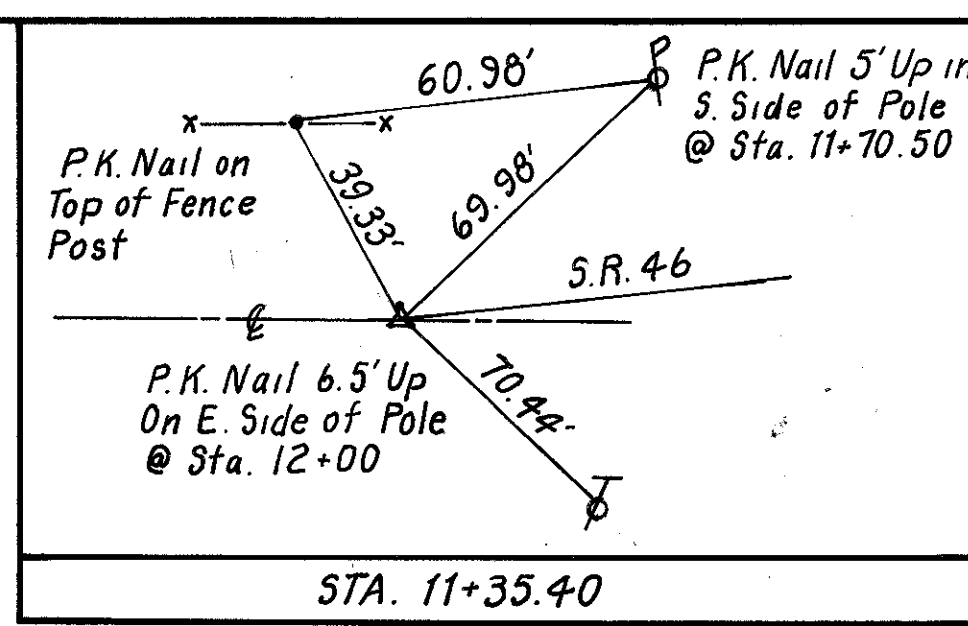
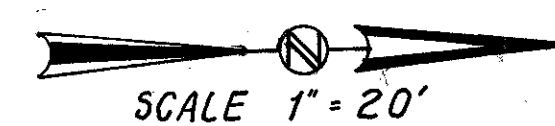
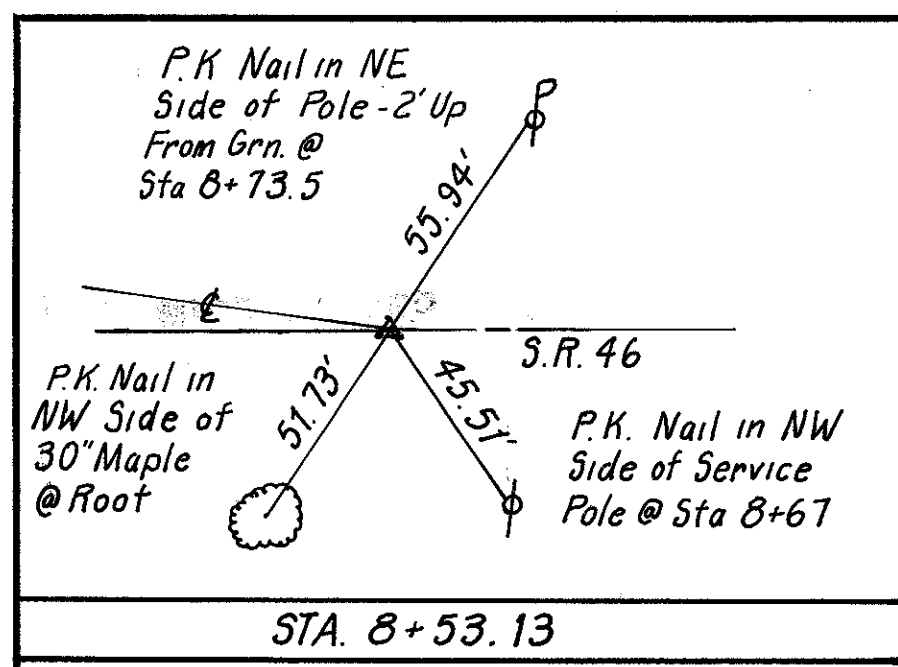
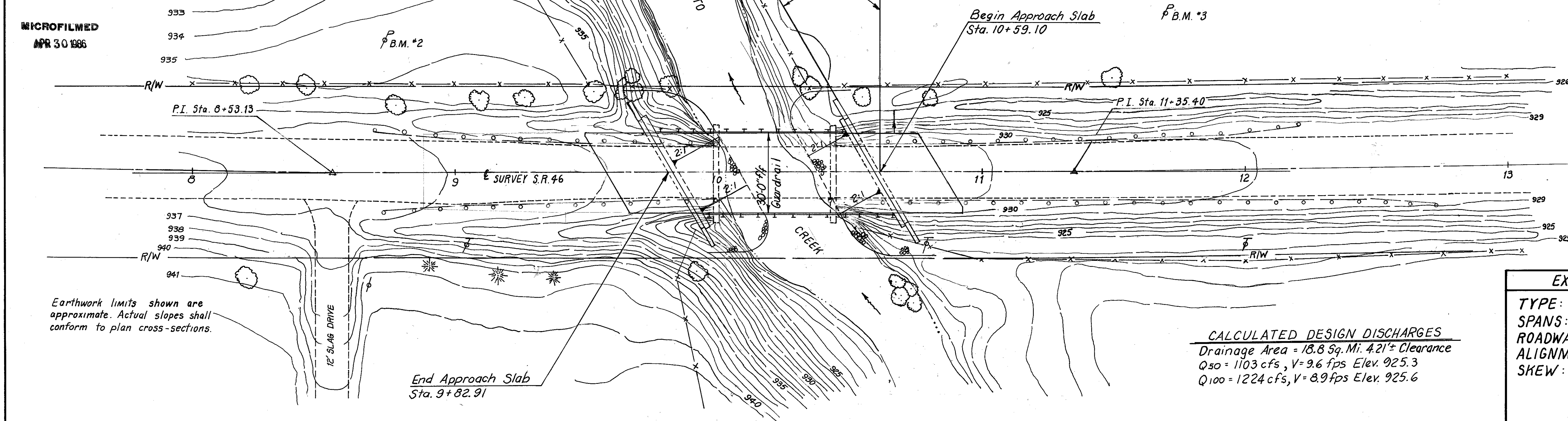




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Earthwork limits shown are approximate. Actual slopes shall conform to plan cross-sections.

