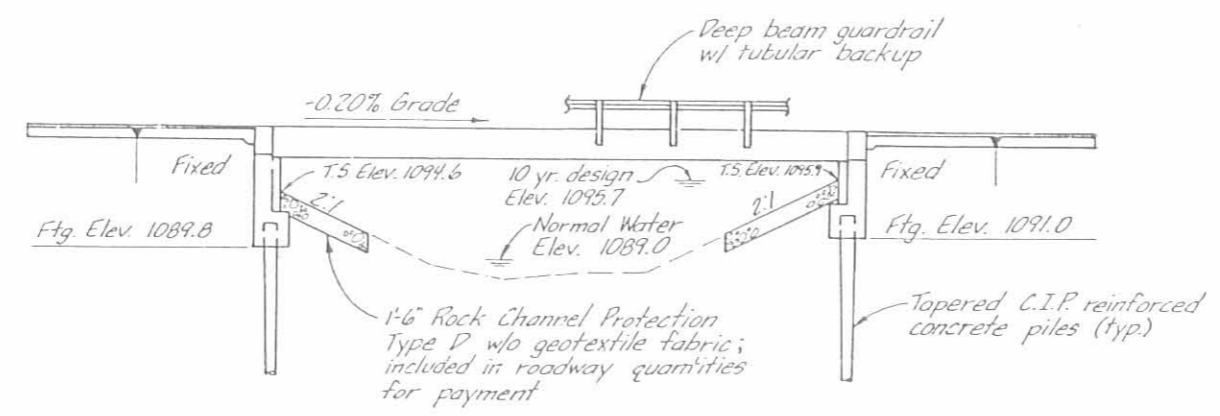


GENERAL PLAN



GENERAL ELEVATION

KORDA / NEMETH ENGINEERING, INC.  
CONSULTING ENGINEERS

**GENERAL PLAN & ELEVATION**

BRIDGE NO. LOG-TR131-0007

OVER BRANCH OF MILL CREEK

SIGNED	DRAWN	TRACED	CHECKED	REV. DATE	DATE	REVISED
DFT	K.J.K.		MTO	NWE	10/22/10	

F.M.W. REGION	STATE	PROJECT
5	OHIO	

25  
34

LOGAN COUNTY  
LOG-TR131-0.06

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-B1, SHEETS 1 AND 2	DATED	11-27-81
OBR-2-73	DATED	4-10-73
PSBS-1-B1, SHEETS 1, 2, AND 3	REVISED	6-20-89
ADD TO SUPPLEMENTAL SPECIFICATIONS:		
836	DATED	11-12-85

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1989 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA

DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING.

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 P.S.I.

REINFORCING STEEL - ASTM A615, A616, A617 - GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I.

CONCRETE FOR PRESTRESSED BEAMS -  
UNIT STRESS 2200 P.S.I. COMPRESSION;  
444 P.S.I. TENSION

PRESTRESSING STRAND ASTM A416  
F'S = 270,000 P.S.I.

INITIAL STRESS = 0.70 F'S

MILD REINFORCING STEEL FOR THE CONCRETE PRESTRESSED BEAMS MAY BE EITHER  
GRADE 40, MINIMUM YIELD 40,000 P.S.I. OR GRADE 60, MINIMUM YIELD 60,000

PROTECTION METHOD: TYPE D WATERPROOFING, ASPHALT CONCRETE OVERLAY,  
STEEL DRIP STRIP AND SEALING OF CONCRETE SURFACES.

ABUTMENT PILES: ABUTMENT PILING BENDING STRESSES MAY APPROACH, REACH OR  
EXCEED YIELD STRESS.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC,  
THE EXISTING STRUCTURE SHALL BE REMOVED. SUITABLE WASTE MASONRY MAY BE  
PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.

UTILITY LINES

ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY  
LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND OWNER(S) ARE  
REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT  
INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

EMBANKMENT CONSTRUCTION: THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE  
TOP OF THE SURFACE. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS AND  
DRIVEN.

A SPECIAL, SEALING OF CONCRETE SURFACES.

A CONCRETE SEALER SHALL BE APPLIED TO THE FOLLOWING CONCRETE SURFACES:

BEAM FASCIA AS SHOWN IN DECK SECTION (EITHER AN EPOXY OR NON-EPOXY  
SEALER). ALSO ON BRIDGE ABUTMENT SEAT AND DOWN FACE OF ABUTMENT AS NOTED  
ON THE PLANS (EPOXY SEALER). SEE THE PROPOSAL FOR SURFACE PREPARATION  
REQUIREMENTS, APPLICATION RATES, MATERIALS REQUIREMENTS AND APPLICATION  
PROCEDURES.

PILE DESIGN LOADS: THE DESIGN LOAD FOR THE ABUTMENT PILES IS 37 TONS PER  
PILE.

\*ITEM 507, CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN: THE  
PILES FOR THIS PROJECT SHALL SATISFY THE FOLLOWING DIMENSION AND MATERIAL  
PROPERTY REQUIREMENTS:

- THE PILE BUTT DIAMETER SHALL BE 8 INCHES + 1 INCH.
- THE TAPER ALONG THE LENGTH OF THE PILE SHALL BE 0.40 INCH PER FOOT +  
0.05 INCH.
- THE PILE WALL THICKNESS SHALL BE NOT LESS THAN 0.220 INCHES.
- THE PILES SHALL HAVE SMOOTH WALLS OR FLUTED WALLS.
- THE STEEL PIPE PILE MATERIAL STRENGTH (fy) SHALL NOT BE LESS THAN  
36,000 POUNDS PER SQUARE INCH.

THE PILES SHALL BE DRIVEN TO BEDROCK AND THE PILE DRIVING SHALL STOP  
IMMEDIATELY AT THE TIME WHEN BEDROCK IS ENCOUNTERED BY THE PILE TIP. THE  
PILE HAMMER USED TO DRIVE THE PILES SHALL HAVE A STATE'S ENERGY RATING OF  
MORE THAN 16,000 FOOT-POUNDS OR A LARGER PILE HAMMER SHALL BE  
USED AT A LOW LEVEL OF EFFICIENCY.

ITEM 518, POROUS BACKFILL, AS PER PLAN: TO INSURE THAT FINE SOIL  
PARTICLES ENCLOSED WITHIN THE EMBANKMENT MATERIAL TO BE PLACED BEHIND  
BOTH ABUTMENTS DO NOT MIGRATE INTO OR THROUGH THE VOIDS OF THE POROUS  
BACKFILL MATERIAL LOCATED BEHIND THE ABUTMENTS, FILTER FABRIC 712-09 TYPE  
A, SHALL BE PLACED BETWEEN THE 518 POROUS BACKFILL MATERIAL AND THE 203  
EMBANKMENT MATERIAL TO THE LIMITS AS SHOWN IN THE PLANS. THE COST OF THE  
FILTER FABRIC WILL BE PAID FOR AS AN INCIDENTAL ITEM TO BE INCLUDED WITH  
THE UNIT PRICE BID PER CUBIC YARD FOR THE ITEM 518 POROUS BACKFILL, AS  
PER PLAN, WHICH SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND  
INCIDENTALS NECESSARY TO COMPLETE THIS WORK.

EXISTING ARTESIAN CONDITION

TO MINIMIZE POTENTIAL PROBLEMS THAT MAY ARISE FROM AN ARTESIAN CONDITION  
DURING CONSTRUCTION OF THE ABUTMENTS, TAPERED, CAST-IN-PLACE REINFORCED  
CONCRETE PILES HAVE BEEN PROVIDED IN THE PLANS. IF THE TAPERED PILES DO  
NOT ARISE THE PROBLEMS, CORRECTIVE MEASURES SHALL BE TAKEN AS FOLLOWS:

- IF THE ARTESIAN CONDITION IS CONFINED TO THE SAND LAYER BETWEEN THE  
CLAY AND BEDROCK, SHEET PILING SHALL BE DRIVEN AROUND THE PERIPHERY  
OF THE ABUTMENT TO ISOLATE THE FOOTING.
- IF THE ARTESIAN CONDITION ORIGINATES FROM THE FRACTURED LIMESTONE,  
THE FOOTING SHALL BE ISOLATED BY DRIVING SHEET PILING AND PRESSURE  
GROUT INJECTION AROUND THE ABUTMENT PERIPHERY.

THE CONTRACTOR SHOULD BE ALERTED TO THE POTENTIAL ARTESIAN CONDITION AND  
BE ABLE TO REACT QUICKLY IF PROBLEMS ARISE.

### ESTIMATED QUANTITIES

Item	Item Ext.	Total	Unit	Description	Abuts.	Super	Gen'l.
202	11000	Lump	Sum	Structure Removed			Lump
403	20000	8	C.Y.	Asphalt Concrete, AC-20		8	
404	20000	6	C.Y.	Asphalt Concrete, AC-20		6	
503	21100	87	C.Y.	Unclassified Excavation	87		
505	11100	Lump	Sum	Pile Driving Equipment Mobilization			Lump
507	61100	210	L.F.	Cast-in-Place Reinforced Concrete Piles, as per plan	210		
509	11400	2939	Lb.	Reinforcing Steel, Grade 60	2939		
509	15800	1907	Lb.	Epoxy Coated Reinforcing Steel, Grade 60	1907		
511	43500	57	C.Y.	Class C Concrete, Abutment Including Footing	57		
512	55800	167	S.Y.	Type D Waterproofing		167	
Special	51267500	25	S.Y.	Sealing of Concrete Surfaces (See Proposal Note)		25	
Special	51267502	23	S.Y.	Sealing of Concrete Surfaces (Epoxy) (See Proposal Note)	23		
515	53900	7	Each	Prestressed Concrete Box Beam (R21-48, 49' Length)(See Prop Note)		7	
516	13600	98	S.F.	1" Preformed Expansion Joint Filler		98	
516	31011	59	L.F.	2" Deep Joint Sealer, as per plan		59	
Special	51631200	57	L.F.	Sawing and Sealing Bituminous Concrete Joints		57	
516	43100	28	Each	5" x 8" x 1" Elastomeric Bearing with Internal Laminates Only (Neoprene)		28	
517	72300	112.50	L.F.	Railing (Deep Beam Rail with Steel Tubular Backup and Type 2 Steel Posts and Anchor Bolts)(See Proposal Note)		112.50	
518	21101	24	C.Y.	Porous Backfill, as per plan	24		
Special	51822200	76	S.F.	Steel Drip Strip		76	
518	41100	87	L.F.	6" Perforated Helical Corrugated Steel Pipe, 707.01	87		
518	41200	24	L.F.	6" Non-Perforated Helical Corrugated Steel Pipe, including Specials, 707.01	24		

