FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	1

ILLINOIS PROJECT BRS-0188(121)

* 08-00303-00-BR

PLANS FOR PROPOSED FEDERAL-AID PROJECT

F.A.S. 188 (C.H. 15) INDIAN HEAD ROAD

PROPOSED STRUCTURE NO. 052-3413

SECTION 08-00303-00-BR

LEE COUNTY

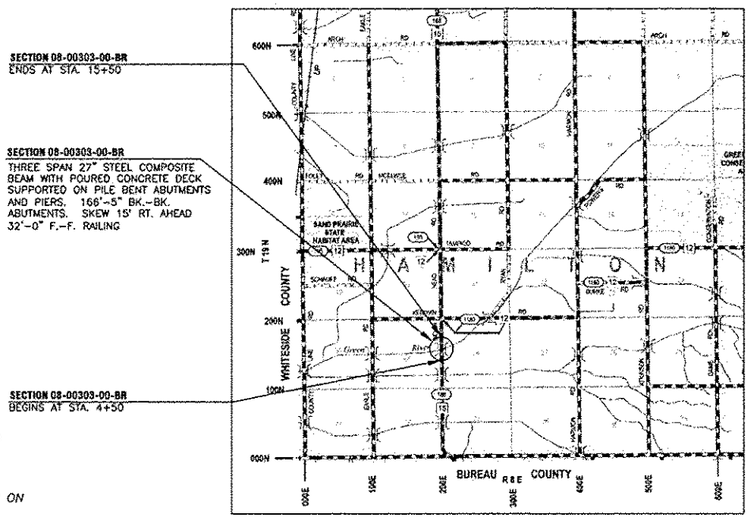
PROJECT BRS-0188(121)

JOB NO. C-92-111-12

INDEX OF SHEETS

STANDARDS:

000001–06	*STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS*
001001–02	*AREAS OF REINFORCEMENT BARS*
280001–07	*TEMPORARY EROSION CONTROL SYSTEMS*
515001–03	*NAME PLATE FOR BRIDGES*
630301–06	*SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS*
635006–03	*REFLECTOR AND TERMINAL MARKER PLACEMENT*
635011–02	*REFLECTOR MARKER AND MOUNTING DETAILS*
701006–04	*OFF–RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE*
701301–04	*LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS*
701901–02	*TRAFFIC CONTROL DEVICES*
720011–01	*METAL POSTS FOR SIGNS, MARKERS & DELINEATORS*
728001–01	*TELESCOPING STEEL SIGN SUPPORT*
729001–01	*APPLICATIONS OF TYPES A & B METAL POSTS (FOR SIGNS & MARKERS)*
BLR 21–9	*TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES*
BLR 22–7	*TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS*
BLR 23–4	*TRAFFIC BARRIER TERMINAL, TYPE 1*
BLR 27–1	*TRAFFIC BARRIER TERMINAL, TYPE 5A*



LOCATION MAP

GROSS LENGTH OF SECTION = 1100 FEET (0.21 MILE)
NET LENGTH OF SECTION = 1100 FEET (0.21 MILE)

LOCATION OF SECTION INDICATED THUS: - ■ -

100' 200' 300' — 1"= 100'
0 10' 20' 30' — 1"= 10'
0 50' 100' — 1"= 50'
0 50' 100' — 1"= 40'
0 50' 100' — 1"= 30'
0 50' 100' — 1"= 20'

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. 85573

DESIGN CRITERIA

ROADWAY	DESIGN CLASSIFICATION	ADT 2012	DESIGN SPEED
INDIAN HEAD ROAD	RURAL COLLECTOR	325	40
	3R GUIDELINES	3% TRUCKS	

REGISTERED PROFESSIONAL ENGINEER
RICHARD A. BAUMANN
062-035417
STATE OF ILLINOIS

12/27/12
DATE

RICHARD A. BAUMANN
STERLING, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-035417
EXPIRES 11-30-2014

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www.wendlergs.com ph: 815.288.2261
Illinois Professional Design Firm No. 184-000848

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 12/20 20 12
Dan M. Anderson
COUNTY ENGINEER

PASSED JAN. 9 20 13
DISTRICT 2 ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR BID BASED ON LIMITED REVIEW JAN. 9 20 13
Paul A. Wilson
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
188	*	LEE	22	2

ILLINOIS PROJECT BRS-0188(121)

* 08-00303-00-BR

SUMMARY OF QUANTITIES

FUNDING CODE: 0011

	CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY
	20400800	FURNISHED EXCAVATION	CU YD	1020
*	20700220	POROUS GRANULAR EMBANKMENT	CU YD	74
	25100630	EROSION CONTROL BLANKET	SQ YD	4261
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	240
	28000400	PERIMETER EROSION BARRIER	FOOT	332
	28000500	INLET AND PIPE PROTECTION	EACH	2
	28100709	STONE DUMPED RIPRAP, CLASS A5	SQ YD	541
	35101400	AGGREGATE BASE COURSE, TYPE B	TON	244
	40600100	BITUMINOUS MATERIALS (PRIME COAT)	GAL	870
	40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	778
	48101200	AGGREGATE SHOULDERS, TYPE B	TON	142
	50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
	50200100	STRUCTURE EXCAVATION	CU YD	74
	50300225	CONCRETE STRUCTURES	CU YD	43.0
	50300255	CONCRETE SUPERSTRUCTURE	CU YD	162.9
	50300260	BRIDGE DECK GROOVING	SQ YD	590.0
	50300280	CONCRETE ENCASEMENT	CU YD	38.4
	50300300	PROTECTIVE COAT	SQ YD	652.0
	50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
	50500505	STUD SHEAR CONNECTORS	EACH	3,465
	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	51,325
Δ	50901050	STEEL RAILING, TYPE SM	FOOT	332
	51202305	DRIVING PILES	FOOT	1,418
	51203200	TEST PILE METAL SHELLS	EACH	2
	51200958	FURNISHING METAL SHELL PILES 14" X 0.250"	FOOT	1,418
	51500100	NAME PLATES	EACH	1
	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	42
Δ	63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
Δ	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (TANGENT)	EACH	2
	67100100	MOBILIZATION	L SUM	1
Δ *	78200200	BIDIRECTIONAL PRISMATIC BARRIER REFLECTORS	EACH	16
Δ *	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	2
*	X2020410	EARTH EXCAVATION (SPECIAL)	CU YD	545
*	X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.88
*	X7010216	TRAFFIC CONTROL & PROTECTION, (SPECIAL)	L SUM	1
*	Z0013798	CONSTRUCTION LAYOUT	L SUM	1
*	Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	120

QUANTITY NOTES:

Δ SPECIALTY ITEMS

* SEE SPECIAL PROVISIONS

PERIMETER EROSION BARRIER IS AN ESTIMATED QUANTITY. LOCATIONS ARE TO BE DETERMINED IN FIELD BY THE ENGINEER

SCHEDULE OF QUANTITIES

AGGREGATE BASE COURSE, TYPE B

LOCATION	TON
STA. 8+50 TO STA. 9+16.8	122
STA. 10+83.2 TO STA. 11+50	122
TOTAL	244 TON

AGGREGATE SHOULDERS, TYPE B

LOCATION	TON
RT. STA. 4+50 TO RT. STA. 9+21	36
LT. STA. 4+50 TO LT. STA. 9+12	35
LT. STA. 10+79.8 TO LT. STA. 15+50	36
RT. STA. 10+86 TO RT. STA. 15+50	35
TOTAL	142 TON

INCIDENTAL HOT-MIX ASPHALT SURFACING

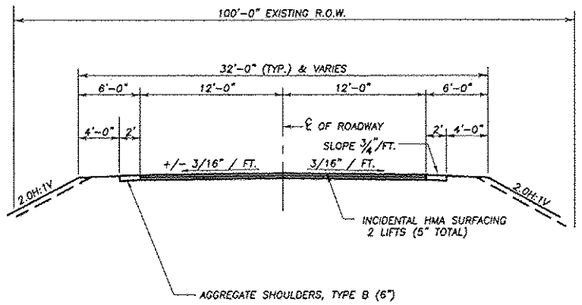
LOCATION	TON
STA. 4+50 TO STA. 9+16.8	389
STA. 10+83.2 TO STA. 15+50	389
TOTAL	778 TON

TRAFFIC BARRIER TERMINAL, TYPE 5A

LOCATION	EACH
RT. STA. 9+08.1 TO RT. STA. 9+21.3	1
LT. STA. 10+78.7 TO LT. STA. 10+92.0	1
TOTAL	2 EACH

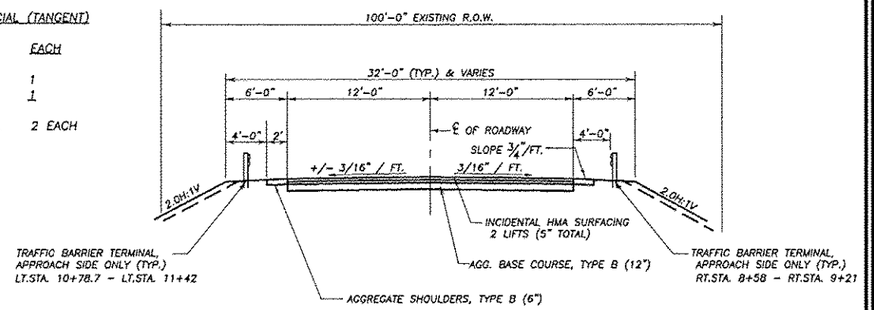
TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)

LOCATION	EACH
RT. STA. 8+58.1 TO RT. STA. 9+08.1	1
LT. STA. 10+92.0 TO LT. STA. 11+42	1
TOTAL	2 EACH



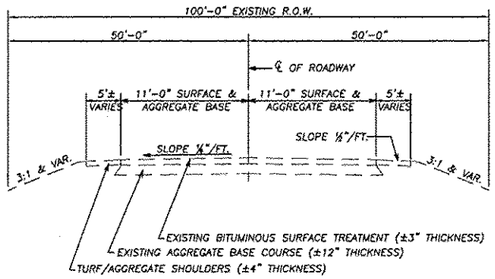
PROPOSED TYPICAL SECTION

STA. 4+50 TO STA. 8+50
STA. 11+50 TO STA. 15+50



PROPOSED TYPICAL GUARDRAIL SECTION

STA. 8+50 TO STA. 11+50
(BRIDGE OMISSION STA. 9+16.8 TO STA. 10+83.2)



EXISTING TYPICAL SECTION

STA. 4+50 TO STA. 15+50
(BRIDGE OMISSION STA. 9+18 TO STA. 10+82)

	RESURFACING
MIXTURE USE(S):	SURFACE
PG:	PG 64-22
DESIGN AIR VOIDS	3.0 @ N50
MIXTURE COMPOSITION	IL 9.5 OR 12.5
FRICTION AGGREGATE	C
20 YEAR ESAL	0.0
MIX UNIT WEIGHT	112 LBS/SY/IN

SCHEDULE OF QUANTITIES
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

DESCRIPTION	DATE

DESIGNED BY: DB
DRAWN BY: RLR, BEH
DRAWING NAME: summ-sched.dwg
SURVEYED BY:
BOOK NO.:

wendler
wendler engineering services, inc.
GROUNDBREAKING SOLUTIONS
engineers · surveyors · scientists
www.wendlergs.com ph. 815.283.2261
Illinois Professional Design Firm No. 184.000346

SCHEDULE OF QUANTITIES
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
SCHEDULE OF QUANTITIES

JOB NUMBER
2080334

DATE
12/31/2012

SHEET NO.
2 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	3

ILLINOIS PROJECT BRS-0188(121)

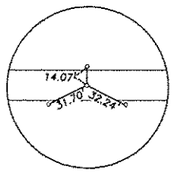
* 08-00303-00-BR

BENCHMARK INFORMATION

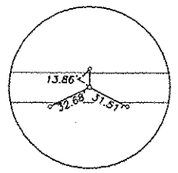
B.M. "A" – SET R.R. SPIKE IN NORTH FACE OF 1ST. POWER POLE, SOUTH OF BRIDGE. WEST SIDE OF ROAD. ELEV=661.92

B.M. "B" – SET R.R. SPIKE IN N.E. FACE OF 1ST. POWER POLE, NORTH OF BRIDGE, WEST SIDE OF ROAD. ELEV=666.00

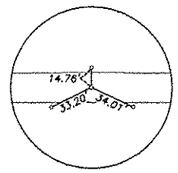
B.M. "C" – FOUND CHISELED "□" ON S.W. HEADWALL OF INDIAN HEAD ROAD BRIDGE OVER GREEN RIVER. ELEV=661.81



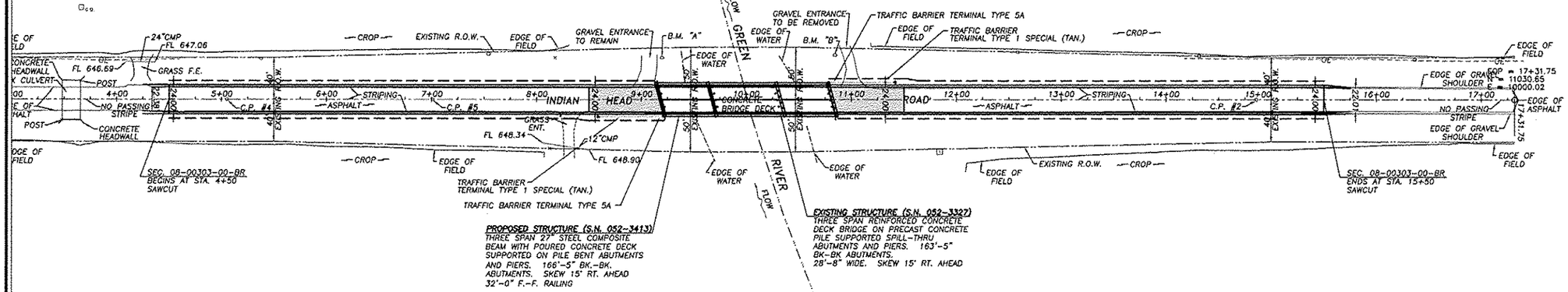
CONTROL POINT #4
STA. 5+05.08
SET R.R. SPIKE
ALL TIES ARE 5/8" STEL PINS



CONTROL POINT #5
STA. 7+01.07
SET R.R. SPIKE
ALL TIES ARE 5/8" STEL PINS



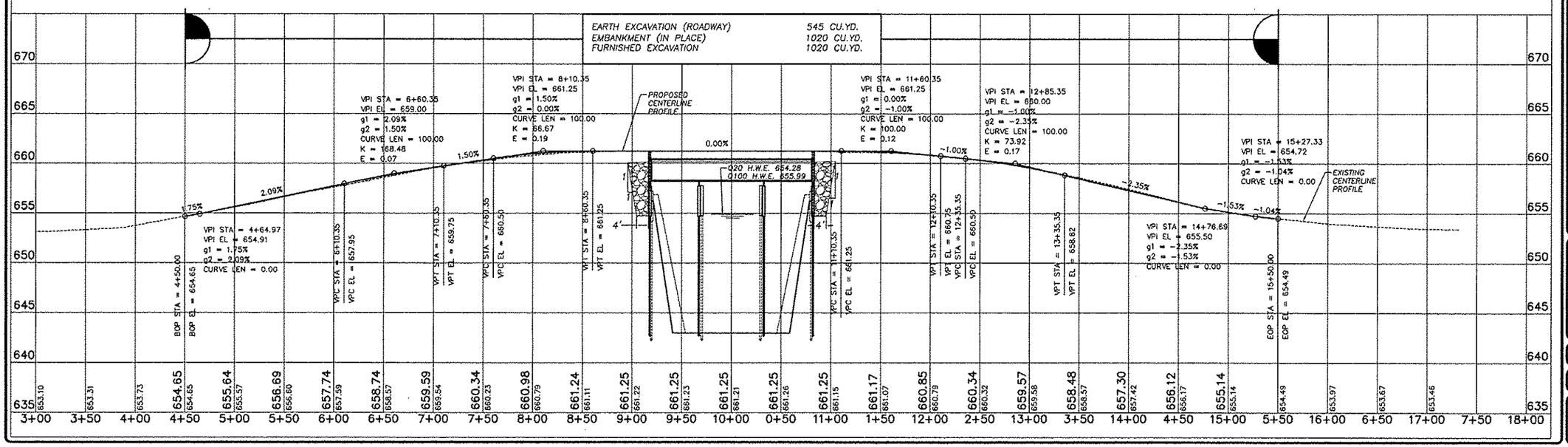
CONTROL POINT #2
STA. 14+85.75
SET R.R. SPIKE
ALL TIES ARE 5/8" STEL PINS



PROPOSED STRUCTURE (S.N. 052-3413)
THREE SPAN 27" STEEL COMPOSITE BEAM WITH POURED CONCRETE DECK SUPPORTED ON PILE BENT ABUTMENTS AND PIERS. 166'-5" BK.-BK. ABUTMENTS. SKEW 15° RT. AHEAD
32'-0" F.-F. RAILING

EXISTING STRUCTURE (S.N. 052-3327)
THREE SPAN REINFORCED CONCRETE DECK BRIDGE ON PRECAST CONCRETE PILE SUPPORTED SPILL-THRU ABUTMENTS AND PIERS. 163'-5" BK.-BK. ABUTMENTS.
28'-8" WIDE. SKEW 15° RT. AHEAD

SCALES:
1" = 50' HOR
1" = 5' VER



EARTH EXCAVATION (ROADWAY)	545 CU.YD.
EMBANKMENT (IN PLACE)	1020 CU.YD.
FURNISHED EXCAVATION	1020 CU.YD.

