

R. F. R. AND NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	I-295-3 (40)	1	27

**STATE OF MAINE
STATE HIGHWAY COMMISSION**



**INTERSTATE 295
OVER
FORE RIVER
BETWEEN THE CITIES OF
PORTLAND & SOUTH PORTLAND
CUMBERLAND COUNTY
MAINE FEDERAL AID INTERSTATE
PROJECT NUMBER I-295-3 (40) 47
TOTAL LENGTH 0.114 MILE**

As Built: 1971-73 HLA

CONVENTIONAL SIGNS

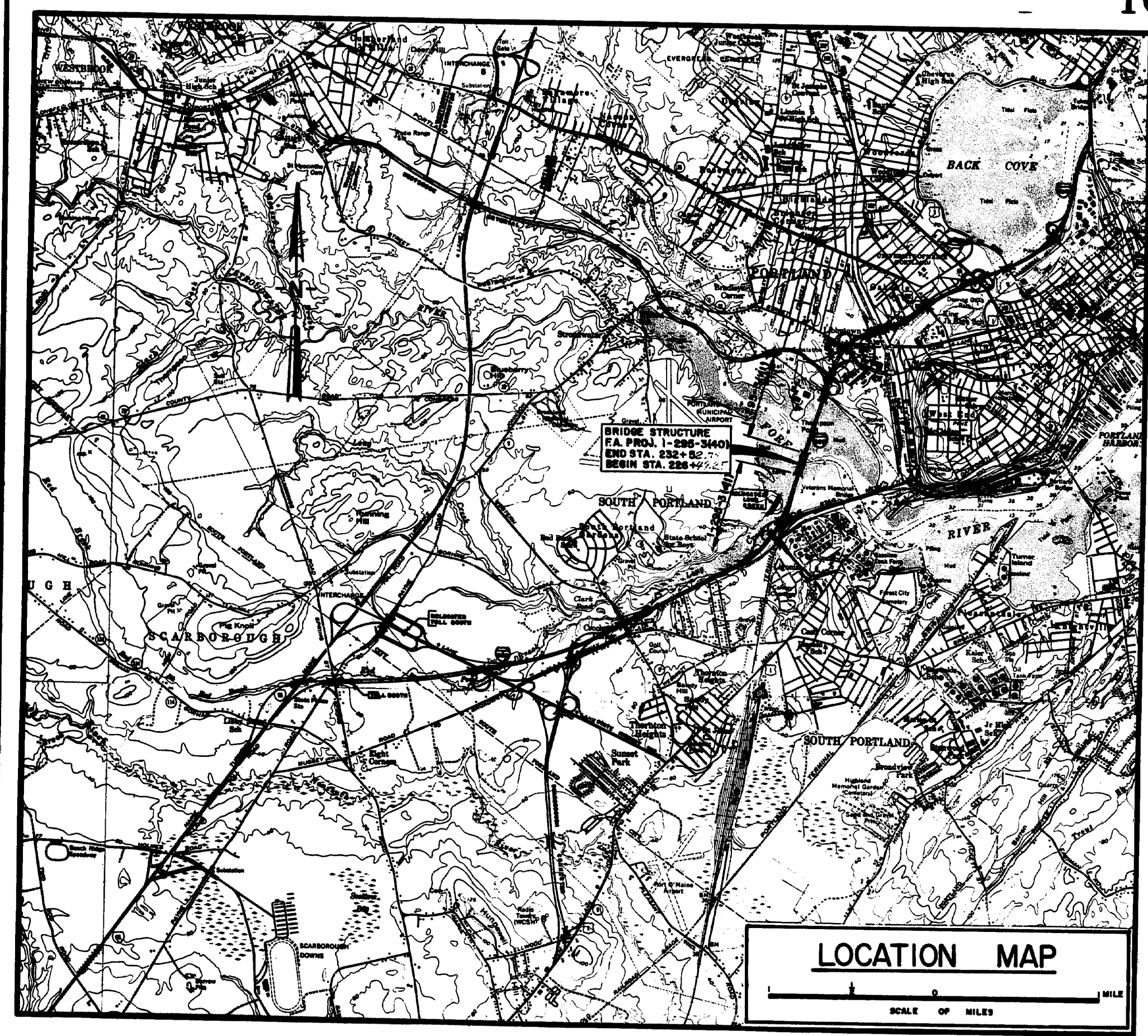
COUNTY LINES	-----	TRAVELLED WAY - PROPOSED	=====
TOWN LINES	-----	UNDERGROUND UTILITIES - EXISTING	-----
PROPERTY LINES	-----	UNDERGROUND UTILITIES - PROPOSED	-----
R/W LINES - EXISTING	=====	RAILROAD - SINGLE TRACK	=====
R/W LINES - NEW - ACCESS CONTROL	=====	RAILROAD - DOUBLE TRACK	=====
R/W LINES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

INDEX OF SHEETS

1	-----	TITLE SHEET
2	-----	GENERAL PLAN & ESTIMATE OF QUANTITIES
3-4-5-6-7	-----	FOUNDATION SURVEY
8	-----	SURVEY PLAN
9	-----	SURVEY PROFILE
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13	-----	END POSTS & ABUTMENT DETAILS
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15	-----	STRUCTURAL STEEL CROSS FRAMES
16	-----	STRUCTURAL STEEL DETAILS
17	-----	BEARING PEDESTALS
18	-----	BOTTOM OF SLAB ELEVATIONS
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20	-----	SUPERSTRUCTURE SLAB - 2
21	-----	SUPERSTRUCTURE SLAB - 3
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STANDARD DETAILS

25	-----	FIELD OFFICE TYPE "A" AUGUST 1969 (2)
26	-----	SHEAR CONNECTORS & DRAINS BD 104-66
27	-----	ALUMINUM RAILING BD 106-69 (REV. 3-25-70)



TRAFFIC DATA

A.D.T.	1970	22,000
A.D.T.	1960	28,490
D.M.V.		2,849
T. (%)		5
D. (%)		60
V.		50 MPH

NOTE
ALL WORK CONTEMPLATED UNDER THIS CONTRACT SHALL BE GOVERNED BY AND IN CONFORMITY WITH THE STANDARD SPECIFICATIONS, REVISION OF JUNE 1968, AND SUPPLEMENTS THERETO, EXCEPT AS MODIFIED ON THE PLANS AND IN THE SPECIAL PROVISIONS.

APPROVED:
MAINE STATE HIGHWAY COMMISSION

<i>D. H. Shuman</i>	CHAIRMAN	DATE	4-2-69
<i>Richard G. Lechard</i>		DATE	4-2-69
<i>Steven D. Shaw</i>		DATE	4-2-69
<i>Robert L. Poirer</i>	CHIEF ENGINEER	DATE	4-2-69

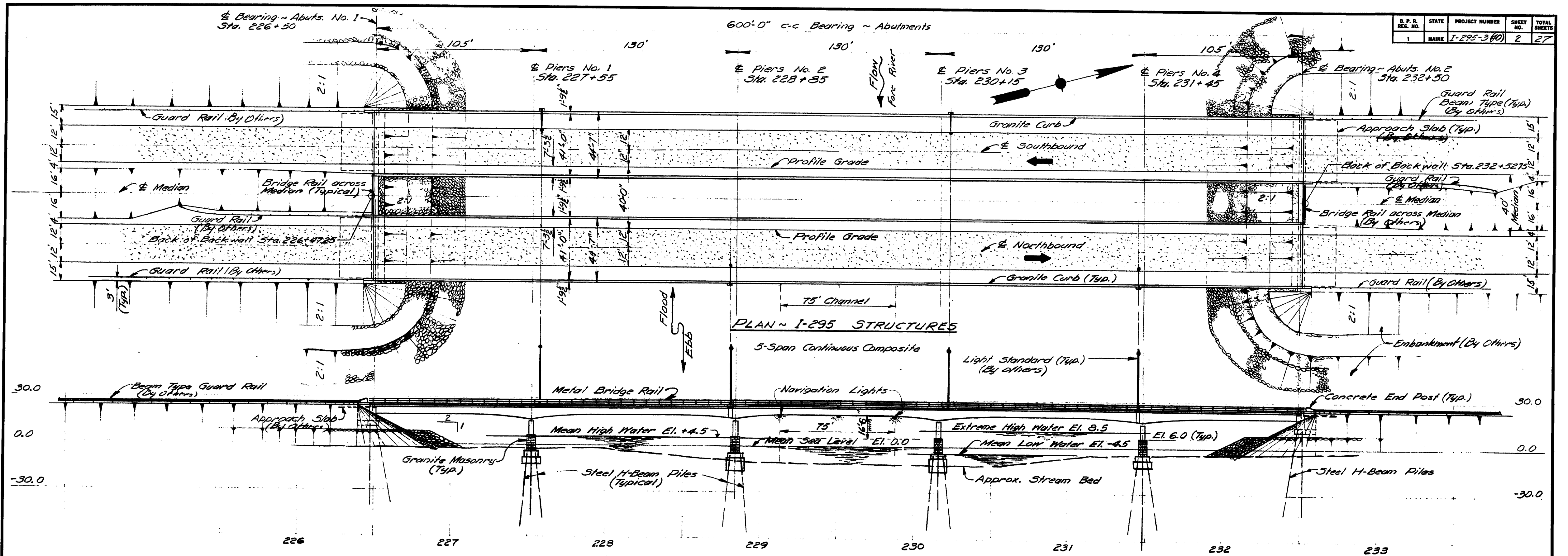
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BUREAU OF PUBLIC ROADS
REGION I

APPROVED:

DIVISION ENGINEER

DATE

150-132



S.P.R. REV. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	I-295-3(40)	2	27

ESTIMATE OF QUANTITIES			
DESCRIPTION	QUANTITY	DESCRIPTION	QUANTITY
GRANULAR BORROW	480 C.Y.	ELASTOMERIC EXPANSION DEVICE, TYPE II	170 L.F.
GRAVEL BORROW	390 C.Y.	GRANITE MASONRY	4,415 S.F.
STRUCTURAL EARTH EXCAVATION, ABUTS. & RET. WALLS	1450 C.Y.	VERTICAL BRIDGE CURB, TYPE I	2,445 L.F.
STRUCTURAL EARTH EXCAVATION, PIERS	1,750 C.Y.	HAND LAID RIPRAP	400 C.Y.
STEEL H-BEAM PILES, 89 LBS./FT.	12,300 L.F.	EMBEDDED WORK IN STRUCTURES	LUMP SUM
STEEL H-BEAM PILES, 73 LBS./FT.	24,780 L.F.	NAVIGATION LIGHTS	LUMP SUM
STRUCTURAL CONCRETE, ABUTS. & RET. WALLS	425 C.Y.	SUPPLY LINE FROM SOURCE OF POWER	LUMP SUM
STRUCTURAL CONCRETE, PIERS	885 C.Y.	PROTECTIVE COATING FOR CONCRETE SURFACES	950 S.Y.
STRUCTURAL CONCRETE, PIERS (PLACED UNDER WATER)	1,100 C.Y.	FIELD OFFICE, TYPE A	1 EACH
STRUCTURAL CONCRETE, RDWY. & SDWK. SLABS ON STEEL BRIDGES	* LUMP SUM	HAND LABOR - STRAIGHT TIME	25 M.H.
REINFORCING STEEL, FAB. & DEL.	492,000 LBS.	SET-RETARDING ADMIXTURES	1300 C.Y. CONC.
REINFORCING STEEL, PLACING	492,000 LBS.	TEMPORARY SEEDING	20 LBS.
STRUCTURAL STEEL, FAB. & DEL.	* LUMP SUM	ON-THE-JOB TRAINING	2000 M.H.
STRUCTURAL STEEL, ERECTION	* LUMP SUM	LOADING TESTS	1 EACH
SHEAR CONNECTORS	* LUMP SUM		
FIELD PAINTING, STRUCTURAL STEEL	* LUMP SUM		
BRIDGE RAILING	2,470 L.F.		
COFFERDAM, PIER 1 NORTHBOUND	LUMP SUM		
COFFERDAM, PIER 2 NORTHBOUND	LUMP SUM		
COFFERDAM, PIER 3 NORTHBOUND	LUMP SUM		
COFFERDAM, PIER 4 NORTHBOUND	LUMP SUM		
COFFERDAM, PIER 1 SOUTHBOUND	LUMP SUM		
COFFERDAM, PIER 2 SOUTHBOUND	LUMP SUM		
COFFERDAM, PIER 3 SOUTHBOUND	LUMP SUM		
COFFERDAM, PIER 4 SOUTHBOUND	LUMP SUM		
SEED AND APPLICATION METHOD A	1 ACRE		
CURING BOX FOR CONCRETE CYLINDERS	1 EACH		
		* ESTIMATED QUANTITIES	
		STRUCTURAL CONCRETE, RDWY. & SDWK. SLABS - 1615 C.Y.	
		STRUCTURAL STEEL - 1,391,000 LBS.	
		SHEAR CONNECTORS - 12820 STUDS = 12,525 LB.	

ELEVATION

NOTE:
 Membrane waterproofing to be installed between Sta. 226+49.82 and Sta. 232+50.78 as follows:
 1) Southbound bridge to be covered by Heavy Duty Bituthene, as manufactured by Construction Products Division, M.R. Grace & Co. of San Diego, Calif.
 2) Northbound bridge to be covered by Prefacto Wrap Mvoo, as manufactured by Prefacto Wrap Co., of Denver, Colorado.
 Both installations to be subject to the Special Provisions, Section 308, Membrane Waterproofing, of August 8, 1972.
 For width and details of membrane see Sheets 19 and 20.

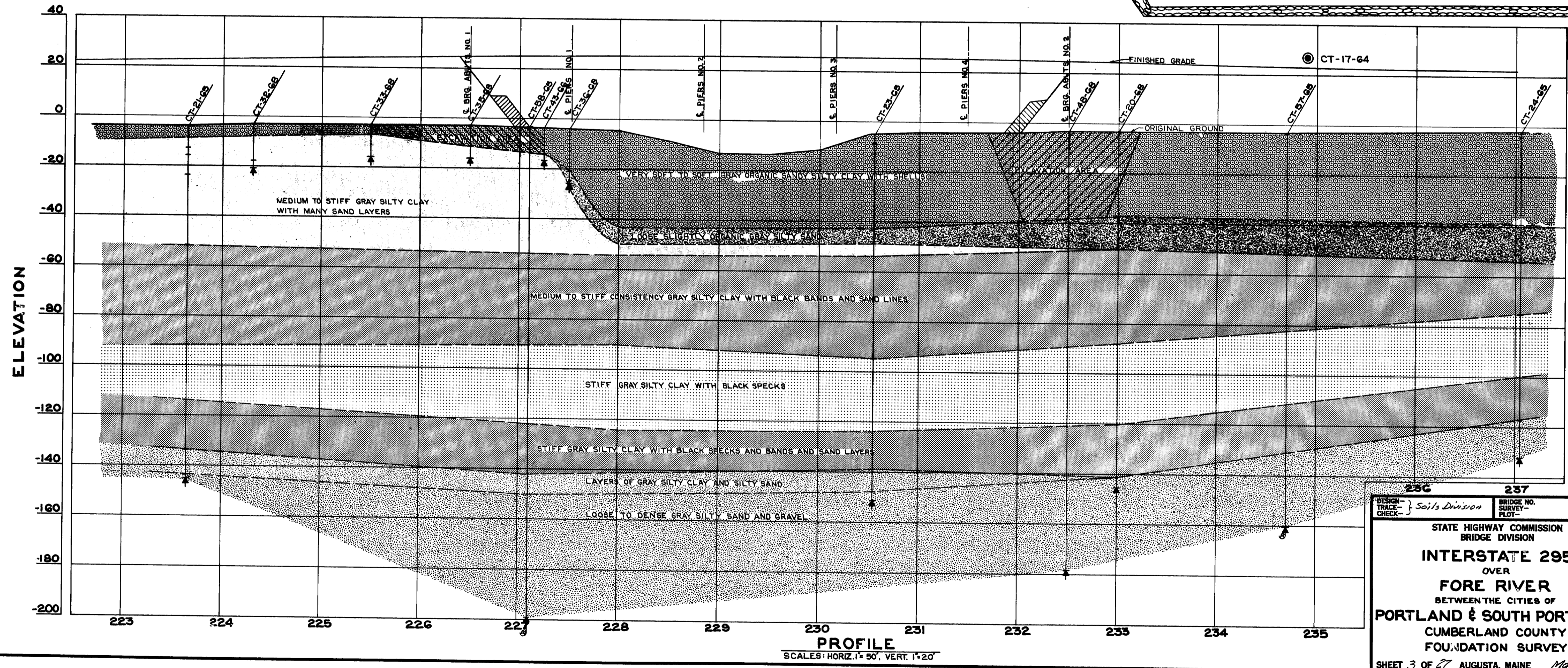
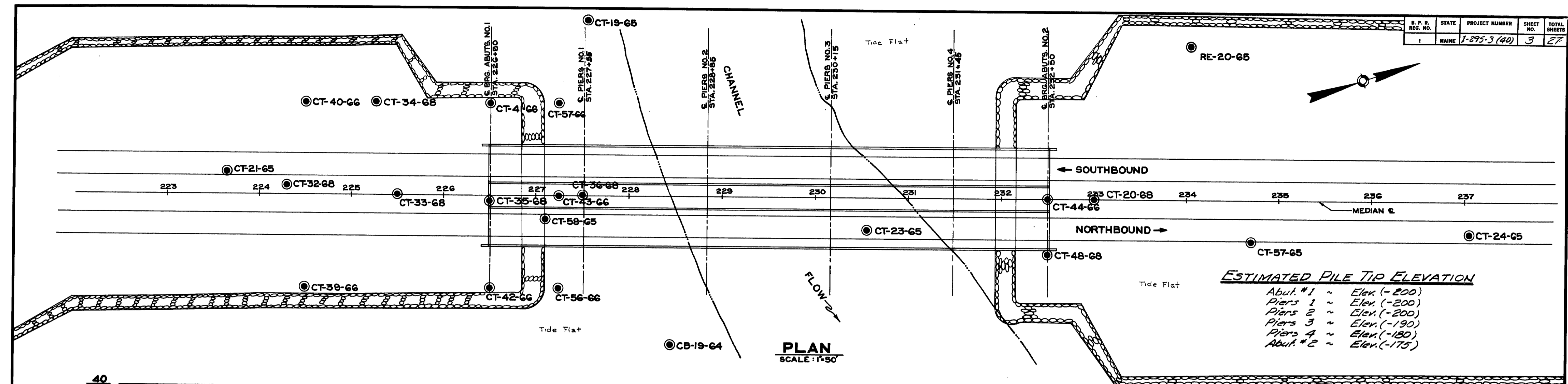
SPECIFICATIONS

DESIGN - A.A.S.H.O. - Standard Specifications for Highway Bridges 1969, with Interim Specifications 1970
 CONTRACT - State of Maine, State Highway Commission Standard Specifications, Highways and Bridges, Revisions of June 1969.
 LIVE LOADING - HS-20-44, as modified for Interstate Highway.
 ALLOWABLE STRESSES - Concrete - $f_c = 1200$ psi., $n = 10$, Reinforcing Steel - $f_s = 20,000$ P.S.I.
 Structural Steel, see sheet 14.
 CONCRETE CLASSIFICATION - Seal concrete to be class "S" all other class "A".
 STRUCTURAL STEEL CLASSIFICATION - see sheet 14.

DESIGN - LLR	SURVEY NO.
TRACE - GWC	PLAT -
CHECK - TJC	
STATE HIGHWAY COMMISSION BRIDGE DIVISION	
INTERSTATE 295	
OVER	
FORE RIVER	
BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY	
GENERAL PLAN & ESTIMATE OF QUANTITIES	
SHEET 2 OF 27 AUGUSTA, MAINE MARCH 1969	

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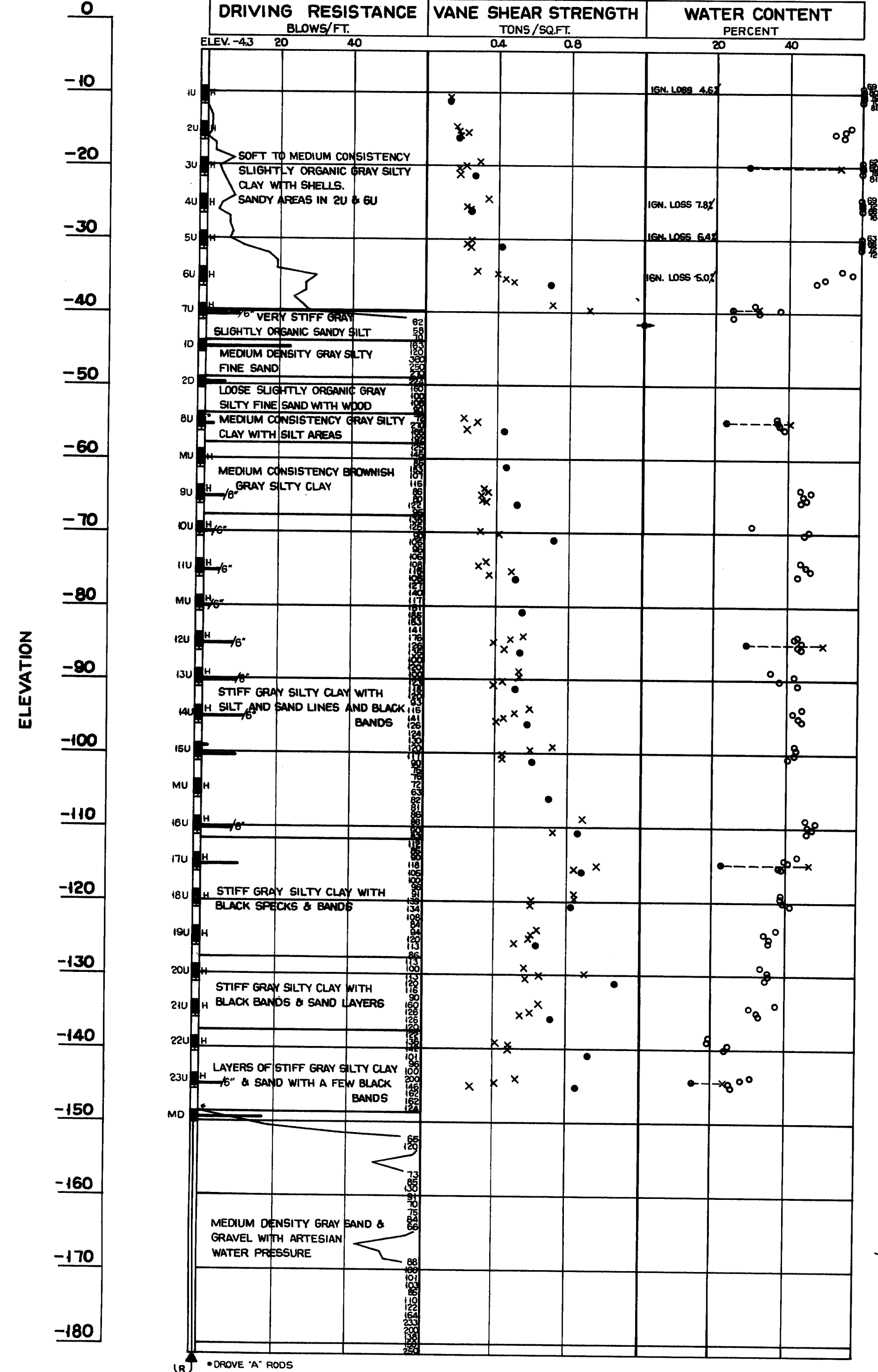
B. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	1-295-3 (40)	3	27



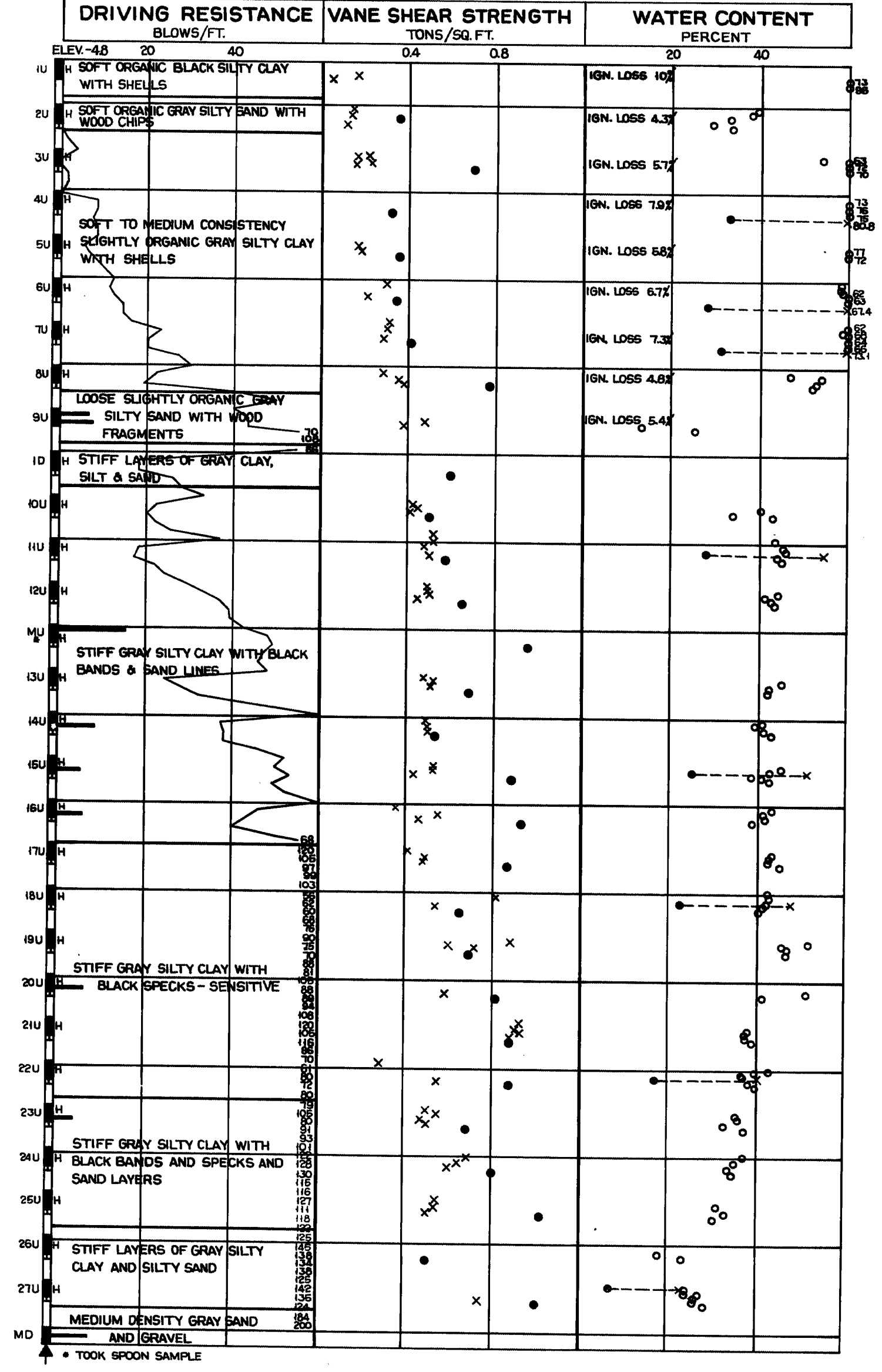
DESIGNER	Soils Division	BRIDGE NO.	
TRACE		SURVEY	
CHECK		PLOT	
STATE HIGHWAY COMMISSION BRIDGE DIVISION			
INTERSTATE 295			
OVER			
FORE RIVER			
BETWEEN THE CITIES OF			
PORTLAND & SOUTH PORTLAND			
CUMBERLAND COUNTY			
FOUNDATION SURVEY			
SHEET 3 OF 27 AUGUSTA, MAINE Mar. 1969			

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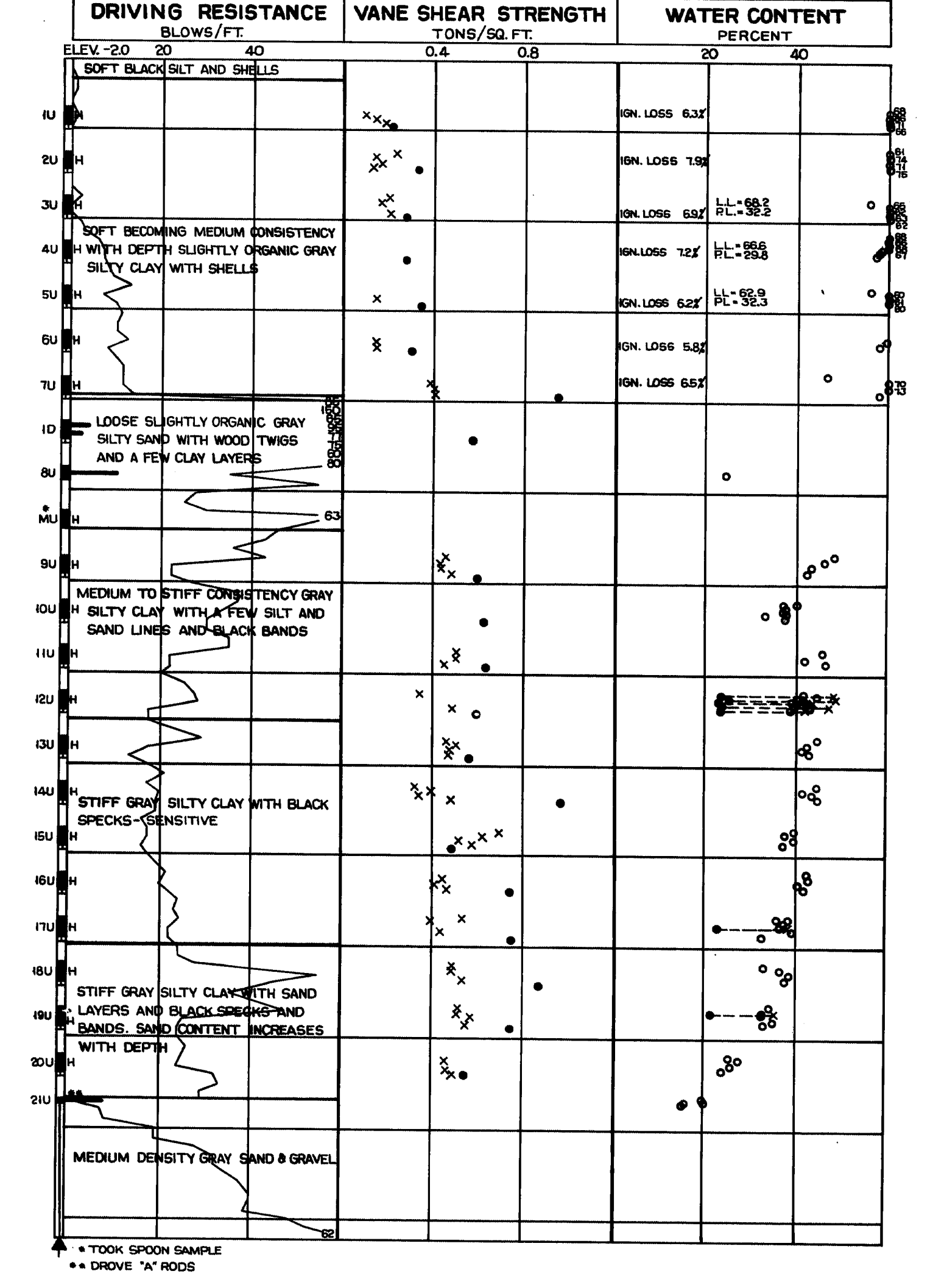
BORING CT-17 (64) STATION 234+90 240'RT.



BORING CT-23 (65) STATION 230+55 35'RT.



BORING CT-24 (65) STATION 237+05 35'RT.



