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

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
 1-800-892-0123
 OR 811

PROJECT ENGINEER - MCW
PROJECT MANAGER - BKC
CONTRACT NO. 85536

FUNCTIONAL CLASSIFICATION
MAJOR COLLECTOR RURAL
DESIGN SPEED 40 MPH
2011 ADT - 275 3% TRUCKS
3R GUIDELINES

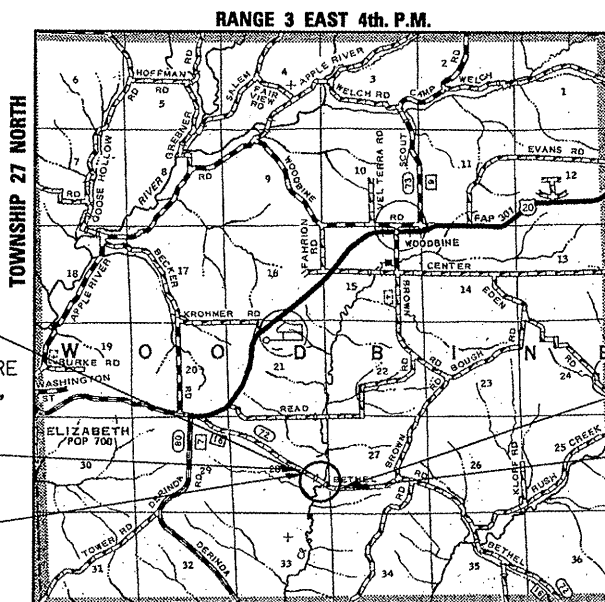
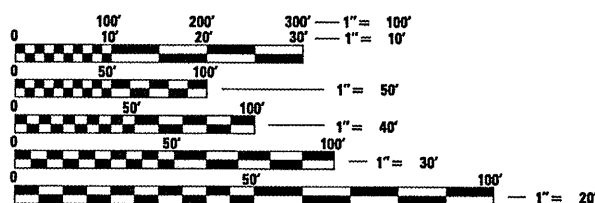
STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
FEDERAL AID PROJECT
EMERGENCY RELIEF FUNDS

FAS ROUTE 72 (E. BETHEL ROAD)
SECTION 10-00134-00-BR
PROJECT ER-0072(103)
STRUCTURE REPLACEMENT
JODAVIESS COUNTY

JOB NO. C-92-065-11



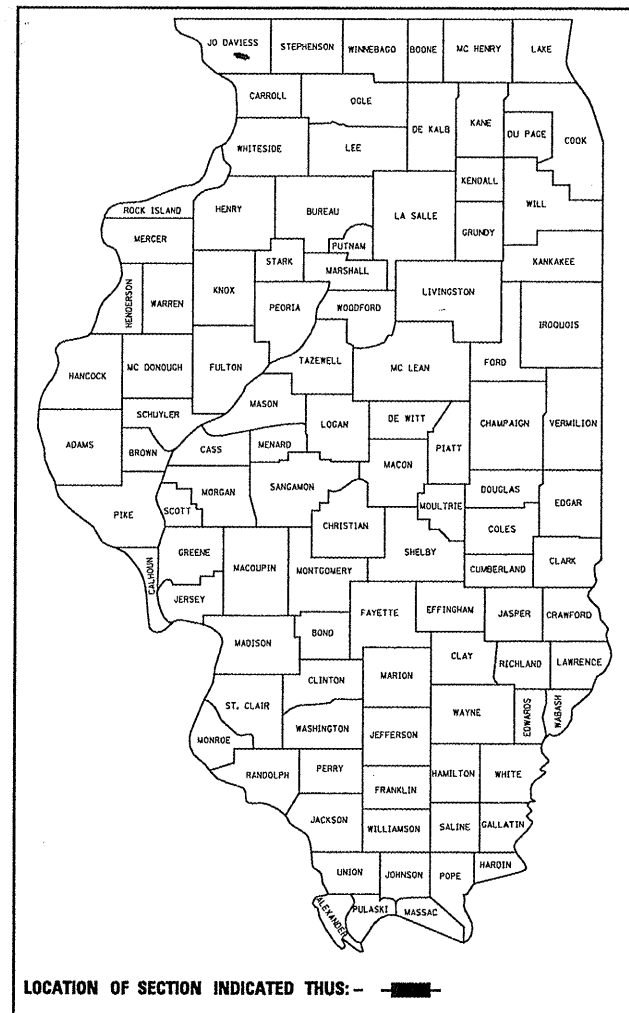
PROPOSED STRUCTURE: S.N. 043-3277
 A SINGLE SPAN (1 @ 85'-0") PRECAST
 PRESTRESSED CONCRETE I-BEAM STRUCTURE
 ON SPILL-THRU ABUTMENTS AT STA. 20+H5,
 SKEWED 10° LT. AHEAD.

SECTION BEGINS
 STATION 18+00
 CONSTRUCTION BEGINS
 STATION 18+25

CONSTRUCTION ENDS
 STATION 22+25
 SECTION ENDS
 STATION 23+30

GROSS LENGTH = 530 FT. = 0.095 MILE
 NET LENGTH = 400 FT. = 0.076 MILE

UTILITIES:
 VERIZON (FRONTIER COMM.)
 ATTN: PAULO JAVIER
 2239 NEWBERG RD.
 BELVIDERE IL 61008
 815-547-0395



JO DAVIESS COUNTY HIGHWAY DEPARTMENT

APPROVED 2-19-2011 DATE
[Signature]
 JO DAVIESS COUNTY ENGINEER

PASSED 4-18-2011 DATE
[Signature]
 DISTRICT 2 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID
 BASED ON LIMITED
 REVIEW 4-18-2011 DATE
[Signature]
 DEPUTY DIRECTOR OF HIGHWAYS, REGION 2 ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

BRIAN K. CONVERSE
 062-04814
 LICENSED
 PROFESSIONAL
 ENGINEER
 OF
 ILLINOIS
[Signature]
 DATE: 2/14/2011
 EXPIRES 11/30/11

WILLET, HOFMANN & ASSOCIATES, INC.
CONSULTING ENGINEERS
 Land Surveying - Transportation - Structural
 Environmental - Architecture
 809 East Second Street Dixon, Illinois 61021
 Phone 815.284.3361 Fax 815.284.3385
 Design Firm #184-000918
 www.willetthofmann.com

FILE NAME = S:\PROJECTS\2010\1183010\JoDavieess_County_Bethel_Road_DESIGN\STRUCT\Drawings\1183010\Cover.dgn

SUMMARY OF QUANTITIES & GENERAL NOTES

NO.	CODE NO.	CONSTRUCTION TYPE CODE: 0011 ITEM	UNIT	TOTAL QUANTITY
1	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	135
2	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	60
3	20100500	TREE REMOVAL, ACRES	ACRE	0.59
4	20201200*	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	100
5	20300100	CHANNEL EXCAVATION	CU YD	1,217
6	25100630	EROSION CONTROL BLANKET	SQ YD	4,960
7	28000305*	TEMPORARY DITCH CHECKS	FOOT	81
8	28000400	PERIMETER EROSION BARRIER	FOOT	1,164
9	28100107	STONE RIPRAP, CLASS A4	SQ YD	673
10	28100111	STONE RIPRAP, CLASS A6	SQ YD	2,239
11	28200200	FILTER FABRIC	SQ YD	2,912
12	31101000*	SUBBASE GRANULAR MATERIAL, TYPE B	TON	321
13	35100100*	AGGREGATE BASE COURSE, TYPE A	TON	146
14	40200800*	AGGREGATE SURFACE COURSE, TYPE B	TON	68
15	40600100*	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	331
16	40600300*	AGGREGATE (PRIME COAT)	TON	2
17	40603000	HOT-MIX ASPHALT BINDER COURSE, IL-12.5, N50	TON	47
18	40603310	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	47
19	42001430*	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	100
20	48100100	AGGREGATE SHOULDERS, TYPE A	TON	122
21	50100100*	REMOVAL OF EXISTING STRUCTURES	EACH	1
22	50200100	STRUCTURE EXCAVATION	CU YD	335
23	50300225	CONCRETE STRUCTURES	CU YD	48.1
24	50300255	CONCRETE SUPERSTRUCTURE	CU YD	191.7
25	50300260	BRIDGE DECK GROOVING	SQ YD	459
26	50300280	CONCRETE ENCASEMENT	CU YD	3.4
27	50300300	PROTECTIVE COAT	SQ YD	492
28	50401005	FURNISHING AND ERECTING PPC I-BEAMS, 48 IN.	FOOT	430
29	50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	46,130
30	50800515	BAR SPLICERS	EACH	62
31	50901050	STEEL RAILING, TYPE SM	FOOT	175
32	51201600	FURNISHING STEEL PILES HP 12X53	FOOT	156
33	51202305	DRIVING PILES	FOOT	156
34	51203600	TEST PILE STEEL HP 12X53	EACH	2
35	51500100	NAME PLATES	EACH	1
36	54200220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	32
37	54213870	STEEL END SECTIONS 15"	EACH	2
38	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	93
39	63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
40	63100167*	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
41	66600105	FURNISHING AND ERECTING RIGHT OF WAY MARKERS	EACH	6
42	66700205*	PERMANENT SURVEY MARKERS, TYPE I	EACH	1
43	67100100	MOBILIZATION	L SUM	1
44	78200410	GUARDRAIL MARKERS, TYPE A	EACH	16
45	78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
46	X2020410*	EARTH EXCAVATION (SPECIAL)	CU YD	3,156
47	X2070304*	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	192
48	X2501000*	SEEDING, CLASS 2 (SPECIAL)	ACRE	1.47
49	X2501845*	SEEDING, CLASS 7 (SPECIAL)	ACRE	1.47
50	X6650200*	WOVEN WIRE FENCE (SPECIAL)	FOOT	800
51	X7010216*	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1
52	Z0005400*	BREAKER-RUN CRUSHED STONE	TON	205
53	Z0013798*	CONSTRUCTION LAYOUT	L SUM	1
54	Z0022800*	FENCE REMOVAL	FOOT	705
55	Z0046304*	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	182

*DENOTES SPECIAL PROVISION, GENERAL NOTE OR DETAIL **Δ SPECIALTY ITEMS**

GENERAL NOTES

THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS.

NO OVERHAUL HAS BEEN COMPUTED AND NONE SHALL BE PAID FOR FROM ANY SOURCE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY DURING CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.31 OF THE STANDARD SPECIFICATIONS.

A MINIMUM OF 48 HOURS ADVANCE NOTICE IS REQUIRED FOR NON-EMERGENCY WORK.

WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS, MONUMENTS AND RIGHT-OF-WAY PINS UNTIL THE OWNER, AN AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. ANY PROPERTY MARKERS, SECTION OR SUBSECTION MONUMENTS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

ALL TREES LESS THAN 6" DIAMETER WITHIN THE CONSTRUCTION LINES AND SHOWN ON THE PLANS TO BE REMOVED WILL NOT BE PAID FOR UNDER THE BID ITEM OF "TREE REMOVAL". THE COST OF REMOVING THESE TREES SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID PER CUBIC YARD FOR EARTH EXCAVATION (SPECIAL).

THE CONTRACTOR SHALL REMOVE ALL STRUCTURES OTHER THAN THE EXISTING SINGLE SPAN BRIDGE WITHIN THE EXISTING RIGHT OF WAY AS DIRECTED BY THE ENGINEER AND AS SHOWN ON THE PLANS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

ALL TELEPHONE AND ELECTRIC POLES, GAS PIPES, ETC. IN THE WAY OF IMPROVEMENTS SHALL BE MOVED BY THE UTILITIES PRIOR TO CONSTRUCTION AND SHALL NOT BE INCLUDED IN THE CONTRACT. THE CONTRACTOR SHALL NOTIFY THE RESPECTIVE UTILITIES TO MAKE THE NECESSARY ADJUSTMENTS PRIOR TO THIS CONSTRUCTION.

THE LOCATION AND ELEVATION OF THE VARIOUS UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE NOT TO BE TAKEN AS EXACT. THE CONTRACTOR SHALL USE SPECIAL CARE WHEN CONDUCTING CONSTRUCTION OPERATIONS NEAR THEM TO PREVENT DAMAGE.

SPECIAL CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING TREES. NO ROOTS SHALL REMAIN EXPOSED FOR LONGER THAN 24 HOURS. ALL TREE PROTECTION MEASURES SHALL BE IN ACCORDANCE WITH ARTICLE 201.05 OF THE STANDARD SPECIFICATIONS. THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE FINAL TOP 4" OF SOIL IN ANY AREA DISTURBED BY THE CONTRACTOR MUST BE ABLE TO SUPPORT VEGETATION.

EXISTING MAIL BOXES, STREET SIGNS AND TRAFFIC SIGNS THAT ARE WITHIN THE CONSTRUCTION LIMITS AND NEED TO BE RELOCATED SHALL BE REMOVED AND RESET BY THE CONTRACTOR. COST OF REMOVING AND RESETTING SHALL BE INCIDENTAL TO EARTH EXCAVATION (SPECIAL). SPECIAL CARE SHALL BE TAKEN BY THE CONTRACTOR NOT TO DAMAGE THESE ITEMS. ANY DAMAGED ITEMS SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

WHERE THE PROPOSED CONSTRUCTION MEETS AN EXISTING BITUMINOUS OR CONCRETE SURFACE, OR WHERE STATED ON THE PLANS, THE EXISTING SURFACE SHALL BE SAWED. SAW CUTTING SHALL CONSIST OF SAWING EXISTING PAVEMENTS IN A STRAIGHT LINE TO SUCH A DEPTH THAT WHEN THE PAVEMENT, SIDEWALK, OR CURB & GUTTER IS REMOVED, A CLEAN, NEAT EDGE WILL RESULT WITH NO SPALLING OF THE EXISTING PAVEMENT. COST OF SAWING IS TO BE INCLUDED IN THE CONTRACT UNIT PRICE PER UNIT OF EARTH EXCAVATION (SPECIAL).

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REV.	DATE	BY	REMARKS	DRAWN	JO DAVIESS COUNTY BRIDGE REPLACEMENT EAST BETHEL ROAD OVER LITTLE RUSH CREEK 2011		WILLETT, HOFMANN & ASSOCIATES, INC. CONSULTING ENGINEERS <small>Land Surveying - Transportation - Structural Environmental - Architecture</small>		GENERAL NOTES INDEX OF QUANTITIES		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				M.P.O.							10-00134-00-BR	JO DAVIESS	34	2
				CHECKED							STA. - STA.			
				D.L.B.										
				APPROVED										
				X.X.X.										
											WHA PROJECT: 1183D10	DATE: 1/2011		

TYPICALS & PAVEMENT DESIGN

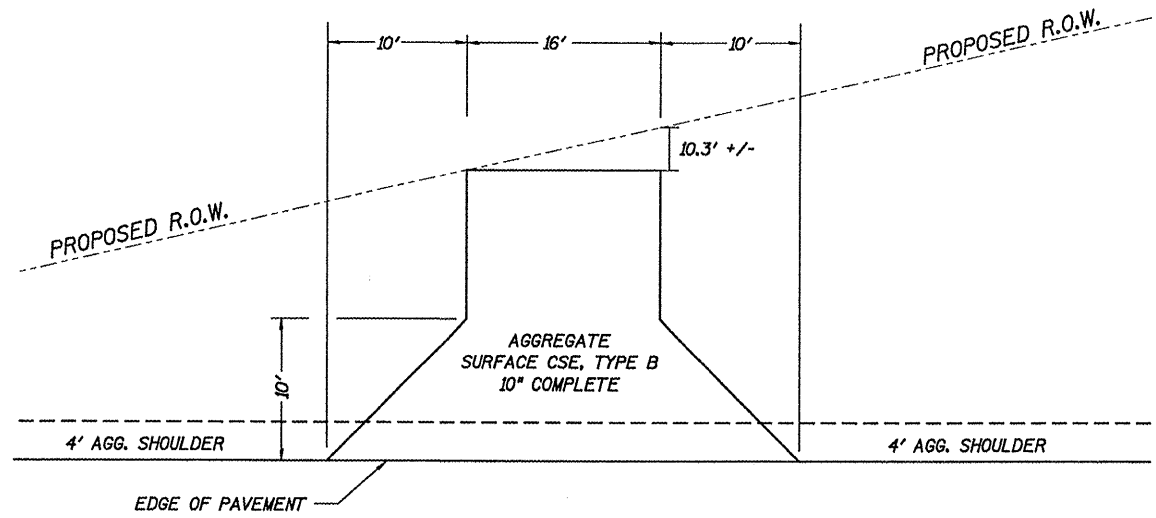
PAVEMENT STRUCTURAL DESIGN EAST BETHEL ROAD STA. 18+00 - 23+30

STRUCTURAL DESIGN TRAFFIC (S.D.T.) = YEAR 2011	
CLASS IV ROAD	P.V. 267
80,000* TRUCK DESIGN	S.U. 5 } 275 ADT
	M.U. 3
E_{PI} : (ASSUMED) 2 ksi	1.5" HOT-MIX ASPHALT SURFACE COURSE, MIX "C" N50
TF = 0.74	1.5" HOT-MIX ASPHALT BINDER COURSE, IL 12.5, N50
HMA MIX TEMP. 78.5° F	4" AGGREGATE BASE COURSE, T-A
HMA E_{AC} = 580 ksi	8" SUB-BASE GRANULAR MATERIAL, T-B
HMA DESIGN STRAIN = 116 microstrain	

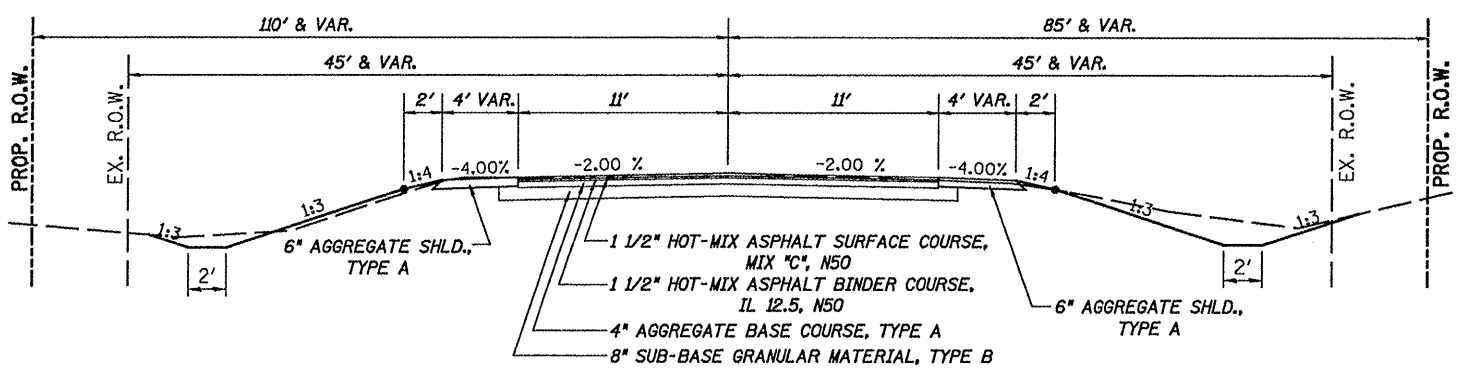
POINT #	STATION	O/S	ELEV	NORTH	EAST
100	14+18	15.8' LT	703.25	2053478.38	2297946.22
103	23+96	15.8' RT	722.45	2052973.96	2298784.55
107	23+01	16.0' RT	715.70	2053019.99	2298701.76
110	22+17	91.1' LT	695.56	2053154.70	2298680.23

PAVEMENT MIXTURE REQUIREMENTS

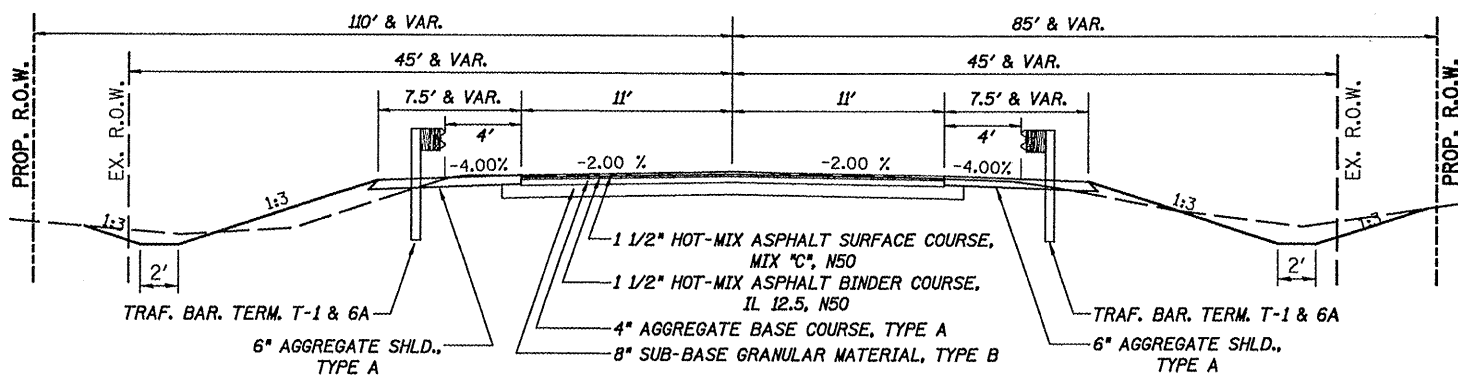
LOCATION:	EAST BETHEL ROAD - STA. 18+25 - 22+25	
MIXTURE USE:	BINDER	SURFACE
PG:	PG 58-22	PG 58-22
DESIGN AIR VOIDS	3.0 @ N50	3.0 @ N50
MIXTURE COMPOSITION (GRADATION MIXTURE)	IL 12.5 OR 9.5	IL 12.5 OR 9.5
FRICTION AGGREGATE	N/A	C
ESAL		0.0



FIELD ENTRANCE LEFT
STA. 18+50



STA. 18+25 - 18+74
STA. 21+56 - 22+25



STA. 18+74 - 19+26.23
STA. 21+03.77 - 21+56

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REV.	DATE	BY	REMARKS	DRAWN	JO DAVIESS COUNTY BRIDGE REPLACEMENT EAST BETHEL ROAD OVER LITTLE RUSH CREEK 2011		ROADWAY TYPICALS ENTRANCE TYPICAL PAVEMENT INFORMATION	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				M.P.O.				10-00134-00-BR	JO DAVIESS	34	3
				CHECKED							
				D.L.B.							
				APPROVED							
				X.X.X.							
WHA PROJECT: 1183D10								DATE: 1/2011			

ROADWAY SCHEDULES

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION * X2020410 (CY)	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE 25%	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
BETHEL ROAD STA. 18+00.00 to 23+25.00	3,156	2,367	1,909	459
TOTALS	3,156	2,367	1,909	459

EROSION CONTROL BLANKET		
STATION	SQ YD	REMARKS
BETHEL ROAD		
LT 18+00 - 18+40	138	
RT 18+00 - 19+58	695	
LT 18+60 - 19+64	402	
RT 20+12 - 22+37	1,032	
LT 20+33 - 23+29	745	
LT 20+71 - 23+93	1,948	
PROJECT TOTAL	4,960	

SUB-BASE GRANULAR MATERIAL, TYPE B		
STATION	TON	REMARKS
BETHEL ROAD		
18+25 - 19+41.23	147	8" COMPLETE
20+88.77 - 22+25	174	8" COMPLETE
PROJECT TOTAL	321	

HOT-MIX ASPHALT SURFACE COURSE, MIX "C" N50		
STATION	TON	REMARKS
BETHEL ROAD		
18+25 - 19+26.23	21	1 1/2"
21+03.77 - 22+25	26	1 1/2"
CALCULATIONS BASED ON 115 LBS / SY / INCH		
PROJECT TOTAL	47	

TREE REMOVAL (6 TO 15 UNITS DIAMETER)		
STATION	UNIT	REMARKS
BETHEL ROAD		
LT 18+84	15	
LT 19+35	8	
RT 20+45	10	
RT 20+63	15	
RT 20+72	12	
RT 21+88	15	
RT 21+93	12	
RT 21+95	15	
RT 21+96	6	
RT 21+98	12	
RT 22+07	15	
PROJECT TOTAL	135	

TEMPORARY DITCH CHECKS		
STATION	FOOT	REMARKS
BETHEL ROAD		
RT 18+00	6	
LT 18+31	6	
RT 18+78	6	
LT 19+16	6	
RT 19+58	6	
LT 19+63	6	
RT 22+27	30	
LT 23+92	15	
PROJECT TOTAL	81	

AGGREGATE BASE COURSE, TYPE A		
STATION	TON	REMARKS
BETHEL ROAD		
18+25 - 19+41.23	66	4"
20+88.77 - 22+25	80	4"
PROJECT TOTAL	146	

BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)		
STATION	SQ YD	REMARKS
BETHEL ROAD		
19+26.23 - 19+41.23	50	
20+88.77 - 21+03.77	50	
PROJECT TOTAL	100	

TREE REMOVAL (OVER 15 UNITS DIAMETER)		
STATION	UNIT	REMARKS
BETHEL ROAD		
RT 21+34	18	
RT 21+78	18	
RT 21+80	24	
PROJECT TOTAL	60	

PERIMETER EROSION BARRIER		
STATION	FOOT	REMARKS
BETHEL ROAD		
LT 18+00 - 18+40	47	
RT 18+00 - 19+40	144	
RT 19+40	97	TEMPORARY DRAIN. EASEMENT
RT 19+41 - 19+77	37	TEMPORARY DRAIN. EASEMENT
RT 20+14 - 23+40	25	TEMPORARY DRAIN. EASEMENT
RT 20+40	90	TEMPORARY DRAIN. EASEMENT
LT 18+60 - 20+10	158	
RT 20+40 - 22+37	198	
LT 20+33 - 23+29	301	
LT 23+36 - 23+92	67	
PROJECT TOTAL	1,164	

AGGREGATE SURFACE COURSE, TYPE B		
STATION	TON	REMARKS
BETHEL ROAD		
FEL 18+50	68	10"
PROJECT TOTAL	68	

AGGREGATE SHOULDERS, TYPE A		
STATION	TON	REMARKS
BETHEL ROAD		
LT 18+25 - 18+35	1	6" COMPLETE
RT 18+25 - 19+68.59	31	6" COMPLETE
LT 18+60 - 19+73.88	24	6" COMPLETE
RT 20+56.13 - 22+37.00	32	6" COMPLETE
LT 20+61.41 - 22+25.00	34	6" COMPLETE
PROJECT TOTAL	122	

TREE REMOVAL, ACRES		
STATION	ACRE	REMARKS
BETHEL ROAD		
LT 20+37 - 23+25	0.59	
PROJECT TOTAL	0.59	

STONE RIPRAP, CLASS A4		
STATION	SQ YD	REMARKS
BETHEL ROAD		
RT 20+66.13 - 22+25.00	289	
LT 20+71.42 - 23+30.95	384	
PROJECT TOTAL	673	

BITUMINOUS MATERIALS (PRIME COAT)		
STATION	GALLON	REMARKS
BETHEL ROAD		
18+25 - 19+41.23	99	1 APPL @ .4 GAL/SY ON AGG
20+88.77 - 22+25	121	1 APPL @ .4 GAL/SY ON AGG
18+25 - 19+41.23	50	2 APPL @ .1 GAL/SY ON BIT
20+88.77 - 22+25	61	2 APPL @ .1 GAL/SY ON BIT
PROJECT TOTAL	331	

PIPE CULVERTS, CLASS D, TYPE 1 15"		
STATION	FOOT	REMARKS
BETHEL ROAD		
FEL 18+50	32	
PROJECT TOTAL	32	

REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL		
STATION	CU YD	REMARKS
BETHEL ROAD		
CONTINGENCY ITEM	100	AS DIRECTED BY ENGINEER
PROJECT TOTAL	100	

FILTER FABRIC		
STATION	SQ YD	REMARKS
BETHEL ROAD		
STONE RIPRAP, CLASS A6	2,239	STRUCTURAL QUANTITY
RT 20+66.13 - 22+25.00	289	
LT 20+71.42 - 23+30.95	384	
PROJECT TOTAL	2,912	

AGGREGATE (PRIME COAT)		
STATION	TON	REMARKS
BETHEL ROAD		
18+25 - 19+41.23	1	2 APPL @ 2 LBS/SY
20+88.77 - 22+25	1	2 APPL @ 2 LBS/SY
PROJECT TOTAL	2	

STEEL END SECTIONS 15"		
STATION	EACH	REMARKS
BETHEL ROAD		
FEL 18+50	2	
PROJECT TOTAL	2	

HOT-MIX ASPHALT BINDER COURSE, IL-12.5, N50		
STATION	TON	REMARKS
BETHEL ROAD		
18+25 - 19+26.23	21	1 1/2"
21+03.77 - 22+25	26	1 1/2"
CALCULATIONS BASED ON 115 LBS / SY / INCH		
PROJECT TOTAL	47	

FILE = S:\PROJECTS\2010\1183_JoDavievs County_Bethel_Road_Design\1183_Typic\c06.dgn

REV.	DATE	BY	REMARKS	DRAWN
				M.P.O.
				CHECKED
				D.L.B.
				APPROVED
				X.X.X.

