

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	1
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 97409	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PLANS FOR PROPOSED
HIGHWAY BRIDGE PROGRAM**

PROJECT NO. BROS-ARA-0083(047)

T.R. 81 OVER STREAM

SECTION 05-10012-00-BR

JERSEY COUNTY - ROSEDALE TOWNSHIP

C - 98-385-09



- INDEX OF SHEETS**
- 1 - TITLE SHEET
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 - 3 - CONTOUR & BARRICADE LOCATION PLAN
 - 4 - PLAN & PROFILE
 - 5 - GENERAL PLAN & ELEVATION
 - 6-7 - SUPERSTRUCTURE
 - 8 - RAILING
 - 9-11 - ABUTMENTS
 - 12 - HP PILE DETAILS
 - 13-19 - CROSS SECTIONS

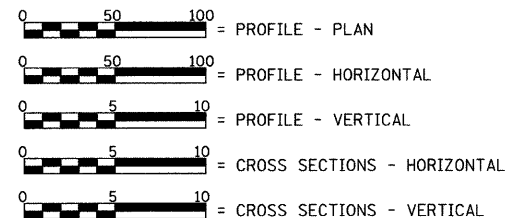
STANDARDS

- STANDARD 515001-03
- STANDARD 701901-01
- STANDARD BLR 21-8

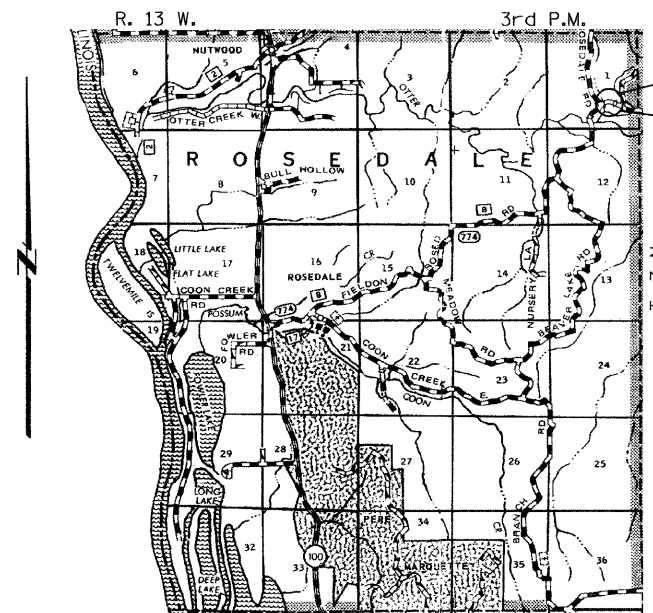
LIST OF UTILITIES

- Frontier Communications
225 N. Broad Street
Carlinville, Illinois 62626
1-217-854-4013
- M.J.M. Electric Cooperative, Inc.
P.O. Box 80
Carlinville, Illinois 62626
1-217-854-3137
- Jersey County Rural Water
1009 E. Shipman Road
Jerseyville, Illinois 62052
1-618-498-9534

SCALE IN FEET

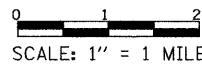


TOWNSHIP - ROSEDALE
LAND SECTION - 1
LAND QUARTER SECTION - S.E.
FUNCTIONAL CLASSIFICATION: MINOR COLLECTOR (NON-URBAN)
A.D.T. - 100 (2002)
A.D.T. - 135 (2021)
30 M.P.H. DESIGN SPEED



LOCATION PLAN

LENGTH OF SECTION - 590.00 FEET = 0.112 MILES



PROJECT BEGINS
STA. 5+20.00

PROJECT ENDS
STA. 11+10.00

EXISTING STRUCTURE:
SINGLE PRECAST CHANNEL BEAM
BRIDGE FOUNDED ON CLOSED TIMBER
ABUTMENTS. ±22'-0" OUT.-OUT. DECK,
±26'-0" BK.-BK. ABUTMENTS. STEEL
RAILING. 0° SKEW.
EXISTING STRUCTURE NO. 042-3089.

PROPOSED STRUCTURE:
SINGLE SPAN PRECAST PRESTRESSED CONCRETE
DECK BEAM (33') BRIDGE ON AN OPEN ABUTMENT
TO THE WEST AND CLOSED ABUTMENT TO
THE EAST. 24'-0" OUT.-OUT. DECK, 72'-0"
BK.-BK. ABUTMENTS. STEEL RAILING TYPE
S-1. 0° SKEW.
PROPOSED STRUCTURE NO. 042-3146.



Christopher P. Kohlman 10/30/09
EXPIRATION: 11/30/2009

APPROVED October 26, 2009

Daniel R. Knebel
ROSEDALE TOWNSHIP COMMISSIONER

APPROVED October 26, 2009

Thomas E. Kline
COUNTY ENGINEER

PASSED November 5, 2009

John P. ...
DISTRICT EIGHT ENGINEER OF
LOCAL ROADS & STREETS

Releasing For
Bid Based on
Limited Review November 5, 2009

Mary C. ...
DEPUTY DIRECTOR OF HIGHWAYS,
REGION FIVE ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOLL FREE
"JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS"
(J.U.L.I.E.) TELEPHONE NUMBER
1-800-892-0123

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<p>Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL. 62703 Phone: (217)544-8033 IL Design Firm No. 184-001907</p>	TITLE SHEET		T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILEL#	PLOT SCALE = #SCALE#	DRAWN -	REVISED -		SCALE: 1" = 1 MILE	SHEET NO. 1 OF 19 SHEETS	STA. 5+20.00 TO STA. 11+10.00	81	05-10012-00-BR	JERSEY	19	1
	PLOT DATE = #DATE#	CHECKED -	REVISED -								CONTRACT NO. 97409	
		DATE -	REVISED -								FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	QUANTITY
20100500	TREE REMOVAL, ACRES	ACRE	0.10
20200100	EARTH EXCAVATION	CU. YD.	306
20300100	CHANNEL EXCAVATION	CU. YD.	875
20400800	FURNISHED EXCAVATION	CU. YD.	525
25001000	SEEDING CLASS 2, SPECIAL	ACRE	1.2
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	120
28000315	AGGREGATE DITCH CHECKS	TON	15
28000400	PERIMETER EROSION BARRIER	FOOT	843
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	730
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	621
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU. YD.	165
50300225	CONCRETE STRUCTURES	CU. YD.	47.2
50300280	CONCRETE ENCASUREMENT	CU. YD.	1.7
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ. FT.	1696
50800105	REINFORCEMENT BARS	POUND	4450
50900205	STEEL RAILING, TYPE S1	FOOT	144
51201400	FURNISHING STEEL PILES HP 10X42	FOOT	530
51202305	DRIVING PILES	FOOT	530
51203400	TEST PILE, STEEL HP 10X42	EACH	2
51500100	NAME PLATES	EACH	1
54200223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	40
54201060	PIPE CULVERTS, CLASS D, TYPE 2 15"	FOOT	60
67100100	MOBILIZATION	L. SUM	1
70101830	TRAFFIC CONTROL AND PROTECTION STANDARD BLR 21	L.SUM	1
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
Z0022800	FENCE REMOVAL	FOOT	516

* SEE SPECIAL PROVISIONS
 Δ SPECIALTY ITEMS

GENERAL NOTES

SEEDING: FERTILIZER NUTRIENTS SHALL BE APPLIED AT A RATIO OF 1:1:1 AND AT A RATE OF 90 POUNDS PER ACRE FOR EACH NUTRIENT.
 MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE.
 AREAS TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER.
 NO COMMITMENTS.
 AREAS OF ALL DISTURBED EARTH SURFACES BEYOND THE RIGHT OF WAY SHALL BE SEEDED AT THE COST OF THE CONTRACTOR.

EARTHWORK SCHEDULE

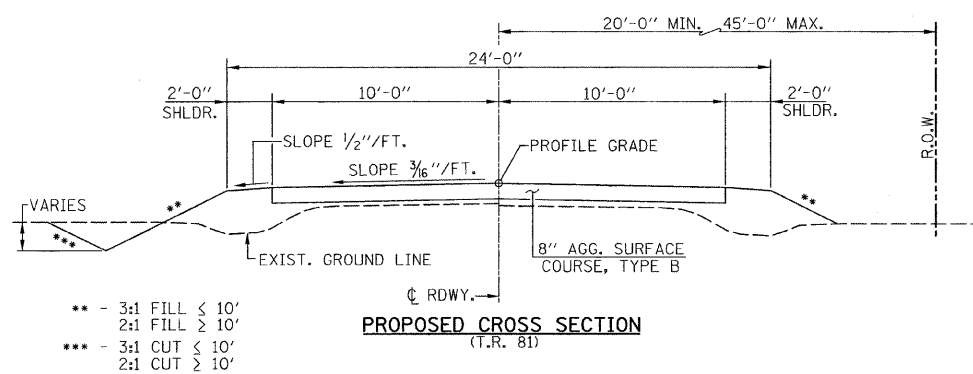
LOCATION	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU. YD.	CU. YD.	CU. YD.	CU. YD.
STA. 5+20 TO STA. 5+50	6	5	2	3
STA. 5+50 TO STA. 6+00	11	8	21	-13
STA. 6+00 TO STA. 6+50	1	1	69	-68
STA. 6+50 TO STA. 7+00	2	1	136	-134
STA. 7+00 TO STA. 7+50	31	23	200	-177
STA. 7+50 TO STA. 7+67	20	15	77	-62
BRIDGE OMISSION - STA. 7+67 TO STA. 8+39	-	-	-	-
STA. 8+39 TO STA. 8+50	3	2	27	-25
STA. 8+50 TO STA. 9+00	15	11	284	-273
STA. 9+00 TO STA. 9+50	11	8	205	-197
STA. 9+50 TO STA. 10+00	6	5	139	-134
STA. 10+00 TO STA. 10+50	10	8	58	-50
STA. 10+50 TO STA. 11+00	25	19	11	8
STA. 11+00 TO STA. 11+10	4	3	1	2
STA. 20+10 TO STA. 20+30	49	37	15	22
STA. 20+30 TO STA. 20+50	65	49	19	30
STA. 20+50 TO STA. 20+75	31	23	8	15
STA. 20+70 TO STA. 20+90	16	12	2	10
TOTAL	306	229	1274	**** -525

**** QUANTITY HAS BEEN REDUCED BY 520 CU. YD. WHICH IS AN ESTIMATED QUANTITY (50% OF 875 CU. YD. + 165 CU. YD.) OF SUITABLE CHANNEL AND STRUCTURE EXCAVATION AS DIRECTED BY THE ENGINEER.

SUMMARY OF QUANTITIES, DETAILS & TYPICAL SECTIONS

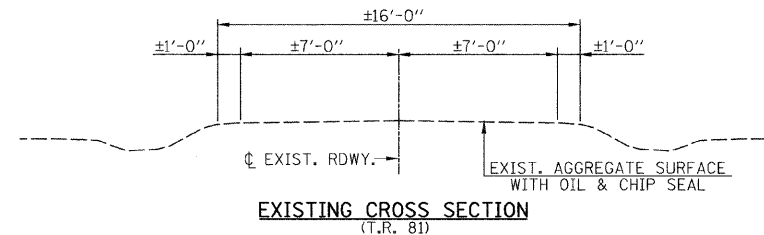
SCALE: 1" = 4' SHEET NO. 2 OF 19 SHEETS STA. TO STA.

T.R. RTE.	SECTION	COUNTY	TOTAL SHEET SHEETS NO.
B1	05-10012-00-BR	JERSEY	19 2
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	CONTRACT NO. 97409	

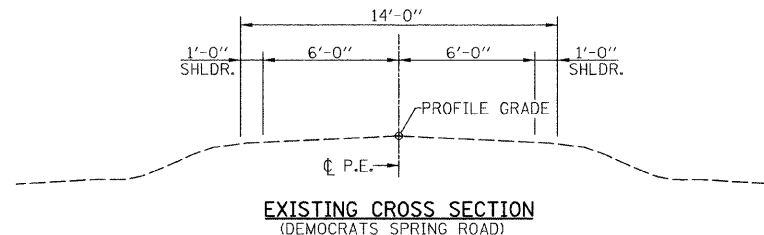


PROPOSED CROSS SECTION
(T.R. 81)

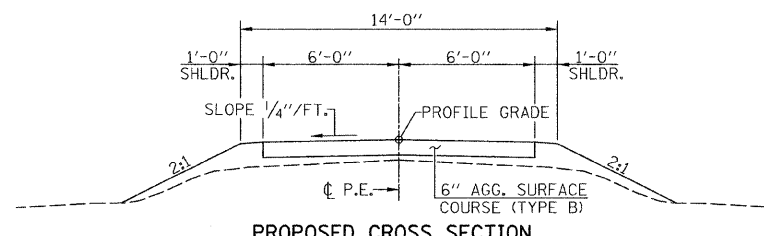
- 3:1 FILL < 10'
- 2:1 FILL > 10'
- 3:1 CUT < 10'
- 2:1 CUT > 10'



EXISTING CROSS SECTION
(T.R. 81)

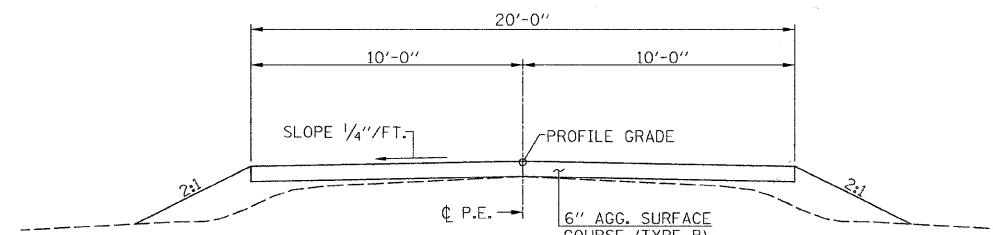


EXISTING CROSS SECTION
(DEMOCRAT'S SPRING ROAD)



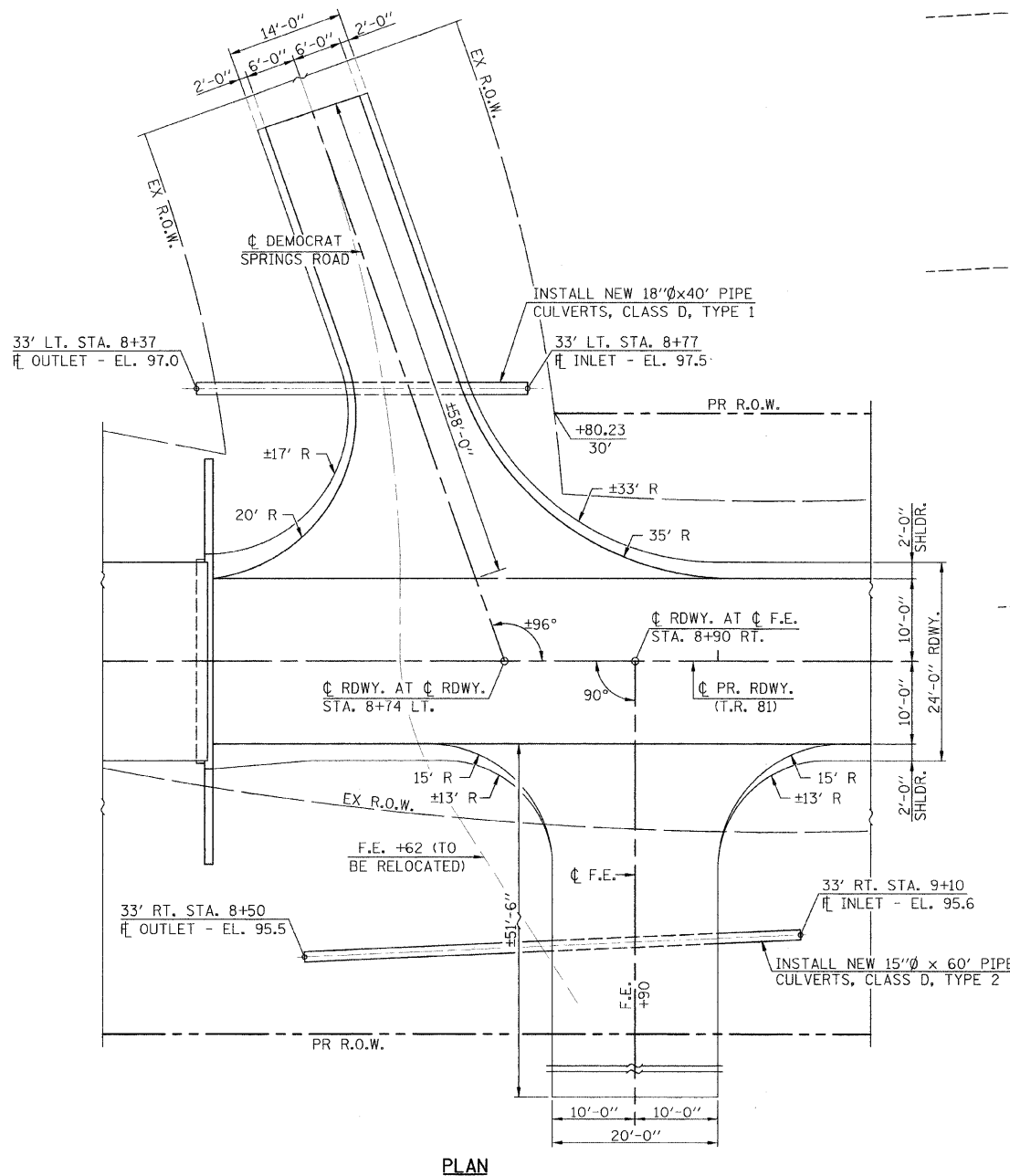
PROPOSED CROSS SECTION
(DEMOCRAT'S SPRING ROAD)

(ESTIMATED QUANTITY - 60 TON)



TYPICAL FIELD ENTRANCE
(STA. 8+90 RT.)

