MICROFILMED
JAN 21 1965

STATE OF OHIO
DEPARTMENT OF HIGHWAYS

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	UG-430(13)	

UG - 430(13)

JEFFERSON COUNTY
JEF.-7-13.36

AUG 27 1963
GROUND PHOTOLAB

JEF-7-13.36

GRADE SEPARATION WITH THE PENNSYLVANIA RAILROAD CO.
VILLAGE OF MINGO JUNCTION
JEFFERSON COUNTY
STEUBENVILLE TOWNSHIP

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.

CONVENTIONAL SIGNS

State Line
County Line
Township Line
Section Line
Center Line
Corporation Line
Fence Line
Guard Rail (existing)
Guard Rail (proposed)
Steam Railroad
Power Poles
Telephone Poles
Trees (existing)
Trees or Stumps (to be removed)

INDEX OF SHEETS

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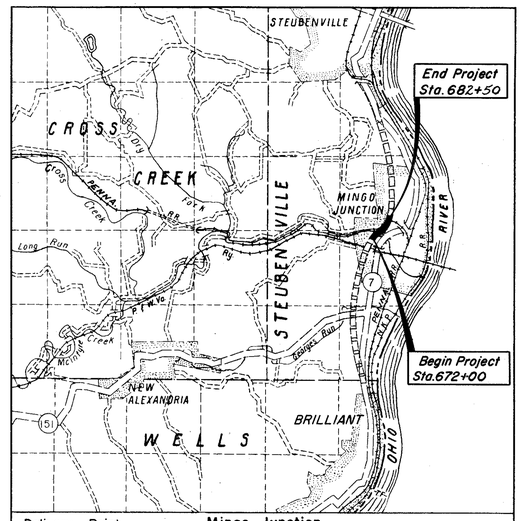
LINE DATA UG-430(13)

Begin Project	Sta. 672 +00.00
End Project	Sta. 682 +50.00
Net Length of Project	1050.00 Lin. Ft. or 0.198 Mi.
Begin Work	Sta. 672 +00.00
End Work	Sta. 683 +25.00
Net Length of Work	1125 Lin. Ft. or 0.213 Mi.

Sheet 21 revised 7-12-60.
Sheet 19 revised 12-1-60.



Delivery Point Mingo Junction
Average haul from siding 0.2 Mile

LOCATION MAP

SCALE OF MILES
0 1 2 3

Portion to be Improved
Portion Under Separate Contract
State Roads
Other Roads

SCALE

Plan	1" = 50'
Profile: Horizontal	1" = 50'
Profile: Vertical	1" = 10'
Cross Sections	1" = 10'

The standard specifications of the State of Ohio, Department of Highways, including changes and supplemental specifications listed in the proposal shall govern this improvement.

The right of way for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved Wm. P. McKenna
Date 3-7-60 Division Deputy Director

Approved Guy E. Hooper
Date 3-22-60 Deputy Director of Planning & Programming

Approved D. H. Overman A.J.E.
Date 3-17-60 Engineer of Bridges

Approved W. Cunman
Date 3-21-60 Engineer of Location & Design

Approved C. W. McCaughey
Date 3-21-60 Deputy Director of Design & Construction

Approved G. A. Berry
Date 3-22-60 First Assistant Director

Approved E. S. Sproton
Date 3-22-60 Director of Highways

AUG 27 1963
GROUND PHOTOLAB

STATE OF OHIO
MICHAEL BAKER, JR.
NO. 9065
REGISTERED PROFESSIONAL ENGINEER

Supplemental Prints of Standard Construction Drawings					
				CSB-2-56	2-2-59
G-7.07	6-1-56	I-15 No. 1	5-21-59	(Sheets 2 & 3)	
RI-1	7-15-58	I-15 No. 2-A	5-21-59	AR-1-57	2-2-59
L-1	4-1-50	I-21-23	8-1-56	RB-1-55	2-2-59
L-3	4-1-50	T-35	1-2-56	AS-1-54	12-1-54
L-3-A	4-1-50	I-1,2,3,4&5	4-24-58		

Supplemental Specifications	
B-219	Rev. 3-12-59
S-101	12-2-59
S-207	4-28-55

AUG 27 1963
GROUND PHOTOLAB

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER

File No.

JEFFERSON COUNTY JEF.-7-13.36
Date of Letting 19
Contract No.

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	UG-430(13)	

2/44

JEFFERSON COUNTY
JEF-7-13.36

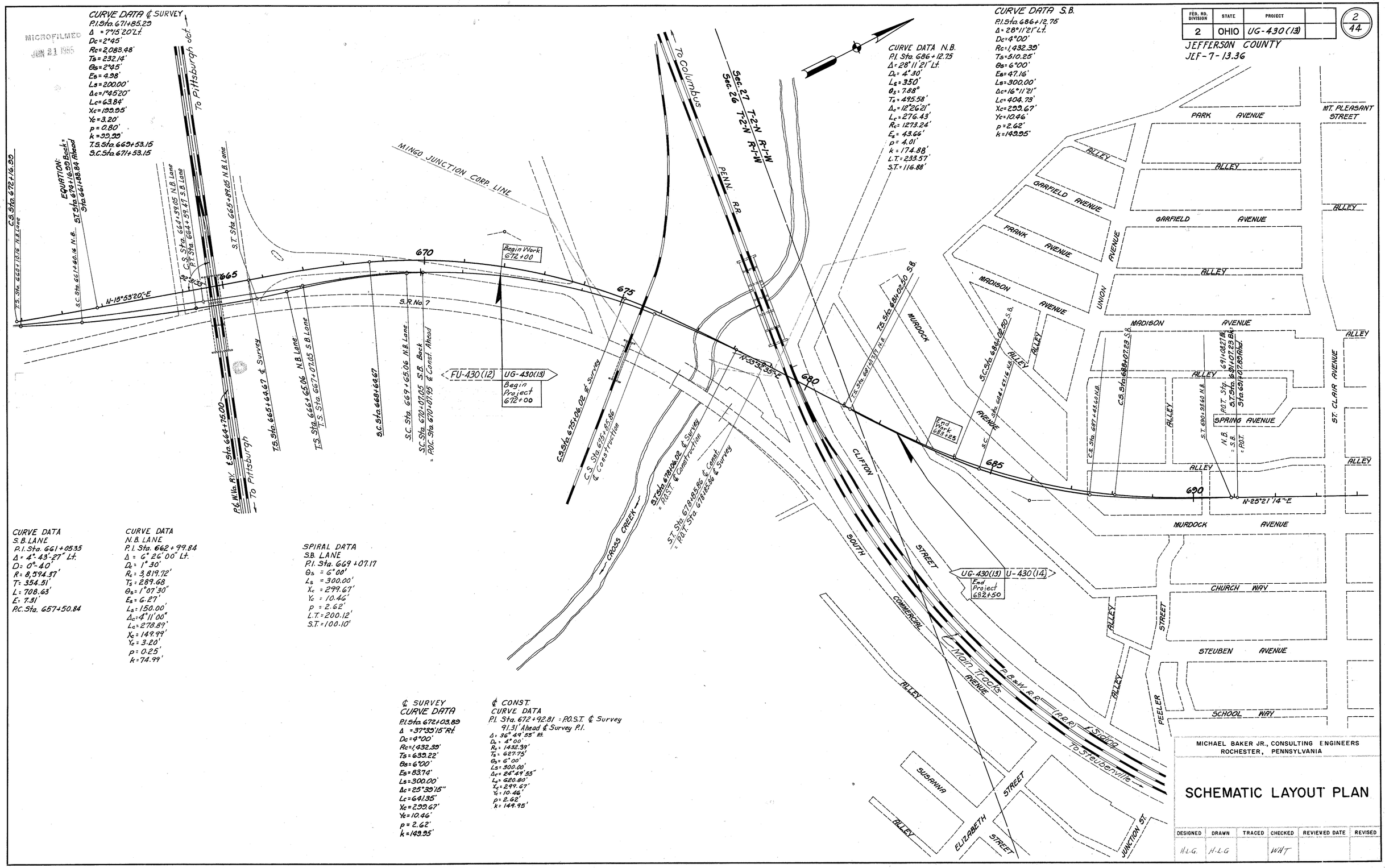
MICROFILMED
JUN 21 1985

CURVE DATA ℄ SURVEY
P.I. Sta. 671+85.29
Δ = 7°15'20" Lt.
Dc = 2°45'
Rc = 2,083.48'
Ts = 232.14'
θs = 2°45'
Es = 4.98'
Ls = 200.00'
Δc = 1°45'20"
Lc = 63.84'
Xc = 199.95'
Yc = 3.20'
p = 0.80'
k = 99.99'
T.S. Sta. 669+53.15
S.C. Sta. 671+53.15

EQUATION:
S.T. Sta. 679+16.99 Back =
Sta. 661+88.84 Ahead

CURVE DATA S.B.
P.I. Sta. 686+12.75
Δ = 28°11'21" Lt.
Dc = 4°00'
Rc = 1,432.39'
Ts = 510.25'
θs = 6°00'
Es = 47.16'
Ls = 300.00'
Δc = 16°11'21"
Lc = 404.73'
Xc = 299.67'
Yc = 10.46'
p = 2.62'
k = 149.95'

CURVE DATA N.B.
P.I. Sta. 686+12.75
Δ = 28°11'21" Lt.
Dc = 4°30'
Ls = 350'
θs = 7.88°
Ts = 495.58'
Δc = 12°26'21"
Lc = 276.43'
Rc = 1273.24'
Es = 43.66'
p = 4.01'
k = 174.88'
L.T. = 233.57'
S.T. = 116.88'



CURVE DATA
S.B. LANE
P.I. Sta. 661+05.35
Δ = 4°43'27" Lt.
Dc = 0°40'
R = 8,594.37'
T = 354.51'
L = 708.63'
E = 7.31'
P.C. Sta. 657+50.84

CURVE DATA
N.B. LANE
P.I. Sta. 662+99.84
Δ = 6°26'00" Lt.
Dc = 1°30'
Rc = 3,819.72'
Ts = 289.68'
θs = 1°07'30"
Es = 6.27'
Ls = 150.00'
Δc = 4°11'00"
Lc = 278.89'
Xc = 149.99'
Yc = 3.20'
p = 0.25'
k = 74.99'

SPIRAL DATA
S.B. LANE
P.I. Sta. 669+07.17
θs = 6°00'
Ls = 300.00'
Xc = 299.67'
Yc = 10.46'
p = 2.62'
L.T. = 200.12'
S.T. = 100.10'

℄ SURVEY
CURVE DATA
P.I. Sta. 672+03.89
Δ = 37°39'15" Rt.
Dc = 4°00'
Rc = 1,432.39'
Ts = 639.22'
θs = 6°00'
Es = 83.74'
Ls = 300.00'
Δc = 25°39'15"
Lc = 641.35'
Xc = 299.67'
Yc = 10.46'
p = 2.62'
k = 149.95'

℄ CONST.
CURVE DATA
P.I. Sta. 672+92.81 = P.O.S.T. ℄ Survey
91.31' Ahead ℄ Survey P.I.
Δ = 36°49'55" Rt.
Dc = 4°00'
Rc = 1432.39'
Ts = 627.75'
θs = 6°00'
Ls = 300.00'
Δc = 24°49'55"
Lc = 620.80'
Xc = 299.67'
Yc = 10.46'
p = 2.62'
k = 149.95'

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SCHEMATIC LAYOUT PLAN

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
H.L.G.	H.L.G.		WHT		

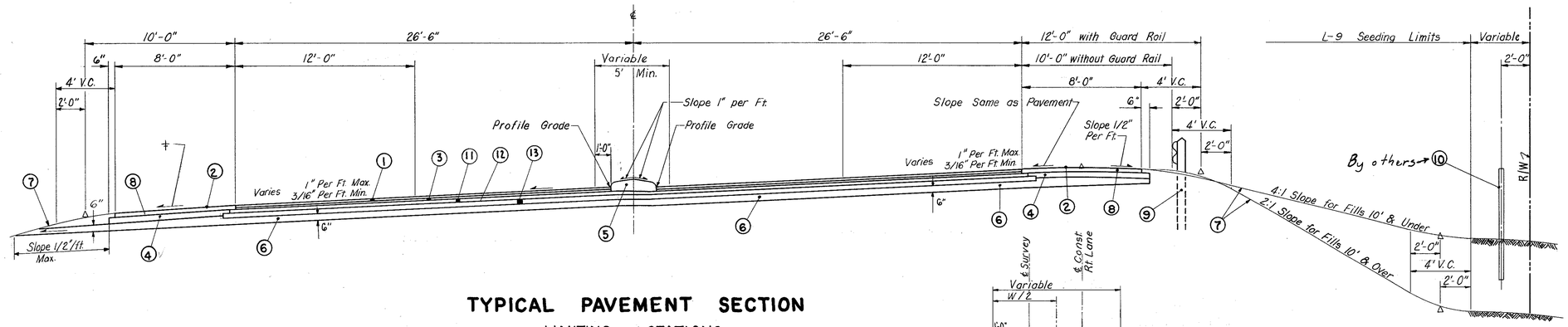
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	UG-430 (13)	

JEFFERSON COUNTY
JEF-7-13.36

TYPICAL SECTIONS

TYPE T-35 ON B-20

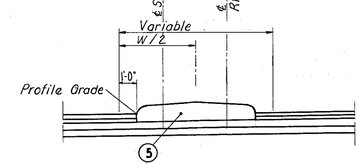
SCALE $\frac{1}{4}$" = 1'-0"



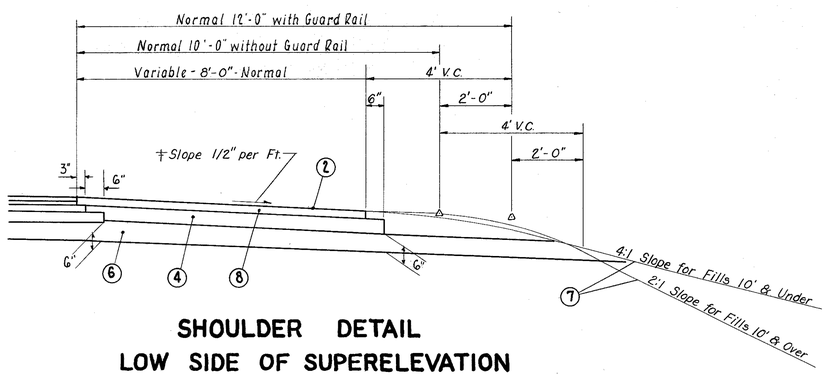
TYPICAL PAVEMENT SECTION

LIMITING STATIONS

Sta. 672+00 to Sta. 672+96.71 = 96.71 Lin. Ft.
Sta. 681+80.42 to Sta. 682+50 = 69.58 Lin. Ft.
Total = 166.29 Lin. Ft.

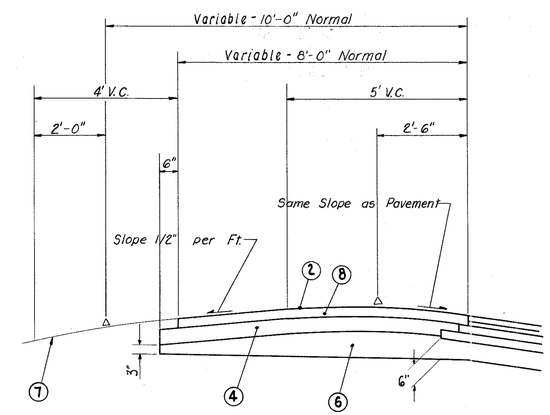


TYPICAL THROUGH VARIABLE MEDIAN



SHOULDER DETAIL
LOW SIDE OF SUPERELEVATION

1	Item	T-35	1" Asphaltic Concrete Surface Course, Type "C" (70-85)
2	* Item	T-31	Bituminous Surface Treatment, See note in proposal
3	Item	B-35	1¼" Asphaltic Concrete Leveling Course (70-85)
4	Item	I-18	5" Stabilized Crushed Aggregate Shoulders and Approaches
5	Item	I-21	Portland Cement Concrete Median Pavement, Standard Type 2
6	Item	I-22	Subbase, Variable depth
7	Item	L-9	Seeding and Protecting
8	Item	B-219	3" Waterproofed Aggregate Base Course
9	Item	I-15	Guard Rail, Steel Beam Standard Type (Deep)
10	Item	SS-18	Fence, Standard Type "C" (By others)
11	Item	B-35	2¾" Asphaltic Concrete Base Course (70-85)
12	Item	T-30	Bituminous Prime Coat @ 0.4 gal. per Sq. Yd.
13	Item	B-20	8" Waterbound Macadam Base Course using Size Nº 2 Coarse Aggregate



SHOULDER DETAIL
HIGH SIDE OF SUPERELEVATION

NOTES:

All Slopes Typical unless otherwise shown on Cross Sections.

‡ Slope away from Pavement 1/2" per Ft. except where Pavement Slope exceeds 1/2" per Ft. See Plans for exceptions.

** Bituminous Surface Treatment shall be applied in one operation. The Seal shall consist of 0.008 Cu. Yds. No. 6 Aggregate and 0.25 Gals. Bituminous Material per Sq. Yd.*

MICHAEL BAKER, JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

TYPICAL SECTIONS

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
	A.M.M.	A.M.M.				

GENERAL NOTES

CONSTRUCTION LAYOUT STAKES:
See note in proposal describing the work included in this Lump Sum pay item.

SIGNS:
All signs that will be disturbed by the Construction shall be carefully removed and stored by the Contractor for disposal by their respective owners. Payment for this operation shall be included in the Lump Sum Price Bid for "Maintaining Traffic."

FIELD OFFICE:
The Contractor shall provide a suitable Field Office for the exclusive use of the State employees in accordance with Sec. S-001 (b) having a minimum of 500 square feet of floor space. The Contractor shall have a telephone installed and maintained in the Field Office during the construction of this project. The Contractor shall install wiring and outlets suitable for connecting to office equipment and provide 110 Volt alternating current during the construction of this project. This Field Office shall be provided within 10 days after the start of work.

DESIGN SPEED:
The geometrics have been planned for this project for a design speed of 50 Miles Per Hour.

UTILITIES:
The Contractor shall notify, at least 48 hours before breaking ground, all Public Service Corporations having wire, poles, pipes, conduits, manholes or other structures that may be affected by this operation, including all structures which are affected and not shown on these plans. Any and all work required for Public or Private Utilities will be done by and at the expense of their respective owners, unless otherwise shown on these plans.

ELEVATION DATUM:
All elevations are based on U.S.G.S. datum.

RIGHT OF WAY MONUMENTS, FEDERAL PROJECT MARKERS AND SECTION MARKERS:
Existing R/W Monuments, Bench Marks, Federal Project Markers or Section Markers that will be destroyed by construction, shall be protected by the Contractor as per Sec. G-7.09 until they can be witnessed, referenced and reset by the construction survey crew.

REPLACEMENT:
The Contractor shall replace at his own expense any item not specifically listed for removal, that is damaged or destroyed by his operation.

HEAVY EQUIPMENT:
The Contractor shall excercise care in the use of heavy equipment over finished work and will be required to remove and replace any completed work destroyed thereby.

LIGHTS, SIGNS AND BARRICADES:
The Contractor shall provide all Lights, Barricades and Danger and Warning Signs as may be required by the Engineer in accordance with the general requirements of Sec. G-7.07. Barricades and gates shall be as detailed on Standard construction drawing № G-7.07. Sign supports and lights for signs shall be as detailed in the Ohio Manual of Uniform Traffic Control Devices. Payment for the above shall be included in the Lump Sum Price Bid for "Maintaining Traffic".

PROTECTION OF TRAFFIC:
During construction of this project the Contractor shall safeguard traffic on Streets and Roads by providing platforms, nets or other suitable protection above the traveled lanes. Payment for this protection shall be included in the Lump Sum Price Bid for "Maintaining Traffic". See additional note on Sheet 13.

GUARD RAIL PARAPET ANCHOR:
Cost of providing and installing anchor for connecting deep steel beam guard rail to bridge parapet is included in the bridge quantities for payment. The Contractor shall provide one additional guard rail post in the center of the first panel of deep steel beam guard rail where anchored to the parapet, cost of which shall be included in the Unit Price Bid for Item I-15, Guard Rail.

SUBGRADE COMPACTION:
The area of compacted subgrade to be paid for includes the main pavement, approach slabs, and paved shoulders.

USE OF EXPLOSIVES:
Explosives must be carefully selected with reference to the charactor of the work. It is strongly recommended that the Contractor utilize the consulting services which explosive manufacturers extend to their patrons.
Extreme care must be used in the blasting operations to assure the safe and uninterrupted movement of vehicular traffic on local Streets and Roads over which traffic is to be maintained.
Sec. G-7.08 of the Specifications shall be strictly adherad to.

WORK SCHEDULE:
The Contractor shall schedule the sequence of his operations, as directed by the Engineer, so that Abutment 8 and Pier № 7 shall be constructed in the early phases of his work and not impede the construction of Clifton Street on Contract № JEF-7-13.53, Project 517-59.

CO-OPERATION:
This project will be under construction at the same time as project 6-59, FU-430 (12), JEF-7-11.35 and project 517-59, U-430 (14), JEF-7-13.53. The Contractor shall co-operate with the Contractors on these projects so that a minimum amount of interference and delay will result.

UNDERGROUND UTILITIES:
The locations of the Underground Utilities shown on the plans have been obtained by diligent field checks and searches of available records. It is believed that they are essentially correct, but the State of Ohio makes no guarantees as to their accuracy or completeness.

SEEDING LIMITS:
Quantities for seeding are calculated for the soil areas between lines ten (10) feet outside the work limits as shown on the plans, or to the right-of-way line, if such line is less than ten (10) feet from the work limits.

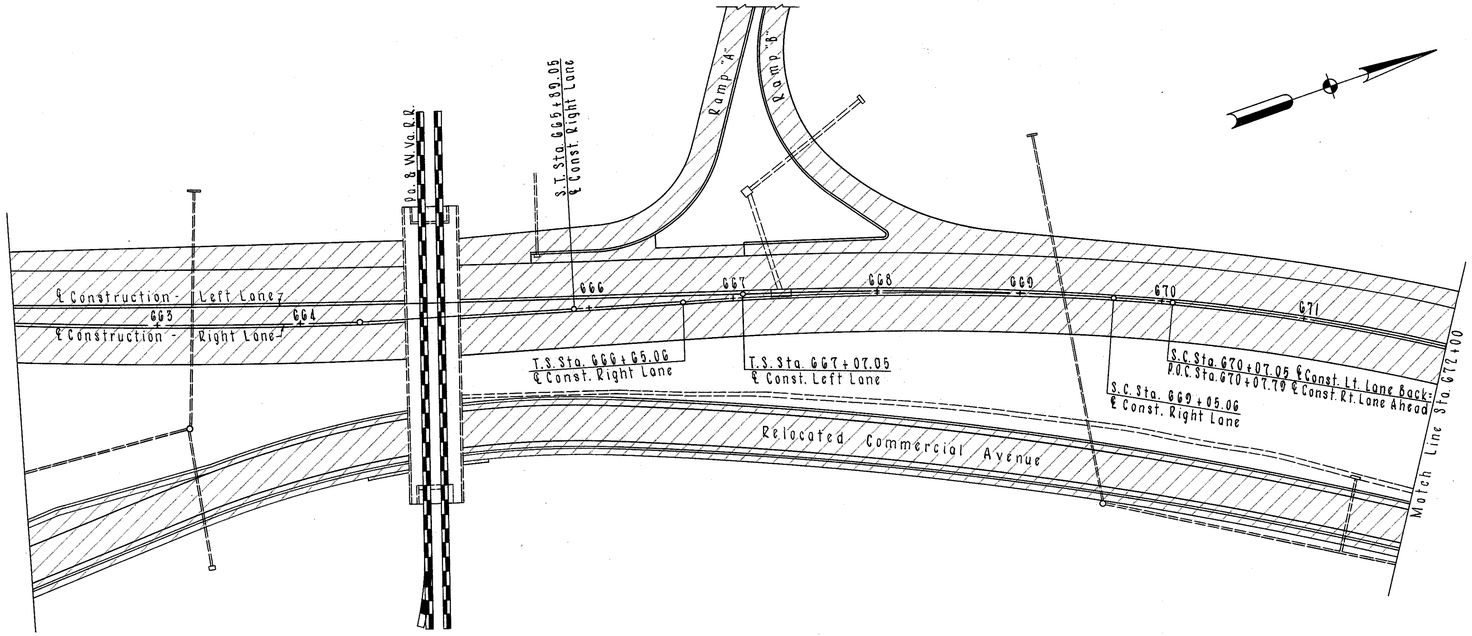
GENERAL SUMMARY

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	UG-430(13)	

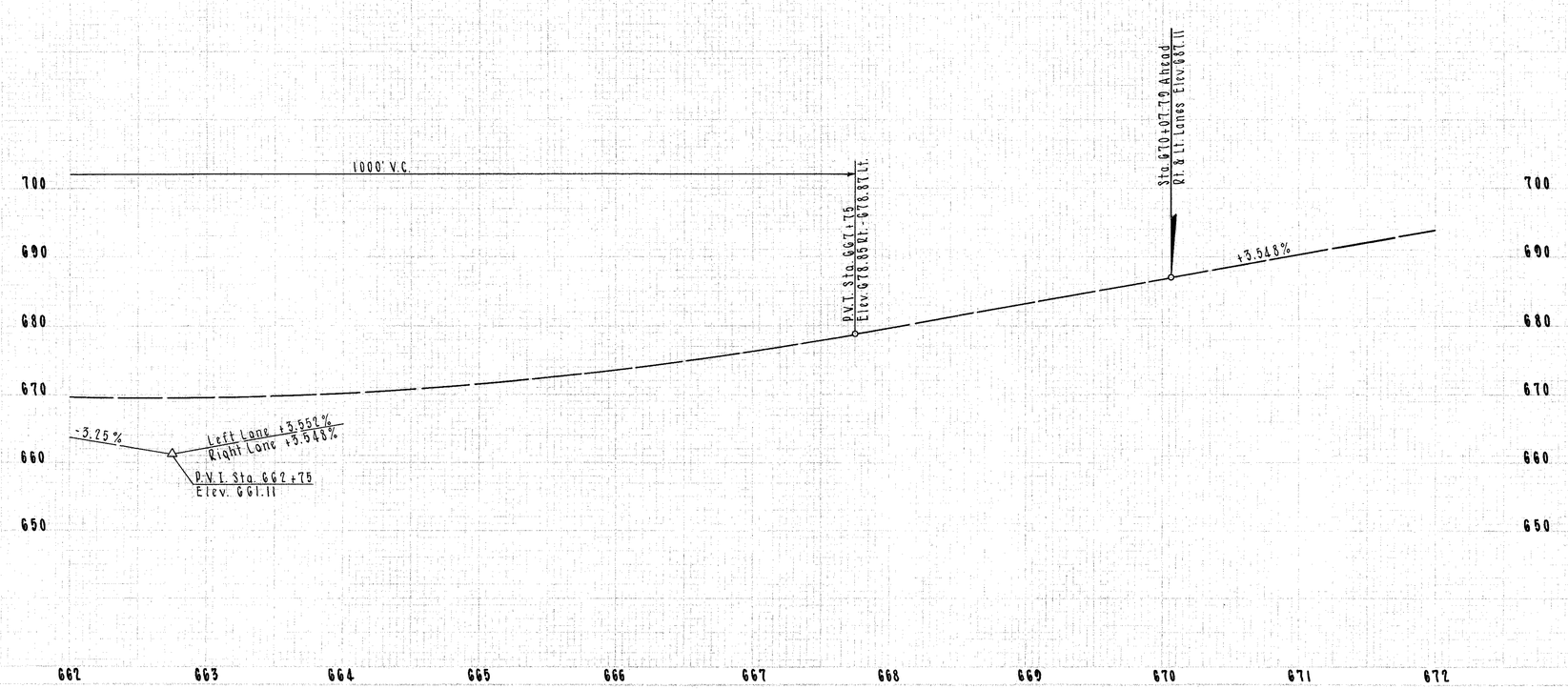
JEFFERSON COUNTY
JEF-7-13.36

ITEM	SHEET NUMBER 3	7	8	9	ITEM	QUAN.	UNIT	DESCRIPTION
					TYPE CODE 6201			
								ROADWAY
E-1				33	E-1	33	Cu.Yds.	Roadway Excavation, Method "B"
E-1		1190.	405		E-1	1595	Sq.Yds.	Compacted Subgrade
E-4				1313	E-4	1313	Cu.Yds.	Borrow
E-11				7	E-11	7	M.Gals.	Water
I-15		275.9	125		I-15	400.9	Lin.Ft.	Guard Rail, Standard Type (Deep), Steel Beam
L-9				750	L-9	750	Sq.Yds.	Seeding and Protecting
L-9				0.07	L-9	0.07	Ton	Commercial Fertilizer (12-12-12)
L-9				0.34	L-9	0.34	Ton	Agricultural Liming Material
								PAVEMENT
B-20		711	319		B-20	1030	Sq.Yds.	8" Waterbound Macadam Base Course, Using Size No. 2 Coarse Aggreate
B-35		52	24		B-35	76	Cu.Yds.	Asphaltic Concrete Base Course (70-85)
B-35		23	10		B-35	33	Cu.Yds.	Asphaltic Concrete Leveling Course (70-85)
B-219		23	7		B-219	30	Cu.Yds.	Waterproofed Aggregate Base Course
I-7		295			I-7	295	Sq.Yds.	Reinforced Concrete Approach Slabs (T=13"), as per Plan
I-18		53	12		I-18	65	Cu.Yds.	Stabilized Crushed Aggregate Shoulders and Approaches
I-21		39	19		I-21	58	Sq.Yds.	Portland Cement Concrete Mod. Pavt., Standard Type 2
I-22		181	72		I-22	253	Cu.Yds.	Subbase
T-30		280	128		T-30	408	Gals.	Bituminous Prime Coat, Sec. M-5.7, RT-2 or RT-3
T-31		67	22		T-31	89	Gals.	Bituminous Surface Treatment, Bituminous Material, as per plan
T-31		2.3	0.7		T-31	3	Cu.Yds.	Bituminous Surface Treatment, No.6 Aggregate
T-35		18	8		T-35	26	Cu.Yds.	Asphaltic Concrete Surface Course, Type "C" (70-85)
	Lump					Lump	Lump	Construction Layout Stakes

STRUCTURE OVER 20 FOOT SPAN
Structure No. JEF.-7-13 36
See Sheet No. 41 for Estimated Quantities



Portion Under Separate Contract

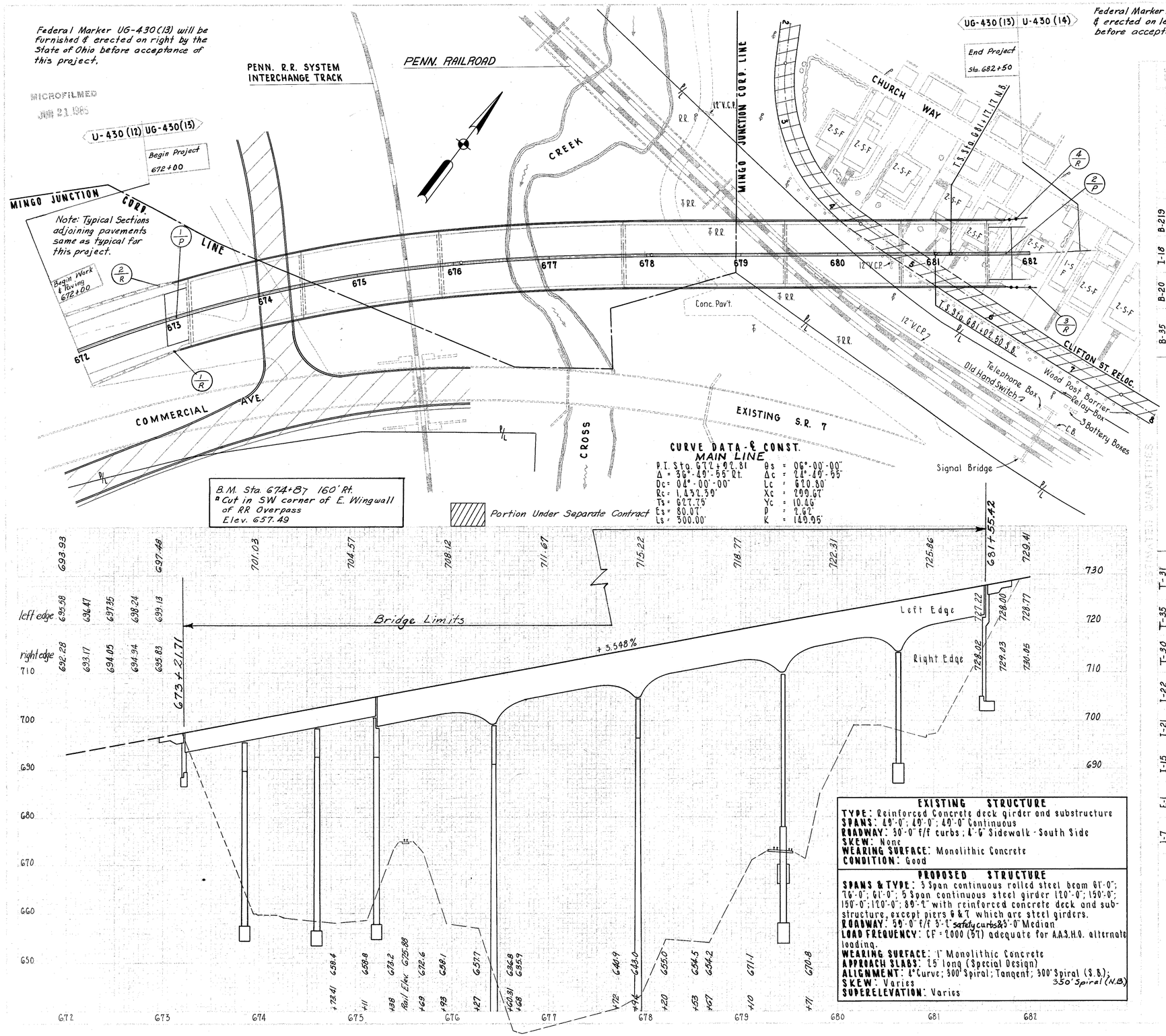


STA. 662+00 to STA. 672+00

Federal Marker UG-430(13) will be furnished & erected on right by the State of Ohio before acceptance of this project.

Federal Marker UG-430(13) will be furnished & erected on left by the State of Ohio before acceptance of this project.

MICROFILMED
JAN 21 1985



CURVE DATA & CONST.
MAIN LINE

P.I. Sta.	672+92.81	θs	= 06°-00'-00"
Δ	= 36°-49'-55" Rt.	Δc	= 24°-49'-55"
Dc	= 04°-00'-00"	Lc	= 620.80'
Rc	= 1,432.39'	Xc	= 299.67'
Ts	= 627.75'	Yc	= 10.46'
Es	= 80.07'	D	= 2.62'
Ls	= 300.00'	K	= 149.95'

EXISTING STRUCTURE

TYPE: Reinforced Concrete deck girder and substructure
SPANS: 49'-0"; 49'-0"; 49'-0" Continuous
ROADWAY: 30'-0" f/f curbs; 4'-6" Sidewalk - South Side
SKEW: None
WEARING SURFACE: Monolithic Concrete
CONDITION: Good

PROPOSED STRUCTURE

SPANS & TYPE: 3 Span continuous rolled steel beam 61'-0"; 76'-0"; 61'-0"; 5 Span continuous steel girder 120'-0"; 150'-0"; 150'-0"; 120'-0"; 89°-2" with reinforced concrete deck and substructure, except piers 6 & 7 which are steel girders.
ROADWAY: 59'-0" f/f 3'-0" safety curbs & 3'-0" Median
LOAD FREQUENCY: CF = 2000 (57) adequate for A.A.S.H.O. alternate loading.
WEARING SURFACE: 1" Monolithic Concrete
APPROACH SLABS: 25' long (Special Design)
ALIGNMENT: 4° Curve; 300' Spiral; Tangent; 300' Spiral (S.B.); 350' Spiral (N.B.)
SKEW: Varies
SUPERELEVATION: Varies

	1-7 Reinf. Conc. Approach Slab 7" 13" Sq. Yds.	E-1 Comp. Subgrade Sq. Yds.	I-15 Guard Rail Type Det. Lin. Ft.	I-21 Std. Type ACI Reaction Sq. Yds.	I-22 Subbase Variable Depth Cu. Yds.	T-30 Bit. Prime Course 0.4 Gal/S.Y. Gals.	T-35 Asph. Emulsion Surface Treatment Mat. Gals.	T-31 Bituminous Aggr. Course Aggr. Cu. Yds.
1-P G72+00 - G73+21.71	147.2	857		32.2	147	230	14.9	51 1.7
2-P G81+55.42 - G82+00	147.4	333		6.7	34	50	3.0	16 0.6
1-R G72+00 - G73+12.5			112.5 Lt.					
2-R G72+00 - G73+05			105.0 Rt.					
3-R G81+67 - G82+00			33.0 Rt.					
4-R G81+46.5 - G82+00			25.4 Lt.					

