

06-14-13 LETTING ITEM 111

# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED STP-BR STRUCTURE REPLACEMENT (TR-60) REES ROAD OVER TRIBUTARY TO YELLOW CREEK PROJECT NO. BROS-0177(045) SECTION 12-03120-00-BR STEPHENSON COUNTY S.N. 089-3286

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
-	*	STEPHENSON	14	1

ILLINOIS PROJECT BROS-0177(045)  
\* 12-03120-00-BR  
CONTRACT NO. 85587

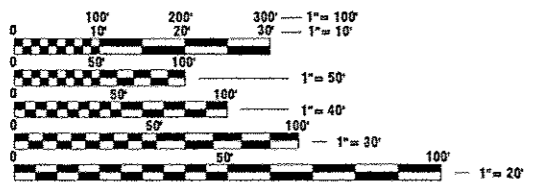
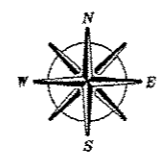
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JOB NO. C-92-071-13

ERINKENT TOWNSHIP STEPHENSON COUNTY



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

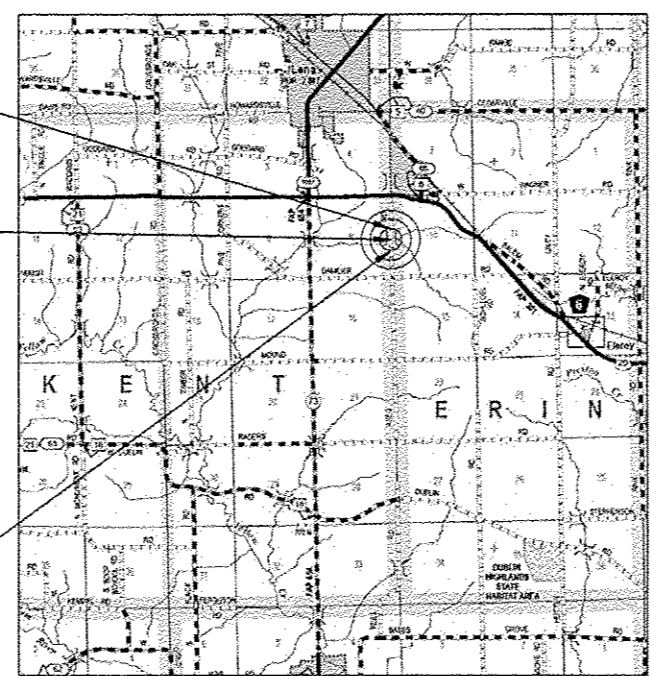
J.U.L.I.E.  
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION  
1-800-892-0123

**CONTRACT NO. 85587**

SECTION 12-03120-00-BR/12-08121-00-BR  
ENDS AT STA. 12+00

SECTION 12-03120-00-BR/12-08121-00-BR  
INCLUDES THE REMOVAL OF AN EXISTING SINGLE SPAN PRECAST/PRESTRESSED CONCRETE SLAB BRIDGE, AND REPLACEMENT WITH A SINGLE SPAN REINFORCED CONCRETE SLAB BRIDGE ON CLOSED PILE BENT ABUTMENTS. 61'-6" BK.-BK. ABUTS. ALSO INCLUDED IS NECESSARY ROADWAY APPROACH WORK.

SECTION 12-03120-00-BR/12-08121-00-BR  
BEGINS AT STA. 8+40



LOCATION MAP  
GROSS LENGTH OF SECTION = 360 FEET (0.07 MILE)  
NET LENGTH OF SECTION = 360 FEET (0.07 MILE)

**DESIGN CRITERIA**

ROADWAY	ADT	DESIGN SPEED
REES ROAD	58	30
	5% TRUCKS	



*Scott Brown 3/20/2013*  
DATE  
SCOTT A. BROWN  
DIXON, ILLINOIS  
ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-053649  
EXPIRES 11-30-2013

PLANS PREPARED BY:  
**wendler**  
GROUNDBREAKING SOLUTIONS  
engineers - surveyors - scientists  
www.wendlers.com ph: 815.288.2261  
Illinois Professional Design Firm No. 184-006848

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

SUBMITTED MAR 26 20 13

*Mr. J. Isbell*  
COUNTY ENGINEER

PASSED 4-12 20 13

*Jim T. Johnson*  
DISTRICT 2 ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW 4-12 20 13

*Paul A. Coetzer*  
DEPUTY DIRECTOR OF HIGHWAYS, REGION 2 ENGINEER

**PRINTED BY THE AUTHORITY  
OF THE STATE OF ILLINOIS**

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
-	*	STEPHENSON	14	2

ILLINOIS PROJECT BROS-0177(045)  
 \* 12-03120-00-BR  
 CONTRACT NO. 85587

## SCHEDULE OF QUANTITIES

### AGGREGATE SURFACE COURSE, TYPE B

LOCATION	TON
STA. 8+40 TO STA. 12+00	544
<b>TOTAL</b>	<b>544 TON</b>

### WOVEN WIRE FENCE (IDOT HIGHWAY STD. 665001-02)

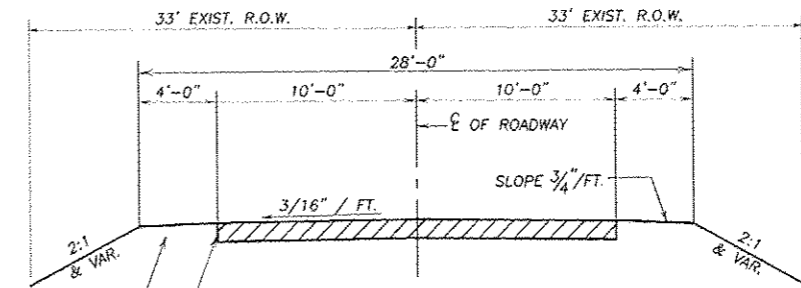
LOCATION	FOOT
RT. STA. 10+28 TO RT. STA. 11+28	100
<b>TOTAL</b>	<b>100 FOOT</b>

### SEEDING, CLASS 2 (SPECIAL)

LOCATION	ACRE
LT. & RT. STA. 8+40 TO LT. & RT. STA. 12+00	0.35
<b>TOTAL</b>	<b>0.35 ACRES</b>

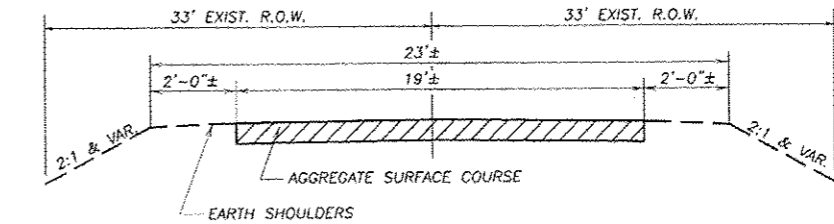
### EROSION CONTROL BLANKET

LOCATION	SQ YD
LT. & RT. STA. 8+40 TO LT. & RT. STA. 12+00	1567
<b>TOTAL</b>	<b>1567 SQ YD</b>



**PROPOSED TYPICAL SECTION**

\*\* THICKNESS SHOWN IS MINIMUM. MATCH EXISTING THICKNESS.



**EXISTING TYPICAL SECTION**

## SUMMARY OF QUANTITIES

CONSTRUCTION TYPE CODE: 0011

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20200100	EARTH EXCAVATION	CU YD	250
20400800	FURNISHED EXCAVATION	CU YD	50
20700220	POROUS GRANULAR EMBANKMENT	CU YD	40
25100630	EROSION CONTROL BLANKET	SQ YD	1567
28000400	PERIMETER EROSION BARRIER	FOOT	200
28100709	STONE DUMPED RIPRAP, CLASS A5	SQ YD	266
28200200	FILTER FABRIC	SQ YD	266
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	544
42001300	PROTECTIVE COAT	SQ YD	230
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	28.1
50300260	BRIDGE DECK GROOVING	SQ YD	187.2
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27")	SQ FT	1685
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	6550
Δ 50901050	STEEL RAILING, TYPE SM	FOOT	124
51201600	FURNISHING STEEL PILES, HP 12X53	FOOT	350
51202305	DRIVING PILES	FOOT	350
51203600	TEST PILE STEEL HP 12X53	EACH	1
51500100	NAME PLATES	EACH	1
66500105	WOVEN WIRE FENCE 4'	FOOT	200
67100100	MOBILIZATION	L SUM	1
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.35
X5030305	CONCRETE WEARING SURFACE, 5"	SQ YD	187.2
X7010216	TRAFFIC CONTROL & PROTECTION, (SPECIAL)	L SUM	1

Δ SPECIALTY ITEMS

REVISIONS	DATE

DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:

**wendler**  
 ENGINEERS - SURVEYORS - SCIENTISTS  
 www.wendlergs.com  
 ph: 615.283.2261  
 8000 Professional Design Firm No. 164-002628

SCHEDULE OF QUANTITIES  
 OF  
 REES ROAD  
 FOR  
 STEPHENSON COUNTY

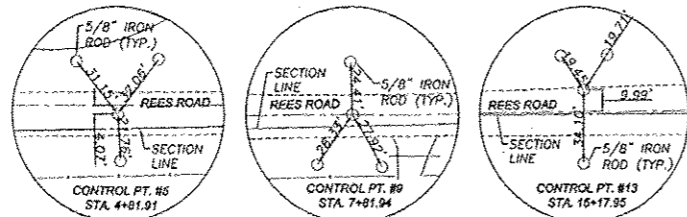
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 SCHEDULE OF QUANTITIES

