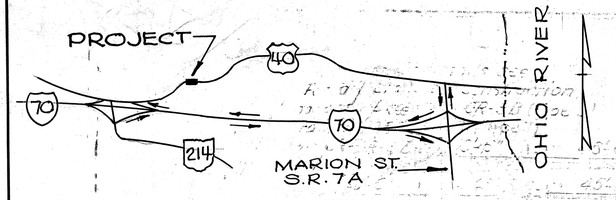
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BEL-40-23.38
PEASE TOWNSHIP
BELMONT COUNTY
BRIDGE REPAIR

OHIO | 1/74
FHWA REGION 5
FEDERAL PROJECT
BRM-2500(1)
BEL-40-23.38

BRM-2500(1)



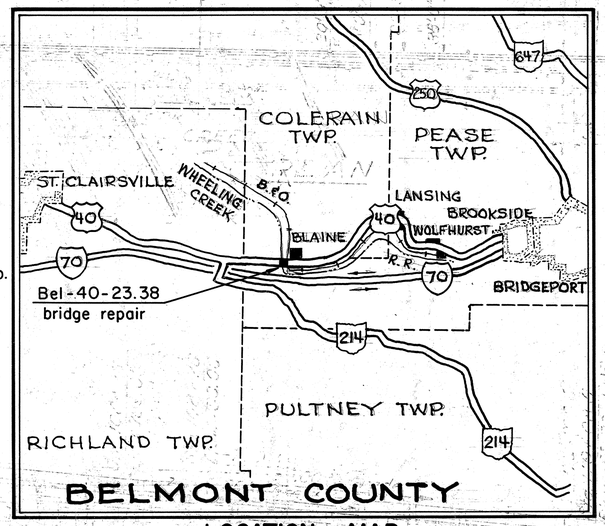
DETOUR MAP

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line or
Fence Line (existing) (proposed) 352 353
Center Line
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light.

Limited Access (only) LA
Right of Way (only) RW
Limited Access & Right of Way LA & RW
Existing Right of Way
Property Line (in existing fence)
Railroad or
Guardrail (existing) (proposed)

INDEX OF SHEETS



LOCATION MAP

SCALE IN MILES
0 1 2 3 4

Portion to be improved
State & Federal Routes
Other Roads
DETOUR

SCALES

Plan
Profile: Horizontal, Vertical
Cross Section: Horizontal, Vertical

LINE DATA

Begin Work Sta. = 106+14
End Work Sta. = 116+70

Total length of Work = 1056 Lin. Ft. or 0.200 Mile
Total length of Project 1056 Lin. Ft. or 0.200 Mile

Plan Prepared By:

Bureau of Bridges and
Structural Design

Central Office, Columbus, Ohio

Sheet No. 2,3,5,43 and 45 Revised 5-5-81 JAM
Sheet No. 4,5,15,30 and 31 Revised 3-23-81 JAM

SUPPLEMENTAL SPECIFICATIONS	
836	3-12-75
849	4-25-77
1001	1-3-77

1979 SPECIFICATIONS

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

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

I hereby approve these plans and declare that the making of this improvement will require the closing of the Highway to traffic and that detours will be provided as indicated on the plans.

Approved _____
Date _____ District Deputy Director of Transportation

Approved Robert B. Pfeifer
Date 1-29-81 Engineer, Bureau of Bridges and Structural Design

Approved Howard E. Nolan
Date 3-16-81 Chief Engineer, Planning and Design

Approved David S. Wein
Date 3-16-81 Director, Department of Transportation

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
MC-3	6-1-73				
PSBD-1-71	9-1-71				
AS-1-72	6-30-72				
BP-2	12-6-76				
GR-1	12-6-76				
GR-3B	12-6-76				
GR-4A	7-26-76				
GR-3	12-6-76				
GR-4	12-6-76				
GR-2B	12-6-76				
MC-4	7-26-76				
MC-9	11-1-77				
MC-9A	4-1-80				

Rev. 4-13-81

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____

DIVISION ADMINISTRATOR DATE

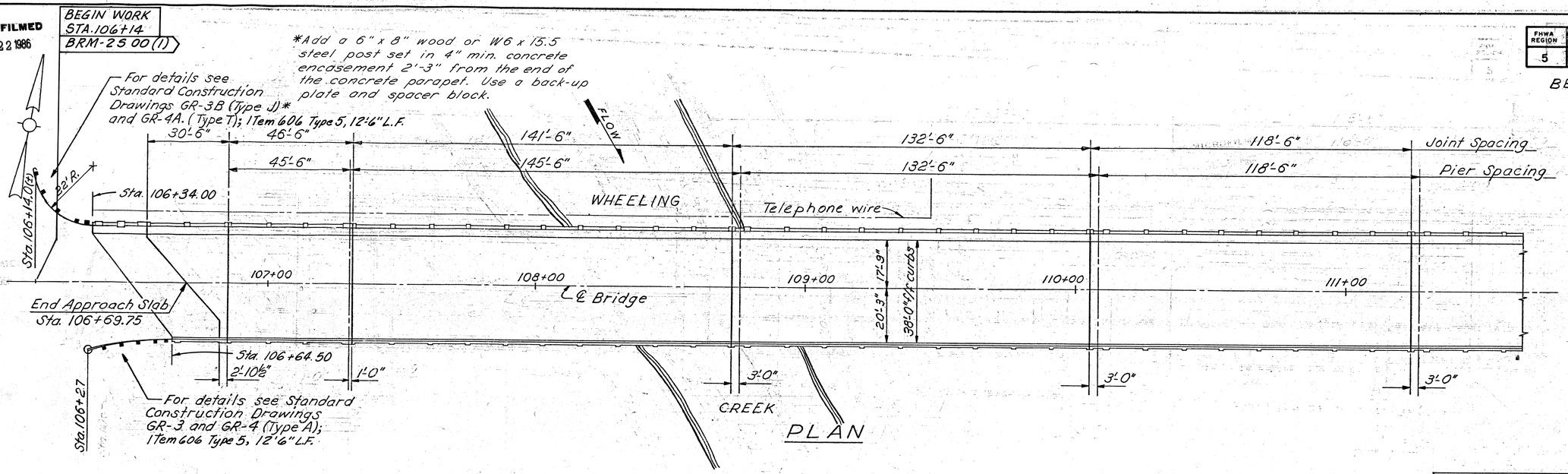
Project: BEL-40-23.38 Belmont County
Date of Letting _____ 19__, Contract No. _____

BRUNING 44-560 29724
LD0300 Rev. 9-3-75

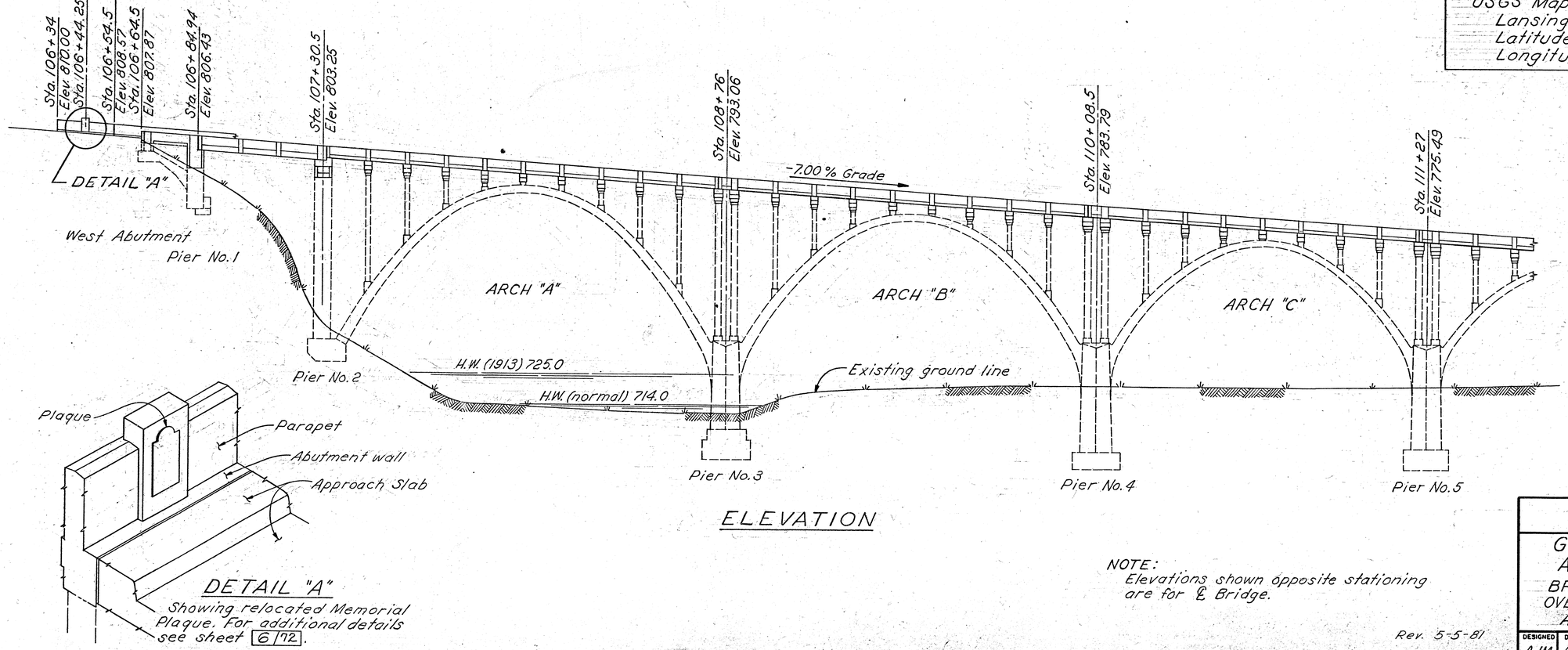
FHWA REGION	STATE	PROJECT	
5	OHIO		

2/74

BEL-40-23.38



BLAINE HILL VIADUCT LOCATION
USGS Map: Ohio-Belmont Co.
Lansing 7.5 Quadrangle
Latitude N 40° 04' 01"
Longitude W 80° 49' 16"



ELEVATION

TRAFFIC DATA (Highway)
Current ADT (1980) = 7,800
Design Year ADT (2000) = 12,480

AVERAGE DAILY TRAIN TRAFFIC
4 Trains (30 MPH)

DETAIL "A"
Showing relocated Memorial Plaque. For additional details see sheet 6/72.

NOTE:
Elevations shown opposite stationing are for ℄ Bridge.

Rev. 5-5-81

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

1/72

GENERAL PLAN AND ELEVATION

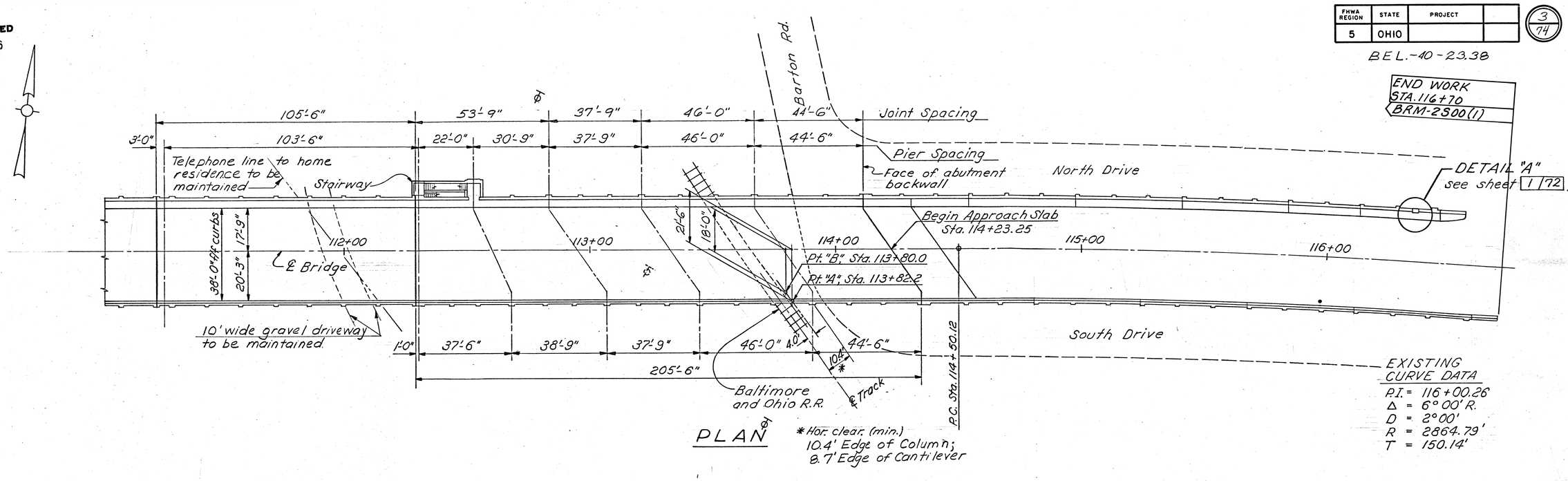
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

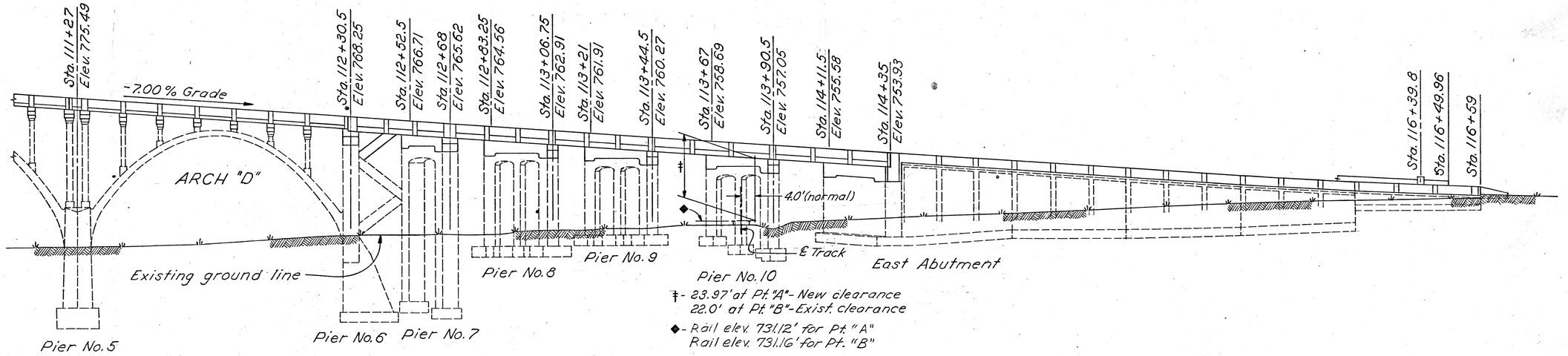
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

3/74

BEL.-40-23.38





ELEVATION

NOTE:
Elevations shown opposite stationing are for ℄ Bridge.

Rev. 5-5-81

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

2/72

GENERAL PLAN AND ELEVATION

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

GENERAL NOTES

G.N.1 BENCH MARK: MINE SPIKE IN POWER POLE NUMBER 497-B4/11 OHIO POWER COMPANY; 45.50 FEET LEFT OF CENTERLINE; STATION 116+50; ELEVATION = 741.11 FEET.

G.N.2 EXISTING BRIDGE DATA

TYPE:	REINFORCED CONCRETE BRIDGE CONSISTING OF FOUR OPEN SPANDREL ARCH SPANS, SIX CONCRETE BEAM SPANS, AND ONE ENCASED STEEL BEAM SPAN OVER R.R.
SPAN LENGTHS:	ARCH SPANS = 145'-6"; 132'-6"; 118'-6"; 103'-6" BEAM SPANS = 15'-3"; 45'-6"; 29'-9"; 34'-9"; 37'-9"; 46'-0"; 44'-6" TOTAL = 753'-6"
ROADWAY:	34'-0" F/F CURBS; 3'-6" SIDEWALK EACH SIDE
LOADING:	H-15
SKEW:	VARIES FROM 0°-00'-00.00" TO 34°-39'-00.00" R.F.
WEARING SURFACE:	MONOLITHIC CONCRETE
APPROACHES:	ASPHALT CONCRETE ROADWAY
ALIGNMENT:	TANGENT
CONDITION:	POOR
DATE BUILT:	1932

G.N.3 REPAIRED BRIDGE DATA

TYPE:	CONCRETE BRIDGE CONSISTING OF FOUR OPEN SPANDREL REINFORCED CONCRETE ARCH SPANS WITH PRESTRESSED CONCRETE BEAM FLOOR SYSTEM, SIX PRESTRESSED CONCRETE BEAM SPANS, AND ONE REINFORCED CONCRETE SLAB SPAN.
SPAN LENGTHS:	ARCH SPANS = 145'-6"; 132'-6"; 118'-6"; 103'-6" BEAM SPANS = 45'-6"; 29'-9"; 34'-9"; 37'-9"; 46'-0"; 44'-6" SLAB SPAN = 15'-3" TOTAL = 753'-6"
ROADWAY:	38'-0" F/F CURBS; 3'-0" SIDEWALK LEFT; DEFLECTOR PARAPET RIGHT
LOADING:	HS20-44 AND THE ALTERNATE MILITARY LOADING
SKEW:	VARIES FROM 0°-00'-00.00" TO 34°-39'-00.00" R.F.
WEARING SURFACE:	MONOLITHIC CONCRETE
APPROACH SLABS:	AS-1-72; MODIFIED (20' LONG)
ALIGNMENT:	TANGENT

G.N.4 REFERENCE SHALL BE MADE TO THE FOLLOWING STANDARD DRAWINGS:

DRAWING	DATE
PSBD-1-71, SHEETS 1, 2, 3	9-1-71
AS-1-72, SHEETS 1, 2	6-30-72
BP-2	12-6-76
GR-1	12-6-76
GR-3B	12-6-76
GR-4A	7-26-76
GR-3	12-6-76
GR-4	12-6-76
GR-2B	12-6-76
MC-9	11-1-77

AND TO SUPPLEMENTAL SPECIFICATIONS:

836 DATED 3-12-75
849 DATED 4-25-77

AND TO SUPPLEMENT:

1034 DATED 1-7-81

G.N.5 DESIGN SPECIFICATIONS: THIS STRUCTURE MODIFICATION CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1977, INCLUDING THE 1978, 1979 and 1980 INTERIM SPECIFICATIONS AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

G.N. 6 DESIGN DATA:

DESIGN LOADING - HS 20-44 AND THE ALTERNATE MILITARY LOADING

CONCRETE CLASS S - COMPRESSIVE STRENGTH 4500 PSI FOR SUPERSTRUCTURE

CONCRETE CLASS C - COMPRESSIVE STRENGTH 4000 PSI FOR SUBSTRUCTURE

REINFORCING STEEL - ASTM A615, A616 OR A617-GRADE 60, MINIMUM YIELD STRENGTH 60,000 PSI

CONCRETE FOR PRESTRESSED CONCRETE BEAMS - UNIT STRESS 2200 PSI COMPRESSION, 444 PSI TENSION

PRESTRESSING STRAND ASTM A416

F'S = 270,000 P.S.I.
INITIAL STRESS = 0.70 F'S

DECK PROTECTIVE METHOD - EPOXY COATED REINFORCING STEEL

MONOLITHIC WEARING SURFACE THICKNESS IS ASSUMED TO BE 1".

G.N.7 PROPOSED WORK:

1. REMOVE EXISTING CONCRETE SLAB, CONCRETE BEAMS, PARAPETS AND SIDEWALKS ON SUPERSTRUCTURE.
2. REMOVE PORTIONS OF EXISTING SUBSTRUCTURES AND STAIRWAY.
3. REMOVE PORTIONS OF EXISTING ROADWAY SLABS, RETAINING WALLS, SIDEWALKS, CURBS, ASPHALT WEARING SURFACE AND CATCH BASINS.
4. CONSTRUCT ALL SUBSTRUCTURE ITEMS.
5. ERECT ALL SUPERSTRUCTURE BEAMS (TRANSVERSE AND PRESTRESSED).
6. PLACE CONCRETE FOR DECK SLAB, SIDEWALK, STAIRWAY AND PARAPETS.
7. CONSTRUCT APPROACH SLABS, ROADWAY SLAB, CATCH BASINS AND ASPHALT WEARING SURFACE.
8. COMPLETE ALL CONTRACT ITEMS.

G.N.8 EXISTING BRIDGE PLANS MAY BE INSPECTED AT THE BUREAU OF BRIDGES AND STRUCTURAL DESIGN IN COLUMBUS, OHIO OR IN THE DISTRICT OFFICE IN NEW PHILADELPHIA, OHIO.

G.N.9 EXISTING STRUCTURE VERIFICATION: DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.

CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.

G.N.10 CONTRACTOR'S PLAN OF OPERATION: PRIOR TO STARTING ANY WORK ON THIS CONTRACT THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR HIS APPROVAL A DETAILED PROCEDURE FOR ACCOMPLISHING THE WORK.

G.N.11 DEMOLITION AND CONSTRUCTION: IN REMOVING EXISTING MATERIAL, THE CONTRACTOR SHALL EXERCISE CARE TO PREVENT DAMAGE TO THOSE PARTS OF THE STRUCTURE WHICH WILL REMAIN IN THE PLACE. ANY PORTION OF THE STRUCTURE DAMAGED DURING DEMOLITION AND CONSTRUCTION BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

ALL CONCRETE AND MATERIALS REMOVED FROM THE EXISTING STRUCTURE SHALL BE HAULED TO A DISPOSAL SITE AS PROVIDED IN SECTION 203.05(2).

G.N.12 CONSTRUCTION CLEARANCE OF 8' HORIZONTALLY FROM THE CENTER OF TRACKS AND 20' VERTICALLY FROM A POINT LEVEL WITH THE TOP OF THE HIGHER RAIL, AND 4' FROM THE CENTER OF TRACKS, SHALL BE MAINTAINED AT ALL TIMES.

G.N.13 UTILITY LINES: ALL EXPENSE INVOLVED IN INSTALLING, THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER. THE CONTRACTOR AND OWNER ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

THE NAME AND ADDRESS OF THE TELEPHONE COMPANY IS:

OHIO BELL TELEPHONE CO.
150 EAST GAY STREET
FLOOR 11G
COLUMBUS, OHIO 43215
TELEPHONE: 614-223-6985
ATTENTION: RUSSELL E. BLACKSTONE

G.N.14 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.

G.N.15 REPLACEMENT OF EXISTING REINFORCING STEEL: ANY EXISTING REINFORCING BARS MADE UNUSABLE BY CONTRACTOR'S CONCRETE REMOVAL OPERATIONS SHALL BE REPLACED WITH NEW STEEL AT HIS COST. ANY EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION SHALL BE REPLACED WITH NEW STEEL. AN ALLOWANCE OF 1000 POUNDS IS INCLUDED IN ITEM 509 FOR THIS PURPOSE.

G.N.16 NEW REINFORCING STEEL MAY REQUIRE FIELD CUTTING TO BE PROPERLY FITTED.

G.N.17 ITEM 511, PRECAST TRANSVERSE BEAMS THAT ARE MANUFACTURED AWAY FROM THE PROJECT SITE SHALL BE FABRICATED ACCORDING TO SUPPLEMENT NUMBER 1034 DATED 1-7-81. IF BEAMS ARE SO FABRICATED, CONCRETE MIX MAY BE AS SPECIFIED IN 515.06 IN LIEU OF CLASS S.

G.N.18 PREFORMED BEARING PAD SHIMS, 1/8" THICK, SHALL BE PLACED UNDER BEARING PADS WHERE REQUIRED FOR PROPER BEARING.

THE TOP SURFACE OF EACH SHIM SHALL BE BONDED TO THE ELASTOMERIC BEARING PAD. IN ADDITION, WHERE MORE THAN ONE SHIM IS REQUIRED, EACH SHIM SHALL BE BONDED TO THE ONE ABOVE. THE BOTTOM SHIM OR ELASTOMERIC BEARING PAD SHALL NOT BE BONDED TO THE CONCRETE.

THE FOLLOWING BONDING PROCEDURE SHALL BE USED:

1. SURFACE PREPARATION: TO AVOID THE SUBSEQUENT CONTAMINATION OF PREPARED SURFACES, ALL ELASTOMERIC SURFACES SHALL BE CLEANED WITH METHYL ETHYL KETONE (MEK), TOLUENE (T) OR OTHER APPROVED SOLVENT USING CLEAN DISPOSABLE CLOTHS. NOT MORE THAN 7 DAYS PRIOR TO ADHESIVE BONDING, APPLY A THIN (1/8" MINIMUM THICKNESS) COATING OF CYCLIZING PASTE* TO THE BONDING SURFACES ONLY. ALLOW PASTE TO REMAIN ON THE SURFACES FOR 25 TO 40 MINUTES. WASH PASTE FROM SURFACES WITH CLEAN WATER. (*CYCLIZING PASTE IS A MIXTURE OF ONE POUND OF PITTSBURGH PLATE GLASS INDUSTRIES' HISIL 233 OR AN APPROVED ALTERNATE AND SIX POUNDS OF CONCERNTRATED SULFURIC ACID (18 MOLAR). TO MIX THE PASTE, ADD HISIL TO ACID SLOWLY WHILE STIRRING MIXTURE TO ACHIEVE A SMOOTH VISCOUS PASTE. NOTE: SINCE CONCENTRATED SULFURIC ACID IS VERY CORROSIVE AND HISIL IS AN EXTREMELY FINE NON-TOXIC POWDER, RUBBER GLOVES AND GLASSES SHOULD BE USED BY THOSE USING THE PASTE WHILE GLOVES, GLASSES AND A RESPIRATOR SHOULD BE USED BY THOSE MIXING THE PASTE.)
2. ADHESIVE APPLICATION: APPLY A FLEXIBLE EPOXY ADHESIVE (SIKASTIX 360, FEL-POXY FP-101 OR AN APPROVED ALTERNATE) TO ONE OR BOTH PREPARED SURFACES, BUT ONLY TO SURFACES WHICH ARE DRY AND WARMER THAN 45°F AND WHICH ARE MAINTAINED ABOVE 45°F UNTIL ADHESIVE HAS CURED. USE A SERRATED SPATULA IF NECESSARY TO ACHIEVE A COMPLETE AND RELATIVELY UNIFORM COATING.
3. ASSEMBLY: FORCE BOTH SURFACES TOGETHER AND MAINTAIN PRESSURE UNTIL ADHESIVE HAS CURED. AFTER ASSEMBLY, REMOVE EXCESS ADHESIVE FROM EXTERIOR SURFACES ADJACENT TO BONDED JOINT.

G.N. 27 THE SIX, FOUR INCH INSIDE DIAMETER PLASTIC PIPE TELEPHONE CONDUITS SHOWN ON THESE PLANS SHALL NOT BE A PART OF THIS CONTRACT

DETAILS AND NOTES THAT PERTAIN TO THESE CONDUITS SHALL BE DISREGARDED.

G.N.19 ITEM 519 PATCHING CONCRETE STRUCTURES AS PER PLAN: AFTER SURFACE PREPARATION IS COMPLETED, ALL EXPOSED REINFORCING STEEL AND CONCRETE SHALL BE CLEANED BY SANDBLASTING. AT THE OPTION OF THE CONTRACTOR ANY PATCHING UNDER THIS ITEM MAY BE PERFORMED ACCORDING TO 520, PNEUMATICALLY PLACED MORTAR.

G.N.20 ATTACHMENT OF GUARDRAIL TO CONCRETE PARAPETS: CONCRETE INSERT ANCHOR ASSEMBLIES PER STANDARD CONSTRUCTION DRAWINGS GR-1 AND GR-3 SHALL BE PLACED DURING PARAPET CONSTRUCTION.

G.N.21 ITEM 619 FIELD OFFICE: THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 400 SQUARE FEET OF FLOOR SPACE

G.N.22 MAINTENANCE OF TRAFFIC: ALL RAILROAD AND VEHICULAR TRAFFIC UNDER AND ADJACENT TO THE STRUCTURE SHALL BE MAINTAINED AT ALL TIMES.

ANY DAMAGE DONE TO THE STREETS AND RAILROAD UNDER AND ADJACENT TO THE STRUCTURE DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

THE CONTRACTOR SHALL EXERCISE CARE WHILE WORKING OVER AND ADJACENT TO THE STREETS AND RAILROAD AND SUBMIT TO THE ENGINEER FOR HIS APPROVAL A PROCEDURE TO ACCOMPLISH THIS WORK. ALL TRAFFIC SHALL BE PROTECTED FROM FALLING DEBRIS AT ALL TIMES.

DETAILED PLANS SHOWING A PROTECTIVE SHIELD OVER THE RAILROAD TRACKS SHALL BE SUBMITTED AS PER ITEM 501.06 FOR APPROVAL.

G.N.23 ESTIMATED QUANTITIES: SPECIFIC LOCATIONS AND USAGE OF ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED "AS DIRECTED BY THE ENGINEER" SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT. ESTIMATED QUANTITIES OF MATERIALS SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

G.N.24 PAVEMENT MARKINGS SHALL BE DONE BY OTHERS. NOT A PART OF THIS CONTRACT.

G.N.25 ITEM 622, TEMPORARY PRECAST CONCRETE BARRIER: THESE BARRIERS SHALL BE PLACED AT THE WEST END OF THE PROJECT IN SUCH A MANNER AS TO SAFELY RETAIN A VEHICLE FROM ENTERING THE ACTUAL CONSTRUCTION AREA. THEY SHALL BE PLACED IN SUCH A MANNER AS TO ALLOW THE CONTRACTOR ACCESS TO THE CONSTRUCTION AREA.

THE CONTRACTOR SHALL SUBMIT A PLAN TO THE ENGINEER FOR HIS APPROVAL TO ACCOMPLISH THIS RETENTION.

WHEN THESE BARRIERS ARE NO LONGER NEEDED, THEY SHALL BECOME THE PROPERTY OF THE OHIO DEPARTMENT OF TRANSPORTATION. ODOT SHALL REMOVE THEM FROM THE PROJECT SITE. THE CONTRACTOR SHALL LOAD THE BARRIERS ONTO ODOT TRUCKS.

G.N. 26 TEMPORARY BRACING: THE CONTRACTOR SHALL SUBMIT PLANS TO THE DIRECTOR FOR REVIEW AND APPROVAL (THREE COPIES) FOR TEMPORARY LONGITUDINAL BRACING OF THE EXISTING SPANDREL COLUMNS TO PREVENT DAMAGE TO THE COLUMNS DURING REMOVAL OF THE EXISTING SUPERSTRUCTURE AND COLUMN CAPS AND DURING ERECTION OF THE NEW CAPS AND SUPERSTRUCTURE.

SIZE AND TYPE OF EQUIPMENT USED IN REMOVAL OPERATIONS SHALL BE LIMITED TO PREVENT DAMAGE.

ATTACHMENT OF TEMPORARY BRACING TO THE EXISTING ARCHES OR COLUMNS BY MEANS OF EXPANSION BOLTS OR OTHER MEANS INVOLVING DRILLING INTO THE CONCRETE WILL NOT BE PERMITTED.

COST OF TEMPORARY BRACING SHALL BE INCLUDED IN ITEM 202, PORTIONS OF EXISTING SUPERSTRUCTURE REMOVED, FOR PAYMENT.

LEGEND: G.N. = GENERAL NOTE

REV. 3-23-81

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

3/72

GENERAL NOTES

BRIDGE NO. BEL-40-23 38
OVER THE B.& O RAILROAD AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	—	T.G.C.	R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

5/74

BEL-40-23.38

ESTIMATED QUANTITIES - GENERAL SUMMARY

TYPE CODE 6706 EXCEPT
* BRIDGE TYPE CODE X324

Item	Total	Unit	Description		Super.	Substr.	Gen'l
202	Lump		Portions of existing superstructure removed	*	Lump		
202	Lump		Portions of existing stairway removed	*	Lump		
202	Lump		Portions of existing substructure removed	*		Lump	
202	163	Sq. Yd.	Pavement removed				163
202	820	Sq. Yd.	Wearing course removed				820
202	1,166	Sq. Ft.	Walk removed				1,166
202	561	Lin. Ft.	Curb removed				561
202	2	Each	Catch basin removed				2
310	58	Cu. Yd.	Subbase, Type II				58
404	25	Cu. Yd.	Asphalt concrete, AC-20				25
407	92	Gallon	Tack coat: RC-250, SS-1, SS-1H, MS-2 or RS-1				92
407	4	Ton	Cover aggregate				4
451	80	Sq. Yd.	Reinforced portland cement concrete pavement				80
509	130,955	Lb.	Reinforcing steel, Grade 60	*	112,234	18,721	
510	880	Each	Dowel holes	*	726	154	
511	952	Cu. Yd.	Class S concrete, superstructure	*	952		
511	13	Cu. Yd.	Class S concrete, stairway	*	13		
511	440	Cu. Yd.	Class S concrete, superstructure precast transverse beams	*	440		
511	393	Cu. Yd.	Class C concrete, substructure	*		278	115
515	2,395	Lin. Ft.	Prestressed concrete bridge members (21"x 48")	*	2,395		
515	239	Lin. Ft.	Prestressed concrete bridge members (21"x 36")	*	239		
515	4,831	Lin. Ft.	Prestressed concrete bridge members (12"x 48")	*	4,831		
515	483	Lin. Ft.	Prestressed concrete bridge members (12"x 36")	*	483		
516	24,889	Lb.	Structural steel expansion joints	*	24,889		
516	188	Sq. Ft.	1" preformed expansion joint filler	*		188	
516	991	Sq. Ft.	½" preformed expansion joint filler	*	956	35	
516	1,496	Each	¾" x 5" x 9" elastomeric bearing pads, 50 durometer	*	1,496		
516	264	Each	¾" x 5" x 11" elastomeric bearing pads, 50 durometer	*	264		
516	285	Sq. Ft.	⅛" preformed bearing pads, 711.21, as per plan	*	285		

Item	Total	Unit	Description		Super.	Substr.	Gen'l
518	24	Each	Scuppers, including supports	*	24		
519	2,784	Sq. Ft.	Patching concrete structures, as per plan	*			2,784
603	15	Lin. Ft.	12" Conduit, Type B, 706.08				15
604	1	Each	Catch basin - South Wall				1
604	1	Each	Catch basin - North Wall				1
606	25	Lin. Ft.	Guardrail, Type 5				25
606	1	Each	Anchor assembly, standard Type A				1
606	1	Each	Anchor assembly, standard Type T				1
606	1	Each	Bridge terminal assembly, standard Type A				1
606	1	Each	Bridge terminal assembly, standard Type J				1
609	12	Lin. Ft.	Curb, cast-in-place concrete, West Approach				12
609	38	Lin. Ft.	Curb, cast-in-place concrete, East Approach				38
611	184	Sq. Yd.	Reinforced concrete approach slabs (T=14"), as per plan				184
622	10	Lin. Ft.	Concrete barrier				10
622	10	Lin. Ft.	Concrete barrier, Standard type D, Modified as per plan				10
622	80	Lin. Ft.	Temporary precast concrete barrier				80
660	6	Sq. Yd.	Sodding				6
849	439	Lin. Ft.	Elastomeric compression seals for structural steel joints, 2½" width	*	439		
Special	97,703	Lb.	Epoxy coated reinforcing steel, Grade 60 (see proposal note)	*	86,165	1,024	10,514
614	Lump		Maintaining traffic				Lump
619	Lump		Field office				Lump
624	Lump		Mobilization				Lump
623	Lump		Construction layout stakes				Lump

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BUREAU OF BRIDGES

4/72

ESTIMATED QUANTITIES - GENERAL SUMMARY
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	AJM	T.G.C.	11-12-80 R.L.D.	W.J.J.	12-1-80	

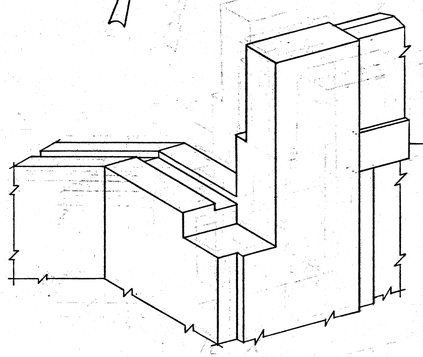
Rev. 5-5-81
Rev. 3-23-81

MICROFILMED
JAN 22 1986

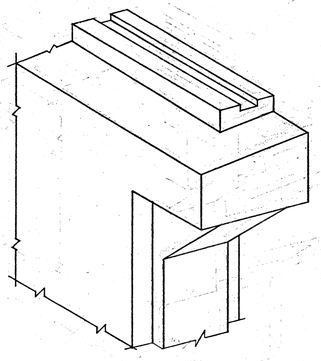
FHWA REGION	STATE	PROJECT	
5	OHIO		

6/74

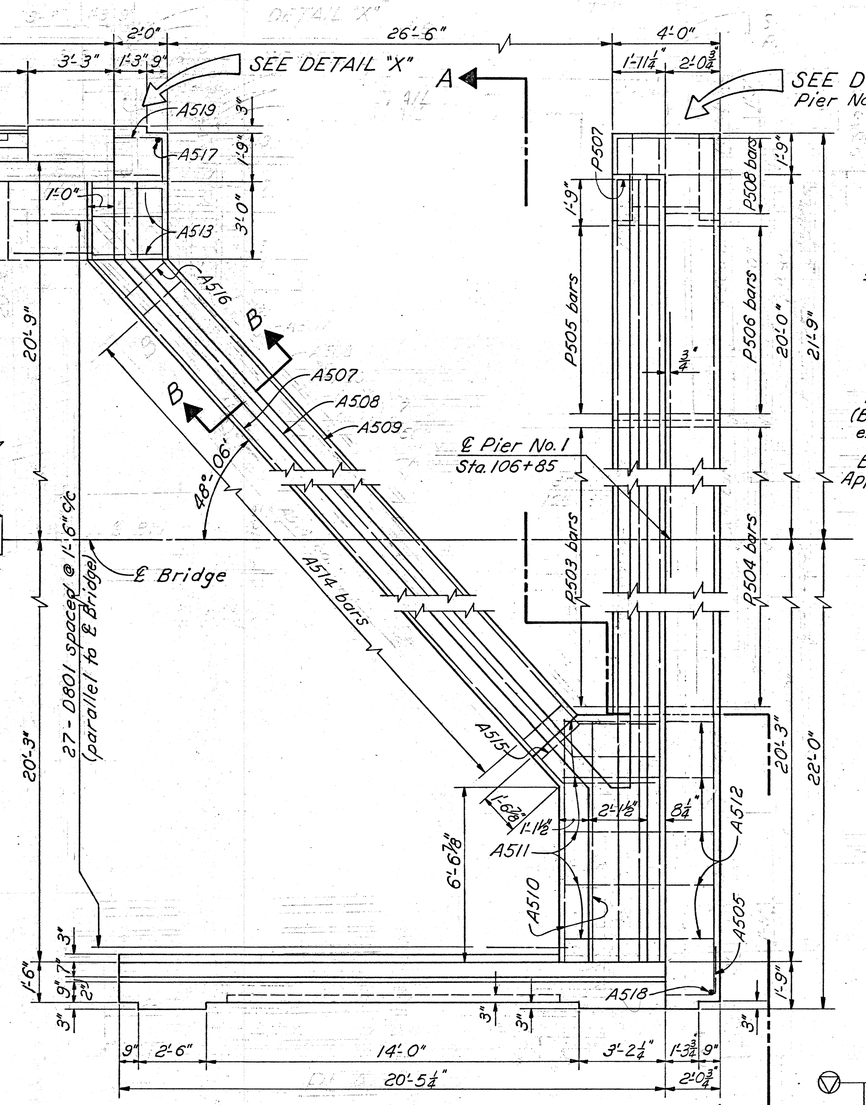
BEL-40-23.38



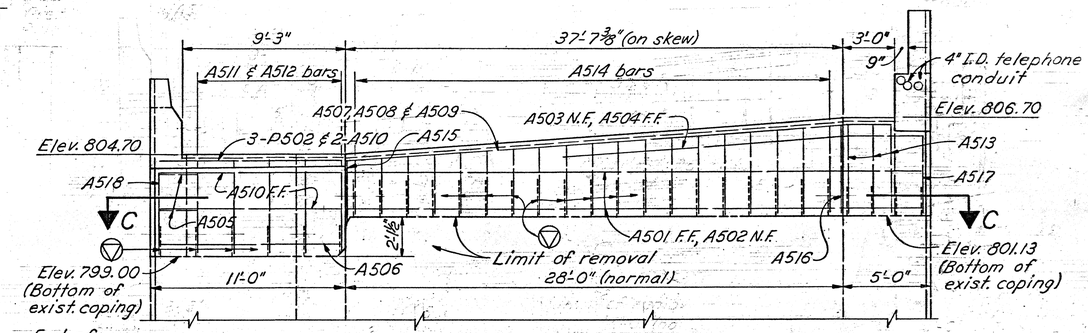
DETAIL "X"



DETAIL "Y"

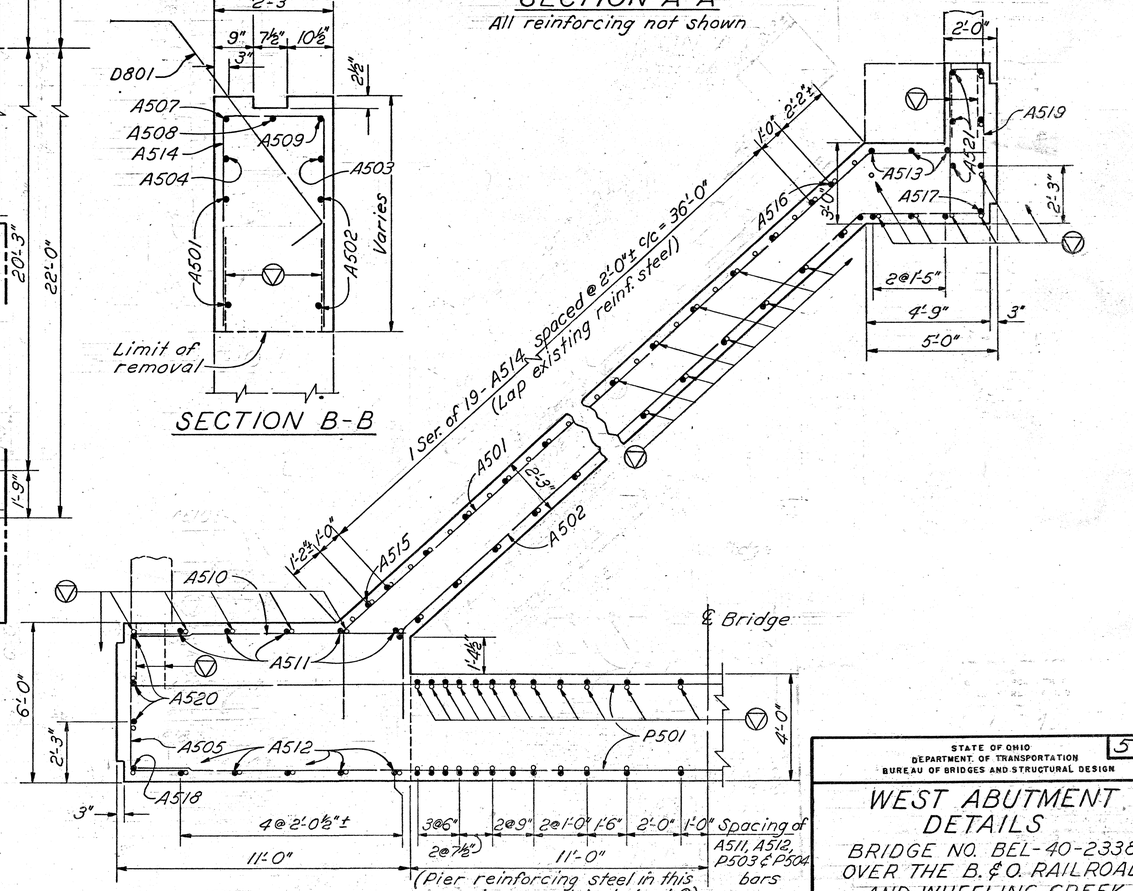


PLAN



SECTION A-A
All reinforcing not shown

SECTION B-B



SECTION C-C

▽ – Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

5/72

WEST ABUTMENT DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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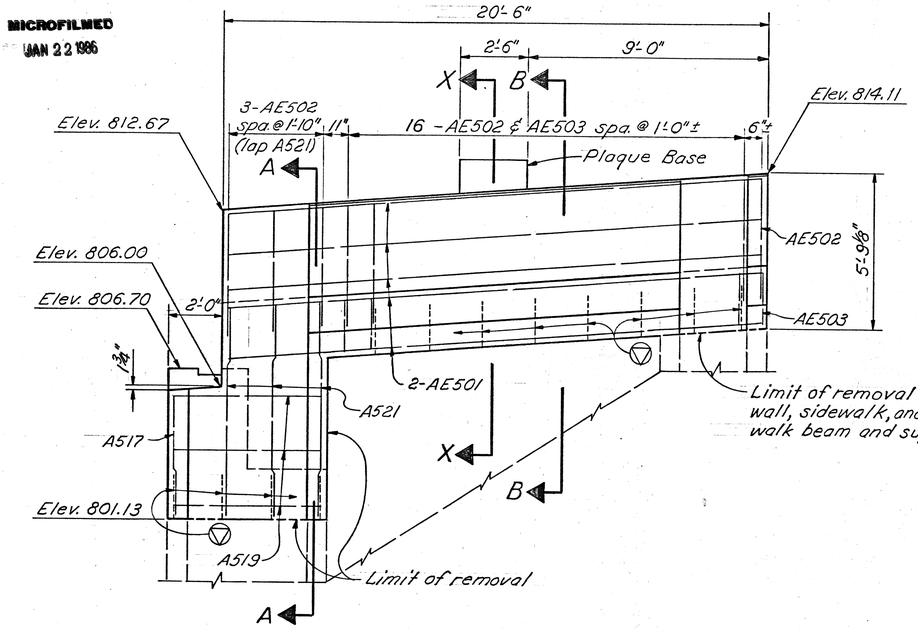
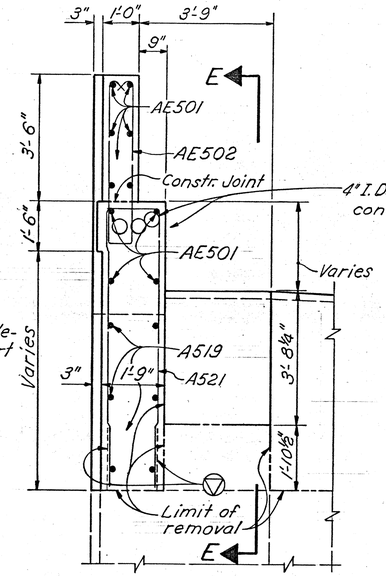
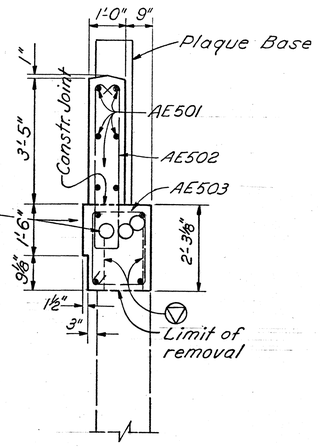
BEL-40-23.38



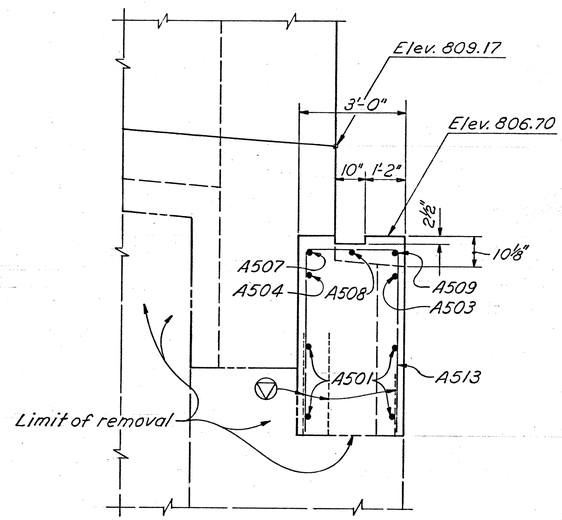
NORTH WINGWALL ELEVATION



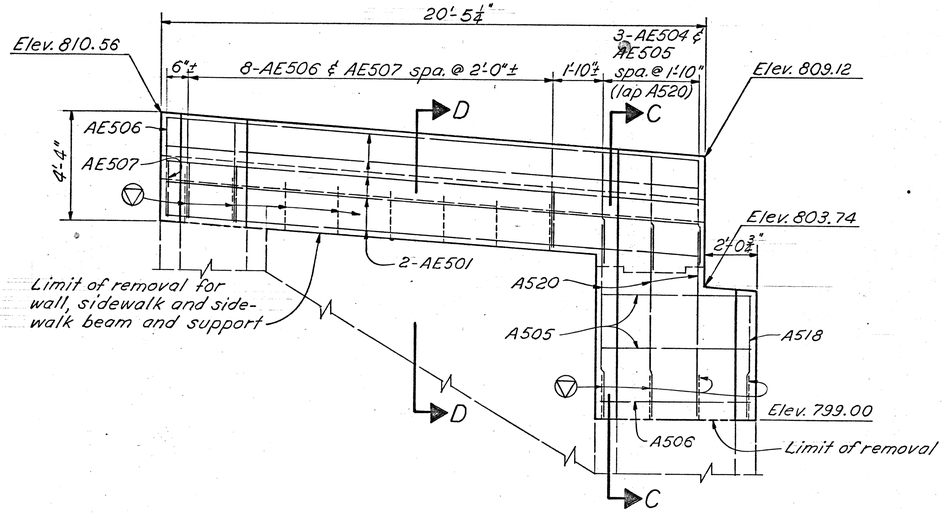
SECTION A-A



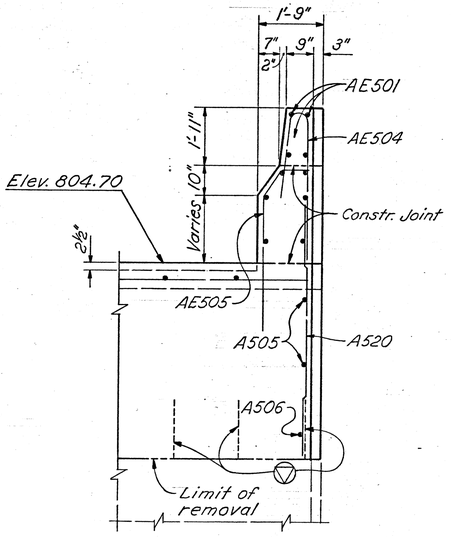
SECTION B-B



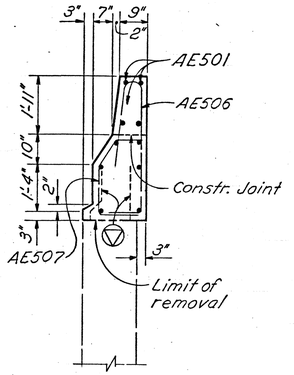
SECTION E-E



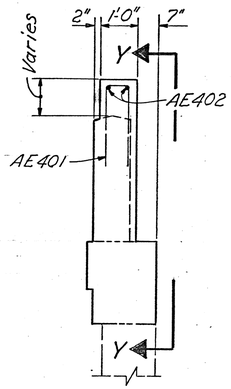
SOUTH WINGWALL ELEVATION



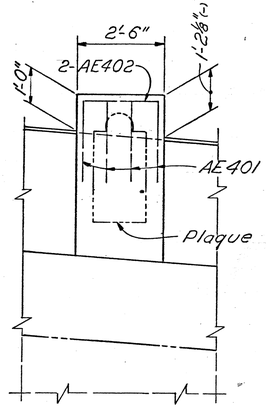
SECTION C-C



SECTION D-D



SECTION X-X



VIEW Y-Y

Contractor shall give the plaques to the Ohio Dept. of Transportation for cleaning and polishing before they are remounted. Adequate time shall be allocated for this.

Note:
The Plaque Base at the east end of bridge is similar in detail to that shown above. For location see sheet 2/72.

▽ - Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

6/72

WEST ABUTMENT DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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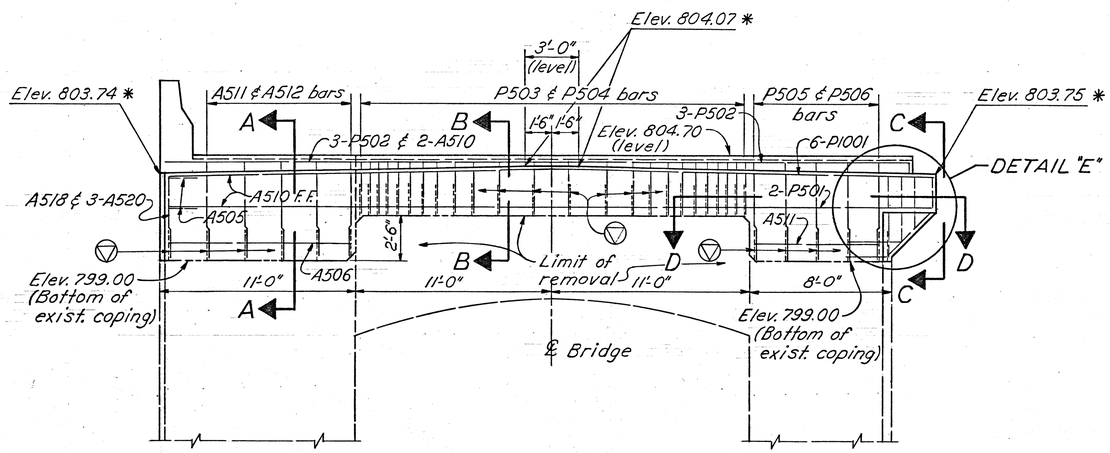
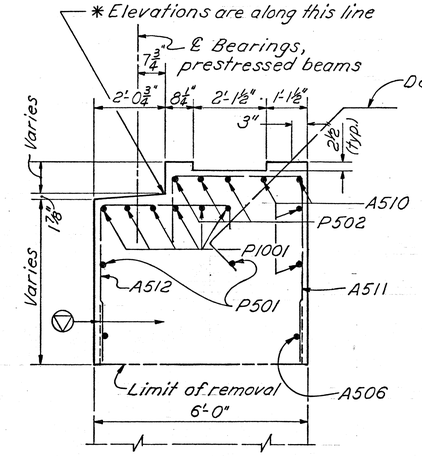
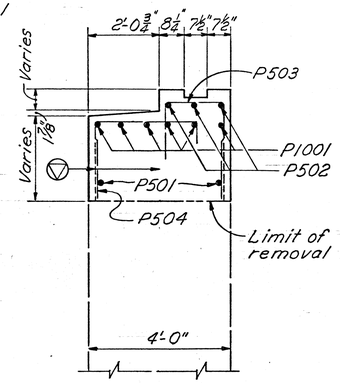
BEL-40-23,38



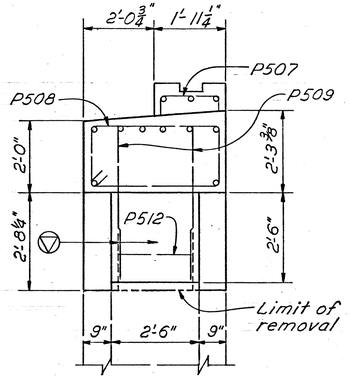
EAST ELEVATION



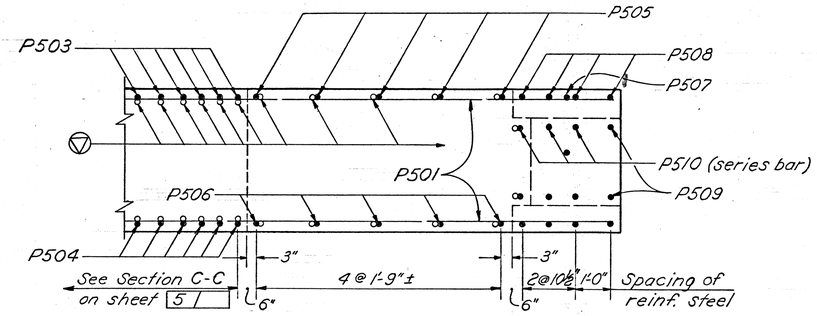
SECTION A-A



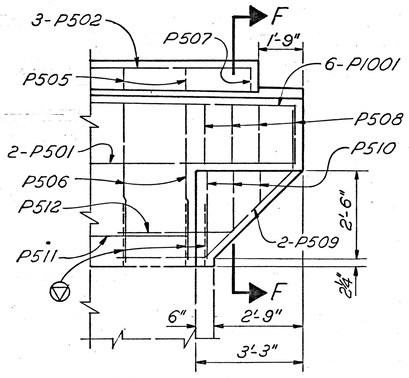
SECTION B-B



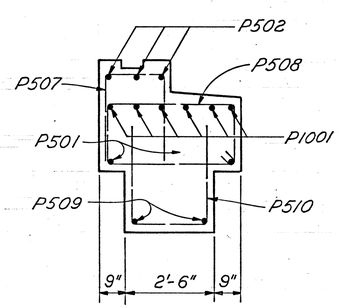
VIEW C-C



SECTION D-D



DETAIL "E"



SECTION F-F

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

⌀ - Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

7/72

PIER NO. 1 DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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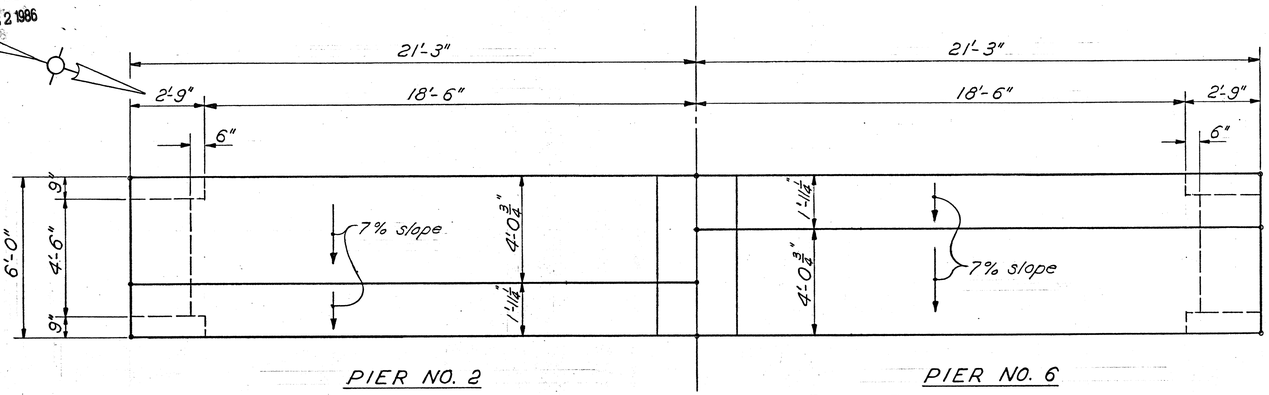
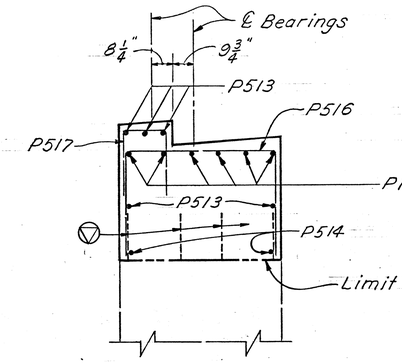
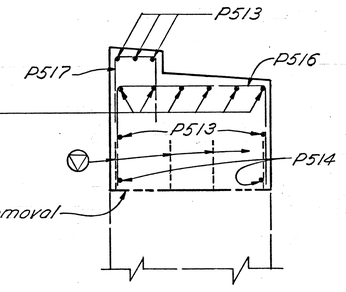
BEL-40-23.38



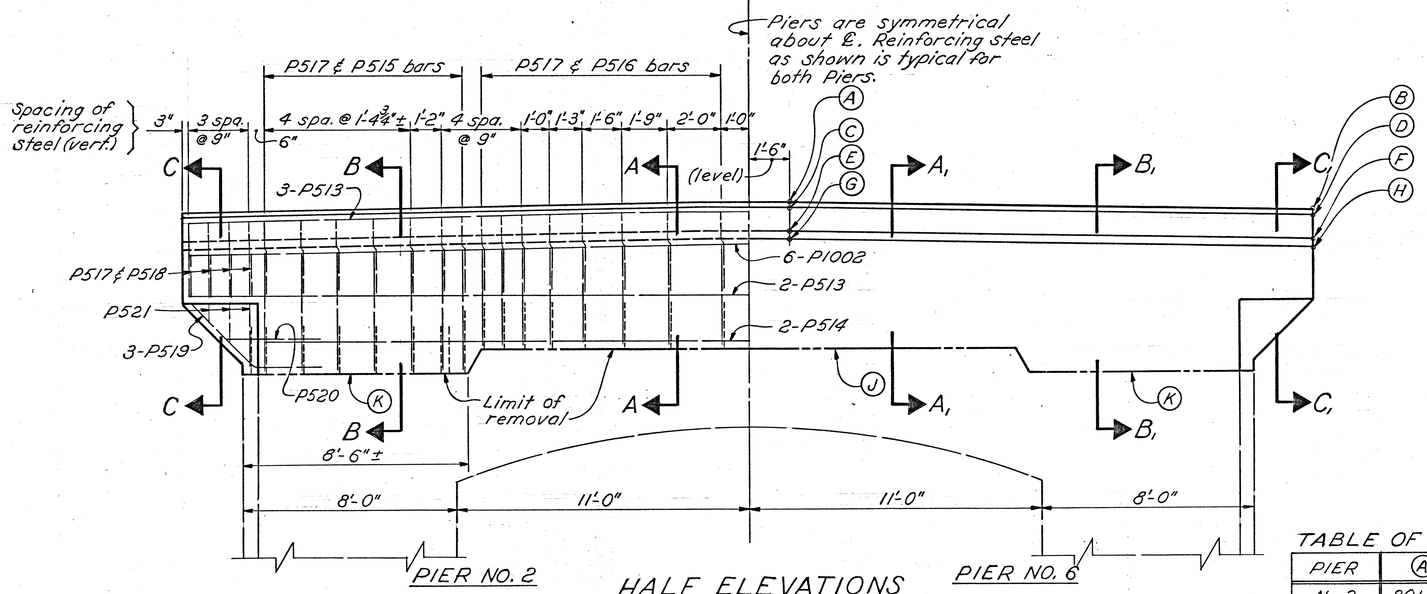
HALF PLANS



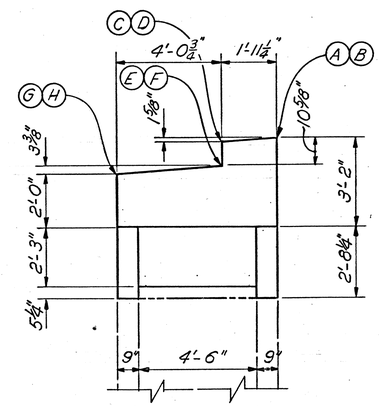
SECTION A-A



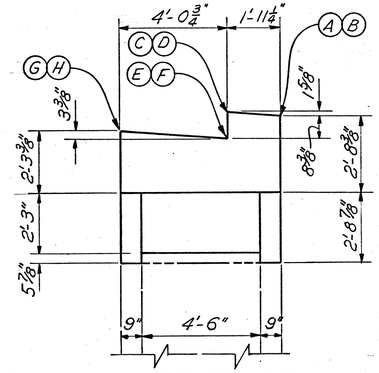
SECTION A,-A,



HALF ELEVATIONS
(Looking Backward on Stations)



PIER NO. 6
(North End)



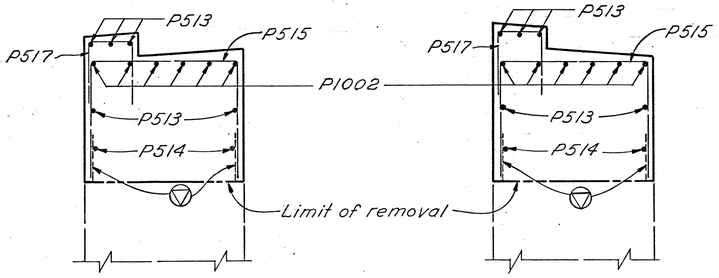
PIER NO. 2
(South End)

END VIEWS

TABLE OF ELEVATIONS:

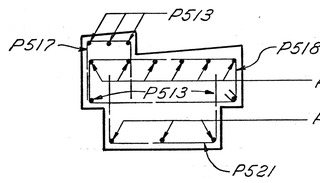
PIER	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓙ	Ⓚ
No. 2	801.50	801.19	801.64	801.33	800.80	800.49	801.08	800.77	796.62	795.75
No. 6	766.92	766.61	766.78	766.47	766.03	765.72	765.75	765.44	761.62	760.75

▽ - Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.