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Illinois Professional Design Firm No. 184-006848

REVISIONS

NO	DESCRIPTION	DATE

DESIGNED BY: DB
DRAWN BY: BDS
CHECKED BY: DB
QUANTITIES BY: cgs01001.dwg
SUBMITTED BY:
BOOK/PAGE:

SCALE: 1"= 60'

PLAN AND PROFILE
OF
INDIANHEAD ROAD BRIDGE
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
PLAN AND PROFILE

JOB NUMBER
2080334

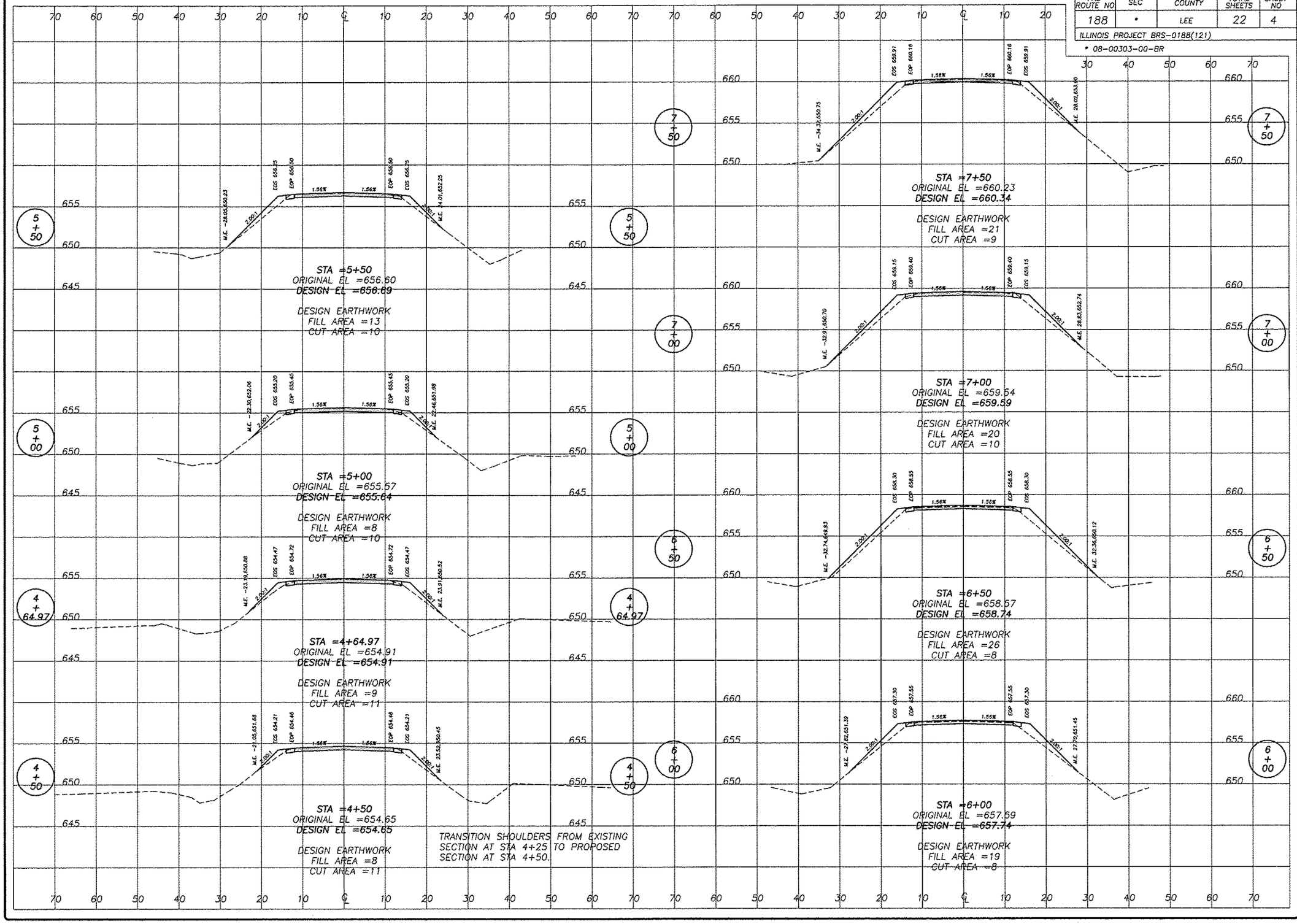
DATE
12/13/2012

SHEET NO.
3 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	4

ILLINOIS PROJECT BRS-0188(121)

* 08-00303-00-BR



REVISIONS

REVISION	DATE	REVISION	DATE

DESIGNED BY:
DRAWN BY: BEH
DRAWING NAME: RC001001
SURVEYED BY:
BOOK NO:

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CROSS SECTIONS OF INDIAN HEAD ROAD BRIDGE FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
CROSS SECTIONS

JOB NUMBER
2080334

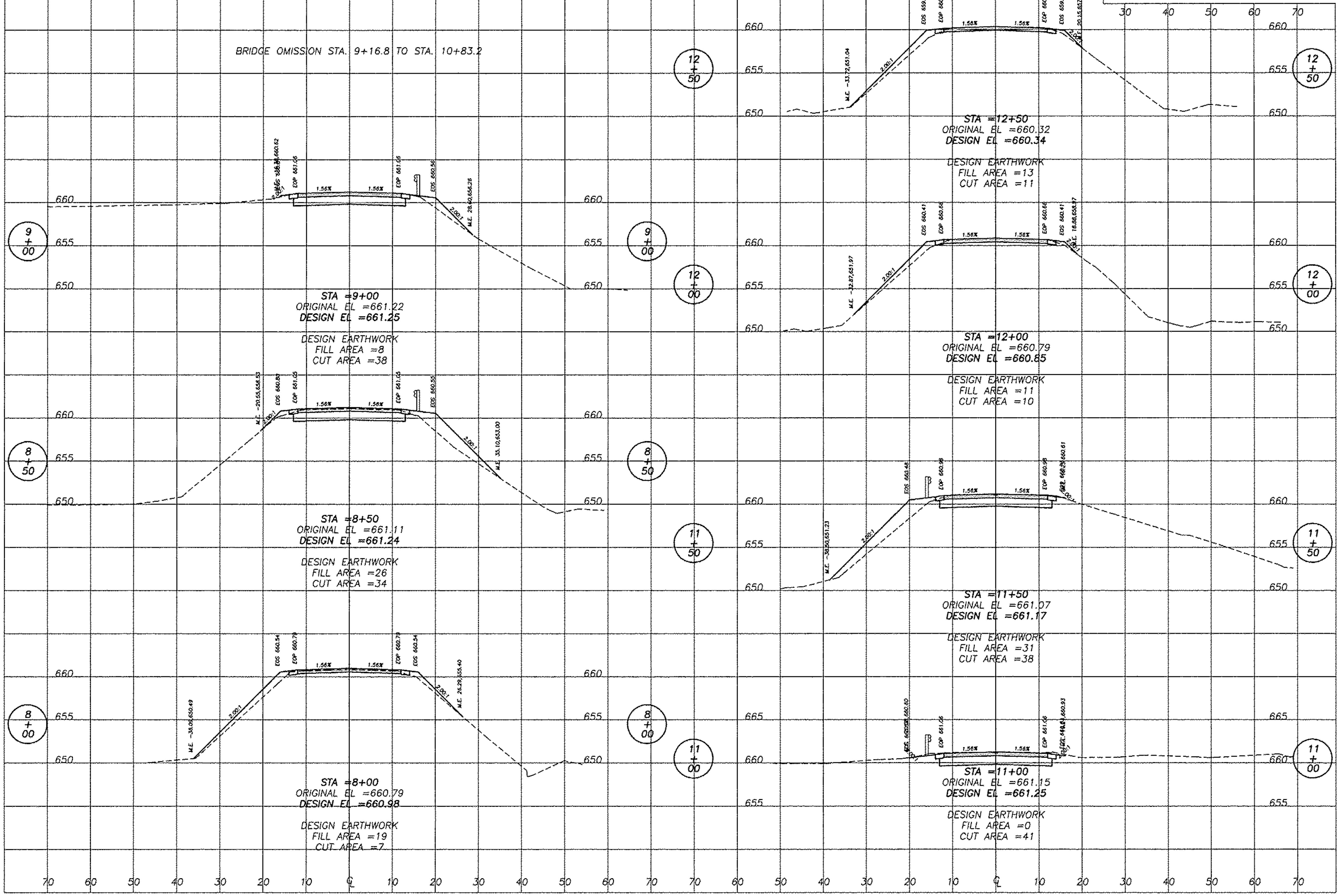
DATE
11/19/2012

SHEET NO.
4 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	5

ILLINOIS PROJECT BRS-0188(121)

* 08-00303-00-BR



REVISIONS

wendler

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CROSS SECTIONS
OF
INDIAN HEAD ROAD BRIDGE
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE

CROSS SECTIONS

JOB NUMBER 2080334

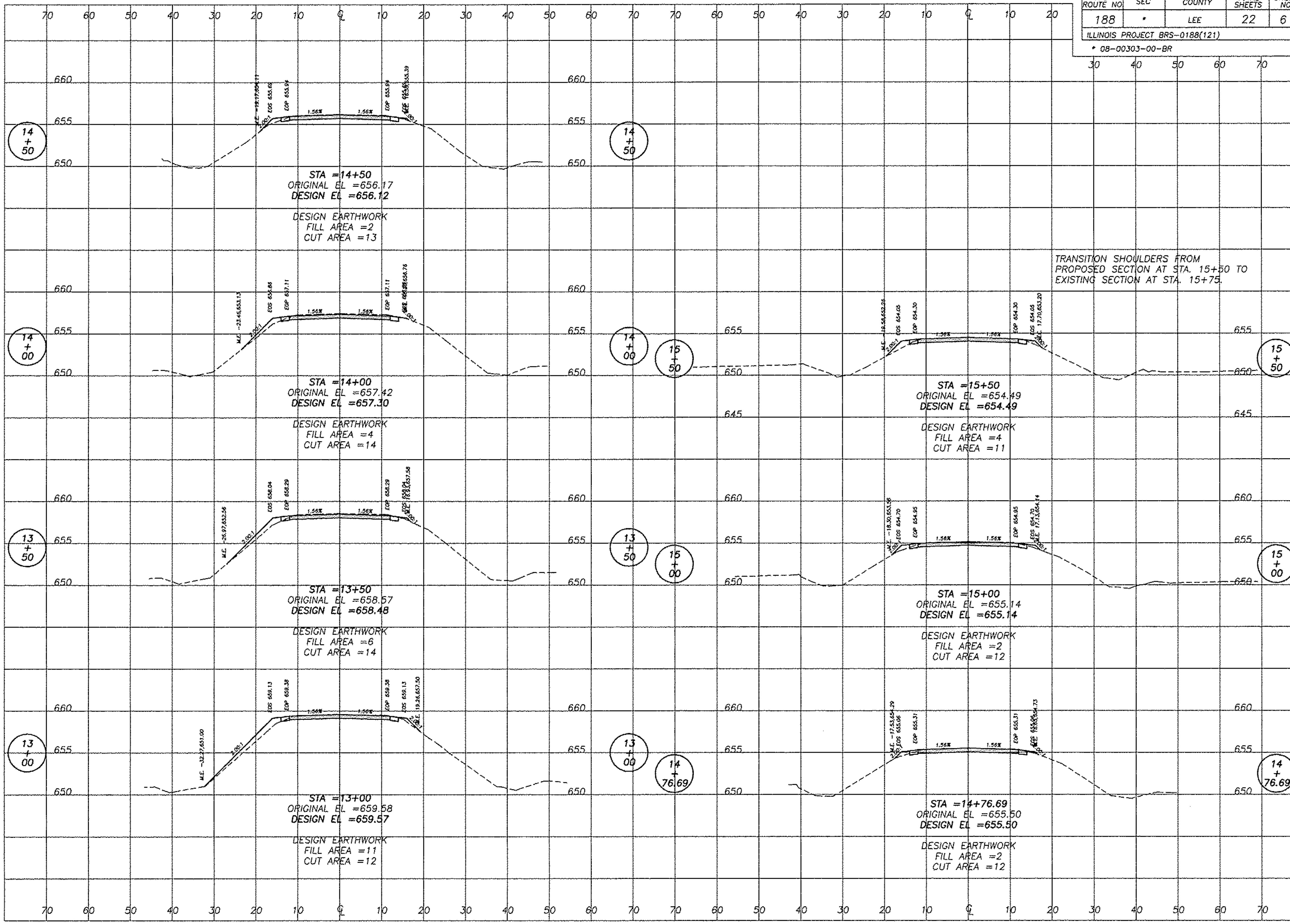
DATE 11/19/2012

SHEET NO.

