04-25-14 LETTING ITEM 096

INDEX OF SHEETS

1	COVER SHEET
2	TYPICAL SECTIONS & SUMMARY OF QUANTITIES
3	PLAN & PROFILE
4–5	MAINLINE CROSS SECTIONS
6	SIDEROAD CROSS SECTIONS
7–14	BRIDGE PLANS
15	BORINGS

STANDARDS:
(SEE PROPOSAL)
280001–07 – EROSION CONTROL
515001–03 – NAME PLATES
630301–06 – SHOULDER WIDENING TYPE 1 TERMINALS
635006–03 – REFLECTOR & TERMINAL MARKER PLACEMENT
701901–03 – TRAFFIC
BLR 21–9 – TRAFFIC
BLR 22–7 – TRAFFIC
BLR 27–1 – TRAFFIC BARR. TERM. TYPE 5A

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM–BRIDGES

CRAWFORD COUNTY
SECTION 08–00093–00–BR
STRUCTURE NO. 017–3062
PROJECT NO. BRS–1698(101)
JOB NO. C–97–051–12
FAS 1698 (CH 12)

SCALES

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

STA.4+45.5 – SPECIAL BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED CONC.
DECK BEAM BRIDGE, 1 SPAN @ 70'
30' RDWY, SKEW= 35° R.F.
PROPOSED STR. NO. 017–3062
EXISTING STR. NO. 017–3034

FUNCTIONAL CLASS: RURAL MAJOR COLLECTOR
ADT = 400
DESIGN SPEED = 40 MPH

LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 545 FT. = 0.103 MILES

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

JOHN A. STONE
062-055012
LICENSED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

02/03/2014
ILLINOIS REGISTERED PROFESSIONAL ENGINEER # 55012
LICENSE EXPIRES NOVEMBER 30, 2015
PROFESSIONAL DESIGN FIRM #184–000832

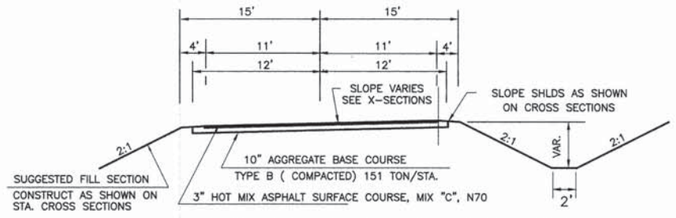
ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED: 2/3, 2014
Justin P. Child
LOCAL AGENCY, COUNTY ENGINEER

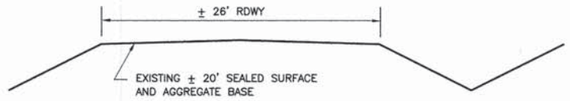
PASSED: 2/18, 2014
Maureen L Cavitt
DISTRICT SEVEN ENGINEER
OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW 2/18, 2014
Roger L Driskell
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FOUR ENGINEER

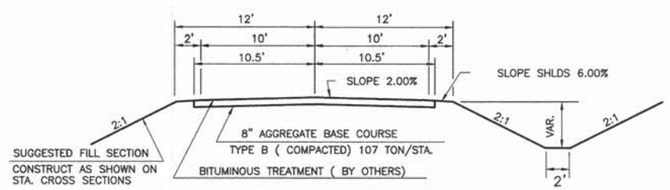
SECTION	08-00093-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	15	2
ROUTE	COUNTY HIGHWAY 12		
	CONTRACT NO. 95731		



TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT



TYPICAL CROSS SECTION OF EXISTING ROADWAY

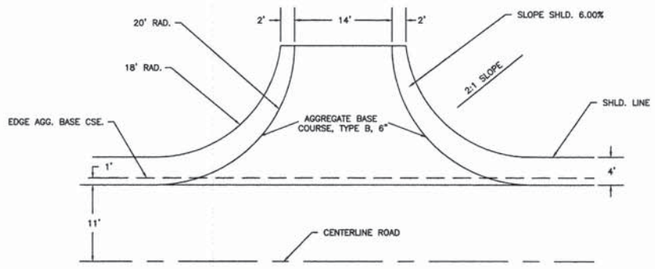


TYPICAL CROSS SECTION OF PROPOSED SIDEROAD

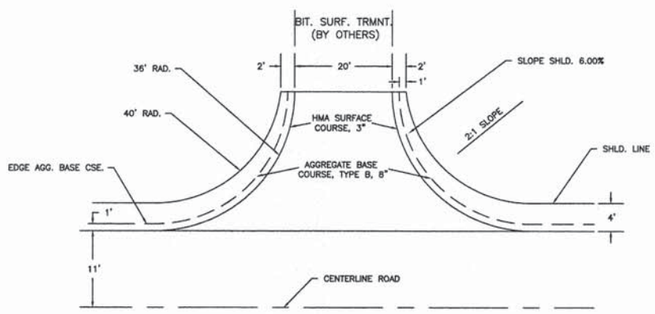
SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
0.9	ACRE	SEEDING, CLASS 2 (SPECIAL)	X2501000
34	TON	AGGREGATE DITCH (SPECIAL)	X2830495
1	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	X7010216
12	EACH	SETTING PILES IN ROCK	Z0065000
676	CU YD	EARTH EXCAVATION	20200100
120	CU YD	CHANNEL EXCAVATION	20300100
516	CU YD	FURNISHED EXCAVATION	20400800
100	TON	POROUS GRANULAR EMBANKMENT	20700110
11	CU YD	TRENCH BACKFILL	20800150
48	FOOT	TEMPORARY DITCH CHECKS	28000305*
150	FOOT	PERIMETER EROSION BARRIER	28000400
270	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
1138	TON	AGGREGATE BASE COURSE, TYPE B	35101400
510	GALLON	BITUMINOUS MATERIALS (PRIME COAT)	40600100
271	TON	HOT MIX ASPHALT SURFACE COURSE, MIX "C", N70	40603315
1	EACH	REMOVAL OF EXISTING STRUCTURES	50100100
37.8	CU YD	CONCRETE STRUCTURES	50300225
2100	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	50400505
5240	POUND	REINFORCEMENT BARS	50800105
144	FOOT	STEEL RAILING, TYPE S1	*50900205
180	FOOT	FURNISHING STEEL PILES HP10x42	51201400
1	EACH	NAME PLATES	51500100
32	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 15"	542D0220
134	FOOT	PIPE CULVERTS, CLASS D, TYPE 1 24"	542D0229
158	FOOT	PORTLAND CEMENT FAIRING COURSE	58300100
2	EACH	TRAFFIC BARRIER TERMINAL, TYPE 5A	*63100075
2	EACH	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	*63100167
1	L SUM	MOBILIZATION	67100100
4	EACH	TERMINAL MARKER - DIRECT APPLIED	*78201000

*SPECIALTY ITEM



DETAIL OF ENTRANCE



DETAIL OF SIDEROAD

UTILITIES

TELEPHONE : FRONTIER COMMUNICATIONS
225 E. CHESTNUT STREET
OLNEY, IL 62450
PH. 618-395-6189

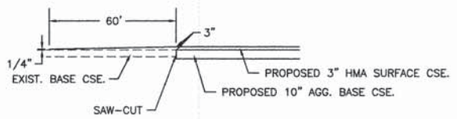
ELECTRIC : NORRIS ELECTRIC COOP.
8543 N. STATE HWY. 130
NEWTON, IL 62448
PH. 618-783-8765

SECTION	08-00093-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	15	3
CONT. NO.	95731		
STA.	1+00 TO STA.	8+00	

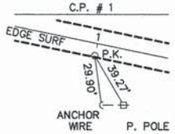
CONSTRUCT TRANSITIONS

AGGREGATE BASE COURSE, TYPE B– TRANSITION WIDTH FROM EXIST. BASE TO PROP. BASE STA. 1+75 TO STA. 2+00 AND STA. 6+95 TO STA. 7+20.
SAW-CUT FOR AGG. BASE STA. 1+75 AND STA. 7+20.

HMA SURFACE COURSE – TRANSITION WIDTH FROM EXIST. SURF. TO PROP. SURF. STA. 1+15 TO STA. 2+00 AND STA. 6+95 TO STA. 7+80. NO BUTT JOINTS.



DETAIL OF TRANSITIONS



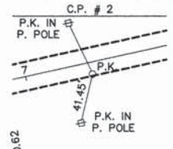
CURVE DATA (CONST. C-LINE)
PI Sta = 4+13.36
Da = 03°08'58"
Dc = 03°09'00"
T = 313.36
R = 1819.22
L = 620.62
E = 26.79
S.E. = 0.06 FT./FT.

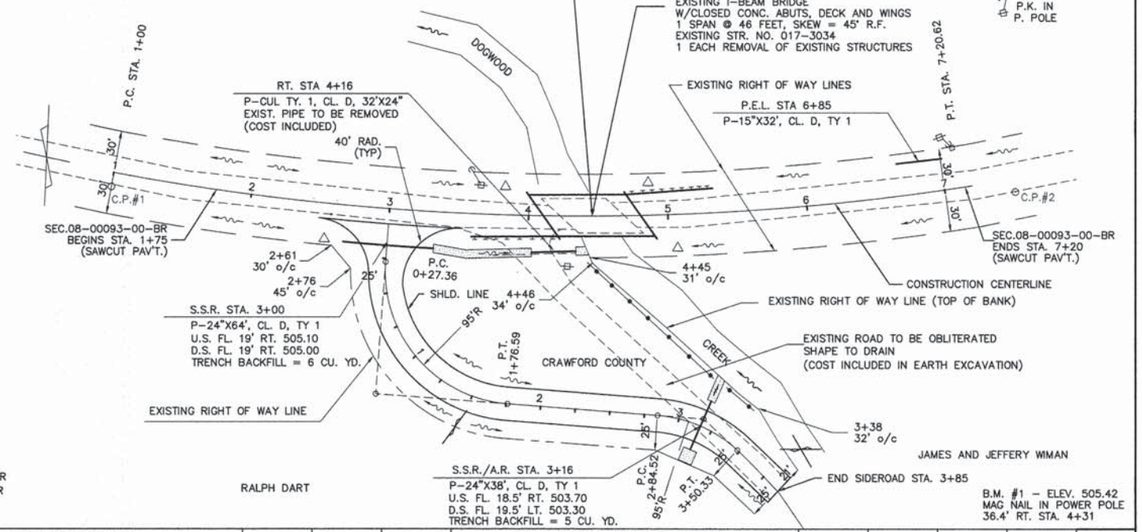
TRANSITION FROM EXISTING CROWN TO FULL SUPER STA. 1+75 TO STA. 2+95 AND STA. 6+00 TO STA. 7+20 SEE X-SECTIONS

DOGWOOD CREEK FARMS, INC.