3 / 9

**K** KORDA/NEMETH ENGINEERING, INC.  
CONSULTING ENGINEERS  
1650 WATERMARK DRIVE, SUITE 200 TEL (614) 487-1450  
COLUMBUS, OHIO 43215-1064 FAX (614) 487-8981

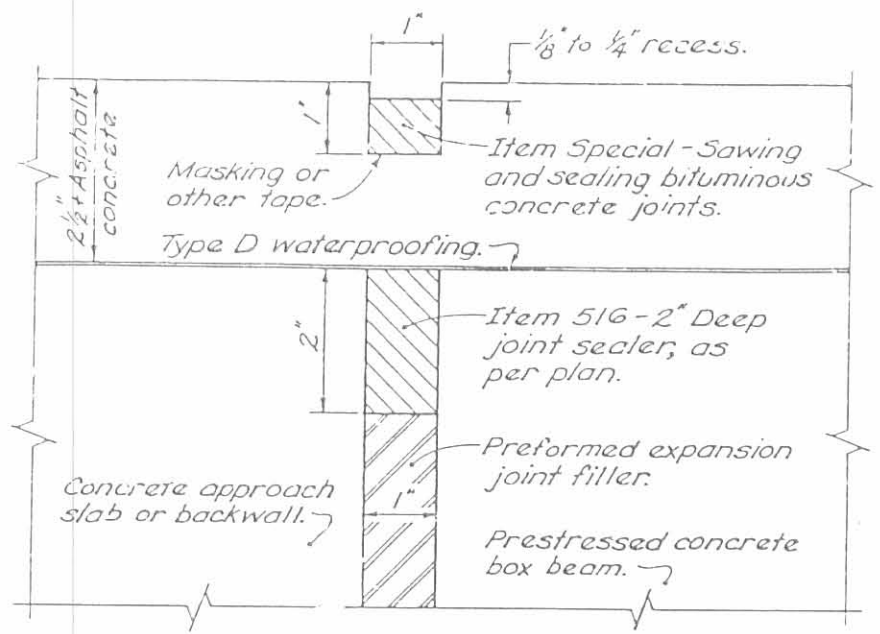
ESTIMATED QUANTITIES &  
GENERAL NOTES  
BRIDGE NO. LOG-TR131-0007  
OVER BRANCH OF MILL CREEK

DESIGNED	DRAWN	CHECKED	REVISED	DATE	REMARKS
DEF	KJK	MTO		10/17/93	

FHWA REGION	STATE	PROJECT
5	OHIO	

25  
34

LOGAN COUNTY  
LOG-TR131-0.06



**SEALING OF JOINTS AT ABUTMENTS**

**ITEM SPECIAL -- SAWING AND SEALING BITUMINOUS CONCRETE JOINTS**

**1) Description:**

This work shall consist of cutting and sealing transverse joints on the new bituminous concrete overlay of box beam bridges. Bituminous concrete joints shall be constructed directly over, and in line with, the existing underlying transverse abutment joint of the box beams.

**2) Materials:**

The joint sealant shall meet the requirements of ASTM Specification D3405, Joint sealants, Hot-poured, for Concrete and Asphalt Pavements. Acceptable alternate materials are:

Roof-Flex 176, polyurethane, as produced by the Carbolite Company, 350 Hanley Industrial Court, St. Louis, Missouri 63144 (Roger Zubal, 614-877-3406); a silicone sealant meeting Federal Specifications TT-S-001543A Class A (one-part silicone sealants) and TT-S-00230C Class A (one-component sealants), such as those manufactured by General Electric, Silicone Products Division, 6155 Rockside Rd., Rockside Square I, Independence, Ohio 44131 (John Fromholtz, 216-447-1750) or Dow Corning, 3737 Park East, Beachwood, Ohio 44122 (Robert Ruppel, 216-464-130); or Sof-Seal, a cold-applied, low-modulus, two-component polymeric compound horizontal sealant as manufactured by W. R. Meadows, Inc., P.O. Box 543, Elgin, Illinois 60121 (Robert Cameron, 312-683-4500). Sealant will be accepted on the basis of the manufacturer's certification that it conforms to the requirements of these specifications.

**3) Construction Details:**

A) General: The contractor shall conduct his operation so that the cutting, cleaning and sealing of transverse joints is a continuous operation that will be performed as soon as practical after the paving, but no later than four (4) days after placement of the asphalt concrete surface course. Traffic shall not be allowed to knead together or damage the joint cut prior to sealing.

B) Cutting of Transverse Joints: The contractor shall saw or rout transverse joints to the dimensions shown in the details on this sheet. The cut joints shall lie directly above each box beam abutment joint. The joint location shall be marked on the new asphalt surface with a chalk line, or by some other acceptable method, before cutting. Details of the method for locating and accurately marking the proposed cuts shall be subject to the approval of the Engineer prior to starting any surfacing or paving operations.

The blade or blades shall be of such size that the full width and depth of the cut can be made with one pass. Dry or wet cutting will be allowed. Joints shall extend the full width of the bridge.

C) Cleaning Joints: Dry sawed joints shall be thoroughly cleaned with a sufficient amount of compressed air to remove any dirt, dust, or deleterious matter. Wet sawed joints shall be washed clean of all cuttings by flushing with a jet of water and with other tools as necessary. After flushing, the joint shall be blown out with compressed air. When the surfaces are thoroughly clean and dry, and just prior to placing the joint sealer, compressed air having a pressure of at least 90 p.s.i. shall be used to blow out the joint and remove all traces of dust.

In the event freshly cut joints become contaminated before they are sealed, they shall be recleaned of all foreign material by high pressure water jet.

D) Sealing Joints: The joint shall be thoroughly dried before the sealant is placed. After cleaning and drying, a bond-breaker (tape) shall be applied to the bottom of the groove.

Hot-poured joint sealant material shall be heated in a kettle or melter constructed as a double boiler, with the space between the inner and outer shells filled with oil or other heat transfer medium. Positive temperature control and mechanical agitation shall be provided. Heating must be in strict accordance with the manufacturer's recommendation. Joint sealer material shall never be kept heated at the pouring temperature for more than four (4) hours and shall never be reheated. Sealer left in the applicator at the end of a day's work shall be removed and discarded.

Hot-poured sealant shall be applied immediately through a nozzle, which must project into the sawed joint, filling from the bottom up. The seal shall completely fill the joint in such a manner that, after cooling, the level of the sealer will not be higher than 1/8" below the pavement surface. Any depression in the cooled seal greater than 3/16" shall be brought up to the specified limit by further addition of hot-poured sealant. Care shall be taken in the sealing of the joints so that the final appearance will present a neat fine line.

The cold applied sealant materials (polyurethane, silicone, and polymeric compounds) shall be installed as per manufacturers' recommendations, or as directed by the Engineer. The sealant shall be installed when the ambient temperature is 40 degrees F or higher. Traffic shall not be allowed on the joint for one hour after application of the sealant.

**4) Method of Measurement:**

The quantity to be paid for under this item will be the number of linear feet of joints sawed and sealed as per the above requirements.

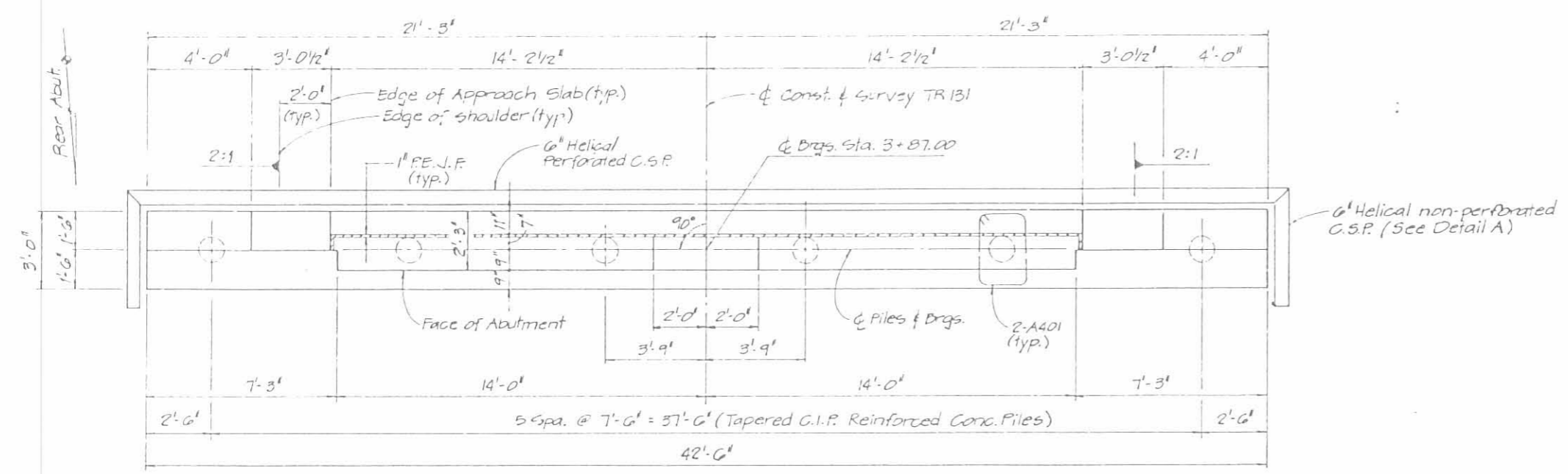
**5) Basis of Payment:**

The unit price per linear foot for Item Special - "Sawing and sealing bituminous concrete joints" shall include the cost of all labor, materials, and equipment necessary to complete the work, including the furnishing and placing of the joint sealer material.

