04-29-11 LETTING ITEM 067

INDEX OF SHEETS

1	COVER SHEET
2	PLAN & PROFILE
3-4	CROSS SECTIONS
5-16	BRIDGE PLANS

STANDARDS:
(SEE PROPOSAL)

280001-05 – EROSION CONTROL
515001-03 – NAME PLATES
630301-05 – SHOULDER WIDENING TYPE 1 TERMINALS
635006-03 – REFLECTOR AND TERM. MARKER PLACEMENT
701901-01 – TRAFFIC
BLR 21-8 – TRAFFIC
BLR 22-6 – TRAFFIC
BLR 27-1 – TRAFFIC BARR. TERM. TYPE 5A

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED

FEDERAL-AID HIGHWAY BRIDGE PROGRAM

CRAWFORD COUNTY
SECTION 08-00091-00-BR
STRUCTURE NO. 017-3058
PROJECT NO. BRS-1698(100)
JOB NO. C-97-048-11

FAS 1698 (CH 12)

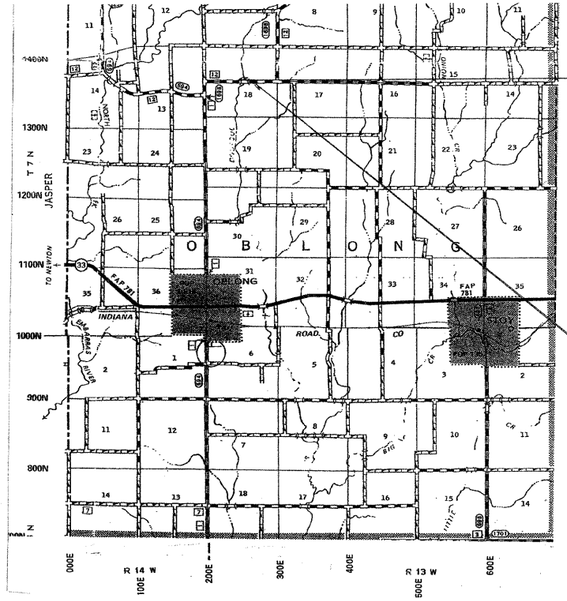
SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEMS	CODE NO.
135	CU YD	EARTH EXCAVATION	20200100
180	CU YD	CHANNEL EXCAVATION	20300100
668	CU YD	FURNISHED EXCAVATION	20400800
58	TON	POROUS GRANULAR EMBANKMENT	20700110
36	FEET	TEMPORARY DITCH CHECKS	28000305
60	FOOT	PERIMETER EROSION BARRIER	28000400
140	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
973	TON	AGGREGATE BASE COURSE, TYPE B	35101400
600	GALLON	BITUMINOUS MATERIALS (PRIME COAT)	40600100
225	TON	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	40603315
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
50.2	CU YD	CONCRETE STRUCTURES	50300225
13.6	CU YD	CONCRETE ENCASEMENT	50300280
1960	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (17" DEPTH)	50400305
4990	POUND	REINFORCEMENT BARS	50800105
151	FOOT	STEEL RAILING, TYPE S1	50900205 *
560	FOOT	FURNISHING STEEL PILES HP 10X42	51201400
560	FOOT	DRIVING PILES	51202305
2	EACH	TEST PILE STEEL HP 10X42	51203400
1	EACH	NAME PLATES	51500100
32	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 15"	542D0220
2	EACH	TRAFFIC BARRIER TERMINAL, TYPE 5A	63100075 *
2	EACH	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	63100167 *
1	L SUM	MOBILIZATION	67100100
2	EACH	TERMINAL MARKER - DIRECT APPLIED	78201000 *
15	TON	AGGREGATE DITCH (SPECIAL)	X2830495
1	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	X7010216
0.8	ACRE	SEEDING, CLASS 2 SPECIAL	X2501000

* SPECIALTY ITEMS

SCALES

PLAN	1 INCH = 50 FEET
PROFILE HORZ.	1 INCH = 50 FEET
PROFILE VERT.	1 INCH = 10 FEET



STA. 4+07- SPECIAL BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED CONC.
DECK BEAM BRIDGE, 3 SPANS @ 25', 20', 25'
28' RDWY, SKEW= 15 ° L.F.
PROPOSED STR. NO. 017-3058
EXISTING STR. NO. 017-3033

LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 700 FT. = 0.133 MILES

FUNCTIONAL CLASS: RURAL MAJOR COLLECTOR
ADT = 600
DESIGN SPEED = 50 MPH

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

PROFESSIONAL DESIGN FIRM #184-000832

JOHN F. STOKE
ILLINOIS
REGISTERED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

02/09/2011
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
LICENSE EXPIRES NOVEMBER 30, 2011

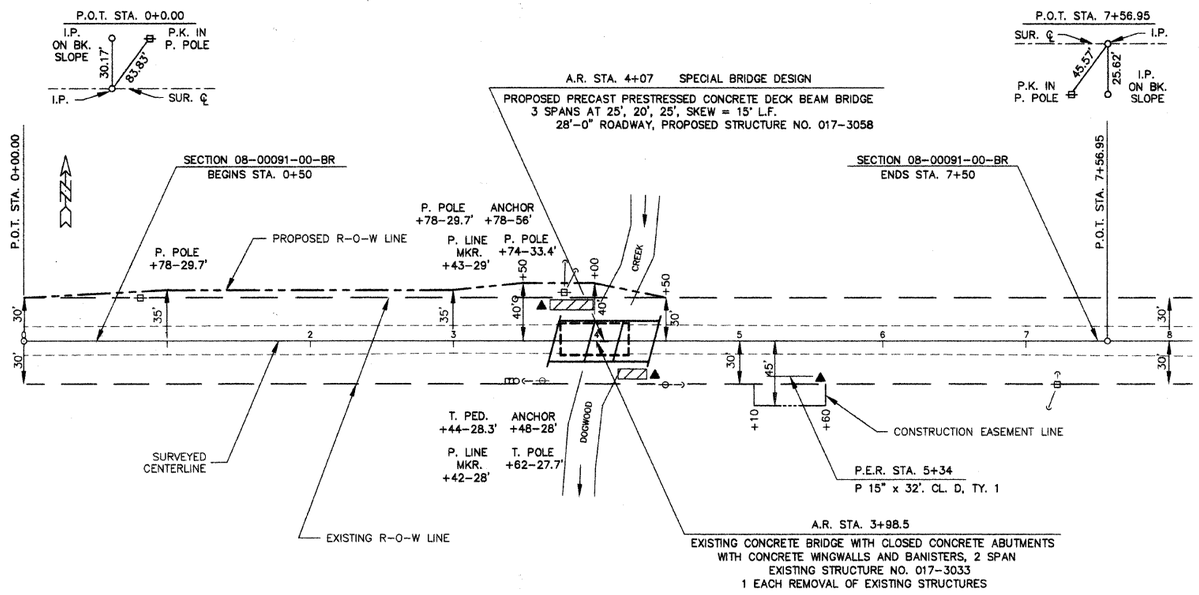
ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED: February 10, 2011
LOCAL AGENCY, COUNTY ENGINEER

PASSED: 2-18, 2011
DISTRICT SEVEN ENGINEER
OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW 2-18, 2011
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FOUR ENGINEER

LAIRD DART

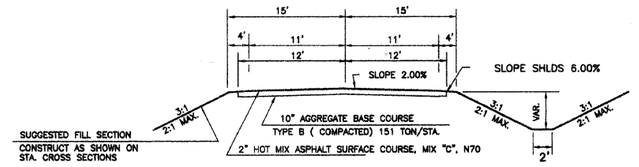


SCALES:
1" = 50' HOR
1" = 10' VER

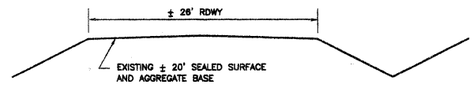
B.M. # 1 ELEVATION 488.03
P.K. NAIL IN POWER POLE
29.7' LT. STA. 0+78

B.M. # 2 ELEVATION 488.86
P.K. NAIL IN POWER POLE
30.2' RT. STA. 7+22

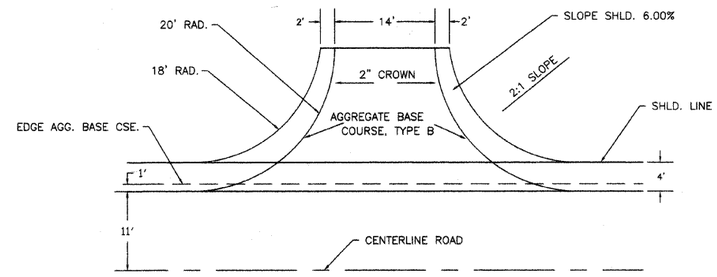
SECTION	08-00091-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	16	2
CONT. NO.	95649		
STA.	0+00 TO STA.	8+00	



TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT



TYPICAL CROSS SECTION OF EXISTING ROADWAY



DETAIL OF FIELD ENTRANCE

1 @ 20 TON EACH = 20 TONS

LAIRD DART

EARTHWORK SCHEDULE

EARTH EXCAVATION	=	135 CU.YD.
EARTH EXCAVATION ADJUSTED 25%	=	101 CU.YD.
CHANNEL EXCAVATION	=	180 CU.YD.
CHANNEL EXCAVATION ADJUSTED 25%	=	135 CU.YD.
EMBANKMENT	=	904 CU.YD.
FURNISHED EXCAVATION	=	668 CU.YD.

