F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	1	24

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAYS

EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
PROJECT NO. 6217
CONTRACT NO. 2 - SUPERSTRUCTURE

CONVENTIONAL SIGNS

COUNTY LINES		TRAVELLED WAY - PROPOSED	
TOWN LINES		UNDERGROUND UTILITIES - EXISTING	
PROPERTY LINES		UNDERGROUND UTILITIES - PROPOSED	
R/W LINES - EXISTING		RAILROAD - SINGLE TRACK	
R/W LINES - NEW - ACCESS CONTROL		RAILROAD - DOUBLE TRACK	
R/W LINES - NEW - NO ACCESS CONTROL		UTILITY POLE - EXISTING	
CULVERT - EXISTING		UTILITY POLE - JOINT OCCUPANCY	J
CULVERT - PROPOSED		PROPOSED UTILITY POLE - TEMPORARY	X
CURBING - EXISTING		PROPOSED UTILITY POLE - PERMANENT	
CURBING - PROPOSED		TREES	hardwood, softwood
TRAVELLED WAY - EXISTING		WOODS	

SPECIFICATIONS

DESIGN = AASHO Specifications for Highway Bridges 1969 and interim Specifications 1970, 1971 and 1972.

CONTRACT = State of Maine, State Highway Commission, Standard Specifications, Highways and Bridges, Revision of June 1968.

DESIGN LOADING

LIVE LOAD = HS 20-44

MATERIALS

CONCRETE.....Class "A"

REINFORCING STEEL.....ASTM A615 Grade 60

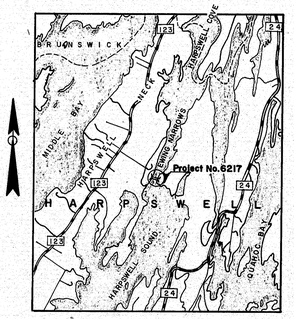
STRUCTURAL STEEL = Girder Web Plates.....ASTM A36
Flange Plates.....ASTM A36 and A572 Grade 50
High Strength Bolts.....ASTM A325
All Other.....ASTM A36

BASIC ALLOWABLE STRESS

CONCRETE = f_c = 1200psi

REINFORCING STEEL = f_s = 24,000psi

STRUCTURAL STEEL = ASTM A36.....f_s= 20,000psi
ASTM A572 Grade 50...f_s = 27,000psi
ASTM A325.....f_v =13,500psi



SCALE IN MILES

TRAFFIC DATA

A.D.T.	1972	148
A.D.T.	1992	350
D.H.V.		53
T. (%)		
D. (%)		
V.		
P.S.D. (%)		
18 KIPS		

INDEX OF SHEETS

TITLE SHEET 1
ESTIMATE OF QUANTITIES 2
GENERAL PLAN & ELEVATION 3
SURVEY 4-6
CROSS SECTIONS 7
ABUTMENT BACKWALL 8
FRAMING PLAN & HAUNCH DETAIL 9
SPLICE & LATERAL DETAIL 10
BEARING PEDESTAL, ARMORED JOINT & EXPANSION DAM DETAILS 11
CAMBER DIAGRAM & BLOCKING 12
SUPERSTRUCTURE SLAB 13
END POST, APPROACH SLAB & JOINT DETAILS 14
NAVIGATION LIGHTING DETAILS 15
REINFORCING STEEL SCHEDULE 16

REFERENCE SHEETS:

BRIDGE STANDARDS

BD 100-71 BEARING PEDESTALS 17
BD 104-71 ARMORED JOINT, SHEAR CONNECTORS & DRAINS 18
BD 105-64 EXPANSION DAMS 19
BD 113-72 DIAPHRAGMS & CROSSFRAMES 20
BD 114-73 ALUMINUM RAILING 21

HIGHWAY STANDARDS

AUGUST 1969 (6) GUARD RAIL 22
AUGUST 1969 (11) BARRICADES & WARNING SIGNS 23
AUGUST 1969 (12) FIELD OFFICE 24

COAST GUARD PERMIT NO. 74-72

APPROVED:

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

Earl H. Stevens — COMMISSIONER — DATE Aug. 29, 1973

Richard A. Barthel — CHIEF ENGINEER AND BUREAU DIRECTOR — Aug. 29, 1973

ALBERT A. LUSTIG 1728 REGISTERED PROFESSIONAL ENGINEER

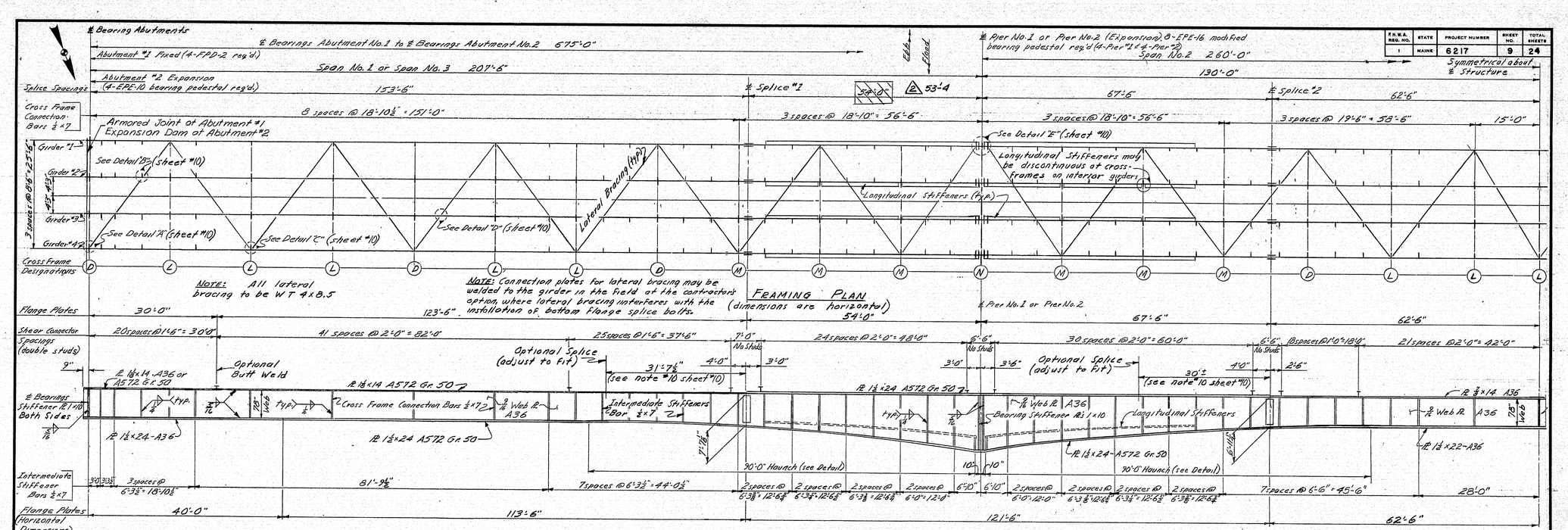
JANUARY 1968

Contract Completed 1975 ARC 3/21/75

139-48

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

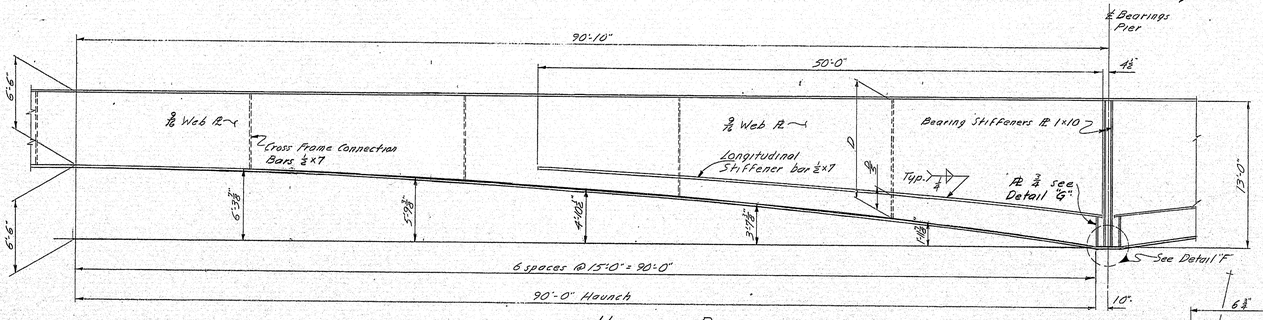
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	9	24



Number of Shear Connectors required = 2,920
Number of Shear Connectors required per girder = 730

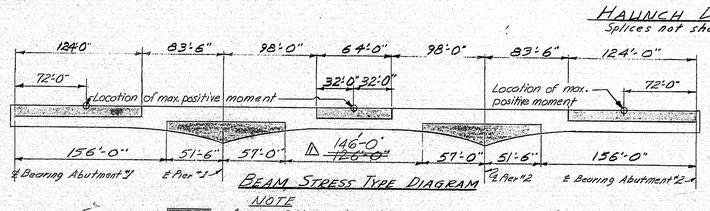
GIRDER ELEVATION

Girder "1 shown, Girders "2 thru "4 similar
(dimensions are horizontal)



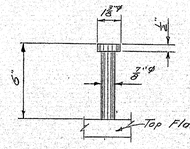
HAUNCH DETAIL

Splices not shown

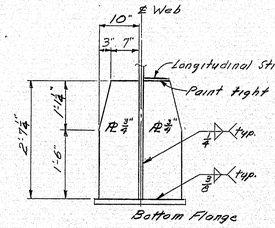


BEAM STRESS TYPE DIAGRAM

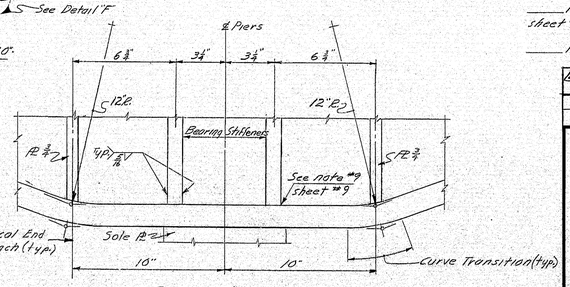
NOTE
▒▒ = Areas of the Girder which will always be in compression.
All other areas will be in tension or are areas which have stress reversals.



STUD DETAIL



DETAIL "G"



DETAIL "F"

REFERENCES

- ____ For Structural Steel Notes see sheet #10.
- ____ For Splice Detail see sheet #10
- ____ For Expansion Dam Detail see sheet #11 & Standard Detail sheet BD 105-64.
- ____ For Armored Joint Details see sheet #11 & Standard Detail sheet BD 104-71.
- ____ For Shear Connectors & Drain Details see Standard Detail sheet BD 104-71. For Stud Detail see this sheet.
- ____ For Bearing Pedestal Details see sheet #11 & Standard Detail sheet BD 100-70.
- ____ For Aluminum Bridge Railing see Standard Detail sheet BD 114-73
- ____ For Diaphragm & Cross Frame Details see sheet #10 & Standard Detail sheet BD 113-72.
- ____ For Details "A" thru "E" see sheet #10.

BY	DATE
M.C.A.	12-72

PLANS
DESIGN - DETAILED
CHECKED
REVISIONS
FIELD CHANGES

Revision. Splice "1 relocation	EBC	11-13-73
Checked	G.O.T	11-13-73
Rivision	MMG	9-27-73
Dimension marked △ modified.		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
FRAMING PLAN & HAUNCH DETAIL

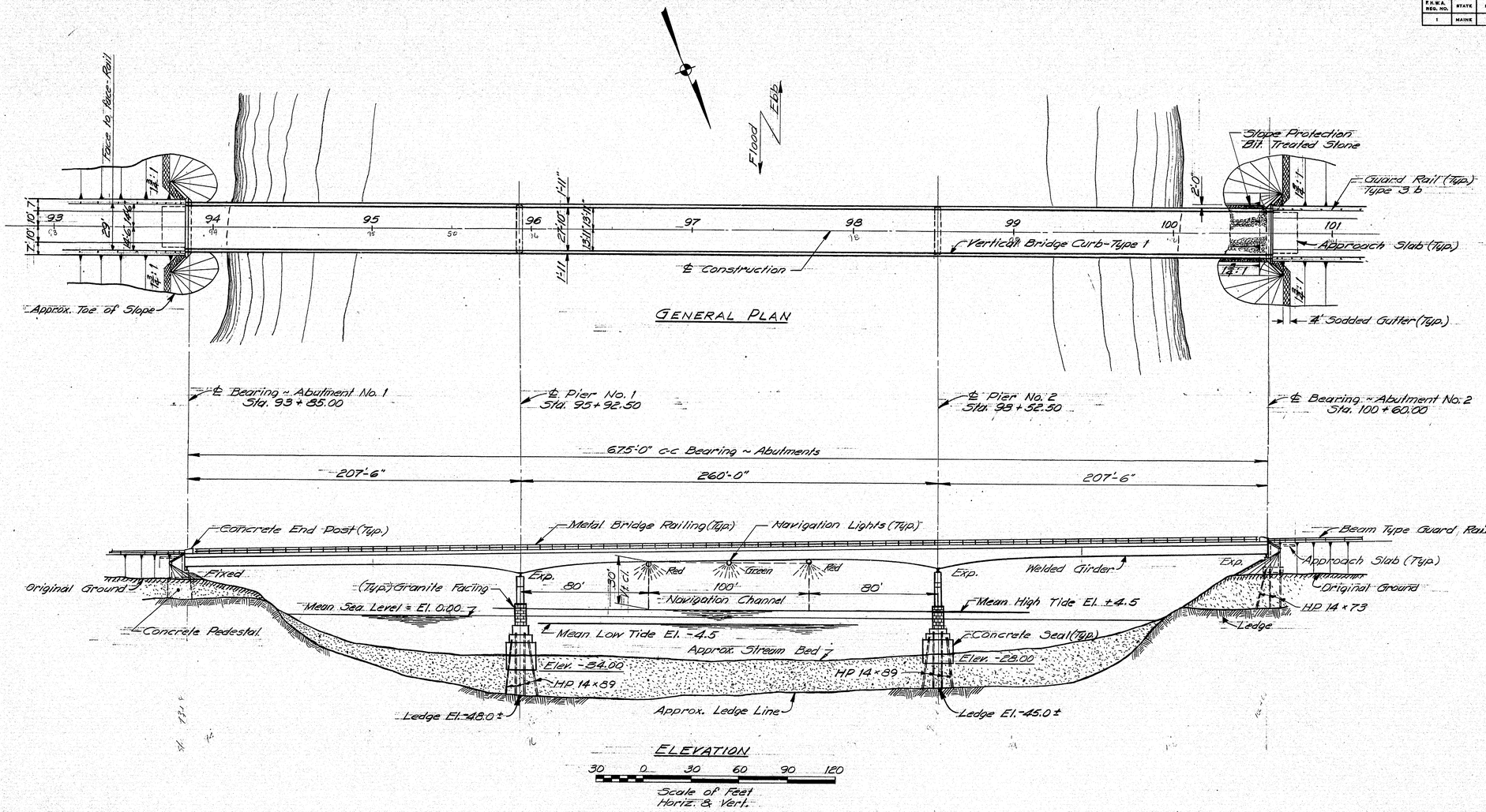
SHEET 9 OF 24 AUGUSTA, MAINE SEPT. 1973

139-56

JANUARY 1969

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	3	24



GENERAL PLAN

ELEVATION

30 0 30 60 90 120

Scale of Feet
Horiz. & Vert.

PROJ. DESIGN ENGINEER–	BY	DATE
PLANS	DESIGN–DETAILED	
	CHECKED	
	REVISIONS	
	FIELD CHANGES	

JANUARY 1969

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

EWING NARROWS BRIDGE

IN THE TOWN OF

HARPSWELL
CUMBERLAND COUNTY

GENERAL PLAN & ELEVATION

SHEET 3 OF 24 AUGUSTA, ME. SEPT. 73

139-50

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

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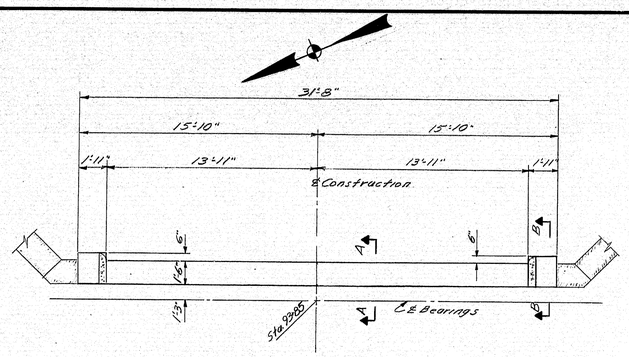
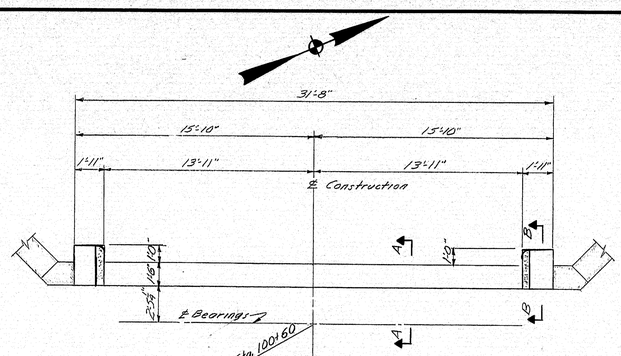
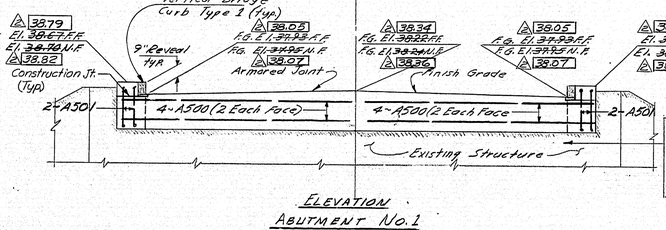
1	MAINE	6217	8	24



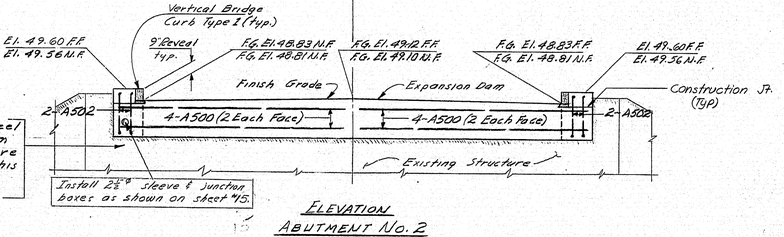
PLAN
ABUTMENT No.1



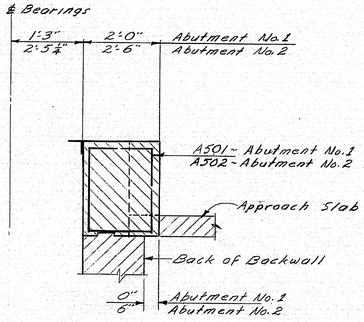
PLAN
ABUTMENT No. 2



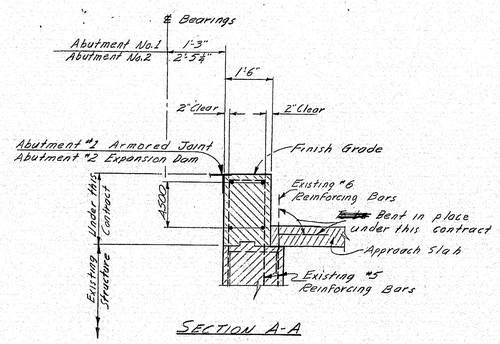
ELEVATION
ABUTMENT No.1



ELEVATION
ABUTMENT No.2



SECTION B-B



SECTION A-A

NOTES:

1. Chamfer all exposed edges of concrete ¾ inch unless otherwise indicated.
2. ~~Break bond at vertical contraction joint by a method approved by the Engineer.~~
3. Placed concrete in top of abutment backwall after the superstructure slab has been placed.
4. Protective Coating for Concrete Surfaces was ~~Shall be~~ applied to the top and 1'-0" down the back of the backwalls. Applied Protective Coating for Concrete Surfaces To the face of backwall abutment #2 in the contract #2.
5. Waterstops not required on any Vertical or Horizontal Joints.
6. Reinforcing Steel ~~shall have~~ 2" cover unless otherwise indicated.

REFERENCES

- For Abutment End Curb Details see sheet No. 12
- For End Post Details see sheet No. 14
- For Approach Slab Details see sheet No. 14
- For location of 2" Conduit and Junction Boxes at Abutment #2 see sheet No. 15.
- For Armored Joint Detail see Standard sheet BD 104-71 & sheet No. 11.
- For Expansion Dam Detail see Standard sheet BD 105-64 & sheet No. 11.

PLANS	DESIGN - DETAILED	BY	DATE
	CHECKED	R.F.V.A.	4-73
	REVISIONS		
	FIELD CHANGES		

Revision EBC 10-3-74
Grade Change See Sh. #7, B, 12 (Δ)
Revision Chk: WCE 10-4-74
Revision MMG 9-27-78
Note #2 cancelled. (Marked with Δ)

Revised As Built [illegible] 3/21/75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
ABUTMENT BACKWALL

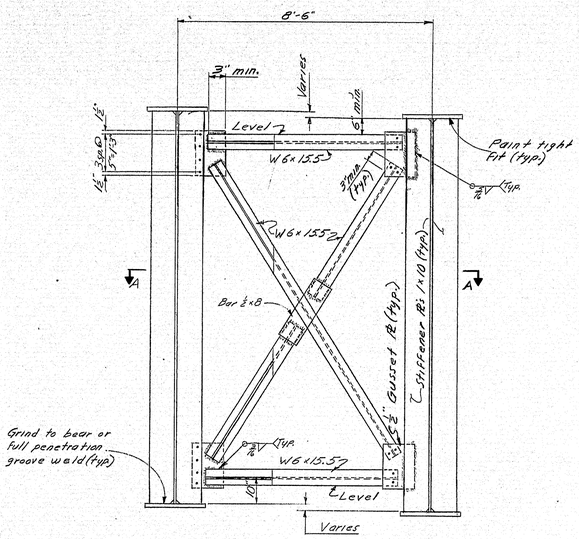
SHEET 8 OF 24 AUGUSTA, MAINE SEPT. 1973

139-55

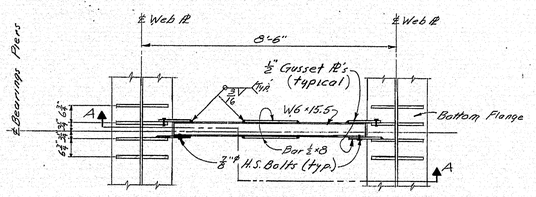
JANUARY 1968

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

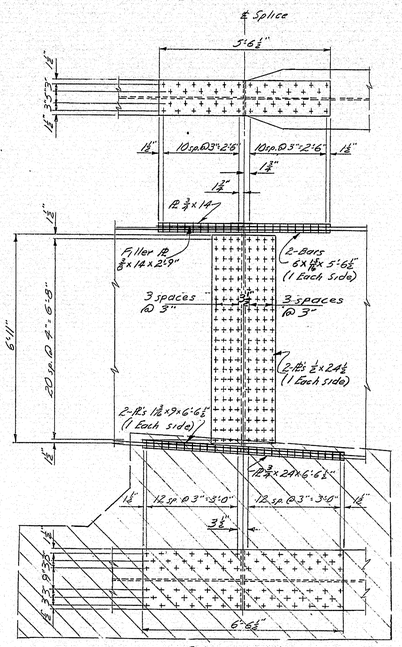
F.H.W.A. REQ. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	10	24



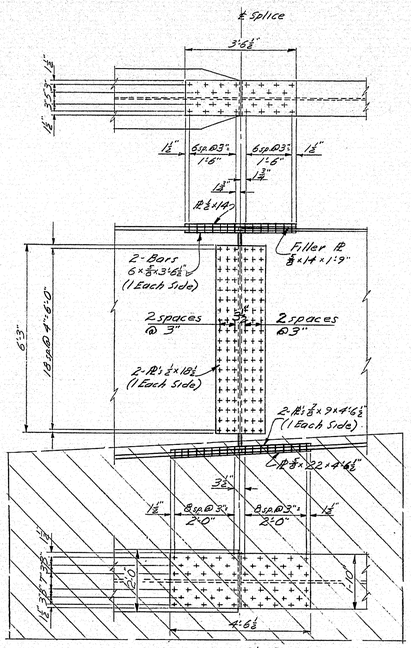
SECTION A-A



PLAN - TYPE N CROSSFRAME



SPLICE No. 1



SPLICE No. 2

SPLICE DETAILS

⚠ - Revision, Bottom flanges splices 1 & 2 see sheet 10-A for revisions EBC 11-13-73

STRUCTURAL STEEL NOTES

1. No transverse butt weld splices in the flange plates or web plates within 10 feet from the points of maximum negative moment or maximum positive moment will be allowed.

2. Sections of flange plates or web plates between transverse butt weld splices or from field splices shall be not less than 20 feet in length unless otherwise shown on the plans.

3. Butt weld splices in flanges shall be not closer than one foot from transverse welds in the web plates.

4. One longitudinal butt weld splice in the web will be allowed in the haunched sections of the girders. Fed Aber Eger between the longitudinal welds and the bottom flanges will not be allowed.

5. Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.

6. Crossframe or diaphragm connection plates may be either plumb or normal to the top flange.

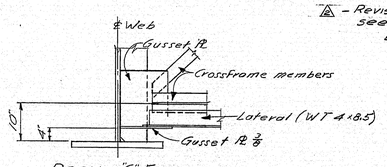
7. Filler plates may be ASTM A36 steel and mill tests for filler plate material will not be required.

8. Intermediate stiffeners and crossframe connection plates shall extend to the top and bottom flanges, and shall have a "paint tight fit" except intermediate stiffeners adjacent to abutments, 10 per beam (5 at each abutment), shall be attached to the top flange with a ⅛" double fillet weld; and intermediate stiffeners adjacent to piers (16 each side of each pier) shall be attached to the bottom flange with a ⅜" double fillet weld.

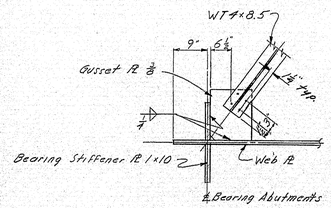
9. Bearing stiffeners shall be attached to both sides of webs at all abutments and piers, and shall have a "paint tight fit" at the top flange and shall be ground to bear at the bottom flange or attached with a full penetration groove weld.

10. At the contractor's option additional bolted field splices may be utilized at locations shown on the plans. Design details will be provided upon written request by the contractor.

11. All structural steel except as otherwise indicated shall conform to ASTM A36, Girder Flanges shall conform to ASTM A572 Gr 50 where shown on framing plan sheet #9. All bolts shall conform to ASTM A325. Bolts shall be ⅞" ϕ and holes 15/16" ϕ. A490 bolts were used in some locations and were torqued to a value not exceeding the replacement for A325 bolts. GMC

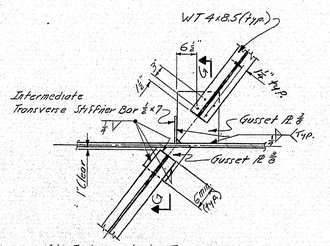


DETAIL "C" ELEVATION
(Showing type D crossframe)



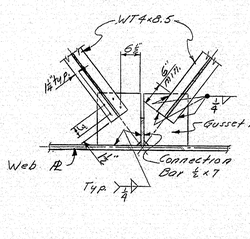
At Abutments

DETAIL "A"



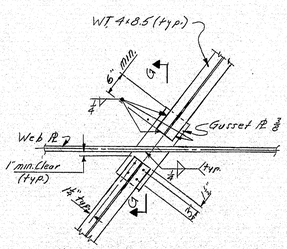
At Intermediate Transverse Stiffeners

DETAIL "B"



At Cross Frames

DETAIL "C"

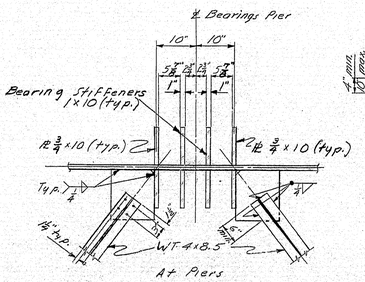


No Stiffeners or Connection Pl

DETAIL "D"

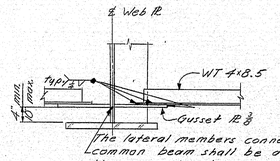
LATERAL CONNECTION DETAILS

Note: At the contractors option lateral members may be bolted or field welded to gusset plates (both methods are shown).



At Piers

DETAIL "E"



SECTION G-G

Revised As Built GMC Jetty 3/21/75

DATE	BY	DESIGN - DETAILED	CHECKED	REVISIONS	FIELD CHANGES
12-72	E.T.M.				

PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
SPLICE & LATERAL SYSTEM DETAILS

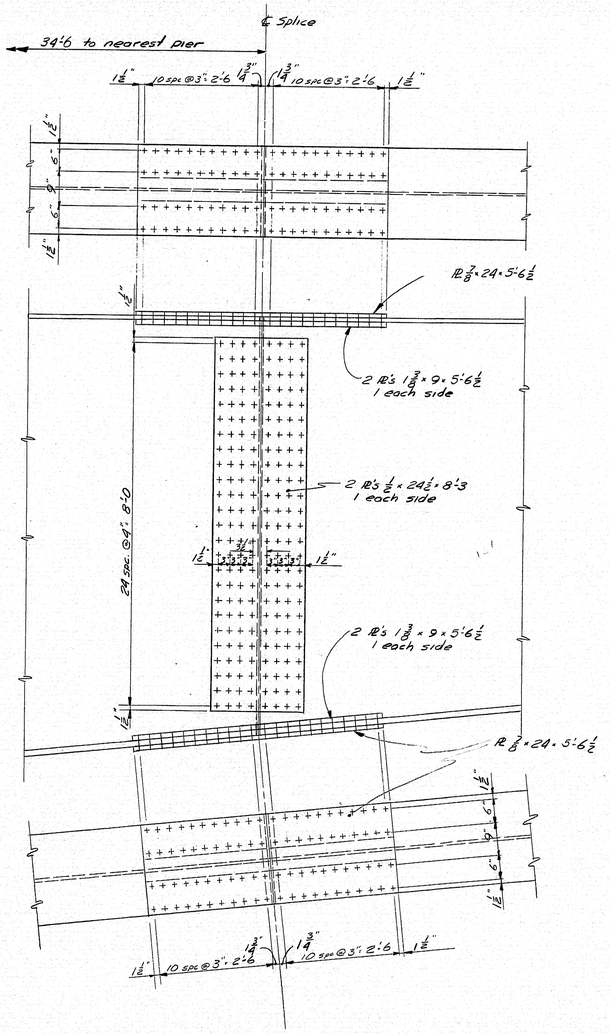
Splice 1 & 2 Revision EBC 11-13-73		
marked ⚠	Checked G.D.T. 11-13-73	
Revision	MMG	9-27-73
Reference in Note #11 (marked ⚠) modified		

SHEET 10 OF 24 AUGUSTA, MAINE SEPT. 1973

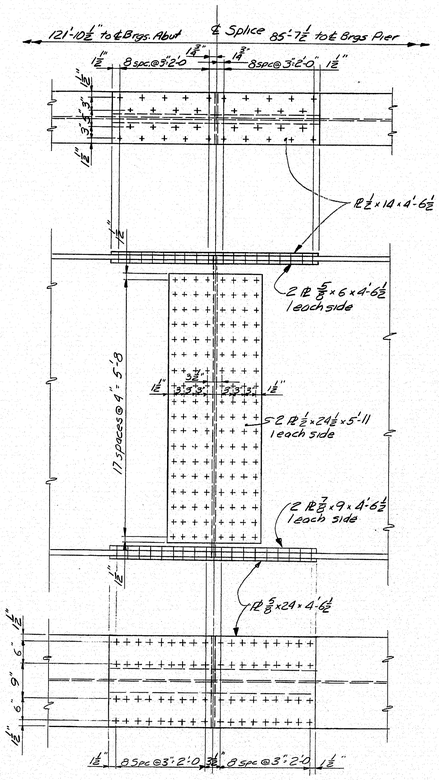
139-57

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

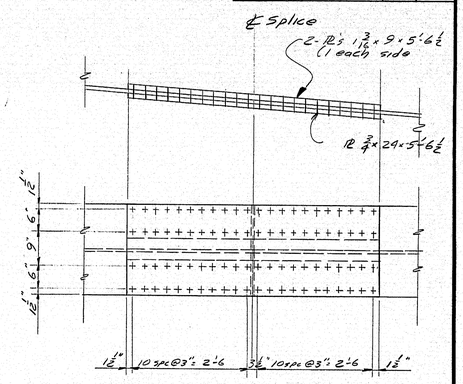
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	10A	



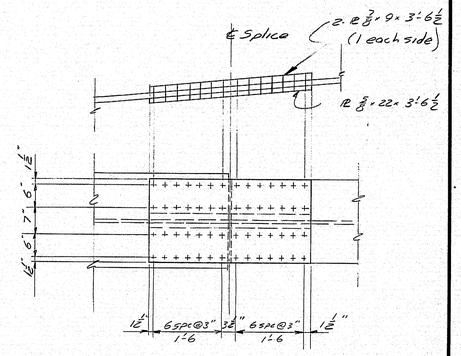
OPTIONAL SPLICE
Span 2



OPTIONAL SPLICE
Span 1℄ Span 3



REVISED SPLICE NO. 1
BOTTOM FLANGE ⚠2



REVISED SPLICE NO. 2
BOTTOM FLANGE ⚠2

PLANS	DESIGN - DETAILED	BY	DATE
	CHECKED	EBC	10-23
	REVISIONS	EBC	11/12/73
	FIELD CHANGES	GOT	

⚠2 Splice 1-2 revision, see sheet "10
EBC 11-13-73 Checked GOT 11-13-73
Sheet Revised EBC 11-12-73
Checked GOT 11-13-73

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
OPTIONAL SPLICE DETAILS

SHEET 10A OF AUGUSTA, MAINE OCT. 1973

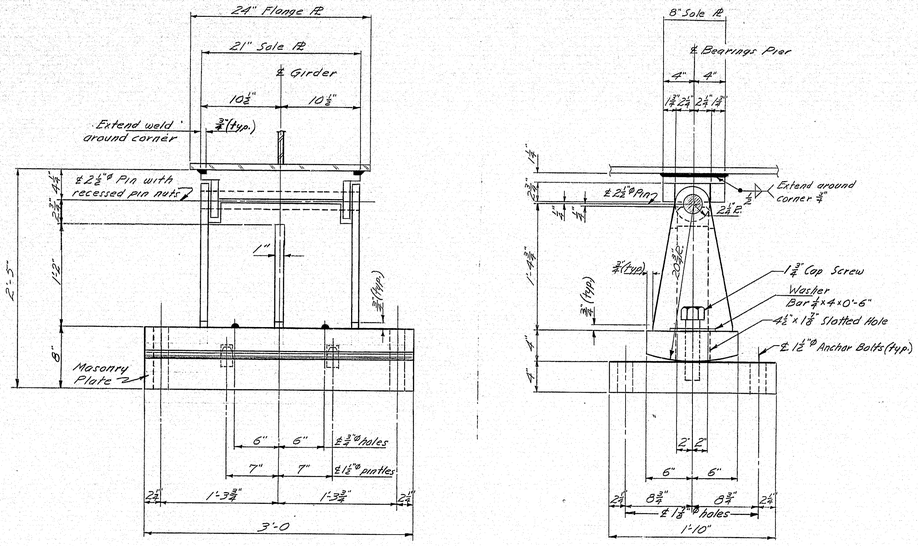
JANUARY 1968

2034 2080

139-58

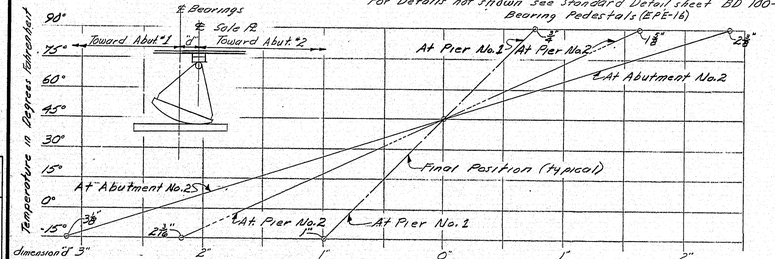
touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	11	24



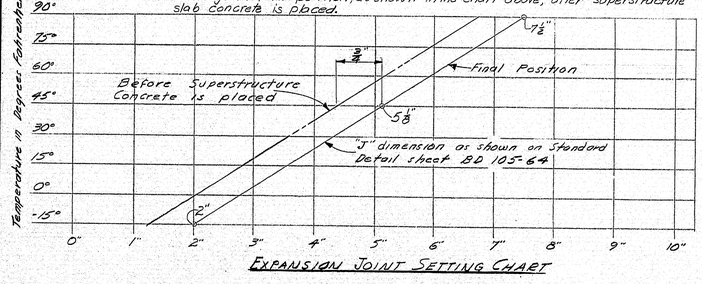
BEARING PEDESTAL AT PIERS (EPE-16 MODIFIED)

For Details not shown see Standard Detail sheet BD 100-71 Bearing Pedestals (EPE-16)

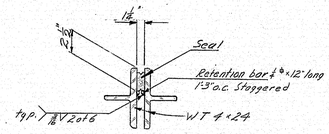


EXPANSION PEDESTAL SETTING CHART

Note: No adjustment of bearing pedestals is anticipated due to placement of superstructure slab. However, the contractor is responsible for setting bearings in final position, as shown in the chart above, after superstructure slab concrete is placed.



EXPANSION JOINT SETTING CHART



SECTION C-C

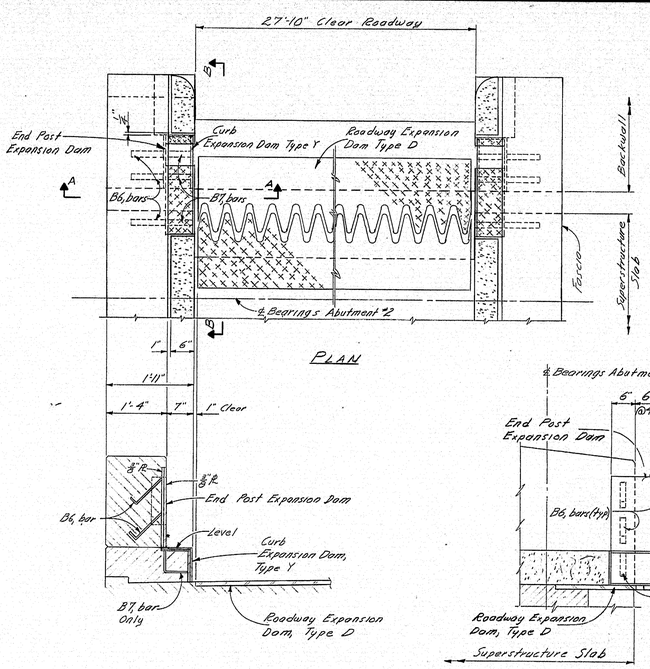
Note

1. The seal furnished shall be as follows:

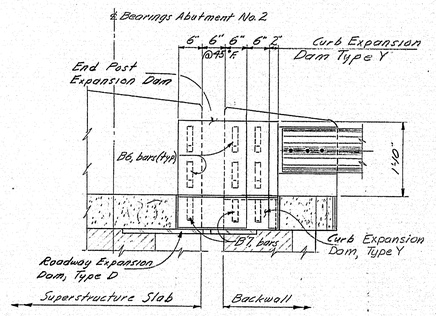
Location	Type	Movement Rating
Abut. #1	A or B	0.500 in.

2. The joint opening shown, is for design only and is subject to change due to differences in seals as supplied by various manufacturers. Do not use for setting of joint opening during construction.
3. The seal characteristics shall be submitted to the Engineer for approval, prior to the fabrication of the armored joint.
4. The following movements due to dead loads (slab, curb, and wearing surface), shall be taken into account when setting the armord joint.

Location	Open	Close
Abut. #1	7/8"	—



PLAN

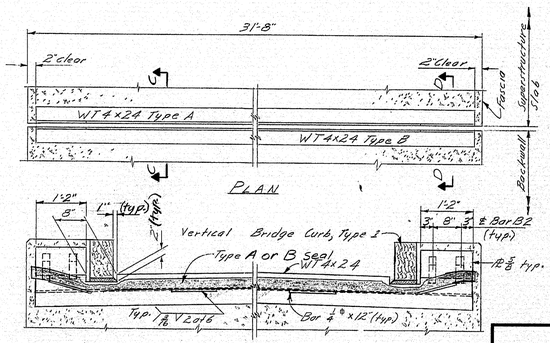


SECTION A-A

SECTION B-B

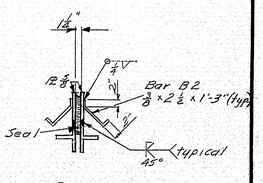
EXPANSION DAM DETAILS

For details not shown see sheet BD 105-64 Expansion Dams



ARMORED JOINT DETAILS

For Details not shown see sheet BD 104-71



SECTION D-D

PLANS	BY	DATE
DESIGN - DETAILED	R.T.A.	12-72
CHECKED	G.G.F.	11-73
REVISIONS		
FIELD CHANGES		

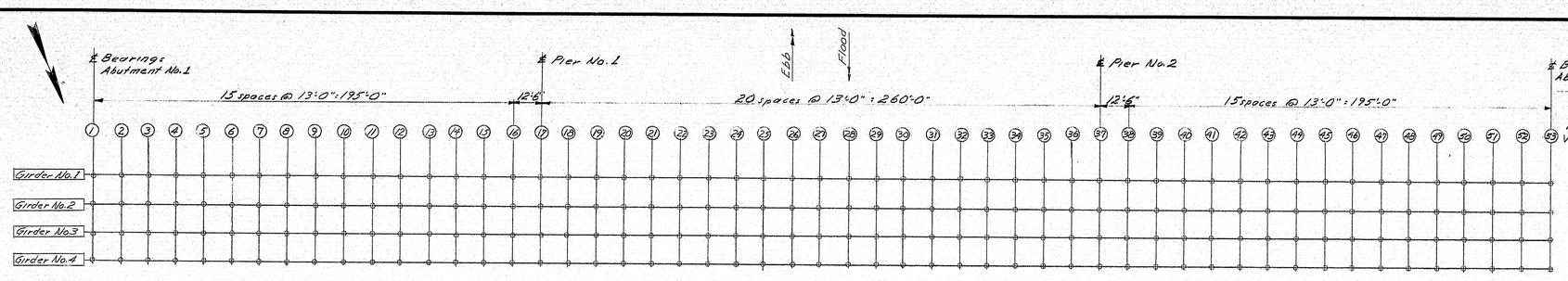
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
BEARING PEDESTAL, ARMORED JOINT & EXPANSION DAM
SHEET 11 OF 24 AUGUSTA, MAINE SEPT. 1973

JANUARY 1968

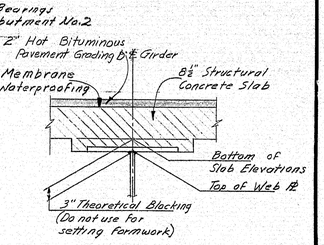
139-59

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	12	24



BLOCKING PLAN

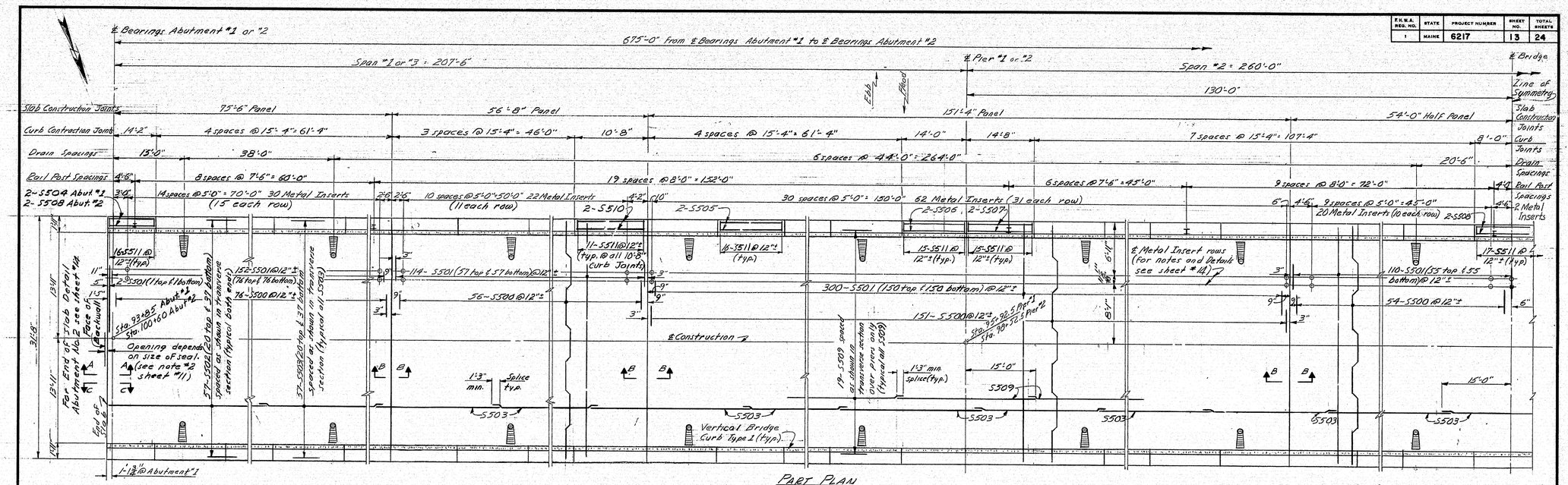


BLOCKING DETAIL

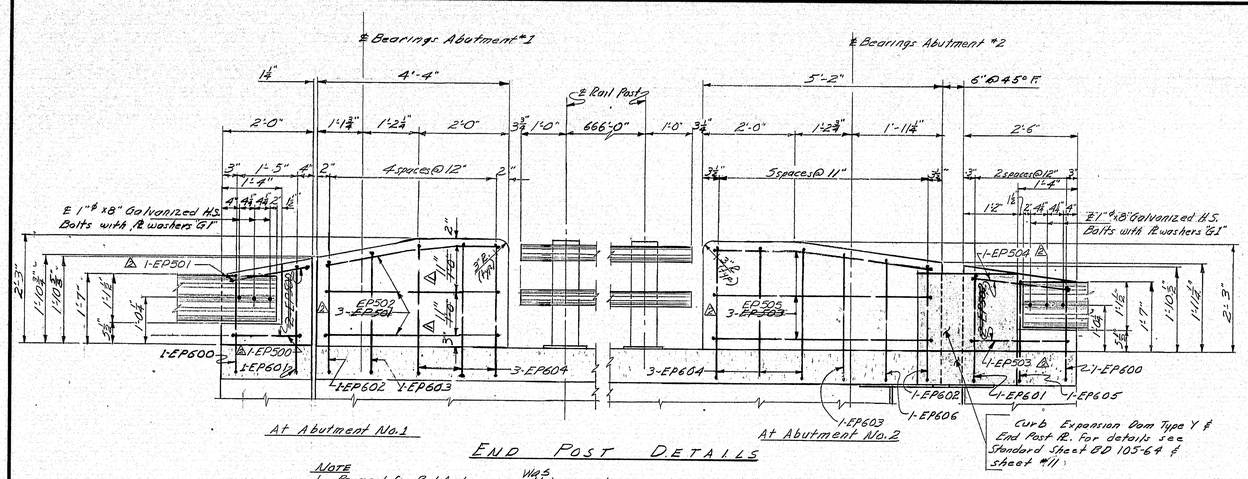
BOTTOM OF SLAB ELEVATIONS

| Beam Girder | ℄ Pier No.1 | | | | | | | | | | | | | | | | | | | | ℄ Pier No.2 | | | | | | | | | | | | | | | | | | |

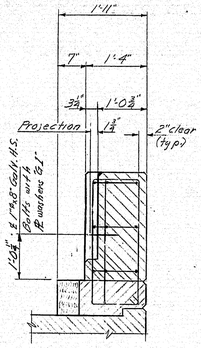
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	13	24


℄ Bearings Abutment "1 or "2
675'-0" from ℄ Bearings Abutment "1 to ℄ Bearings Abutment "2
Span "1 or "3 = 207'-6"
℄ Pier "1 or "2
Span "2 = 260'-0"
130'-0"
℄ Bridge
Line of Symmetry
Slab Construction Joints
Curb Contraction Joints
Drain Spacings
Rail Post Spacings
2-S504 Abut "1
2-S508 Abut "2
75'-6" Panel
56'-8" Panel
151'-4" Panel
54'-0" Half Panel
14'-2"
15'-0"
38'-0"
3'-10"
14 spaces @ 5'-0" = 70'-0" 30 Metal Inserts (15 each row)
10 spaces @ 5'-0" = 50'-0" 22 Metal Inserts (11 each row)
4 spaces @ 15'-4" = 61'-4"
3 spaces @ 15'-4" = 46'-0"
10'-8"
14'-0"
14'-8"
6 spaces @ 14'-0" = 264'-0"
7 spaces @ 15'-4" = 107'-4"
8'-0"
20'-6"
19 spaces @ 8'-0" = 152'-0"
30 spaces @ 5'-0" = 150'-0" 62 Metal Inserts (31 each row)
6 spaces @ 7'-6" = 45'-0"
9 spaces @ 8'-0" = 72'-0"
9 spaces @ 5'-0" = 45'-0" 20 Metal Inserts (10 each row)
4'-2"
2-S510
2-S505
2-S506, 2-S507
2-S508
Face of Slab
Face of Backwall
Opening depends on size of seal. A (see note #2 sheet #11)
Sta. 93+85 Abut "1
Sta. 100+60 Abut "2
16-S511 @ 12"± (Typ)
2-S501 (1 top & 1 bottom)
152-S501 @ 12"± (76 top & 76 bottom)
76-S500 @ 12"±
37-S503 Edge & 37 bottom spaced as shown in transverse section (typical both ends)
37-S503 Edge & 37 bottom spaced as shown in transverse section (typical all S503)
11-S511 @ 12"± (typ. @ all 10'-8" Curb Joints)
114-S501 (57 top & 57 bottom) @ 12"±
56-S500 @ 12"±
15-S511 @ 12"± (Typ)
300-S501 (150 top & 150 bottom) @ 12"±
151-S500 @ 12"±
℄ Metal Insert runs (for water and Retault see sheet #14)
110-S501 (55 top & 55 bottom) @ 12"±
54-S500 @ 12"±
17-S511 @ 12"± (Typ)
℄ Construction
19-S509 spaced as shown in transverse section over piers only (Typical all S509)
13" min. splice (Typ.)
15'-0"
S509
1'-3" min. Splice Typ.
S503
Vertical Bridge Curb Type 1 (Typ.)
1'-3½" @ Abutment "1
Sta. 95+55.5 Pier "1
Sta. 98+55.5 Pier "2
13'-9"
13'-11"
Per End of Slab Detail Abutment No 2 see sheet #12
6'-1½"
6'-1"
6'-4"
6'-0"
6'-3"
6'-4"
6'-1"
6'-1½

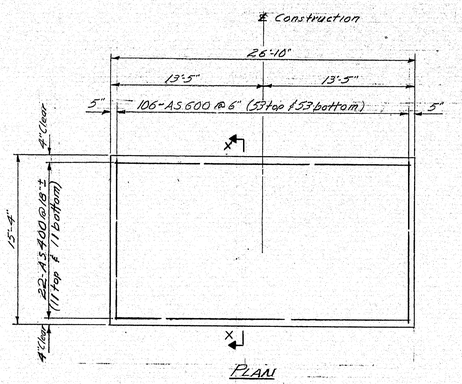
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	14	24



END POST DETAILS

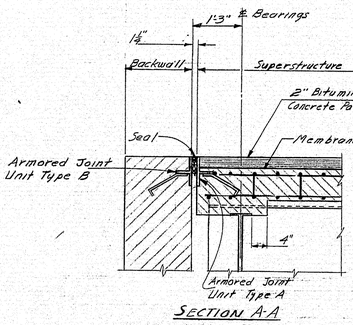


TYPICAL END POST SECTION

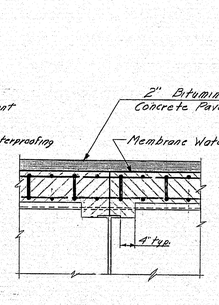


PLAN

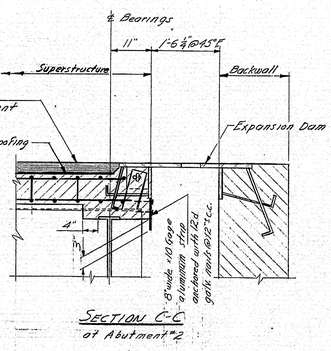
NOTE
1. Payment for Rail Anchorage ~~will be~~ considered incidental to related contract Items.
2. Payment for all end post concrete ~~shall be~~ incidental to Item 502.26 Structural Concrete, Roadway & Sidewalk Slabs on Steel Bridges.
3. Chamfered all exposed edges ¾".



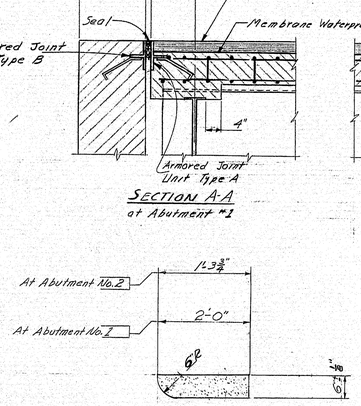
SECTION A-A at Abutment #1



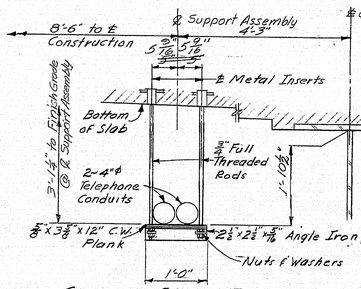
SECTION B-B at Slab Construction Joints



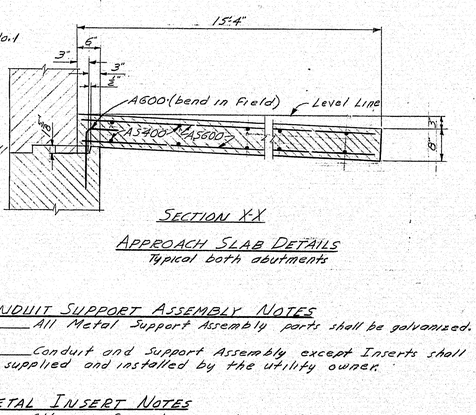
SECTION C-C at Abutment #2



PLAN
ABUTMENT END CURB DETAILS

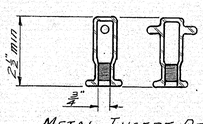


CONDUIT SUPPORT ASSEMBLY

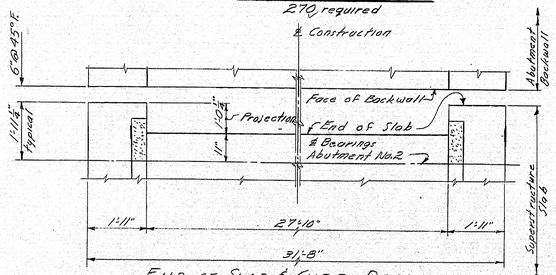


SECTION X-X

APPROACH SLAB DETAILS
Typical both abutments



METAL INSERT DETAIL
270 required



END OF SLAB & CURB DETAIL AT ABUTMENT No.2

Note
End Post & Expansion Dam not shown

CONDUIT SUPPORT ASSEMBLY NOTES
1. All Metal Support Assembly parts shall be galvanized.
2. Conduit and Support Assembly except Inserts shall be supplied and installed by the utility owner.

METAL INSERT NOTES
1. Other configurations may be used if approved by the Engineer.
2. Metal inserts shall be threaded to receive ¾ inch diameter bolts with National Course threads. Inserts shall have a minimum working load of 2,500 pounds, and a minimum ultimate strength of 3,000 pounds.
3. Inserts ~~were~~ supplied by the utility and installed by the contractor. The cost of installing the inserts ~~was~~ incidental to Item 502.26

BY	DATE
DESIGN - DETAILED	R.F.A. 11-72
CHECKED	
REVISIONS	
FIELD CHANGES	

PLANS

JANUARY 1968

Revised As Built [illegible] 3/21/75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY

END POST, APPROACH SLAB & JOINT DETAILS

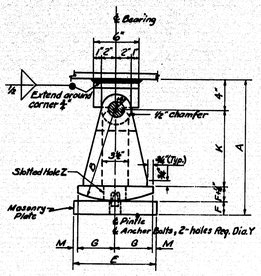
SHEET 14 OF 24 AUGUSTA, MAINE SEPT. 1973

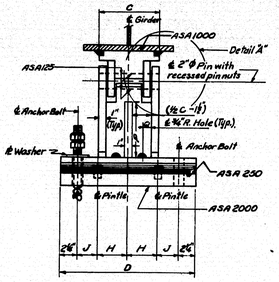
Revision	MMG	11-29-73
End Post reinf. steel (marked △) modified		
Revision	MMG	9-27-73
End Post dimensions (marked △) modified		

139-62

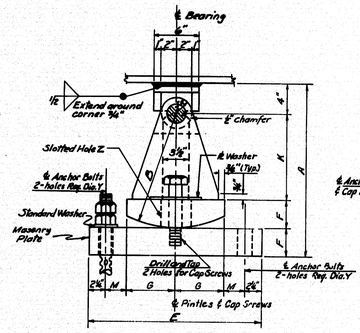
touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

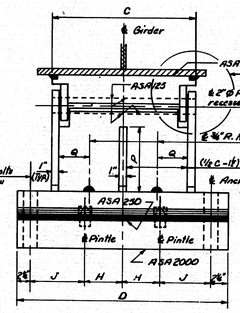
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	17	24





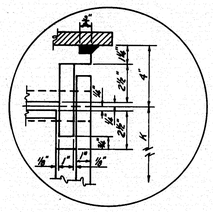
EXPANSION PEDESTAL — EPD



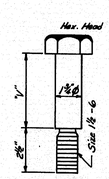


EXPANSION PEDESTAL — EPE

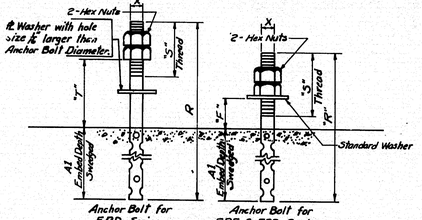
MARK	LOAD	A	B	C	D	E	F	G	H	J	K	M	P	Q	R	S	T		V	X-Anchor Bolt Diameter	Y-Masonry Plate Hole Size	Number Anchor Bolts Required	Z-Slotted Hole for Anchor Bolts or Cap Screws	℄ Washer-Size for Anchor Bolts or Cap Screws	A1 Embedment Depth	MARK
EPD-1	100ᴷ	1'-2¾"	9"	8"	1'-6"	8"	1½"	3½"	4"	2¾"	7"	¼"	–	3"	1'-1½"	3"	4½"		–	1"	1⅝"	2	3"×1⅜"	3"×5"×¼"	10"	EPD-1
EPD-2	100ᴷ	1'-2¾"	9"	8"	1'-6"	9"	1⅝"	4"	4"	2¾"	7"	½"	–	3"	1'-1¾"	3"	4½"		–	1"	1⅝"	2	3"×1⅜"	3"×5"×¼"	10"	EPD-2
EPD-3	100ᴷ	1'-2¾"	9"	8"	1'-6"	10"	1½"	4½"	4"	2¾"	7"	¼"	–	3"	1'-1¾"	3"	4½"		–	1"	1⅝"	2	3"×1⅜"	3"×5"×¼"	10"	EPD-3
EPD-4	100ᴷ	1'-3⅜"	1'-0"	8"	1'-6"	11"	1⅝"	5"	4"	2¾"	10"	¼"	–	3"	1'-1½"	3"	4½"		–	1"	1⅝"	2	3"×1⅜"	3"×5"×¼"	10"	EPD-4
EPD-5	200ᴷ	1'-9⅛"	1'-3"	10"	1'-8"	1'-0"	2¼"	5½"	4"	3½"	1'-0⅛"	¼"	–	4"	2'0⅜"	4"	6¼"		–	1½"	1⅞"	2	4"×1⅜"	4"×7"×¼"	1'-3"	EPD-5
EPD-6	200ᴷ	1'-9⅛"	1'-3"	10"	1'-8"	1'-1"	2¼"	6"	4"	3½"	1'-0⅛"	¼"	–	4"	2'-1"	4"	6¼"		–	1½"	1⅞"	2	4"×1⅜"	4"×7"×¼"	1'-3"	EPD-6
EPD-7	200ᴷ	1'-9⅛"	1'-3"	10"	1'-8"	1'-2"	2¼"	6½"	4"	3½"	1'-0⅛"	½"	–	4"	2'-1"	4"	6¼"		–	1½"	1⅞"	2	4"×1⅜"	4"×7"×½"	1'-3"	EPD-7
EPD-8	200ᴷ	1'-9⅛"	1'-3"	10"	1'-8"	1'-3"	2¼"	7"	4"	3½"	1'-0⅛"	½"	–	4"	2'-1"	4"	6⅜"		–	1½"	1⅞"	2	4"×1⅜"	4"×7"×½"	1'-3"	EPD-8
EPD-9	300ᴷ	1'-10"	1'-3"	1'-2"	2'-0"	1'-4"	3"	7⅜"	5"	4⅜	1'1⅜"	½"	–	6"	2'2¼"	4"	8"		–	1½"	1⅞"	2	5"×1⅜"	4"×8"×½"	1'-3"	EPD-9
EPD-10	400ᴷ	1'-10⅜"	1'-3"	1'-6"	2'-4"	1'-6"	3½"	8⅝"	6"	5⅜"	1'1⅝"	½"	8⅝"	3⅜"	2'-3"	4"	8⅜"		–	1½"	1⅞"	2	5"×1⅜"	4"×8"×½"	1'-3"	EPD-10
EPE-1	200ᴷ	1'-10"	1'-3"	10"	1'-7"	1'-6"	3"	4"	4"	3½"	1'-0"	2⅜"	–	4"	1'-10"	4½"	–		4"	1½"	1⅝"	4	3⅜"×1⅜"	3½"×4½"×½"	1'-3"	EPE-1
EPE-2	200ᴷ	1'-10"	1'-3"	11"	1'-8"	1'-9"	3"	5½"	4½"	3½"	1'-0"	2⅜"	–	4½"	1'-10"	4½"	–		4"	1½"	1⅝"	4	4"×1⅜"	3½"×5½"×½"	1'-3"	EPE-2
EPE-3	200ᴷ	1'-10"	1'-3"	11"	1'-8"	1'-10"	3"	6"	4½"	3½"	1'-0"	2⅜"	–	4½"	1'-10"	4½"	–		4½"	1½"	1⅝"	4	4"×1⅜"	3½"×5½"×½"	1'-3"	EPE-3
EPE-4	200ᴷ	1'-10"	1'-3"	11"	1'-8"	1'-10"	3"	6½"	4½"	3½"	1'-0"	2⅜"	–	4½"	1'-10"	4½"	–		4½"	1½"	1⅝"	4	4½"×1⅜"	3½"×6"×½"	1'-3"	EPE-4
EPE-5	200ᴷ	1'-10"	1'-3"	11"	1'-8"	2'-0"	3"	7"	4½"	3½"	1'-0"	2⅜"	–	4½"	1'-10"	4½"	–		4⅝"	1½"	1⅝"	4	4½"×1⅜"	3½"×6"×½"	1'-3"	EPE-5
EPE-6	300ᴷ	1'-10"	1'-3"	1'-2"	1'-11"	1'-6"	3"	4"	5"	4⅜"	1'-0"	2⅜"	–	6"	1'-10"	4½"	–		4"	1½"	1⅝"	4	2¾"×1⅜"	3½"×4½"×½"	1'-3"	EPE-6
EPE-7	300ᴷ	1'-10⅜"	1'-3"	1'-2"	1'-11"	1'-8"	3⅛"	5"	5"	4½"	1'1⅜"	2⅜"	–	6"	1'-10"	4½"	–		4"	1½"	1⅝"	4	3"×1⅜"	3½"×5"×½"	1'-3"	EPE-7
EPE-8	300ᴷ	1'-10⅜"	1'-3"	1'-2"	1'-11"	1'-10"	3½"	6"	5"	4½"	1'1⅜"	2⅜"	–	6"	1'-10⅜"	4½"	–		4½"	1½"	1⅝"	4	4½"×1⅜"	3½"×6"×½"	1'-3"	EPE-8
EPE-9	300ᴷ	1'-10⅜"	1'-3"	1'-2"	1'-11"	2'-0"	3½"	7"	5"	4½"	1'1⅜"	2½"	–	6"	1'-10⅜"	4½"	–		4⅜"	1½"	1⅝"	4	5"×1⅜"	3½"×6½"×½"	1'-3"	EPE-9
EPE-10	300ᴷ	1'-10⅜"	1'-3"	1'-2"	1'-11"	2'-3"	3½"	8"	5"	4½"	1'1½"	3½"	–	6"	1'-10⅜"	4½"	–		5½"	1½"	1⅝"	4	5"×1⅜"	3½"×7"×½"	1'-3"	EPE-10
EPE-11	400ᴷ	1'-10⅜"	1'-3"	1'-7"	2'-4"	1'-7"	3½"	4½"	5"	6⅜"	1'1⅜"	2⅜"	9"	4"	1'-10"	4½"	–		4"	1½"	1⅝"	4	4"×1⅜"	3½"×5"×½"	1'-3"	EPE-11
EPE-12	400ᴷ	1'-10⅜"	1'-3"	1'-7"	2'-4"	1'-11"	3⅜"	6½"	5"	6⅜"	1'1½"	2⅜"	8½"	4"	1'-10⅜"	4½"	–		5"	1½"	1⅝"	4	5"×1⅜"	3½"×6"×½"	1'-3"	EPE-12
EPE-13	400ᴷ	1'-11"	1'-3"	1'-7"	2'-4"	2'-4"	4"	8½"	5"	6⅜"	11"	3½"	8½"	4"	1'-11"	4½"	–		6⅛"	1½"	1⅝"	4	6⅛"×1⅜"	3½"×8"×½"	1'-3"	EPE-13
EPE-14	600ᴷ	2'-1⅜"	1'-6"	1'-11"	3'-0"	1'-10"	3⅜"	6"	7"	8⅜"	1'-2⅜"	2⅜"	11½"	5"	1'-10⅜"	4½"	–		4⅜"	1½"	1⅝"	4	4½"×1⅜"	4"×5½"×½"	1'-3"	EPE-14
EPE-15	600ᴷ	2'-2½"	1'-6"	1'-11"	3'-0"	2'-5"	4½"	9"	7"	8⅜"	1'-1⅜"	3½"	11"	5"	1'-11"	4½"	–		6½"	1½"	1⅝"	4	6½"×1⅜"	4"×8"×½"	1'-3"	EPE-15
EPE-16	800ᴷ	2'-2"	1'-6"	2'-6"	3'-10"	1'-11"	4"	6½"	10"	10⅜"	1'-2"	2⅜"	11½"	6⅜"	1'-11"	4½"	–		5"	1½"	1⅝"	4	4½"×1⅜"	4"×6"×½"	1'-3"	EPE-16
EPE-17	800ᴷ	2'-2½"	1'-6"	2'-6"	3'-10"	2'-5"	4½"	9"	10"	10⅜"	1'-1⅜"	3½"	10⅜"	6⅜"	1'-11⅜"	4½"	–		6⅛"	1½"	1⅝"	4	6½"×1⅜"	4"×8½"×½"	1'-3"	EPE-17
FPD-1	100ᴷ	1'-0"	–	8"	1'-6"	9"	2"	2¼"	6⅜"	–	6"	–	–	–	1'-3"	3½"	–		–	1"	1⅛"	4	–	Standard	10"	FPD-1
FPD-2	200ᴷ	1'-0"	–	10"	1'-8"	1'-2"	2"	4½"	7⅜"	–	6"	–	–	–	1'-8"	4"	–		–	1½"	1⅝"	4	–	Standard	1'-3"	FPD-2
FPD-3	300ᴷ	1'-0"	–	1'-2"	2'-0"	1'-4"	2"	5⅜"	9⅜"	–	6"	–	–	–	1'-8"	4"	–		–	1½"	1⅝"	4	–	Standard	1'-3"	FPD-3
FPD-4	400ᴷ	1'-3"	–	1'-6"	2'-4"	1'-6"	2"	6⅜"	11⅜"	–	9"	–	6¼"	–	1'-8"	4"	–		–	1½"	1⅝"	4	–	Standard	1'-3"	FPD-4
FPD-5	600ᴷ	1'-3"	–	1'-11"	3'-0"	1'-10"	3"	8⅜"	1'-3⅜"	–	8"	–	3½"	–	1'-9"	4"	–		–	1½"	1⅝"	4	–	Standard	1'-3"	FPD-5
FPD-6	800ᴷ	1'-3"	–	2'-6"	3'-10"	1'-11"	3"	9½"	1'-8⅜"	–	8"	–	3½"	–	1'-9"	4"	–		–	1½"	1⅝"	4	–	Standard	1'-3"	FPD-6



