STATE OF OHIO

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS

BARKCAMP STATE PARK
ROAD RELOCATION
CONSTRUCTION DRAWINGS
BELMONT COUNTY

LINE DATA

	SECTION A	SECTION B
BEGIN CONTRACT	0-40	0+00
END CONTRACT	35+50	16+54.61
NET LENGTH	3590 LIN. FT. or 0.68 MILES	1654.61 LIN. FT. or 0.31 MILES

CONVENTIONAL SIGNS

CENTER LINE

GUARD RAIL (PROPOSED)

PROPOSED EDGE OF PAVEMENT

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0 1 2 3 4

SCALE IN MILES

PORTION TO BE IMPROVED

FEDERAL HIGHWAYS

STATE HIGHWAYS

COUNTY ROADS

TOWNSHIP ROADS

SCALES

PLAN	1" = 50'
PROFILE HORIZONTAL	1" = 50'
PROFILE VERTICAL	1" = 10'
CROSS SECTIONS	1" = 10'

BURGESS & NIPLE

CONSULTING ENGINEERS

COLUMBUS, OHIO

APPROVED BY [illegible] CHIEF ENGINEER

DATE June 1, 1964 DEPT. OF NATURAL RESOURCES

APPROVED BY _____ CHIEF, DIVISION OF PARKS

DATE _____ DEPT. OF NATURAL RESOURCES

APPROVED BY Fred E. Moss DIRECTOR

DATE June 1, 1964 DEPT. OF NATURAL RESOURCES

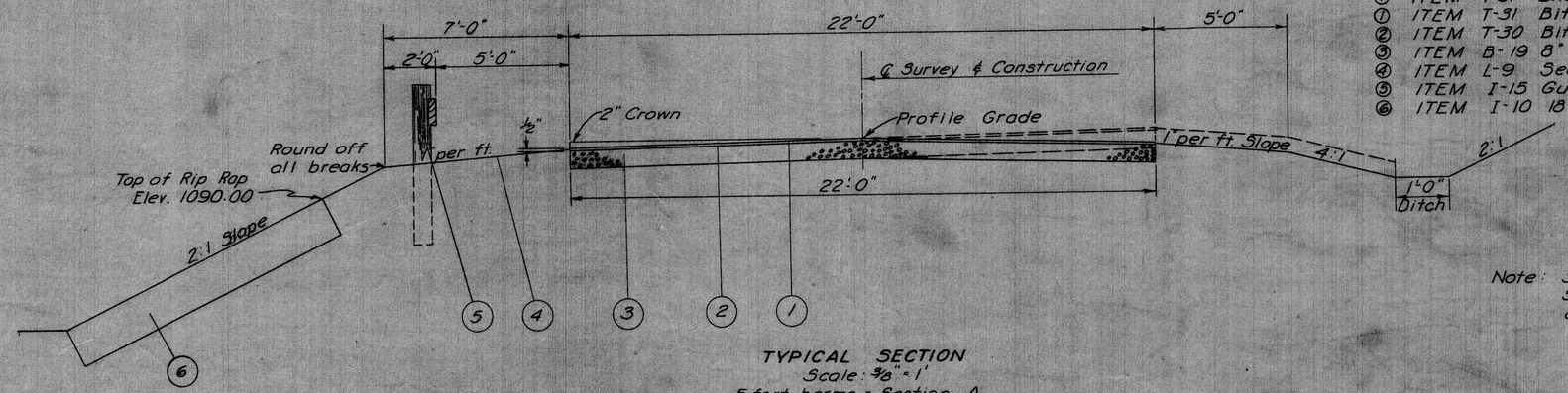
APPROVED BY _____ DIRECTOR

DATE _____ DEPT. OF PUBLIC WORKS

REVISED 9/7/65 AS CONSTRUCTED

SUPPLEMENTAL PRINT OF STANDARD CONSTRUCTION DRAWING - I-8 NO. I-2-A & B DATED I-26-59

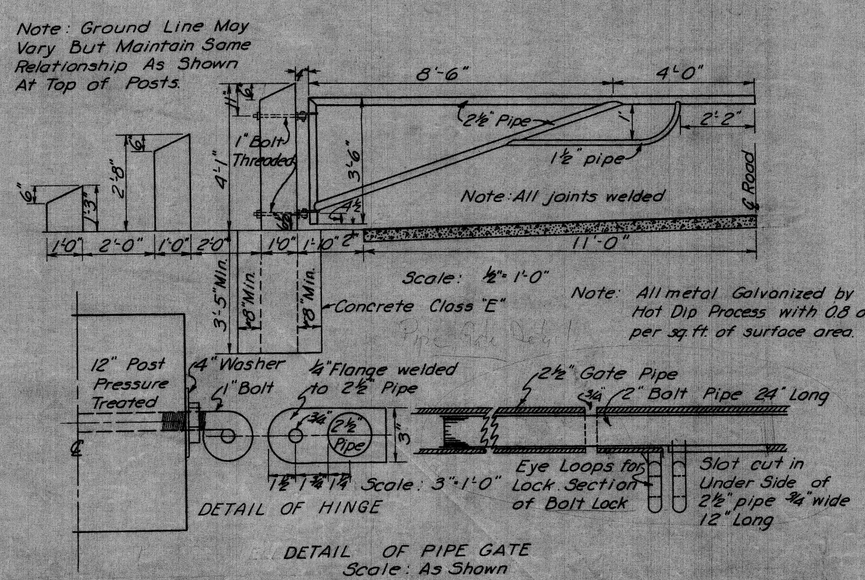
① ITEM T-31 Bituminous Surface Treatment 25 lbs. No. 6 - Second Application
① ITEM T-31 Bituminous Surface Treatment 25 lbs. No. 46 - First Application
① ITEM T-31 Bituminous Surface Treatment 0.30 Gal. Per Sq. Yd. Each Application
② ITEM T-30 Bituminous Prime Coat (0.35 Gal. per Sq. Yd.)
③ ITEM B-19 8" Crushed Aggregate Base in Two 4" Courses
④ ITEM L-9 Seeding & Protecting
⑤ ITEM I-15 Guard Rail (Special Type)
⑥ ITEM I-10 18" Rip Rap

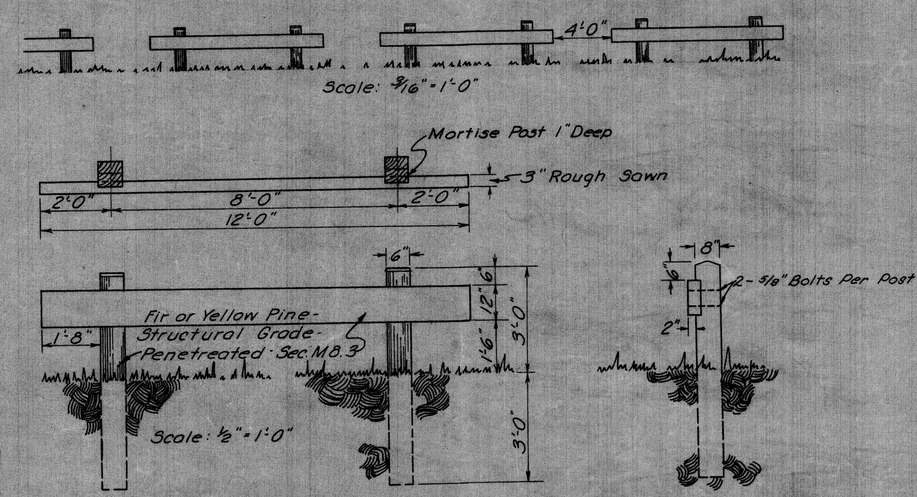


TYPICAL SECTION
Scale: 3/8" = 1'
5 foot berms - Section A
7 foot berms - Section B - Sta. 7+00 to 16+00

Note: Crown eliminated in curves; normal slope in one direction only. Use one hundred feet to eliminate crown.