**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2011**

WILLET, HOFMANN & ASSOCIATES, INC.
CONSULTING ENGINEERS
Land Surveying - Transportation - Structural
Environmental - Architecture
800 East Second Street Dixon, Illinois 61021
Phone 815.284.3381 Fax 815.284.3386
Design Firm #194-000918
www.willett-hofmann.com

ROADWAY SCHEDULES

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	4
STA.	- STA.		
WHA PROJECT: 1183010		DATE: 1/2011	

ROADWAY SCHEDULES

TRAFFIC BARRIER TERMINAL, TYPE 6A		
STATION	EACH	REMARKS
BETHEL ROAD		
RT 18+74.31	1	
LT 18+79.60	1	
RT 20+99.92	1	
LT 21+04.21	1	
PROJECT TOTAL	4	

TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT		
STATION	EACH	REMARKS
BETHEL ROAD		
RT 19+25.79	1	
LT 19+31.08	1	
RT 20+55.77	1	
LT 20+61.06	1	
PROJECT TOTAL	4	

FURNISHING AND ERECTING RIGHT OF WAY MARKERS		
STATION	EACH	REMARKS
BETHEL ROAD		
45.00' LT STA. 18+00.00	1	
45.00' RT STA. 18+00.00	1	
110.00' LT STA. 19+00.00	1	
85.00' RT STA. 19+68.00	1	
85.00' RT STA. 22+37.00	1	
110.00' LT STA. 23+00.00	1	
PROJECT TOTAL	6	

PERMANENT SURVEY MARKERS, TYPE I		
STATION	EACH	REMARKS
BETHEL ROAD		
STA. 20+15	1	AS DIRECTED BY THE ENGINEER
PROJECT TOTAL	1	

MOBILIZATION		
STATION	L SUM	REMARKS
BETHEL ROAD		
ENTIRE PROJECT	1	
PROJECT TOTAL	1	

GUARDRAIL MARKERS, TYPE A		
STATION	EACH	REMARKS
BETHEL ROAD		
RT 18+74.31	4	
LT 18+79.60	4	
RT 20+99.92	4	
LT 21+04.21	4	
PROJECT TOTAL	16	

TERMINAL MARKER - DIRECT APPLIED		
STATION	EACH	REMARKS
BETHEL ROAD		
RT 18+74.31	1	
LT 18+79.60	1	
RT 20+99.92	1	
LT 21+04.21	1	
PROJECT TOTAL	4	

SEEDING, CLASS 2 (SPECIAL)		
STATION	ACRE	REMARKS
BETHEL ROAD		
LT 18+00 - 20+17	0.27	
RT 18+00 - 19+77	0.24	
RT 19+40	0.07	TEMPORARY DRAIN. EASEMENT
RT 20+07	0.06	TEMPORARY DRAIN. EASEMENT
RT 20+06 - 22+37	0.28	
LT 20+35 - 23+29	0.15	
LT 20+71 - 23+93	0.40	
PROJECT TOTAL	1.47	

SEEDING, CLASS 7 (SPECIAL)		
STATION	ACRE	REMARKS
BETHEL ROAD		
LT 18+00 - 20+17	0.27	
RT 18+00 - 19+77	0.24	
RT 19+40	0.07	TEMPORARY DRAIN. EASEMENT
RT 20+07	0.06	TEMPORARY DRAIN. EASEMENT
RT 20+06 - 22+37	0.28	
LT 20+35 - 23+29	0.15	
LT 20+71 - 23+93	0.40	
PROJECT TOTAL	1.47	

WOVEN WIRE FENCE (SPECIAL)		
STATION	FOOT	REMARKS
BETHEL ROAD		
LT 18+00 - 18+40	48	
RT 18+00 - 22+37	442	
LT 18+60 - 20+10	158	
LT 20+33 - 21+85	152	
PROJECT TOTAL	800	

TRAFFIC CONTROL AND PROTECTION, (SPECIAL)		
STATION	L SUM	REMARKS
BETHEL ROAD		
ENTIRE PROJECT	1	
PROJECT TOTAL	1	

BREAKER-RUN CRUSHED STONE		
STATION	TON	REMARKS
BETHEL ROAD		
CONTINGENCY ITEM	205	AS DIRECTED BY ENGINEER
PROJECT TOTAL	205	

CONSTRUCTION LAYOUT		
STATION	L SUM	REMARKS
BETHEL ROAD		
ENTIRE PROJECT	1	
PROJECT TOTAL	1	

FENCE REMOVAL		
STATION	FOOT	REMARKS
BETHEL ROAD		
RT 18+00 - 19+69	180	
LT 18+00 - 19+63	166	
RT 20+31 - 22+36	217	
LT 20+42 - 22+01	109	
LT 21+88 - 21+96	33	
PROJECT TOTAL	705	

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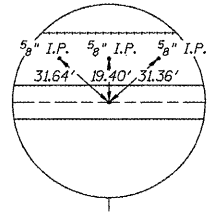
REV.	DATE	BY	REMARKS	DRAWN
				M.P.O.
				CHECKED
				D.L.B.
				APPROVED
				X.X.X.

**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2011**

WILLET, HOFMANN & ASSOCIATES, INC.
CONSULTING ENGINEERS
Land Surveying - Transportation - Structural
Environmental - Architecture
800 East Second Street Dixon, Illinois 61021
Phone 815.284.3381 Fax 815.284.3385
Design Firm #184-000918
www.willett-hofmann.com

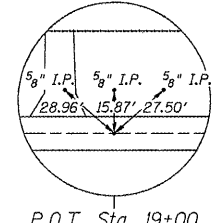
ROADWAY SCHEDULES

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	5
STA. - STA.			
WHA PROJECT: 1183D10	DATE: 1/2011		

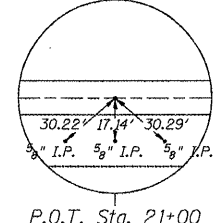


P.O.T. Sta. 15+00
PK Nail

Benchmark: Railroad spike in 3rd power pole
W. of exist. bridge. ±36.6' Lt. of
Sta. 14+10, Elev. 697.59

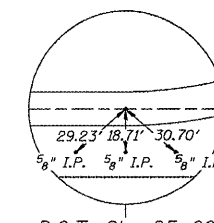


P.O.T. Sta. 19+00
PK Nail



P.O.T. Sta. 21+00
PK Nail

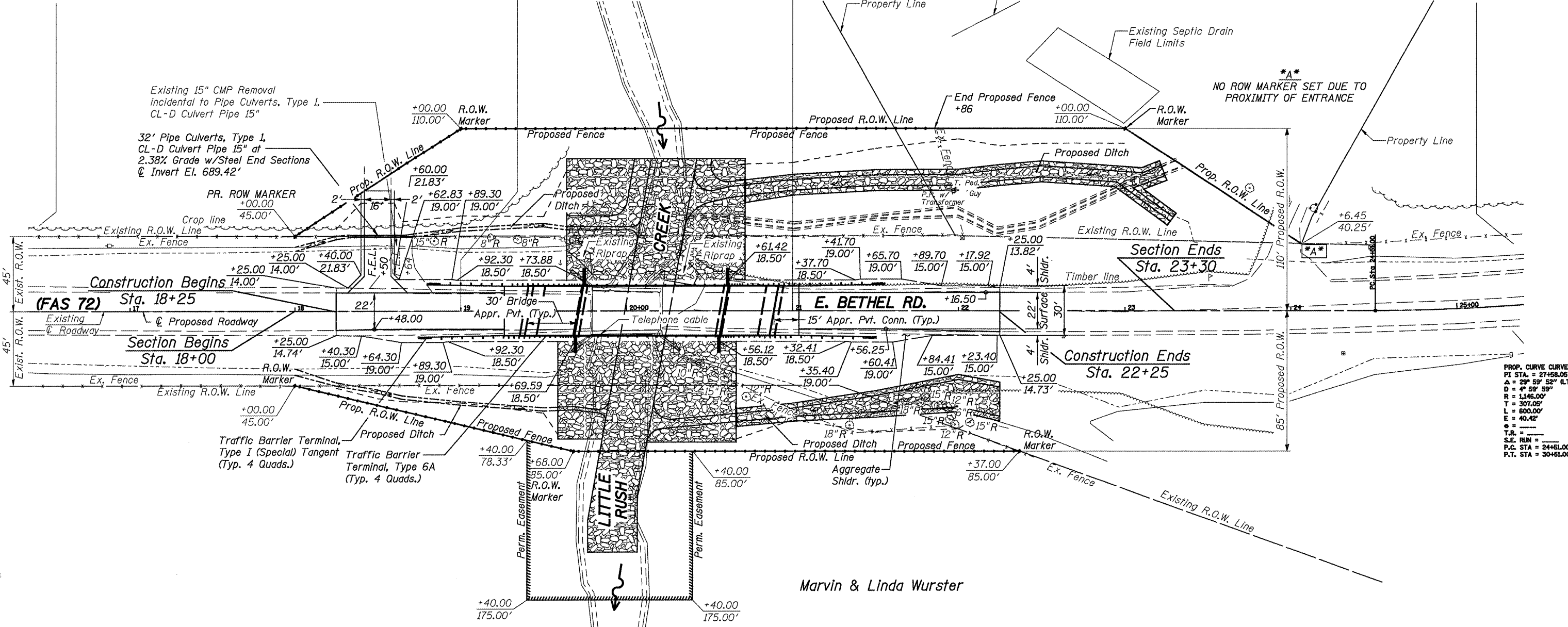
Benchmark: Railroad spike in 2nd power pole
W. of exist. bridge. ±38.4' Lt. of
Sta. 16+88, Elev. 695.31



P.O.T. Sta. 25+00
PK Nail

Marvin & Linda Wurster

Griffith & Kathleen Lippert

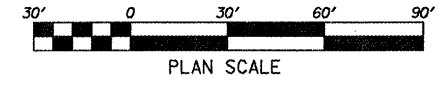


PROP. CURVE CURVE-1
PI STA. = 27+58.05
Δ = 29° 59' 52" (LT)
D = 4° 59' 59"
R = 1,146.00'
T = 307.05'
L = 600.00'
E = 40.42'
C = 100'
T.R. = 100'
S.E. RUN = 100'
P.C. STA = 24+61.00
P.T. STA = 30+61.00



Existing Structure: S.N. 043-3009
A single span (1 @ 42'-0") concrete T-beam bridge
on closed abutments @ Sta. 20+00. No Skew

Proposed Structure: S.N. 043-3277
A single span (1 @ 85'-0") precast prestressed
concrete I-beam structure on spill-thru abutments
at Sta. 20+15, Skewed 10° Lt. ahead.



REV.	DATE	BY	REMARKS

**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2011**

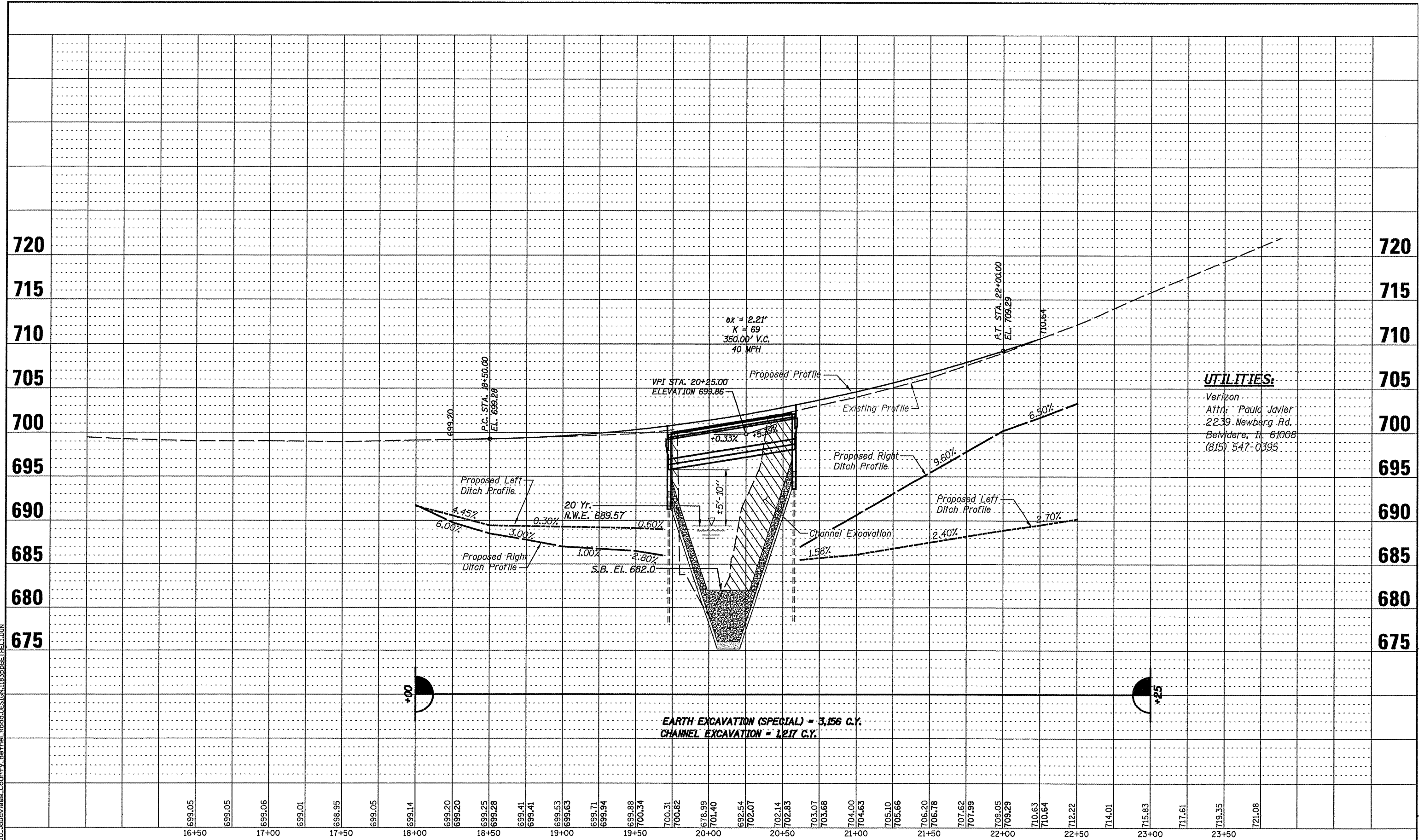
WILLET, HOFMANN & ASSOCIATES, INC.
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Phone 815.294.3381 Fax 815.294.3385
Design Firm #164-000918
www.wilsethofmann.com

**EAST BETHEL ROAD
PROPOSED PLAN VIEW
STA. 18+00.00 - STA. 23+30.00**

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	6
STA. 18+00.00 - STA. 23+30.00			
WHA PROJECT: 1183D10		DATE: 1/2011	

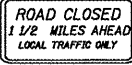
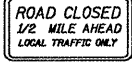



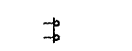
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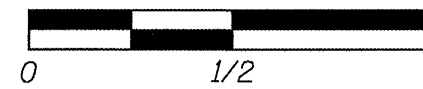
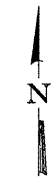
REV.	DATE	BY	REMARKS	DRAWN	M.P.O.	JO DAVIESS COUNTY BRIDGE REPLACEMENT EAST BETHEL ROAD OVER LITTLE RUSH CREEK 2011	WILLET, HOFMANN & ASSOCIATES, INC. CONSULTING ENGINEERS Land Surveying - Transportation - Structural Environmental - Architecture 809 East Second Street Dixon, Illinois 61021 Phone 815.294.3381 Fax 815.294.3385 Design Firm #184-000818 www.willett-hofmann.com	EAST BETHEL ROAD		SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				CHECKED	D.L.B.			PROFILE VIEW		10-00134-00-BR	JO DAVIESS	34	7
				APPROVED	X.X.X.			STA. 18+00.00 - STA. 23+30.00		WHA PROJECT: 1183D10		DATE: 1/2011	
								STA. 18+00.00 - STA. 23+30.00					

SIGN LEGEND

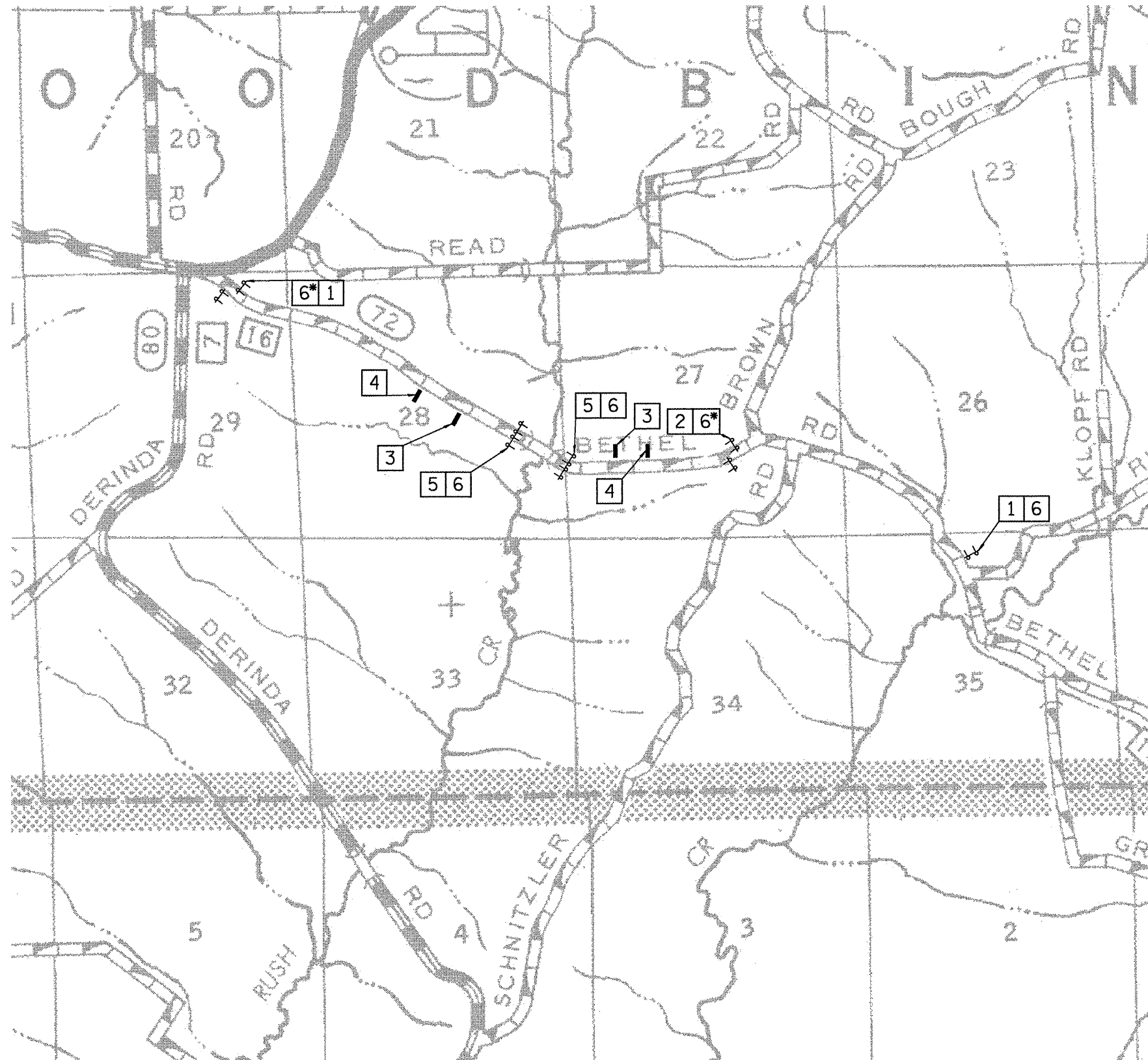
- 1  R11-3a, 60" X 30"
(2 REQ'D)
- 2  R11-3a, 60" X 30"
(1 REQ'D)
- 3  W20-3, 48" X 48" **
(2 REQ'D)
- 4  W20-3, 48" X 48" **
(2 REQ'D)
- 5  R11-2, 48" X 30"
(2 REQ'D)
- 6  TYPE III BARRICADES WITH TWO
FLASHING LIGHTS EACH.
HIGHWAY STANDARD 701901
(8 REQ'D)

NOTES:

- * Staggered barricades to allow local traffic access to their properties.
 - ** See the applicable standards for use of flags and flashing lights.
- Spacing of all proposed signs shall be in accordance with B.L.R. 22.



GRAPHIC SCALE IN MILES



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REV.	DATE	BY	REMARKS

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APPROVED	X.X.X.

JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2011

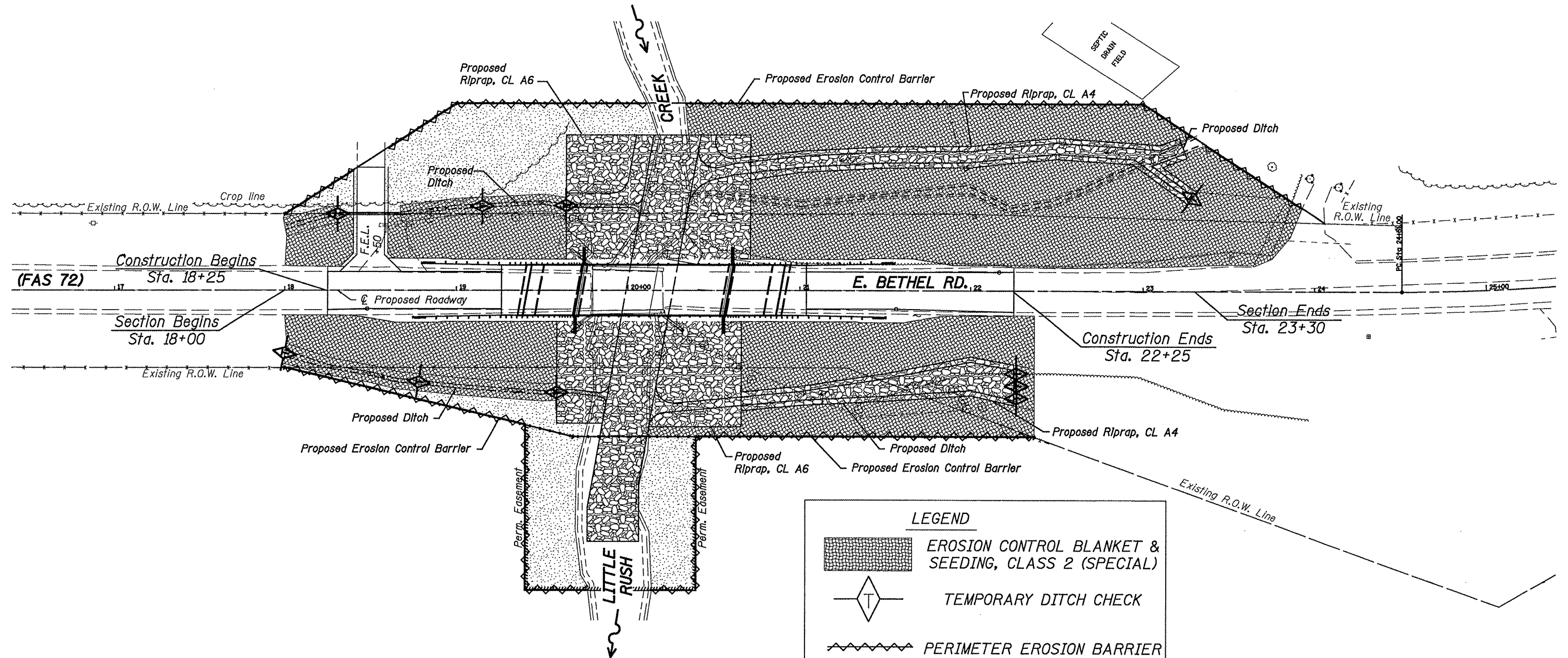
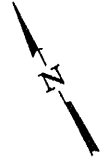


**WILLETT,
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 www.willett-hofmann.com

EAST BETHEL ROAD
TRAFFIC CONTROL &
PROTECTION MAP

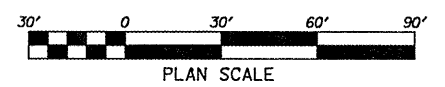
STA. 18+00.00 - STA. 23+30.00

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	8
STA. 18+00.00 - STA. 23+30.00			
WHA PROJECT: 1183D10		DATE: 1/2011	



LEGEND

- EROSION CONTROL BLANKET & SEEDING, CLASS 2 (SPECIAL)
- TEMPORARY DITCH CHECK
- PERIMETER EROSION BARRIER
- SEEDING, CLASS 2 (SPECIAL)
- RIPRAP, CLASS A4 & A6



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REV.	DATE	BY	REMARKS

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APPROVED	X.X.X.

**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2011**

WILLET, HOFMANN & ASSOCIATES, INC.
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Phone 815.284.3381 Fax 815.284.3385
Design Firm #184-00018
www.willett-hofmann.com

**EAST BETHEL ROAD
STORM WATER POLLUTION
PROTECTION PLAN (SWPPP)**

STA. 18+00.00 - STA. 23+30.00

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	9
STA. 18+00.00 - STA. 23+30.00			
WHA PROJECT: 1183010		DATE: 1/2011	

STORM WATER POLLUTION PREVENTION PLAN EROSION CONTROL PLAN

THE FOLLOWING PLAN WAS ESTABLISHED AND INCLUDED IN THESE PLANS TO DIRECT THE CONTRACTOR IN THE PLACEMENT OF TEMPORARY EROSION CONTROL SYSTEMS AND TO PROVIDE A STORM WATER POLLUTION PREVENTION PLAN FOR COMPLIANCE UNDER NPDES.

THE PURPOSE OF THIS PLAN IS TO MINIMIZE SILTATION WITHIN THE CONSTRUCTION ZONE AND TO ELIMINATE SEDIMENTS FROM ENTERING AND LEAVING THE CONSTRUCTION ZONE BY UTILIZING PROPER TEMPORARY EROSION CONTROL SYSTEMS AND PROVIDING GROUND COVER WITHIN A REASONABLE AMOUNT OF TIME.

CERTAIN ITEMS, AS SHOWN IN THIS PLAN AND REFERENCED BY THE LEGEND, SHALL BE PLACED BY THE CONTRACTOR AT THE BEGINNING OF CONSTRUCTION. OTHER ITEMS SHALL BE PLACED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER ON A CASE BY CASE SITUATION RESULTING FROM THE CONTRACTOR'S SEQUENCE OF ACTIVITIES, TIME OF YEAR, AND EXPECTED WEATHER CONDITIONS.

THE CONTRACTOR SHALL PLACE PERMANENT EROSION CONTROL SYSTEMS AND SEEDING WITHIN A REASONABLE AMOUNT OF TIME; THEREFORE, REDUCING THE AMOUNT OF AREA BEING OPEN TO THE POSSIBILITY OF EROSION AND REDUCING THE AMOUNT OF TEMPORARY SEEDING. THE RESIDENT ENGINEER WILL DETERMINE IF TEMPORARY EROSION CONTROL SYSTEMS SHOWN IN THE PLAN CAN BE DELETED, THE PROPER METHOD OF INSTALLATION, AND IF ANY ADDITIONAL TEMPORARY EROSION CONTROL SYSTEMS SHALL BE ADDED WHICH ARE NOT INCLUDED IN THE PLANS. THE CONTRACTOR SHALL PERFORM ALL WORK AS DIRECTED BY THE ENGINEER AND AS SHOWN IN STANDARD 280001 OF THE PLANS.

SITE DESCRIPTION

DESCRIPTION OF CONSTRUCTION ACTIVITY: TOTAL RECONSTRUCTION OF A STRUCTURE ON EAST BETHEL ROAD CROSSING LITTLE RUSH CREEK.

THIS PROJECT CONSISTS OF REMOVAL AND REPLACEMENT OF THE EXISTING STRUCTURE, EARTH EXCAVATION, PAVEMENT REMOVAL, GUARDRAIL, AGGREGATE ENTRANCE, VARIOUS PAVEMENT ITEMS AND OTHER MISCELLANEOUS ITEMS OF CONSTRUCTION.

