No PID
C No 680020

APR 09

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO	U-395(7)	

ERI-250-0.48

U-395(7)

1/121

STATE OF OHIO

DEPARTMENT OF HIGHWAYS

MILAN ROAD

ERI-250-0.48

CITY OF SANDUSKY - ERIE COUNTY

GRADE CROSSING

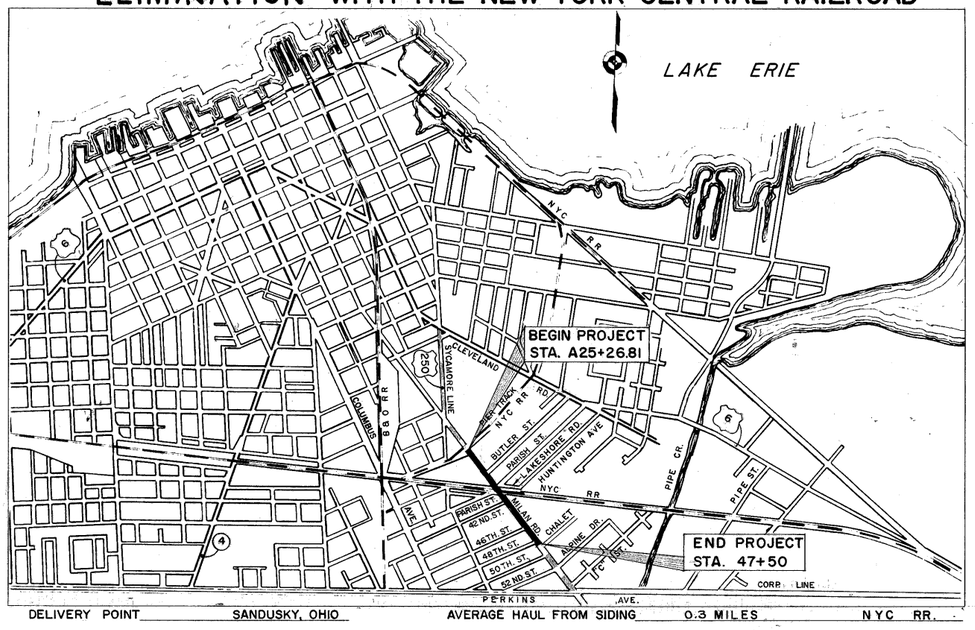
ELIMINATION WITH THE NEW YORK CENTRAL RAILROAD

CONVENTIONAL SIGNS

TREES AND STUMPS (EXISTING)	
TREES (TO BE REMOVED)	
FENCE LINE	
POLE LINE	
COUNTY LINE	
TOWNSHIP LINE	
SECTION LINE	
CORPORATION LINE	
CENTER LINE	
GUARD RAIL	
EXISTING PIPE	EXISTING W—G—S PROPOSED
RAILROAD	
PROPERTY LINE	℄
EXISTING RIGHT OF WAY	
PROPOSED RIGHT OF WAY	R/W
SERVICE CONNECTION-SEWER	

INDEX OF SHEETS

TITLE SHEET	1
SCHEMATIC LAYOUT PLAN	2
GEOMETRIC LAYOUT	2-A
TYPICAL SECTIONS	3-5
GENERAL NOTES	6
TRAFFIC NOTES	6
CALCULATIONS	7
SUMMARY OF TABLES	8,9
GENERAL SUMMARY	8,9
GUARD RAIL DETAILS	10 & 10A
RESIDENCE WALKS, STEPS AND REMOVALS	11
DRIVE DETAILS	12
PLAN AND PROFILE	13-21
CROSS SECTIONS	22-38
PAVEMENT DETAILS	39-42
STORM SEWER DETAILS	43
LAKESHORE OUTFALL SEWER	44-46
WATER AND SEWER LINES	47-50
WATER AND SEWER CONSTRUCTION DETAILS	51-53
STRUCTURES OVER 20'	54-88
RETAINING WALLS	89-97
PEDESTRIAN OVERPASS	98-107
LIGHTING AND TRAFFIC CONTROL	107-A, 107-B, 108-114
RIGHT OF WAY	115-A, 115-121



DELIVERY POINT SANDUSKY, OHIO AVERAGE HAUL FROM SIDING 0.3 MILES NYC RR.

APPROVED: Paul A. Flynn
DATE: 27/11/67 CITY MANAGER

APPROVED: W R Donaldson
DATE: 27 Nov 67 CITY ENGINEER

1967 SPECIFICATIONS

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 FOR BY STATE OF OHIO.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING OF THE HIGHWAY TO TRAFFIC, EXCEPT AS NOTED ON SHEET 6, AND THAT DETOURS WILL BE PROVIDED BY THE CITY OF SANDUSKY.

APPROVED: D H Simmer
DATE: 11-27-67 DIVISION DEPUTY DIRECTOR

APPROVED: C. H. Altwater
DATE: 12-15-67 ENGINEER OF BRIDGES

APPROVED: R.E. Bathe
DATE: 12-15-67 ENGINEER OF LOCATION & DESIGN

APPROVED: R.E. Shultz
DATE: 12-15-67 DEPUTY DIRECTOR OF DESIGN & CONSTRUCTION

APPROVED:
DATE: _____ DEPUTY DIRECTOR OF RIGHT-OF-WAY

APPROVED: Thomas McMajor
DATE: 1-5-68 DEPUTY DIRECTOR OF PLANNING & PROGRAMMING

APPROVED: R. W. Wilson
DATE: 1-5-68 FIRST ASSISTANT DIRECTOR

APPROVED: P E Mashter
DATE: 1-5-68 DIRECTOR OF HIGHWAYS

PROJECT	BEGIN STA	END STA	LIN FT	MILE
U-395(7) (STA. EQUATION ADD 2.01)	A25+26.81	47+50	2225.20	0.421
WORK				
MILAN ROAD (EQUATION ADD 2.01)	A25+00	47+50	2252.01	
BUTLER ST.	00+00	8+62	862.00	
LAKESHORE RD. OUTFALL SEW.	0+19	15+00	1481.00	
TOTAL			4595.01	0.870

Sheet Nos. 59, 64, 69, 72, 74, 75, & 78 revised 3-15-68 EBL
Sheet Nos. 98 & 105 revised 5-3-68 EBL
Sheet Nos. 58, 59, 64, 66, 75, 81, 82 & 83 revised 9-9-68
Sheet No. 58, 99 REV. 4-16-70 GFJ.

LOCATION MAP

0 1000 2000 3000 4000 5000
SCALE IN FEET

PORTION TO BE IMPROVED
STATE HIGHWAYS
OTHER ROADS
PORTION TO BE IMPROVED UNDER SEPARATE CONTRACT

SCALES

PLAN	1" = 30'
PROFILE - HORIZONTAL	1" = 30'
PROFILE - VERTICAL	1" = 6'
CROSS SECTIONS	1" = 5'

DESIGN DATA

CURRENT ADT (1966)	9472
DESIGN ADT (1986)	23,680
DESIGN HOURLY VOLUME	12%
DIRECTIONAL DISTRIBUTION	60-40
TRUCKS	4.6%
SPEED	35 MPH

STANDARD DRAWINGS

								SUPPLEMENTAL SPECIFICATIONS	
BP-2	1-10-67	GR-2A	1-1-67	MC-1	10-1-67	AS-1-54	8-10-65	814	1-1-67
BP-3	1-10-67	CB-6	6-1-65	MC-2	6-1-65	SD-1-65 Sh.1, 283	11-8-65	808	1-13-67
BP-4	1-10-67	HL-1	11-1-65	MC-3	5-1-66	BR-1-65 Sh.1	11-24-65	815	1-1-67
BP-5	6-1-65	HL-3	11-1-65	MC-4	6-1-65	RB-1-55	2-2-59	816	8-6-65
BP-7	1-1-66	HL-4	1-1-66	MC-6	6-1-65				
CB-2-2-A & B	6-1-65			MC-7	3-1-66				
CB-3	6-1-65	HW-E	6-1-65	MH-1	6-1-65			825	1-1-67
FACI-1	9-15-67	I-2A	6-1-65	MH-1A	8-1-66			828	1-1-67
FACI-2	6-1-65							832	5-25-67
BP-6	6-1-65	L-1	6-1-65					927	5-7-67
BP-1	6-1-65	GR-1	1-1-67						5-25-67
CB-3A	6-1-65	F-1	6-1-65						3-21-66

DEPT. OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS

APPROVED

DIVISION ENGINEER DATE

FILE NO. ____

ERI.-250-0.48 ERIE COUNTY
DATE OF LETTING _____
CONTRACT NO. _____

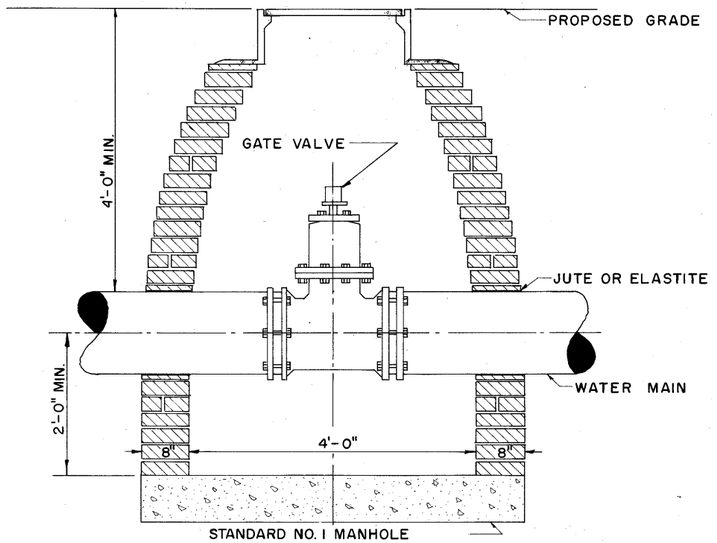
PREPARED AND RECOMMENDED BY
SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
CONSULTING ENGINEERS
MANSFIELD OHIO WOOSTER

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

52
121

ERI-250-0.48
MILAN ROAD

DETAIL OF VALVE IN MANHOLE



STANDARD NO. I MANHOLE

WATER AND SEWER LINE NOTES

THE OHIO DEPARTMENT OF HIGHWAYS SUPPLEMENTAL SPECIFICATION NO. 814 SHALL BE FOLLOWED IN THE CONSTRUCTION OF ALL WATER LINES, EXCEPT FOR THE FOLLOWING WHICH IS TAKEN FROM THE CITY OF SANDUSKY SPECIFICATIONS:

EXCAVATION. THE ROUGH EXCAVATION FOR THE WATER MAIN SHALL BE A CONTINUOUS TRENCH AND WHETHER DONE BY TRENCHING MACHINE OR OTHERWISE SHALL EXTEND NOT LESS THAN FOUR INCHES (4") AND NOT MORE THAN SIX INCHES (6") PLUS THE THICKNESS OF THE BARREL OF THE PIPE, BELOW THE SPECIFIED INVERT GRADE OF THE WATER MAIN UNLESS OTHERWISE SPECIFIED OR SHOWN BY TYPICAL SECTIONS. ALL LUMPS AND LOOSE PIECES OF MATERIAL SHALL BE REMOVED FROM THE TRENCH AND THE TRENCH BOTTOM MADE EVEN.

BEDDING PIPE. ALL WATER PIPE AND SPECIAL CASTINGS SHALL BE LAID WITHOUT THE USE OF WOOD BLOCKING AND WOOD WEDGES UNLESS OTHERWISE ORDERED BY ENGINEER. ALL GATE VALVES AND HYDRANTS SHALL BE SUPPORTED BY BLOCKS AND AS PLANNED OR OTHERWISE ORDERED BY ENGINEER.

AFTER THE ROUGH EXCAVATION HAS BEEN COMPLETED, THE BED FOR THE WATER MAIN SHALL BE MADE WITH NO. 9 CRUSHED LIMESTONE OR OTHER APPROVED MATERIAL THOROUGHLY COMPACTED BY TAMPING. THE ACCURACY OF ALL SUBGRADE PREPARATION SHALL BE SUCH THAT A UNIFORM AND CONTINUOUS BEARING AND SUPPORT IS PROVIDED AT THE REQUIRED LINE AND GRADE ON A SOLID BOTTOM AT EVERY POINT BETWEEN BELL HOLES, EXCEPT THAT IT WILL BE PERMISSIBLE TO DISTURB AND OTHERWISE DAMAGE THE FINISHED SUBGRADE OVER A MAXIMUM LENGTH OF 18 INCHES NEAR THE MIDDLE OF EACH LENGTH OF PIPE BY THE WITHDRAWAL OF PIPE SLINGS OR OTHER LIFTING TACKLE.

HAND BACKFILLING. ALL TRENCHES SHALL BE BACKFILLED BY HAND FROM THE SUBGRADE OR BOTTOM OF THE PIPE UP TO THE CENTER LINE OF THE PIPE WITH NO. 9 LIMESTONE OR OTHER APPROVED MATERIAL. THE BACKFILL MATERIAL SHALL BE DEPOSITED IN LAYERS NOT EXCEEDING FOUR INCHES AND THOROUGHLY COMPACTED SIMULTANEOUSLY ON BOTH SIDES OF PIPE.

BEFORE LEAD IS POURED AND CAULKED IN THE BELL OF A PIPE OR SPECIAL CASTING, THE BACKFILLING MATERIAL SHALL HAVE BEEN DEPOSITED AND COMPACTED TO THE CENTER LINE OF THE BARREL OF THIS PIPE OR SPECIAL CASTING AND ALSO TO THE CENTER LINE OF A PORTION OF THE PIPE OR SPECIAL CASTING IN ADVANCE OF THE BELL TO BE POURED.

INSOFAR AS POSSIBLE ALL HAND BACKFILLING REQUIRED SHALL BE PLACED DURING THE SAME DAY THE PIPE IS LAID.

REACTION BACKING. REACTION OR THRUST BACKING SHALL BE OF CLASS "D" CONCRETE. BACKING SHALL BE PLACED BETWEEN SOLID GROUND AND THE FITTING TO BE ANCHORED; THE AREA OF BEARING ON PIPE AND ON GROUND IN EACH INSTANCE SHALL BE THAT REQUIRED BY THE ENGINEER. THE BACKING SHALL, UNLESS OTHERWISE DIRECTED, BE SO PLACED THAT THE PIPE AND FITTING JOINTS WILL BE ACCESSIBLE FOR REPAIR.

HYDROSTATIC PRESSURE TEST. AFTER THE PIPE HAS BEEN LAID AND PARTIALLY BACKFILLED AS SPECIFIED, ALL NEWLY LAID PIPE OR ANY VALVED SECTION OF IT SHALL, UNLESS OTHERWISE SPECIFIED, BE SUBJECTED TO HYDROSTATIC TEST PRESSURE OF 150 POUNDS.

SERVICE CONNECTION - WATER. THE CITY OF SANDUSKY WILL MAKE ALL CORPORATION TAPS AND SERVICE CONNECTIONS TO THE NEW WATER LINE.

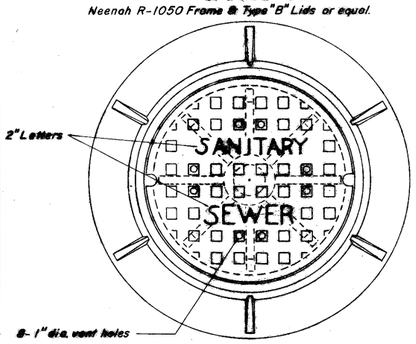
SERVICE CONNECTIONS - SANITARY SEWER. THE CONTRACTOR SHALL CONNECT TO THE NEW SANITARY SEWER LINE ALL EXISTING SERVICE LINES AND SHALL PROVIDE ADDITIONAL WYE BRANCHES FOR FUTURE CONNECTIONS AS DIRECTED BY THE ENGINEER. AN ESTIMATED QUANTITY HAS BEEN SET UP FOR THESE CONNECTIONS

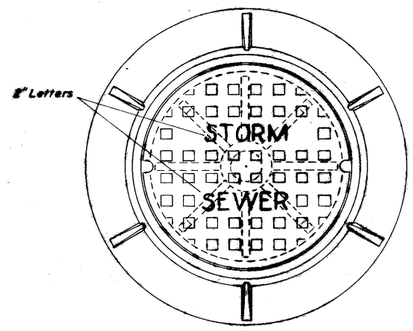
603 4" CONDUIT, TYPE C WITH CLASS C BEDDING 706.08
19 x 6 FT. EACH = 114 LIN. FT.

SEQUENCE OF CONSTRUCTION OF WATER LINES WILL BE APPROVED BY THE SANDUSKY CITY ENGINEER.

CITY STANDARD NO.1 FRAME & COVERS

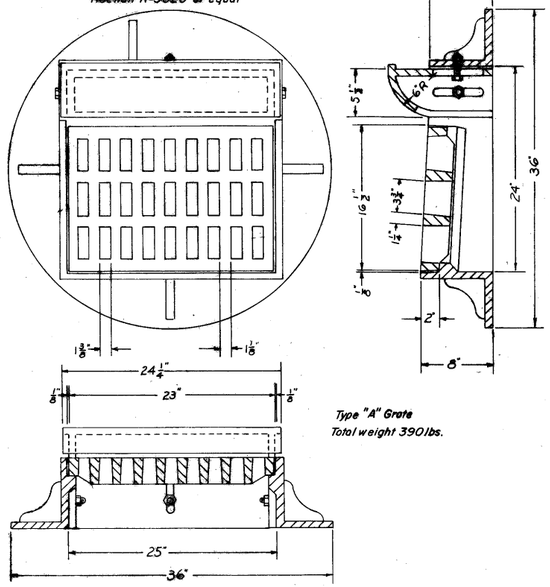
Neenah R-1050 Frame & Type "B" Lids or equal.





STANDARD CURB INLET FRAME & GRATE

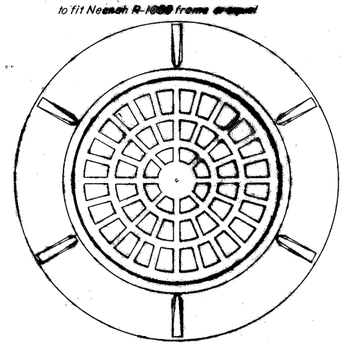
Neenah R-3020 or equal

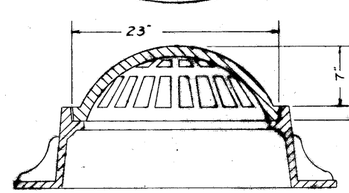


Type "A" Grate
Total weight 390lbs.

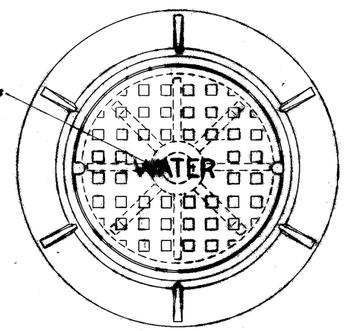
PLAIN FLAT "C" GRATE OR BEEHIVE GRATE

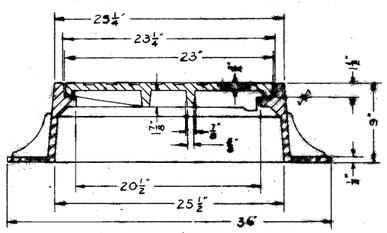
to fit Neenah R-1988 frame or equal





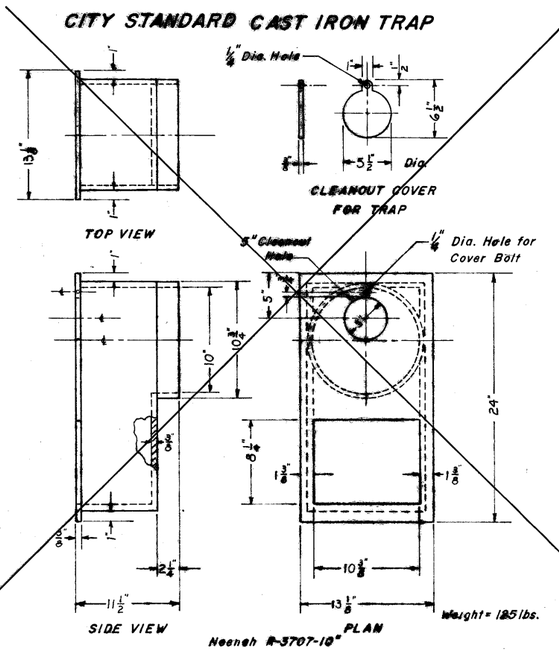
All lids and covers to be machined





Total weights 311 lbs.

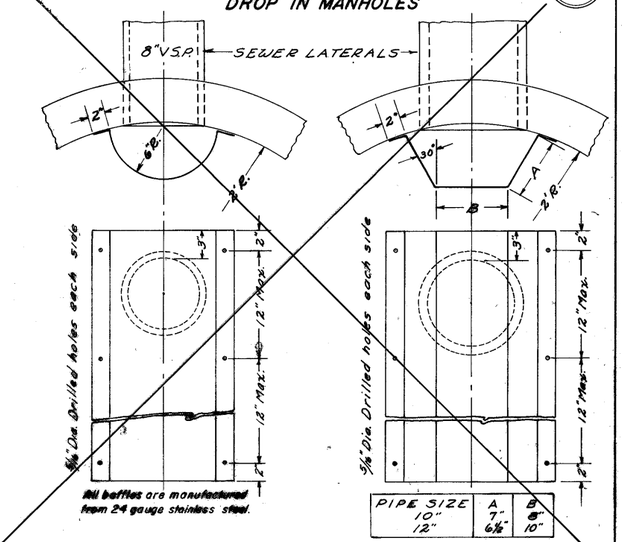
CITY STANDARD CAST IRON TRAP



Neenah R-3707-10"

Weight = 185lbs.

STAINLESS STEEL BAFFLES FOR INSIDE DROP IN MANHOLES

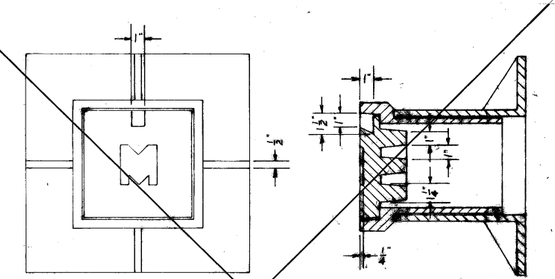


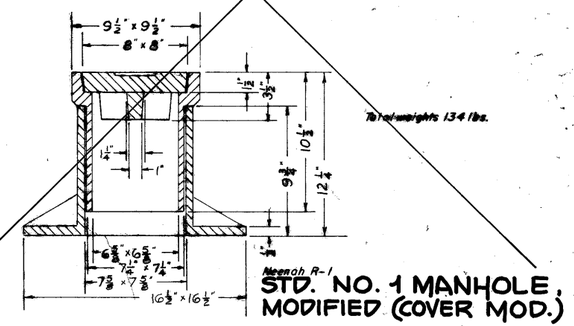
All baffles are manufactured from 24 gauge stainless steel.

PIPE SIZE	A	B
10"	7"	8"
12"	6½"	10"

ADJUSTABLE MONUMENT BOX

Neenah R-1988 Type 36-B, or equal.





Total weight 134 lbs.

Neenah R-1

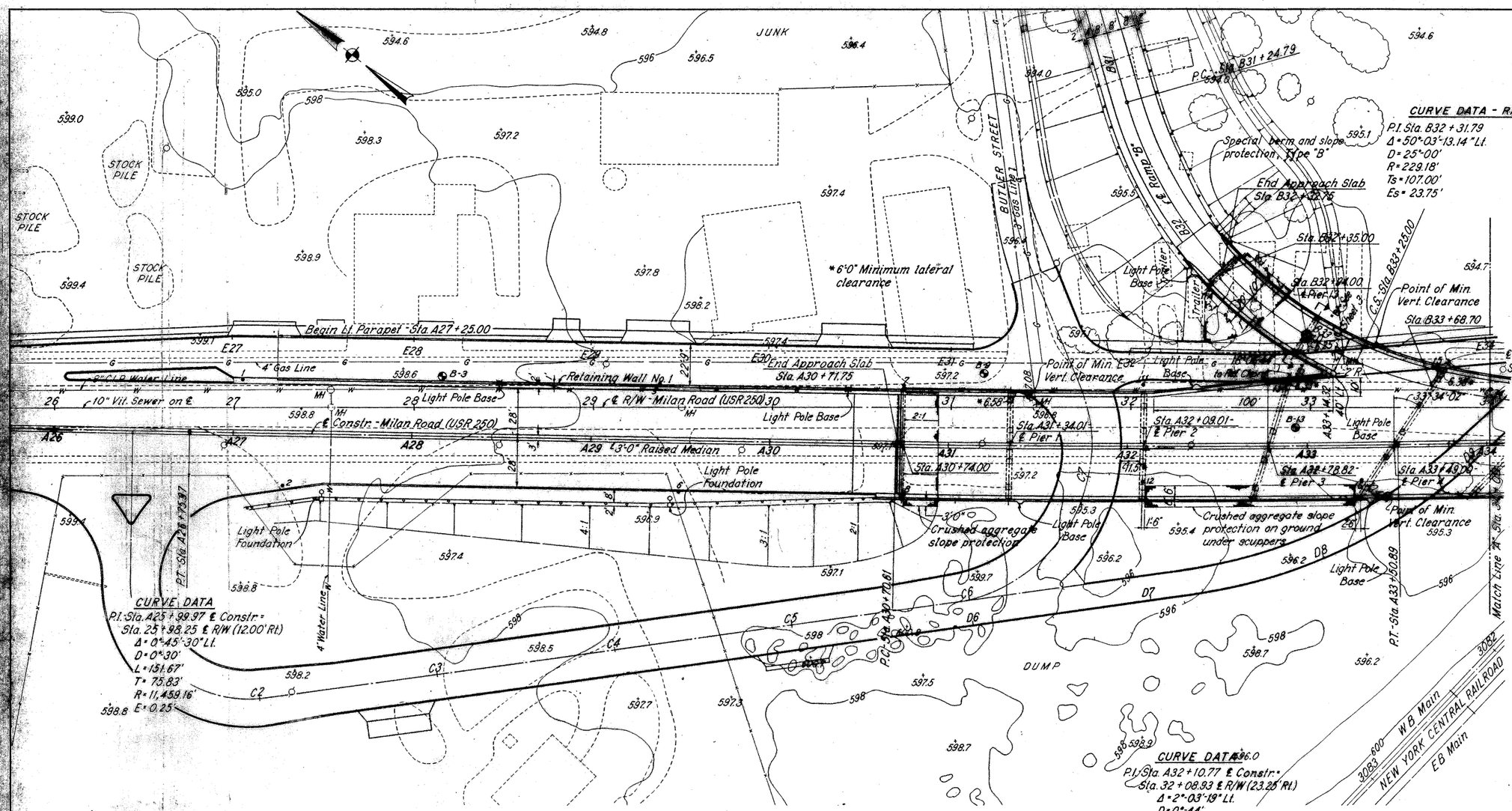
STD. NO. 1 MANHOLE, MODIFIED (COVER MOD.)

CITY OF SANDUSKY, O. DEPARTMENT OF ENGINEERING & CONST. STANDARD DRAWINGS	
STANDARD CONSTRUCTION DRAWING ST-2	DATE 6-1-66

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

54

ERI-250-0.48



CURVE DATA - RAMP "B"

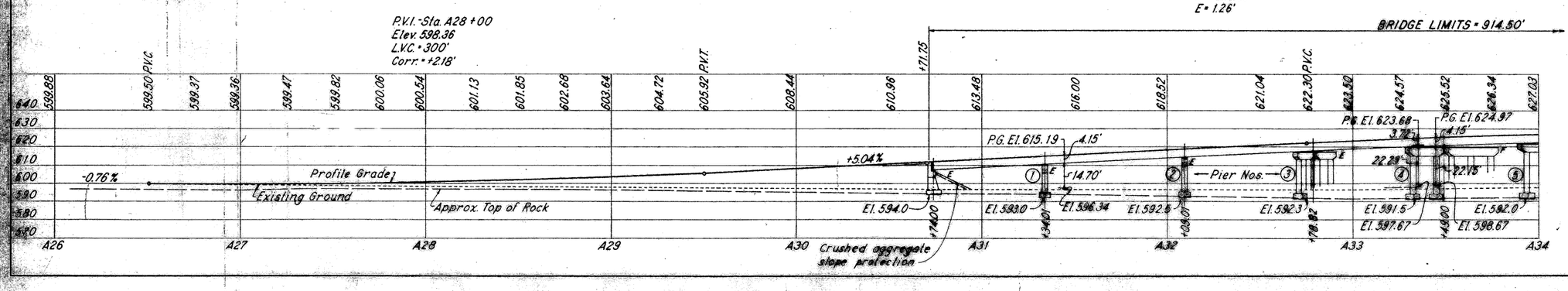
P.I. Sta. B32 + 31.79
Δ = 50°-03'-13.14" Lt.
D = 25°-00'
R = 229.18'
Ts = 107.00'
Es = 23.75'
Lc = 200.21'
Ls = 200.00'
θs = 25°-00'
L.T. = 134.69'
S.T. = 67.90'

CURVE DATA

P.I. Sta. A25 + 99.97 ℄ Constr. = Sta. 25 + 98.25 ℄ R/W (12.00' Rt.)
Δ = 0°-45'-30" Lt.
D = 0°-30'
L = 151.67'
T = 75.83'
R = 11,459.16'
E = 0.25'

CURVE DATA

P.I. Sta. A32 + 10.77 ℄ Constr. = Sta. 32 + 08.93 ℄ R/W (23.25' Rt.)
Δ = 2°-03'-19" Lt.
D = 0°-44'
L = 280.27'
T = 140.15'
R = 7813.06'
E = 1.26'



PROPOSED STRUCTURE

TYPE: Continuous steel beam with reinforced concrete deck and substructure.

