

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.14	Removing Existing Railings (Property of Contractor)	810	L.F.
503.12	Reinforcing Steel Fabricated and Delivered	1900	Lbs.
503.13	Reinforcing Steel Placing	1900	Lbs.
507.094	Aluminum Bridge Railing, 3-Bar with Pales	800	L.F.
526.30	Temporary Concrete Barrier Type 1	450	L.F.
526.40	Resetting Temporary Concrete Barrier Type 1	450	L.F.
606.173	Bridge Connections	4	Each
606.178	Guard Rail Beam	25	L.F.
606.36	Guard Rail, Removed and Reset	50	L.F.
626.21	Metallic Conduit	30	L.F.
626.22	Non-metallic Conduit	420	L.F.
634.210	Conventional Light Standard	3	Each
639.20	Field Office Type C	1	Each
652.31	Type 1 Barricade	15	Each
652.33	Drum	5	Each
652.34	Cone	10	Each
652.35	Construction Signs	200	S.F.
652.36	Maintenance of Traffic Control Devices	70	C.D.
652.38	Flagger	200	M.H.
659.10	Mobilization	1	L.S.

CONSTRUCTION NOTES

- Maintain two lanes of traffic and one sidewalk at all times.
- Holes for grouting reinforcing dowels shall be filled with water for a minimum of two hours prior to grouting, at which time all water shall be removed. Mortar for grouting shall contain an approved non-shrink additive. The grouted area shall be kept wet for a minimum of twelve hours following initial set. Payment for drilling and grouting will be considered incidental to Item No. 503.13, Reinforcing Steel, Placing.
- Existing reinforcing steel to remain shall be cleaned as directed by the Engineer prior to placing new concrete.
- All bridge railing work shall be done behind temp. conc. barrier.
- Concrete for bridge rail anchorage Option "A" shall be Class "AA". Payment for removal and replacement of concrete at each new rail post will be considered incidental to Item No. 507.094, Aluminum Bridge Railing, 3-Bar with Pales.
- Protective Coating for Concrete Surfaces shall be applied to all exposed surfaces of new concrete (incidental to contract items.)
- Existing bridge rail anchor bolts, lighting conduits and end post reinforcing shall be cut off at least two inches below the top surface of the existing concrete. The resulting hole shall be filled with non-shrink mortar. Payment will be considered incidental to related contract items.
- Concrete End Posts shall be paid for under Item No. 606.173, Bridge Connections.
- Payment for Light Standard Bases, including removal of concrete, installation of anchorage and placement of new concrete, will be considered incidental to Item No. 634.210, Conventional Light Standard.
- Hangers for suspending the 2-inch ϕ PVC conduit under the slab shall be of a type specifically designed for this purpose and shall be installed with $\frac{3}{8}$ -inch ϕ x 3-inch long expansive-type concrete anchors.
- Light Standards shall be galvanized steel, 40-foot tall, with a 4" x 6" hand hole 18" above the bottom of the base and a 6-ft truss-type arm. A pull wire shall be installed in each section of lighting conduit. The flexible conduit required at Abutment No. 1 shall be installed with sufficient slack length to allow for thermal movement of the bridge deck. Payment for the flexible conduit will be made under Item No. 626.22, Non-metallic Conduit. Payment for trenching, back-fill and reseeding as required to install the metallic conduit will be considered incidental to Item No. 626.21, Metallic Conduit. The wiring and luminaires will not be a part of this contract.
- Payment for the "Special Panel" guard rail beams will be made under Item No. 606.178, Guard Rail Beam. Payment will be based on the full length panels required to fabricate the "Special Panels" and shall include all necessary modifications required to properly install the panels.
- Reinforcing steel shall have two inches minimum cover unless otherwise indicated.

SPECIFICATIONS

DESIGN: AASHTO Standard Specifications for Highway Bridges 1983 and interim specifications thru 1985.

CONTRACT: State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Revision of January 1984.

DESIGN LOADING: LIVE LOAD (Existing) H20-S16-44

MATERIALS: Concrete (except as noted) Class "A"
Reinforcing Steel ASTM A615, Grade 60

BASIC DESIGN STRESSES

Concrete $f'_c = 3000$ psi
Reinforcing Steel $f_y = 60,000$ psi

TRAFFIC DATA: AADT 1984 4980
AADT 2004 5980
Design Hourly Volume 718
Design Speed (mph) 35

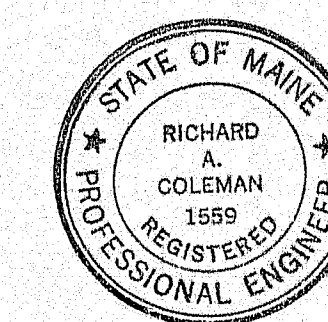
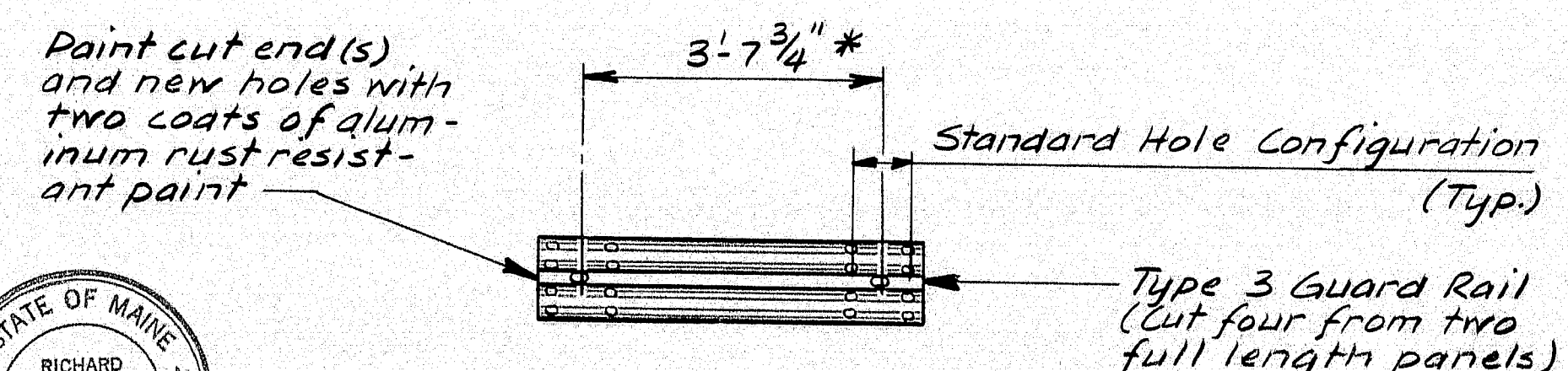
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Maintenance of Traffic in Construction Zones	9-11

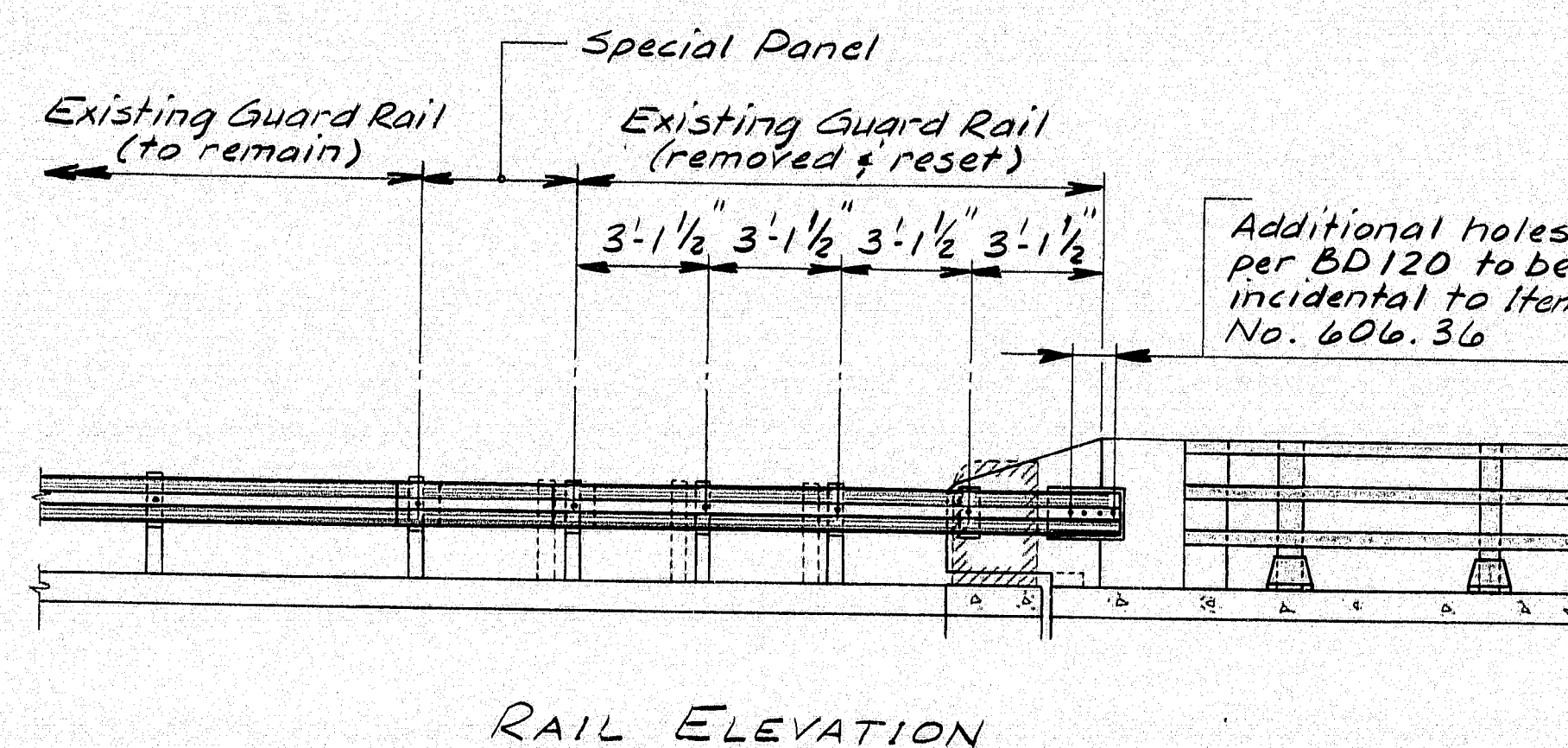
NOTES

Plans of the existing bridge are available for the Contractor's reference at the Bridge Design Office in Augusta. The plans are reproductions of original drawings as prepared for the construction of the bridge and it is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span.

All work contemplated under this contract shall be governed by and in conformity with the Standard Specifications (Revision of January 1984) and Supplementals thereto, except as modified on the plans and in the Special Provisions.



SPECIAL PANEL 99-383
* Verify in the field



RAIL ELEVATION

"AS BUILT" (NO CHANGES MADE)

STEVEN B. FALMER JAN 22, 1988
Steven B. Falmer

SCOPE OF WORK

Remove existing aluminum bridge railing and light standards and install new 3-bar aluminum bridge railing. Construct bases to receive new galvanized steel light standards and install new wiring conduit. Construct concrete end posts for connection to existing beam-type guard rail.

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 1

APPROVED:

DIVISION ADMINISTRATOR DATE

Bridge No. 2018

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED:

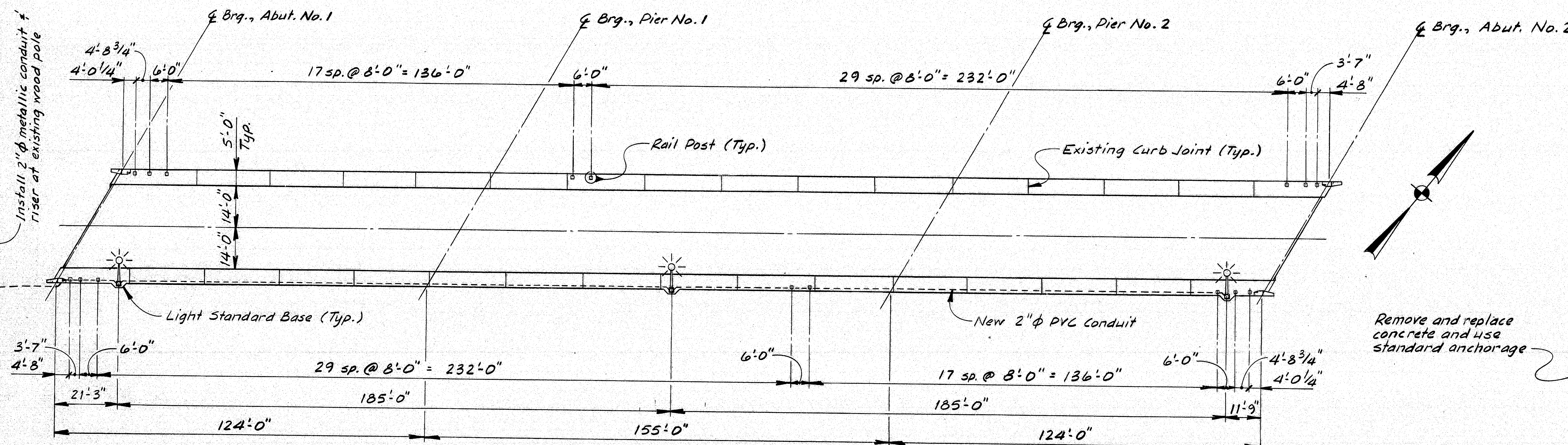
Commissioner 11-3-86 Date
Chief Engineer 11-3-86 Date

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

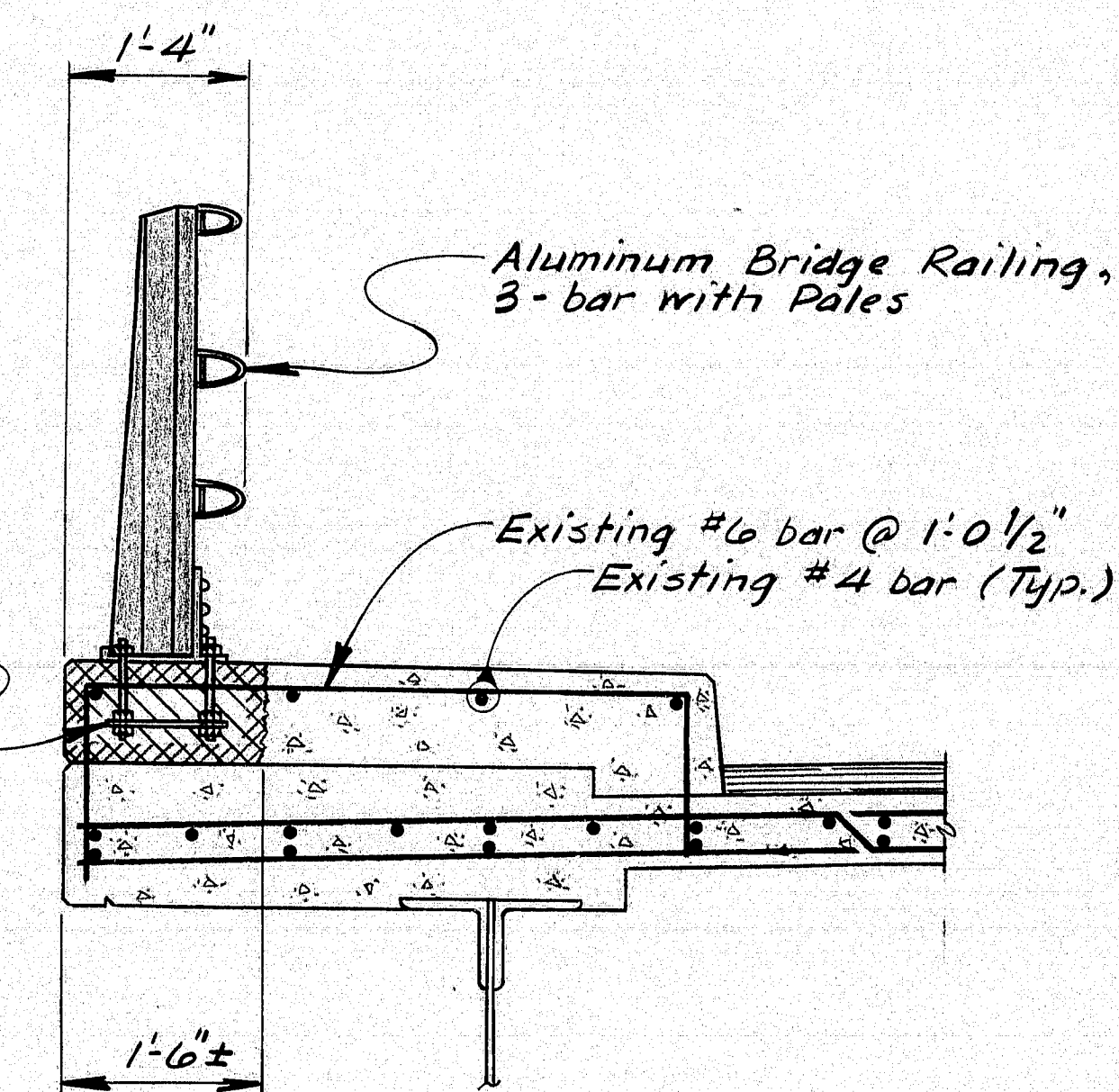
ANDROSCOGGIN RIVER BRIDGE
BETWEEN THE TOWNS OF
LIVERMORE
AND
LIVERMORE FALLS
ANDROSCOGGIN COUNTY
QUANTITIES AND NOTES

