

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	1

FED. RD. DIST. NO. ILLINOIS FED. AID PROJECT
* 03-06118-00-BR

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
BRIDGE REPLACEMENT AND
REHABILITATION PROGRAM
MORGAN COUNTY-ROAD DISTRICT #6
TR-128/MASSEY LANE OVER SANDY CREEK
STRUCTURE NUMBER 069-3256
SECTION 03-06118-00-BR
PROJECT BRS-137(24)
JOB NUMBER C-96-239-04

INDEX OF SHEETS

TITLE SHEET	1
TYPICAL SECTION, GENERAL NOTES AND SCHEDULES	2
PLAN AND PROFILE	3
STRUCTURE PLANS	4 - 10
PILE DETAILS	11
TRAFFIC CONTROL PLAN	12
CROSS SECTIONS	13 - 15

STANDARDS

000001-04	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
280001-02	TEMPORARY EROSION CONTROL SYSTEMS
515001-02	NAME PLATE FOR BRIDGES
630301-03	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631026-02	TRAFFIC BARRIER TERMINAL TYPE 5 & 5A
635006-02	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-01	REFLECTOR MARKERS AND MOUNTING DETAILS
702001-05	TRAFFIC CONTROL DEVICES
B.L.R. 21-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

SCALES

PLAN	0 12.5 25
PROFILE HORZ.	0 12.5 25
PROFILE VERT.	0 2.5 5
CROSS SECTIONS HORZ.	0 2.5 5
CROSS SECTIONS VERT.	0 2.5 5



TOWNSHIP 15 NORTH
TOWNSHIP 14 NORTH

EXISTING STRUCTURE

STRUCTURE NO. 069-3068 IS A THREE SPAN BRIDGE WITH A REINFORCED CONCRETE DECK ON STEEL STRINGERS, REINFORCED CONCRETE ABUTMENTS AND REINFORCED CONCRETE PIER CAPS ON TIMBER PILES.
96'-11" BK TO BK ABUTMENTS
ROADWAY WIDTH = 26'-0" FACE TO FACE
NO SALVAGE

UTILITIES

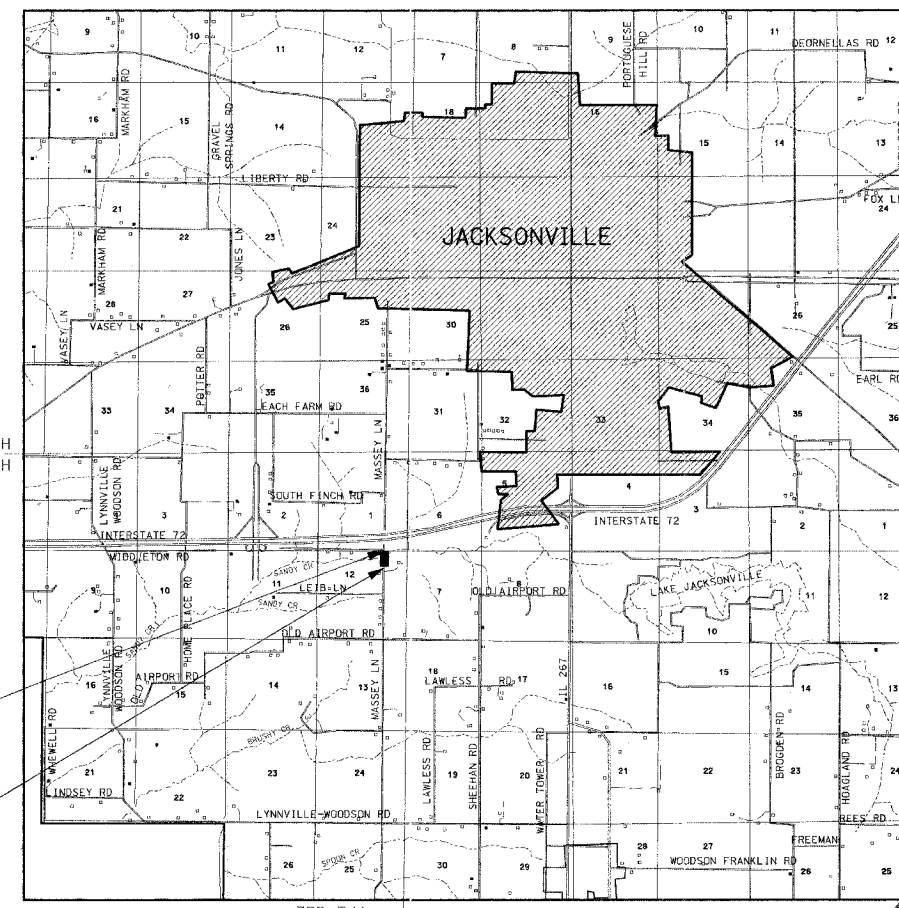
- AMEREN IP (POWER)
JACKSONVILLE, ILLINOIS
- ILLINOIS RURAL ELECTRIC COMPANY
WINCHESTER, ILLINOIS
- VERIZON TELEPHONE
JACKSONVILLE, ILLINOIS
- SCOTT-GREENE-MORGAN WATER COOPERATIVE
MURRAYVILLE, ILLINOIS

TOLL FREE:

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

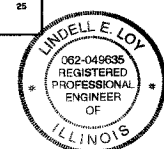
END IMPROVEMENTS
SECTION 03-06118-00-BR
STA. 13+75.00

BEGIN IMPROVEMENTS
SECTION 03-06118-00-BR
STA. 10+75.00



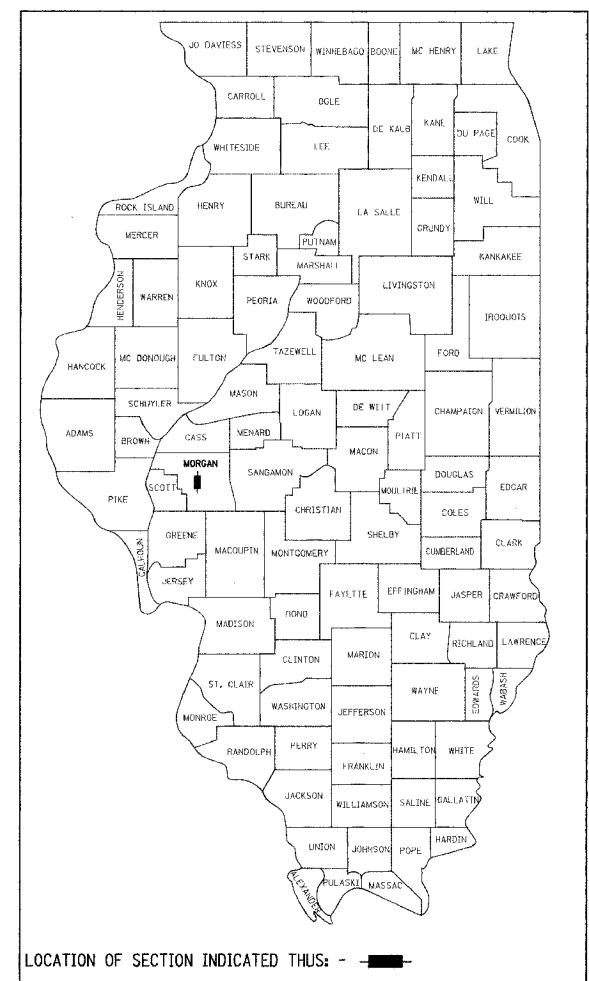
LOCATION MAP

GRAPHIC SCALE
0 1 MILE 2 MILES
LENGTH OF IMPROVEMENT = 300.00 FT. = 0.057 MILES
NET LENGTH OF IMPROVEMENT = 300.00 FT. = 0.057 MILES
ADT = 800
DESIGN CLASS: MINOR COLLECTOR
DESIGN SPEED: 50 MPH



BY *Lindell Loy*
DATE 3/7/2005

EXPIRATION DATE: 11-30-2005
Benton & Associates, Inc.
Consulting Engineers
Jacksonville, Illinois



LOCATION OF SECTION INDICATED THUS: - [black rectangle]

PROPOSED STRUCTURE

THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE WITH REINFORCED CONCRETE OPEN ABUTMENTS AND REINFORCED CONCRETE PILE CAP PIERS ON STEEL PILES
100'-0" BK TO BK ABUTMENTS
BRIDGE WIDTH 28'-0" OUT TO OUT
0° SKEW
PROPOSED STRUCTURE NO. 069-3256

PASSED	<i>March 7 2005</i>	2005
	<i>Markus Cookerill</i>	
	HIGHWAY COMMISSIONER	
PASSED	<i>March 7 2005</i>	2005
	<i>Calvin W. Hance</i>	
	COUNTY ENGINEER	
PASSED	<i>April 1 2005</i>	2005
	<i>W.R. Frey</i>	
	DISTRICT CONSTRUCTION ENGINEER	
PASSED	<i>4-05 2005</i>	2005
	<i>James J. [unclear]</i>	
	DISTRICT LOCAL ROADS ENGINEER	
APPROVED	<i>4/1 2005</i>	2005
	<i>Christine M. Reed</i>	
	REGIONAL ENGINEER	
	STATE OF ILLINOIS	
	DEPARTMENT OF TRANSPORTATION	

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	2
FED. RD. DIST. NO.	ILLINOIS	FED. AID PROJECT	* 03-06118-00-BR	

PAVEMENT STRUCTURE DESIGN INFORMATION

STRUCTURAL DESIGN TRAFFIC: YEAR 2014 ADT 800
 P.V. = 704 (88%) SU = 56 (7%) MU = 40 (5%)
 ROAD CLASSIFICATION: CLASS III
 DESIGN PERIOD : 15 YR.
 T.F. = 0.162 (80K)

PAVEMENT STRUCTURE:
 BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, IL-19.0, N50 3"
 BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50 2"
 AGGREGATE BASE COURSE, TYPE A (8")

BITUMINOUS CONCRETE MIXTURE REQUIREMENTS

ITEM	AGGREGATE COMPOSITION	ASPHALT GRADE	ALLOWABLE RAP	VOIDS
BINDER COURSE	IL-19.0	PG 64-22	20%	4.0%
SURFACE COURSE	IL-12.5 MIX "C"	PG 64-22	15%	4.0%

APPLICATION RATE TABLE

AGGREGATE BASE COURSE	2.05 TON / CU YD
STONE DUMPED RIPRAP, CLASS A5	1.5 TON / CU YD
AGGREGATE SHOULDERS	2.05 TON / CU YD
BITUMINOUS MATERIALS (PRIME COAT)	
AGGREGATE BASE	0.40 GAL / SQ YD
BITUMINOUS BASE	0.08 GAL / SQ YD
BITUMINOUS CONCRETE BINDER COURSE	112 LBS / SQ YD / IN
BITUMINOUS CONCRETE SURFACE COURSE	112 LBS / SQ YD / IN

TREE REMOVAL SCHEDULE

STATION	OFFSET	TREE REMOVAL (6 TO 15 UNITS DIAMETER) (UNIT)	TREE REMOVAL (OVER 15 UNITS DIAMETER) (UNIT)
11+28	26' RT	8	
11+29	25' RT	8	
11+35	28' RT	8	
11+44	28' RT	8	
11+46	27' RT	6	
11+62	20' RT	12	
11+75	18' RT	15	
12+03	21' RT		18
12+05	20' RT		18
12+68	46' LT	6	
12+69	49' LT	6	
12+76	25' LT		30
12+80	15' RT		30
12+84	36' RT	8	
12+86	41' LT		18
13+14	27' LT	6	
TOTALS		91	114