BORING NOTES

CASING SIZE 4" UNLESS OTHERWISE NOTED
 ALL SAMPLES AND VANES ARE MADE AHEAD OF CASING
 NUMBER OF BLOWS REQUIRED TO DRIVE EXTRA HEAVY CASING ONE FOOT WITH 400 FT. LBS. OF ENERGY PER BLOW
 LOCATION OF SAMPLE OR SAMPLE ATTEMPT
 NUMBER AND TYPE OF DRY SAMPLE
 S & H SAMPLER # (2906)
 IC 2" O.D. 16 GA. SEAMLESS TUBING
 IU 3 1/2" O.D. 16 GA. SEAMLESS TUBING
 IW WASH SAMPLE AND NUMBER

MD UNSUCCESSFUL SAMPLE ATTEMPT AND TYPE OF SAMPLER
 NUMBER OF BLOWS REQUIRED TO DRIVE SPOON OR TUBING ONE FOOT WITH 350 FT. LBS. OF ENERGY PER BLOW
 H SAMPLING SPOON OR SEAMLESS TUBING DRIVEN BY STATIC WEIGHT OF DRILL RODS AND HAMMER
 II FIELD VANE TEST
 BOTTOM OF BORING (MAY NOT BE BOTTOM OF SOIL STRATA)
 REFUSAL OF DRILL RODS OR CASING (MAY NOT BE LEDGE)
 LOCATIONS CORED BY DIAMOND BIT AND PER CENT RECOVERY OF ROCK

SHEAR NOTES

● FIELD VANE SHEAR STRENGTHS
 X LABORATORY VANE SHEAR STRENGTHS
 — SHEAR STRENGTHS IN EXCESS OF CAPACITY OF EQUIPMENT
 ○ ONE HALF UNCONFINED COMPRESSIVE STRENGTHS
WATER CONTENT NOTES
 ○ NATURAL WATER CONTENTS, GIVEN AS PER CENT OF DRY WEIGHT
 ○—X PLASTIC AND LIQUID LIMITS
 IGNITION LOSSES ARE GIVEN AS PER CENT OF DRY WEIGHT

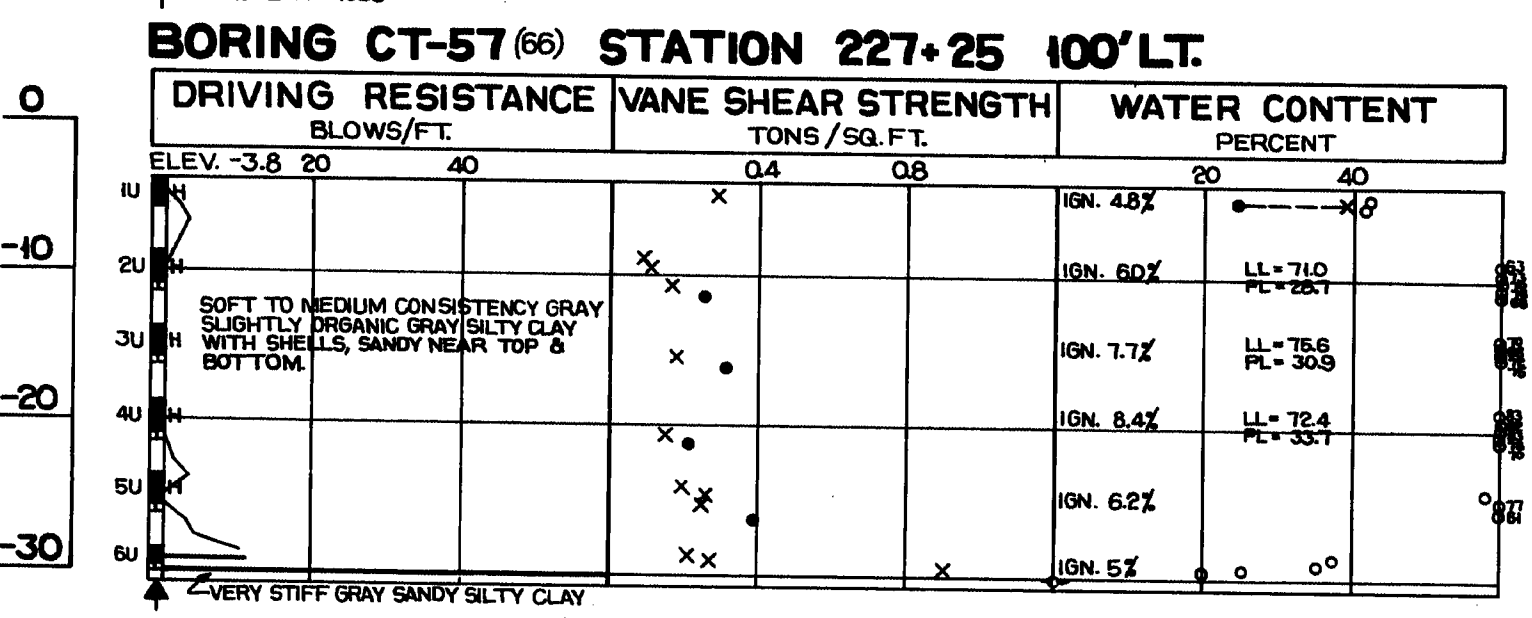
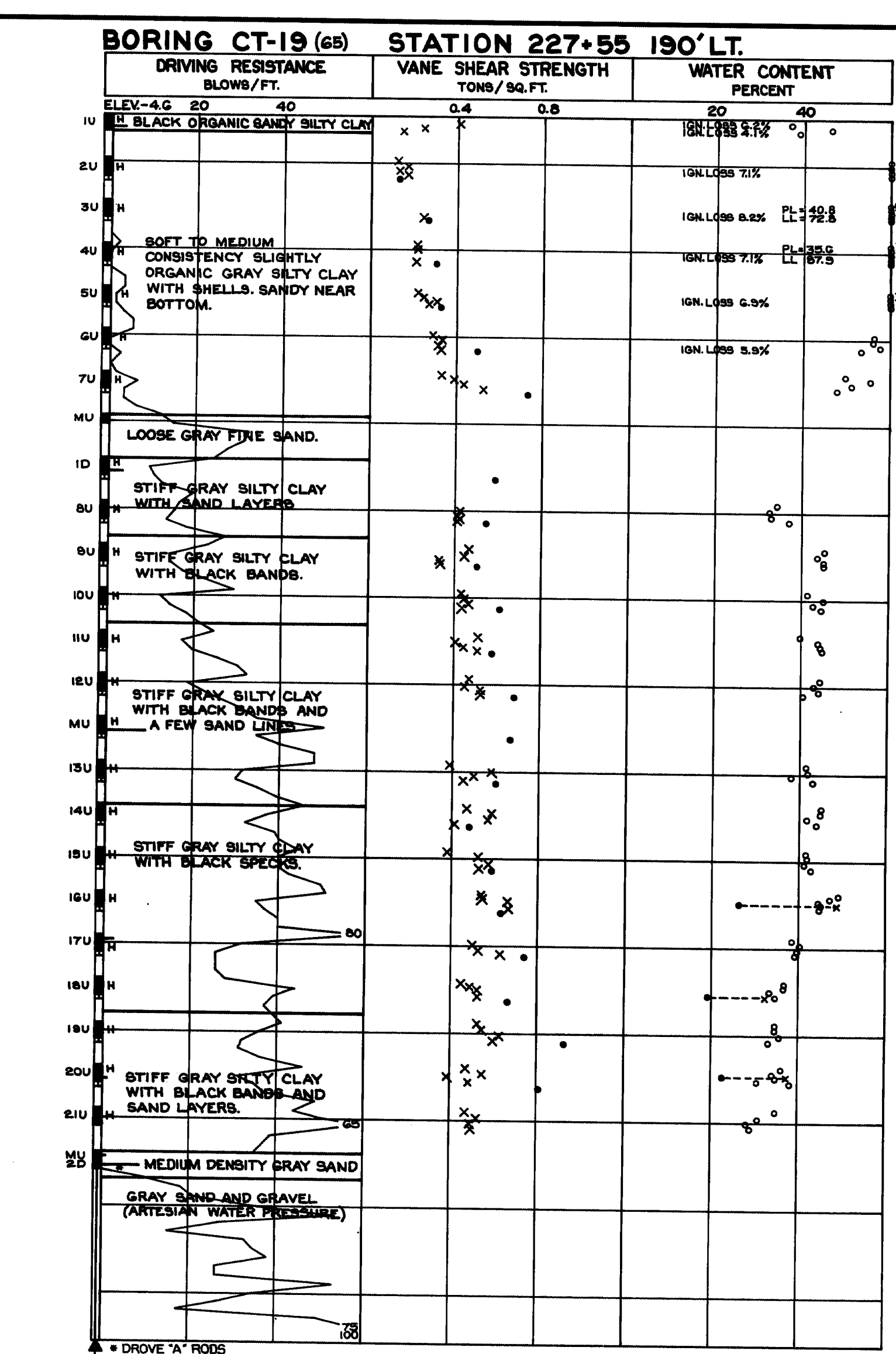
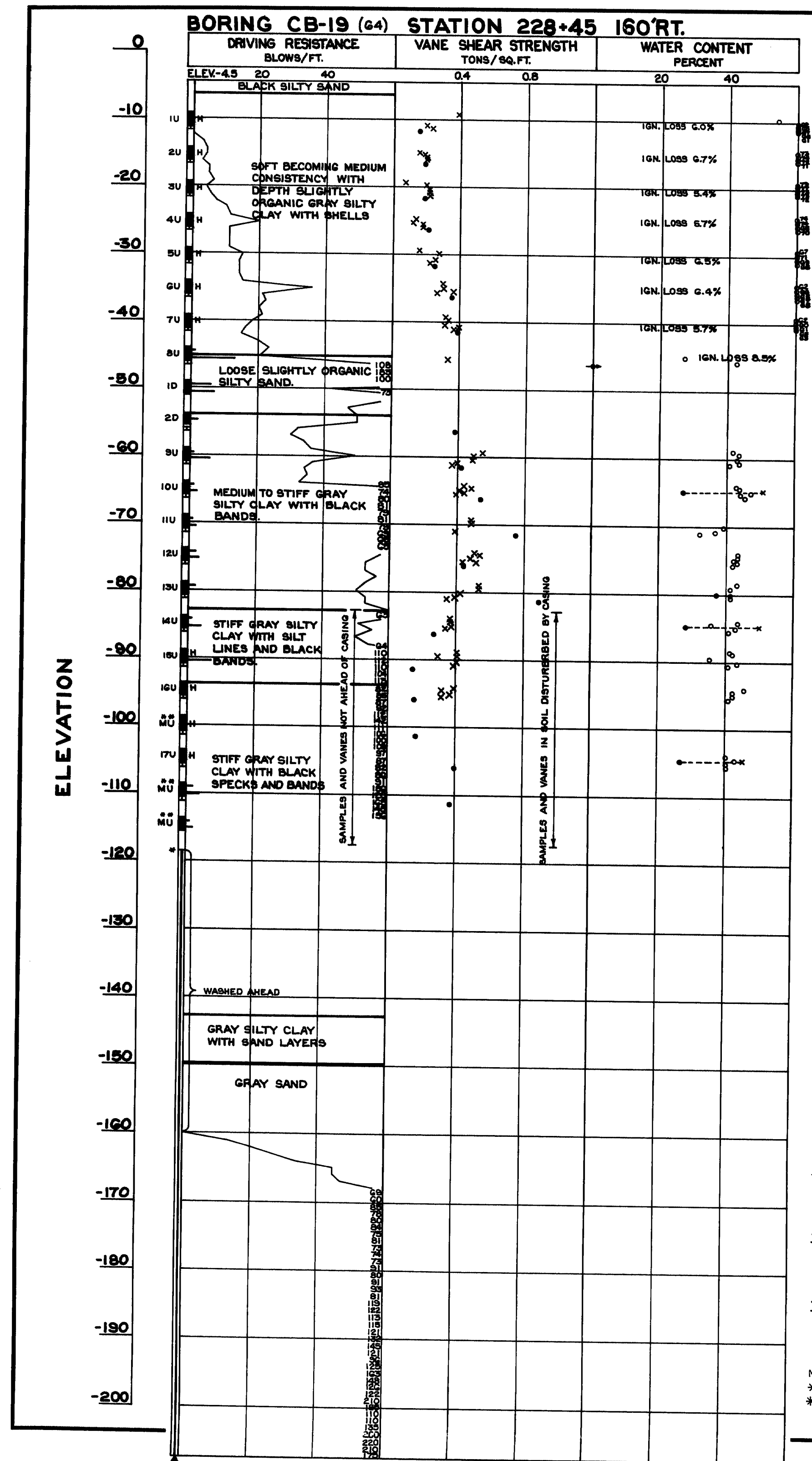
DESIGN CHECKED: Soils Division SURVEY PLOT

STATE HIGHWAY COMMISSION
 BRIDGE DIVISION

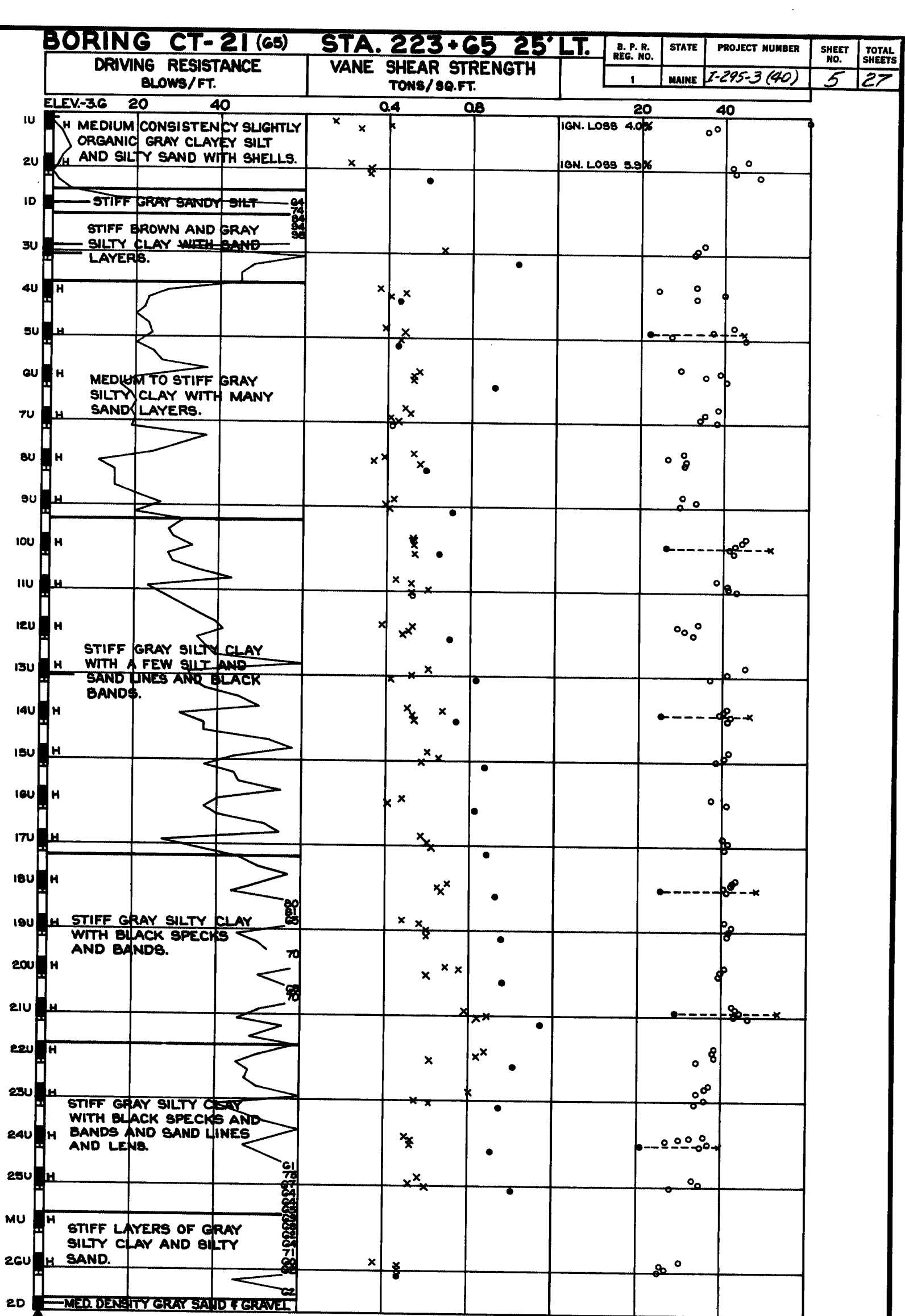
INTERSTATE 295
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 BETWEEN THE CITIES OF
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 CUMBERLAND COUNTY
 BORING DETAILS

SHEET 4 OF 27 AUGUSTA, MAINE Mar. 1969

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NOTES BORING CB-19-64
* DROVE "A" RODS
** ALSO TRIED FOR SPOON SAMPLE



DESIGN: Soils Division
TRACE: SURVEY
CHECK: PLOT

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

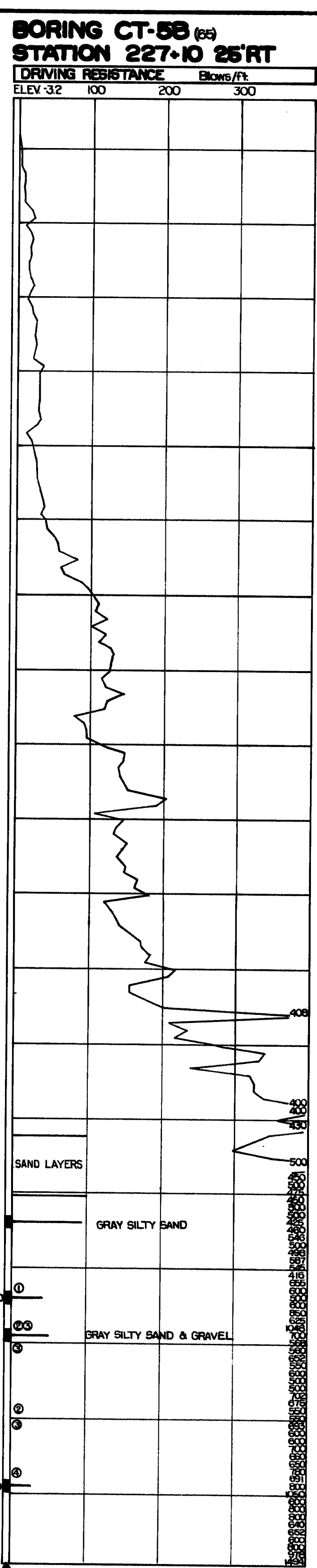
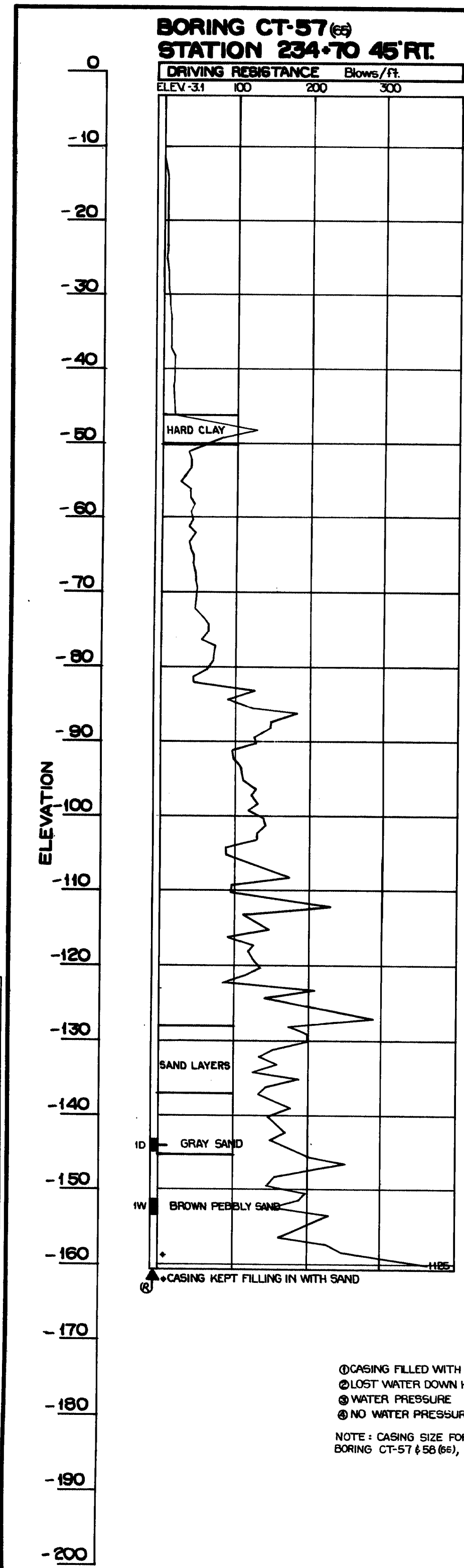
INTERSTATE 295
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CUMBERLAND COUNTY
BORING DETAILS

SHEET 5 OF 27 AUGUSTA, MAINE Mar. 1969

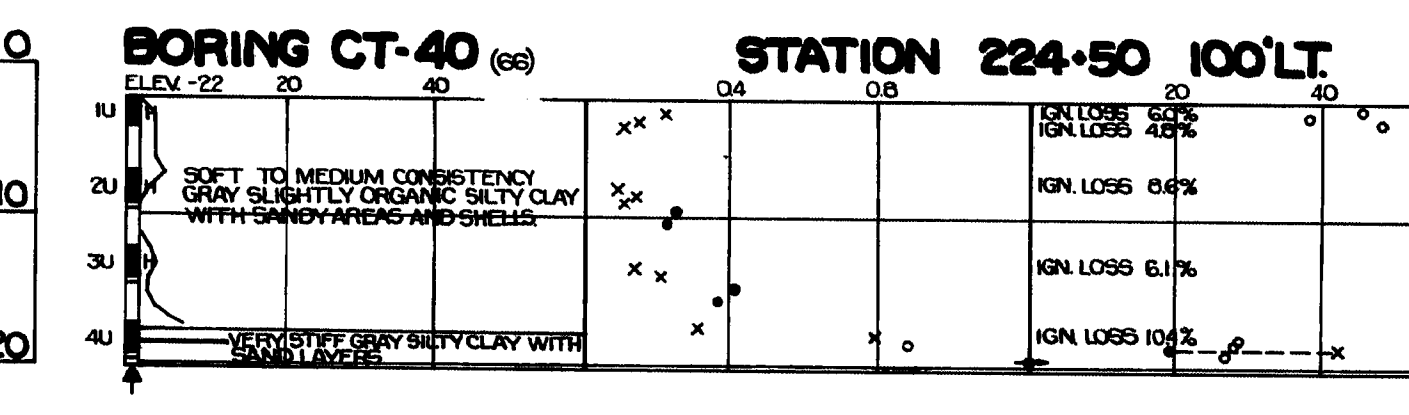
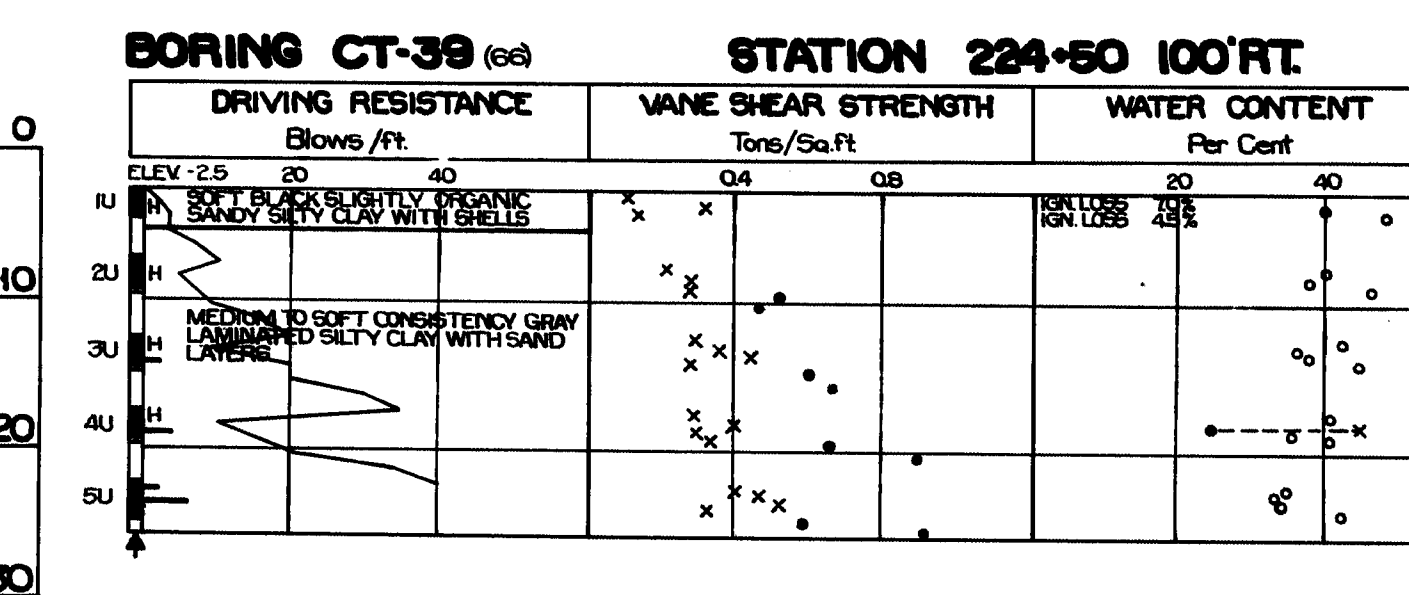
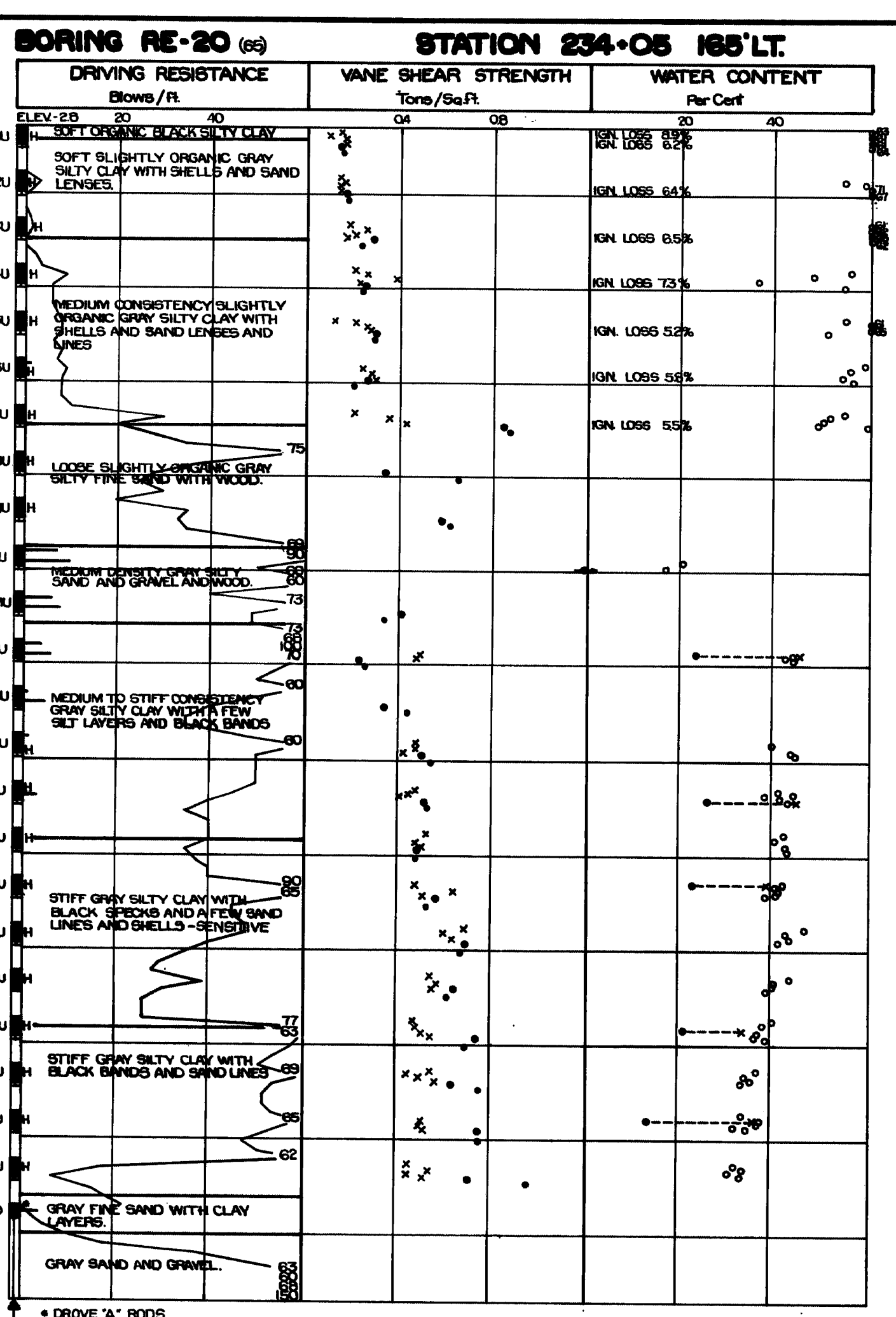
150-136

DESIGN - DETAILED	DATE
CHECKED	BY
REVISIONS	DATE
FIELD CHANGES	DATE

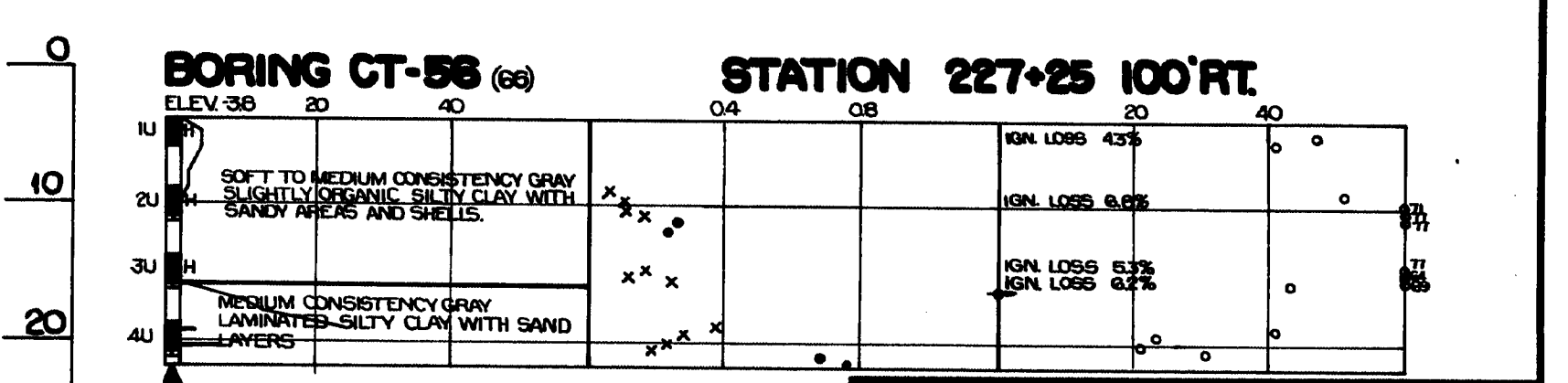
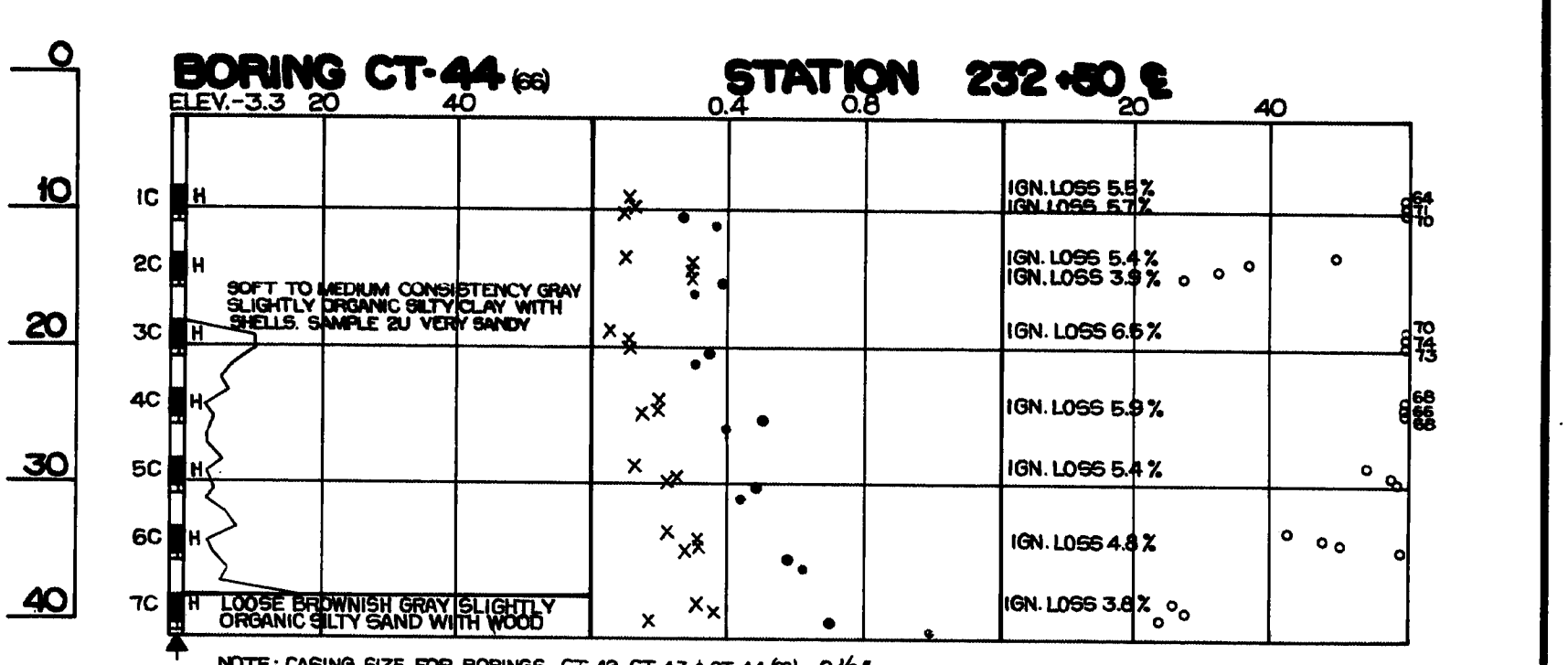
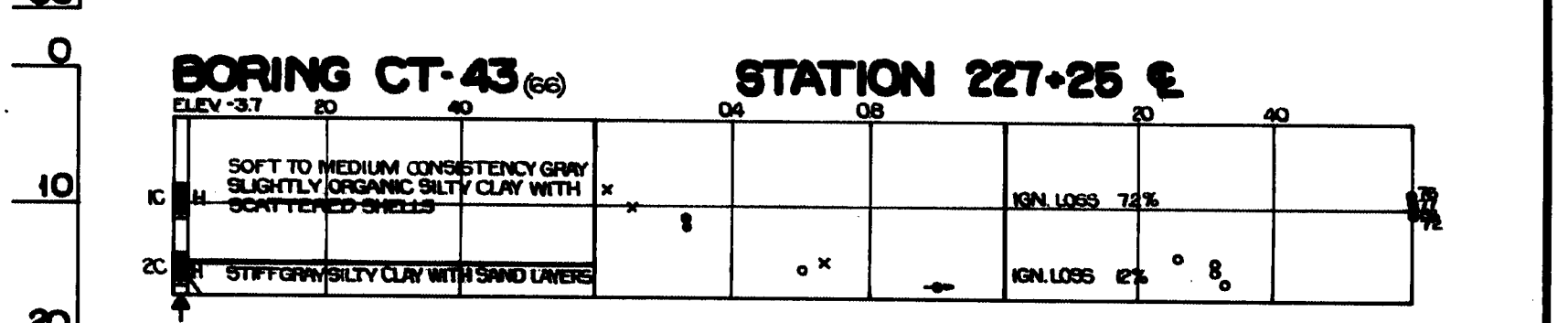
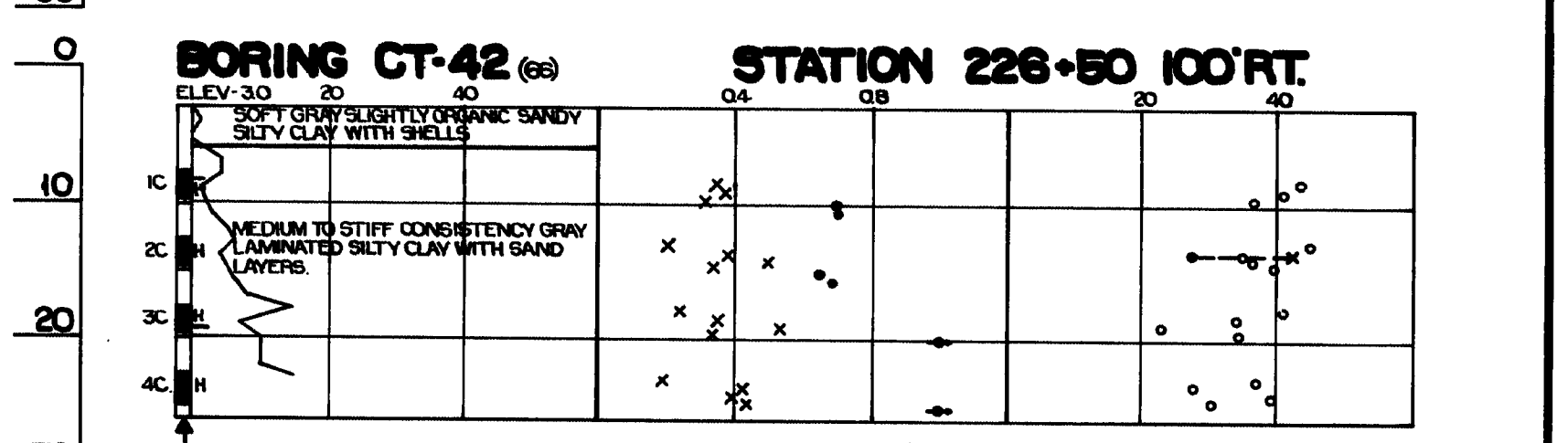
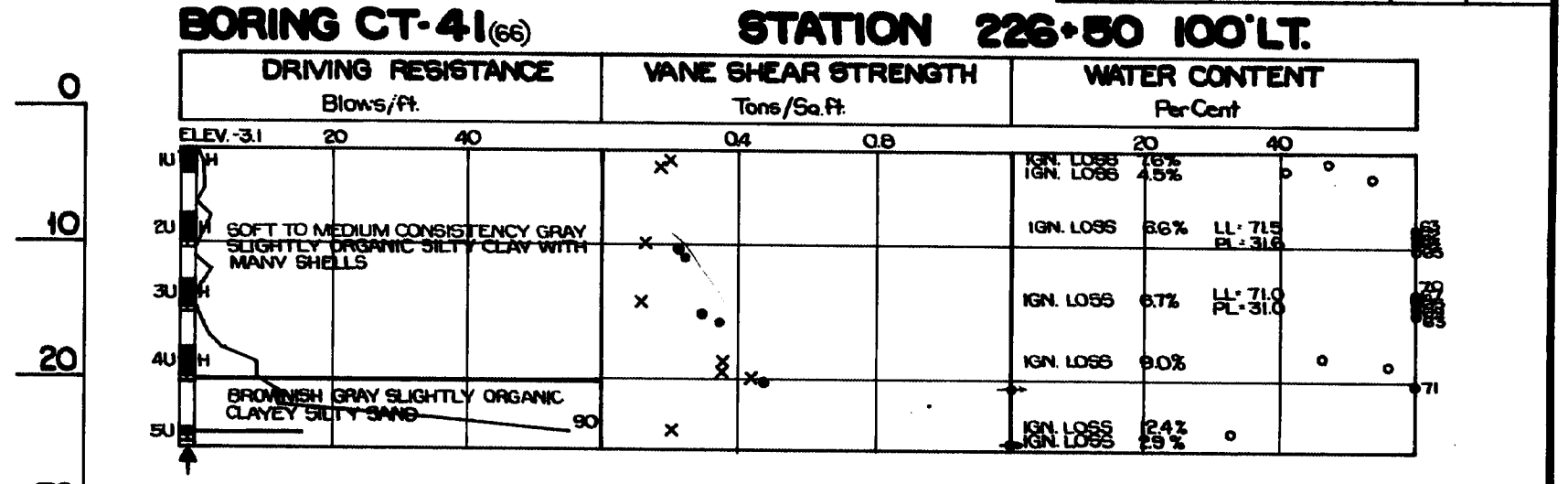
PLANS