	B-35 Asph. Conc. Base Course Cu. Yds.	B-20 8" W.B.M. Base (Level) Course Course 1½" Aggr. Sq. Yds.	T-18 5" Slab, Concrete Base Course Cu. Yds.	B-219 3" Water-bound Macadam Base Stls. Aggr. Course Cu. Yds.	T-31 Bituminous Aggr. Course Aggr. Cu. Yds.	T-35 Asph. Emulsion Surface Treatment Mat. Gals.	T-30 Bit. Prime Course 0.4 Gal/S.Y. Gals.	I-22 Subbase Variable Depth Cu. Yds.	I-21 Std. Type ACI Reaction Sq. Yds.	I-15 Guard Rail Type Det. Lin. Ft.	E-1 Comp. Subgrade Sq. Yds.	1-7 Reinf. Conc. Approach Slab 7" 13" Sq. Yds.
1-P G72+00 - G73+21.71	43.8	186 585	43	17	1.7	51	230	147	32.2		857	147.2
2-P G81+55.42 - G82+00	8.3	3.8 126	10	6	0.6	16	50	34	6.7		333	147.4

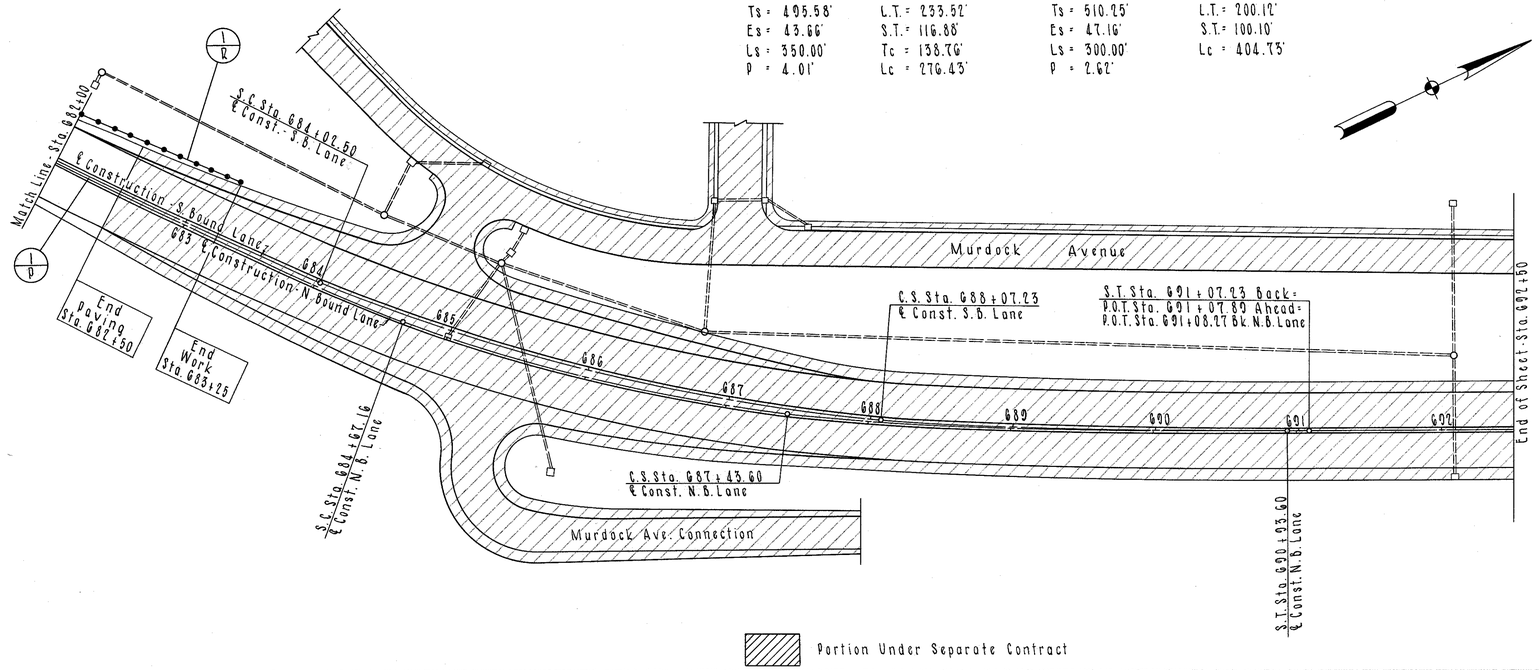
STA. G72+00 to STA. G82+00

CURVE DATA - ℄ CONST. NORTH BOUND LANE
P.I. Sta. 686+12.75

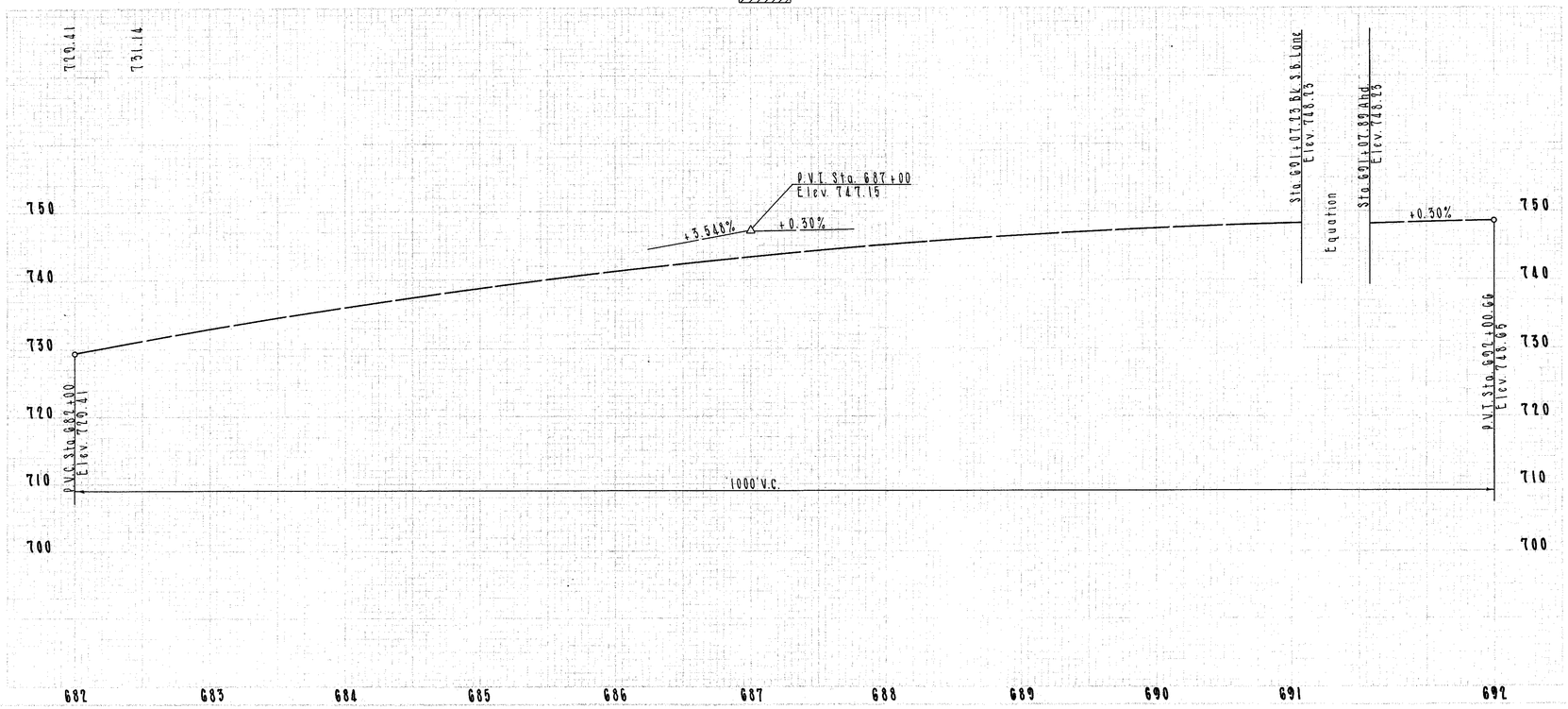
Δ = 28°-11'-21"	Δc = 12°-26'-21"
Dc = 04°-30'-00"	θs = 07°-52'-30"
Rc = 1,273.24'	K = 174.88'
Ts = 495.58'	L.T. = 233.52'
Es = 43.66'	S.T. = 116.88'
Ls = 350.00'	Tc = 138.76'
P = 4.01'	Lc = 276.43'

CURVE DATA - ℄ CONST. SOUTH BOUND LANE
P.I. Sta. 686+12.75

Δ = 28°-11'-21" Lt.	Δc = 16°-11'-21"
Dc = 04°-00'-00"	θs = 06°-00'-00"
Rc = 1,432.39'	K = 149.95'
Ts = 510.25'	L.T. = 200.12'
Es = 47.16'	S.T. = 100.10'
Ls = 300.00'	Lc = 404.73'
P = 2.62'	



Portion Under Separate Contract



	E-1 Comp. Subgrade S.Y.	I-15 Guard Rail Std. Type Lin. Ft.	I-21 P.C.C. Median Std. Type Slope S.Y.	I-22 Subbase Variable Depth C.Y.	T-30 Bit. Prime Cut Back Gals.	T-35 1" Asph. Conc. Surface Course C.Y.	T-31 Bit. Surface Treatment Bit. Aggr. Mix Gals.	C.Y.
1-P 682+00 - 682+50	1 ℄ R 405		19.4	72.0	128	8.2	22	0.7
1-R 682+00 - 683+25	Lt.	125						
	405	125	19.4	72.0	128	8.2	22	0.7

	B-35 2¾" Asph. Conc. Base Course C.Y.	B-35 1½" Asph. Conc. Base Course C.Y.	B-20 8" w.B.M. Base Course S.Y.	I-18 2" Stab. Crushed Aggregate Base Course 4" Aggr. C.Y.	B-219 3" Water Washed Crushed Aggregate Base Course C.Y.
	24.1	10.3	319	12.4	7.4
	24.1	10.3	319	12.4	7.4

STA. 682+00 to STA. 692+50

Total E-1	Roadway Excav.	33 C.Y.	
	Embankment	1122 C.Y.	
	Embankment + 20%	1346 C.Y.	0
E-4	Borrow	1313 C.Y.	

L-9 Total Seeding — 750 Sq. Yds. or 6750 Sq. Ft. @ 3 lbs. per 1000 Sq. Ft. = 20 lbs. — +80 0

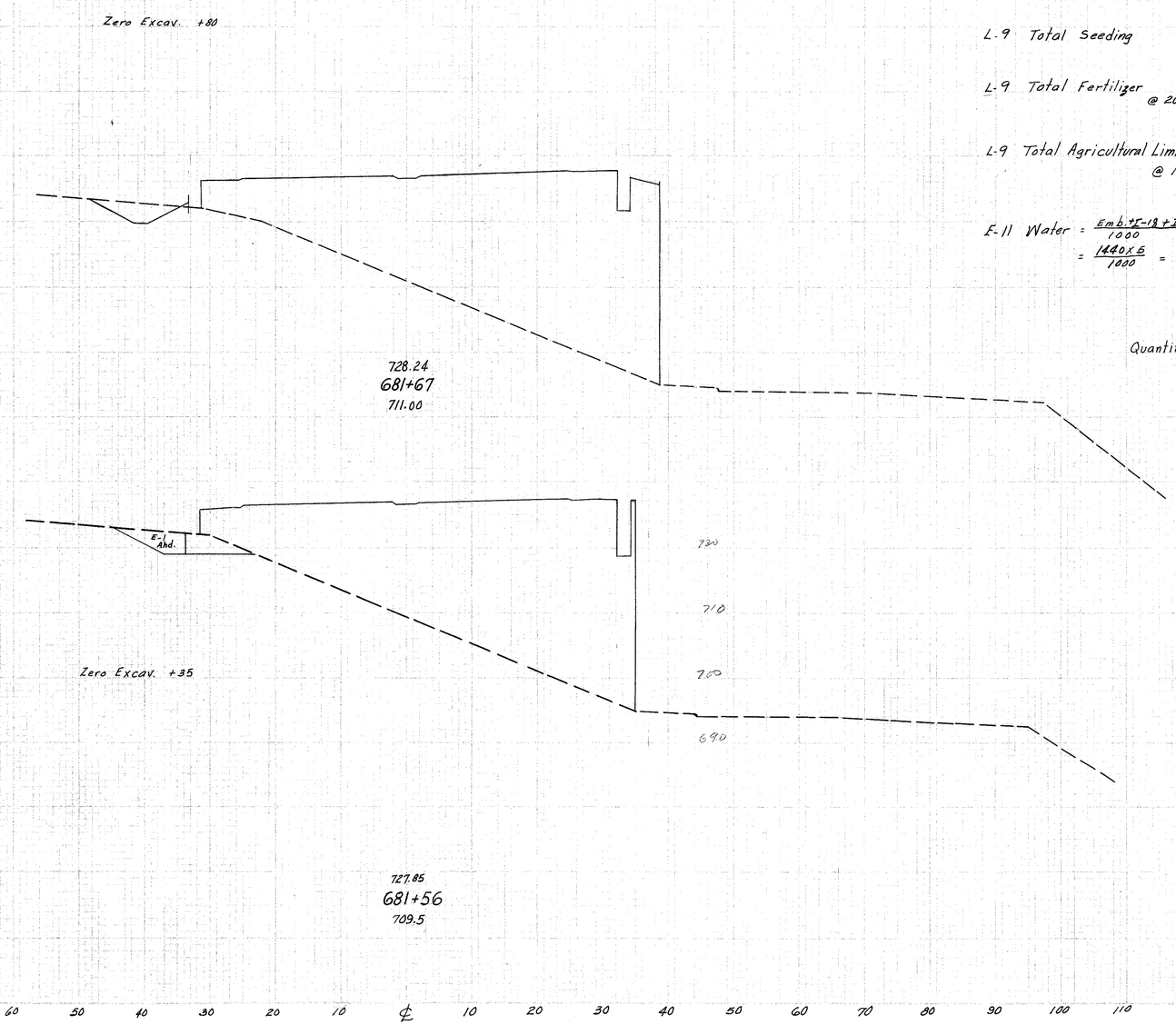
L-9 Total Fertilizer — @ 20 lbs. per 1000 Sq. Ft. = 135 lbs. or 0.07 tons

L-9 Total Agricultural Liming — @ 100 lbs. per 1000 S.F. = 675 lbs or 0.34 tons — 5 630

E-11 Water = $\frac{Emb. + E\text{-}18 + E\text{-}22}{1000}$

$= \frac{1440 \times 5}{1000} = 7.2$ M-Gals

Quantities transferred to sheet no. 5



21 1215

9 492

Abd. 24 1190
Bk. 50 0

19

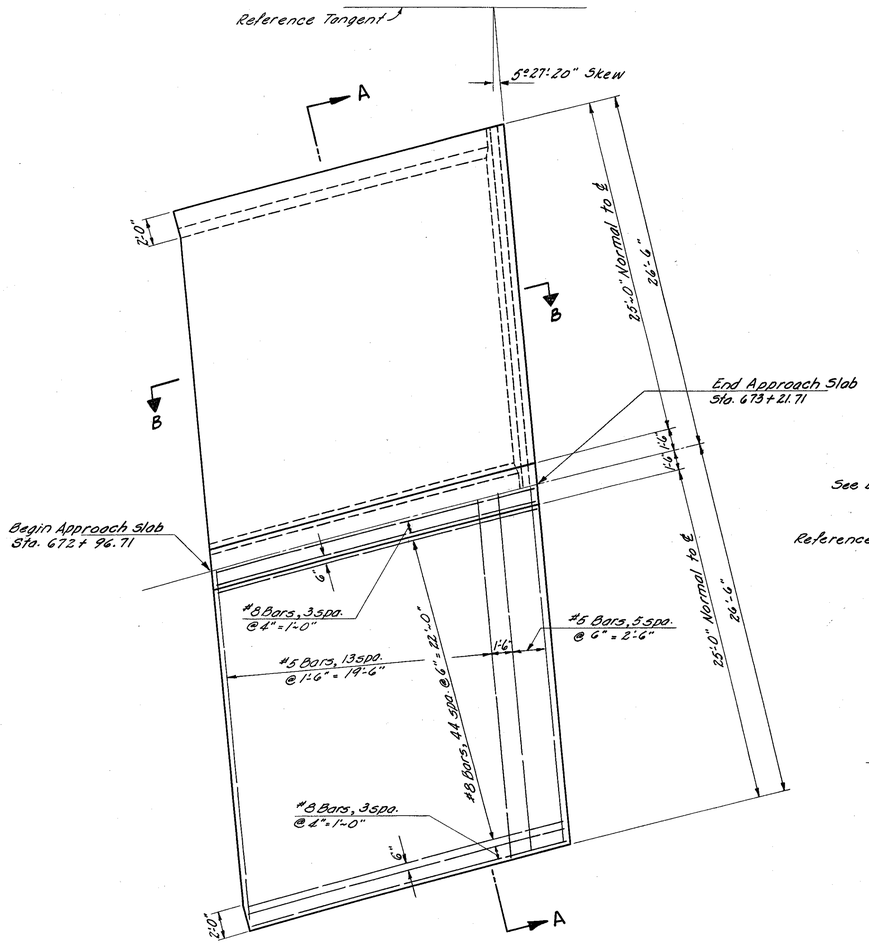
+35 0

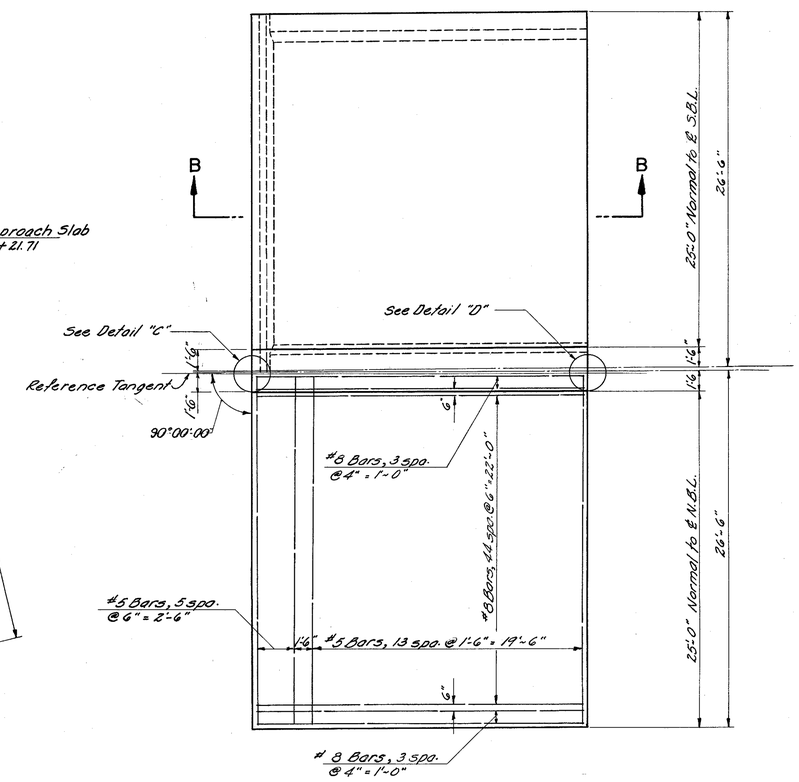
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

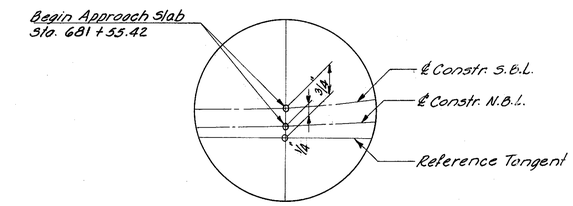
10/44

JEFFERSON COUNTY

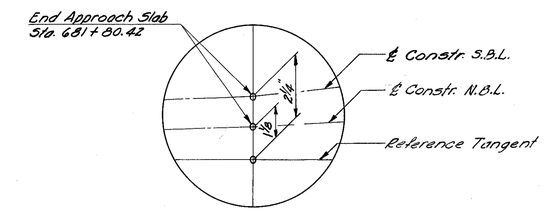
JEF - 7 - 13.36







DETAIL "C"



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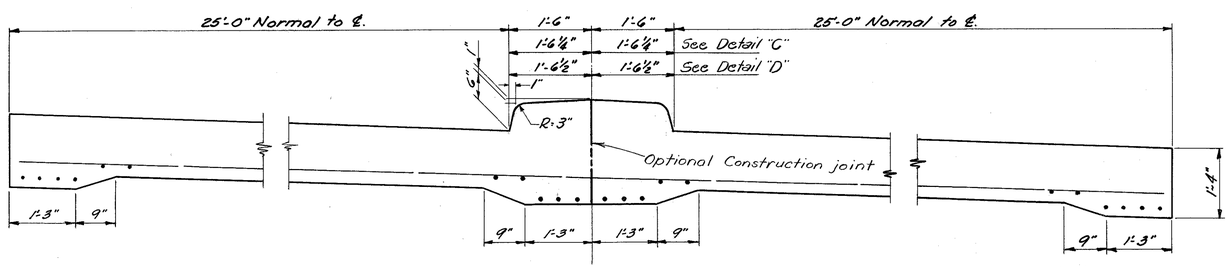
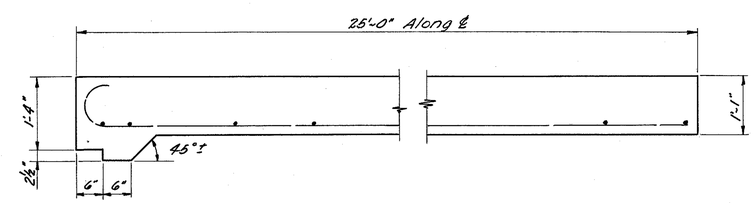


SECTION A-A



SECTION B-B

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

APPROACH SLAB DETAILS

BRIDGE NO. JEF-7-1336

OVER CROSS CREEK & THE PENN. R.R.

STA. 673+21.71

JEFFERSON COUNTY STA. 681+55.42

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
C.J.K.	C.J.K.	B.D.B. M.M.	P.M.	E. Roberts	Feb. 25, 1960	

V-7-30260

1/32

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

11/44

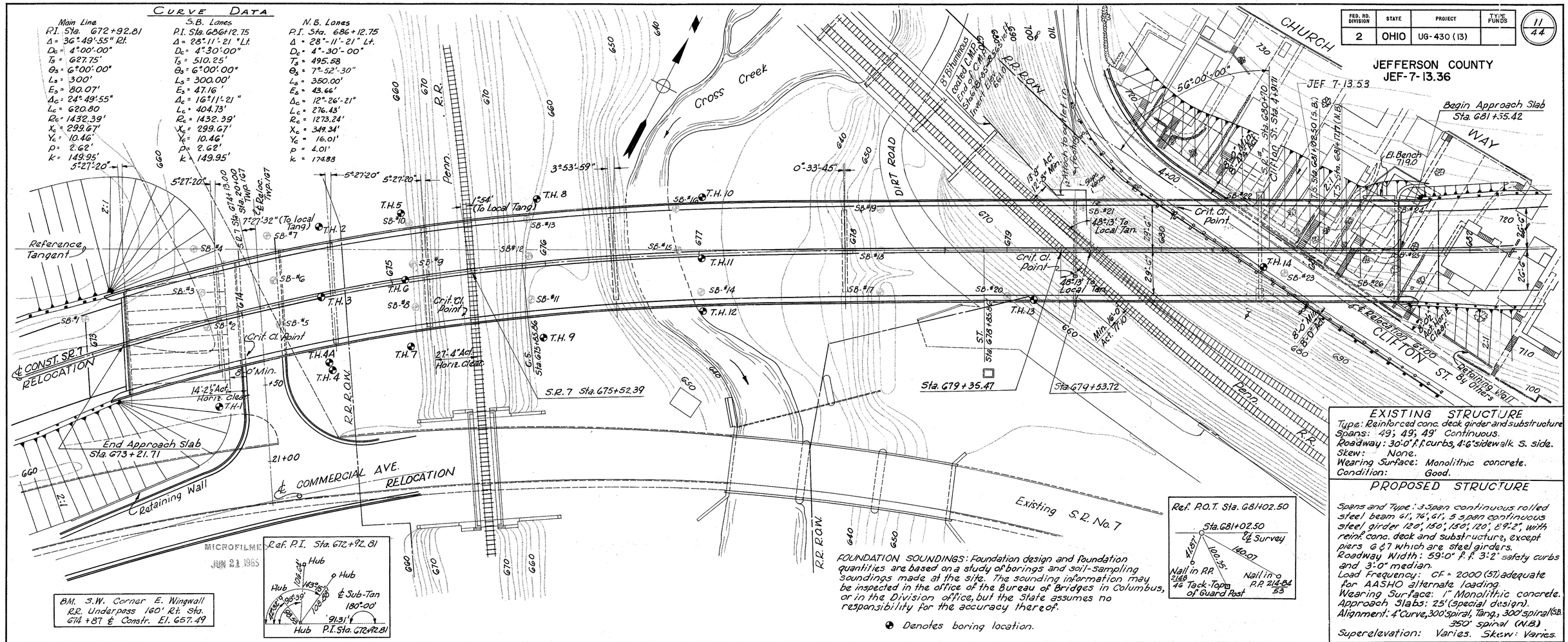
JEFFERSON COUNTY
JEF-7-13.36

CURVE DATA

Main Line
P.I. Sta. 672+92.81
$\Delta = 36°49'55"$ Rt.
$D_c = 4°00'00"$
$T_s = 627.75'$
$\theta_s = 6°00'00"$
$L_s = 300'$
$E_s = 80.07'$
$\Delta_c = 24°49'55"$
$L_c = 620.80$
$R_c = 1432.39'$
$X_c = 299.67'$
$Y_c = 10.46'$
$p = 2.62'$
$k = 149.95'$

S.B. Lanes
P.I. Sta. 686+12.75
$\Delta = 28°11'21"$ Lt.
$D_c = 4°30'00"$
$T_s = 510.25'$
$\theta_s = 6°00'00"$
$L_s = 300.00'$
$E_s = 47.16'$
$\Delta_c = 16°11'21"$
$L_c = 404.73'$
$R_c = 1432.39'$
$X_c = 299.67'$
$Y_c = 10.46'$
$p = 2.62'$
$k = 149.95'$

N.B. Lanes
P.I. Sta. 686+12.75
$\Delta = 28°11'21"$ Lt.
$D_c = 4°30'00"$
$T_s = 495.58$
$\theta_s = 7°52'30"$
$L_s = 350.00'$
$E_s = 43.66'$
$\Delta_c = 12°26'21"$
$L_c = 276.43'$
$R_c = 1273.24'$
$X_c = 349.34'$
$Y_c = 16.01'$
$p = 4.01'$
$k = 174.88$

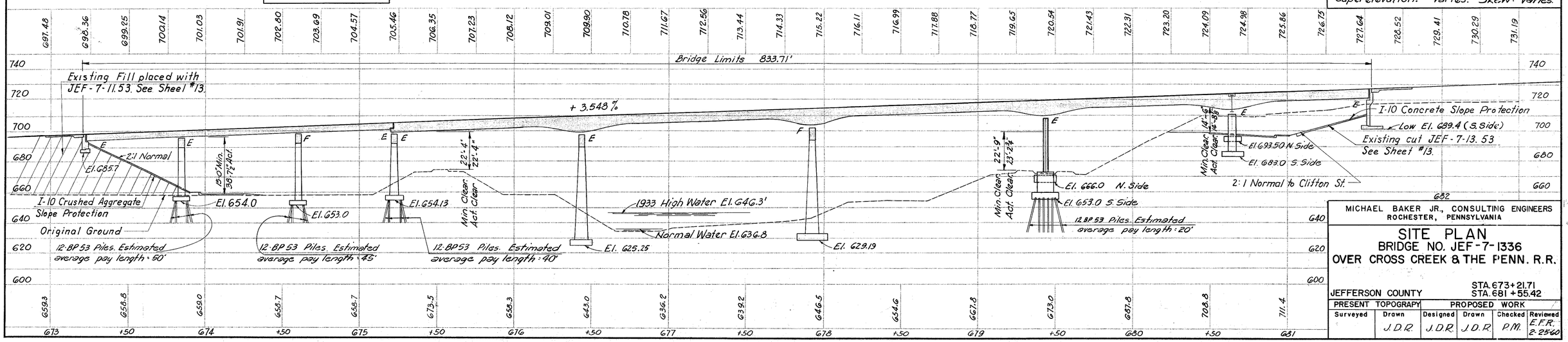


FOUNDATION SOUNDINGS: Foundation design and foundation quantities are based on a study of borings and soil-sampling soundings made at the site. The sounding information may be inspected in the office of the Bureau of Bridges in Columbus, or in the Division office, but the State assumes no responsibility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

◕ Denotes boring location.

EXISTING STRUCTURE
Type: Reinforced conc. deck girder and substructure
Spans: 49', 49', 49' Continuous.
Roadway: 30'-0" f.f. curbs, 4'-6" sidewalk S. side.
Skew: None.
Wearing Surface: Monolithic concrete.
Condition: Good.

PROPOSED STRUCTURE
Spans and Type: 3-span continuous rolled steel beam 41', 76', 41'; 5-span continuous steel girder 120', 150', 150', 120', 89'-2", with reinf. conc. deck and substructure, except piers 6 & 7 which are steel girders.
Roadway Width: 59'-0" f.f. 3'-2" safety curbs and 3'-0" median.
Load Frequency: CF = 2000 (57) adequate for AASHO alternate loading.
Wearing Surface: 1" Monolithic concrete.
Approach Slabs: 25' (special design).
Alignment: 4° Curve, 300' spiral, Tang., 300' spiral (S.B.) 350' spiral (N.B.)
Superelevation: Varies. Skew: Varies.



MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SITE PLAN
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673+21.71 — STA. 681+55.42

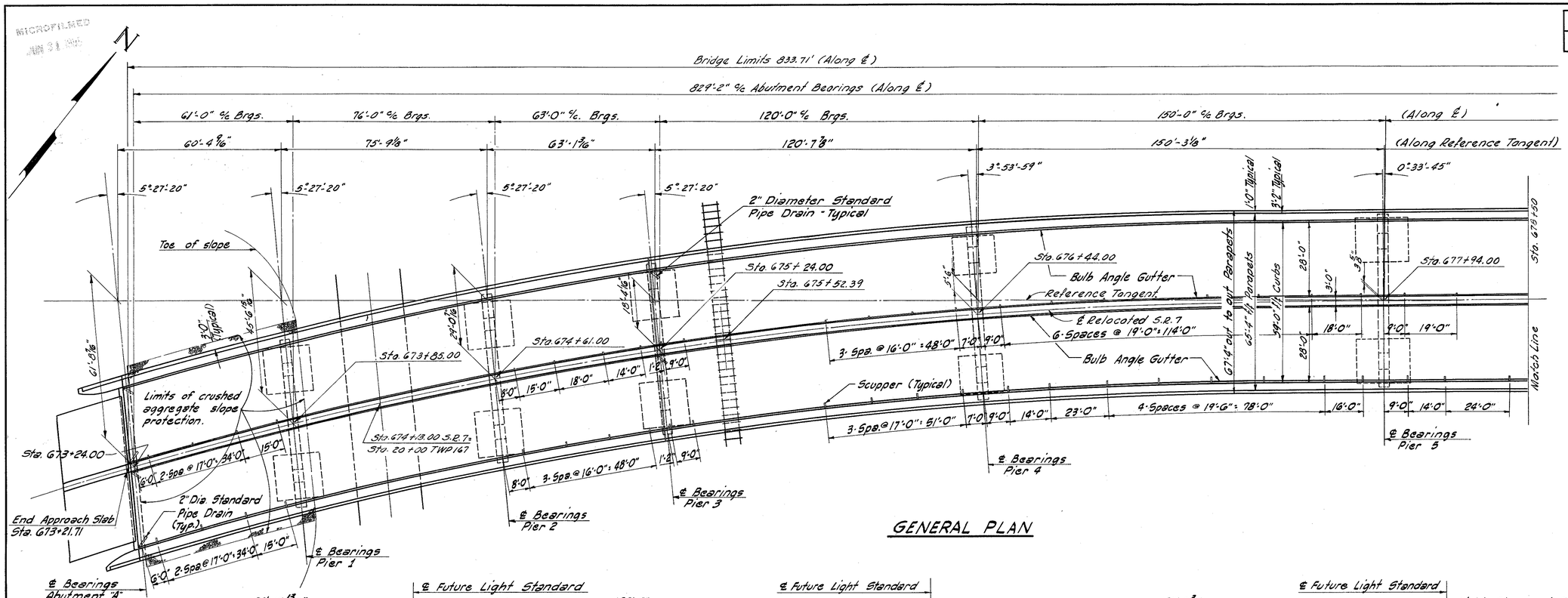
PRESENT TOPOGRAPHY		PROPOSED WORK			
Surveyed	Drawn	Designed	Drawn	Checked	Reviewed
	J.D.R.	J.D.R.	J.D.R.	P.M.	E.F.R. 2-25-60

MICROFILMED
JAN 31 1962

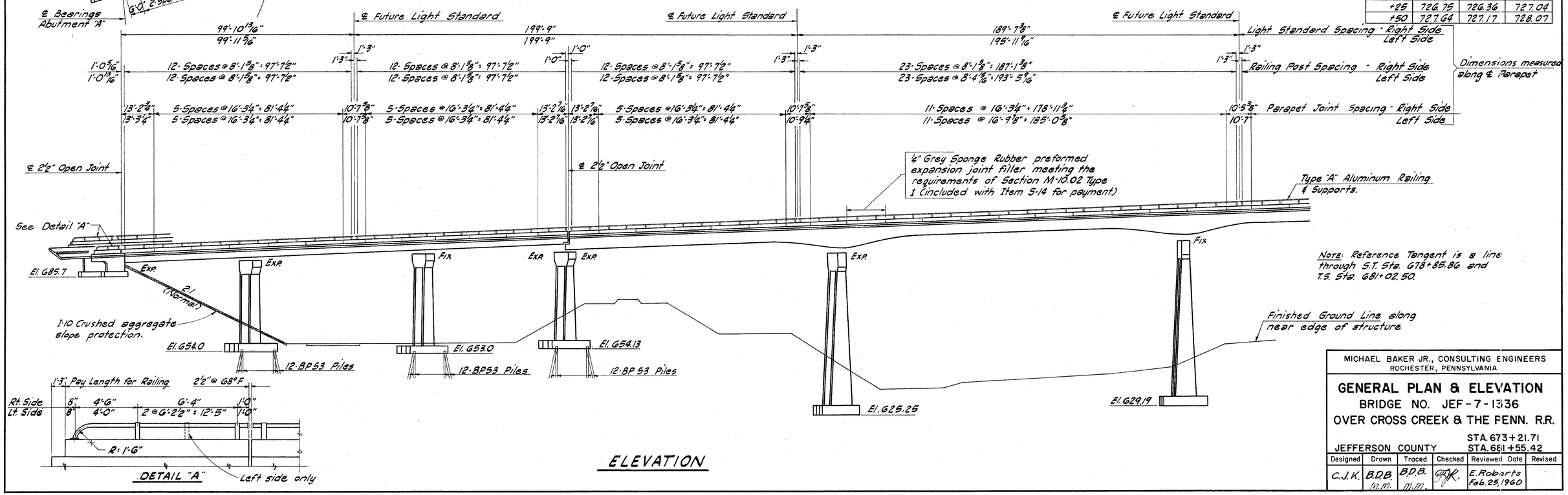
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

12/44

JEFFERSON COUNTY
JEF-7-13.36



GENERAL PLAN



DETAIL "A"

ELEVATION

PAVEMENT ELEVATIONS			
STATION	P.G.	LT. CURB	RT. CURB
673+25	698.36	700.21	696.52
+50	699.25	701.10	697.40
+75	700.14	701.99	698.29
674+00	701.03	702.87	699.18
+25	701.91	703.76	700.06
+50	702.80	704.65	700.95
+75	703.69	705.53	701.84
675+00	704.57	706.42	702.73
+25	705.46	707.31	703.61
+50	706.35	708.20	704.50
+75	707.23	709.07	705.40
676+00	708.12	709.88	706.36
+25	709.01	710.63	707.38
+50	709.90	711.39	708.41
+75	710.78	712.13	709.43
677+00	711.67	712.88	710.46
+25	712.56	713.63	711.49
+50	713.44	714.37	712.51
+75	714.33	715.12	713.54
678+00	715.22	715.87	714.57
+25	716.10	716.61	715.59
+50	716.99	717.36	716.57
+75	717.88	718.11	717.51
679+00	718.77	718.86	718.44
+25	719.65	719.64	719.37
+50	720.54	720.47	720.30
+75	721.43	721.31	721.24
680+00	722.31	722.16	722.18
+25	723.20	722.99	723.11
+50	724.09	723.84	724.04
+75	724.97	724.68	725.01
681+00	725.86	725.51	726.01
+25	726.75	726.36	727.04
+50	727.64	727.17	728.07

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

GENERAL PLAN & ELEVATION

BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673+21.71 / STA. 681+55.42

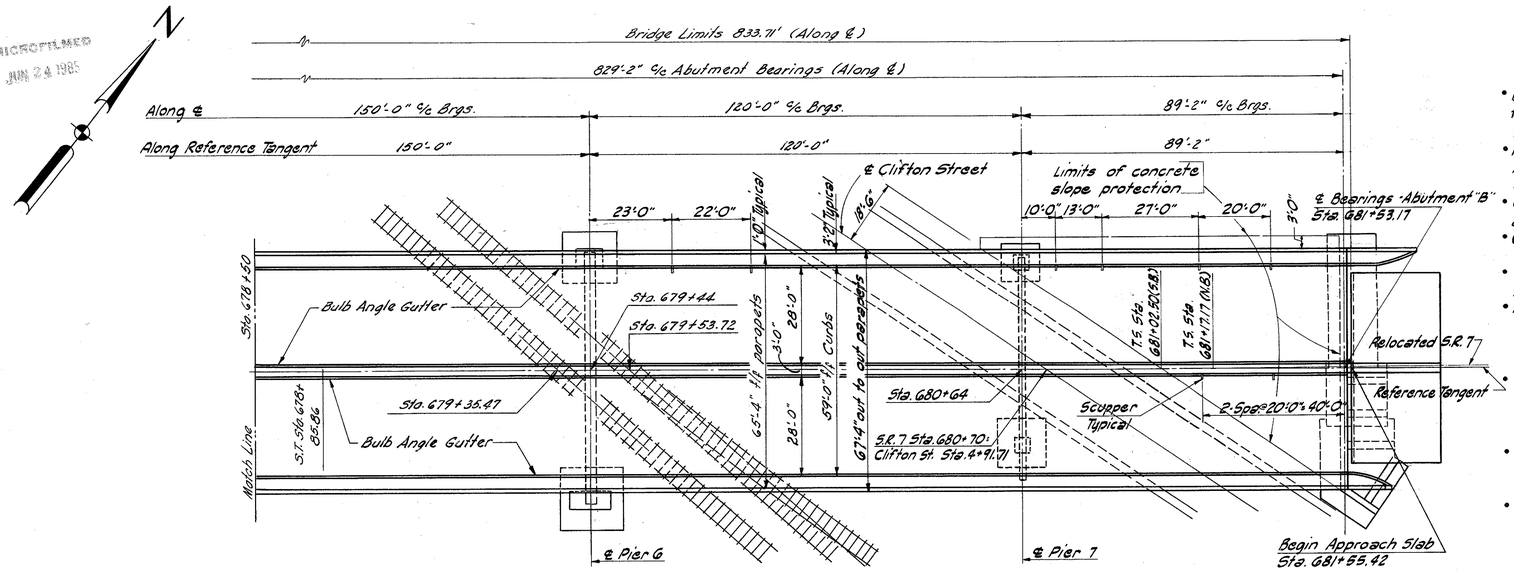
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
C.J.K.	B.D.B. M.M.	B.D.B. M.M.	J.K.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 24 1985

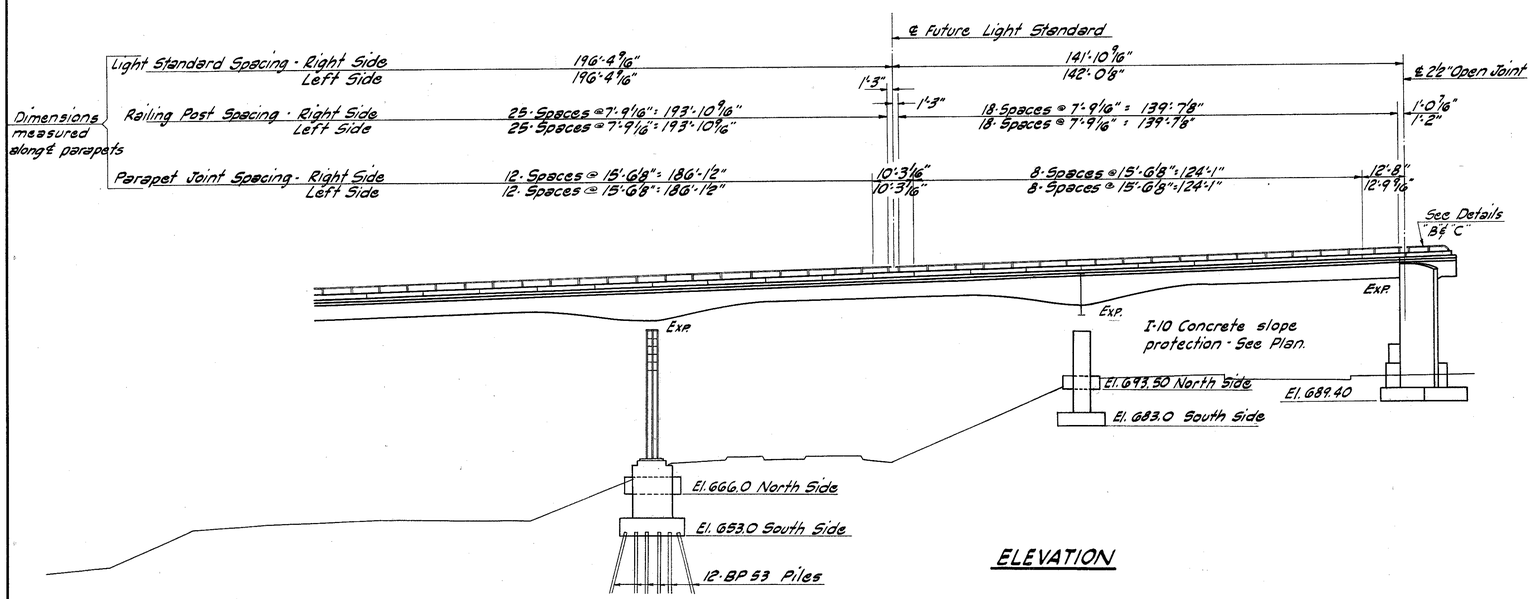
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430(13)	

13
44

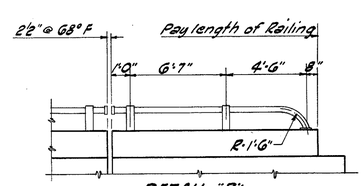
JEFFERSON COUNTY
JEF-7-13.36



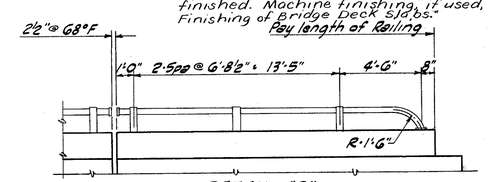
GENERAL PLAN



ELEVATION



DETAIL "B"
Right Side



DETAIL "C"
Left Side

GENERAL NOTES

- DESIGN SPECIFICATIONS: This structure conforms to the requirements of Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions there of.
- REFERENCE: shall be made to Standard Drawings CSB-2-56 (revised 2-2-59) sheets 2 and 3 of 6, AR-1-57 (revised 2-2-59) RB-1-55 revised 2-2-59); and to Supplemental Specification S 207 dated 4-28-55; and S-101 dated 12-2-59.
- CRUSHED AGGREGATE: slope protection meeting the requirements of Sec. I-10.04, shall cover the areas shown on General Plan and Elevation.
- CONCRETE SLOPE PROTECTION meeting the requirements of Sec. I-10.05 shall cover the areas shown on General Plan and Elevation.
- WELDING of structural steel shall be Class "A" except as shown (—<B) Welds shown as field welds may, at the option of the contractor, be made in the shop.
- BEARING PRESSURES: Maximum bearing pressures for sub-structure units are as follows:

Abutment "A"	3.2 Tons per sq. ft.	Pier 6 North Side	5.4 Tons per sq. ft.
Pier 4	6.0 Tons per sq. ft.	Pier 7	10.0 Tons per sq. ft.
Pier 5	7.4 Tons per sq. ft.	Abutment "B"	4.3 Tons per sq. ft.