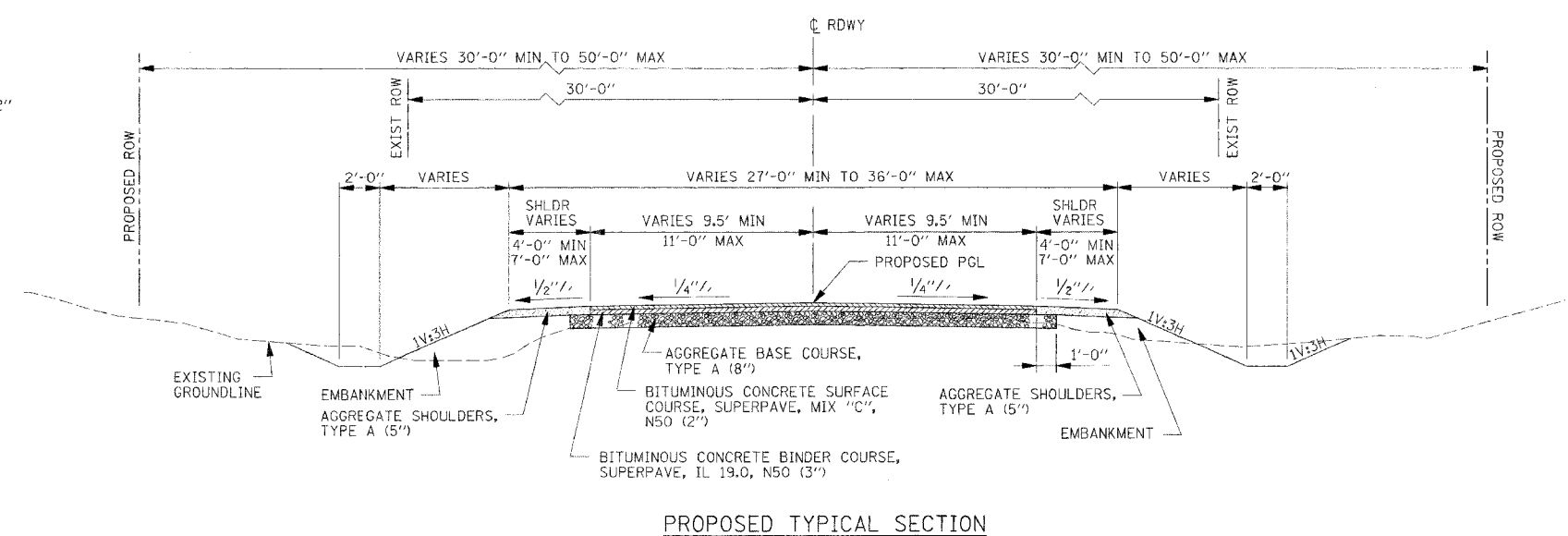
EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION (CU YD)	EARTH EXCAVATION ADJUSTED FOR 25% SHRINKAGE (CU YD)	CHANNEL & RIPRAP EXCAVATION (CU YD)	** SUITABLE CHANNEL & RIPRAP EXCAVATION (CU YD)	CHANNEL & RIPRAP EXCAVATION ADJUSTED FOR 25% SHRINKAGE (CU YD)	EMBANKMENT (CU YD)	EARTHWORK BALANCE WASTE (+) SHRITAGE (-) (CU YD)
STA. 10+75 TO 11+75	109.3	82.0	0.0	0.0	0.0	265.8	-183.8
STA. 11+75 TO 12+75	0.0	0.0	926.0	504.0	377.6	32.0	+345.6
STA. 12+75 TO 12+85	11.7	8.8	0.0	0.0	0.0	72.4	-63.6
STA. 12+85 TO 13+75	123.5	92.6	0.0	0.0	0.0	190.4	-97.8
TOTALS	245	183	926	504	378	561	0

** 45.6% OF THE CHANNEL & RIPRAP EXCAVATION IS CONSIDERED UNSUITABLE MATERIAL.

PAVEMENT MATERIAL SCHEDULE

LOCATION	AGGREGATE BASE COURSE, TYPE A (TON)	BITUMINOUS MATERIALS (PRIME COAT) (GALLON)	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50 (TON)	BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, IL 19.0, N50 (TON)
STA. 10+75 TO 11+75	122.0	126.5	27.4	41.1
STA. 11+75 TO 12+75	0.0	24.9	51.4	0.0
STA. 12+75 TO 13+75	122.0	126.5	27.4	41.1
TOTALS	244	278	106	82



PROPOSED TYPICAL SECTION

STA. 10+75.00 TO STA. 11+75.00
 BRIDGE STA. 11+75.00 TO STA. 12+75.00
 STA. 12+75.00 TO STA. 13+75.00

GENERAL NOTES

- NO BEDDING AND NO FILTER FABRIC MATERIAL IS REQUIRED UNDER THE STONE DUMPED RIPRAP.
- THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE OWNER AND THE INDICATED ADJUSTMENTS ARE CONSIDERED TO BE REASONABLY ACCURATE. AS DETAILED IN SECTION 563 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, ITS OFFICERS AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLES 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS.
- ALL EXISTING PRIVATELY OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY COMPANY INVOLVED UNLESS OTHERWISE NOTED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENT ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY SAID UTILITY ADJUSTMENTS.
- WHERE SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER OR AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATIONS.
- DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHALL COMPLY WITH THE LEGAL LOADING LIMITS ESTABLISHED BY THE COUNTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY LUGS OR CLEATS ON TREADS OR WHEELS OR EQUIPMENT OR BY EXCESSIVE WEIGHTS AND LOADS.
- THE NOMINAL THICKNESS FOR SURFACE COURSES ARE SHOWN ON THE TYPICAL SECTIONS, STANDARDS, SCHEDULES OR SPECIAL DETAILS. THE CONSTRUCTED THICKNESS OF THE ABOVE ITEMS SHALL NOT BE LESS THAN 90 PERCENT OF THE NOMINAL THICKNESS AT ANY LOCATION.
- STOCKPILING OF MATERIALS WILL BE ALLOWED ON COUNTY PROPERTY AT MUTUALLY AGREEABLE LOCATIONS. NO STOCKPILING OF MATERIALS SHALL BE ALLOWED ON THE TRAVELED SURFACE OF EXISTING ROADS AND HIGHWAYS THAT ARE OPEN TO TRAFFIC.
- THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS OR HER CONSTRUCTION AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE INCLUDED IN THE COST OF THE PAY ITEM FOR THE WORK INVOLVED.

SUMMARY OF QUANTITIES

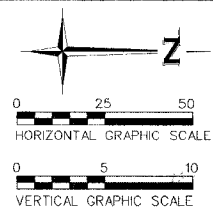
CODE NO.	ITEM	UNIT	QUANTITY
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	91
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	114
20200100	EARTH EXCAVATION	CU YD	245
20300100	CHANNEL EXCAVATION	CU YD	513
* 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.3
28000300	TEMPORARY DITCH CHECKS	EACH	4
28100809	STONE DUMPED RIPRAP, CLASS A5	TON	756
* 35100100	AGGREGATE BASE COURSE, TYPE A	TON	244
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	278
48100100	AGGREGATE SHOULDERS, TYPE A	TON	75
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	100
50300225	CONCRETE STRUCTURES	CU YD	92.9
50400405	PRECAST PRESTRESSED CONCRETE DECK BEAMS (21" DEPTH)	SQ FT	2,751.0
50800105	REINFORCEMENT BARS	POUND	8,330
50900205	STEEL RAILING, TYPE S1	FOOT	200
51201000	FURNISHING METAL PILE SHELLS 12"	FOOT	1,230
51202600	DRIVING AND FILLING SHELLS	FOOT	1,230
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
63100075	TRAFFIC BARRIER TERMINAL, TYPE SA	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	4
* 70103700	TRAFFIC CONTROL COMPLETE	L SUM	1
* 78200410	GUARDRAIL MARKERS, TYPE A	EACH	4
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
* X4066414	BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "C", N50	TON	106
* X4066614	BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, IL-19.0, N50	TON	82
* X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 1	EACH	1
* X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION - LOCATION 2	EACH	1
* Z0023900	FILLING EXISTING WELLS	EACH	1

* SEE SPECIAL PROVISIONS

CONSTRUCTION TYPE CODE: X080-2A

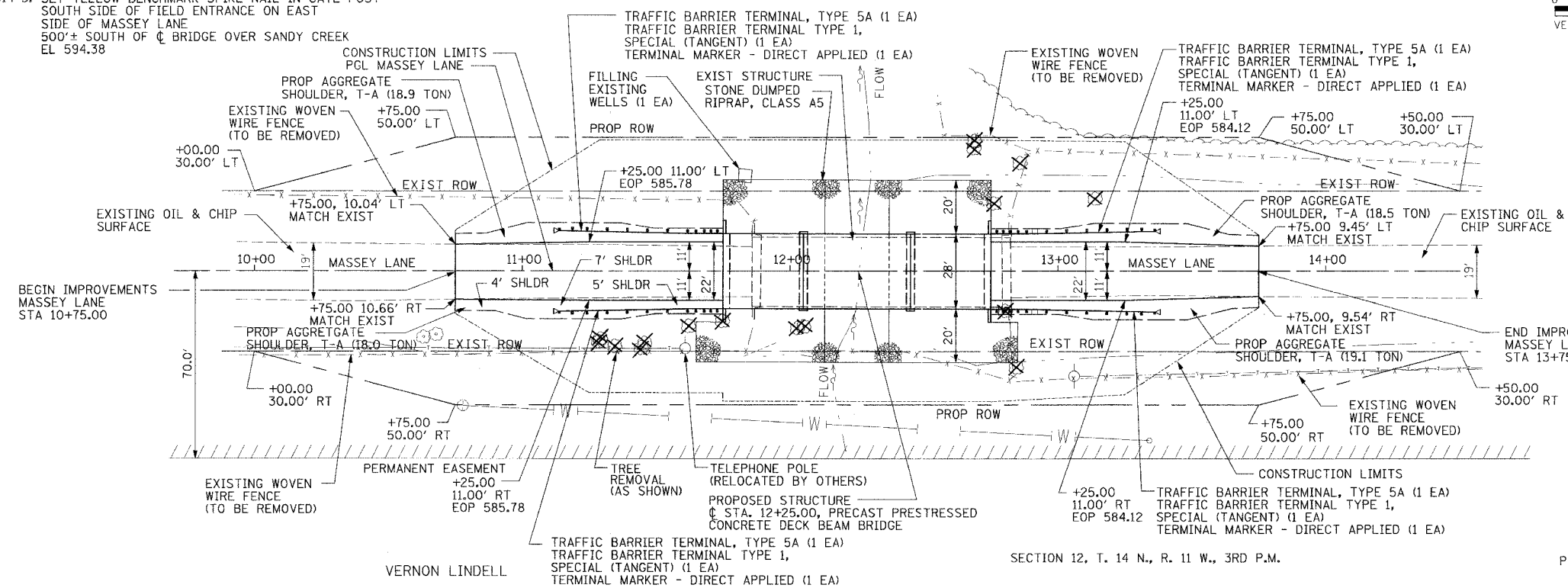
DRAWN BY: LEL	<p>TYPICAL SECTION, GENERAL NOTES AND SCHEDULES MASSEY LANE OVER SANDY CREEK SEC 03-06118-00-BR STA. 12+25.00</p>								
CHECKED BY: LEL									
APPROVED BY: REG									
DATE: MARCH, 2005									
<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>		DATE	BY						
DATE	BY								
<p>MORGAN COUNTY, ILLINOIS</p> <p>Benton & Associates, Inc. Consulting Engineers / Land Surveyors 1970 West Lafayette Avenue Jacksonville, Illinois 62650 Phone : 217-245-4146 Fax : 217-245-4149 IL Design Firm Registration No. 184-000852</p>									
FIELD BOOK:	SCALE: N.T.S.								
	JOB NO. 02E1314 SHEET 2 OF 15								

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	03-06118-00-BR	MORGAN	15	3
STA.	10+75	TO STA.	13+75	
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



- BM #1314-1: EXISTING USGS BENCHMARK DISK IN TOP SOUTHWEST WINGWALL OF EXISTING BRIDGE OVER SANDY CREEK STAMPED "V.P.T. 1979" EL 585.28
- BM #1314-2: CUT CHISELED "□" ON CONCRETE INLET AT THE NOTRWEST CORNER OF MASSEY LANE AND FRICKE LANE 460'± NORTH OF C BRIDGE OVER SANDY CREEK EL 582.37
- BM #1314-3: SET YELLOW BENCHMARK SPIKE NAIL IN GATE POST SOUTH SIDE OF FIELD ENTRANCE ON EAST SIDE OF MASSEY LANE 500'± SOUTH OF C BRIDGE OVER SANDY CREEK EL 594.38

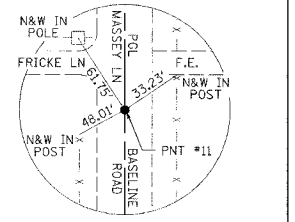
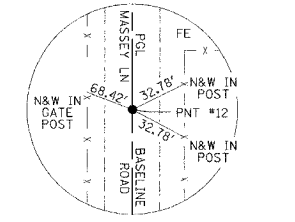
LOUIS BURMEISTER
SECTION 12, T. 14 N., R. 11 W., 3RD P.M.