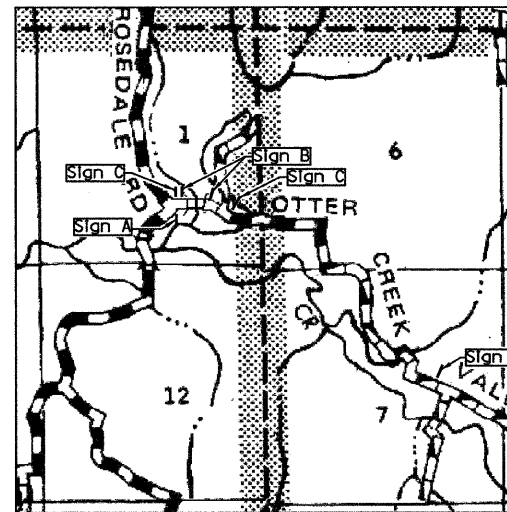
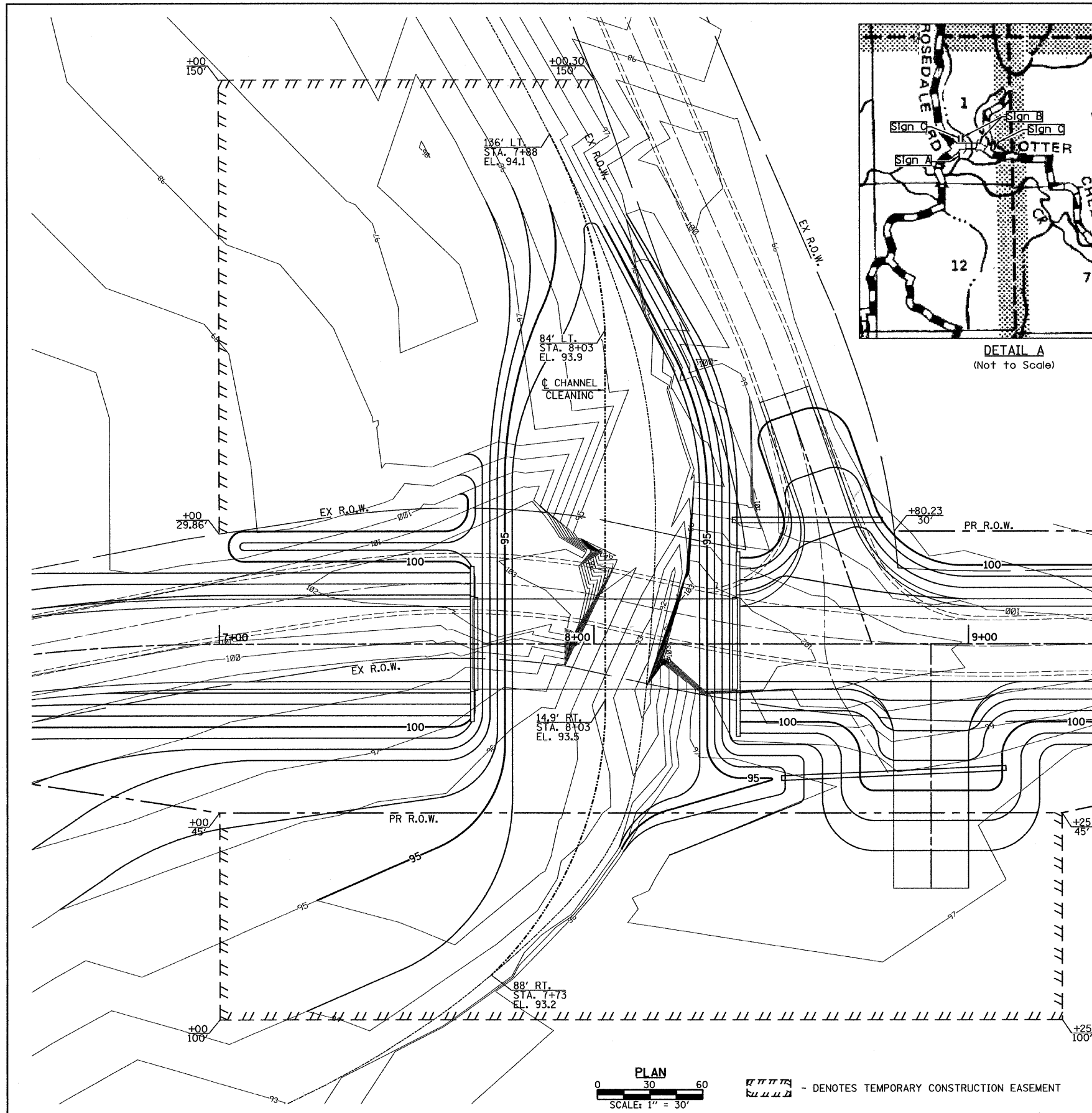
(ESTIMATED QUANTITY - 53 TON)



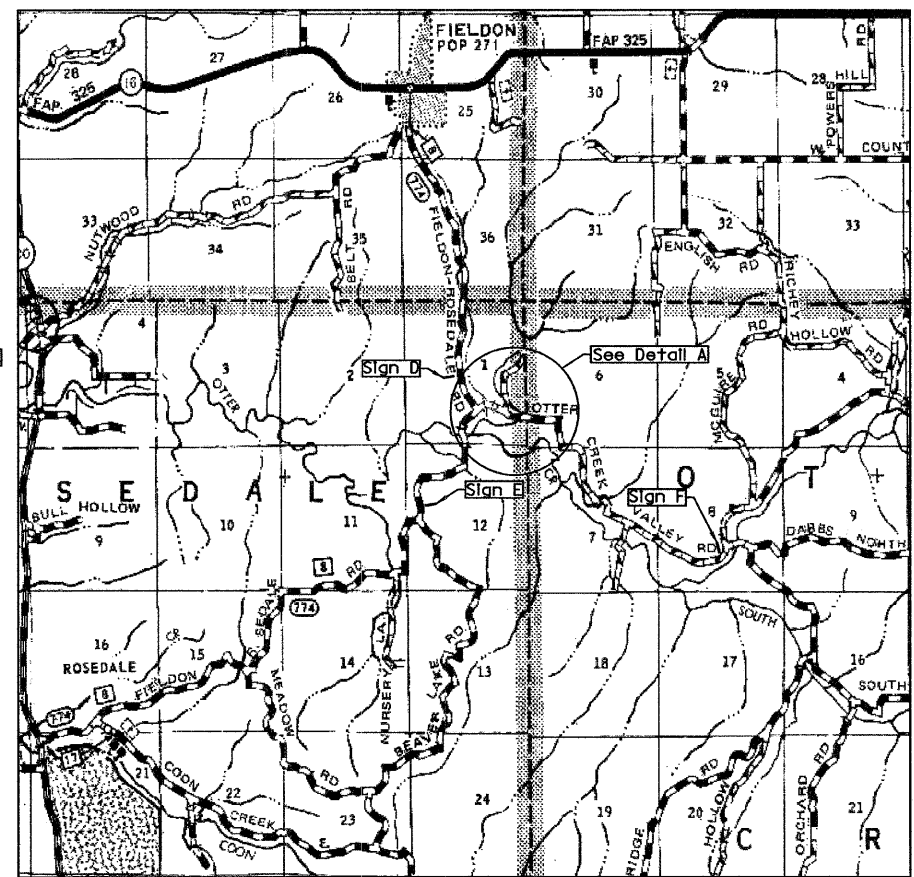
PLAN

FILE NAME #	USER NAME #	DESIGNED	REVISED
#PLOT#	#SCALE#	DRAWN	REVISED
#DATE#	#DATE#	CHECKED	REVISED
		DATE	REVISED

Allen Henderson & Associates, Inc.
 Civil and Structural Engineers Springfield, IL
 62703 Phone: (217)544-8033 IL Design Firm
 No. 184-001907

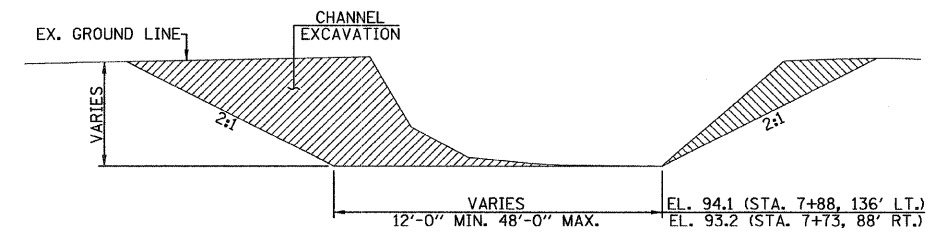


DETAIL A
(Not to Scale)

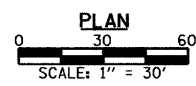


BARRICADE LOCATION
(Not to Scale)

- LEGEND**
- SIGN A - "ROAD CLOSED AHEAD"
W20-3(O) 4848
 - SIGN B - BLR STANDARD 21
 - SIGN C - "ROAD CLOSED 500 FEET"
W20-3(O) 4848
 - SIGN D - "ROAD CLOSED AHEAD"
W20-3(O) 4848 M4-9L 3024
 - SIGN E - "ROAD CLOSED AHEAD"
W20-3(O) 4848 M4-9R 3024
 - SIGN F - "ROAD CLOSED 2 MILES AHEAD"
W20-3(O) 4848



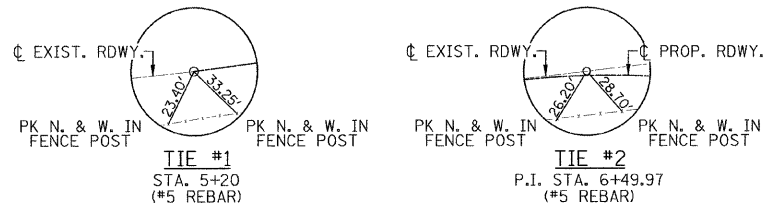
CHANNEL CLEANING
TYPICAL SECTION



--- DENOTES TEMPORARY CONSTRUCTION EASEMENT

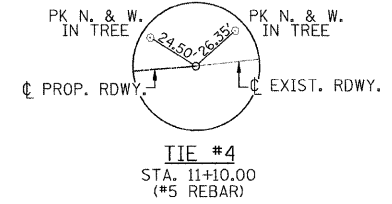
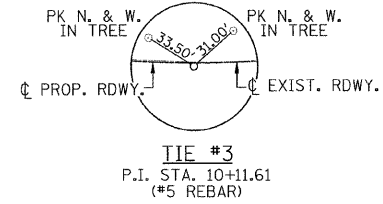
FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<p>Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL 62703 Phone: (217)544-8033 IL Design Firm No. 184-001907</p>	<p>CONTOUR & BARRICADE LOCATION PLAN</p> <p>SCALE: 1" = 30' SHEET NO. 3 OF 19 SHEETS STA. _____ TO STA. _____</p>	T-R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
#FILE#		DRAWN -	REVISED -			81	05-10012-00-BR	JERSEY	19	3
PLOT SCALE = #SCALE#		CHECKED -	REVISED -			CONTRACT NO. 97409				
PLOT DATE = #DATE#		DATE -	REVISED -			FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				

SECTION 1. T. 7 N., R. 13 W., 3rd P.M.

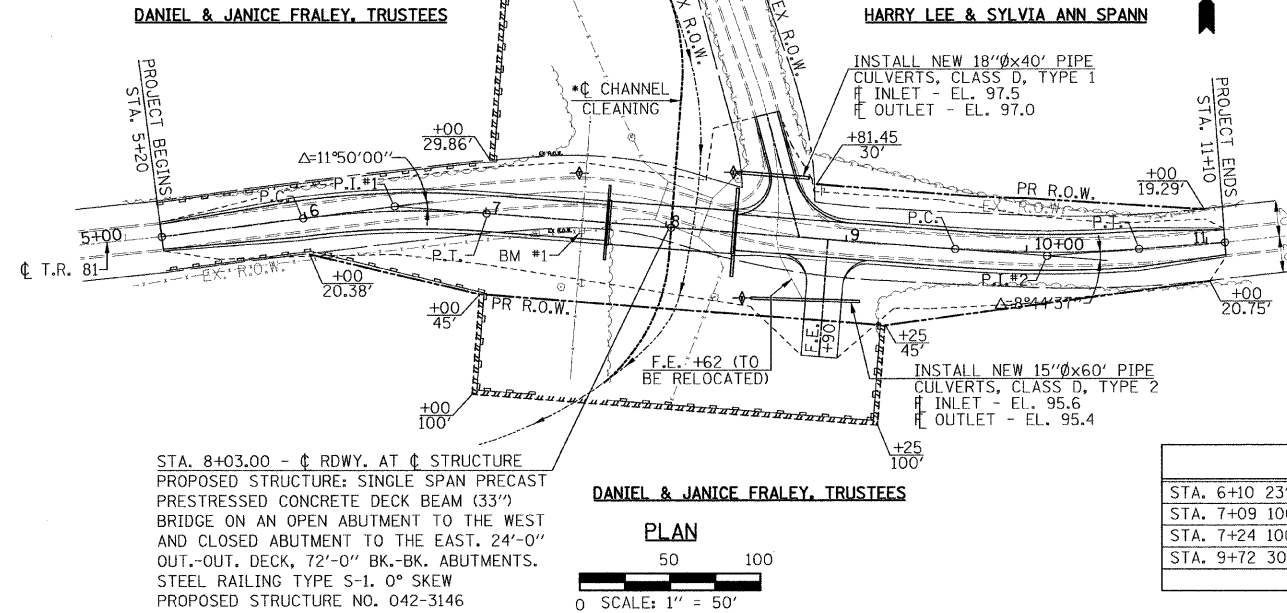
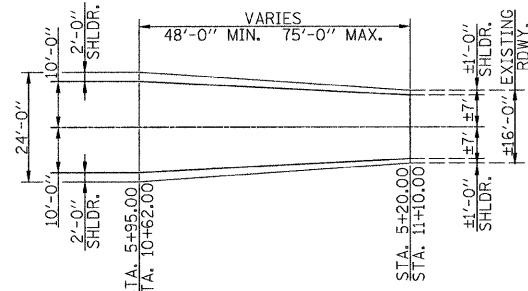


CURVE #1 DATA
 PI STA. = 6+49.97
 $\Delta = 11^\circ 50' 00''$ (RT)
 $D = 11^\circ 38' 34''$
 $R = 492.12'$
 $T = 51.00'$
 $L = 101.64'$
 $E = 2.64'$
 P.C. STA. = 5+98.97
 P.T. STA. = 7+00.60

CURVE #2 DATA
 PI STA. = 10+11.61
 $\Delta = 8^\circ 44' 37''$ (LT)
 $D = 8^\circ 35' 20''$
 $R = 667.10'$
 $T = 51.00'$
 $L = 101.80'$
 $E = 1.95'$
 P.C. STA. = 9+60.61
 P.T. STA. = 10+62.41



- LEGEND**
- AGGREGATE DITCH CHECK
 - PERIMETER EROSION BARRIER
 - TEMPORARY CONSTRUCTION EASEMENT



STA. 8+03.00 - ϕ RDWY. AT ϕ STRUCTURE
 PROPOSED STRUCTURE: SINGLE SPAN PRECAST
 PRESTRESSED CONCRETE DECK BEAM (33")
 BRIDGE ON AN OPEN ABUTMENT TO THE WEST
 AND CLOSED ABUTMENT TO THE EAST. 24'-0"
 OUT-OUT. DECK, 72'-0" BK.-BK. ABUTMENTS.
 STEEL RAILING TYPE S-1. 0° SKEW
 PROPOSED STRUCTURE NO. 042-3146

* SEE SHEET NO. 3 FOR CHANNEL
 CLEANING TYPICAL SECTION

SCHEDULE FENCE REMOVAL

LOCATION	QUANTITY (FOOT)
STA. 6+10 23' RT. TO STA. 7+78 3' LT.	167
STA. 7+09 100' RT. TO STA. 7+30 12' RT.	92
STA. 7+24 100' LT. TO STA. 7+86 35' LT.	131
STA. 9+72 30' LT. TO STA. 11+00 19.5' LT.	126
TOTAL	516

SCHEDULE TREE REMOVAL, ACRES

LOCATION	QUANTITY (ACRE)
STA. 7+25 TO STA. 8+01 LT.	0.09
STA. 9+71 TO STA. 11+10 LT.	0.01
TOTAL	0.10

TREES SOUTH OF STRUCTURE ARE TO BE INCLUDED WITH TREE REMOVAL, ACRES.

