07-29-2016 LETTING ITEM 081

INDEX OF SHEETS

STANDARDS:
280001–07 – EROSION CONTROL
515001–03 – NAME PLATE
630301–06 – SHOULDER WIDENING FOR TY 1 (SPL) TERMINALS
701901–05 – TRAFFIC
725001 – OBJECT AND TERMINAL MARKER
BLR 21–9 – TRAFFIC
BLR 27–1 – TRAFFIC BARRIER TERMINAL, TYPE 5A

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM	CODE NO.
1	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	X7010216
200	SQ FT	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	X7011754
46	CU YD	EARTH EXCAVATION	20200100
33	CU YD	FURNISHED EXCAVATION	20400800
50	TON	POROUS GRANULAR EMBANKMENT	20700110
240	TON	STONE DUMPED RIPRAP, CLASS A4	28100807
100	TON	AGGREGATE BASE COURSE, TYPE B	35101400
486	POUND	BITUMINOUS MATERIALS (PRIME COAT)	40600275
36	TON	HOT–MIX ASPHALT SURFACE COURSE, MIX "C", N70	40603315
1	EACH	REMOVAL OF EXISTING SUPERSTRUCTURES	50101500
1.6	CU YD	CONCRETE REMOVAL	50102400
3.5	CU YD	CONCRETE STRUCTURES	50300225
3.8	CU YD	CONCRETE SUPERSTRUCTURE	50300255
1,560	SQ FT	PRECAST PRESTRESSED CONCRETE DECK BEAMS (11" DEPTH)	50400205
900	POUND	REINFORCEMENT BARS, EPOXY COATED	50800205
125	FOOT	STEEL RAILING, TYPE T1	50900305 △
1	EACH	NAME PLATES	51500100
4	EACH	TRAFFIC BARRIER TERMINAL, TYPE 5A	63100075 △
4	EACH	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	63100167 △
100	FOOT	GUARDRAIL REMOVAL	63200310 △
1	L SUM	MOBILIZATION	67100100
4	EACH	TERMINAL MARKER – DIRECT APPLIED	72501000 △

△ SPECIALTY ITEMS

FUNCTIONAL CLASS: MINOR COLLECTOR
ADT = 1000
DESIGN SPEED = 35 MPH

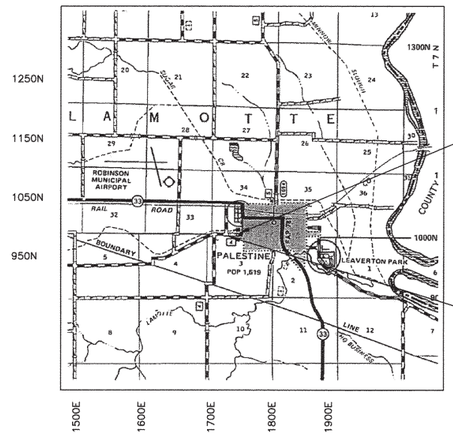
TOLL FREE JOINT UTILITY LOCATING
INFORMATION FOR EXCAVATORS (J.U.L.I.E.)
TELEPHONE NO. 1–800–892–0123 OR 811

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM–BRIDGE
COUNTY HIGHWAY 4
CRAWFORD COUNTY
SECTION 15–00100–00–BR
STRUCTURE NO. 017–3047
PROJECT NO. BHOS–0033(056)
JOB NO. C–97–037–16

SCALES

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

R11W, 2ND P.M.



SECTION 15–00100–00–BR
ENDS STA. 7+31

STA. 6+56 – SPECIAL BRIDGE DESIGN
PROPOSED PRECAST PRESTRESSED
CONCRETE DECK BEAMS (11" DEPTH)
2 SPAN @ 30', 26' (O.–O.) 24' RDWY., SKEW = 30° R.F.
PROP. STR. NO. 017–3047
EXIST. STR. NO. 017–3047

SECTION 15–00100–00–BR
BEGINS STA. 5+81

LOCATION MAP

APPROXIMATE SCALE: 1 INCH = 1 MILE
NET LENGTH = 150.00 L.F. = 0.028 MILES

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

05/18/2016
ILLINOIS REGISTERED PROFESSIONAL ENGINEER #55012
LICENSE EXPIRES NOVEMBER 30, 2017
PROFESSIONAL DESIGN FIRM #184–000832

ILLINOIS DEPARTMENT OF TRANSPORTATION

APPROVED 5/18/2016
Austin R. Clubb
COUNTY ENGINEER

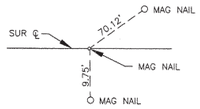
PASSED 5/27/2016
Maureen E. Kastl
DISTRICT SEVEN ENGINEER
OF LOCAL ROADS & STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW
5/27/2016
Jeffrey M. Douth
REGION FOUR ENGINEER

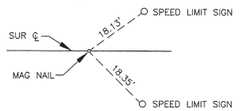
SECTION	15-00100-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	14	2
ROUTE	C.H. 4		
STA. 2+00	TO STA. 9+00		

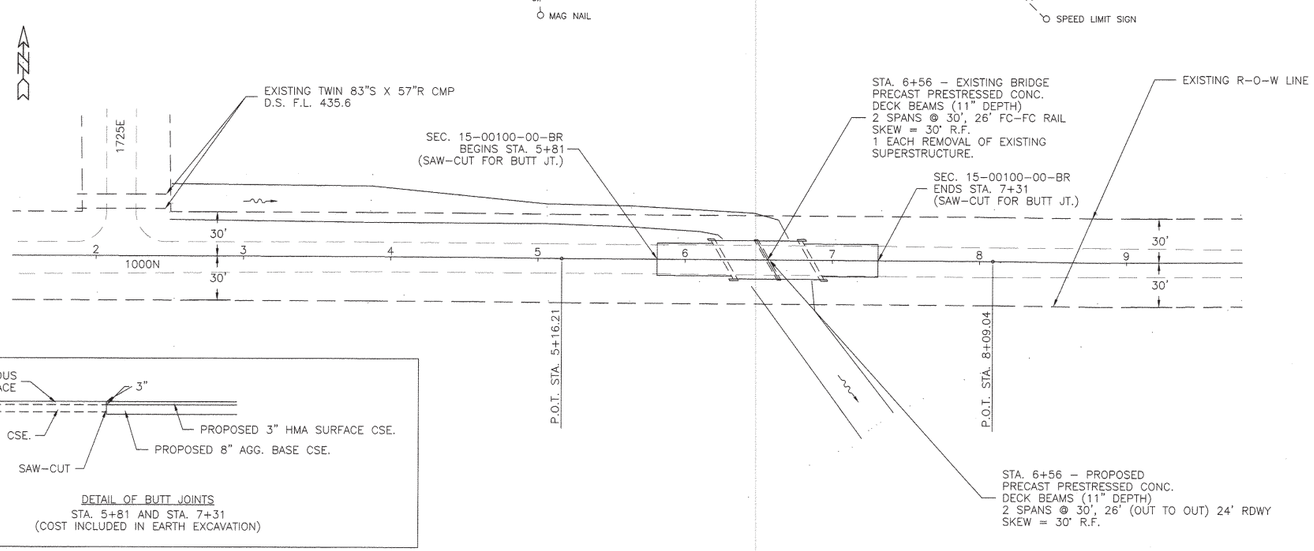
CONTRACT NO. 95796

P.O.T. STA. 5+16.21



P.O.T. STA. 8+09.04



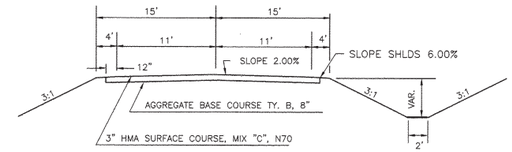


DETAIL OF BUTT JOINTS
STA. 5+81 AND STA. 7+31
(COST INCLUDED IN EARTH EXCAVATION)

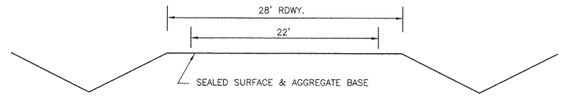
SCALES:
1" = 50' HOR
1" = 10' VER

B.M. ELEV. 443.19
BOT. BOLT CONC. POST
24' RT. STA. 2+00

B.M. ELEV. 443.32
TOP OF EXIST PIER CAP
N. END OF CAP



TYPICAL CROSS SECTION OF PROPOSED IMPROVEMENT



TYPICAL CROSS SECTION OF EXISTING ROADWAY

GUARD RAIL REMOVAL
EXISTING TERMINAL SECTIONS
4 CORNERS OF BRIDGE @ 25FT. EACH = 100 FOOT

HOT-MIX ASPHALT SURFACE COURSE, MIC "C", N70
WEST END BRIDGE = 18 TON
EAST END BRIDGE = 18 TON
TOTAL = 36 TON

AGGREGATE BASE COURSE, TYPE B 8"
WEST END BRIDGE = 50 TON
EAST END BRIDGE = 50 TON
TOTAL = 100 TON

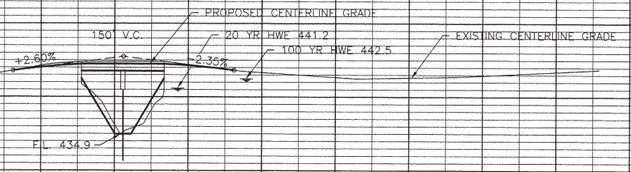
TRAFFIC BARRIER TERMINALS, TYPE 5A
EACH CORNER OF BRIDGE = 4 EACH
TRAFFIC BARRIER TERMINALS, TYPE 1 (SPECIAL) TANGENT
EACH CORNER OF BRIDGE = 4 EACH
TERMINAL MARKER - DIRECT APPLIED
EACH CORNER OF BRIDGE = 4 EACH