- NOTES**
1. THE EXISTING WOVEN WIRE FENCE SHALL BE REMOVED ON EACH SIDE OF MASSEY LANE INSIDE THE LIMITS OF THE PROPOSED RIGHT OF WAY. THE REMOVAL OF THE EXISTING WOVEN WIRE FENCE SHALL NOT BE MEASURED FOR PAYMENT. THE REMOVAL OF THE WOVEN WIRE FENCE SHALL BE INCLUDED WITH CLEARING.
 2. THE PERMANENT EASEMENT IS OWNED BY THE SCOTT-MORGAN-GREENE WATER COOPERATIVE.

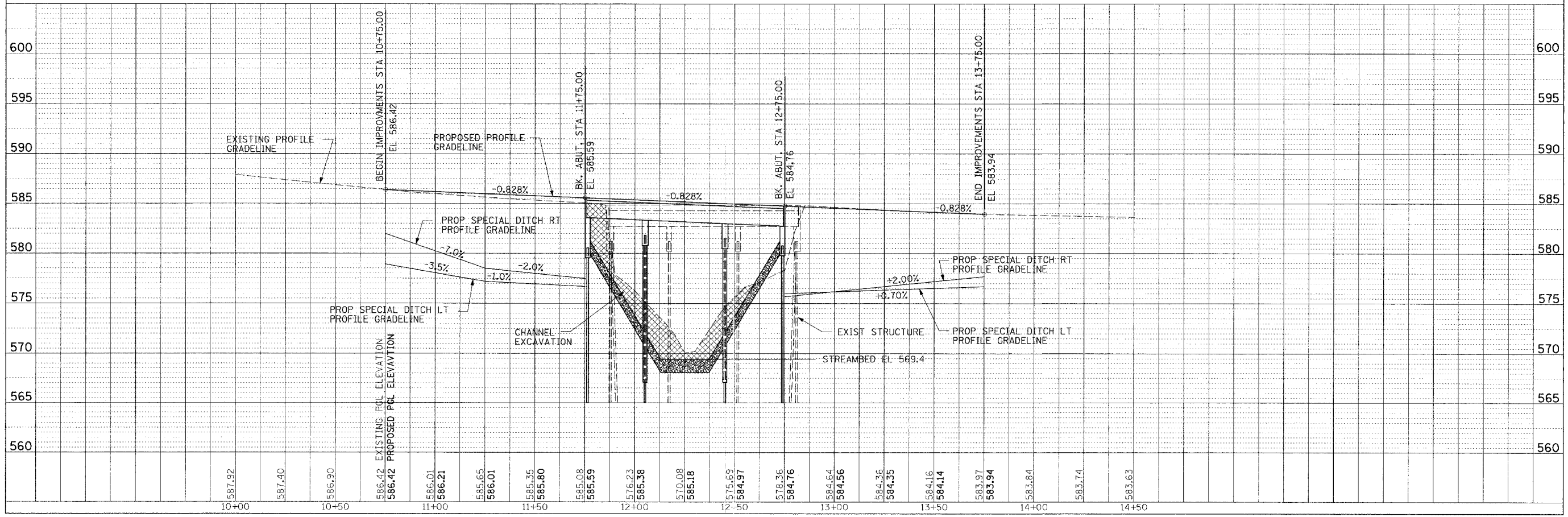
LEGEND

- EXIST TREE TO REMAIN
- ✕ EXIST TREE TO BE REMOVED



PNT #12 MAG NAIL STA. 8+34.29 (N. 5000.00, E. 5000.00) PNT #11 MAG NAIL STA. 16+34.29 (N. 5800.00, E. 5000.00)

VERNON LINDELL
SECTION 12, T. 14 N., R. 11 W., 3RD P.M.



DATE	BY	REVISION

DATE	BY	REVISION

B.M. #1314-1
Existing USGS BM Disk in Top S.W. Wingwall of Existing Bridge over Sandy Creek, Stamped "V.P.T. 1979", EL 585.28

B.M. #1314-2
Set Chiseled "I" on Concrete Inlet Structure at the Northwest Corner of Massey Lane and Fricke Lane 460'± North of Centerline Bridge over Sandy Creek, EL 582.37

B.M. #1314-3
Set Yellow BM Spike Nail in Gate Post, South Side of Field Entrance on East Side Massey Lane, 500'± South of Centerline Bridge over Sandy Creek, EL 594.38

GENERAL NOTES

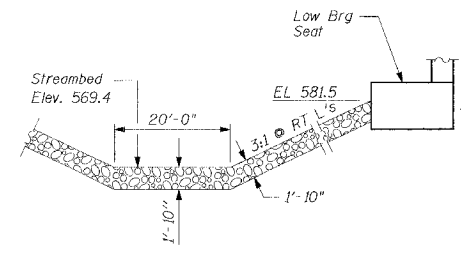
- See Special Provisions for Boring Logs.
- The Contractor shall drive a test pile as specified in a permanent location in Pier #1 as directed by the Engineer prior to ordering the remainder of the piles.
- A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions shall be used in the concrete for precast prestressed concrete deck beams.
- Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.
- Road shall be closed to traffic at all times during construction.

EXISTING STRUCTURE:

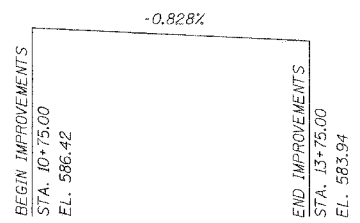
Structure No. 069-3068 Three Span Bridge with a Reinforced Concrete Deck on Steel Stringers with Reinforced Concrete Abutments and Pier Caps on Timber Piles. The Existing Structure is 96'-11" back to back Abutments and 26'-0" Wide. The Contractor shall remove the existing structure in accordance with the Special Provisions.

Estimate of quantities for Existing Structure Removal.

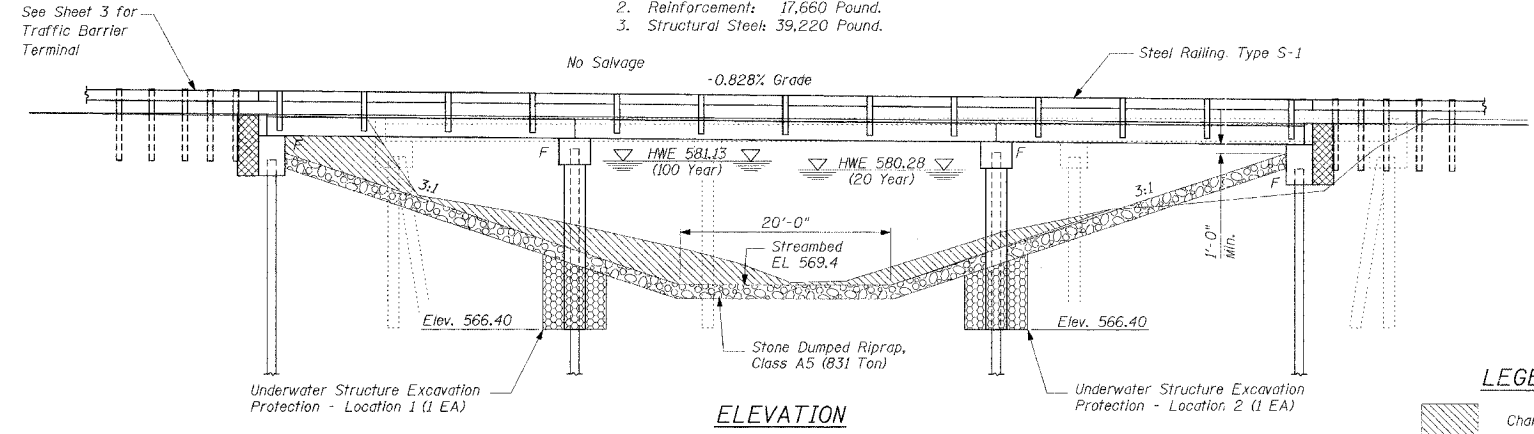
- Concrete: 94.4 Cu Yd.
- Reinforcement: 17,660 Pound.
- Structural Steel: 39,220 Pound.



STONE RIPRAP CHANNEL DETAIL
N.T.S.



PROFILE GRADE
ALONG CENTERLINE ROADWAY

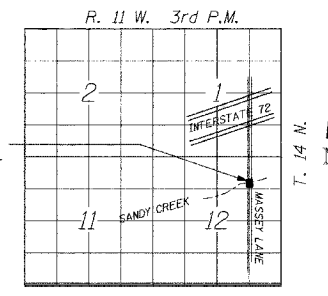


ELEVATION

LEGEND

- Channel Excavation
- Structure Excavation
- Underwater Structure Excavation

PROPOSED STRUCTURE



LOCATION SKETCH

SEISMIC DATA
Seismic Performance Category (SPC) A
Bedrock Acceleration Coefficient (A) 0.05
Site Coefficient (S) 1.5