HOT MIX ASPHALT SURFACE COURSE, MIX C, N 70
STA. 0+00 TO STA. 8+00 = 225 TONS

AGGREGATE BASE COURSE, TYPE B

STA. 0+50 TO STA. 3+71	=	486 TON
STA. 4+41 TO STA. 7+50	=	467 TON
P.E.R. STA. 5+34	=	20 TON
TOTAL	=	973 TON

PERIMETER EROSION BARRIER
LOCATE ALONG TOE OF CHANNEL SLOPE
15 FEET @ EACH COR. BRIDGE = 60 FEET

SEEDING CLASS 2 SPECIAL
STA. 0+50 TO STA. 8+50 = 0.8 ACRES

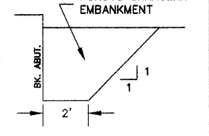
AGGREGATE DITCH
LT. STA. 3+70 TO STA. 4+00 = 9 TON
RT. STA. 4+20 TO STA. 4+40 = 6 TON
TOTAL = 15 TON

▲ TEMPORARY DITCH CHECKS

LT. STA. 3+70	= 12 FEET
RT. STA. 4+40	= 12 FEET
RT. STA. 5+50	= 12 FEET
TOTAL	= 36 FEET

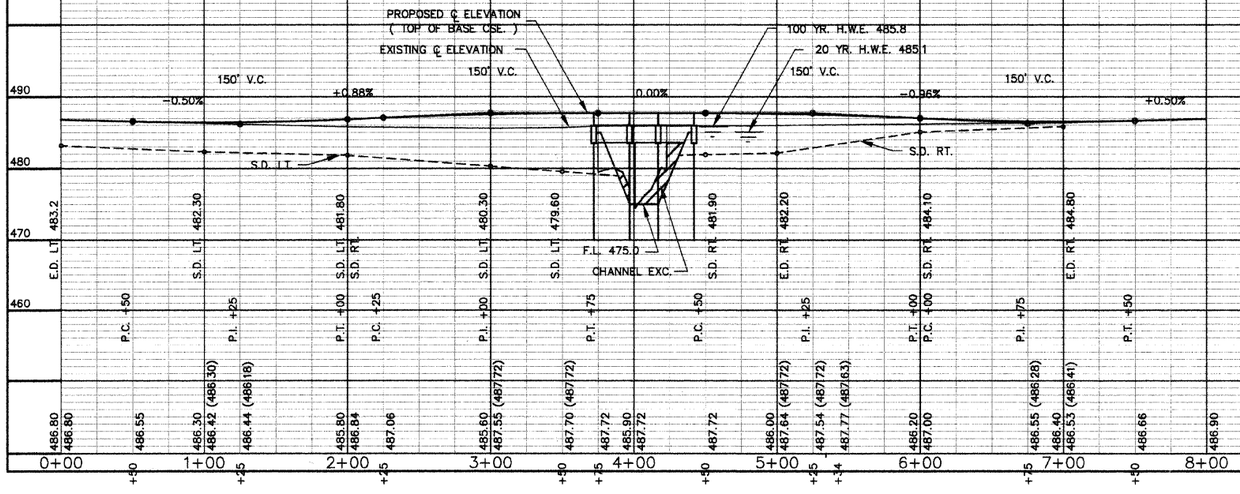
CONSTRUCT TRANSITION
FROM EXISTING 28' RDWY. TO PROPOSED 30' RDWY.
STA. 0+00 TO STA. 0+50 AND STA. 7+50 TO STA. 8+00
FROM EXISTING 20' SURFACE (1/2" THICK) TO PROPOSED 22' SURFACE (2" THICK)
STA. 0+00 TO STA. 0+50 AND STA. 7+50 TO STA. 8+00

POROUS GRANULAR EMBANKMENT
WEST ABUTMENT(30' WIDE) = 29 TON
EAST ABUTMENT(30' WIDE) = 29 TON
TOTAL = 58 TON



TRAFFIC BARRIER TERMINALS, TYPE 5A
APPROACH CORNERS OF BRIDGE = 2 EACH

TRAFFIC BARRIER TERMINALS, TYPE 1 SPECIAL (TANGENT)
APPROACH CORNERS OF BRIDGE = 2 EACH

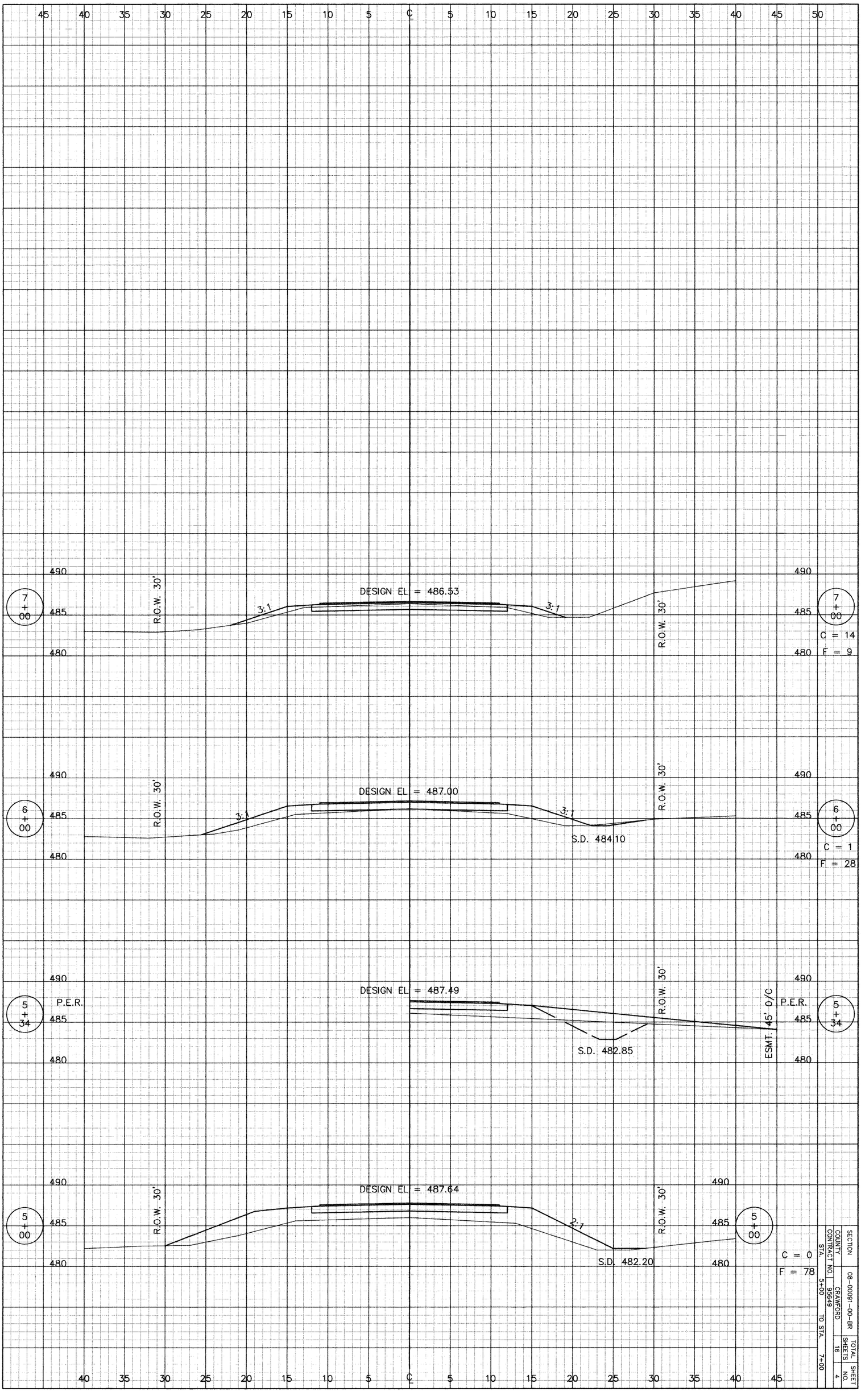


UTILITIES

ELECTRIC : NORRIS ELECTRIC COOP.
8543 N. STATE HWY. 130
NEWTON, IL 62448
618-783-8765

TELEPHONE : FRONTIER
225 E. CHESTNUT ST.
OLNEY, IL 62450
618-395-6189

SECTION	08-00091-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	16	3
CONTRACT NO.	95649		
STA.	0+00 TO STA.	4+50	

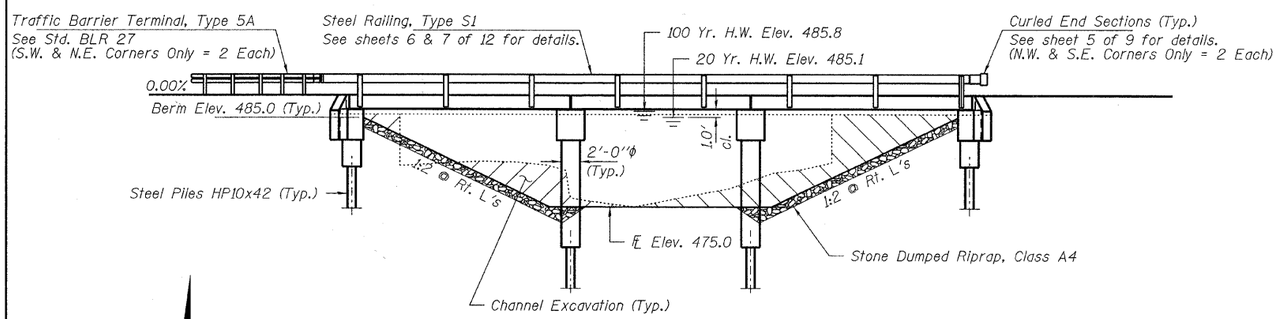


SECTION	
COUNTY	CRAWFORD
CONTRACT NO.	95649
STA.	5+00
TO STA.	7+00
08-00091-00-BR	
TOTAL SHEETS	16
SHEET NO.	4

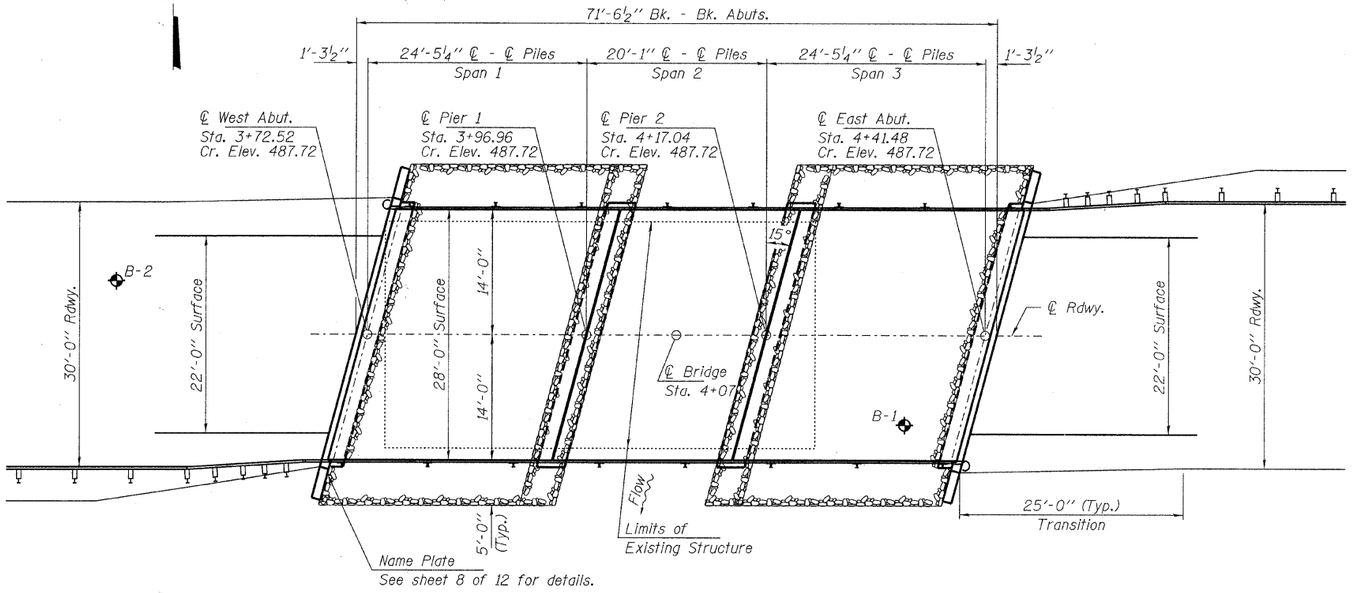
BENCHMARK: PK nail in power pole. 30.2' Rt., Sta. 7+22, Elev. 488.86

EXISTING STRUCTURE: A two span concrete deck bridge on closed concrete abutments and wingwalls. Structure closed to traffic.