DESCRIPTION OF INTENDED SEQUENCE OF ACTIVITIES:

THE SEQUENCE OF EVENTS ARE AS FOLLOW: STRUCTURE/PAVEMENT REMOVAL, EARTH EXCAVATION, STUCTURE INSTALLATION, PIPE CULVERT INSTALLATION, INSTALLATION OF INLET AND PIPE PROTECTION, AGGREGATE BASE, BITUMINOUS SURFACE AND RELATED APPURTENANCES, PLACEMENT OF PERMANENT EROSION CONTROL INCLUDING SEEDING

TOTAL CONSTRUCTION SITE (CONSTRUCTION LIMIT TO CONSTRUCTION LIMIT) 2.3 ACRES
PROPOSED WORK PERMIT AND PERMANENT EASEMENT AREA 2.0 ACRES
SEED AREA 1.5 ACRES

SUPPORTING REPORTS AND PLANS

THE FOLLOWING ASSISTED IN DEVELOPING THE EROSION CONTROL PLAN AS REFERENCED DOCUMENTS:

USGS DRAINAGE MAPS, PROJECT PLAN DOCUMENTS

DRAINAGE TRIBUTARIES RECEIVING WATER FROM CONSTRUCTION SITE:
MISSISSIPPI RIVER

EROSION CONTROLS AND SEDIMENT CONTROL PROCEDURES
STABILIZATION PRACTICES AT THE BEGINNING OF CONSTRUCTION:
NA

STABILIZATION PRACTICES DURING CONSTRUCTION:

- (a) WITHIN THE CONSTRUCTION LIMITS, AREAS WHICH MAY BE SUSCEPTIBLE TO EROSION AS DETERMINED BY THE ENGINEER SHALL REMAIN UNDISTURBED UNTIL FULL SCALE CONSTRUCTION IS UNDERWAY TO PREVENT UNNECESSARY SOIL EROSION.
- (b) EARTH STOCKPILES SHALL BE TEMPORARILY SEEDED IT THEY ARE TO REMAIN UNUSED FOR MORE THAN FOURTEEN DAYS.
- (c) AS CONSTRUCTION PROCEEDS, THE CONTRACTOR SHALL INSTITUTE THE FOLLOWING AS DIRECTED BY THE ENGINEER:
 - I. PLACE TEMPORARY EROSION CONTROL FACILITIES AT LOCATIONS SHOWN ON THE PLANS.
 - II. TEMPORARILY SEED ERODABLE BARE EARTH ON A WEEKLY BASIS TO MINIMIZE THE AMOUNT OF ERODABLE SURFACE AREA WITHIN THE CONTRACT LIMITS.
- (d) EXCAVATED AREAS AND EMBANKMENT SHALL BE PERMANENTLY SEEDED IMMEDIATELY AFTER FINAL GRADING. IF NOT, THEY SHALL BE TEMPORARILY SEEDED IF NO CONSTRUCTION ACTIVITY IN THE AREA IS PLANNED FOR SEVEN DAYS.
- (e) CONSTRUCTION EQUIPMENT SHALL BE STORED AND FUELED ONLY AT DESIGNED LOCATIONS. ALL NECESSARY MEASURES SHALL BE TAKEN TO CONTAIN ANY FUEL OR OTHER POLLUTANT IN ACCORDANCE WITH EPA WATER QUALITY REGULATIONS. LEAKING EQUIPMENT OR SUPPLIES SHALL BE IMMEDIATELY REPAIRED OR REMOVED FROM THE SITE.
- (f) THE RESIDENT ENGINEER SHALL INSPECT THE PROJECT DAILY DURING CONSTRUCTION ACTIVITIES. INSPECTION SHALL ALSO BE DONE WEEKLY AND AFTER RAINS OF 1/2 INCH OR GREATER OR EQUIVALENT SNOWFALL AND DURING THE WINTER SHUTDOWN PERIOD. THE PROJECT SHALL ADDITIONALLY BE INSPECTED BY THE CONSTRUCTION FIELD ENGINEER ON A BI-WEEKLY BASIS TO DETERMINE THAT EROSION CONTROL EFFORTS ARE IN PLACE AND EFFECTIVE AND IF OTHER EROSION CONTROL WORK IS NECESSARY.
- (g) SEDIMENT COLLECTED DURING CONSTRUCTION OF THE VARIOUS TEMPORARY EROSION CONTROL SYSTEMS SHALL BE DISPOSED OF ON THE SITE ON A REGULAR BASIS AS DIRECTED BY THE ENGINEER. THE COST OF THIS MAINTENANCE SHALL BE INCLUDED IN THE UNIT BID PRICE FOR EARTH EXCAVATION (SPECIAL).
- (h) THE TEMPORARY EROSION CONTROL SYSTEM SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AFTER USE IS NO LONGER NEEDED OR NO LONGER FUNCTIONING. THE COST OF THIS REMOVAL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR VARIOUS TEMPORARY EROSION CONTROL PAY ITEMS.

MAINTENANCE AFTER FINAL GRADING

TEMPORARY EROSION CONTROL SYSTEMS SHALL BE LEFT IN PLACE WITH PROPER MAINTENANCE UNTIL PERMANENT EROSION CONTROL IS IN PLACE AND WORKING PROPERLY AND ALL PROPOSED TURF AREAS SEEDED AND ESTABLISHED WITH THE PROPER STAND.

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REV.	DATE	BY	REMARKS	DRAWN	M.P.O.	CHECKED	D.L.B.	APPROVED	X.X.X.

**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2011**



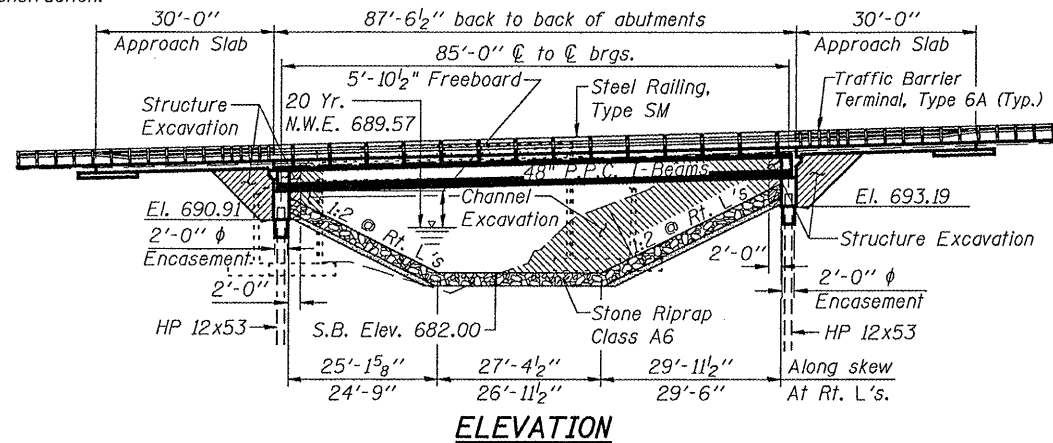
**EAST BETHEL ROAD
STORM WATER POLLUTION
PROTECTION PLAN (SWPPP)**

STA. 18+00.00 - STA. 23+30.00

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	10
STA. 18+00.00 - STA. 23+30.00			
WHA PROJECT: 1183D10		DATE: 1/2011	

EXISTING STRUCTURE: S.N. 043-3009
Originally built in 1958 as F.A.S. Route 72, Section 71B. The existing structure is a single span (1 @ 42'-0") concrete T-beam bridge on closed abutments. 43'-0" back to back of abutments and 28'-4" out to out of deck. Superstructure has been removed by others and the substructure remains. Road shall be closed to traffic during construction.

No salvage.



BENCH MARK: Railroad spike in 2nd power pole west of existing bridge, ±38.4' Lt. of Sta. 16+88, Elev. 695.31

INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 Riprap & Pile Layout
- 3 Top of Slab Elevations
- 4-5 Top of West & East Bridge Approach Slab Elevations
- 6 Framing Plan
- 7 Superstructure Details
- 8 Integral Abutment Diaphragm Details
- 9 Bridge Approach Slab Details
- 10 48" PPC I-Beam
- 11 48" PPC I-Beam Details
- 12 West Abutment Details
- 13 East Abutment Details
- 14 Steel Railing, Type SM Details
- 15 Bar Splicer Assembly and Mechanical Splicer Details
- 16 HP Pile Details
- 17 Boring Logs

BILL OF MATERIAL - BRIDGE

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu Yd	---	1,217	1,217
Stone Riprap, Class A6	Sq Yd	---	2,239	2,239
Filter Fabric	Sq Yd	---	2,239	2,239
* Removal of Existing Structures	Each	---	---	1
Structure Excavation	Cu Yd	---	335	335
Concrete Structures	Cu Yd	9.4	38.7	48.1
Concrete Superstructure	Cu Yd	191.7	---	191.7
Bridge Deck Grooving	Sq Yd	459	---	459
Concrete Encasement	Cu Yd	---	3.4	3.4
** Protective Coat	Sq Yd	492	---	492
Furnishing And Erecting Precast Prestressed Concrete I-Beams, 48"	Foot	430	---	430
Reinforcement Bars, Epoxy Coated	Pound	40,700	5,430	46,130
Bar Splicers	Each	62	---	62
Steel Railing, Type SM	Foot	175	---	175
Furnishing Steel Piles HP12x53	Foot	---	156	156
Driving Piles	Foot	---	156	156
Test Pile Steel HP12x53	Each	---	2	2
Name Plates	Each	---	1	1
Geocomposite Wall Drain	Sq Yd	---	93	93
* Porous Granular Embankment, Special	Cu Yd	---	192	192
* Pipe Underdrains For Structures 4"	Foot	---	182	182

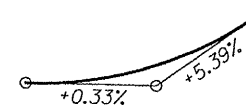
* See Special Provisions.
** Includes Deck & Approach Pavement.

GENERAL NOTES

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.



P.I. Sta. 20+25
P.I. Elev. = 699.86
v.c. = 350'
x = 2.21'
k = 69

VERTICAL CURVE

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications, 5th Ed.

DESIGN STRESSES

FIELD UNITS

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

PRECAST PRESTRESSED UNITS

f'c = 7,000 psi
f'ci = 6,000 psi
fpu = 270,000 psi (1/2" φ Low Relaxation Strands)
fpbt = 201,960 psi (1/2" φ Low Relaxation Strands)

LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.052g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.080g
Soil Site Class = C

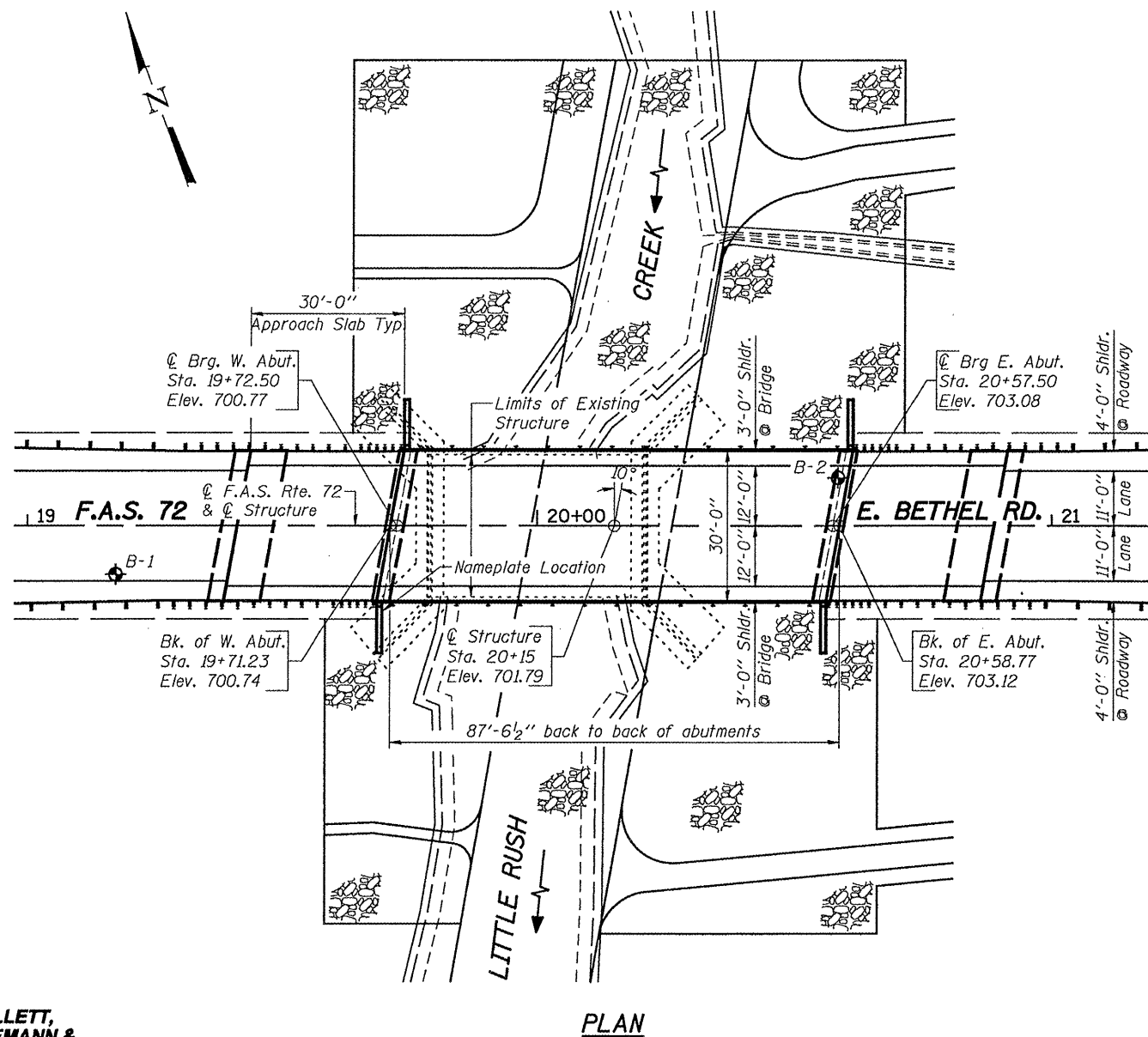
WATERWAY INFORMATION

Drainage Area = 6.63 sq. mi. Low Grade Elev. 699.20 @ Sta. 18+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater E.I.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	1,800	311	318	689.57	0	0	689.49	689.43
Base	100	2,750	353	380	690.60	0.22	0.38	690.82	690.98

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	W. Abut.	E. Abut.
	690.91	693.19



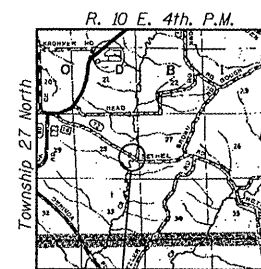
LITTLE RUSH CREEK
BUILT 2011 BY
JODAVIESS COUNTY
SECTION 10-00134-00-BR
FAS RTE 72 STATION 20+15
STR. NO. 043-3277 LOADING HL-93

NAME PLATE LETTERING

Refer To Std. 515001-03



Brian K. Converse
DATE: 2/14/2011
EXPIRES 11/30/12



BRIDGE LOCATION LOCATION SKETCH

"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 Bridge Design Specifications."

FILE NAME = S:\PROJECTS\2010\1183010_JodavieSS_County_Bethel_Road\DESIGN\STRUCT\Drawings\1183010GPE.dgn

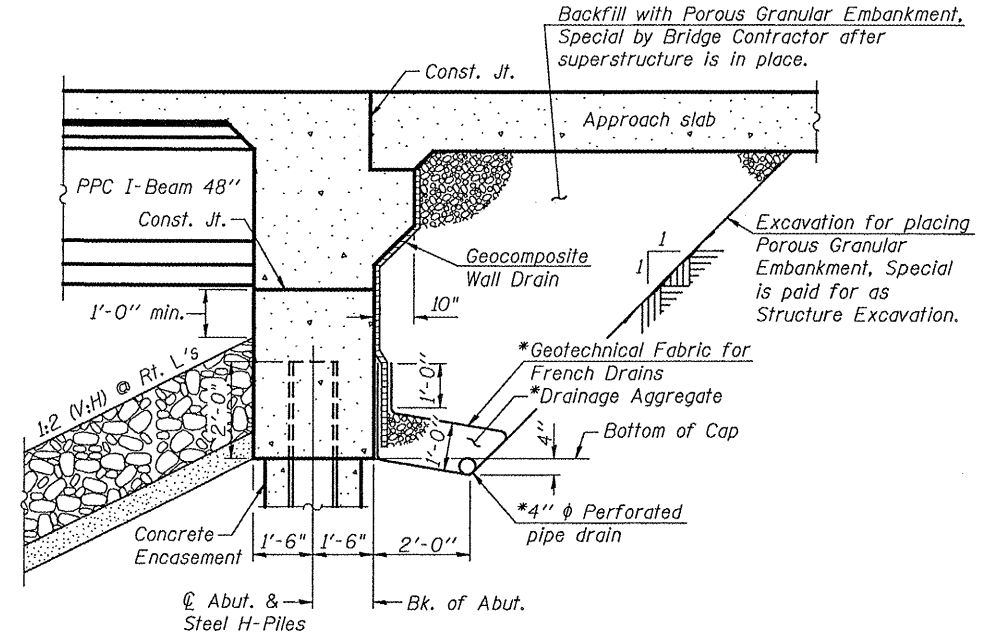
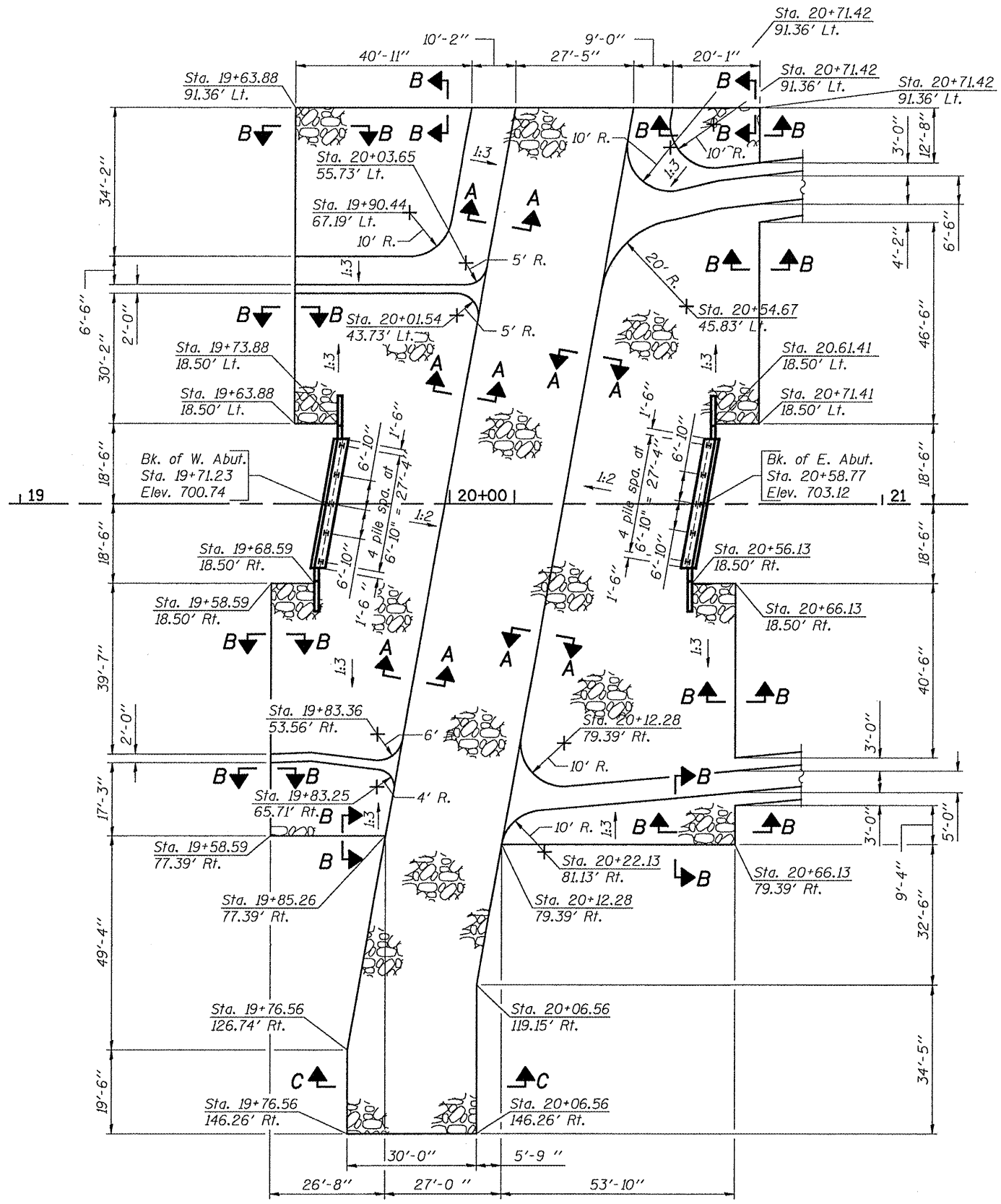
WILLET, HOFMANN & ASSOCIATES, INC.
CONSULTING ENGINEERS
Land Surveying - Transportation - Structural
Environmental - Architecture
809 East Second Street Dixon, Illinois 61021
Phone 815.294.5381 Fax 815.294.2558
Design Firm #184-000918
www.willett-hofmann.com

USER NAME =	DESIGNED - M. C. WAGNER	REVISED -
	CHECKED - B. K. CONVERSE	REVISED -
PLOT SCALE =	DRAWN - F. D. LACHAT	REVISED -
PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20+15

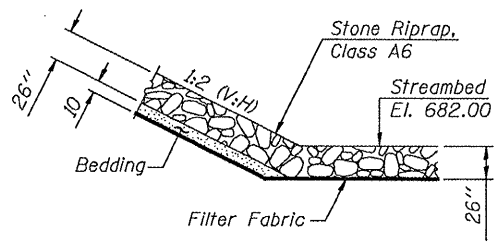
GENERAL PLAN & ELEVATION
STRUCTURE NO. 043-3277
STRUCTURAL SHEET NO. 1 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	11
WHA* 1083010			CONTRACT NO. 85536	
ILLINOIS FED. AID PROJECT ER-0072103				

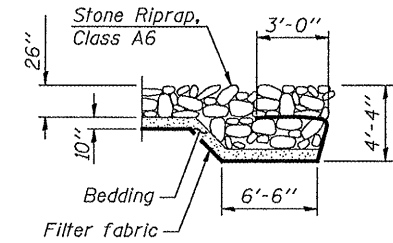


SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

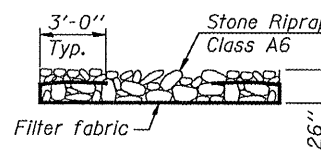
*Included in the cost of Pipe Underdrains for Structures.
Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



SECTION A-A



SECTION B-B



SECTION C-C

BILL OF MATERIAL

Item	Unit	Quantity
Stone Riprap, Class A6	Sq. Yd.	2,239
Filter Fabric	Sq. Yd.	2,239

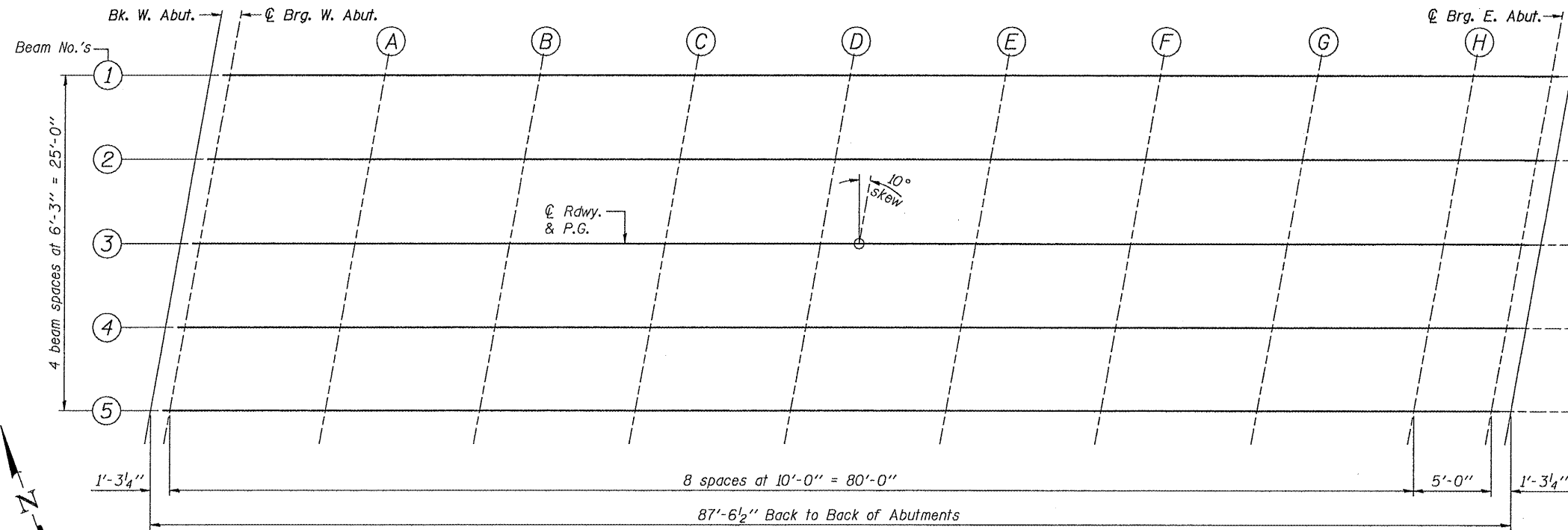
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USER NAME =	DESIGNED - M. C. WAGNER	REVISED -
	CHECKED - B. K. CONVERSE	REVISED -
PLOT SCALE =	DRAWN - F. D. LACHAT	REVISED -
PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

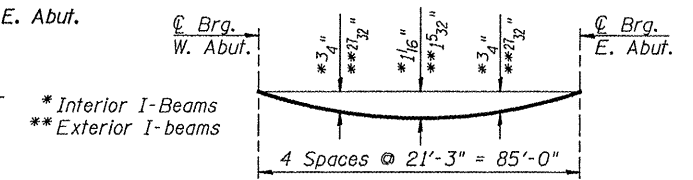
JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

RIPRAP AND PILE LAYOUT
STRUCTURE NO. 043-3277
STRUCTURAL SHEET NO. 2 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	12
	WHA# 1183010	CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-0072003				

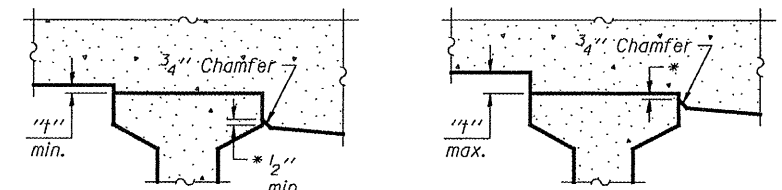


PLAN



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete slab only)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.



At Minimum Fillet At Maximum Fillet
EXTERIOR BEAMS

To determine "t": After all beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

BEAM 1

Location	Station	Offset Lt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	19+73.44	12.50	700.59	700.59
☉ Brg. W. Abut.	19+74.71	12.50	700.62	700.62
A	19+84.71	12.50	700.84	700.88
B	19+94.71	12.50	701.08	701.14
C	20+04.71	12.50	701.33	701.41
D	20+14.71	12.50	701.59	701.69
E	20+24.71	12.50	701.87	701.96
F	20+34.71	12.50	702.16	702.24
G	20+44.71	12.50	702.47	702.52
H	20+54.71	12.50	702.79	702.81
☉ Brg. E. Abut.	20+59.71	12.50	702.96	702.96
Bk. of E. Abut.	20+60.98	12.50	703.00	703.00

BEAM 2

Location	Station	Offset Lt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	19+72.34	6.25	700.67	700.67
☉ Brg. W. Abut.	19+73.61	6.25	700.70	700.70
A	19+83.61	6.25	700.92	700.95
B	19+93.61	6.25	701.15	701.21
C	20+03.61	6.25	701.40	701.48
D	20+13.61	6.25	701.66	701.75
E	20+23.61	6.25	701.94	702.02
F	20+33.61	6.25	702.23	702.30
G	20+43.61	6.25	702.53	702.58
H	20+53.61	6.25	702.85	702.87
☉ Brg. E. Abut.	20+58.61	6.25	703.02	703.02
Bk. of E. Abut.	20+59.88	6.25	703.06	703.06

BEAM 3

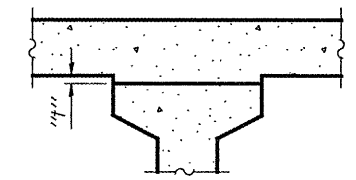
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	19+71.23	0.00	700.74	700.74
☉ Brg. W. Abut.	19+72.51	0.00	700.77	700.77
A	19+82.51	0.00	700.99	701.02
B	19+92.51	0.00	701.22	701.28
C	20+02.51	0.00	701.47	701.55
D	20+12.51	0.00	701.73	701.82
E	20+22.51	0.00	702.00	702.09
F	20+32.51	0.00	702.29	702.36
G	20+42.51	0.00	702.60	702.64
H	20+52.51	0.00	702.91	702.93
☉ Brg. E. Abut.	20+57.50	0.00	703.08	703.08
Bk. of E. Abut.	20+58.77	0.00	703.12	703.12

BEAM 4

Location	Station	Offset Rt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	19+70.13	6.25	700.62	700.62
☉ Brg. W. Abut.	19+71.40	6.25	700.65	700.65
A	19+81.40	6.25	700.87	700.90
B	19+91.40	6.25	701.10	701.16
C	20+01.40	6.25	701.34	701.42
D	20+11.40	6.25	701.60	701.69
E	20+21.40	6.25	701.87	701.96
F	20+31.40	6.25	702.16	702.23
G	20+41.40	6.25	702.46	702.51
H	20+51.40	6.25	702.78	702.80
☉ Brg. E. Abut.	20+56.40	6.25	702.95	702.95
Bk. of E. Abut.	20+57.67	6.25	702.99	702.99

BEAM 5

Location	Station	Offset Rt.	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. of W. Abut.	19+69.03	12.50	700.50	700.50
☉ Brg. W. Abut.	19+70.30	12.50	700.53	700.53
A	19+80.30	12.50	700.74	700.78
B	19+90.30	12.50	700.97	701.04
C	20+00.30	12.50	701.21	701.30
D	20+10.30	12.50	701.47	701.57
E	20+20.30	12.50	701.74	701.84
F	20+30.30	12.50	702.03	702.11
G	20+40.30	12.50	702.33	702.38
H	20+50.30	12.50	702.65	702.66
☉ Brg. E. Abut.	20+55.30	12.50	702.81	702.81
Bk. of E. Abut.	20+56.57	12.50	702.85	702.85



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown above, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS

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USER NAME =	DESIGNED - M. C. WAGNER	REVISED -
	CHECKED - B. K. CONVERSE	REVISED -
PLOT SCALE =	DRAWN - F. D. LACHAT	REVISED -
PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20+15

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 043-3277
STRUCTURAL SHEET NO. 3 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	13
	WHA# 1183010	CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-007210(3)				

