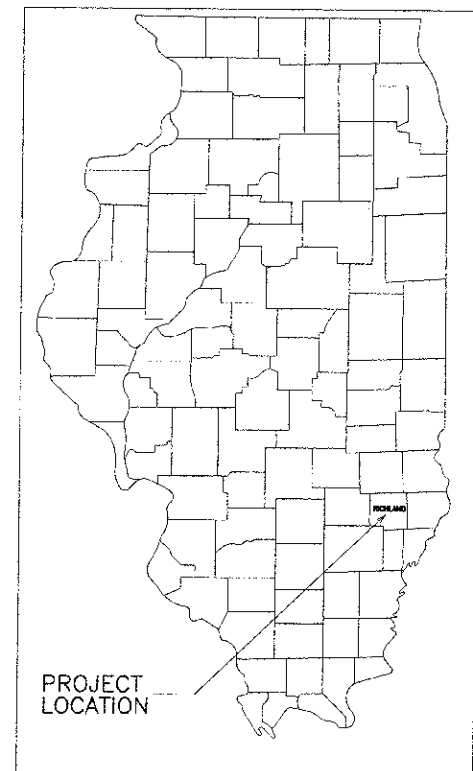


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 1722	11-00118-00-BR	RICHLAND	16	1
CONTRACT NO. 95705		ILLINOIS		

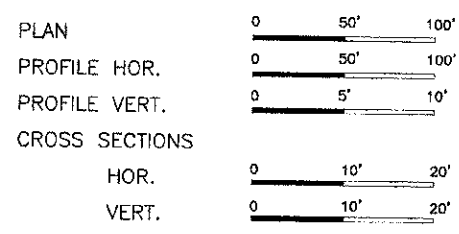
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM
SECTION 11-00118-00-BR RICHLAND COUNTY
PROJECT BRS-1722(103)
JOB NO. C-97-023-13
F.A.S. 1722



INDEX OF SHEETS

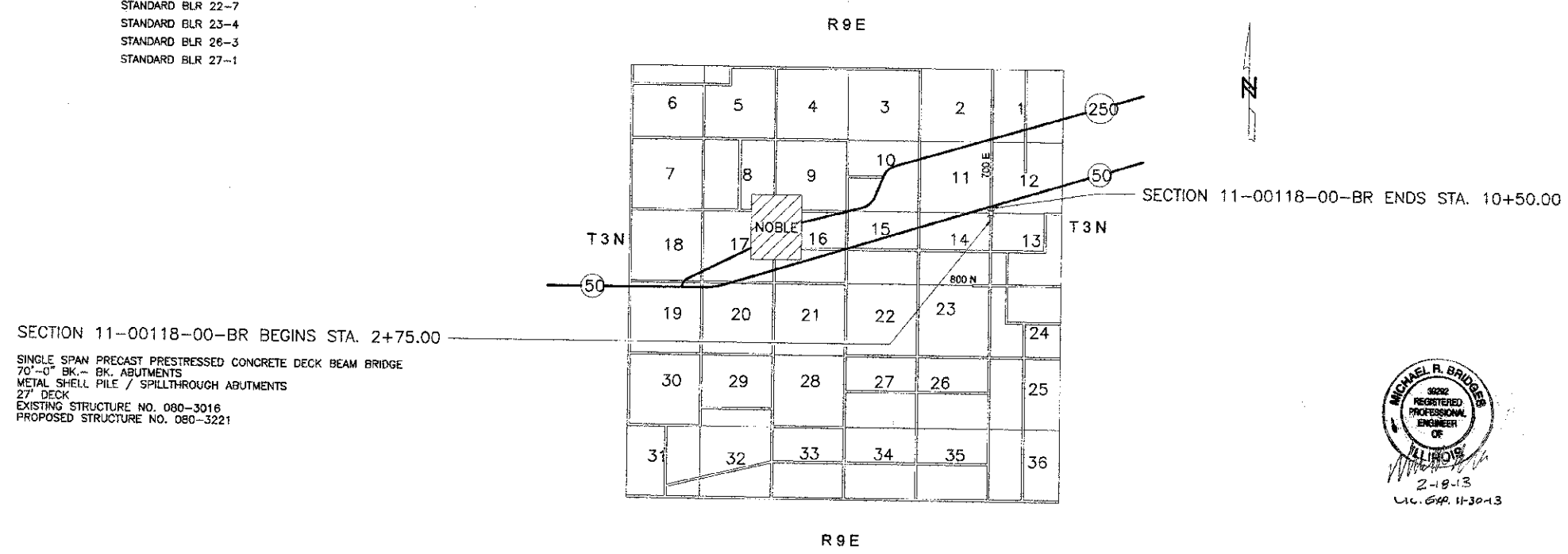
SHEET	ITEM
1	COVER SHEET
2	SUMMARY OF QUANTITIES
3	ROADWAY PLAN AND PROFILE
4	EROSION CONTROL PLAN
5	GENERAL PLAN AND ELEVATION
6	33" x 36" PPC DECK BEAM
7	33" x 36" PPC DECK BEAM DETAILS
8	SUPERSTRUCTURE DETAILS
9	STEEL RAILING, TYPE S-1
10	ABUTMENTS
11	METAL SHELL PILE DETAILS
12-13	BORING LOGS
14-16	CROSS SECTIONS

- STANDARD DRAWINGS
- STANDARD 000001-05
 - STANDARD 280001-07
 - STANDARD 515001-03
 - STANDARD 701901-02
 - STANDARD BLR 21-9
 - STANDARD BLR 22-7
 - STANDARD BLR 23-4
 - STANDARD BLR 26-3
 - STANDARD BLR 27-1

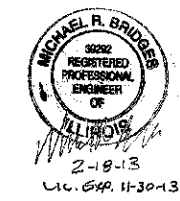


CONTRACT NO. 95705

Joint Utility Locating Information for Excavators
JULIE 1-800-892-0123



SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
70'-0" BK.- BK. ABUTMENTS
METAL SHELL PILE / SPILLTHROUGH ABUTMENTS
27' DECK
EXISTING STRUCTURE NO. 080-3016
PROPOSED STRUCTURE NO. 080-3221



CHARLESTON ENGINEERING, INC.
CONSULTING ENGINEERS
105 NORTH KITCHELL
P.O. BOX 397
OLNEY, ILLINOIS 62450
(618) 362-0736
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #194.003513

APPROVED February 25 2013
Danny A. Colwell p.e.
 COUNTY ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PASSED *2/28 2013*
Maureen Costello
 DISTRICT SEVEN ENGINEER OF
LOCAL ROADS AND STREETS

Releasing For Bid Based on Limited Review
2/28 2013
Foan L. Anshel
 DEPUTY DIRECTOR OF HIGHWAYS
REGION FOUR ENGINEER

FUNCTIONAL CLASSIFICATION - RURAL MAJOR COLLECTOR
ADT = 275
DESIGN SPEED = 30 MPH

NET LENGTH SECTION 11-00118-00-BR = 775.00 Ft. = 0.147 Mi.

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1722	11-00118-00-BR	RICHLAND	16	2
CONTRACT NO.		ILLINOIS		

DESIGN DATA

RURAL MAJOR COLLECTOR
ADT = 275

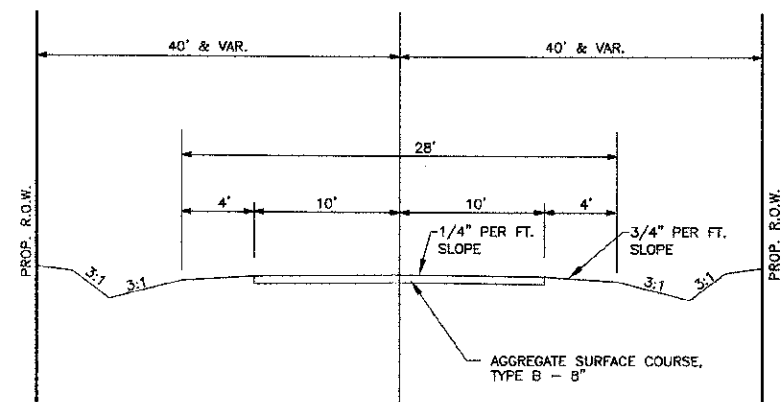
GENERAL NOTES

- SEEDING: THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 250 OF THE STANDARD SPECIFICATIONS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR SEEDING CLASS 2 (SPECIAL).
 - SPRING SEEDING SHALL EXTEND FROM JANUARY 1 TO JUNE 30
FALL SEEDING SHALL EXTEND FROM JULY 1 TO DECEMBER 31
 - FERTILIZER NUTRIENTS SHALL BE APPLIED AT THE RATE OF 100 LB/ACRE
 - MULCHING SHALL BE DONE IN ACCORDANCE WITH ARTICLE 251 OF THE STANDARD SPECIFICATIONS AND SHALL BE DONE BY METHOD 2, PROCEDURE 1 AT THE RATE OF 2 TONS PER ACRE.
- NO PAYMENT FOR OVERHAUL WILL BE MADE ON THIS SECTION.

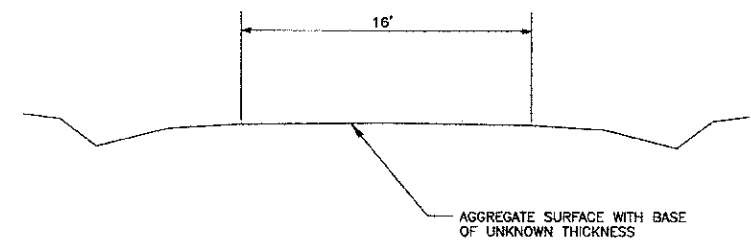
SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
Δ LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.90
X2830495	AGGREGATE DITCH (SPECIAL)	TON	180
Z0015500	DEBRIS REMOVAL	L SUM	1
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	64
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	35
20200100	EARTH EXCAVATION	CU YD	425
20300100	CHANNEL EXCAVATION	CU YD	185
20400800	FURNISHED EXCAVATION	CU YD	1820
28000305	TEMPORARY DITCH CHECKS	FOOT	196
28100201	STONE RIPRAP, CLASS A4	TON	140
28200200	FILTER FABRIC	SQ YD	200
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	630
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	27.4
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	1854
50800105	REINFORCEMENT BARS	POUND	2780
Δ 50900205	STEEL RAILING, TYPE S1	FOOT	139
51200957	FURNISHING METAL PILE SHELLS 12" X 0.250"	FOOT	225
51202305	DRIVING PILES	FOOT	225
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
Δ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	2
67100100	MOBILIZATION	L SUM	1

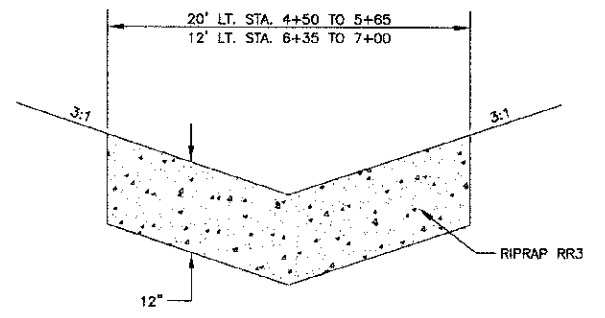
Δ SPECIALTY ITEMS



TYPICAL SECTION
PROPOSED



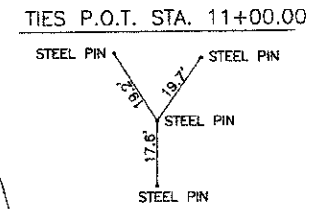
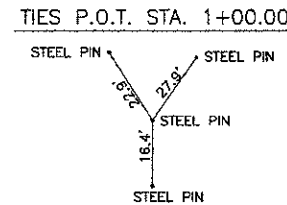
TYPICAL SECTION
EXISTING



AGGREGATE DITCH (SPECIAL) DETAIL

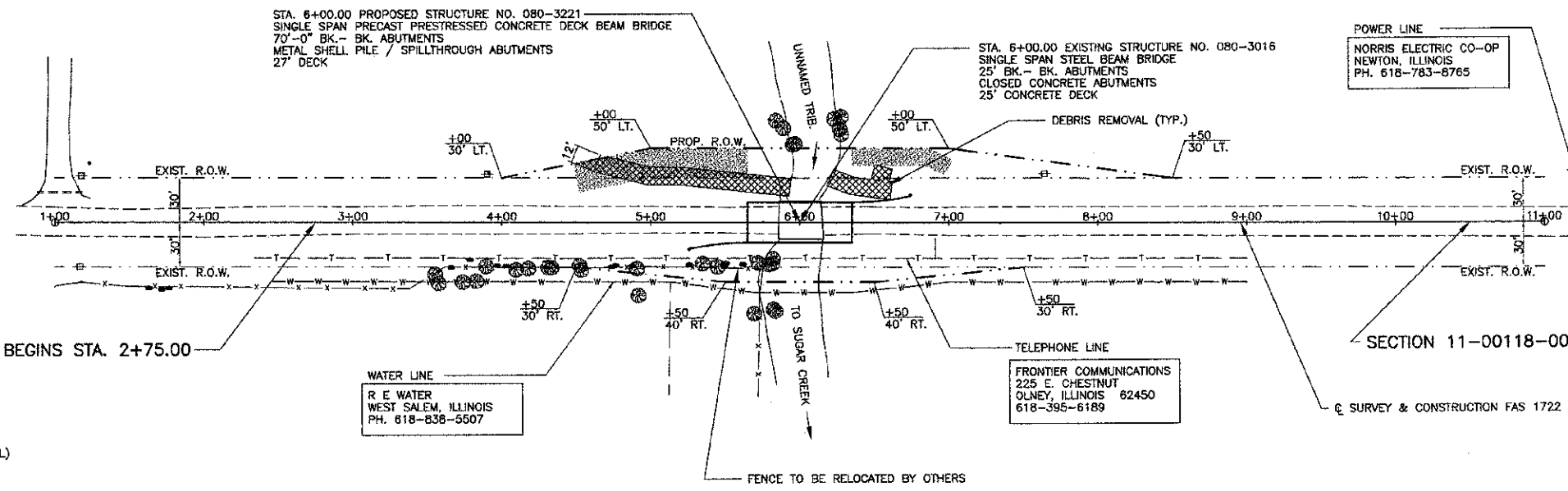
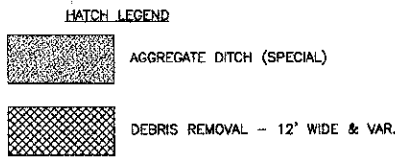
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1722	11-00118-00-BR	RICHLAND	16	3
CONTRACT NO. 95705		ILLINOIS		