STA. 4+45.5 – SPECIAL BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE. 1 SPAN @ 70'
30' ROADWAY, SKEW = 35° R.F.
PROPOSED STR. NO. 017-3062

STA. 4+45.5
EXISTING I-BEAM BRIDGE
W/CLOSED CONC. ABUTS, DECK AND WINGS
1 SPAN @ 46 FEET, SKEW = 45° R.F.
EXISTING STR. NO. 017-3034
1 EACH REMOVAL OF EXISTING STRUCTURES





CURVE DATA (SIDEROAD)
PI Sta = 1+22.36
Da = 90°00'00"
Dc = 60°18'41"
T = 95.00'
R = 95.00'
L = 149.23'
E = 39.35'
S.E. = NONE

CURVE DATA (SIDEROAD)
PI Sta = 3+18.07
Da = 38°25'58"
Dc = 60°18'41"
T = 33.11'
R = 95.00'
L = 63.72'
E = 5.61'
S.E. = NONE

AGGREGATE DITCH (SPECIAL)
(MAINLINE) RT. STA. 3+32 TO STA. 4+00 = 20 TON
(MAINLINE) RT. STA. 4+32 TO STA. 4+42 = 4 TON
(SIDEROAD) LT. STA. 3+16 (6'X15') = 5 TON
(SIDEROAD) RT. STA. 3+16 (10'X10') = 5 TON
TOTAL = 34 TON

TEMPORARY DITCH CHECKS △
RT. STA. 2+50 = 12 FOOT
LT. STA. 3+90 = 12 FOOT
LT. STA. 4+90 = 12 FOOT
RT. STA. 5+00 = 12 FOOT
TOTAL = 48 FOOT

PERIMETER EROSION BARRIER
RT. STA. 4+00(ALONG TOP OF BANK = 150 FOOT

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

HMA SURFACE COURSE, MIX "C" N70
(MAINLINE) STA. 1+75 TO STA. 7+20 = 224 TON*
FEATHER HMA SURFACE FROM 3" TO 1/4 "
STA. 1+15 TO STA. 1+75 & STA. 7+20 TO STA. 7+80 = 14 TON
SIDEROAD RT. STA. 3+00 = 33 TON
TOTAL = 271 TON
*INCLUDES 40 TONS ON BRIDGE

AGGREGATE BASE COURSE, TYPE B
(MAINLINE) STA. 1+75 TO STA. 4+10 = 355 TON
(MAINLINE) STA. 4+81 TO STA. 7+20 = 361 TON
(SIDEROAD) STA. 0+00 TO STA. 3+85 = 412 TON
(MAINLINE) P.E.L. STA. 6+84 = 10 TON
TOTAL = 1138 TON

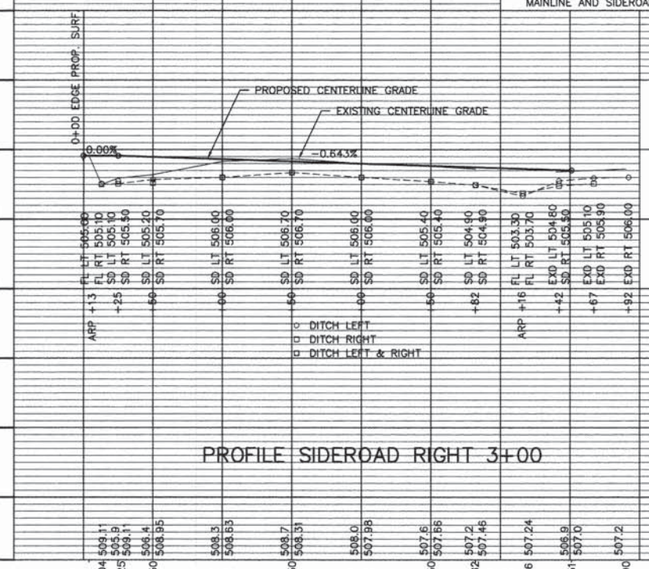
SEEDING, CLASS 2 (SPECIAL)
MAINLINE AND SIDEROAD = 0.9 ACRES

EARTHWORK SCHEDULE

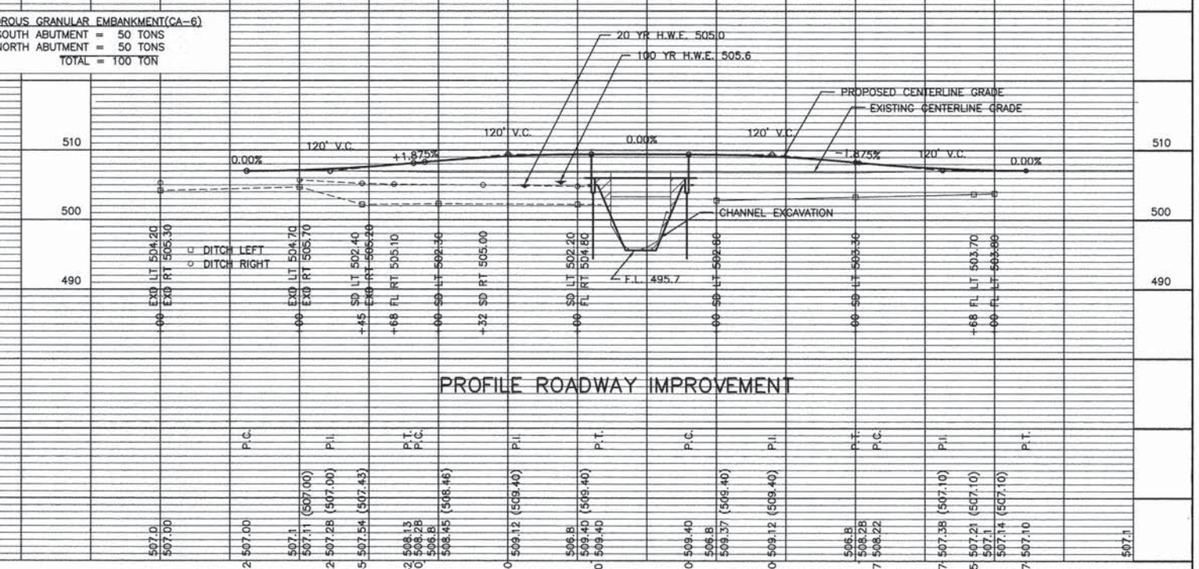
EARTH EXCAVATION	=	676 CU YD
EARTH EXCAVATION ADJUSTED 25%	=	507 CU YD
CHANNEL EXCAVATION	=	120 CU YD
CHANNEL EXCAVATION ADJUSTED 25%	=	90 CU YD
EMBANKMENT	=	1113 CU YD
FURNISHED EXCAVATION	=	516 CU YD

POROUS GRANULAR EMBANKMENT(CA-6)
SOUTH ABUTMENT = 50 TONS
NORTH ABUTMENT = 50 TONS
TOTAL = 100 TON

TRAFFIC BARRIER TERMINALS, TYPE 5A
AT APPROACH CORNERS OF BRIDGE = 2 EACH
TRAFFIC BARRIER TERMINALS, TYPE 1, SPECIAL (TANGENT)
AT APPROACH CORNERS OF BRIDGE = 2 EACH
TERMINAL MARKERS – DIRECT APPLIED
AT EACH CORNER OF BRIDGE = 4 EACH



PROFILE SIDEROAD RIGHT 3+00



PROFILE ROADWAY IMPROVEMENT

SECTION	08-00093-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	15	4
CONT. NO.	95731		
STA.	1+00	TO STA.	4+00

4 + 00
C=20
F=84
CONSTR ℄
2.46'
SUR ℄
509.40
6.0%
6.0%
6.0%
4.0%
2:1
502.20
FL 504.80
30'

3 + 00
C=3
F=66
CONSTR ℄
2.67'
SUR ℄
508.45
6.0%
6.0%
6.0%
0.00%
2:1
502.30
509.11
F... 505.05
30'

2 + 45
C=8
F=15
CONSTR ℄
2.37'
SUR ℄
507.54
6.8%
6.0%
6.0%
5.5%
2:1
502.40
505.20
30'

2 + 00
C=24
F=3
CONSTR ℄
1.70'
SUR ℄
507.11
7.5%
6.0%
4.0%
504.70
505.70
30'

1 + 60

1 + 00
505.30
504.20

SECTION	08-00093-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	15	5
CONT. NO.	95731		
STA.	5+00 TO STA. 7+00		

SECTION	08-00093-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	15	6
CONT. NO.	95731		
STA. 0+13	TO	STA. 3+92	

SIDEROAD CROSS SECTIONS

510 / 2 + 00

25'
507.98
S.D. 506.00
S.D. 506.00
C=51
F=0

510 / 1 + 50

25'
508.31
S.D. 506.70
S.D. 506.70
C=57
F=0

505 / 1 + 00

25'
508.63
S.D. 506.00
S.D. 506.00
C=42
F=1

505 / 0 + 50

25'
508.95
S.D. 505.20
S.D. 505.70
C=9
F=54

505 / 0 + 25

25'
509.11
S.D. 505.10
S.D. 505.50
C=4
F=91

505 / 0 + 13

509.11
P=24"x64', CL. D, TY. 1
F.L. 505.00
F.L. 505.10
C=0
F=199

505 / 3 + 92

EX 506.00

505 / 3 + 67

EX 505.90

505 / 3 + 42

SURVEY ℄ — 0.3' — CONSTR. ℄
507.07
EX 504.80
S.D. 505.50
25'
C=10
F=6

505 / 3 + 16

SURVEY ℄ — 5.6' — CONSTR. ℄
507.24
TOP CREEK BANK
P=24"x38', CL. D, TY. 1
F.L. 503.00
F.L. 503.30
F.L. 503.70
30'
C=53
F=11