SEEDING: BY OTHERS

STONE DUMPED RIPRAP CL. A4
SOUTH CHANNEL SLOPE
LT. STA. 5+50 TO STA. 6+20 = 60 TON

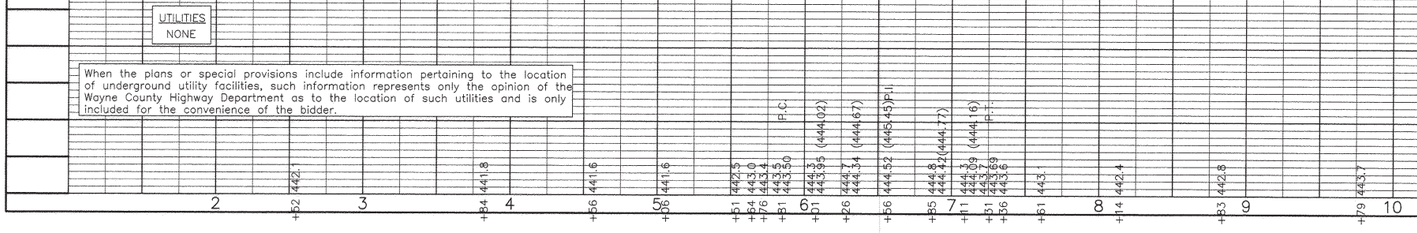
EARTHWORK QUANTITIES
EARTH EXCAVATION = 46 CU YD
EARTH EXC. (ADJ. 25%) = 34 CU YD
EMBANKMENT (SHLD WIDENING) = 67 CU YD
FURNISHED EXCAVATION = 33 CU YD

BITUMINOUS MATERIALS (PRIME COAT)
WEST END BRIDGE = 243 POUND
EAST END BRIDGE = 243 POUND
TOTAL = 486 POUND

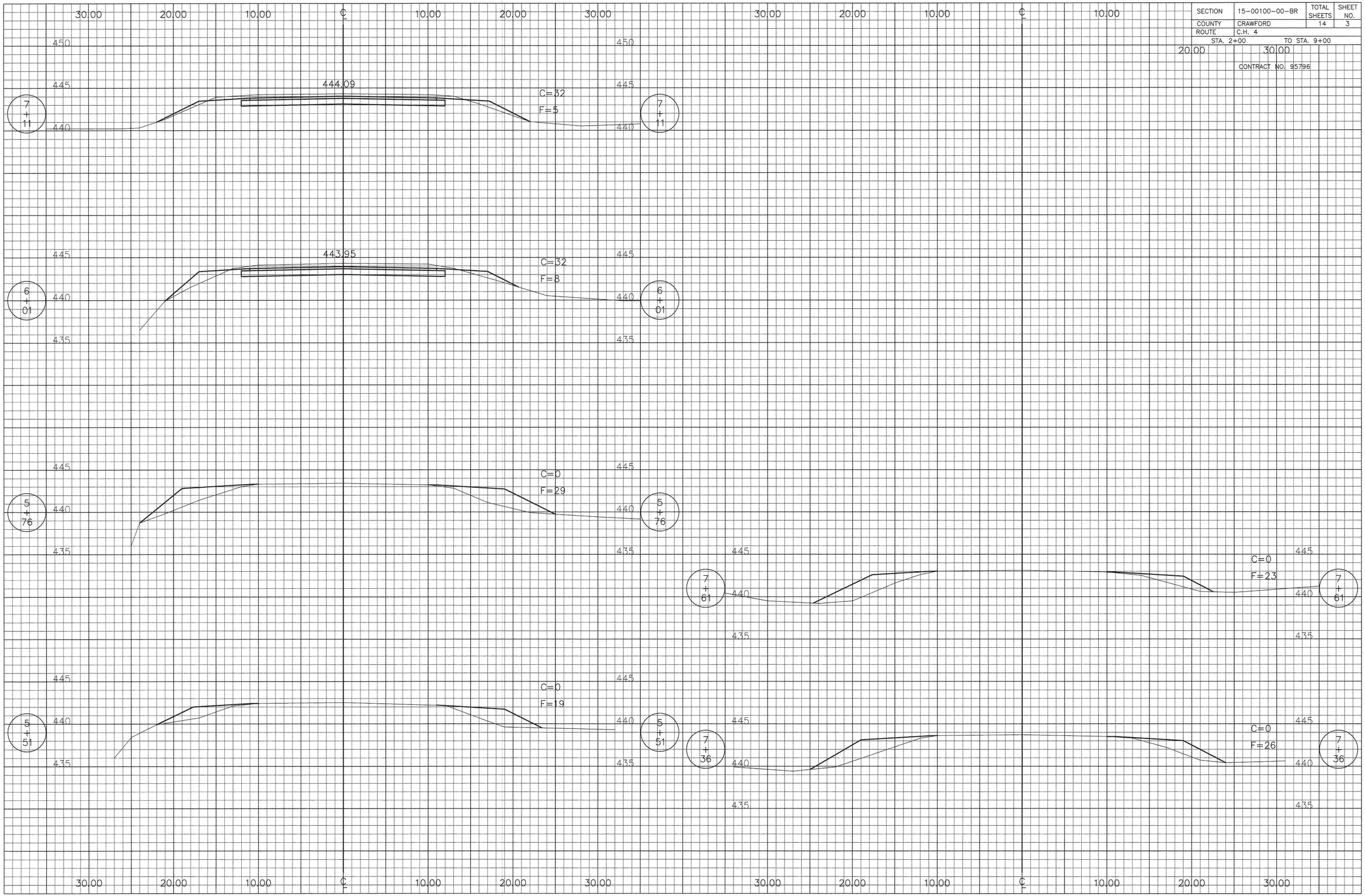


UTILITIES
NONE

When the plans or special provisions include information pertaining to the location of underground utility facilities, such information represents only the opinion of the Wayne County Highway Department as to the location of such utilities and is only included for the convenience of the bidder.



SECTION	15-00100-00-BR	TOTAL SHEETS	SHEET NO.
COUNTY	CRAWFORD	14	3
ROUTE	C.H. 4		
STA. 2+00	TO STA. 9+00		
20.00	30.00		
CONTRACT NO. 95796			

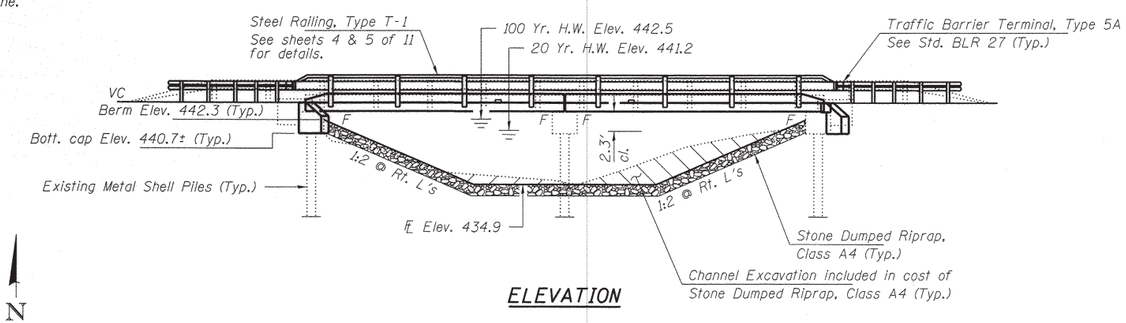


EXISTING STRUCTURE: Sta. 6+56, Str. No. 017-3047. 2-span Precast prestressed concrete deck beam bridge on spill thru pile bent abutments and pier. 56.6' fc.-fc. abuts; 26' o.-o. deck.

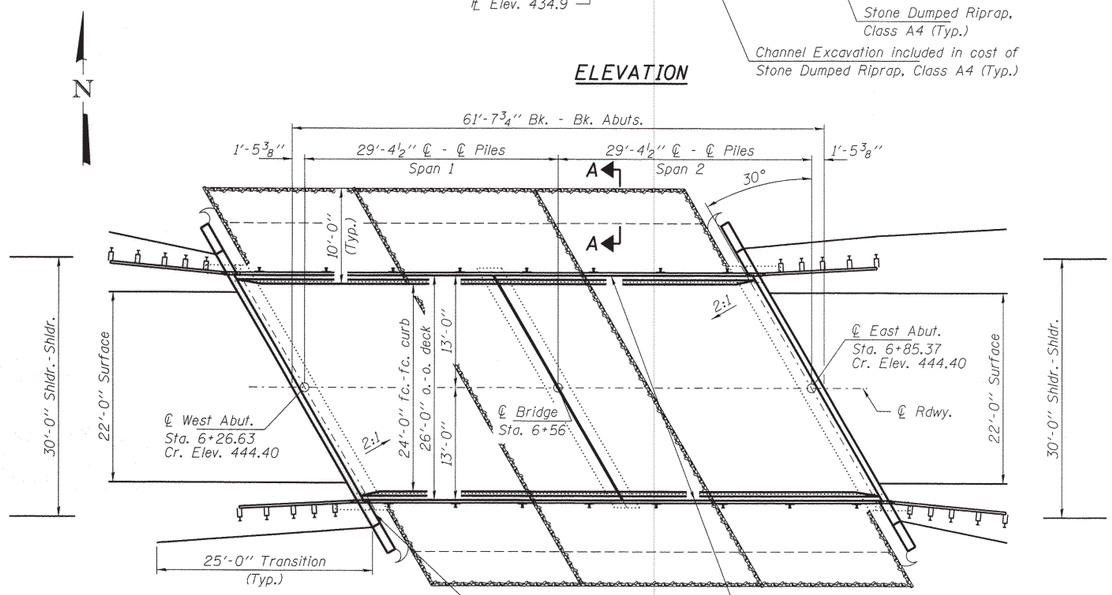
The existing superstructue is to be removed and replaced. The existing abutments and pier are to remain.

Structure closed to traffic during construction.

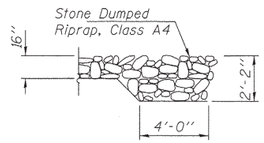
Salvage: None.



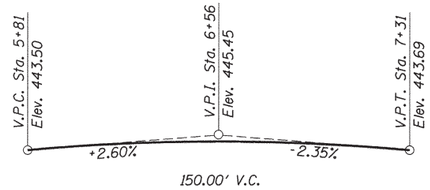
ELEVATION



PLAN



SECTION A-A



PROFILE GRADE

C.H. 4

GENERAL NOTES

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

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.