SPANS: 60'; 75'; 70'; 70'; 69.62'; 79'; 76'; 66.38'; 67'; 67'; 75'; 75'; 60' = 910' ℄ Bearings (℄ Constr. Milan Rd.) 59' & 70.56' ℄ Bearings (℄ Ramp "B")

ROADWAY: 56'-0" f/f of 2'-0" Safety Curbs with 3'-0" raised median (Milan Road). 20'-0" f/f of 2'-0" Safety Curbs (Ramp "B").

LOAD FREQUENCY: CF 400 (57)

SKEW: Varies -0° at ends to 44°-16' at center

WEARING SURFACE: 1" monolithic concrete

APPROACH SLABS: AS-1-54 (25'-0" long)

ALIGNMENT: 0°-44' curve; tangent

AVERAGE DAILY TRAFFIC: 23,680 (1986)

FOUNDATION INVESTIGATION LEGEND

- ⊕ - Indicates core boring location
- • - Indicates rod sounding location

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

SITE PLAN - 1

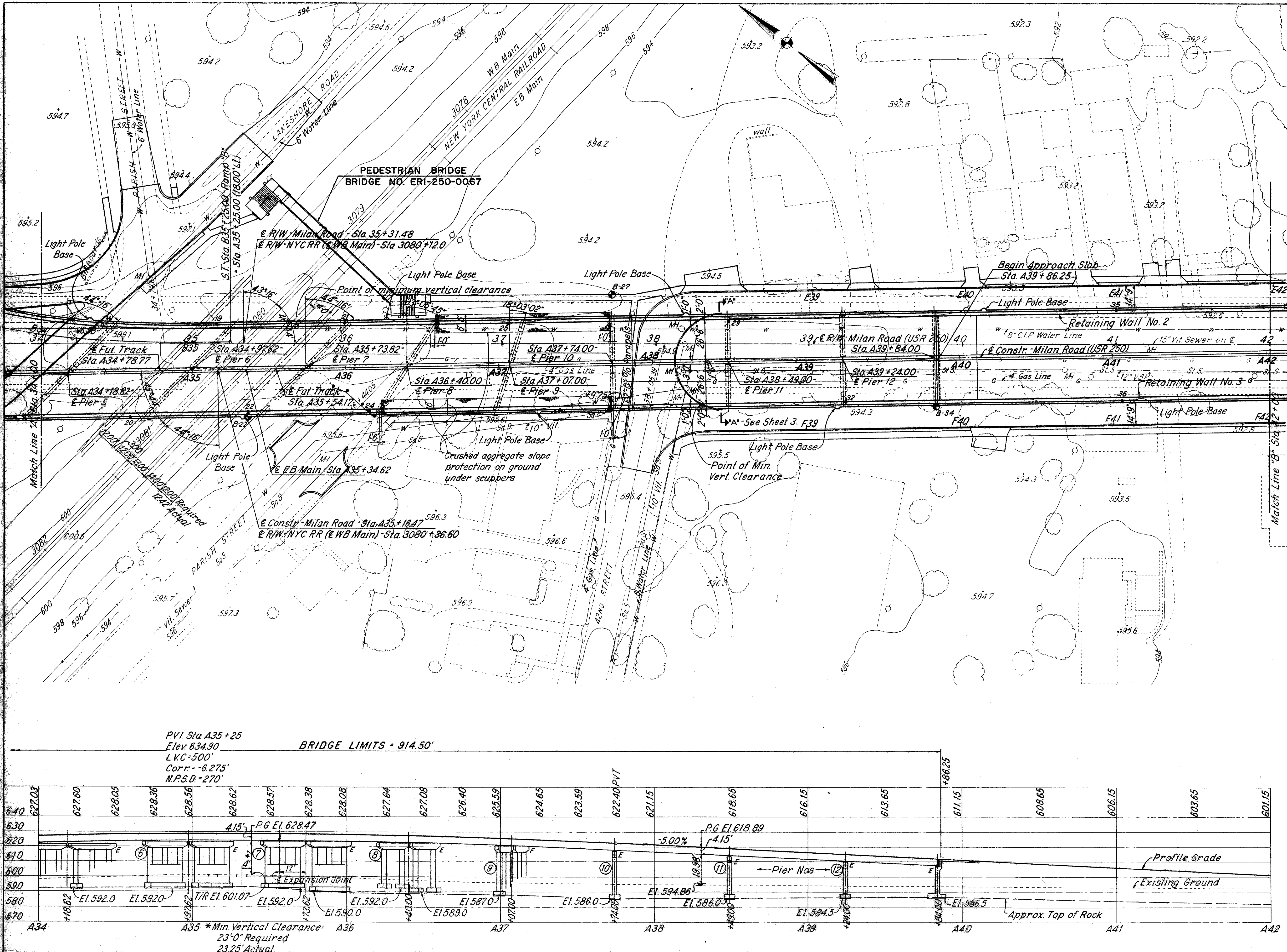
BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250

STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	Bob	VL		R.A.L.A.	11-15-89	

ERI-250-0.48



PEDESTRIAN BRIDGE
BRIDGE NO. ERI-250-0067
LAKESHORE ROAD
NEW YORK CENTRAL RAILROAD
WB Main
EB Main
PARISH STREET
42ND STREET
Light Pole Base
Point of minimum vertical clearance
Begin Approach Slab
Sta. A39 + 86.25
Retaining Wall No. 2
Retaining Wall No. 3
℄ Constr.-Milan Road (USR 250)
℄ R/W-Milan Road (USR 250)
Sta. A39 + 84.00
"A"-See Sheet 3.
Point of Min. Vert. Clearance
Crushed aggregate slope protection on ground under scuppers
℄ EB Main/Sta. A35 + 34.62
℄ Constr.-Milan Road -Sta. A35 + 16.47
℄ R/W-NYC RR (℄ WB Main)-Sta. 3080 + 36.60
℄ R/W-Milan Road -Sta. 35 + 31.48
℄ R/W-NYC RR (℄ WB Main)-Sta. 3080 + 12.0
Match Line "A" Sta. A30 + 00
Match Line "B" Sta. A42 + 00
P.V.I. Sta. A35 + 25
Elev. 634.90
L.V.C. = 500'
Corr. = -6.275'
N.P.S.D. = 270'
BRIDGE LIMITS = 914.50'
P.G. El. 628.47
P.G. El. 618.89
-5.00%
Profile Grade
Existing Ground
Approx. Top of Rock
Pier Nos.
Expansion Joint
* Min. Vertical Clearance: 23'-0" Required 23.25' Actual

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

SITE PLAN - 2

BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

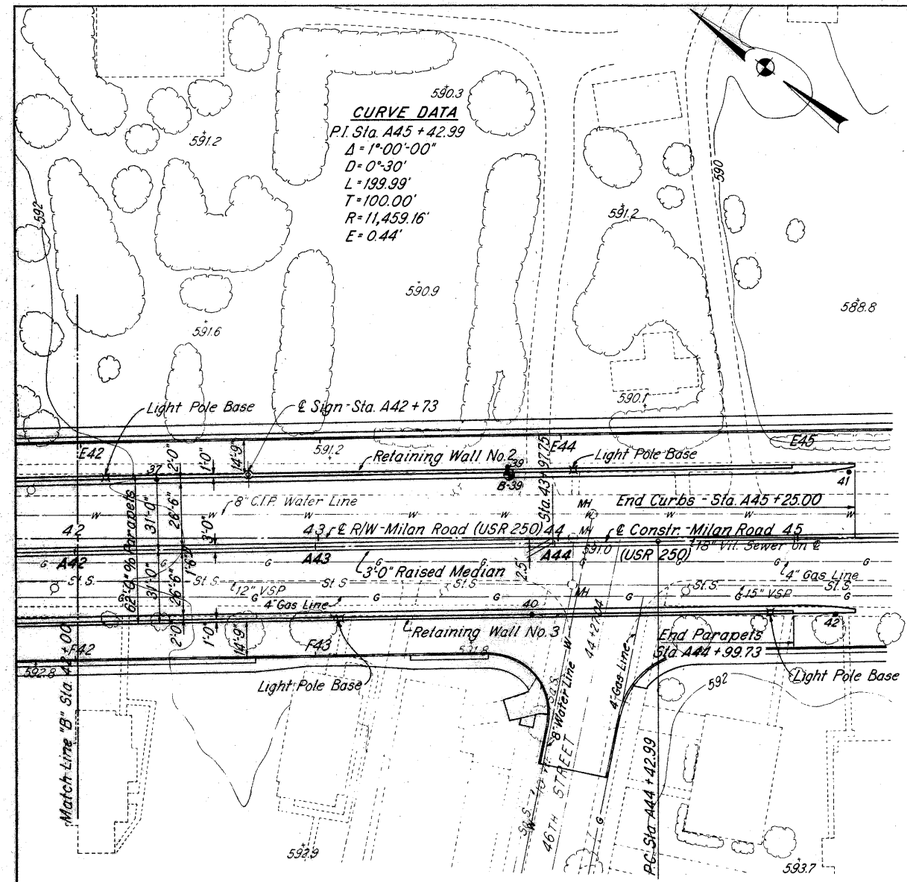
ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

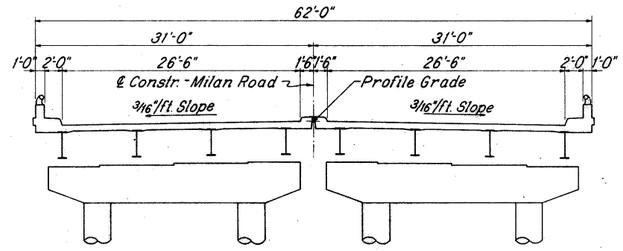
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	Bob	LH		R.A. [illegible]	11-15-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

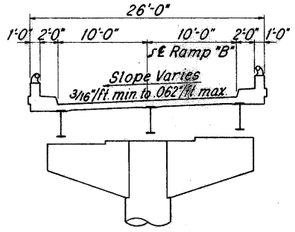
56

ERI-250-0.48

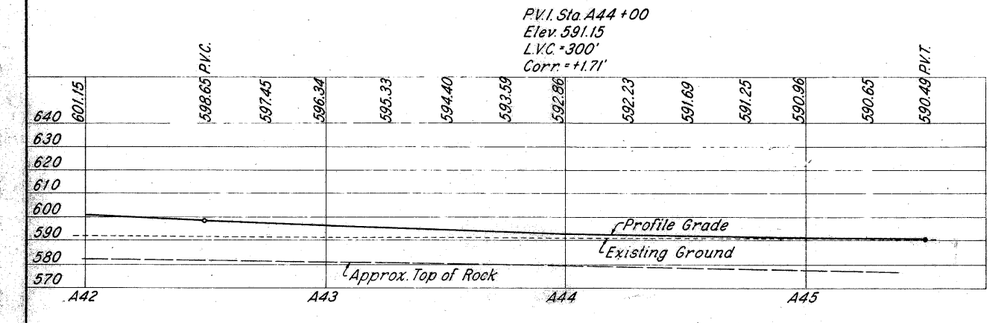




SECTION A-A



SECTION B-B



SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

SITE PLAN - 3

BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250

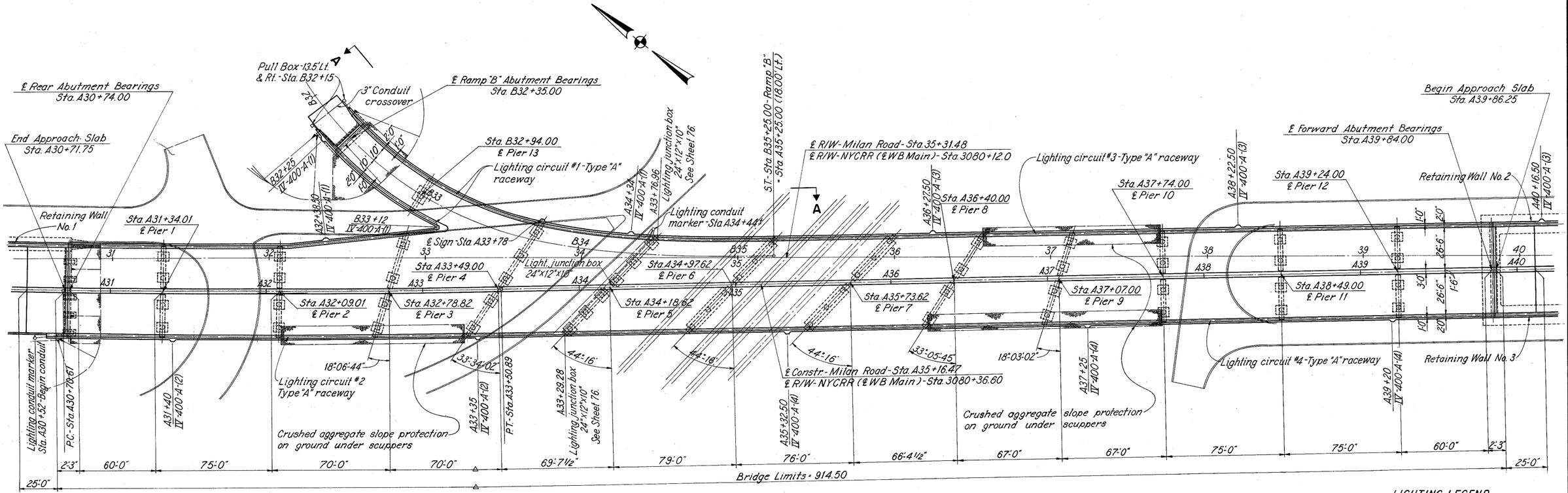
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	Bob	VL		R.A. Tait	11-5-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

57

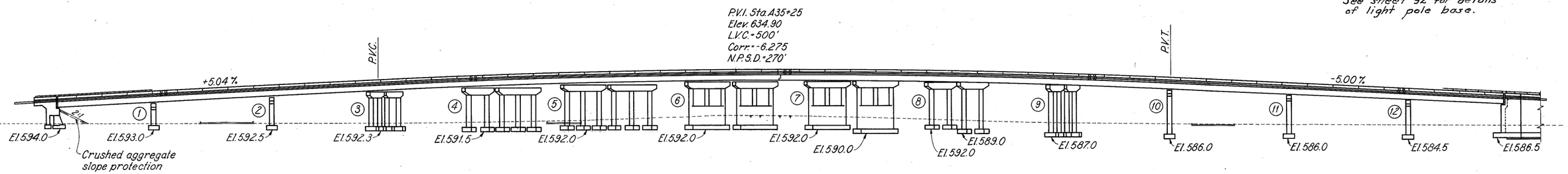
ERI-250-0.48



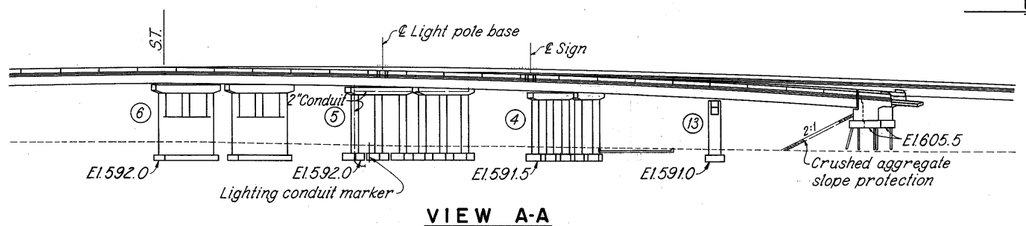
GENERAL PLAN

LIGHTING LEGEND

STATION - Typical light pole identification
IV-400 - IV ASA - I.E.S. Type 400 lamp wattage
A - Anchor Base
(3) - Circuit No. 3
See sheet 92 for details of light pole base.



ELEVATION



VIEW A-A

Note: For superelevation transition and profile grade elevations of Ramp "B" see Sheet 76.

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

GENERAL PLAN

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIS
RAK	RAR	RAR		R.A.K.	11-15-67	

FED. RD. DIVISION	STATE	PROJECT		58
2	OHIO			

ERI-250-0.48

FEDERAL - STATE PARTICIPATION

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	PIERS	GEN'L.	As Built
503	1548	Cu. Yds.	Unclassified excavation		440	1108		
503	80	Cu. Yds.	Rock excavation		27	53		C-3 477 150
503	Lump	Sum	Cofferdams, cribs and sheeting				Lump	
505	Lump	Sum	First test pile				Lump	
507	154	Lin. Ft.	Steel piles, 10 BP 42		154			
509	660,894	Lbs.	Reinforcing steel	492,295	27,765	140,834		
511	1897	Cu. Yds.	Class "C" concrete, superstructure	1897				
511	597	Cu. Yds.	Class "C" concrete, pier caps and columns			597		
511	295	Cu. Yds.	Class "E" concrete, pier footings			295		
511	234	Cu. Yds.	Class "E" concrete, pier collision walls			234		
511	459	Cu. Yds.	Class "E" concrete, abutments		459			C-10 +50 509
513	1,737,200	Lbs.	Structural steel	1,737,200				
832	1,737,200	Lbs.	Field painting of structural steel	1,737,200				
517	2055.50	Lin. Ft.	Bridge railing, type 1	1977.12	78.38			
518	38	Each	Scuppers, including supports	38				
518	90	Cu. Yds.	Porous backfill		90			C-10 +47 137
518	70	Lin. Ft.	6" Helical perforated C.M.P., 707.06, including specials		70			
518	75	Lin. Ft.	6" Helical C.M.P., 707.06, non-perforated		75			
518	42	Lin. Ft.	8" Helical perforated C.M.P., 707.06, incl. specials		42			
601	815	Sq. Yds.	Crushed aggregate slope protection		303		512	C-10 518 297
625	27	Lin. Ft.	Conduit - 3" crossover, Type II or Type III				27	
625	3	Each	Structure junction box, 24" x 12" x 10"	3				C-10 1 ea 2 ea
625	2	Each	Pull box, 18" Fiber				2	
625	11	Sets of 4	Light pole anchor bolts (1" x 40")	11				
625	2153	Lin. Ft.	Conduit - 2", Type II or Type III	2108	45			
625	2	Each	Structure grounding system (At Piers 4 & 9) Including cable runs to 2 sign lighting posts				2	
625	2	Each	Lighting markers				2	C-10 -2 ea. —
808	1890	Units	Water-reducing, set-retarding admixture	1890				C-10 1890 —
825	7480	Sq. Yds.	Concrete surface treatment	7480				
828	200.0	Lin. Ft.	Joint sealer	200.0				C-5 -200 —

GENERAL NOTES

REFERENCE shall be made to Standard Drawings AS-1-54 (revised 8-10-65); SD-1-65, sheets 1, 2 and 3 of 3 (dated 11-8-65); BR-1-65, sheet 1 of 2 (revised 11-24-65); RB-1-55 (revised 2-2-59); HL-3 (revised 11-1-65), HL-4 (dated 1-1-66) and to Supplemental Specifications 808 (dated 1-13-67), 811 (dated 1-1-67), 825 (dated 1-1-67), 828 (dated 1-1-67), 832 (dated 5-25-67) and 931 (dated 5-25-67).

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 thereof.

DESIGN DATA:

Design Loading - CF400 (57)
Concrete Class "C" basic unit stress = 1333 p.s.i.
Concrete Class "E" basic unit stress = 1133 p.s.i.
Structural Steel - ASTM A36 - basic unit stress = 20,000 p.s.i.
Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress = 20,000 p.s.i., except spiral reinforcement may be plain, Structural Grade with basic unit stress of 18,000 p.s.i.

PILES FOR RAMP "B" ABUTMENT shall be driven with a hammer of not less than 11,000 ft. lbs. per blow to firm contact with rock. If the length of penetration is approximately equal to the depth to rock according to the bridge foundation investigation report, the firm contact shall be considered as attained when the capacity according to the formula in Sec. 507.05 is not less than the following value for a pile hammer of the indicated energy rating:

40 tons per pile using an 11,000 ft. lb. hammer
38 tons per pile using a 15,000 ft. lb. or greater hammer

If the energy rating is between the ratings as shown above, the required formula capacity shall be determined by interpolation. The design load is 35 tons per pile.

FOOTINGS, except for Ramp "B" (Butler Street) Abutment, shall extend a minimum of 3' into undisturbed rock or to the elevation shown, whichever is lower.

FOUNDATION BEARING PRESSURE: Footings are designed for the following maximum bearing pressures:

Rear Abutment - 4.6 tons per sq. ft.
Forward Abutment - 2.5
Pier 1 - 4.6
Pier 2 - 4.5
Pier 3 - 4.4 (Lt. Half), 5.4 (Rt. Half)
Pier 4 - 3.6 (Lt. Half), 4.0 (Rt. Half)
Pier 5 - 3.2 (Lt. Half), 2.7 (Rt. Half)
Pier 6 - 2.3
Pier 7 - 2.3
Pier 8 - 4.4
Pier 9 - 5.4
Pier 10 - 4.7
Pier 11 - 4.7
Pier 12 - 4.6
Pier 13 - 5.4

MACHINE FINISH: The concrete bridge deck shall be finished by the use of a finishing machine, except for Ramp "B" and between Sta. A32 + 09.01 and Sta. A35 + 25.00, where machine finishing is optional.

UTILITY LINES (OTHER THAN RAILROAD AERIAL LINES): All expense involved in relocating and installing the affected utility 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.

CONSTRUCTION CLEARANCE of 20 feet vertically above the top of the railroad rails and 8 feet horizontally from the center of the existing 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.

ALIGNING RAILROAD TRACKS: After the Contractor has completed all excavation and backfill adjacent to the railroad tracks in compliance with Sec. 503.04 and Sec. 503.09 of the Construction and Material Specifications, subject to the supervision of the Railroad Company, nothing in Sec. 503.04, 503.09, 108.04 of the Specifications shall be construed to hold the Contractor liable for aligning and resurfacing the railroad tracks.

RAILROAD AERIAL LINES will 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 the relocation shall be included in the railroad force account work.

LIGHTING: The Contractor shall contact the Ohio Edison Company at the outset of the project to coordinate the separate parts of the work necessary for the lighting system. The contractor shall arrange his schedule so that all lighting work may be installed in the most direct manner and delays will be avoided. In general, markers, junction boxes, anchor bolts, pull boxes, conduit, and structure grounding are included with this project. Lighting standards, luminaires, cable, and controls are not a part of the project. Note that all empty conduits shall be furnished with pull wires. Grounding of lighting units on retaining walls will be done by Ohio Edison.

WELDS on secondary stress carrying members are shown thus S>.

PAINTING of structural steel shall be in accordance with Supplemental Specification 832.

FIELD WELDED ATTACHMENTS: No attachments shall be made by welding to the top flanges of the beams within a distance of 0.10 of the span length on either side of the interior supports. Welding for attachments to the top flanges at other parts of the spans shall be kept at least 2" from edge of flange.

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

GENERAL NOTES AND ESTIMATED QUANTITIES
BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

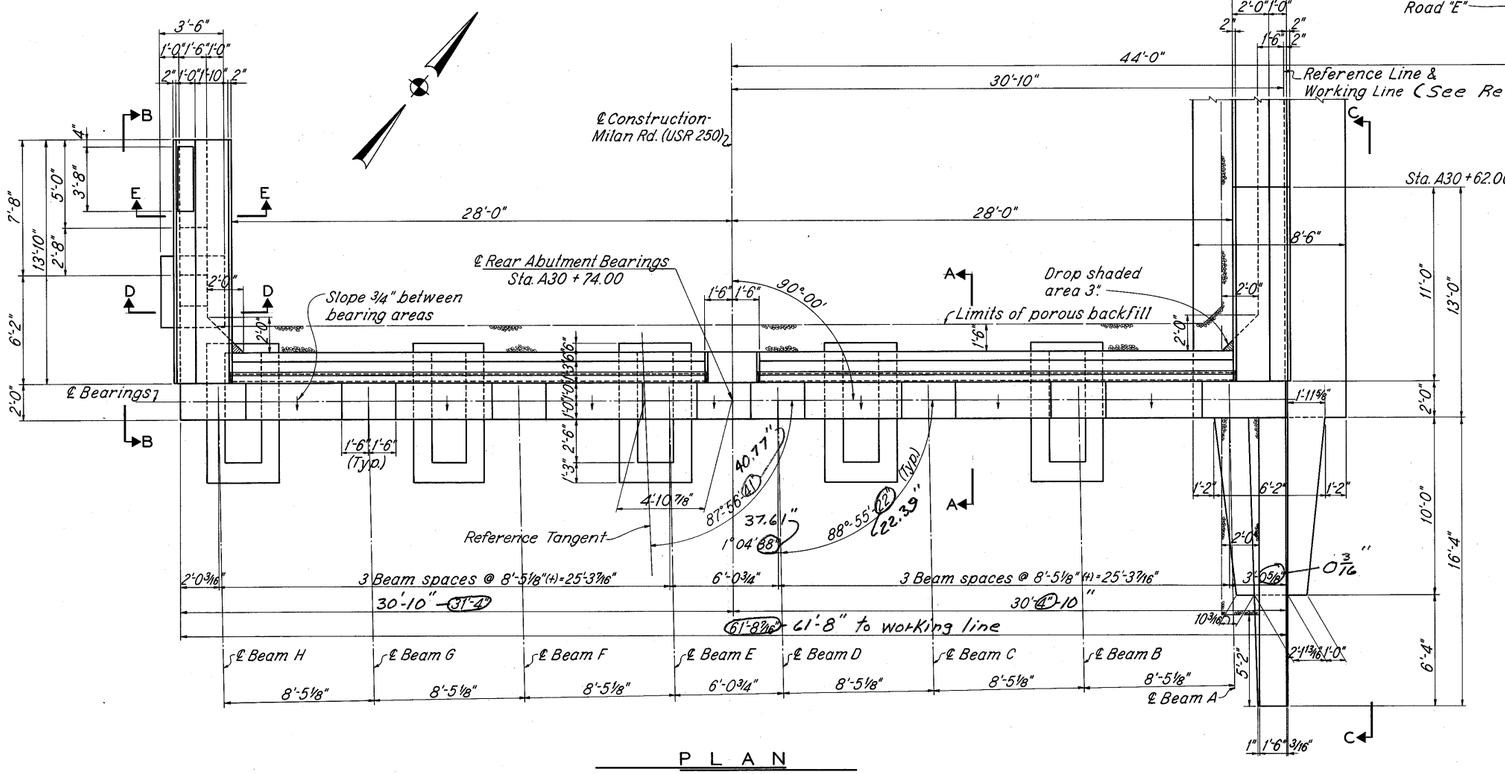
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAR	RAR		RAK	11-1967	9-9-68

REV. 9-16-70 GFJ

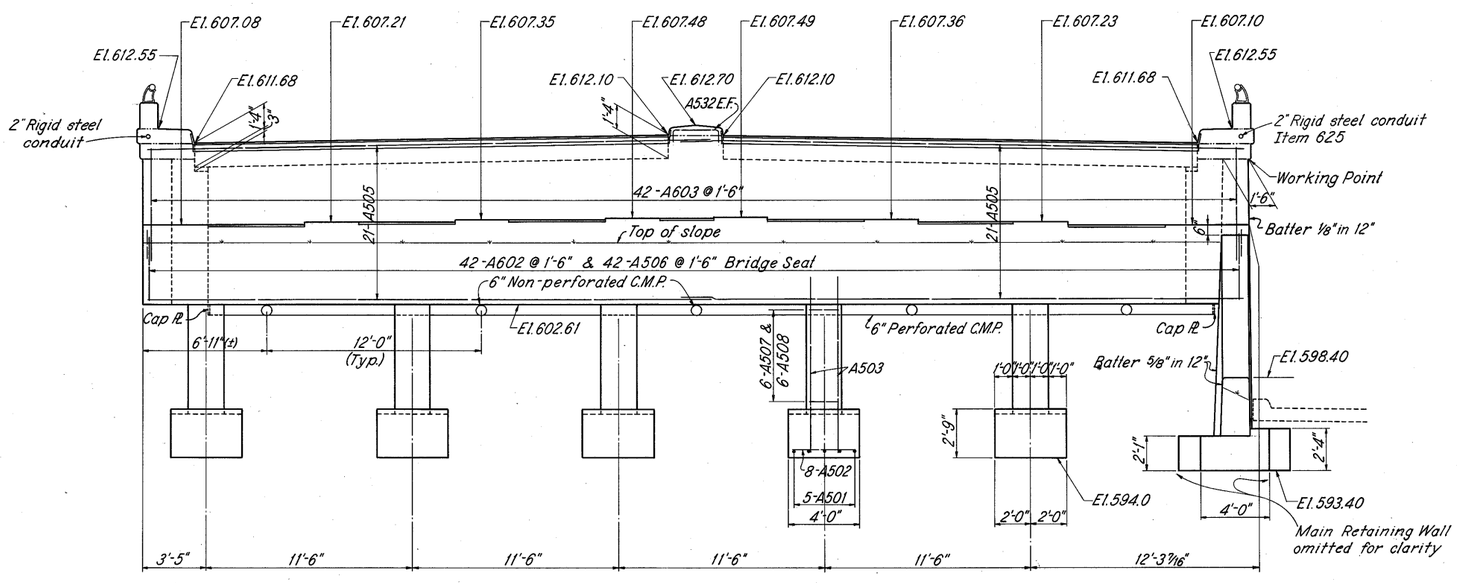
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

59

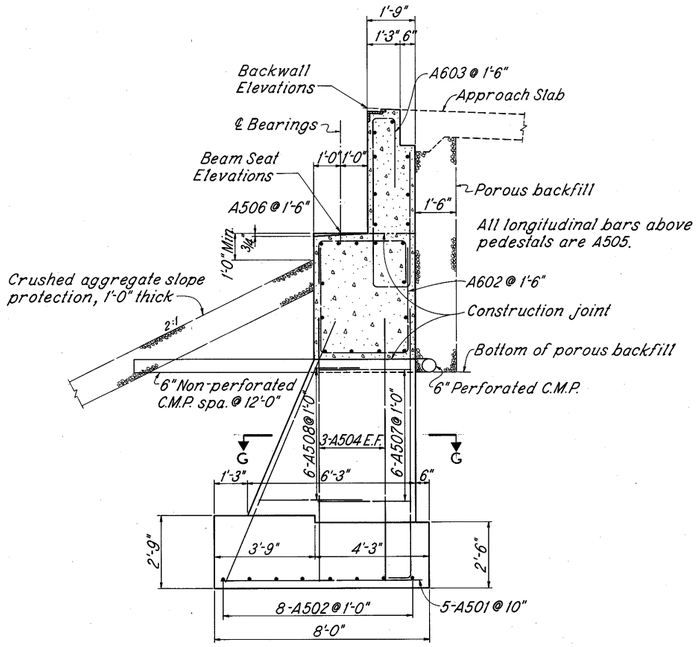
ERI-250-0.48



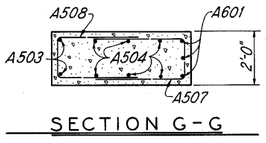
PLAN



ELEVATION



SECTION A-A



SECTION G-G

NOTES

CONCRETE: All abutment concrete shall be Class "E", except parapets, which shall be Class "C".