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



SECTION 11-00118-00-BR BEGINS STA. 2+75.00

SECTION 11-00118-00-BR ENDS STA. 10+50.00



STA. 6+00.00 PROPOSED STRUCTURE NO. 080-3221
 SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
 70'-0" BK.-BK. ABUTMENTS
 METAL SHELL PILE / SPILLTHROUGH ABUTMENTS
 27' DECK

STA. 6+00.00 EXISTING STRUCTURE NO. 080-3016
 SINGLE SPAN STEEL BEAM BRIDGE
 25' BK.-BK. ABUTMENTS
 CLOSED CONCRETE ABUTMENTS
 25' CONCRETE DECK

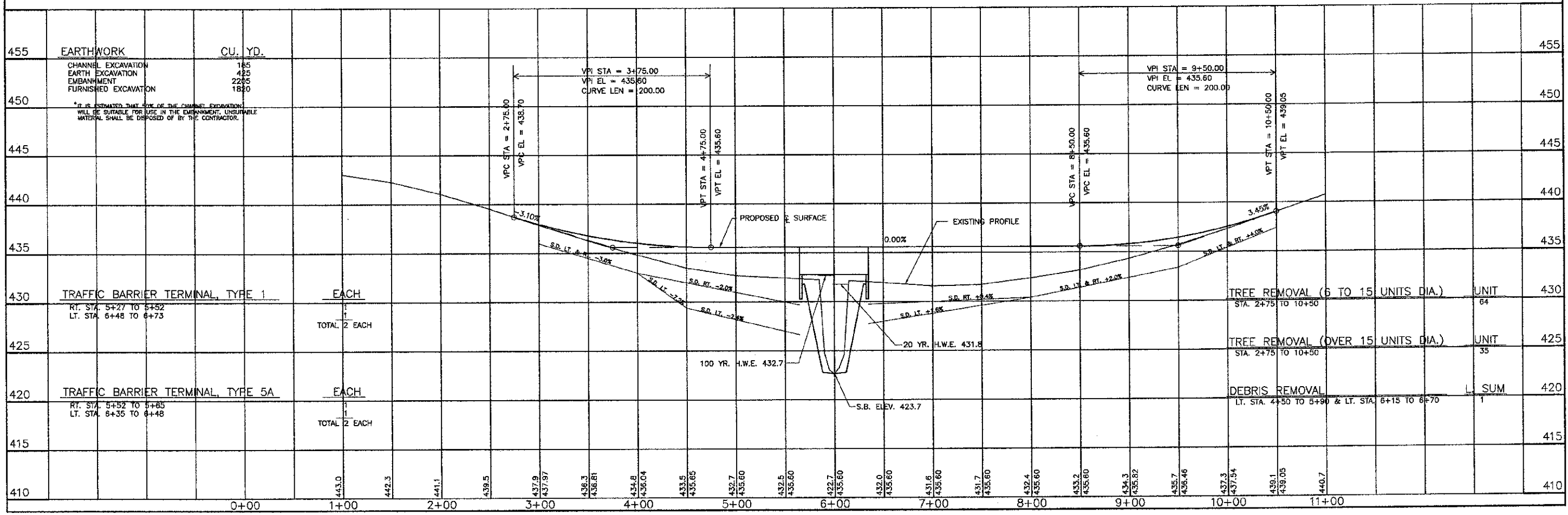
POWER LINE
 NORRIS ELECTRIC CO-OP
 NEWTON, ILLINOIS
 PH. 618-783-8765

WATER LINE
 R E WATER
 WEST SALEM, ILLINOIS
 PH. 618-838-5507

TELEPHONE LINE
 FRONTIER COMMUNICATIONS
 225 E. CHESTNUT
 OLNEY, ILLINOIS 62450
 618-395-6189

© SURVEY & CONSTRUCTION FAS 1722

TRANSITION EXISTING ROADWAY TO PROPOSED ROADWAY
 STA. 2+25 TO 2+75 AND STA. 10+50 TO 11+00
 QUANTITIES FOR THE ABOVE ARE INCLUDED IN THOSE LISTED



STATION	DESCRIPTION	QUANTITY	UNIT
455	EARTHWORK		CU. YD.
450	CHANNEL EXCAVATION	185	
450	EARTH EXCAVATION	425	
450	EMBANKMENT	2285	
450	FURNISHED EXCAVATION	1820	
430	TRAFFIC BARRIER TERMINAL, TYPE 1	2	EACH
420	TRAFFIC BARRIER TERMINAL, TYPE 5A	2	EACH
425	TREE REMOVAL (6 TO 15 UNITS DIA.)	64	UNIT
425	TREE REMOVAL (OVER 15 UNITS DIA.)	35	UNIT
420	DEBRIS REMOVAL	1	SUM

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

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1722	11-00118-00-BR	RICHLAND	16	4
CONTRACT NO. 95705		ILLINOIS		

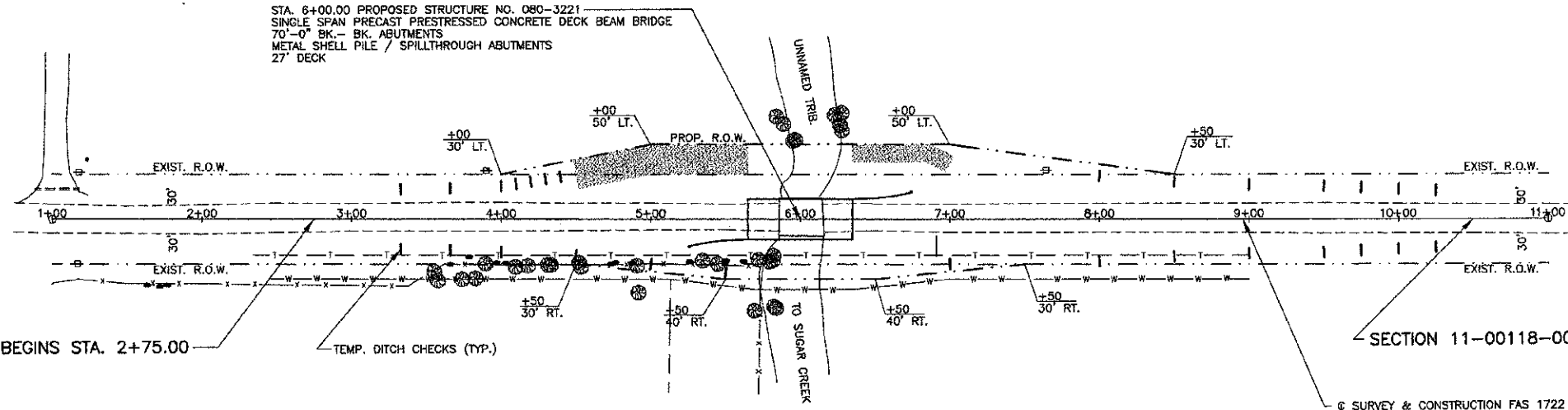
CLARENCE L. & PAISY L. BERGER

HATCH LEGEND

LYNDEN & BONITA BALDING



STA. 6+00.00 PROPOSED STRUCTURE NO. 080-3221
SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
70'-0" BK.- BK. ABUTMENTS
METAL SHELL PILE / SPILLTHROUGH ABUTMENTS
27' DECK



SECTION 11-00118-00-BR BEGINS STA. 2+75.00

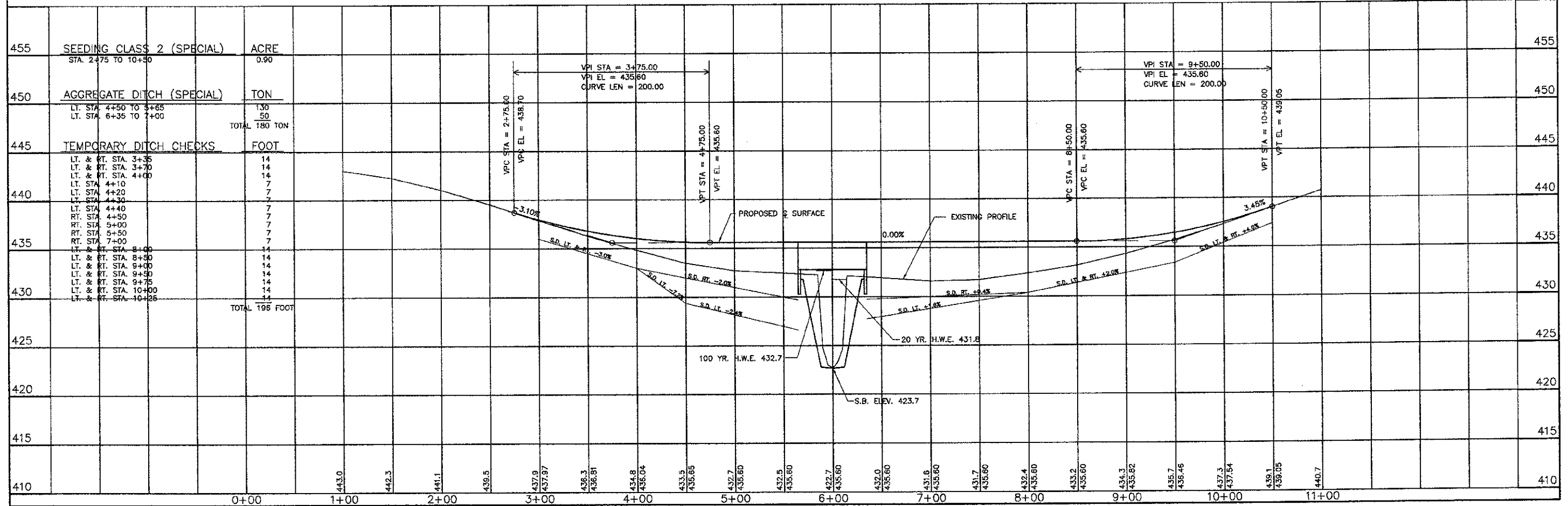
SECTION 11-00118-00-BR ENDS STA. 10+50.00

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DONOVAN O'DONNELL TRUST

LYNDEN & BONITA BALDING

B.M. LT. STA. 3+90
SPIKE IN P.P.
ELEV. 435.54



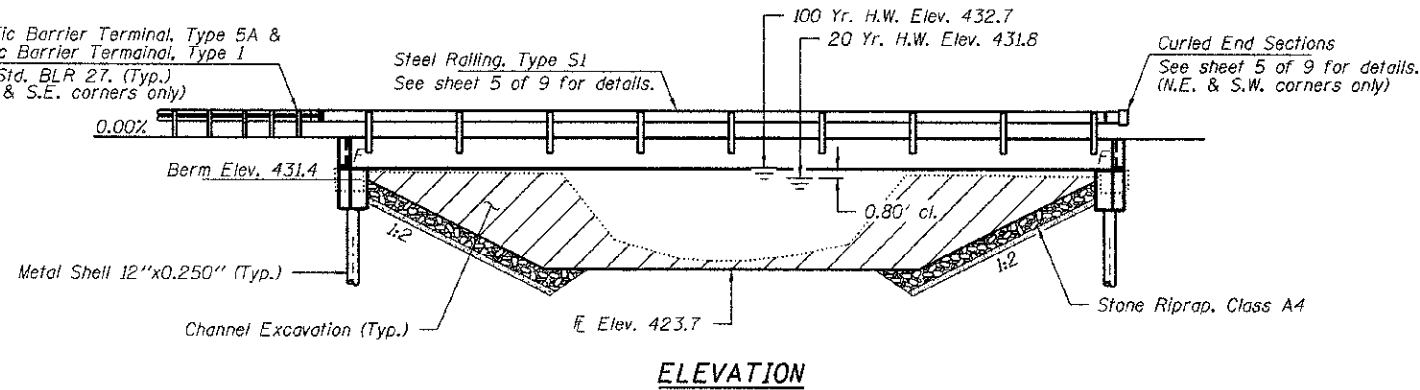
455	SEEDING CLASS 2 (SPECIAL)	ACRE	0.90	455
STA. 2+75 TO 10+50				
450	AGGREGATE DITCH (SPECIAL)	TON	180	450
LT. STA. 4+50 TO 5+65			50	
LT. STA. 6+35 TO 7+00			TOTAL 180 TON	
445	TEMPORARY DITCH CHECKS	FOOT		445
TOTAL 195 FOOT				
440	LT. & RT. STA. 3+35		14	440
	LT. & RT. STA. 3+70		14	
	LT. & RT. STA. 4+00		14	
	LT. STA. 4+10		7	
	LT. STA. 4+20		7	
	LT. STA. 4+30		7	
	LT. STA. 4+40		7	
	RT. STA. 4+50		7	
	RT. STA. 5+00		7	
	RT. STA. 5+50		7	
	RT. STA. 7+00		7	
435	LT. & RT. STA. 8+00		14	435
	LT. & RT. STA. 8+50		14	
	LT. & RT. STA. 9+00		14	
	LT. & RT. STA. 9+50		14	
	LT. & RT. STA. 9+75		14	
	LT. & RT. STA. 10+00		14	
	LT. & RT. STA. 10+25		14	
TOTAL 195 FOOT				
430				430
425				425
420				420
415				415
410				410

BENCHMARK: LT. STA. 3+90 spike in P.P. Elev. 435.54

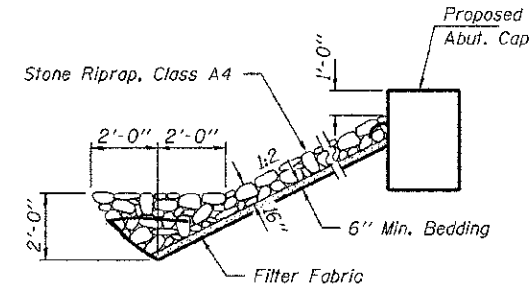
EXISTING STRUCTURE: Sta. 6+00.00 - Single Span Steel Beam Bridge
25' Bk.-Bk. Abutments. Closed concrete abutments
25' concrete deck.

