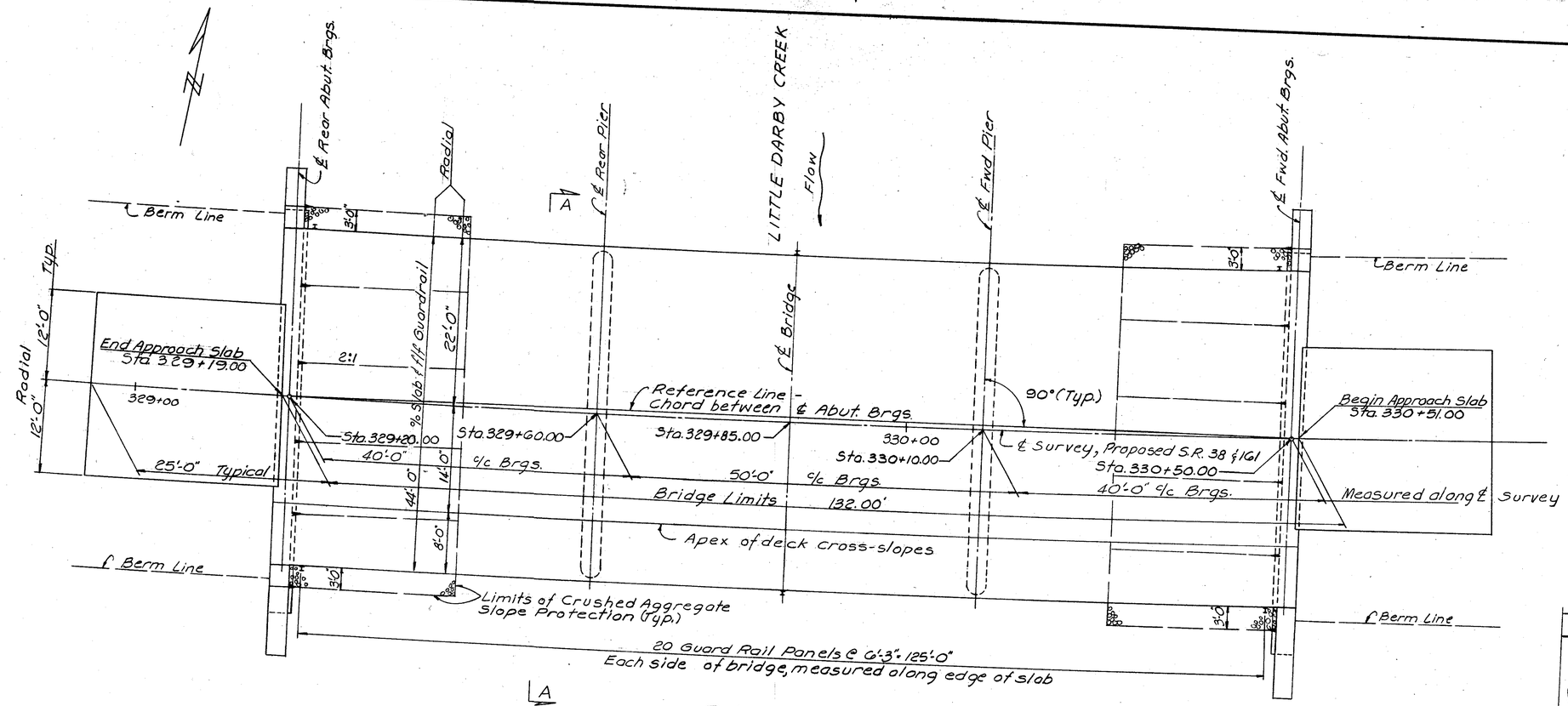
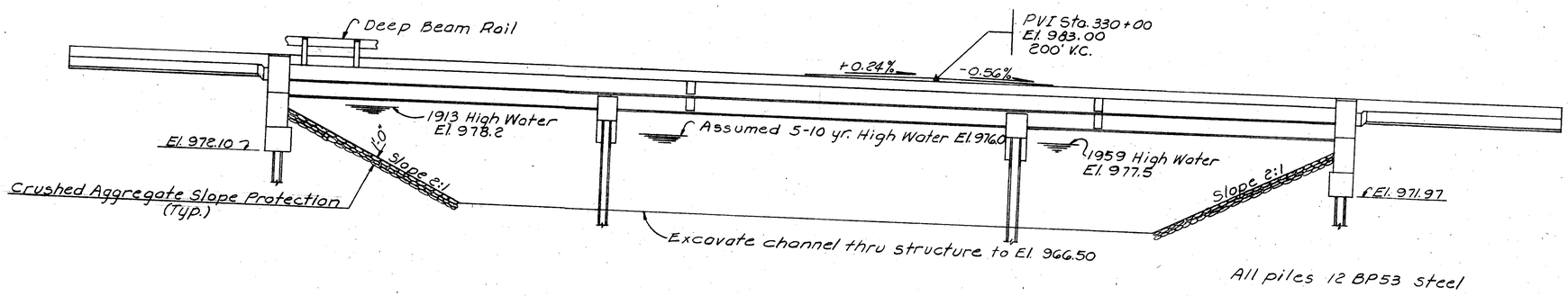