- FOOTINGS: The Engineer shall inspect the entire area and insure that excavation goes to bedrock. Prolonged exposure to atmospheric conditions shall be averted. The excavation shall be kept drained at all times. Footings at Piers 4, 5, 6 North Side and 7, and at Abutment "B" shall extend a minimum of 6" into rock or shale, or to the elevation shown, which ever is lower.
- EMBANKMENT: Sufficient time has lapsed since the placing of the fill at Abutment "A" in JEF-7-11.35 that construction may begin immediately on Abutment "A". At Abutment "B" Clifton Street backslopes will be cut with JEF-7-13.53 as indicated on Sheet No 11.
- PILES shall be driven to firm contact with rock or shale. If the length of penetration is approximately equal to the depth to rock or shale 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 the following value for a pile hammer of the indicated energy rating: For Piers 1, 2 & 3 — 43 Tons per pile using an 11,000 ft. lb. hammer, 35 Tons per pile using a 15,000 ft. lb. or greater hammer. For Pier 6 South Side — 40 tons per pile using an 11,000 ft. lb. hammer, 40 tons per pile using a 15,000 ft. lb. or greater hammer. If the energy rating of the hammer is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 32 tons per pile for Pier 1, 35 tons per pile for Piers 2 and 3, and 40 tons per pile for Pier 6.
- PREBORED HOLES FOR PILES: Preboring, if necessary, at Pier 6, shall be done to insure that the piles will make firm contact with rock. However, such preboring shall be done in the amount and at the locations designated by the Engineer. Where piles are driven in prebored holes, I-22 material shall be poured in the hole around the steel-H pile and shall entirely fill the hole. The filling with I-22 material at each pile shall be done before driving of the pile is completed. The material shall be saturated with water to insure maximum compaction. Payment for I-22 Material and any necessary water used shall be included in the unit price bid for Item Special, Prebored Holes for Piles. Prebored holes for piles shall be 10" to 14" in diameter. The depth of the prebored holes may vary and, if deemed necessary by the Engineer, shall extend the full length of any pile or piles.
- SURFACE FINISH OF CONCRETE: Pier caps and columns of Piers 1, 2 & 7 together with the exposed faces of Abutment "B" shall receive a rubbed surface finish.
- RAILROAD AERIAL LINES shall be relocated by the railroad. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with the railroad in the relocation of these lines. The cost of relocation shall be included in the Rail Road force account work.
- MAINTENANCE AND PROTECTION OF TRAFFIC: Two lanes of traffic with a minimum horizontal width of 20'-0" shall be maintained on Twp. Road 167 and Clifton Street at all times. The contractor shall safe guard the traveling public by providing platforms, nets, or other suitable protection above the traveled lanes. A minimum vertical clearance of 12'-0" shall be provided at all times.
- CONSTRUCTION CLEARANCE of 19'-0" vertically above the top of the railroad rails and 8'-0" horizontally from the center of the tracks shall be maintained at all times.
- SHEETING AND BRACING: Before construction is started, eight sets of prints showing details of the sheeting and bracing to be used for excavation adjacent to the railroad tracks shall be submitted to the Director for approval by the Department of Highways and by the Railroad Company.
- UTILITY LINES: All labor and expense involved in relocating the affected lines shall be borne by the owners. The Contractor and owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.
- ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. E-2.04 and Sec. E-2.08 of the Construction and Materials Specifications, subject to the supervision of the Railroad Company, nothing in Sec. E-2.04, Sec. E-2.08, or Sec. G-8.07 of the Specifications shall be construed to hold the Contractor liable for aligning and re-surfacing the railroad tracks.
- MACHINE FINISH: At the Contractor's option, the top of the bridge deck slab may be machine finished. Machine finishing, if used, shall be in accordance with the proposal note "Machine Finishing of Bridge Deck Slabs."

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

GENERAL PLAN & ELEVATION

BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 — STA. 681 + 55.42

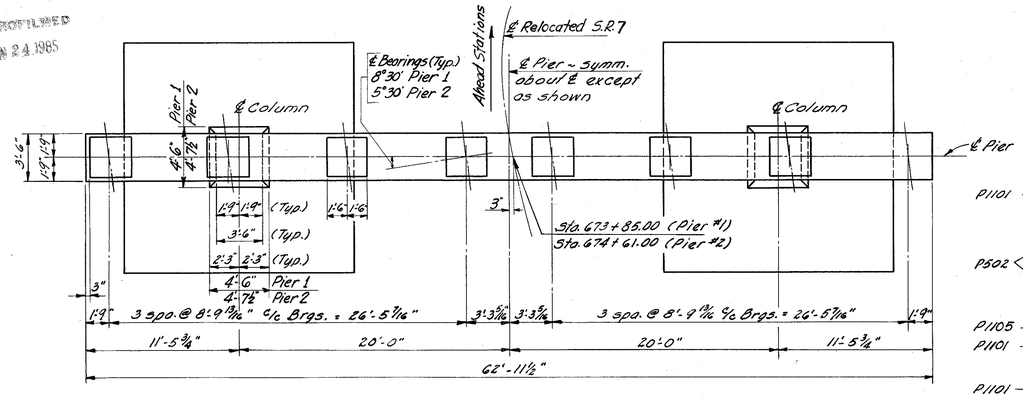
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
C.J.K.	B.D.B. M.M.	B.D.B. M.M.	GJK.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

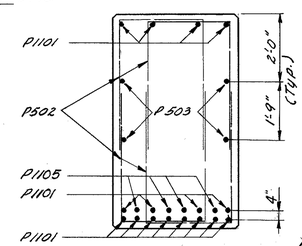
14
44

JEFFERSON COUNTY
JEF-7-13.36



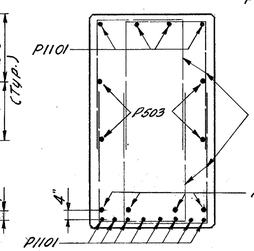
PLAN

For location and layout of piers see General Plan & Elevation, sht. #12



Spacing typical unless otherwise shown.

SECTION E-E



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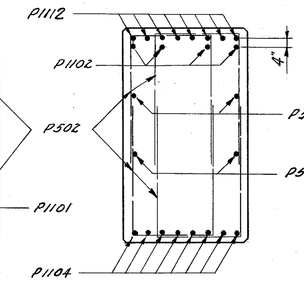

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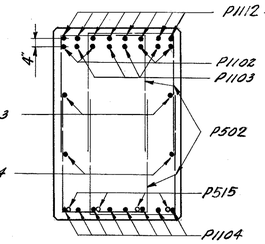

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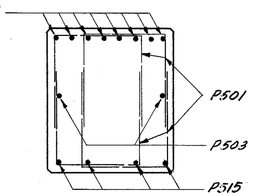
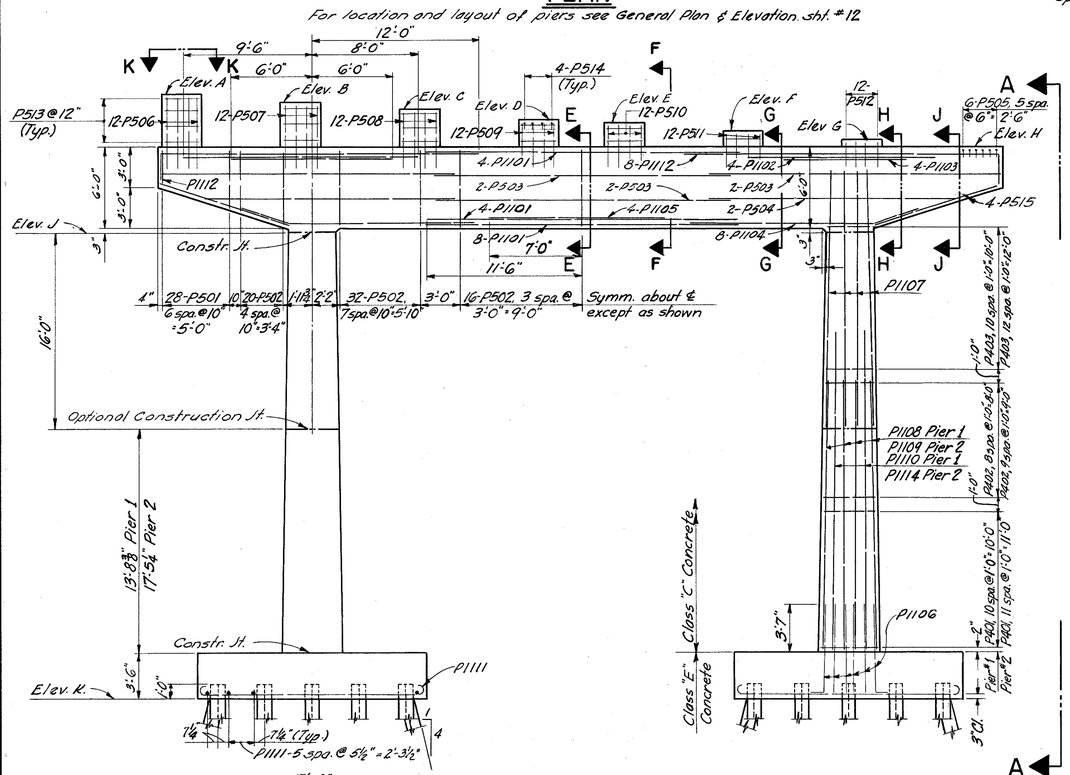
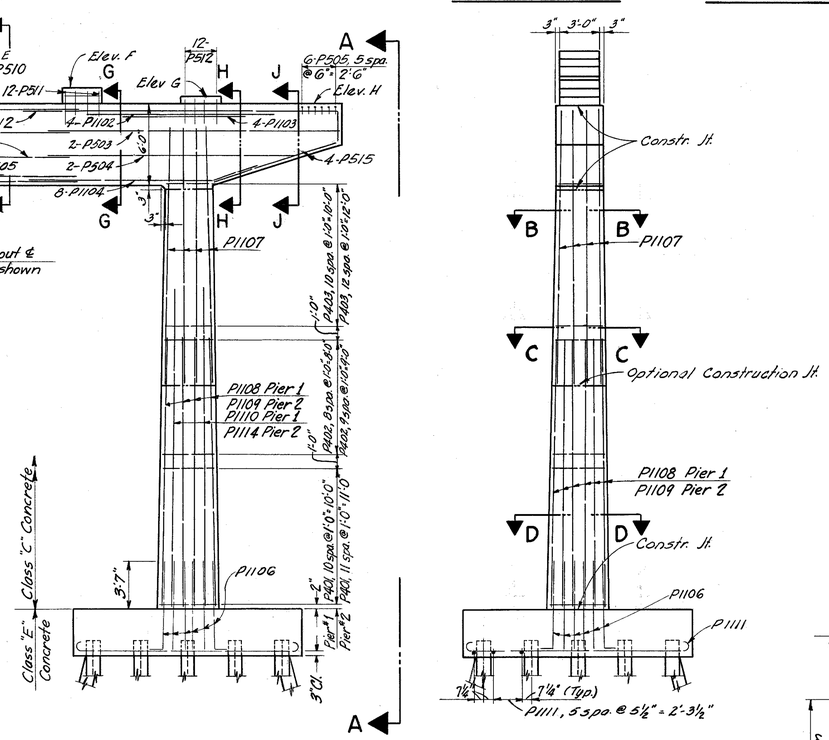


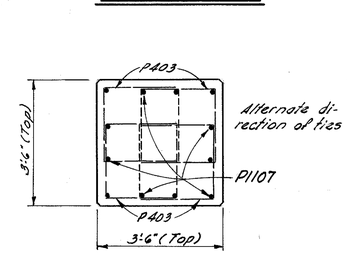
SECTION J-J



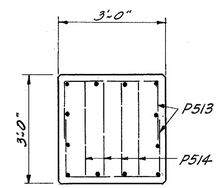
ELEVATION



VIEW A-A

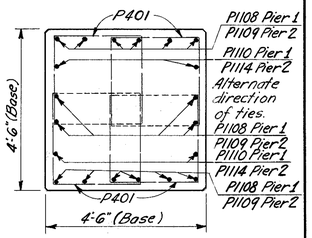


SECTION B-B

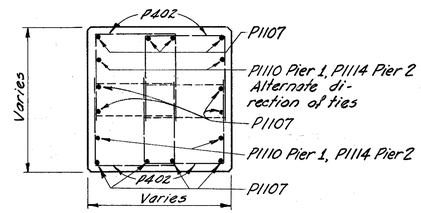


VIEW K-K

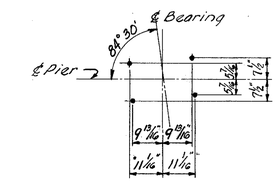
Typical, for Bearing Seats A, B, C, D, E, F & G



SECTION D-D



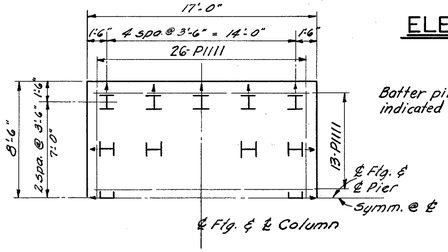
SECTION C-C



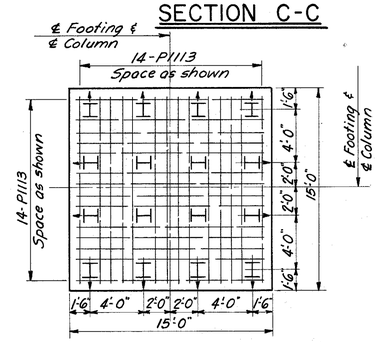
ANCHOR BOLT LAYOUT

(Pier #2 only)

Batter piles 1:4 where indicated by arrows.



HALF FOOTING PLAN-PIER 2



FOOTING PLAN-PIER 1

(Dimensions and Details not shown are similar to Pier 2)

TABLE OF ELEVATIONS										
LOCATION	A	B	C	D	E	F	G	H	J	K
Pier -1-	697.45	696.83	696.20	695.58	695.32	694.70	694.07	693.45	687.20	654.00
Pier -2-	700.10	699.49	698.88	698.27	698.02	697.41	696.80	696.19	689.94	653.00

NOTES:
Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes at Pier #2.

For electrical grounds see sheet # 38

PILES: The design load is 35 tons per pile.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIERS 1 & 2
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN RR

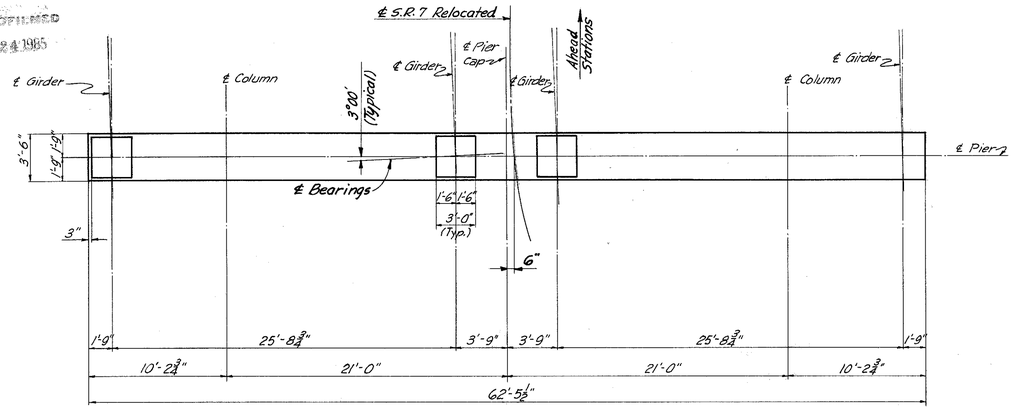
JEFFERSON COUNTY
STA. 673+21.71
STA. 681+55.42

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
J.M.	BDB	BDB	G.M.W.	E. Roberts	Feb 25, 1960	

MICROFILMED
JUN 24 1965

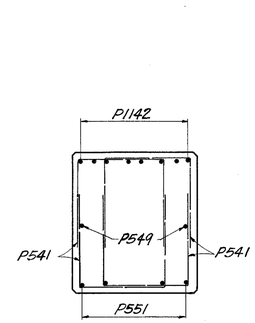
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

JEFFERSON COUNTY
JEF-7-13.36

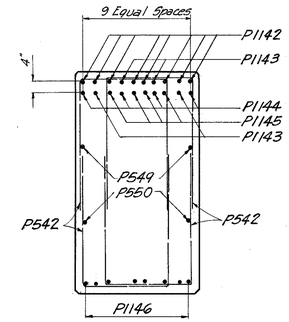


For location and layout of piers see General Plan & Elevation sheet #12.

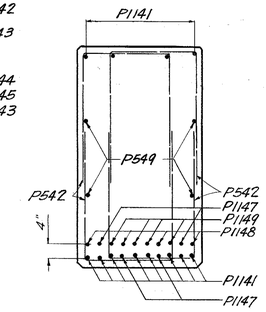
PLAN



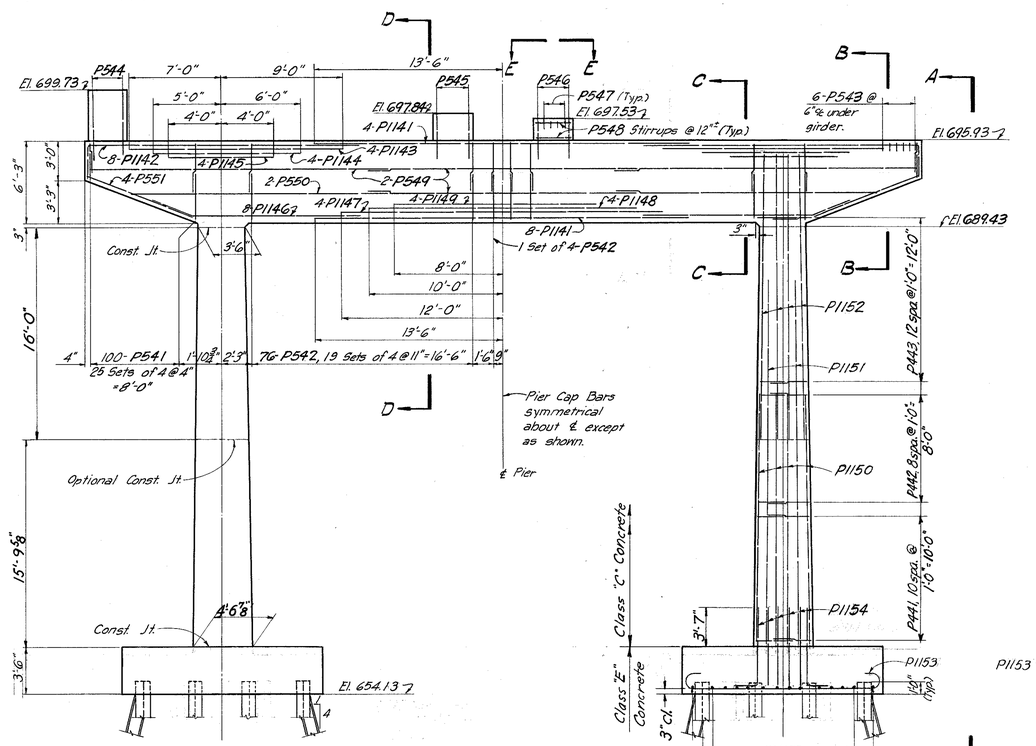
SECTION B-B



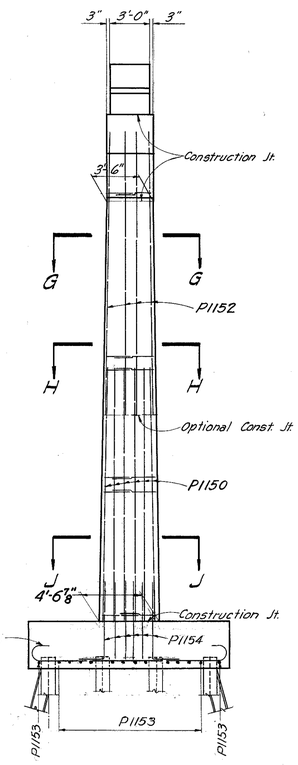
SECTION C-C



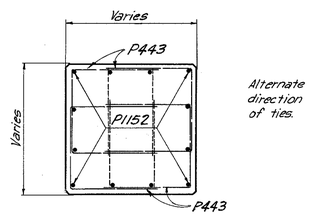
SECTION D-D



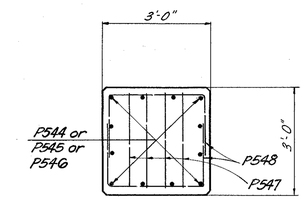
ELEVATION



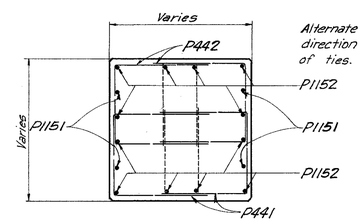
VIEW A-A



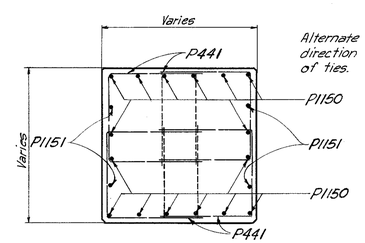
SECTION G-G



VIEW E-E
Typical for Pedestals



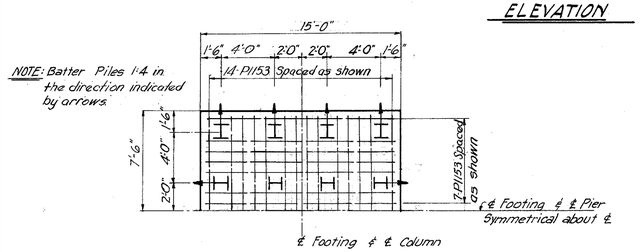
SECTION H-H



SECTION J-J

NOTE

PILES: The design load is 35 tons per pile.



NOTE: Batter Piles 1:4 in the direction indicated by arrows.

HALF FOOTING PLAN

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIER 3
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. RR

JEFFERSON COUNTY — STA. 673 + 21.71 — STA. 681 + 55.42

Designed	Drawn	Traced	Checked	Reviewed-Date	Revised
G.M.W.	M.S.	M.S. J.A.	G.M.W.	H.G.H. 1-26-60 E.F.R. 2-25-60	

60-8-3

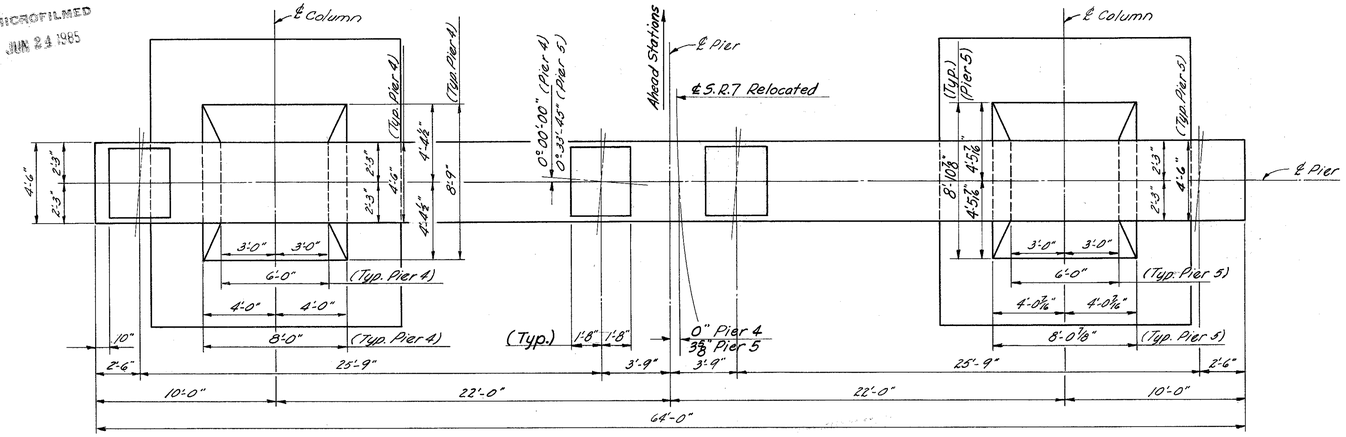
K+E 108 IMPERIAL TRACING CLOTH T.M.

MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

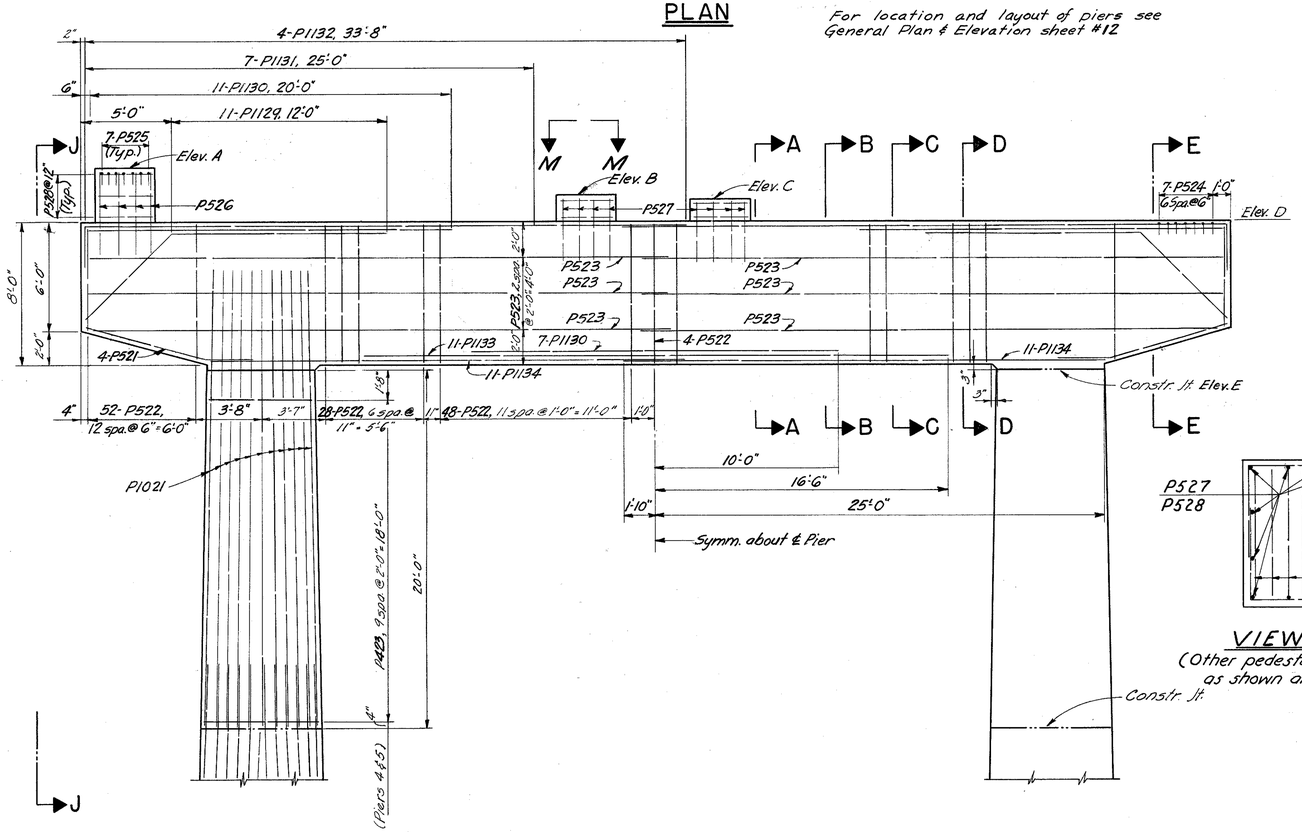
16/44

JEFFERSON COUNTY
JEF-7-13.36

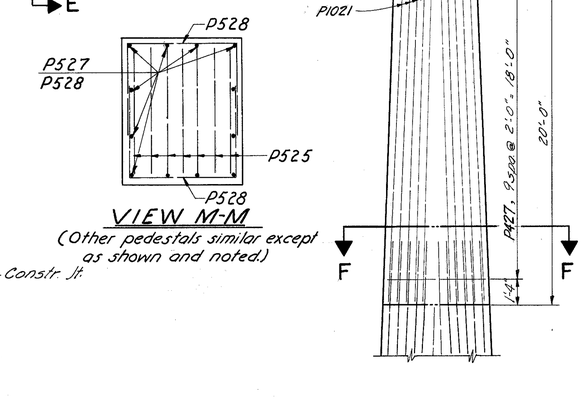


PLAN

For location and layout of piers see General Plan & Elevation sheet #12

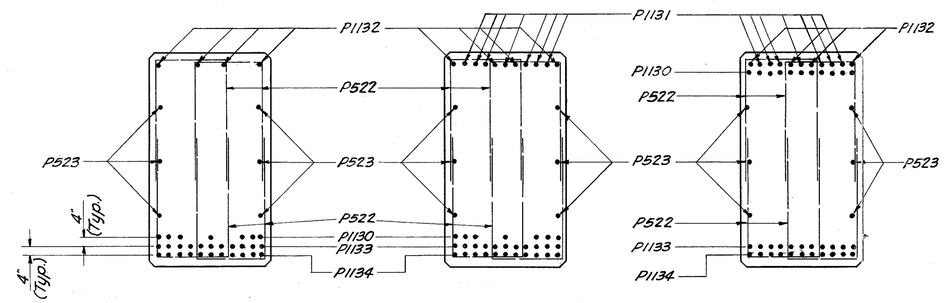


ELEVATION



VIEW M-M

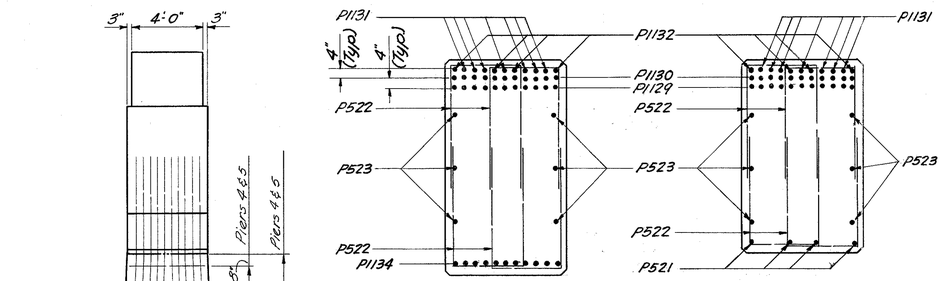
(Other pedestals similar except as shown and noted.)



SECTION A-A

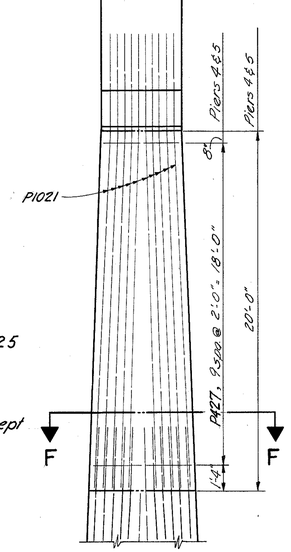
SECTION B-B

SECTION C-C

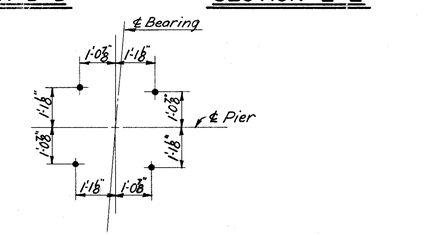


SECTION D-D

SECTION E-E



VIEW J-J



ANCHOR BOLT LAYOUT

(Pier 5 Only)

NOTES:
Special care shall be taken in placing reinforcing steel in the bridge seat so that it will not interfere with the drilling of anchor bolt holes at Pier #5.

For electrical grounds see sheet # 38

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIERS 4 & 5
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

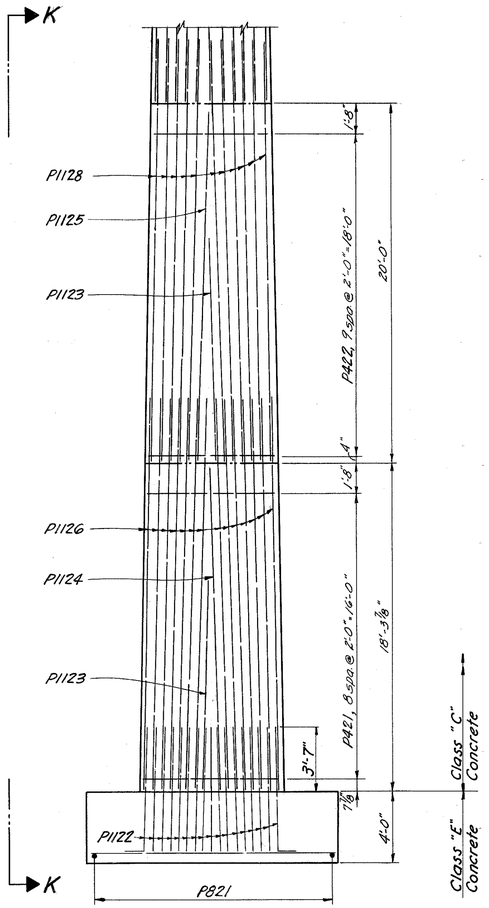
JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.A	B.D.B.	B.D.B. J.A.	E.F.R.	E. Roberts	Feb. 25, 1960	

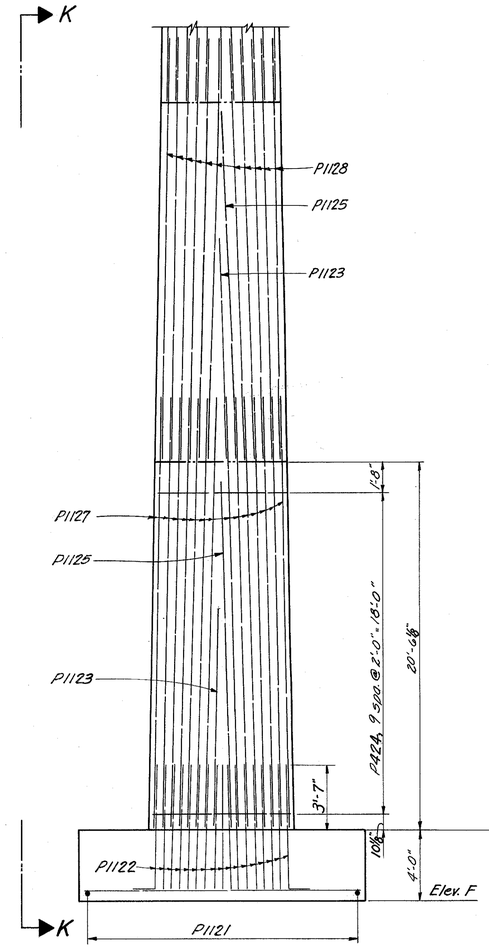
MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430(13)	

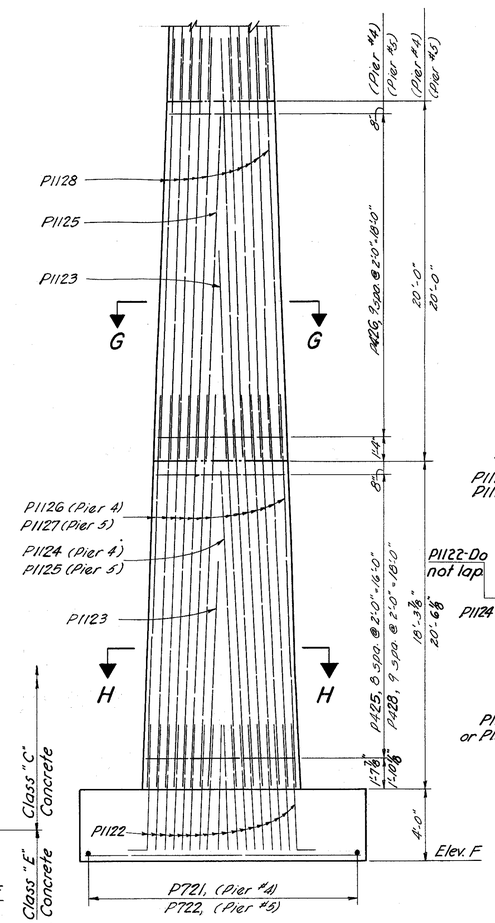
JEFFERSON COUNTY
JEF-7-13.36



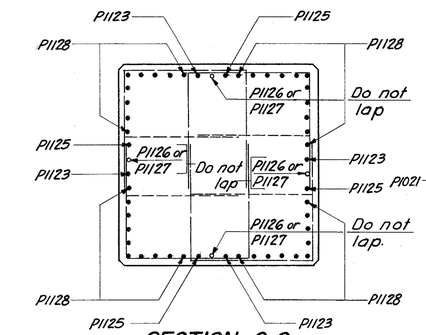
TYP. COLUMN (PIER 4)



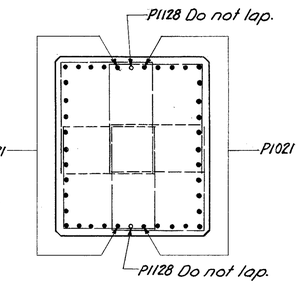
TYP. COLUMN (PIER 5)



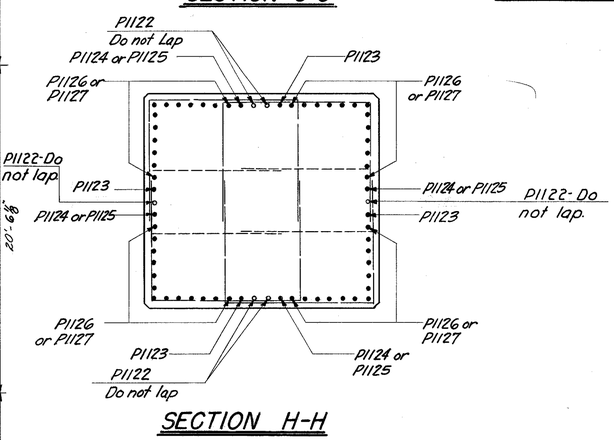
VIEW K-K



SECTION G-G

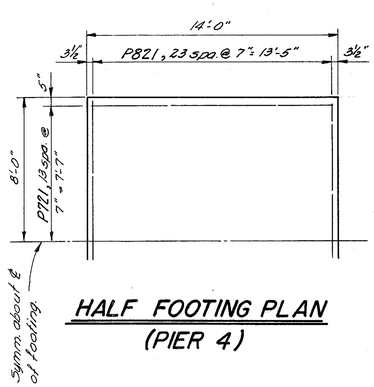


SECTION F-F

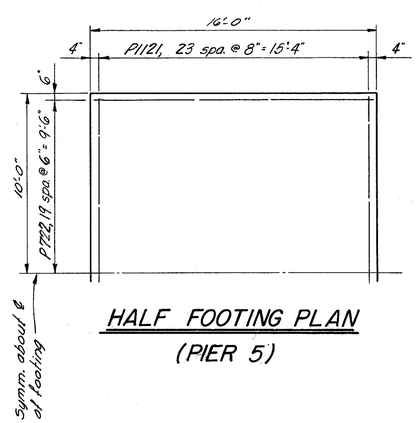


SECTION H-H

NOTE: Alternate direction of ties.



HALF FOOTING PLAN
(PIER 4)



HALF FOOTING PLAN
(PIER 5)

TABLE OF ELEVATIONS						
LOCATION	A	B	C	D	E	F
Pier 4	698.87	697.32	697.07	695.82	687.57	625.25
Pier 5	703.31	702.54	702.43	701.95	693.70	629.19

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIERS 4 & 5
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

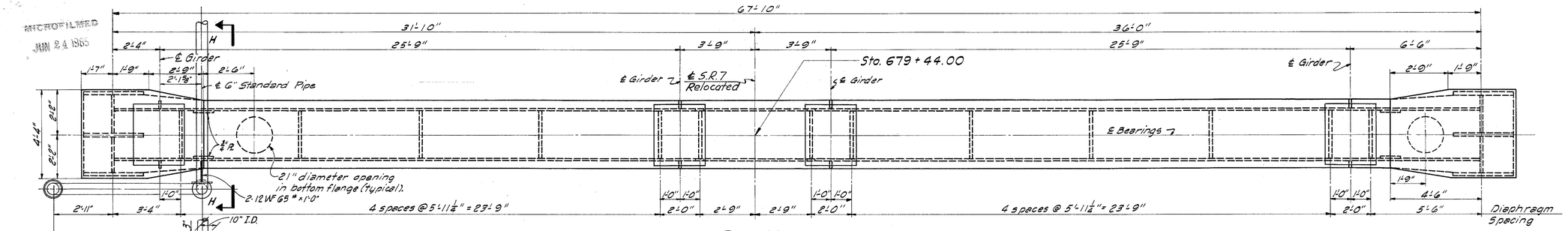
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
F.A	B.D.B	B.D.B JA	E.F.R.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 24 1965

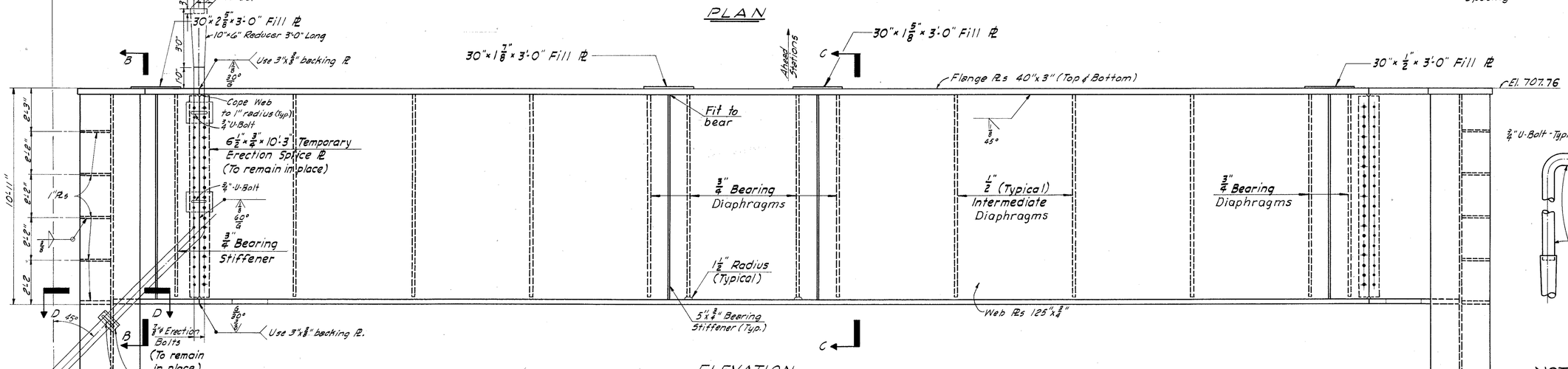
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

18/44

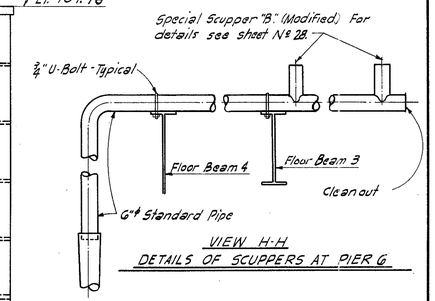
JEFFERSON COUNTY
JEF-7-13.36



PLAN

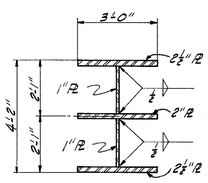


ELEVATION

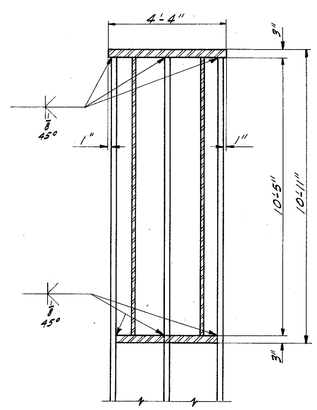


VIEW H-H
DETAILS OF SCUPPERS AT PIER 6

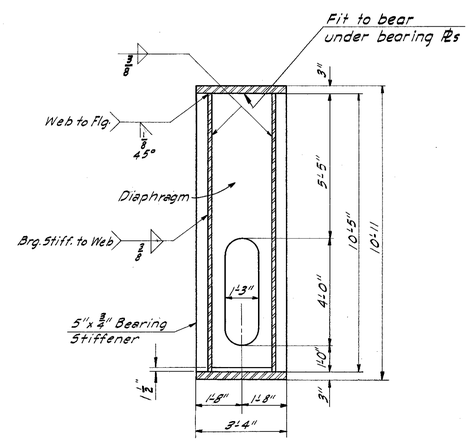
NOTE:
For Painting see sheet No. 27.