POROUS BACKFILL shall extend upward to the approach slab for the full length of the abutment and retaining wall as shown. Excavation therefor, in excess of that required for the construction of the abutment, shall be considered as paid for in the bid price per cu.yd. paid for porous backfill.

NOTATION: F.F.-Front Face; R.F.-Rear Face; E.F.-Each Face.

VIEWS B-B & C-C; SECTIONS D-D & E-E: See Sheet 60.

GENERAL NOTES: See Sheet 58.

PROCEDURE: After the pedestals and Retaining Wall No. 1 near the Rear Abutment have been constructed, the earth fill shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade, after which excavation shall be made for the crossbeam.

EXCAVATION QUANTITY includes the removal of fill material between the finished spill-thru slope and the bottom of the abutment crossbeam.

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

REAR ABUTMENT - 1

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

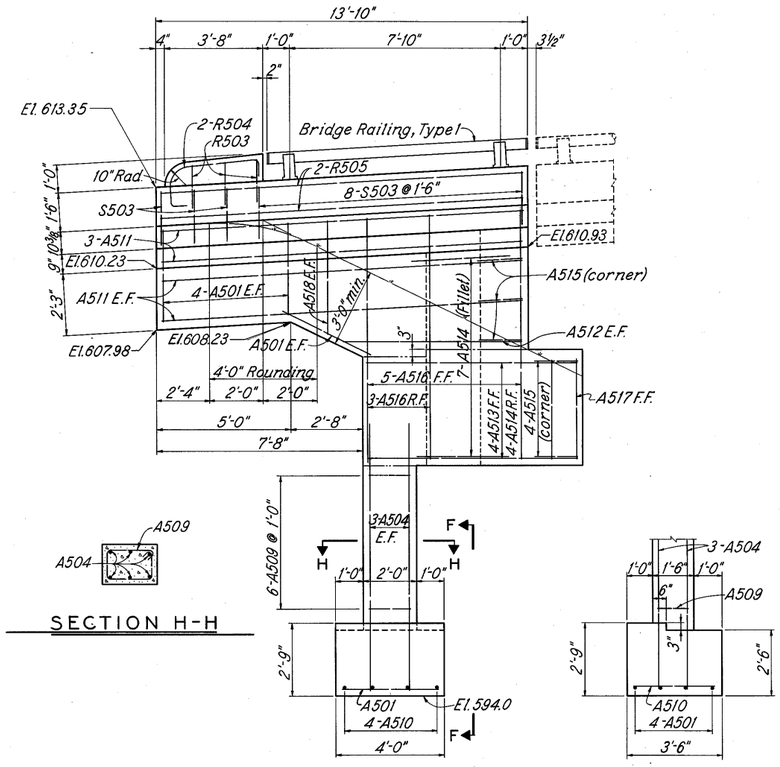
ERIE COUNTY U.S.R. 250
STA. A30+71.75 TO STA. A39+86.25

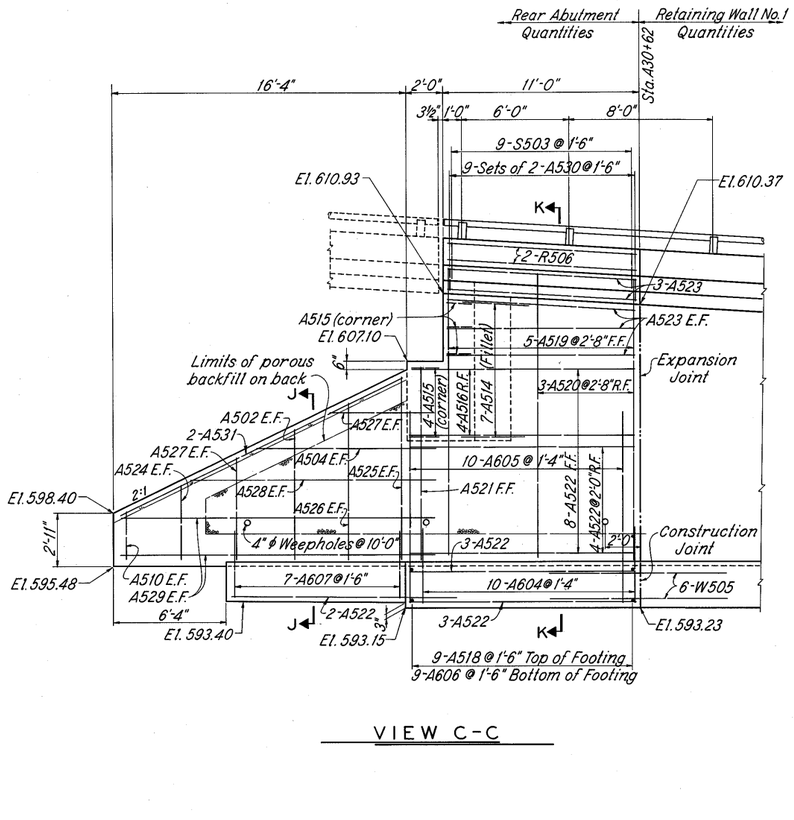
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JPG	JPG	UL		RAK	11-15-67	3-15-68 9-9-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

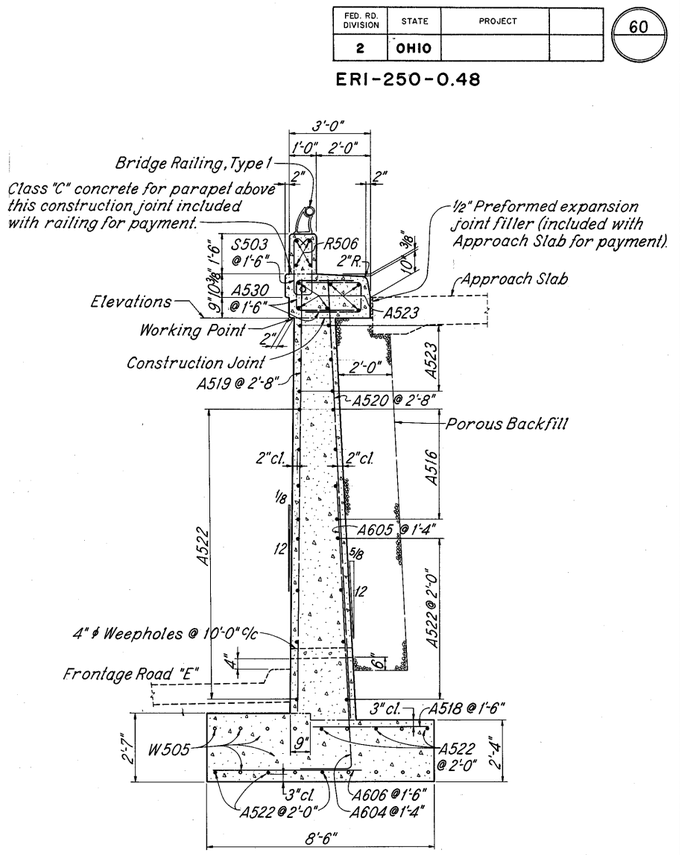
60

ERI-250-0.48

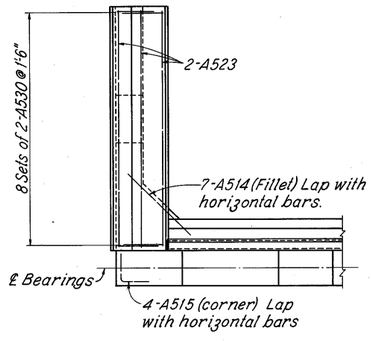




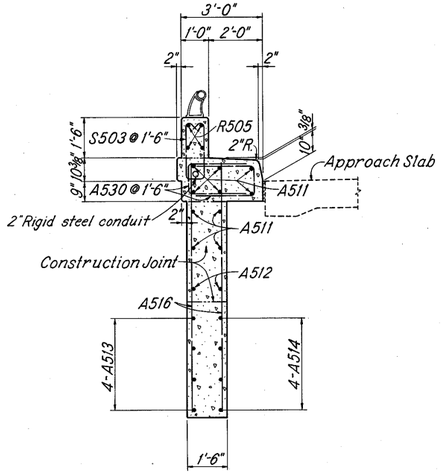
VIEW C-C



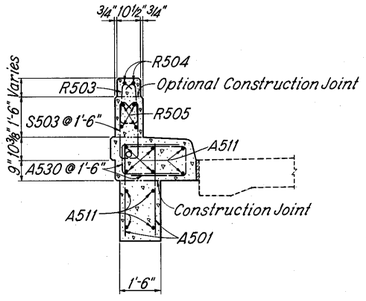
SECTION K-K



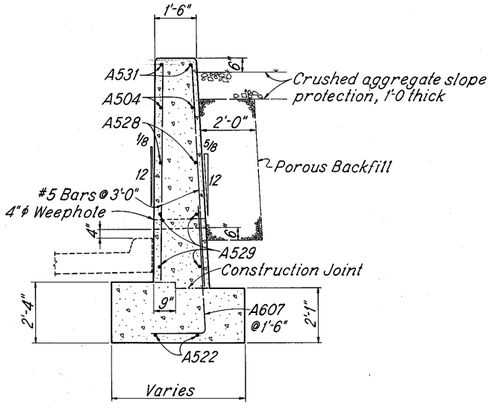
WINGWALL PLAN



SECTION D-D



SECTION E-E



SECTION J-J

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

REAR ABUTMENT-2

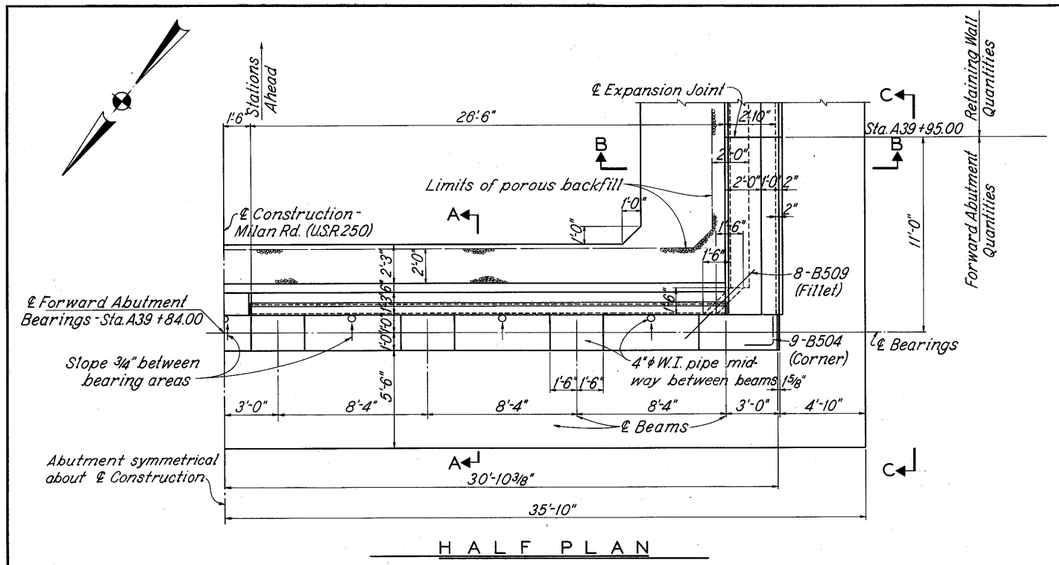
BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250
STA. A30+71.75 TO STA. A39+86.25

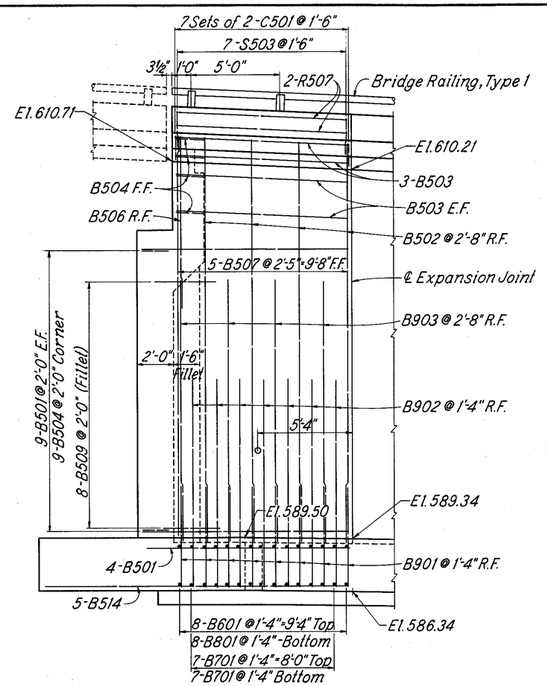
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JPG	JPG	UL		RAK	11-15-67	

FED. RD. DIVISION	STATE	PROJECT		61
2	OHIO			

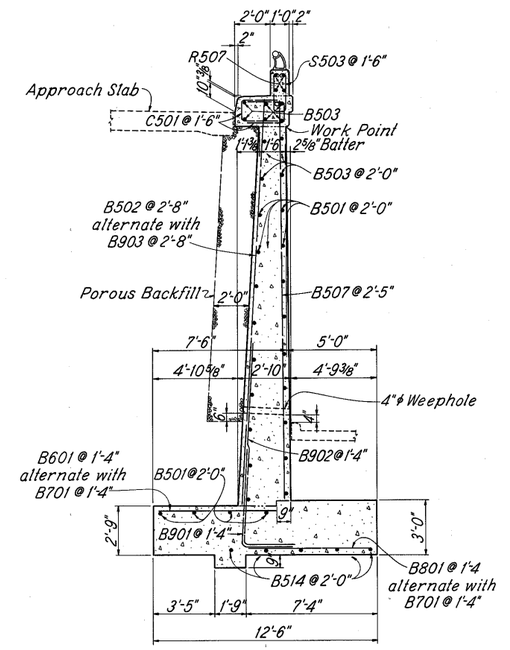
ERI-250-0.48



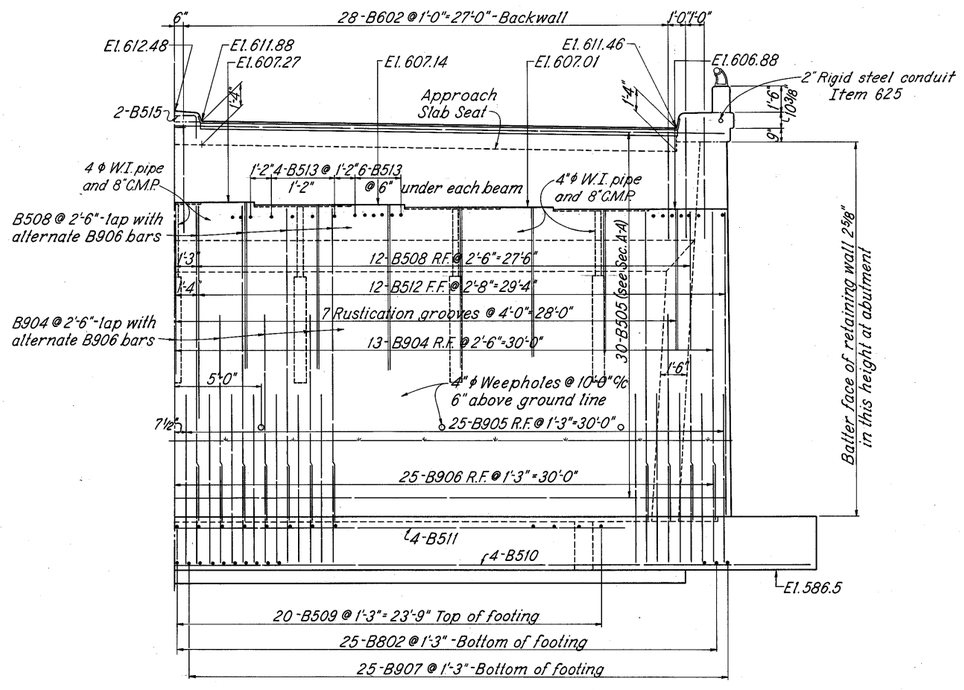
HALF PLAN



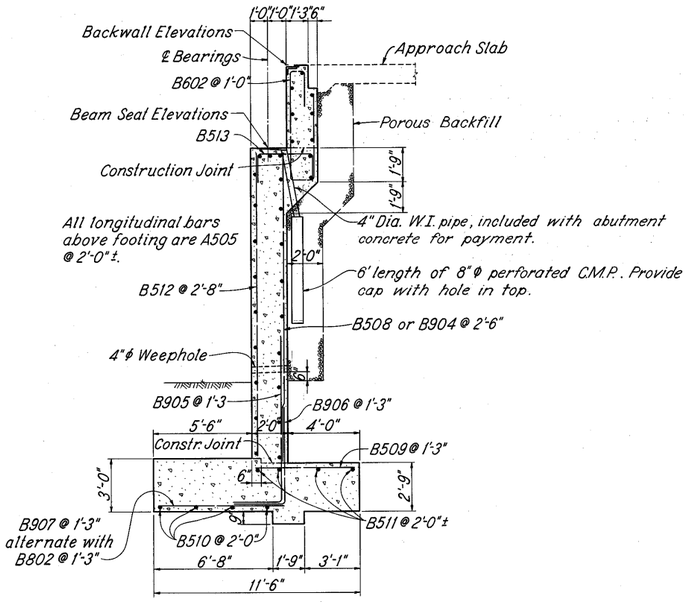
VIEW C - C



SECTION B - B



HALF ELEVATION



SECTION A - A

NOTES

CONCRETE: All abutment concrete shall be Class "E", except parapets, which shall be Class "C".

PROCEDURE: Before the backwall is constructed the embankment shall be placed and compacted up to the level of the subgrade, with a 1:1 slope from the bridge seat to the subgrade, for a distance of 200 feet back of the abutment.

POROUS BACKFILL, 2 Ft. thick, full length of abutment, shall extend up to the pavement subgrade.

NOTATION: E.F.-Each Face; F.F.-Front Face; R.F.-Rear Face.

GENERAL NOTES: See Sheet 58.

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

FORWARD ABUTMENT
BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

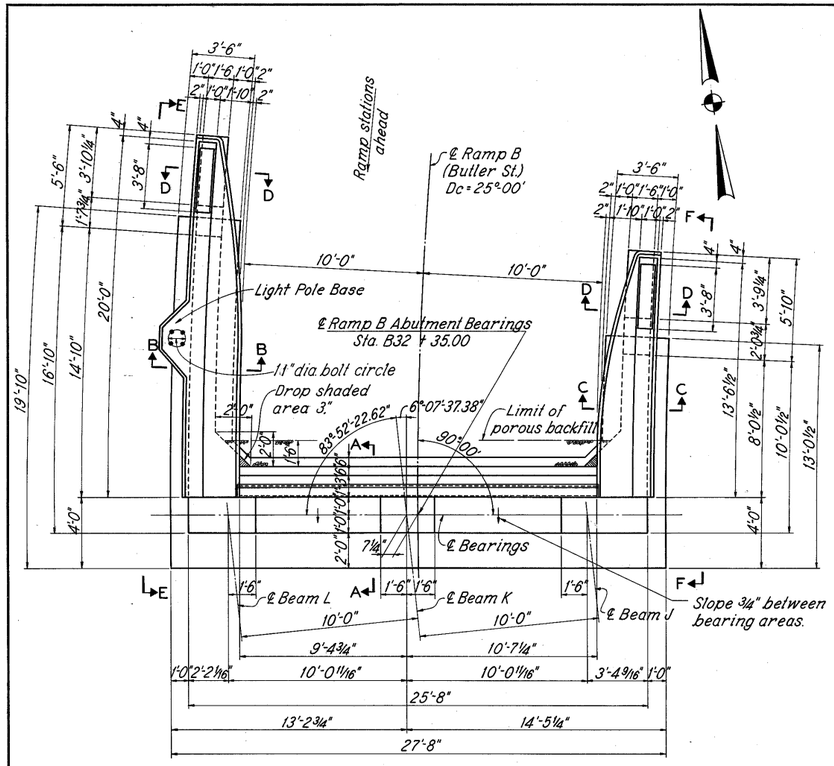
ERIE COUNTY U.S.R. 250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	UL		RAK	11-15-67	

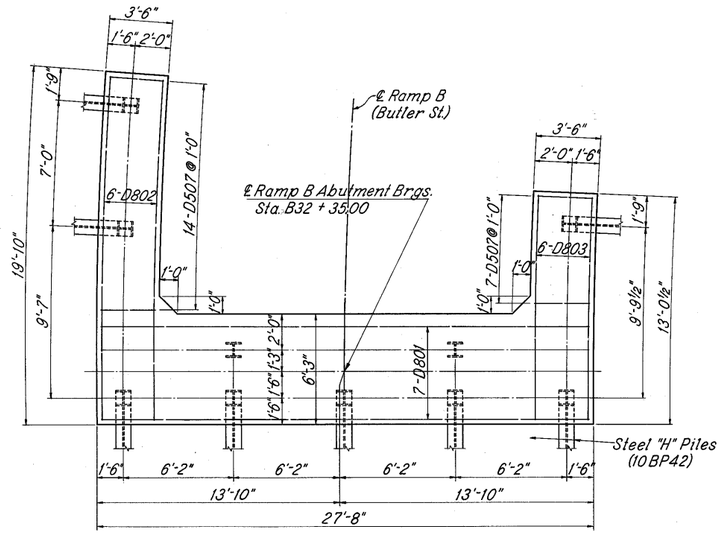
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

62

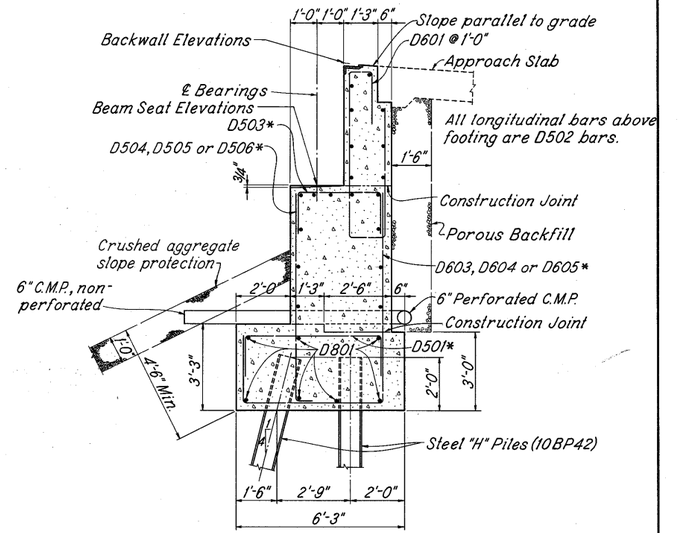
ERI-250-0.48



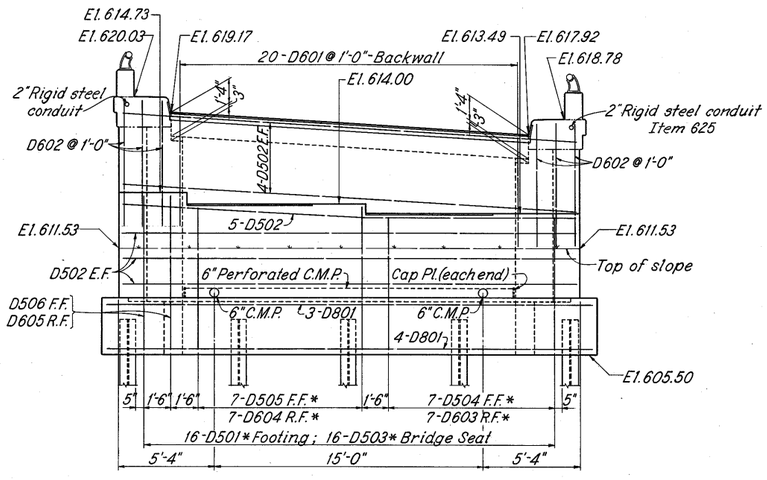
PLAN



FOOTING PLAN

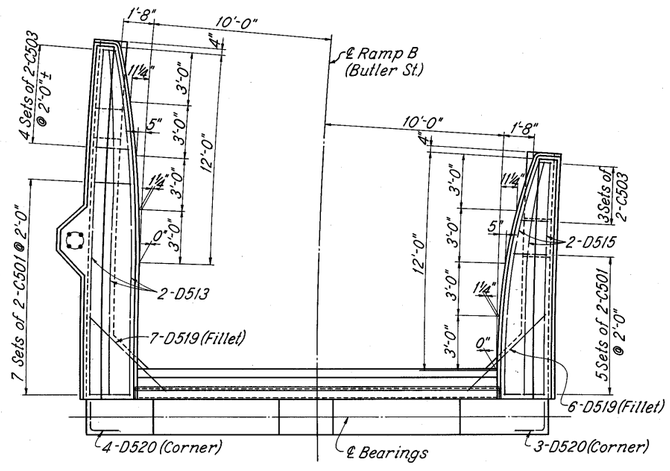


SECTION A-A



* Bars shall be equally spaced between piles at approximately 1'-6"±.

ELEVATION



WINGWALL PLAN

NOTES

CONCRETE: All abutment concrete shall be Class "E", except parapets, which shall be Class "C".

