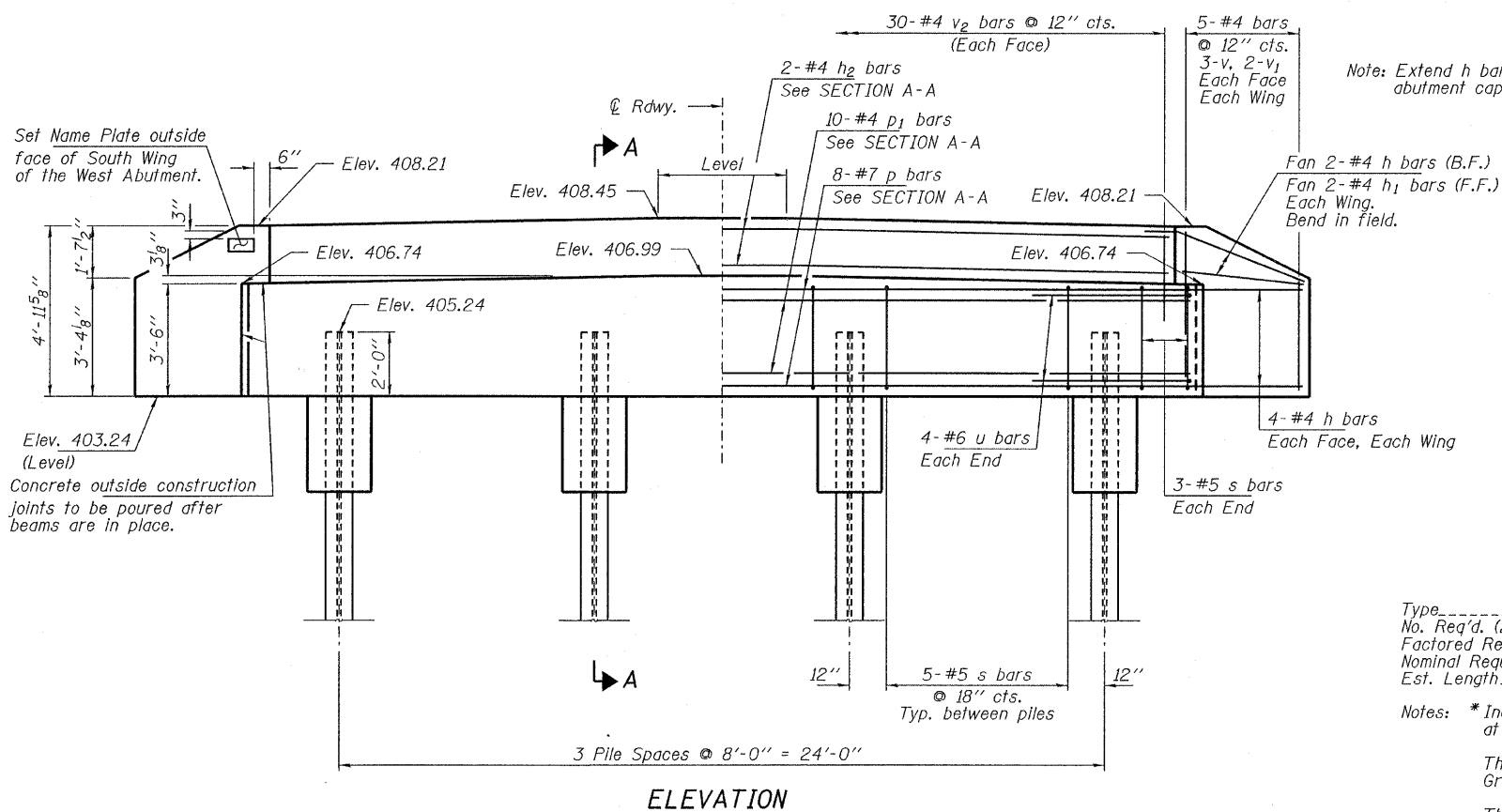
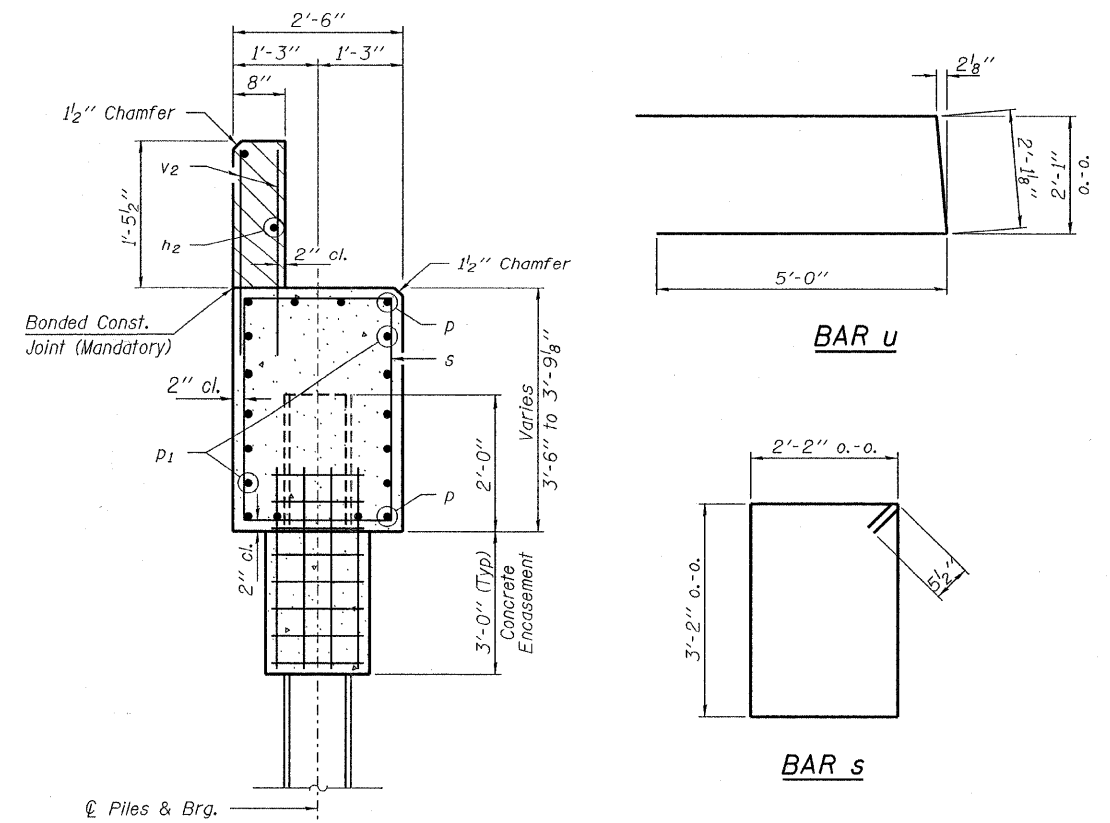