EXISTING BRIDGE DATA
TYPE: Steel beams with timber strip floor
SPANS: Three at 42± 126' out/out
ROADWAY: 30'
LOADING: S-11.4
SKEW: 0° 6° Long Chord
CONDITION: Fair
BUILT: 1932
N
FED. RD. DIVISION 2
STATE OHIO
PROJECT
61/70
UNI-38-0.06
UNI-161 (6.07)(6.33)
6.1 Miles West of Plain City
LITTLE DARBY CREEK
Elev. 966.5±
Existing 15" Drain Tile
Existing 20" Drain Tile
Transition
5.3 mi. to Irwin
6.1 mi to Plain City
End Approach Slab Sta. 329+19.00
Begin Approach Slab Sta. 330+51.00
℄ Survey, Prop. S.R. 38 ℄ 161
12' Field Dr.
S 85° E
℄ Existing S.R. 38 ℄ S.R. 161
Struc. UNI-38-0.21
CHUCKERY
EARTHWORK limits shown are schematic. Actual slopes shall conform to plan cross-sections.
Clears Assumed 5-10 Yr. H.W. Elev. 2.8±
1987 Design Traffic = 2242 A.D.T.
PROPOSED CURVE DATA
S.R. 161
P.I. Sta. 334+24.52
Δ = 43°-01'-15" Lt.
Dc = 2°-00'
Ls = 300' R = 2864.79'
P = 1.30' Ts = 1279.57'
K = 149.99' Es = 215.91'
Yc = 5.24 Δc = 37°-01'-15"
θs = 3°-00' Lc = 1851.04'
Max. Super. = 0.064 ‰
Drainage Area = 72.0 sq. mi.
Water Elev. at Survey 969.52 (3-3-66)
Bridge Limits = 132.0'
Brush Area
Elev. 966.4±
Elev. 983.00
PROPOSED STRUCTURE
TYPE: Continuous steel beams with reinforced concrete deck with capped pile substructure
SPANS: 40-50-40% brgs.
ROADWAY: 44'-0" f/f guard rails
LOAD FREQUENCY: CF=400(57)
SKEW: None
WEARING SURFACE: 1" monolithic concrete
APPROACH SLABS: AS-1-54 (25' long)
ALIGNMENT: 2°-0' curve left
SUPERELEVATION: 0.064 ft./ft.
Proposed Profile S.R. 38 +0.24%
Existing Profile S.R. 38 -0.56%
P.C. Sta. 329+00 Elev. 982.76
Existing P.C. Sta. 329+37.93
Sta. 329+19.00
P.I. @ Sta. 330+00
Sta. 330+51.00
P.T. Sta. 331+00 Elev. 981.44
Top of Slope Elev. 977.4±
Top of Slope Elev. 977.3±
1913 High Water Elev. 978.2
Ftg. Elev. 972.10
1959 High Water Elev. 977.5
Ftg. Elev. 971.97
200' v.c.
All piles 12 BP53
Est. ave. pay length:
Abuts: 25' / Pile
Piers: 30' do
Assumed 5-10 yr. H.W. Elev. 976.0
Excavate channel thru structure to Elev. 966.5±
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
BUREAU OF BRIDGES
SITE PLAN
BRIDGE NO. UNI-38-0021
SR 38 OVER LITTLE DARBY CREEK
UNION CO. SR-38
SEC.
SCALE 1" = 20'
STA. 329+19.00 330+51.00
PRESENT TOPOGRAPHY: SURVEYED Aerial Survey; DRAWN Aerial Survey
PROPOSED WORK: DESIGNED N.J.B.; DRAWN N.J.B.; CHECKED R.E.J.; REVIEWED P.E.S.
BFG 2-24-67
06599

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

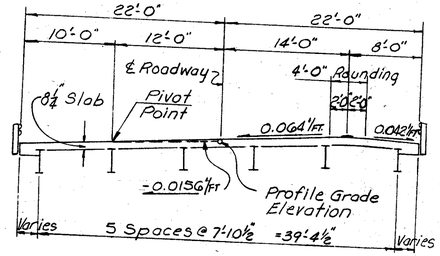
62
70

UNI-38-0.06
UNI-161 (6.07)(6.33)
6.1 Miles West of Plain City





ELEVATION



SECTION A-A

Slab thickness shown includes 1" for monolithic wearing surface

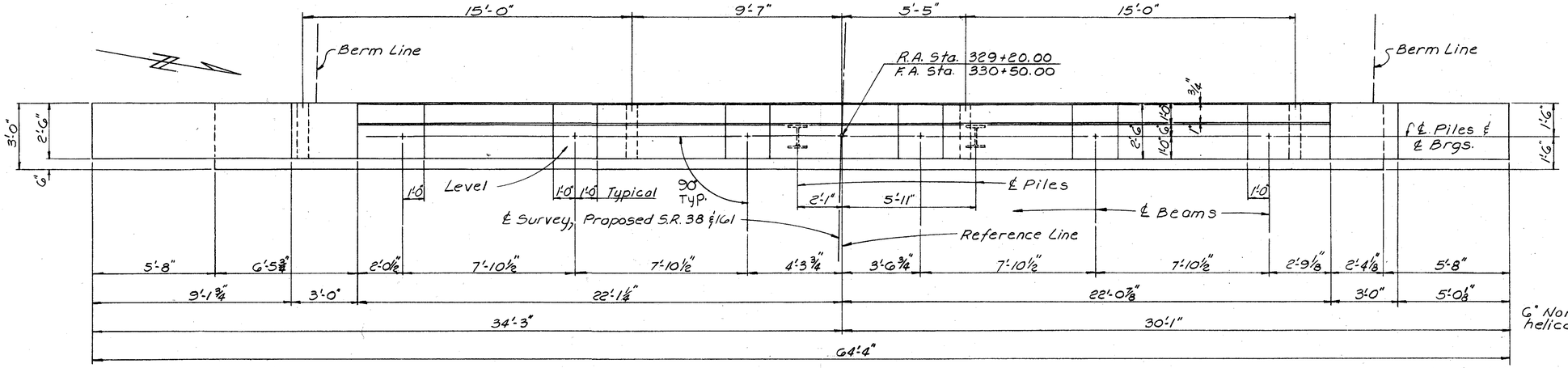
STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION