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	6

ILLINOIS PROJECT BRS-0188(121)

* 08-00303-00-BR



REVISIONS

REVISION	DATE	REVISION	DATE

DESIGNED BY: -
DRAWN BY: BEH
DRAWING NAME: RC003001
SURVEYED BY: -
BOOK NO.: -

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CROSS SECTIONS
OF
INDIAN HEAD ROAD BRIDGE
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE: CROSS SECTIONS

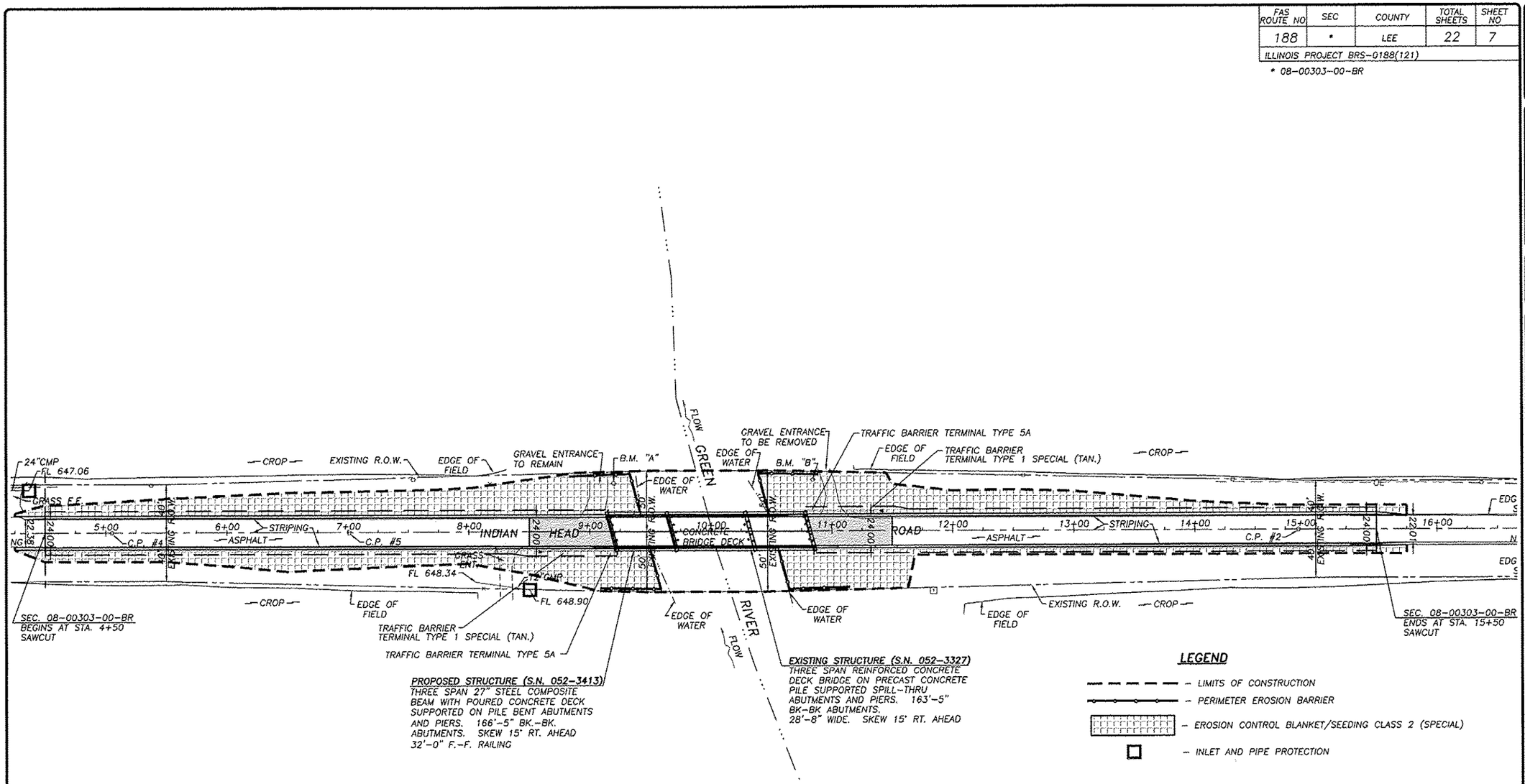
JOB NUMBER: 2080334

DATE: 11/19/2012

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	7

ILLINOIS PROJECT BRS-0188(121)

* 08-00303-00-BR



0 20 40
SCALE: 1" = 40'

REVISIONS

REVISION	DATE

DESIGNED BY:
DRAWN BY: BEH
DRAWING NAME: 2080334.dwg
SURVEYED BY:
BOOK/PAG:

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Illinois Professional Design Firm No. 184.000048

EROSION CONTROL PLAN
OF
INDIAN HEAD ROAD BRIDGE
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
EROSION CONTROL PLAN

JOB NUMBER
2080334

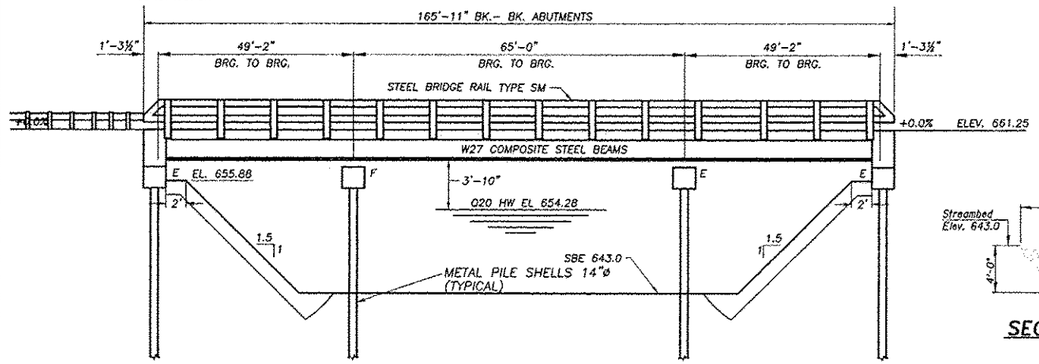
DATE
12/13/2012

SHEET NO.
7 of 22

BM: RR SPIKE IN NORTH FACE OF FIRST POWER POLE SOUTH OF BRIDGE
ELEV. 661.92

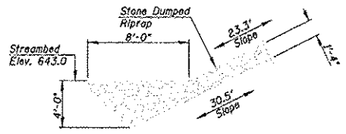
EXISTING STRUCTURE: S.N. 052-3327 FAS 177 SEC 618, BUILT 1956
THREE SPAN REINF. CONC. DECK
BRIDGE ON PRECAST CONC. PILE SUPPORTED
SPILL-THRU ABUTMENTS AND PIERS. 163'-5"
BK.- BK. ABUTMENTS
27'-8" WIDE. SKEW 15° RT. AHEAD

STRUCTURE TO BE REMOVED & REPLACED
NO SALVAGE. ROAD TO BE CLOSED DURING
CONSTRUCTION

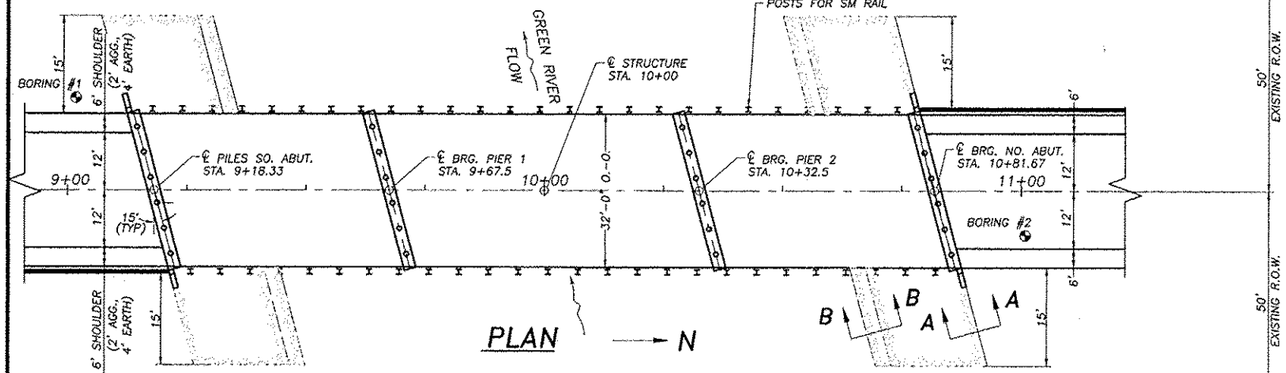


ELEVATION

SECTION A-A



SECTION B-B

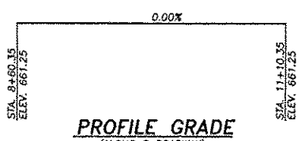


PLAN

WATERWAY INFORMATION

Drainage Area = 290 sq. miles Prop. Grade = 661.25 at Roadway Sta. 10+00

Flood	Frequency Year	Q (cfs)	Opening Sq. Ft. Existing	Opening Sq. Ft. Proposed	Natural H.W.E.	Head-Ft. Existing	Head-Ft. Proposed	Headwater El. Existing	Headwater El. Proposed
Design	20	5764	1203	1459	654.28	0.15	0.18	654.43	654.46
Base	100	7810	152	197	655.99	0.19	0.24	656.18	656.23
Overtopping									
Max Calc.	500	9660			657.37	0.22	0.29	657.59	657.66



PROFILE GRADE
(ALONG ℄ ROADWAY)

SEISMIC DATA

SEISMIC PERFORMANCE ZONE (SPZ) = 1
DESIGN SPECTRAL ACCELERATION AT 1.0 SEC. (S_{D1}) = 0.090g
DESIGN SPECTRAL ACCELERATION AT 0.2 SEC. (S_{DS}) = 0.150g
SOIL SITE CLASS = C

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	SB
DATE:	12/13/2012

BUILT 2013 BY
LEE COUNTY
SECTION 08-00303-00-BR
STA. 10+00
STR. NO. 052-3413 LOADING HL-93

LETTERING FOR NAME PLATE

SEE STD. 515001-02

LOADING HL-93

ALLOW 25 PSF FOR FUTURE WEARING SURFACE

DESIGN DATA

A.D.T. = 325

DESIGN SPEED: 40 MPH

DESIGN STRESSES

f'c = 5000 PSI

fy = 60,000 PSI (REINFORCEMENT)

Fy = 50,000 PSI (M270 GRADE 50W)

DESIGN SPECIFICATIONS

AASHTO 2010 LRFD SPECIFICATIONS

STATE OF ILLINOIS
RICHARD A. BAUMANN
061-004752
DIXON, IL
LICENSED STRUCTURAL ENGINEER

12-27-12
License Expires 11-30-14

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 STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES"

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	8

ILLINOIS PROJECT BRS-0188(121)

* 08-00303-00-BR

GENERAL NOTES

CONCRETE FROM THE EXISTING STRUCTURE SHALL NOT BE BURIED WITHIN 200 FEET OF THE PROPOSED STRUCTURE.

PLANS OF THE EXISTING STRUCTURE ARE AVAILABLE BY WRITTEN REQUEST FROM THE LEE COUNTY HIGHWAY DEPARTMENT.

THE UTILITIES SHOWN ON THE PLANS ARE SHOWN IN APPROXIMATE LOCATION ONLY. THE CONTRACTOR SHALL DETERMINE EXACT LOCATIONS OF ALL UTILITIES WITHIN THE PROJECT LIMITS BEFORE BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION ACTIVITIES WITH AFFECTED UTILITIES AND BY CONTACTING J.U.L.I.E. AT 1-800-892-0123. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITIES PRIOR TO CONSTRUCTION.

FASTENERS SHALL BE HIGH STRENGTH BOLTS, AASHTO M164, TYPE 3. BOLTS 3/4" INCH DIAMETER, OPEN HOLES 13/16 INCH DIAMETER, UNLESS OTHERWISE NOTED.

CALCULATED WEIGHT OF STRUCTURAL STEEL = 103,891 POUNDS OF AASHTO M270 GRADE 50W BEAMS, DIAPHRAGMS, SPLICES, AND BEARINGS. 386 POUNDS AASHTO M270 GRADE 36 PLATES, ANCHOR BOLTS, & MISC.

FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS OR GIRDERS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.

THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL SPLICE PLATE MATERIAL.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60.

BACKFILL SHALL BE PLACED BEHIND THE ABUTMENTS AFTER THE SUPERSTRUCTURE HAS BEEN POURED AND THE FALSEWORK REMOVED. SEE ARTICLE 502.10 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL MAKE ALLOWANCE FOR THE DEFLECTION OF FORMS, SHRINKAGE AND SETTLEMENT OF FALSEWORK, IN ADDITION TO ALLOWANCE FOR DEAD LOAD DEFLECTION.

BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS.

THE CONTRACTOR SHALL DRIVE ONE TEST PILE IN A PERMANENT LOCATION AT THE NORTH ABUTMENT, AND ONE TEST PILE AT PIER #1, AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

AASHTO M 270 GRADE 50W STRUCTURAL STEEL SHALL ONLY BE PAINTED, AT THE ENDS OF THE BEAMS, FOR A DISTANCE OF EQUAL TO THE DEPTH OF EMBEDMENT INTO THE CONCRETE CAP PLUS 3 INCHES. THOSE AREAS SHALL BE PRIMED IN THE SHOP WITH AN INORGANIC ZINC RICH PRIMER PER AASHTO M300, TYPE 1. NO FIELD PAINTING SHALL BE REQUIRED. ALL STRUCTURAL STEEL SHALL BE CLEANED AS SPECIFIED IN ARTICLE 506.07.

ALL CONSTRUCTION JOINTS SHALL BE BONDED.

BILL OF MATERIAL — BRIDGE

ITEM	UNIT	SUPERSTR.	SUBSTR.	TOTAL
REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1		1
GEOCOMPOSITE WALL DRAIN	SQ. YD.		42	42
STRUCTURE EXCAVATION	CU. YD.		74	74
CONCRETE STRUCTURES	CU. YD.		43.0	43.0
CONCRETE SUPERSTRUCTURES	CU. YD.	162.9		162.9
BRIDGE DECK GROOVING	SQ. YD.	590		590
PROTECTIVE COAT	SQ. YD.	652		652
FURNISHING AND ERECTING STRUCTURAL STEEL	L.SUM	1		1
STUD SHEAR CONNECTORS	EACH	3465		3465
STEEL BRIDGE RAIL, TYPE SM	FOOT	332		332
REINFORCEMENT BARS (EPOXY COATED)	POUND	39,597	11,728	51,325
DRIVING PILES	FOOT		1418	1418
FURNISHING METAL SHELL PILES 14"x0.250"	FOOT		1418	1418
TEST PILE METAL SHELLS	EACH		2	2
STONE DUMPED RIPRAP, CLASS A5	SQ. YD.		541	541
NAME PLATE	EACH		1	1
CONCRETE ENCASEMENT	CU. YD.		38.4	38.4
PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT		120	120

PROTECTIVE COAT HAS BEEN INCLUDED FOR THE TOP OF THE DECK AND THE SIDES OF THE DECK TO THE DRIPNOTCH AND THE SIDES OF THE ABUTMENT DIAPHRAGMS.

GENERAL PLAN AND ELEVATION
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS
DATE
REVISION

DESIGNED BY: DB
DRAWN BY: BEH
CHECKED BY: SB
QUANTITIES BY: JLR, BEH
SURVEYED BY: per orig
BOOKING:

wendler
engineering, p.c.
GROUNDBREAKING SOLUTIONS
engineers - surveyors - scientists
www.wendlergs.com
ph: 815.288.2261
Illinois Professional Design Firm No. 184.005843

GENERAL PLAN & ELEVATION
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
GPE

JOB NUMBER
2080334

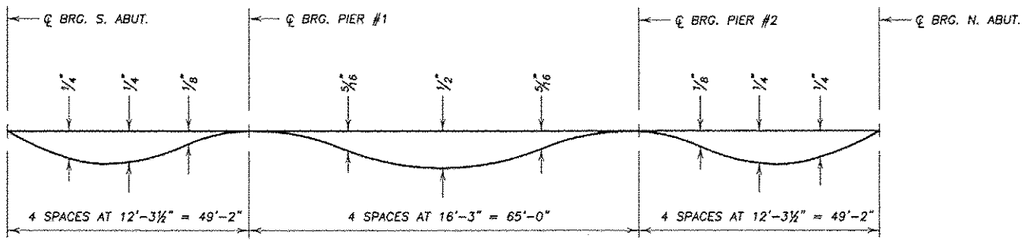
DATE
12/13/2012

SHEET NO.
8 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	9

ILLINOIS PROJECT BRS-188(121)

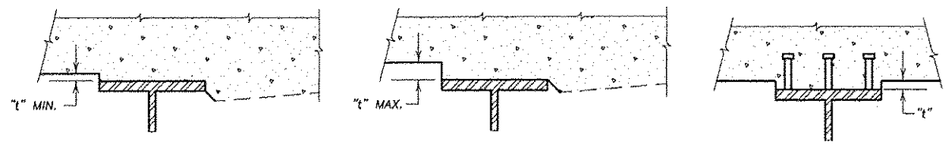
* 08-00303-00-BR



DEAD LOAD DEFLECTION DIAGRAM

(INCLUDES WEIGHT OF CONCRETE ONLY)

NOTE: THE ABOVE DEFLECTIONS ARE NOT TO BE USED IN THE FIELD IF THE ENGINEER IS WORKING FROM THE GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS AS SHOWN BELOW.