DESIGN SPECIFICATIONS
AASHTO 2002

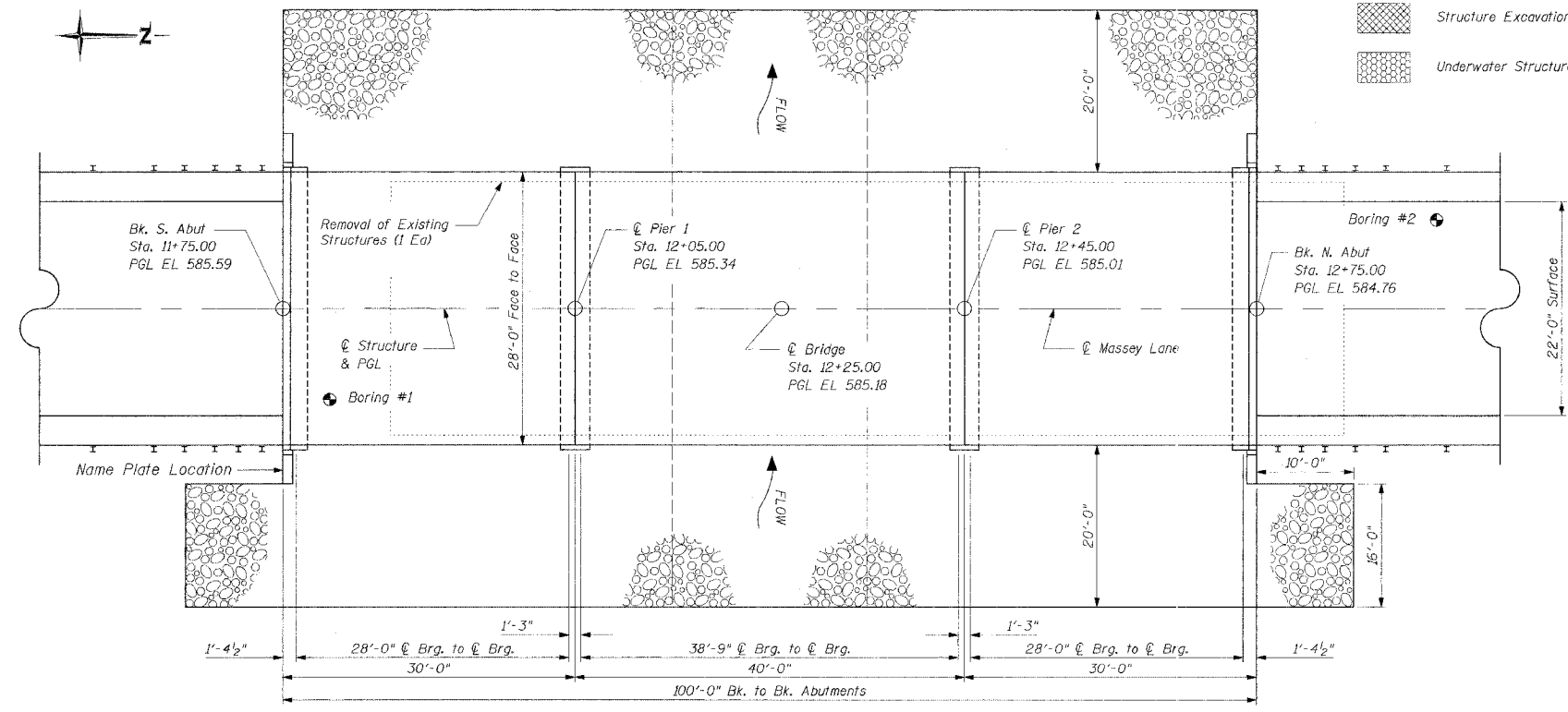
LOADING HS20-44
Future Wearing Surface = 50 psf
Allowance 50 psf Wearing Surface

DESIGN STRESSES
FIELD UNITS
f_c = 3,500 psi
f_y = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS
f_c = 5,000 psi
f_{ci} = 4,000 psi
f_s = 270,000 psi (1/2" φ Strands)
f_{si} = 201,960 psi (1/2" φ Strands)

SANDY CREEK
BUILT 200... BY
ROAD DISTRICT #6
MORGAN COUNTY
SEC 03-06118-00-BR
STA 12+25.00
STR. NO. 069-3256 LOADING HS20

LETTERING FOR NAME PLATE
See Std. 515001
(Locate at S.E. Wing)



PLAN

TOTAL BILL OF MATERIALS

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu Yd		513	513
* Stone Dumped Riprap, Class A5	Ton		756	756
* Removal of Existing Structures	L Sum		1	1
Structure Excavation	Cu Yd		100	100
Concrete Structures	Cu Yd		92.9	92.9
Precast Prestressed Concrete				
Deck Beams (21" Depth)	Sq Ft	2,751.0		2751.0
Reinforcement Bars	Pound		8,330	8,330
Steel Railing, Type S-1	Foot	200		200
Furnishing Metal Pile Shells	Foot		1,230	1,230
Driving and Filling Shells	Foot		1,230	1,230
Test Pile Metal Shells	Each		1	1
Name Plates	Each		1	1
* Underwater Structure Excavation Protection - Location 1	Each		1	1
* Underwater Structure Excavation Protection - Location 2	Each		1	1

* See Special Provisions

WATERWAY INFORMATION

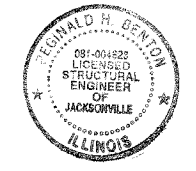
Drainage Area = 18.8 Sq.Mi. Low Grade Elev. 582.9

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head-Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	3322	551	571	580.28	0.63	0.27	580.91	580.55
Base	100	4780	634	638	581.13	1.44	0.58	582.57	581.71
Overtopping									
Max. Calc.	500	6180	634	693	581.82	1.97	0.86	583.79	582.68

CONSTRUCTION PERMITS

This project has been approved for construction under statewide permit No. 12, as issued by the Department of Natural Resources' / Office of Water Resources.

I hereby declare 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 the structure and complies with requirements of the current "AASHTO Standard Specifications for Highway Bridges".



EXPIRATION DATE: 11-30-2006

BY *Ronald H. Benton*
DATE 3/8/2005

DRAWN BY MKC
CHECKED BY LEL
APPROVED BY REG
DATE MARCH, 2005

REVISIONS

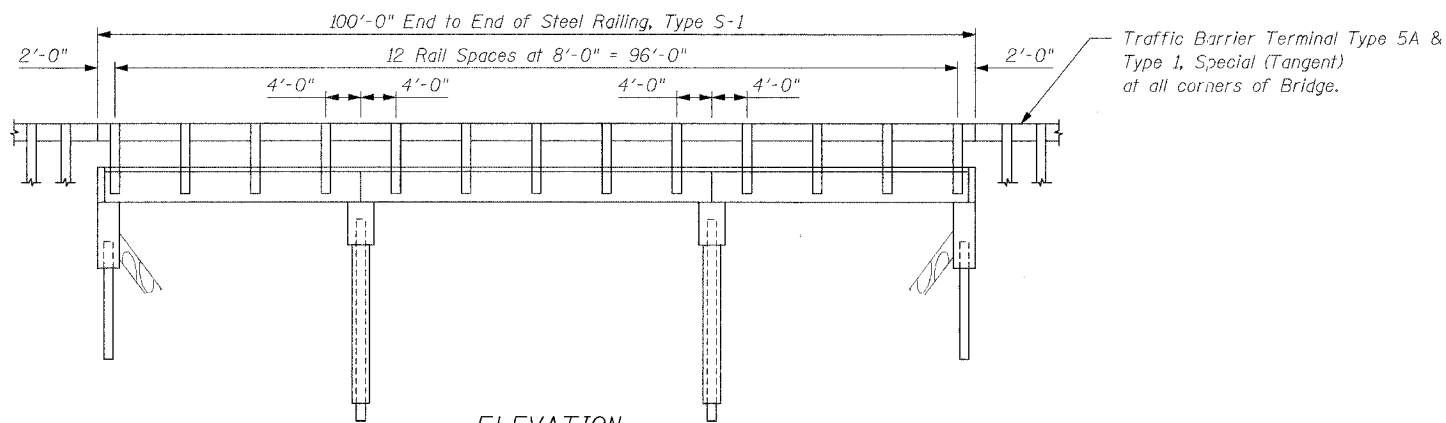
DATE	BY

GENERAL PLAN AND ELEVATION
MASSEY LANE OVER SANDY CREEK
SEC 03-06118-00-BR STA. 12+25.00

MORGAN COUNTY, ILLINOIS

Benton & Associates, Inc.
Consulting Engineers / Land Surveyors
1970 West Lafayette Avenue Jacksonville, Illinois 62650
Phone : 217-245-4146 Fax : 217-245-4149
IL Design Firm Registration No. 184-000852

FIELD BOOK: SCALE: N.T.S. JOB NO. 02E1314 SHEET 4 OF 15



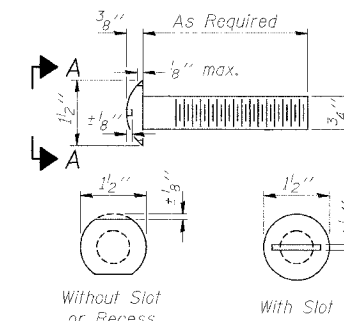
ELEVATION

NOTES

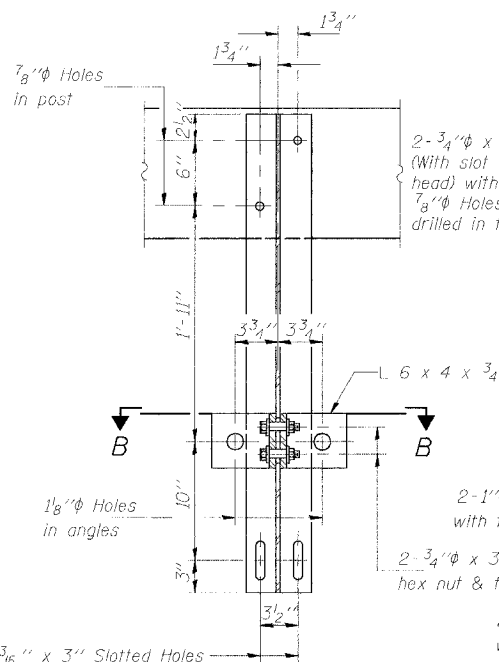
Hollow structural steel tubing shall conform to the requirements of ASTM designation A 500 Grade B Structural Steel Tubing and shall meet the longitudinal CVN requirements of 15 ft-lbs at 0° F. All other steel shapes and plates shall conform to the requirements of AASHTO M 270 Grade 36 except posts and angles shall conform to AASHTO M 270, Grade 50. Bolts, cap screws, and nuts shall conform to the requirements of ASTM designation A 307 except for high strength bolts, nuts and washers noted which shall conform to AASHTO M 164. All bolts, nuts, cap screws, washers and lock washers shall be galvanized according to AASHTO M 232. All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication according to AASHTO M 111 and ASTM A 385. Galvanized rail shall not be painted. Railing shall be according to 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. All field drilled holes shall be coated with an approved zinc rich paint before erection. The lower portion of the post flange in contact with concrete shall receive two coats of asphalt paint conforming to Section 1060.07 Type II or place 1/8" fabric bearing pad between the post and concrete. The 3/4" high strength bolts used to connect the 6 x 4 x 3/4 angles to the post shall be tightened according to Article 505.04(f)(2) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only. For multi-span bridges, sufficient 1/4" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with SIFEL RAILING, TYPE S-1.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	7
FED. RD. DIST. NO.	ILLINOIS	FED. AID PROJECT		