JOB NUMBER  
 2120077

DATE  
 04/03/2013

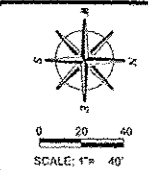
SHEET NO.  
 2 of 14

SCHEDULE OF QUANTITIES  
 TYPICAL SECTIONS  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY



**BENCHMARKS**  
 BM"A": SET CHISELED "C" @ NORTHWEST CORNER OF EXISTING STRUCTURE. ELEV. 882.00

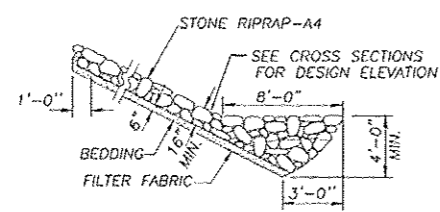
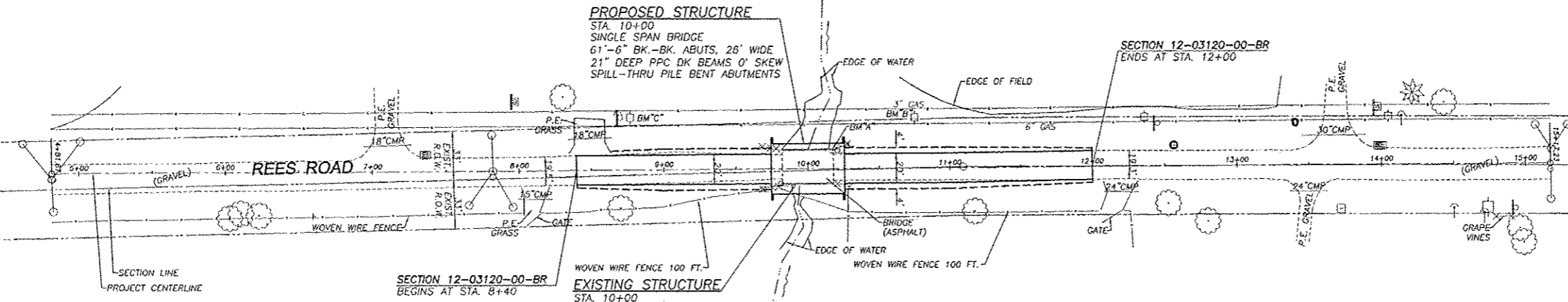
FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
-	-	STEPHENSON	14	3



BM"B": SET COTTON SPINDLE IN EAST FACE OF FIRST POWER POLE NORTH OF BRIDGE - WEST R.O.W. OF REES RD. ELEV. 876.51

ILLINOIS PROJECT BROS-0177(045)  
 \* 12-03120-00-BR  
 CONTRACT NO. 85587

BM"C": SET COTTON SPINDLE IN NORTHWEST FACE OF FIRST POWER POLE SOUTH OF BRIDGE - WEST R.O.W. OF REES RD. ELEV. 883.93



SCALES:  
 1" = 40' HOR  
 1" = 5' VER

**SECTION THRU STONE DUMPED RIPRAP**

**PROPOSED STRUCTURE**  
 STA. 10+00  
 SINGLE SPAN BRIDGE  
 61'-6" BK-BK. ABUTS, 28' WIDE  
 21" DEEP PPC DK BEAMS 0' SKEW  
 SPILL-THRU PILE BENT ABUTMENTS

**EXISTING STRUCTURE**  
 STA. 10+00  
 SINGLE SPAN  
 PRECAST/PRESTRESSED CONCRETE  
 DECK BRIDGE ON TIMBER PILING  
 WITH CLOSED TIMBER BACKING  
 ABUTMENTS & WINGS ±38' LONG  
 0' SKEW

**NOTES**

- ALL STUMP, TREE REMOVAL (< 6IN DIA.), AND BRUSH REMOVAL ARE CONSIDERED INCIDENTAL TO EARTH EXCAVATION.
- ALL FENCES DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE RELOCATED AND RESTORED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. WORK PAID FOR AS WOVEN WIRE FENCE.
- FENCE BETWEEN CHANNEL BANKS TO BE CONSTRUCTED BY OTHERS.

**UTILITIES**  
 GAS: NICOR  
 SCOTT PUFFER  
 4631 LINDEN ROAD  
 ROCKFORD, IL 61109

TELEPHONE: FRONTIER COMMUNICATIONS  
 PAULO JAVIER  
 2239 NEWBURG ROAD  
 BELVIDERE, IL 61005

ELECTRIC: COMED  
 JAMES ACKERT  
 123 ENERGY AVE.  
 ROCKFORD, IL 61109

THE LOCATIONS OF UTILITY FACILITIES AS SHOWN ON THESE PLANS ARE AN ESTIMATE AND NOT INTENDED AS FIELD LOCATIONS FOR CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES PRIOR TO CONSTRUCTION AND CALLING J.U.L.I.E. AT 800-892-0123 FOR CONFIRMATION OF EXISTING UTILITY LOCATIONS.

**REVISIONS**

NO.	DATE	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	IN CHARGE

**wendler**  
 wendler engineering services, inc.  
 1001 1/2 AVENUE  
 SUITE 100  
 ROCKFORD, IL 61103  
 PHONE: 815.288.2281  
 WWW.WENDLERENGINEERING.COM  
 Illinois Professional Design Firm No. 184-000849

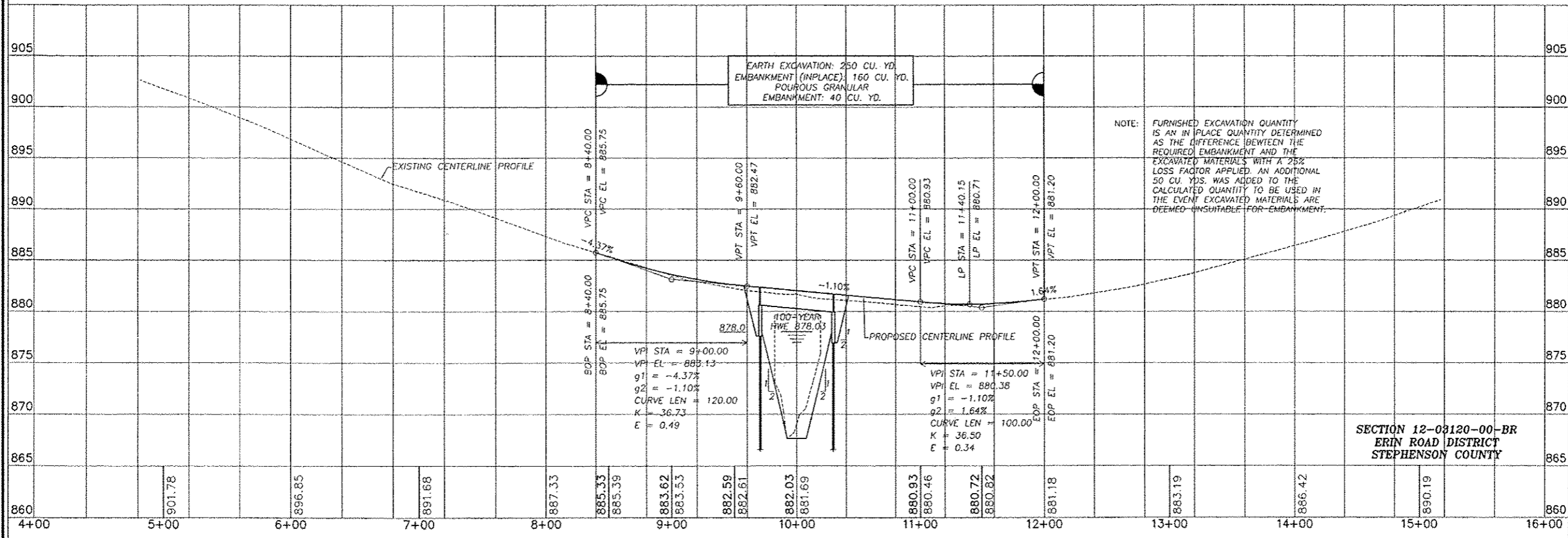
PLAN AND PROFILE  
 OF  
 REES ROAD  
 FOR  
 STEPHENSON COUNTY

SHEET TITLE  
**PLAN & PROFILE**

JOB NUMBER  
 2120077

DATE  
 03/27/2013

SHEET NO.  
 3 of 14



EARTH EXCAVATION: 250 CU. YD.  
 EMBANKMENT (INPLACE): 160 CU. YD.  
 POURIOUS GRANULAR EMBANKMENT: 40 CU. YD.

NOTE: FURNISHED EXCAVATION QUANTITY IS AN IN PLACE QUANTITY DETERMINED AS THE DIFFERENCE BETWEEN THE REQUIRED EMBANKMENT AND THE EXCAVATED MATERIALS WITH A 25% LOSS FACTOR APPLIED. AN ADDITIONAL 50 CU. YDS. WAS ADDED TO THE CALCULATED QUANTITY TO BE USED IN THE EVENT EXCAVATED MATERIALS ARE DEEMED UNSUITABLE FOR EMBANKMENT.