SCHEDULE PERIMETER EROSION BARRIER

LOCATION	QUANTITY (FOOT)
STA. 5+20 18' RT. TO STA. 7+35 98' RT.	273
STA. 7+75 98' RT. TO STA. 9+23 43' RT.	205
STA. 5+20 18' LT. TO STA. 7+65 148' LT.	365
TOTAL	843

SCHEDULE AGGREGATE DITCH CHECKS

LOCATION	QUANTITY (TON)
STA. 7+50 26' LT.	5
STA. 8+35 33' LT.	5
STA. 8+45 36' RT.	5
TOTAL	15

DATE: _____ BY: _____

PLANNING: _____

DESIGN: _____

CHECKED: _____

DATE: _____ BY: _____

DATE: _____ BY: _____

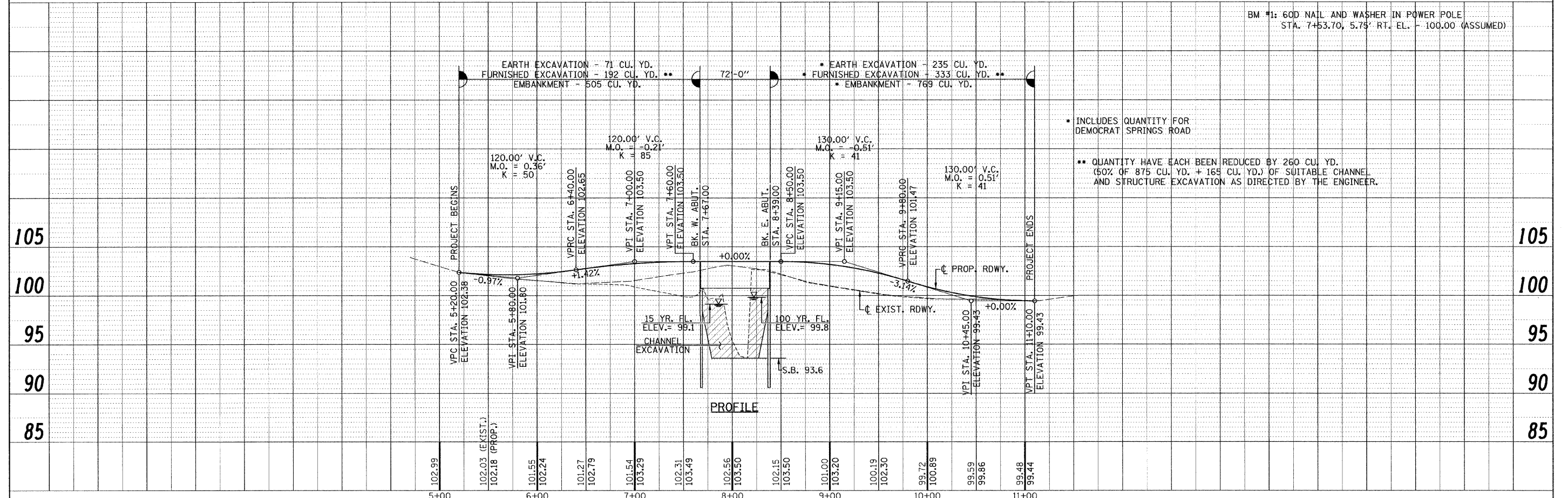
PROFILE: _____

GRADES CHECKED: _____

STRUCTURE: _____

NOTATION: _____

DATE: _____ BY: _____

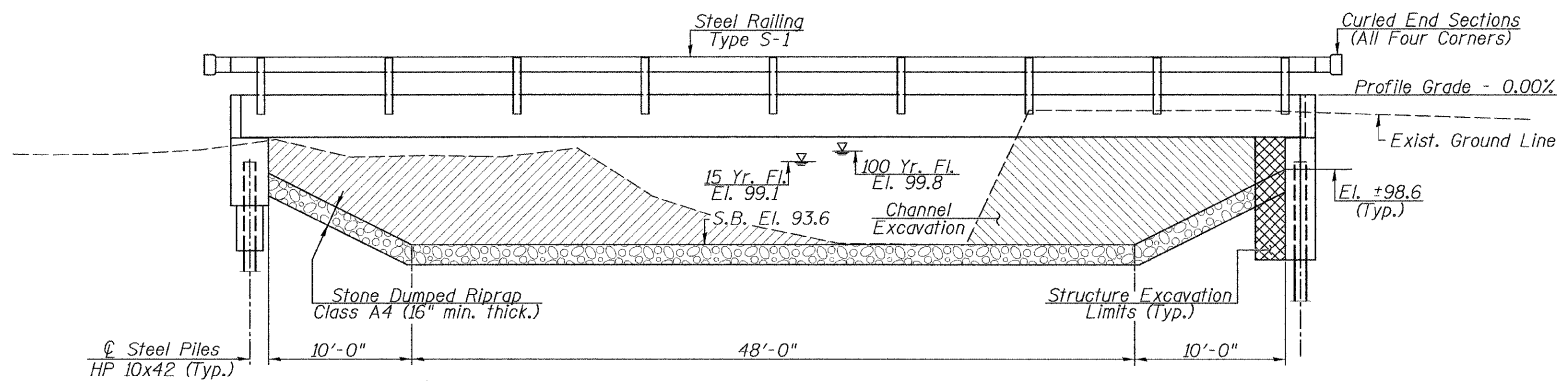


* INCLUDES QUANTITY FOR DEMOCRAT SPRINGS ROAD

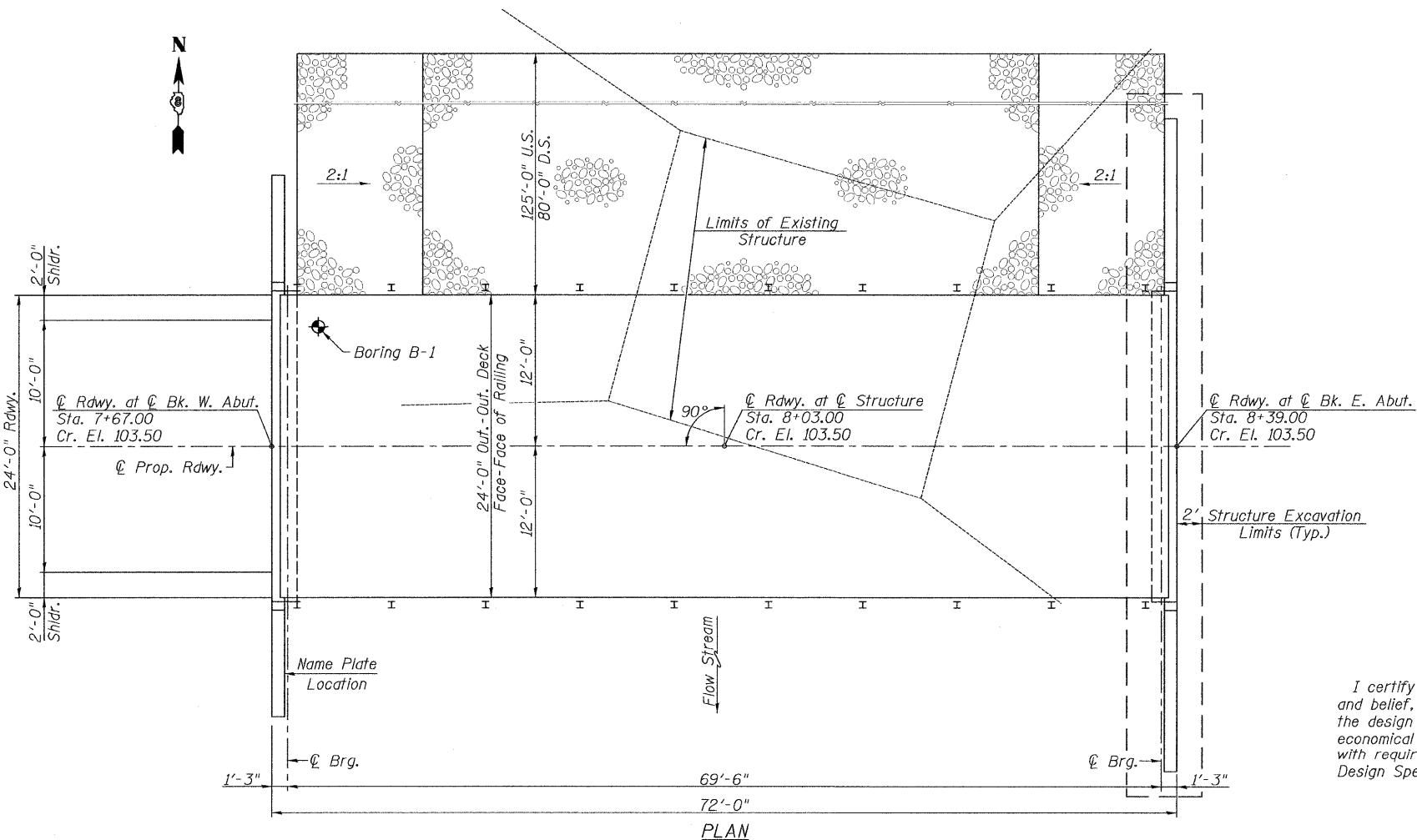
** QUANTITY HAVE EACH BEEN REDUCED BY 260 CU. YD. (50% OF 875 CU. YD. + 165 CU. YD.) OF SUITABLE CHANNEL AND STRUCTURE EXCAVATION AS DIRECTED BY THE ENGINEER.

BM #1: 60D NAIL AND WASHER IN POWER POLE
 STA. 7+53.70, 5.75' RT. EL. = 100.00 (ASSUMED)

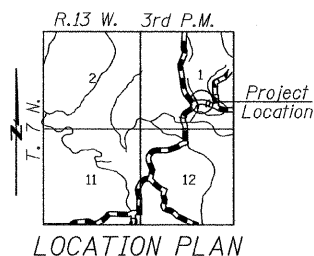
Existing Structure: Single Precast Channel Beam Bridge Founded on Closed Timber Abutments. +22'-0" Out.-Out. Deck, +26'-0" Bk.-Bk. Abutments. Steel Railing, 0° Skew Existing Structure No. 042-3089
 Benchmark #1: 60D Nail & Washer in Power Pole Sta. 7+53.70, 5.75' Rt. El. 100.00 (Assumed)



ELEVATION



PLAN



LOCATION PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		875	875
Stone Dumped Riprap, Class A4	Ton		730	730
Removal of Existing Structures	Each		1	1
Structure Excavation	Cu. Yd.		165	165
Concrete Structures	Cu. Yd.		47.2	47.2
Concrete Encasement	Cu. Yd.		1.7	1.7
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq. Ft.	1696		1696
Reinforcement Bars	Pound		4450	4450
Steel Railing, Type S-1	Foot	144		144
Furnishing Steel Piles HP 10x42	Foot		530	530
Driving Piles	Foot		530	530
Name Plates	Each		1	1
Test Piles, Steel HP 10 x 42	Each		2	2
Underwater Structure Excavation Protection - Location 1 (East Abutment)	Each		1	1

WATERWAY INFORMATION

Drainage Area = 2.58 Sq. Mi. Pr. Low Grade Elev. 99.43 Sta. 11+10

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	15	1482	107	323	99.1	1.9	0.4	101.0	99.5
Base	100	2714	127	370	99.8	2.6	0.9	102.4	100.7
Exist. Overtop.	9.3	1300							
Prop. Overtop.	15	1610							
Max. Calc.	500	3852	159	411	100.4	2.6	1.4	103.0	101.8

DESIGN SPECIFICATIONS

2007 AASHTO LRFD Bridge Design Specifications, 4th Edition (with 2008 Interims)

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'c = 3500 psi
 fy = 60000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6000 psi
 f'ci = 5000 psi
 fpu = 270000 psi
 fpbt = 201960 psi

GENERAL NOTES

See Proposal for Boring Data.
 Reinforcement bars shall conform to the requirements of ASTM A706, Grade 60. See Special Provision.
 The layout of the riprap slopedwall may be varied to suit conditions in the field as determined by the Engineer.
 The contractor shall drive one test pile in a permanent location at each abutment as directed by the Engineer in the field prior to ordering the remainder of piles.

STREAM
 BUILT 200 BY
 JERSEY COUNTY
 SECTION 05-10012-00-BR
 STA. 8+03.00
 STR. NO. 042-3146 LOADING HL-93

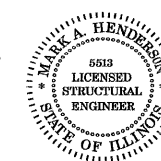
NAME PLATE

(Standard 515001)

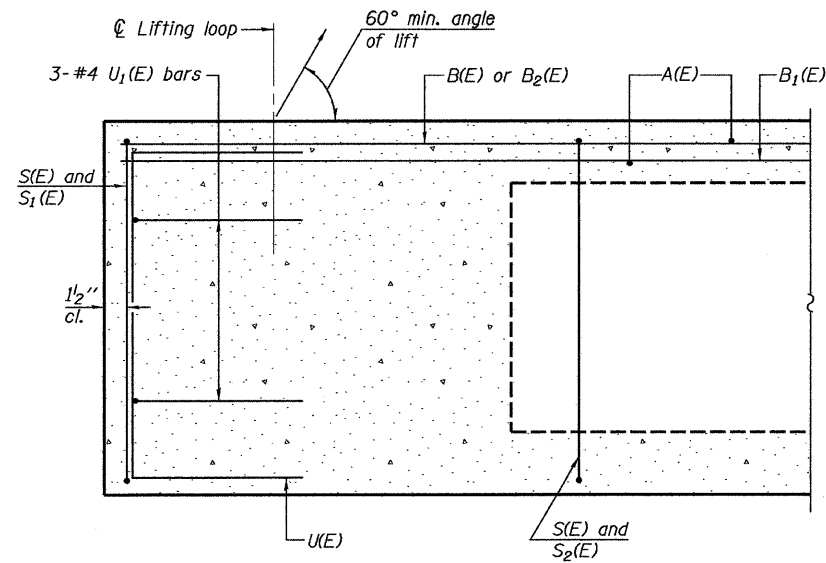
GENERAL PLAN & ELEVATION
 T.R. RTE. 81 OVER STREAM
 SECTION NO. 05-10012-00-BR
 JERSEY COUNTY
 STA. 8+03.00
 S.N. 042-3146

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 "A.A.S.H.T.O. LRFD Bridge Design Specifications".

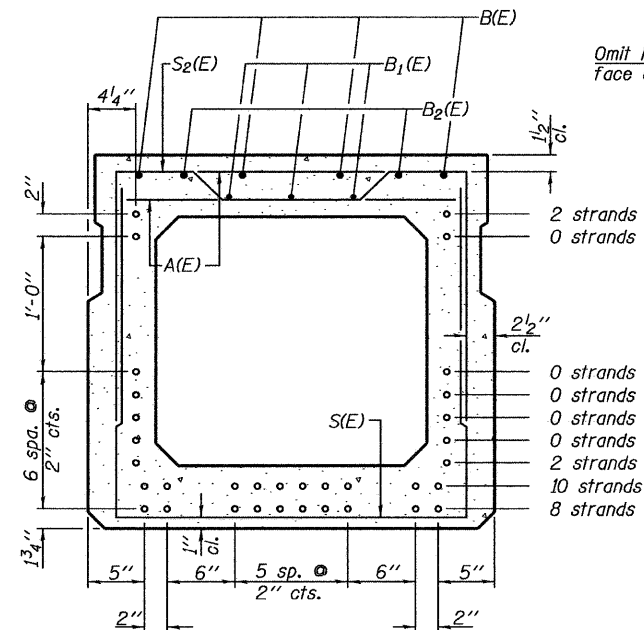
Mark A. Henderson 10/30/09
 Expiration Date 11/30/2010



Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL. 62703 Phone: (217)544-8033 IL Design Firm No. 184-001907	SHEET NO. 1 8 SHEETS	T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		81	05-10012-00-BR	JERSEY	19	5
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					CONTRACT NO. 97409	

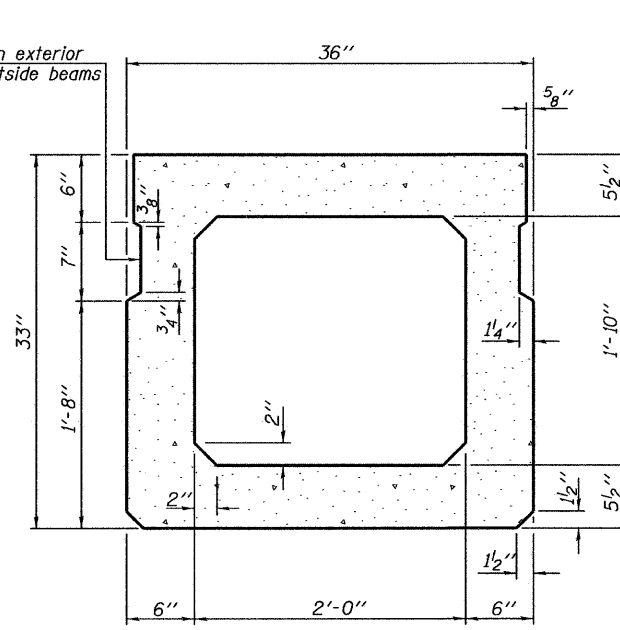


SECTION C-C

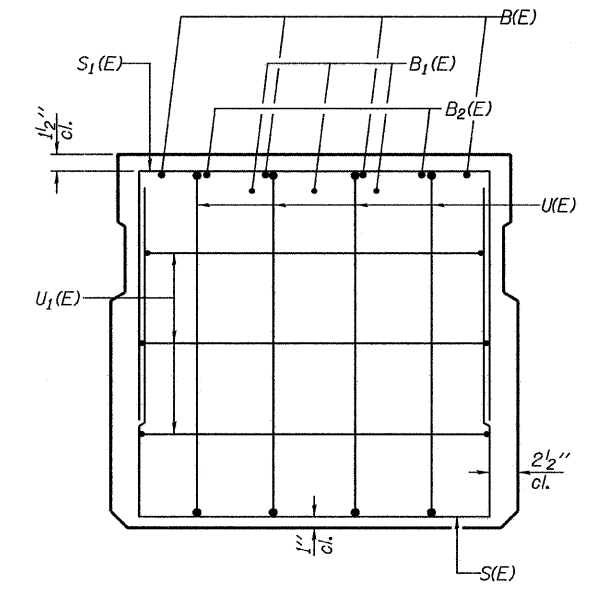


SECTION A-A
(Showing reinforcement and permissible strand locations)

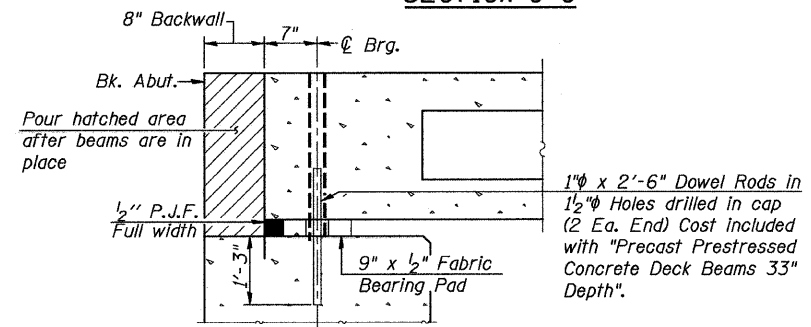
Note: Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.



