STATE OF OHIO
DEPARTMENT OF HIGHWAYS
MED -224-17.66
SUM -224- 0.00
WADSWORTH AND GUILFORD TOWNSHIPS & CITY OF WADSWORTH, MEDINA COUNTY AND NORTON TOWNSHIP SUMMIT COUNTY

F-458(14)
PARTS I & II

220-M

2	OHIO	F-458(14)

MED - 224 - 17.66
SUM - 224 - 0.00

Note:
This project has been sub[divided] into two parts, each of which requ[ires] grading, drainage, st[ructures,] pavement work and incidental perform[ed] as specified.

PART I = STA. 959+00 TO 1278+00 IN MED. C
PART II = STA. 1278+00 IN MED. CO. TO STA. 138+58 SU

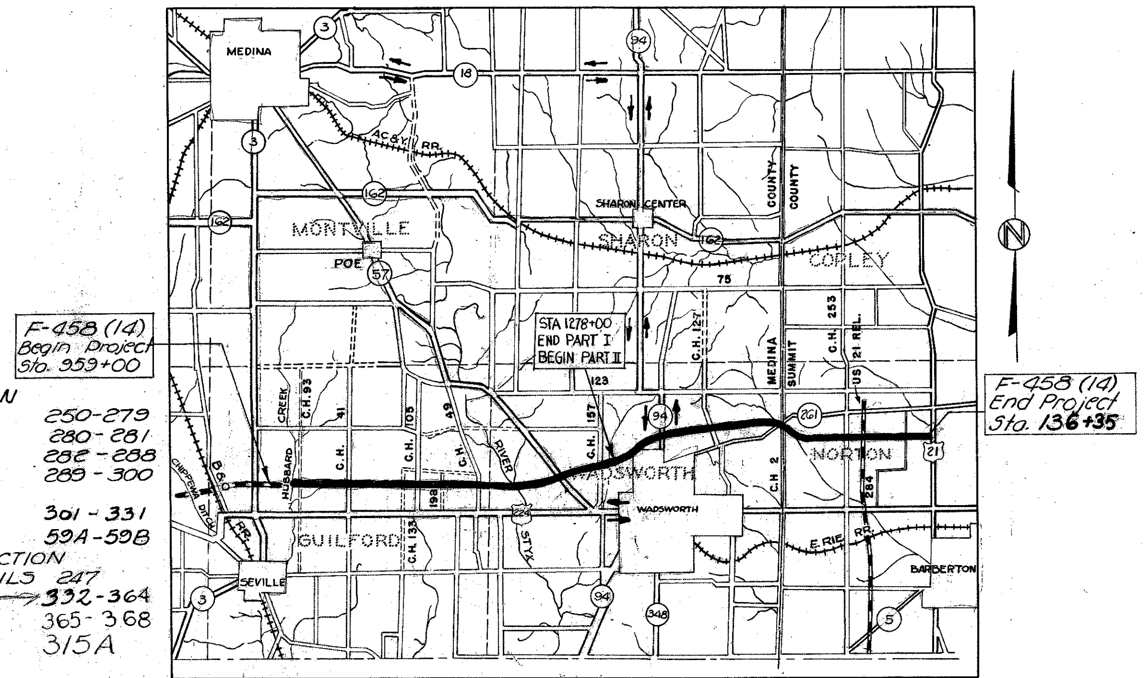
Reviewed and Approved: [signature]
Date 3/1/57 Engineer of Traffic

CONVENTIONAL SIGNS

COUNTY LINE
TOWNSHIP LINE
SECTION LINE
CITY OR VILLAGE LINE
CENTER LINE
PROPERTY LINE
FENCE LINE
GUARD RAIL — New — Exist.
POLE LINES — Telephone — Power
RAILROAD
DRAINAGE PIPES — New — Exist.

INDEX OF SHEETS

TITLE SHEET	1
TYPICAL SECTIONS	2-4
GENERAL NOTES	5 & 12-A
SCHEMATIC LAYOUT	6-7
GENERAL SUMMARY	8-10
COMPUTATIONS AND SUB-SUMMARIES	11, 12, 12A
SUPERELEVATION TABLES	13-15
PAVEMENT DETAILS	16
PLAN AND PROFILE SHEETS	17-59
CROSS SECTIONS	60-180
C.H. 93 DETAILS	181-182
C.H. 41 AND C.H. 127 DETAILS	183
C.H. 284 AND C.H. 198 DETAILS	184
C.H. 105 DETAILS	185
OMIT (SEE GENERAL NOTES)	186-187
S.R. 57 AND INTERCHANGE DETAILS	188-200
C.H. 157 DETAILS	201-202
S.R. 94 AND INTERCHANGE DETAILS	203-213
S.R. 261 AND INTERCHANGE DETAILS	214-221
C.H. 2 AND C.H. 253 DETAILS	222-224
U.S. 21 (RELOCATED) AND INTERCHANGE DETAILS	225-246
OMIT (SEE GENERAL NOTES)	248-249
STRUCTURES 20' SPAN AND UNDER	250-279
DRAINAGE DETAILS	280-281
FENCE DETAILS	282-288
ROADSIDE PARK	289-300
STRUCTURES OVER 20' SPAN	301-331
DRIVE DETAILS	59A-59B
EXIST. U.S 21 INTERSECTION DETAILS	247
RIGHT-OF-WAY	332-364
LOCATION PLAN	365-368
	315A



Delivery Point: Wadsworth. Average Haul: 4 Miles

LOCATION PLAN

0 1 2
Scale of Miles

Detour
Portion to be improved
State Roads
County Roads
Road under Construction

SCALES

PLAN: 1"=50'
PROFILE: Hor. 1"=50'
Vert. 1"=5' & 1"=10'
CROSS SECTIONS: 1"=10'