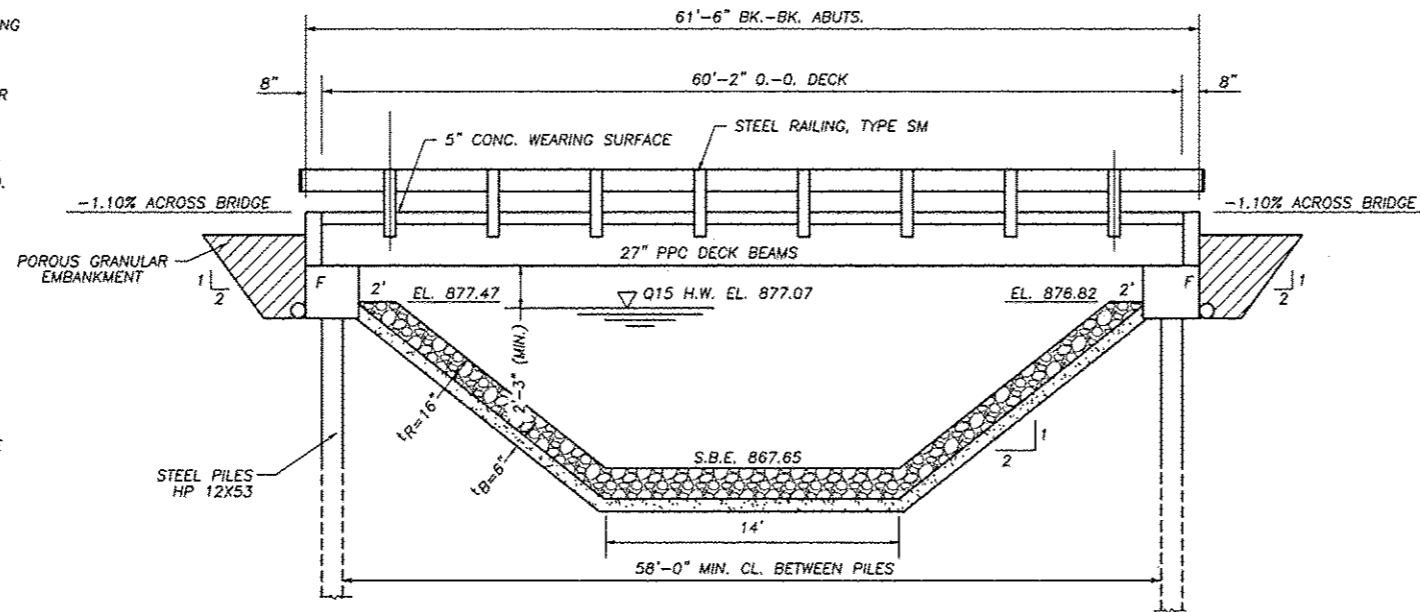
SECTION 12-03120-00-BR  
 ERIN ROAD DISTRICT  
 STEPHENSON COUNTY

**BENCHMARK INFORMATION**

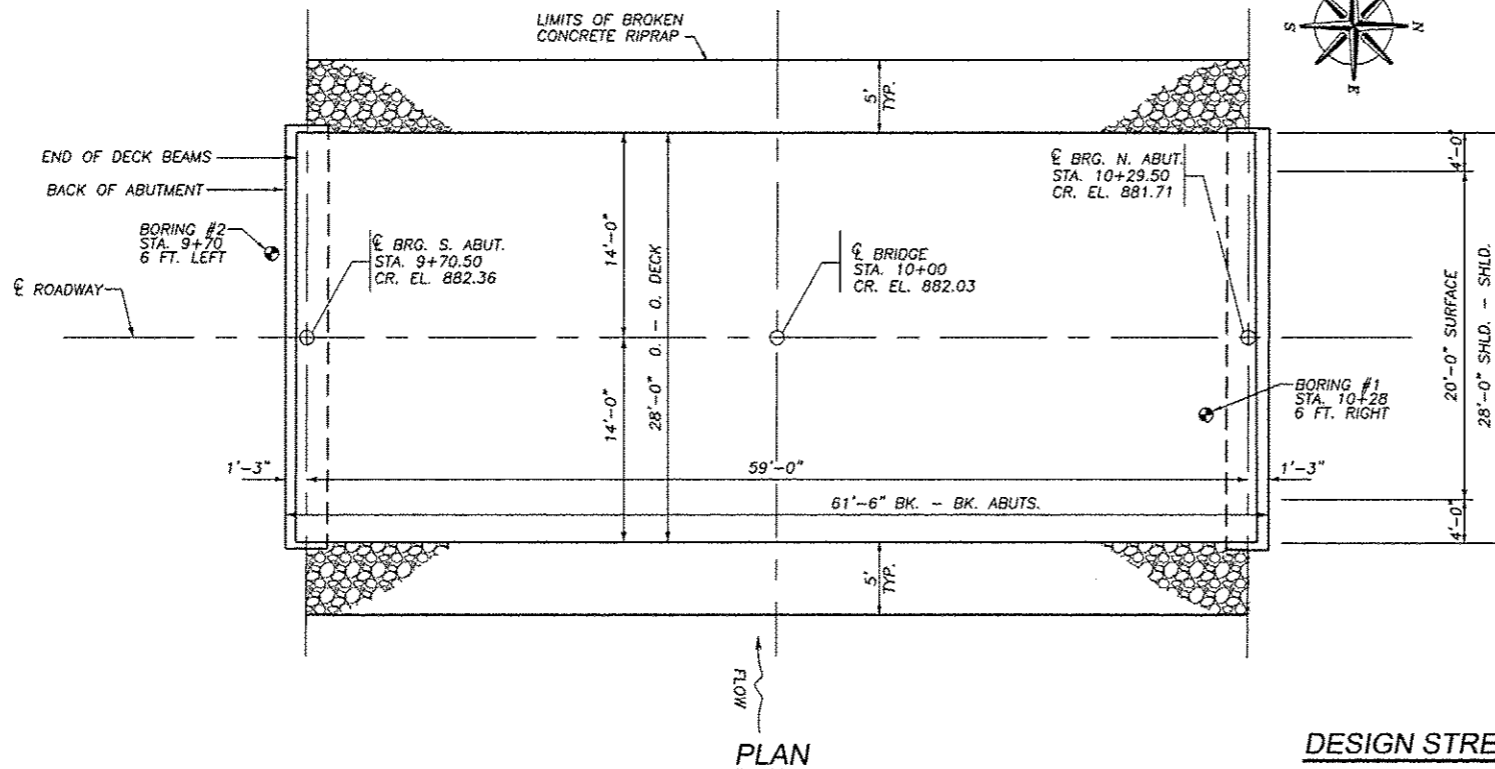
BM"A": SET CHISELED "c" @ NORTHWEST CORNER OF EXISTING STRUCTURE. ELEV. 882.00  
 BM"B": SET COTTON SPINDLE IN EAST FACE OF FIRST POWER POLE NORTH OF BRIDGE - WEST R.O.W. OF REES RD. ELEV. 876.51  
 BM"C": SET COTTON SPINDLE IN NORTHWEST FACE OF FIRST POWER POLE SOUTH OF BRIDGE - WEST R.O.W. OF REES RD. ELEV. 883.93

**EXISTING STRUCTURE:**  
 SIMPLE SPAN PRECAST PRESTRESSED CONCRETE DECK BRIDGE ON TIMBER PILING WITH CLOSED TIMBER BACKING ABUTMENTS AND WINGS

**SALVAGE:**  
 ALL ITEMS DEEMED SALVAGABLE BY THE ENGINEER SHALL BE STOCKPILED ON THE RIGHT OF WAY.



**ELEVATION**



**PLAN**

**WATERWAY INFORMATION**

Flood		Frequency Year	Q (cfs)	Opening Sq. Ft.		Natural H.W.E.	Head-Ft.		Headwater El.	
				Existing	Proposed		Existing	Proposed	Existing	Proposed
Design		15	972	225	328	877.02	0.58	0.05	877.58	877.07
Base		100	1610	261	382	877.75	1.07	0.28	878.82	878.03

BRANCH OF YELLOW CREEK BUILT 2013 BY STEPHENSON COUNTY SECTION 12-03120-00-BR STATION 10+00 STR. NO. 089-3286 LOADING HL-93

**LETTERING FOR NAME PLATE**  
 SEE STD. 515001

**DESIGN STRESSES**

**PRESTRESSED UNITS FIELD UNITS**

$f'_c = 6000$  P.S.I.       $f'_c = 3500$  P.S.I.  
 $f'_{ci} = 5000$  P.S.I. RELEASE       $f'_c = 5000$  P.S.I. (CONCRETE WEARING SURFACE)  
 $f'_s = 270,000$  P.S.I.       $f_y = 60,000$  P.S.I. (REINFORCEMENT)  
 $f'_{si} = 201,960$  P.S.I.       $F_y = 36,000$  P.S.I. (HARDWARE)  
 DESIGN SPECIFICATIONS: 2010 AASHTO SPECIFICATIONS  
 (ALLOWED FOR 50 P.S.F. FOR FUTURE WEARING SURFACE.)

**LOADING HL 93**

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
-	*	STEPHENSON	14	4

ILLINOIS PROJECT BROS-0177(045)  
 \* 12-03120-00-BR  
 CONTRACT NO. 85587

**GENERAL NOTES**

SEE SPECIAL PROVISIONS FOR REMOVAL OF EXISTING STRUCTURE.  
 AFTER THE EXISTING STRUCTURE IS REMOVED ANY SHAPING REQUIRED IN THE CHANNEL UNDER THE BRIDGE TO CONFORM TO THE ELEVATION VIEW SHALL BE CONSIDERED INCIDENTAL TO REMOVAL OF THE EXISTING STRUCTURE.  
 BACKFILLING OF ABUTMENTS SHALL NOT BE DONE UNTIL THE DECK BEAMS ARE IN PLACE AND THE DOWELS ARE GROUTED AND CURED.  
 A PROTECTIVE COAT HAS BEEN INCLUDED FOR THE TOP OF THE DECK AND OUTSIDE FACES OF THE OUTSIDE BEAMS.

**BILL OF MATERIAL**

ITEM	UNIT	SUPERSTR.	SUBSTR.	TOTAL
CONCRETE STRUCTURES	CU. YD.		28.1	28.1
REINFORCEMENT BARS, EPOXY COATED	POUND	2410	4140	6550
PRECAST PRESTRESSED CONCRETE DECK BEAMS (27")	SQ. FT.	1685		1685
PROTECTIVE COAT	SQ. YD.	230		230
FURNISHING STEEL PILES, HP 12X53	FOOT	350		350
DRIVING PILES	FOOT	350		350
TEST PILE STEEL HP 12X53	EACH		1	1
NAME PLATES	EACH			1
REMOVAL OF EXISTING STRUCTURES	EACH			1
STEEL RAILING, TYPE SM	FOOT	124		124
CONCRETE WEARING SURFACE, 5"	SQ. YD.	187.2		187.2
BRIDGE DECK GROOVING	SQ. YD.	187.2		187.2
STONE DUMPED RIPRAP, CLASS A5	SQ. YD.		266	266
FILTER FABRIC	SQ. YD.		266	266



*Richard A. Baumann* DATE 3-24-13  
 RICHARD A. BAUMANN  
 STERLING, ILLINOIS  
 ILLINOIS LICENSED STRUCTURAL  
 ENGINEER NO. 081-004732  
 EXPIRES 11-30-2014

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF THE STRUCTURE AND COMPLIES WITH REQUIREMENTS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES".