LEFT EDGE OF APPROACH PAVEMENT

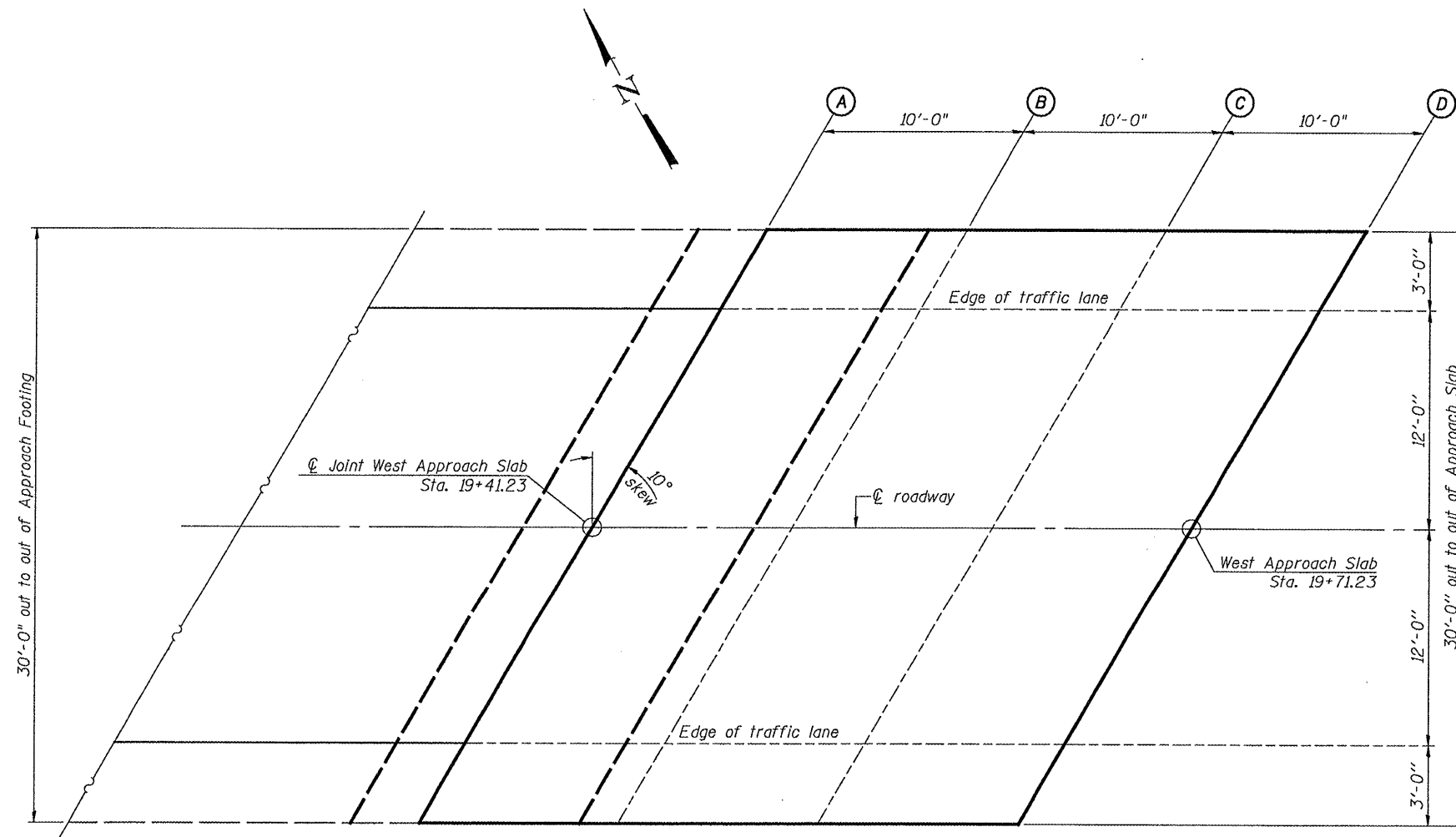
Location	Station	Offset Lt.	Theoretical Grade Elevations
A	19+43.88	15.00'	699.98
B	19+53.88	15.00'	700.16
C	19+63.88	15.00'	700.35
D	19+73.88	15.00'	700.55

LEFT EDGE OF TRAFFIC LANE

Location	Station	Offset Lt.	Theoretical Grade Elevations
A	19+43.35	12.00'	700.03
B	19+53.35	12.00'	700.21
C	19+63.35	12.00'	700.40
D	19+73.35	12.00'	700.60

CENTERLINE

Location	Station	Offset	Theoretical Grade Elevations
A	19+41.23	0.00'	700.19
B	19+51.23	0.00'	700.36
C	19+61.23	0.00'	700.54
D	19+71.23	0.00'	700.74



RIGHT EDGE OF TRAFFIC LANE

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	19+39.12	12.00'	699.96
B	19+49.12	12.00'	700.13
C	19+59.12	12.00'	700.31
D	19+69.12	12.00'	700.51

RIGHT EDGE OF APPROACH PAVEMENT

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	19+38.59	15.00'	699.89
B	19+48.59	15.00'	700.06
C	19+58.59	15.00'	700.24
D	19+68.59	15.00'	700.44

PLAN

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USER NAME =	DESIGNED - M. C. WAGNER	REVISED -
	CHECKED - B. K. CONVERSE	REVISED -
PLOT SCALE =	DRAWN - F. D. LACHAT	REVISED -
PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20+15

TOP OF WEST BRIDGE APPROACH SLAB ELEVATIONS
STRUCTURE NO. 043-3277

STRUCTURAL SHEET NO. 4 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	14
WHA# 1183D10		CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-0072(103)				

LEFT EDGE OF APPROACH PAVEMENT

Location	Station	Offset Lt.	Theoretical Grade Elevations
A	20+61.42	15.00'	702.96
B	20+71.42	15.00'	703.31
C	20+81.42	15.00'	703.67
D	20+91.42	15.00'	704.04

LEFT EDGE OF TRAFFIC LANE

Location	Station	Offset Lt.	Theoretical Grade Elevations
A	20+60.89	12.00'	703.00
B	20+70.89	12.00'	703.35
C	20+80.89	12.00'	703.71
D	20+90.89	12.00'	704.08

CENTERLINE

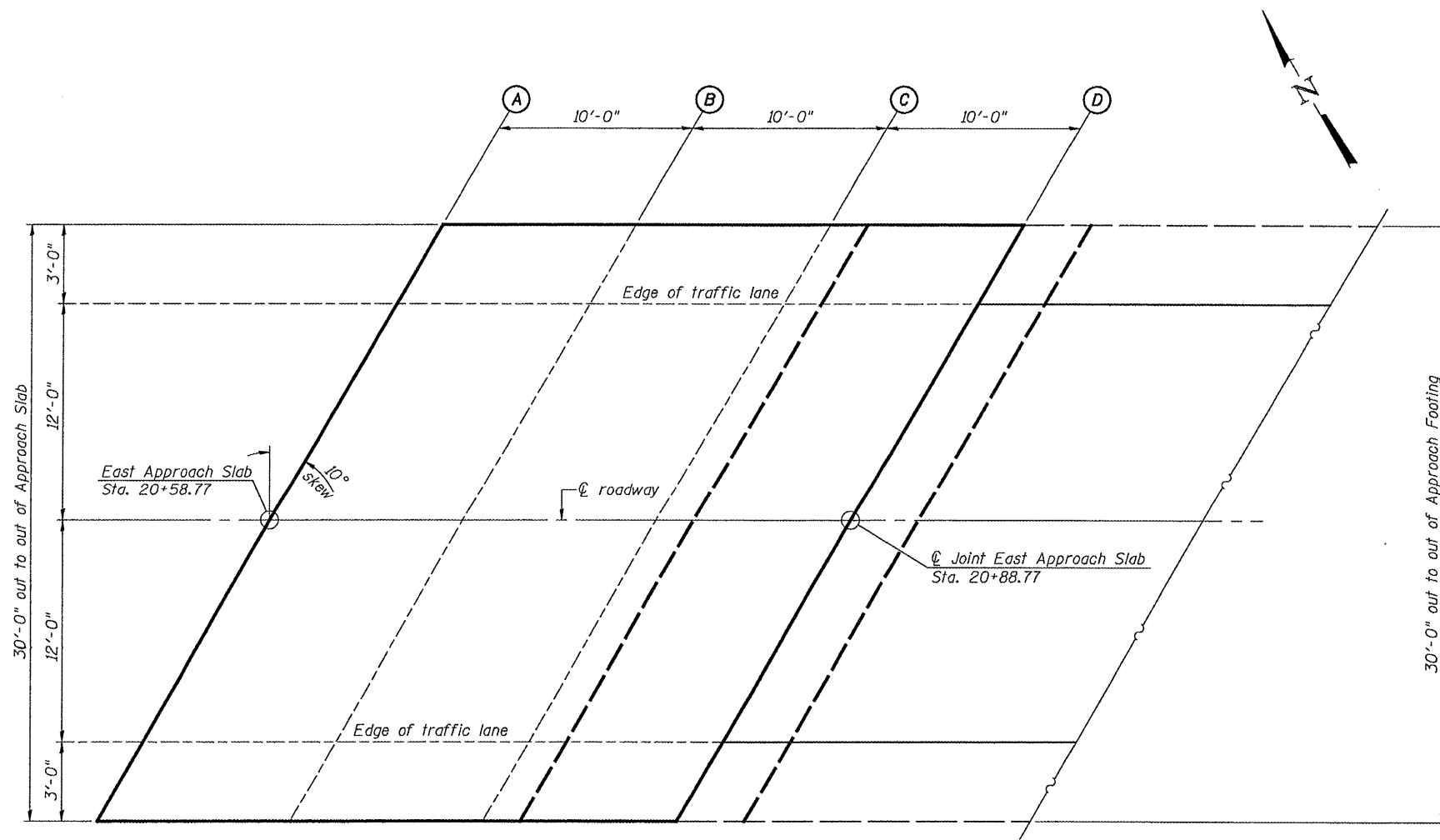
Location	Station	Offset	Theoretical Grade Elevations
A	20+58.77	0.00'	703.12
B	20+68.77	0.00'	703.46
C	20+78.77	0.00'	703.82
D	20+88.77	0.00'	704.19

RIGHT EDGE OF TRAFFIC LANE

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	20+56.65	12.00'	702.86
B	20+66.65	12.00'	703.20
C	20+76.65	12.00'	703.55
D	20+86.65	12.00'	703.92

RIGHT EDGE OF APPROACH PAVEMENT

Location	Station	Offset Rt.	Theoretical Grade Elevations
A	20+56.13	15.00'	702.78
B	20+66.13	15.00'	703.12
C	20+76.13	15.00'	703.48
D	20+86.13	15.00'	703.84



PLAN

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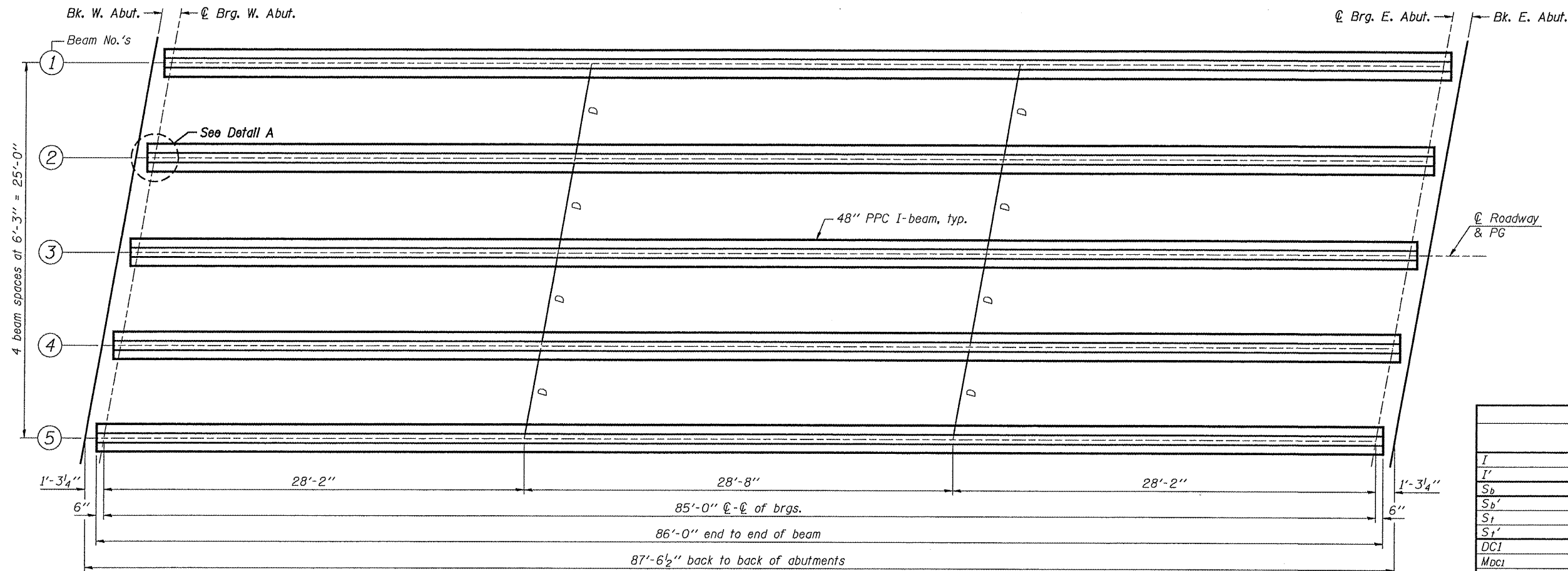
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

JODAVIENS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

TOP OF EAST BRIDGE APPROACH SLAB ELEVATIONS
STRUCTURE NO. 043-3277

STRUCTURAL SHEET NO. 5 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIENS	34	15
WHA# 1183D10		CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-0072(103)				

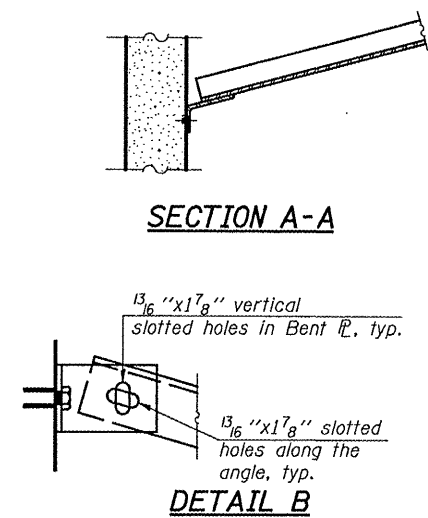
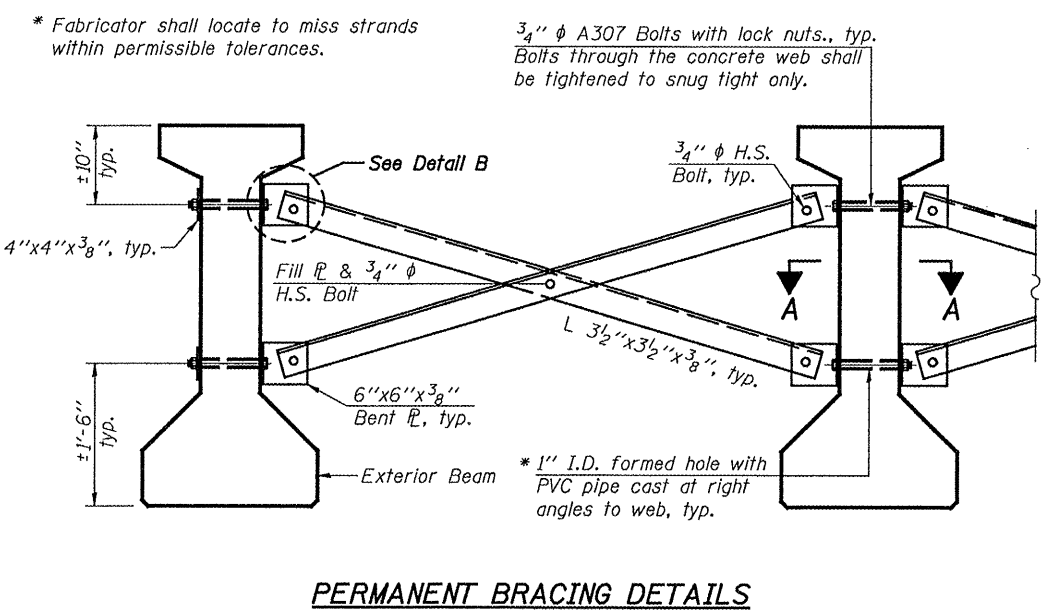
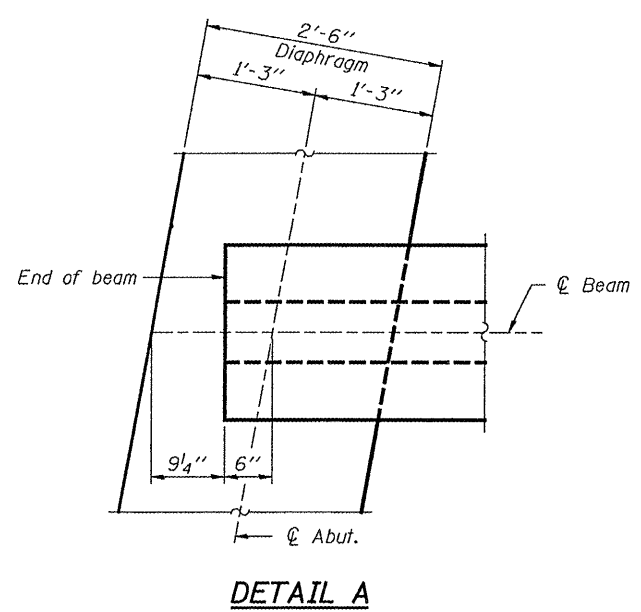


BEAM MOMENT TABLE

	Interior 0.5 Span	Exterior 0.5 Span
I	(in ⁴) 144,117	144,117
I'	(in ⁴) 379,283	365,134
S _b	(in ³) 6,834.1	6,834.1
S _b '	(in ³) 11,055	10,900
S _t	(in ³) 5,355.1	5,355.1
S _t '	(in ³) 27,705	25,182
DC1	(k/')	1.258
MDC1	(k)	1.136
DC2	(k/')	0.04
MDC2	(k)	36
DW	(k/')	0.313
MDW	(k)	283
M _Σ + IM	(k)	1,306

BEAM REACTION TABLE

	Interior at Abutment	Exterior at Abutment
R _{DC1}	(k) 53.5	56.4
R _{DC2}	(k) 1.7	1.7
R _{DW}	(k) 13.3	11.9
R _Σ + IM	(k) 79.8	79.8
R _{Total}	(k) 148.3	149.8



NOTES:
 All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.
 Two hardened washers are required for each set of oversized holes.
 All holes shall be 15/16" φ unless otherwise noted.
 5/16" x 3" x 3" plate washers are required over all slotted holes.
 All bolts shall be galvanized according to AASHTO M232.
 Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
 Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete I-Beams, 48".

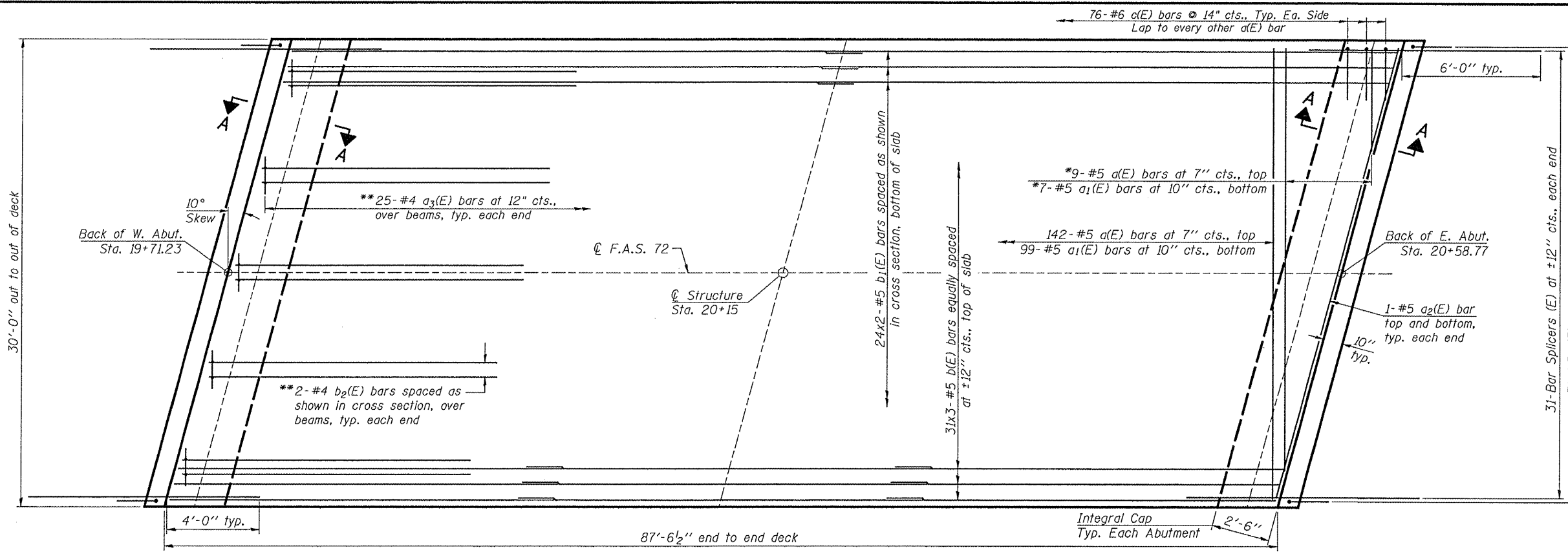
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PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -
PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

FRAMING PLAN
STRUCTURE NO. 043-3277
 STRUCTURAL SHEET NO. 6 OF 17 SHEETS

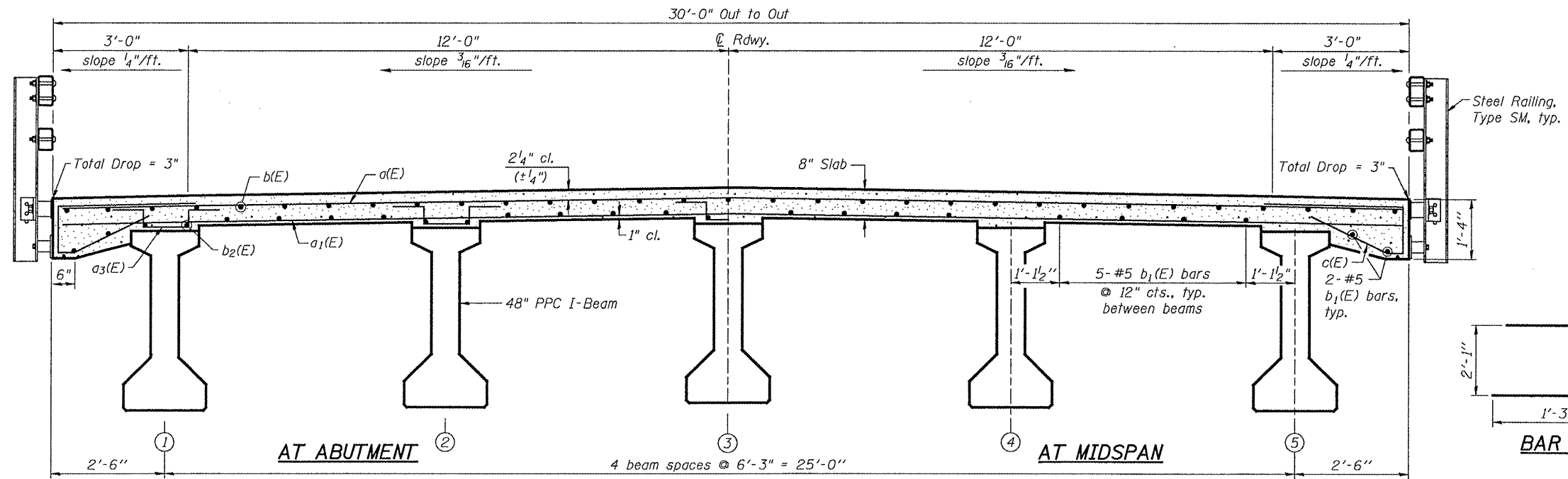
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	16
WHA* 1183010		CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-00721033				



PLAN

**SUPERSTRUCTURE
BILL OF MATERIAL**

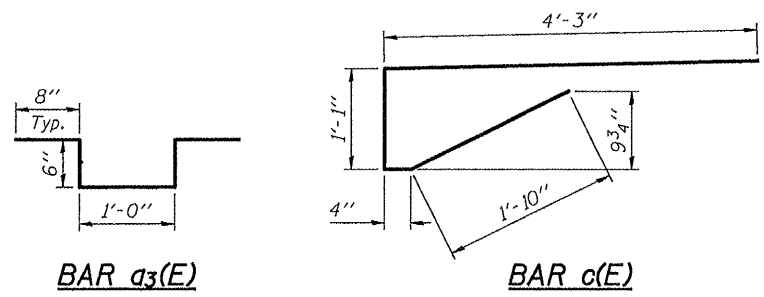
Bar	No.	Size	Length	Shape
a(E)	151	#5	29'-8"	—
a ₁ (E)	106	#5	29'-8"	—
a ₂ (E)	4	#5	30'-1"	—
a ₃ (E)	250	#4	3'-4"	└
b(E)	93	#5	31'-2"	—
b ₁ (E)	48	#5	45'-3"	—
b ₂ (E)	20	#4	27'-7"	—
c(E)	152	#6	7'-6"	└
m(E)	14	#6	30'-1"	—
m ₁ (E)	30	#6	9'-8"	—
m ₂ (E)	8	#6	4'-1"	—
m ₃ (E)	4	#6	1'-3"	—
s(E)	52	#5	6'-9"	└
s ₁ (E)	52	#4	12'-6"	└
u(E)	16	#6	4'-7"	└
v(E)	62	#5	3'-10"	└
Concrete Superstructure			Cu. Yd.	103.2
Bridge Deck Grooving			Sq. Yd.	272
Protective Coat			Sq. Yd.	292
Reinforcement Bars, Epoxy Coated			Pound	18,290
Bar Splicers			Each	62



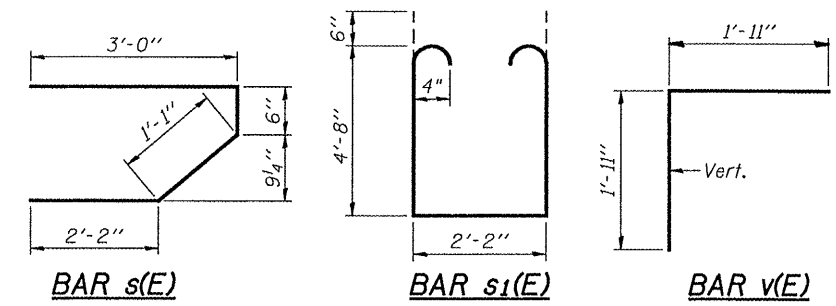
**CROSS SECTION
(Looking East)**

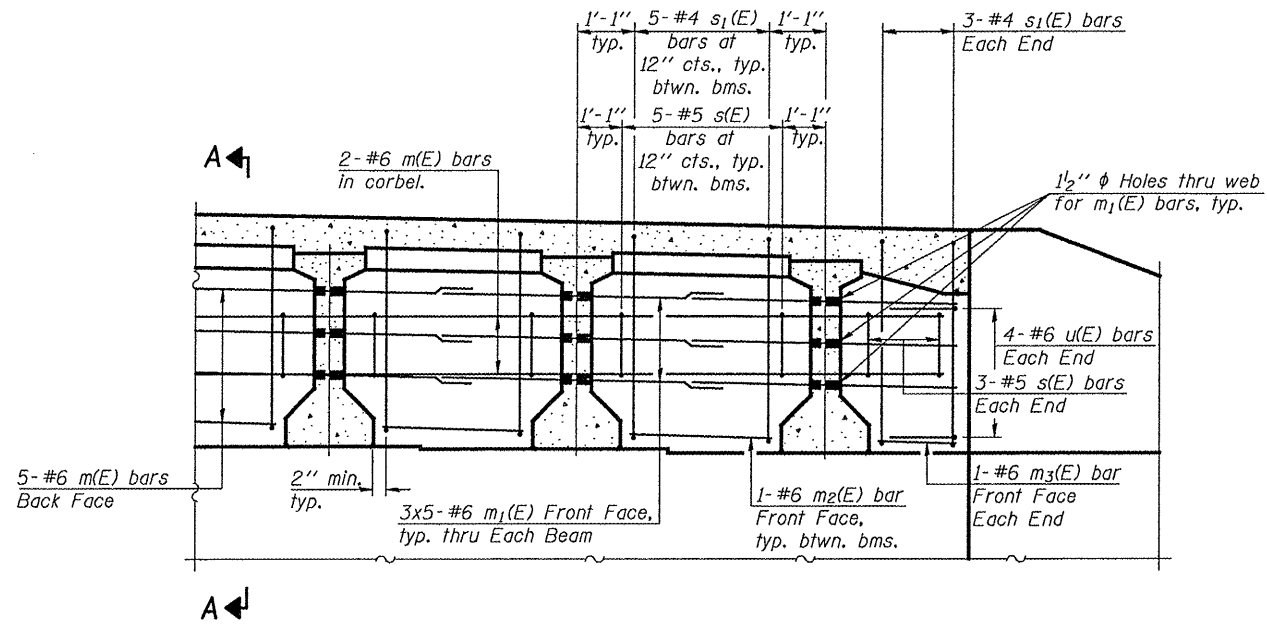
NOTES:

For Section A-A and Diaphragm Details, see Structural Sheet 8 of 17.
See Structural Sheet 14 of 17 for Steel Railing Details.
Bars indicated thus 31 x 3-#5 etc. indicates 31 lines of bars with 3 lengths per line.
* Order a(E) and a₁(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.
** Required where fillet exceeds 2 1/2", exact number of a₃(E) bars & length of b₂(E) bars to be determined during construction.
For Bar Splicer Details see Structural Sheet 15 of 17.