CALCULATED DESIGN DISCHARGES
Drainage Area = 18.8 Sq. Mi. 4.21'± Clearance
Q₅₀ = 1103 cfs, V = 9.6 fps Elev. 925.3
Q₁₀₀ = 1224 cfs, V = 8.9 fps Elev. 925.6

Benchmark #2 - Boat Spike on E. Side of Power Pole 50.7' Lt. Sta. 8+73.50 (1' Up From Ground) Elev. 936.843

ESTIMATED AVG. PAV LENGTH
For 12" C.I.P. Reinforced Concrete Piles:
Both Abutments = 35' (ea. pile)

Benchmark #3 - Boat Spike on S. Side Power Pole 60.5' Lt. Sta. 11+70.50 (1' Up From Ground) Elev. 927.286

EXISTING STRUCTURE
TYPE: Concrete Girder
SPANS: Single Span @ 35'-6"
ROADWAY: 18'-10" Between Curbs
ALIGNMENT: Tangent
SKEW: 0°
Bridge To Be Removed

PROPOSED STRUCTURE
TYPE: Single Span Non-Composite Pre-Cast, Prestressed Concrete Box Beam
SPANS: 74.85'± Bearing (All Box Beam Length 76'-0")
ROADWAY: 30'-0" f/f Guardrail
SKEW: 30° Rt. Fwd.
DESIGN LOADING: HS 20-14 & Alternate Military Loading
APPROACH SLAB: 25'-0" Long (AS-1-81)
ALIGNMENT: Tangent
SUPERELEVATION: None
WEARING SURFACE: 2 1/2" Asph. Conc. (Min.)
AVERAGE DAILY TRAFFIC: 1120 (2000)

Structure File No. 7803001

			934.90		934.02		933.44		933.14		932.26		932.10		931.38				
950																			950
940																			940
930																			930
920																			920
910																			910
900																			900
890																			890
	936.08		935.70		934.90		934.12		933.16		932.79		932.44		931.07		930.03		
	8		9		10		11		12										

Type "B" Rock Channel Protection 2.5' thick with filter
Channel Bottom Elev. 918.8 ±
50 Year High Water Elev. 925.3
100 Year High Water Elev. 925.6
Normal Flow Elev. 920.0 ±
4.21' CLEAR