SHEET 1 OF 11 AUGUSTA, MAINE

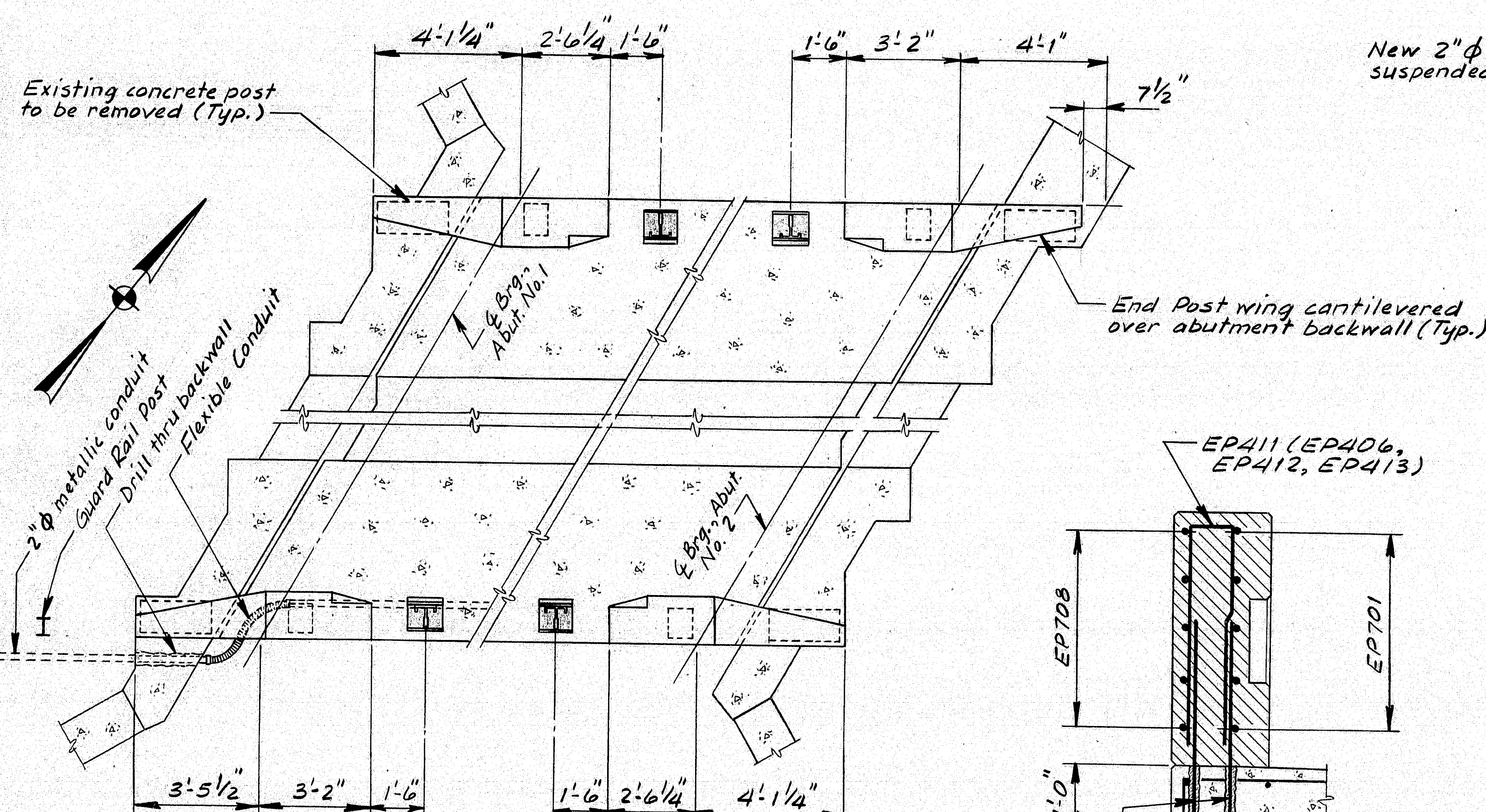
F.R.A.	STATE	PROJECT NUMBER	SHEET	TOTAL
1	MAINE	F-021-1(38)	2	11



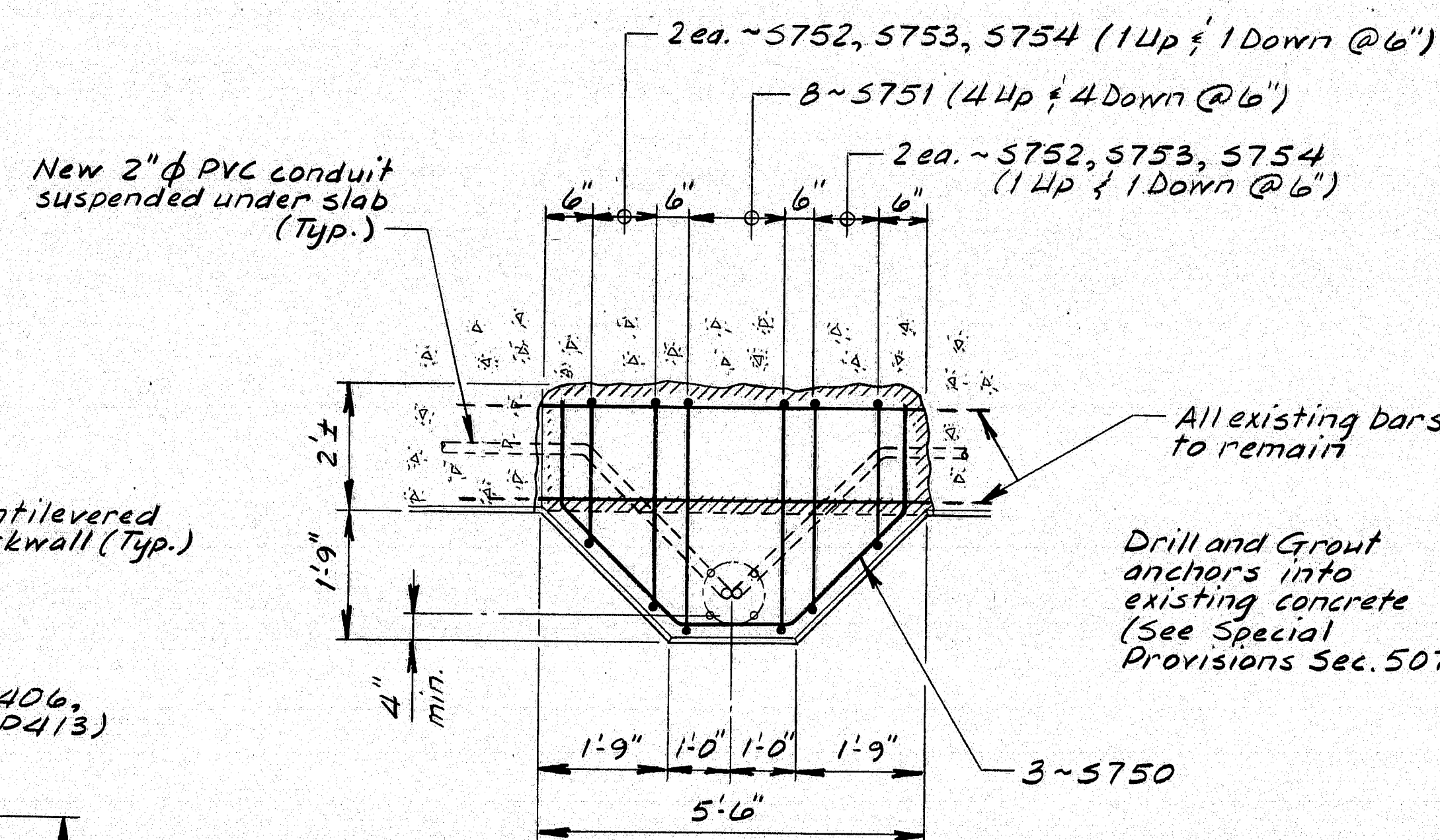
PLAN



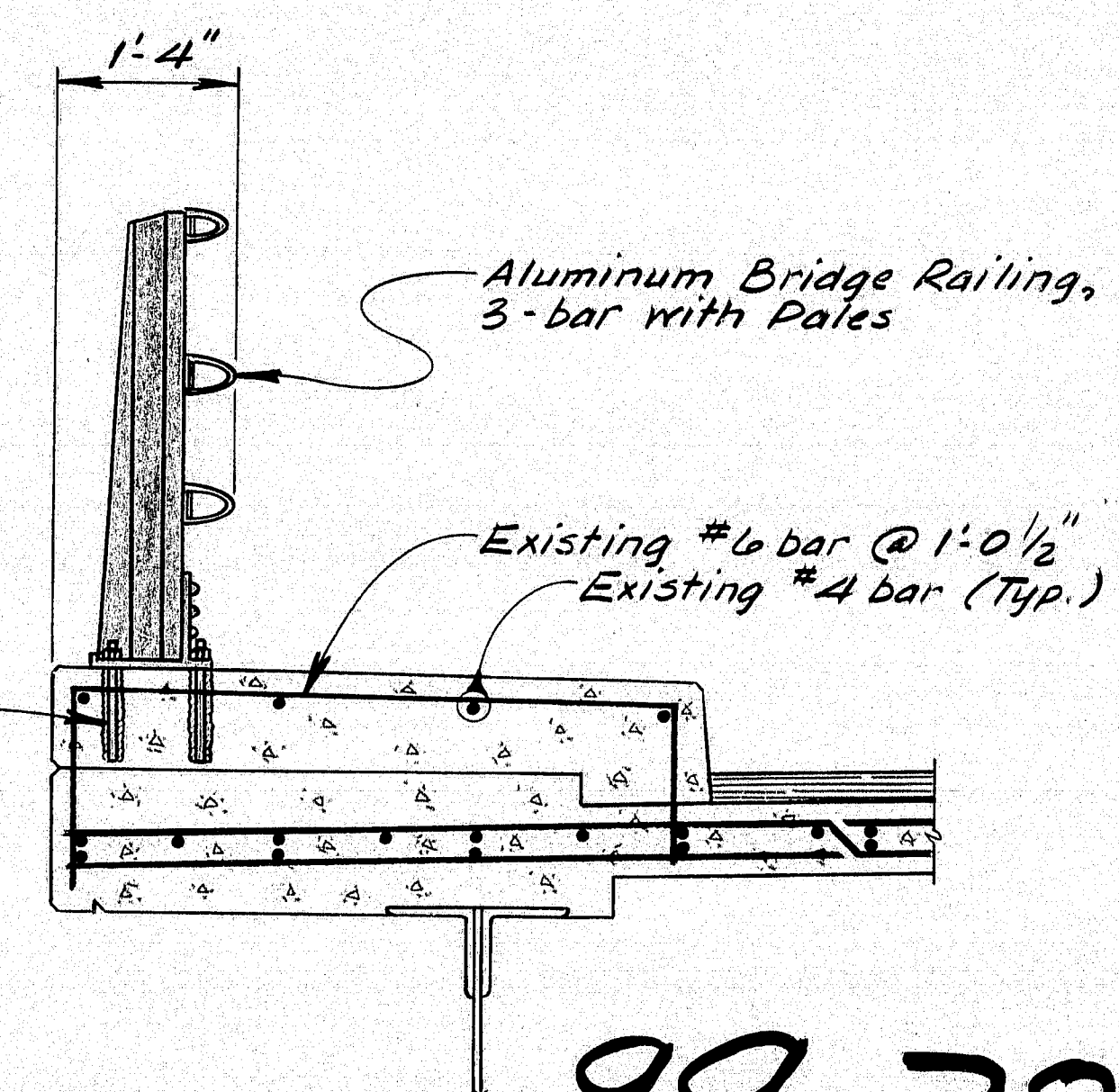
CURB SECTION
Option "A"



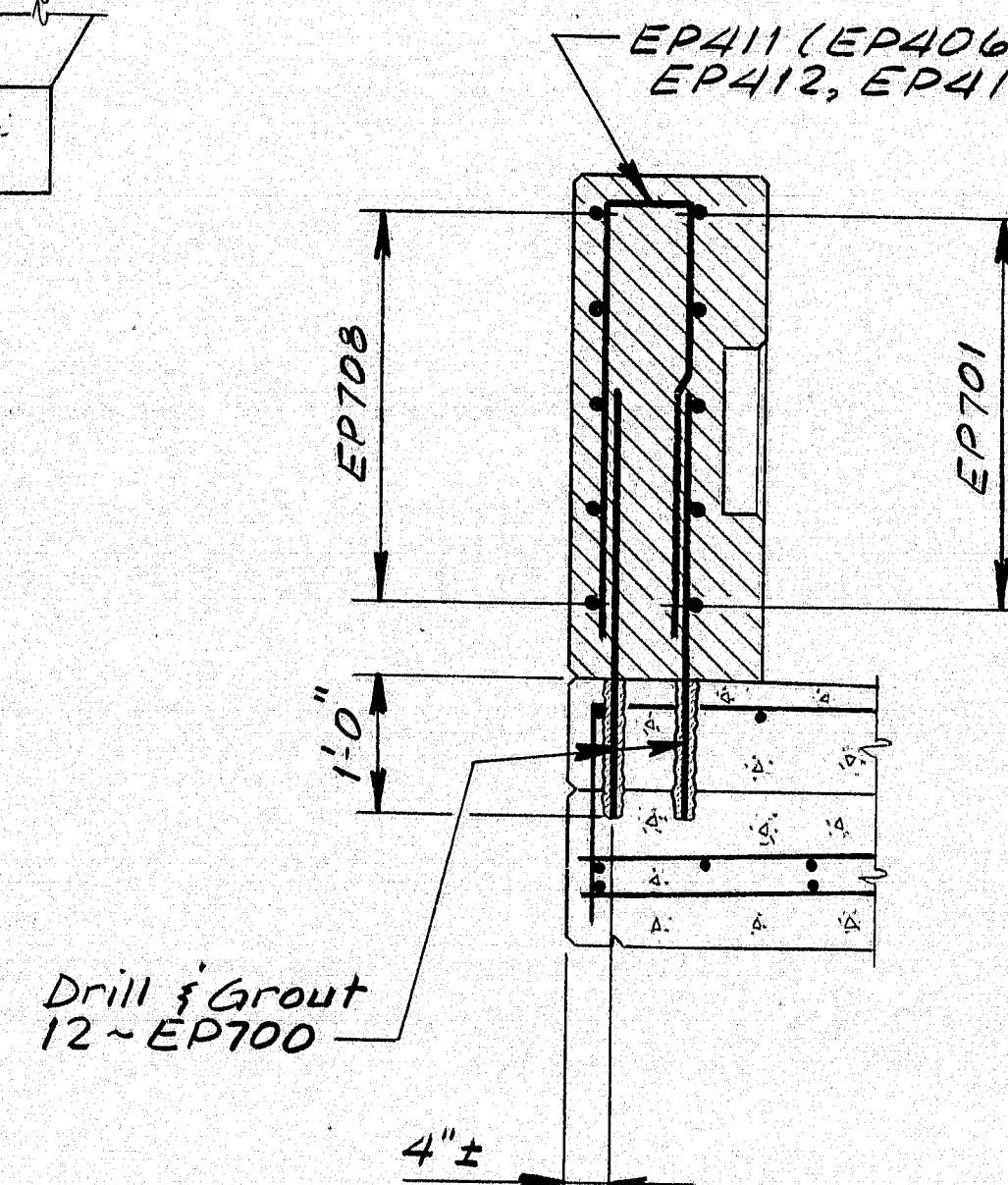
CONCRETE END POST LAYOUT



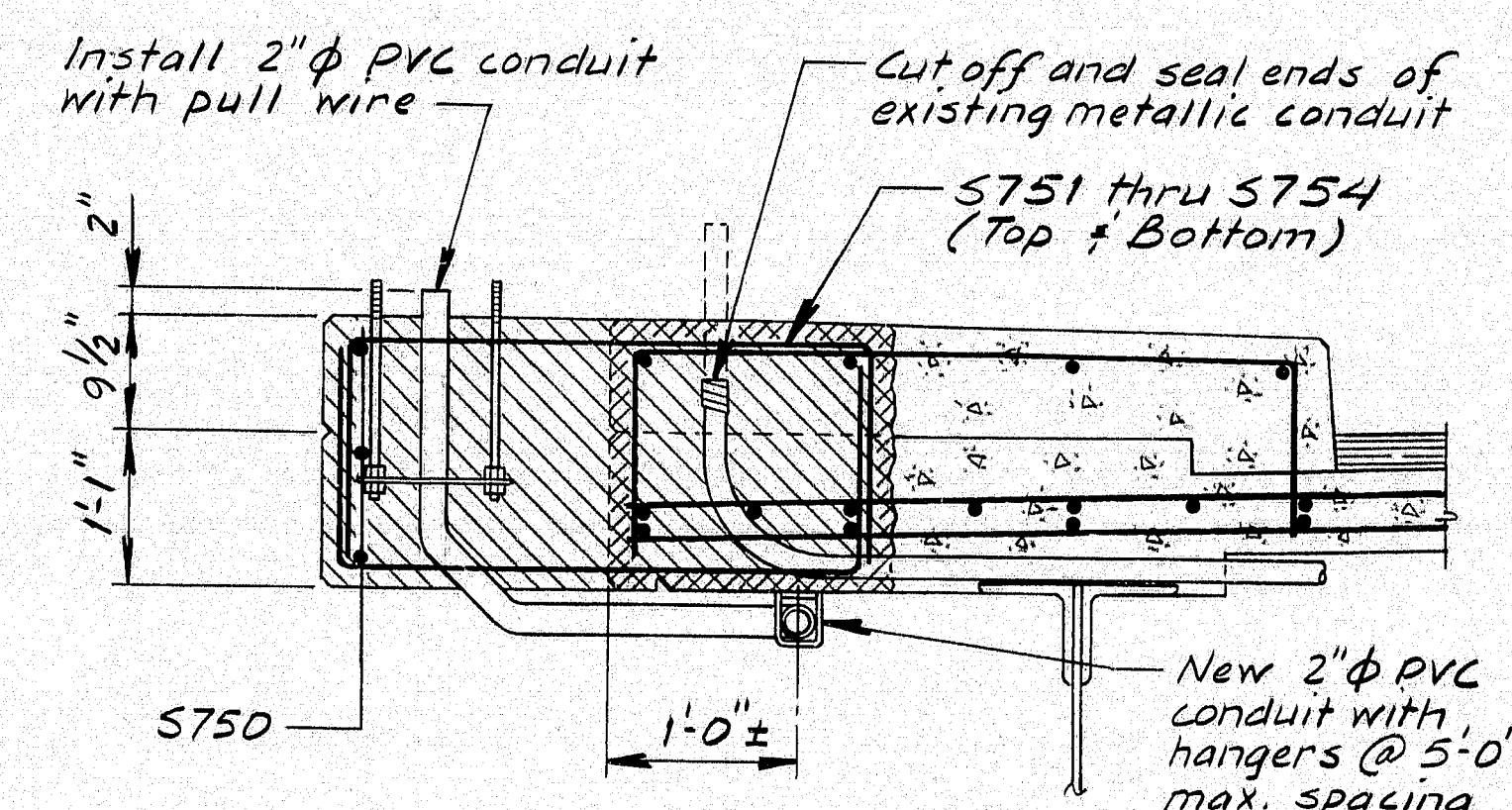
LIGHT STANDARD BASE ~ PLAN



CURB SECTION
Option "B"



SECTION THRU END POST
Refer to BD 120 for all other details



LIGHT STANDARD BASE ~ SECTION

SYMBOLS

- Existing Concrete (to be removed)
- New Concrete
- New Concrete (Section)
- Existing Concrete (to remain)
- Drilled & Grouted Reinf. bar or anchor

Note:
Bars EP700 replace bars EP502, EP503, EP504 on BD 120.
Bars EP701, EP708 replace bars EP501, EP508, respectively.