Note: SPECIFICATIONS: The Standard Construction and Material Specifications of the Department of Highways, State of Ohio, dated January 1, 1963 shall govern this contract.





DETAIL: WOOD GUARD RAIL
Scale: As Shown
(Barricade)

QUANTITIES FOR 2 APPROACH SLABS					
	Area	Reinforcing Steel			
Bridge No.	Sq. Yds.	Mark	Nº	Length	Shp.
1	42	801	36	15'-7"	B
		501	14	24'-0"	S
2	37	802	36	15'-7"	B
		502	14	21'-6"	S
3	37	803	36	15'-7"	B
		503	14	21'-6"	S

For all other approach slab details see Std. Drwg. AS-1-54. Approach slabs are included with roadway quantities for payment.

TYPICAL SECTION
DETAIL OF PIPE GATE
DETAIL OF WOOD GUARD RAIL

FINAL SUMMARY

ROADWAY

ITEM NO.	DESCRIPTION	FINAL QUAN.	UNIT
E-1	ROADWAY EXCAVATION	28,952	CU.YDS.
E-2	STRUCTURE EXCAVATION FOR CULVERTS	250	CU.YDS.
E-4	BORROW	6,477	CU.YDS.
E-9	REMOVAL OF TREES AND STUMPS	LUMP	SUM
E-11	WATER	100M	GAL.
B-19	CRUSHED AGGREGATE BASE COURSE	4,410	CU. YDS.
T-30	BITUMINOUS PRIME COAT (MC-0 or 1, SC-1 or 2, OR RT-2 or 3) 0.35 GAL. PER SQ.YD.	9,233	GAL.
T-31	BITUMINOUS SURFACE TREATMENT - BITUMINOUS MATERIAL (MC-4 or 5, RT-5,6 or 7) 0.25 GAL. PER		
	SQ. YD. - FIRST APPLICATION	5,610	GAL.
T-31	BITUMINOUS SURFACE TREATMENT - AGGREGATE (25 LBS. OF NO. 46 PER SQ. YD.) FIRST APPLICATION	270	CU. YDS.
T-31	BITUMINOUS SURFACE TREATMENT - BITUMINOUS MATERIAL (MC-4 or 5, RT-5,6 or 7) 0.25 GAL. PER		
	SQ.YD. - SECOND APPLICATION	5,610	GAL.
T-31	BITUMINOUS SURFACE TREATMENT - AGGREGATE (25 LBS. OF NO. 6 PER SQ.YD) SECOND APPLICATION	270	CU.YDS.
I-8	STANDARD NO. I-2-A CATCH BASINS	11	EACH
I-10	DUMPED ROCK FILL AS PER PLAN - 18" THICK	3,770	SQ.YDS.
I-15	GUARD RAIL (SPECIAL TYPE)	1550	LIN. FT.
L-9	COMMERCIAL FERTILIZER	4.45	TONS
L-9	SEEDING AND PROTECTING	49,493	SQ.YDS.
I-1	15" CORRUGATED METAL PIPE (SEC. M-6.4(C))	722	LIN. FT.
SPECIAL	PIPE GATES AS PER PLAN	8	EACH
SPECIAL	BARRICADES (GUARD RAIL SECTION)	2	EACH
I-7	REINFORCED CONCRETE APPROACH SLABS T = 13"	116	SQ.YDS.
SPECIAL	BUMPER BLOCKS	63	EACH
I-1	12" CORRUGATED METAL PIPE (SEC. M-6.4 (A))	58	LIN. FT.

NOTES

FIELD OFFICE:

The Contractor shall provide a suitable field office for the exclusive use of the Engineers and inspectors assigned to this project in accordance with Sec. 3-0.01(b) of the Construction and Material Specifications.

ROADWAY EXCAVATION:

Rock will generally be encountered on most of the hillside cuts. The price bid for Item E-1 Roadway Excavation will include any necessary rock excavation.

CLEARING:

Initial clearing will be to limits of ditch lines. Clearing beyond ditch lines will be at direction of Engineer. Additional clearing will depend on extent of back slope due to presence of rock.

ROADWAY DITCHES:

Backslope of ditches in cross sections is shown to be a 2:1 slope between bottom of ditch and original ground. Where rock is encountered this backslope may be changed to a vertical face at the direction of the Engineer.

BORROW:

Ample borrow areas are available adjacent to the sections of roads to be improved. The Engineer reserves the right at all times to specify the locations in the borrow areas from which material shall be procured.

SEEDING AND PROTECTING:

The estimated quantities of seeding are approximate. The actual limits of seeding and protecting will be determined by the Engineer after construction is completed.

GATES AND BARRICADES:

Final location of gates and barricades will be determined by the Engineer at the time of construction.