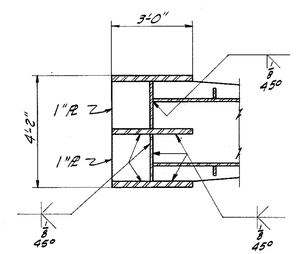
SECTION A-A



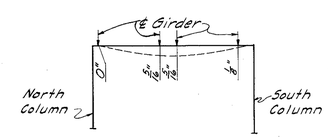
SECTION B-B



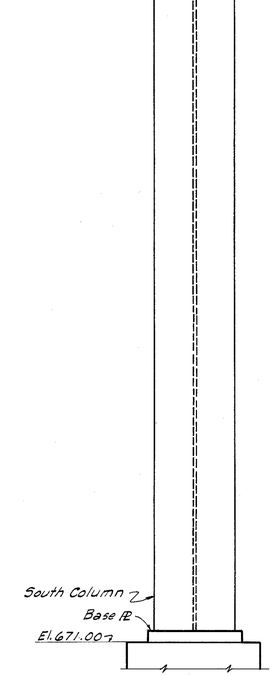
SECTION C-C



SECTION D-D



DEAD LOAD DEFLECTION OF CAP
No Camber Required



MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIER 6
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. RR

JEFFERSON COUNTY — STA. 673 + 21.71 — STA. 681 + 55.42

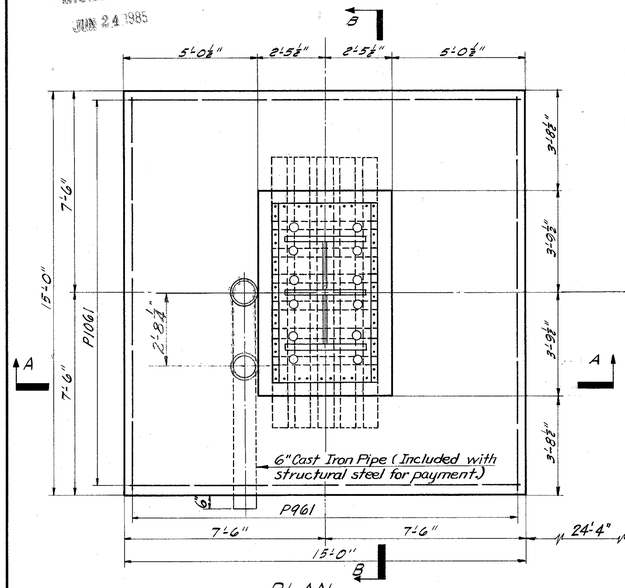
Designed	Drawn	Traced	Checked	Reviewed-Date	Revised
D.E.B.	A.C.M.	A.C.M.	G.S.W.	H.G.H. 1-26-60 E.F.R. 2-23-60	

60-B-1

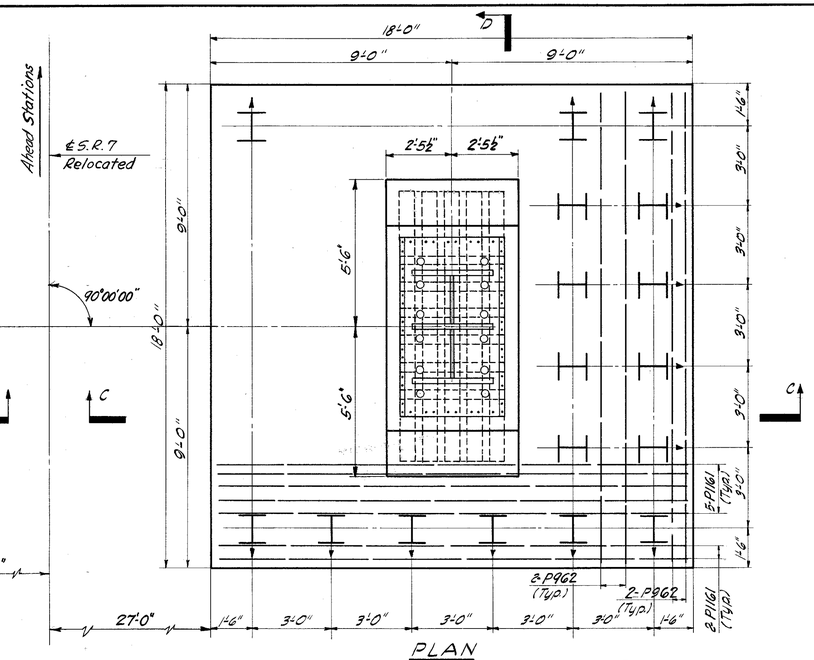
MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

JEFFERSON COUNTY
JEF-7-13.36



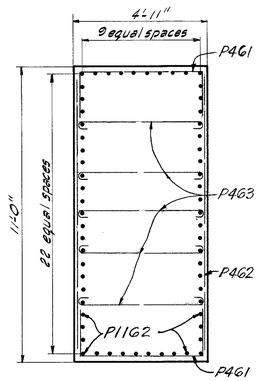
PLAN



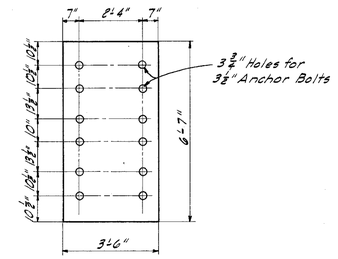
PLAN

For location and layout of Pier see General Plan & Elevation Sheet #13.

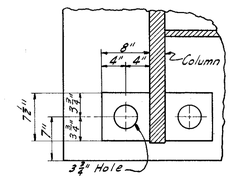
NOTE:
Use 36-12 BP53. Piles under Column not shown. Batter all exterior piles 1:4 in direction indicated.



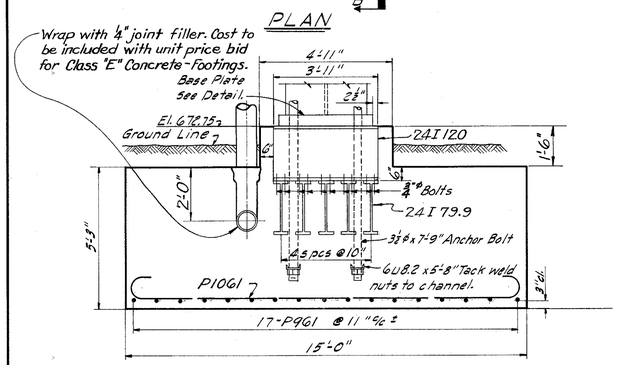
SECTION E-E



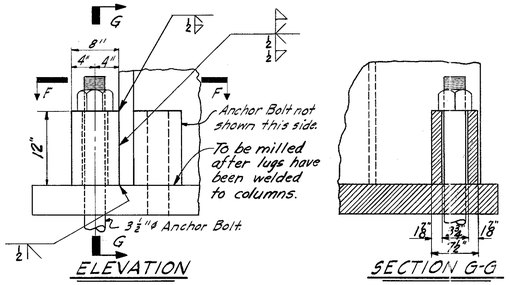
BASE PLATE DETAIL
42"x 5" x 6'-7" Base PL



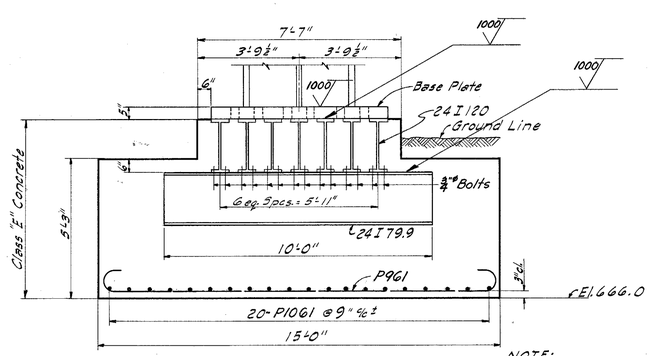
SECTION F-F
Anchor Bolt Not Shown



SECTION A-A



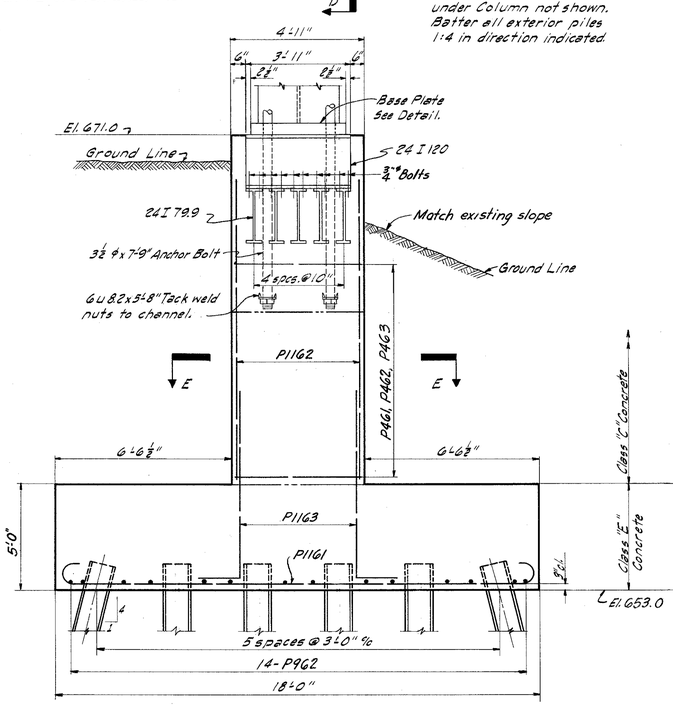
ANCHOR BOLT DETAIL



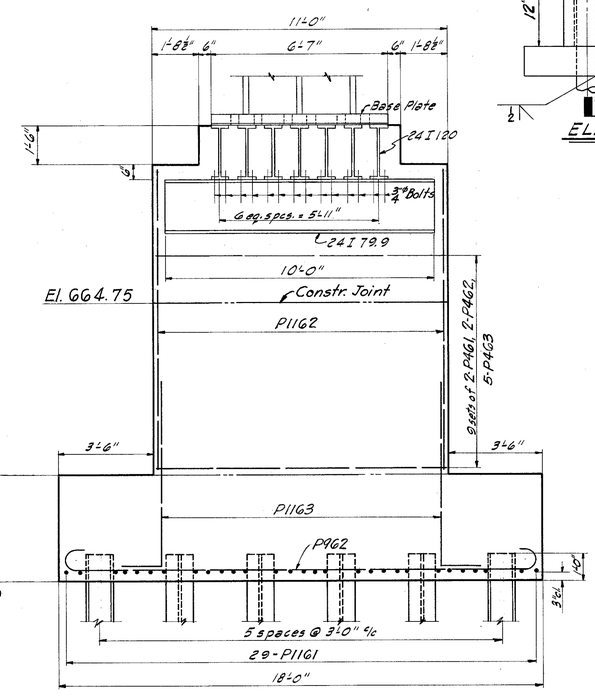
SECTION B-B

NOTE:
Anchor Bolts not shown.

FOOTING - NORTH COLUMN



SECTION C-C



SECTION D-D

FOOTING - SOUTH COLUMN

NOTES

Footing for north column is designed for a maximum bearing pressure of 5 tons per sq. ft.

The design load for piles is 40 tons per pile

Grillage beams shall be finished to exact equal depths for each group, shop assembled and checked for full contact on base plate.

Contractor shall provide adjustable temporary supports for grillages. Temporary supports, left in place shall be incidental to other items of work.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIER 6
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. RR

JEFFERSON COUNTY
STA. 673 + 21.71
STA. 681 + 55.42

Designed	Drawn	Traced	Checked	Reviewed-Date	Revised
D.E.B.	A.C.M.	A.C.M. J.A.	D.E.B.	H.G.H. 1-26-60 E.F.R. 2-25-60	12-1-60

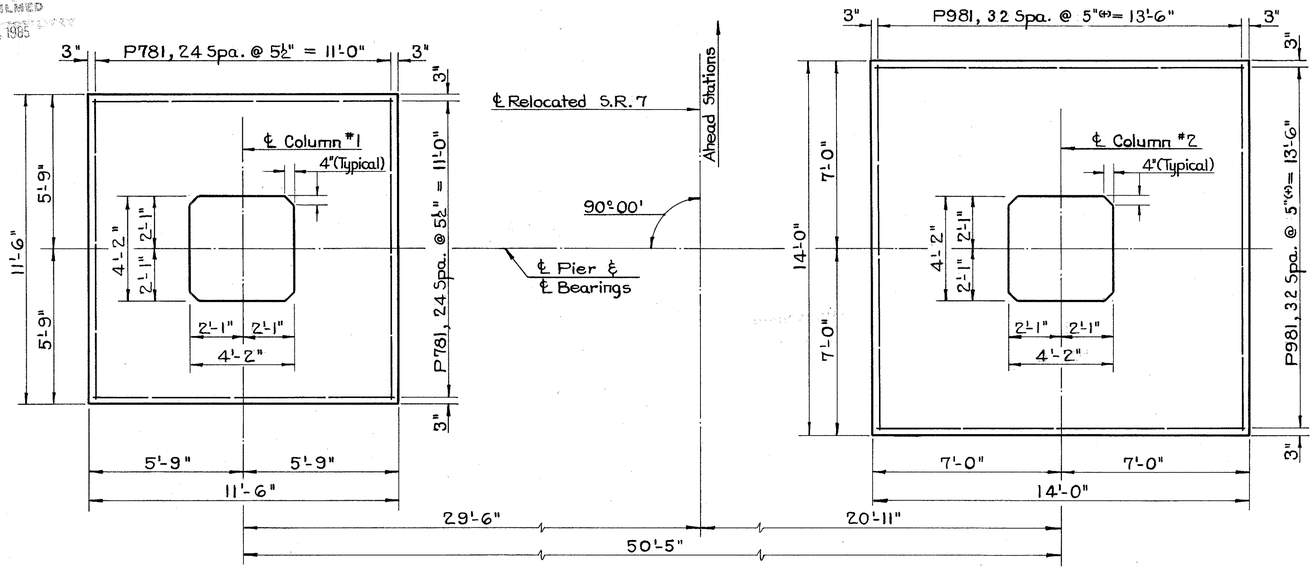
60-B-2

K+E 100 IMPERIAL DRAWING CLOTH 10 X 10 63900

MICROFILMED
JUN 24 1965

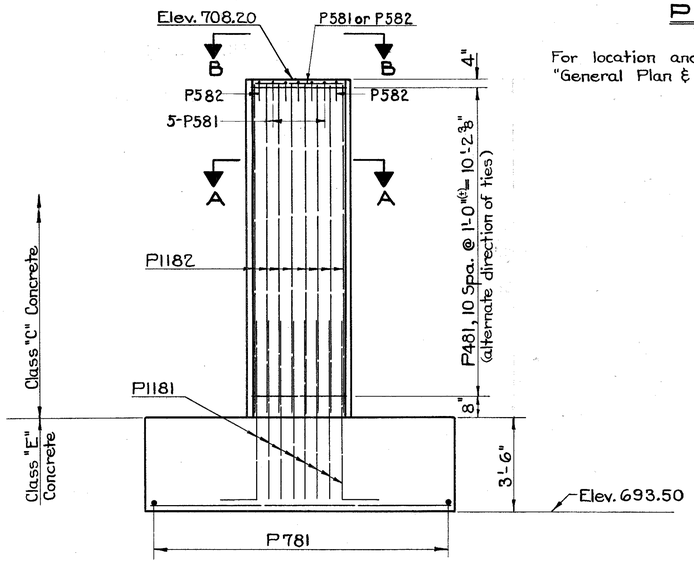
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430(13)	

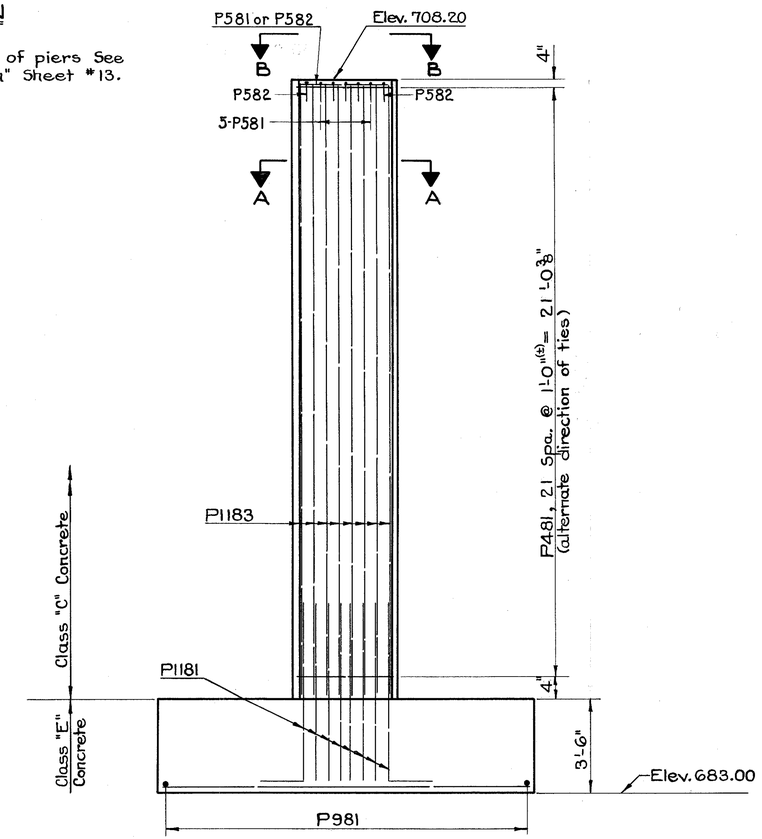
JEFFERSON COUNTY
JEF-7-13.36



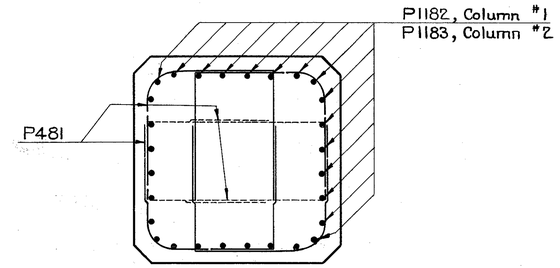
PLAN

For location and layout of piers See "General Plan & Elevation" Sheet #13.

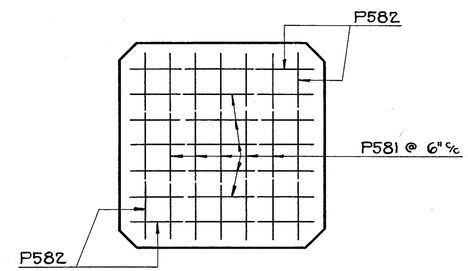




ELEVATION



SECTION A-A



VIEW B-B

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

PIER 7
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN.R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 631 + 55.42

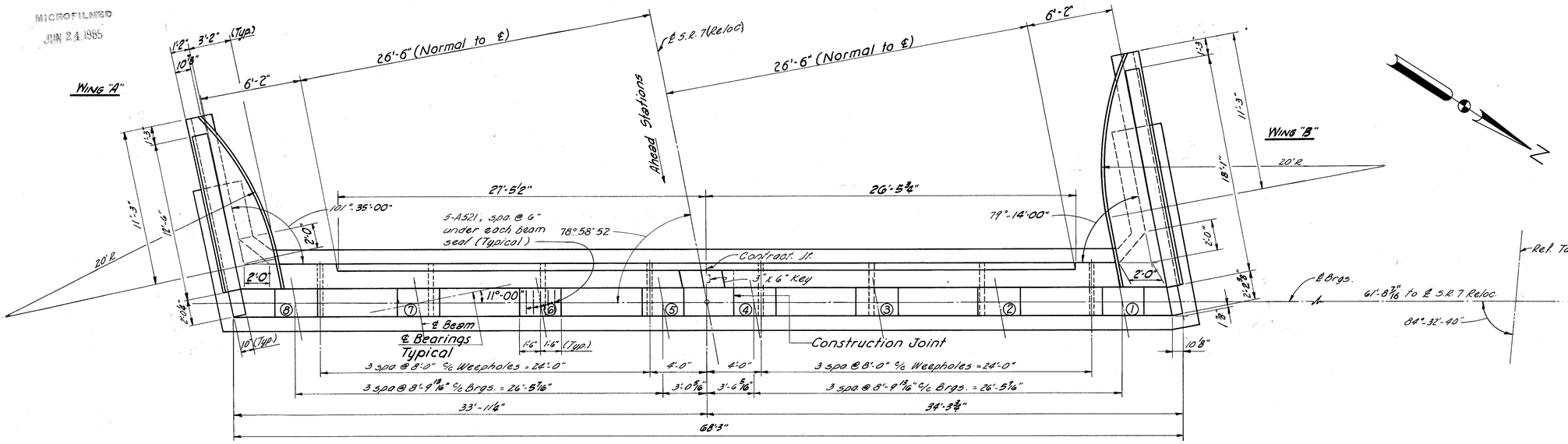
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
P.M.	B.D.B.	G.H.	E.F.R. V.C.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 24 1985

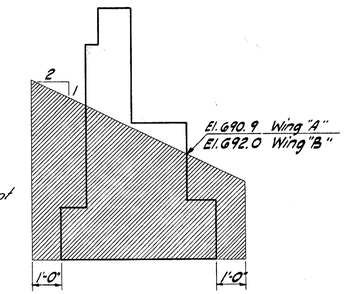
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	U-430 (13)	

21/44

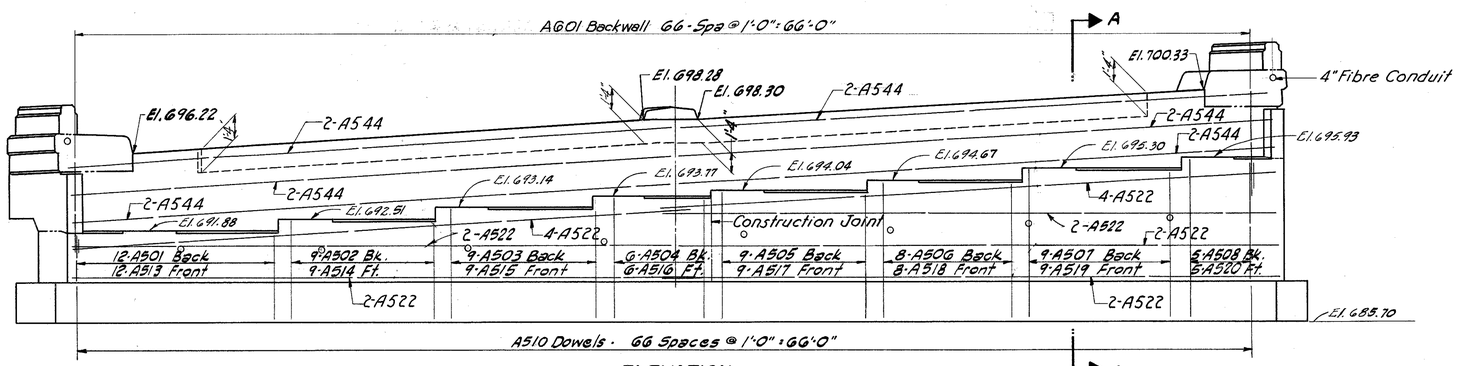
JEFFERSON COUNTY
JEF-7-13.36



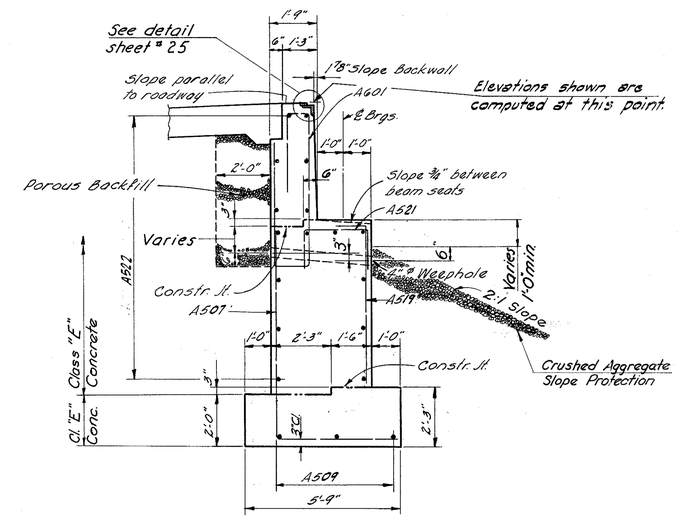
PLAN



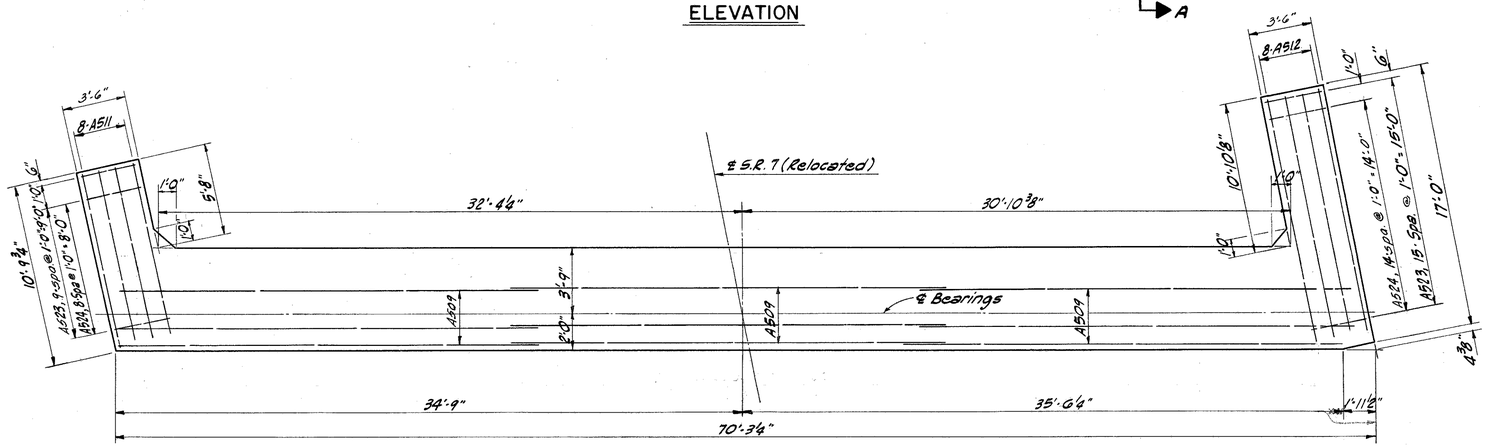
SKETCH SHOWING LIMITS OF UNCLASSIFIED EXCAVATION



ELEVATION



SECTION A-A



FOOTING PLAN

LEGEND
Bk. = Back Face
Ft. = Front Face

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

ABUTMENT A DETAILS

BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673+21.71 / STA. 681+55.42

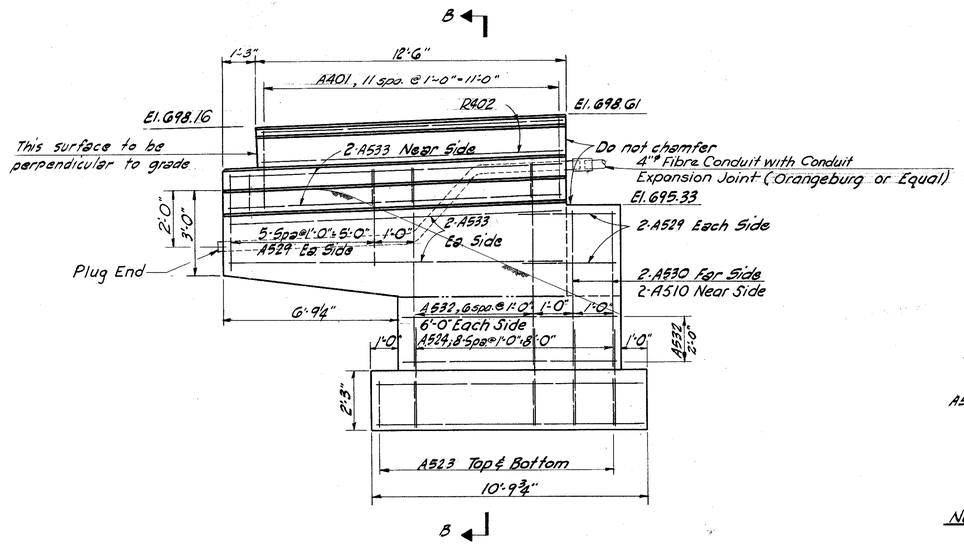
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
B.S.	K.E.A.	B.D.B. M.M.	A.S.J.	E. Roberts	Feb. 25, 1960	7-12-60

MICROFILMED
JUN 24 1985

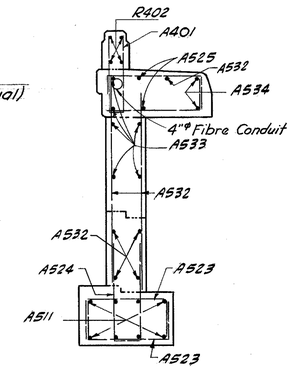
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

22/44

JEFFERSON COUNTY
JEF-7-13.36



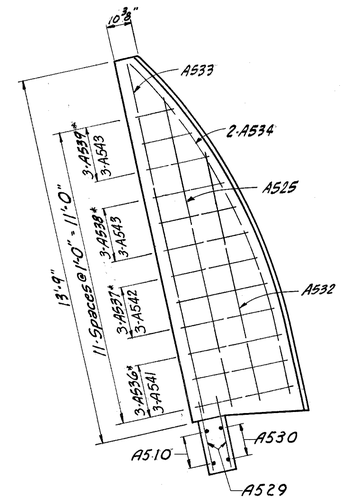
ELEVATION - WING "A"



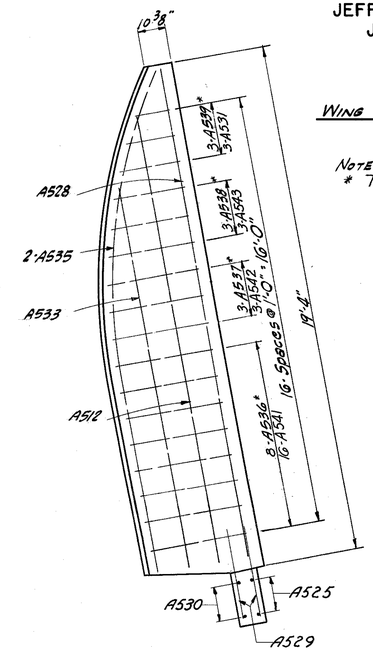
SECTION B-B

Note: Dimensions not shown are similar to those of Section A-A

WING "A"

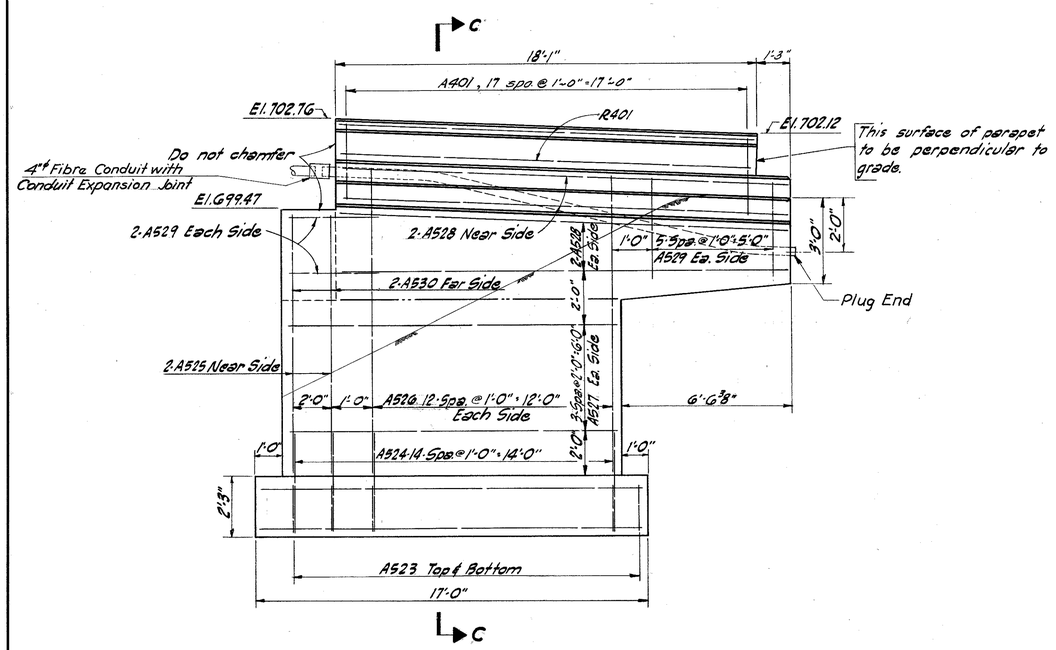


WING "B"

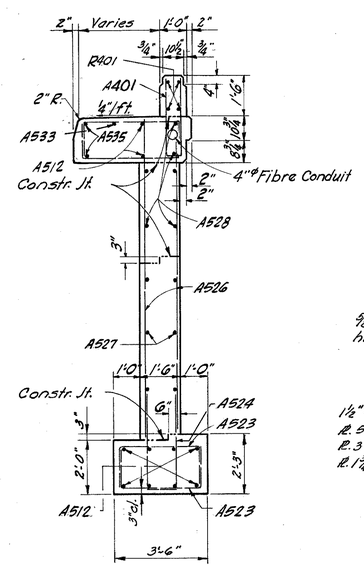


Note:
* Top

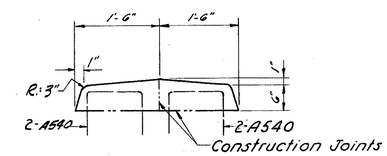
SAFETY CURB REINFORCEMENT



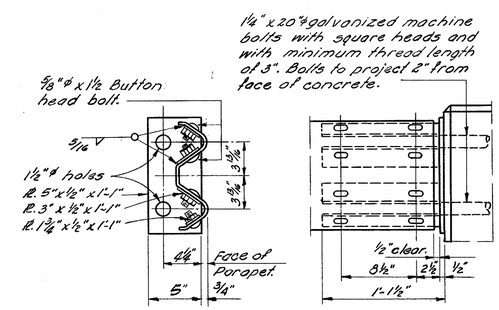
ELEVATION - WING "B"



SECTION C-C



MEDIAN DETAIL



GUARD RAIL ATTACHMENT DETAILS

Guardrail end connection assembly shall be galvanized after welding.

Guardrail end connection to be included with Item 514, Railing, for payment.

Notes:

Porous backfill 2'-0" thick as shown in Section A-A full length of abutments and wingwalls, shall extend from elevations shown to underside of approach slab and wing curb.

All abutment concrete shall be Class "E"

All parapet concrete shall be Class "C"

Parapet concrete and reinforcing steel shall be included with Item 5-14, Railing, for payment.