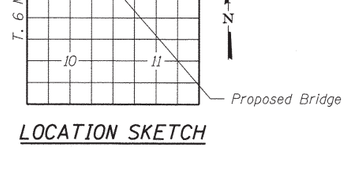
All bars to be epoxy coated.

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.

Existing dowel rods shall be burned off flush with the existing substructure. Grind existing dowel rods smooth and seal with epoxy. Cost included in removal of existing superstructure.

Removal of any existing pavement located above the existing abutments shall be included in the cost of removal of existing superstructure.

INDEX OF STRUCTURE SHEETS



LOCATION SKETCH

RE-BUILT 201_ BY
CRAWFORD COUNTY
C.H. 4
SEC. 15-00100-00-BR
STR. NO. 017-3047
LOADING HL-93

NAME PLATE

See Std. 515001

DESIGN SPECIFICATIONS

NEW CONSTRUCTION

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with all interims.

LOADING HL-93-SUPERSTRUCTURE

Allow 25#/sq. ft. for future wearing surface.

DESIGN STRESSES

FIELD UNITS-NEW CONSTRUCTION

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

EXISTING CONSTRUCTION

f'c = 3,500 psi
fy = 40,000 psi

PRECAST PRESTRESSED UNITS

f'c = 8,500 psi
f'ci = 7,000 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) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.293g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.683g
Soil Site Class = E

DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.) W. Abut.	Pier	E. Abut.	Item 113
0.100	440.8	430.3	440.8	8
0.200	440.8	430.4	440.8	
Design	440.8	430.3	440.8	
Check	440.8	430.4	440.8	

WATERWAY INFORMATION

Drainage Area = 3.6 Sq. Mi.
Existing Low Grade Elev. 441.6 @ Sta. 5+06
Proposed Low Grade Elev. 441.6 @ Sta. 5+06

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	900	180	180	441.2				
Base	100	1370	250	250	442.5	0.4	0.4	442.9	442.9

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO LRFD Specifications."

Steven W. Megginson 05/25/2016
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064

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

Expires 11-30-2016

TOTAL BILL OF MATERIAL

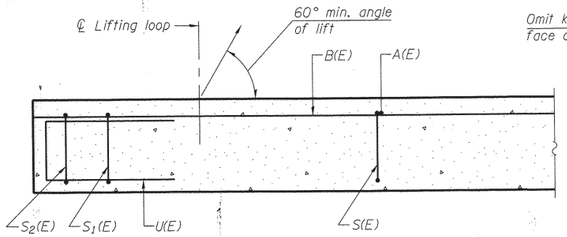
ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment	Ton			50
Stone Dumped Riprap, Class A4	Ton			180
Removal of Existing Superstructures	Each			1
Concrete Removal	Cu. Yd.		1.6	1.6
Concrete Structures	Cu. Yd.		3.5	3.5
Concrete Superstructures	Cu. Yd.	3.8		3.8
Precast Prestressed Concrete Deck Beams (11'' Depth)	Sq. Ft.	1,560		1,560
Reinforcement Bars, Epoxy Coated	Pound	190	710	900
Steel Railing, Type T1	Foot	125		125
Name Plates	Each		1	1
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.		200	200

FILE NAME = 150168-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. 184.006959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -

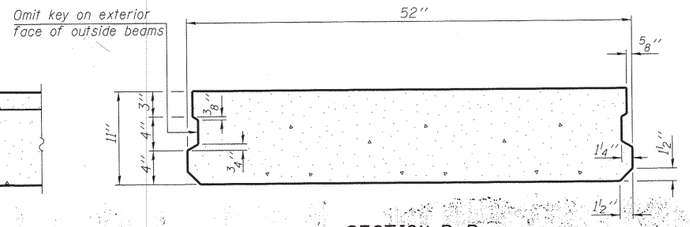
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

GENERAL PLAN & ELEVATION
STRUCTURE NO. 017-3047
SHEET NO. 1 OF 11 SHEETS

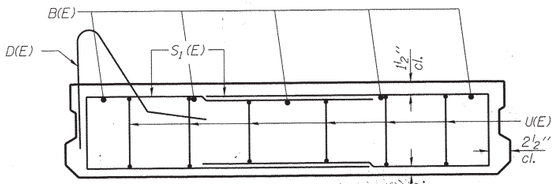
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	4
		CONTRACT NO. 95796		
		ILLINOIS FED. AID PROJECT		



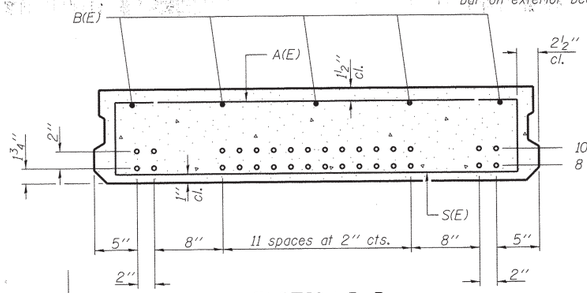
SECTION A-A



SECTION B-B
(Showing dimensions)

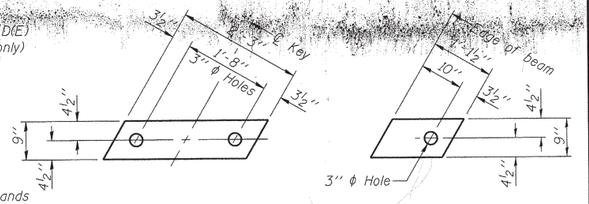


VIEW C-C
(Omit keyway and place D(E) bar on exterior beam only)



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.

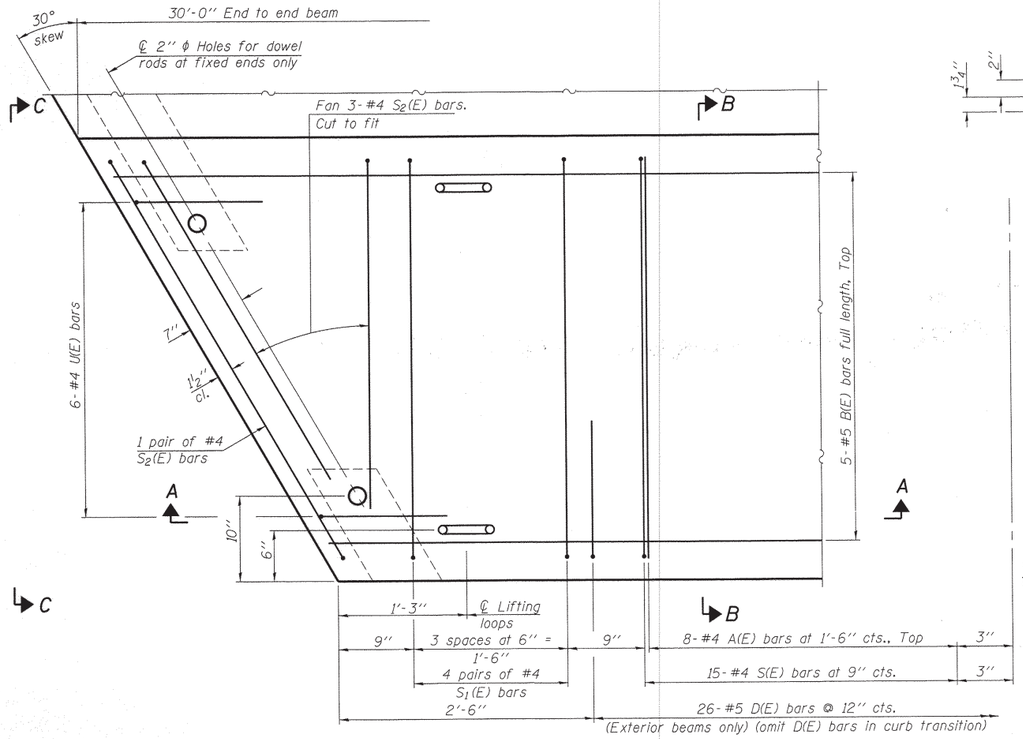


FABRIC BEARING PAD
(Interior - 20 Req'd.)

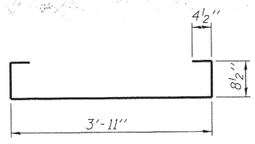
FABRIC BEARING PAD
(Exterior - 8 Req'd.)

FIXED

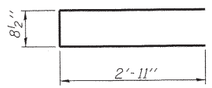
Notes:
All bearing pads shall be 1'' thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



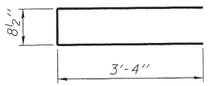
PLAN VIEW



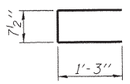
BAR S(E)



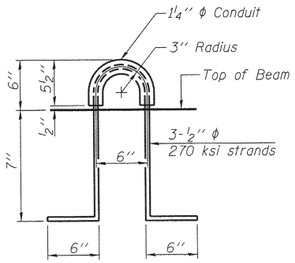
BAR S1(E)



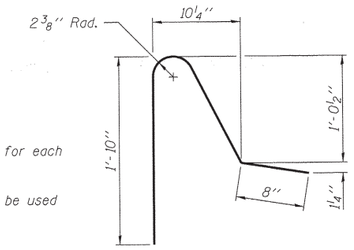
BAR S2(E)



BAR U(E)



LIFTING LOOP DETAIL



BAR D(E)

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	16	#4	3'-11''	—
B(E)	5	#5	29'-9''	—
*D(E)	26	#5	3'-11''	⌐
S(E)	30	#4	6'-1''	⊔
S1(E)	16	#4	6'-7''	⊏
S2(E)	10	#4	7'-5''	⊏
U(E)	12	#4	3'-2''	⊏

*Exterior Beams Only

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (11'' depth)	Sq. Ft.	1,560

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.

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)(10) 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 8500 psi.

Compressive strength of prestressed concrete at release, f'ci, shall be 7000 psi.