POROUS BACKFILL, 1'-6" thick, shall extend upward to the approach slab for the full length of the abutment. Excavation therefor, in excess of that required for the construction of the abutment, shall be considered as paid for in the bid price per cu. yd. paid for porous backfill.

EXCAVATION QUANTITY includes the removal of fill material required for construction of Ramp "B" Abutment.

SECTIONS B-B, C-C AND D-D: See Sheet 63.

PROCEDURE: The Ramp "B" embankment shall be placed and compacted up to the finished spill-thru slope and to the level of the subgrade for a distance of 200 ft. back of the abutments, after which excavation shall be made for the Ramp "B" Abutment, and piles driven.

NOTATION
E.F. - Each Face
F.F. - Front Face
R.F. - Rear Face

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

RAMP "B" (BUTLER ST.) ABUTMENT-1
BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

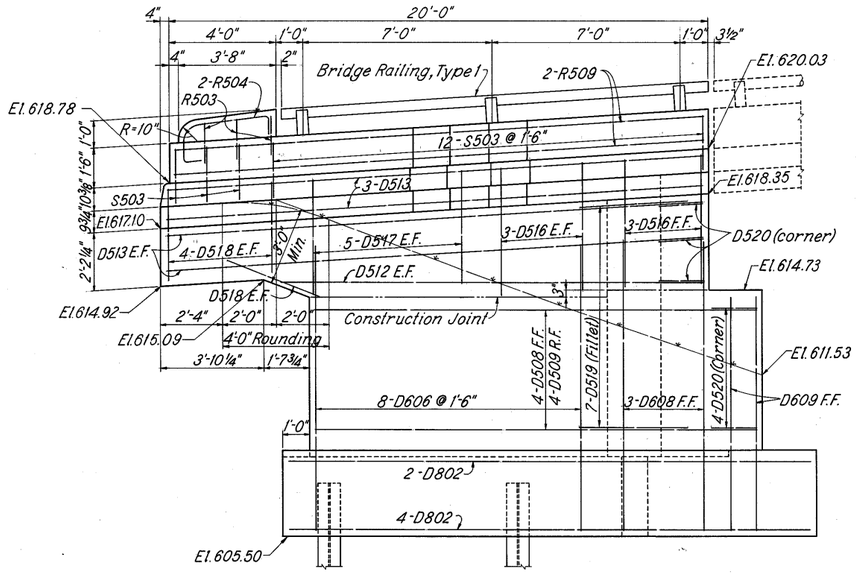
ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RHU	UL		RAK	11-15-67	

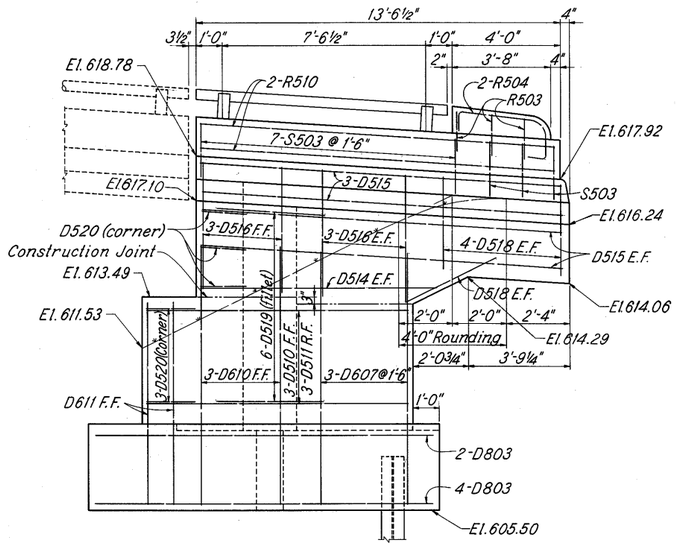
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

63

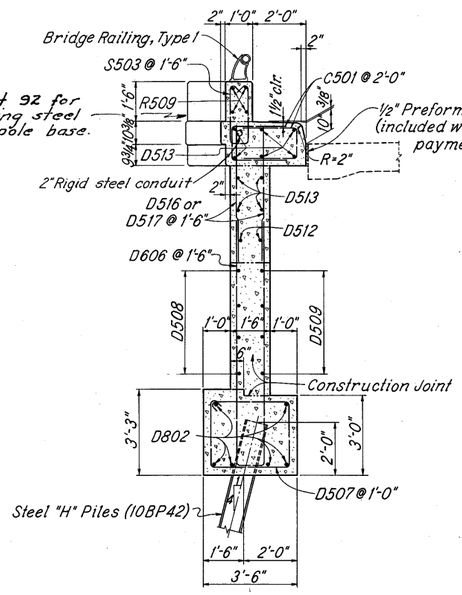
ERI-250-0.48



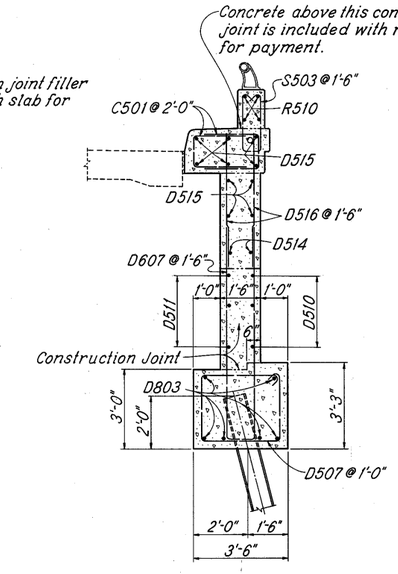
VIEW E-E



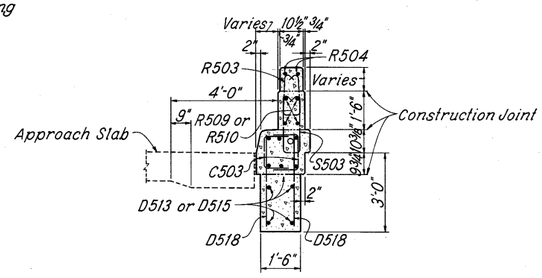
VIEW F-F



SECTION B-B



SECTION C-C



SECTION D-D

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

RAMP "B" (BUTLER ST.) ABUTMENT-2
BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

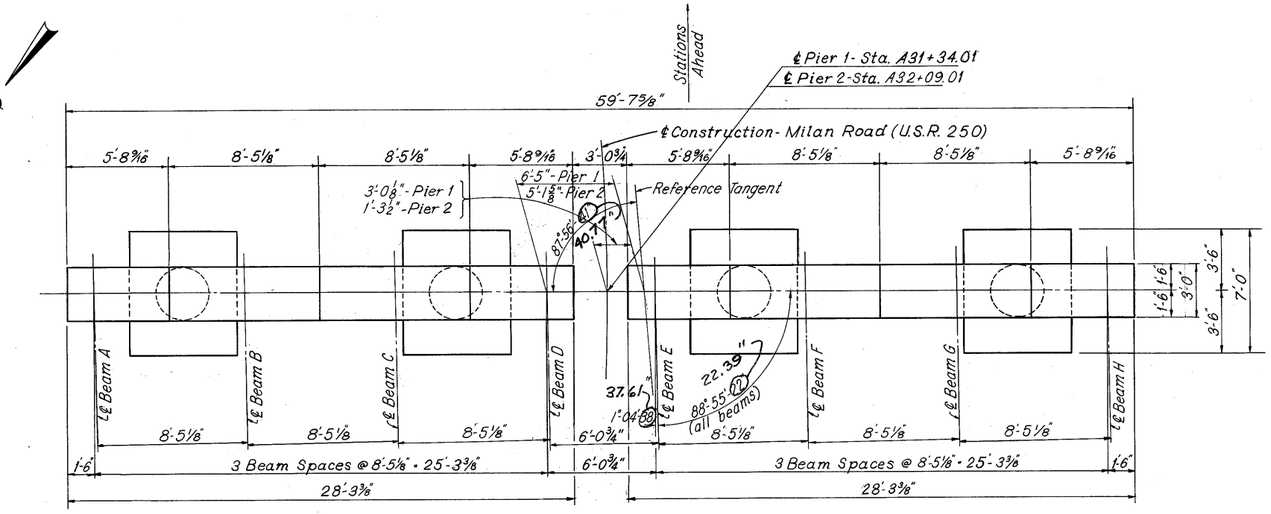
ERIE COUNTY U.S.R. 250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RHU	UL		RAK	11-15-67	

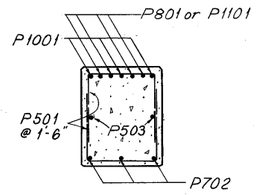
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

64

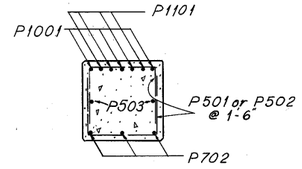
ERI-250-0.48



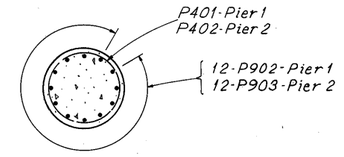
PLAN



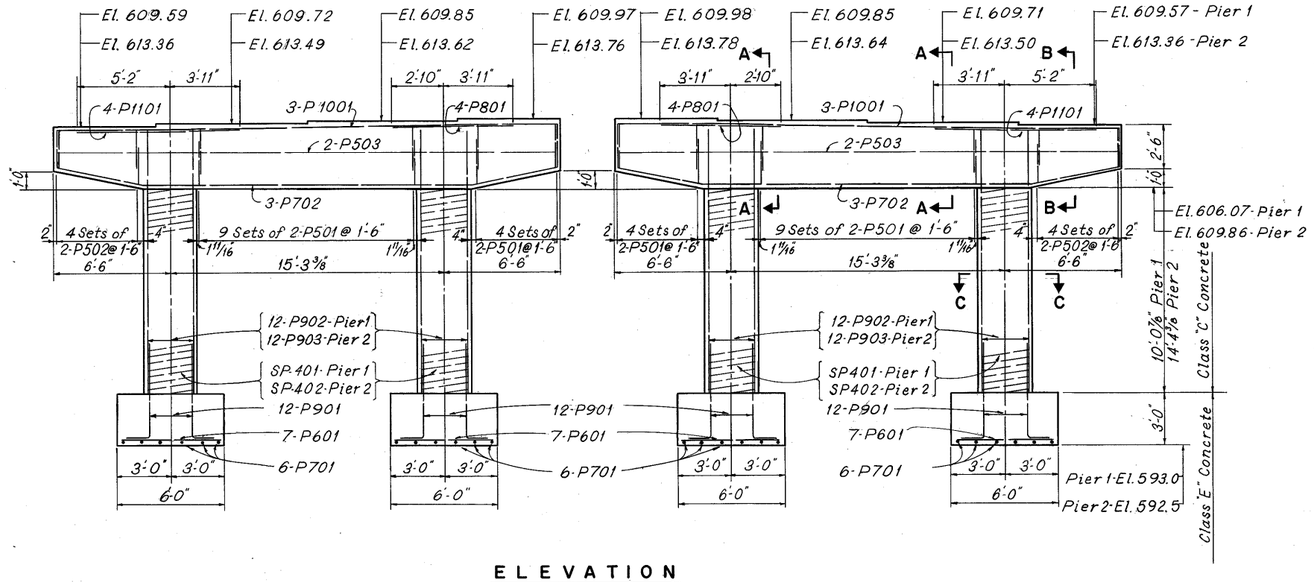
SECTION A-A



SECTION B-B



SECTION C-C



ELEVATION

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above pier footings shall be Class "C".

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

PIERS 1 AND 2

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

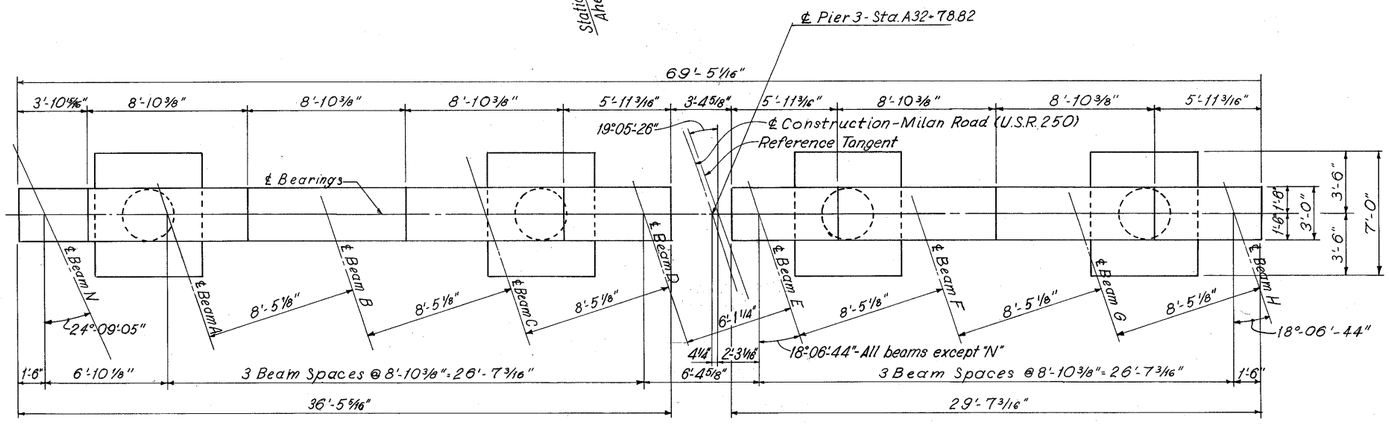
ERIE COUNTY U.S.R.250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	GMB		RAK	11-15-67	3-15-68 5-9-68

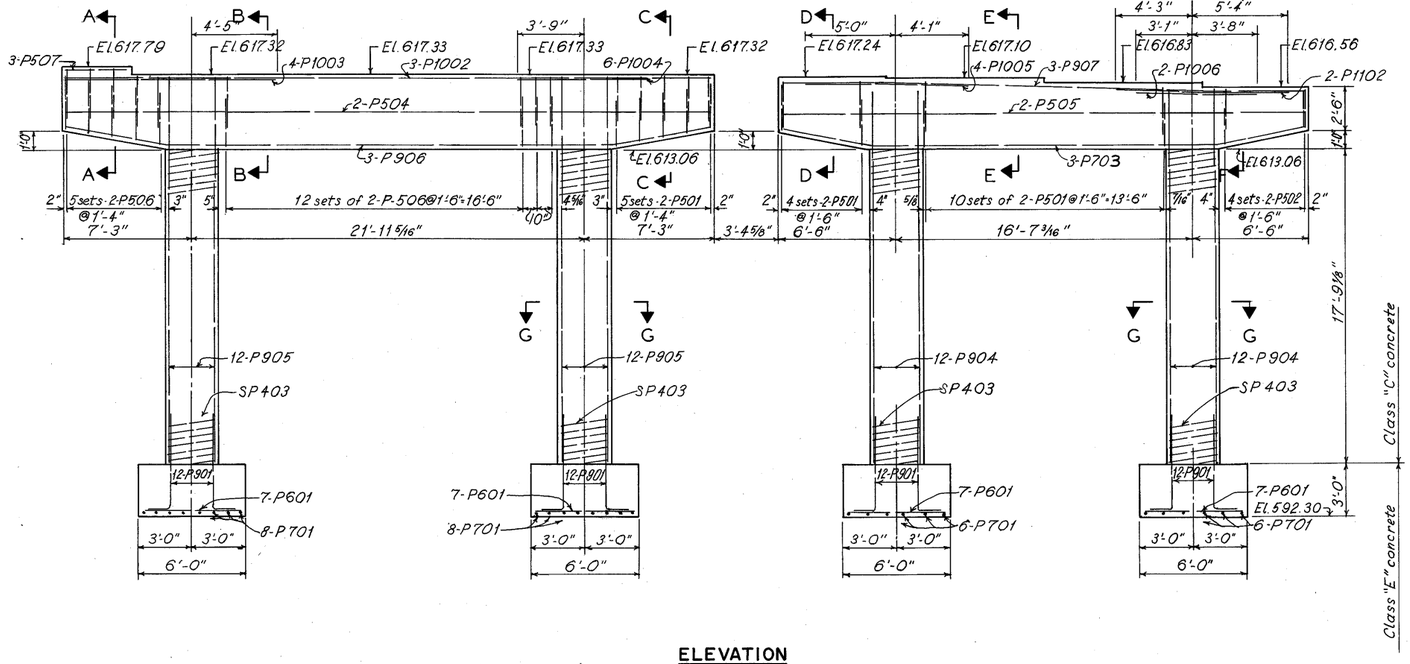
FED. RD. DIVISION	STATE	PROJECT	

65

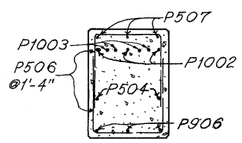
ERI-250-0.48



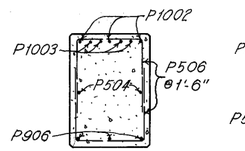
PLAN



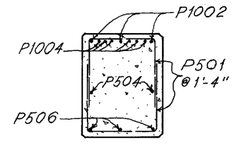
ELEVATION



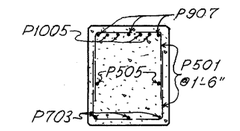
SECTION A-A



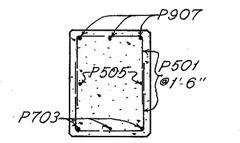
SECTION B-B



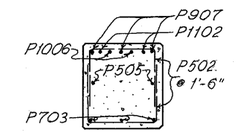
SECTION C-C



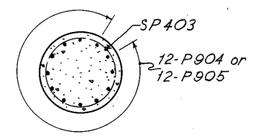
SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above pier footing shall be Class "C".

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

PIER 3

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL R.R.

ERIE COUNTY / U.S.R. 250

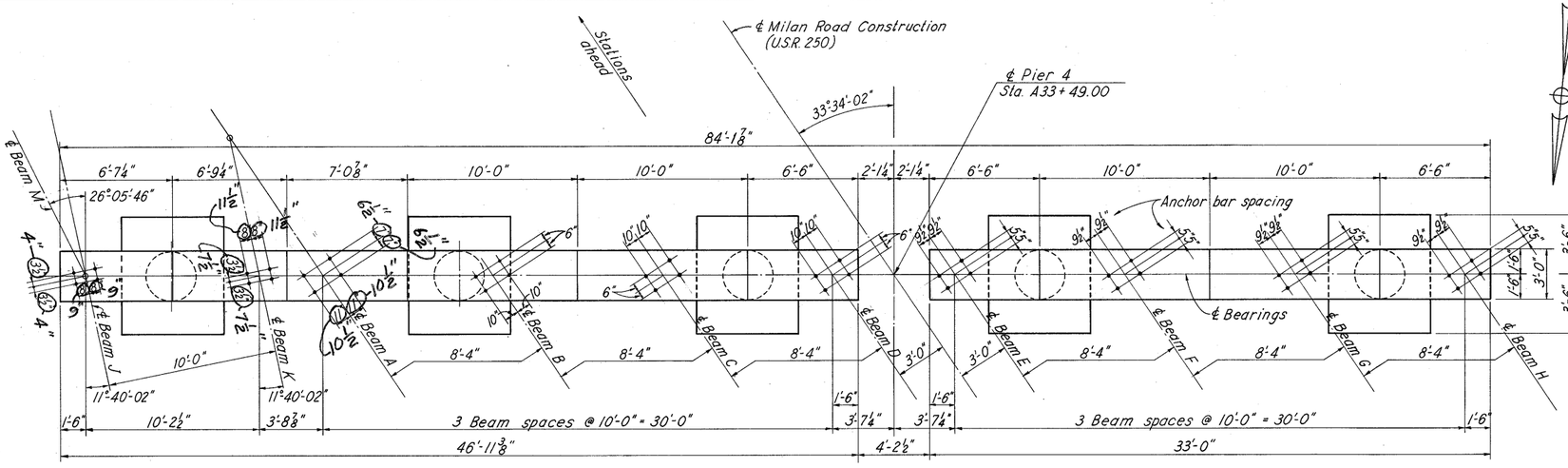
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.A.K.	R.A.K.	F.D.S.				

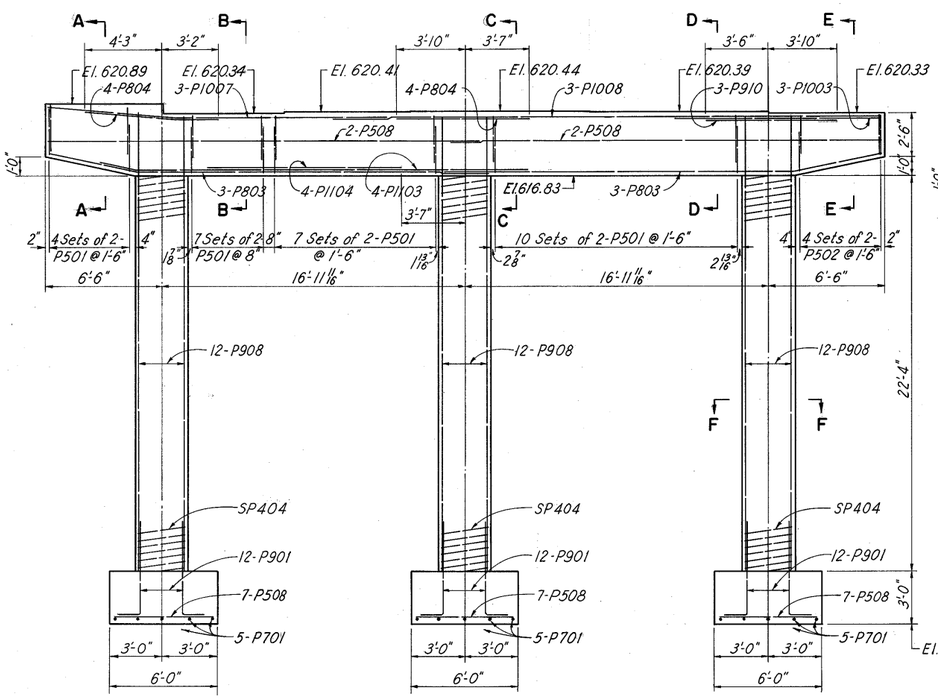
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

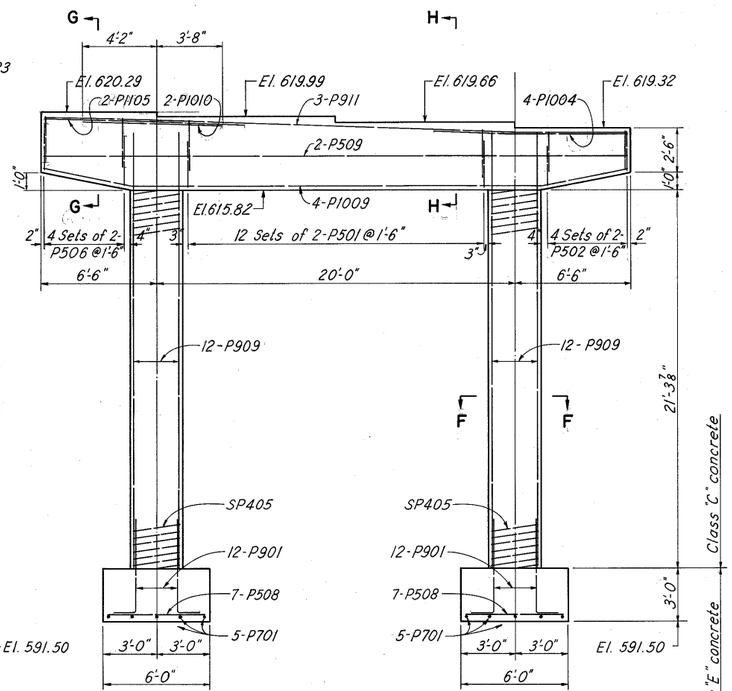
66

ERI-250-0.48

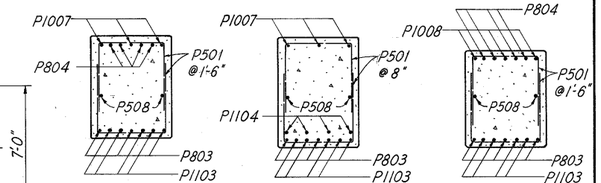


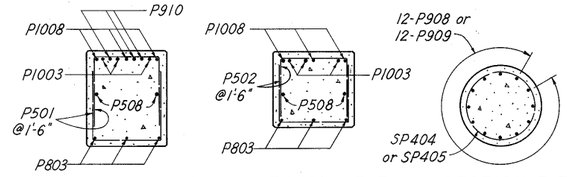
PLAN

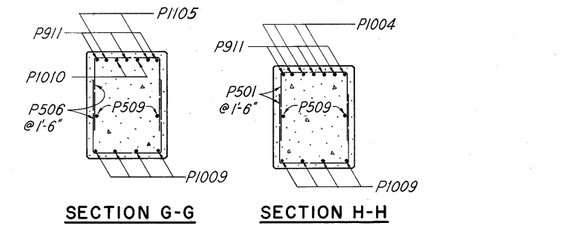




ELEVATION







NOTES:

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above pier footings shall be Class "C".

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

PIER 4

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250

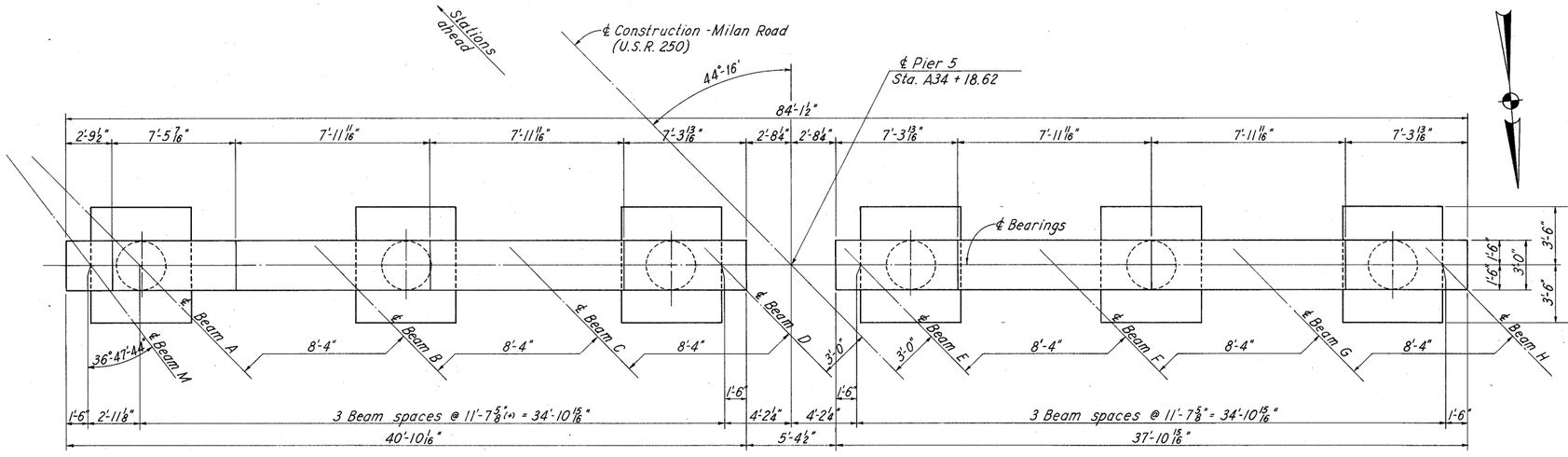
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK		RAK		RAK	11-15-67	9-9-68

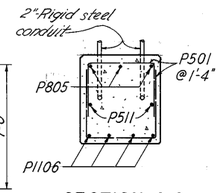
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

67

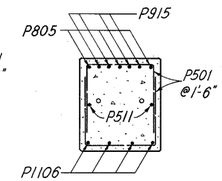
ERI-250-0.48



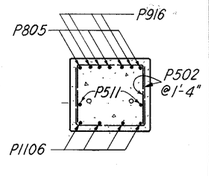
PLAN



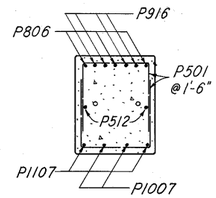
SECTION A-A



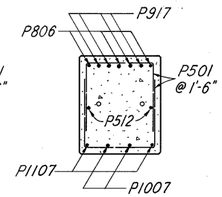
SECTION B-B



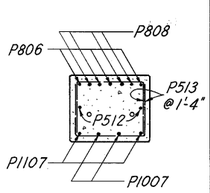
SECTION C-C



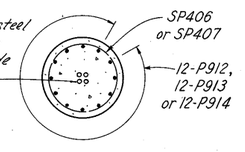
SECTION D-D



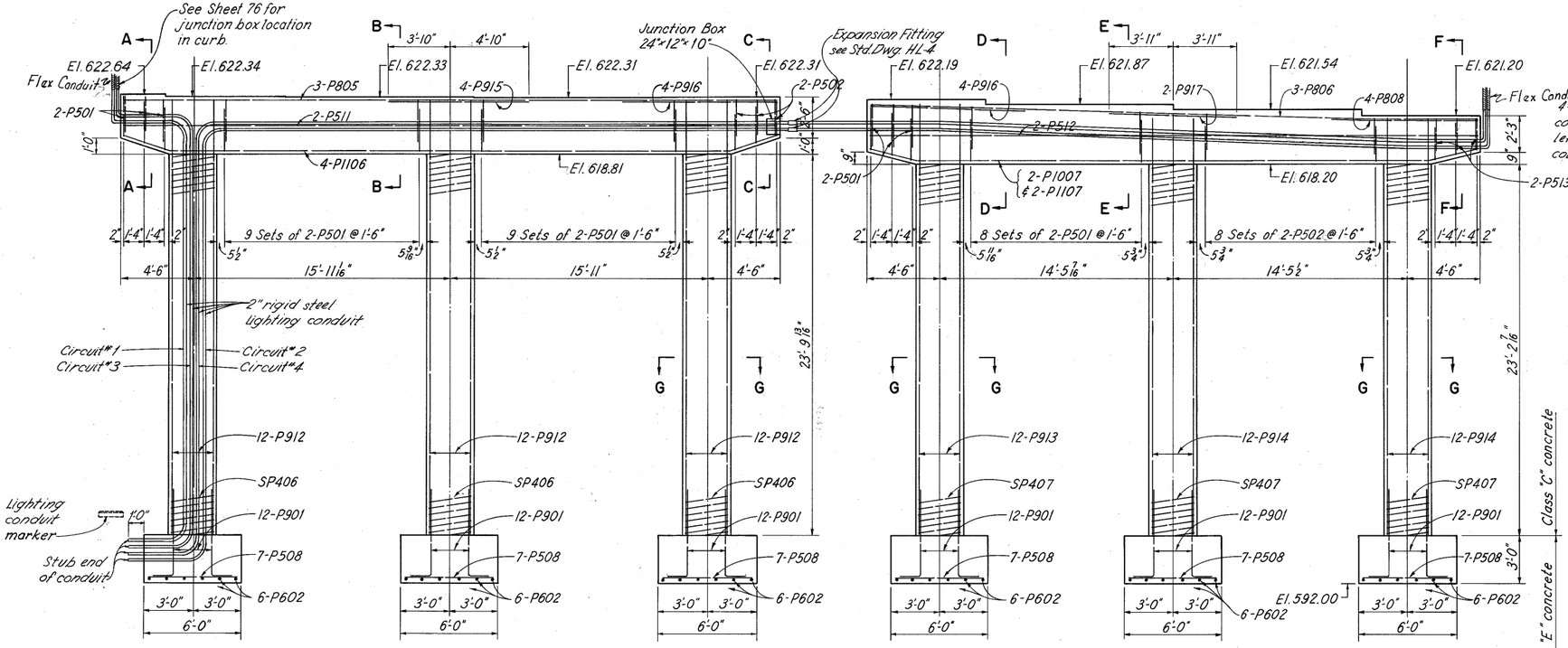
SECTION E-E



SECTION F-F



SECTION G-G



ELEVATION

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above footings shall be Class "C".