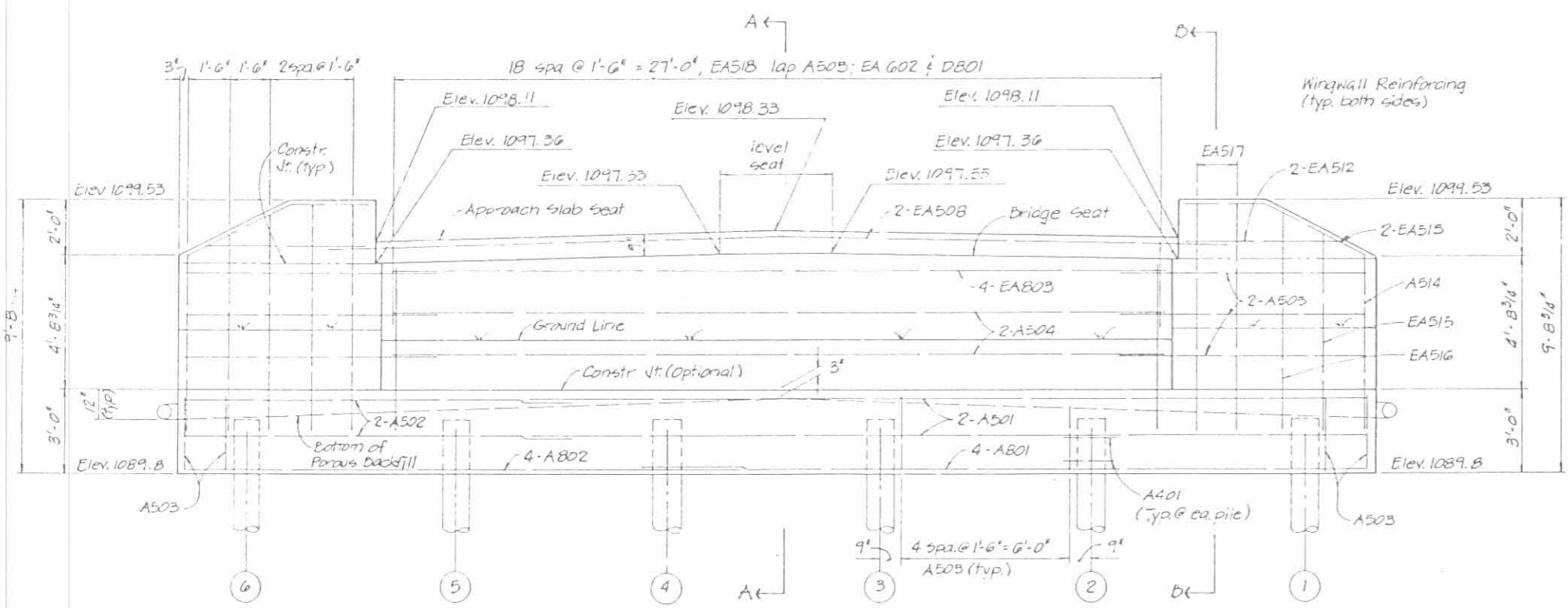
**ITEM 516 - 2" DEEP JOINT SEALER, AS PER PLAN**

This item shall meet the material (para. 2) and sealing (para. 3D) specifications of Item Special - Sawing and sealing bituminous concrete joints.

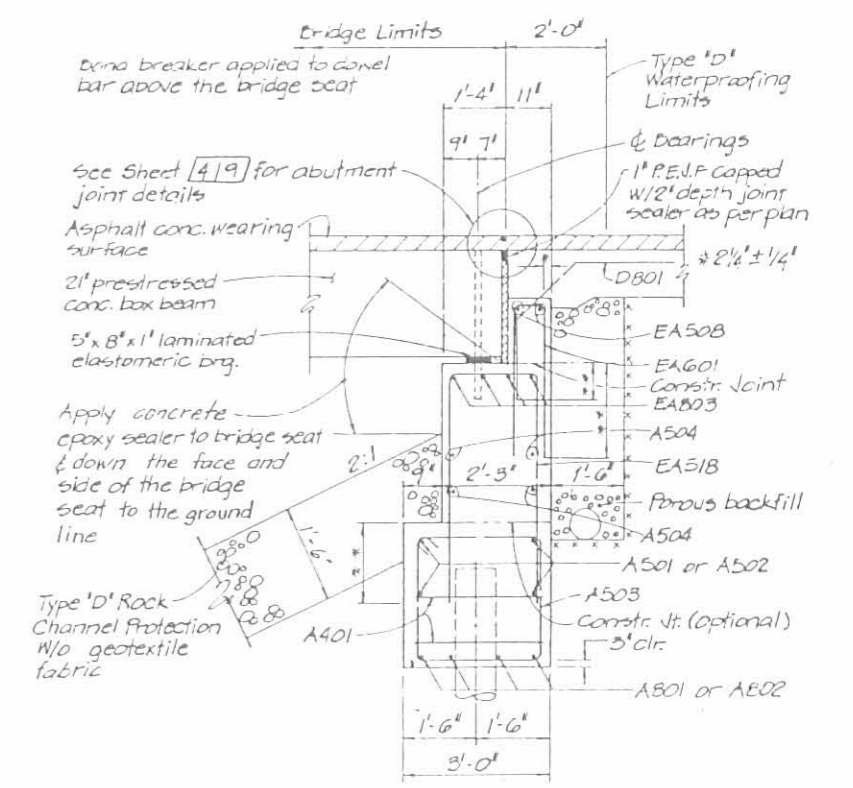
REVISIONS	STATE OF OHIO DEPARTMENT OF TRANSPORTATION BUREAU OF BRIDGES AND STRUCTURAL DESIGN				4/9
2-8-84	<b>ABUTMENT JOINTS IN BITUMINOUS CONCRETE, BOX BEAM BRIDGES</b> BRIDGE NO. LOG-TR131-0007				
3-10-87					
4-14-87					
6-16-87					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JEB	MJE		WTF	WJJ	2-2-87



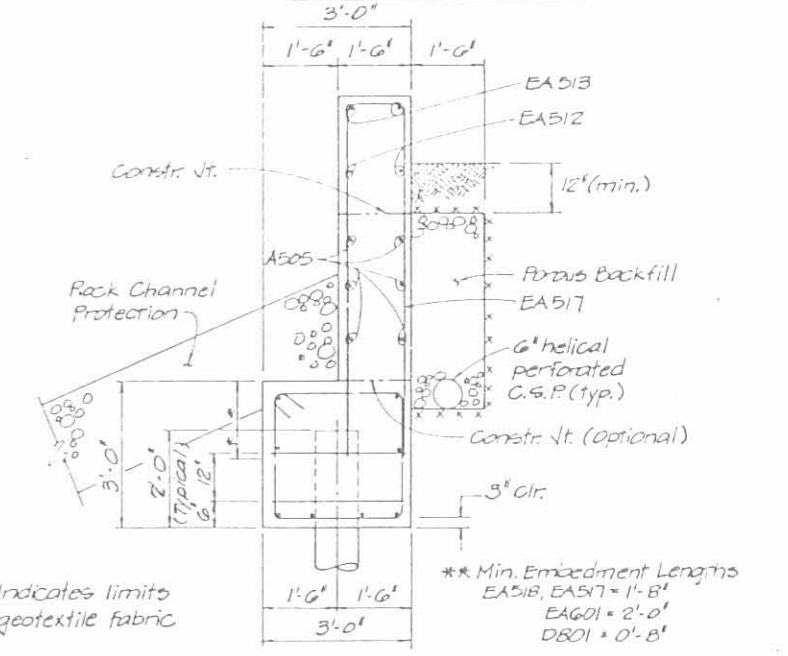
PLAN



ELEVATION



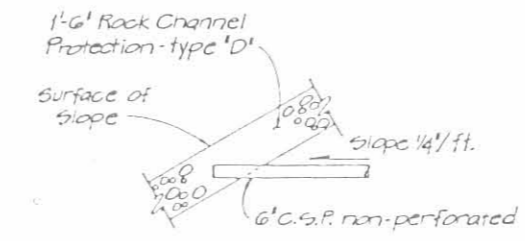
SECTION A-A



SECTION B-B

NOTES:

- BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE PLACEMENT OF ANCHOR BAR HOLES.
- POROUS BACKFILL: 1.5 FT. THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FT. BELOW PROPOSED GROUND SURFACE AND LATERALLY TO THE ENDS OF THE WINGWALLS.
- DOWEL BARS, DB01, SHALL BE PLACED PARALLEL TO CENTERLINE OF ROADWAY.
- ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT SHALL NOT BE PLACED UNTIL THE PRESTRESSED BEAMS HAVE BEEN ERECTED.
- POROUS BACKFILL SHALL BE ENCASED WITH GEOTEXTILE FABRIC. GEOTEXTILE FABRIC SHALL CONFORM TO 712.09, TYPE A AND SHALL BE INCLUDED WITH POROUS BACKFILL FOR PAYMENT. GEOTEXTILE FABRIC SHALL BE PLACED 6-INCH MINIMUM UP THE ABUTMENT BACKWALL.



DETAIL A

LEGEND

- P.E.J.F. ~ Preformed Expansion Joint Filler
- ① ~ Indicates Pile Numbering
- min. lap ~ #5 = 1'-8"
- #8 = 3'-6"