LINE DATA

BEGIN PT. I PROJ. F-458(14) 959+00.00 (MEDINA CO.)
END PT. I STA. 1278+00.00 NET LENGTH PROJ. PT. I = 31,900.00 Lin. Ft. or 6.042 Miles
BEGIN PT. II PROJ. F-458(14) 1278+00.00
TO STA. 1299+80.00 (WADSWORTH CORP. LINE) = 2,180.00 Lin. Ft.
TO STA. 1302+16.85 (WADSWORTH CORP. LINE) = 236.85 " "
TO STA. 1455+70.03 (MEDINA-SUMMIT CO. LINE) = 15,353.18 " "
STATION EQUATION: 1455+70.03 MEDINA CO. = 0+00.00 SUMMIT CO.
END PT. II PROJECT F-458(14) STA. 136+35.00 (SUMMIT CO.) = 13,635.00 " "
NET LENGTH PT. II PROJECT F-458(14) = 31,405.03 Lin. Ft. or 5.947 Miles
TOTAL LENGTH PROJECT F-458(14) = 63,305.03 Lin. Ft. or 11.989 Miles

WORK PT. I F-458(14):
APPR. C.H. 93 STA. 7+75 to 15+55 (-24') = 756 Lin. Ft.
APPR. S.R. 57 STA. 2+80 to 28+25 = 2545 " "
APPR. C.H. 157 STA. 0+75 to 8+25 (-88') = 662 " "
= 3963 Lin. Ft.
TOTAL WORK PT. I = 31900 + 3963 = 35863 Lin. Ft. or 6.792 Miles

WORK PT. II F-458(14): APPR. STA. 136+35 to 138+58 = 223
APPR., S.R. 261 STA. 6+40 to 13+30 = 690 Lin. Ft.
APPR., C.H. 2 STA. 8+49 to 15+75 (-111) = 615 " "
APPR., C.H. 253 STA. 8+75 to 14+25 (-88') = 462 " "
APPR., U.S. 21 (Reloc.) STA. 172+47 to 208+00 = 3553 " "
APPR. S.R. 94 STA. 2+50 to 18+00 = 1550 " "
= 7093 Lin. Ft.
TOTAL WORK PT. II = 31,405.03 + 7093.00 = 38498.03 Lin. Ft. or 7.291 Mi
TOTAL WORK F-458(14)
= 35863.00 Lin. Ft. + 38498.03 Lin. Ft.
= 74361.03 Lin. Ft. or 14.083 Miles

FILE No.	MED-224-17.66 SUM-224-0.00
220-M	DATE OF LETTING CONTRACT No

STANDARD CONSTRUCTION DRAWINGS

DRAWING NO.	DATE	DRAWING NO.	DATE	DRAWING NO.	DATE
RB-1-55	3-1-55	CSB-1-55 (Sheet 2)	12-3-56	P-1-54	12-1-54
A-1-54	12-1-54	CS-1-54 (2 Sheets)	7-16-56		
L-1	4-1-50	S-27 PC-3	2-20-45	I-15 No 2A	7-2-56
L-3	4-1-50	S-27 PC-4	1-4-54	I-21-23	8-1-56
L-3A	4-1-50	I-1,2,3,4 & 5	2-20-45	I-8 MH No 1A	1-3-55
RI-1	1-3-55	I-8 CB 2-2A & B	8-1-56	G-7.07	6-1-56
T-35	1-2-56	I-8 C.B No 3	5-1-52	B-T-50-70-71E No 1	10-1-47
B-T-71R	3-2-53	I-8 C.B No 6	5-1-52	I-8 MH No 3	5-1-52
LJ. No 1	7-1-55	I-8 C.B No 7	5-1-52	OS-1	12-17-56
T-J	5-1-56	I-8 M.H. No 1	5-1-52	OS-2	12-17-56
DR-1	1-3-55	I-12	7-1-54	L-2	4-1-50
AS-1-54	12-1-54	I-14 G	1-22-52	RP-1	7-2-56
S-27 PC-1	5-1-52	I-15 No 1	8-1-55	RP-2	9-14-56
I-8 CB No 2-3 & 2-4	5-1-52	I-15 No 2	12-1-54	RP-3	9-14-56
SP-53	7-21-53				

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a limited access highway or freeway by action of the Director of Highways in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

The Standard Specifications of the State of Ohio, Department of Highways, including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highways except as noted on Sheet No 5 and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

The Right-of-Way necessary for this improvement will be provided by the State of Ohio.

Approved: W. C. Hauserman
Date: 2-26-57 Division Deputy Director

Approved: C. H. Makeever
Date: 5-22-57 Deputy Director of Planning and Programming

Approved: D. H. Overman
Date: 5-16-57 Engineer of Bridges

Approved: R. E. Shultz
Date: 5-17-57 Engineer of Location and Design.

Approved: R. E. Masketer
Date: 5-17-57 Deputy Director of Design and Construction

Approved:
Date: First Assistant Director

Approved: [signature]
Date: 5/22/57 Acting Director of Highways

Approved: J. W. Wiri, Jr.
Date: 1-22-57 Stepleton, McDonnell, & Barber, Associated Engineers and Architect

Sheet 5 - Revised 7-12-57 - G.H.J.

SUPPLEMENTAL SPECIFICATIONS

B-119	Rev.	6-30-56
E-101		1-1-57
5		6-8-55
18	Rev.	2-6-57
M-206.6(b)		5-25-56
S-114		8-30-55