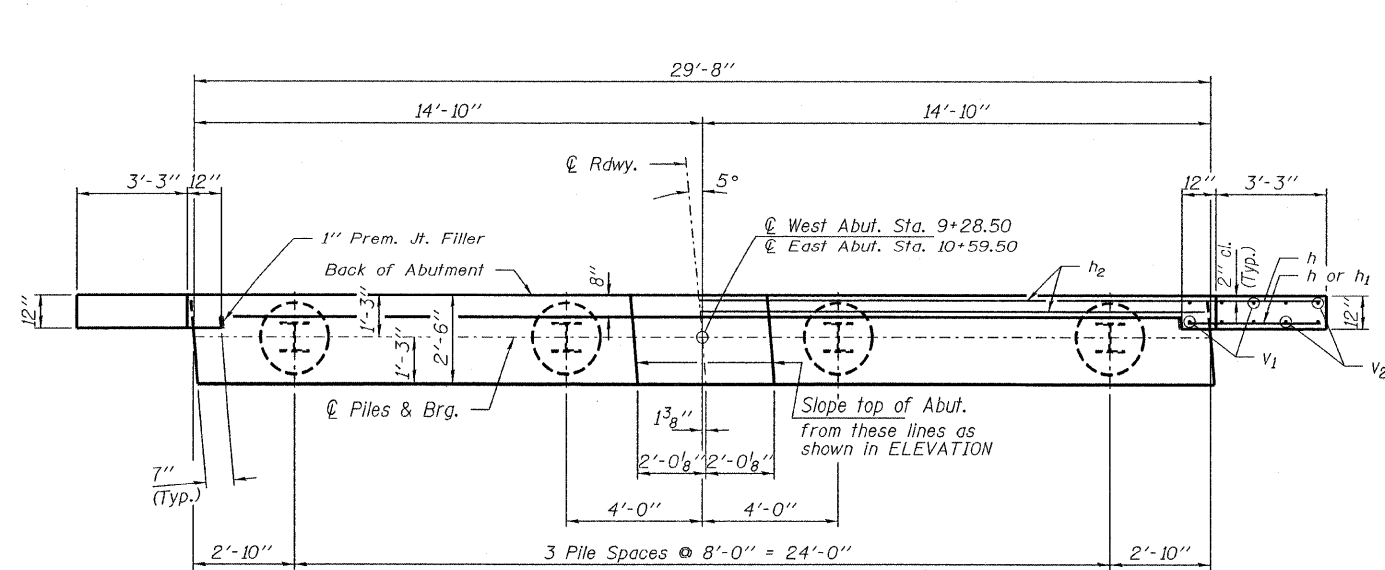
SECTION C-C