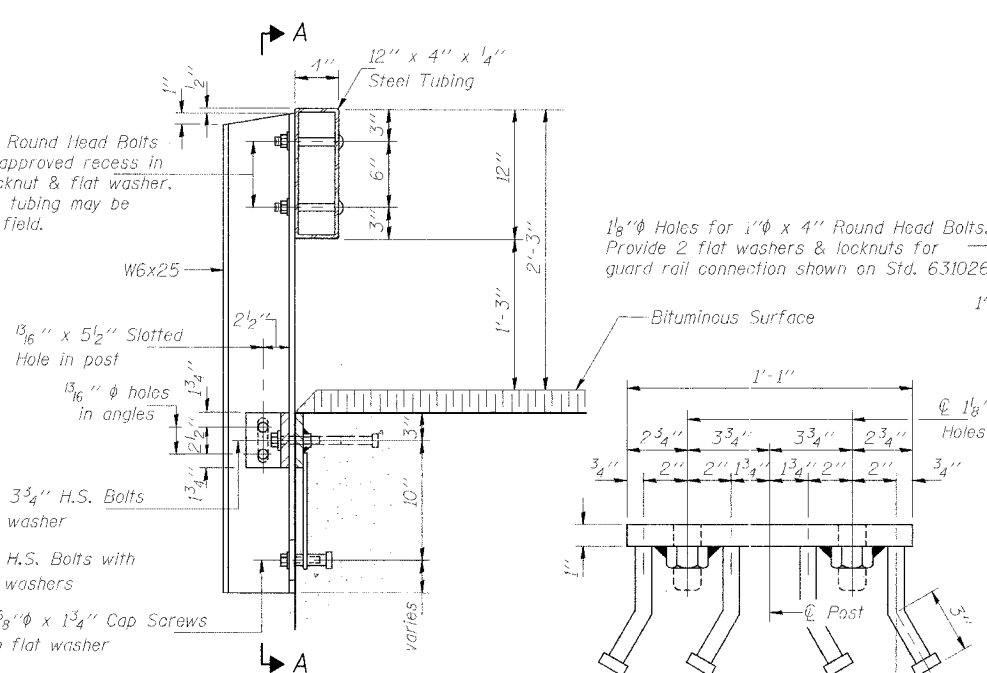
* 03-06118-00-BR



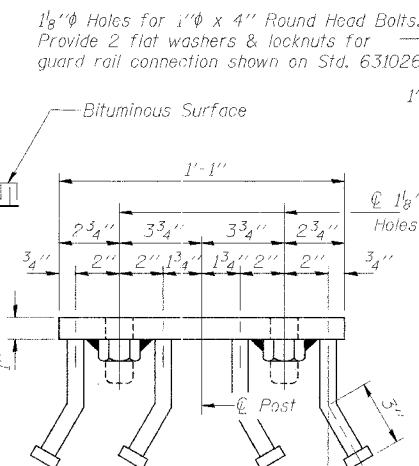
VIEW A-A
ROUND HEAD BOLT



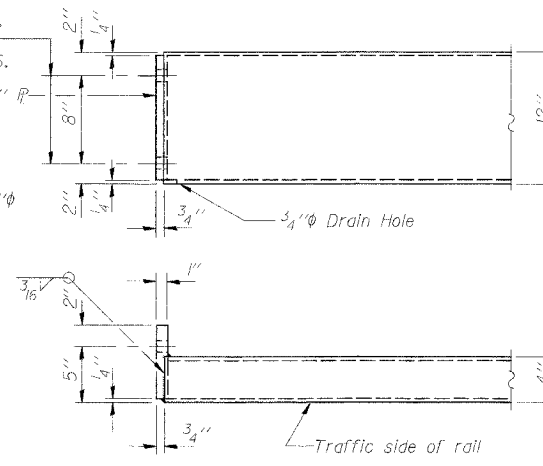
SECTION A-A



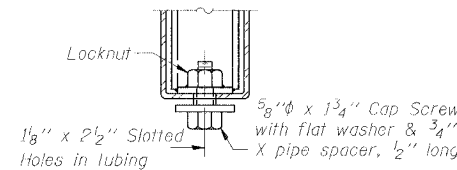
SECTION AT RAIL POST



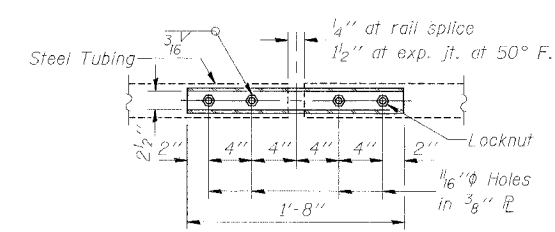
VIEW C-C



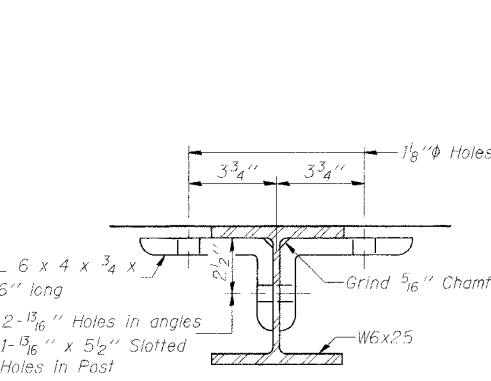
END OF RAIL DETAILS



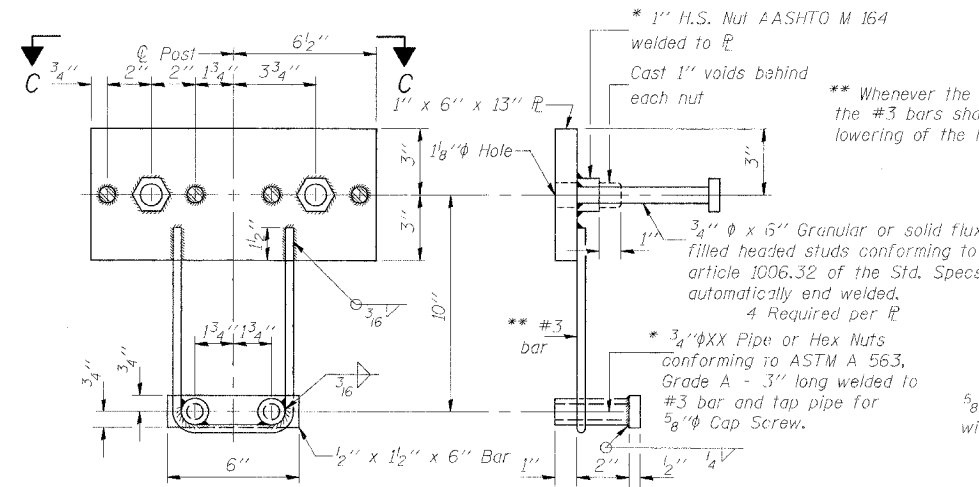
RAIL SPLICE CONNECTION
AT EXPANSION JT.



PLAN-BOTT. SPLICE R
TYPICAL

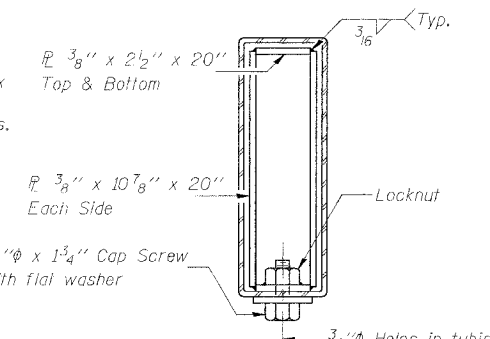


SECTION B-B



ANCHOR DEVICE

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



SECTIONS AT RAIL SPLICE

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	200.0

TYPE S1
STEEL RAILING

TYPE S1 STEEL RAILING
MASSEY LANE OVER SANDY CREEK
SEC 03-06118-00-BR STA. 12+25.00

MORGAN COUNTY, ILLINOIS

Benton & Associates, Inc.
Consulting Engineers / Land Surveyors
1970 West Lafayette Avenue Jacksonville, Illinois 62650
Phone : 217-245-4146 Fax : 217-245-4149
IL Design Firm Registration No. 184-000852

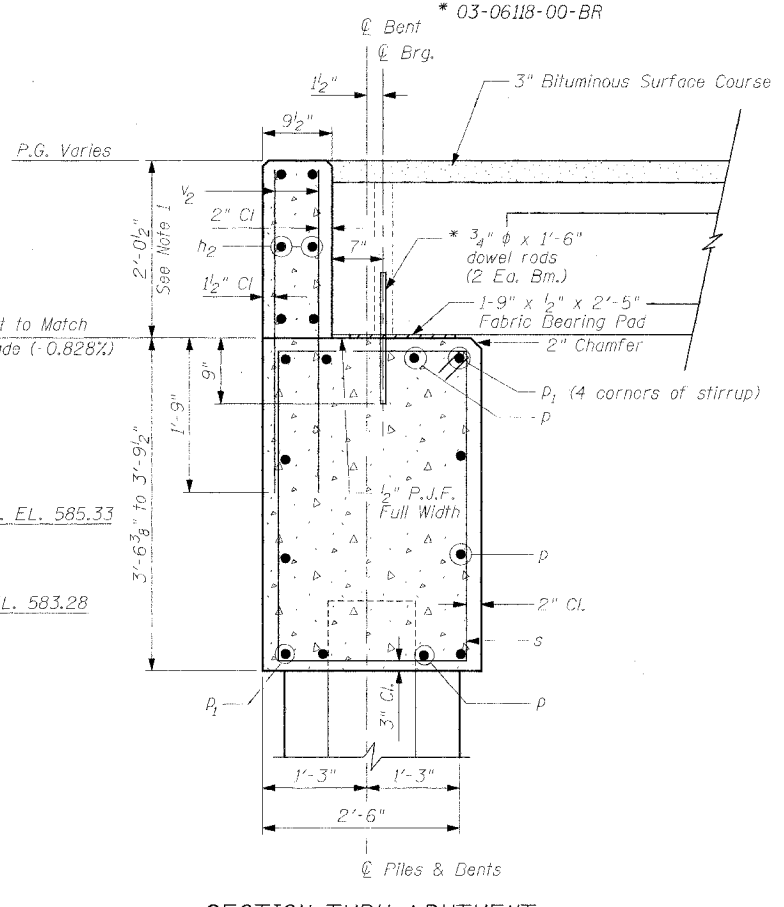
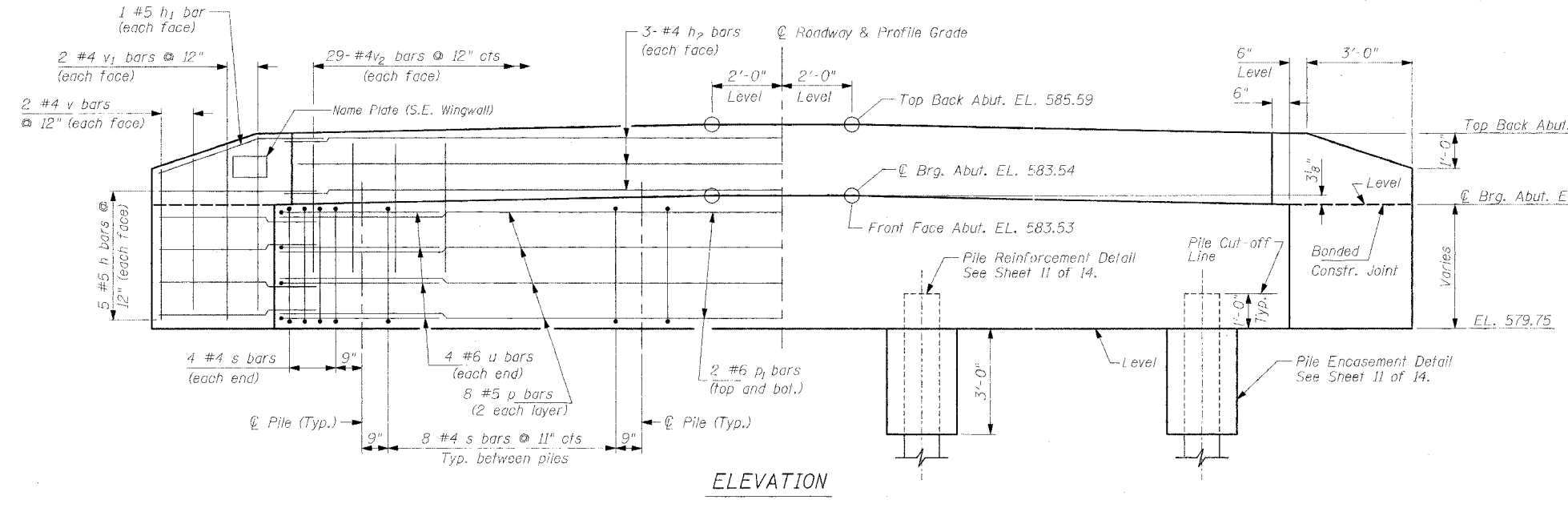
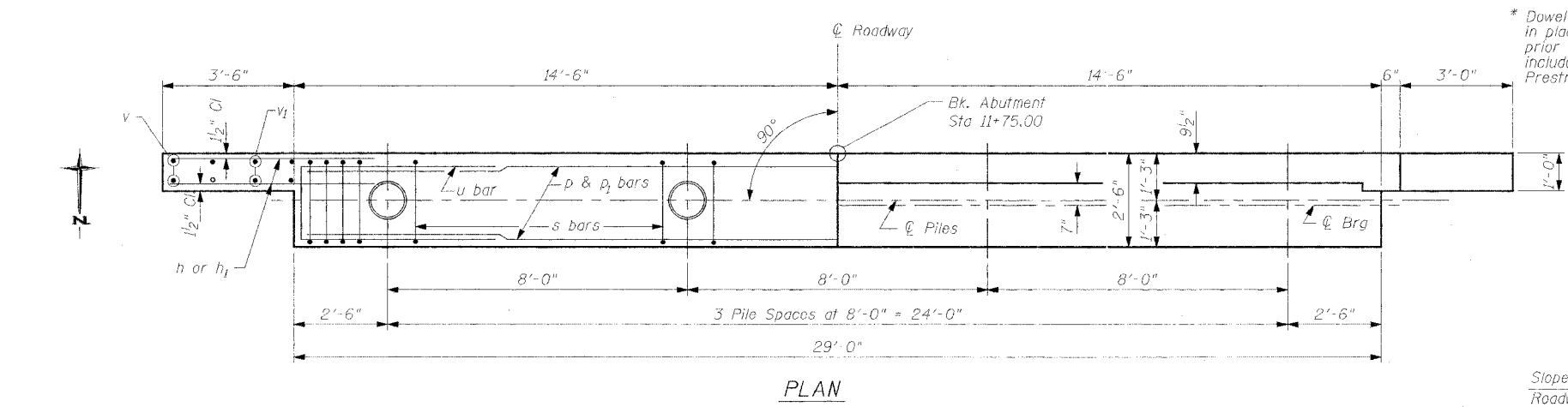
DRAWN BY: MKC
CHECKED BY: LEL
APPROVED BY: REG
DATE: MARCH, 2005