Reinforcement bars designated (E) shall be epoxy coated.

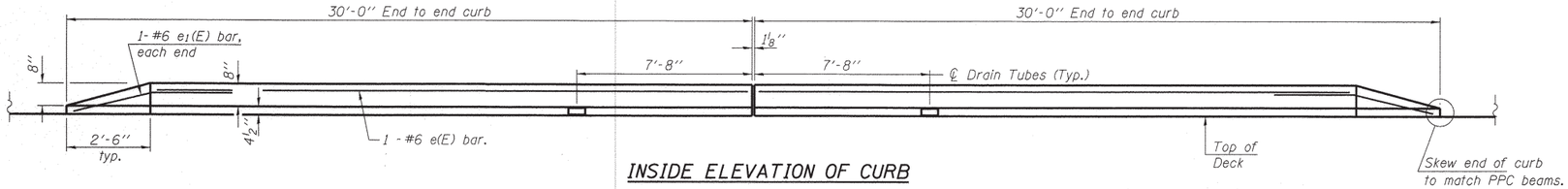
1-28-16

FILE NAME = 150168-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 - R.D.H.	REVISED -
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

11'' x 52'' PPC DECK BEAM
STRUCTURE NO. 017-3047
SHEET NO. 2 OF 11 SHEETS

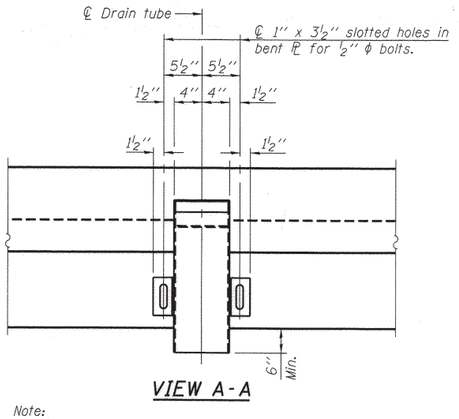
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	5
		CONTRACT NO. 95796		
		ILLINOIS FED. AID PROJECT		



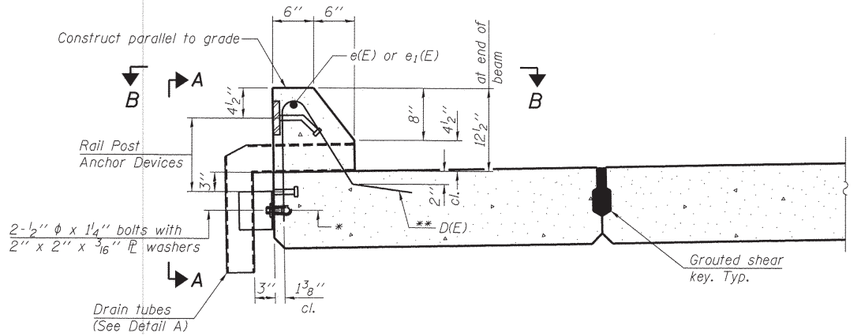
INSIDE ELEVATION OF CURB

MINIMUM BAR LAP

#6 bar 3'-7"



VIEW A-A



SECTION THRU CURB

Curbs shall be poured in the field.

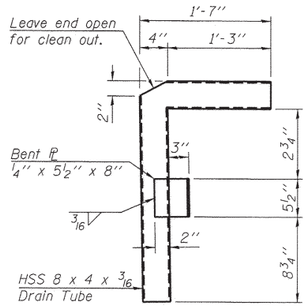
Note:

All drain tubes and accessories shall be galvanized according to AASHTO M111 or M232, (as applicable).

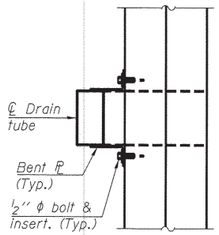
The cost of the drain tube assemblies and everything necessary for their installation is included with Concrete Superstructure.

* ℄ Loop Ferrule inserts for ½" ϕ bolts. Place at ℄ of beam depth.

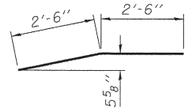
** Place #5 D(E) bars at 12" cts. in fascia beam for railing curb. Omit D(E) bars in curb transition. D(E) bar included in cost of beam.



DETAIL A



VIEW B-B



BAR e1(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
e(E)	4	#6	27'-2"	
e1(E)	4	#6	5'-0"	
Reinforcement Bars, Epoxy Coated			Pound	190
Concrete Superstructure			Cu. Yd.	3.8

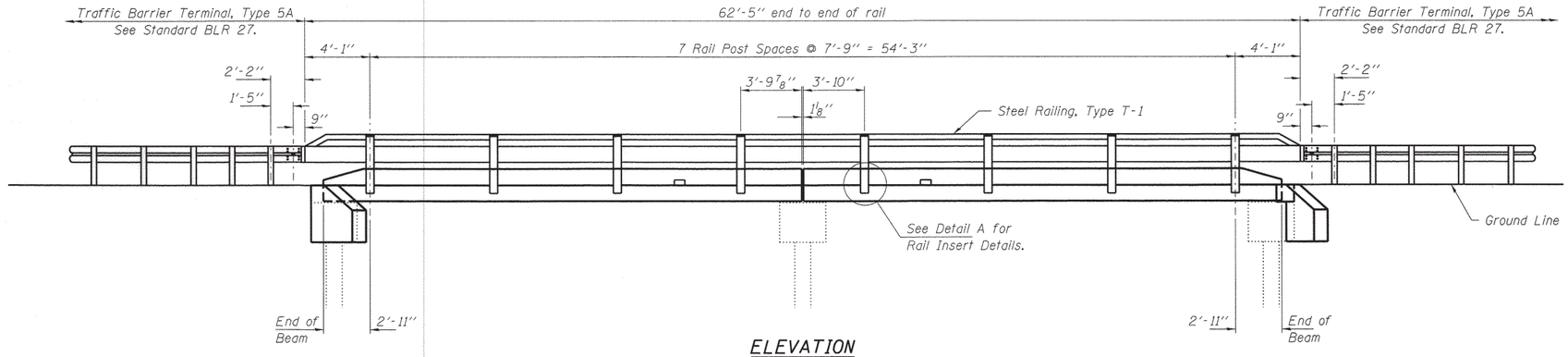
PDS-HMA-11-M-T1-D 6-8-15

FILE NAME = 15016B-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 LB / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

CURB DETAILS
STRUCTURE NO. 017-3047
SHEET NO. 3 OF 11 SHEETS

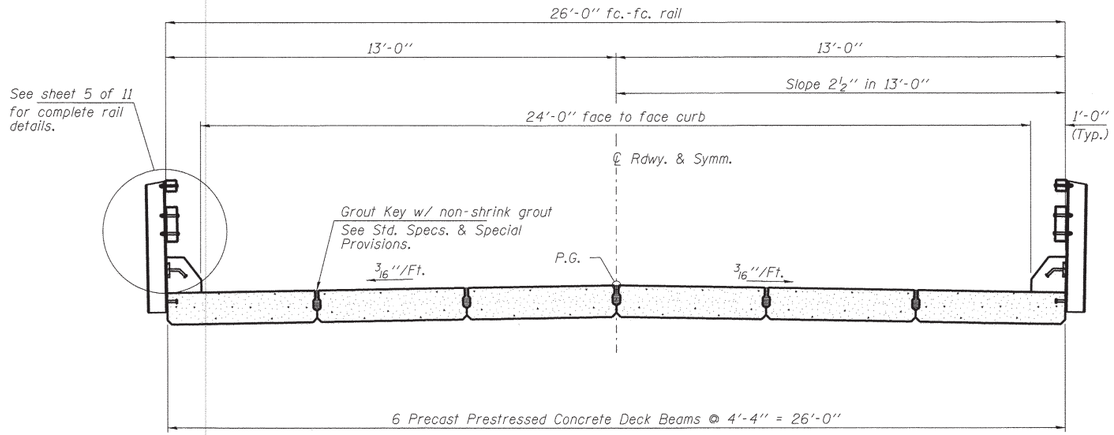
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	6
		CONTRACT NO. 95796		
	ILLINOIS FED. AID PROJECT			



ELEVATION

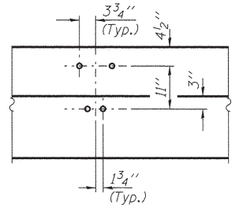
Showing Rail Post Spaces

See sheet 5 of 11 for Railing Details.

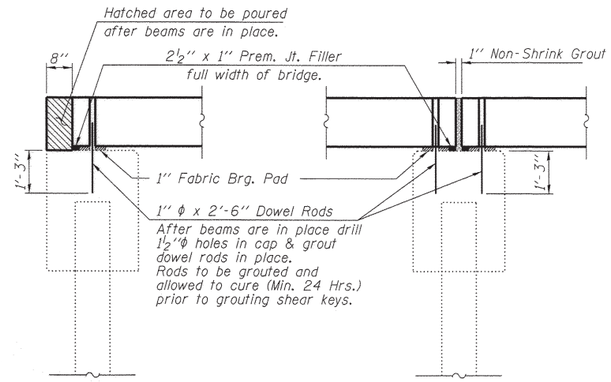


CROSS SECTION

See sheets 2 & 3 of 11 for Superstructure.



