

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM

PROJECT NO. BROS-065 (46) JOB NO. C-99-528-08
SECTION 08-09113-00-BR
WHITE OAK CREEK
HAMILTON COUNTY
T.R. 234

PROPOSED STRUCTURE NO. 033-3310

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
234	08-09113-00-BR	HAMILTON	13	1
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT * BROS-065 (46)		CONTRACT * 99343		
JOB * C-99-528-08		WHITE OAK CREEK		
LEC JOB * H081017M				

323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL
62863
PHONE:
(618)-262-8651
FAX:
(618)-263-3327

405 W. STATE ST.
SUITE 1
PRINCETON, IN
47670

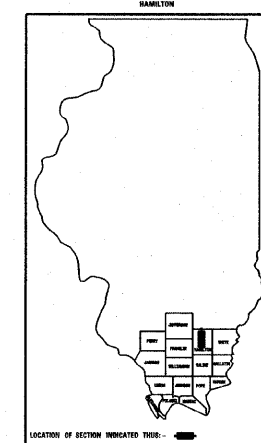
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FAX:
(812)-385-2012



PROFESSIONAL
DESIGN FIRM
LAND SURVEY &
PROFESSIONAL
ENGINEERING
CORPORATION
184-00887
(82-032435)(35-002769)



AARON M. MEFFORD
NAME
SIGNATURE
8-26-08
DATE
11-30-09
EXPIRES



INDEX OF SHEETS

SHEET NO. DESCRIPTION

- 1. COVER SHEET & SUMMARY OF QUANTITIES
- 2. PLAN AND PROFILE & TYPICAL SECTIONS
- 3.-4. STATION CROSS SECTIONS
- 5.-11. BRIDGE PLANS
- 12.-13. BORINGS

HIGHWAY STANDARDS:

- 000001-05 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-04 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-02 NAME PLATE FOR BRIDGES
- 701901 TRAFFIC CONTROL DEVICES
- BLR 21-7 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS
- BLR 22-5 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO-WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20200100	EARTH EXCAVATION	CU YD	29
20300100	CHANNEL EXCAVATION	CU YD	110
20400800	FURNISHED EXCAVATION	CU YD	480
25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.2
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	150
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	340
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	23.6
50300280	CONCRETE ENCASEMENT	CU YD	2.8
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SO FT	1,368
50800105	REINFORCEMENT BARS	POUND	2,740
* 50900205	STEEL RAILING, TYPE S1	FOOT	109
51201400	FURNISHING STEEL PILES HP10X42	FOOT	428
51202305	DRIVING PILES	FOOT	428
51500100	NAME PLATES	EACH	1
54200220	PIPE CULVERTS, CLASS D TYPE 1 15"	FOOT	40
67100100	MOBILIZATION	L SUM	1
28001000	AGGREGATE (EROSION CONTROL)	TON	13

* SPECIALTY ITEMS

CONTRACT NO. 99343

HAMILTON COUNTY

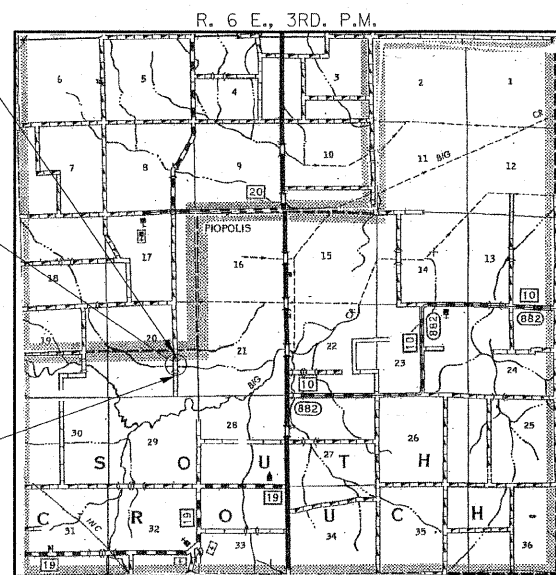
X081-2A
QUANTITY



IMPROVEMENT ENDS
STATION 7+55

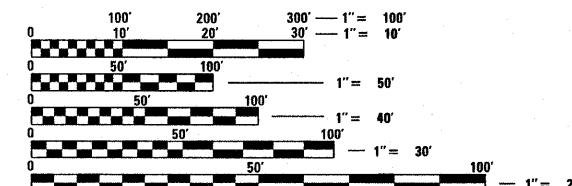
STA. 5+00
PRECAST PRESTRESSED CONCRETE DECK BEAM
BRIDGE, SINGLE SPAN 57'-0"
24'-0" RDWY.; SKEW = 0°
EXISTING STRUCTURE NO. 033-3085
PROPOSED STRUCTURE NO. 033-3310

IMPROVEMENT BEGINS
STATION 2+45



LOCATION MAP

APPROXIMATE SCALE: 0 1 MILE
NET LENGTH OF SECTION = 510 FEET = 0.097 MILES



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

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED August 26 20 08
Kimi Phillips
COUNTY ENGINEER

PASSED SEPT. 2 20 08
Dennis W. Hillman
DISTRICT NINE ENGINEER OF
LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review
Sept 3 20 08
Mary C. Linnick
DEPUTY DIRECTOR OF HIGHWAYS
REGION FIVE ENGINEER
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH CROUCH TOWNSHIP
OVER WHITE OAK CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:

TITLE SHEET

SCALE: VARIES

BY: AMM

DATE: 7/1/08

REV:

1 OF 13 SHEETS

SHEET NO. 1

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

ELGIN • SPRINGFIELD

PROJECT NUMBER: 08.0102.130 DATE: 08/25/08

GENERAL NOTES:

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, SPECIAL PROVISIONS AND "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2007.

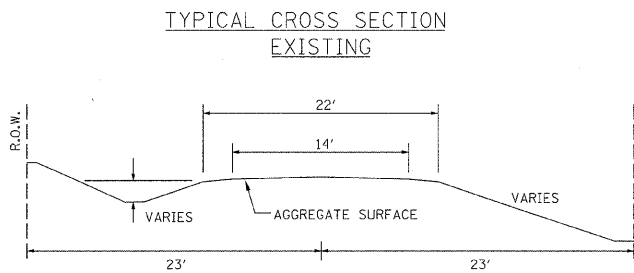
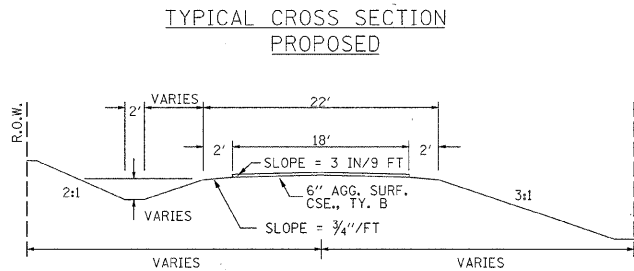
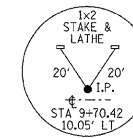
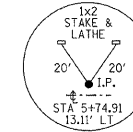
THE WORK INVOLVED ON THIS SECTION CONSISTS OF THE REMOVAL OF THE EXISTING STRUCTURE, THE CONSTRUCTION OF A 57 FOOT LONG SINGLE SPAN PRECAST, PRESTRESSED CONCRETE DECK BEAM BRIDGE, EARTH APPROACHES, AGGREGATE SURFACE COURSE AND OTHER MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THIS SECTION.

ALL ELEVATIONS ARE BASED ON U.S.C.S. MEAN SEA LEVEL DATUM.

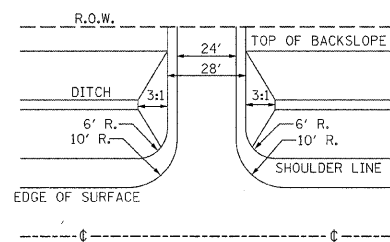
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL THE UTILITIES, AFFECTING THE PROJECT, PRIOR TO CONSTRUCTION.

NOTE: CONSTRUCTION TRANSITIONS
STA. 2+45 TO STA 3+00
STA 7+00 TO STA 7+55
ALL QUANTITIES ARE INCLUDED IN THE PROPOSAL

CURVE #1
P.I. STA= 1+57.86
Δ= LT. 2°37'30"
D= 1°54'35"
R= 3000'
T= 68.74'
L= 137.45'
E= 0.79'
e= NONE
T.R.= NONE
S.E. RUN= NONE
P.C. STA= 0+89.12
P.T. STA= 2+26.57