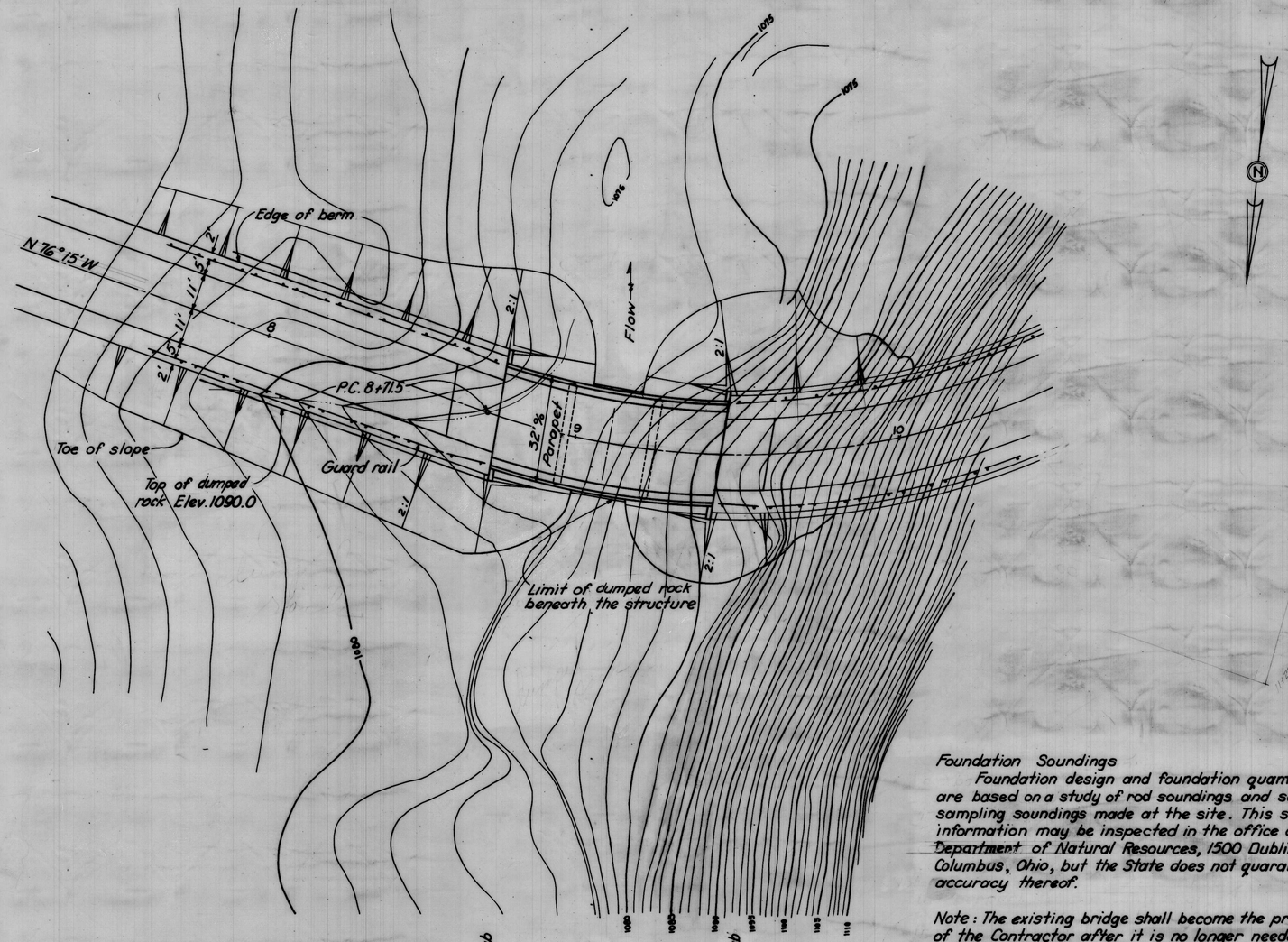
DUMPED ROCK FILL:

Stone for dumped rock fill shall be placed by skip, clamshell or other acceptable method and arranged, if necessary, by hand, so as to provide a compact paving of the thickness shown on the plans with a tolerance of six (6) inches below or above grade.

BARKCAMP STATE PARK
ROAD RELOCATION
SECTION B
7.BE-J.2

17
2c

Curve Data
Δ = 93°53'
D = 24°00'
T = 255.48'
R = 238.73'
L = 391.2'
PC = 8+71.50
PI = 11+26.98
PT = 12+62.70



PLAN

EXISTING BRIDGE DATA
TYPE - Simple span wooden beams on field stone substructure.
SPAN - 12'
ROADWAY - 15'
SKEW - None
SURFACE COURSE - Wood plank
CONDITION - Fair
WATERWAY OPENING - 10'x5'

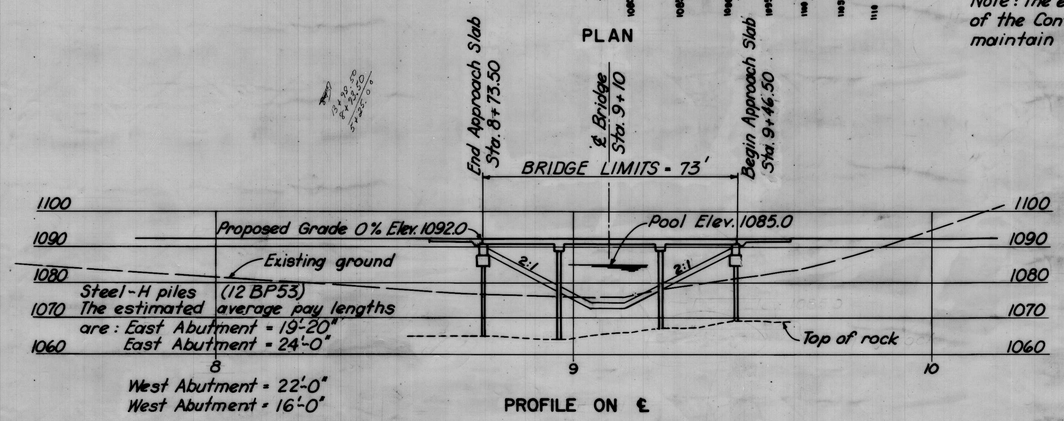
Water Surface Data

Storm Freq. In years	Elevation Of Water Surface
100	1087.8
50	1087.4
25	1086.8
10	1086.4
Normal pool	1085.0

Foundation Soundings

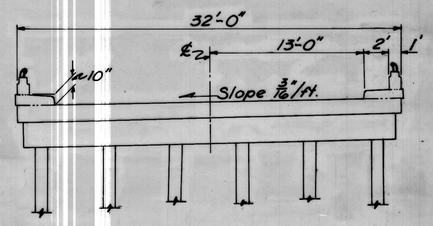
Foundation design and foundation quantities are based on a study of rod soundings and soil-sampling soundings made at the site. This sounding information may be inspected in the office of the Department of Natural Resources, 1500 Dublin Road, Columbus, Ohio, but the State does not guarantee the accuracy thereof.

Note: The existing bridge shall become the property of the Contractor after it is no longer needed to maintain traffic.



PROFILE ON ℄

PROPOSED STRUCTURE
TYPE - 3 span continuous concrete slab on capped pile superstructure.
SPAN - 22'-27.5'-22' c/c bearings
LOADING - CF 30 (57)
ROADING - 26' c/c 2 ft. safety curbs
SKEW - None
SURFACE COURSE - ½" Monolithic
APPROACH SLABS - 15' long AS-1-54
ALIGNMENT - 24" left curve
SUPERELEVATION - 3/16"/ft.



TYPICAL CROSS-SECTION

B.M. 6" □ in S.E. corner of N.E. wingwall of existing bridge on 2nd Road N. of dam site. Elev. 1076.45

Drainage Area = 1.1 sq. mi.