2

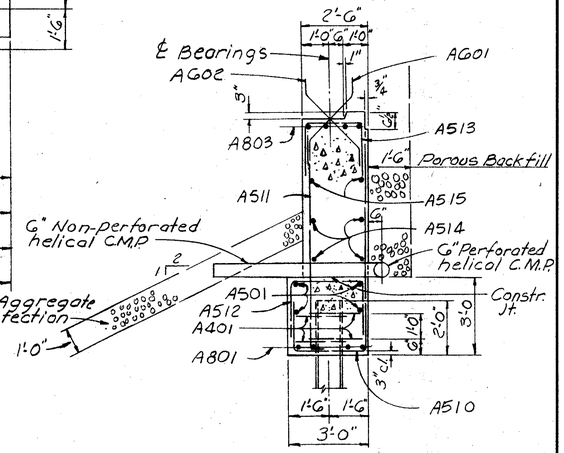
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

63/70

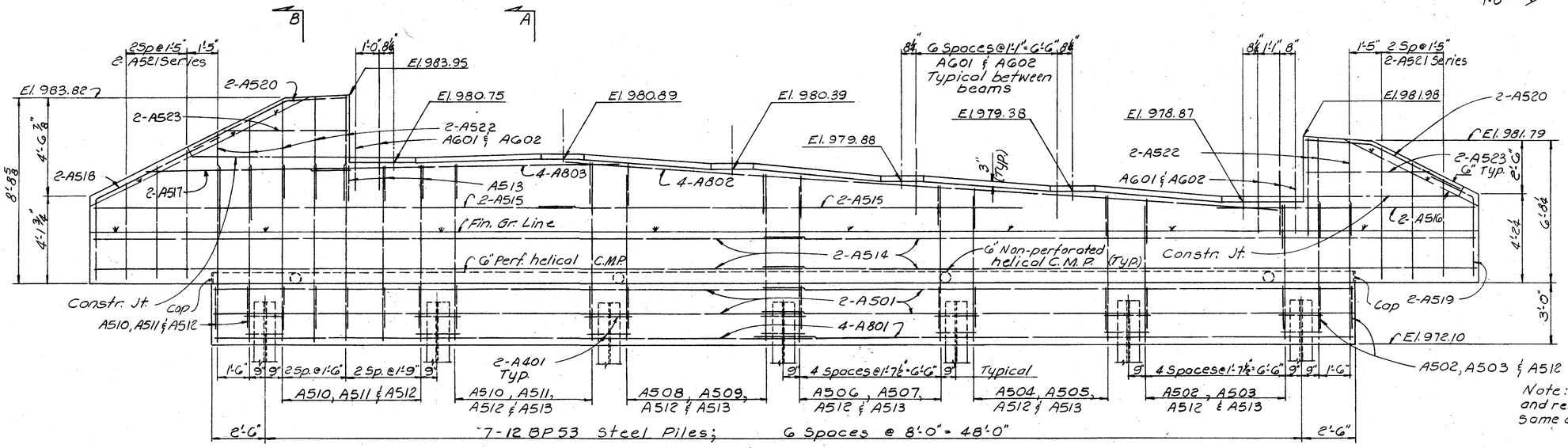
UNI-38-0.06
UNI-161 (6.07)(6.33)
6.1 Miles West of Plain City



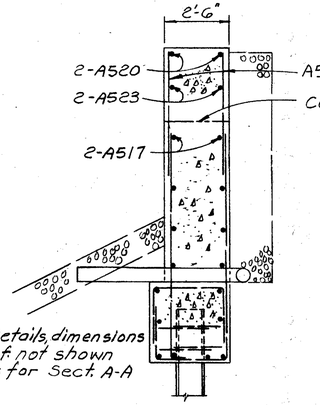
PLAN ~ REAR ABUTMENT



SECTION A-A



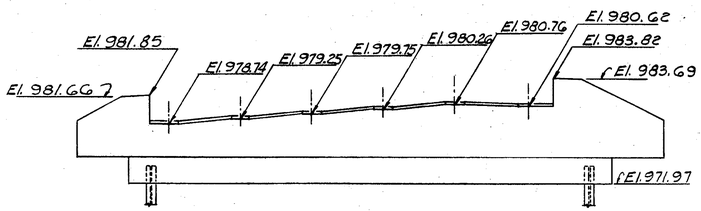
ELEVATION ~ REAR ABUTMENT



Note: Details, dimensions and reinf. not shown same as for Sect. A-A

SECTION B-B

POROUS BACKFILL shall extend upward to the approach slab and to the surface of the earth shoulders and outward to the surface of the embankment slopes.