xxx Indicates limits of geotextile fabric

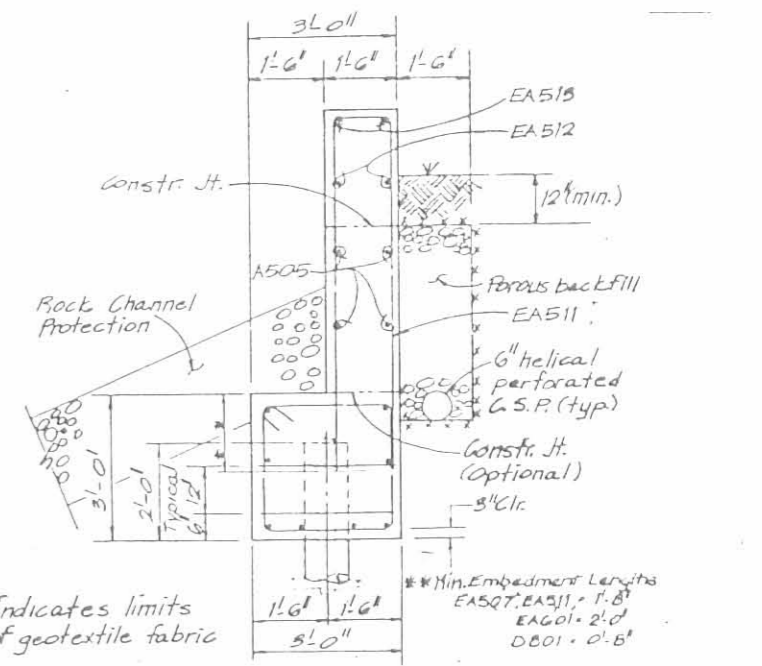
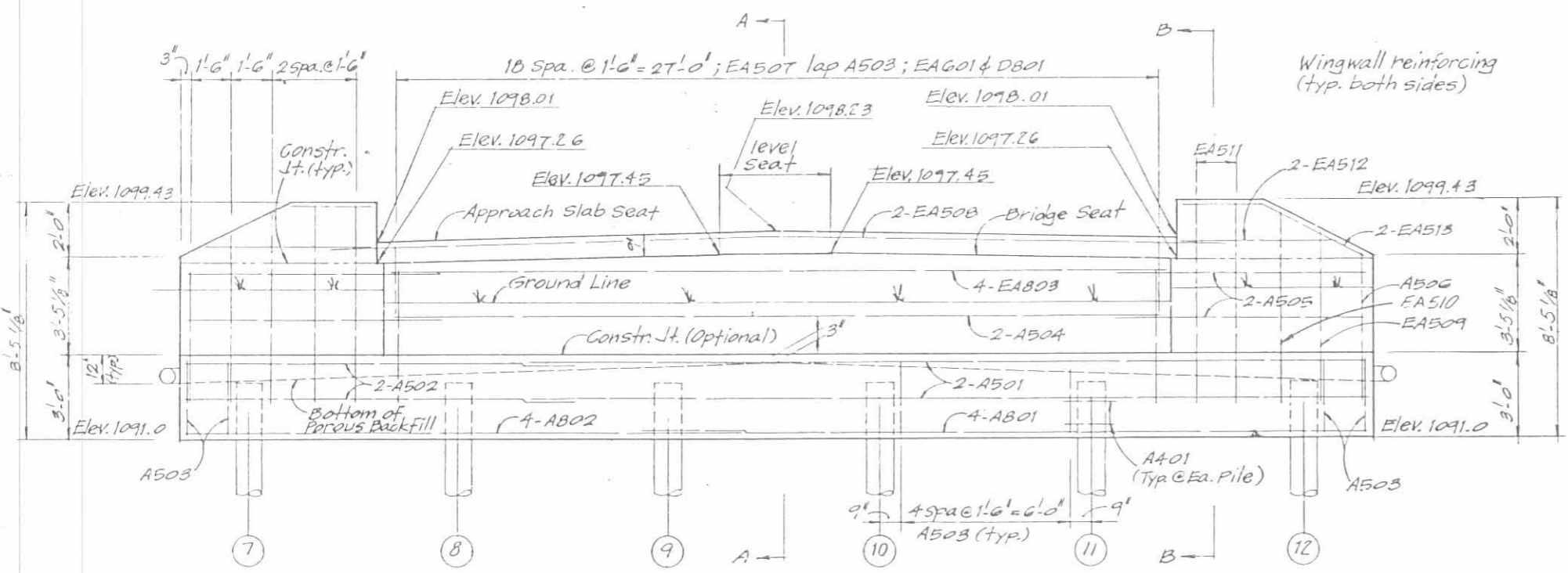
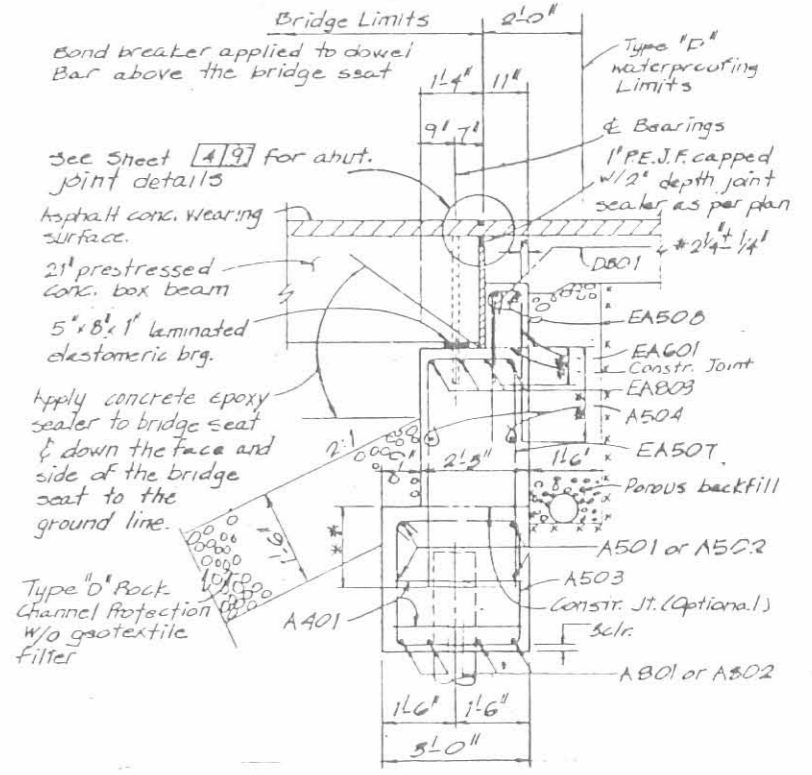
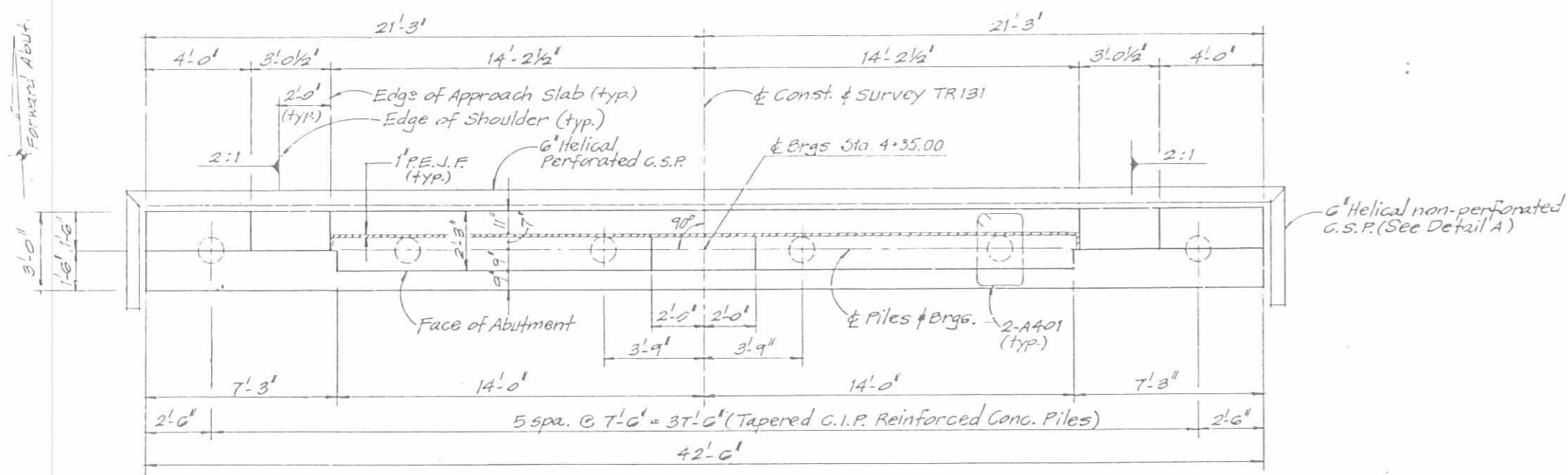
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**KORDA / NEMETH ENGINEERING, INC.**  
CONSULTING ENGINEERS

**REAR ABUTMENT DETAILS**  
BRIDGE NO. LOG-TRI31-0007  
OVER BRANCH OF MILL CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFT	KAH		MTO	NJE	10/22/96	

LOGAN COUNTY  
LOG-TR131-006



NOTES:

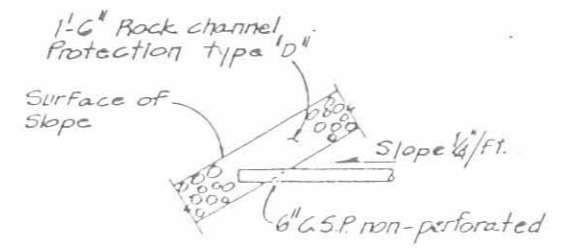
BRIDGE SEAT REINFORCING: REINFORCING STEEL IN THE VICINITY OF THE BRIDGE SEAT SHALL BE ACCURATELY PLACED TO AVOID INTERFERENCE WITH THE INSTALLATION OF ANCHOR BAR HOLES.

PO. BACKFILL: 1.5 FT. THICK SHALL EXTEND UP TO THE PLANE OF THE SUBGRADE, TO 1 FT. BELOW PROPOSED GROUND SURFACE AND Laterally TO THE ENDS OF THE WINGWALLS.

DOWEL BARS, DB01, SHALL BE PLACED PARALLEL TO CENTERLINE OF ROADWAY.

ABUTMENT CONCRETE ABOVE THE BRIDGE SEAT CONSTRUCTION JOINT SHALL NOT BE PLACED UNTIL THE PRESTRESSED BEAMS HAVE BEEN ERECTED.

POROUS BACKFILL SHALL BE ENCASED WITH GEOTEXTILE FABRIC. GEOTEXTILE FABRIC SHALL CONFORM TO 712.09, TYPE A AND SHALL BE INCLUDED WITH POROUS BACKFILL FOR PAYMENT. GEOTEXTILE FABRIC SHALL BE PLACED 6-INCH MINIMUM UP THE ABUTMENT BACKWALL.



Bar marks for reinforcing which are to be epoxy coated include a letter prefix E.

