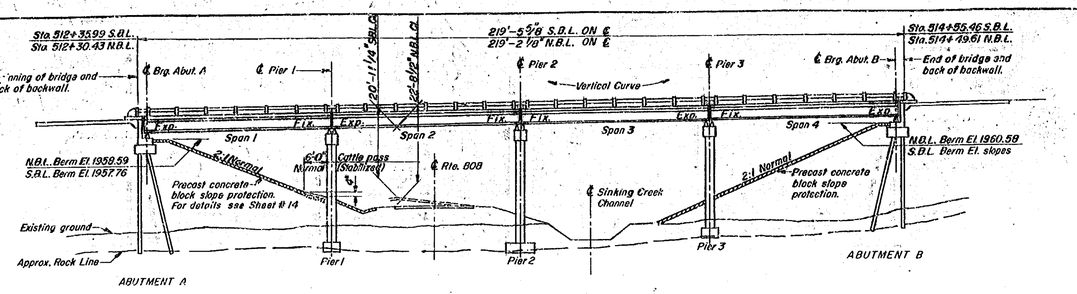
PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(13)5	81	0081-095 014 B-9	24-1	

Old(8095-28)



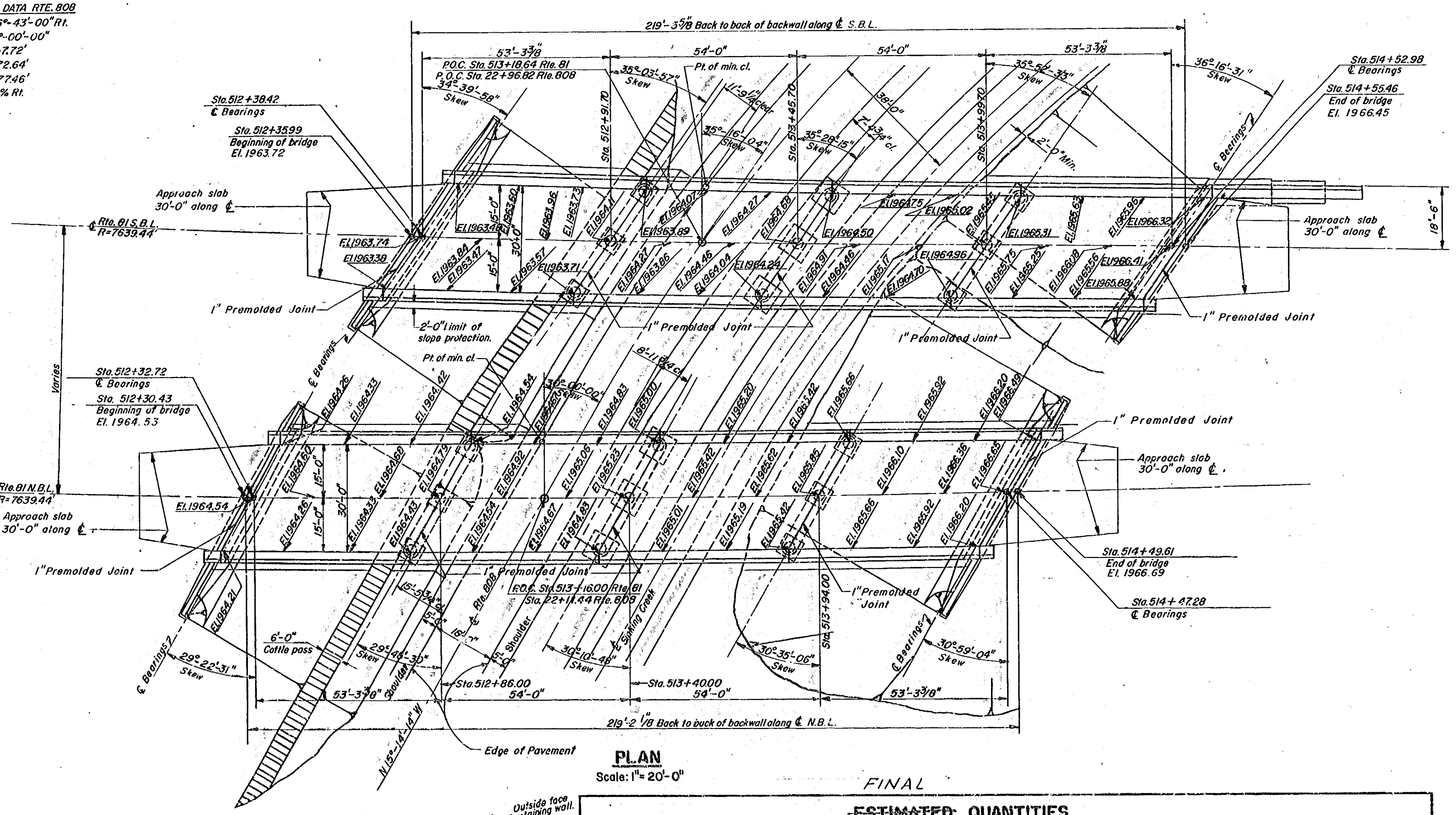
ELEVATION
Scale: 1" = 20'-0"

CURVE DATA RTE. 81

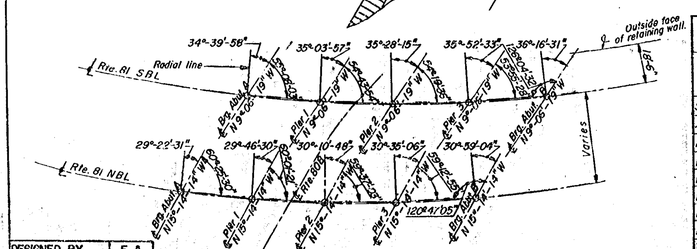
N.B.L.	S.B.L.
Δ = 26°-25'-00" Lt.	Δ = 26°-25'-00" Lt.
D = 0°-45'-00"	D = 0°-45'-00"
T = 1792.99'	T = 1792.99'
L = 3522.22'	L = 3522.22'
R = 7639.44'	R = 7639.44'

CURVE DATA RTE. 808

Δ = 56°-43'-00" Rt.
D = 12°-00'-00"
T = 257.72'
L = 472.64'
R = 477.46'
SE = 11% Rt.



PLAN
Scale: 1" = 20'-0"



SUBSTRUCTURE LAYOUT
No Scale

DESIGNED BY	E.A.
DRAWN BY	G.G.
CHECKED BY	F.E.U.

FINAL

~~ESTIMATED~~ QUANTITIES

	CONCRETE CU. YDS.	REINFORCING STEEL LBS.	STRUCTURAL STEEL LBS. LUMP SUM	STEEL-H-BEARING PILES LIN. FT.	BRIDGE RAIL LIN. FT.	STRUCTURE EXC. CU. YDS.	CONC. SLOPE PROTECTION CL. Y(AE) SQ. YDS.
SUPERSTRUCTURE	534.6 ~~541.2~~	~~87,370~~ 87,979	~~389,300~~		922		
ABUT. A NEAT	66.0 ~~86.8~~	~~31,710~~ 31,709	405,674				
ABUT. A FOOTING	86.7 ~~87.0~~	~~31,990~~ 31,986		~~8,073~~ 700.4		~~266~~ 258	~~572~~ 561.76
PIER 1	103.8	~~15,186~~ 14,527				~~245~~ 201	
PIER 2	124.3 ~~122.5~~	~~15,876~~ 14,396				~~173~~ 164	
PIER 3	100.8 ~~102.6~~	~~14,783~~ 14,650				~~134~~ 128	
ABUT. B NEAT	114.6 ~~116.0~~	~~5,290~~ 5,287					
ABUT. B FOOTING	100.8 ~~101.2~~	~~4,870~~ 4,871		~~756~~ 850.1		~~379~~ 401	~~692~~ 727.66
TOTALS	~~1,230.2~~	~~151,033~~		~~1,677~~	922	~~1,356~~ 1,152	~~1,269~~
LUMP SUM	1,231.6	149,405	~~389,300~~ 405,674	1,550.5			1,289.42

GENERAL NOTES

ROADWAY: 2-30'-0" clear roadway widths.
CAPACITY: H20-S16-44 and B.P.R. modified loading for military vehicles.
SPECIFICATIONS:
GENERAL—Virginia Department of Highways, Road and Bridge Specifications, 1953.
DESIGN—A.A.S.H.O. Standard Specifications for Highway Bridges, 1957.
SHEAR CONNECTORS—Special Provisions titled "Composite Stringer-Slab Construction", as revised to Aug. 19, 1959.
FOUNDATIONS: Shall be approved by the Engineer. Provision for variation from plan depths for foundation of piers shall be made by adjustment of column length, maintaining the same footing thickness shown on the Plans. Complete fill in front of abutments shall be placed and compacted with main approach fill to elevation of final subgrade and excavations shall be made through fill to indicated footing elevation.
CONCRETE: All concrete in structure shall be Class A (AE).
EXCAVATION: Structure Excavation shall not be classified. Excavation above subgrade and side slope template shall be classified as Regular Excavation; below, as Structure Excavation. The quantity of Regular Excavation is not included in the Bridge Plans.
QUANTITIES: Quantities for items on which "Lump Sum" bids are asked are approximate and are given for estimating purposes only.
BENCH MARK: N B C in root 48" Oak 300' Lt. Sta. 513+00 Elev. 1933.49.
PILES: All piles are 10 BP 42, and shall be driven to refusal.
ELEVATIONS: Deck elevations shown are for finished roadway and gutter at third points of span.
CHAMFER: Unless otherwise noted on the Plans, the edges of all exposed concrete surfaces shall be chamfered 3/4".

"AS BUILT"

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HIGHWAYS
PROPOSED BRIDGE
RTE. 81 OVER RTE. 808 & SINKING CREEK
STA. 513+16.00 N.B.L. STA. 513+18.64 S.B.L.
PROJECT 0081-095-014 B-9 WASHINGTON CO.
FOUR 54'-0" COMPOSITE STEEL BEAM SPANS

Finals Posted Nov. 12, 1963
Bristol Dist.

RICHMOND, VIRGINIA

Submitted for Approval: J. M. Blair, Bridge Engineer
Recommended for Approval: M. O. Fisher, Assistant Chief Engineer
Approved: T. S. Davis, Deputy Commissioner and Chief Engineer

L.C. URQUHART

COMMONWEALTH OF VIRGINIA — LICENSED PROFESSIONAL ENGINEER — L. C. URQUHART — 4-5-1960

PORTER, URQUHART, McCREARY, & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N. J.
SUBMITTED BY

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

Sheet 1 of 16

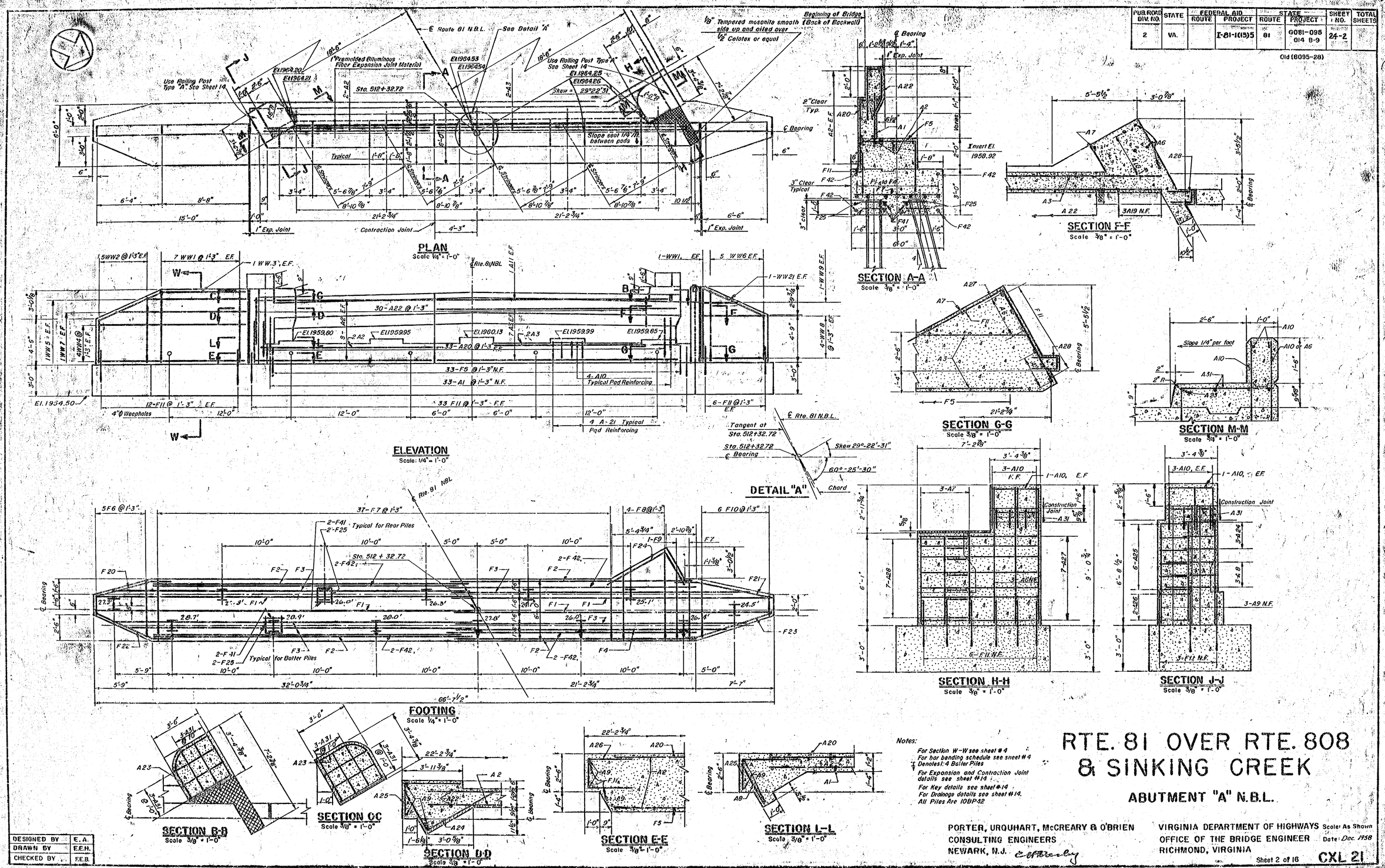
Scale: As noted
Date: Dec. 31, 1958

CXL-21

12-01-41

PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(15)5	81	0081-095 014 8-9	24-2	

Old (8095-28)



Notes:

For Section W-W see sheet # 4
For bar bending schedule see sheet # 4
Denotes: 4 Batter Piles
For Expansion and Contraction Joint details see sheet # 14
For Key details see sheet # 14
For Drainage details see sheet # 14.
All Piles Are 10BP42

RTE. 81 OVER RTE. 808 & SINKING CREEK

ABUTMENT "A" N.B.L.

DESIGNED BY	E.A.
DRAWN BY	E.E.H.
CHECKED BY	F.E.B.

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

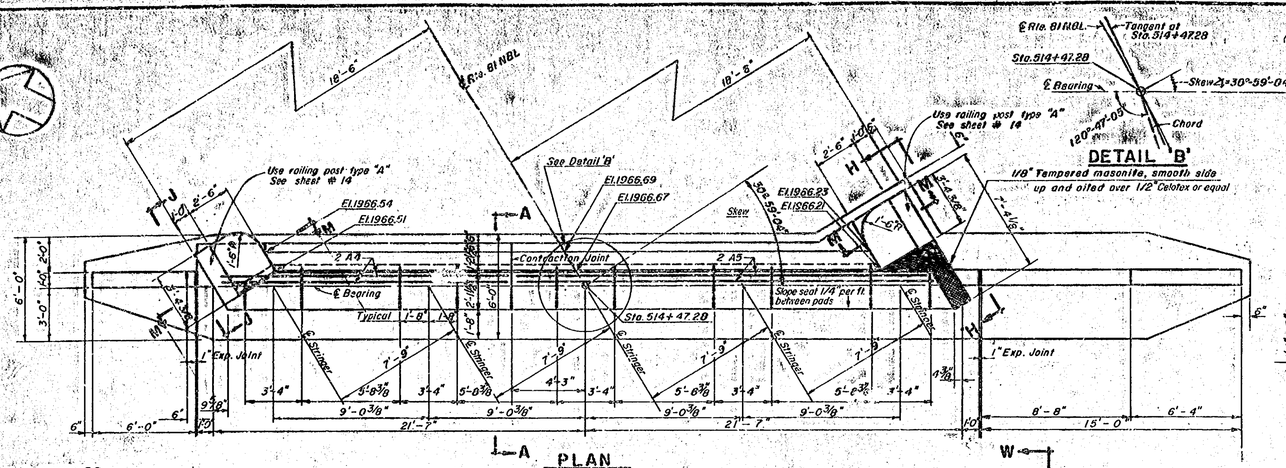
Scale: As Shown
Date: Dec. 1958

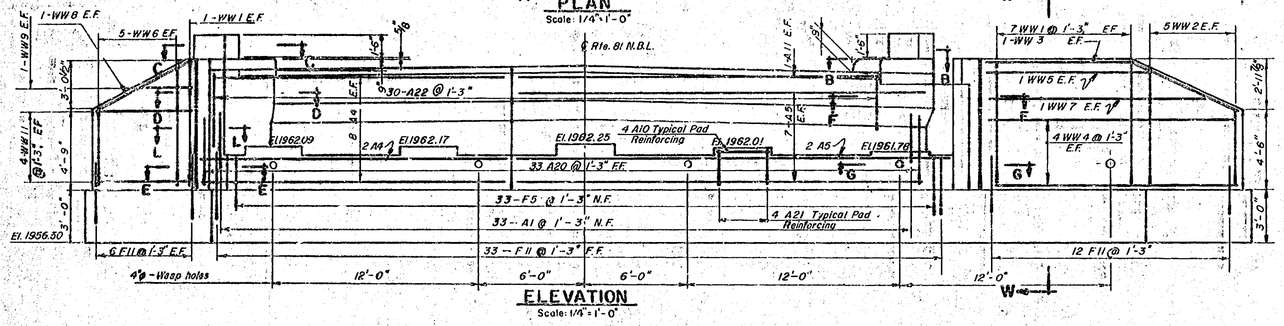
Sheet 2 of 16

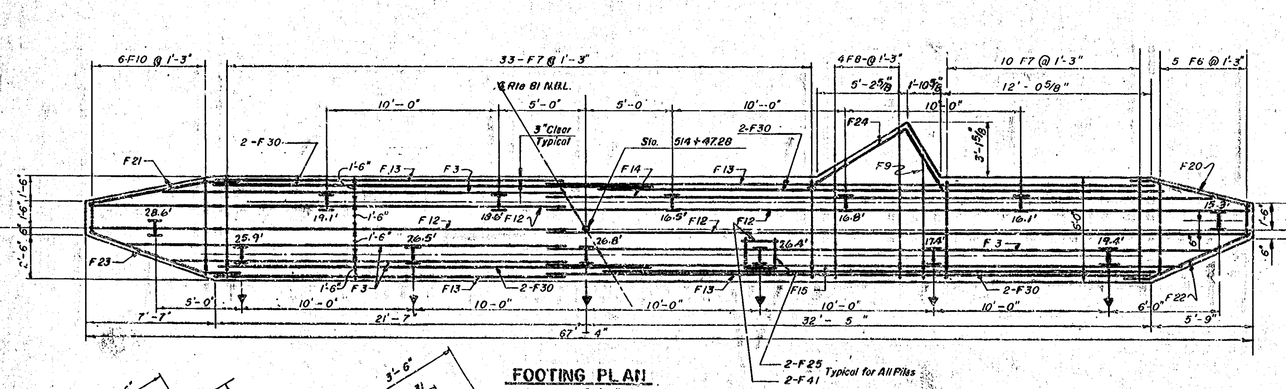
CXL 21

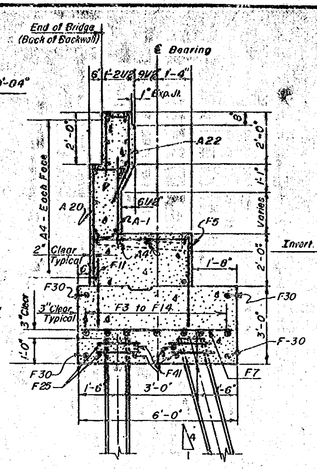
PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEET
2	VA		I-81-1(15)5	81	0081-098 014 8-3	24-3	

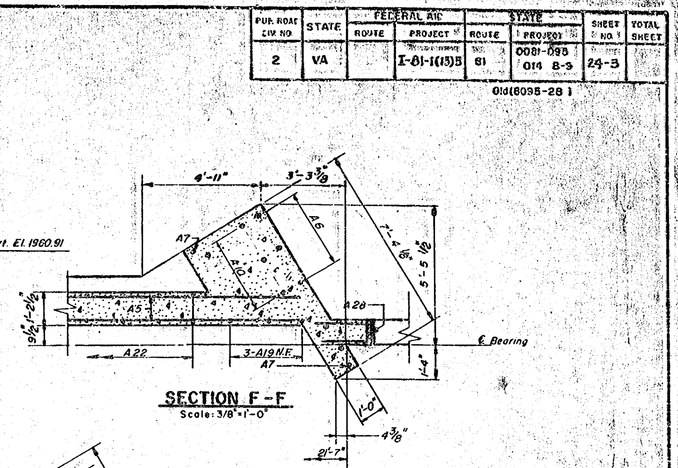
Old (8098-28)

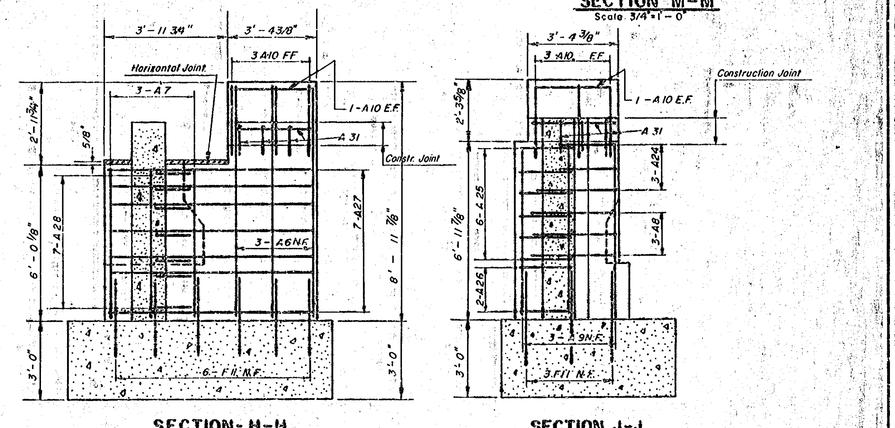


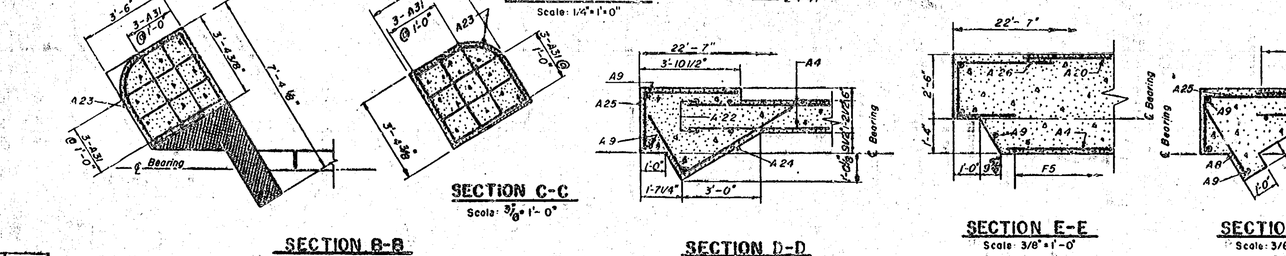












NOTE:
For Section W-W see Sheet # 4
† Denotes 1:4 Batter Piles

For Bar Schedule See Sheet #4
For Expansion and Contraction Joint Details see Sheet #14
For Key Details see Sheet #14
For Drainage Details See Sheet #14
All Piles are 10 BP 42

RTE. 81 OVER RTE. 808 & SINKING CREEK

ABUTMENT "B" N.B.L.

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

Scale: As Shown
Date: Dec. 1958

Sheet 3 of 16

CXL-21

DESIGNED BY	E.A.
DRAWN BY	R.D.W.
CHECKED BY	F.E.B.

C-3-0-2-14-1

PUB ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(13)5	81	0081-095 014 B-9	24-4	

OLD (8095-28)

N.B.L.

ABUTMENT "A"

Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F 1	4	5	Str.						34'-0"	142
F 2	4	5	Str.						27'-6"	115
F 3	5	5	Str.						32'-0"	167
F 4	1	5	Str.						28'-0	29
F 6	1set of 5	4	Str.	Varies from 1'-6" to 4'-10" by 0'-10"						11
F 7	38	4	Str.						5'-6"	140
F 8	1set of 4	4	Str.	Varies from 6'-3" to 8'-3" by 8"						19
F 9	1	4	Str.						6'-9"	5
F 10	1set of 6	4	Str.	Varies from 5'-0" to 1'-6" by 8 1/2"						13
F 11	79	5	Str.						4'-0"	330
F 41	26	3	Str.						2'-0"	20
F 42	8	8	Str.						27'-6"	587
A 1	33	5	Str.						4'-0"	136
A 2	18	4	Str.						16'-3"	195
A 3	16	4	Str.						23'-9"	254
A 6	3	4	Str.						8'-7"	17
A 7	4	4	Str.						5'-6"	15
A 8	3	4	Str.						3'-3"	7
A 9	3	4	Str.						6'-3"	13
A 10	33	4	Str.						3'-0"	66
A 11	2	4	Str.						21'-0"	28
WW 1	16	5	Str.						7'-0"	117
WW 2	2sets of 5	5	Str.	Varies from 4'-2" to 6'-6" by 7"						56
WW 4	8	4	Str.						14'-6"	77
WW 5	2	4	Str.						10'-0"	13
WW 6	2sets of 5	5	Str.	Varies from 4'-6" to 6'-6" by 8"						57
WW 7	2	5	Str.						12'-6"	26
WW 8	8	4	Str.						6'-0"	32
WW 9	2	4	Str.						3'-0"	4
WW 21	2	4	Str.						6'-5"	9

BENT BAR SCHEDULE

Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F20	1	5	3	5'-9"	1'-0"	3"		2"	6'-9"	7
F21	1	5	3	7'-3"	1'-0"	2"		2"	8'-3"	9
F22	1	5	3	6'-0"	1'-0"	5"		2"	7'-0"	7
F23	1	5	3	7'-9"	1'-0"	4"		2"	8'-9"	9
F24	1	5	1	7'-3"	4'-0"			2"	11'-3"	12
F25	26	4	2	2'-0"	1'-6"	2'-0"		2"	5'-6"	96
F5	33	5	1	3'-7"	3'-5"			2"	7'-0"	241
A19	3	5	3	1'-8"	1'-1"	6 1/2"		2"	2'-9"	9
A20	33	5	1	4'-6"	1'-2"			2"	5'-8"	195
A21	20	5	1	1'-9"	3'-4"			2"	5'-1"	106
A22	30	5	4	3'-0"	10"	1'-9"	1'-1"	2"	6'-8"	209
A23	2	4	6	1'-6"	2'-0"	1'-8"		2"	5'-2"	7
A24	3	4	1	5'-0"	2'-6"			2"	7'-6"	15
A25	6	4	1	3'-6"	2'-0"			2"	5'-6"	22
A27	7	4	1	7'-0"	6'-6"			2"	13'-6"	63
A28	7	4	2	1'-5"	0' 8"	1'-5"		2"	3'-6"	16
A31	12	4	1	2'-10"	1'-6"			2"	4'-4"	35
A26	2	4	2	3'-0"	2'-2"	3'-0"		2"	8'-2"	11
WW3	2	4	3	8'-2"	6'-9"	3'-0"		2"	14'-11"	20

ABUTMENT "B"

Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F 3	4	5	Str.						32'-0"	134
F 6	1set of 5	4	Str.	Varies from 1'-6" to 4'-10" by 0'-10"						11
F 7	43	4	Str.						5'-6"	158
F 8	1set of 4	4	Str.	Varies from 6'-3" to 8'-3" by 8"						19
F 9	1	4	Str.						6'-9"	5
F 10	1set of 6	4	Str.	Varies from 5'-0" to 1'-6" by 8 1/2"						13
F 11	79	5	Str.						4'-0"	330
F 12	4	5	Str.						34'-6"	144
F 13	4	5	Str.						29'-9"	116
F 14	1	5	Str.						30'-0"	31
F 15	1	5	Str.						20'-6"	30
F 30	8	8	Str.						27'-9"	593
F 41	26	3	Str.						2'-0"	20
A 1	33	5	Str.						4'-0"	138
A 4	18	4	Str.						16'-0"	192
A 5	16	4	Str.						24'-0"	257
A 6	3	4	Str.						8'-7"	17
A 7	4	4	Str.						5'-6"	15
A 8	3	4	Str.						3'-3"	7
A 9	3	4	Str.						6'-3"	13
A 10	33	4	Str.						3'-0"	66
A 11	2	4	Str.						21'-0"	28
WW 1	16	5	Str.						7'-0"	1117
WW 2	2sets of 5	5	Str.	Varies from 4'-2" to 6'-6" by 7"						56
WW 4	8	4	Str.						14'-6"	77
WW 5	2	4	Str.						10'-0"	13
WW 6	2sets of 5	5	Str.	Varies from 4'-6" to 6'-6" by 6"						57
WW 7	2	5	Str.						12'-6"	26
WW 8	2	4	Str.						6'-0"	8
WW 9	2	4	Str.						3'-0"	4
WW 11	8	4	Str.						5'-8"	30

BENT BAR SCHEDULE

Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F20	1	5	3	5'-9"	1'-0"	3"		2"	6'-9"	7
F21	1	5	3	7'-3"	1'-0"	2"		2"	8'-3"	9
F22	1	5	3	6'-0	1'-0"	5"		2"	7'-0"	7
F23	1	5	3	7'-9"	1'-0"	4"		2"	8'-9"	9
F24	1	5	1	7'-3"	4'-0"			2"	11'-3"	12
F25	26	4	2	2'-0"	1'-6"	2'-0"		2"	5'-6"	96
F5	33	5	1	3'-7'	3'-5"			2"	7'-0"	241
A19	3	5	3	1'-8"	1'-1"	6 1/2"		2"	2'-9"	9
A20	33	5	1	4'-6"	1'-2"			2"	5'-9"	195
A21	20	5	1	1'-9"	3'-4"			2"	5'-1"	106
A22	30	5	4	3'-0"	10"	1'-9"	1'-1"	2"	6'-8"	209
A23	2	4	6	1'-6"	2'-0"	1'-8"		2'-6"	5'-2"	7
A24	3	4	1	5'-0"	2'-6"			2"	7'-6"	15
A25	6	4	1	3'-6"	2'-0"			2"	5'-6"	22
A26	2	4	2	3'-0"	2'-2"	3'-0"		2"	8'-2"	11
A28	7	4	2	1'-5"	8"	1'-5"		2"	3'-6"	16
A31	12	4	1	2'-10"	1'-6"			2"	4'-4"	35
A27	7	4	1	7'-0"	6'-6"			2"	13'-6"	63
WW3	2	4	3	8'-2"	6'-9"	3'-0"		2"	14'-11"	20

S.B.L.