S.N. 089-3286  
**GENERAL PLAN AND ELEVATION**  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY

REVISIONS

NO.	DATE	DESCRIPTION

DATE	BY	FOR

**wendler**  
 GEOTECHNICAL SOLUTIONS  
 engineers - surveyors - scientists  
 WWW.WENDLERGS.COM    Ph: 815.288.2261  
 Mchen Professional Design Firm No. 18-000868

**GENERAL PLAN AND ELEVATION**  
 OF  
**NORTH REES ROAD BRIDGE**  
 FOR  
**STEPHENSON COUNTY**

SHEET TITLE

**GPE**

JOB NUMBER  
2120077

DATE  
03/25/2013

SHEET NO.  
**4 of 14**

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
-	*	STEPHENSON	14	5

ILLINOIS PROJECT BROS-0177(045)

\* 12-03120-00-BR  
CONTRACT NO. 85587

SCALE: 1" = 4'

REVISION	DATE

DESIGNED BY:	DAS
DRAWN BY:	MARKER
CHECKED BY:	ROS
DATE:	
PROJECT:	

**wendler**  
GROUNDING SOLUTIONS  
engineers - surveyors - scientists  
www.wendlerps.com    ph: 315.288.2261  
Illinois Professional Design Firm No. 194-00045

DECK BEAM DETAILS OF NORTH REES ROAD BRIDGE FOR STEPHENSON COUNTY

SHEET TITLE

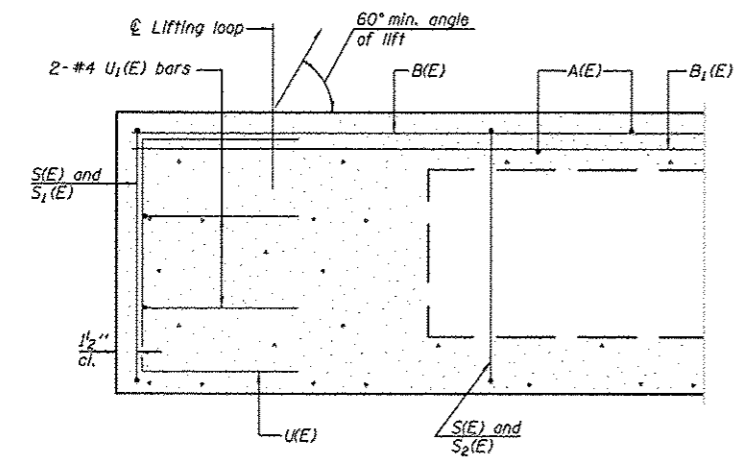
DETAILS

JOB NUMBER  
2120077

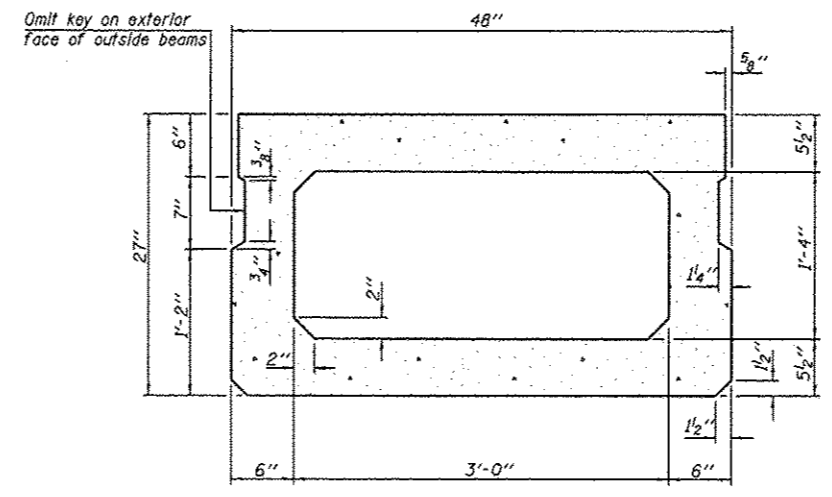
DATE  
3/25/2013

SHEET NO.

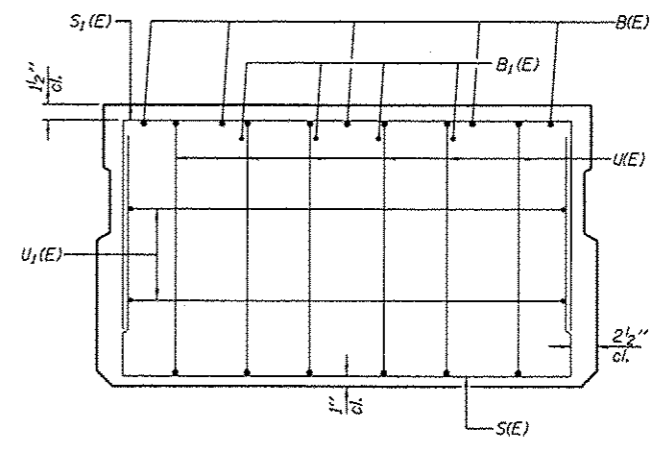
5 of 14



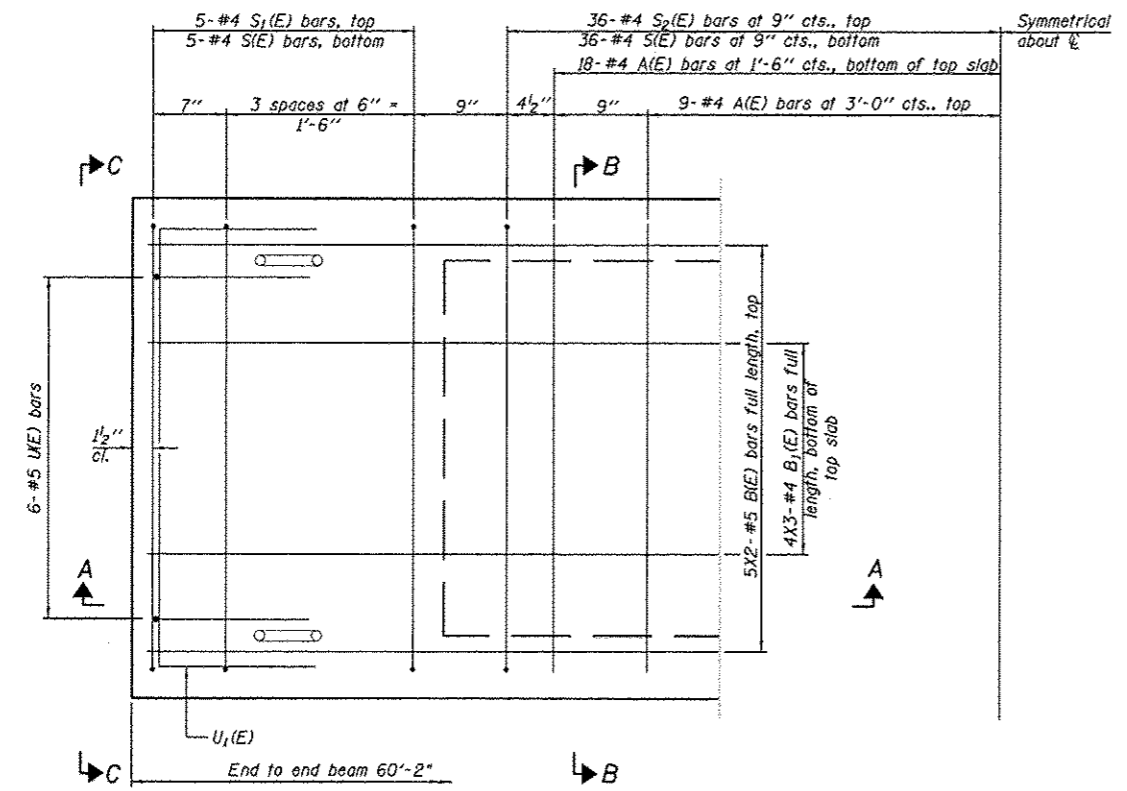
SECTION A-A



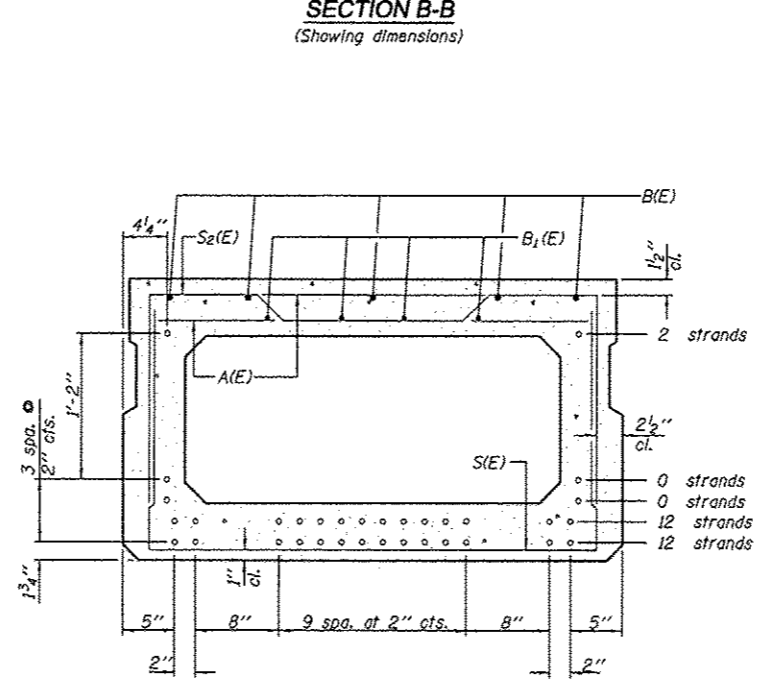
SECTION B-B  
(Showing dimensions)



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)	56	#4	3'-7"	—
B(E)	10	#5	31'-2"	—
B1(E)	12	#4	31'-0"	—
S(E)	82	#4	7'-5"	U
S1(E)	10	#4	6'-11"	U
S2(E)	72	#4	7'-2"	U
U(E)	12	#5	4'-6"	U
U1(E)	4	#4	6'-0"	U

Note: See sheet 6 of 14 for additional details and Bill of Material.