ELEVATION ~ FORWARD ABUTMENT
(Looking forward)

Note: Details, dimensions and reinf. not shown same as for REAR ABUTMENT except for being opposite hand.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

5

ABUTMENT DETAILS

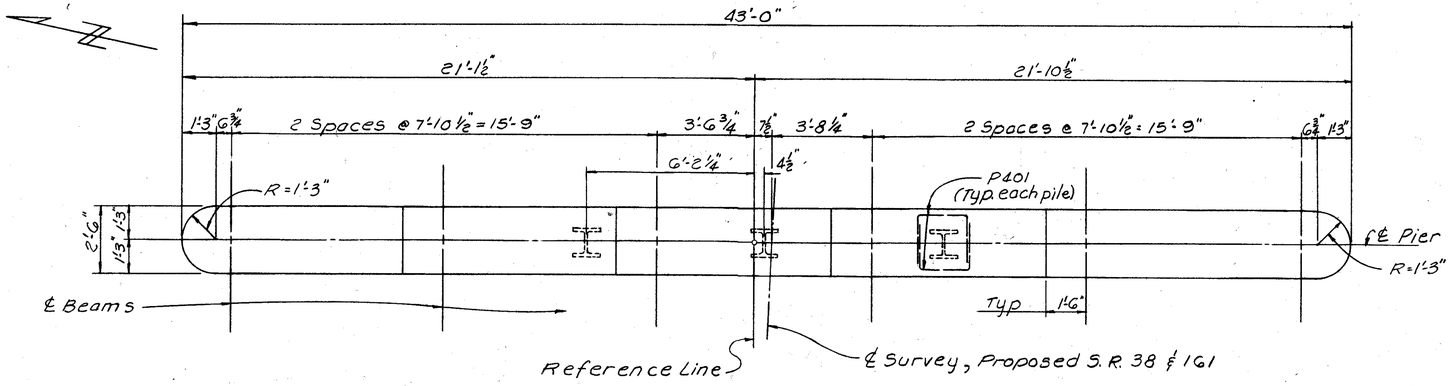
BRIDGE NO. UNI-38-0021
OVER LITTLE DARBY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kay	BFG	2-24-67	

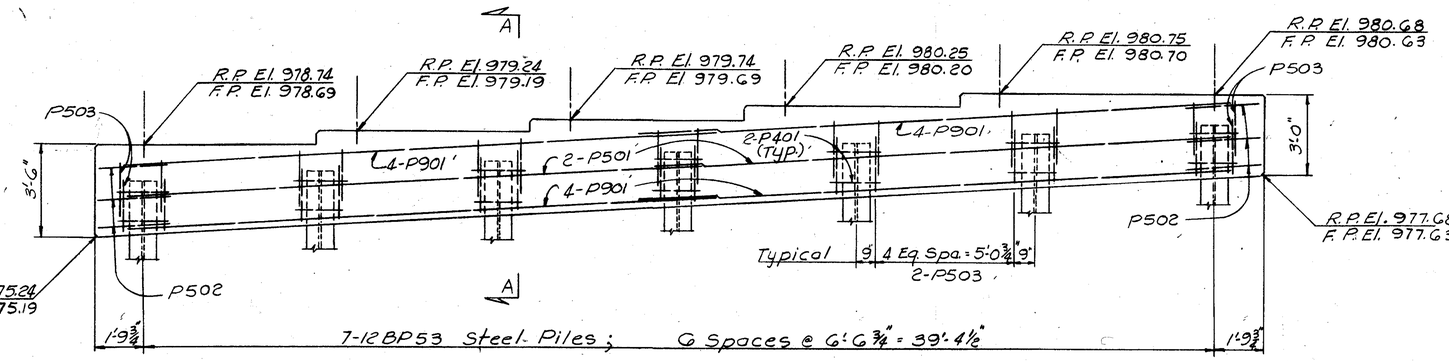
FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

64/70

UNI-38-0.06
UNI-161 (6.07)(6.33)
6.1 Miles West of Plain City



P L A N



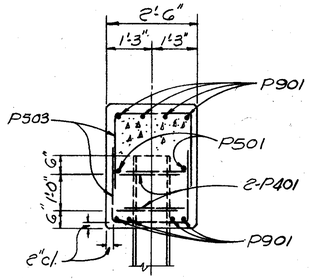
E L E V A T I O N

WELDS on secondary stress carrying members are shown thus: ⊖

WELDED ATTACHMENTS: No attachments shall be made by welding to the top flanges of the beams within a distance of 0.10 of the span length on either side of the interior supports.

Welding for attachments to the top flanges or other parts of the spans shall be kept at least 2" from edge of flange.