REVISIONS
DATE BY

FIELD BOOK: SCALE: N.T.S. JOB NO. 02E1314 SHEET 7 OF 15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	8
FED. RD. DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 03-06118-00-BR



BAR LIST FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h	20	#5	5'-0"	—
h ₁	4	#5	5'-3"	—
h ₂	6	#4	28'-6"	—
p	8	#5	28'-6"	—
p ₁	4	#6	28'-6"	—
s	32	#4	11'-5"	□
u	8	#6	11'-1"	□
v	8	#4	4'-0"	—
v ₁	8	#4	4'-8"	—
v ₂	58	#4	3'-8"	—

QUANTITIES FOR ONE ABUTMENT

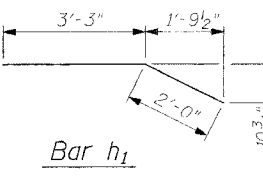
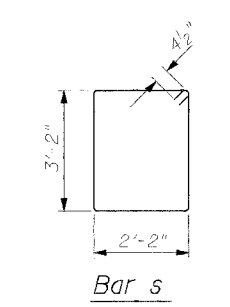
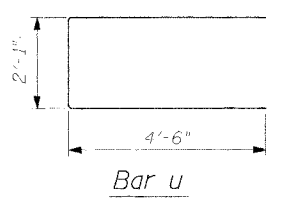
Concrete Structures	12.9 Cu Yd
Reinforcement Bars	1,210 Pound
Furn. Metal Shell Piles, 12" Dia.	208 Foot
Driving and Filling Shells	208 Foot
Name Plates	1 Each

PILE DATA

Type: Metal Shell 12" Dia.
Capacity: 32.5 Ton
Est. Length: 52'-0"
Num Required: 4

DESIGN STRESSES

f'c = 3500 psi
fy = 60000 psi



NOTES

- The backwall and the portion of the wingwalls above the bonded construction joint shall be cast against the in place beam.
- Reinforcement bars shall conform to AASHTO M-31, M-42 or M-53, Grade 60.

DRAWN BY: MKC
CHECKED BY: LEL
APPROVED BY: REG
DATE: MARCH, 2005

REVISIONS

DATE	BY

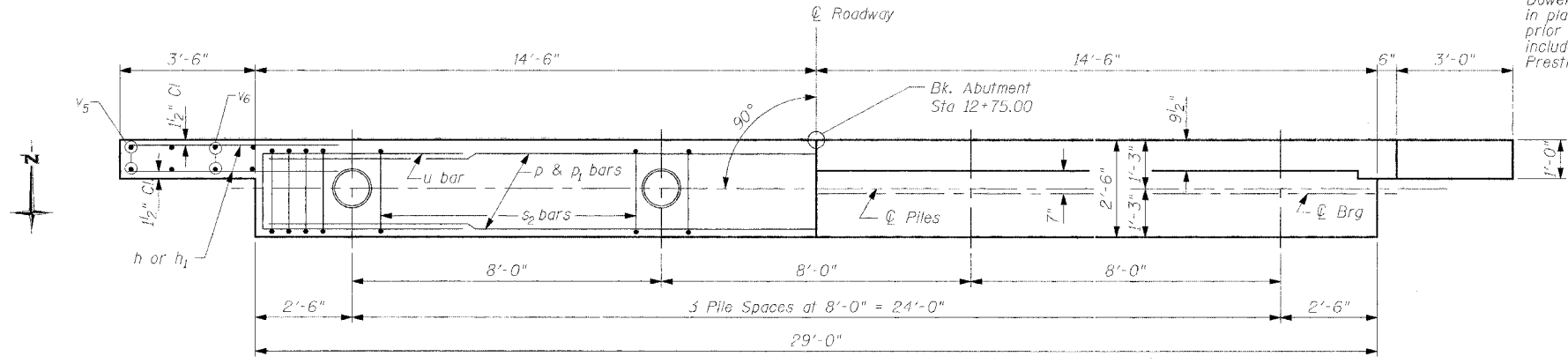
**SOUTH ABUTMENT
MASSEY LANE OVER SANDY CREEK
SEC 03-06118-00-BR STA. 12+25.00**

MORGAN COUNTY, ILLINOIS

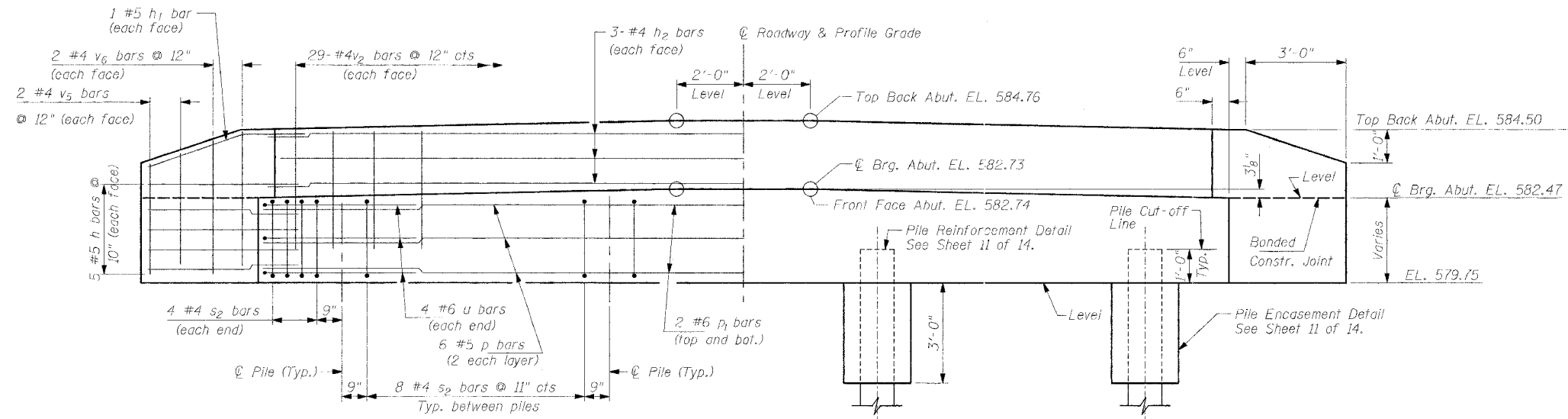
Benton & Associates, Inc.
Consulting Engineers / Land Surveyors
1970 West Lafayette Avenue Jacksonville, Illinois 62650
Phone : 217-245-4146 Fax : 217-245-4149
IL Design Firm Registration No. 184-000852

FIELD BOOK: SCALE: N.T.S. JOB NO. 02E1314 SHEET 8 OF 15

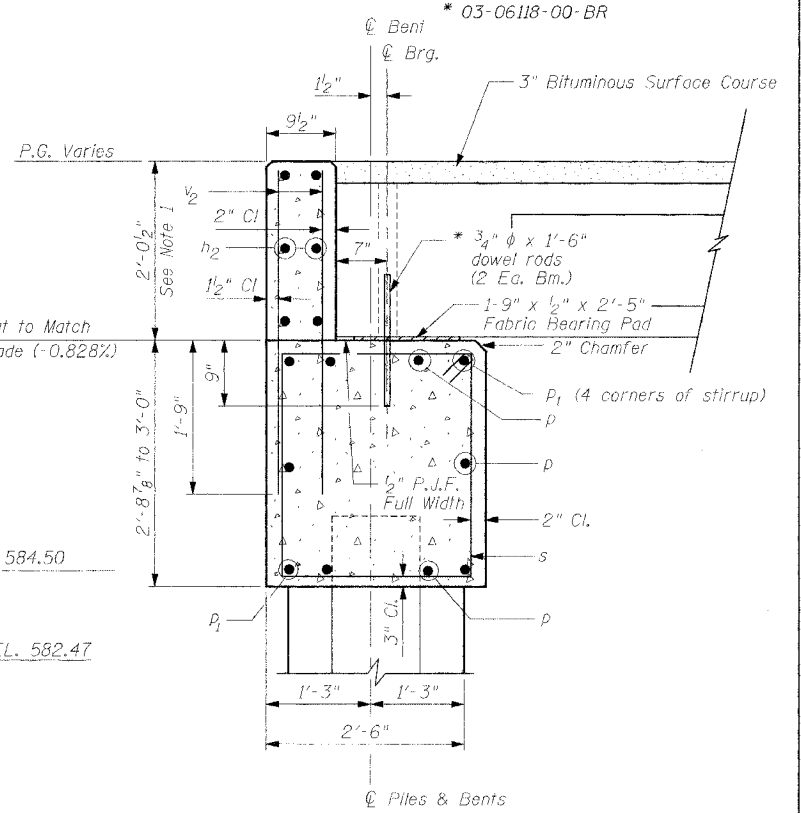
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	9
FED. RD. DIST. NO.		ILLINOIS	FED. AID PROJECT	



PLAN



ELEVATION



SECTION THRU ABUTMENT

BAR LIST FOR ONE ABUTMENT

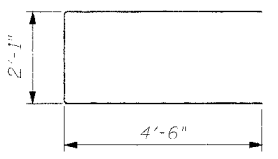
Bar	No.	Size	Length	Shape
h	20	#5	5'-0"	—
h ₁	4	#5	5'-3"	—
h ₂	6	#4	28'-6"	—
p	6	#5	28'-6"	—
p ₁	4	#6	28'-6"	—
s ₂	32	#4	9'-9"	□
u	8	#6	11'-1"	□
v ₂	58	#4	3'-8"	—
v ₅	8	#4	3'-6"	—
v ₆	8	#4	4'-2"	—

QUANTITIES FOR ONE ABUTMENT

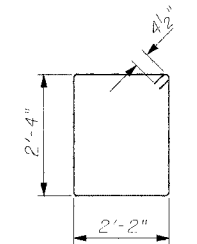
Concrete Structures	10.5 Cu Yd
Reinforcement Bars	1,110 Pound
Furn. Metal Shell Piles, 12" Dia.	224 Foot
Driving and Filling Shells	224 Foot

NOTES

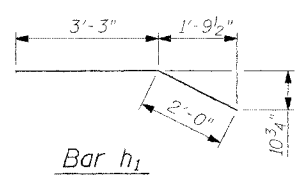
- The backwall and the portion of the wingwalls above the bonded construction joint shall be cast against the in place beam.
- Reinforcement bars shall conform to AASHTO M-31, M-42 or M-53, Grade 60.