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

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

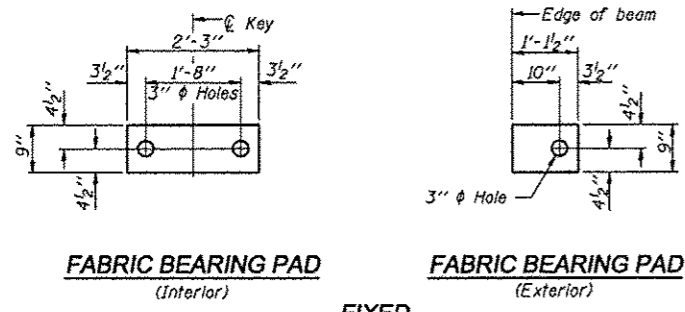
PD-2748-0

7-1-10

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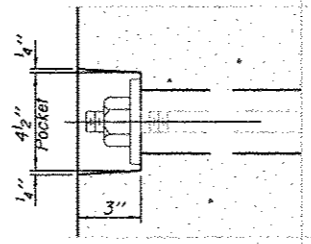
FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO
-	*	STEPHENSON	14	6

ILLINOIS PROJECT BROS-0177(045)  
 \* 12-03120-00-BR  
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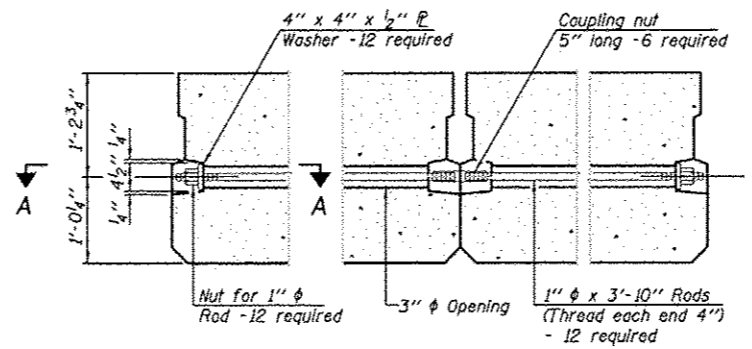


**FABRIC BEARING PAD (Interior)**  
**FABRIC BEARING PAD (Exterior)**  
**FIXED**

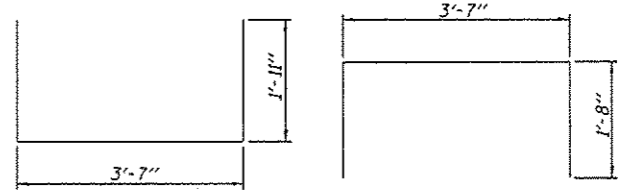
Notes:  
 All bearing pads shall be 1" thick.  
 Omit holes when using expansion bearings.  
 Expansion bearing pad shall be bonded to the substructure.



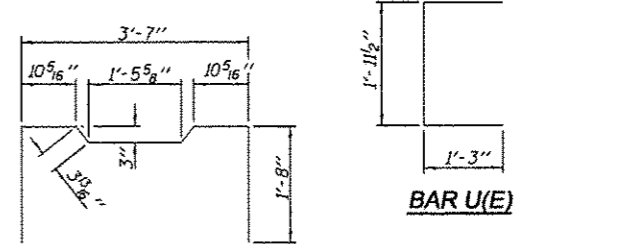
**SECTION A-A**



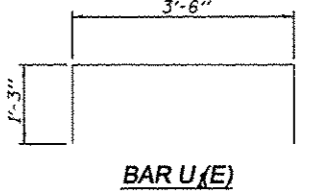
**TYPICAL TRANSVERSE TIE ASSEMBLY**



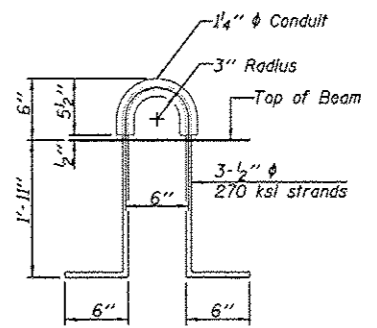
**BAR S(E)**  
**BAR S1(E)**



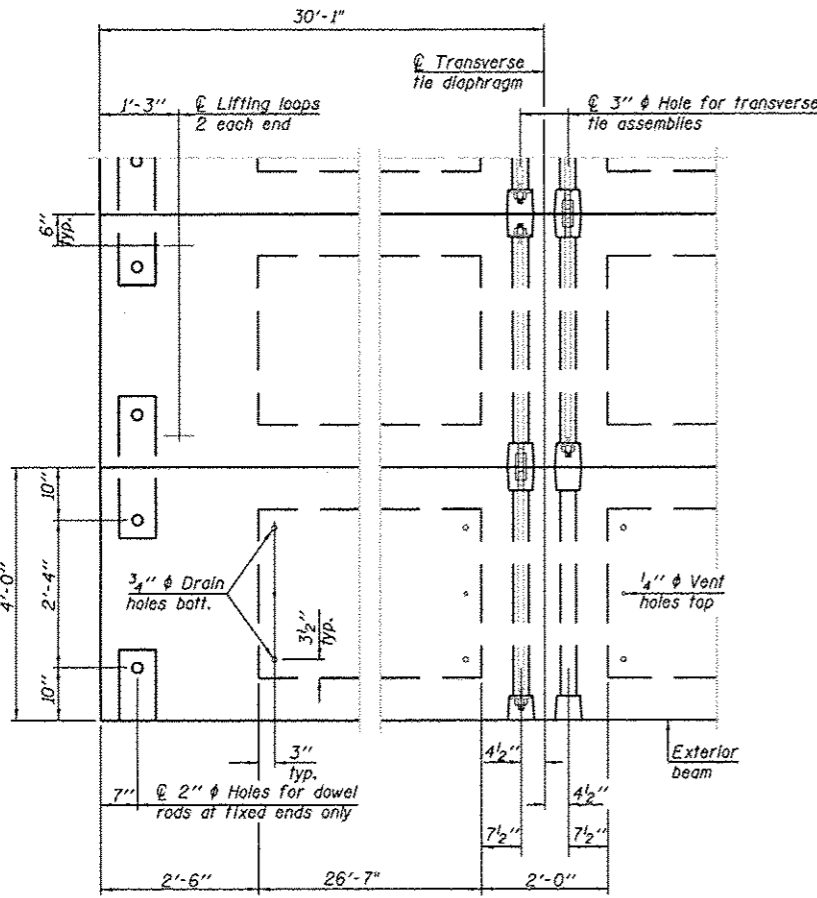
**BAR S2(E)**  
**BAR U1(E)**



**BAR U(E)**



**LIFTING LOOP DETAIL**



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

**BILL OF MATERIAL**

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	1685
---	---------	------

REVISIONS	
DATE	REVISION

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 engineers, surveyors, appraisers  
 www.wendlergs.com    ph. 815.288.2261  
 Illinois Professional Engineer Firm No. 158-000048

DECK BEAM DETAILS  
 OF  
 NORTH REES ROAD BRIDGE  
 FOR  
 STEPHENSON COUNTY

SHEET TITLE  
**DETAILS**

JOB NUMBER  
 2120077

DATE  
 3/22/2013

SHEET NO.  
**6 of 14**

PD-2748-OD    7-1-10

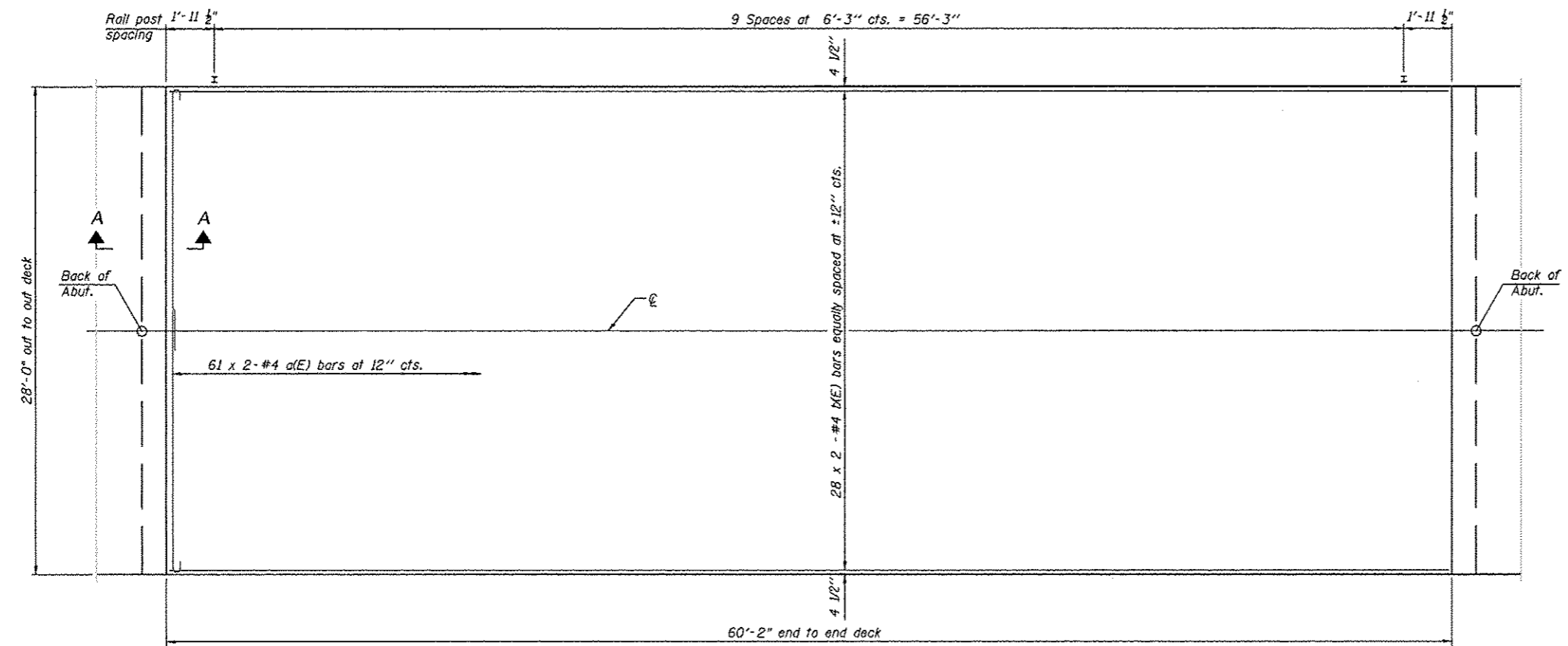
S.N. 089-3286  
 27" X 48" PPC DECK BEAMS  
 CONCRETE OVERLAY DETAILS  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
—	*	STEPHENSON	14	7