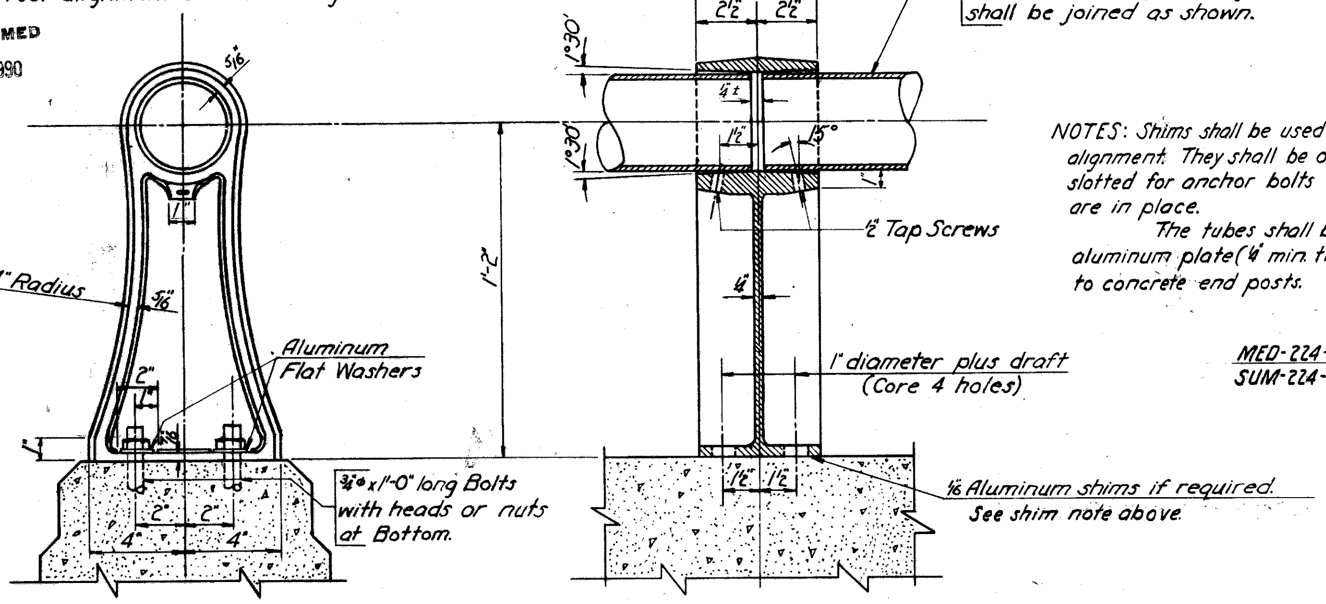
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

DISTRICT ENGINEER DATE

PLANS BY STEPLETON, McDONNELL, & BARBER - TOLEDO, OHIO

NOTE: Extreme care shall be exercised in placing the Anchor Bolts to insure correct alignment of the Railing.

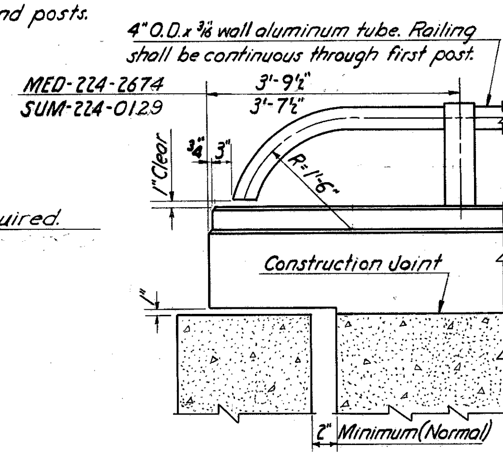


NOTES: Shims shall be used where necessary for vertical alignment. They shall be of aluminum alloy, 2⅜" x 1/16" x 0'-8" slotted for anchor bolts to permit insertion after posts are in place.

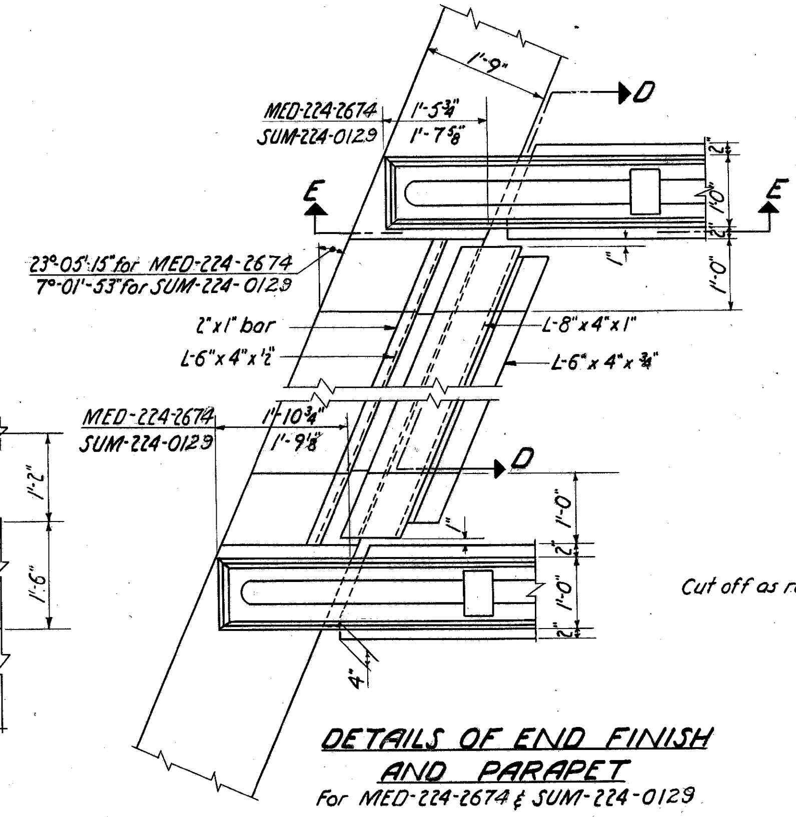
The tubes shall be closed with a welded-in aluminum plate (¼" min. thickness) at ends adjacent to concrete end posts.

NOTE: Reference shall be made to Supplemental Specification No. S-114, Aluminum for Bridge Railing, dated August 30, 1955.