XXX ~ Indicates limits of geotextile fabric

LEGEND

P.E.J.F. ~ Preformed Expansion Jt. Filler

⑦ ~ Indicates pile numbering

min. lap ~ #5 = 1'-8"

#8 = 3'-6"

KORDA / NEMETH ENGINEERING, INC.  
CONSULTING ENGINEERS

FORWARD ABUTMENT DETAILS  
BRIDGE No. LOG-TR131-0007  
OVER BRANCH OF MILL CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFT	B.T.I.		MTO	RWE	10/22/05	

PRJ. NO.	STATE	PROJECT
5	OHIO	

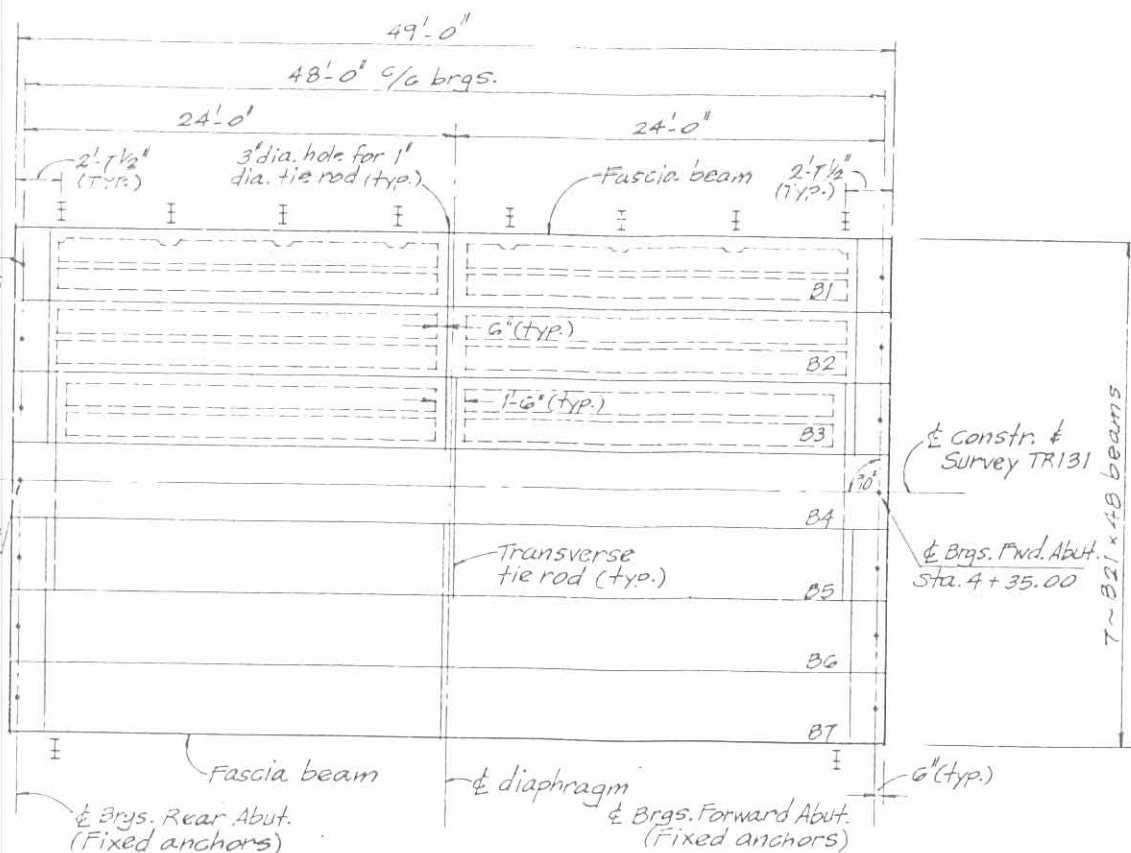
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LOGAN COUNTY  
LOG-TR131-0.06

NOTES:

DRIP STRIP: PRIOR TO APPLYING TYPE D WATERPROOFING, A BENT DRIP STRIP SHALL BE INSTALLED ALONG THE EDGES OF THE DECK AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6" C/C MAXIMUM WITH 1-1/4" X 5/32" X 1/4" FLAT HEAD DRIVE PIN AND WASHER. (LENGTH X SHANK DIAMETER X HEAD DIAMETER) OR #10 GALVANIZED SCREWS AND EXPANSION ANCHORS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK, ENDING AT THE FACE OF THE ABUTMENT WING WALL. WHERE SPLICES ARE REQUIRED A 3-INCH (MINIMUM) LAP SHALL BE USED WITH A FASTENER THROUGH THE LAP. STEEL FOR GALVANIZED STRIPS SHALL BE 8" X 0.105" AND SHALL MEET THE REQUIREMENTS OF ASTM A568. GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. STAINLESS STEEL SHALL BE 20 GAUGE ASTM A167, TYPE 304, MILL FINISH. PAYMENT SHALL BE AT THE CONTRACT PRICE BID ITEM SPECIAL, SQ.FT. STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.

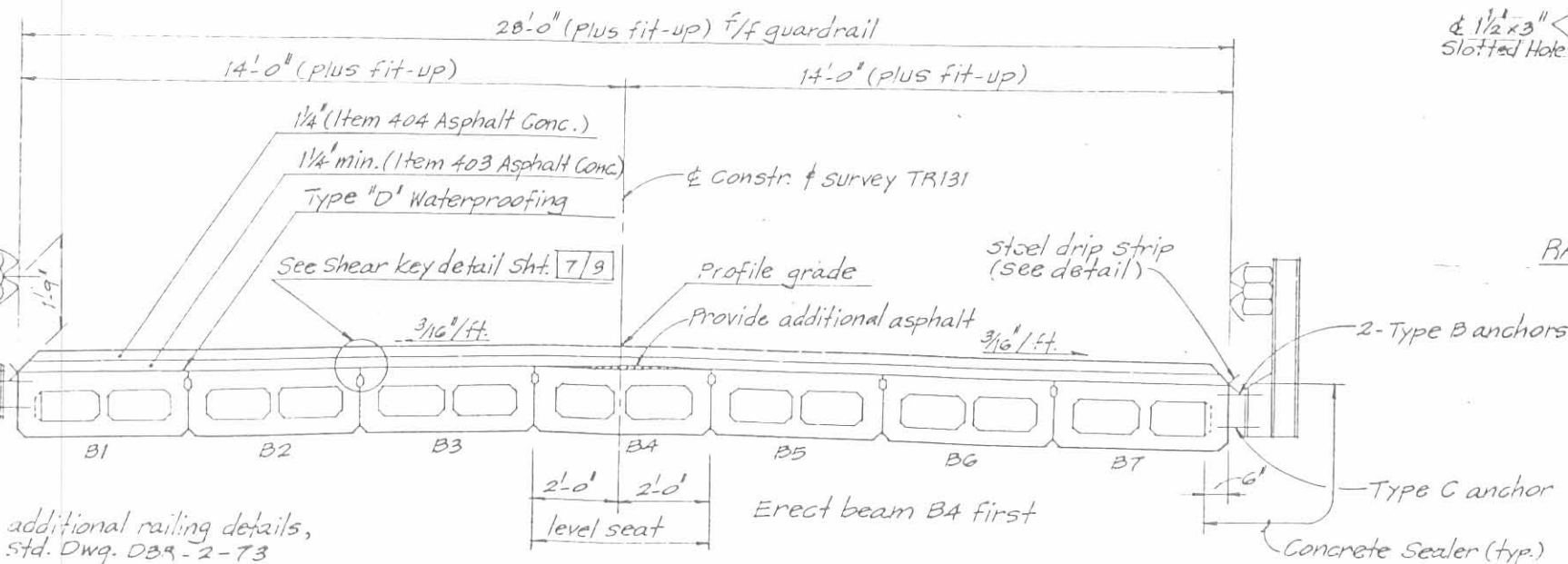
For additional superstructure details, see sht. 8/9



Railing post spacing @ 6'-3" (TYP. both sides)  
Railing posts dimensioned from beam ends.