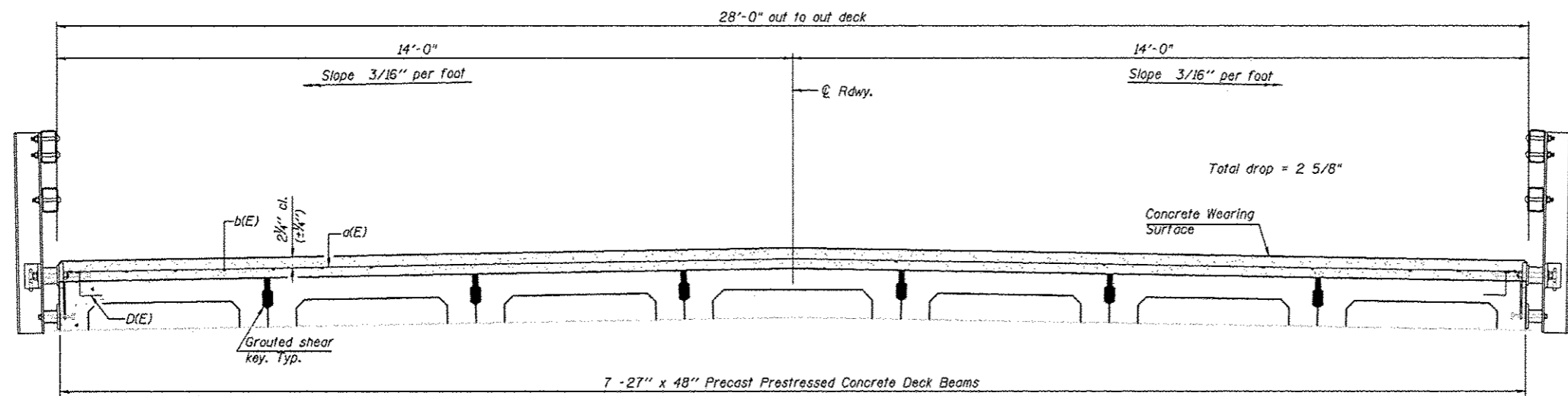
ILLINOIS PROJECT BROS-0177(045)

\* 12-03120-00-BR  
CONTRACT NO. 85587

SCALE: 1" = 1'-0"



PLAN



CROSS SECTION  
(Looking NORTH)

**SECTION A-A**  
Notes:  
All concrete wearing surfaces shall be placed prior to casting a backwall and/or approach slab.

REVISIONS	DATE

DESIGNED BY:	DATE:
CHECKED BY:	
APPROVED BY:	

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engineers - surveyors - estimators  
www.wendlergs.com P: 815.288.2261  
Missouri Professional Design Firm No. 184-000648

SUPERSTRUCTURE DETAILS  
OF  
NORTH REES ROAD BRIDGE  
FOR  
STEPHENSON COUNTY

SHEET TITLE  
**DETAILS**

JOB NUMBER  
2120077

DATE  
3/25/2013

SHEET NO.  
**7 of 14**

PDS-S-R34-0 7-1-10

Notes:  
See sheet 8 of 14 for Superstructure Details and Bill of Material.  
Bars indicated thus 20 x 2-#4 etc. indicates 20 lines of bars with 2 lengths per line.

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

S.N. 089-3286  
27" X 48" PPC DECK BEAMS  
CONCRETE OVERLAY DETAILS  
SECTION 12-03120-00-BR  
STEPHENSON COUNTY

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
-	*	STEPHENSON	14	8

ILLINOIS PROJECT BROS-0177(045)

\* 12-03120-00-BR  
CONTRACT NO. 85587

SCALE: 1" = 1'

REVISIONS	DATE

DESIGNED BY	CHECKED BY	DATE

**wendler**  
 GEOTECHNICAL ENGINEERING SOLUTIONS  
 ENGINEERS-SURVEYORS-PLANNERS  
 www.wendlereng.com Ph: 815.288.2261  
 1800 Woodland Drive, Farmington, IL 62521

SUPERSTRUCTURE DETAILS  
 OF  
 NORTH REES ROAD BRIDGE  
 FOR  
 STEPHENSON COUNTY

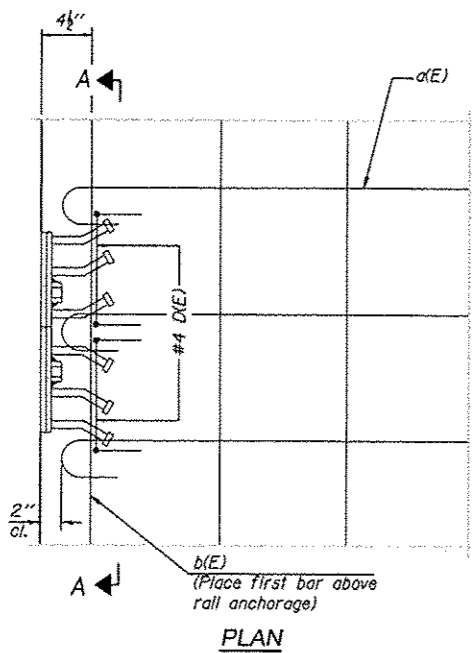
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DETAILS

JOB NUMBER  
2120077

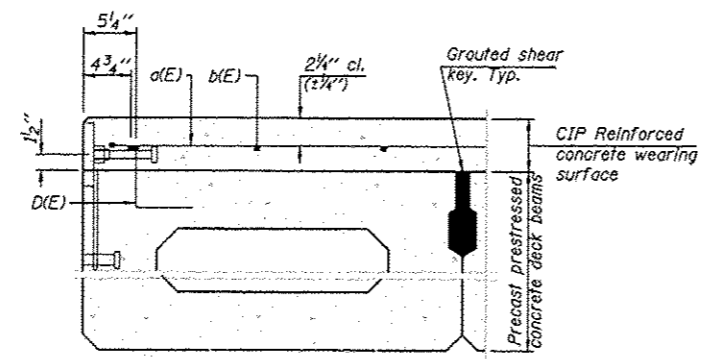
DATE  
3/22/2013

SHEET NO.  
8 of 14

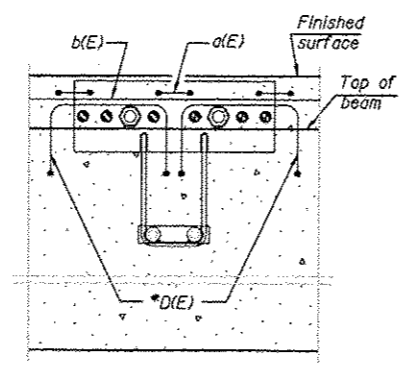


**PLAN**

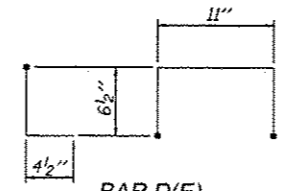
Notes:  
Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam.