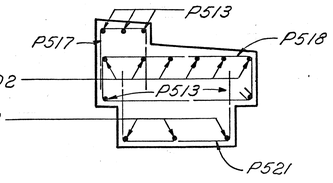


SECTION B-B

SECTION B,-B,



SECTION C-C



SECTION C,-C,

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

8/72

PIERS NO. 2 AND 6 DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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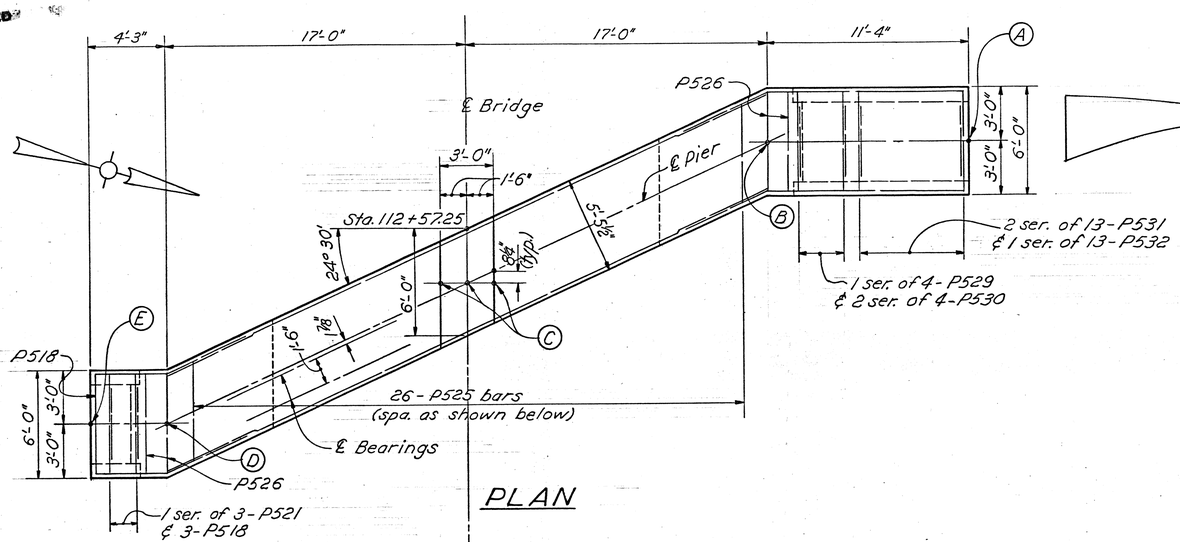
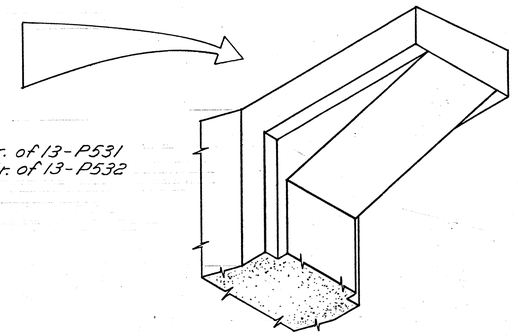
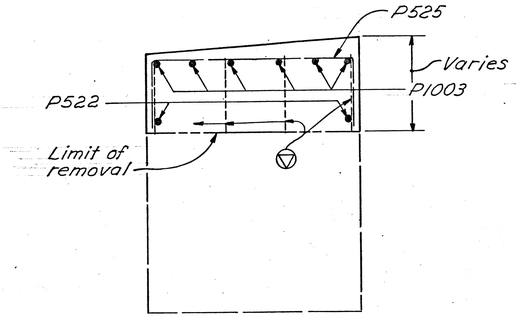
BEL-40-23.38

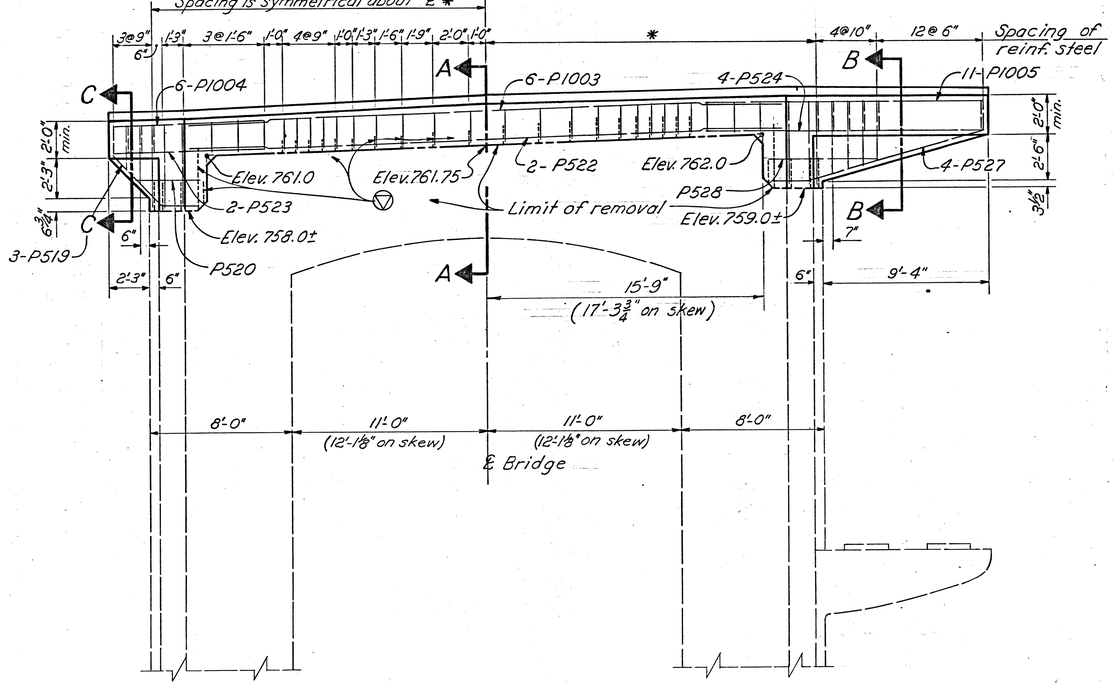


PLAN

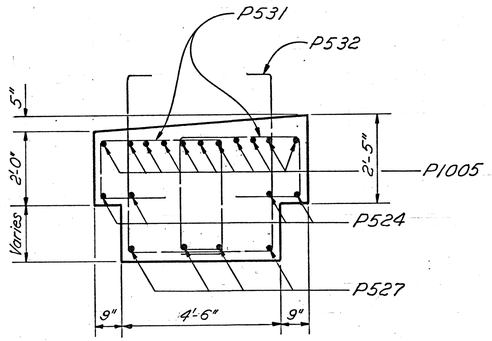




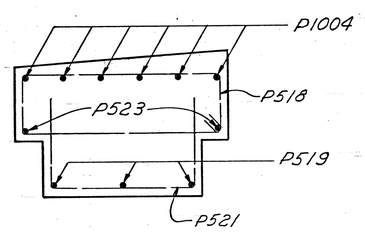
SECTION A-A



ELEVATION
(Looking Backward on Stations)



SECTION B-B



SECTION C-C

TABLE OF ELEVATIONS:

Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ
764.00	764.18	763.88	763.09	763.02

▽- Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

9/72

PIER NO. 7 DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B.&O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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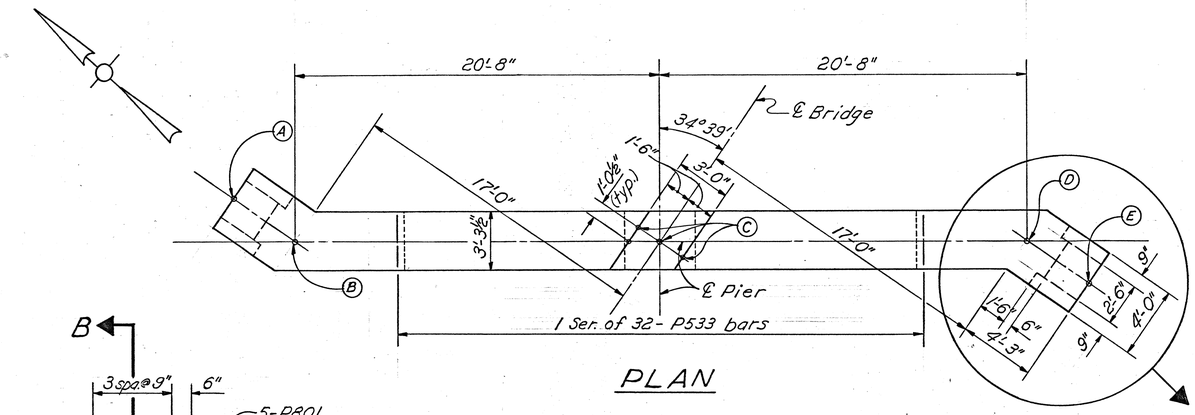
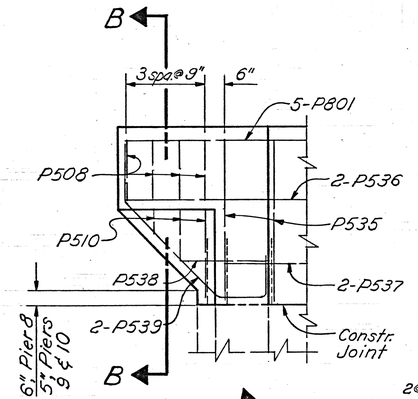
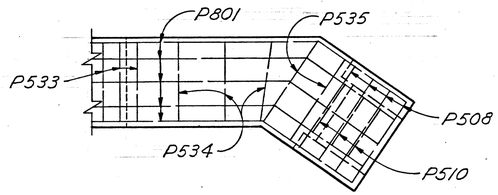
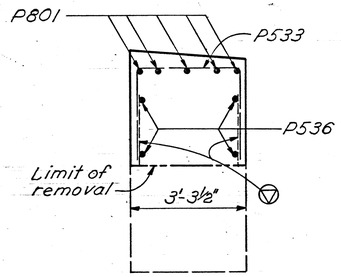
BEL-40-23.38



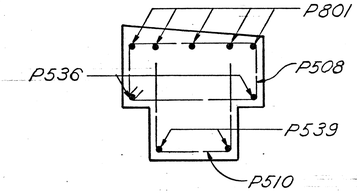
PLAN



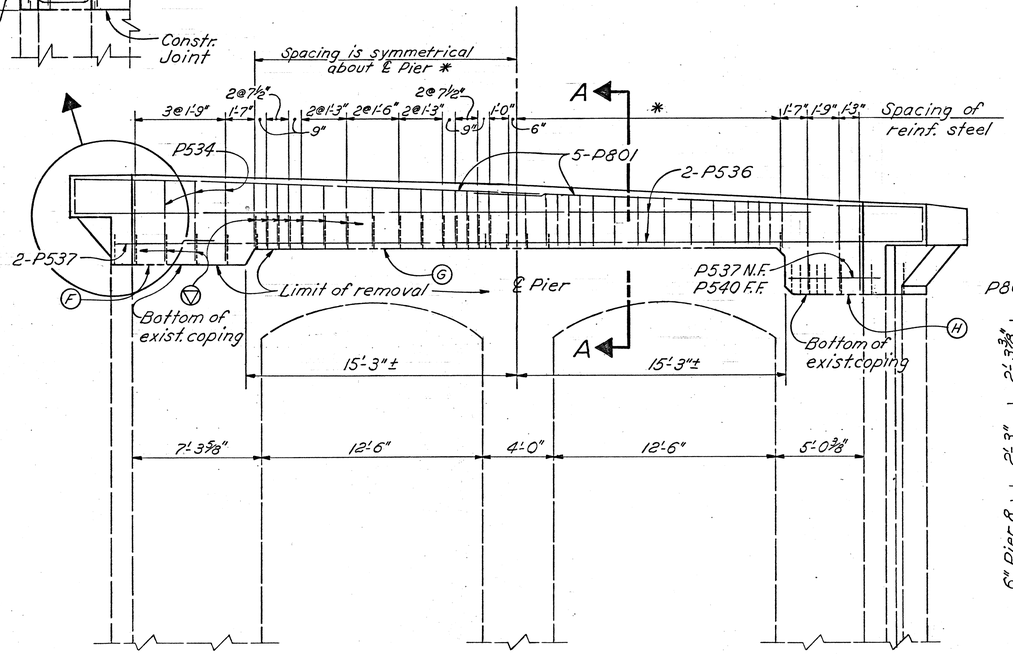




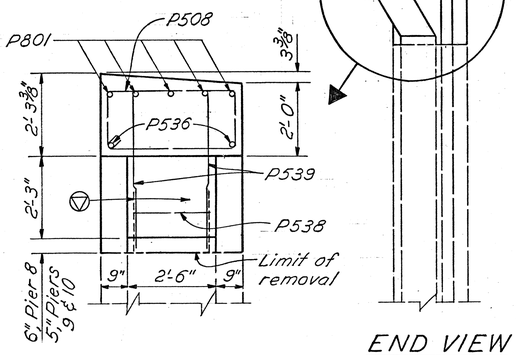
SECTION A-A



SECTION B-B



ELEVATION
(Looking Forward on Stations)



END VIEW

Ⓥ - Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.

LOCATION	ELEVATION							
	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ
Pier No. 8	761.95	762.02	761.44	760.37	760.31	757.06	758.04	755.42
Pier No. 9	759.23	759.29	758.72	757.65	757.58	754.42	755.32	752.78
Pier No. 10	756.01	756.07	755.50	754.43	754.36	751.20	752.10	749.56

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

10/72

PIERS NO. 8, 9 AND 10 DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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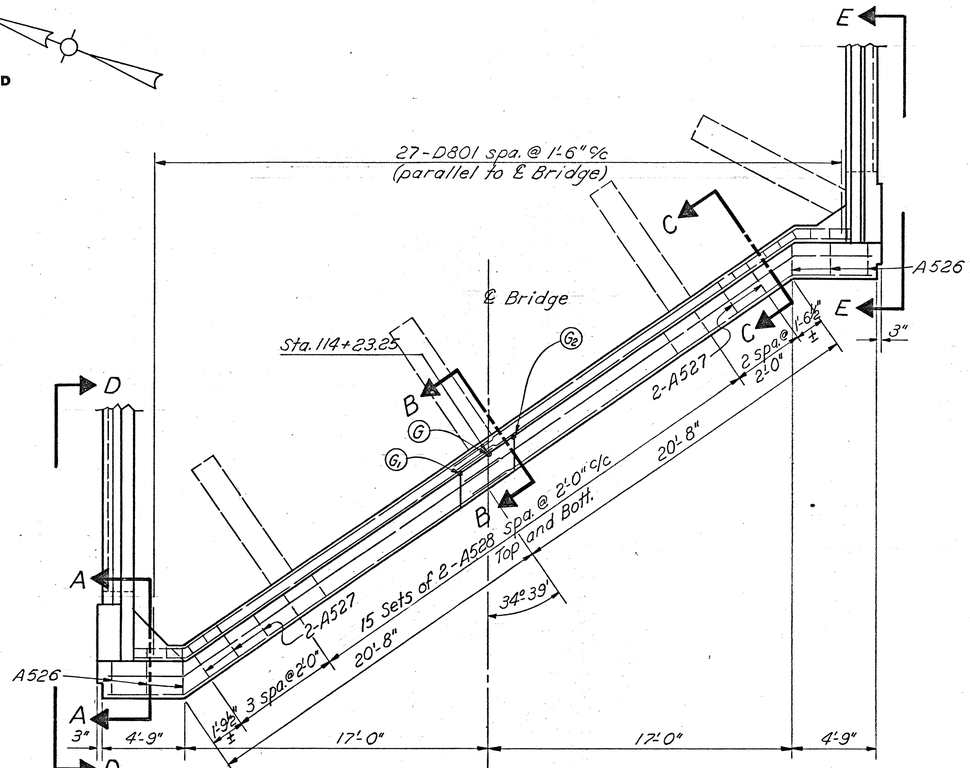
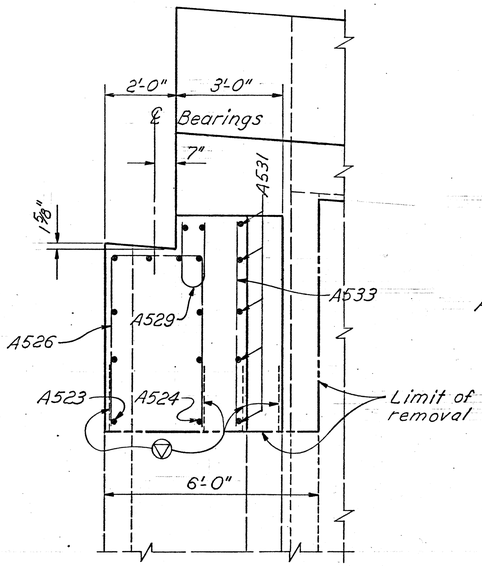
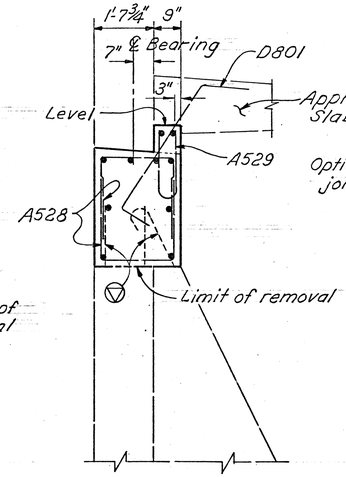


PLAN



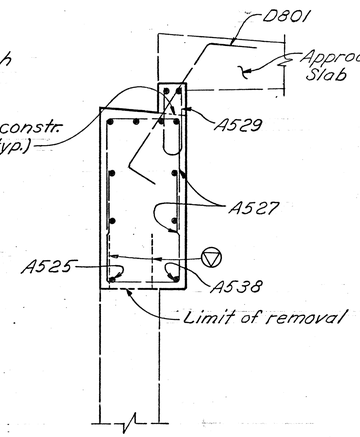
SECTION A-A **

** Unless otherwise noted horizontal bars are A522



SECTION B-B

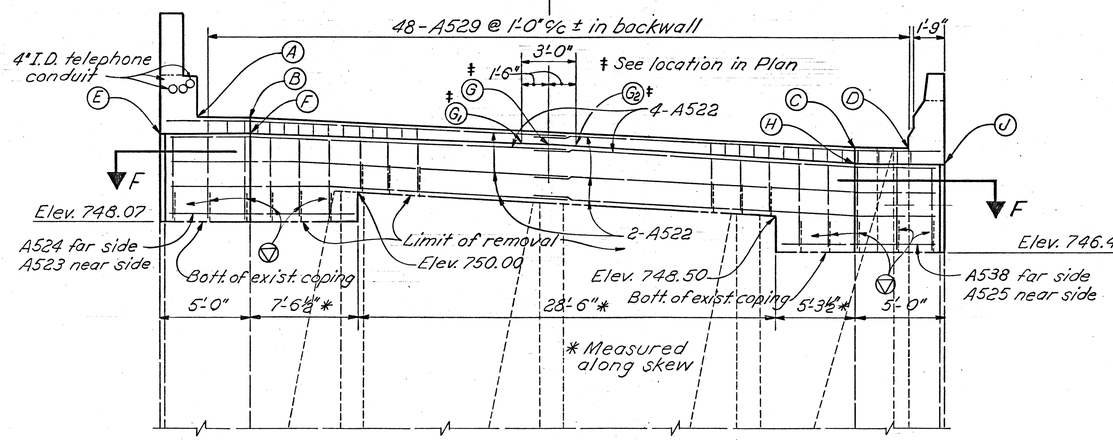
Horizontal bars are A522



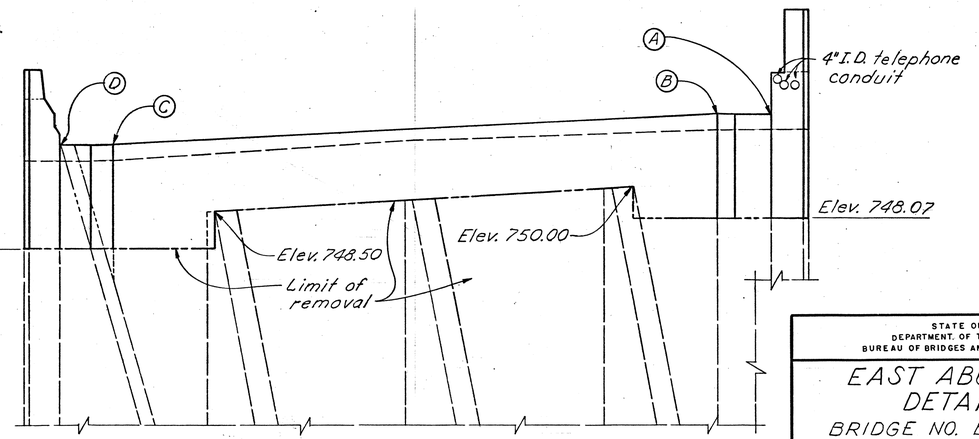
SECTION C-C **

NOTE:
For details of View D-D, View E-E, Section F-F and Table of Elevations see sheet 12/72.

▽ - Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.



FRONT ELEVATION



REAR ELEVATION

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

11/72

EAST ABUTMENT DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISE
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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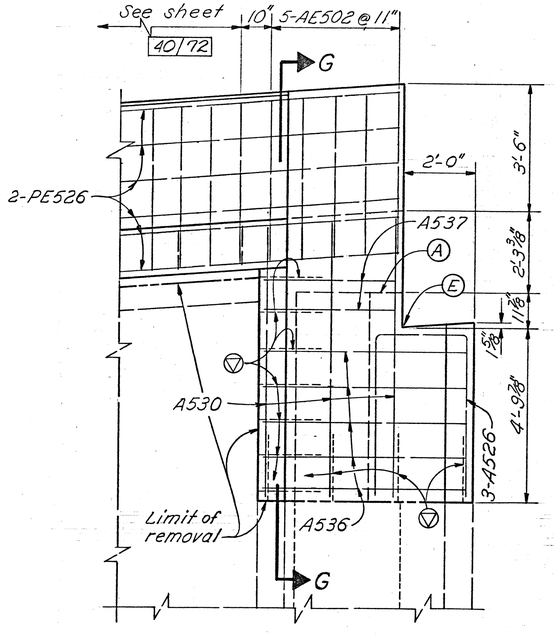
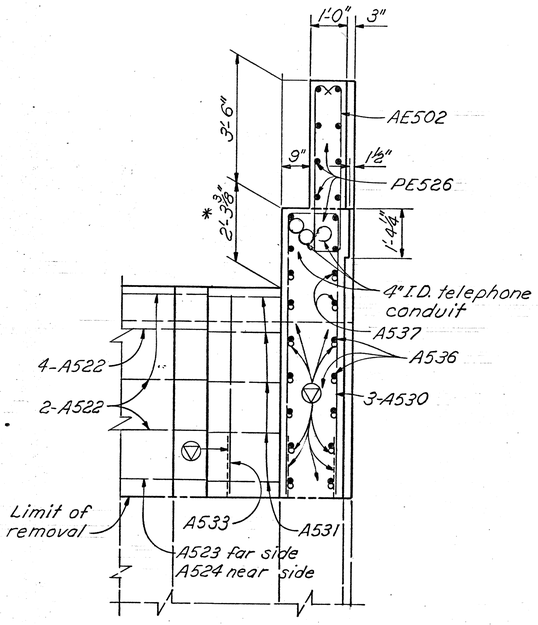
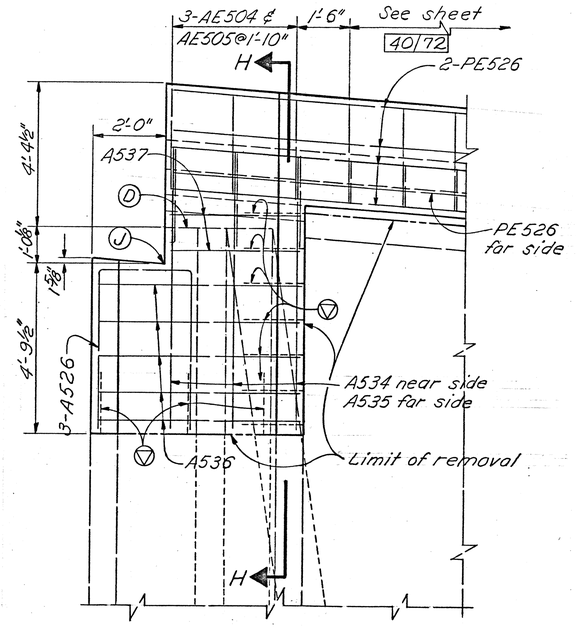
BEL-40-23.38



VIEW D-D

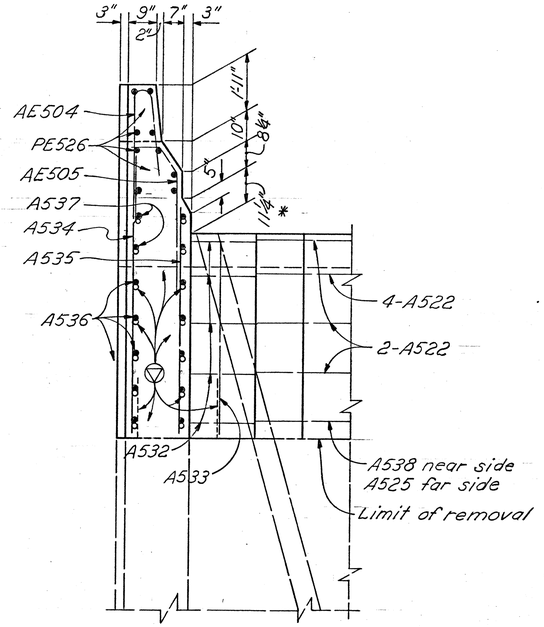


SECTION G-G

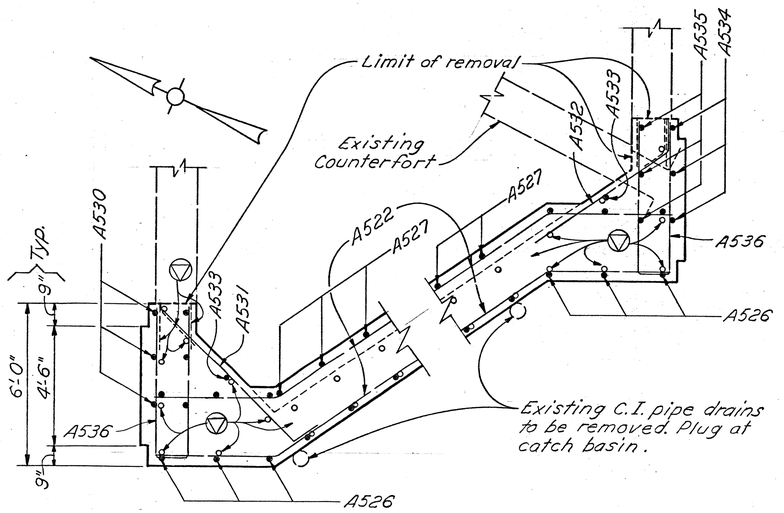


VIEW E-E

*Dimension taken at front face of abut. backwall.



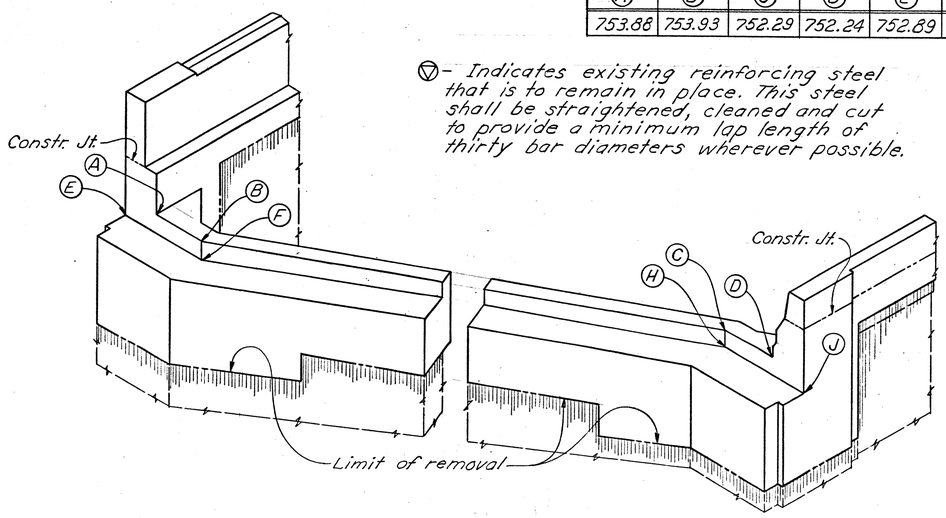
SECTION H-H



SECTION F-F

TABLE OF ELEVATIONS										
Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓙ	G_1	G_2
753.88	753.93	752.29	752.24	752.89	752.96	752.38	751.31	751.23	752.45	752.31

▽ - Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap length of thirty bar diameters wherever possible.



ISOMETRIC OF ABUTMENT

NOTES:
For location of VIEW D-D, VIEW E-E and SECTION F-F see sheet 11/72.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

12/72

EAST ABUTMENT DETAILS

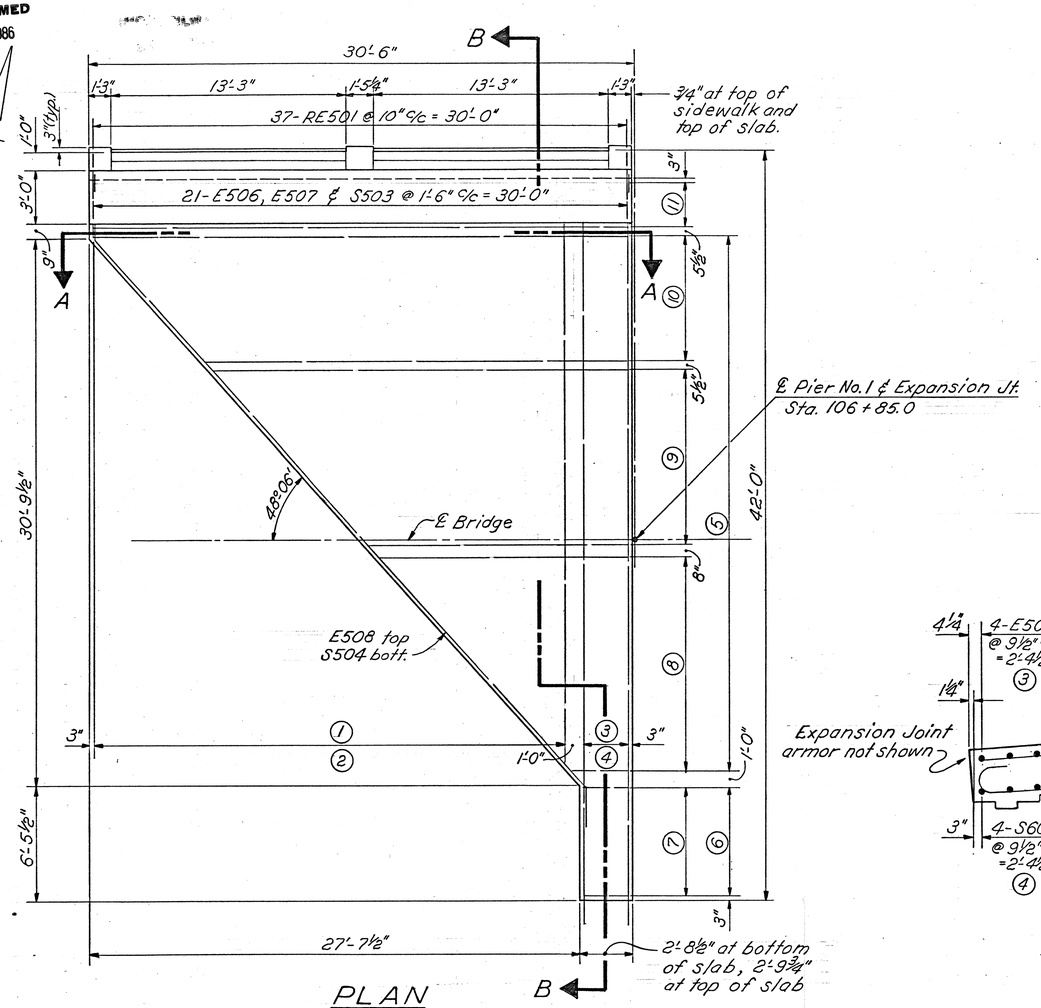
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

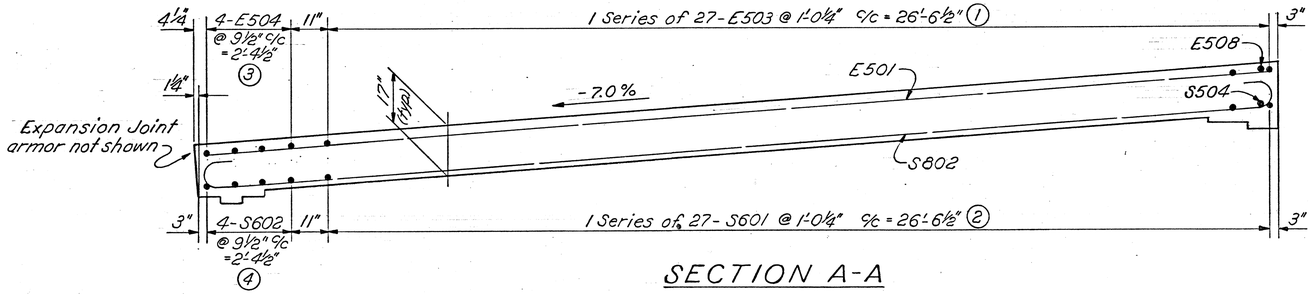
FHWA REGION	STATE	PROJECT	
5	OHIO		

14/74

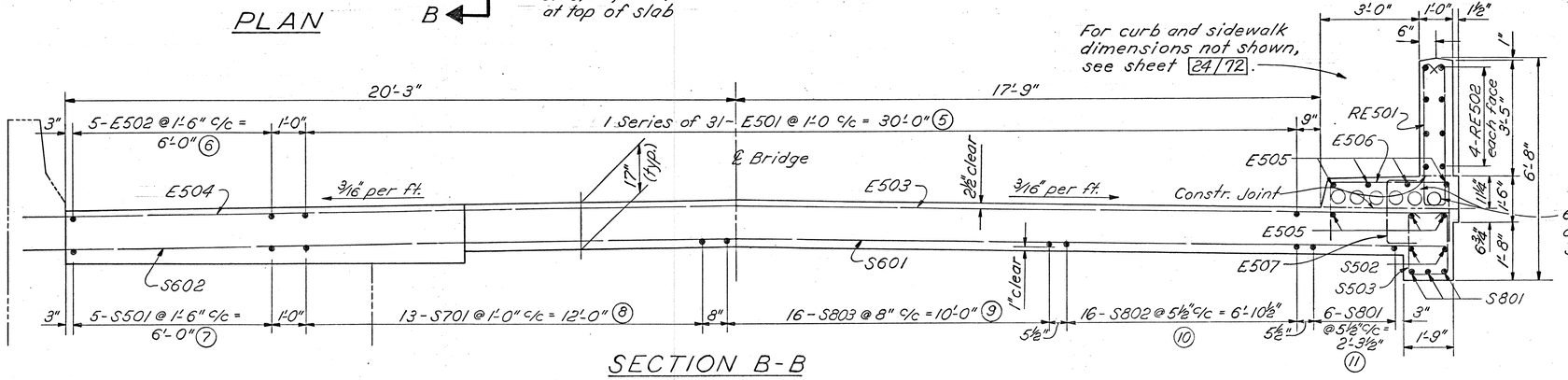
BEL-40-23.38



PLAN



SECTION A-A



SECTION B-B

Camber at 1/800 of the span shall be provided to allow for dead load deflection. This is the amount of camber required before falsework is released. To obtain this, proper allowance shall be made for the deflection of falsework members. Camber shall vary from zero at the right edge of slab to maximum value at left edge.

STATE OF OHIO
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BUREAU OF BRIDGES AND STRUCTURAL DESIGN

13/72

SUPERSTRUCTURE SLAB SPAN DETAILS

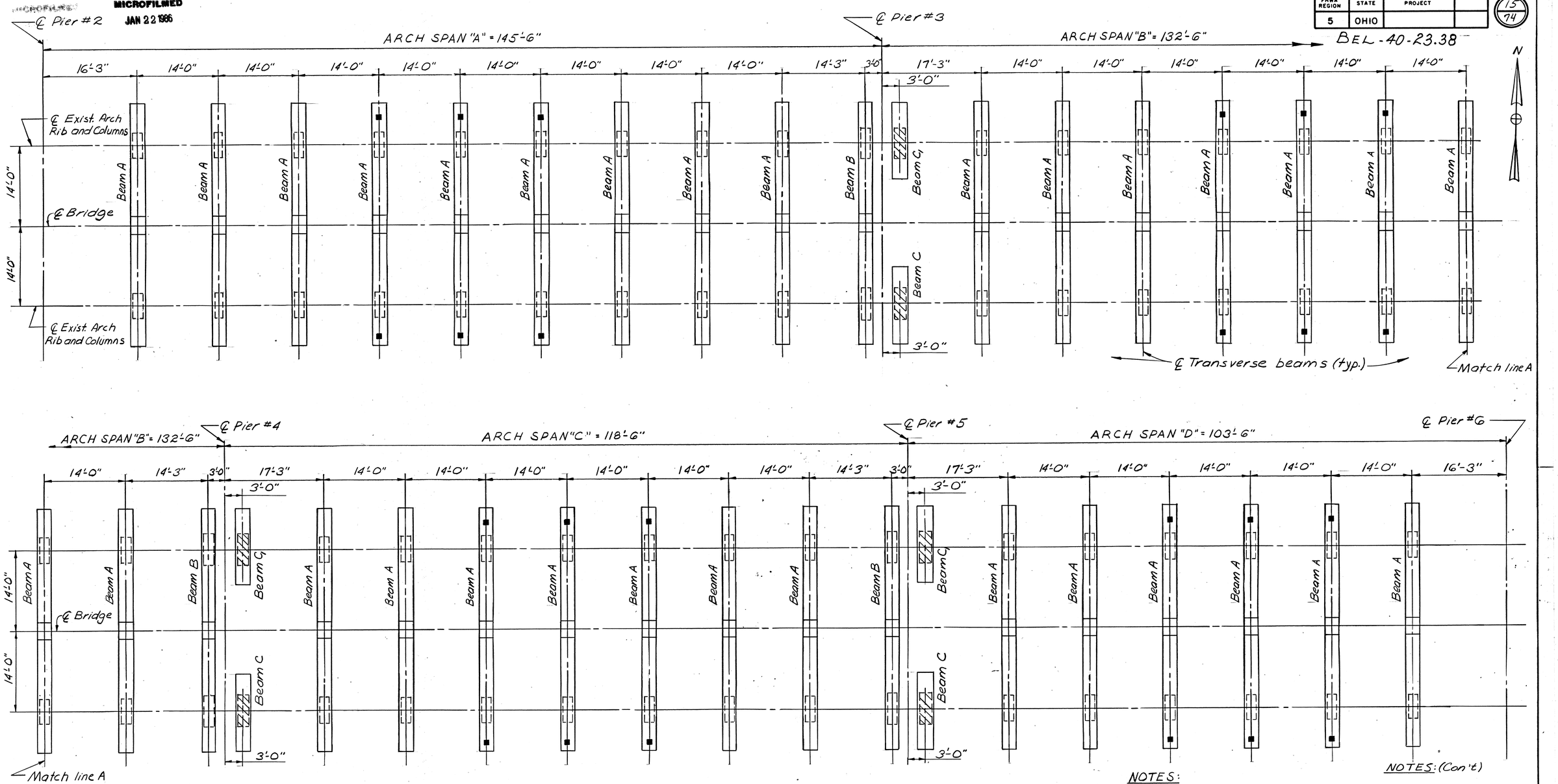
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

15/74

BEL-40-23.38



PRECAST TRANSVERSE BEAM PLAN

LEGEND:

Existing Pier Columns not used for load carrying. Beams C and C1 are used for architectural purposes.

Scupper location = ■

NOTES:

For beam details see sheet:
15/72 - Beam A
16/72 - Beam B
17/72 - Beams C and C1

For Scupper details see sheets 48/72 and 49/72.

For Transverse Beam elevations see sheets 28/72 to 35/72 incl.

NOTES: (Con't)

All plan lengths shown are horizontal (typ., unless noted)

Rev. 3-23-81

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

14/72

TRANSVERSE BEAM LAYOUT

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	W.J.J.	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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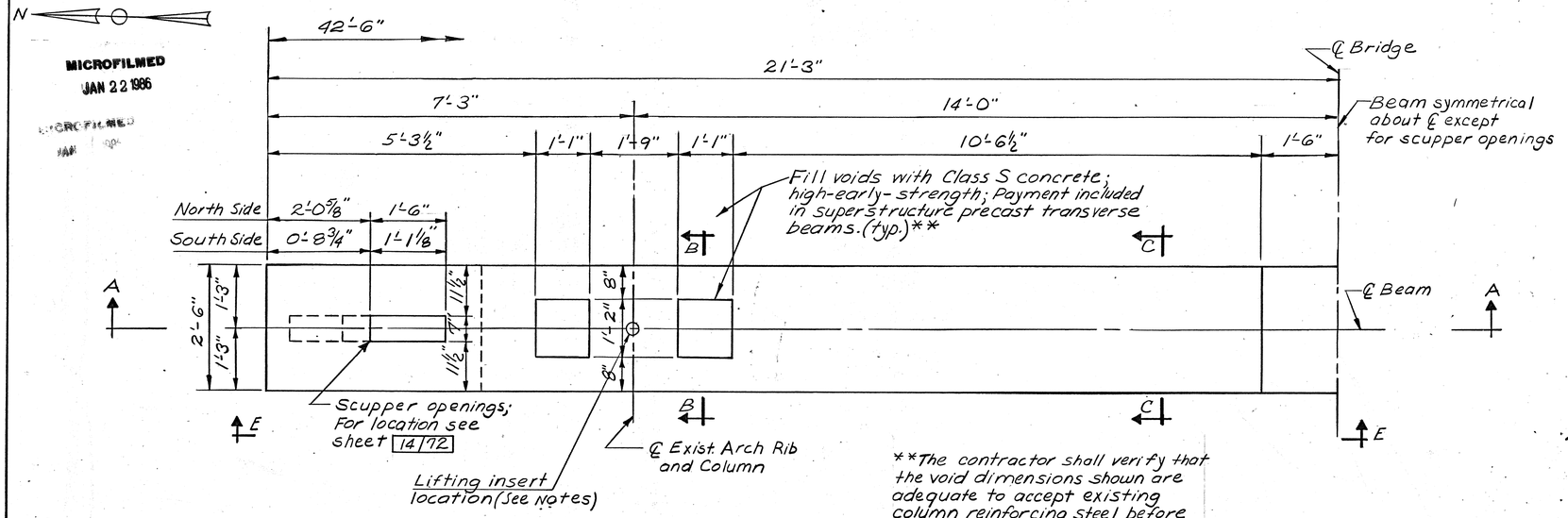
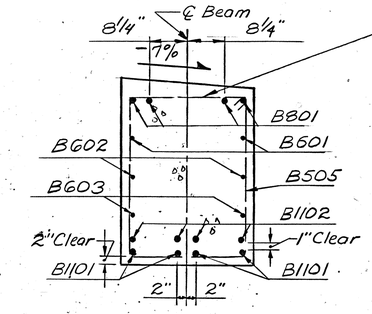
BEL-40-23.38

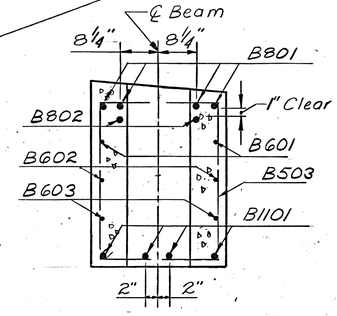


PLAN-BEAM A

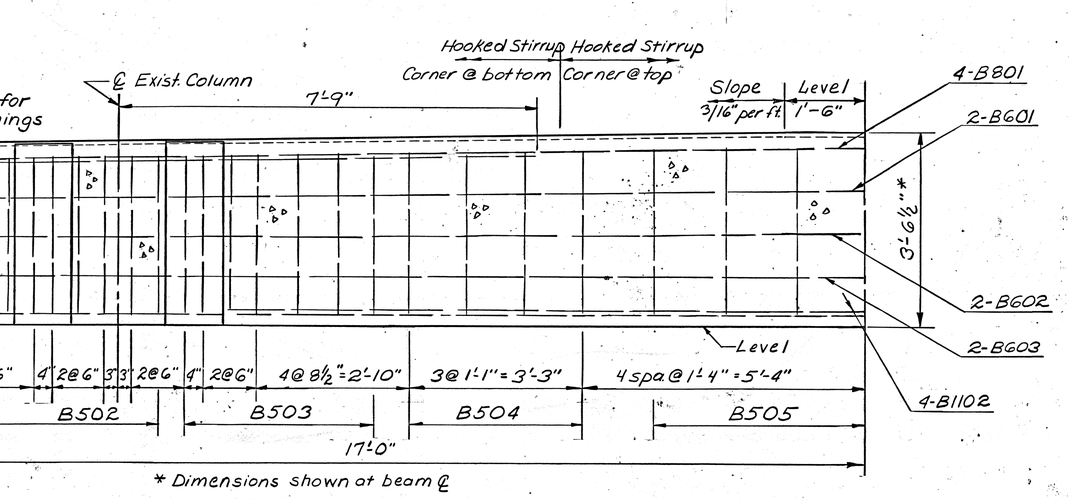
**The contractor shall verify that the void dimensions shown are adequate to accept existing column reinforcing steel before the beams are constructed.



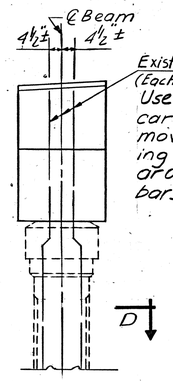
SECTION C-C



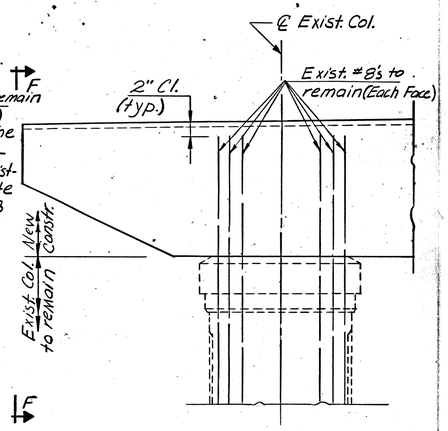
SECTION B-B



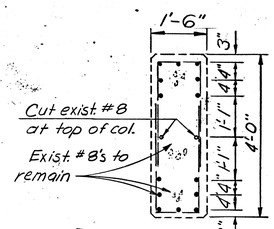
SECTION A-A
(Along Beam ℄)



VIEW F-F



PARTIAL VIEW E-E
(Showing Existing Column)



SECTION D-D

NOTES

LIFTING inserts shall be of the contractor's design approved by the Director. Cut it off close to the beam after erection. Payment included in transverse beams.

NOTES(con't)

SUPPORT locations during storage and transportation shall be under the lifting inserts. Ship, store upright

NOTES(con't)

FOR beam layout plan see sheet 14/72
FOR scupper details see sheets 48/72 and 49/72
BEAMS shall be precast
CONCRETE, Class S

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

15/72

TRANSVERSE BEAM A DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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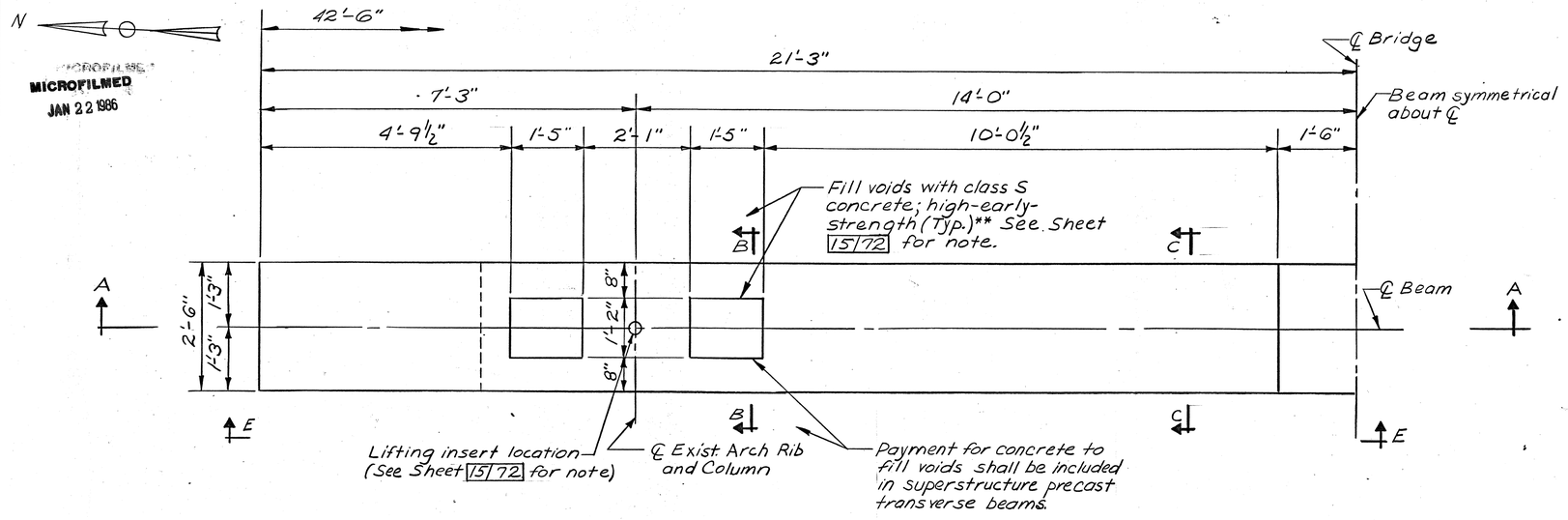
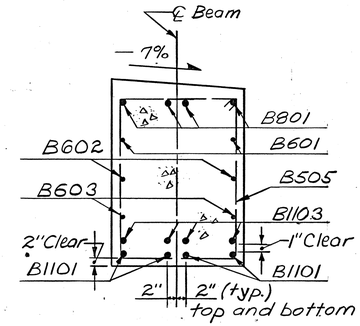
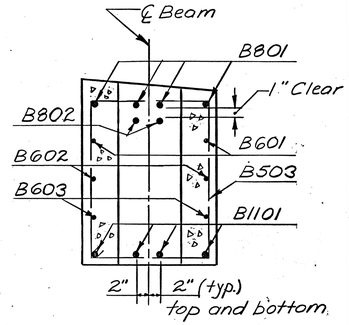
BEL-40-23.38



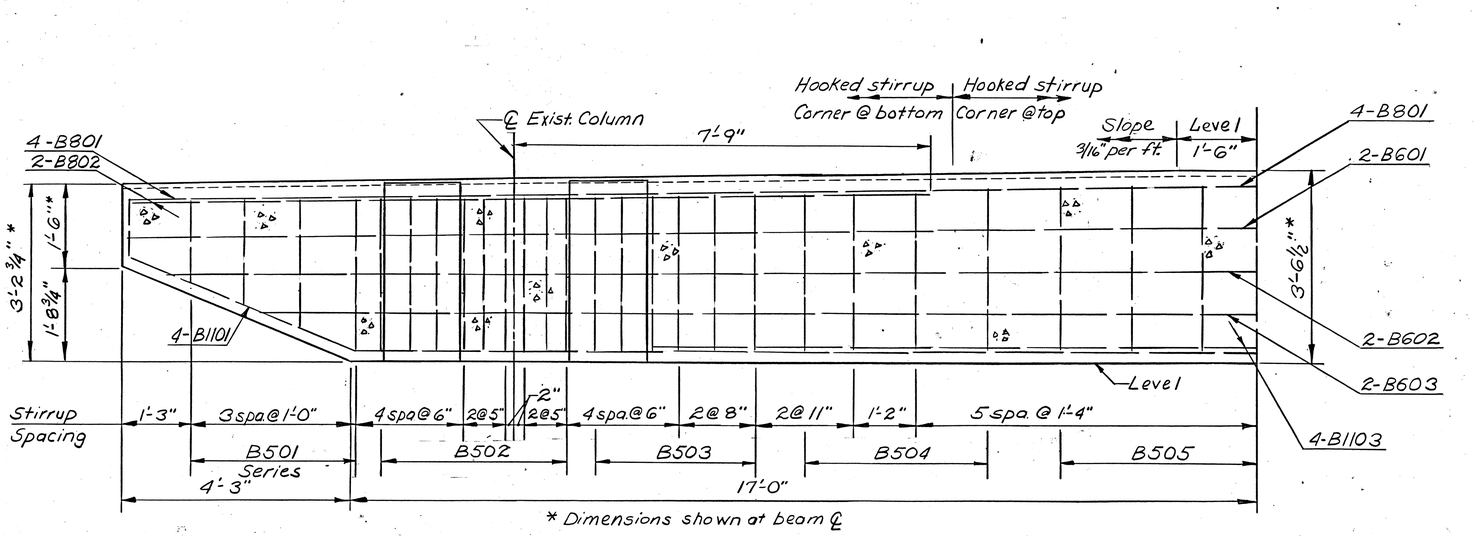
PLAN-BEAM B



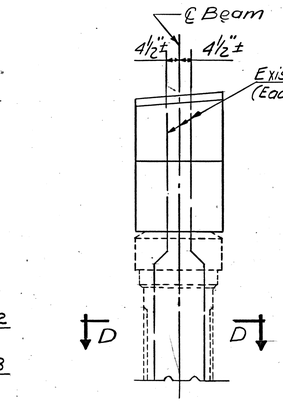
SECTION C-C



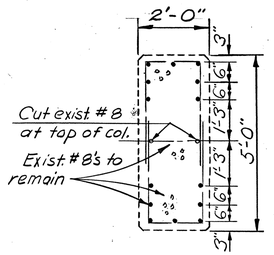
SECTION B-B



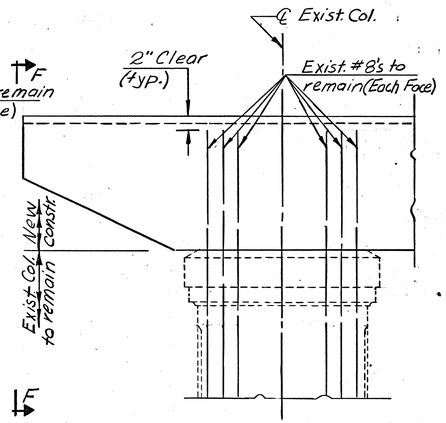
SECTION A-A
(Along Beam ℄)



VIEW F-F



SECTION D-D



PARTIAL VIEW E-E
(Showing Existing Column)

NOTES

BEAMS shall be precast CONCRETE, Class S
FOR beam layout plan see sheet 14/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

16/72

TRANSVERSE BEAM B DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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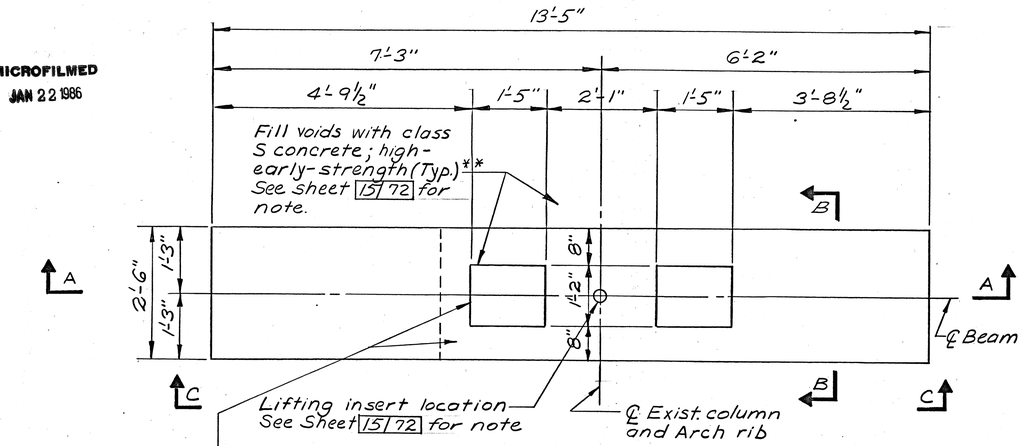
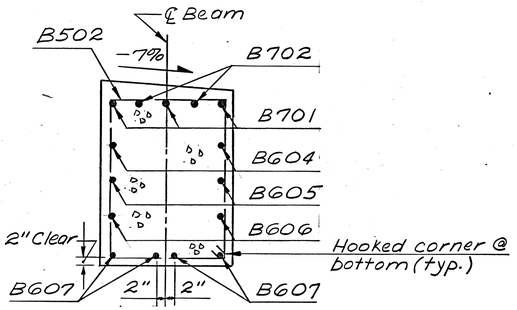
BEL-40-23.38

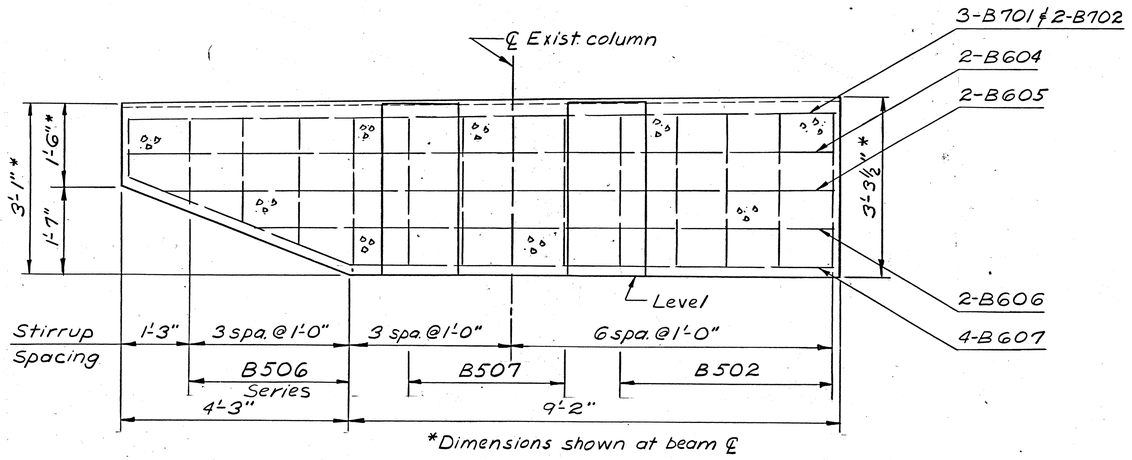
N



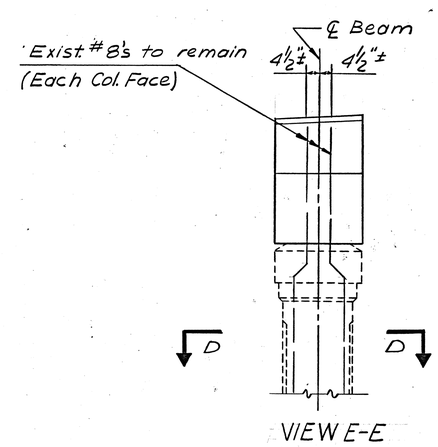
PLAN-BEAM C
(BEAM C, - OPP. HAND)



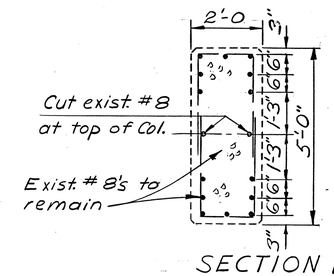
SECTION B-B



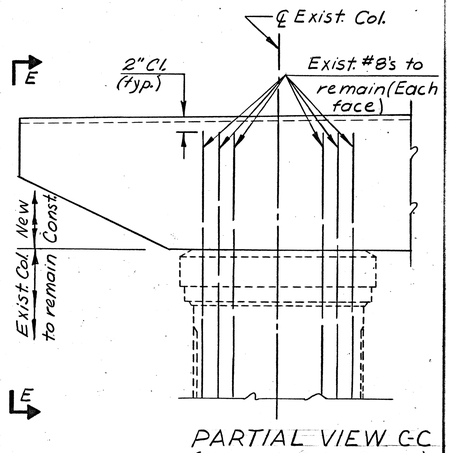
SECTION A-A
(Along Beam ℄)