For abutment backwall contraction joint see Abutment "B" Sheet No. 23.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

ABUTMENT A DETAILS

BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

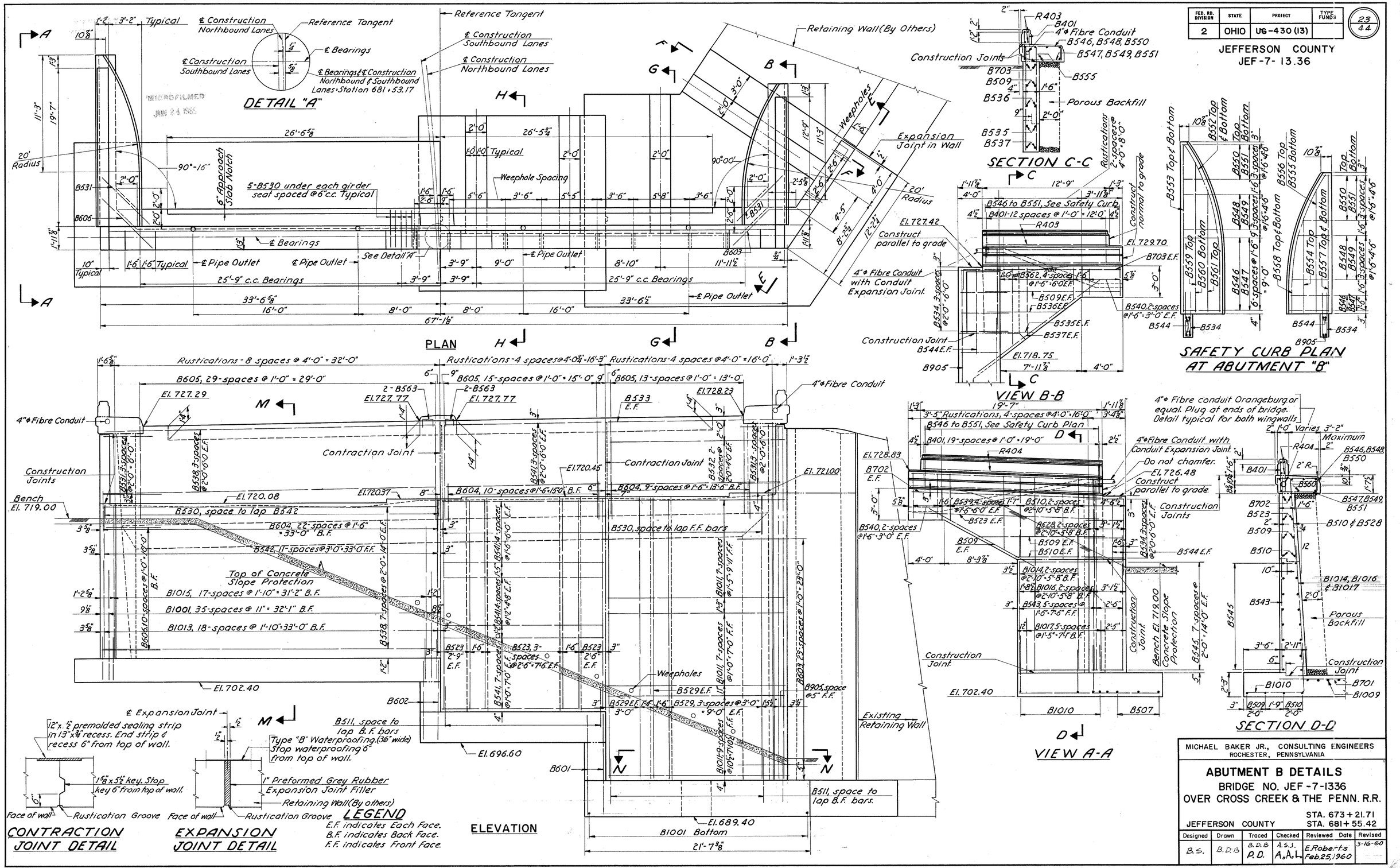
JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
B.S.	K.E.A.	B.D.B. M.M.	A.S.J.	E. Roberts	Feb. 25, 1960	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

23/44

JEFFERSON COUNTY
JEF-7-13.36



MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

ABUTMENT B DETAILS

BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673+21.71 — STA. 681+55.42

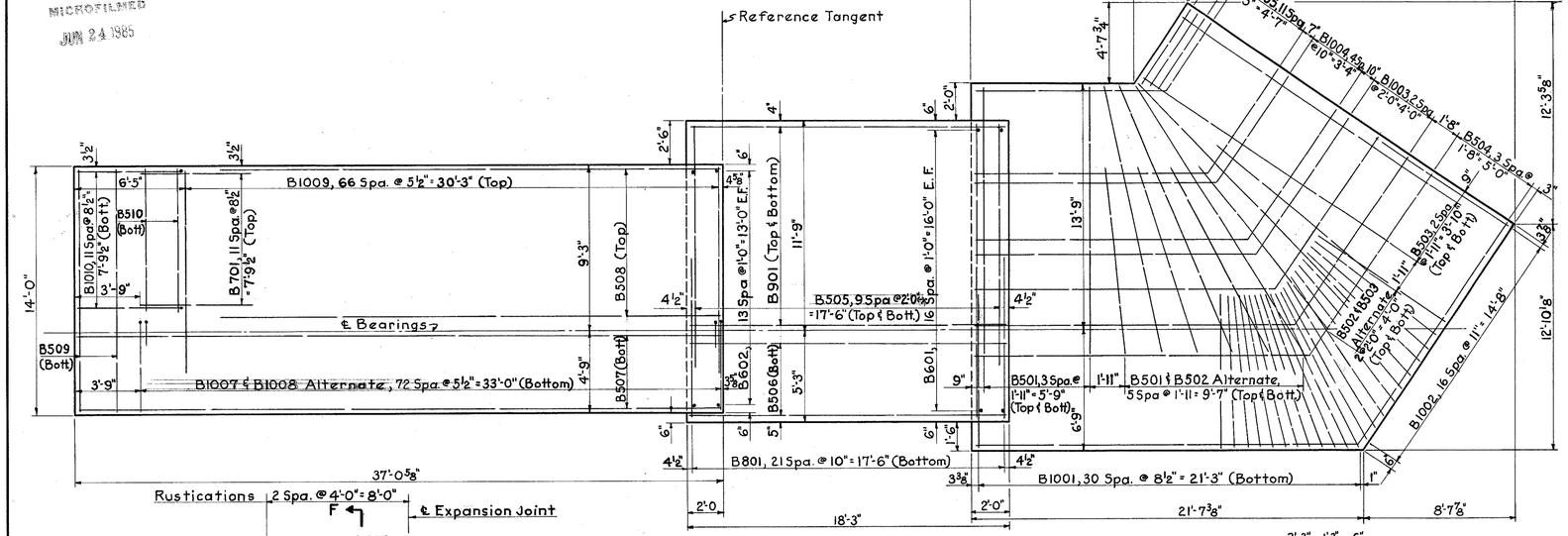
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
B.S.	B.D.B	B.D.B P.D.	A.S.J. A.A.L.	E.Roberts Feb.25,1960	3-16-60	

MICROFILMED
JUN 24 1985

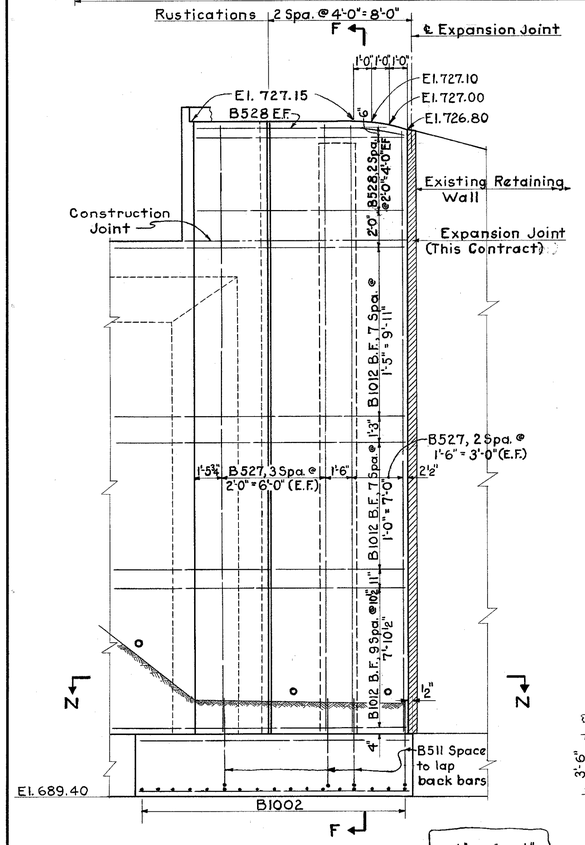
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

24/44

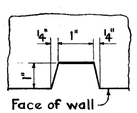
JEFFERSON COUNTY
JEF-7-13.36



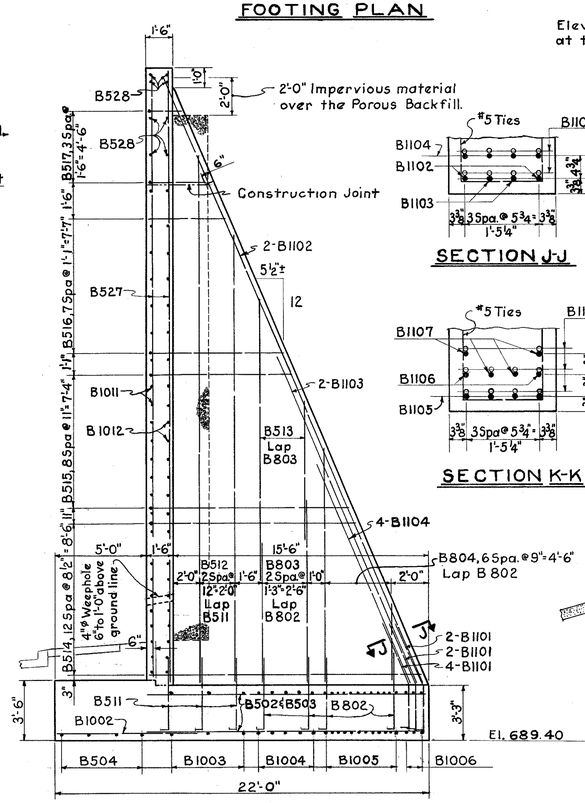
FOOTING PLAN



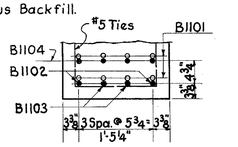
VIEW E-E



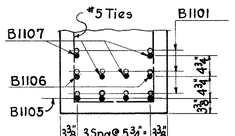
DETAIL OF RUSTICATION GROOVE



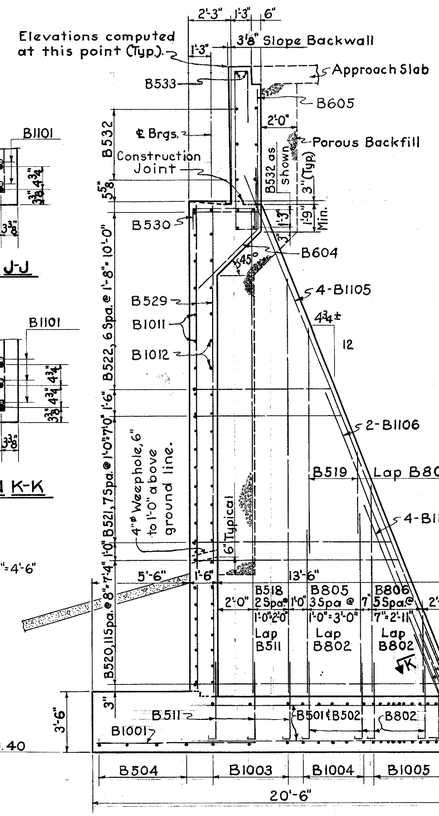
SECTION F-F



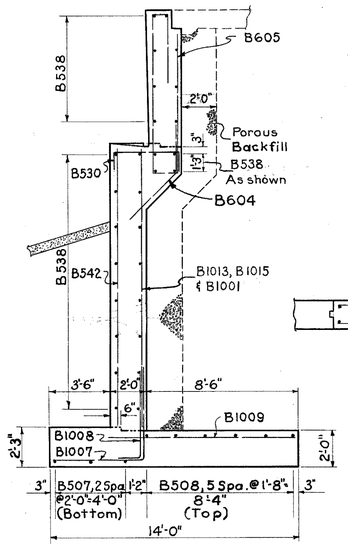
SECTION J-J



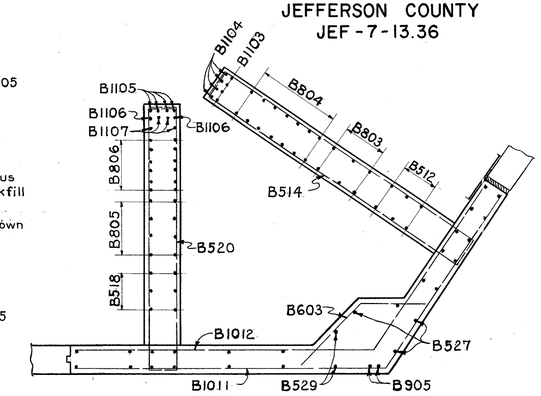
SECTION K-K



SECTION G-G



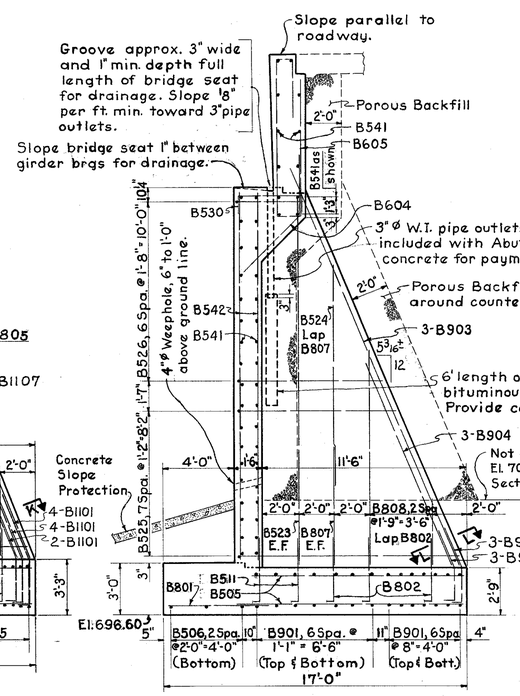
SECTION M-M



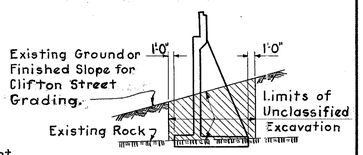
SECTION N-N

NOTES:

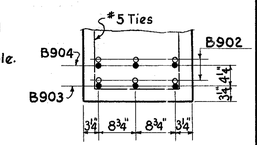
- All abutment concrete shall be Class "E".
- All parapet concrete shall be Class "C".
- Parapet concrete and reinforcing steel shall be included with Item S-14, Railing for payment.
- Porous backfill, with thickness as shown, shall extend from top of footings or elevations shown, to the underside of the approach slab or wing curbs.
- For "Median Detail" and "Guard Rail Attachment Detail" see Sheet No. 22



SECTION H-H



SKETCH SHOWING LIMITS OF UNCLASSIFIED EXCAVATION



SECTION L-L

LEGEND

E.F. indicates Each Face
B.F. indicates Back Face
F.F. indicates Front Face

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

ABUTMENT B DETAILS

BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

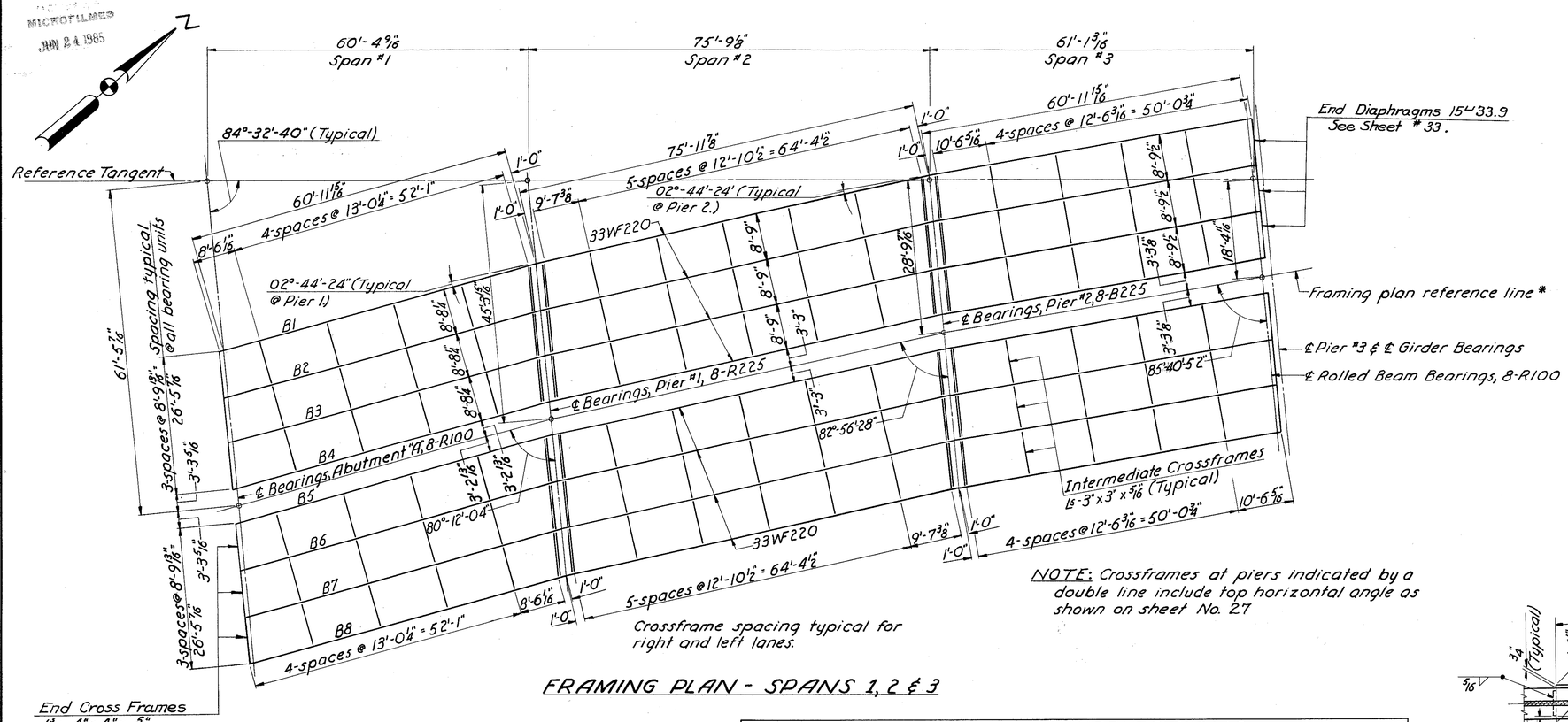
JEFFERSON COUNTY — STA. 673 + 21.71 — STA. 681 + 55.42

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
B.S.	B.D.B	B.D.B C.H.B	A.S.J. A.A.L.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JAN 24 1985

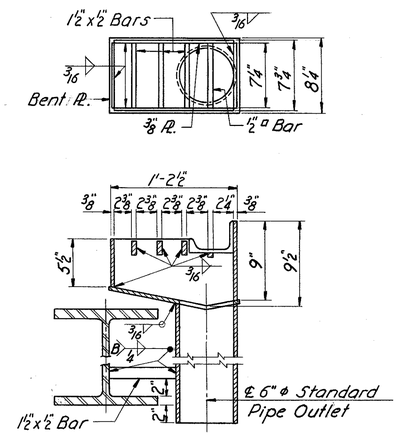
FED. RD. DIVISION	STATE	PROJECT	TYPE FUND'S
2	OHIO	UG-430 (13)	

JEFFERSON COUNTY
JEF-7-13.36

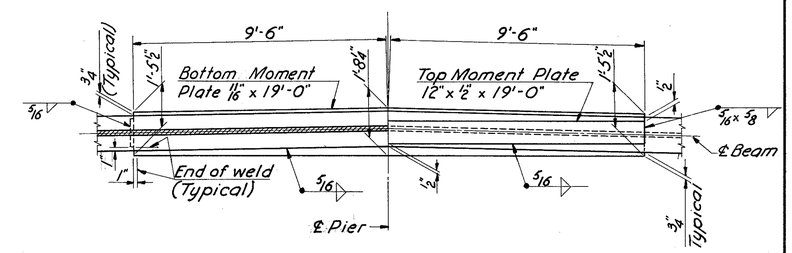


NOTE: Crossframes at piers indicated by a double line include top horizontal angle as shown on sheet No. 27

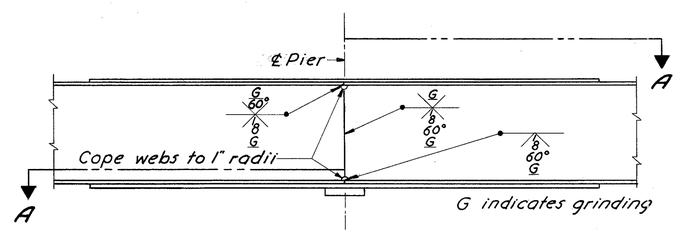
FRAMING PLAN - SPANS 1, 2 & 3



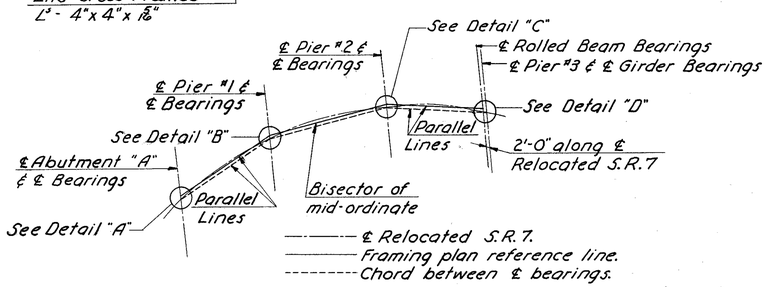
DETAILS OF SPECIAL SCUPPER "A"



SECTION A-A



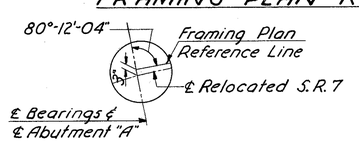
BEAM SPLICE DETAIL AT PIERS 1 & 2



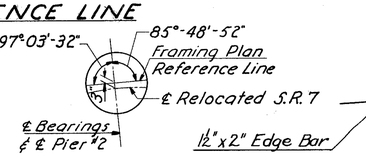
* FRAMING PLAN REFERENCE LINE

DEAD LOAD DEFLECTIONS				
Location	Spans #1 & 3		Span #2	
	Exterior and Interior Beams	Median Beams	Exterior and Interior Beams	Median Beams
Deflection due to Weight of Steel	0"	0"	1/8"	1/8"
Deflection due to Remaining Dead Load	7/16"	5/16"	9/16"	3/8"
Total Deflection	7/16"	5/16"	11/16"	1/2"

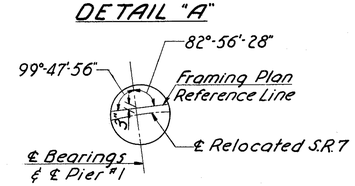
NOTE: No camber required, but beams shall be erected and fabricated with any natural camber or bowed side up.



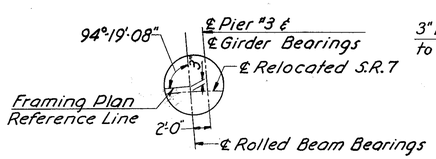
DETAIL "A"



DETAIL "C"



DETAIL "B"



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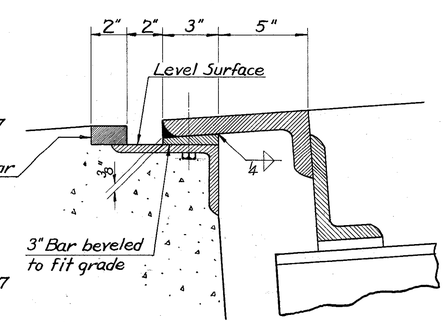

ROADWAY END DAM DETAIL AT ABUTMENT "A"

For details not shown see Standard Drawing CSB-2-56 (Revised 2-2-59) Sheet 2 of 6.

BEAM SPLICE WELDING PROCEDURE

1. Raise ends of beams at Abutment "A" and Pier #3 -1 3/4".
2. Butt weld beam flanges and web using the following sequence: make two passes on each flange, then two on the web; repeat, using one pass at each location until welds are completed.
3. Weld the bottom and top moment plates.
4. The above mentioned crossframes shall be welded in place before the WF beams are lowered.
5. Lower the beam ends to final position.

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SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

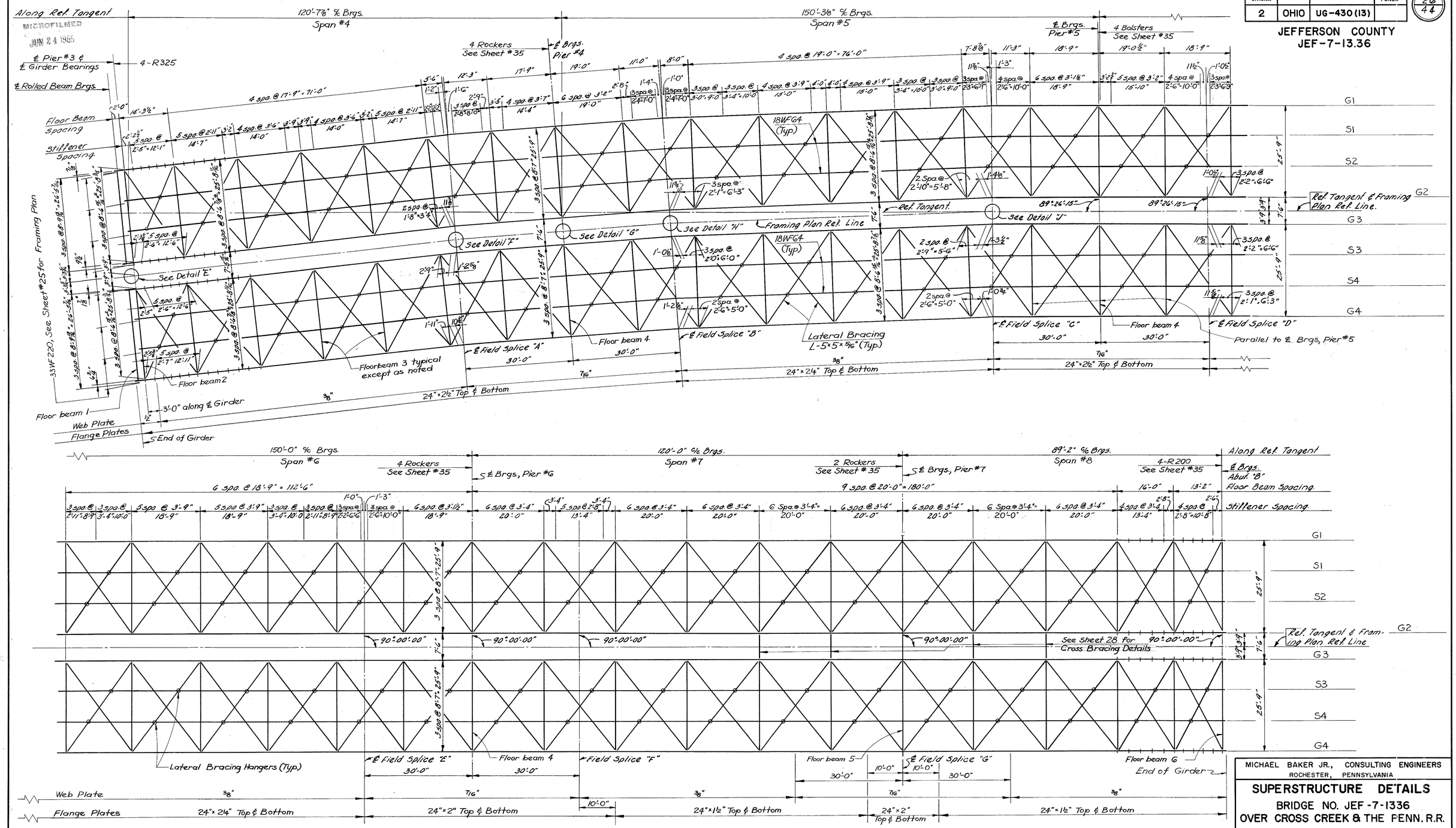
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	K.E.A.	P.D.	B.S.	E.Roberts	Feb.25,1960	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430(13)	

26/44

JEFFERSON COUNTY
JEF-7-13.36

MICROFILMED
JUN 24 1965



STEEL FRAMING PLAN

NOTE: All floor beams are normal to girders except as noted.
All girders and stringers are parallel to framing plan referene line.
For Details "E", "F", "G", "H" & "J" See Sheet 28.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS

BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 — STA. 681 + 55.42

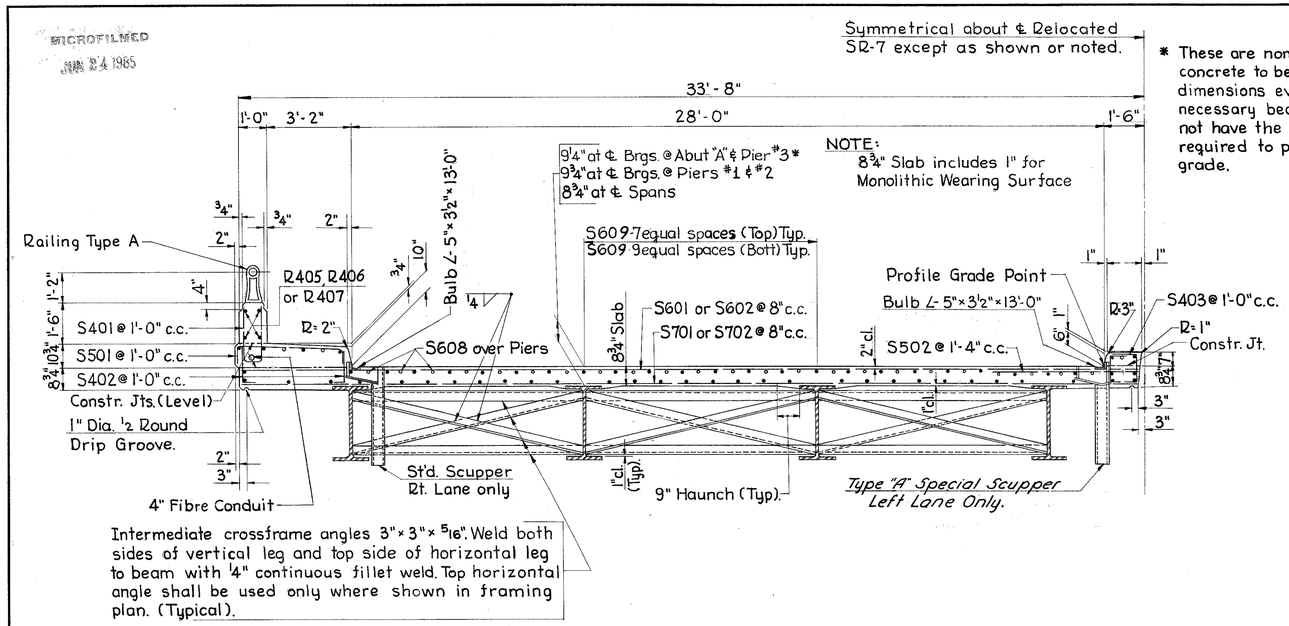
Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
R.M.	B.D.B	B.D.B	HPL	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

27
44

JEFFERSON COUNTY
JEF-7-13.36



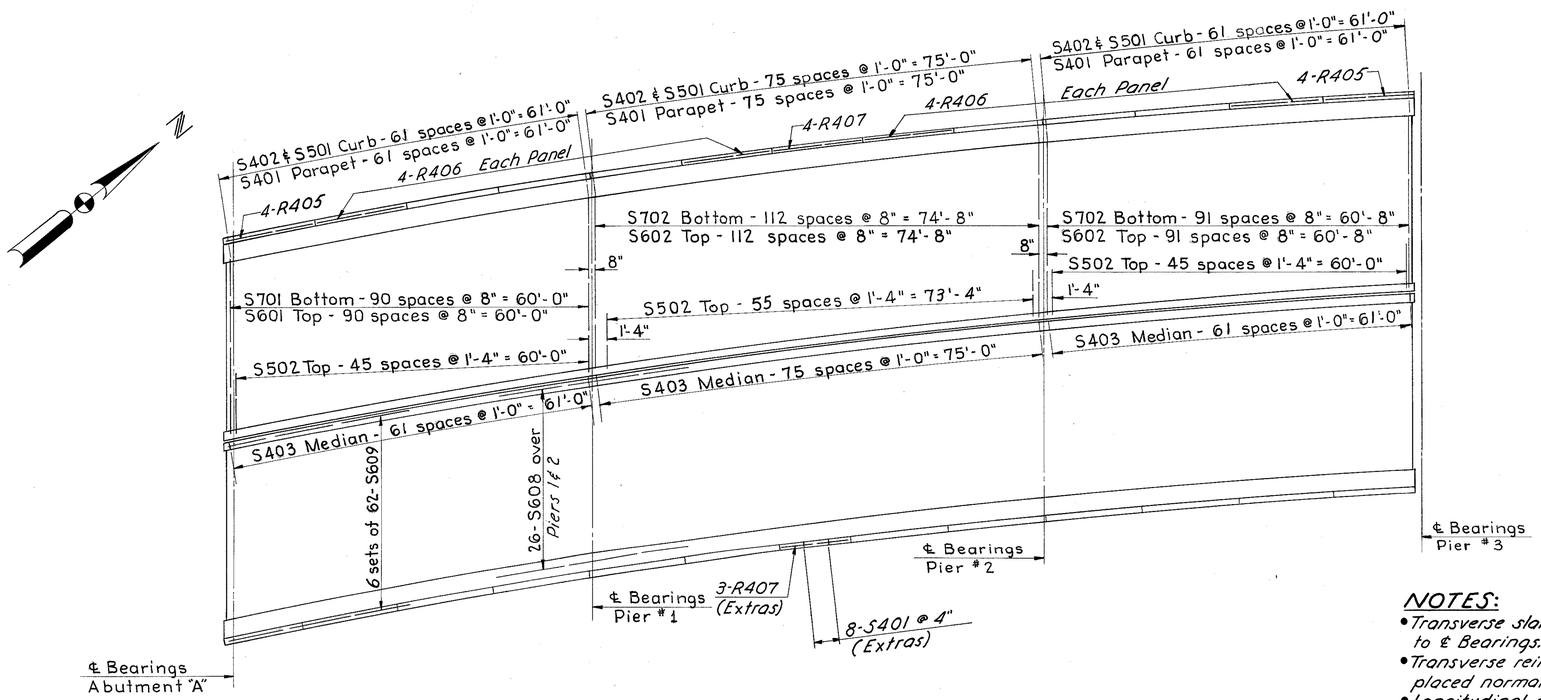
TYPICAL CROSS SECTION - SPANS 1, 2 & 3

All dimensions are radial to ℄ Relocated SR 7

* These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions even though deviation from it may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade.

NOTES FOR SUPERSTRUCTURE

- REFERENCE shall be made to standard drawing CSB-2-56 (revised 2-2-59), sheets 2 and 3 of 6 for details of end dam and end cross frames at Abutment "A", standard scuppers, gutters and 2" pipe drains.
- REFERENCE shall be made to standard drawing AR-1-57 (revised 2-2-59) for details of type "A" aluminum railing.
- SHOP DRAWINGS for the girders shall include an overall layout with dimensions showing the relative unloaded vertical position of each girder or girder segment with respect to the others in the same girder line and with respect to a full length base or work line taking into account camber and the profile of the highway.
- SHOP ASSEMBLY: Reaming of holes for high strength bolts in field splices of girder segments shall be done with at least three adjacent segments assembled in their correct unloaded positions as shown on the shop drawing layout required in the above note.
- FIELD SPLICES shall be made with high strength bolts as per Standard Specifications S-207 dated 4-28-55. Bolts shall be ⅞" diameter unless otherwise noted.
- CONCRETE for superstructure shall be Class "C".
- CONCRETE and reinforcing steel above parapet construction joint included with railing for payment.
- CONCRETE DECK PLACING: In order to facilitate water curing of the concrete of the deck slab, the placing of the concrete shall progress upgrade. The slab may be placed in sections between transverse construction joints which are parallel to transverse reinforcing steel and are located near the center of any span.
- PAINTING: After erection and after the shop coat has been cleaned and where necessary, repainted in accordance with Section S-8.04, all structural steel shall be given an additional coat of the same paint as used in the shop. After the completion of the girder splices at Floor Beam 5 at Pier 7 the space between the top plates and the girder web at the lower flange shall be filled with a metallic compound of a non-shrinking type, after which the shop and field paint coats shall be applied.
- REFER to General Plan & Elevation sheets for spacings of railing posts, scuppers and pipe drains.



DECK REINFORCING PLAN - SPANS 1, 2 & 3

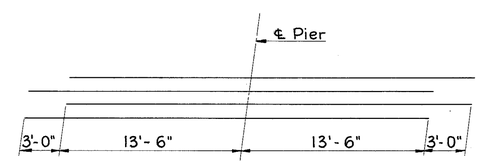


DIAGRAM SHOWING STAGGER OF S608 BARS OVER PIERS

NOTES:

- Transverse slab reinforcing steel shall be placed parallel to ℄ Bearings.
- Transverse reinforcing steel in curbs and medians shall be placed normal to the roadway alignment.
- Longitudinal reinforcing steel between the beams shall be placed parallel to the beams.
- Longitudinal reinforcing steel outside the exterior beams shall be placed parallel to the edge of slab.

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ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
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JEFFERSON COUNTY — STA. 673+21.71 STA. 681+55.42

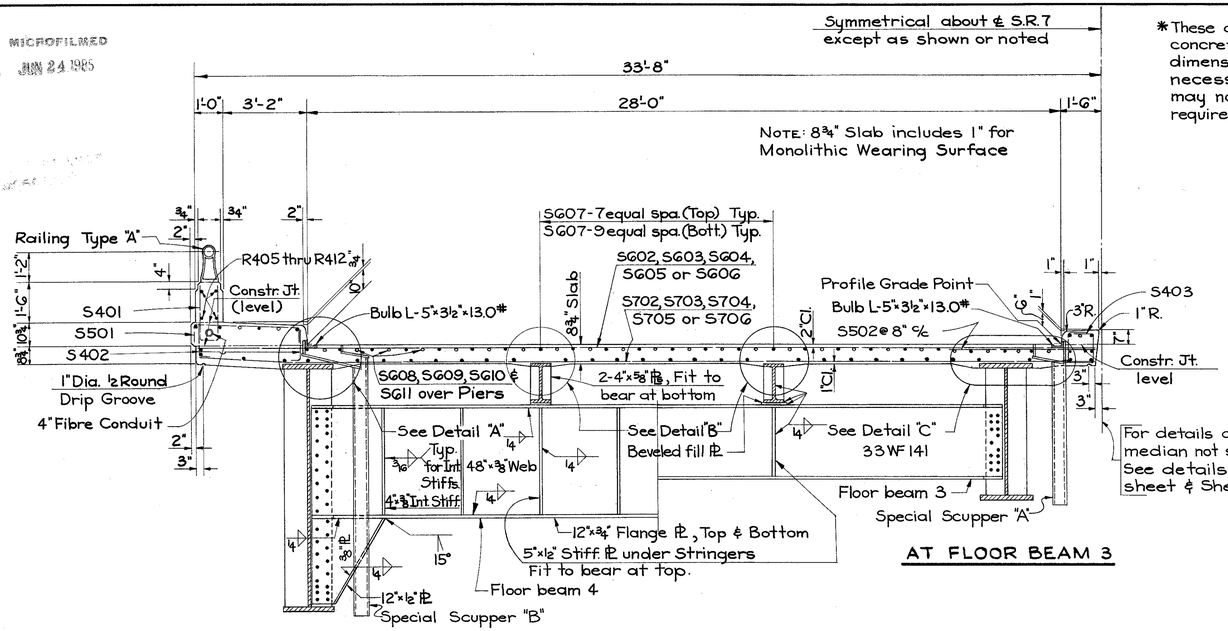
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.M.	K.E.A.	P.D. P.T.R.	B.S. A.C.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 24 1985

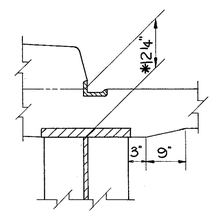
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

JEFFERSON COUNTY
JEF-7-13.36

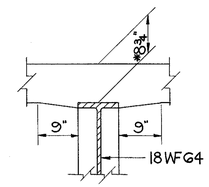
*These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions even though deviation from it may be necessary because the top flange of the stringer or girder may not have the exact camber or conformation required to place it parallel to the finished grade.



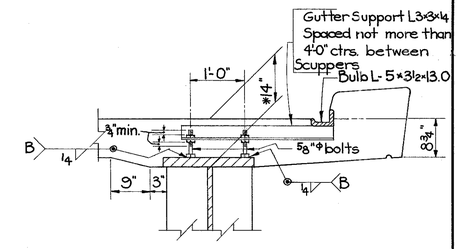
TYPICAL CROSS-SECTION, SPANS 4, 5, 6, 7 & 8



DETAIL A

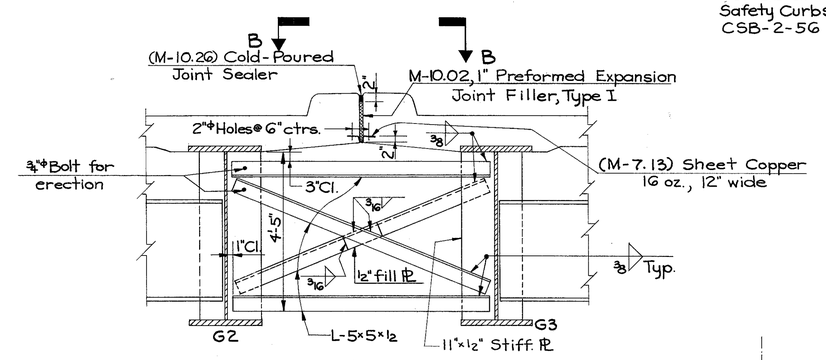


DETAIL B



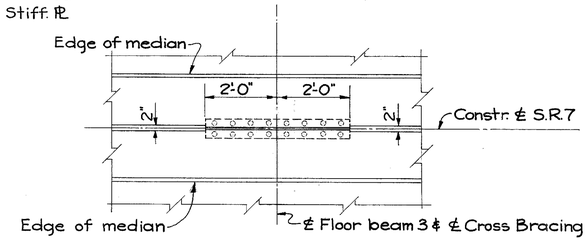
DETAIL C
SHOWING MEDIAN GUTTER SUPPORT

For details of Gutter Support at Safety Curbs, See Standard Drawing CSB-2-56 Sheet 3 of 6.



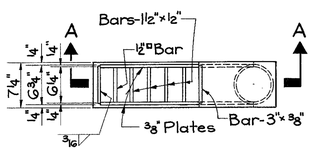
CROSS BRACING

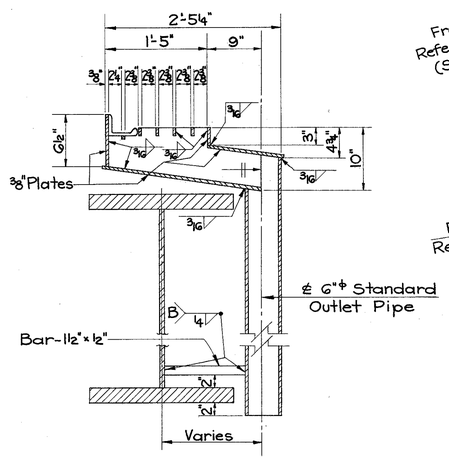
(Two on each side of Pier 7, See Steel Framing Plan, Sheet No. 26.)



VIEW B-B

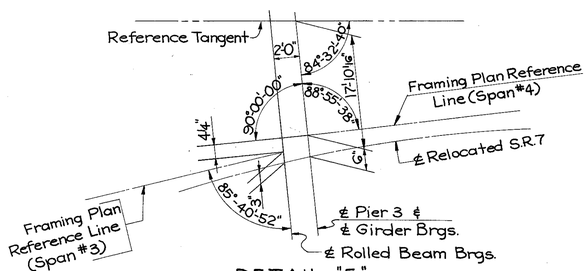
NOTE: Cold-Poured Joint Sealer to be included in the Unit Price Bid for Class "C" Concrete-Superstructure.



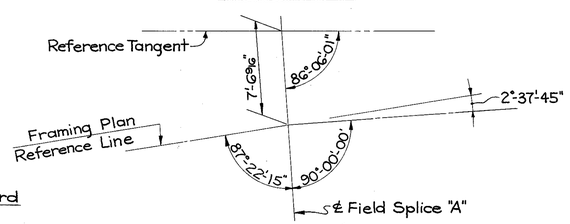


SECTION A-A

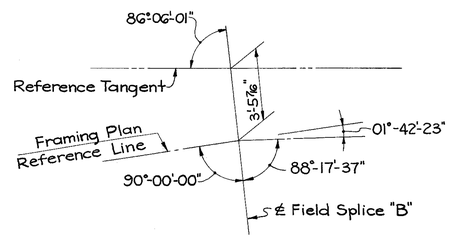
DETAILS OF SPECIAL SCUPPER "B"



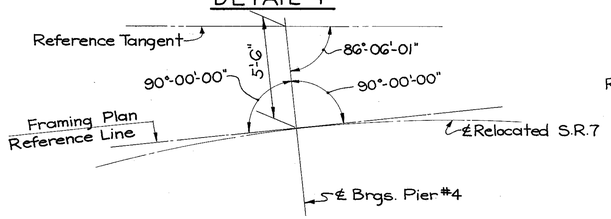
DETAIL "E"



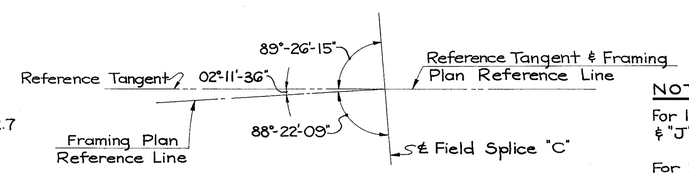
DETAIL "F"



DETAIL "H"



DETAIL "G"



DETAIL "J"

NOTES:

For locations of Details "E", "F", "G", "H" & "J", See Sheet No. 26.