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

R-23A 5-16-08 (10'-9" Maximum Post Spacing)

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400
 PROJECT NUMBER: 08.0210.130 DATE: 06/17/09

SHEET NO. 5	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	7	07-00116-00-BR	WAYNE	16	11
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
			CONTRACT NO. 95589		



SECTION A-A
Hatched area to be poured after beams are in place.

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	29'-4"	—
p	16	#7	29'-4"	—
p ₁	20	#4	29'-4"	—
s	42	#5	11'-7"	□
u	16	#6	12'-2"	—
v	24	#4	4'-1"	—
v ₁	16	#4	3'-1"	—
v ₂	120	#4	2'-4"	—
Concrete Structures			Cu. Yd.	24.6
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,680
Steel Piles HP12x53			Foot	420
Test Pile Steel HP12x53			Each	1
Name Plates			Each	1

PILE DATA

Type: Steel HP12x53
 No. Req'd. (2 Abuts.): 8
 Factored Resistance Available (R_f): 209 Kips/Pile
 Nominal Required Bearing (R_n): 419 Kips/Pile
 Est. Length: 60 Ft/Pile

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

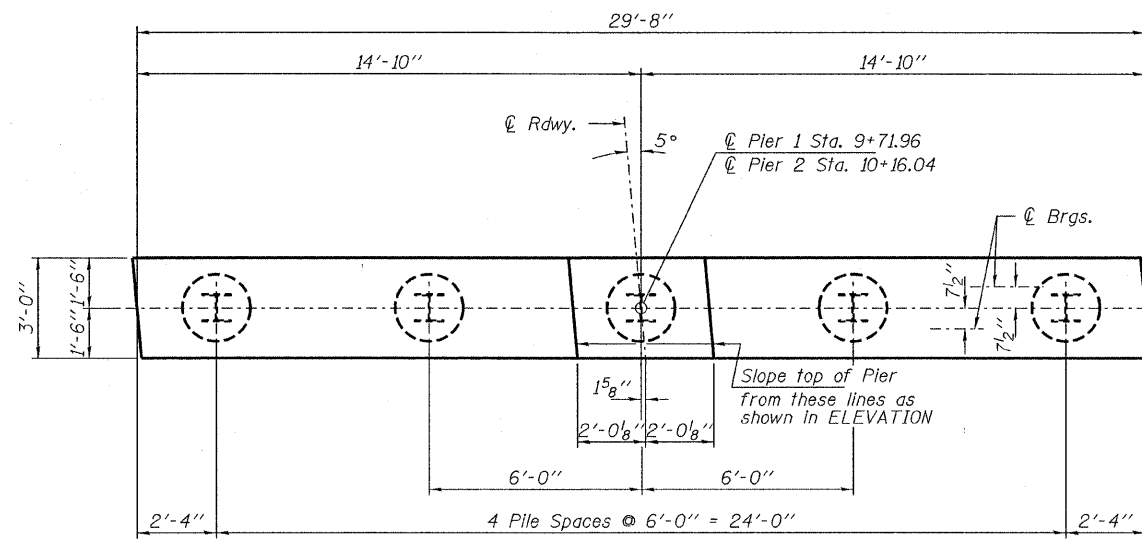
The Steel H-Piles shall be according to AASHTO M270 Grade 50.