VIEW E-E



SECTION D-D



PARTIAL VIEW C-C
(Showing Exist. Column)

NOTES

FOR beam layout plan see sheet 14/72

BEAMS shall be precast CONCRETE, Class S

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

17/72

TRANSVERSE BEAMS C&C, DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

1-02.77

BEL-40-23.38

FHWA REGION	STATE	PROJECT	
5	OHIO		

19/74

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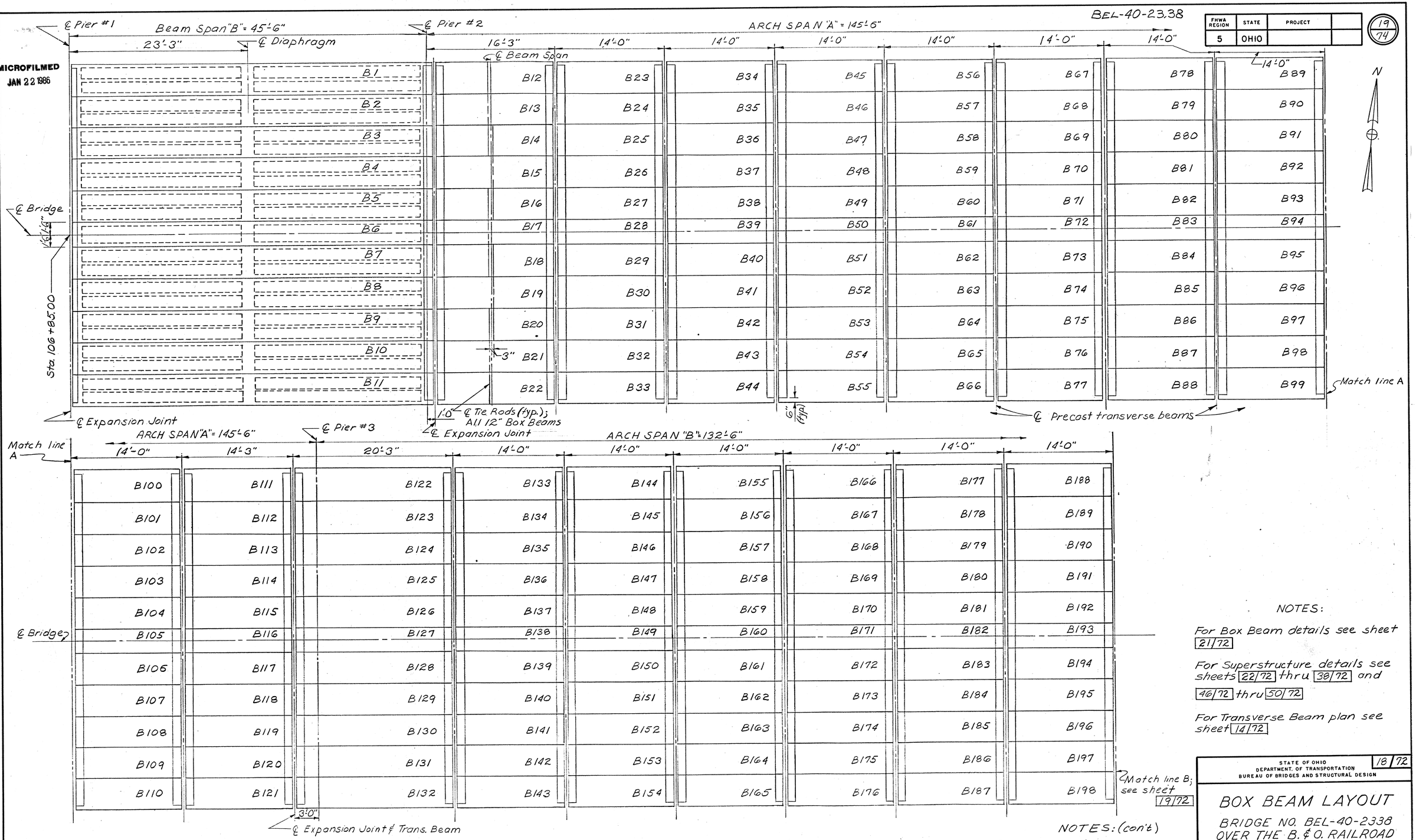
JAN 22 1986



PRESTRESSED CONCRETE BEAM PLAN

NOTES:

For Box Beam details see sheet 21/72

For Superstructure details see sheets 22/72 thru 38/72 and 46/72 thru 50/72

For Transverse Beam plan see sheet 14/72

NOTES: (con't)

Box beams shall have the same identification marks on the shop drawings as on the project plans.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

18/72

BOX BEAM LAYOUT

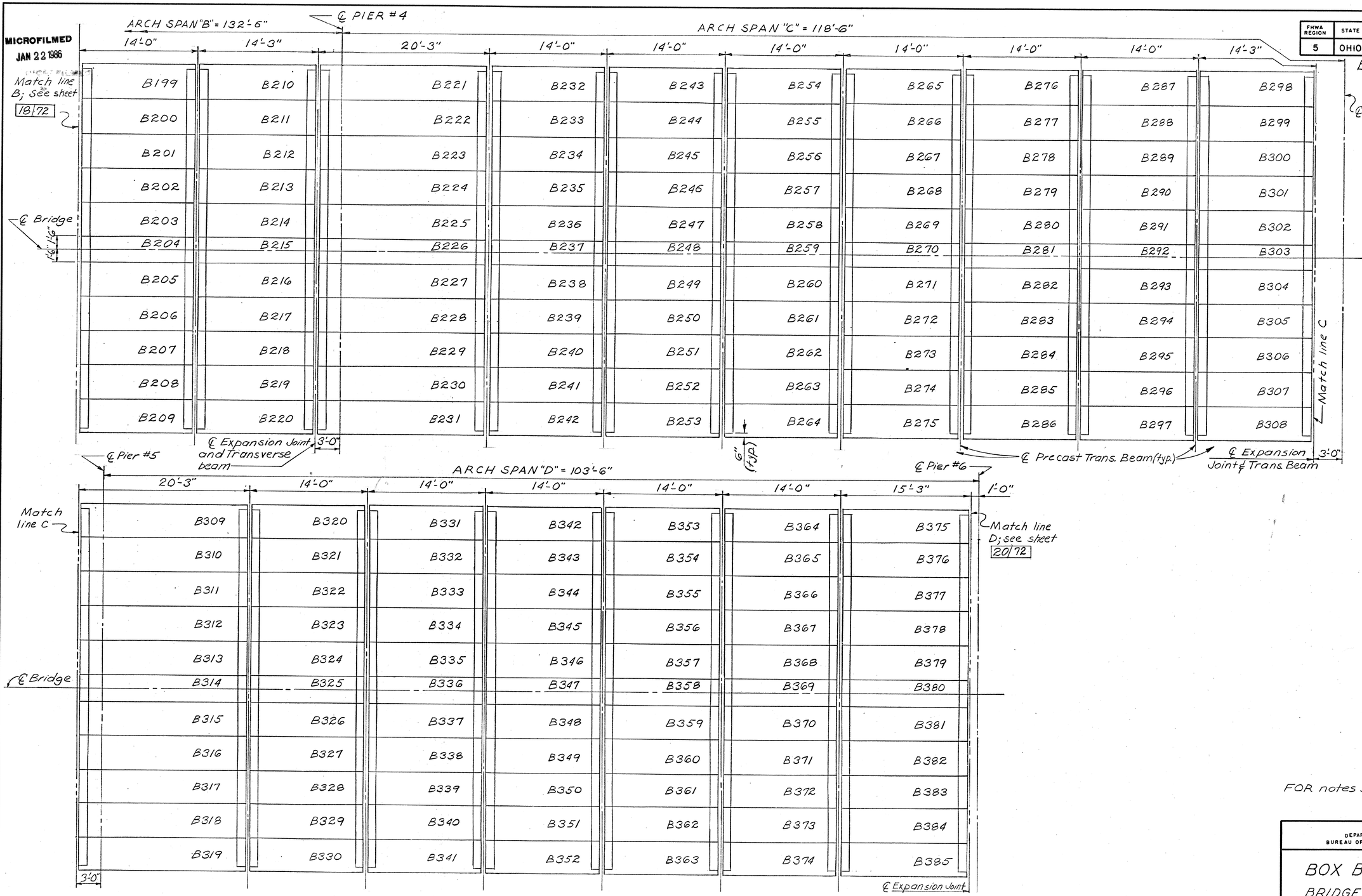
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

20/74

BEL-40-23.38



PRESTRESSED CONCRETE BEAM PLAN

FOR notes see sheet 18/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

19/72

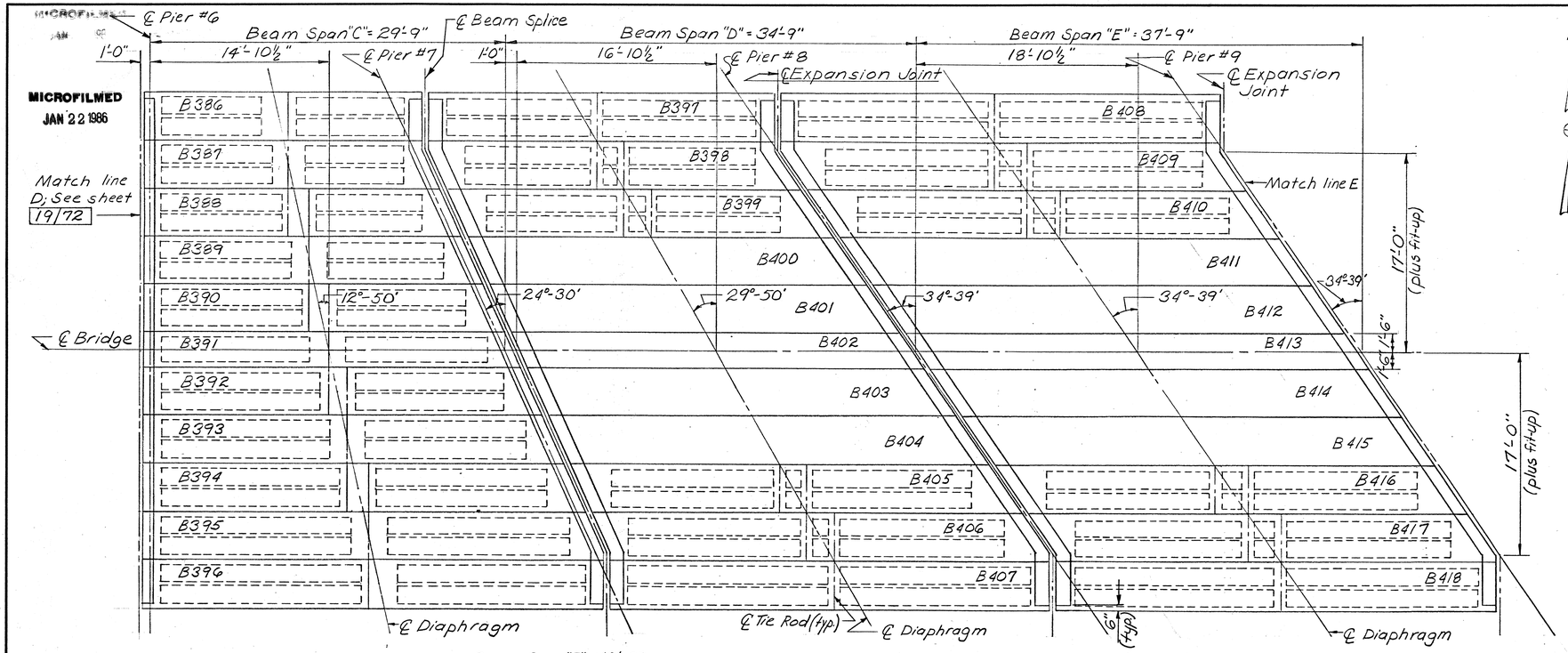
BOX BEAM LAYOUT

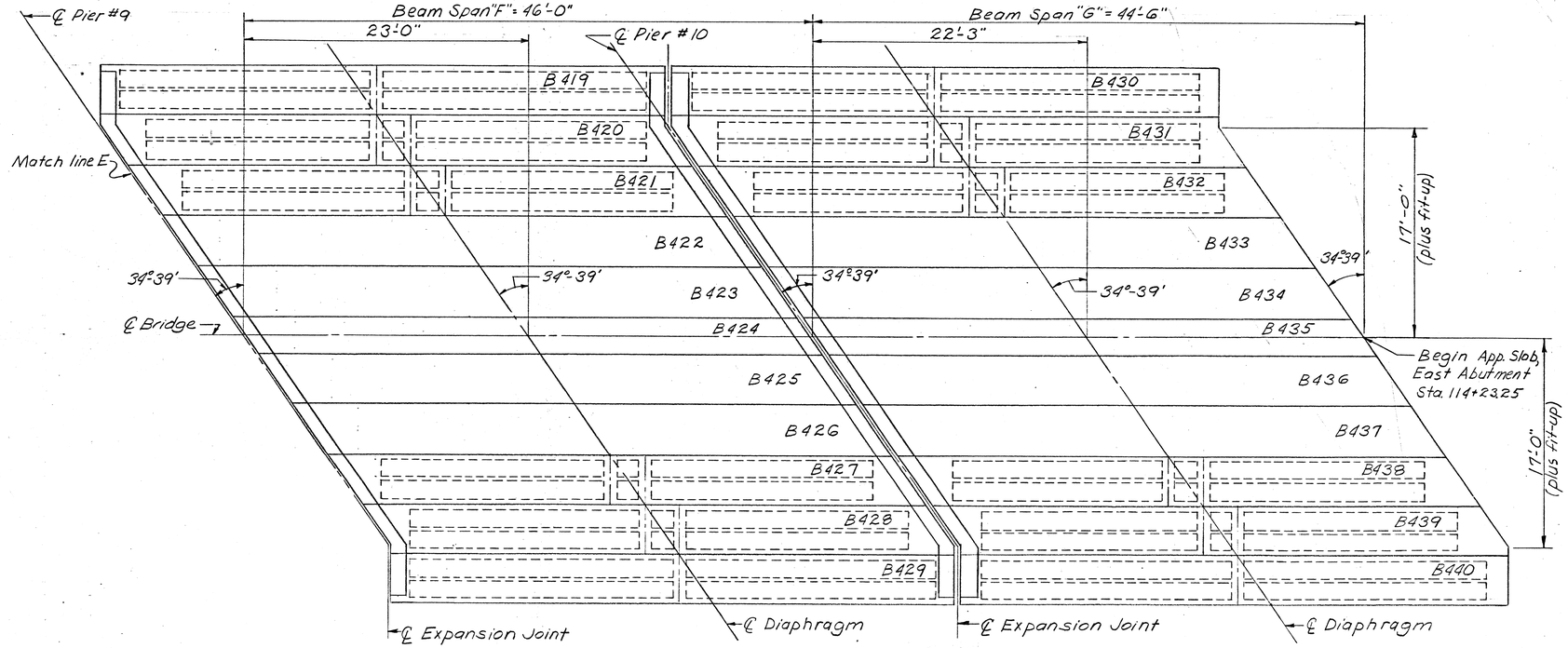
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-40-23.38





PRESTRESSED CONCRETE BEAM PLAN

For notes see sheet 18/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

20/72

BOX BEAM LAYOUT

BRIDGE NO. BEL-40-23.38
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1

FHWA REGION	STATE	PROJECT	
5	OHIO		

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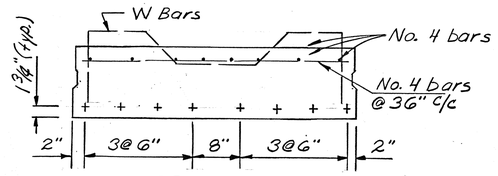
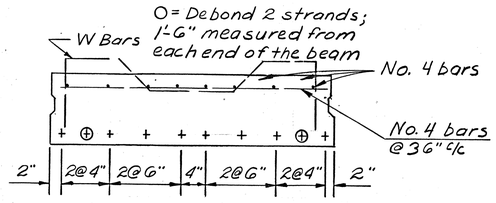
BEL-40-23.38



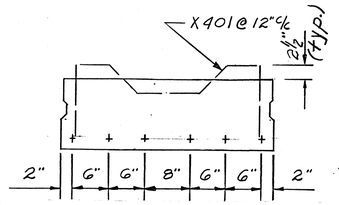
CB 12-48
(8 Strands)

All beams in Arch Spans A,B,C,D except B122 to B132 Incl.; B221 to B231 Incl.; B309 to B319 Incl.; and B17, B28, B39, B50, B61, B72, B83, B94, B105, B116, B138, B149, B160, B171, B182, B193, B204, B215, B231, B248, B259, B270, B281, B292, B303, B325, B336, B347, B358, B369, B380



CB 12-48
(10 Strands)

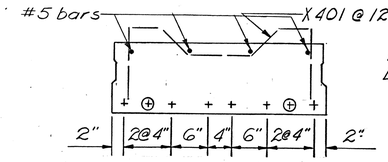
Beams B122 to B126 Incl.; B128 to B132 Incl.; B221 to B225 Incl.; B227 to B231 Incl.; B309 to B313 Incl.; B315 to B319



B 12-36
(6 Strands)

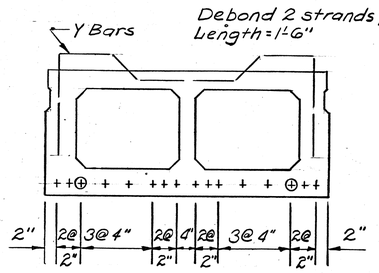
Beams B17, B28, B39, B50, B61, B72, B83, B94, B105, B116, B138, B149, B160, B171, B182, B193, B204, B215, B237, B248, B259, B270, B281, B292, B303, B325, B336, B347, B358, B369, B380
(modified for composite construction)

Dimensions and reinforcing not shown is the same as for B12-36 (8 Strands, this sheet)



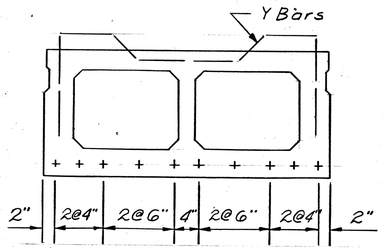
B 12-36
(8 Strands)

Beams B127, B226, B314
(modified for composite construction)



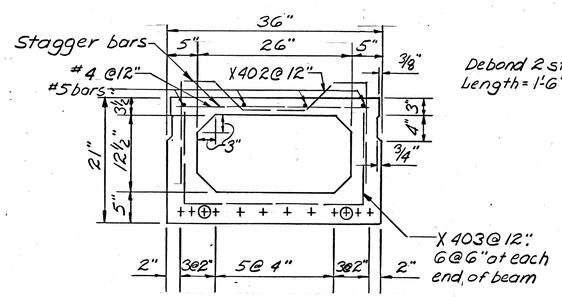
CB 21-48
(16 Strands)

Beams B1 to B5 Incl.; B7 to B11 Incl.; B419 to B423 Incl.; B425 to B429 Incl.; B430 to B434 Incl.; B436 to B440 Incl.

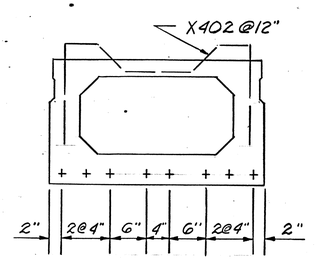


CB 21-48
(10 Strands)

Beams B386 to B390 Incl.; B392 to B396 Incl.; B397 to B401 Incl.; B403 to B407 Incl.; B408 to B412 Incl.; B414 to B418 Incl.

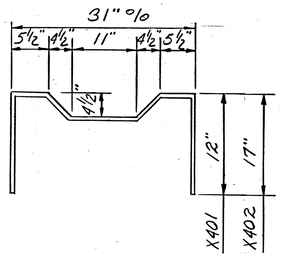


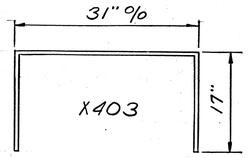
B 21-36
(12 Strands)
(modified for composite construction)
Beams B6, B424, B435



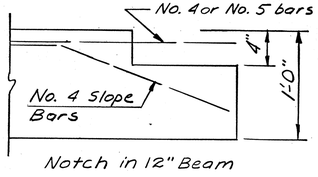
B 21-36
(8 Strands)
(modified for composite construction)
Beams B391, B402, B413

Dimensions and reinforcement not shown is the same as for B21-36 (12 Strands)





Bending Diagrams
(Bars X401, X402, W, Y shall be epoxy coated. Payment included in Item 515)



Notch in 12" Beam

Additional Top Bars Each End

Beam	Bar Size	No. Req'd	Length
CB 21-48 (16 Strands)	#4	7	9'-6"
CB 21-48 (10 Strands)	#4	3	6'-0"
B 21-36 (12 Strands)	#5	3	8'-6"
B 21-36 (8 Strands)	#5	1	6'-6"

NOTES

For beam notches and dowel hole locations see sheets 26/72, 49/72, 26A/72,

For additional beam details see Std. Drwg. PSBD-1-71, Sheets 1, 2, 3

Top surface finish for composite members as per Item 515.06.

Sloping sides of beams at ℄ of bridge is not required.

Box beams are composite members

STATE OF OHIO
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BUREAU OF BRIDGES AND STRUCTURAL DESIGN

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BOX BEAM DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	-

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BEL-40-23.38

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N

℄ Pier #1 and expansion joint — Beam Span "B" — ℄ Pier #2 — Arch Span "A" — ℄ Pier #3 — Arch Span "B" — ℄ Pier #4

SE 504, SE505-30 spa.@1'-6"=45'-0" | SE 504, SE505-93 spa.@1'-6"(+)=140'-3" | SE504, SE505-87 spa.@1'-6"(+)=131'-3"

4-SE506 (Top of sidewalk) | ℄ Transverse Beam | 4-SE501 (sidewalk) 4 per line | 4-SE507 Lap SE501 | ℄ Transverse Beam | 4-SE501 (sidewalk) 4 per line | 4-SE509 Lap SE501

Sidewalk

SE 403-32 spa.@1'-4"=42'-8" | SE 402-60 spa@9"=45'-0" | 28-SE405 between SE401@each beam | SE401-32 spa@1'-4"=42'-8" 4 per line | 9-Transverse Beams | 3-SE508 @ each beam | 33-SE404 Lap SE401 | 28-SE405 between SE401@each beam | SE401-32 spa@1'-4"=42'-8" 4 per line | 8-Transverse Beams | 3-SE508@ each beam | 33-SE406 Lap SE401

SE402-187 spa.@9"=140'-3" | SE402-175 spa.@9"=131'-3"

2-SE501(curb) 4 per line | 1-SE508@ each beam

Curb

SE502, SE503-30 spa. @1'-6"=45'-0" | SE502, SE503-93 spa.@1'-6"(+)=140'-3" | SE502, SE503-87 spa.@1'-6"(+)=131'-3"

2-SE509 Lap SE501

3'-0"

2-SE506 (curb) | ℄ Expansion Joint Arch Span "C" | 2-SE501(curb) 4 per line | 2-SE507 Lap SE501 | ℄ Expansion Joint Arch Span "D"

℄ Expansion Joint and match line A

℄ Pier #4 | ℄ Pier #5 | ℄ Pier #6 | ℄ Pier #7 Beam Span "D" | ℄ Pier #8 and expansion joint | Span "C"

SE504, SE505-78 spa.@1'-6"=117'-0" | SE504, SE505-69 spa.@1'-6"(+)=104'-3" | SE504, SE505-36 Spa.@1'-6"(-)=53'-5"

Match line A

℄ Transverse Beam | 4-SE501(sidewalk) 3 per line | 4-SE510 Lap SE501 | ℄ Transverse Beam | 4-SE501(sidewalk) 3 per line | 4-SE511 Lap SE501 | 4-SE515 Lap SE501 | 3-SE512 @ Pier | 4-SE501 (sidewalk) | SE414 Lap SE401

3-SE508@ each beam | 3-SE508 @each beam

28-SE405 between SE401@each beam | SE401-32 Spa@1'-4"=42'-8" 3 per line | 7-Transverse Beams | 33-SE407 Lap SE401 | 28-SE405 between SE401@each beam | SE401-32 Spa@1'-4"=42'-8" 3 per line | 6-Transverse Beams | 33-SE408 Lap SE401 | 1'-4" | 24 spa@1'-4"=32'-0" | 28-SE409 between SE401, SE410, SE416 @Pier | 3 spa. @1'-4" = 4'-0" | SE410 Lap SE401

SE402-156 spa.@9"=117'-0" | SE402-139 spa.@9"=104'-3" | SE402-71 Spa.@9"=53'-3" | SE417-3 Spa. @9"(-)=23'-0"

2-SE501(curb) 3 per line | 1-SE508@ each beam | 2-SE501(curb) 3 per line | 1-SE508 @ each beam

SE502, SE503-78 spa.@1'-6"=117'-0" | SE502, SE503-69 spa.@1'-6"(+)=104'-3" | SE502, SE503-51 Spa. @1'-6"(+)=76'-11"

2-SE510 Lap SE501 | 2-SE511 Lap SE501 | Match Line B

℄ Pier #8 | ℄ Pier #9 and expansion joint | ℄ Pier #10 and expansion joint | ℄ Expansion Jt. | East Abutment | ℄ Expansion Joint | SE401 | 3 spa.@1'-4"= 4'-0" | SE416 Lap SE401 | 2-SE516 Lap SE501

Beam Span "E" | Beam Span "F" | Beam Span "G" | 2-SE501 (Curb) | 1-SE512 @ Pier

Match Line B

SE504, SE505-25 Spa. @1'-6"(-)=37'-3" | SE504, SE505-30 Spa. @1'-6"(+)=45'-6" | SE504, SE505-29 Spa. @1'-6"(+)=43'-11"

4-SE517(Sidewalk) | 4-SE514(Sidewalk) | 4-SE513(Sidewalk)

9" | SE415-31 Spa. @9"=23'-3" | SE402-17 Spa.@9"=12'-9" | SE415-31 Spa. @9"=23'-3" | SE402-28 Spa. @9"=21'-0" | SE415-31 spa. @9"=23'-3" | SE402-26 Spa. @9"=19'-6"

SE411-32 Spa.@1'-4"=42'-8" | SE412-32 Spa.@1'-4"=42'-8" | SE413-32 Spa.@1'-4"=42'-8"

9" | SE415-31 Spa. @9"=23'-3" | 9" | SE415-31 Spa.@9"=23'-3" | 9" | SE415-31 spa. @9"=23'-3"

2-SE517(Curb) | 2-SE514(Curb) | 2-SE513(Curb)

SE502, SE503-25 Spa.@1'-6"(-)=37'-3" | SE502, SE503-30 Spa. @1'-6"(+)=45'-6" | SE502, SE503-29 spa.@1'-6"(+)=43'-11"

SLAB REINFORCING STEEL PLAN

Parapet Steel Not Shown; See Sheets 27/72 thru 35/72 and 38/72

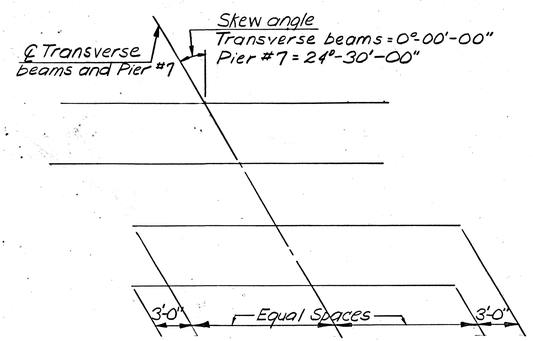

Diagram Showing Stagger of SE405, SE409, SE508, SE512 Bars

NOTES

Lap all #4 bars 1'-4"; Lap all #5 bars 1'-8"

For additional details see sheet numbers 23/72, 24/72

Bars with a SE designation are to be epoxy coated. For example SE401.

For prestress box beam layout see sheets 18/72 to 20/72 Incl.

For transverse beam plan see sheet 14/72

NOTES (Con't)

For SJ401 and SJ501 reinforcement locations see sheets 26/72, 49/72

STATE OF OHIO
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BUREAU OF BRIDGES AND STRUCTURAL DESIGN

22/72

SUPERSTRUCTURE DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

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5	OHIO		

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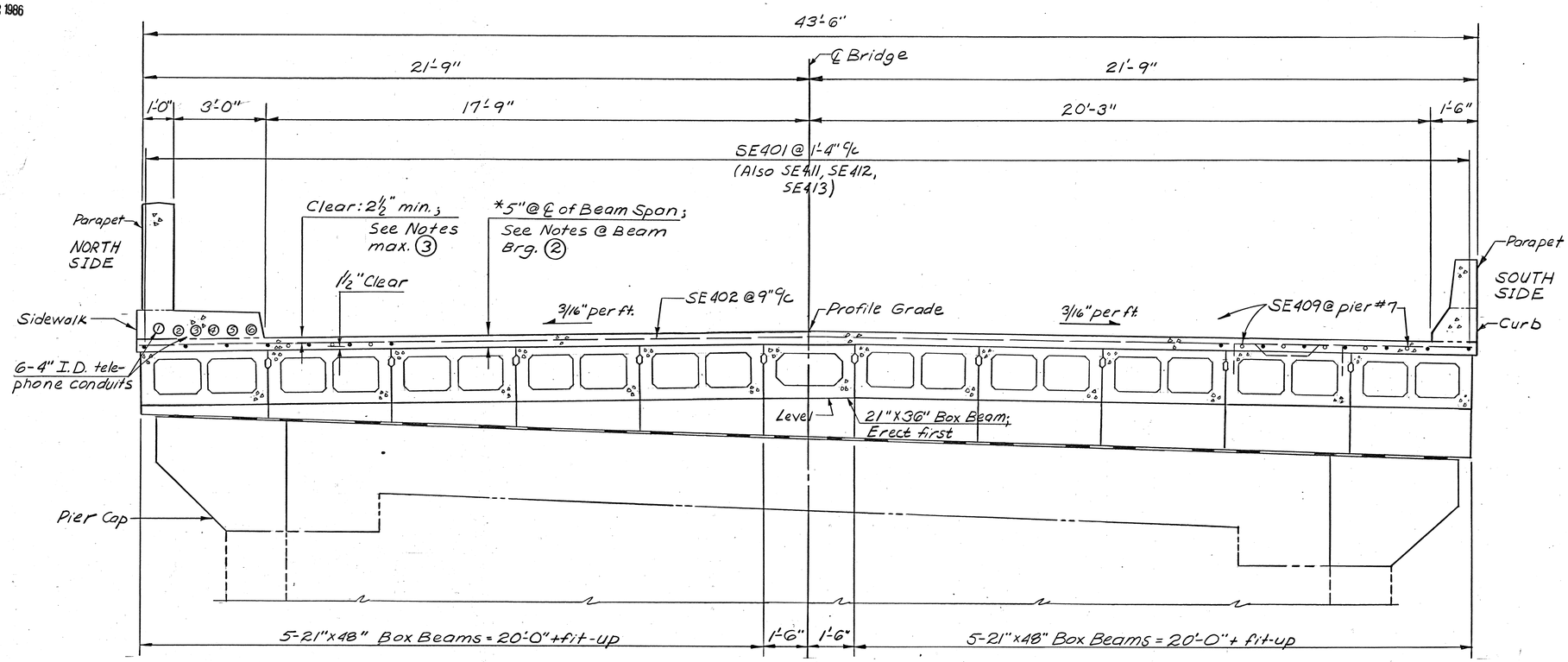

TRANSVERSE DECK SECTION
THRU BEAM SPANS

NOTES:

*This is the nominal dimension. The pay quantity of that portion of the deck concrete over the beams shall be based on the average of this dimension and the depth at beam bearings even though deviation from this average may occur because the top of the beam may not have the camber onticipated in the design; i.e., see "Calculated camber allowance" (1) in the table. The camber of beams shall be measured in the field before the deck is placed. The actual depth at mid-span shall be the nominal dimension plus or minus the difference between actual and anticipated camber.

For slab steel plan see sheet 22/72.
For parapet steel spacing see sheet 27/72 and 38/72.
For parapet, curb and sidewalk details see sheet 24/72.
For Beam Plan see sheet 18/72 and 20/72.

Non-shrinking mortar used to fill the beam Key-Ways, the tie-rod recesses in the fascia beams and the dowel holes, also the anchor dowels shall be included with Item 515 for payment.

NON-SHRINKING MORTAR: In lieu of the requirements for non-shrinking mortar and grout given on Standard Drawing PSBD-1-71, non-shrinking mortar shall be made with materials and proportions as follows:

2680 lbs. sand, 703.02, @ 6% moisture
9 bags cement, 701.05
40 gallons water, 499.02
9 lbs. expanding grouting aid admixture, Intraplast-N by Sika Chemical Corporation, or approved equal

The cement, sand and water shall be mixed first, after which the admixture shall be added. Batch size shall be limited so placement can be completed within 30 minutes. Water shall not be added to increase flowability which has been decreased by delayed use of mortar.

NOTES: (Con't)

Dowel holes for anchor dowels in the supporting members shall be paid for under Item 510.

Voids shall be vented in the top flange to prevent heaving of the top flange during curing, to be closed after curing.

NOTES: (Con't)

Location	Calculated Camber Allowance Inches (1)	Slab Thick. @ Bearing Inches (2)	Clearance @ Bearing Max.-Inches (3)
Pier #1	1 3/4	6 3/4	4 1/4
Pier #2			
21" Beam	1 3/4	6 3/4	4 1/4
12" Beam	3/4	5 3/4	3 1/4
Pier #6			
12" Beam	3/4	5 3/4	3 1/4
21" Beam	3/4	5 3/4	3 1/4
Pier #7,8	3/4	5 3/4	3 1/4
Pier #9,10	1 3/4	6 3/4	4 1/4
East Abut.	1 3/4	6 3/4	4 1/4

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DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN
23/72

SUPERSTRUCTURE DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

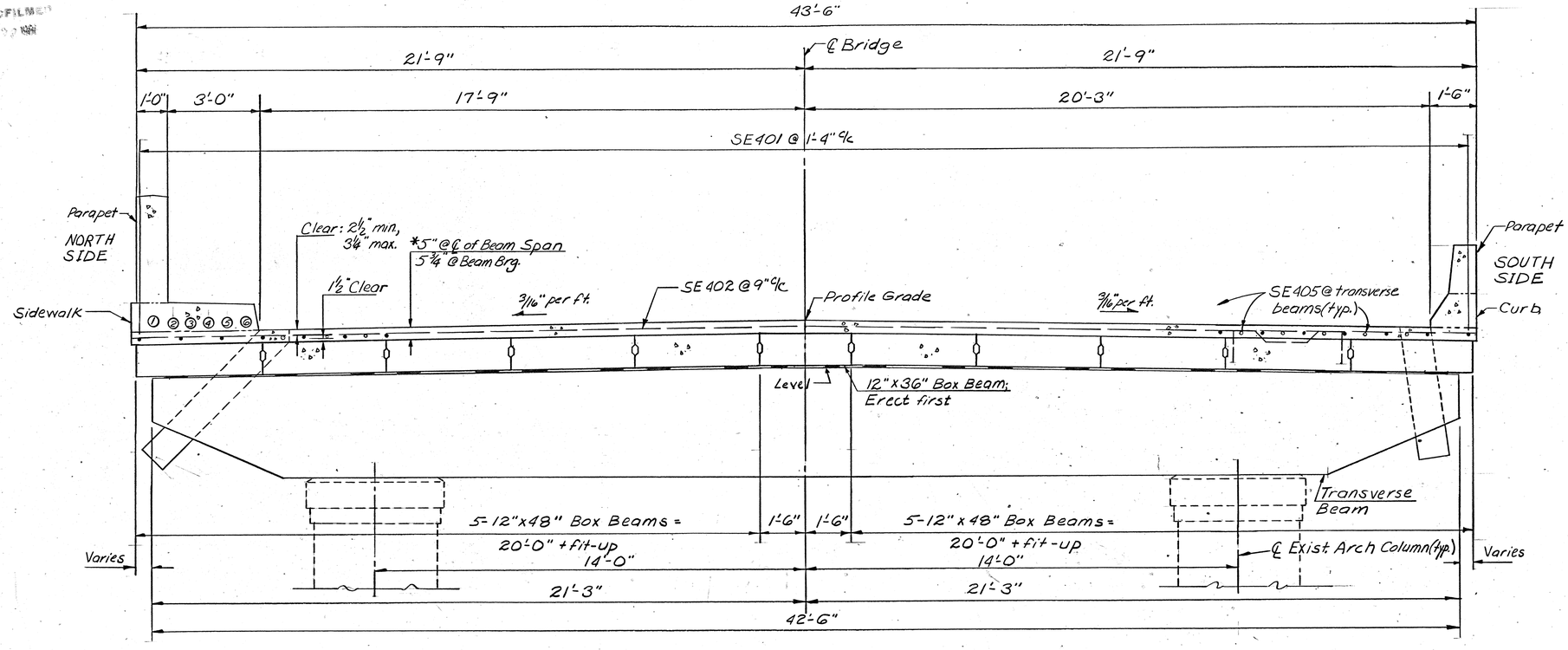
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	W.J.J.	12-1-80	

N50277

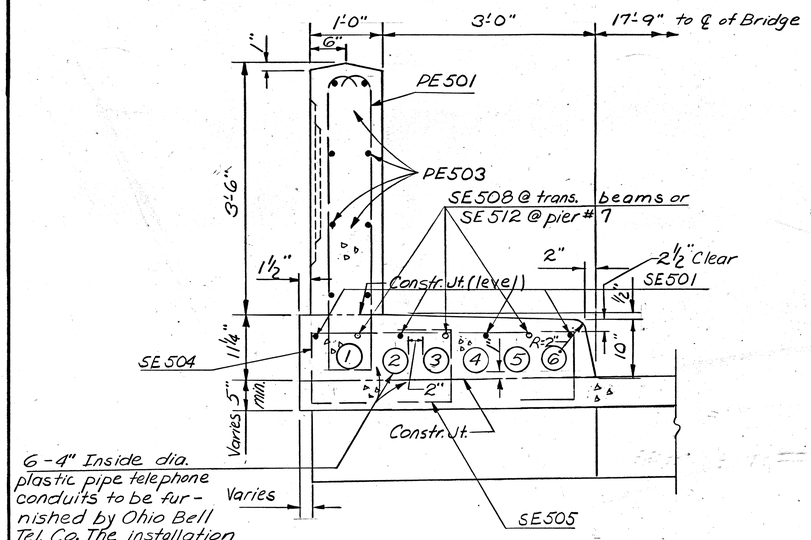
FHWA REGION	STATE	PROJECT	
5	OHIO		

23/74

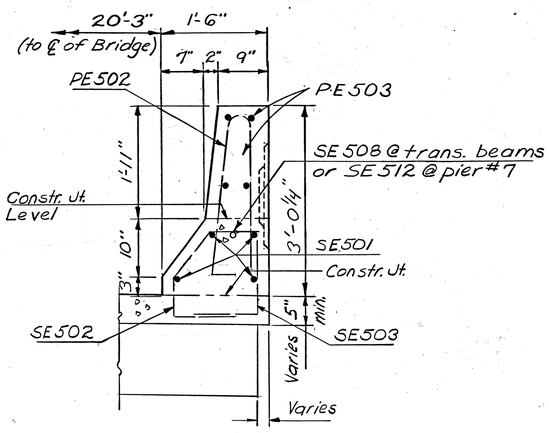
BEL-40-23.38



TRANSVERSE DECK SECTION
THRU ARCH SPANS



NORTH SIDE - SECTION



SOUTH SIDE - SECTION

NOTES:

*This is the nominal dimension. The pay quantity of that portion of the deck concrete over the beams shall be based on the average of this dimension and the depth at beam bearings even though deviation from this average may occur because the top of the beam may not have the camber anticipated in the design; i.e., ¾". The camber of beams shall be measured in the field before the deck is placed. The actual depth at mid-span shall be the nominal dimension plus or minus the difference between actual and anticipated camber.

NOTES:

For slab steel plan see sheet 22/72.
For parapet steel spacing see sheet 28/72 thru 35/72
Scupper location on sheet 14/72.
Scupper details on sheet 48/72.
Field cut reinforcing steel at the scuppers.

For Beam Plan see sheets 18/72; 19/72

Calculated camber for all 12" box beams = ¾"

For additional notes see sheet 23/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

24/72

SUPERSTRUCTURE DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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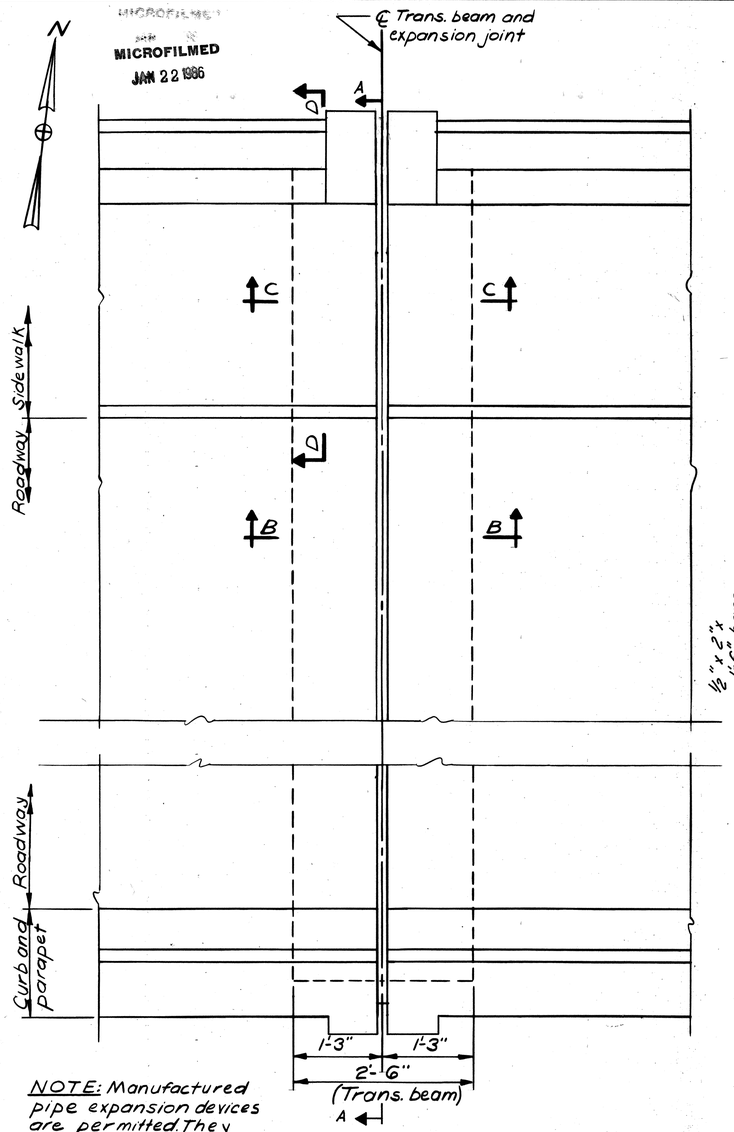
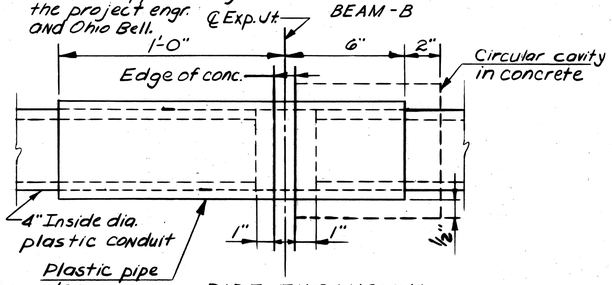
BEL-40-23.38



PLAN
BEAM-B

NOTE: Manufactured pipe expansion devices are permitted. They shall be approved by the project engr. and Ohio Bell.

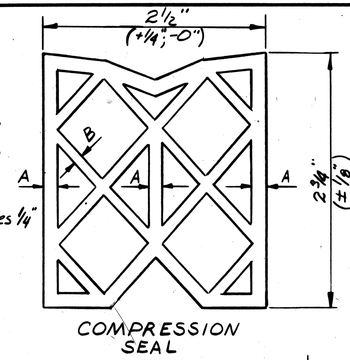


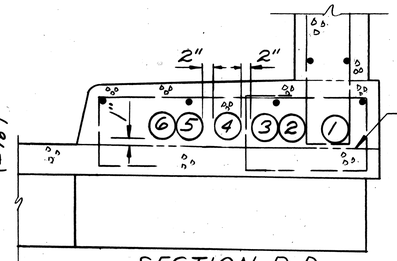
PIPE EXPANSION JOINT DETAIL

System "A" shall be used to paint the steel.

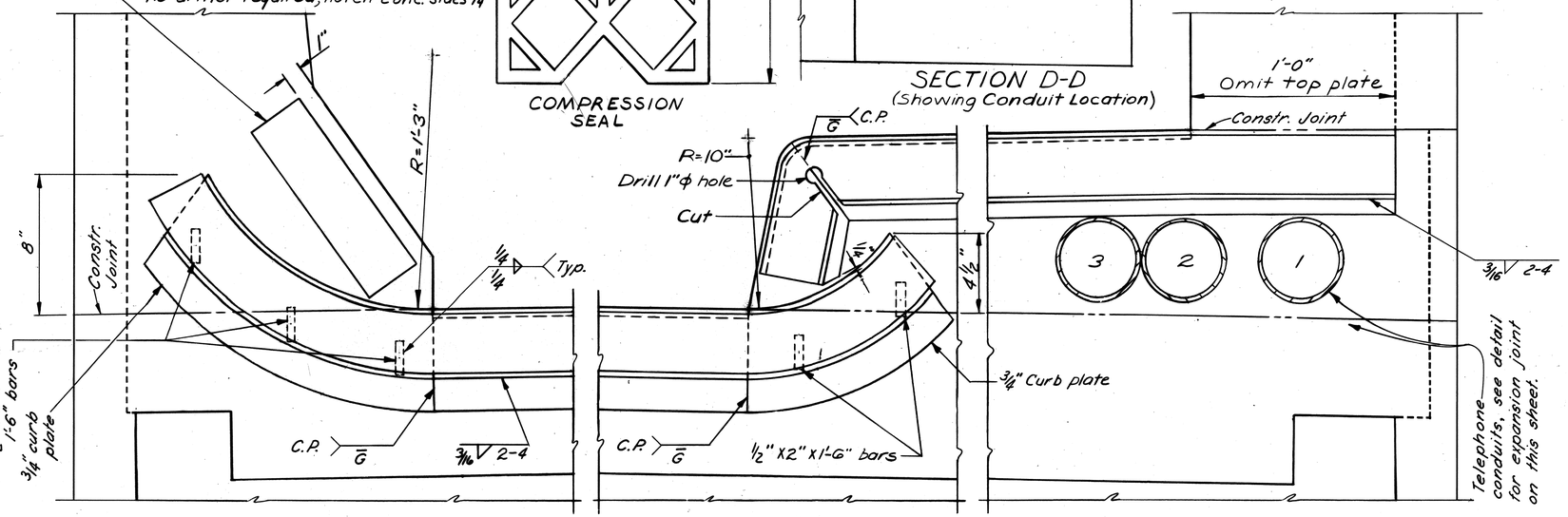
$A = 3/16" \begin{cases} +3/64 \\ -1/64 \end{cases}$

$B = 3/32" \begin{cases} +1/32" \\ -1/64" \end{cases}$

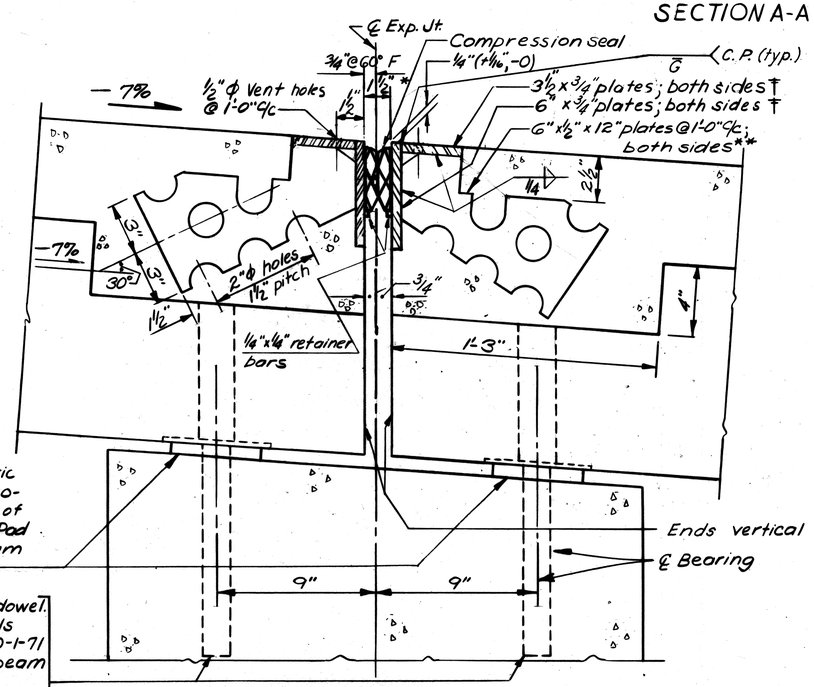




SECTION D-D
(Showing Conduit Location)

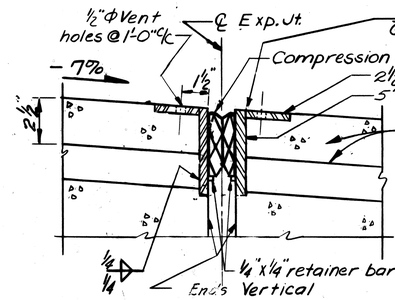


SECTION A-A



SECTION B-B

C.P. - Complete Penetration



SECTION C-C

NOTES (cont.)

⅛" x 5" x 9" preformed bearing pad shims shall be placed on bottom of bearing pads when required for proper bearing. The number supplied shall be 2 per beam. However, only 25% of the total number of shims shall be furnished until it is determined how many are required. Shims in excess of the actual requirement shall be non-performed.

NOTES:

* Setting temperature of 60° F. For each 20° F. increase or decrease in setting temperature the dimension shall be reduced or increased by 3/16" respectively.

** Plates shall be placed within 6" of each side of the apex of roadway. The holes may be burned in the plate.

† At the apex of roadway the plates shall be field welded (C.P.). No other splices permitted unless shown on the plans. (Grind welds flush at top plate and in contact with seal)

All 2" round holes in the box beams shall be vertical

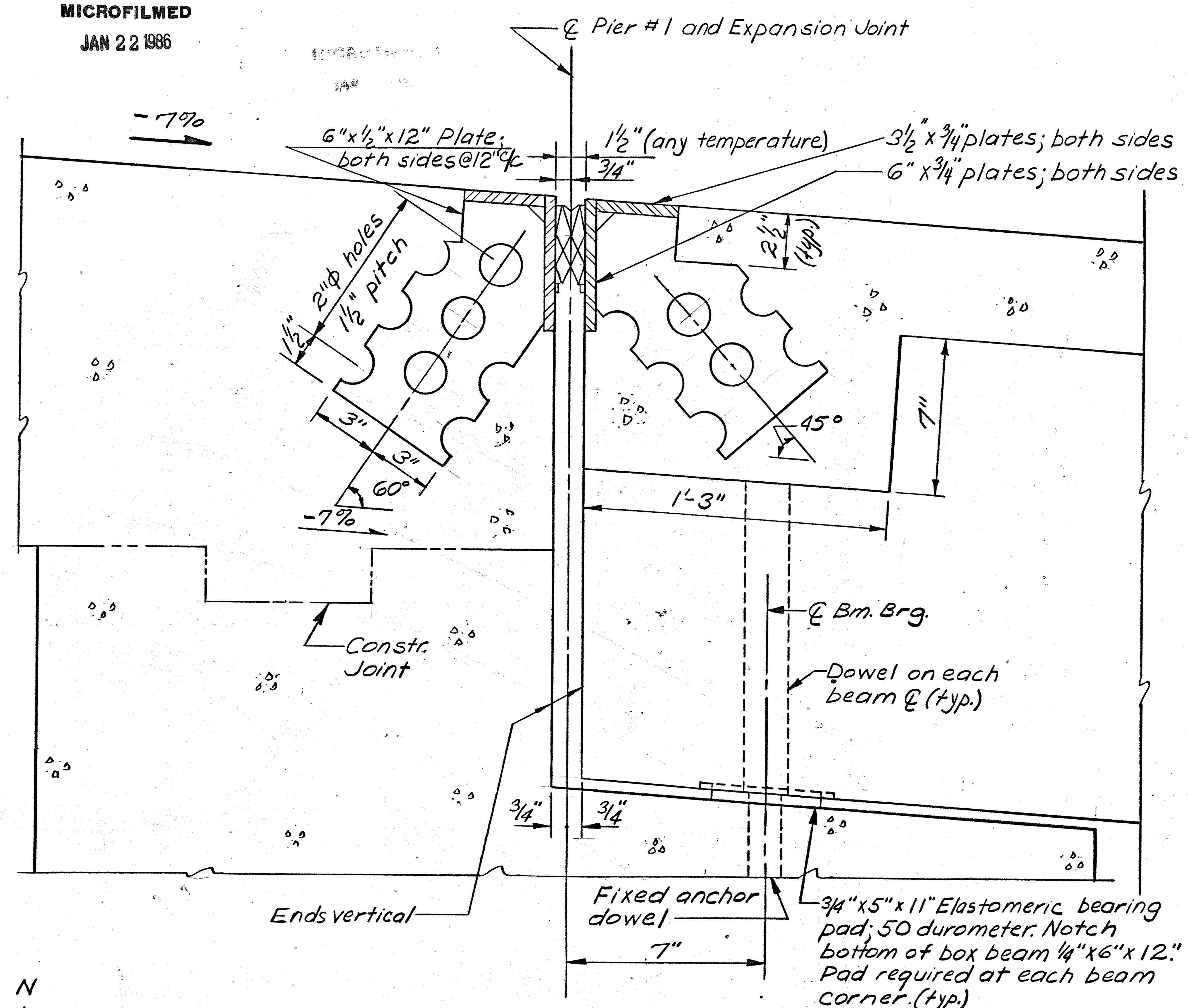
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

25/72

SUPERSTRUCTURE JOINT DETAILS

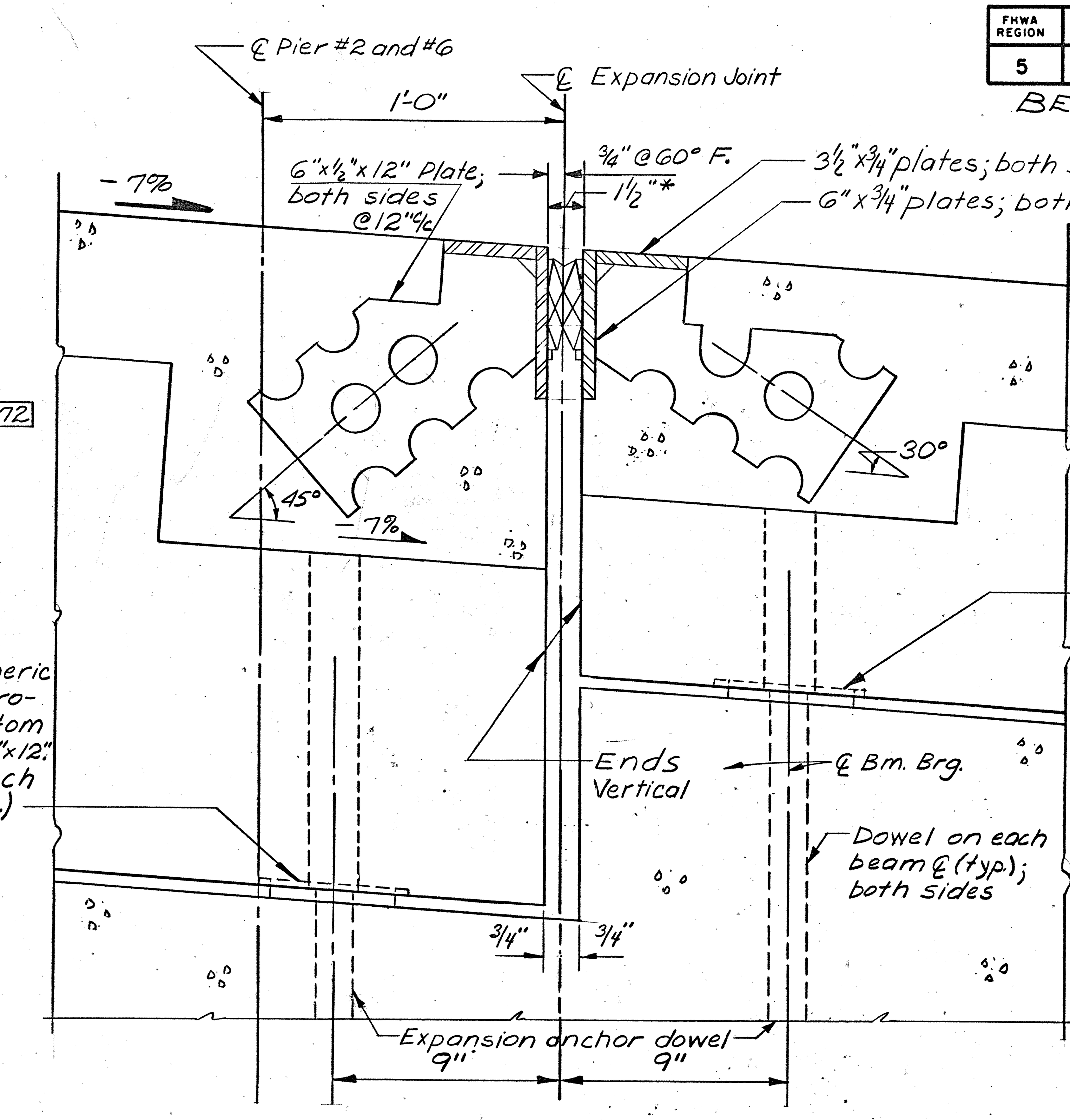
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
V.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	



SECTION
PIER 1

NOTE: For details not shown for expansion joints see sheet 25/72, 49/72

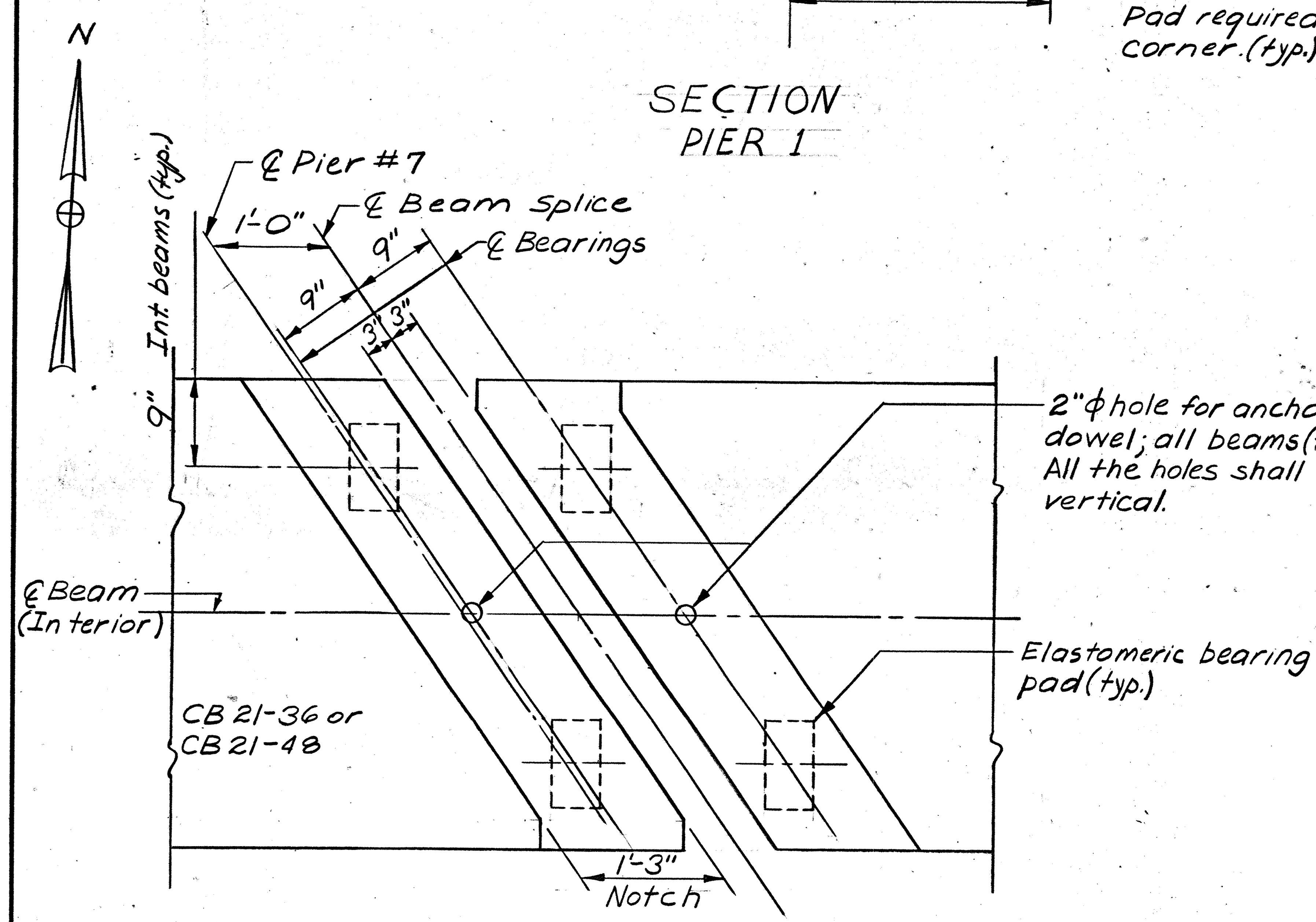


* Setting temperature of 60°F. For each 20°F. increase or decrease in setting temperature the dimension shall be reduced or increased by 3/16" respectively

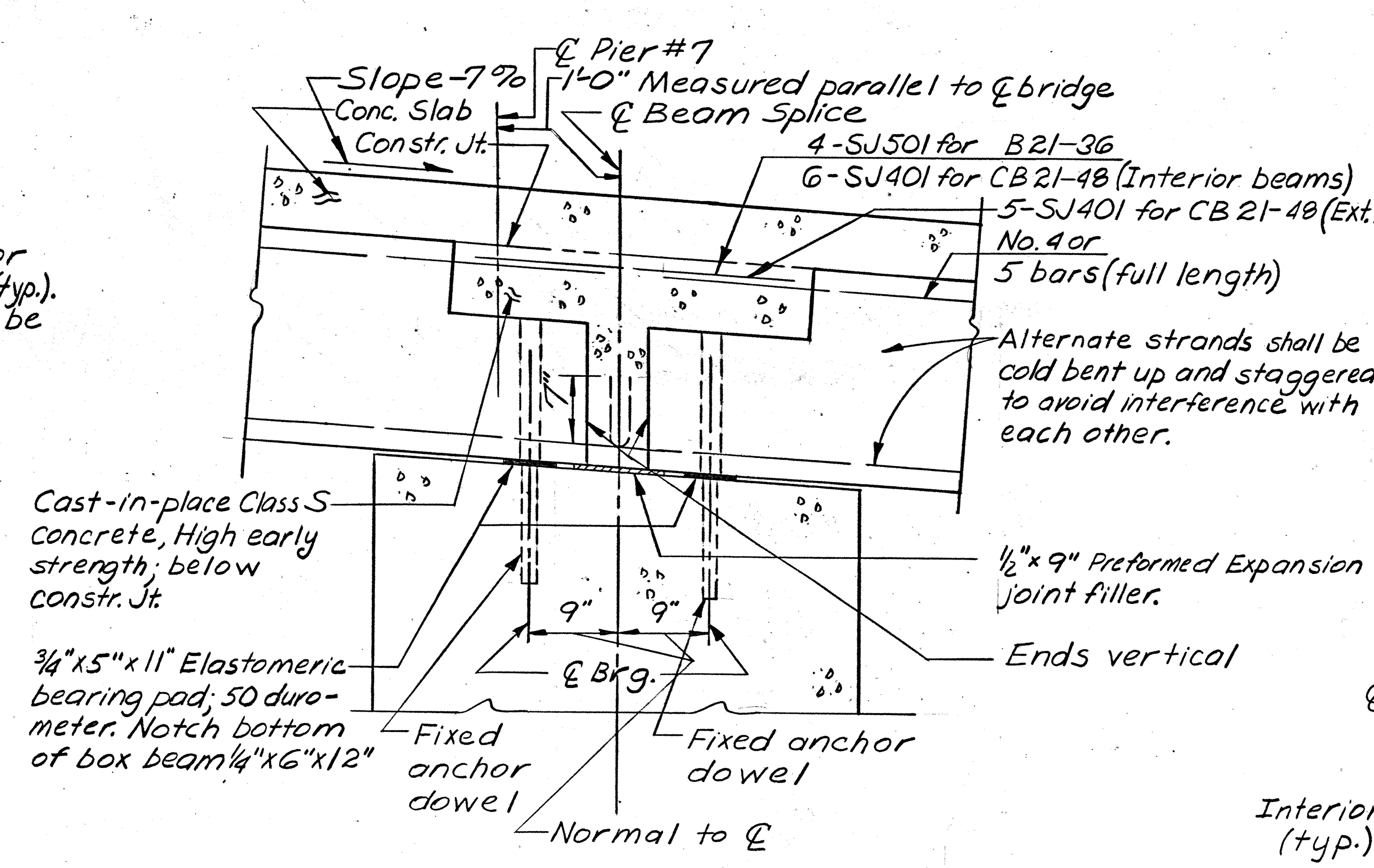
NOTE

1/8"x5"x11" Preformed bearing pad shims shall be placed on bottom of bearing pads when required for proper bearing. The number supplied shall be 2 per beam. However, only 25% of the total number of shims shall be furnished until it is determined how many are required. Shims in excess of the actual requirement shall be non-performed.