For Details of Special Scupper "A", See Sheet No. 25.

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ROCHESTER, PENNSYLVANIA

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OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673+21.71 / STA. 681+55.42

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
P.M.	B.D.B.	J.H.	W.H. / F.A.	E. Roberts	Feb. 25, 1960	

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

JEFFERSON COUNTY
JEF-7-13.36

NOTES:

- Bars marked thus * shall be placed parallel to ℄ Bearings, Pier #3.
- All other transverse bars shall be placed normal to roadway alignment. Spacing of these bars shall be measured along left curb.
- Steel reinforcement, unless shown otherwise, is similar for both lanes.

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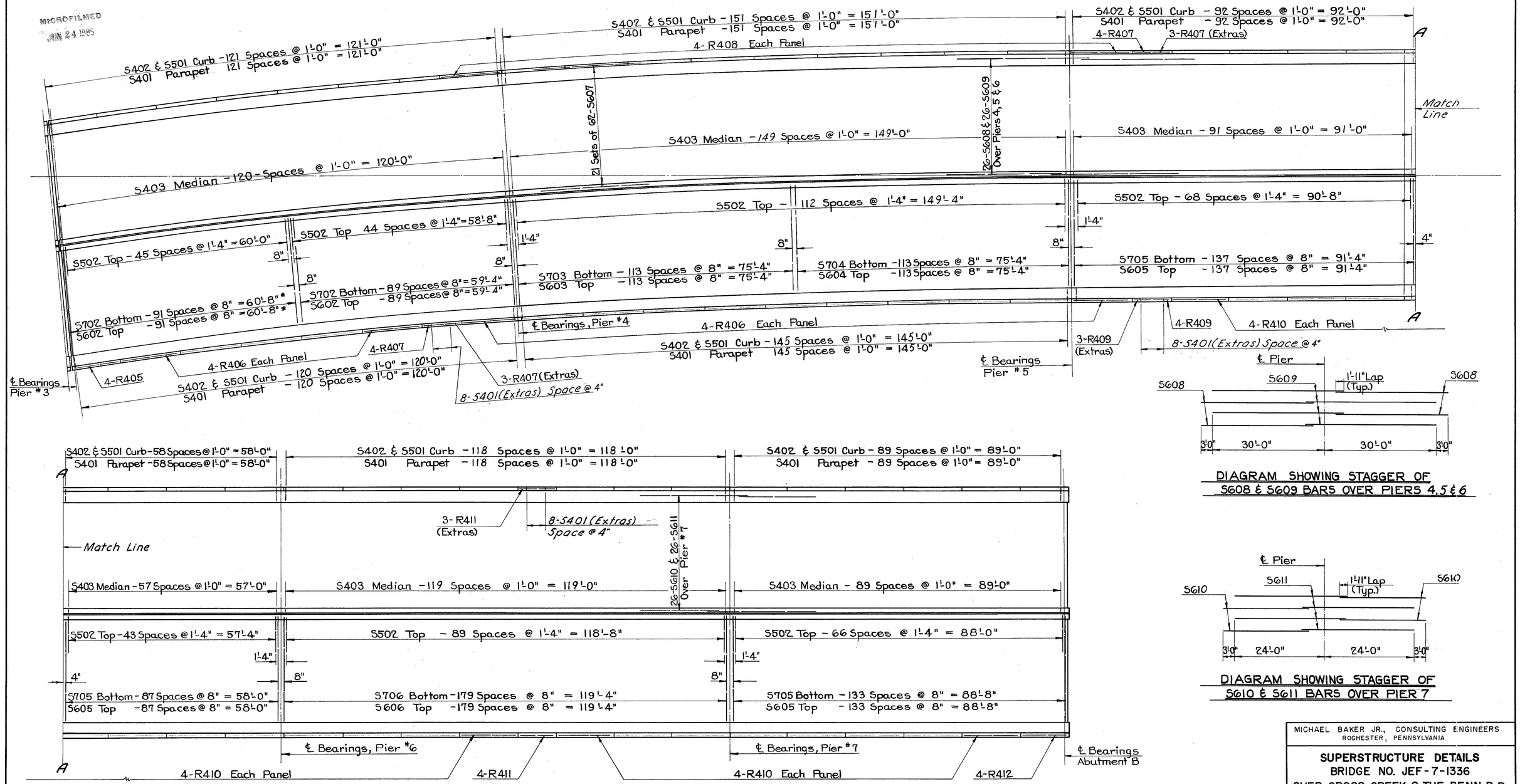
JUN 24 1985



DECK REINFORCING PLAN FOR SPANS 4, 5, 6, 7 & 8

DIAGRAM SHOWING STAGGER OF S608 & S609 BARS OVER PIERS 4, 5 & 6

DIAGRAM SHOWING STAGGER OF S610 & S611 BARS OVER PIER 7

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ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

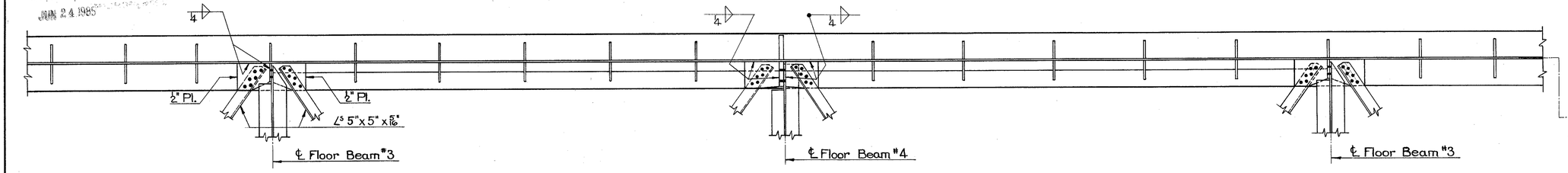
JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
P.M.	K.E.A.	G.H.	A.C.	E. Roberts	Feb. 23, 1960	

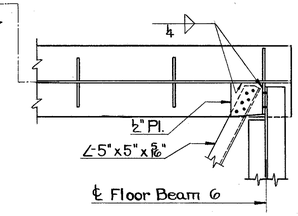
MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430(13)	

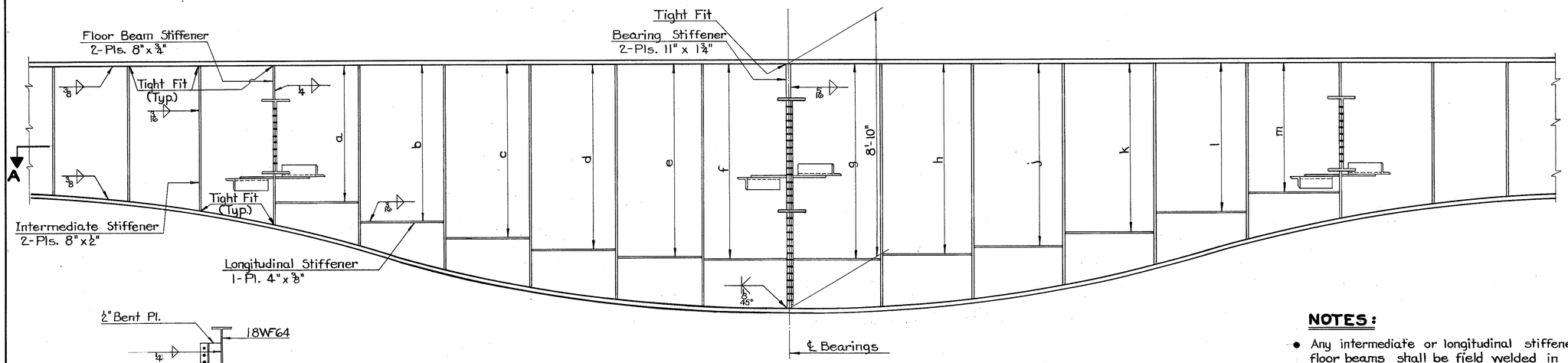
JEFFERSON COUNTY
JEF-7-13.36

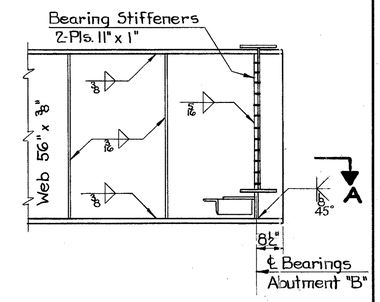


SECTION A-A

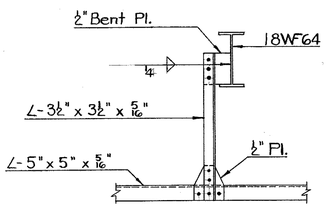


Ahead Stations →



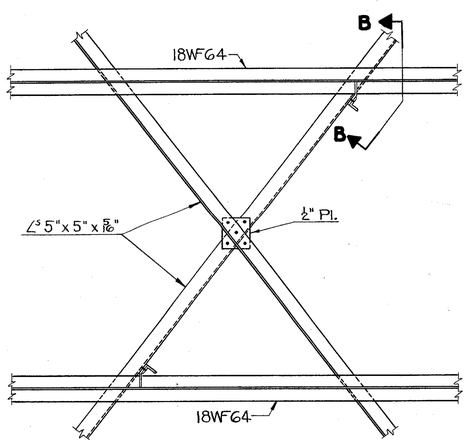


GIRDER DETAILS - HAUNCHED PORTION

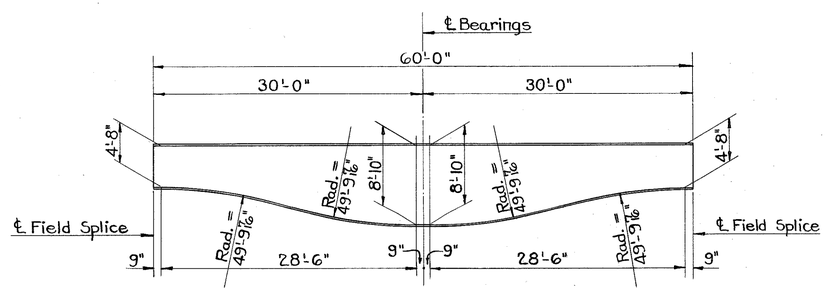


SECTION B-B

DIMENSIONS FROM BOTTOM OF TOP FLANGE TO LONGITUDINAL STIFFENERS												
	a	b	c	d	e	f	g	h	j	k	l	m
Pier # 4	omit	5'-2"	5'-11"	6'-6"	6'-10"	7'-1"	7'-1"	6'-11"	6'-8"	6'-2"	5'-7"	4'-10½"
Pier # 5	4'-11"	5'-7½"	6'-3"	6'-8"	6'-11"	7'-1"	7'-1"	6'-11"	6'-8"	6'-2"	5'-7"	4'-10½"
Pier #6	4'-11"	5'-7½"	6'-3"	6'-8"	6'-11"	7'-1"	7'-1"	6'-11"	6'-7"	6'-1"	5'-5"	4'-8½"
Pier #7	4'-8½"	5'-5"	6'-1"	6'-7"	6'-11"	7'-1"	7'-1"	6'-11"	6'-7"	6'-1"	5'-5"	4'-8½"



TYPICAL LATERAL BRACING DETAIL



GIRDER HAUNCH GEOMETRY

NOTES:

- Any intermediate or longitudinal stiffener interfering with the erection of floor beams shall be field welded in position.
- Details of floor beam & lateral bracing connections typical for Piers 4,5 & 6. For details at Pier 7 see Sheet No. 34.

MICHAEL BAKER JR., CONSULTING ENGINEERS
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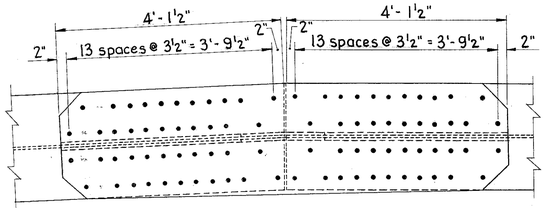
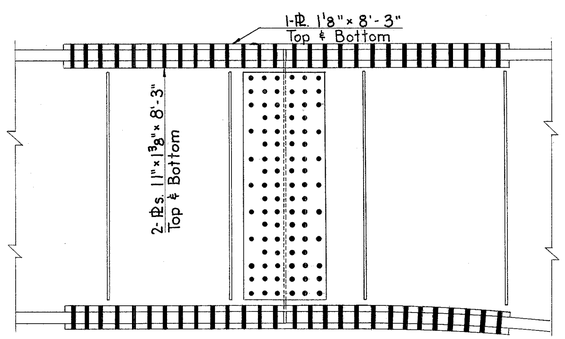
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIEWE
P.M.	G.H.	G.H.	W.H.	E.Roberts	Feb.25,1960	

MICROFILMED
JUN 24 1985

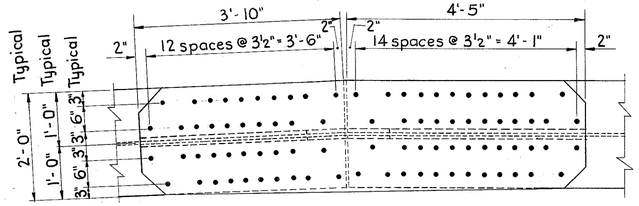
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

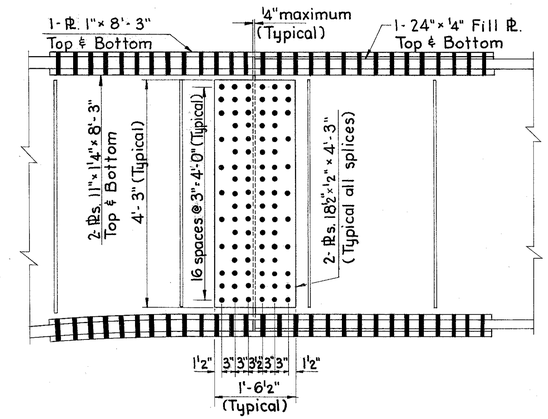
JEFFERSON COUNTY
JEF-7-13.36





FIELD SPLICE "A"

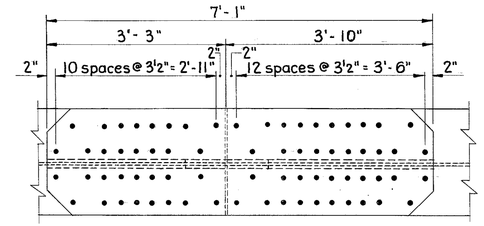


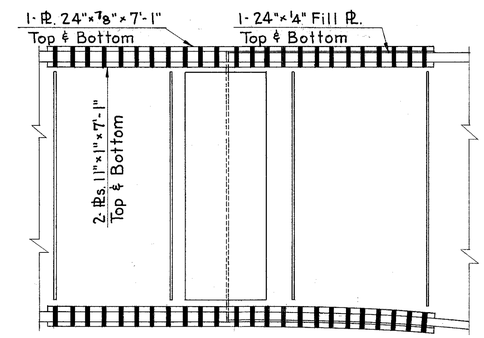


FIELD SPLICES "B", "C" & "D"

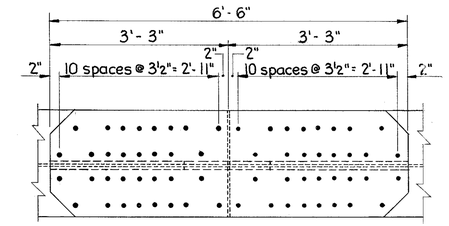
All bolts in Girder Flange Splices shall be 1" ø.

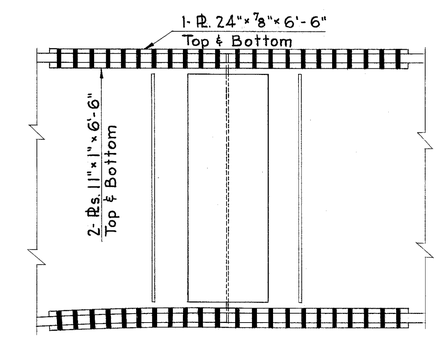
GIRDER FIELD SPLICES



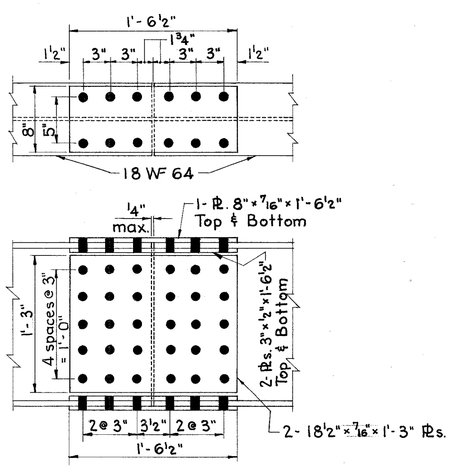


FIELD SPLICE "E"

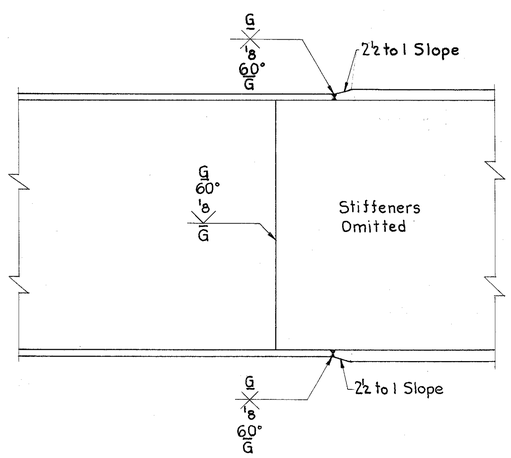




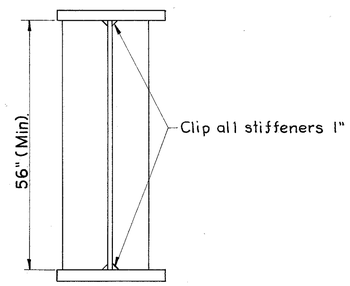
FIELD SPLICE "F"



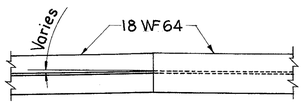
STRINGER FIELD SPLICE
Locate splice 4'± from floor beam



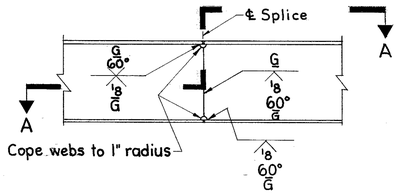
TYPICAL SHOP GIRDER SPLICE DETAIL



SECTION THRU GIRDER



SECTION A-A



STRINGER SHOP SPLICE
AT STRINGER BEND POINTS

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY
STA. 673 + 21.71
STA. 681 + 55.42

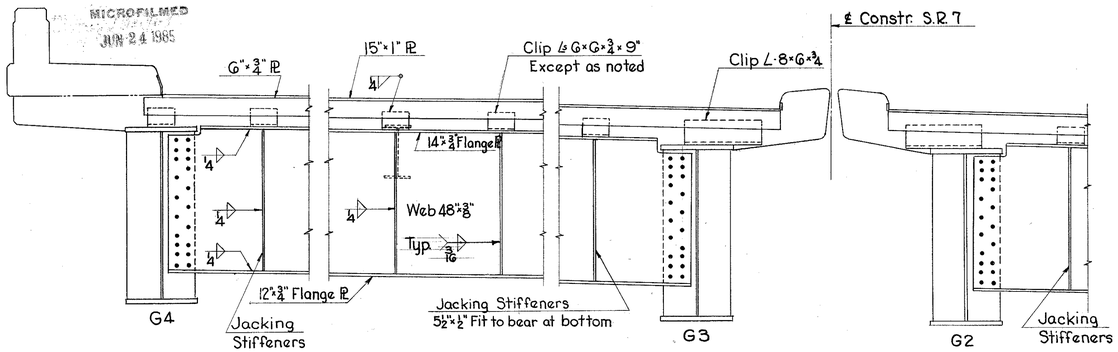
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
P.M.	B.D.B.	P.T.R.	W.H.	E. Roberts	Feb. 25, 1960	3-16-60

MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

32/44

JEFFERSON COUNTY
JEF-7-13.36

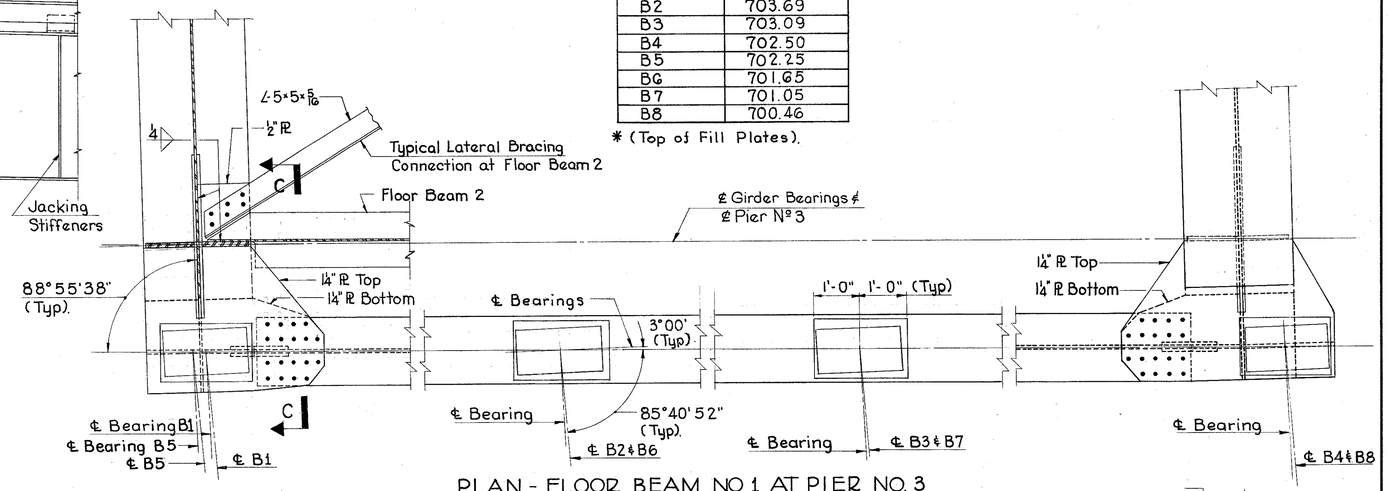


SECTION A-A
(FLOOR BEAM 6)

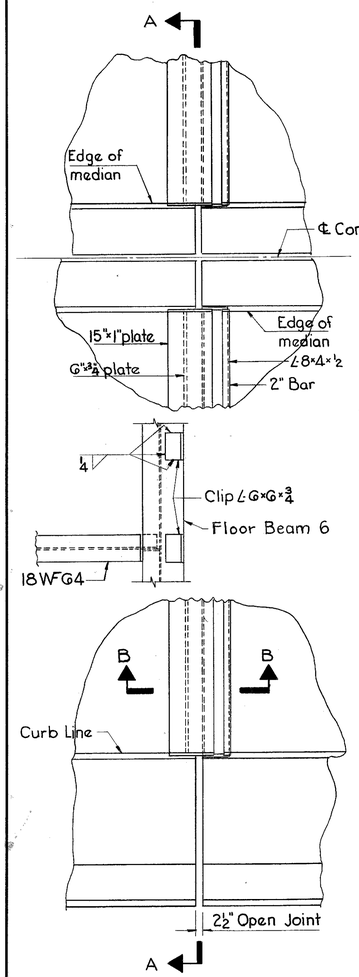
Stiffeners and Clip Angles similar to those at Floor Beam 2, unless otherwise noted. See Sheet Nº 33. For details of Curb and Median Plate, see Sheet No. 33.

TABLE OF ELEVATIONS	
BEAM SEAT *	ELEVATION
B1	704.29
B2	703.69
B3	703.09
B4	702.50
B5	702.25
B6	701.65
B7	701.05
B8	700.46

* (Top of Fill Plates).



PLAN - FLOOR BEAM NO 1 AT PIER NO. 3

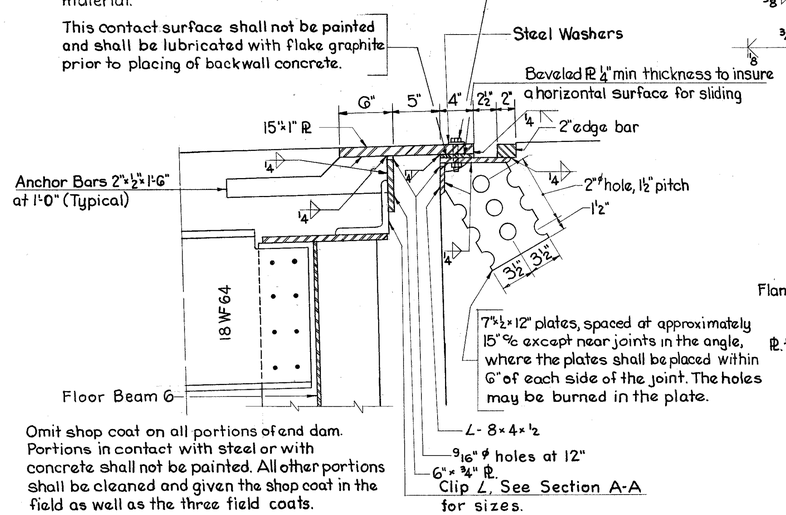


PART PLAN
ABUTMENT B

The portion of the end dam attached to the backwall shall be placed in segments not less than 6'-0" in length. These shall be closely butted but shall not be welded.

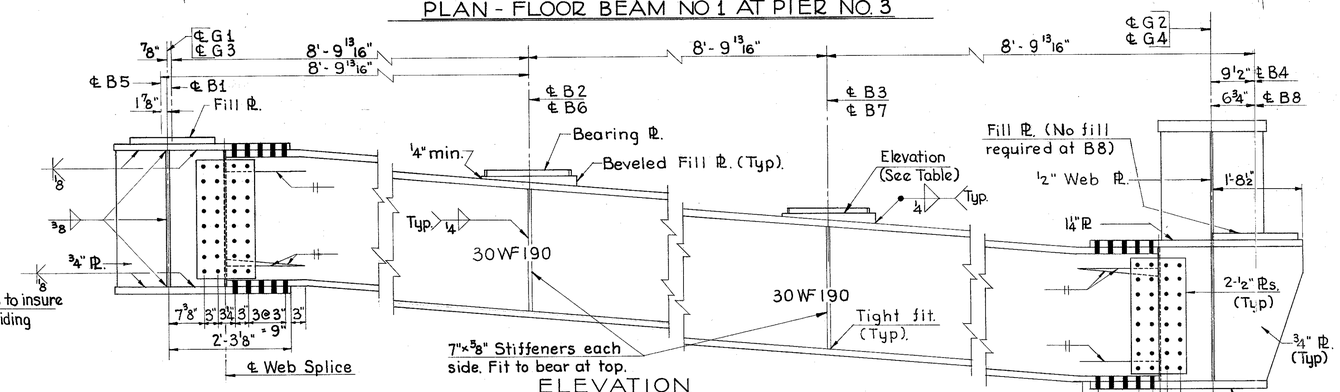
⅝"×2" bolts at not more than 2'-0"℄ with nuts tack-welded to under side of lower angle. 1 1/16" holes in plate. Center ⅝" bolts in 1 1/16" holes. Apply flake graphite between washers and plate. Turn bolt tight and release one-half turn. Remove bolts as soon as concrete has set, preferably within two hours after placing, to avoid damage due to temperature expansion or contraction of superstructure. Fill holes with bituminous material.

This contact surface shall not be painted and shall be lubricated with flake graphite prior to placing of backwall concrete.

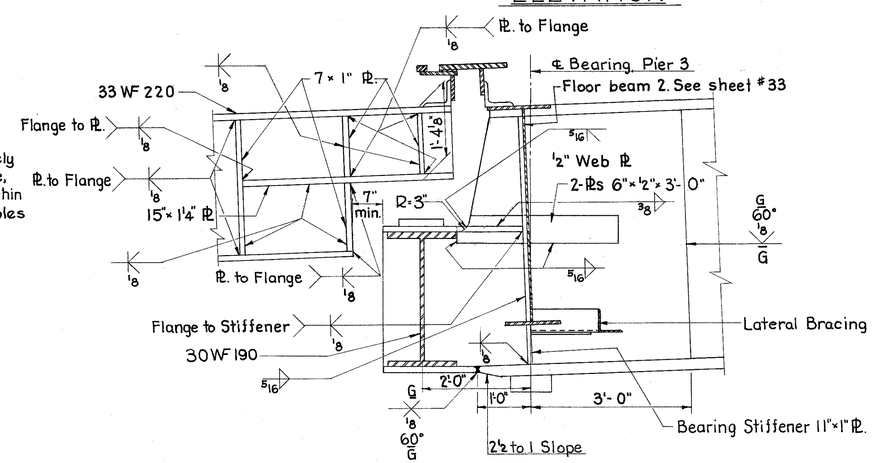


Omit shop coat on all portions of end dam. Portions in contact with steel or with concrete shall not be painted. All other portions shall be cleaned and given the shop coat in the field as well as the three field coats.

SECTION B-B



ELEVATION



SECTION C-C

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673+21.71 / STA. 681+55.42

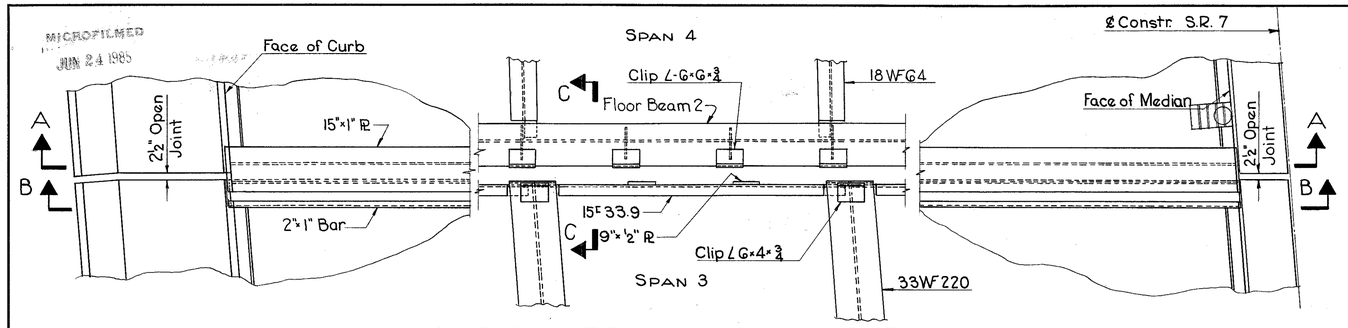
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
E.F.R. W.H.		R.M. P.T.R.	W.H. E.F.R.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 24 1985

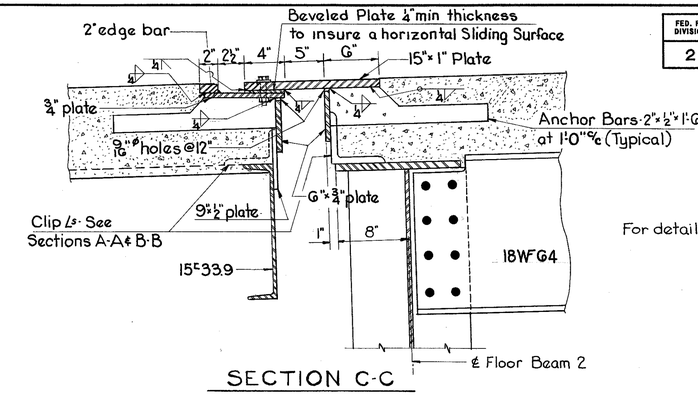
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

33/44

JEFFERSON COUNTY
JEF-7-13.36

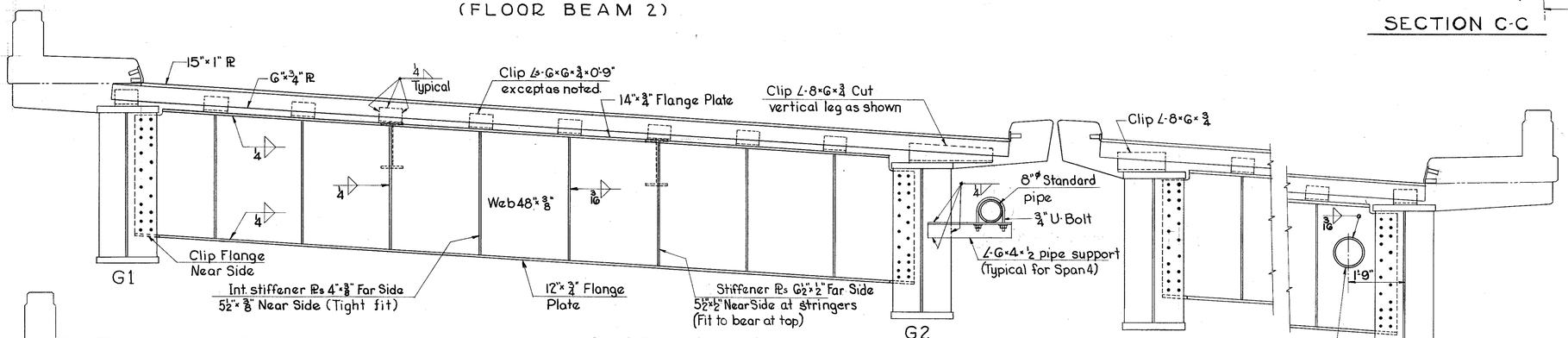


PART PLAN-EXPANSION DAM AT PIER Nº3
(FLOOR BEAM 2)

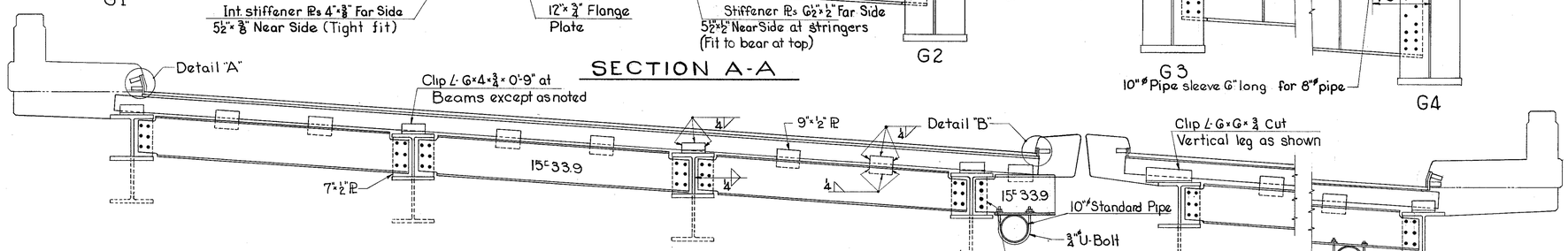


SECTION C-C

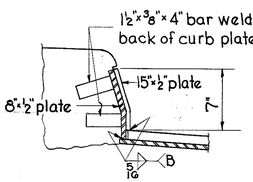
For details not shown see sheet 32.



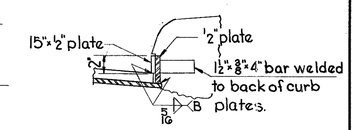
SECTION A-A



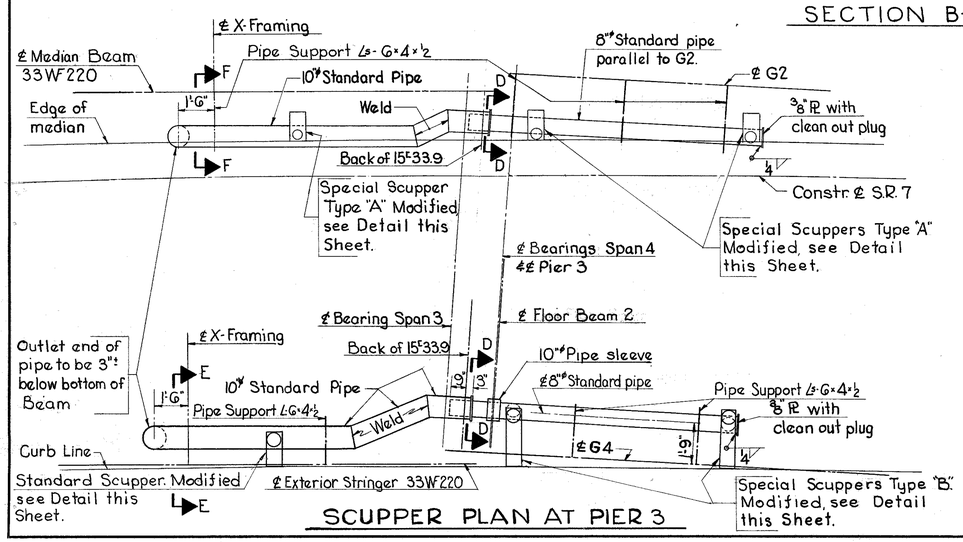
SECTION B-B



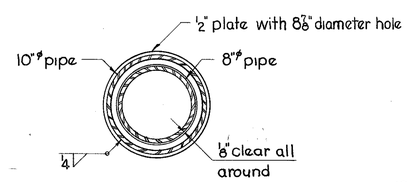
DETAIL A



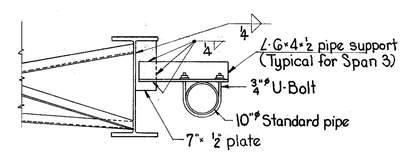
DETAIL "B"



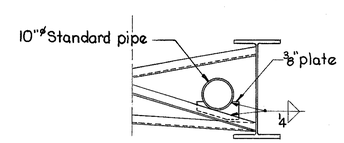
SCUPPER PLAN AT PIER 3



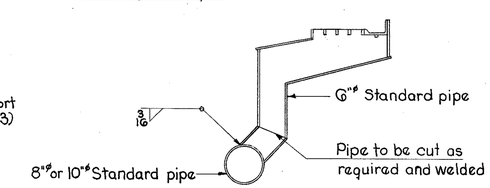
SECTION D-D



SECTION F-F



SECTION E-E



TYPICAL SCUPPER TO PIPE CONNECTION
(Modified). See Scupper Plan at Pier 3

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

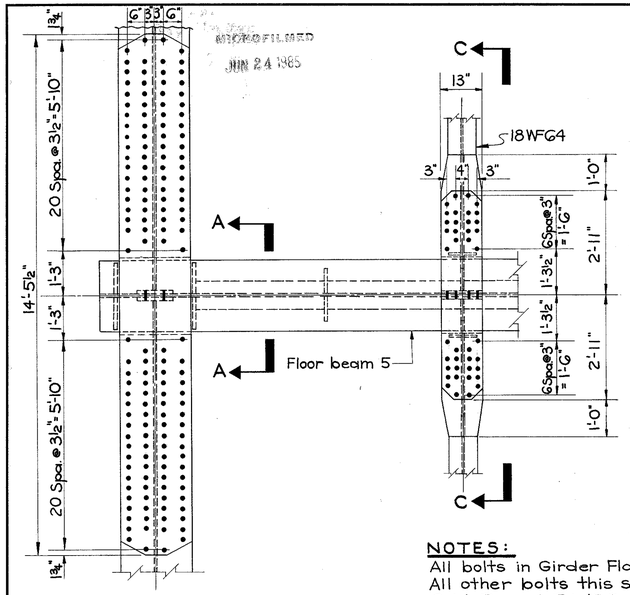
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.H.	W.H.		E.F.R.	E. Roberts	Feb. 25, 1960	

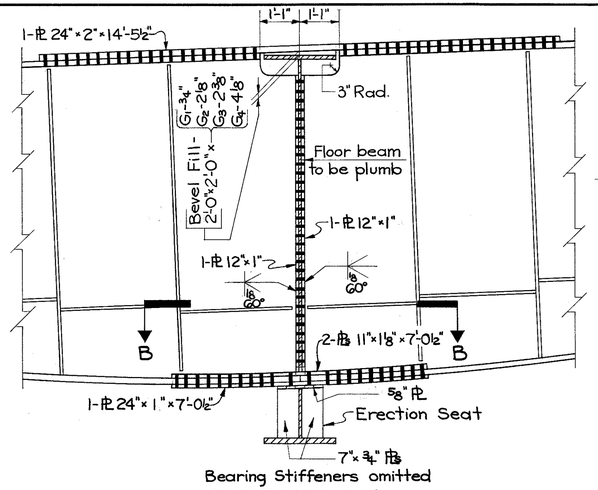
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

34/44

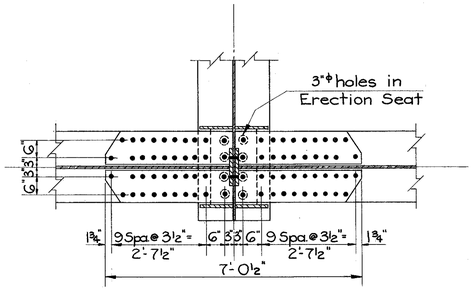
JEFFERSON COUNTY
JEF-7-13.36

MICROFILMED
JUN 24 1985

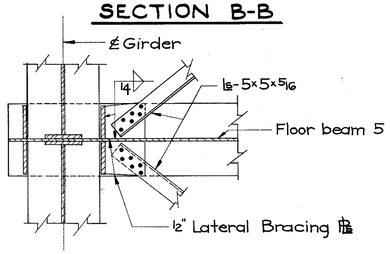




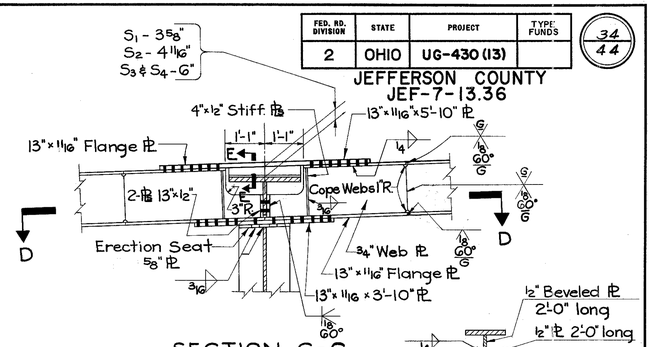
SECTION A-A
(FIELD SPLICE "G")



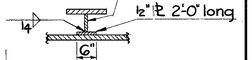
SECTION B-B



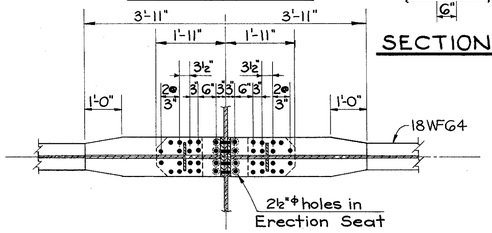
SECTION F-F



SECTION C-C

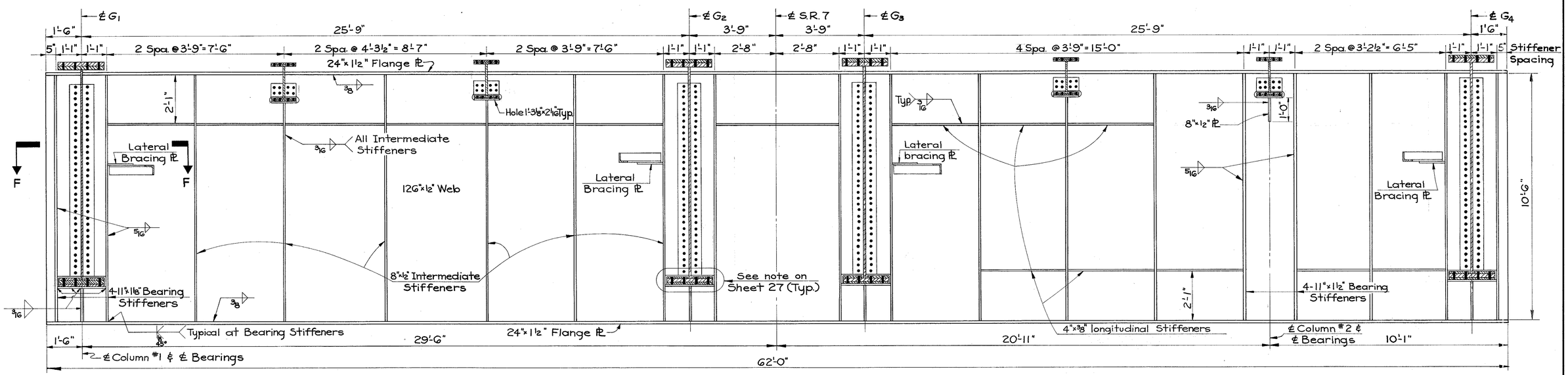


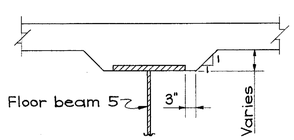
SECTION E-E



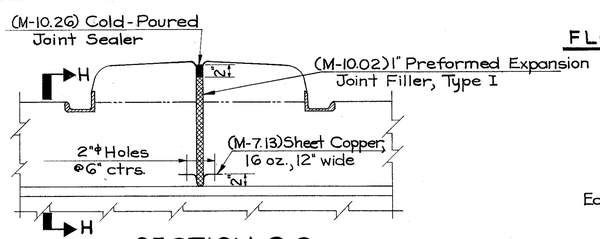
SECTION D-D

NOTES:
All bolts in Girder Flange Splices to be 1"Φ.
All other bolts this sheet to be ⅞"Φ.
Cold-Poured Joint Sealer to be included in the Unit Price bid for Class "C" Concrete.