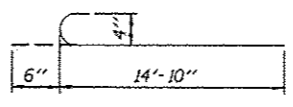
**SECTION THRU FASCIA BEAM**



**SECTION A-A**

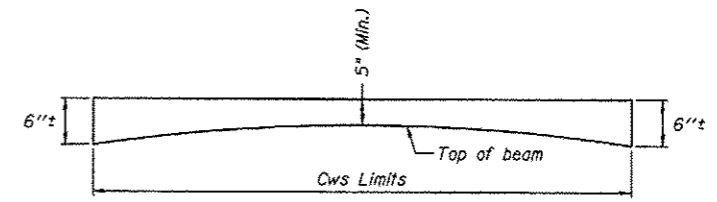


**BAR D(E)**  
Place 2-#4 D(E) bars in beam at each post location as shown. D(E) bar included in cost of beam.



**BAR a(E)**

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



**ANTICIPATED CONCRETE WEARING SURFACE PROFILE**  
(For information only)

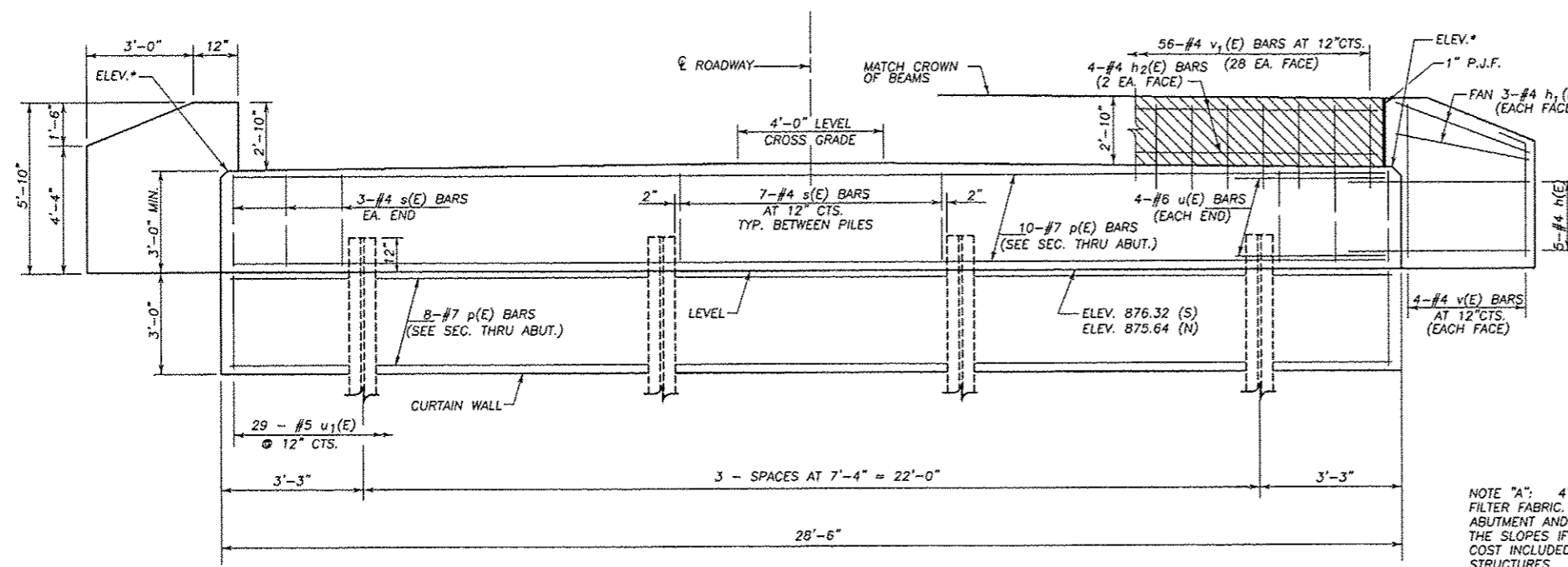
**SUPERSTRUCTURE BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	122	#4	15'-4"	C
b(E)	56	#4	30'-11"	—
Reinforcement Bars, Epoxy Coated			Pound	2410
Concrete Wearing Surface, 5"			Sq. Yd.	187.2

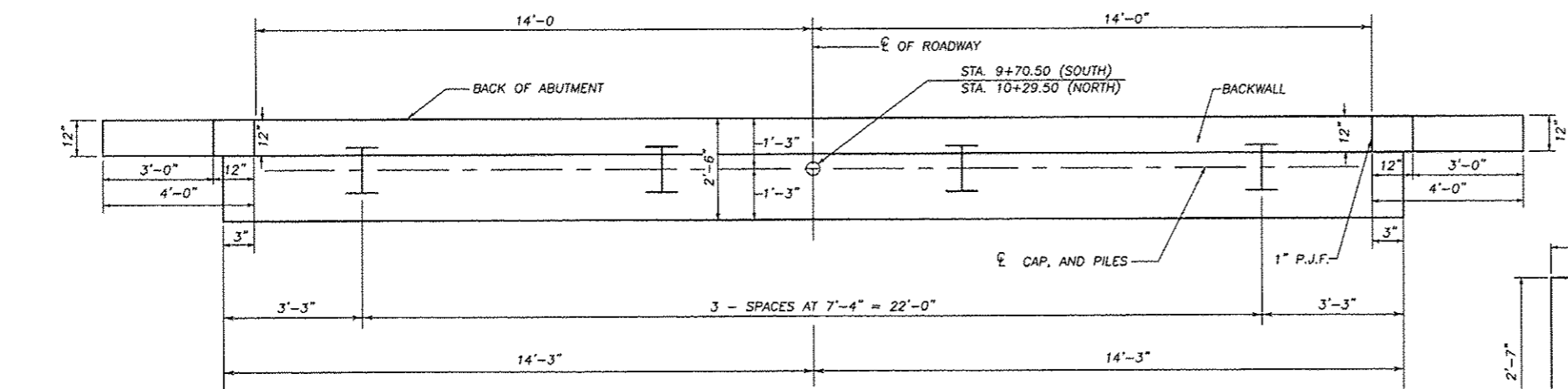
S.N. 089-3286  
 27" X 48" PPC DECK BEAMS  
 CONCRETE OVERLAY DETAILS  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY



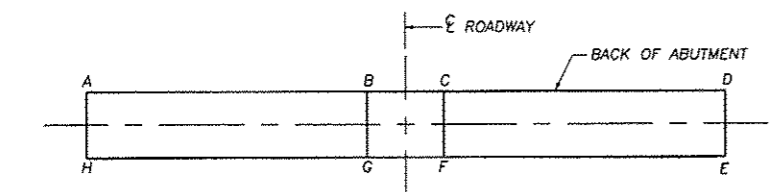




**ELEVATION**  
 \* FOR CAP ELEVATIONS SEE TABLE BELOW

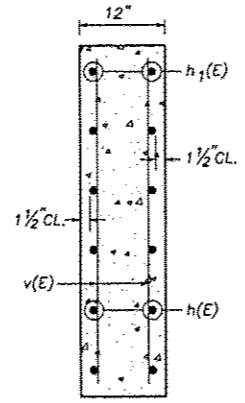


**PLAN**



ABUTMENT	A	B	C	D	E	F	G	H
S	879.32	879.51	879.51	879.32	879.29	879.48	879.48	879.29
N	878.64	880.19	880.19	878.64	878.67	880.22	880.22	878.67

**ELEVATION TOP OF ABUTMENTS**



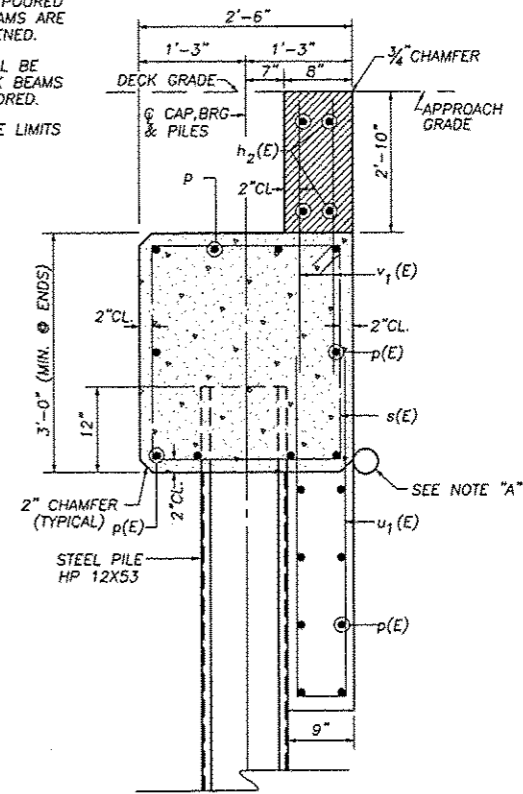
**SECTION THRU WINGWALL**

**PILE DATA INFORMATION**

TYPE AND SIZE: STEEL PILES HP 12X53  
 DRIVE TO REFUSAL. MIN. PENETRATION 20' BELOW STREAM BED  
 NO. REQUIRED : 7+1 TEST PILE NORTH ABUTMENT  
 EST. LENGTH: 50' - S. ABUT. ; 50' - N. ABUT.

NOTE: WINGWALLS ABOVE TOP OF CAP SHALL NOT BE POURED UNTIL THE DECK BEAMS ARE IN PLACE AND FASTENED.  
 HATCHED AREA SHALL BE POURED AFTER DECK BEAMS ARE SET AND ANCHORED.  
 WIDTH SHALL BE THE LIMITS OF THE CAP.

NOTE "A": 4"Ø PIPE UNDERDRAIN IN FILTER FABRIC. FULL WIDTH OF ABUTMENT AND EXTEND TO INTERSECT THE SLOPES IF FRONT OF THE CAP. COST INCLUDED WITH CONCRETE STRUCTURES.



**SEC. THRU ABUT. (AT RIGHT ANGLES)**

**BILL OF MATERIAL 2 ABUTMENTS**

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	40	#4	5'-6"	—
h <sub>1</sub> (E)	24	#4	3'-8"	—
h <sub>2</sub> (E)	8	#4	27'-6"	—
p(E)	36	#7	28'-2"	—
s(E)	54	#4	10'-3"	□
u(E)	16	#6	10'-1"	□
u <sub>1</sub> (E)	58	#5	8'-10"	□
v(E)	32	#4	5'-6"	—
v <sub>1</sub> (E)	112	#4	4'-8"	—
CONCRETE STRUCTURES			CU. YD.	28.1
REINFORCEMENT BARS (EPOXY CTD.)			POUND	4140
STEEL PILE HP 12X53			FOOT	350
DRIVING PILES			FOOT	350
TEST PILE METAL SHELLS			EACH	1

S.N. 089-3286  
 SUBSTRUCTURE ABUTMENTS  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY

REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY: [ ]  
 CHECKED BY: [ ]  
 DRAWN BY: [ ]  
 DATE: [ ]  
 PROJECT NO.: [ ]  
 SHEET NO.: [ ]

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 Illinois Professional Design Firm No. 184-00068

**SUBSTRUCTURE ABUTMENTS OF NORTH REES ROAD BRIDGE FOR STEPHENSON COUNTY**

SHEET TITLE  
**ABUTMENTS**

12/27/2008 11:20:07 AM 12/27/2008 2:09:45 AM 3/25



FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
-	*	STEPHENSON	14	12

ILLINOIS PROJECT BROS-0177(045)  
 \* 12-03120-00-BR  
 CONTRACT NO. 85587

SCALE: 1" = 10'

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354  
**BORING LOG**  
 Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net  
 Sheet 1 of 3

Client: Stephenson County  
 Project Name: Rees Road Section 12-03120-00-BR  
 Project Site: Stephenson County, IL.  
 Boring No. B-1  
 Surface Elev. 99.80  
 Auger Depth 51.5' Rotary Depth NA  
 Start Date 04/13/12 Finish Date 04/13/12