No Salvage



ELEVATION



PLAN

GENERAL NOTES

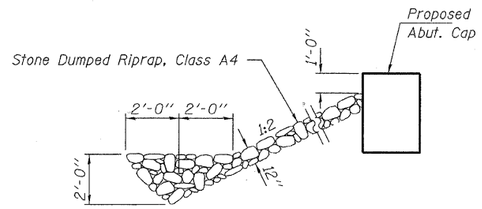
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at West Abutment and Pier 2 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.

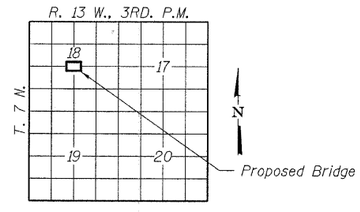


SECTION A-A

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

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 17" x 48" PPC Deck Beam
3. 17" x 48" PPC Deck Beam Details
4. 17" x 48" PPC Deck Beam
5. 17" x 48" PPC Deck Beam Details
6. Superstructure Details
7. Steel Railing, Type S1
8. Abutments
9. Piers
10. HP Pile Details
11.-12. Borings



LOCATION SKETCH

DOGWOOD CREEK
BUILT 20__ BY
CRAWFORD COUNTY
SEC. 08-00091-00-BR
C.H. 12 / F.A.S. 1698
STR. NO. 017-3058
LOADING HL-93

NAME PLATE

See Std. 515001

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: 2010 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}) = 0.206g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.466g
Soil Site Class = D

WATERWAY INFORMATION

Drainage Area = 6.26 Sq. Mi.
Existing Low Grade Elev. 485.60 @ Sta. 3+00
Proposed Low Grade Elev. 486.42 @ Sta. 1+00

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	20	1657	226	340	485.1	1.0	0.4	486.1	485.5
Base	100	2540	226	371	485.8	0.9	0.9	486.7	486.7
Max. Calc.	500	3440	226	413	486.3	0.7	1.0	487.0	487.3

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	Pier 1	Pier 2	E. Abut.
	482.5	470.5	470.5	482.5

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. Meggenson 2/14/2011
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064 Expires 11-30-2012

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

TOTAL BILL OF MATERIAL

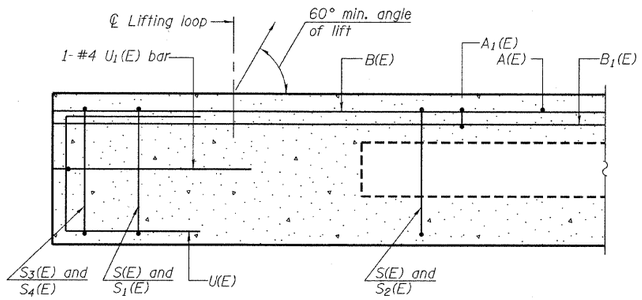
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			180
Stone Dumped Riprap, Class A4	Ton			140
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		49.8	49.8
Concrete Encasement	Cu. Yd.		13.6	13.6
Precast Prestressed Concrete Deck Beams (17" Depth)	Sq. Ft.	1,960		1,960
Reinforcement Bars	Pound		4,800	4,800
Steel Railing, Type S1	Foot	145		145
Furnishing Steel Piles HP10x42	Foot		560	560
Driving Piles	Foot		560	560
Test Pile Steel HP10x42	Each		2	2
Name Plates	Each		1	1

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -

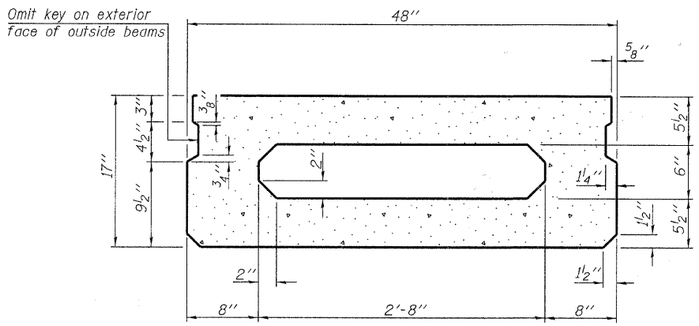
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 017-3058
SHEET NO. 1 OF 12 SHEETS

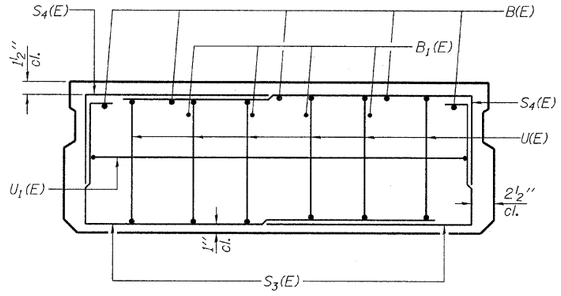
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	5
		CONTRACT NO. 95649		
		ILLINOIS FED. AID PROJECT		



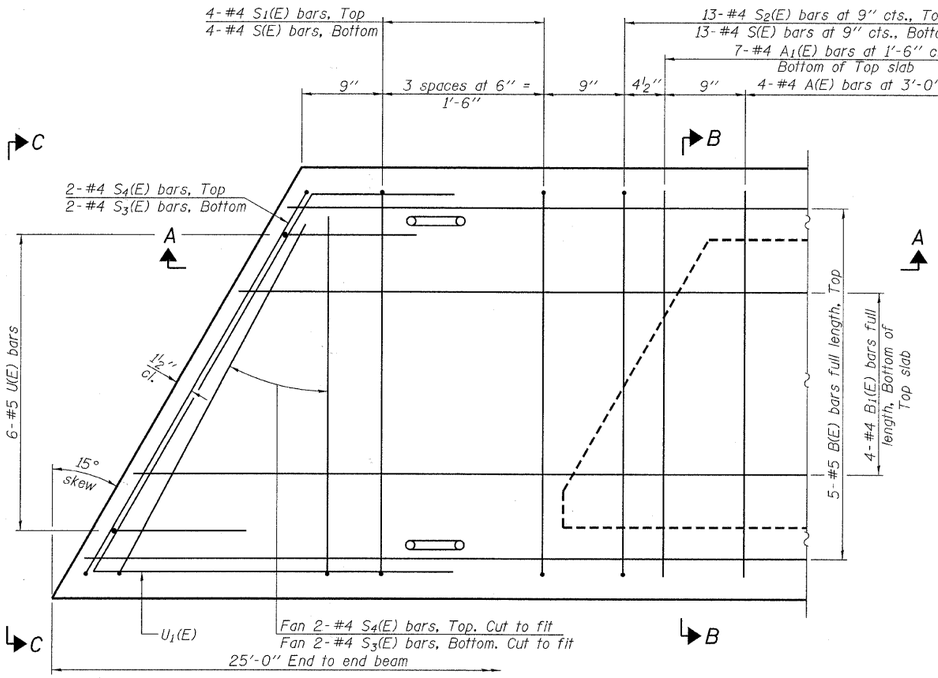
SECTION A-A



SECTION B-B
(Showing dimensions)

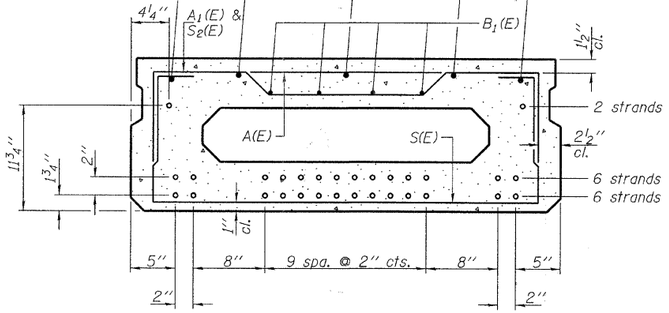


VIEW C-C



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 B-B
(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.

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	8	#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)	34	#4	6'-9"	⊔
S_1(E)	8	#4	5'-3"	⊓
S_2(E)	26	#4	5'-6"	⊓
S_3(E)	8	#4	4'-4"	⌋
S_4(E)	8	#4	3'-7"	⌋
U(E)	12	#5	3'-8"	⊏
U_1(E)	2	#4	7'-1"	⊏

Note: See sheets 3 thru 6 of 12 for additional details and Bill of Material.

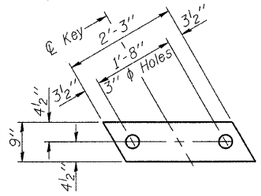
PD-1748-L 7-1-10

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3068 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 2/18/2011	CHECKED - D.T.M.	REVISED -

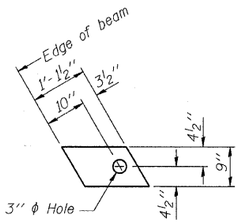
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

17" x 48" PPC DECK BEAM
STRUCTURE NO. 017-3058
SHEET NO. 2 OF 12 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	6
		CONTRACT NO. 95649		
		ILLINOIS FED. AID PROJECT		

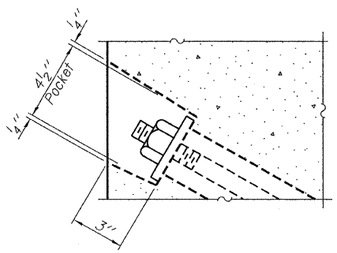


FABRIC BEARING PAD
(Interior - 24 Req'd.)