ABUTMENT "A"

Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F 3	2	5	Str.						32'-0"	67
F 6	1set of 5	4	Str.	Varies from 1'-6" to 4'-10" by 0'-10"						11
F 7	39	4	Str.						5'-6"	143
F 8	1set of 4	4	Str.	Varies from 6'-3" to 8'-3" by 8"						19
F 9	1	4	Str.						6'-9"	5
F 10	1set of 6	4	Str.	Varies from 5'-0" to 1'-6" by 8 1/2"						13
F 11	81	5	Str.						4'-0"	330
F 16	5	5	Str.						35'-0"	183
F 17	4	5	Str.						28'-9"	120
F 18	2	5	Str.						30'-5"	64
F 19	1	5	Str.						33'-0"	34
F 41	26	3	Str.						2'-0"	20
F 45	8	8	Str.						28'-9"	614
A 1	35	5	Str.						4'-0"	146
A 6	3	4	Str.						0'-7"	17
A 7	4	4	Str.						5'-6"	15
A 8	3	4	Str.						3'-3"	7
A 9	3	4	Str.						6'-3"	13
A 10	33	4	Str.						3'-0"	66
A 11	2	4	Str.						21'-0"	28
A 13	16	4	Str.						24'-6"	262
A 16	18	4	Str.						17'-0"	204
WW 1	16	5	Str.						7'-0"	117
WW 2	2sets of 5	5	Str.	Varies from 4'-2" to 6'-6" by 7"						56
WW 4	8	4	Str.						14'-6"	77
WW 5	2	4	Str.						10'-0"	13
WW 6	2sets of 5	5	Str.	Varies from 4'-6" to 6'-6" by 6"						57
WW 7	2	5	Str.						12'-6"	26
WW 8	2	4	Str.						6'-0"	8
WW 9	2	4	Str.						3'-0"	4
WW 11	8	4	Str.						5'-8"	30

BENT BAR SCHEDULE

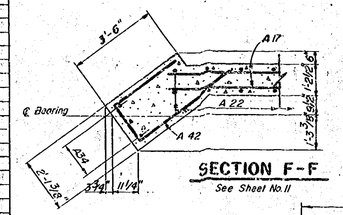
Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F20	1	5	3	5'-9"	1'-0"	3"		2"	6'-9"	7
F21	1	5	3	7'-3"	1'-0"	2"		2"	8'-3"	9
F22	1	5	3	6'-9"	1'-0"	5"		2"	7'-0"	7
F23	1	5	3	7'-9"	1'-0"	4"		2"	8'-9"	9
F24	1	5	1	7'-3"	4'-0"			2"	11'-3"	12
F25	26	4	2	2'-0"	1'-6"	2'-0"		2"	5'-6"	96
F 5	35	5	1	3'-7"	3'-5"			2"	7'-0"	256
A19	3	5	3	1'-8"	1'-1"	6 1/2"		2"	2'-9"	9
A20	35	5	1	4'-6"	1'-2"			2"	5'-8"	207
A21	20	5	1	1'-9"	3'-4"			2"	5'-1"	106
A22	32	5	4	3'-0"	10"	1'-9"	1'-1"	2"	6'-8"	223
A23	2	4	6	1'-6"	2'-0"	1'-8"			5'-2"	
A24	3	4	1	5'-0"	2'-6"			2"	7'-6"	15
A25	6	4	1	3'-6"	2'-0"			2"	5'-6"	22
A26	2	4	2	3'-0"	2'-2"	3'-0"		2"	8'-2"	11
A27	7	4	1	7'-0"	6'-6"			2"	13'-6"	63
A28	7	4	2	1'-5"	8"	1'-5"		2"	3'-6"	16
A31	12	4	1	2'-10"	1'-6"			2"	4'-4"	35
WW 3	2	4	3	8'-2"	6'-9"	3'-0"			14'-11"	20

ABUTMENT "B"

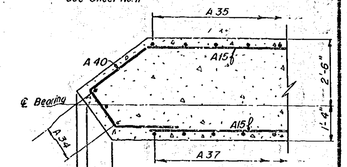
Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F2	1	5	Str.						27'-6"	29
F 7	14	4	Str.						3'-6"	51
F 11	90	5	Str.						4'-0"	375
F 26	2	5	Str.						22'-6"	47
F 14	2	5	Str.						30'-0"	63
F 28	1	5	Str.						28'-3"	29
F 29	1	5	Str.						26'-0"	27
F 31	4	8	Str.						22'-6"	240
F 32	8	5	Str.						25'-0"	209
F 33	4	8	Str.						25'-0"	267
F 34	1	4	Str.						8'-0"	5
F 8	1set of 4	4	Str.	Varies from 6'-3" to 8'-3" by 8"						19
F 10	1set of 6	4	Str.	Varies from 5'-0" to 1'-6" by 8 1/2"						13
F 35	20	4	Str.						6'-6"	187
F 41	24	3	Str.						2'-0"	18
A 1	37	5	Str.						4'-0"	154
A 10	28	4	Str.						3'-0"	56
A 15	4	4	Str.						21'-6"	57
A 17	18	4	Str.						24'-3"	292
A 18	16	4	Str.						16'-10"	180
A 30	3	4	Str.						10'-6"	21
A 32	3	5	Str.						7'-6"	23
A 33	1	5	Str.						8'-3"	9
A 34	5	5	Str.						12'-10"	67
A 43	6	5	Str.						1'-9"	11
WW 8	12	4	Str.						6'-0"	48
WW 9	2	4	Str.						3'-0"	4
WW 10	2 sets of 6	4	Str.	Varies from 6'-0" to 9'-0" by 7 1/2"						60
WW 21	2	4	Str.						6'-5"	9

BENT BAR SCHEDULE

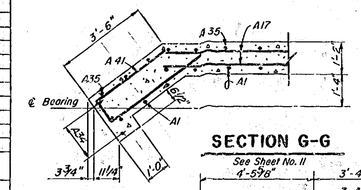
Mark	Quan.	Size	Type	A	B	C	D	Pin	Length	Weight
F21	1	5	3	7'-3"	1'-0"	2"		2"	8'-3"	9
F23	1	5	3	7'-9"	1'-0"	4"		2"	8'-9"	9
F24	1	5	1	7'-3"	4'-0"			2"	11'-3"	12
F25	24	4	2	2'-0"	1'-6"	2'-0"		2"	5'-6"	88
A19	3	5	3	1'-8"	1'-1"	6 1/2"		2"	2'-9"	9
A22	33	5	4	3'-0"	10"	1'-9"	1'-1"	2"	6'-8"	229
A23	1	4	6	1'-6"	2'-0"	1'-8"			5'-2"	3
A28	8	4	2	1'-5"	8"	1'-5"		2"	3'-6"	19
A35	20	5	1	8'-4"	1'-2"			2"	9'-6"	198
A36	17	5	1	6'-4"	1'-2"			2"	7'-6"	133
A37	18	5	1	5'-8"	3'-6"			2"	9'-2"	172
A38	37	5	1	3'-9"	3'-6"			2"	7'-2"	277
A39	8	5	1	7'-6"	7'-6"			2"	15'-0"	125
A40	5	4	5	3'-3"	1'-9"	2'-4"	1'-0"	2"	7'-4"	24
A41	3	4	2	3'-3"	1'-0"	4'-0"		2"	8'-3"	17
A42	2	4	2	3'-3"	1'-6"	4'-0"		2"	8'-9"	12
A31	9	4	1	2'-10"	1'-6"			2"	4'-4"	26



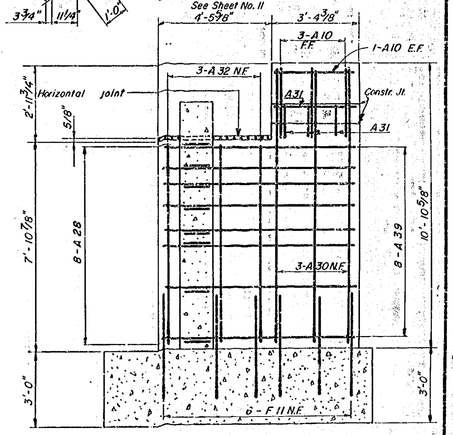
SECTION F-F
See Sheet No. 11



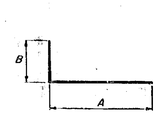
SECTION H-H
See Sheet No. 11



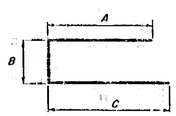
SECTION G-G
See Sheet No. 11



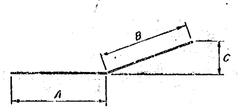
SECTION J-J
See Sheet No. 11



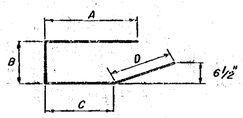
TYPE 1



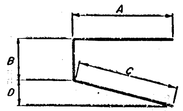
TYPE 2



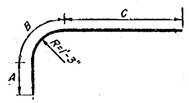
TYPE 3



TYPE 4

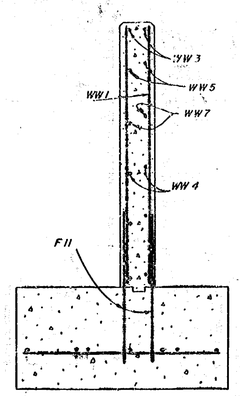


TYPE 5



TYPE 6

NOTE: All bar dimensions are out to out



SECTION W-W
See Sheets # 2, 3, 10, 11.

RTE. 81 OVER RTE. 808 & SINKING CREEK

ABUTMENT BAR SCHEDULES & DETAILS

DESIGNED BY	E.A.
DRAWN BY	Z.S.K.
CHECKED BY	F.E.B.

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS.
NEWARK, N.J.

C M Darby

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

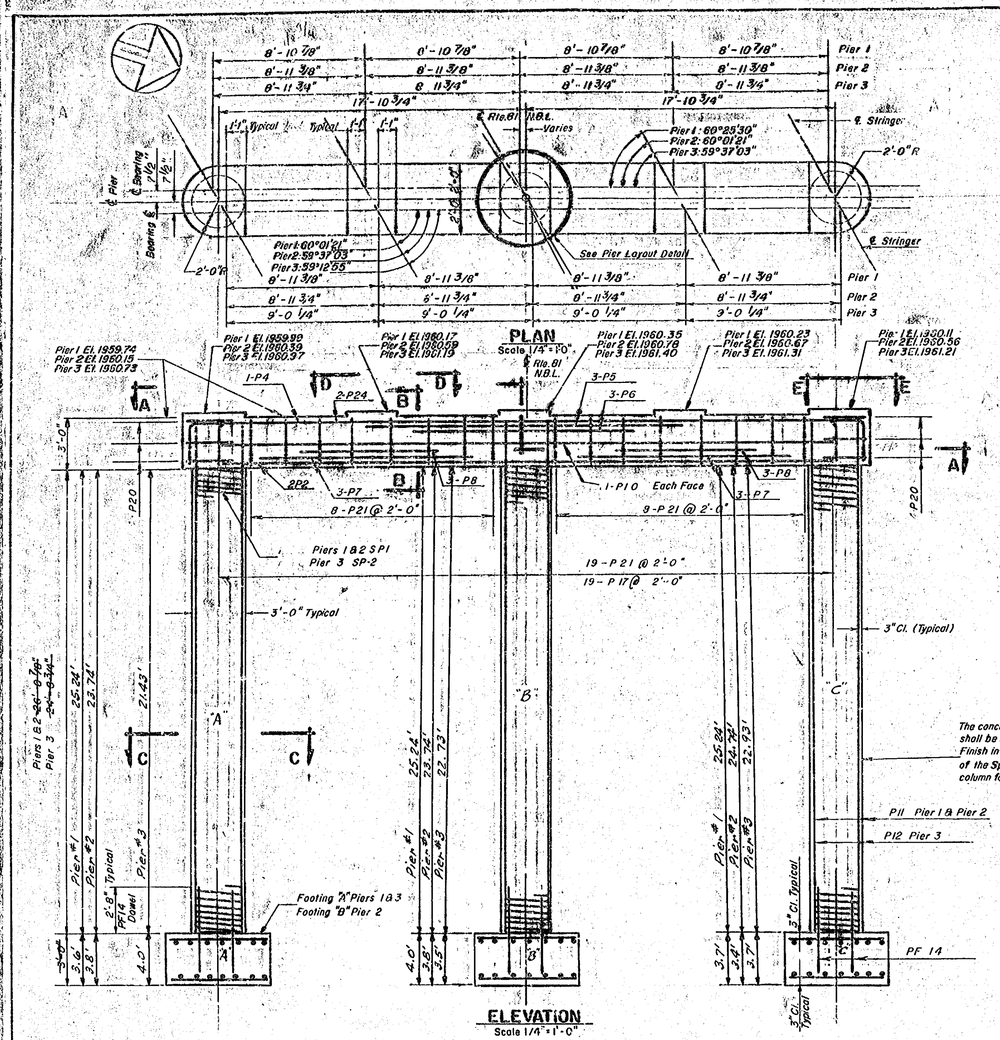
Scale: 3/8" = 1'-0"
Date: Dec. 1958

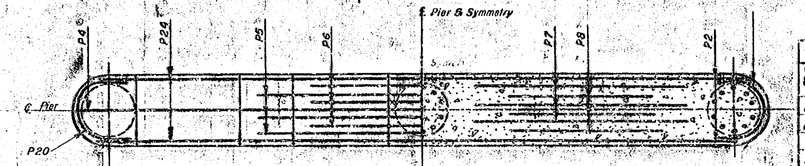
SHEET 4 OF 16

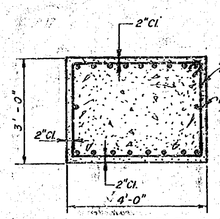
CXL-21

PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(15)5	91	0081-095 014-B-9	24-5	

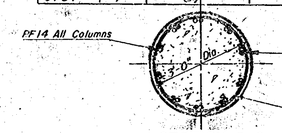
OLD(8095-26)







SECTION B-B
Scale 1/2" = 1'-0"



SECTION C-C
Scale 1/2" = 1'-0"

SECTION A-A
Scale 1/4" = 1'-0"

SPIRALS (SIZE #4, 3 1/2" PITCH 31 1/2" CORE DIA.)

MARK	QUAN.	NO. OF TURNS	PIER NO.	LENGTH	WEIGHT
SP1A	3	92	1 NBL	759'-0"	1,521
SP1B	2	86	2 NBL	709'-6"	948
SP1C	1	89	2 NBL	734'-3"	490
SP2A	1	83	3 NBL	685'-7"	458
SP2B	1	84	3 NBL	693'-10"	463
SP2C	1	79	3 N.B.L.	652'-7"	436
SP3A	2	82	1 S.B.L.	676'-6"	904
SP3B	1	74	1 SBL	610'-6"	408
SP3C	2	93	2 SBL	767'-3"	1,025
SP3D	1	89	3 SBL	734'-3"	490
SP3E	2	79	3 SBL	651'-9"	871
SP3F	1	84	3 SBL	693'-0"	463

REINFORCING BAR SCHEDULE

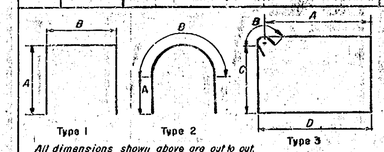
MARK	QUAN.	SIZE	TYPE	A	B	C	D	E	LENGTH	WEIGHT
P-1	6	9	Str.						38'-0"	775
P-2	6	9	Str.						35'-9"	729
P-5	18	10	Str.						18'-0"	1394
P-6	18	10	Str.						12'-6"	968
P-7	36	9	Str.						12'-0"	1469
P-8	36	9	Str.						8'-0"	979
P-9	6	4	Str.						38'-0"	152
P-10	6	4	Str.						36'-0"	144
~~P-11~~	~~60~~	~~9~~	~~Str.~~						~~29'-5"~~	~~6991~~
~~P-12~~	~~30~~	~~9~~	~~Str.~~						~~27'-5"~~	~~2797~~
~~P-13~~	~~90~~	~~9~~	~~Str.~~						~~28'-5"~~	~~8696~~
PF14	180	9	Str.						5'-4"	3264
PF15	336	5	Str.						5'-6"	1927
PF16	216	5	Str.						7'-6"	1690
P-18	96	4	Str.						2'-8"	171

BENT BAR SCHEDULE

MARK	QUAN.	SIZE	TYPE	A	B	C	D	E	LENGTH	WEIGHT
P-3	3	10	1	2'-9"	41'-6"				47'-0"	607
P-4	3	10	1	2'-9"	39'-6"			10"	45'-0"	581
P-24	6	10	1	2'-9"	35'-9"			10"	41'-3"	1065
P-20	48	4	2	10"	5'-6"			3'-7"	7'-2"	230
P-21	102	4	3	3'-6½"	6½"	2'-6½"	3'-6"	2½"	13'-10"	~~942~~ 943
P-22	126	4	1	2'-8"	3'-8"			2"	9'-0"	~~756~~ 758
P-23	6	10	1	2'-9"	38'-0"			10"	43'-6"	~~1128~~ 1123

SPIRALS (SIZE #4, 3½" PITCH 31½" CORE DIA.)

MARK	QUAN.	NO. OF TURNS	LENGTH	WEIGHT
~~SP-1~~	~~6~~	~~86~~ Pier 1 & 2	~~792'-6"~~	~~3321~~
~~SP-2~~	~~3~~	~~89~~ " 3	~~735'-6"~~	~~1498~~
~~SP-3~~	~~9~~	~~83~~ " 1 & 3	~~764'-1"~~	~~4594~~



All dimensions shown above are out to out.
Length of spiral includes 1½ closed turns at top & bottom.
E = Pin diameter tab used for bar bending.
Splices in spiral bars when required shall be made by welding.

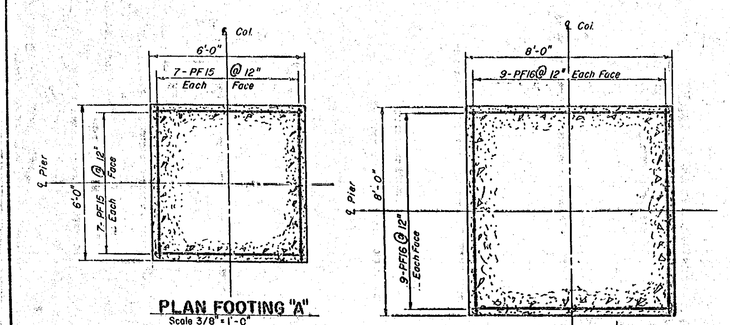
NOTE: Reinforcing Bar Schedule Includes Bars For Pier Details, S.B.L., Sheet # 13.

MARK	QUAN.	SIZE	TYPE		LENGTH	WEIGHT
P11A	30	9	Str.	Pier # 1 NBL	28'-0"	2,856
P11B	20	9	Str.	Pier # 2 NBL	26'-6"	1,802
P11C	10	9	Str.	Pier # 2 NBL	27'-6"	935
P12A	10	9	Str.	Pier # 3 NBL	25'-8"	873
P12B	10	9	Str.	Pier # 3 NBL	25'-11"	881
P12C	10	9	Str.	Pier # 3 NBL	24'-6"	833

RTE. 81 OVER RTE. 808 & SINKING CREEK

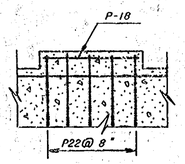
P13A	20	9	Str.	Pier # 1 NBL	25'-6"	1,734
P13B	10	9	Str.	Pier # 1 NBL	23'-0"	781
P13C	20	9	Str.	Pier # 2 NBL	28'-6"	1,938
P13D	10	9	Str.	Pier # 2 NBL	27'-6"	935
P13E	20	9	Str.	Pier # 3 NBL	23'-7"	1,607
P13F	10	9	Str.	Pier # 3 NBL	26'-1"	887

PIER DETAILS N.B.L.

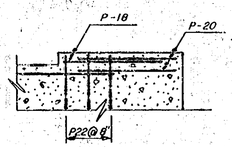


PLAN FOOTING "A"
Scale 3/8" = 1'-0"

PLAN FOOTING "B"
Scale 3/8" = 1'-0"



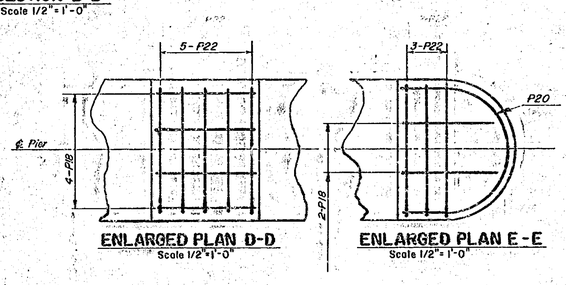
ELEVATION-PLAN D-D
Scale: 1/2" = 1'-0"



ELEVATION-PLAN E-E
Scale: 1/2" = 1'-0"

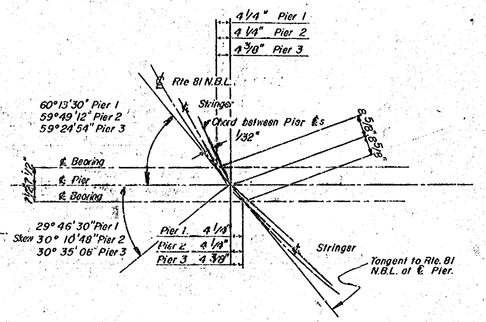
Note: Reinforcing Bars in Pad Shall be Carefully Placed to Clear Anchor Bolts.

The concrete surface of the pier columns shall be finished with Class 2 Rubbed Finish in accordance with Section 404.19 of the Specifications unless seamless column forms are used.



ENLARGED PLAN D-D
Scale 1/2" = 1'-0"

ENLARGED PLAN E-E
Scale 1/2" = 1'-0"



PIER LAYOUT DETAIL
No Scale

DESIGNED BY	E.A.
DRAWN BY	J.P.
CHECKED BY	J.R.P.

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NEWARK, N.J. C.P. Darby

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

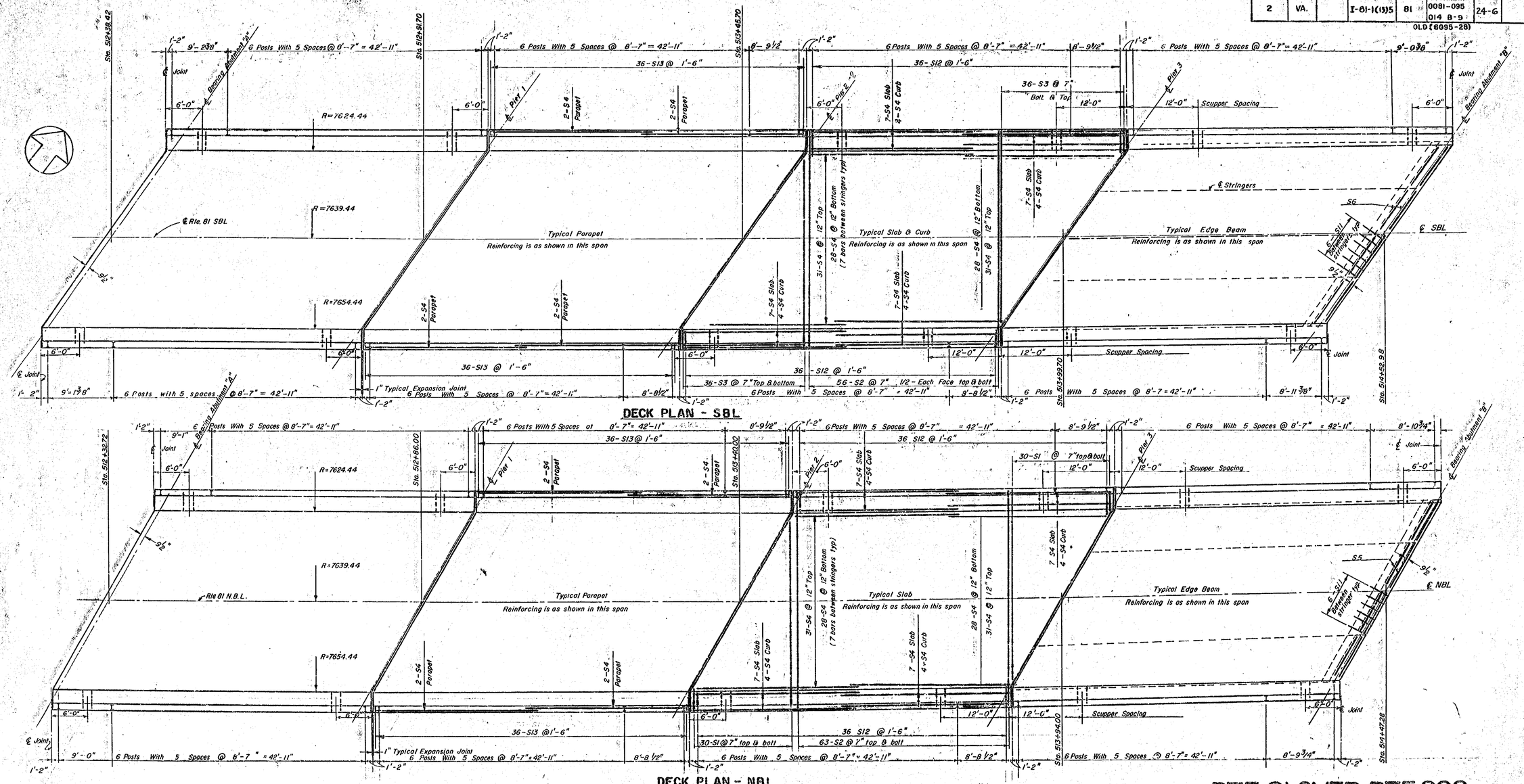
SHEET 5 OF 16

Scale: As Shown
Date: Dec. 1958
CXL-21

1-2-0-4-1

PUB ROAD DIV. NO	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(13)5	81	0081-095 014 B-9	24-6	

OLD (8095-28)



DECK PLAN - SBL

DECK PLAN - NBL

Note:
For Details & bar Schedule, see Sheet 7
For Expansion joint orientation, see sheet 7
For Framing plan, see sheet 8

RTE. 81 OVER RTE. 808 & SINKING CREEK

SUPERSTRUCTURE DECK PLAN

DESIGNED BY	E.A.
DRAWN BY	L.R.A.
CHECKED BY	H.K.

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CONSULTING ENGINEERS
NEWARK, N.J.