FIELD ENTRANCE DETAIL



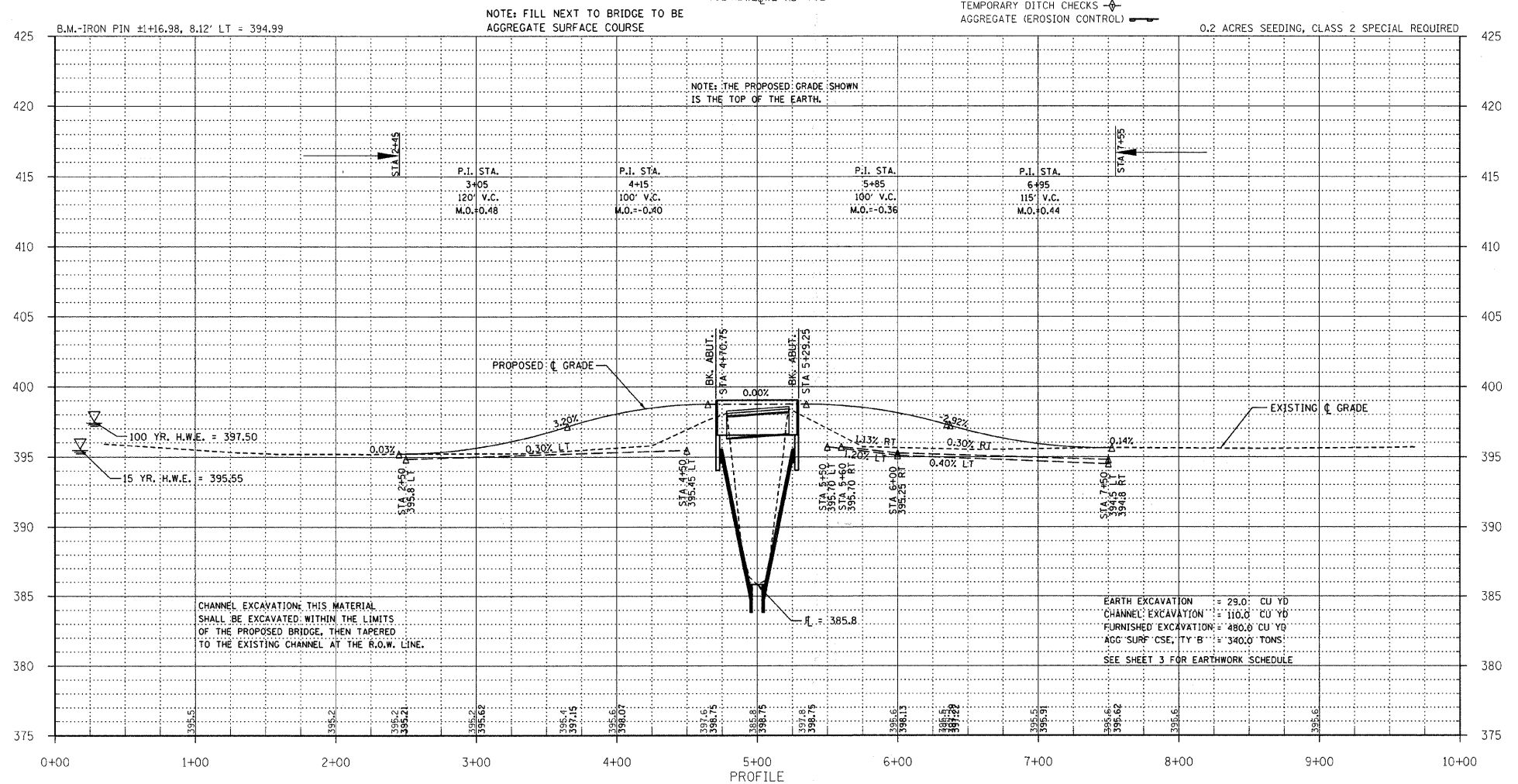
UTILITIES:
J.U.L.I.E. 1-800-892-0123

NOTE: CONSTRUCT SPECIAL DITCH

STA 2+50 TO STA 4+50 LT
STA 5+50 TO STA 7+50 LT
STA 5+60 TO STA 7+50 RT

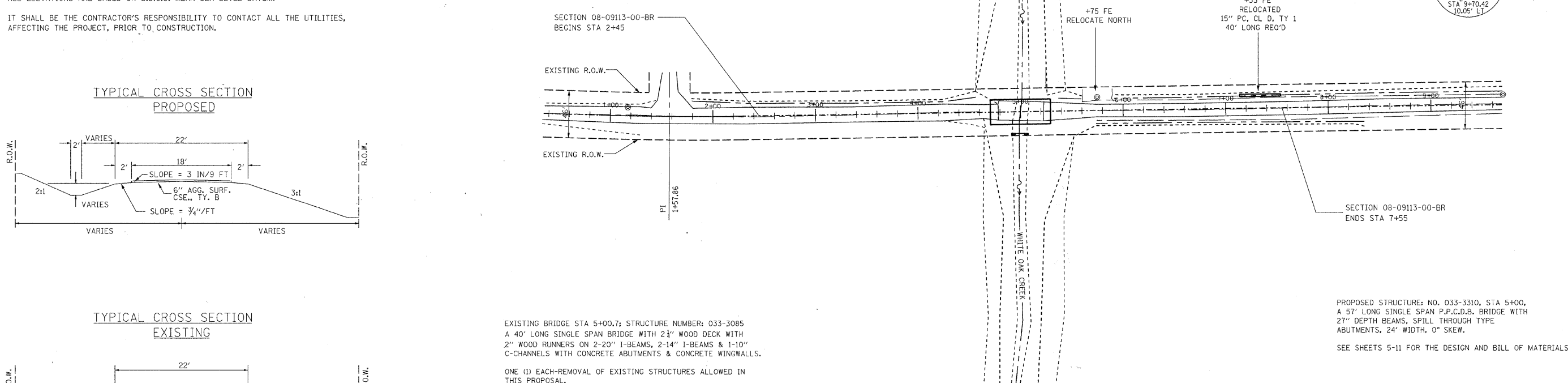
EXISTING BRIDGE STA 5+00.7; STRUCTURE NUMBER: 033-3085
A 40' LONG SINGLE SPAN BRIDGE WITH 2 1/2" WOOD DECK WITH 2" WOOD RUNNERS ON 2-20" I-BEAMS, 2-14" I-BEAMS & 1-10" C-CHANNELS WITH CONCRETE ABUTMENTS & CONCRETE WINGWALLS.

ONE (1) EACH-REMOVAL OF EXISTING STRUCTURES ALLOWED IN THIS PROPOSAL.



CHANNEL EXCAVATION: THIS MATERIAL SHALL BE EXCAVATED WITHIN THE LIMITS OF THE PROPOSED BRIDGE, THEN TAPERED TO THE EXISTING CHANNEL AT THE R.O.W. LINE.

EARTH EXCAVATION = 29.0' CU YD
CHANNEL EXCAVATION = 110.0' CU YD
FURNISHED EXCAVATION = 480.0' CU YD
AGG SURF CSE, TY B = 340.0' TONS
SEE SHEET 3 FOR EARTHWORK SCHEDULE



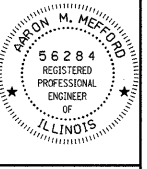
T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
234	08-09113-00-BR	HAMILTON	13	2

323 W. 3RD ST.
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AARON M. MEFFORD
NAME
SIGNATURE
8-25-08
DATE
11-30-09
EXPIRES

TOWNSHIP ROUTE 234
OVER WHITE OAK CREEK
HAMILTON COUNTY, ILLINOIS

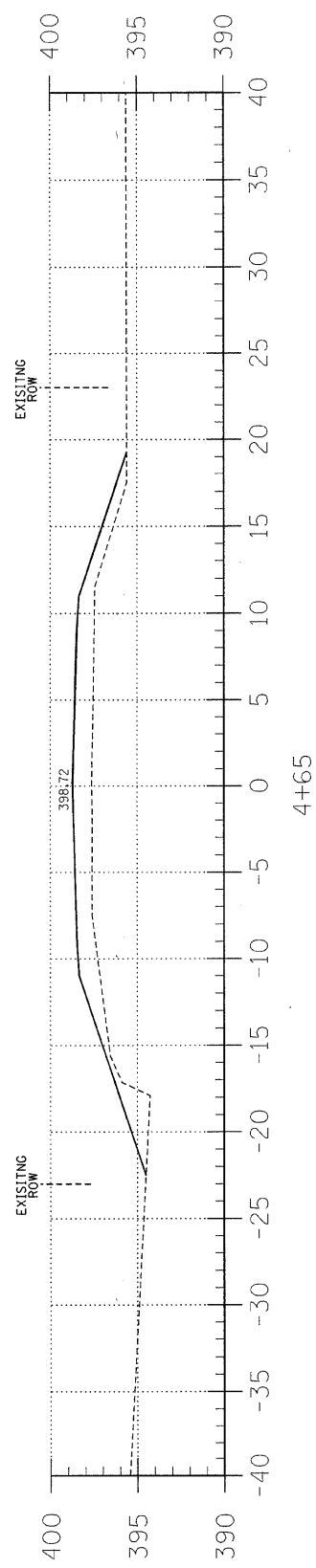
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PLAN & PROFILE

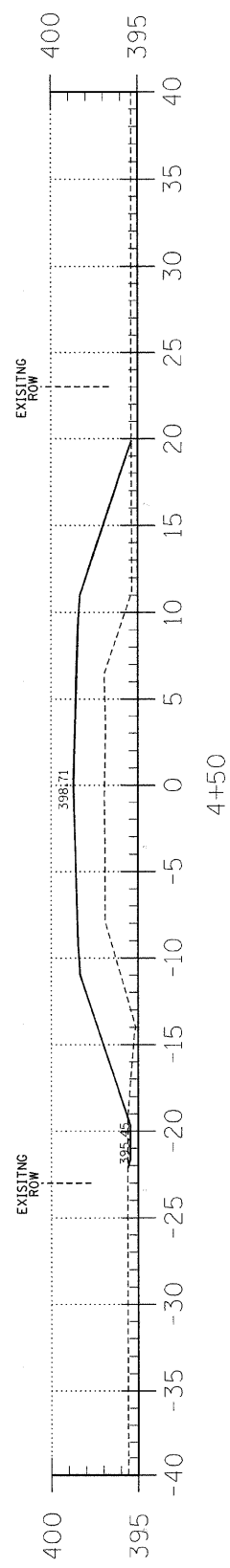
SCALE: WRES
BY: AMM
DATE: 08/08
REV:

2 OF 13
SHEETS

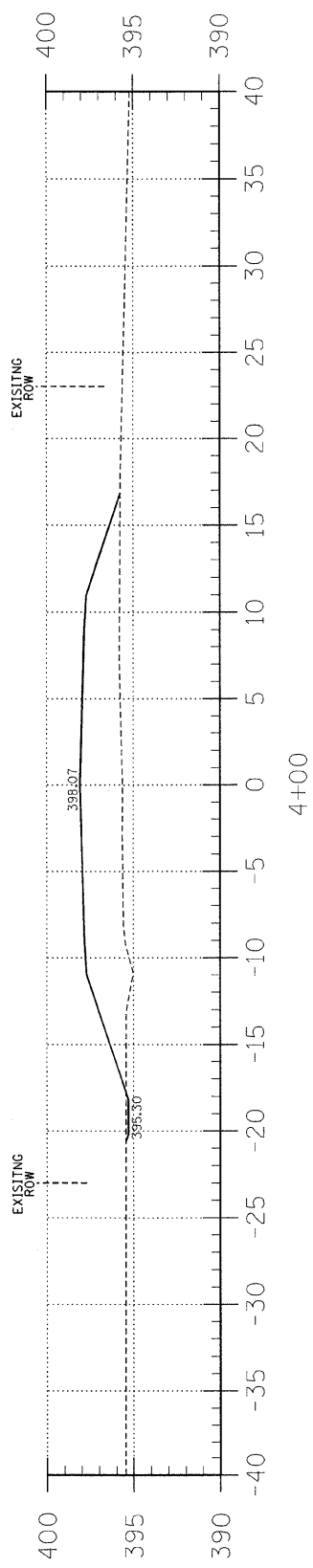
SHEET NO.
2



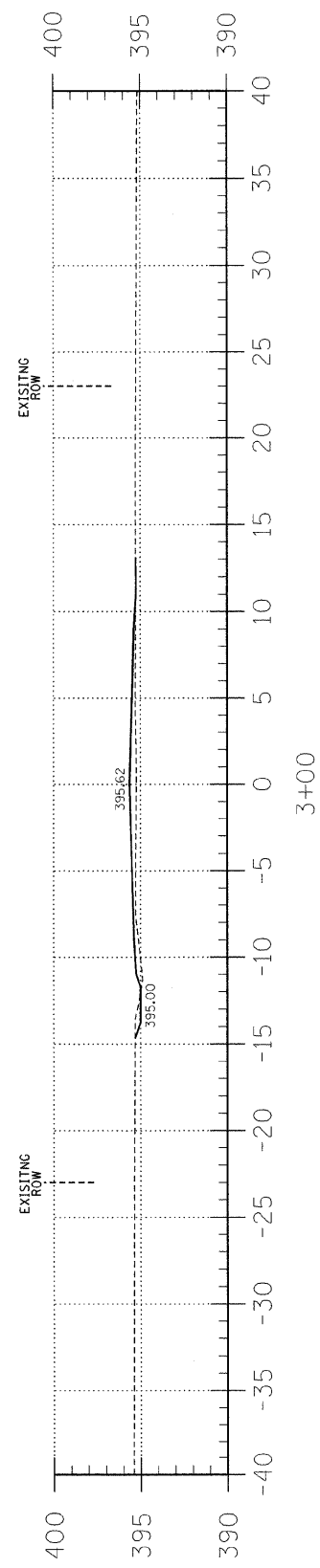
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F = 36.6



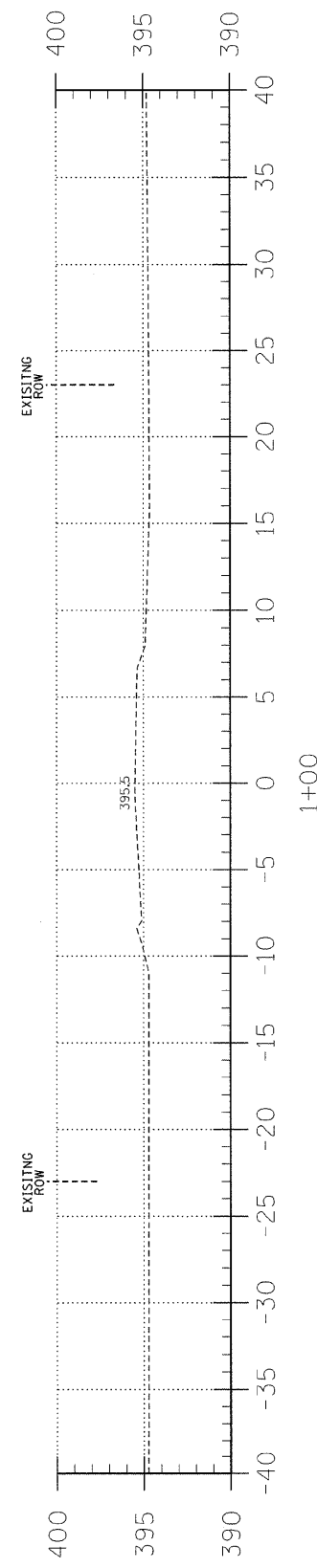
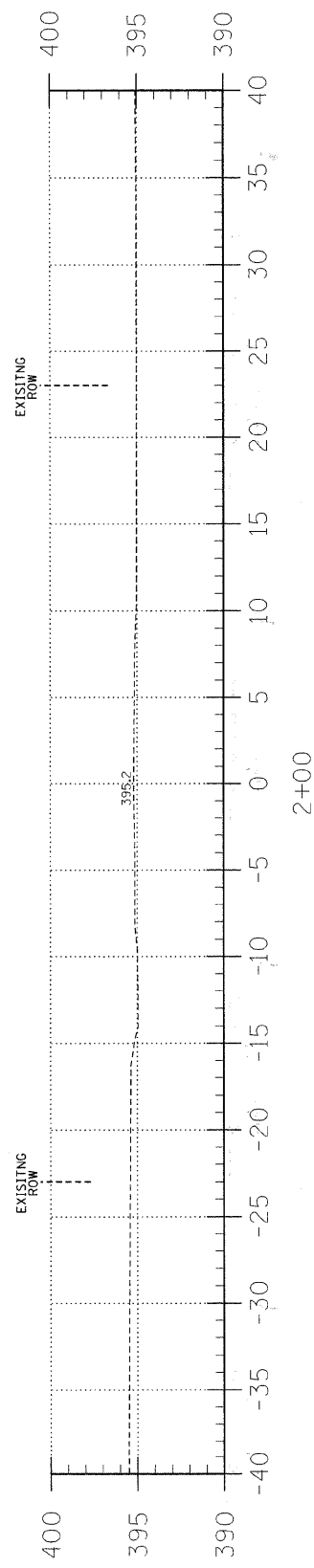
C = 0.4
F = 67.0