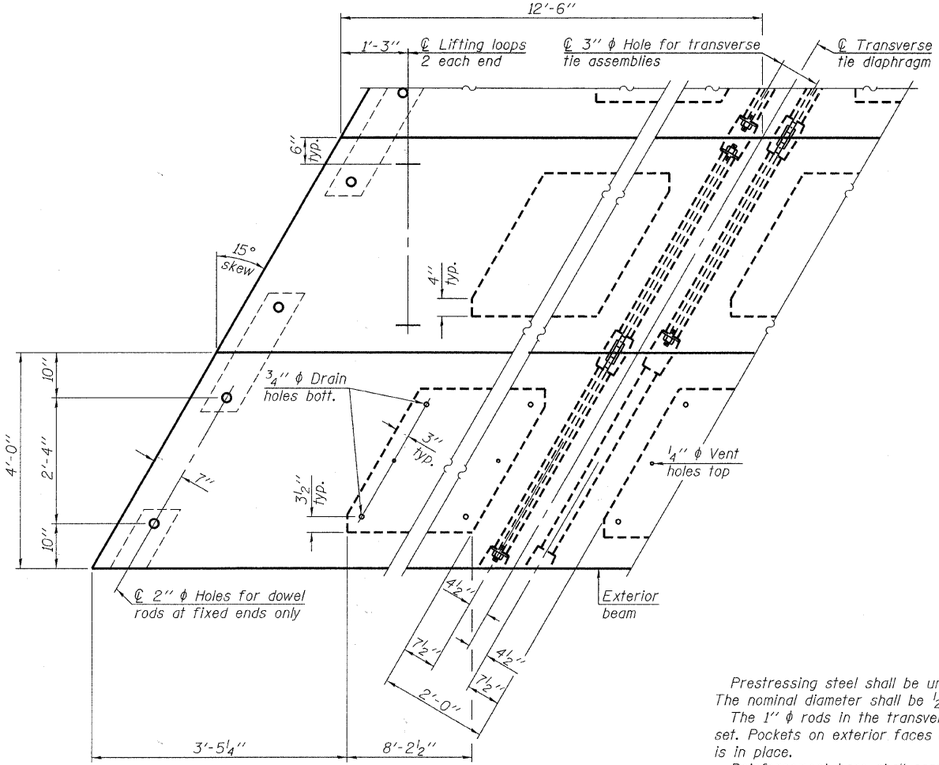
FABRIC BEARING PAD
(Exterior - 8 Req'd.)

FIXED



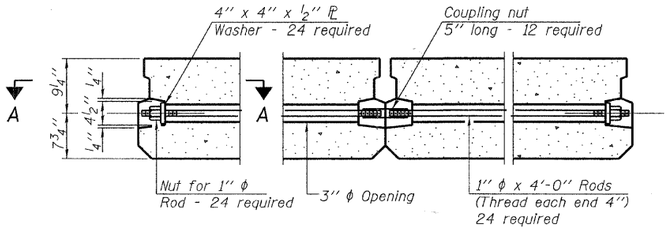
SECTION A-A

Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.

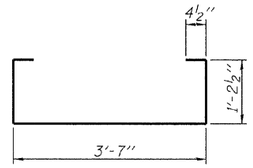


PLAN VIEW

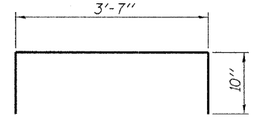
Note: Connect beams in pairs with the transverse tie configuration shown.



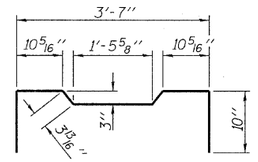
TYPICAL TRANSVERSE TIE ASSEMBLY



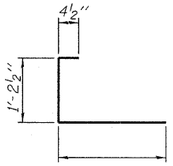
BAR S(E)



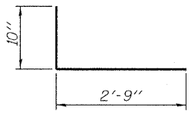
BAR S_1(E)



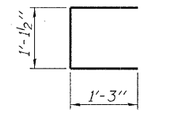
BAR S_2(E)



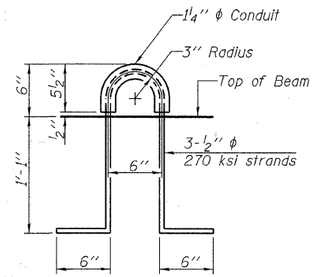
BAR S_3(E)



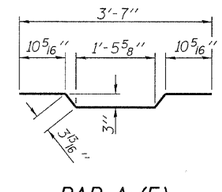
BAR S_4(E)



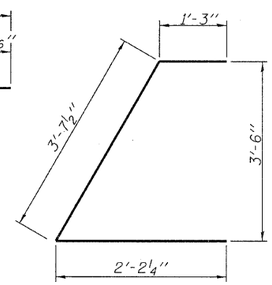
BAR U(E)



LIFTING LOOP DETAIL



BAR A_1(E)



BAR U_1(E)

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.

All bars shall be epoxy coated.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	1,400

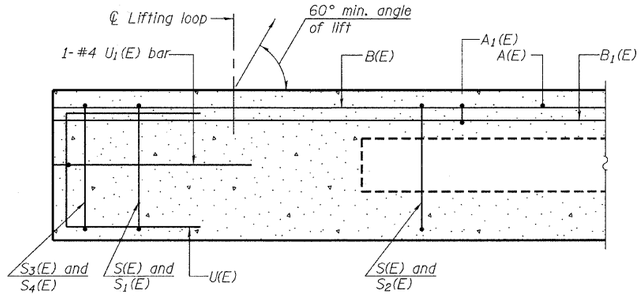
PD-1748-LD 7-1-10

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000869		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -	

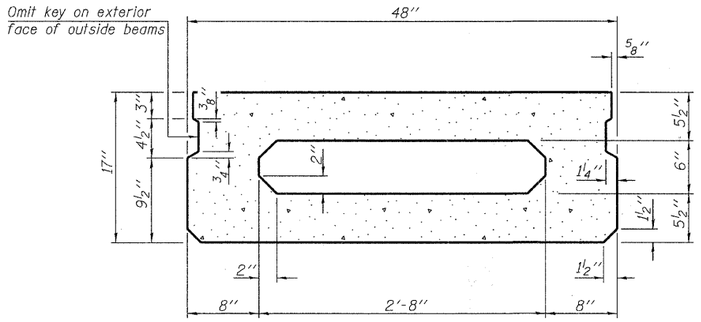
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

17" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 017-3058
SHEET NO. 3 OF 12 SHEETS

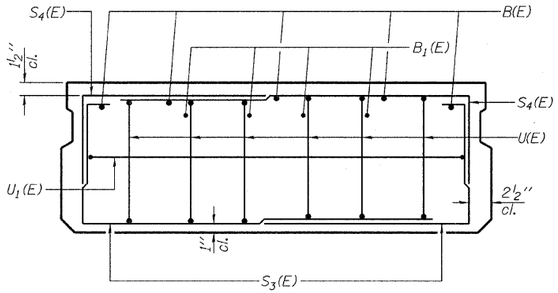
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	7
		CONTRACT NO. 95649		
	ILLINOIS FED. AID PROJECT			



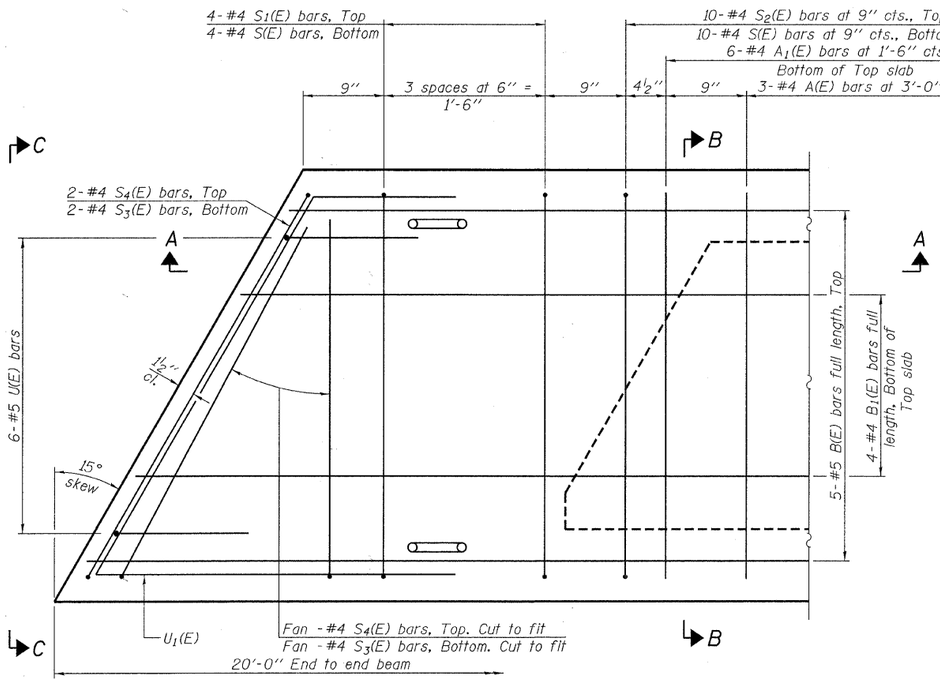
SECTION A-A



SECTION B-B
(Showing dimensions)



VIEW C-C



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 B-B
(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.

MINIMUM BAR LAP
#4 bar = 2'-0"
#5 bar = 2'-6"

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	6	#4	3'-7"	—
$A_1(E)$	12	#4	3'-10"	~
B(E)	5	#5	19'-8"	—
$B_1(E)$	4	#4	19'-8"	—
S(E)	28	#4	6'-9"	⊏
$S_1(E)$	8	#4	5'-3"	⊐
$S_2(E)$	20	#4	5'-6"	⊐
$S_3(E)$	8	#4	4'-4"	⌊
$S_4(E)$	8	#4	3'-7"	⌊
U(E)	12	#5	3'-8"	⊏
$U_1(E)$	2	#4	7'-1"	⊏

Note: See sheets 2 & 3 of 12 and 5 & 6 of 12 for additional details and Bill of Material.