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

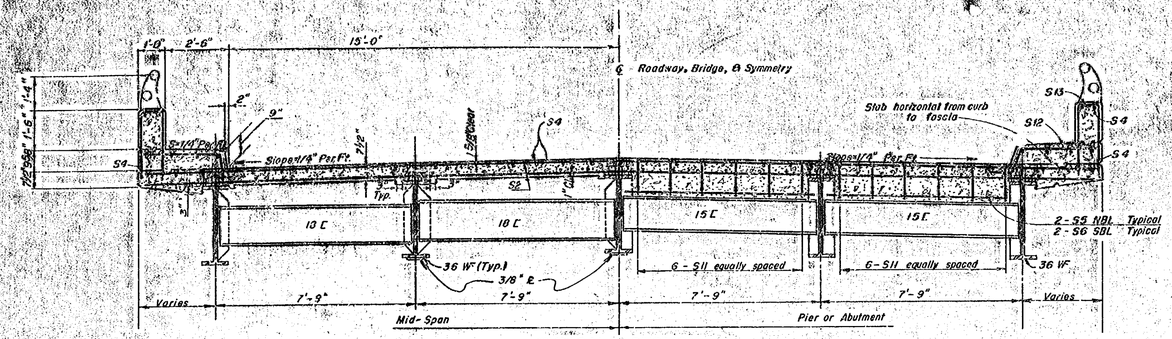
Scale: ⅛" = 1'-0"
Date: Dec. 1958

SHEET 6 OF 16

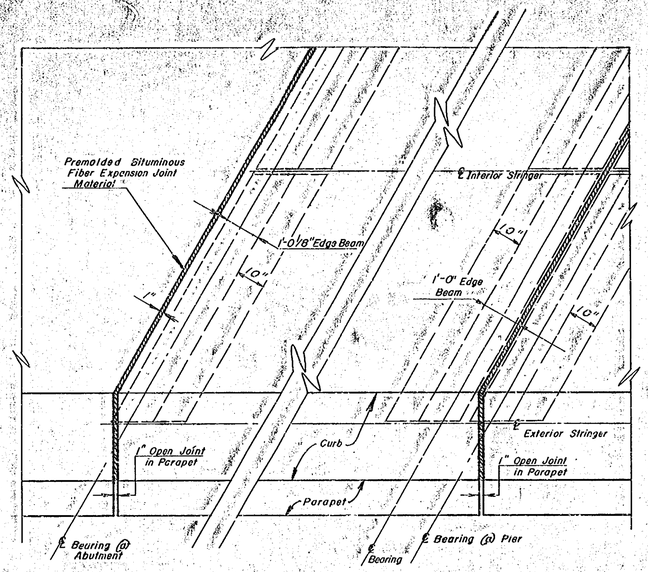
CXL-21

PUB. ROAD DIM NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(3)5	81	0081-095 014 B-9	24-7	

OLD(8095-28)

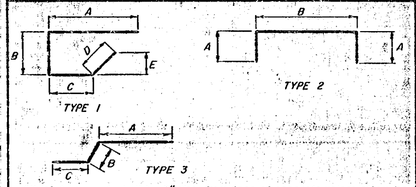


TYPICAL SECTION
HALF AT MID-SPAN & HALF AT PIER OR ABUTMENT
Scale : 3/8" = 1'-0"



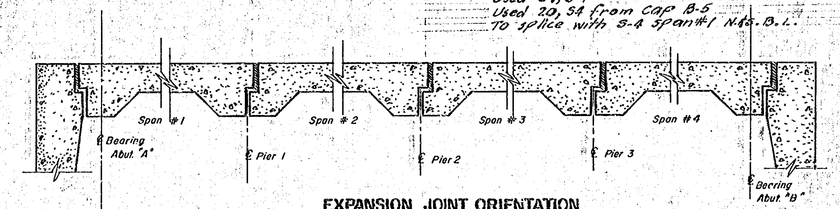
EXPANSION JOINT PLAN
Scale : 1/2" = 1'-0"

REINFORCING BAR SCHEDULE							
STRAIGHT BAR SCHEDULE							
MARK	QUAN.	SIZE #	TYPE	A	B	LENGTH	WEIGHT
S 1	480	5	16 sets of 30 Vary 3'-6" to 32'-6" by 12"				9011
S 2	952	3				36'-8"	36,408
S 3	576	5	16 sets of 36 Vary 3'-6" to 32'-6" by 10"				10,814
S 4	1368	4				27'-2"	24,923
S 5	64	5				8'-6"	567
S 6	64	5				9'-0"	600
S-4	510	4				28'-0"	9,539
* A-3	96	4				3'-0"	192
* B-4	54	4				2'-6"	90
*	20	4				2'-6"	33
BENT BAR SCHEDULE							
MARK	QUAN.	SIZE #	TYPE	A	B	C	D	E	PIN	LENGTH	WEIGHT
S 11	384	4	1	23"	1'-1"	0'-8"	1'-2"	0'-10"	1"	6'-2"	1,325
S 12	576	4	3	3'-2"	1'-0"	6"			1"	4'-8"	1,785
S 13	576	4	2	2'-6"	0'-8"	1"			1"	5'-8"	2,180

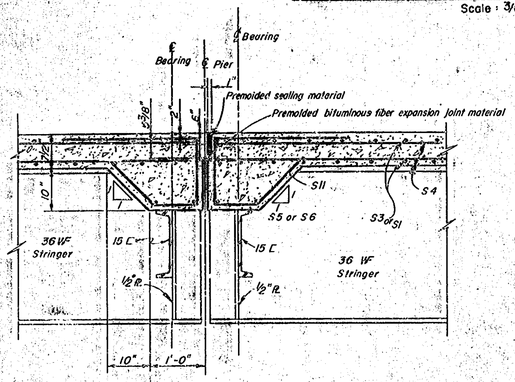


All reinforcement shall be 2" clear from face of concrete unless otherwise shown.
All bar dimensions shown above are out to out.

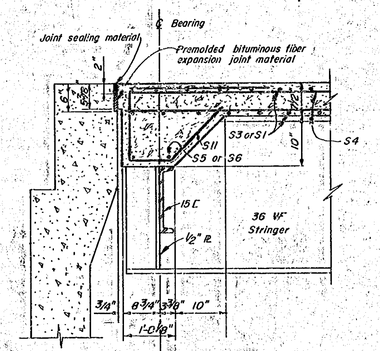
Note:
For DECK PLANS see sht. # 6
* Note: Used 96, A3 from Abut. "B" B6
Used 54, B-4
Used 20, S4 from Cap B-5
To splice with B-4 Span #1 N.B.L.



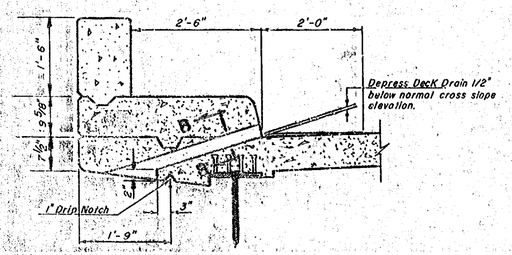
EXPANSION JOINT ORIENTATION
No Scale



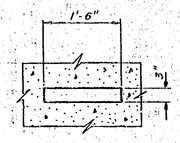
EXPANSION JOINT AT PIER
Scale : 3/4" = 1'-0"



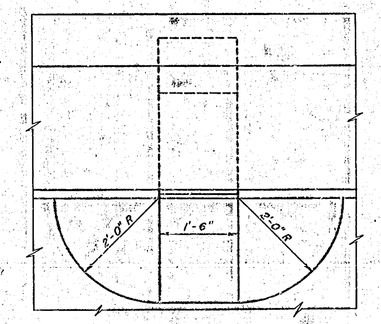
EXPANSION JOINT AT ABUTMENT
Scale : 3/4" = 1'-0"



ELEVATION



SECTION B-B



PLAN

DECK DRAINS
Scale : 3/4" = 1'-0"

RTE. 81 OVER RTE. 808 & SINKING CREEK
DECK DETAILS & BAR SCHEDULE

DESIGNED	E.A.
DRAWN	Z.S.K.
CHECKED	H.K.

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J. C.W. Darby

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA.

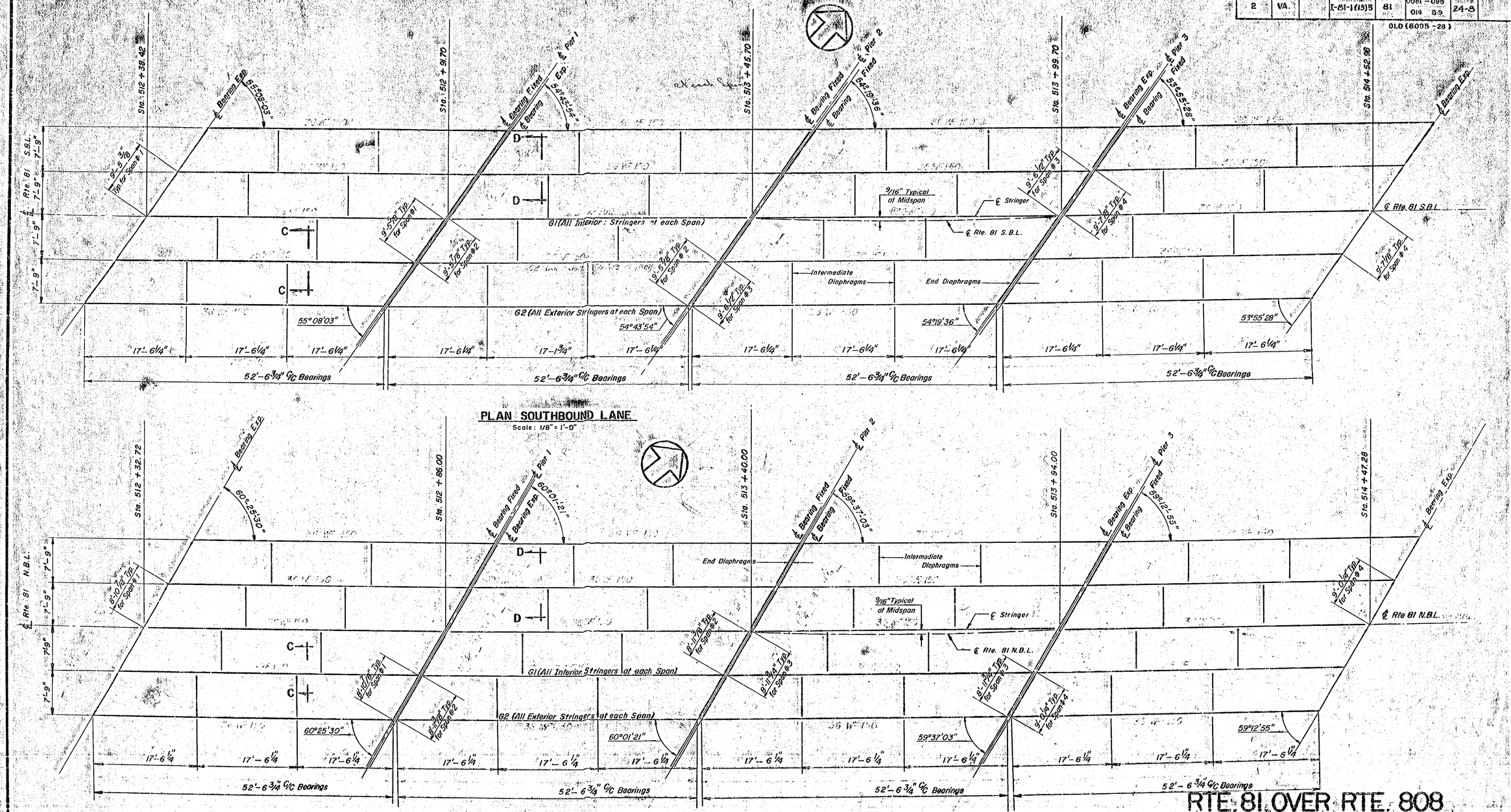
SHEET 7 OF 16

Scale : As Noted
Date : Dec. 1958

CXI-21

PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(15)5	81	0081-095 014 0-9	24-B	

OLD (8095-28)



NOTE:
All end diaphragms are 15 L 33.9
Intermediate diaphragms are 18 L 42.7
For sections CC & DD, see Sheet #9
Stringers are parallel to the chord of each span

RTE. 81 OVER RTE. 808 & SINKING CREEK

SUPERSTRUCTURE FRAMING PLAN

DESIGNED BY	E.A.
DRAWN BY	L.R.A.
CHECKED BY	H.K.

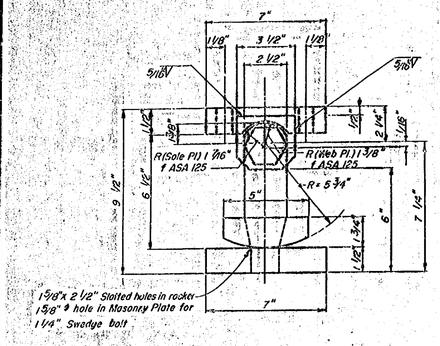
PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

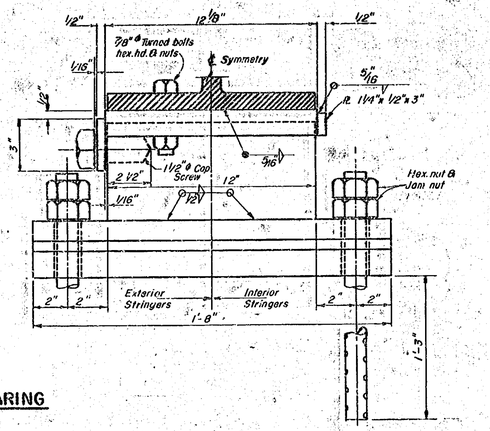
Scale: As Shown
Date: Dec 1950
Sheet 8 of 16
CXL-21

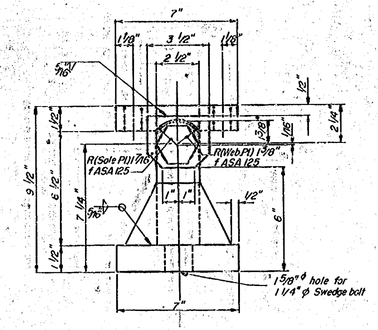
FED. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(19)5	81	0081-095 014 B-9	24-7	

OLD(8095-28)

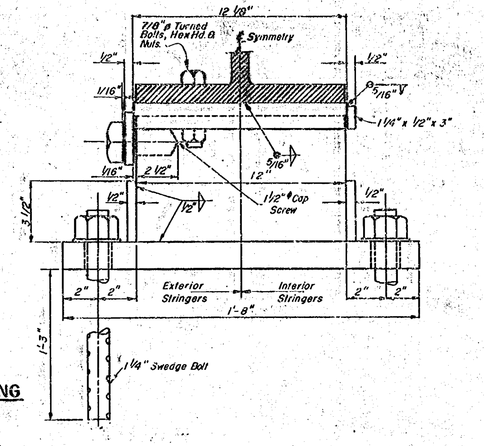


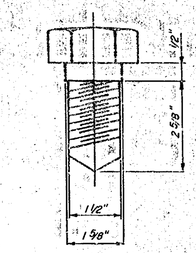
EXPANSION BEARING
Scale: 3" = 1'-0"



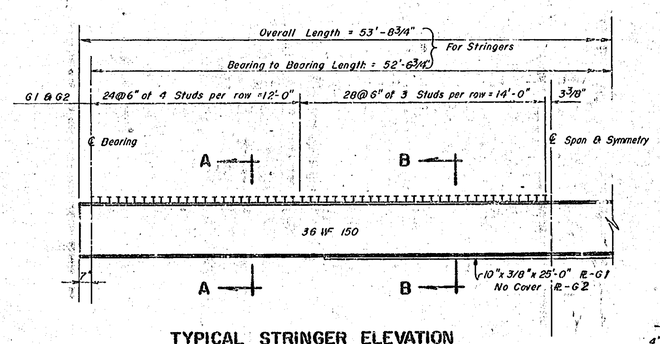


FIXED BEARING
Scale: 3" = 1'-0"

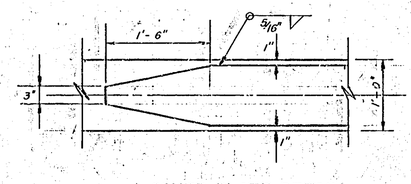




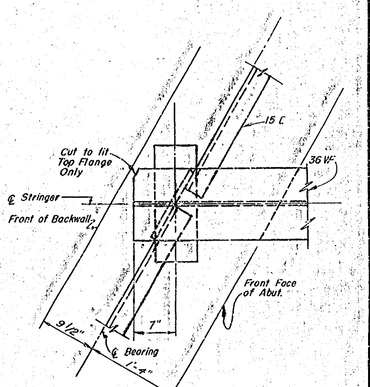
CAP SCREW DETAIL
Scale: 6" = 1'-0"



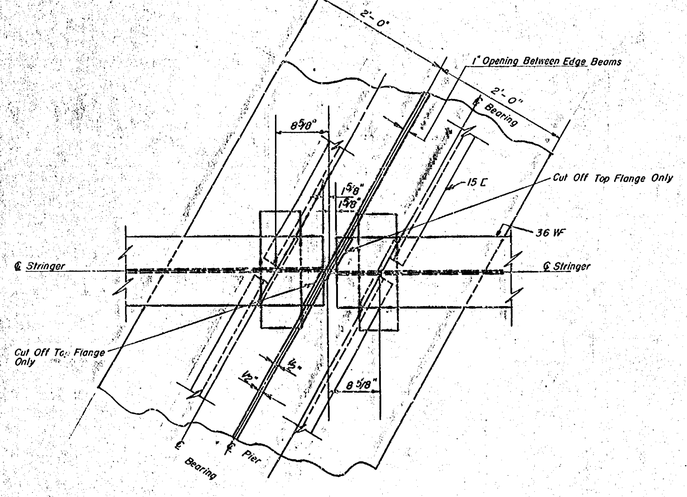
TYPICAL STRINGER ELEVATION
Scale: 1/4" = 1'-0"



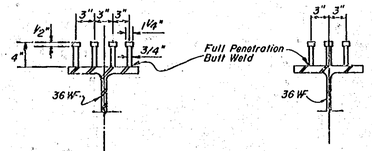
COVER PLATE DETAIL
Scale: 1" = 1'-0"



ENLARGED PLAN AT ABUTMENT
Scale: 1" = 1'-0"

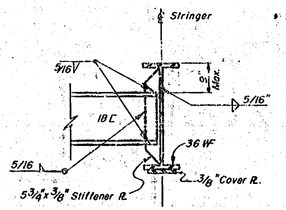


ENLARGED PLAN AT PIER
Scale: 1" = 1'-0"

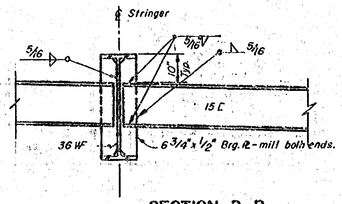


SECTION A-A
Scale: 1" = 1'-0"

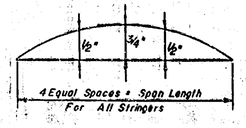
SECTION B-B
Scale: 1" = 1'-0"



SECTION C-C
Scale: 1/2" = 1'-0"
(See Sheet 8)



SECTION D-D
Scale: 1/2" = 1'-0"
(See Sheet 8)



CAMBER DIAGRAM FOR DEAD LOAD DEFLECTION
(VERTICAL CURVE NOT INCLUDED)
No Scale

RTE. 81 OVER RTE. 808 & SINKING CREEK

SUPERSTRUCTURE FRAMING DETAILS

DESIGNED	E. A.
DRAWN	Z.S.K.
CHECKED	H. K.

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VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

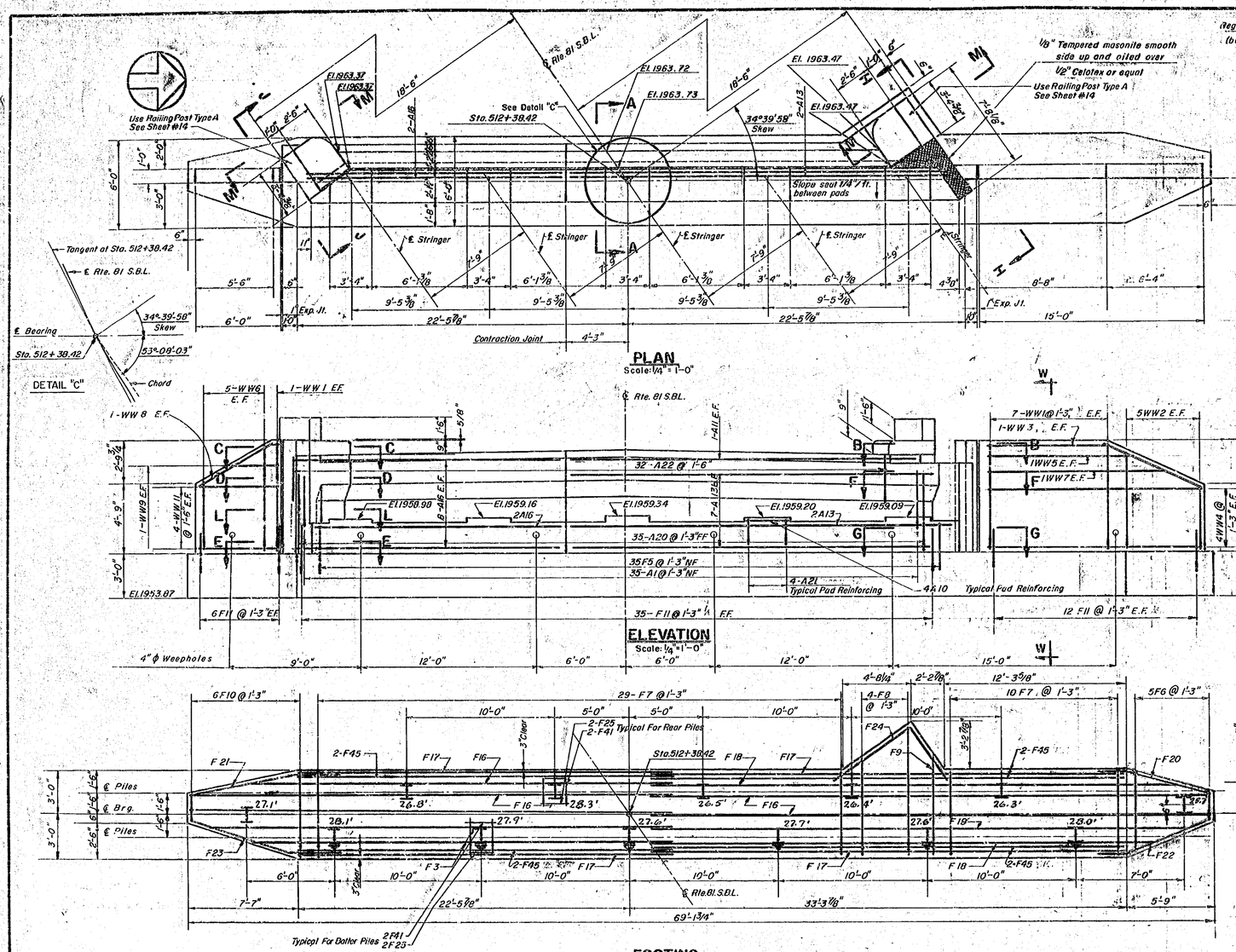
Scale: As Noted
Date: Dec. 1958

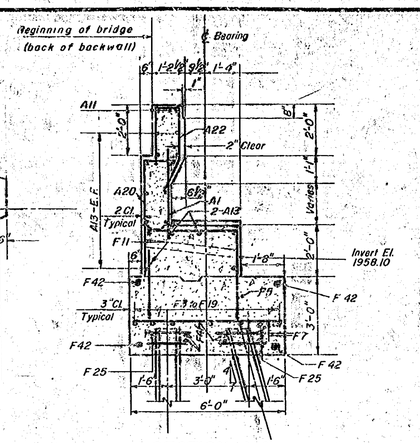
SHEET 8 OF 16

CXI-21

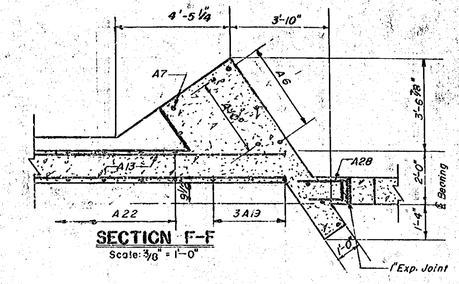
PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA		I-81-1(15)5	81	0081-095 014 B-9	24-10	

Old (8095-28)

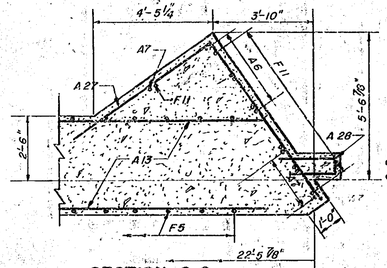




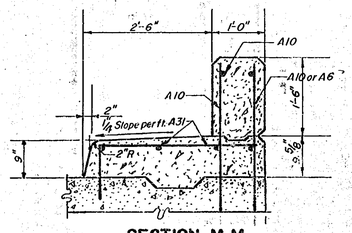
SECTION A-A
Scale: 3/8" = 1'-0"



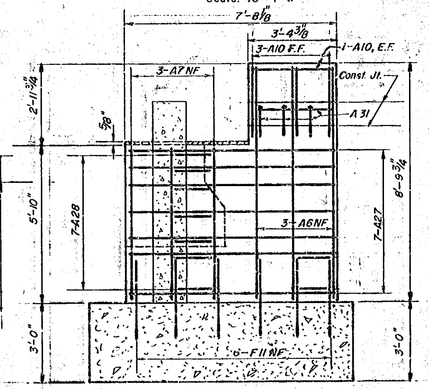
SECTION F-F
Scale: 3/8" = 1'-0"



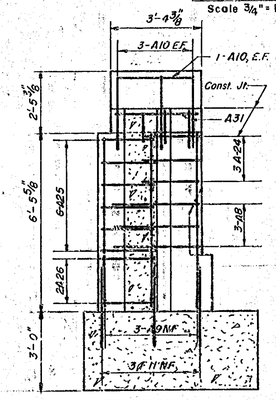
SECTION G-G
Scale: 3/8" = 1'-0"



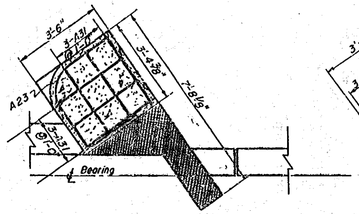
SECTION M-M
Scale 3/4" = 1'-0"



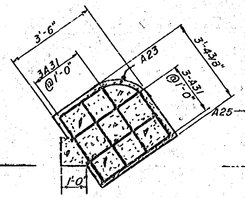
SECTION H-H
Scale: 3/8" = 1'-0"



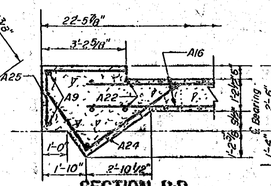
SECTION J-J
Scale: 3/8" = 1'-0"



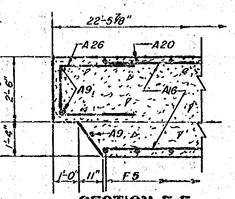
SECTION B-B
Scale: 3/8" = 1'-0"



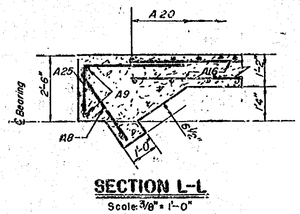
SECTION C-C
Scale: 3/8" = 1'-0"



SECTION D-D
Scale: 3/8" = 1'-0"



SECTION E-E
Scale: 3/8" = 1'-0"



SECTION L-L
Scale: 3/8" = 1'-0"

Notes:

For section WW see sheet #4

For bar bending schedule see sheet #4

Denotes 1:4 Batter Piles

For Expansion and Contraction Joint details see sheet #14.

For Key details see sheet #14.

All piles are 10 BP 42

For Abutment drainage details see Sheet #14.

RTE. 81 OVER RTE. 808 & SINKING CREEK

ABUTMENT "A" S.B.L.

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C. O. Darby

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

Scale: As Shown
Date: Dec. 1958

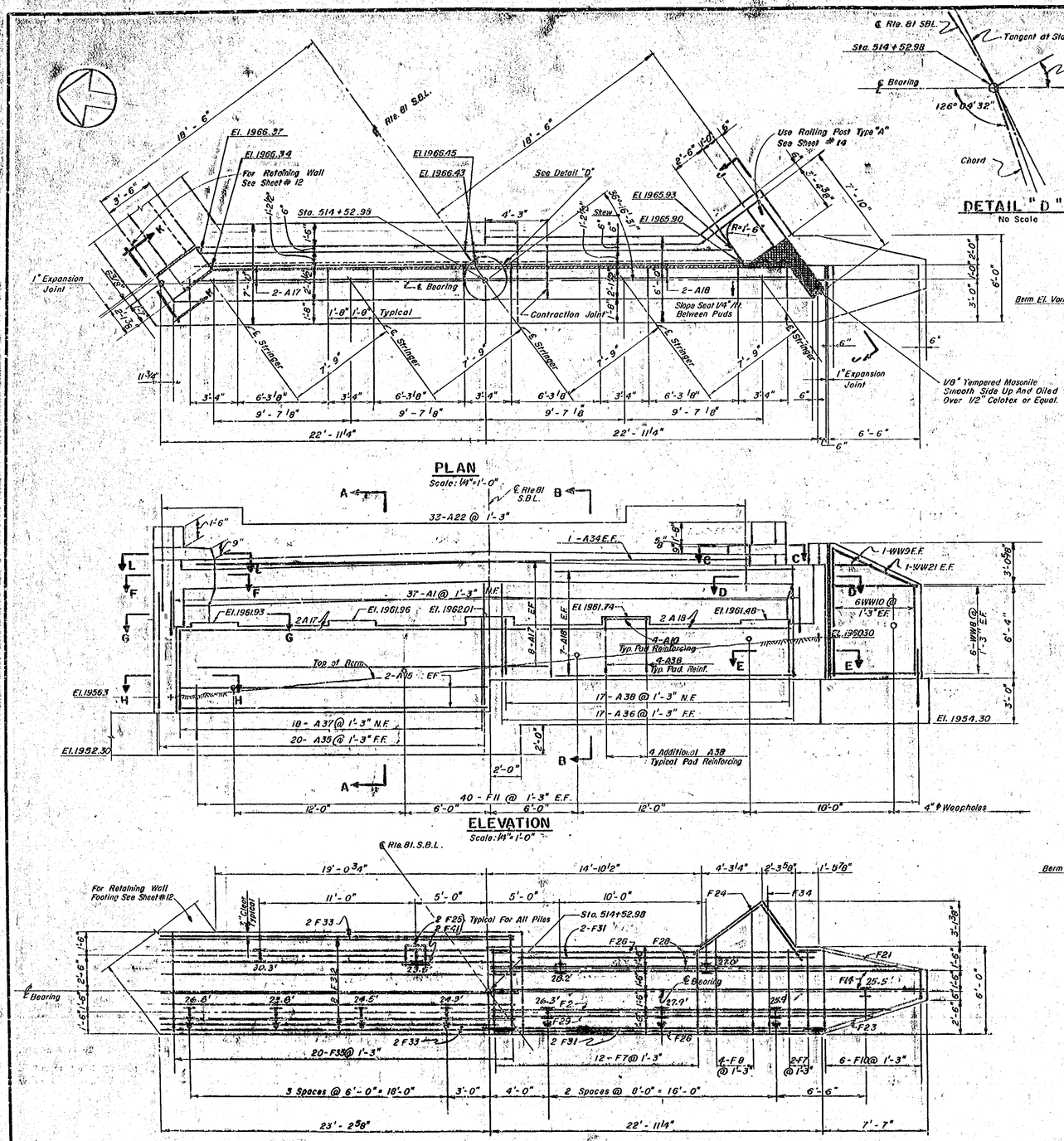
DESIGNED BY	E. A.
DRAWN BY	E.E.H.
CHECKED BY	F.E.B.