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
ANDROSCOGGIN RIVER BRIDGE
BETWEEN THE TOWNS OF
LIVERMORE
AND
LIVERMORE FALLS
BRIDGE RAIL & LIGHTING

SHEET 2 OF 11 AUGUSTA, MAINE

PLANS	DESIGN - DETAIL	DATE
	CHECKED	BY
	REVISIONS	DATE
	FIELD CHANGES	DATE

REINFORCING STEEL SCHEDULE																											
STRAIGHT BARS													BENT BARS														
MARK	NO.	LENGTH	LOCATION	MARK	NO.	LENGTH	LOCATION	MARK	NO.	LENGTH	LOCATION	MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION	
		END POSTS																									
EP407	16	2'-5"	Vertical									5750	9	10'-0"	X	1'-9"	2'-4"	1'-10"	2'-4"	1'-9"	—	—	—	—	5'-1 1/2"	—	Horizontal
EP700	48	3'-0"	Dowels									5751	24	6'-6"	S	0	1'-6"	3'-6"	1'-6"	—	—	0	—	—	—	—	Stirrups
												5752	12	6'-3"	S	0	1'-6"	3'-3"	1'-6"	—	—	0	—	—	—	—	Stirrups
												5753	12	5'-9"	S	0	1'-6"	2'-9"	1'-6"	—	—	0	—	—	—	—	Stirrups
EP708	20	4'-0"	Horizontal									5754	12	5'-3"	S	0	1'-6"	2'-3"	1'-6"	—	—	0	—	—	—	—	Stirrups

FWA REV. NO.	STATE MAINE	PROJECT NUMBER F-021-1(38)	SHEET NO. 3	TOTAL SHEETS 11
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TYPE-BENDING DIAGRAMS

All dimensions are out to out of reinf. bar.
Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 318. Δ
Reinforcing Bar: A57M A615 Grade 60

GENERAL NOTES

- First digit(s) following the letter of the Mark indicates size of reinf. bar.
Mark (A502) bar size - #5
Mark (P1001) bar size - #10
Mark (S603) bar size - #6
- Each truss bar, Type B, may be replaced by two (2) straight bars (one top & one bottom) of the same bar size as the truss bar. Payment in either case shall be based on truss bars as scheduled on plans.

Δ New Bent Bar Type 37	9-26-83
Δ Revised ACI Standard	5-12-83

REVISIONS

REVISIONS	DATE
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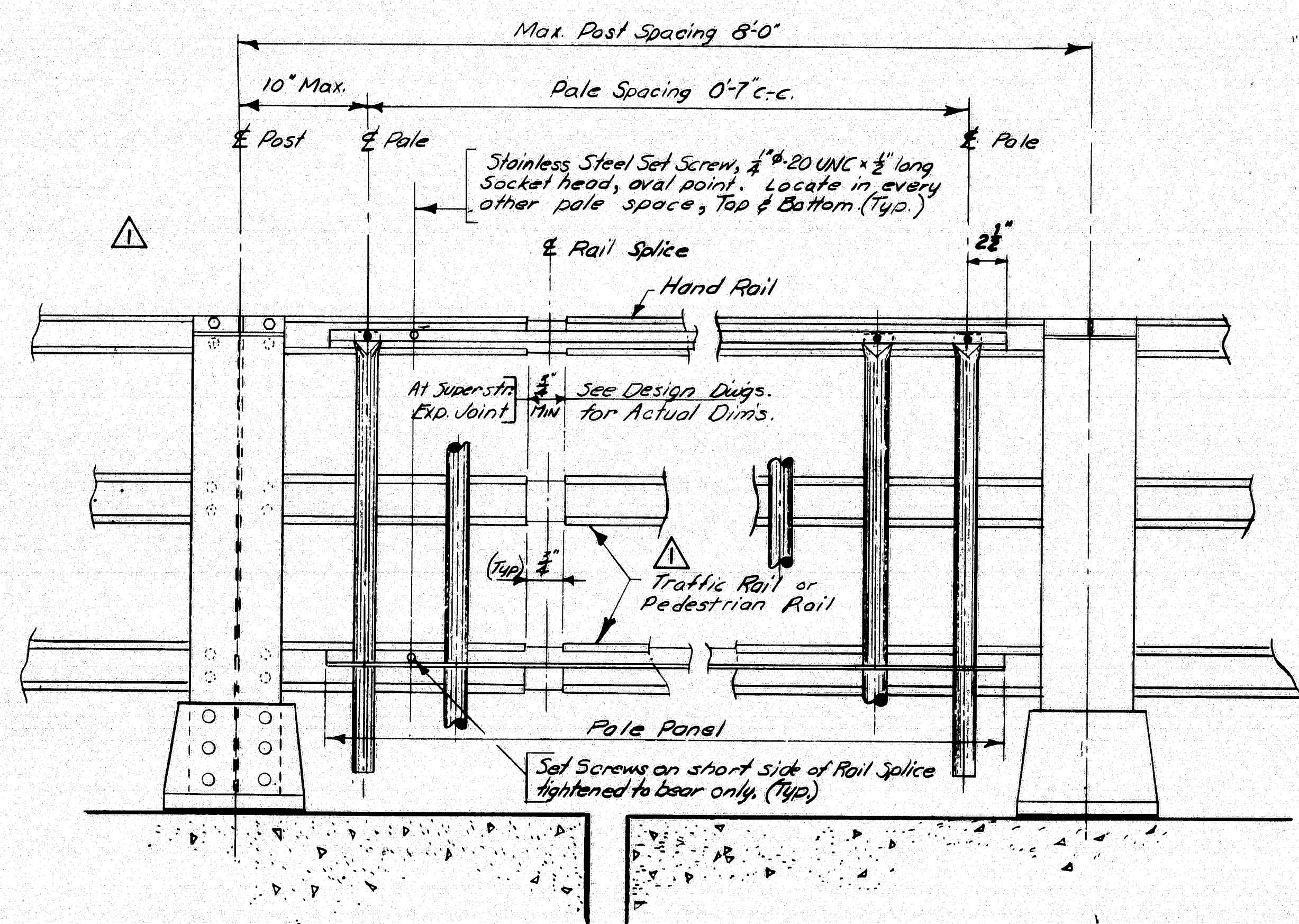
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

ANDROSCOGGIN RIVER BRIDGE
BETWEEN THE TOWNS OF
LIVERMORE
AND
LIVERMORE FALLS

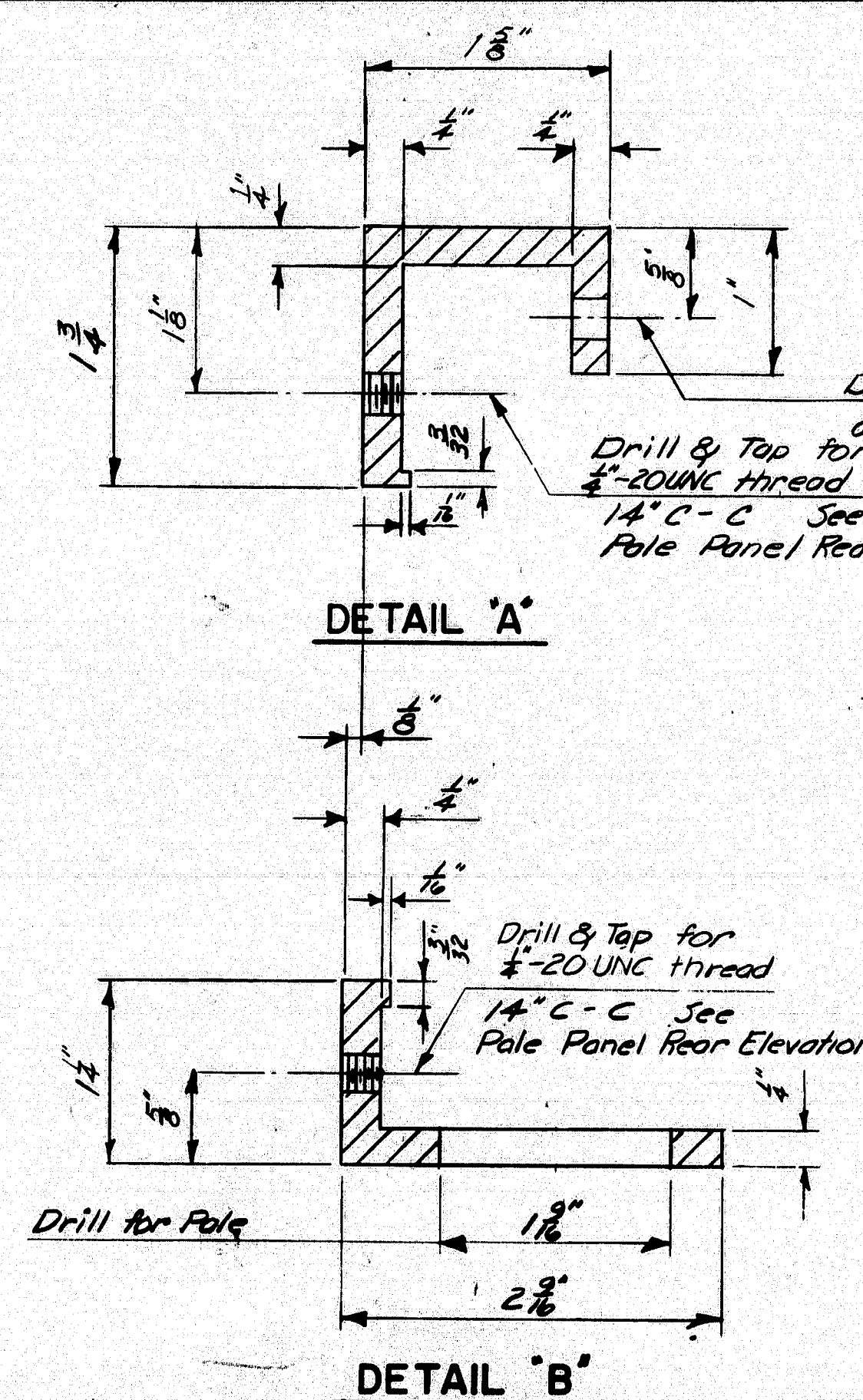
99-385

REINFORCING STEEL SCHEDULE
SHEET 3 OF 11 AUGUSTA, MAINE

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	F-021-1(38)	5	11

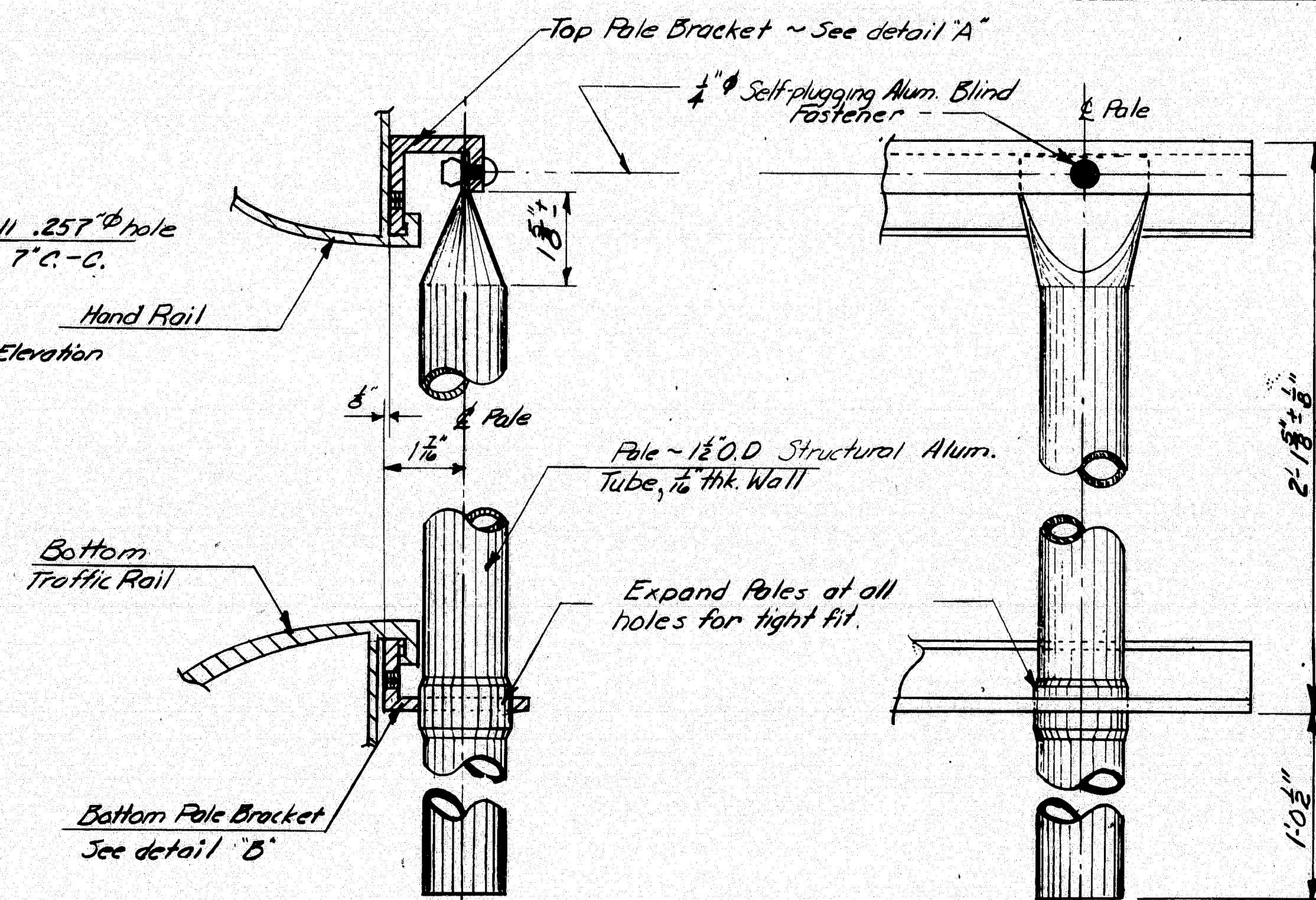


PALE PANEL REAR ELEVATION



DETAIL 'A'

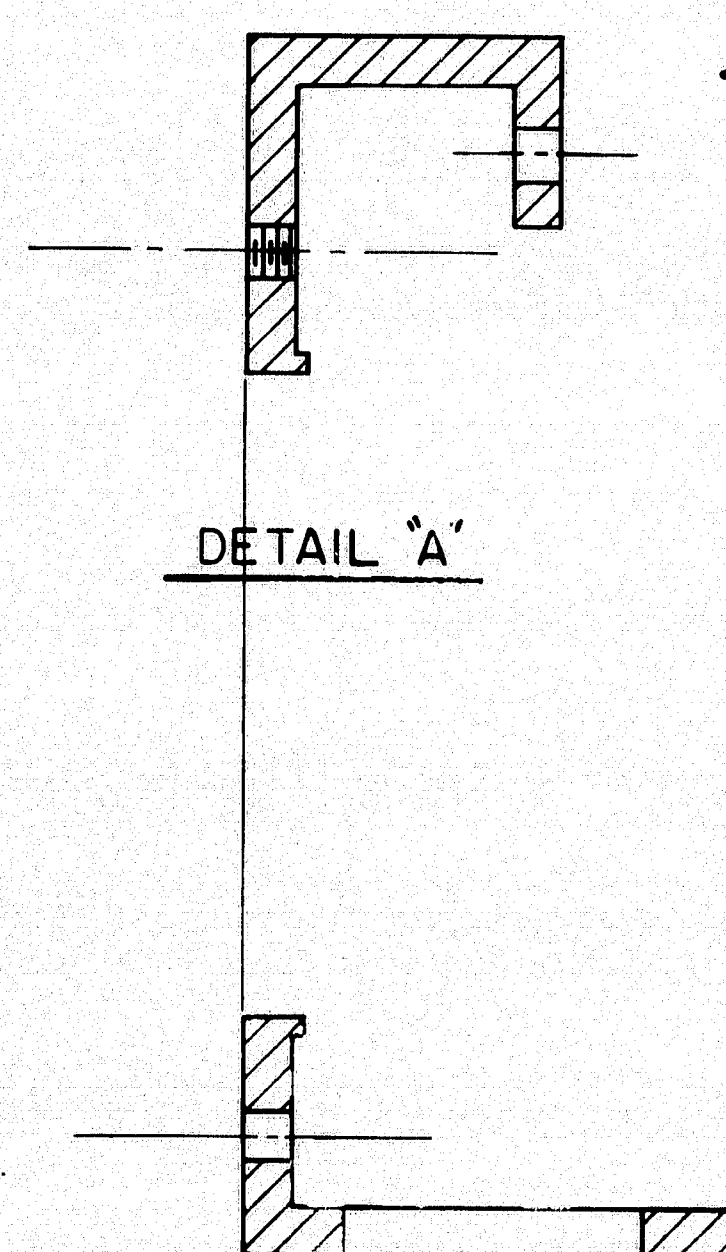
DETAIL 'B'