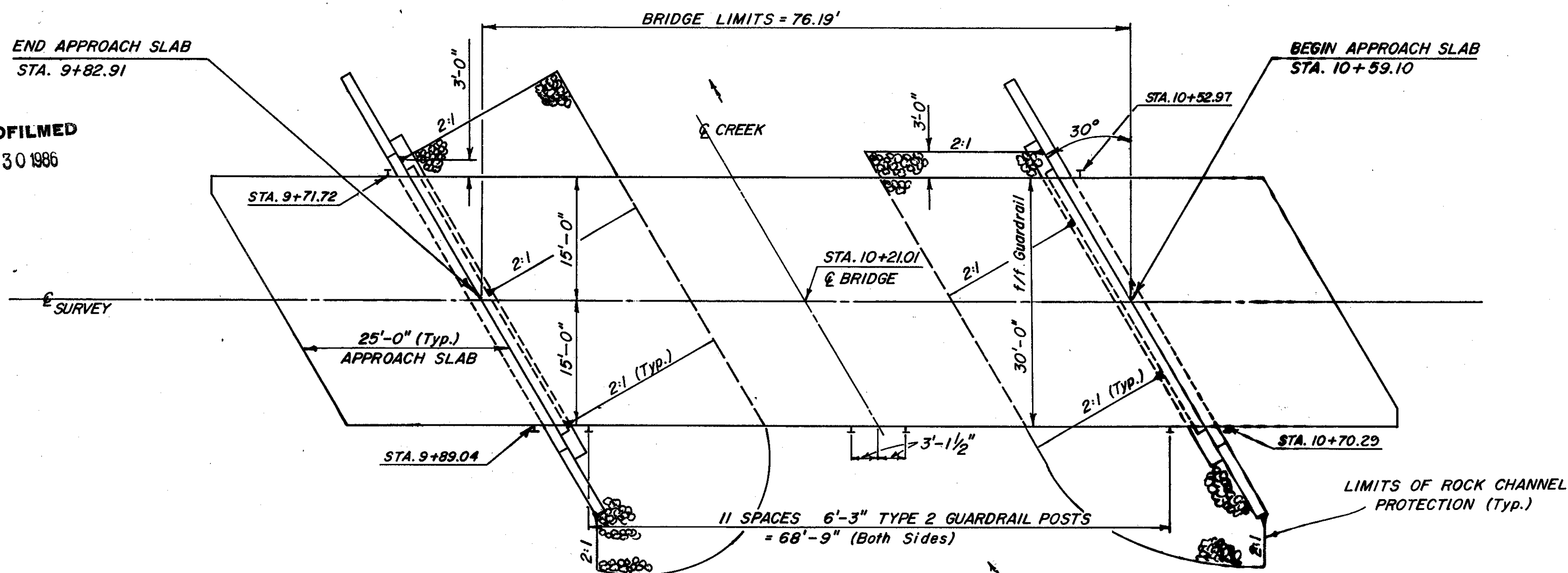
THOMAS FOK & ASSOCIATES
CONSULTING ENGINEERS AND PLANNERS
YOUNGSTOWN, OHIO

SITE PLAN
Br. No. TRU-46-25.14
Over
Mosquito Creek Trumbull County

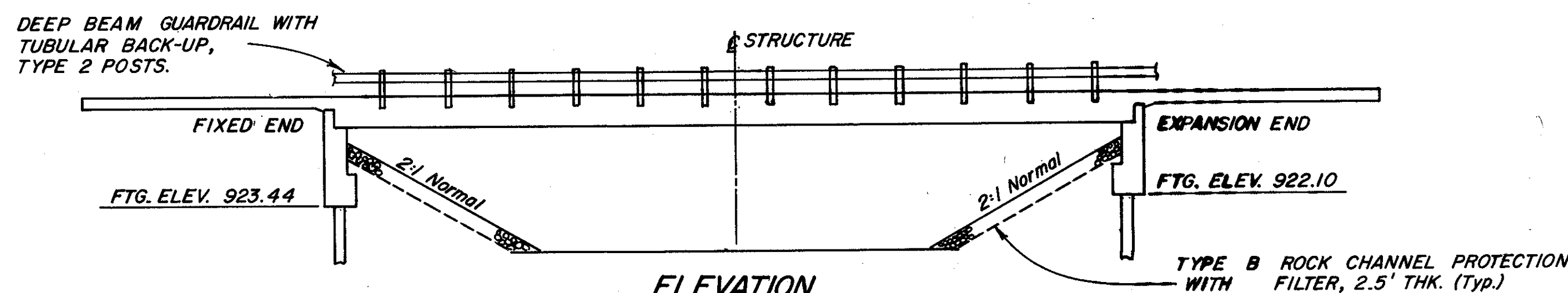
SR 46

PRESENT TOPOGRAPHY	DESIGNED	DRAWN	CHECKED	REVIEWED
SURVEYED Division Office	DESIGNED QEF July 83	DRAWN QEF July 83	CHECKED L.Z. July 83	REVIEWED T.F. July 83

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APR 30 1986



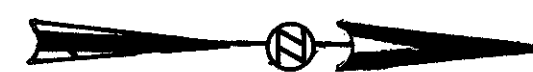
GENERAL PLAN



ELEVATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	S. STR.	ABUTS.	GEN.
202	LUMP	SUM	STRUCTURE REMOVED			LUMP
403	14	CU.YDS.	ASPHALT CONCRETE, (A.C.-20)	14		
404	9	CU.YDS.	ASPHALT CONCRETE, (A.C.-20)	9		
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION		LUMP	
503	215	CU.YDS.	UNCLASSIFIED EXCAVATION		215	
507	490	L.FT.	12" Ø CAST-IN-PLACE REINFORCED CONCRETE PILES, AS PER PLAN		490	
509	6429	LBS.	REINFORCING STEEL, GRADE 60		6429	
511	30	CU.YDS.	CLASS "C" CONCRETE, FOOTINGS		30	
511	39	CU.YDS.	CLASS "C" CONCRETE, ABUTMENTS ABOVE FOOTINGS		39	
512	254	SQ.YDS.	TYPE D WATERPROOFING	254		
515	760	L.FT.	PRESTRESSED CONCRETE BRIDGE MEMBERS (B33-36)	760		
516	4	EA.	10"x5"x1" ELASTOMERIC BEARING PADS		4	
516	18	EA.	20"x5"x1" ELASTOMERIC BEARING PADS		18	
516	8	SQ.FT.	1/8" PREFORMED BEARING PADS, 711.21		8	
516	75	L.FT.	JOINT SEALER			75
516	195	SQ.FT.	1" PREFORMED EXPANSION JOINT FILLER			195
517	152.38	L.FT.	RAILING (DEEP BEAM RAIL W/STEEL TUBULAR BACK-UP & STEEL POSTS & BOLTS)	152.38		
518	45	CU.YDS.	POROUS BACKFILL		45	
523	3	HRS.	DYNAMIC LOAD TEST		3	
601	280	CU.YDS.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER			280
SPEC.	118	SQ.FT.	STEEL DRIP STRIP	118		



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GENERAL NOTES

DESIGN DATA:

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

PRESTRESSED CONCRETE BEAMS:

CONCRETE UNIT STRESS = 2,200 P.S.I. COMPRESSION.

CONCRETE UNIT STRESS = 444 P.S.I. TENSION.

MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS

F'_c = 5,500 P.S.I.

MINIMUM CONCRETE COMPRESSIVE STRENGTH AT TIME OF

INITIAL PRESTRESS F'_{ci} = 4,000 P.S.I.

PRESTRESSING STRANDS:

1/2" DIA., 270-K SEVEN-WIRE, UNCOATED, STRESS -

RELIEVED STRAND. A_s = 0.154 SQ.IN.

INITIAL TENSION = 28,900 LBS. PER STRAND.

TENSION AT RELEASE = 26,600 LBS. PER STRAND (ASSUMED).

FINAL TENSION = 21,700 LBS. PER STRAND AFTER ALL

LOSSES (ASSUMED).

PRESTRESSING STRAND ASTM A416 -

F'_s = 270,000 P.S.I.

INITIAL STRESS = 0.70 F'_s .

REINFORCING STEEL - ASTM A615, A616 OR A617 GRADE 60 MINIMUM

YIELD STRENGTH 60,000 P.S.I. FOR SUBSTRUCTURE.

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4,000 P.S.I. FOR

SUBSTRUCTURE.

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81 SHEET 1, 2 and 3 DATED 11-27-81

DBR-2-73 DATED 4-10-73

PSBD-1-81 SHEET 1, 2 and 3 DATED 9-18-81

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1977, WITH INTERIMS TO 1982, AND THE OHIO SUPPLEMENT TO THESE SPECIFICATIONS.

SHIMS: 1/8" THICK PREFORMED BEARING PAD SHIMS, PLAN AREA 5"x 20" SHALL BE PLACED ON TOP OF BEARINGS WHERE REQUIRED FOR PROPER BEARING.

DECK PROTECTION METHOD: TYPE D WATERPROOFING AND

ASPHALT CONCRETE OVERLAY.

PILES SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY

OF 50 DESIGN TONS PER PILE FOR THE ABUTMENT. ACTUAL

LOADING FOR EACH PILE IS 50 TONS PER PILE.