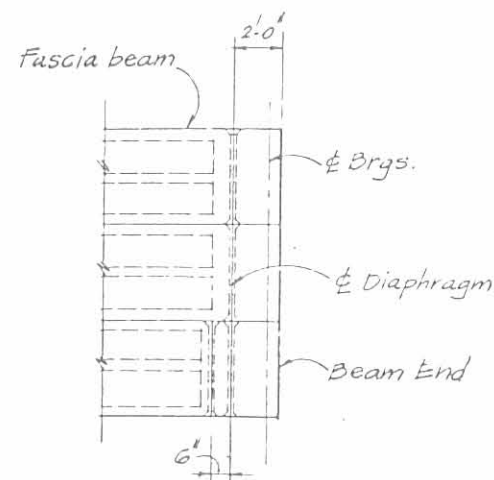
Omit keyway on outside of fascia beam

SUPERSTRUCTURE PLAN

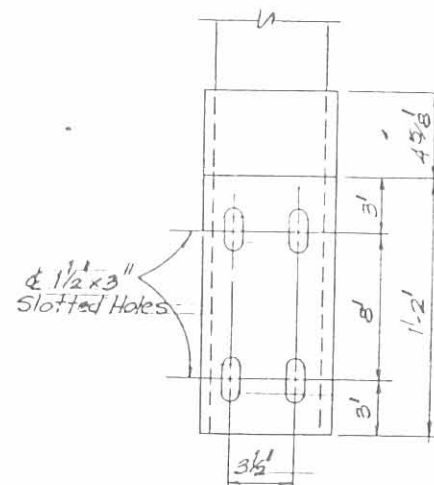


additional railing details, std. Dwg. DB3-2-73

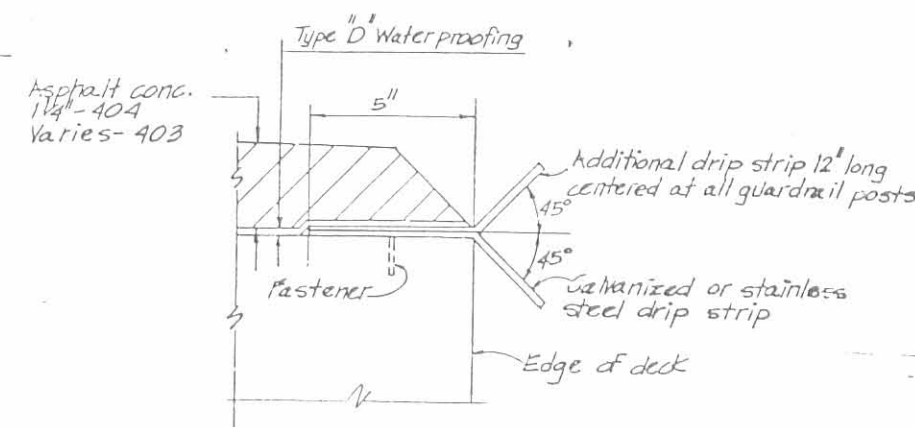
DECK SECTION



PARTIAL PLAN OF END DIAPHRAGMS



RAILING POST DETAIL



DRIP STRIP DETAIL

KORDA / NEMETH ENGINEERING, INC.  
CONSULTING ENGINEERS

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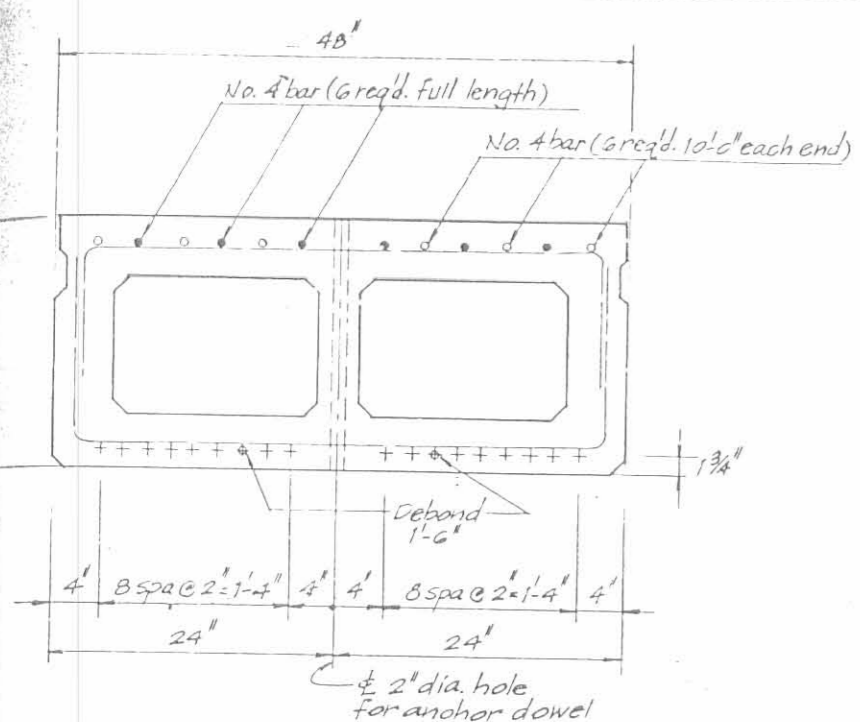
SUPERSTRUCTURE DETAILS  
BRIDGE NO. LOG - TR131-0007  
OVER BRANCH OF MILL CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFT	BTJ		MTD	AWE	10/22/14	

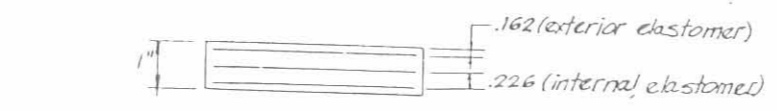
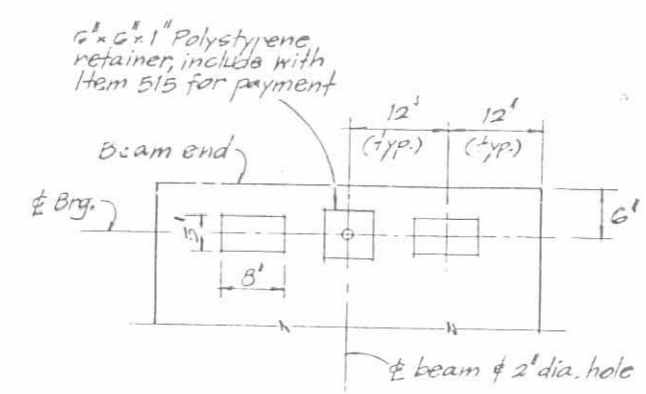
FILE NO.	DATE	PROJECT
5	OHIO	

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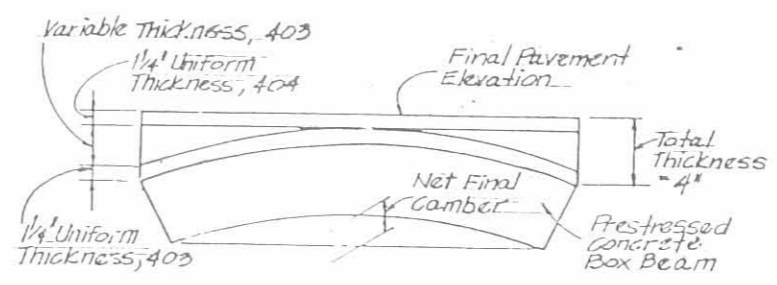
LOGAN COUNTY  
LOG-TR131-0.06



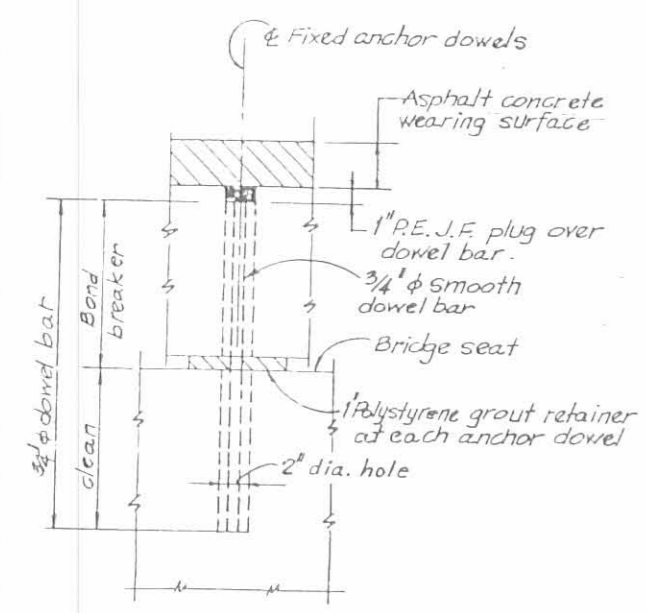
**BOX BEAM DETAILS**  
(18 strands)  
For additional box beam details see Std. Dwg. PSBD-1-81



**BEARING PAD LAYOUT**  
5" x 8" x 1" Laminated Elastomeric Bearing Pads  
50 Durometer  
3-14 gage steel laminated (0.0147")

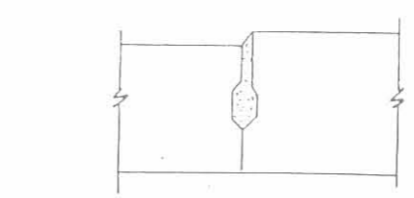


**ASPHALT THICKNESS DIAGRAM**



**FIXED ANCHOR DOWEL**

Procedure: Place 1" polystyrene grout retainer. Drill and clean dowel hole. Then place non-shrink grout, dowel and plug. Included for payment with Item 515.



Shear Keys shall be mortared on a finished plane between the top edge of the adjacent beams where vertical offset within tolerance occurs.

**SHEAR KEY DETAIL**

**NOTES:**

PRESTRESSING STRANDS ARE ASTM A416, 1/2-INCH, 7 WIRE UNCOATED, STRESS-RELIEVED STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI AND AN INITIAL TENSION OF 28,900 LBS. PER STRAND.

REFER TO STANDARD DRAWING PSBD-1-81 FOR THE FOLLOWING DETAILS:

- BEAM LIFTING INSERTS
- MILD STEEL REINFORCEMENT AND REINFORCING OF BEAM ENDS.
- ANCHOR DOWELS
- END DETAILS OF TRANSVERSE TIE ROD ANCHORAGE
- BEAM DIMENSIONAL TOLERANCES
- DIMENSIONS OF BEAM SECTION
- WALL THICKENING AT RAILING POST ANCHORS
- TYPICAL PLANS OF DIAPHRAGMS AND TRANSVERSE TIE RODS
- NORMAL CROWN TREATMENT AT CENTERLINE OF ROADWAY

REFER TO STANDARD DRAWING PSBD-1-81 FOR THE FOLLOWING NOTES:

- TRANSVERSE TIE RODS
- GALVANIZING
- ANCHOR DOWELS
- END OF BEAMS
- MORTARING OF SHEAR KEYS
- NON-SHRINKING MORTAR
- PREPARATION OF CONCRETE SURFACES IN CONTACT WITH NON-SHRINKING MORTAR

AS REQUIRED TO SUPPLEMENT APPLICABLE DETAILS.

ASPHALT CONCRETE SURFACE COURSE SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND A 1-1/4-INCH THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS. THE FIRST COURSE SHALL BE OF 1-1/4-INCH THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1-1/4-INCH BELOW FINAL PAVEMENT SURFACE ELEVATION.

CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 1-5/8-INCH. CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS 1/8-INCH. NET FINAL CAMBER OF BEAMS IS 1-1/2-INCH. THIS IS 1-1/2-INCH IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO PROFILE GRADE. THIS ADDITIONAL AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE FROM 1-1/4-INCH AT CENTER OF SPANS TO 2-3/4-INCH AT ENDS OF SPANS.

A BOND BREAKER SHALL BE USED ON ALL PORTIONS OF THE ANCHOR DOWELS PROJECTING ABOVE THE BRIDGE SEAT AT THE FIXED BEARING. DOWEL BARS SHALL BE 3/4-INCH DIAMETER PLAIN BARS.

TOLERANCES FOR LAMINATED ELASTOMERIC BEARING:

INDIVIDUAL ELASTOMER LAYER THICKNESS:	+20% OF DESIGN VALUE (NOT TO EXCEED +) 1/8-INCH
PLAN DIMENSIONS	-0. +1/4-INCH
DESIGN THICKNESS <1-1/4-INCH	-0. +1/8-INCH
EDGE COVER OF EMBEDDED LAMINATES	-0. +1/8-INCH

LAMINATED ELASTOMERIC BEARINGS:

THE MAXIMUM DESIGN LOAD FOR THE LAMINATED ELASTOMERIC BEARING PADS IS 21.4 KIPS. MAXIMUM DEAD LOAD IS 11.8 KIPS, AND MAXIMUM LIVE LOAD IS 9.6 KIPS.