ALUMINUM RAILING DETAIL

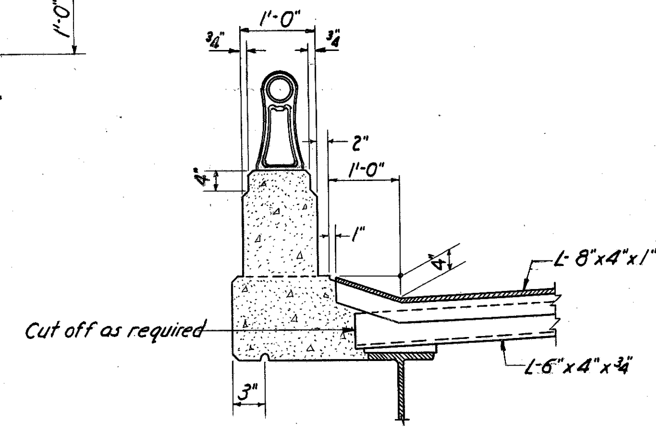


SECTION E-E

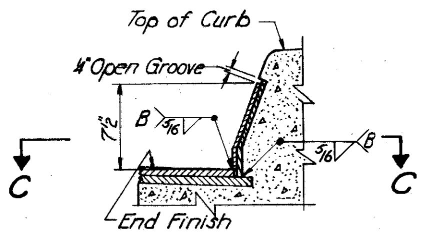


DETAILS OF END FINISH AND PARAPET

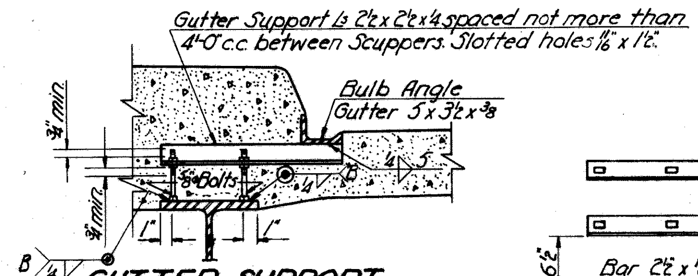
For MED-224-2674 & SUM-224-0129



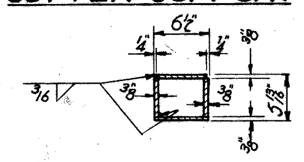
SECTION D-D



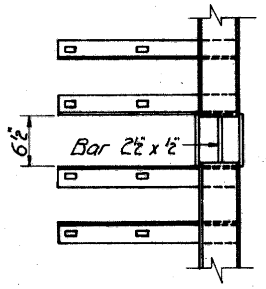
SPLASH GUARD DETAIL



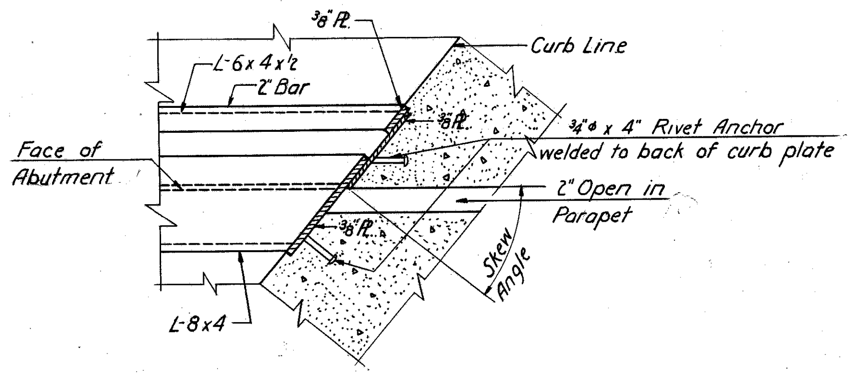
GUTTER SUPPORT



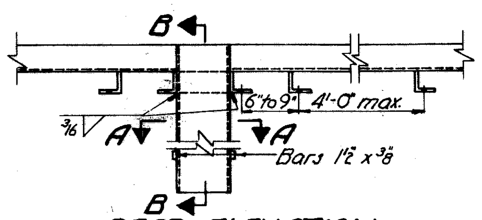
SECTION A-A



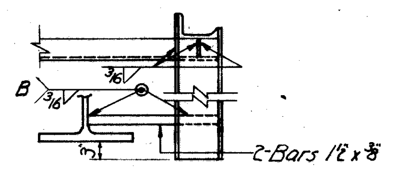
PART PLAN



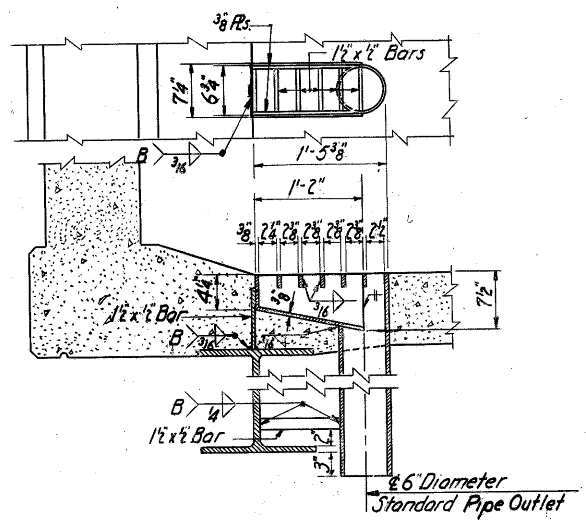
SECTION C-C



REAR ELEVATION



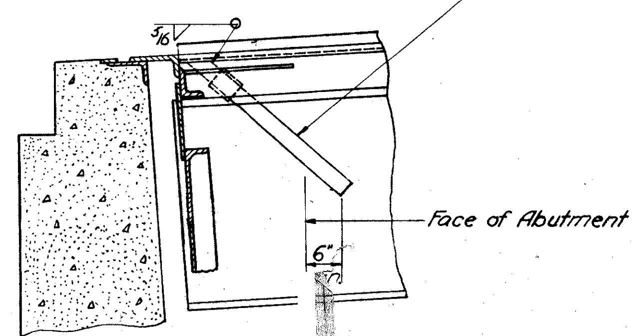
SECTION B-B



SCUPPER DETAIL

For MED-224-2674 & SUM-224-0129

3" Diameter Standard Steel Pipe. Weld stub end full perimeter to Bulb L and provide coupling.



SCUPPER DETAIL AT LOW END FINISH

Locate at ends of bridge where grade slopes down to end finish.