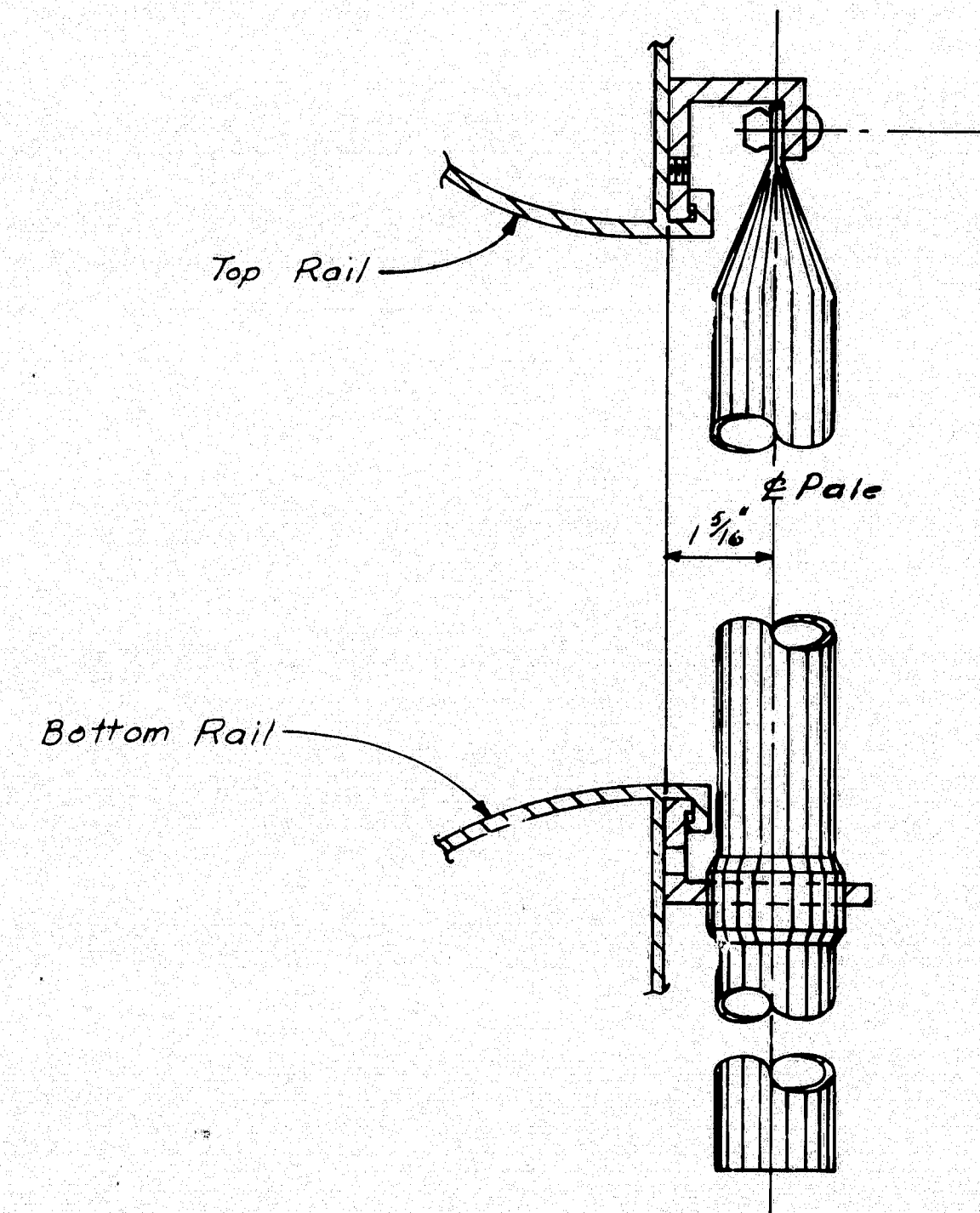
PALE PANEL DETAILS

PALE PANEL (3-BAR TRAFFIC RAIL)

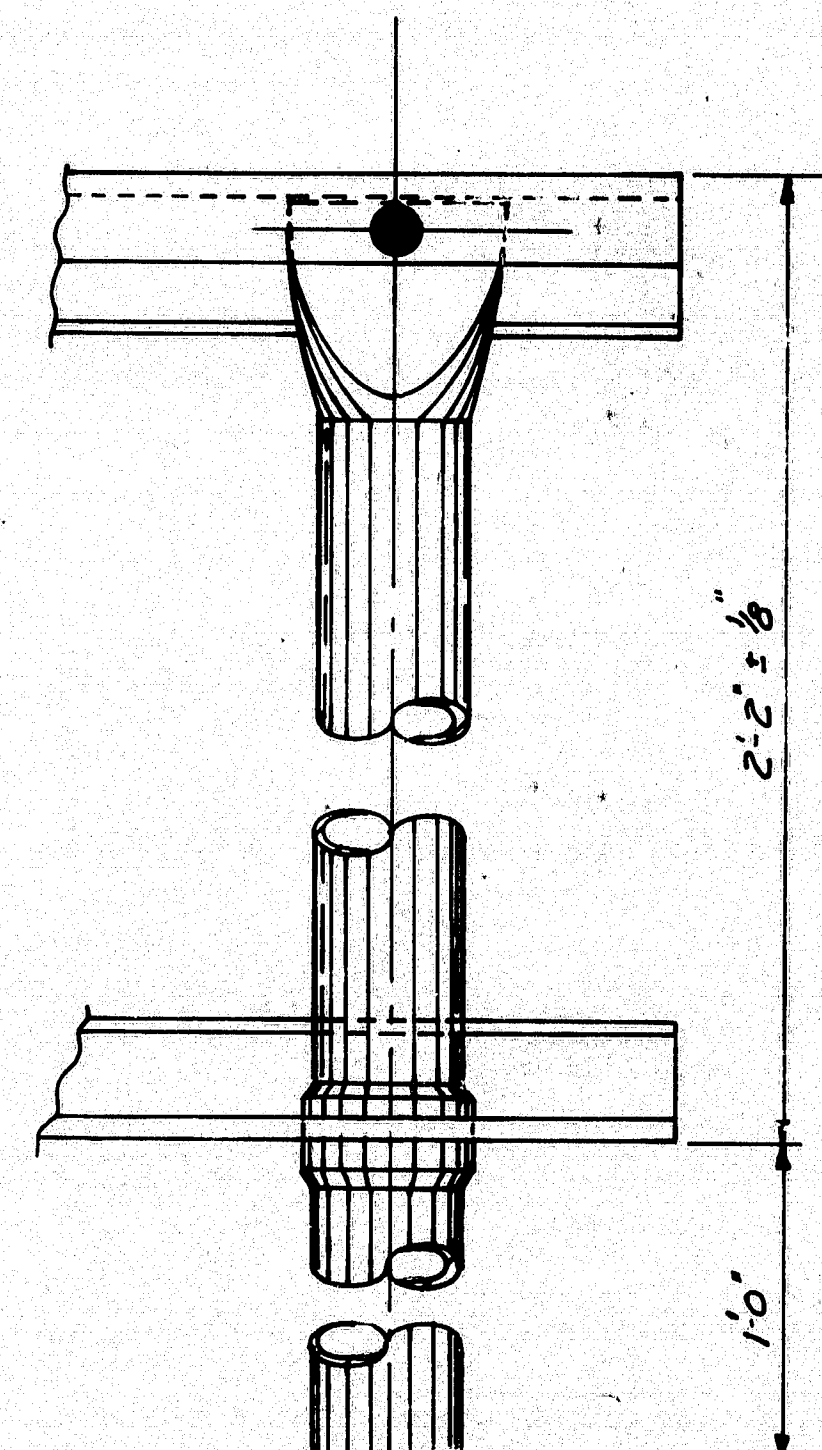
NOTE: If there is a conflict between this Standard Detail and the Design Drawings, the requirements of the Design Drawings shall be followed.



DETAIL 'A'



DETAIL 'B'



PALE PANEL DETAILS

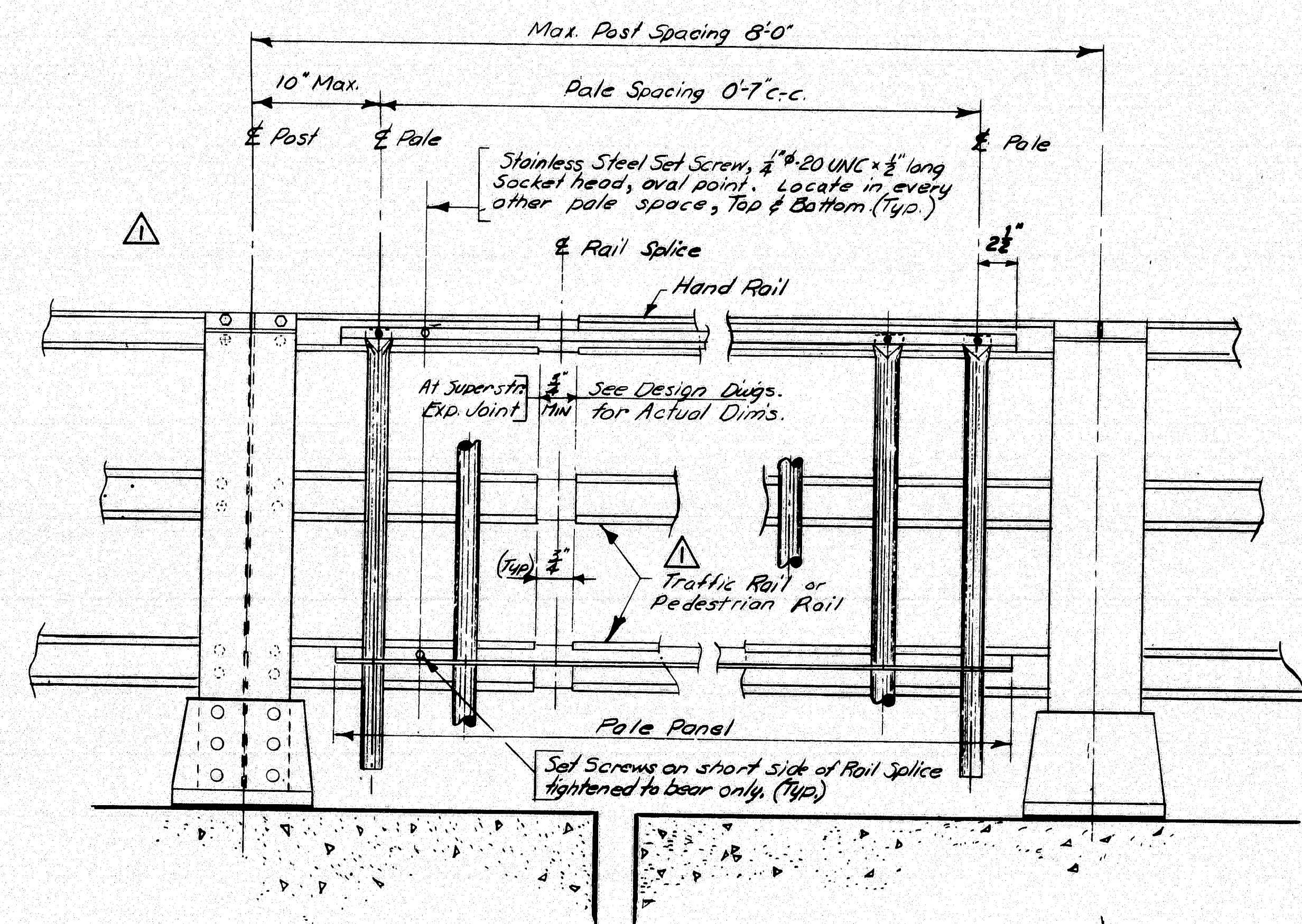
PALE PANEL (3-BAR PEDESTRIAN RAIL)

NOTE: For dimensions not shown see Pale Panel 3-Bar Traffic Rail.

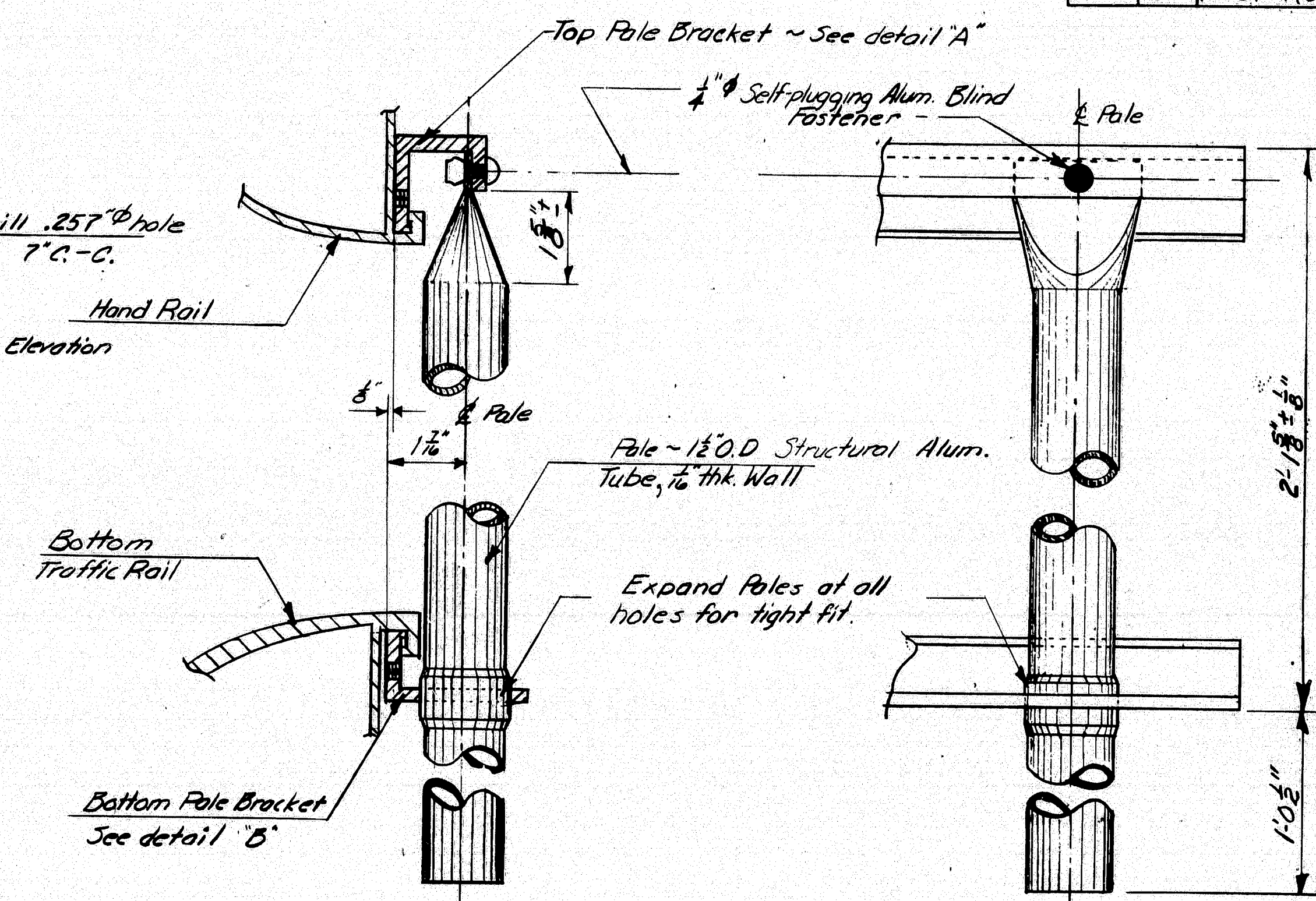
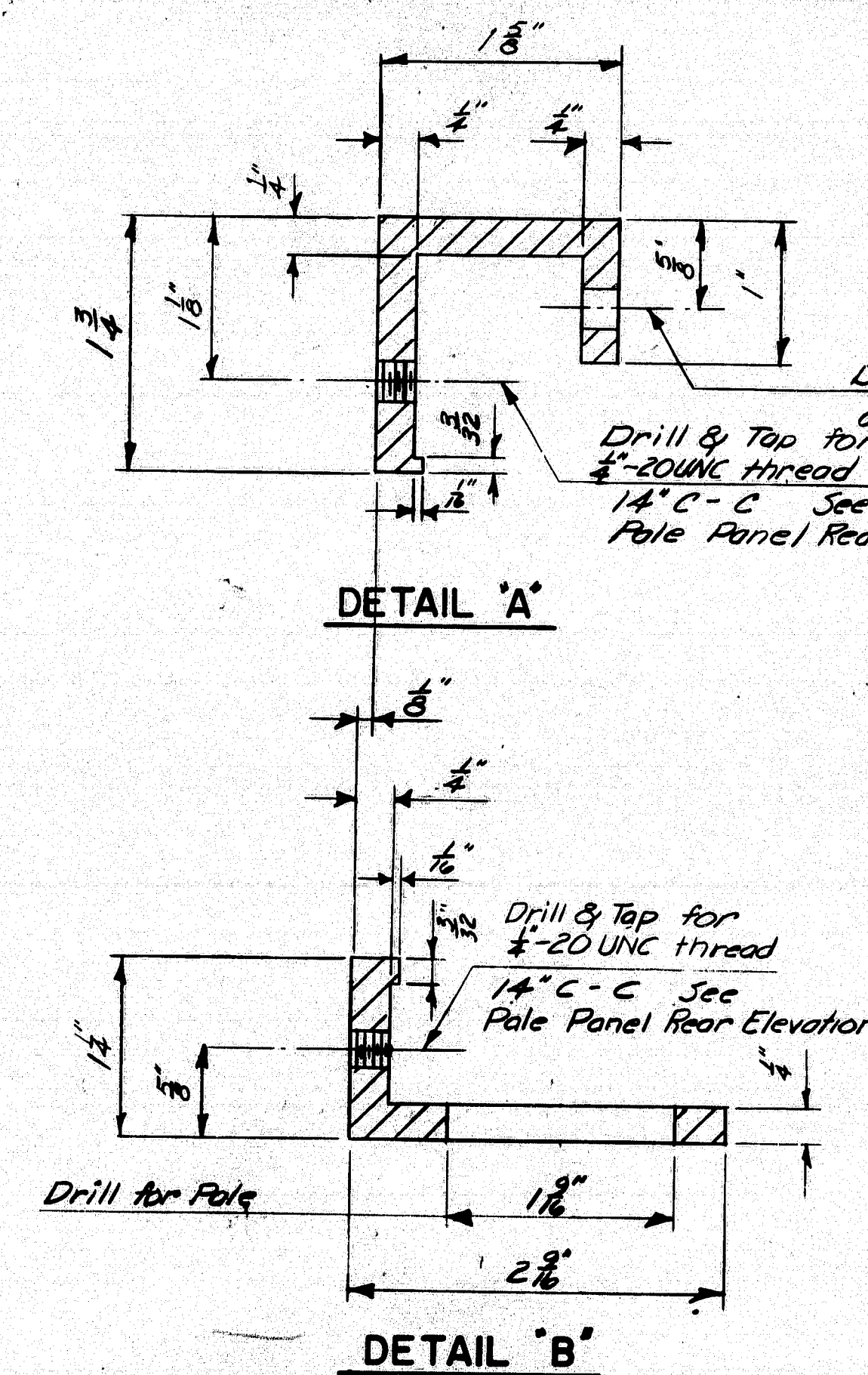
Added Note	12-84
Pedestrian Pale Panel Detail	3-82
REVISIONS	DATE
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	
STANDARD DETAILS (BD 116-81)	
ALUMINUM BRIDGE RAILING PALE PANEL	
SHEET 5 OF 11	AUGUSTA, MAINE JUNE 1981