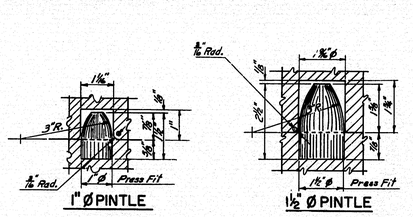
DETAIL "A"



CAP SCREW DETAIL

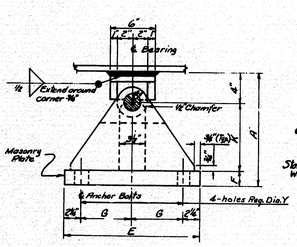


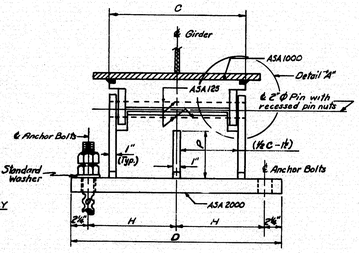
ANCHOR BOLT DETAILS



PINTLE DETAILS

NOTE:
Use 1" ⌀ Pintles with 1" ⌀ Anchor Bolts & 1½" ⌀ Pintles with 1½" ⌀ Anchor Bolts.





FIXED PEDESTAL — FPD

GENERAL NOTES:

At the location of bearing pedestals the concrete bridge seats shall be dressed one inch larger all around than size of masonry plates and to exact elevations shown on the plans. If dressed areas are below the surface of the surrounding bridge seat a small channel shall be cut in the edge of the bridge seat for drainage where required by the Engineer. Channels shall have a min. width of 2", and a min. slope of ¼ inch per foot. No separate payment for this work will be made as it shall be considered incidental to contract items.

Fabricate pedestals with ¼" fillet welds.

The diameter of the pin hole shall not exceed that of the pin by more than ⅛ inch.

Pedestals EPD-1 thru EPD-9 and EPE-1 thru EPE-10 have no center stiffeners and have only one drainage hole.

Pedestals EPD-10 and EPE-11 thru EPE-17 have a center stiffener and have two drainage holes.

Pedestals FPD-1 thru FPD-3 have no center stiffeners and have no drainage holes.

Pedestals FPD-4 thru FPD-6 have a center stiffener and no drainage holes.

DESIGN SPECIFICATIONS

A.A.S.H.O., Standard Specifications for Highway Bridges, 1969

A.S.T.M. STEEL CLASSIFICATION

All structural steel shall be -A36 except the following:

2" ⌀ Pin - A36; A235, Class E or A108, Grade 1016 - 1030 inclusive.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS
(BD 100-71)

BEARING PEDESTALS

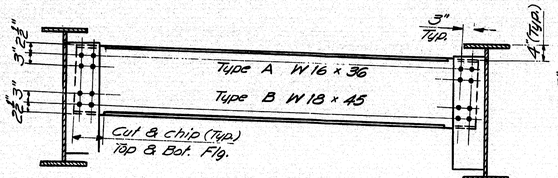
SHEET 17 OF 24 AUGUSTA, MAINE JULY 1971

139-65

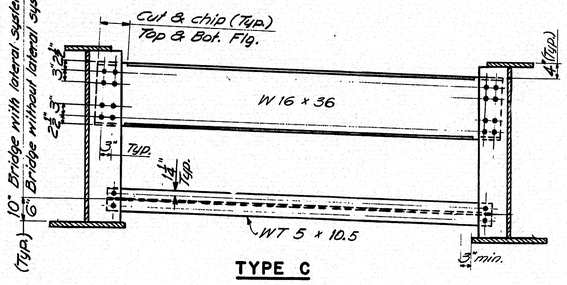
touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. SER. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	20	24

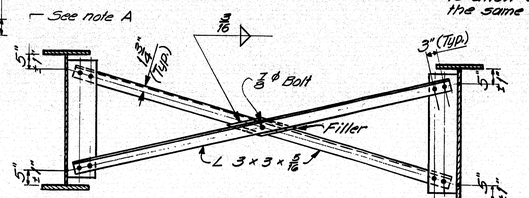
NOTE A This dimension may be varied (±1") to allow a series of diagonals to have the same slope.



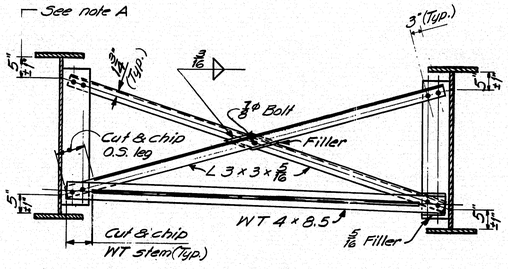
TYPE A & B



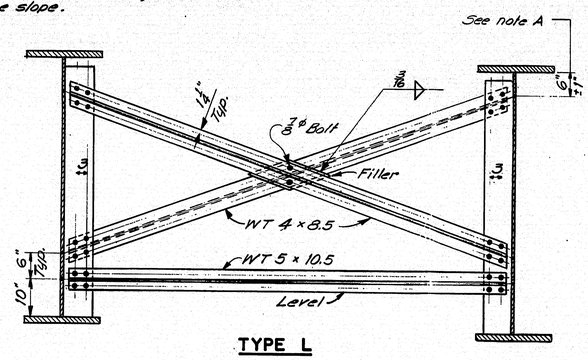
TYPE C



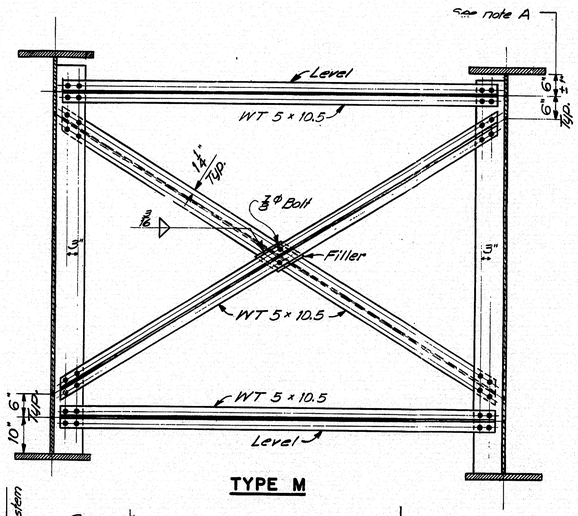
TYPE G



TYPE H



TYPE L



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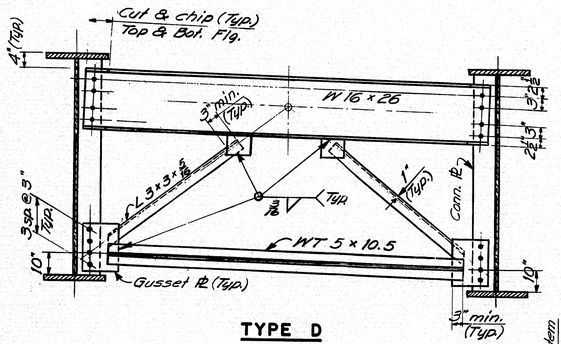
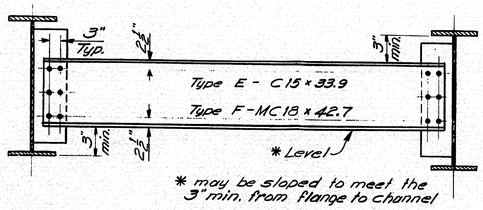
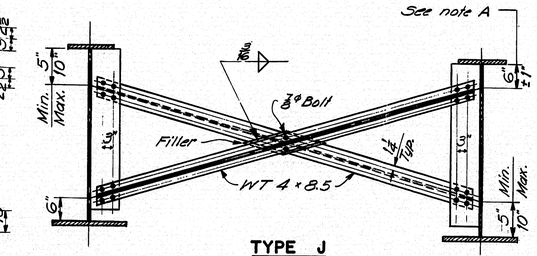


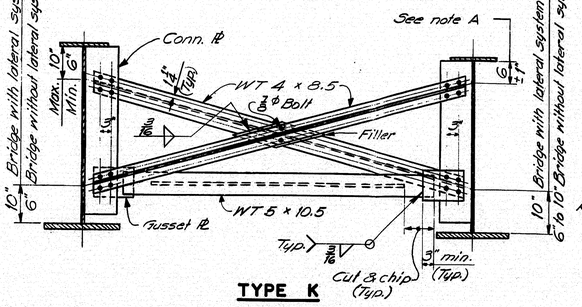
TYPE D



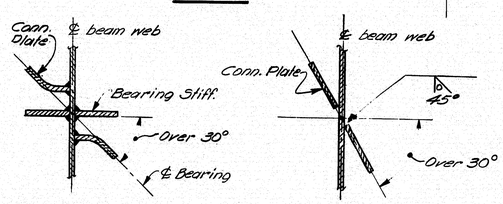
TYPE E & F



TYPE J



TYPE K



DETAIL A
Referenced from Note 5

DETAIL B
Referenced from Note 4

FABRICATION NOTES

1. For location and type of diaphragm or crossframe see design details.
2. Holes for ⅞" diameter bolts shall be 1 1/16" dia. and Edge distances shall be 1¼" minimum unless otherwise shown.
3. Connection plates and gusset plates shall have a minimum thickness of ⅜" and shall have sufficient width to provide erection clearances. When bearing stiffeners or intermediate stiffeners are used as connection plates, the plate size will be given on the design details.
4. Connection plates shall be fastened to beam and girder webs as follows:
   - 0° to 30° skew --- fillet weld both sides.
   - Over 30° skew --- full penetration groove weld (see Detail B) except as indicated in Note 5
   - Over 45° skew - weld prequalification will be required.

   The skew angle is the angle between the connection plate and a line normal to the beam.
5. Bearing stiffeners shall be used as connection plates when the skew is not over 30°. When the skew is over 30° a bent connection plate shall be attached to the web adjacent to the bearing stiff. as shown in Detail A.
6. All fillet weld sizes shall be the minimum for the thickness of metal being joined according to AWS Specifications For Welded Highway & Railway Bridges.
7. Connection plates on welded beams and girders shall extend to the top flange in areas where the top flange is always in compression or when used as a bearing stiffener or intermediate stiff.
8. Connection plates shall extend to the bottom flange when used as a bearing stiffener, at points where lateral bracing is attached & on welded beams and girders in areas where the bottom flange is always in compression.
9. When a conn. plate is extended to a flange it shall be a paint tight fit except as otherwise indicated on design details.
10. Conn. plates shall be 2½" clear from flanges, except as indicated by Notes 7&8.
11. Use only those items called for on the design details. In case of conflict between these standard details and the design details, the design details shall be followed.

MATERIALS

Diaphragms, Crossframes and All Plates (Filler, gusset, and connection). ASTM A36
High Strength Bolts ⅞" diameter ___ ASTM A325

PLANS	DATE	BY
DESIGN - DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

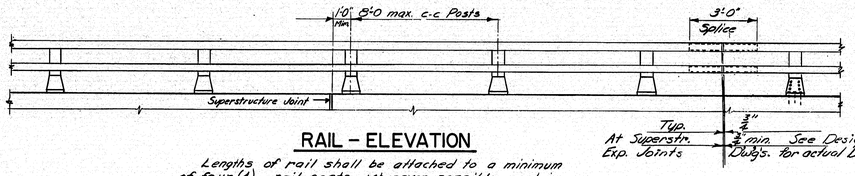
STANDARD DETAILS
(BD 113 - 72)
DIAPHRAGMS & CROSSFRAMES

SHEET 20 OF 24 AUGUSTA, MAINE SEPT. 1972

139-68

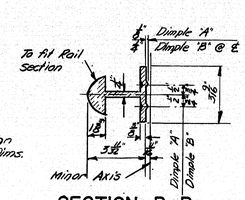
touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. REQ. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	21	24

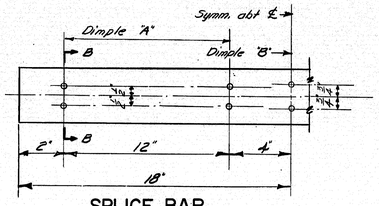


RAIL - ELEVATION

Lengths of rail shall be attached to a minimum of four (4) rail posts wherever possible, and in any case never less than two (2). Rail posts are to be set normal to grade unless otherwise shown on the Bridge Plans.



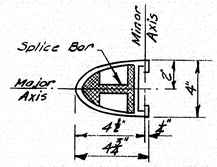
SECTION B-B



SPLICE BAR

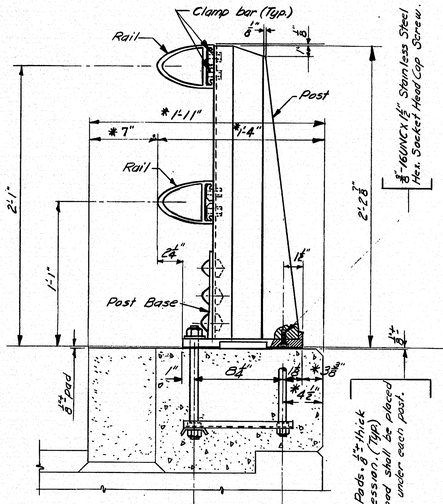
Note - An alternate to the dimple system for holding the splice bar in position may be used if approved by the Engineer.

DESIGN SPECIFICATIONS
AASHO. Standard Specifications for Highway Bridges 1969 and Interim Specifications.



RAIL SECTION

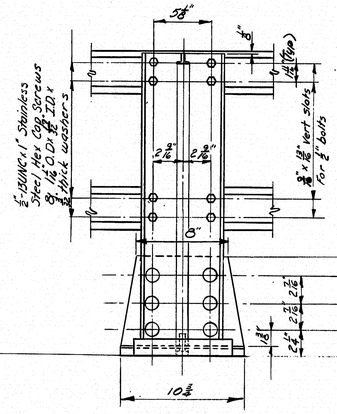
See "Rail Detail"



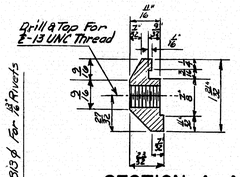
BRIDGE RAIL

(Assembly)

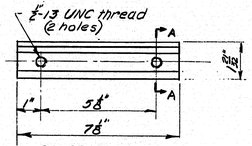
* Preferable minimum dimensions. For actual dimensions see Bridge Plan.



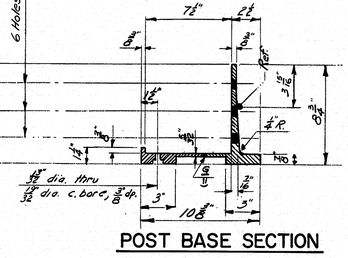
REAR ELEV.



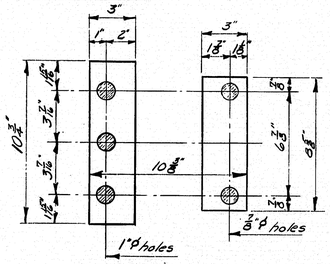
SECTION A-A



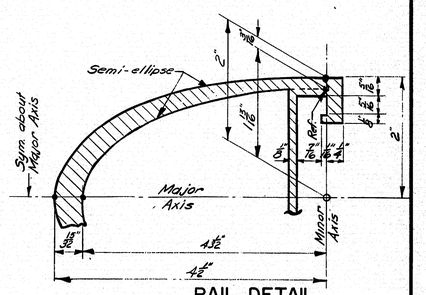
CLAMP BAR



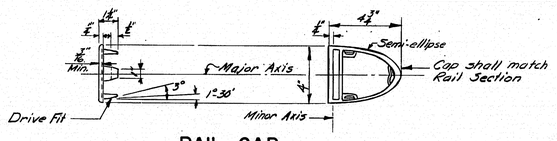
POST BASE SECTION



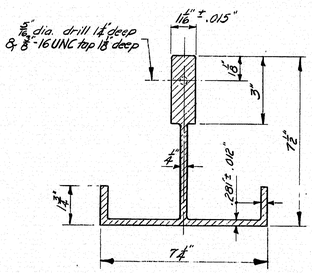
PREFORMED PADS



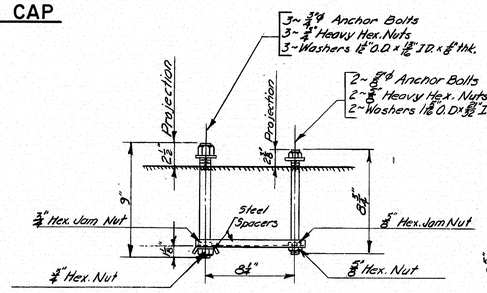
RAIL DETAIL



RAIL CAP

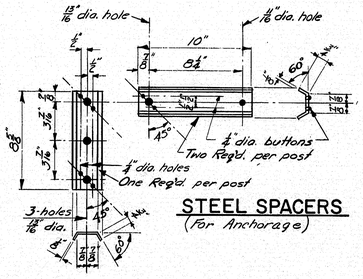


POST SECTION



RAIL POST ANCHORAGE

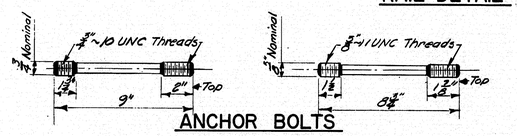
(Assembly)



STEEL SPACERS

(For Anchorage)

ANCHOR BOLTS



If cut threads are used, body diameter shall be not less than nominal diameter. If rolled threads are used, body diameter shall be not less than root diameter of the threads.

PLANS	BY	DATE
DESIGN - DETAILED	K. Reed / K. Leach	Jan. 1973
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS
(BD 114-73)

ALUMINUM RAILING
2 - BAR (SEMI-ELLIPSE) EXTRUDED POST

SHEET 21 OF 24 AUGUSTA, MAINE FEBRUARY 1973

JANUARY 1969

139-69

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	1	19

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAYS

EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
PROJECT NO. 6217
CONTRACT NO. 1 - SUBSTRUCTURE

CONVENTIONAL SIGNS

COUNTY LINES	TRAVELLED WAY - PROPOSED
TOWN LINES	UNDERGROUND UTILITIES - EXISTING
PROPERTY LINES	UNDERGROUND UTILITIES - PROPOSED
R/W LINES - EXISTING	RAILROAD - SINGLE TRACK
R/W LINES - NEW - ACCESS CONTROL	RAILROAD - DOUBLE TRACK
R/W LINES - NEW - NO ACCESS CONTROL	UTILITY POLE - EXISTING
CULVERT - EXISTING	UTILITY POLE - JOINT OCCUPANCY
CULVERT - PROPOSED	PROPOSED UTILITY POLE - TEMPORARY
CURBING - EXISTING	PROPOSED UTILITY POLE - PERMANENT
CURBING - PROPOSED	TREES (hardwood / softwood)
TRAVELLED WAY - EXISTING	WOODS

SPECIFICATIONS

DESIGN = AASHO Specifications for Highway Bridges 1969 and Interim Specifications 1970, 1971 and 1972.

CONTRACT = State of Maine, State Highway Commission, Standard Specifications, Highways and Bridges, Revision of June 1968.

DESIGN LOADING

LIVE LOAD = HS 20-44

MATERIALS

CONCRETE = Pier Seals.....Class "S"
Abutment No.1 Concrete Pedestal...Class "B"
All Other.....Class "A"

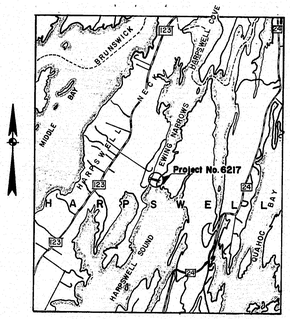
REINFORCING STEEL = ASTM A615 Grade 60

BASIC ALLOWABLE STRESS

CONCRETE = f_c = 1200 psi

REINFORCING STEEL = f_s = 24,000psi

HYDROLOGIC DATA



LOCATION MAP

SCALE IN MILES 0 1 2

TRAFFIC DATA

A.D.T.	1972	148
A.D.T.	1992	350
D.H.V.		53
T. (%)		
D. (%)		
V.		
P.S.D. (%)		
18 KIPS		

INDEX OF SHEETS

TITLE SHEET — 1
ESTIMATE OF QUANTITIES — 2
SURVEY — 3-5
CROSS SECTIONS — 6
ABUTMENT NO. 1 CONCRETE PEDESTAL — 7
ABUTMENT NO. 1 — 8
ABUTMENT NO. 2 — 9
PIER NO. 1 — 10
PIER NO. 2 — 11
REINFORCING STEEL SCHEDULE, ABUTMENT NO. 1 — 12
REINFORCING STEEL SCHEDULE, ABUTMENT NO. 2 — 13
REINFORCING STEEL SCHEDULE, PIERS — 14

REFERENCE SHEETS:

··HIGHWAY STANDARDS··

AUGUST 1969 (11) MONUMENTS & PROJECT MARKERS — 15
AUGUST 1969 (12) FIELD OFFICE — 16

··SOILS··

FOUNDATION SURVEY — 17
BORING DETAILS — 18

RIGHT OF WAY MAPS — 19

STATE OF MAINE — RICHARD A. HUETTICH, SR. 1725 — REGISTERED PROFESSIONAL ENGINEER

APPROVED:

COAST GUARD PERMIT NO. 74-72

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION — DATE

Dan H. Stevens, COMMISSIONER — April 25, 1973

Richard A. Huettich, CHIEF ENGINEER AND BUREAU DIRECTOR — April 25, 1973

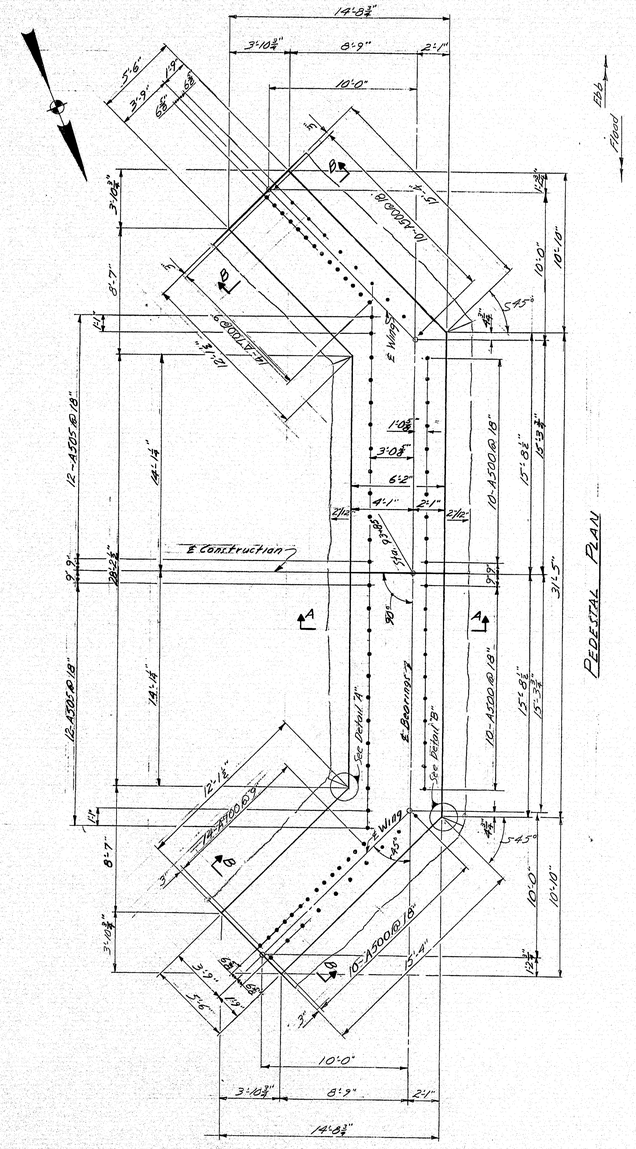
JANUARY 1968

Project Completed 1973

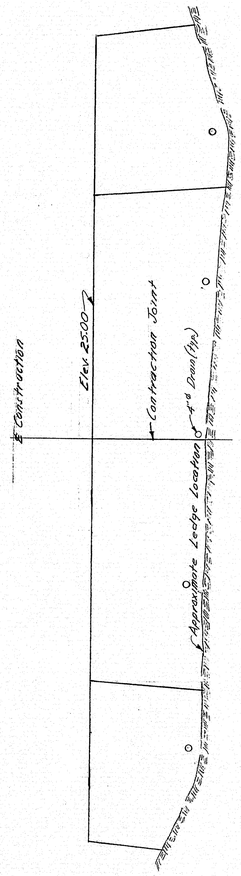
139-89

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

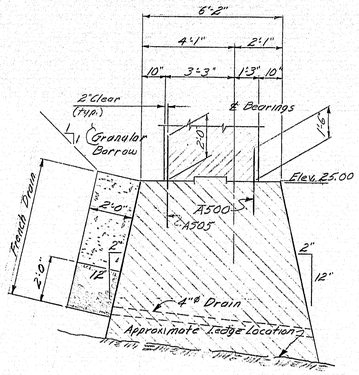
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	7	19



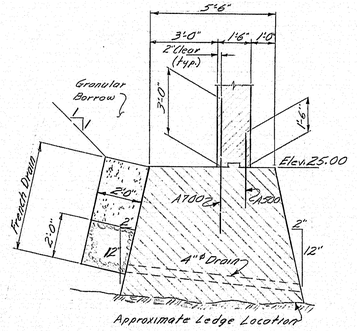
PEDESTAL PLAN



PEDESTAL ELEVATION



SECTION A-A



SECTION B-B

ABUTMENT NOTES

1. Chamfer all exposed edges of concrete ¾ inch unless otherwise indicated.

2. All reinforcing steel splices and embedments shall be a minimum of 24 bar diameters unless otherwise indicated.

3. Reinforcing steel ~~shall have~~ Add 2 inches cover unless otherwise indicated.

4. Place reinforcing steel in bridge seat to clear anchor bolts.

5. ~~Brake~~ Bond at vertical contraction Joints by a method approved by the Engineer.

7. Protective Coating for Concrete Surfaces shall be applied to the following areas: Abutment #2, face of backwall; bridge seat; face of breastwall to 1 foot below finish grade.

8. Maximum footing toe pressure is 6.8 Tons per Sq. Ft. for abutment #1.

9. All structural earth excavation required of abutment #1 in order to reach the ledge foundation ~~will be~~ paid for at the contract unit price for Item 206.08 Structural Earth Excavation and Retaining Walls.

10. At the location of bearing pedestals the concrete bridge seats ~~shall be~~ dressed to exact elevations and dimensions shown on the plans. If dressed areas are below the surface of the surrounding bridge seat a small channel shall be cut to the edge of the bridge seat for drainage where required by the Engineer. Channels shall have a minimum slope of ¼ inch per foot. No seperate payment for this work will be made as it shall be considered incidental to contract items.