(O) CASING FILLED WITH SAND
 (X) LOST WATER DOWN HOLE
 (W) WATER PRESSURE
 (N) NO WATER PRESSURE
 NOTE: CASING SIZE FOR BORING CT-57 & 58 (66), 2 1/2"



STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
MAINE	1-285-3 (42)	6	27



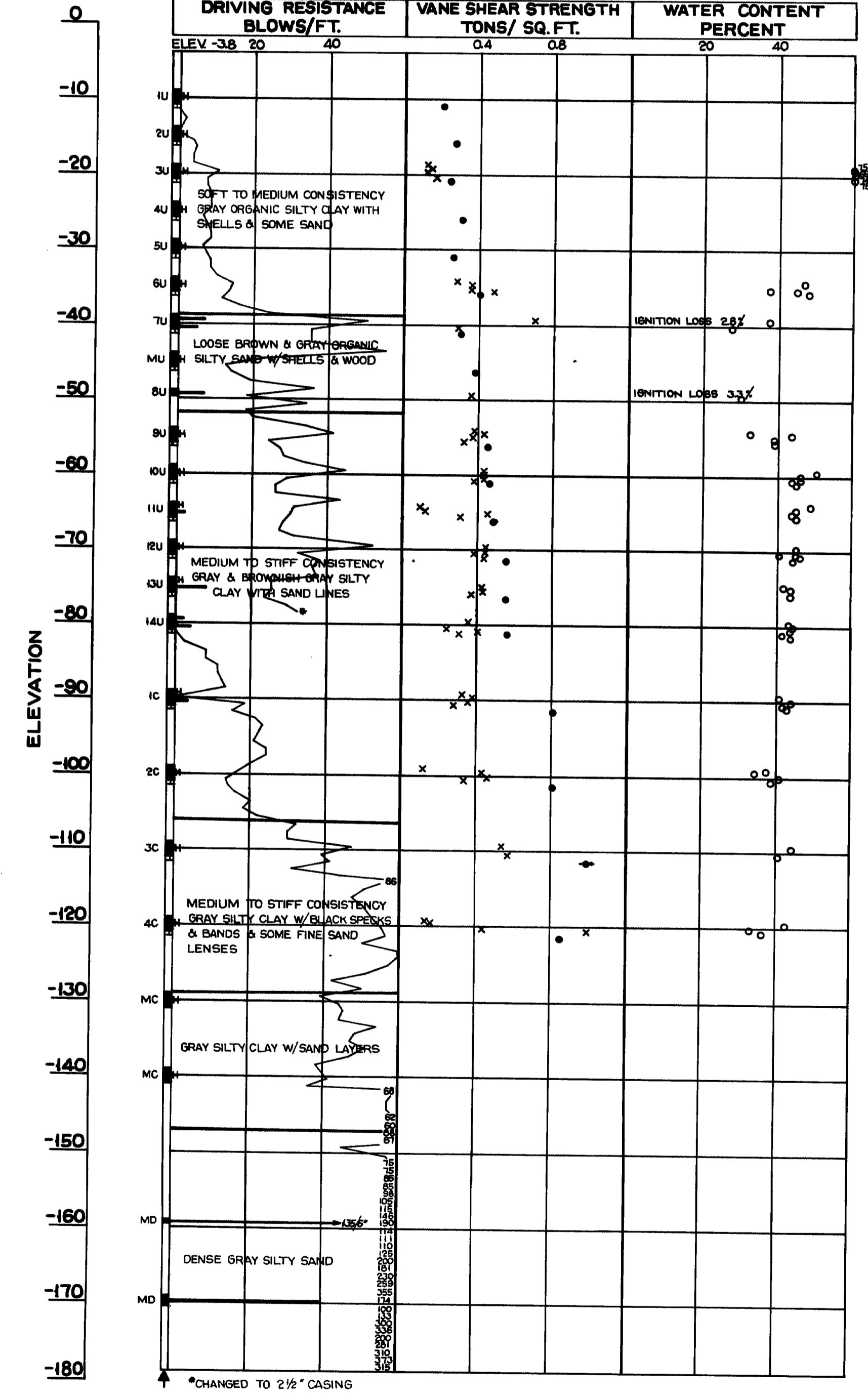
STATE HIGHWAY COMMISSION

INTERSTATE 295
OVER
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BETWEEN THE CITIES OF
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CUMBERLAND COUNTY
BORING DETAILS

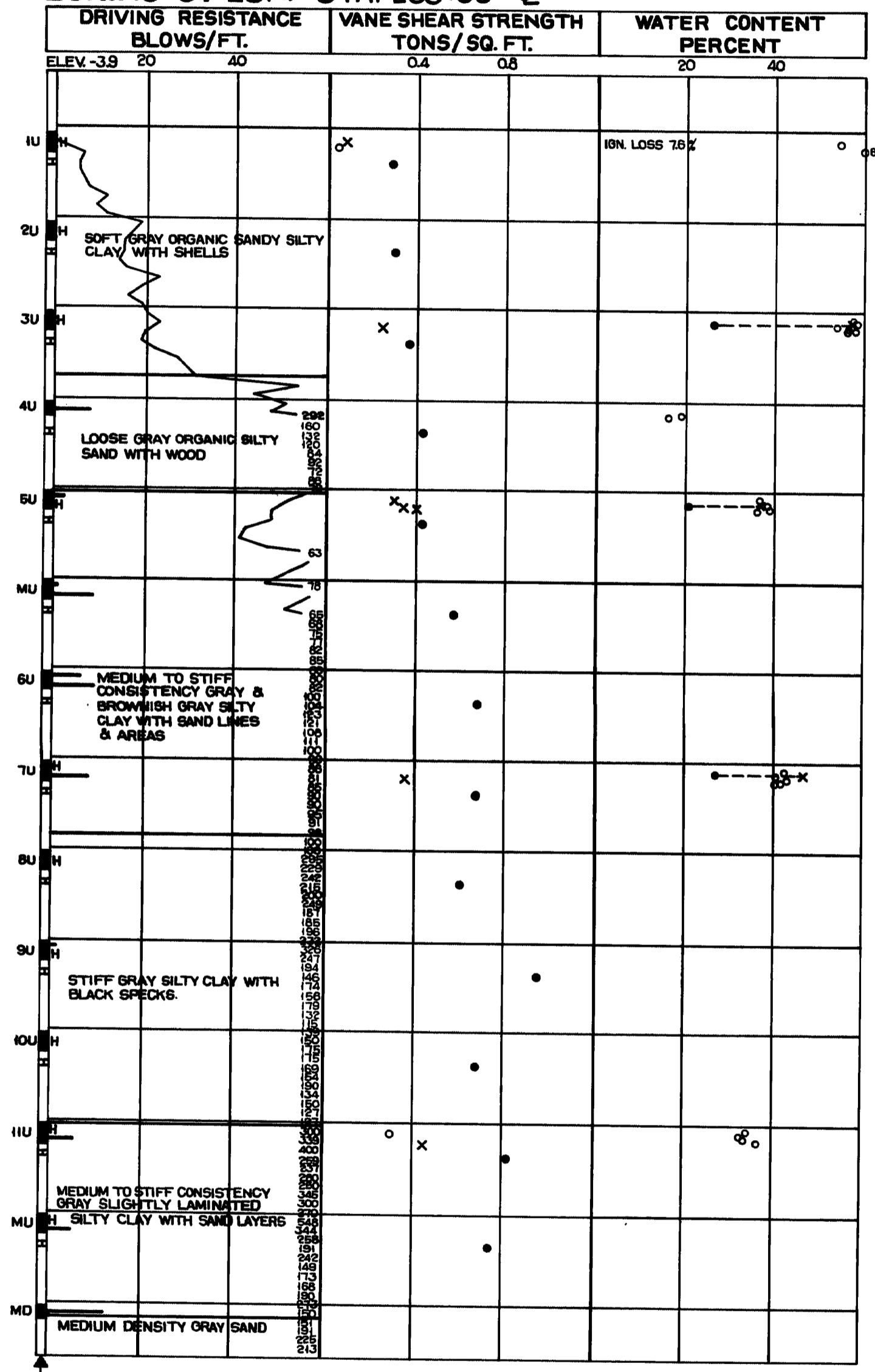
SHEET 6 OF 27 AUGUSTA, MAINE Mar. 1969

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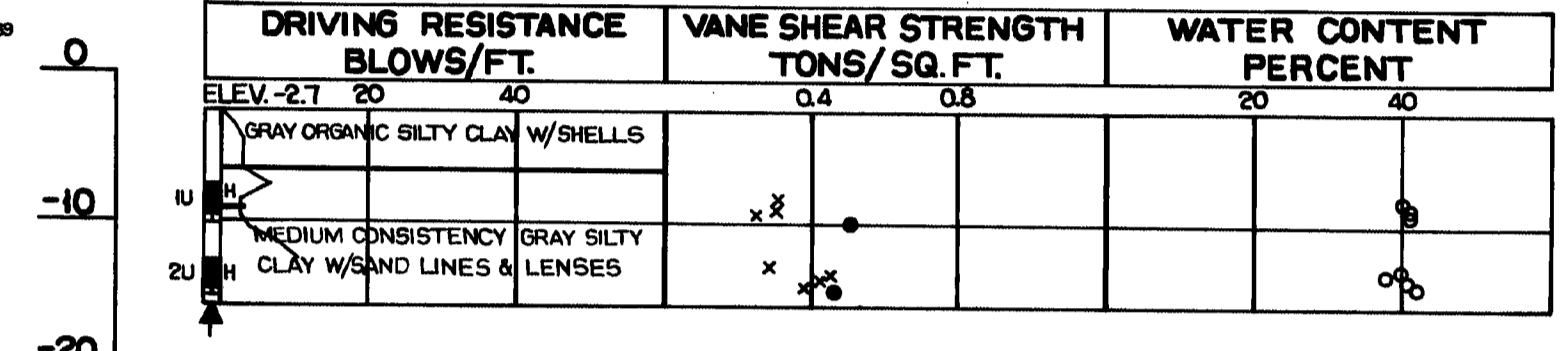
BORING CT-48(66) STA. 232+50 60'RT.



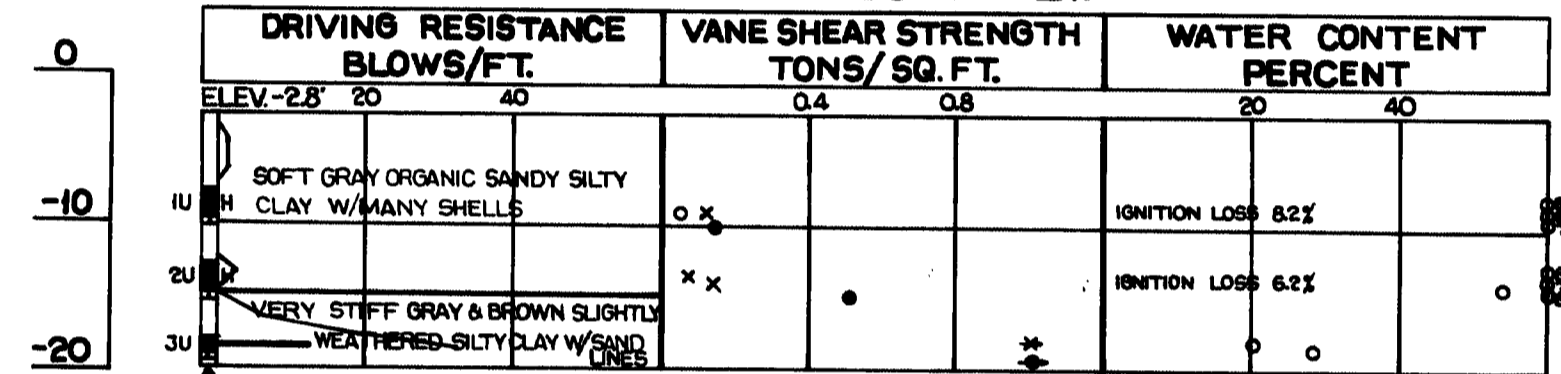
BORING CT-20(66) STA. 233+00 6'



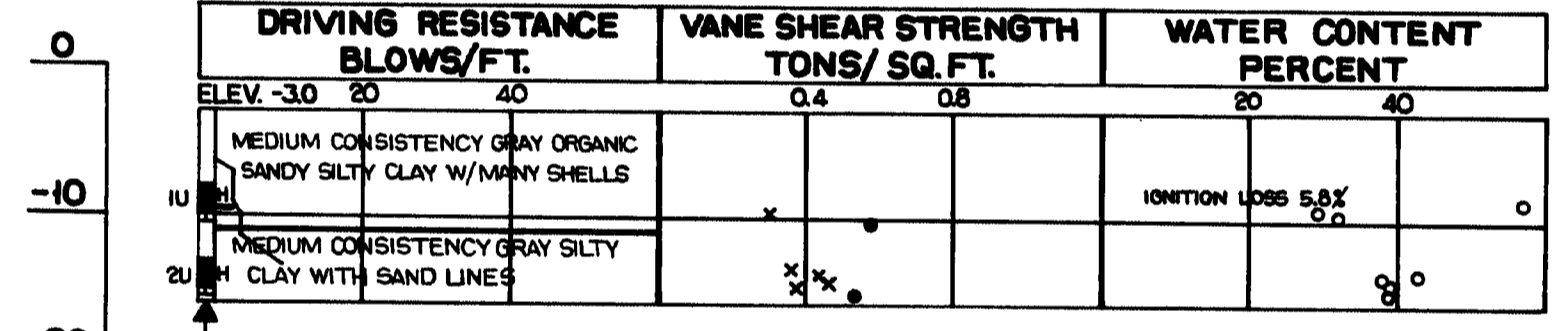
BORING CT-33(66) STA. 225+50 6'



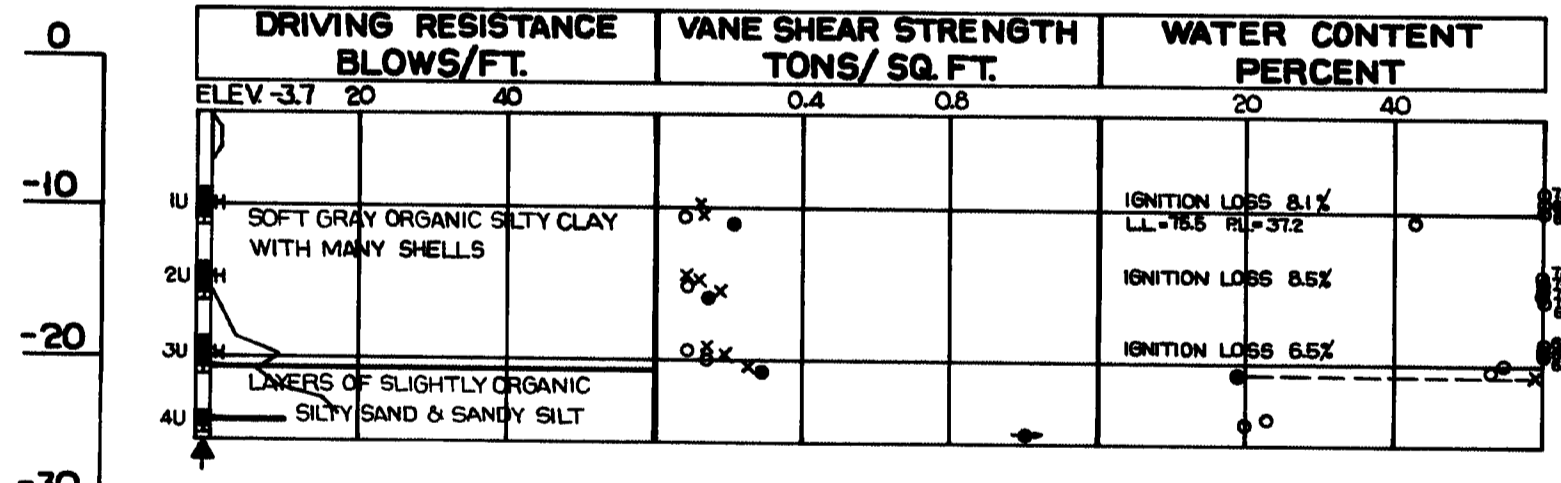
BORING CT-34(66) STA. 225+25 100'LT.



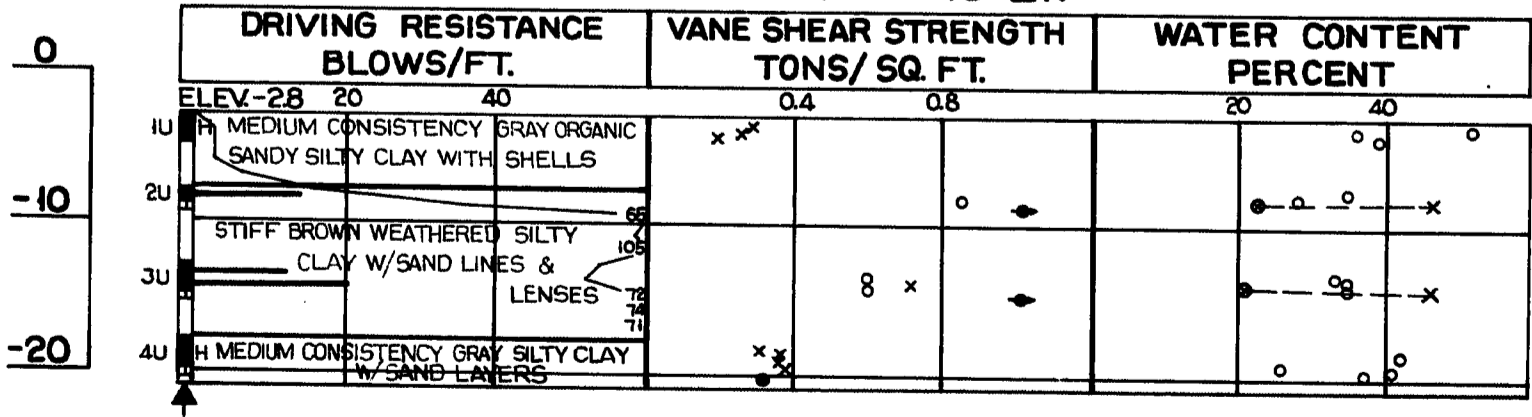
BORING CT-35(66) STA. 226+50 6'RT.



BORING CT-36(66) STA. 227+50 6'



BORING CT-32(66) STA. 224+30 10'LT.



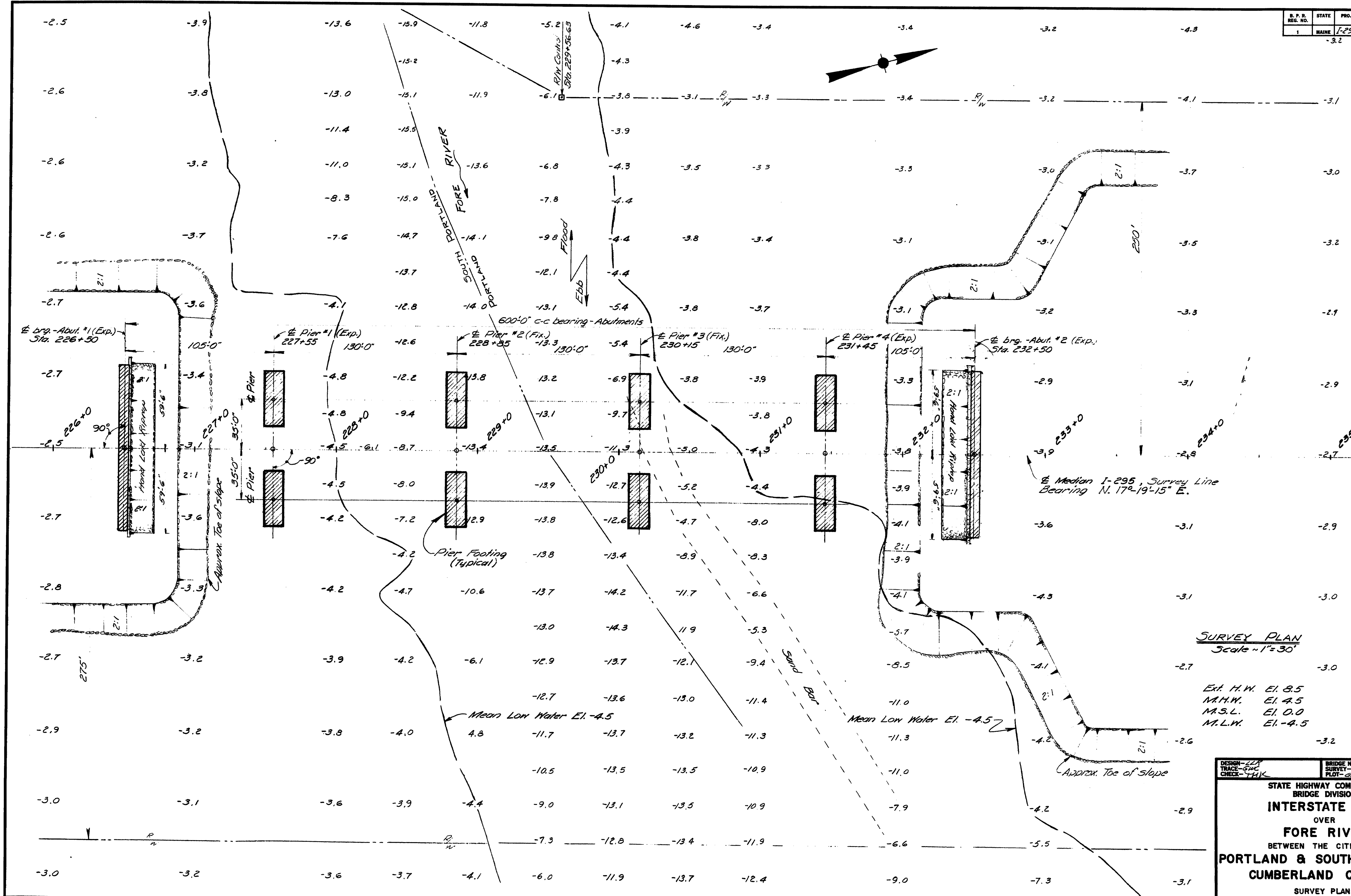
BY	DATE
DESIGN - DETAILED	
CHECKED	
REVISIONS	
FIELD CHANGES	

PLANS

STATE HIGHWAY COMMISSION
INTERSTATE 295
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 CUMBERLAND COUNTY
 BORING DETAILS
 SHEET 7 OF 27 AUGUSTA, MAINE Mar. 1969

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R. P. S. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	I-295-3(40)	8	27



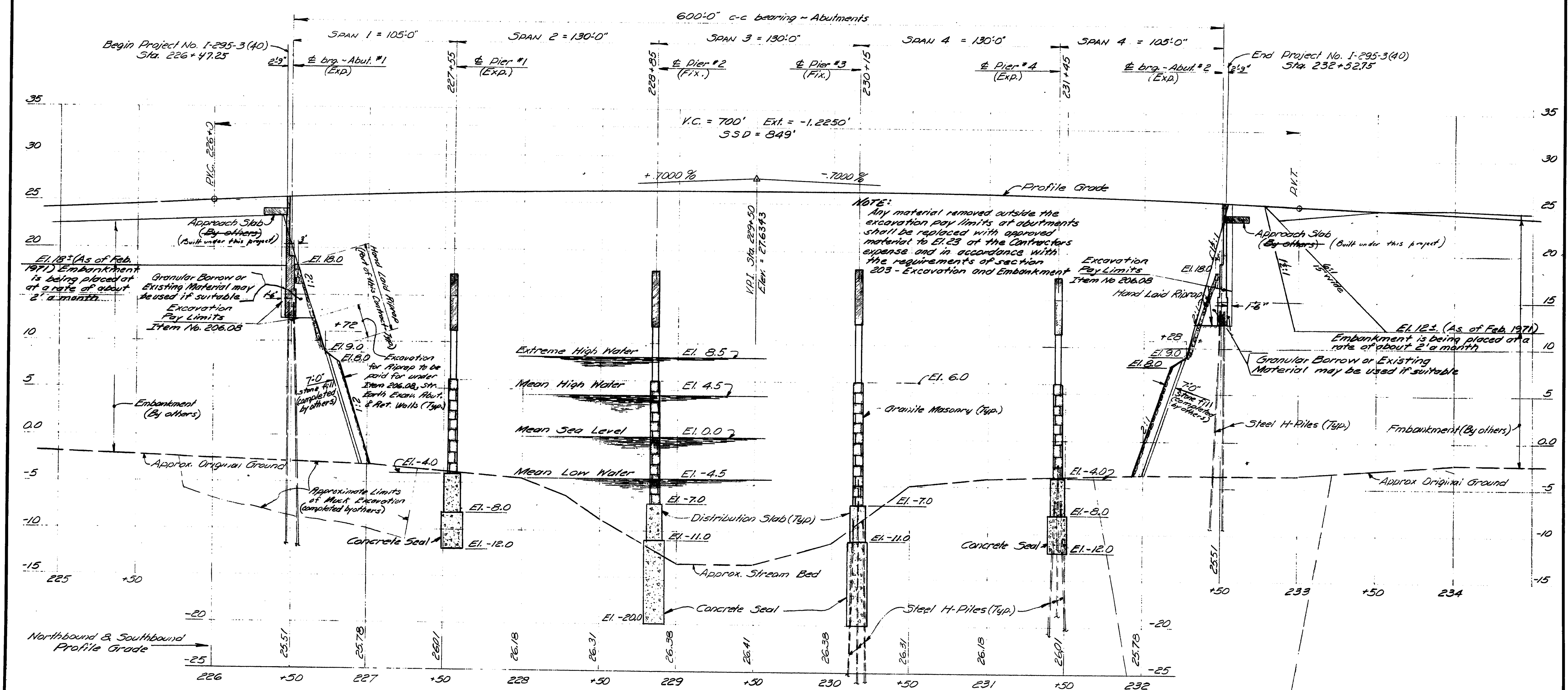
SURVEY PLAN
Scale = 1" = 30'

Ext. H.W. El. 8.5
M.H.W. El. 4.5
M.S.L. El. 0.0
M.L.W. El. -4.5

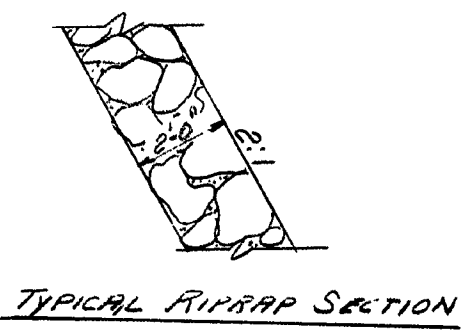
DESIGN - JJA	BRIDGE NO.
TRACE - GWC	SURVEY - GWC
CHECK - JJK	PLAT - GWC
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY SURVEY PLAN	
SHEET 8 OF 27 AUGUSTA, MAINE MARCH 1969	

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S. F. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	I-295-3(40)	9	27



PROFILE & SURVEY LINE
Scale = Hor. 1" = 30', Vert. 1" = 5'



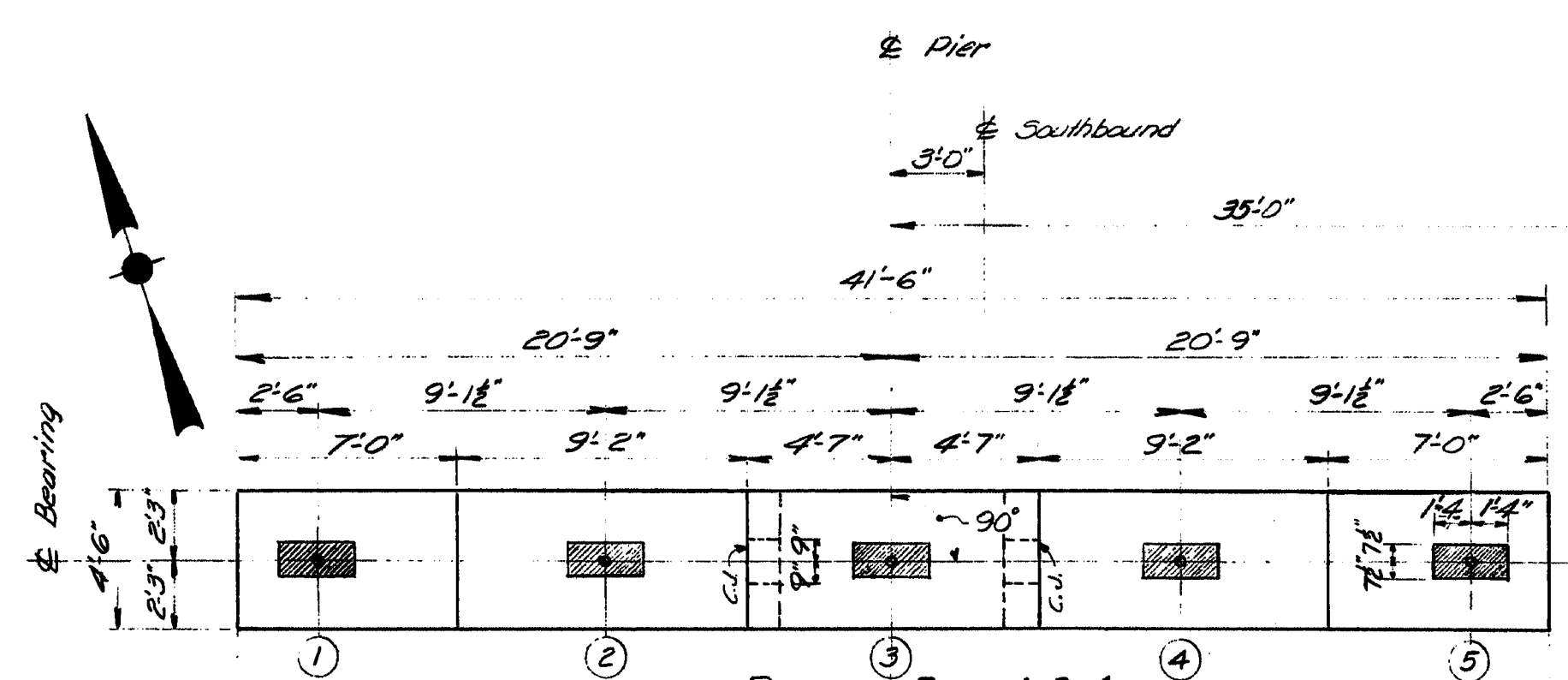
NOTE: Excavation from pier seals shall be disposed of in an area which has been approved by the Engineer.