BAR	LAP
#4	2'-7"
#5	3'-3"
#6	3'-10"

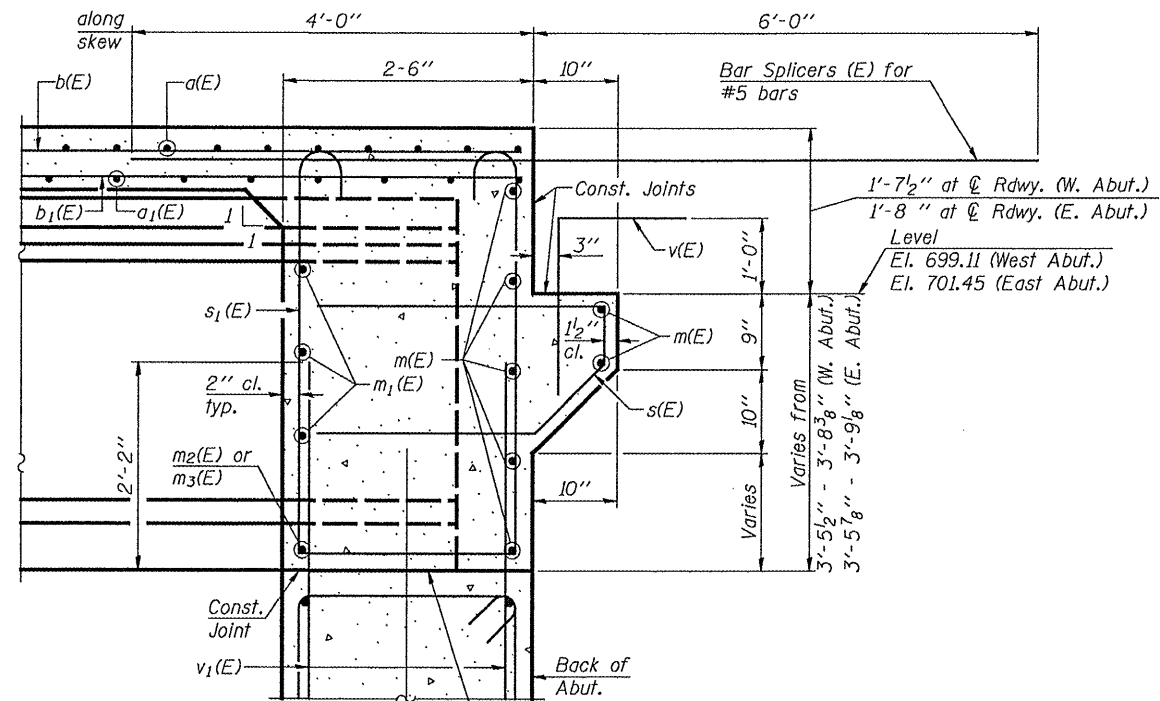




DIAPHRAGM ELEVATION AT ABUTMENT

MIN. BAR LAP

#6 bar = 3'-4"



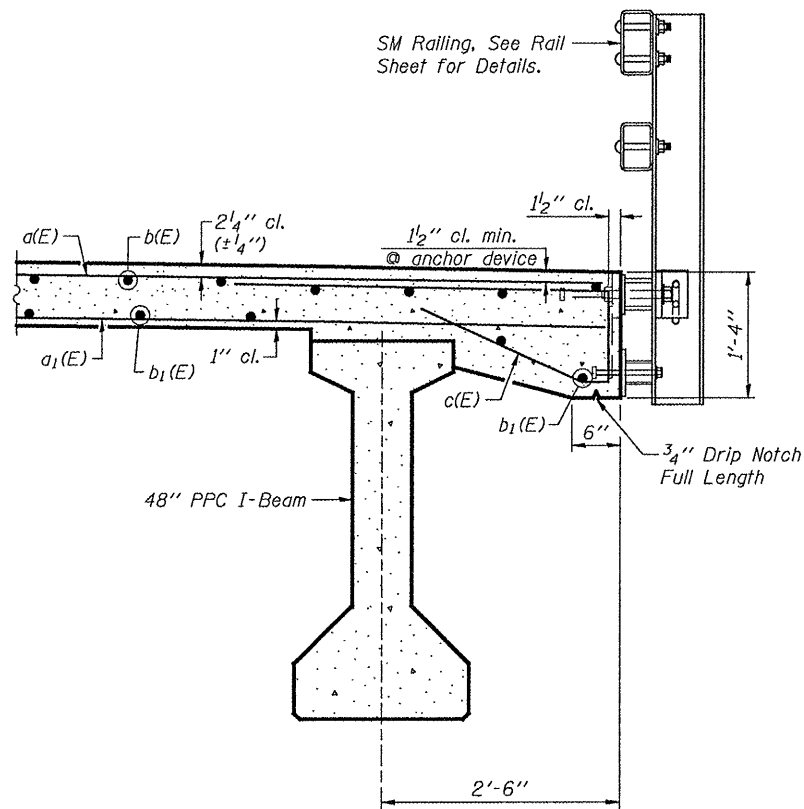
SECTION A-A

Dimensions at right angles to abutment, except as shown.

Beam ends shall be set on an initial 1/2" min. grout (2:1 sand and portland cement, very dry mix) to provide full bearing. Any excess grout squeezed out from under the beam shall be removed. Cost included with Concrete Structures.

NOTES:

Reinforcement bars in diaphragm are billed with superstructure on Structural Sheet 7 of 17. Concrete in diaphragm is included with Concrete Superstructure on Structural Sheet 7 of 17. For details of bar s(E) & s1(E) see Structural Sheet 7 of 17. The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.



SECTION THRU EDGE OF DECK

Reinforcement bars in the top of the deck may be placed with a 1/2" minimum clearance in the area of the rail post anchor devices. 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.

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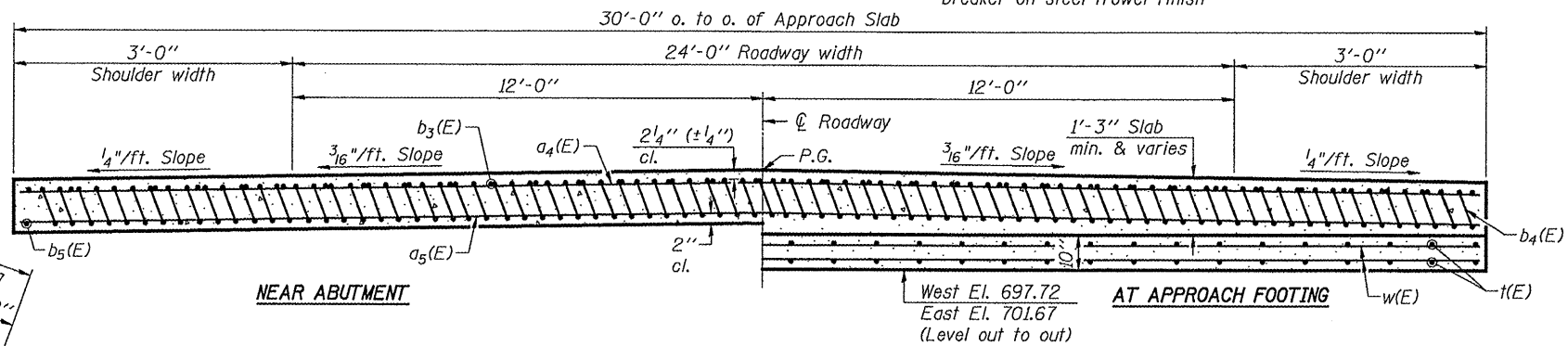
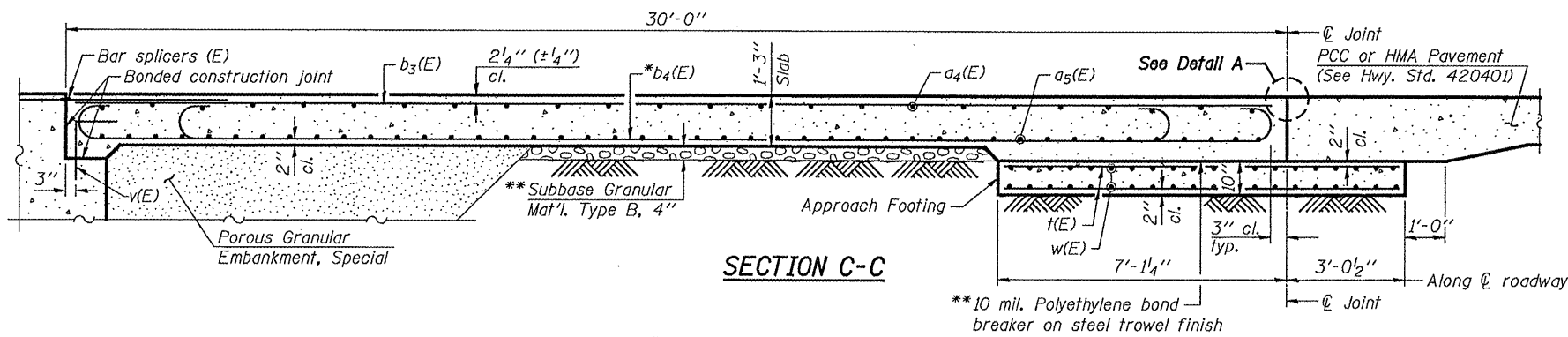
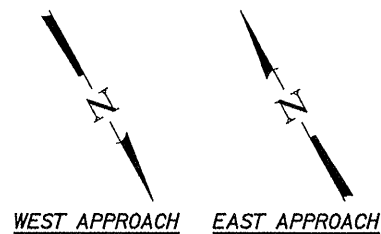
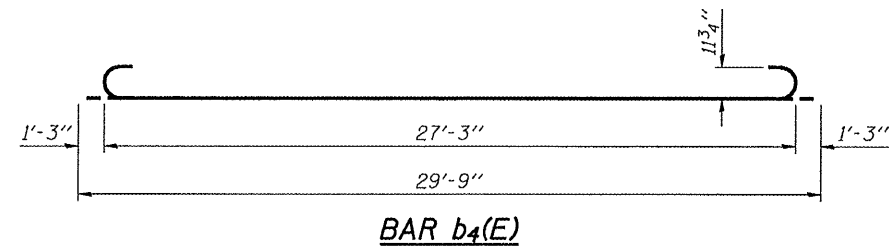
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	CHECKED - B. K. CONVERSE	REVISED -
PLOT SCALE =	DRAWN - F. D. LACHAT	REVISED -
PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

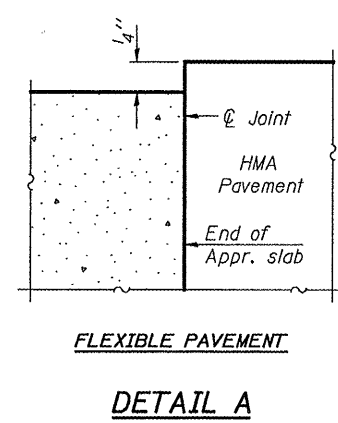
INTEGRAL ABUTMENT DIAPHRAGM DETAILS
STRUCTURE NO. 043-3277

STRUCTURAL SHEET NO. 8 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	18
WHA* 1183010		CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-0072(103)				



SECTION D-D
(See Plan for dimensions not shown.)



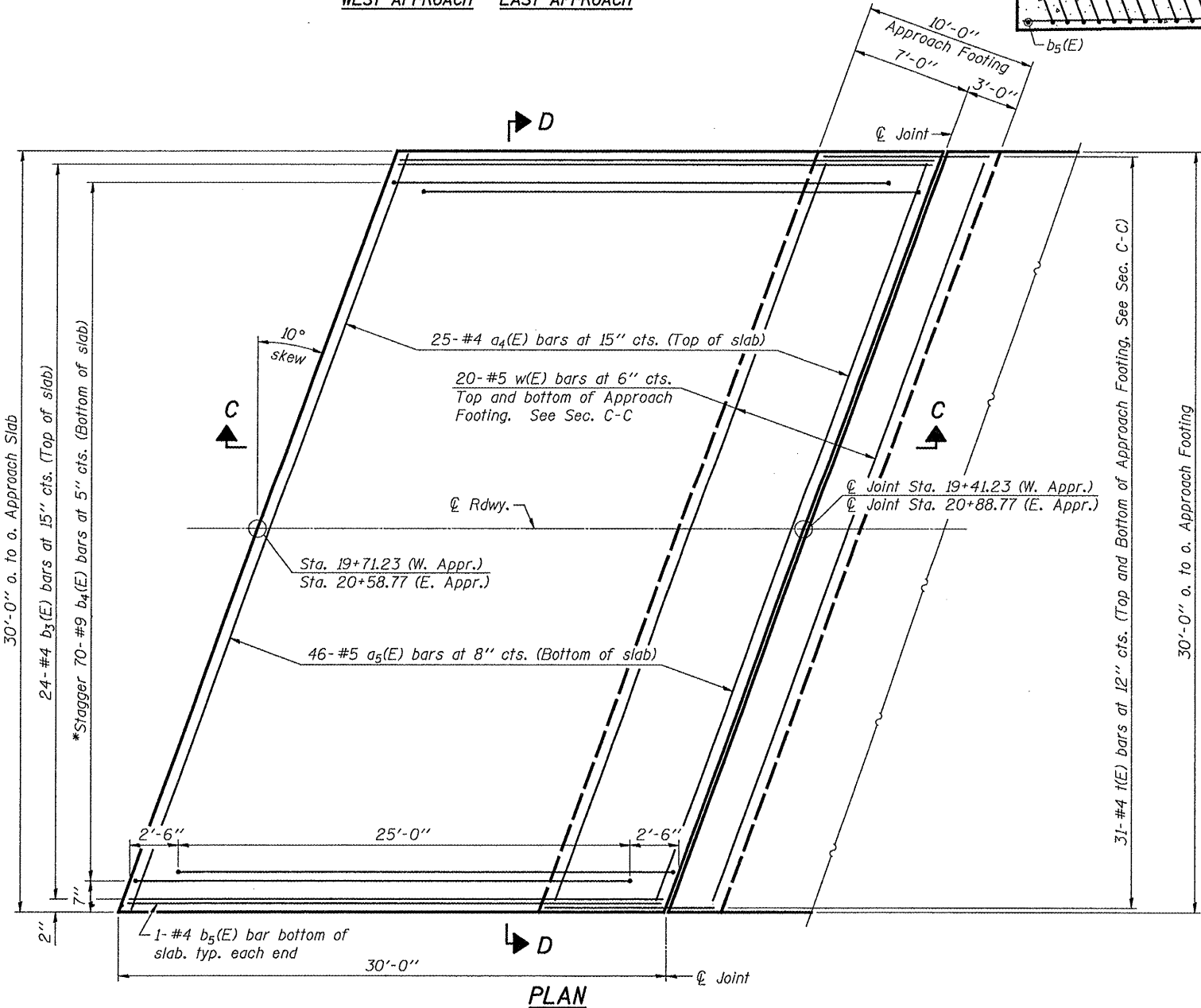
FLEXIBLE PAVEMENT
DETAIL A

**TWO APPROACHES
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a ₄ (E)	50	#4	30'-1"	—
a ₅ (E)	92	#5	30'-1"	—
b ₃ (E)	48	#4	29'-8"	—
b ₄ (E)	140	#9	29'-9"	⌋
b ₅ (E)	4	#4	29'-8"	—
t(E)	124	#4	9'-10"	—
w(E)	80	#5	30'-1"	—
Concrete Structures		Cu. Yd.	9.4	
Concrete Superstructure		Cu. Yd.	88.5	
Bridge Deck Grooving		Sq. Yd.	187	
Protective Coat		Sq. Yd.	200	
Reinforcement Bars, Epoxy Coated		Pound	22,410	

NOTES:

- a₄(E) and a₅(E) bar spacings measured along centerline roadway.
- Approach slab shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- For v(E) bar details, see Structural Sheet 8 of 17.
- The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
- For Bar Splicer Assembly Details, see Structural Sheet 15 of 17.
- Cost of excavation for approach footing included with Concrete Structures.
- For Porous Granular Embankment, Special and drainage treatment details, see Structural Sheet 2 of 17.
- *Tilt #9 b₄(E) bars as required to maintain clearance.
- **Cost included with Concrete Superstructure.



PLAN

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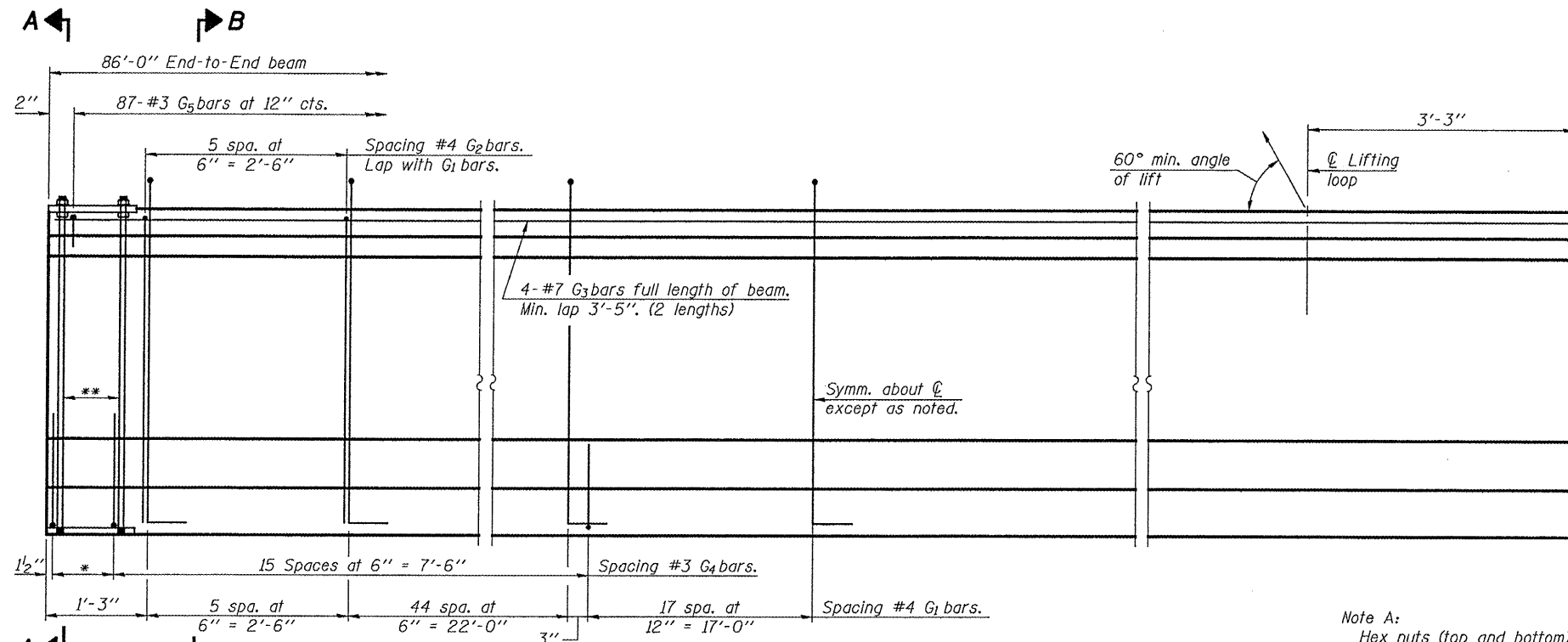
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20+15

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 043-3277
STRUCTURAL SHEET NO. 9 OF 17 SHEETS

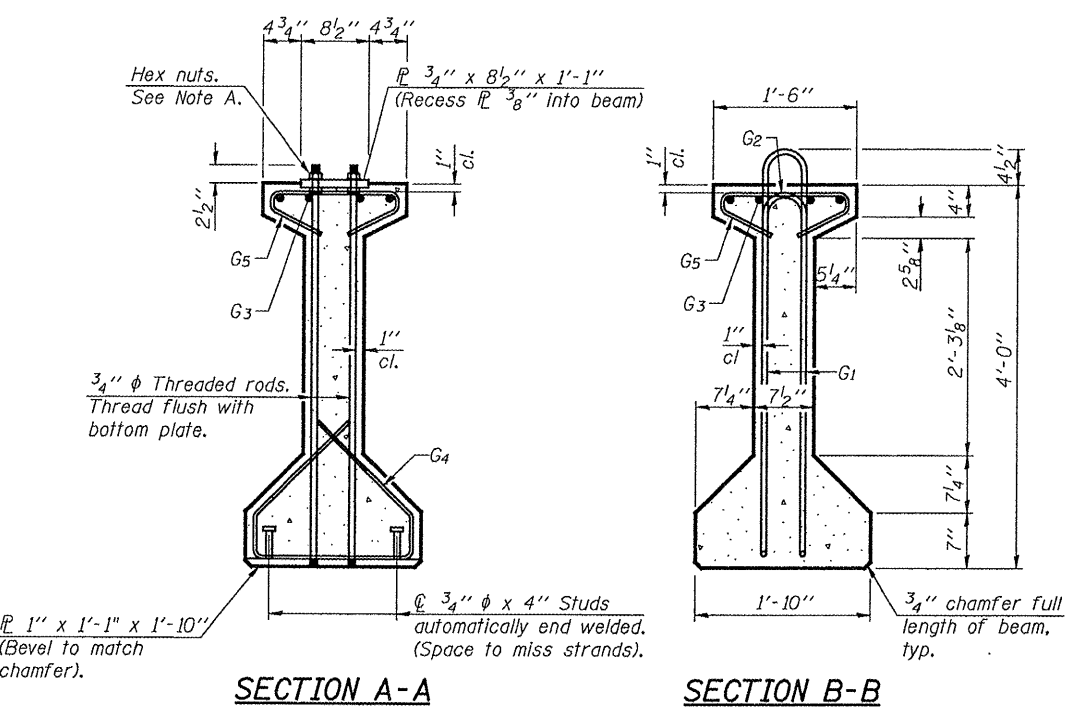
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	WHA* 1183010	CONTRACT NO. 85536		

ILLINOIS FED. AID PROJECT ER-0072103



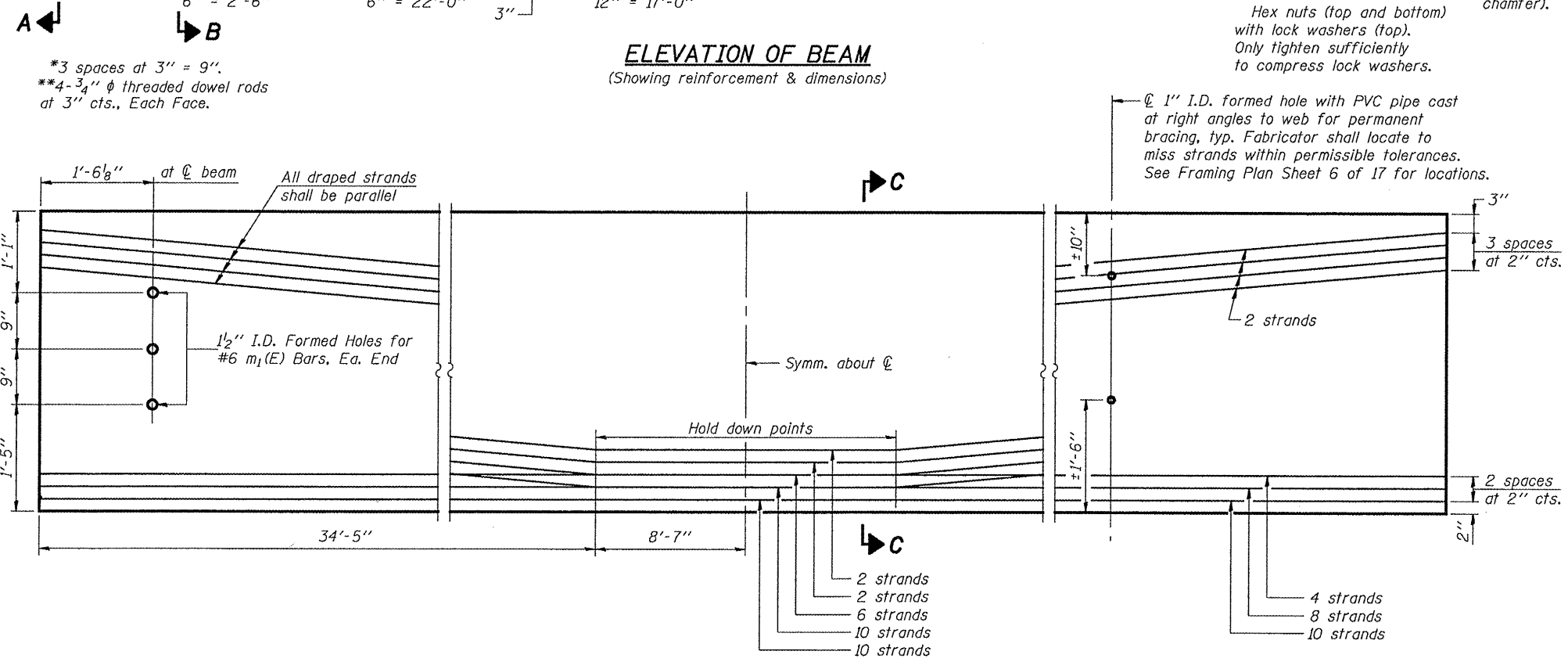
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

Note A:
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.

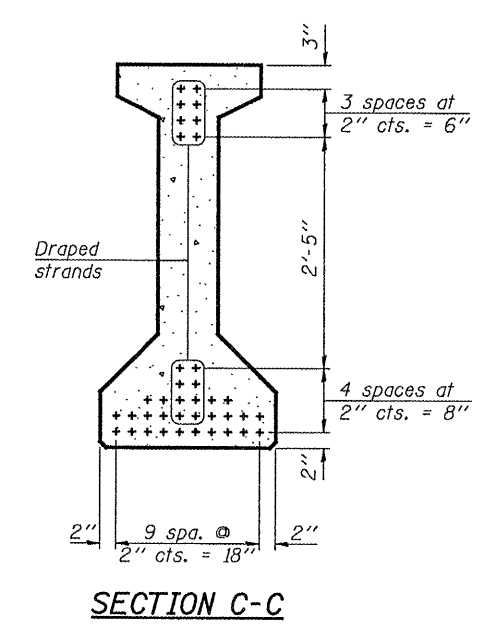


SECTION A-A

SECTION B-B



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION C-C

*****BAR LIST
ONE BEAM ONLY**

Bar	No.	Size	Length	Shape
G1	135	#4	9'-6"	□ L
G2	12	#4	7'-11"	□
G3	8	#7	44'-6"	—
G4	38	#3	5'-3"	□
G5	86	#3	2'-9"	□

***For information only

NOTES:
See Structural Sheet 11 of 17 for additional details and Bill of Material.
Required release strength, f'ci, shall be 6,000 psi.

FILE NAME = S:\PROJECTS\2010\1183D10 - Jodaviness County - Bethel Rd - Drawings\1183D101 - Beam.dgn

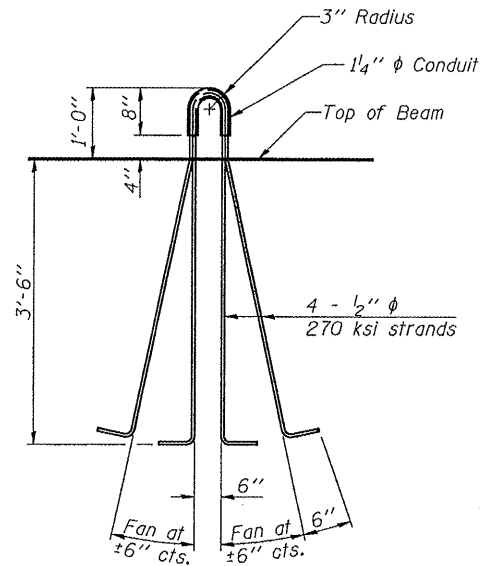
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PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

JODAVIENS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

48" PCC I-BEAM
STRUCTURE NO. 043-3277
STRUCTURAL SHEET NO. 10 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIENS	34	20
	WHA* 1183D10	CONTRACT NO.	85536	
[ILLINOIS] FED. AID PROJECT ER-00721(03)				

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LIFTING LOOP DETAIL

NOTES:

Inserts for 3/4" ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in.

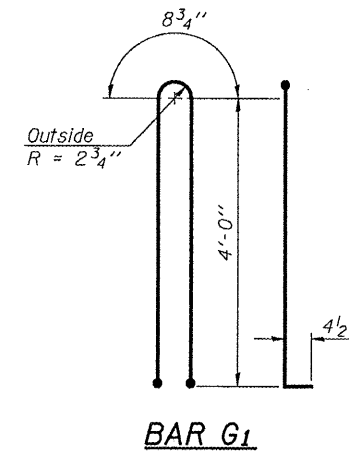
Reinforcement bars shall conform to ASTM A 706, Grade 60. (See Special Provisions)

A minimum 2 1/2" ϕ lifting pin shall be used to engage the lifting loops during handling.

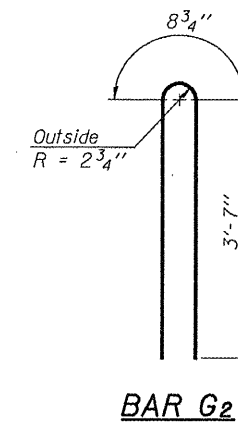
The top and bottom plates shall be AASHTO M270 Grade 50.

The bottom plates and studs shall be galvanized according to AASHTO M111. Top plates and threaded rods need not be galvanized.

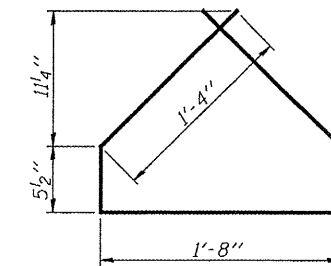
Threaded rods shall be ASTM F 1554 Grade 55.