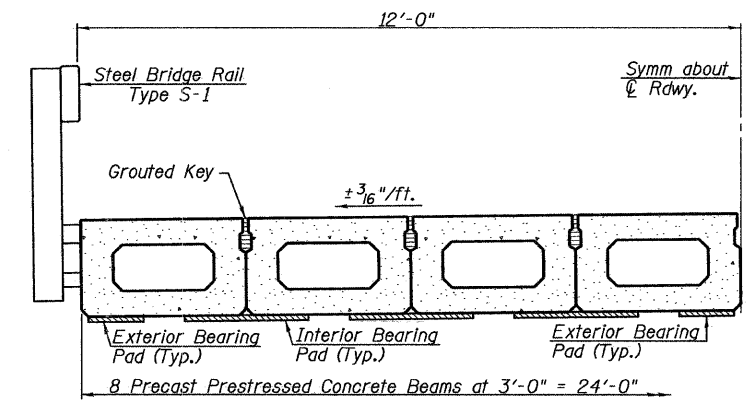
SECTION A-A
(Showing dimensions)



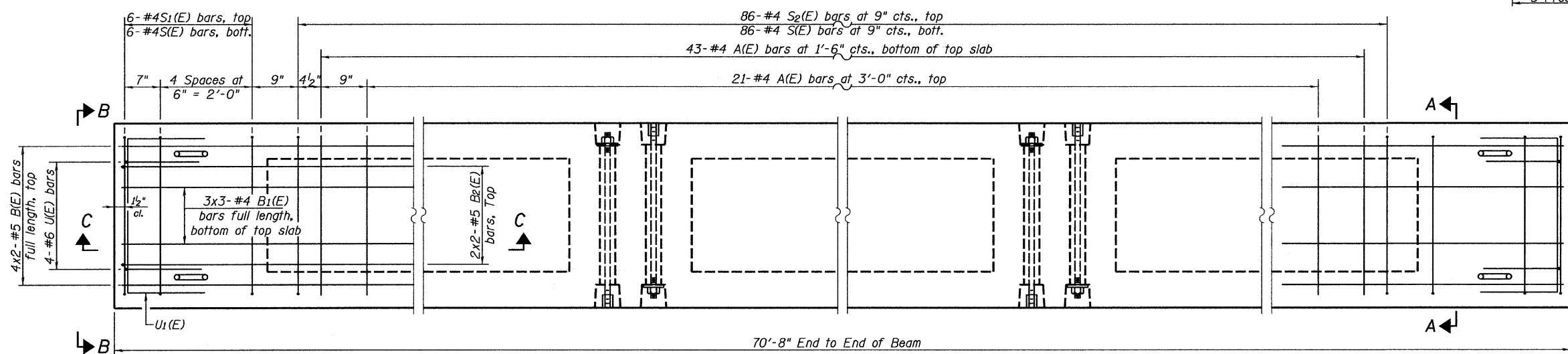
VIEW B-B



SECTION THRU ABUTMENT
(At Right Angles)



HALF CROSS SECTION



PLAN VIEW

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	64	#4	2'-7"	—
B(E)	8	#5	36'-4"	—
B1(E)	9	#4	24'-8"	—
B2(E)	4	#5	36'-4"	—
S(E)	98	#4	7'-5"	□
S1(E)	12	#4	6'-3"	□
S2(E)	86	#4	6'-6"	□
U(E)	8	#6	5'-0"	□
U1(E)	6	#4	5'-0"	□

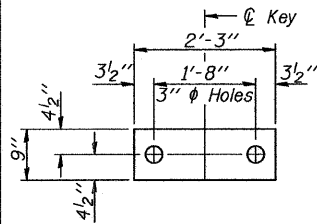
Note: See sheet 7 of 19 for additional details and Bill of Material.

MIN. LAP

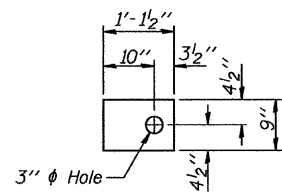
#4 Bars = 1'-8"
#5 Bars = 2'-2"

SUPERSTRUCTURE
T.R. RTE. 81 OVER STREAM
SECTION NO. 05-10012-00-BR
JERSEY COUNTY

	Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL. 62703 Phone: (217)544-8033 IL. Design Firm No. 184-001907		SHEET NO. 2 8 SHEETS	T.R. RTE. 81	SECTION 05-10012-00-BR	COUNTY JERSEY	TOTAL SHEETS 19	SHEET NO. 6
					CONTRACT NO. 97409			
					FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			

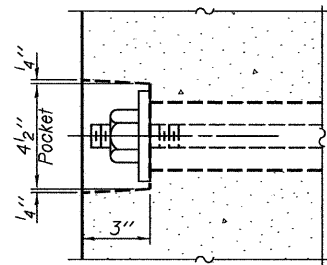


FABRIC BEARING PAD
(Inferior)
(12 Required)

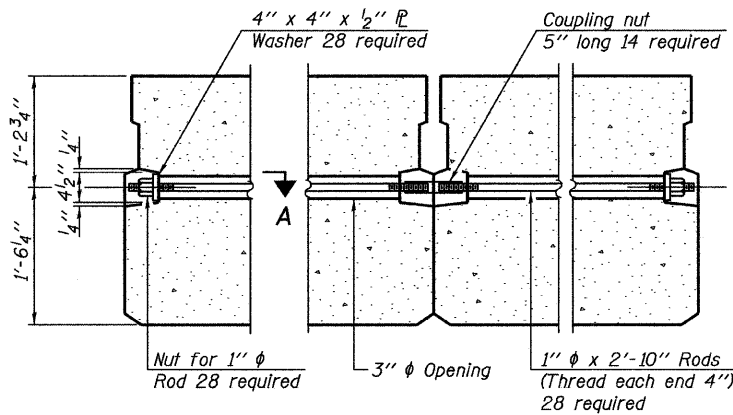


FABRIC BEARING PAD
(Exterior)
(8 Required)

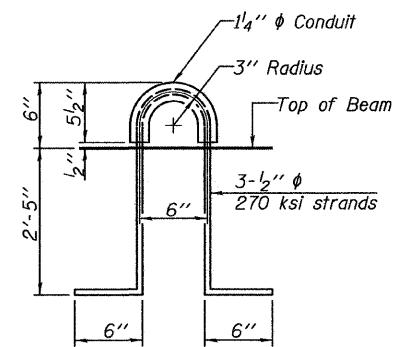
FIXED



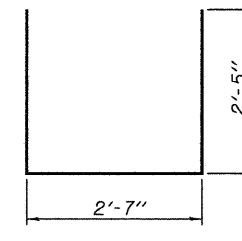
SECTION A-A



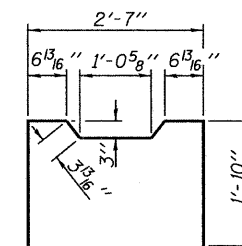
TYPICAL TRANSVERSE TIE ASSEMBLY



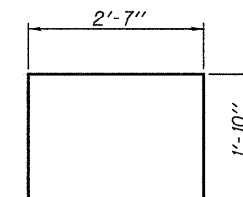
LIFTING LOOP DETAIL



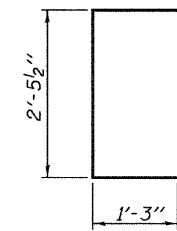
BAR S(E)



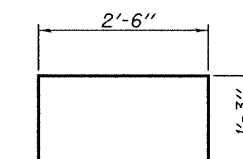
BAR S₂(E)



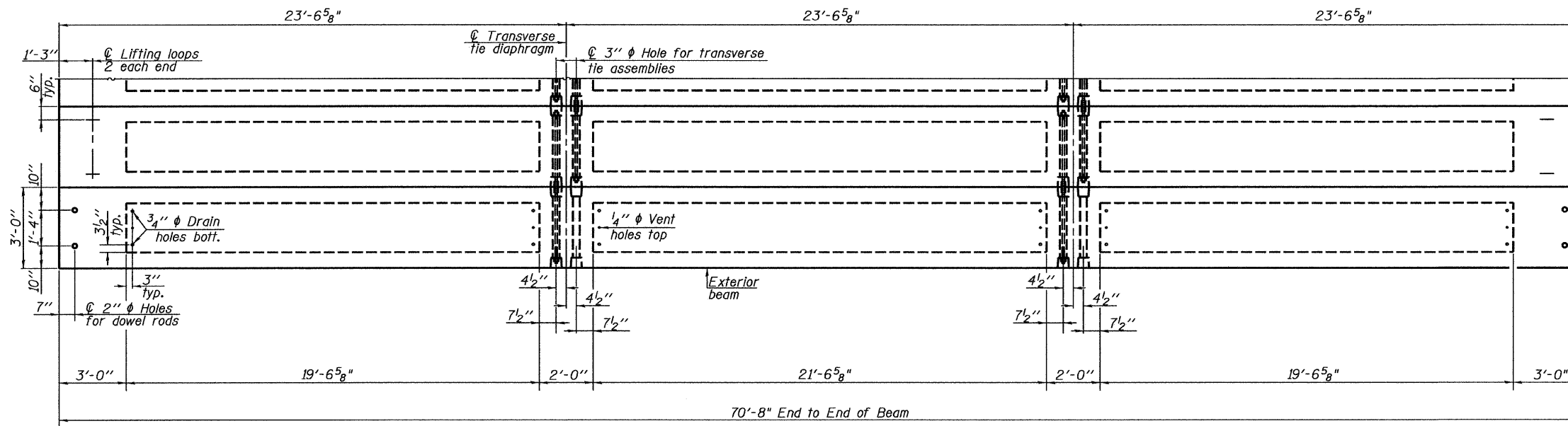
BAR S₁(E)



BAR U(E)



BAR U₁(E)



PLAN

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

NOTES

- Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.
- The 1" 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" lifting pin shall be used to engage the lifting loops during handling.
- Corrosion Inhibitor, per Article 1020.05(b)(12) and 1021.06 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.
- Compressive strength of prestressed concrete, f'c, shall be 6000 psi.
- Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	1696
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SUPERSTRUCTURE
T.R. RTE. 81 OVER STREAM
SECTION NO. 05-10012-00-BR
JERSEY COUNTY

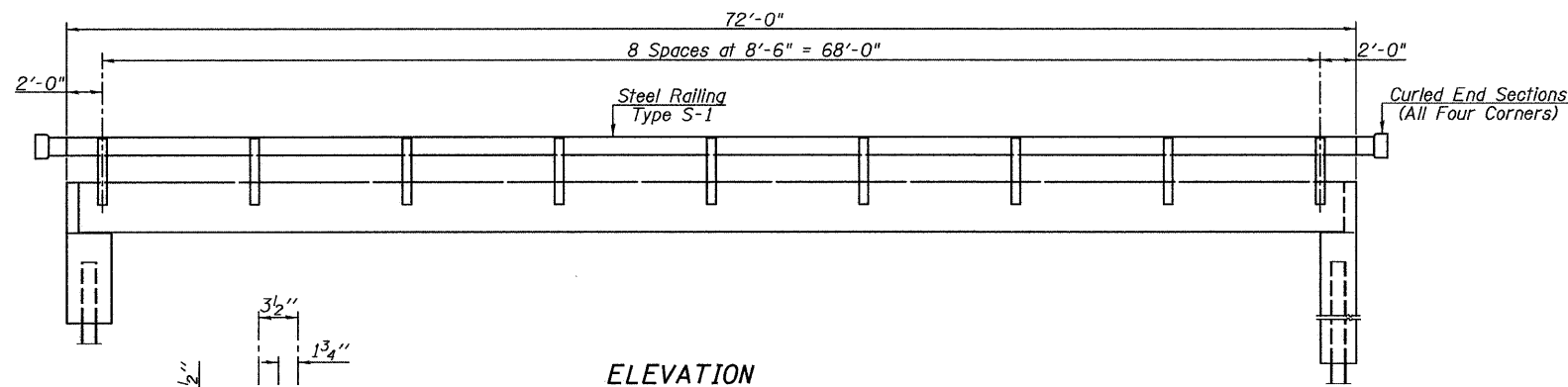
PD-3336-0D 5-16-08



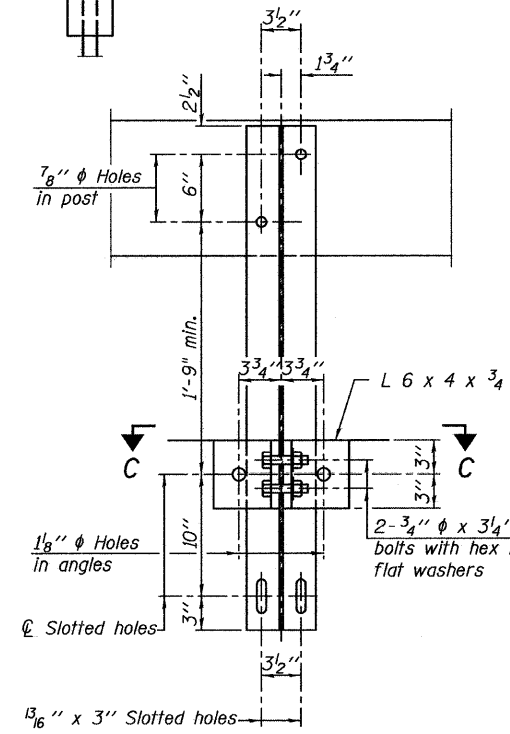
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62703 Phone: (217)544-8033 IL Design Firm
No. 184-001907

SHEET NO. 3
8 SHEETS

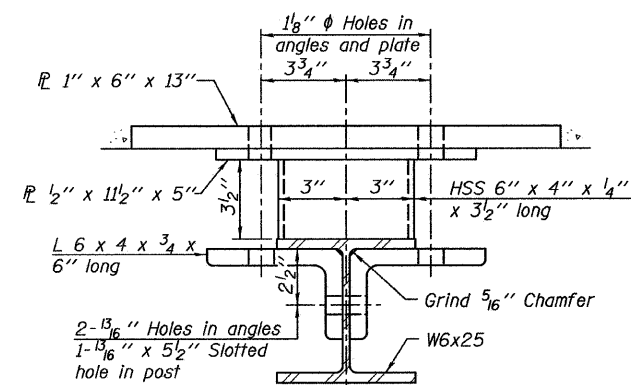
T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	7
CONTRACT NO. 97409				
FED. ROAD DIST. NO. -		ILLINOIS FED. AID PROJECT		



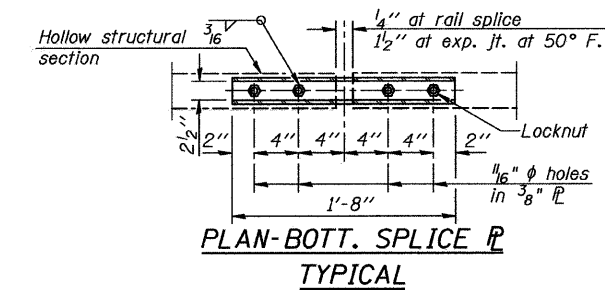
ELEVATION
(Showing Outside Face)



SECTION B-B



SECTION C-C



PLAN-BOTT. SPLICE P TYPICAL

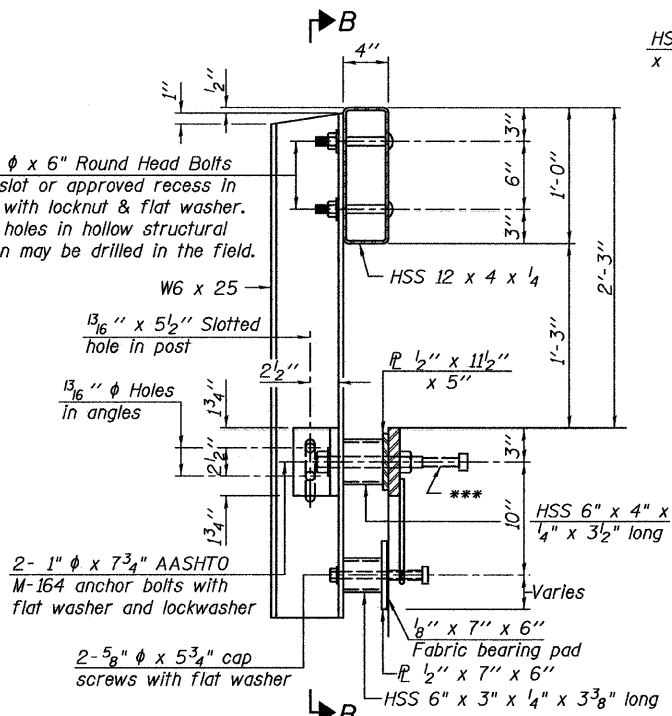
TYPICAL

TYPICAL

TYPICAL

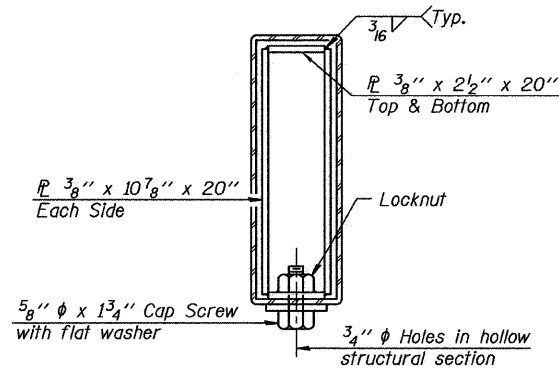
TYPICAL

TYPICAL

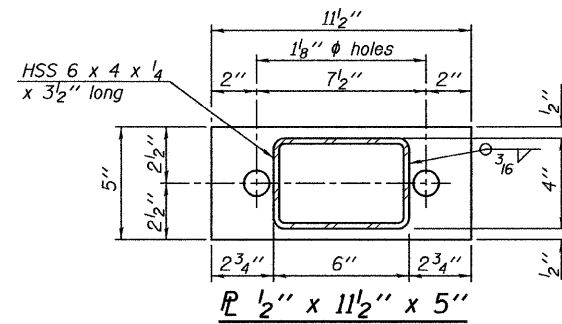


SECTION AT RAILING POST

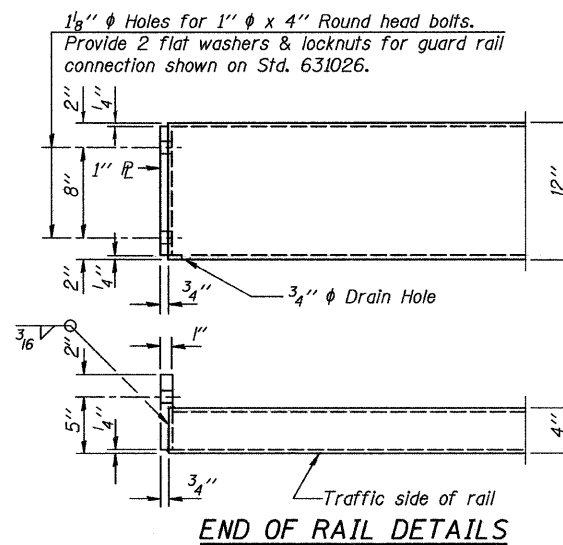
** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".