Approximate Limits of Muck Excavation (Completed by others)

DESIGN - ELL	BRIDGE NO. SURVEY - G.M.C.
TRACE - G.M.C.	PLOT - G.M.C.
CHECK - T.L.K.	

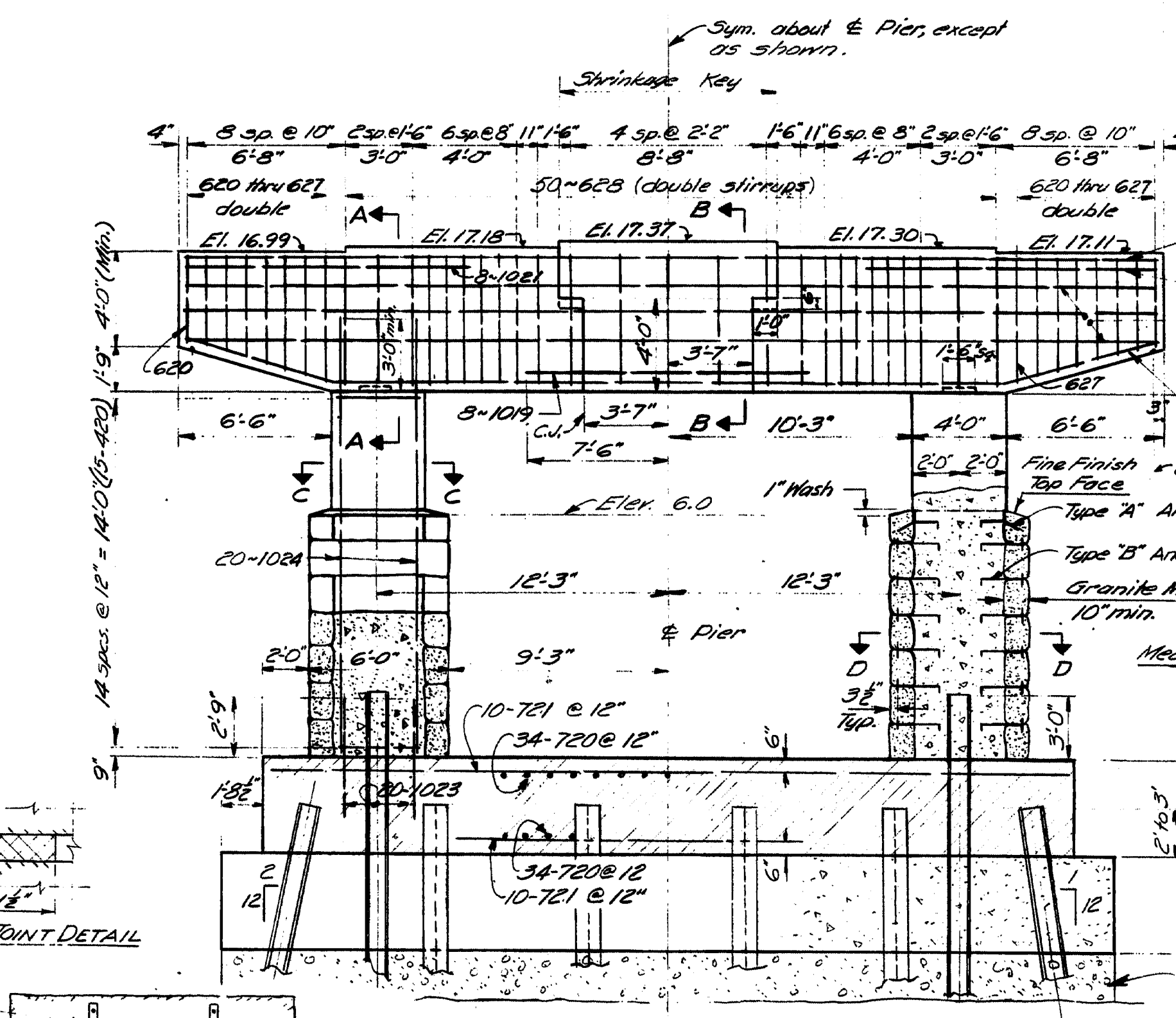
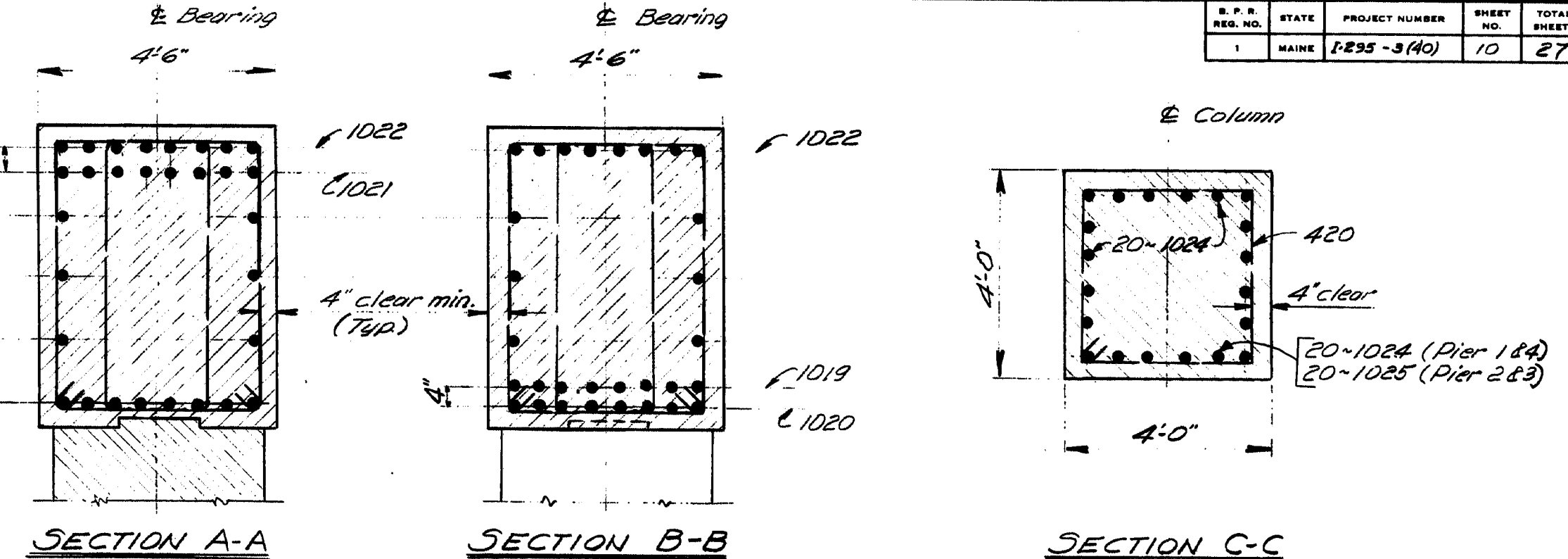
STATE HIGHWAY COMMISSION
BRIDGE DIVISION
INTERSTATE 295
OVER
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BETWEEN THE CITIES OF
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CUMBERLAND COUNTY
SURVEY PROFILE
SHEET 9 OF 27 AUGUSTA, MAINE MARCH 1969

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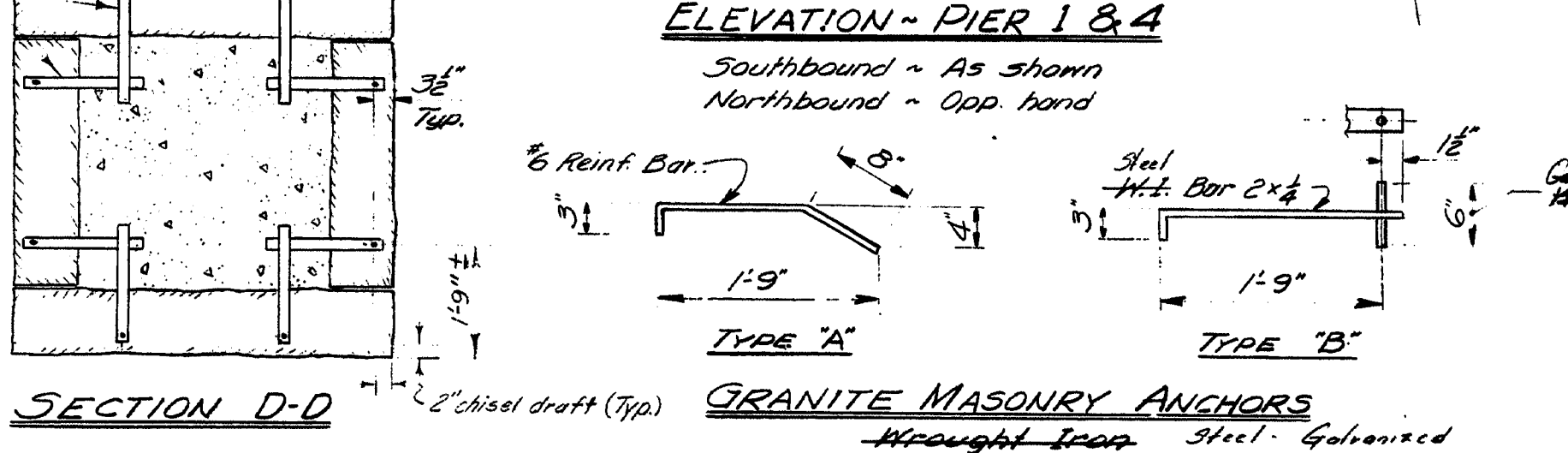
PLAN - PIER 1 & 4
Southbound - As shown
Northbound - Opp. hand

NOTE:
Dress shaded bearing areas to exact elevation and size as indicated.



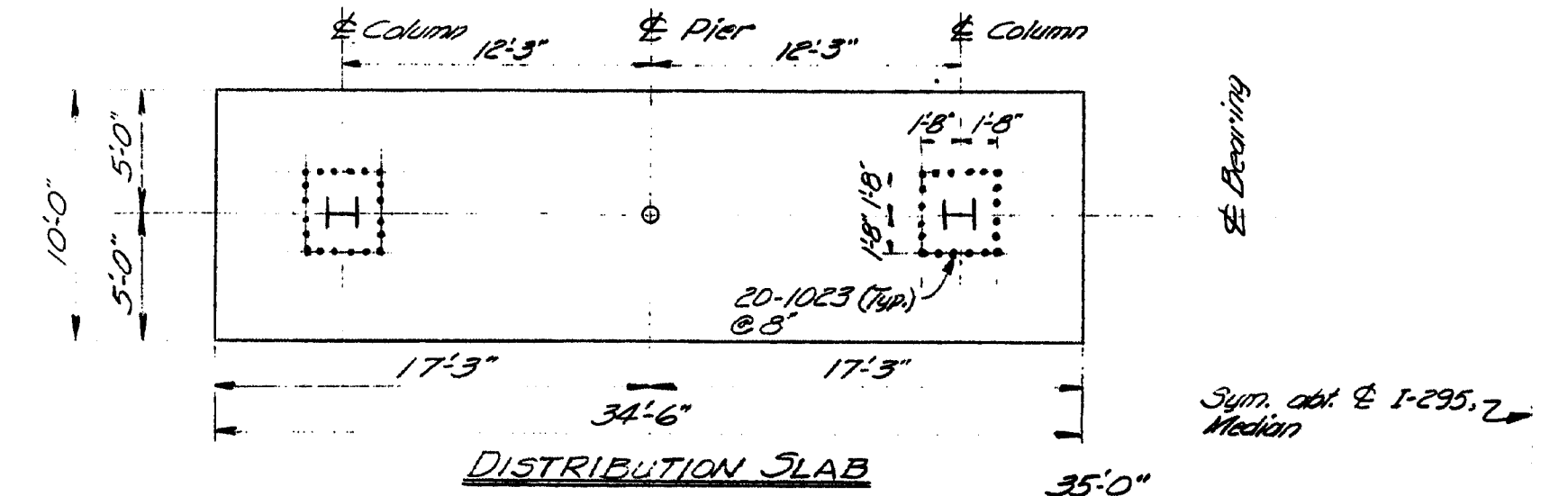
ELEVATION - PIER 1 & 4
Southbound - As shown
Northbound - Opp. hand

NOTE:
Provide a minimum of two (2) anchors per stone in Granite Masonry. Payment for anchors will be considered incidental to Item 525.06. Adjust granite masonry anchors to clear column reinf. steel, where necessary. All construction joints in pier columns shall be formed with a 1'-6" sq. x 2" shear box.

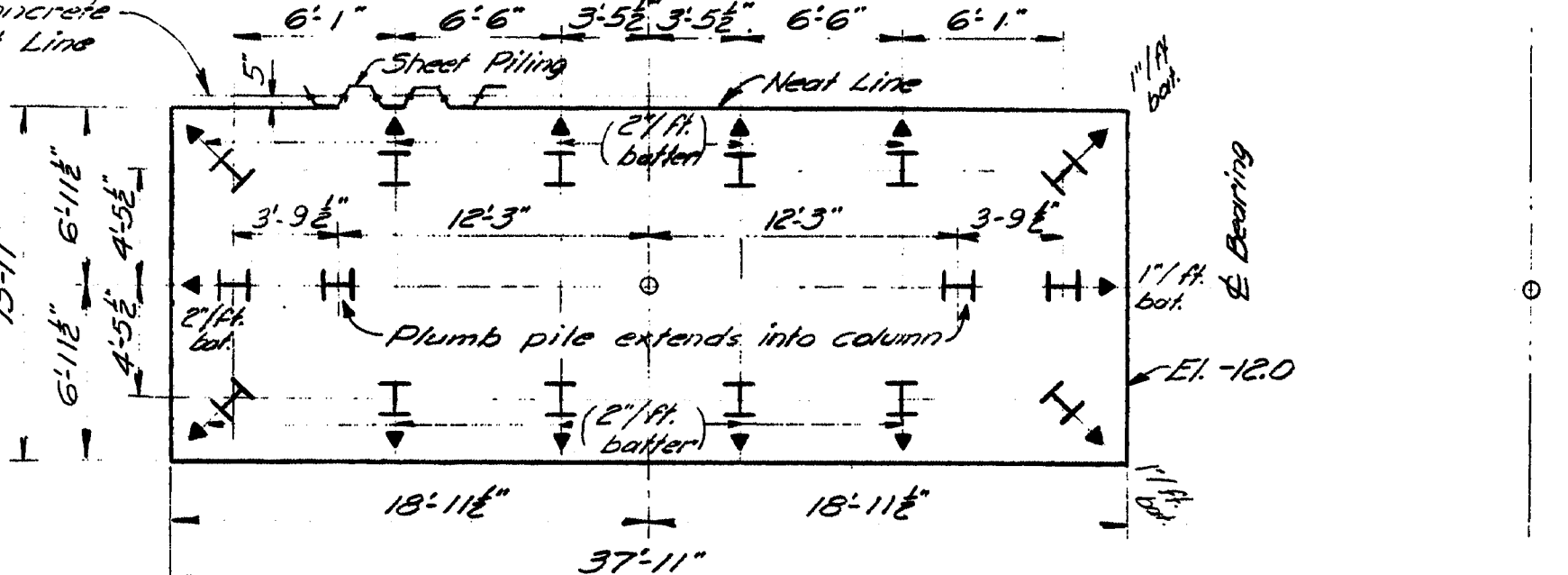


SECTION D-D

GRANITE MASONRY ANCHORS
Wrought Iron Steel Galvanized



DISTRIBUTION SLAB



PILE PLAN & SEAL

Southbound - As shown
Northbound - Opp. hand

- PILE NOTES**
- All piles shall be, 14 BP 73, Steel H-Piles.
 - Piles marked H shall be battered as indicated in the direction of arrow.
 - Piles shall be driven to ledge or practical refusal.
 - Allowable load per pile 96.5 TONS
 - Estimated Length of piles: Piers 1 - Total Lth. = 6430 ft.
Piers 2 - " = 6330 ft.
Piers 3 - " = 6010 ft.
Piers 4 - " = 5790 ft.
16 Piles per footing
 - For Reinforced Pile Tip see sheet #11.

GENERAL PIER NOTES
Reinforcing Steel shall have a min. conc. cover of 4".
Locate reinf. steel in pier cap to clear anchor bolts.

SEAL NOTES
No hydrostatic head in either direction shall be allowed within the cofferdam at anytime until unwatering is commenced.
Seal concrete dimensions shown are predicated on use of MP-116, DP-2, I-27 or equal steel sheet piling with appropriate rolled corners. Pay dimensions for concrete seal shall be neat lines plus 5" all around. Seal concrete is intended to be placed under water and to be paid for under Item 502.04. The weight of piles, and friction between piles and soil was considered to resist uplift, in seal depth calculations. Seals should not be unwatered except as provided in Standard Specifications Section 511.04, and when the water elevation is not in excess of Elevation 8.5

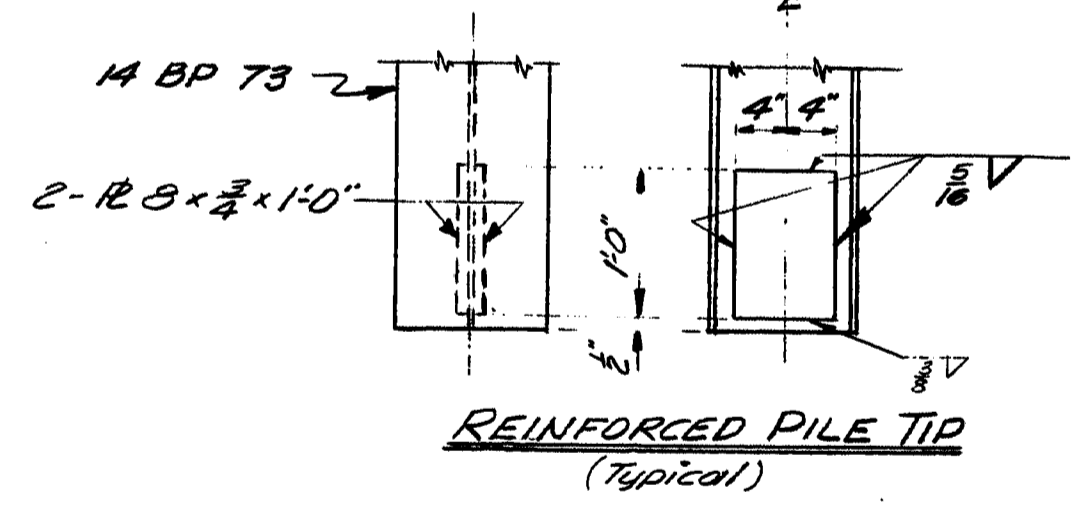
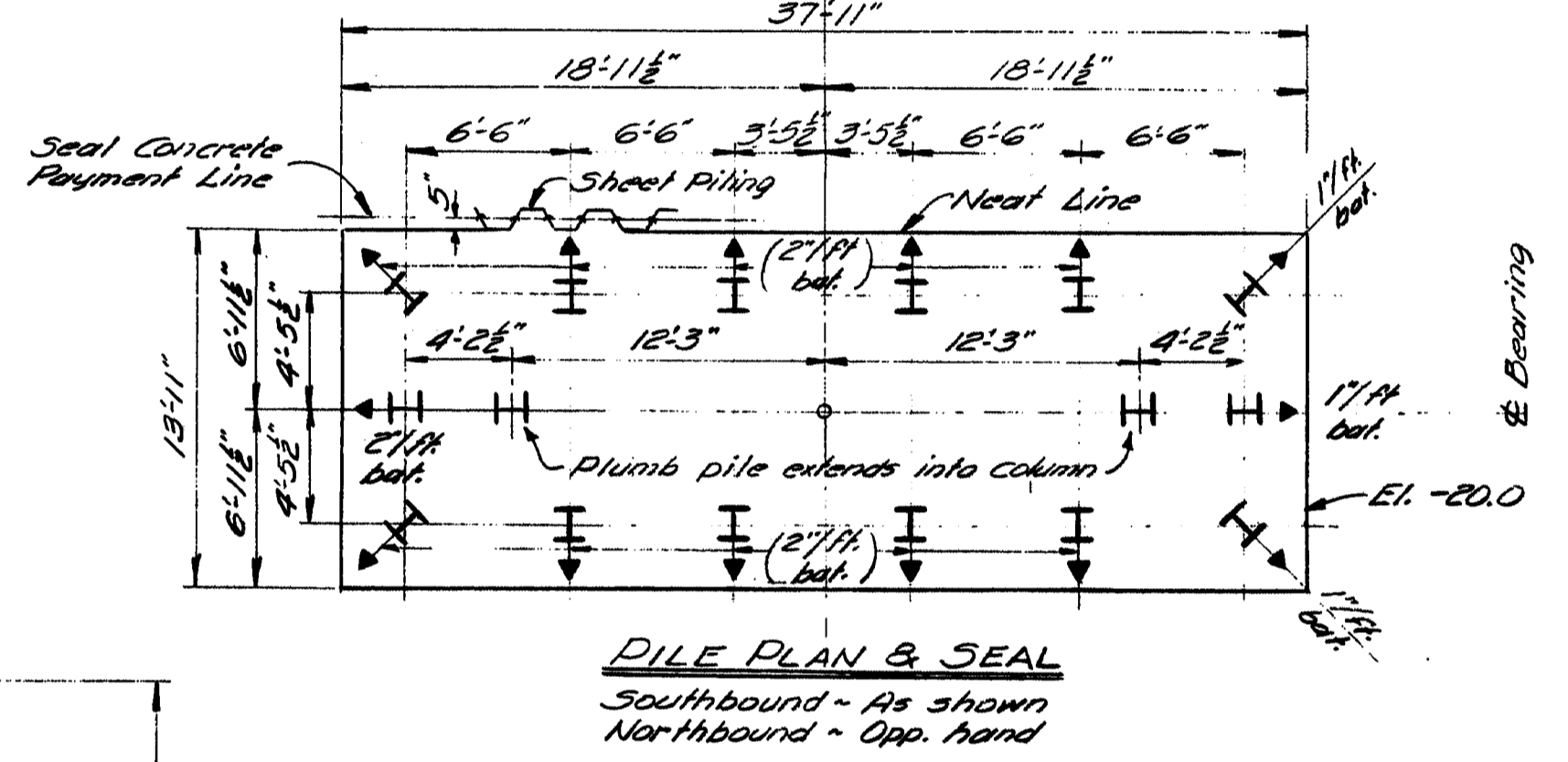
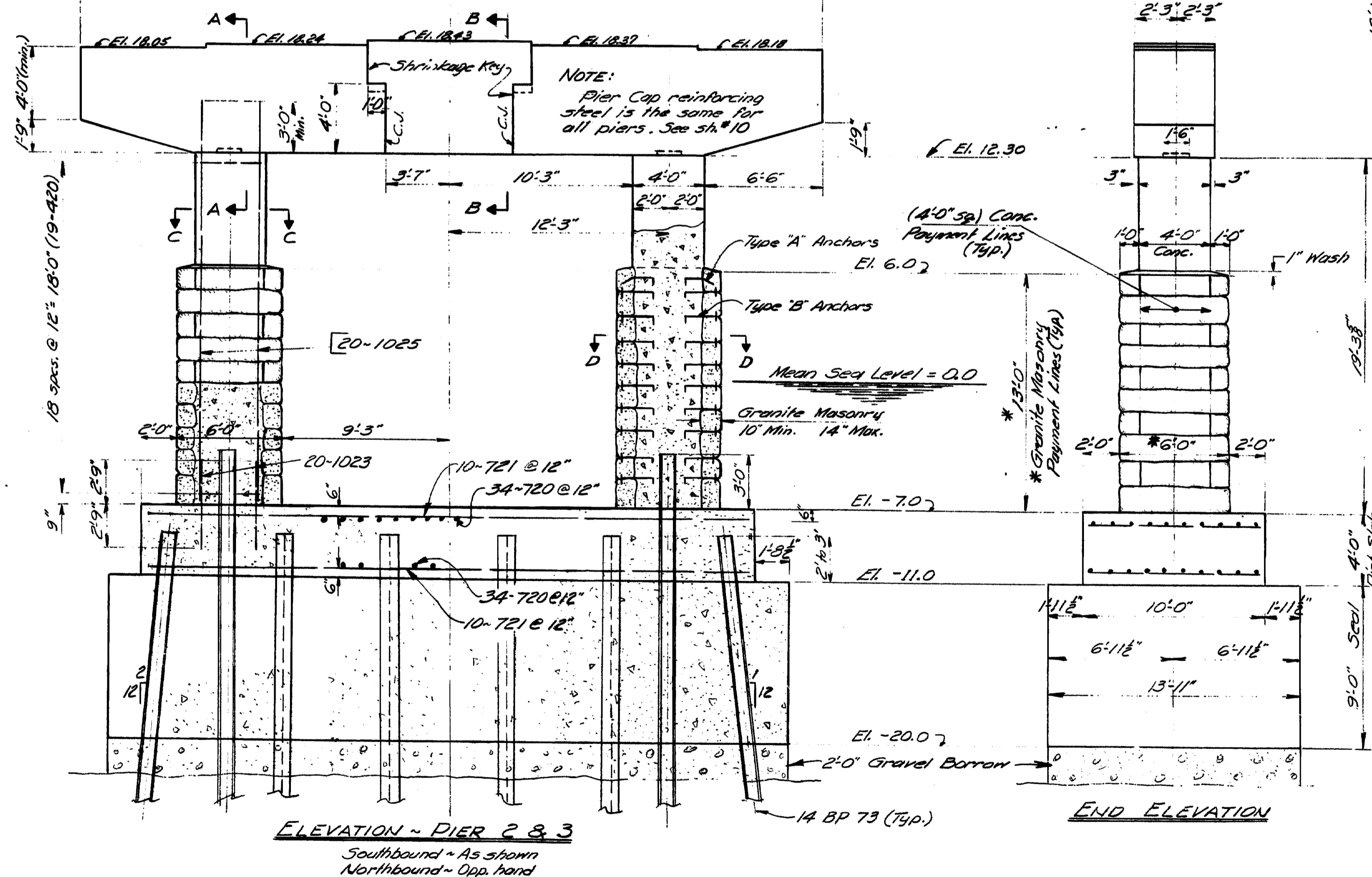
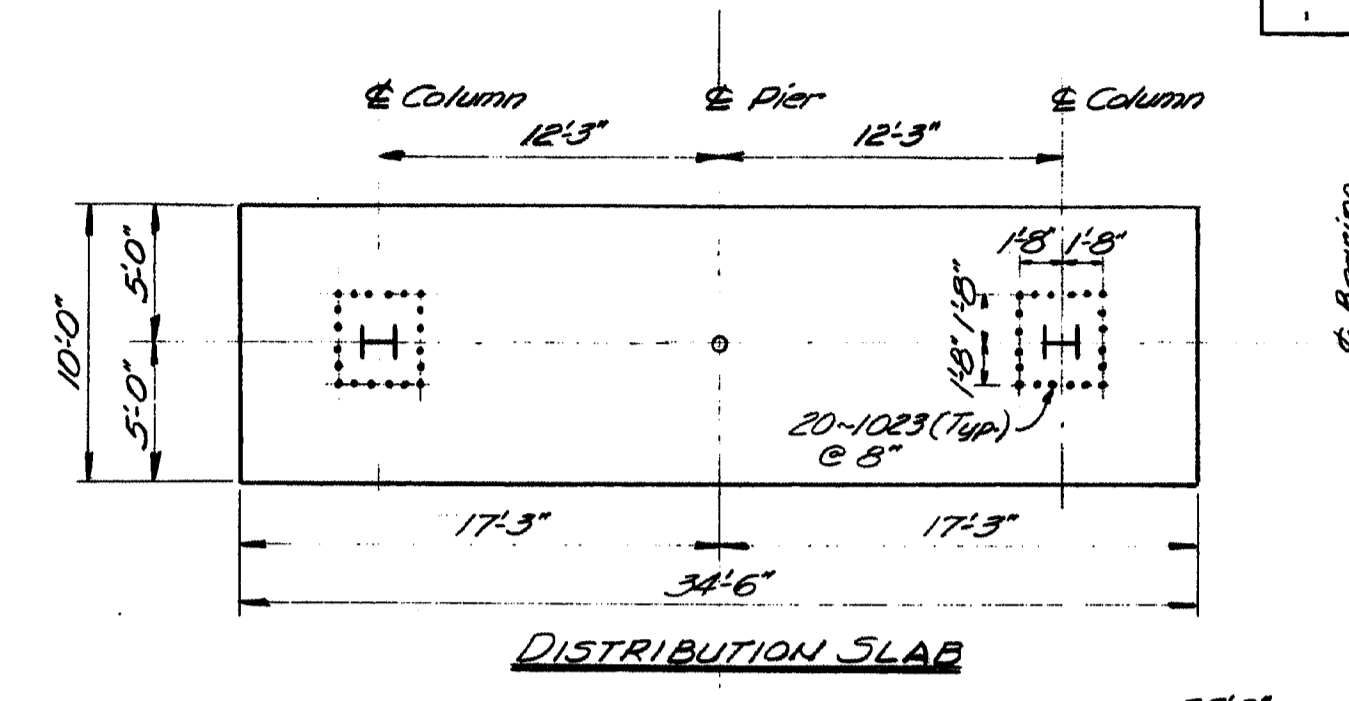
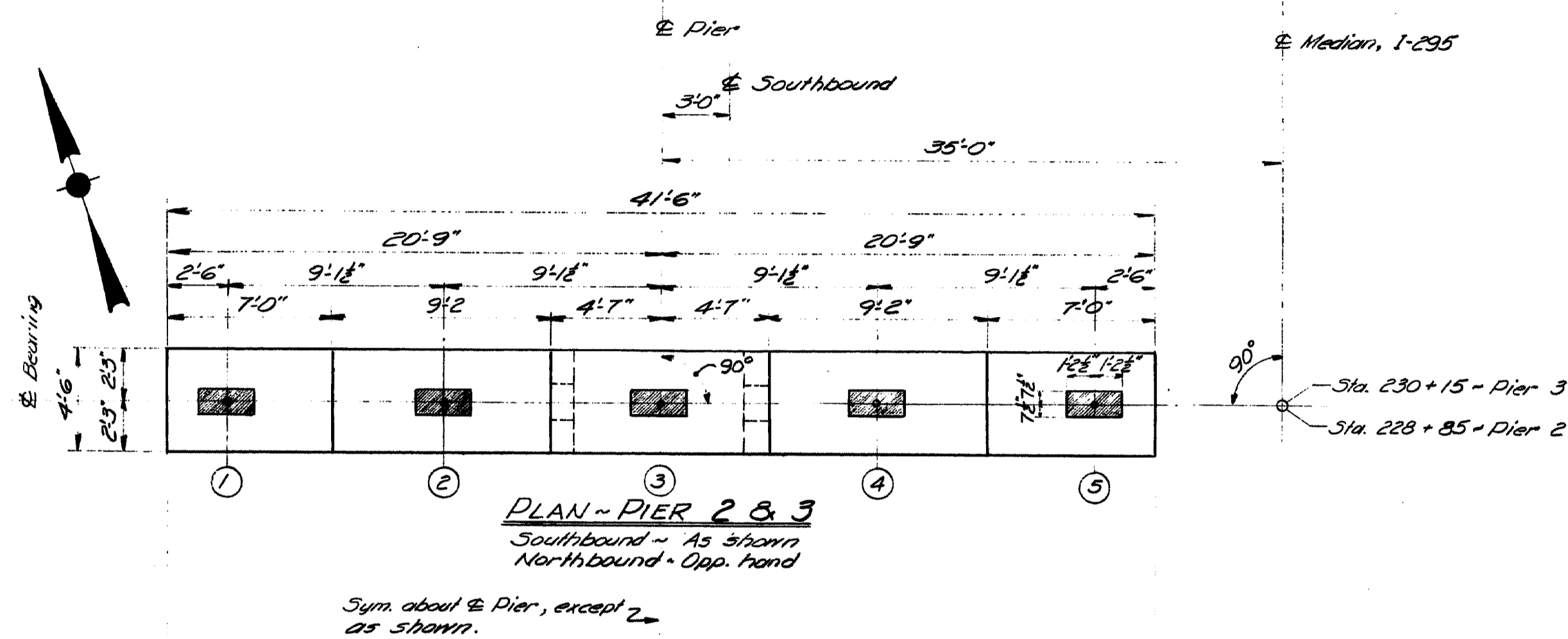
Do not place Shrinkage Key concrete in pier cap until adjacent sections of cap concrete have been in place a minimum of three (3) days.