DETAIL A

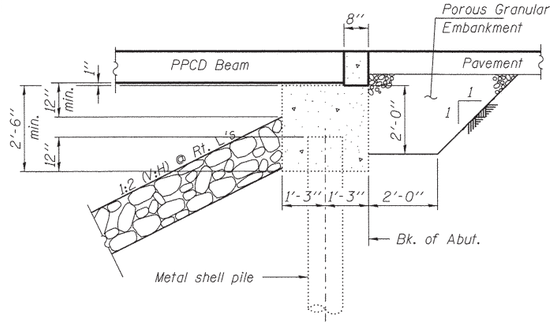


SECTION AT ABUTMENTS

℄ Rt. L's

SECTION AT PIERS

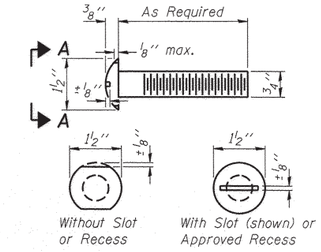
℄ Rt. L's



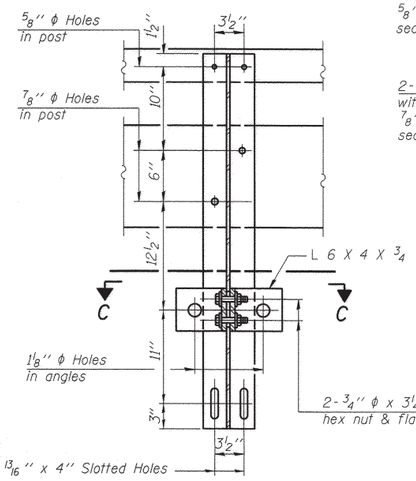
SECTION THRU ABUTMENT

(Horiz. dim. ℄ Rt. L's)

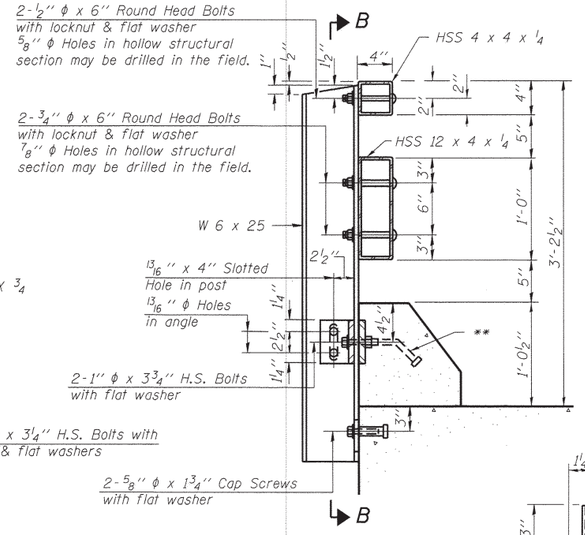
FILE NAME = 150168-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE STRUCTURE NO. 017-3047 SHEET NO. 4 OF 11 SHEETS	C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -			4	15-00100-00-BR	CRAWFORD	14	7
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE =	DRAWN - R.D.H.	REVISED -					CONTRACT NO. 95796		
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -					ILLINOIS FED. AID PROJECT		



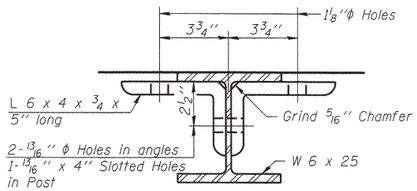
VIEW A-A ROUND HEAD BOLT



SECTION B-B



SECTION AT RAIL POST



1/4" SHIM PLATE

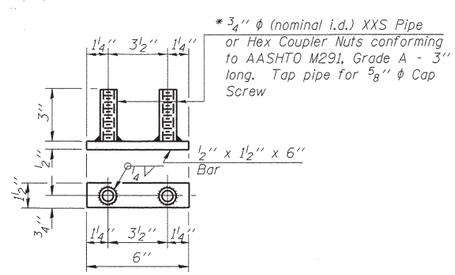
SECTION C-C

SPLICE DIMENSIONS

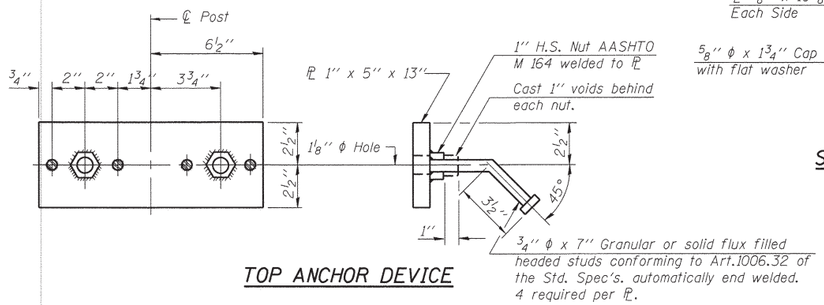
T	D	A	B	C	E
≤ 4"	2 1/2"	1'-8"	2"	4"	2 1/2"
> 4" ≤ 6 1/2"	3 3/4"	2'-0"	2 1/2"	5 1/2"	3 1/2"
> 6 1/2" ≤ 9"	5"	2'-4"	3 1/2"	6 1/2"	9"
> 9" ≤ 13"	7"	2'-10"	4 1/2"	8 1/2"	11"
Rail Splice	1/4"	1'-8"	2"	4"	——

T = Total movement at expansion joint as shown on the design plans.

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



BOTTOM ANCHOR DEVICE



TOP ANCHOR DEVICE

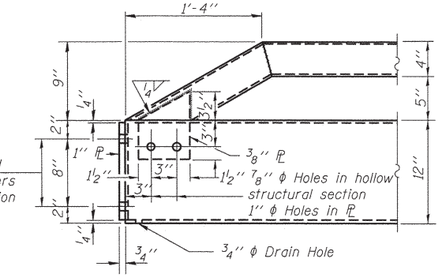
Notes:

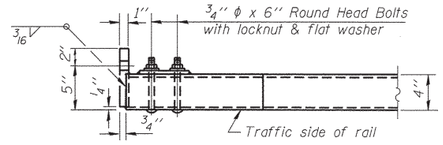
For multi-span bridges, sufficient 1/4" x 6" x 1'-5" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type T-1.

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

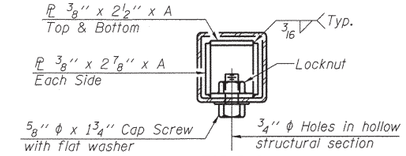
** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

1 1/8" ϕ Holes for 1" ϕ x 4" Round Head Bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Hwy. Std. 631026 or BLR 27-1.

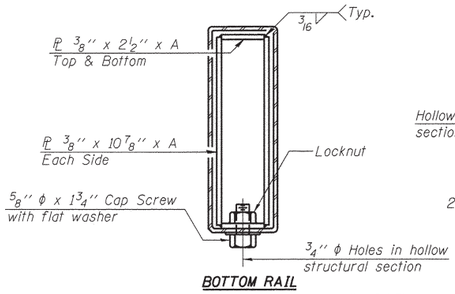




END OF RAIL DETAILS

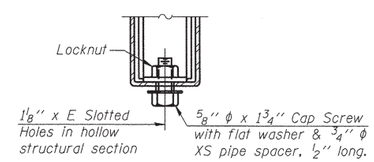


TOP RAIL

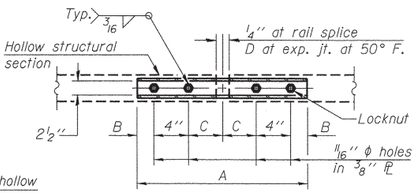


BOTTOM RAIL

SECTIONS AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE PL TYPICAL

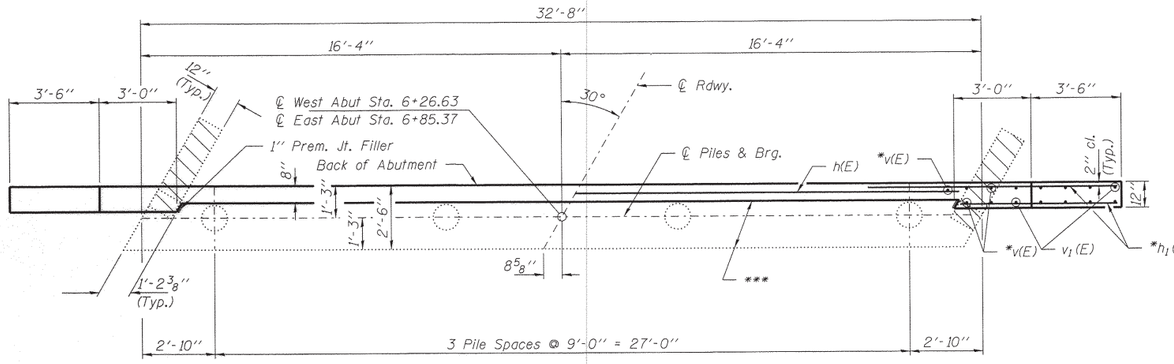
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type T-1	Foot	125

R-24A 1-12-15 (9'-6" Maximum Post Spacing)

FILE NAME = 150168-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	STATE OF ILLINOIS CRAWFORD COUNTY HIGHWAY DEPARTMENT	STEEL RAILING, TYPE T-1 STRUCTURE NO. 017-3047
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		SHEET NO. 5 OF 11 SHEETS
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000989	PLOT SCALE =	DRAWN - R.D.H.	REVISED -		
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -		

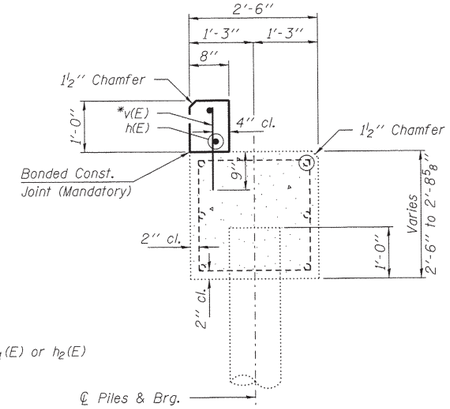
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	8
		CONTRACT NO. 95796		
		ILLINOIS FED. AID PROJECT		



PLAN

Concrete Removal area

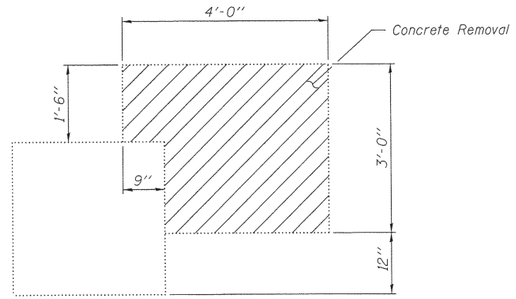
***Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) shall be completed across the full length and width of the bearing seats of each pile cap. The Engineer shall inspect the top of caps after PPC beams are removed to determine the delaminated areas.