505 / 2 + 82

25'
507.46
S.D. 504.90
S.D. 504.90
C=38
F=14

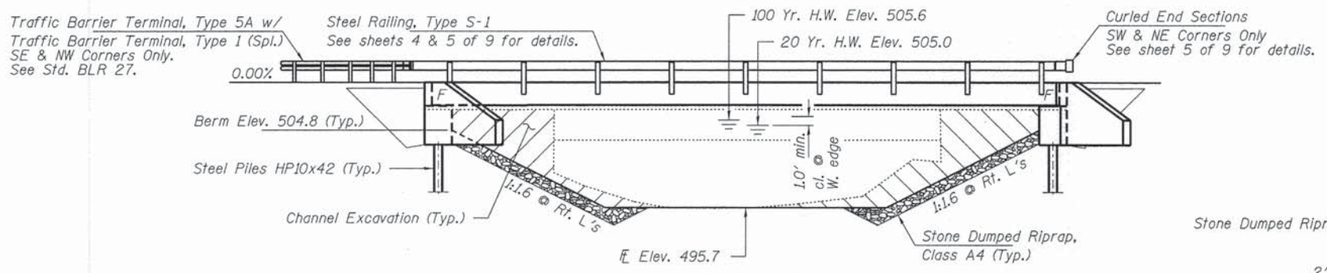
505 / 2 + 50

25'
507.66
S.D. 505.40
S.D. 505.40
C=43
F=1

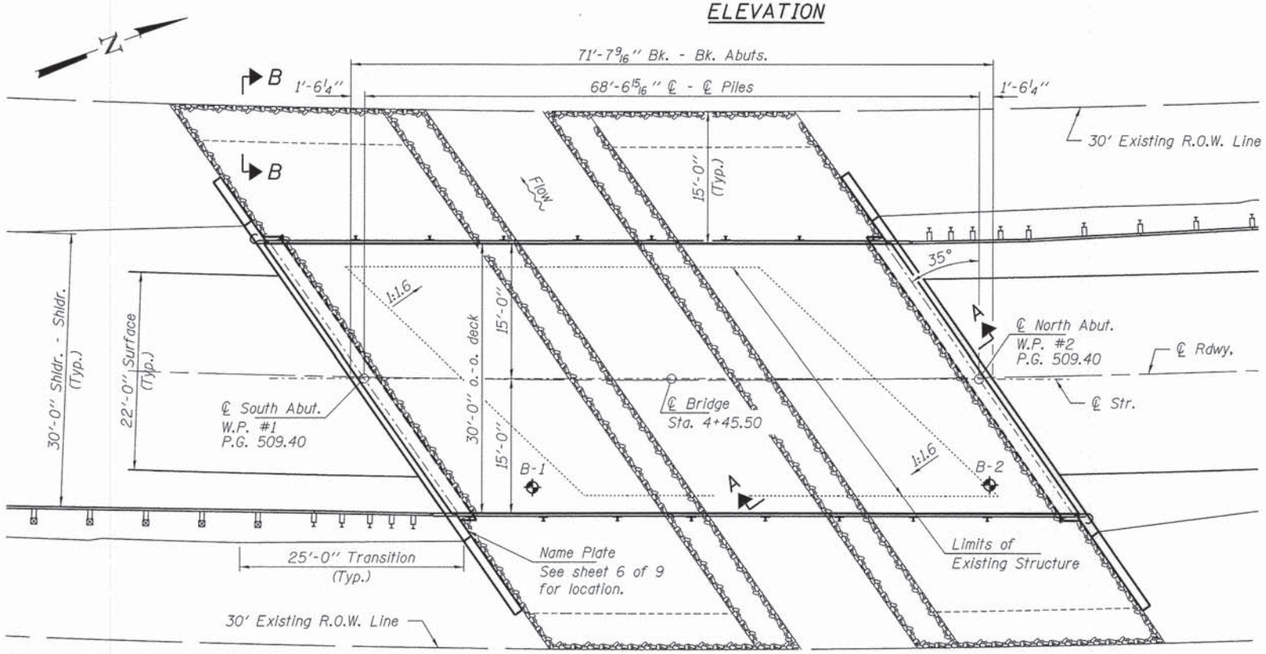
BENCHMARK: Mag. nail in power pole. 36.4' Rt., Sta. 4+31, Elev. 505.42

EXISTING STRUCTURE: Sta. 4+45.50, Str. No. 017-3034. 46' Single span I-beam bridge, on closed concrete abutments and wingwalls.

Structure closed to traffic during construction.



ELEVATION



PLAN

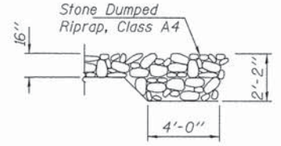
GENERAL NOTES

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

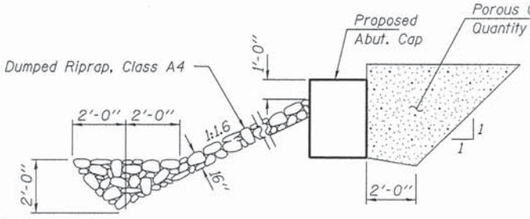
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

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 B-B

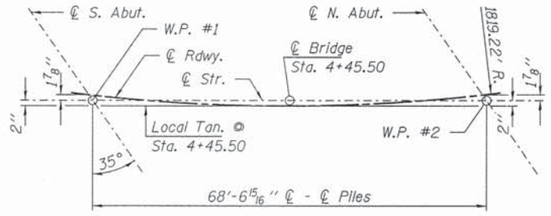


SECTION A-A

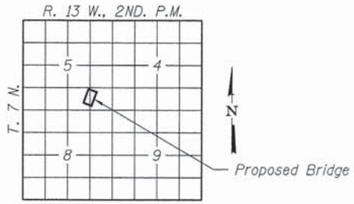
Note: See Special Provisions for Stone Dumped Riprap, Class A4.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 27"x36" PPC Deck Beam
3. 27"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. South Abutment
7. North Abutment
8. HP Pile Details
9. Borings



OFFSET SKETCH



LOCATION SKETCH

DOGWOOD CREEK
BUILT 201_ BY
C.H. 12
CRAWFORD COUNTY
SEC. 08-00093-00-BR
STR. NO. 017-3062
LOADING HL-93

NAME PLATE
See Std. 515001

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition with all applicable interims.

LOADING HL-93

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

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.)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.144g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.351g
Soil Site Class = C

Design Scour Elevations (ft.)		
	S. Abut.	N. Abut.
Q100	503.2	503.2

WATERWAY INFORMATION

Drainage Area = 3.70 Sq. Mi.
Existing Low Grade Elev. 507.0 @ Sta. 1+00
Proposed Low Grade Elev. 507.0 @ 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/Overtop	20	1250	190	315	505.0		0.3		505.3
Base	100	1930	190	347	505.6	1.6	0.4	507.2	506.0

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 02/04/2014
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

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

Expires 11-30-2014

TOTAL BILL OF MATERIAL

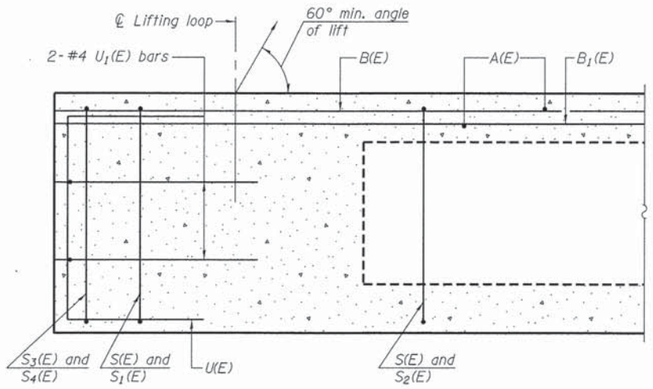
ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			120
Stone Dumped Riprap, Class A4	Ton			270
Hot-Mix Asphalt Surface Course, Mix C, N70	Ton	40		40
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		37.8	37.8
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	2,100		2,100
Reinforcement Bars	Pound		5,240	5,240
Steel Railing, Type S-1	Foot	144		144
Furnishing Steel Piles HP10x42	Foot		180	180
Setting Piles in Rock	Each		12	12
Name Plates	Each		1	1
P.C. Mortar Fairing Course	Foot	158		158

FILE NAME = 132206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3065 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 = 2/4/2014	CHECKED - S.W.M.	REVISED -

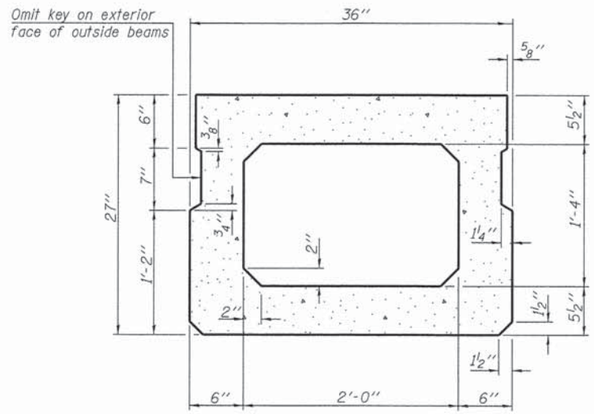
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 017-3062
SHEET NO. 1 OF 9 SHEETS

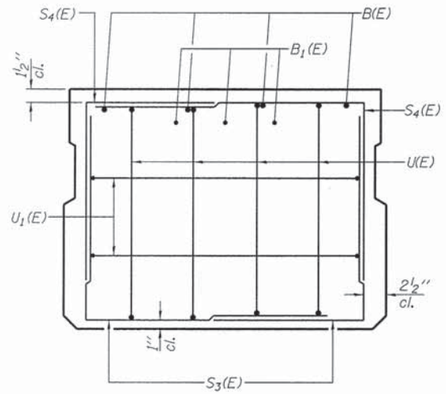
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	7
		CONTRACT NO. 95731		
	ILLINOIS FED. AID PROJECT			