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Lawrence



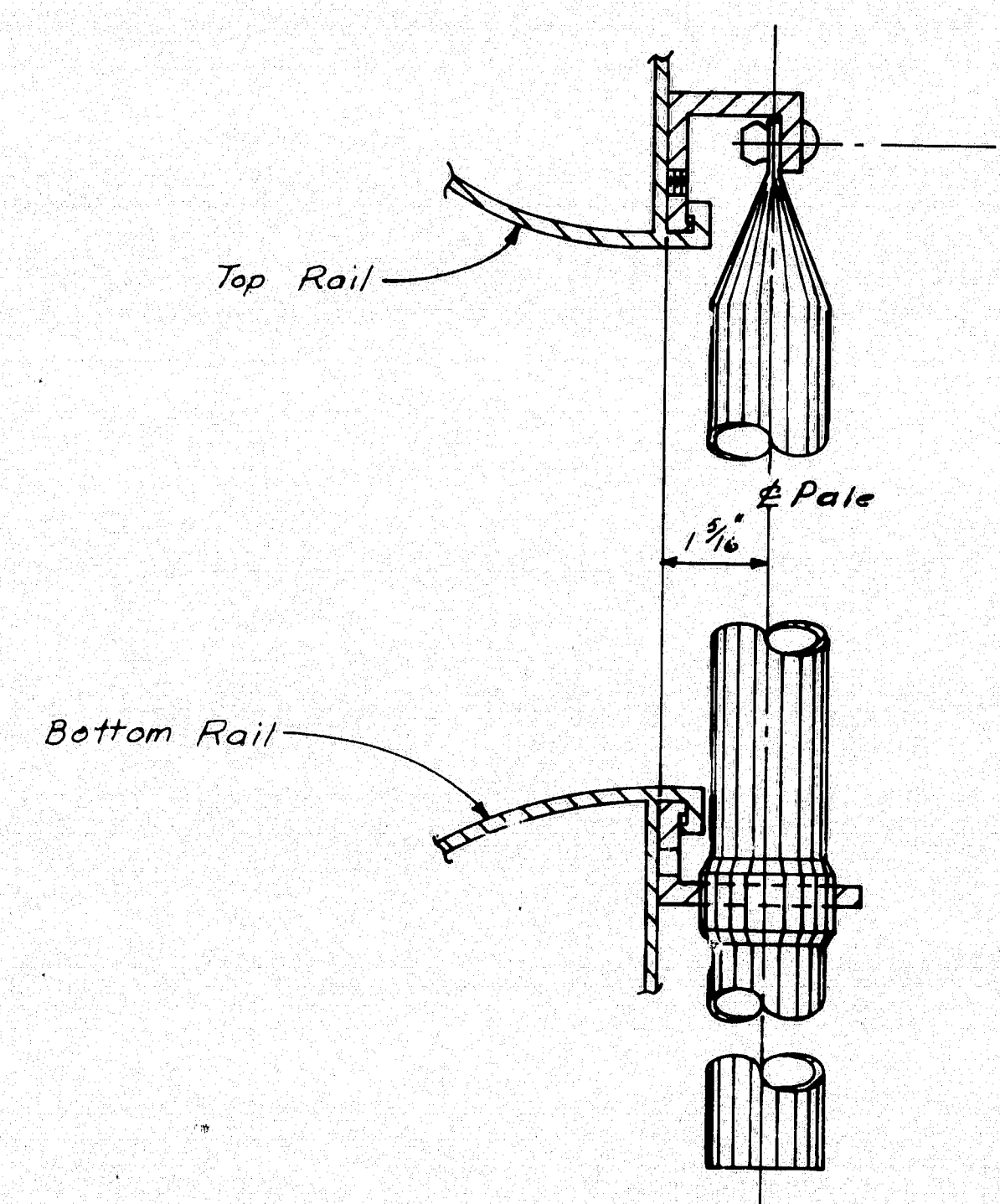
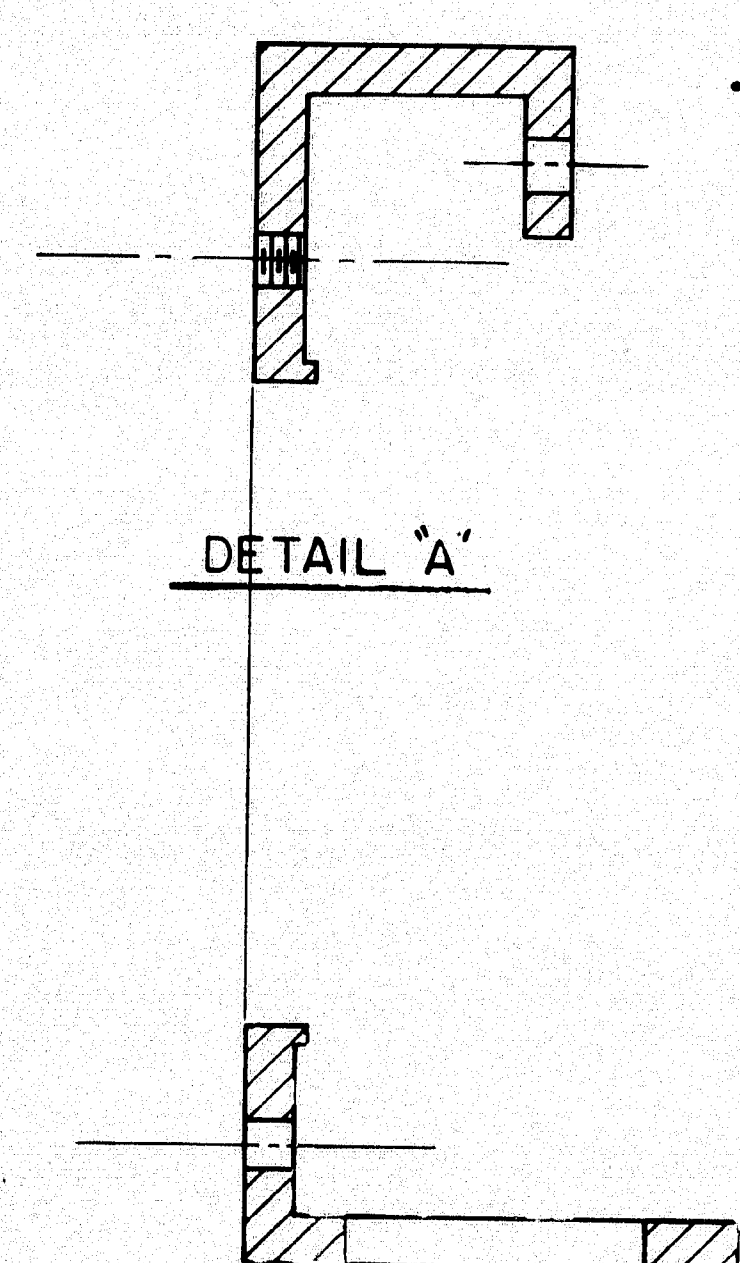
PALE PANEL REAR ELEVATION



PALE PANEL DETAILS

PALE PANEL (3-BAR TRAFFIC RAIL)

NOTE: If there is a conflict between this Standard Detail and the Design Drawings, the requirements of the Design Drawings shall be followed.



DETAIL 'B'

PALE PANEL DETAILS

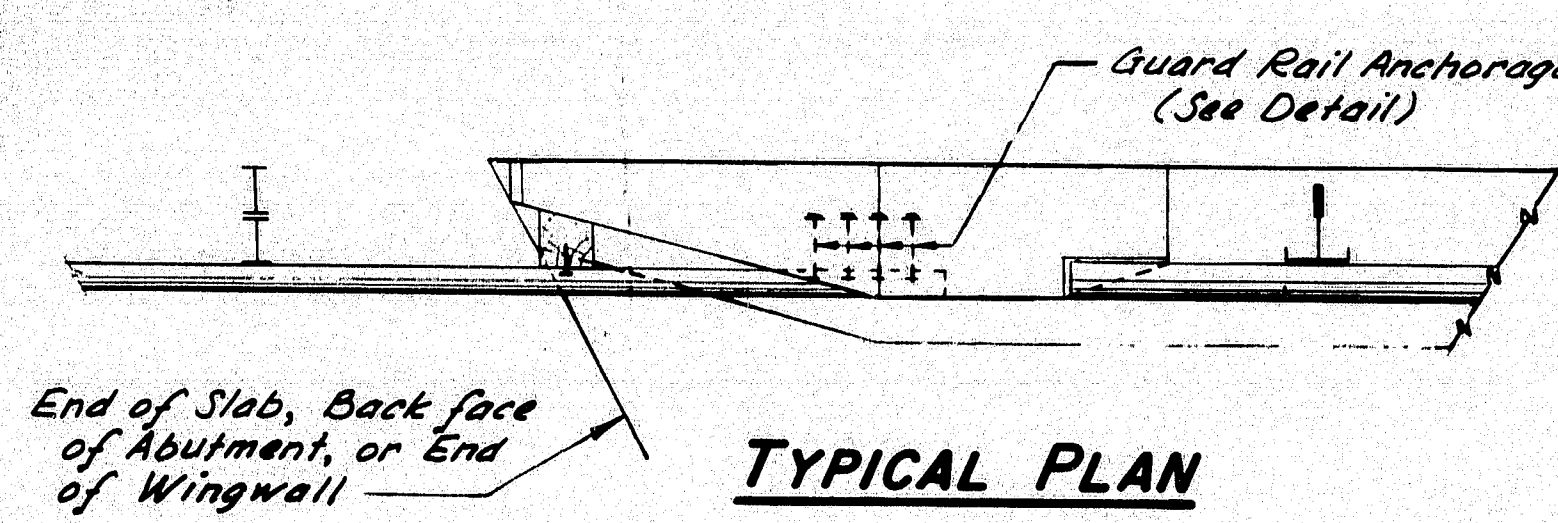
PALE PANEL (3-BAR PEDESTRIAN RAIL)

NOTE: For dimensions not shown see Pale Panel 3-Bar Traffic Rail.

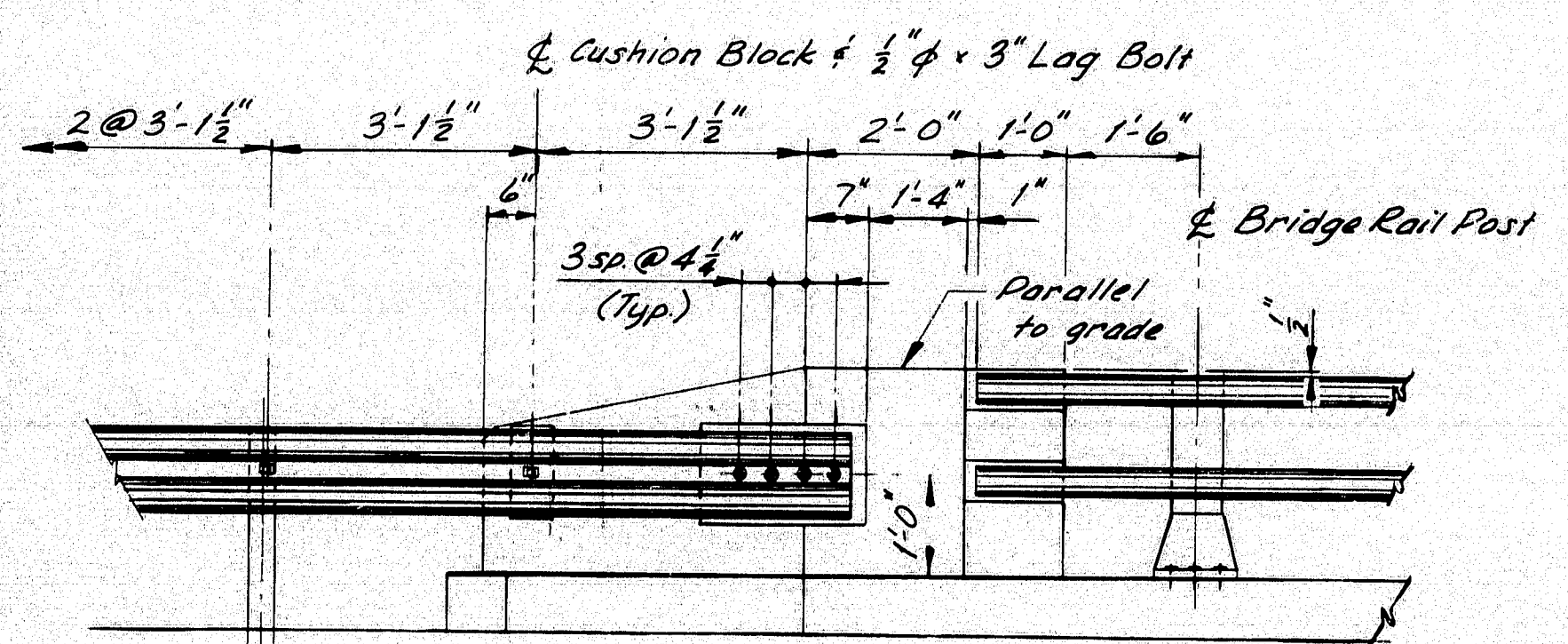
Added Note	12-84
Pedestrian Pale Panel Detail	3-82
REVISIONS	
STATE OF MAINE	DATE
DEPARTMENT OF TRANSPORTATION	
STANDARD DETAILS	
(BD 116-81)	
ALUMINUM BRIDGE RAILING	
PALE PANEL	
SHEET 5 OF 11 AUGUSTA, MAINE JUNE 1981	

99-387

FILE NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
MAINE	MAINE	F-021-1(38)	6	11

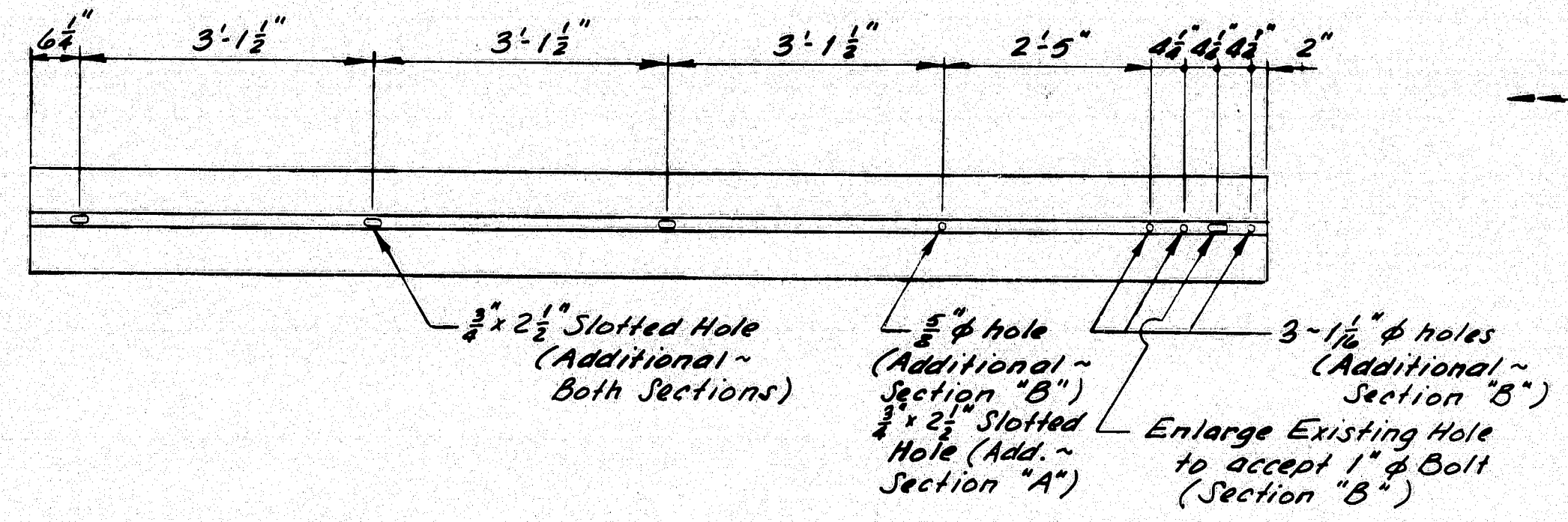


TYPICAL PLAN

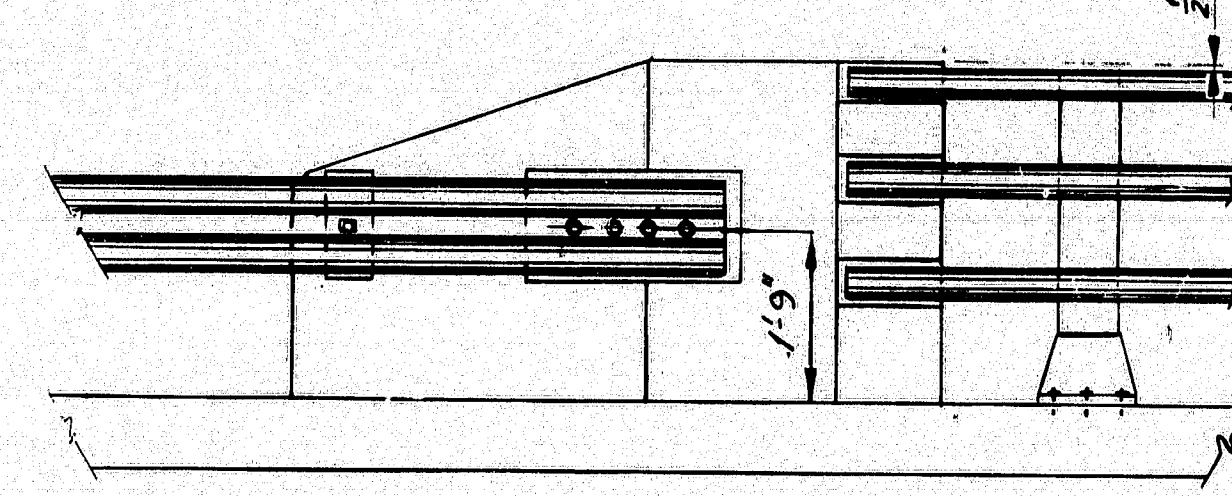


ELEVATION

2-Bar Bridge Rail (Aluminum or Steel)