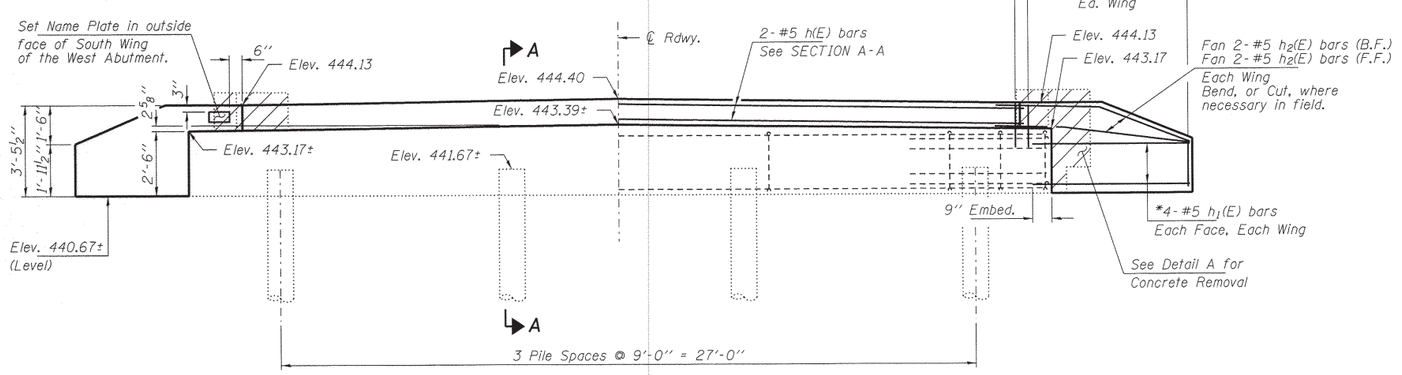
SECTION A-A

Backwalls and Wingwalls to be poured after beams are in place.

*v(E) & h_1(E) bars shall be drilled and set according to Article 509.06 of the Standard Specifications. Bars shall have a 9" minimum embedment depth, be set in 1"ϕ holes and filled with approved epoxy grout.



EXISTING WINGWALL DETAIL A



ELEVATION

Notes:

The contractor shall repair, at his own expense, any damage to the substructure caused by removal operations.

Cost of drilling and grouting reinforcing bars included in cost for Concrete Structures.

Existing wingwall reinforcement which extends into the abutment cap shall be burned off flush with surface, ground smooth, and sealed with epoxy. Cost included with Concrete Removal.

Backwall and wingwalls shall be poured after the beams are in place.

See sheet 10 of 11 for existing reinforcement.

BILL OF MATERIAL - 2 ABUTS.

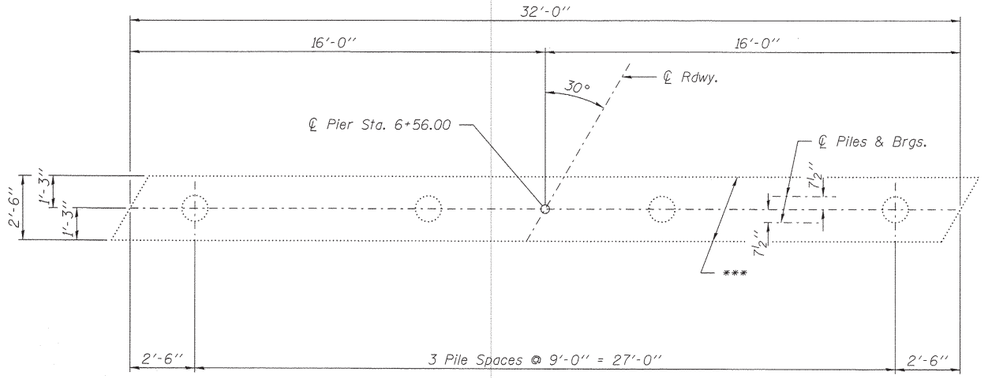
BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	4	#5	32'-4"	——
h_1(E)	32	#5	7'-1"	——
h_2(E)	16	#5	6'-3"	——
v(E)	148	#4	1'-7"	——
v_1(E)	40	#4	3'-1"	——
Concrete Structures			Cu. Yd.	3.5
Reinforcement Bars, Epoxy Coated			Pound	710
Concrete Removal			Cu. Yd.	1.6
Name Plates			Each	1
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)			Sq. Ft.	120

FILE NAME = 150168-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. 184.000969	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -

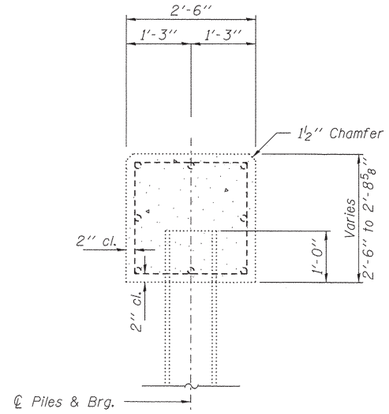
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

ABUTMENTS
STRUCTURE NO. 017-3047
SHEET NO. 6 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	9
		CONTRACT NO. 95796		
	ILLINOIS FED. AID PROJECT			

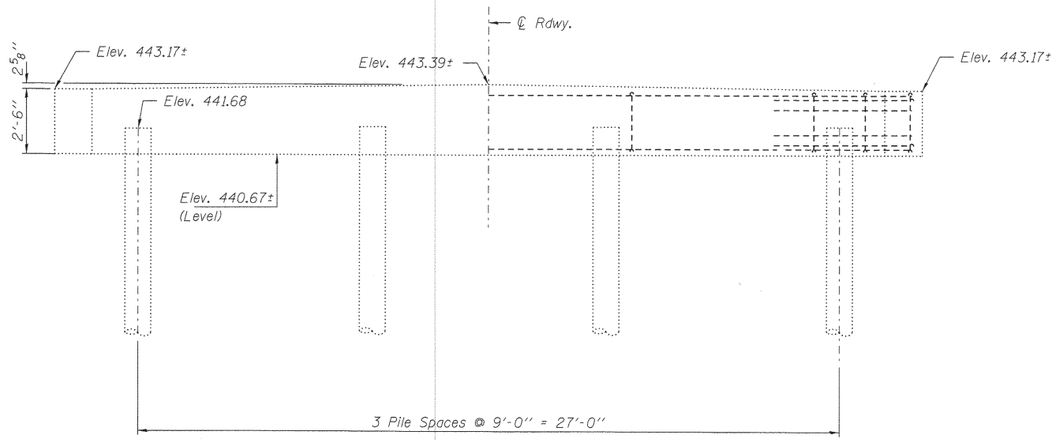


PLAN



SECTION A-A

***Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches) shall be completed across the full length and width of the bearing seats of each pile cap. The Engineer shall inspect the top of caps after PPC beams are removed to determine the delaminated areas.



ELEVATION

Notes:
The contractor shall repair, at his own expense, any damage to the substructure caused by removal operations.
See sheet 11 of 11 for existing reinforcement.

BILL OF MATERIAL - PIER

Item	Unit	Quantity
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	80

FILE NAME = 150168-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 LB / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -

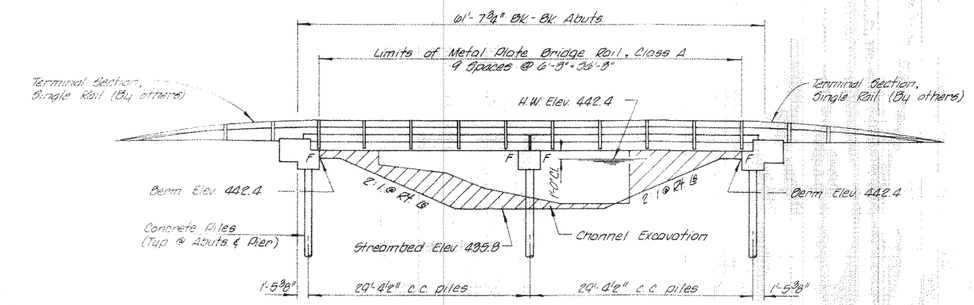
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

PIER
STRUCTURE NO. 017-3047
SHEET NO. 7 OF 11 SHEETS

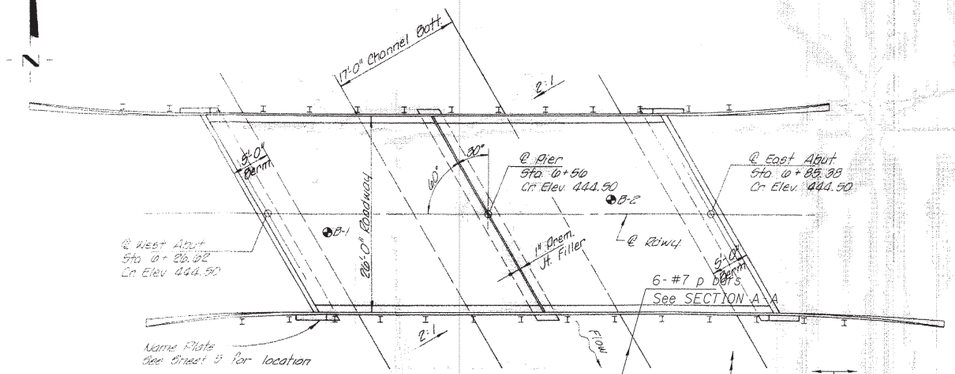
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	10
		CONTRACT NO. 95796		
		ILLINOIS FED. AID PROJECT		

DIETZGEN 1861 AGEPRODE

Existing Structure : Single span pony truss with zone floor on closed concrete abuts & wings ; 30° Sk. to Bk. abuts, 9' Rdwy. Contractor shall remove before constructing new bridge.