C = 0.3
F = 64.0



C = 0.4
F = 5.3



EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION		CHANNEL EXCAVATION		ESTIMATED UNSUITABLE MATERIAL		SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE		EMBANKMENT		EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)	
	CUBIC YARD		CUBIC YARD		CUBIC YARD		CUBIC YARD		CUBIC YARD		CUBIC YARD	
STA 0+00 TO 4+70.7	14.0		0.0		0.0		11.0		274.0		-263.0	
STA 4+70.7 TO 5+29.2	0.0		110.0		55.0		41.0		0.0		41.0	
STA 5+29.2 TO 10+00	15.0		0.0		0.0		11.0		269.0		-258.0	
	0.0		0.0		0.0		0.0		0.0		0.0	
TOTAL	29.0		110.0		55.0		63.0		543.0		-480.0	

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
234	08-09113-00-BR	HAMILTON	13	3

FED. ROAD DIST. NO. 9 ILLINOIS
PROJECT# BROS-065(46)
JOB NO. C-99-528-08
FED. AID PROJECT
CONTRACT# 99343
WHITE OAK CREEK

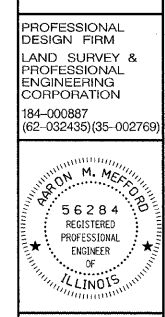
323 W. 3RD ST.
P.O. BOX 160
MT. CARMEL, IL 62863
PHONE: (618)-262-8651
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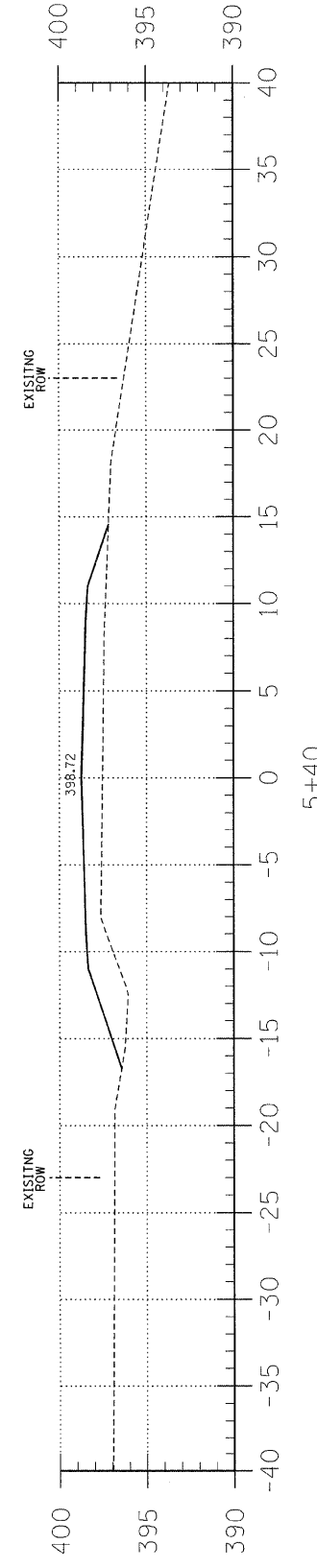
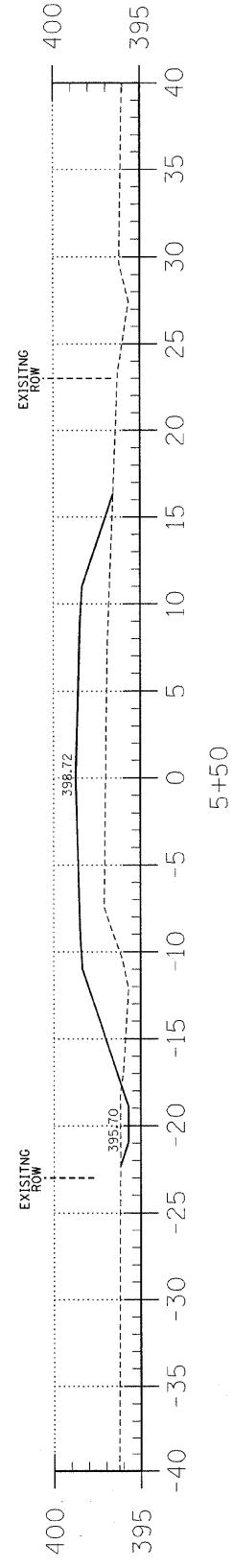
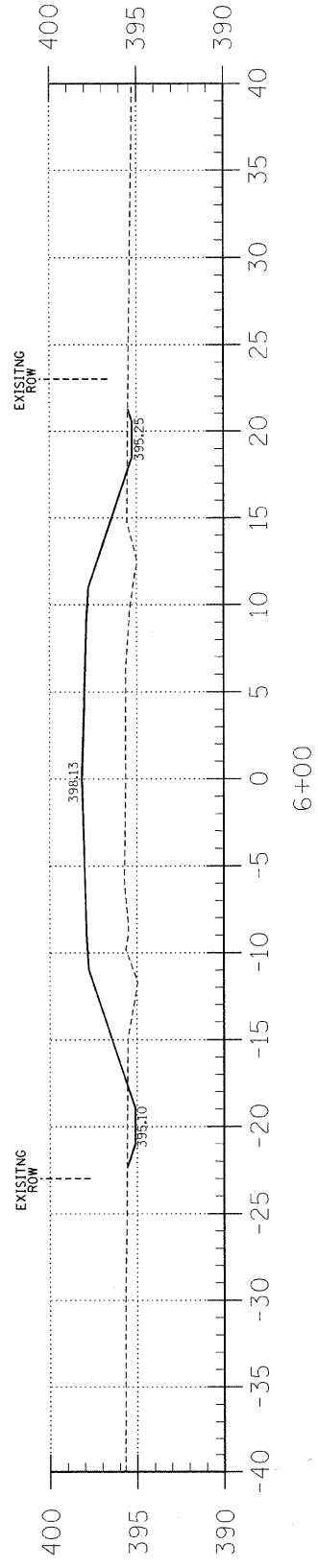
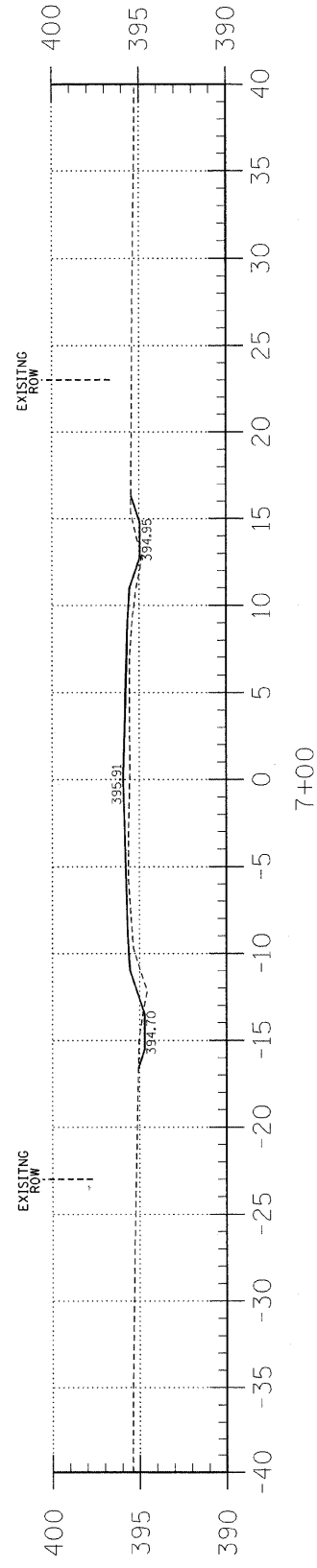
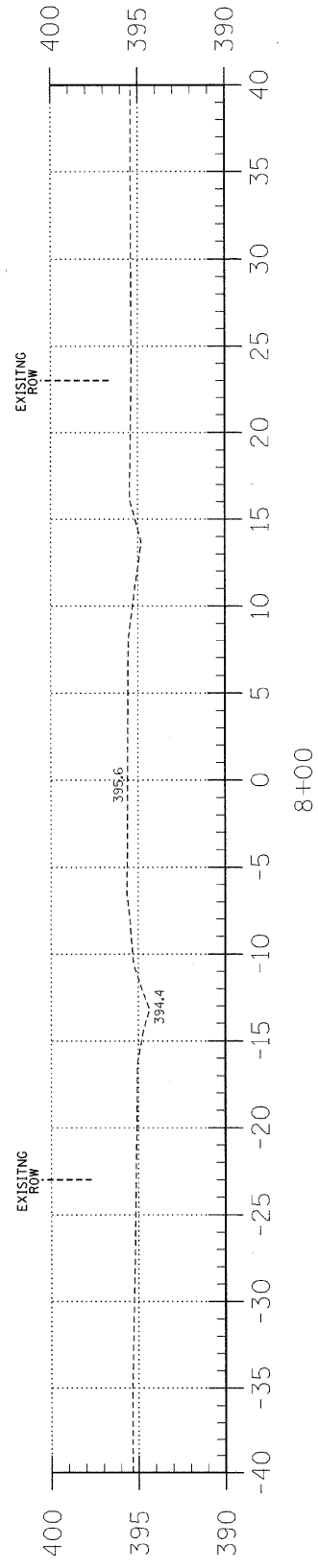
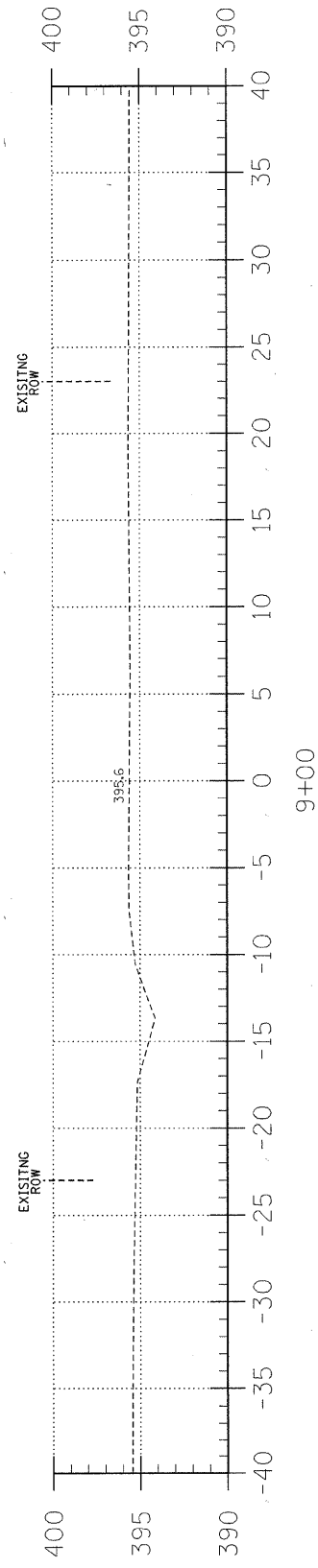
405 W. STATE ST
SUITE 1
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AARON M. MEFFORD
NAME
SIGNATURE
8-25-08
DATE
11-30-08 EXPIRES