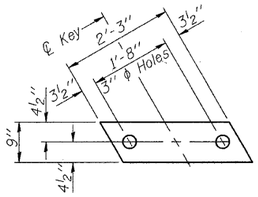
PD-1748-L 7-1-10

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3055 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -	
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -	

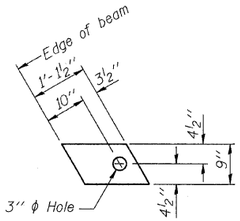
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

17" x 48" PPC DECK BEAM
STRUCTURE NO. 017-3058
SHEET NO. 4 OF 12 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	8
		CONTRACT NO. 95649		
	ILLINOIS FED. AID PROJECT			

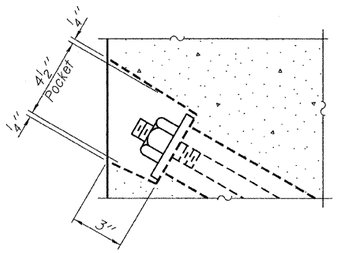


FABRIC BEARING PAD
(Interior - 12 Req'd.)



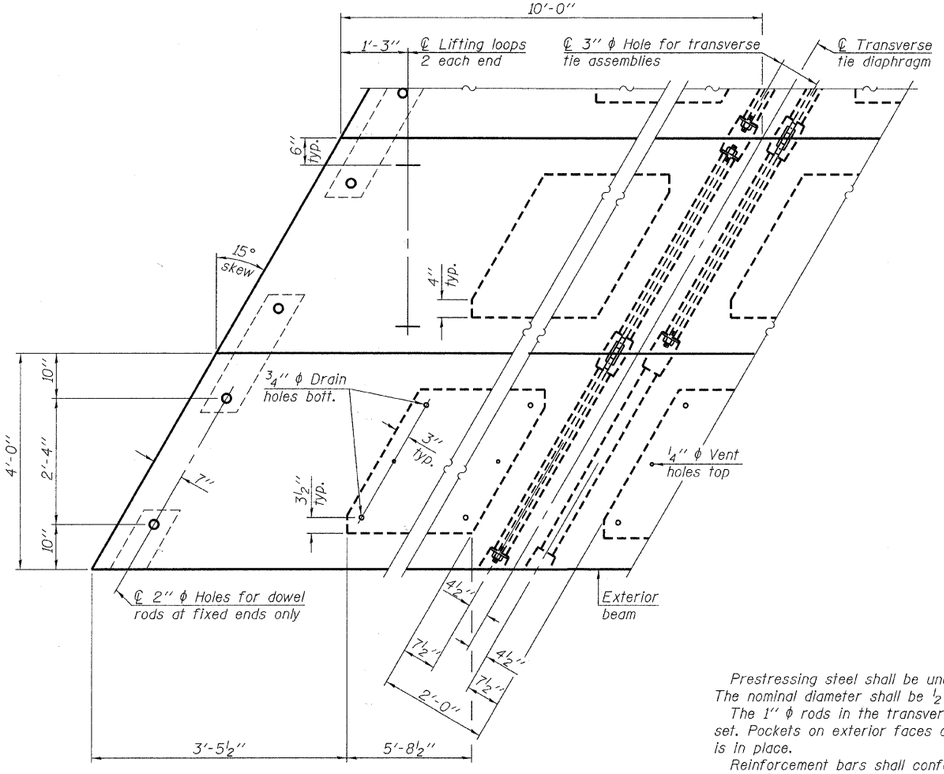
FABRIC BEARING PAD
(Exterior - 4 Req'd.)

FIXED



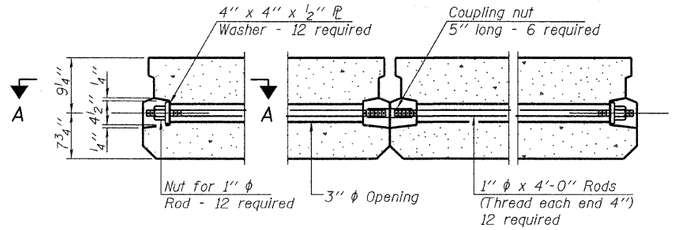
SECTION A-A

Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.

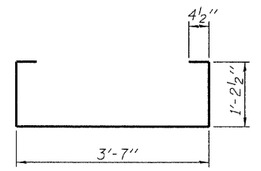


PLAN VIEW

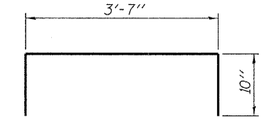
Note: Connect beams in pairs with the transverse tie configuration shown.



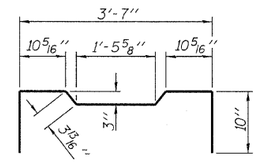
TYPICAL TRANSVERSE TIE ASSEMBLY



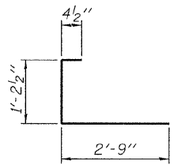
BAR S(E)



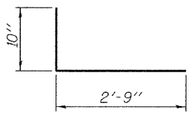
BAR S1(E)



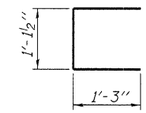
BAR S2(E)



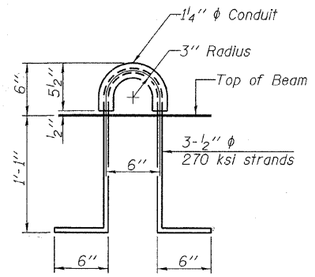
BAR S3(E)



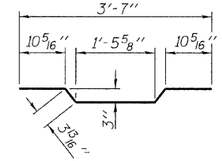
BAR S4(E)



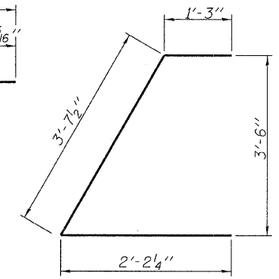
BAR U(E)



LIFTING LOOP DETAIL



BAR A1(E)



BAR U1(E)

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.

All bars shall be epoxy coated.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (17" depth)	Sq. Ft.	560

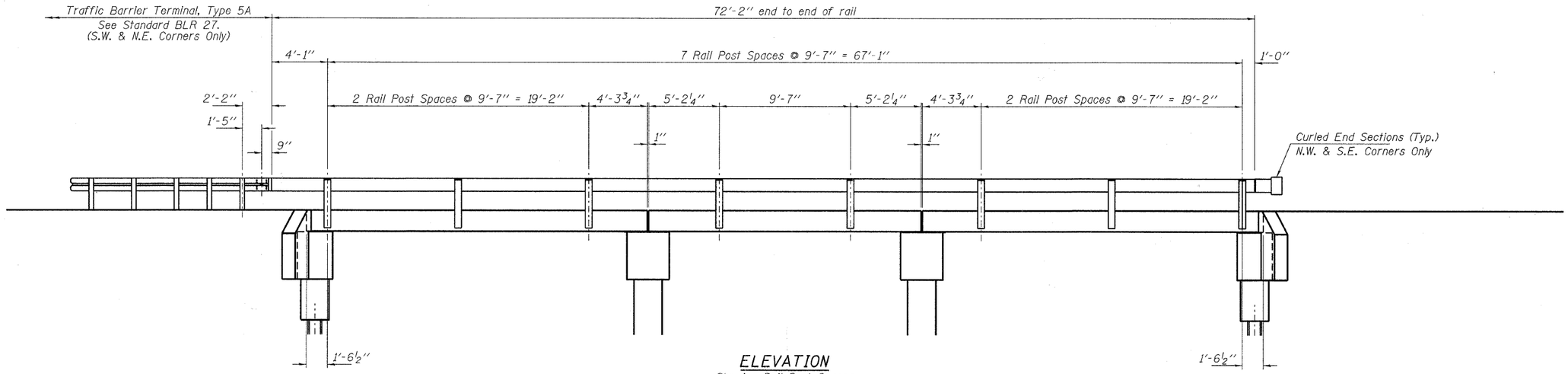
PD-1748-LD 7-1-10

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
LS / PE / SE CORP. 184.005959	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

17" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 017-3058
SHEET NO. 5 OF 12 SHEETS

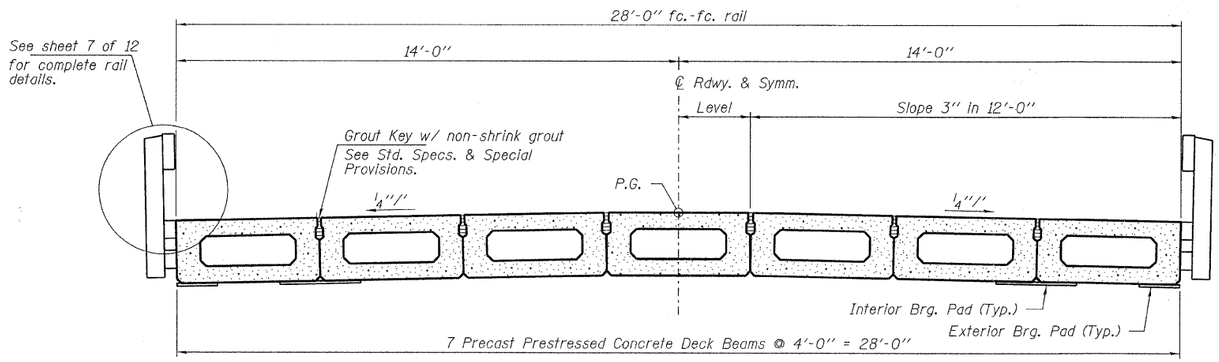
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	9
		CONTRACT NO. 95649		
	ILLINOIS FED. AID PROJECT			



ELEVATION

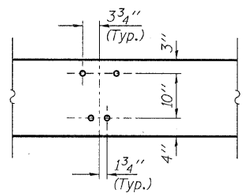
Showing Rail Post Spaces

See sheet 7 of 12 for Railing Details.

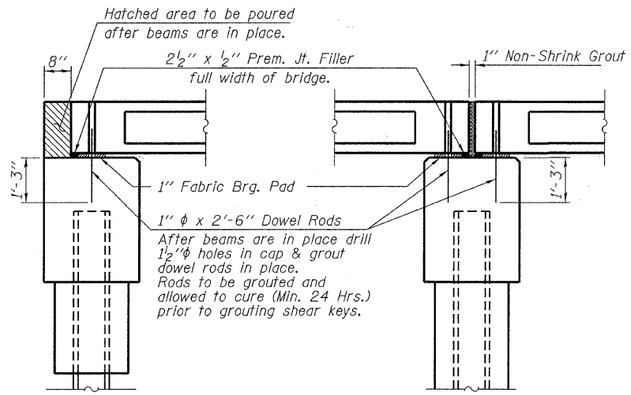


CROSS SECTION

See sheets 2 thru 5 of 12 for Superstructure.