11. Waterstops not required on any Vertical or Horizontal Joints.

12. Tension splices approved during construction and not shown on the plans will require 36 bar diameters.

13. Place 4 inch diameter drains at 10 Ft. maximum spacing and at low points in ledge. Exact number and location ~~shall be~~ determined by the Engineer in the field. (Abutment #1 only)

PLANS	BY	DATE
DESIGN - DETAILED	EBC	10-72
CHECKED	G.D.T.	4/9/75
REVISIONS		
FIELD CHANGES		

Revised As Built CK Cushing 4/9/75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
ABUTMENT NO. 1 CONCRETE PEDESTAL

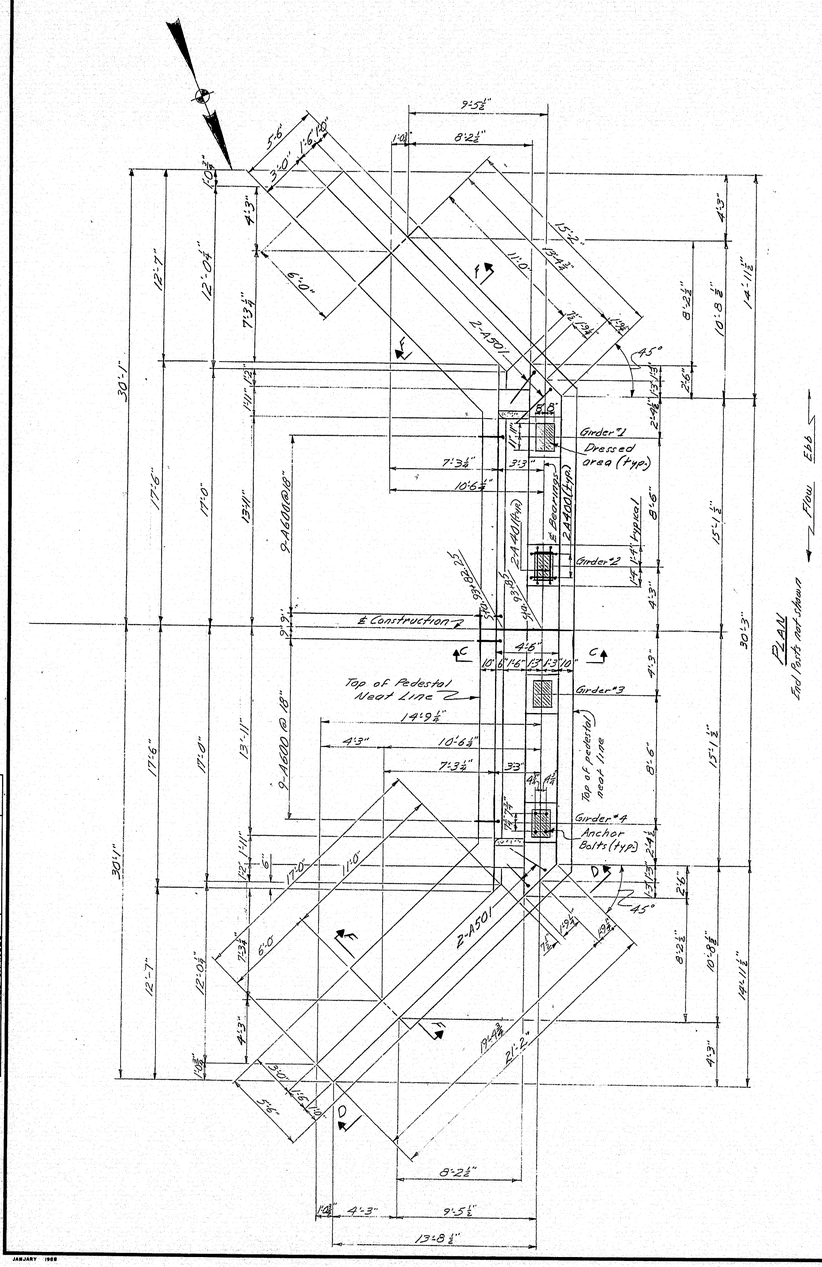
SHEET 7 OF 19 AUGUSTA, MAINE MARCH 1973

JANUARY 1968

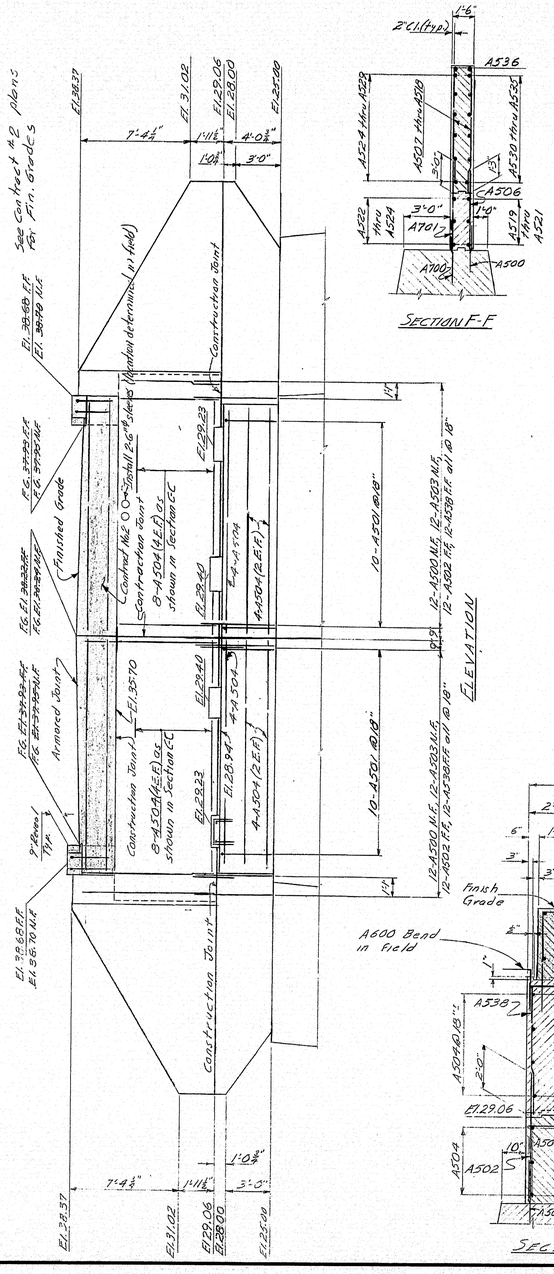
139-97

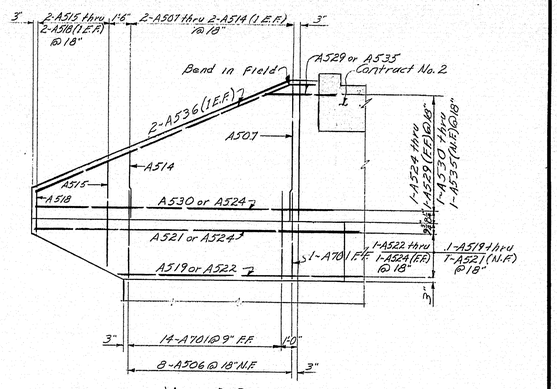
touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

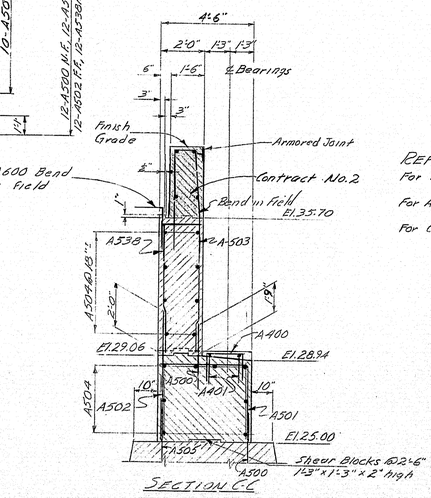
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	8	19



NOTE:
Top of backwall, curb and end posts will be constructed under Contract No. 2







REFERENCES:
For Abutment Notes see sheet # 7
For Abutment Pedestal see sheet # 7
For Construction & Contraction Joint Details see sheet # 9

PLANS	BY	DATE
DESIGN - DETAILED	EBC	11-72
CHECKED	ADT	9/80/73
REVISIONS		
FIELD CHANGES		

Revised As Built OK Bellamy 4/9/75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
ABUTMENT NO.1

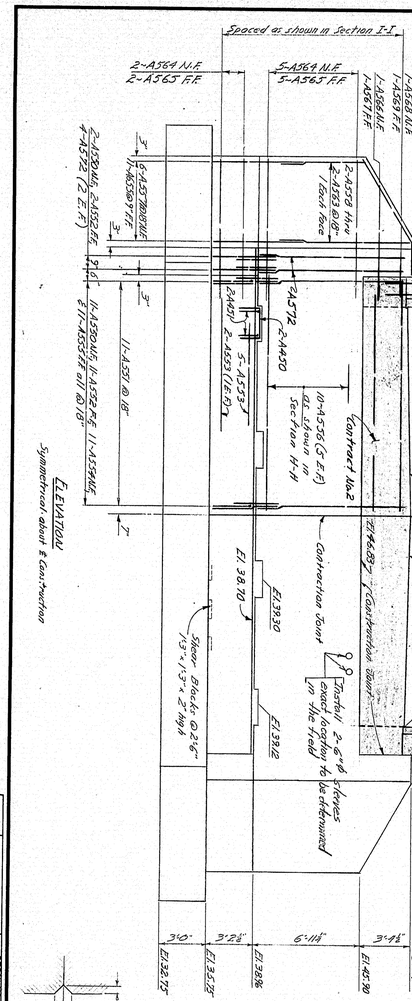
SHEET 8 OF 19 AUGUSTA, MAINE MARCH 1973

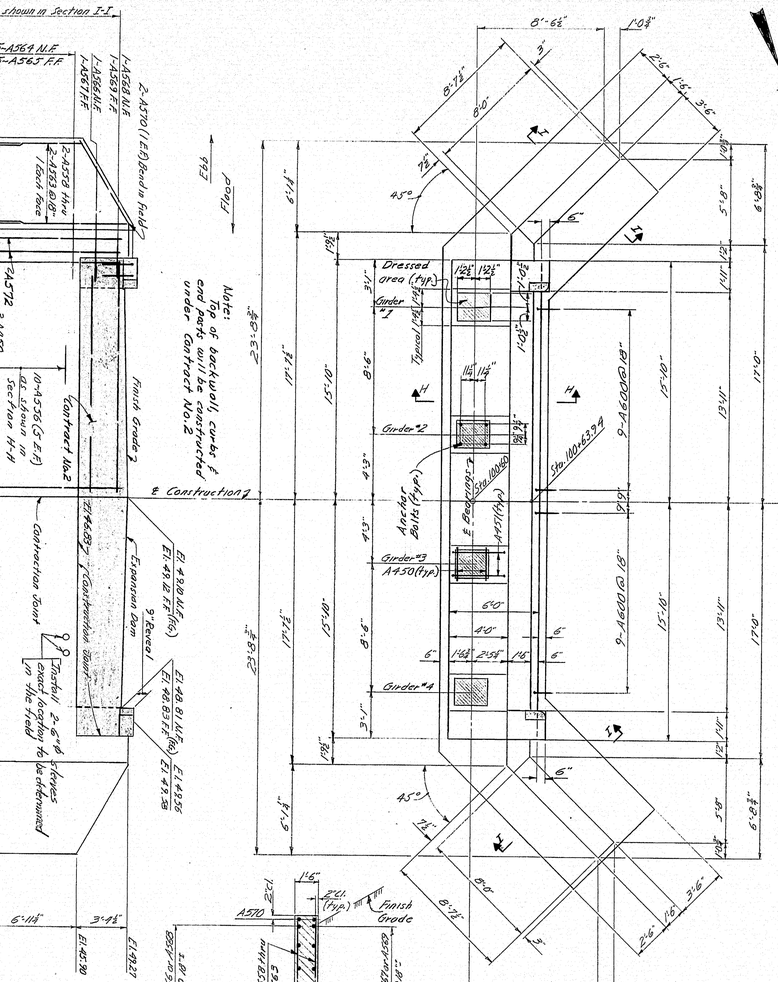
JANUARY 1968

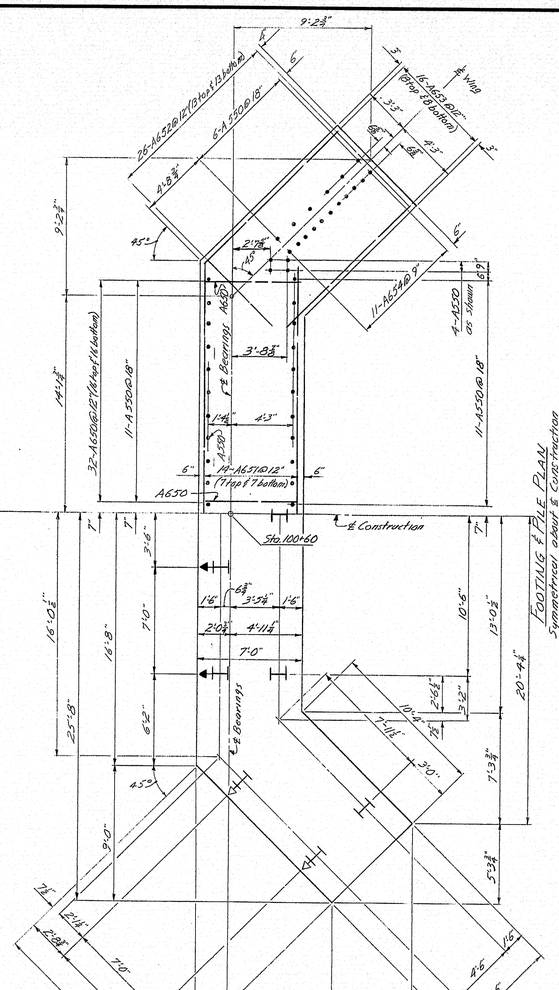
139-98

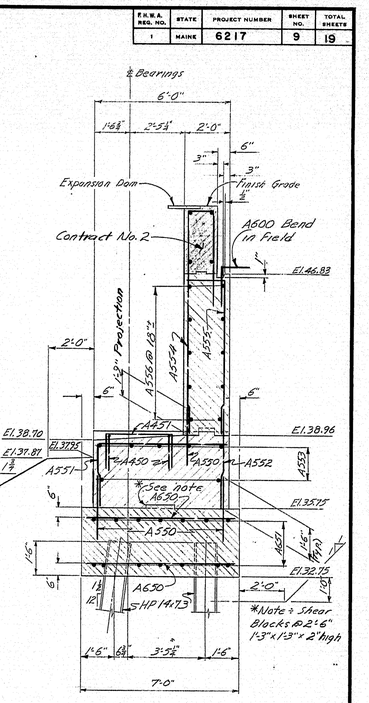
touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	9	19









SECTION H-H

PILE NOTES:

1. Piles ~~shall be~~ driven to ledge or practical refusal.

2. All piles shall have pointed reinforced tips.

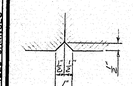
(Used) 3. Alternate types of pointed reinforced pile tips may be used if they have at least the cross-sectional area of the pointed reinforced pile tip shown on the plans and are approved by the Engineer.

4. Estimated driven lengths of piles are determined from available soils information with no allowance for pile cut-offs and no allowance for for uncertain pile penetration.

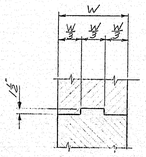
5. Piles marked thus, H, ~~shall be~~ battered 3 inches per foot and those marked thus, HP ~~shall be~~ battered 2 1/2 per foot. Were

6. Maximum pile load equals 98 tons.

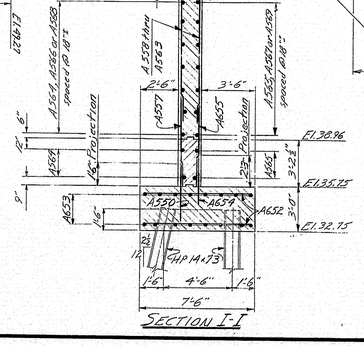
7. Following are pile locations, number of piles required, size of piles and estimated driven lengths:
Abutment No. 2 13 - HP 14x73 @ 20 Ft.



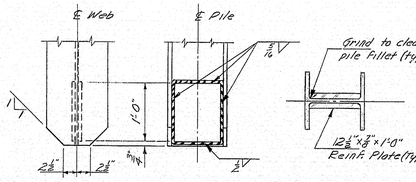
CONTRACTION JOINT DETAIL



CONSTRUCTION JOINT DETAIL



SECTION I-I



POINTED REINFORCED PILE TIP DETAIL
Plates may be shop or field welded

REFERENCES:

For Abutment Notes see sheet #7.

Revised As Built [illegible] 4/6/76

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
ABUTMENT NO.2

SHEET 9 OF 19 AUGUSTA, MAINE MARCH 1973

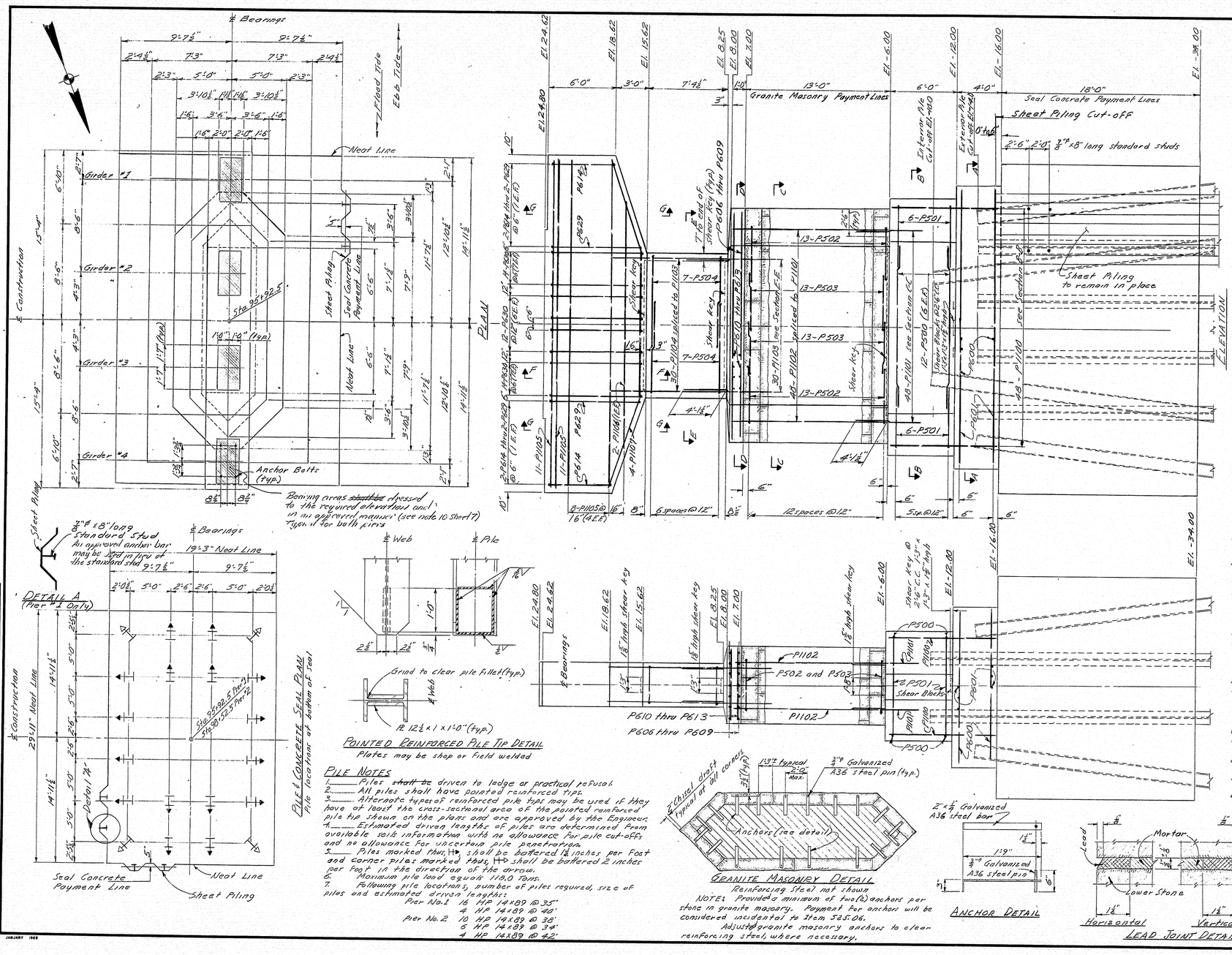
PLANS	BY	DATE
DESIGN - DETAILED	MMS	10/72
CHECKED	EEA	1/1973
REVISIONS	GOF	
FIELD CHANGES		

JANUARY 1968

189-99

touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	10	19



PIER NOTES

1. Chamfered all exposed edges of concrete ¾ inch unless otherwise indicated.
2. Reinforcing steel ~~shall have~~ had 3 inches minimum cover above elev. 7.0 & 4 inches minimum cover below elev. 7.0, unless otherwise indicated.
3. Placed reinforcing steel in bridge seats to clear anchor bolts.
4. All reinforcing steel splices and embedments shall be 36 bar diameters unless otherwise indicated.
5. Seal concrete dimensions are predicated on the use of MP-116, AP-2, T-27 or equivalent steel sheet piling with appropriate standard rolled corners. Pay dimensions for seal concrete shall be the neat lines shown plus 5 inches all around.
6. Intermediate concrete construction joints shall be at least 6 inches from horizontal granite joints and shear blocks shall be provided.
7. The seals are designed assuming a pumped head from elevation 6.0 to the top of seal and considering only the buoyant weight of the seal concrete. If the pumped head exceeds the design criteria the seal must be re-analyzed. The cofferdams shall be vented at low tide until dewatering begins, and at elevation 6.0 after dewatering begins until distribution slab is placed.
8. At the contractors option the outer ring of piles may be terminated between the top of the seal and a horizontal plane ten (10) feet above the bottom of seal. However if more than 8 piles are terminated below the specified cut-off elevation the contractor shall install by drilling and grouting - 48 #11 anchor bars 8'0" long, embedded at least 3'0" into the seal and distribution slab. Separate payment will be made for furnishing and installing anchor bars.
9. Bottom of sheet piling shall be driven to elevation -43.0 and shall remain in place. Pier No.1 ONLY.

DESIGN CRITERIA

1. Stream flow velocity of 6 feet per second skewed at 0°0' longitudinal centerline of pier.
2. Wind - 91 psf transverse and 12 psf longitudinal.
3. Ice - 6" thick, producing 200 psf Ice pressure skewed at 10° to longitudinal centerline of pier, with water level at elevation 7.5.
4. Critical AASHO loading group IX
5. Buoyancy - Water level assumed at elevation 6.0.

REFERENCES

For Sections A-A thru G-G see sheet No. 11

LEGEND

typ. = typical
Cl. = Clear
Sp. = Spaces
E.F. = Each Face

PILE NOTES

1. Piles ~~shall be~~ driven to ledge or practical refusal.
2. All piles shall have pointed reinforced tips.
3. Alternate types of reinforced pile tips may be used if they have at least the cross-sectional area of the pointed reinforced pile tip shown on the plans and are approved by the Engineer.
4. Estimated driven lengths of piles are determined from available soils information with no allowance for pile cut-offs and no allowance for uncertain pile penetration.
5. Piles marked thus ⊢ shall be battered ½ inches per Foot and corner piles marked thus ⊢⊢ shall be battered 2 inches per Foot in the direction of the arrow.
6. Maximum pile load equals 110.0 Tons.
7. Following pile locations, number of piles required, size of piles and estimated driven lengths:

Pier No.1	16	HP 14x89	@ 35'
	4	HP 14x89	@ 40'
Pier No. 2	10	HP 14x89	@ 38'
	6	HP 14x89	@ 34'
	4	HP 14x89	@ 42'

Revised As Built GP Battey 6/9/75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
PIER NO.1
SHEET 10 OF 19 AUGUSTA, MAINE APRIL 1973

139-100

PLANS — DESIGN - DETAILED — BY: MMG — DATE: 4-73
CHECKED — BY: J.T.A. — DATE: 6-24-73
REVISIONS — BY: GPM — DATE:
FIELD CHANGES — BY: — DATE:

Checked details - EBC

JANUARY 1968

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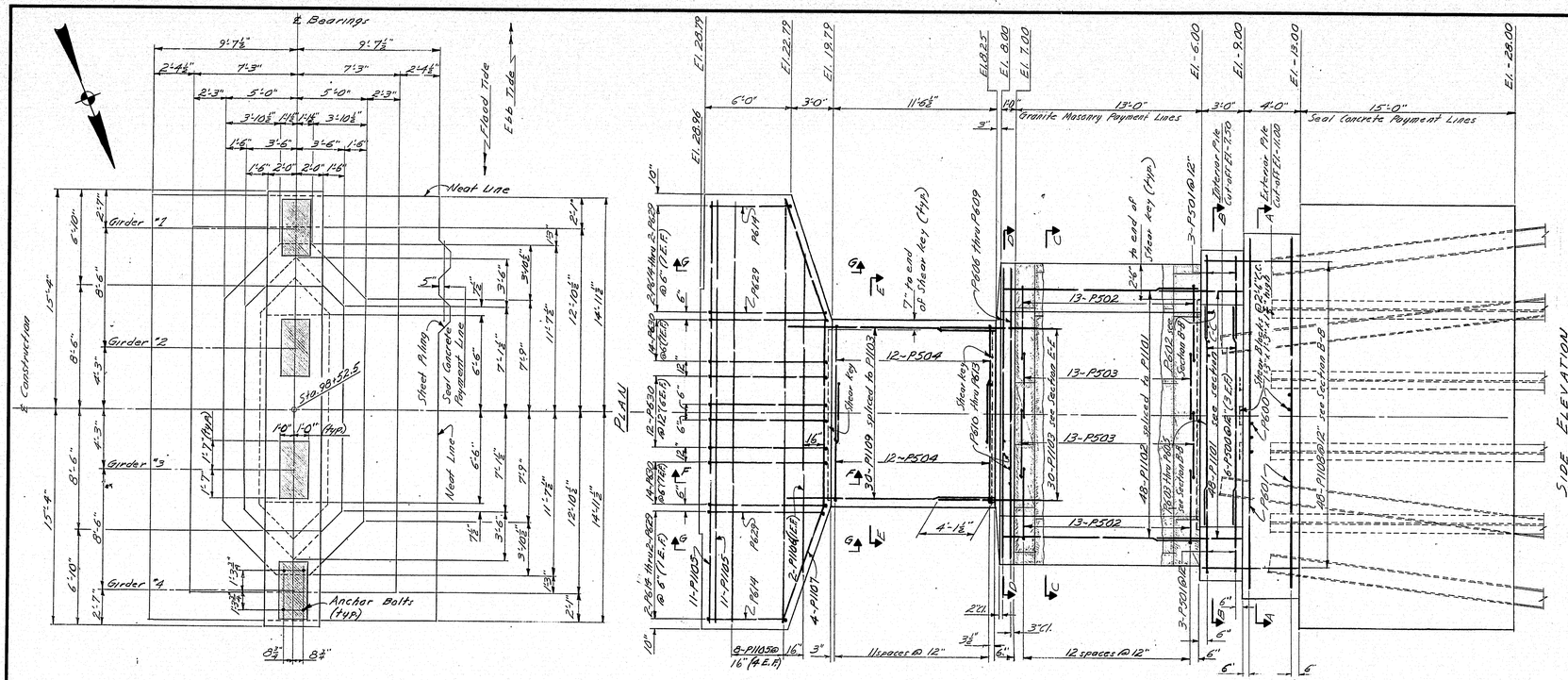
F.H.W.A. REQ. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	6217	11	19

PLANS

BY	DATE
DESIGN - DETAILED	MMG 2-73
CHECKED	CEH 3-73
REVISED	
FIELD CHANGES	

Checked details EBC



REFERENCES:

For Pier and Pile Notes see sheet No. 10.

For Pile and Concrete Seal Plan see sheet No. 10.

For Pointed Reinforced Pile Tip Detail see sheet No. 10.

For Granite Masonry Detail see sheet No. 10.

For Anchor and Lead Joint Details see sheet No. 10.

LEGEND:

Cl. = Clear

Sp. = Spaces

E.F. = Each Face

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
EWING NARROWS BRIDGE
IN THE TOWN OF
HARPSWELL
CUMBERLAND COUNTY
PIER NO. 2

SHEET 11 OF 19 AUGUSTA, MAINE APRIL 1973

JANUARY 1968

139-101

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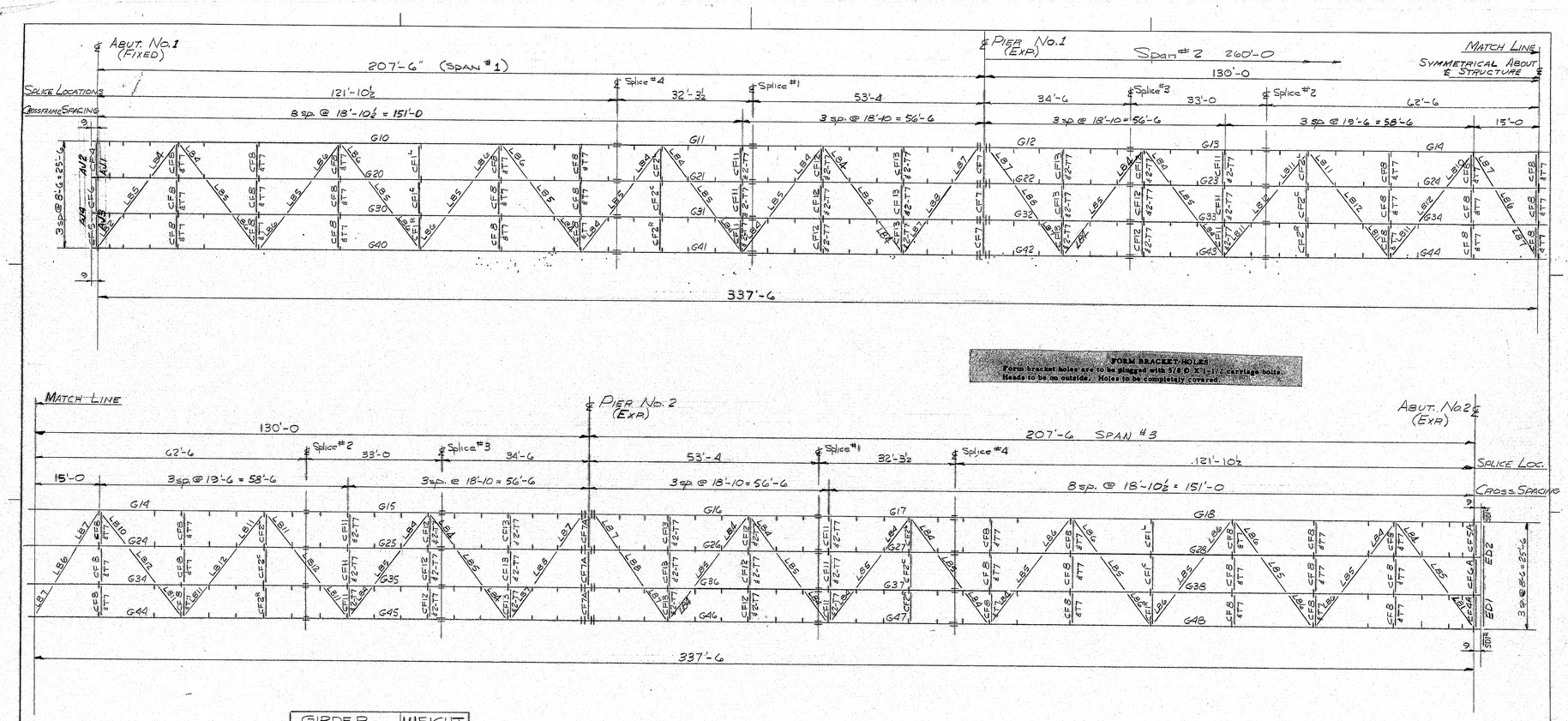


FORM BRACKET HOLES
Form bracket holes are to be plugged with 5/8 Ø X 1-1/2 carriage bolts. Heads to be on outside. Holes to be completely covered.

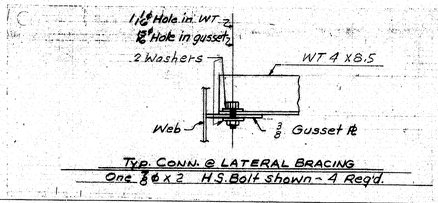
GIRDER	WEIGHT
G10, G20, G30, G40	20.7 Tons
G11, G21, G31, G41 G17, G27, G37, G47	7.5 Tons
G12, G22, G32, G42 G16, G26, G36, G46	20.0 Tons
G13, G23, G33, G43 G15, G25, G35, G45	9.5 Tons
G14, G24, G34, G44	20.4 Tons
G18, G28, G38, G48	20.8 Tons

N

Framing Plan

Bridge is on constant grade
All dimensions are horizontal

* Rg. Mt's on lateral bracing

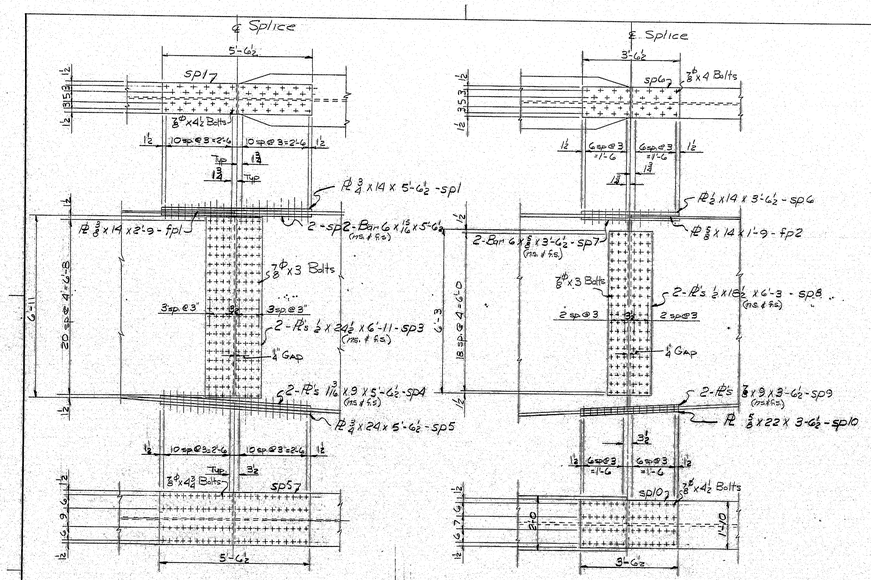


Typ. Conn. @ Lateral Bracing
One ⅞ Ø x 2 H.S. Bolt shown - 4 Req'd.