TOWNSHIP ROUTE 234
OVER WHITE OAK CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:
CROSS-SECTIONS
SCALE: 1" = 5'
BY: AMM
DATE: 08/08
REV:
3 OF 13 SHEETS
SHEET NO. 3





C = 1.4
F = 7.2

C = 2.3
F = 70.2

C = 1.6
F = 50.0

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
234	08-09113-00-BR	HAMILTON	13	4
FED. ROAD DIST. NO. 9 ILLINOIS		FED. AID PROJECT		
PROJECT * BROS-065(46)		CONTRACT * 99343		
JOB NO. C-99-528-08		WHITE OAK CREEK		

LEC JOB * H081017HM
C = 0.0
F = 33.4

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CORPORATION
184-000887
(62-032435)(35-002769)



AARON M. MEFFORD
NAME
Aaron M. Mefford
SIGNATURE
8-25-08
DATE
11-30-09
EXPIRES

TOWNSHIP ROUTE 234
OVER WHITE OAK CREEK
HAMILTON COUNTY, ILLINOIS

SHEET TITLE:
CROSS-SECTIONS

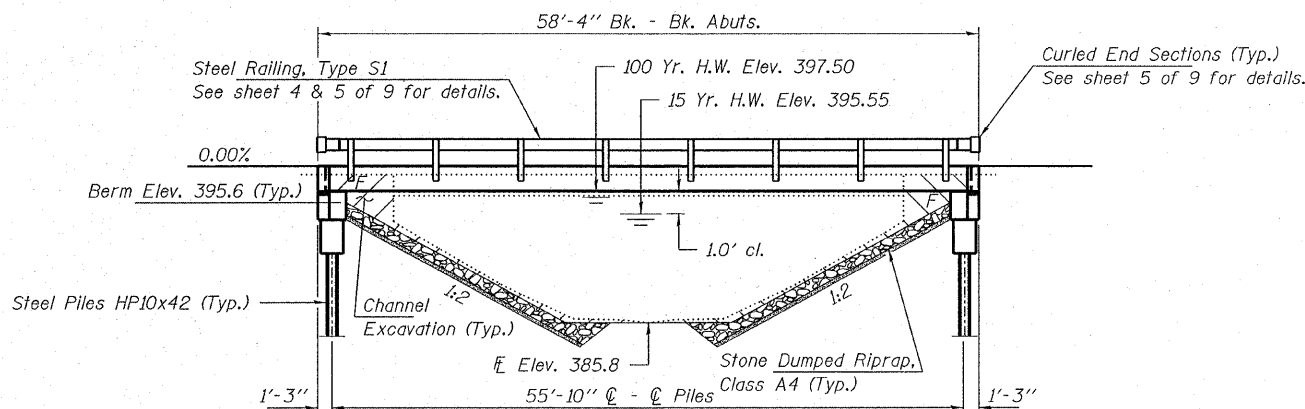
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BY:	AMM
DATE:	08/08
REV:	

4 OF 13
SHEETS
SHEET NO.
4

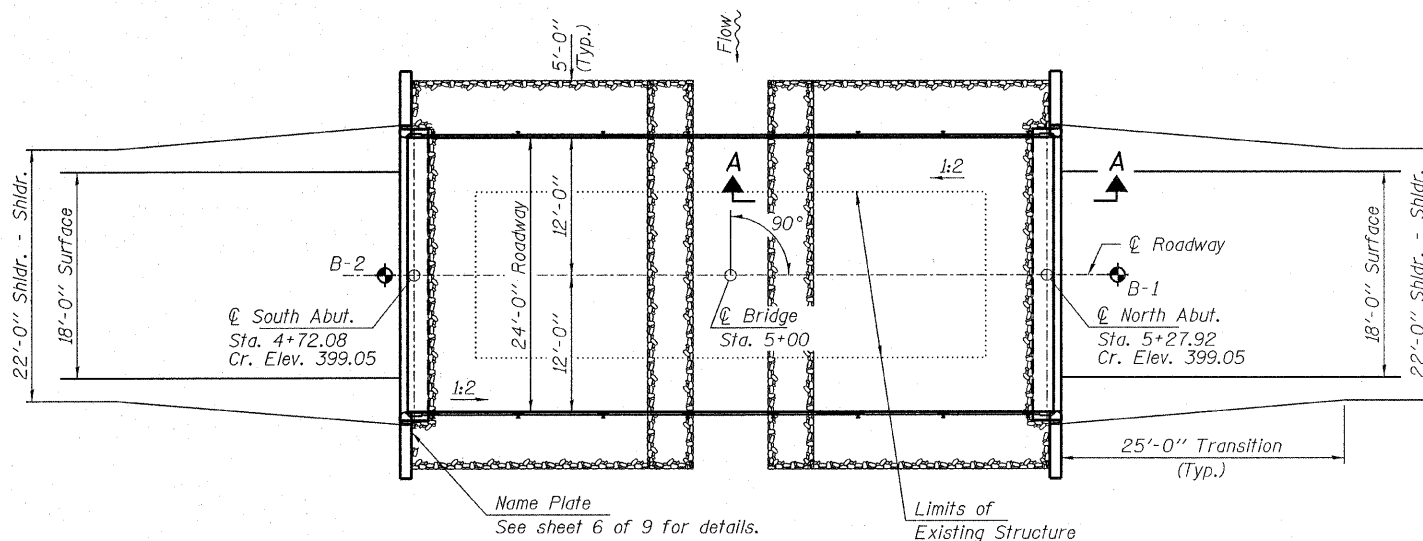
BENCHMARK: Iron Pin. Sta. ±9+90.80, 8.66' Rt., Elev. 404.86

EXISTING STRUCTURE: Sta. 5+00.7 - Single span steel I-beam bridge with concrete abutments & wingwalls. 40.0' bk. - bk. abuts.; 14.5' o.-o. deck Structure closed to traffic.

No Salvage



ELEVATION



PLAN

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinf.)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi ($\frac{1}{2}$ " low lax. strands)
 $f_{pbt} = 201,960$ psi ($\frac{1}{2}$ " low lax. strands)
 $f_y = 60,000$ psi (Reinf.)

LOADING HL-93

Design Specifications: 2007 AASHTO LRFD with all applicable interims.
25#/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}) = 0.226g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.633g
Soil Site Class = C

WATERWAY DATA

Drainage Area----- 5.3 Sq. Mi.
Existing Opening (15 yr)----- 247 Sq. Ft.
Req'd Opening (15 yr)----- 292 Sq. Ft.
Proposed Opening (15 yr)----- 292 Sq. Ft.
Design Discharge (15 yr)----- 1,693 C.F.S.
Created Head (15 yr)----- 0.0 Ft.
100 Yr. Discharge----- 2,900 C.F.S.
100 Yr. Created Head----- 0.1 Ft.

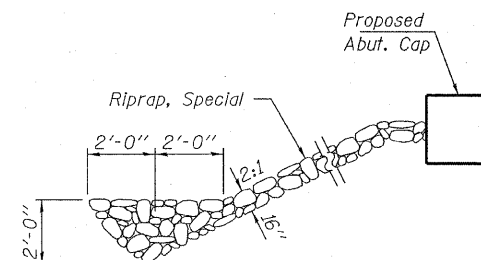
GENERAL NOTES

Layout of 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 100% of the nominal required bearing specified in production location at North Abutment or approved by the Engineer before ordering the remainder of piles.~~
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Excavation required to construct the Abutments 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 8 & 9 of 9 for Borings.

WHITE OAK CREEK
BUILT 200_ BY
HAMILTON COUNTY
SEC. 08-09113-00-BR
SOUTH CROUCH ROAD DISTRICT
STR. NO. 033-3310
LOADING HL-93

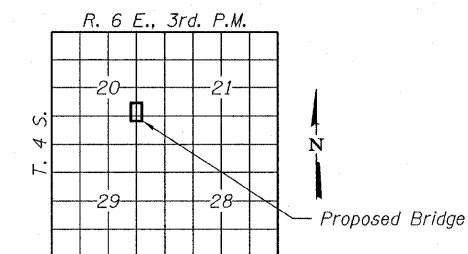
NAME PLATE

See Std. 515001



SECTION A-A

Note: See Special Provisions for Riprap, Special.



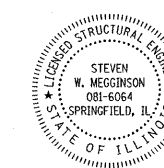
LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Dumped Riprap, Class A4	Ton			150
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		23.6	23.6
Concrete Encasement	Cu. Yd.		2.8	2.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	1,368		1,368
Reinforcement Bars	Pound		2,740	2,740
Steel Railing, Type S1	Foot	109		109
Furnishing Steel Piles HP10x42	Foot		428	428
Driving Piles	Foot		428	428
Name Plates	Each		1	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."

Steven W. Megginson 8-25-08
ILLINOIS STRUCTURAL NO. 081-6064

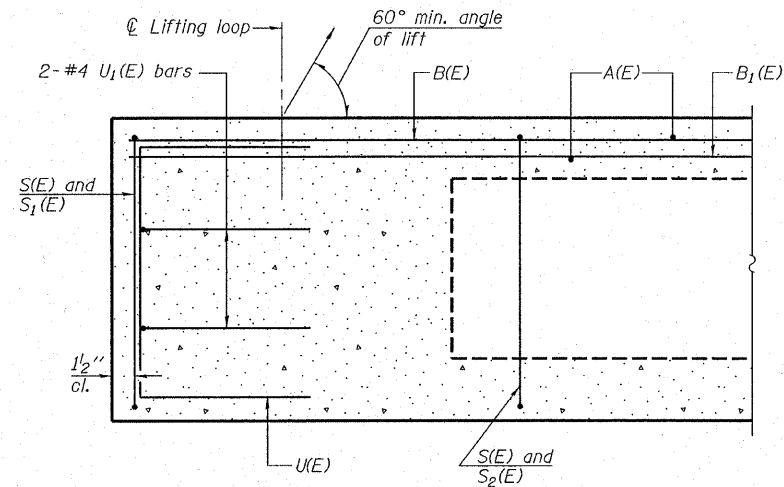


Expires 11-30-08

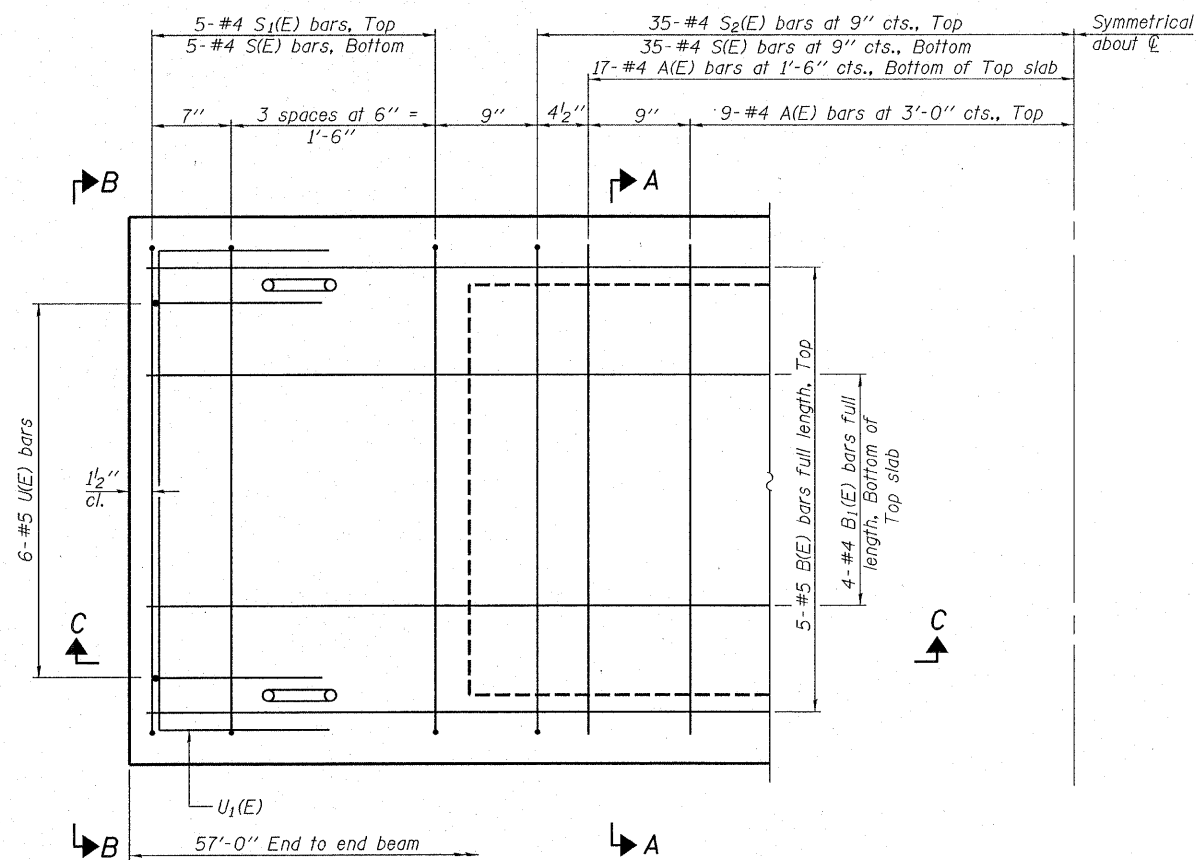
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 033-3310