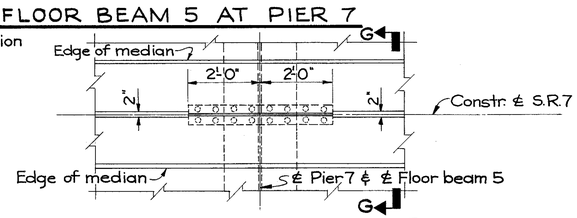


SECTION H-H



SECTION G-G

FLOOR BEAM 5 AT PIER 7



PLAN OF MEDIAN AT PIER 7

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
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JEFFERSON COUNTY — STA. 673+21.71 / STA. 681+55.42

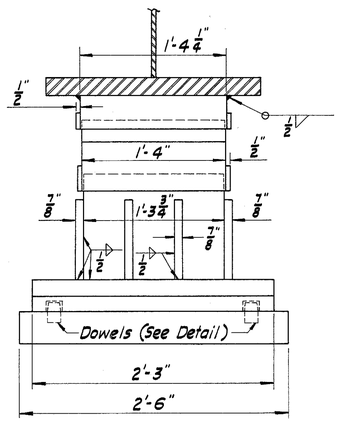
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
P.M.	B.D.B.	J.H.	W.H.	E. Roberts	Feb. 25, 1960	

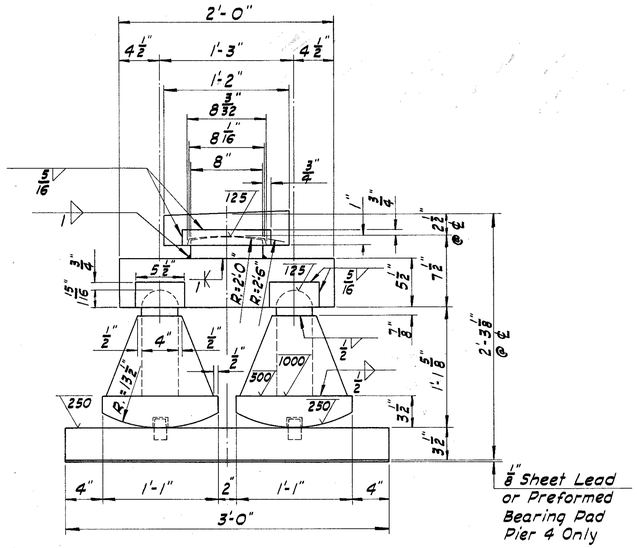
MICROFILMED
JUN 24 1985

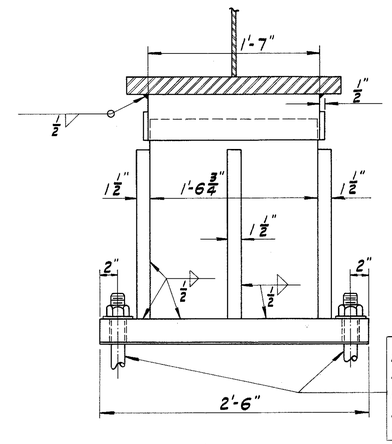
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

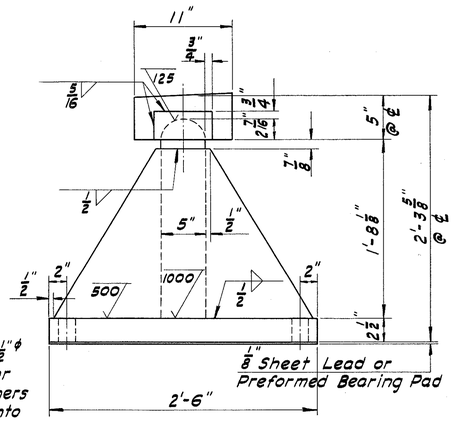
35
44

JEFFERSON COUNTY
JEF-7-13.36

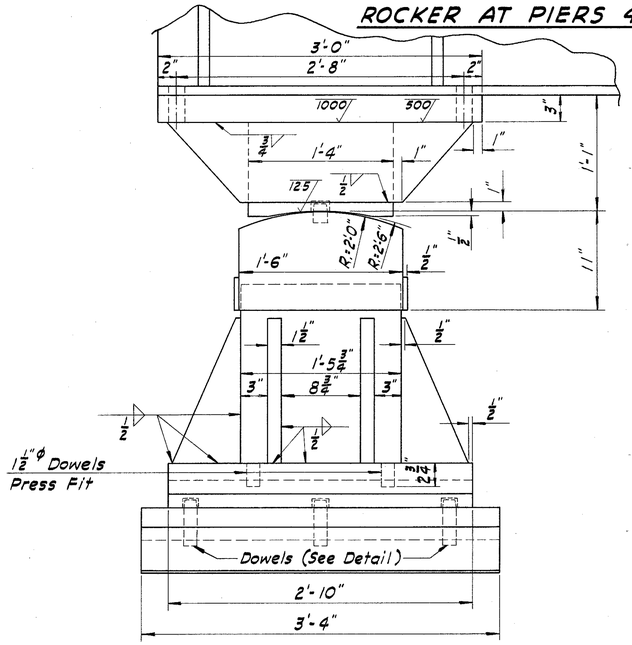




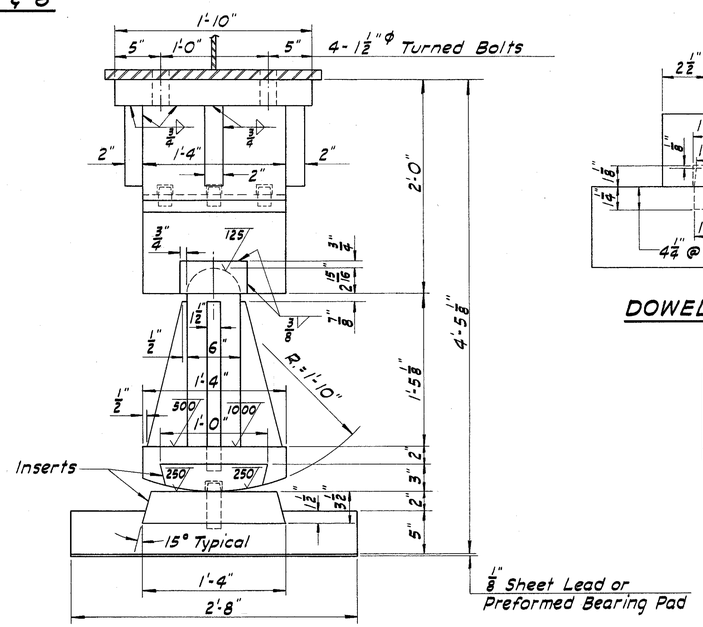




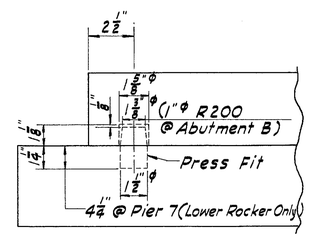
ROCKER AT PIERS 4 & 6



ROCKER AT PIER 7



BOLSTER AT PIER 5



DOWEL DETAIL

NOTES :

- For Top Bearing Detail see Standard Drawing RB-1-55.
- Inserts and Dowels for Rocker at Pier 7 to be corrosion resisting steel ASTM A276 Type 410 Tempered minimum yield 55,000 p.s.i.
- Bevel top of sole plates to match grade on all shoes on this structure except Rocker at Pier 7. Dimensions C & H as shown on Standard Drawing RB-1-55 and in table below are at ℄.
- Reference shall be made to Standard Drawing RB-1-55 (Revised 2-2-59) for Rockers and Bolsters at Abutment "A", Pier 1, Pier 2, Pier 3, and Abutment "B".

TABLE OF DIMENSIONS FOR R-325

A	B	C	D	F	G	H	K	L	M	R	T	Y
4"	22"	3 3/4"	3 1/2"	7/8"	13"	20 5/8"	16"	30"	27"	13 1/2"	3 1/4"	1 15/16"

NOTE: For locations of dimensions and details not shown see Standard Drawing RB-1-55

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SHOES
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71, STA. 681 + 55.42

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JBJ	CWC	CWC	HPL	E. Roberts	Feb. 25, 1960	

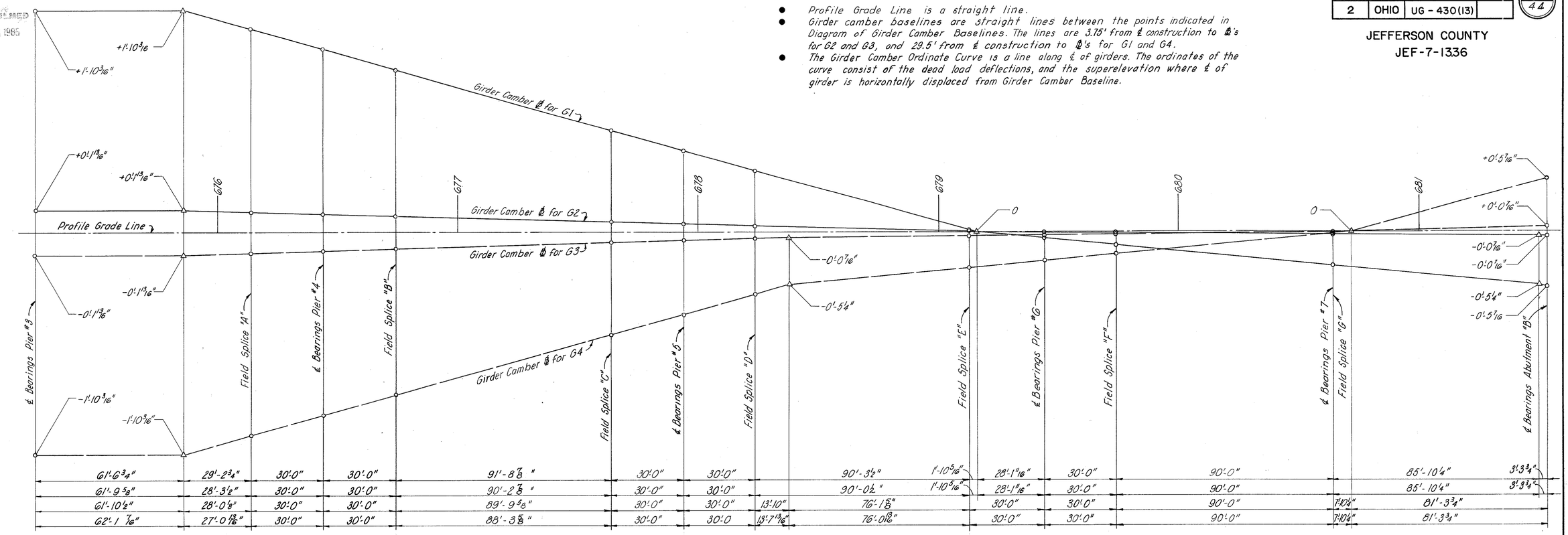
MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG - 430(13)	

36/44

JEFFERSON COUNTY
JEF-7-1336

- Profile Grade Line is a straight line.
- Girder camber baselines are straight lines between the points indicated in Diagram of Girder Camber Baselines. The lines are 3.75' from ℄ construction to ℄'s for G2 and G3, and 29.5' from ℄ construction to ℄'s for G1 and G4.
- The Girder Camber Ordinate Curve is a line along ℄ of girders. The ordinates of the curve consist of the dead load deflections, and the superelevation where ℄ of girder is horizontally displaced from Girder Camber Baseline.



| | | |

MICROFILMED
JUN 24 1985

RADIOGRAPHIC EXAMINATION OF WELDS

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430(13)	

JEFFERSON COUNTY
JEF-7-13.36

THIS WORK SHALL CONSIST OF THE PERFORMANCE AND INTERPRETATION OF A RADIOGRAPHIC EXAMINATION OF BUTT WELDS AS REQUIRED BY THESE SPECIFICATIONS. IT SHALL INCLUDE THE PREPARATION AND POSITIONING OF WELDS FOR EXAMINATION, THE RADIOGRAPHING OF WELDS, THE PROCESSING AND EXAMINATION OF RADIOGRAPHS, THE INTERPRETATION OF RADIOGRAPHS FOR COMPLIANCE WITH THESE SPECIFICATIONS, AND THE PERFORMANCE AND INTERPRETATION OF ANY RETAKES OF RADIOGRAPHS REQUIRED FOR WELDS MADE TO REPLACE UNSATISFACTORY WELDS.

APPROVAL OF DIRECTOR

THE CONTRACTOR SHALL FURNISH EVIDENCE, ACCEPTABLE TO THE DIRECTOR, OF THE ADEQUACY OF THE EQUIPMENT TO BE USED AND THE COMPETENCE OF THE PERSONNEL.

THE INTERPRETATION OF RADIOGRAPHS AND THE CORRECTION OF DEFECTIVE WELDS SHALL BE SUBJECT TO THE APPROVAL OF THE DIRECTOR.

SCOPE OF EXAMINATION

BY MEANS OF RADIOGRAPHIC EXAMINATION, THE CONTRACTOR SHALL FURNISH EVIDENCE OF THE ACCEPTABLE QUALITY OF THE BUTT WELDS OF ALL GIRDERS. THE PARTS OF THESE MEMBERS TO BE RADIOGRAPHED ARE AS FOLLOWS:

1. THE COMPLETE BUTT WELDS IN THE FLANGES OF EACH GIRDER EXCEPT THE BOTTOM FLANGE OVER THE BEARING DEVICES.

2. ONE FOOT AT EACH END OF EACH OF THE WEB SPLICE WELDS.

THE SHOP EXAMINATION OF THE BUTT WELDS OF THE FLANGE PLATES AND OF THE WEB PLATES SHALL BE DETERMINED TO BE ACCEPTABLE BEFORE THESE FLANGE AND WEB PLATES ARE ASSEMBLED AND WELDED TO FORM THE GIRDERS. THE EXAMINATION OF FIELD WELDS SHALL BE MADE AS SOON AS PRACTICABLE AFTER WELDING AT EACH FIELD SPLICE IS COMPLETED.

WELD CONDITION

ALL WELDED JOINTS WHICH ARE TO BE RADIOGRAPHED SHALL BE FREE OF PAINT, SCALE, AND GREASE, AND SHALL BE GROUND FREE OF ALL WELD RIPPLES AND SURFACE IRREGULARITIES ON BOTH SIDES. THE DIRECTION OF GRINDING SHALL BE PERPENDICULAR TO THE LENGTH OF THE WELD. THE WELDS SHALL BE GROUND TO SUCH A DEGREE THAT THE RESULTING RADIOGRAPHIC CONTRAST, DUE TO REMAINING IRREGULARITIES, CANNOT MASK OR BE CONFUSED WITH THAT OF ANY OBJECTIONABLE DEFECT AND THAT THE WELD SURFACE WILL MERGE SMOOTHLY INTO THE PLATE SURFACE. UNLESS SPECIFIED TO BE GROUND FLUSH, THE FINISHED SURFACE OF THE REINFORCEMENT MAY HAVE A CROWN EQUAL TO ONE-EIGHTH THE THICKNESS OF THE METAL BUT NOT MORE THAN 1/8 INCH.

RADIOGRAPHIC TECHNIQUE

THE WELD SHALL BE RADIOGRAPHED WITH A TECHNIQUE WHICH WILL DETERMINE QUANTITATIVELY THE SIZE OF DEFECTS WITH THICKNESSES EQUAL TO OR GREATER THAN 2 PER CENT OF THE THICKNESS OF THE BASE METAL. IN THE CASE OF A WELD JOINING PLATES OF UNEQUAL THICKNESS, BOTH PLATES MUST BE RADIOGRAPHED AT 2 PER CENT SENSITIVITY TOGETHER OR SINGLY, WITH THE WELD JUNCTION EVIDENT IN BOTH VIEWS.

TO DETERMINE WHETHER THE RADIOGRAPHIC TECHNIQUE EMPLOYED IS DETECTING DEFECTS OF A THICKNESS EQUAL TO OR GREATER THAN 2 PER CENT OF THE THICKNESS OF THE BASE MATERIAL, THICKNESS GAGES OR PENETRAMETERS OF THE TYPE HEREINAFTER SPECIFIED SHALL BE PLACED ON THE SIDE OF THE WELDED PLATE NEAREST THE SOURCE OF RADIATION AT AN EXTREME EDGE OF THE RADIOGRAPHIC PLATE OR FILM.

THE MATERIAL OF THE PENETRAMETER SHALL BE SUBSTANTIALLY THE SAME AS THAT OF THE WELDED PLATE.

THE THICKNESS OF THE PENETRAMETER SHALL BE NOT MORE THAN 2 PER CENT OF THE THICKNESS OF THE PLATE EXCLUSIVE OF ANY WELD REINFORCEMENT. PENETRAMETERS DESIGNED FOR INCREMENTS OF 1/8" OF PLATE THICKNESS ARE ACCEPTABLE.

IN EACH PENETRAMETER THERE SHALL BE THREE HOLES WITH DIAMETERS EQUAL RESPECTIVELY TO TWO, THREE AND FOUR TIMES THE PENETRAMETER THICKNESS, BUT IN NO CASE SHALL LESS THAN 1/16" DIAMETER BE USED.

EACH PENETRAMETER SHALL CARRY AN IDENTIFYING NUMBER REPRESENTING IN TWO SIGNIFICANT FIGURES THE MINIMUM THICKNESS IN INCHES OF THE PLATE FOR WHICH IT MAY BE USED. PENETRAMETERS MAY BE ESTABLISHED FOR DIFFERENCES IN THICKNESS NOT TO EXCEED 1/8" SO THAT A SET OF PENETRAMETERS VARYING FOR INCREMENTS OF PLATE THICKNESS OF 1/8" WILL BE ADEQUATE TO SERVE PLATES HAVING THICKNESSES BETWEEN THESE 1/8" DIMENSIONS.

THE IMAGES OF IDENTIFYING NUMBERS AND THE HOLES OF EACH PENETRAMETER MUST APPEAR CLEARLY ON THE RADIOGRAPH TO ESTABLISH THE 2 PER CENT SENSITIVITY.

FOR PLATES UP TO AND INCLUDING 2-1/2" IN THICKNESS. EACH PENETRAMETER SHALL BE 1-1/2" LONG AND 1/2" WIDE. FOR PLATES THICKER THAN 2-1/2" EACH PENETRAMETER SHALL BE 2-1/4" LONG AND 1" WIDE.

THE FILM DURING EXPOSURE SHALL BE AS CLOSE TO THE WELD AS PRACTICABLE. IF POSSIBLE, THIS DISTANCE SHALL BE NOT GREATER THAN 1 INCH. IN ANY EVENT, THE

$$\text{RATIO} = \frac{\text{DISTANCE FROM SOURCE OF RADIATION TO WELD SURFACE TOWARD RADIATION}}{\text{DISTANCE FROM WELD SURFACE TOWARD RADIATION TO FILM}}$$

SHALL BE AT LEAST 7 TO 1.

ALL RADIOGRAPHS SHALL BE FREE FROM EXCESSIVE MECHANICAL PROCESSING DEFECTS WHICH WOULD INTERFERE WITH PROPER INTERPRETATION OF THE RADIOGRAPH.

IDENTIFICATION MARKERS, THE IMAGES OF WHICH WILL APPEAR ON THE FILM, SHALL BE PLACED ADJACENT TO THE WELD AND THEIR LOCATIONS SHALL BE ACCURATELY AND PERMANENTLY MARKED ON THE OUTSIDE SURFACE NEAR THE WELD SO THAT A DEFECT APPEARING ON THE RADIOGRAPH MAY BE ACCURATELY LOCATED.

THE SIZE OF FILM TO BE USED SHALL BE AT LEAST 4" WIDE X 15" LONG UNLESS PERMISSION TO USE A DIFFERENT SIZE IS OBTAINED IN WRITING FROM THE DIRECTOR.

STANDARDS OF ACCEPTABILITY

THE ACCEPTABILITY OF THE WELDS EXAMINED BY RADIOGRAPHY SHALL BE JUDGED BY THE FOLLOWING STANDARDS:

(1) CRACKS:

DEFINITION- A DISCONTINUITY RESULTING FROM A VERY NARROW SEPARATION OF METAL.

STANDARD- NO WELD CONTAINING CRACKS REGARDLESS OF LENGTH, SIZE OR LOCATION SHALL BE CONSIDERED ACCEPTABLE.

(2) GAS POROSITY:
DEFINITION- GAS POCKETS OR VOIDS IN METAL.

STANDARD- THE MAXIMUM DIMENSION OF ANY INDIVIDUAL GAS POCKET SHALL NOT EXCEED 1/8 INCH. THE MAXIMUM ACCUMULATION OF GAS POCKETS SHALL NOT EXCEED THAT SHOWN IN THE "POROSITY STANDARDS" OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS.

(3) SLAG INCLUSIONS:

DEFINITION- NON-METALLIC, SOLID MATERIAL ENTRAPPED IN WELD METAL OR BETWEEN WELD METAL AND BASE METAL.

STANDARD- A. ELONGATED SLAG INCLUSIONS: NO ELONGATED SLAG INCLUSION SHALL EXCEED TWO-THIRDS OF THE THICKNESS OF THE THINNER PLATE OF THE JOINT IN LENGTH AND 1/16" IN WIDTH, EXCEPT THAT REGARDLESS OF THE PLATE THICKNESS NO SUCH INCLUSION SHALL BE LONGER THAN 3/4" AND EXCEPT THAT NO SUCH INCLUSION WHICH IS SHORTER THAN 1/4" SHALL BE CAUSE FOR REJECTION.

B. ISOLATED SLAG INCLUSIONS: IN ANY 12 INCH LENGTH OF WELD, THE MAXIMUM WIDTH OF ANY ISOLATED SLAG INCLUSION SHALL NOT EXCEED 1/8 INCH, THE SUMMATION OF LENGTHS OF ISOLATED SLAG INCLUSIONS SHALL NOT EXCEED 1 INCH, AND THERE SHALL BE NO MORE THAN FOUR ISOLATED SLAG INCLUSIONS OF THE MAXIMUM WIDTH OF 1/8 INCH. ANY TWO SUCH INCLUSIONS SHALL BE SEPARATED BY AT LEAST 2 INCHES OF SOUND WELD METAL.

(4) INCOMPLETE FUSION:

DEFINITION- FAILURE OF THE WELD METAL TO FUSE COMPLETELY WITH THE BASE METAL OR PRECEDING BEADS.

STANDARD- NO INDIVIDUAL LACK OF FUSION SHALL EXCEED 1/2 INCH IN LENGTH. IN ANY 12 INCH LENGTH OF WELD, THE SUMMATION OF LENGTHS OF LACK OF FUSION SHALL NOT EXCEED 3/4 INCH AND INDIVIDUAL DEFECTS SHALL BE SEPARATED BY AT LEAST 6 INCHES OF SOUND METAL.

(5) INCOMPLETE PENETRATION:

DEFINITION- ROOT PENETRATION WHICH IS LESS THAN COMPLETE OR FAILURE OF A ROOT PASS AND A BACKING PASS TO FUSE WITH EACH OTHER.

STANDARD- NO INDIVIDUAL LACK OF PENETRATION SHALL EXCEED 1/2 INCH IN LENGTH. IN ANY 12 INCH LENGTH OF WELD, THE SUMMATION OF LENGTHS OF LACK OF PENETRATION SHALL NOT EXCEED 3/4 INCH AND INDIVIDUAL DEFECTS SHALL BE SEPARATED BY AT LEAST 6 INCHES OF SOUND METAL.

REPAIR OF DEFECTIVE WELDS

DEFECTIVE WELDS SHALL BE REPAIRED BY CHIPPING OR MELTING OUT SUCH DEFECTS FROM ONE OR BOTH SIDES OF THE JOINT AS REQUIRED, REMOVING ONLY SUFFICIENT WELD METAL TO CORRECT THE DEFECT. THE JOINT SHALL THEN BE REWELDED AND AGAIN RADIOGRAPHED.

ADDITIONAL RADIOGRAPHS

WHEREVER AN UNACCEPTABLE WELD OCCURS, A RADIOGRAPH SHALL BE MADE OF THE ADJOINING 12-INCH LENGTHS OF WELD TO DETERMINE IF THE FLAWS EXTEND BEYOND THE LIMITS OF THE ORIGINAL RADIOGRAPH. IF UNACCEPTABLE FLAWS OCCUR IN THESE ADJOINING LENGTHS OF WELD, THESE DEFECTIVE WELDS SHALL BE REPAIRED AND THIS ENTIRE PROCEDURE REPEATED FOR THE NEXT ADJOINING 12-INCH LENGTH OF WELD.

CUSTODY OF RADIOGRAPHS

AS SOON AS THE RADIOGRAPHING OF THE WELDMENTS ON THE FULL LENGTH OF EACH FLANGE OR WEB PLATE BETWEEN FIELD SPLICES HAS BEEN COMPLETED, THE CONTRACTOR SHALL SEND TO THE STATE THE PROCESSED CONTACT FILM (THAT FILM CLOSEST TO THE SOURCE OF RADIATION) OF ALL ORIGINAL AND RETAKE RADIOGRAPHS. THESE RADIOGRAPHS SHALL BE ACCOMPANIED BY A CERTIFICATION FROM THE CONTRACTOR THAT THE RADIOGRAPHIC EXAMINATION WAS PERFORMED IN CONFORMANCE WITH THESE SPECIFICATIONS. THE RADIOGRAPHS SHALL BECOME THE PROPERTY OF THE STATE. EACH RADIOGRAPH SHALL BE CLEARLY IDENTIFIED TO SHOW THE LOCATION ON THE STRUCTURE AT WHICH IT WAS TAKEN. UNACCEPTABLE DEFECTS SHALL BE IDENTIFIED IN EACH RADIOGRAPH IN WHICH THEY OCCUR AND THE REPAIR OR REPLACEMENT OF EACH UNACCEPTABLE WELD DEFECT SHALL BE NOTED AND IDENTIFIED.

REPORT OF COST

AFTER THE COMPLETION OF THE RADIOGRAPHIC INSPECTION OF WELDS, THE CONTRACTOR SHALL FURNISH THE STATE A COMPLETE REPORT OF THE COST OF PERFORMING THIS WORK, SEPARATED INTO THE ITEMS MENTIONED IN THE FOLLOWING PARAGRAPH.

BASIS OF PAYMENT

PAYMENT FOR THIS WORK, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR S-7, STRUCTURAL STEEL.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

SUPERSTRUCTURE DETAILS
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN.R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

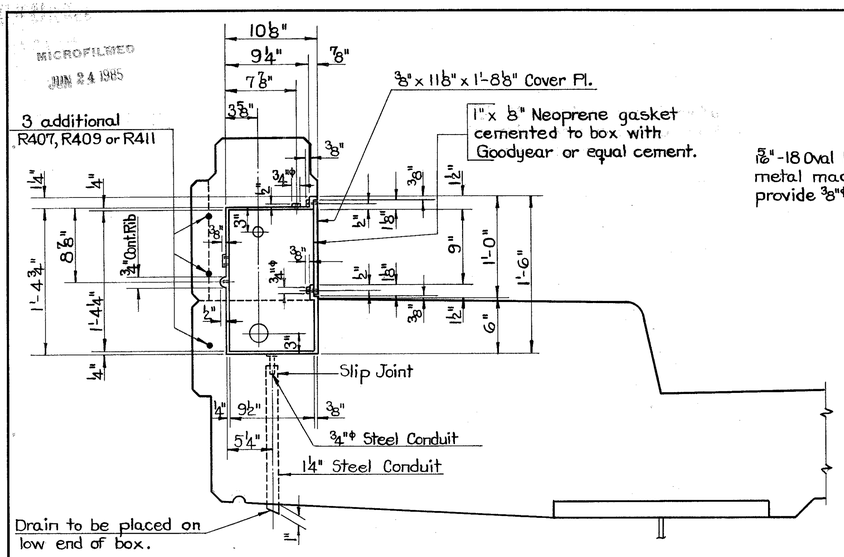
Designed	Drawn	Traced	Checked	Reviewed-Date	Revised
P.M.			E.F.R.	E. Roberts Feb 23, 1960	

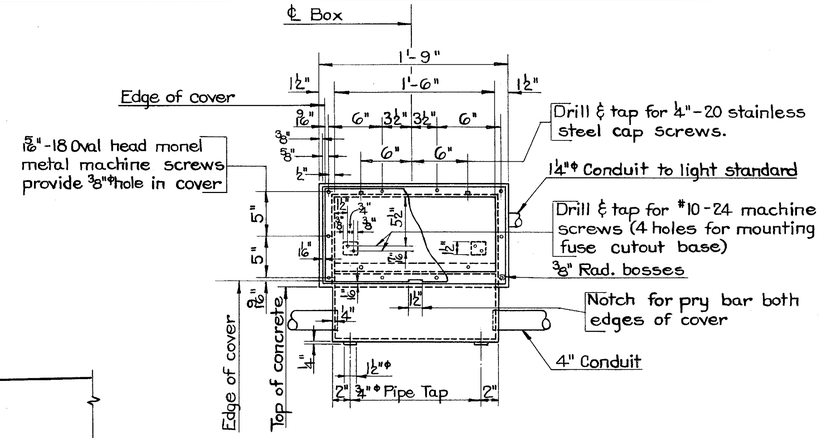
MICROFILMED
JUN 24 1985

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

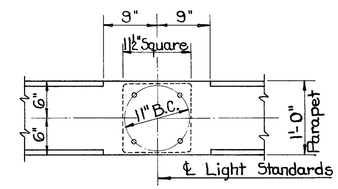
38
44

JEFFERSON COUNTY
JEF-7-13.36

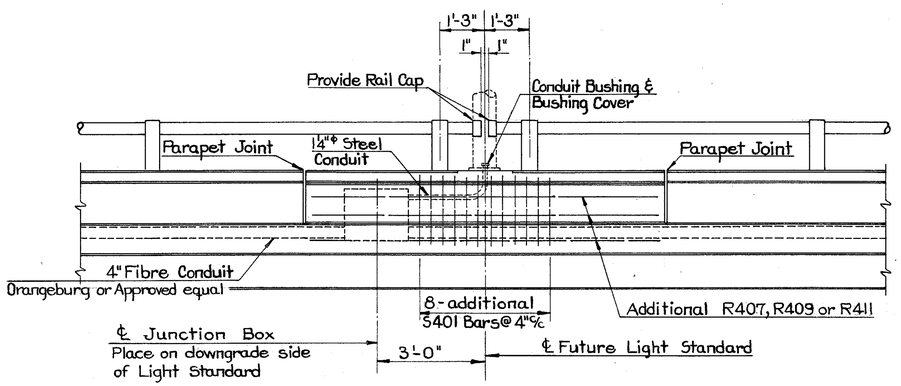




JUNCTION BOX DETAILS

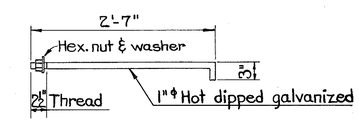


ANCHOR BOLT LAYOUT



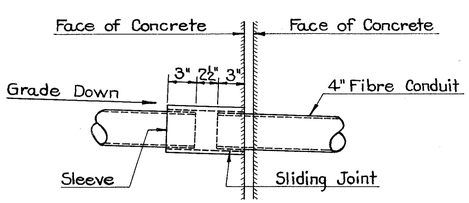
DETAILS OF PARAPET AT LIGHT STANDARDS

NOTE: Any reinforcing steel interfering with the junction box shall be cut.



LIGHT STANDARD ANCHOR BOLT

(4 PER STANDARD)
Project bolt 3" above concrete

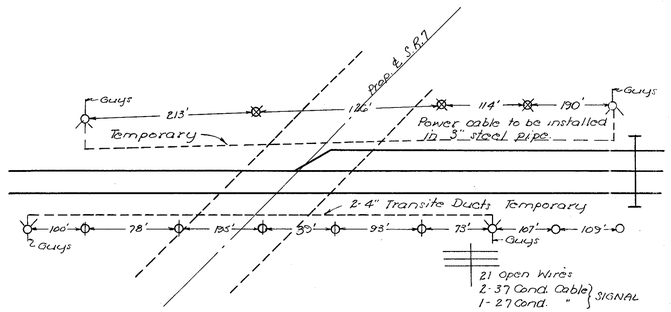


CONDUIT EXPANSION JOINT DETAIL
TYPICAL OF ALL EXP. JOINTS

• ELECTRICAL NOTES •

- Junction boxes shall be made of cast iron and covers shall be aluminum.
- Boxes shall be hot dipped galvanized both inside and outside after fabrication. All exposed surfaces of boxes shall be painted aluminum. See specifications 5-8.04 & 5-8.05.
- Tapped hole for drain, not used, shall be plugged.
- Junction box shall be set parallel to grade of adjoining curb.
- Electrical Grounds:
  A solid No. 0 gage, bare copper wire electrical ground shall be embedded in each column of Pier No. 2 and Pier No. 5. The lower ends of the wires shall be brazed to one of the steel H-piles at Pier No. 2, and at Pier No. 5 shall terminate in a 25 foot length coiled under the footings and separated from the concrete by two layers of tarpaper. The upper ends shall extend sufficiently above the top of the concrete to provide for suitable splices and extensions for connections to the superstructure. The connections to the superstructure shall be a No. 6 gage, bare, stranded, tinned copper wire, brazed or bolted to a girder flange and to the solid copper wire in the pier shaft. At the base of the lamp standards there shall be a tinned No. 6 gage copper wire brazed to one anchor bolt and the other end brazed or bolted to the flange of the outside girder.

FORCE ACCOUNT WORK
by
The Pennsylvania Railroad Company
1. Engineering and Inspection
2. Relocation and restoration of two pole lines



⊗ Power poles to be removed.
φ T&T poles to be removed.