No Salvage

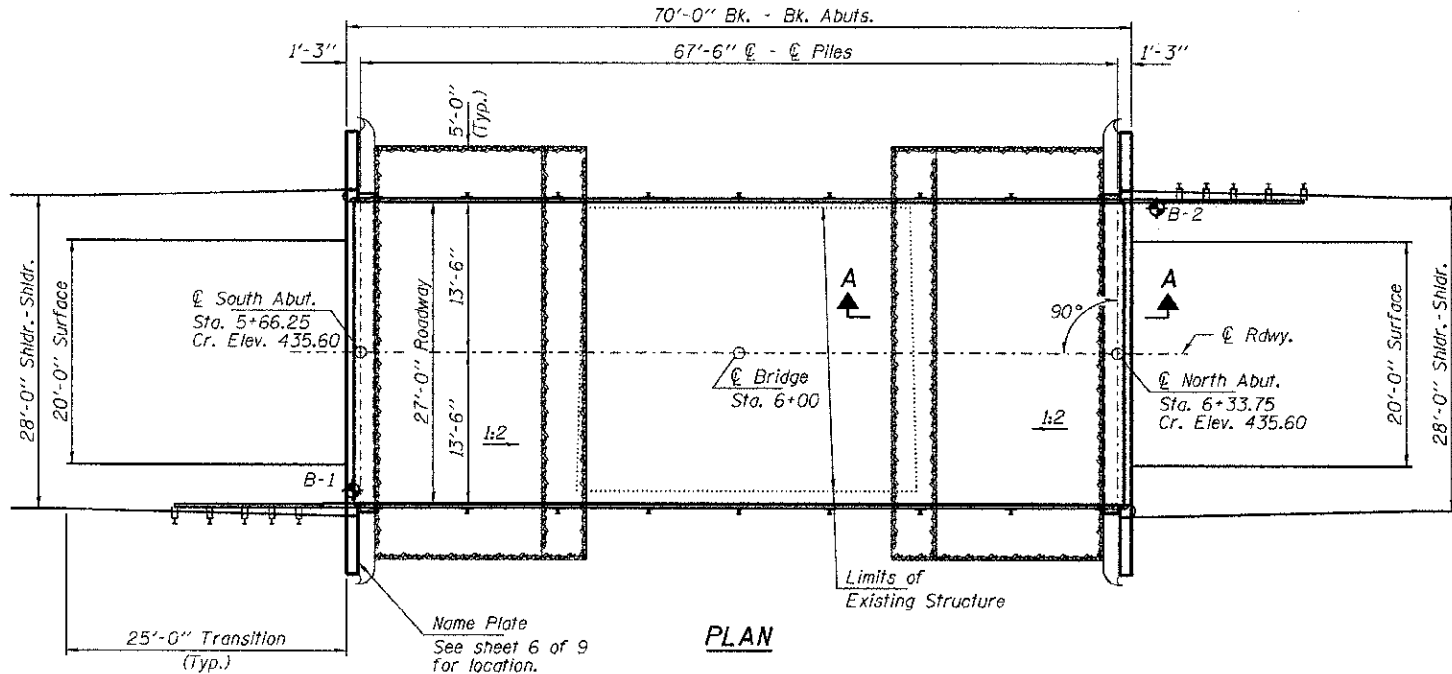
Traffic Barrier Terminal, Type 5A &
Traffic Barrier Terminal, Type 1
See Std. BLR 27. (Typ.)
(N.W. & S.E. corners only)



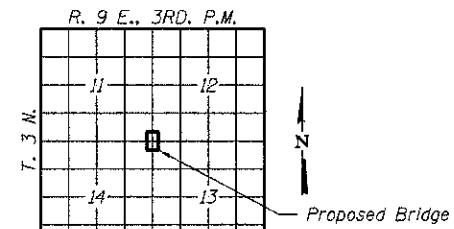
ELEVATION



SECTION A-A



PLAN



LOCATION SKETCH

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
The Contractor shall drive test piles to 110% of the nominal required bearing specified in production locations at South Abutment or approved by the Engineer before ordering the remainder of piles.
Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
Excavation required to construct the Abutments shall be included in the cost of Concrete Structures. No additional compensation will be allowed for Structure Excavation.
All proposed construction activities shall be in accordance with Nationwide Permit number 14 of the Department of the Army authorized under Section 404 of the Clean Water Act.
The IEPA has Issued Section 401 Water Quality Certification for this activity. See Special Provisions for conditions.

INDEX OF STRUCTURE SHEETS

1. General Plan & Elevation
2. 33"x36" PPC Deck Beam
3. 33"x36" PPC Deck Beam Details
4. Superstructure Details
5. Steel Railing, Type S-1
6. Abutments
7. Metal Shell Pile Details
- 8-9. Borings

BUILT 201. BY
RICHLAND COUNTY
SEC. 11-00118-00-BR
STR. NO. 080-3221
LOADING HL-93

NAME PLATE
See Std. 515001

DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi
f'ci = 5,000 psi
fpu = 270,000 psi (1/2" low lax. strands)
fpbt = 201,960 psi (1/2" low lax. strands)
fy = 60,000 psi (Reinf.)

LOADING HL-93

Design Specifications: 2012 AASHTO LRFD
with all applicable interims.
50#/Sq. Ft. included in dead load for
future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.249g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.587g
Soil Site Class = D

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	S. Abut.	N. Abut.
	429.0	429.0

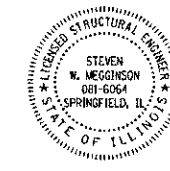
WATERWAY INFORMATION

Drainage Area = 3.63 Sq. Mi. Existing Low Grade Elev. 431.6 @ Sta. 7+00
Proposed Low Grade Elev. 439.1 @ Sta. 10+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural Head - Ft.		Headwater E.	
			Exist.	Prop.	H.W.E. Exist.	Prop.	Exist.	Prop.
Design	20	1476	200	380	431.8	-	-	-
Base	100	2200	214	435	432.7	0.65	0.0	433.35 432.70
Max. Calc.	500							

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

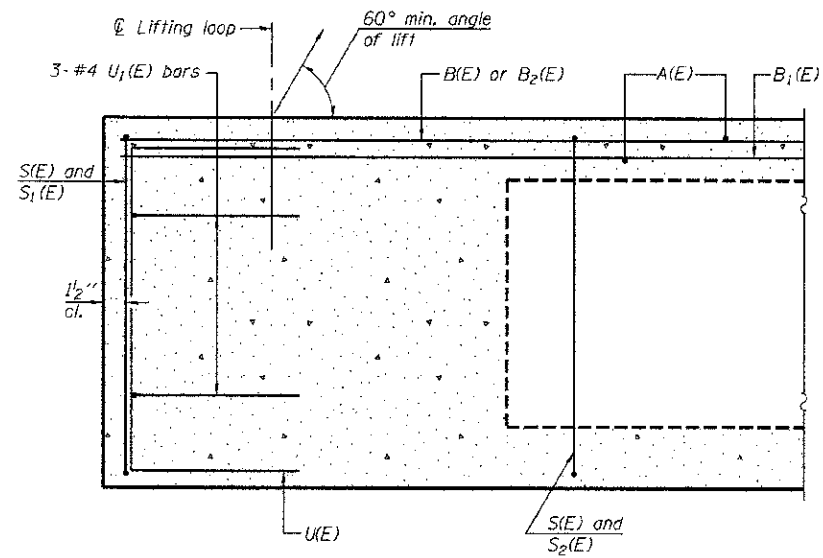
Steven W. McGinnis 11/29/2012
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064



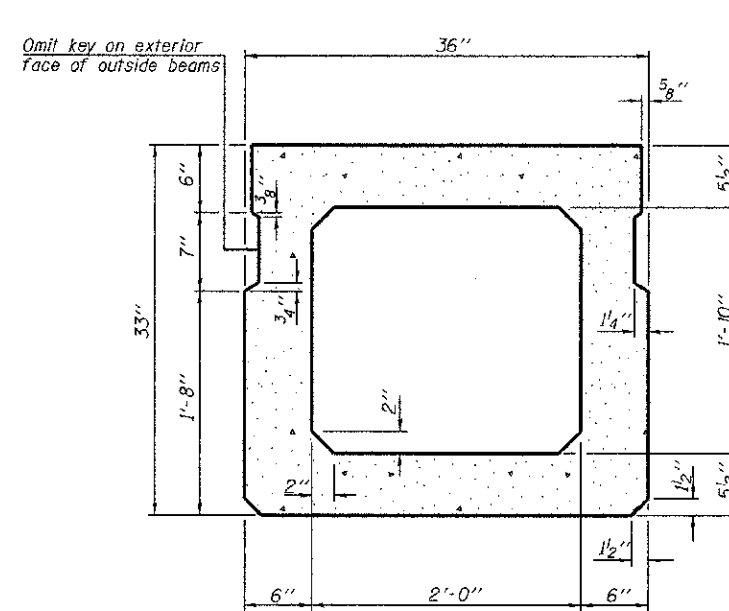
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.			185
Stone Riprap, Class A4	Ton			140
Filter Fabric	Sq. Yd.			200
Removal of Existing Structures	Each			1
Concrete Structures	Cu. Yd.		27.4	27.4
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1,854		1,854
Reinforcement Bars	Pound		2,780	2,780
Steel Railing, Type S-1	Foot	139		139
Furnishing Metal Shell Piles 12"x0.250"	Foot		225	225
Driving Piles	Foot		225	225
Test Pile Metal Shell	Each		1	1
Name Plates	Each		1	1

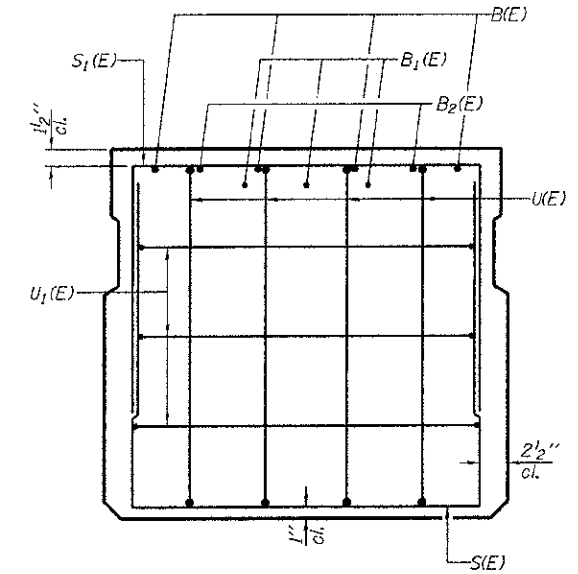
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HAMPTON, LENZINI AND RENWICK, INC. 3605 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62765	PLOT SCALE =	CHECKED - S.W.M.	REVISED -			1722	11-00118-00-BR	RICHLAND	16	5
ILLINOIS PROFESSIONAL DESIGN FIRM L.S. / P.E. / S.E. / C.E.P.M. / S.A. / P.O.P.S.	PLOT DATE = #DATE#	DRAWN - R.D.H.	REVISED -			CONTRACT NO. 95705				
		CHECKED - D.A.B.	REVISED -			ILLINOIS FED. AID PROJECT				