STATE HIGHWAY COMMISSION
INTERSTATE 295
OVER
FORE RIVER
BETWEEN THE CITIES OF
PORTLAND & SOUTH PORTLAND
CUMBERLAND COUNTY
PIERS 1 & 4

150-141

DATE	BY
DESIGN - DETAILED	LIE GWZ
CHECKED	THE
REVISIONS	
FIELD CHANGES	
PLANS	

R. F. B.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	I-295-3 (40)	11	27



NOTE:
 For Sections A-A, B-B, C-C, D-D and Details not shown see sheet # 10, Piers 1 & 4.

DESIGN - DETAILED	BY	DATE
✓	CHC	
✓	THK	
✓	REVISIONS	
✓	FIELD CHANGES	

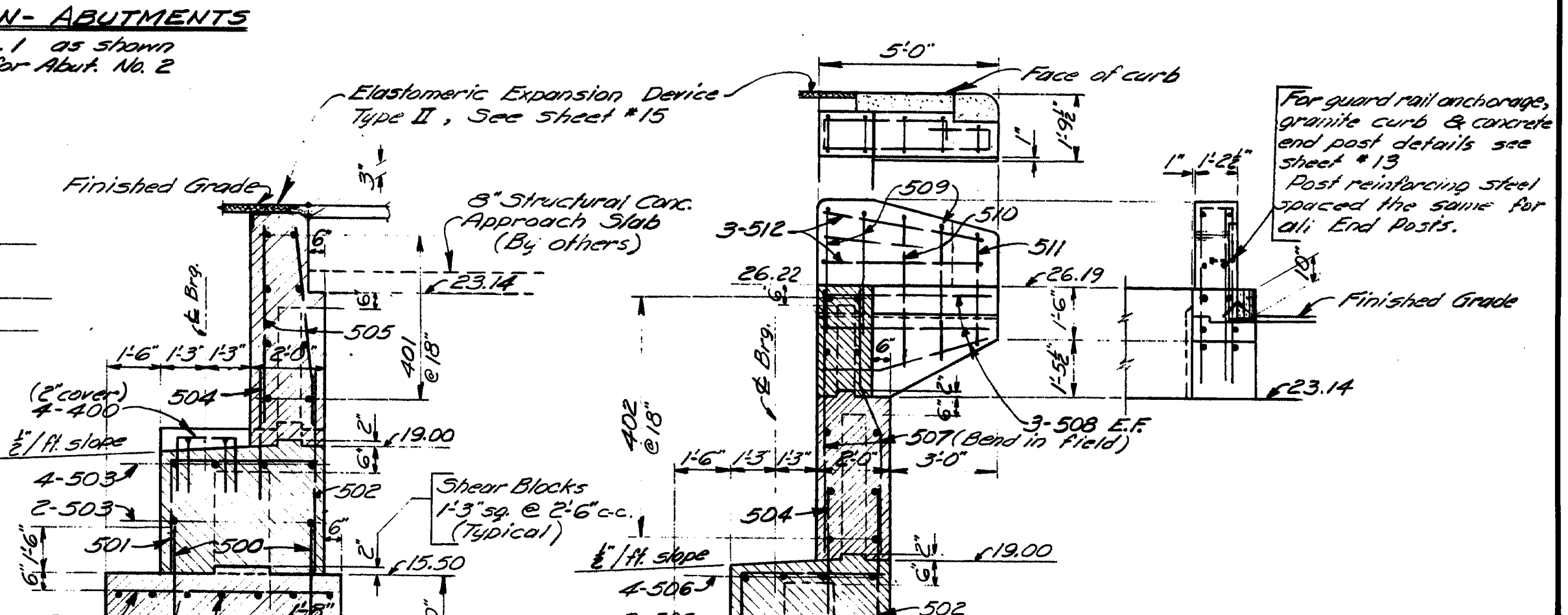
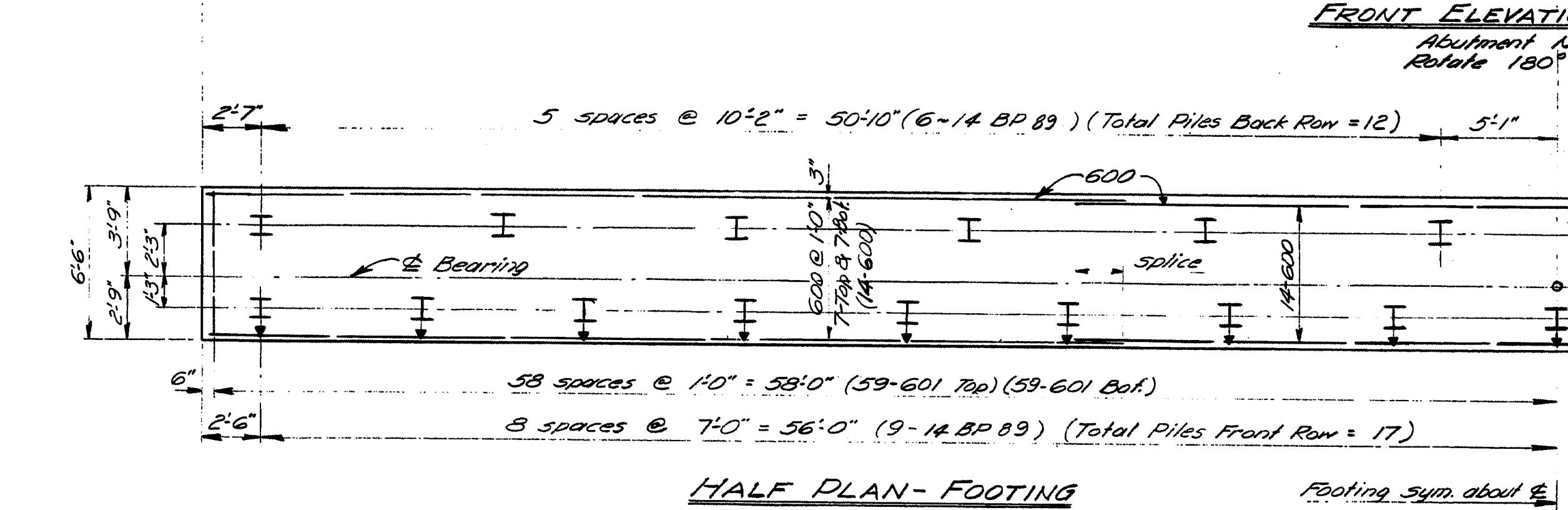
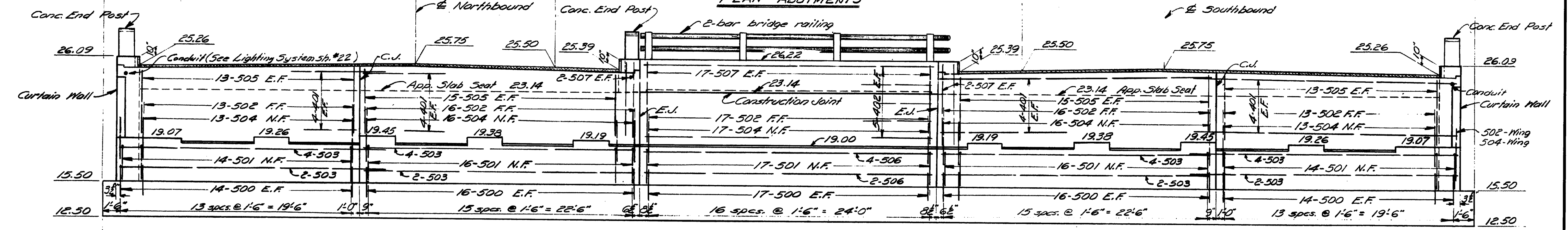
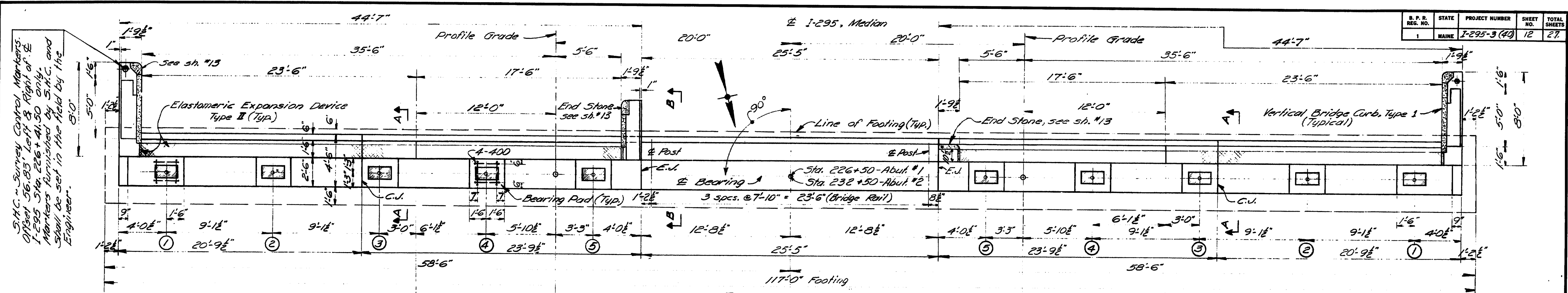
PLANS

STATE HIGHWAY COMMISSION
INTERSTATE 295
 OVER
FORE RIVER
 BETWEEN THE CITIES OF
PORTLAND & SOUTH PORTLAND
CUMBERLAND COUNTY
 PIERS 2 & 3
 SHEET 11 OF 27 AUGUSTA, MAINE MARCH 1969

150-142

S.P.R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	I-295-3 (40)	12	27

S.H.C. - Survey Control Markers
 Offset 56.85' Left & Right of
 I-295 Sta. 226+41.50 only, and
 Markers furnished by S.H.C. and
 shall be set in the field by the
 Engineer.



PILE NOTES:

All piles shall be 14 BD 89, Steel H-Piles.
 Total Capacity of each pile = 113 tons
 Design Capacity of each pile = 45.5 tons
 Allowance to Negative Skin Friction = 72.5 tons
 Piles marked thus H shall be battered 2" per foot in direction of arron.

Piles shall be driven to ledge or practical refusal.

Estimated Length of piles { Abut. #1 = 6500 feet
 Abut. #2 = 5800 feet

58-Piles required (29 each Abutment)
 For Pile Tips see sheet #13

GENERAL NOTES

1. Place reinforcing steel in bridge seats to clear anchor bolts.
2. Reinforcing steel to have 3" cover unless noted.
3. Minimum splices and embedments shall be 24 bar diameters, for reinforcing steel, unless noted.
4. Chamfer all exposed edges of concrete 1/2 inch.
5. For treatment of shaded area on Bearing Pads see sheet #17 Bearing Pedestals.
6. Backwalls shall not be built until Superstructure Slab has been placed.
7. See sheet #22 for lighting conduit details.

LEGEND

N.F. = Near Face
 F.F. = Far Face
 E.F. = Each Face
 C.J. = Contraction Joint
 E.J. = Expansion Joint

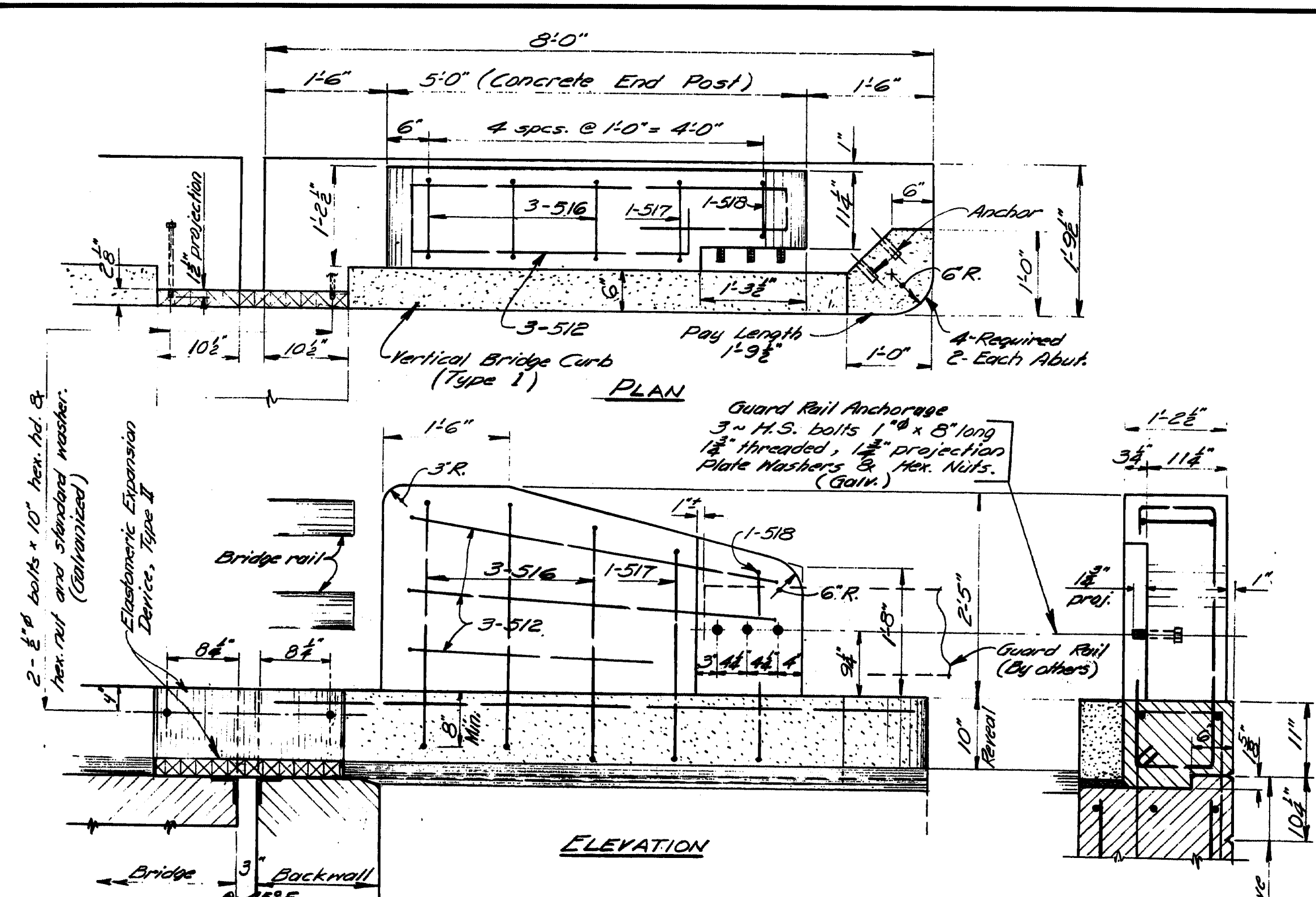
DESIGN - G.M.C.
 TRACE - T.H.K.
 BRIDGE NO. SURVEY PLOT

STATE HIGHWAY COMMISSION
 BRIDGE DIVISION
INTERSTATE 295
 OVER
FORE RIVER
 BETWEEN THE CITIES OF
PORTLAND & SOUTH PORTLAND
 CUMBERLAND COUNTY
 ABUTMENTS

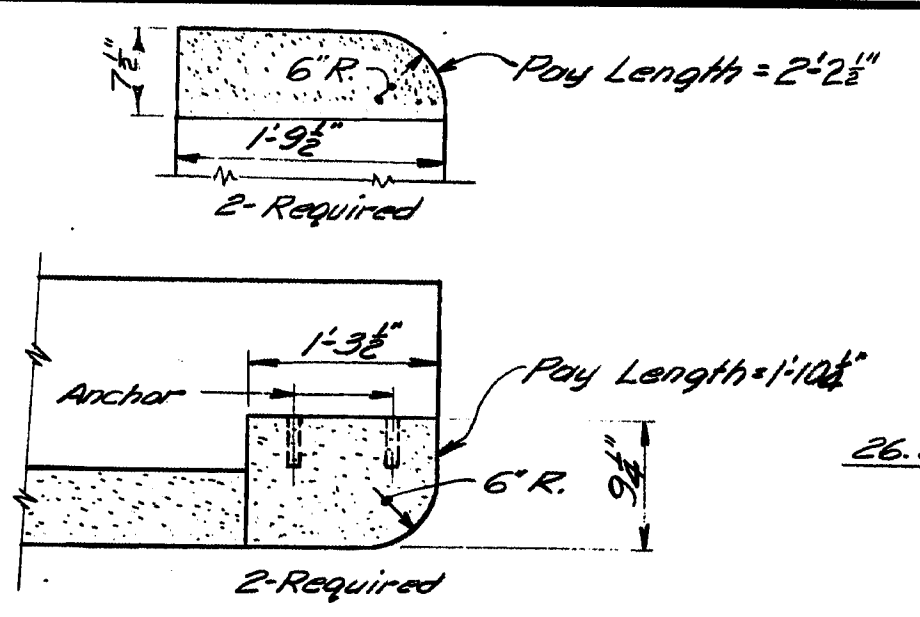
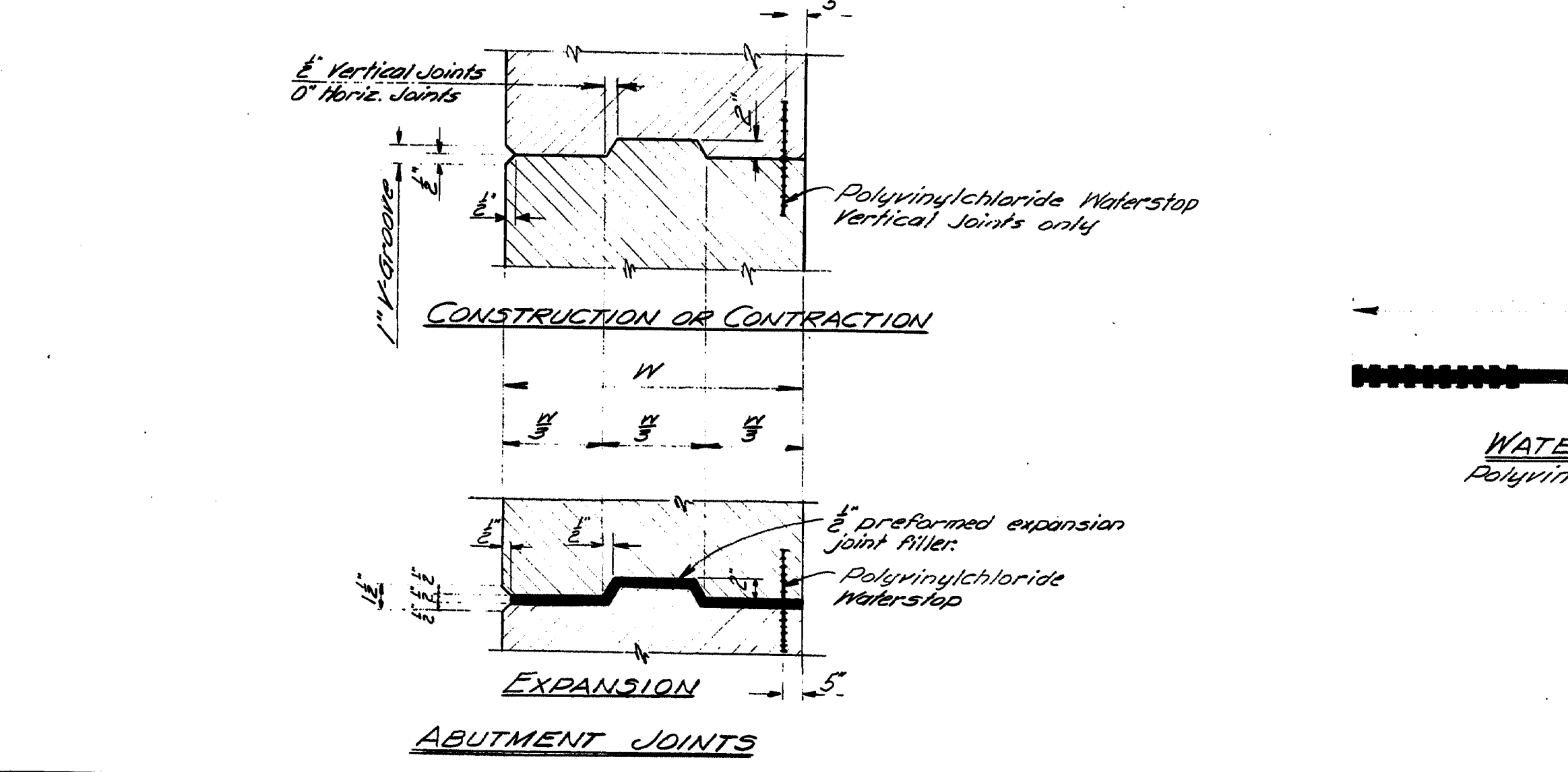
SHEET 12 OF 27 AUGUSTA, MAINE MARCH 1969

150-143

B. F. R. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	E295-3(40)	13	27



CONCRETE END POST & CURB
 Payment for concrete end posts to be made under Item 502.21, Structural Concrete Abutments & Retaining Walls.
 Furnishing and installing guard rail anchorages and bolts for anchoring Elastomeric Expansion Device to curbs shall be incidental to Item 502.21.
 Coat End Posts all over and top of abut curbs with protective coating for concrete surfaces.



END STONE DETAIL
 One (1) of each @ each abut. (Curb @ Median)

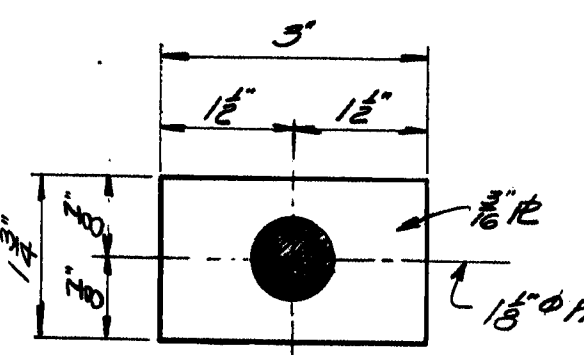
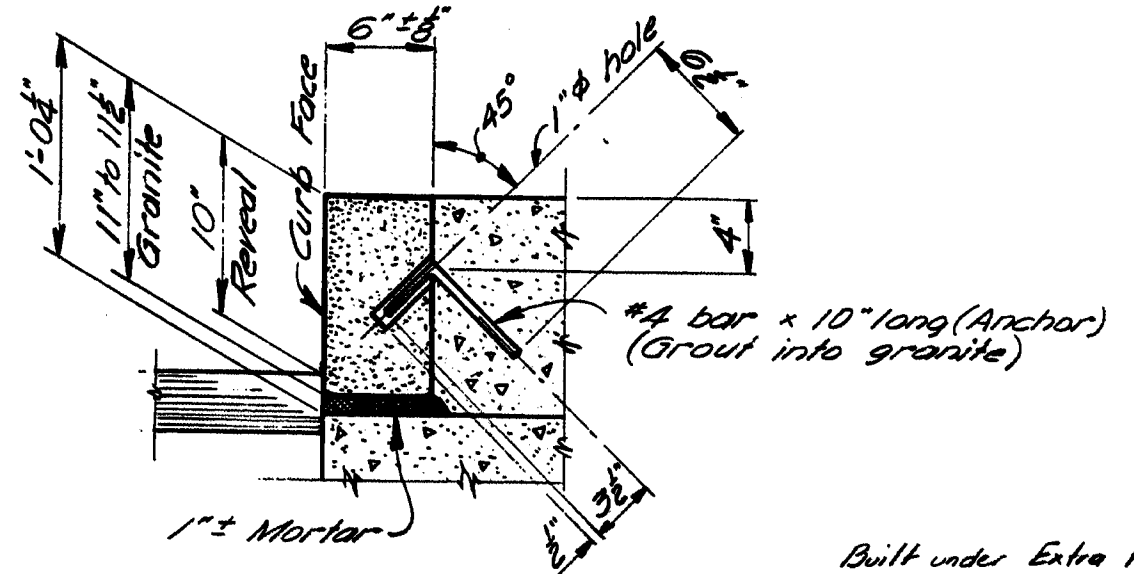
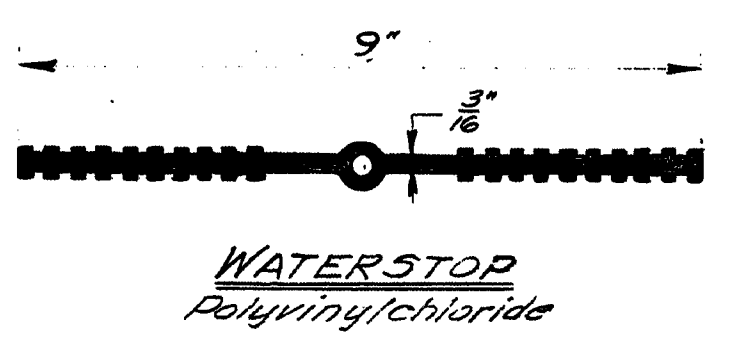


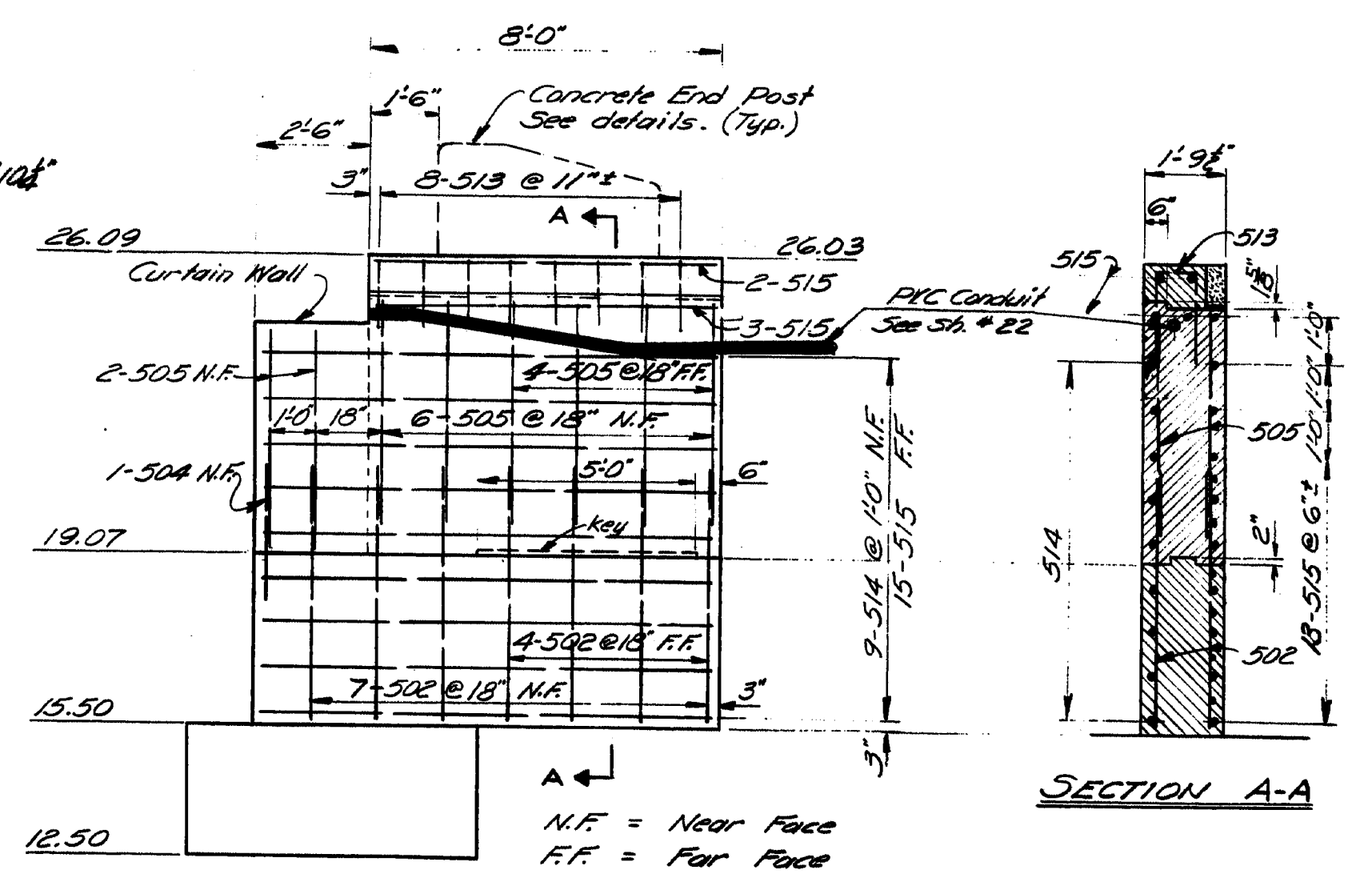
PLATE WASHER
 Galvanize after fabrication



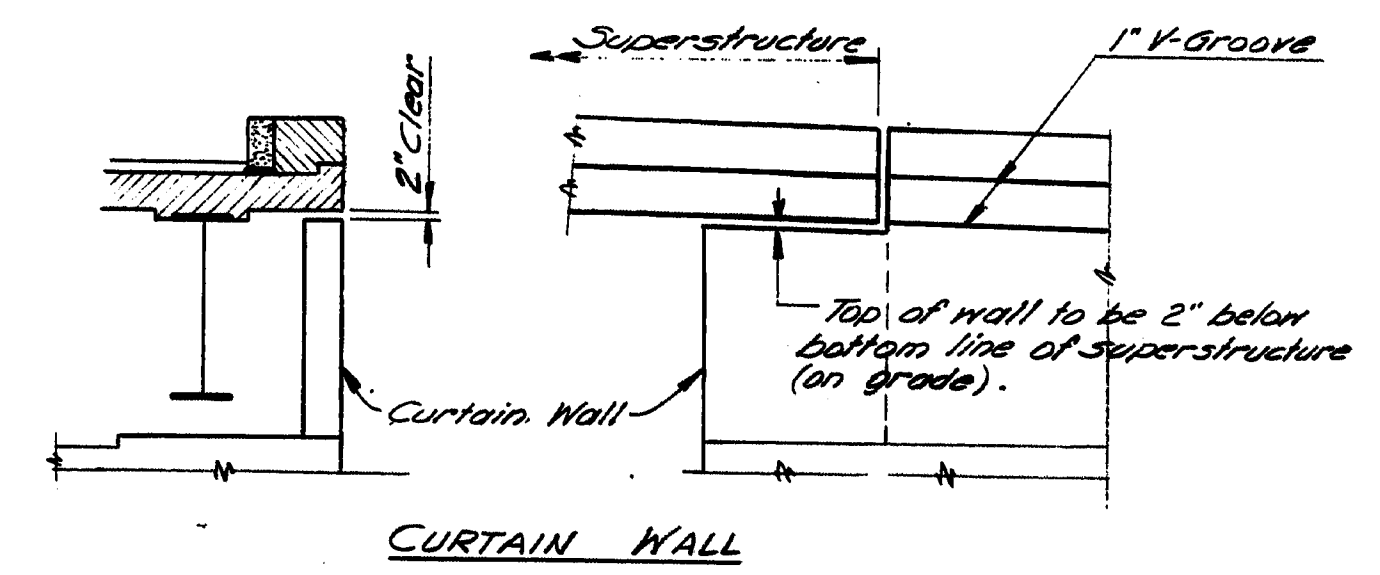
TYPICAL SECTION
 Vertical Bridge Curb, Type 1