Item No. 504.70
Project No. 6217
Approved 4-11-74 4-26-74

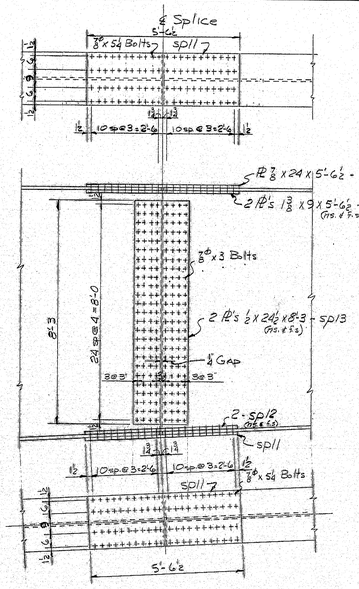
Framing Plan			
Print Dist.			Bancroft & Martin Inc. South Portland, Maine 04106
2	3-25-74	A.	
0 Revised	4-4-74	F.A.	
1	4-9-74	Shoulder	
2 Revised	4-11-74	Revised	Job: Ewing Narrows Bridge Harpswell, Maine
2	5-21-74	Cust.	
3	6-26-74	Cust.	
			Customer: Callahan Bros.
			Designer: State of Me. Dept. of Trans.
Rev.			Order No. / Job No. 73-524 / Drawing No. E1
Checked			
Drawn	11/12/73	MCD	

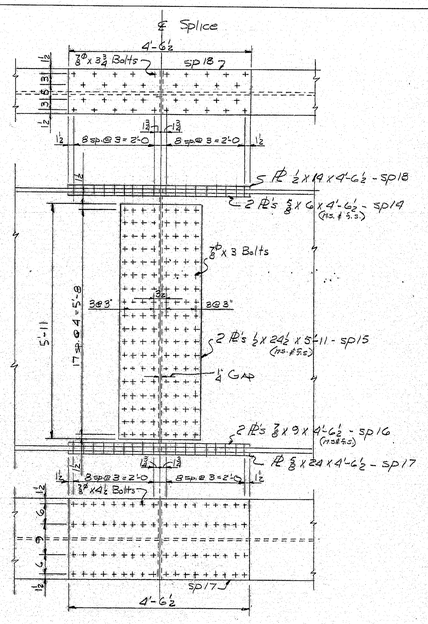
141-168



SPLICE No. 1

SPLICE No. 2





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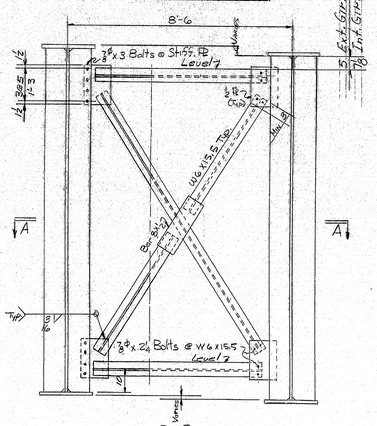
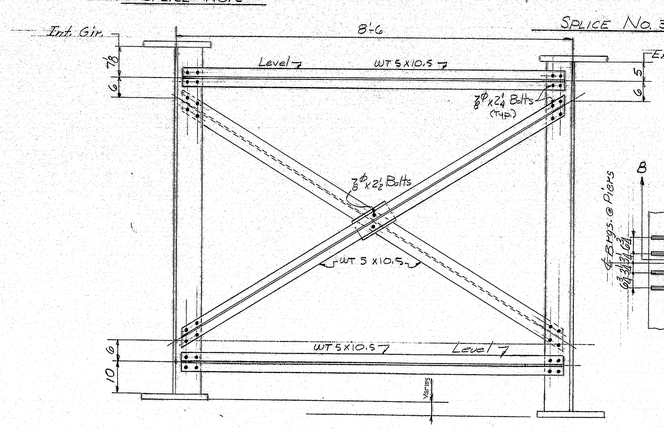


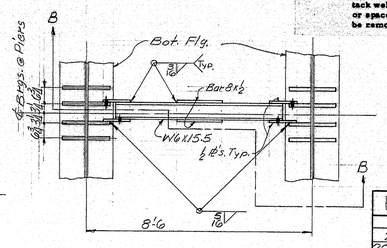
B-B

Cross frame CF7 & CF7A @ Piers
Type N



Intermediate Cross frame - CF11, 12 & 13
Type M

SPLICE No. 3



SECTION A-A

SPLICE NOTE

In order to maintain the 0-¼ gap shown, the webs and flanges are to be cut (with the use of mechanical guide) at the time of shop assembly of the field splices. Holes are to be drilled full size from the solid with all material in exact relative field position.
No welding of filler plates or splice plates is allowed; except that web splice plates & fillers may be tack welded for drilling as follows: no tack weld closer to a flange than 1/6 of web width, or longer than 3", or spaced less than approximately 12" on center. All tack welds will be removed and web surface ground flush. Bolt for shipment.

NOTE: All bolts to be A325 Type 1 ⅞Φ with 1⅛Φ Holes.

ITEM No. 504.70
PROJECT No. 6217
APPROVED: 4-11-74

FRAMING PLAN DETAILS

PRINT DIST.		
2	3-25-74	A
2 Revised	4-9-74	EA
1	4-9-74	SWP
2	5-21-74	CWT
3	6-26-74	CWT
REV.		
CHECKED		
DRAWN	11/16/73	MGP

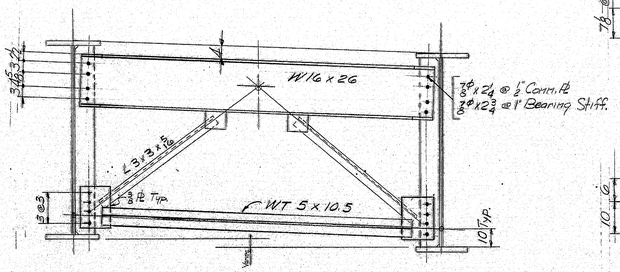
Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

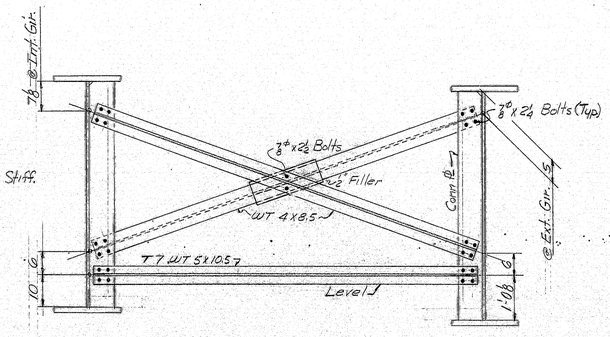
CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF ME. DEPT. OF TRANS.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	E 2

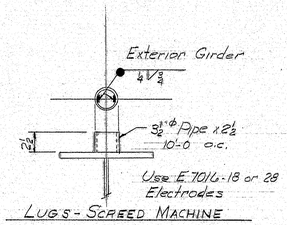
141-169



Crossframe - CF1,2,4,5 & 6
Type D



Intermediate Crossframe - CF8
Type L



LUGS - SCREED MACHINE

To be welded to compression flange in the first 124'-0" of span 1, the center 64'-0" of span 2 and the last 124'-0" of span 3 only.

Note: All bolts to be 7/8" A325 Type 1 with 1 7/16" holes.

ITEM NO. 504.70
PROJECT NO. 6217
APPROVED 4-11-74

FRAMING PLAN

PRINT DIST.		
2	3-25-74	A.
2 Sepias	4-9-74	F.A.
4	4-9-74	STATE
2 Sepias	4-17-74	F.H.A.
2	5-21-74	CONST.
3	6-26-74	C.S.T.
REV.		
CHECKED		RSM
DRAWN	11/17/73	MSP

Bancroft & Martin Inc.
South Portland, Maine 04106

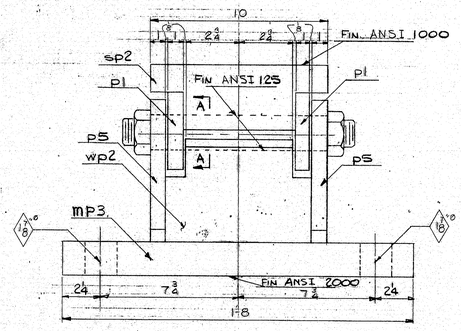
JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

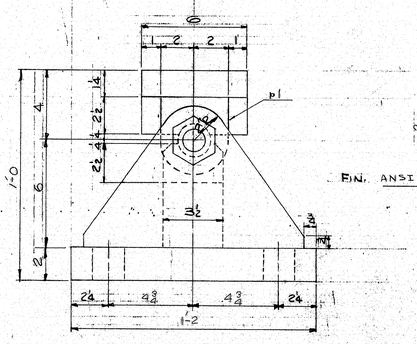
CUSTOMER: CALLAHAN BROS.

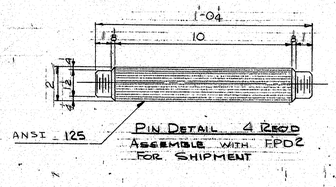
DESIGNER: STATE OF ME. DEPT. OF TRANS.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	E3

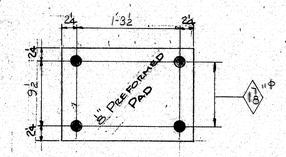
141-170





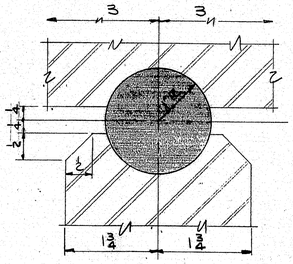


PIN DETAIL 4 REQ'D
ASSEMBLE WITH FPD2 FOR SHIPMENT



FP3 - 4 REQ'D

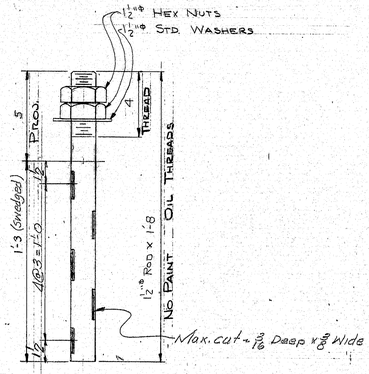
FIXED PEDESTAL - FPD2 4 REQ'D
@ ABUT #1



SECTION A-A

PIN NOTE:
THE DIAMETER OF THE PIN HOLE SHALL NOT EXCEED THAT OF THE PIN BY MORE THAN 1/50 INCH.

PAINT NOTE:
NO PAINT ON TOP OF SOLE PLATES AND 1" DOWN FROM TOP ON SIDES, COAT WITH BOILED LINSEED OIL.
NO PAINT ON SURFACES WITH ANSI 125 FINISH, COAT WITH MIXTURE OF WHITE LEAD AND TALLOW.
NO PAINT ON ANCHOR BOLTS - OIL THREADS.
MASONRY PLATES SHALL RECEIVE 2 COATS OF SHOP PAINT.



AB3 16 REQ'D

SHIP	BILL OF MATERIAL					JOB NO. 73-524	DWG. NO. 51-3
MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
FPD2	4		SHOP ASSEMBLY		—		
	4	mP3	PL 2 x 14	1 8		7-7	
	8	p1	Bar 4 x 1	0 4¾		7-11	
	8	p5	Bar 5 x 1	1 0½		7-10	
	4	wp2	Bar 5½ x 3½	0 8		7-9	
	4	sp2	Bar 6 x 3¾	0 10		7-8	
FP3	4		Pad ¾ x 14	1 8		7-16	PREFORMED PAD REQ. NO. 126
	4	SHOP	2" ROD	1 0¼		7-14	CRS THREADED ONE
	8	Do	12" NUTS			7-15	LOMAS NUT
AB3	16		12" ROD	1 8		7-12	
	32	SHOP	12 HEX NUTS			7-13	
	16	Do	1½" STD WASHER				

ITEM NO. 504.76
PROJECT NO. 0621

STEEL: ASTM. A36
WELDING ELECTRODE SEE WELDING PROCEDURES #301
SHOP CONN: WELDED - 2 CONT. FILLETS
FIELD CONN: WELDED
HOLES: AS NOTED
PAINT: RED LEAD PER MAINE SPECS & AS NOTED
SPECIAL CLEANING: BLAST CLEAN
APPROVED.

PEDESTAL DETAILS

PRINT DIST.		
2P.	1-31-74	A
2 Sepias	2-7-74	F.A.
4	2-8-74	SHOP
2	5-21-74	CUST.
REV.		
CHECKED		
DRAWN	10-12-73	RFS

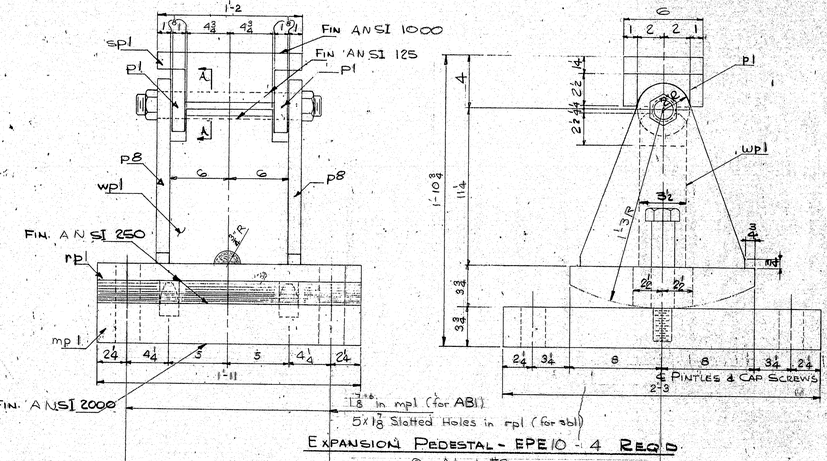
Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.
DESIGNER: MAINE SHC. BRIDGE DIV.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	51-3

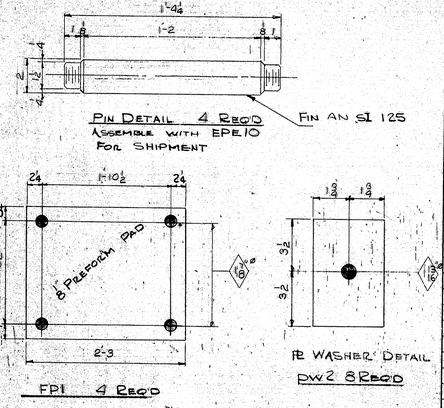
141-171



EXPANSION PEDESTAL - EPE10 - 4 REQ'D

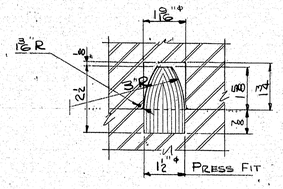
@ Abut #2

Drill & Tap 2 Holes (in mp1) For sb1

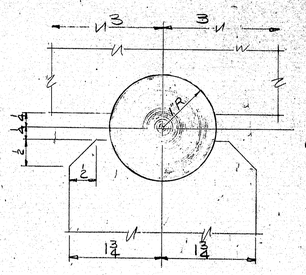


PIN DETAIL 4 REQ'D

ASSEMBLE WITH EPE10 FOR SHIPMENT

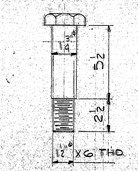


PINTLE DETAIL



SECTION A-A

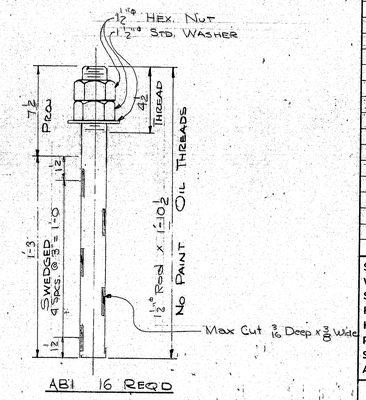
PIN NOTE:
THE DIAMETER OF THE PIN HOLE SHALL NOT EXCEED THAT OF THE PIN BY MORE THAN 1/50 INCH



Shoulder Bolt sb1

8 Req'd

Bolt rp1 to mp1 for shipment



ABI 16 REQ'D

PAINT NOTE:
NO PAINT ON TOP OF SOLE PLATES AND 1" DOWN FROM TOP ON SIDES COAT WITH BOILED LINSEED OIL.
NO PAINT ON SURFACES WITH ANSI 125 FINISH, COAT WITH MIXTURE OF WHITE LEAD AND TALLOW.
NO PAINT ON THE ANCHOR BOLTS - OIL THREADS!
MASONRY PLATES AND BEARING SURFACES OF EXPANSION BEARING ROCKERS ANSI 250, SHALL RECEIVE 2 COATS OF SHOP PAINT.

SHIP MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
EPE10	4		SHOP ASSEMBLY				
	4	mp1	PL 3⅜ x 23	2 3		G-15	
	8	p1	Bar 4 x 1	0 4¾		G-20	
	8	p8	PL 1 x 13¾	1 2½		G-19	
	4	rp1	PL 3⅜ x 16	1 11		G-16	
	4	sp1	Bar 6 x 3⅜	1 2		G-18	
	4	wp1	PL 3 x 11	1 0		G-17	
FP1	4		Pad ⅛ x 23	2 3		F-6	PREFORMED PAD REG. NO 1261
	4	SHOP	2" ROD	1 4¼		F-1	CRS (ROLLED PIN)
	8	Do	1½" NUTS			F-2	LOMAS NUT
	8	PINTLE	1½" ROD	0 2½		G-21	CRS
	8	sb1	1¾" Shoulder Bolt	0 8		F-3	
ABI	16		1½" ROD	1 10½		F-4	SWEDGED
	8	pw1	Bar ¼ x 3½	0 7			@ sb1
	32	SHOP	1½" HEX. NUTS			F-5	
FIELD	16		1½" Std WASHER				

ITEM No. 509.70
PROJECT No. 0217

STEEL: ASTM. A36
WELDING ELECTRODE: SEE WELDING PROCEEDURES # 301
SHOP CONN: WELDED - ⅝" CONT. FILLET
FIELD CONN: WELDED & BOLTED
HOLES: AS NOTED
PAINT: RED LEAD PER MAINE SPECS & AS NOTED
SPECIAL CLEANING: BLAST CLEAN
APPROVED:

PEDESTAL DETAILS

PRINT DIST.		
2P	1-31-74	A.
2 Sepias	2-7-74	FA.
4	2-8-74	Shop
2	2-21-74	Cust.

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.

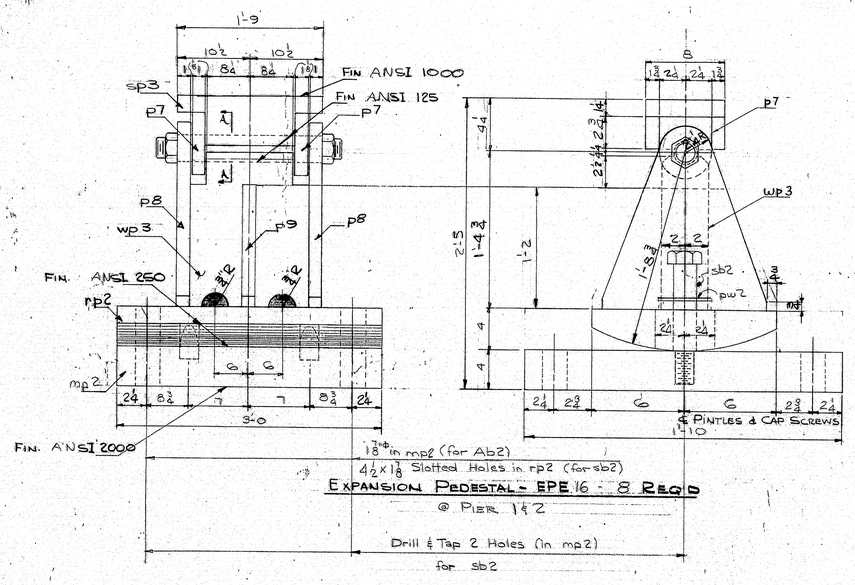
DESIGNER: MAINE S.H.C. BRIDGE DIV.

REV.			ORDER NO.	JOB NO.	DRAWING NO.
CHECKED				73-524	51-1
DRAWN	10-12-73	RFS			

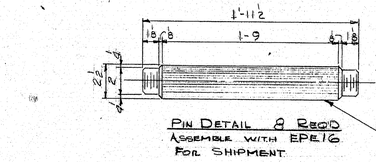
141-172

EPE 1-18

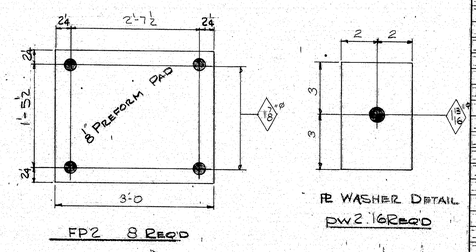
touraine paints TRUFLEX ☆ SILKY ☆ TRIPLE WHITE ☆ RYPLEX



EXPANSION PEDESTAL - EPE16 - 8 REQ'D
@ PIER 1 & 2

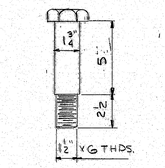


PIN DETAIL 8 REQ'D
ASSEMBLE WITH EPE16 FOR SHIPMENT

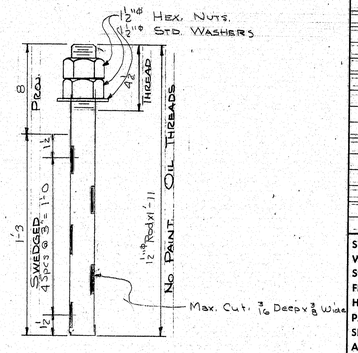


FP2 8 REQ'D

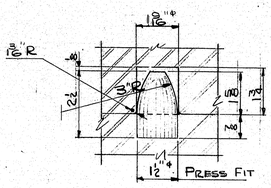
PL WASHER DETAIL
PW2 16 REQ'D



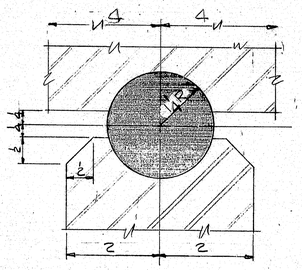
Shoulder Bolt sb2
16 Req'd
(Bolt rp2 to mp2 for Shipment)



AB2 32 REQ'D



PINTLE DETAIL



SECTION A-A

PIN NOTE:
THE DIAMETER OF THE PIN HOLE SHALL NOT EXCEED THAT OF THE PIN BY MORE THAN $\frac{1}{50}$ INCH.

PAINT NOTE:
NO PAINT ON TOP OF SOLE PLATES AND 1" DOWN FROM TOP ON SIDES, COAT WITH BOILED LINSEED OIL.
NO PAINT ON SURFACES WITH ANSI 125 FINISH, COAT WITH MIXTURE OF WHITE LEAD AND TALLOW.
NO PAINT ON THE ANCHOR BOLTS - OIL THREADS.
MASONRY PLATES AND BEARING SURFACES OF EXPANSION BEARING ROCKERS ANSI 250, SHALL RECEIVE 2 COATS OF SHOP PAINT.

BILL OF MATERIAL — JOB NO. 73-524 — DWG. NO. S1-2

SHIP MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
EPE16	8		SHOP ASSEMBLY				
	8	mp2	PL 4 x 22	3 0		6-2	
	16	p7	Bar 4½ x 1	0 5¼		6-6	
	16	p8	PL 1 x 10½	1 7		6-4	
	16	p9	Bar 3¼ x 1	1 2		6-7	
	8	rp2	PL 9 x 12	3 0		6-1	
	8	sp3	Bar 8 x 4	1 9		6-3	
	8	wp3	PL 9 x 16½	1 7		6-5	
FP2	8		Pad ½ x 22	3 0		6-10	PREFORMED PAD REG. NO. 1261
	8	SHOP	2 1/16" ⌀ ROD	1 10½		6-9	CRS (RECESSED PIN)
	16	Do	2 1/16" ⌀ NUTS	-		6-10	LOMAS NUT
	16	Pintle	1½" ⌀ ROD	0 22		6-8	C.R.S.
	16	sb2	1½" ⌀ Shoulder Bolt	0 7½		6-11	
AB2	32		1½" ⌀ ROD	1 11		6-12	SWEDGED for sb 2
	16	pw2	Bar 9 x ½	0 6			
	64	SHOP	1½" ⌀ HEX. NUTS			6-13	
FIELD	32		1½" ⌀ Std. Washer				

ITEM No. 5049.70
PROJECT No. 6217

STEEL: ASTM A36
WELDING ELECTRODE SEE WELDING PROCEEDURES #301
SHOP CONN: WELDED - ½" CONT. FILLET
FIELD CONN: WELDED & Bolted
HOLES: AS NOTED
PAINT: RED LEAD PER MAINE SPECS & AS NOTED
SPECIAL CLEANING: BLAST CLEAN
APPROVED:

PEDESTAL DETAILS

PRINT DIST.		
ZP	1-31-74	A
3 Copies	2-7-74	F.A.
4	2-8-74	Shop
2	5-21-74	CUSTR

REV.
CHECKED
DRAWN 10-12-73 RFS

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

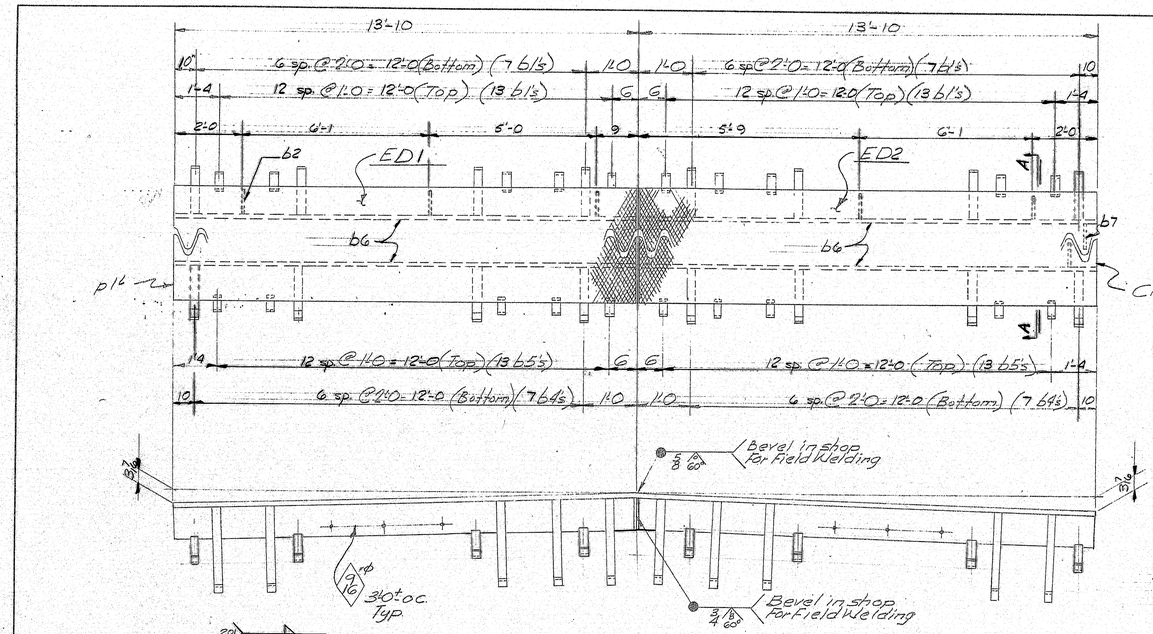
CUSTOMER: CALLAHAN BROS.

DESIGNER: MAINE S.H.C. BRIDGE DIV.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	51-2

141-173 EPE 11-15-74

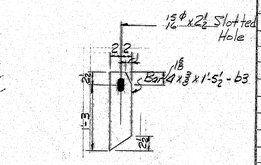
GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK Printed in U.S.A. ULTRAVEL/HARDM



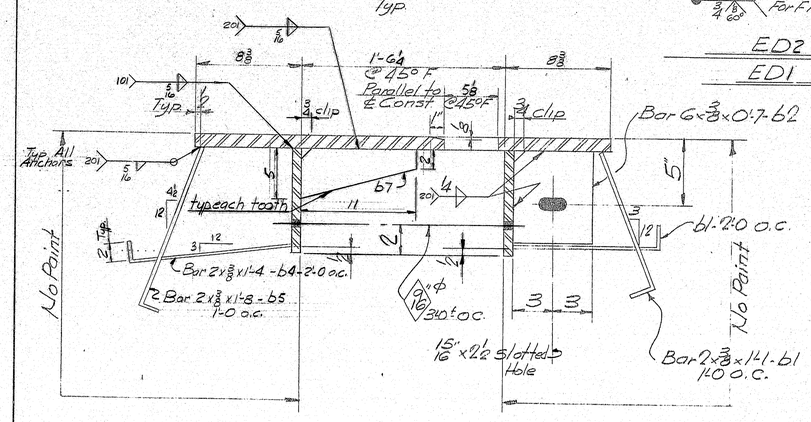
ED2 - One Req'd

ED1 - One Req'd

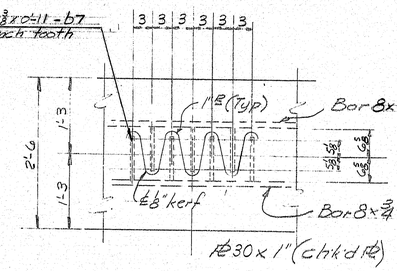
Shop to provide 2 shipping devices per section.



5 - b3 - Detail (No Paint)
Bolt to b2 for shipment
Use 7/8" H.S. Bolts x 2 1/2



SECTION A-A



CUTTING DETAIL
Match Mark.