SHAFFER JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

PIER 5

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250

STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	GMB		RAK	11-15-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

68

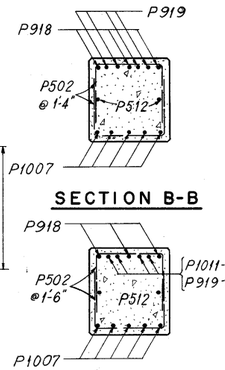
ERI-250-0.48

℄ Pier 6 - Sta. A 34+97.62
℄ Pier 7 - Sta. A35+73.21
℄ Construction
Milan Road (U.S.R. 250)
Stations Ahead

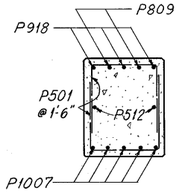
37'-10 13/16" | 5'-4 1/2" | 37'-10 13/16"
7'-3 13/16" | 11'-7 1/16" | 11'-7 3/8" | 7'-3 13/16" | 2'-8 1/4" | 2'-8 1/4" | 7'-3 13/16" | 11'-7 3/8" | 11'-7 1/16" | 7'-3 13/16"
44°-16'
℄ Beam A | 8'-4" | ℄ Beam B | 8'-4" | ℄ Beam C | 8'-4" | ℄ Beam D | 3'-0" | 3'-0" | ℄ Beam E | 8'-4" | ℄ Beam F | 8'-4" | ℄ Beam G | 8'-4" | ℄ Beam H
1'-6" | 3 Beam Spaces @ 11'-7 5/8" (+) = 34'-10 13/16" | 4'-2 1/4" | 4'-2 1/4" | 3 Beam Spaces @ 11'-7 5/8" (+) = 34'-10 13/16" | 1'-6"
40'-7 3/16" | 40'-7 3/16"
81'-2 3/8"

1'-6" | 3'-0" | 3'-6" | 7'-0"

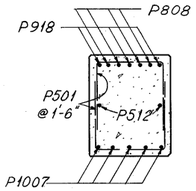
PLAN



SECTION B-B

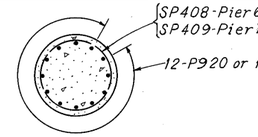


SECTION C-C

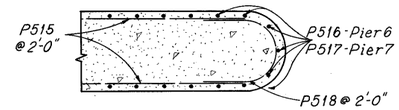


SECTION D-D

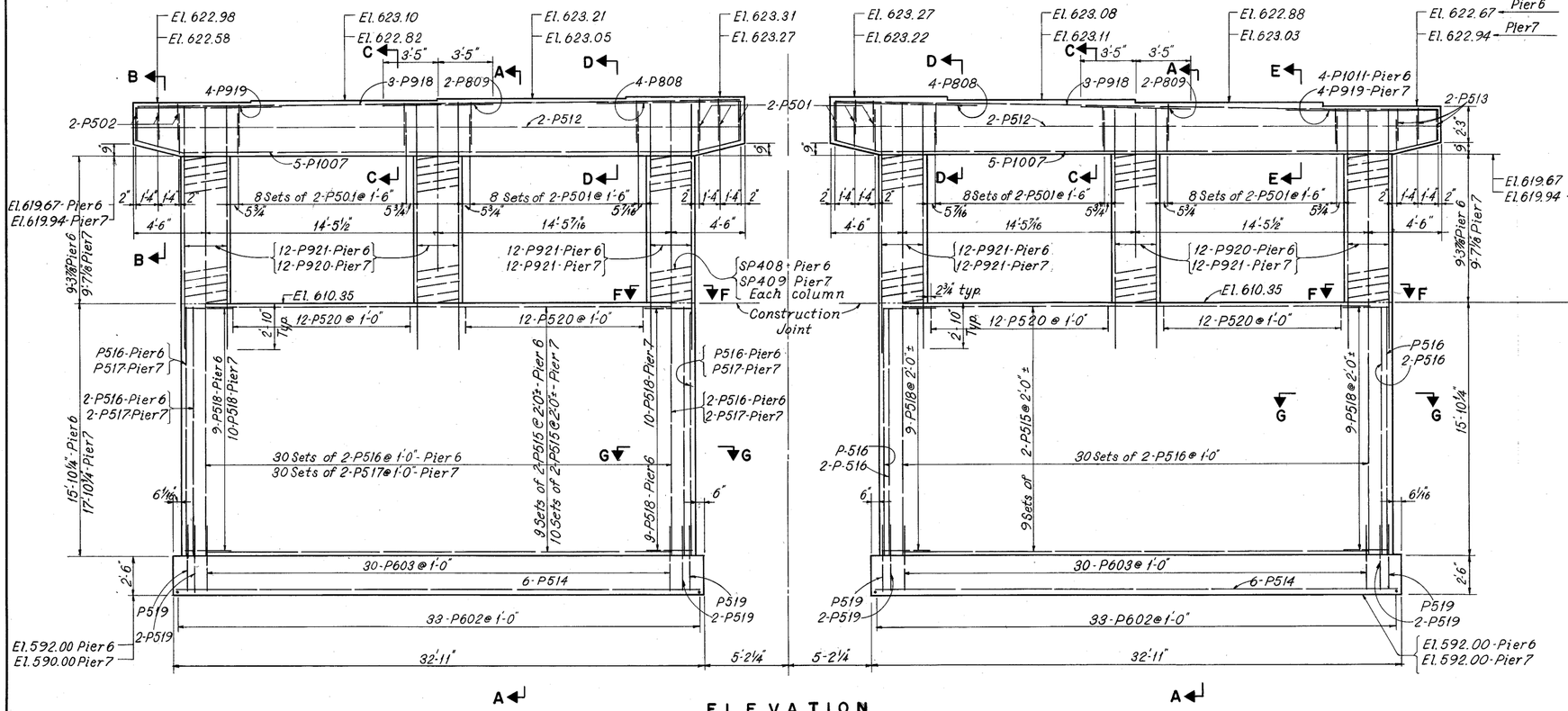
SECTION E-E



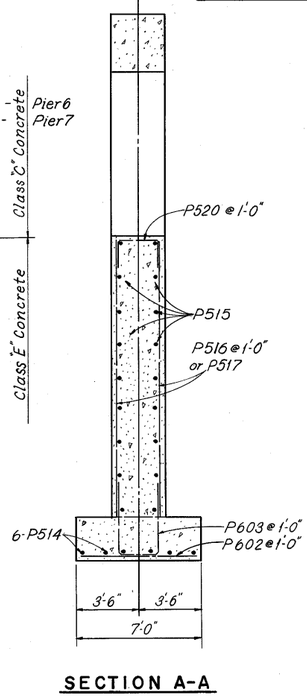
SECTION F-F



SECTION G-G



ELEVATION



SECTION A-A

CONCRETE: All concrete for pier footings and collision walls shall be class "E" and all concrete above top of collision walls shall be class "C".

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO

PIERS 6 AND 7
BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

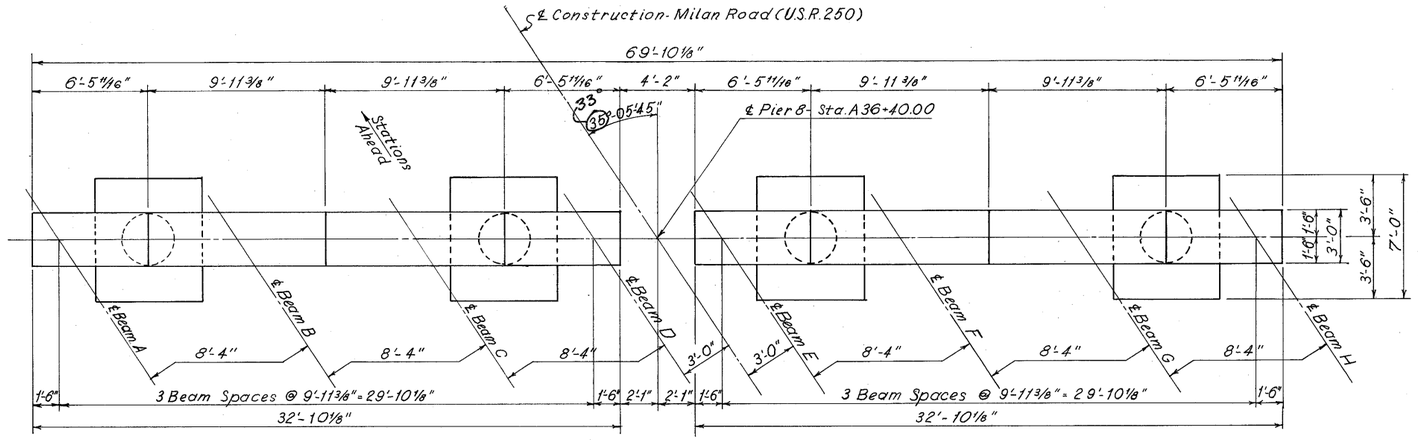
ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	GMB		RAK	11-15-67	

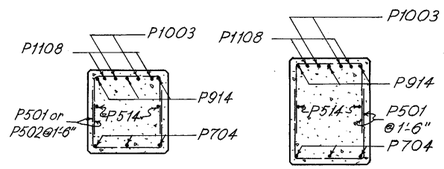
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ERI-250-0.48

69

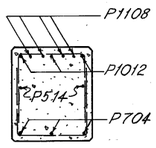


PLAN

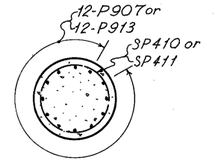


SECTION A-A

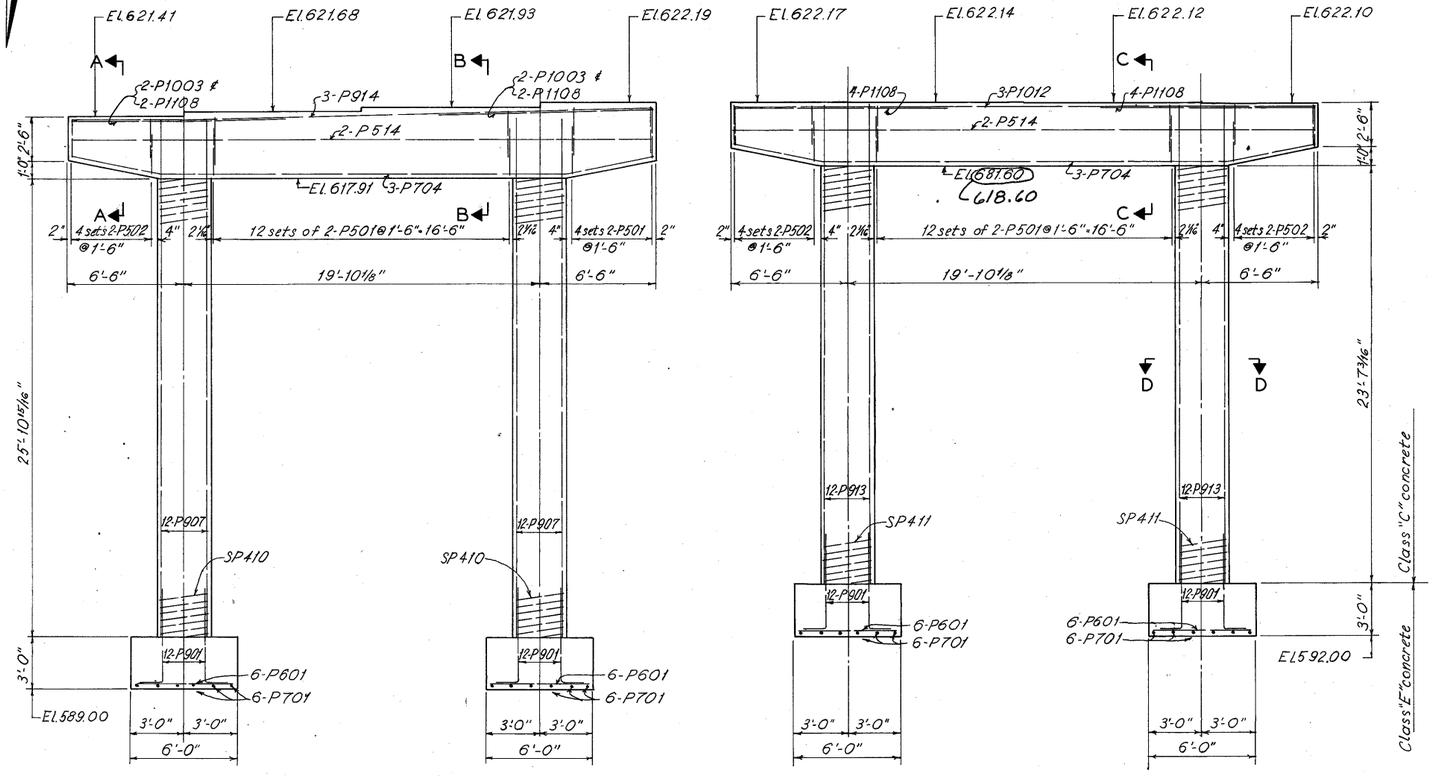
SECTION B-B



SECTION C-C



SECTION D-D



ELEVATION

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above pier footings shall be Class "C".

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

PIER 8

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL R.R.

ERIE COUNTY U.S.R. 250

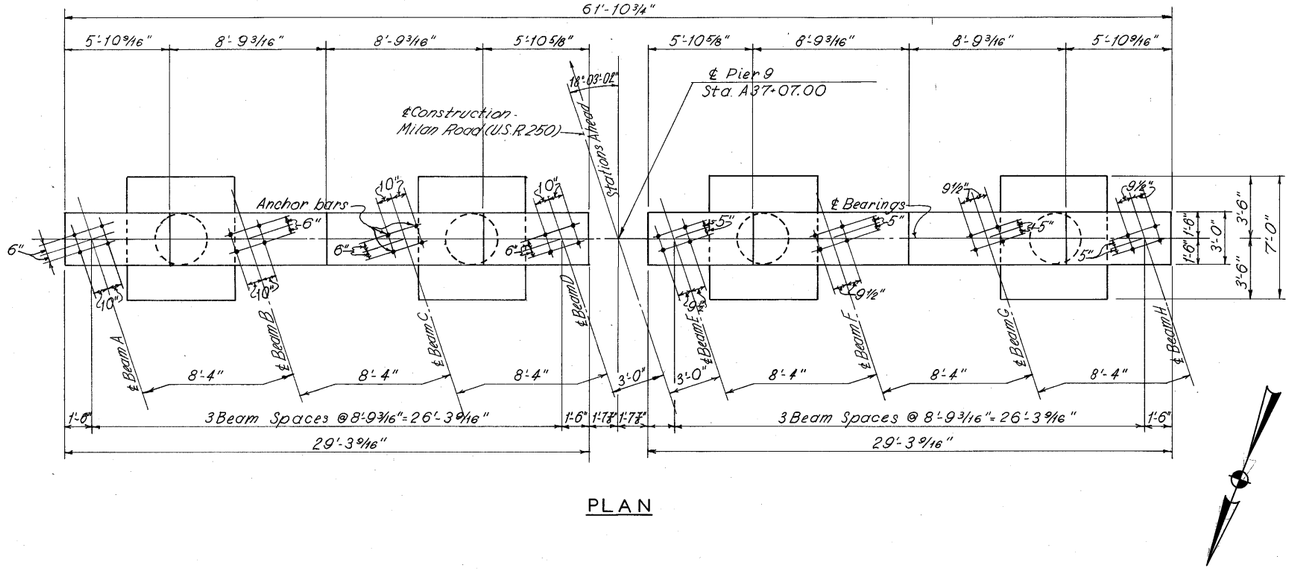
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	FDS		RAK	11-15-67	3-15-68

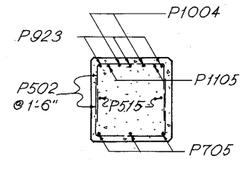
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

70

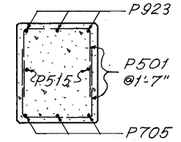
ERI-250-0.48



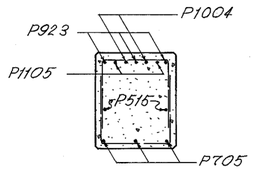
PLAN



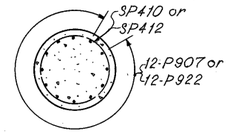
SECTION A-A



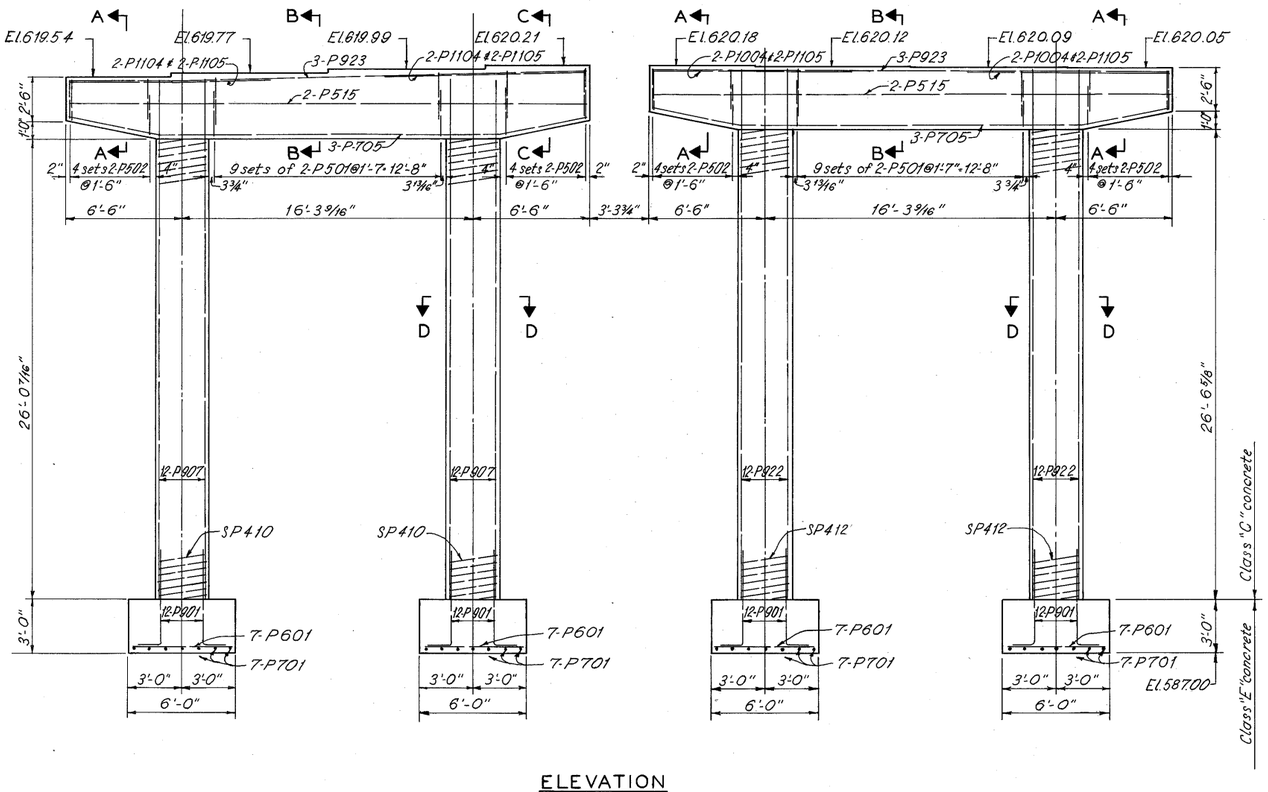
SECTION B-B



SECTION C-C



SECTION D-D



ELEVATION

NOTES:

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor bar holes.

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above pier footings shall be Class "C".

SHAFFER, [illegible] JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

PIER 9

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL R.R.

ERIE COUNTY U.S.R. 250

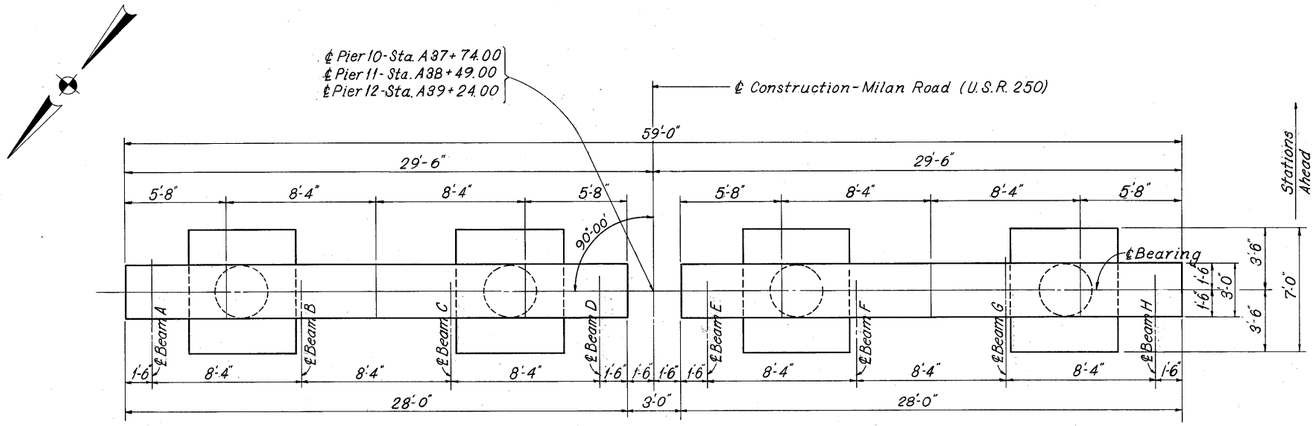
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK.	RAK	F.D.S.		RAK	11-15-67	

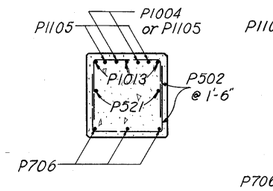
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

71

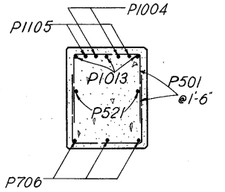
ERI-250-0.48



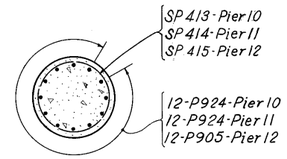
PLAN



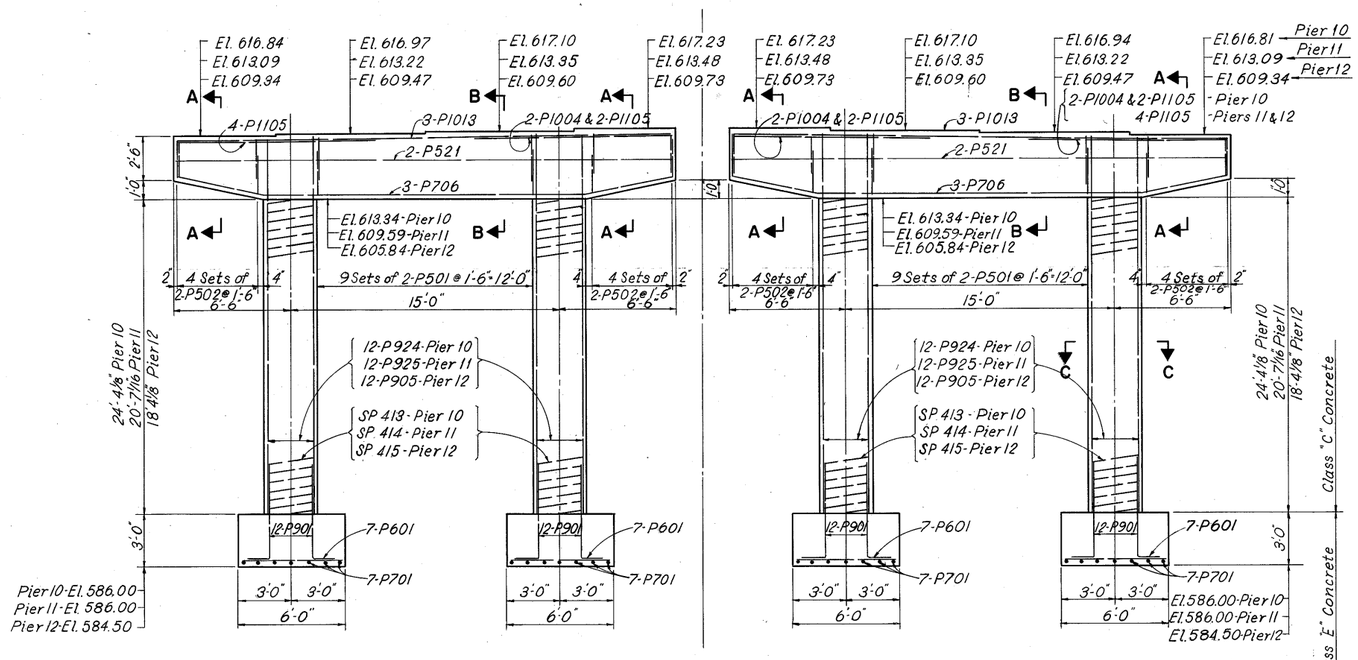
SECTION A-A



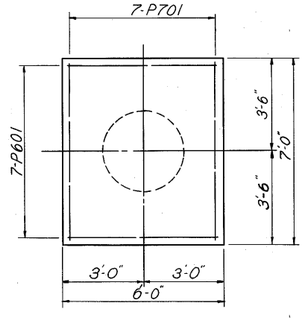
SECTION B-B



SECTION C-C



ELEVATION



PLAN OF TYPICAL FOOTING

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above pier footings shall be Class "C."