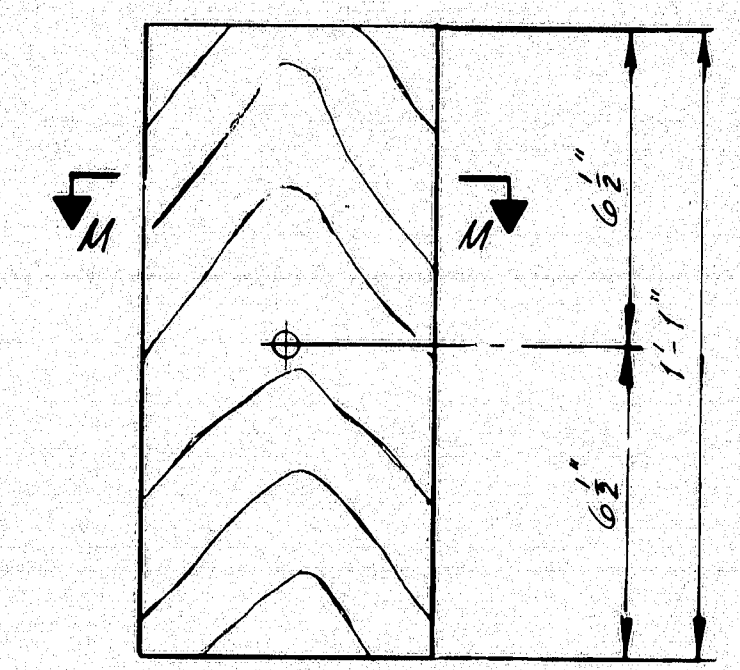


MODIFIED GUARD RAIL SECTIONS
(See Note #6)

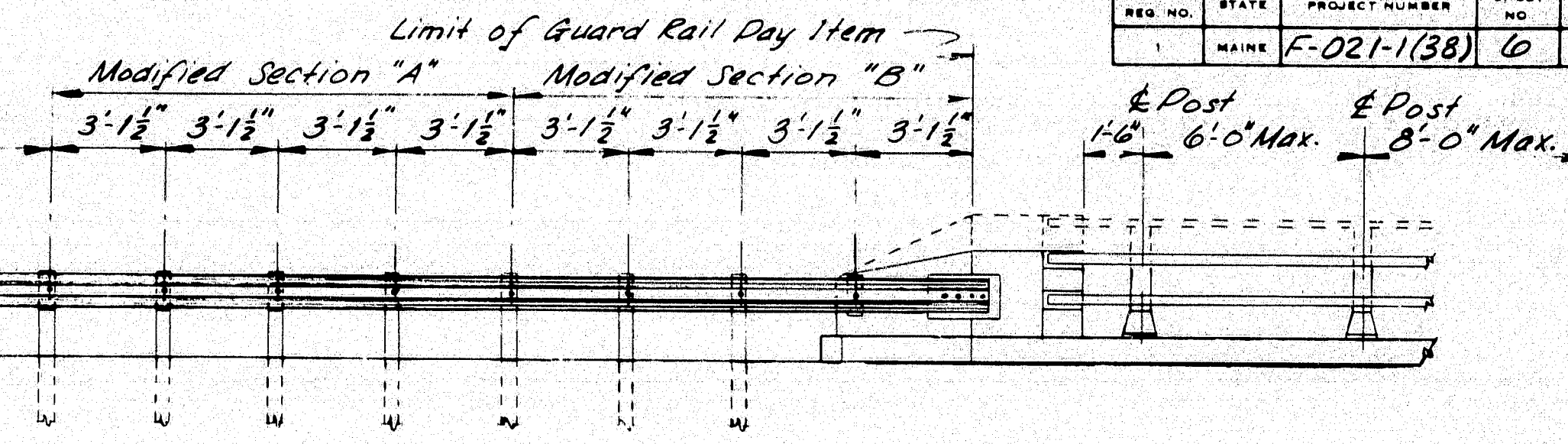


ELEVATION

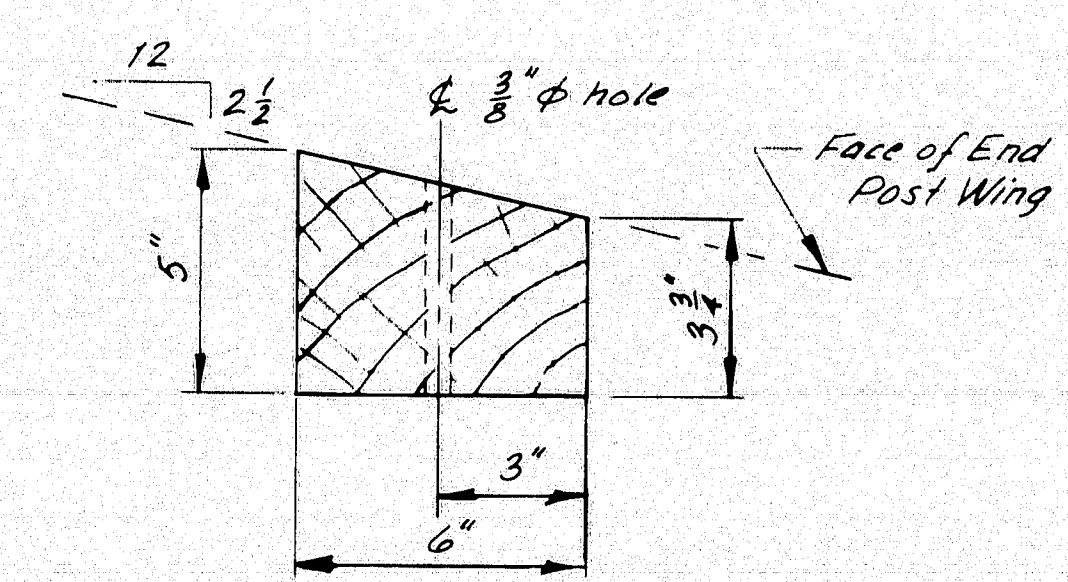
3-Bar Bridge Rail (Aluminum or Steel)



CUSHION BLOCK
(See Note #7)



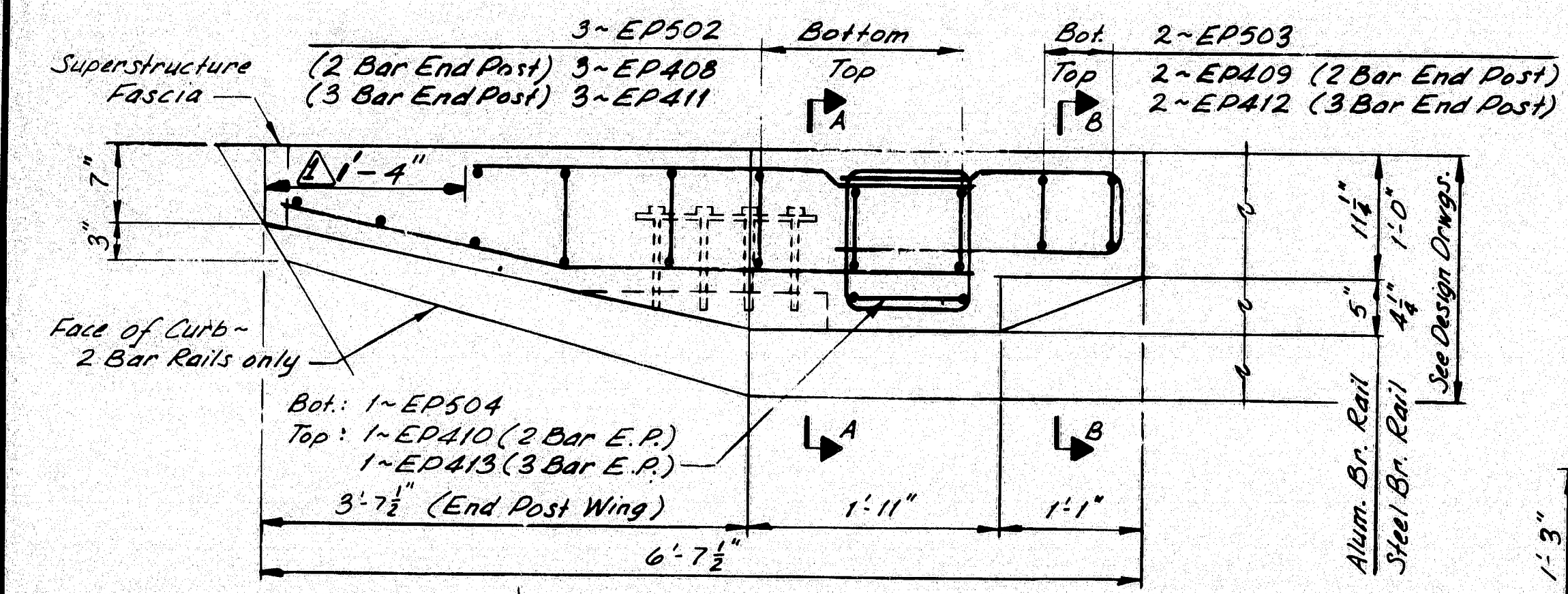
RAILING - ELEVATION



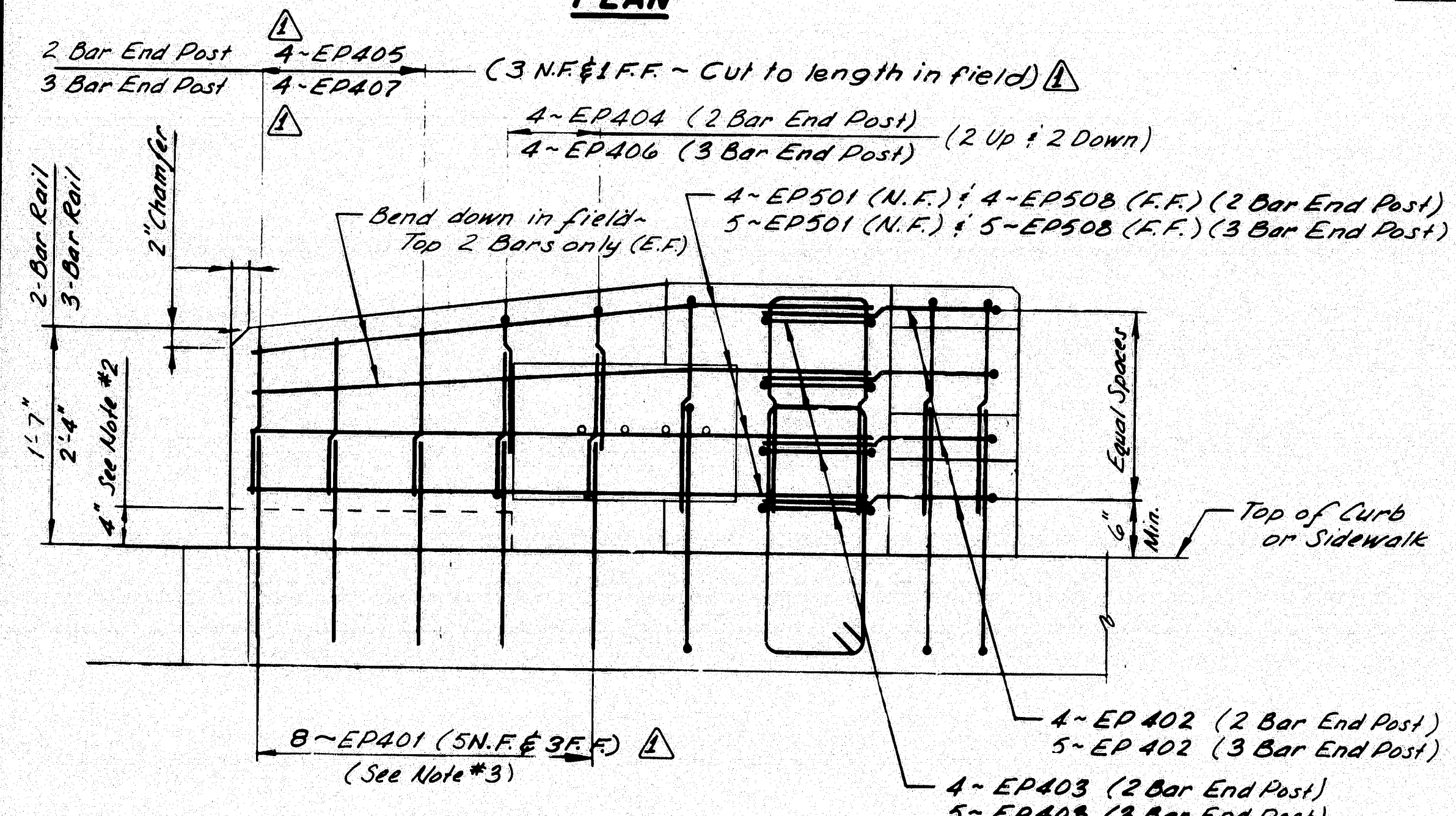
SECTION M-M

NOTES

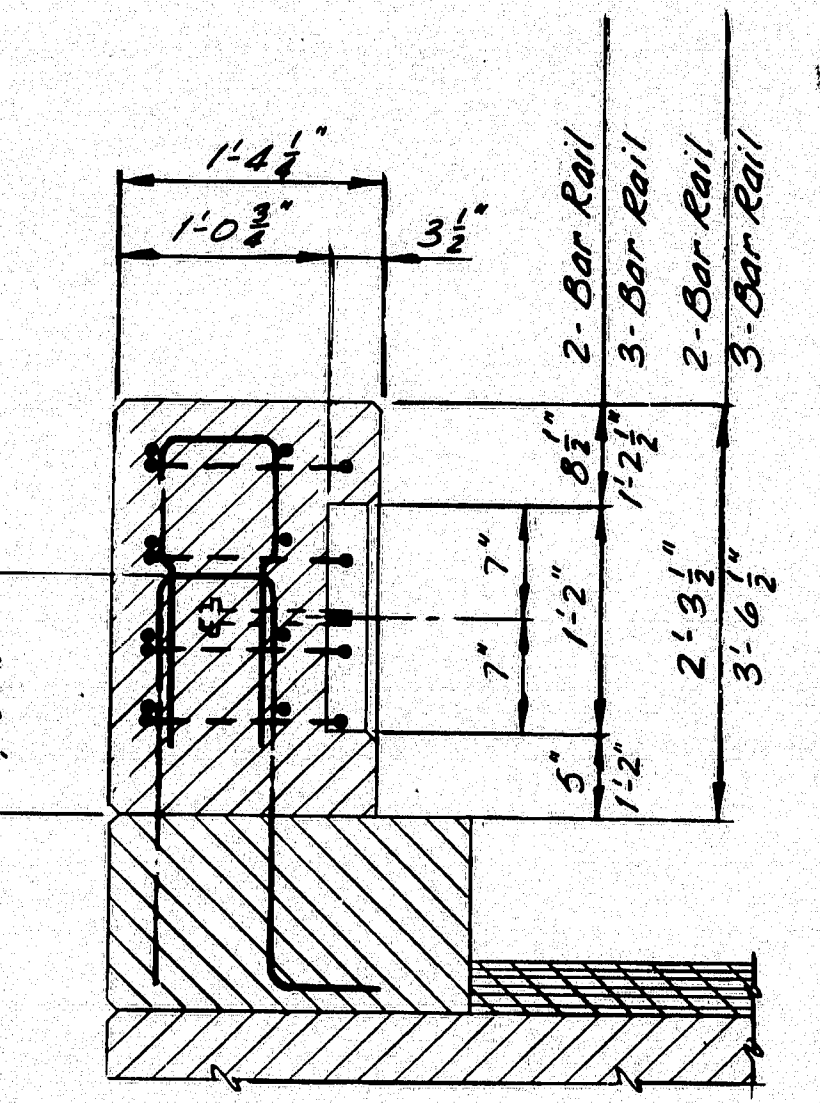
- For locations of End Posts on the structure, see Design Drawings.
- At times, an End Post Wing may be cantilevered for all or part of its length. For details, see Design Drawings.
- If an End Post Wing is cantilevered, bars EP401 to be omitted as needed.
- When End Post Wing is cantilevered more than 2'-0", all #5 bars shall be replaced by #7 bars.
- Nuts for 3/4" anchor bolts shall be incidental to Guard Rail Pay Items. Nuts shall conform to A.S.T.M. A563, Grade D4, galvanized in accordance with A.S.T.M. A153, or Grade C3, plain.
- Additional holes in the Modified Guard Rail Sections may be made by drilling, punching, or any other method that produces a neat, clean hole of the required size. Burning of holes will not be allowed.
- Cushion Block material shall be as specified for Wood Posts in Subsection 710.07 (a). Payment for Cushion Blocks and Lag Bolts shall be incidental to the Guard Rail Pay Items.
- Reinforcing Steel shall have 2" min. concrete cover.
- After installation of Guard Rail is complete, upset the thread on the anchor bolts in three places around each bolt, at the junction of the nut and the exposed thread, with a center punch or similar tool.
- Guard Rail Anchorage shall be incidental to the applicable concrete pay item.
- End Posts shall be constructed normal to grade unless otherwise shown on Design Drawings.
- If there is a conflict between this Standard Detail and the Design Drawings, the requirements of the Design Drawings shall be followed.