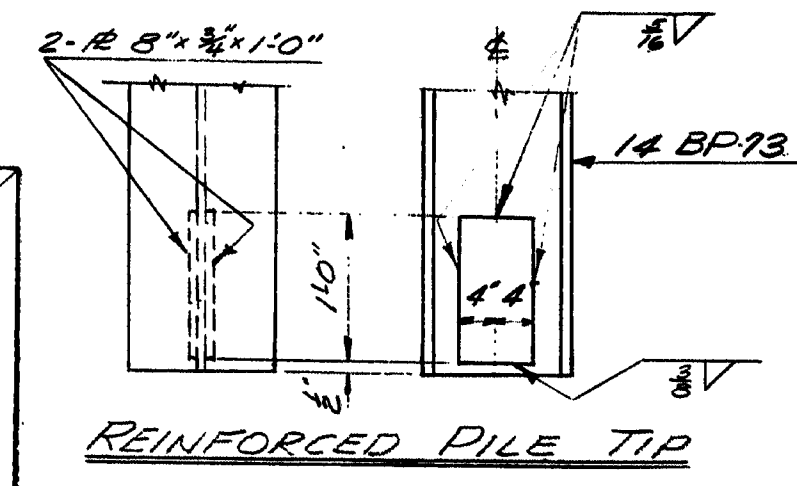
WATERSTOP
 Polyvinylchloride



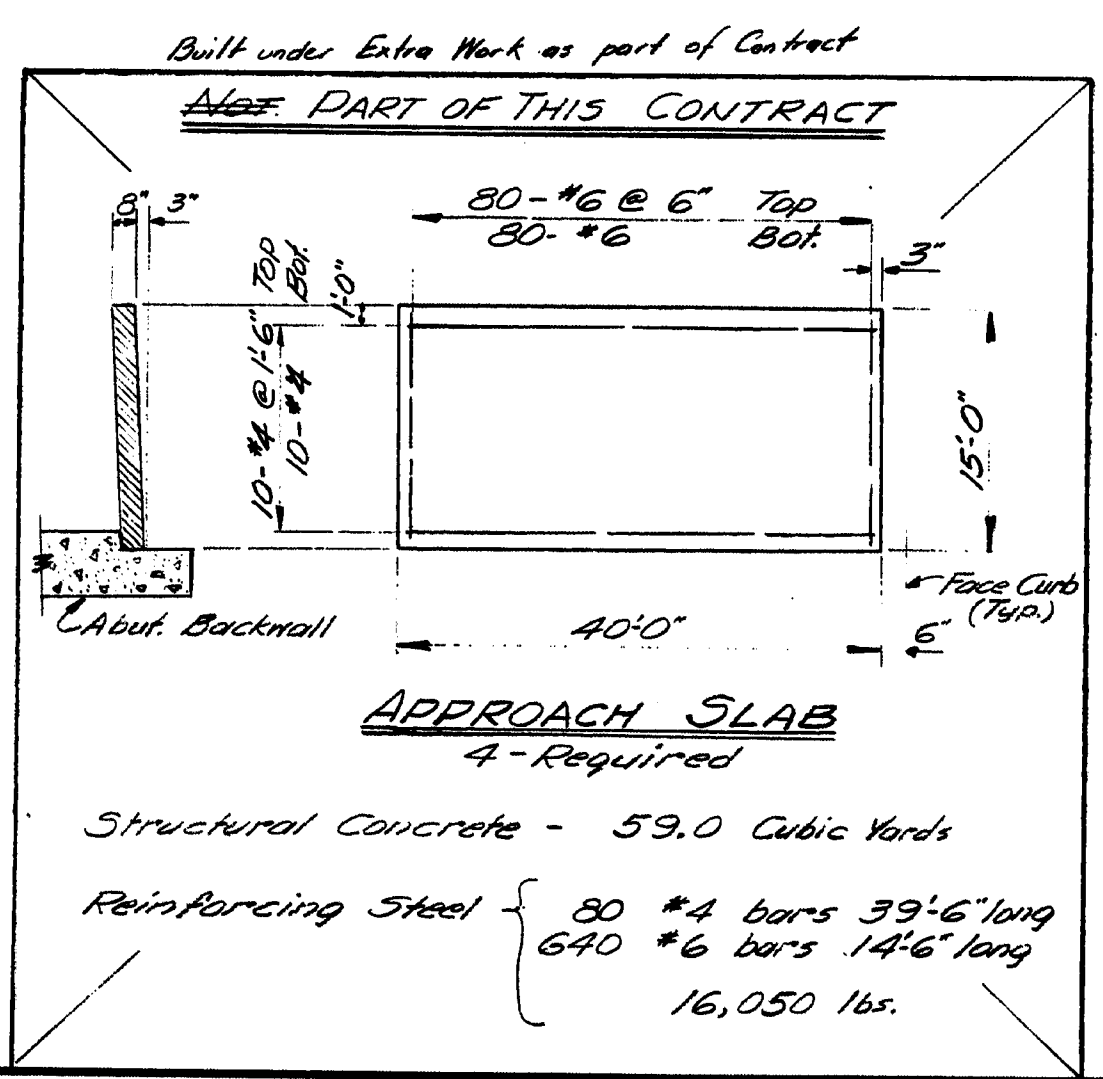
WINGWALL ELEVATION
 (Typical)



CURTAIN WALL



REINFORCED PILE TIP



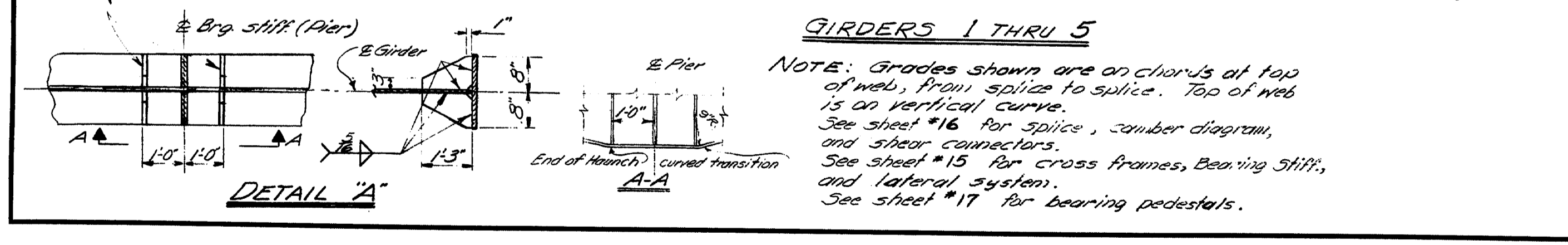
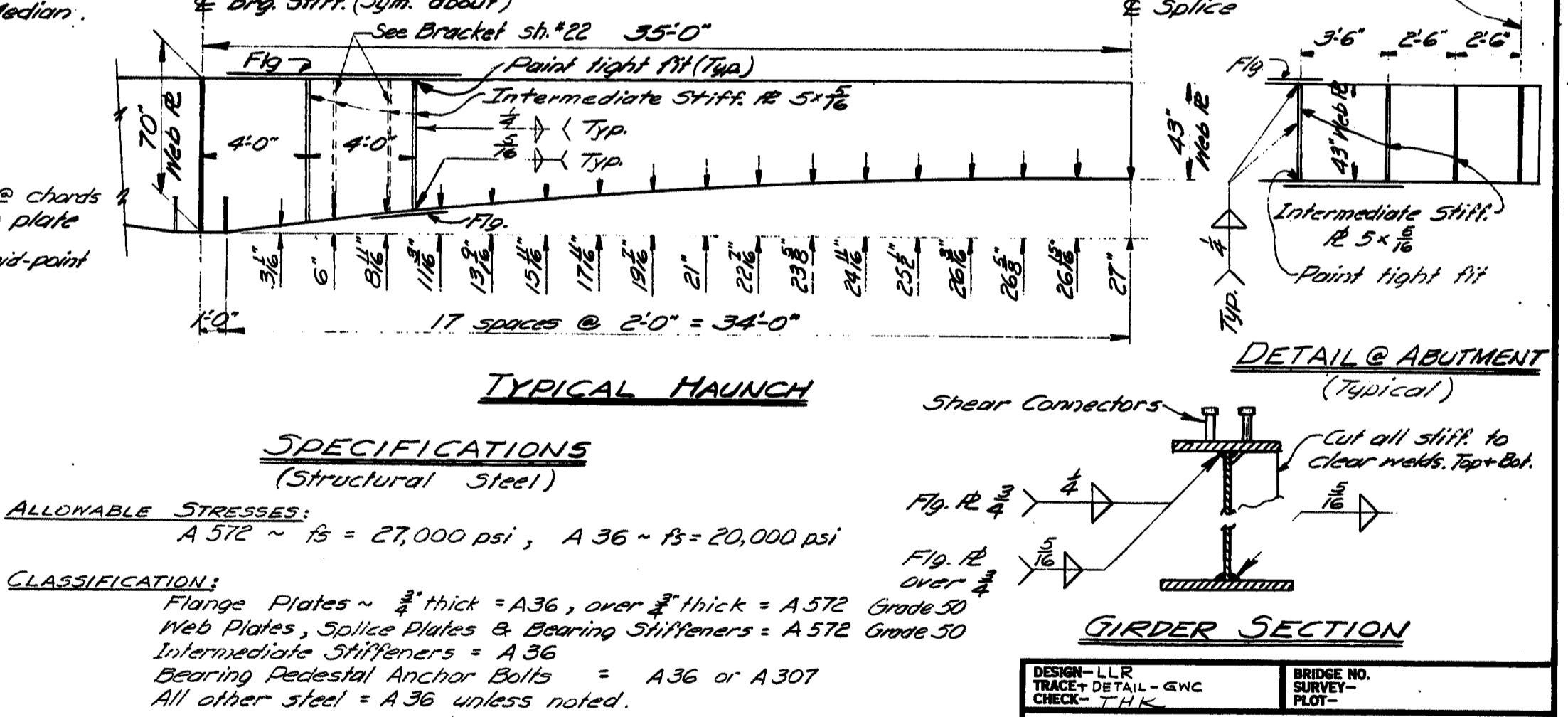
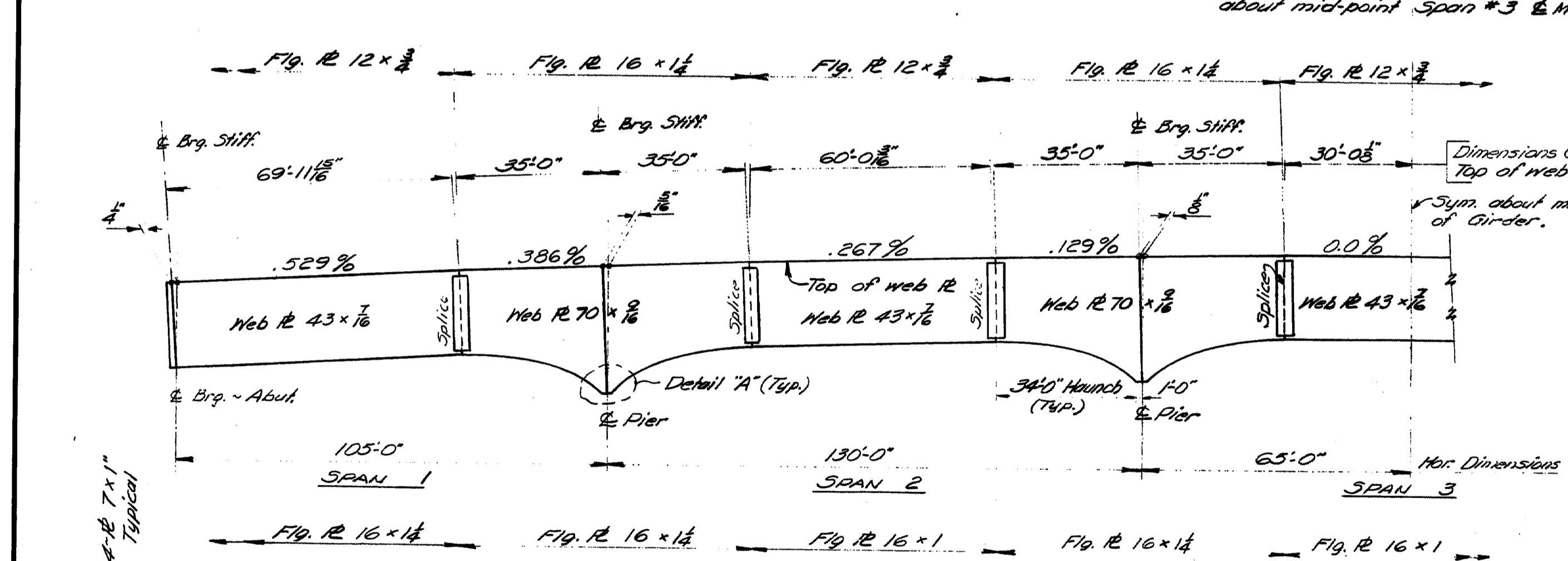
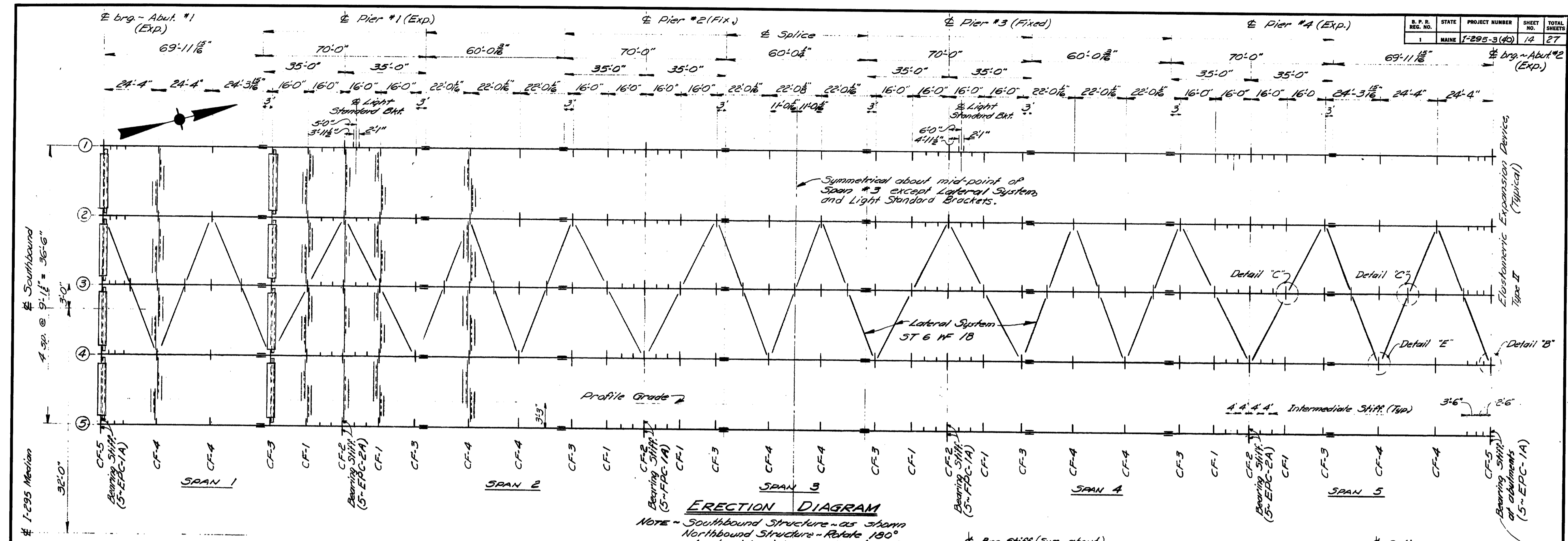
APPROACH SLAB
 4-Required

Built under Extra Work as part of Contract
 NOT PART OF THIS CONTRACT
 Structural Concrete - 59.0 Cubic Yards
 Reinforcing Steel { 80 #4 bars 39'-6" long
 640 #6 bars 14'-6" long
 16,050 lbs.

DESIGN - GRC	BRIDGE NO. SURVEY PLOT
TRACE	
CHECK - TH K	
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY END POSTS & ABUT. DETAILS	
SHEET 13 OF 27 AUGUSTA, MAINE MARCH 1969	

150-144

D. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	1-295-3(40)	14	27



SPECIFICATIONS
(Structural Steel)

ALLOWABLE STRESSES:
A 572 ~ fs = 27,000 psi, A 36 ~ fs = 20,000 psi

CLASSIFICATION:
Flange Plates ~ 3/8" thick = A 36, over 3/8" thick = A 572 Grade 50
Web Plates, Splice Plates & Bearing Stiffeners = A 572 Grade 50
Intermediate Stiffeners = A 36
Bearing Pedestal Anchor Bolts = A 36 or A 307
All other steel = A 36 unless noted.

GENERAL NOTES

A maximum of two (2) transverse shop butt weld splices will be permitted to fabricate the web plate. Transverse web splices shall not be nearer than 1'-0" to a flange splice.

One (1) longitudinal shop butt weld web splice will be allowed at the haunched area of girder.

Location and details of butt weld shop splices shall be shown on shop detail drawings for approval by the Engineer.

For rocker setting data, see sheet #16.

DESIGN - LLR
TRACE - DETAIL - GNC
CHECK - THK

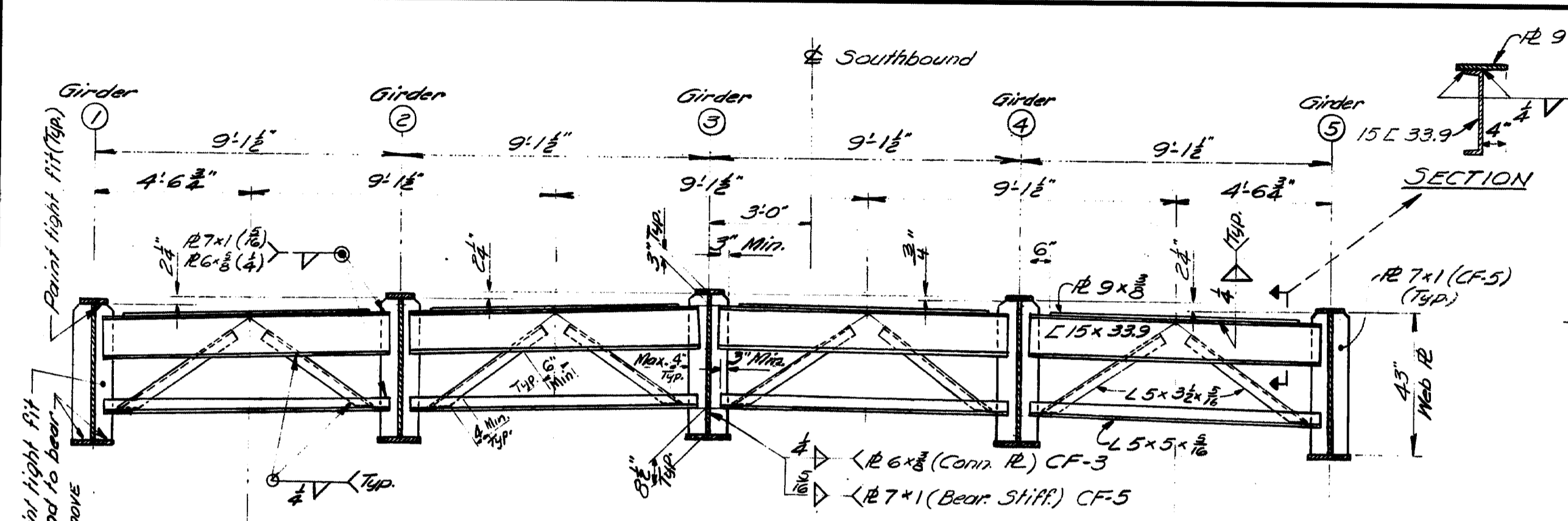
BRIDGE NO. SURVEY PLOT

STATE HIGHWAY COMMISSION
BRIDGE DIVISION
INTERSTATE 295
OVER
FORE RIVER
BETWEEN THE CITIES OF
PORTLAND & SOUTH PORTLAND
CUMBERLAND COUNTY
STRUCTURAL STEEL FRAMING PLAN

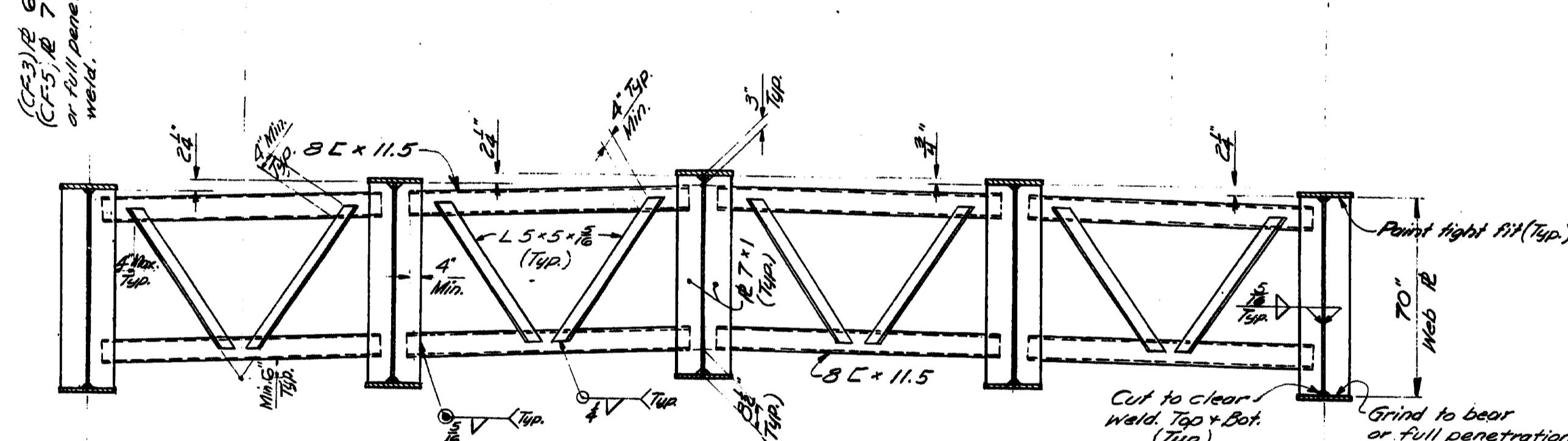
SHEET 14 OF 27 AUGUSTA, MAINE MARCH 1969

150-195

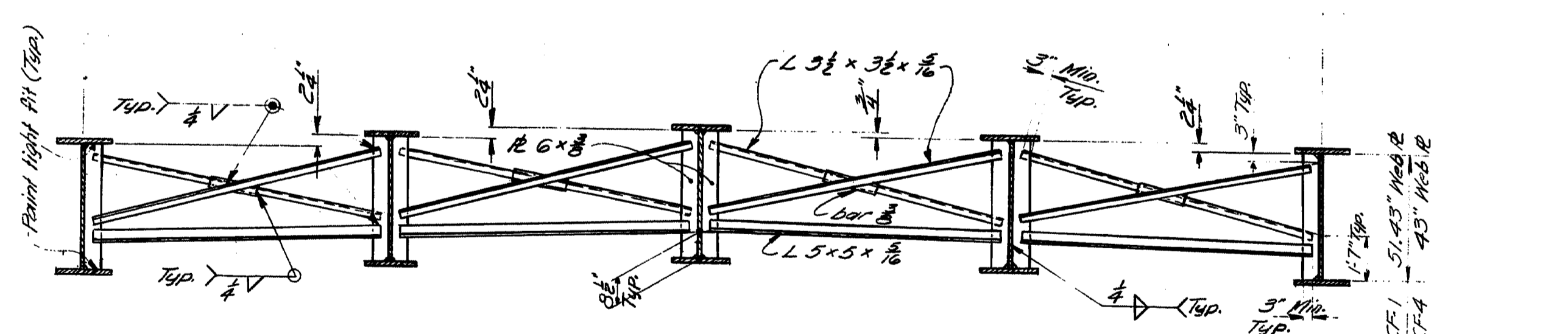
B. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	1295-3(10)	15	27



CF-3 & CF-5 CROSS FRAME



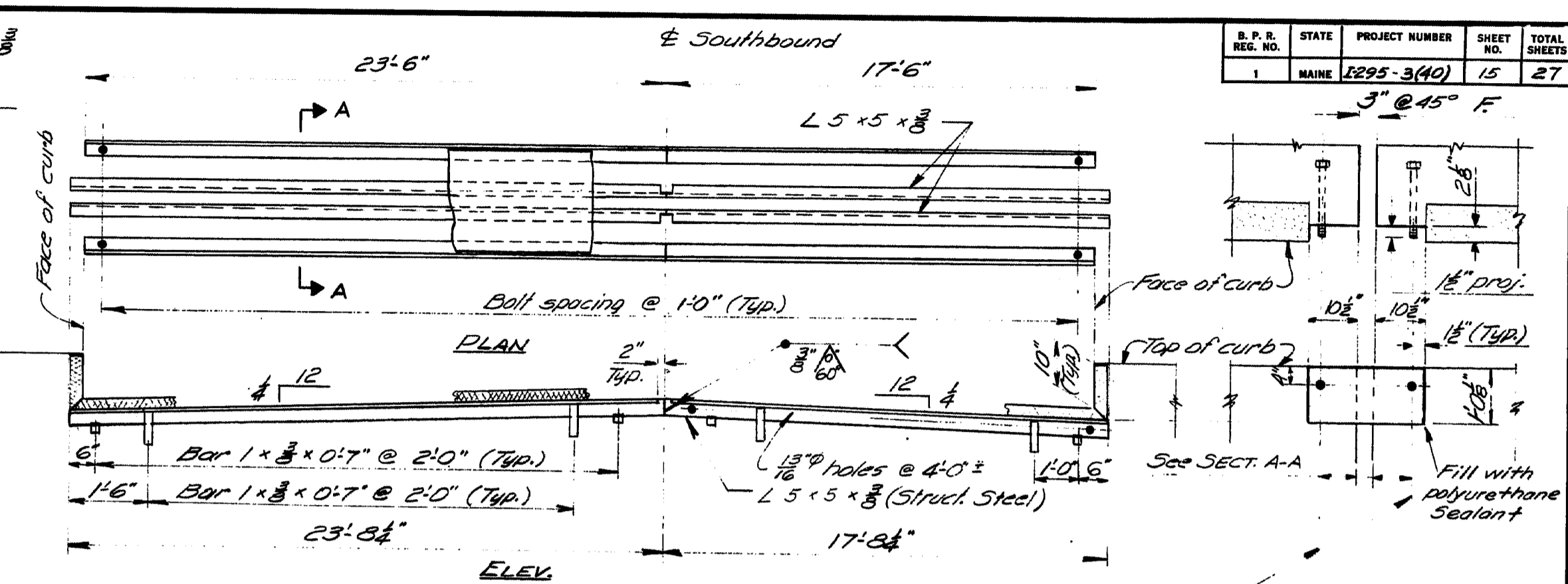
CF-2 CROSS FRAME
Pier - Bearing Stiffeners



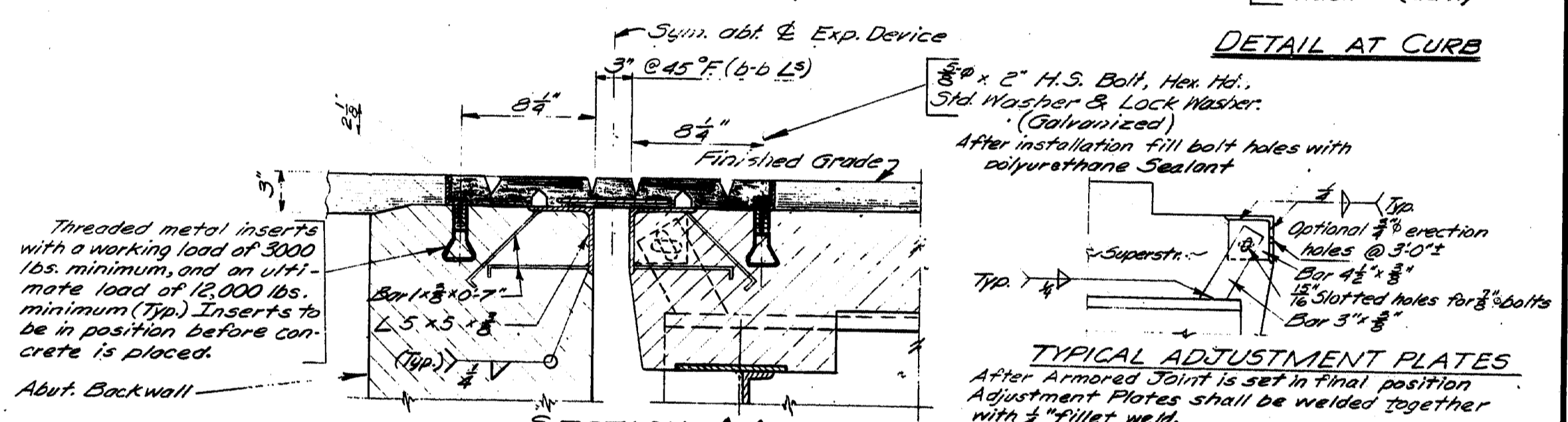
CF-1, CF-4 CROSS FRAME

CROSS FRAMES
Southbound - As shown
Northbound - Opp. hand

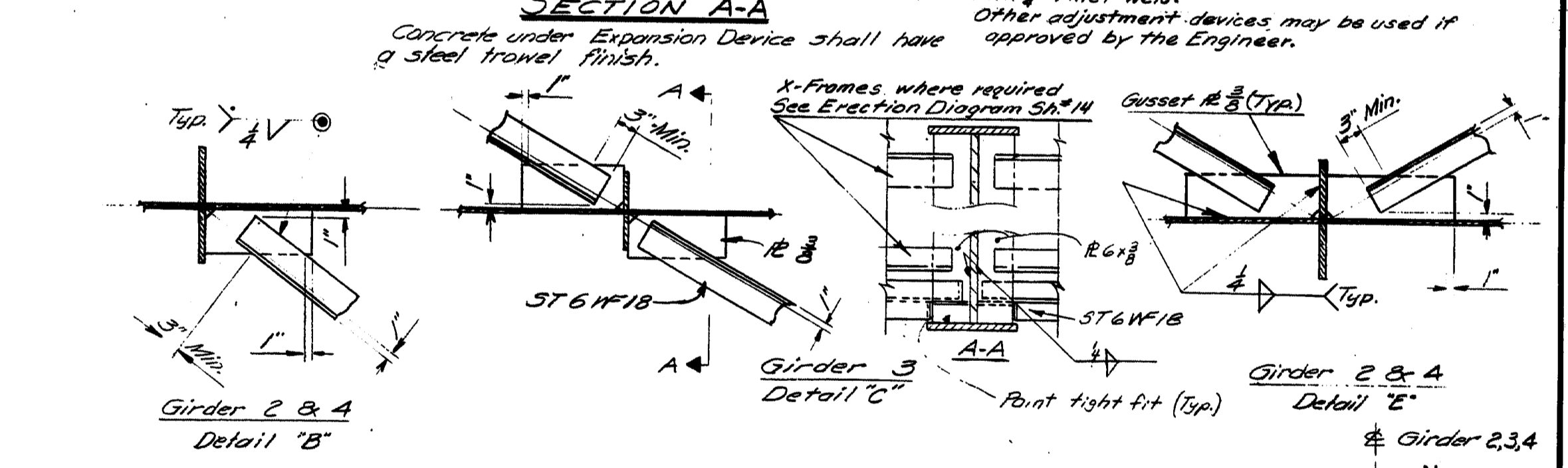
NOTE: For the convenience of the Contractor one 1/4" hole for an erection bolt will be permitted at each cross frame connection. Place cross frames on side of stiffener that permits outstanding leg of channel or angle to point down grade, wherever possible.