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

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 PROJECT NUMBER: 08.0102.130 DATE: 08/25/08	SHEET NO. 1	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	234	08-09113-00-BR	HAMILTON	13	5
		SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99343		
		FED. ROAD DIST. NO. 9 ILLINOIS FED. AID PROJECT				

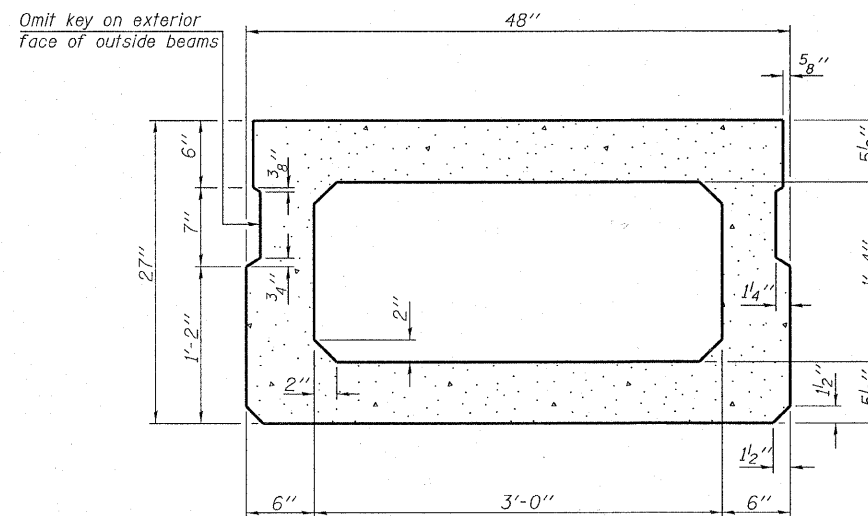


SECTION C-C

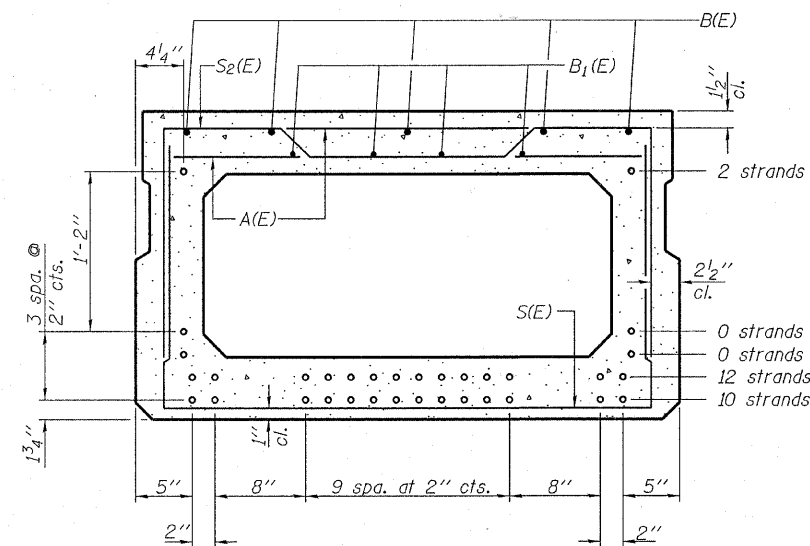


PLAN VIEW

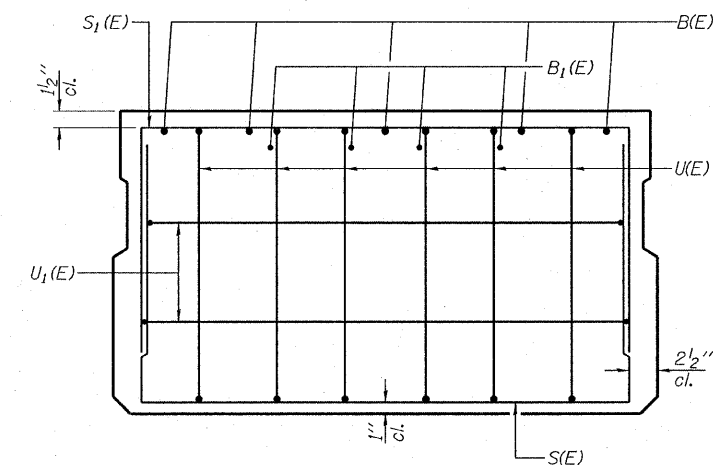
Note: Spacing of S(E) and S₂(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION A-A
(Showing dimensions)



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.



VIEW B-B

BAR LIST
ONE BEAM ONLY

(For information only)

Bar	No.	Size	Length	Shape
A(E)	52	#4	3'-7"	—
B(E)	5	#5	56'-8"	—
B ₁ (E)	4	#4	56'-8"	—
S(E)	80	#4	7'-5"	⌊
S ₁ (E)	10	#4	6'-11"	⌊
S ₂ (E)	70	#4	7'-2"	⌊
U(E)	12	#5	4'-6"	⌊
U ₁ (E)	4	#4	6'-0"	⌊

Note: See sheets 3 & 4 of 9 for additional details and Bill of Material.

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

PD-2748-0 5-16-08

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

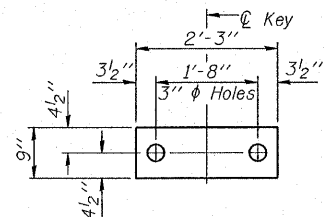
HLR 3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 08.0102.130 DATE: 08/25/08

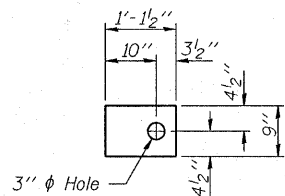
SHEET NO. 2
9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
234	08-09113-00-BR	HAMILTON	13	6
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99343		
FED. ROAD DIST. NO. 9 ILLINOIS FED. AID PROJECT				

SUPERSTRUCTURE
27" X 48" PPC DECK BEAM
STRUCTURE NO. 033-3310



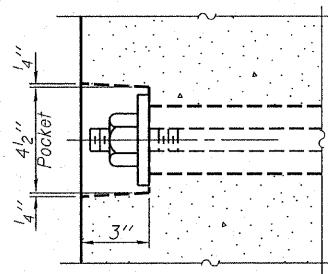
FABRIC BEARING PAD
(4 Req'd - Interior)



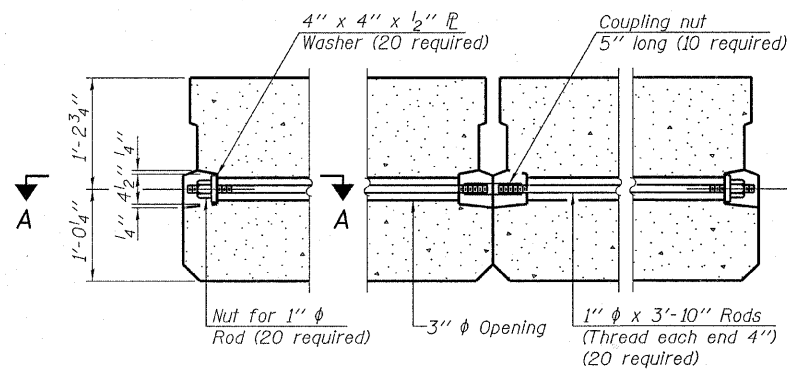
FABRIC BEARING PAD
(10 Req'd - Exterior)

FIXED

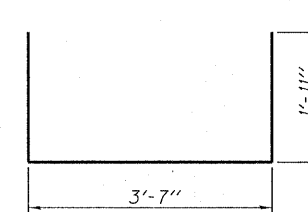
Note: Omit holes when using expansion bearings.



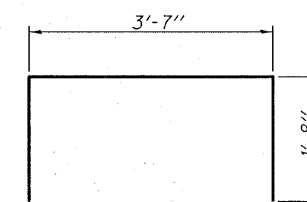
SECTION A-A



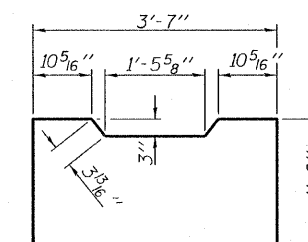
TYPICAL TRANSVERSE TIE ASSEMBLY



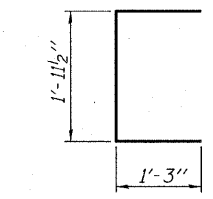
BAR S1(E)



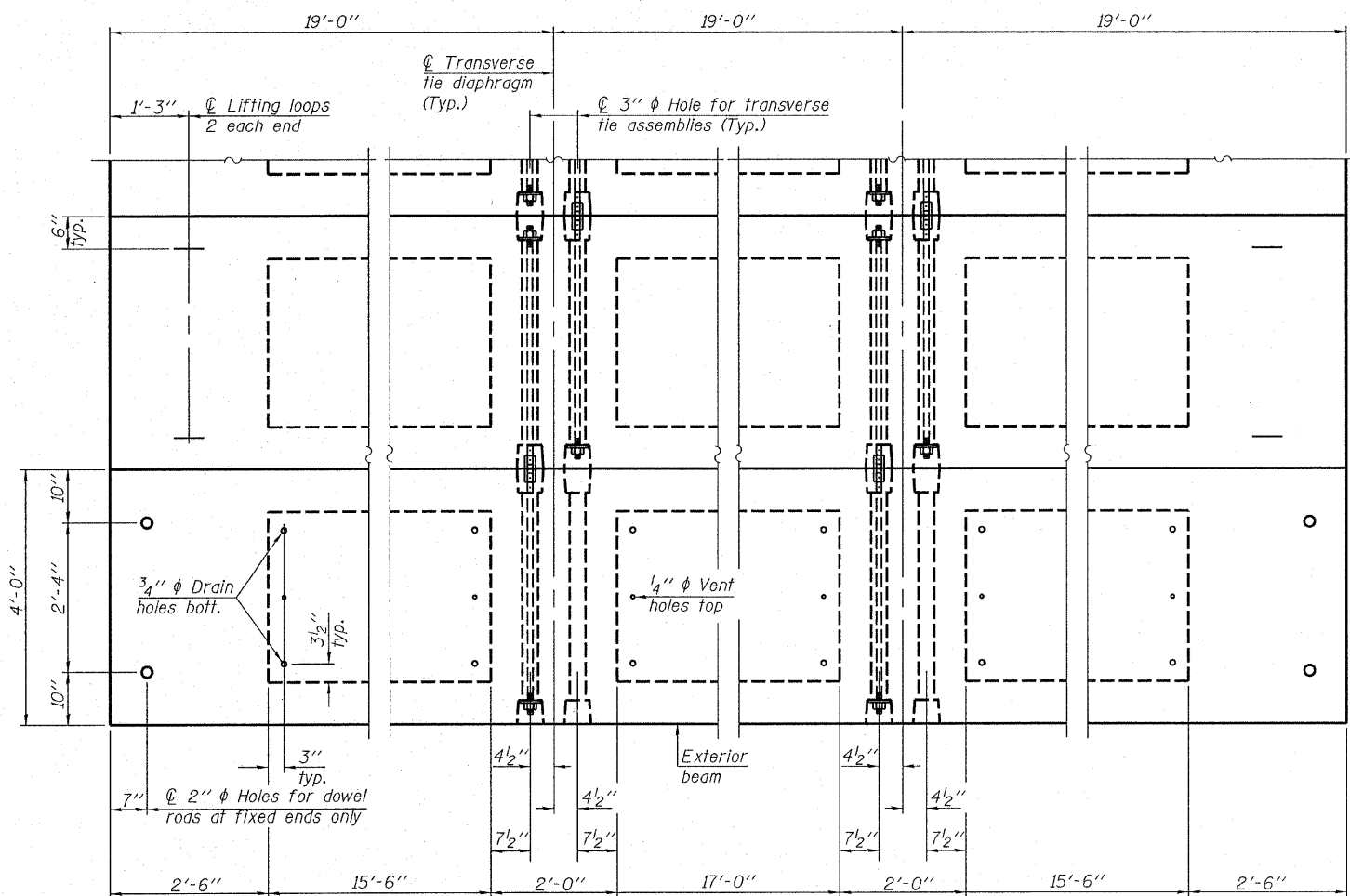
BAR S2(E)