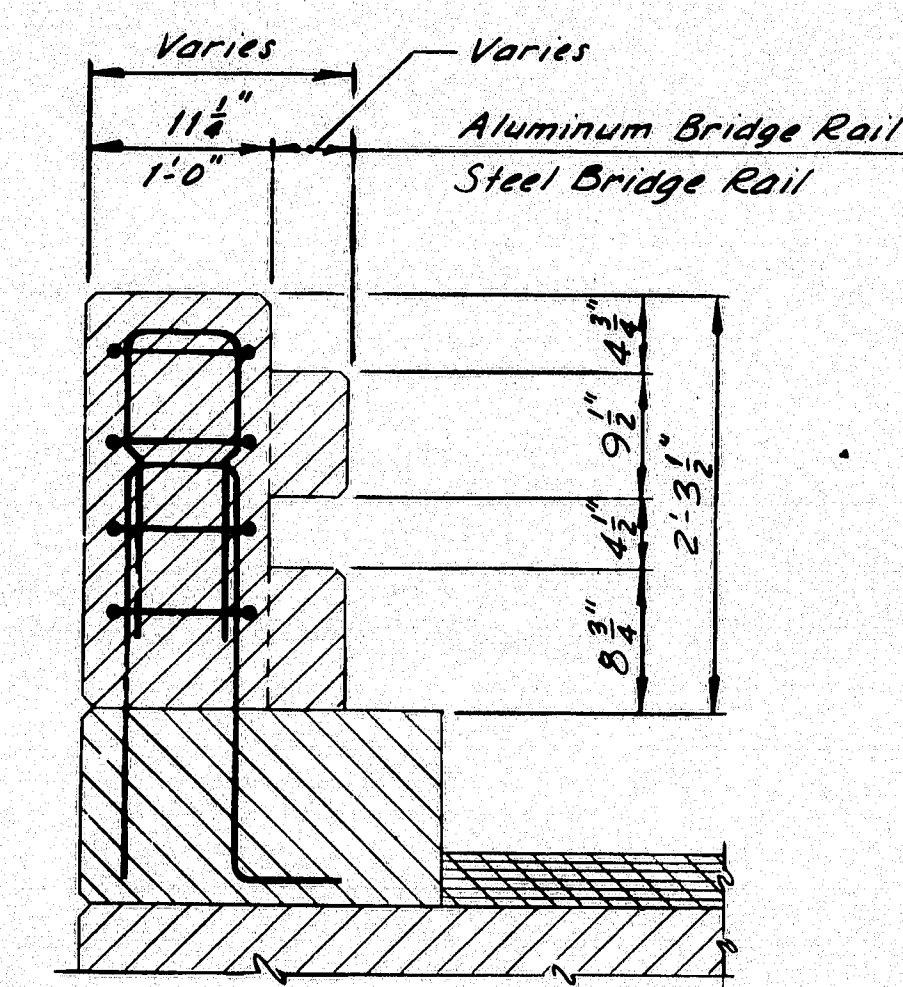
PLAN



ELEVATION

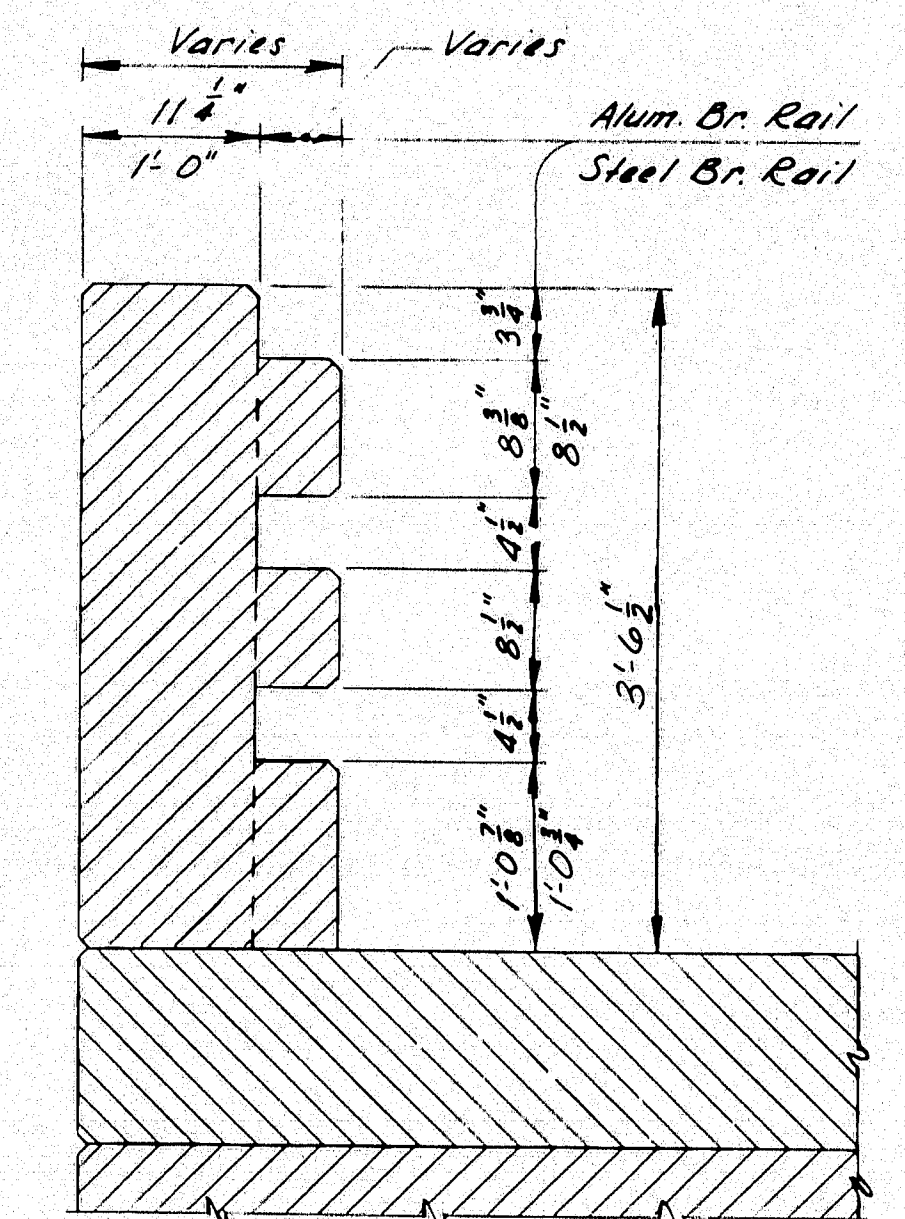


SECTION A-A



SECTION B-B

2-Bar Bridge Rail (Aluminum or Steel)

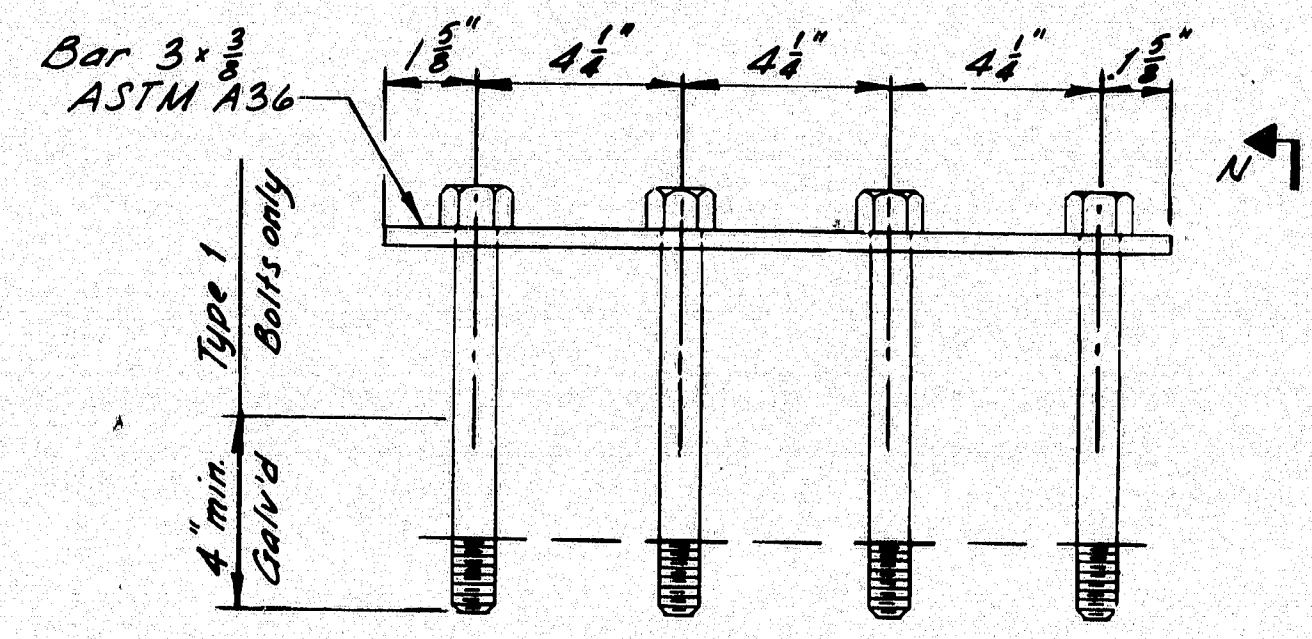


SECTION B-B

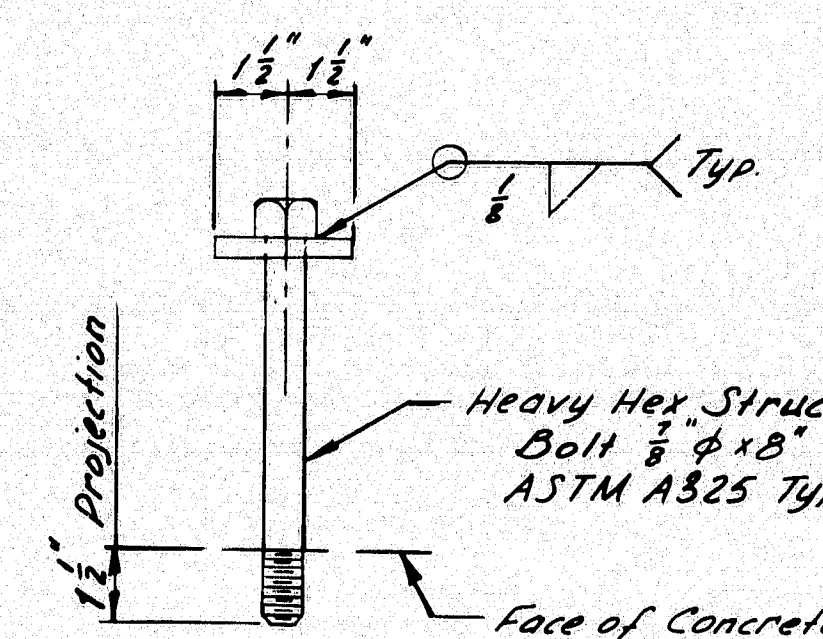
3-Bar Bridge Rail (Aluminum or Steel)

LEGEND

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



GUARD RAIL ANCHORAGE



VIEW N-N

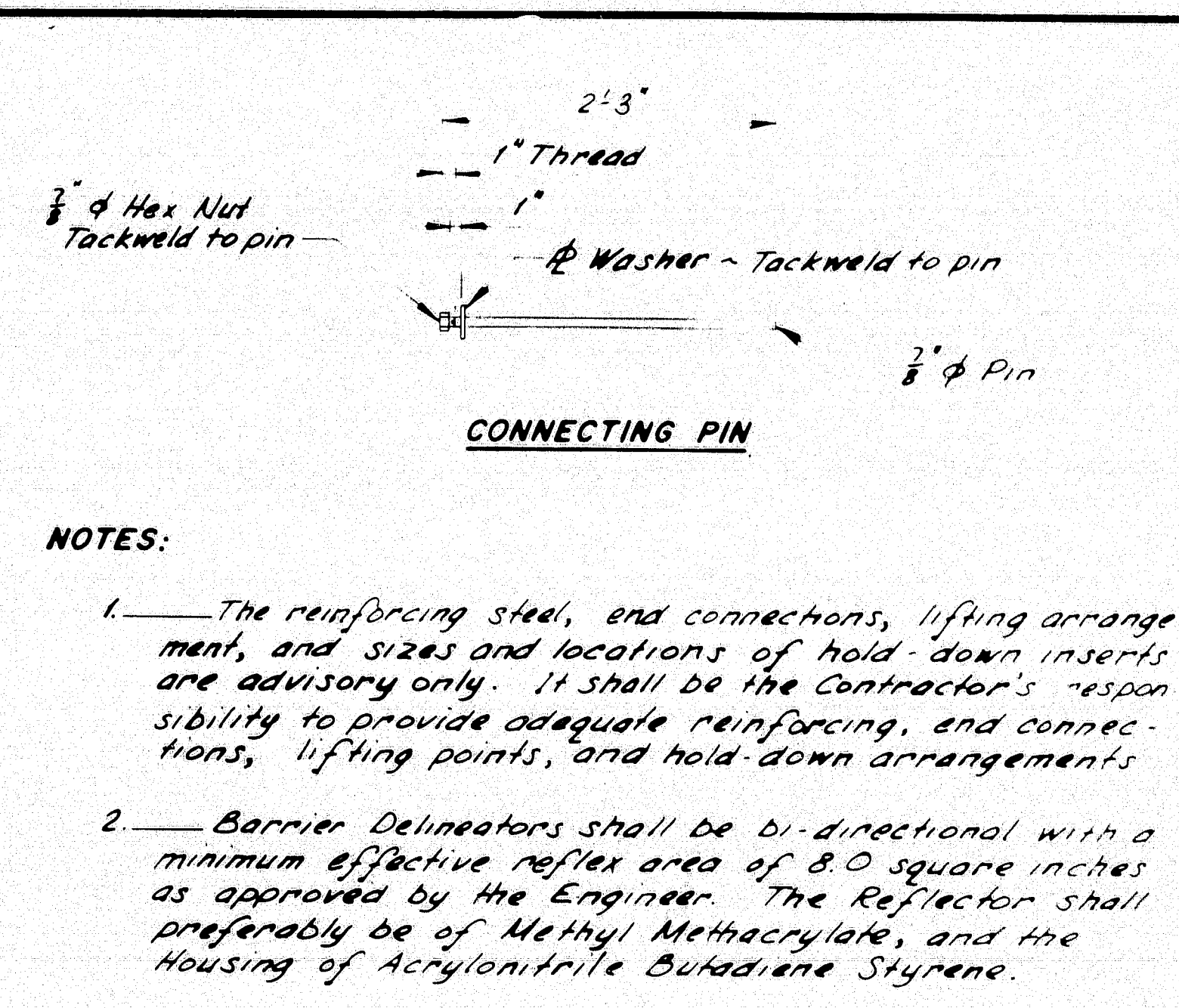
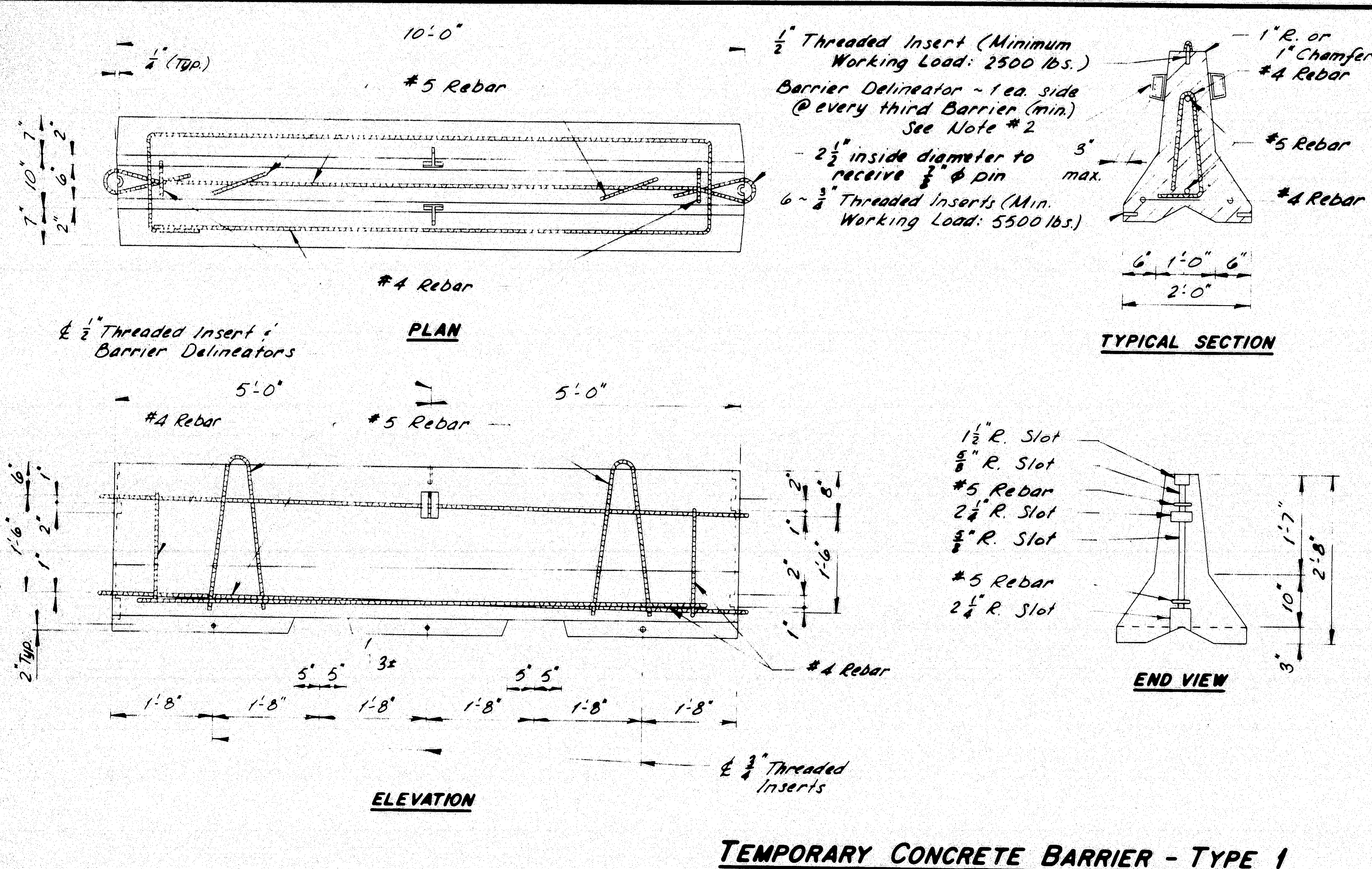
REVISIONS	DATE
General Revisions 1-83	
Added Note #12	1-85