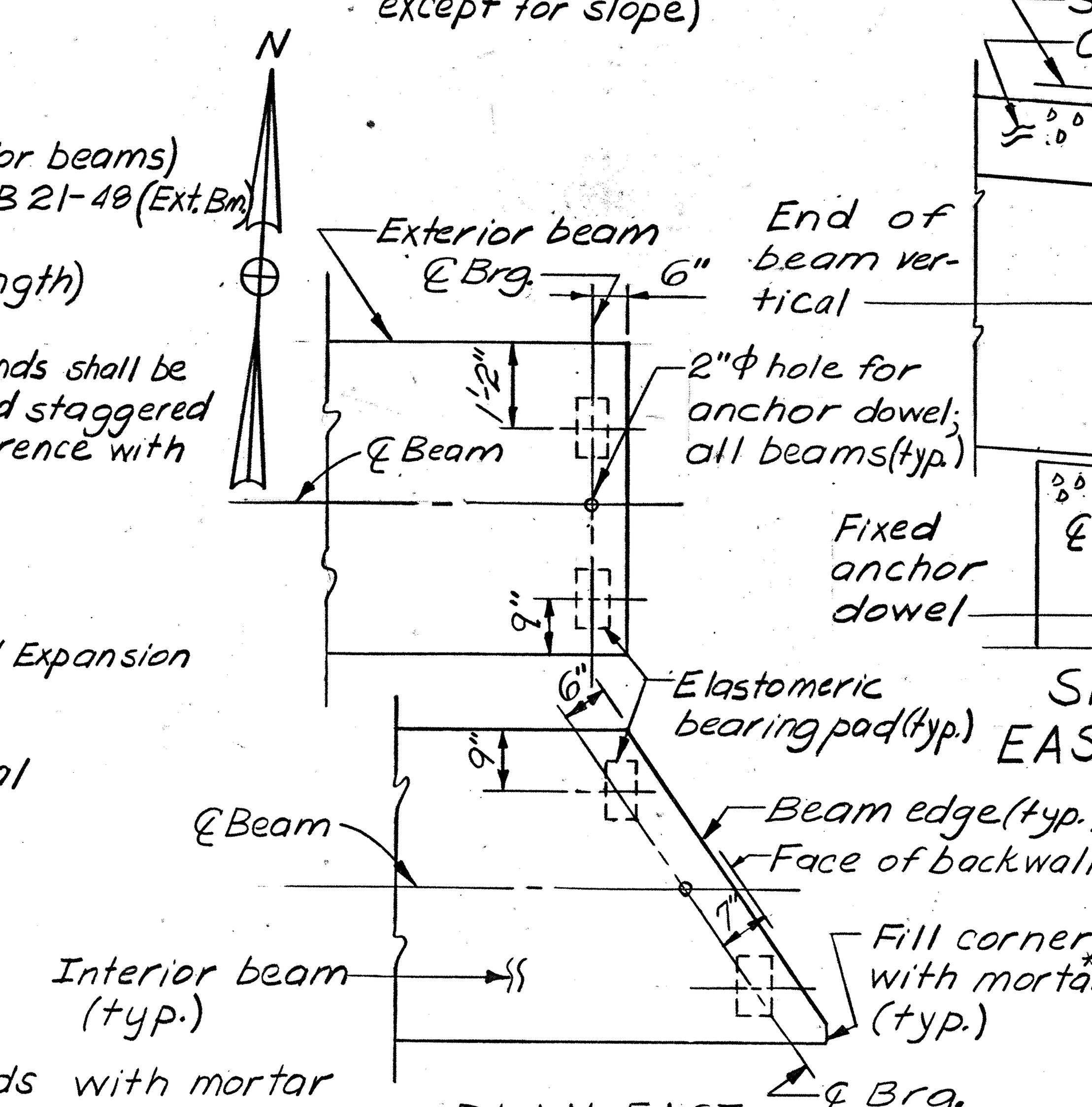
SECTION
PIER 2 AND 6
(Pier #6 opposite hand except for slope.)



BEAM PLAN AT PIER 7
For beam layout see sheet 20/72
NOTE: For exterior beam plan see Transverse Beam A Plan; Sheet 49/72

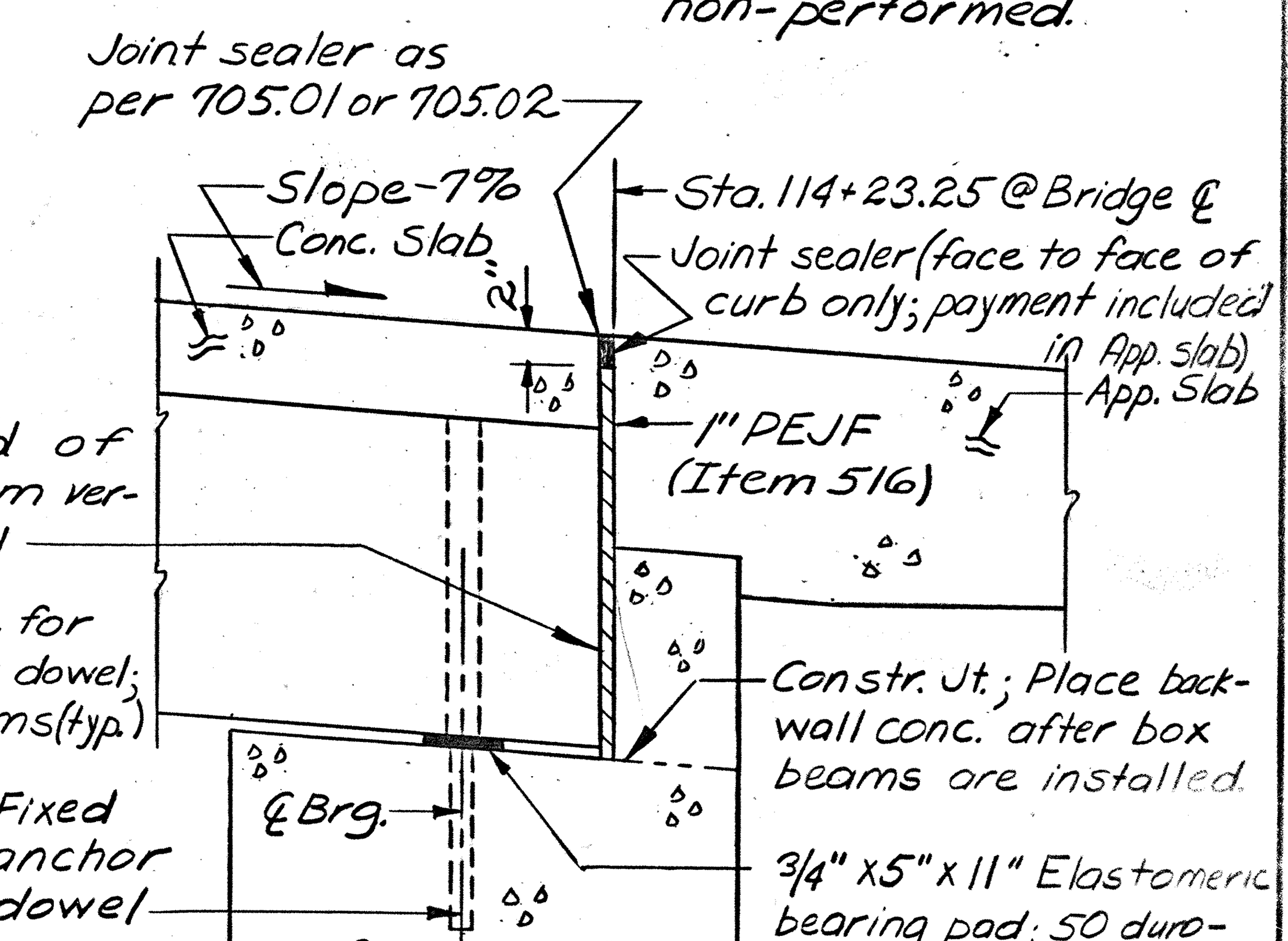


SECTION
PIER 7



**Coat beam ends with mortar so that all beam ends line up for a straight installation of 1" PEJF. Payment included in Item 515.

PLAN-EAST
ABUTMENT



SECTION
EAST ABUTMENT

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

26/72

SUPERSTRUCTURE JOINT DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B.& O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

BEL-40-23.38

FHWA REGION	STATE	PROJECT	
5	OHIO		

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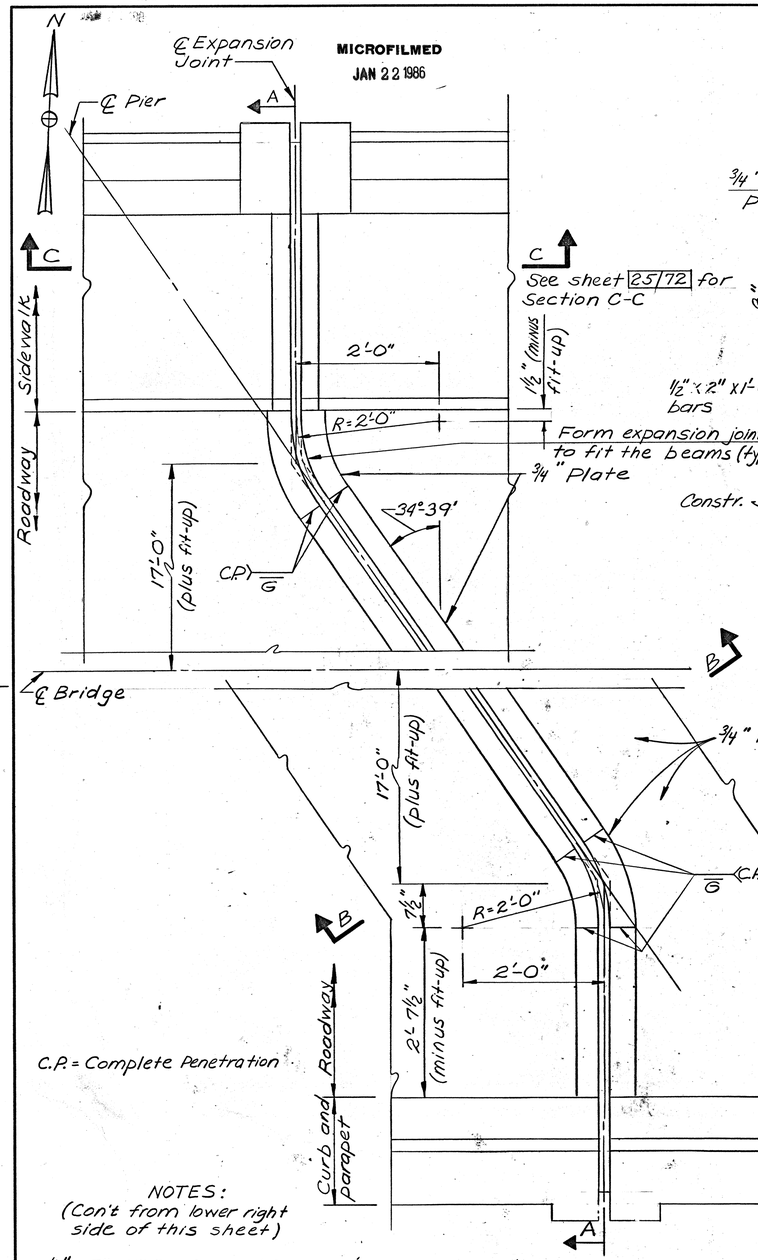
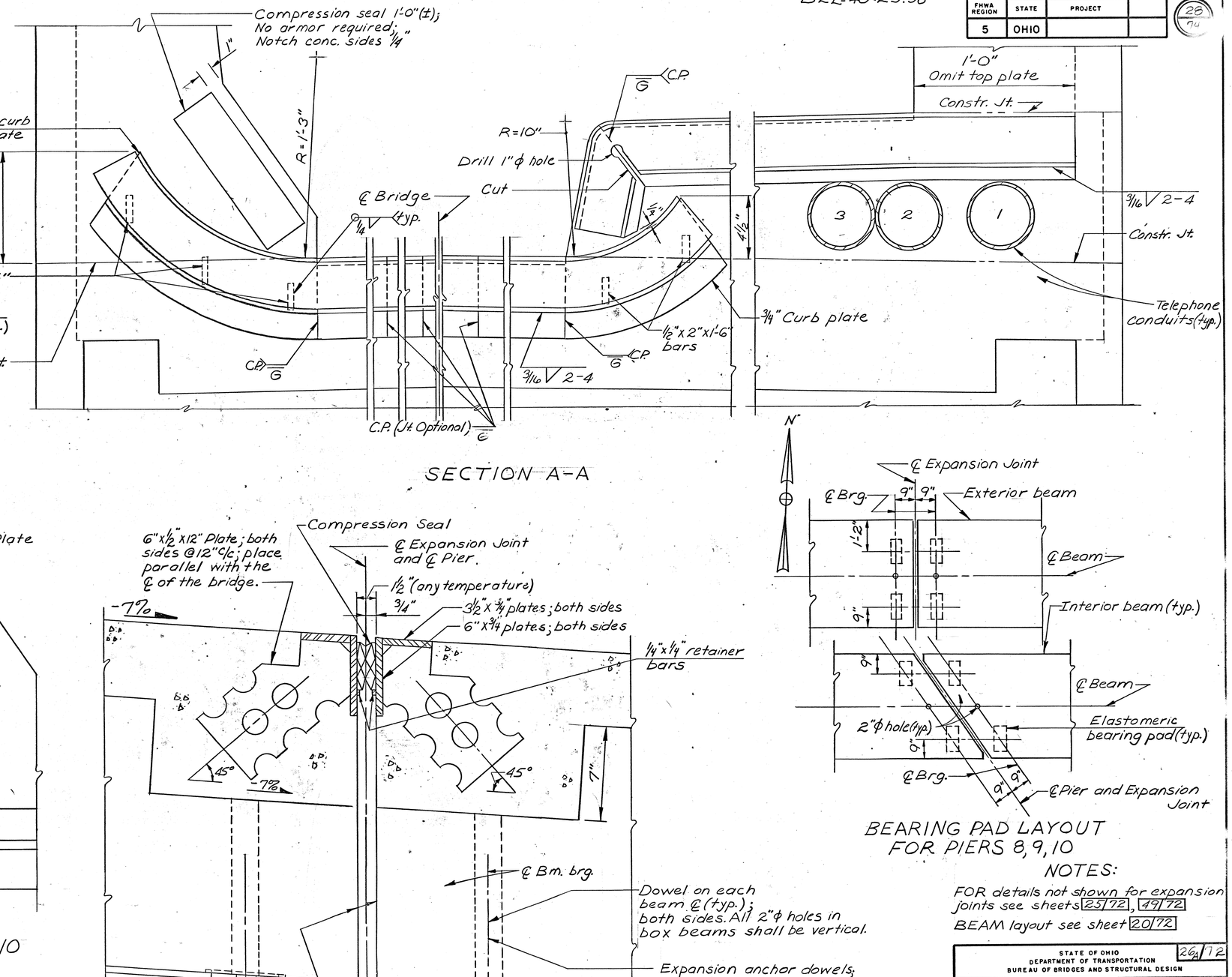


JOINT PLAN AT PIERS 8, 9, 10

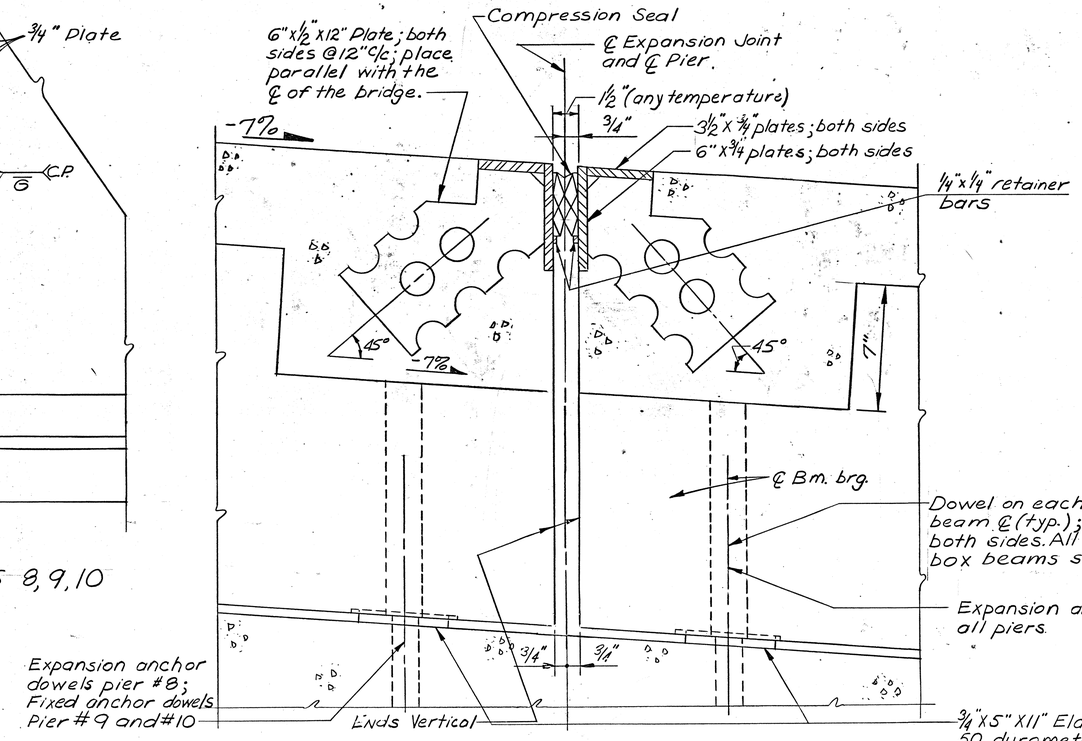
C.P. = Complete Penetration

NOTES:
(Con't from lower right side of this sheet)

⅛" x 5" x 11" Preformed bearing pad shims shall be placed on bottom of bearing pads when required for proper bearing. The number supplied shall be 2 per beam. However, only 25% of the total number of shims shall be furnished until it is determined how many are required. Shims in excess of the actual requirement shall be non-performed.



SECTION A-A



SECTION B-B

BEARING PAD LAYOUT FOR PIERS 8, 9, 10

NOTES:

FOR details not shown for expansion joints see sheets 23/72, 49/72

BEAM layout see sheet 20/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

26/72

SUPERSTRUCTURE JOINT DETAILS

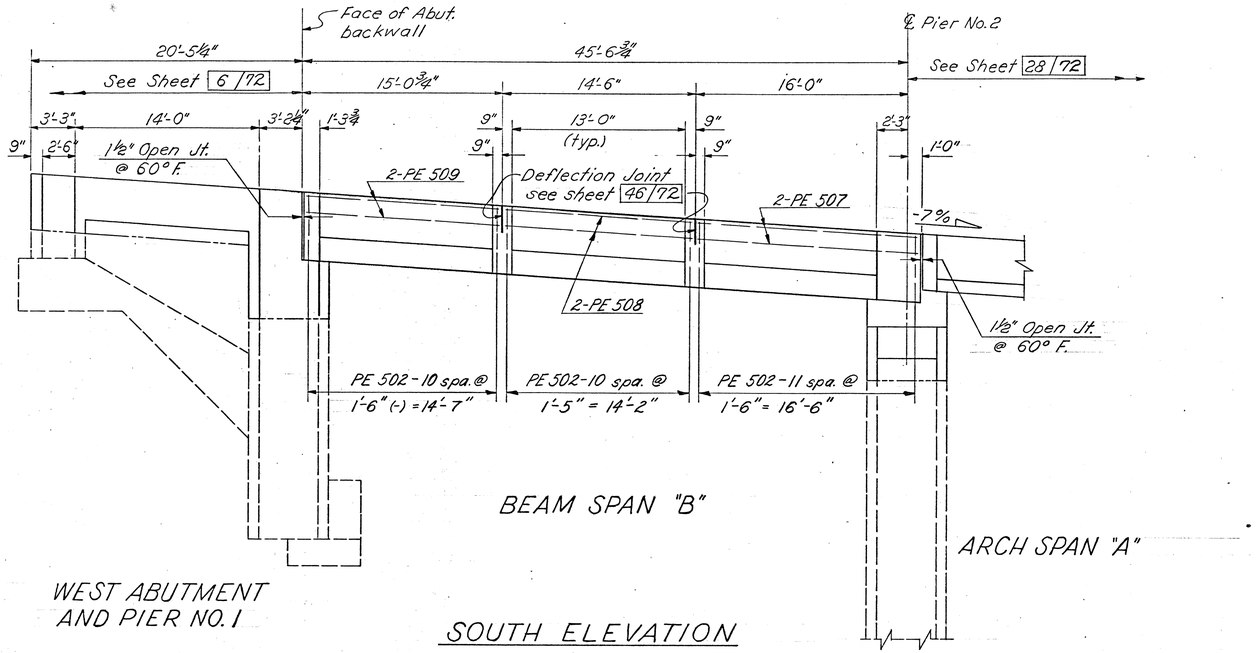
BRIDGE NO. BEL-40-2338 OVER THE B. & O. RAILROAD AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVIS
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

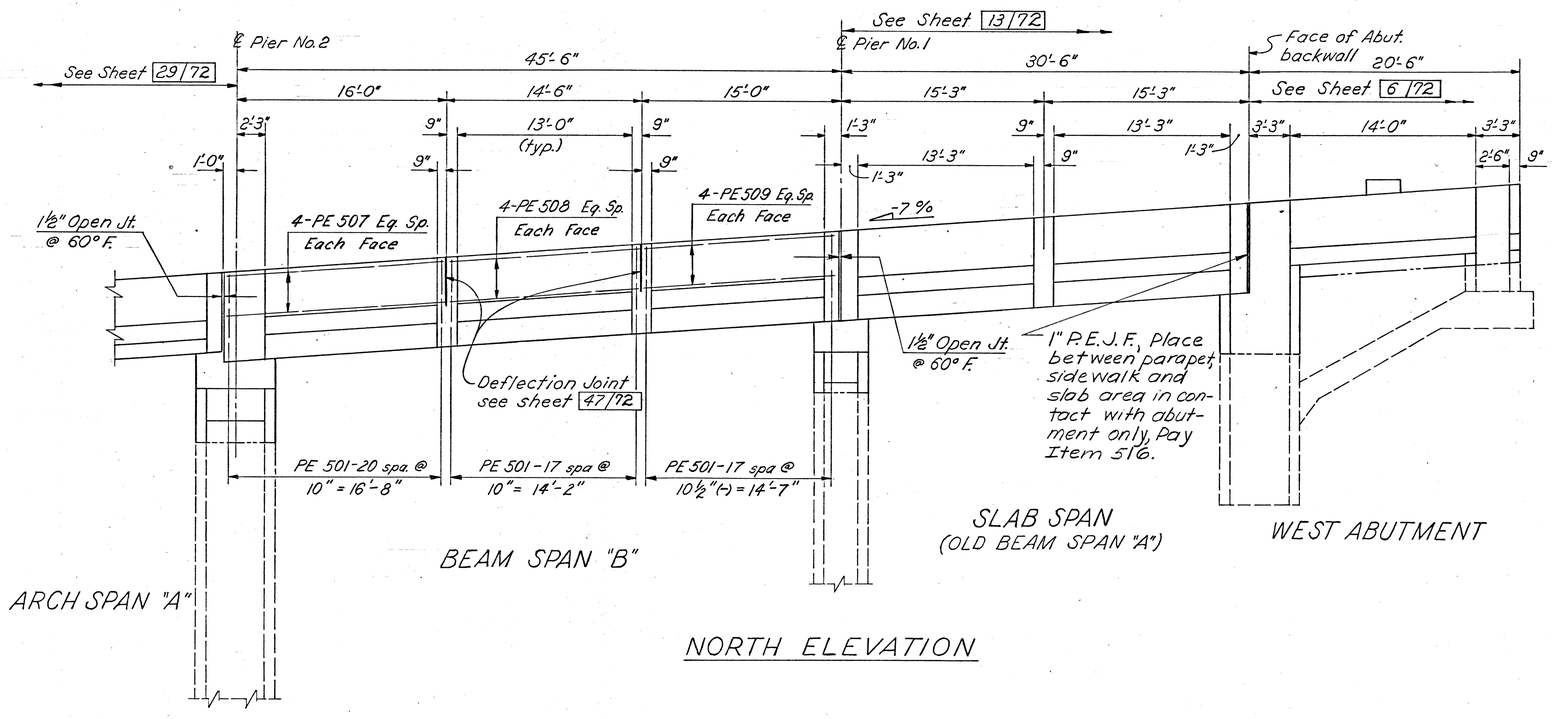
FHWA REGION	STATE	PROJECT	
5	OHIO		

29/74

BEL-40-23.38



SOUTH ELEVATION



NORTH ELEVATION

For section thru parapet see sheet 24/72.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

27/72

SLAB SPAN AND BEAM SPAN "B" ELEVATIONS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

BEL-40-23.38

FHWA REGION	STATE	PROJECT	
5	OHIO		

30/74

℄ Pier No. 2

See Sheet 27/72

PE 502 - 10 spa. @ 1'-6" (-) = 14'-10"

145'-6"

8 Spaces 14'-0" = 112'-0"

16'-3"

1'-0" 2'-3" 13'-3" 9"

2-PE 505

1'-3"

-7%

9" 12'-6" (typ.) 9"

PE 502 - 9 spa. @ 1'-6" = 13'-6"

2-PE 503

Deflection Joints: Parapet section only (typ.), see sheet 46/72

1'-6" (typ.)

℄ Pier No. 3

14'-3" 6'-0"

See Sheet 30/72

9" 12'-3" 3'-6" 1'-3"

1'-3"

PE 502 - 9 spa. @ 1'-6½" (-) = 13'-10

2-PE 504

1½" open Jt. @ 60° F.

Note A (Typical for all columns)

1½" open Jt. @ 60° F.

9 sq. ft.

1 2 3 4 5 6 7 8 9 10 11

℄ Arch

72'-3" 73'-3"

6 sq. ft. - Top of arch rib, far side

10 sq. ft.

6 sq. ft. - Bott. of arch rib

50 sq. ft.

ELEVATIONS										
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
797.03	796.05	795.07	794.09	793.11	792.13	791.15	790.17	789.19	788.19	787.77

Item 519 - Patching concrete structures. (total this sheet - 81 sq. ft.)

NOTE A:
Bearing areas for precast transverse beams shall be plane and smoothly finished. The proper elevation shall be secured by using portland cement mortar. Mortar shall be used for fill thickness 3 inches or less. For fill thickness greater than 3 inches, Class S high-early-strength concrete with #4 bars at 9 inch centers each way shall be used. This bar mat shall be placed in the middle of the concrete fill. (Include with Superstructure precast transverse beam concrete for payment)

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STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

28/72

ARCH SPAN "A" SOUTH ELEVATION

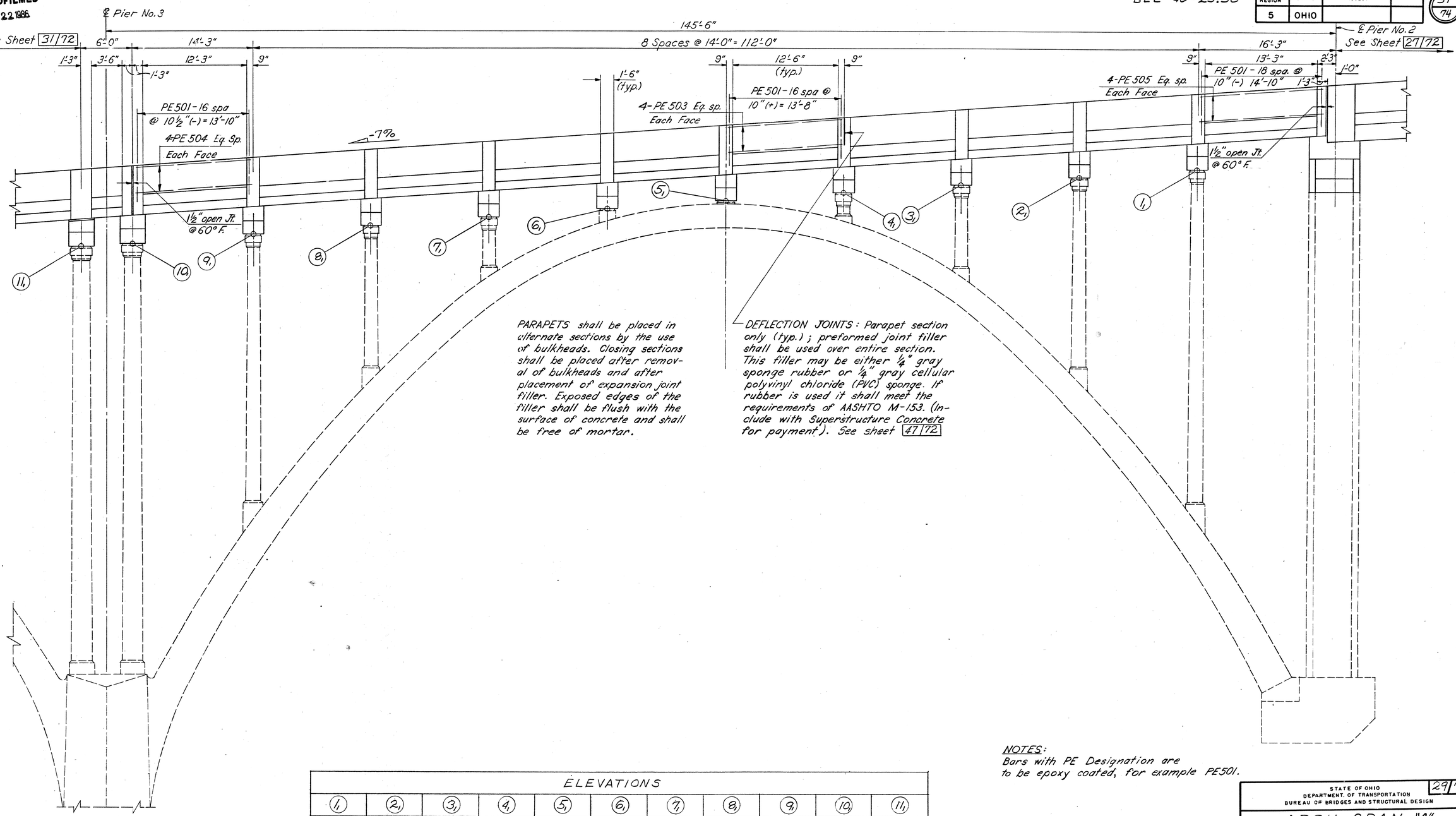
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

BEL-40-23.38

FHWA REGION	STATE	PROJECT	
5	OHIO		

31/74



PARAPETS shall be placed in alternate sections by the use of bulkheads. Closing sections shall be placed after removal of bulkheads and after placement of expansion joint filler. Exposed edges of the filler shall be flush with the surface of concrete and shall be free of mortar.

DEFLECTION JOINTS: Parapet section only (typ.); preformed joint filler shall be used over entire section. This filler may be either ¼" gray sponge rubber or ¼" gray cellular polyvinyl chloride (PVC) sponge. If rubber is used it shall meet the requirements of AASHTO M-153. (Include with Superstructure Concrete for payment). See sheet 47/72

ELEVATIONS										
1	2	3	4	5	6	7	8	9	10	11
797.03	796.05	795.07	794.09	793.11	792.13	791.15	790.17	789.19	788.19	787.77

NOTES:
Bars with PE Designation are to be epoxy coated, for example PE501.

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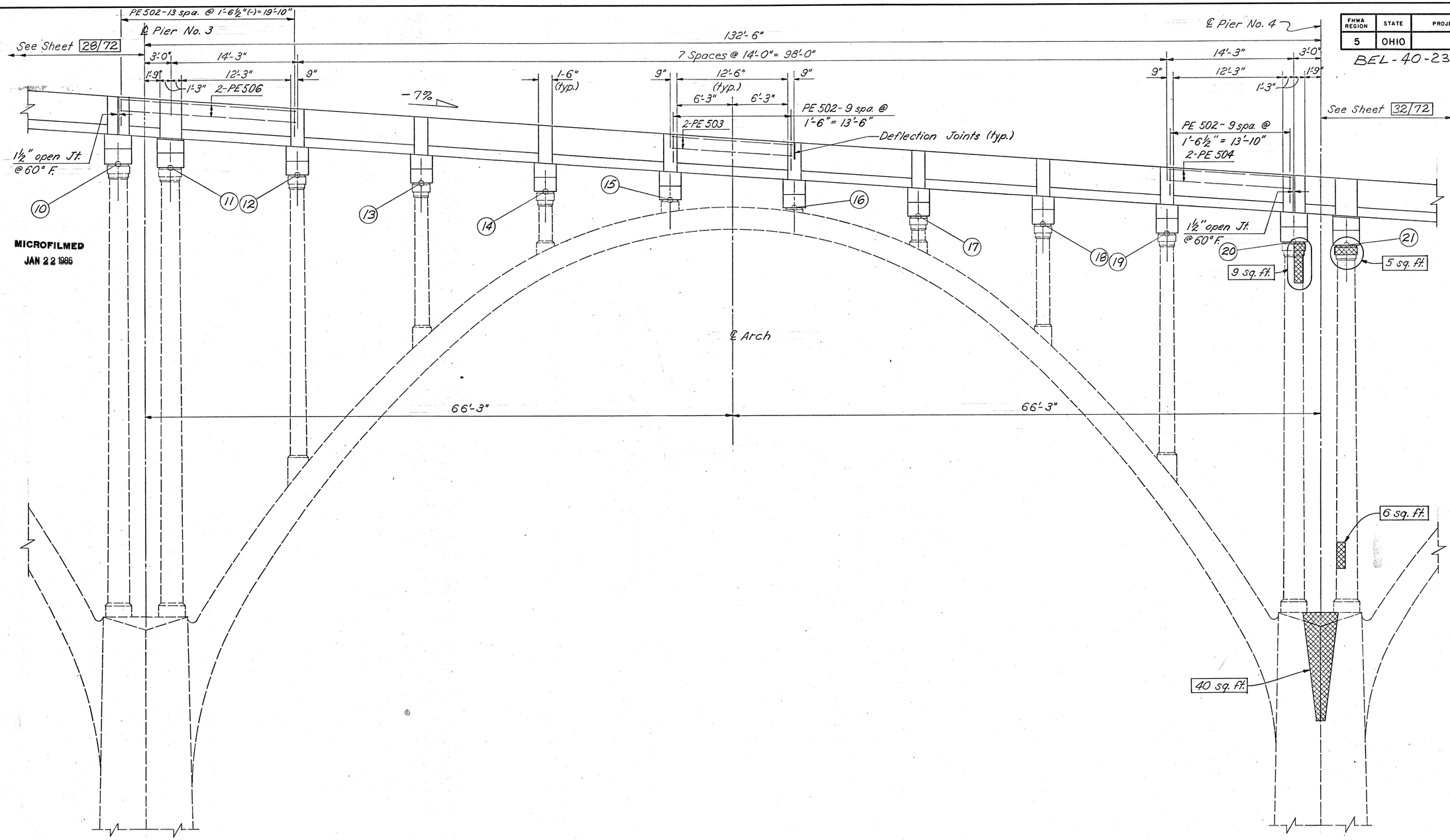
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

29/72

ARCH SPAN "A" NORTH ELEVATION

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	



MICROFILMED
JAN 22 1986

ELEVATIONS											
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
788.19	787.77	786.77	785.79	784.81	783.83	782.85	781.87	780.89	779.91	778.91	778.50

Item 519 - Patching concrete structures.
(total this sheet - 60 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

30/72

ARCH SPAN "B" SOUTH ELEVATION

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

See Sheet 33/72

℄ Pier No. 4

132'-6"

3'-0" | 14'-3" | 12'-3" | 9" | 1'-9" | 1'-3"

7 Spaces @ 14'-0" = 98'-0"

PE501-16 spa @ 10½" (-) = 13'-10"
4-PE504 Eq. Sp. Each Face

-7%

1½" open Jt. @ 60° F.

1'-6" (typ.)

9" | 12'-6" (typ.) | 9"

6'-3" | 6'-3"

4-PE503 Eq. Sp. Each Face

PE501-16 spa @ 10"(+) = 13'-8"

Deflection Joint (typ.)

PE501-24 spa. @ 10"(-) = 19'-10"

℄ Pier No. 3

4-PE506 Eq. Sp. Each Face

14'-3" | 3'-0" | 9" | 12'-3" | 1'-9" | 1'-3"

See Sheet 29/72

BEL-40-23.38

1½" open Jt. @ 60° F.

17 sq. ft.

10 11 12 13 14 15 16 17 18 19 20 21

3 sq. ft.

11 sq. ft.

5 sq. ft.

66'-3" | 66'-3"

℄ Arch

4 sq. ft. - Top of arch rib

Strut

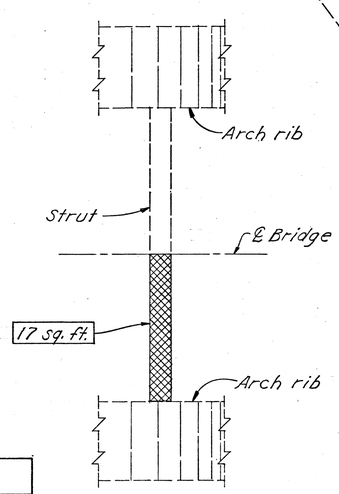
A A

4 sq. ft. - Top of arch rib

5 sq. ft.

1 sq. ft.

40 sq. ft.



VIEW A-A

ELEVATIONS											
10	11	12	13	14	15	16	17	18	19	20	21
788.19	787.77	786.77	785.79	784.81	783.83	782.85	781.87	780.89	779.91	778.91	778.50

Item 519 - Patching concrete structures.
(total this sheet - 107 sq. ft.)

FHWA REGION	STATE	PROJECT	
5	OHIO		

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STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

31/72

ARCH SPAN "B" NORTH ELEVATION

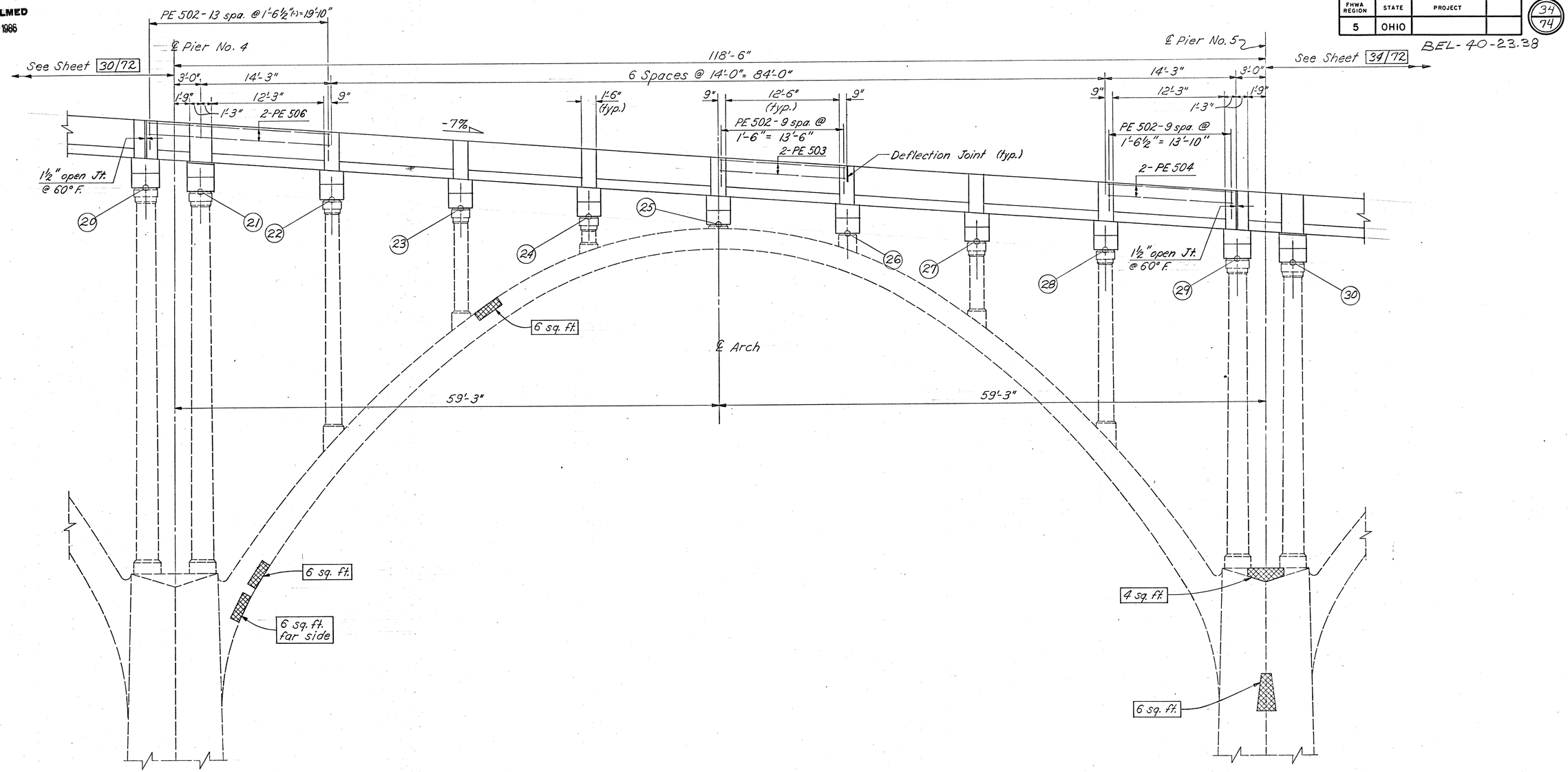
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

34/74

BEL-40-23.38



ELEVATIONS										
(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
778.91	778.50	777.50	776.52	775.54	774.56	773.58	772.60	771.62	770.62	770.20

Item 519 - Patching concrete structures. (total this sheet - 28 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

32/72

ARCH SPAN "C" SOUTH ELEVATION

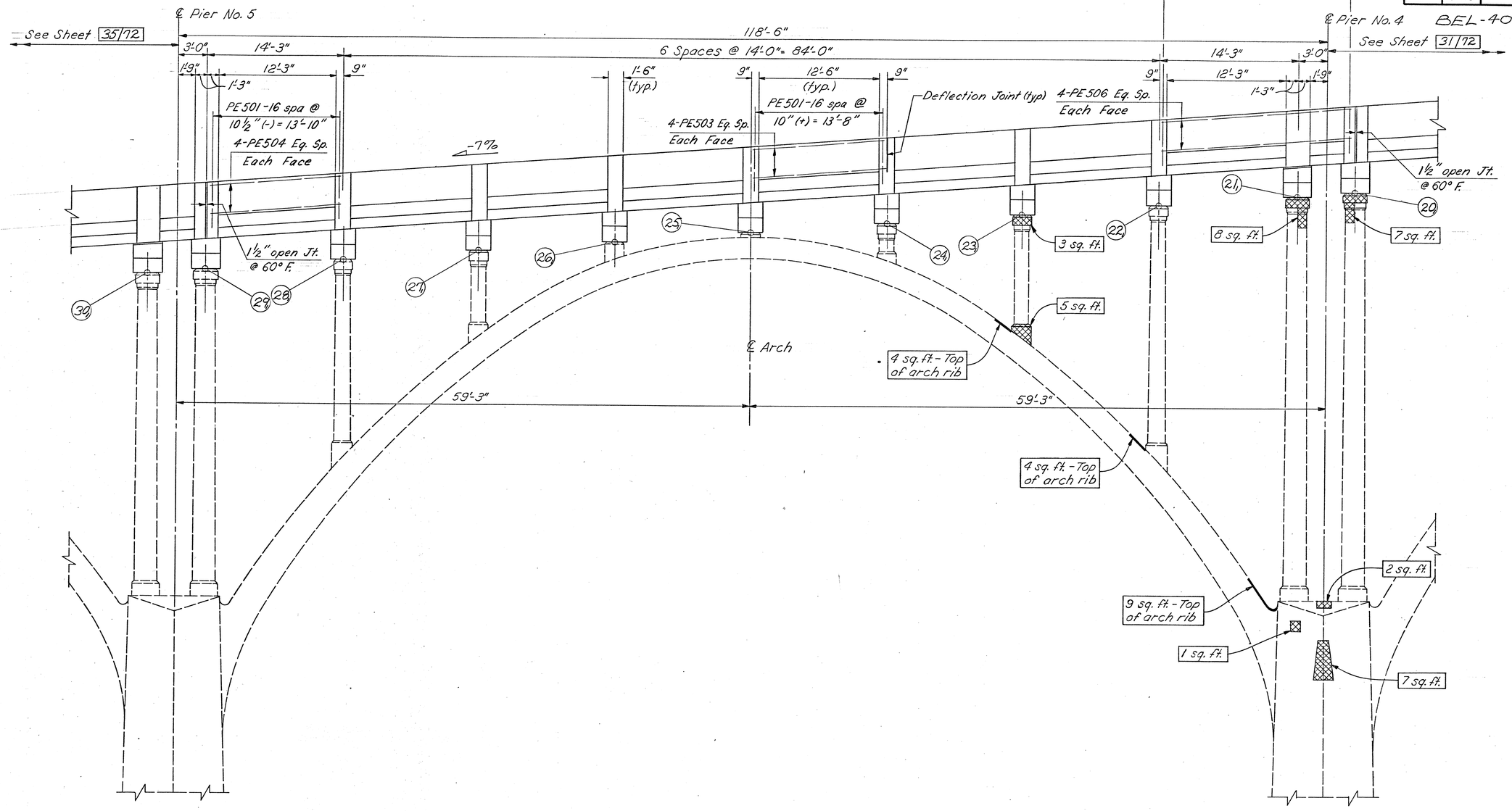
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

35/74

BEL-40-23.38



ELEVATIONS										
(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
778.91	778.50	777.50	776.52	775.54	774.56	773.58	772.60	771.62	770.62	770.20

▨ Item 519 - Patching concrete structures. (total this sheet - 50 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

33/72

ARCH SPAN "C" NORTH ELEVATION

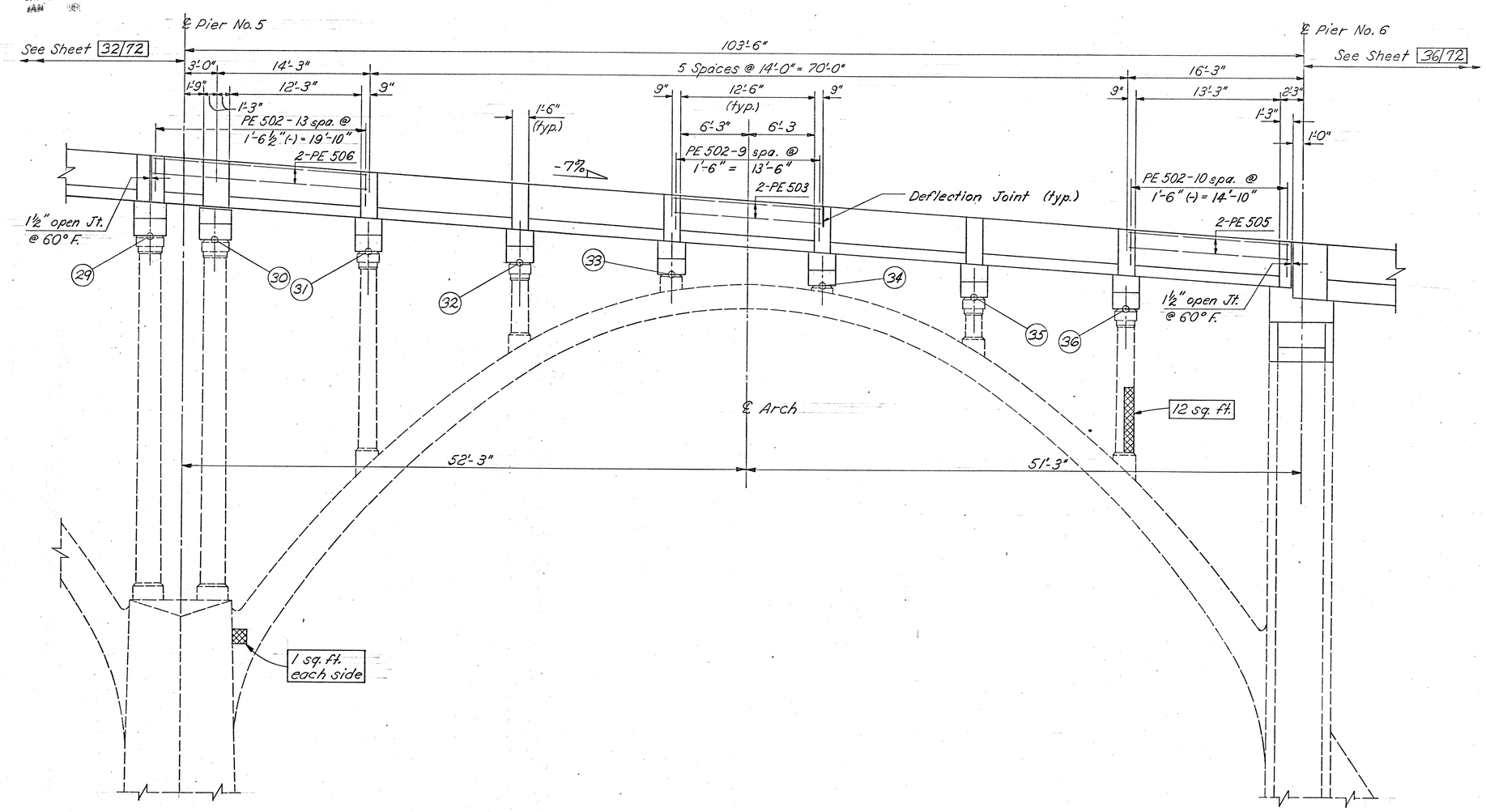
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

36/74

BEL-40-23.38



ELEVATIONS							
(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
770.62	770.20	769.20	768.22	767.24	766.26	765.28	764.30

▨ Item 519 - Patching concrete structures. (total this sheet - 13 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

34/72

ARCH SPAN "D" SOUTH ELEVATION

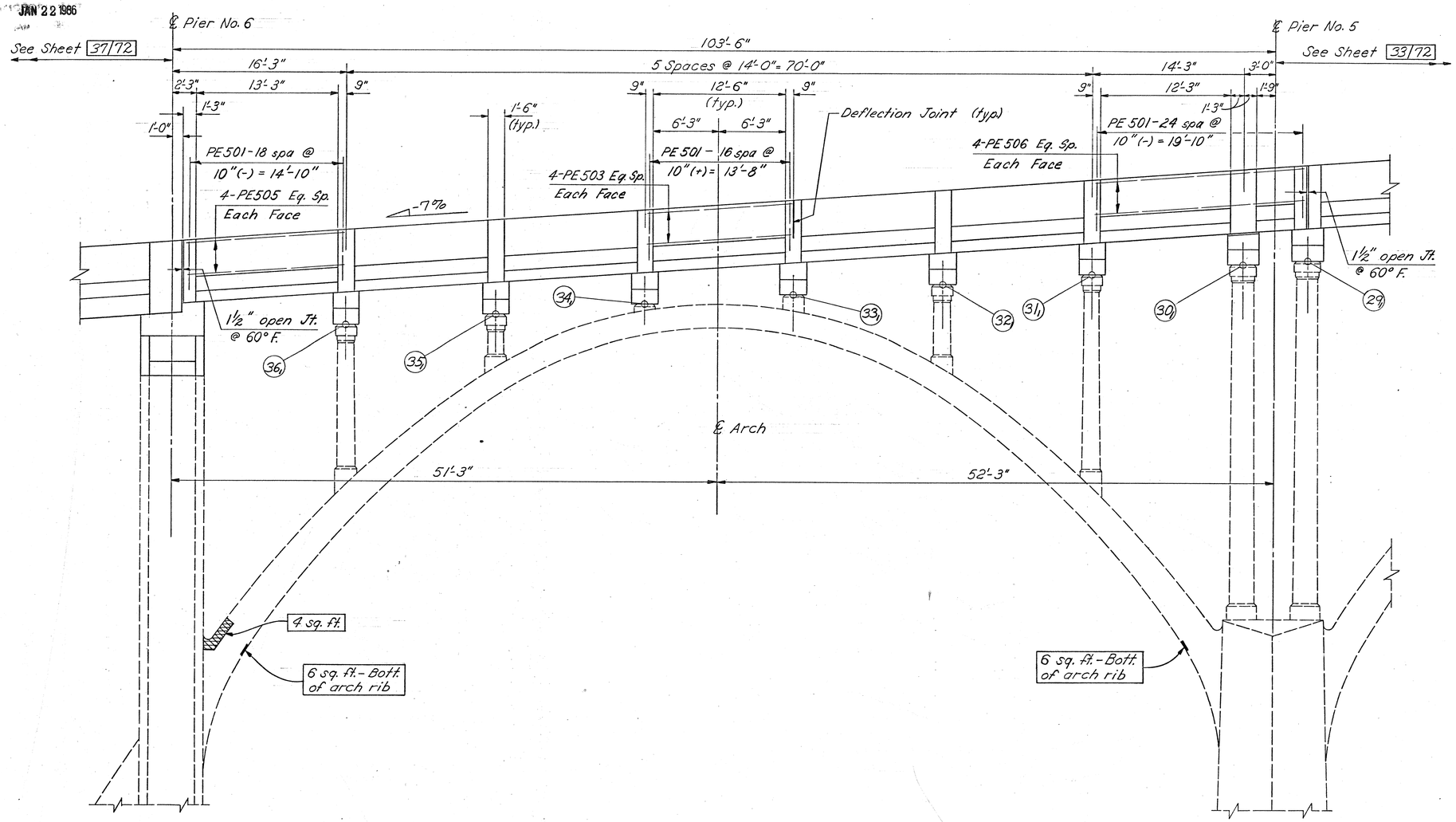
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

37/74

BEL-40-23.38



ELEVATIONS							
(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)
770.62	770.20	769.20	768.22	767.24	766.26	765.28	764.30

Item 519 - Patching concrete structures. (total this sheet - 16 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

35/72

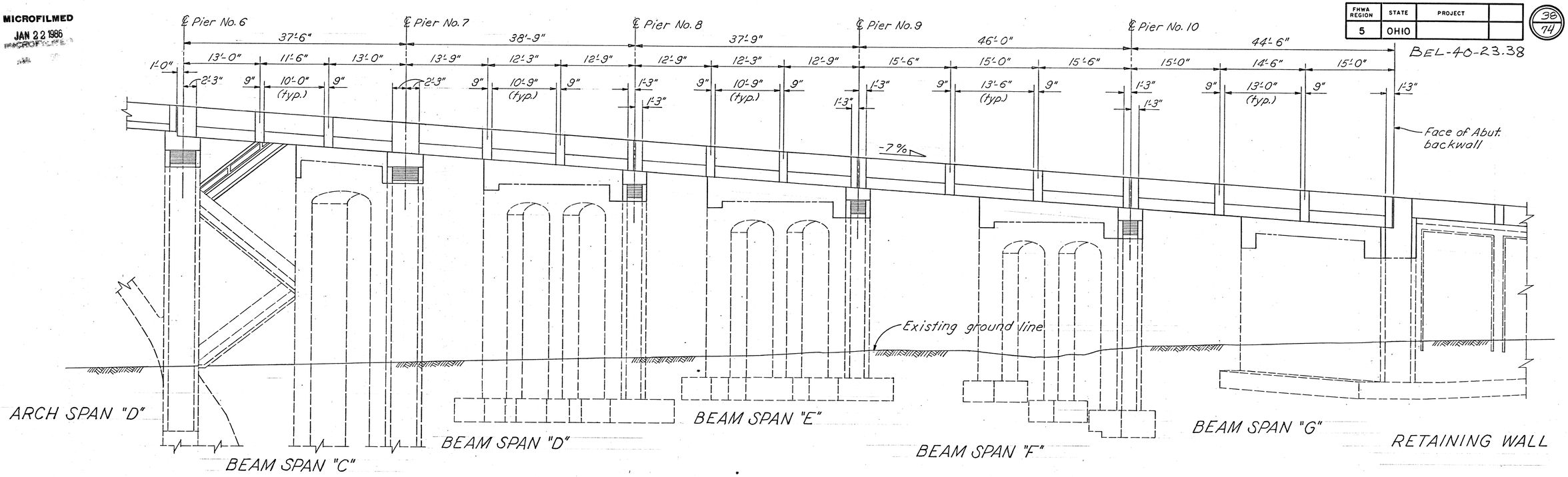
ARCH SPAN "D" NORTH ELEVATION

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

38/74



SOUTH ELEVATION

NOTE :

For parapet steel see sheet 38/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

36/72

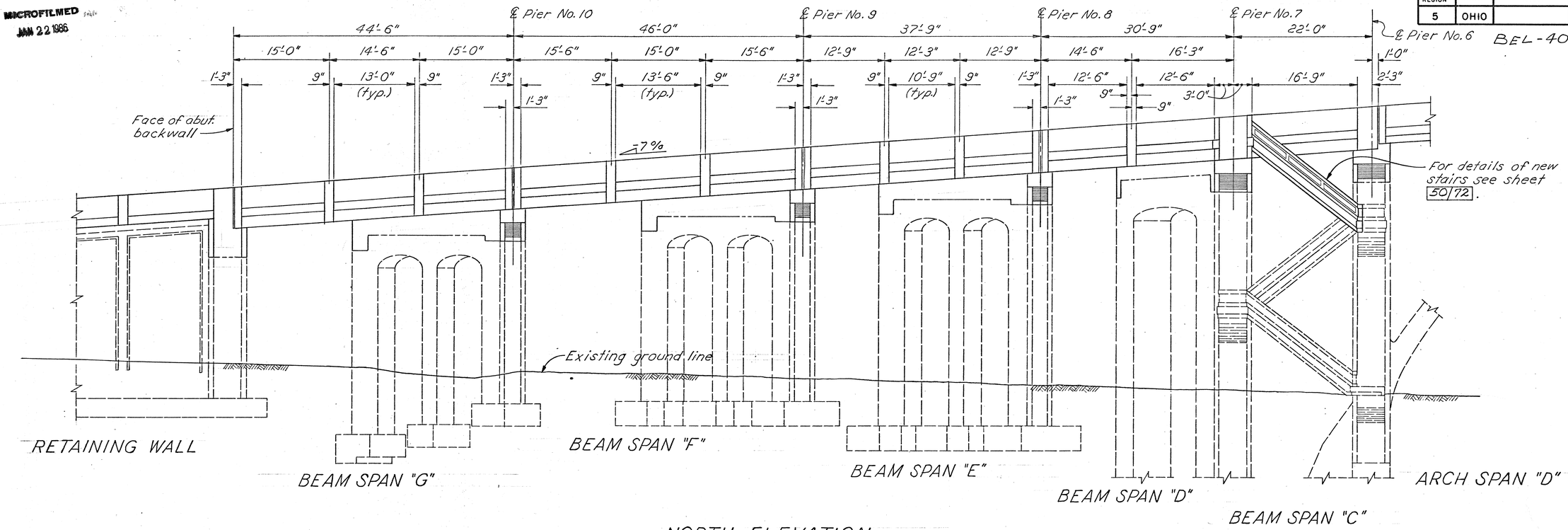
BEAM SPANS "C" THRU "G"
SOUTH ELEVATION
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

39/74

BEL-40-23.38



NORTH ELEVATION

NOTE:

For parapet steel see sheet 38/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

37/72

BEAM SPANS "C" THRU "G" NORTH ELEVATION

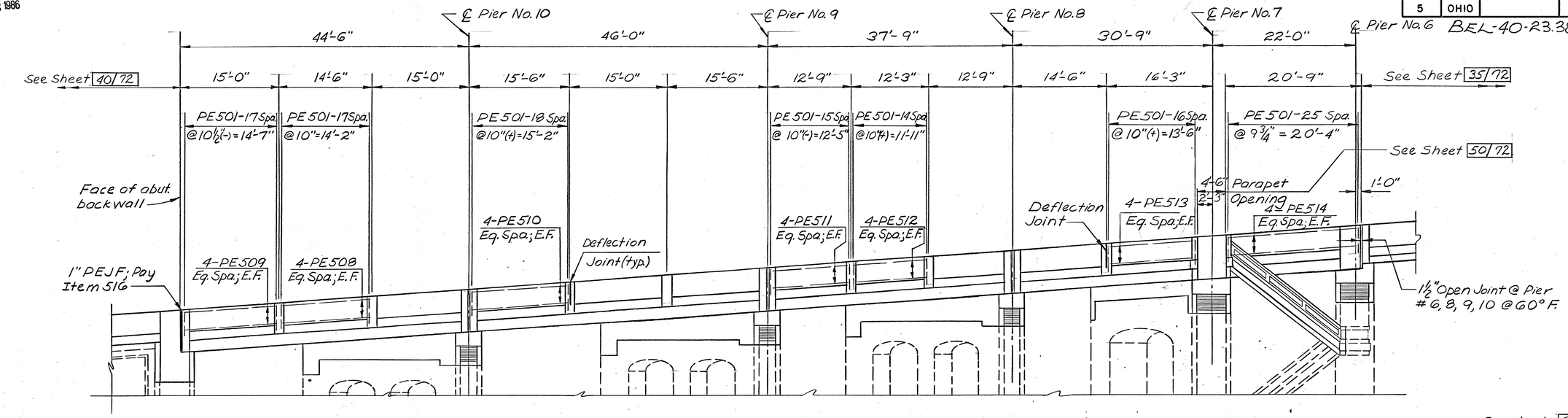
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

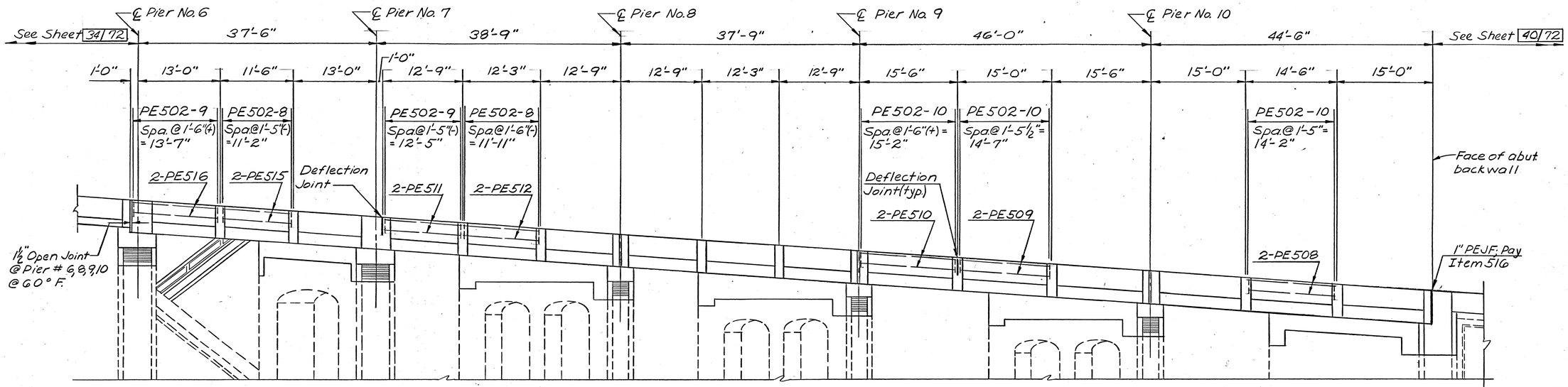
40/74

BEL-40-23.38



See sheets 23/72, 36/72, 37/72 for additional details

NORTH ELEVATION
(Parapet Steel)



SOUTH ELEVATION
(Parapet Steel)

LEGEND:
E.F. = Each Face

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

38/72

BEAM SPANS "C" THRU "G" PARAPET STEEL

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

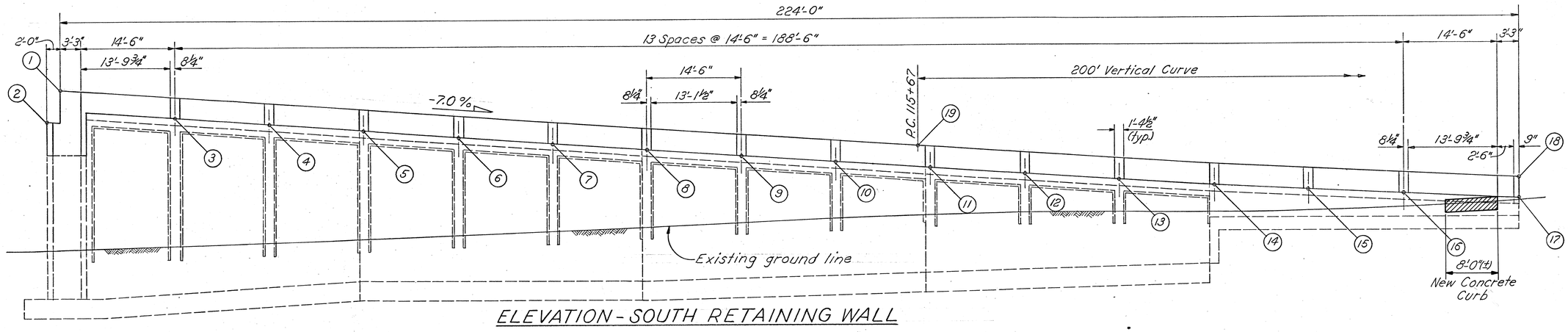
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

h-0277

FHWA REGION	STATE	PROJECT	
5	OHIO		

41/74

BEL-40-23.38

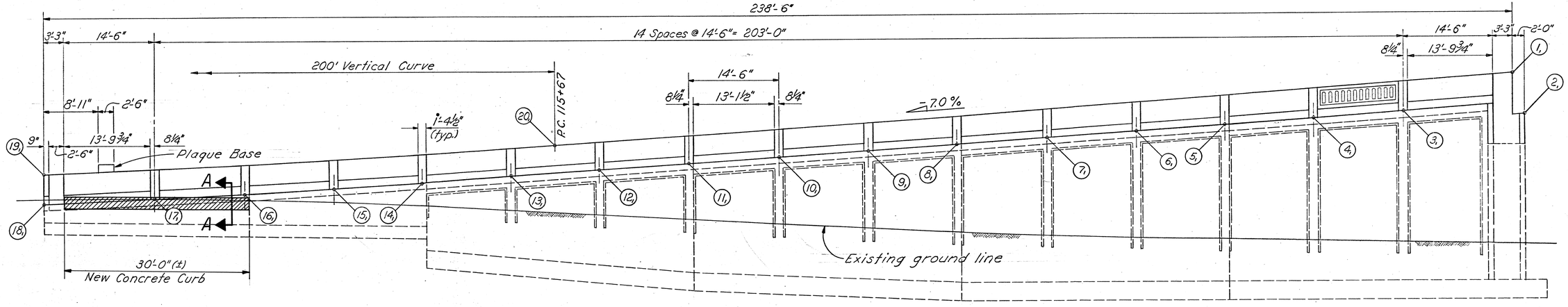


ELEVATION - SOUTH RETAINING WALL

ELEVATIONS																		
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑲
756.61	751.37	751.94	750.92	749.91	748.89	747.88	746.86	745.85	744.83	743.82	742.86	741.99	741.21	740.51	739.88	739.26	742.69	747.37

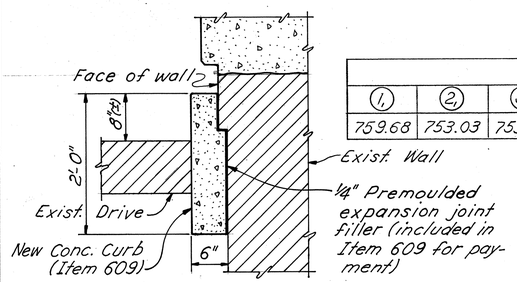
.61

See Section C-C, sheet 42/72 for location of elevations.