GUTTER AND SCUPPER NOTES

- See General Plan for spacing of scuppers. Scuppers must be spaced to clear crossframes.
- Milled joints will be permitted in bulb angles, but individual lengths shall be made as long as practicable.
- Supports shall be placed 6" to 9" on each side of joints.
- Gutters shall be accurately adjusted for alignment and grade, with allowance for dead load deflection, before concrete is placed.
- Welding shall be Class "A" except as shown. Any welds shown as field welds may, at the option of the Contractor, be made in the shop.
- Class "B" welds are indicated thus B

File No 220-M

STATE OF OHIO · Michael Baker, Jr. No. 9065 · REGISTERED PROFESSIONAL ENGINEER

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

COMMON DETAILS

MEDINA COUNTY

MED-224-
SUM-224-

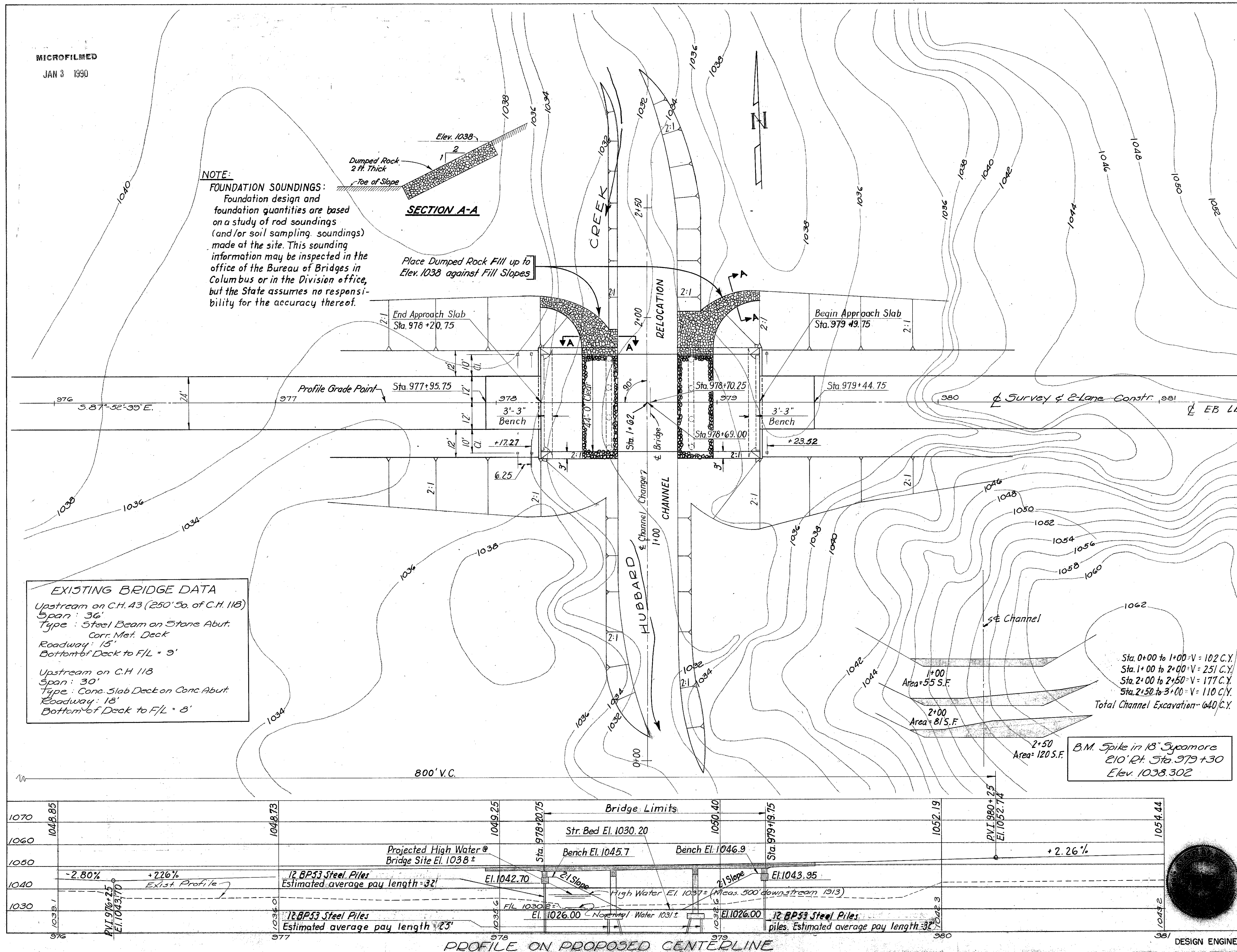
Designed	Drawn	Traced	Checked	Reviewed Date	Revised
—	—	P.V.C.D.	—	FJK. 4-8-57	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

302

MEDINA COUNTY
MED-224-17.66
SUM-224-0.00

NOTE:
FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of rod soundings (and/or soil sampling soundings) made at the site. This sounding information may be inspected in the office of the Bureau of Bridges in Columbus or in the Division office, but the State assumes no responsibility for the accuracy thereof.



EXISTING BRIDGE DATA

Upstream on C.H. 43 (250' So. of C.H. 118)
Span: 36'
Type: Steel Beam on Stone Abut. Corr. Met. Deck
Roadway: 15'
Bottom of Deck to F/L = 9'

Upstream on C.H. 118
Span: 30'
Type: Conc. Slab Deck on Conc. Abut.
Roadway: 18'
Bottom of Deck to F/L = 8'

EXISTING BRIDGE DATA

Bridge No. ME-224-176 over Hubbard Creek on U.S. 224 Downstream
TYPE: Concrete Slab
SPAN: 2 @ 26'
ROADWAY: 34'
OUT to OUT DECK: 38'
BOTTOM OF DECK TO F/L = 10'

0299 R

PROPOSED STRUCTURE

TYPE - Continuous reinforced concrete slab with capped pile abutments and cap and column piers.
SPAN - 30'-37.5'-30' c/c bearings.
ROADWAY - 44'-0" f/f of guard rails.
LOAD-FREQUENCY CF = 2000 (51)
SKEW - None
WEARING SURFACE - 1" Monolithic Concrete
APPROACH SLAB - AS-1-54 (25' long)
ALIGNMENT - Tangent

Drainage Area = 6.04 Sq. Mi.

STEPLETON, McDONNELL & BARBER
ASSOCIATED ENGINEERS & ARCHITECT
TOLEDO 2, OHIO

0299 R

SITE PLAN
BRIDGE No. MED-224-1802
Over Hubbard Creek
MEDINA COUNTY
STA. 978+20.75
STA. 979+19.75

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
	J.W.	J.C.P.				