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
STANDARD DETAILS (BD 120-81)
CONCRETE END POSTS

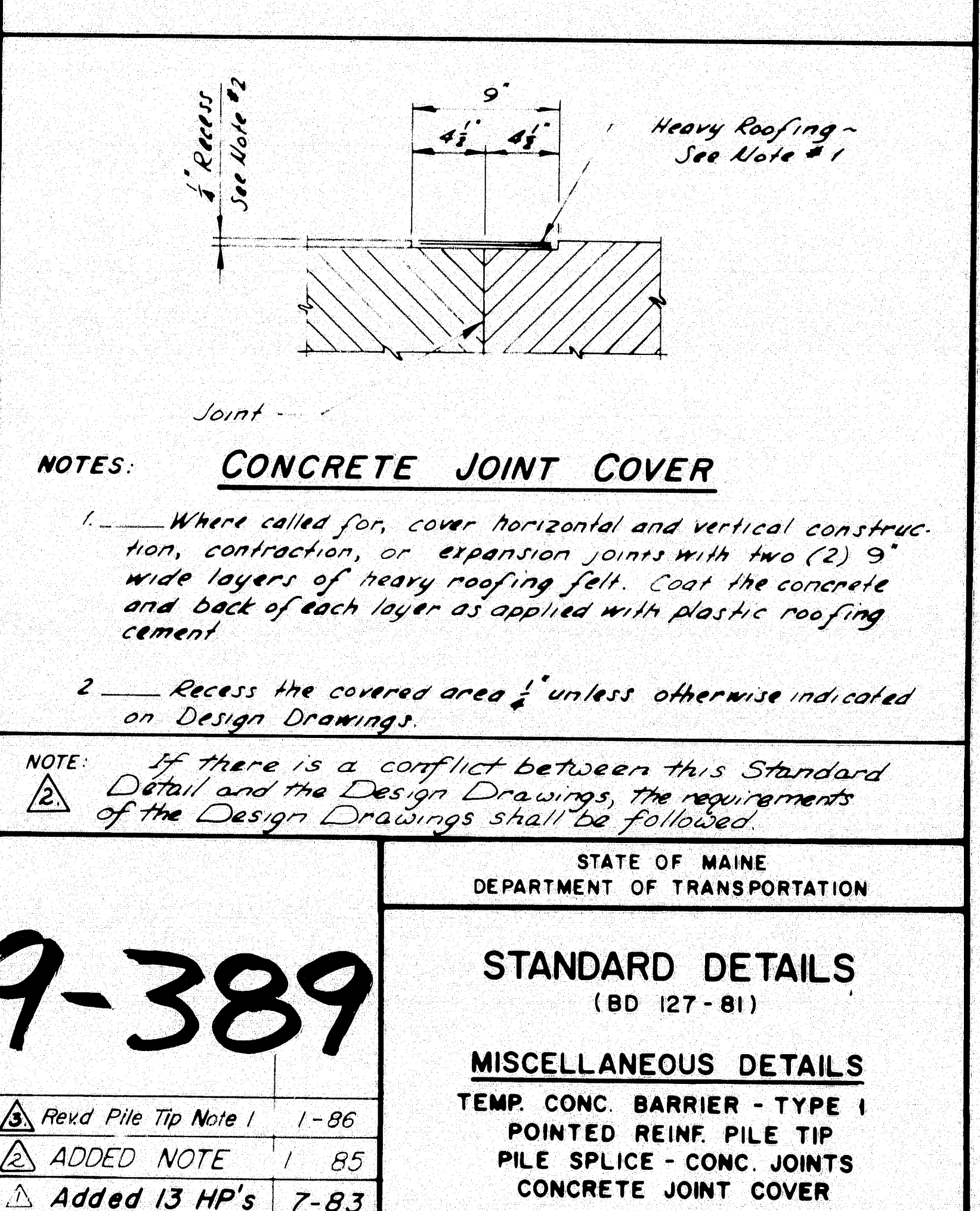
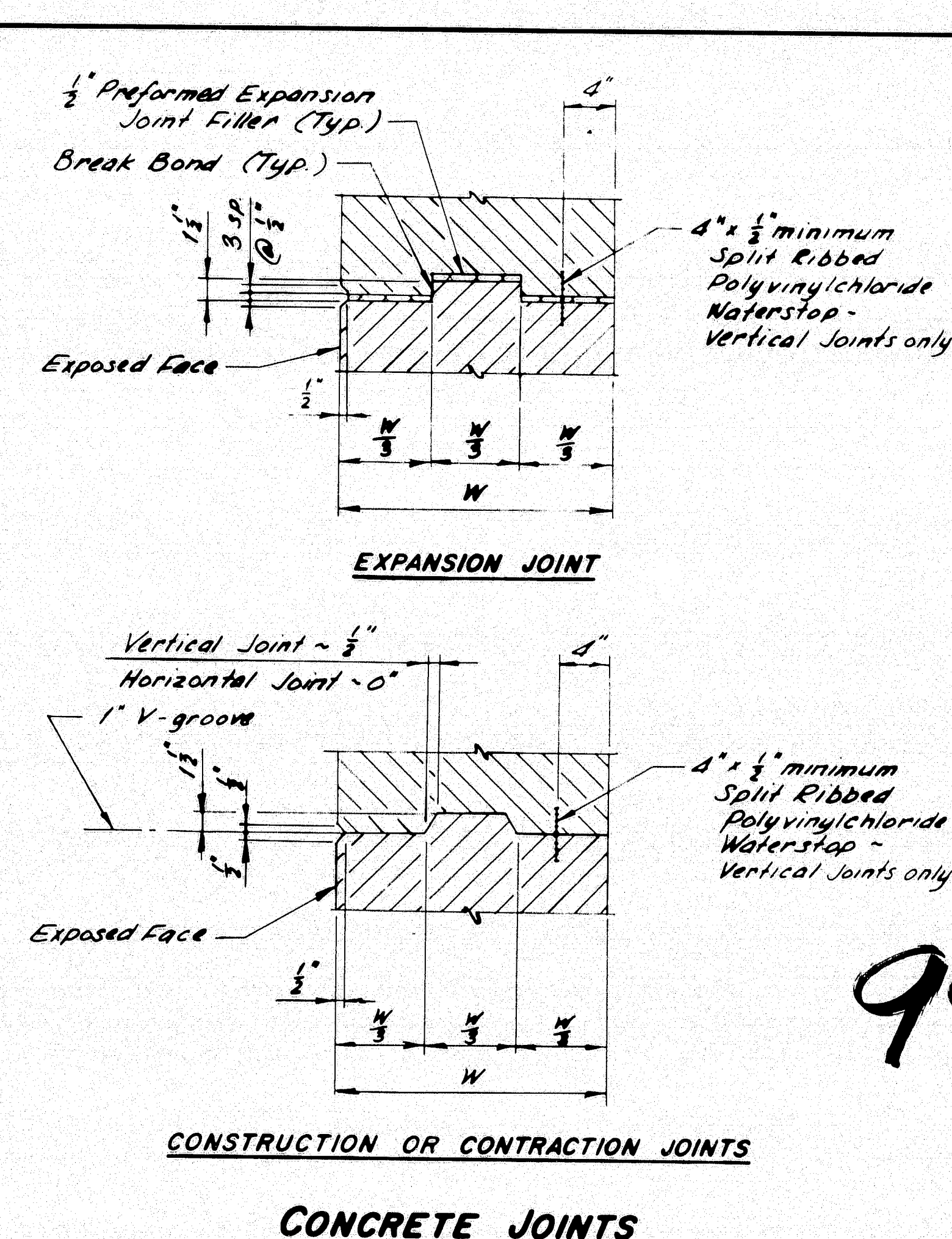
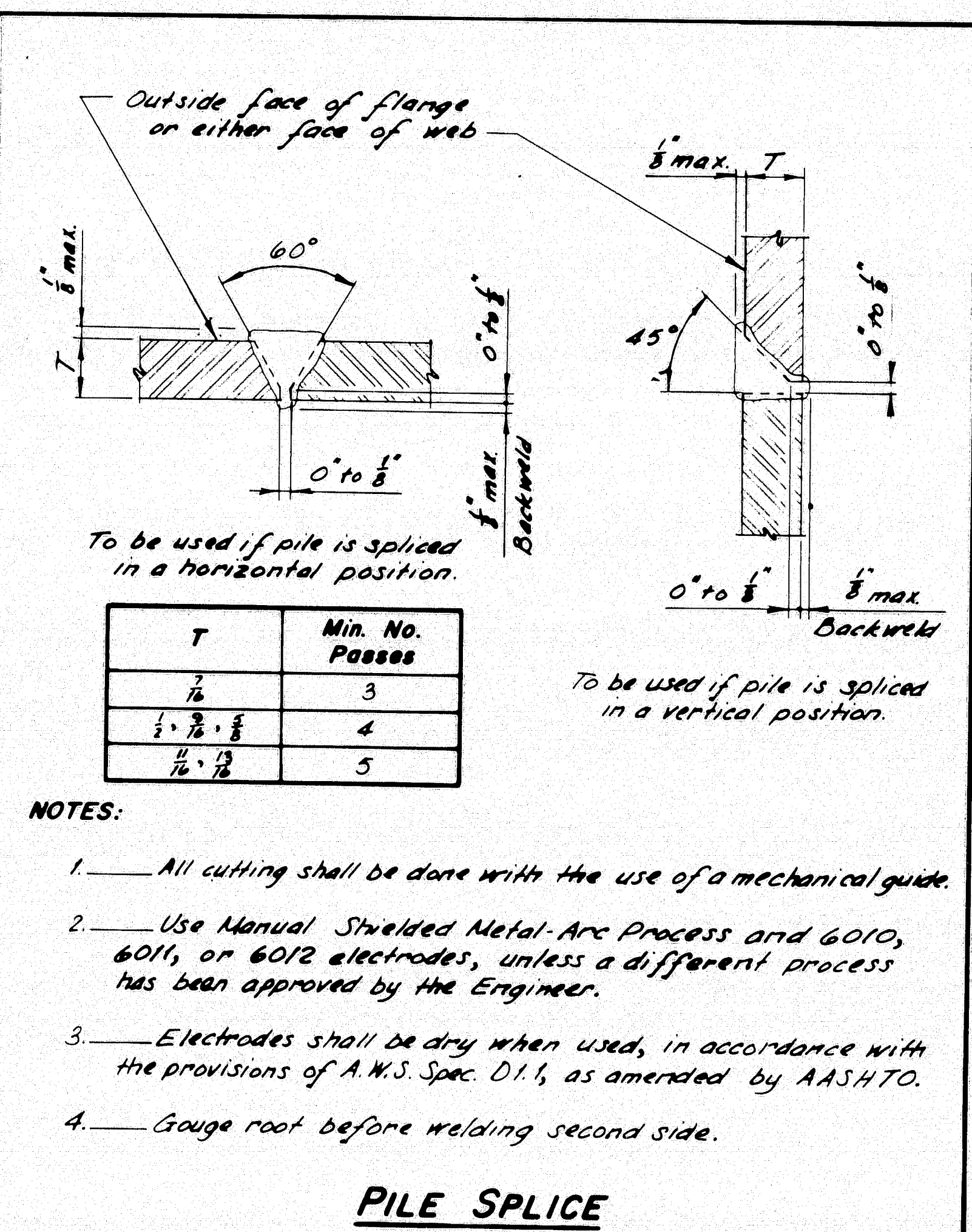
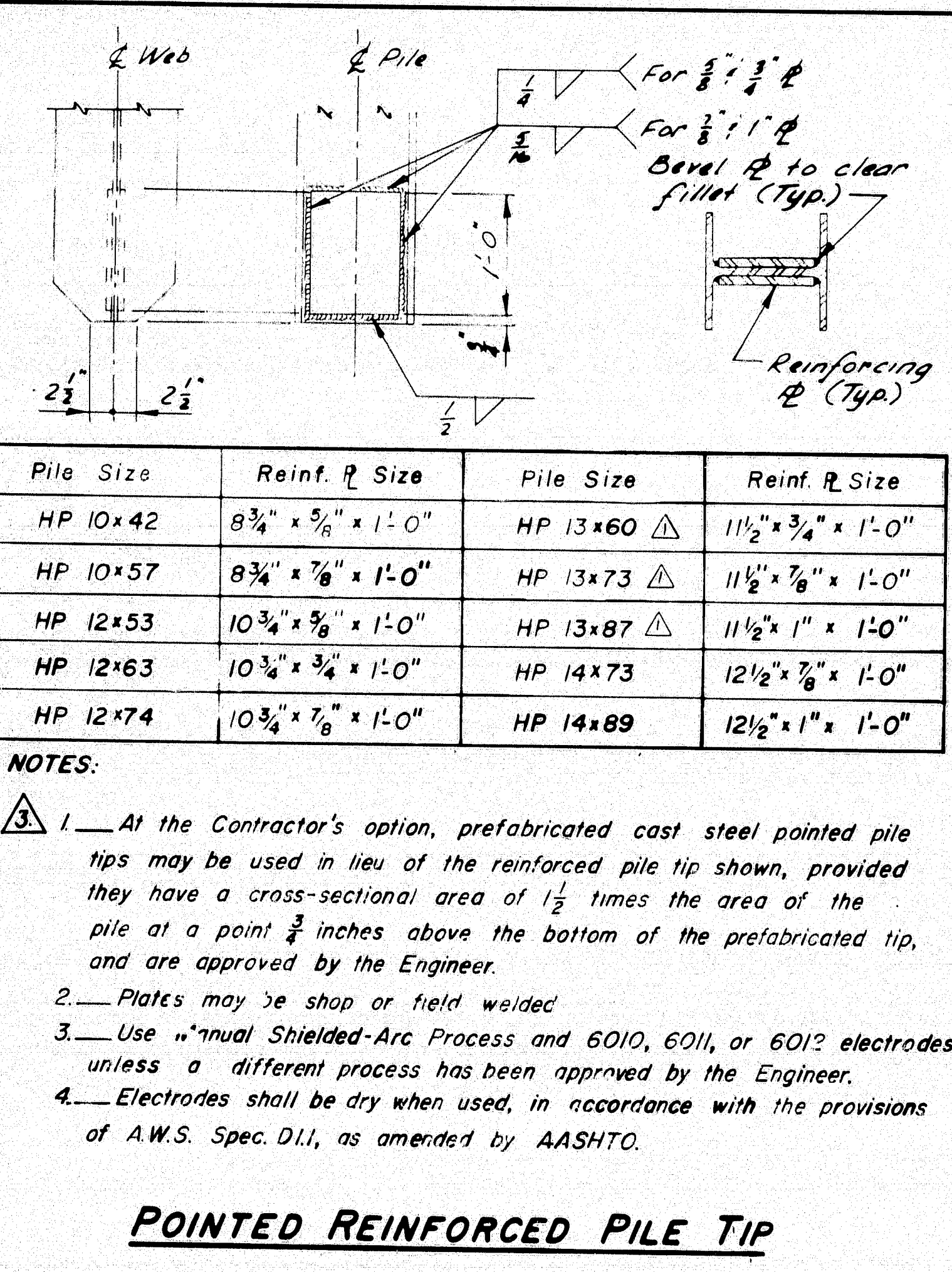
99-388

PROJECT NUMBER	DATE
ENGINEER	BY
DESIGN - DETAIL	DESIGN
REVISION	REVISION
FIELD CHANGES	FIELD CHANGES
PLANS	

BRUNING 44 132 49710



- NOTES:**
- The reinforcing steel, end connections, lifting arrangement, and sizes and locations of hold-down inserts are advisory only. It shall be the Contractor's responsibility to provide adequate reinforcing, and connections, lifting points, and hold-down arrangements.
 - Barrier Delineators shall be bi-directional with a minimum effective reflect area of 8.0 square inches as approved by the Engineer. The Reflector shall preferably be of Methyl Methacrylate, and the Housing of Acrylonitrile Butadiene Styrene.



99-389

Revd Pile Tip Note 1	1-86
ADDED NOTE	1-85
Added 13 HP's	7-83
REVISIONS	Date

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
STANDARD DETAILS (BD 127-81)
MISCELLANEOUS DETAILS
TEMP. CONC. BARRIER - TYPE 1
POINTED REINF. PILE TIP
PILE SPLICE - CONC. JOINTS
CONCRETE JOINT COVER

SHEET 7 OF 11 AUGUSTA, MAINE JUNE 1981