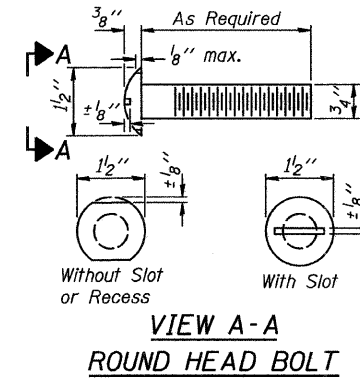
SECTIONS AT RAIL SPLICE



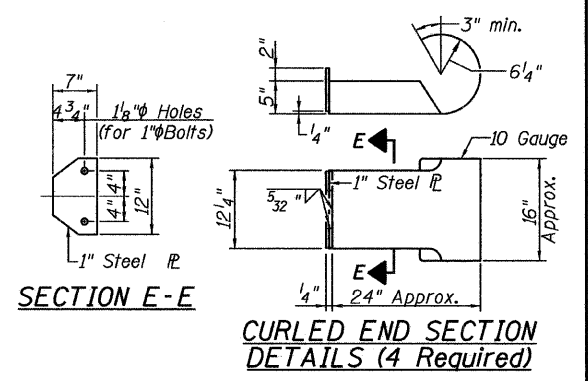
VIEW D-D



END OF RAIL DETAILS

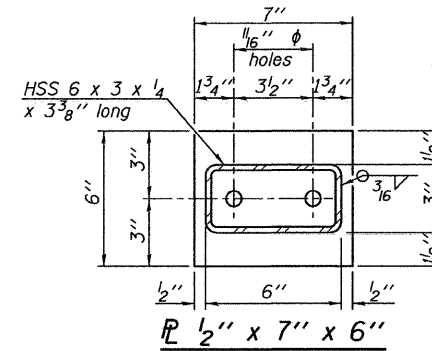


VIEW A-A
ROUND HEAD BOLT

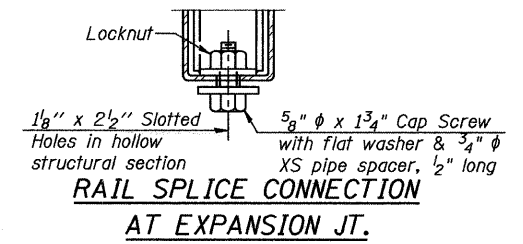


SECTION E-E

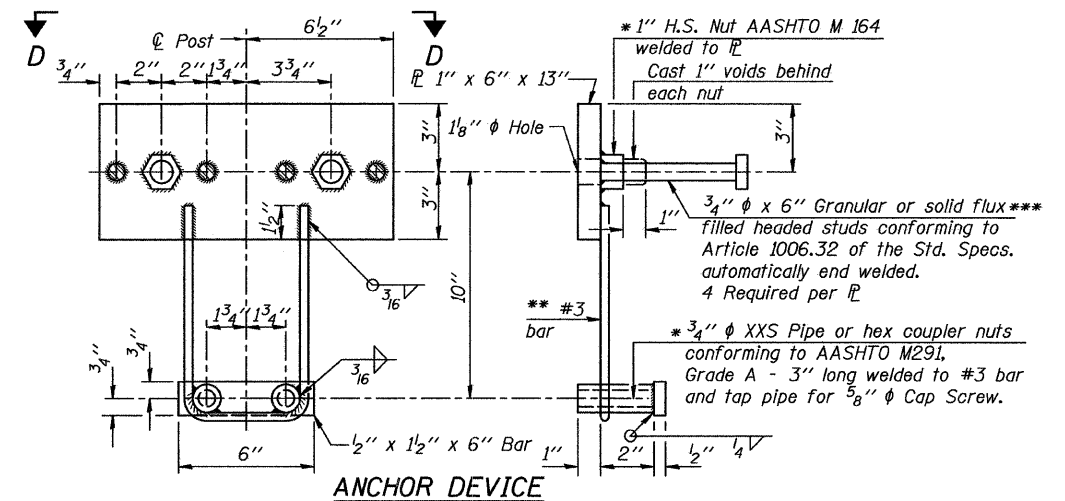
CURLLED END SECTION DETAILS (4 Required)



VIEW D-D



RAIL SPLICE CONNECTION
AT EXPANSION JT.



ANCHOR DEVICE

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

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

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

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

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 Railing, Type S-1.

The cost of curled end sections shall be included in the cost of Steel Railing, Type S1.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	144

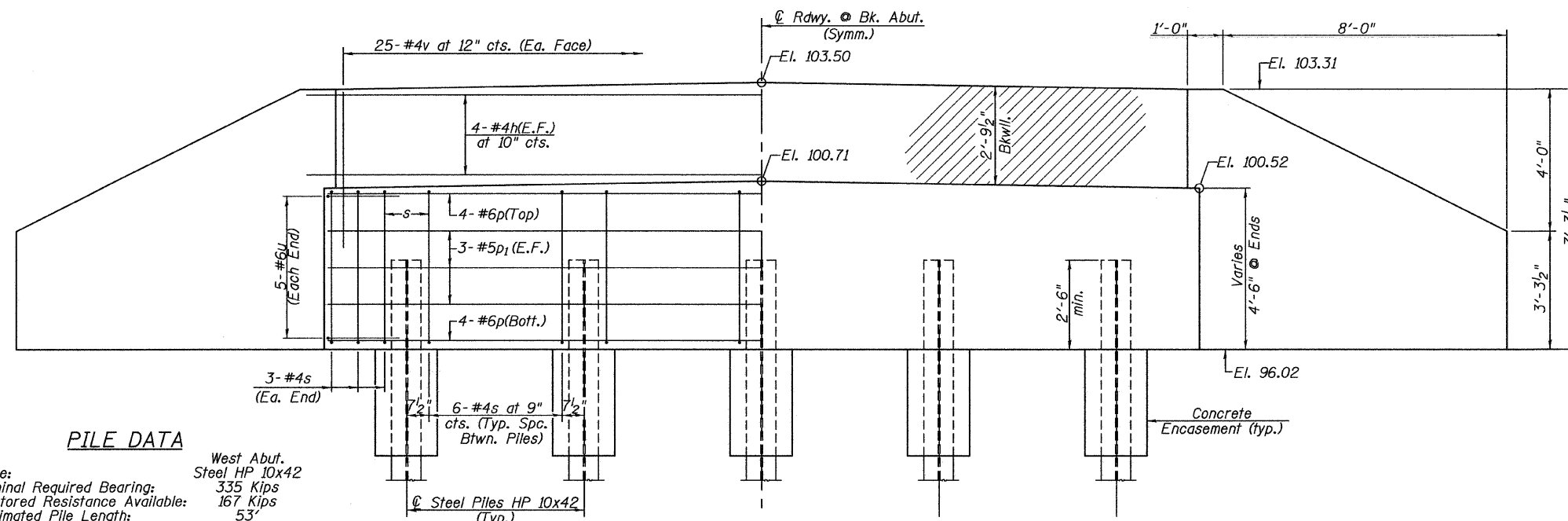
STEEL RAILING, TYPE S-1
T.R. RTE. 81 OVER STREAM
SECTION NO. 05-10012-00-BR
JERSEY COUNTY



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SHEET NO. 4
8 SHEETS

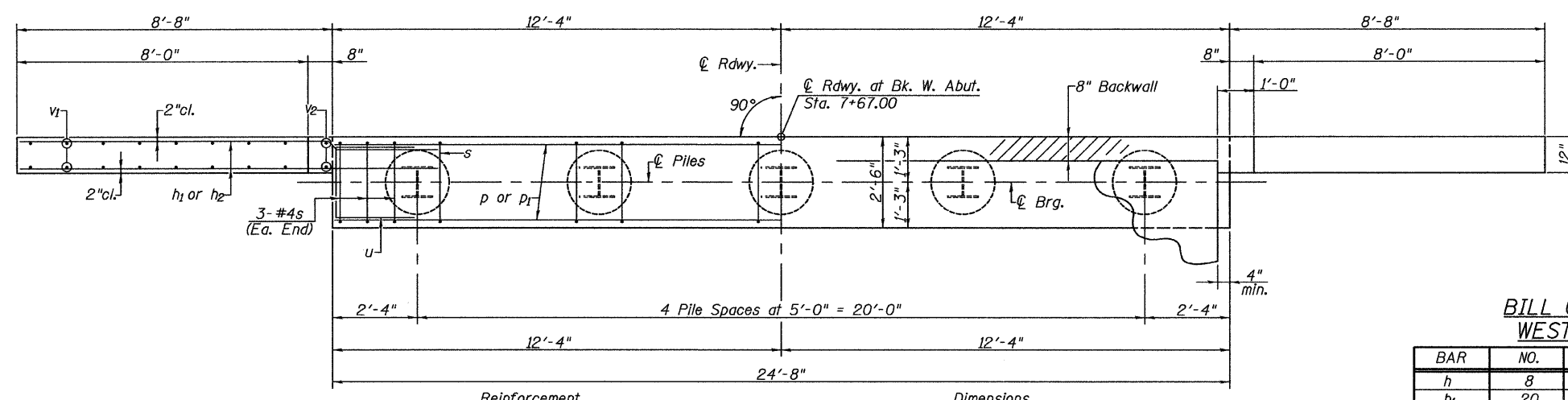
T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	8
CONTRACT NO. 97409				
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				



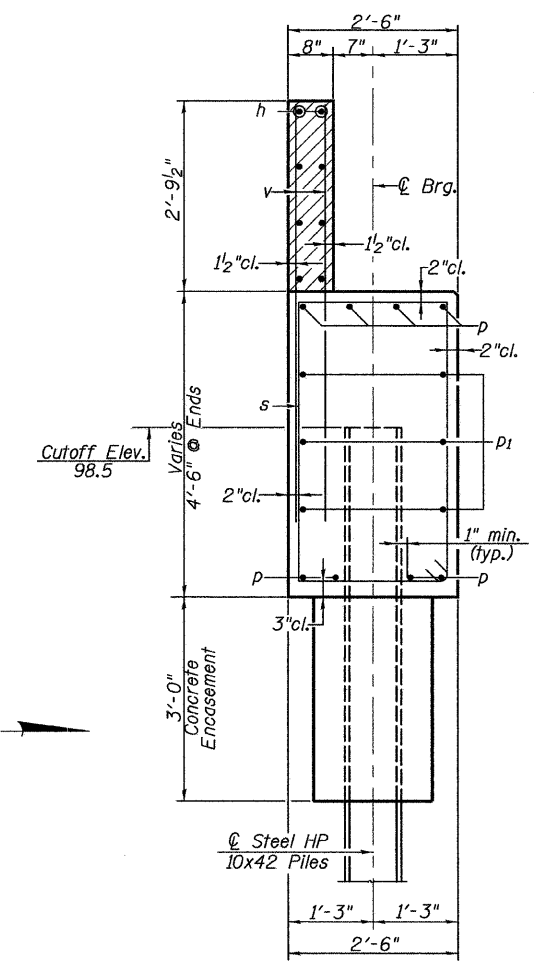
PILE DATA

Type: West Abut.
 Nominal Required Bearing: Steel HP 10x42 335 Kips
 Factored Resistance Available: 167 Kips
 Estimated Pile Length: 53'
 Number of Production: 4
 Number of Test Piles: 1

ELEVATION
(Looking West)



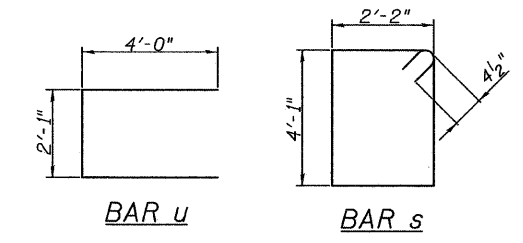
PLAN
Reinforcement Dimensions



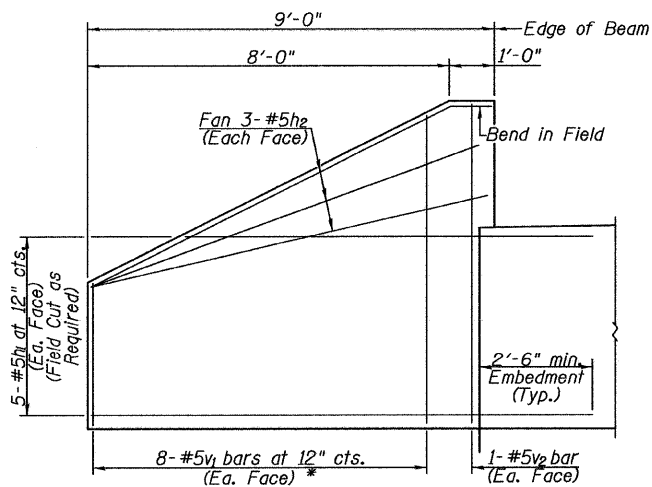
SECTION THRU ABUTMENT

BILL OF MATERIAL WEST ABUTMENT

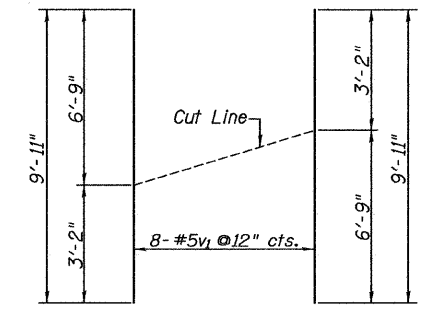
BAR	NO.	SIZE	LENGTH	SHAPE
h	8	#4	25'-8"	—
h1	20	#5	11'-0"	—
h2	12	#5	8'-10"	—
p	8	#6	24'-4"	—
p1	6	#5	24'-4"	—
s	30	#4	13'-3"	□
u	10	#6	10'-1"	□
v	50	#4	4'-3"	—
v1	16	#5	9'-11"	—
v2	4	#5	6'-11"	—



WEST ABUTMENT
 T.R. RTE. 81 OVER STREAM
 SECTION 05-10012-00-BR
 JERSEY COUNTY



WINGWALL ELEVATION
(Showing Reinforcement)
* See v1-bar cut diagram



v1 - BAR CUT DIAGRAM
Order v1 bars full length. Layout in field according to diagram. Cut v1 bars along cut line. Use remainder of each bar in opposite face.