SHIP MARK	NO.	MARK	SHAPE	LENGTH		WT.	ITEM No.		REMARKS
ED2			ASSEMBLY			—			
ED1			ASSEMBLY			—			
	2	pl's	PL 1 x 30	13	10		5-7		CHK'D PL 13'-10
	40	b1	Bar 2 x 3/8	1	1		5-14		
	5	b2	Bar 6 x 3/8	0	7		5-19		L.O.
	5	b3	Bar 4 x 3/8	1	5 1/2		5-20		L.O.
	14	b4	Bar 2 x 3/8	1	4		5-15		
	26	b5	Bar 2 x 3/8	1	8		5-16		
	4	b6	Bar 8 x 3/4	13	10		5-9		
	109	b7	Bar 5 x 3/8	0	11		5-13		L.O.
	5	SHOP	7/8" H.S. Bolts	0	2 4				A325 TYPE 1
	5	Do	7/8" HARD WASHERS						A325

ITEM No. 504.70
PROJECT No. 6217
A.S.T.M. A36

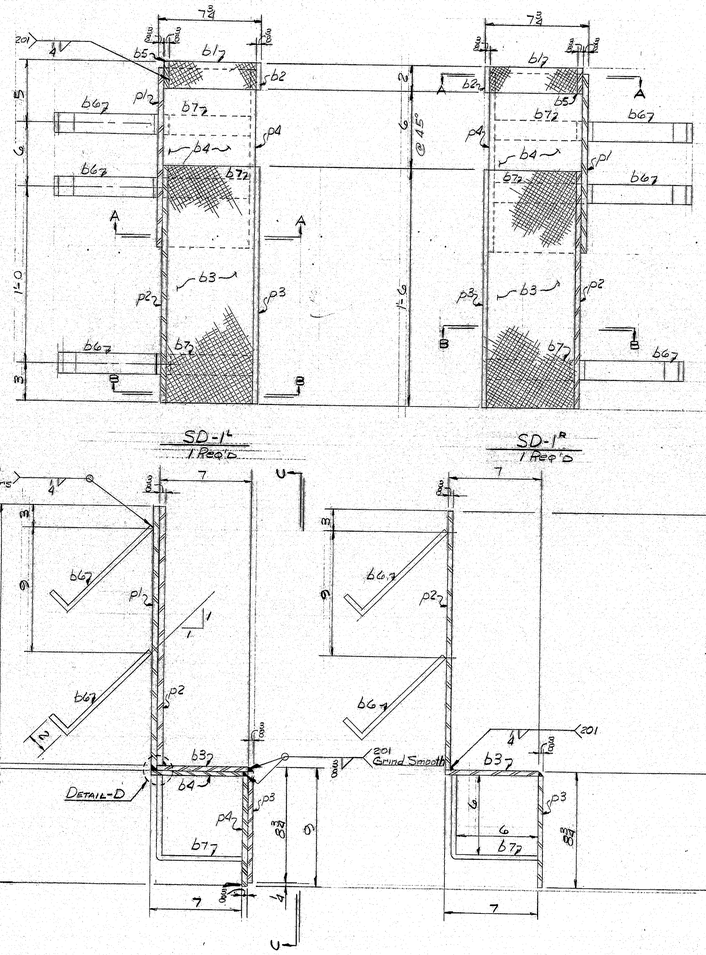
SHOP CONNECTIONS: Welded & Bolted
FIELD CONNECTIONS: Welded
HOLES: As Noted
PAINT: Red Lead Per Mc. Specs. & as noted

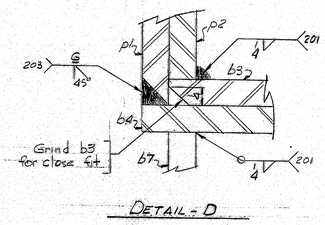
APPROVED 7-9-74

EXPANSION DAM
Bancroft & Martin Inc.
South Portland 7, Maine.
EWING NARROWS BRIDGE
HARPSWELL, MAINE
CUSTOMER Callahan Bros.
DESIGNER Me. S.H.C. Bridge Div.
JOB NO. 73-524 DWG. NO. 57-2

2P	7-10-74	F&P	
4P	7/2/74	Shop	
2S	7/11/74	F.A.	
2P	6/17/74	App	
DRAWN	11/7/73	MEP	
REVISION			
REVISION			
REVISION			

141-174





SHIP	BILL OF MATERIAL	JOB NO. 73-524	DWG. NO. S7-1

MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
SD1L	2		SIDEWALK EXPANSION DAM				1 Req'd
	2	p1	PL 3/8 x 13 1/2	1 10 3/8		5-11	
	2	p2	PL 3/8 x 18	1 10		5-12	
	2	p3	PL 3/8 x 8 3/8	1 6		5-10	
	2	p4	PL 3/8 x 8 1/4	1 1/2		5-11	
	2	b1	Bar 2 x 3/8	0 7		5-8	(Ch'kd 12)
	2	b2	do	0 8 3/8		5-10	
	2	b3	Bar 7 x 3/8	1 6		5-8	(Ch'kd 12)
	2	b4	do	1 1 1/2		5-10	
	2	b5	Bar 2 x 3/8	1 10		5-12	
	12	b6	Bar 1 1/2 x 3/8	0 11		5-17	
	6	b7	do	1 0		5-16	

ITEM NO. 504.70
PROJECT NO. 6217

STEEL: ASTM. A36
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN:
HOLES: None
PAINT: Red Lead Per Mer. Specs. & As noted
SPECIAL CLEANING: Blast Clean
APPROVED: 7-9-74

SIDEWALK EXPANSION DAM

REV.	PRINT DIST.		
2P	6/17/74	MSD	
2S	7/1/74	FSP	
4P	7/2/74	MSD	
2P	7-10-74	FSP	
CHECKED			
DRAWN	1/17/74	MSD	

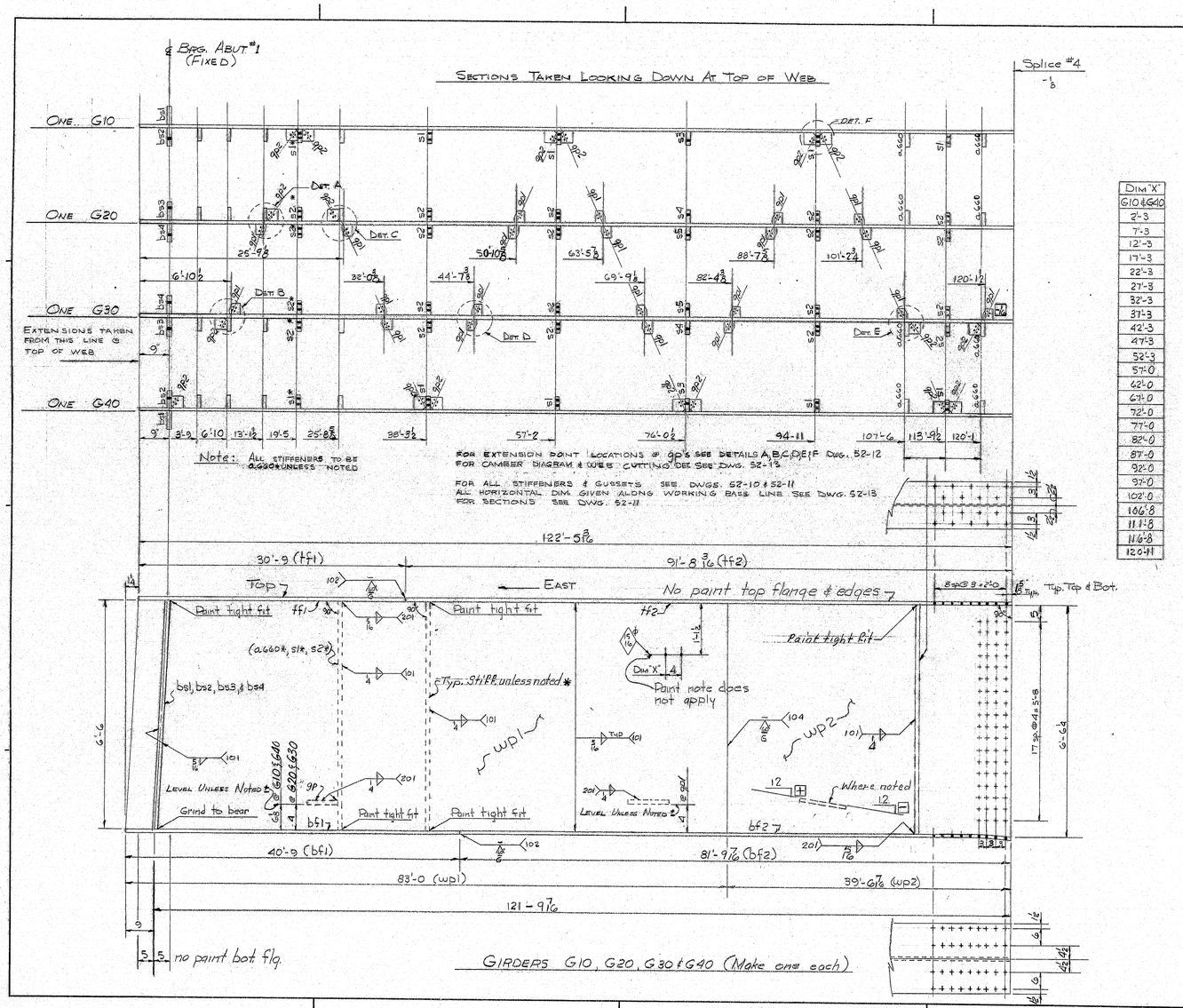
Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF ME, DEPT. OF TRANS.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	S7-1

141-175



Dim 'X'
G10 & G40
2'-3
7'-3
12'-3
17'-3
22'-3
27'-3
32'-3
37'-3
42'-3
47'-3
52'-3
57'-0
62'-0
67'-0
72'-0
77'-0
82'-0
87'-0
92'-0
97'-0
102'-0
106'-8
111'-8
116'-8
120'-11

SHIP | **BILL OF MATERIAL** | JOB NO. 73-524 | DWG. NO. 52-1

MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.		REMARKS
G10	1		Girder	122 6 7/16	—			
G20	1		do	122 6 7/16	—			
G30	1		do	122 6 7/16	—			
G40	1		do	122 6 7/16	—			
	4	wp1	PL 9/16 x 78	83 0		2-1		Cut from PL 9/16 x 84 x 84
	4	wp2	PL 9/16 x 78 1/4	39 6 7/16		2-2		Cut from PL 9/16 x 82 1/4 x 40-0
	4	tf1	PL 1 1/2 x 14	30 9		1-1		
	4	tf2	PL 1 1/2 x 14	91 8 13/16		1-2		A572 - Gr 50
	4	bf1	PL 1 1/2 x 24	40 9		1-8		
	4	bf2	PL 1 1/2 x 24	81 9 7/16		1-9		A572 - Gr 50
	2	bs1	PL 1 x 10	6 6		3-1		
	2	bs2	do	6 6		3-1		
	2	bs3	do	6 6		3-1		
	2	bs4	do	6 6		3-1		
	10	s1	Bar 7 x 1/2	6 6		3-4		
	20	s2	do	6 6		3-4		
	2	s3	do	6 6		3-4		
	2	s4	do	6 6		3-4		
	2	s5	do	6 6		3-4		
	24	g660	Bar 7 x 1/2	6 6		3-13		
	21	gp1	PL 3/8 x 9	0 9		3-18		
	18	gp2	PL 3/8 x 12 1/4	1 4		3-17		

Holes are for high tensile bolts. They are to be free from burrs and shall not be painted on any surface within 6" of such open holes.

ITEM No. 504.70
PROJECT No. 6217

STEEL: ASTM. A36 unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted & Welded
HOLES: 15/16 Ø
PAINT: Red Lead Per Maine Specs. & As noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS - G10 thru G40

PRINT DIST.		
EP	3 25 74	App.
2 Sepias	4-16-74	F.A.
4	4-17-74	S.H.P.
2	5-21-74	Corr.

Bancroft & Martin Inc.
South Portland, Maine 04106

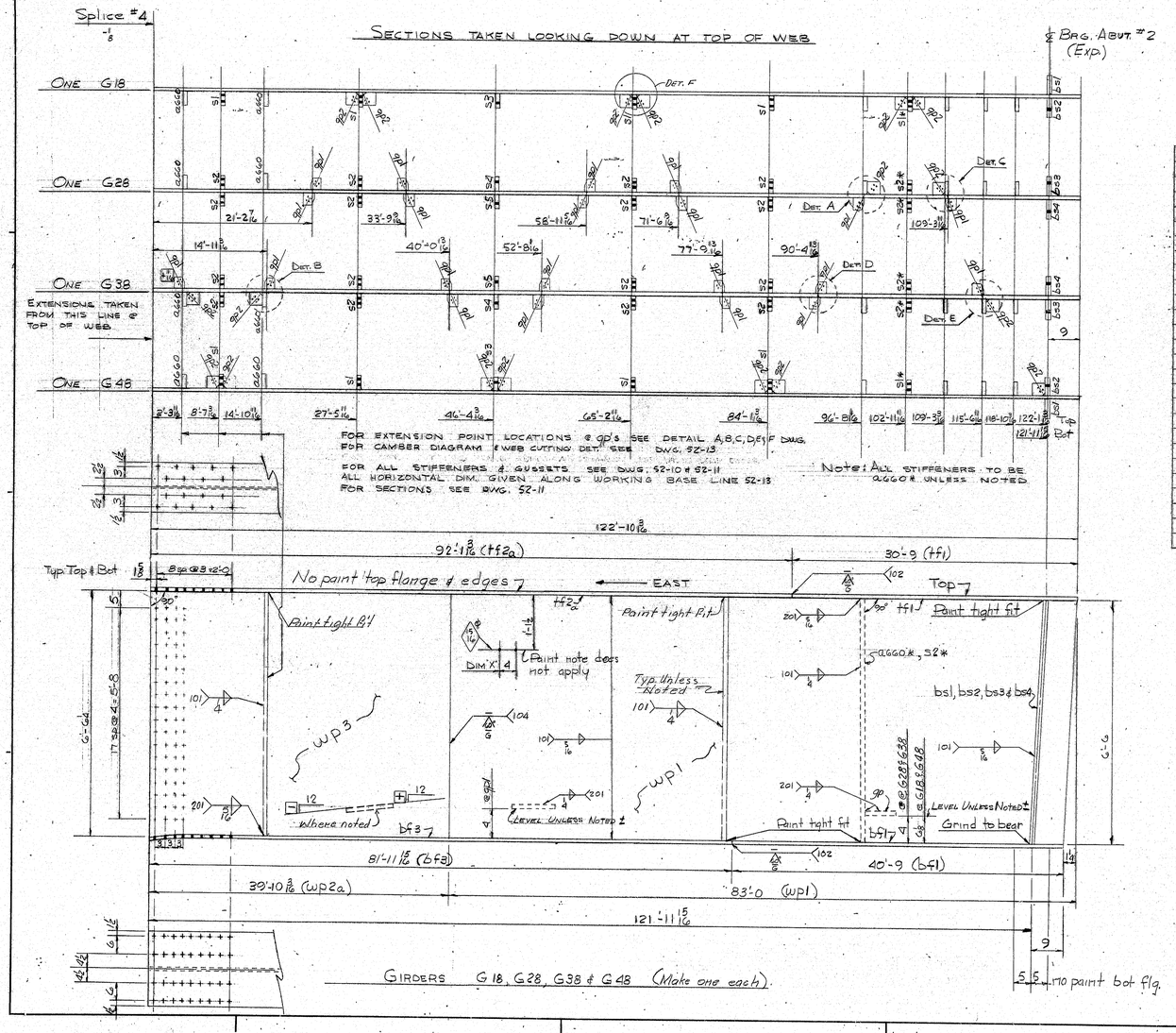
JOB: Ewing Narrows Bridge
Harpswell, Maine

CUSTOMER: Callahan Bros.
DESIGNER: State of Me. Dept. of Trans.

REV.			
CHECKED			RGM
DRAWN	11 23 73		MGP

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	52-1

141-176



GIRDERS G18, G28, G38 & G48 (Make one each).

DIM X G18 & G48
1'-2
6'-2
11'-2
16'-2
21'-2
26'-2
31'-2
36'-2
41'-2
46'-2
51'-2
56'-2
61'-2
66'-2
71'-2
76'-2
81'-2
86'-2
91'-2
96'-2
101'-2
106'-2
111'-2
116'-2
120'-3

SHIP BILL OF MATERIAL JOB NO. 73-524 DWG. NO. S2-2

SHIP MARK	NO.	MARK	SHAPE	LENGTH		WT.	ITEM NO.		REMARKS
G18	1		Girder.	122	10 5/16	—			
G28	1		do	122	10 5/16	—			
G38	1		do	122	10 5/16	—			
G48	1		do	122	10 5/16	—			
	4	wp3	PL 5/16 x 78 1/4	39	10 5/16		2-2		cut from PL 5/16 x 82 X 40'-0
	4	wp1	PL 5/16 x 78	83	0		2-1		cut from PL 5/16 x 83 x 83'-3
	4	tf1	PL 18 x 14	30	9		1-1		
	4	tf2a	do	92	1 5/16		1-2		A572 - GR 50
	4	bf1	PL 1 1/2 x 24	40	9		1-8		
	4	bf3	PL 1 1/2 x 24	81	11 15/16		1-9		A572 - GR 50
	2	bs1	PL 1 x 10 ·	6	6		3-1		
	2	bs2	do	6	6		3-1		
	2	bs3	do	6	6		3-1		
	2	bs4	do	6	6		3-1		
	10	s1	Bar 7 x 1/2	6	6		3-4		
	20	s2	do	6	6		3-4		
	2	s3	do	6	6		3-4		
	2	s4	do	6	6		3-4		
	2	s6	do	6	6		3-4		
	24	a660	Bar 7 x 1/2	6	6		3-13		
	21	gp1	PL 5/16 x 9	0	9		3-18		
	18	gp2	PL 5/16 x 12 1/4	1	4		3-17		

HOLES ARE FOR HIGH TENSILE BOLTS
~~They are to be free from burrs~~ and shall not be painted on any surface within 5" of such open holes.

ITEM NO. 504.70
PROJECT NO. 6217

STEEL: ASTM. A36 unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted & Welded
HOLES: 15/16 ∅
PAINT: Red Lead Per Maine Specs. & As noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS - G18 thru G48

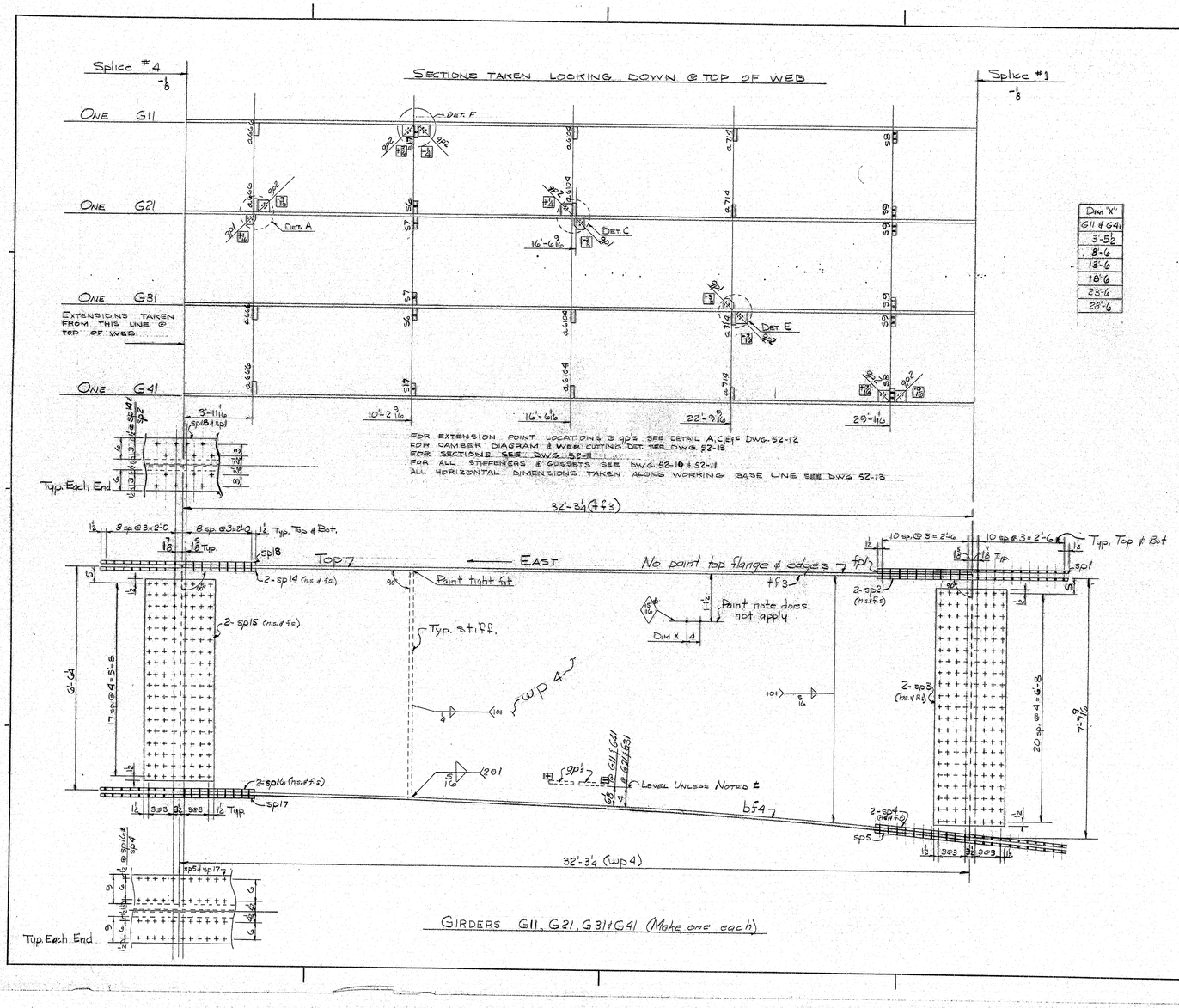
PRINT DIST.			
2P	3/25/74	APP.	
2 Sepias	4-17-74	F.A.	
1	4-17-74	Shop	
2	5-21-74	CONST.	

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE HARPSWELL, MAINE
CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF MAINE DEPT OF TRANS.

REV.				ORDER NO.	JOB NO.	DRAWING NO.
CHECKED			RGM		73-524	52-2
DRAWN	11	26	73 MGP			

141-177



Dim 'X'
G11 & G41
3'-5 1/2
8'-6
18'-6
18'-6
28'-6
28'-6

SHIP	BILL OF MATERIAL			JOB NO. 73-524		DWG. NO. 52-3		
MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.		REMARKS
G11	1		Girder.	32	3 1/4	—		
G21	1		do	32	3 1/4	—		
G31	1		do	32	3 1/4	—		
G41	1		do	32	3 1/4	—		
	4	tf3	PL 1 1/8 x 14	32	3 1/4		1-3	A572 - Gr 50
	4	wp4	PL 5/16 x 91 13/16	32	3 1/4		2-3	Cut from PL 3/8 x 32 x 92
	4	bf4	PL 1 1/2 x 24	32	8 3/4		1-10	A572 - Gr 50
	4	sp1	PL 3/8 x 14	5	6 1/2		2-10	
	8	sp2	Bar 6 x 13/16	5	6 1/2		2-12	
	8	sp3	PL 1/2 x 24 1/2	6	11		2-9	
	8	sp4	PL 11/16 x 9	5	6 1/2		2-13	
	4	sp5	PL 3/8 x 24	5	6 1/2		2-11	
	4	tp1	PL 3/8 x 14	2	9		2-14	
	4	sp18	PL 1/2 x 14	4	6 1/2		8-2	
	8	sp14	Bar 6 x 3/8	4	6 1/2		8-4	
	8	sp15	PL 1/2 x 24 1/2	5	11		8-1	
	8	sp16	PL 5/8 x 9	4	6 1/2		8-5	
	4	sp17	PL 5/8 x 24	4	6 1/2		8-3	
	4	a666	Bar 7 x 1/2	6	6 3/4		3-9	
	4	a104	do	6	10 1/2		3-9	
	4	a714	do	7	1 1/2		3-9	
	2	s17	Bar 7 x 1/2	6	8 1/4		3-5	
	2	s6	do	6	8 1/4		3-5	
	2	s7	do	6	8 1/4		3-5	
	2	s8	do	7	5 3/8		3-6	
	4	s9	do	7	5 3/8		3-6	
	3	sp1	PL 3/8 x 9	0	9		3-8	
	7	sp2	PL 3/8 x 12 1/4	1	4		3-7	

HOLES ARE FOR HIGH TENSILE BOLTS They are to be free from burrs and shall not be painted on any surface within 5" of such open holes

ITEM NO. 504 70
PROJECT NO. 6217

STEEL: ASTM. A36 Unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted
HOLES: 5/8
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS G11 thru G41

PRINT DIST.		
ZP	3/25/74	App.
2 Revised	4-17-74	F.A.
1	4-17-74	SHOP
2	5-21-74	CUST.

Bancroft & Martin Inc.
South Portland, Maine 04106

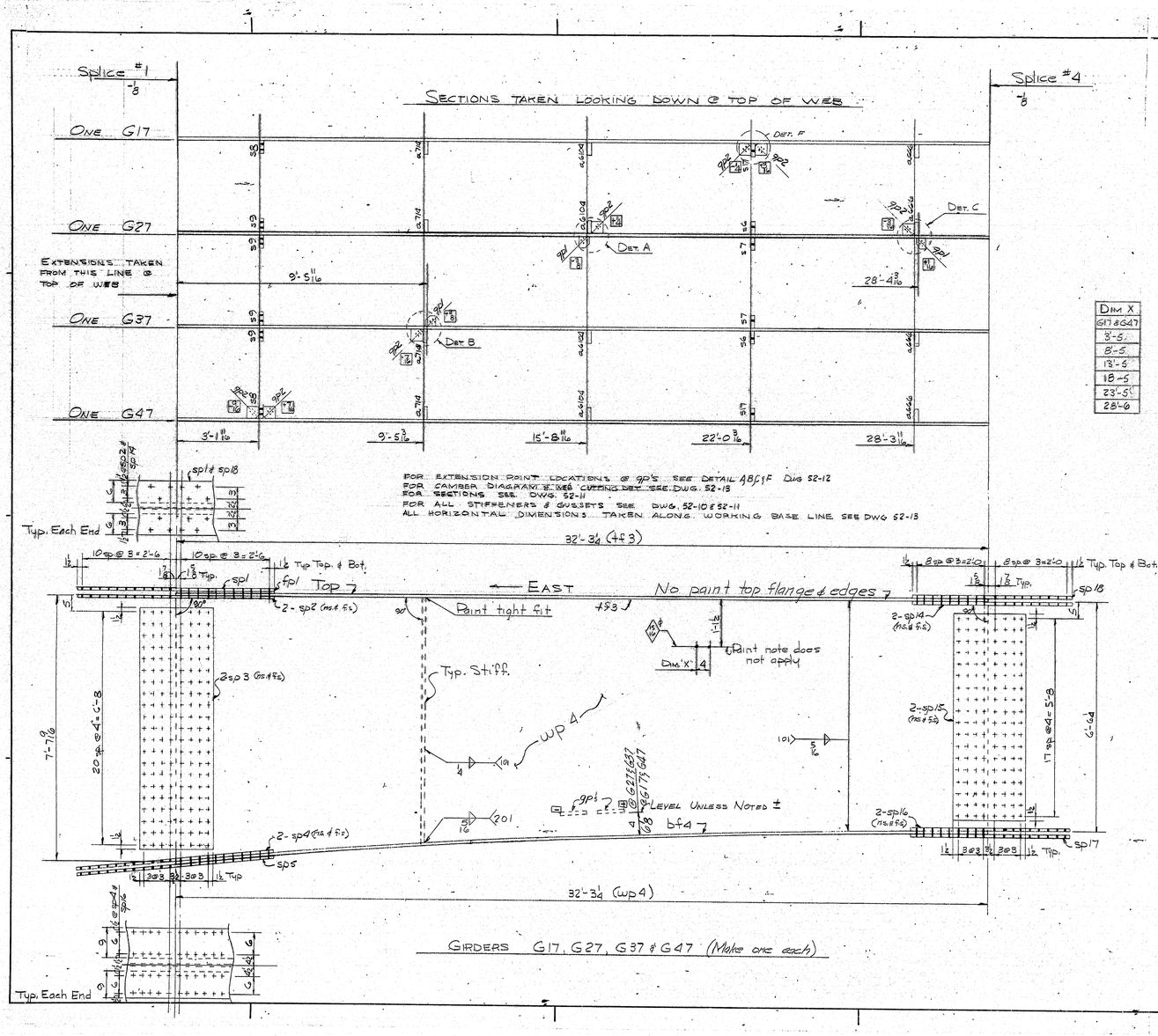
JOB: EWING NARROWS BRIDGE HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.

DESIGNER: STATE OF ME. DEPT OF TRANS.

REV.			ORDER NO.	JOB NO.	DRAWING NO.
CHECKED		RGM			
DRAWN	11/20/73	MAP		73-524	52-3

141-178



Dim X
G17 & G47
3'-5.
8'-5.
13'-5
18'-5
23'-5
28'-6

SHIP MARK	NO.	MARK	SHAPE	LENGTH		WT.	ITEM NO.		REMARKS
G17	1		Girder	32	3¼	—			
G27	1		do	32	3¼	—			
G37	1		do	32	3¼	—			
G47	1		do	32	3¼	—			
	4	tf3	PL 1/8 x 14	32	3¼		1-3		A572 - Gr 50
	4	wp4	PL 5/16 x 91 11/16	32	3¼		2-3		Typical for PL 91 11/16 x 32'-7
	4	bf4	PL 1/2 x 24	32	3 3/8		1-10		A572 - Gr. 50
	4	sp1	PL 3/8 x 14	5	6½		2-10		
	8	sp2	Bar G x 1/8	5	6½		2-12		
	8	sp3	PL ½ x 24½	6	11		2-9		
	8	sp4	PL 1 7/16 x 9	5	6½		2-13		
	4	sp5	PL 3/8 x 24	5	6½		2-11		
	4	sp1	PL 3/8 x 14	2	9		2-14		
	4	sp18	PL ½ x 14	4	6½		8-2		
	8	sp19	Bar G x 5/8	4	6½		8-4		
	8	sp15	PL ½ x 24½	5	11		8-1		
	8	sp16	PL 3/8 x 9	4	6½		8-5		
	4	sp17	PL 3/8 x 24	4	6½		8-3		
	4	a666	Bar 7 x ½	6	6 3/8		3-9		
	4	a6104	do	6	10½		3-9		
	4	a714	do	7	1½		3-9		
	2	s17	Bar 7 x ½	6	8¼		3-5		
	2	s6	do	6	8¼		3-5		
	2	s7	do	6	8¼		3-5		
	2	s8	do	7	5 5/16		3-6		
	4	s9	do	7	5 5/16		3-6		
	3	sp1	PL 3/8 x 9	0	9		3-18		
	7	sp2	PL 3/8 x 12'4	1	4		3-17		

HOLES ARE FOR HIGH TENSILE BOLTS They are to be free from burrs and shall not be painted on any surface within 5" of such open holes.

ITEM No. 509.70
PROJECT NO. 6217

STEEL: ASTM. A36 Unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted
HOLES: 13/16 ø
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS G17 thru G47

PRINT DIST.		
2P	3/25/74	APP.
2sp1a	4-17-74	FHA
4	4-17-74	SHOP
2	5-21-74	SHOP
REV.		
CHECKED		RGM
DRAWN	11/29/73	MGP

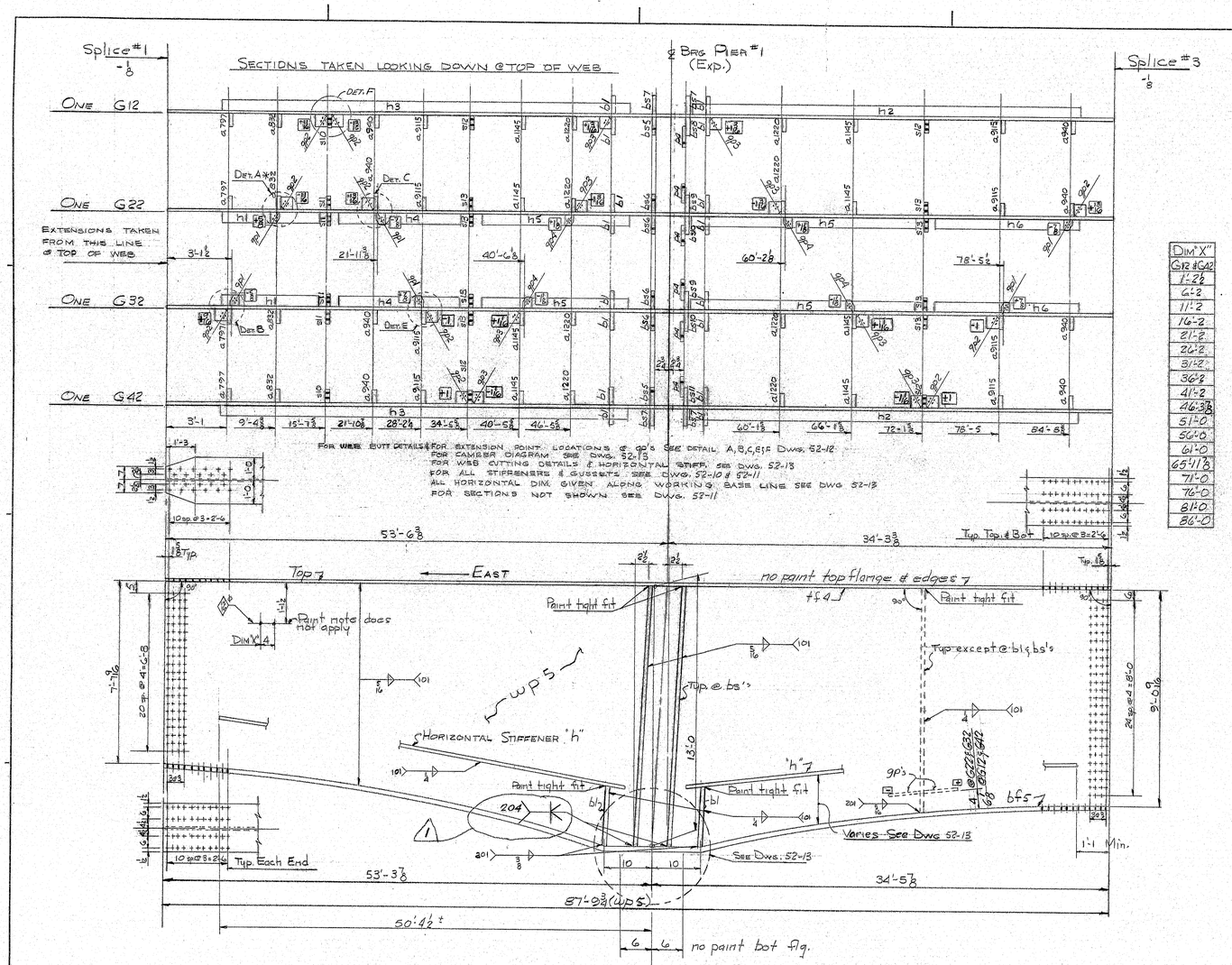
Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE.

CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF ME. DEPT. OF TRANS.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	52-4

141-179



GIRDERS G12, G22, G32 & G42 (Make one each)

DIM "X"
G12 & G42
1'-2 1/2
G22
11'-2
16'-2
21'-2
26'-2
31'-2
36'-2
41'-2
46'-3 3/8
51'-0
56'-0
61'-0
65'-11 3/8
71'-0
76'-0
81'-0
86'-0

SHIP MARK	NO.	BILL OF MATERIAL MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
G12	1		Girder	87 9 3/8	—		
G22	1		do	87 9 3/8	—		
G32	1		do	87 9 3/8	—		
G42	1		do	87 9 3/8	—		
	4	WP5	Shop Assy	87 9 3/8		2-6 2-10	Web from 2 pcs PL 7/16 x 28-11 PL 7/16 x 55-3 3/8 See Dwg. 52-12
	4	tf4	PL 1 1/2 x 24	87 9 3/8		1-4	A572 - GR 50
	4	bf5	PL 1 1/2 x 24	88 4		1-11	A572 - GR 50
	4	a797	Bar 7 x 1/2	7 9 3/8		3-10	
	4	a832	do	8 3 4		3-10	
	8	a940	do	9 4		3-11	
	8	a9115	do	9 11 3/8		3-11	
	8	a1145	do	11 4 3/8		3-12	
	8	a1220	do	12 2		3-12	
	16	b1	PL 3/8 x 10	2 7 4		3-3	
	12	p4	PL 3/8 x 12	1 6		4-18	
	2	bs5	PL 1 x 10	13 0		3-2	
	4	bs6	do	13 0		3-2	
	4	bs7	do	13 0		3-2	
	1	bs8	do	13 0		3-2	
	2	bs9	do	13 0		3-2	
	2	bs10	do	13 0		3-2	
	1	bs11	do	13 0		3-2	
	2	s10	Bar 7 x 1/2	8 9 4		3-7	
	4	s11	do	8 9 4		3-7	
	4	s12	do	10 7 7/8		3-8	
	8	s13	do	10 7 7/8		3-8	
	6	gp1	PL 3/8 x 9	0 9		3-18	
	10	gp2	PL 3/8 x 12 1/4	1 4		3-17	
	8	gp3	PL 3/8 x 12 1/4	1 4		3-17	
	4	gp4	PL 3/8 x 9	0 9		3-16	
						3-17	
	2	h1	Bar 7 x 1/2	12 4		3-15	
	2	h2	do	32 11		3-14	
	2	h3	do	50 0		3-14	
	2	h4	do	18 2		3-15	
	4	h5	do	18 1		3-15	
	2	h6	do	14 2		3-15	
			ITEM No. 504.70				
			PROJECT No. 6217				

WPS ARE FOR HIGH TENSILE BOLTS they are to be free from burrs and shall not be painted on any surface within 2" of such conn. holes

STEEL: ASTM. A36 Unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted & Welded
HOLES: 13/16 ϕ
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS G12 thru G42

PRINT DIST.		
ZP	3/28/74	APP
2 Sepias	4/17/74	FA
1	4-17-74	SHOP
2	5-24-74	CONT

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

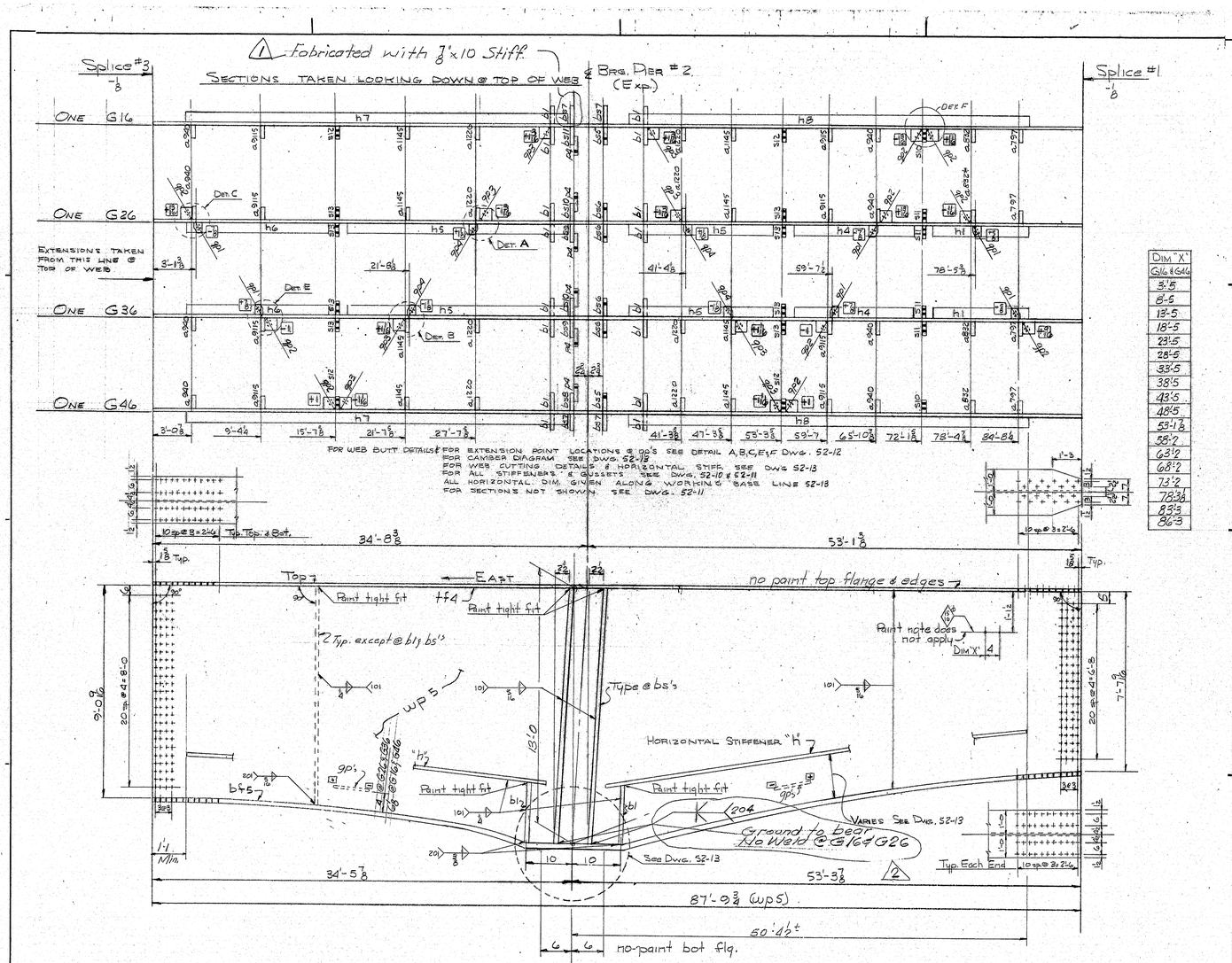
CUSTOMER: CALLAHAN BROS.

DESIGNER: STATE OF ME. DEPT. OF TRANS.

REV.	5-24-74	DF
CHECKED		KBM
DRAWN	12/5/73	MGP

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	52-5

141-180



DIM "X"
G16 & G46
3'-5
8'-5
18'-5
18'-5
23'-5
28'-5
33'-5
38'-5
43'-5
48'-5
53'-1 3/8
58'-2
63'-2
68'-2
73'-2
78 3/8
83'-3
86'-3

SHIP | **BILL OF MATERIAL** | JOB NO. 73-524 | DWG. NO. 52-6

MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
G16	1		Girder	87 0 3/4	—		
G26	1		do	87 0 3/4	—		
G36	1		do	87 0 3/4	—		
G46	1		do	87 0 3/4	—		
	4	wp5	Shop Assy	87 0 3/4		3-4 2-6	Cut from 2 PL's PL 76 x 88-1 & 16 x 88 1.85 Gr. See Dwg. 52-12
	4	bf5	PL 1 1/2 x 24	88 4		1-11	A572-Gr 50
	4	tf4	PL 1 1/2 x 24	87 9 3/4		1-4	A572 GR 50
	4	a797	Bar 7 x 1/2	7 9 1/2		3-10	
	4	a832	do	8 3 1/4		3-10	
	8	a940	do	9 4		3-11	
	8	a9115	do	9 11 3/8		3-11	
	8	a1145	do	11 4 5/8		3-12	
	8	a1220	do	12 2		3-12	
	16	b1	PL 3/4 x 10	2 7 1/2		3-3	
	12	p4	PL 1/2 x 12	1 6		4-18	
	2	bs5	PL 1 x 10	13 0		3-2	
	4	bs6	do	13 0		3-2	
	4	bs7	do	13 0		3-2	
	1	bs8	do	13 0		3-2	
	2	bs9	do	13 0		3-2	
	2	bs10	do	13 0		3-2	
	1	bs11	do	13 0		3-2	
	2	s10	Bar 7 x 1/2	8 9 1/4		3-7	
	4	s11	do	8 9 1/4		3-7	
	4	s12	do	10 7 7/8		3-8	
	8	s13	do	10 7 7/8		3-8	
	6	gp1	PL 3/8 x 9	0 9		3-18	
	10	gp2	PL 3/8 x 12	1 4		3-17	
	8	gp3	PL 3/8 x 12	1 4		3-17	
	4	gp4	PL 3/8 x 9	0 9		3-18	
						3-17	
	2	h1	Bar 7 x 1/2	12 4		3-15	
	2	h4	do	18 2		3-15	
	4	h5	do	18 1		3-15	
	2	h6	do	14 2		3-15	
	2	h7	do	33 0		3-14	
	2	h8	do	49 11		3-14	
							HOLES ARE FOR HIGH TENSILE BOLTS They are to be free from burrs and shall not be painted on any surface within 6" of such open holes

ITEM No. 504.70
PROJECT No. G217

STEEL: ASTM. A36 Unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted & Welded
HOLES: 15/16"
PAINT: Red Lead Per Maine Specs & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS G16 thru G46

PRINT DIST.		
ED	3/25/74	APP.
2 Splices	4-17-74	E.A.
1	4-17-74	SHOP
2	5-24-74	CONST.

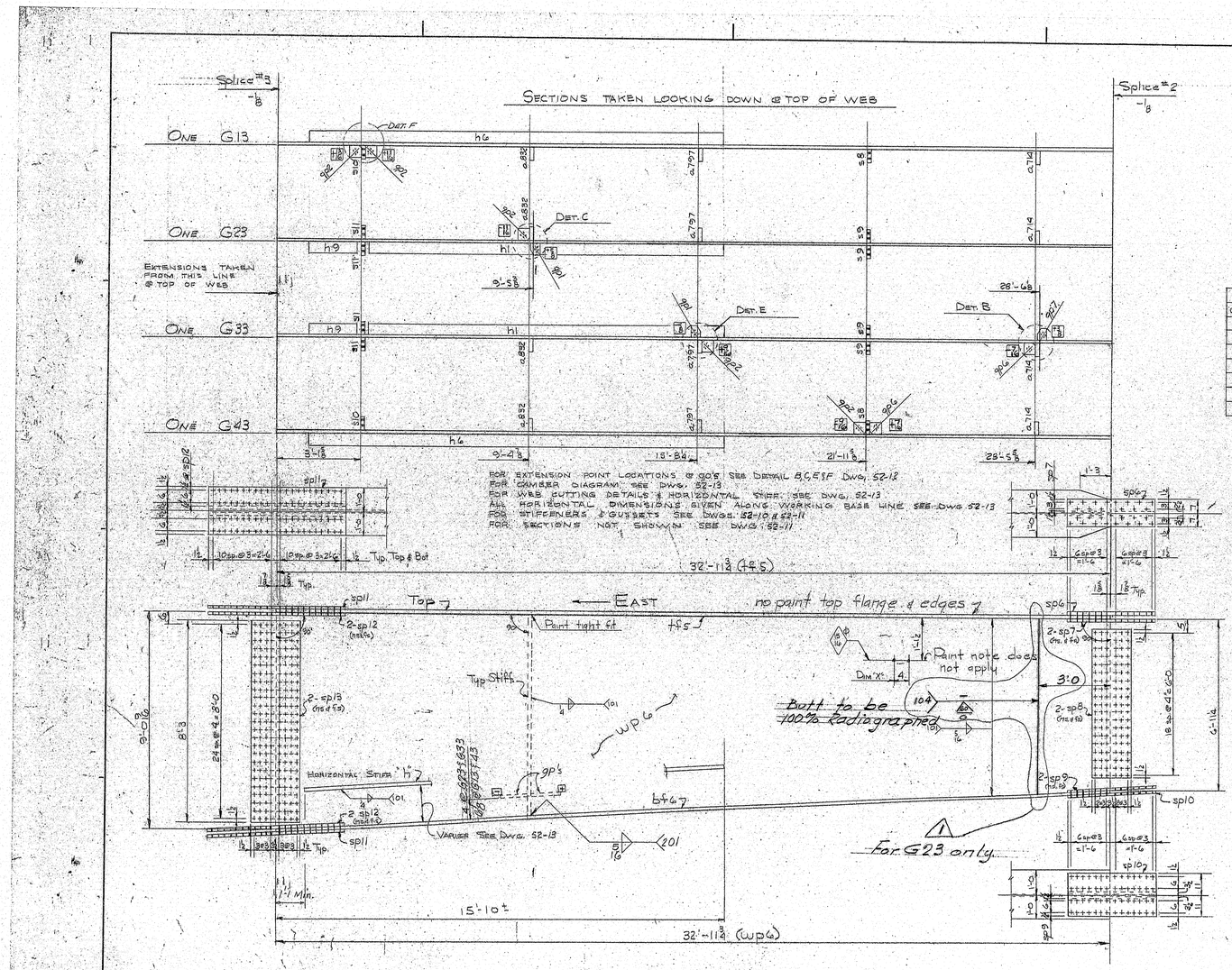
Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.

Rev 4	5-24-74	JPF	DESIGNER: STATE OF ME. DEPT. OF TRANS.
REV. 3	5-22-74	JPF	ORDER NO. / JOB NO. 73-524 / DRAWING NO. 52-6
CHECKED		RSM	
DRAWN	12/6/73	MGP	

141-181



GIRDERS G13, G23, G33 & G43 (Make one each)

SHIP	BILL OF MATERIAL	JOB NO. 73-524	DWG. NO. 52-7

MARK	NO.	MARK	SHAPE	LENGTH		WT.	ITEM NO.	REMARKS
G13	1		Girder	32	11 3/4	—		
G23	1		do	32	11 3/4	—		
G33	1		do	32	11 3/4	—		
G43	1		do	32	11 3/4	—		
	4	wp6	PL 5/8 x 108 5/16	32	11 3/4		2-8 2-6	See Dwg 52-12
	4	bf&7	PL 1/2 x 24	32	11 3/4		1-5	A572-Gr50
	4	bf&6	PL 1/2 x 24	33	0 5/8		1-12	A572-Gr 50
	4	a.714	Bar 7 x 1/2	7	1 1/2		3-9	
	4	a.797	do	7	9 5/8		3-10	
	4	a.832	do	8	3 1/2		3-10	
	2	s8	do	7	5 3/8		3-6	
	4	s9	do	7	5 3/4		3-6	
	2	s10	do	8	9 1/4		3-7	
	4	s11	do	8	9 1/4		3-7	
	2	sp1	PL 3/8 x 9	0	9		3-18	
	5	sp2	PL 3/8 x 12 1/4	1	4		3-17	
	2	sp6	PL 5/8 x 12 1/2	1	4		3-17	
	1	sp7	PL 3/8 x 9	0	9		3-18	
	2	h1	Bar 7 x 1/2	12	3		3-15	
	2	h6	do	14	9		3-15	
	2	h9	do	1	8		3-14	
	4	sp6	PL 1/2 x 14	3	6 1/2		2-16	
	8	sp7	Bar 6 x 5/8	3	6 1/2		2-18	
	8	sp8	PL 1/2 x 18 1/2	6	3		2-15	
	8	sp9	PL 3/8 x 9	3	6 1/2		2-19	
	4	sp10	PL 3/8 x 22	3	6 1/2		2-17	
	8	sp11	PL 3/8 x 24	5	6 1/2		8-7	
	16	sp12	PL 1/8 x 9	5	6 1/2		8-8	
	8	sp13	PL 1/2 x 24 1/2	8	3		8-6	

HOLES ARE FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted on any surface within 2" of such oval holes

ITEM No. 504.70
PROJECT No. 6217

STEEL: ASTM. A36 Unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted
HOLES: 15/16 ϕ
PAINT: Red Lead Per Maine Specs & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS G13 thru G43

PRINT DIST.		
2P	3/25/74	APP.
Spec	4-17-74	FA.
4	4-17-74	SHOP
3P	5-2-74	FA.
4	5-6-74	Shop
2	5-21-74	Const.
REV. 1	5-2-74	JPE
CHECKED		KGM
DRAWN	12/10/73	MSP

Bancroft & Martin Inc.
South Portland, Maine 04106

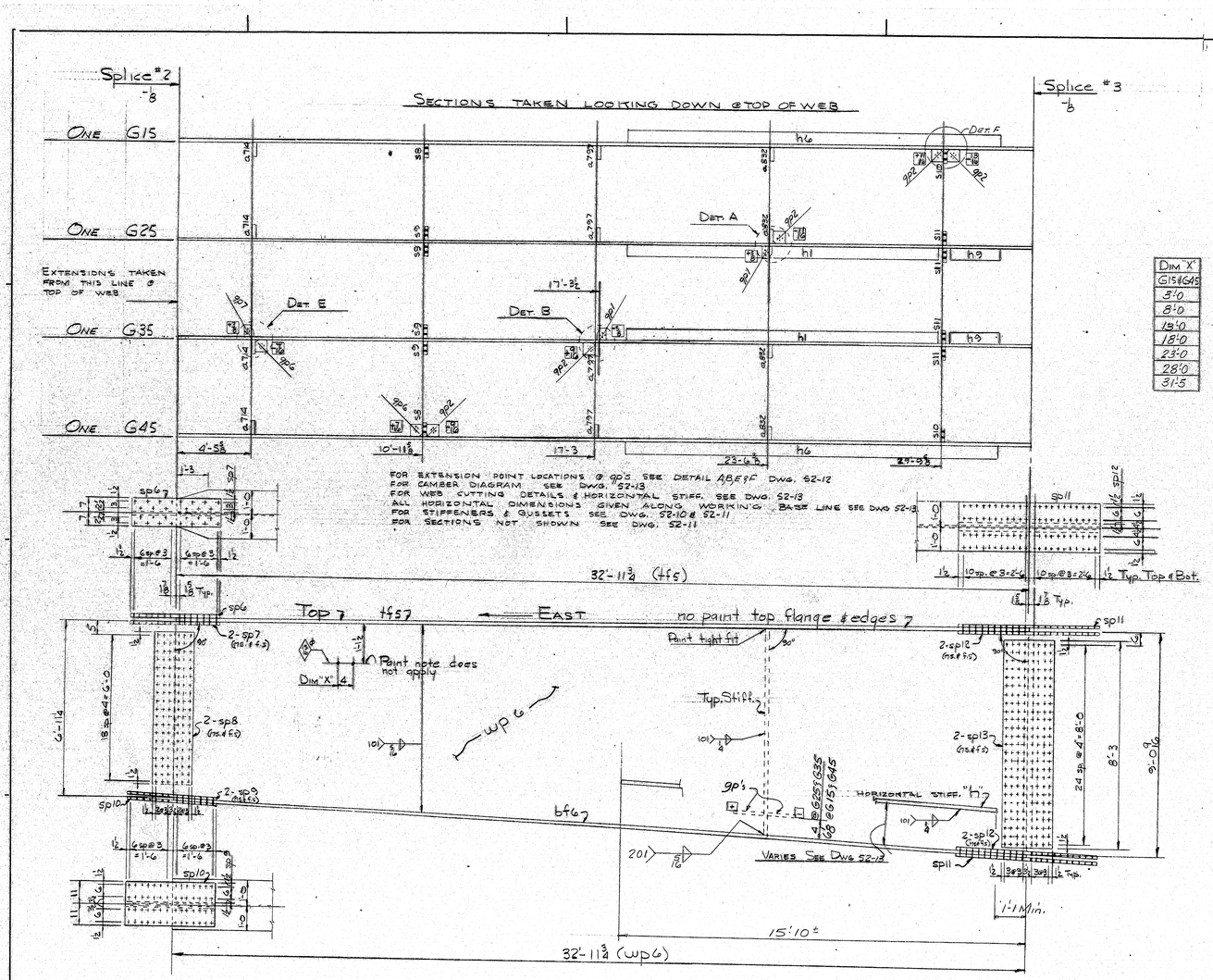
JOB: EWING NARROWS BRIDGE HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.

DESIGNER: STATE OF ME. DEPT. OF TRANS.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	52-7

141-182



Dim "X"
G15&G45
5'-0
8'-0
13'-0
18'-0
23'-0
28'-0
31'-5

SHIP	BILL OF MATERIAL			JOB NO. 73-524		DWG. NO. 52-8	
MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
G15	1		Girder	32 11½	—		
G25	1		do	32 11⅜	—		
G35	1		do	32 11¾	—		
G45	1		do	32 11⅛	—		
	4	wp6	PL ⅜ x 100⅛	32 11½		2-8 2-16	See Dwg. 52-12
	4	tfs	PL ½ x 24	32 11½		1-5	A572 - Gr 50
	4	bf6	PL ½ x 24	33 0½		1-12	A572 - Gr 50
	4	a714	Bar 7 x ½	7 1½		3-9	
	4	a797	do	7 9⅛		3-10	
	4	a832	do	8 3⅛		3-10	
	2	s8	do	7 5⅜		3-6	
	4	s9	do	7 5⅜		3-6	
	2	s10	do	8 9¼		3-7	
	4	s11	do	8 9¼		3-7	
	2	sp1	PL ⅜ x 9	0 9		3-18	
	5	sp2	PL ⅜ x 12¼	1 4		3-17	
	2	sp6	do	1 4		3-17	
	1	sp7	PL ⅜ x 9	0 9		3-18	
	2	h1	Bar 7 x ½	12 3		3-15	
	2	h6	do	14 9		3-15	
	2	h9	do	1 8		3-14	
	4	sp6	PL ½ x 14	3 6½		2-16	
	8	sp7	Bar 6 x ⅜	3 6½		2-18	
	8	sp8	PL ½ x 18½	6 3		2-15	
	8	sp9	PL ⅜ x 9	3 6½		2-19	
	4	sp10	PL ⅜ x 22	3 6½		2-17	
	8	sp11	PL ⅜ x 24	5 6½		8-9	
	16	sp12	PL 1⅜ x 9	5 6½		8-8	
	8	sp13	PL ½ x 24½	8 3		8-6	

HOLES ARE FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted or any surface within 5" of such open holes

ITEM No. 504.70
PROJECT No. 6217

STEEL: ASTM. A36 unless noted
WELDING ELECTRODE See Welding Procedures
SHOP CONN. Welded
FIELD CONN. Bolted
HOLES: ¹³/₁₆
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS G15 thru G45

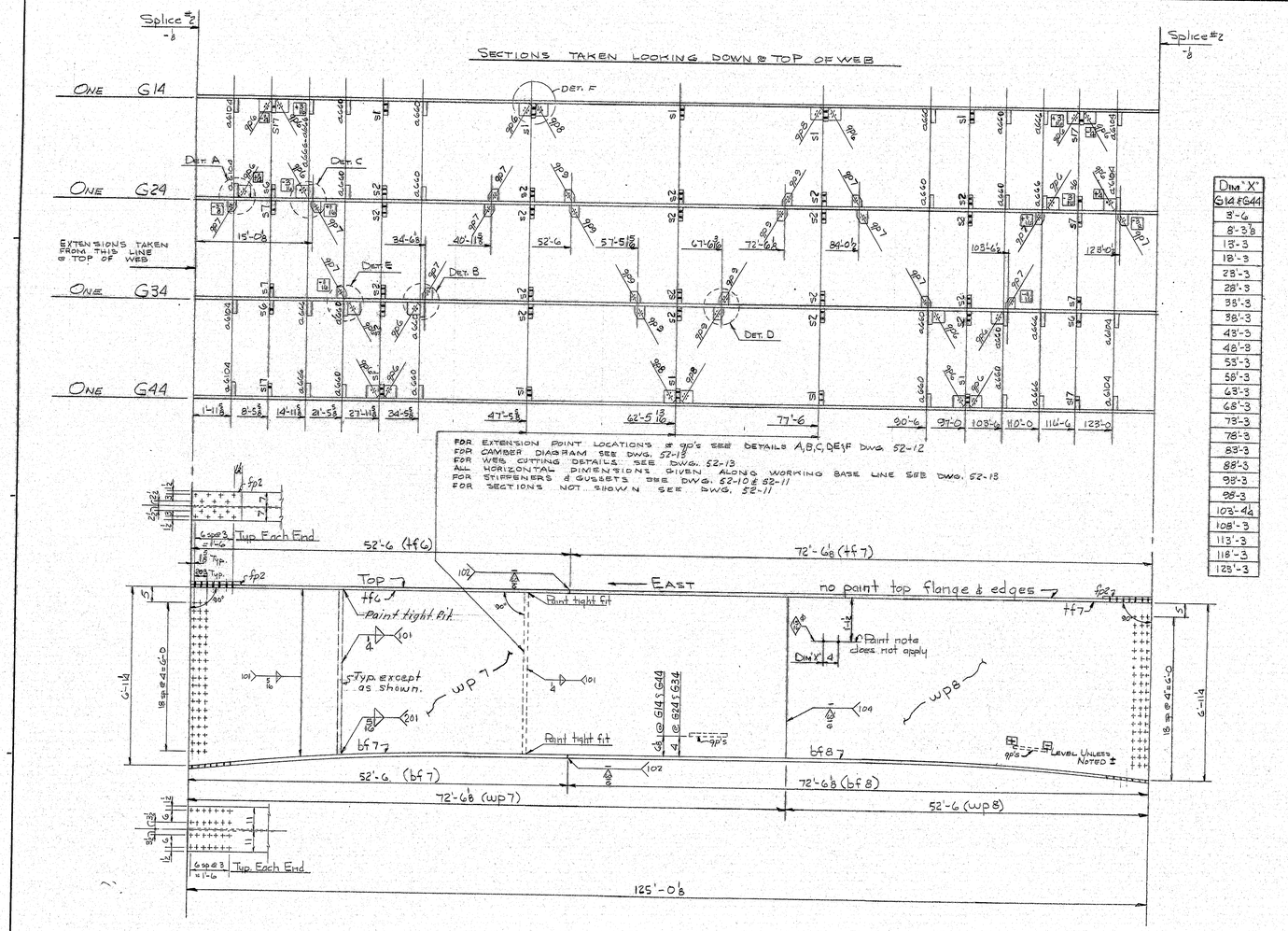
PRINT DIST.		
2	3-25-74	A
2 Sepias	4-17-74	FA
4	4-17-74	Stress
2	5-21-74	MDOT

Bancroft & Martin Inc.
South Portland Maine 04106

JOB: EWING NARROWS BRIDGE HARPSWELL, MAINE
CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF ME, DEPT. OF TRANS.

REV.			ORDER NO.	JOB NO.	DRAWING NO.
CHECKED		RBG MJ		73-524	52-8
DRAWN	12/10/73	MDP			

141-183



GIRDERS G14, G24, G34 & G44 (Make one each)

Dim 'X' G14 & G44
3'-6
8'-5⅜
13'-3
18'-3
23'-3
28'-3
33'-3
38'-3
43'-3
48'-3
53'-3
58'-3
63'-3
68'-3
73'-3
78'-3
83'-3
88'-3
93'-3
98'-3
103'-4½
108'-3
113'-3
118'-3
123'-3

SHIP — **BILL OF MATERIAL** — JOB NO. 73-524 — DWG. NO. 52-9

MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
G14	1		Girder	125 0⅛	—		
G24	1		do	125 0⅛	—		
G34	1		do	125 0⅛	—		
G44	1		do	125 0⅛	—		
	4	wp7	PL ⅜ x 83¼	72 6⅛		2-8	Cut from PL ⅜ x 87 x 72-0
	4	wp8	do	52 6		2-7	Cut from PL ⅜ x 86 x 52-6
	4	tf6	PL ⅜ x 14	52 6		1-6	
	4	tf7	do	72 6⅛		1-7	
	4	bf7	PL 1½ x 22	52 6		1-13	
	4	bf8	do	72 6⅛		1-14	
	16	a660	Bar 7 x ½	6 6		3-3	
	8	a666	do	6 6⅜		3-4	
	8	a6104	do	6 10½		3-6	
	10	s1	do	6 6		3-1	"
	20	s2	do	6 6		3-2	
	4	s6	do	6 8½		3-5	
	4	s7	do	6 8½		3-5	
	4	s17	do	6 8½		3-5	
	18	gpc	PL ⅜ x 12¼	1 4		3-17	
	12	gp7	PL ⅜ x 9	0 9		3-18	
	4	gp8	PL ⅜ x 12¼	1 6		3-17	
	8	gp9	PL ⅜ x 9	0 9		3-18	
	8	fp2	PL ⅝ x 14	1 9			Bolt for Ship.

HOLES ARE FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted on any surface within 5" of such open holes

ITEM No. 504.70
PROJECT No. 6217

STEEL: ASTM. A36
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted
HOLES: 13/16
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

GIRDERS G14 thru G44

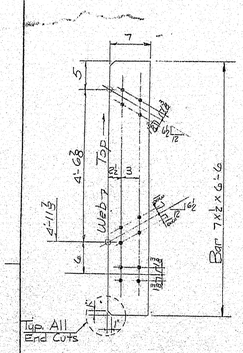
PRINT DIST.		
2	3-25-74	A.
26 plus 4	4-17-74	GA
4	4-17-74	Shop
2	5-21-74	MDOT

Bancroft & Martin Inc.
South Portland, Maine 04106

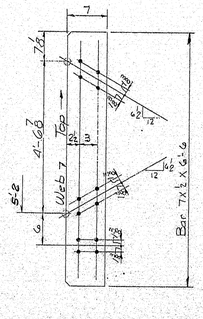
JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE
CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF ME. DEPT OF TRANS.