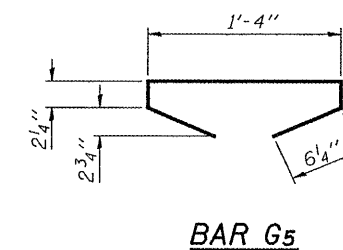
BAR G1



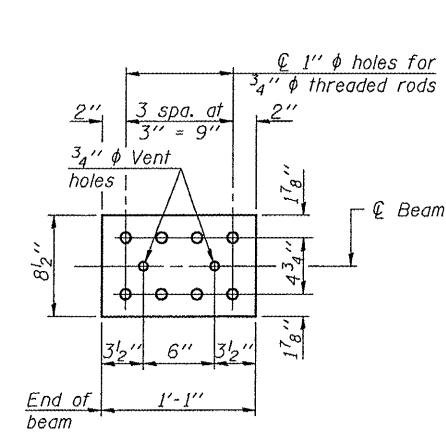
BAR G2



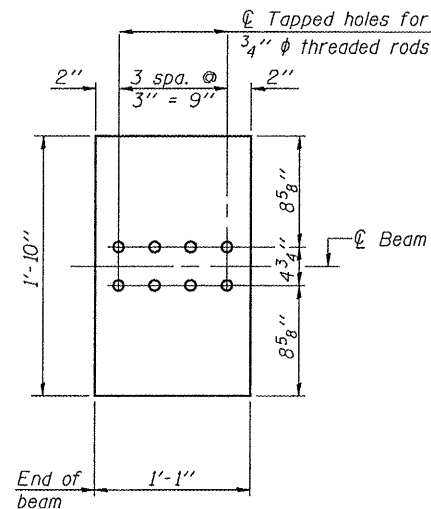
BAR G4



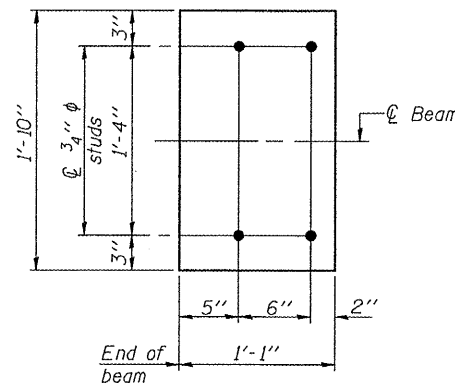
BAR G5



TOP PLATE



BOTTOM PLATE
(Showing threaded rods)



BOTTOM PLATE
(Showing studs)

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 48"	Foot	430

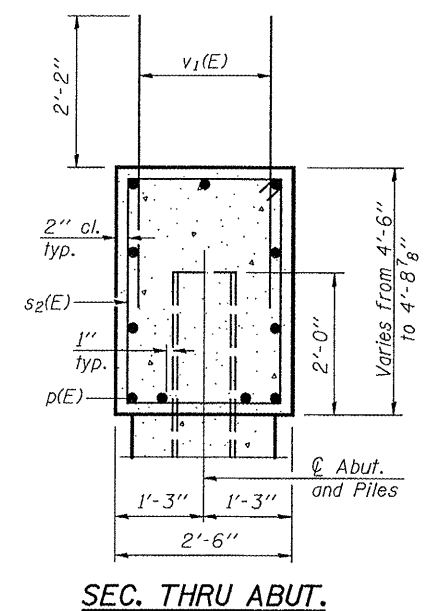
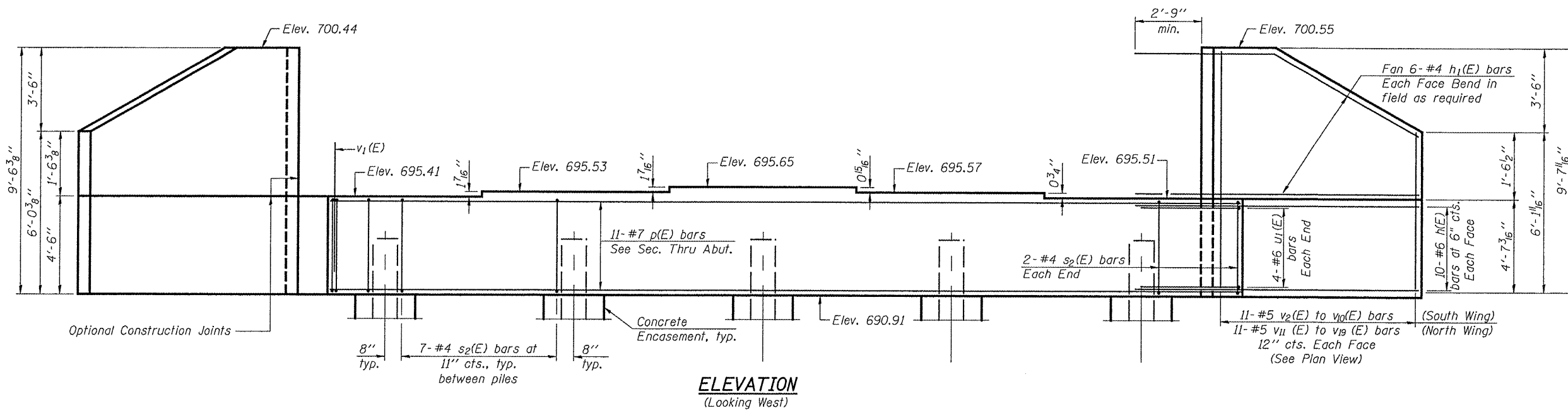
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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

48" PPC I-BEAM DETAILS
STRUCTURE NO. 043-3277

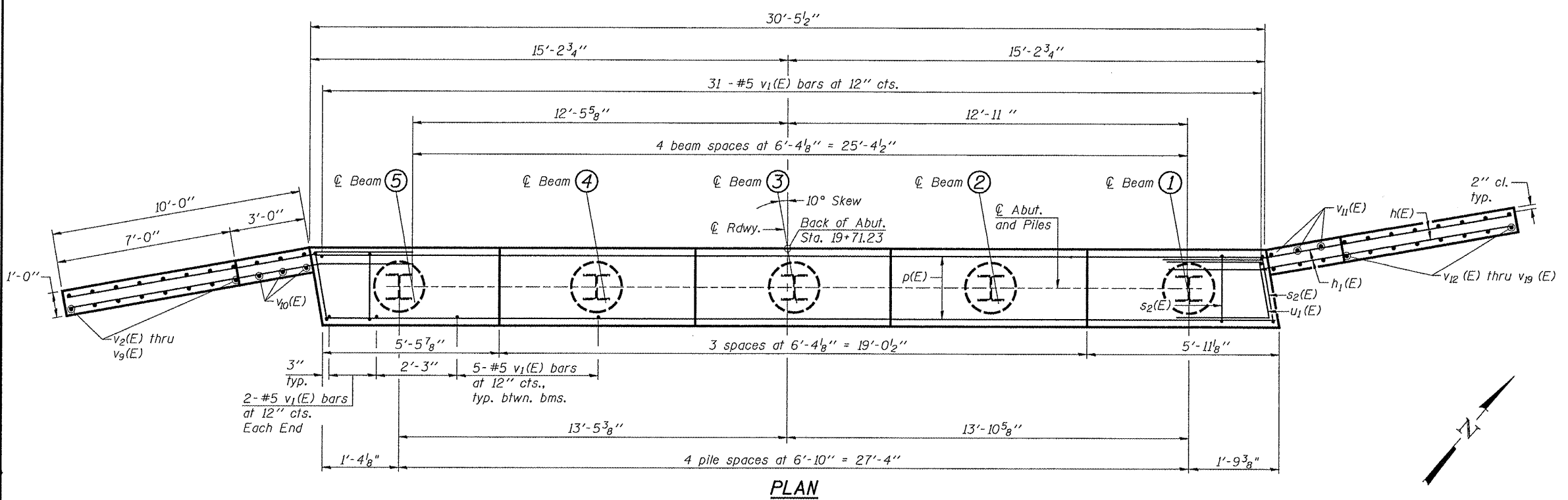
STRUCTURAL SHEET NO. 11 OF 17 SHEETS

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WHA* 1183010		CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-0072(103)				



ELEVATION
(Looking West)

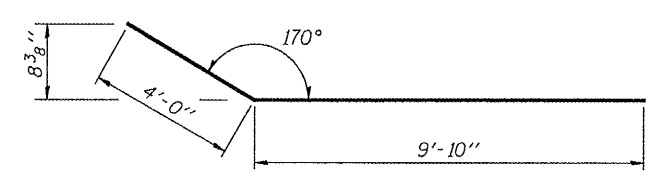
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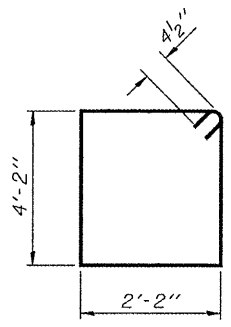
PLAN

PILE DATA

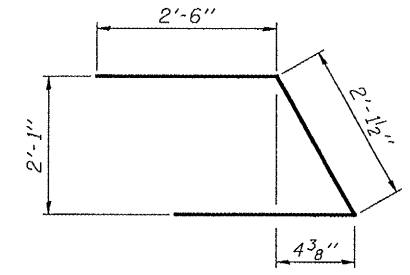
Type: Steel HP 12x53
 Nominal Required Bearing: Drive To Refusal
 Factored Resistance Available: 230K
 Est. Length: 20'
 No. Production Piles: 4
 No. Test Piles: 1



BAR h(E)



BARS s2(E)



BAR u1(E)

NOTES:

*See Structural Sheet 2 of 17 For Drainage Details.
 For details of Piles and Concrete Encasement, see Structural Sheet 16 of 17.
 Pour steps monolithically with cap.
 All exposed edges shall have standard 3/4 inch chamfers, except as noted.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	40	#6	13'-10"	—
h1(E)	24	#4	13'-6"	—
p(E)	11	#7	30'-1"	—
s2(E)	32	#4	13'-5"	□
u1(E)	8	#6	7'-2"	—
v1(E)	55	#5	4'-4"	—
v2(E)	2	#5	5'-9"	—
v3(E)	2	#5	6'-1"	—
v4(E)	2	#5	6'-7"	—
v5(E)	2	#5	7'-1"	—
v6(E)	2	#5	7'-7"	—
v7(E)	2	#5	8'-1"	—
v8(E)	2	#5	8'-7"	—
v9(E)	2	#5	9'-1"	—
v10(E)	6	#5	9'-2"	—
v11(E)	6	#5	9'-3"	—
v12(E)	2	#5	9'-2"	—
v13(E)	2	#5	8'-8"	—
v14(E)	2	#5	8'-2"	—
v15(E)	2	#5	7'-8"	—
v16(E)	2	#5	7'-2"	—
v17(E)	2	#5	6'-8"	—
v18(E)	2	#5	6'-2"	—
v19(E)	2	#5	5'-10"	—
Structure Excavation Cu. Yd. 166				
Concrete Structures Cu. Yd. 19.3				
Concrete Encasement Cu. Yd. 1.7				
Reinforcement Bars, Epoxy Coated Pound 2,710				
Furnishing Steel Piles HP12x53 Foot 80				
Driving Piles Foot 80				
Test Pile Steel HP12x53 Each 1				
Geocomposite Wall Drain Sq. Yd. 46				
Porous Granular Embankment, Special Cu. Yd. 93				
Pipe Underdrains for Structures 4" Foot 92				

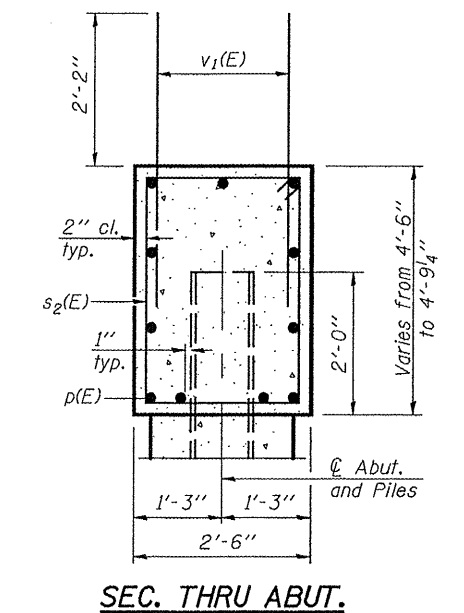
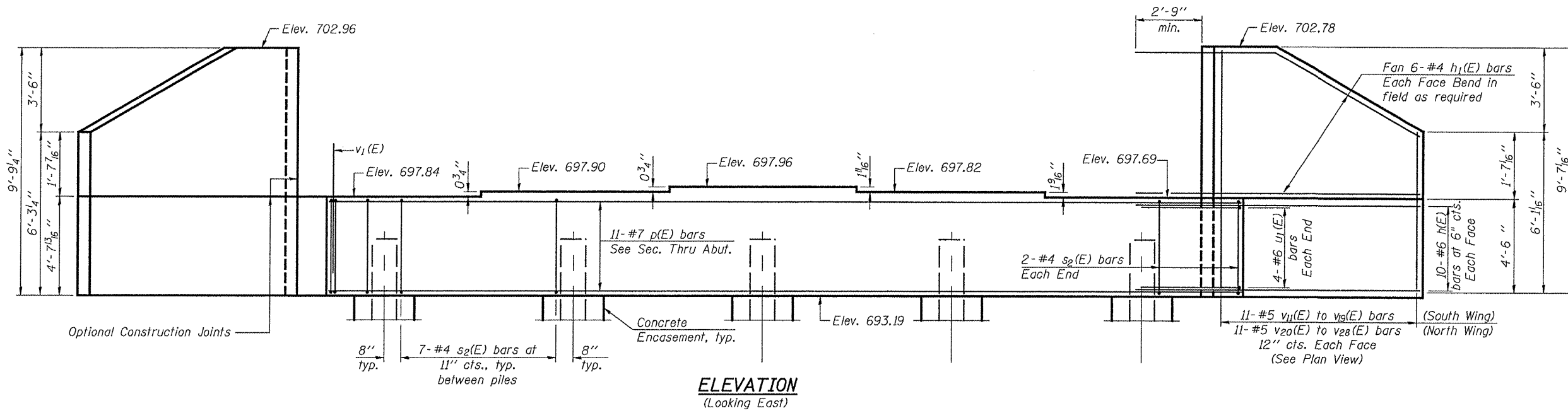
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PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20+15

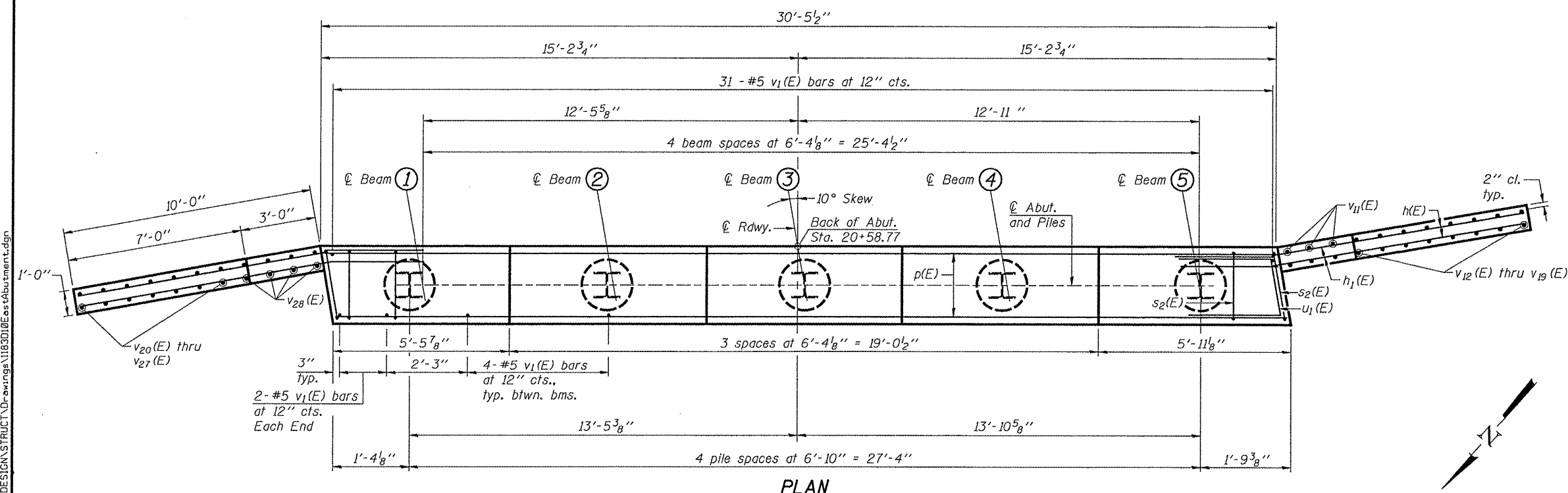
WEST ABUTMENT DETAILS
STRUCTURE NO. 043-3277
 STRUCTURAL SHEET NO. 12 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
T2	10-00134-00-BR	JODAVIESS	34	22
	WHA# 1183D10	CONTRACT NO.	85536	
ILLINOIS FED. AID PROJECT ER-00721033				



ELEVATION
(Looking East)

SEC. THRU ABUT.



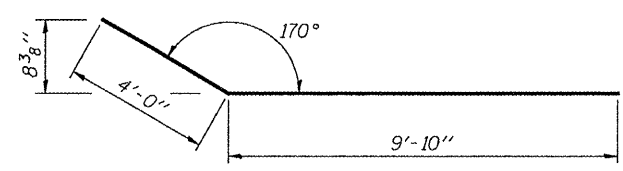
PLAN

BILL OF MATERIAL

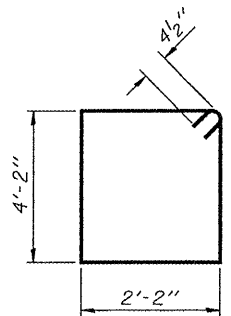
Bar	No.	Size	Length	Shape
h(E)	40	#6	13'-10"	—
h1(E)	24	#4	13'-6"	—
p(E)	11	#7	30'-1"	—
s2(E)	32	#4	13'-5"	□
u1(E)	8	#6	7'-2"	∩
v1(E)	55	#5	4'-4"	—
v11(E)	6	#5	9'-3"	—
v12(E)	2	#5	9'-2"	—
v13(E)	2	#5	8'-8"	—
v14(E)	2	#5	8'-2"	—
v15(E)	2	#5	7'-8"	—
v16(E)	2	#5	7'-2"	—
v17(E)	2	#5	6'-8"	—
v18(E)	2	#5	6'-2"	—
v19(E)	2	#5	5'-10"	—
v20(E)	2	#5	6'-0"	—
v21(E)	2	#5	6'-4"	—
v22(E)	2	#5	6'-10"	—
v23(E)	2	#5	7'-4"	—
v24(E)	2	#5	7'-10"	—
v25(E)	2	#5	8'-4"	—
v26(E)	2	#5	8'-10"	—
v27(E)	2	#5	9'-4"	—
v28(E)	6	#5	9'-5"	—

PILE DATA

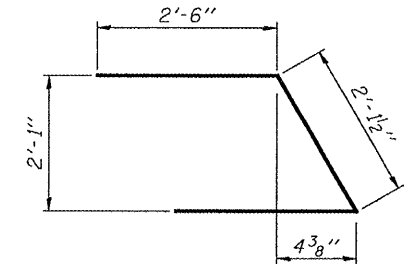
Type: Steel HP 12x53
 Nominal Required Bearing: Drive To Refusal
 Factored Resistance Available: 230K
 Est. Length: 19'
 No. Production Piles: 4
 No. Test Piles: 1



BAR h(E)



BARS s2(E)



BAR u1(E)

NOTES:

*See Structural Sheet 2 of 17 for Drainage Details.
 For details of Piles and Concrete Encasement, see Structural Sheet 16 of 17.
 Pour steps monolithically with cap.
 All exposed edges shall have standard 3/4" chamfers, except as noted.

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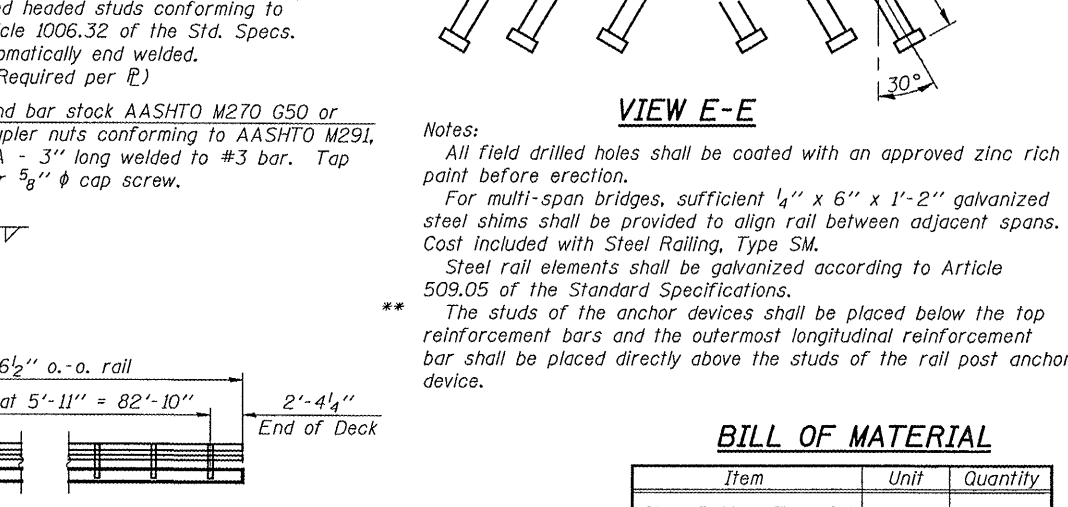
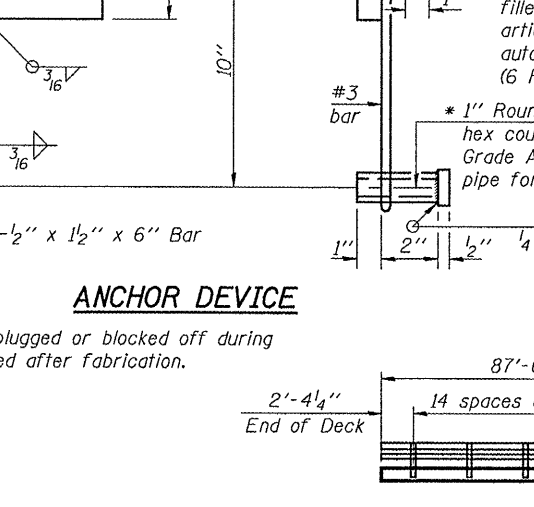
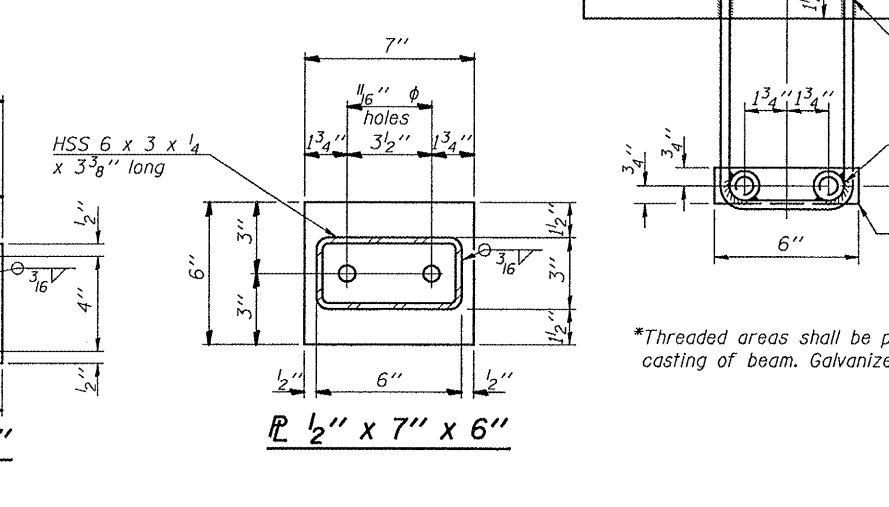
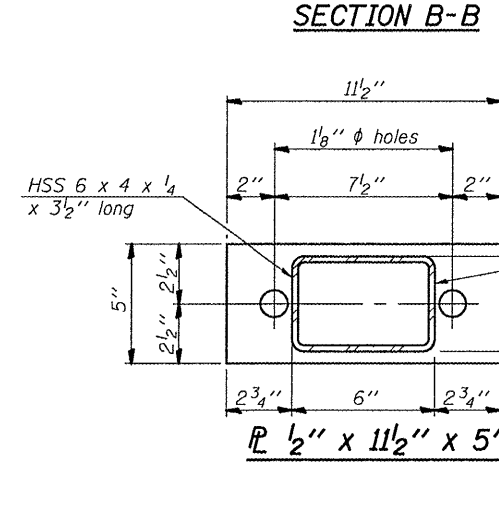
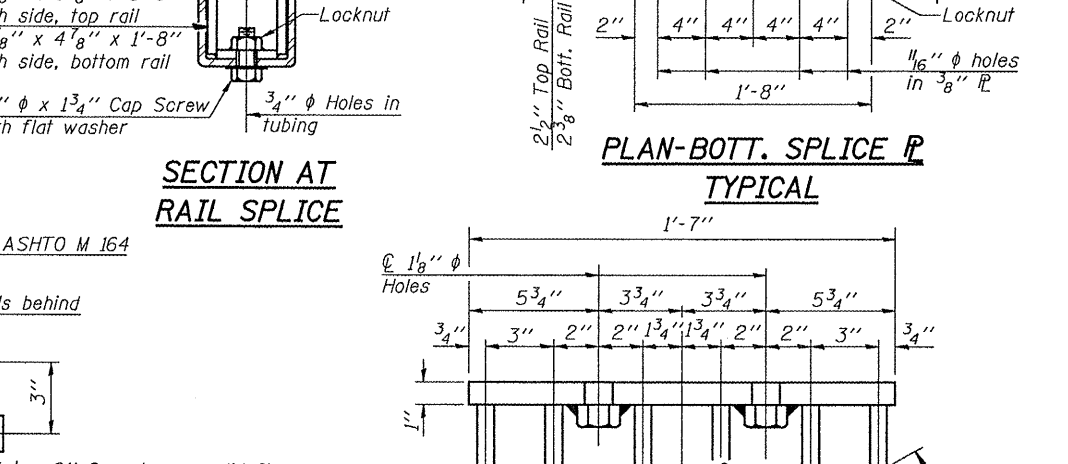
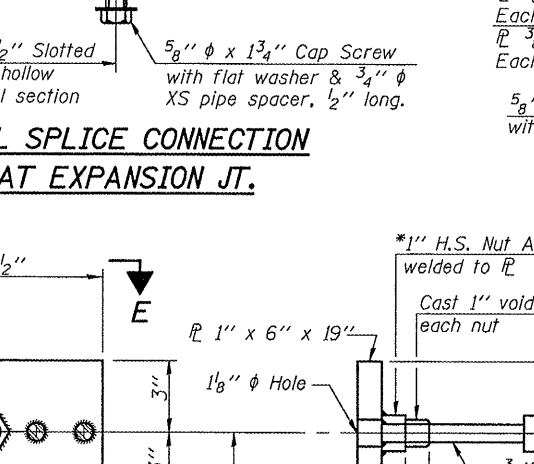
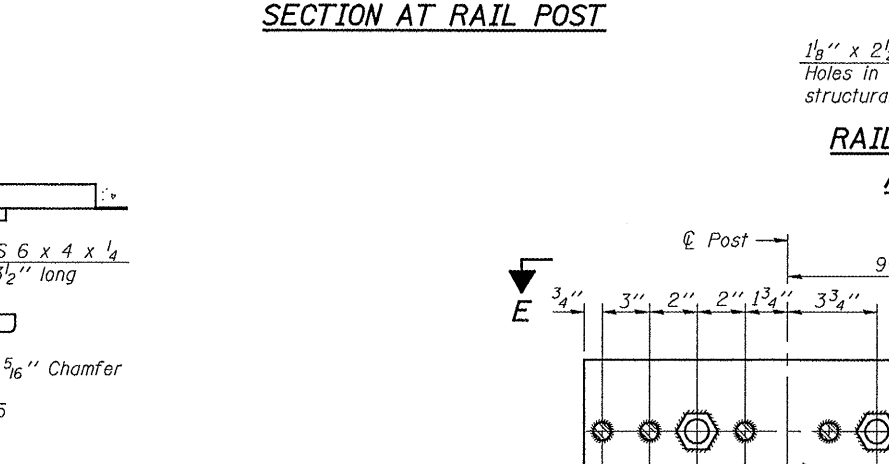
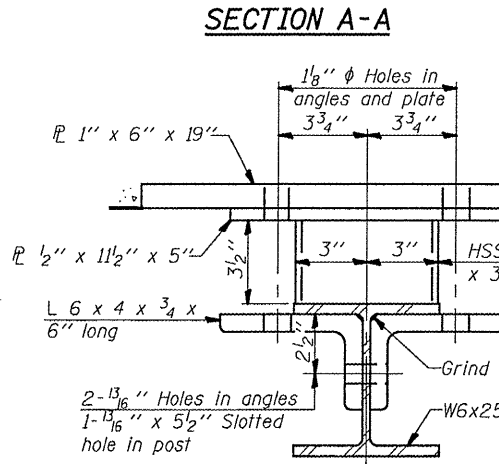
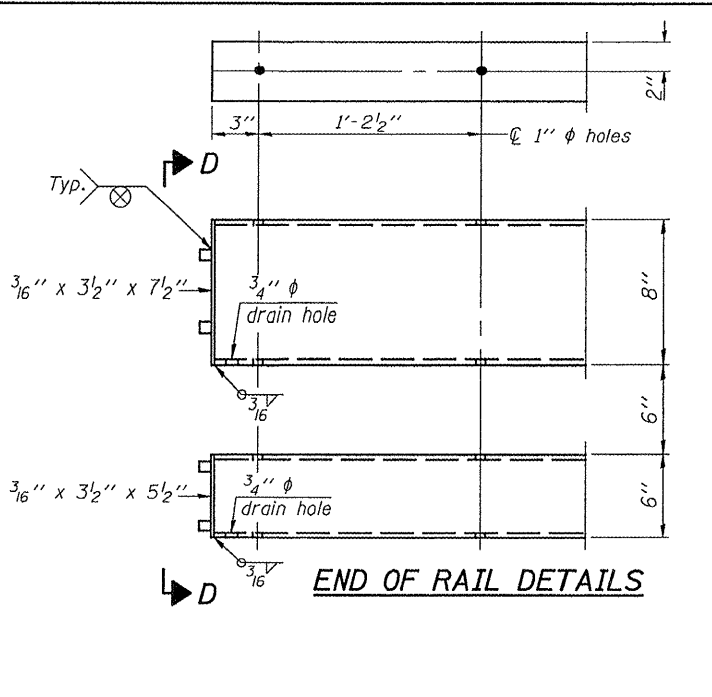
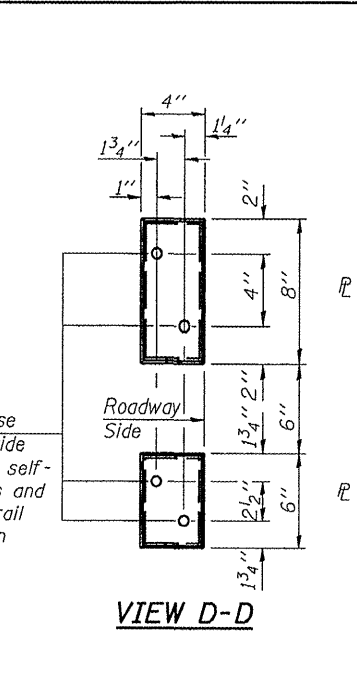
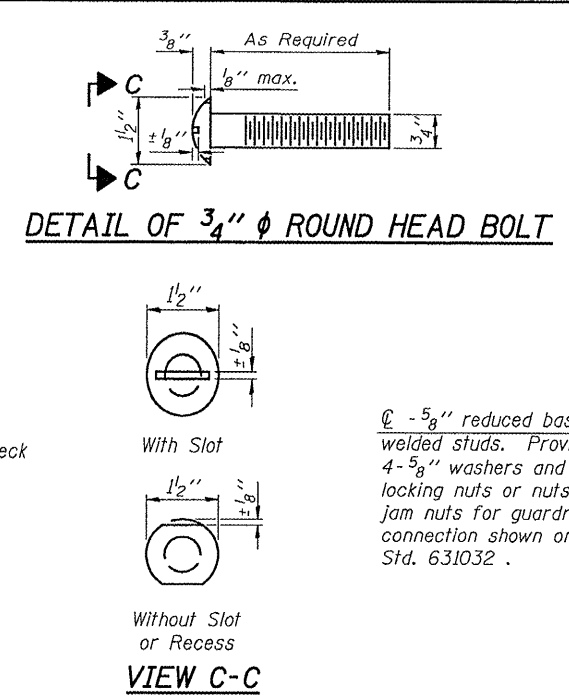
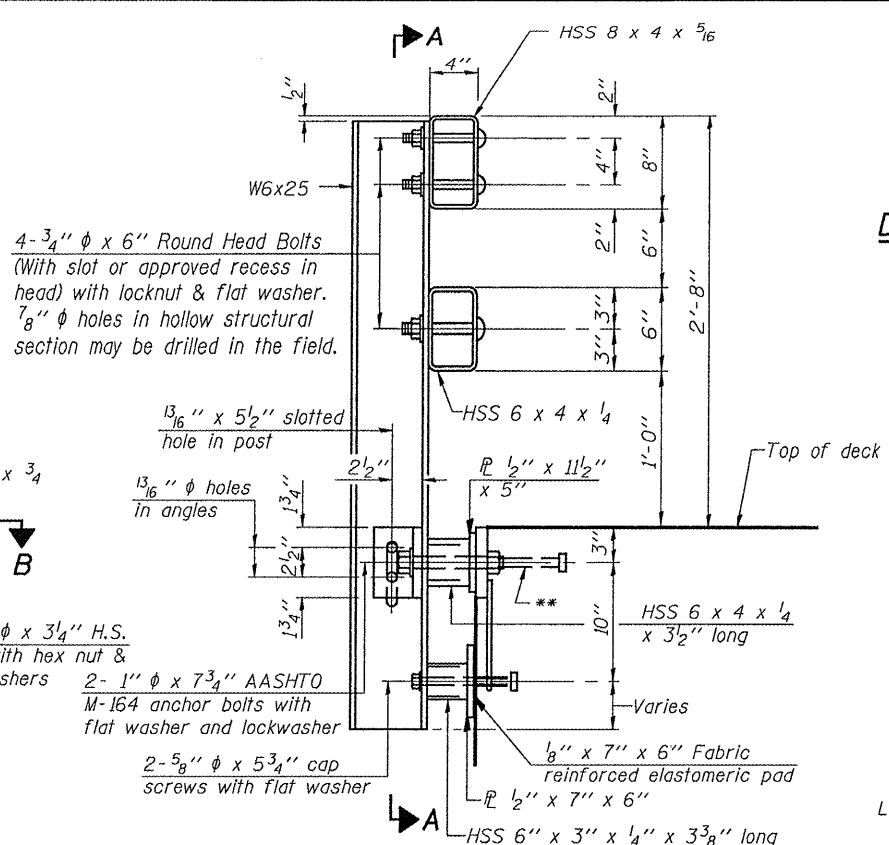
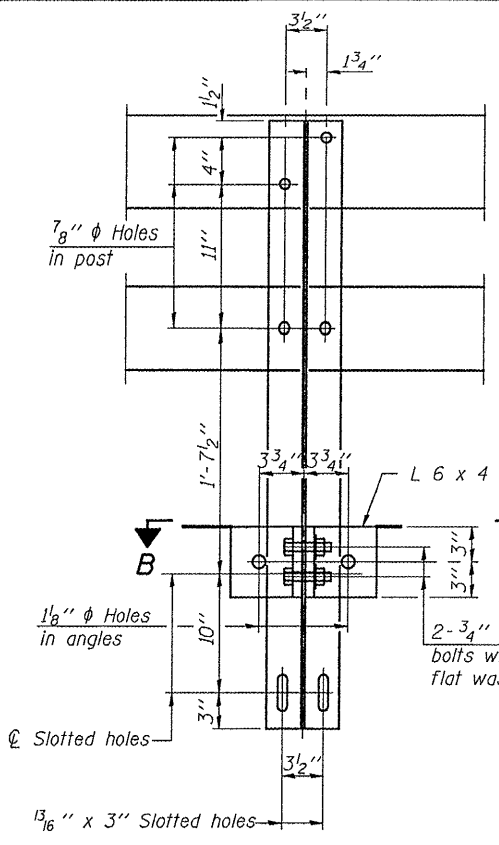
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	CHECKED - B. K. CONVERSE	REVISED -
PLOT SCALE =	DRAWN - F. D. LACHAT	REVISED -
PLOT DATE =	CHECKED - M. A. CACKLEY	REVISED -

JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

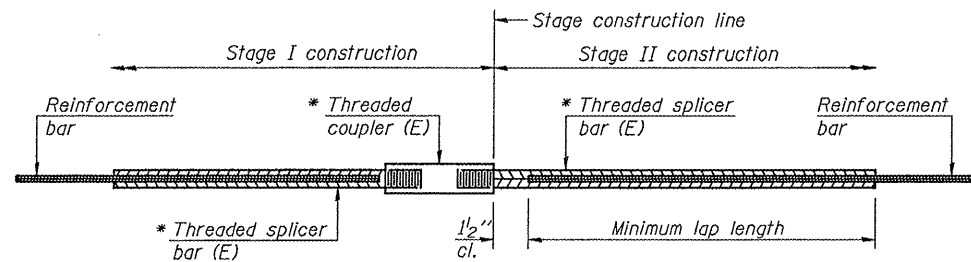
EAST ABUTMENT DETAILS
STRUCTURE NO. 043-3277
 STRUCTURAL SHEET NO. 13 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	23
WHA* 1183010		CONTRACT NO. 85536		
ILLINOIS FED. AID PROJECT ER-00721031				

FILE NAME = S:\PROJECTS\2010\1183D10 - Jodaviness County Bethel Road DESIGN\STRUCT\Drawings\1183D10SMRail.dgn



USER NAME =	DESIGNED - M. C. WAGNER	REVISED -	JODAVIESS COUNTY F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK STATION 20+15	STEEL RAILING, TYPE SM DETAILS STRUCTURE NO. 043-3277	F.A.S. RTE. 72	SECTION 10-00134-00-BR	COUNTY JODAVIESS	TOTAL SHEETS	SHEET NO.
PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -						34	24
PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -			WHA# 1183D10		CONTRACT NO. 85536		
	CHECKED - M. A. CACKLEY	REVISED -			ILLINOIS FED. AID PROJECT ER-0072103				



STANDARD BAR SPLICER ASSEMBLY

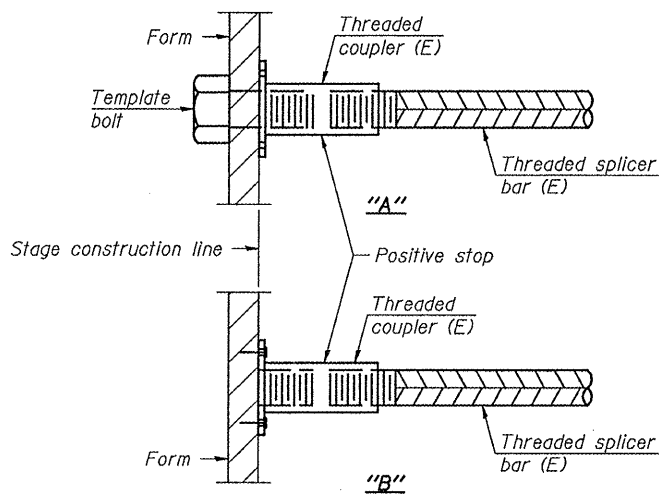
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1/2" + thread length

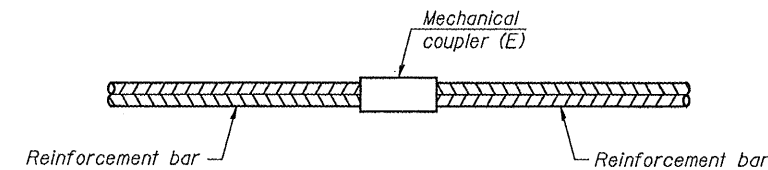
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



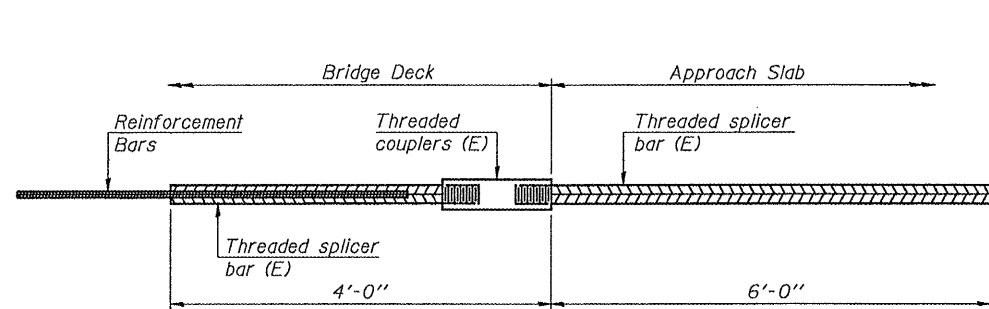
INSTALLATION AND SETTING METHODS

"A": Set bar splicer assembly by means of a template bolt.
 "B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



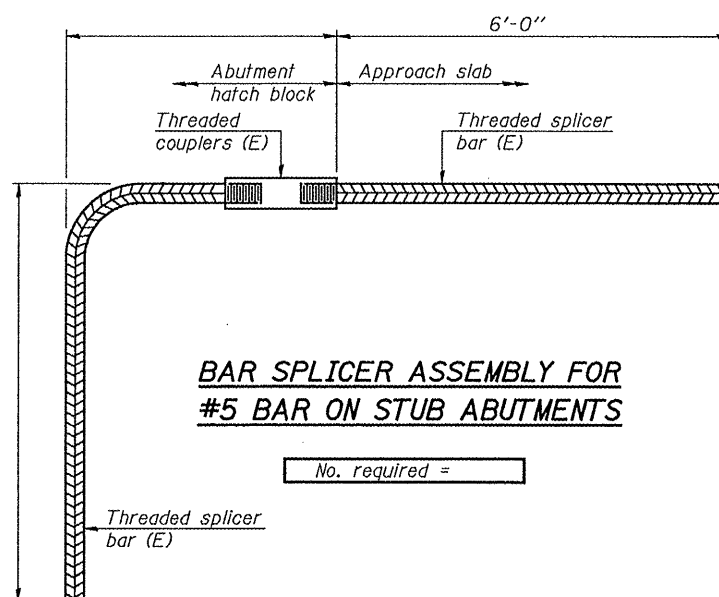
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required = 62



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See special provision for Mechanical Splicers.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

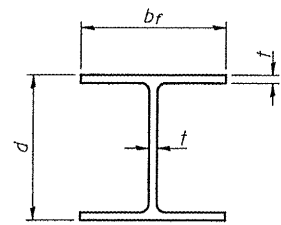
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USER NAME =	DESIGNED - M. C. WAGNER	REVISED -
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JODAVIESS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20 + 15

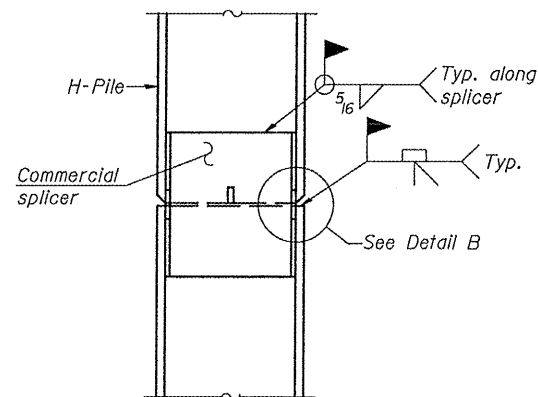
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 043-3277
 STRUCTURAL SHEET NO. 15 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIESS	34	25
	WHA# 1183D10		CONTRACT NO.	85536
ILLINOIS FED. AID PROJECT ER-0072(R3)				

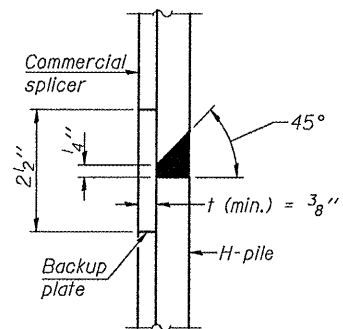


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 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 1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 5/8"	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 5/8"	7/16"	24"
HP 8x36	8"	8 5/8"	7/16"	18"

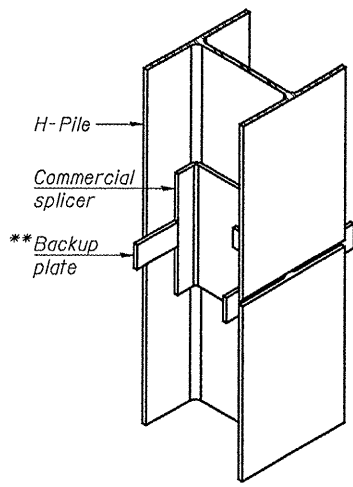


ELEVATION

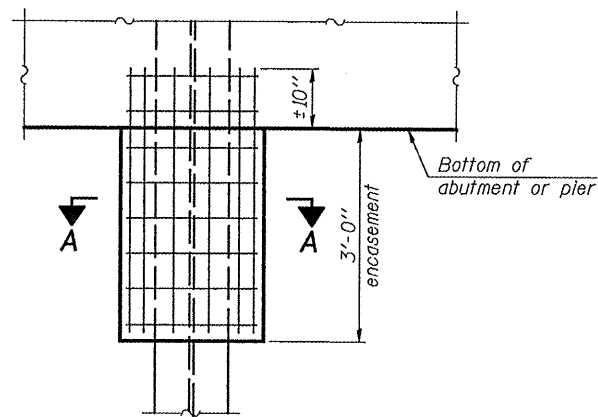


DETAIL "B"

WELDED COMMERCIAL SPLICE

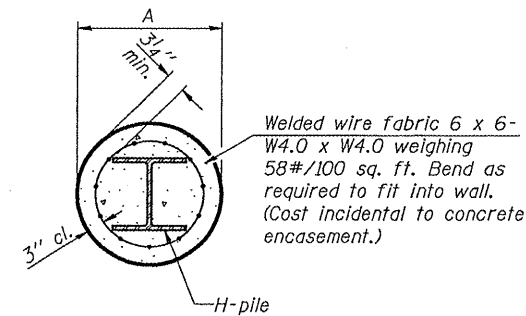


ISOMETRIC VIEW



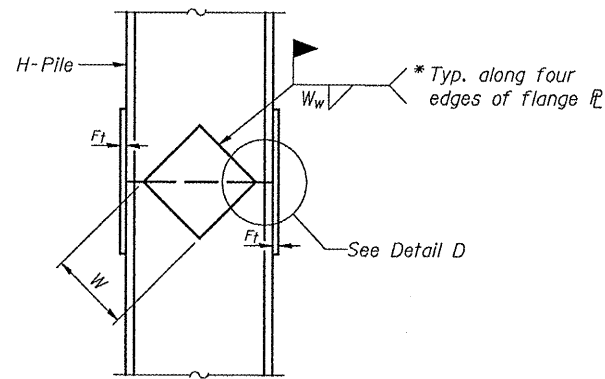
ELEVATION

PILE ENCASEMENT

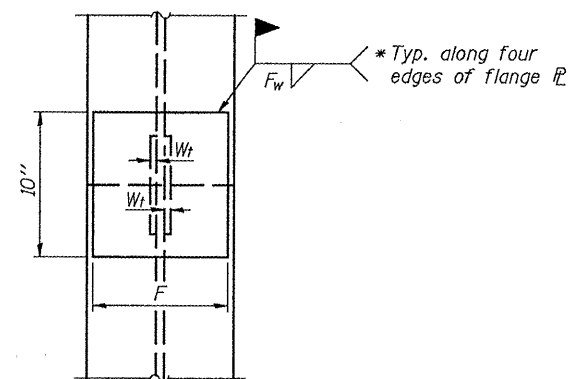


SECTION A-A

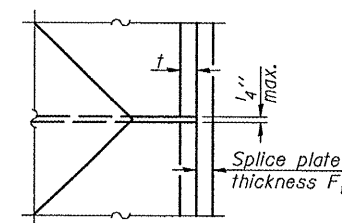
Note:
Forms for encasement may be omitted when soil conditions permit.



ELEVATION



END VIEW

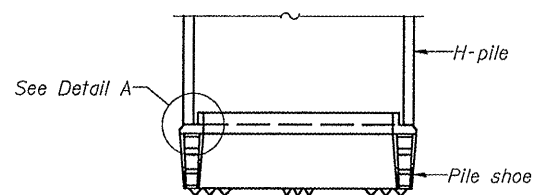


DETAIL D

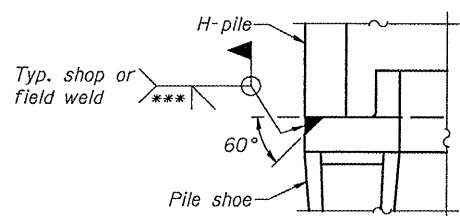
Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5 5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5 5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5 5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5 5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5 5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5 5/8"	1/2"
x63	10"	5/8"	1/2"	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.

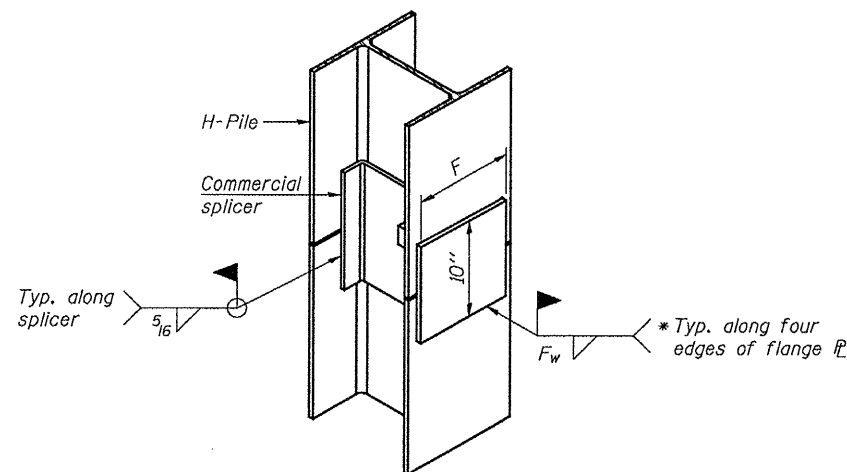


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).

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PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -
	CHECKED - M. A. CACKLEY	REVISED -

JODAVIENS COUNTY
F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK
STATION 20+15

HP PILE DETAILS
STRUCTURE NO. 043-3277

STRUCTURAL SHEET NO. 16 OF 17 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	10-00134-00-BR	JODAVIENS	34	26
WHA# 1183010			CONTRACT NO. 85536	
ILLINOIS FED. AID PROJECT ER-0072(103)				

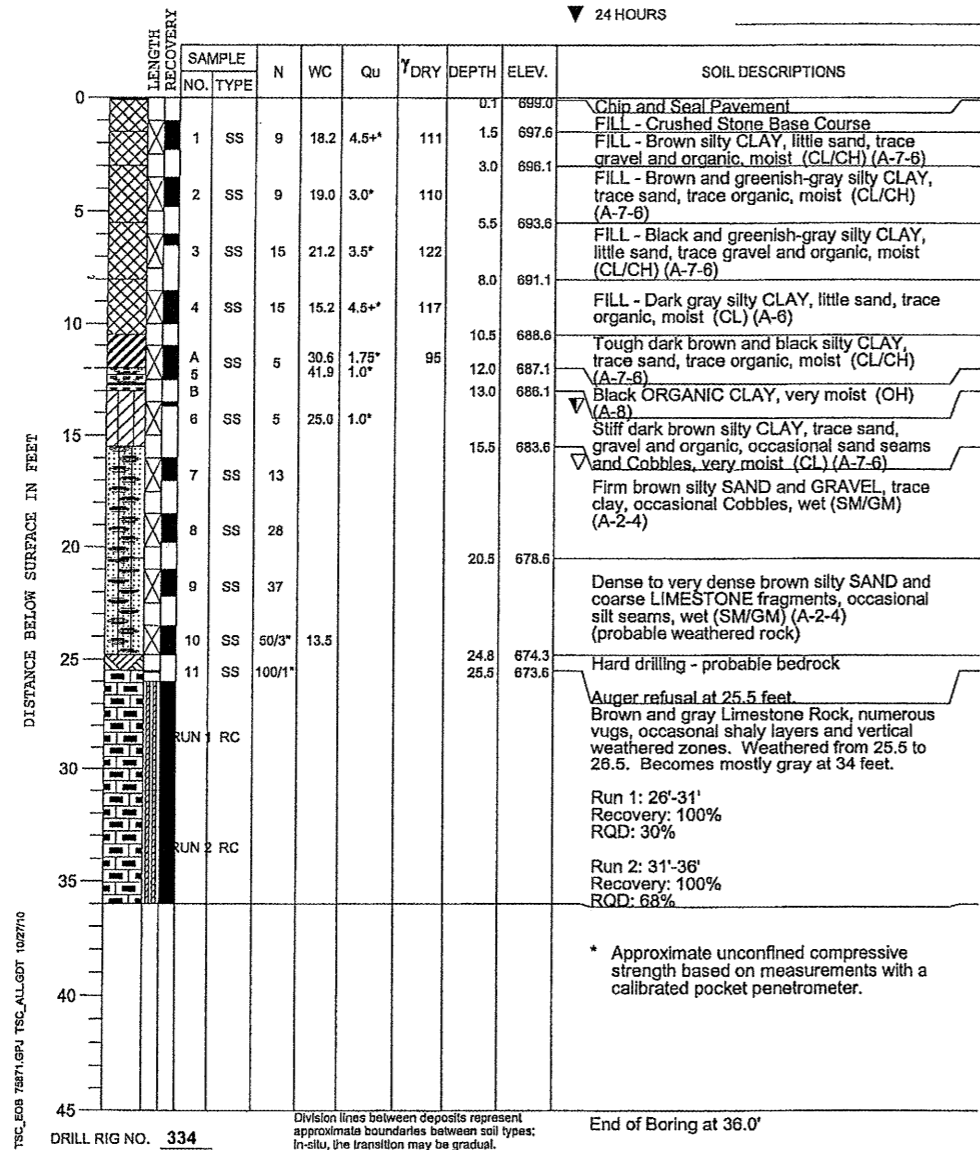
PROJECT **East Bethel Road over Little Rush Creek Bridge, JoDavless County, Illinois**

CLIENT **Willett Hofmann and Associates, Dixon, Illinois**



BORING **1** DATE STARTED **9-27-10** DATE COMPLETED **10-11-10** JOB **L-75,871**

ELEVATIONS		WATER LEVEL OBSERVATIONS	
GROUND SURFACE	699.1	▽ WHILE DRILLING	14.0'
END OF BORING	663.1	▽ AT END OF BORING	16.5'
		▽ 24 HOURS	



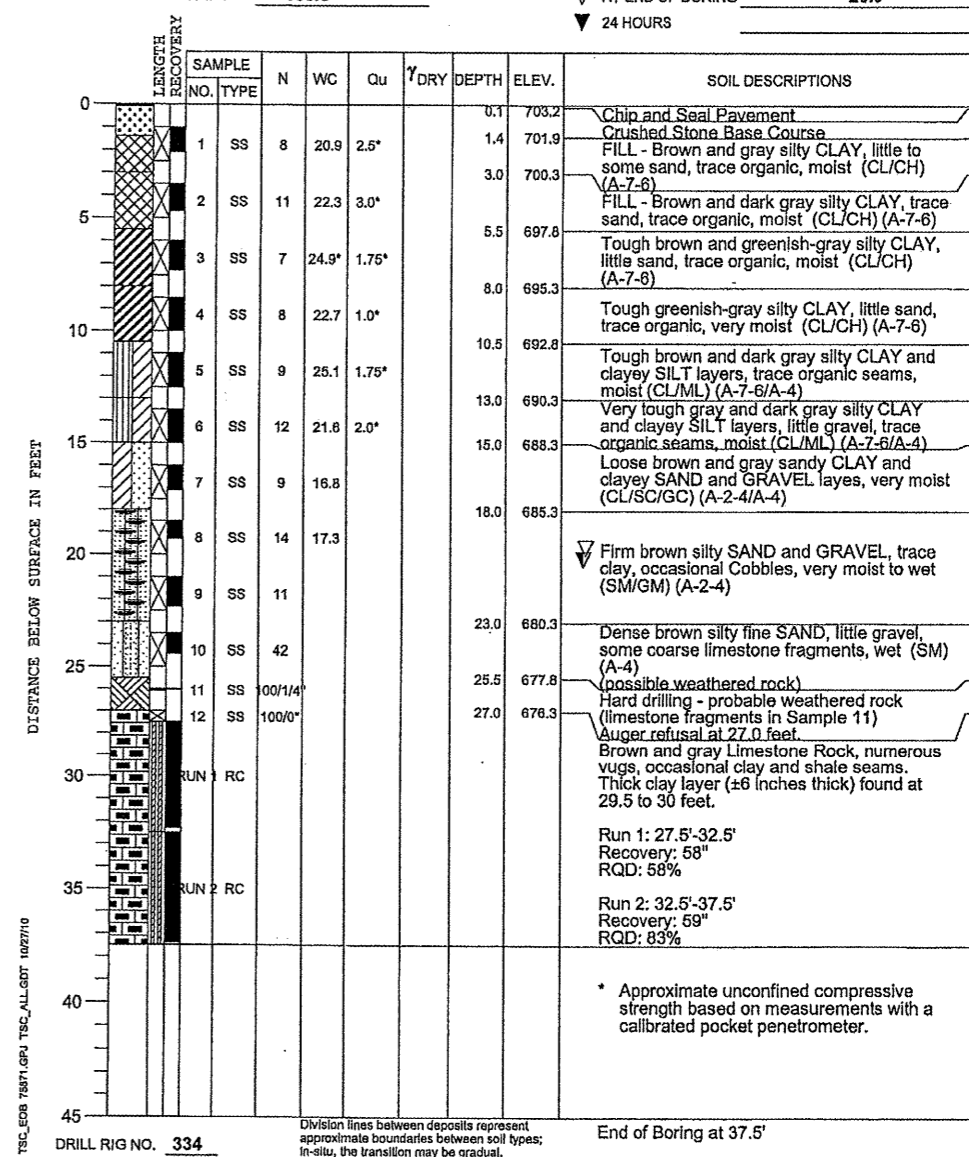
PROJECT **East Bethel Road over Little Rush Creek Bridge, JoDavless County, Illinois**

CLIENT **Willett Hofmann and Associates, Dixon, Illinois**



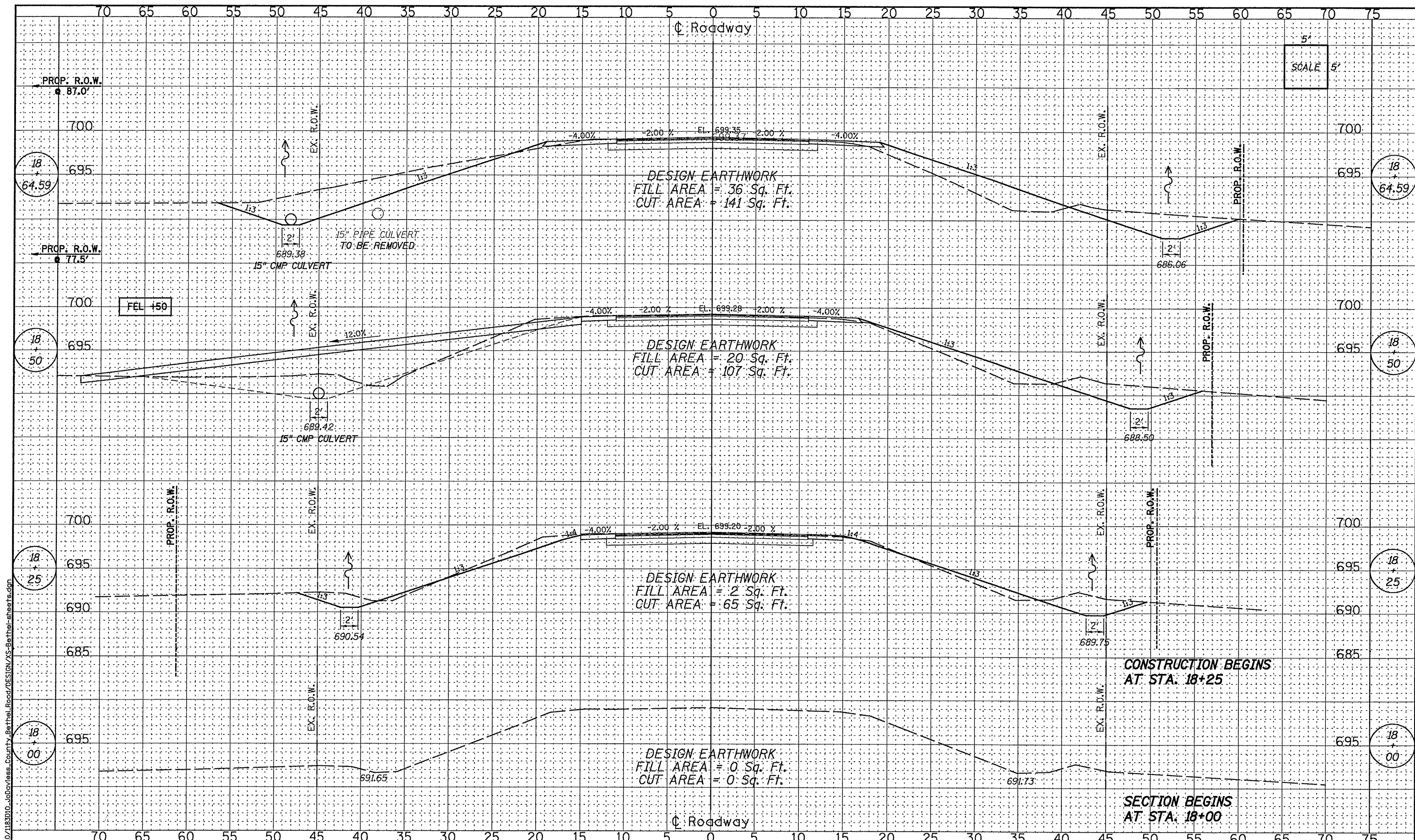
BORING **2** DATE STARTED **10-12-10** DATE COMPLETED **10-12-10** JOB **L-75,871**

ELEVATIONS		WATER LEVEL OBSERVATIONS	
GROUND SURFACE	703.3	▽ WHILE DRILLING	20.5'
END OF BORING	665.8	▽ AT END OF BORING	20.0'
		▽ 24 HOURS	



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USER NAME =	DESIGNED - M. C. WAGNER	REVISED -	JODAVIESS COUNTY F.A.S. 72 (E. BETHEL RD.) OVER LITTLE RUSH CREEK STATION 20+15	BORING LOGS STRUCTURE NO. 043-3277	F.A.S. RTE. 72	SECTION 10-00134-00-BR	COUNTY JODAVIESS	TOTAL SHEETS 34	SHEET NO. 27
PLOT SCALE =	CHECKED - B. K. CONVERSE	REVISED -			WH# 1183010	CONTRACT NO. 85536			
PLOT DATE =	DRAWN - F. D. LACHAT	REVISED -	STRUCTURAL SHEET NO. 17 OF 17 SHEETS		ILLINOIS FED. AID PROJECT ER-0072(103)				
	CHECKED - M. A. CACKLEY	REVISED -							



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REV.	DATE	BY	REMARKS

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APPROVED	X.X.X.