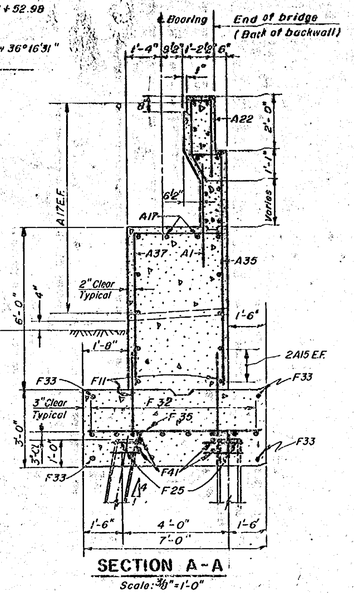
SHEET 10 OF 16

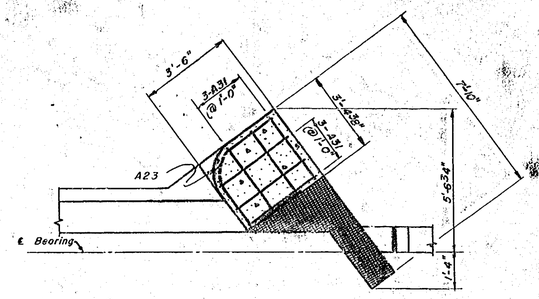
CXL-21

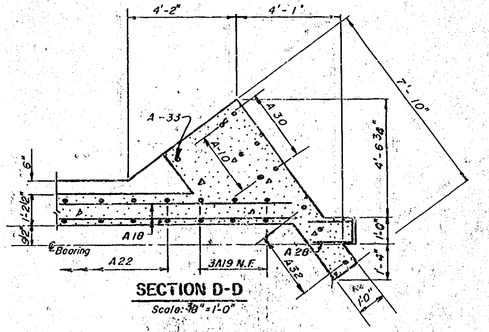
PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(15)5	81	0081-095 614B-5	24-11	

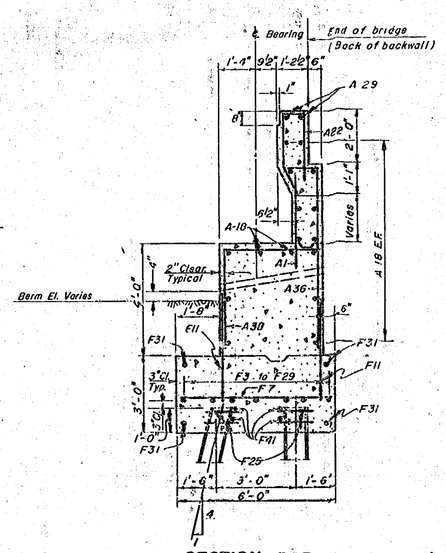
OLD(6095-28)

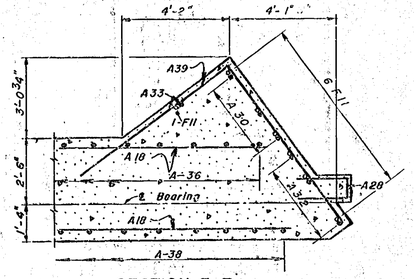












NOTES:

1. For Sections K-K and L-L See Sheet # 12.
2. For Sections F-F, G-G, H-H, J-J See Sheet #4.
3. For Bar Schedule See Sheet #4
4. Denotes 1:4 Batter Piles.
5. All Piles are 10BP42.
6. For Expansion and Contraction Joints See Sheet #14
7. For Key Details See Sheet #14
8. For Abutment Drainage Details See Sheet #14.

RTE. 81 OVER RTE. 808 & SINKING CREEK

ABUTMENT "B" S.B.L.

DESIGNED BY	E.A.
DRAWN BY	P.J.K.
CHECKED BY	F.E.B.

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CONSULTING ENGINEERS
NEWARK, N.J.

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

Scale: As Shown
Date: Dec. 1958

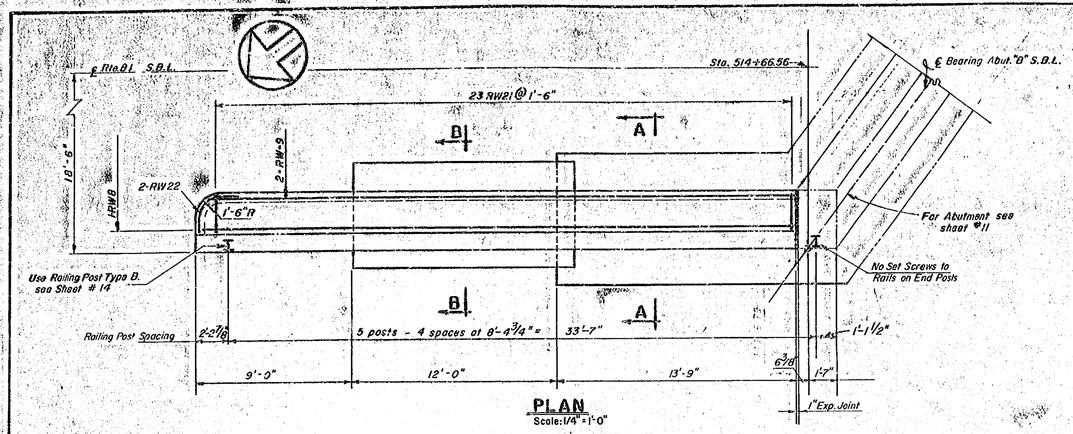
SHEET 11 OF 16

CXL-21

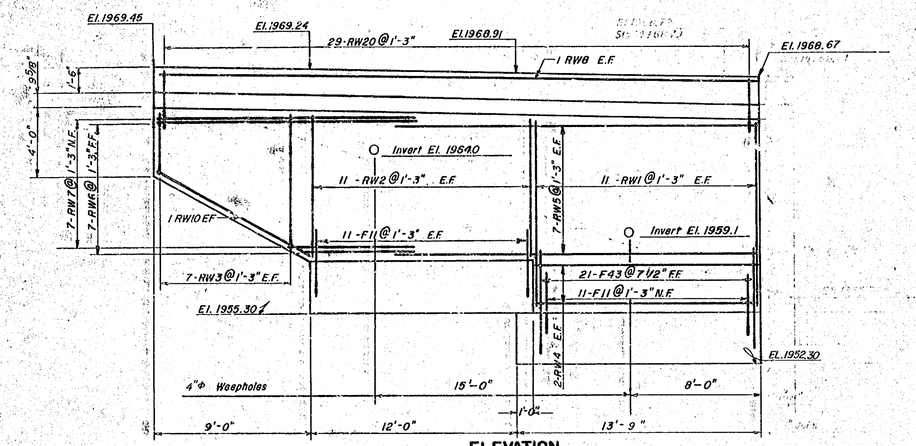
11-4-0-2

PUB. ROAD DIV. NO	STATE	FEDERAL AID PROJECT ROUTE	FEDERAL AID PROJECT	STATE PROJECT ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(13)5	81	0081-095 014 B-9	24-12.	

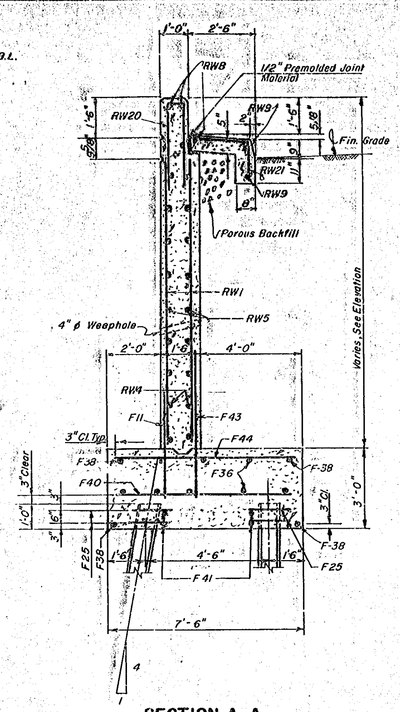
OLD (8095-28)



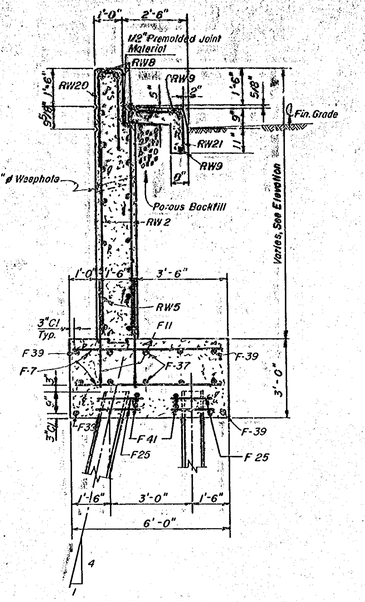
PLAN
Scale: 1/4" = 1'-0"



ELEVATION
Scale: 1/4" = 1'-0"



SECTION A-A
Scale: 3/8" = 1'-0"



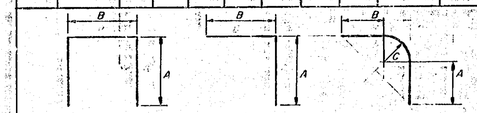
SECTION B-B
Scale: 3/8" = 1'-0"

REINFORCING BAR SCHEDULE

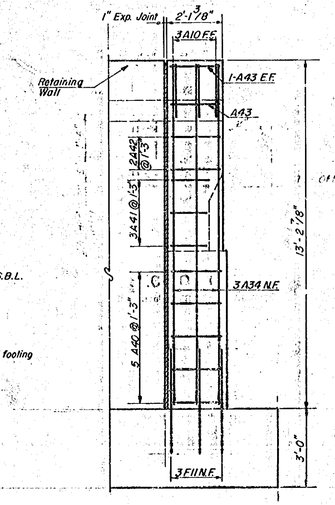
MARK	QUAN.	SIZE	TYPE	A	B	C	D	E	LENGTH	WEIGHT
F-7	22	4	Str.						5'-6"	81
F-11	33	5	Str.						4'-0"	138
F-61	18	3	Str.						2'-0"	14
F-36	8	4	Str.						16'-9"	90
F-37	8	4	Str.						12'-6"	67
F-38	4	8	Str.						16'-9"	179
F-39	4	8	Str.						12'-6"	134
F-40	14	4	Str.						7'-0"	65
F-43	21	8	Str.						5'-6"	308
F-44	14	6	Str.						7'-0"	147
RW-1	22	5	Str.						10'-9"	247
RW-2	22	5	Str.						8'-0"	184
RW-3	2 sets of 7	5	Str.	From 3'-8" to 7'-8" Vary by 8"						83
RW-4	4	4	Str.						12'-6"	33
RW-5	14	4	Str.						20'-6"	192
RW-6	1 set of 7	6	Str.	From 6'-9" to 15'-9"			Vary by 1'-6"			118
RW-7	1 set of 7	4	Str.	From 6'-9" to 15'-9"			Vary by 1'-6"			53
RW-8	3	4	Str.						34'-5"	69
RW-9	2	4	Str.						33'-0"	44
RW-10	2	4	Str.						10'-0"	13

BENT BAR SCHEDULE

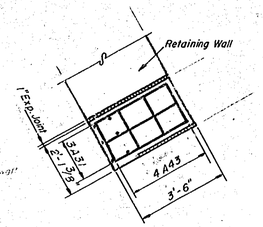
MARK	QUAN.	SIZE	TYPE	A	B	C	D	PIN	LENGTH	WEIGHT
F-25	18	4	1	2'-0"	1'-6"			2"	5'-6"	66
RW-20	29	4	1	3'-0"	8"			2"	6'-8"	129
RW-21	23	4	2	1'-4"	2'-1"			3"	3'-5"	52
RW-22	2	4	3	8"	1'-8"	1'-4"			4'-5"	6



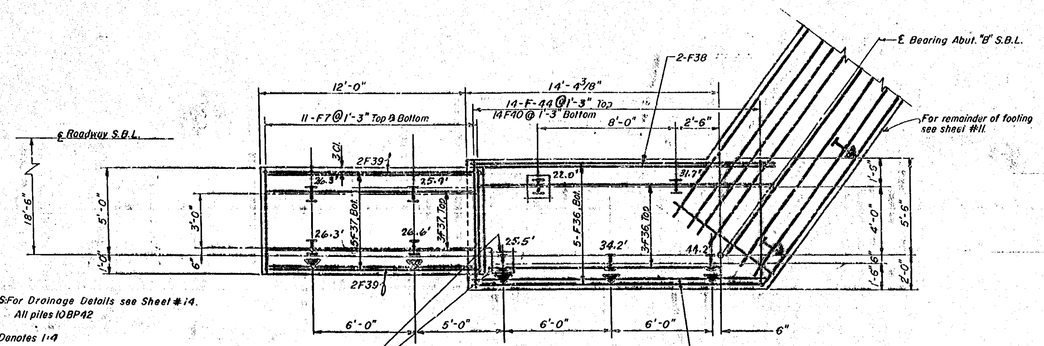
All reinforcement shall be 2" clear from face of concrete unless otherwise shown
Dimensions shown above are out to out



SECTION K-K
Scale: 3/8" = 1'-0"
See Sheet #11



SECTION L-L
Scale: 3/8" = 1'-0"
See Sheet #11



FOOTING PLAN
Scale: 1/4" = 1'-0"

NOTES: For Drainage Details see Sheet #14.
All piles 10BP42

Denotes 1:4 Batter Piles

For joints and key details see sheet #14

DESIGNED BY	E.A.
DRAWN BY	J.P.
CHECKED BY	F.E.B.

RTE. 81 OVER RTE. 808 & SINKING CREEK

RETAINING WALL ABUTMENT "B" S.B.L.

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

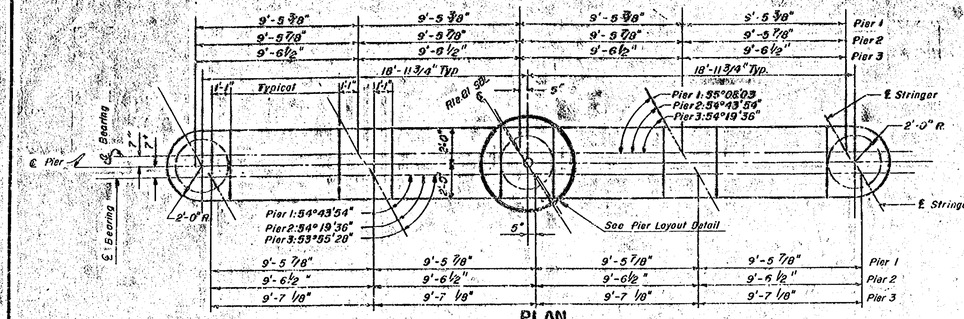
Scale: As Shown
Date: Dec 1958

SHEET 12 of 16

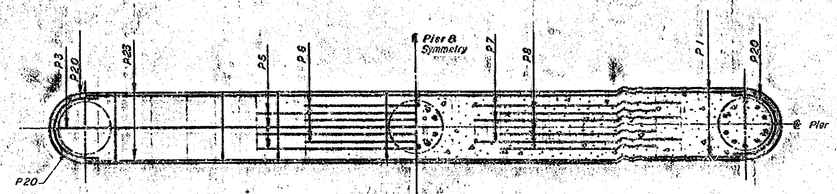
CXL-21

PUB ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(13)5	81	0081-095 014 B-9	24-13	

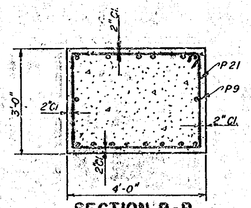
OLD(8095-28)



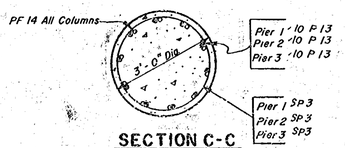
PLAN
Scale 1/4" = 1'-0"



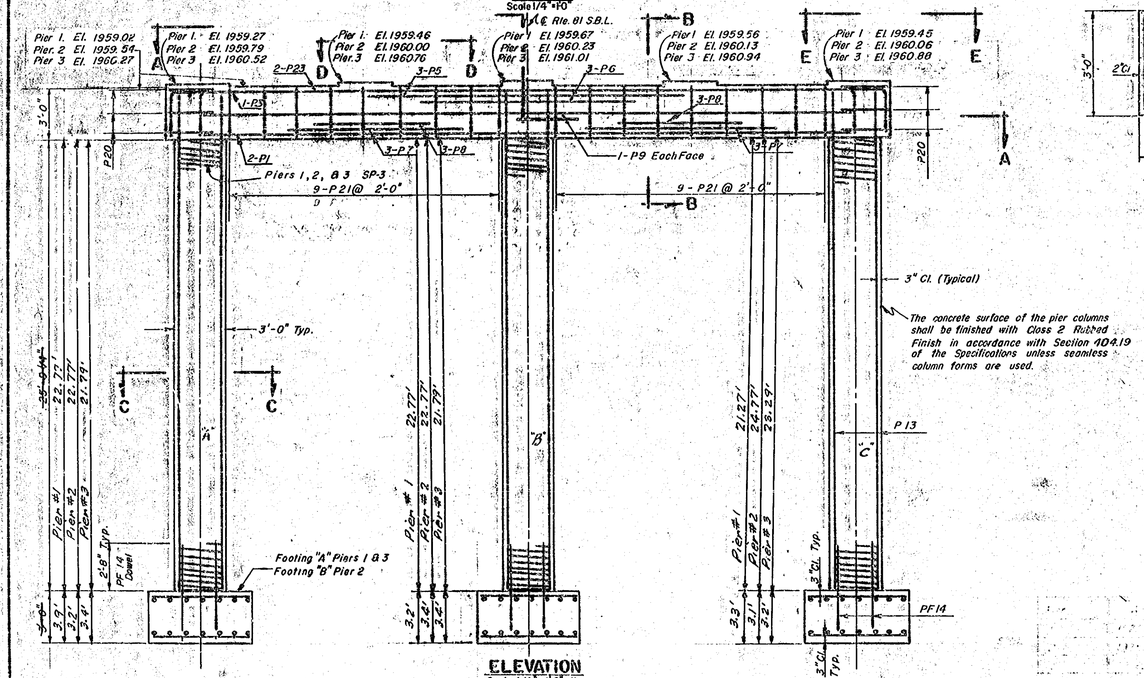
SECTION A-A
Scale 1/4" = 1'-0"



SECTION B-B
Scale 1/2" = 1'-0"

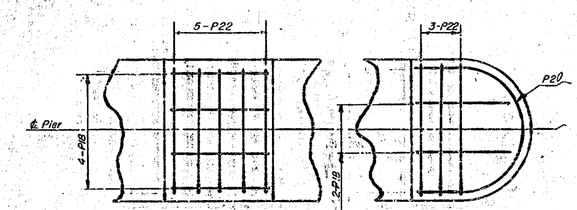


SECTION C-C
Scale 1/2" = 1'-0"



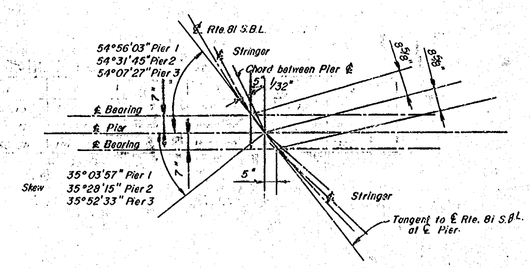
ELEVATION
Scale 1/4" = 1'-0"

The concrete surface of the pier columns shall be finished with Class 2 Rubbed Finish in accordance with Section 404.19 of the Specifications unless seamless column forms are used.



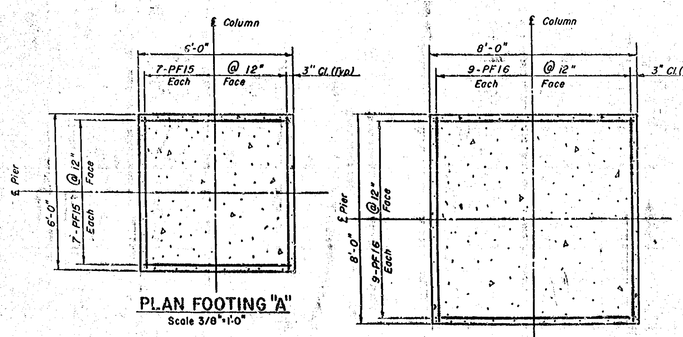
ENLARGED PLAN D-D
Scale 1/2" = 1'-0"

ENLARGED PLAN E-E
Scale 1/2" = 1'-0"



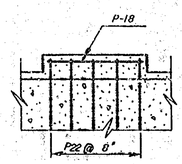
PIER LAYOUT DETAIL.

NOTE: For bar schedule see sheet # 5

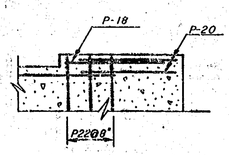


PLAN FOOTING "A"
Scale 3/8" = 1'-0"

PLAN FOOTING "B"
Scale 3/8" = 1'-0"



ELEVATION-PLAN D-D
Scale: 1/2" = 1'-0"



ELEVATION-PLAN E-E
Scale: 1/2" = 1'-0"

Note: Reinforcing Bars in Pad Shall be Carefully Placed to Clear Anchor Bolts.

RTE. 81 OVER RTE. 808 & SINKING CREEK

PIER DETAILS SBL

DESIGNED BY	E.A.
DRAWN BY	J.P.
CHECKED BY	J.R.P.

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.

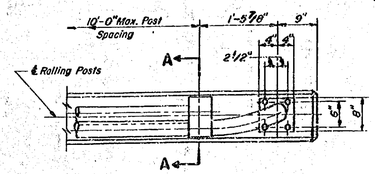
VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

Scale: As Shown
Date: Dec. 1956
SHEET 13 OF 15
CXL-21

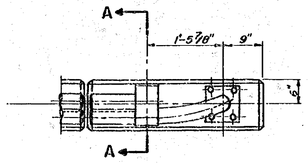
14-0-2

PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(3)5	81	0081-095 014 B-9	24-14	

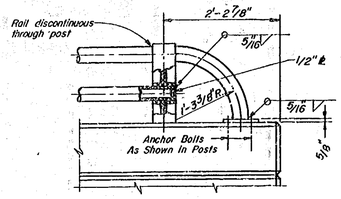
OLD(8095-28)



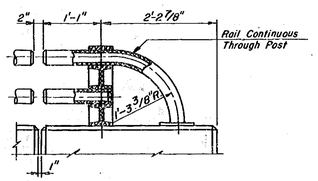
PLAN
Scale: 3/4" = 1'-0"



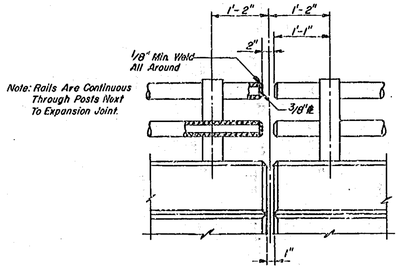
PLAN
Scale: 3/4" = 1'-0"



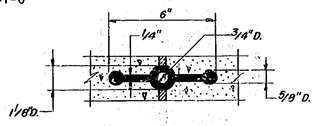
ELEVATION OF END SECTION-TYPE B
Scale: 3/4" = 1'-0"



ELEVATION OF END SECTION-TYPE A
Scale: 3/4" = 1'-0"

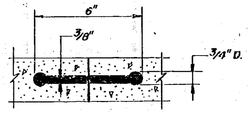


TYPICAL RAILING AT EXPANSION JOINT
Scale: 3/4" = 1'-0"



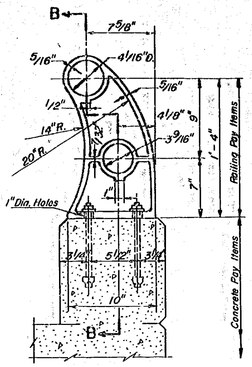
Note: Waterstops to extend from top of footing to top of wall.

EXPANSION JOINT

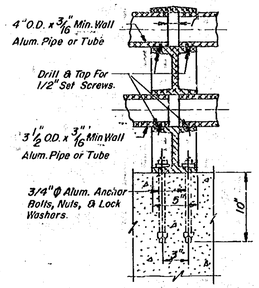


CONTRACTION JOINT

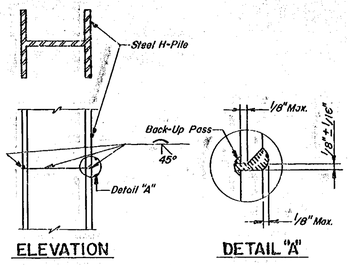
RUBBER WATERSTOP DETAILS
Scale: 3" = 1'-0"



SECTION A-A
Scale: 1 1/2" = 1'-0"



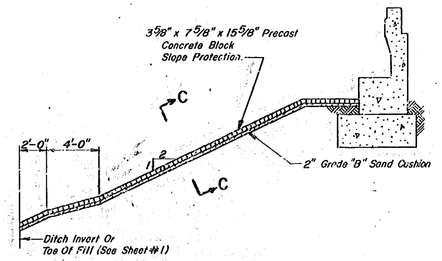
SECTION B-B
Scale: 1 1/2" = 1'-0"



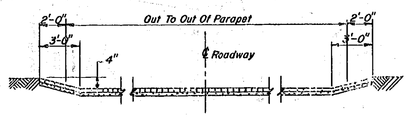
ELEVATION DETAIL "A"

STEEL PILE SPLICE DETAIL
No Scale

Note: All Welding To Be In Accordance With A.W.S. Specifications. Grinding Of Weld Surface Is Not Required. Contractor Shall Provide Suitable Means Of Alignment.

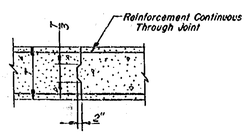


ELEVATION

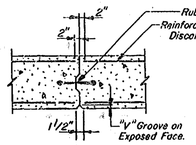


SECTION C-C

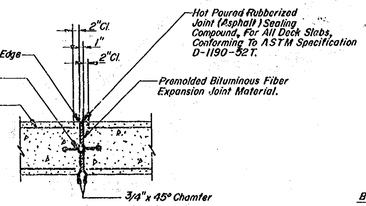
SLOPE PROTECTION DETAILS
Scale: 3/16" = 1'-0"



CONSTRUCTION JOINT

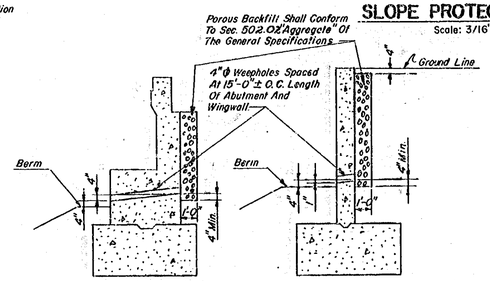


CONTRACTION JOINT



EXPANSION JOINT

DETAILS AT JOINTS
Scale: 1" = 1'-0"



ABUTMENT & WINGWALL DRAINAGE DETAILS
Scale: 1/4" = 1'-0"

Note:
4" Cl. "A", A.E. Conc. with No. 6 Ga., 6"x6" Wire mesh was used in lieu of Precast Conc. Block slope protection.

SPECIFICATIONS & NOTES

GENERAL NOTES:

Slope Protection: Precast Concrete Blocks Used for Slope Protection Shall Conform to the Requirements of Section 223, Gutter Paving Block, of the General Specifications Except That Concrete Shall be Class Y(AE) and the Blocks Shall be 3 5/8" Thick and Laid With Grout Joints. The Grout Used Shall Conform, as Regards Materials, Proportions, and Mixing to the Grout Specified for Grouted Rubble Gutter, Section 503. The Grout Shall be Mixed to a Creamy Consistency and Applied in Accordance With Section 503. All Excess Grout Shall be Removed From the Surface of the Blocks Before it Has Set.

RUBBER WATERSTOP SPECIFICATIONS:

Hardness: The Shore "A" Durometer Hardness Shall be 60 to 70. Test for Shore Durometer Hardness Shall be Made in Accordance With ASTM Designation D 676 - 49 T.

Elongation: The Elongation Shall be a Minimum of 450 Per Cent.

Tensile Strength: The Tensile Strength Shall be a Minimum of 3000 Pounds Per Square Inch.

Modulus: 300 Per Cent, 900 PSI Minimum.

Water Absorption: The Water Absorption Shall be a Maximum of 5 Per Cent by Weight After Immersion in Water for Two Days at 158° F.

Tensile Strength After Aging: The Tensile Strength of the Test Specimen, After Accelerated Aging Test of Seven Days at 150° F., Shall be Not Less Than 80 Per Cent of Original Tensile Strength. The Tensile Strength of the Test Specimen After Accelerated Aging Test of 48 Hours in Oxygen at 70° C. and 300 Pounds Per Square Inch, Shall be Not Less Than 80 Per Cent.

Compression Set: The Compression Set After 22 Hours at 158° F. Shall be Not More Than 30 Per Cent. Test for Compression Set Shall be Made in Accordance With ASTM Designation D 395 - 52 Method "B".

Specific Gravity: The Specific Gravity Shall be 1.17 Plus or Minus .03

Fabrication: The Waterstop Shall be Manufactured in Such a Manner That the Finished Product Will Have an Integral Cross Section Which Will be Dense, Homogeneous, and Free from Porosity and Other Imperfections. Minor Surface Defects Such as Surface Peel Covering Less Than One Square Inch, Surface Cavities or Bumps Less Than 1/4 Inch in Longest Lateral Dimensions and Less Than 1/16 inch Deep Will be Acceptable.