ELASTOMERIC EXPANSION DEVICE - TYPE II

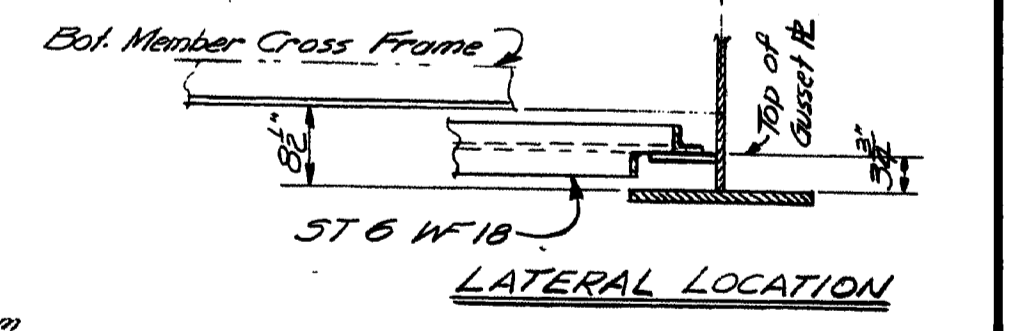


DETAIL AT CURB



LATERAL SYSTEM

Laterals ~ ST 6 WF 18
Gussets ~ R 6 Detail to provide 18" min. downhand fillet weld to laterals.
See sheet # 14 Erection Diagram

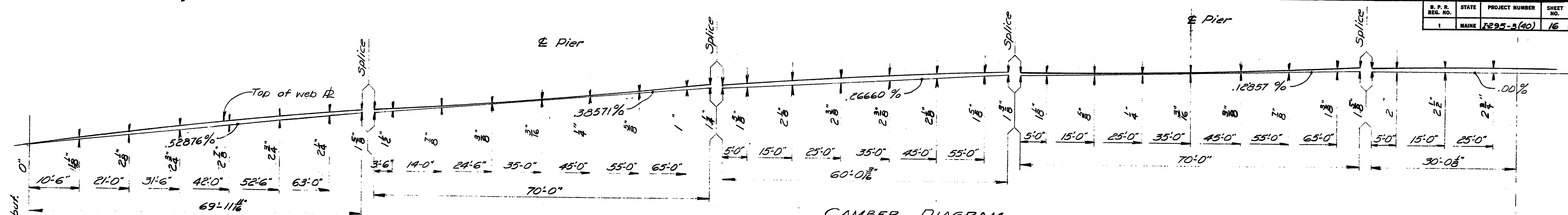


LATERAL LOCATION

DESIGN - LLR	BRIDGE NO.
TRACE - DETAIL - GNC	SURVEY PLOT -
CHECK - THK	

STATE HIGHWAY COMMISSION
BRIDGE DIVISION
INTERSTATE 295
OVER
FORE RIVER
BETWEEN THE CITIES OF
PORTLAND & SOUTH PORTLAND
CUMBERLAND COUNTY
STRUCTURAL STEEL CROSS FRAMES
SHEET 15 OF 27 AUGUSTA, MAINE MARCH 1969

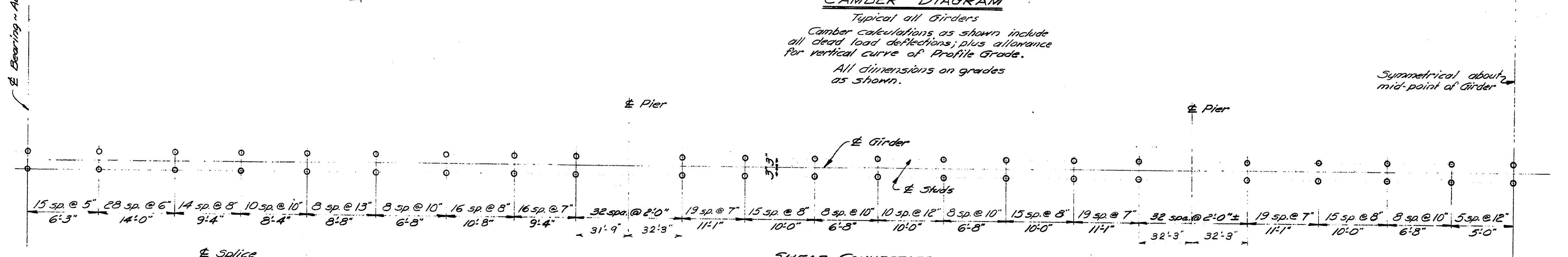
150-146



CAMBER DIAGRAM

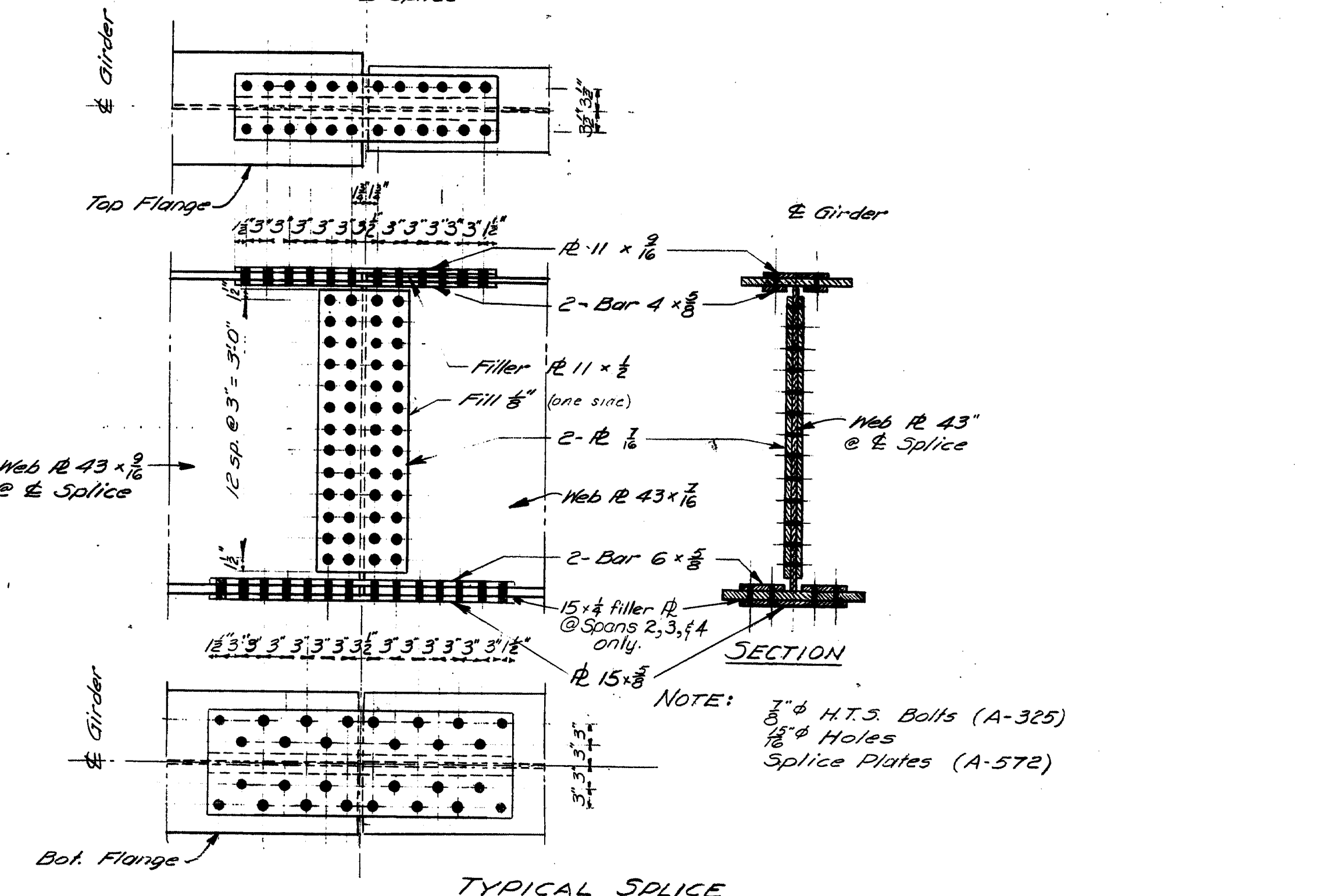
Typical all Girders
 Camber calculations as shown include all dead load deflections; plus allowance for vertical curve of Profile Grade.
 All dimensions on grades as shown.

Symmetrical about mid-point of girder



SHEAR CONNECTORS

Typical all Girders
 Stud spacing may be varied at splice to suit splice plate connection.
 See Standard Detail - BD 104-66

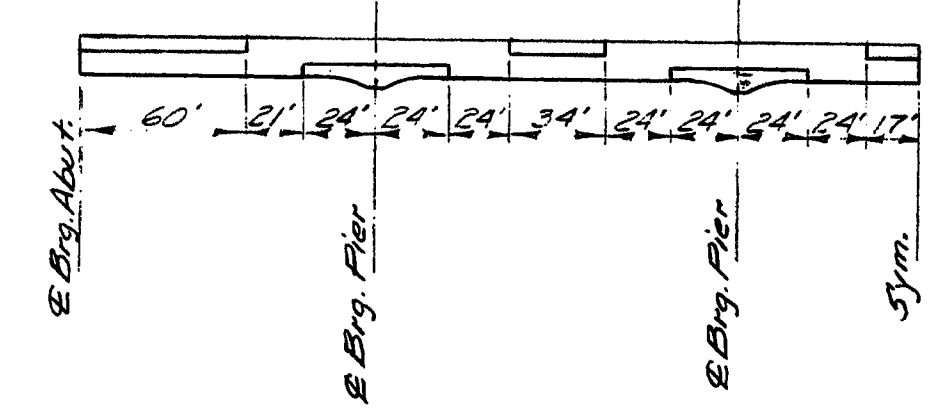


TYPICAL SPLICE

ROCKER SETTING DATA

(-) Sign indicates bearings tilt toward Piers 2&3.
 (+) Sign indicates bearings tilt away from Piers 2&3.

TEMP.	ABUT.#1	PIER #1	PIERS 2&3 (Fixed)	PIER #4	ABUT.#2
-15°	-1/8"	-5/8"	0"	-5/8"	-1 1/8"
0°	-1/8"	-5/8"	0"	-5/8"	-1 1/8"
15°	-1/8"	-5/8"	0"	-5/8"	-1 1/8"
30°	-1/8"	-5/8"	0"	-5/8"	-1 1/8"
45°	-1/8"	-5/8"	0"	-5/8"	-1 1/8"
60°	+1/8"	-5/8"	0"	+5/8"	-1 1/8"
75°	+1/8"	-5/8"	0"	+5/8"	-1 1/8"
90°	+1/8"	-5/8"	0"	+5/8"	-1 1/8"
105°	+1/8"	-5/8"	0"	+5/8"	-1 1/8"



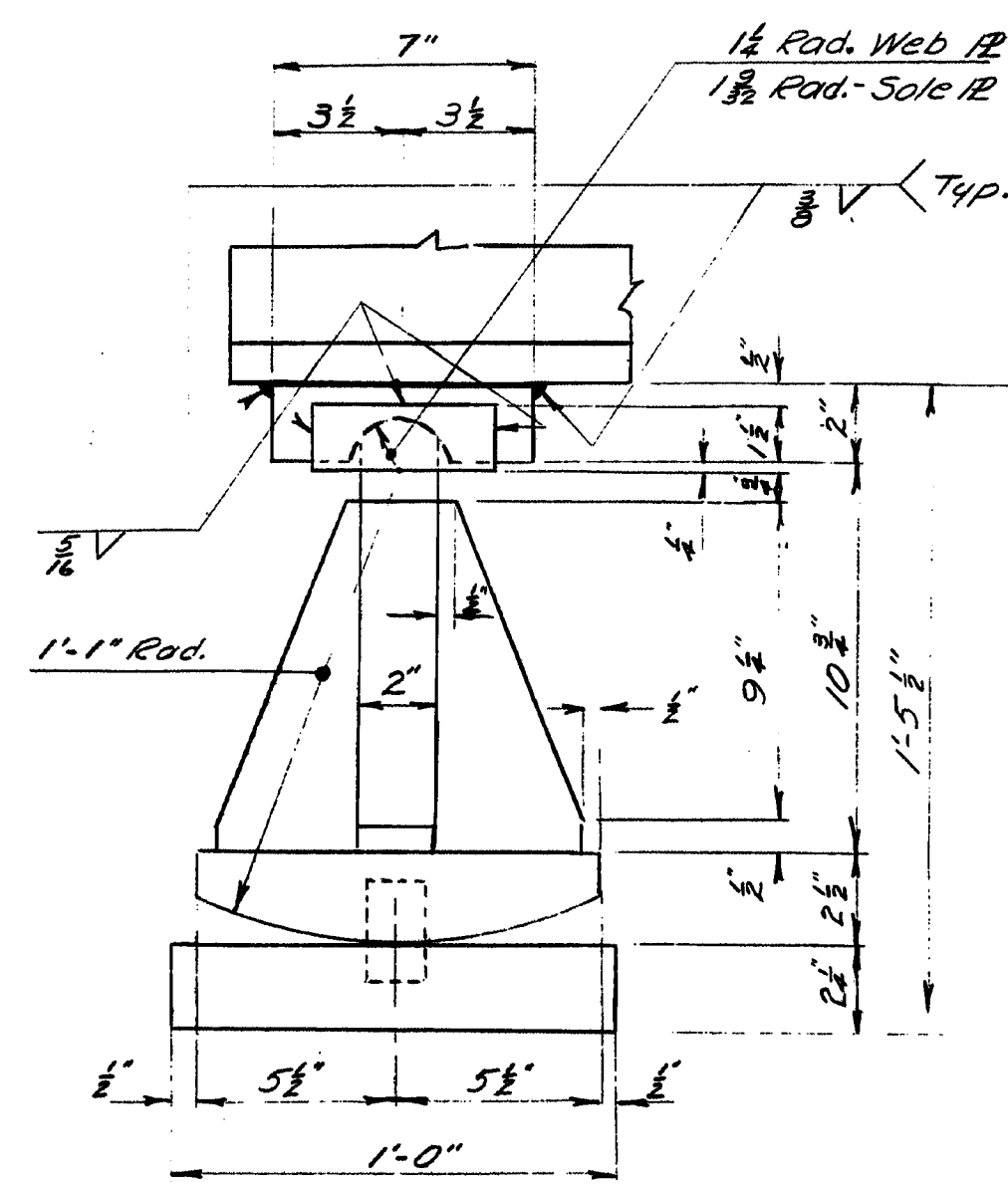
BEAM STRESS TYPE DIAGRAM

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

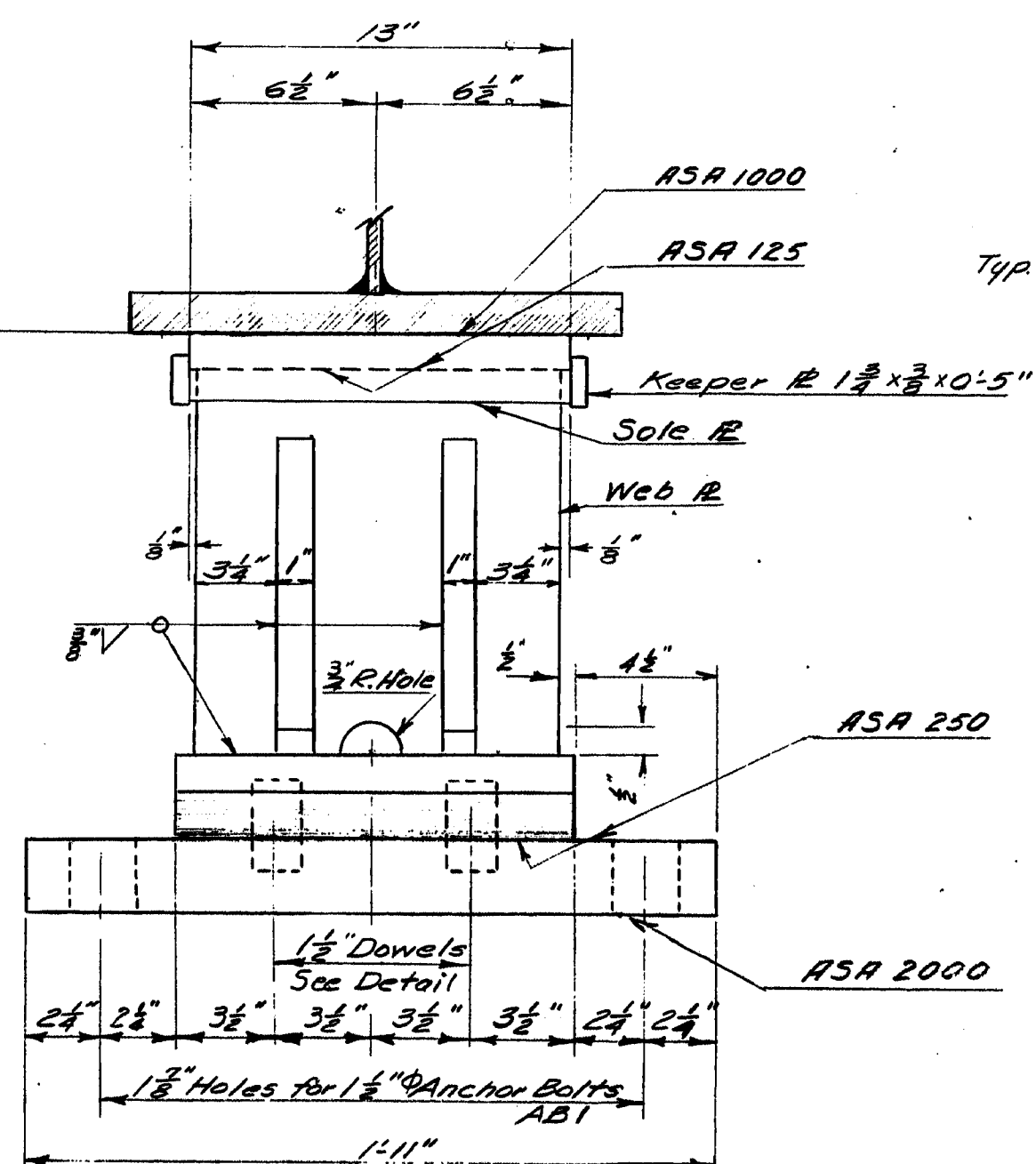
DESIGN - L.L.C.	BRIDGE NO.
TRACE - G.W.C.	SURVEY -
CHECK - G.H.R.	PLAT -

STATE HIGHWAY COMMISSION
 BRIDGE DIVISION
INTERSTATE 295
 OVER
FORE RIVER
 BETWEEN THE CITIES OF
PORTLAND & SOUTH PORTLAND
CUMBERLAND COUNTY
 STRUCTURAL STEEL DETAILS
 SHEET 16 OF 27 AUGUSTA, MAINE MARCH 1969

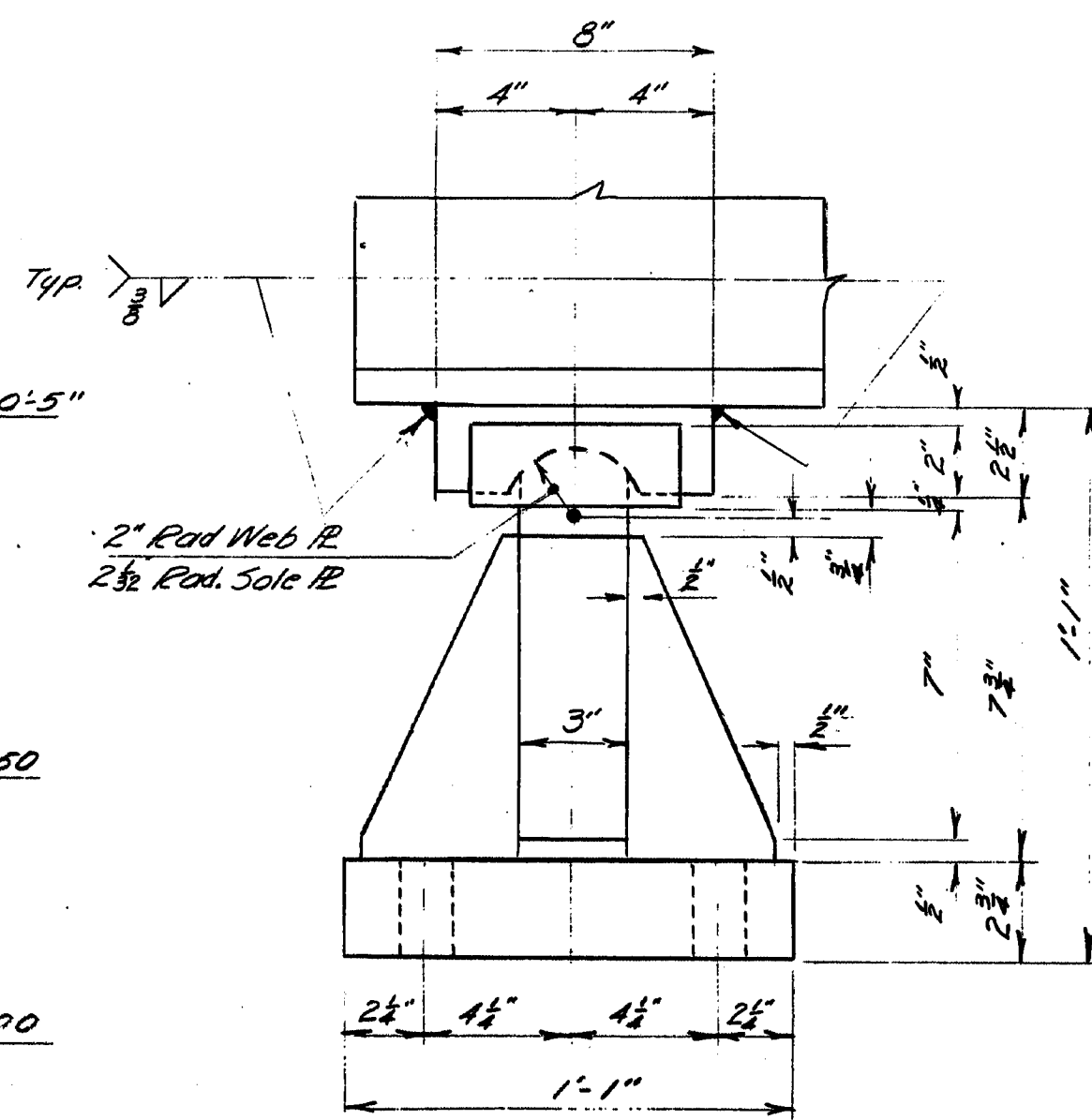
150-147



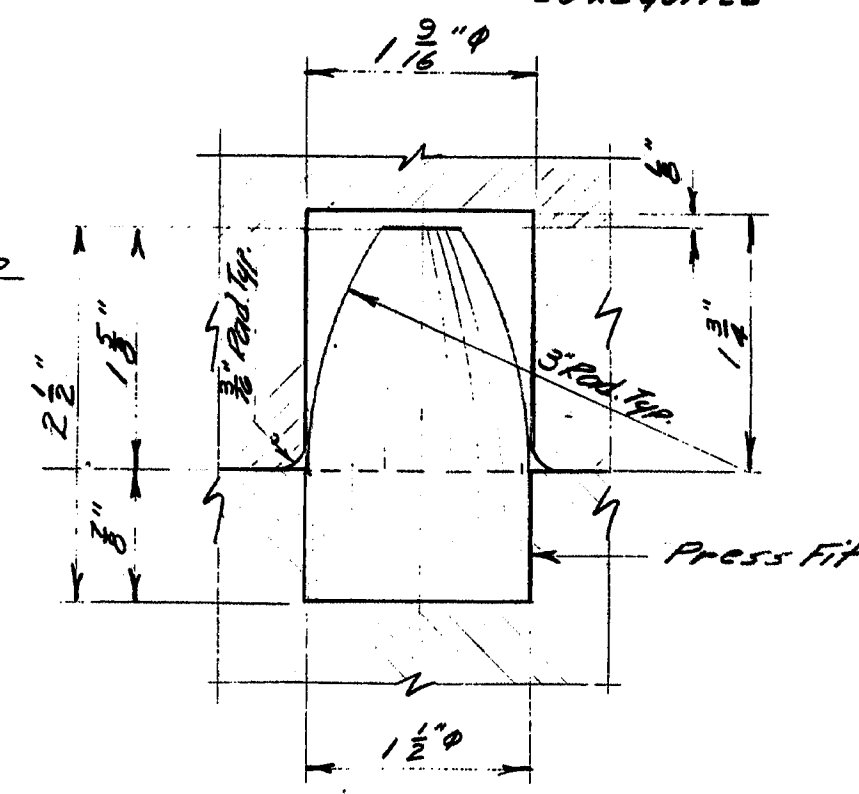
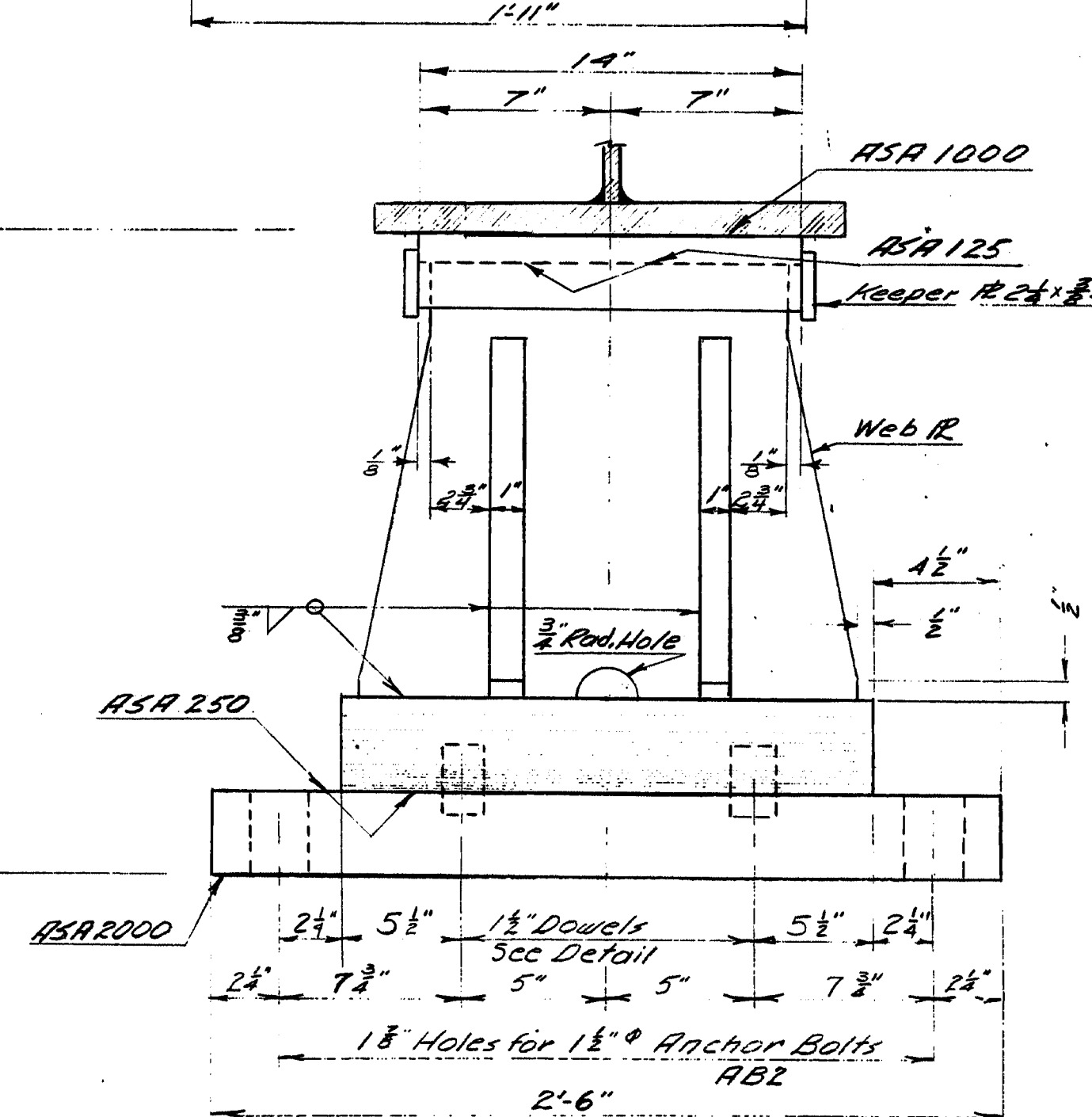
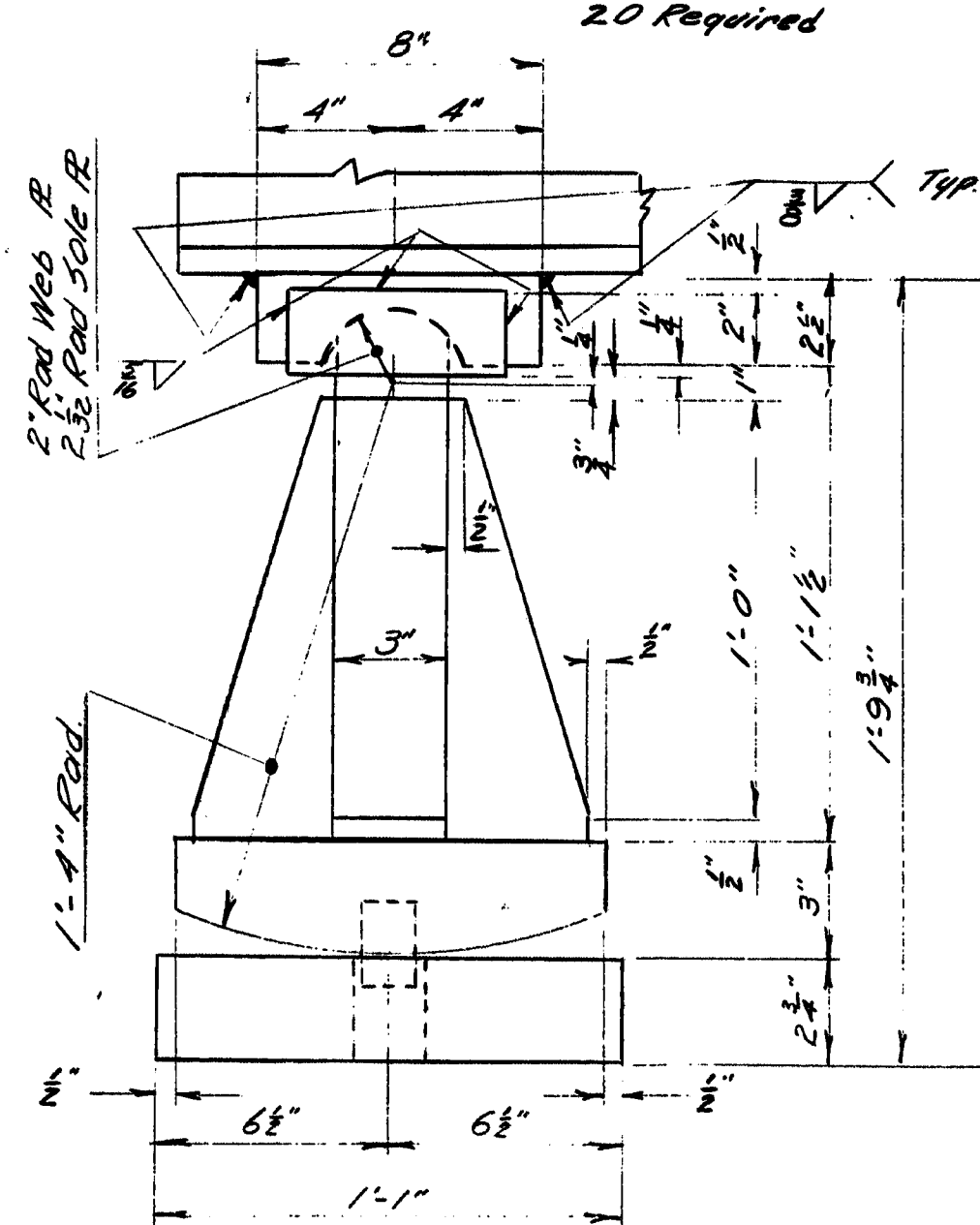
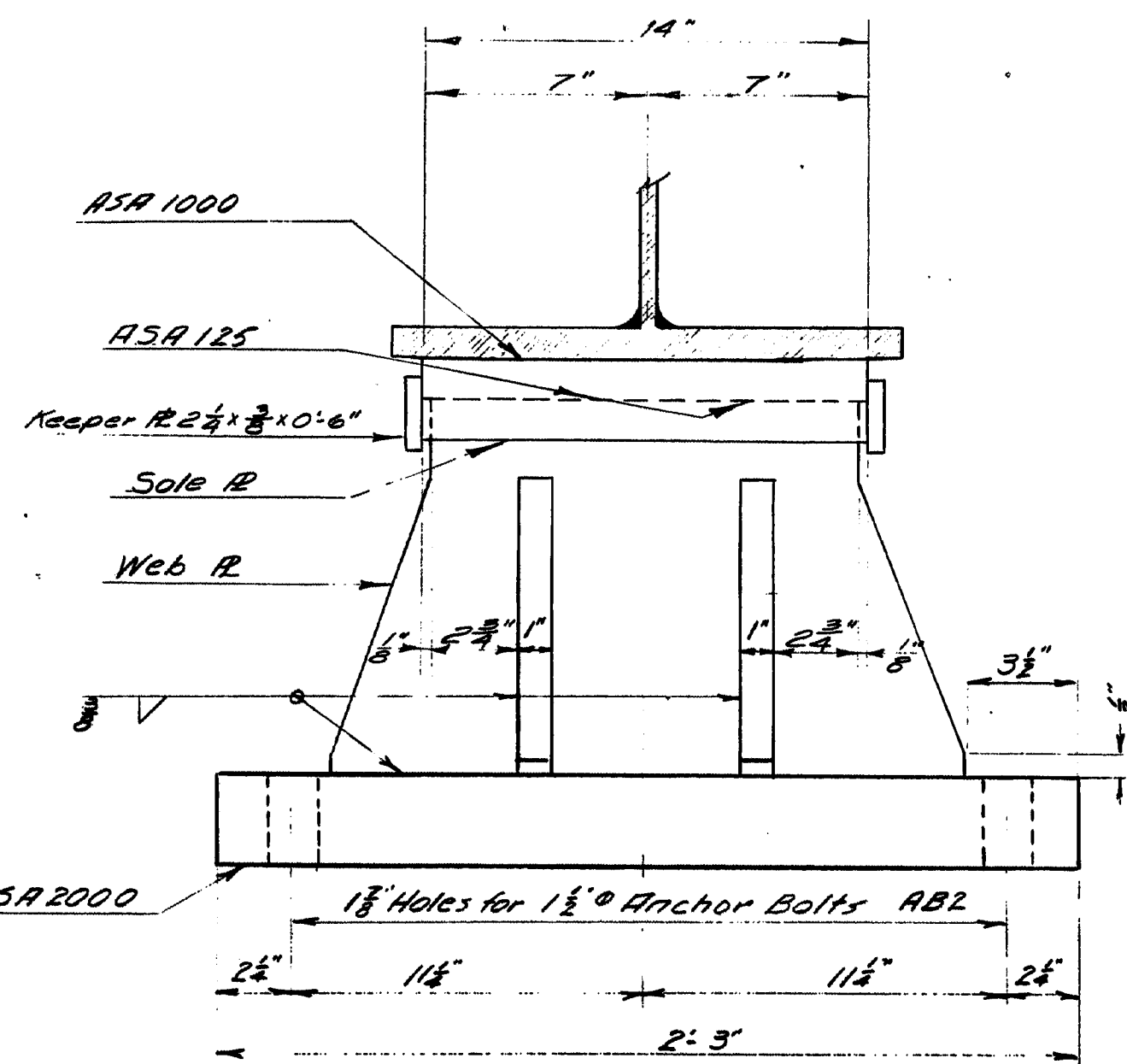
EPC-1A ABUTMENTS
20 Required



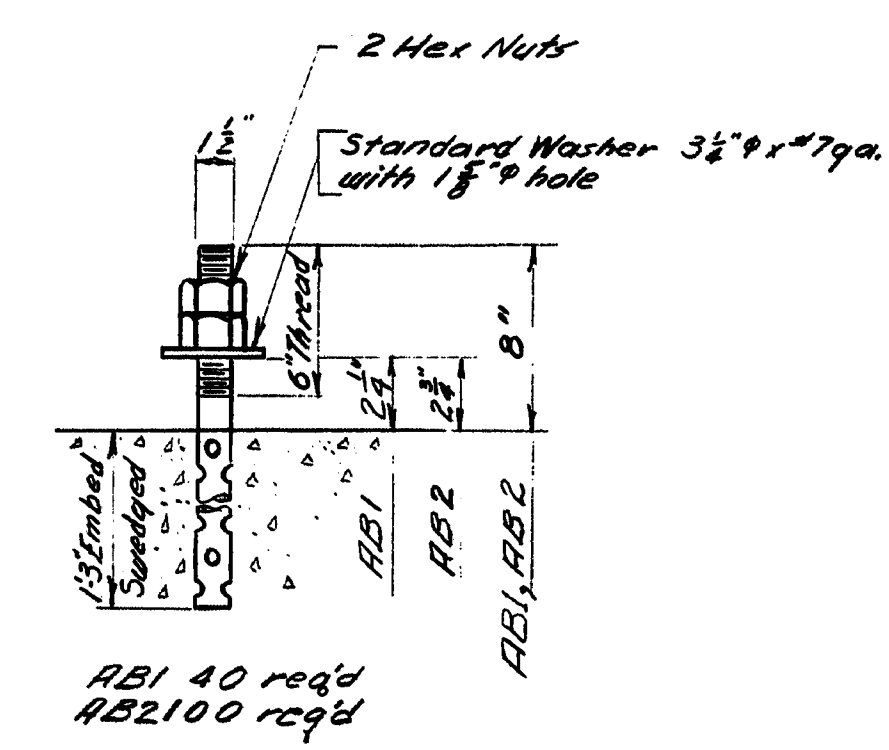
EPC-2A PIERS 1 & 4
20 Required



FPC-1A PIERS 2 & 3
20 Required



PINTLE



ANCHOR BOLTS

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 plans. If the 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. Channel shall have a min. width of 2" and min. slope of 1" per foot. No separate payment for this work will be made as it shall be considered incidental to concrete items.
For rocker setting data, see Table, sheet #16
Anchor Bolts - A36, or A307.
All others - A36.