ELEVATION



PLAN

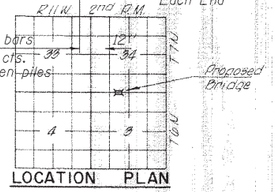
WATERWAY DATA

Drainage Area	2,470 Acres
Required Opening (25 Yrs)	275 Sq. Ft.
Present Opening	155 Sq. Ft.
Proposed Opening	190 Sq. Ft.*
Computed Discharge	1,100 C.F.S.

* West approach to remain low water approach.

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
Class X Concrete shall be used in the pier and the abutments.
Boring Data is shown only as a guide to bidders in estimating soil conditions which may be encountered in the work.
Pier piles shall be driven a minimum of 15 feet below streambed.
The Contractor shall drive one concrete test pile in a permanent location at the pier as directed by the Engineer before ordering the remainder of the piles.

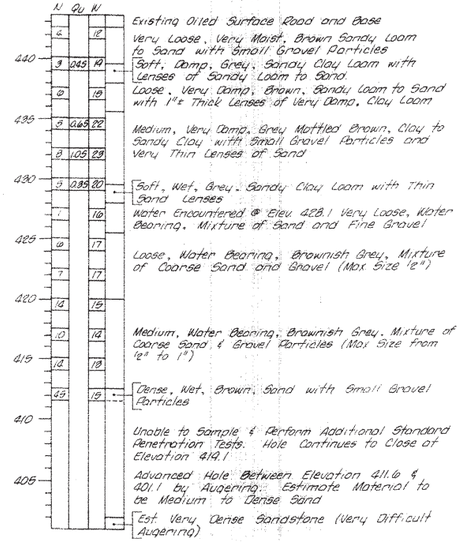


LOCATION PLAN

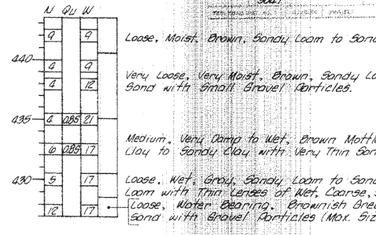
STRUCTURE NO. 3047
STATION 6+50
BUILT 197_ BY
CRAWFORD COUNTY
C.H. 4 NON-MFT
LOADING HS 20

LETTERING FOR NAME PLATE

See Std. 2113-1



BORING NO. 1
2.5' Rt. ℄ Sta. 6+34.5



Due to the difficulty of maintaining the hole opening, the exploration was continued by the use of augers between Elevations 427.0 and 375.5

The material encountered is estimated to be a very dense mixture of sand and gravel.

Between Elevations 394.0 and 375.5 augering was fairly difficult but not to a degree to warrant a sandstone classification.

Note:

ELEVATION		DEPTH
427.0	=	10.5'
394.0	=	50.5'
375.5 *	=	108.0' *

* Extent of Exploration

BORING NO. 2
2' Lt. ℄ Sta. 6+72.5

BORING DATA

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".
Q_u - Unconfined Compressive Strength - Tons per sq. ft.
W - Water Content - Percentage of oven dry weight
S - Shear Failure

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Precast Prestressed Concrete Deck Beams (11" Depth)	Sq. Ft.	1,560		1,560
Class X Concrete	Cu. Yd.		24.6	24.6
Reinforcement Bars	Pound		3,040	3,040
Metal Plate Bridge Rail, Cl. A	Lin. Ft.	113		113
Name Plates	Each		1	1
Concrete Piles	Lin. Ft.		400	400
Test Piles Concrete	Each		1	1

DESIGN STRESSES

f_c = 1,400 p.s.i. (Class X Concrete)
f'_c = 5,000 p.s.i. (Prestressed Beams)
f'_{ci} = 4,000 p.s.i. (Prestressed Beams)
f_s = 22,000 p.s.i. (Reinforcement)
f_s = 270,000 p.s.i. (Prestressed Strands)
f_{si} = 188,700 p.s.i. (Prestressed Strands)
n = 10 (Cl. X Conc.)
LOADING HS 20-44

Fred J. Schaefer Jr.
Illinois Structural No. 20.94

017-3047

GENERAL PLAN & ELEVATION
STRUCTURE NO. 3047
COUNTY HIGHWAY 4
CRAWFORD COUNTY
STATION 6+56

COLLINS AND RICE CONSULTING ENGINEERS

DESIGNED F.S. DETAILED A.D.
CHECKED A.O. DATE 4-9-76 JOB 1105

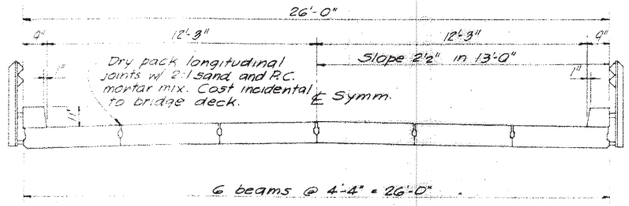
C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	11
		CONTRACT NO. 95796		
	ILLINOIS FED. AID PROJECT			

FILE NAME = 150168-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 - R.D.H.	REVISED -
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -

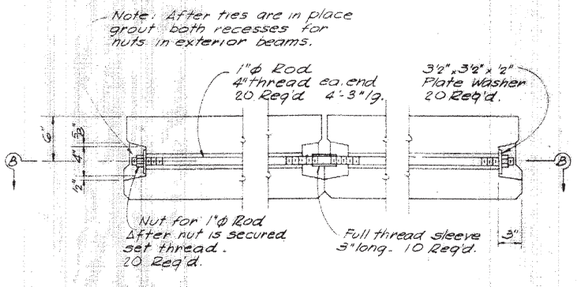
STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

EXISTING PLANS
STRUCTURE NO. 017-3047
SHEET NO. 8 OF 11 SHEETS

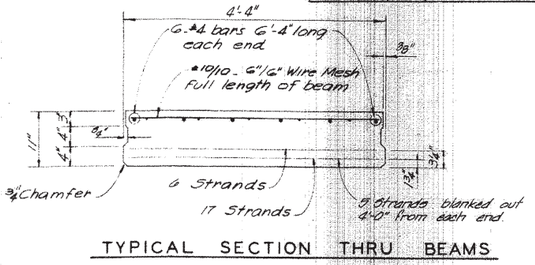
ROUTE SEC.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 4	BRIDGE 3047	CRAWFORD	14	12
FED. ROAD DIST. NO. 17	ILLINOIS	PROJECT		



CROSS SECTION

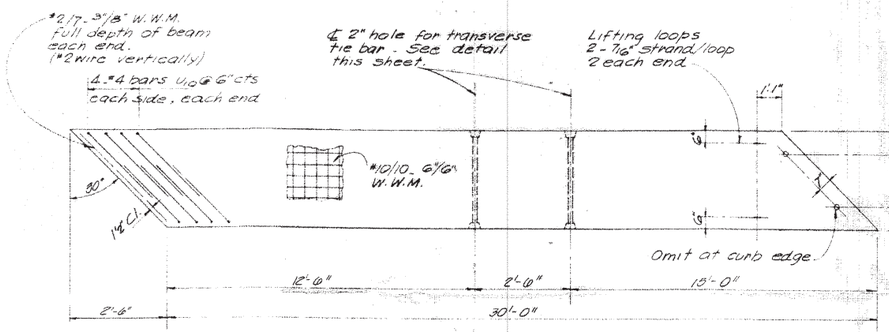


TRANSVERSE TIE BAR DETAIL

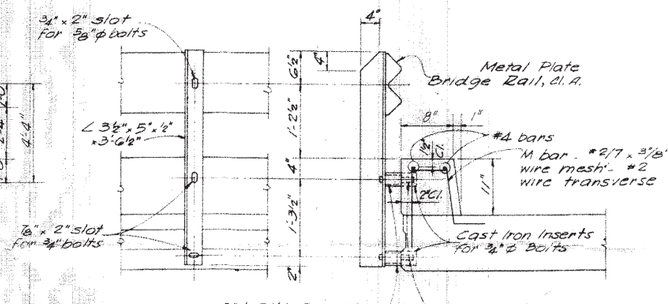


TYPICAL SECTION THRU BEAMS

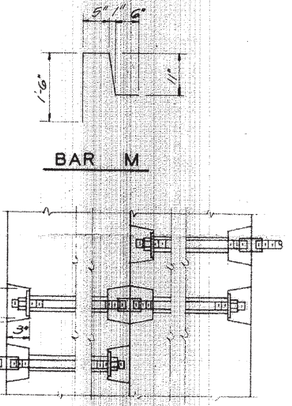
23-7 wire 7/16"ϕ strands stressed to 21,700 lbs. each. Strands shall be non-galvanized extra high strength stress-relieved. Place strands symmetrically about ℄ of beam.

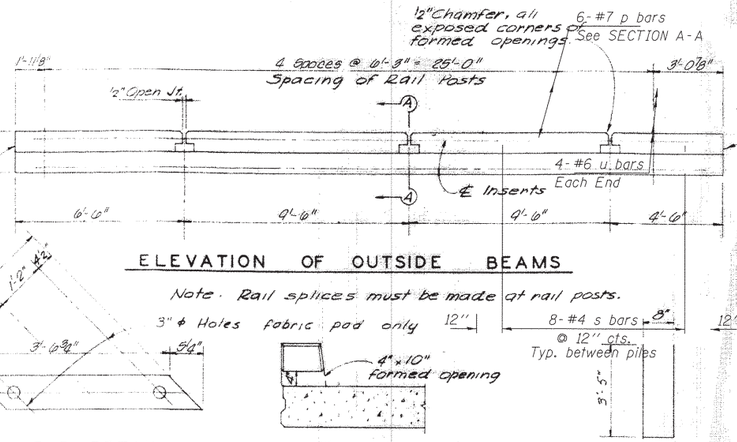


TYPICAL PLAN OF BEAMS



RAIL POST DETAIL

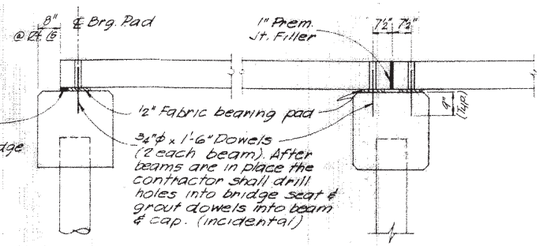




LIFTING LOOP DETAIL

Loops shall be burned off after beams have been erected.