DETAIL A



SECTION AT ABUTMENTS

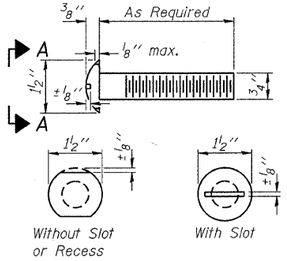
℄ Rt. L's

SECTION AT PIERS

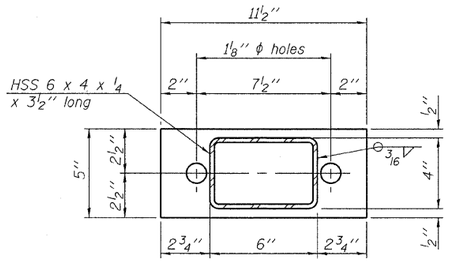
℄ Rt. L's

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 017-3058 SHEET NO. 6 OF 12 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LB / PE / SE CORP. 184.000669		CHECKED - S.W.M.	REVISED -		
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -		

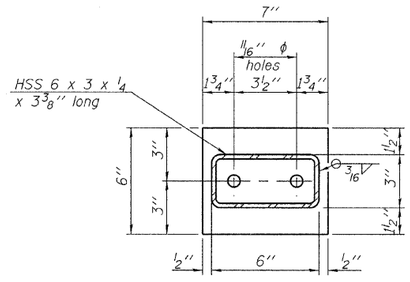
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	10
		CONTRACT NO. 95649		
		ILLINOIS FED. AID PROJECT		



VIEW A-A
ROUND HEAD BOLT

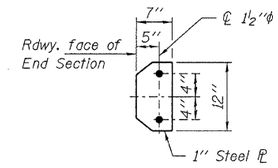


PL 1/2" x 11 1/2" x 5"

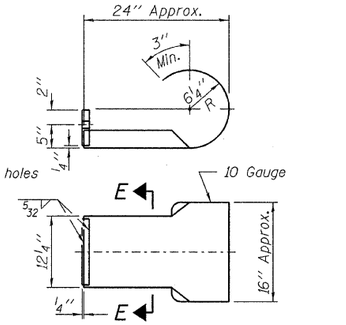


PL 1/2" x 7" x 6"

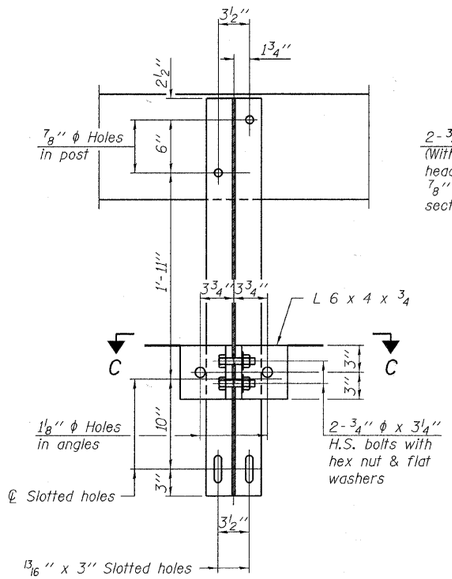
Note: Cost of curled end sections shall be included with the Steel Railing. (2 Required)



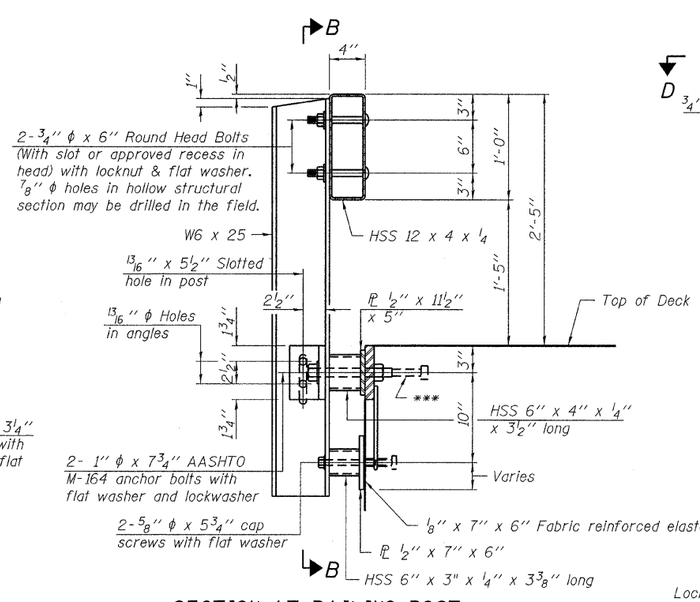
SECTION E-E



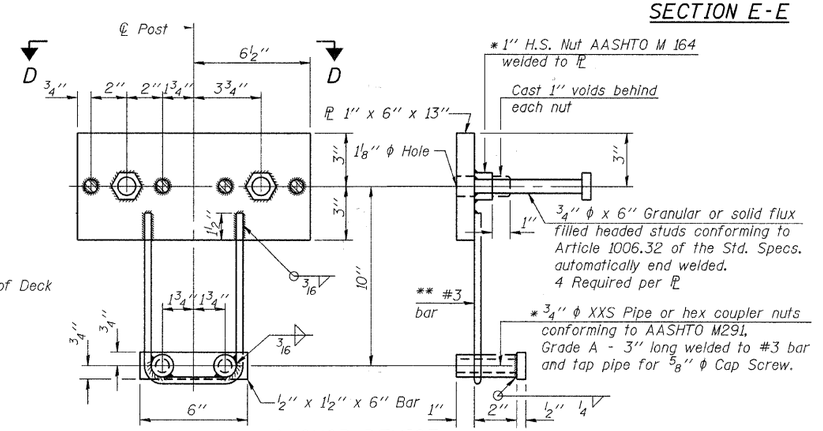
CURLED END SECTION DETAILS



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

Notes:

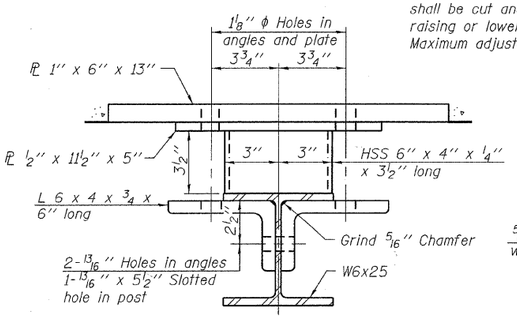
All field drilled holes shall be coated with an approved zinc rich paint before erection.

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.

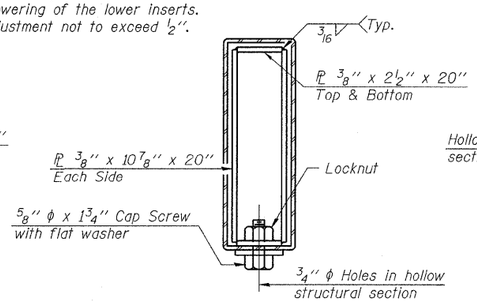
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

*** 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.

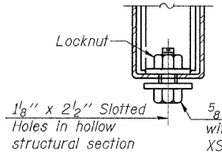
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



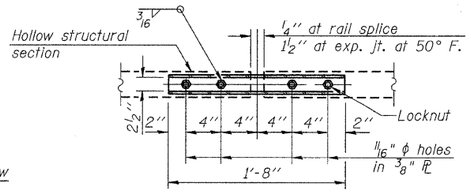
SECTION C-C



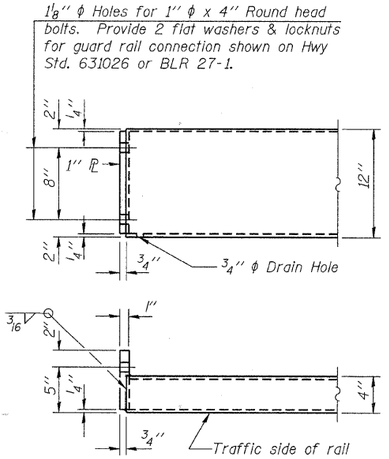
SECTIONS AT RAIL SPLICE



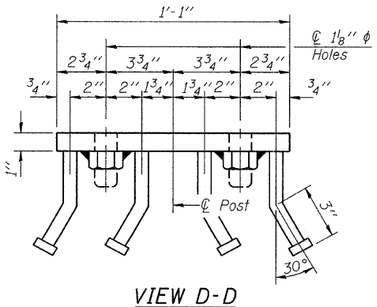
RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE PL TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	145

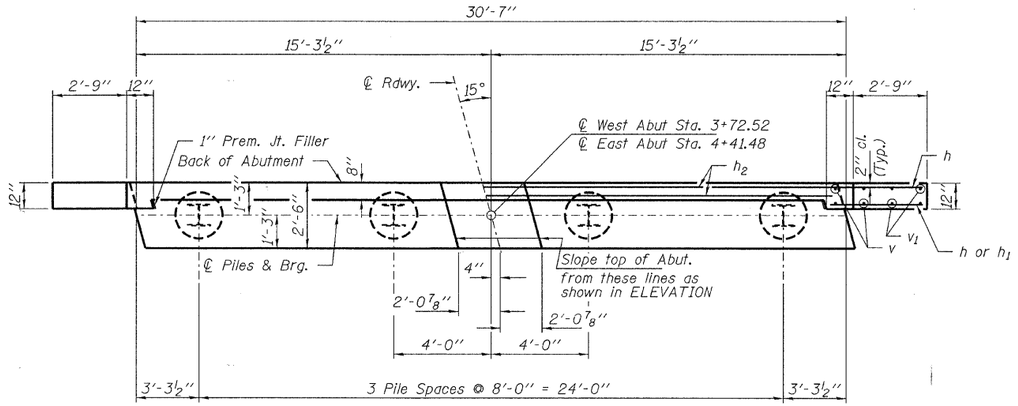
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000989		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -

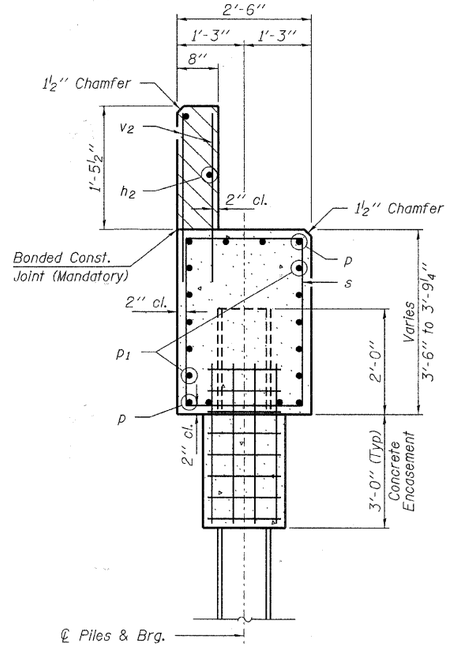
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 017-3058
SHEET NO. 7 OF 12 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	11
		CONTRACT NO. 95649		
	ILLINOIS FED. AID PROJECT			

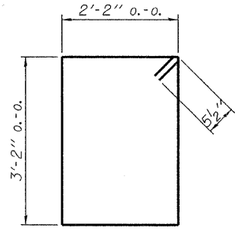


PLAN

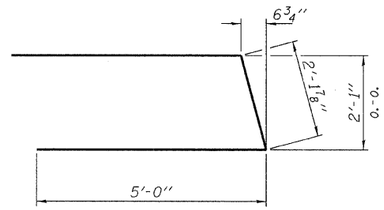


SECTION A-A

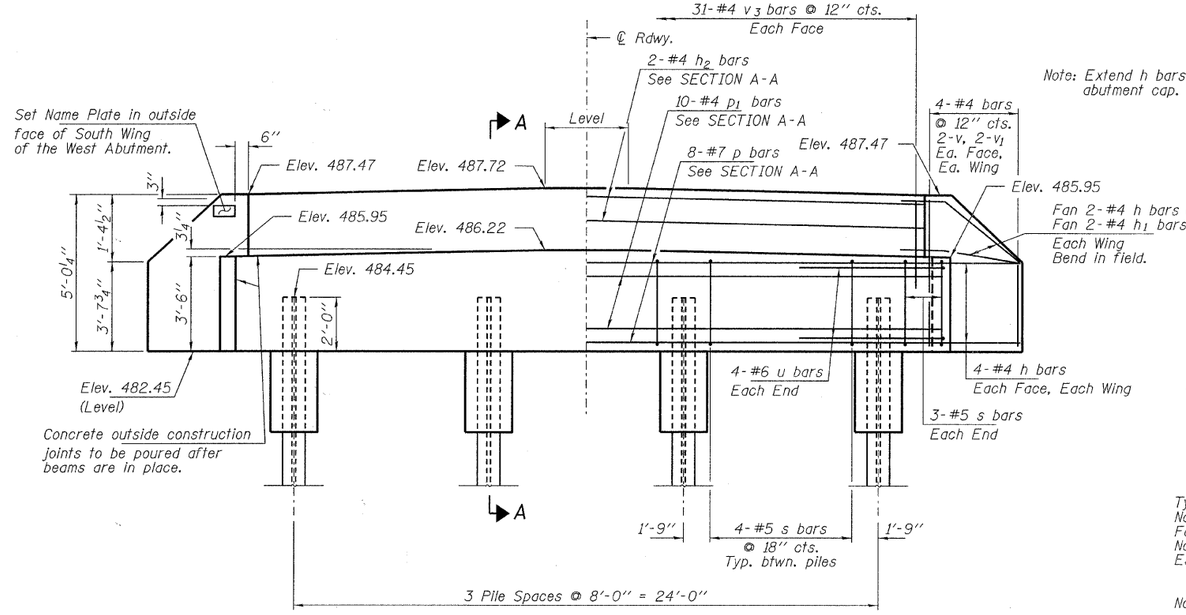
Hatched area to be poured after beams are in place.



BAR s



BAR u



ELEVATION

Note: Extend h bars into abutment cap.

PILE DATA

Type _____ Steel HP10x42
No. Req'd. (2 Abuts.) _____ *8
Factored Resistance Available ___ 184 Kips/Pile
Nominal Req'd Bearing _____ 335 Kips/Pile
Est. Length _____ 40 Ft/Pile

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

BILL OF MATERIAL - 2 ABUTS.

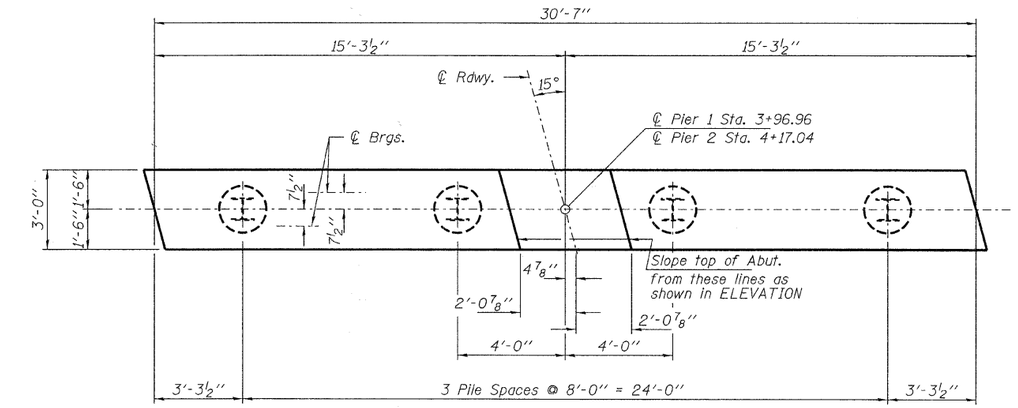
BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	5'-0"	——
h_1	8	#4	3'-6"	——
h_2	4	#4	30'-3"	——
p	16	#7	30'-3"	——
p_1	20	#4	30'-3"	——
s	36	#5	11'-7"	□
u	16	#6	12'-2"	▱
v	16	#4	4'-6"	——
v_1	16	#4	3'-6"	——
v_2	124	#4	2'-4"	——
Concrete Structures			Cu. Yd.	25.0
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars			Pound	2,630
Steel Piles HP10x42			Foot	280
Test Pile Steel HP10x42			Each	1
Name Plates			Each	1

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3005 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LD / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -

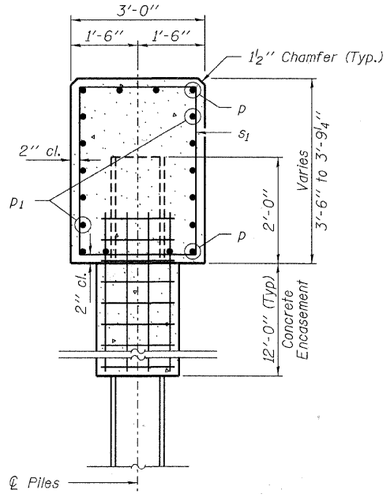
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

ABUTMENTS
STRUCTURE NO. 017-3058
SHEET NO. 8 OF 12 SHEETS

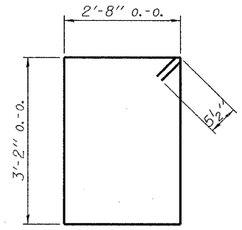
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	12
		CONTRACT NO. 95649		
		ILLINOIS FED. AID PROJECT		



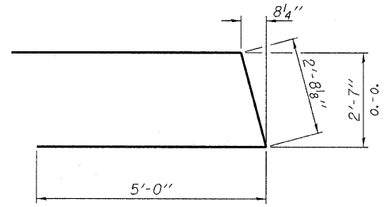
PLAN



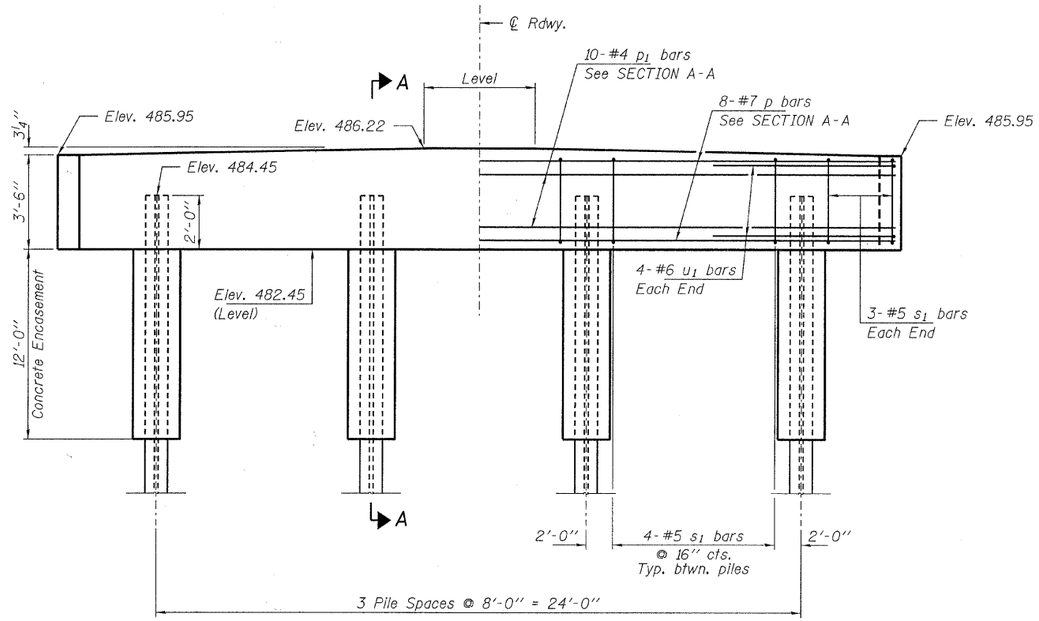
SECTION A-A



BAR s_1



BAR u_1



ELEVATION
(Looking East)

PILE DATA

Type _____ Steel HP10x42
No. Req'd. (2 Piers) _____ *8
Factored Resistance Available ___ 184 Kips/Pile
Nominal Req'd Bearing _____ 335 Kips/Pile
Est. Length _____ 40 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