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

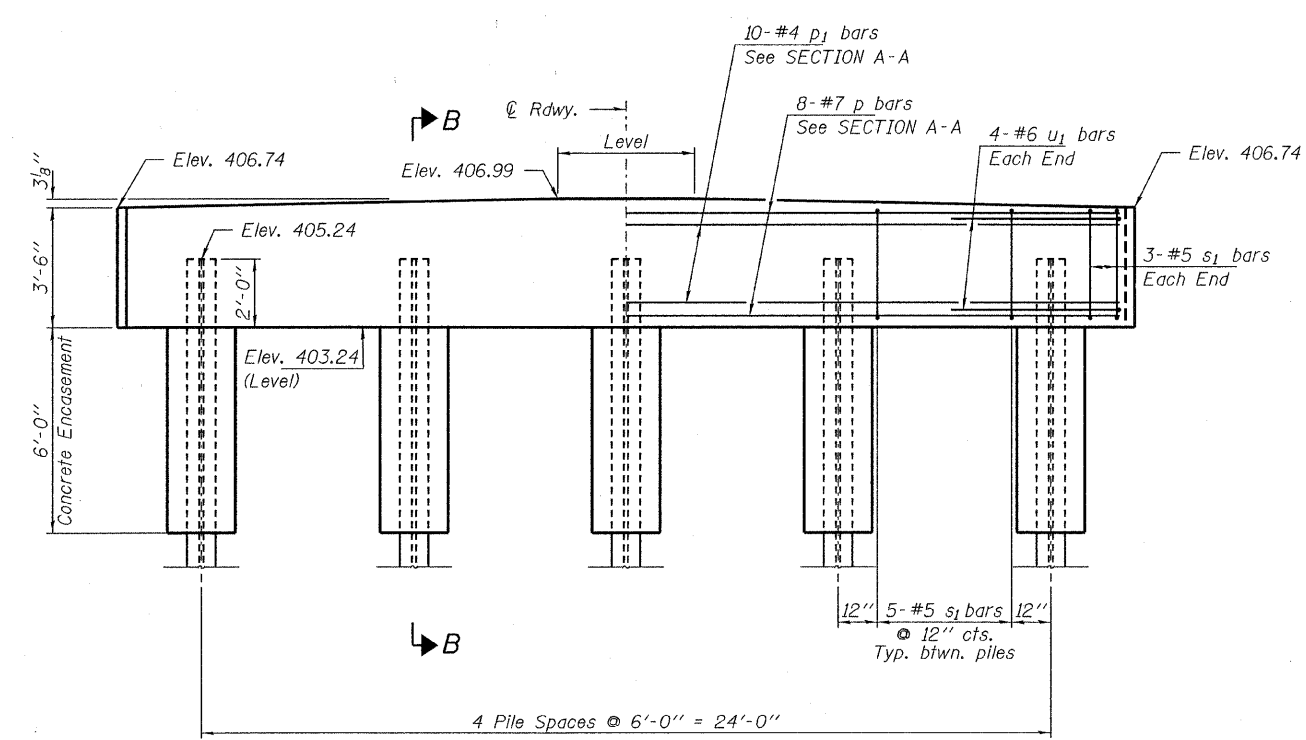
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