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

PIERS 10, 11 AND 12

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250

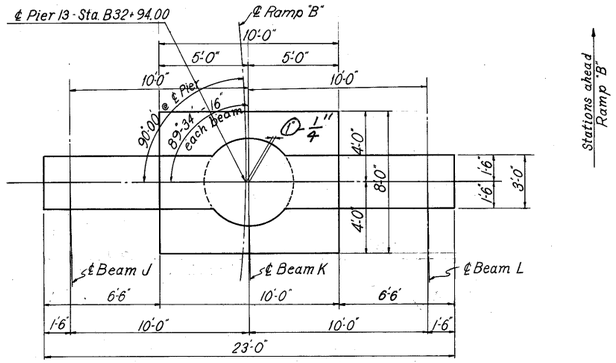
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	GMB		RAK	11-15-67	

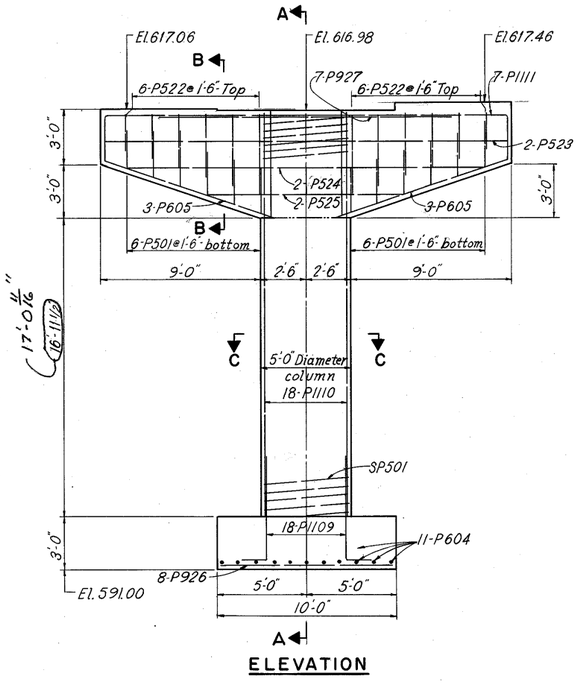
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

72

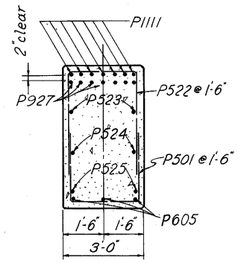
ERI-250-0.48



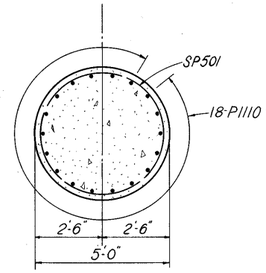
PLAN



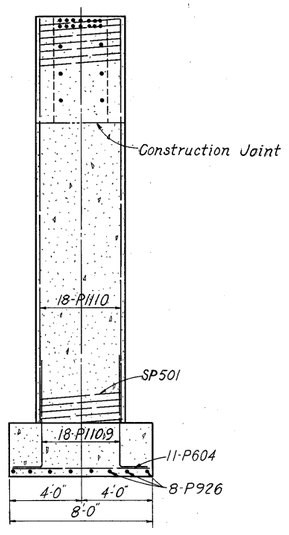
ELEVATION



SECTION B-B



SECTION C-C



SECTION A-A

CONCRETE: All concrete for pier footings shall be Class "E" and all concrete above pier footings shall be Class "C."

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

PIER 13

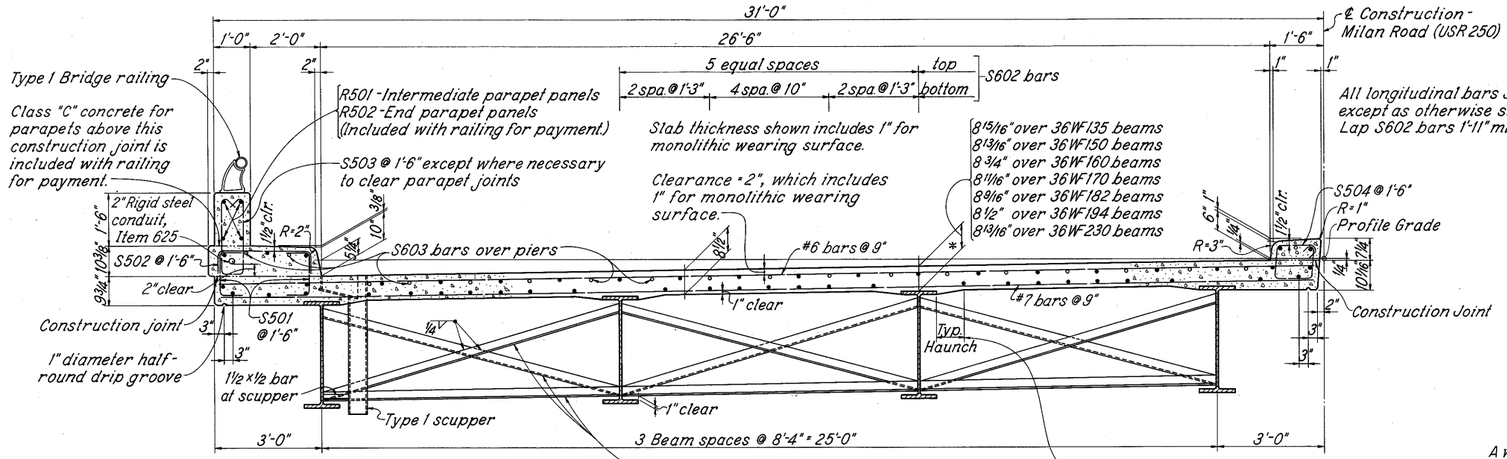
BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	GMB		RAK	11-15-67	3-15-68

FED. RD. DIVISION	STATE	PROJECT		73
2	OHIO			

ERI-250-0.48

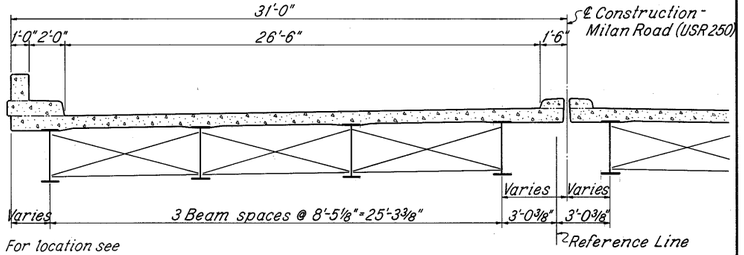


* These are nominal dimensions. The quantity of deck concrete to be paid for shall be based on these dimensions, even though deviation from them may be necessary because the top flange of the beam may not have the exact camber or conformation required to place it parallel to the finished grade. Deduction shall be made for the volume of encased steel plates as per Sec. 511.19 of the Construction and Material Specifications.

Intermediate crossframe angles - 3 x 3 x 5/16. Weld both sides of vertical leg and top side of horizontal leg to beam with ¼" continuous fillet weld.

A typical haunch width of 9" shall be used for computing quantity of concrete. However, the haunch width may vary between 6" and 12" provided that the slope shall be not more than 1:4 for a haunch less than 9" in width.

Note: For light pole base reinforcing and details see sheet 92.



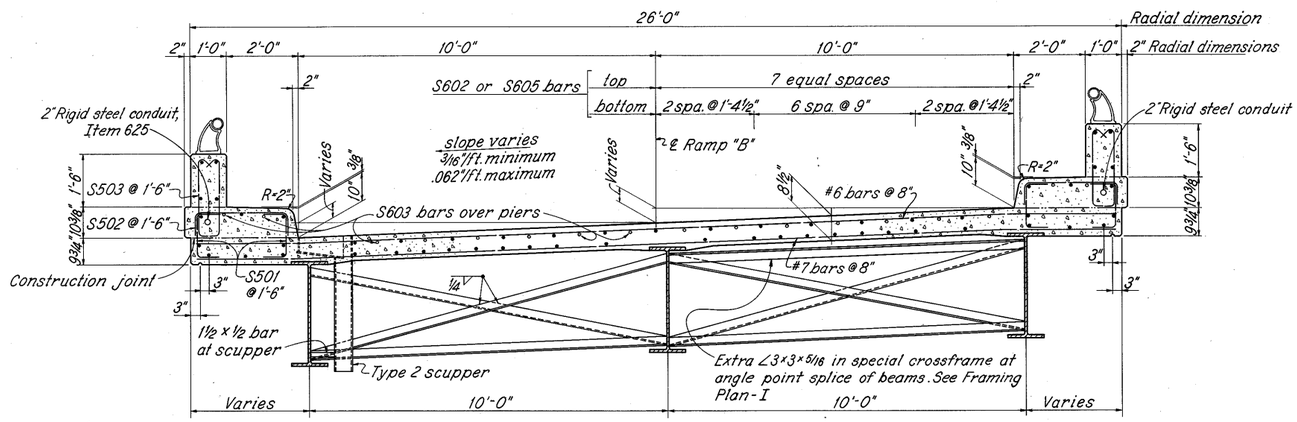
For location see Sheet 74.

Note: For details not shown see Section A-A.

SECTION B-B

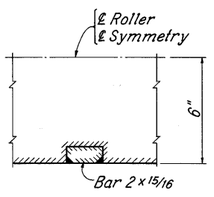
SECTION A-A

(See Sheet 75 for location)

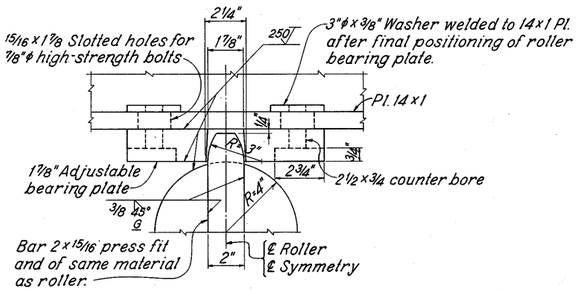


SECTION C-C

(See Sheet 74 for location)



SECTION THRU ROLLER

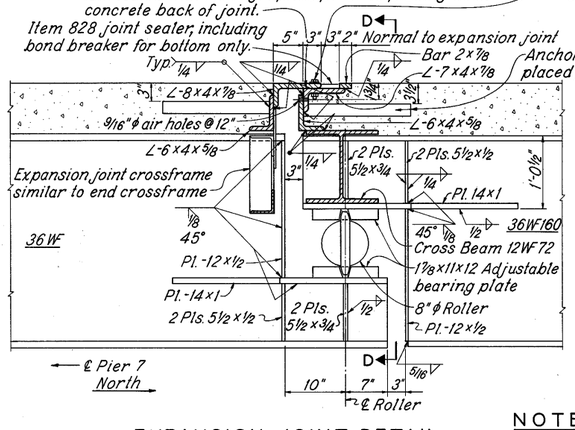


ROLLER DETAIL

A welded butt joint in the end dam at or near the centerline of roadway, will be required. 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.

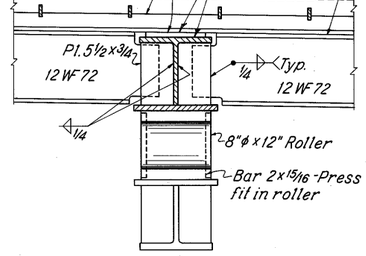
This contact surface shall not be painted and shall be lubricated with flake graphite prior to placing deck concrete back of joint.

⅝" x 2" bolts with steel washers at not more than 2'-0" ℄c with nuts tack-welded to underside of lower angle. 1 1/16" holes in upper angle. Center ⅝" bolts in 1 1/16" holes. Apply flake graphite between washers and angle. Turn bolts light 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.

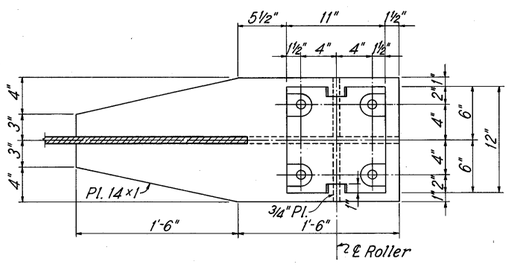


EXPANSION JOINT DETAIL

Note: Re-entrant cut of ends of beam webs shall be filleted to a radius of not less than ¾".



SECTION D-D



ROLLER BEARING PLATE

NOTES

END DAMS, END CROSSFRAMES, SCUPPERS, CURB PLATES, MEDIAN CURB PLATES, MOMENT PLATE WELDING, AND BOLTED BEAM SPLICE DETAILS: See Std. Dwg. SD-1-65, Sheets 1, 2 and 3 of 3.

RAILING: See Std. Dwg. BR-1-65, Sheet 1 of 2.

BEARINGS: See Std. Dwg. RB-1-55. For sizes see Framing Plan.

CONCRETE: All superstructure concrete shall be Class "C".

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

DECK CROSS SECTIONS AND EXPANSION JOINT DETAILS

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	UL		RAK	11-15-67	

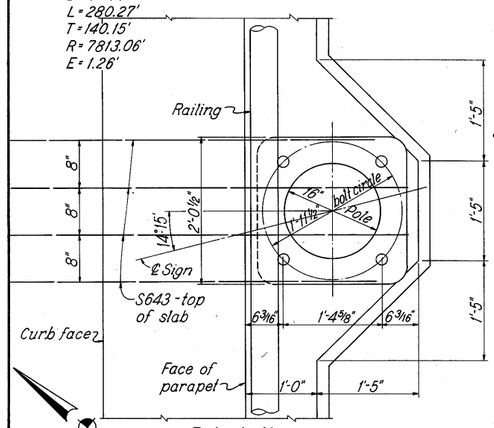
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ERI-250-0.48

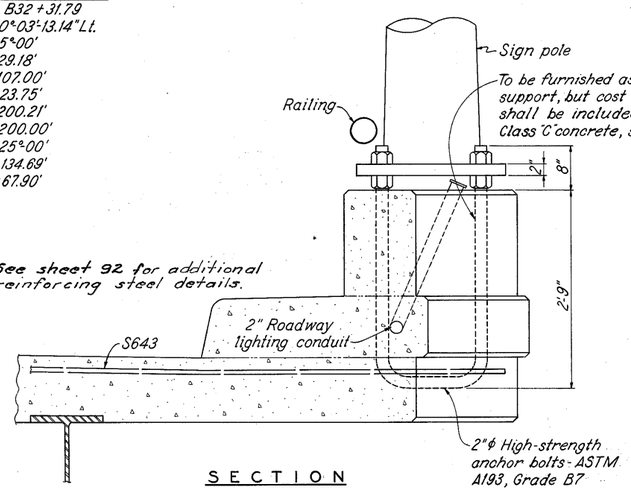
74

CURVE DATA - MILAN ROAD
P.I. Sta. A32 + 10.77
Δ = 2°-03'-19" Lt.
D = 0°-44'
L = 280.27'
T = 140.15'
R = 7813.06'
E = 1.26'

CURVE DATA - RAMP "B"
P.I. Sta. B32 + 31.79
Δ = 50°-03'-13.14" Lt.
D = 25°-00'
R = 229.18'
Ts = 107.00'
Es = 23.75'
Lc = 200.21'
Ls = 200.00'
θs = 25°-00'
L.T. = 134.69'
S.T. = 67.90'

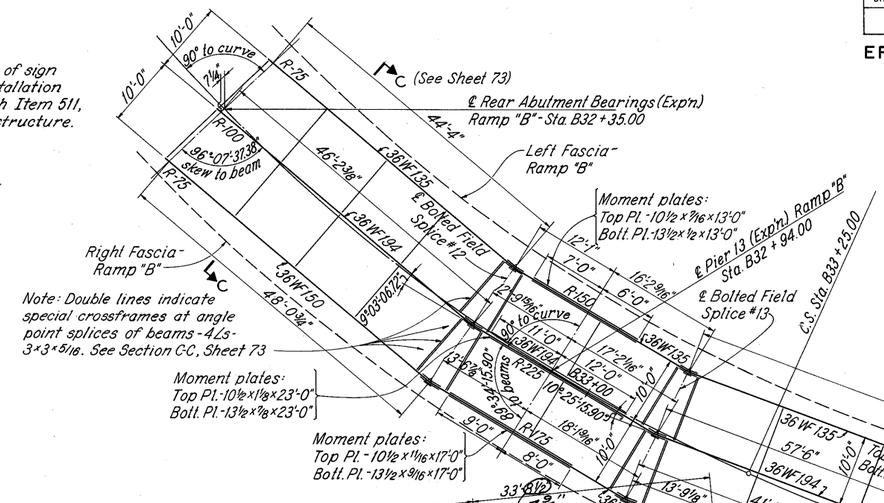


PLAN



SECTION

SIGN BASE AT LEFT RAILING - STA. A33+78



SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

FRAMING PLAN - 1

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

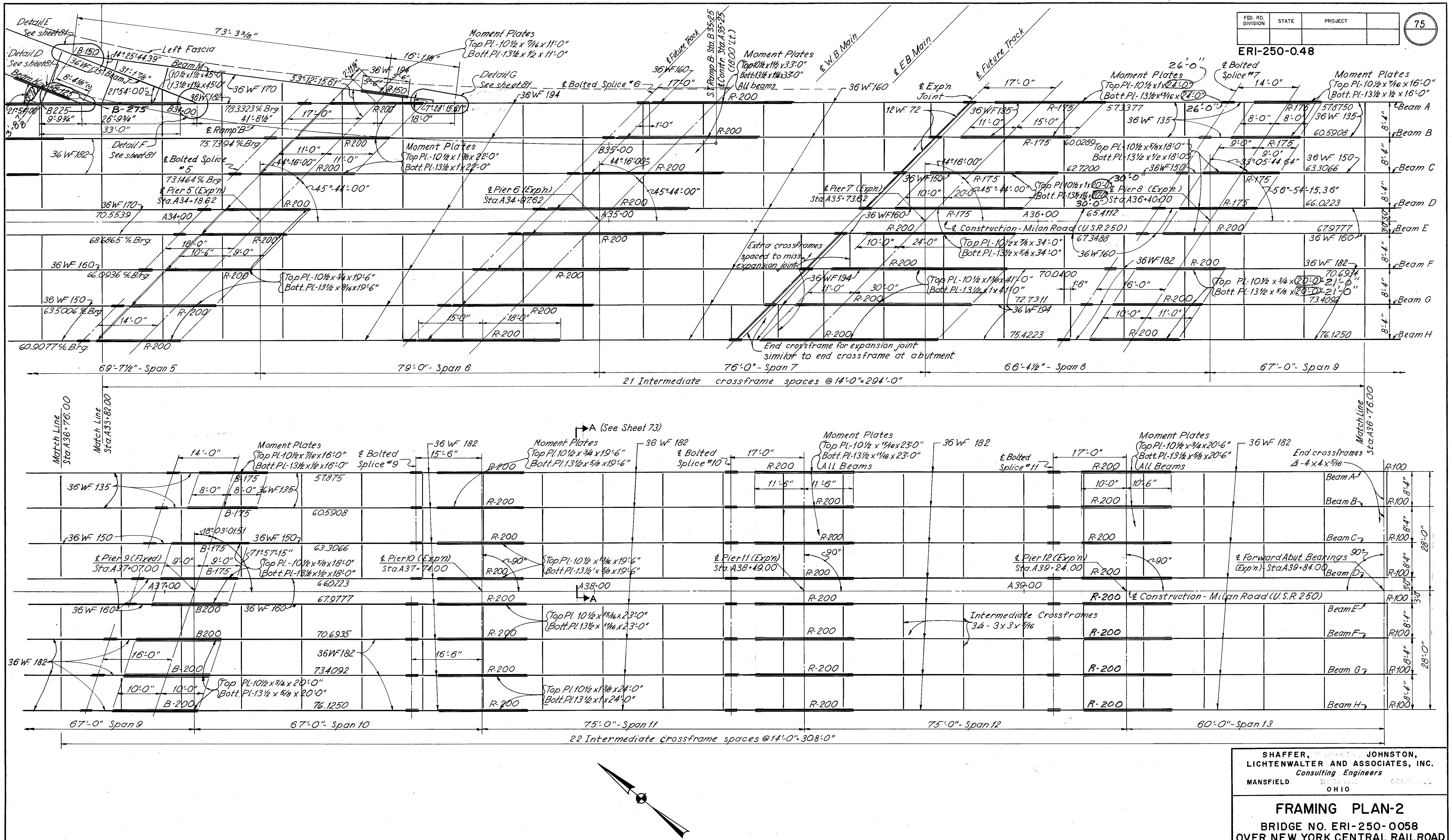
ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	Bob	UL		RAK	11-15-67	3-15-68

FED. RD. DIVISION	STATE	PROJECT	

75

ERI-250-0.48



SHAFFER, [illegible], JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD [illegible] OHIO

FRAMING PLAN-2

BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

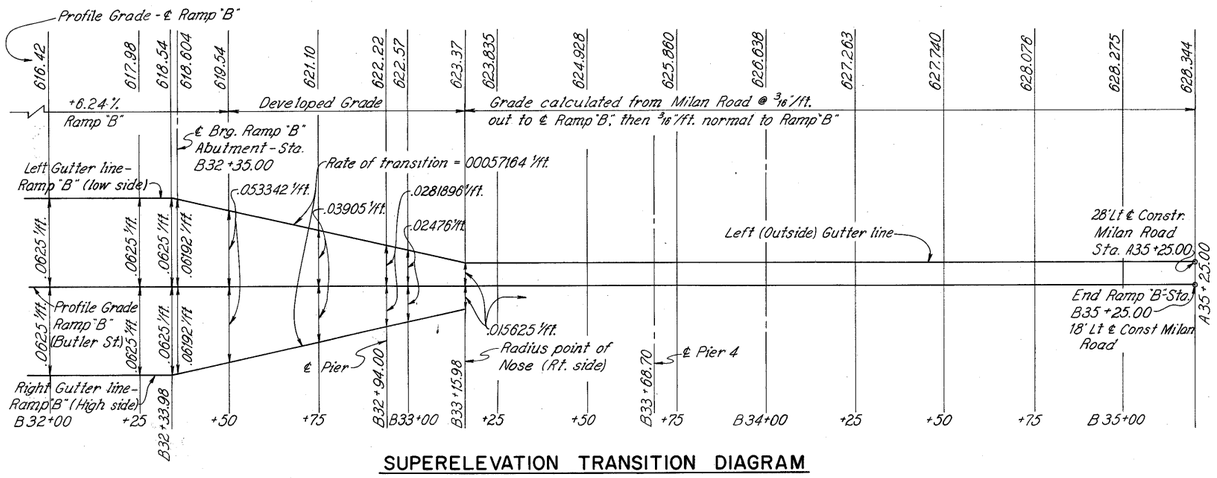
ERIE COUNTY U.S.R. 250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
RAK	RAK	FDS		RAK 11-15-67	3-15-68 9-9-68

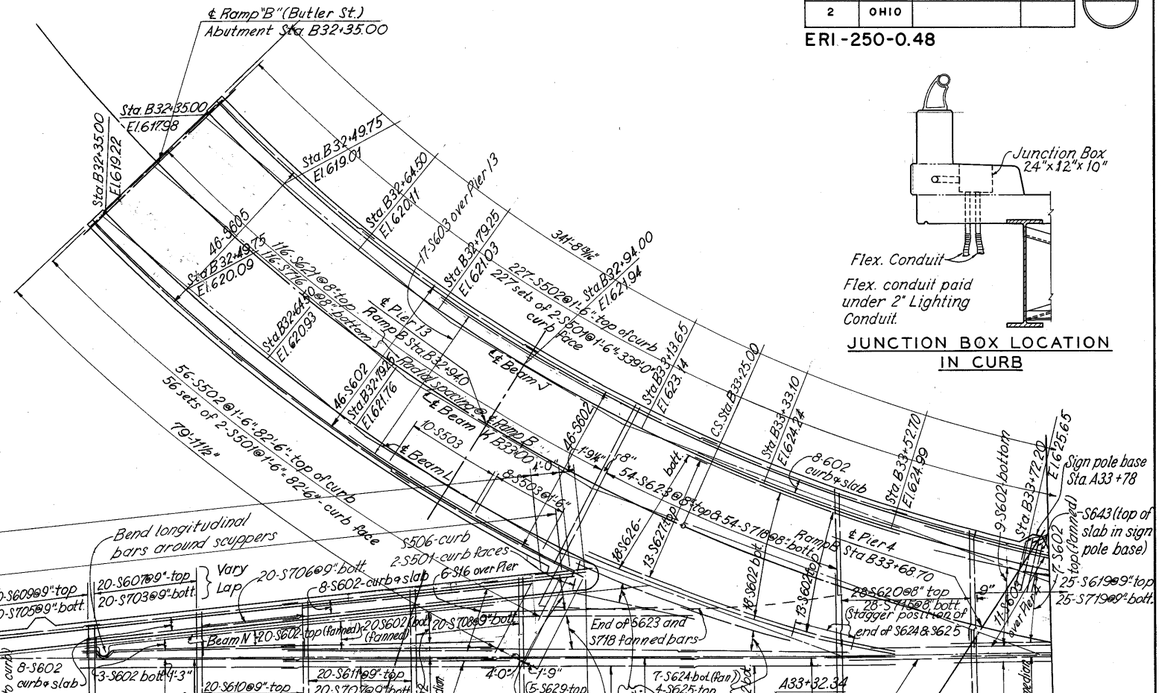
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

76

ERI-250-0.48



SUPERELEVATION TRANSITION DIAGRAM FOR RAMP "B"



JUNCTION BOX LOCATION IN CURB

NOTE: Elevations shown are at deck level at face of curbs and are those which are required before the deck concrete is placed. These points are located at the ends, quarter points, and midpoints of each span measured along the curb face at the stations shown.