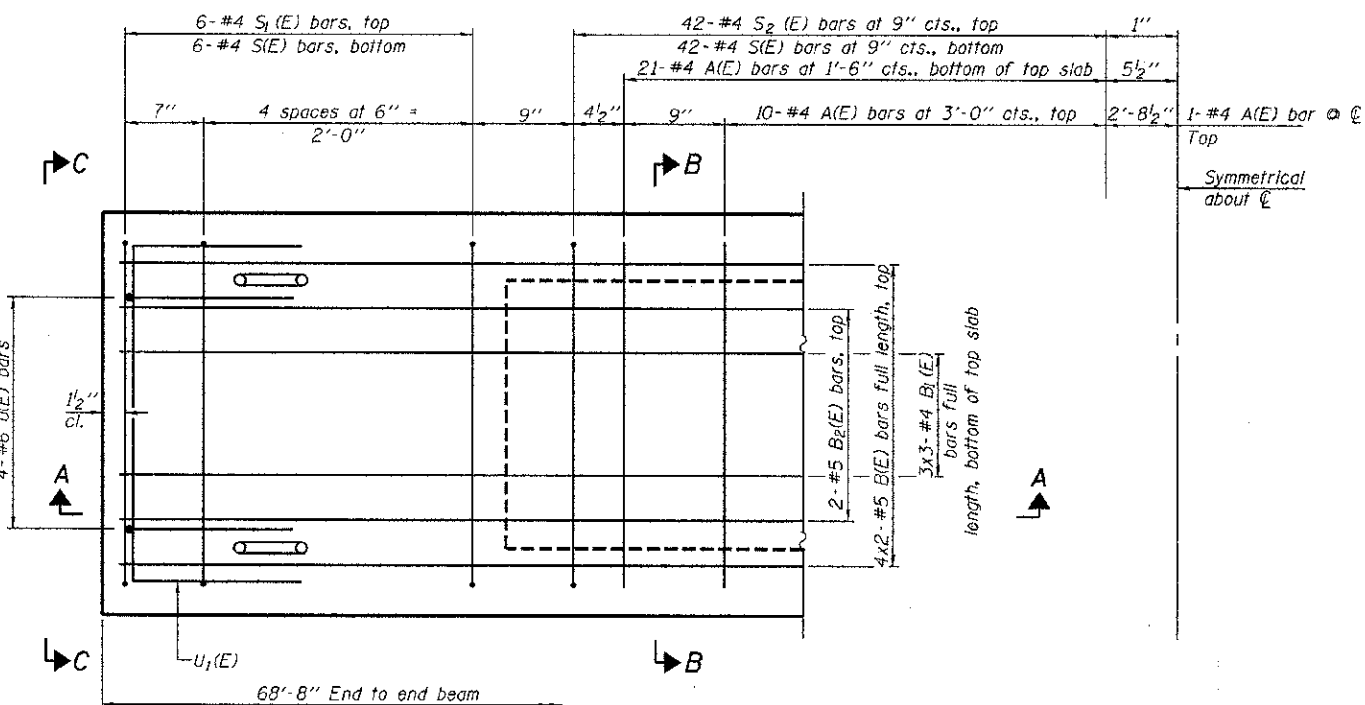
SECTION A-A



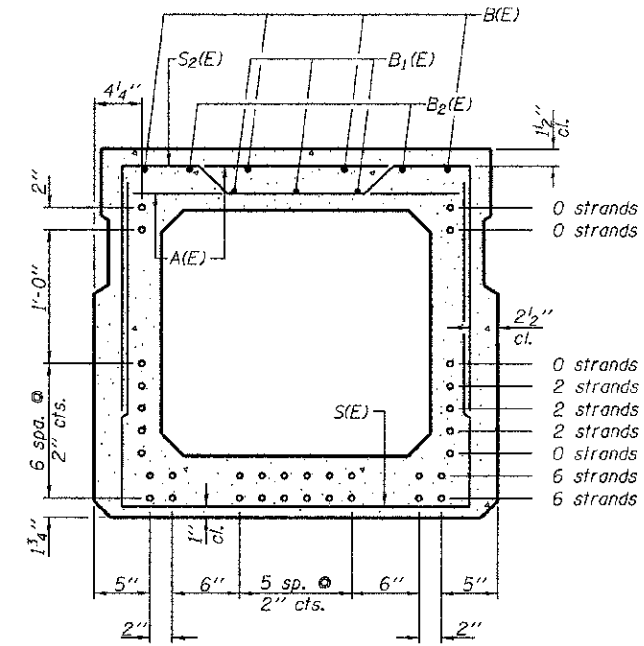
SECTION B-B
(Showing dimensions)



VIEW C-C



PLAN VIEW



SECTION B-B
(Showing reinforcement and permissible strand locations)

Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	63	#4	2'-7"	—
B(E)	8	#5	35'-5"	—
B1(E)	9	#4	24'-2"	—
B2(E)	4	#5	10'-0"	—
S(E)	96	#4	7'-5"	U
S1(E)	12	#4	6'-3"	U
S2(E)	84	#4	6'-6"	U
U(E)	8	#6	5'-0"	U
U1(E)	6	#4	5'-0"	U

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

Notes:
Spacing of S(E) and S(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.
Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

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

PD-3336-0

7-1-10

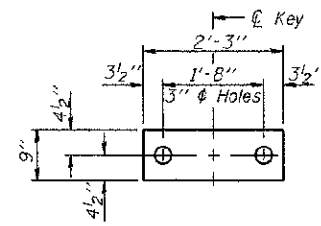
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HAMPTON, LENZINI AND RENWICK, INC. 505 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
PLLOT SCALE =		DRAWN - R.D.H.	REVISED -
PLLOT DATE = #DATE#		CHECKED - D.A.B.	REVISED -

STATE OF ILLINOIS
RICHLAND COUNTY HIGHWAY DEPARTMENT

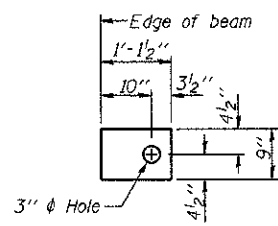
33" x 36" PPC DECK BEAM
STRUCTURE NO. 080-3221

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1722	11-00118-00-BR	RICHLAND	16	6
CONTRACT NO. 95705			ILLINOIS FED. AID PROJECT	

SHEET NO. 2 OF 9 SHEETS

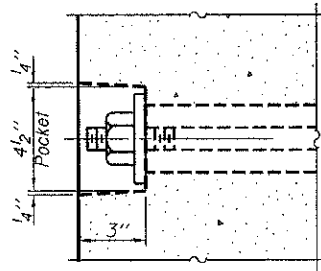


FABRIC BEARING PAD
(Interior - 16 Req'd.)

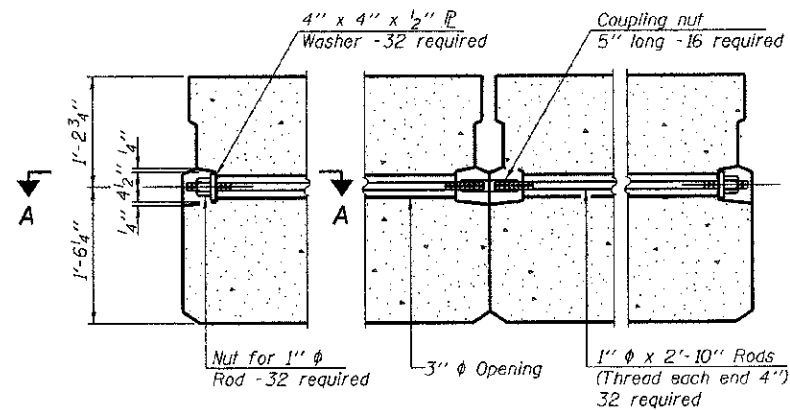


FABRIC BEARING PAD
(Exterior - 4 Req'd.)

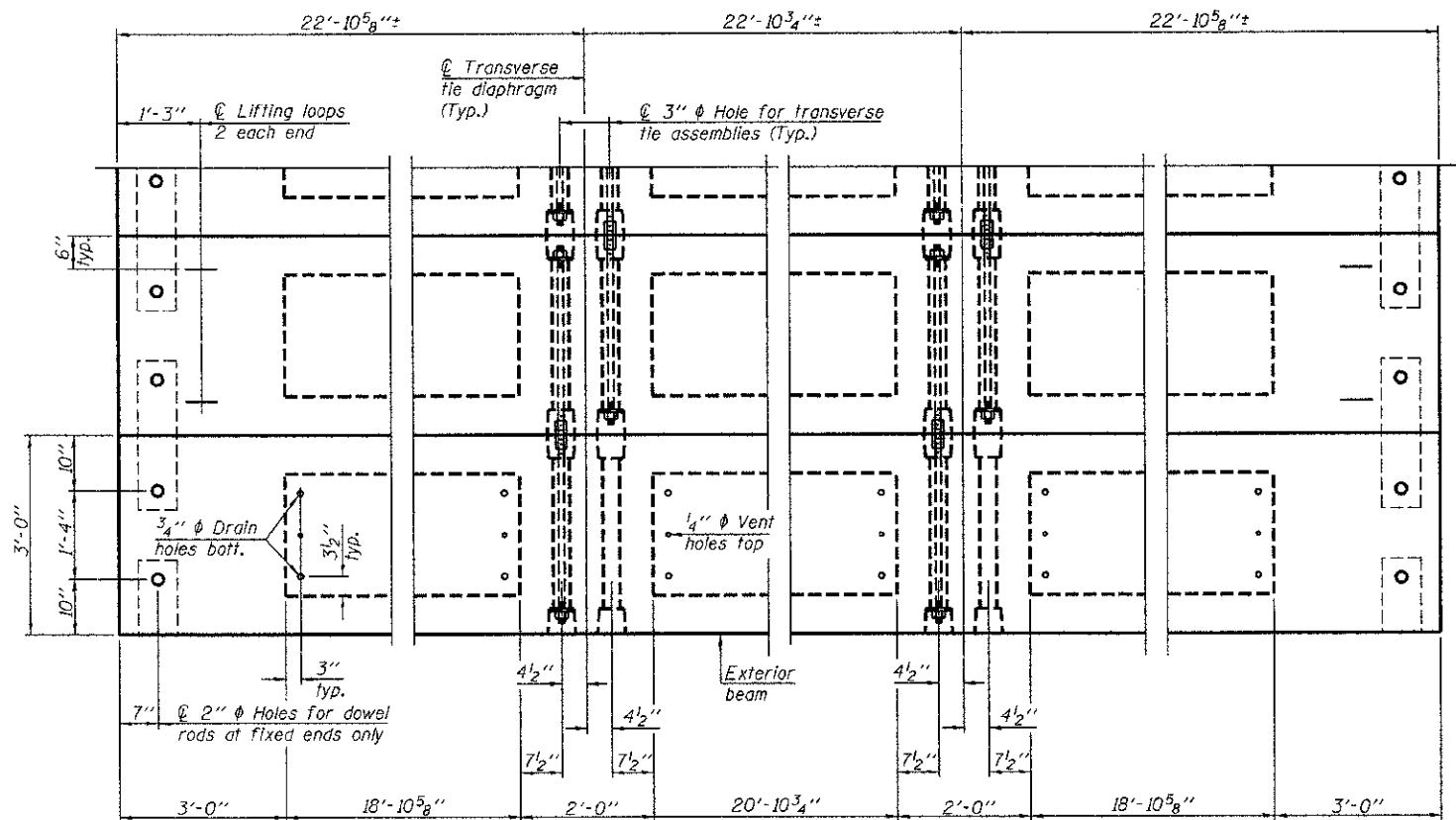
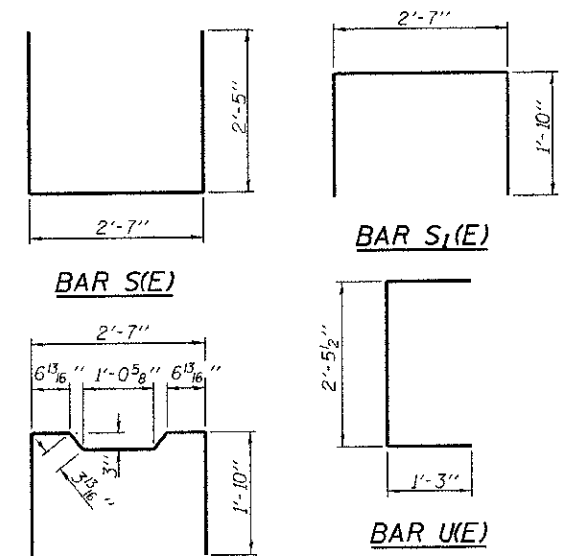
Notes:
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pad shall be bonded to the substructure.



SECTION A-A



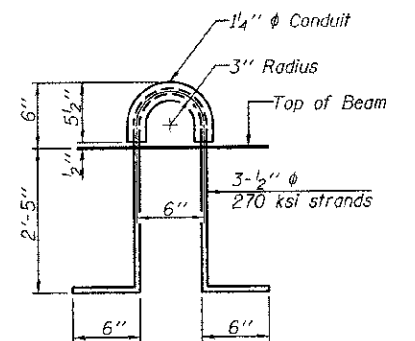
TYPICAL TRANSVERSE TIE ASSEMBLY



PLAN VIEW

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" 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 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.
All reinforcement shall be epoxy coated.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1,854
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PD-3336-0D 7-1-10

FILE NAME = #FILE#	USER NAME =	DESIGNED - D.W.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3605 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62776	PLLOT SCALE =	DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS 7/PE 1 SEE COPY, 184.000968	PLLOT DATE = #DATE#	CHECKED - D.A.B.	REVISED -

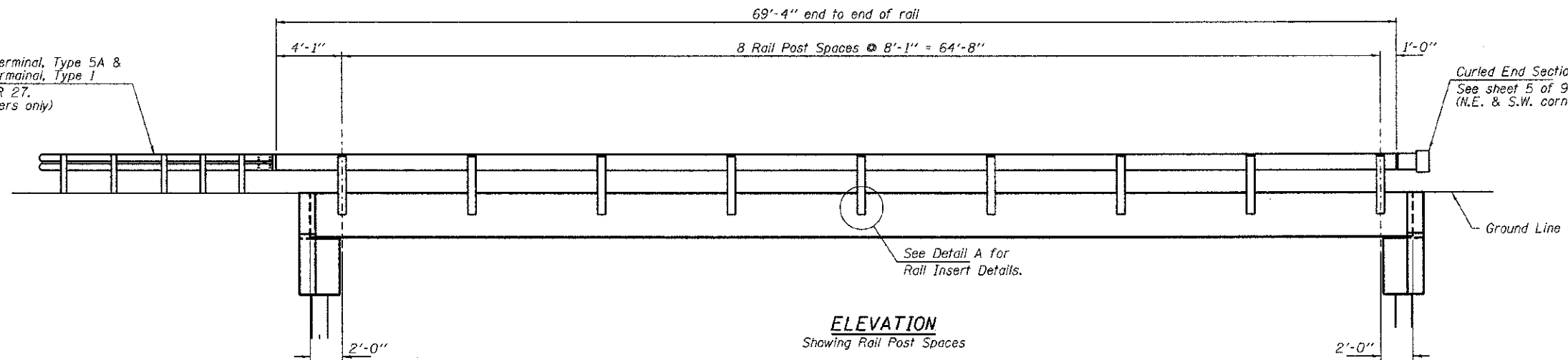
STATE OF ILLINOIS
RICHLAND COUNTY HIGHWAY DEPARTMENT

33" x 36" PPC DECK BEAM DETAILS
STRUCTURE NO. 080-3221

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1722	11-00118-00-BR	RICHLAND	16	7
CONTRACT NO. 95705			ILLINOIS FED. AID PROJECT	