Mingo Jct., O.
C.&S. work to be done at S.R.7
Bridge No. JEF-7-1336
Not to scale
Jan. 20, 1960

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

ELECTRICAL LIGHTING SYSTEM DETAILS
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY
STA. 673 + 21.71
STA. 681 + 55.42

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GHK.	B.D.B.	G.H.	P.M.	E. Roberts	Feb. 25, 1960	

MICROFILMED
JUN 2 4 1985

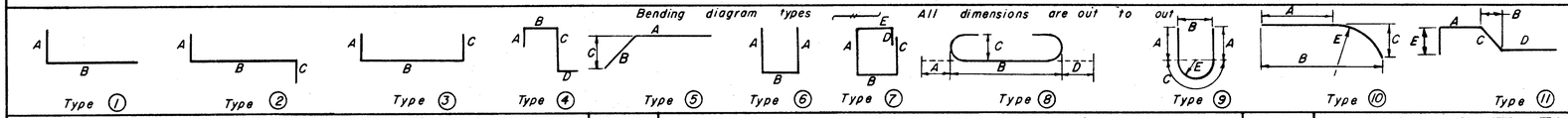
FED. RD. DIVISON	STATE	PROJECT	
	OHIO	UG-430 (13)	

39/44

JEFFERSON COUNTY
JEF-7-13.36

REINFORCING STEEL BAR SCHEDULE

Bending diagram types — All dimensions are out to out



ABUTMENT "A"

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
A601	67	6	14'-4"	7	5'-10"	1'-3"	4'-8"	2'-6"	9"	1,442
A501	12	5	9'-8"	1	5'-6"	4'-4"				121
A502	9	5	10'-3"	1	6'-1"	4'-4"				96
A503	9	5	10'-11"	1	6'-9"	4'-4"				102
A504	6	5	11'-7"	1	7'-5"	4'-4"				72
A505	9	5	11'-10"	1	7'-8"	4'-4"				111
A506	8	5	12'-6"	1	8'-4"	4'-4"				104
A507	9	5	13'-1"	1	8'-11"	4'-4"				123
A508	5	5	13'-9"	1	9'-7"	4'-4"				72
A509	9	5	24'-0"	Str.						225
A510	2	5	7'-2"	Str.						15
A511	8	5	10'-0"	Str.						83
A512	10	5	16'-0"	Str.						167
A513	12	5	4'-6"	1	1'-1½"	3'-6"				56
A514	9	5	5'-2"	1	1'-1½"	4'-2"				48
A515	9	5	5'-9"	1	1'-1½"	4'-9"				54
A516	6	5	6'-5"	1	1'-1½"	5'-5"				40
A517	9	5	6'-6"	1	1'-1½"	5'-6"				61
A518	8	5	7'-4"	1	1'-1½"	6'-4"				61
A519	9	5	7'-11"	1	1'-1½"	6'-11"				74
A520	5	5	8'-7"	1	1'-1½"	7'-7"				45
A521	40	5	4'-6"	6	1'-6"	1'-10"				188
A522	20	5	34'-6"	Str.						720
A523	52	5	5'-10"	6	1'-6"	3'-2"				316
A524	24	5	8'-10"	6	4'-0"	1'-2"				221
A525	4	5	11'-3"	Str.						47
A526	26	5	12'-6"	Str.						339
A527	8	5	14'-8"	Str.						122
A528	6	5	19'-0"	Str.						119
A529	32	5	3'-6"	Str.						117
A530	4	5	4'-10"	Str.						20
A531	6	5	2'-6"	1	1'-3"	1'-5"				16
A532	19	5	8'-6"	Str.						168
A533	7	5	13'-5"	Str.						98
A534	2	5	14'-9"	10	3'-0"	14'-0"			19'-8"	31
A535	2	5	19'-0"	10	7'-3"	18'-3"			19'-8"	40
A536	11	5	5'-4"	3	1'-3"	3'-10"	7"			61
A537	6	5	4'-11"	3	1'-3"	3'-5"	7"			31
A538	6	5	4'-3"	3	1'-3"	2'-9"	7"			27
A539	6	5	3'-1"	3	1'-3"	1'-7"	7"			19
A540	4	5	4'-4"	6	1'-10"	1'-0"				18
A541	11	5	4'-9"	1	1'-3"	3'-8"				55
A542	6	5	4'-4"	1	1'-3"	3'-3"				27
A543	6	5	3'-8"	1	1'-3"	2'-7"				23
A544	12	5	33'-6"	Str.						419
A401	30	4	6'-0"	6	2'-9"	8"				120
R401*	4	4	17'-6"	Str.						
R402*	4	4	12'-2"	Str.						
									Total Weight	6,534

ABUTMENT "B"

B1101	18	11	6'-10"	11	3'-0"	3'-5"	3'-9"		9"	653
B1102	2	11	37'-0"	Str.						393
B1103	2	11	22'-6"	Str.						239
B1104	4	11	14'-6"	Str.						308
B1105	4	11	32'-3"	Str.						685
B1106	2	11	18'-3"	Str.						194
B1107	4	11	12'-3"	Str.						260

ABUTMENT "B" (CONT'D)

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
B1001	67	10	8'-6"	Str.						251
B1002	17	10	8'-0"	Str.						585
B1003	3	10	24'-9" to	5	15'-6" to	9'-5" to	7'-10" to			347
			29'-1" ⓐ		17'-8" ⓒ	11'-7" ⓔ	9'-7" ⓖ			
B1004	5	10	20'-5" to	5	13'-4" to	7'-3" to	6'-0" to			478
			23'-11" ⓐ		15'-1" ⓗ	9'-0" ⓑ	7'-6" ⓙ			
B1005	12	10	14'-11" to	5	10'-7" to	4'-6" to	3'-9" to			895
			19'-9" ⓚ		13'-0" ⓜ	6'-11" ⓜ	5'-9" ⓟ			
B1006	3	10	5'-3"	Str.						66
B1007	37	10	9'-8"	1	5'-0"	5'-0"				1539
B1008	36	10	6'-2"	1	5'-0"	1'-6"				955
B1009	67	10	11'-5"	Str.						3291
B1010	12	10	10'-7"	1	5'-11"	5'-0"				547
B1011	26	10	28'-10"	5	16'-11"	12'-0"	9'-6"			3225
B1012	26	10	27'-4"	5	16'-5"	11'-0"	9'-0"			3057
B1013	19	10	15'-6"	Str.						1267
B1014	3	10	18'-7"	Str.						240
B1015	18	10	12'-9"	Str.						988
B1016	3	10	14'-3"	Str.						184
B1017	6	10	9'-7"	Str.						247
B901	28	9	17'-9"	Str.						1690
B902	12	9	5'-6"	11	2'-6"	2'-9"	3'-0"		6"	224
B903	6	9	25'-7"	Str.						522
B904	6	9	12'-6"	Str.						256
B905	2	9	34'-3"	Str.						233
B801	22	8	6'-3"	Str.						367
B802	56	8	5'-9"	1	1'-0"	5'-0"				860
B803	6	8	10'-0" to 12'-6"	Str.	2 Sets-3 Ea. Set Vary by 1'-3"					180
B804	14	8	3'-9" to 13'-6"	Str.	2 Sets-7 Ea. Set Vary by 1'-7½"					322
B805	8	8	8'-0" to 11'-0"	Str.	2 Sets-4 Ea. Set Vary by 1'-0"					203
B806	12	8	4'-4" to 11'-7"	Str.	2 Sets-6 Ea. Set Vary by 1'-5"					255
B807	4	8	7'-0"	Str.						74
B808	12	8	4'-0" to 12'-2"	Str.	2 Sets-3 Ea. Set Vary by 4'-1"					258
B701	12	7	6'-0"	Str.						147
B702	2	7	20'-4"	Str.						83
B703	2	7	17'-7"	1	15'-6"	2'-3"				72
B601	34	6	9'-9"	Str.						498
B602	28	6	7'-7"	Str.						319
B603	24	6	8'-10"	5	5'-0"	3'-11"	2'-9"			318
B604	44	6	8'-5"	5	5'-0"	3'-6"	2'-6"			556
B605	60	6	21'-8"	7	9'-3"	1'-3"	9"	7'-11"	3'-1"	1953
B606	11	6	6'-9"	Str.						112
B501	14	5	16'-0"	Str.						234
B502	10	5	12'-0"	Str.						125
B503	8	5	17'-0"	Str.						142
B504	4	5	30'-11" to	5	18'-7" to	12'-5" to	10'-4" to			141
			36'-3" ⓚ		21'-3" ⓐ	15'-1" ⓖ	12'-6" ⓒ			
B505	20	5	11'-10"	Str.						247
B506	3	5	17'-9"	Str.						56
B507	3	5	36'-6"	Str.						114
B508	6	5	28'-3"	Str.						177
B509	8	5	13'-6"	Str.						113
B510	7	5	8'-0"	Str.						59
B511	38	5	4'-1"	1	1'-0"	3'-3"				162
B512	6	5	24'-3" to 28'-1"	Str.	2 Sets-3 Ea. Set Vary by 2'-2"					165
B513	6	5	4'-9" to 10'-6"	Str.	2 Sets-4 Ea. Set Vary by 2'-10½"					48
B514	13	5	28'-11" to	7	1'-8"	12'-3" to	1'-8"	1'-8"	12'-3" to	446
			36'-11" ⓑ			16'-3" ⓓ			16'-3" ⓓ	
B515	9	5	21'-7" to	7	1'-8"	8'-7" to	1'-8"	1'-8"	8'-7" to	234
			28'-3" ⓟ			11'-11" ⓡ			11'-11" ⓡ	
B516	8	5	13'-5" to	7	1'-8"	4'-6" to	1'-8"	1'-8"	4'-6" to	141
			20'-5" ⓢ			8'-0" ⓣ			8'-0" ⓣ	

ABUTMENT "B" (CONT'D)

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT	
B517	4	5	8'-1" to	7	1'-8"	1'-10" to	1'-8"	1'-8"	1'-10" to	42	
			12'-1" ⓐ			3'-10" ⓑ			3'-10" ⓑ		
B518	6	5	23'-1" to 27'-5"	Str.	2 Sets-3 Ea. Set Vary by 2'-2"					158	
B519	8	5	3'-8" to 11'-2"	Str.	2 Sets-4 Ea. Set Vary by 2'-6"					62	
B520	12	5	27'-5" to	7	1'-8"	11'-6" to	1'-8"	1'-8"	11'-6" to	378	
			32'-11" ⓔ			14'-3" ⓜ			14'-3" ⓜ		
B521	8	5	20'-9" to	7	1'-8"	8'-2" to	1'-8"	1'-8"	8'-2" to	197	
			26'-7" ⓟ			11'-1" ⓟ			11'-1" ⓟ		
B522	7	5	11'-7" to	7	1'-8"	3'-7" to	1'-8"	1'-8"	3'-7" to	114	
			19'-7" ⓐ			7'-7" ⓑ			7'-7" ⓑ		
B523	22	5	20'-6"	Str.						471	
B524	4	5	18'-4"	Str.						76	
B525	16	5	22'-1" to	7	1'-8"	8'-10" to	1'-8"	1'-8"	8'-10" to	426	2 Sets-8 Ea. Set
			29'-1" ⓢ			12'-4" ⓣ			12'-4" ⓣ		
B526	14	5	12'-3" to	7	1'-8"	3'-11" to	1'-8"	1'-8"	3'-11" to	240	2 Sets-7 Ea. Set
			20'-9" ⓥ			8'-2" ⓤ			8'-2" ⓤ		
B527	14	5	33'-8"	Str.						491	
B528	11	5	11'-7"	Str.						133	
B529	14	5	27'-1"	Str.						395	
B530	47	5	6'-6"	6	1'-7"	3'-8"				319	
B531	8	5	6'-6"	Str.						54	
B532	10	5	19'-0"	Str.						198	
B533	2	5	17'-0"	Str.						35	
B534	8	5	7'-0"	6	3'-11"	6"				58	
B535	2	5	5'-0"	Str.						10	
B536	2	5	7'-9"	Str.						16	
B537	2	5	14'-0"	Str.						29	
B538	28	5	33'-2"	Str.						969	
B539	10	5	4'-2" to 7'-0"	Str.	2 Sets-5 Ea. Set Vary by 8½"					58	
B540	12	5	4'-0"	Str.						50	
B541	48	5	15'-11"	Str.						797	
B542	12	5	15'-3"	Str.						191	
B543	6	5	23'-4"	Str.						146	
B544	6	5	8'-8"	Str.						54	
B545	16	5	10'-2"	Str.						170	
B546	9	5	5'-4"	3	1'-3"	3'-10"	7"			50	
B547	9	5	4'-9"	1	1'-3"	3'-8"				43	
B548	8	5	4'-7" to	3	1'-3"	3'-1" to	7"	2 Sets		41	
			5'-4" ⓜ			3'-10" ⓜ		4 Ea. Set			
B549	8	5	4'-0" to	1	1'-3"	2'-11" to		2 Sets		35	
			4'-9" ⓜ			3'-8" ⓜ		4 Ea. Set			
B550	8	5	2'-1" to	3	1'-3"	7" to	7"	2 Sets		27	
			4'-4" ⓒ			2'-10" ⓒ		4 Ea. Set			
B551	8	5	1'-6" to	1	1'-3"	5" to		2 Sets		20	
			3'-9" ⓒ			2'-8" ⓒ		4 Ea. Set			
B552	2	5	21'-1"	10	9'-4"	13'-6"			20'-0"	44	
B553	2	5	20'-6"	Str.						43	
B554	1	5	9'-7"	Str.						10	
B555	1	5	10'-10"	Str.						11	
B556	1	5	12'-2"	Str.						12	
B557	2	5	13'-8"	Str.						29	
B558	2	5	14'-3"	10	2'-6"	13'-6"			20'-0"	30	
B559	1	5	19'-0"	Str.						20	
B560	1	5	17'-8"	Str.						18	
B561	1	5	16'-5"	Str.						17	
B562	10	5	5'-0" to 10'-0"	Str.	2 Sets-5 Ea. Set Vary by 1'-3"					78	
B563	4	5	4'-4"	6	1'-10"	1'-0"				18	
B401	33	4	6'-0"	6	2'-10"	6"				132	
R403*	4	4	12'-4"	Str.							
R404*	4	4	19'-2"	Str.							
									Total Weight	42,225	

ⓐ Vary by 1'-4"
ⓑ Vary by 8"
ⓒ Vary by 9"
ⓓ Vary by 2'-2"
ⓔ Vary by 1'-1"
ⓕ Vary by 2¼"
ⓖ Vary by 10½"
ⓗ Vary by 5¼"
ⓙ Vary by 4½"
ⓚ Vary by 5¼"
ⓜ Vary by 2½"
ⓝ Vary by 3"
ⓟ Vary by 10"
ⓠ Vary by 4"
ⓡ Vary by 5"
ⓢ Vary by 12"
ⓣ Vary by 6"
ⓤ Vary by 8½"
ⓥ Vary by 1'-5"
ⓦ Vary by 1'-9¼"

* Included in Item S-14, Railing for Payment.

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

REINFORCING BAR SCHEDULE
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
A.A.L.		CJB	D.M.R.			

MICROFILMED
JUN 24 1985

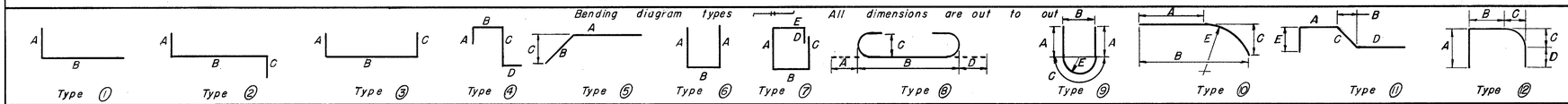
FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

40/44

JEFFERSON COUNTY
JEF-7-13.36

REINFORCING STEEL BAR SCHEDULE

Bending diagram types — All dimensions are out to out



PIER 1 & PIER 2

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P1101	32	11	23'-0"	Str.						3,910
P1102	16	11	17'-6"	Str.						1,488
P1103	16	11	12'-0"	Str.						1,020
P1104	32	11	17'-4"	5	13'-9"	3'-7"	1'-1"			2,946
P1105	8	11	14'-0"	Str.						595
P1106	80	11	7'-8"	1	1'-6⅝"	6'-6"				3,260
P1107	48	11	21'-0"	Str.						5,356
P1108	32	11	17'-3"	Str						2,933
P1109	32	11	21'-0"	Str.						3,570
P1110	8	11	21'-0"	Str.						893
P1111	104	11	19'-8"	8	1'-7"	16'-6"	1'-1¾"			10,867
P1112	32	11	25'-5"	1	2'-6"	23'-3"				4,322
P1113	56	11	17'-8"	8	1'-7"	14'-6"	1'-1¾"			5,257
P1114	8	11	24'-7"	Str.						1,045
P501	112	5	7'-4"	6	2'-8"	2'-4"				856
P502	264	5	9'-4"	6	3'-8"	2'-4"				2,569
P503	16	5	22'-0"	Str.						367
P504	8	5	18'-6"	Str.						154
P505	12	5	4'-2"	6	0'-7⅝"	3'-2"				52
P506	24	5	5'-5"	Str.						136
P507	24	5	4'-9"	Str.						119
P508	24	5	4'-2"	Str.						104
P509	24	5	3'-7"	Str.						90
P510	24	5	3'-5"	Str.						86
P511	24	5	2'-8"	Str.						67
P512	24	5	2'-0"	Str.						50
P513	86	5	6'-9"	6	2'-2"	2'-8"				605
P514	56	5	3'-6"	6	0'-7⅝"	2'-6"				204
P515	16	5	9'-9"	Str.						163
P401	184	4	7'-8"	6	2'-9"	2'-4"				943
P402	152	4	7'-2"	6	2'-7"	2'-2"				728
P403	192	4	6'-8"	6	2'-5"	2'-0"				855
				TOTAL FOR PIERS 1 & 2						55,610

PIER 4 & PIER 5

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P1121	48	11	19'-6"	Str.						4,973
P1122	264	11	8'-3"	1	1'-6⅝"	7'-1"				11,572
P1123	32	11	12'-0"	Str.						2,040
P1124	8	11	18'-0"	Str.						765
P1125	24	11	19'-6"	Str.						2,486
P1126	104	11	21'-10"	Str.						12,062
P1127	104	11	24'-0"	Str.						13,261
P1128	160	11	23'-7"	Str.						20,045
P1129	44	11	18'-6"	5	12'-0"	6'-6"	4'-7"			4,325
P1130	58	11	20'-0"	Str.						6,163
P1131	28	11	25'-0"	Str.						3,719
P1132	16	11	35'-4"	1	2'-0⅝"	33'-8"				3,003
P1133	22	11	33'-0"	Str.						3,857
P1134	44	11	26'-10"	Str.						6,272
P1021	152	10	26'-0"	Str.						17,005
P821	48	8	15'-6"	Str.						1,986
P721	54	7	13'-6"	Str.						1,490
P722	78	7	15'-6"	Str.						2,471
P521	16	5	9'-0"	5	7'-0"	2'-0"	0'-7"			150
P522	520	5	11'-8"	6	4'-7¼"	2'-9"				6,329
P523	24	5	32'-8"	Str.						818
P524	14	5	5'-2"	6	0'-7⅝"	4'-2"				75
P525	42	5	4'-7"	6	0'-7⅝"	3'-6¾"				201
P526	24	5	4'-6"	Str.						113
P527	48	5	3'-0"	Str.						150
P528	28	5	7'-11"	6	2'-6½"	2'-10"				231

PIER 4 & PIER 5 CONT'D

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P421	72	4	14'-8"	6	5'-0"	4'-10½"				706
P422	160	4	12'-9"	6	4'-3¾"	4'-5"				1,363
P423	160	4	10'-10"	6	3'-6⅞"	3'-10¾"				1,158
P424	80	4	15'-0"	6	5'-1¾"	4'-11"				802
P425	72	4	14'-6"	6	4'-7½"	5'-5½"				697
P426	160	4	12'-8"	6	4'-3"	4'-4½"				1,354
P427	160	4	11'-2"	6	4'-0"	3'-4½"				1,194
P428	80	4	14'-7"	6	4'-7¼"	5'-7"				779
				TOTAL FOR PIERS 4 & 5						133,615

PIER 3

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P1141	12	11	27'-0"	Str.						1,721
P1142	16	11	24'-0"	1	2'-6"	21'-10"				2,040
P1143	8	11	16'-0"	Str.						680
P1144	8	11	11'-0"	Str.						468
P1145	8	11	8'-0"	Str.						340
P1146	16	11	16'-4"	5	12'-9"	3'-7"	1'-1"			1,388
P1147	4	11	24'-0"	Str.						510
P1148	4	11	20'-0"	Str.						425
P1149	4	11	16'-0"	Str.						340
P1150	32	11	19'-5"	Str.						3,301
P1151	8	11	29'-0"	Str.						1,233
P1152	24	11	21'-0"	Str.						2,678
P1153	56	11	17'-8"	8	1'-7"	14'-6"	1'-1¾"			5,257
P1154	40	11	7'-8"	1	1'-6⅝"	6'-6"				1,630
P541	200	5	6'-4" to	6	2'-2" to	2'-4"				1,633
			9'-4" @		3'-8"		50 Sets-4 Ea. Set			
P542	160	5	9'-4"	6	3'-8"	2'-4"				1,557
P543	6	5	4'-2"	6	0'-7¾"	3'-2"				26
P544	12	5	5'-3"	Str.						66
P545	12	5	3'-4"	Str.						42
P546	12	5	3'-1"	Str.						39
P547	12	5	3'-6"	6	0'-7⅝"	2'-6"				44
P548	20	5	6'-9"	6	2'-2"	2'-8"				141
P549	8	5	21'-9"	Str.						181
P550	4	5	19'-0"	Str.						79
P551	8	5	8'-6"	Str.						71
P441	88	4	7'-8"	6	2'-9"	2'-4"				451
P442	72	4	7'-2"	6	2'-7"	2'-2"				345
P443	104	4	6'-8"	6	2'-5"	2'-0"				463
				TOTAL FOR PIER 3						27,149

PIER 6

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P1161	29	11	20'-10"	8	1'-7"	17'-8"	1'-1¾"			3,210
P1162	62	11	11'-4"	Str.						3,733
P1163	62	11	9'-2"	1	1'-6⅝"	8'-0"				3,021
P1061	20	10	17'-6"	8	1'-5"	14'-8"	1'-0½"			1,506
P961	17	9	17'-2"	8	1'-3"	14'-8"	0'-11¼"			992
P962	14	9	20'-2"	8	1'-3"	17'-8"	0'-11¼"			960
P461	18	4	7'-11"	6	1'-9"	4'-7"				95
P462	18	4	9'-8"	Str.						116
P463	45	4	5'-7"	8	6"	4'-7"				168
				TOTAL FOR PIER 6						13,801

PIER 7

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
P1181	56	11	7'-10"	1	1'-6⅝"	6'-8"				2,330
P1182	28	11	11'-0"	Str.						1,636
P1183	28	11	21'-6"	Str.						3,198
P981	66	9	13'-8"	Str.						3,068
P781	50	7	11'-2"	Str.						1,142
P581	20	5	4'-9"	6	0'-7¾"	3'-9"				99
P582	8	5	4'-6"	6	0'-7¾"	3'-6"				38
P481	132	4	7'-10"	12	2'-8½"	2'-2"	0'-8"	2'-0½"		690
				TOTAL FOR PIER 7						12,201

@ Vary by ¾"

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

REINFORCING BAR SCHEDULE
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
		G.H.		E. Roberts	Feb. 25, 1960	

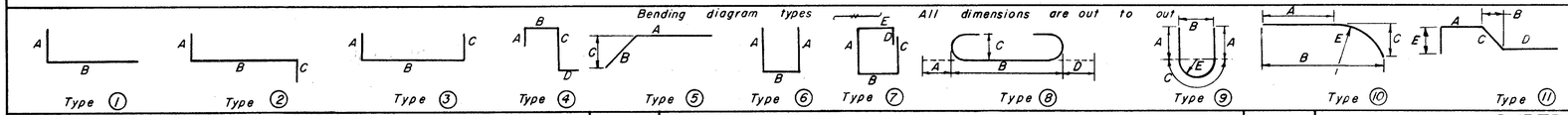
MICROFILMED
JUN 24 1985

FED. RD. DIVISON	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430 (13)	

JEFFERSON COUNTY
JEF-7-13.36

REINFORCING STEEL BAR SCHEDULE

Bending diagram types — All dimensions are out to out



MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
Total Weight										

SUPERSTRUCTURE

MARK	TOTAL	SIZE	LENGTH	TYPE	A	B	C	D	E	WEIGHT
S701	182	7	33'-5"	5	29'-5"	4'-0"	3"			12,433
S702	774	7	33'-1"	5	29'-1"	4'-0"	3"			52,334
S703	228	7	33'-1"	5	29'-1"	4'-0"	2¼"			15,416
S704	228	7	33'-1"	5	29'-1"	4'-0"	1½"			15,416
S705	718	7	33'-1"	5	29'-1"	4'-0"	¾"			48,548
S706	360	7	33'-1"	Str.						24,342
S601	182	6	33'-6"	5	29'-6"	4'-0"	3"			9,158
S602	774	6	33'-2"	5	29'-2"	4'-0"	3"			38,562
S603	228	6	33'-2"	5	29'-2"	4'-0"	2¼"			11,359
S604	228	6	33'-2"	5	29'-2"	4'-0"	1½"			11,359
S605	718	6	33'-2"	5	29'-2"	4'-0"	¾"			35,772
S606	360	6	33'-3"	Str.						17,979
S607	2604	6	32'-0"	Str.						125,159
S608	260	6	30'-0"	Str.						11,716
S609	1024	6	35'-0"	Str.						53,832
S610	52	6	24'-0"	Str.						1,874
S611	52	6	29'-0"	Str.						2,265
S501	1663	5	4'-11"	6	8"	3'-11"				8,534
S502	1244	5	5'-6"	Str.						7,136
S401	1727	4	4'-6"	6	2'-0"	8"				5,191
S402	3326	4	1'-9"	1	6"	1'-4"				3,888
S403	1662	4	4'-0"	7	11"	1'-1"	11"	6"	1'-0"	4,441
R405*	24	4	12'-9"	Str.						
R406*	164	4	15'-11"	Str.						
R407*	35	4	10'-3"	Str.						
R408*	44	4	16'-6"	Str.						
R409*	7	4	10'-1"	Str.						
R410*	160	4	15'-2"	Str.						
R411*	14	4	9'-11"	Str.						
R412*	8	4	12'-5"	Str.						
Total Weight										516,714

* Included in Item S-14, Railing for pavement.
* Does not include grillages.

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPERSTR.	ABUTS.	PIERS	GENERAL
E-2	Lump	sum	Cofferdams, cribs and sheeting				Lump sum
E-2	2007	cu.yds	Unclassified excavation		688	1319	
E-2	719	cu.yds	Rock, and shale excavation		104	615	
S-1	1,917	cu.yds	Class "C" concrete, superstructure	1917			
S-1	899	cu.yds	Class "C" concrete, pier caps & columns			899	
S-1	333	cu.yds	Class "E" concrete, abutment walls		333		
S-1	684	cu.yds	Class "E" concrete, footings		185	499	
S-3	11	sq.yds	Waterproofing, Type B		11		
S-3	54	lin.ft.	Waterproofing, premolded sealing strip		54		
S-4	759090	lbs.	Reinforcing steel	516,714		242,376	
S-7	2,627,600	lbs.	Structural steel	2,410,100		217,500	
S-8	2,606,600	lbs.	Field painting of structural steel as per plan.	2,410,100		196,500	
S-9	73	sq.ft.	1" Preformed expansion joint filler (gray rubber, M-10.02)	25	48		
S-9	20	lin.ft.	Folded copper strip 12", 16 oz.	20			
S-14	1725	lin.ft.	Railing (aluminum rail and supports and concrete parapet)				1725
S-16	Lump	sum	First test pile				Lump sum
S-18	5,400	lin.ft.	Steel piles 12 BP 53			5,400	
S-25	1725	lin.ft.	4" Fibre conduit including specials (expansion joints)				1725
S-25	Lump	sum	Electrical lighting system (junction boxes, anchor bolts, electrical grounds, & steel conduit)				Lump sum
S-29	194	cu.yds	Pourous backfill				194
S-29	24	lin.ft.	8" Perforated bituminous coated C.M.P. including specials		24		
I-2	75	lin.ft.	8" Bituminous coated C.M.P. including specials				75
I-10	445	sq.yds.	Concrete slope protection				445
I-10	610	sq.yds	Crushed aggregate slope protection				610
Special	680	lin.ft.	Prebored holes for piles.			680	

REPLACEMENT BARS

MARK	NO.	SIZE	LENGTH	TYPE	WEIGHT
RE 1101	10	11	7'-7"	Str.	
RE 1001	2	10	7'-3"	Str.	
RE 901	1	9	6'-10"	Str.	
RE 801	1	8	6'-6"	Str.	
RE 701	9	7	6'-3"	Str.	
RE 601	17	6	5'-11"	Str.	
RE 501	3	5	5'-7"	Str.	
RE 401	2	4	5'-3"	Str.	

BAR SIZE:
Bar size is indicated in the barmark. The first digit where three digits are used and the first two where four are used, indicates the bar size number. For example, A401 is a number 4 bar and B1107 is a number 11 size bar.

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

MICHAEL BAKER JR., CONSULTING ENGINEERS
ROCHESTER, PENNSYLVANIA

REINFORCING BAR SCHEDULE & ESTIMATED QUANTITIES
BRIDGE NO. JEF-7-1336
OVER CROSS CREEK & THE PENN. R.R.

JEFFERSON COUNTY — STA. 673 + 21.71 / STA. 681 + 55.42

Designed	Drawn	Traced	Checked	Reviewed	Date	Revised
		P.T.R.		E. Roberts	Feb. 25, 1960	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	UG-430(13)	

42/44

JEFFERSON COUNTY
JEF.-7-13.36
LIMITED ACCESS
R/W
1 OF 3

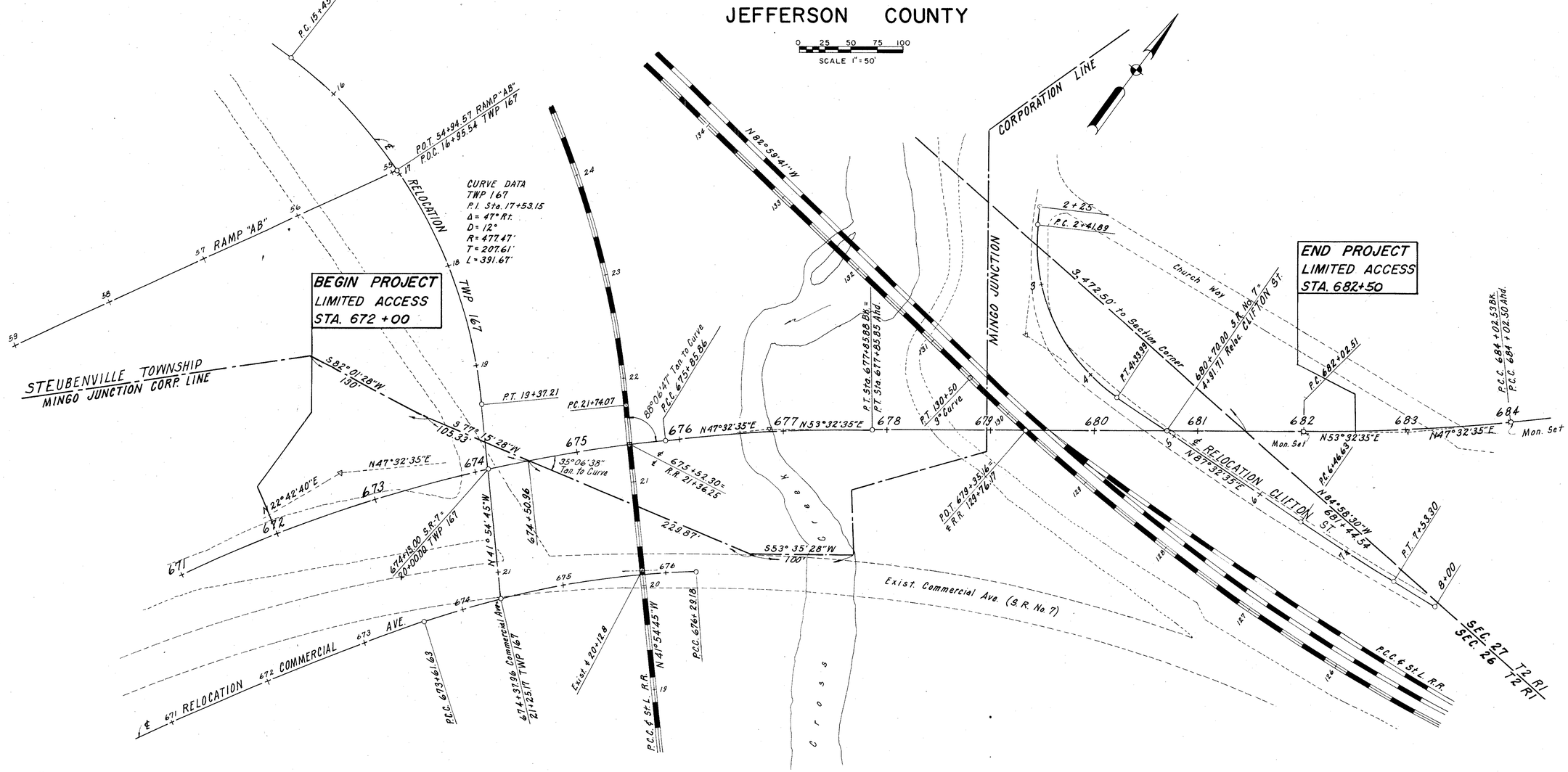
CENTERLINE PLAT

OHIO DEPARTMENT OF HIGHWAYS

JEF.-7-13.36

STEUBENVILLE TOWNSHIP & VILLAGE OF MINGO JUNCTION

JEFFERSON COUNTY



STEUBENVILLE TWP.
SEC. 26 T2 R1

CURVE DATA S.R. No. 7

P.I. Sta. 672+80.41	P.I. Sta. 676+85.96	P.I. Sta. 683+02.61
Δ = 24°49'55" Rt.	Δ = 6°00'00" Rt.	Δ = 6°00'00" Lt.
D = 4°00'00"	D = 2°59'59"	D = 2°59'59"
R = 1432.39'	R = 1910.02'	R = 1910.02'
T = 315.35'	T = 100.10'	T = 100.10'
L = 620.80'	L = 200.02'	L = 200.02'

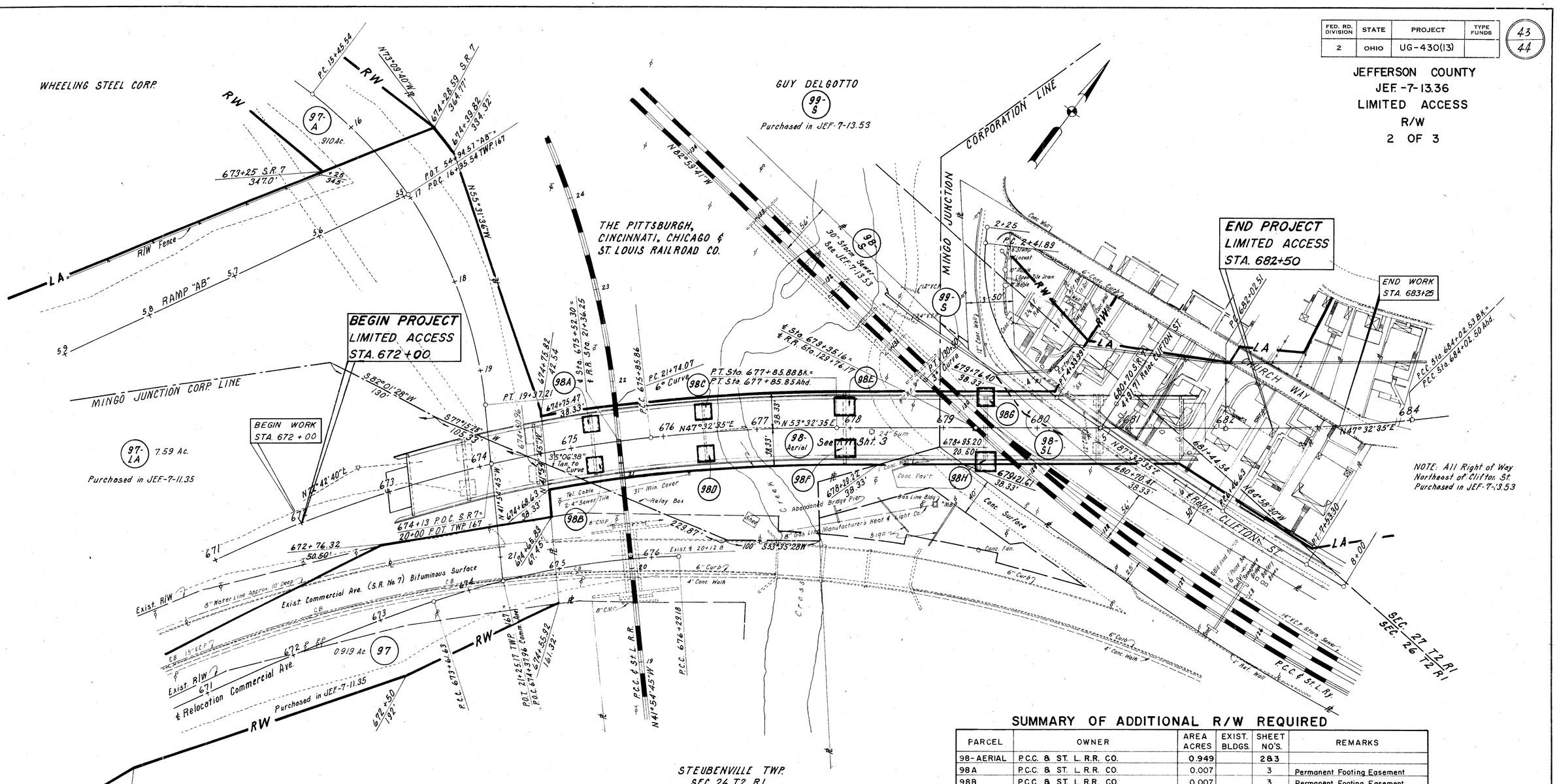
PREPARED BY
MICHAEL BAKER, JR.
CONSULTING ENGINEERS
ROCHESTER, PENN.

RIGHT OF WAY CENTERLINE PLAT

FED. RD. DIVISION	STATE	PROJECT	TYPE FUNDS
2	OHIO	UG-430(13)	

43
44

JEFFERSON COUNTY
JEF.-7-13.36
LIMITED ACCESS
R/W
2 OF 3



SUMMARY OF ADDITIONAL R/W REQUIRED

PARCEL	OWNER	AREA ACRES	EXIST. BLDGS.	SHEET NO'S.	REMARKS
98-AERIAL	P.C.C. & ST. L. R.R. CO.	0.949		2&3	
98A	P.C.C. & ST. L. R.R. CO.	0.007		3	Permanent Footing Easement
98B	P.C.C. & ST. L. R.R. CO.	0.007		3	Permanent Footing Easement
98C	P.C.C. & ST. L. R.R. CO.	0.007		3	Permanent Footing Easement
98D	P.C.C. & ST. L. R.R. CO.	0.007		3	Permanent Footing Easement
98E	P.C.C. & ST. L. R.R. CO.	0.009		3	Permanent Footing Easement
98F	P.C.C. & ST. L. R.R. CO.	0.009		3	Permanent Footing Easement
98G	P.C.C. & ST. L. R.R. CO.	0.007		3	Permanent Footing Easement
98H	P.C.C. & ST. L. R.R. CO.	0.009		3	Permanent Footing Easement
98-S	P.C.C. & ST. L. R.R. CO.	—		2	SEE JEF-7-13.53
98-SL	P.C.C. & ST. L. R.R. CO.	0.012		2	SEE JEF-7-13.53

Scale 1" = 50'

Date of Completion 1-29-60

UTILITY OWNERSHIP

Ohio Power Company
301-315 Cleveland Avenue, SW
Columbus 15, Ohio

Ohio Bell Telephone Company
1 South Fourth Street
Columbus 15, Ohio

Village of Mingo Junction
Mingo Junction, Ohio

The Pennsylvania Railroad
1132 Pennsylvania Station
Pittsburg, Pennsylvania

Manufacturer's Heat & Light Company
875 Union Trust Building
Pittsburg, Pennsylvania

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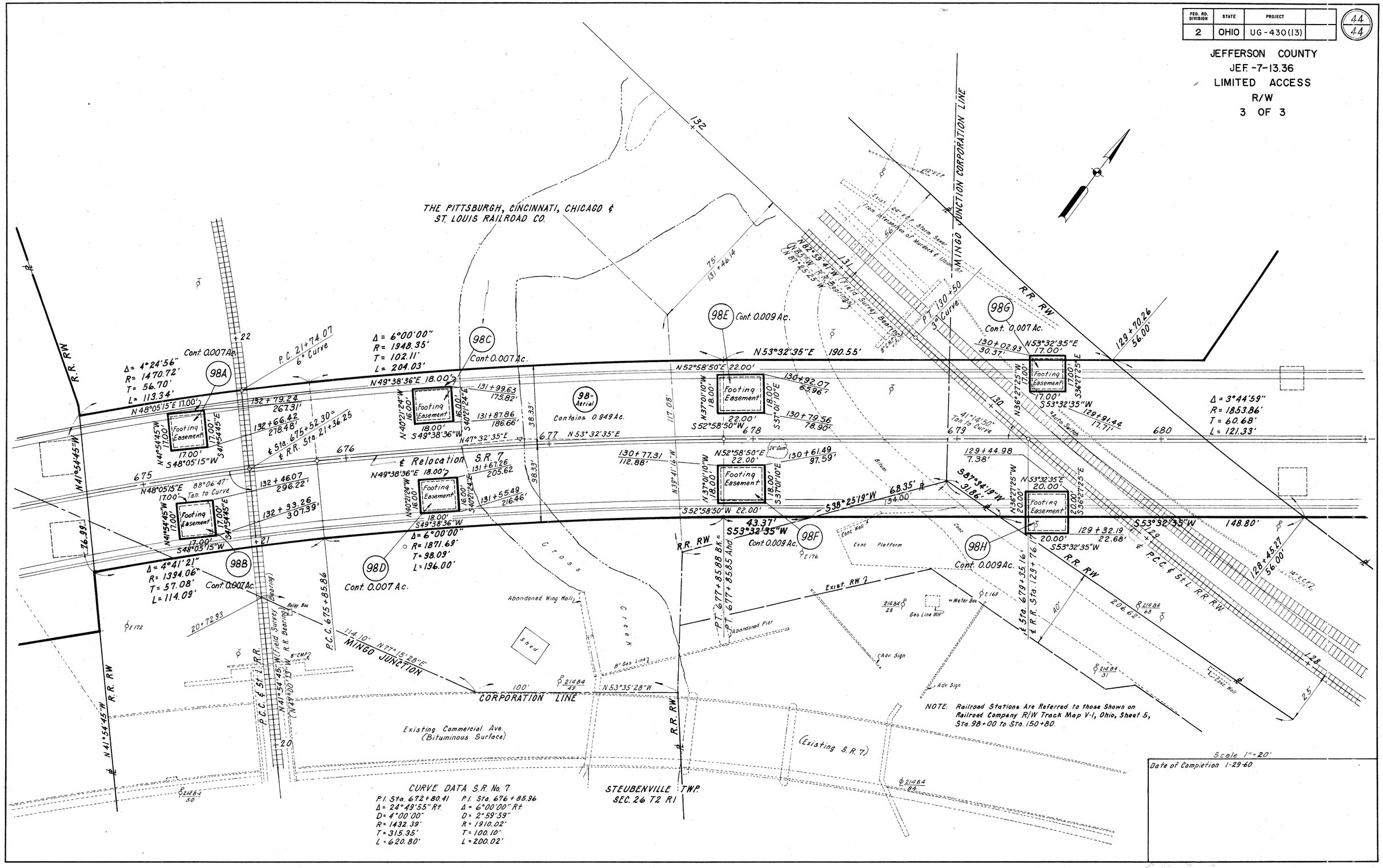
RIGHT OF WAY STA. 672 + 96.66 TO STA. 681 + 95.00

BEAVER VALLEY ENGINEERING SUPPLIES COMPANY REORDER A-37046

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	UG-430(13)	

44/44

JEFFERSON COUNTY
JEF.-7-13.36
LIMITED ACCESS
R/W
3 OF 3



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RIGHT OF WAY P.C.C. & ST. L. Ry.