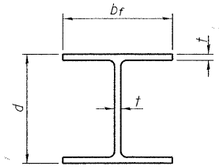
BAR	NO.	SIZE	LENGTH	SHAPE
p	16	#7	30'-3"	——
p_1	20	#4	30'-3"	——
s_1	36	#5	12'-7"	□
u_1	16	#6	12'-9"	⌓
Concrete Structures			Cu. Yd.	24.8
Concrete Encasement			Cu. Yd.	10.8
Reinforcement Bars			Pound	2,170
Steel Piles HP10x42			Foot	280
Test Pile Steel HP10x42			Each	1

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000559		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

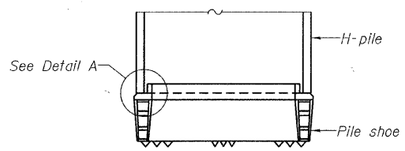
PIERS
STRUCTURE NO. 017-3058
SHEET NO. 9 OF 12 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	13
		CONTRACT NO. 95649		
	ILLINOIS FED. AID PROJECT			

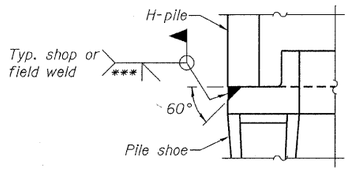


STEEL PILE TABLE

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"

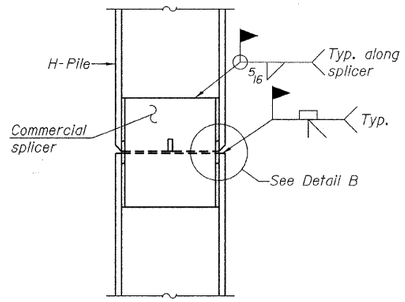


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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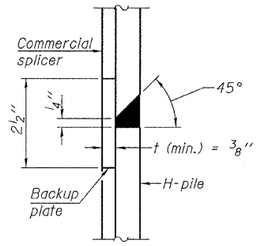
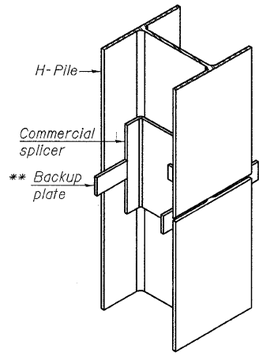
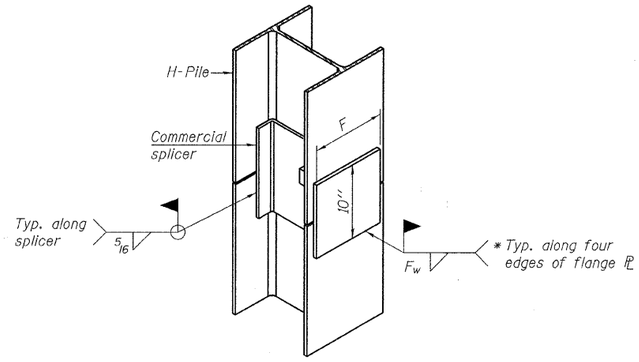


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



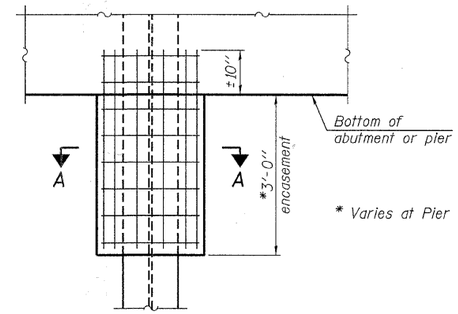
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

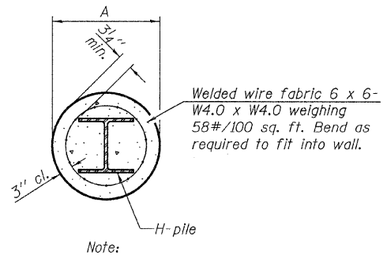
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



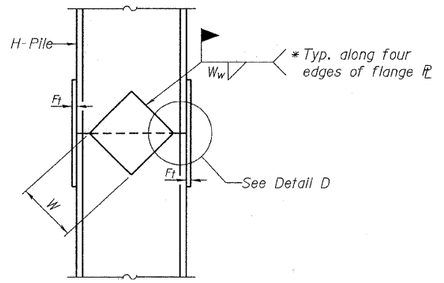
ELEVATION



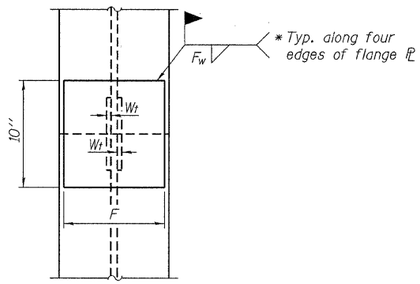
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

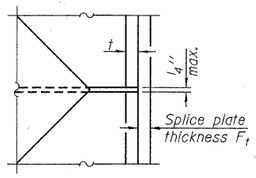
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

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

WELDED PLATE FIELD SPLICE

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

F-HP 7-1-10

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 017-3058	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.005659		CHECKED - S.W.M.	REVISED -			12	08-00091-00-BR	CRAWFORD	16	14
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -						CONTRACT NO. 95649	
	PLOT DATE = 2/18/2011	CHECKED - D.T.M.	REVISED -		SHEET NO. 10 OF 12 SHEETS			ILLINOIS	FED. AID PROJECT	

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

Page 1 of 2

Bridge Foundation Boring Log

Project: H-08196
Section: 08-00091-00-BR
Dist.: Oblong
County: Crawford

Bridge Over Dogwood Creek
Station 4+07

Date: 1/12/09
Bored by: J. Carter
Checked By: T. Holcomb

Boring No: 1
Station: 4+32
Offset: 10' RT

Surface Water Elev.
Ground Water Elev. During Drilling 472.1
Upon Completion plugged

Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %
Ground Surface 485.6 / 0 2" A-3/ 3" C. Stone 485.2				Sandy CLAY (A-6)			
Gray Mottled Brown Sandy CLAY (A-6) w/ pebbles	3	0.8S	18	-25	49	5.4S	9
-5	2	0.5S	20		35	6.2S	10
	6	1.4S	23	-30	35	7.0S	10
477.1							
Gray Silty CLAY (A-6) w/ sand	5	1.2S	23	-35	85	3.5S	9
-10	3	0.4B	25				
472.1							
Gray Mottled Brown Sandy CLAY (A-6) to Clayey SAND (A-2-4)	5	---	18	447.1			
-15				Gray Fine SAND (A-2-4)			
	7	0.7B	22	-40	100/4"	---	13
-20	18	---	15				
464.1							
Gray Silty CLAY (A-6) to	40	0.9B	15		100/0"	---	10

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

Page 2 of 2

Bridge Foundation Boring Log

Project: H-08196
Section: 08-00091-00-BR
Route: Oblong
County: Crawford

Bridge Over Dogwood Creek
Station 4+07

Date: 1/12/09
Bored by: J. Carter
Checked By: T. Holcomb

Boring No: 1
Station: 4+32
Offset: 10' RT

Surface Water Elev.
Ground Water Elev. During Drilling 472.1
Upon Completion plugged

Elevation	N	Qu tsf	w %	Elevation	N	Qu tsf	w %
sand (continued)				415.6 / -70	64	---	23
-45				End of Boring @ -70.0'			
437.6							
Gray Silty CLAY (A-6) w/ sand				-75			
-50	125	---	8				
				-80			
-55	47	4.3S	11				
				-85			
-60	35	5.0B	14				
423.6							
Gray Fine to Medium SAND (A-2-4)							
-65	32	---	24				

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 1

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -	**STATE OF ILLINOIS** **CRAWFORD COUNTY HIGHWAY DEPARTMENT**	**BORINGS** **STRUCTURE NO. 017-3058**	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -			12	08-00091-00-BR	CRAWFORD	16	15
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		SHEET NO. 11 OF 12 SHEETS				CONTRACT NO. 95649	
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -					ILLINOIS	FED. AID PROJECT	

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

Page 1 of 2

Bridge Foundation Boring Log

Project: H-08196
Section: 08-00091-00-BR
Dist.: Oblong
County: Crawford

Bridge Over Dogwood Creek
Station 4+07

Date: 1/12/09
Bored by: J. Carter
Checked By: T. Holcomb

Boring No: 2
Station: 3+45
Offset: 6' LT

Surface Water Elev.
Ground Water Elev. During Drilling 471.5
Upon Completion plugged

Elevation	N	Qu tsf	w %	Description
485.5				Ground Surface
484.8				5" A-3/ 4" C. Stone
				Gray Mottled Brown Sandy SILT (A-4) w/ pebbles
	4	1.3S	13	
-5	1	0.9S	20	
479.5				
				Gray Mottled Brown Silty CLAY (A-6) w/ sand and pebbles
	5	1.3S	22	
-10	5	1.5S	23	
	4	0.6B	23	
472.0				
				Gray Mottled Brown Sandy CLAY (A-6) to Clayey SAND (A-2-4)
-15	4	---	22	
469.5				
				Gray Mottled Brown Fine SAND (A-2-4)
	5	---	19	
-20	13	---	12	
	27	---	16	
				sand (continued)
462.0				
				Gray Silty CLAY (A-6) w/ sand
-25	51	5.8S	9	
	30	4.7S	11	
-30	36	6.9S	10	
-35	62	---	10	
447.0				
				Gray Fine SAND (A-2-4)
-40	100/3"	---	12	
	100/6"	---	11	

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

Page 2 of 2

Bridge Foundation Boring Log

Project: H-08196
Section: 08-00091-00-BR
Route: Oblong
County: Crawford

Bridge Over Dogwood Creek
Station 4+07

Date: 1/12/09
Bored by: J. Carter
Checked By: T. Holcomb

Boring No: 2
Station: 3+45
Offset: 6' LT

Surface Water Elev.
Ground Water Elev. During Drilling 471.5
Upon Completion plugged

Elevation	N	Qu tsf	w %	Description
				sand (continued)
437.0				
				Gray Silty CLAY (A-6) w/ sand
-50	131	4.3B	10	
-55	48	6.6S	12	
425.5				
-60	30	4.1B	15	End of Boring @ -60.0'
-65				
-70				
-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

FILE NAME =	USER NAME =	DESIGNED - V.J.H.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 017-3058 SHEET NO. 12 OF 12 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000669		CHECKED - S.W.M.	REVISED -		
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		
	PLOT DATE = 2/10/2011	CHECKED - D.T.M.	REVISED -		

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00091-00-BR	CRAWFORD	16	16
		CONTRACT NO. 95649		
		ILLINOIS FED. AID PROJECT		