THE PILE HAMMER USED TO INSTALL THE CAST-IN-PLACE REINFORCED CONCRETE

PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN

* 16,500 FOOT-LBS. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROCEDURES FOR STRUCTURES TO OBTAIN THE STATE'S ENERGY RATING.

* Rev. 12-13-84

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN

TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED TO ELEVATION

AS DIRECTED BY OHIO DEPARTMENT OF TRANSPORTATION ENGINEER.

SEE NOTE SHEET No.3

STANDARD DRAWINGS GR-3 AND DBR-2-73 ARE IN CONFLICT IN REGARD TO THE BRIDGE TERMINAL ASSEMBLY. THE ASSEMBLY SHALL BE AS SHOWN ON GR-3, I.E., TWO (2) 6" LONG TS 8x4xJ875 TUBING SPACERS AT THE FIRST POST OFF THE BRIDGE, AND A STEEL POST RATHER THAN A WOOD POST SHALL BE USED AT THIS LOCATION. THE TWO (2) TUBING SPACERS AND TUBING BEYOND BRIDGE LIMITS SHALL BE INCLUDED IN ITEM 517 FOR PAYMENT.

REINFORCING STEEL SPLICES: ALL REINFORCING STEEL SPLICES SHALL BE IN ACCORDANCE WITH ITEM 509.08 (ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS, 1983) UNLESS SHOWN OTHERWISE.

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.

THOMAS FOK & ASSOCIATES, LIMITED

CONSULTING ENGINEER, SURVEYOR & PLANNER
3896 MAHONING AVE. YOUNGSTOWN, OHIO

GENERAL PLAN & QUANTITIES

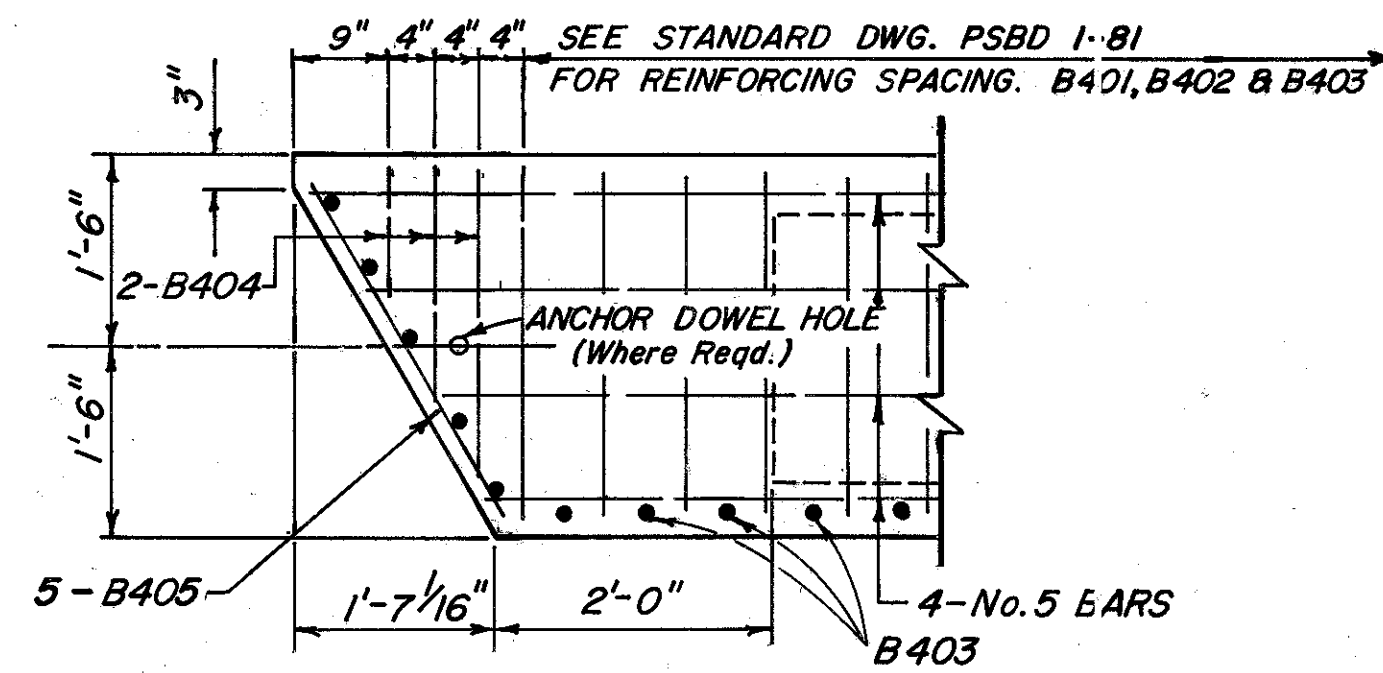
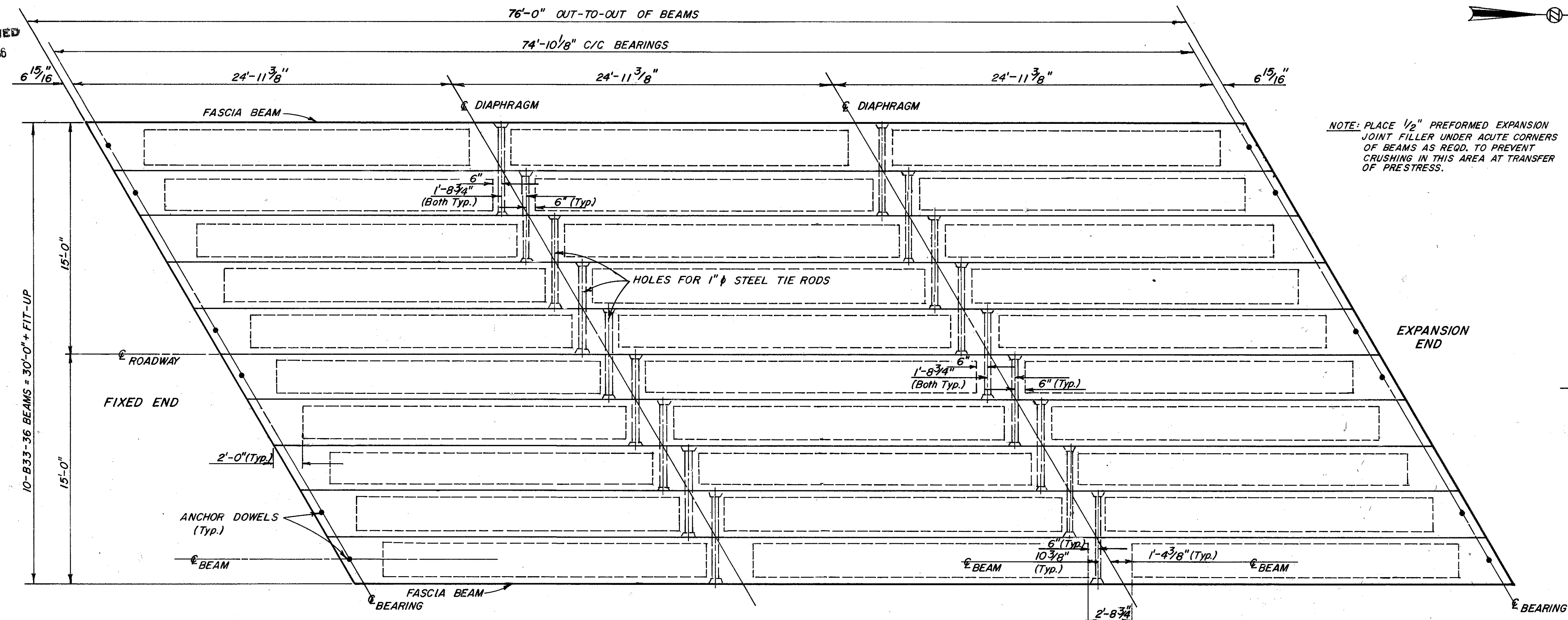
BR. No. TRU-46-25.14
over