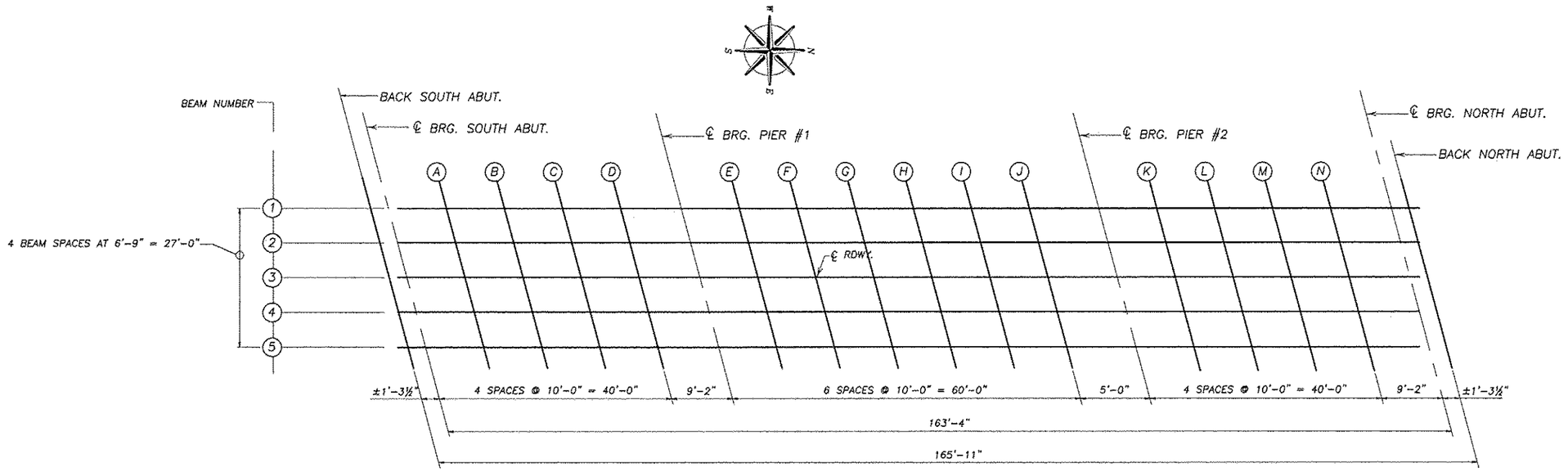
AT MINIMUM FILLET
EXTERIOR BEAM

AT MAXIMUM FILLET
EXTERIOR BEAM

COMPOSITE
INTERIOR BEAM

NOTE: TO DETERMINE "t" – AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT THE STATIONS SHOWN. THESE ELEVATIONS SUBTRACTED FROM THE THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS, MINUS FLOOR THICKNESS, EQUALS THE FILLET HEIGHTS ABOVE TOP FLANGE OF BEAMS.

FILLET HEIGHTS



PLAN

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	
DATE:	

DECK ELEVATIONS LAYOUT
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

SYMBOL	DESCRIPTION	DATE

DESIGNED BY: DB
DRAWN BY: BLR, BEH
CHECKED BY: Chad Ang
SURVEYED BY: -
ACCEPTED: -

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wendler engineering services, inc.
consulting engineers • land surveyors
engineers • surveyors • scientists
www.wendlereng.com
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Illinois Professional Design Firm No. 184.000349

DECK ELEVATIONS LAYOUT
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
DECK ELEVATIONS LAYOUT

JOB NUMBER 2080334

DATE 12/13/2012

SHEET NO.
9 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	10

ILLINOIS PROJECT BRS-188(121)

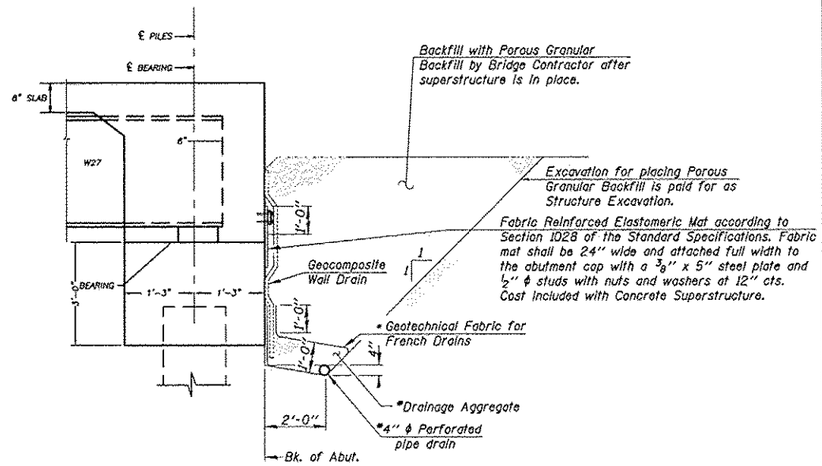
* 08-00303-00-BR

BEAM #1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJ. FOR DEAD LOAD DEFLECTION
Bk So. Abut	9+13.42	13.500	661.039	661.039
Cl Brg So Abut	9+14.72	13.500	661.039	661.039
A	9+24.72	13.500	661.039	661.058
B	9+34.72	13.500	661.039	661.066
C	9+44.72	13.500	661.039	661.060
D	9+54.72	13.500	661.039	661.045
Cl Brg Pier 1	9+63.88	13.500	661.039	661.039
E	9+73.88	13.500	661.039	661.056
F	9+83.88	13.500	661.039	661.080
G	9+93.88	13.500	661.039	661.093
H	10+03.88	13.500	661.039	661.091
I	10+13.88	13.500	661.039	661.072
J	10+23.88	13.500	661.039	661.048
Cl Brg Pier 2	10+28.88	13.500	661.039	661.039
K	10+38.88	13.500	661.039	661.045
L	10+48.88	13.500	661.039	661.060
M	10+58.88	13.500	661.039	661.066
N	10+68.88	13.500	661.039	661.058
Cl Brg No Abut	10+78.05	13.500	661.039	661.039
Bk No Abut	10+79.34	13.500	661.039	661.039

BEAM #2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJ. FOR DEAD LOAD DEFLECTION
Bk So. Abut	9+15.23	6.750	661.145	661.145
Cl Brg So Abut	9+16.53	6.750	661.145	661.145
A	9+26.53	6.750	661.145	661.164
B	9+36.53	6.750	661.145	661.172
C	9+46.53	6.750	661.145	661.166
D	9+56.53	6.750	661.145	661.151
Cl Brg Pier 1	9+65.70	6.750	661.145	661.145
E	9+75.70	6.750	661.145	661.162
F	9+85.70	6.750	661.145	661.186
G	9+95.70	6.750	661.145	661.199
H	10+05.70	6.750	661.145	661.197
I	10+15.70	6.750	661.145	661.178
J	10+25.70	6.750	661.145	661.154
Cl Brg Pier 2	10+30.70	6.750	661.145	661.145
K	10+40.70	6.750	661.145	661.151
L	10+50.70	6.750	661.145	661.166
M	10+60.70	6.750	661.145	661.172
N	10+70.70	6.750	661.145	661.164
Cl Brg No Abut	10+79.87	6.750	661.145	661.145
Bk No Abut	10+81.16	6.750	661.145	661.145



SECTION AT ABUTMENT
(TYPICAL EACH ABUTMENT)

* Included in the cost of pipe underdrains for structures.

BEAM #3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJ. FOR DEAD LOAD DEFLECTION
Bk So. Abut	9+17.04	0.000	661.250	661.250
Cl Brg So Abut	9+18.33	0.000	661.250	661.250
A	9+28.33	0.000	661.250	661.269
B	9+38.33	0.000	661.250	661.277
C	9+48.33	0.000	661.250	661.271
D	9+58.33	0.000	661.250	661.256
Cl Brg Pier 1	9+67.50	0.000	661.250	661.250
E	9+77.50	0.000	661.250	661.267
F	9+87.50	0.000	661.250	661.291
G	9+97.50	0.000	661.250	661.304
H	10+07.50	0.000	661.250	661.302
I	10+17.50	0.000	661.250	661.283
J	10+27.50	0.000	661.250	661.259
Cl Brg Pier 2	10+32.50	0.000	661.250	661.250
K	10+42.50	0.000	661.250	661.256
L	10+52.50	0.000	661.250	661.271
M	10+62.50	0.000	661.250	661.277
N	10+72.50	0.000	661.250	661.269
Cl Brg No Abut	10+81.67	0.000	661.250	661.250
Bk No Abut	10+82.96	0.000	661.250	661.250

BEAM #4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJ. FOR DEAD LOAD DEFLECTION
Bk So. Abut	9+18.85	6.750	661.145	661.145
Cl Brg So Abut	9+20.14	6.750	661.145	661.145
A	9+30.14	6.750	661.145	661.164
B	9+40.14	6.750	661.145	661.172
C	9+50.14	6.750	661.145	661.166
D	9+60.14	6.750	661.145	661.151
Cl Brg Pier 1	9+69.31	6.750	661.145	661.145
E	9+79.31	6.750	661.145	661.162
F	9+89.31	6.750	661.145	661.186
G	9+99.31	6.750	661.145	661.199
H	10+09.31	6.750	661.145	661.197
I	10+19.31	6.750	661.145	661.178
J	10+29.31	6.750	661.145	661.154
Cl Brg Pier 2	10+34.31	6.750	661.145	661.145
K	10+44.31	6.750	661.145	661.151
L	10+54.31	6.750	661.145	661.166
M	10+64.31	6.750	661.145	661.172
N	10+74.31	6.750	661.145	661.164
Cl Brg No Abut	10+83.48	6.750	661.145	661.145
Bk No Abut	10+84.77	6.750	661.145	661.145

BEAM #5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJ. FOR DEAD LOAD DEFLECTION
Bk So. Abut	9+20.66	13.500	661.039	661.039
Cl Brg So Abut	9+21.95	13.500	661.039	661.039
A	9+31.95	13.500	661.039	661.058
B	9+41.95	13.500	661.039	661.066
C	9+51.95	13.500	661.039	661.060
D	9+61.95	13.500	661.039	661.045
Cl Brg Pier 1	9+71.12	13.500	661.039	661.039
E	9+81.12	13.500	661.039	661.056
F	9+91.12	13.500	661.039	661.080
G	10+01.12	13.500	661.039	661.093
H	10+11.12	13.500	661.039	661.091
I	10+21.12	13.500	661.039	661.072
J	10+31.12	13.500	661.039	661.048
Cl Brg Pier 2	10+36.12	13.500	661.039	661.039
K	10+46.12	13.500	661.039	661.045
L	10+56.12	13.500	661.039	661.060
M	10+66.12	13.500	661.039	661.066
N	10+76.12	13.500	661.039	661.058
Cl Brg No Abut	10+85.29	13.500	661.039	661.039
Bk No Abut	10+86.58	13.500	661.039	661.039

DESIGNED:	DB
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CHECKED:	
DATE:	

DECK ELEVATIONS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: DB
DRAWN BY: BEH
CHECKED BY: RJR
DRAWING NAME: deck elevs
SURVEYED BY:
BOOK NO.:

wendler engineering services, inc.
consulting engineers
and land surveyors
www.wendlereng.com
ph: 815.288.2261
Illinois Professional Design Firm No. 184.000934

DECK ELEVATIONS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
DECK ELEVATIONS

JOB NUMBER
2080334

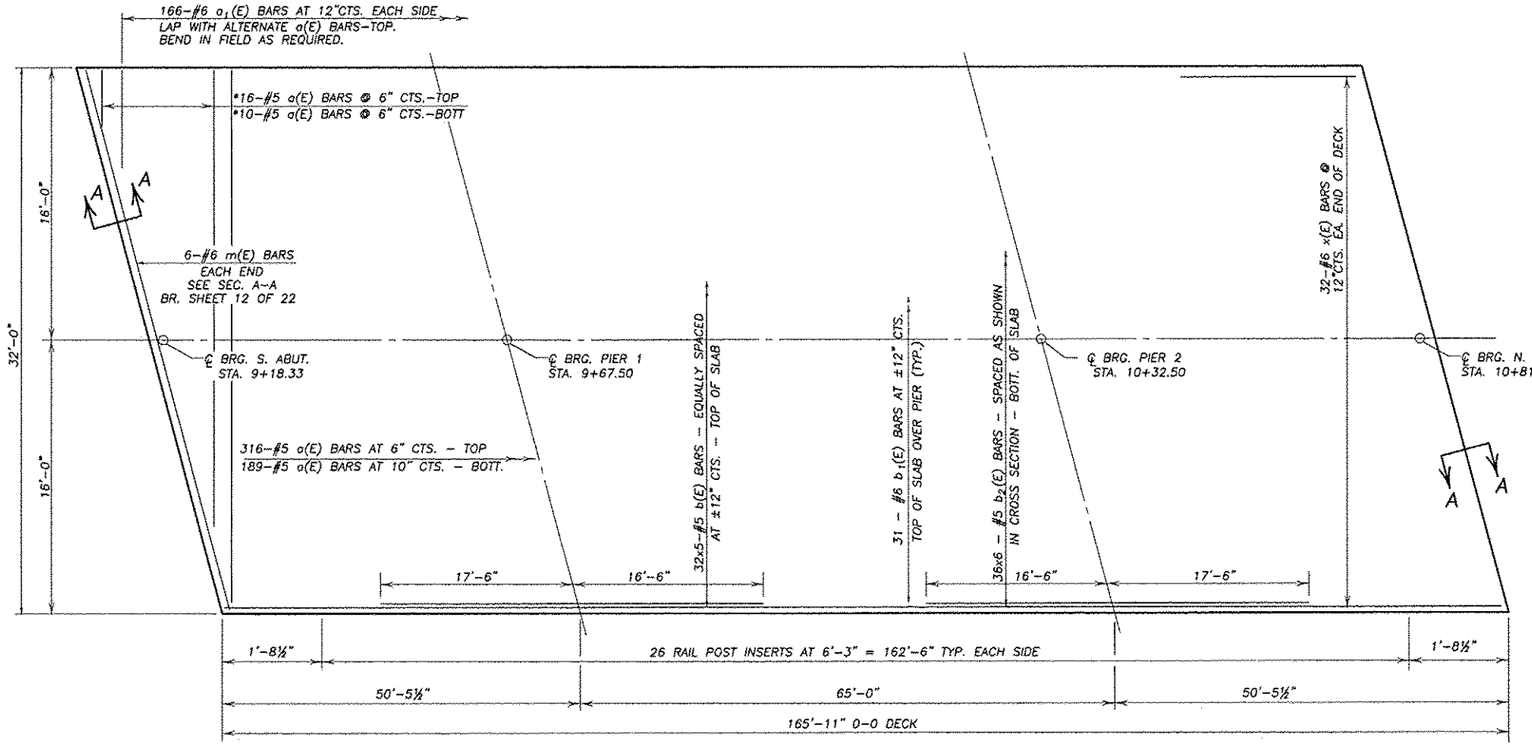
DATE
12/13/2012

SHEET NO.
10 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	11

ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR



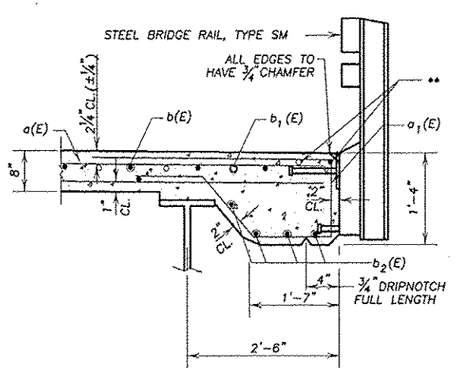
PLAN

* CUT BARS IN FIELD TO FIT SKEW AND USE REMAINDER OF BARS AT OTHER END OF DECK.