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

SLAB REINFORCING AND GUTTER ELEVATIONS - I
BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL R.R.
ERIE COUNTY U.S.R.250

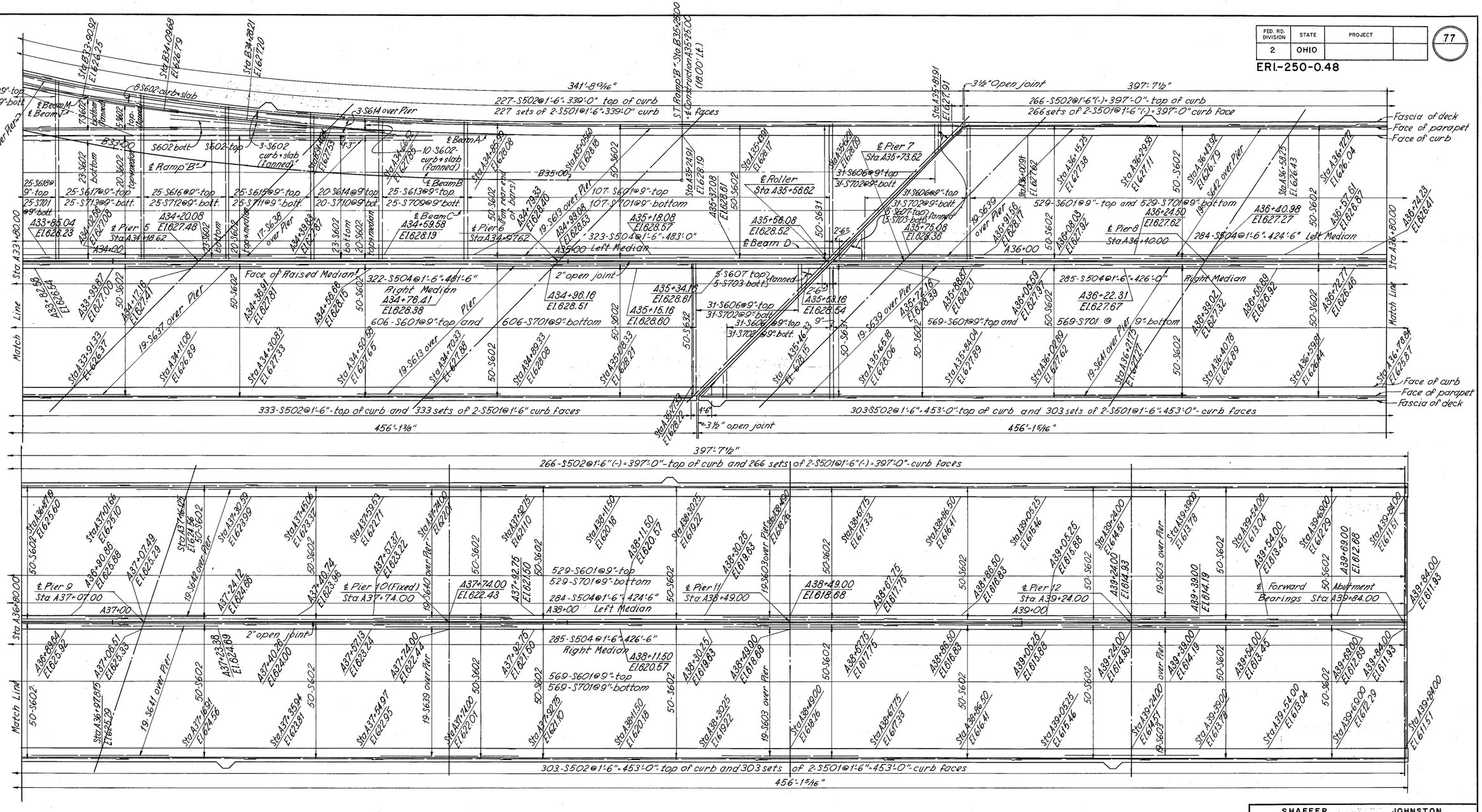
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	FDS		RAK	11-15-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

77

ERI.-250-0.48



SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

SLAB REINFORCING AND GUTTER ELEVATIONS - 2

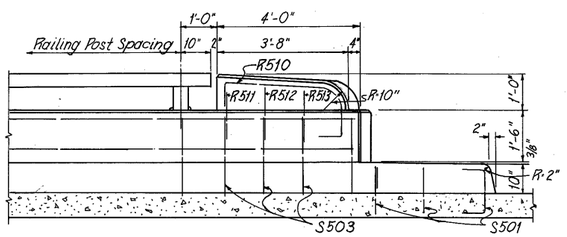
BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL R.R.
ERIE COUNTY U.S.R.250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	FDS		RAK	11-15-67	

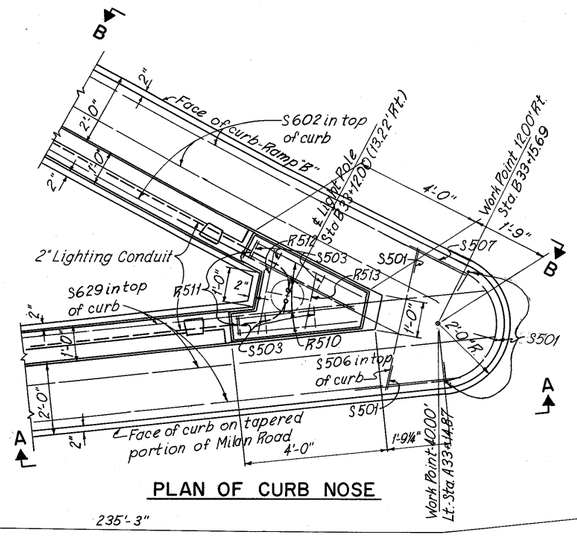
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ERI-250-0.48

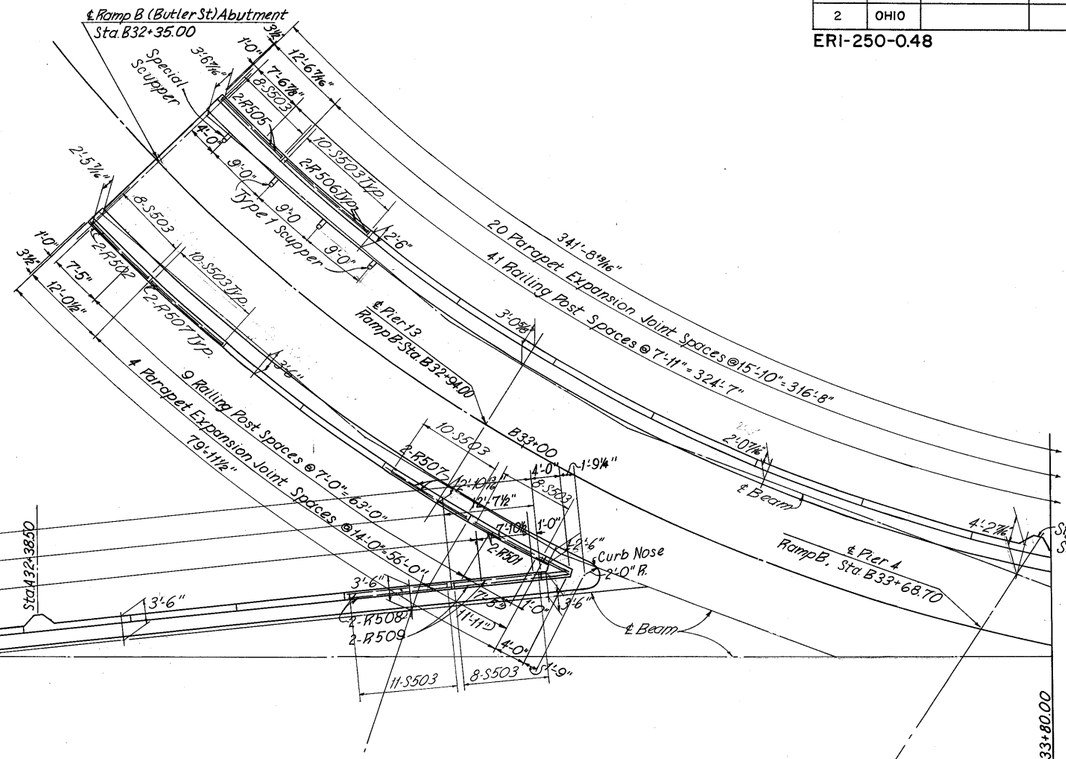
78



VIEW A-A SHOWN
VIEW B-B OPP. HAND



PLAN OF CURB NOSE



SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

RAILING, SCUPPERS AND FASCIA OFFSETS - 1

BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL R.R.
ERIE COUNTY USR 250
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	FDS		RAK	11-15-67	3-15-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ERI-250-0.48

79

Sta. B35+25.00
Sta. A35+25.00
(1800 Lt.)

341'-8 13/16"
20 Parapet Expansion Joint spaces @ 15'-10" = 316'-8"
41 Railing Post spaces @ 7'-1" = 324'-7"

3½" open joint

397'-7½"
24 Parapet Expansion Joint spaces @ 15'-6" = 372'-0"
49 Railing Post spaces @ 7'-9" = 379'-9"

1'-7 13/16"
2'-7 11/16"
3'-7 11/16"
3'-0" Typ.
℄ Beam
B34+00
Sta. A34+34.00
Lighting junction box in curb see Sheet 76 for Section.
B35+00
St. Route 15
℄ Const.

12'-6 7/16"
7'-7 3/16"
12'-9 3/4"
7'-11 1/4"
2-R506 Typ.
2-R505
2-R504
2-R503 Typ.
11-S503 Typ.
9-S503
9-S503
11-S503 Typ.
Sta. A36+27.50
11'-0"
11'-0"

Sta. A33+80.00
Match Line
Match Line
Sta. A36+80

℄ Pier 5
Sta. A34+18.62
A34+00
Lighting junction box in pier cap.
℄ Pier 6
Sta. A34+97.62
A35+00
℄ Roller
Sta. A35+56.62
℄ Pier 7
Sta. A35+73.62
A36+00
℄ Pier 8
Sta. A36+40.00

Lighting junction box in curb.
Sta. A35+32.50
11-S503 Typ.
2-R501 Typ.
9-S503
2-R502
9-S503
2-R502
11-S503 Typ.
2-R501 Typ.
7'-0 1/16"
7'-0 5/8"
12'-0 1/16"
12'-0 5/8"
3½" open joint
Type 1 Scupper
7'-6"
12'-6"
12'-6"
12'-6"
12'-6"

55 Railing Post spaces @ 8'-0" = 440'-0"
27 Parapet Expansion Joint spaces @ 16'-0" = 432'-0"
456'-1 3/8"
55 Railing Post spaces @ 8'-0" = 440'-0"
27 Parapet Expansion Joint spaces @ 16'-0" = 432'-0"
456'-1 5/16"

397'-7½"
24 Parapet Expansion Joint spaces @ 15'-6" = 372'-0"
49 Railing Post spaces @ 7'-9" = 379'-9"

3½"
12'-9¾"
7'-11¼"
1'-0"
2-R503
2-R504
11-S503
9-S503
Typical intermediate parapet panel - left side

11'-0"
11'-0"
11'-0"
7'-0"
7'-0"
11'-0"
11'-0"
11'-0"
11'-0"
Type 1 Scupper
Sta. A38+22.50

℄ Pier 9
Sta. A37+07.00
A37+00
℄ Pier 10 (Fixed)
Sta. A37+74.00
A38+00
℄ Pier 11
Sta. A38+49.00
℄ Pier 12
Sta. A39+24.00
A39+00
℄ Forward Abutment Bearings
Sta. A39+84.00

Match Line - Sta. 36+80.00
12'-6"
12'-6"
12'-6"
Sta. A37+25.00
Type 1 Scupper
12'-6"
12'-6"
12'-6"
7'-0"
Sta. A39+20.00
Typical intermediate parapet panel - right side
11-S503
9-S503
2-R501
2-R502
Face of Abutment Parapet
1'-0"
7'-0 5/8"
12'-0 5/8"
4'-0"
55 Railing Post spaces @ 8'-0" = 440'-0"
27 Parapet Expansion Joint spaces @ 16'-0" = 432'-0"
456'-1 5/16"

SHAFFER PARKER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

RAILING, SCUPPERS AND FASCIA OFFSETS-2
BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL R.R.

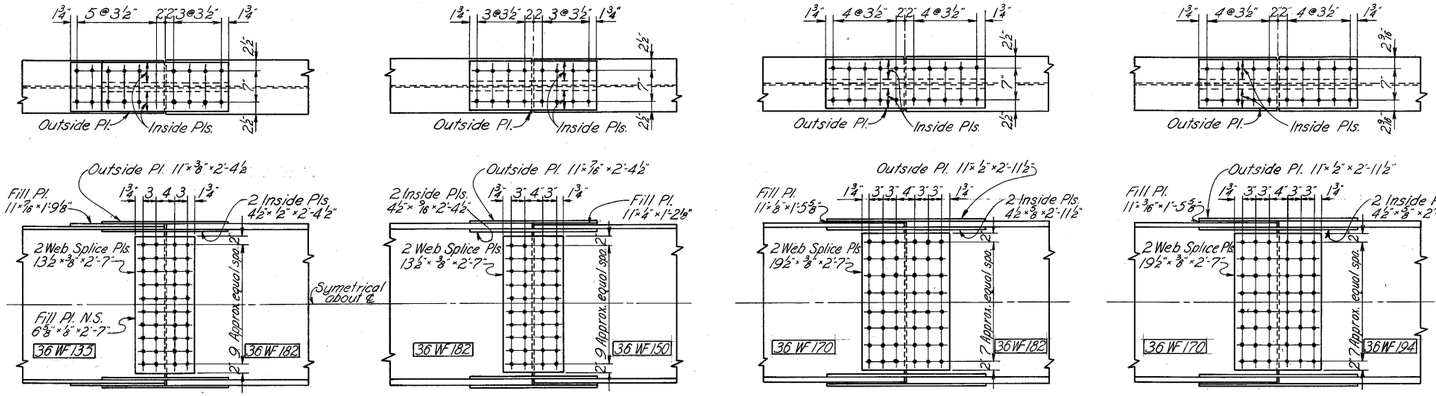
ERIE COUNTY U.S.R.250

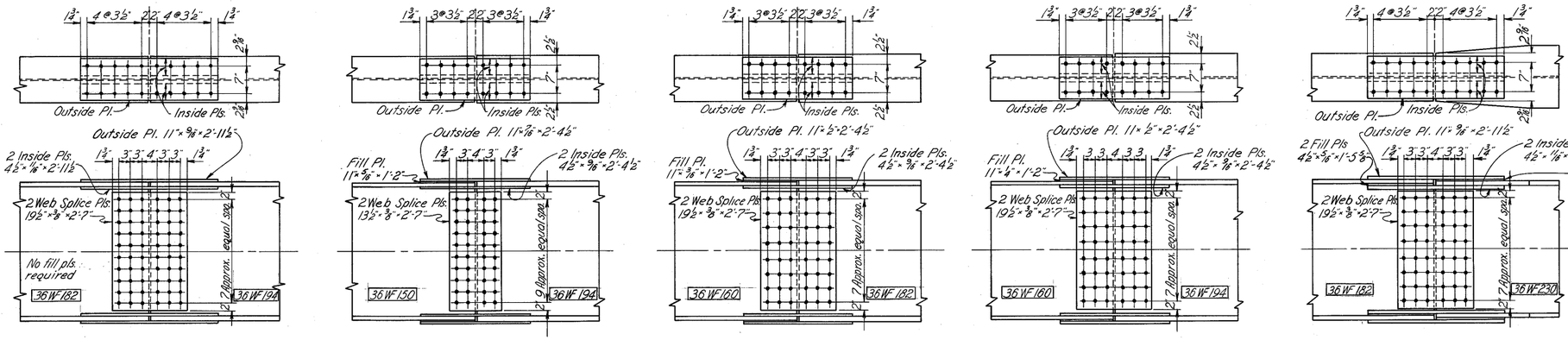
STA. A30+71.75 TO STA. A39+86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	FDS		RAK	11-15-67	

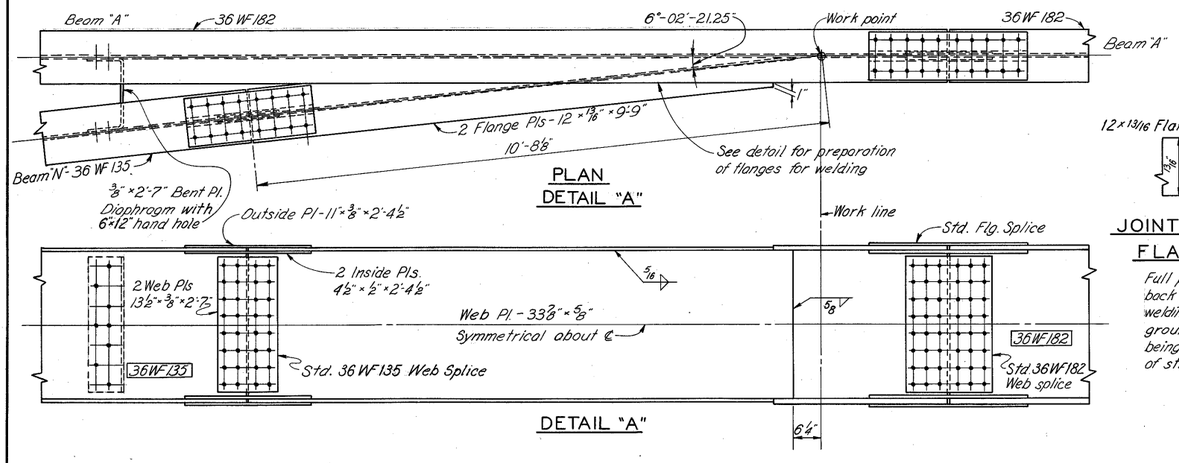
FED. RD. DIVISION	STATE	PROJECT		80
2	OHIO			

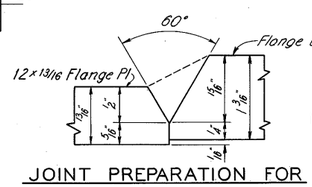
ERI-250-0.48





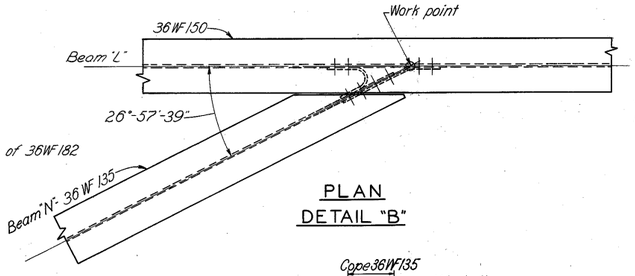
BOLTED FIELD SPLICE DETAILS



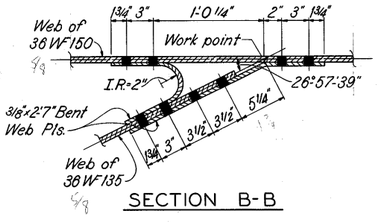


JOINT PREPARATION FOR FLANGE WELDING

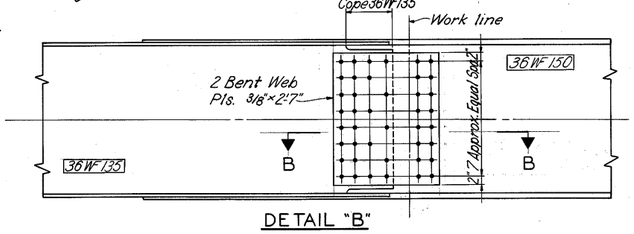
Full penetration welds shall be back gouged and welded after welding far side. Weld shall be ground flush, the finish grinding being parallel to the direction of stress.



PLAN DETAIL "B"



SECTION B-B



DETAIL "B"

REFERENCE shall be made to Sheet 74

SHAFFER JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO

SUPERSTRUCTURE DETAILS

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY · USR 250

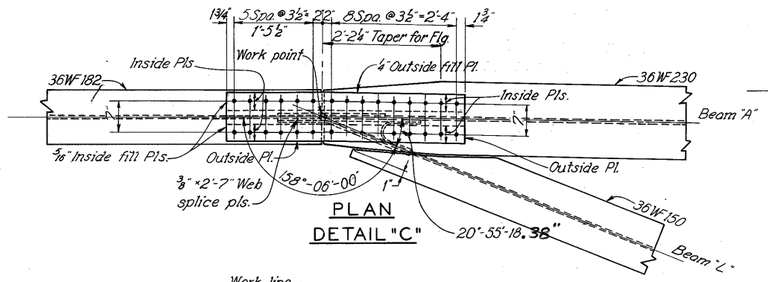
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	TWH		RAK	11-15-67	

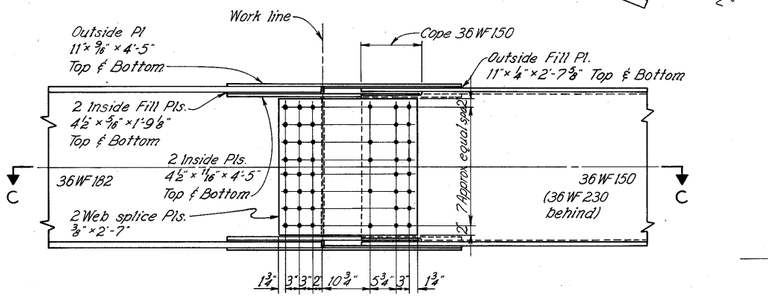
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

81

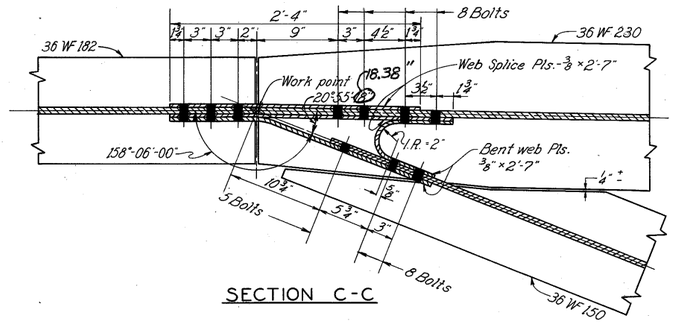
ERI-250-0.48



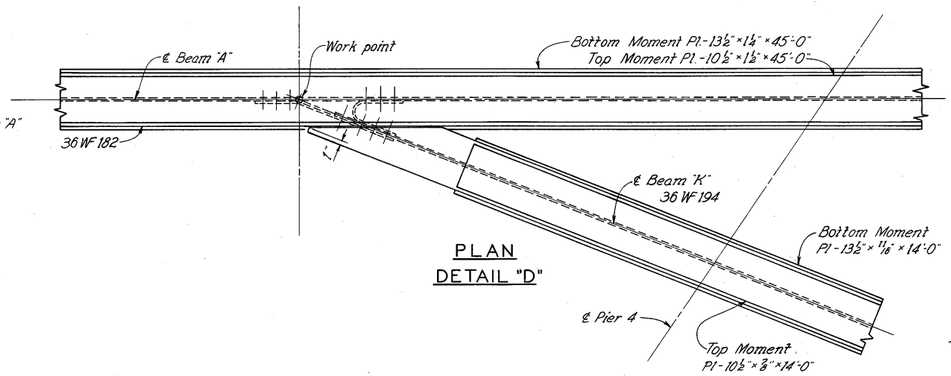
PLAN
DETAIL "C"



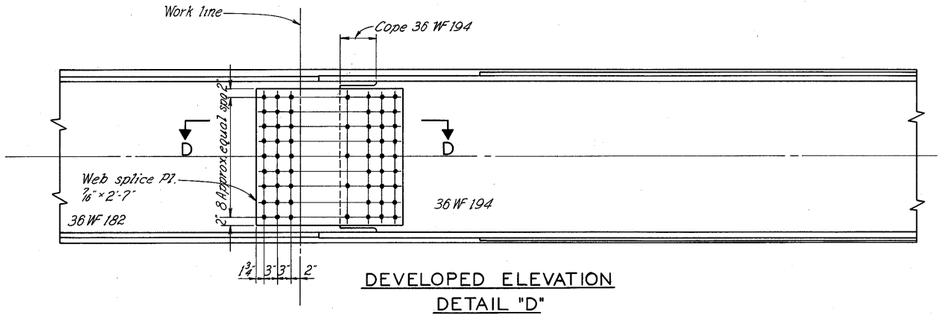
DEVELOPED ELEVATION
DETAIL "C"



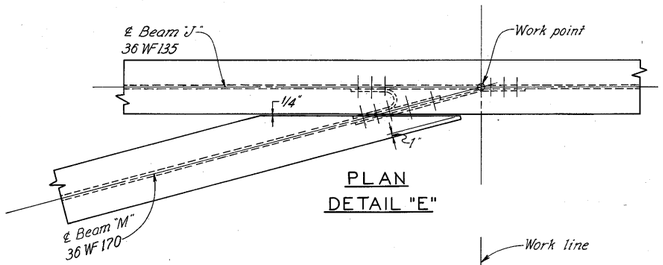
SECTION C-C



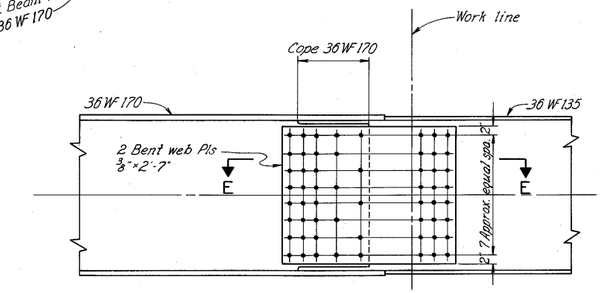
PLAN
DETAIL "D"



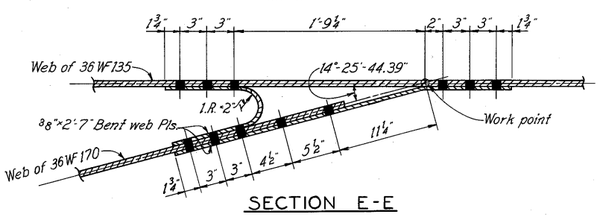
DEVELOPED ELEVATION
DETAIL "D"



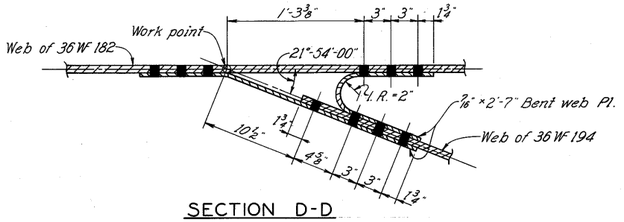
PLAN
DETAIL "E"



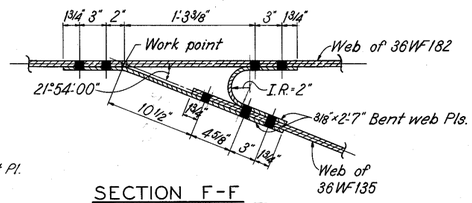
DEVELOPED ELEVATION
DETAIL "E"



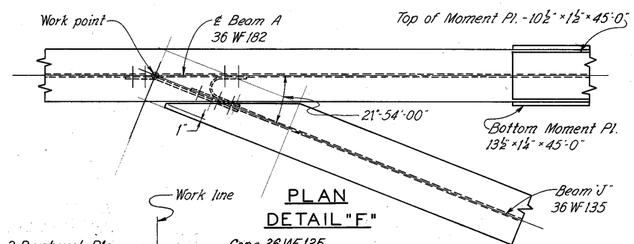
SECTION E-E



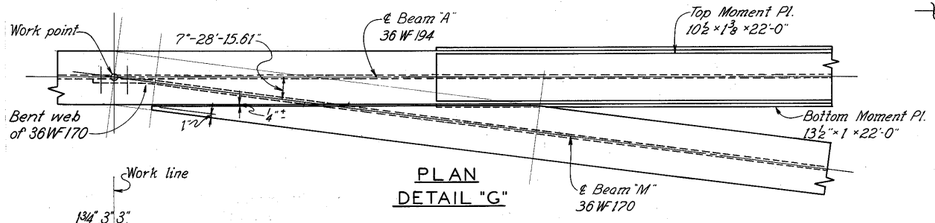
SECTION D-D



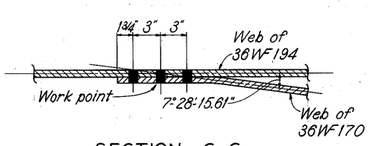
SECTION F-F



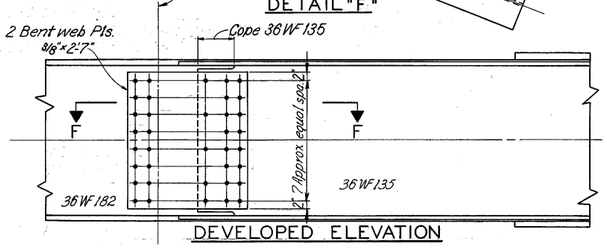
PLAN
DETAIL "F"



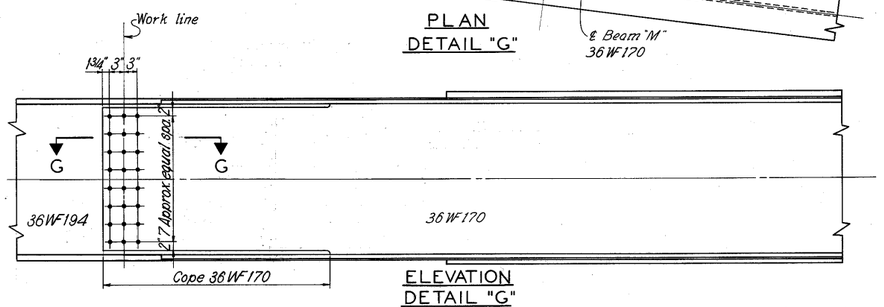
PLAN
DETAIL "G"



SECTION G-G



DEVELOPED ELEVATION
DETAIL "F"



ELEVATION
DETAIL "G"

REFERENCE shall be made to Sheets 74 and 75

SHAFFER JOHNSTON,
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO

BEAM CONNECTIONS

BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

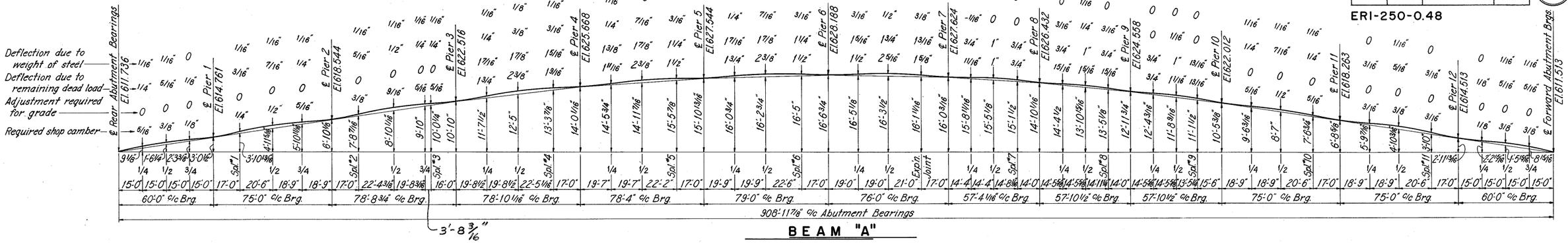
ERIE COUNTY USR 250
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	TWH		RAK	11-15-67	5-3-68

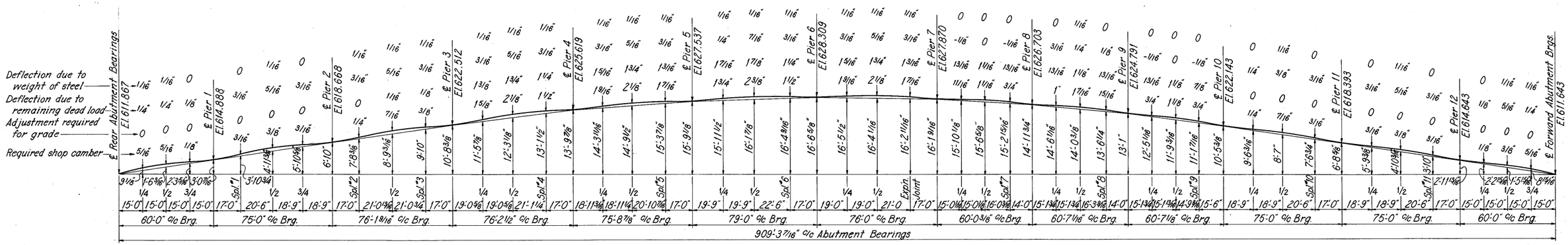
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

82

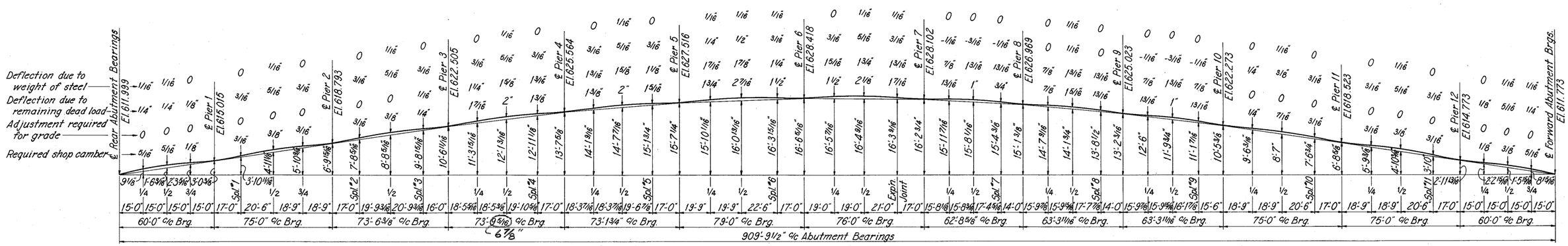
ERI-250-0.48



BEAM "A"



BEAM "B"



BEAM "C"

Note: Elevations and vertical offsets shown are located at top of deck concrete over centerline of beam at longitudinal points shown, and are those which are required to conform with roadway grades, crown, and dead load camber.