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



SECTION A-A

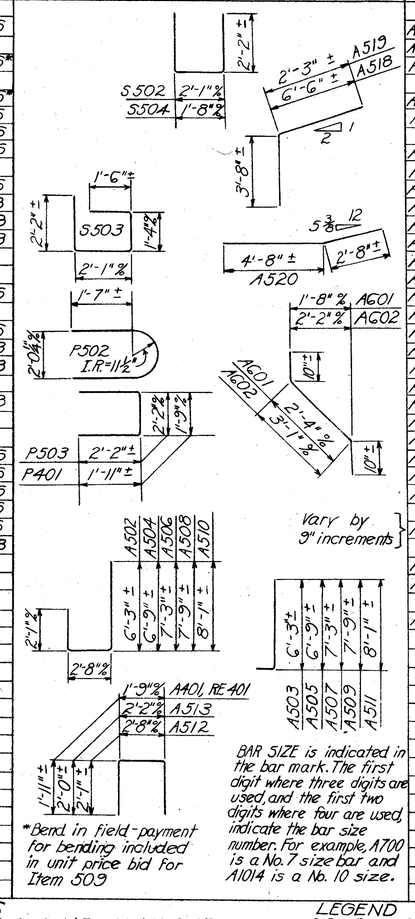
ESTIMATED QUANTITIES

Item	Total	Unit	Description	Super.	Abuts.	Piers.	Genl.	As Built	
202	Lump	Sum	Existing structure removed				Lump		
503	50 (61)	Cu. Yds.	Unclassified excavation		50 (61)				
505	Lump	Sum	First test pile				Lump		
507	770	Lin. Ft.	Steel piles, 12 BP53		350	420			
509	58,089	Lbs.	Reinforcing steel	48,517	7,345	3,227			
511	182	Cu. Yds.	Class C concrete, superstructure	182					
511	27	Cu. Yds.	Class C concrete, pier caps			27			
511	101	Cu. Yds.	Class E concrete, abutments		101				
512	88	Lin. Ft.	Premolded sealing strip		88				
513	105,100	Lbs.	Structural steel	105,100					
832	105,100	Lbs.	Field painting of structural steel	105,100					
516	76	Sq. Ft.	¼" Preformed expansion joint filler, AASHO M-153		76				
516	86	Sq. Ft.	1" Preformed expansion joint filler, AASHO M-153		86				
517	264	Lin. Ft.	Railing (two deep beam rails with steel post & bolts.)	264					
518	53	Cu. Yds.	Porous backfill		53				
518	106	Lin. Ft.	6" Perforated, helical CMP including specials, 707.06		106				
518	48	Lin. Ft.	6" Non-perforated, helical CMP, 707.06		48				
601	269	Sq. Yds.	Crushed aggregate slope protection		269				
808	182	Units	Water-reducing, set-retarding admixture	182					
825	690	Sq. Yds.	Concrete surface treatment	690					

REINFORCING STEEL LIST

Mark	No.	Length	Weight	Shp
Superstructure				
S801	44	23'-1"	2712	S
S701	177	43'-8"	15,798	S*
S601	177	43'-8"	11,609	S*
S602	296	30'-0"	13,338	S
S603	64	20'-0"	1,923	S
S604	74	19'-0"	2,112	S
S501	4	9'-7"	40	S
S502	68	6'-2"	437	B
S503	42	6'-9"	296	B
S504	42	5'-9"	252	B
Piers				
P901	32	21'-8"	2,357	S
P501	8	21'-0"	175	S
P502	12	6'-4"	79	B
P503	64	6'-3"	417	B
P401	56	5'-4"	199	B
Replacement bars				
RE501	1	6'-10"	—	S
RE801	1	6'-6"	—	S
RE701	1	6'-2"	—	S
REG01	2	5'-11"	—	S
RE501	1	5'-7"	—	S
RE401	1	5'-4"	—	B

Bending Diagram



Vary by 9" increments

*Bend in field - payment for bending included in unit price bid for Item 509.

BAR SIZE is indicated in the bar mark. The first digit where three digits are used, and the first two digits where four are used, indicate the bar size number. For example, A700 is a No. 7 size bar and A1014 is a No. 10 size.

Mark	No.	Length	Weight	Shp
Abutments				
A801	16	27'-6"	1,175	S
A802	8	33'-0"	705	S
A803	8	14'-3"	304	S
AG01	80	3'-10"	461	B
AG02	80	4'-7"	551	B
A501	16	27'-3"	455	S
A502	14	10'-8"	156	B
A503	14	6'-9"	99	B
A504	10	11'-2"	116	B
A505	10	7'-3"	76	B
A506	10	11'-8"	122	B
A507	10	7'-9"	81	B
A508	10	12'-2"	127	B
A509	10	8'-3"	86	B
A510	24	12'-6"	313	B
A511	24	8'-7"	215	B
A512	68	6'-7"	467	B
A513	56	5'-11"	346	B
A514	16	32'-10"	548	S
A515	8	22'-6"	188	S
A516	4	12'-0"	50	S
A517	4	9'-6"	40	S
A518	4	10'-1"	42	B
A519	4	5'-10"	24	B
A520	8	7'-3"	60	B
A521	8 series of 3	4'-6" to 6'-0"	131	S
A522	32	4'-9"	159	S
A523	8	5'-9"	48	S
A401	56	5'-4"	200	B

GENERAL NOTES

REFERENCE shall be made to Standard Drawings CSB-1-63, sheets 1 & 5, revised 12-8-65, SD-1-65 sheets 2 & 3, dated 11-8-65 and to Supplemental Specifications 811 and 825 dated 1-1-67, and 808 dated 1-13-67, 832 and 931 dated 5-25-67.

DESIGN SPECIFICATIONS: This structure conforms to the requirements of "Design Specifications for Highway Structures" of the State of Ohio, Department of Highways, dated 9-1-57 together with current revisions thereof.

DESIGN DATA: Design Loading - CF400(57). Concrete Class C basic unit stress 1,333 p.s.i.
Concrete Class E basic unit stress 1,133 p.s.i.
Structural Steel - ASTM A36 basic unit stress 20,000 p.s.i.
Reinforcing Steel - ASTM A15, A16, A160, Deformed, Intermediate or Hard Grade. Basic unit stress 20,000 p.s.i.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed.

PILES shall be driven to a minimum bearing capacity of 35 tons per pile for the abutments and 40 tons per pile for the piers.

PILE PAINTING: The exposed portion of the pier piles above low water elevation shall be painted in accordance with Item 514, applying two coats as per Secs. 708.06, 708.08 or 708.09 and two coats as per Sec. 708.12. Payment shall be included in Item 507.