MOSQUITO CREEK

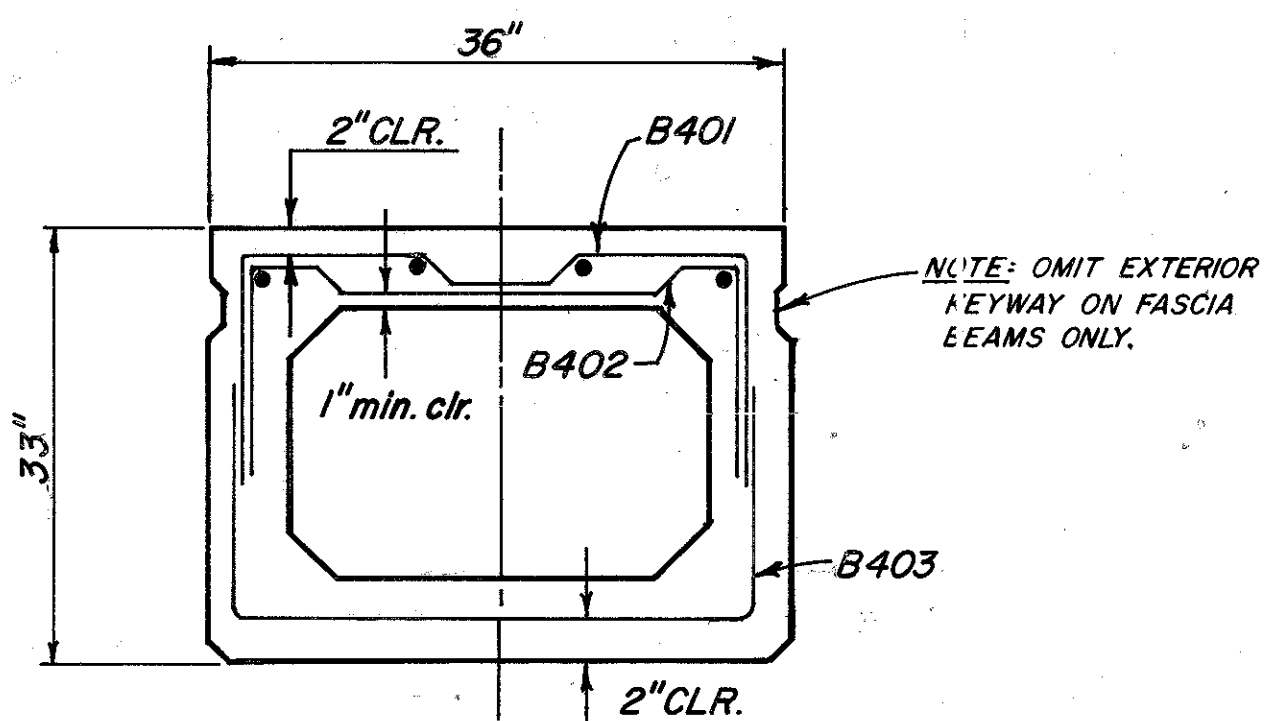
S.R. 46 TRUMBULL COUNTY

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	AJB	GEF	T.F.	12/13/84
	10-13-83		10-19-83	Oct. 83	