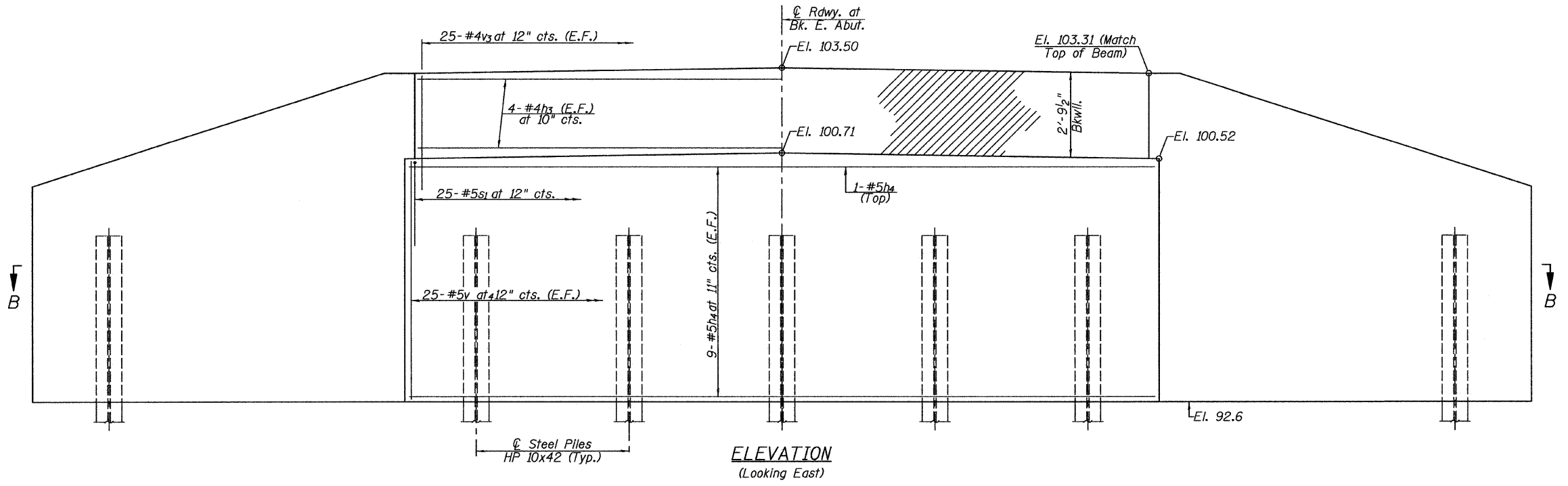
NOTES
 All exposed edges shall have standard 3/4" chamfer.
 Space reinforcement in cap to miss beam anchor dowels.
 Wingwalls and Backwalls may, at the contractor's option, be cast monolithically.
 Hatched area and wingwalls shall be poured after deck beams are anchored in place.
 The Steel H-Piles shall be according to AASHTO M270, Grade 50.

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 No. 184-001907

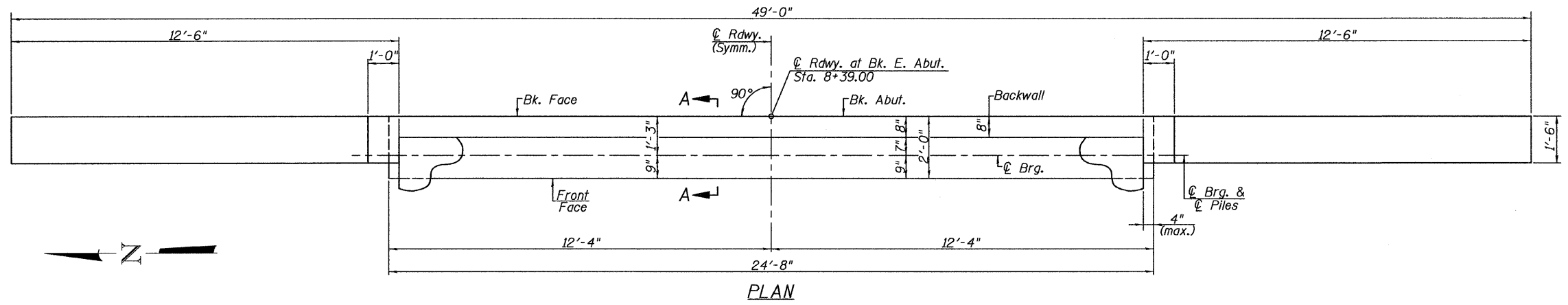
SHEET NO. 5	T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	81	05-10012-00-BR	JERSEY	19	9
8 SHEETS	CONTRACT NO. 97409				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

PILE DATA

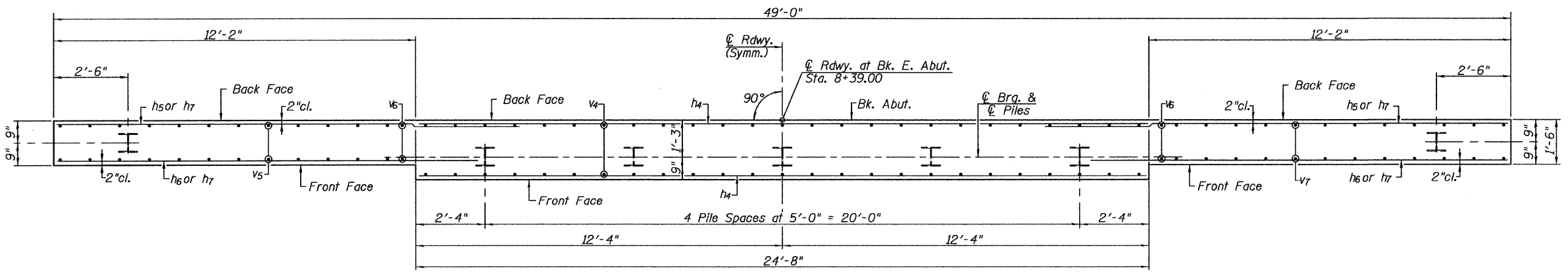
East Abut.
 Type: Steel HP 10x42
 Nominal Required Bearing: 335 Kips
 Factored Resistance Available: 167 Kips
 Estimated Pile Length: 53'
 Number of Production: 6
 Number of Test Piles: 1



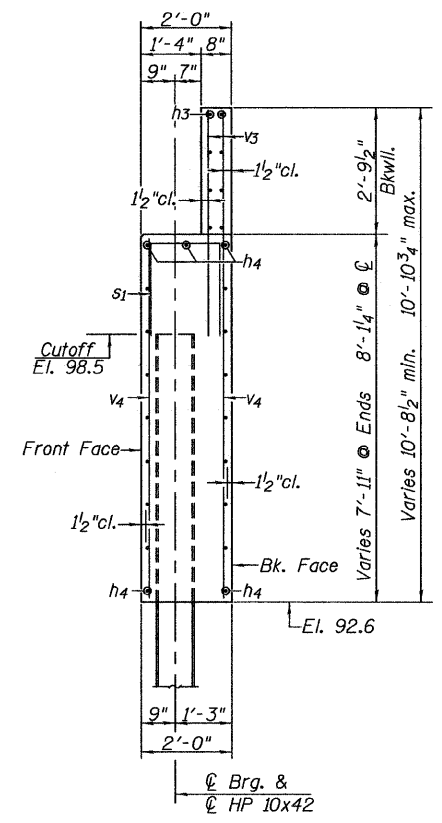
ELEVATION
(Looking East)



PLAN




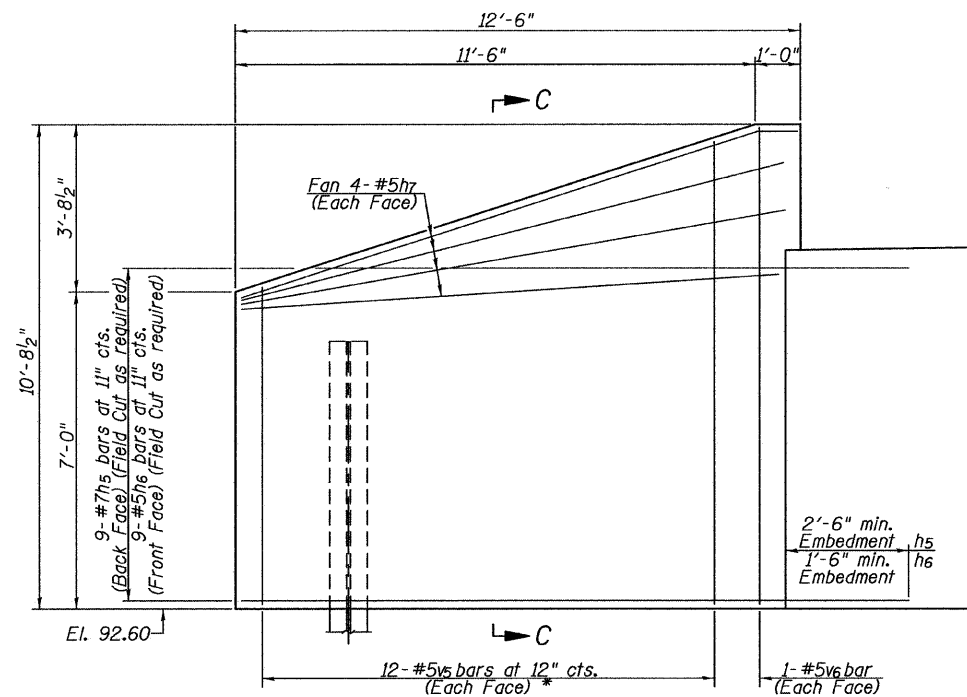
SECTION B-B



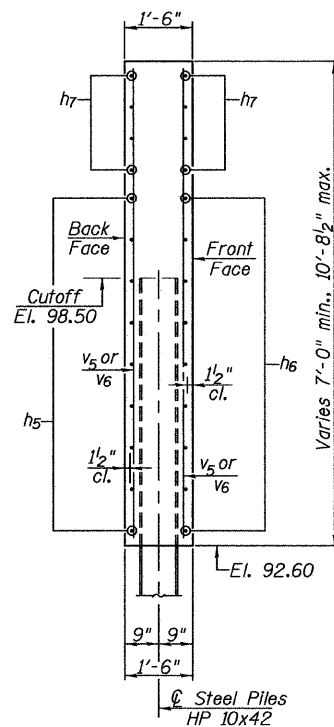
SECTION A-A

EAST ABUTMENT
 T.R. RTE. 81 OVER STREAM
 SECTION 05-10012-00-BR
 JERSEY COUNTY

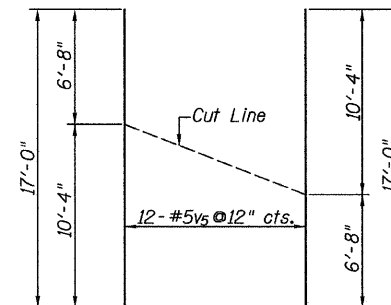
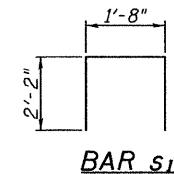
 Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL. 62703 Phone: (217)544-8033 IL. Design Firm No. 184-001907	SHEET NO. 6 8 SHEETS	T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		81	05-10012-00-BR	JERSEY	19	10
		CONTRACT NO. 97409				
		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				



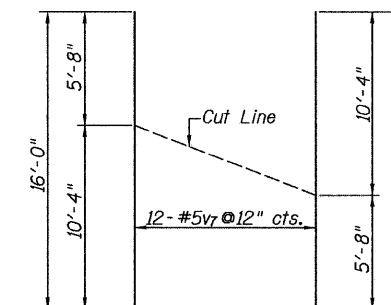
WINGWALL ELEVATION
(East Abutment - North Wingwall)
* See v5 bar cut diagram



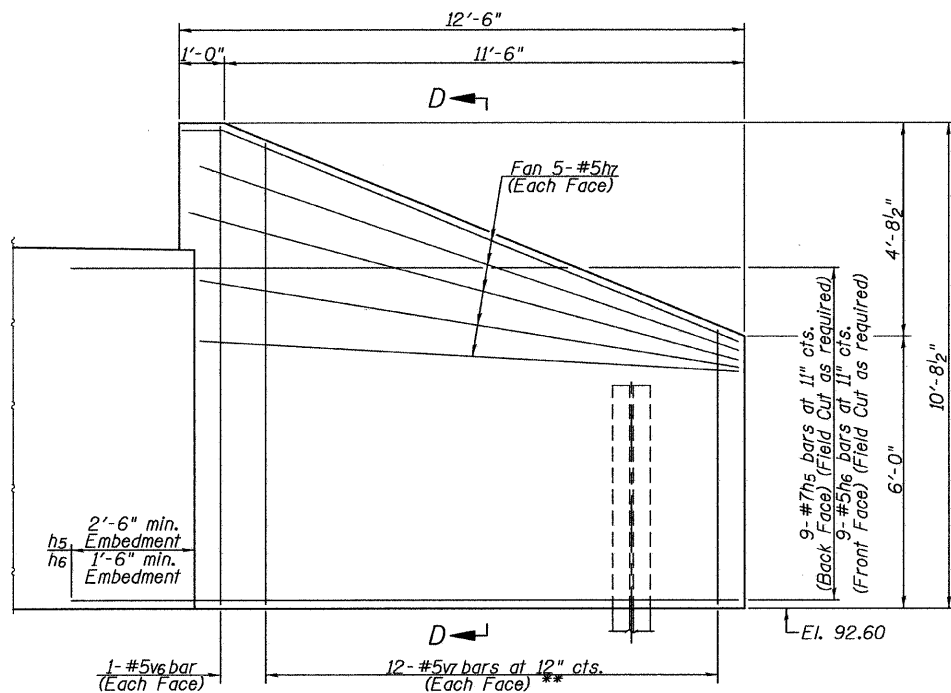
SECTION C-C



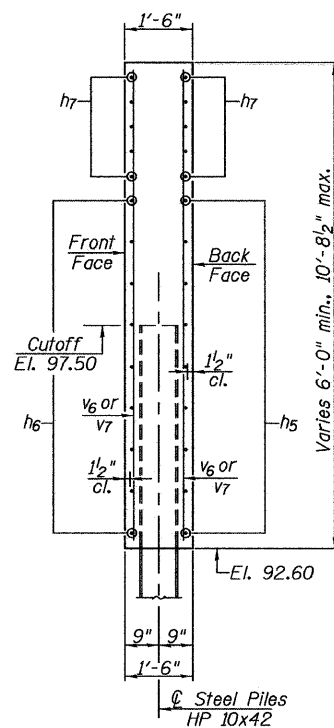
*** V5- BAR CUT DIAGRAM**
Order v5 bars full length; Layout in field according to diagram. Cut v5 bars along cut line. Use remainder of each bar in opposite face.



**** V7- BAR CUT DIAGRAM**
Order v7 bars full length; Layout in field according to diagram. Cut v7 bars along cut line. Use remainder of each bar in opposite face.



WINGWALL ELEVATION
(East Abutment - South Wingwall)
** See v7 bar cut diagram



SECTION D-D

**BILL OF MATERIAL
EAST ABUTMENT**

Bar	No.	Size	Length	Shape
h3	8	#4	25'-8"	—
h4	19	#5	24'-4"	—
h5	18	#7	14'-6"	—
h6	18	#5	13'-6"	—
h7	18	#5	12'-2"	—
s1	25	#5	6'-0"	□
v3	50	#4	4'-3"	—
v4	50	#5	7'-7"	—
v5	12	#5	17'-0"	—
v6	4	#5	10'-4"	—
v7	12	#5	16'-0"	—

Reinforcement Bars	Pound	2785
Concrete Structures	Cu. Yd.	31.1
Furnishing Steel Piles HP10x42	Foot	318
Driving Piles	Foot	318
Test Pile Steel HP10x42	Each	1
Structure Excavation	Cu. Yd.	118
Underwater Structure Excavation Protection Location 1 (East Abutment)	Each	1

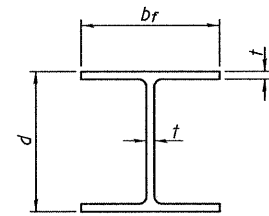
**EAST ABUTMENT
T.R. RTE. 81 OVER STREAM
SECTION NO. 05-10012-00-BR
JERSEY COUNTY**



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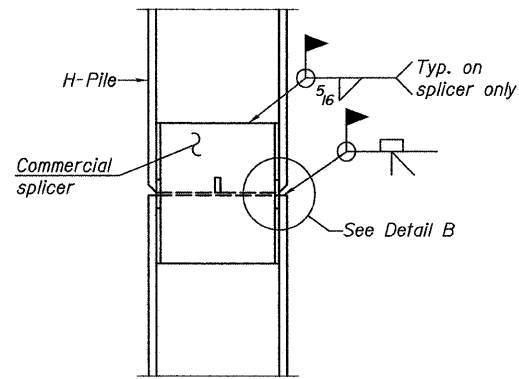
SHEET NO. 7
8 SHEETS

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	11
CONTRACT NO. 97409				
FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

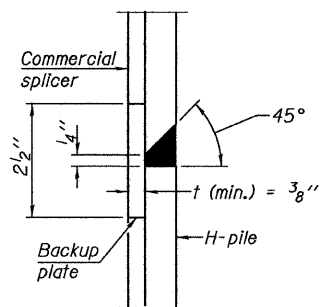


STEEL PILE TABLE

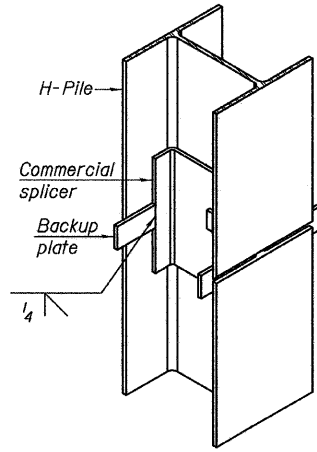
Designation	Depth d	Flange width b _f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



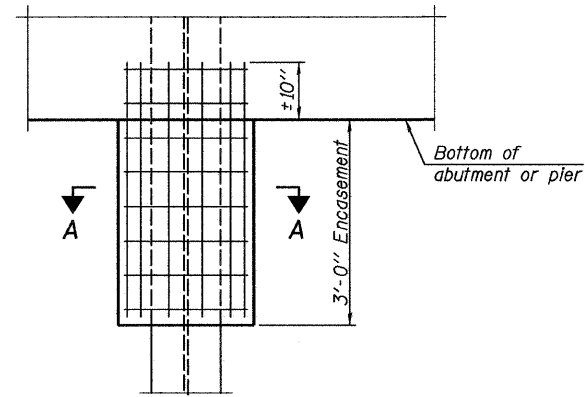
ELEVATION



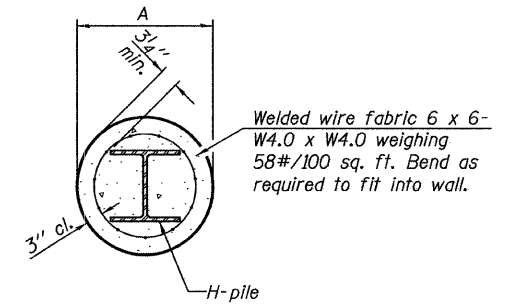
DETAIL "B"



ISOMETRIC VIEW



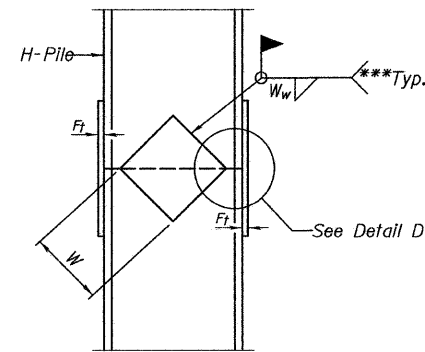
ELEVATION



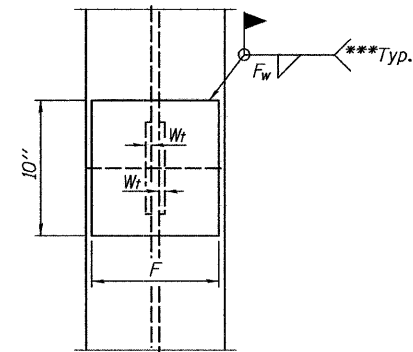
SECTION A-A

PILE ENCASEMENT

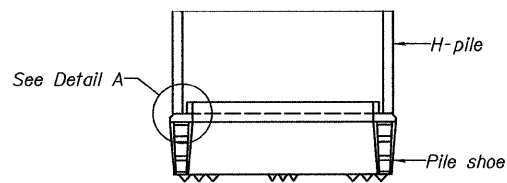
Note:
Forms for encasement may be omitted when soil conditions permit.