RAILING SPECIFICATIONS:

Scope: Railings for Bridges, Wingwalls, Retaining Walls, etc. Shall Include all work Constructed Above the Top of the Parapet. This Item Shall include the Furnishing of All Material, Equipment, Tools, Supplies and Labor Necessary for the Proper Construction of the Railing as Shown on the Plans or as Provided for in the Supplemental Specification, (Including Anchor Bolts.)

Construction: Fabrication and Erection Shall be Done in Accordance With the Requirements for Steel Structures Division II of Standard Specifications for Highway Bridges of The American Association of State Highway Officials With the Following Exceptions:

Cutting: Material 1/2" Thick or Less May be Sheared, Sawed, or Milled. Material over 1/2" Thick Shall be Sawed or Milled. Cut Edges Shall be True and Smooth and Free from Excessive Burrs or Ragged Breaks. Re-Entrant Cuts Shall be Filleted by Drilling Prior to Cutting. Flame Cutting is Not Permitted.

Bending: Material May be Heated to a Temperature Not Exceeding 400° F. for a Period Not Exceeding 30 Minutes to Facilitate Bending.

Bolt Holes: Anchor Bolt Holes May be up to 50 Per Cent Greater Than the Nominal Bolt Diameter With a Maximum of 1/2" Greater Than the Nominal Bolt Diameter.

Bolting: The Portion of Aluminum Alloy Anchor Bolts Which is Intended to be Exposed Above the Finished Concrete Line Shall be Given a Protective Coat of Grease or Heavy Oil Before the Concrete is Poured.

Welding: Welding Shall be Done by an Arc Welding Process in Which no Welding Flux is Used. Welding is Not Permitted Except as Specifically Called for on the Plans.

Contact With Concrete, Stone or Masonry: The Contacting Surfaces Shall be Thoroughly Coated With an Aluminum Impregnated Caulking Compound; or Where Bond Between Aluminum and Concrete is Desired, the Aluminum Shall be Coated With Zinc Chromate Paint and Allowed to Dry Before Installation.

Material: As Specified for Aluminum Alloy, Section 240 of the General Specifications.

RTE. 81 OVER RTE. 808 & SINKING CREEK

RAILING AND MISCELLANEOUS DETAILS

DESIGNED BY	A.S.K.
DRAWN BY	G. G.
CHECKED BY	F. A.

PORTER, URQUHART, McCREARY, & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N. J.
C. O. Darby

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

Scale: As noted
Date: Dec. 1958

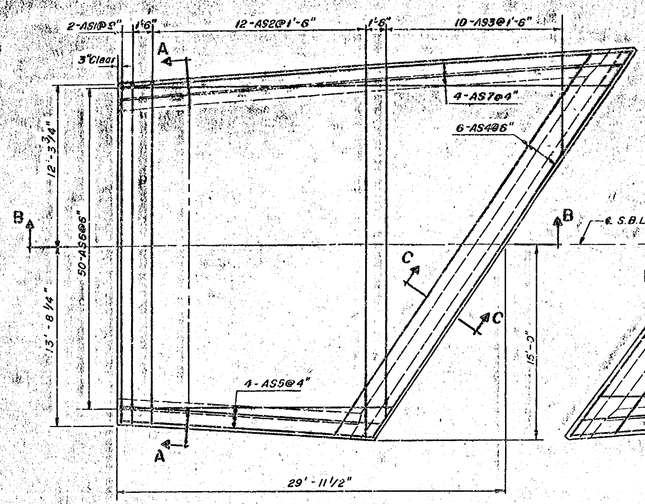
Sheet 14 of 16

CXL-21

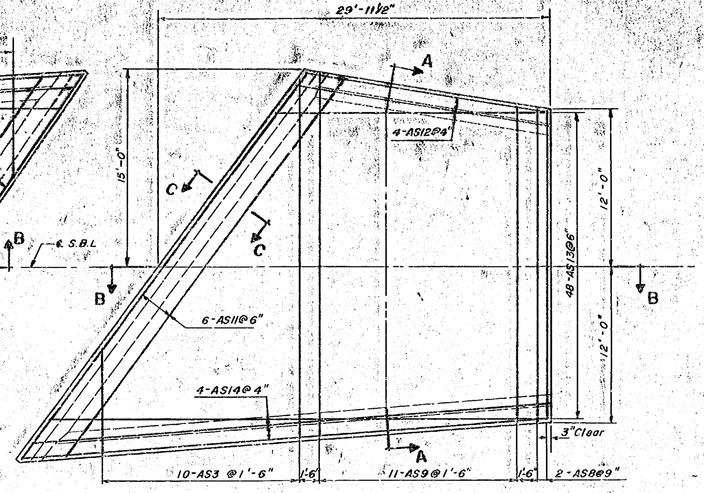
14-0-2

PUB. ROAD DIV. NO	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO	TOTAL SHEETS
2	VA.		I-81-1(13)5		0081-095 014 B-9	24-15	

OLD (8095-28)



ABUTMENT "A" S.B.L.



ABUTMENT "B" S.B.L.

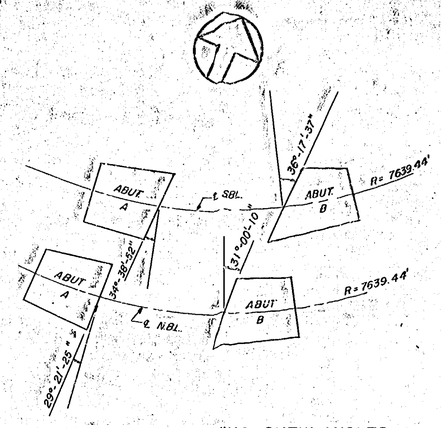
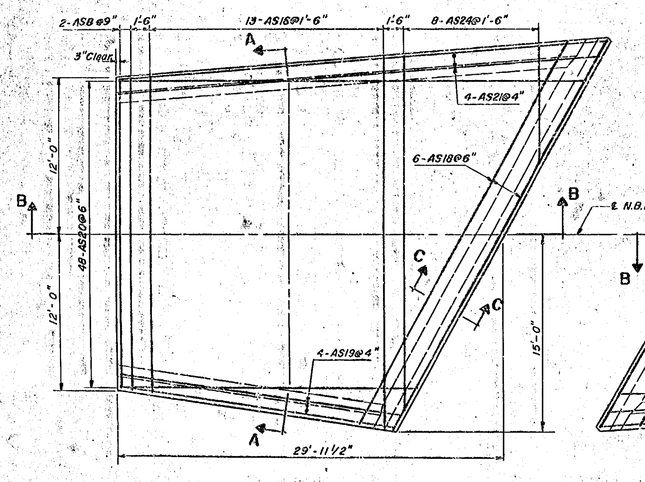
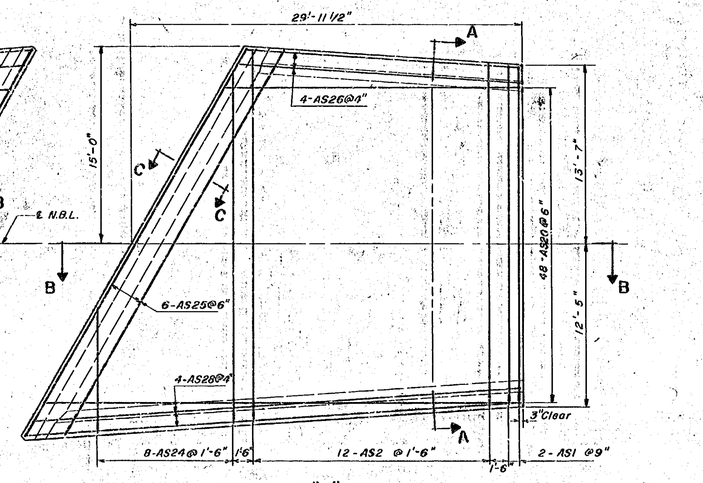


DIAGRAM SHOWING SKEW ANGLES

Not to scale



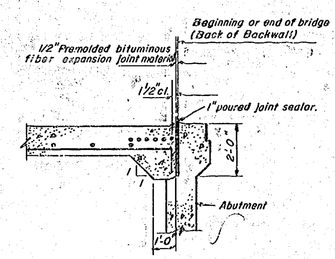
ABUTMENT "A" N.B.L.



ABUTMENT "B" N.B.L.

PLAN

Scale: 3/16" = 1'-0"

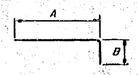


SECTION C-C

Scale: 3/8" = 1'-0"

REINFORCING BAR SCHEDULE

MARK	QUAN	SIZE	A	B	LENGTH	WGHT.
STRAIGHT BARS						
AS1	4	5			25'-8"	107
AS2	24	5	Vary by 2"		25'-10" to 27'-8"	646
AS3	20	5	Vary by 2'-2"(-)		7'-8" to 27'-0"	361
AS4	6	5			38'-6"	222
AS5	4	5			23'-6"	98
AS9	11	5	Vary by 4"(+)		24'-0" to 27'-8"	205
AS11	6	5	Vary by 2"(-)		35'-3" to 38'-6"	226
AS16	13	5	Vary by 4"(-)		24'-2" to 28'-0"	354
AS18	5	5	Vary by 2"(-)		33'-0" to 33'-9"	209
AS24	16	5	Vary by 2'-6"		9'-2" to 26'-6"	307
AS25	6	5			33'-8"	210
BENT BARS						
AS5	4	8	19'-8" to 20'-5" Vary by 3"	9"	20'-5" to 21'-2"	222
AS6	50	8	20'-6" to 37'-9" Vary by 4"(+)	9"	21'-3" to 38'-6"	3988
AS7	4	8	39'-0" to 39'-6" Vary by 2"	9"	39'-9" to 40'-3"	427
AS12	4	8	18'-9" to 19'-3" Vary by 2"	9"	19'-6" to 20'-0"	211
AS13	48	8	20'-9" to 37'-10" Vary by 4"(+)	9"	21'-6" to 38'-7"	3850
AS14	4	8	39'-6" to 40'-3" Vary by 3"	9"	40'-3" to 41'-0"	434
AS19	4	8	21'-0"	9"	21'-9"	232
AS20	96	8	22'-10" to 36'-0" Vary by 3"(-)	9"	23'-7" to 36'-9"	7732
AS21	4	8	37'-3" to 37'-9" Vary by 2"	9"	38'-0" to 38'-6"	409
AS26	4	8	21'-9"	9"	22'-6"	240
AS28	4	8	37'-3"	9"	38'-0"	406

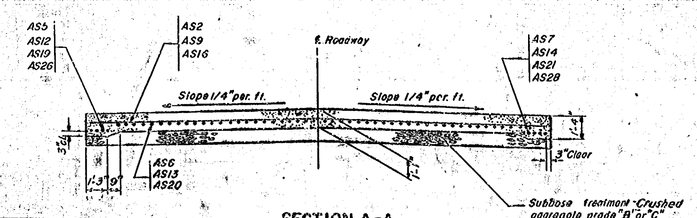


6"Ø Pin for #8 bar
All bar dimensions shown above are out to out.
All reinforcing shall be 2" clear from face of concrete unless otherwise noted.

Approach Slabs quantities are shown in the Road Plans and the cost of Approach Slabs shall not be included in the bridge plans.
Concrete shall be class A(AE)

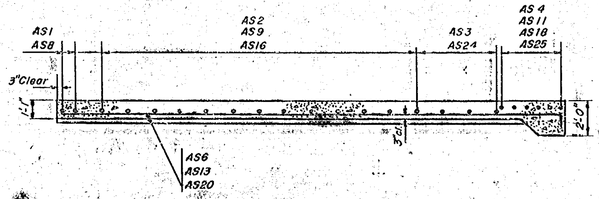
ESTIMATED QUANTITIES

	Concrete Class A(AE) Cu. Yds.	Reinforcing Steel Pounds
SBL	70.0	10,595
NBL	70.0	10,595
Total	140.0	21,190



SECTION A-A

Scale: 1/4" = 1'-0"



SECTION B-B

Scale: 1/4" = 1'-0"

RTE. 81 OVER RTE. 808 & SINKING CREEK

REINFORCED CONCRETE APPROACH SLABS

DESIGNED BY	G.D.
DRAWN BY	E.F.W.
CHECKED BY	H.K.

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

Sheet 15 of 16

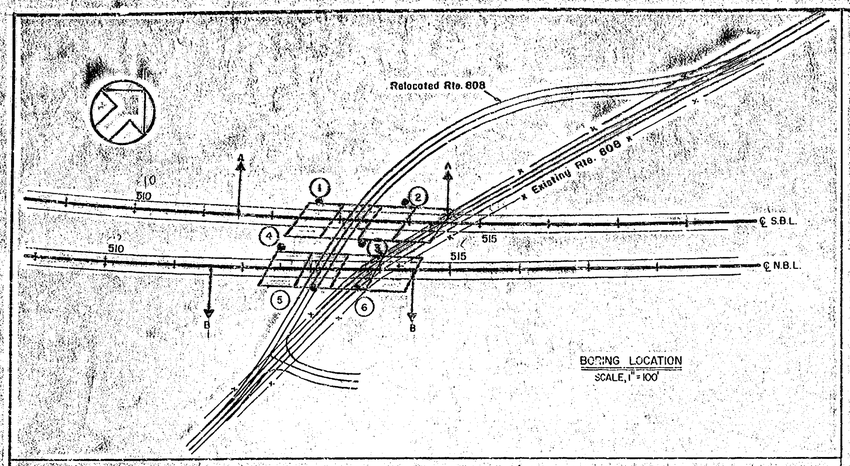
Scale: As shown
Date: Dec. 1959

CXL-21

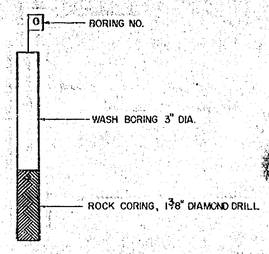
11-4-0-2

PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.		I-81-1(13)5	81	0081-095 014 B-9	24-16	

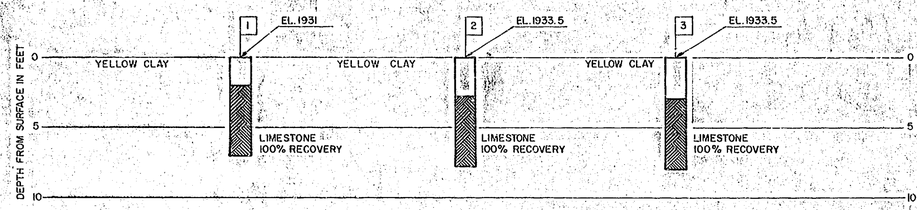
OLD(8095-28)



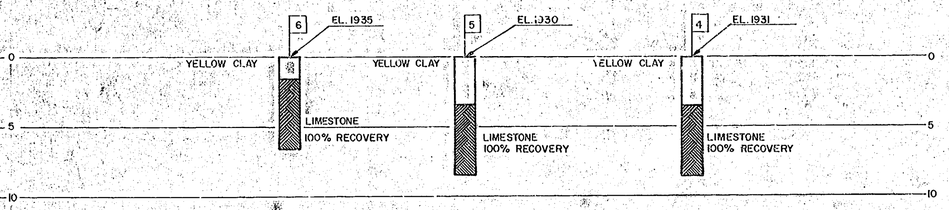
BORING LOCATION
SCALE, 1" = 100'



LEGEND



PROFILE A-A
VERT. SCALE: 1" = 5'



PROFILE B-B
VERT. SCALE: 1" = 5'

RTE. 81 OVER RTE. 808 & SINKING CREEK

STRUCTURE BORINGS

PORTER, URQUHART, McCREARY & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.

C.H. Darby

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

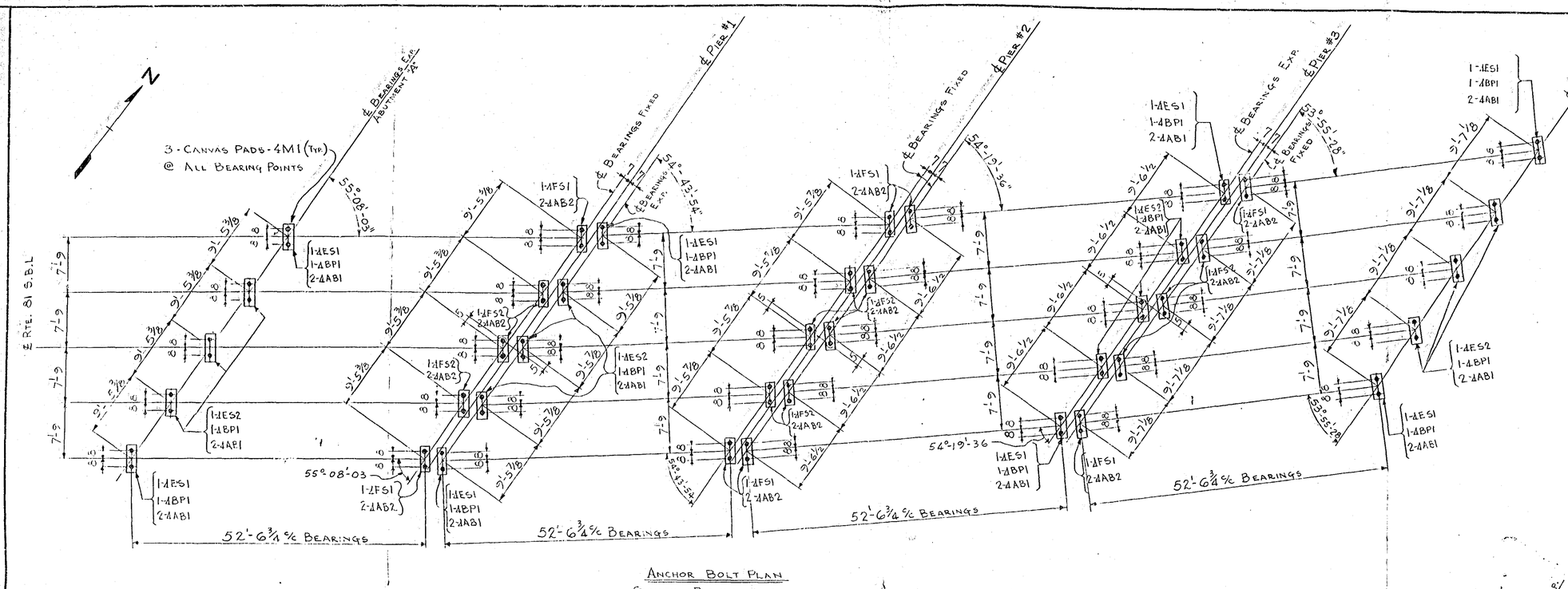
Scale: As Shown
Date: Dec. 1958

Sheet 16 of 16

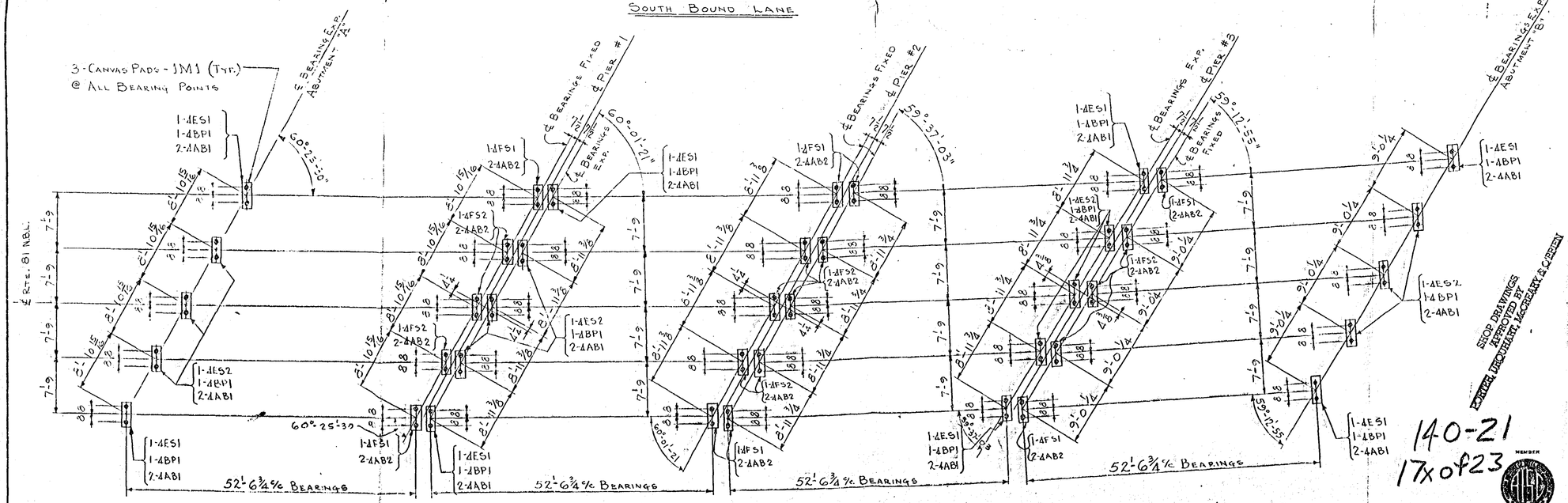
CXL-21

DESIGNED BY	E.A.
DRAWN BY	R.E.C.
CHECKED BY	S.J.R.

F 1 6 1 1 4 0 2 1



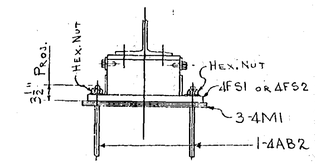
Anchor Bolt Plan
South Bound Lane



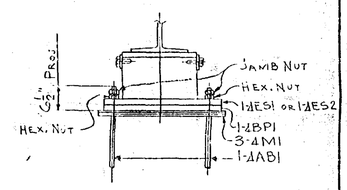
Anchor Bolt Plan
North Bound Lane

Note "A"

The Bridge Seat Bearing Area Shall Be Thoroughly Swabbed With #1 Red Lead Paint & 3 Layers Of 12 oz. Duck Shall Be Placed Upon It, Each Layer Being Thoroughly Swabbed On Its Top Surface With Red Lead Paint. The Superstructure Shoes Shall Be Placed In Position While The Paint Is Plastic.
(See General Provisions - Sec. 404.18)



Section @ Fixed End



Section At Expansion End

Anchor Bolts:-

Anchor Bolts To Be Furnished By B.S. & I. Works And Set By Others In Strict Accordance With This Plan.

Shop Drawings Approved By Porter, Urquhart, McCreary & Gerdes

140-21
17x of 23

HOLES
RIVETS
PAINT

CONTRACTOR PLEASE NOTE

FAILURE TO CHECK AND/OR APPROVE GENERAL MEASUREMENTS WILL NECESSITATE RESUBMITTING THIS DRAWING AND WILL RESULT IN DELAY.

APPROVED FOR DESIGN
AS SHOWN
AS CORRECTED — ARCHITECT

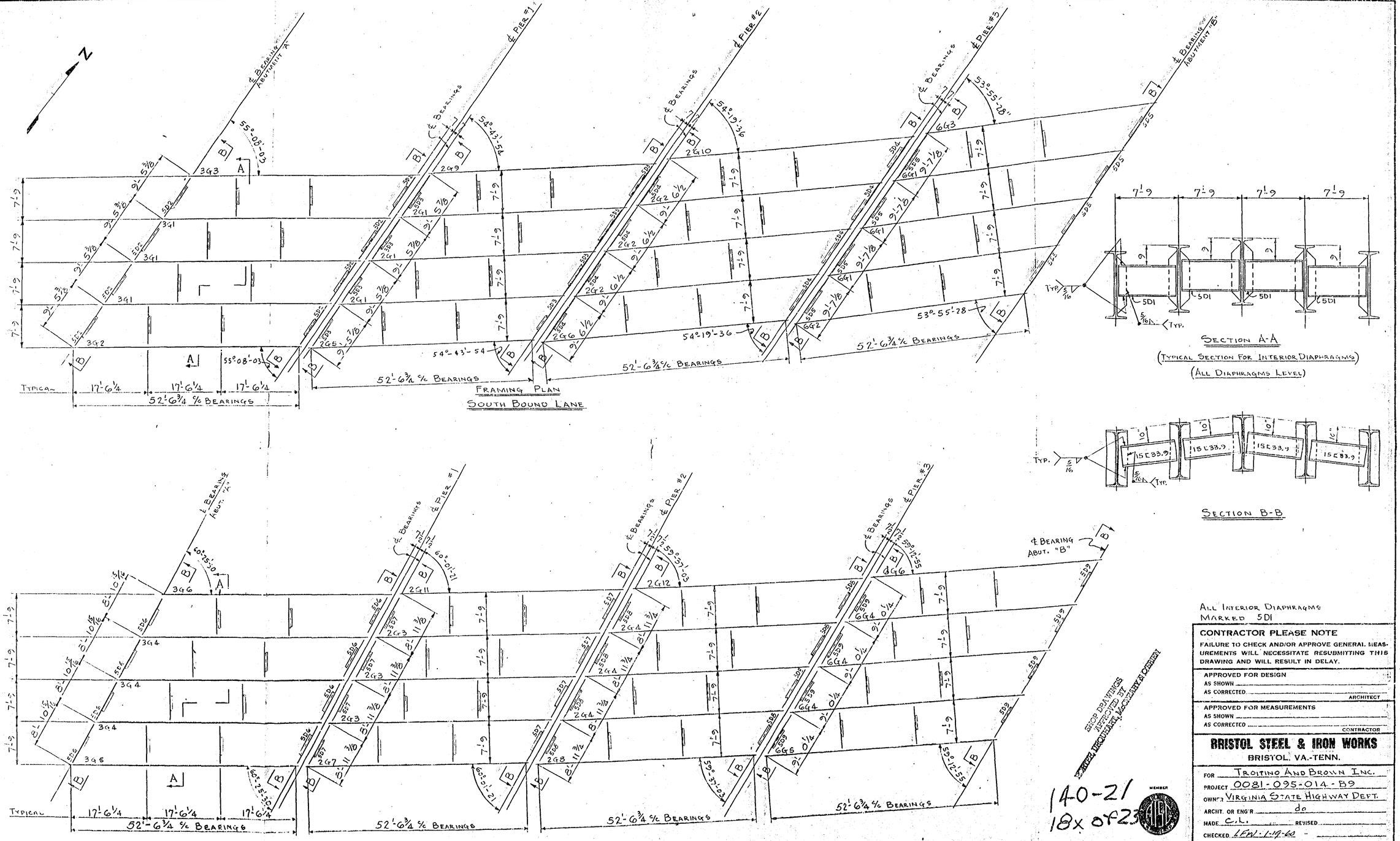
APPROVED FOR MEASUREMENTS
AS SHOWN
AS CORRECTED — CONTRACTOR

BRISTOL STEEL & IRON WORKS
BRISTOL, VA.-TENN.

FOR Troitino And Brown Inc.
PROJECT 0081-095-014-B9
OWNER Virginia State Highway Dept.
ARCHT. OR ENG'R do
MADE C.L. REVISED
CHECKED LFW. 1-19-60
FIELD CHECKED
SHOP INSPECTION

CUSTOMER'S NUMBER	CONTRACT	SHEET
	FE 745	E 2

B. F. Sellers & Co. Phil. Pa. Reorder A-12956



All Interior Diaphragms Marked 5D1

CONTRACTOR PLEASE NOTE

FAILURE TO CHECK AND/OR APPROVE GENERAL MEASUREMENTS WILL NECESSITATE RESUBMITTING THIS DRAWING AND WILL RESULT IN DELAY.

APPROVED FOR DESIGN
AS SHOWN
AS CORRECTED
ARCHITECT

APPROVED FOR MEASUREMENTS
AS SHOWN
AS CORRECTED
CONTRACTOR

BRISTOL STEEL & IRON WORKS
BRISTOL, VA.-TENN.