REV.			ORDER NO.	JOB NO.	DRAWING NO.
CHECKED					
DRAWN	12/11/73	KBM MGB		73-524	52-9

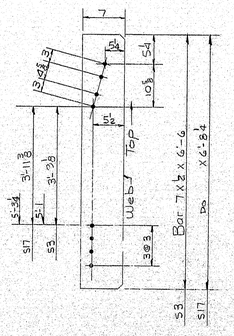
141-184



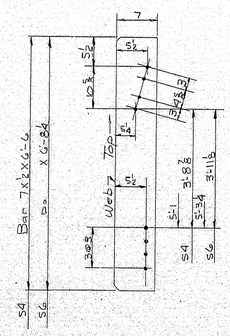
30 - S1



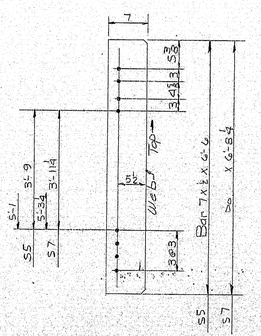
60 - S2



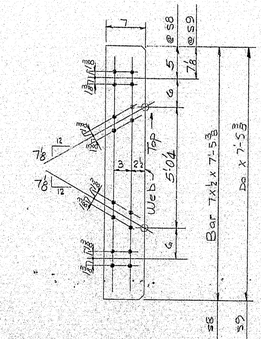
4 - S3
8 - S17



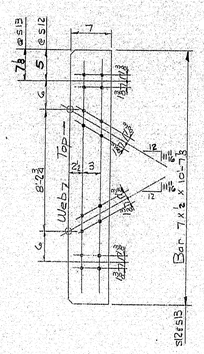
4 - S4
8 - S6



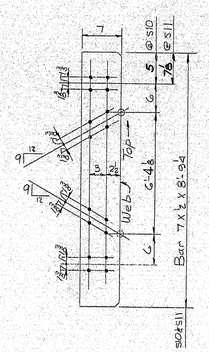
4 - S5
8 - S7



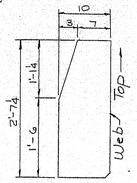
8 - S8
10 - S9



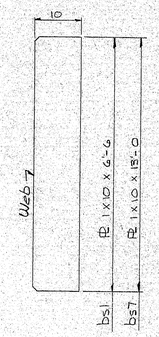
8 - S12
16 - S13



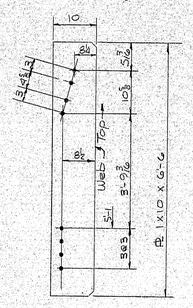
8 - S10
16 - S11



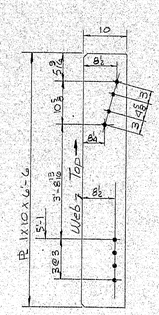
32 - b1



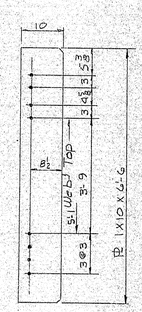
4 - bs1
8 - bs7



4 - bs2



4 - bs3



4 - bs4

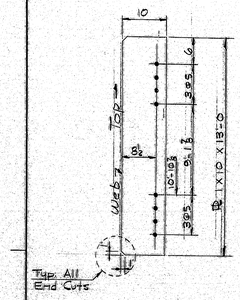
holes

ITEM No. 504.70
PROJECT No. 6217
APPROVED: 4-26-74

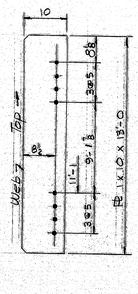
STIFFENERS

PRINT DIST.			
~~ZP~~	~~3|8|74~~	~~Prints~~	Bancroft & Martin Inc.
~~2 Copies~~	~~4-17-74~~	~~EA~~	South Portland, Maine 04106
~~4~~	~~4-17-74~~	~~SHOP~~	JOB: EWING NARROWS BRIDGE
~~2~~	~~5-21-74~~	~~DIST.~~	HARPSWELL, MAINE
			CUSTOMER: CALLAHAN BROS.
			DESIGNER: STATE OF ME. DEPT. OF TRANS.
REV.			ORDER NO. / JOB NO. 73-524 / DRAWING NO. 52-10
CHECKED		R.M.	
DRAWN	3|74	M&P	

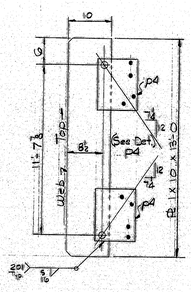
141-185



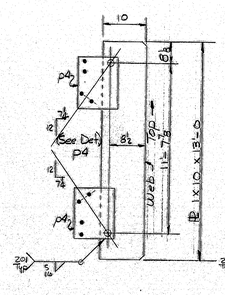
4-bs5



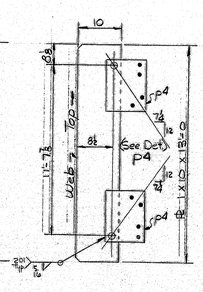
8-bs6



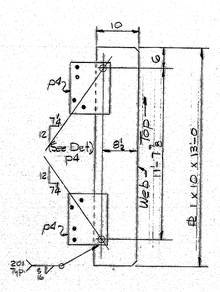
2-bs8



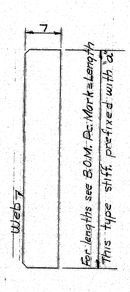
4-bs9



4-bs10

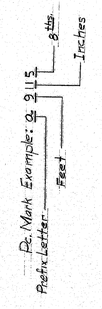


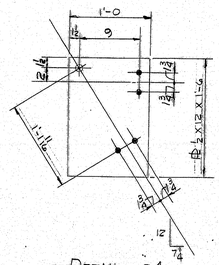
2-bs11



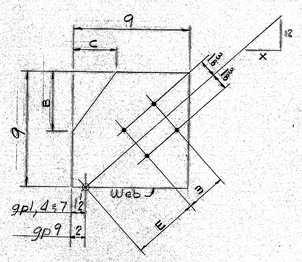
For lengths see B.O.M. Pc. Mark = Length This type stiff. prefixed with 'a'

Intermediate Stiff. Type "a"
(Bar 7 x ½)

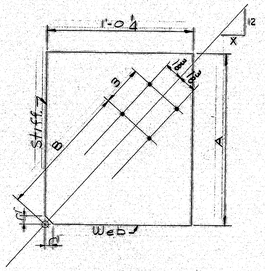




DETAIL - P4
24 Req'd

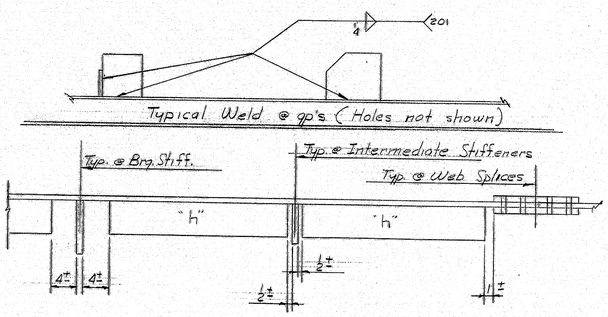


Mk.	Quan.		B	C		E	X
gp1	44		5½	4		5¼	8⅜
gp4	8		5¾	4		5¼	8 11/16
gp7	14		5½	4		5¼	9⅛
gp9	8		6	3½		4¾	7

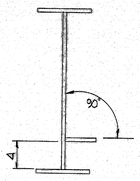


Mk.	Quan.	A	B	X
gp2	80	1'-4	1'-0¾	8⅜
gp3	16	1'-4	1'-1½	8 11/16
gp6	22	1'-4	1'-1	9⅛
gp8	4	1'-4	1'-3½	7

Note: All gp's ⅜ thick
All holes 15/16 Φ



TYP. DETAILS @ HORIZONTAL STIFFENERS



TYP. SECT. @ gp's marked ⊞ ⊟

ITEM NO. 504.70
PROJECT NO. 6217
APPROVED: 4-25-74

STIFFENERS, gp's & DETAILS

PRINT DIST.		
2	4-16-74	A
2 Sepias	4-26-74	
4	4-26-74	Sepias
2	5-21-74	MGP

Bancroft & Martin Inc.
South Portland, Maine 04106

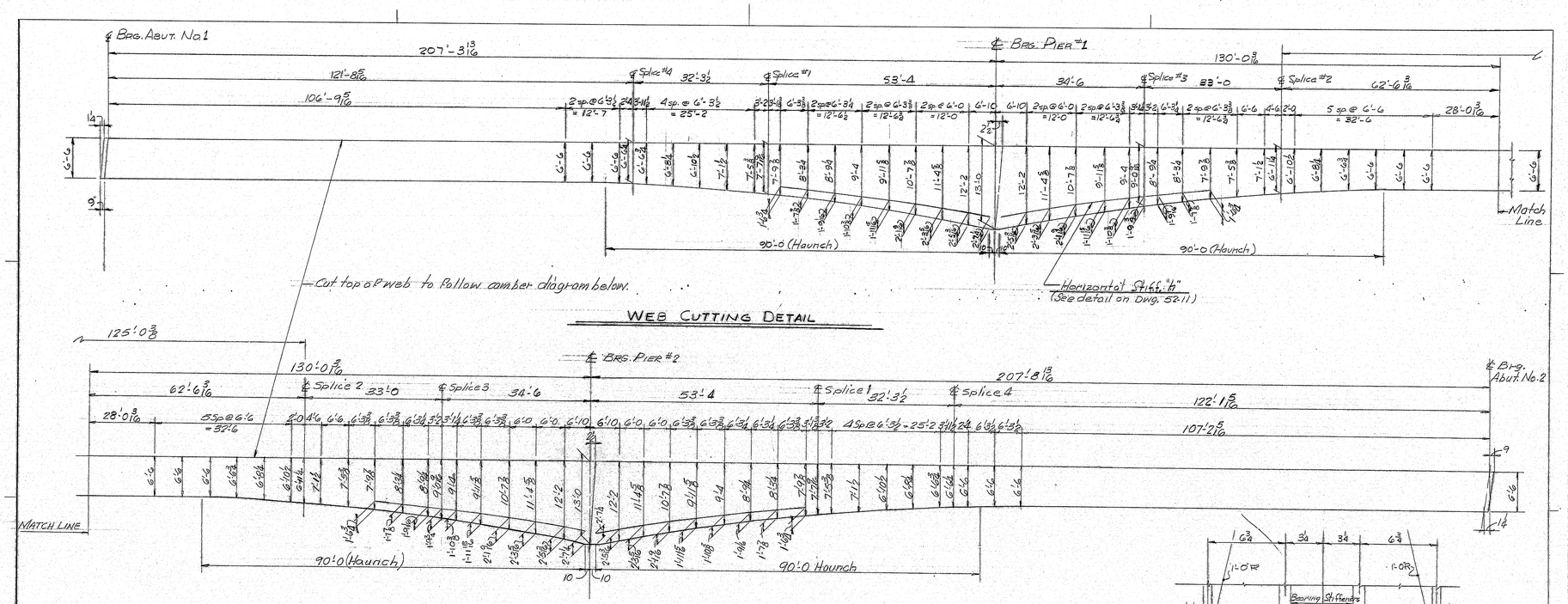
JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.

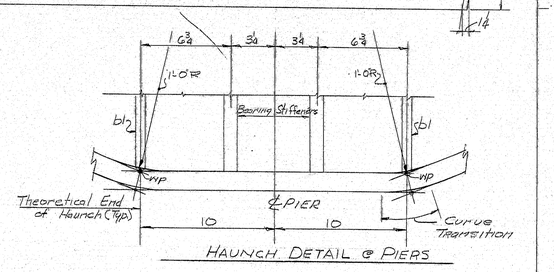
DESIGNER: STATE OF ME. DEPT. OF TRANS.

REV.			ORDER NO.	JOB NO.	DRAWING NO.
CHECKED					
DRAWN	11/4/74	MGP		73-524	52-11

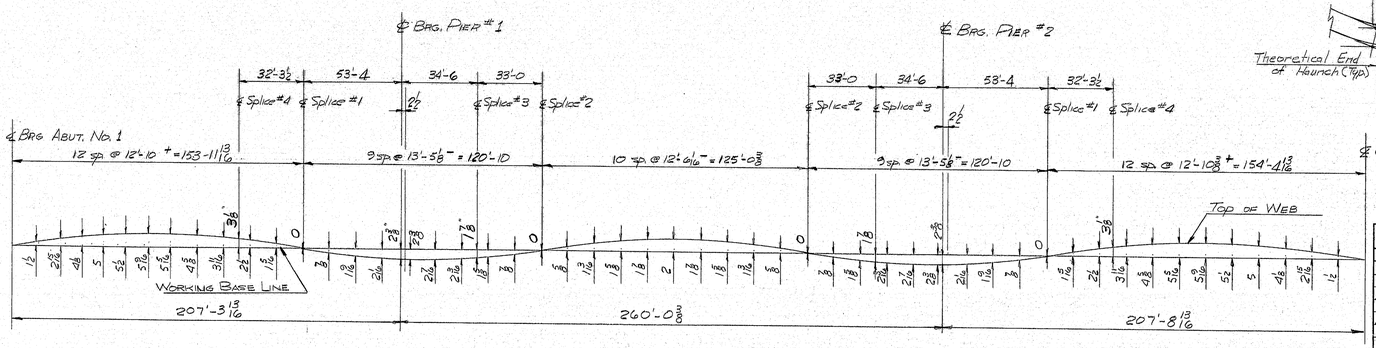
141-186



WEB CUTTING DETAIL



HAUNCH DETAIL @ PIERS



CAMBER DIAGRAM

Dim. Changes

℄ Brg Abut. No. 2

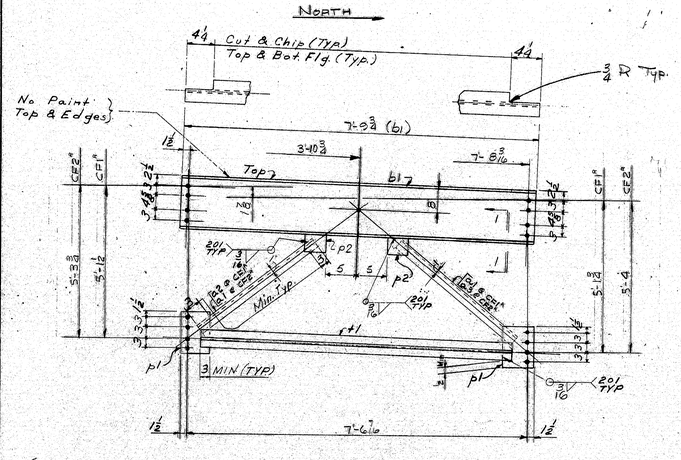
ITEM No. 504.70
PROJECT No. 6217
APPROVED: 4-11-74 4-26-74

WEB CUTTING DETAILS & CAMBER DIAGRAM

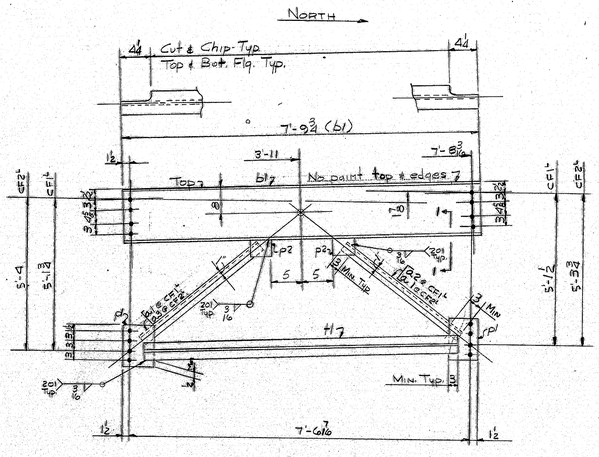
PRINT DIST.			
2	3-25-74	A	Bancroft & Martin Inc. South Portland, Maine 04106
2	4-3-74	A	
2 Sepias	4-9-74	T.A.	
4	4-9-74	SHOP	JOB: EWING NARROWS BRIDGE HARPSWELL, MAINE
2 Sepias	4-17-74	FAP	
4	4-17-74	SHOP	
2	5-21-74	SHOP	CUSTOMER: CALLAHAN BROS.
			DESIGNER: STATE OF ME. DEPT OF TRANS.

REV.	4-17-74	RGM.	ORDER NO.	JOB NO.	DRAWING NO.
CHECKED		RGM		73-524	52-13
DRAWN	1/8/74	MSP			

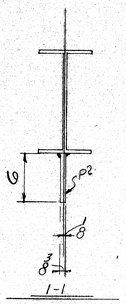
141-188

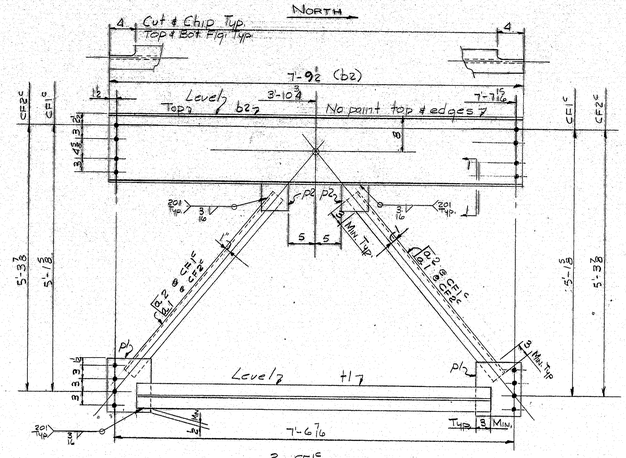


2 - CF1a
4 - CF2a



2 - CF1b
4 - CF2b





2 - CF1c
4 - CF2c

SHIP	BILL OF MATERIAL	JOB NO. 73-524	DWG. NO. 53-1

MARK	NO.	MARK	SHAPE	LENGTH		WT.	ITEM NO.	REMARKS
CF1a	2		Crossframes			—		
CF2a	4		do			—		
CF1c	2		do			—		
CF2c	4		do			—		
CF1b	2		do			—		
CF2b	4		do			—		
	12	b1	W16 x 26	7	9 3/4		4-1	
	6	b2	do	7	9 1/2		4-1	
	20	a1	L 3 x 3 x 5/16	4	7		4-3	
	8	a2	do	4	5' 4		4-3	
	8	a3	do	4	8' 6		4-3	
	18	t1	WT 5 x 10.5	6	9 3/4		4-2	
	36	p1	PL 3/8 x 9	1	0		4-5	
	36	p2	Bar 6 x 3/8	0	6		4-4	

HOLES ARE FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted on any surface within 6" of such open holes.

ITEM No. 504.70
PROJECT No. 6217

STEEL: ASTM. A36
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted
HOLES: 15/16
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

CROSSFRAMES

PRINT DIST.			
EP	3/28/74	Appr.	
Supv.	4-17-74	Fab.	
Ar.	4-17-74	Shop	
2	5-21-74	Insp.	
REV.			
CHECKED			
DRAWN	12/14/73	PLM MGD	

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

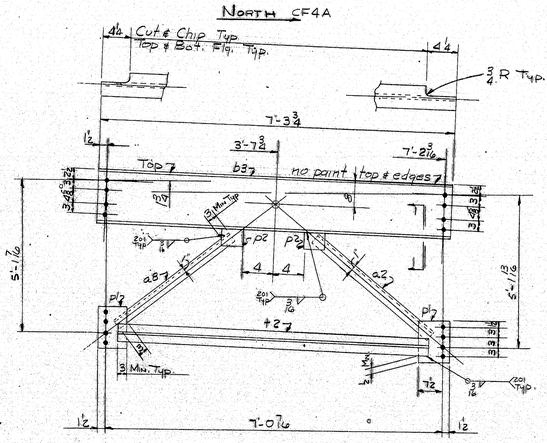
CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF ME. DEPT. OF TRANS.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	53-1

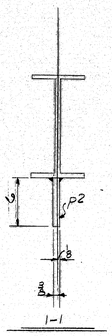
141-189

NORTH CF4

NORTH CF4A

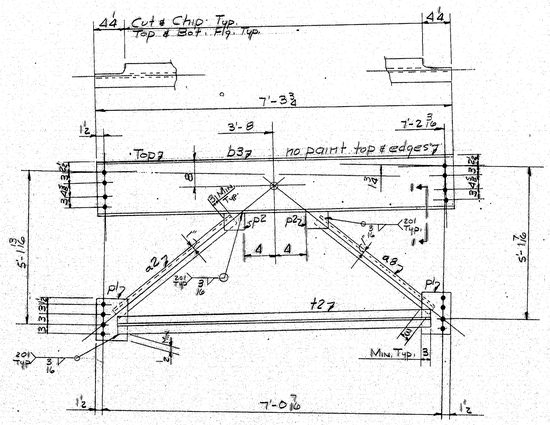


ONE - CF4
ONE - CF4A



NORTH CF5

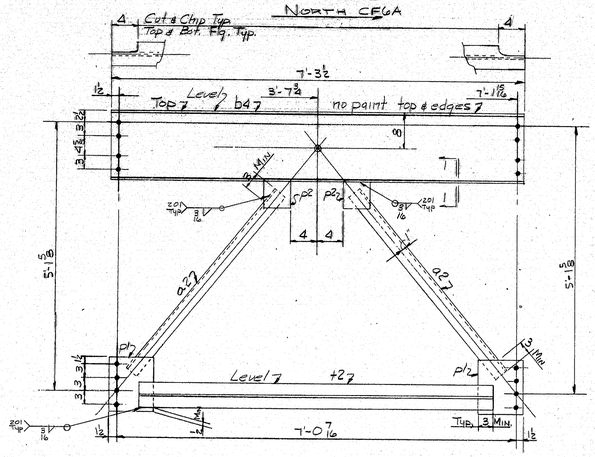
NORTH CF5A



ONE - CF5
ONE - CF5A

NORTH CF6

NORTH CF6A



ONE - CF6
ONE - CF6A

SHIP	BILL OF MATERIAL			JOB NO. 73-524		DWG. NO. 53-2
MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
CF4	1		Crossframe		—		
CF4A	1		do		—		
CF5	1		do		—		
CF5A	1		do		—		
CF6	1		do		—		
CF6A	1		do		—		
	2	b4	W16 x 26	7 3½		4-1	
	8	a2	L3x3x5/16	4 5½		4-3	
	4	a8	do	4 3½		4-3	
	12	p1	PL 3/8 x 9	1 0		4-5	
	12	p2	Bar 6 x 3/8	0 6		4-4	
	6	t2	WT5x10.5	6 3½		4-2	
	4	b3	W16 x 26	7 3 3/4		4-1	

HOLES ARE FOR HIGH TENSILE BOLTS
~~They are to be free from burrs~~ and shall not be painted on any surface within 5" of such open ~~holes~~

ITEM NO. 504.70
PROJECT NO. 6217

STEEL: ASTM. A36
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted
HOLES: 15/16 Ø
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 8-26-74

CROSSFRAMES

PRINT DIST.			
2P	3	28	74 App.
2C spare	3	17	74 FA
4	4	17	74 Shop
2	5	21	74 Job

REV.			
CHECKED			
DRAWN	12	14	73 RWM MGP

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

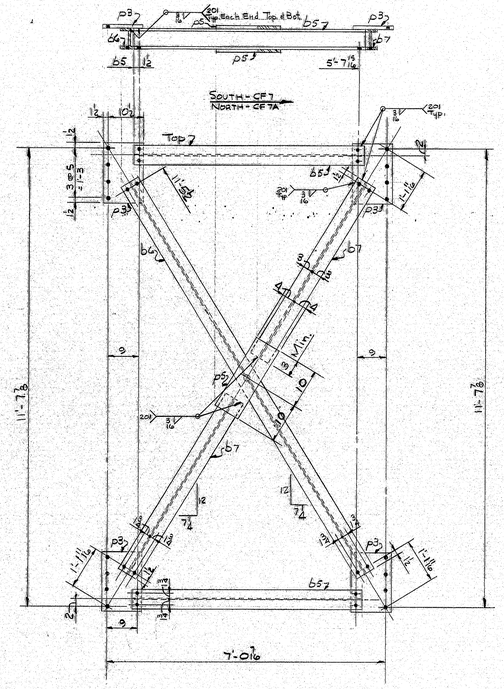
CUSTOMER: CALLAHAN BROS.

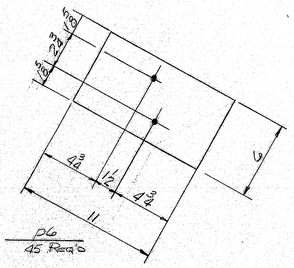
DESIGNER: STATE OF ME. DEPT. OF TRANS

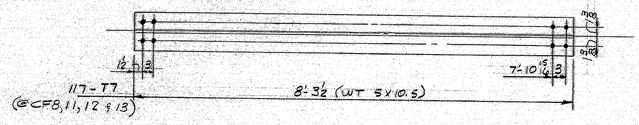
ORDER NO.	JOB NO.	DRAWING NO.
	73-524	53-2

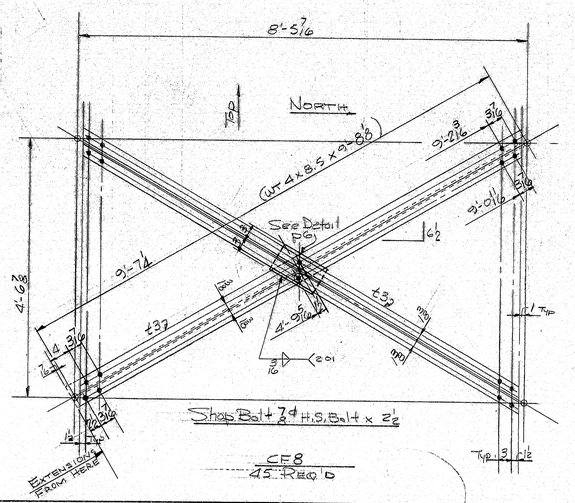
141-190

BMD 40MD









SHIP	BILL OF MATERIAL	JOB NO. 73-524	DWG. NO. S3-3

MARK	NO.	MARK	SHAPE	LENGTH		WT.	ITEM NO.		REMARKS
CF7	3		Cross Frame			—			
CF7A	3		do			—			
CF8	45		do			—			
	90	b3	WT 4 x 8.5	9	8⅜		4-7		
	12	b5	WG x 15.5	5	9½		4-14		
	6	b6	do	11	7		4-15		
	12	b7	do	5	2½		4-16		
	24	p3	PL ⅜ x 12	1	6		4-18		
	12	p5	Bar 8 x ½	1	8		4-17		
	45	PG	Bar 6 x ½	0	11		4-8		
T7	117		WT 5 x 10.5	8	3½		4-6 & 4-13		
	45	Shop	⅞" H.S. Bolt	0	2½				A325-Type 1
			Bolts - A325			TYPE 1			
Field	2668		⅞" H.S. Bolt	0	2½	(For location see E-1, 213)			
do	83		do	0	2½				
do	6206		do	0	3				
do	294		do	0	3½				
do	229		do	0	4				
do	882		do	0	2				
do	1,404		do	0	4½				
do	718		do	0	4⅝				
do	1436		do	0	5½				
do	98		do	0	2⅝				
do	3,018		⅞" (Hand Washers)						A325
do	570		⅞" Diameter Bolts	0	1½				@ Flaming Cut Holes

HOLES ARE FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted on any surface within 5" of such open holes

ITEM No. 504.70
PROJECT No. 0217

STEEL: ASTM. A36
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded
FIELD CONN: Bolted
HOLES: 15/16
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED:

CROSSFRAMES

REV.	PRINT DIST.	
2	3-28-74	A
2 Supp.	4-17-74	P.A.
1	4-17-74	Shop
2	5-21-74	Cont.

Bancroft & Martin Inc.
South Portland, Maine 04106

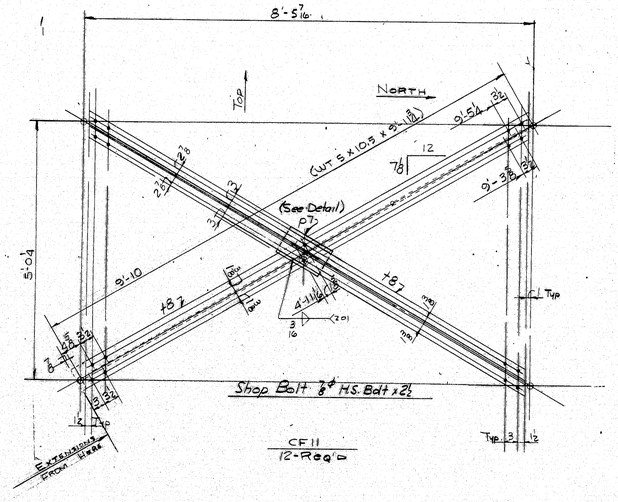
JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS.
DESIGNER: STATE OF ME. DEPT. OF TRANS

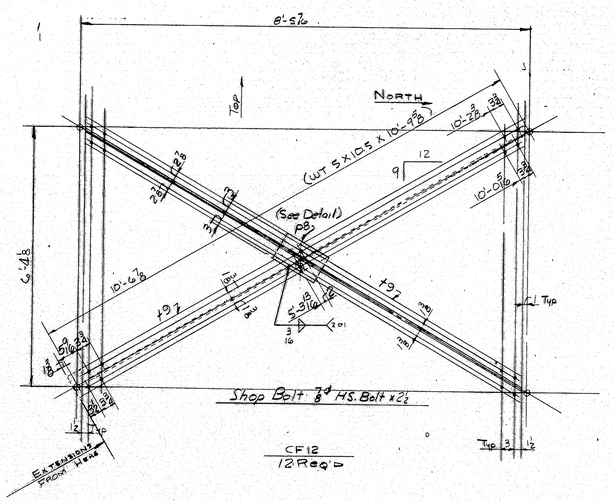
ORDER NO.	JOB NO.	DRAWING NO.
	73-524	S3-3

CHECKED			
DRAWN	12 8 72	RGM MGP	

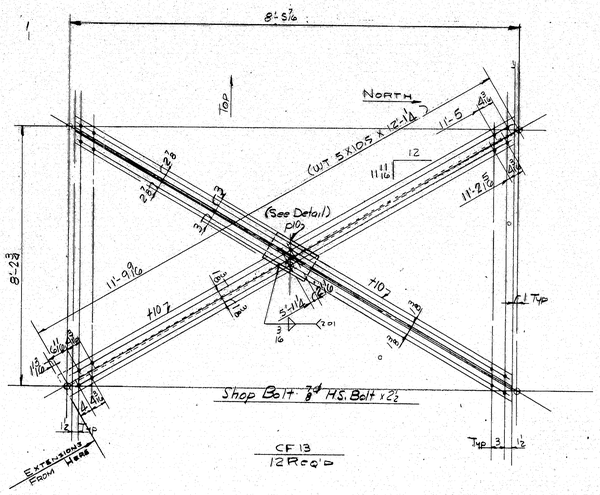
141-191



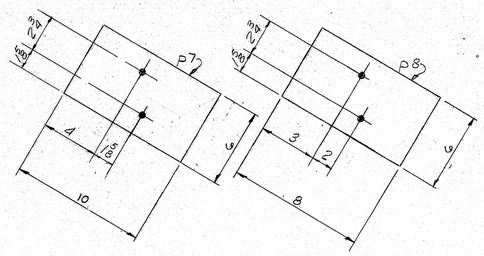
CF11
12-Req'd



CF12
12 Req'd



CF13
12 Req'd



P7 12 Req'd

P8 12 Req'd

P10 12 Req'd

SHIP	BILL OF MATERIAL			JOB NO. 73-524	DWG. NO. 53-5	
MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
CF11	12		Crossframes		—		
CF12	12		do		—		
CF13	12		do		—		
	24	f8	WT 5 x 10.5	9 11 3/16		4-12	
	24	f9	do	10 9 5/16		4-11	
	24	f10	do	12 1/4		4-10	
	12	P7	Bar 6 x 1/2	0 10		4-13	
	12	P8	do	0 8		4-13	
	12	P10	do	0 6		4-13	
	36	Shop	7/8" H.S. Bolt	0 2 1/2			A325 - Type 1

HOLES ARE FOR HIGH TENSILE BOLTS
They are to be free from burrs and shall not be painted on any surface within 5" of such open holes

ITEM NO. 504.70
PROJECT NO. 6217

STEEL: ASTM. A36
WELDING ELECTRODE See Welding Procedures
SHOP CONN: Welded & Bolted
FIELD CONN: Bolted
HOLES: 15/16 Ø
PAINT: Red Lead Per Maine Specs. & as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-26-74

CROSSFRAMES

PRINT DIST.		
EP	3/26/74	Appr.
25 Prints	4-17-74	F.A.
4	4-17-74	State
2	5-21-74	Users

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

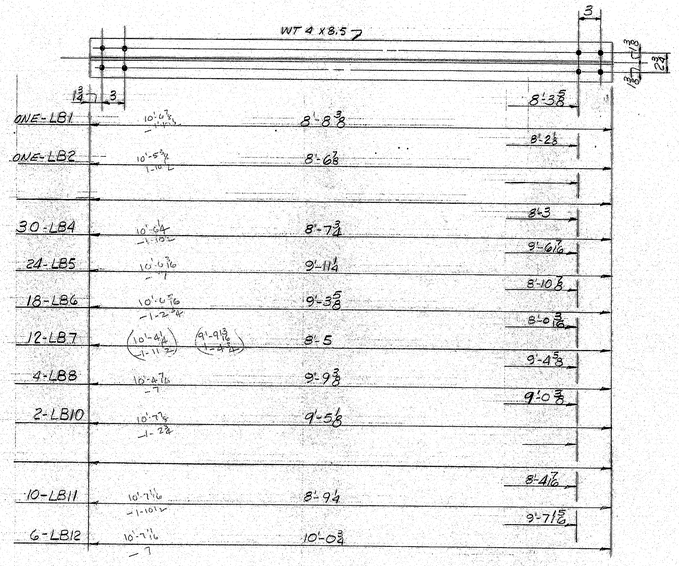
CUSTOMER: CALLAHAN BROS.

DESIGNER: STATE OF ME, DEPT. OF TRANS.

REV.		
CHECKED		P&M.
DRAWN	12/27/73	MSP

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	53-4

141-172



SHIP	BILL OF MATERIAL	JOB NO. 73-524	DWG. NO. 54-1

MARK	NO.	MARK	SHAPE	LENGTH	WT.	ITEM NO.	REMARKS
LB1	1		WT4 x 8.5	8 8 3/8		3-16	
LB2	1		⏤	8 6 5/8			
LB4	30		⏤	8 7 3/8			
LB5	24		⏤	9 11 1/4			
LB6	18		⏤	9 3 3/8			
LB7	12		⏤	8 5			
LB8	4		⏤	9 9 3/8			
LB10	2		⏤	9 5 1/8			
LB11	10		⏤	8 9 1/4			
LB12	6		⏤	10 0 3/8			

HOLES ARE FOR HIGH TENSILE BOLTS. They are to be free from burrs and shall not be painted on any surface within 2" of such open holes

ITEM NO. 504.70
PROJECT NO. 6217

STEEL: ASTM. A36
WELDING ELECTRODE —
SHOP CONN: —
FIELD CONN: Bolted
HOLES: 11/16
PAINT: Red Lead Per Maine Specs.e as noted
SPECIAL CLEANING: Blast Clean
APPROVED: 4-25-74

LATERAL BRACING

PRINT DIST.		
2	4-16-74	A
25 opio	4-26-74	FA
4	4-26-74	SH
2	5-21-74	CONT

REV.
CHECKED
DRAWN 1/18/74 MGD

Bancroft & Martin Inc.
South Portland, Maine 04106

JOB: EWING NARROWS BRIDGE
HARPSWELL, MAINE

CUSTOMER: CALLAHAN BROS
DESIGNER: STATE OF ME. DEPT. OF TRANS.

ORDER NO.	JOB NO.	DRAWING NO.
	73-524	54-1

141-193