MICROFILMED
APR 30 1986

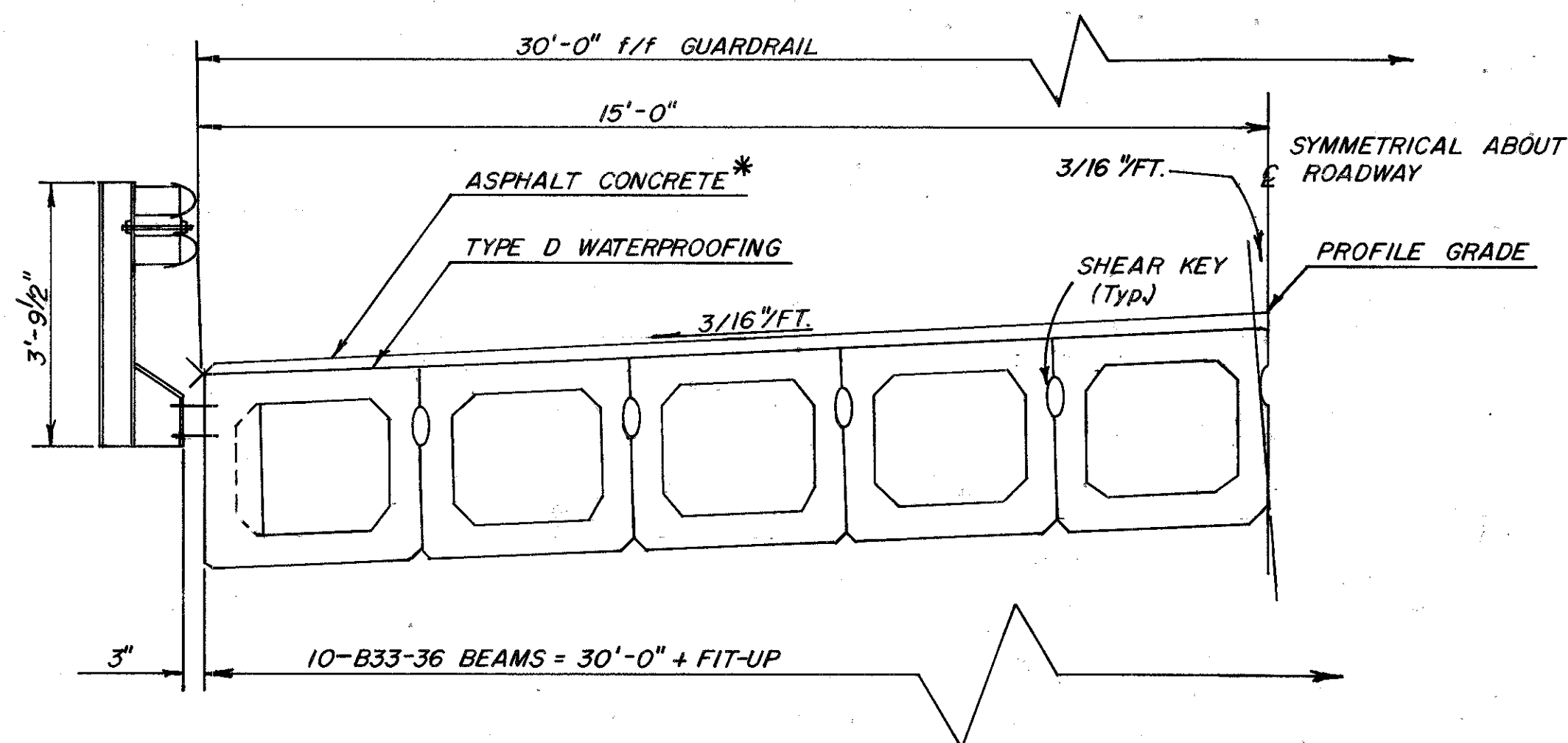


REINFORCEMENT AT BEAM ENDS - PLAN



REINFORCING STEEL DETAILS

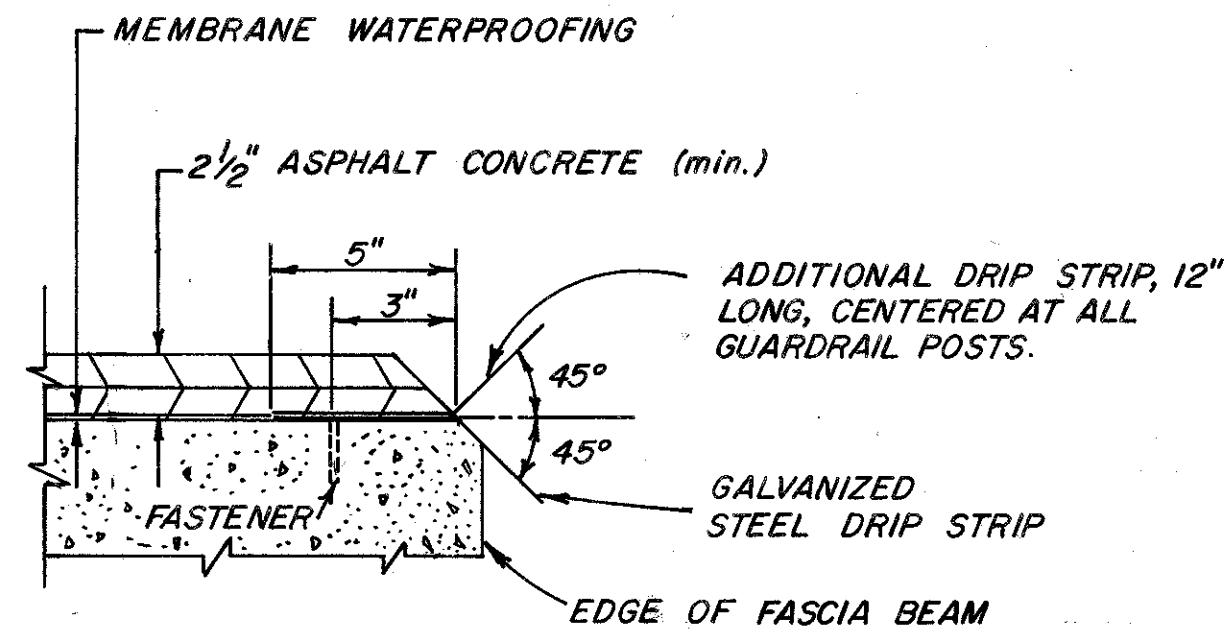
FOR GUARDRAIL DETAILS
SEE STD. DRAWING DBR-2-73



TRANSVERSE SECTION

*ASPHALT CONCRETE SURFACE COURSE:
SHALL BE 2 1/2" MINIMUM AND SHALL CONSIST OF A VARIABLE THICKNESS OF 403 AND A 1 1/4" THICKNESS OF 404. THE 403 SHALL BE PLACED IN TWO OPERATIONS: THE FIRST COURSE SHALL BE OF 1 1/4" UNIFORM THICKNESS. THE SECOND COURSE SHALL BE FEATHERED TO PLACE THE SURFACE PARALLEL TO AND 1 1/4" BELOW FINAL PAVEMENT SURFACE ELEVATION.