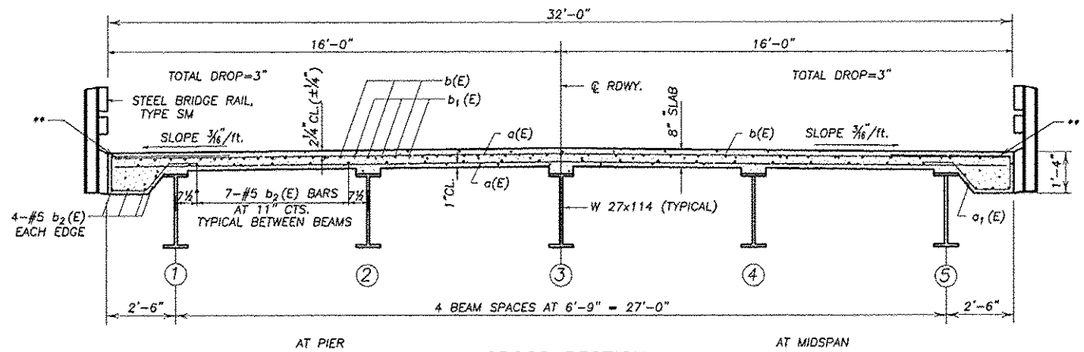
** NOTE: REINFORCEMENT BARS IN THE TOP OF THE DECK MAY BE PLACED WITH A 1½" MINIMUM CLEARANCE IN THE AREA OF THE RAIL POST ANCHOR DEVICES. THE STUDS OF THE ANCHOR DEVICES SHALL BE POSITIONED BELOW THE TOP REINFORCEMENT BARS AND THE OUTERMOST LONGITUDINAL REINFORCEMENT BARS (b(E) 1AND b (E) BARS) SHALL BE PLACED DIRECTLY ABOVE THE STUDS OF THE RAIL POST ANCHOR DEVICE.

MIN. LAP

#5	2'-2"
#6	2'-7"



SECTION THRU EDGE OF SLAB



CROSS SECTION
(LOOKING NORTH)

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	SB
DATE:	12/13/2012

SUPERSTRUCTURE
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: DB
DRAWN BY: BEH, RLR
CHECKED BY: SB
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BOOK NO.: -

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Illinois Professional Design Firm No. 184-000945

SUPERSTRUCTURE OF INDIAN HEAD ROAD BRIDGE REPLACEMENT FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE: SUPER-STRUCTURE

JOB NUMBER: 2080334

DATE: 12/13/2012

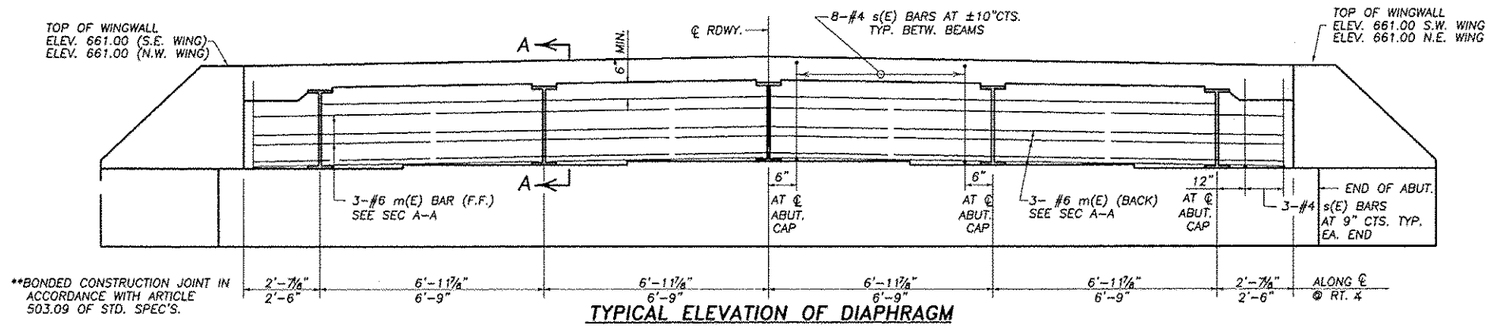
SHEET NO.: 11 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	12

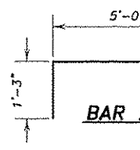
ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR

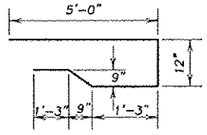
* PLACE s(E) BARS AT RIGHT ANGLES TO ABUT.



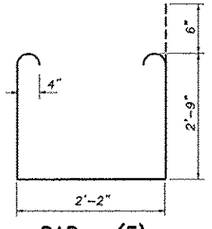
TYPICAL ELEVATION OF DIAPHRAGM



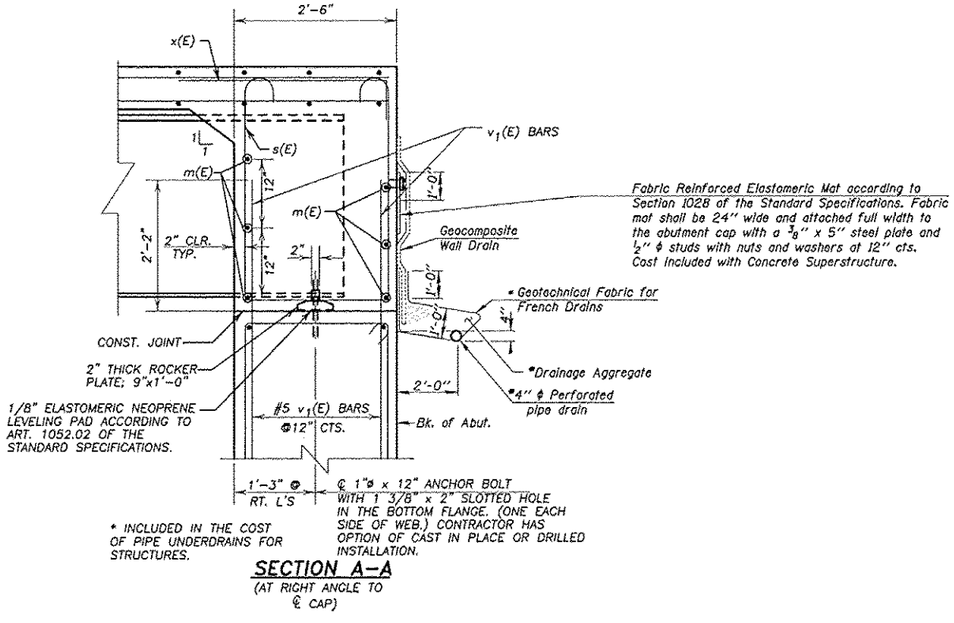
BAR x(E)



BAR a_1 (E)



BAR s (E)



* INCLUDED IN THE COST OF PIPE UNDERDRAINS FOR STRUCTURES.

SECTION A-A
(AT RIGHT ANGLE TO ℄ CAP)

BILL OF MATERIAL - SUPERSTRUCTURE

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	531	#5	31'-8"	
a_1(E)	332	#6	9'-7"	
b(E)	160	#5	35'-0"	
b_1(E)	62	#6	34'-0"	
b_2(E)	216	#5	29'-6"	
m(E)	12	#6	32'-6"	
s(E)	76	#4	8'-8"	
x(E)	64	#6	6'-3"	
CONCRETE SUPERSTRUCTURE			CU. YD.	162.9
REINFORCEMENT BARS EPOXY COATED			LBS.	39597
PROTECTIVE COAT **			SQ. YD.	652
BRIDGE DECK GROOVING			SQ. YD.	590

REINFORCEMENT BARS INDICATED (E) SHALL BE EPOXY COATED.

** INCLUDES TOP OF DECK AND EDGES TO THE DRIP NOTCH AND SIDES OF THE ABUTMENT DIAPHRAGMS.

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	
DATE:	

SUPERSTRUCTURE DETAILS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

0
SCALE: 1"=

REVISIONS
DESCRIPTION | DATE

DESIGNED BY: DB
DRAWN BY: PLR, BSH
CHECKED BY: superstat.dwg
SUBMITTED BY:
MODIFIED:

wendler engineering services, inc.
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www.wendlergs.com ph: 815.288.2261
Illinois Professional Design Firm No. 184-000948

SUPERSTRUCTURE DETAILS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
SUPER-STRUCTURE DETAILS

JOB NUMBER 2080334

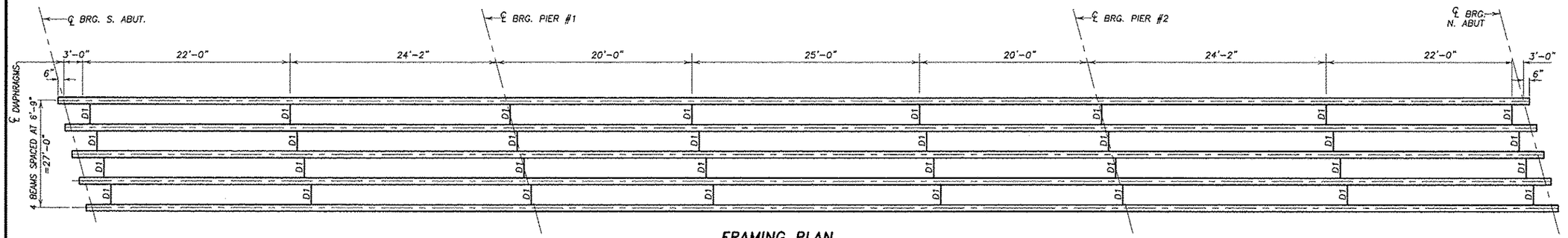
DATE 12/13/2012

SHEET NO. 12 of 22

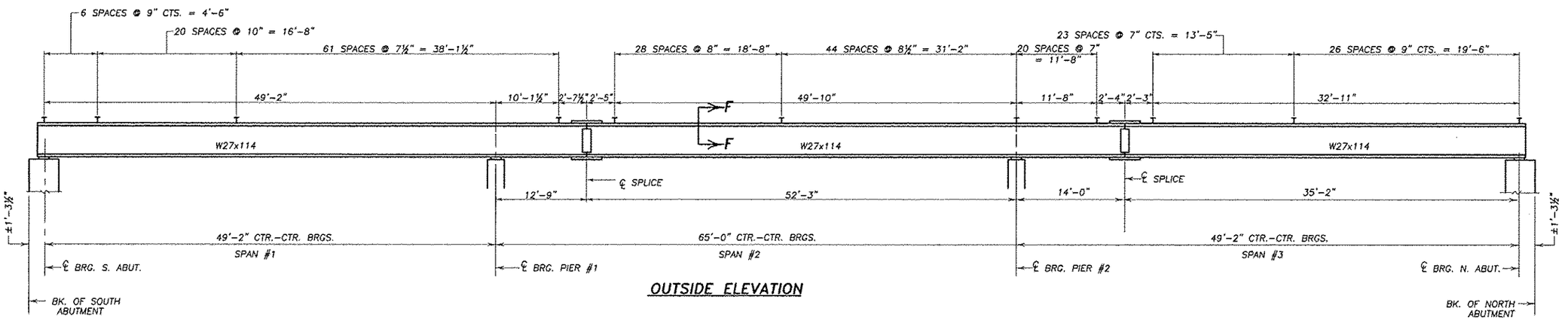
FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	13

ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR

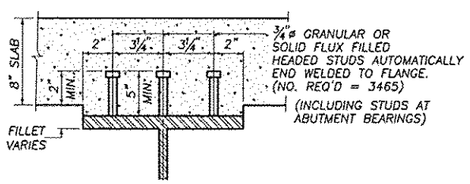


FRAMING PLAN

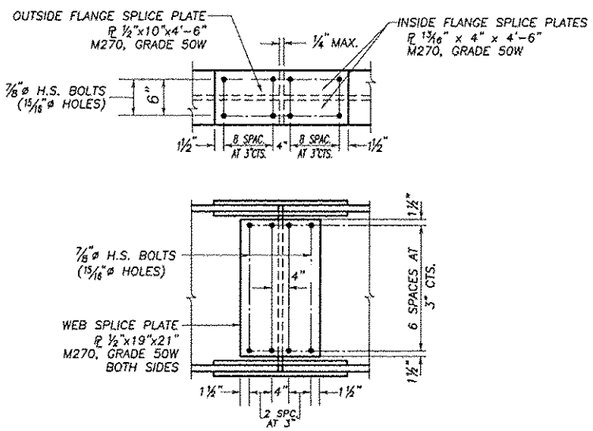


OUTSIDE ELEVATION

NOTE: SEE SEC A-A SHEET 12 OF 22 FOR 1 1/4"ø HOLE LOCATIONS IN WEB AT ENDS OF BEAM AND FOR STUD LOCATION ON TOP OF BOTTOM FLANGE AT ENDS OF BEAM.



SECTION F-F



DETAIL OF SPLICE

(ALL SPLICE PLATES N.T.R.)

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	
DATE:	

FRAMING PLAN
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: DB
DRAWN BY: BLR, BEH
DRAWING NAME: framing.dwg
CHECKED BY: -
INCREASE: -

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FRAMING PLAN
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
FRAMING PLAN

JOB NUMBER 2080334

DATE 12/13/2012

SHEET NO.
13 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	14

ILLINOIS PROJECT BRS-188(121)

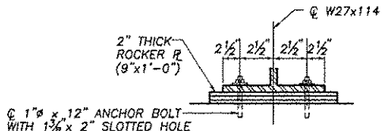
* 08-00303-00-BR

INTERIOR BEAM MOMENT TABLE
(COMPOSITE IN POSITIVE AND NEGATIVE MOMENT AREA ONLY)

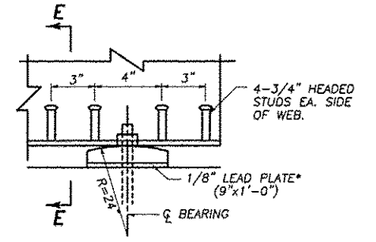
	0.4 SPAN 1 or 0.5 SPAN 2	PIER
Is (in^4)	4080	4080
Ic (in^4)(n)	13734	13734
Ic (in^4)(3n)	10571	10571
Ss (in^3)	299	299
Sc (in^3)(n)	496	496
Sc (in^3)(3n)	453	453
DC1(k/ft.)	0.71	0.71
M DC1(ft.-k)	160	274
DC2(k/ft.)	0.14	0.14
M DC2(ft.-k)	4	7
DW(ft.-k)	0.38	0.38
M DW(ft.-k)	66	113
($M_{LL+M\ IMP}$)('k)	506	440
Mu(STRENGTH) (ft.-k)	1190	1291
fs DC1(non-comp)(ksi)	6.48	11.04
fs DC2(comp)(ksi)	0.12	0.12
fs DW(ksi)	1.80	3.00
fs(LL+IM)(ksi)	12.24	10.64
fs(SERVICE II)(ksi)	24.31	27.99
fs(TOTAL)(STRENGTH)(k)	32.37	37.07
ϕ_f Mn	47.5	47.5
V_f	52	69

INTERIOR BEAM REACTION TABLE

	ABUTMENTS	PIERS
R DC1 (k)	12.5	46
R DC2 (k)	2.5	9
R DW (k)	6	22
R LL+IMP (k)	88	135
R_{TOTAL}	109	212

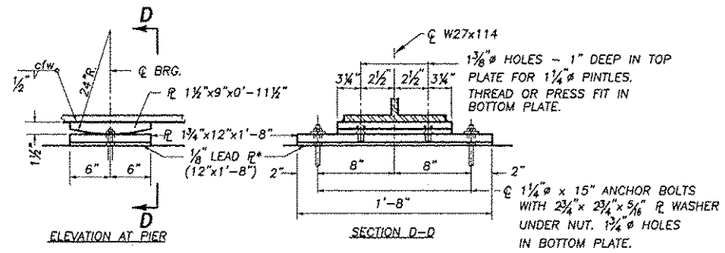


SECTION E-E



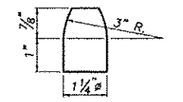
ROCKER PLATE @ ABUTS
(10 REQUIRED)

* 1/8" REINFORCED ELASTOMERIC NEOPRENE MAT MAY BE SUBSTITUTED. COST INCLUDED WITH STRUCTURAL STEEL.