Location: 6' East of centerline of road and  
28' North of center of bridge

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES					DRILLED BY		REMARKS
				Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
99.80	882								Randy Safranski Diedrich D-120		
98.80	Medium Brown Crushed Stone (Fill)		1								
97.80			2								
96.80			3	1	SS	19	---	10			
95.80	Medium Black And Brown Clay (Fill)		4								
94.80			5	2	SS	0.8	5	S	23		
93.80			6								
92.80	Loose Black And Brown Silty Loam (Fill)		7								
91.80			8	3	SS	---	6	---	18		
90.80			9								
89.80			10	4	SS	---	5	---	22		
88.80	Medium Brown Silt With Limestone Fragments		11								
87.80			12								
86.80			13	5	SS	---	25	---	---		
85.80			14								
84.80	867 SS		15	6	SS	---	12	---	---		
83.80			16								
82.80	864		17								
81.80	Medium Brown Fine Sand		18	7	SS	---	10	---	---		
80.80			19								
79.80			20	8	SS	---	16	---	---		

Groundwater Data: Static water level at time of investigation - Elevation 87.0  
 Comments: Assumed center of existing bridge deck as elevation 100.0. = 881.72

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354  
**BORING LOG**  
 Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net  
 Sheet 2 of 3

Client: Stephenson County  
 Project Name: Rees Road Section 12-03120-00-BR  
 Project Site: Stephenson County, IL.  
 Boring No. B-1  
 Surface Elev. 99.80  
 Auger Depth 51.5' Rotary Depth NA  
 Start Date 04/13/12 Finish Date 04/13/12

Location: 6' East of centerline of road and  
28' North of center of bridge

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES					DRILLED BY		REMARKS
				Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	
78.80									Randy Safranski Diedrich D-120		
820 77.80	859		22								
76.80			23	9	SS	---	18	---	---		
75.80	857		24								
74.80	Medium Brown Silt		25								
73.80			26	10	SS	---	15	---	---		
72.80			27								
855 71.80	854		28								
70.80			29	11	SS	---	17	---	---		
69.80	Medium Brown Fine To Coarse Sand		30								
68.80			31	12	SS	---	15	---	---		
850 67.80	849		32								
66.80			33	13	SS	---	16	---	---		
65.80	847		34								
64.80			35								
63.80			36	14	SS	---	23	---	---		
845 62.80	843		37								
61.80	Medium Brown Fine And Coarse Sand With Occasional Gravel		38								
60.80			39								
59.80			40								
58.80			41	15	SS	---	18	---	---		

Groundwater Data: Static water level at time of investigation - Elevation 87.0  
 Comments: Assumed center of existing bridge deck as elevation 100.0.

REVISIONS	DATE	BY

REVISIONS	DATE	BY

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 Illinois Professional Design Firm No. 194-000849

SOIL BORINGS  
 OF  
 NORTH REES ROAD BRIDGE  
 FOR  
 STEPHENSON COUNTY

SHEET TITLE

BORINGS

JOB NUMBER  
2120077

DATE  
03/22/2013

SHEET NO.

12 of 14

S.N. 089-3286  
 SOIL BORINGS  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354

**BORING LOG**  
 Sheet 3 of 3  
 Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net

Client: Stephenson County  
 Project Name: Rees Road Section 12-03120-00-BR  
 Project Site: Stephenson County, IL.

Boring No. B-1  
 Surface Elev. 99.80  
 Auger Depth 51.5' Rotary Depth NA  
 Start Date 04/13/12 Finish Date 04/13/12

Location: 6' East of centerline of road and  
28' North of center of bridge

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY		
				Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS	
57.80												
56.80			43									
55.80			44									
54.80			45									
53.80	Stiff Gray Clay		46	16	SS	1.3	8	B	25			
52.80			47									
51.80			48									
50.80			49									
49.80	Very Dense Yellowish Brown Limestone Fragments		50									
48.80			51	17	SS	---	54	---	---			
47.80	Refusal Limestone Bedrock		52									
46.80			53									
45.80			54									
44.80			55									
43.80			56									
42.80			57									
41.80			58									
40.80			59									
39.80			60									
38.80			61									
37.80			62									

Groundwater Data: Static water level at time of investigation - Elevation 87.0  
 Comments: Assumed center of existing bridge deck as elevation 100.0.

**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354

**BORING LOG**  
 Sheet 1 of 3  
 Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net

Client: Stephenson County  
 Project Name: Rees Road Section 12-03120-00-BR  
 Project Site: Stephenson County, IL.

Boring No. B-2  
 Surface Elev. 100.00  
 Auger Depth 52' Rotary Depth NA  
 Start Date 04/13/12 Finish Date 04/13/12

Location: 6' West of centerline of road and  
30' South of center of bridge

802  
801  
810  
867  
865

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY		
				Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS	
100.00												
99.00			1									
98.00	Dense Yellowish Brown Crushed Stone (Fill)		2									
97.00			3	1	SS	---	32	---	8			
96.00			4									
95.00			5									
94.00	Stiff Black And Brown Clay (Fill)		6	2	SS	1.2	7	B	20			
93.00			7									
92.00			8	3	SS	1.4	7	B	21			
91.00			9									
90.00			10	4	SS	1.2	6	B	23			
89.00			11									
88.00	Stiff Black Silty Clay		12									
87.00			13	5	SS	1.0	5	B	25			
86.00			14									
85.00	Medium Brown Fine Sand		15	6	SS	---	11	---	---			
84.00			16									
83.00			17									
82.00			18	7	SS	---	15	---	---			
81.00			19									
80.00			20	8	SS	---	19	---	---			

Groundwater Data: Static water level at time of investigation - Elevation 87.0  
 Comments: Assumed center of existing bridge deck as elevation 100.0.

REVISIONS	DATE

DESIGNED BY	DAB
DRAWN BY	DAB
CHECKED BY	DAB
DATE	03/22/2013

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 www.wendlers.com  
 ph: 815.288.2261  
 Illinois Professional Design Firm No. 154-000848

SOIL BORINGS  
 OF  
 NORTH REES ROAD BRIDGE  
 FOR  
 STEPHENSON COUNTY

SHEET TITLE  
**BORINGS**

JOB NUMBER  
 2120077

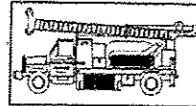
DATE  
 03/22/2013

SHEET NO.  
 13 of 14

S.N. 089-3286  
 SOIL BORINGS  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
-	*	STEPHENSON	14	14

ILLINOIS PROJECT BROS-0177(045)  
 \* 12-03120-00-BR  
 CONTRACT NO. 85587



**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354

**BORING LOG**

Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net

Sheet 2 of 3

Client: Stephenson County  
 Project Name: Rees Road Section 12-03120-00-BR  
 Project Site: Stephenson County, IL.

Boring No. B-2  
 Surface Elev. 100.00  
 Auger Depth 52' Rotary Depth NA  
 Start Date 04/13/12 Finish Date 04/13/12

Location: 6' West of centerline of road and  
30' South of center of bridge

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)		
79.00										Randy Safranski Diedrich D-120	
78.00			22								
77.00			23	9	SS	---	21	---	---		
76.00			24								
75.00			25								
74.00			26	10	SS	---	23	---	---		
73.00			27								
72.00	Medium Brown Fine Sand With Silt Seams		28	11	SS	---	16	---	---		
71.00			29								
70.00			30								
69.00			31								
68.00			32								
67.00			33	13	SS	---	18	---	---		
66.00			34								
65.00			35								
64.00			36	14	SS	---	26	---	---		
63.00			37								
62.00	Medium Brown Fine And Coarse Sand With Occasional Gravel		38								
61.00			39								
60.00			40								
59.00			41	15	SS	---	20	---	---		
	Stiff Gray Clay										

Groundwater Data: Static water level at time of investigation - Elevation 87.0  
 Comments: Assumed center of existing bridge deck as elevation 100.0.



**Midwest Testing Services, Inc.**  
 3705 Progress Blvd.  
 Peru, IL 61354

**BORING LOG**

Phone: 815-223-6696  
 Fax: 815-223-6659  
 e-mail: mts37@comcast.net

Sheet 3 of 3

Client: Stephenson County  
 Project Name: Rees Road Section 12-03120-00-BR  
 Project Site: Stephenson County, IL.

Boring No. B-2  
 Surface Elev. 100.00  
 Auger Depth 52' Rotary Depth NA  
 Start Date 04/13/12 Finish Date 04/13/12

Location: 6' West of centerline of road and  
30' South of center of bridge

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	SAMPLES						DRILLED BY	REMARKS
				Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)		
58.00										Randy Safranski Diedrich D-120	
57.00			43								
56.00			44								
55.00			45								
54.00	Stiff Gray Clay		46	16	SS	1.2	9	B	24		
53.00			47								
52.00			48								
51.00			49								
50.00			50								
49.00	Dense Yellowish Brown Limestone Fragments		51	17	SS	---	46	---	---		
48.00			52								
47.00	Refusal Limestone Bedrock		53								
46.00			54								
45.00			55								
44.00			56								
43.00			57								
42.00			58								
41.00			59								
40.00			60								
39.00			61								
38.00			62								

Groundwater Data: Static water level at time of investigation - Elevation 87.0  
 Comments: Assumed center of existing bridge deck as elevation 100.0.

SCALE: 1"=

REVISIONS	DATE

DESIGNED BY	DRAWN BY	CHECKED BY	DATE

**wendler**  
 GROUND-BREAKING SOLUTIONS  
 engineers - surveyors - scientists  
 www.wendlergs.com ph: 815.283.2281  
 Illinois Professional Design Firm No. 184-000648

SOIL BORINGS  
 OF  
 NORTH REES ROAD BRIDGE  
 FOR  
 STEPHENSON COUNTY

SHEET TITLE

BORINGS

JOB NUMBER  
2120077

DATE  
03/22/2013

SHEET NO.

14 of 14

S.N. 089-3286  
 SOIL BORINGS  
 SECTION 12-03120-00-BR  
 STEPHENSON COUNTY

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