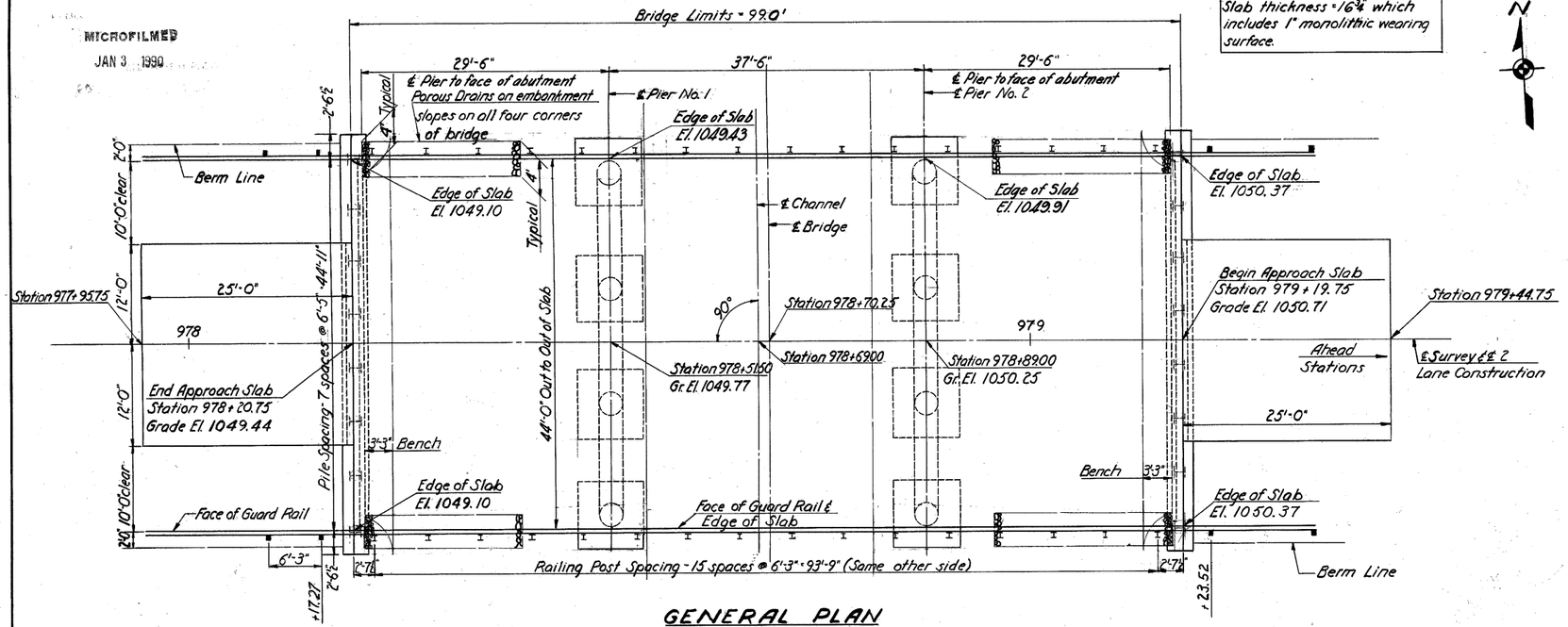
DESIGN ENGINEER - MICHAEL BAKER JR.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

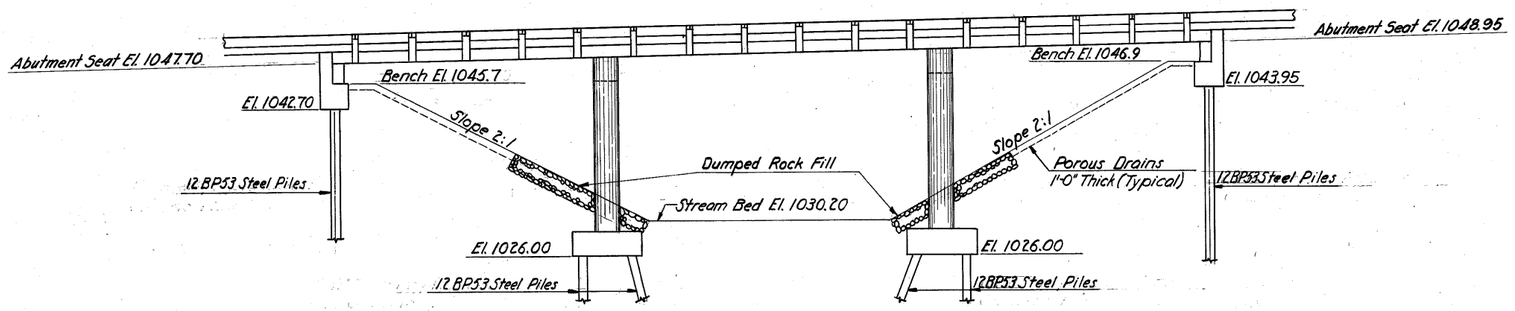
303

MEDINA COUNTY
MED-224-17.66
SUM-224-0.00

Slab thickness = 16¾" which includes 1" monolithic wearing surface.



GENERAL PLAN



ELEVATION

GENERAL NOTES

- Reference shall be made to the following Standard Drawings:
  Slab CS-1-54 Date 7-1-54 Revised 7-16-56
  Abutments A-1-54 Date 7-1-54 Revised 12-1-54
- Design Specifications: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 10-1-51, together with revisions thereof dated 7-15-52, 4-1-54 and 2-1-55.
- Excavation quantity includes the removal of fill material between the top of the earth bench and the bottom of the abutment.
- Galvanizing of all members which are specified to be galvanized shall be as called for in Section M-7.4(d).
- Porous drains, extending from face of abutment to Elevation 1038.0 shall be provided at all four corners of the bridge. The drains shall be 4 feet wide and one foot thick.
- Gravel, if used as the coarse aggregate, shall be according to Section M-3.93 for Class "C" Concrete in the superstructure. Gravel meeting the requirements of Section M-3.93 also may be used for other concrete in this structure.
- Piles shall be driven to firm contact with dense clay, which shall be considered as attained when the capacity according to the formula in Section S-18.05 is at least 40 tons per pile for the pier piles and 35 tons for the abutment piles if a 7000 ft. lb. hammer is used, or 30 tons for the pier piles and 27 tons for the abutment piles if a hammer of 11,000 ft. lb. or greater energy is used and if the length of penetration is approximately equal to the estimated length according to the bridge foundation investigation report. If the energy rating of the hammer is between these values the required formula capacity shall be determined by interpolation. (The design load is 30 tons per pile for the pier piles and 27 tons for the abutment piles.) The length of penetration of every pile shall be at least 80% of the estimated average length of penetration of the piles in the pertinent pier or abutment as indicated on the plans unless a lesser penetration is approved by the Director.