SHAFFER, JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD, WOOSTER
OHIO

BEAM LAYOUT DIAGRAMS- I

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY — U.S.R. 250

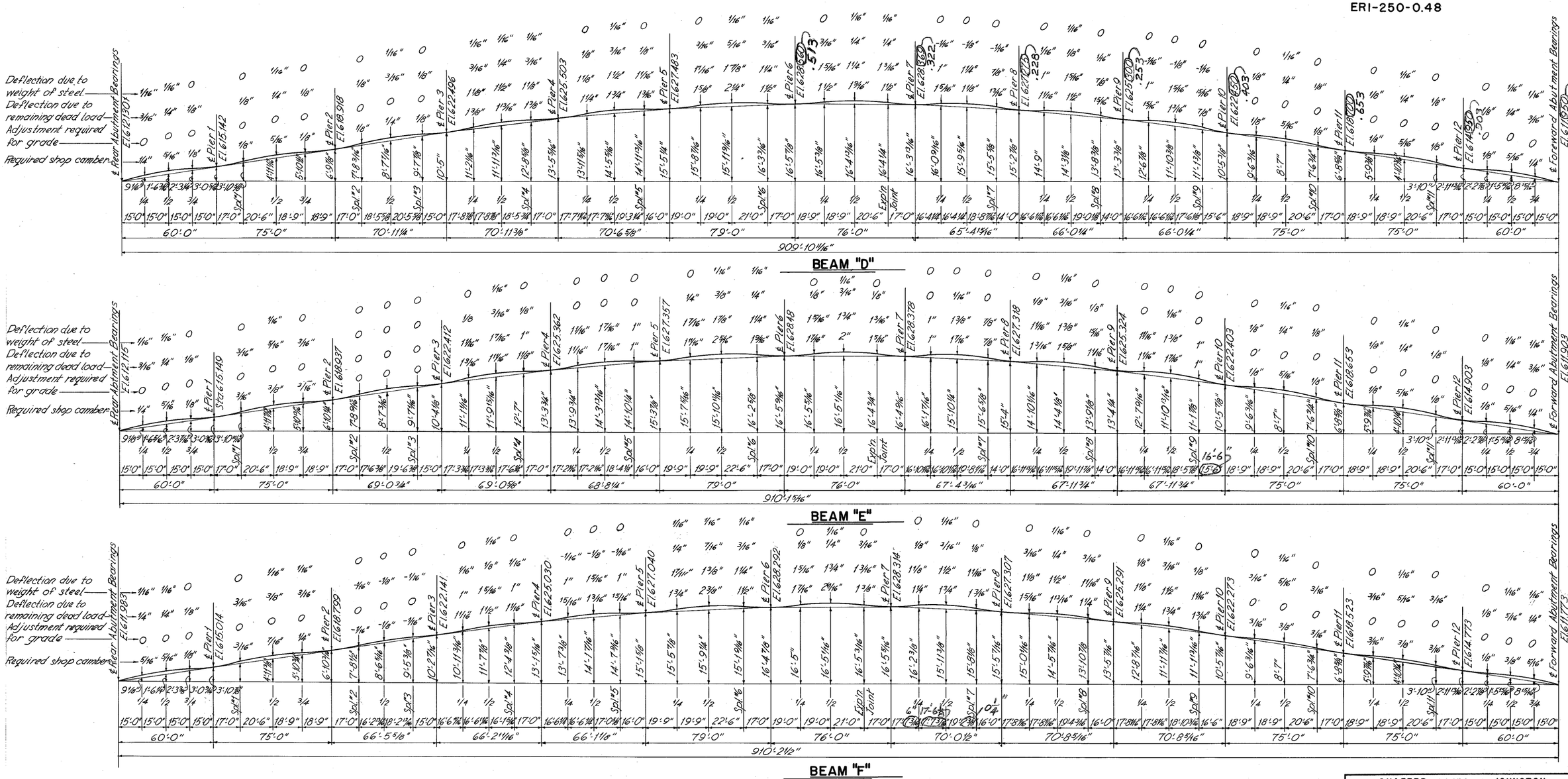
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	RAR		RAK	11-15-67	9-9-68

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

83

ERI-250-0.48



SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD OHIO WOOSTER

BEAM LAYOUT DIAGRAMS-2

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

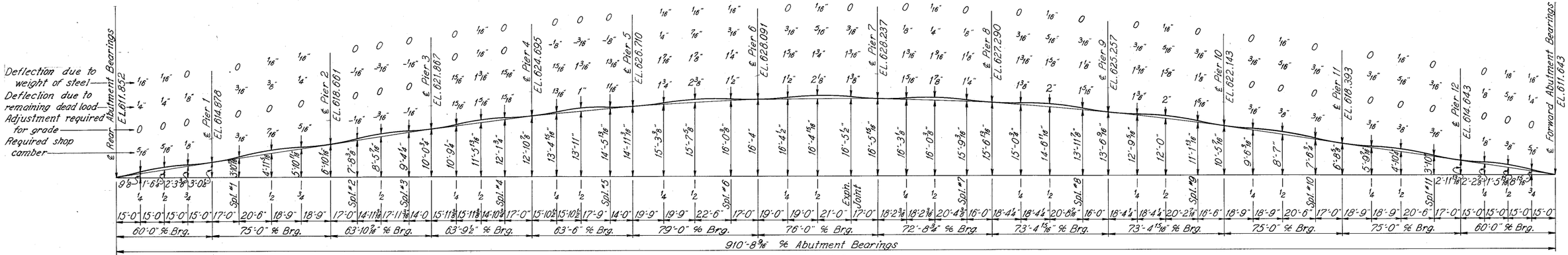
ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAR	FDS		RAK	11-15-67	5-9-68

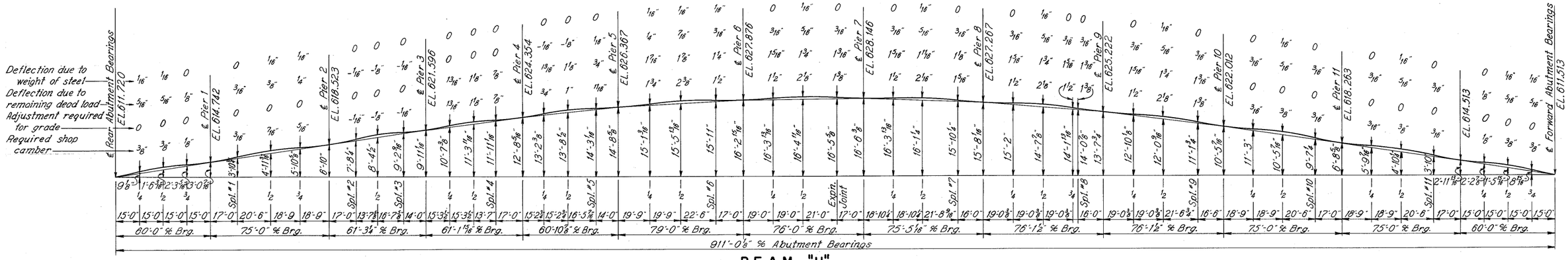
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

84

ERI-250-0.48



BEAM "G"



BEAM "H"

SHAFFER JOHNSTON
LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

BEAM LAYOUT DIAGRAMS-3

BRIDGE NO. ERI-250-0058 OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250

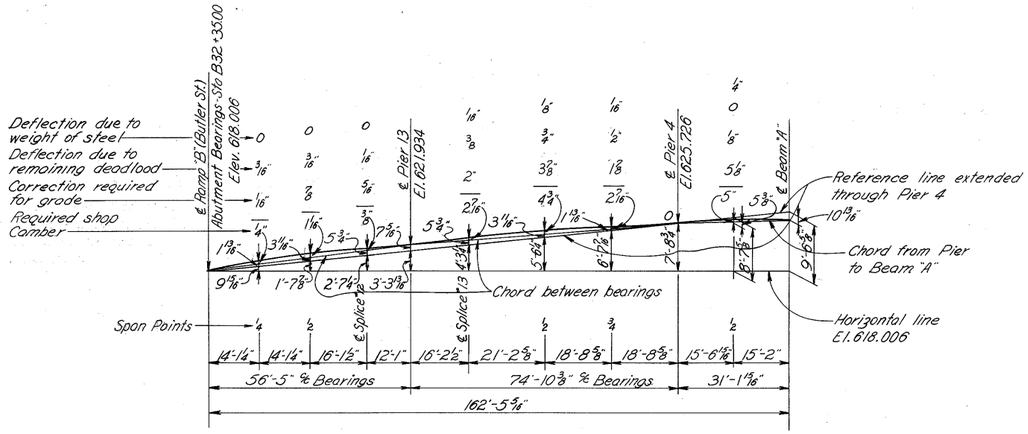
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	TWH		RAK	11-15-67	

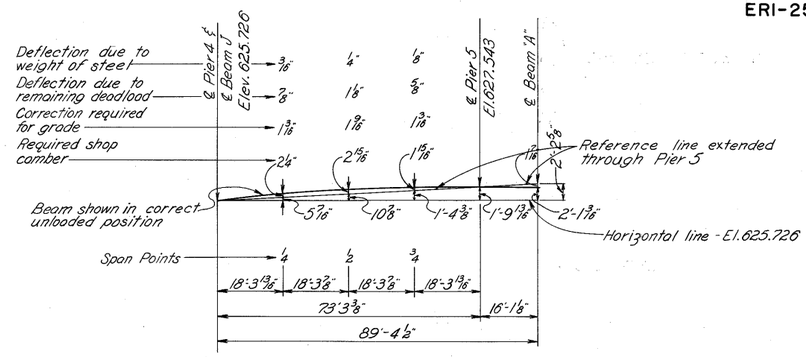
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

85

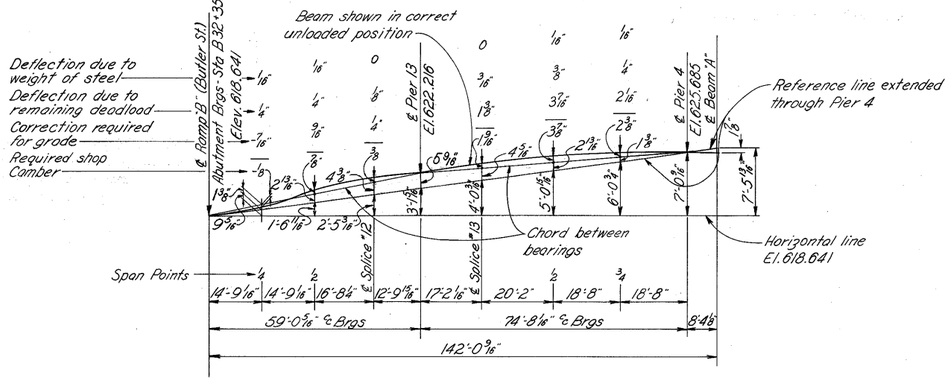
ERI-250-0058



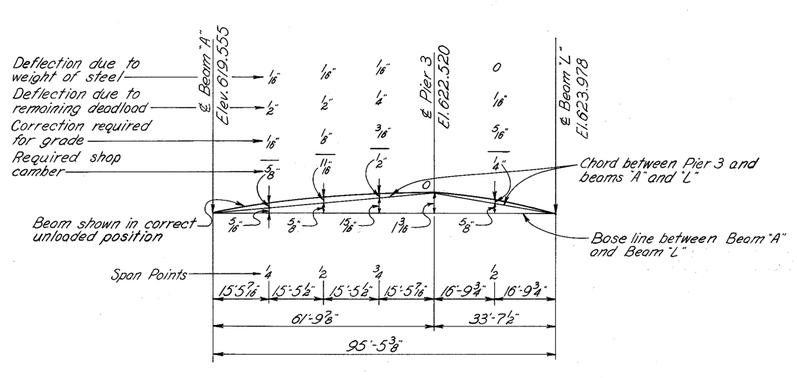
BEAM J



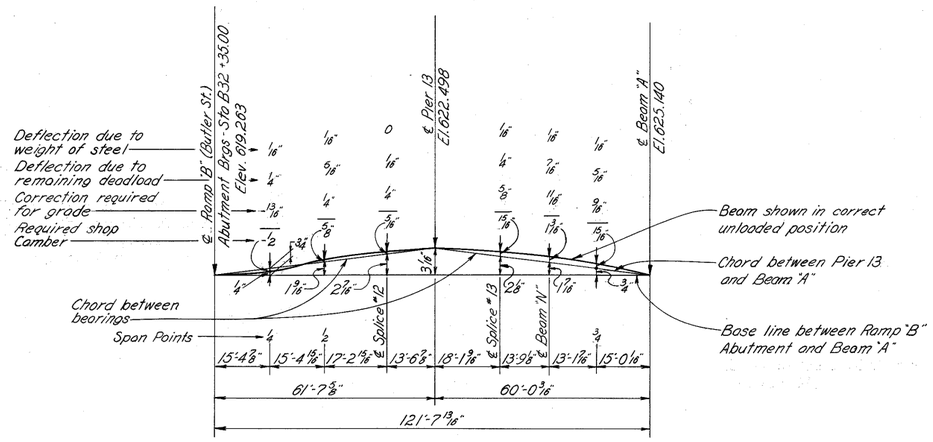
BEAM M



BEAM K



BEAM N



BEAM L

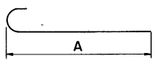
SHAFFER, PARRETT, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER OHIO COLUMBUS

BEAM LAYOUT DIAGRAMS-4

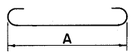
BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY USR 250
STA. A30 71.75 TO STA. A39 86.25

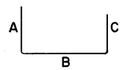
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	TWH		RAK	11-15-67	



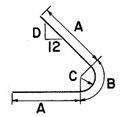
TYPE 1



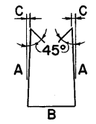
TYPE 2



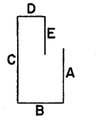
TYPE 3



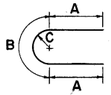
TYPE 4



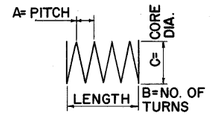
TYPE 5



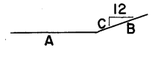
TYPE 6



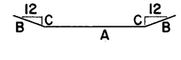
TYPE 7



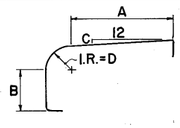
TYPE 8



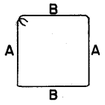
TYPE 9



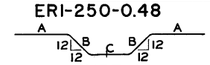
TYPE 10



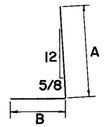
TYPE 11



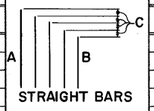
TYPE 12



TYPE 16



TYPE 13



TYPE 15

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

ERI-250-0.48

86

ABUTMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
REAR ABUTMENT									
R503	3	4'-2"	5	1'-6"	8"	3/4"			*
R504	2	5'-4"	11	2'-8 1/2"	9"	3/4	7 3/8"		*
R505	4	12'-0"	Str.						*
R506	4	10'-8"	Str.						*
S503	21	5'-7"	5	2'-2"	8"	0			119
A501	39	3'-6"	Str.						146
A502	42	7'-6"	Str.						329
A503	10	10'-7"	Str.						110
A504	38	9'-11"	Str.						393
A505	42	31'-6"	Str.						1380
A506	42	6'-4"	3	1'-7"	3'-5"	1'-7"			277
A507	30	8'-3"	3	3'-5"	1'-8"	3'-5"			258
A508	30	②	3	①	1'-8"	①			87
A509	6	6'-6"	12	1'-2"	1'-8"	1'-2"			41
A510	6	3'-0"	Str.						19
A511	10	13'-6"	Str.						141
A512	2	6'-10"	Str.						14
A513	4	7'-10"	Str.						33
A514	18	4'-8"	Str.						88
A515	14	3'-1"	3	1'-7"	1'-7"	0"			45
A516	12	9'-3"	Str.						116
A517	2	4'-0"	Str.						8
A518	11	4'-4"	Str.						50
A519	5	16'-0"	Str.						83
A520	3	16'-3"	Str.						51
A521	1	10'-11"	Str.						11
A522	20	12'-8"	Str.						264
A523	10	10'-8"	Str.						111
A524	2	4'-6"	Str.						9
A525	2	10'-6"	Str.						22
A526	2	9'-0"	Str.						19
A527	4	6'-0"	Str.						25
A528	2	14'-0"	Str.						29
A529	4	18'-0"	Str.						75
A530	34	5'-4"	3	2'-1"	1'-3"	2'-1"			189
A531	2	17'-9"	Str.						37
A532	2	3'-6"	3	7 1/2"	2'-6"	7 1/2"			7
A601	15	10'-11"	3	10"	10'-3"	0"			246
A602	42	11'-1"	3	4'-0"	3'-5"	4'-0"			699
A603	42	13'-10"	6	4'-1"	1'-5"	6'-4"	11"	2'-4"	873
A604	10	5'-11"	13	4'-2"	1'-11"				89
A605	10	12'-6"	13	10'-9"	1'-11"				188
A606	9	4'-11"	Str.						66
A607	7	5'-6"	13	3'-9"	1'-11"				58
					Rear Abutment Total				6,805
FORWARD ABUTMENT									
F507	8	9'-8"	Str.						*
C501	28	5'-4"	3	2'-1"	1'-3"	2'-1"			156
S503	14	5'-7"	5	2'-2"	8"	0"			82
B501	44	11'-8"	Str.						535
B502	8	Varies (2 sets)	15	22'-10"	22'-7"	1"			189
B503	20	9'-8"	Str.						202
B504	26	3'-1"	3	1'-7"	1'-7"	0"			84
B505	60	31'-6"	Str.						1971
B506	2	10'-9"	Str.						22
B507	10	Varies (2 sets)	15	22'-7"	22'-3"	1"			234
B508	24	17'-5"	Str.						436
B509	55	5'-6"	Str.						316
B510	8	25'-11"	Str.						216
B511	8	36'-5"	Str.						304
B512	24	17'-2"	Str.						430
B513	78	6'-4"	3	1'-7"	3'-5"	1'-7"			515

ABUTMENTS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
FORWARD ABUTMENT (Cont.)									
B514	10	17'-0"	Str.						177
B515	2	3'-6"	3	7 1/2"	2'-6"	7 1/2"			7
B601	16	6'-4"	Str.						152
B602	56	14'-6"	6	4'-9"	1'-5"	6'-1"	11"	2'-0"	1220
B603	4	15'-1"	3	7'-0"	1'-5"	7'-0"			91
B701	28	6'-8"	Str.						382
B801	16	6'-11"	Str.						295
B802	49	6'-9"	Str.						883
B901	16	8'-1"	13	2'-10"	5'-6"				440
B902	14	14'-2"	13	2'-10"	11'-7"				674
B903	8	14'-10"	Str.						404
B904	25	11'-9"	Str.						999
B905	50	12'-3"	3	9'-8"	2'-10"				2083
B906	49	8'-2"	3	5'-7"	2'-10"	0"			1361
B907	50	7'-1"	Str.						1204
					Forward Abutment Total				16,064
RAMP "B" ABUTMENT (BUTLER ST.)									
R503	6	4'-2"	5	1'-6"	8"	3/4"			*
R504	4	5'-4"	11	2'-8 1/2"	9"	3/4			*
R509	4	19'-8"	Str.						*
R510	4	13'-2"	Str.						*
S503	25	5'-7"	5	2'-2"	8"	0"			146
D501	16	8'-2"	3	1'-7"	5'-3"	1'-7"			136
D502	19	25'-4"	Str.						502
D503	16	6'-4"	3	1'-7"	3'-5"	1'-7"			106
D504	7	8'-1"	3	7'-7"	7 1/2"	0"			59
D505	7	8'-8"	3	8'-2"	7 1/2"	0"			63
D506	2	9'-4"	3	8'-10"	7 1/2"	0"			19
D507	21	11'-7"	12	2'-6"	3'-0"				254
D508	4	16'-6"	Str.						69
D509	4	12'-6"	Str.						52
D510	3	9'-8"	Str.						30
D511	3	5'-8"	Str.						18
D512	2	15'-9"	Str.						33
D513	10	19'-11"	Str.						208
D514	2	8'-9"	Str.						18
D515	10	13'-5"	Str.						140
D516	18	4'-10"	Str.						91
D517	10	4'-4"	Str.						45
D518	20	3'-6"	Str.						73
D519	13	6'-0"	Str.						81
D520	13	3'-1"	3	1'-7"	1'-7"	0"			42
D601	20	16'-4"	6	5'-8"	1'-5"	7'-0"	11"	2'-0"	491
D602	6	15'-5"	3	7'-2"	1'-5"	7'-2"			139
D603	7	15'-1"	3	2'-7"	5'-3"	7'-7"			159
D604	7	15'-8"	3	2'-7"	5'-3"	8'-2"			165
D605	2	16'-4"	3	2'-7"	5'-3"	8'-10"			49
D606	8	22'-4"	3	10'-9"	1'-2"	10'-9			268
D607	3	19'-10"	3	9'-6"	1'-2"	9'-6"			89
D608	3	11'-1"	Str.						50
D609	2	8'-10"	Str.						27
D610	3	9'-10"	Str.						44
D611	2	7'-7"	Str.						23
D801	7	27'-2"	Str.						508
D802	6	19'-4"	Str.						310
D803	6	13'-4"	Str.						214
C501	24	5'-4"	3	2'-1"	1'-3"	2'-1"			134
C502	14	2'-10"	3	11"	1'-3"	11"			41
					Ramp 'B' Abutment Total				4,896

SUPERSTRUCTURE

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	WEIGHT
SUPERSTRUCTURE									
R501	220	15'-8"	Str.						*
R502	20	11'-8"	Str.						*
R503	96	15'-2"	Str.						*
R504	12	12'-5"	Str.						*
R505	8	12'-0"	Str.						*
R506	80	15'-6"	Str.						*
R507	16	13'-8"	Str.						*
R508	56	14'-8"	Str.						*
R509	4	16'-3"	Str.						*
R510	4	5'-4"	11	2'-8 1/2"	9"	3/4	7 3/8"		*
R511	2	4'-2"	5	1'-6"	8"	3/4"			*
R512	1	5'-1"	3	1'-6"	2'-4"	1'-6"			*
R513	1	4'-3"	3	1'-6"	1'-6"	1'-6"			*
S501	2701	2'-4"	3	7 1/2"	1'-4"	7 1/2"			6573
S502	1344	3'-6"	3	7 1/2"	2'-6"	7 1/2"			4906
S503	1387	5'-7"	5	2'-2"	8"	0"			8054
S504	1214	2'-8"	3	1'-0"	11"	1'-0"			3377
S505	2	4'-1"	3	7 1/2"	3'-1"	7 1/2"			9
S506	3	4'-6"	3	7 1/2"	3'-6"	7 1/2"			14
S507	1	9'-6"	4	2'-6"	4'-6"	1'-9"	7 3/4		10
S601	2040	30'-6"	Str.						93,454
S602	3279	30'-0"	Str.						147,762
S603	142	30'-0"	Str.						6,399
S604	120	37'-11"	Str.						5,753
S605	46	29'-1"	Str.						1,338
S606	124	Varies (4 sets)	15	30'-2"	7'-1"	9 1/4"			3469
S607	40	6'-3"	Str.						376
S608	20	Varies (1 set)	15	32'-0"	30'-7"	7/8"			940
S609	20	5'-0"	Str.						150
S610	40	19'-4"	Str.						1162
S611	40	20'-0"	Str.						1202
S612	20	9'-6"	Str.						285
S613	63	30'-11"	Str.						2,926
S614	29	31'-9"	Str.						1,383
S615	25	Varies (1 set)	15	34'-1"	32'-5"	13/16"			1249
S616	25	Varies (1 set)	15	36'-6"	34'-1"	1 3/16"			1,325
S617	25	Varies (1 set)	15	39'-11"	36'-8"	1 9/16"			1438
S618	50	25'-0"	Str.						1878
S619	25	Varies (1 set)	15	21'-9"	17'-3"	2 3/16"			732
S620	28	Varies (1 set)	15	27'-10"	21'-10"	2 11/16"			1044
S621	116	25'-8"	Str.						4472
S622	59	39'-6"	Str.						3500
S623	54	Varies (1 set)	15	31'-6"	15'-0"	3 3/4"			1886
S624	7	Varies (1 set)	15	24'-0"	16'-0"	1'-4"			210
S625	4	Varies (1 set)	15	24'-0"	16'-0"	2'-8"			120
S626	18	Varies (1 set)	15	16'-3"	3'-6"	9"			267
S627	13	Varies (1 set)	15	16'-0"	3'-6"	1'-0 1/2"			190
S628	5	18'-0"	Str.						135
S629	5	Varies (1 set)	15	25'-0"	15'-0"	2'-6"			150
S630	4	Varies (1 set)	15	25'-9"	15'-0"	3'-7"			122
S631	100	Varies (4 sets)	15	35'-6"	5'-6"	1'-3"			3079
S632	100	Varies (4 sets)	15	33'-0"	3'-0"	1'-3"			2704
S633	19	Varies (1 set)	15	28'-10"	27'-3"	1 1/16"			800
S634	19	Varies (1 set)	15	30'-9"	29'-2"	1 1/16"			855

Continued on next sheet.

① 1'-9" to 3'-10". Vary 6 each by 5".
② 4'-11" to 9'-1". Vary 6 each by 10".

SUPERSTRUCTURE LIGHTING & SIGNING

MARK	NO.	LENGTH	TYPE	A	B	C	WEIGHT
L501	44	7'-9"	14	1'-6"	1'-11"	1'-3"	356
L502	22	7'-2"	3	1'-11"	3'-9"	1'-11"	164
L503	22	5'-6"	3	1'-0"	3'-9"	1'-0"	126
					Total		646

SHAFFER, JOHNSTON, LICHTENWALTER AND ASSOCIATES, INC.
Consulting Engineers
MANSFIELD WOOSTER
OHIO

REINFORCING STEEL-I

BRIDGE NO. ERI-250-0058
OVER NEW YORK CENTRAL RAILROAD

ERIE COUNTY U.S.R. 250
STA. A30 + 71.75 TO STA. A39 + 86.25

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
		F.D.S.		RAK	11-15-67	