**ABUTMENTS
STRUCTURE NO. 096-3446**

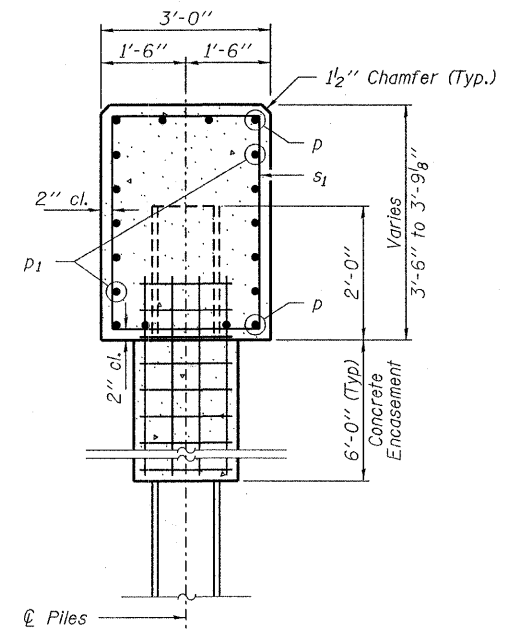
HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400	SHEET NO. 6 10 SHEETS	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		7	07-00116-00-BR	WAYNE	16	12
PROJECT NUMBER: 08.0219.130		DATE: 06/17/09		CONTRACT NO. 95589		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT		



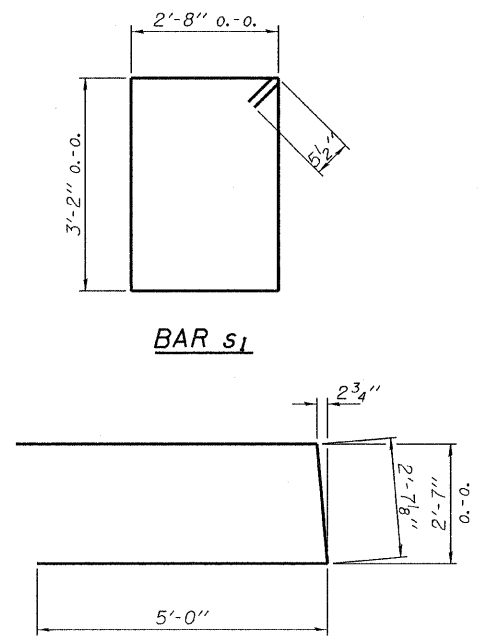
PLAN



ELEVATION



SECTION A-A



PILE DATA

Type	Steel HP12x53
No. Req'd. (2 Piers)	10
Factored Resistance Available (Rf)	209 Kips/Pile
Nominal Required Bearing (Rn)	419 Kips/Pile
Est. Length	60 Ft/Pile

Notes: * Includes one test pile to be driven in permanent location at Pier 1.

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	16	#7	29'-4"	—
p_1	20	#4	29'-4"	—
s_1	52	#5	12'-7"	□
u_1	16	#6	12'-8"	—
Concrete Structures			Cu. Yd.	24.0
Concrete Encasement			Cu. Yd.	6.8
Reinforcement Bars			Pound	2,340
Steel Piles HP12x53			Foot	540
Test Pile Steel HP12x53			Each	1

**PIERS
STRUCTURE NO. 096-3446**

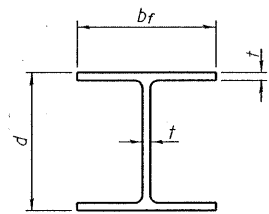
DESIGNED - A.S.L.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

HAMPTON, LENZINI & RENWICK, INC.
 CIVIL & STRUCTURAL ENGINEERS
 LAND SURVEYORS
HLR 3085 STEVENSON DRIVE, SUITE 201
 SPRINGFIELD, ILLINOIS 62703
 (217) 546-3400

SHEET NO. 7
10 SHEETS

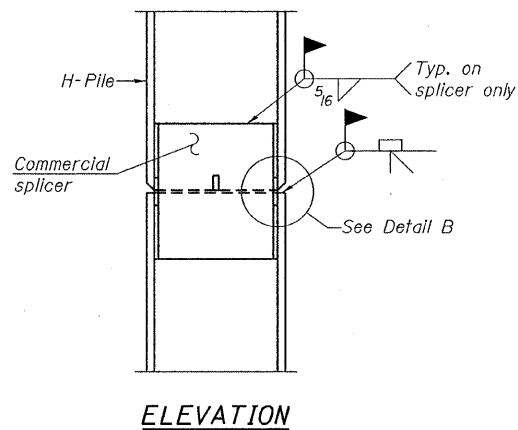
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
7	07-00116-00-BR	WAYNE	16	13
CONTRACT NO. 95589				
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