ELEVATION - NORTH RETAINING WALL

ELEVATIONS																				
1,	2,	3,	4,	5,	6,	7,	8,	9,	10,	11,	12,	13,	14,	15,	16,	17,	18,	19,	20,
759.68	753.03	753.58	752.56	751.55	750.53	749.52	748.50	747.49	746.47	745.46	744.44	743.44	742.52	741.68	740.93	740.25	739.56	744.42	748.79



SECTION A-A

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

39/72

RETAINING WALL ELEVATIONS

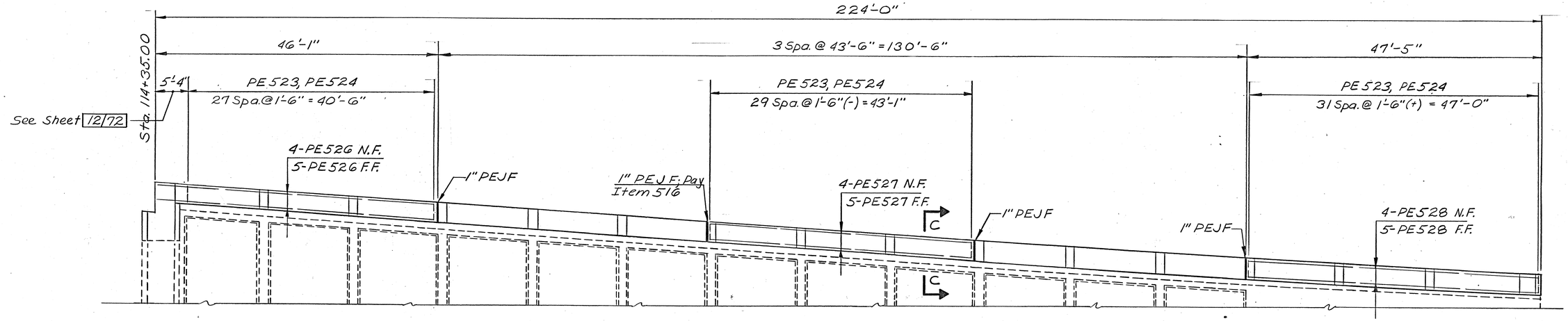
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

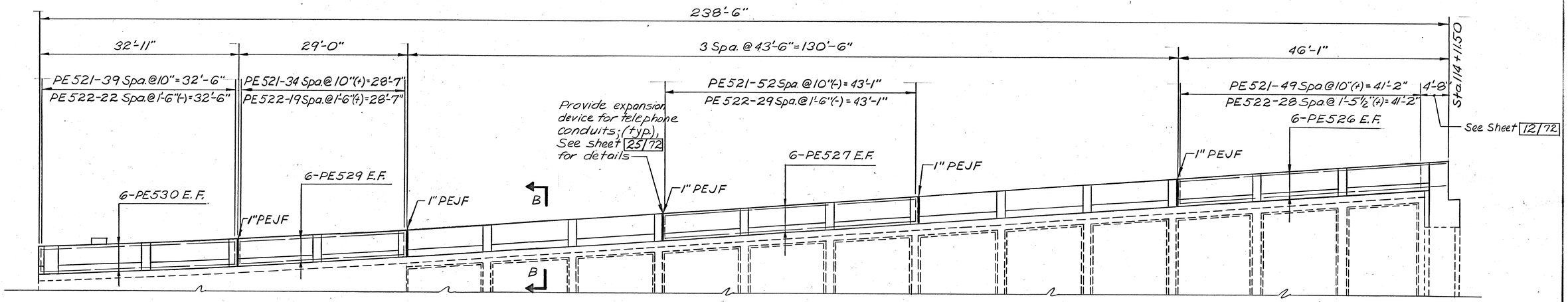
FHWA REGION	STATE	PROJECT	
5	OHIO		

42/74

BEL-40-23.38



SOUTH ELEVATION
(Parapet steel)



NORTH ELEVATION
(Parapet steel)

NOTES

See sheet 42/72 for parapet sections

LEGEND

N.F. = Near Face
F.F. = Far Face
E.F. = Each Face

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

40/72

RETAINING WALL PARAPET STEEL

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

H50277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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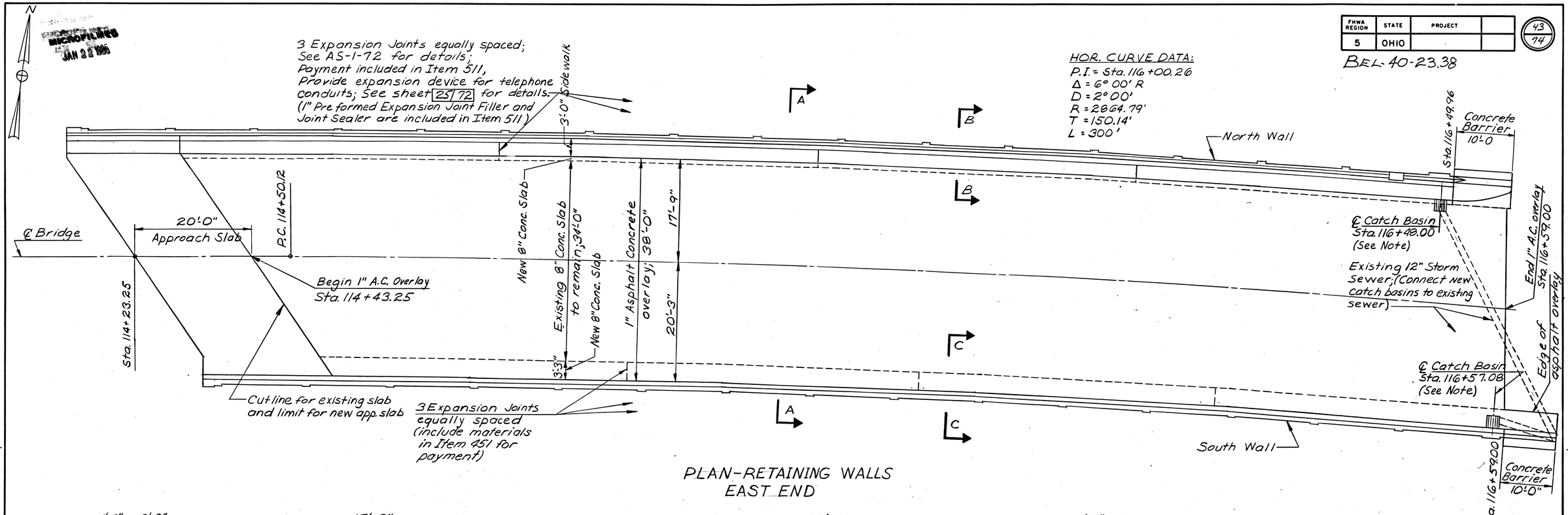
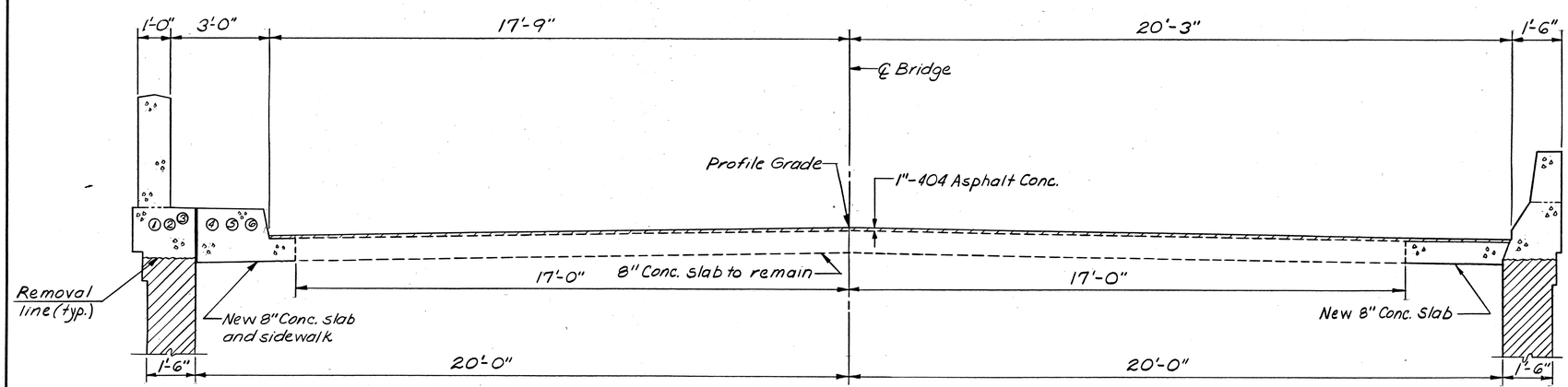
BEL-40-23.38

3 Expansion Joints equally spaced; See AS-1-72 for details; Payment included in Item 511, Provide expansion device for telephone conduits; See sheet 25/72 for details. (1" Pre formed Expansion Joint Filler and Joint Sealer are included in Item 511)

HOR. CURVE DATA:
P.I. = Sta. 116+00.26
Δ = 6° 00' R
D = 2° 00'
R = 2864.79'
T = 150.14'
L = 300'



PLAN-RETAINING WALLS
EAST END



SECTION A-A

NOTES

See sheet 52/72 for Approach Slab details.

For additional details and sections see sheets 39/72 42/72 43/72

See sheet 40/72 for reinforcing steel in parapets

CATCH BASINS: Remove the two existing catch basins; For new catch basin construction details see sheet 44/72 for the South Wall catch basin and sheet 45/72 for the North Wall catch basin.

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STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

41/72

RETAINING WALL PLAN

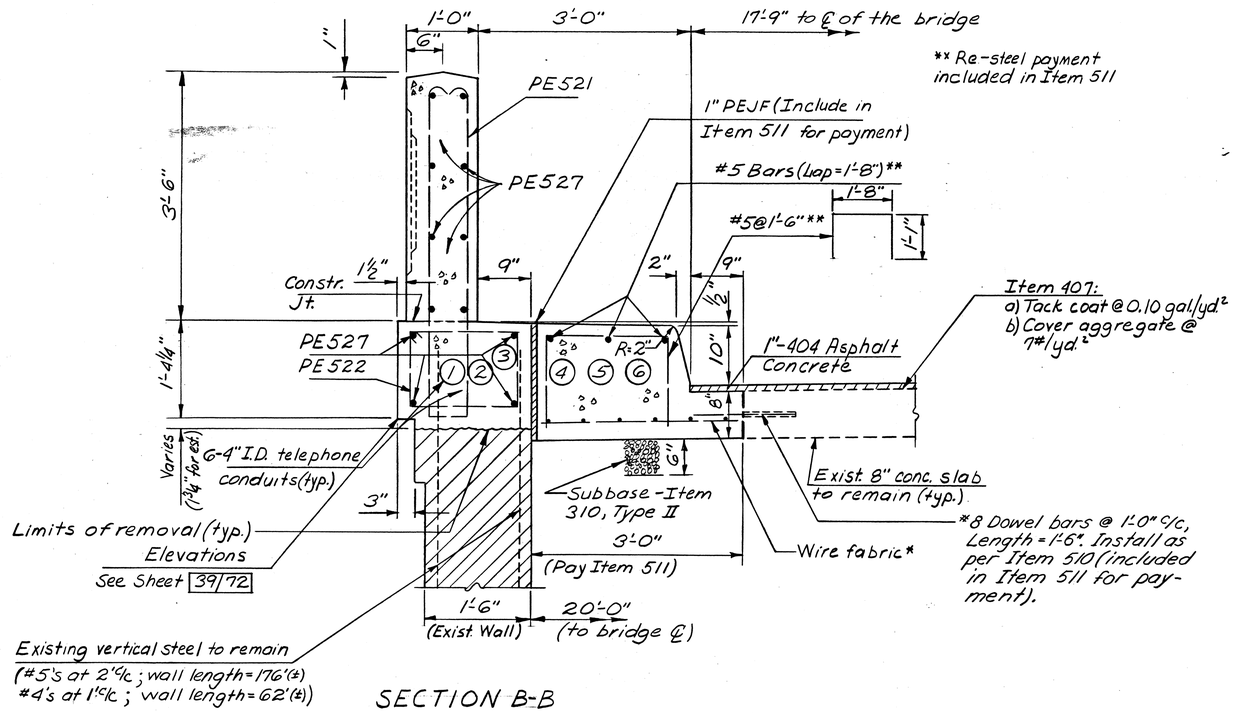
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

44/74

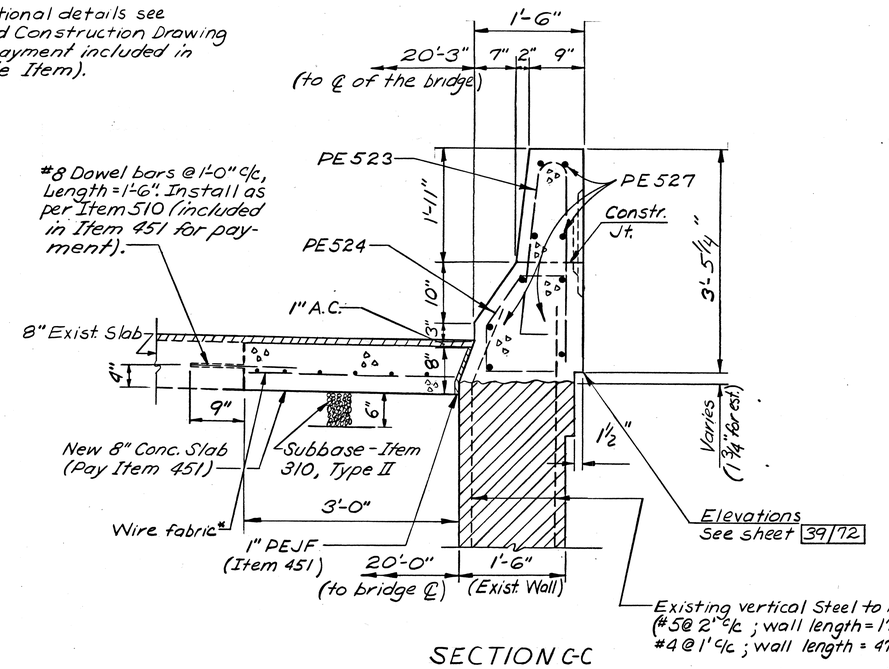
BEL-40-23.38



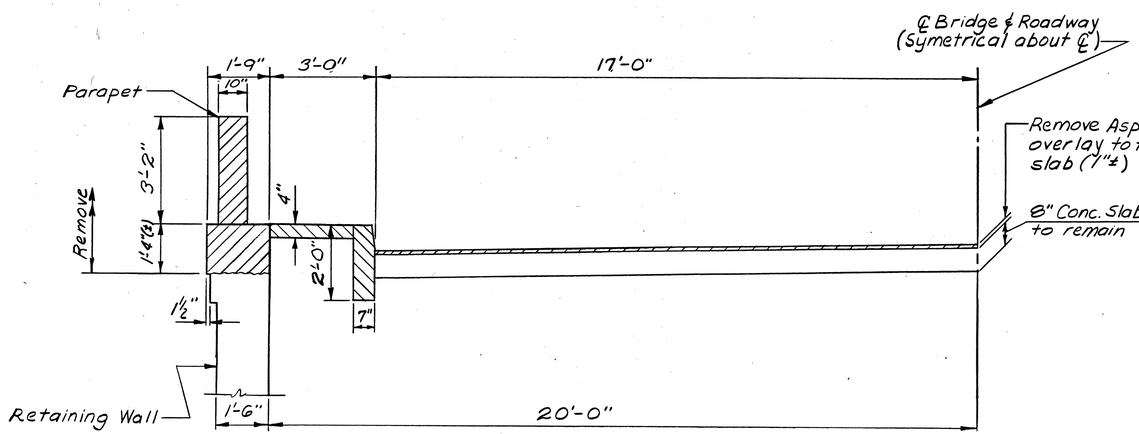
SECTION B-B

** Re-steel payment included in Item 511

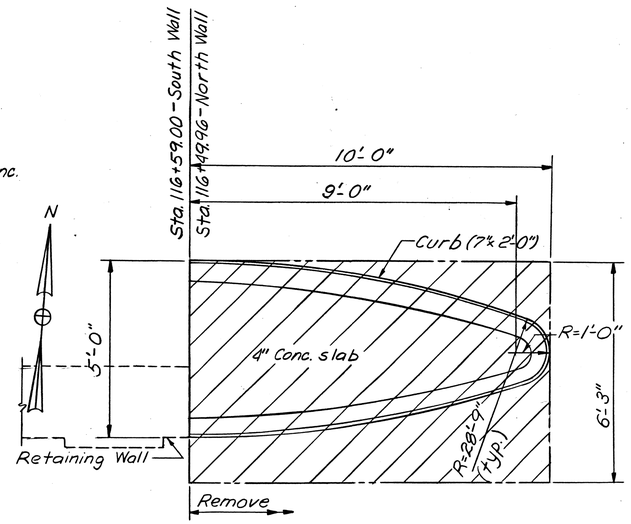
*For additional details see Standard Construction Drawing BP-2 (payment included in concrete Item).



SECTION C-C



EXISTING RETAINING WALL AND ROADWAY SECTION
(Section A-A; Showing concrete removal;)
(For parapet removal dimensions see sheet 61/72)



EXISTING CURB TURN PLAN
(South wall shown; North wall opp. hand; Conc. removal shown)

NOTES

See sheet 41/72 for Retaining wall plan.

See sheet 40/72 for parapet steel.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

42/72

RETAINING WALL DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

h50277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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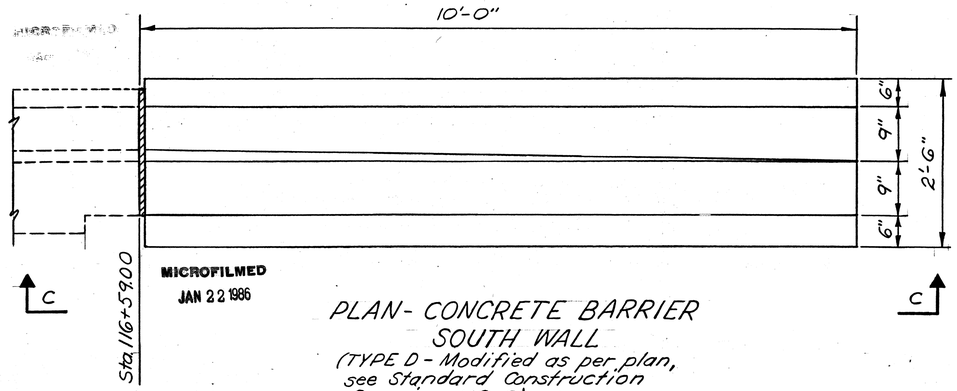
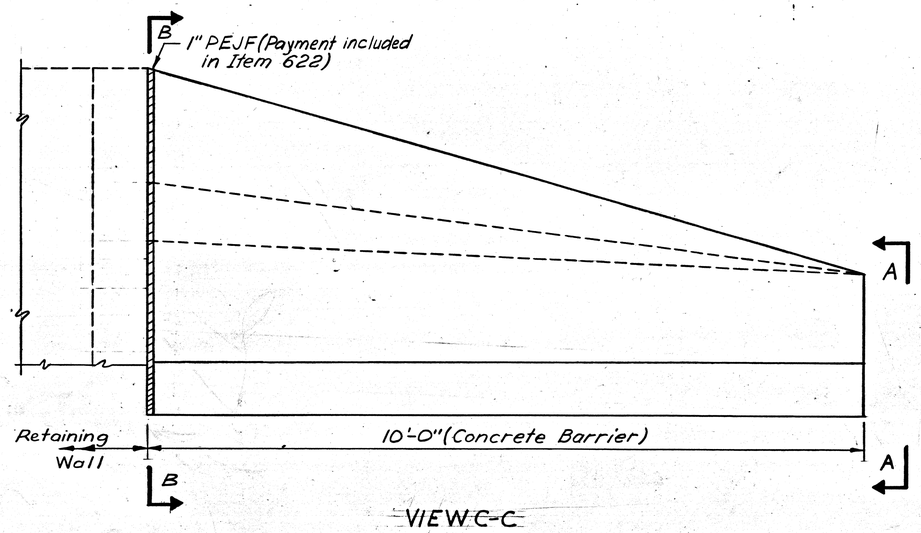
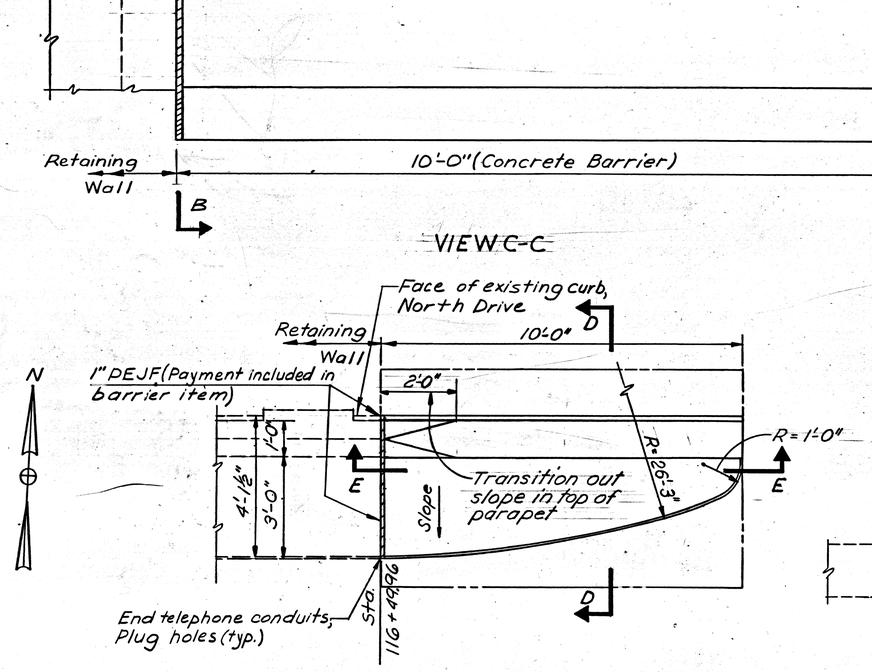
BEL-40-23.38



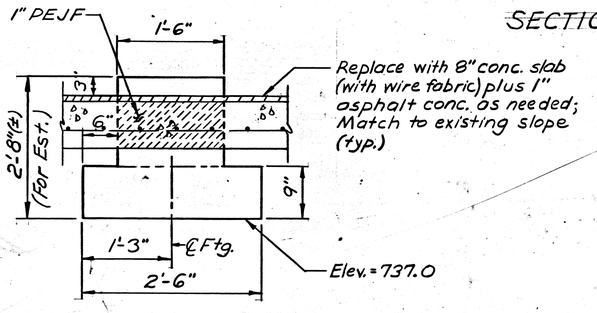
PLAN- CONCRETE BARRIER
SOUTH WALL
(TYPE D - Modified as per plan, see Standard Construction Drawing MC-9)



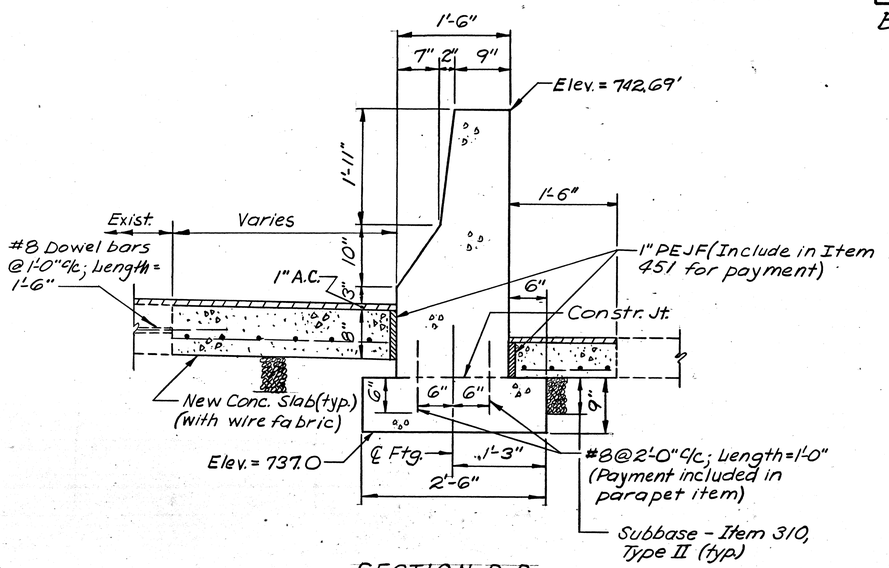
VIEW C-C



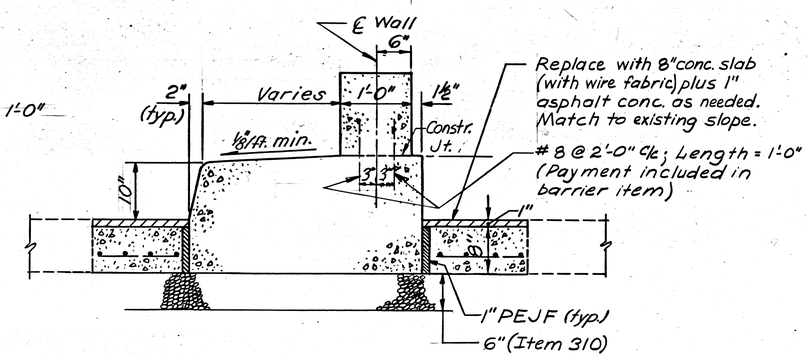
PLAN-CONCRETE BARRIER
NORTH WALL



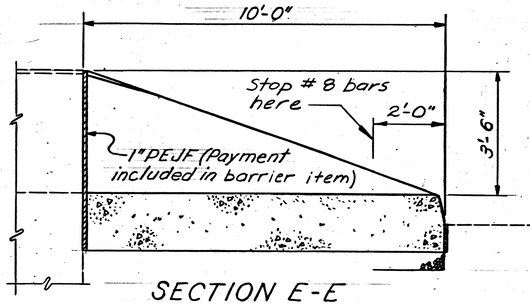
VIEW A-A



SECTION B-B



SECTION D-D



SECTION E-E

NOTES

See sheet 41/72 for retaining wall plan.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

43/72

RETAINING WALL DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

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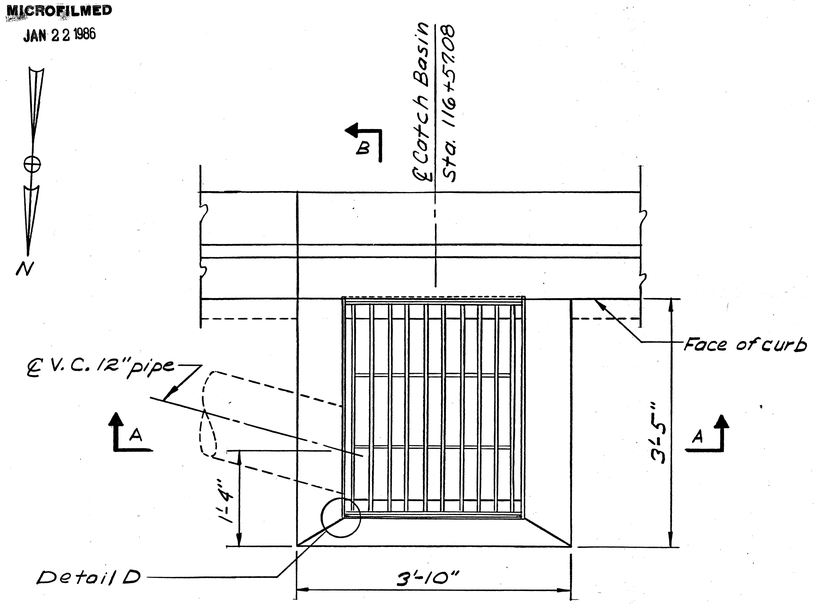
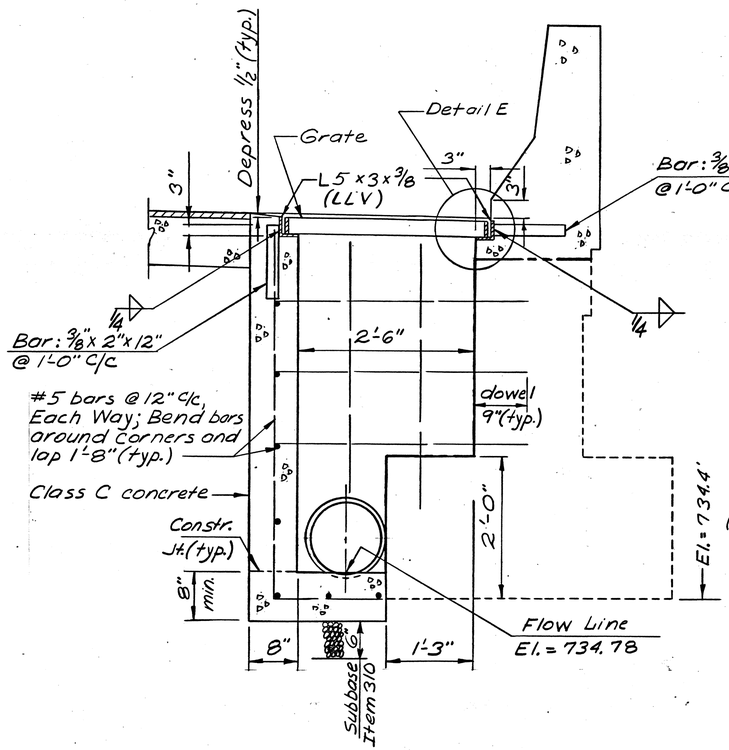
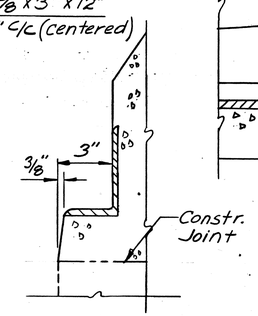
BEL-40-23.38



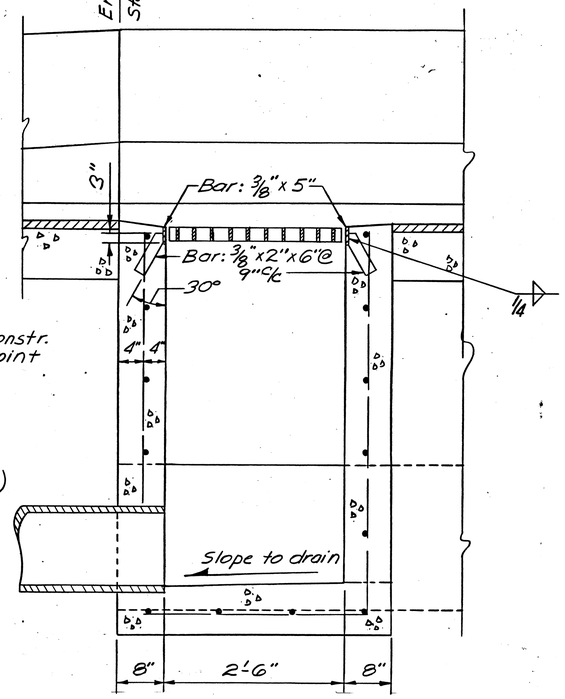
PLAN AT SOUTH WALL



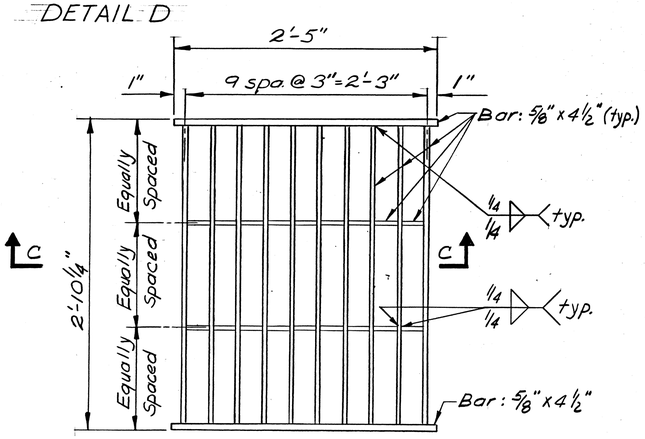
SECTION B-B



DETAIL E
(Grate not shown)

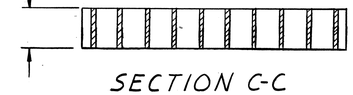


SECTION A-A

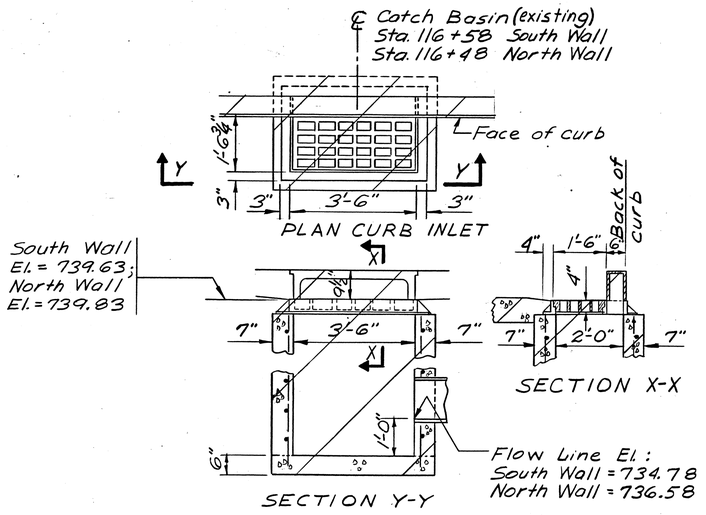


DETAIL D

GRATING PLAN



SECTION C-C



Details showing removal of existing catch basins (2); Pay Item 202

NOTES:

See sheet 41/72 for catch basin location

To connect both catch basins to existing 12" pipe, add 15 feet of 12" Vitrified Clay Pipe (est.); 12" Vitrified clay pipe as per 706.08; Payment as per Item 603, Class B bedding

Galvanize Grating and frame as per 711.02. Structural Steel shall be in accordance with 711.01 and 513.

All concrete, reinforcing steel, gratings, frames and dowel holes into existing structure shall be included in Item 604 for payment.

LLV = Long Leg vertical

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

44/72

CATCH BASIN-SOUTH WALL

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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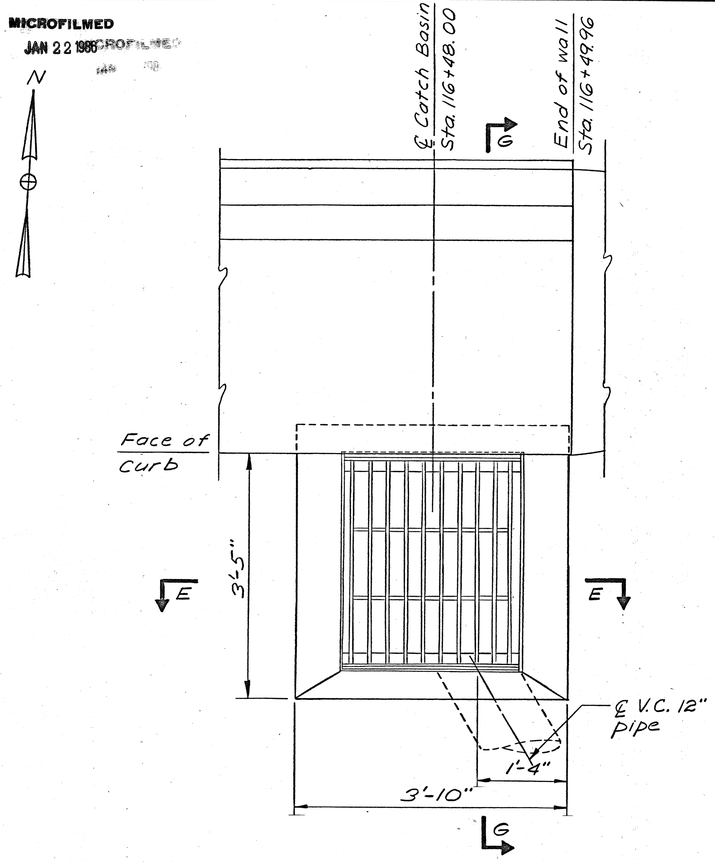
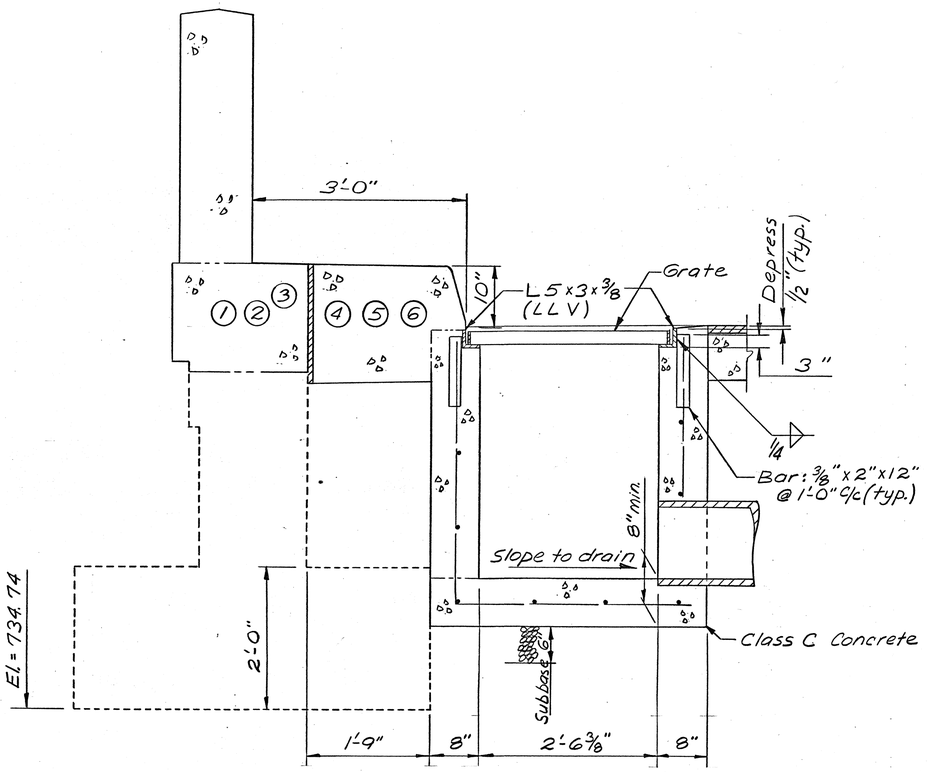
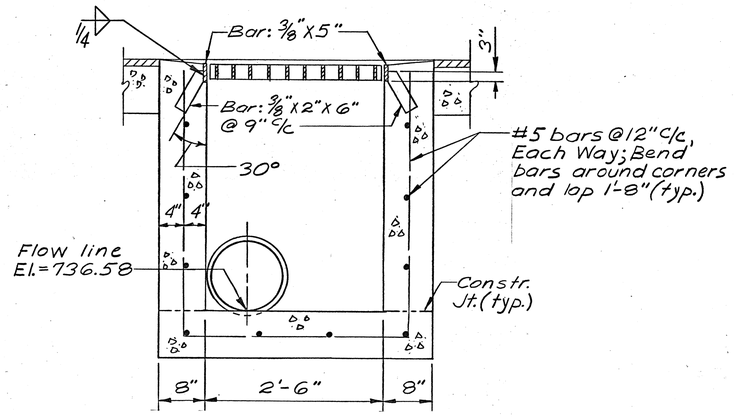
BEL-40-23.38



PLAN AT NORTH WALL



SECTION G-G



SECTION E-E

NOTES

See sheet 41/72 for catch basin location

For grating details see sheet 44/72

L L V = Long Leg Vertical

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

45/72

CATCH BASIN-NORTH WALL

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

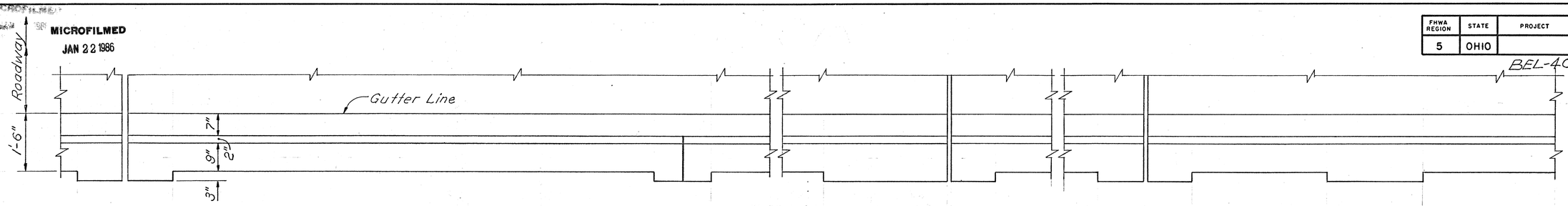
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

h52277

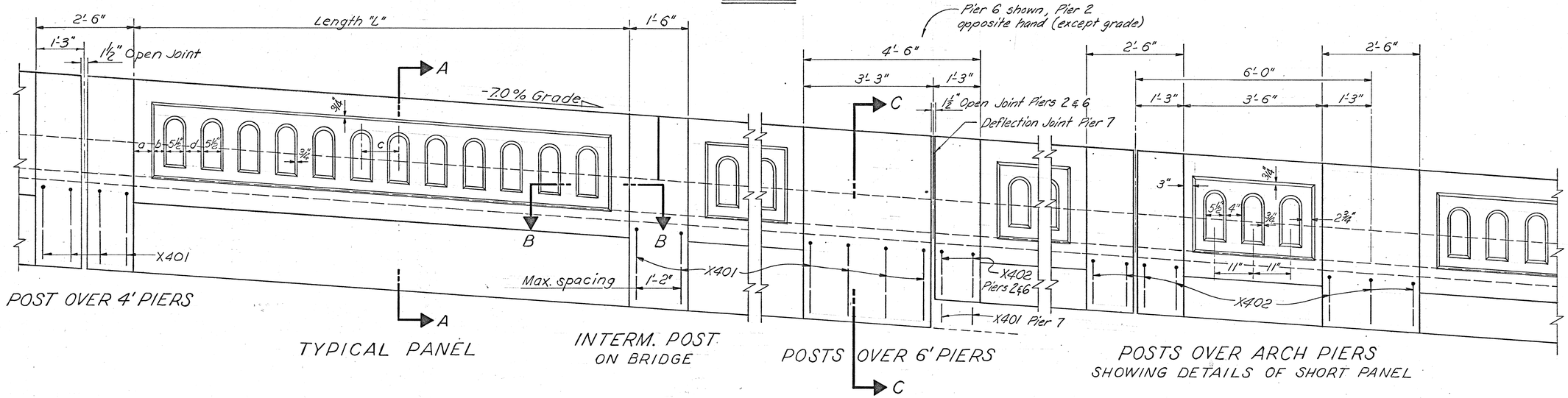
FHWA REGION	STATE	PROJECT	
5	OHIO		

48/74

BEL-40-23.38



PLAN



POST OVER 4' PIERS

TYPICAL PANEL

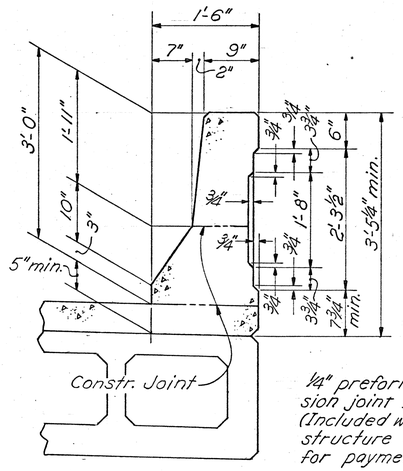
INTERM. POST ON BRIDGE

POSTS OVER 6' PIERS

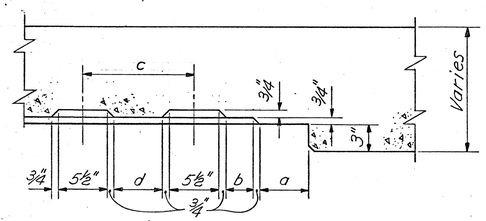
POSTS OVER ARCH PIERS
SHOWING DETAILS OF SHORT PANEL

ELEVATION *

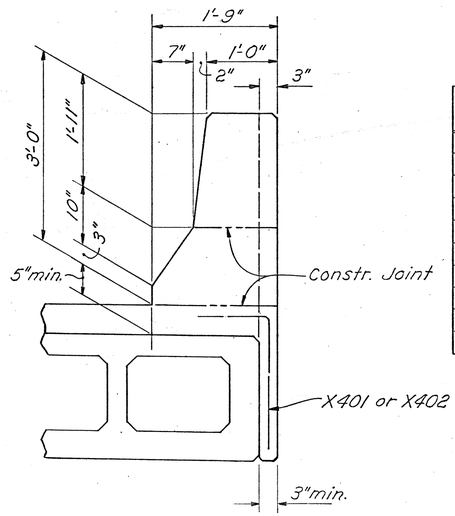
* NORTH SIDE ELEVATION is similar but opposite hand.



SECTION A-A



SECTION B-B



SECTION C-C

Panel Length "L"	No. of Panels	Figures Per Panel	Dimension a	b	c	d
10'-0"	3	9	5"	2¾"	12"	5"
10'-9"	6	10	5½"	3"	11½"	4½"
12'-3"	6	11	5¾"	3½"	12"	5"
12'-6"	26	12	5"	2½"	11½"	4½"
13'-0"	6	12	5"	2¾"	12"	5"
13'-1½"	13	12	5"	3½"	12"	5"
13'-3"	2	12	5¾"	3½"	12"	5"
13'-6"	3	12	5¾"	3⅝"	12⅛"	5⅛"
13'-9¾"	2	13	5"	3⅛"	11¾"	4¾"
14'-0"	1	13	5"	2¾"	12"	5"

¼" preformed expansion joint filler. (Included with superstructure concrete for payment.) ‡

SECTION THRU DEFLECTION JOINT

‡ PREFORMED EXPANSION JOINT FILLER in the parapet deflection joints may be either ¼" gray sponge rubber or ¼" gray cellular polyvinyl chloride (PVC) sponge. If rubber is used it shall meet the requirements of AASHTO M-153.

For additional details see "RAILING DETAILS NORTH SIDE", sheet 47/72.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

46/72

RAILING DETAILS SOUTH SIDE

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM.	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-40-23.38

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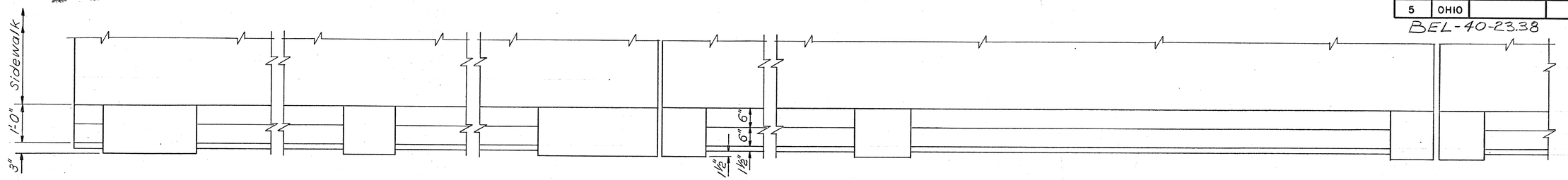
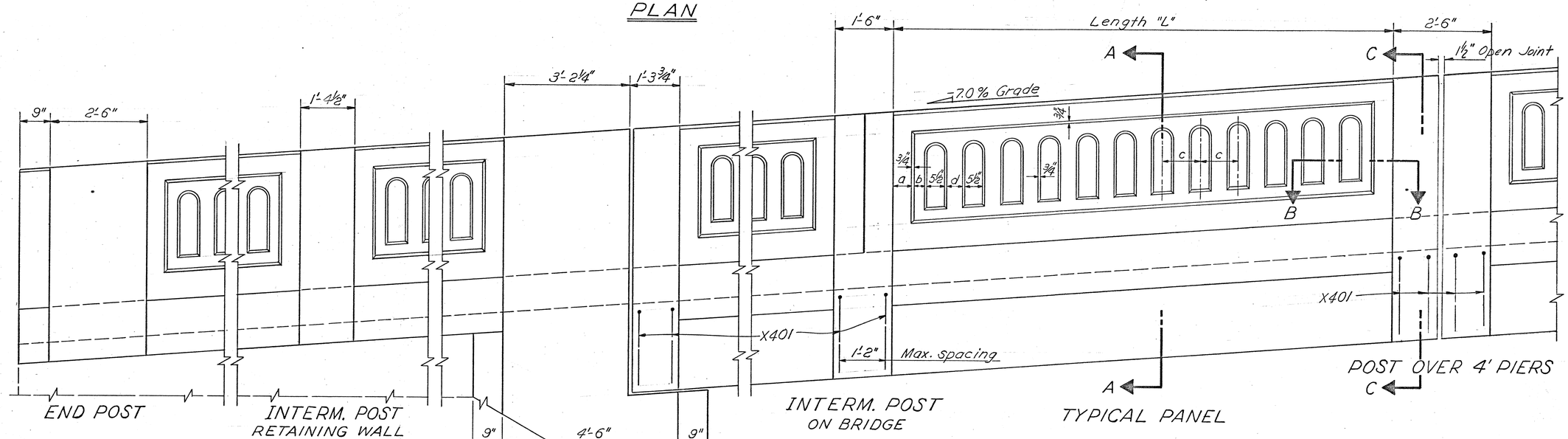
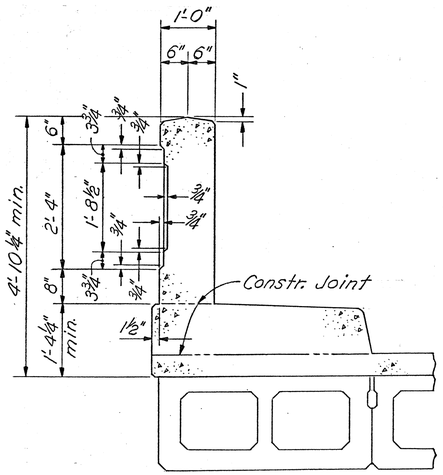


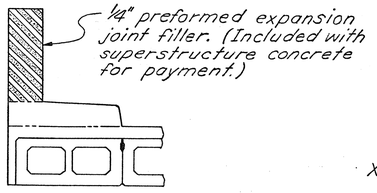
PLAN



POSTS AT ABUTMENTS

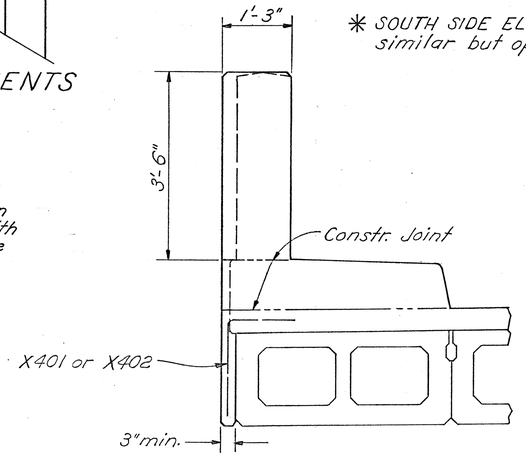


SECTION A-A



SECTION THRU DEFLECTION JOINT

ELEVATION *



SECTION C-C

* SOUTH SIDE ELEVATION is similar but opposite hand.