Bar u



Bar s



Bar h₁

PILE DATA

Type: Metal Shell 12" Dia.
Capacity: 32.5 Ton
Est. Length: 56'-0"
Num Required: 4

DESIGN STRESSES

f'_c = 3500 psi
f_y = 60000 psi

DRAWN BY	MKC
CHECKED BY	LEL
APPROVED BY	REG
DATE	MARCH, 2005
REVISIONS	
DATE	BY

NORTH ABUTMENT
MASSEY LANE OVER SANDY CREEK
SEC 03-06118-00-BR STA. 12+25.00

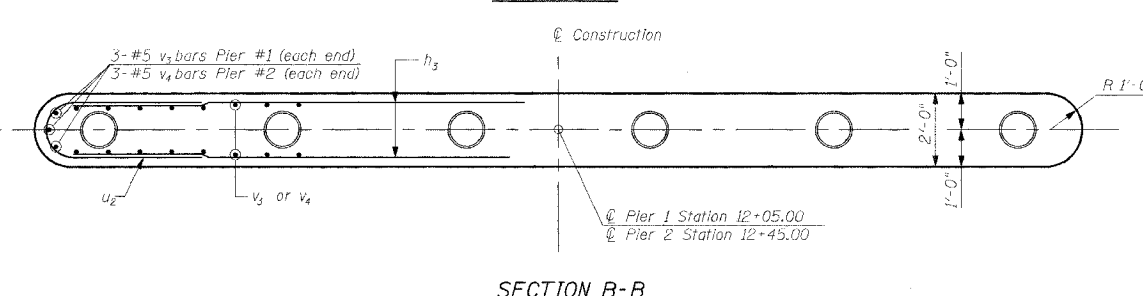
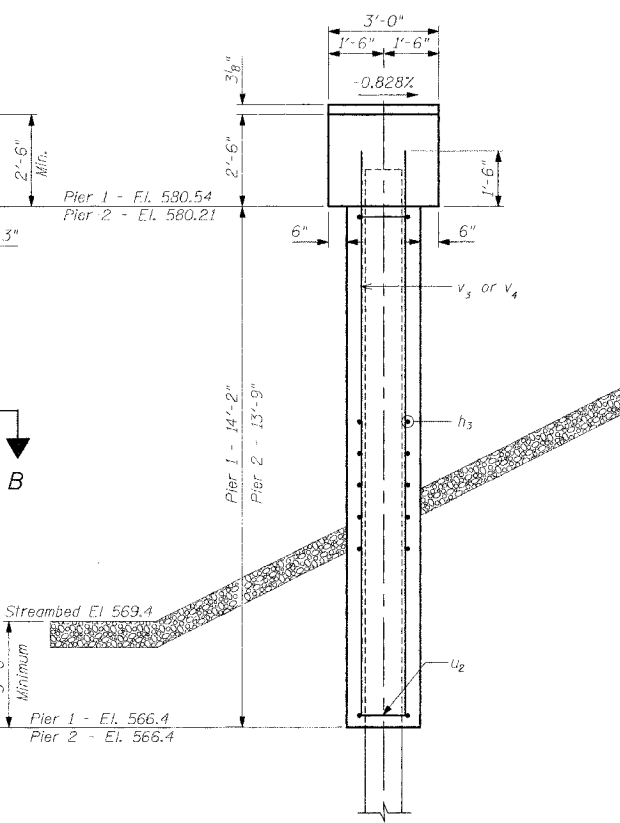
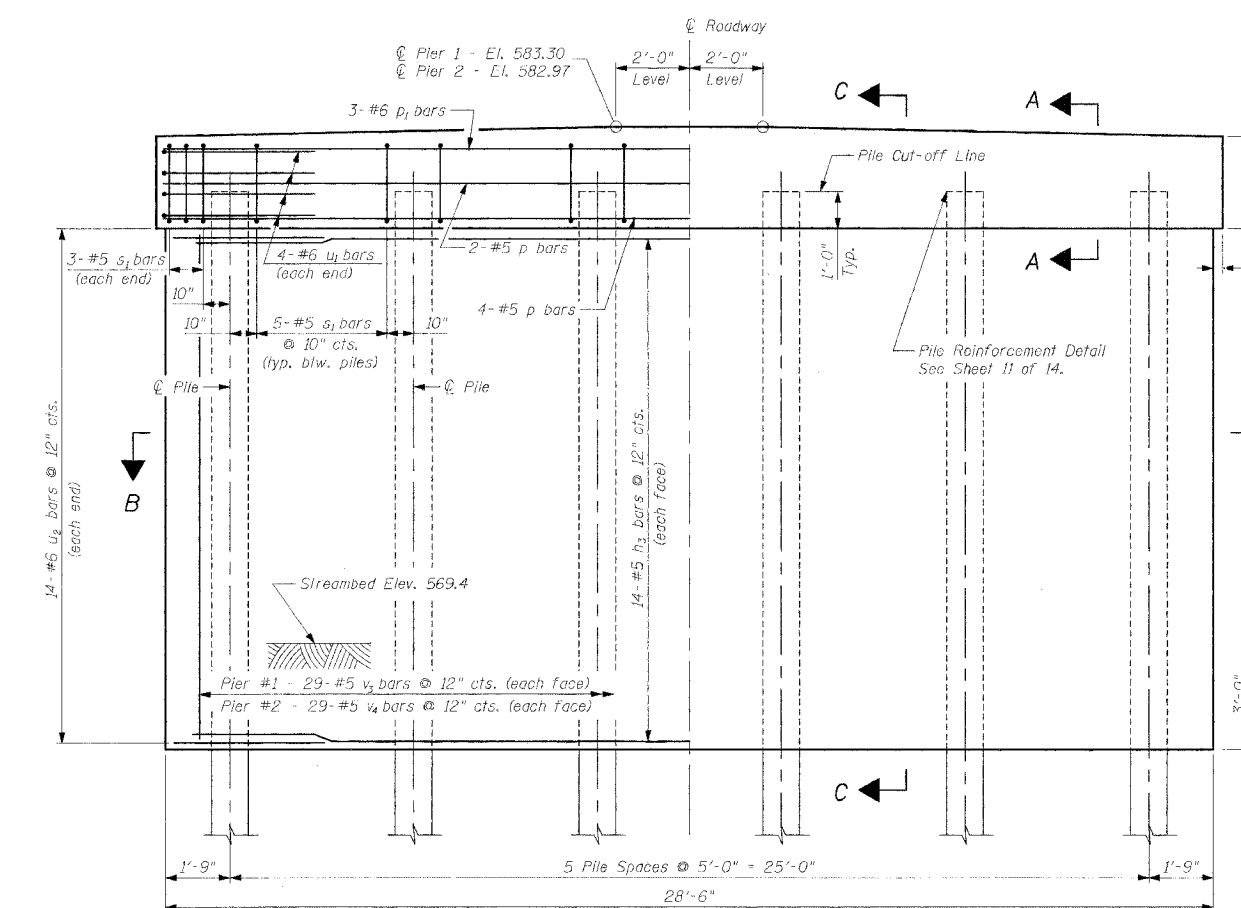
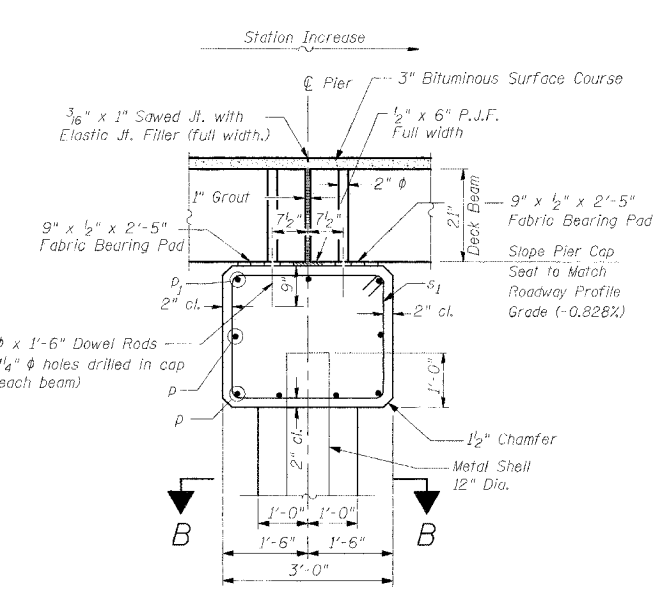
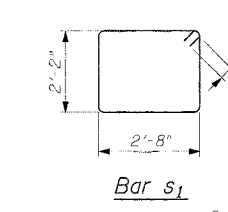
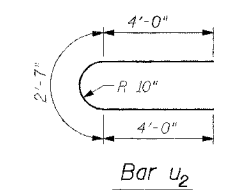
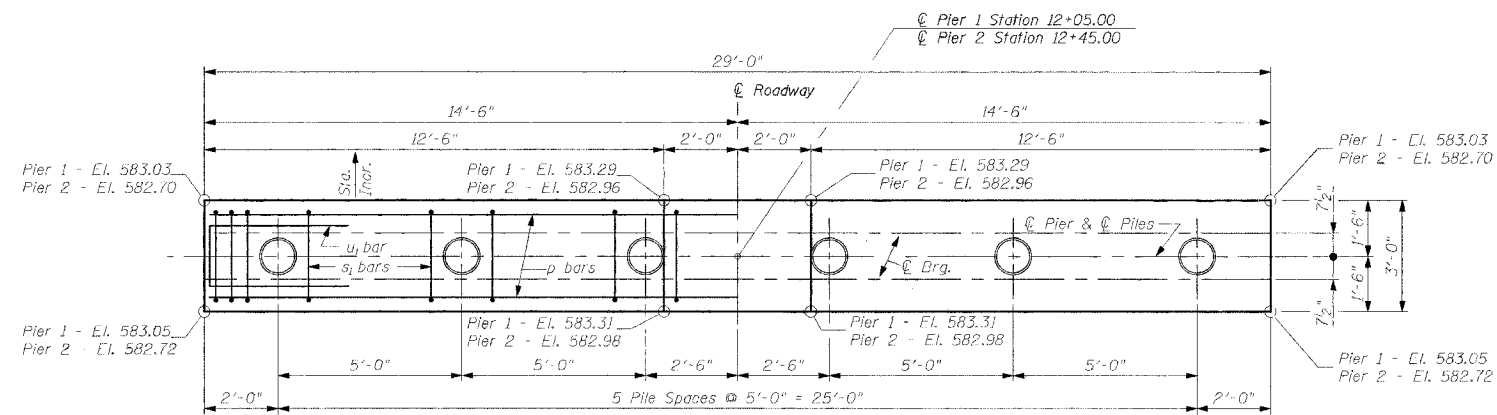
MORGAN COUNTY, ILLINOIS

Benton & Associates, Inc.
Consulting Engineers / Land Surveyors
1970 West Lafayette Avenue Jacksonville, Illinois 62850
Phone : 217-245-4146 Fax : 217-245-4149
IL Design Firm Registration No. 184-000852

FILED BOOK: SCALE: N.T.S. JOB NO. 02E1314 SHEET 9 OF 15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	10
FED. RD. DIST. NO.		ILLINOIS	FED. AID PROJECT	

* 03-06118-00-BR



PIER 1 - PILE DATA
Type = 12" Dia. Metal Shell
Capacity = 45.0 Tons
No. Required = 5+1 Test Pile
Estimated Length = 78 FT
Test Pile = 1
Drive test pile near east edge of pier.