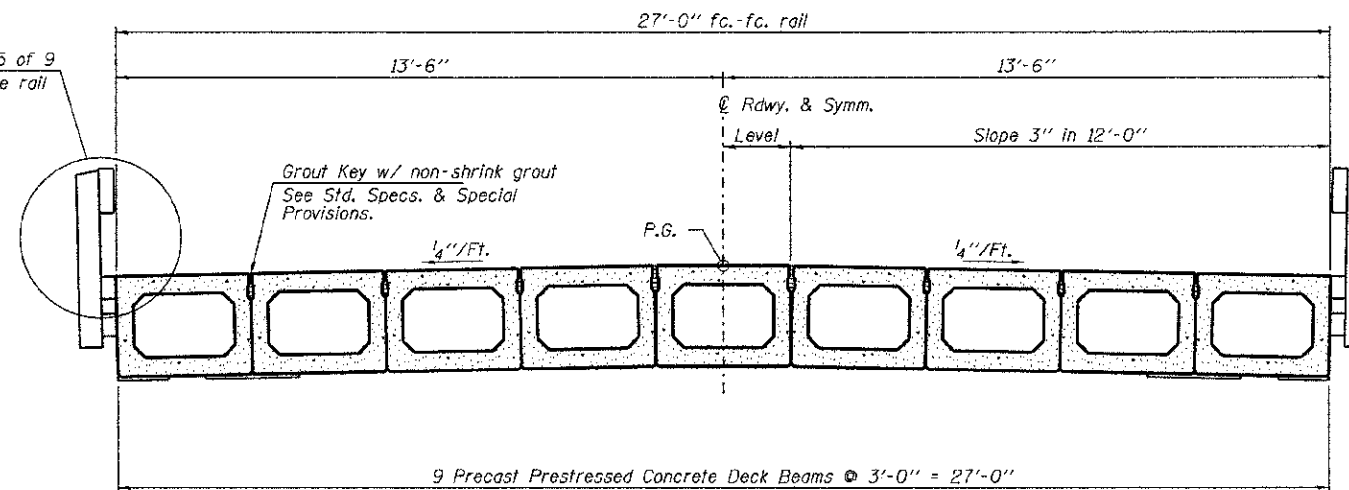
SHEET NO. 3 OF 9 SHEETS

Traffic Barrier Terminal, Type 5A &
Traffic Barrier Terminal, Type 1
See Standard BLR 27.
(N.W. & S.E. corners only)

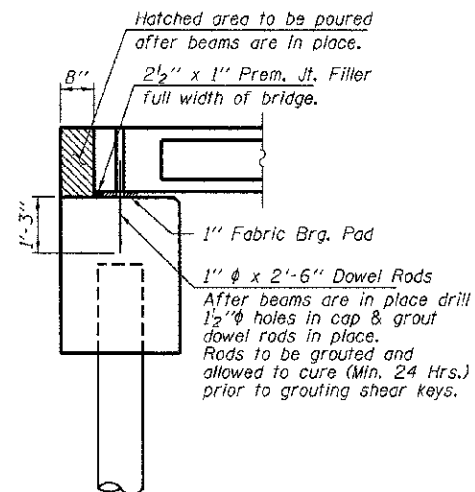


ELEVATION
Showing Rail Post Spaces
See sheet 5 of 9 for Railing Details.

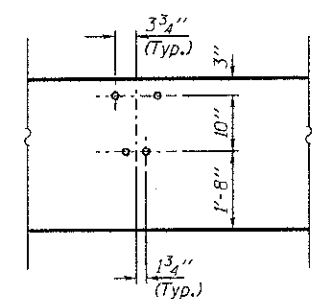
See sheet 5 of 9
for complete rail
details.



CROSS SECTION
See sheets 2 & 3 of 9 for Superstructure.

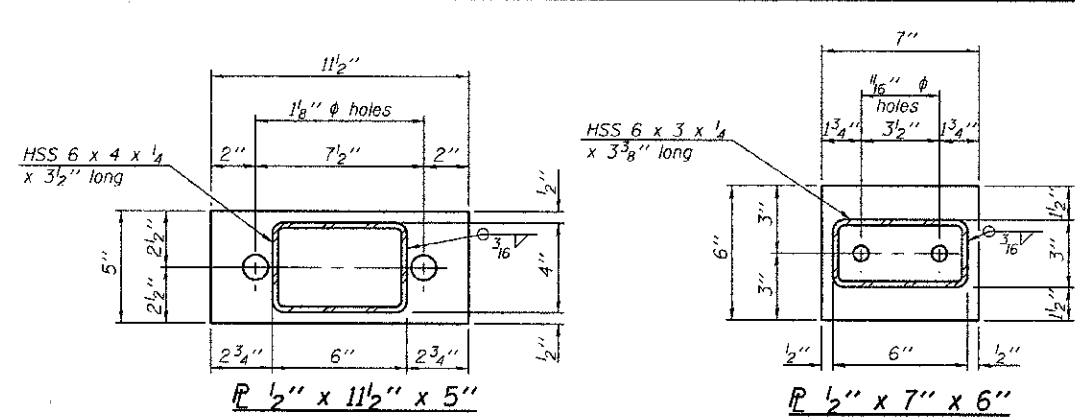
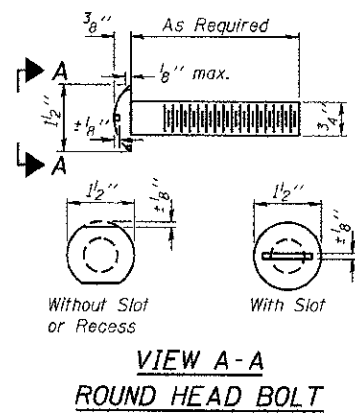


SECTION AT ABUTMENTS
@ R/L's

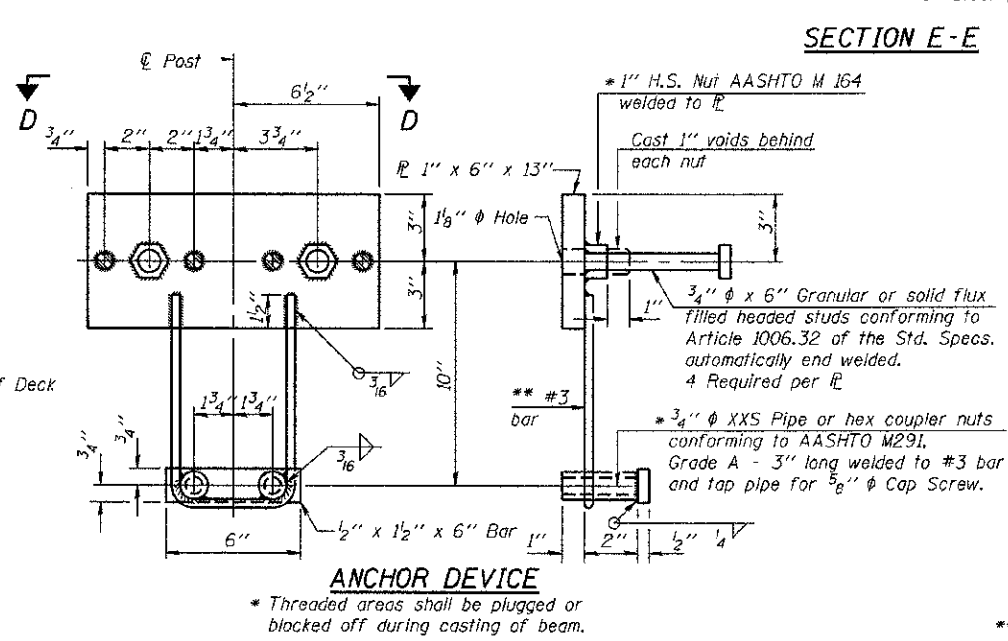
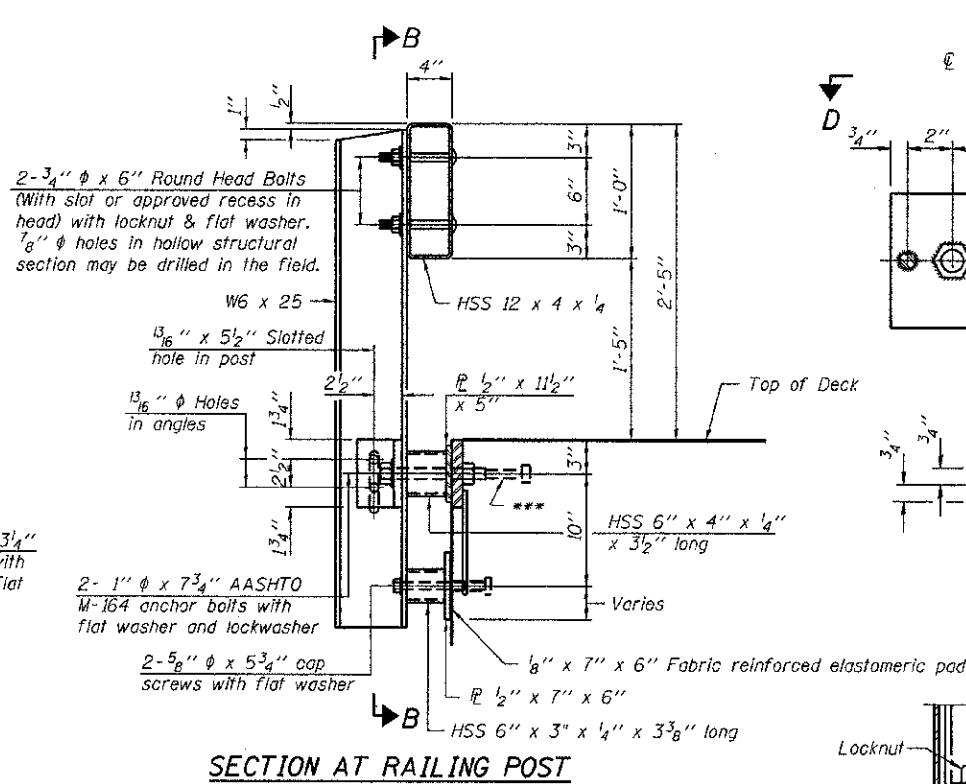
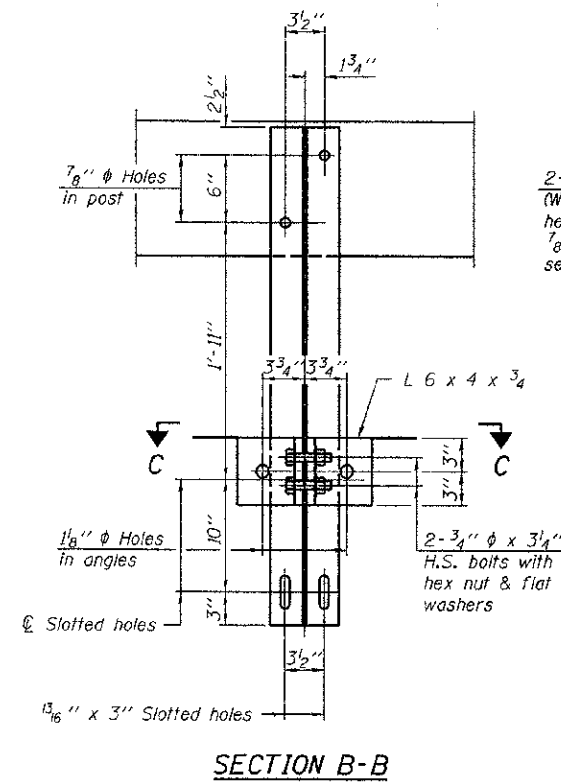
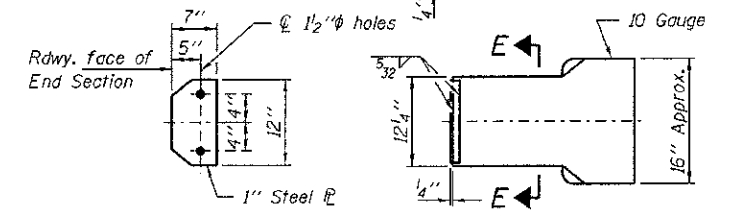


DETAIL A

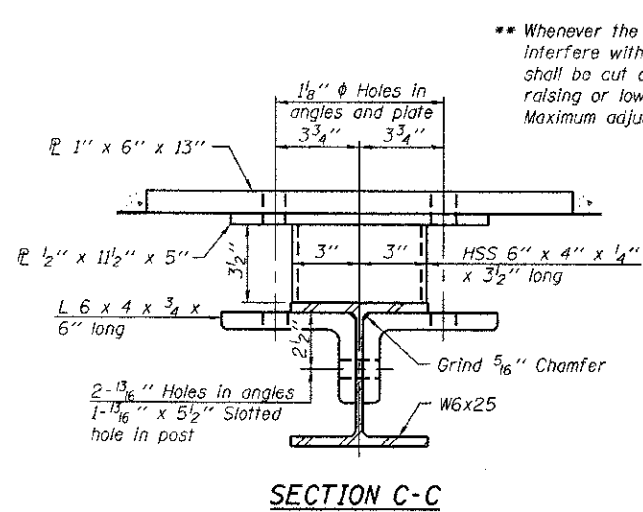
FILE NAME = #FILE#	USER NAME =	DESIGNED - D.W.T.	REVISED -	STATE OF ILLINOIS RICHLAND COUNTY HIGHWAY DEPARTMENT	SUPERSTRUCTURE DETAILS STRUCTURE NO. 080-3221	F.A.S. SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 1505 STEVENSON AVENUE, SUITE 100 SPRINGFIELD, ILLINOIS 62705		CHECKED - S.W.M.	REVISED -			1722 11-00118-00-BR	RICHLAND	16	8
ILLINOIS PROFESSIONAL DESIGN FIRM L51-102132 CORP. 194005018	PILOT SCALE =	DRAWN - R.D.H.	REVISED -			CONTRACT NO. 95705			
	PILOT DATE = #DATE#	CHECKED - D.A.B.	REVISED -			ILLINOIS FED. AID PROJECT			
SHEET NO. 4 OF 9 SHEETS									