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES

PROPOSED DAM — BELMONT COUNTY
BR. NO. 2 OVER NORTH FORK BARKCAMP CREEK

SITE PLAN

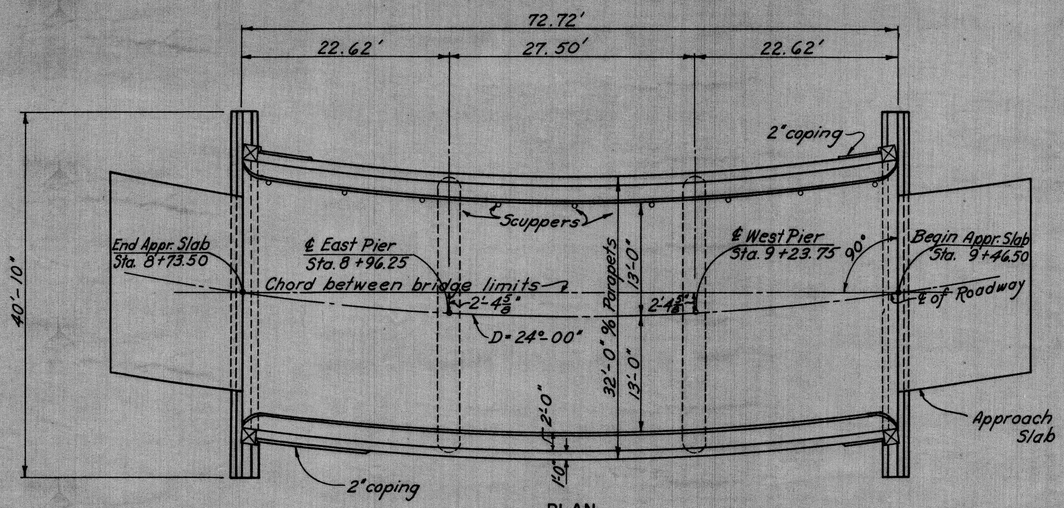
Sta. 9+10

BURGESS & NIPLE
CONSULTING ENGINEERS
COLUMBUS, OHIO

62C

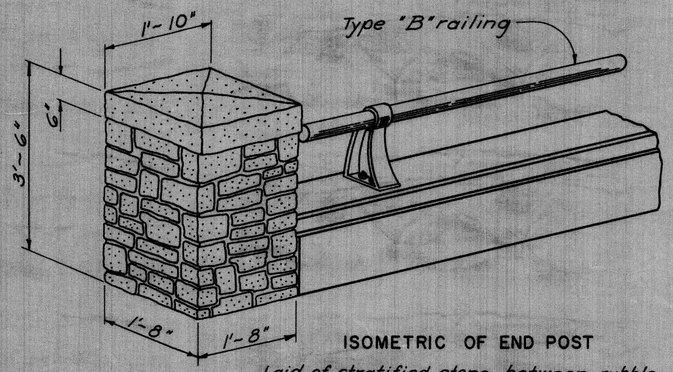
BARKCAMP STATE PARK
ROAD RELOCATION
SECTION B
7.BE-J.2

18
24



PLAN

Note:
Piers and abutments are parallel.



ISOMETRIC OF END POST

Laid of stratified stone, between rubble and ashlar, fitted on job. Finish is quarry face, seam face or split.

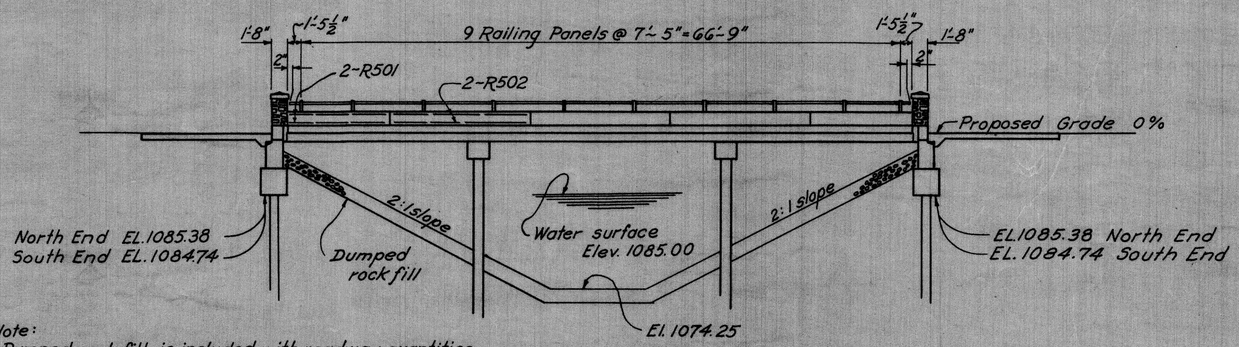
SQUARED STONE MASONRY RAILING POSTS:

The squared stone masonry shall conform to the isometric drawing shown on the plans and to Item S-20, except that in lieu of the first three paragraphs of Section S-20.04, the following specifications shall govern:

The courses shall not be less than 3 inches nor more than 8 inches thick. All stones shall be laid on their natural beds. The width of the stretchers shall be at least one-and-one-half times their thickness, and their length not less than three times their thickness, governed of course by the width of the posts.

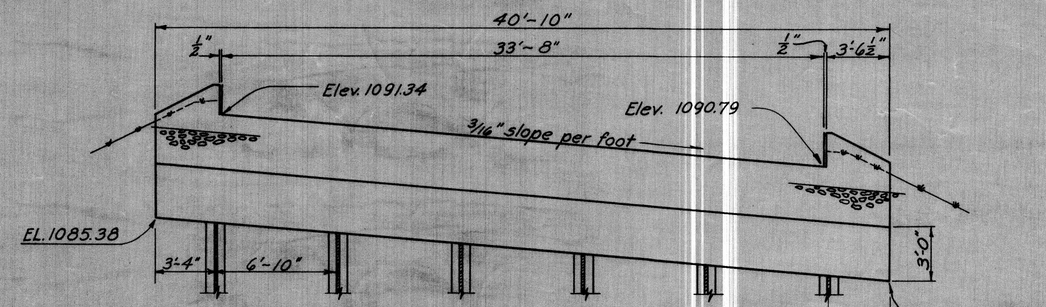
If headers are used, they shall be of a width not less than their thickness and shall have a length not less than twice the width of stretchers.

The posts shall be built after the parapet is in place. Any space between post and parapet shall be filled with mortar.

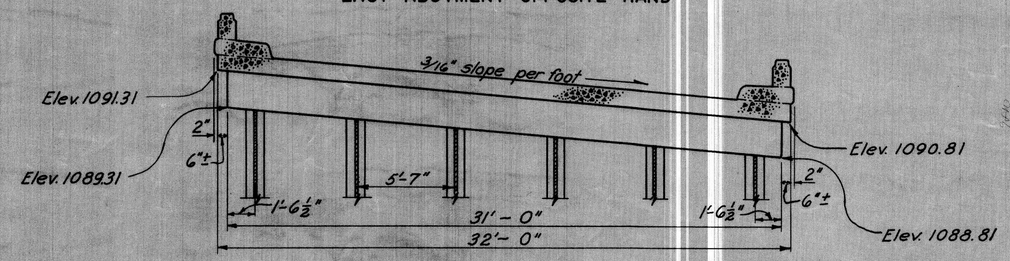


Note:
Dumped rock fill is included with roadway quantities for payment.