FOR Troitino And Brown Inc.
PROJECT 0081-095-014-B9
OWNER Virginia State Highway Dept.
ARCHT. OR ENG'R do
MADE C.L. REVISED
CHECKED LFW 1-19-60
FIELD CHECKED
SHOP INSPECTION

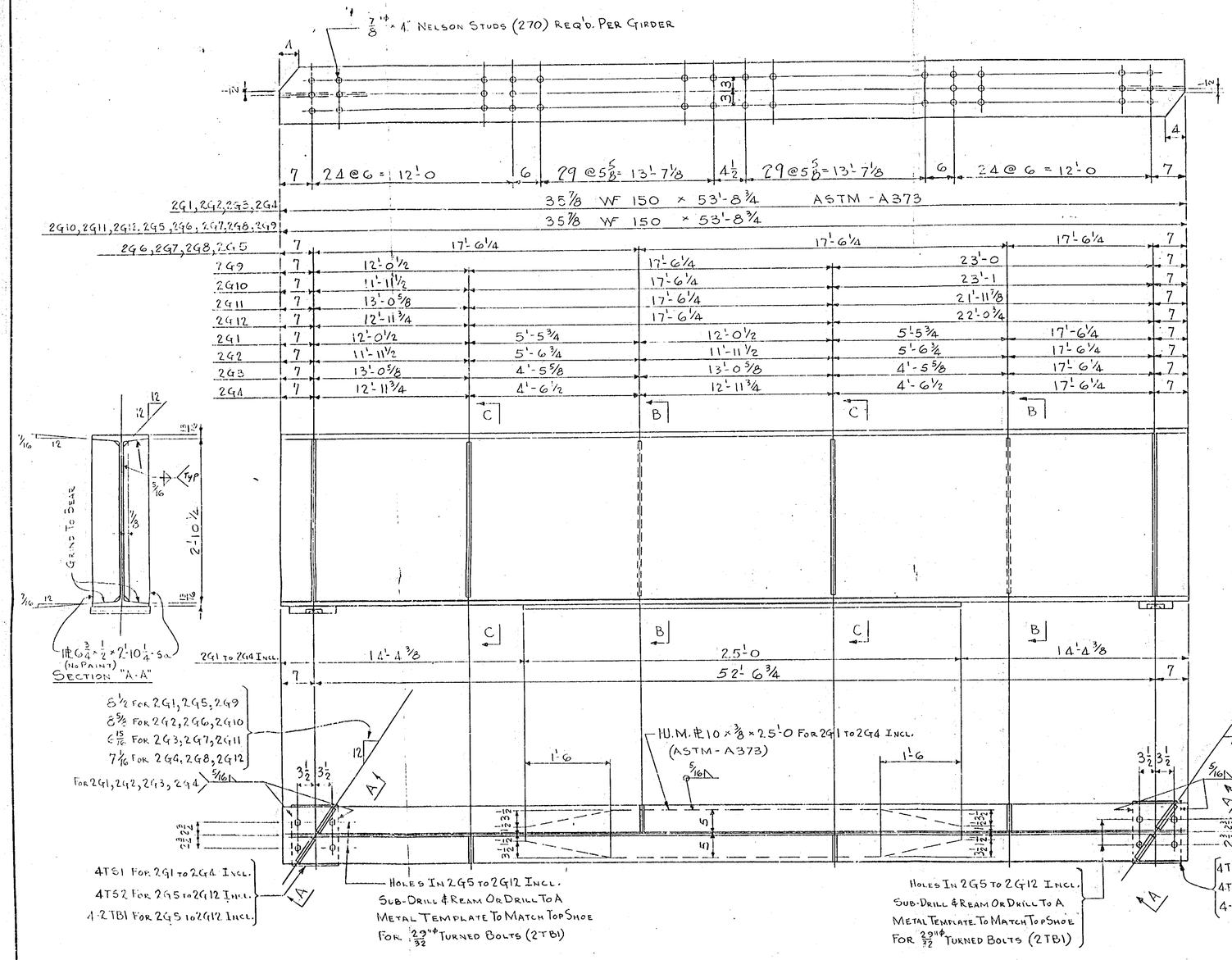
HOLES
RIVETS
PAINT

CUSTOMER'S NUMBER	CONTRACT	SHEET
	FE745	E3

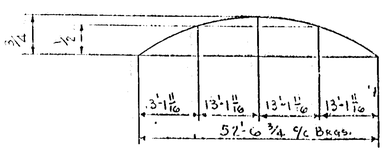
SHOP DRAWINGS APPROVED BY SHEPP, URQUHART, McCLEARY & OBERLY

140-21
18x of 23

11-4-0-21



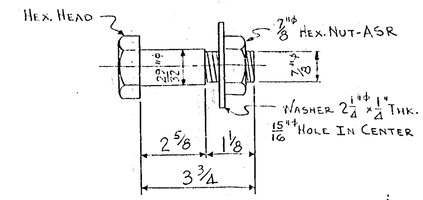
SECTION "A-A"



CAMBER DIAGRAM

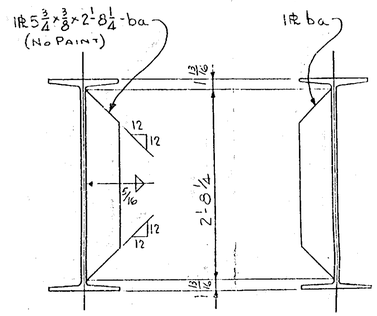
3 - GIRDERS - 2G1	ONE - GIRDER - 2G7
3 - do - 2G2	ONE - do - 2G8
3 - do - 2G3	ONE - do - 2G9
3 - do - 2G4	ONE - do - 2G10
ONE - do - 2G5	ONE - do - 2G11
ONE - do - 2G6	ONE - do - 2G12

(5/16 WELD - 1480 LIN. FT.)



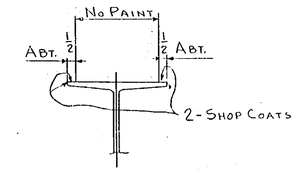
128 - TURNED BOLTS - 2TB1

REQUIRED LIST		
MAKE	DESCRIPTION	MARK
3	GIRDER	2G1
3	do	2G2
3	do	2G3
3	do	2G4
ONE	do	2G5
ONE	do	2G6
ONE	do	2G7
ONE	do	2G8
ONE	do	2G9
ONE	do	2G10
ONE	do	2G11
ONE	do	2G12



SECTION B-B FOR 2G1 TO 2G8 INCL.

SECTION C-C FOR 2G1 - 2G2 - 2G3 - 2G4 2G9 - 2G10 - 2G11 - 2G12



TYP. FOR PAINT - TOP FLG.

SHOP DRAWINGS REQUIRED FOR ALL PLATES, ANGLES & SHEARS

CONTRACTOR PLEASE NOTE

FAILURE TO CHECK AND/OR APPROVE GENERAL MEASUREMENTS WILL NECESSITATE RESUBMITTING THIS DRAWING AND WILL RESULT IN DELAY.

APPROVED FOR DESIGN
AS SHOWN
AS CORRECTED ARCHITECT

APPROVED FOR MEASUREMENTS
AS SHOWN
AS CORRECTED CONTRACTOR

BRISTOL STEEL & IRON WORKS
BRISTOL, VA.-TENN.

FOR TROITINO AND BROWN INC.
PROJECT 0081-095-014-B9
OWNER VIRGINIA STATE HIGHWAY DEPT.
ARCHT. OR ENG'R do
MADE C.L. REVISED
CHECKED EW 1-19-60 "
FIELD CHECKED. "
SHOP INSPECTION "

CUSTOMER'S NUMBER	CONTRACT	SHEET
	FE745	2

PAINT NOTE:
WHERE "NO PAINT" IS SPECIFIED USE ONE COAT BOILED LINSEED OIL OR EQUAL

14-0-21
19x of 23

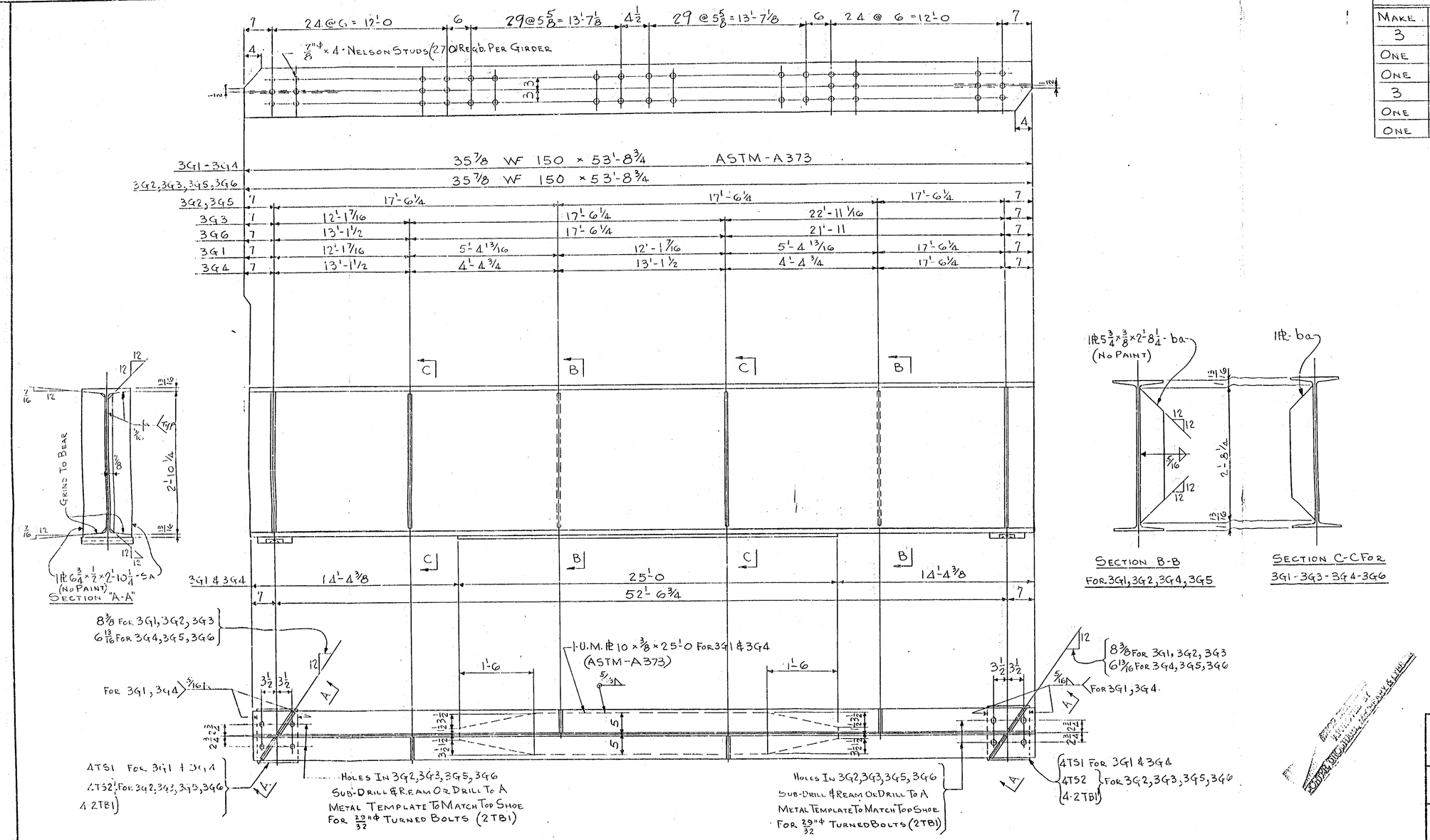
ALL MATERIAL ASTM-A7 U.N.

MEMBER AISC

PAINT NOTE:
SHOP CONTACT SURFACES NOT PAINTED

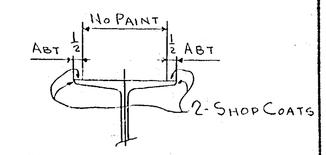
HOLES AS NOTED
RIVETS
PAINT O.S.C. (U.N.)
PER VA. HWY. DEPT. SPEC. #1 RED LEAD

14-0-21



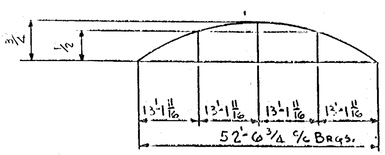
SECTION B-B
FOR 3G1, 3G2, 3G4, 3G5

SECTION C-C FOR
3G1-3G3-3G4-3G6



TYP. FOR PAINT - TOP FLG.

REQUIRED LIST		
MAKE	DESCRIPTION	MARK
3	GIRDER	3G1
ONE	do	3G2
ONE	do	3G3
3	do	3G4
ONE	do	3G5
ONE	do	3G6



CAMBER DIAGRAM

3 - GIRDERS - 3G1
ONE - do - 3G2
ONE - do - 3G3
3 - do - 3G4
ONE - do - 3G5
ONE - do - 3G6
(5/16" WELD - 740 LIN. FT.)

PAINT NOTE:
WHERE "NO PAINT" IS SPECIFIED USE ONE COAT BOILED LINSEED OIL OR EQUAL

140-21
20x of 23

ALL MATERIAL ASTM-A7 U.N.

PAINT NOTE:
SHOP CONTACT SURFACES NOT PAINTED

HOLES AS NOTED
RIVETS —
PAINT O.S.C. (U.N.)
PER VA. HWY. DEPT. SPEC. #1 RED LEAD

CONTRACTOR PLEASE NOTE
FAILURE TO CHECK AND/OR APPROVE GENERAL MEASUREMENTS WILL NECESSITATE RESUBMITTING THIS DRAWING AND WILL RESULT IN DELAY.

APPROVED FOR DESIGN
AS SHOWN
AS CORRECTED
ARCHITECT

APPROVED FOR MEASUREMENTS
AS SHOWN
AS CORRECTED
CONTRACTOR

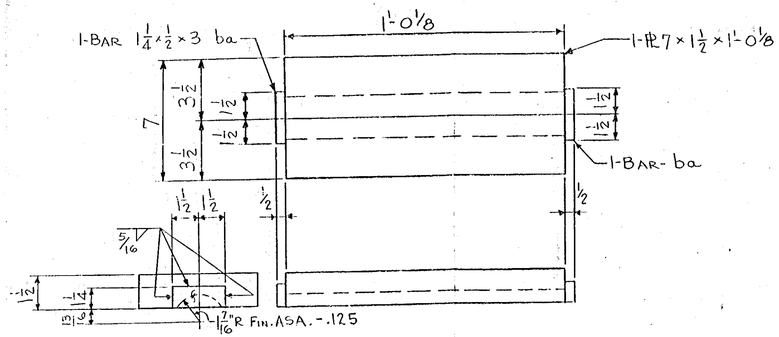
BRISTOL STEEL & IRON WORKS
BRISTOL, VA.-TENN.

FOR TROITINO AND BROWN INC.
PROJECT 0081-095-014-B9
OWNER VIRGINIA STATE HIGHWAY DEPT.
ARCHT. OR ENG'R do.
MADE C.L. REVISED
CHECKED LFW - 1-19-60
FIELD CHECKED
SHOP INSPECTION

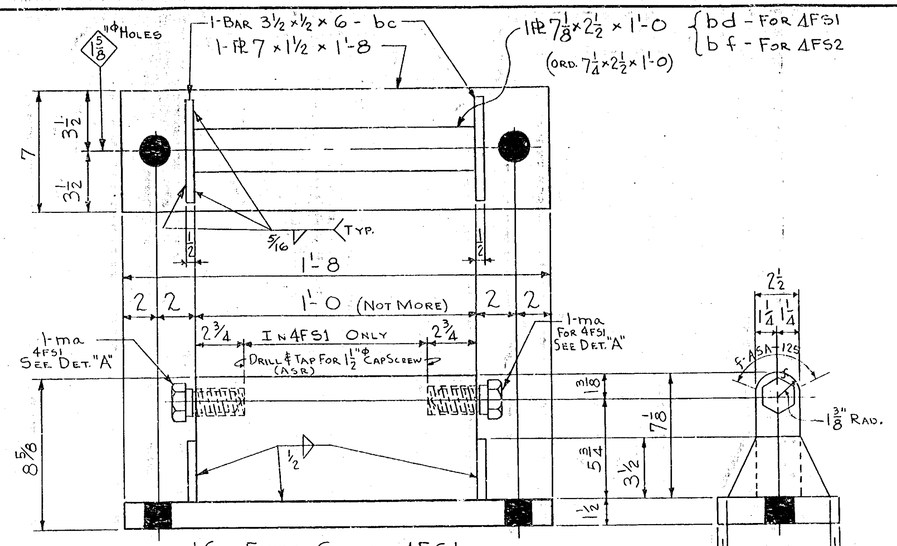
CUSTOMER'S NUMBER	CONTRACT	SHEET
	FE745	3

B. F. ELLIOTT CO. PGH. PA. REORDER A-12454

1-4-0-2-1-1-2-0-X



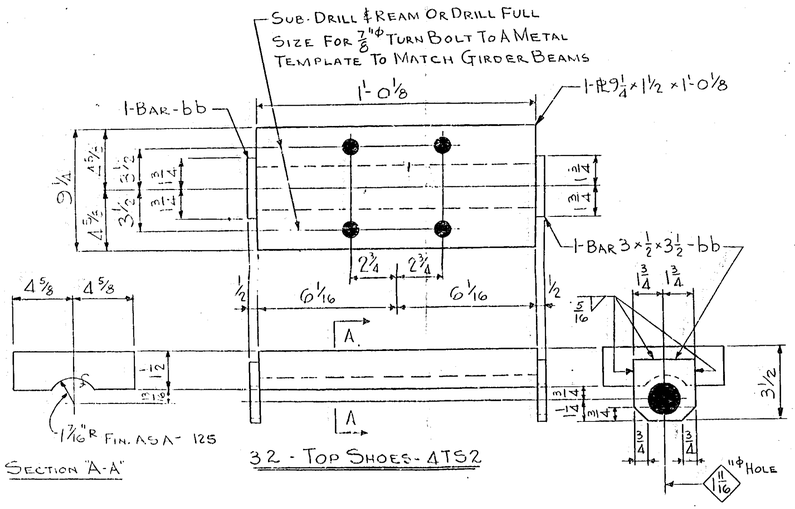
48 - TOP SHOES - 4TS1



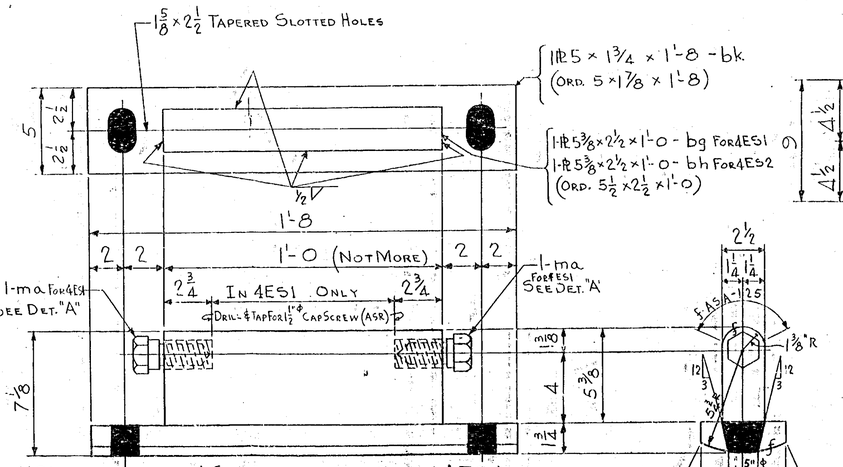
16 - FIXED SHOES -4FS1

24 - FIXED SHOES -4FS2

REQUIRED LIST		
MAKE	DESCRIPTION	MARK
48	TOP SHOES	4TS1
32	do do	4TS2
40	MASONRY PLATES	4BP1
16	FIXED SHOES	4FS1
24	do do	4FS2
16	EXPANSION SHOES	4ES1
24	do do	4ES2
80	ANCHOR BOLTS	4AB1
80	do do	4AB2
240	CANVAS SHEETS	4M1

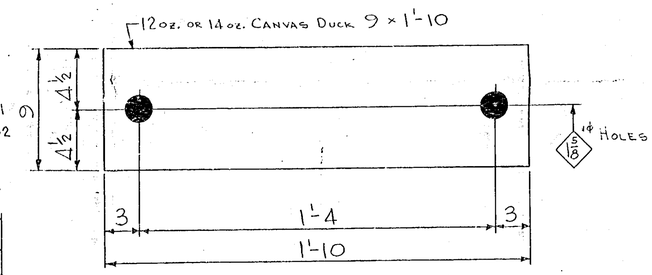


32 - TOP SHOES - 4TS2

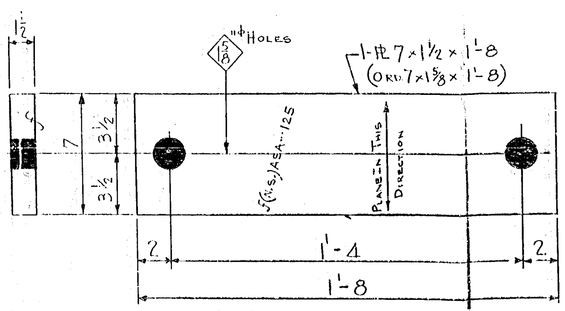


16 - EXPANSION SHOES 4ES1

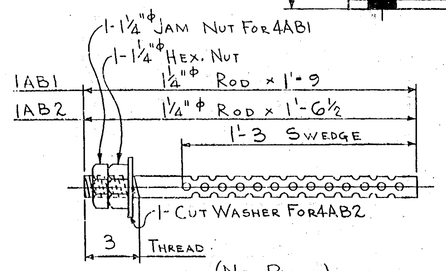
24 - EXPANSION SHOES 4ES2



240 - CANVAS SHEETS - 4 M1



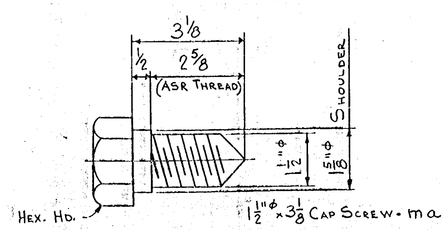
40 - MASONRY PLATES - 4BP1



(NO PAINT)

80 - ANCHOR BOLTS - 4AB1

80 - ANCHOR BOLTS - 4AB2



DETAIL "A"
(CAP SCREW DETAIL)
(64 REQ'D)

ALL MATERIAL ASTM-A7

NOTE:
FINISHED SURFACES TO HAVE ONE COAT OF WHITE LEAD & TALLOW.

PAINT NOTE:
SHOP CONTACT SURFACES NOT PAINTED.

SHOP DRAWINGS APPROVED BY BORTER, URQUHART, MCCREARY & GREEN

14-0-21
21 of 2

CONTRACTOR PLEASE NOTE
FAILURE TO CHECK AND/OR APPROVE GENERAL MEASUREMENTS WILL NECESSITATE RESUBMITTING THIS DRAWING AND WILL RESULT IN DELAY.

APPROVED FOR DESIGN
AS SHOWN
AS CORRECTED — ARCHITECT

APPROVED FOR MEASUREMENTS
AS SHOWN
AS CORRECTED — CONTRACTOR

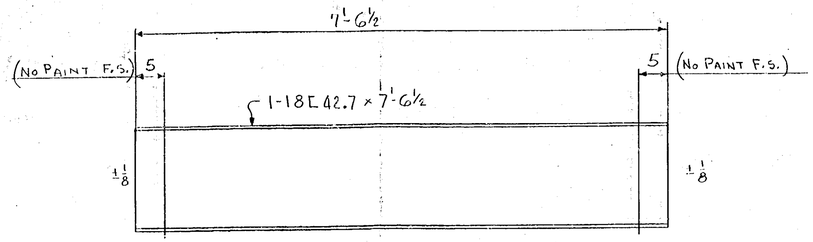
BRISTOL STEEL & IRON WORKS
BRISTOL, VA.-TENN.

FOR Troitino And Brown Inc.
PROJECT 0081-095-014-39
OWNER Virginia State Highway Dept.
ARCHT. OR ENG'R do.
MADE C.L. REVISED
CHECKED LFW-1-19-60
FIELD CHECKED
SHOP INSPECTION

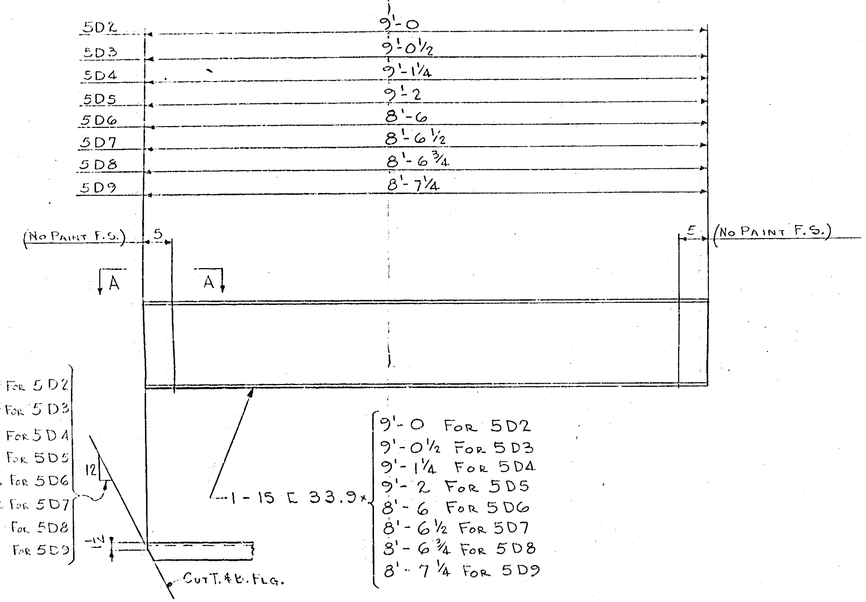
HOLES U.N.
RIVETS
PAINT O.S.C.
PER VA. HWY. DEPT. SPEC. #1 RED LEAD UN. NTD.

CUSTOMER'S NUMBER	CONTRACT	SHEET
	FE 745	4

B. K. ELLIOTT CO., PGH., PA. PATENTED A-18935



64 - Diaphragms - 5D1



Section "A-A"

8 -	Diaphragms	- 5D2
8 -	do	- 5D3
8 -	do	- 5D4
8 -	do	- 5D5
8 -	do	- 5D6
8 -	do	- 5D7
8 -	do	- 5D8
8 -	do	- 5D9

Required List

Make	Description	Mark
64	Diaphragms	5D1
8	do	5D2
8	do	5D3
8	do	5D4
8	do	5D5
8	do	5D6
8	do	5D7
8	do	5D8
8	do	5D9

Shop Drawings
Porter, Urquhart, McCreary & O'Brien

Architect
Porter, Urquhart, McCreary & O'Brien

Material: ASTM-A7

140-21
22 x of 23

Paint Note:
Where "No Paint" is specified
Use One Coat Boiled Linseed
Oil Or Equal

Holes
Rivets
Paint O.S.C. (U.N.)

Per Va. State Hwy. Dept. Spec. #1 Red Lead

Member AISC

Contractor Please Note
Failure to check and/or approve general measurements will necessitate resubmitting this drawing and will result in delay.

Approved for Design
As shown
As corrected — Architect

Approved for Measurements
As shown
As corrected — Contractor

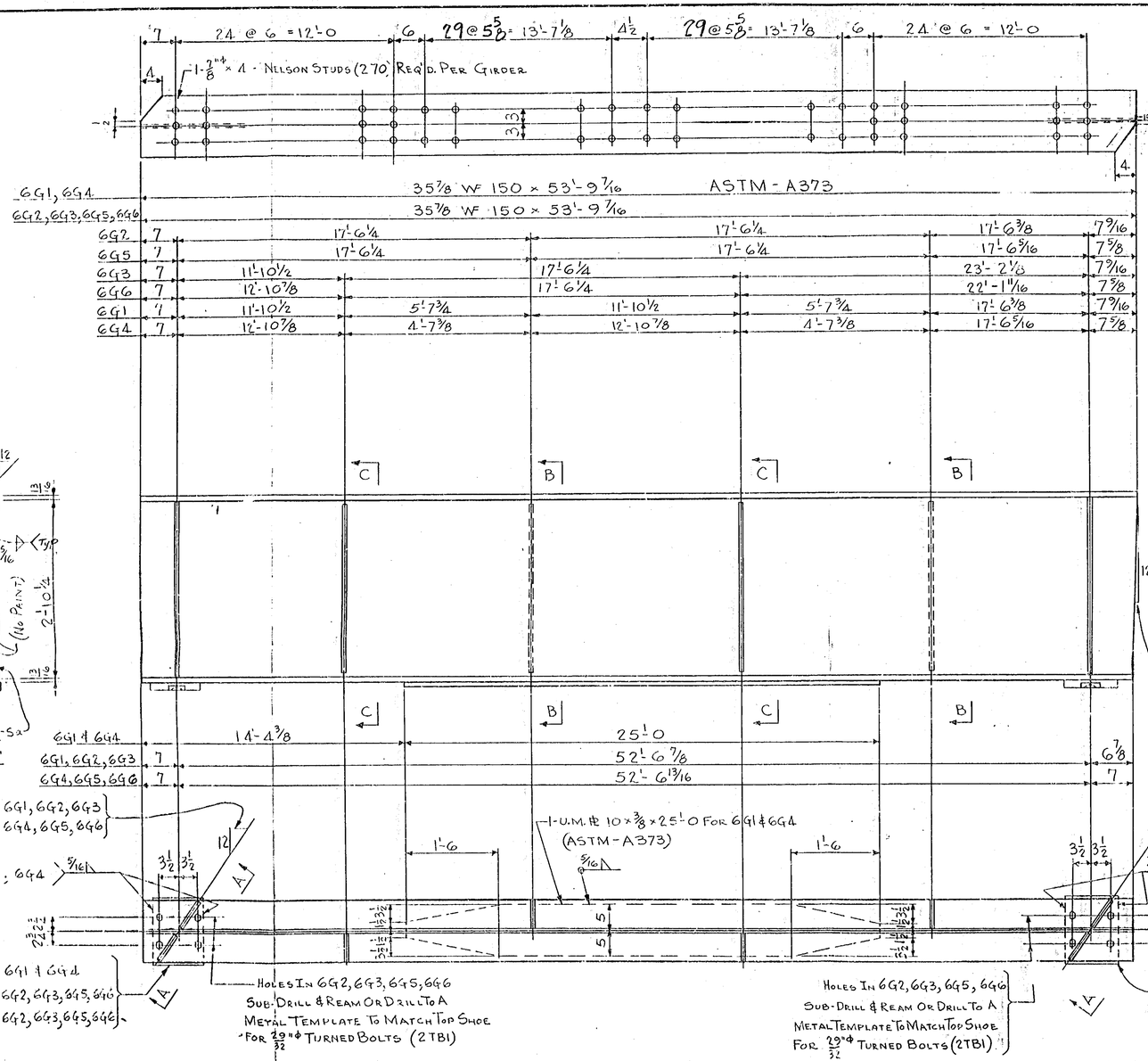
Bristol Steel & Iron Works
Bristol, Va.-Tenn.