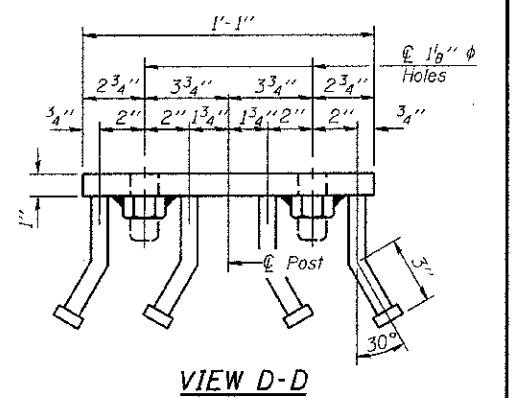
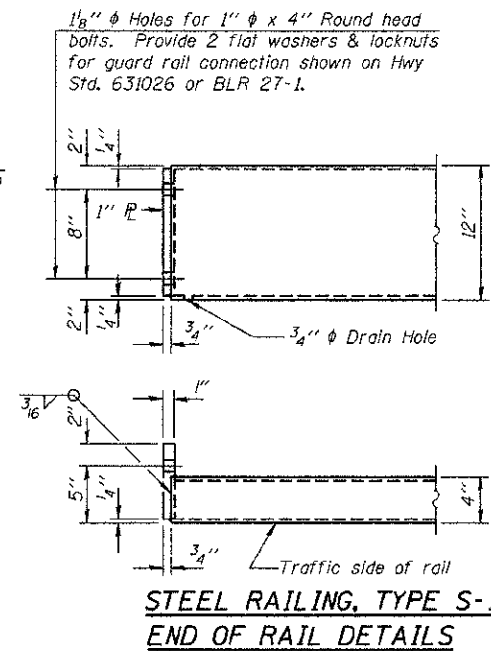
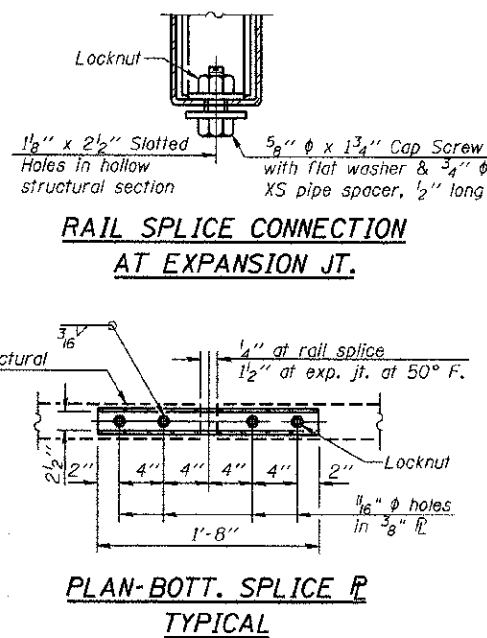
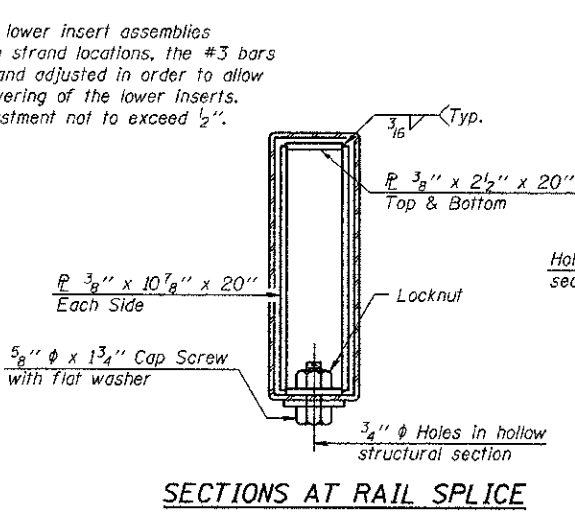
Note: Cost of curled end sections shall be included with the Steel Railing. (2 Required)



Notes:
 All field drilled holes shall be coated with an approved zinc rich paint before erection.
 For multi-span bridges, sufficient 1/4\"/>



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



BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S-1	Foot	139

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

FILE NAME = #FILE#	USER NAME =	DESIGNED - D.W.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3932 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62770	PLOT SCALE =	CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS 1772 BE CORP. 154-000959	PLOT DATE = #DATES	DRAWN - R.D.H.	REVISED -
		CHECKED - D.A.B.	REVISED -

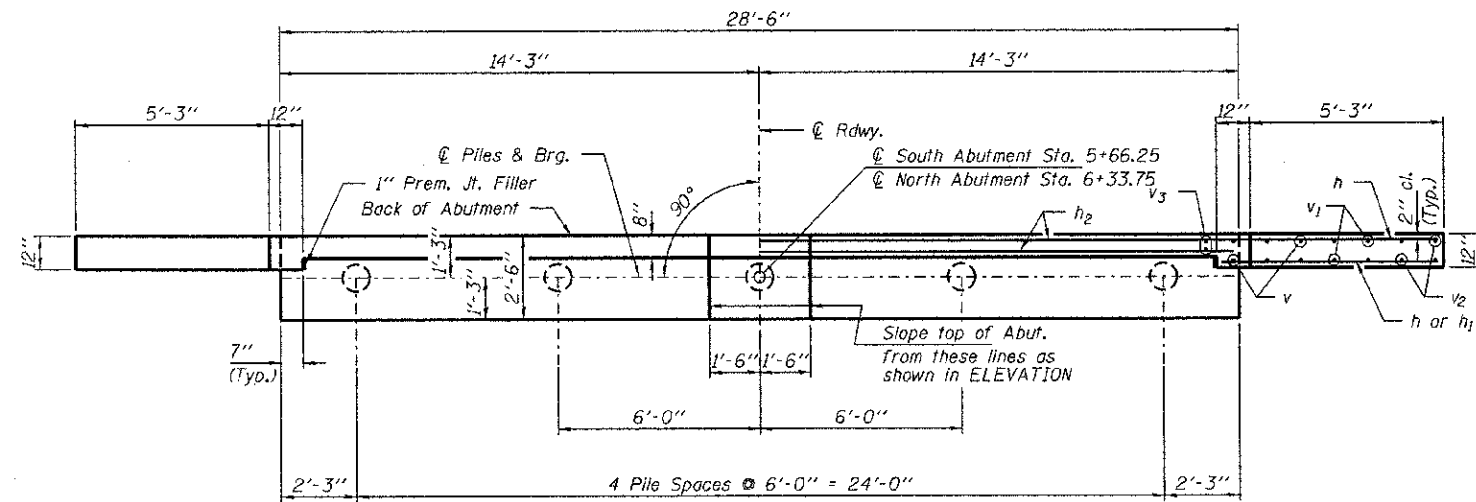
STATE OF ILLINOIS
 RICHLAND COUNTY HIGHWAY DEPARTMENT

STEEL RAILING, TYPE S-1
 STRUCTURE NO. 080-3221

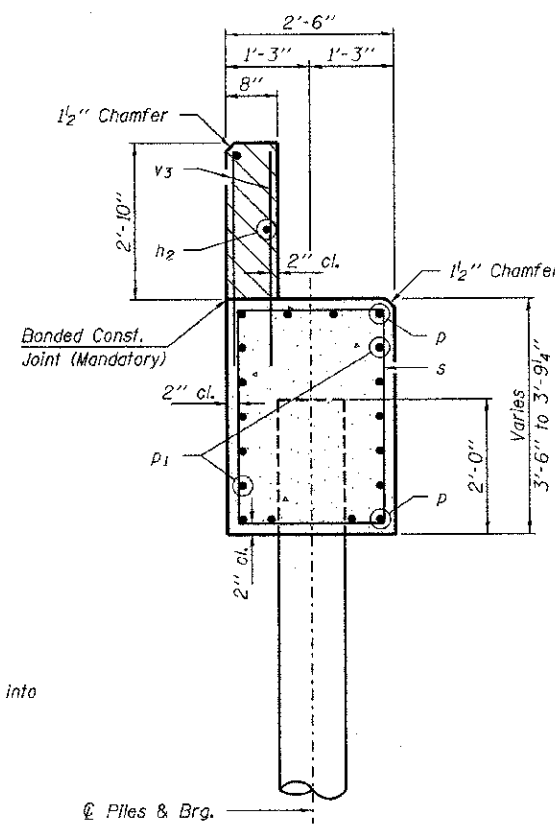
SHEET NO. 5 OF 9 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1722	11-00118-00-BR	RICHLAND	16	9
				CONTRACT NO. 95705

ILLINOIS FED. AID PROJECT

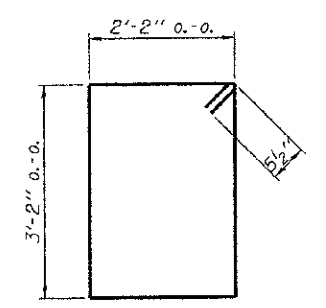


PLAN

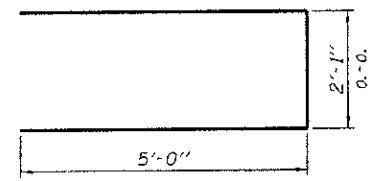


SECTION A-A

Hatched area to be poured after beams are in place.

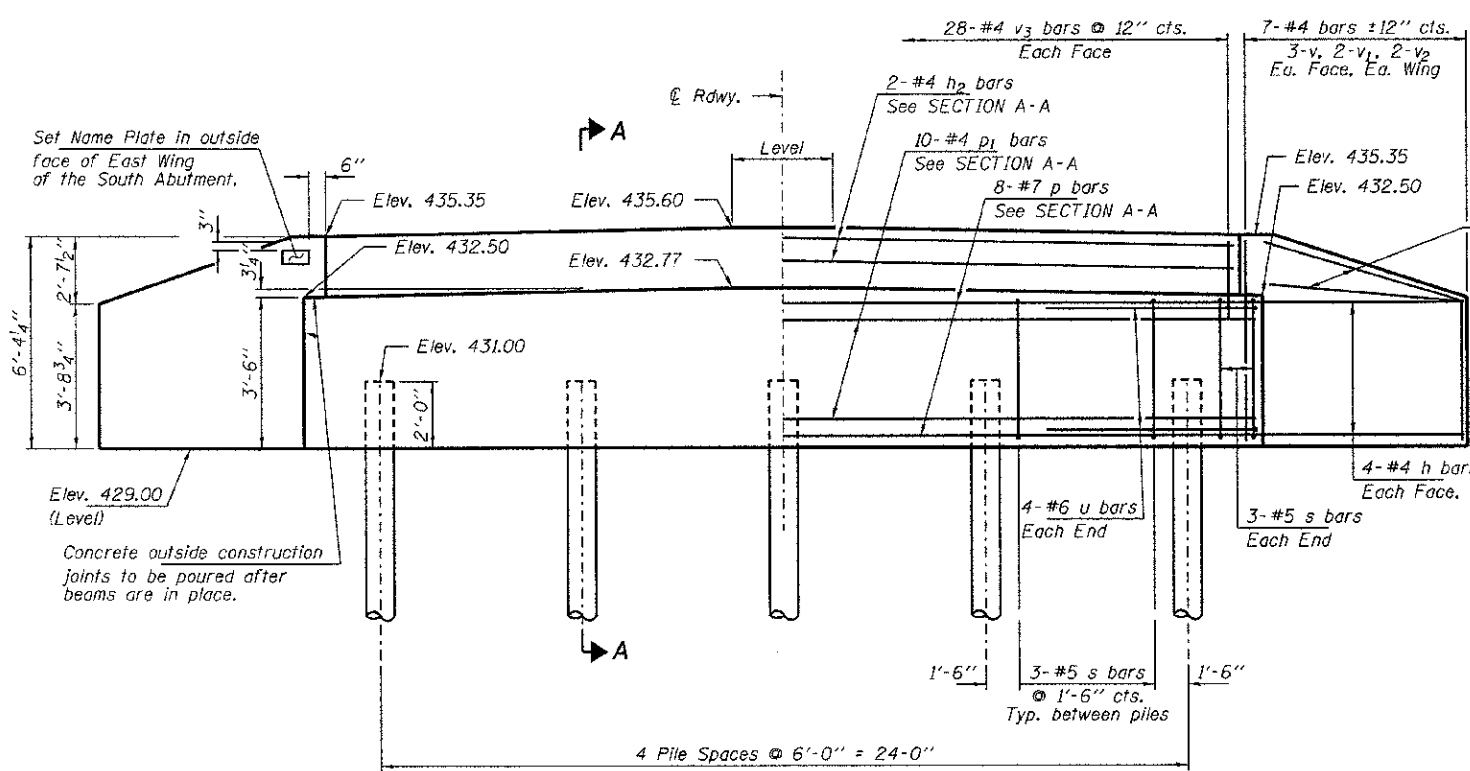


BAR s



BAR u

Note: Extend h bars into abutment cap.



ELEVATION

Each Wing Bend in field.

PILE DATA

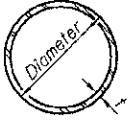
Type ----- Metal Shell 12"x0.250"
 No. Req'd. (2 Abuts.) ----- *10
 Factored Resistance Available (Rf) ----- 167 Kips/Pile
 Nominal Required Bearing (Rn) ----- 304 Kips/Pile
 Est. Length ----- 25 Ft/Pile

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

The test piles shall be driven to 110 percent of the Nominal Required Bearing indicated in the pile data information.

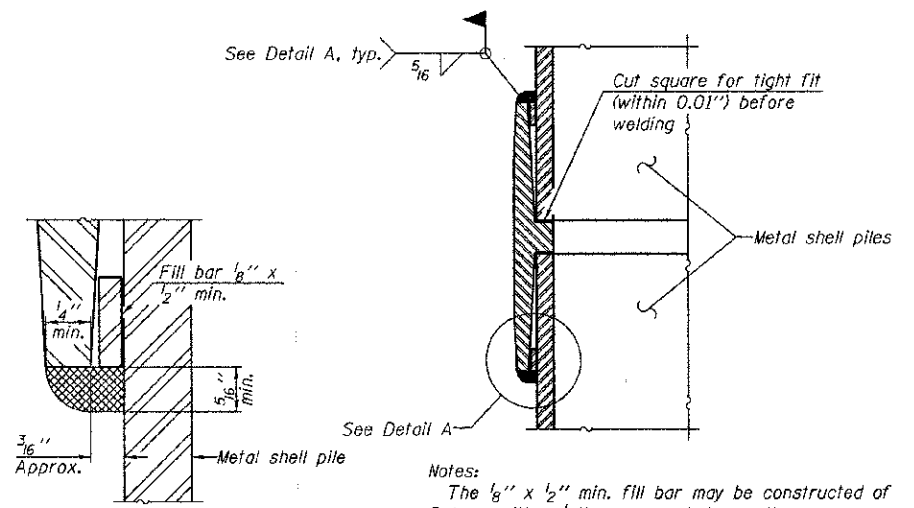
BILL OF MATERIAL - 2 ABUTS.