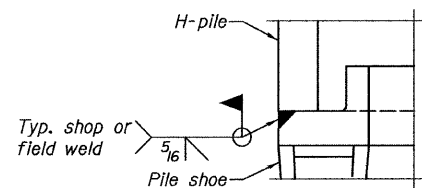
ELEVATION



END VIEW

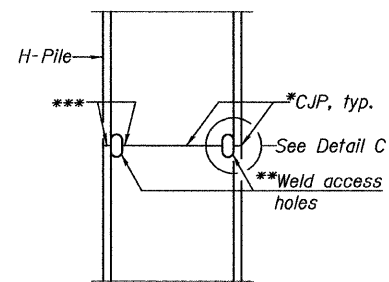


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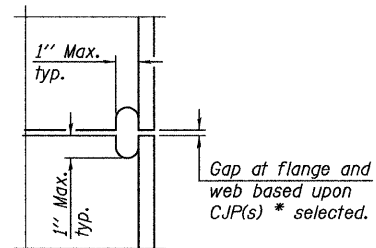


DETAIL A

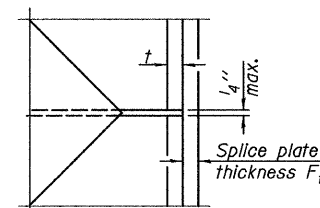
H-PILE SHOE ATTACHMENT



ELEVATION



DETAIL C



DETAIL D

COMPLETE PENETRATION WELD SPLICE

Designation	F	F _t	F _w	W	W _t	W _w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

HP PILE DETAILS
T.R. RTE. 81 OVER STREAM
SECTION 05-10012-00-BR
JERSEY COUNTY

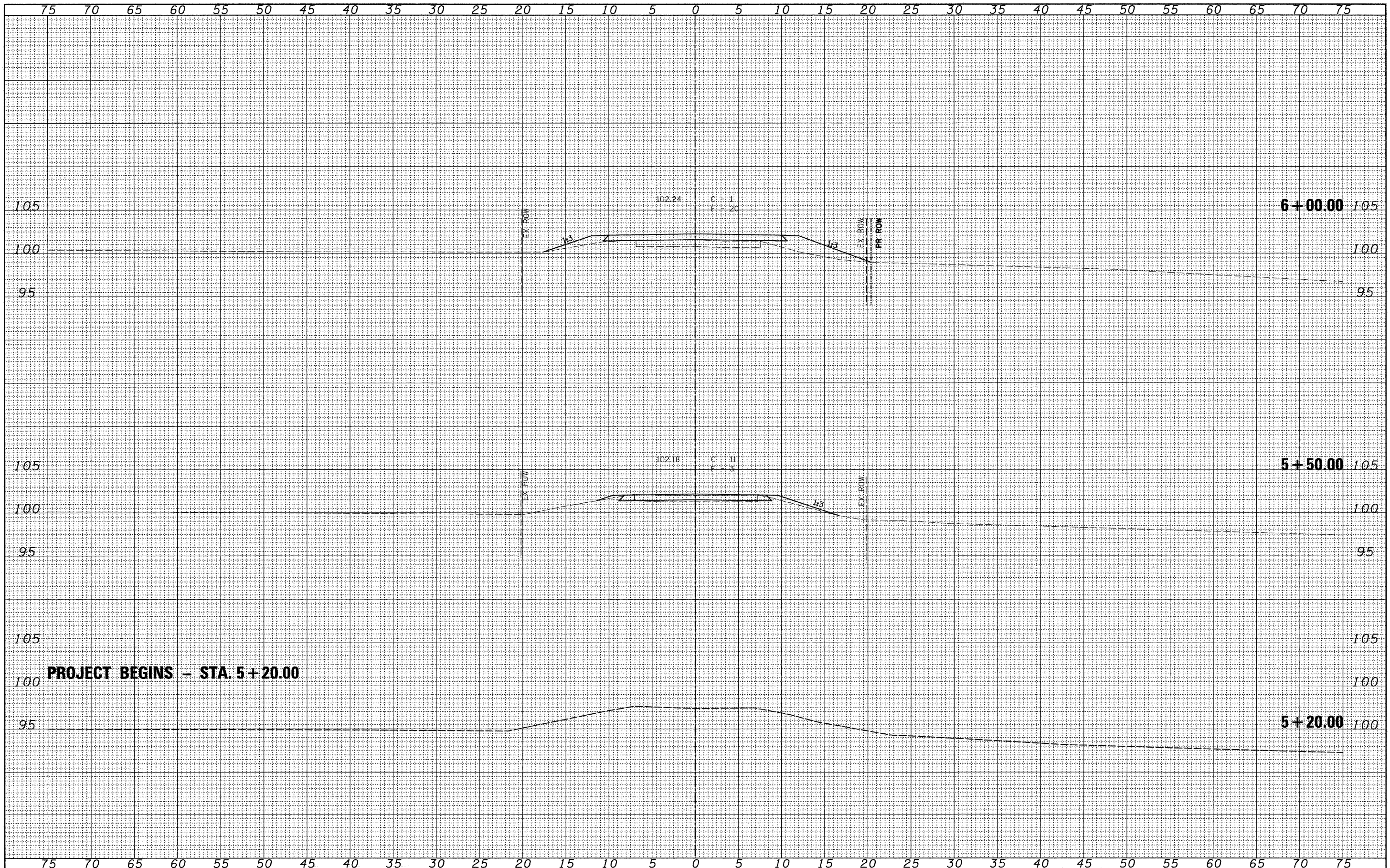
- * Use joint conforming to Figure 3.4 in AWS D1.1, Structure Welding Code - Steel.
- ** Preparation per Fig. 5.2 in AWS D1.1, Structure Welding Code - Steel.
- *** Interrupt welds 1/4" from end of each pile.



T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	12
CONTRACT NO. 97409				
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				


FINAL	DATE
SURVEYED	BY
NOTE BOOK	
AREAS CHECKED	
NO.	

ORIGINAL	DATE
SURVEYED	BY
NOTE BOOK	
AREAS CHECKED	
NO.	



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PLOT DATE = #DATE#	DATE -	REVISED -



Allen Henderson & Associates, Inc.
Civil and Structural Engineers Springfield, IL
62703 Phone: (217)544-8033 IL Design Firm
No. 184-001907

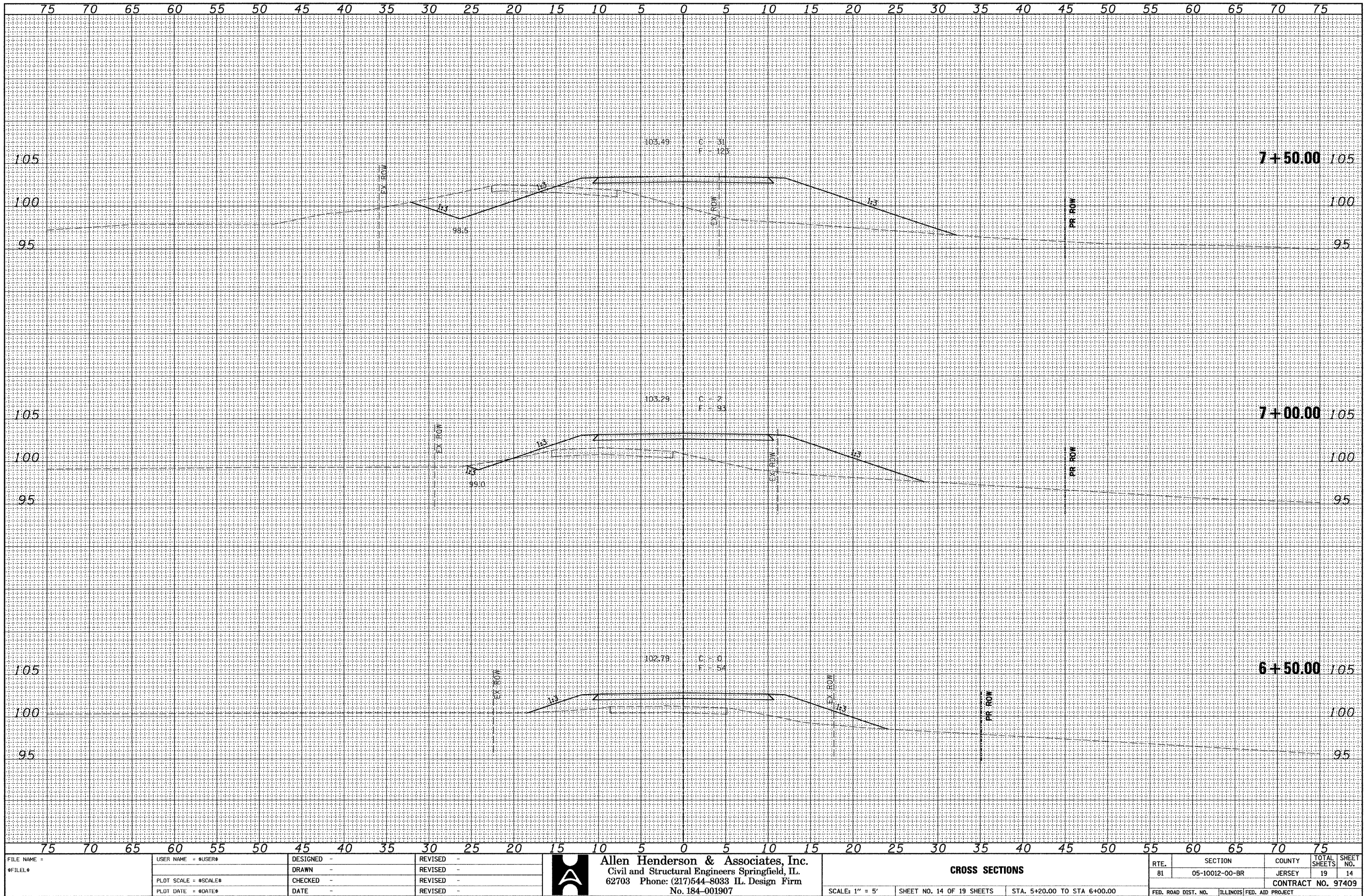
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SHEET NO. 13 OF 19 SHEETS

CROSS SECTIONS
STA. 5+20.00 TO STA 6+00.00

T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	13
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 97409	

DATE _____ BY _____
 SURVEYED _____
 ORIGINAL SURVEY _____
 NOTE BOOK _____
 NO. _____

DATE _____ BY _____
 SURVEYED _____
 ORIGINAL SURVEY _____
 NOTE BOOK _____
 NO. _____



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 DATE -

REVISED -
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 No. 184-001907

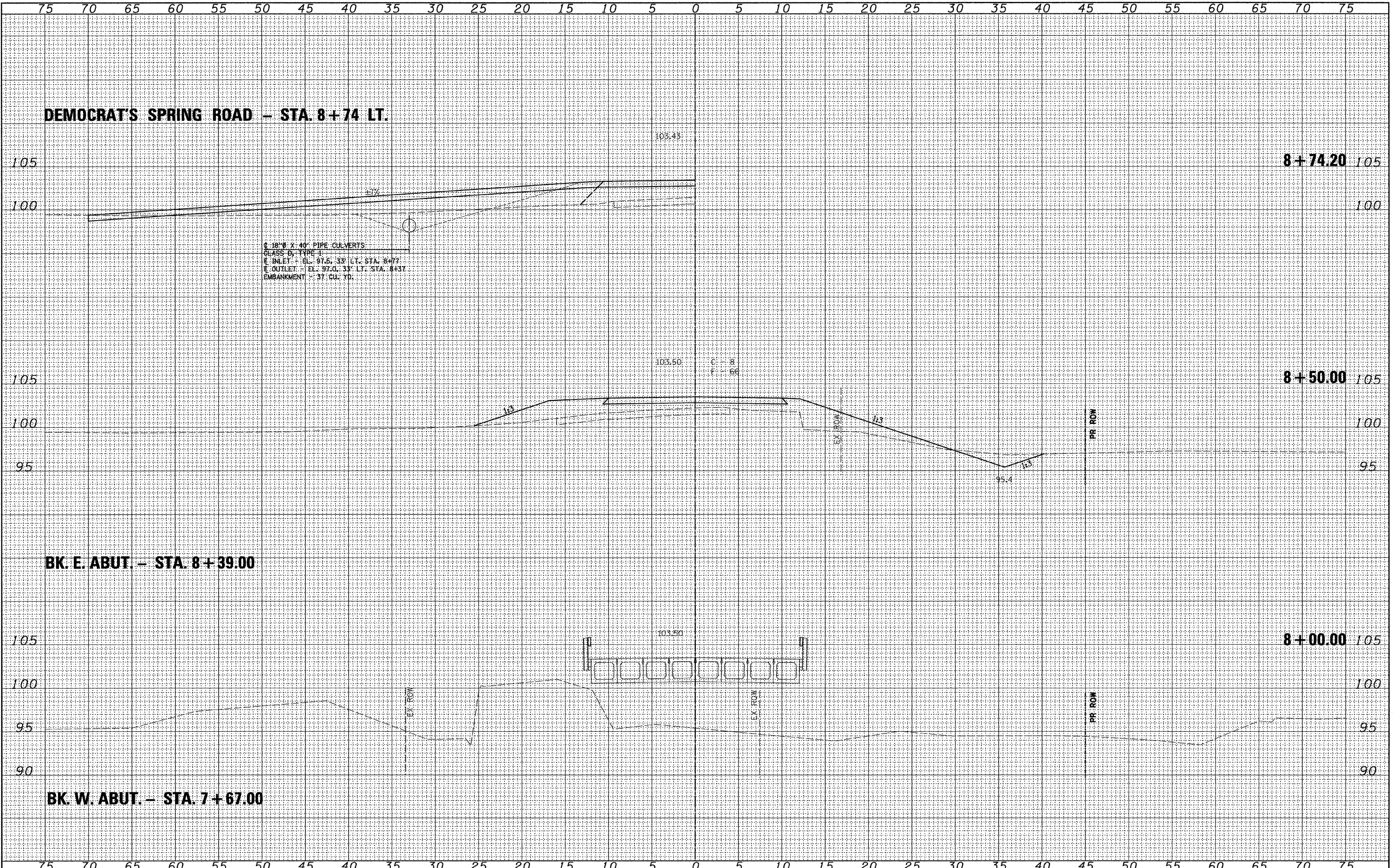
CROSS SECTIONS

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RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 97409	