PIER 2 - PILE DATA
Type = 12" Dia. Metal Shell
Capacity = 45.0 Tons
No. Required = 6
Estimated Length = 68 FT

* Dowel Rods shall be grouted after beams are in place and allowed to cure (Min. 24 hrs.) prior to grouting the shear keys. Cost shall be included in the cost of the unit price for Precast Prestressed Concrete Deck Beams (21" Depth).

**TWO PIERS
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h_3	56	#5	26'-0"	—
p	12	#5	28'-6"	—
p_1	6	#6	28'-6"	—
s_1	62	#5	10'-5"	□
u_1	16	#6	11'-7"	—
u_2	56	#6	10'-7"	—
v_3	64	#5	15'-6"	—
v_4	64	#5	15'-0"	—
Concrete Structures			Cu.Yd.	69.5
Reinforcement Bars			Pound	6,010
Furnishing Metal Pile Shells 12"			Foot	798
Test Pile Metal Shells			Each	1
Driving and Filling Shells			Foot	798

DRAWN BY: MKC
CHECKED BY: LEL
APPROVED BY: REG
DATE: MARCH 2005

PIERS
MASSEY LANE OVER SANDY CREEK
SEC 03-06118-00-BR STA. 12+25.00

MORGAN COUNTY, ILLINOIS

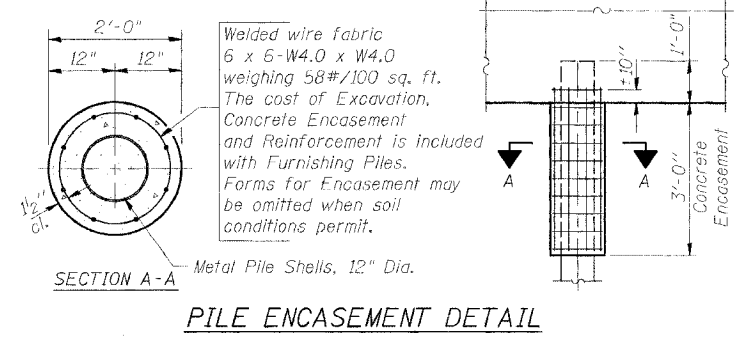
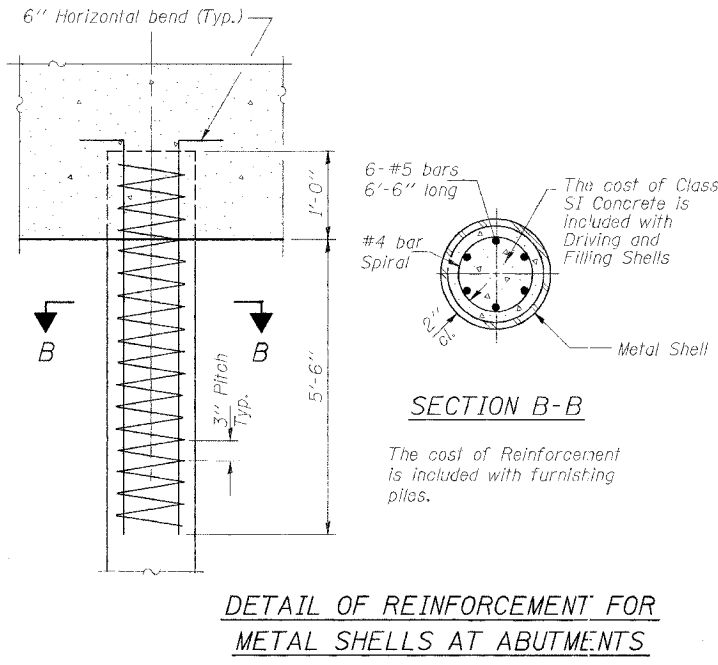
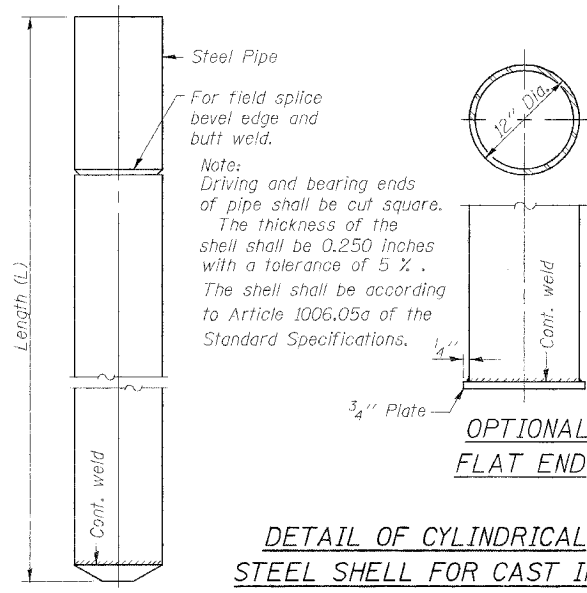
Benton & Associates, Inc.
Consulting Engineers / Land Surveyors
1970 West Lafayette Avenue Jacksonville, Illinois 62650
Phone : 217-245-4146 Fax : 217-245-4149
IL Design Firm Registration No. 184-000862

REVISIONS
DATE BY

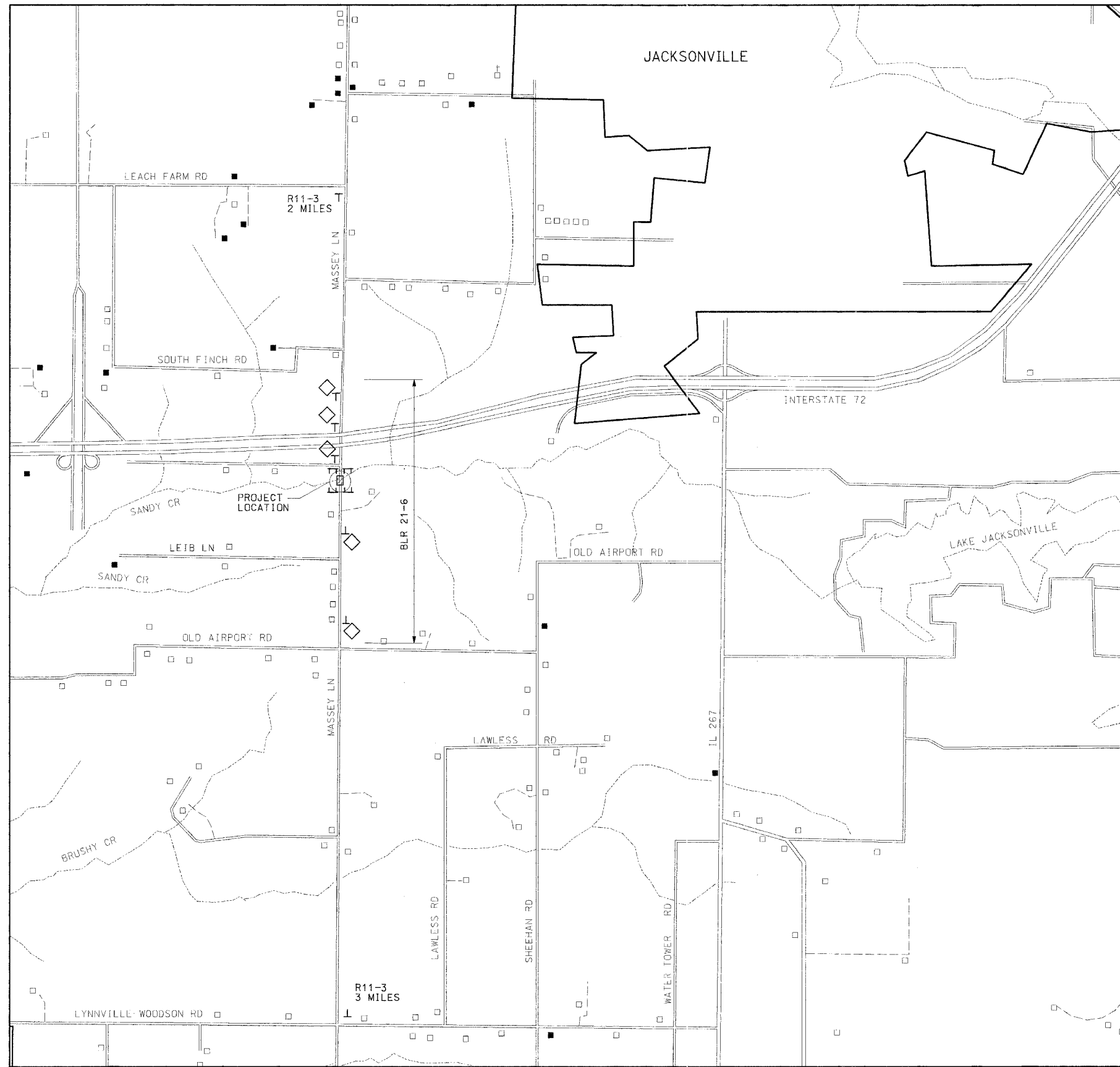
SCALE: N.T.S. JOB NO. 02E1314 SHEET 10 OF 15

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	11
FED. RD. DIST. NO.		ILLINOIS	FED. AID PROJECT	

* 03-06118-00-BR



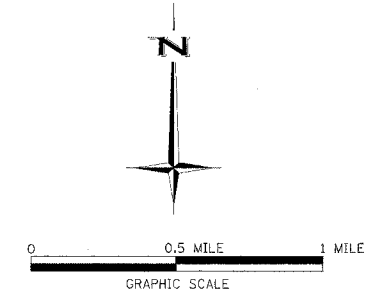
DRAWN BY: MKC CHECKED BY: LEL APPROVED BY: REG DATE: MARCH, 2005	PILE DETAILS MASSEY LANE OVER SANDY CREEK SEC 03-06118-00-BR STA. 12+25.00	
REVISIONS DATE BY	MORGAN COUNTY, ILLINOIS	
FIELD BOOK:	Benton & Associates, Inc. Consulting Engineers / Land Surveyors 1970 West Lafayette Avenue Jacksonville, Illinois 62650 Phone : 217-245-4146 Fax : 217-245-4149 IL Design Firm Registration No. 184-000852	
SCALE: N.T.S.	JOB NO. 02E1314	SHEET 11 OF 15



TRAFFIC CONTROL PLAN

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
MASSEY LANE	*	MORGAN	15	12
FED. RD. DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 03-06118-00-BR



DRAWN BY LEL
 CHECKED BY LEL
 APPROVED BY REG
 DATE MARCH, 2005

REVISIONS	
DATE	BY

TRAFFIC CONTROL PLAN
 MASSEY LANE OVER SANDY CREEK
 SEC 03-06118-00-BR STA. 12+25.00

MORGAN COUNTY, ILLINOIS

Benton & Associates, Inc.
 Consulting Engineers / Land Surveyors
 1970 West Lafayette Avenue Jacksonville, Illinois 62850
 Phone : 217-245-4146 Fax : 217-245-4149
 IL Design Firm Registration No. 184-000862