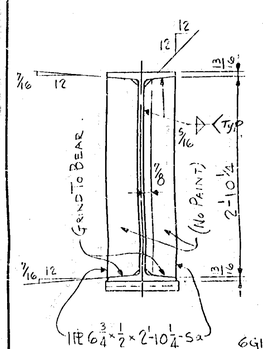
For Troitino And Brown Inc.
Project 0081-095-014-B9
Owner Virginia State Highway Dept.
Archt. or Eng'r do
Made C.L. Revised
Checked LFW: 1-19-60
Field Checked
Shop Inspection

Customer's Number	Contract	Sheet
	FE745	5

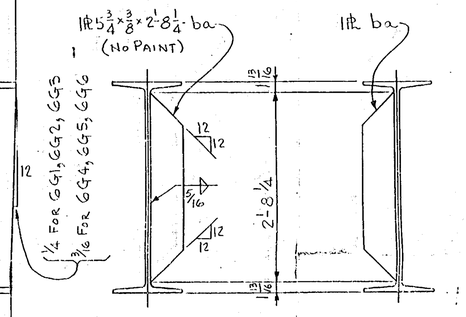
140-21 22 of 23

REQUIRED LIST		
MAKE	DESCRIPTION	MARK
3	GIRDER	6G1
ONE	do	6G2
ONE	do	6G3
3	do	6G4
ONE	do	6G5
ONE	do	6G6



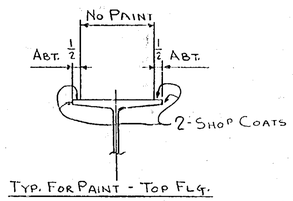


SECTION "A-A"

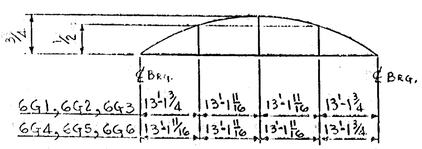


SECTION B-B FOR 6G1, 6G2, 6G4, 6G5

SECTION C-C FOR 6G1, 6G3, 6G4, 6G6



TYP. FOR PAINT - TOP FLG.



CAMBER DIAGRAM

3 - GIRDERS - 6G1
ONE - do - 6G2
ONE - do - 6G3
3 - do - 6G4
ONE - do - 6G5
ONE - do - 6G6

(5/16" WELD - 740 LIN. FT.)

PAINT NOTE:
WHERE "NO PAINT" ON STIFFENERS IS SPECIFIED, USE ONE COAT BOILED LINSEED OIL OR EQUAL

ALL MATERIAL ASTM - A7 U.N.

PAINT NOTE:
SHOP CONTACT SURFACES NOT PAINTED

PER VA. HWY. DEPT. SPEC. #1 RED LEAD

SHOP DRAWINGS APPROVED BY PORTER, URQUHART, McCREARY & O'BRIEN

140-21
23x of 23

CONTRACTOR PLEASE NOTE
FAILURE TO CHECK AND/OR APPROVE GENERAL MEASUREMENTS WILL NECESSITATE RESUBMITTING THIS DRAWING AND WILL RESULT IN DELAY.

APPROVED FOR DESIGN
AS SHOWN
AS CORRECTED — ARCHITECT

APPROVED FOR MEASUREMENTS
AS SHOWN
AS CORRECTED — CONTRACTOR

BRISTOL STEEL & IRON WORKS
BRISTOL, VA.-TENN.

FOR Troitino And Brown Inc.
PROJECT 0081-095-014-B9
OWNER Virginia State Highway Dept.
ARCHT. OR ENG'R do
MADE C.L. REVISED
CHECKED LFW. 1-19-60
FIELD CHECKED
SHOP INSPECTION

MEMBER AISC

HOLES 15/16" Φ
RIVETS
PAINT O.S.C. (U.N.)

CUSTOMER'S NUMBER	CONTRACT	SHEET
	FE745	6

B. R. ELECTRO CO. POR. PA. REORDER A-19454

RTE 402 PROJ 8095-14
BRISTOL DISTRICT
WASHINGTON COUNTY
SITUATION PLAN FOR PROPOSED
GRADE SEPARATION WITH RTE 808
FROM STATION 512+00 TO 516+00
CHIEF OF PARTY — G.M. ATKINS
SCALE — 1" = 20'
CONTOUR INTERVAL — 2'
DRAWN BY — J.B. JOHNSON
DATE — JULY 5, 1957

CX-21

LD-23—Rev. 7-1-56

Commonwealth of Virginia

DEPARTMENT OF HIGHWAYS

BRIDGE DATA SHEET

Situation data for design of Bridge over Rt. 808 near _____ approximately 8 miles from Bristol on _____ Railroad, at Station 513+92.80 on Route 402, Project 8095-14, Date 7-26-57.

1. GENERAL INFORMATION

Fill out all blanks carefully, giving information on all points and supplementary information on features of importance not listed. High water and foundation conditions are especially important and should be thoroughly investigated.

2. EXISTING STRUCTURE

Was present bridge in place at time of extreme high water? _____.
Has bridge ever been washed out? _____, Date: _____.
Explain what portion of bridge or approaches have been washed out. _____

3. STREAM FLOW DATA

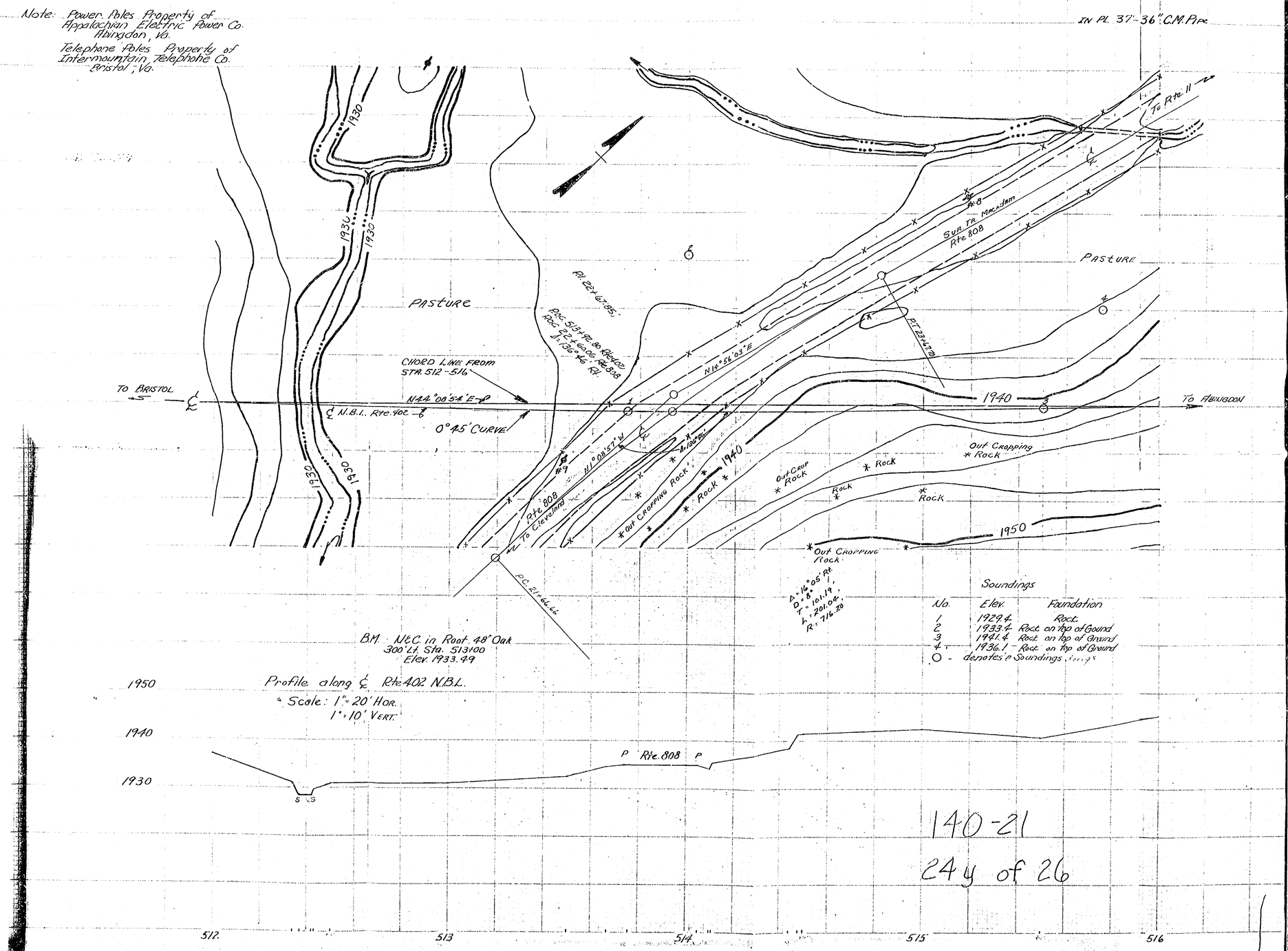
Elev. of maximum high water of this stream at proposed location: _____. Date: _____.
Source of Information: _____
Elev. of maximum high water of this stream on upstream side of existing structure: _____
Elev. of maximum high water of this stream on downstream side of existing structure: _____
Date: _____. Source of Information: _____
Elev. of highest backwater caused by another stream: _____. Date: _____
Source of Information: _____
Elev. of normal water (average). _____. Elev. of extreme low water: _____. Date: _____
Source of Information: _____
Velocity of current at high water: _____ ft./sec. Velocity of current at normal water: _____ ft./sec.
Amount and character of drift during a freshet or flood: _____
Amount and character of ice: _____
Do banks or bed show scour? _____.
Description of scour _____
Bed of stream consists mainly of: mud, silt, clay, sand, gravel, small stones, large stones, soft solid rock, stratified rock, hard rock, silt sedimentation, deposition of small stones, deposition of large stones. Is this material loose or well compacted? _____
Location and condition of dams with ¼ mile: _____
Location and description of any water-gaging stations in the vicinity: _____
Elev. _____ on gage corresponds to elev. _____ on survey datum.
Area of drainage basin: _____. Source of Information: _____
Character of drainage basin: Terrain; Mountainous, rolling, Lt. rolling, flat.
Soil Types: _____
Land use: _____ % Wooded.
_____ % Pasture.
_____ % Cultivated.
Extent to which sink holes effect run-off, etc. _____

4. Depth of firm foundation: Elev. 1929.4 to 1941.4. Should footing extend to solid rock? Yes
Will piling be necessary? No

5. REMARKS

Grade Separation Rte 808 & Rte 402

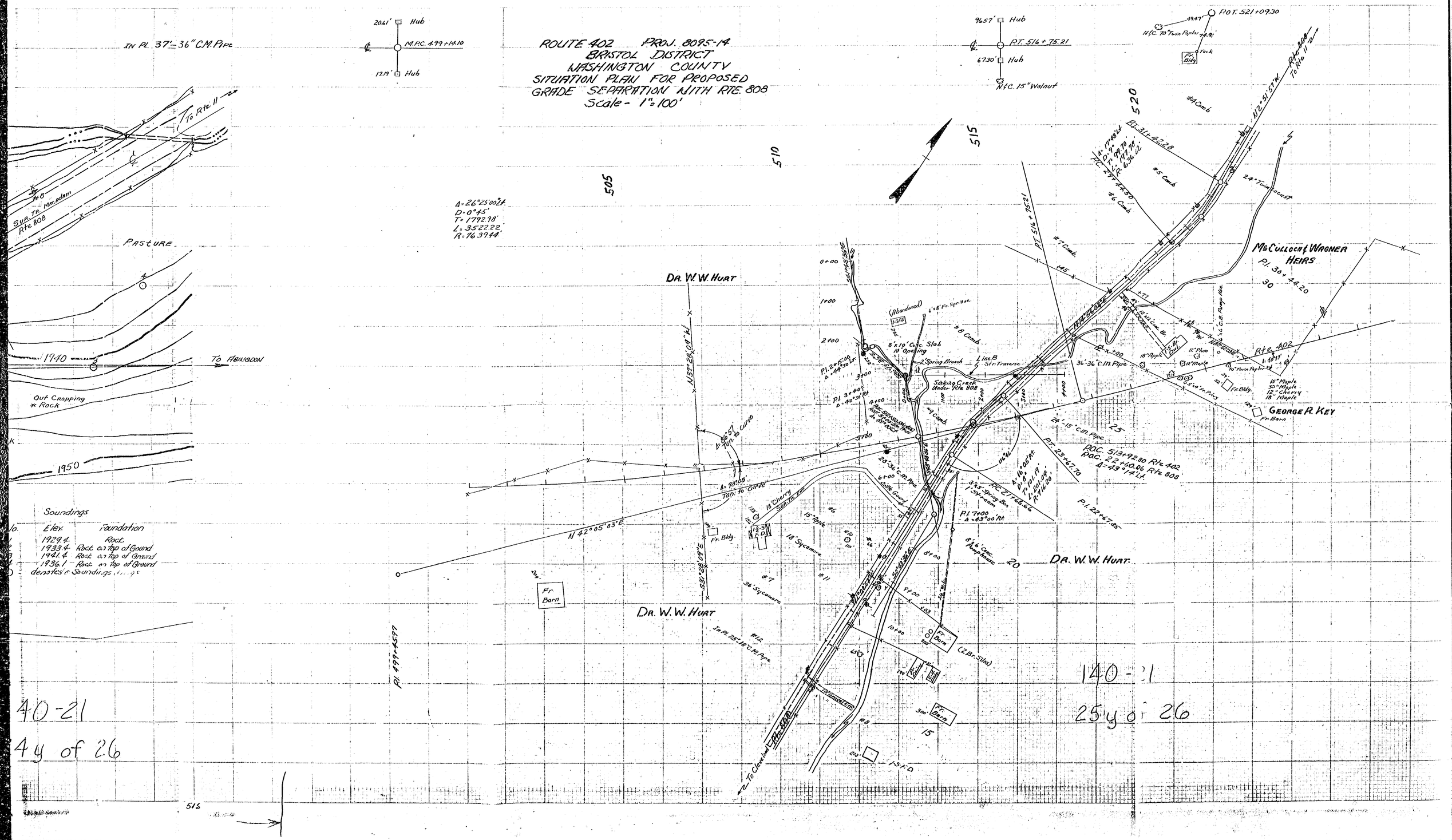
Survey by J. Z. Halbrook



140-21
24y of 26

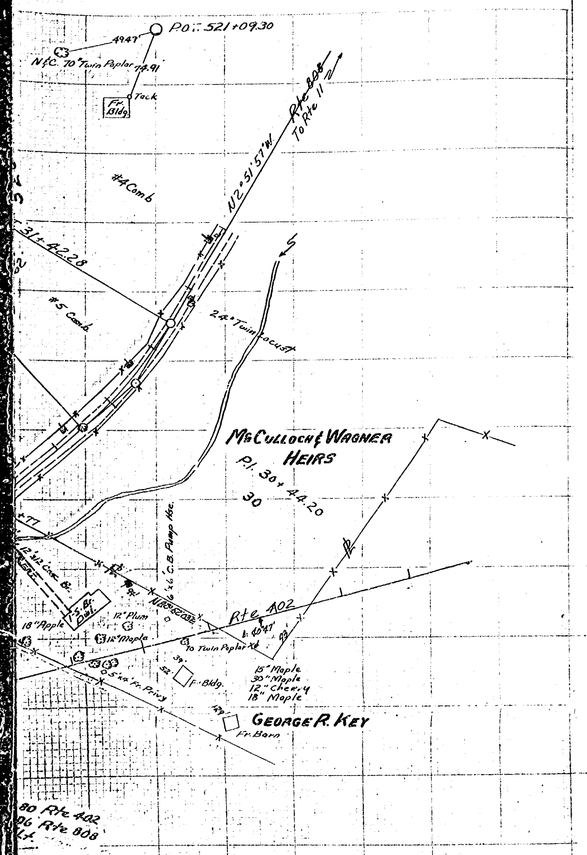
14-0-21
24Y

ROUTE 402 PROJ. 809S-14
BRISTOL DISTRICT
WASHINGTON COUNTY
SITUATION PLAN FOR PROPOSED
GRADE SEPARATION WITH RTE. 808
Scale - 1" = 100'



40-21
4 of 26

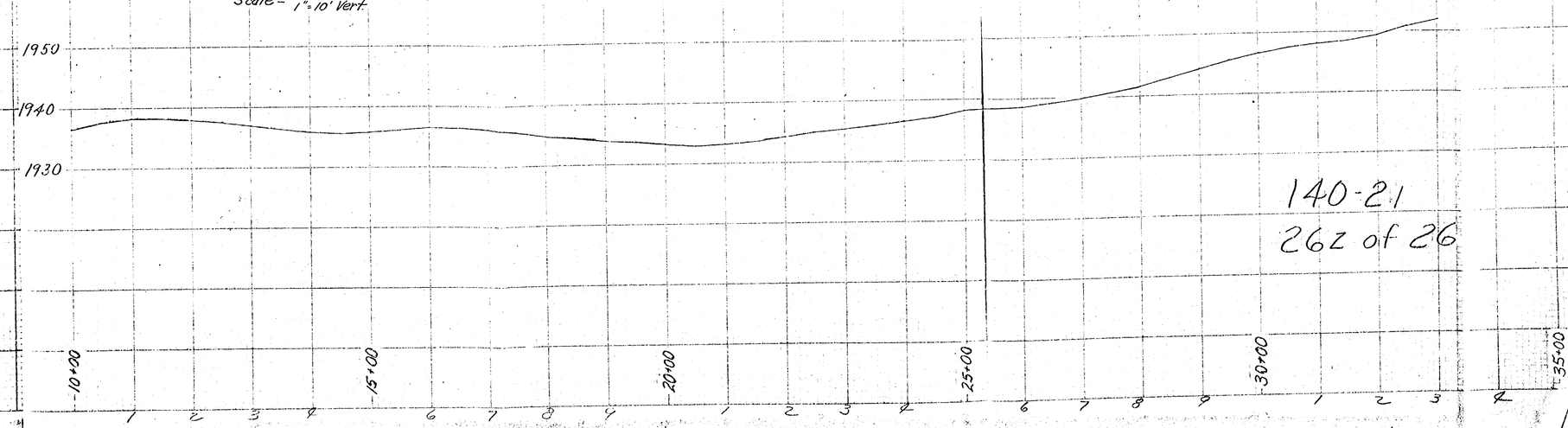
140-21
25 of 26



Profile Stream

B.M. N&C in Root 48" Oak
300' Lt. Sta. 513+00
Elev. 1933.49

Profile along ℄ Conn. Rte 808
Scale - 1" = 100' Hor.
1" = 10' Vert.



BRIDGE DIVISION
RECEIVED

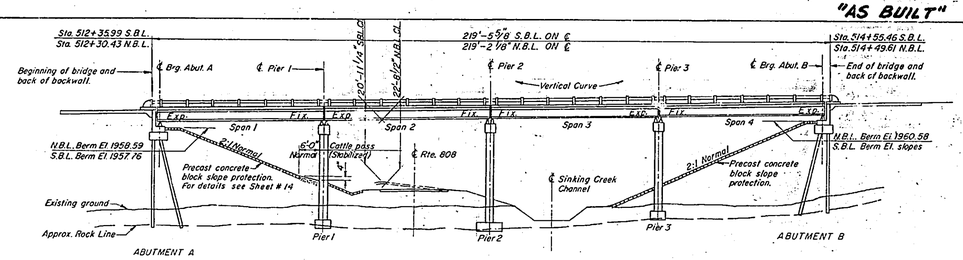
140-21
26z of 26

21
of 26

"AS BUILT"

PUB. ROAD DIV. NO.	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.	TOTAL SHEETS
2	VA.			81	0081-095 -204,SR01	1	

Old (8095-28)



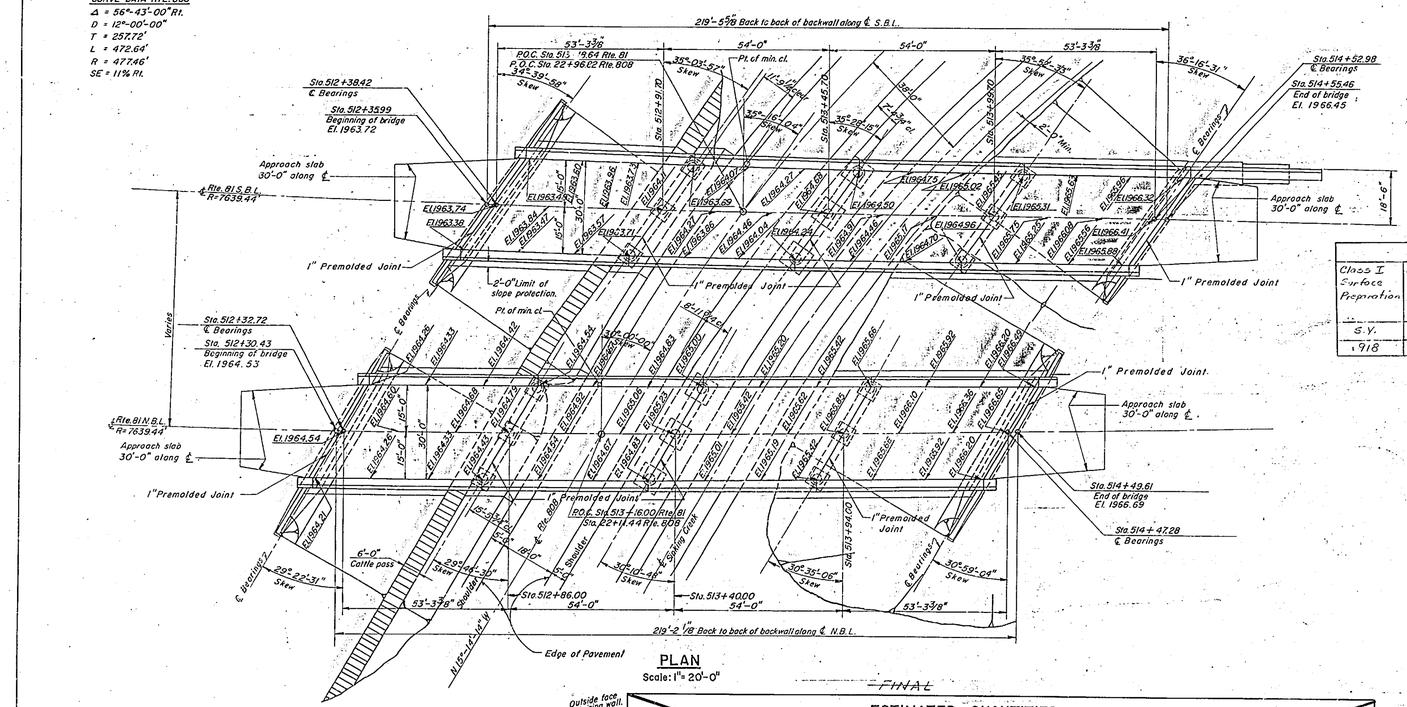
ELEVATION
Scale: 1" = 20'-0"

CURVE DATA RTE. 81

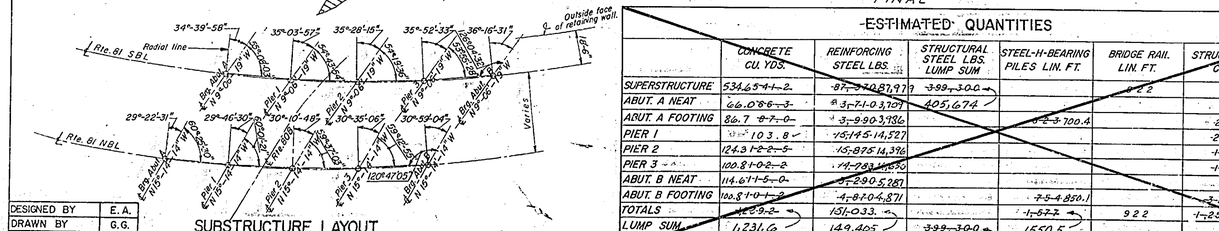
N.B.L.	S.B.L.
Δ = 26°-25'-00" Lt.	Δ = 26°-25'-00" Lt.
D = 0°-45'-00"	D = 0°-45'-00"
T = 1792.99'	T = 1792.99'
L = 3522.22'	L = 3522.22'
R = 7639.44'	R = 7639.44'

CURVE DATA RTE. 808

Δ = 56°-43'-00" Rt.
D = 12°-00'-00"
T = 257.72'
L = 472.64'
R = 477.46'
SE = 11% Rt.



PLAN
Scale: 1" = 20'-0"



SUBSTRUCTURE LAYOUT
No Scale

DESIGNED BY	E.A.
DRAWN BY	G.G.
CHECKED BY	F.E.B.

FINAL

ESTIMATED QUANTITIES

	CONCRETE CU. YDS.	REINFORCING STEEL LBS.	STRUCTURAL STEEL LBS. LUMP SUM	STEEL-H-BEARING PILES LIN. FT.	BRIDGE RAIL LIN. FT.	STRUCTURE EXC. CU. YDS.	CONC. SLOPE PROTECTION CL. Y(AE) SQ. YDS.
SUPERSTRUCTURE	534.6 ~~541.2~~	~~87,970~~ 87,977	~~399,300~~		922		
ABUT. A NEAT	66.0 ~~86.3~~	~~3,710~~ 3,707	405,674				
ABUT. A FOOTING	86.7 ~~87.0~~	~~3,990~~ 3,986		~~2,700~~ 2,700.4		~~266~~ 258	~~572~~ 551.7
PIER 1	103.8	~~15,145~~ 14,527				~~245~~ 201	
PIER 2	124.3 ~~122.5~~	~~15,875~~ 14,396				~~172~~ 164	
PIER 3	100.8 ~~102.2~~	~~14,783~~ 14,670				~~134~~ 128	
ABUT. B NEAT	114.6 ~~115.0~~	~~5,290~~ 5,287					
ABUT. B FOOTING	100.8 ~~101.2~~	~~4,810~~ 4,871		~~754~~ 850.1		~~379~~ 401	~~692~~ 727.1
TOTALS	~~532.9~~	151,033		~~1,572~~	922	~~1,256~~ 1,152	~~1,264~~
LUMP SUM	1,231.6	149,405	~~399,300~~	1,550.5			1,289.42
			405,674				

GENERAL NOTES

ROADWAY: 2-30'-0" clear roadway widths.
CAPACITY: H20-S16-44 and B.P.R. modified loading for military vehicles.
SPECIFICATIONS:
GENERAL—Virginia Department of Highways, Road and Bridge Specifications, 1958.
DESIGN—A.A.S.H.O. Standard Specifications for Highway Bridges, 1957.
SHEAR CONNECTORS—Special Provisions titled "Composite Stringer-Slab Construction", as revised to Aug. 19, 1959.
FOUNDATIONS: Shall be approved by the Engineer. Provision for variation from plan depths for foundation of piers shall be made by adjustment of column length, maintaining the same footing thickness shown on the Plans. Complete fill in front of abutments shall be placed and compacted with main approach fill to elevation of final subgrade and excavations shall be made through fill to indicated footing elevation.
CONCRETE: All concrete in structure shall be Class A (AE).
EXCAVATION: Structure Excavation shall not be classified. Excavation above subgrade and side slope template shall be classified as Regular Excavation; below, as Structure Excavation. The quantity of Regular Excavation is not included in the Bridge Plans.
QUANTITIES: Quantities for items on which "Lump Sum" bids are asked are approximate and are given for estimating purposes only.
BENCH MARK: N B C in root 48" Oak 300' Lt. Sta. 513+00 Elev. 1933.49.
PILES: All piles are 10 BP 42, and shall be driven to refusal.
ELEVATIONS: Deck elevations shown are for finished roadway and gutter at third points of span.
CHAMFER: Unless otherwise noted on the Plans, the edges of all exposed concrete surfaces shall be chamfered 3/4".