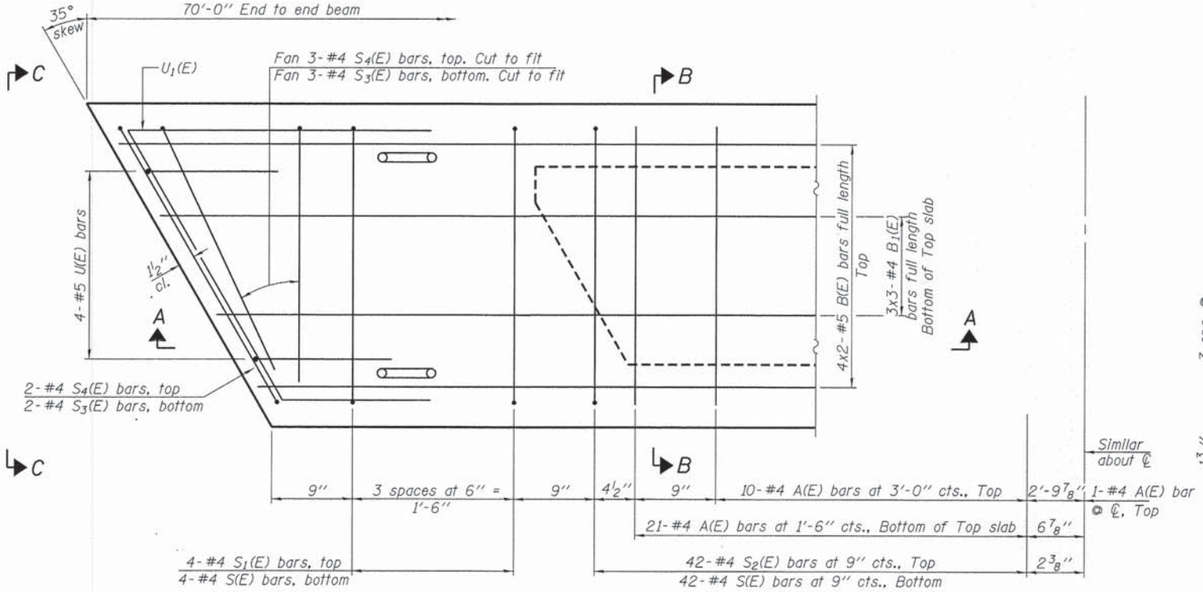
SECTION A-A



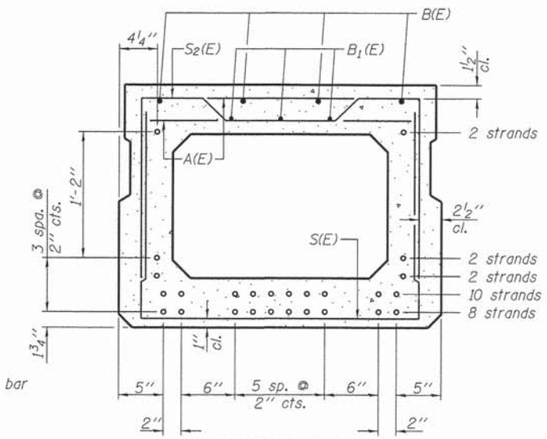
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



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.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	63	#4	2'-7''	—
B(E)	8	#5	36'-2''	—
$B_1(E)$	9	#4	24'-7''	—
S(E)	96	#4	6'-5''	⊔
$S_1(E)$	8	#4	5'-11''	⊓
$S_2(E)$	84	#4	6'-2''	⊓
$S_3(E)$	10	#4	4'-5''	⊔
$S_4(E)$	10	#4	4'-2''	⊔
U(E)	8	#5	4'-6''	⊏
$U_1(E)$	4	#4	7'-4''	⊏

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

Notes:
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.
Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

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

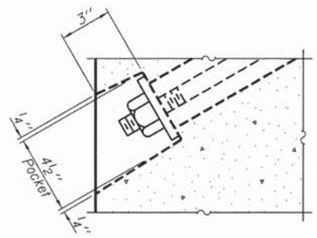
PD-2736-R 7-1-10

FILE NAME = 130206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3065 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 = 2/4/2014	CHECKED - S.W.M.	REVISED -

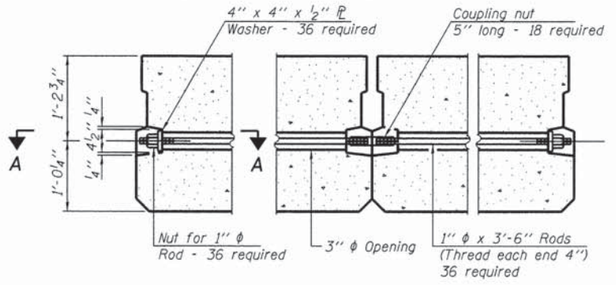
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

27'' x 36'' PPC DECK BEAM
STRUCTURE NO. 017-3062
SHEET NO. 2 OF 9 SHEETS

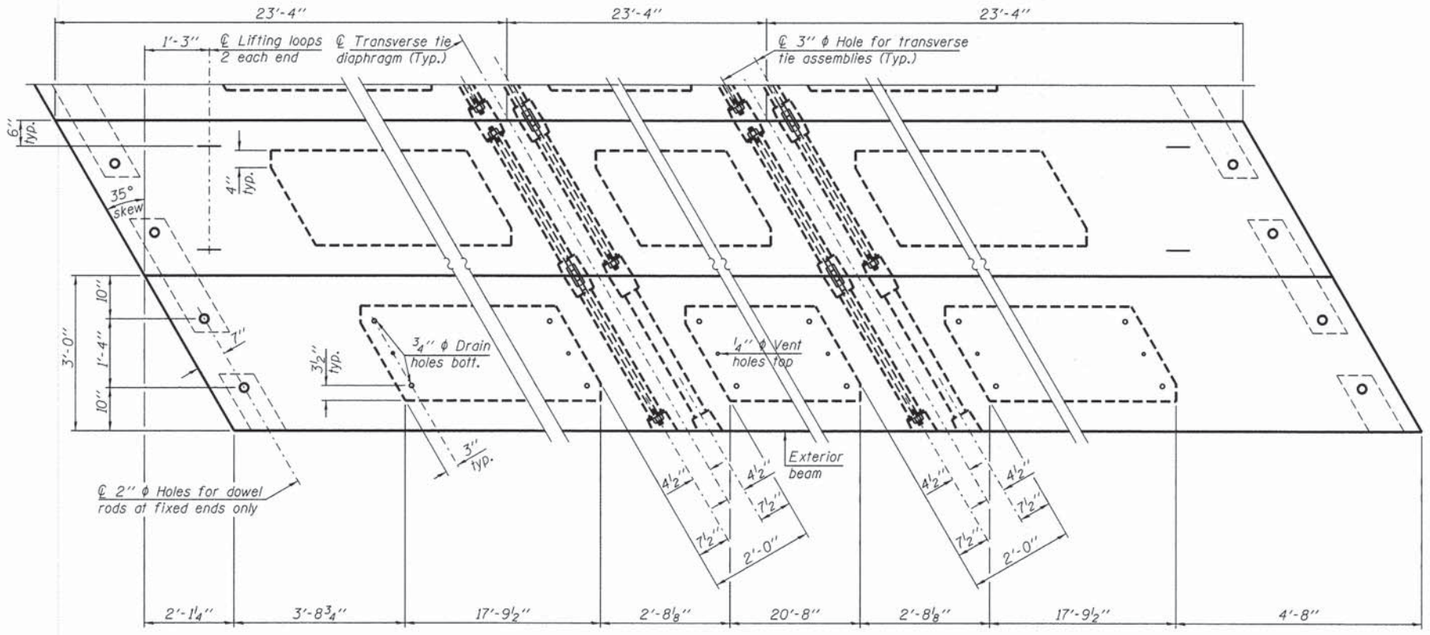
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	8
		CONTRACT NO. 95731		
	ILLINOIS FED. AID PROJECT			



SECTION A-A



TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW

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

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" 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 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

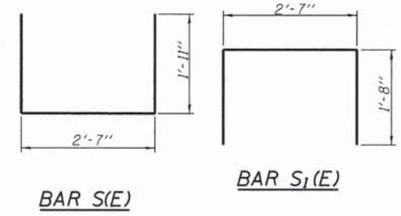
A minimum 2 1/2" ϕ lifting pin shall be used to engage the lifting loops during handling.

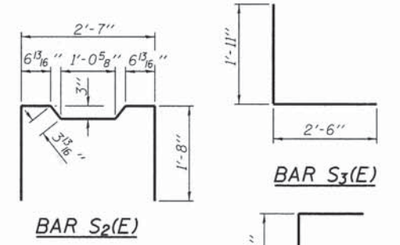
Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

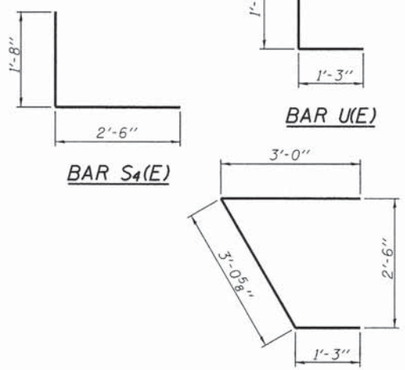
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

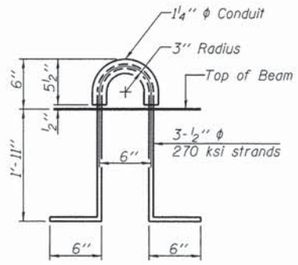
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Reinforcement bars designated (E) shall be epoxy coated.









LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	2,100
Hot-Mix Asphalt Surface Course, Mix D, N50	Ton	40
P.C. Mortar Fairing Course	Foot	158

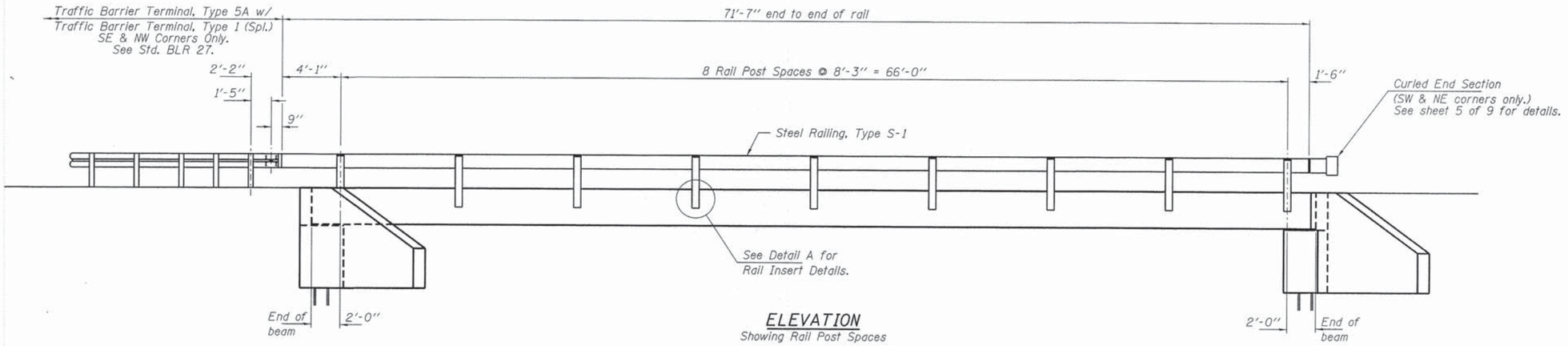
PD-2736-RD 7-1-10

FILE NAME = 130206-sht-brg.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3088 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000968		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -
	PLOT DATE = 2/4/2014	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

27" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 017-3062
SHEET NO. 3 OF 9 SHEETS

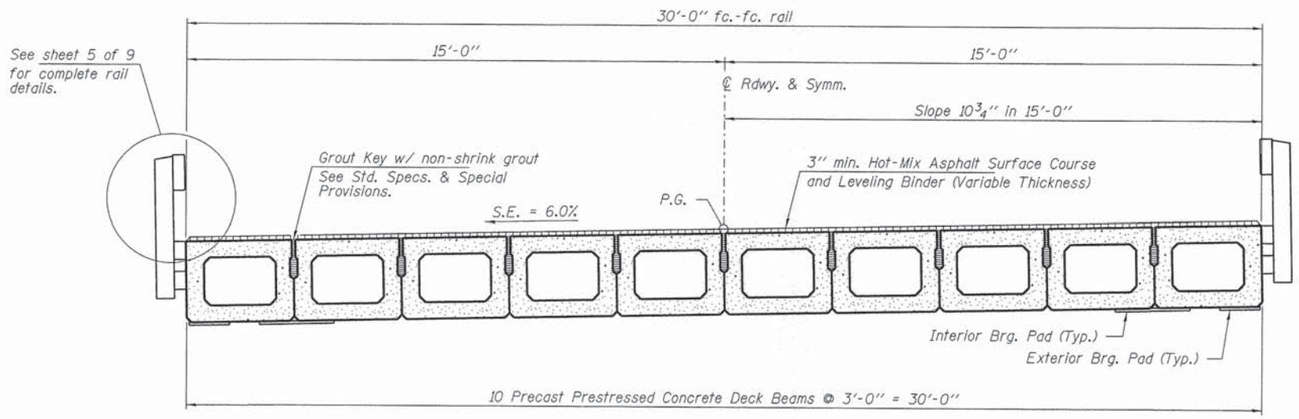
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	9
		CONTRACT NO. 95731		
	ILLINOIS FED. AID PROJECT			



ELEVATION

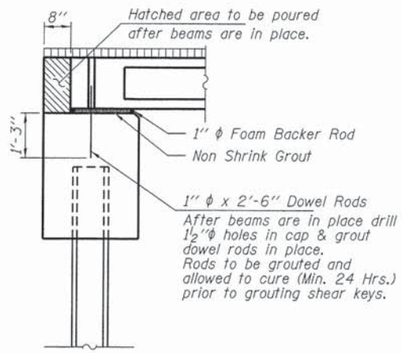
Showing Rail Post Spaces

See sheet 5 of 9 for Railing Details.



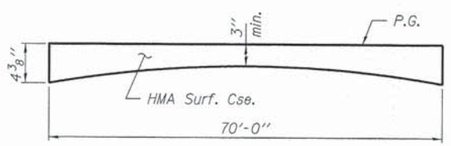
CROSS SECTION

See sheets 2 & 3 of 9 for Superstructure.



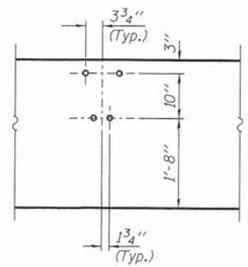
SECTION AT ABUTMENTS

@ Rt. L's

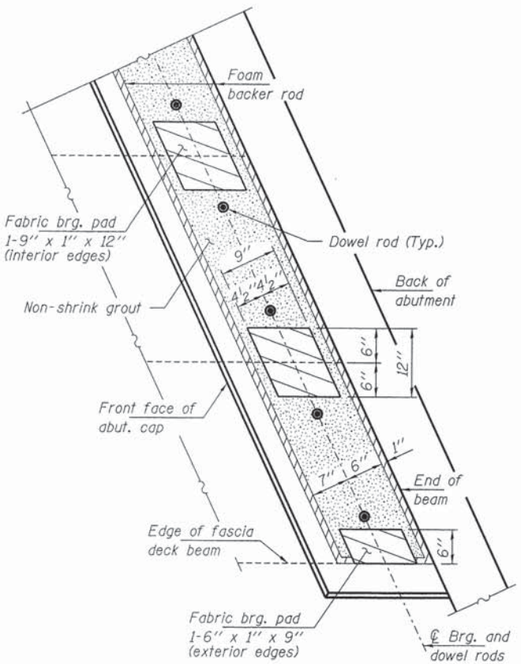


ANTICIPATED HMA WEARING SURFACE PROFILE

(For information only - beam camber may vary in field.)
(Estimated beam camber = 1 3/8")



DETAIL A



PLAN

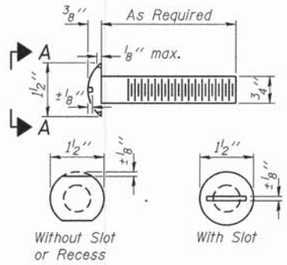
(Abutment)

FILE NAME = 130206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3095 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 = 2/4/2014	CHECKED - S.W.M.	REVISED -	

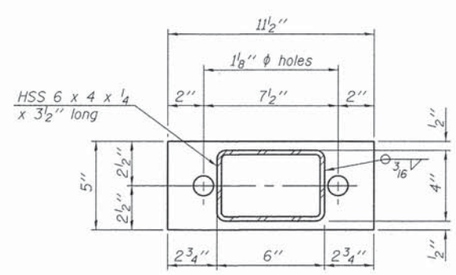
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 017-3062
SHEET NO. 4 OF 9 SHEETS

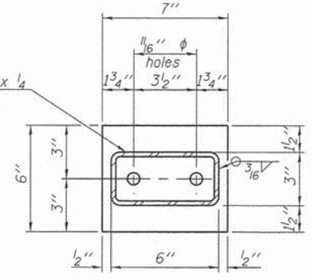
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	10
		CONTRACT NO. 95731		
		ILLINOIS FED. AID PROJECT		



VIEW A-A
ROUND HEAD BOLT

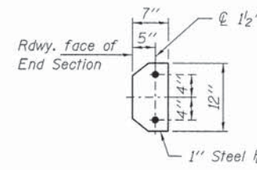


℄ 1/2" x 11 1/2" x 5"

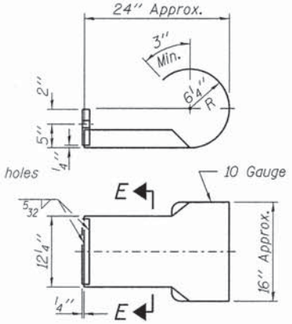


℄ 1/2" x 7" x 6"

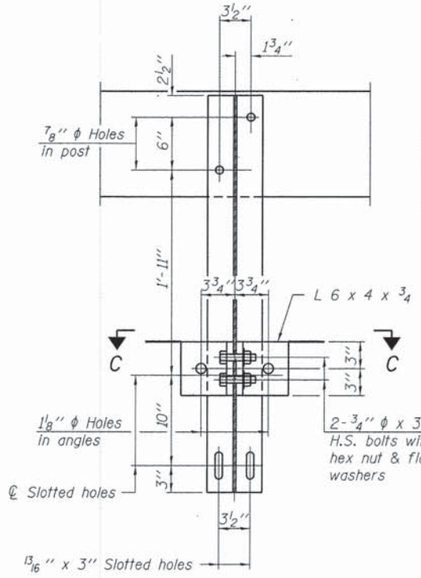
Note: Cost of curled end sections shall be included with the Steel Railing. (2 Required)



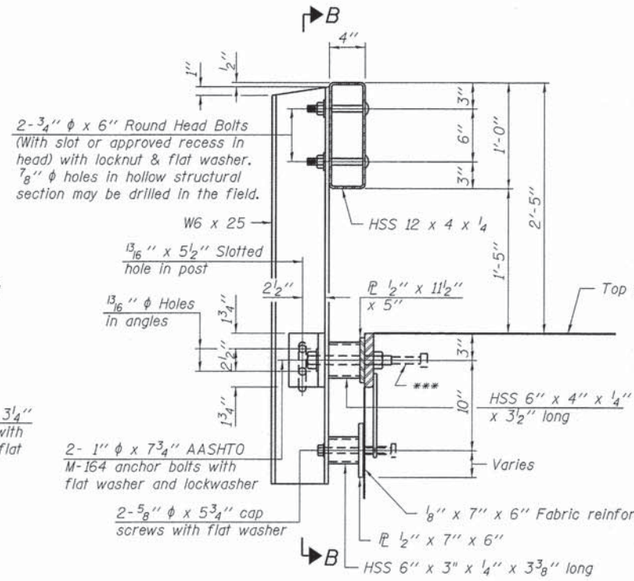
SECTION E-E



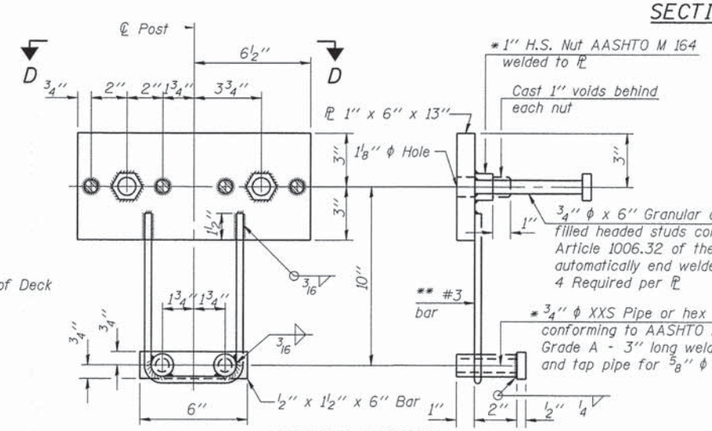
CURLED END SECTION DETAILS



SECTION B-B



SECTION AT RAILING POST



ANCHOR DEVICE

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

Notes:

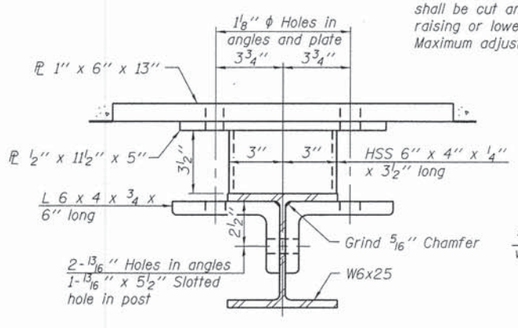
All field drilled holes shall be coated with an approved zinc rich paint before erection.