Panel Length "L"	No. of Panels	Figures Per Panel	Dimension a	b	c	d
8'-4½"	2	7	5"	3½"	12½"	5½"
10'-9"	3	10	5½"	3"	11½"	4½"
12'-3"	6	11	5¾"	3½"	12"	5"
12'-6"	28	12	5"	2½"	11½"	4½"
13'-0"	6	12	5"	2¾"	12"	5"
13'-1½"	14	12	5"	3½"	12"	5"
13'-3	4	12	5¾"	3½"	12"	5"
13'-6"	3	12	5¾"	3⅝"	12¼"	5¼"
13'-9¾"	2	13	5"	3⅓"	11¾"	4¾"
14'-0"	1	13	5"	2¾"	12"	5"

For additional details and Section B-B see "RAILING DETAILS SOUTH SIDE", sheet 46/72.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

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RAILING DETAILS NORTH SIDE

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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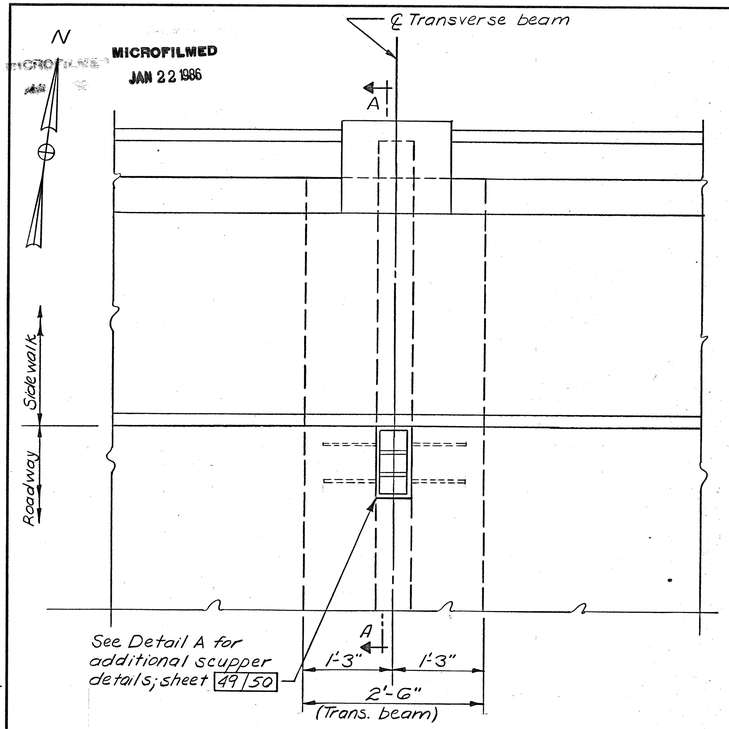
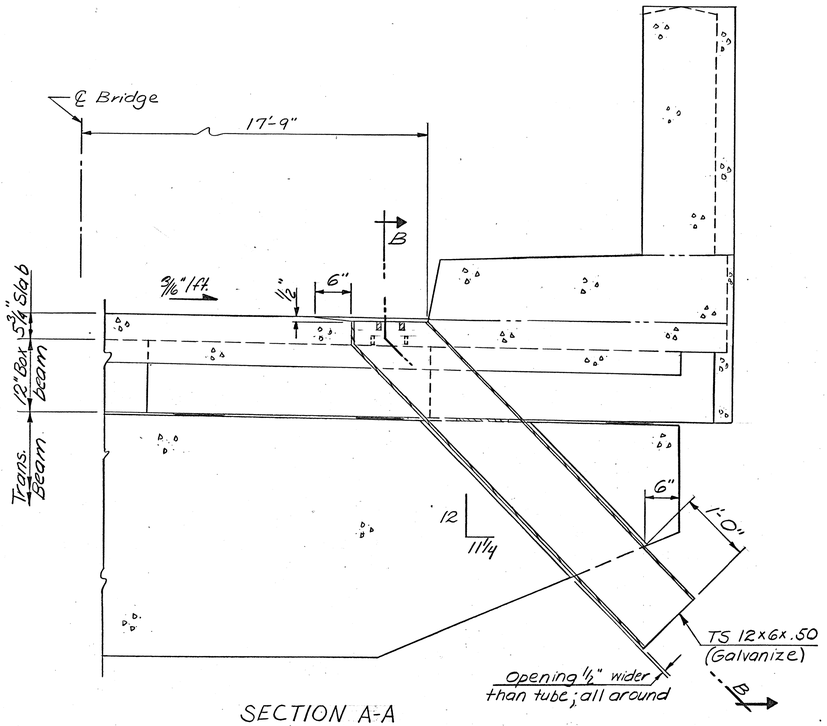
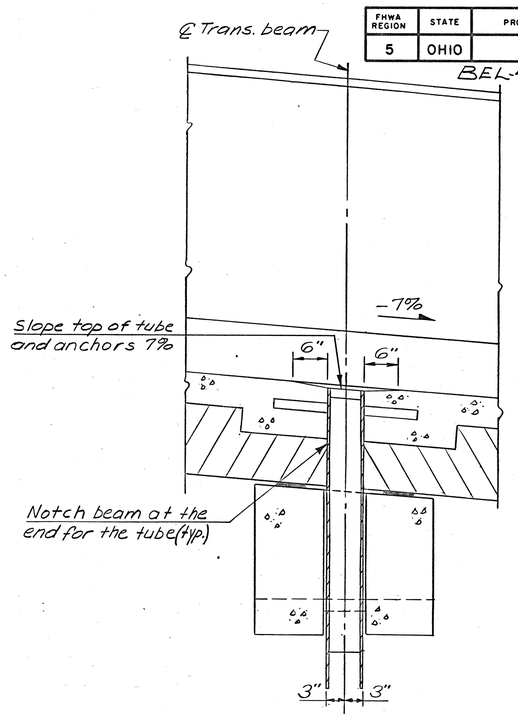
BEL-40-23.38



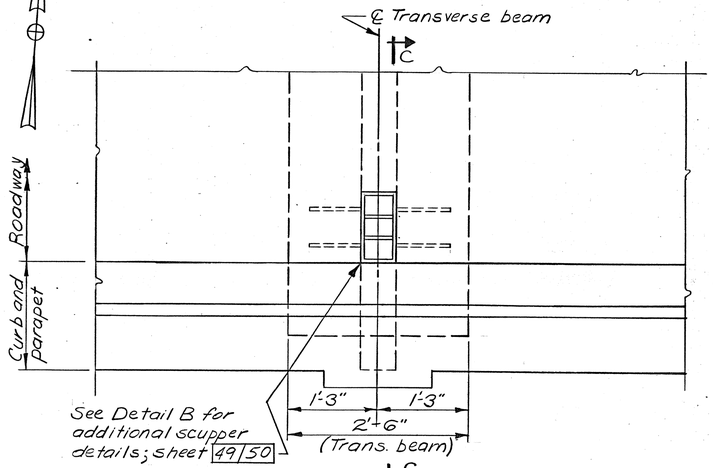
PLAN
SCUPPER
(North Side)



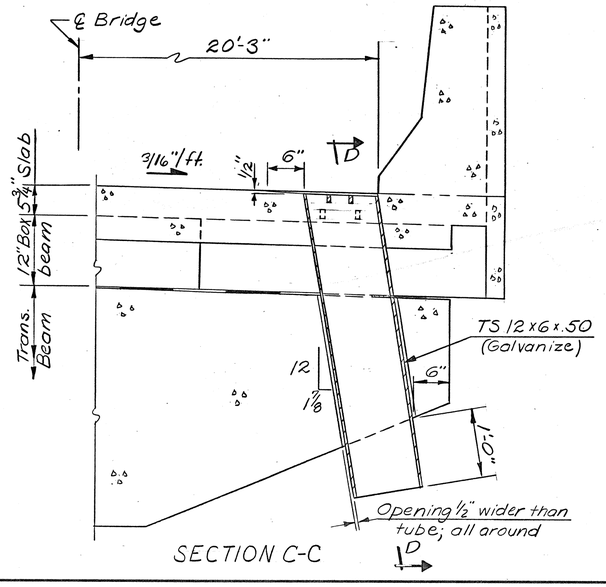
SECTION A-A



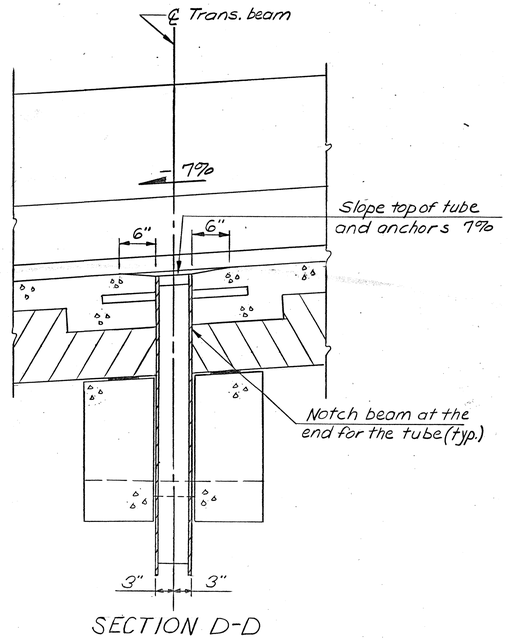
SECTION B-B



PLAN
SCUPPER
(South Side)



SECTION C-C



SECTION D-D

NOTE

SEE sheet 49/50 for additional notes and details.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

48/72

SUPERSTRUCTURE AND SCUPPER DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D	WJJ	12-1-80	

N:0277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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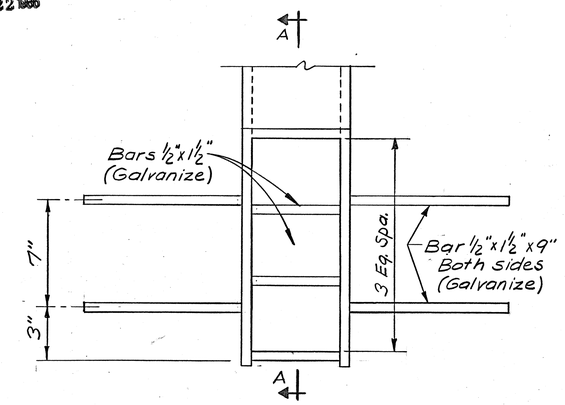
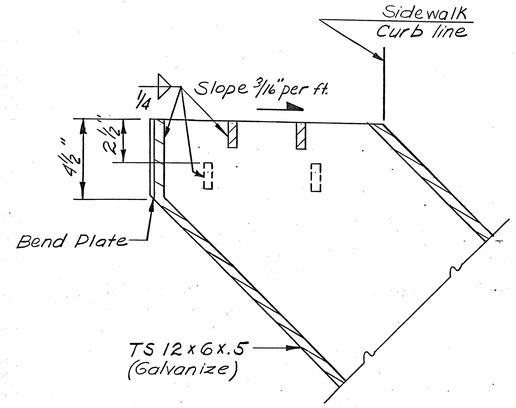
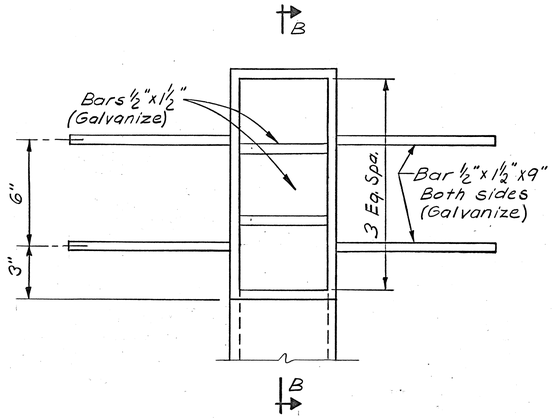
BEL-40-23.38



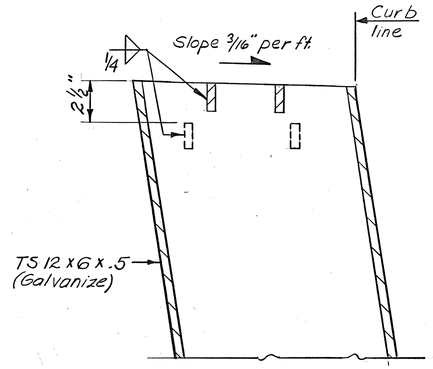
DETAIL A
(Scupper North side)



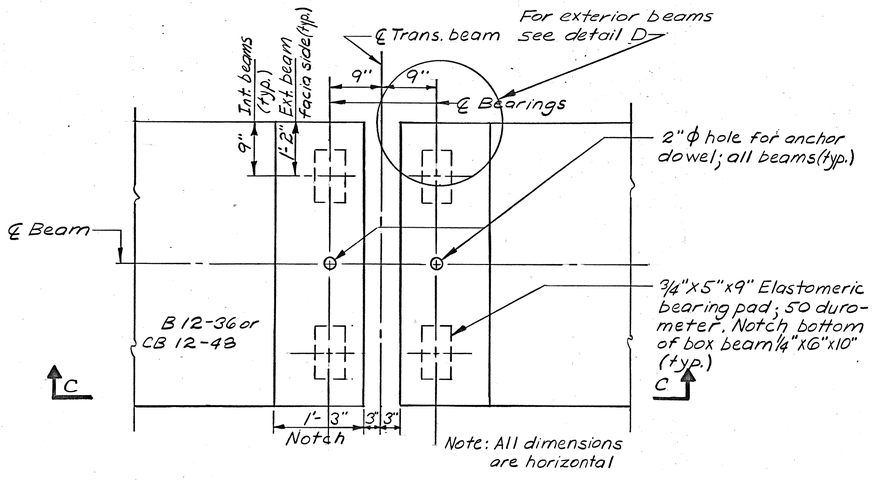
SECTION A-A



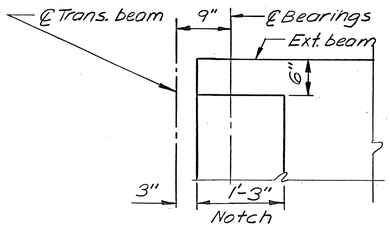
DETAIL B
(Scupper South Side)



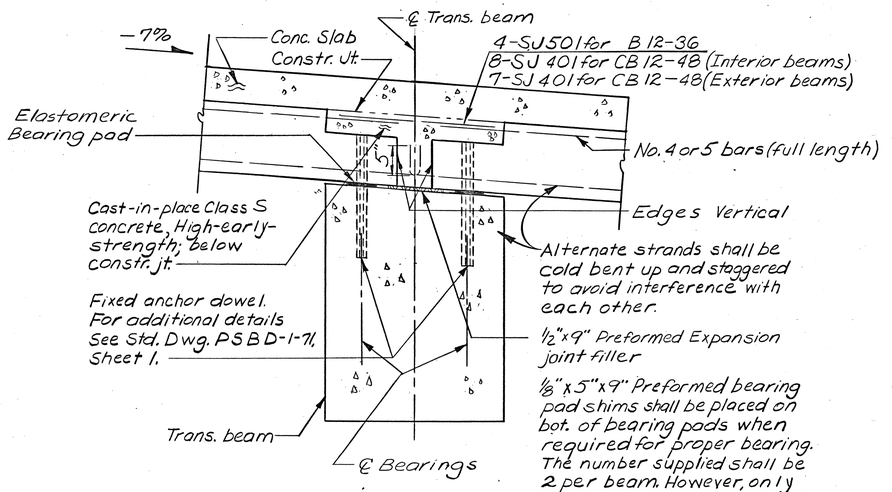
SECTION B-B



PLAN AT TRANSVERSE BEAM
(BEAM A)
For beam layout see sheet 14



DETAIL D



SECTION-TRANSVERSE BEAM A
(SECTION C-C)

NOTES:

BRIDGE SEAT REINFORCING: Reinforcing steel in the vicinity of the bridge seat shall be accurately placed to avoid interference with the drilling of anchor bar holes.

All 2" holes in the box beams shall be vertical.

See sheet 48/72 for Detail A and B locations
See sheet 14/72 for scupper locations

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

49/72

SUPERSTRUCTURE & SCUPPER DETAILS
BRIDGE NO. BEL-40-2338 OVER THE B. & O. RAILROAD AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-90	

h02077

FHWA REGION	STATE	PROJECT	
5	OHIO		

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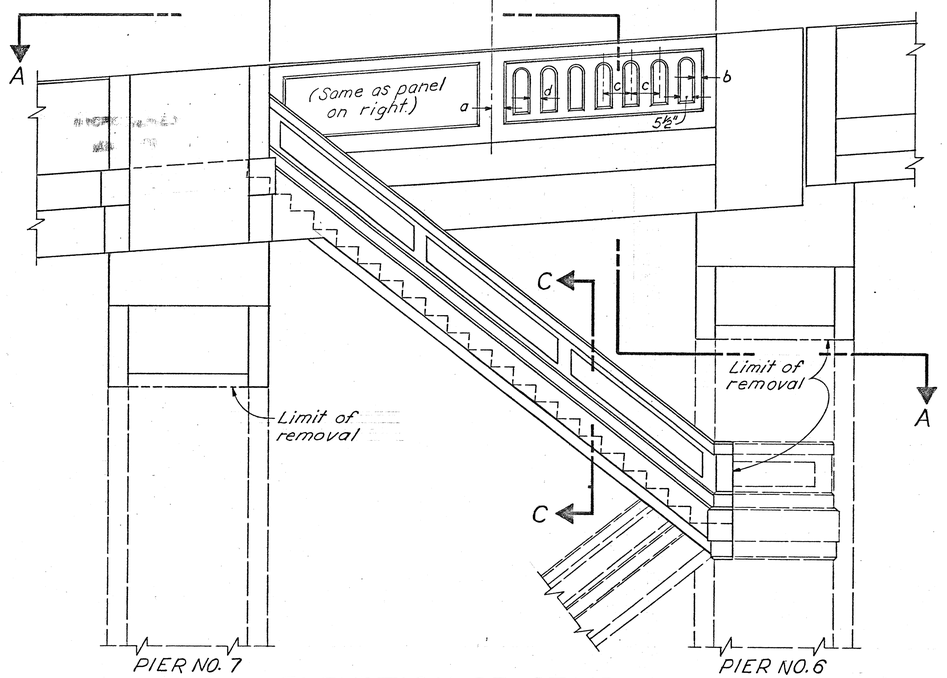
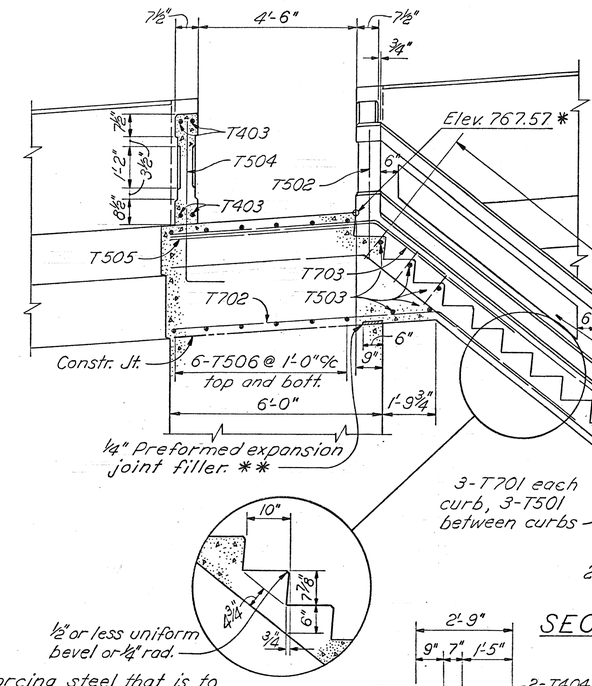
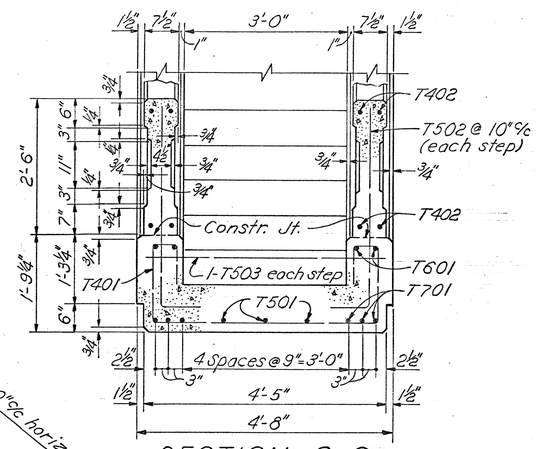
BEL-40-23.38

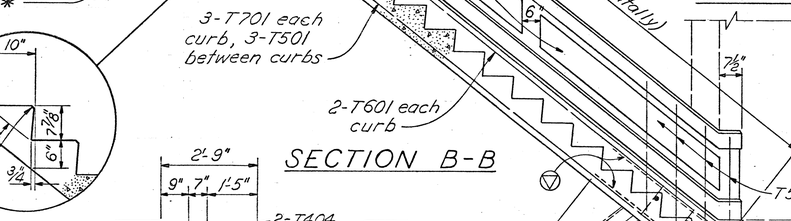


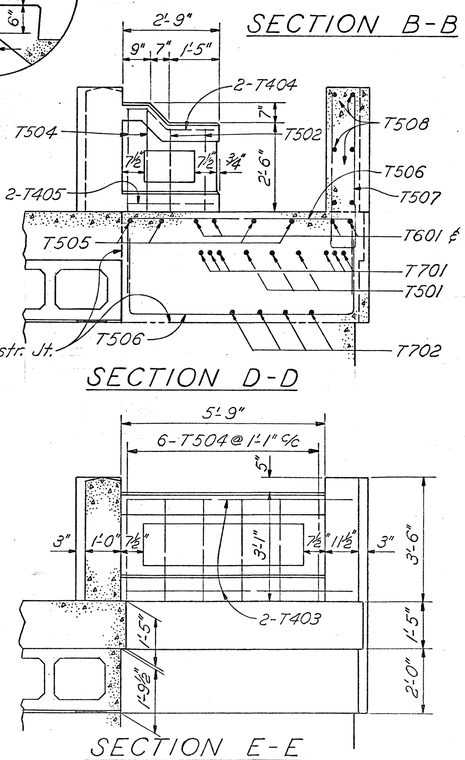
ELEVATION OF STAIRWAY

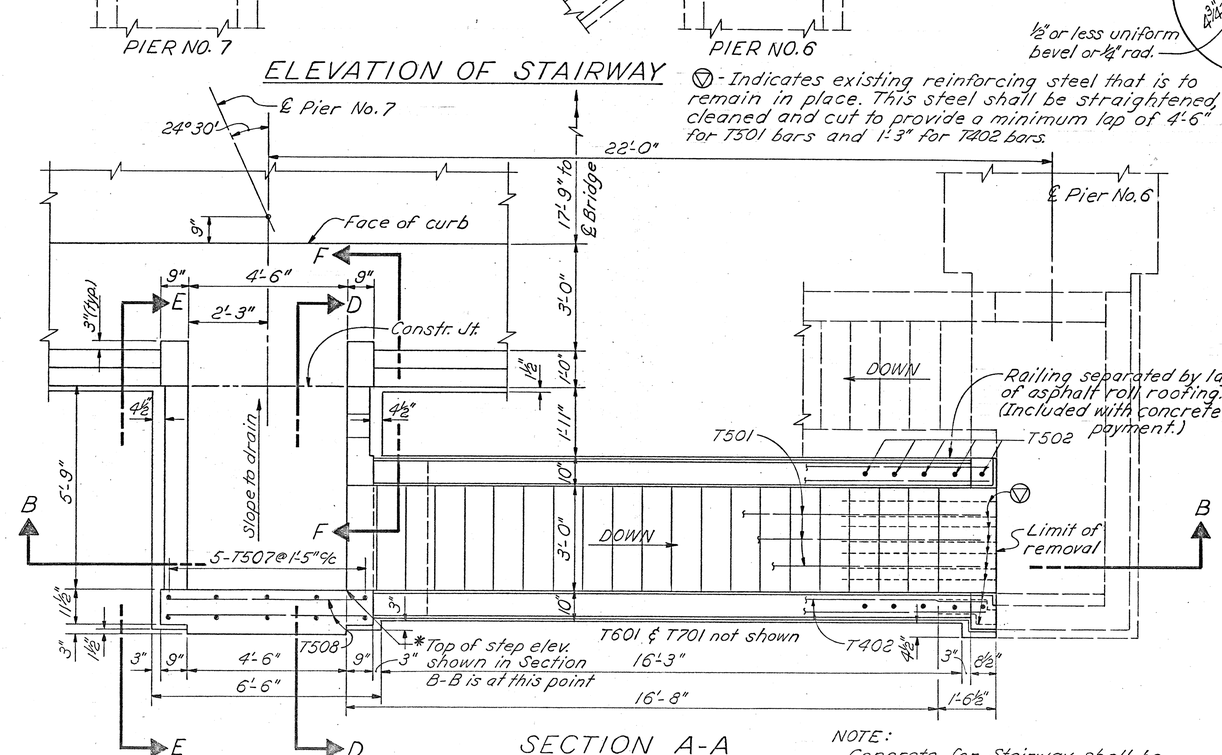
▽ - Indicates existing reinforcing steel that is to remain in place. This steel shall be straightened, cleaned and cut to provide a minimum lap of 4'-6" for T501 bars and 1'-3" for T402 bars.



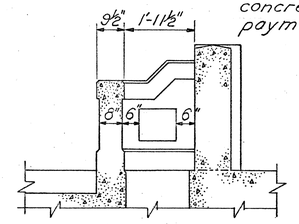








NOTE:
Concrete for Stairway shall be Class S.



** Included with concrete for payment.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

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STAIRWAY DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED / DATE	REVISED
AJM	AJM		R.L.D.	WJJ 12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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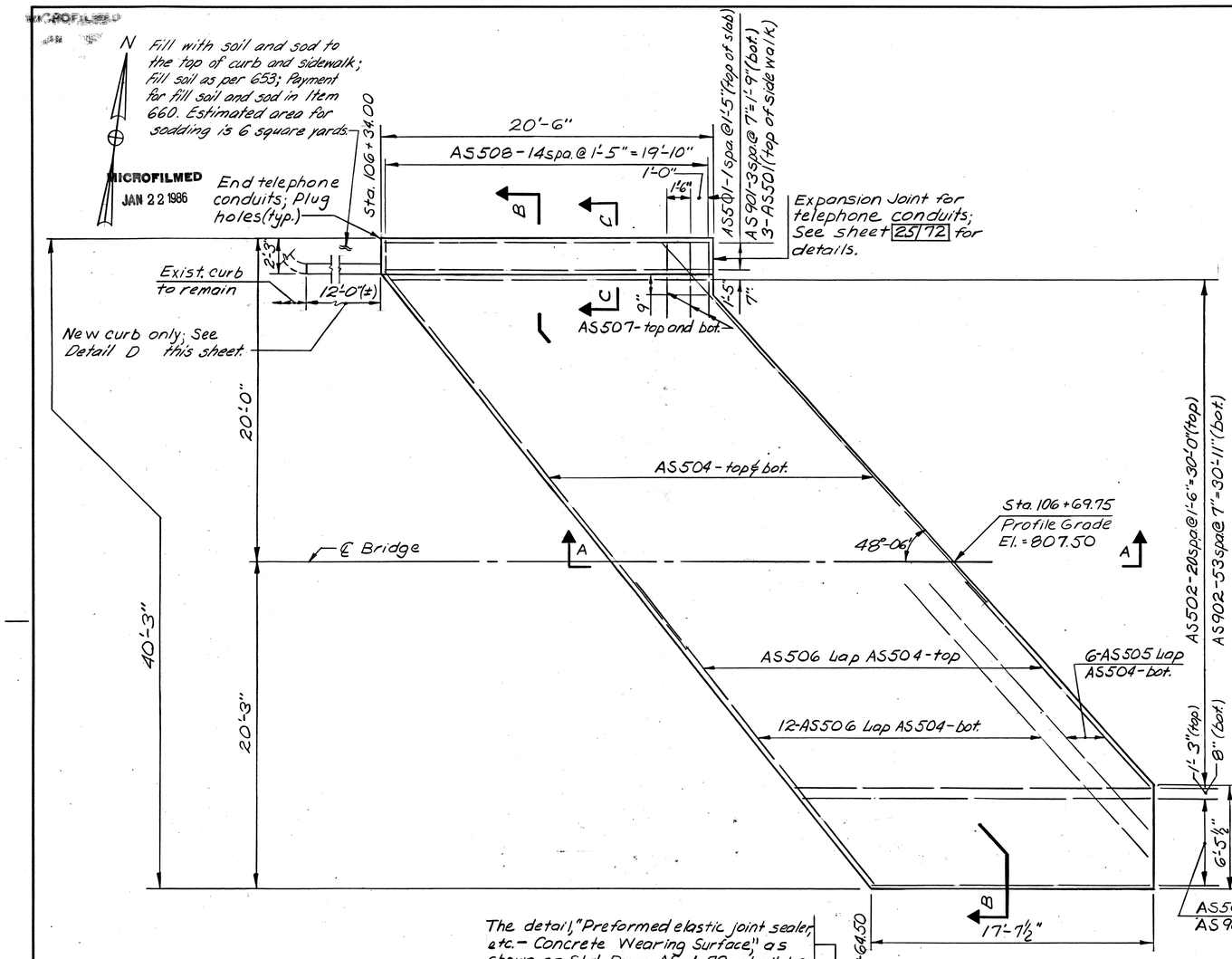
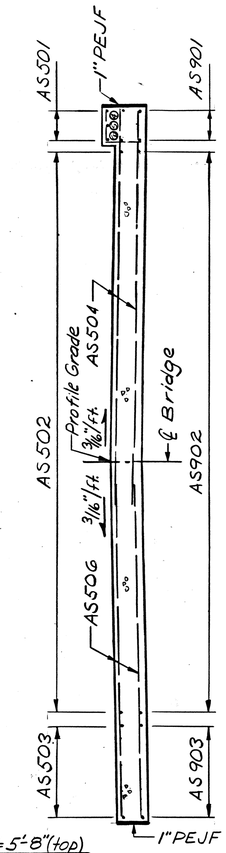
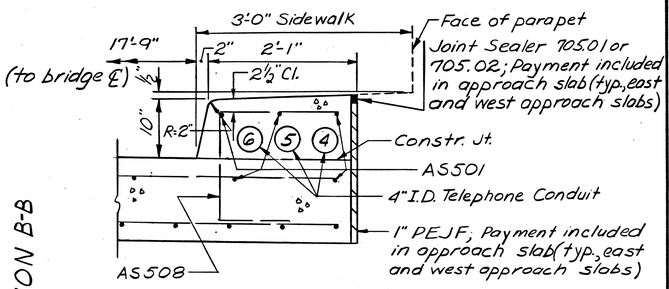
BEL-40-2338



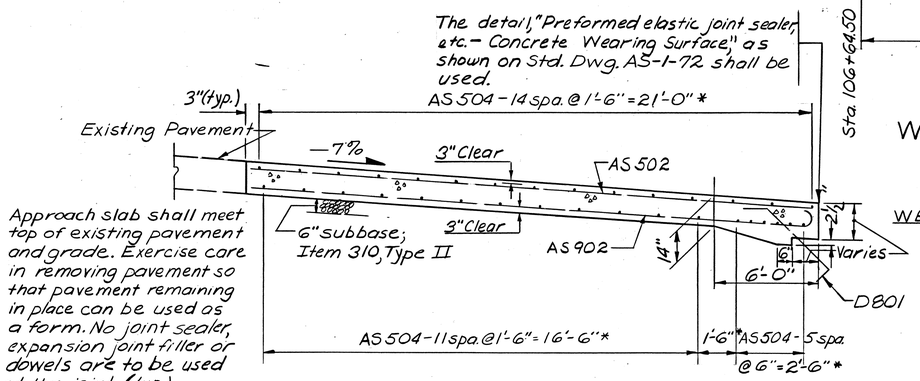
PLAN
WEST APPROACH SLAB



SECTION B-B



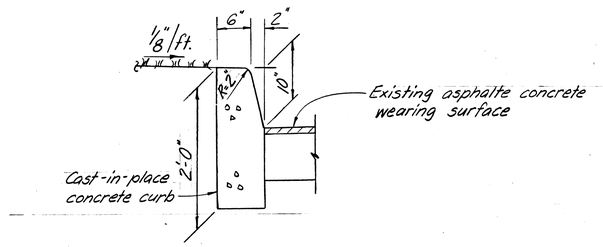
SECTION C-C



Approach slab shall meet top of existing pavement and grade. Exercise care in removing pavement so that pavement remaining in place can be used as a form. No joint sealer, expansion joint filler or dowels are to be used at this joint. (typ.)

* Bar spacing along ℄ of roadway. Fan bars to fit.

SECTION A-A



DETAIL D

NOTES

See sheet 5/72 for West Abutment details.

For additional approach slab details see Std. Dwg. AS-1-72, sheets 1 and 2. Omit jacking holes.

Remove existing 8" concrete roadway slab plus 1 inch of asphalt wearing surface. Estimated Area = 80 yd.²

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WEST APPROACH SLAB

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	W.J.J.	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

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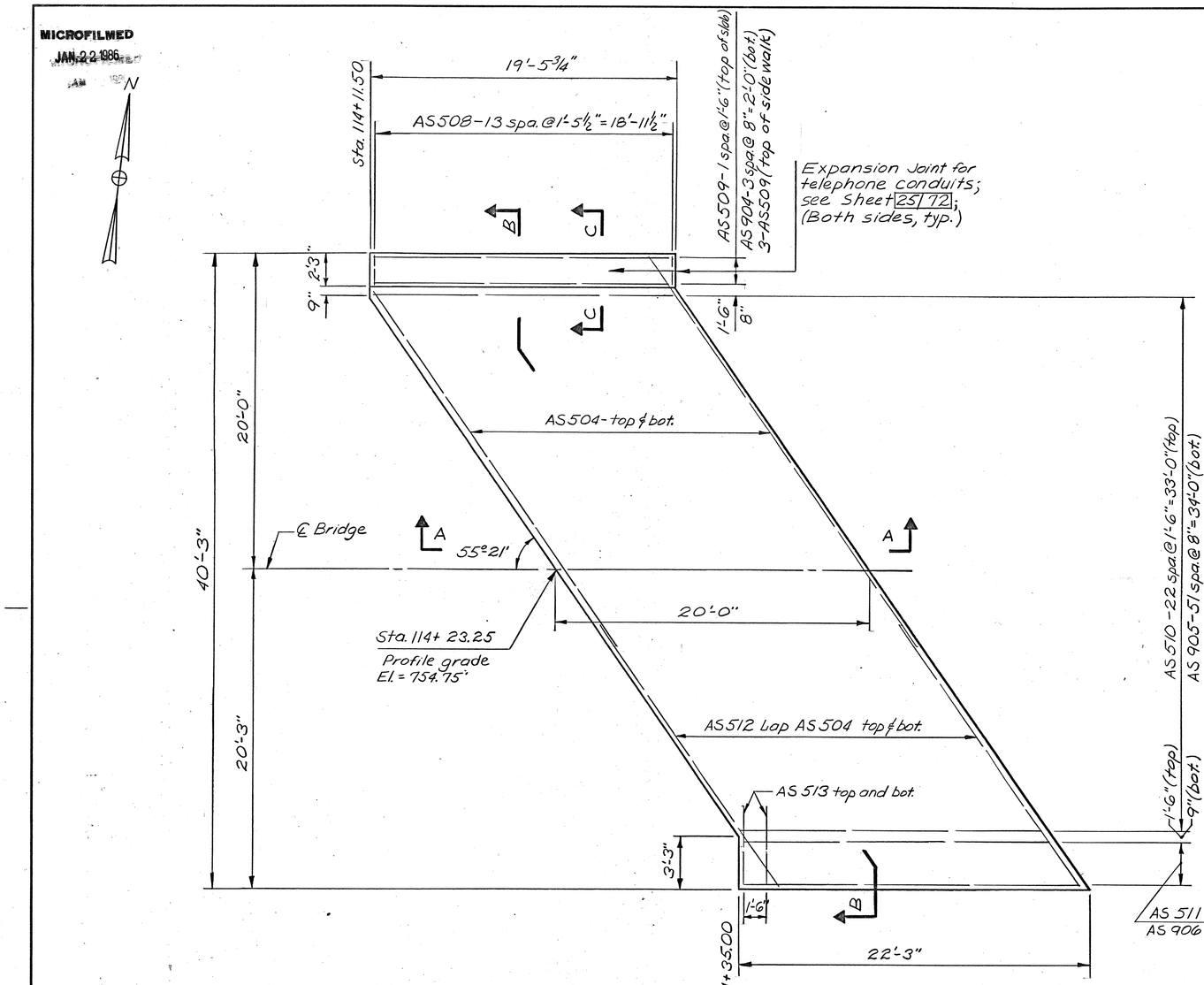
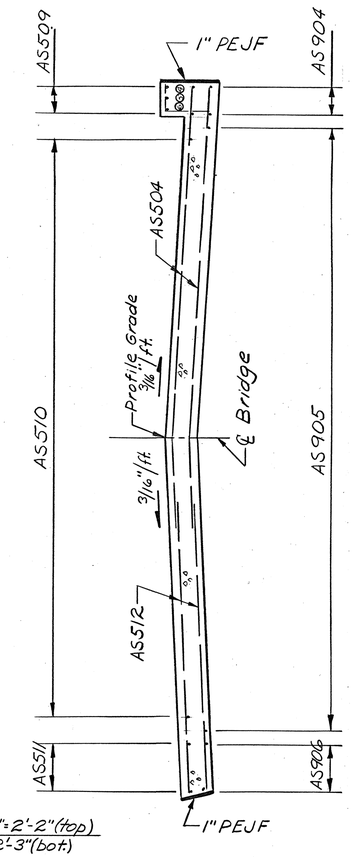
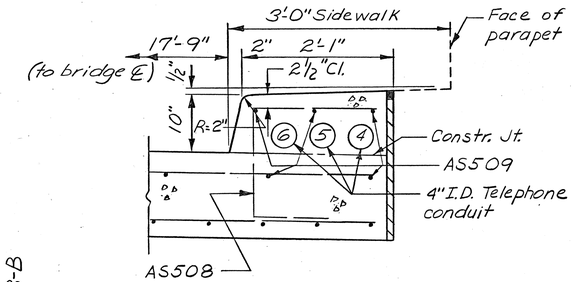
BEL-40-23.38



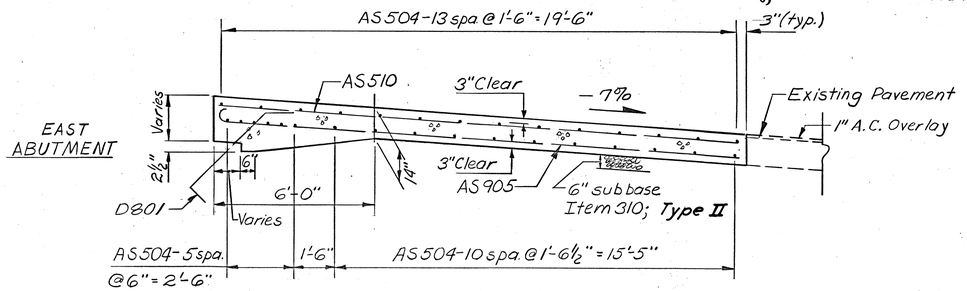
PLAN
EAST APPROACH SLAB



SECTION B-B



SECTION C-C



SECTION A-A

NOTES

See sheet 11/72 for East Abutment details.

Remove existing 8" concrete roadway slab plus 1 inch of asphalt wearing surface. Area Estimated = 76 sq. yds.

For additional details of curb and sidewalk removal see section A-A, sheet 42/72.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

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EAST APPROACH SLAB

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

h02277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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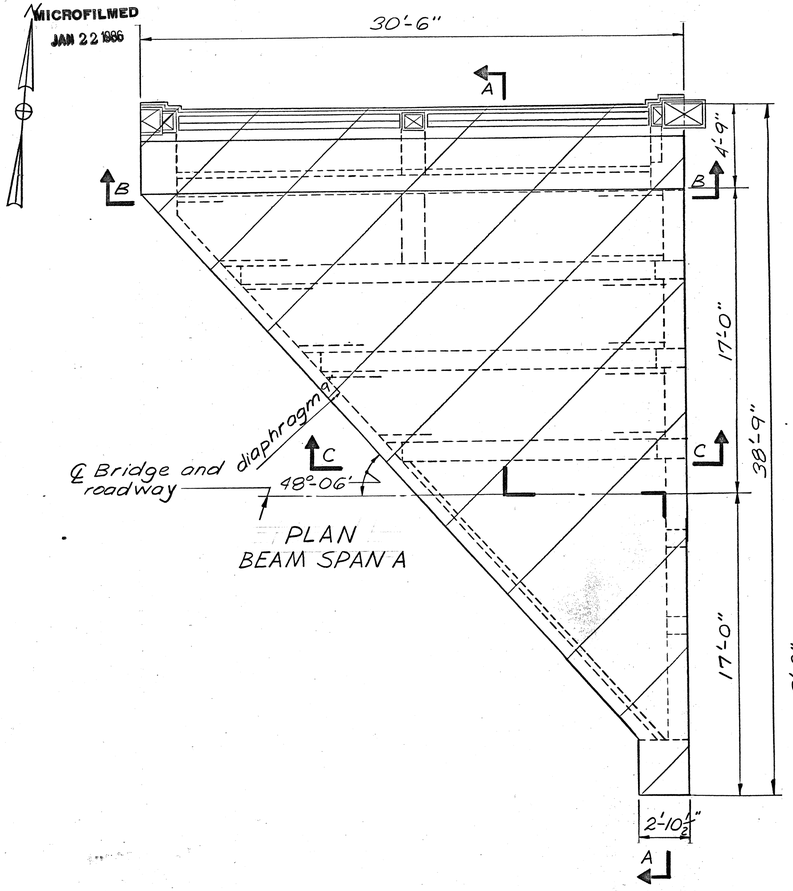
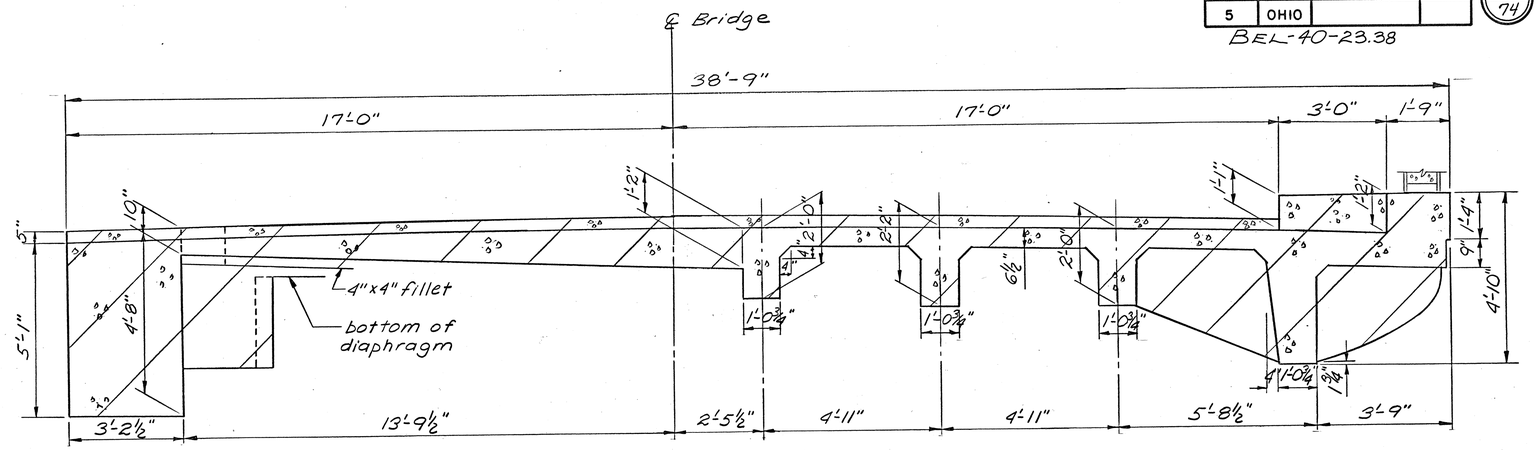
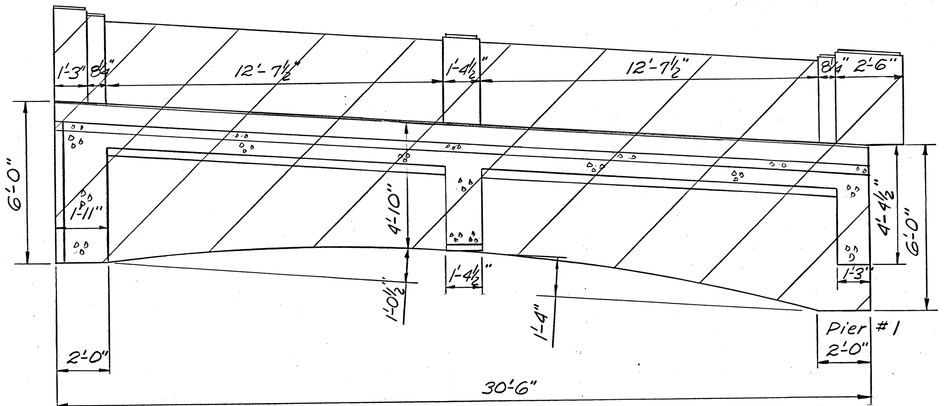
BEL-40-23.38



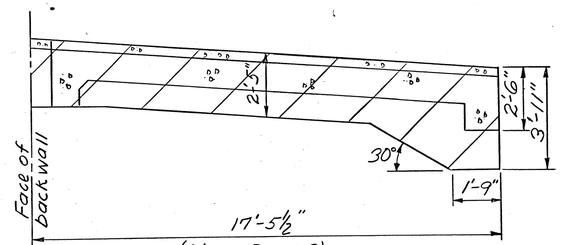
PLAN
BEAM SPAN A



SECTION A-A

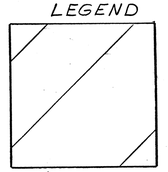


SECTION B-B



SECTION C-C

LEGEND



Area to remove

For parapet removal dimensions see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

53/72

CONCRETE REMOVAL BEAM SPAN "A"

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

P60277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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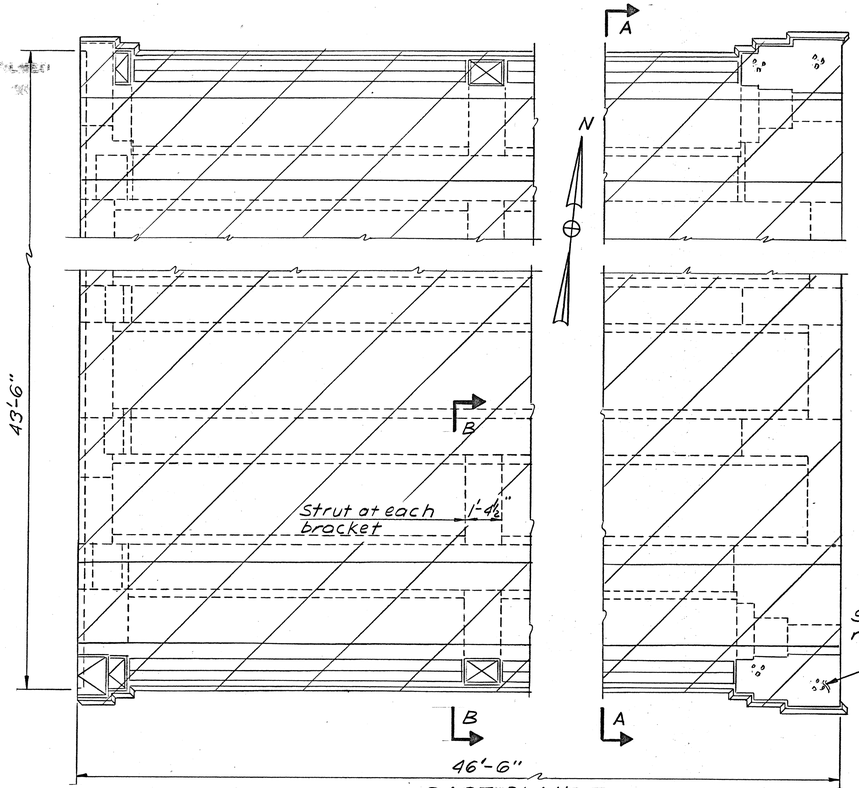
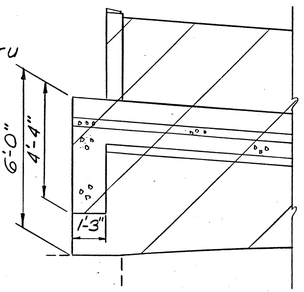
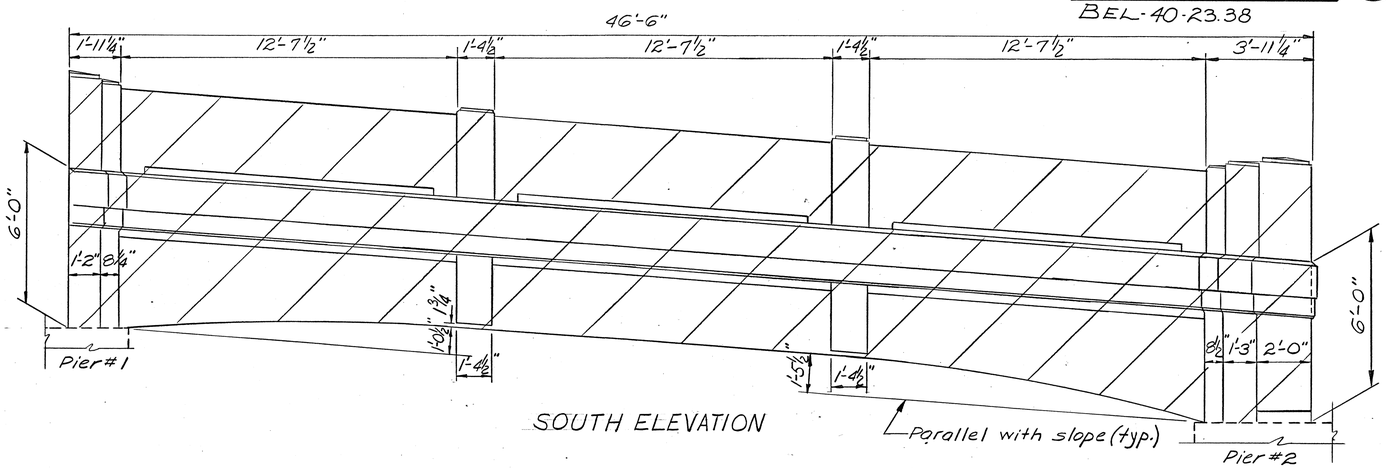
BEL-40-23.38



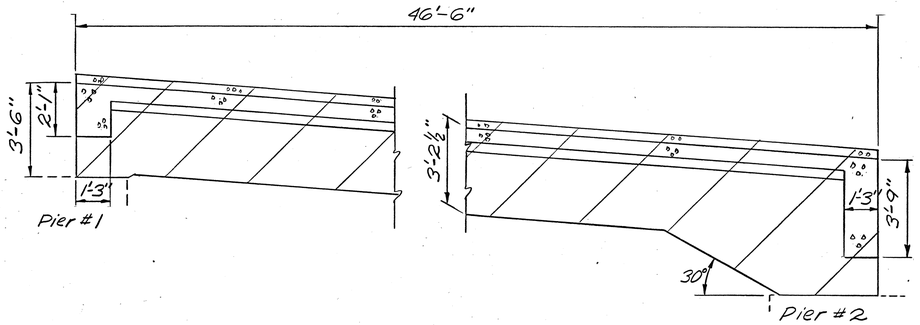
PART PLAN
BEAM SPAN B



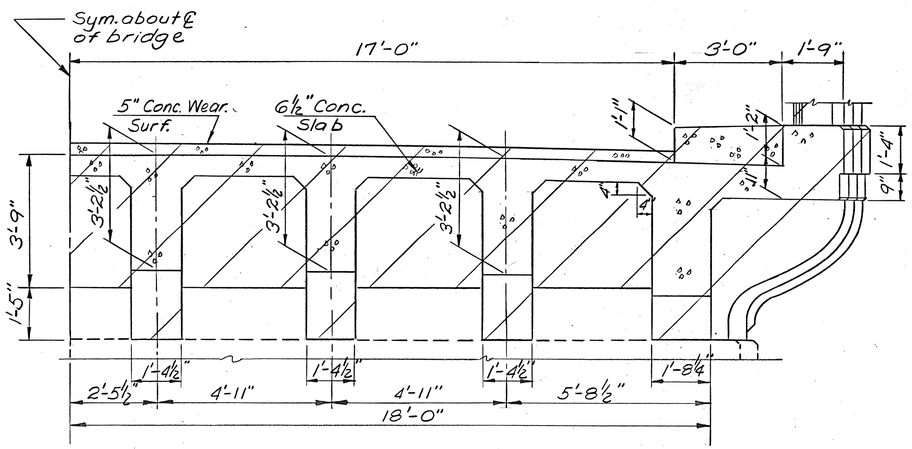
SECTION AT NORTH OUTSIDE BEAM
(Additional details as in South Elevation)



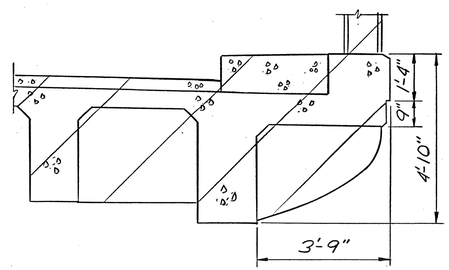
SOUTH ELEVATION



LONGITUDINAL SECTION SHOWING BEAMS NEAR ℄ BRIDGE
(Typ. all intermediate beams)

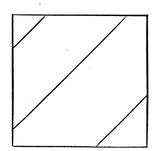


HALF SECTION A-A



SECTION B-B
(Showing intermediate bracket)

LEGEND



Area to remove

For parapet removal dimensions see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

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CONCRETE REMOVAL BEAM SPAN "B"

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

N-0277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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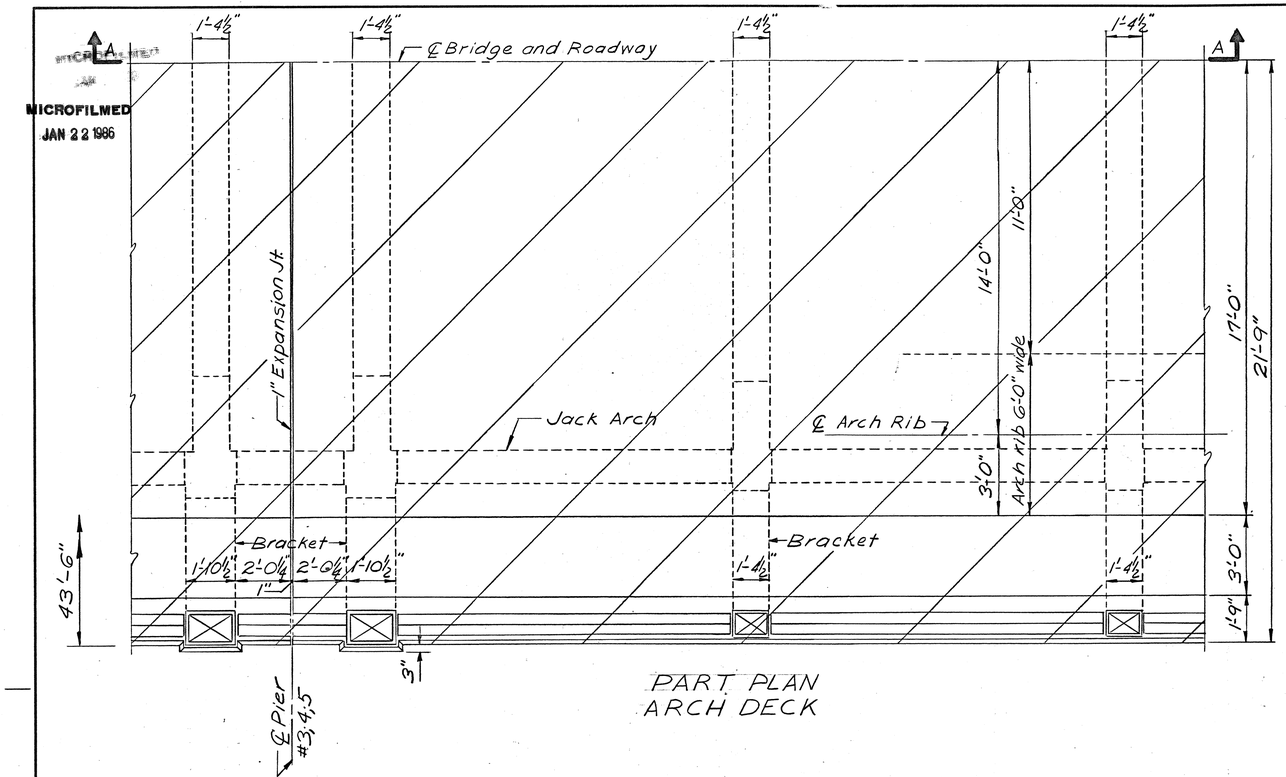
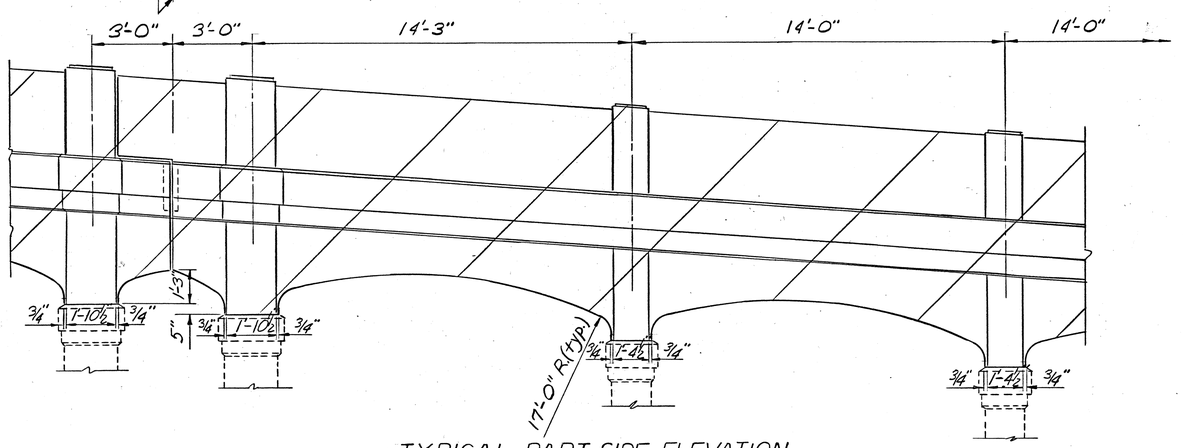
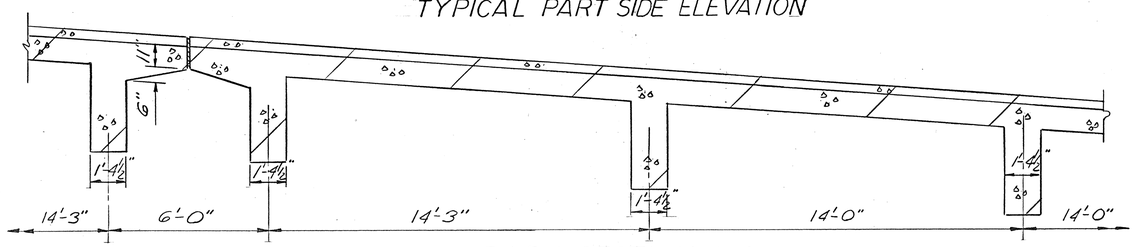


PART PLAN
ARCH DECK



TYPICAL PART SIDE ELEVATION

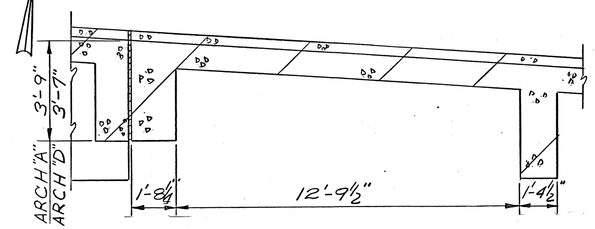


PART SECTION A-A

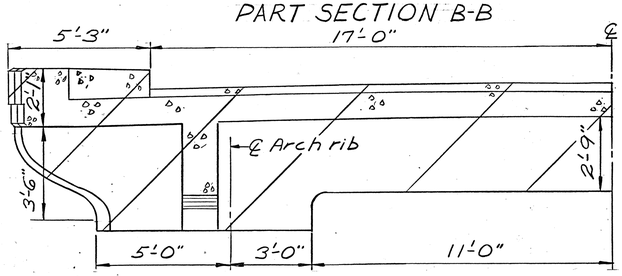
N

ARCH REMOVAL LENGTHS:

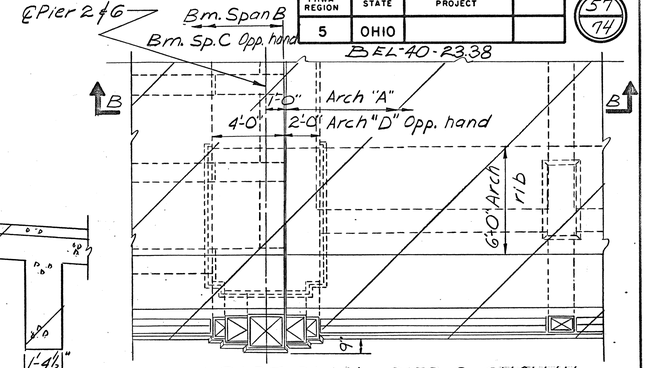
Arch "A" = 144'-6"
Arch "B" = 132'-6"
Arch "C" = 118'-6"
Arch "D" = 102'-6"



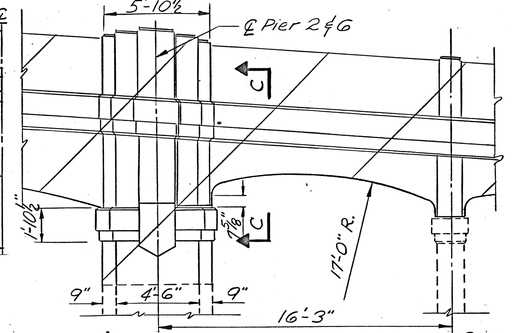
PART SECTION B-B



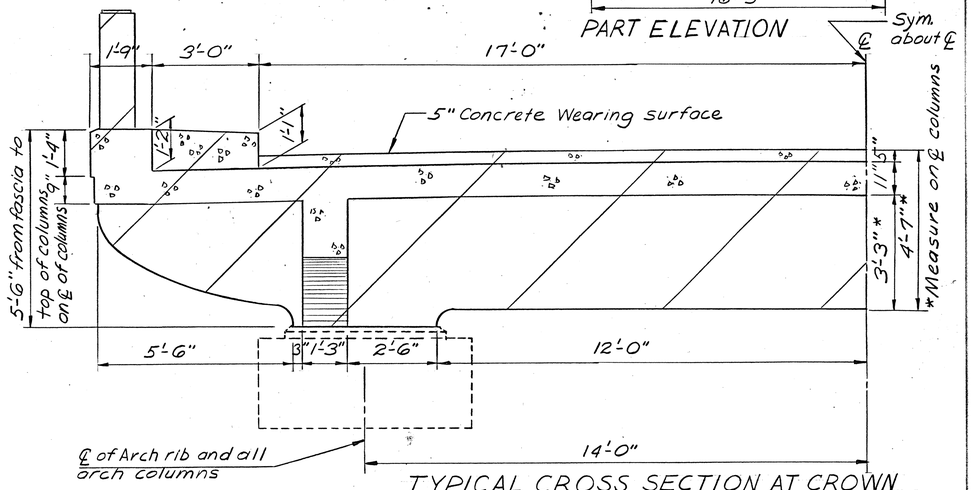
SECTION C-C



PART PLAN - PIER 2 SHOWN
PIER 6 OPPOSITE HAND

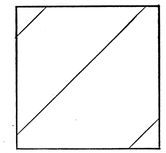


PART ELEVATION



TYPICAL CROSS SECTION AT CROWN

LEGEND



Area to remove

For parapet removal dimensions see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