FINAL SURVEY	DATE
SURVEYED	BY
NOTE BOOK	NO.
TEMP. PLATE	AREAS CHECKED
AREAS	CHECKED

ORIGINAL SURVEY	DATE
SURVEYED	BY
NOTE BOOK	NO.
TEMP. PLATE	AREAS CHECKED
AREAS	CHECKED



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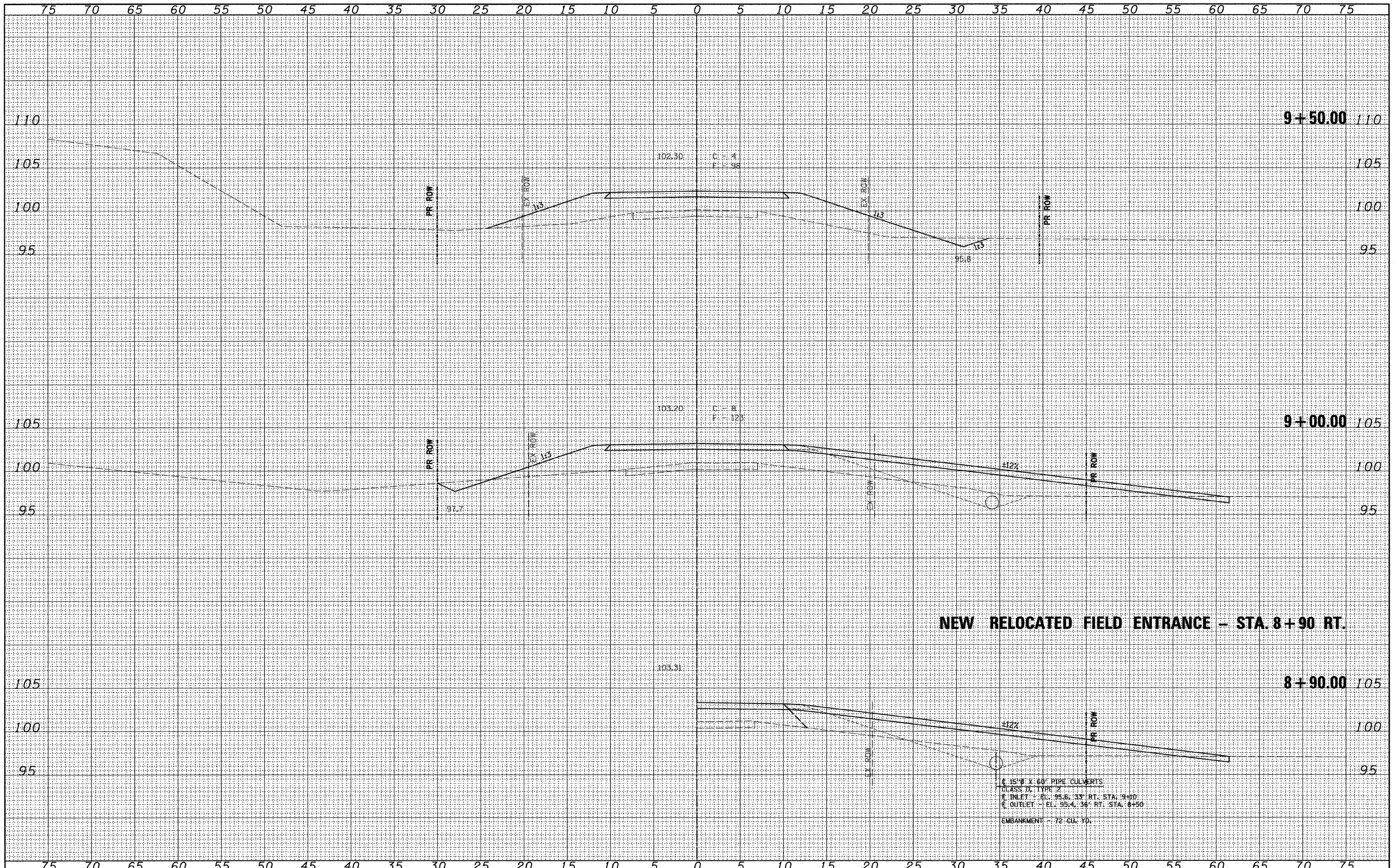
Allen Henderson & Associates, Inc.
 Civil and Structural Engineers Springfield, IL
 62703 Phone: (217)544-8033 IL Design Firm
 No. 184-001907

CROSS SECTIONS
 SCALE: 1" = 5' SHEET NO. 15 OF 19 SHEETS STA. 5+20.00 TO STA 6+00.00

RT#	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	15
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	
			CONTRACT NO. 97409	

DATE	
BY	
SURVEYED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	

DATE	
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SURVEYED	
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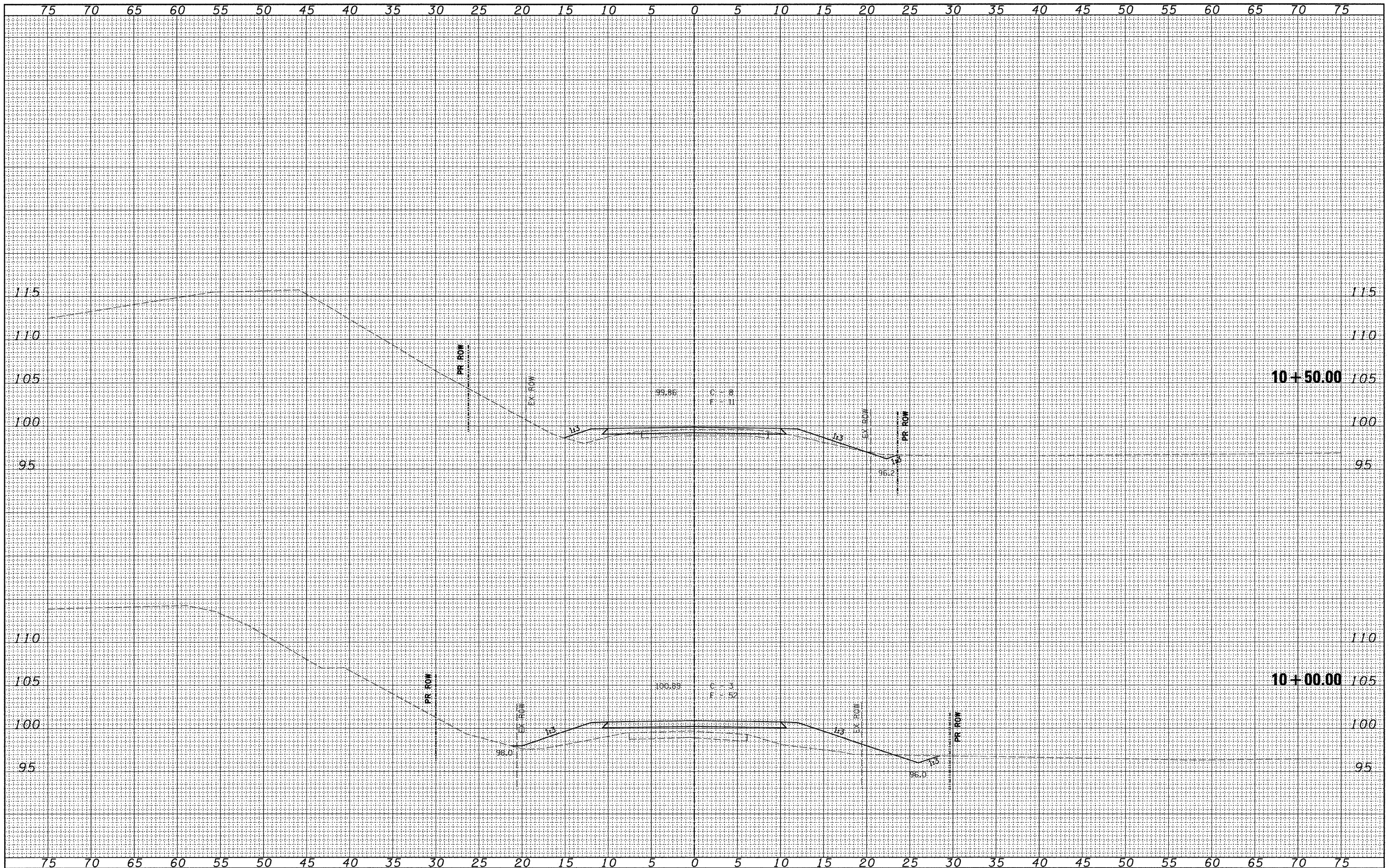


15" X 60" PIPE CULVERTS
 CLASS D, TYPE 2
 INLET - EL: 95.6, 3' RT. STA: 9+00
 OUTLET - EL: 95.4, 36' RT. STA: 8+50
 EMBANKMENT - 72 CU. YD.

FILE NAME =	USER NAME = *USER*	DESIGNED -	REVISED -	<p> Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL 62703 Phone: (217)544-8033 IL Design Firm No. 184-001907 </p>	CROSS SECTIONS SCALE: 1" = 5' SHEET NO. 16 OF 19 SHEETS STA. 5+20.00 TO STA 6+00.00		RTE. SECTION COUNTY TOTAL SHEETS SHEET NO.
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PLOT DATE = *DATE*		DATE -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

FINAL SURVEY	DATE
SURVEYED	BY
NOTE BOOK	
NO.	
AREAS CHECKED	

ORIGINAL SURVEY	DATE
SURVEYED	BY
NOTE BOOK	
NO.	
AREAS CHECKED	



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DRAWN -
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CHECKED -
PLOT DATE = #DATE#
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DESIGNED -
DRAWN -
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -



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Civil and Structural Engineers Springfield, IL
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No. 184-001907

CROSS SECTIONS

SCALE: 1" = 5'

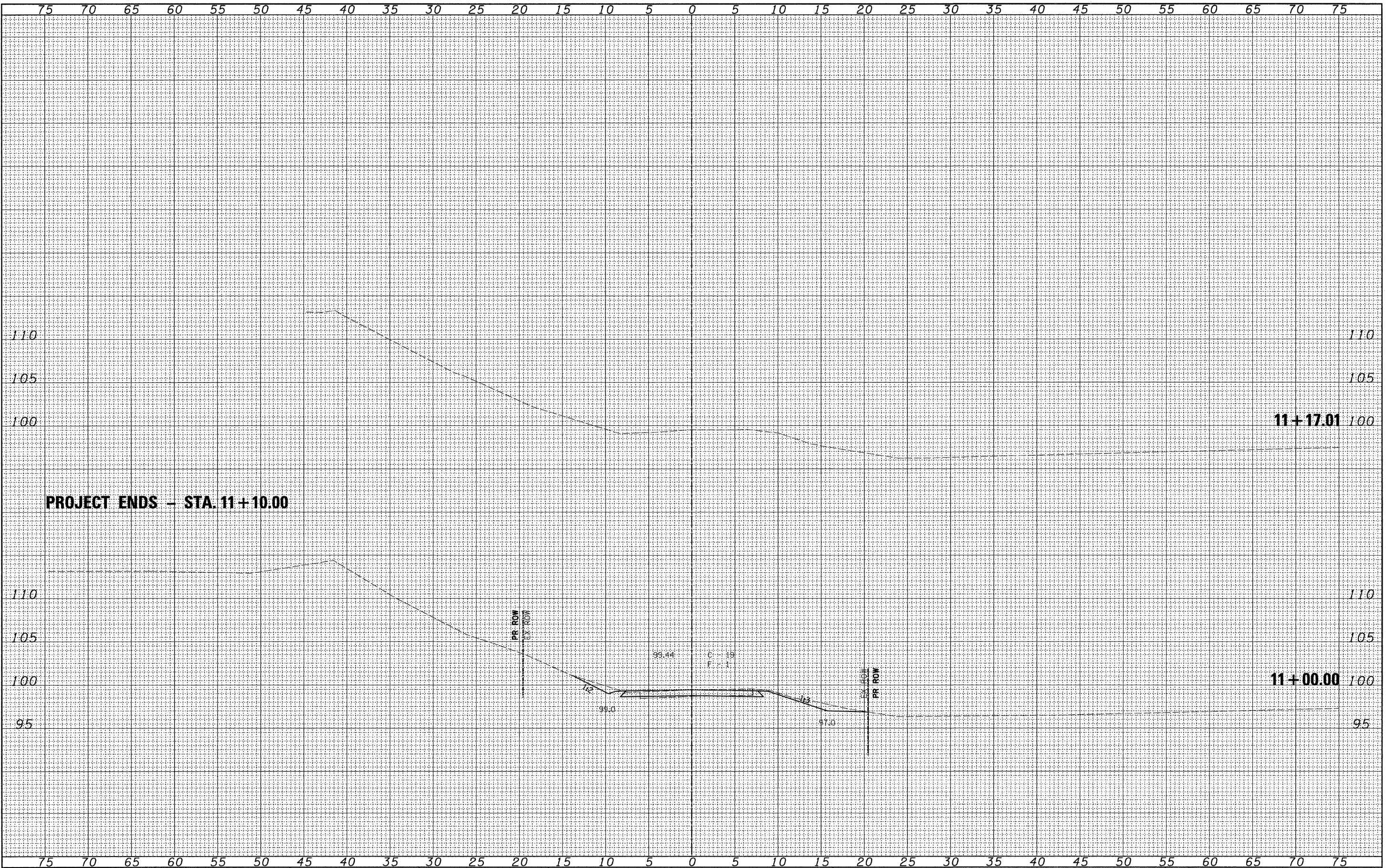
SHEET NO. 17 OF 19 SHEETS


STA. 5+20.00 TO STA 6+00.00

RT#	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
81	05-10012-00-BR	JERSEY	19	17
CONTRACT NO. 97409				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	DATE
SURVEYED	BY
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	

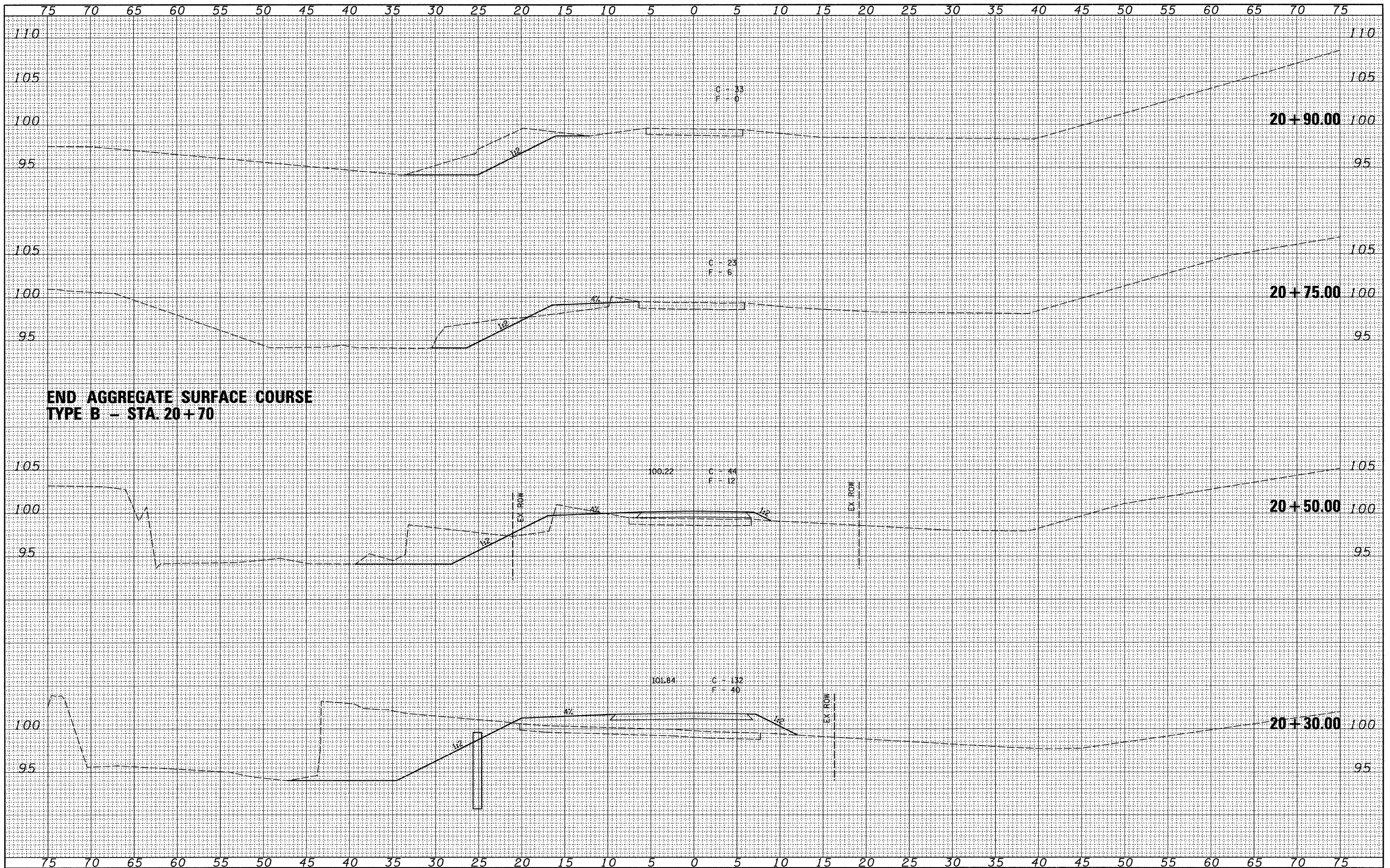
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TEMPLATE	
NOTE BOOK	
AREAS CHECKED	



FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	 Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL 62703 Phone: (217)544-8033 IL Design Firm No. 184-001907	CROSS SECTIONS		RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT DATE = #DATE#		DATE -	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT							

DATE	BY
SURVEYED	
TEMPERATURE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	BY
SURVEYED	
TEMPERATURE	
NOTE BOOK	
AREAS CHECKED	
NO.	



**END AGGREGATE SURFACE COURSE
TYPE B - STA. 20+70**

FILE NAME =	USER NAME = #USER#	DESIGNED -	REVISED -	<p>Allen Henderson & Associates, Inc. Civil and Structural Engineers Springfield, IL 62703 Phone: (217)544-8033 IL Design Firm No. 184-001907</p>	<p align="center">CROSS SECTIONS (DEMOCRAT SPRINGS ROAD)</p>		T.R. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
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PLOT DATE = #DATE#		DATE -	REVISED -				FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			