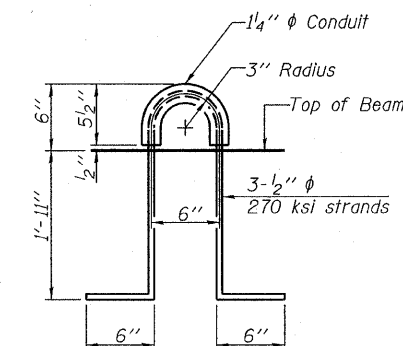
BAR U1(E)



BAR U2(E)



PLAN VIEW



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1,368
---	---------	-------

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

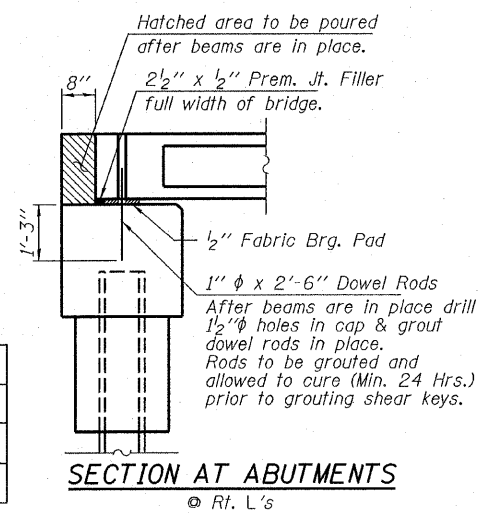
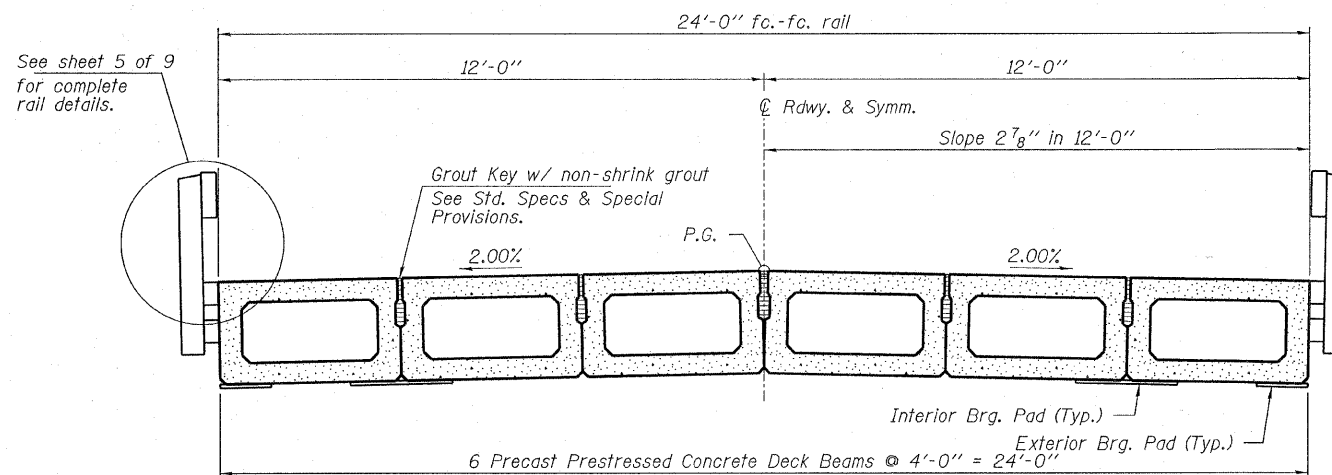
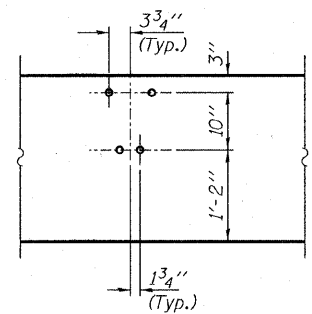
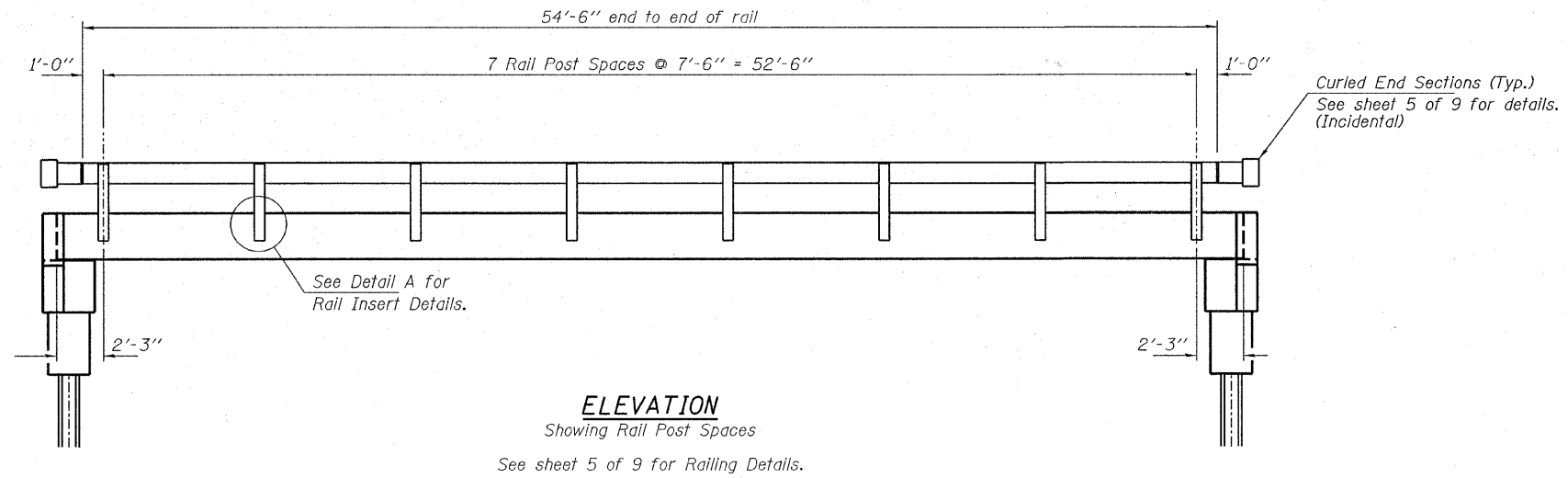
DESIGNED	- S.M.S.
CHECKED	- S.W.M.
DRAWN	- D.A.B.
CHECKED	- D.T.M.

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" diameter 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'cl, shall be 5000 psi.

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 PROJECT NUMBER: 08.0102.130 DATE: 08/25/08	SHEET NO. 3	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	9 SHEETS	234	08-09113-00-BR	HAMILTON	13	7	
		SOUTH CROUCH ROAD DISTRICT			CONTRACT NO. 99343		
		FED. ROAD DIST. NO. 9 ILLINOIS			FED. AID PROJECT		

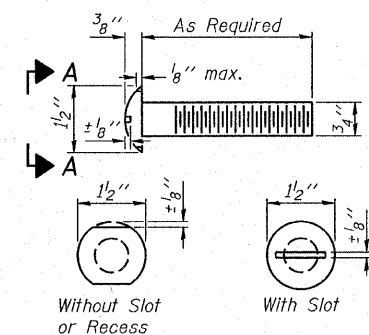
SUPERSTRUCTURE DETAILS
27" X 48" PPC DECK BEAMS
STRUCTURE NO. 033-3310



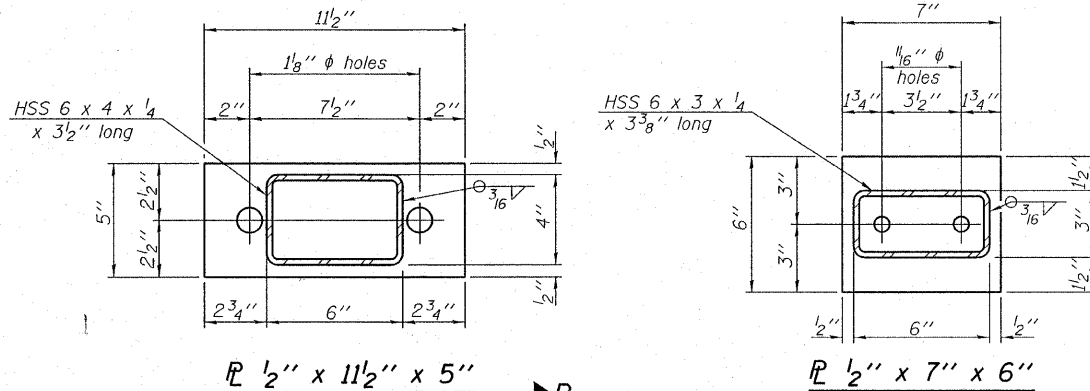
DESIGNED - S.M.S.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 033-3310

HLR HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400	SHEET NO. 4 9 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		234	08-09113-00-BR	HAMILTON	13	8
		SOUTH CROUCH ROAD DISTRICT			CONTRACT NO. 99343	
PROJECT NUMBER: 08.0102.130		DATE: 08/25/08		FED. ROAD DIST. NO. 9 ILLINOIS FED. AID PROJECT		



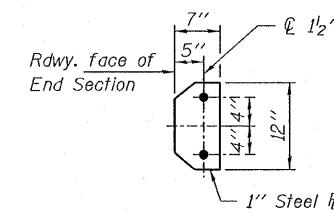
VIEW A-A ROUND HEAD BOLT



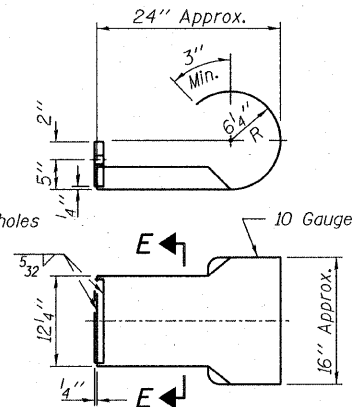
PL 1/2" x 11 1/2" x 5"

PL 1/2" x 7" x 6"

Note: Cost of curled end sections shall be included with the Steel Railing. (4 Required)



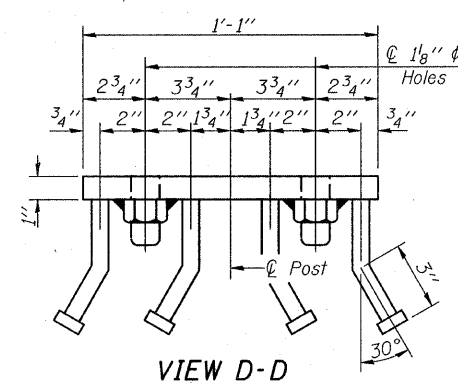
SECTION E-E



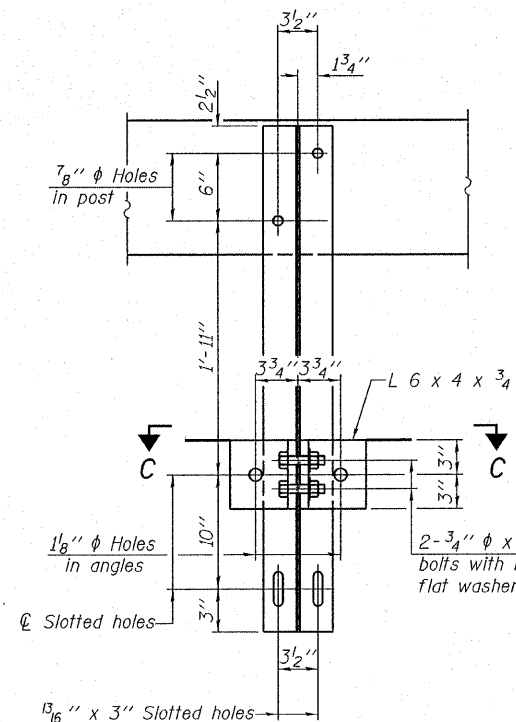
CURLED END SECTION DETAILS

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.