For additional Superstructure details see sht. 7/9

KORDA / NEMETH ENGINEERING, INC.  
CONSULTING ENGINEERS

**SUPERSTRUCTURE DETAILS II**  
BRIDGE NO. LOG-TR131-0007  
OVER BRANCH OF MILL CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
DFT	BTJ		MTD	AWC	10/21/90	

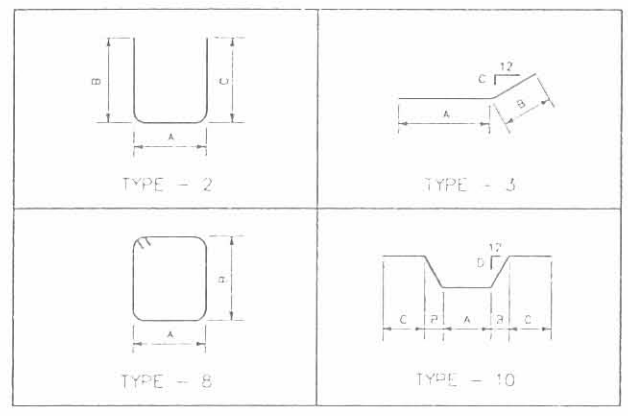
FEDERAL REGION	STATE	PROJECT
5	OHIO	

LOGAN COUNTY  
LOG-TR131-0.06

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD	TOTAL				A	B	C	D	E	R	INC
ABUTMENTS													
A401	12	12	24	4-7	144	8	2-6	1-9					
A501	4	4	8	35-0	280	St							
A502	4	4	8	17-10	115	St							
A503	29	29	58	11-0	635	8	2-8	2-7					
A504	4	2	6	27-8	173	St							
A505	12	8	20	8-11	166	St							
A506	2	2	4	10-11	23	2	1-2	5-0	5-0				
A514	2	2	4	13-7	28	2	1-2	6-4	6-4				
A301	4	4	8	25-0	200	St							
A802	4	4	8	20-8	163	St							
DR01	19	19	38	4-4	152	10	1-8	1-0	0	12			
Total 2999 lb.													

MARK	NUMBER			LENGTH	WEIGHT	TYPE	DIMENSIONS						
	REAR	FWD	TOTAL				A	B	C	D	E	R	INC
ABUTMENTS (EPOXY COATED)													
EA507		19	19	11-8	231	2	1-11	5-0	5-0				
EA508	2	2	4	32-0	134	St							
EA509		2	2	12-5	26	2	1-2	5-9	5-9				
EA510		2	2	13-11	29	2	1-2	6-6	6-6				
EA511		4	4	14-3	62	2	1-2	6-11	6-11				
EA512	4	4	8	5-8	47	St							
EA513	4	4	8	7-0	58	3	2-9	4-3	6				
EA515	2		2	15-1	31	2	1-2	7-1	7-1				
EA516	2		2	16-7	35	2	1-2	7-10	7-10				
EA517	4		4	17-5	73	2	1-2	8-3	8-3				
EA518	19		19	14-2	281	2	1-11	6-3	6-3				
EA601	19	19	38	5-5	309	2	0-7	2-7	2-7				
EA803	4	4	4	27-8	591	St							
Total 1907 lb.													

BENDING DIAGRAMS



NOTES

1. BAR MARKS WITH A LETTER PREFIX "ET" SHALL BE EPOXY COATED.
2. LENGTHS ARE GIVEN IN FEET - INCHES.
3. "ST" IN THE "TYPE" COLUMN INDICATES STRAIGHT BARS.
4. REFER TO C.M.S. SEC. 509.05 FOR STANDARD BEND DIMENSIONS.
5. ALL DIMENSIONS ARE OUT-TO-OUT.

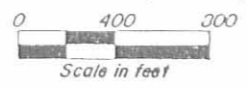
KORDA/NEMETHI ENGINEERING, INC.  
CONSULTING ENGINEERS  
1650 WATERMARK DRIVE, SUITE 200  
COLUMBUS, OHIO 43215-1094  
TEL (614) 447-1640  
FAX (614) 487-8941

REINFORCING STEEL LI  
BRIDGE NO. LOG-TR131-01  
OVER BRANCH OF MILL CR

DESIGNED	DRAWN	CHECKED	REVIEWED	DATE
DFT	KJK	MTO	AKJE	10/22/92

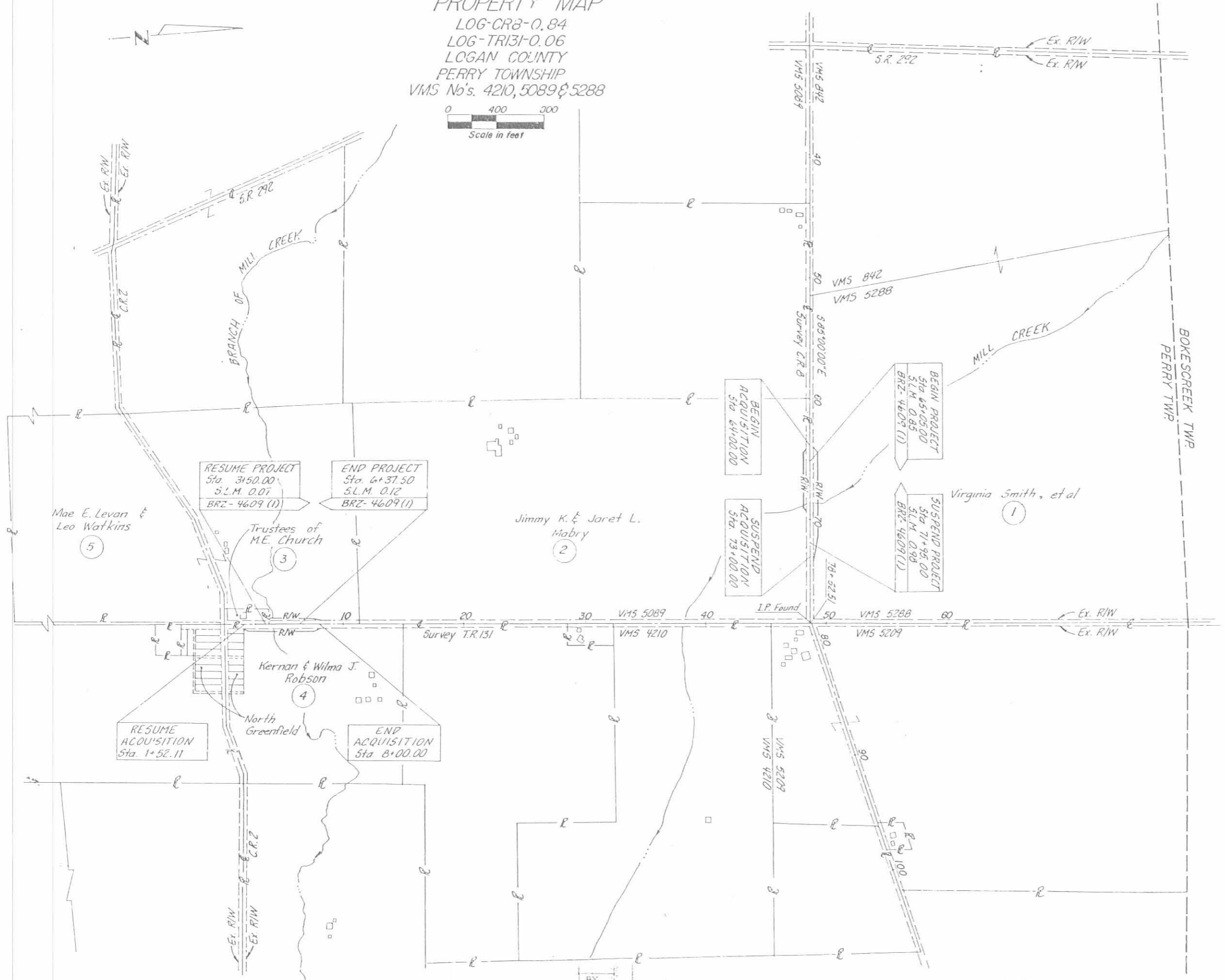


PROPERTY MAP  
 LOG-CR8-0.84  
 LOG-TRI31-0.06  
 LOGAN COUNTY  
 PERRY TOWNSHIP  
 VMS No's. 4210, 5089 & 5288



PID NO. 4635	DATE 12/7/90	BY C.H.C.	REV. 1
STATE JOB NO. 07094 (G)	5		3

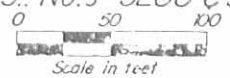
LOGAN COUNTY  
 LOG-CR8-0.84  
 LOG-TRI31-0.06



BY  
 MAP

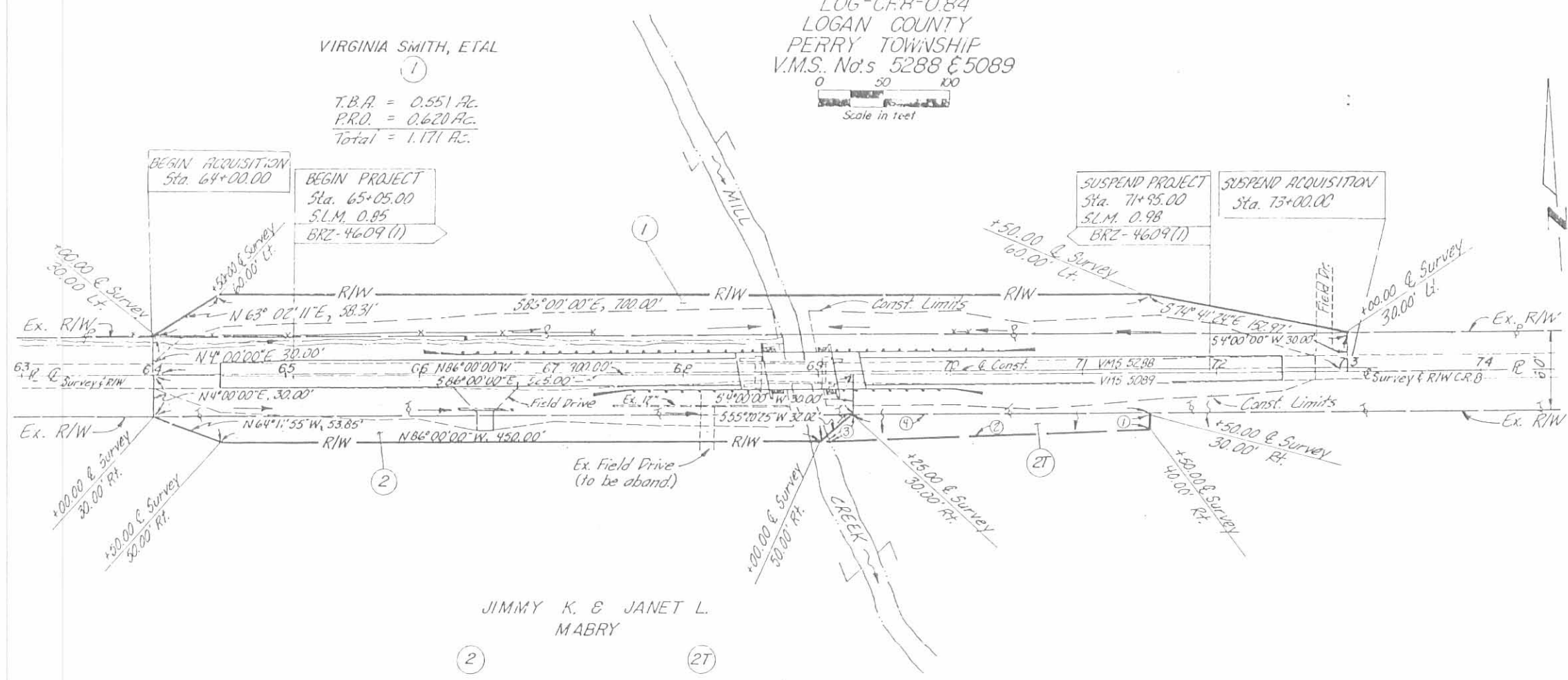
REV.	DATE	DESCRIPTION	BY
	12/7/90	COMPLETION DATE	P.H.S.