55/72

CONCRETE REMOVAL ARCH SPANS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

N-0277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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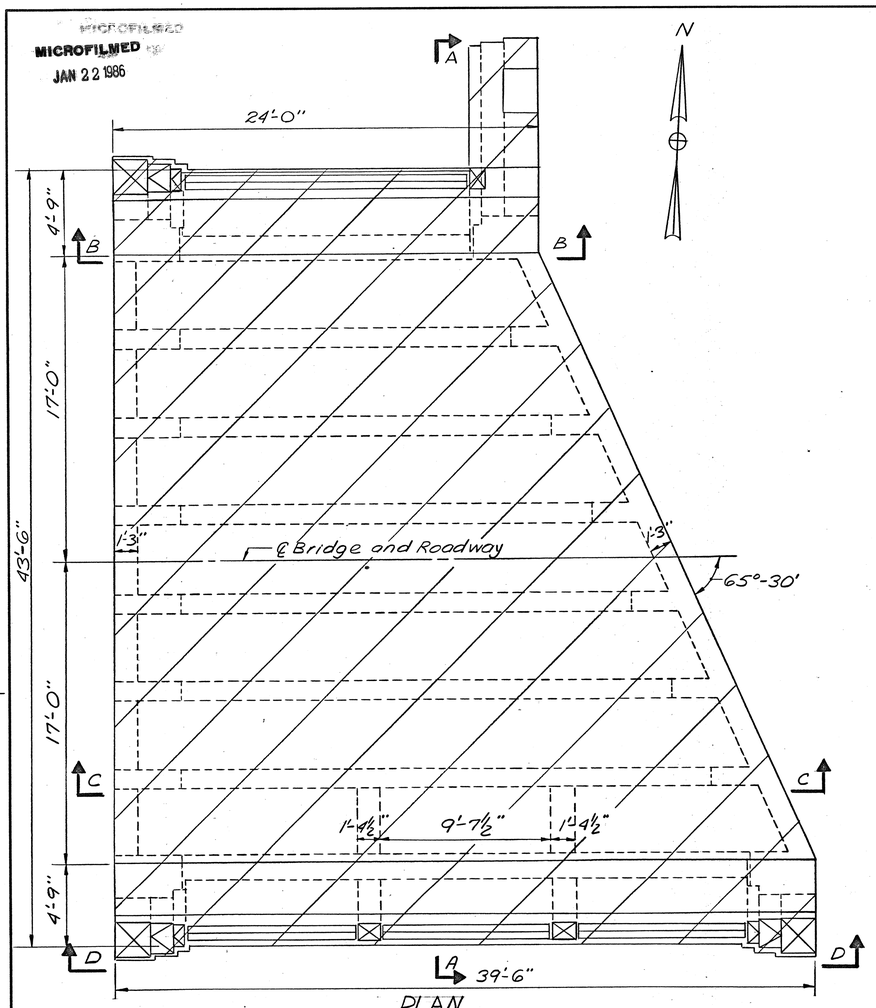
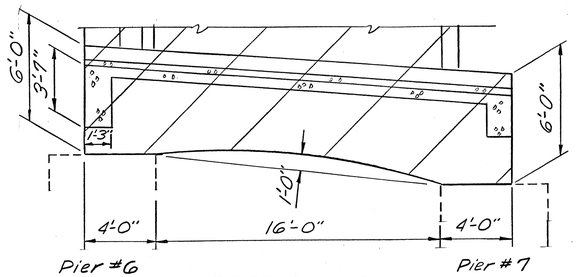
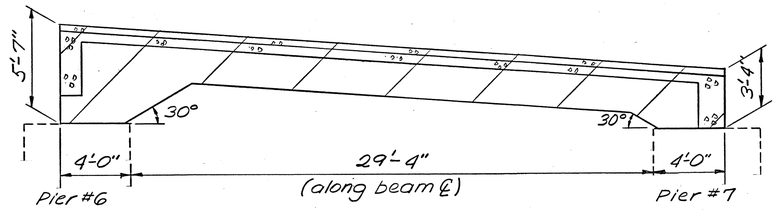
BEL-40-23.38



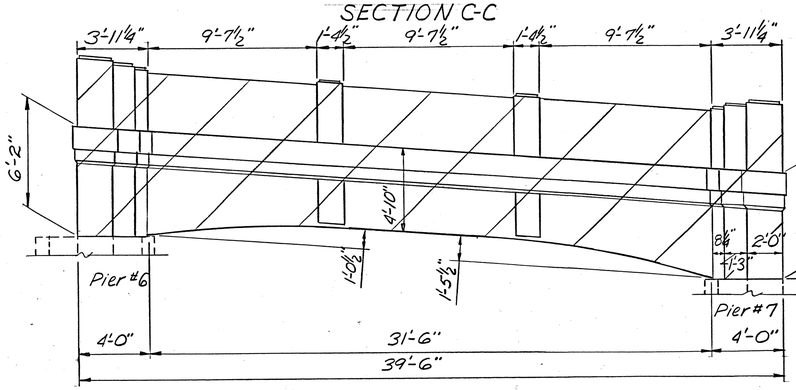
PLAN
BEAM SPAN C



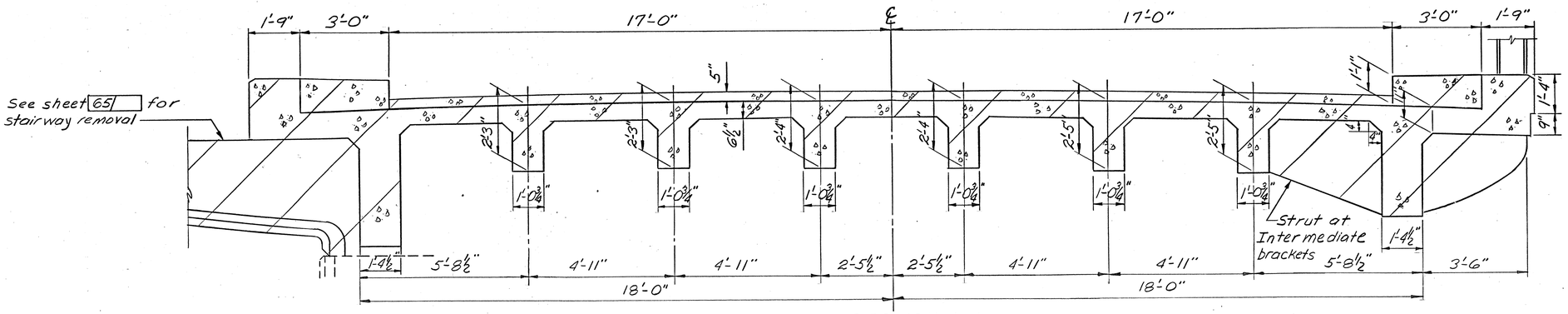
SECTION B-B



SECTION C-C



VIEW D-D



SECTION A-A

LEGEND

Area to remove

For parapet removal dimensions see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

56/72

CONCRETE REMOVAL BEAM SPAN "C"

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	W.J.J.	12-1-80	

h50277

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-40-23.38

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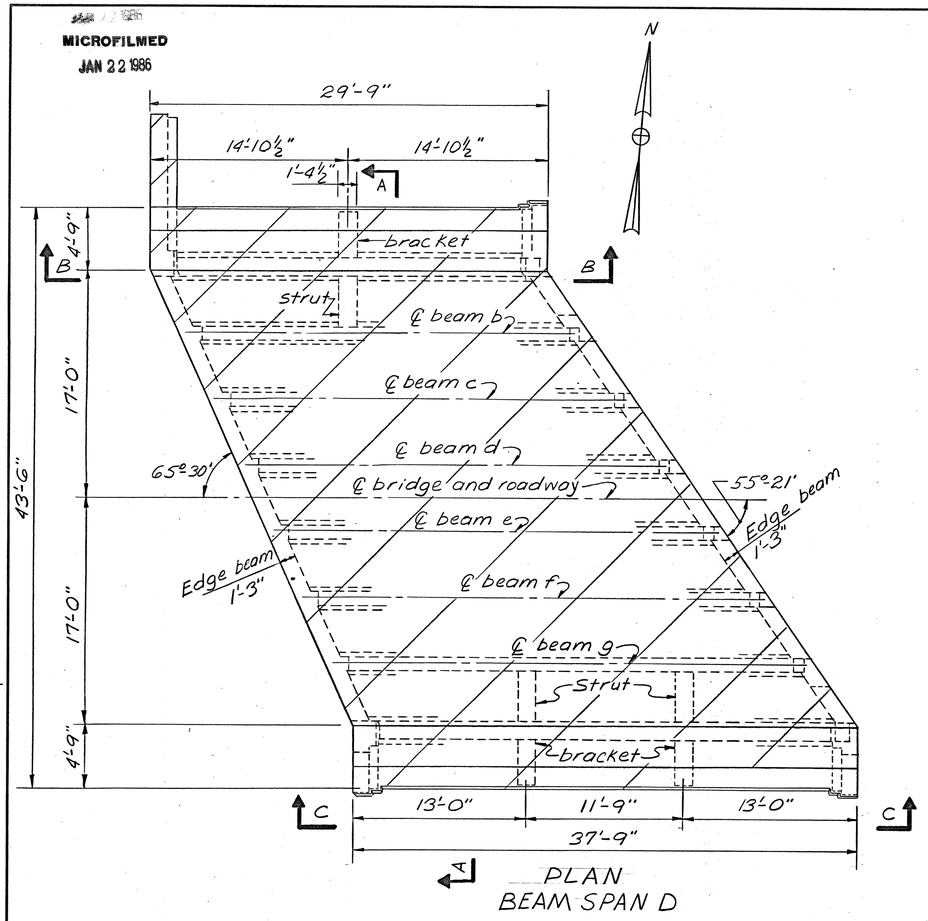
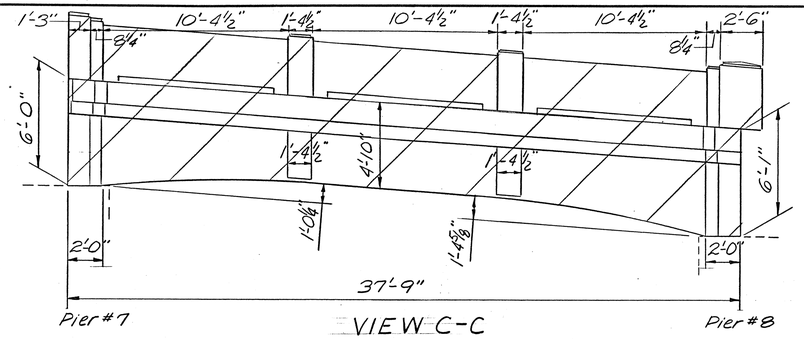
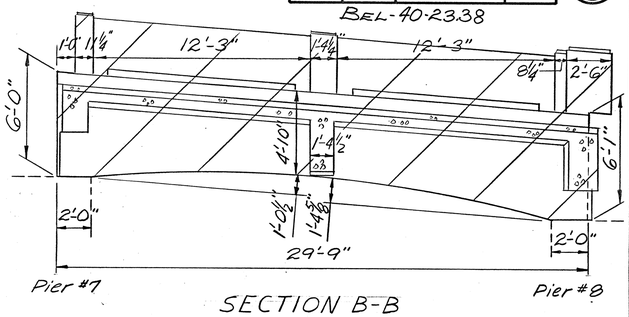


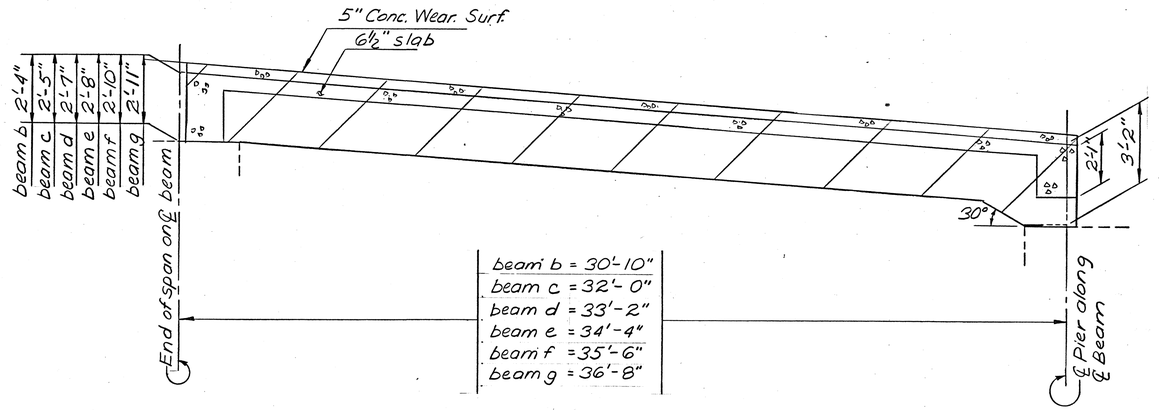
PLAN
BEAM SPAN D



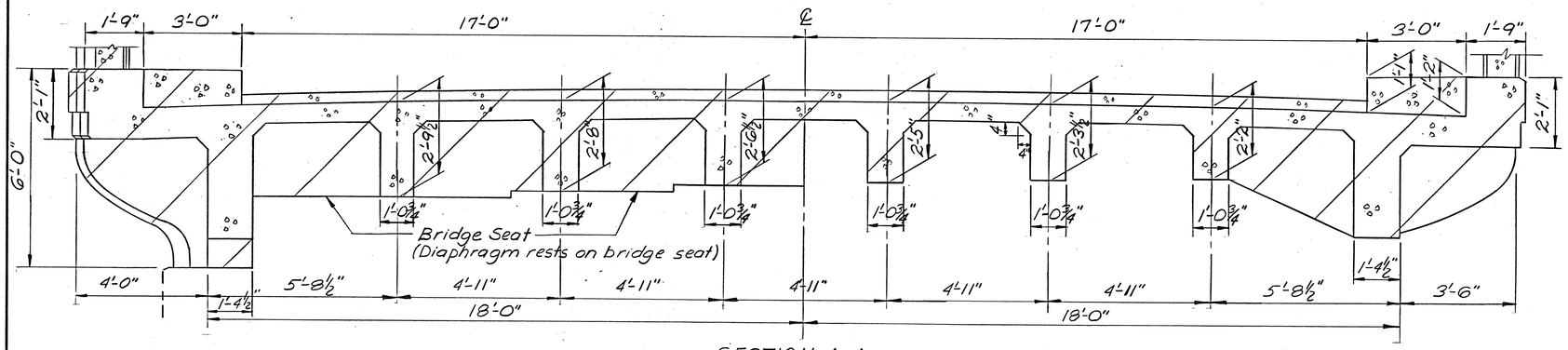
VIEW C-C



SECTION B-B



SECTION SHOWING INTERIOR BEAMS



SECTION A-A

LEGEND

Area to remove

For parapet removal dimensions see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

57/72

CONCRETE REMOVAL BEAM SPAN "D"

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

h40277

FHWA REGION	STATE	PROJECT	
5	OHIO		

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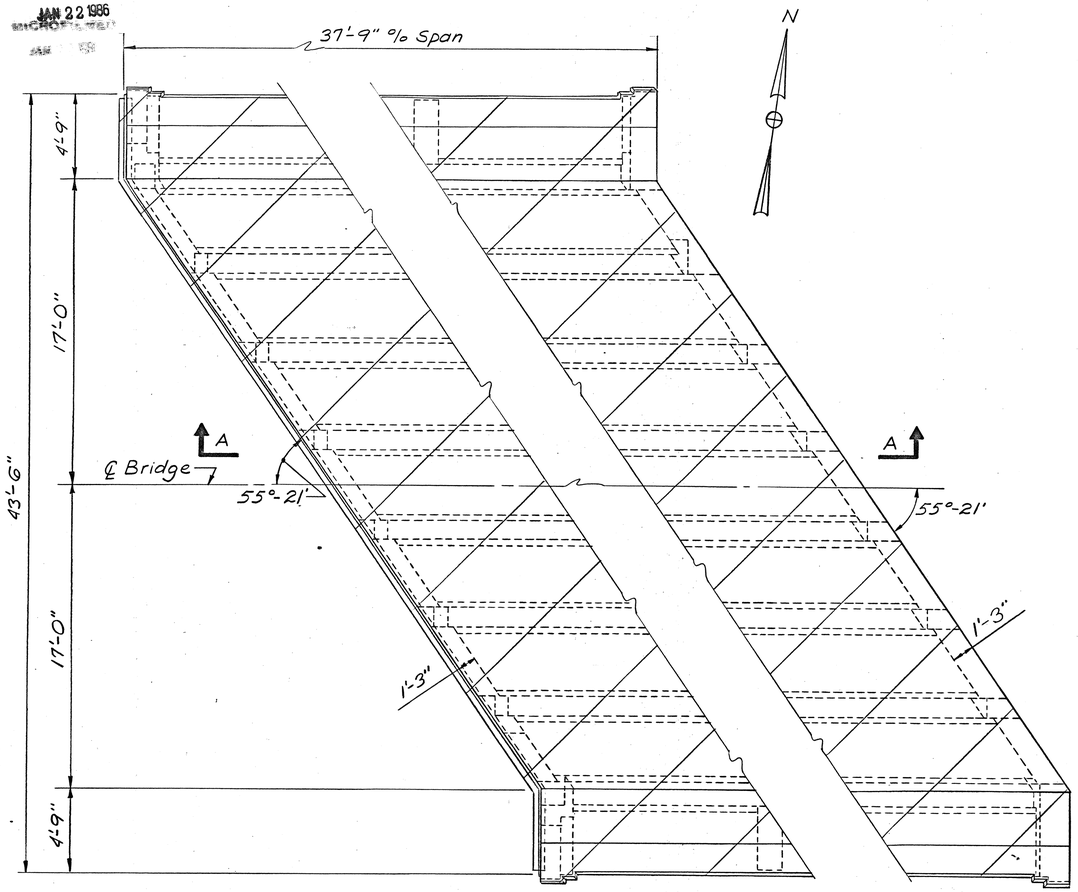
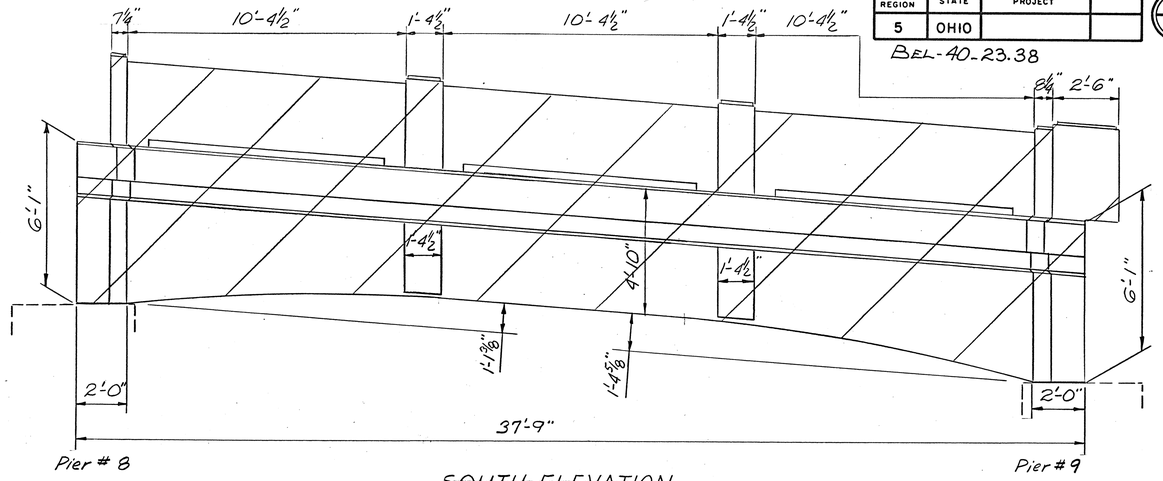
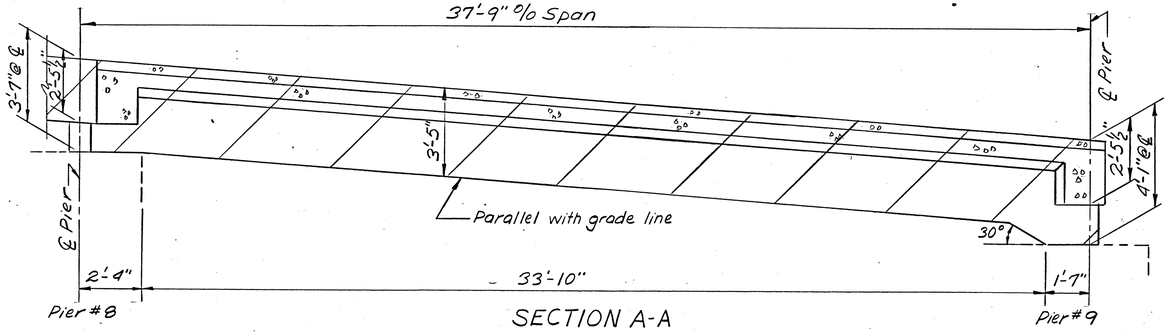
BEL-40-23.38



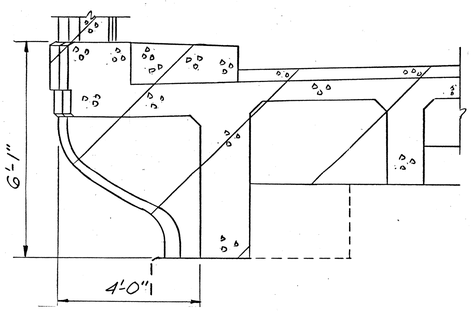
PLAN
BEAM SPAN E



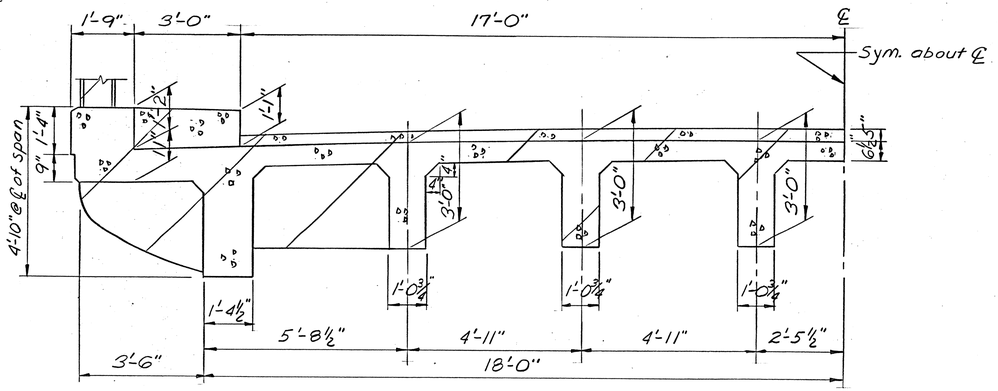
SOUTH ELEVATION
(North Elevation opposite hand)



SECTION A-A

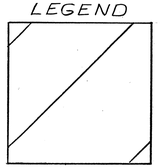


SECTION SHOWING BRACKETS
AT PIER



TYPICAL HALF TRANSVERSE SECTION
(at center of span)

LEGEND



Area to remove

For parapet removal dimensions
see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

58/72

CONCRETE REMOVAL BEAM SPAN "E"

BRIDGE NO BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-80	

N50277

FHWA REGION	STATE	PROJECT	
5	OHIO		

BEL-40-23.38

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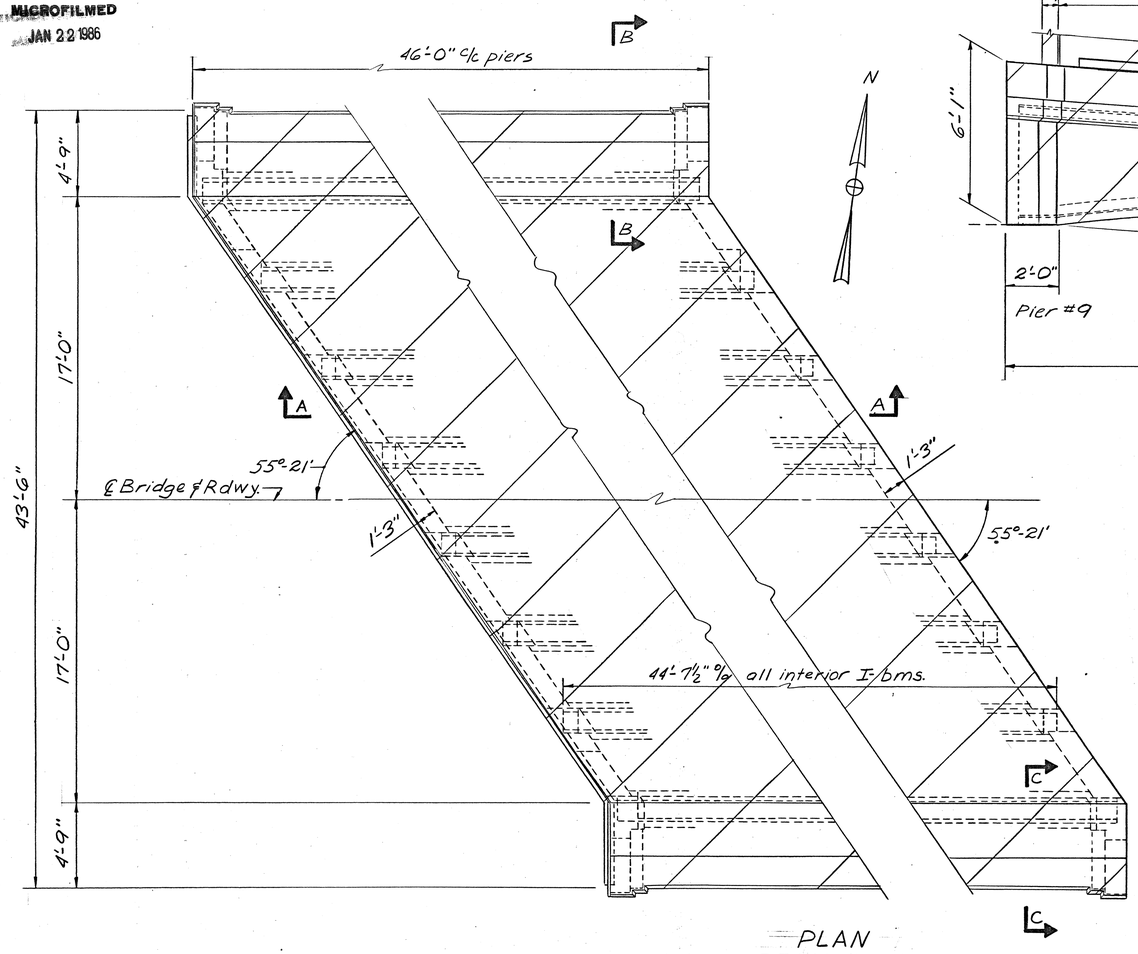
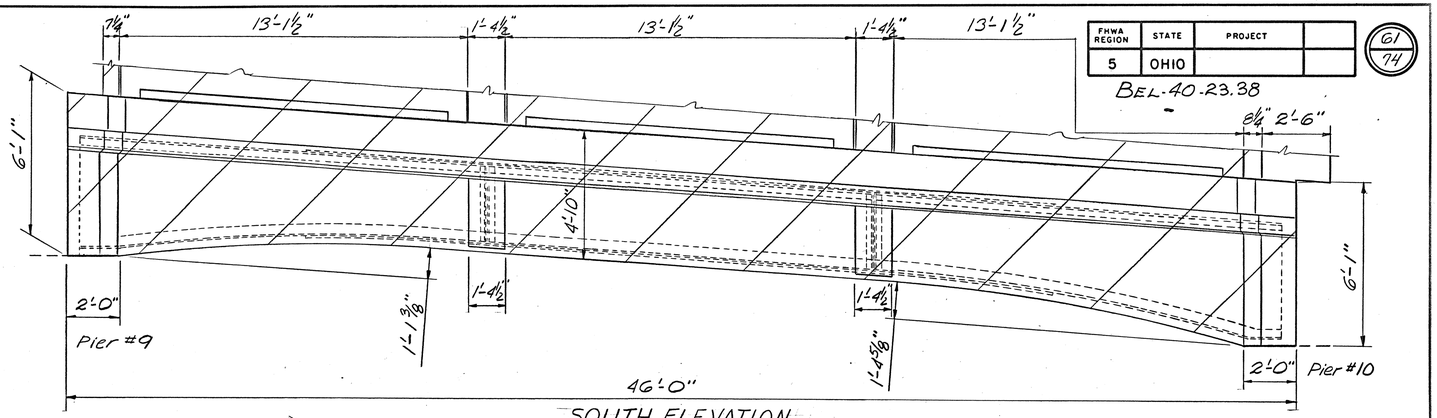
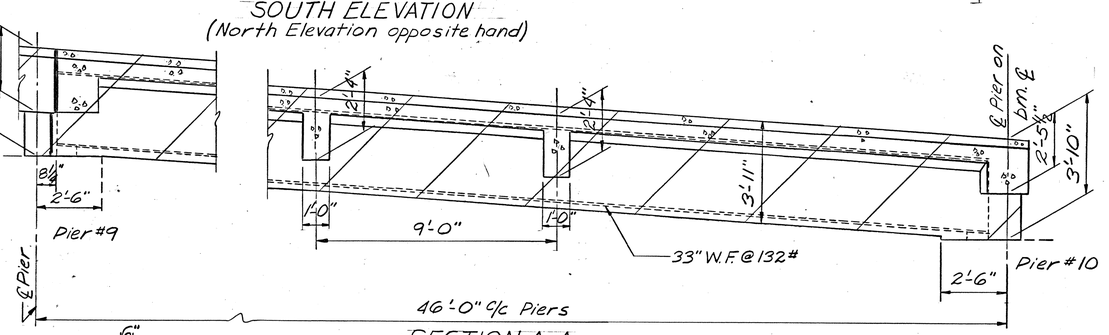


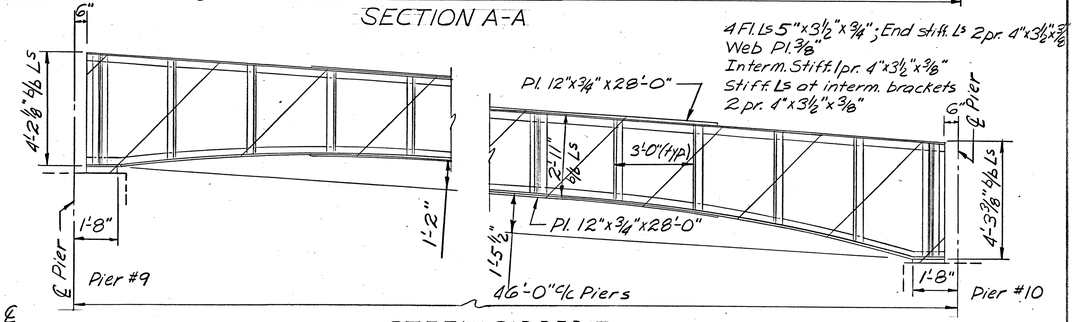
PLAN
BEAM SPAN F



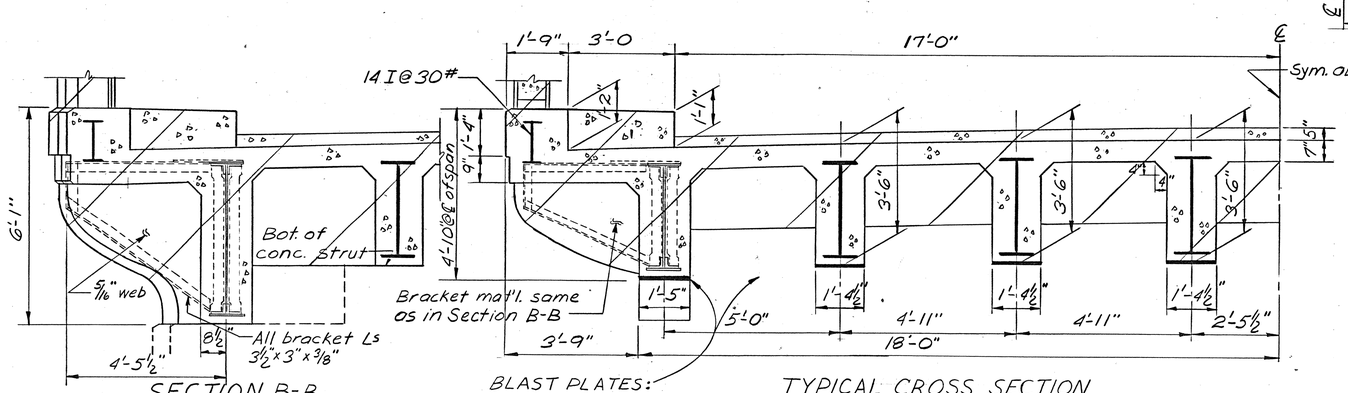
SOUTH ELEVATION
(North Elevation opposite hand)



SECTION A-A



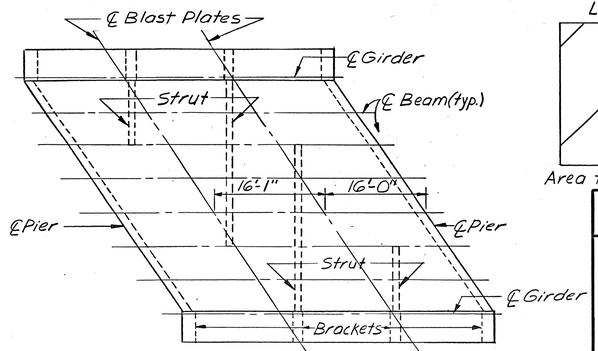
STEEL GIRDER
(See South Elevation above)



SECTION B-B
SECTION C-C
(Opposite hand)

BLAST PLATES:
2 per beam
¾" x 16½" x 6'-8" – Int. brm.
¾" x 17" x 6'-8" – Ext. Girder

TYPICAL CROSS SECTION



SPAN LAYOUT

LEGEND

Area to remove

For parapet removal dimensions see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

59/72

CONCRETE REMOVAL BEAM SPAN "F"

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

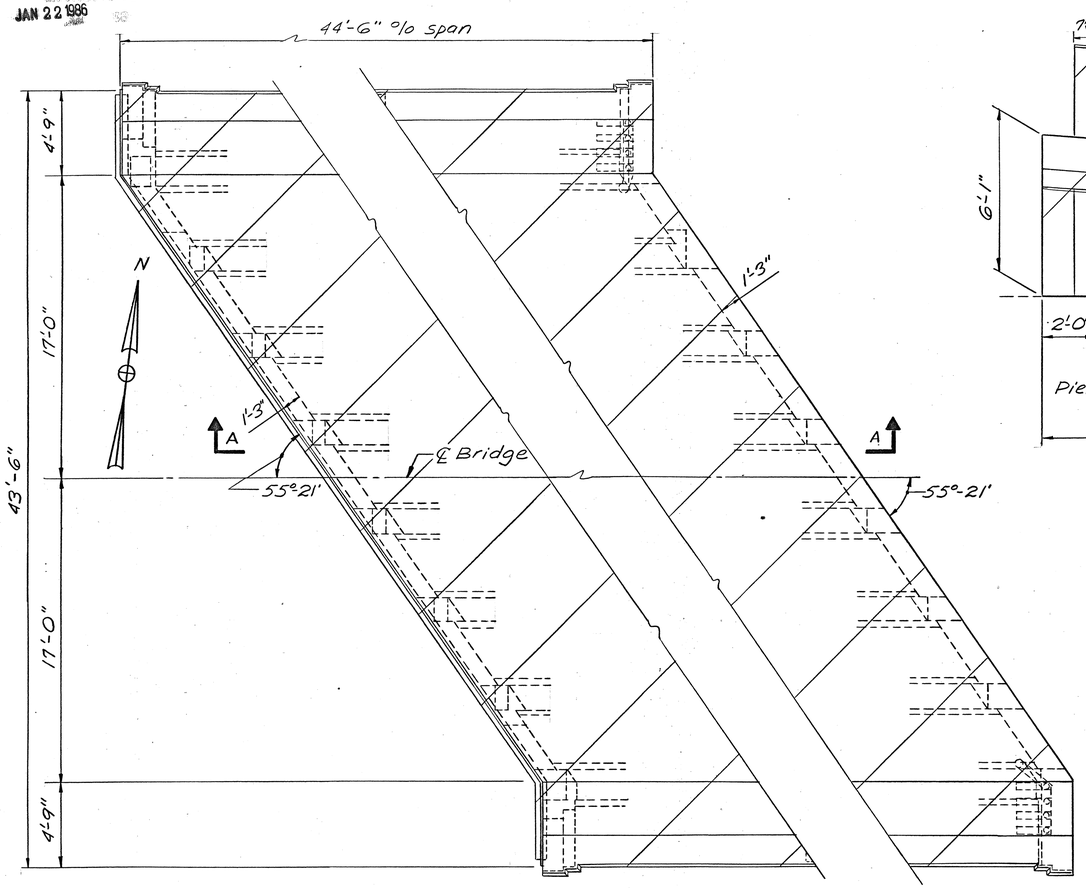
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D.	WJJ	12-1-90	

N:02277

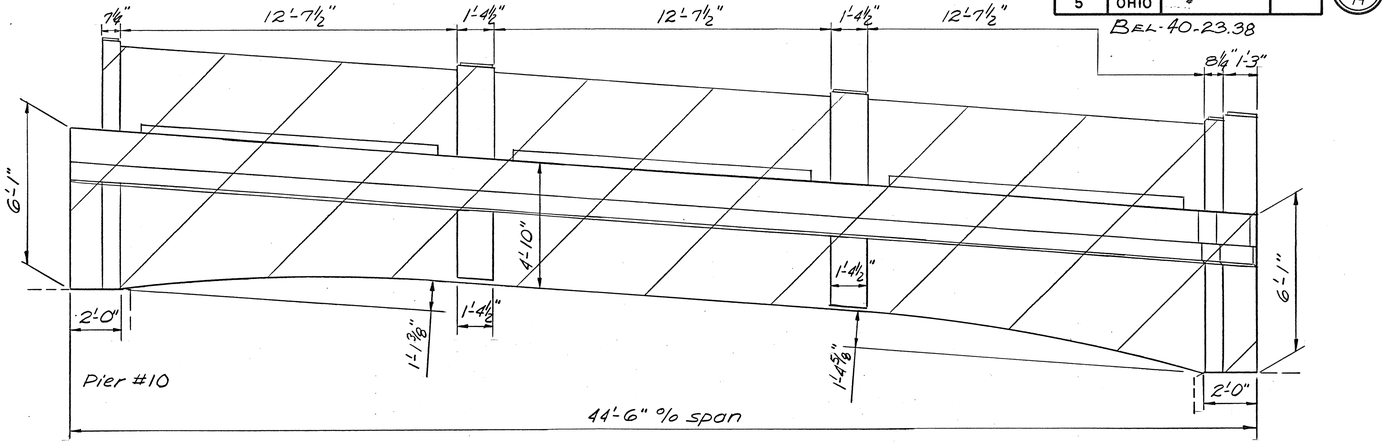
FHWA REGION	STATE	PROJECT	
5	OHIO	$	

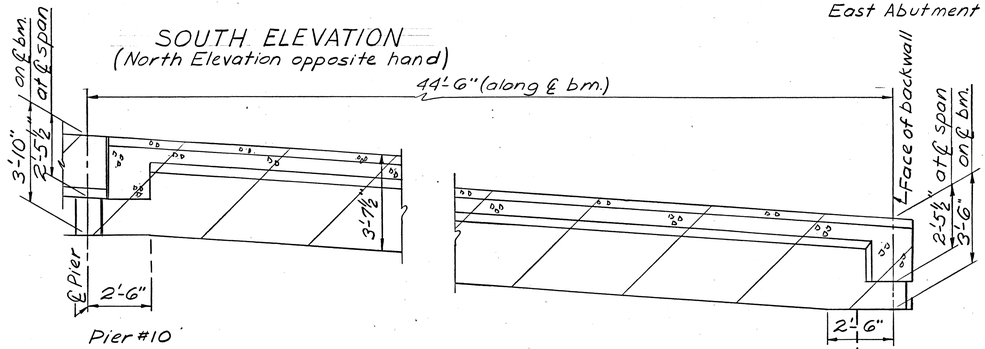
62/74

BEL-40-23.38

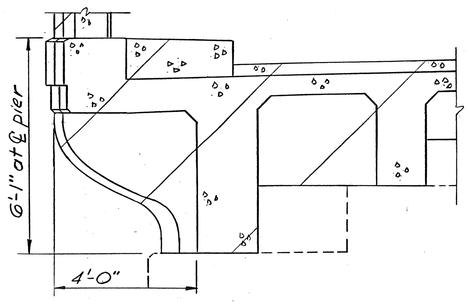


PLAN
BEAM SPAN G

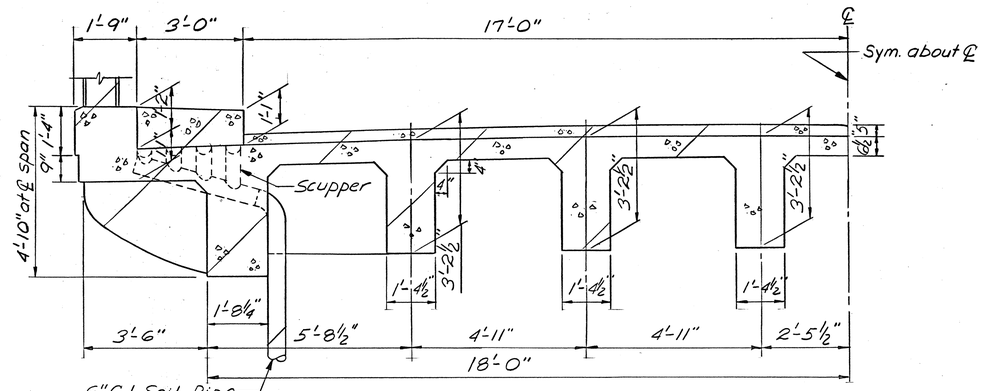




SECTION A-A



SECTION SHOWING BRACKET AT
PIER AND ABUTMENT



TYPICAL HALF TRANSVERSE SECTION
(at center of span)

LEGEND

Area to remove

For paropet removal dimensions see sheet 61/72

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

60/72

CONCRETE REMOVAL BEAM SPAN "G"

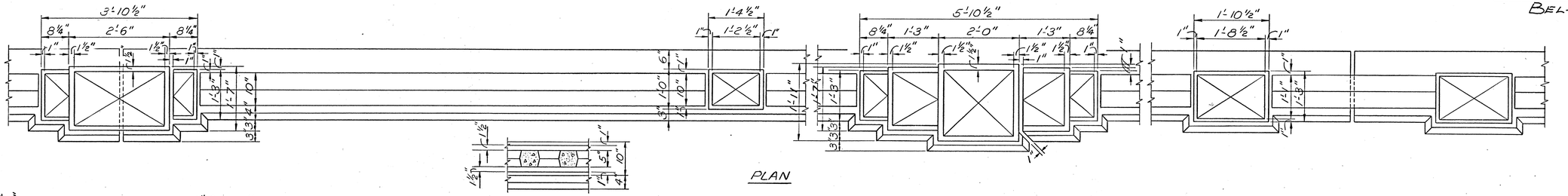
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

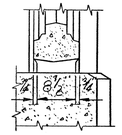
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	J.A.M.		R.L.D	WJJ	12-1-80	

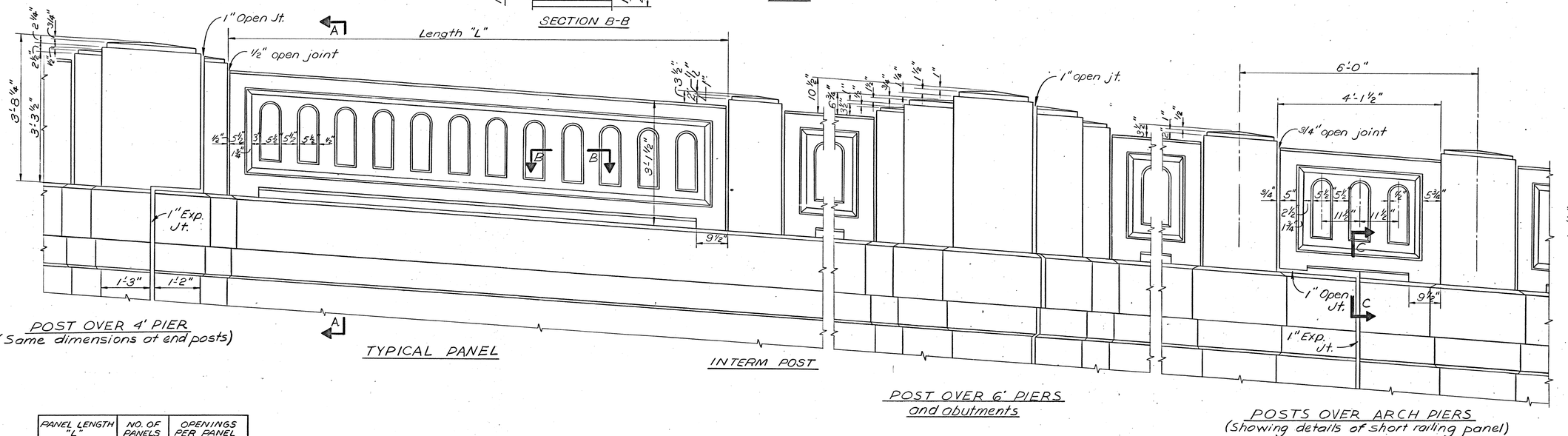
FHWA REGION	STATE	PROJECT	
5	OHIO		

63/74

BEL-40-23.38







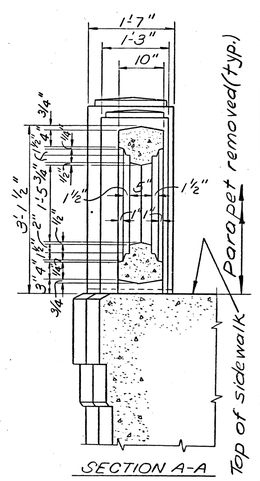
POST OVER 4' PIER
(Same dimensions of end posts)

TYPICAL PANEL

INTERM POST

POST OVER 6' PIERS
and abutments

POSTS OVER ARCH PIERS
(Showing details of short railing panel)



SECTION A-A

PANEL LENGTH "L"	NO. OF PANELS	OPENINGS PER PANEL
9'-7½"	3	9
10'-4½"	9	9
12'-3"	2	11
12'-7½"	84	12
13'-1½"	37	12

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

61/72

CONCRETE REMOVAL PARAPET DETAILS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

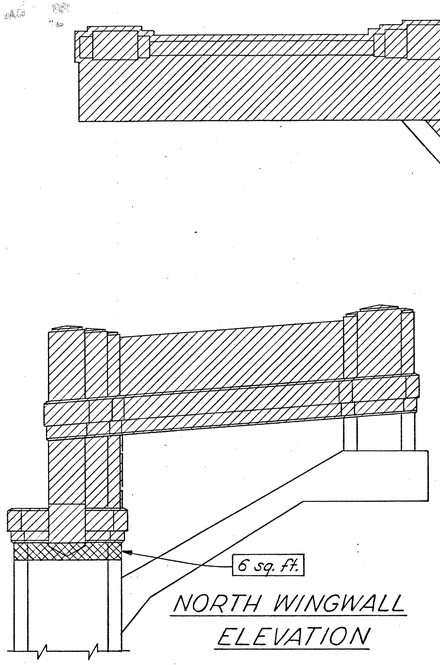
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.A.M.	——	TGC	R.L.D.	WJJ	12-1-80	

h50277

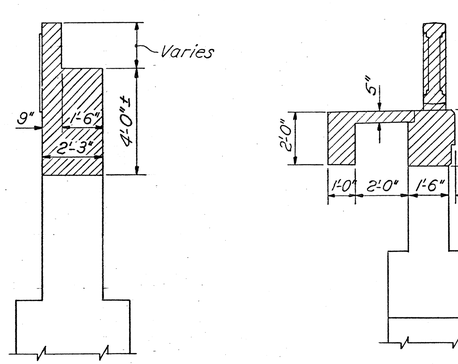
FHWA REGION	STATE	PROJECT	
5	OHIO		

64/74

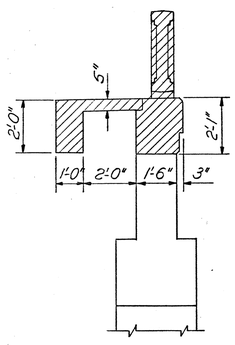
BEL-40-23.38



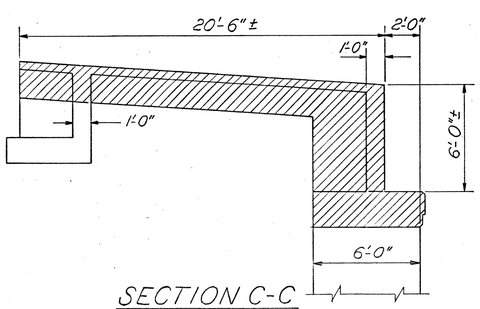
NORTH WINGWALL ELEVATION



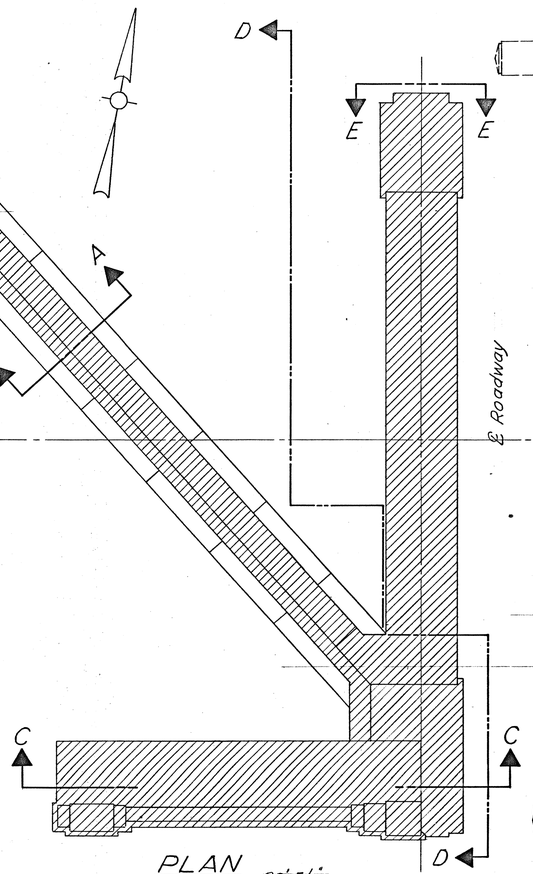
SECTION A-A



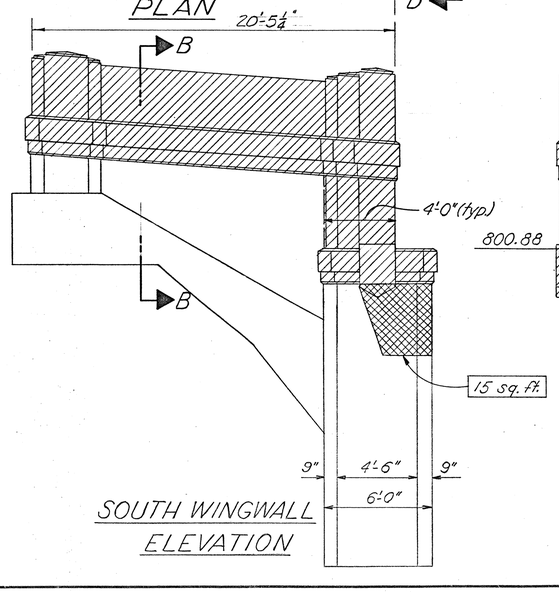
SECTION B-B



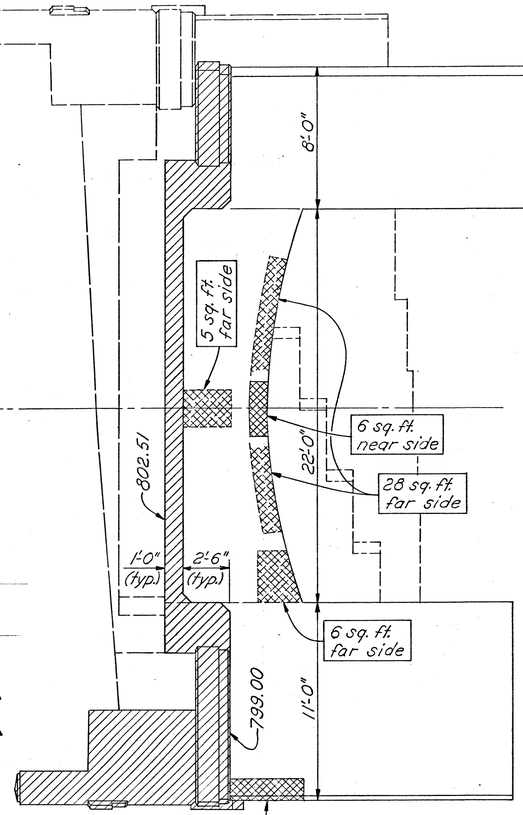
SECTION C-C



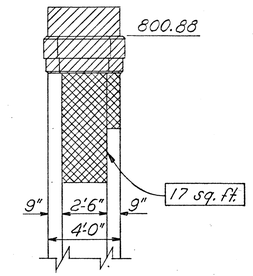
PLAN



SOUTH WINGWALL ELEVATION



EAST ELEVATION

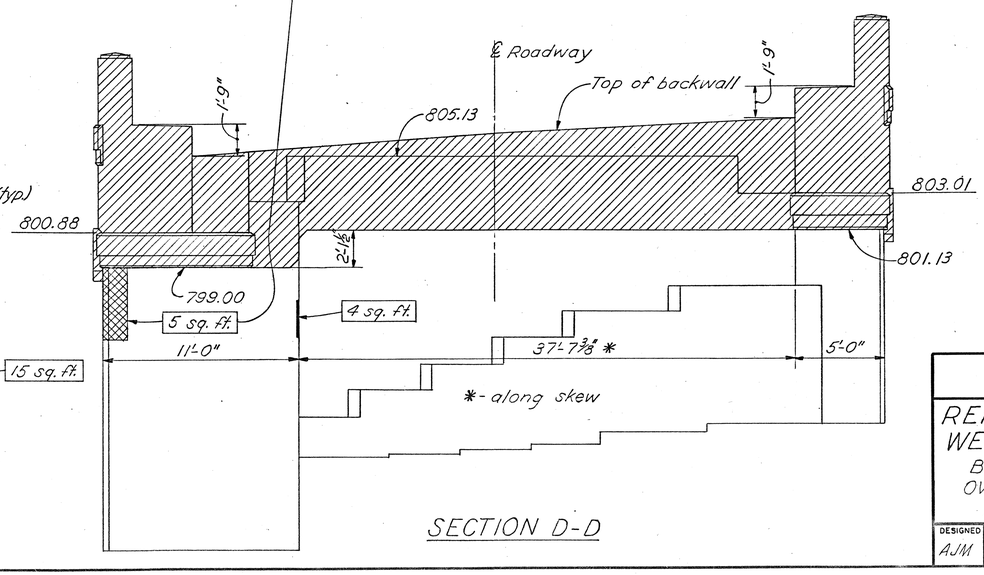


VIEW E-E

LEGEND

Item 202 - Portions of structures removed.

Item 519 - Patching concrete structures. (total this sheet - 92 sq. ft.)



SECTION D-D

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

62/72

REMOVAL AND PATCHING WEST ABUT. & PIER NO. 1

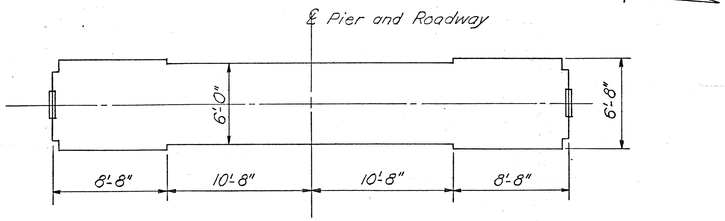
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

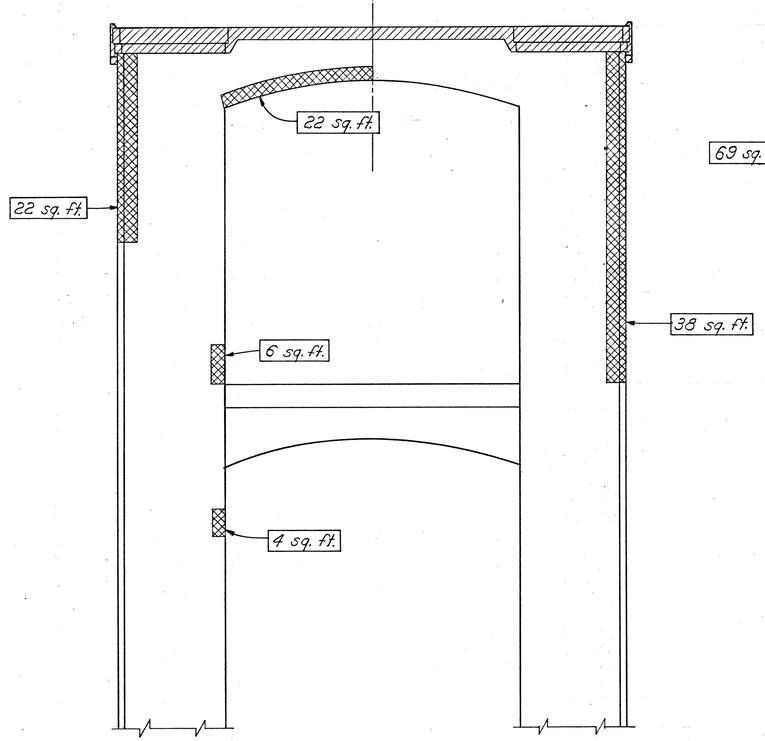
FHWA REGION	STATE	PROJECT	
5	OHIO		

63/74

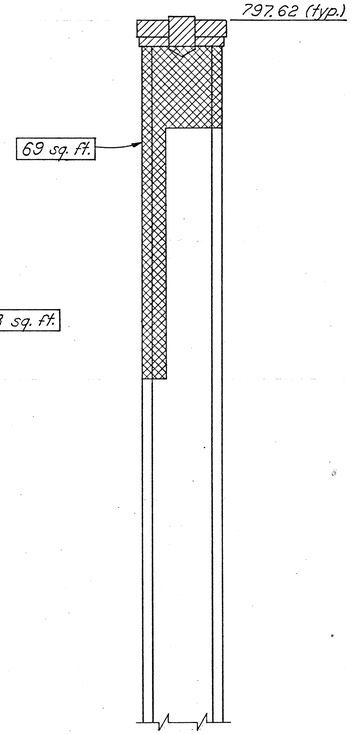
BEL-40-23.38



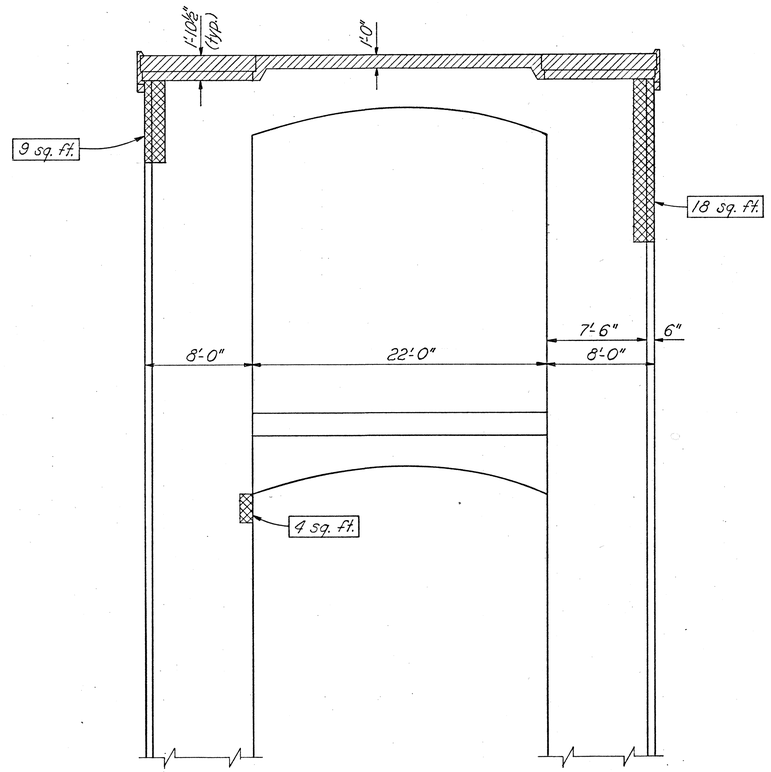
PLAN



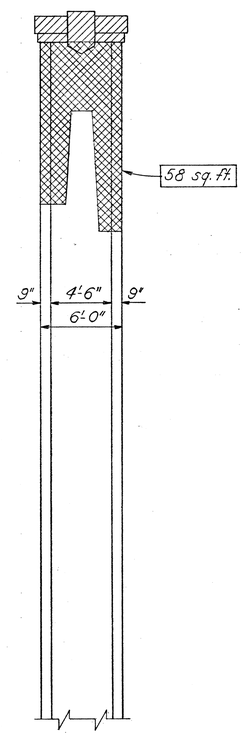
EAST ELEVATION



NORTH END



WEST ELEVATION



SOUTH END

LEGEND

Item 202 - Portions of structures removed.