PROJECT NUMBER: 08 0219.130 DATE: 06/17/09

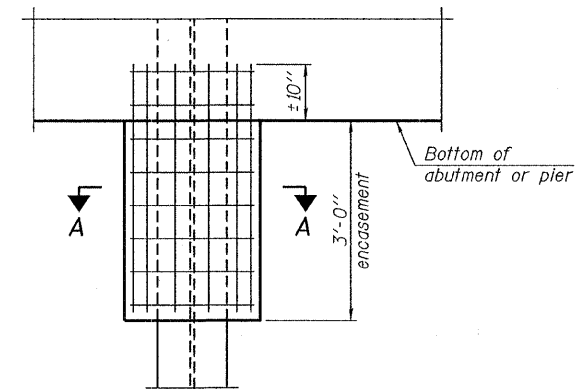


STEEL PILE TABLE

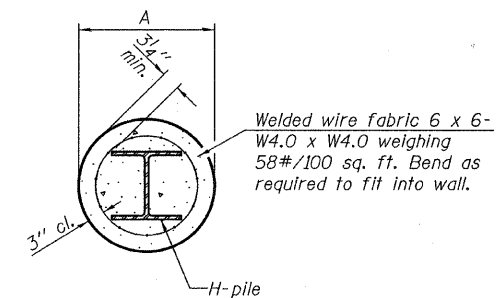
Designation	Depth <i>d</i>	Flange width <i>b_f</i>	Web and Flange thickness <i>t</i>	Encasement diameter <i>A</i>
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63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



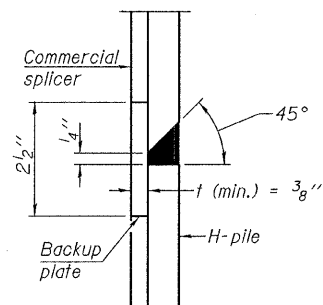
ELEVATION



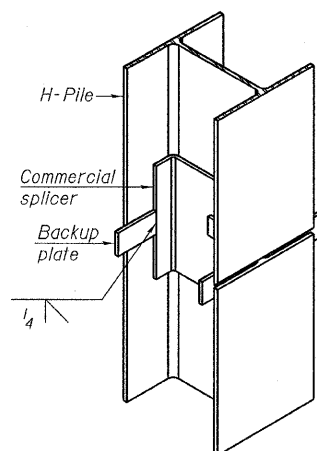
SECTION A-A

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

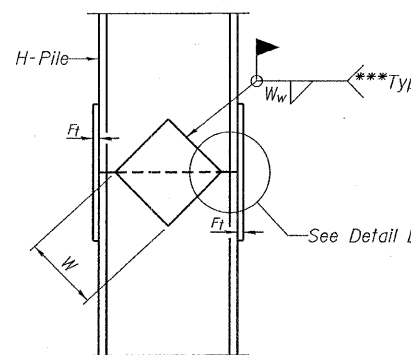
PILE ENCASEMENT



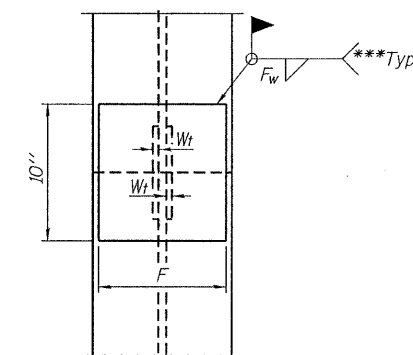
DETAIL "B"