Curbs are to be Class X Concrete & are to be poured after prestressed forces have been transferred to the beams. Curbs will not be paid for separately and are incidental to the item "Precast Prestressed Concrete Bridge Deck".



SECTION AT ABUTS. SECTION AT PIER

BILL OF MATERIAL

Precast Prestressed Concrete Deck Beams	Sq. Ft.	1,560
Metal Plate Bridge Rail, Cl. A.	Lin. Ft.	113

017-3047

SUPERSTRUCTURE
STRUCTURE NO. 3047
COUNTY HIGHWAY 4
CRAWFORD COUNTY
STATION 6+56

COLLINS AND RICE
CONSULTING ENGINEERS

FS
AO
AD
DATE 4-9-76
NO. 1105

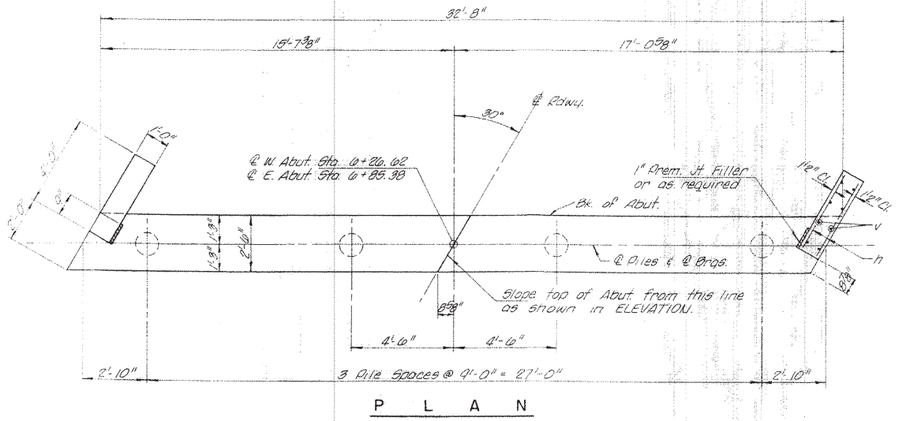
FILE NAME = 150168-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE =	DRAWN - R.D.H.	REVISED -	
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -	

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

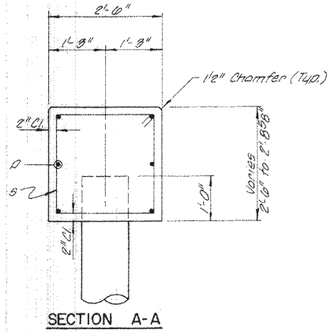
EXISTING PLANS
STRUCTURE NO. 017-3047
SHEET NO. 9 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	12
		CONTRACT NO. 95796		
	ILLINOIS FED. AID PROJECT			

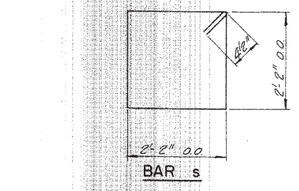
DIRECTION THIS AGLEPROOF



P L A N



SECTION A-A



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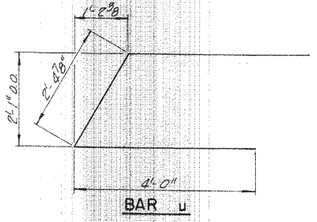

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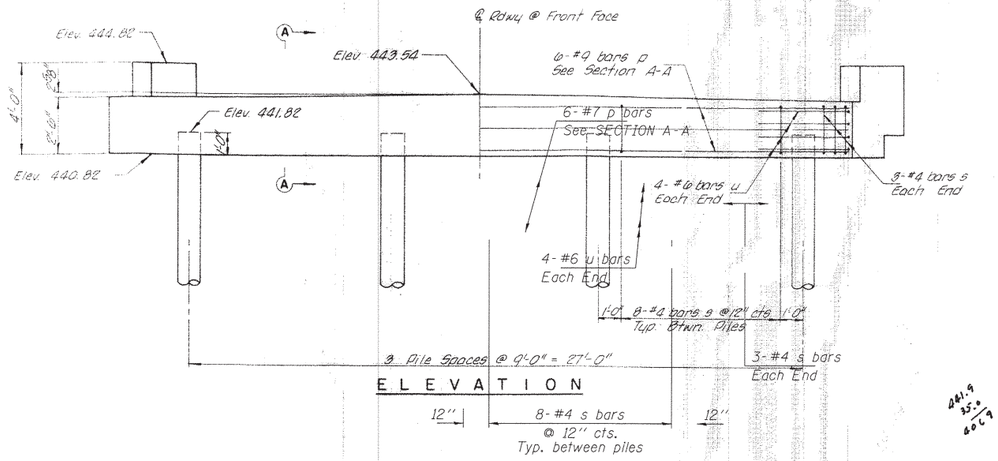
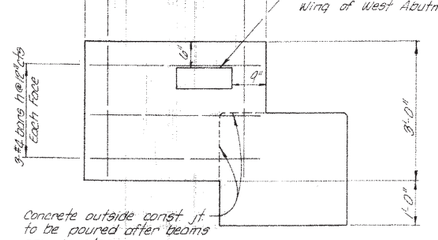


E L E V A T I O N



ELEVATION - WINGWALL

461.9
35.9
60.7

PILE DATA

Type ——— Concrete
No. Req'd (2 Abuts.) ——— 8
Min. Capacity ——— 26 Tons / Pile
Est. Length ——— 33 Feet / Pile

BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
D	12	#9	32' 4"	——
h	24	#4	3'-0"	——
u	10	#6	10'-5"	⊏
v	32	#4	2'-9"	——
s	60	#4	9'-5"	□
Class X Concrete			Cu. Yd.	17.0
Reinforcement Bars			Pound	2,070
Concrete Piles			Lin. Ft.	280

See Proposal Booklet for pile alternates.

017-3047

ABUTMENTS
STRUCTURE NO. 3047
COUNTY HIGHWAY 4
CRAWFORD COUNTY
STATION 6+56

COLLINS AND RICE
CONSULTING ENGINEERS

PROJECT F.S. A.O.
PLANS A.O. 4-9-76 1105

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	13
		CONTRACT NO. 95796		
		ILLINOIS FED. AID PROJECT		

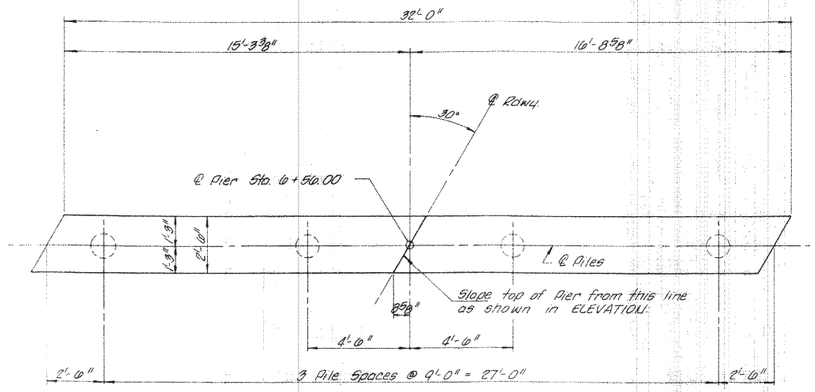
FILE NAME = 150168-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3065 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000999	PLOT SCALE =	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 5/25/2016	CHECKED - L.A.P.	REVISED -

STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

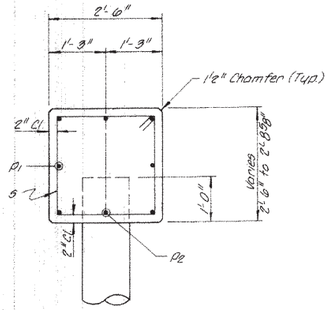
EXISTING PLANS
STRUCTURE NO. 017-3047
SHEET NO. 10 OF 11 SHEETS

DESIGN SECTION AGENDA

SECTION	TYPE	COUNTY	TOTAL SHEETS	SHEET NO.
CH 4	BRIDGE DECK	CRAWFORD	6	6

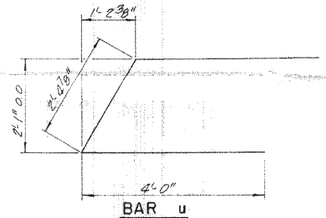


PLAN



SECTION A-A

ELEVATION



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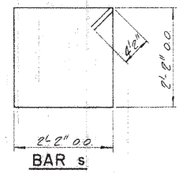

BAR s

PILE DATA

Type ——— Concrete
No. Req'd ——— 4 *
Min. Capacity ——— 34 Tons / Pile
Est. Length ——— 40 Feet / Pile
*Includes one concrete test pile to be driven in a permanent location.

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
P1	7	#8	31'-8"	——
P2	3	#8	7'-6"	——
u	8	#6	10'-5"	⊏
s	30	#4	4'-5"	□
Class X Concrete			Cu. Yd.	7.6
Reinforcement Bars			Pound	970
Concrete Piles			Lin. Ft.	120
Test Piles Concrete			Each	1

See Proposal Booklet for pile alternates.

017-3047

PIER

STRUCTURE NO. 3047
COUNTY HIGHWAY 4
CRAWFORD COUNTY
STATION 6+56

LD LINE & GRADE
COMPUTATIONS

DESIGNED F.S. CHECKED A.D.
DRAWN A.D. CHECKED 4-9-16 1105

FILE NAME = 150168-sht-bridge.dgn	USER NAME =	DESIGNED - L.A.P.	REVISED -
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STATE OF ILLINOIS
CRAWFORD COUNTY HIGHWAY DEPARTMENT

EXISTING PLANS
STRUCTURE NO. 017-3047
SHEET NO. 11 OF 11 SHEETS

C.H.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	15-00100-00-BR	CRAWFORD	14	14
		CONTRACT NO. 95796		
		ILLINOIS FED. AID PROJECT		