LEGEND
R.P. - Rear Pier
F.P. - Forward Pier

BRIDGE SEAT REINFORCING: Special care shall be taken in placing reinforcing steel in the vicinity of the bridge seat so as to avoid interference with the drilling of anchor rod holes. Anchor rod holes are included with Item 513 for payment.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

4

PIER DETAILS, QUANTITIES, REINFORCING STEEL LIST & GENERAL NOTES
BRIDGE NO. UNI-38-0021
OVER LITTLE DARBY CREEK

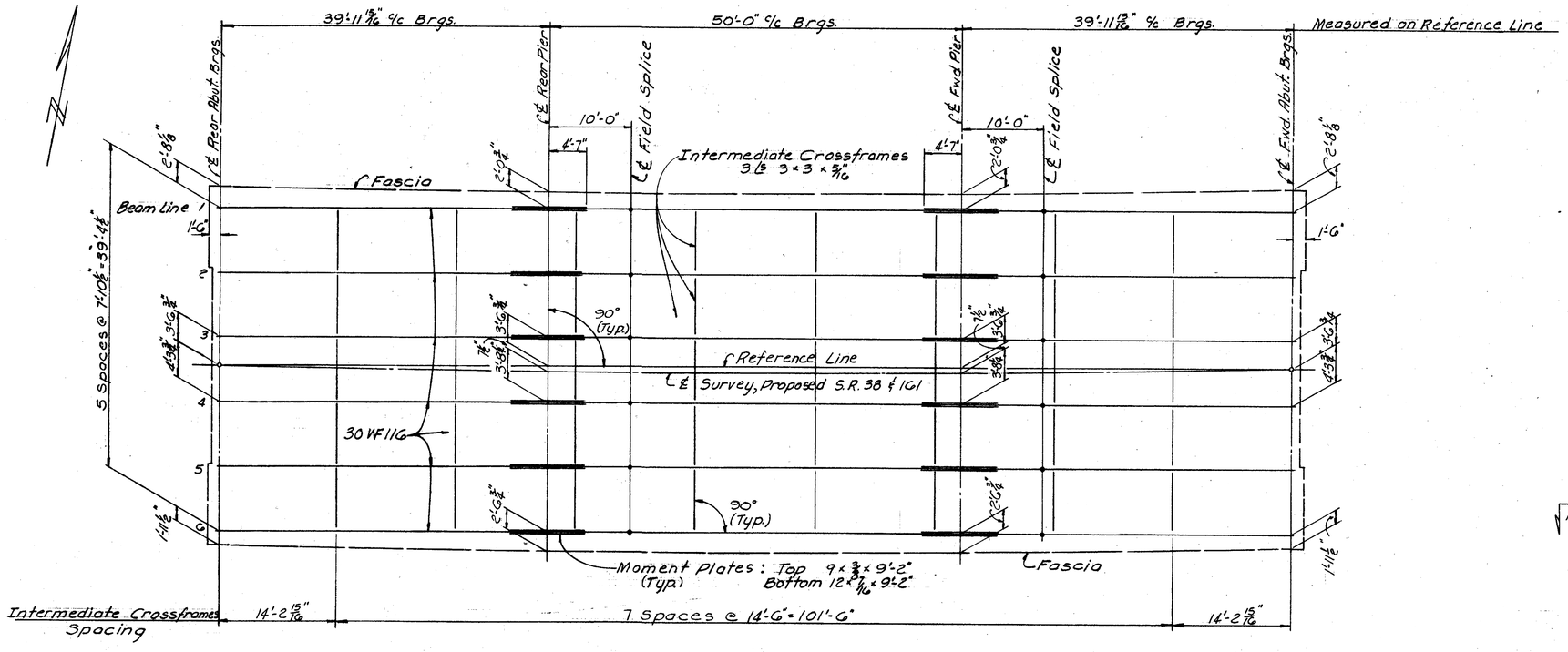
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Kuy 1/23/67	BFG	2-24-67	

Revised As-Built

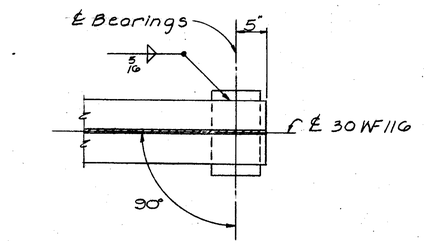
FED. RD. DIVISION	STATE	PROJECT		
2	OHIO			

65/70

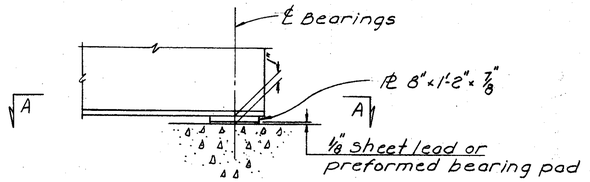
UNI-38-0.06
UNI-161 (6.07)(6.33)
6.1 Miles West of Plain City