BAR	NO.	SIZE	LENGTH	SHAPE
h	40	#4	7'-6"	—
h1	8	#4	6'-0"	—
h2	4	#4	28'-2"	—
p	16	#7	28'-2"	—
p1	20	#4	28'-2"	—
s	36	#5	11'-7"	□
u	16	#6	12'-1"	—
v	24	#4	5'-5"	—
v1	16	#4	4'-5"	—
v2	16	#4	3'-5"	—
v3	112	#4	3'-8"	—
Concrete Structures			Cu. Yd.	27.4
Reinforcement Bars			Pound	2,780
Metal Shells 12"x0.250"			Foot	225
Test Pile Metal Shell 12"x0.250"			Each	1
Name Plates			Each	1



METAL SHELL PILE TABLE

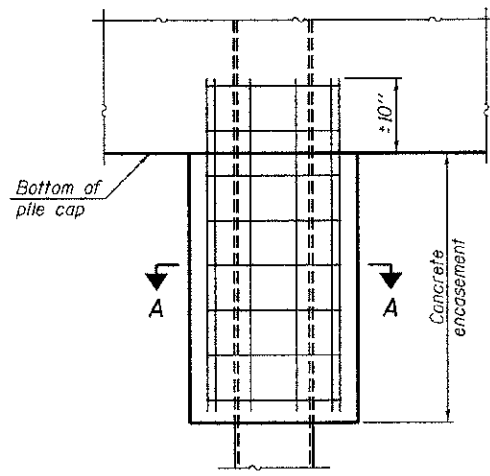
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



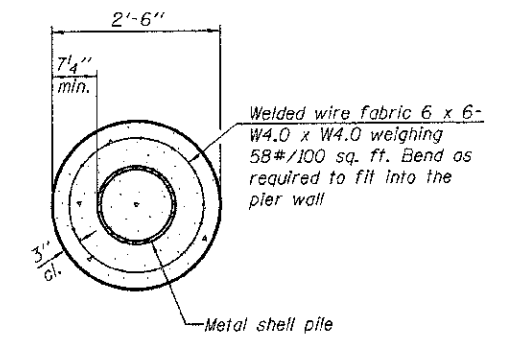
DETAIL A

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



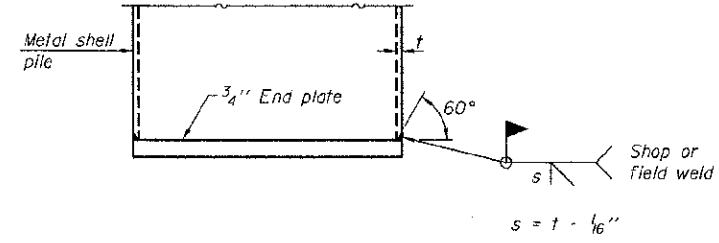
ELEVATION



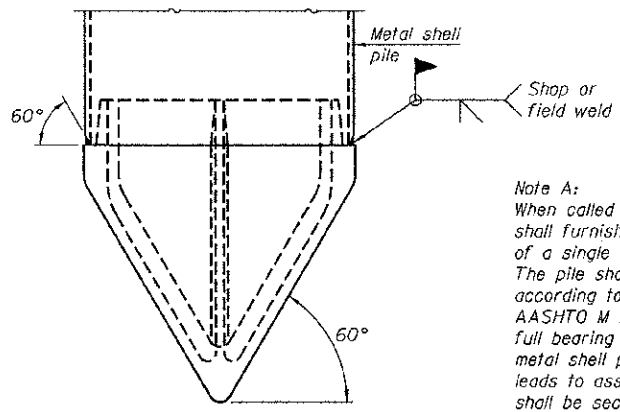
SECTION A-A

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

CONCRETE ENCASEMENT AT PIERS



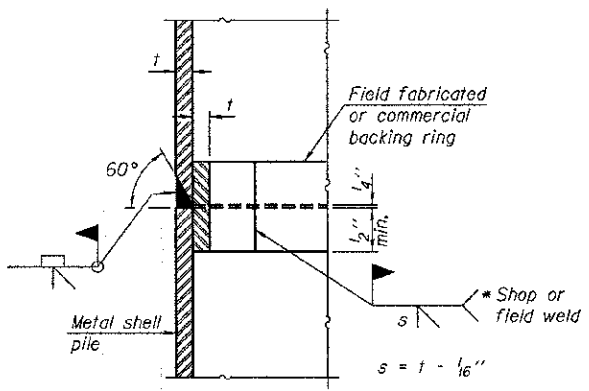
END PLATE ATTACHMENT



METAL SHELL PILE SHOE ATTACHMENT

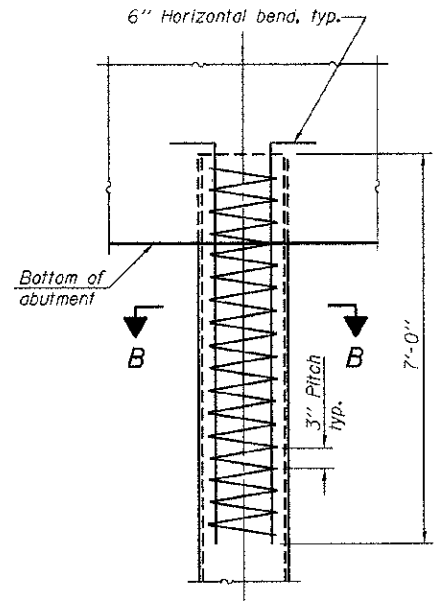
(See Note A)

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.

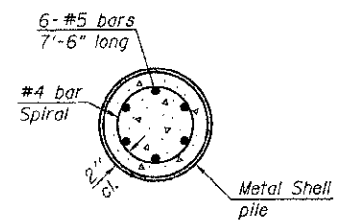


COMPLETE PENETRATION WELD SPLICE

* 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.



ELEVATION



SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

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

F-MS 1-27-12

FILE NAME * #FILE#	USER NAME *	DESIGNED - D.W.T.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -
3063 STEVENSON DRIVE SUITE 307 SPRINGFIELD, ILLINOIS 62763		DRAWN - R.D.H.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LSJ/PW/RE/COMD 154/08/06/09		CHECKED - D.A.B.	REVISED -

**STATE OF ILLINOIS
 RICHLAND COUNTY HIGHWAY DEPARTMENT**

**METAL SHELL PILE DETAILS
 STRUCTURE NO. 080-3221**

SHEET NO. 7 OF 9 SHEETS

F.A.S.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1722	11-00118-00-BR	RICHLAND	16	11
CONTRACT NO. 95705				
ILLINOIS FED. AID PROJECT				

NOBLE		BORING No. B-1					water level reading			
ENGINEERING CONSULTANTS		County: Richland, IL		Sheet No. 1 of 1		1st encounter: 28'				
Client: Richland County Highway Dept.		Weather: Overcast		Temperature: low 80's		water level reading				
Driller: Noble Engineering Consultants		Date Start: 7-02-12		Surface Elevation: 100		@completion wet cave				
Location: Structure #080-3016		Date Finished: 7-02-12		Driller: Tony Schocker		Backfill: Soil cuttings				
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	W %	USC Class.	Elev.
1										432
2	SS-1	1.0'-2.5'	6	4-3-3	50	-	0.0'-5.0' silt, clay, sand, etc FILL	9.2	FILL	431
3										430
4	SS-2	3.5'-5.0'	19	3-10-9	80	-		15.7	CL	429
5										428
6	SS-3	6.0'-7.5'	27	8-12-15	100	-	5.0'-8.0' SANDY SILT, trace gravel, moist, medium dense, brown with occ. gray mottling	14.4	CL	427
7										426
8										425
9	SS-4	8.5'-10.0'	7	3-3-4	100	-	9.0'-13.0' SILTY FINE SAND, trace gravel, loose, moist, gray	13.9	CL	424
10										423
11										422
12										421
13										420
14	SS-5	13.5'-15.0'	3	1-2-1	100	0.5	13.0'-18.0' SILTY CLAY, trace to some sand, medium, gray	-	CL	419
15										418
16										417
17										416
18										415
19	SS-6	18.5'-20.0'	SS	16-26-29	100	4.5+	18.0'-29.0' CLAYEY SILT (HII), trace to some sand, trace gravel, hard, gray	-	CL	414
20										413
21										412
22										411
23										410
24	SS-7	23.5'-25.0'	58	15-24-34	100	4.5+		24.2	SM	409
25										408
26										407
27										406
28										405
29										404
30	SS-8	28.5'-30.0'	55	22-24-31	100	-	29.0'-34.2' SILTY FINE TO COARSE SAND, tr. gravel, very dense, saturated, gray	10.5	SM	403
Drilling Method: HSA (3-3/4" ID)		comments		* Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder						
Depth: 0' to 34.2'		comments		** ground surface elevation at boring location is estimated and is not surveyed						
Drill Rig: Mobile B-47		comments		and is based on bridge deck elevation of 100						
Sampling: split-spoon (SS)		comments								

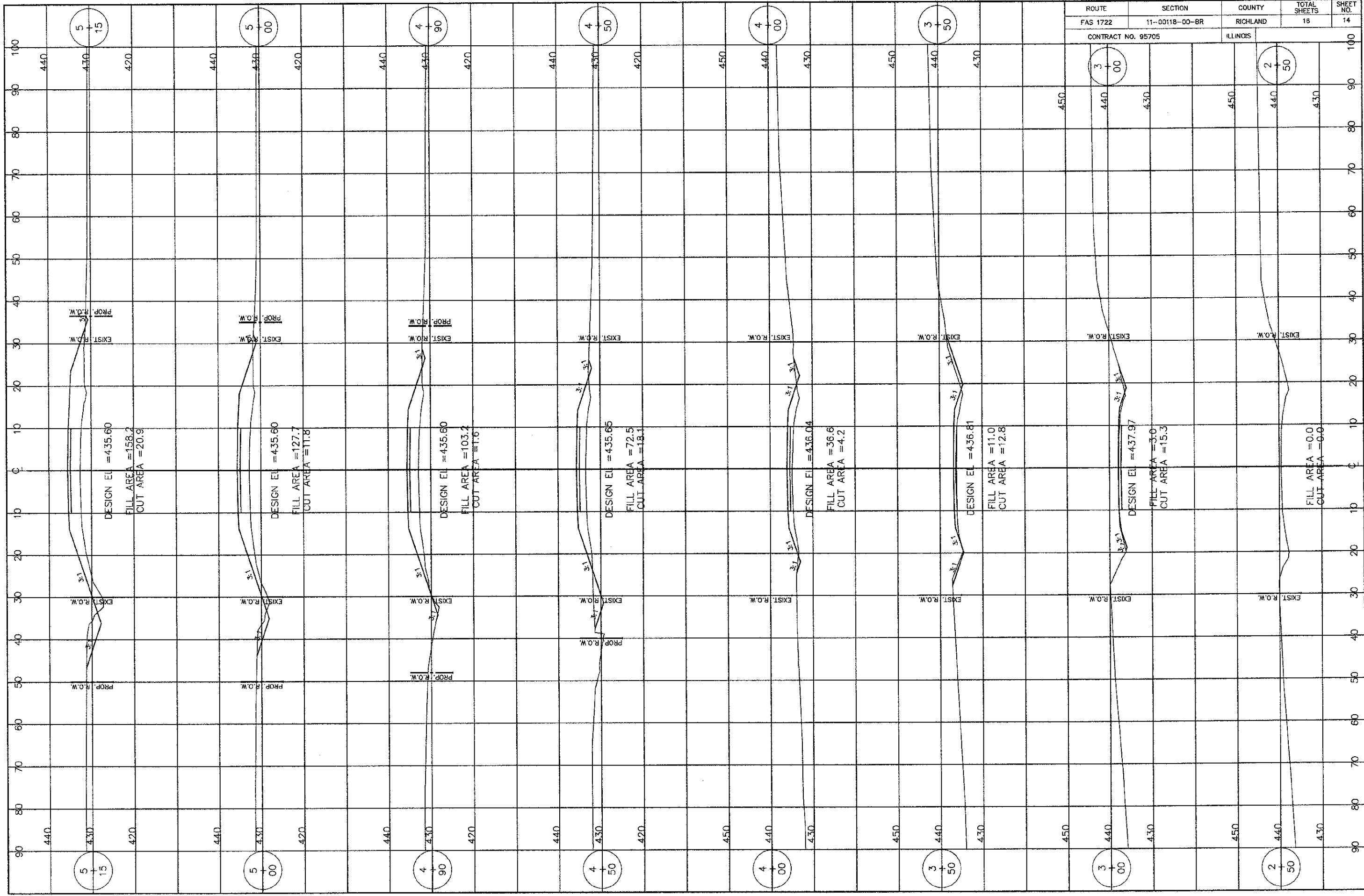
NOBLE		BORING No. B-1					water level reading			
ENGINEERING CONSULTANTS		County: Richland, IL		Sheet No. 2 of 2		1st encounter: 28'				
Client: Richland County Highway Dept.		Weather: Sunny		Temperature: low 80's		water level reading				
Driller: Noble Engineering Consultants		Date Start: 7-02-12		Surface Elevation: 100		@completion wet cave				
Location: Structure #080-3016		Date Finished: 7-02-12		Driller: Tony Schocker		Backfill: Soil Cuttings				
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	W %	USC Class.	Elev.**
31										402
32										401
33										400
34	SS-9	33.5'-35.0'	100+	78-100/1*	100	-	29.0'-34.2' SILTY FINE TO COARSE SAND, tr. gravel, very dense, saturated, gray	20.8	CL	399
35							AR 34.2'			398
36							EOB 34.2'			
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
Drilling Method: HSA (3-3/4" ID)		comments		* Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder						
Depth: 0' to 34.2'		comments		** ground surface elevation at boring location is estimated and is not surveyed						
Drill Rig: Mobile B-47		comments								
Sampling: split-spoon (SS)		comments								