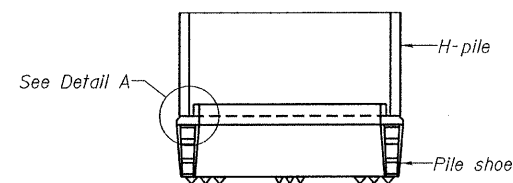
ISOMETRIC VIEW



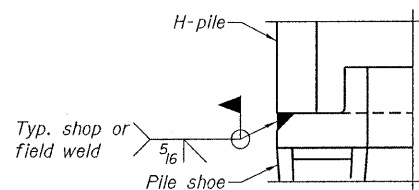
ELEVATION



END VIEW

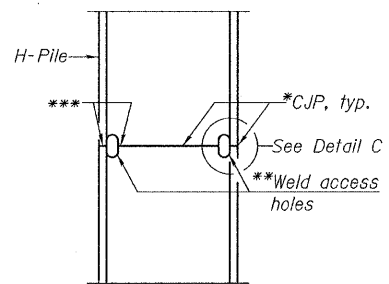


ELEVATION

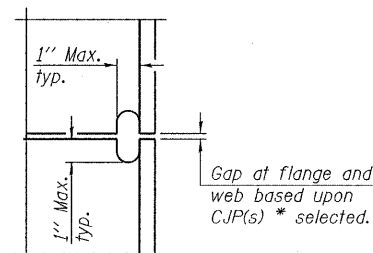


DETAIL A

H-PILE SHOE ATTACHMENT

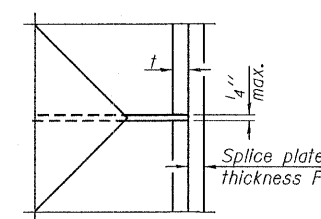


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

WELDED PLATE FIELD SPLICE

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"	1/16"	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"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	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"

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

- * 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.

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

F-HP 10-1-08

**HP PILE DETAILS
STRUCTURE NO. 096-3446**

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 PROJECT NUMBER: 08.0219.130 DATE: 06/17/09	SHEET NO. 8	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	10 SHEETS	7	07-00116-00-BR	WAYNE	16	14
				CONTRACT NO. 95589		
		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

Bridge Foundation Boring Log

Project: H-08042 Bridge Over Martin Creek Date: 3-11-08
Section: 07-00116-00-BR Station .9+96
Route: CR 7 Bored by: D. Russell
County: Wayne Checked By: J. Holcomb

Boring No. 1 Station: 10+16 Offset: 8' RT	Elevation	N	Qu tsf	w %	Surface Water Elev.	Ground Water Elev. During Drilling 387.1 Upon Completion plugged	Elevation	N	Qu tsf	w %	
Ground Surface 407.1 0					clay (continued)						
2" Oil and Chip/ 6" C. Stone 406.4											
Gray Sandy SILT (A-4)											
		2	0.5B	22			-25	21	6.4B	11	
		2	0.4B	23			-5	26	7.2B	11	
		1	0.2B	33			-30	26	7.1B	11	
		5		25			-10				
402.6											
Brown Mottled Gray Sandy CLAY (A-6)											
		5	1.0S	21			-35	14	4.0B	15	
		12	1.4B	18			-15				
		57	5.1S	10			-40	18	2.8B	15	
388.1											
Gray Sandy CLAY (A-6)											
		51	5.5S	10			-20				
		25	5.5B	12				19	3.0B	19	

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

Bridge Foundation Boring Log

Project: H-08042 Bridge Over Martin Creek Date: 3-11-08
Section: 07-00116-00-BR Station .9+96
Route: CR 7 Bored by: D. Russell
County: Wayne Checked By: J. Holcomb

Boring No. 1 Station: 10+16 Offset: 8' RT	Elevation	N	Qu tsf	w %	Surface Water Elev.	Ground Water Elev. During Drilling 387.1 Upon Completion plugged	Elevation	N	Qu tsf	w %	
clay (continued)											
							-45				
							-70				
358.1											
Gray-Clayey SAND (A-2-4)											
		12	1.7B	28			-50				
							-75				
		15	3.0B	33			-55				
348.1											
Gray SHALE											
							-60	100/6"		14	
							-65	100/6"		16	
							-65	100/3"		11	
343.1											
End of Boring @ -64.0'											
							-65				

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.A.B.
CHECKED - D.T.M.

BORING 1

BORINGS
STRUCTURE NO. 096-3446

HAMPTON, LENZINI & RENWICK, INC. <small>CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS</small> HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 PROJECT NUMBER: 08 0219.130 DATE: 06/17/09	SHEET NO. 9	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	10 SHEETS	7	07-00116-00-BR	WAYNE	16	15
			CONTRACT NO. 95589			
		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