WORK ORDER #2

Mobilization	Barricade Group C	Warning Lights	Electronic Arrow	Removable Pavement Markings 4"	Removable Pavement Markings 8"	Eradication of Pavement Markings	Preformed Elastomeric Joint Sealer 2½"
Lump Sum	DAY	DAY	HR.	L.F.	L.F.	L.F.	L.F.
Lump Sum	~~1000~~	~~100~~	~~2000~~	~~3000~~	~~3000~~	~~2000~~	~~215~~
	2736	3432	4262	2726	4000	1822	235

WORK ORDER #2

Class I Surface Preparation	Class II Surface Preparation	Class III Surface Preparation	Latex Portland Cement Concrete	Concrete Traffic Barrier Service	Barricade Group 2 Modified	Expansion Joint Removal	Remove Bituminous Overlay	Special Design Bridge Guardrail	Waterproofing Class I
S.Y.	S.Y.	S.Y.	C.Y.	L.F.	DAY	L.F.	S.Y.	L.F.	S.Y.
918	~~160~~	~~90~~ 0	~~66~~	~~1032~~	~~100~~	175	918	438	158
	305.1		81	1284	352				

Finals Posted Sept. 13, 1969
Bristol Dist. by W.L. Jackson

L.C. URQUHART

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF HIGHWAYS
PROPOSED BRIDGE REPAIRS
RTE. 81 OVER RTE. 808 & SINKING CREEK
STA. 513+16.00 N.B.L. STA. 513+18.64 S.B.L.
PROJECT 0081-095-204, SR01 WASHINGTON CO.
FOUR 54'-0" COMPOSITE STEEL BEAM SPANS

RICHMOND, VIRGINIA

Submitted for Approval: J. N. Clary, Bridge Engineer
Recommended for Approval: M. R. Shelden, Assistant Chief Engineer
Approved: H. G. Wilson, Deputy Commissioner and Chief Engineer

PORTER, URQUHART, McCREARY, & O'BRIEN
CONSULTING ENGINEERS
NEWARK, N.J.
SUBMITTED BY C.H. Pinckney

VIRGINIA DEPARTMENT OF HIGHWAYS
OFFICE OF THE BRIDGE ENGINEER
RICHMOND, VIRGINIA

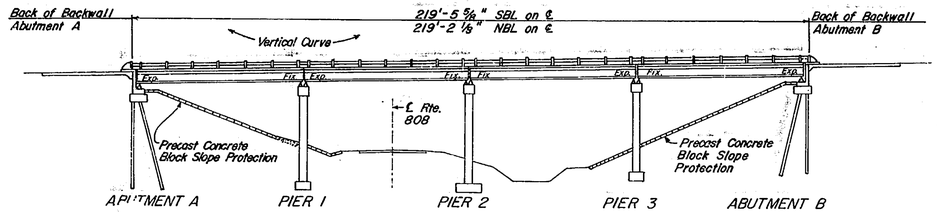
Scale: As noted
Date: Dec. 31, 1958
Sheet 1 of 1
140-21A ~~CXL-21~~
12 of 1

PR534 DATA 11310

"AS BUILT" PLANS

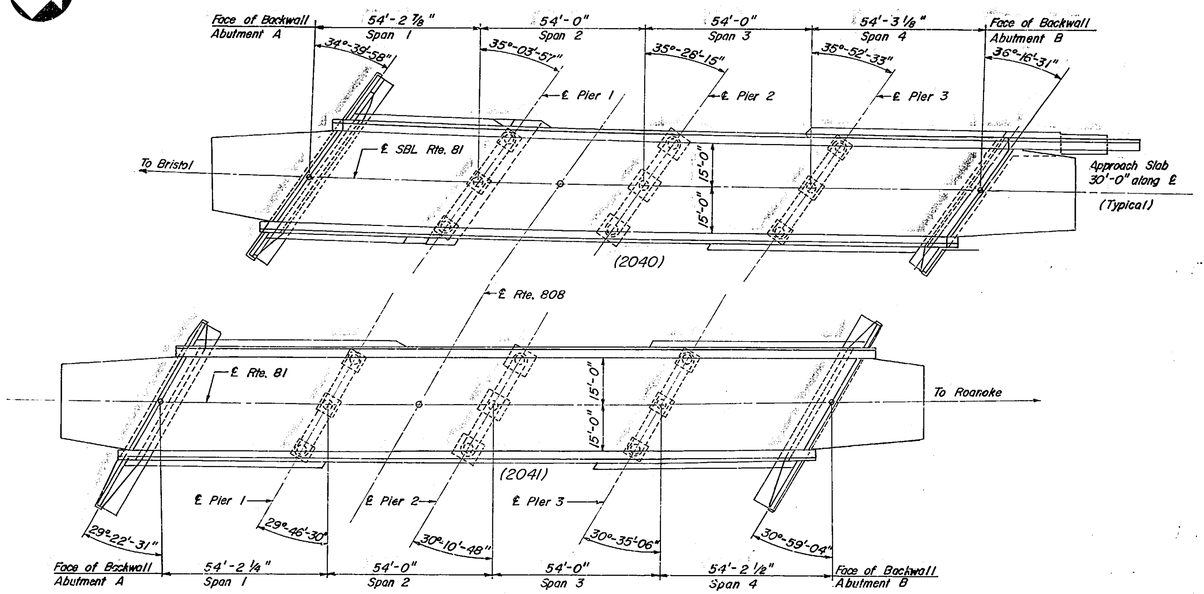
FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			81	0081-095-2040,SR01	1
				81	0081-095-2041,SR02	
No Additional Right of Way is Required						

X471-S8



ELEVATION

Scale: 1" = 20'-0"



PLAN

Scale: 1" = 20'

GENERAL NOTE:

Width: 30'-0" face to face of curbs.

Specifications: Virginia Department of Transportation Road and Bridge Specifications, 1987.

Standards: Virginia Department of Transportation Road and Bridge Standards, 1989.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

This project is to be constructed in accordance with the Virginia Department of Transportation Work Area Protection Manual, January, 1987.

All concrete shall be Class A4. All epoxy shall be Epoxy, Type EP-5.

Bridge numbers of existing structures are 2040(SBL) and 2041(NBL). Plan number is 140-21.

Class II and Class III Surface Preparation shall be performed at selected locations as determined by the engineer in the field.

The final inspection of the deck for delamination determination shall be made after the deck has been sandblasted and cleaned following Class I Surface Preparation.

Bridge shall be kept open to traffic at all times with 12'-0" minimum roadway.

Repairs to abutments and piers shall be done at selected locations as determined by the engineer in the field and is to be paid for as Concrete Substructure Repair at the contract unit bid price per square foot. This price shall be full compensation for furnishing and installing all material, including concrete, epoxy bonding compound, and for all materials, labor, tools, equipment, and incidentals necessary to complete the work, including removal and disposal of existing material. Price shall also include cleaning all exposed reinforcing steel.

Special Design Bridge Guardrail includes removal of existing approach guardrail and installation of new guardrail and delineators across entire length of bridge. For guardrail reuse, the contractor shall be responsible for furnishing additional materials as required to comply to current standards. Existing guardrail damaged by construction practices shall be replaced at the contractors expense.

Prepare and Spot Point Existing Structure No. 2040 and No. 2041 shall include cleaning and painting all bearings, all exposed areas along a 2'-0" length of the beam ends, end diaphragms, and end diaphragm connectors, using paint system A.

Finish paint shall be Brown, No. 595-20219.

Finals posted in Bristol District Office - January, 1991.

Contractor - Overlay Inc.
P.O. Box 133
Mitchellsburg, Ky. 40452

ACTUAL ~~ESTIMATED~~ QUANTITIES

	Group 2 Channelizing Devices	Warning Lights	Electronic Arrow	Construction Pavement Markings 4" (Type D)	Construction Pavement Markings 8" (Type D)	Eradication of Existing Pavement Markings	Traffic Barrier Service Concrete Std. MB-7APC	Remove Asphaltic Concrete Overlay	Asphaltic Pavement Planing	Asphalt Concrete Type SM-2A	Class I Surface Preparation	Class II Surface Preparation	Class III Surface Preparation	Latex Portland Cement Concrete	Waterproofing Class I	Expansion Joint Removal	Preformed Elastomeric Joint Seater 2 1/2"	Clean and Reseal Expansion Joints	Bridge Deck Grooving	Concrete Substructure Repair	Prepare and Spot Point Existing Structure (Type B)	Stone Riprap (Variable Depth)
UNIT	DAY	DAY	HOUR	L.F.	L.F.	L.F.	L.F.	* S.Y.	△S.Y.	TON	* S.Y.	* S.Y.	S.Y.	* C.Y.	⊗S.Y.	L.F.	⊗L.F.	L.F.	* S.Y.⊗	S.F.	* S.F.	⊗TON
SBL-2040	~~2800~~ 2976	~~1800~~ 2976	~~4300~~ 2976	~~2800~~ 2200	4000	~~1900~~ 2884	~~1560~~ 1512	~~746~~ 905	~~267~~ 0	~~31~~ 0	905	~~300~~ 163	~~10~~ 0	~~51~~ 85.2	310	212	212	74	~~925~~ 0	~~130~~ 322	~~1400~~ 1440	~~3~~ 0
NBL-2041	—	—	—	—	—	—	—	—	—	—	—	—	—	—	155	—	—	—	—	~~120~~ 451	1400	—
TOTALS	~~2800~~ 2976	~~1800~~ 2976	~~4300~~ 2976	~~2800~~ 2200	4000	~~1900~~ 2884	1560	~~746~~ 905	267	~~31~~ 0	905	~~300~~ 163	~~10~~ 0	~~51~~ 85.2	465	212	212	74	~~925~~ 0	~~250~~ 773	~~2800~~ 2840	~~3~~ 0

Mobilization - Lump Sum
Environmental Protection - Str. No. 2040 - Lump Sum
-Str. No. 2041 - Lump Sum

Disposal of Waste - Str. No. 2040 - Lump Sum
-Str. No. 2041 - Lump Sum

Special Design Bridge Guardrail
Str. No. 2040 (BR-GR-4D) — Lump Sum

△Approximately 50' of approach roadway asphalt material at each end of approach slabs shall be removed at a depth of 2" and replaced with asphalt material Type SM-2A to provide a smooth transition to the bridge surface.

Shoulders shall be paved at approaches as required by the engineer to provide smooth transitions during work.

* Includes approach slabs

WORK TO BE DONE BY STATE FORCES
1. Pavement Marking - T.E.C. (After contract is completed)
2. Construction Signs - T.E.C. (Sign panels only)

⊗Denotes item to be paid for on basis of plan quantities in accordance with current Road and Bridge Specifications.

Truck Mounted Crash Cushion (Str. 2040) --- ~~168~~ 43 Hours

⊗Materials for Stone Riprap (Variable Depth) shall conform to section 418.03 of the specifications.

REVISIONS
For Table of Revisions, see Sheet 2.

BRISTOL DISTRICT
SUPERVISED: DPG
DESIGNED: WDP
DRAWN: WDP
CHECKED: VLC

COMMONWEALTH OF VIRGINIA
DEPARTMENT
OF
TRANSPORTATION

PROPOSED BRIDGE REPAIRS ON
RTE. 81 OVER RTE. 808 & SINKING CREEK
WASHINGTON COUNTY - 1.97 MI. S. RTE. 611
PROJ. 0081-095-2040, SR01; 2041, SR02

Recommended for Approval: Fred P. Gustafson 3-23-90
Structure and Bridge Engineer

Recommended for Approval: D. R. Gee 3/30/90
Assistant Chief Engineer

Approved: J. Stodge 3/30/90
Chief Engineer

Date March 23, 1990

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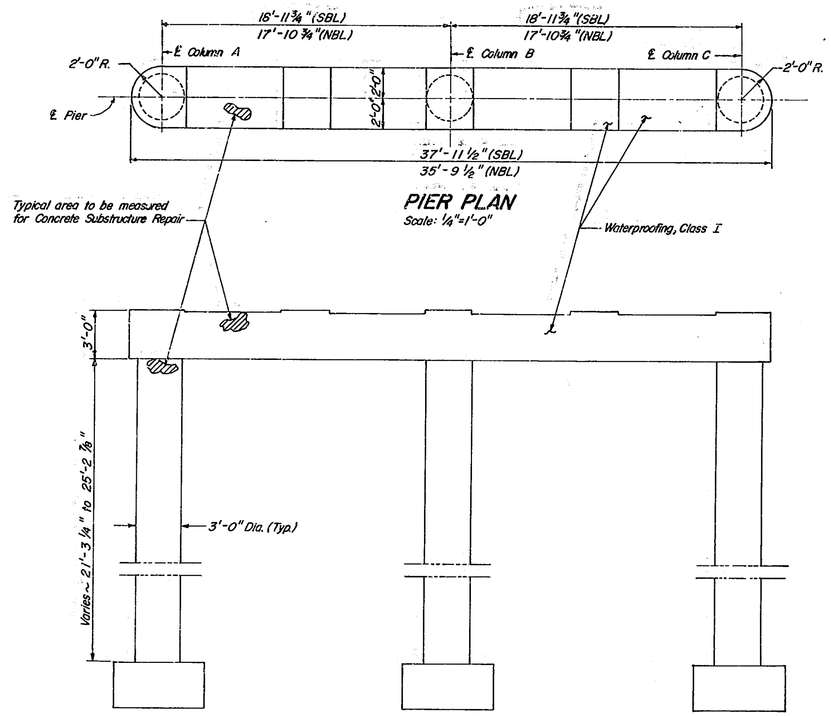
140-21B
Sheet 1 of 4

american blueprint of columbia

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			81	0081-095-2040,SR01	2
				81	0081-095-2041,SR02	

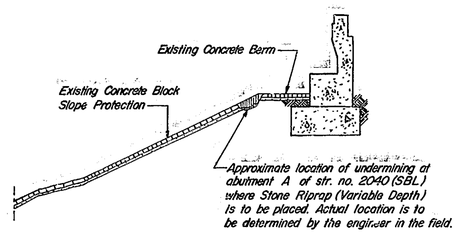


PIER PLAN

Scale: ¼"=1'-0"

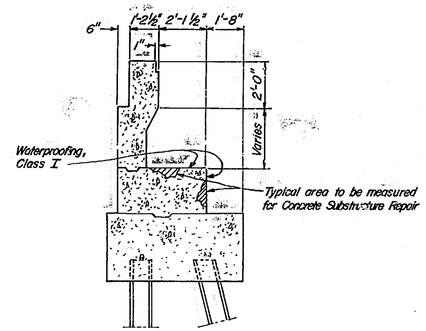
PIER ELEVATION

Scale: ¼"=1'-0"



SLOPE PROTECTION

No Scale



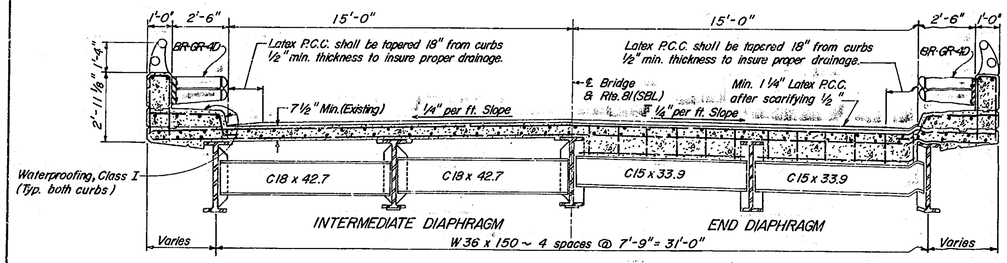
ABUTMENT SECTION

Scale: ⅜"=1'-0"

NOTES:

Waterproofing, Class I is to be applied to all exposed areas along entire length of curbs, abutment seats, and pier caps as shown on this sheet. All areas to be waterproofed shall be throughly cleaned in accordance with section 421 of the specifications.

When performing Concrete Substructure Repair, remove all deteriorated concrete and recast to original dimensions using Class A4 Concrete. See note on sheet 1 for location selection. Care shall be taken during preparation of areas to maintain the structural integrity of the substructure. Where it may be deemed necessary to extend repairs more than 2' into bearing area, the District Bridge Engineer shall be notified and determine the scope of work to be performed. Large areas on pier columns shall be repaired in stages as approved by the engineer. In no case shall areas which extend more than one-third of the pier column circumference be removed and repaired at one time.



TYPICAL TRANSVERSE SECTION

Scale: ⅜"=1'-0"

Rev. No.	Sheets Revised	Date

TABLE OF REVISIONS

No.	Description	Date

Revisions

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

MISCELLANEOUS DETAILS

Designed: WDP	Date	Plan No.	Sheet No.
Drawn: WDP	March, 1990	140-21B	2 of 4
Checked: VLC			

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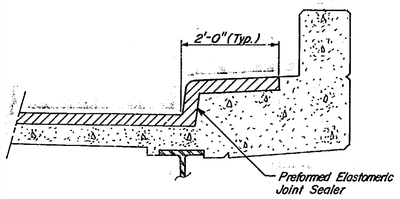
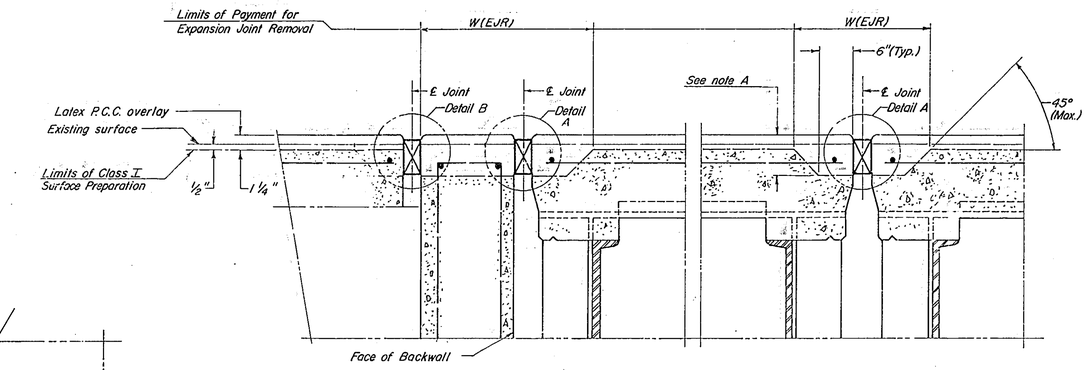
american blueprint of columbia

FHWA REGION	STATE	FEDERAL AID ROUTE	FEDERAL AID PROJECT	STATE ROUTE	STATE PROJECT	SHEET NO.
3	VA.			81	0081-095-2040,SR01	3

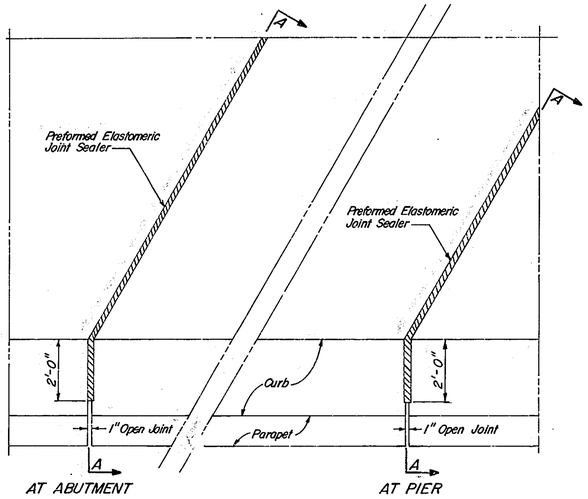


SECTION A-A



AT ABUTMENTS AT PIERS

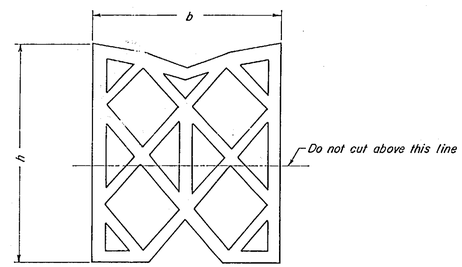
SECTION THROUGH JOINTS



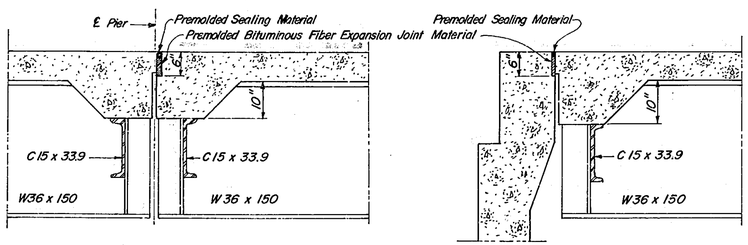
Actual conditions at abutments may vary from the detail shown. Unless otherwise shown this detail shall apply.

AT ABUTMENT AT PIER

EXPANSION JOINT PLAN

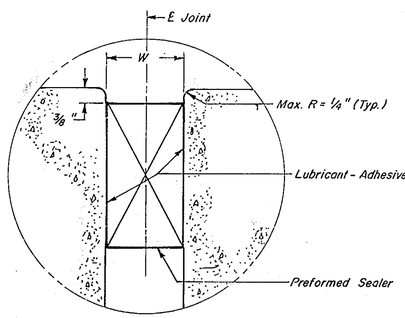


PREFORMED ELASTOMERIC JOINT SEALER
(In Uncompressed State)

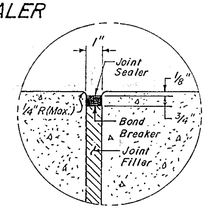


AT PIER AT ABUTMENT

EXISTING EXPANSION JOINTS



DETAIL A



DETAIL B
(Filled joints for cleaning & resealing)

No Scale

NOTES:

Preformed elastomeric joint sealer shall be heavy duty structural type sealer and may vary slightly depending on manufacturer.

As nearly as possible, sides of joints shall be straight, vertical, and parallel. The area of the installation shall be free from cracks and spalls.

Sealer shall be installed in one continuous piece applying lubricant-adhesive on the side of joint prior to installation.

Joint width W is the final joint width of the cured concrete when placed at 60° F. The width W shall be increased or decreased for every 10° F temperature drop or rise respectively by t.

Latex P.C.C. overlay placed on the approach slabs shall be tapered from a minimum thickness of 1 1/4" at the abutment to a minimum thickness of 3/4" at the roadway end to provide a smooth transition between road and bridge surfaces.

Note A:
Expansion Joint Removal along joints shall extend 1" minimum below the top mat of reinforcing steel or the compressed depth of the sealer, according to the manufacturer's product data, measured from the existing surface, whichever is greater. "Existing surface" is defined for these details as the surface of the concrete approach slab, abutment backwall, or bridge deck after any wearing course has been removed. Latex P.C.C. shall be placed in these areas monolithic with the overlay and is included with the estimated quantity Latex Portland Cement Concrete.

The required joint openings may be constructed as shown or cast smaller than required and saw cut to necessary dimensions.

Cleaning and resealing filled joints shall be paid for as Clean and Reseal Expansion Joints at the contract unit bid price per lineal foot. This price shall be full compensation for furnishing and installing all material and for all labor, tools, equipment, and incidentals necessary to complete the work.

	Abutment	Pier	Sealer Size b	Sealer Depth h	Joint Width W	t	Exp. Jt. Removal W(EJR) *
2040(591)	A		2 1/2"	2 3/8" ±	1 1/2"	3/64"	2'-0"
		1	2 1/2"	2 3/8" ±	1 1/2"	3/64"	2'-0"
		2	2 1/2"	2 3/4" ±	1 1/2"	0"	2'-0"
		3	2 1/2"	2 3/8" ±	1 1/2"	3/64"	2'-0"
	B		2 1/2"	2 3/8" ±	1 1/2"	3/64"	2'-0"

* W(EJR), width of Expansion Joint Removal, is approximate and is shown for estimating purposes only.

No.	Description	Date
	Revisions	

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION
STRUCTURE AND BRIDGE DIVISION

JOINT REPAIR DETAILS

Designed: WDP	Date	Plan No.	Sheet No.
Drawn: WDP	March, 1990	140-21B	3 of 4
Checked: VLC			

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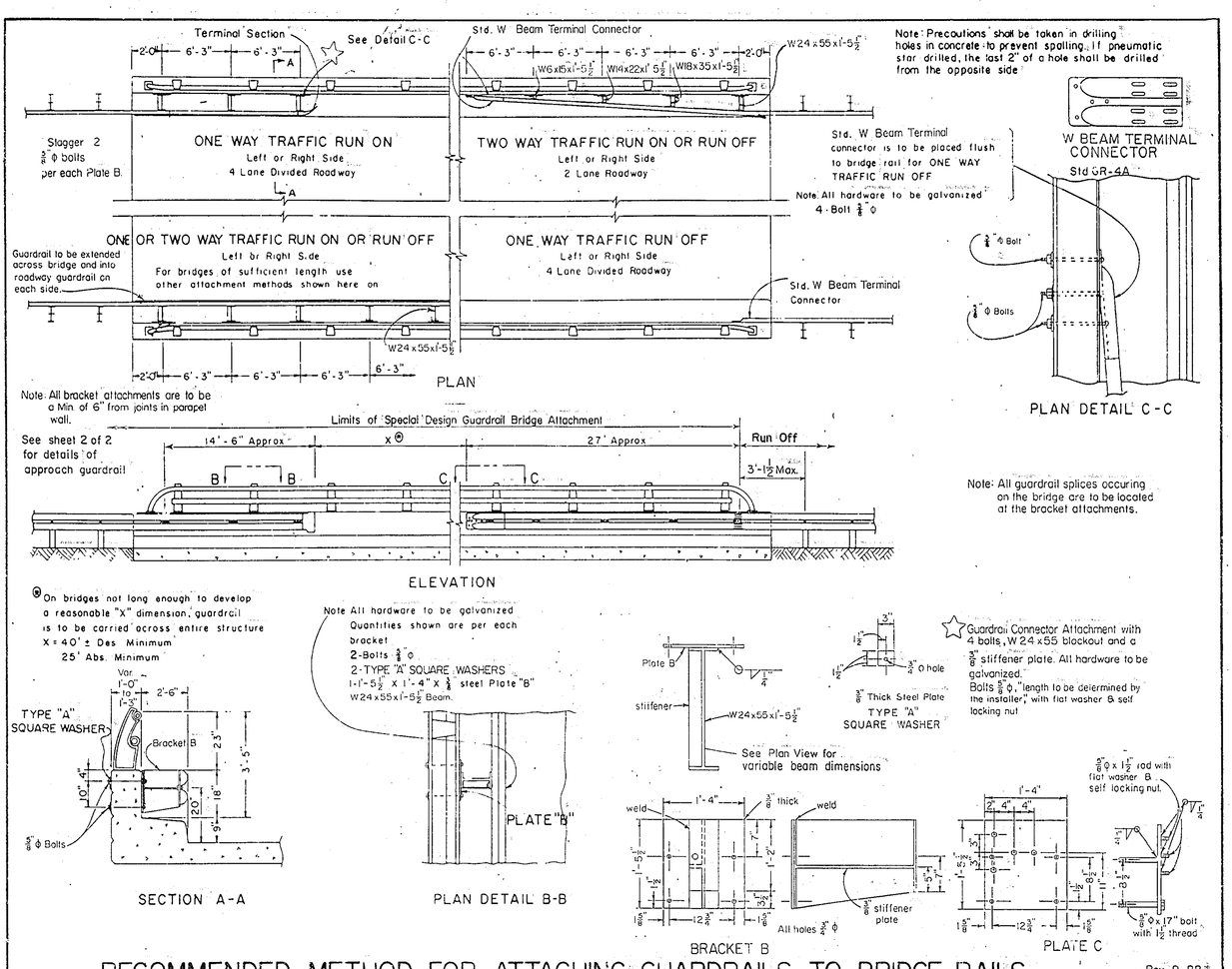
PLAN NOTEBOOK No.		BY	DATE
	SURVEYED		
	PLOTTED		
	ALIGNMENT CHECKED		
	RT OF WAY CHECKED		

SUPERVISED BY _____

DESIGNED BY _____

VDOT NO. 6013

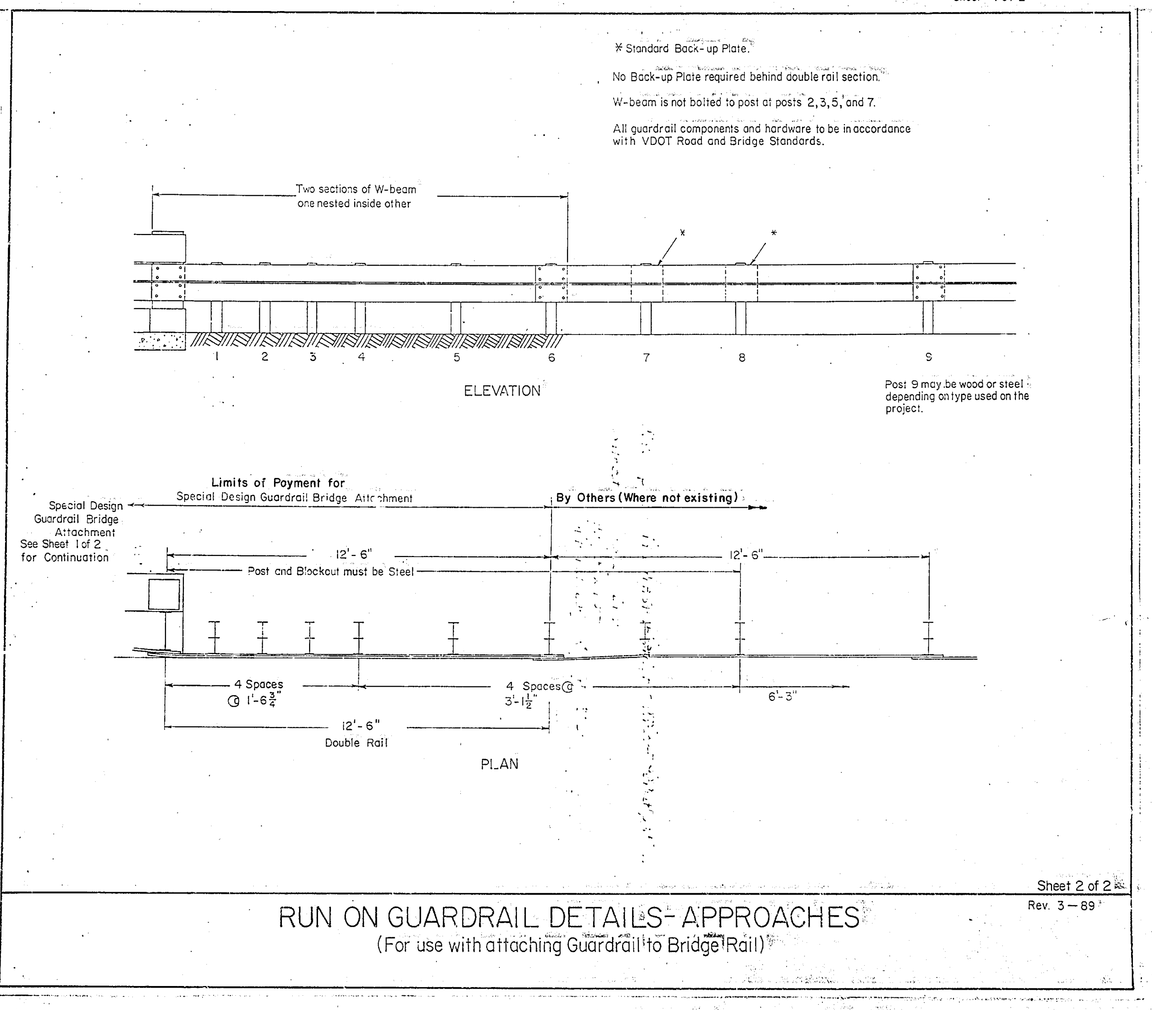


RECOMMENDED METHOD FOR ATTACHING GUARDRAILS TO BRIDGE RAILS

Rev. 9-88

BR-GR-4D

Sheet 1 of 2



RUN ON GUARDRAIL DETAILS - APPROACHES

(For use with attaching Guardrail to Bridge Rail)

Sheet 2 of 2

Rev. 3-89

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT.

REVISED	DISTRICT	STATE	FEDERAL AID PROJECT	ROUTE	STATE PROJECT	SHEET
	3	VA.		81	0081-095-2040, SR01	4

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PLAN NO. 140-21B

PROJECT

FILE NO.

SHEET NO. 4 of 4

1 4 0 - 2 1 B 0 9 4