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.

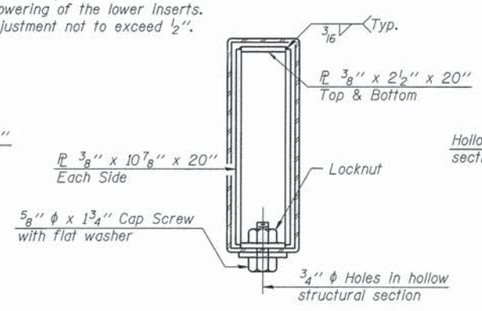
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

*** 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.

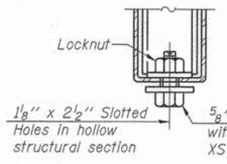
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



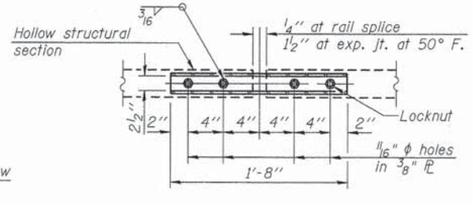
SECTION C-C



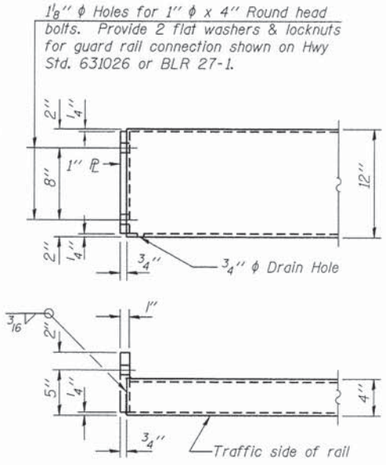
SECTIONS AT RAIL SPLICE



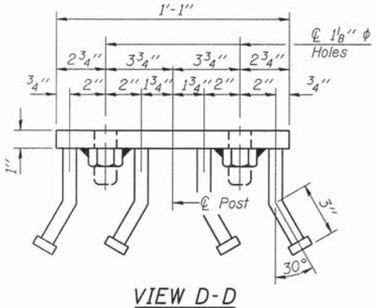
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE ℄
TYPICAL



END OF RAIL DETAILS



VIEW D-D

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	144

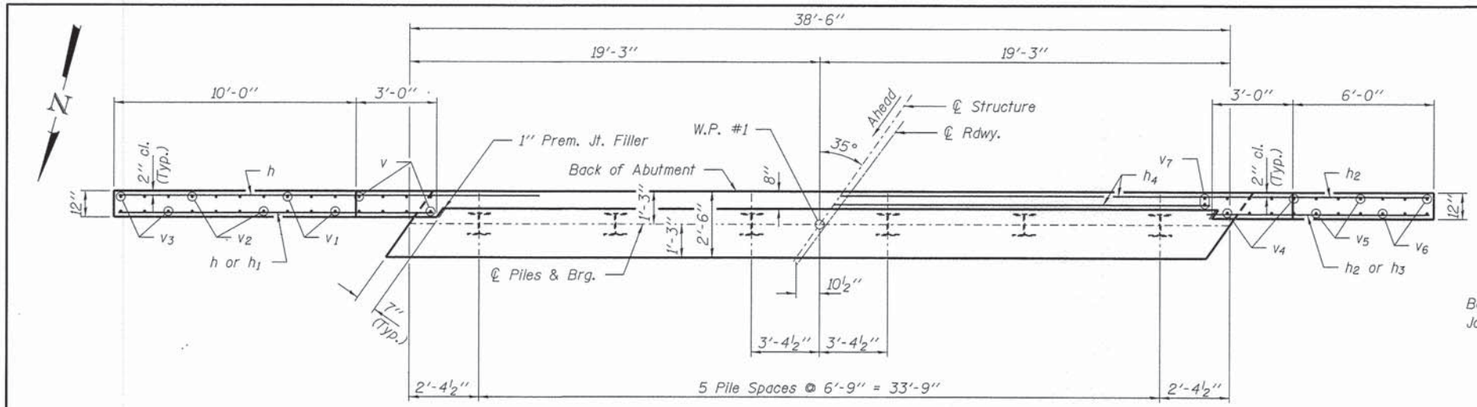
R-23A 7-1-10 (10'-9" Maximum Post Spacing)

FILE NAME = 130206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 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 = 2/4/2014	CHECKED - S.W.M.	REVISED -

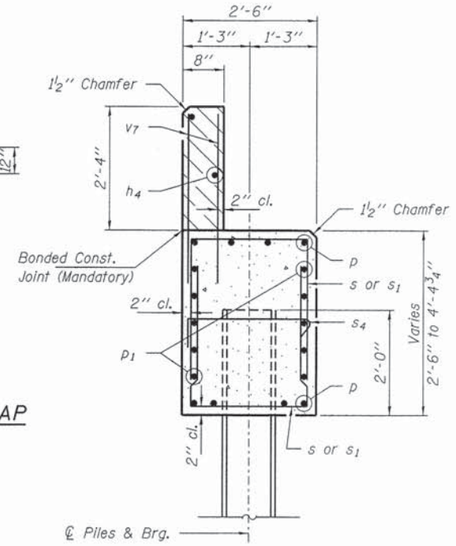
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
STRUCTURE NO. 017-3062
SHEET NO. 5 OF 9 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	11
		CONTRACT NO. 95731		
		ILLINOIS FED. AID PROJECT		



PLAN

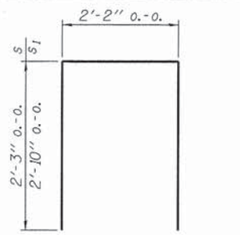


SECTION A-A

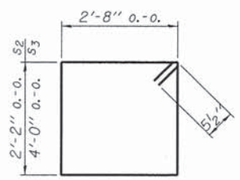
Hatched area to be poured after beams are in place.

MINIMUM BAR LAP

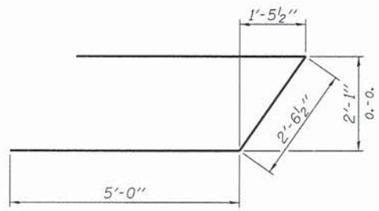
#5 bar = 1'-9"



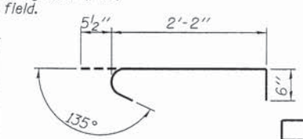
BAR s & s1



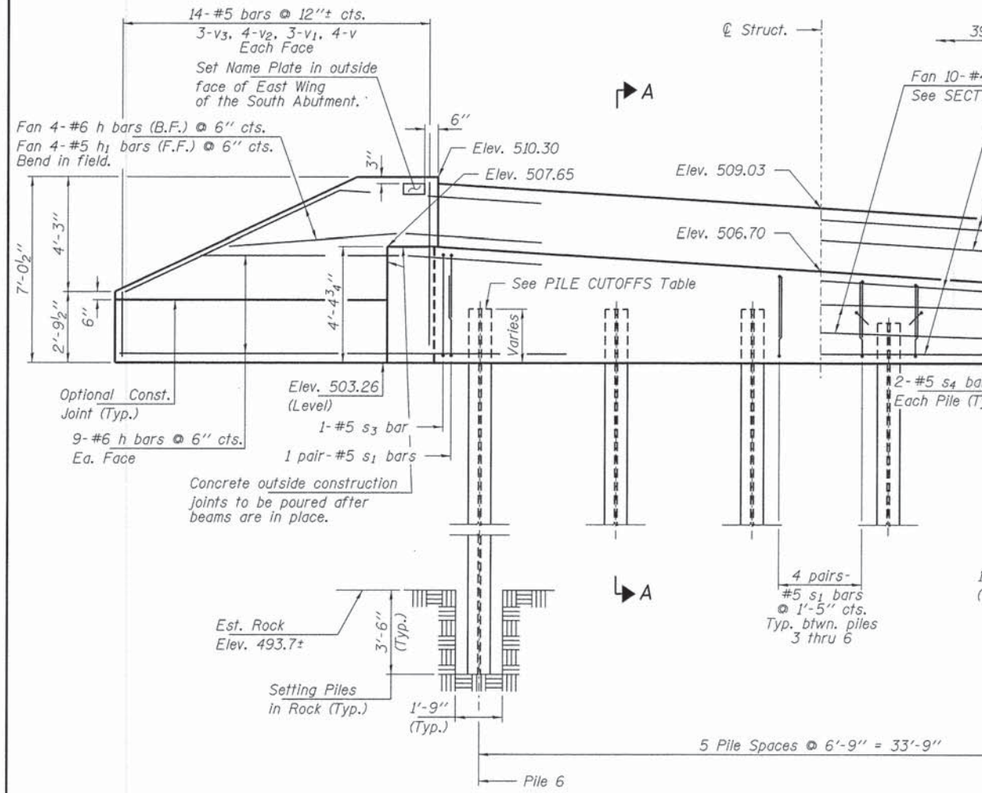
BAR s2 & s3



BAR u



BAR s4



ELEVATION

(Looking South)

PILE CUTOFFS

PILE	EMBEDMENT	ELEVATION
1	1'-6"	504.76
2	1'-6"	504.76
3	1'-6"	504.76
4	2'-0"	505.26
5	2'-0"	505.26
6	2'-0"	505.26

PILE DATA

Type _____ Steel HP10x42
No. Req'd. (S. Abut.) _____ 6
Factored Resistance Available (Rf) __ 184 Kips/Pile
Nominal Required Bearing (Rn) _____ 335 Kips/Pile
Est. Length _____ 15 Ft/Pile

BILL OF MATERIAL - S. ABUT.