ELEVATION



WEST ABUTMENT ELEVATION
EAST ABUTMENT OPPOSITE HAND



SUPERSTRUCTURE AND PIER ELEVATION

FINAL QUANTITIES

Item	Total	Unit	Description	Super.	Piers	Abuts.	Gen'l.		
E-2	102	Cu.Yd.	Unclassified excavation			102			
E-3	600	Cu.Yd.	Channel Excavation				600		
S-1	107	Cu.Yd.	Class "C" concrete, superstructure & pier caps.	95	12				
S-1	46	Cu.Yd.	Class "E" concrete, abutments.			46			
S-4	28,709	Lb.	Reinforcing steel	21,977	2,535	4,197			
S-14	146	Lin.ft.	Railing (Type "B" alum. rail and supports with concrete parapet.)	146					
S-16	Lump	Sum	First test pile				Lump		
S-18	481	Lin.ft.	Steel piles, 12BP53		255	226			
S-24	Lump	Sum	Removal of existing structure				Lump		
S-29	16	Cu.Yd.	Porous backfill			16			
S-29	9	Each	Scuppers	9					
S-20	1.53	Cu.Yd.	Squared stone masonry railing post.	1.53					

General notes, details, and reinforcing steel for bridge #3 Over Barkcamp Creek apply to this bridge also. See sheets #20 and #21

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF PARKS

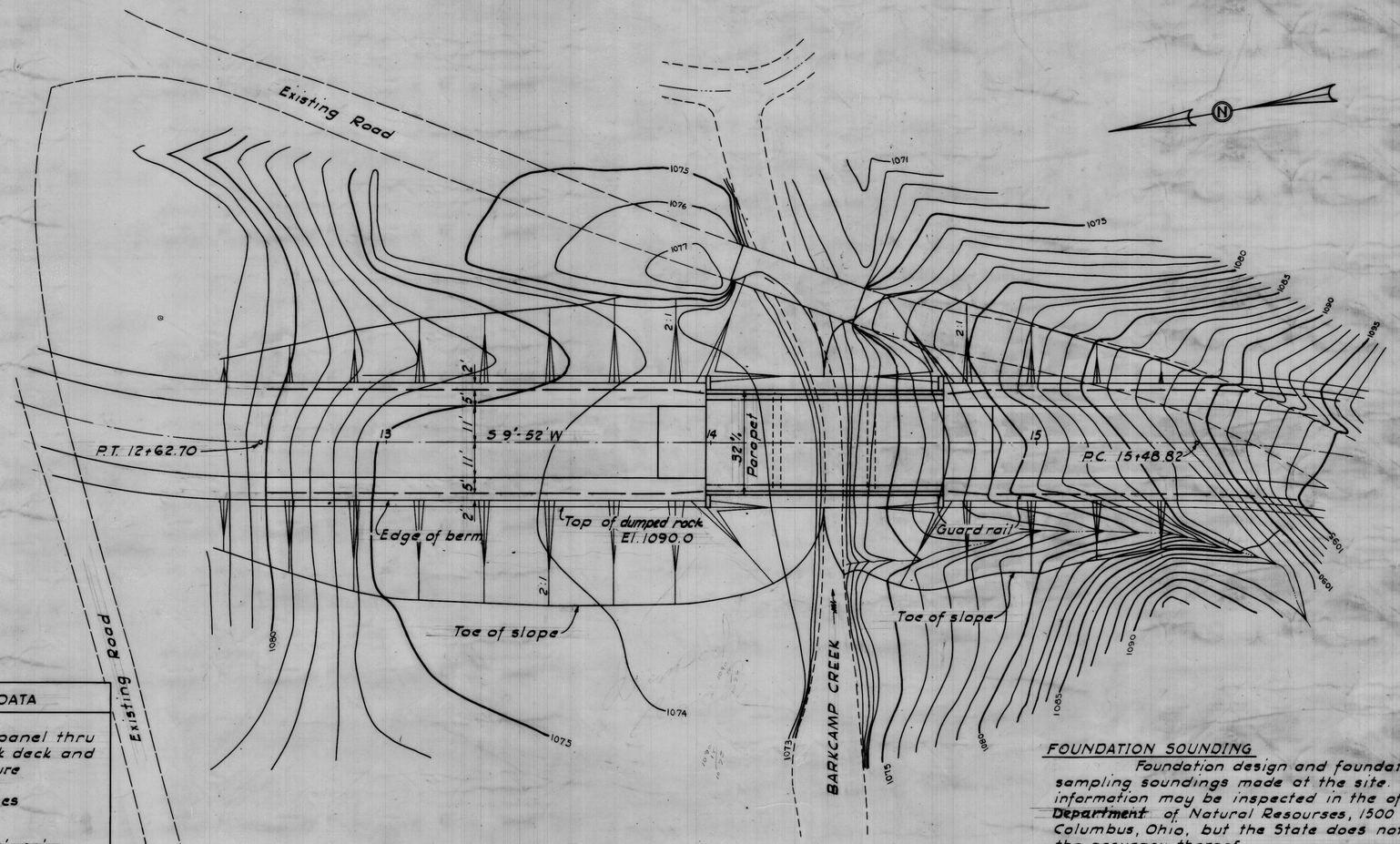
PROPOSED DAM – BELMONT COUNTY
BR. NO. 2 OVER NORTH FORK BARKCAMP CREEK

GENERAL PLAN & ELEVATION
ESTIMATED QUANTITIES

BURGESS & NIPLE
CONSULTING ENGINEERS
COLUMBUS, OHIO

BARKCAMP STATE PARK
ROAD RELOCATION
SECTION B
7.BE-J.2

19/24



PLAN

PROPOSED STRUCTURE
TYPE - 3 span continuous concrete slab on capped pile substructure
SPAN - 22'-27.5'-22' ℄ bearing
LOADING - CF 30 (57)
ROADWAY - 26' ⅞" w/2' safety curbs
SKEW - None
SURFACE COURSE - ½" monolithic
APPROACH SLABS - 15' long AS-1-54
ALIGNMENT - Tangent

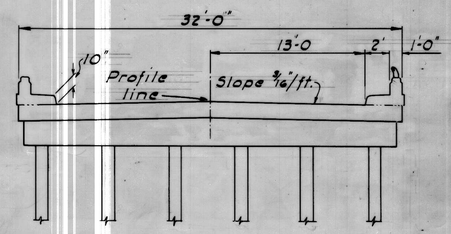
EXISTING BRIDGE DATA
TYPE - Simple span, 3 panel thru truss with woodplank deck and field stone substructure
SPAN - 42' ℄ Bearing
ROADWAY - 10' ⅞" of trusses
SKEW - None
CONDITION - Fair
WATERWAY OPENING - 6' x 40'

FOUNDATION SOUNDING

Foundation design and foundation soil-sampling soundings made at the site. This sounding information may be inspected in the office of the ~~Department~~ of Natural Resourses, 1500 Dublin Road, Columbus, Ohio, but the State does not guarantee the accuracy thereof.