LOG-CR8-0.84  
LOGAN COUNTY  
PERRY TOWNSHIP  
V.M.S. No's 5288 & 5089



VIRGINIA SMITH, ETAL

T.B.A. = 0.551 Ac.  
P.R.O. = 0.620 Ac.  
Total = 1.171 Ac.



JIMMY K. & JANET L.  
MABRY

T.B.A. = 0.224 Ac.  
P.R.O. = 0.361 Ac.  
Total = 0.585 Ac.

T.B.A. = 0.000 Ac.

- ① 5'4"00"00" W, 10.00'
- ② N 88°17'26" W, 250.20'
- ③ N 55°20'25" E, 32.02'
- ④ S 06°00'00" E, 225.00'

Utility Companies

Type	Name and Address
Electric	Logan County Cooperative Power & Light P.O. Box 279 Bellefontaine, Ohio 43311 (513) 592-4781
Telephone	United Telephone Co. of Ohio 127 North Main St. Bellefontaine, Ohio 43311 (513) 597-9200

NOTE: Underground utilities - The locations of the underground utilities shown on the plans are as obtained from the owners of the utility as required by section 153.64 ORC.

SUMMARY OF ADDITIONAL R/W REQUIRED

ALL AREAS IN ACRES UNLESS OTHERWISE NOTED

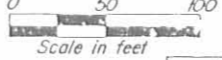
PID No. 4635  
State Job No. 07694 (0)

TOTAL NUMBER OF  
 OWNERSHIPS  
 TOTAL TAKES  
 OWNERSHIPS WITH STRUCTURES INVOLVED  
 OWNERSHIPS WITH "P" ITEMS

PARCEL	OWNER	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	PRO IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS AND PERSONALITY	AS ACQUIRED	
		BOOK	PAGE							LEFT	RIGHT			BOOK	PAGE
1	Virginia Smith, etal	26	471	612.53	14.27	1.171	0.620	0.551	No	597.71			Auditor's Parcel No. 32-082-00-00-005		
2	Jimmy K. & Janet L. Mabry	71	95	156.06	3.82	0.585	0.361	0.224	No		152.02		Auditor's Parcel No. 32-082-00-00-026 & Provide Working Area		
2T	"					0.080	0.000	0.080	No				32-082-00-00-027		
TOTAL															

12/1/90	Completion Date:	
REV.	DATE	DESCRIPTION

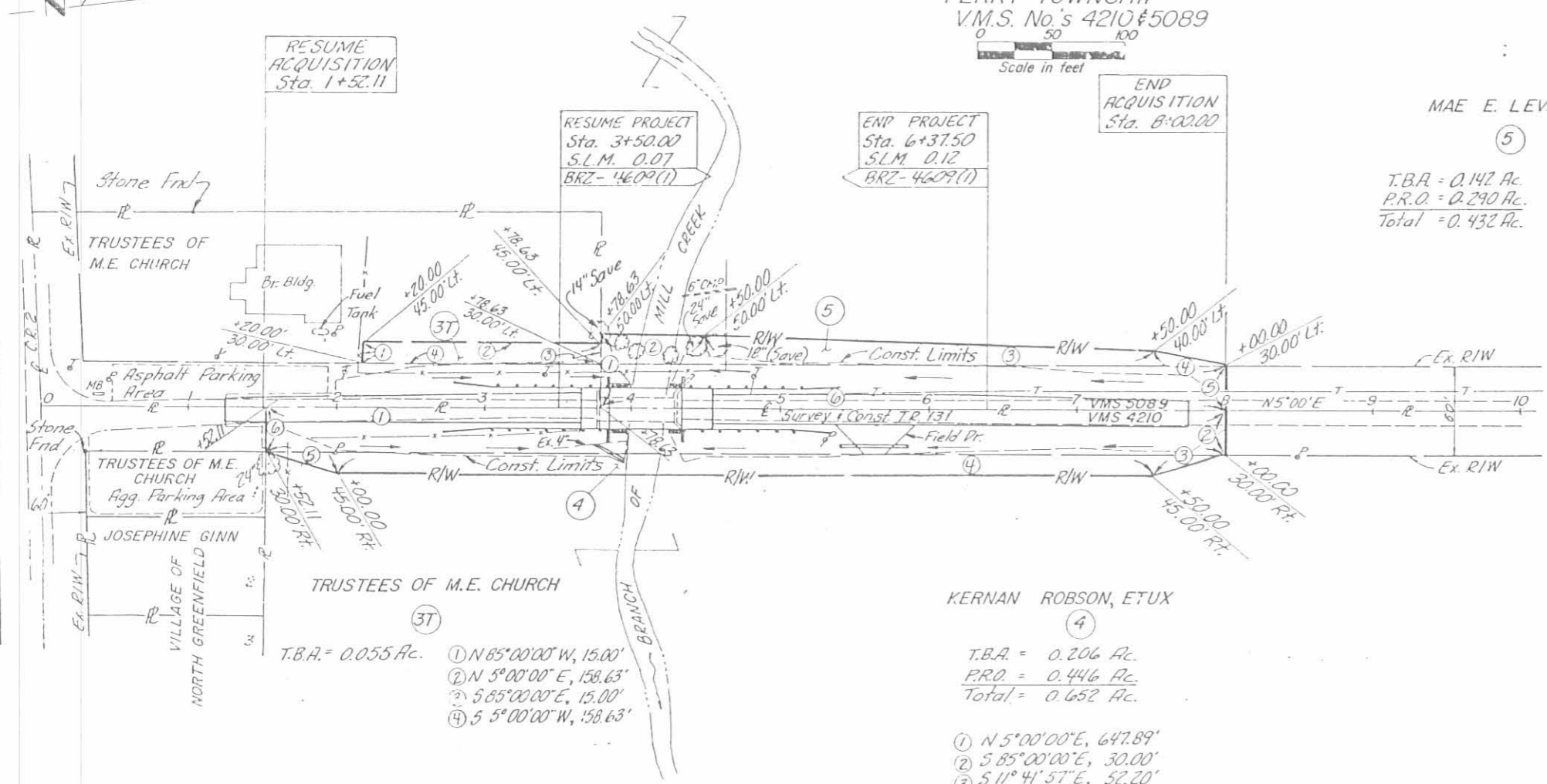
LOG - TR131 - 0.06  
 LOGAN COUNTY  
 PERRY TOWNSHIP  
 V.M.S. No.'s 4210 & 5089



PID NO. 4635			
STATE JOB NO. 07694(0)		BRZ-4609(1)	

34  
34  
3  
3

LOGAN COUNTY  
 LOG - TR131 - 0.06



MAE E. LEVAN, ETAL

5

T.B.A. = 0.142 Ac.  
 P.R.O. = 0.290 Ac.  
 Total = 0.432 Ac.

① N 85° 00' 00" W, 50.00'  
 ② N 5° 00' 00" E, 71.37'  
 ③ N 6° 54' 33" E, 300.17'  
 ④ N 16° 18' 36" E, 50.99'  
 ⑤ S 85° 00' 00" E, 30.00'  
 ⑥ S 5° 00' 00" W, 421.37'

KERNAN ROBSON, ETUX

4

T.B.A. = 0.206 Ac.  
 P.R.O. = 0.446 Ac.  
 Total = 0.652 Ac.

- ① N 5° 00' 00" E, 647.89'
- ② S 85° 00' 00" E, 30.00'
- ③ S 11° 41' 57" E, 52.20'
- ④ S 5° 00' 00" W, 550.00'
- ⑤ S 22° 23' 29" W, 50.18'
- ⑥ N 85° 00' 00" W, 30.00'

- T.B.A. = 0.055 Ac.
- ① N 85° 00' 00" W, 15.00'
  - ② N 5° 00' 00" E, 158.63'
  - ③ S 85° 00' 00" E, 15.00'
  - ④ S 5° 00' 00" W, 158.63'

Utility Companies	
Type	Name and Address
Electric	Logan County Cooperative Power & Light P.O. Box 279 Bellefontaine, Ohio 43311 (513) 592-4781
Telephone	United Telephone Co. of Ohio 127 North Main St. Bellefontaine, Ohio 43311 (513) 599-9200

NOTE: Underground utilities - The locations of the underground utilities shown on the plans are as obtained from the owners of the utility as required by section 153.64 ORC.

TOTAL NUMBER OF  
 OWNERSHIPS  
 TOTAL TAKES  
 OWNERSHIPS WITH STRUCTURES INVOLVED  
 OWNERSHIPS WITH "P" ITEMS

## SUMMARY OF ADDITIONAL R/W REQUIRED

PID No 4635  
 State Job No. 07694(0)

ALL AREAS IN ACRES UNLESS OTHERWISE NOTED

PARCEL	OWNER	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	PRO IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED	
		BOOK	PAGE							LEFT	RIGHT			BOOK	PAGE
37	Trustees of Methodist Episcopal Church	P	541	1.15		0.085	0.000	0.055	No				Minor Grading		
			223	332											
			261	200											
4	Kernan & Wilma J. Robson	66	696	123.61	2.15	0.652	0.446	0.206	No		121.25	LOCAL	Auditor's Parcel No. 32-052-00-00-010-000		
5	Mae E. Levan & Leo Watkins	332	92	147.8	3.15	0.432	0.290	0.142	No	144.51	LOCAL				

11/190	Completion Date:	PWT
REV. DATE	DESCRIPTION	BY