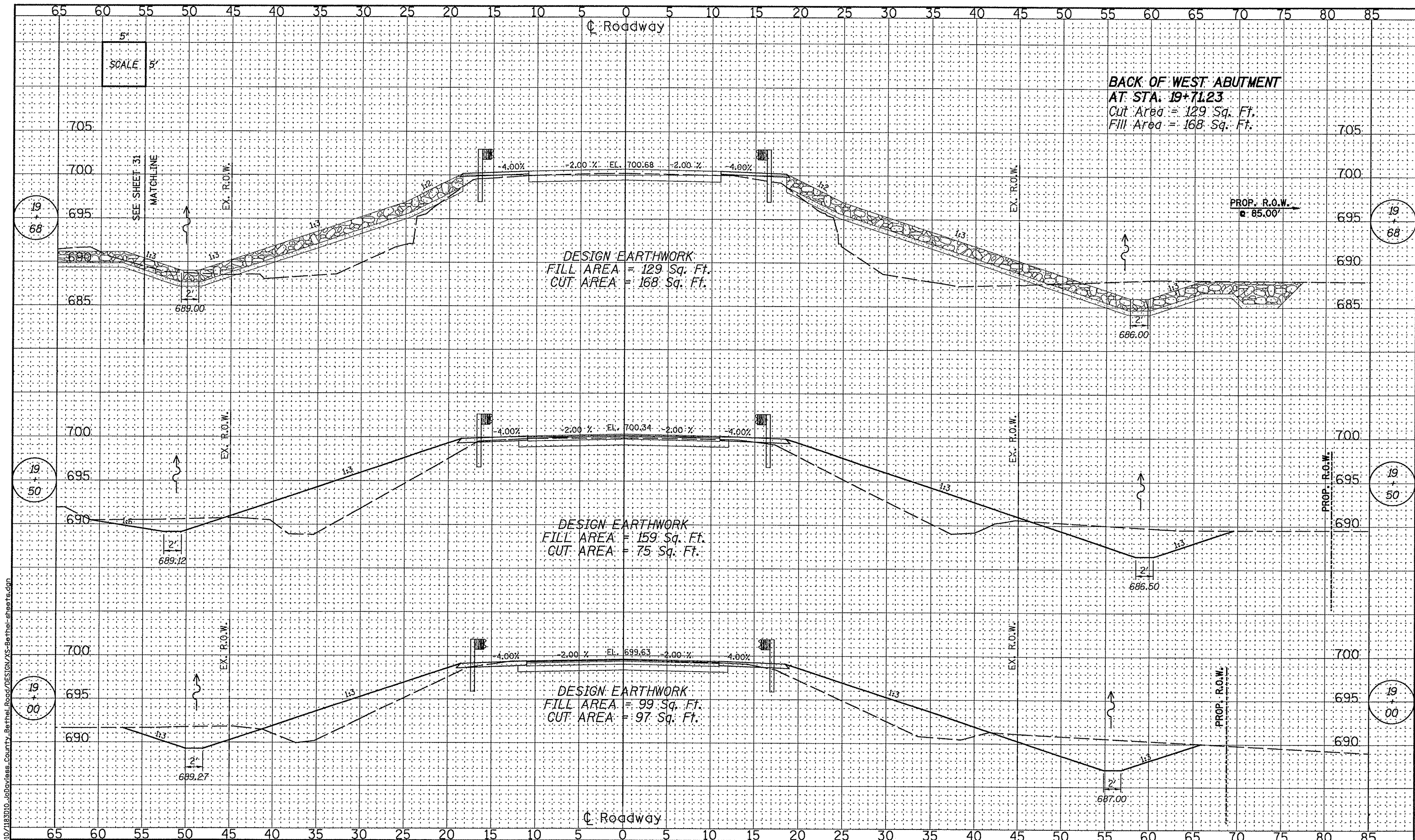
**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2010**

WILLET, HOFMANN & ASSOCIATES, INC.
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Land Surveying - Transportation - Structural
Environmental - Architecture
800 East Second Street Dixon, Illinois 61021
Phone 815.284.3381 Fax 815.284.3385
Design Firm #194-000918
www.willett-hofmann.com

CROSS SECTIONS

SHEET 1 OF 7

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	28
STA. 18+00.00 - STA. 18+64.59			
WHA PROJECT: 1183010		DATE: 1/2011	



REV.	DATE	BY	REMARKS

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D.L.B.

APPROVED
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**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2010**

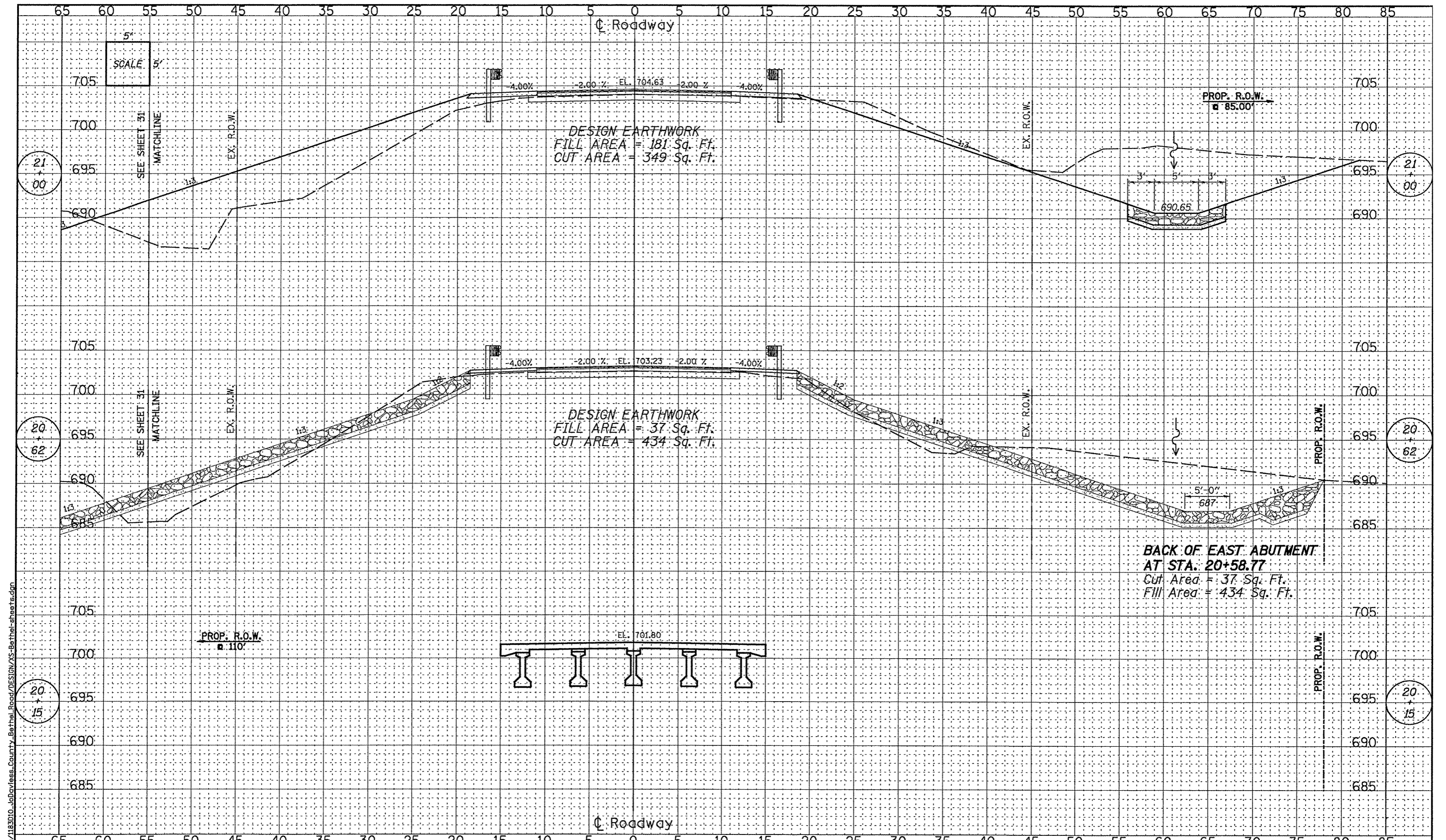
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ASSOCIATES, INC.**
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Design Firm #124-00918
www.willetthofmann.com

CROSS SECTIONS

SHEET 2 OF 7

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	29
STA. 19+00.00 - STA. 19+68.00			
WHA PROJECT: 1183010		DATE: 1/2011	

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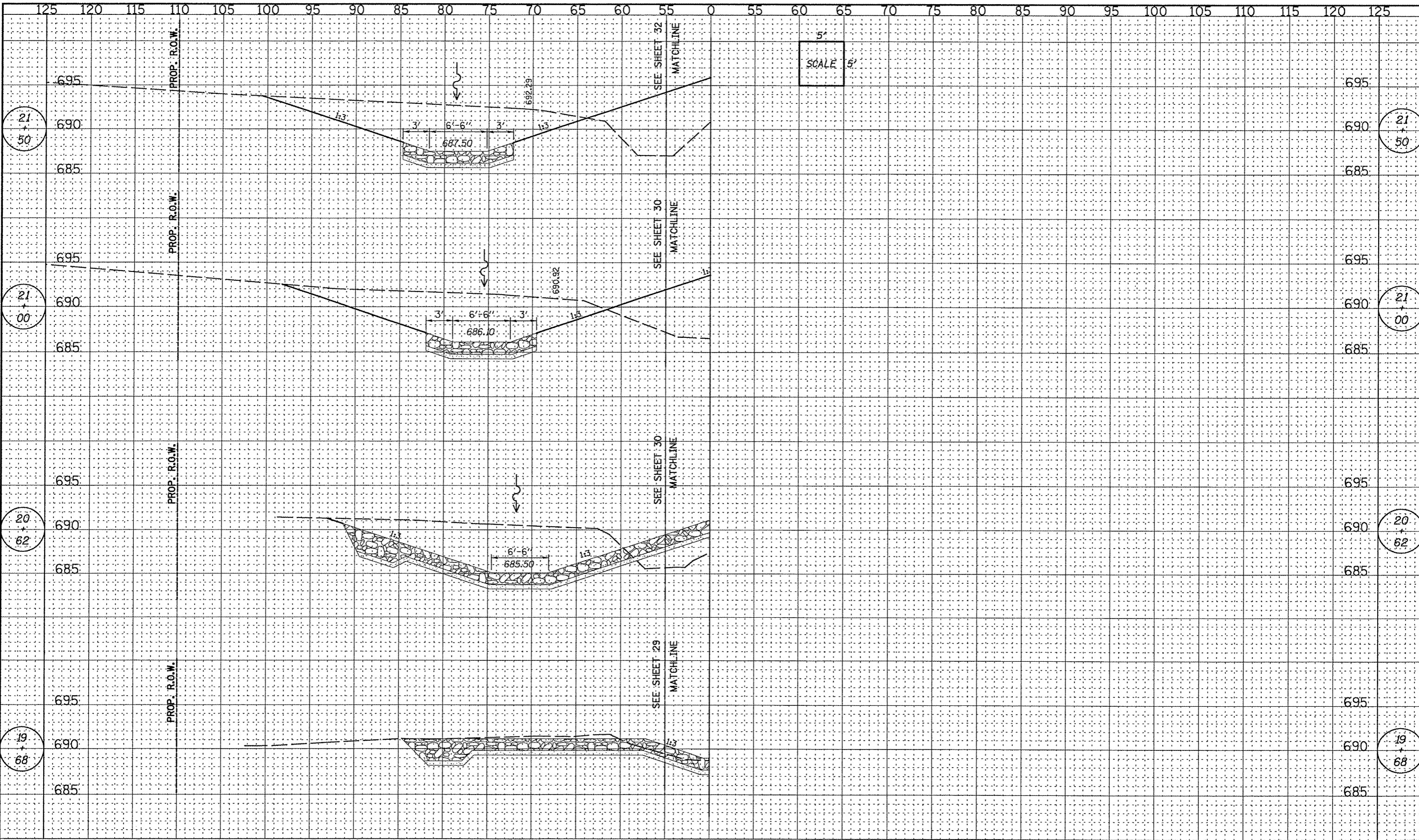
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CHECKED	D.L.B.
APPROVED	X.X.X.

**JO DAVIESS COUNTY
 BRIDGE REPLACEMENT
 EAST BETHEL ROAD OVER LITTLE RUSH CREEK
 2010**

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 Design Firm #184-002918
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CROSS SECTIONS
 SHEET 3 OF 7

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	30
STA. 20+15.00 - STA. 21+00.00			
WHA PROJECT: 1183D10		DATE: 1/2011	



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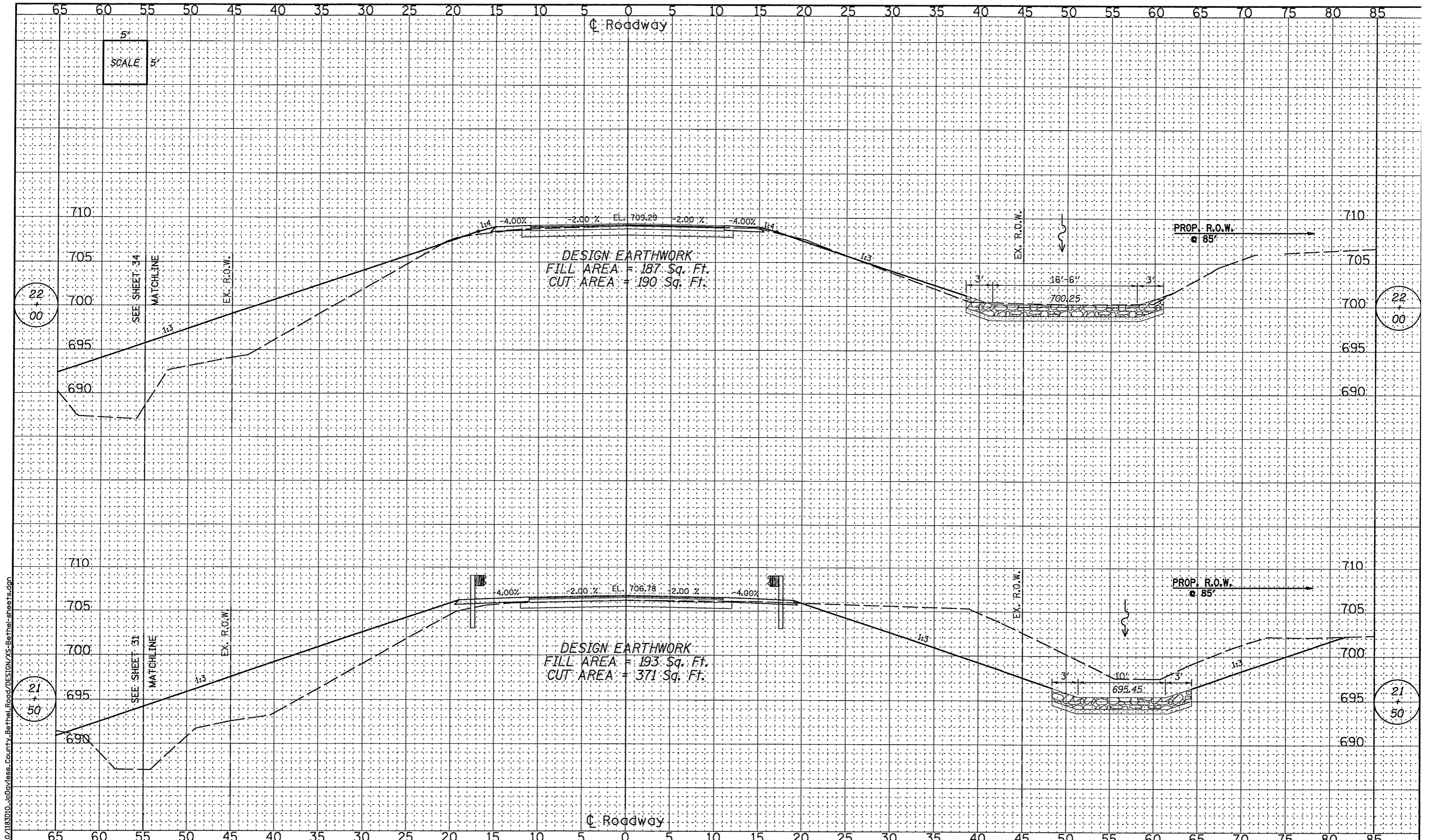
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APPROVED
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**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD OVER LITTLE RUSH CREEK
2010**

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CROSS SECTIONS
 SHEET 4 OF 7

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	31
STA. 19+68.00 - STA. 21+50.00			
WHA PROJECT: 1183010		DATE: 1/2011	



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**JO DAVIESS COUNTY
 BRIDGE REPLACEMENT
 EAST BETHEL ROAD OVER LITTLE RUSH CREEK
 2010**

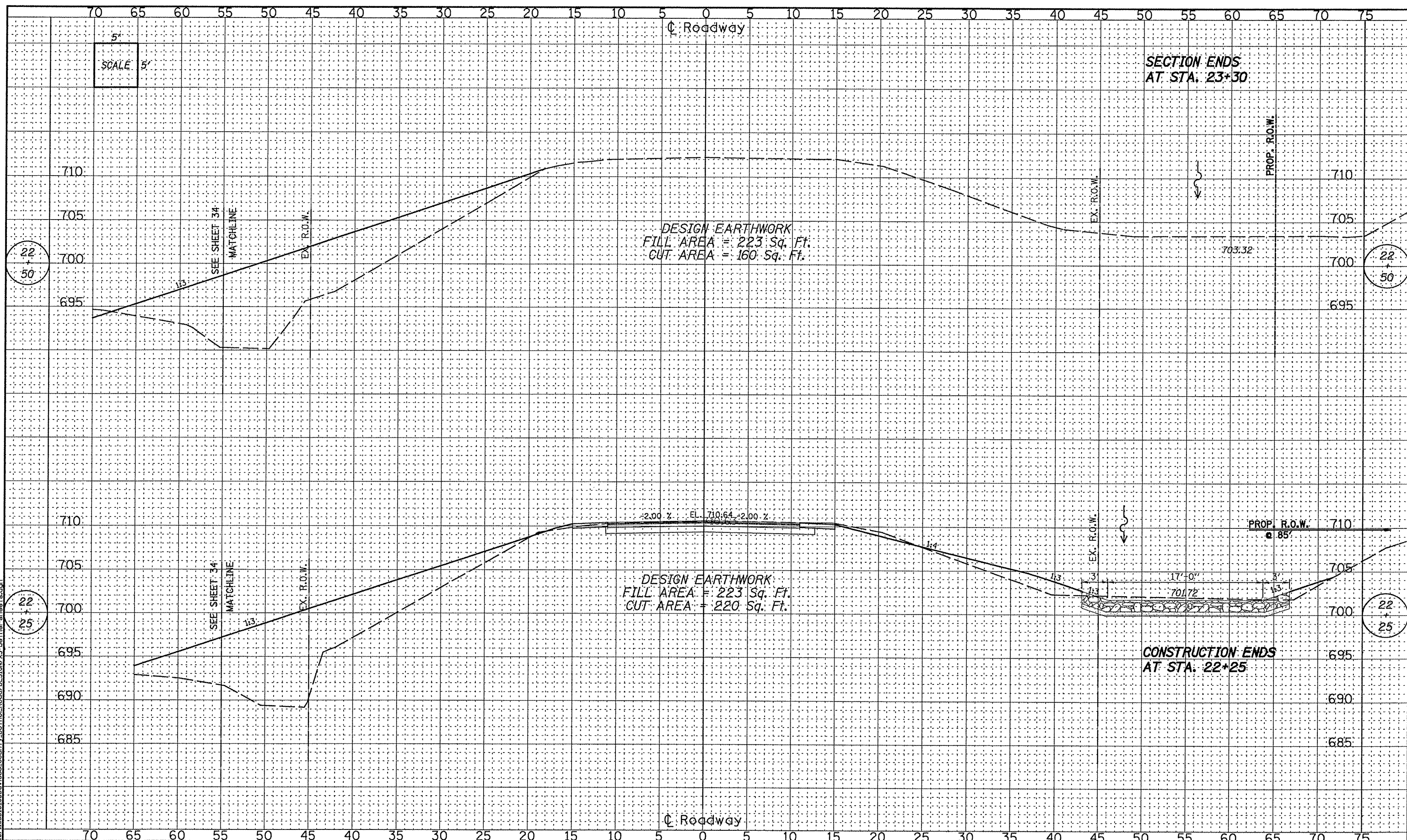
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CROSS SECTIONS
 SHEET 5 OF 7

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	32
STA. 21+50.00 - STA. 22+00.00			
WHA PROJECT: 1183D10		DATE: 1/2011	

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REV.	DATE	BY	REMARKS

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M.P.O.

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D.L.B.

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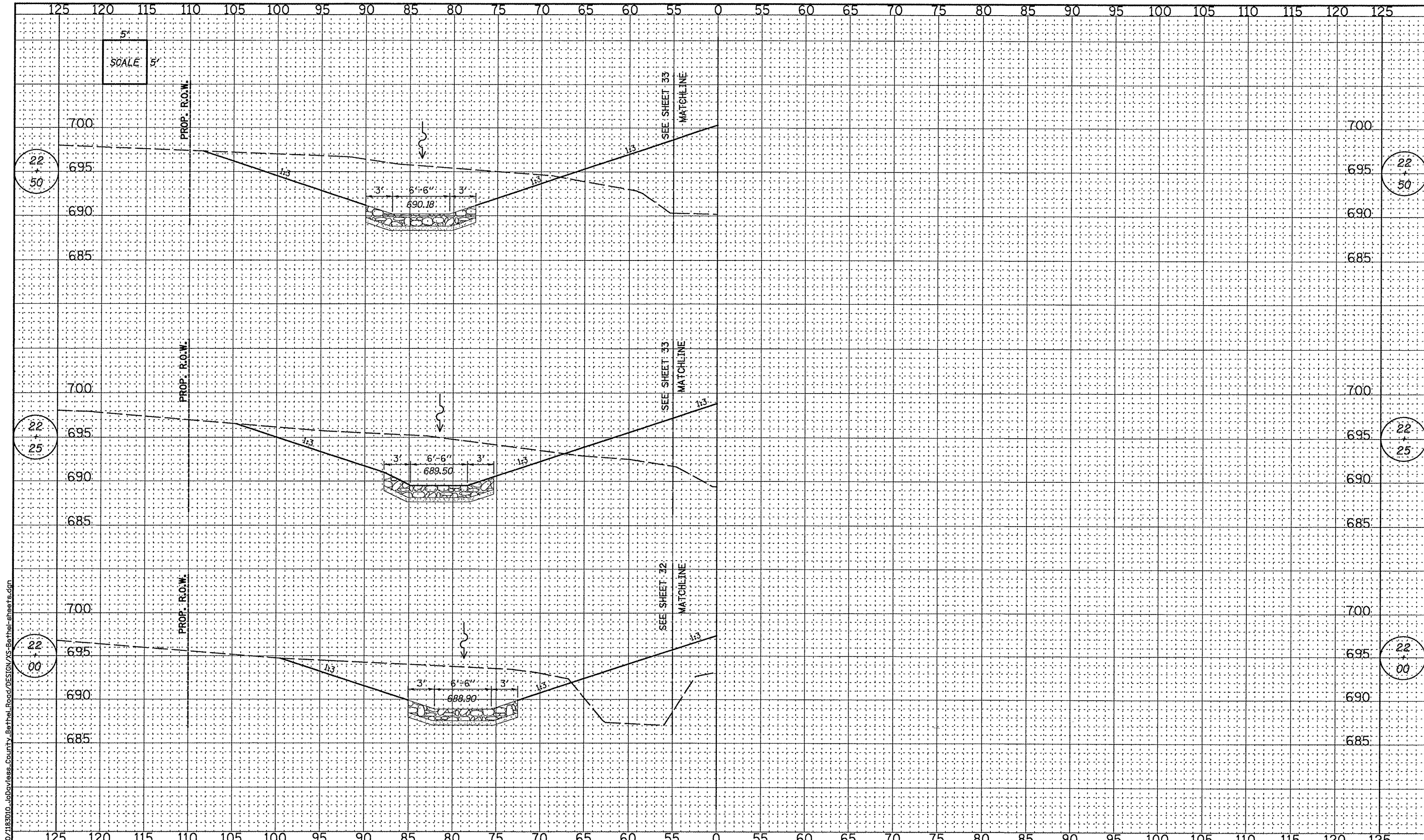
**JO DAVIESS COUNTY
BRIDGE REPLACEMENT
EAST BETHEL ROAD
OVER LITTLE RUSH CREEK
2010**

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Design Firm #194-000918
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CROSS SECTIONS

SHEET 6 OF 7

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	33
STA. 22+25.00 - STA. 22+50.00			
WHA PROJECT: 1183010		DATE: 1/2011	



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REV.	DATE	BY	REMARKS

DRAWN M.P.O.
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 APPROVED X.X.X.
**JO DAVIESS COUNTY
 BRIDGE REPLACEMENT
 EAST BETHEL ROAD OVER LITTLE RUSH CREEK
 2010**


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 809 East Second Street - Dixon, Illinois 61021
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 Design Firm #184-000018
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CROSS SECTIONS

SHEET 7 OF 7

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10-00134-00-BR	JO DAVIESS	34	34
STA. 22+00.00 - STA. 22+50.00			
WHA PROJECT: 1183D10		DATE: 1/2011	