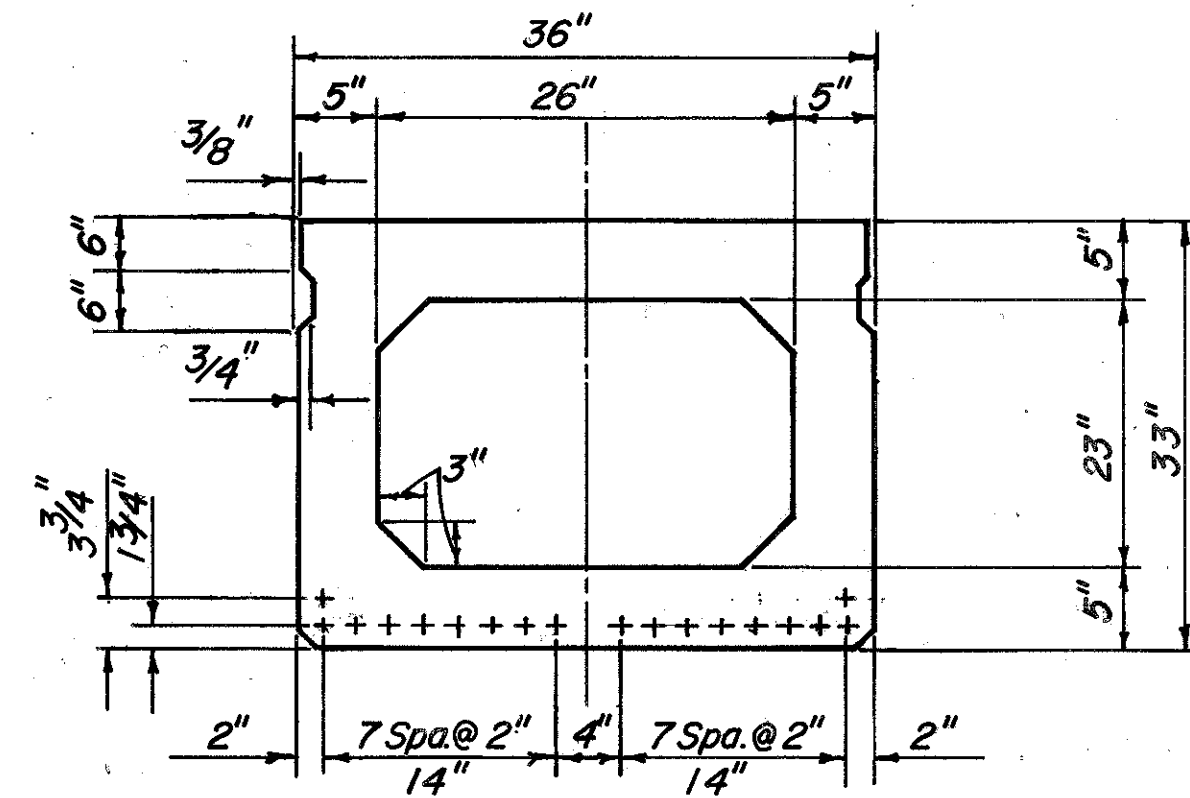
PLAN PRESTRESSED BEAMS



DRIP STRIP DETAIL

STEEL DRIP STRIP:

GALVANIZED STEEL DRIP STRIP: PRIOR TO APPLYING DECK MEMBRANE WATERPROOFING, A BENT, GALVANIZED, STEEL DRIP STRIP, 8"x0.0105" SHALL BE INSTALLED ALONG THE EXTERIOR EDGE OF THE EXTERIOR BEAMS AS SHOWN. THE STRIPS SHALL BE FASTENED AT 1'-6" MAXIMUM WITH POWER DRIVEN PIN OR No. 10 GALVANIZED EXPANSION SCREWS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THE STRIPS SHALL BE PLACED THE FULL LENGTH OF THE DECK WHERE SPLICES ARE REQUIRED. A 3" (min.) LAP SHALL BE USED, WITH A FASTENER THROUGH THE LAP. STEEL SHALL MEET THE REQUIREMENTS OF ASTM A508 AND GALVANIZING SHALL BE IN ACCORDANCE WITH 711.02. PAYMENT SHALL BE AT THE CONTRACT BID FOR ITEM SPECIAL, SQ. FT., GALVANIZED STEEL DRIP STRIP, WHICH SHALL INCLUDE ALL MATERIALS, LABOR, TOOLS AND INCIDENTALS NECESSARY TO COMPLETE THE ITEM.



B33-36
18 STRANDS
(INITIAL CAMBER 0.61")

NOTE: CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP, IS 1 3/8".

NOTE: CALCULATED DEFLECTION DUE TO WEIGHT OF SURFACE COURSE AND RAILING IS 1/4". NET FINAL CAMBER OF BEAMS IS 1 3/8". THIS IS 1 3/8" IN EXCESS OF THE AMOUNT REQD. TO PLACE THE TOP OF BEAMS PARALLEL TO PROFILE GRADE. THIS EXCESS AMOUNT SHALL BE COMPENSATED FOR BY THICKENING THE 403 LEVELING COURSE: FROM 1 1/4" AT CENTRE OF SPANS TO 2 3/8" AT ENDS OF SPANS.

NOTE: THE FABRICATOR'S SHOP DRAWING SHALL SHOW COMPLETE DETAILS OF THE REINFORCING. THE TOP STIRRUPS SHALL BE DETAILED TO FURNISH 2" CLEARANCE.

NOTE: BEAM MANUFACTURER WILL TAKE EXTRA CARE IN STORING BEAMS PRIOR TO SHIPMENT TO SITE. THE BEAMS SHALL BE STORED IN THE POSITION WHICH SHALL CORRESPOND WITH THEIR ERECTED POSITION.