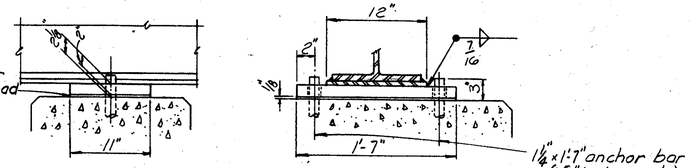
STEEL FRAMING PLAN



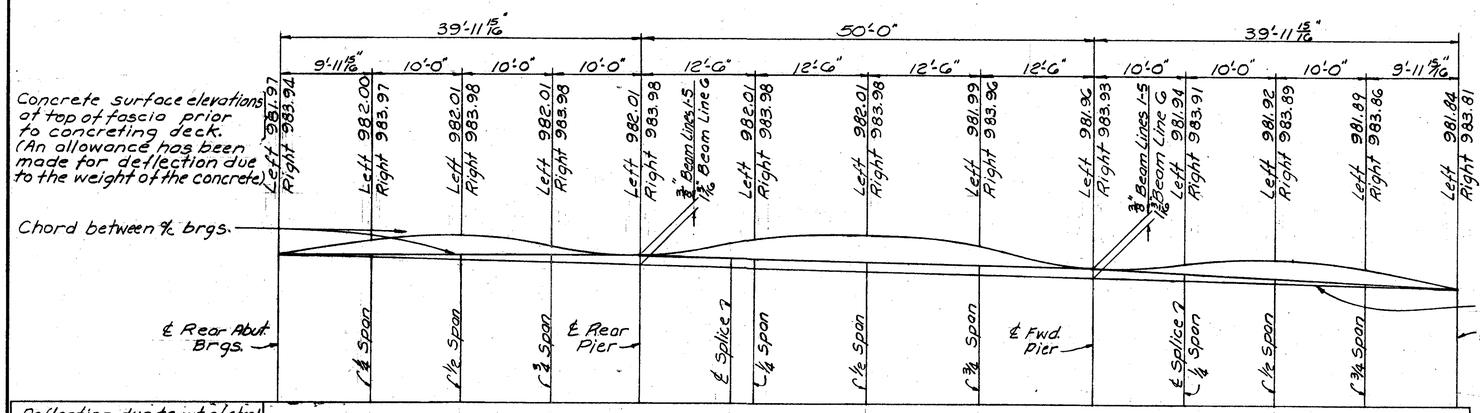
SECTION A-A



ABUTMENT BEARING DETAILS



PIER BEARING DETAILS



Deflection due to wt. of steel (All Beam Lines)	0	0	0	0	0	0	0	0	0	
Deflection due to remaining DL (All Beam Lines)	1/8"	1/8"	1/16"	1/16"	3/16"	1/8"	1/16"	1/8"	1/8"	
Adjustment reqd for hor. & vert. curves (Beam Lines 1,2,3,4 & 5)	0	1/16"	0	1/16"	1/8"	1/16"	0	1/16"	0	
Required shop camber (Beam Lines 1,2,3,4 & 5	1/8"	3/16"	1/16"	1/8"	5/16"	3/16"	1/16"	3/16"	1/8"	
Adjustment reqd for hor. & vert. curves (Beam Line 6)	1/16"	1/8"	1/16"	1/8"	3/16"	1/8"	1/16"	1/8"	1/16"	
Required shop camber (Beam Line 6)	3/16"	1/4"	1/8"	3/16"	3/8"	1/4"	1/8"	1/4"	3/16"	

BEAM CAMBER DIAGRAM AND CONCRETE PLACEMENT ELEVATIONS

NOTES

See Std. Dwg. CSB-1-63, sheets 1 & 5 and DETAIL A on sheet ___ of these plans for deck and railing details.
See Std. Dwg. SD-1-65, sheet 2 for moment plate welding details and sheet 3 for details of Bolted Beam Splices.
Slab thickness is 8 1/4" which includes 1" for monolithic wearing surface.

Each longitudinal line of deck reinforcing bars shown on the HALF TRANSVERSE SECTION of Std. Dwg. CSB-1-63, sheet 5, as 5G02 bars shall be 2-5G02 and 1-5G04. Lap 1'-11" min.

5

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

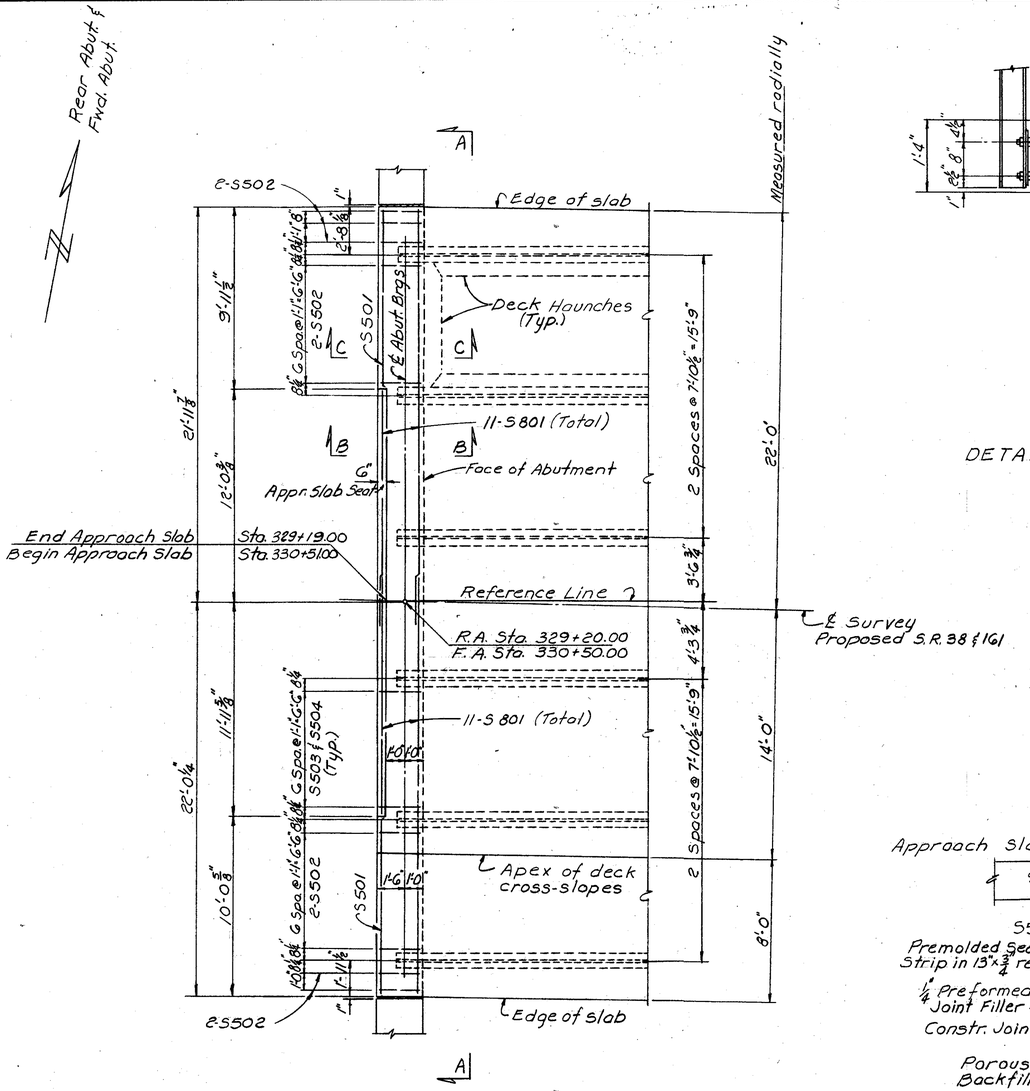
BRIDGE NO. UNI-38-0021 OVER LITTLE DARBY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray.	BFG	2-24-67	