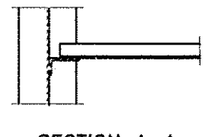


FIXED BEARING - PIERS NO. 1 & 2
(10 REQUIRED.)

* 1/8" REINFORCED ELASTOMERIC NEOPRENE MAT MAY BE SUBSTITUTED. COST INCLUDED WITH STRUCTURAL STEEL.



DETAIL OF PINTLE

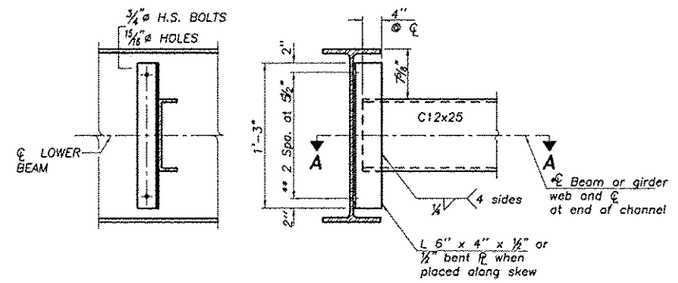


SECTION A-A

PROPOSED TOP OF BEAM ELEVATIONS

LOCATION \ BEAM No.	1	2	3	4	5
℄ BRG. S. ABUT.	660.330	660.436	660.542	660.436	660.330
℄ BRG. PIER #1	660.288	660.394	660.500	660.394	660.288
TOP OF BEAM @ SPLICE	660.288	660.394	660.500	660.394	660.288
℄ BRG. PIER #2	660.288	660.394	660.500	660.394	660.288
TOP OF BEAM @ SPLICE	660.288	660.394	660.500	660.394	660.288
℄ BRG. N. ABUT.	660.330	660.436	660.542	660.436	660.330

FOR FABRICATION ONLY



NOTE: HARDENED WASHERS SHALL BE REQUIRED OVER 15/16" ø HOLES FOR DIAPHRAGM CONNECTIONS. (2 PER BOLT)

DIAPHRAGM D_1

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	DB
DATE:	12/21/2012

STRUCTURAL STEEL DETAILS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

REVISION	DATE

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DRAWING FILENAME: ss.dwg
SUPPLEMENTED BY:
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STRUCTURAL STEEL DETAILS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE: STRUCTURAL STEEL DETAILS

JOB NUMBER: 2080334

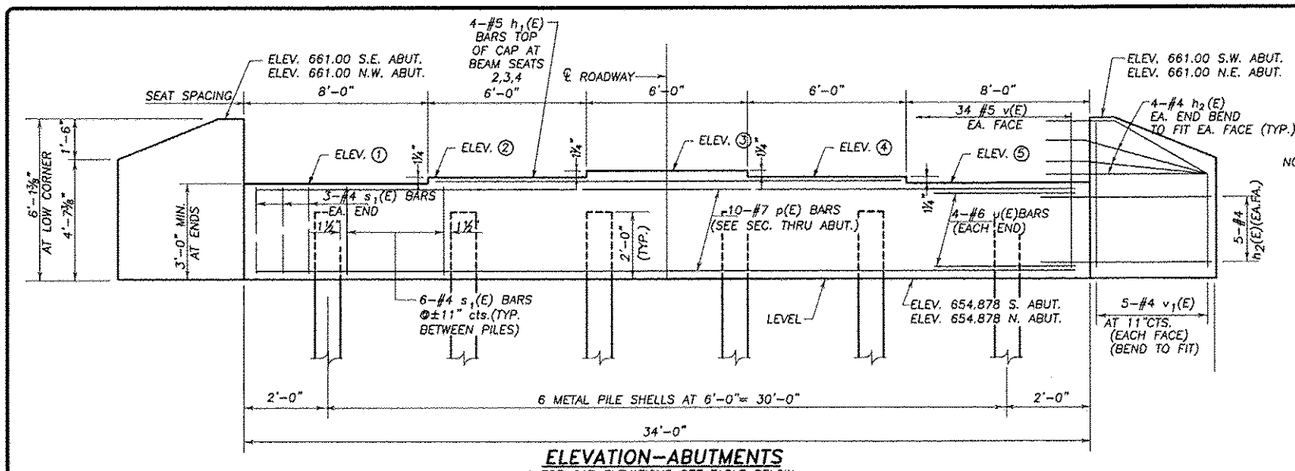
DATE: 12/13/2012

SHEET NO.: 14 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	15

ILLINOIS PROJECT BRS-188(121)

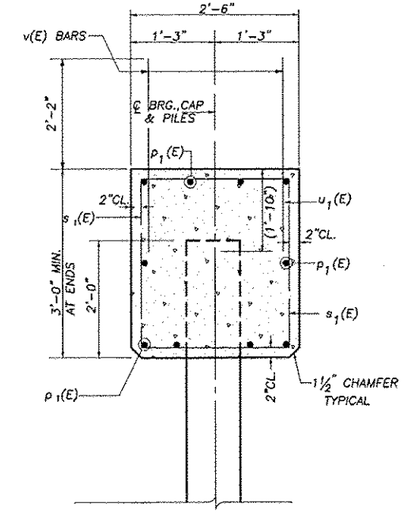
* 08-00303-00-BR



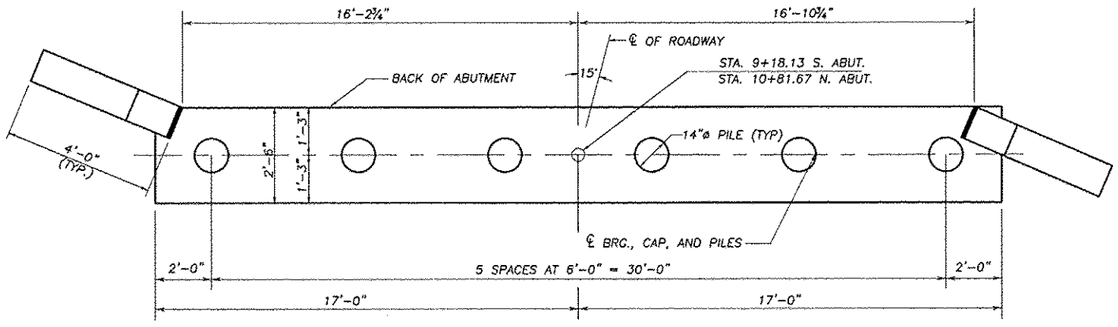
NOTE: WINGWALLS SHALL BE POURED WITH SUPERSTRUCTURE

ELEVATION-ABUTMENTS

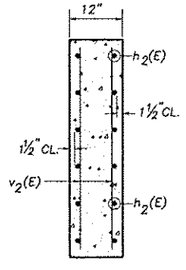
* FOR CAP ELEVATIONS SEE TABLE BELOW



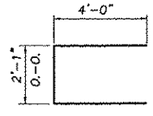
SEC. THRU ABUT.



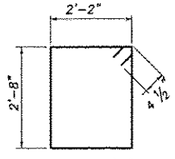
PLAN-ABUTMENTS



SECTION THRU WINGWALL



BAR u(E)



BAR s1(E)

LOCATION \ ELEV.	1	2	3	4	5
SOUTH ABUT.	657.878	657.984	658.089	657.984	657.878
NORTH ABUT.	657.878	657.984	658.089	657.984	657.878
PIER 1	657.733	657.839	657.944	657.839	657.733
PIER 2	657.733	657.839	657.944	657.839	657.733

ELEVATION TOP OF ABUTMENTS

MIN. BAR LAP

#4	1'-8"
#5	2'-2"
#6	2'-7"
#7	3'-5"

PILE DATA-ABUTMENTS

TYPE METAL PILE SHELLS 14"ø

NOMINAL REQUIRED BEARING 320K
FACTORED RESISTANCE AVAILABLE 177K

NO. REQUIRED 11+1 TEST PILE AT NORTH ABUTMENT

EST. LENGTH 44 FT S. ABUT, 40 FT N. ABUT.

MINIMUM 15 ft PENETRATION BELOW STREAMBED ELEVATION

METAL SHELL PILES SHALL BE ACCORDING TO ASTM A252 GRADE 3

BILL OF MATERIAL - 2 ABUTMENTS

BAR	NO.	SIZE	LENGTH	SHAPE
h_1(E)	8	#5	17'-8"	
h_2(E)	72	#4	6'-0"	
p(E)	20	#7	33'-8"	
s_1(E)	72	#4	10'-5"	
u(E)	16	#6	10'-1"	
v(E)	136	#4	4'-0"	
v_1(E)	40	#4	6'-2"	
CONCRETE STRUCTURES			CU YD	21.2
REINFORCEMENT BARS, EPOXY CTD.			POUND	6168
FURNISHING METAL SHELL PILES 14"x0.250"			FOOT	464
DRIVING PILES			FOOT	464
TEST PILE METAL SHELLS			EACH	1
STRUCTURE EXCAVATION			CU. YD.	74

BARS DESIGNATED (E) SHALL BE EPOXY COATED.

ABUTMENTS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	SB
DATE:	12/21/2012

SB-10

SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: DB
DRAWN BY: BLR, BEH
DRAWING NAME: abuts.dwg
SURVEYED BY: -
BOOK NO: -

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Illinois Professional Design Firm No. 184-000648

ABUTMENTS OF INDIAN HEAD ROAD BRIDGE REPLACEMENT FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE: ABUTMENTS

JOB NUMBER: 2080334

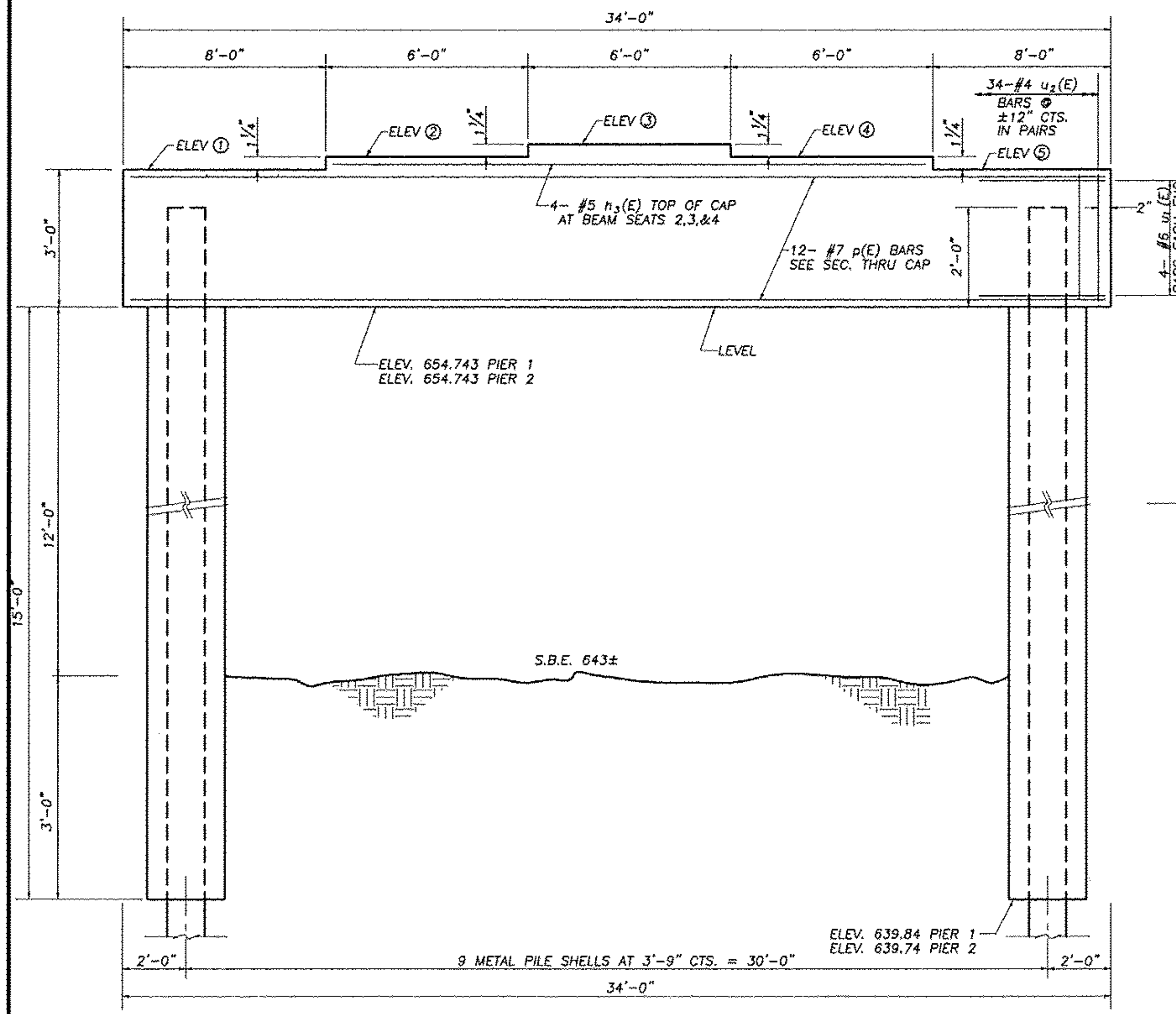
DATE: 12/13/2012

SHEET NO.: 15 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	16

ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR



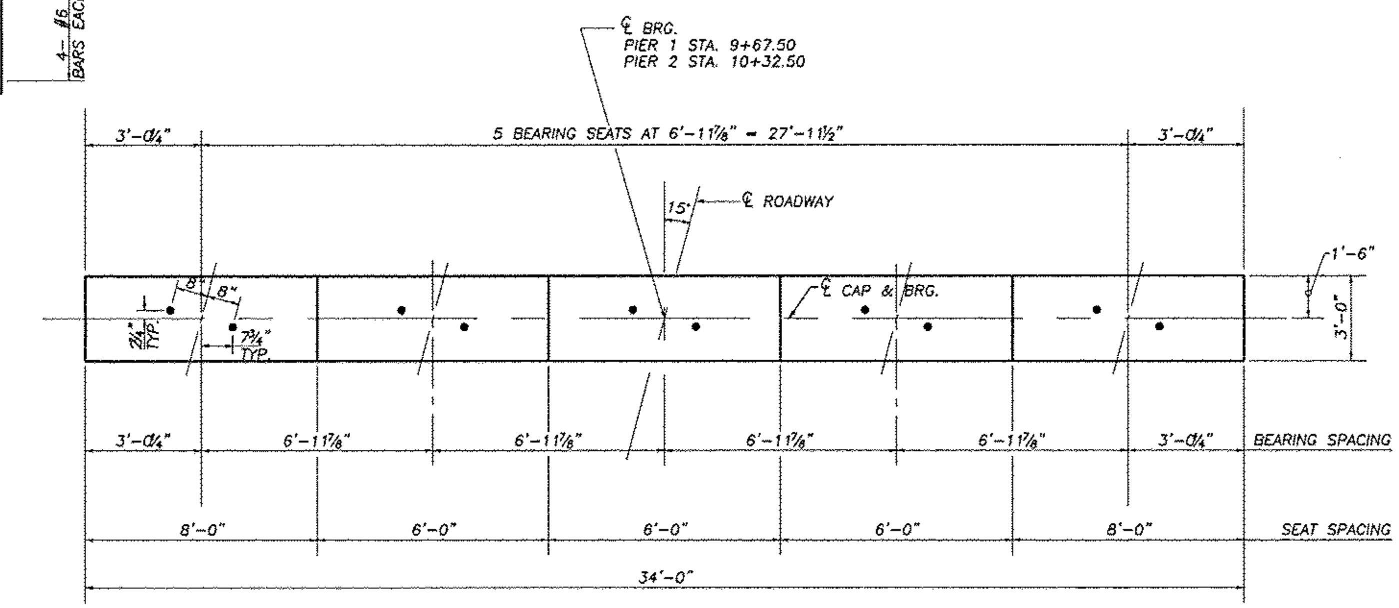
ELEVATION – PIERS 1 & 2

(LOOKING NORTH)