Item 519 - Patching concrete structures. (total this sheet - 250 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

63/72

REMOVAL AND PATCHING PIER NO. 2

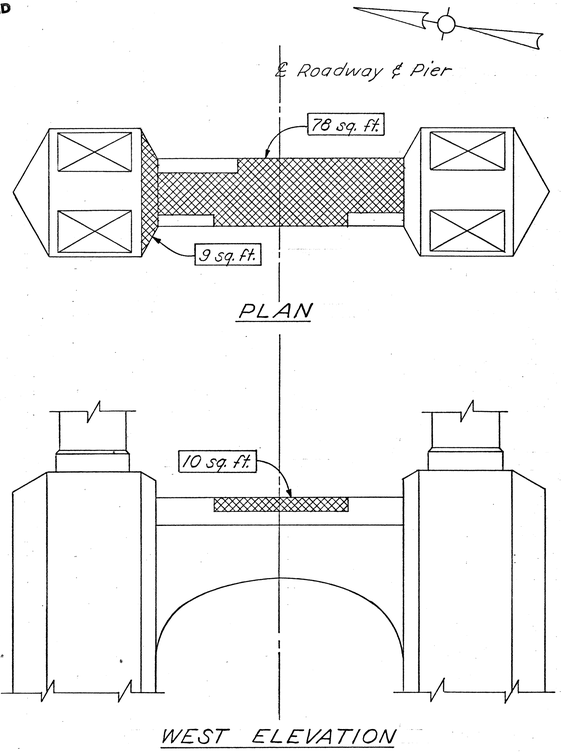
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

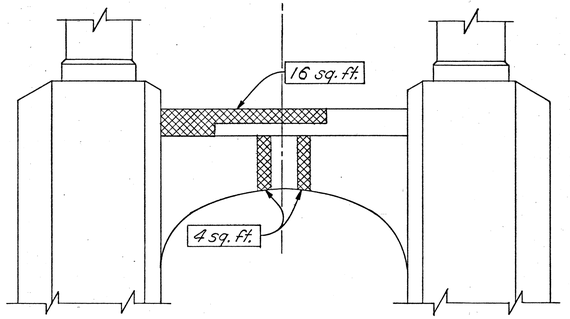
66/74

BEL-40-23.38



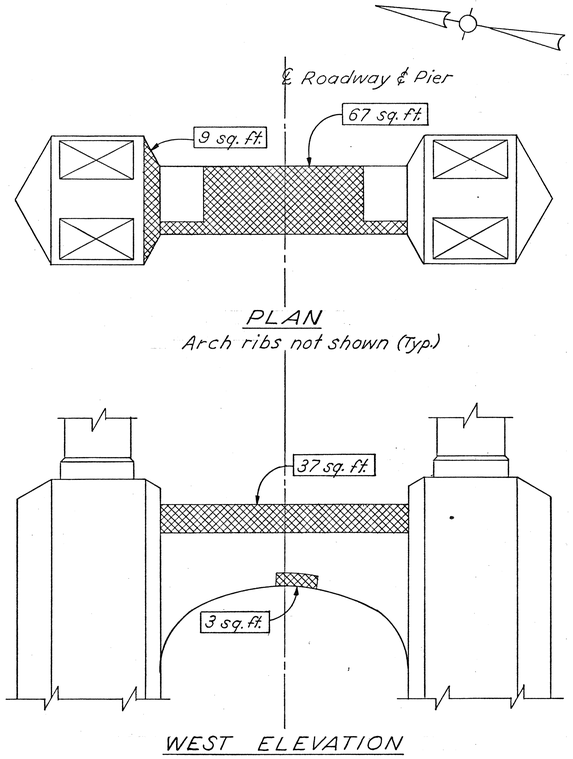
PLAN

WEST ELEVATION



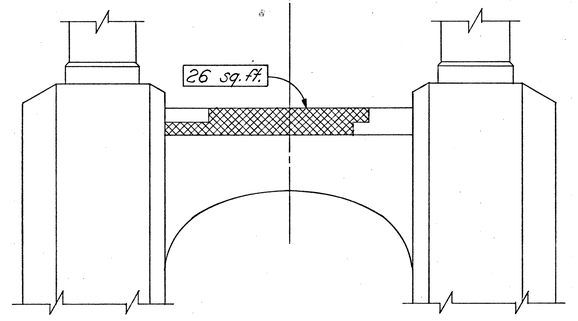
EAST ELEVATION

PIER NO. 3



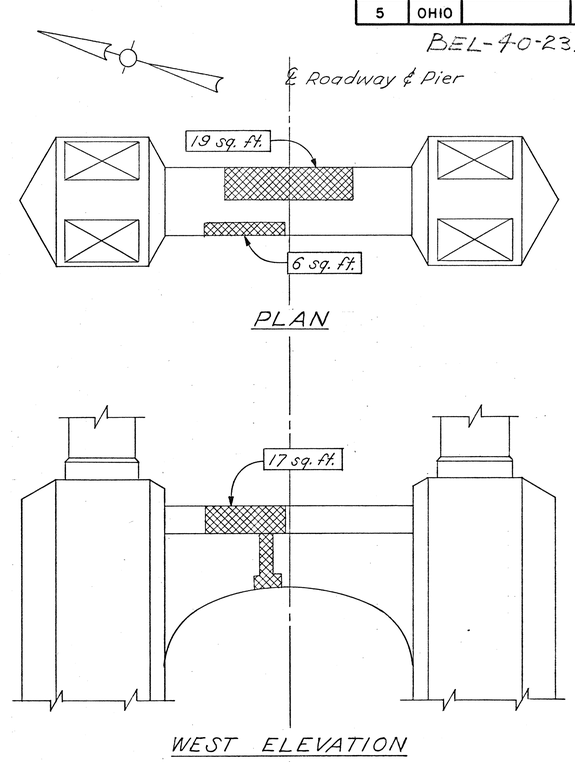
PLAN
Arch ribs not shown (Typ.)

WEST ELEVATION



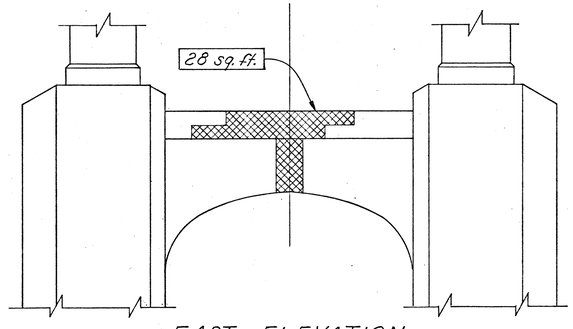
EAST ELEVATION

PIER NO. 4



PLAN

WEST ELEVATION



EAST ELEVATION

PIER NO. 5

NOTE-
For additional patching details and quantities of these piers see sheets 28/72 thru 35/72.

LEGEND

Item 519 - Patching concrete structures. (total this sheet - 333 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

64/72

REMOVAL AND PATCHING PIERS NO. 3, 4 AND 5

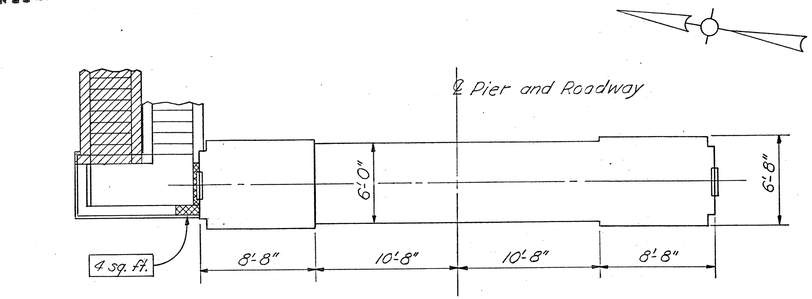
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

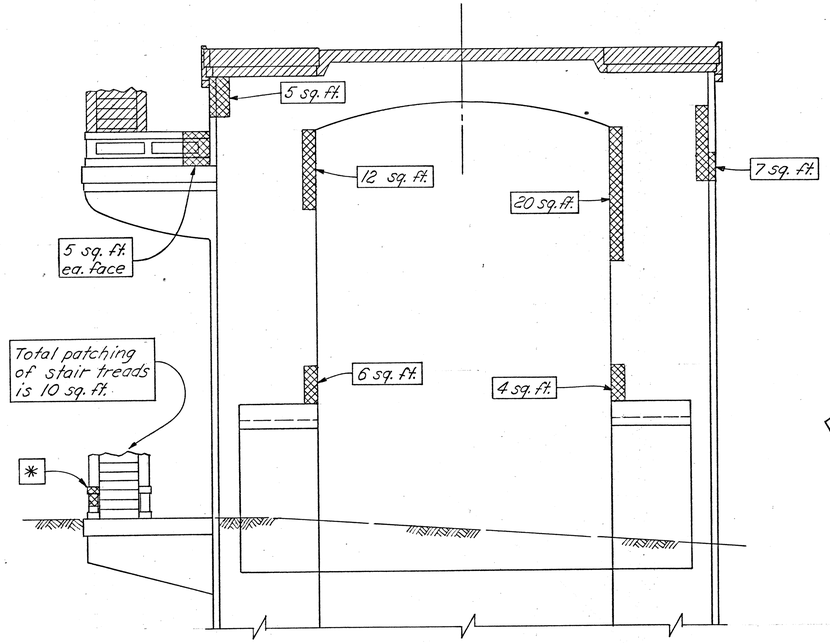
FHWA REGION	STATE	PROJECT	
5	OHIO		

67/74

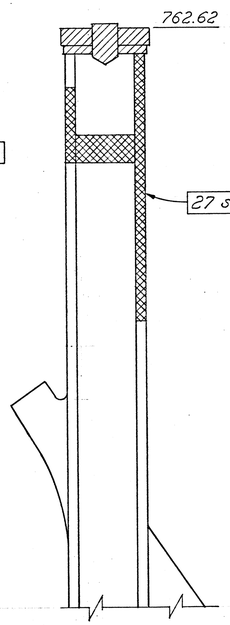
BEL-40-23.38



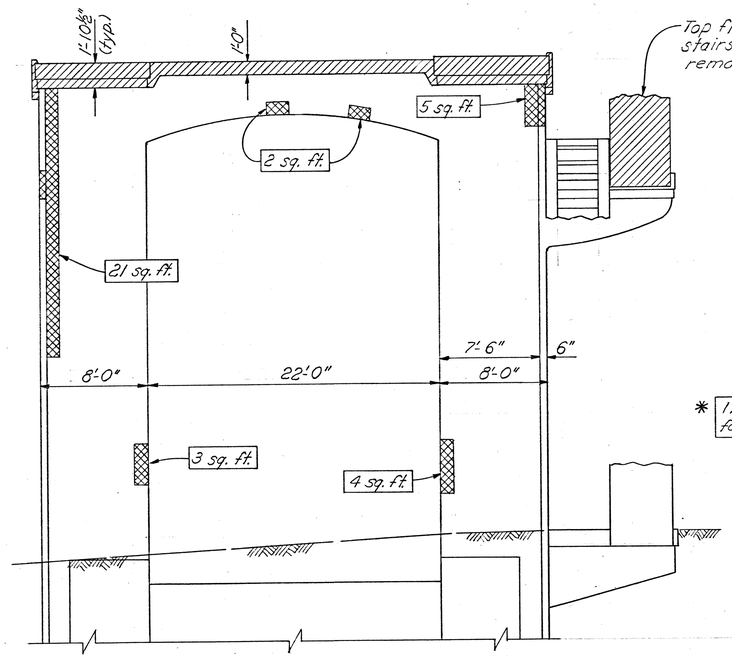
PLAN



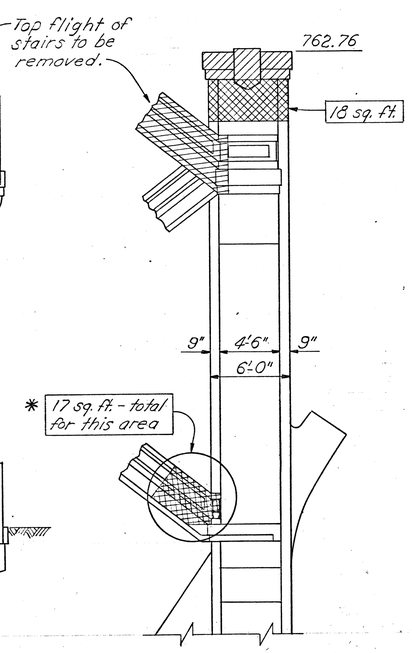
WEST ELEVATION



SOUTH END



EAST ELEVATION



NORTH END

LEGEND

Item 202 - Portions of structures removed.

Item 519 - Patching concrete structures. (total this sheet - 177 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

65/72

REMOVAL AND PATCHING PIER NO. 6

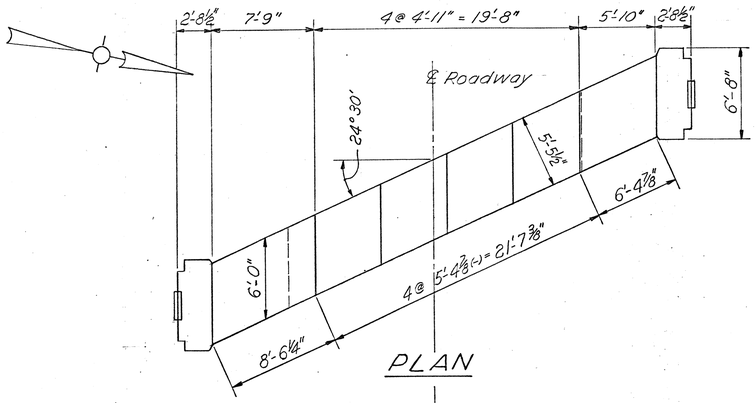
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

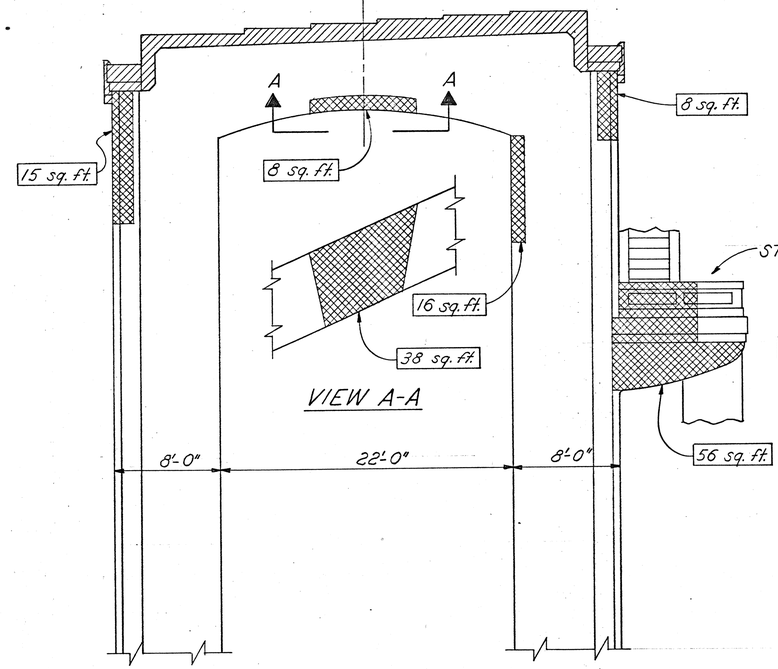
FHWA REGION	STATE	PROJECT	
5	OHIO		

68/74

BEL-40-23.38

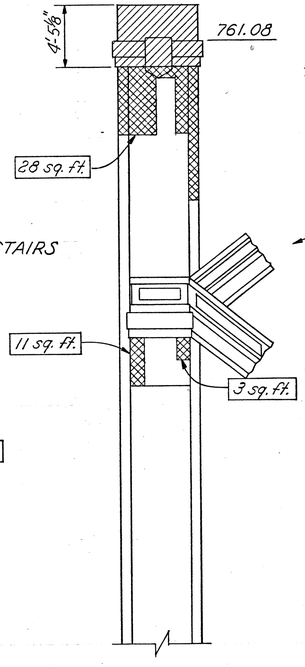


PLAN

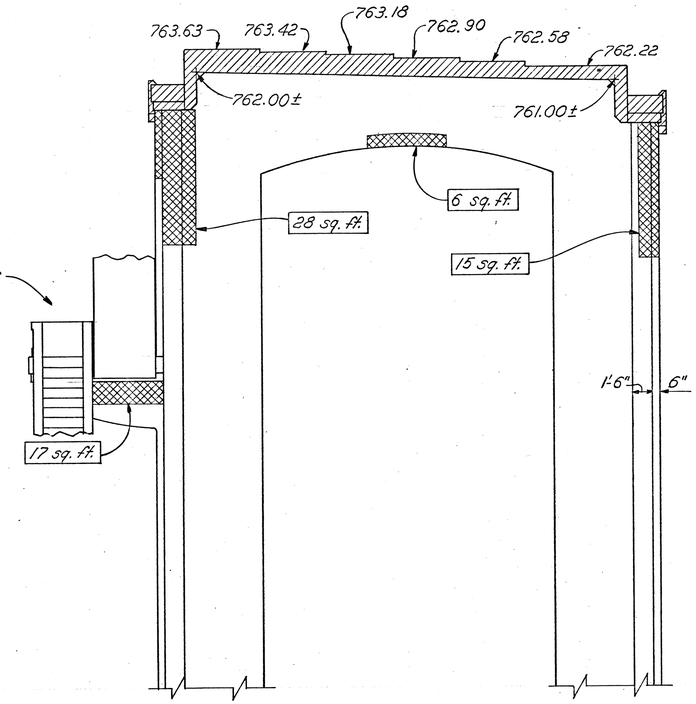


VIEW A-A

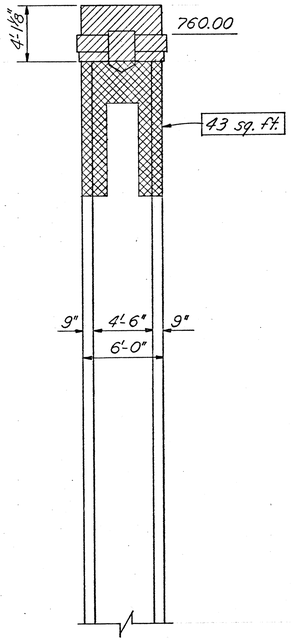
EAST ELEVATION



NORTH END



WEST ELEVATION



SOUTH END

LEGEND

Item 202 - Portions of structures removed.

Item 519 - Patching concrete structures. (total this sheet - 292 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

66/72

REMOVAL AND PATCHING PIER NO. 7

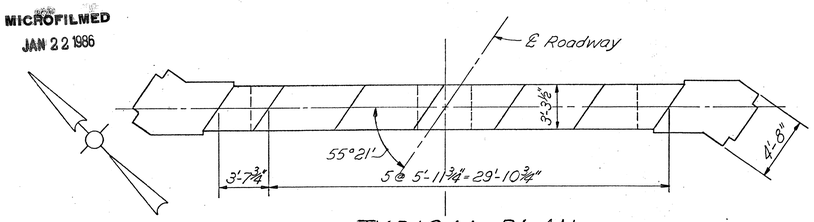
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

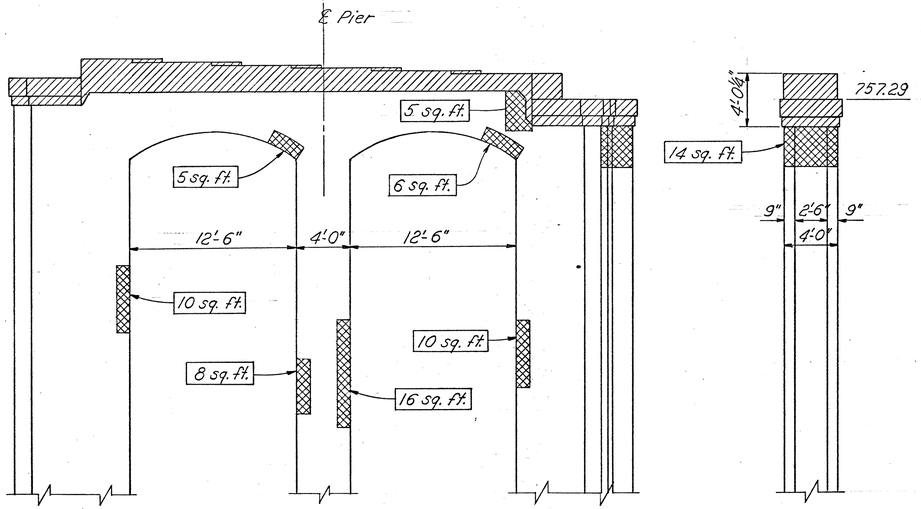
FHWA REGION	STATE	PROJECT	
5	OHIO		

69/74

BEL-40-23-38

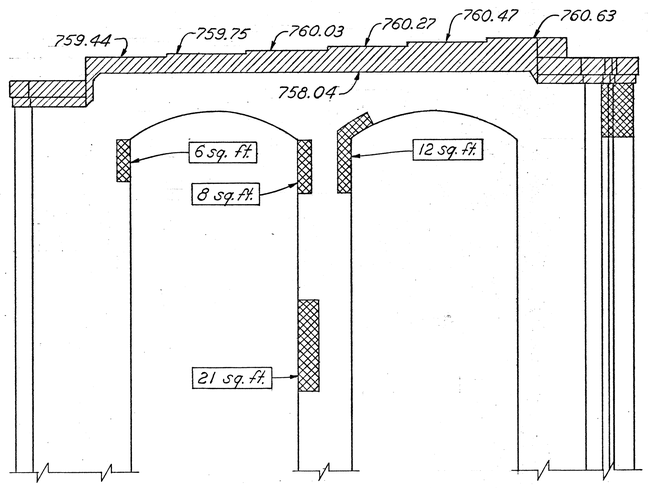


TYPICAL PLAN

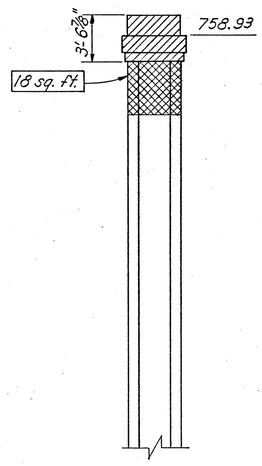


WEST ELEVATION

SOUTH END

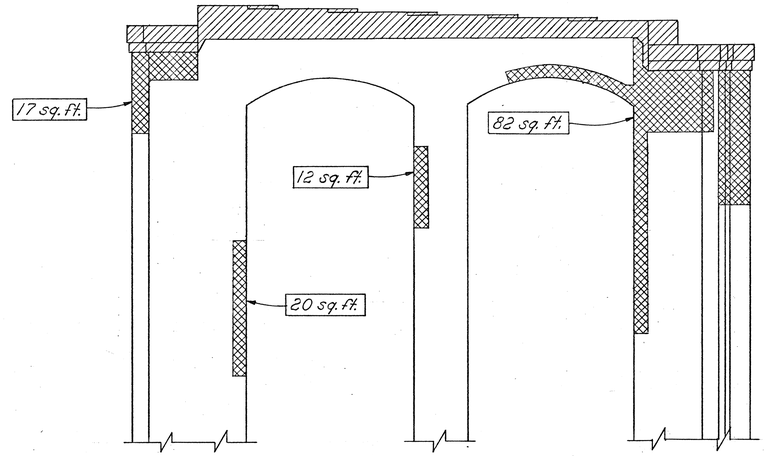


EAST ELEVATION

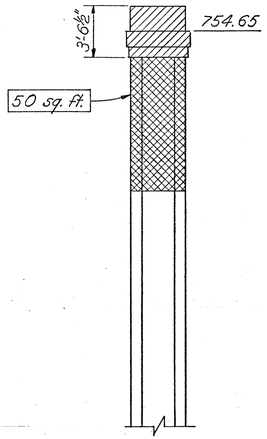


NORTH END

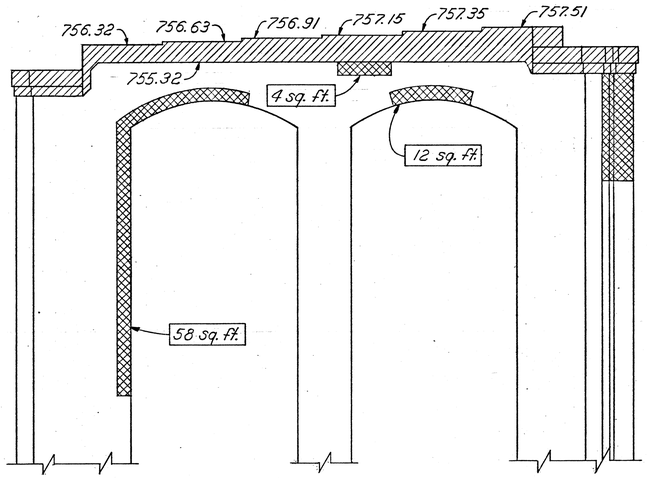
PIER NO. 8



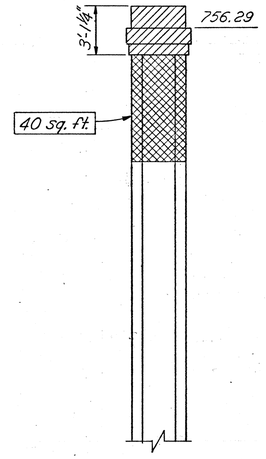
WEST ELEVATION



SOUTH END



EAST ELEVATION



NORTH END

PIER NO. 9

LEGEND

Item 202 - Portions of structures removed.

Item 519 - Patching concrete structures.
(total this sheet - 434 sq. ft.)

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

67/72

REMOVAL AND PATCHING PIERS NO. 8 AND 9

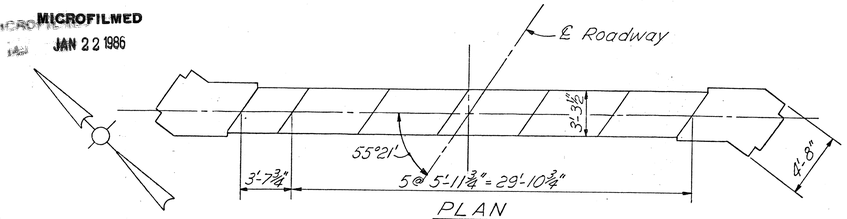
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

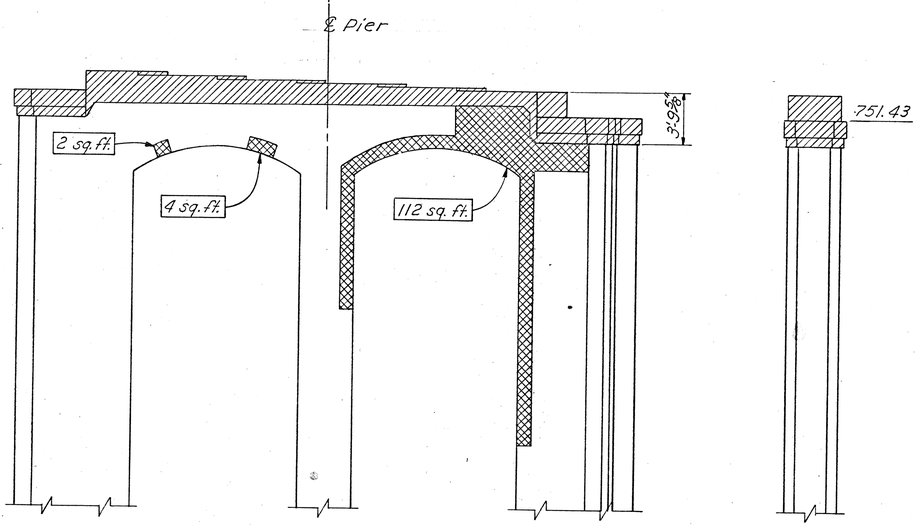
FHWA REGION	STATE	PROJECT	
5	OHIO		

70/74

BEL-40-23.38

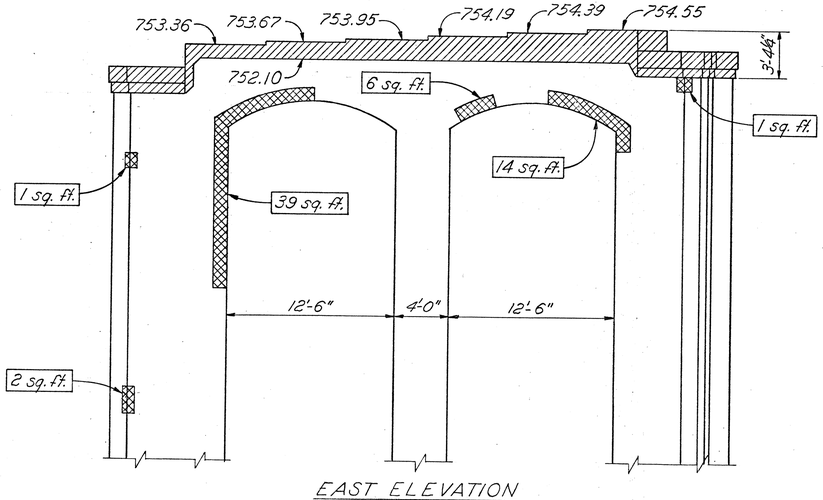


PLAN

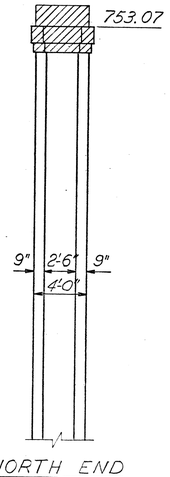


WEST ELEVATION

SOUTH END

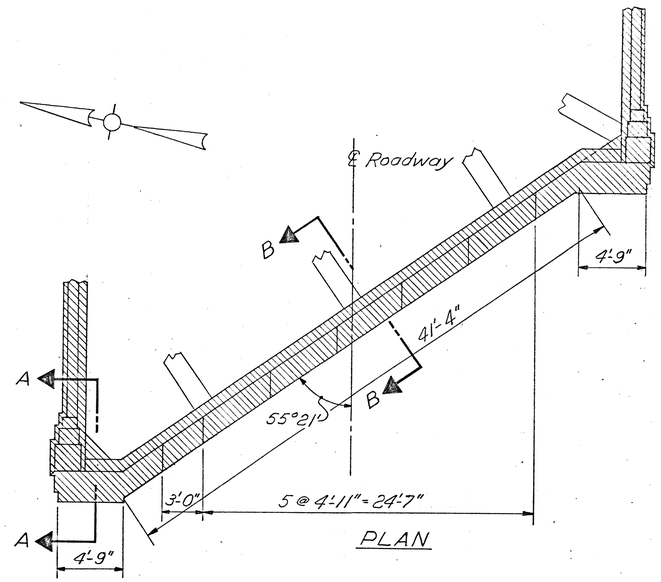


EAST ELEVATION

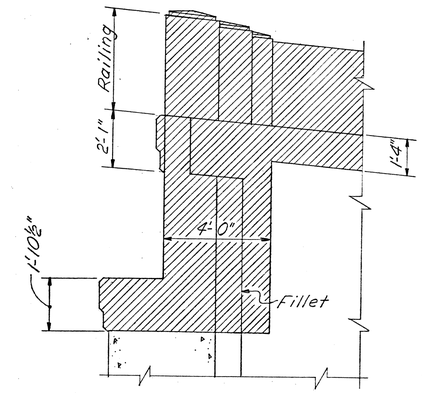


NORTH END

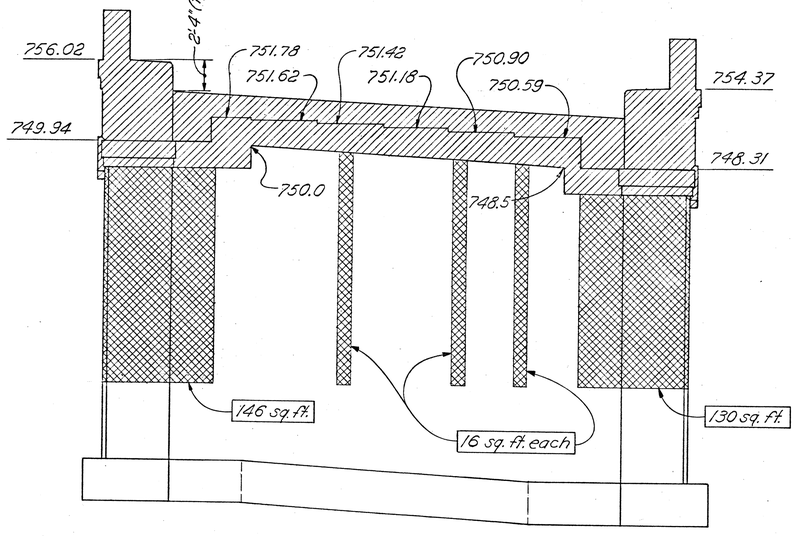
PIER NO. 10



PLAN



SECTION A-A



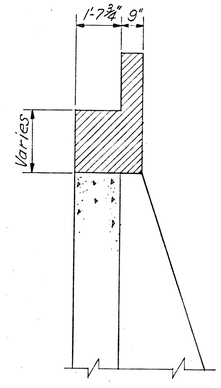
ELEVATION

EAST ABUTMENT

LEGEND

Item 202 - Portions of structures removed.

Item 519 - Patching concrete structures. (total this sheet - 505 sq. ft.)



SECTION B-B

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

68/72

REMOVAL AND PATCHING PIER NO. 10 & EAST ABUT.

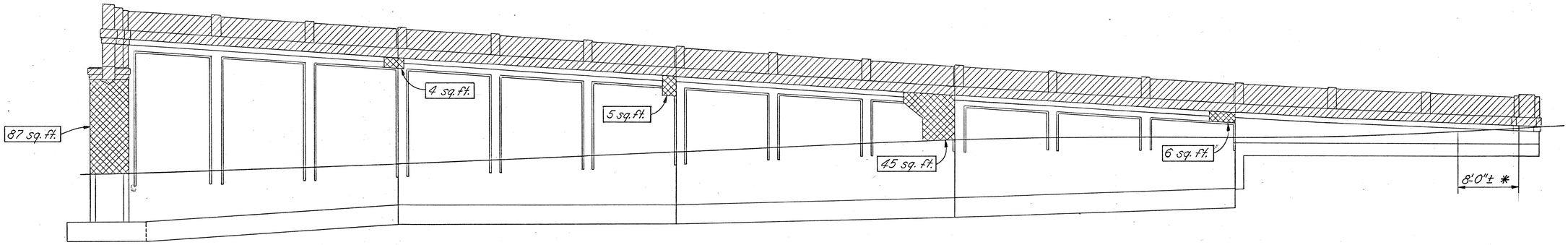
BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	NJJ	12-11-30	

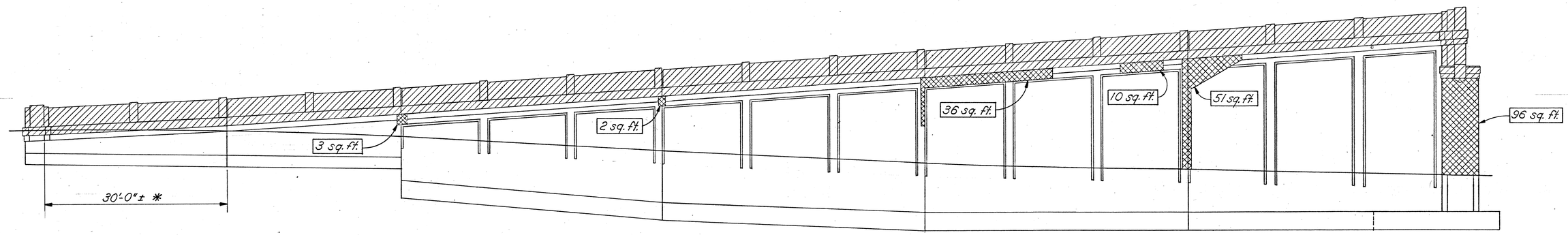
FHWA REGION	STATE	PROJECT	
5	OHIO		

71/74

BEL-40-23.38



ELEVATION - SOUTH RETAINING WALL



ELEVATION - NORTH RETAINING WALL

Item 202 - Portions of structures removed.

Item 519 - Patching concrete structures. (total this sheet - 345 sq. ft.)

* Existing curbing in this area may be damaged during construction. Replacement will be paid for under Item 609. See sheet 39/72.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

69/72

REMOVAL AND PATCHING RETAINING WALLS

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

72/74

BEL-40-23.38

SLAB SPAN

MARK	———	———	———	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
				1 Ser.	3'-2"							
E501				of	to	538	Str.	(incr. = 10¾"+)				
				31	30'-1"							
E502				5	2'-6"	13	Str.					
				1 Ser.	4'-7"							
E503				of	to	546	Str.	(incr. = 1'-1⅜"+)				
				27	34'-2"							
E504				4	43'-4"	181	Str.					
E505				7	30'-1"	220	Str.					
E506				21	6'-9"	148	2	3'-6"	1'-9"	1'-9"		
E507				21	3'-5"	75	2	1'-11"	10½"	10½"		
E508				1	44'-10"	47	13	41'-4"	1'-9"	10¾"		
RE501				37	9'-6"	367	18	6½"	4'-2"			
RE502				8	30'-1"	251	Str.					
S501				5	2'-4"	12	Str.					
S502				2	30'-1"	63	Str.					
S503				21	5'-8"	124	18	1'-5"	1'-10"			
S504				1	44'-10"	47	13	41'-4"	1'-9"	10¾"		
				1 Ser.	4'-7"							
S601				of	to	786	Str.	(incr. = 1'-1⅜"+)				
				27	34'-2"							
S602				4	43'-4"	260	Str.					
				1 Ser.	4'-10"			3'-2"				
S701				of	to	271	6	to	(incr. = 10¾")			
				13	15'-7"			13'-11"				
S801				9	31'-10"	765	6	30'-0"				
				1 Ser.	25'-7"			23'-9"				
S802				of	to	1,226	6	to	(incr. = 5")			
				16	31'-10"			30'-0"				
				1 Ser.	16'-2"			14'-4"				
S803				of	to	885	6	to	(incr. = 7½")			
				16	25'-3"			23'-5"				

PARAPETS

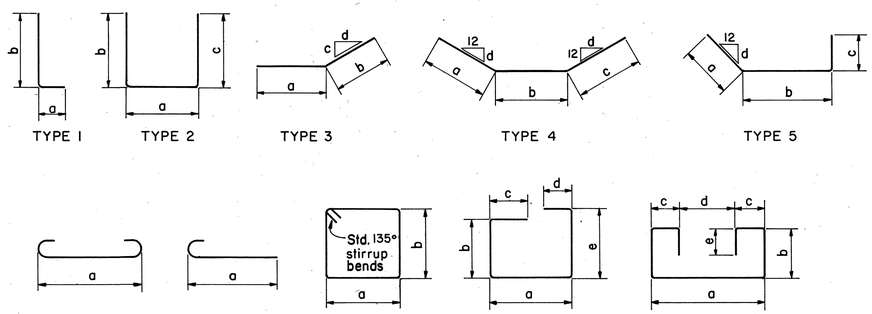
MARK	———	NORTH	SOUTH	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
PE501		881		881	9'-6"	8,729	18	6½"	4'-2"			
PE502			541	541	5'-11"	3,339	15	2'-6"	2'-9"	7½"		
PE503		208	104	312	13'-8"	4,447	Str.					
PE504		24	12	36	13'-10"	519	Str.					
PE505		16	8	24	14'-10"	371	Str.					
PE506		24	12	36	19'-10"	745	Str.					
PE507		8	4	12	16'-7"	208	Str.					
PE508		24	8	32	14'-1"	470	Str.					
PE509		32	16	48	14'-7"	730	Str.					
PE510		16	8	24	15'-1"	378	Str.					
PE511		16	16	32	12'-4"	412	Str.					
PE512		8	8	16	11'-11"	199	Str.					
PE513		8		8	13'-8"	114	Str.					
PE514		8		8	20'-4"	170	Str.					
PE515			4	4	11'-2"	47	Str.					
PE516			8	8	13'-7"	113	Str.					
PE517	Not used											
PE518												
PE519												
PE520												

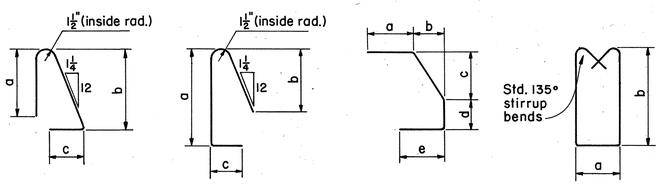
PARAPETS (CONT.)

MARK	———	NORTH	SOUTH	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
PE521		284		284	10'-4"	3,061	18	6½"	4'-7"			
PE522		162		162	5'-7"	943	8	1'-6"	1'-0"			
PE523			150	150	6'-8"	1,043	15	2'-11"	3'-1"	7½"		
PE524			150	150	2'-9"	430	17	7"	6"	8½"	7"	10½"
PE525	(Not used)											
PE526		12	9	21	45'-8"	1000	Str.					
PE527		36	27	63	43'-1"	2,831	Str.					
PE528			9	9	47'-0"	441	Str.					
PE529		12		12	28'-7"	358	Str.					
PE530		12		12	32'-6"	407	Str.					
X401		42	54	96	3'-0"	192	1	1'-3"	1'-10"			
X402		85	85	170	2'-3"	256	1	1'-3"	1'-1"			

APPROACH SLABS *

MARK	———	WEST	EAST	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
AS501		5		5	20'-1"	105	Str.					
		1 Ser.		1 Ser.	19'-6"							
AS502		of		of	to	459	Str.	(incr. = 1¾")				
		21		21	22'-5"							
		1 Ser.		1 Ser.	17'-5"							
AS503		of		of	to	103	Str.	(incr. = 1'-1½")				
		5		5	21'-11"							
AS504		33	31	64	30'-0"	2,003	Str.					
		1 Ser.		1 Ser.	17'-4"							
AS505		of		of	to	120	Str.	(incr. = 9")				
		6		6	21'-1"							
AS506		27		27	25'-1"	706	Str.					
AS507		6		6	4'-6"	28	Str.					
AS508		15	14	29	3'-10"	116	2	1'-5"	1'-8"	1'-0"		
AS509			5	5	19'-1"	100	Str.					
AS510			23	23	19'-7"	470	Str.					
			1 Ser.	1 Ser.	20'-2"							
AS511			of	of	to	65	Str.	(incr. = 9")				
			3	3	21'-8"							
AS512			31	31	20'-1"	649	Str.					
AS513			4	4	5'-0"	21	Str.					
AS901		4		4	21'-4"	290	7	20'-1"				
		1 Ser.		1 Ser.	20'-9"			19'-6"				
AS902		of		of	to	4,062	7	to	(incr. = 5/8")			
		54		54	23'-6"			22'-3"				
		1 Ser.		1 Ser.	18'-9"			17'-6"				
AS903		of		of	to	787	7	to	(incr. = 5½")			
		11		11	23'-4"			22'-1"				
AS904			4	4	20'-4"	277	7	19'-1"				
AS905			52	52	20'-10"	3,683	7	19'-7"				
			1 Ser.	1 Ser.	20'-11"			19'-8"				
AS906			of	of	to	298	7	to	(incr. = 8")			
			4	4	22'-11"			21'-8"				





REINFORCING STEEL SAMPLES

Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

NOTES:

All E5XX, RE5XX and PE5XX reinforcing steel bars shall be epoxy coated.

* *Approach Slab reinforcing steel shall be paid for under Item 611.*

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

70/72

REINFORCING STEEL LIST

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

73/74

BEL-40-23.38

ABUTMENTS

MARK	——	WEST	EAST	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
A501		2		2	48'-10"	102	4	4'-6"	4'-4"	3'-0"	10¾	
A502		2		2	45'-6"	95	4	4'-6"	38'-0"	3'-0"	10¾	
A503		1		1	20'-0"	21	3	4'-6"	15'-6"	10¾	12	
A504		1		1	23'-3"	24	3	4'-6"	18'-9"	10¾	12	
A505		2		2	8'-7"	18	2	5'-8"	1'-7"	1'-7"		
A506		1		1	26'-3"	27	2	5'-8"	10'-5"	10'-5"		
A507		1		1	47'-2"	49	4	2'-10"	4'-4"	3'-0"	10¾	
A508		1		1	45'-6"	48	4	2'-10"	39'-8"	3'-0"	10¾	
A509		1		1	43'-10"	46	4	2'-10"	38'-0"	3'-0"	10¾	
A510		4		4	10'-7"	44	Str.					
A511		5		5	10'-7"	55	2	3'-6"	2'-0"	5'-4"		
A512		5		5	8'-9"	46	2	3'-8"	10½"	4'-5"		
A513		3		3	12'-11"	40	2	2'-8"	5'-3"	5'-3"		
		1 Ser.		1 Ser.	8'-2"				3'-3"	3'-3"		(incr. = 1¼"
A514		of		of	to	199	2	1'-11"	to	to		each leg)
		19		19	11'-11"				5'-1½"	5'-1½"		
A515		1		1	8'-0"	8	2	1'-11"	3'-2"	3'-2"		
A516		1		1	12'-0"	13	2	1'-11"	5'-2"	5'-2"		
A517		1		1	4'-6"	5	Str.					
A518		1		1	4'-5"	5	Str.					
A519		3		3	12'-5"	39	2	1'-4"	5'-8"	5'-8"		
A520		3		3	7'-8"	24	Str.					
A521		3		3	16'-10"	53	2	1'-5"	7'-10"	7'-10"		
A522			20	20	26'-2"	546	3	4'-7"	21'-7"	8¼	12	
A523			1	1	11'-11"	12	3	4'-7"	7'-4"	8¼	12	
A524			1	1	10'-5"	11	3	4'-7"	5'-10"	8¼	12	
A525			1	1	9'-8"	10	3	4'-7"	5'-1"	8¼	12	
A526			6	6	11'-6"	72	2	2'-7"	4'-7"	4'-7"		
A527			10	10	8'-2"	85	2	2'-1"	3'-2"	3'-2"		
A528			30	30	6'-4"	198	2	2'-1"	2'-3"	2'-3"		
A529			48	48	4'-5"	221	14	1'-11"	5¼"			2
A530			3	3	16'-6"	52	2	1'-5"	7'-8"	7'-8"		
A531			5	5	7'-11"	41	3	7'-0"	1'-0"	12	2¼	
A532			5	5	6'-11"	36	3	6'-0"	1'-0"	12	8¼	
A533			2	2	5'-7"	12	Str.					
A534			3	3	8'-4"	26	Str.					
A535			3	3	6'-1"	19	Str.					
A536			10	10	12'-5"	130	2	1'-4"	5'-8"	5'-8"		
A537			4	4	8'-5"	35	2	1'-4"	3'-8"	3'-8"		
A538			1	1	11'-1"	12	3	4'-7"	6'-6"	8¼	12	
D801		27	27	54	7'-3"	1,045	5	1'-7"	4'-9"	1'-1"	9	
AE401		4	4	8	4'-10"	26	2	7"	2'-3"	2'-3"		
AE402		2	2	4	2'-2"	6	Str.					
AE501		20		20	20'-0"	417	Str.					
AE502		20	5	25	10'-4"	269	18	6½"	4'-7"			
AE503		17		17	7'-2"	127	8	1'-5"	1'-11"			
AE504		3	3	6	6'-11"	43	16	4'-0"	2'-9"	0		
AE505		3	3	6	4'-11"	31	17	7"	7"	10"	3'-5"	0
AE506		9		9	7'-8"	72	16	4'-0"	2'-9"	10½"		
AE507		9		9	3'-6"	33	17	7"	7"	10"	1'-3"	10½"

PIERS

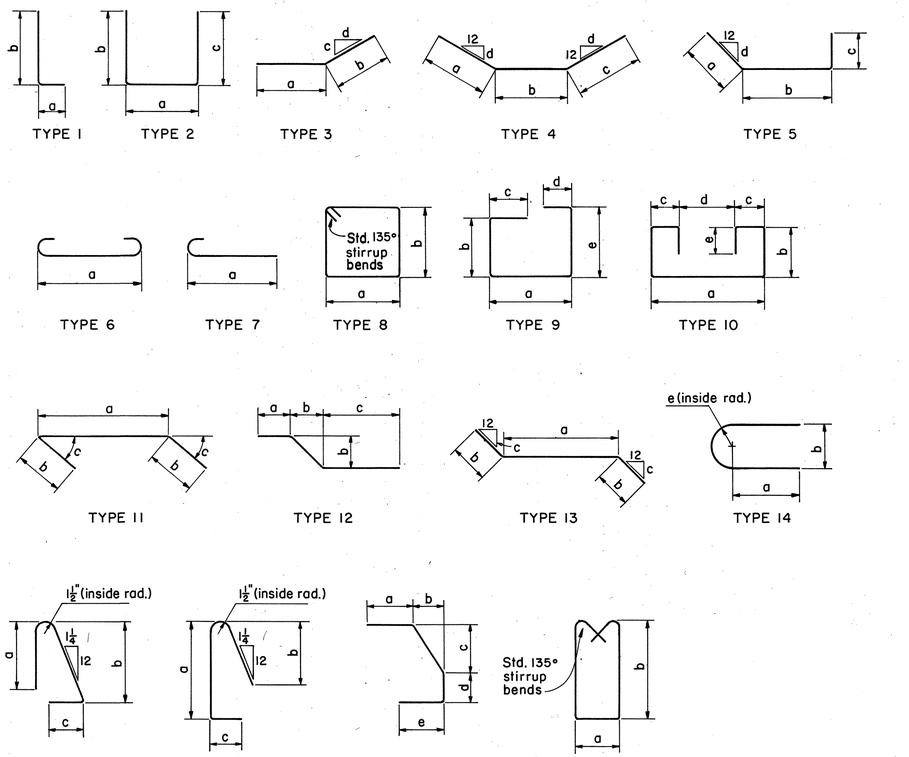
MARK	NO. 1	——	——	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
P501	2			2	43'-2"	90	Str.					
P502	3			3	41'-8"	130	Str.					
P503	24			24	6'-1"	152	2	1'-6"	2'-0"	2'-10"		
P504	24			24	5'-7"	140	2	2'-10½"	10½"	2'-1"		
P505	5			5	8'-7"	45	2	1'-6"	2'-0"	5'-4"		
P506	5			5	7'-11"	41	2	2'-10½"	4'-5"	10½"		
P507	1			1	6'-3"	7	2	1'-6"	2'-6"	2'-6"		
P508	4			4	11'-0"	46	8	1'-7"	3'-8"			
P509	2			2	7'-6"	16	4	1'-8"	3'-6"	2'-6"	10⅜	
	1 Ser.			1 Ser.	6'-7"				2'-4"	2'-4"		(incr. = 9"
P510	of			of	to	25	2	2'-2"	to	to		each leg)
	3			3	9'-7"				3'-10"	3'-10"		
P511	1			1	17'-9"	19	2	3'-8"	7'-2"	7'-2"		
P512	1			1	8'-5"	9	2	2'-2"	3'-3"	3'-3"		
P1001	6			6	42'-11"	1,108	Str.					

MARK	NO. 2	NO. 6	NO. 7	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
P513	5	5		10	42'-2"	440	Str.					
P514	2	2		4	36'-8"	153	Str.					
P515	14	14		28	14'-3"	416	2	5'-8"	4'-5"	4'-5"		
P516	16	16		32	12'-11"	431	2	5'-8"	3'-9"	3'-9"		
P517	38	38		76	6'-0"	476	2	1'-7"	2'-4"	2'-4"		
P518	8	8	4	20	15'-2"	316	8	1'-8"	5'-8"			
P519	6	6	3	15	7'-2"	112	4	2'-6"	3'-2"	1'-8"	12	
P520	2	2	1	5	10'-3"	53	2	4'-0"	3'-3"	3'-3"		
	2 Ser.	2 Ser.	1 Ser.	5 Ser.	7'-11"				2'-0"	2'-0"		(incr. = 9"
P521	of	of	of	of	to	147	2	4'-2"	to	to		each leg)
	3	3	3	3	10'-11"				3'-6"	3'-6"		
P522			2	2	37'-4"	78	Str.					
P523			2	2	6'-4"	13	3	4'-1"	2'-3"	5½	12	
P524			4	4	13'-5"	56	3	11'-2"	2'-3"	5½	12	
P525			26	26	8'-11"	242	2	5'-8"	1'-9"	1'-9"		
P526			4	4	14'-9"	62	2	5'-8"	4'-8"	4'-8"		
P527			4	4	13'-8"	57	4	1'-8"	9'-8"	2'-6"	3¼	
P528			1	1	15'-11"	17	2	4'-2"	6'-0"	6'-0"		
			1 Ser.	1 Ser.	9'-11"				3'-0"	3'-0"		(incr. = 2⅜"
P529			of	of	to	44	2	4'-2"	to	to		each leg)
			4	4	11'-3"				3'-8"	3'-8"		
			2 Ser.	2 Ser.	10'-10"							3'-6"
P530			of	of	to	93	9	3'-5"	1'-8"	1'-9"	1'-0"	to
			4	4	11'-6"							4'-2"
			2 Ser.	2 Ser.	9'-0½"							1'-8½"
P531			of	of	to	267	9	3'-5"	1'-8"	1'-9"	1'-0"	to
			13	13	10'-8"							3'-4"
			1 Ser.	1 Ser.	12'-6"				3'-6½"			
P532			of	of	to	192	10	4'-2"	to	10½"	2'-5"	0
			13	13	15'-9"				5'-2"			
P1002	6	6		12	42'-2"	2,177	Str.					
P1003			6	6	37'-4"	964	Str.					
P1004			6	6	9'-10"	254	3	4'-1"	5'-9"	5½	12	
P1005			11	11	16'-11"	801	3	11'-2"	5'-9"	5½	12	

(incr. = 2⅝"+)

(incr. = 1⅜")

(incr. = 1⅝" each leg)



NOTES:
For reinforcing steel sampling note see sheet 70/72.
All AE4XX and AE5XX reinforcing steel bars shall be epoxy coated.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

71/72

REINFORCING STEEL LIST

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	

FHWA REGION	STATE	PROJECT	
5	OHIO		

74/74

BEL-40-23.38

PIERS (CONT.)

MARK	NO. 8	NO. 9	NO. 10	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
P508	8	8	8	24	11'-0"	275	8	1'-7"	3'-8"			
	2 Ser.	2 Ser.	2 Ser.	6 Ser.	6'-7"				2'-4"	2'-4"	(incr. = 9"	
P510	of	of	of	of	to	152	2	2'-2"	to	to	each leg)	
	3	3	3	3	9'-7"				3'-10"	3'-10"		
	1 Ser.	1 Ser.	1 Ser.	3 Ser.	7'-2"				2'-2⅝"	2'-2⅝"	(incr. = ½"	
P533	of	of	of	of	to	847	2	2'-11½"	to	to	each leg)	
	32	32	32	32	9'-9"				3'-6"	3'-6"		
P534	6	6	6	18	11'-7"	217	2	2'-11½"	4'-5"	4'-5"		
P535	4	4	4	12	12'-5"	155	2	3'-8"	4'-6"	4'-6"		
P536	4	4	4	12	43'-0"	538	3	39'-0"	4'-0"	8¼	12	
P537	3	3	3	9	5'-6"	52	3	4'-3"	1'-3"	8¼	12	
P538	2	2	2	6	6'-9"	42	2	2'-0"	2'-6"	2'-6"		
P539	4	4	4	12	7'-2"	90	17	1'-8"	2'-3"	2'-3"	1'-8"	11"
P540	1	1	1	3	7'-7"	24	3	6'-4"	1'-3"	8¼	12	
P801	10	10	10	30	26'-5"	2,116	3	22'-5"	4'-0"	8¼	12	
						1,000	*					

PRECAST TRANSVERSE BEAMS

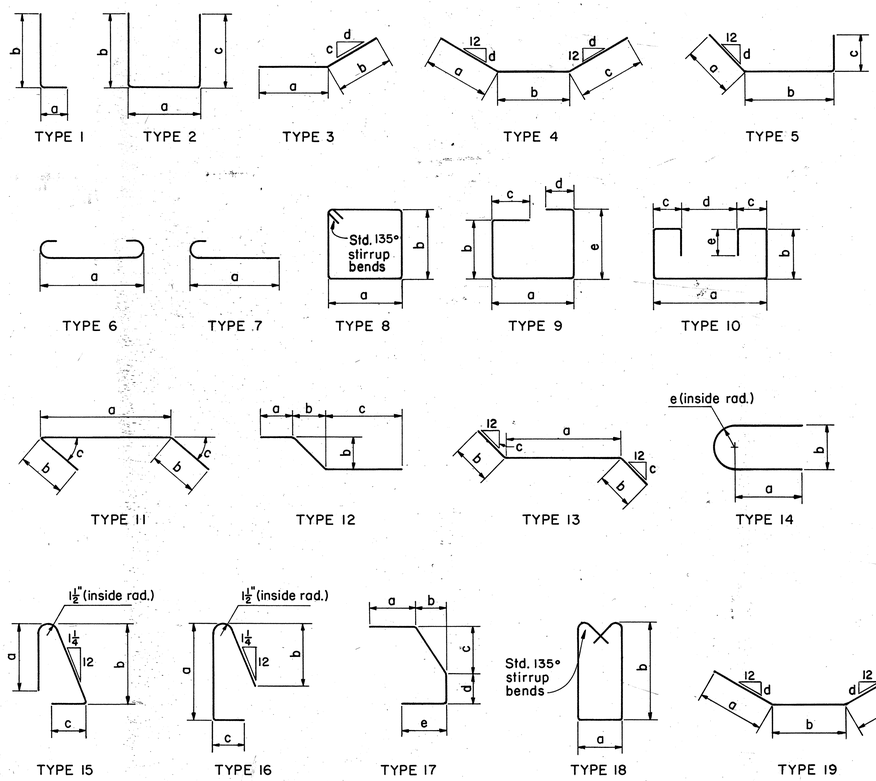
MARK	A	B	C & C1	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
	60 Ser.	6 Ser.		66 Ser.	7'-10"				1'-6"			
B501	of	of		of	to	2,501	8	2'-2"	to	(incr. = 5" each leg)		
	4	4		4	10'-4"				2'-9"			
B502	480	54	30	564	10'-6"	6,177	8	2'-2"	2'-10"			
B503	420	36		456	10'-8"	5,073	8	2'-2"	2'-11"			
B504	240	24		264	10'-10"	2,983	8	2'-2"	3'-0"			
B505	210	21		231	11'-0"	2,650	8	2'-2"	3'-1"			
			6 Ser.	6 Ser.	8'-0"				1'-7"			
B506			of	of	to	227	8	2'-2"	to	(incr. = 4⅜" each leg)		
			4	4	10'-2"				2'-8"			
B507			24	24	10'-4"	259	8	2'-2"	2'-9"			
B601	60	6		66	42'-2"	4,180	Str.					
B602	60	6		66	40'-8"	4,031	Str.					
B603	60	6		66	37'-6"	3,717	Str.					
B604			12	12	13'-1"	236	Str.					
B605			12	12	12'-7"	227	Str.					
B606			12	12	10'-10"	195	Str.					
B607			24	24	13'-4"	481	3	9'-0"	4'-4"	4½	12	
B701			18	18	14'-0"	515	1	1'-1"	13'-1"			
B702			12	12	13'-1"	321	Str.					
B801	120	12		132	44'-0"	15,507	2	42'-2"	1'-1"	1'-1"		
B802	120	12		132	14'-10"	5,228	Str.					
B1101	120	12		132	42'-10"	30,039	19	4'-5"	34'-0"	4'-5"	4⅞	
B1102	120			120	23'-8"	15,089	Str.					
B1103		12		12	22'-9"	1,450	Str.					

DECK SLAB, SIDEWALK and CURB

MARK	DECK	SIDE-WALK	CURB	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
SE401	495			495	30'-0"	9,920	Str.					
SE402	868			868	43'-3"	25,077	Str.					
SE403	33			33	45'-10"	1,010	Str.					
SE404	33			33	26'-10"	592	Str.					
SE405	840			840	6'-0"	3,367	Str.					
SE406	33			33	17'-4"	382	Str.					
SE407	33			33	32'-0"	705	Str.					
SE408	33			33	19'-0"	419	Str.					
SE409	28			28	18'-0"	337	Str.					
	1 Ser.			1 Ser.	25'-5"							
SE410	of			of	to	610	Str.	(incr. = 11⅛")				
	25			25	47'-8"							
SE411	33			33	37'-3"	821	Str.					
SE412	33			33	45'-6"	1,003	Str.					
SE413	33			33	43'-11"	968	Str.					
SE414	4			4	24'-9"	66	Str.					
	6 Ser.			6 Ser.	4'-7"							
SE415	of			of	to	2,763	Str.	(incr. = 1'-1⅛")				
	32			32	38'-6"							
SE416	4			4	48'-3"	129	Str.					
	1 Ser.			1 Ser.	4'-8"							
SE417	of			of	to	459	Str.	(incr. 1'-1")				
	32			32	38'-3"							
SE501		60	60	120	30'-0"	3,755	Str.					
SE502			501	501	2'-8"	1,394	17	7"	6"	8½"	6"	10½"
SE503			501	501	1'-11"	1,002	1	10½"	1'-2"			
SE504		486		486	6'-8"	3,379	9	3'-7"	11"	10½"	10½"	11"
SE505		486		486	2'-5"	1,225	2	11"	10½"	10½"		
SE506		4	4	8	45'-10"	382	Str.					
SE507		4	4	8	28'-2"	235	Str.					
SE508		90	30	120	6'-0"	751	Str.					
SE509		4	4	8	16'-8"	156	Str.					
SE510		4	4	8	33'-0"	274	Str.					
SE511		4	4	8	20'-0"	167	Str.					
SE512		3	1	4	18'-0"	75	Str.					
SE513		4	4	8	43'-11"	366	Str.					

STAIRS

MARK	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
T401	21	8'-2"	116	10	4'-2"	1'-2"	5½"	3'-3"	7½"
T402	8	22'-4"	119	13	21'-6"	5½"	9½"		
T403	4	6'-3"	17	Str.					
T404	2	2'-7"	4	12	6"	7"	1'-4"		
T405	2	2'-5"	3	Str.					
T501	3	27'-0"	85	3	22'-0"	5'-0"	10¾"	12	
T502	45	4'-9"	223	1	1'-1"	3'-9"			
T503	24	4'-3"	106	Str.					
T504	8	5'-6"	46	1	1'-1"	4'-6"			
T505	4	5'-2"	22	Str.					
T506	12	10'-3"	128	2	6'-2"	2'-2"	2'-2"		
T507	5	9'-1"	47	2	8"	4'-4"	4'-4"		
T508	6	5'-8"	35	Str.					
T601	4	28'-1"	169	3	22'-4"	5'-9"	10¾"	12	
T701	6	27'-0"	331	3	22'-0"	5'-0"	10¾"	12	
T702	4	12'-9"	104	3	5'-0"	7'-9"	10¾"	12	
T703	4	10'-9"	88	3	5'-0"	5'-9"	10¾"	12	



DECK SLAB, SIDEWALK and CURB (cont.)

MARK	DECK	SIDE-WALK	CURB	TOTAL NO.	LENGTH	WEIGHT	TYPE	a	b	c	d	e
SE514		4	4	8	45'-6"	380	Str.					
SE515		4		4	25'-1"	105	Str.					
SE516			4	4	48'-7"	203	Str.					
SE517		4	4	8	37'-3"	311	Str.					
SJ401	2,398			2,398	2'-8"	4,273	Str.					
SJ501	124			124	2'-8"	345	Str.					

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NOTES:

* Extra steel used as directed by the Engineer.

For reinforcing steel sampling note see sheet 70/72.

All SE4XX and SE5XX reinforcing steel bars shall be epoxy coated.

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BUREAU OF BRIDGES AND STRUCTURAL DESIGN

72/72

REINFORCING STEEL LIST

BRIDGE NO. BEL-40-2338
OVER THE B. & O. RAILROAD
AND WHEELING CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
AJM	AJM		R.L.D.	WJJ	12-1-80	