B-1

NOBLE		BORING No. B-2					water level reading			
ENGINEERING CONSULTANTS		County: Richland, IL		Sheet No. 1 of 2		1st encounter: 18'				
Client: Richland County Highway Dept.		Weather: Sunny		Temperature: low 90's		water level reading				
Driller: Noble Engineering Consultants		Date Start: 7-03-12		Surface Elevation: 100		@completion		wet cave		
Location: Structure #080-3016		Date Finished: 7-03-12		Driller: Tony Schocker		Backfill:		Soil cuttings		
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	W %	USC Class.	Elev.**
1										432
2	SS-1	1.0'-2.5'	100+	3-39-100/5	70	-	0.0'-5.0' silt, clay, sand, concret at 2', etc FILL	-	FILL	431
3										430
4	SS-2	3.5'-5.0'	3	1-2-1	70	-		24.4	FILL	429
5										428
6	SS-3	6.0'-7.5'	14	2-6-8	100	-	5.0'-14.0' SANDY SILT, trace gravel, silty fine sand seam at 13.5', moist, medium dense, brown with occ. gray mottling	16.9	SM	427
7										426
8										425
9	SS-4	8.5'-10.0'	13	2-5-8	100	-		15.2	SM	424
10										423
11										422
12										421
13										420
14	SS-5	13.5'-15.0'	3	1-2-1	100	0.5	14.0'-18.0' SILTY CLAY, trace to some sand, medium, gray	22.5	CL	419
15										418
16										417
17										416
18										415
19	SS-6	18.5'-20.0'	26	5-9-17	100	4.25	18.0'-29.0' CLAYEY SILT (B), trace to some sand, trace gravel, hard, gray	21.6	CL-ML	414
20										413
21										412
22										411
23										410
24	SS-7	23.5'-25.0'	69	15-27-42	100	4.5+		10.4	CL-ML	409
25										408
26										407
27										406
28										405
29										404
30	SS-8	28.5'-30.0'	57	18-28-29	100	-	29.0'-36' SILTY FINE TO COARSE SAND, tr. gravel, very dense, saturated, gray	10.5	SM	403
Drilling Method: HSA (3-3/4" ID)		comments		* Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder						
Depth: 0' to 35'				** ground surface elevation at boring location is estimated and is not surveyed						
Drill Rig: Mobile B-47				** ground surface elevation at boring location is estimated and is not surveyed						
Sampling: split-spoon (SS)				and is based on bridge deck elevation of 100						

NOBLE		BORING No. B-2					water level reading			
ENGINEERING CONSULTANTS		County: Richland, IL		Sheet No. 2 of 2		1st encounter: 18'				
Client: Richland County Highway Dept.		Weather: Sunny		Temperature: 90's		water level reading				
Driller: Noble Engineering Consultants		Date Start: 7-03-12		Surface Elevation: 100		@completion		wet cave		
Location: Structure #080-3016		Date Finished: 7-03-12		Driller: Tony Schocker		Backfill:		Soil Cuttings		
Depth	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	W %	USC Class.	Elev.**
31										402
32										401
33										400
34	SS-9	33.5'-35.0'	100+	22-89-100/1*	100	-	29.0'-36' SILTY FINE TO COARSE SAND, tr. gravel, very dense, saturated, gray	-	CL	399
35							AR 36'			398
36							EOB 36'			
37										
38										
39										
40										
41										
42										
43										
44										
45										
46										
47										
48										
49										
50										
Drilling Method: HSA (3-3/4" ID)		comments		* Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder						
Depth: 0' to 35'				** ground surface elevation at boring location is estimated and is not surveyed						
Drill Rig: Mobile B-47				** ground surface elevation at boring location is estimated and is not surveyed						
Sampling: split-spoon (SS)										

B-2



5
+
15

5
+
00

4
+
90

4
+
50

4
+
00

3
+
50

3
+
00

2
+
50

DESIGN EL = 435.60
FILL AREA = 158.2
CUT AREA = 20.9

DESIGN EL = 435.60
FILL AREA = 127.7
CUT AREA = 11.8

DESIGN EL = 435.60
FILL AREA = 103.2
CUT AREA = 1.6

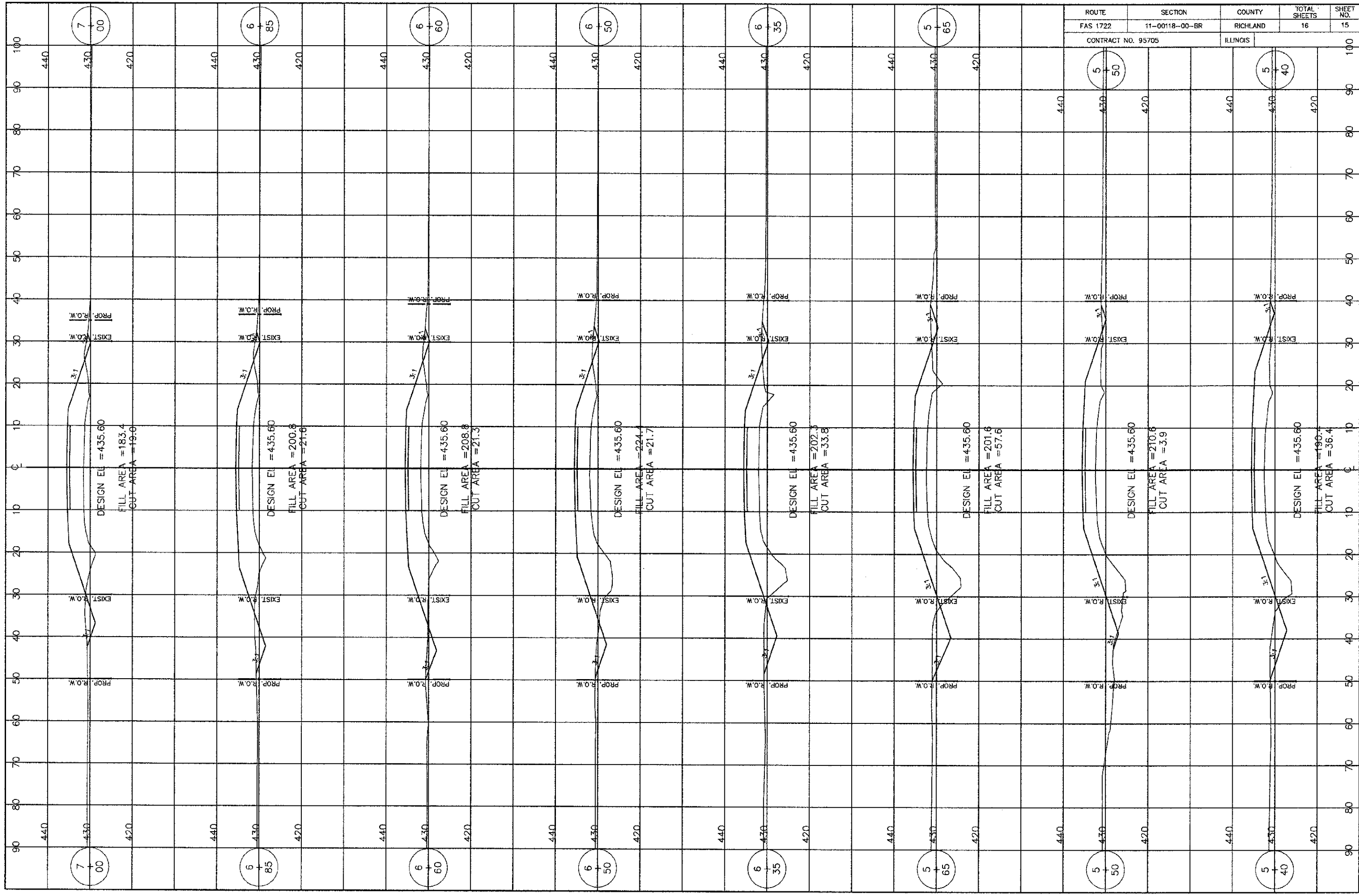
DESIGN EL = 435.65
FILL AREA = 72.5
CUT AREA = 18.1

DESIGN EL = 436.04
FILL AREA = 36.6
CUT AREA = 4.2

DESIGN EL = 436.81
FILL AREA = 11.0
CUT AREA = 12.8

DESIGN EL = 437.97
FILL AREA = 3.0
CUT AREA = 15.3

FILL AREA = 0.0
CUT AREA = 0.0



ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 1722	11-00118-00-BR	RICHLAND	16	15
CONTRACT NO. 95705		ILLINOIS		

DESIGN EL = 435.60
 FILL AREA = 183.4
 CUT AREA = 19.0

DESIGN EL = 435.60
 FILL AREA = 200.8
 CUT AREA = 21.6

DESIGN EL = 435.60
 FILL AREA = 208.8
 CUT AREA = 21.3

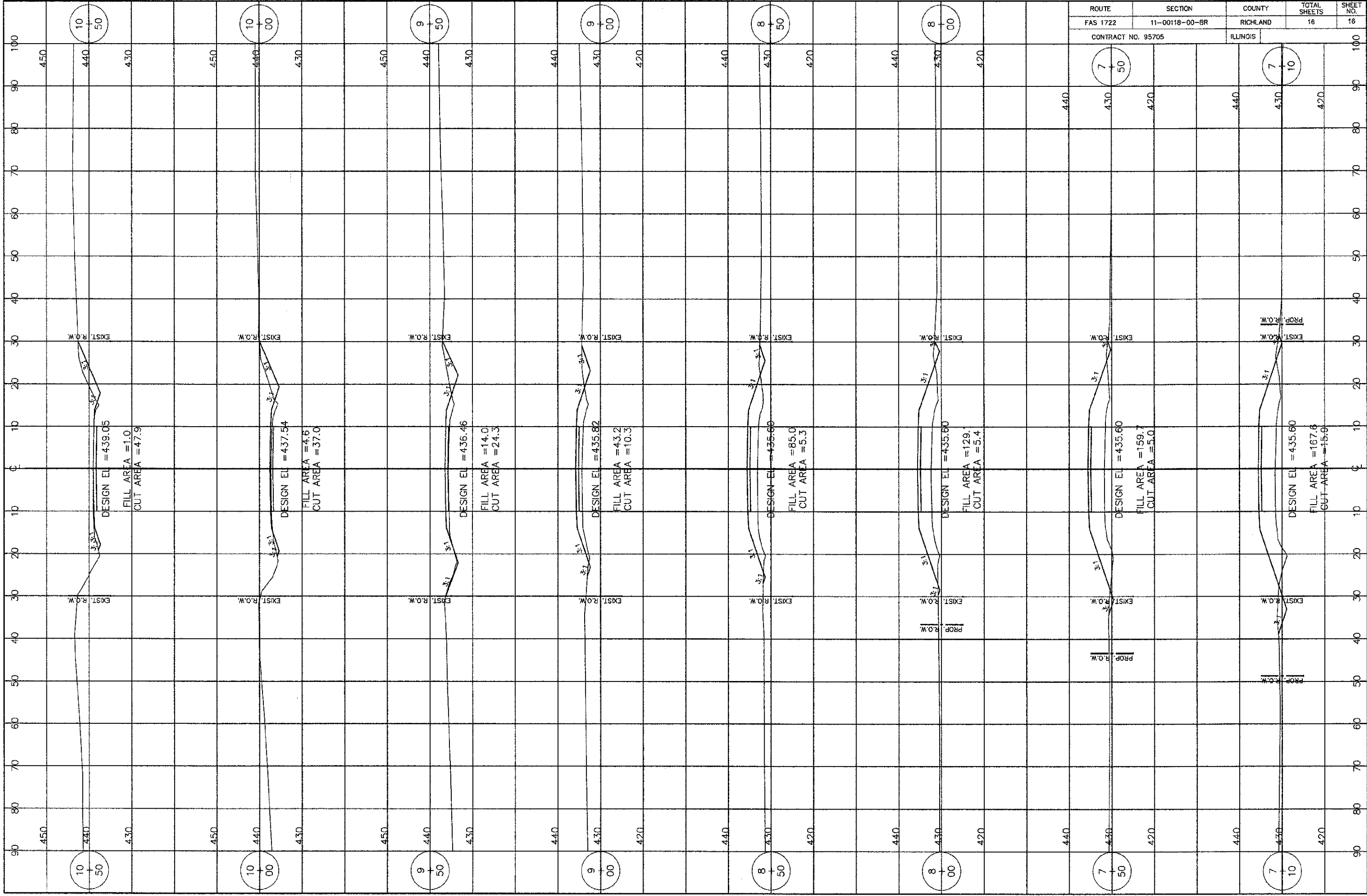
DESIGN EL = 435.60
 FILL AREA = 224.7
 CUT AREA = 21.7

DESIGN EL = 435.60
 FILL AREA = 202.3
 CUT AREA = 33.8

DESIGN EL = 435.60
 FILL AREA = 201.6
 CUT AREA = 57.6

DESIGN EL = 435.60
 FILL AREA = 210.6
 CUT AREA = 3.9

DESIGN EL = 435.60
 FILL AREA = 190.7
 CUT AREA = 36.4



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DESIGN EL = 439.05
FILL AREA = 1.0
CUT AREA = 47.9

DESIGN EL = 437.54
FILL AREA = 4.6
CUT AREA = 37.0

DESIGN EL = 436.46
FILL AREA = 14.0
CUT AREA = 24.3

DESIGN EL = 435.82
FILL AREA = 43.2
CUT AREA = 10.3

DESIGN EL = 435.60
FILL AREA = 85.0
CUT AREA = 5.3

DESIGN EL = 435.80
FILL AREA = 129.1
CUT AREA = 5.4

DESIGN EL = 435.60
FILL AREA = 159.7
CUT AREA = 5.0

DESIGN EL = 435.60
FILL AREA = 167.6
CUT AREA = 15.9

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