ESTIMATED QUANTITIES

Item	Total	Unit	Description	Superstr.	Piers	Abutments	General		
E-2	200	Cu. Yds.	Unclassified Excavation		140	60			
E-3	640	Cu. Yds.	Channel Excavation				640		
S-1	228	Cu. Yds	Class "C" Concrete, Superstructure	228					
S-1	52	Cu. Yds	Class "C" Concrete, Pier Caps and Columns		52				
S-1	51	Cu. Yds.	Class "E" Concrete, Abutments			51			
S-1	44	Cu. Yds	Class "E" Concrete, Pier Footings		44				
S-4	72,268	Lbs.	Reinforcing Steel	52,321	14,318	5,629			
S-14	198	Lin. Ft.	Railing (Type T-15.13 with galvanized Steel Posts & Bolts)	198					
S-16	Lump	Sum	First Test Pile						
S-18	1290	Lin. Ft.	Steel Piles, 12 BP53		780	510			
S-29	13		Porous Drains on Embankment Slopes				13		
S-29	22		Porous Backfill			22			
I-10	195	Cu. Yds.	Dumped Rock Fill				195		
E-2	Lump	Sum	Cofferdams, Cribs, and Sheeting						

REINFORCING STEEL LIST

Superstructure Mark	No.	Length	Weight	Type	Bending Diagram
F1067	80	27'-2"	9353	Str.	
G1067	40	12'-11"	2224	Str.	
H1067	38	8'-10"	1444	Str.	
A967	132	34'-10"	15,632	Str.	
B967	44	24'-11"	3728	Bt.	
C967	42	21'-11"	3,130	Bt.	
D967	22	23'-4"	1745	Str.	
E967	21	18'-2"	1297	Str.	
M701	91	43'-6"	8091	Str.	
J601	40	18'-4"	1101	Str.	
K601	20	15'-4"	460	Str.	
N601	63	43'-6"	4116	Str.	

Total Weights for Superstructure = 52,321

Abutments Mark	No.	Length	Weight	Type	Bending Diagram
R1001	16	22'-11"	1578	Str.	
R801	16	26'-1"	1114	Str.	
R501	16	25'-7"	427	Str.	
R502	156	6'-7"	1070	Bt.	
R503	8	22'-1"	184	Str.	
R504	24	5'-4"	133	Str.	
R505	32	7'-11"	264	Bt.	
R506	8	12'-6"	104	Str.	
R507	16	4'-11"	82	Str.	
R508	28	6'-8"	195	Bt	
R509	28	8'-5"	246	Bt.	
R401	64	5'-5"	232	Bt.	

R401 1'-9" %
R502 2'-8" %
R505 1'-8" %
R508 0'-11" %
R509 2'-2" %
1'-11" 2'-2" 3'-3" 3'-0" 3'-3"

Total Weight for Abutments = 5629#

- Bar size is indicated in the Bar Mark. The first digit where three digits are used, indicate the Bar size number. For example: F1067 is a number 10 size Bar.

REPLACEMENT BAR SCHEDULE

Mark	No.	Size	Length	Type	Weight
RE401	1	4	5'-3"	Str.	
RE502	1	5	5'-7"	Str.	
RE603	1	6	5'-11"	Str.	
RE704	1	7	6'-2"	Str.	
RE805	1	8	6'-6"	Str.	
RE906	2	9	6'-10"	Str.	
RE1007	1	10	7'-1"	Str.	

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.

MICHAEL BAKER, JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

GENERAL PLAN & ELEVATION

BRIDGE NO. MED. 224-1802
OVER HUBBARD CREEK
STA. 978+20.75
979+19.75
MEDINA COUNTY

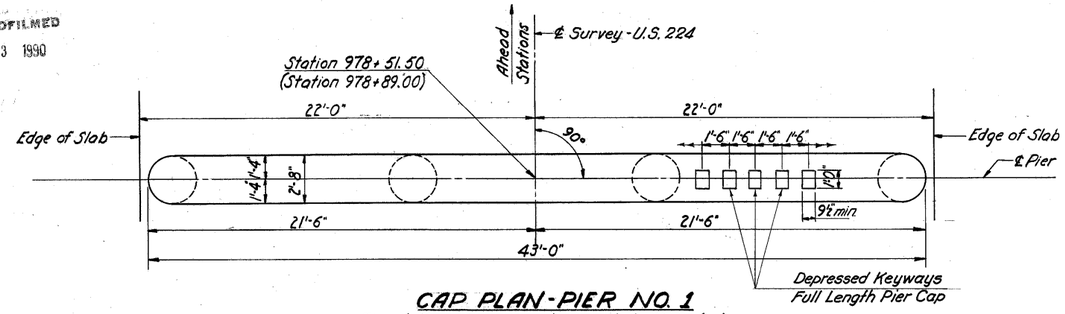
Designed	Drawn	Traced	Checked	Reviewed-Date	Revised
F.W.L.	F.W.L.	P.D.	FK		

DESIGN ENGINEER-MICHAEL BAKER JR.