REMOVAL OF EXISTING STRUCTURE

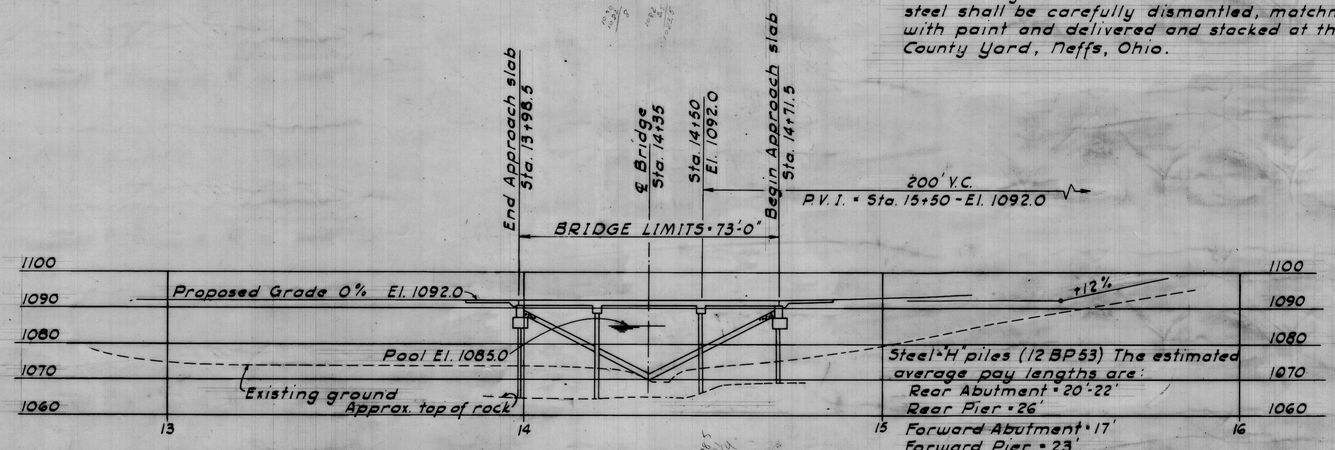
When no longer needed to maintain traffic the existing structure shall be removed. Structural steel shall be carefully dismantled, matchmarked with paint and delivered and stacked at the Belmont County Yard, Neffs, Ohio.



TYPICAL CROSS-SECTION

WATER SURFACE DATA

Storm Freq. In Years	Elevation of Water Surface
100	1087.8
50	1087.4
25	1086.8
10	1086.4
Normal Pool	1085.0



PROFILE ON ℄

B.M. "6" in S.E. corner of N.E. wingwall of existing bridge on 2nd road N. of dam site. El. 1076.45

Drainage Area = 2 sq. mi.

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES

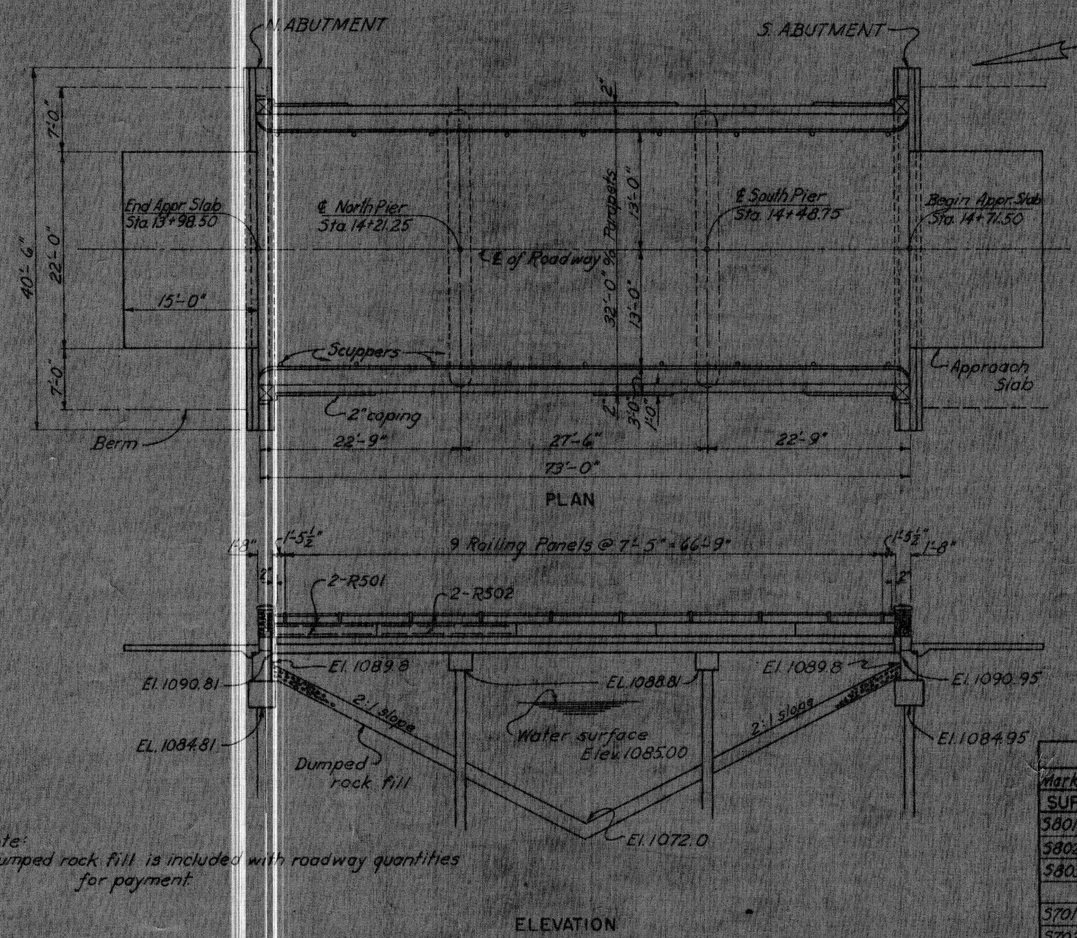
PROPOSED DAM - BELMONT COUNTY
BR. NO. 3 OVER BARKCAMP CREEK

SITE PLAN

Sta. 14+35

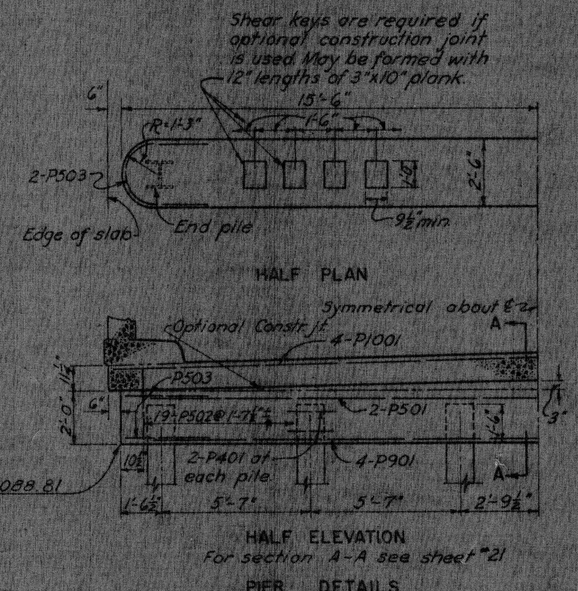
BURGESS & NIPLE
CONSULTING ENGINEERS
COLUMBUS, OHIO

62-C



Note:
Dumped rock fill is included with roadway quantities for payment

ELEVATION



PIER DETAILS

GENERAL NOTES

REFERENCE shall be made to Standard Drawings A.R.-1-57.