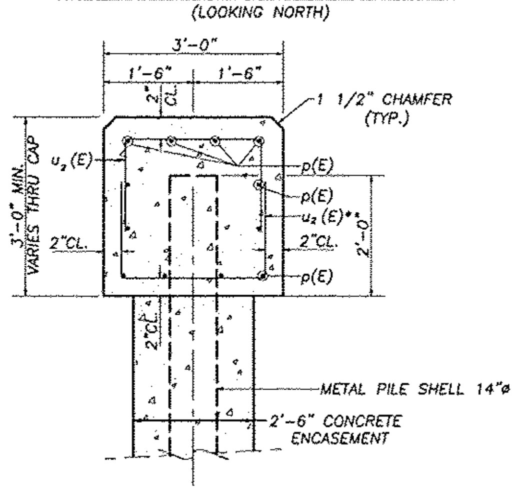
BEAM SEAT ELEVATIONS

PIER 1	BEAM SEATS			
①	②	③	④	⑤
657.743	657.839	657.944	657.839	657.743

PIER 2	BEAM SEATS			
①	②	③	④	⑤
657.743	657.839	657.944	657.839	657.743



PLAN – PIERS 1 & 2



SECTION THRU CAP

* u2(E) BARS IN PAIRS

PILE DATA

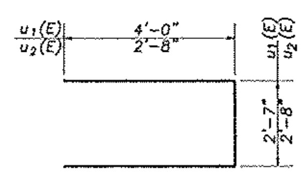
TYPE — METAL PILE SHELLS 14"ø

NOMINAL REQUIRED BEARING — 348K
ALLOWABLE RESISTANCE AVAILABLE — 183K

EST. LENGTH — PIER 1 54 FT.; PIER 2 58 FT.

NO. REQUIRED — PIER 1 8+1 TEST PILE; PIER 2 9

METAL SHELL PILES SHALL BE ACCORDING TO ASTM A252 GRADE 3



BARS $u_1(E)$, $u_2(E)$

GENERAL NOTES

SPACE BARS TO MISS ANCHOR BOLTS.

POUR STEPS MONOLITHICALLY WITH CAP.

BILL OF MATERIAL – PIERS

BAR	NO.	SIZE	LENGTH	SHAPE
$h_3(E)$	8	#5	17'-8"	
p(E)	24	#7	33'-8"	
$u_1(E)$	16	#6	10'-7"	
$u_2(E)$	136	#4	8'-0"	
CONCRETE STRUCTURES			CU. YD.	21.8
FURNISHING METAL SHELL PILES 14"x0.250"			FOOT	954
DRIVING PILES			FOOT	954
TEST PILE– METAL SHELLS			EACH	1
REINFORCEMENT BARS EPOXY COATED			LBS.	5560

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	
DATE:	

PIERS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

REVISIONS

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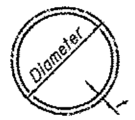
PIERS OF INDIAN HEAD ROAD BRIDGE REPLACEMENT FOR LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE: PIERS

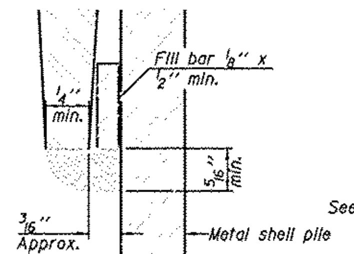
JOB NUMBER: 2080334

DATE: 12/13/2012

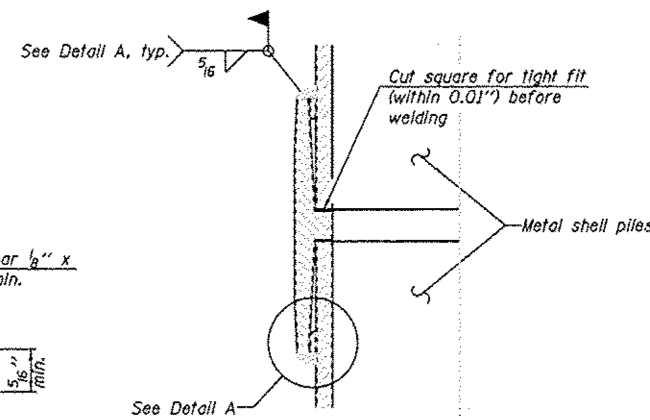


METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd³/ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361

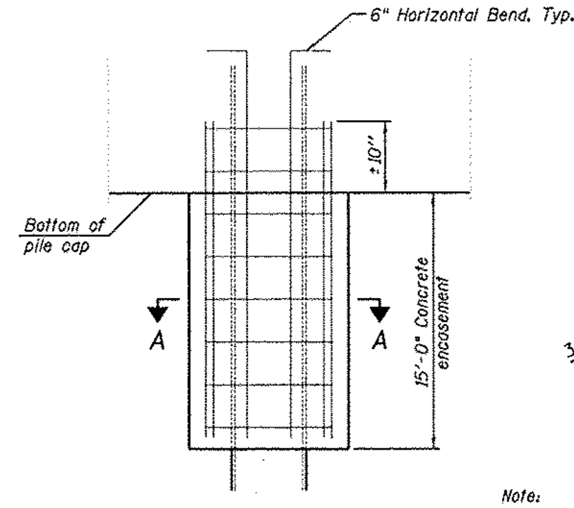


DETAIL A

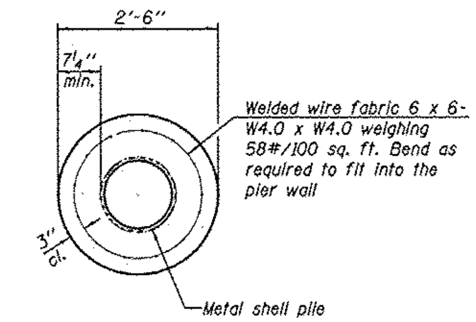


Notes:
The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE



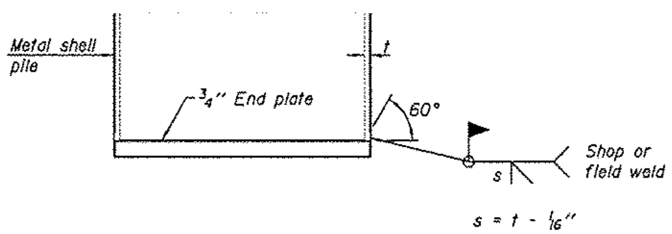
ELEVATION



SECTION A-A

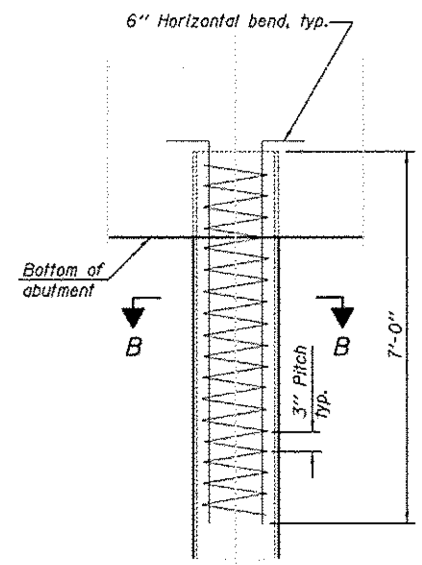
Note:
Forms for encasement may be omitted when soil conditions permit.

CONCRETE ENCASEMENT AT PIERS

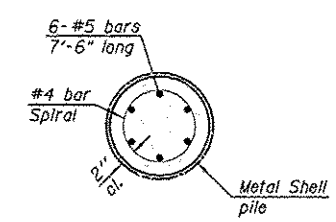


s = t - 1/16"

END PLATE ATTACHMENT

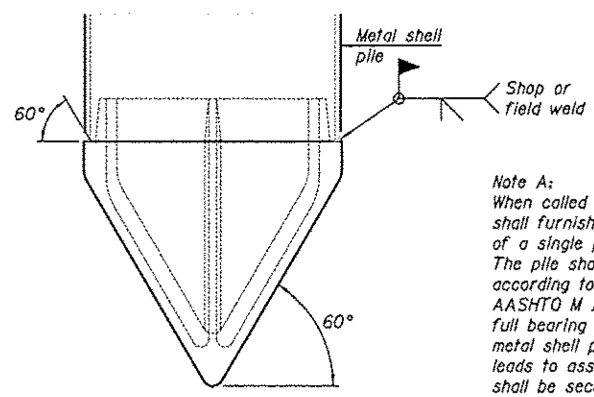


ELEVATION



SECTION B-B

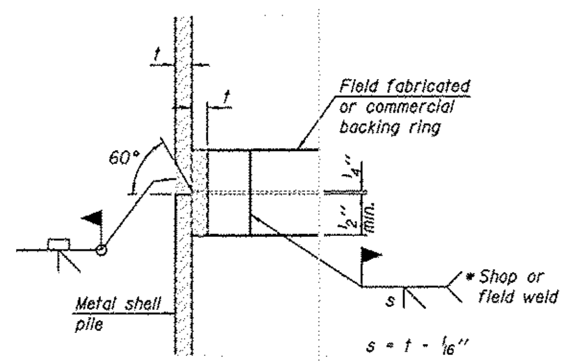
METAL SHELL REINFORCEMENT AT ABUTMENTS



Note A:
When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

METAL SHELL PILE SHOE ATTACHMENT

(See Note A)



s = t - 1/16"

COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.

Note:
The metal shell piles shall be according to ASTM A 252 Grade 3.

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	
DATE:	

F-MS 1-27-12

PILING DETAILS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

DESIGNED BY: DB
DRAWN BY: RLR, BEH

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PILING DETAILS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
PILING DETAILS

JOB NUMBER
2080334

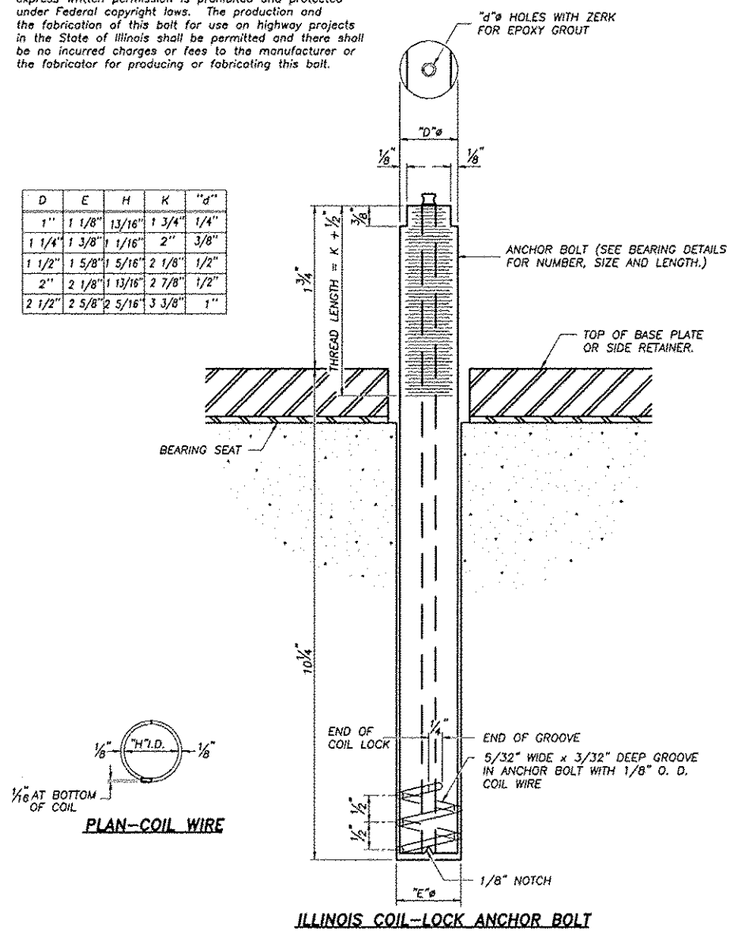
DATE
12/13/2012

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	18

ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR

D	E	H	K	"d"
1"	1 1/8"	13/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/16"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 13/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed. The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE FOR THE ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place,the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

DESIGNED:	DB
DRAWN:	BEH
CHECKED:	
DATE:	

ANCHOR BOLT DETAILS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

SYMBOL	DATE

DESIGNED BY: DB
DRAWN BY: BEH
PLR. BSH
DRAWING NAME: anchorbolt.dwg
SURVEYED BY:
BOOK NO.:

wendler engineering services, inc.
consulting civil & structural engineers • land surveyors • scientists
www.wendlergs.com ph: 815.288.2261
Illinois Professional Design Firm No. 184.000348

ANCHOR BOLT DETAILS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE: ANCHOR BOLT DETAILS

JOB NUMBER: 2080334

DATE: 12/13/2012

SHEET NO.: 18 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	19

ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR

Midwest Testing Services, Inc.
3705 Progress Blvd.
Peru, IL 61354
Phone: 815-223-6696
Fax: 815-223-6659
e-mail: mts37@comcast.net

BORING LOG

Sheet 1 of 4

Client: Wendler Engineering Services, Inc.
Project Name: Sec 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-1
Surface Elev. 99.10
Auger Depth 76'
Rotary Depth NA
Start Date 03/10/12
Finish Date 03/10/12

Location: 18' West of centerline of road and 95' South of center of bridge

DRILLED BY: Jeff Safranski; Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)
99.10		1							
98.10		2							
97.10		3	1	SS	1.2	6	B	23	
96.10		4							
95.10		5							
94.10		6	2	SS	1.0	5	B	25	
93.10	Stiff Black And Brown Clay To Sandy Clay (Fill)	7							
92.10		8	3	SS	1.0	5	B	24	
91.10		9							
90.10		10							
89.10		11	4	SS	1.5	6	B	27	
88.10		12							
87.10		13	5	SS	1.1	5	B	24	
86.10	Stiff Gray Clay With Sand Seams	14							
85.10		15							
84.10		16	6	SS	1.3	6	B	22	
83.10		17							
82.10		18	7	SS	---	8	---	---	
81.10	Loose To Medium Gray Fine Sand	19							
80.10		20							
79.10			8	SS	---	11	---	---	

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

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BORING LOG

Sheet 2 of 4

Client: Wendler Engineering Services, Inc.
Project Name: Sec 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-1
Surface Elev. 99.10
Auger Depth 76'
Rotary Depth NA
Start Date 03/10/12
Finish Date 03/10/12

Location: 18' West of centerline of road and 95' South of center of bridge

DRILLED BY: Jeff Safranski; Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)
78.10		22							
77.10		23	9	SS	1.2	6	B	24	
76.10	Stiff Gray Clay With Root Hairs	24							
75.10		25							
74.10		26	10	SS	1.3	7	B	22	
73.10		27							
72.10		28	11	SS	---	10	---	---	
71.10		29							
70.10		30							
69.10	Medium Gray Fine Sand With Clay Seams	31	12	SS	---	11	---	---	
68.10		32							
67.10		33	13	SS	---	10	---	---	
66.10		34							
65.10		35							
64.10		36	14	SS	---	10	---	---	
63.10		37							
62.10		38							
61.10	Medium Gray Fine Sand	39	15	SS	---	19	---	---	
60.10		40							
59.10		41							
58.10			16	SS	---	23	---	---	