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO		

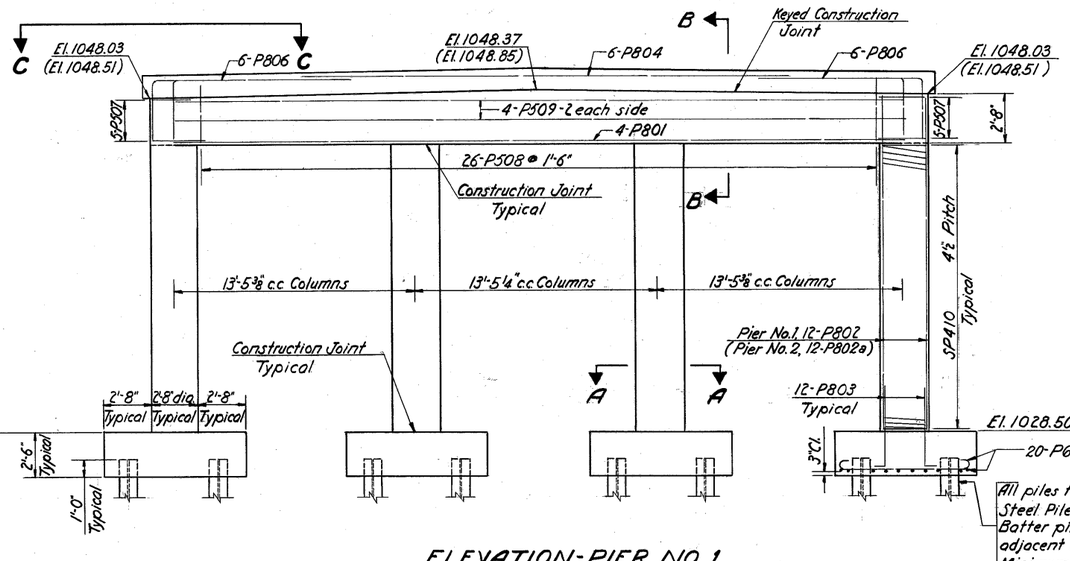
304

MEDINA COUNTY
MED-224-17.66
SUM-224-0.00



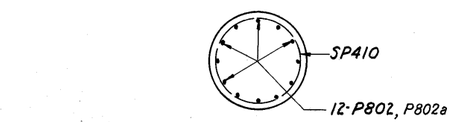
CAP PLAN-PIER NO. 1

Pier No.2 similar except as noted thus ( )

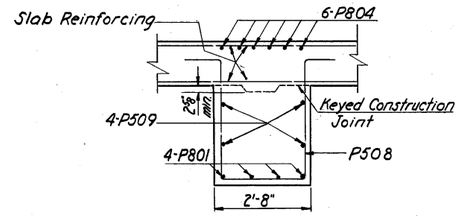


ELEVATION-PIER NO. 1

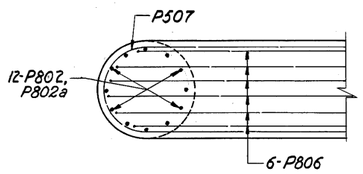
Pier No.2 similar except as noted thus ( )



SECTION A-A



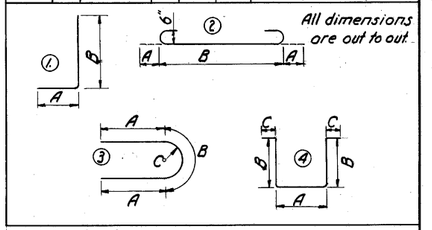
SECTION B-B



SECTION C-C

BAR SCHEDULE FOR TWO PIERS

Mark	No.	Length	Size	Type	A	B	C	Weight
P801	8	41'-0"	8	Str.				876
P802	48	19'-4"	8	Str.				2477
P803	96	5'-2"	8	1	8"	4'-8"		1325
P804	12	28'-0"	8	Str.				897
P605	160	8'-10"	6	2	8"	7'-6"		2122
P806	24	13'-6"	8	1	3'-9"	10'-0"		865
P507	20	6'-10"	5	3	1'-7"	3'-8"	1'-2"	142
P508	52	10'-8"	5	4	2'-4"	3'-8"	8"	579
P509	8	41'-0"	5	Str.				342
P802a	48	19'-10"	8	Str.				2541



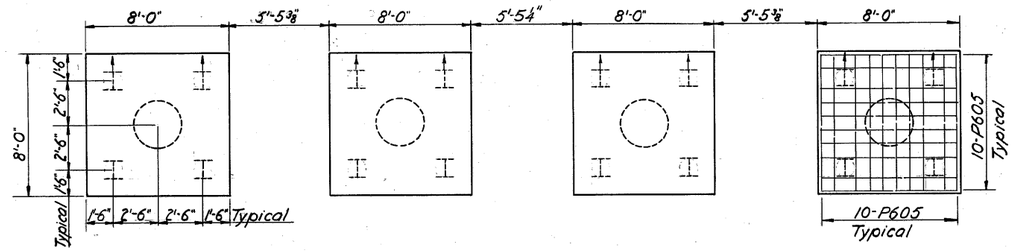
SPIRAL BARS FOR TWO PIERS

Mark	No.	Length	Pitch	No. of Turns	Core Diam.	Size	Weight
SP410	8	16'-9"	4½"	48	28"	4	2,152

Total Weight = 14,318#

NOTES

- Bar size is indicated in the bar mark. The first digit where three digits are used indicate the bar size number. For example, P605 is a No. 6 size bar.
- Clearance of Reinforcing Steel from face of concrete shall be 2" unless otherwise noted.
- Falsework for pier cap shall remain in place until deck slab is poured and cured.



FOOTING PLAN

SPIRAL NOTES

- 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 in the steel list for the spiral bars 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 not have deformations, but shall in other respects conform to Item S-4. 1't closed coils shall be provided at the ends of each spiral unit.
- Three steel Channel, tee or angle spacers, weighing approximately 0.68 lbs. per lin.ft., 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 0.68 lbs. per lin.ft, will be paid for as reinforcing steel and is included in the tabulated quantity of spiral bars.

MICHAEL BAKER, JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIERS

BRIDGE NO. MED. 224-1802
OVER HUBBARD CREEK

MEDINA COUNTY — STA. 978+20.75, 979+19.75

Designed	Drawn	Traced	Checked	Reviewed-Date	Revised
F.W.L.	F.W.L.	P.D.	F.W.L.		

DESIGN ENGINEER-MICHAEL BAKER JR,