DESIGN SPECIFICATIONS This structure conforms to the requirements of "Design Specification for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57.

PILES for both abutments and piers shall be driven to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. S-18.05 is not less than 24 tons for a pile hammer of an energy rating of 7,000 ft. lbs. or over.

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders, and outward to the surface of the embankment slopes. Excavation therefor, in excess of that required for construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used and the first two digits were four are used, indicate the bar size.

REPLACEMENT BARS If reinforcing bars are fabricated from stock which has previously been tested and approved by the Ohio Highway Testing Laboratory, test samples as provided in Sec. S-4.02 need not be furnished and replacement bars will not be required.

CURBS shall be placed after the shoring under the slab has been released sufficiently to permit the slab to attain full dead load deflection.

CAMBER of $\frac{1}{800}$ of the span shall be provided in each span, to allow for dead load deflection. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for the deflection of falsework members.

FALSEWORK SUPPORT The pier cap shall not be used to support falsework for the deck slab.

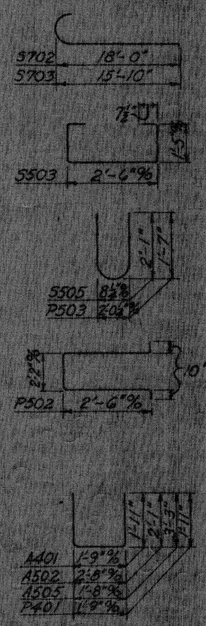
FINAL QUANTITIES

Item	Total	Unit	Description	Super.	Piers	Abuts.	Gen'l
E-2	102	Cu.Yd.	Unclassified excavation			102	
S-1	107	Cu.Yd.	Class "C" concrete, superstructure & pier caps	95	12		
S-1	46	Cu.Yd.	Class "E" concrete, abutments			46	
S-4	28,709	Lb.	Reinforcing steel	21,977	2,535	4,197	
S-14	146	Lin.ft.	Railing (Type "B" alum. rail and supports with concrete parapet)	146			
S-16	Lump	Sum	First test pile				Lump
S-18	540	Lin.ft.	Steel piles, 12 BP 53		284	260	
S-24	Lump	Sum	Removal of existing structure				Lump
S-29	16	Cu.Yd.	Porous backfill			16	
S-29	18	Each	Scuppers	18			
S-20	153	Cu.Yd.	Squared stone masonry railing posts	153			

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp.
SUPERSTRUCTURE				
S801	62	18'-6"	3063	S
S802	30	8'-11"	715	S
S803	30	7'-6"	60	S
S701	105	25'-9"	5526	S
S702	30	18'-10"	1155	B
S703	30	16'-8"	1022	B
S704	15	17'-10"	547	S
S705	15	14'-6"	445	S
S601	32	14'-7"	701	S
S602	16	14'-2"	340	S
S603	116	37'-8"	5578	S
S604	20	15'-2"	456	S
S501	6	15'-6"	97	S
S502	12	16'-7"	208	S
S503	186	6'-1"	1179	B
S504	186	2'-6"	485	S
S505	98	4'-6"	460	B
R501	16	12'-3"	*	S
R502	24	14'-6"	*	S
PIERS				
P1001	8	31'-6"	1084	S
P901	8	28'-6"	775	S

Bending Diagram



*Included with railing for payment

Mark	No.	Length	Weight	Shp.
PIERS (CONT.)				
P501	4	28'-6"	119	S
P502	38	8'-4"	330	B
P503	8	6'-4"	53	B
P401	48	5'-5"	174	B
ABUTMENTS				
A1001	16	21'-8"	1492	S
A801	16	21'-4"	911	S
A501	24	20'-9"	519	S
A502	96	6'-7"	660	B
A503	16	3'-6"	59	S
A504	8	2'-3"	19	S
A505	44	7'-11"	363	B
A401	48	5'-5"	174	B
REPLACEMENT BARS				
RE1001	1	7'-2"		S
RE800	1	6'-6"		S
RE700	1	6'-2"		S
RE600	1	5'-11"		S
RE500	1	5'-7"		S
RE400	1	5'-3"		S