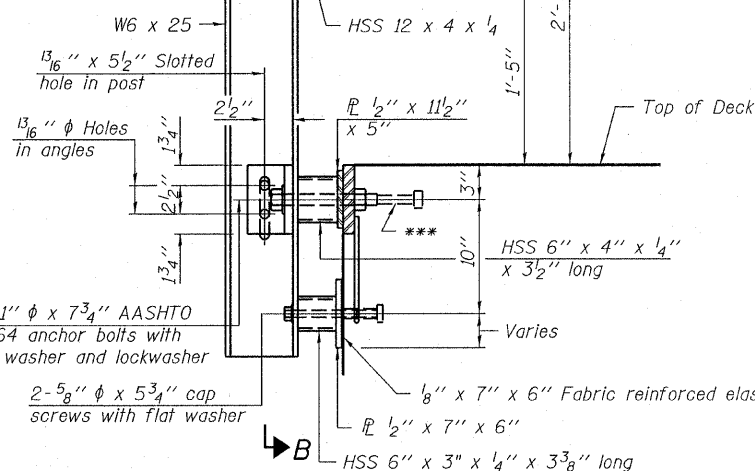


VIEW D-D



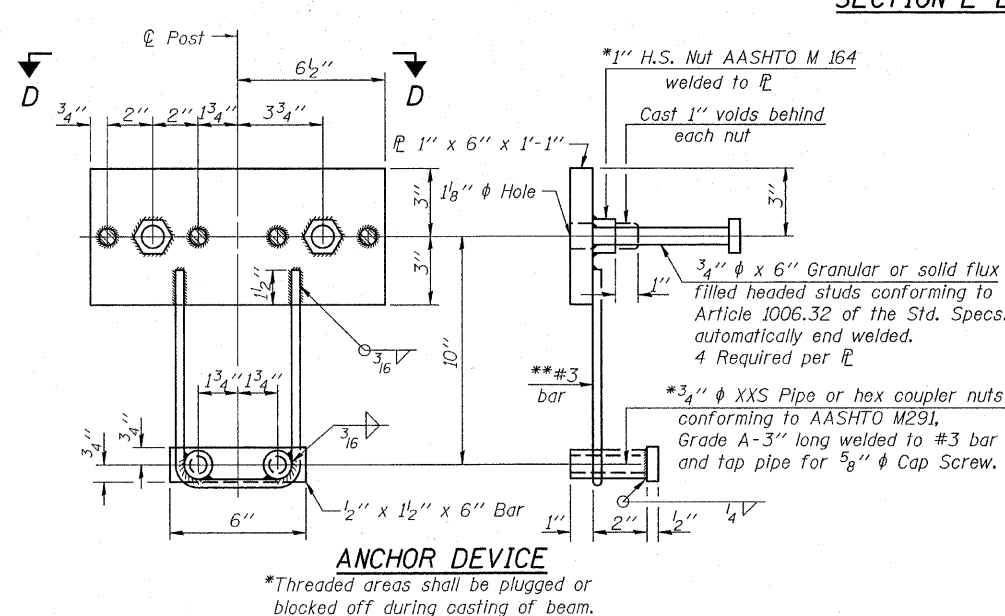
SECTION B-B

2- 3/4" φ x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. 7/8" φ holes in hollow structural section may be drilled in the field.



SECTION AT RAILING POST

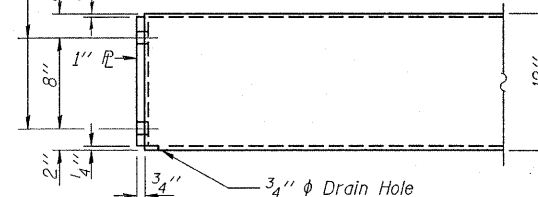
2- 1" φ x 7 3/4" AASHTO M-164 anchor bolts with flat washer and lockwasher
2- 5/8" φ x 5 3/4" cap screws with flat washer



ANCHOR DEVICE

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

1 1/8" φ Holes for 1" φ x 4" Round head bolts. Provide 2 Flat washers & locknuts for guard rail connection shown on Std. 631026.

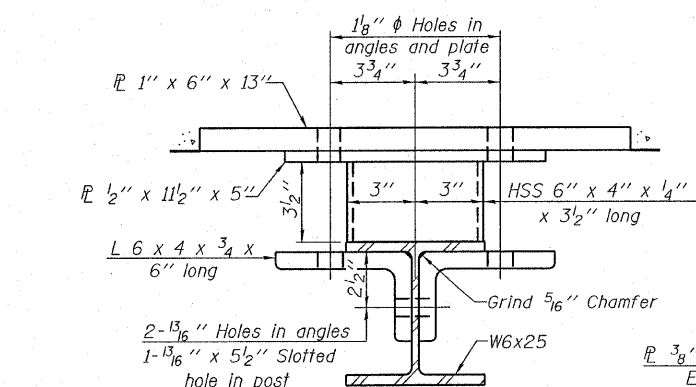


END OF RAIL DETAILS

BILL OF MATERIAL

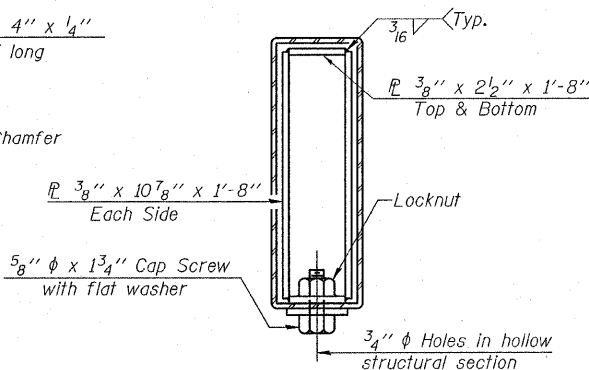
Item	Unit	Quantity
Steel Railing, Type S-1	Foot	109

STEEL RAILING, TYPE S-1
STRUCTURE NO. 033-3310

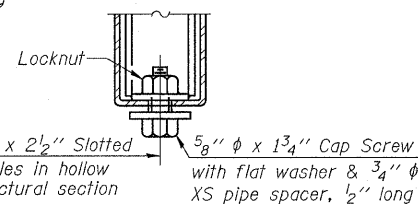


SECTION C-C

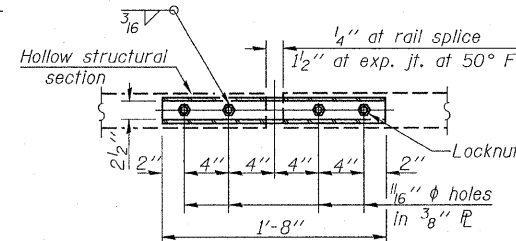
**Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.

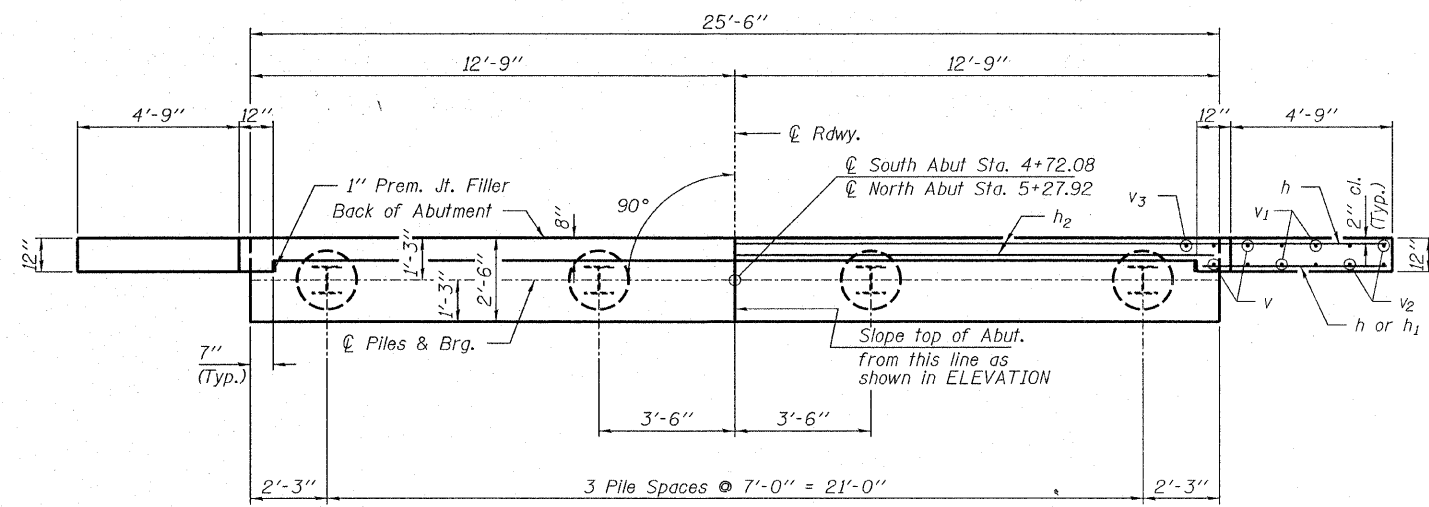


PLAN-BOTTOM SPLICE PL TYPICAL

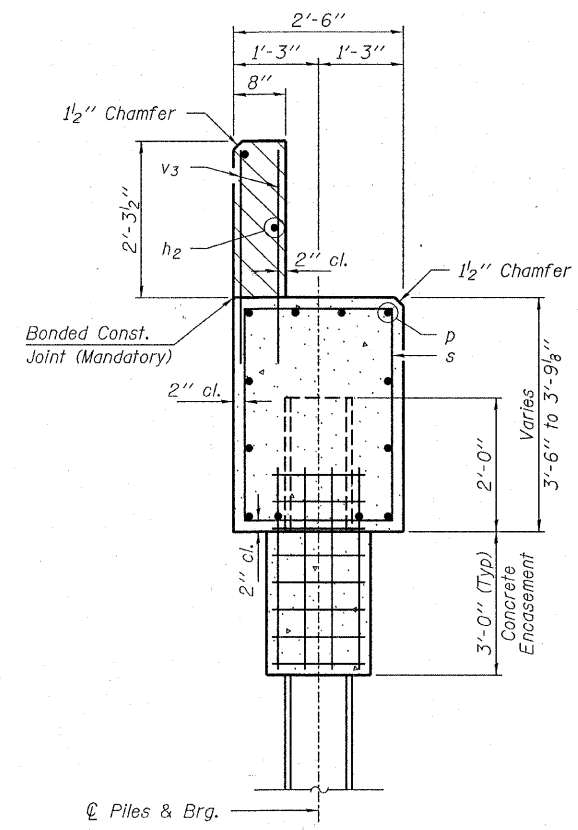
DESIGNED - S.M.S.
CHECKED - S.W.M.
DRAWN - D.A.B.
CHECKED - D.T.M.