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

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BORING LOG

Sheet 3 of 4

Client: Wendler Engineering Services, Inc.
Project Name: Sec 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-1
Surface Elev. 99.10
Auger Depth 76'
Rotary Depth NA
Start Date 03/10/12
Finish Date 03/10/12

Location: 18' West of centerline of road and 95' South of center of bridge

DRILLED BY: Jeff Safranski; Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)
57.10		41							
56.10		42							
55.10		43							
54.10		44							
53.10		45	17	SS	---	20	---	---	
52.10		46							
51.10		47							
50.10		48							
49.10	Medium Gray Fine Sand With Occasional Fine Gravel	49							
48.10		50	18	SS	---	22	---	---	
47.10		51							
46.10		52							
45.10		53							
44.10		54							
43.10		55							
42.10		56	19	SS	---	25	---	---	
41.10		57							
40.10		58							
39.10		59							
38.10		60							
37.10		61	20	SS	---	22	---	---	
		62							

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

SOIL BORINGS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

0
SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: RLR
DRAWN BY: RLR, BSH
DRAWING NAME: borings.dwg
SUBMITTED BY:
BOOK/PAC:

wendler engineering services, inc.
GROUNDBREAKING SOLUTIONS
DESIGN BUILD CONSTRUCTION
www.wendlereng.com ph: 815.283.2261
Illinois Professional Design Firm No. 184-003848

SOIL BORINGS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
SOIL BORINGS

JOB NUMBER 2080334

DATE 12/13/2012

SHEET NO.
19 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	20

ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR

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BORING LOG

Sheet 4 of 4

Client: Wendler Engineering Services, Inc.
Project Name: Sec 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-1
Surface Elev. 99.10
Auger Depth 76'
Start Date 03/10/12
Rotary Depth NA
Finish Date 03/10/12

Location: 18' West of centerline of road and 95' South of center of bridge

DRILLED BY: Jeff Safranski; Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
36.10											
35.10			64								
34.10			65	21	SS	---	23	---	---		
33.10			66								
32.10			67								
31.10			68								
30.10	Medium Gray Fine To Coarse Sand With Occasional Fine Gravel		69								
29.10			70	22	SS	---	21	---	---		
28.10			71								
27.10			72								
26.10			73								
25.10			74								
24.10			75								
23.10			76	23	SS	---	25	---	---		
22.10			77								
21.10			78								
20.10			79								
19.10			80								
18.10			81								
17.10			82								
16.10			83								

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

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BORING LOG

Sheet 1 of 4

Client: Wendler Engineering Services, Inc.
Project Name: Sec 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-2
Surface Elev. 99.50
Auger Depth 76'
Start Date 03/10/12
Rotary Depth NA
Finish Date 03/10/12

Location: 19' East of centerline of road and 96' North of center of bridge

DRILLED BY: Jeff Safranski; Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
99.50											
98.50			1	1	SS	1.6	8	B	20		
97.50			2								
96.50			3	2	SS	1.1	6	B	24		
95.50			4								
94.50	Stiff Brown Sandy Clay (Fill)		5	3	SS	1.0	5	B	24		
93.50			6								
92.50			7	4	SS	1.2	6	B	22		
91.50			8								
90.50			9								
89.50			10								
88.50			11	5	SS	0.8	5	B	26		
87.50			12								
86.50	Medium To Stiff Gray Clay With Sand Seams		13	6	SS	1.0	6	B	23		
85.50			14								
84.50			15								
83.50			16								
82.50			17	7	SS	---	9	---	---		
81.50	Loose Gray Fine Sand With Clay Seams		18								
80.50			19								
79.50			20	8	SS	---	8	---	---		

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

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BORING LOG

Sheet 2 of 4

Client: Wendler Engineering Services, Inc.
Project Name: Sec 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-2
Surface Elev. 99.50
Auger Depth 76'
Start Date 03/10/12
Rotary Depth NA
Finish Date 03/10/12

Location: 19' East of centerline of road and 96' North of center of bridge

DRILLED BY: Jeff Safranski; Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in Feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
78.50											
77.50			22								
76.50			23	9	SS	---	16	---	---		
75.50			24								
74.50			25								
73.50			26	10	SS	---	18	---	---		
72.50			27								
71.50	Medium Gray Fine Sand With Clay Seams		28	11	SS	---	18	---	---		
70.50			29								
69.50			30								
68.50			31	12	SS	---	19	---	---		
67.50			32								
66.50			33	13	SS	---	15	---	---		
65.50			34								
64.50			35	14	SS	---	18	---	---		
63.50			36								
62.50			37								
61.50	Medium Gray Fine To Coarse Sand		38	15	SS	---	18	---	---		
60.50			39								
59.50			40								
58.50			41	16	SS	---	21	---	---		

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

SOIL BORINGS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: DB
DRAWN BY: RLR, BEH
CHECKED BY: bor logs.dwg
SURVEYED BY: -
BOOK NO.: -

wendler engineering services, inc.
GEOTECHNICAL ENGINEERS
ENVIRONMENTAL SCIENTISTS
www.wendlereng.com
ph: 815.288.2251
Illinois Professional Design Firm No. 184-000848

SOIL BORINGS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE: SOIL BORINGS

JOB NUMBER: 2080334

DATE: 12/13/2012

SHEET NO.: 20 of 22

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	21

ILLINOIS PROJECT BRS-188(121)

* 08-00303-00-BR

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

Phone: 815-223-6696
Fax: 815-223-6659
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BORING LOG

Sheet 3 of 4

Client: Wendler Engineering Services, Inc.
Project Name: See 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-2
Surface Elev. 99.50
Auger Depth 76'
Rotary Depth NA
Start Date 03/10/12
Finish Date 03/10/12

Location: 19' East of centerline of road and 96' North of center of bridge

DRILLED BY: Jeff Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
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51.50											
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49.50											
48.50	Medium Gray Fine Sand With Occasional Fine Gravel										
47.50											
46.50											
45.50											
44.50											
43.50											
42.50											
41.50											
40.50											
39.50											
38.50											
37.50											

			43								
			44								
			45								
			46	17	SS	---	22	---	---		
			47								
			48								
			49								
			50								
			51	18	SS	---	20	---	---		
			52								
			53								
			54								
			55								
			56	19	SS	---	22	---	---		
			57								
			58								
			59								
			60								
			61	20	SS	---	24	---	---		
			62								

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

Midwest Testing Services, Inc.
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Peru, IL 61354

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BORING LOG

Sheet 4 of 4

Client: Wendler Engineering Services, Inc.
Project Name: See 08-00303-00-BR Indian Head Road
Project Site: Lee County, Illinois

Boring No. B-2
Surface Elev. 99.50
Auger Depth 76'
Rotary Depth NA
Start Date 03/10/12
Finish Date 03/10/12

Location: 19' East of centerline of road and 96' North of center of bridge

DRILLED BY: Jeff Safranski, Diedrich D-120

(DEPTH) ELEV.	DESCRIPTION OF MATERIALS	Graphic Log	Depth in feet	Sample No.	Sample Type	Qu (TSF)	N Value (Blows)	Bulge / Shear	Moisture (%)	Dry Density (PCF)	REMARKS
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35.50											
34.50											
33.50											
32.50											
31.50											
30.50											
29.50											
28.50											
27.50											
26.50											
25.50											
24.50											
23.50											
22.50											
21.50											
20.50											
19.50											
18.50											
17.50											
16.50											

			64								
			65								
			66	21	SS	---	22	---	---		
			67								
			68								
			69								
			70								
			71	22	SS	---	20	---	---		
			72								
			73								
			74								
			75								
			76	23	SS	---	24	---	---		
			77								
			78								
			79								
			80								
			81								
			82								
			83								

Medium Gray Fine To Coarse Sand With Occasional Gravel

Groundwater Data: Static water level - Elevation 85.5.
Comments: *Assumed center of existing bridge deck elevation 100.0.*

SOIL BORINGS
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: DB
DRAWN BY: RLR, BSH
CROSS SECTIONS: borings.dwg
SURVEYED BY: -
BOOK NO.: -

wendler engineering services, inc.
CIVIL ENGINEERS & LAND SURVEYORS
GROUNDWATER SPECIALISTS
www.wendlereng.com
ph: 815.288.2261
Illinois Professional Design Firm No. 184-000848

SOIL BORINGS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

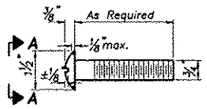
SHEET TITLE: SOIL BORINGS

JOB NUMBER: 2080334
DATE: 12/13/2012
SHEET NO.: 21 of 22

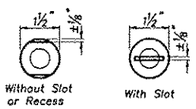
FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
188	*	LEE	22	22

ILLINOIS PROJECT BRS-188(121)

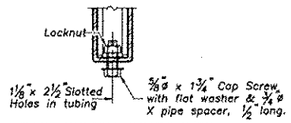
* 08-00303-00-BR



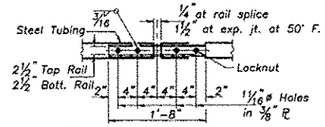
DETAIL OF 3/4"ø ROUND HEAD BOLT



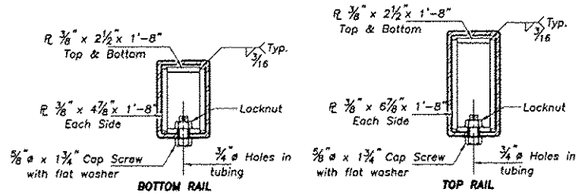
VIEW A-A



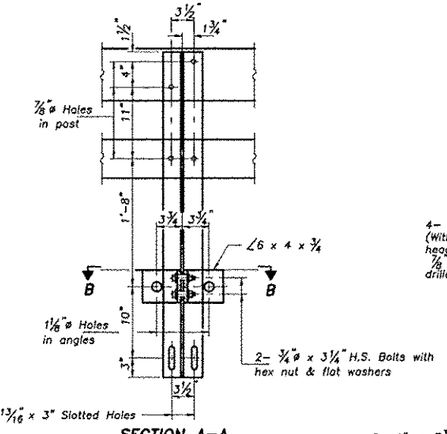
RAIL SPLICE CONNECTION AT EXPANSION JT.



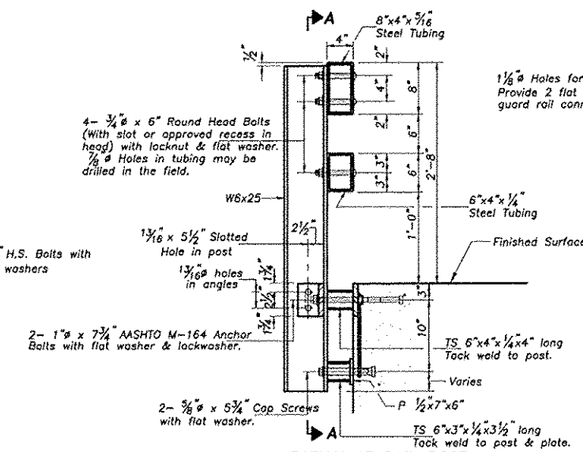
PLAN-BOTT. SPLICE ℄ TYPICAL



SECTIONS AT RAIL SPLICE



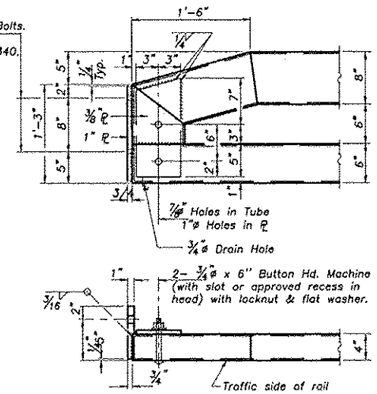
SECTION A-A



SECTION AT RAIL POST

4- ¾"ø x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat washer. ⅞"ø Holes in tubing may be drilled in the field.

1⅛"ø Holes for 1"ø x 4" Round Head Bolts. Provide 2 flat washers & locknuts for guard rail connection shown on Std. 2340.



END OF RAIL DETAILS

GENERAL NOTES

Hollow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F.

All other steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 36 except posts and angles shall conform to AASHTO M-270, Grade 50.

Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M-164.

All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with AASHTO M-232.

All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with AASHTO M-111 and ASTM A-385. Galvanized rail shall not be painted.

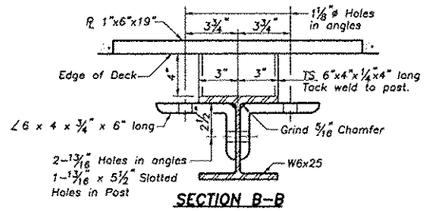
Railing shall be in accordance with Section 509 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for STEEL BRIDGE RAIL, TYPE SM.

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

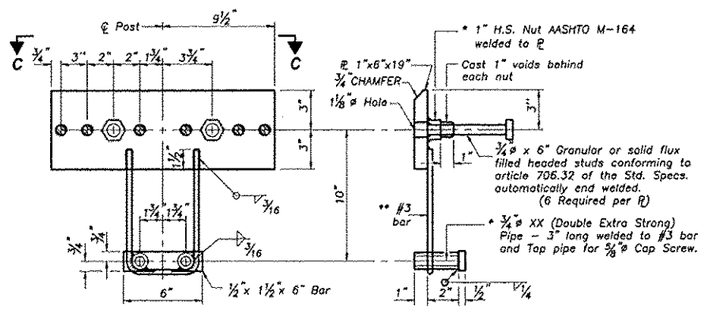
For multi-span PPC Deck bridges, sufficient ¼" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost incidental to STEEL BRIDGE RAIL, TYPE SM.

Bolts located at expansion joint shall be provided with locknuts and shall be tightened only to a point that will allow railing movement.

The ¾"ø high strength bolts used to connect the 6 x 4 x ¾ angles to the post shall be tightened in accordance with Article 505.04(f)(3) of the Standard Specifications. The 1"ø high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional ⅛ turn. The ⅝"ø cap screws in bottom of posts shall be tightened to a snug fit only.



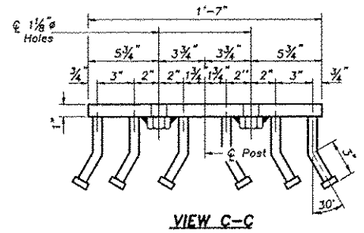
SECTION B-B



ANCHOR DEVICE

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

** 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 ½".



VIEW C-C

BILL OF MATERIAL

Item	Unit	Quantity
Steel Bridge Rail, Type SM	Foot	332

DESIGNED:	RLR
DRAWN:	BDS
CHECKED:	
DATE:	

R-34 7-1-94 (6'-3" Maximum Post Spacing)

TYPE SM
STEEL BRIDGE RAIL SIDE MOUNTED
SECTION 08-00303-00-BR
F.A.S. 188 (INDIAN HEAD RD.)
LEE COUNTY
S.N. 052-3413

SCALE: 1"=

REVISIONS

REVISION	DATE

DESIGNED BY: RLR
DRAWN BY: RLR
CHECKED BY:
QUANTITIES BY:
SURVEYED BY:
BOOK NO.:

wendler
GROUNDBREAKING SOLUTIONS
engineers · surveyors · scientists
www.wendlereg.com ph: 815.288.2261
Illinois Professional Design Firm No. 184-003948

TYPE SM RAIL DETAILS
OF
INDIAN HEAD ROAD BRIDGE REPLACEMENT
FOR
LEE COUNTY HIGHWAY DEPARTMENT

SHEET TITLE
RAIL DETAILS

JOB NUMBER 2080334

DATE 12/21/2012

SHEET NO.
22 of 22