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES

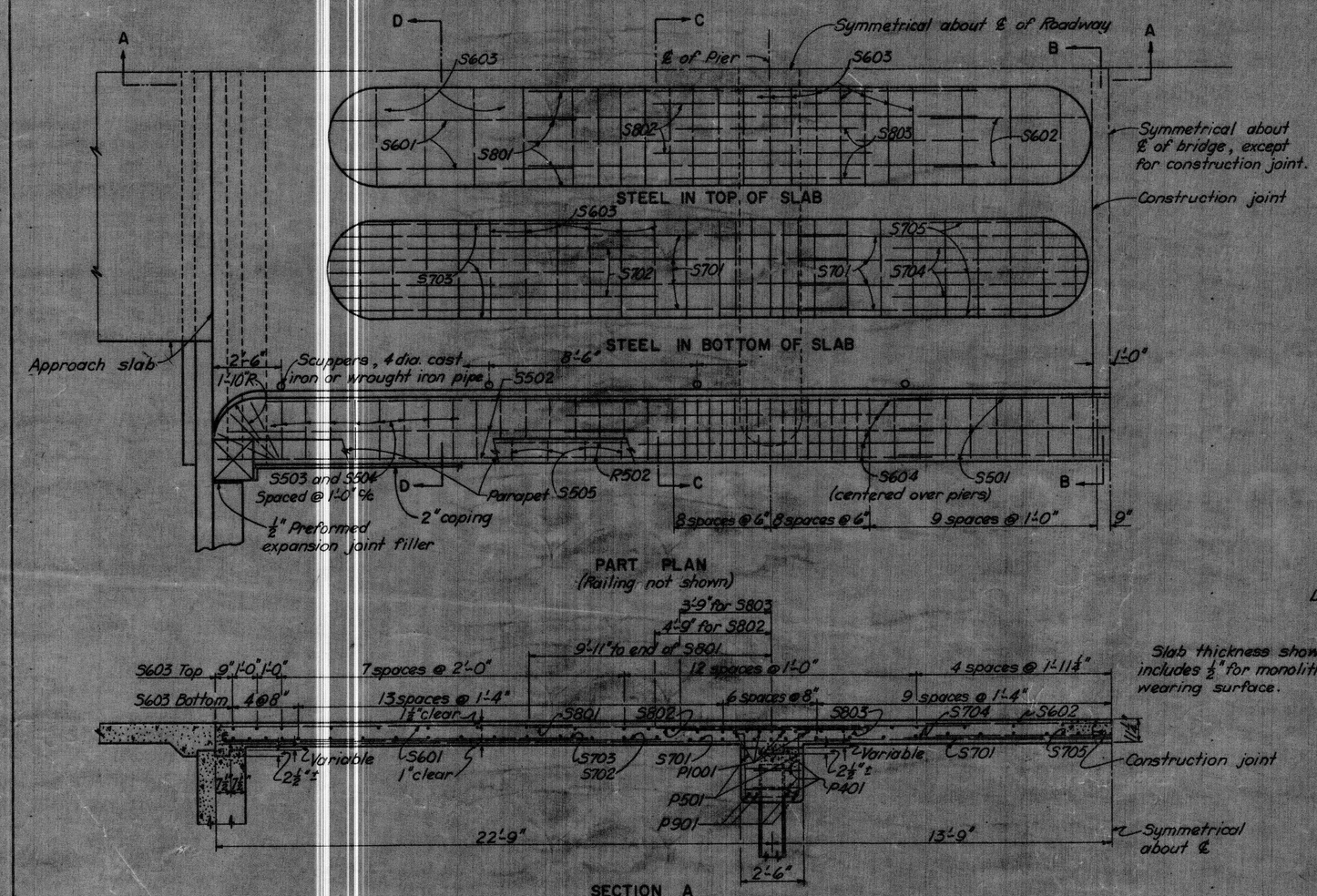
PROPOSED DAM — BELMONT COUNTY
BR. NO. 3 OVER BARKCAMP CREEK

GENERAL PLAN & ELEVATION, NOTES, ESTIMATED QUANTITIES & BAR LIST

BURGESS & NIPLE
CONSULTING ENGINEERS
COLUMBUS, OHIO

BARKCAMP STATE PARK
ROAD RELOCATION
SECTION B
7.BE-J.2

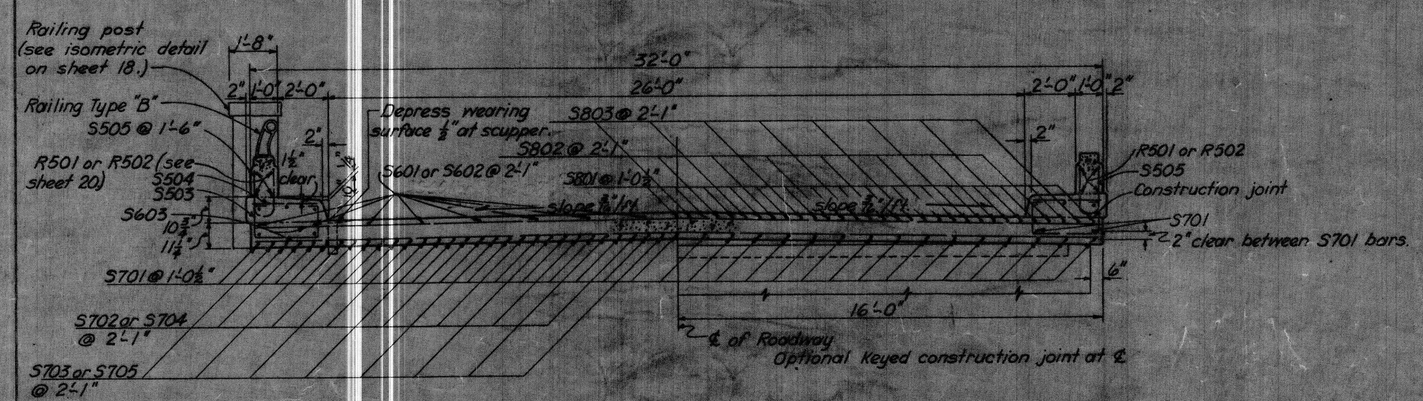
21
24



PART PLAN
(Railing not shown)

SECTION A

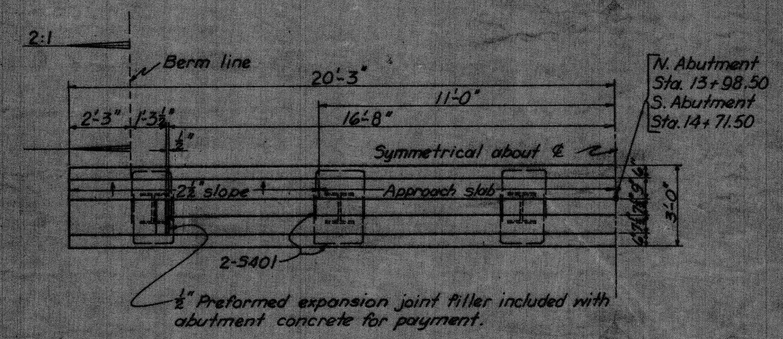
For details of parapet and railing see drawing AR-1-57.



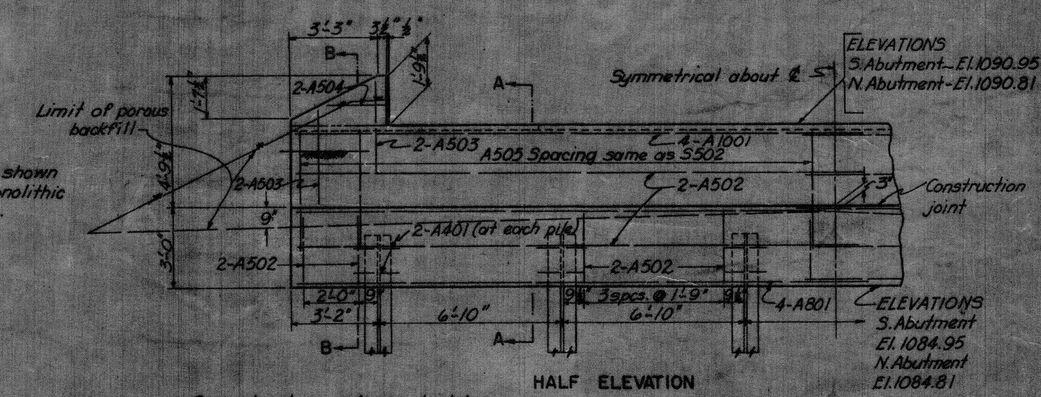
SECTION B & D

SECTION C

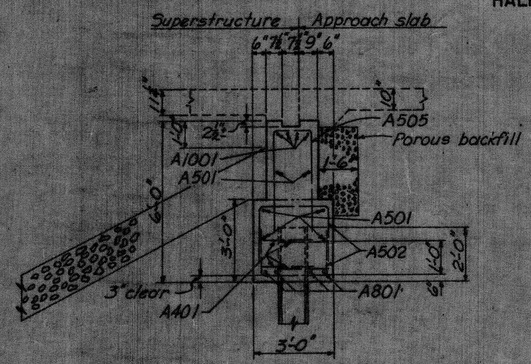
DECK SLAB DETAILS



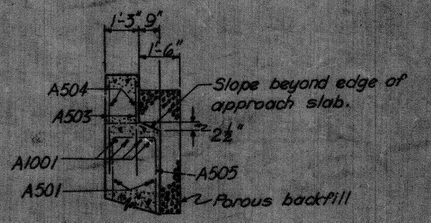
HALF PLAN



HALF ELEVATION



SECTION A



SECTION B

ABUTMENT DETAILS

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES

PROPOSED DAM — BELMONT COUNTY
BR. NO. 3 OVER BARKCAMP CREEK

ABUTMENTS & SUPERSTRUCTURE DETAILS

BURGESS & NIPLE
CONSULTING ENGINEERS
COLUMBUS, OHIO