(10'-9" Maximum Post Spacing)

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 PROJECT NUMBER: 08.0102.130 DATE: 08/25/08	SHEET NO. 5	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	9 SHEETS	234	08-09113-00-BR	HAMILTON	13	9
			SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99343	
			FED. ROAD DIST. NO. 9 ILLINOIS FED. AID PROJECT			

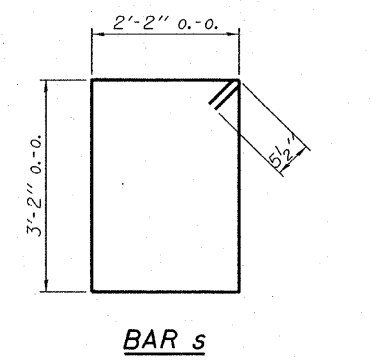


PLAN

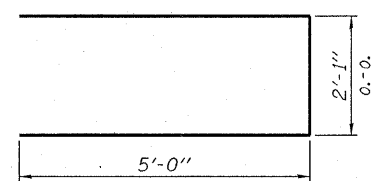


SECTION A-A

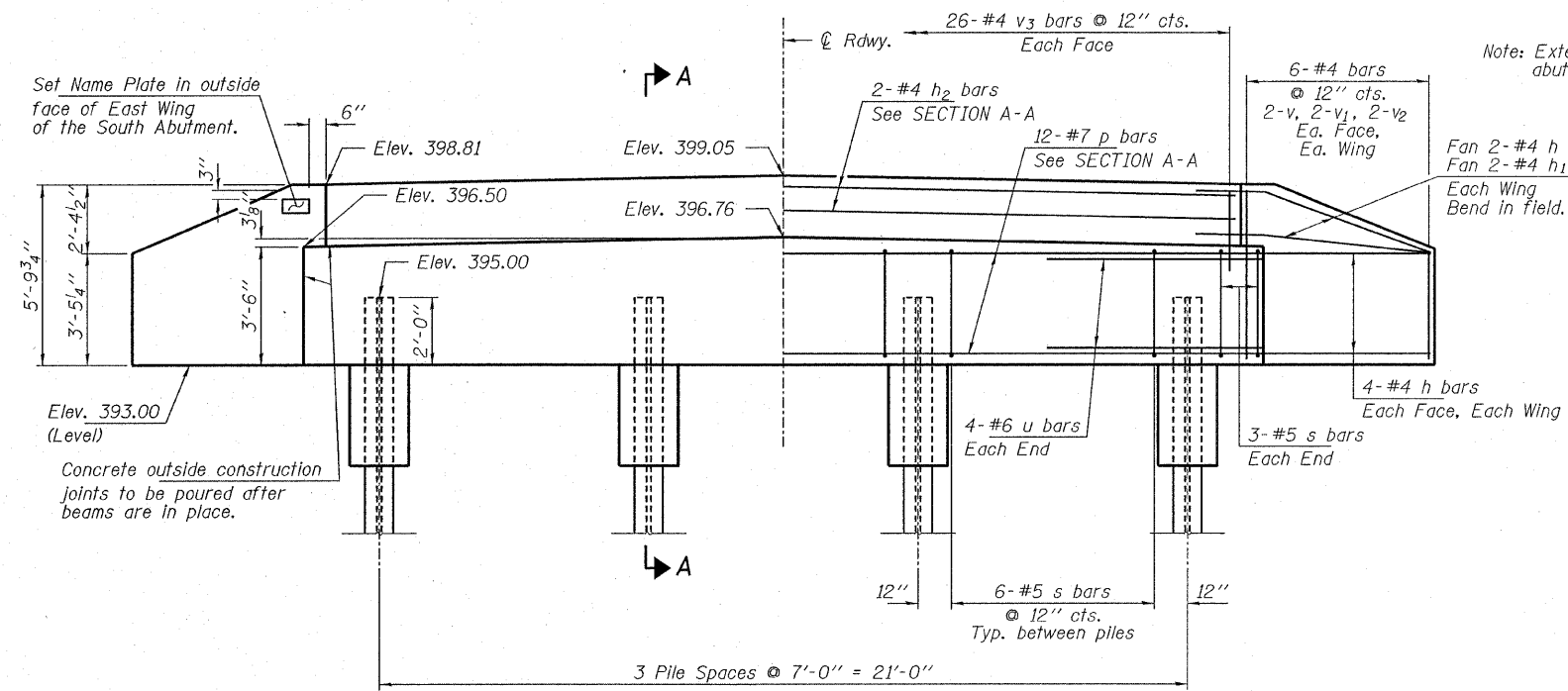
Hatched area to be poured after beams are in place.



BAR s



BAR u



ELEVATION

BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	7'-0"	—
h1	8	#4	5'-6"	—
h2	4	#4	25'-2"	—
p	24	#7	25'-2"	—
s	48	#5	11'-7"	□
u	16	#6	12'-1"	▭
v	16	#4	5'-2"	—
v1	16	#4	4'-2"	—
v2	16	#4	3'-2"	—
v3	104	#4	3'-2"	—
Concrete Structures			Cu. Yd.	23.6
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,740
Steel Piles HPI0x42			Foot	428
Name Plates			Each	1

PILE DATA

Type Steel HPI0x42
 No. Req'd. (2 Abuts.) 8
 Allowable Resistance Available 156 Kips/Pile
 Nominal Req'd Bearing 468 Kips/Pile
 Est. Length 55 Ft/Pile - N. Abut.
 52 Ft/Pile - S. Abut.

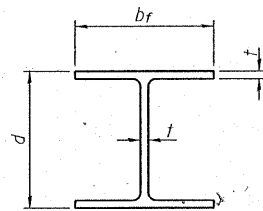
Notes: The Steel H-Piles shall be according to AASHTO M270 Grade 50.

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

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

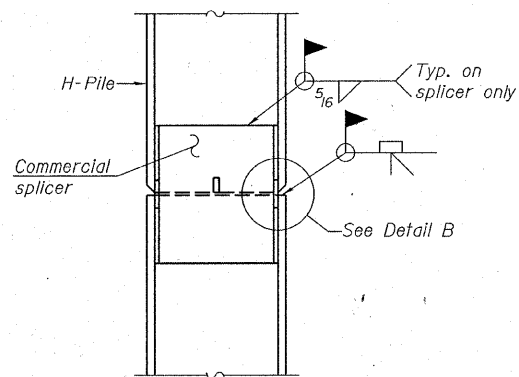
ABUTMENTS
 STRUCTURE NO. 033-3310

HAMPTON, LENZINI & RENWICK, INC. CIVIL & STRUCTURAL ENGINEERS LAND SURVEYORS HLR 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 (217) 546-3400 PROJECT NUMBER: 08.0102.130 DATE: 08/25/08	SHEET NO. 6 9 SHEETS	T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		234	08-09113-00-BR	HAMILTON	13	10
SOUTH CROUCH ROAD DISTRICT			CONTRACT NO. 99343			
FED. ROAD DIST. NO. 9 ILLINOIS FED. AID PROJECT						

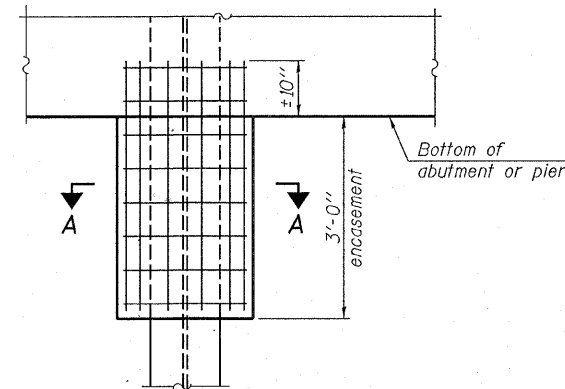


STEEL PILE TABLE

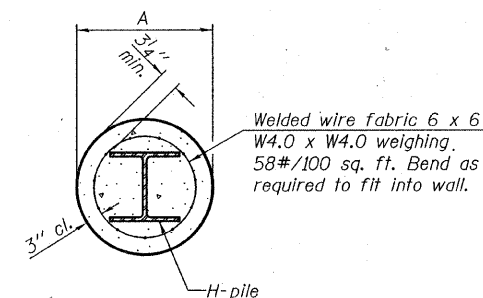
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11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



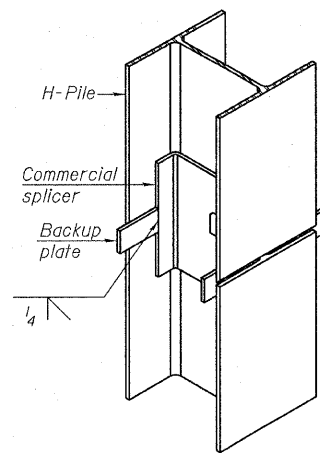
ELEVATION



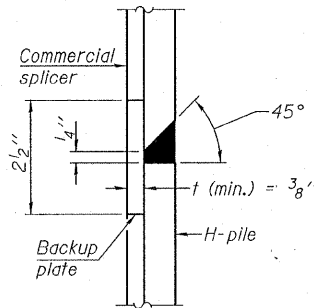
SECTION A-A

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

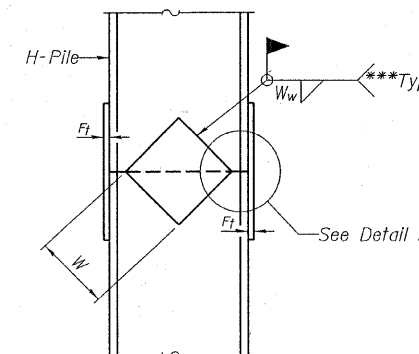
PILE ENCASEMENT



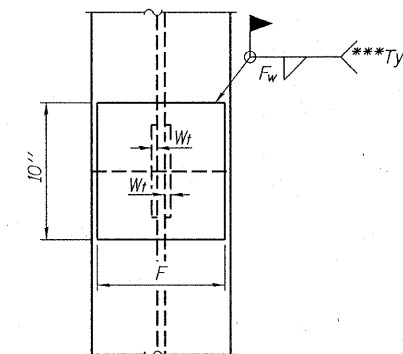
ISOMETRIC VIEW



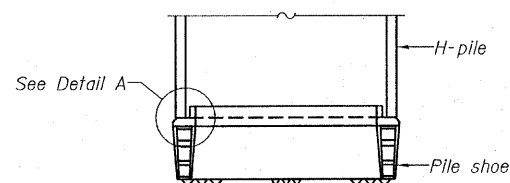
DETAIL "B"



ELEVATION

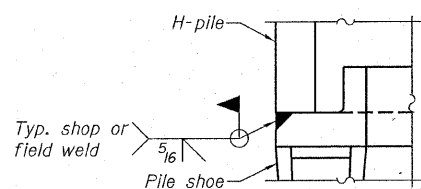


END VIEW



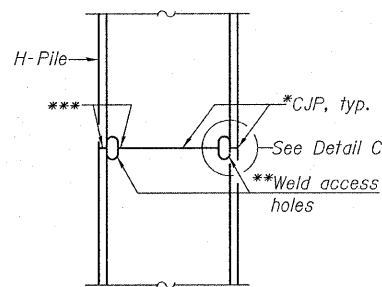
ELEVATION

WELDED COMMERCIAL SPLICE

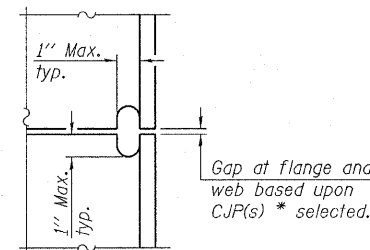


DETAIL A

H-PILE SHOE ATTACHMENT

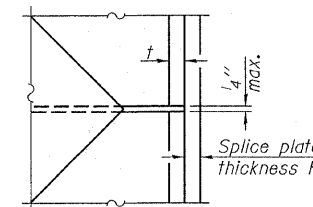


ELEVATION



DETAIL C

COMPLETE PENETRATION WELD SPLICE



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
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"

**STEEL H PILE DETAILS
STRUCTURE NO. 033-3310**

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

F-HP

5-16-08

HAMPTON, LENZINI & RENWICK, INC.
CIVIL & STRUCTURAL ENGINEERS
LAND SURVEYORS

HLR 3085 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
(217) 546-3400

PROJECT NUMBER: 08.0102.130 DATE: 08/25/08

SHEET NO. 7

9 SHEETS

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
234	08-09113-00-BR	HAMILTON	13	11
SOUTH CROUCH ROAD DISTRICT		CONTRACT NO. 99343		
FED. ROAD DIST. NO. 9 ILLINOIS FED. AID PROJECT				