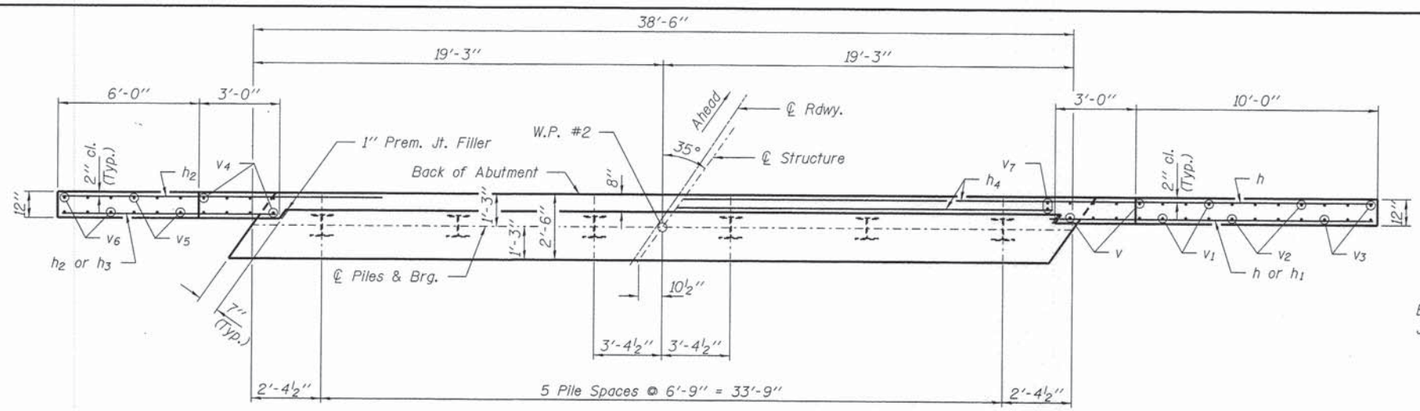
BAR	NO.	SIZE	LENGTH	SHAPE
h	22	#6	17'-6"	
h1	4	#5	12'-9"	
h2	9	#5	10'-6"	
h3	3	#5	9'-0"	
h4	2	#4	38'-2"	
p	8	#7	38'-2"	
p1	10	#4	38'-2"	
s	18	#5	6'-8"	
s1	26	#5	7'-10"	
s2	1	#5	10'-7"	
s3	1	#5	14'-3"	
s4	12	#5	3'-2"	
u	8	#6	12'-7"	
v	8	#5	6'-9"	
v1	6	#5	5'-6"	
v2	8	#5	3'-10"	
v3	6	#5	2'-6"	
v4	8	#5	4'-10"	
v5	6	#5	3'-8"	
v6	6	#5	2'-5"	
v7	78	#4	3'-2"	
Concrete Structures			Cu. Yd.	18.9
Reinforcement Bars			Pound	2,620
Steel Piles HP10x42			Foot	90
Name Plates			Each	1
Setting Piles in Rock			Each	6

FILE NAME = 130206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	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 = 2/4/2014	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

SOUTH ABUTMENT
STRUCTURE NO. 017-3062
SHEET NO. 6 OF 9 SHEETS

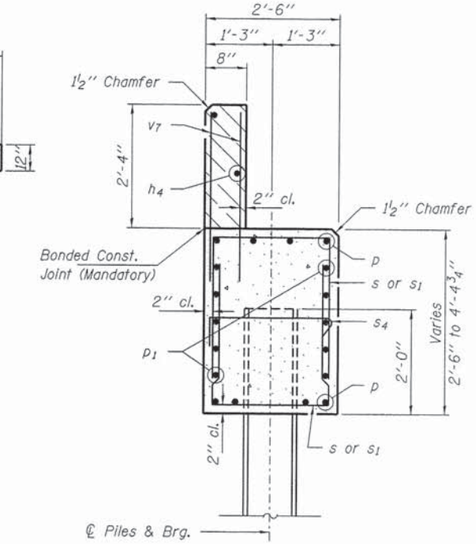
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	12
		CONTRACT NO. 95731		
		ILLINOIS FED. AID PROJECT		



PLAN

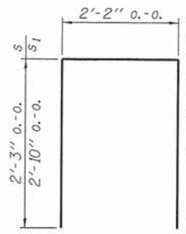
MINIMUM BAR LAP

#5 bar = 1'-9"

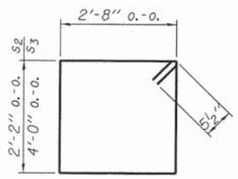


SECTION A-A

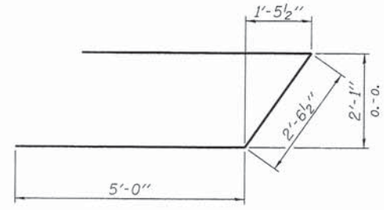
Hatched area to be poured after beams are in place.



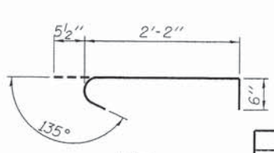
BAR s & s1



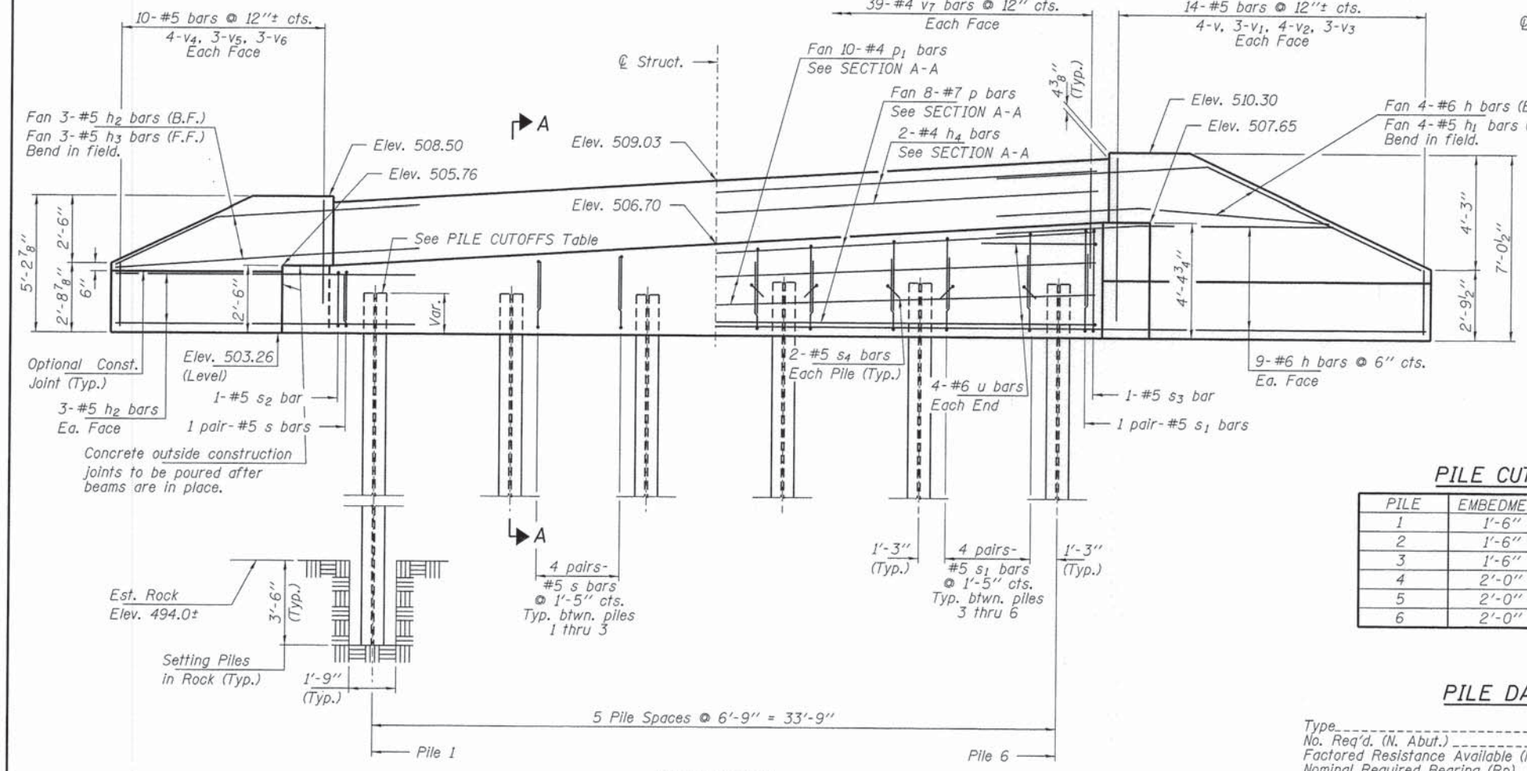
BAR s2 & s3



BAR u



BAR s4



ELEVATION

(Looking North)

PILE CUTOFFS

PILE	EMBEDMENT	ELEVATION
1	1'-6"	504.76
2	1'-6"	504.76
3	1'-6"	504.76
4	2'-0"	505.26
5	2'-0"	505.26
6	2'-0"	505.26

PILE DATA

Type _____ Steel HP10x42
No. Req'd. (N. Abut.) _____ 6
Factored Resistance Available (Rf) __ 184 Kips/Pile
Nominal Required Bearing (Rn) _____ 335 Kips/Pile
Est. Length _____ 15 Ft/Pile

BILL OF MATERIAL - N. ABUT.