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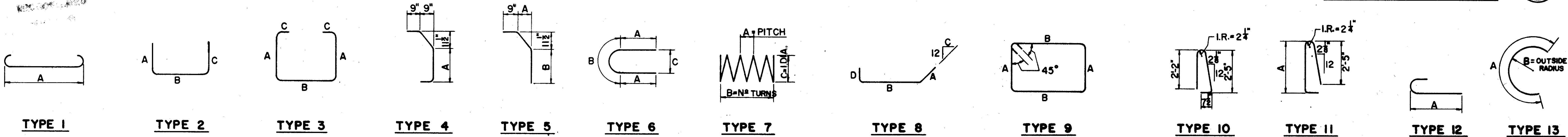
THOMAS FOK & ASSOCIATES, LIMITED
CONSULTING ENGINEER, SURVEYOR & PLANNER
3896 MAHONING AVE. YOUNGSTOWN, OHIO

SUPERSTRUCTURE DETAILS

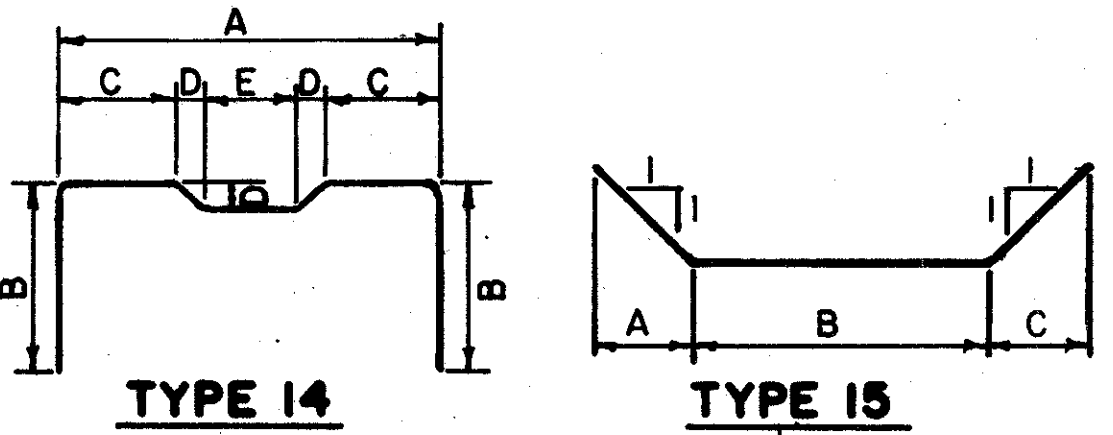
BR. No. TRU-46-25.14

over
MOSQUITO CREEK

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	AJB	QEF	T.F.	
				01.83	



ABUTMENTS										NON-STANDARD BEAM BARS										SUPERSTRUCTURE															
MARK	NO.	LENGTH	TYPE	A	B	C	D		WEIGHT			MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT			MARK	NO.	LENGTH	TYPE	A	B	C	D		WEIGHT		
A401	28	8'-8"	9	2'-5"	1'-9"				162			B401			14	2'-7"	1'-2"	0'-10"	0'-1 1/2"	0'-8"															
												B402			14	2'-7"	1'-2"	0'-4"	0'-1 1/2"	1'-8"															
												B403			2	2'-5"	2'-7"	2'-5"																	
A501	16	22'-8"	STR.						378			B404			2	1'-10"	0'-9"	1'-10"	(B-By 7" INCREMENTS)																
A502	136	6'-7"	2	2'-1'	2'-8"	2'-1"			934			B405		2'-8"	STR.																				
A503	32	18'-6"	STR.						618																										
A504	58	12'-8"	2	5'-6"	1'-11"	5'-6"			766																										
A505	8	25'-3"	STR.						211																										
A506	58	5'-8"	2	2'-0"	1'-11"	2'-0"			343																										
A507	4	3'-3"	STR.						14																										
A508	2	4'-0"	STR.						8																										
A509	2	2'-4"	STR.						5																										
A510	2	7'-3"	STR.						15																										
A511	2	6'-0"	STR.						13																										
A512	2	10'-10"	STR.						23																										
A513	2	11'-7"	STR.						24																										
A514	2	11'-3"	STR.						24																										
A515	2	10'-4"	STR.						22																										
A516	4	12'-6"	STR.						52																										
A517	4	13'-6"	STR.						56																										
A518	4	11'-6"	STR.						48																										
A519	4	12'-6"	STR.						52																										
A520	series of 6	2'-1" to 5'-10"	STR.	9" INCREMENTS					99																										
A521	series of 6	2'-8" to 6'-5"	STR.	9" INCREMENTS					114																										
A522	4	7'-5"	STR.						31																										
A523	4	8'-2"	STR.						34																										
A524	4	6'-6"	STR.						27																										
A525	6	7'-9"	STR.						49																										
A526	6	6'-3"	STR.						39																										
A527	4	13'-5"	15	1'-8"	9'-0"	1'-8"			56																										
A528	4	14'-8"	15	1'-8"	10'-3"	1'-8"			61																										
A601	70	5'-9"	2	2'-9"	0'-7"	2'-9"			605																										
A801	16	23'-6"	STR.						1004																										
A802	42	4'-10"	15	1'-0"	2'-1"	1'-0"			542																										
TOTAL									6429																										



NOTES:

BAR SIZE; The bar size is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example: A506 is a No. 5 size bar and P1101 is a No. 11 size bar.

SPIRAL REINFORCING BARS; The "Length" shown in the steel list for the spiral bars is the distance from the top of the footing to the bottom of the pier cap. The "No. of Turns" shown is the "Length" divided by the pitch, plus 3 turns (total number of closed coils), expressed as the nearest whole number. Spiral reinforcing bars shall may have deformation and shall in other respects conform to Item 509. 1 1/2 closed coils shall be provided at the ends of each spiral unit. Four steel channel, tee or angle spacers, weighing approximately 0.80 lb. per lin. ft. of spacers, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. The number of pounds of these spacers, based on 0.80 lb. per lin. ft., will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

REINFORCING STEEL SAMPLES: Refer to CWS section 106.03, 700, 709.01 through 709.05 and 709.08 - Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.