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

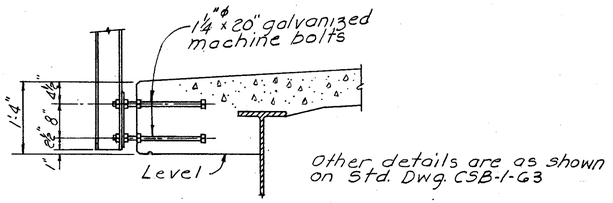
66
70

UNI-38-0.06
UNI-161 (6.07)(6.33)
6.1 Miles West of Plain City



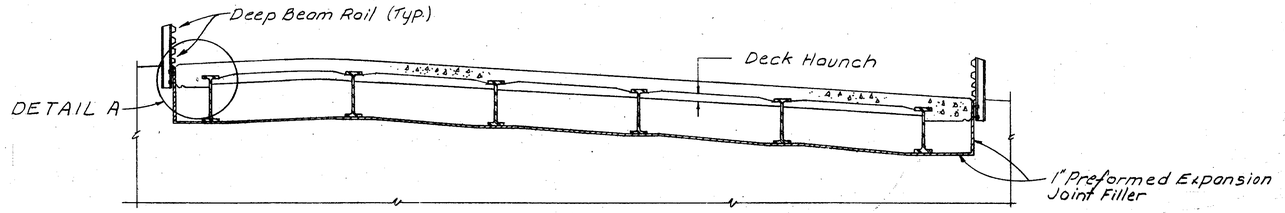
PARTIAL PLAN OF DECK

REAR ABUTMENT ~ AS SHOWN
FORWARD ABUTMENT ~ OPPOSITE HAND
(Deck reinforcing not shown)



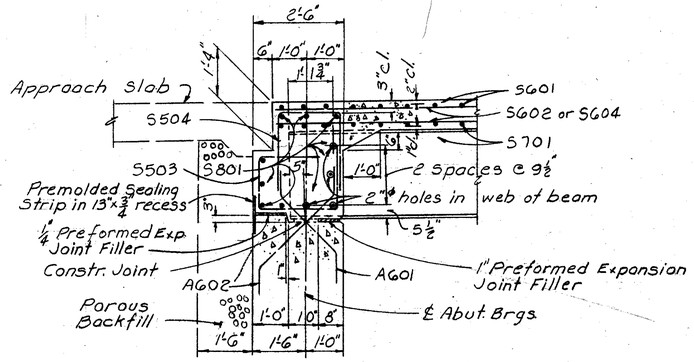
Other details are as shown on Std. Dwg. CSB-1-63

DETAIL A

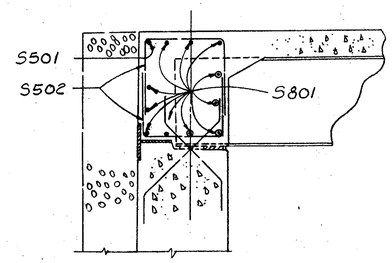


SECTION A-A

For additional details, see Std. Dwg. CSB-1-63

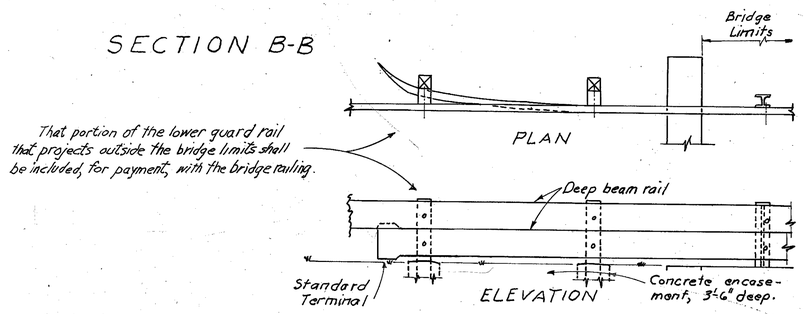


SECTION B-B



For details and dimensions not shown, see SECTION B-B

SECTION C-C



TWO-DEEP BEAM BRIDGE RAILING

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
BUREAU OF BRIDGES

SUPERSTRUCTURE DETAILS

BRIDGE NO. UNI-38-0021 OVER LITTLE DARBY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
WTF	WTF		Ray	BFG	2-24-67	