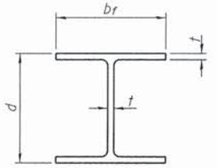
BAR	NO.	SIZE	LENGTH	SHAPE
h	22	#6	17'-6"	
h1	4	#5	12'-9"	
h2	9	#5	10'-6"	
h3	3	#5	9'-0"	
h4	2	#4	38'-2"	
p	8	#7	38'-2"	
p1	10	#4	38'-2"	
s	18	#5	6'-8"	
s1	26	#5	7'-10"	
s2	1	#5	10'-7"	
s3	1	#5	14'-3"	
s4	12	#5	3'-2"	
u	8	#6	12'-7"	
v	8	#5	6'-9"	
v1	6	#5	5'-6"	
v2	8	#5	3'-10"	
v3	6	#5	2'-6"	
v4	8	#5	4'-10"	
v5	6	#5	3'-8"	
v6	6	#5	2'-5"	
v7	78	#4	3'-2"	
Concrete Structures			Cu. Yd.	18.9
Reinforcement Bars			Pound	2,620
Steel Piles HP10x42			Foot	90
Setting Piles in Rock			Each	6

FILE NAME = 130206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	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 = 2/4/2014	CHECKED - S.W.M.	REVISED -	

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

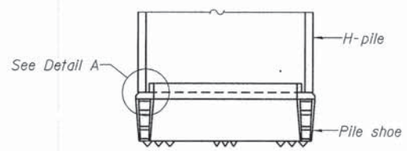
NORTH ABUTMENT
STRUCTURE NO. 017-3062
SHEET NO. 7 OF 9 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	13
		CONTRACT NO. 95731		
ILLINOIS	FED. AID PROJECT			

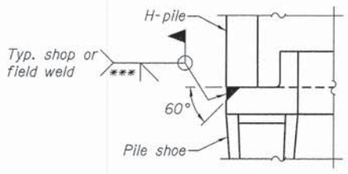


STEEL PILE TABLE

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"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

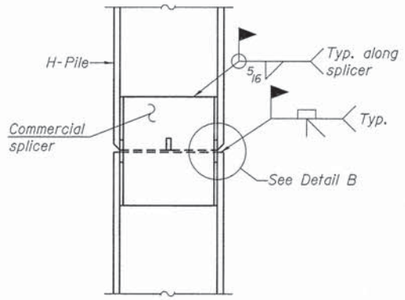


ELEVATION

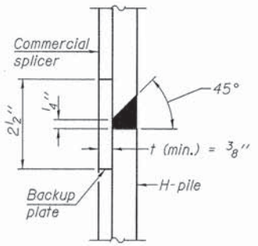


DETAIL A

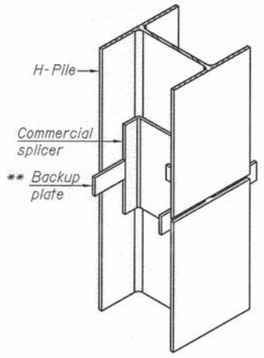
H-PILE SHOE ATTACHMENT



ELEVATION

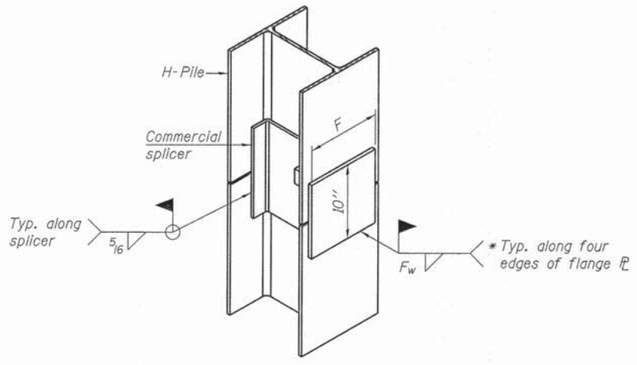


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



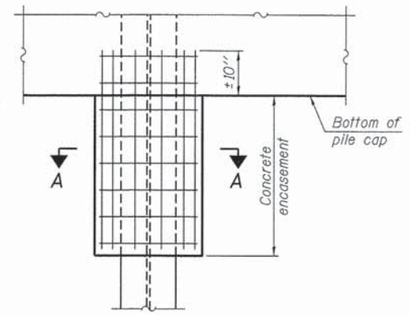
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

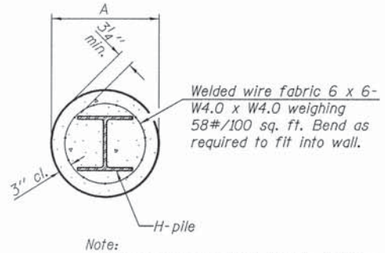
* Interrupt welds 1/4" from end of web and/or each flange.

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

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



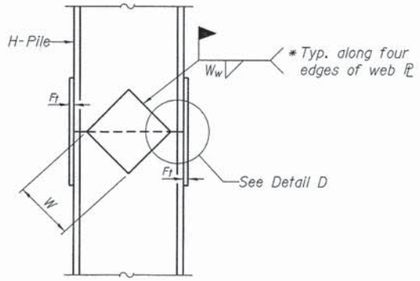
ELEVATION



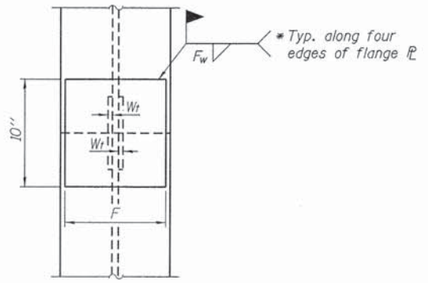
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

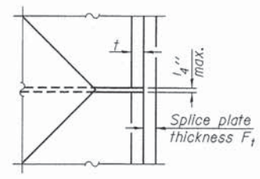
PILE ENCASEMENT
(Not Required)



ELEVATION



END VIEW



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"	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 1-27-12

FILE NAME = 130206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	HP PILE DETAILS STRUCTURE NO. 017-3062 SHEET NO. 8 OF 9 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000859		CHECKED - S.W.M.	REVISED -		
	PLOT SCALE =	DRAWN - D.A.B.	REVISED -		
	PLOT DATE = 2/4/2014	CHECKED - S.W.M.	REVISED -		

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	14
		CONTRACT NO. 95731		
		ILLINOIS FED. AID PROJECT		

NOBLE				BORING No. B-1	water level reading	
ENGINEERING CONSULTANTS		County: Crawford, IL		Sheet No. 1 of 1	1st encounter: 13'	
Client: Connor & Connor		Weather: Overcast		Temperature: 40's	water level reading	
Driller: Noble Engineering Consultants		Date Start: 11-30-09		Surface Elevation: -0.3'	@completion	dry cave 10'
Location: structure # 017-3034		Date Finished: 11-30-09		Driller: Eric Seals	Backfill:	soil cuttings

Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	W (%moisture)	Soil Description	USC Class.	Elev.
1									505.7
2	SS-1	1.0'-2.5'	6	4-3-3	50	19.9	0.0'-3.0' silty, clayey, etc. FILL	FILL	504.7
3									503.7
4	SS-2	3.5'-5.0'	6	2-3-3	100	14.2	3.0'-13.0' SANDY CLAY, sm silt, tr gravel, soft, bwn	CL	502.7
5									501.7
6	SS-3	6.0'-7.5'	4	1-2-2	100	17.8		CL	500.7
7									499.7
8									498.7
9	SS-4	8.5'-10.0'	6	1-4-2	100	21.4		CL	497.9
10									496.7
11									495.7
12									494.7
13									493.7
14	SS-5	13.5'-15.0'	166	34-73-93	100	9.5	13.0'-15.0' HIGHLY WEATHERED ROCK		492.7
15									491.7
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Drilling Method: HSA (2-1/4" id)		comments * Surface elevation based on bridge deck elevation 507.0	
Depth: 0' to 15'			
Drill Rig: Mobile B-47			
Sampling: split-spoon (SS)			
shelby tube (ST)			

BORING 1

NOBLE				BORING No. B-2	water level reading	
ENGINEERING CONSULTANTS		County: Crawford, IL		Sheet No. 1 of 1	1st encounter: Dry	
Client: Connor & Connor		Weather: Overcast		Temperature: 40's	water level reading	
Driller: Noble Engineering Consultants		Date Start: 11-30-09		Surface Elevation: 0.0'	@completion	dry cave 9'
Location: structure # 017-3034		Date Finished: 11-30-09		Driller: Eric Seals	Backfill:	soil cuttings

Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	W (%moisture)	Soil Description	USC Class.	Elev.
1									506.0
2	SS-1	1.0'-2.5'	7	1-3-4	100	15.5	0.0'-4.0' silty, clayey, etc. FILL	FILL	505.0
3									504.0
4	SS-2	3.5'-5.0'	4	1-2-2	100	16.7	4.0'-13.0' SANDY CLAY, sm silt, tr gravel, soft, bwn	CL	503.0
5									502.0
6	SS-3	6.0'-7.5'	3	1-1-2	100	21.7		CL	501.0
7									500.0
8									499.0
9	SS-4	8.5'-10.0'	2	1-1-1	100	19.5		CL	498.0
10									497.0
11									496.0
12									495.0
13									494.0
14	SS-5	13.5'-15.0'	100+	100/2"	100	3.8	13.0'-14.0' HIGHLY WEATHERED ROCK		493.0
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Drilling Method: HSA (2-1/4" id)		comments * Surface elevation based on bridge deck elevation 507.0	
Depth: 0' to 14'			
Drill Rig: Mobile B-47			
Sampling: split-spoon (SS)			
shelby tube (ST)			

BORING 2

FILE NAME = 130206-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	BORINGS STRUCTURE NO. 017-3062 SHEET NO. 9 OF 9 SHEETS
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	CHECKED - S.W.M.	REVISED -		
	PLOT DATE = 2/4/2014	DRAWN - D.A.B.	REVISED -		
		CHECKED - S.W.M.	REVISED -		

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
12	08-00093-00-BR	CRAWFORD	15	15
		CONTRACT NO. 95731		
		ILLINOIS FED. AID PROJECT		