DESIGN - L.L.B.	BRIDGE NO. -
TRACE - D.E. HNF	SURVEY -
CHECK - T.H.K.	PLOT -
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY BEARING PEDESTALS	
SHEET 17 OF 27 AUGUSTA, MAINE MARCH 1969	

150-148

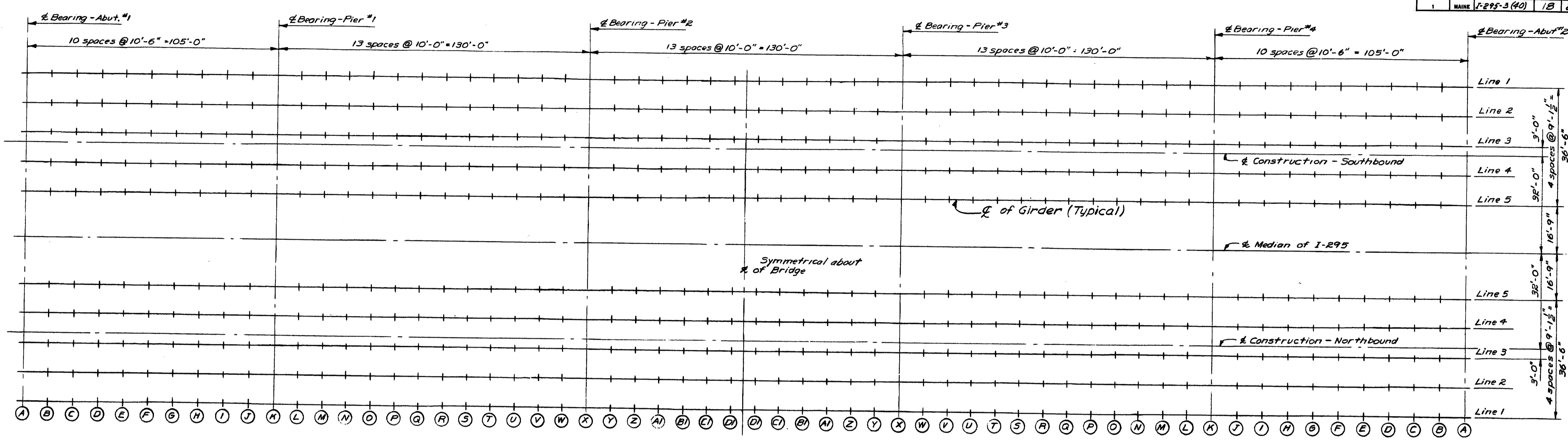
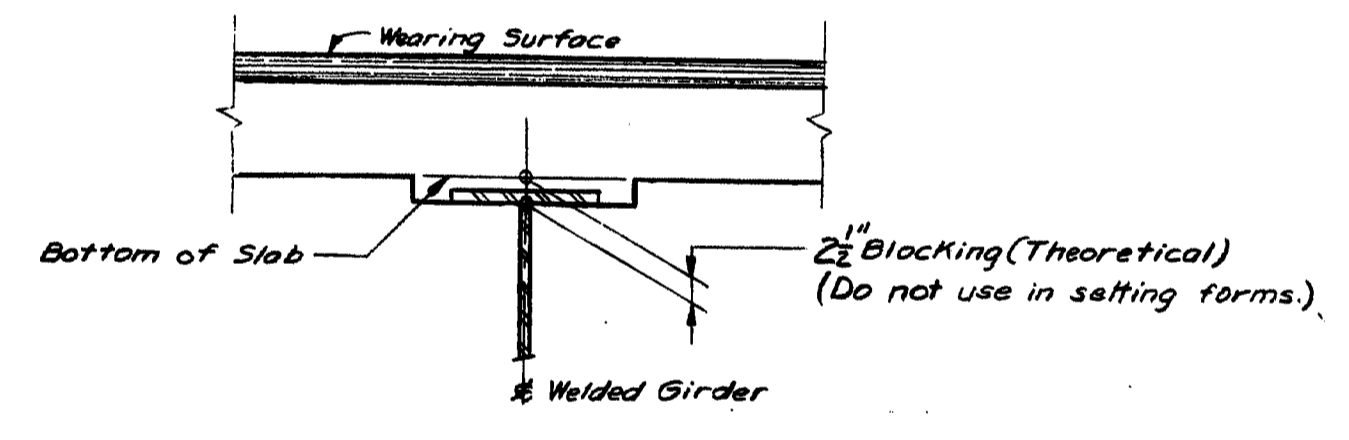


DIAGRAM OF BLOCKING POINTS



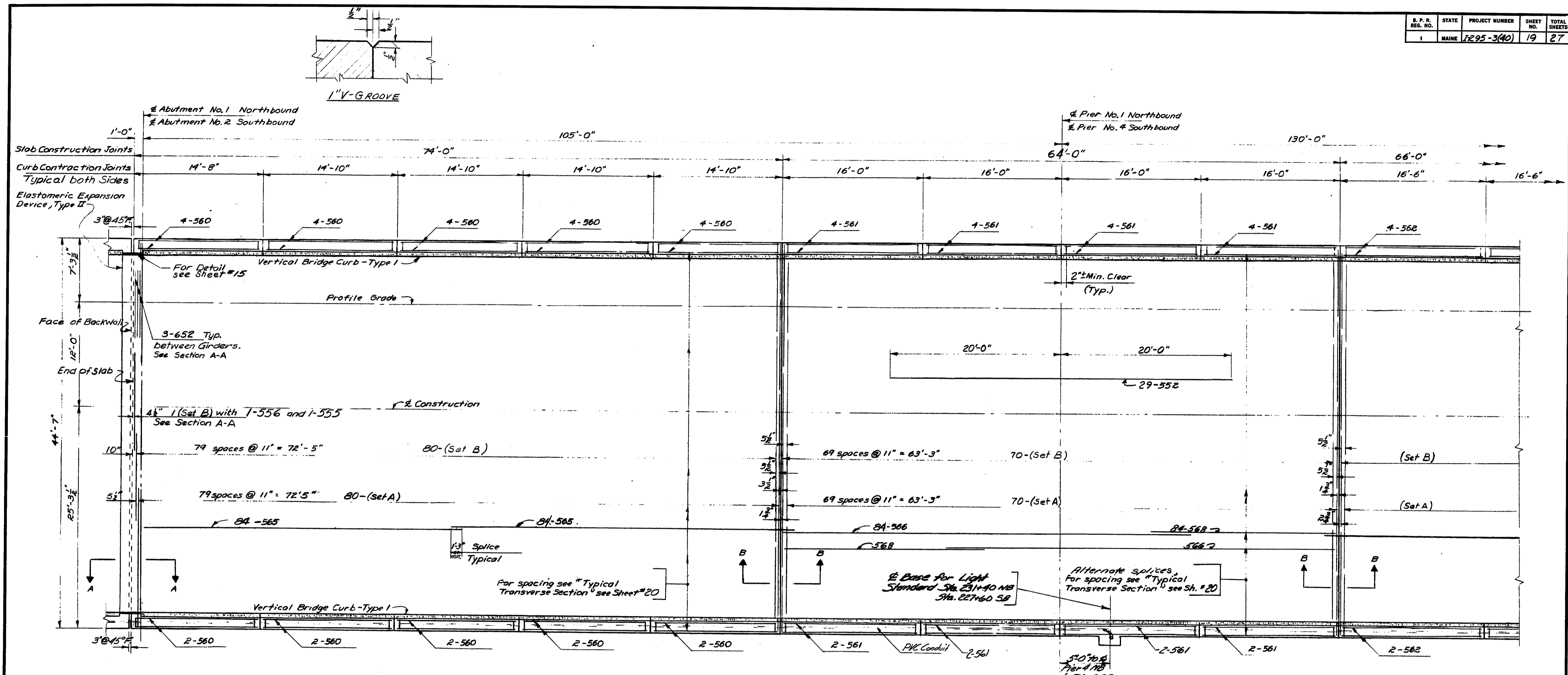
POINTS	BOTTOM OF SLAB ELEVATIONS AT BLOCKING POINTS - ABUT #1 TO LINE OF SYMMETRY															
	Abut #1 +10'-6"	+21'-0"	+31'-6"	+42'-0"	+52'-6"	+63'-0"	+73'-6"	+84'-0"	+94'-6"	Line of Symmetry	+10'-0"	+20'-0"	+30'-0"	+40'-0"	+50'-0"	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Line 1	24.42	24.56	24.68	24.78	24.85	24.89	24.91	24.91	24.91	24.92	24.94	24.99	25.04	25.11	25.18	25.25
Line 2	24.61	24.75	24.87	24.97	25.04	25.08	25.10	25.10	25.11	25.13	25.18	25.23	25.30	25.37	25.44	
Line 3	24.80	24.94	25.06	25.16	25.23	25.27	25.29	25.29	25.29	25.30	25.32	25.37	25.42	25.49	25.56	25.63
Line 4	24.74	24.88	25.00	25.10	25.17	25.21	25.22	25.22	25.23	25.23	25.26	25.30	25.36	25.43	25.50	25.56
Line 5	24.55	24.69	24.81	24.91	24.98	25.02	25.03	25.03	25.03	25.04	25.07	25.11	25.17	25.24	25.31	25.37

POINTS	BOTTOM OF SLAB ELEVATIONS AT BLOCKING POINTS - ABUT #1 TO LINE OF SYMMETRY (CONT'D)													
	+60'-0"	+70'-0"	+80'-0"	+90'-0"	+100'-0"	+110'-0"	+120'-0"	Line of Symmetry	+10'-0"	+20'-0"	+30'-0"	+40'-0"	+50'-0"	+60'-0"
	Q	R	S	T	U	V	W	X	Y	Z	A1	B1	C1	D1
Line 1	25.30	25.33	25.33	25.32	25.30	25.28	25.28	25.28	25.31	25.35	25.40	25.45	25.49	25.51
Line 2	25.49	25.52	25.52	25.51	25.49	25.47	25.47	25.47	25.50	25.54	25.59	25.64	25.68	25.70
Line 3	25.68	25.71	25.71	25.70	25.68	25.66	25.66	25.66	25.69	25.73	25.78	25.83	25.87	25.89
Line 4	25.61	25.64	25.65	25.64	25.62	25.60	25.59	25.60	25.62	25.66	25.71	25.76	25.80	25.82
Line 5	25.42	25.45	25.46	25.45	25.43	25.41	25.40	25.41	25.43	25.47	25.52	25.57	25.61	25.63

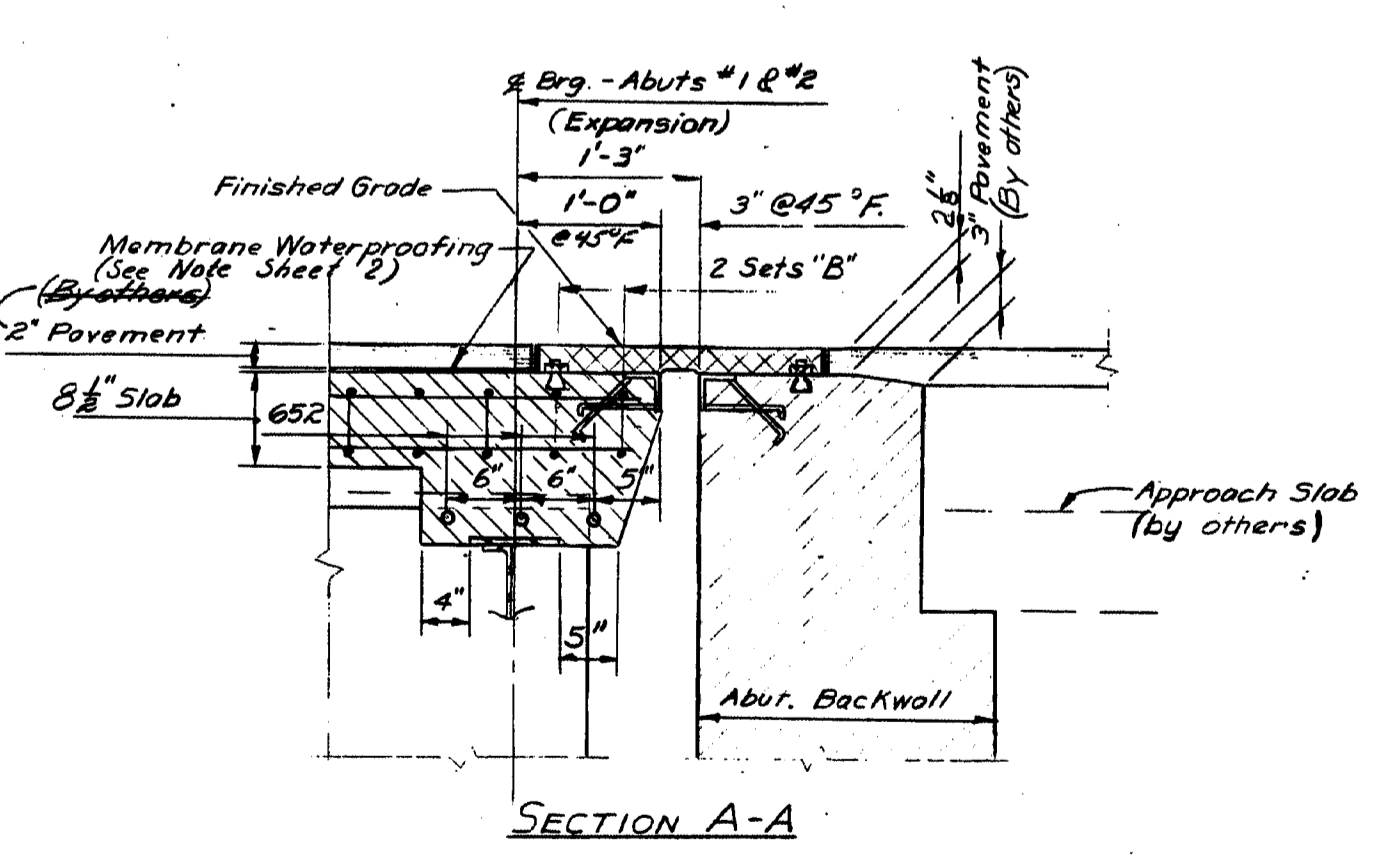
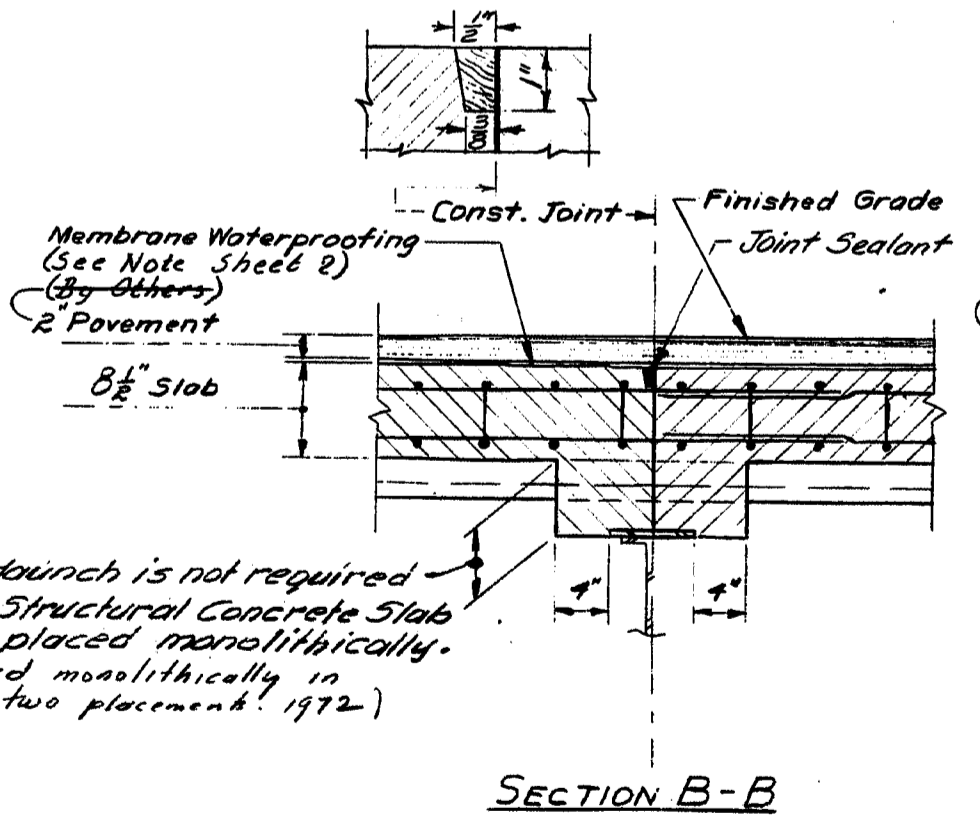
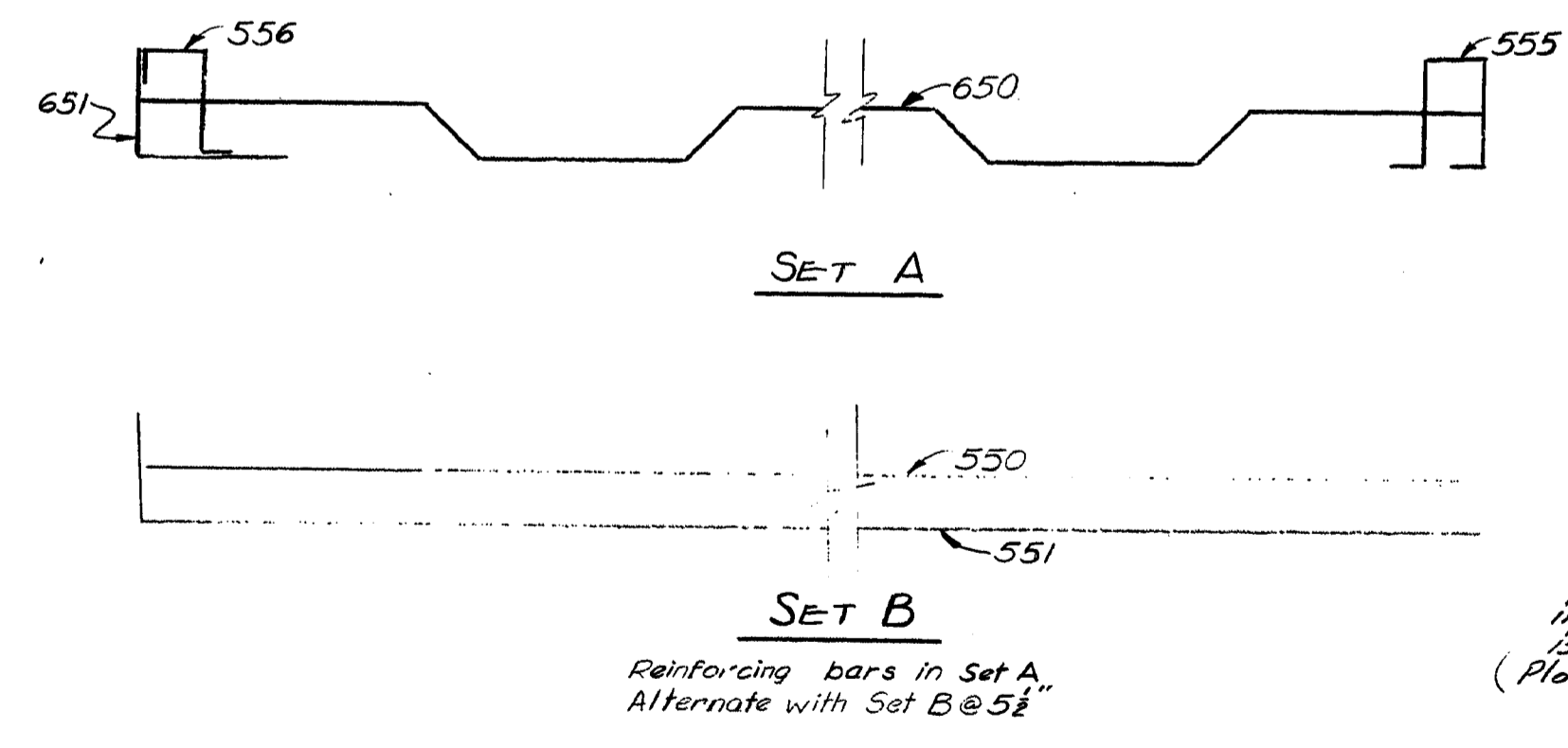
DESIGN - L.L.R.	BRIDGE NO.
TRACE + DET. - C.M.R.	SURVEY -
CHECK - T.H.R.	PLOT -
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY BOTTOM OF SLAB ELEVATIONS SHEET 18 OF 27 AUGUSTA, MAINE MARCH 1969	

150-149

B. P. R. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	1295-3(40)	19	27



SUPERSTRUCTURE SLAB PLAN
N.B. is shown, rotate 180° for S.B.

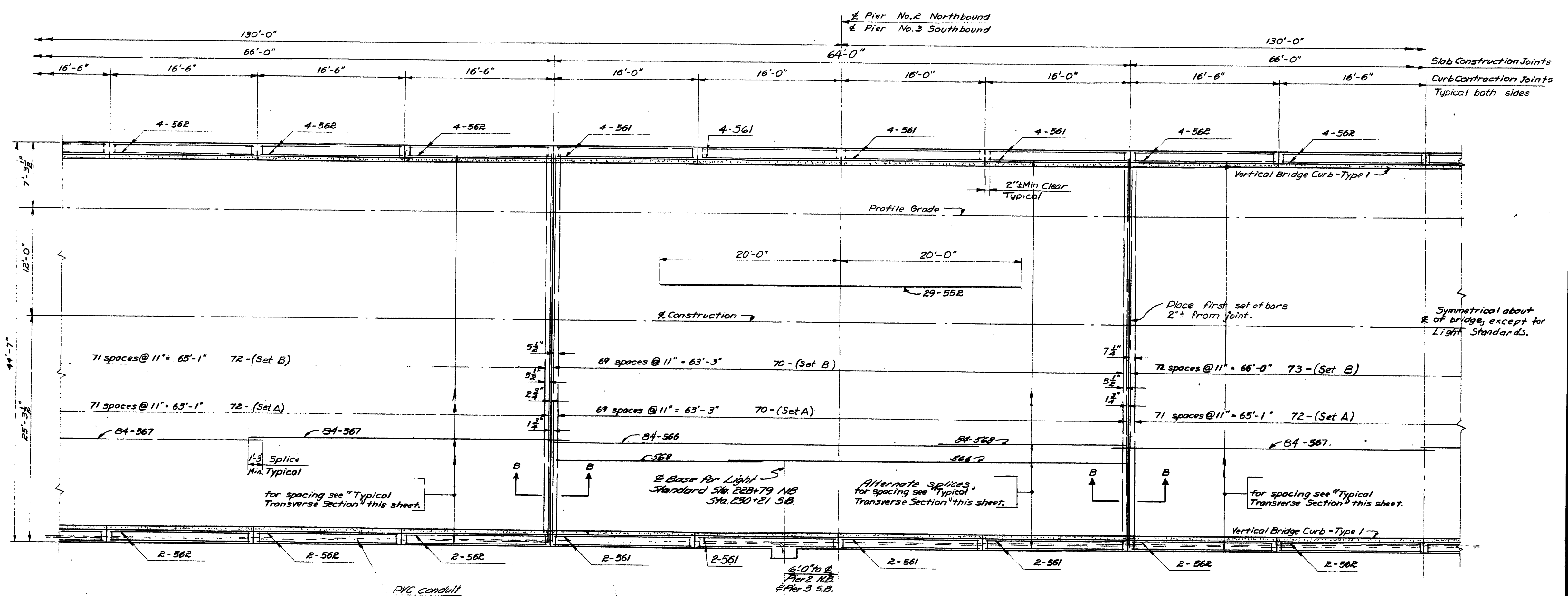


For Bridge Rail spacing see Sheet 21
 For Drain spacing see Sheet 21
 For Drain details see Standard Detail BD104-66
 For Lighting System see sh. #22

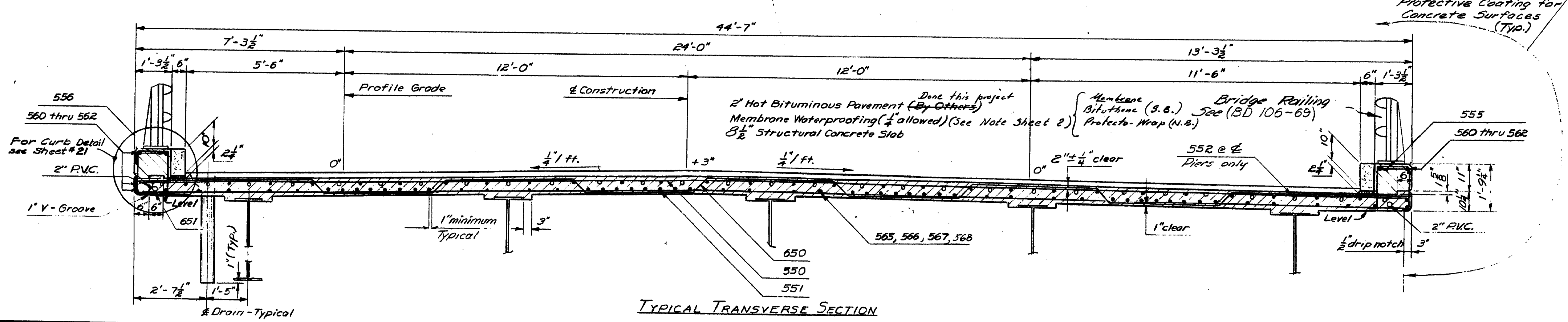
DESIGN - L.L.B.	BRIDGE NO.
TRACE - D.L.L.	SURVEY -
CHECK - T.H.V.	PLOT -
STATE HIGHWAY COMMISSION	
BRIDGE DIVISION	
INTERSTATE 295	
OVER	
FORE RIVER	
BETWEEN THE CITIES OF	
PORTLAND & SOUTH PORTLAND	
CUMBERLAND COUNTY	
SUPERSTRUCTURE SLAB-1	
SHEET 19 OF 27 AUGUSTA, MAINE MARCH 1969	

150-150

R.P.R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	F295-3(40)	20	27



SUPERSTRUCTURE SLAB PLAN
 NB. is as shown, rotate 180° for SB.



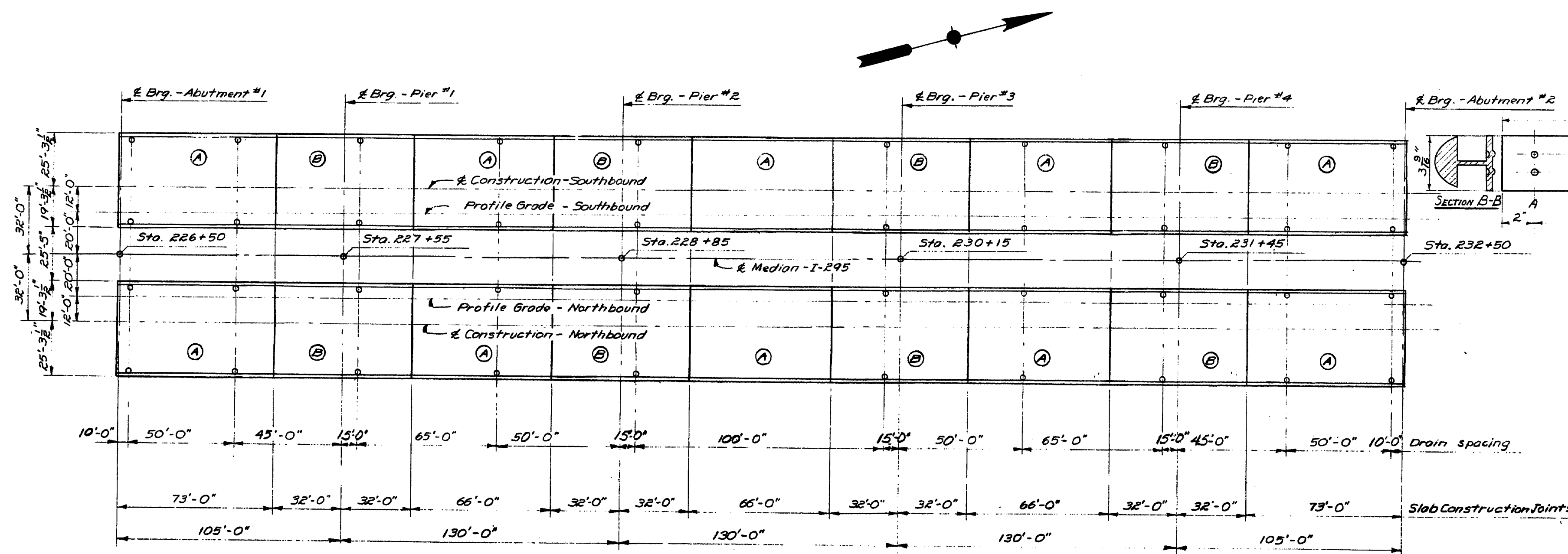
TYPICAL TRANSVERSE SECTION

NOTE: For Section B-B see sheet # 19
 For Detail Set 'A' and Set 'B' see Sheet # 19
 For Lighting System see Sh. # 22

DESIGN - LLR	BRIDGE NO. SURVEY -
TRACE + DET. - CMR	PLOT -
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY SUPERSTRUCTURE SLAB-2	
SHEET 20 OF 27 AUGUSTA, MAINE MARCH 1969	

150-151

S. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	FE85-3(40)	21	27



DETAIL A
Splice similar to Standard Splice Detail except as noted.

SUPERSTRUCTURE NOTES

Set-retarding Admixture may be used as authorized by the Engineer and measured for payment as provided in the Standard Specifications. Measurement of the number of cubic yards of concrete for payment of Set-retarding Admixture shall be determined from the theoretical yield of the design mix, or in the case of ready-mix concrete, by delivery slips in accordance with the applicable paragraph (e) of subsection 502.19 of the Standard Specifications.

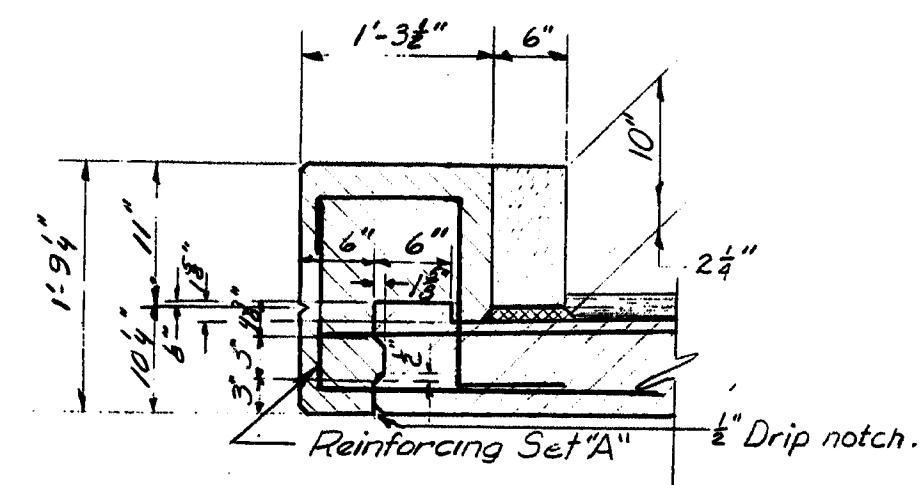
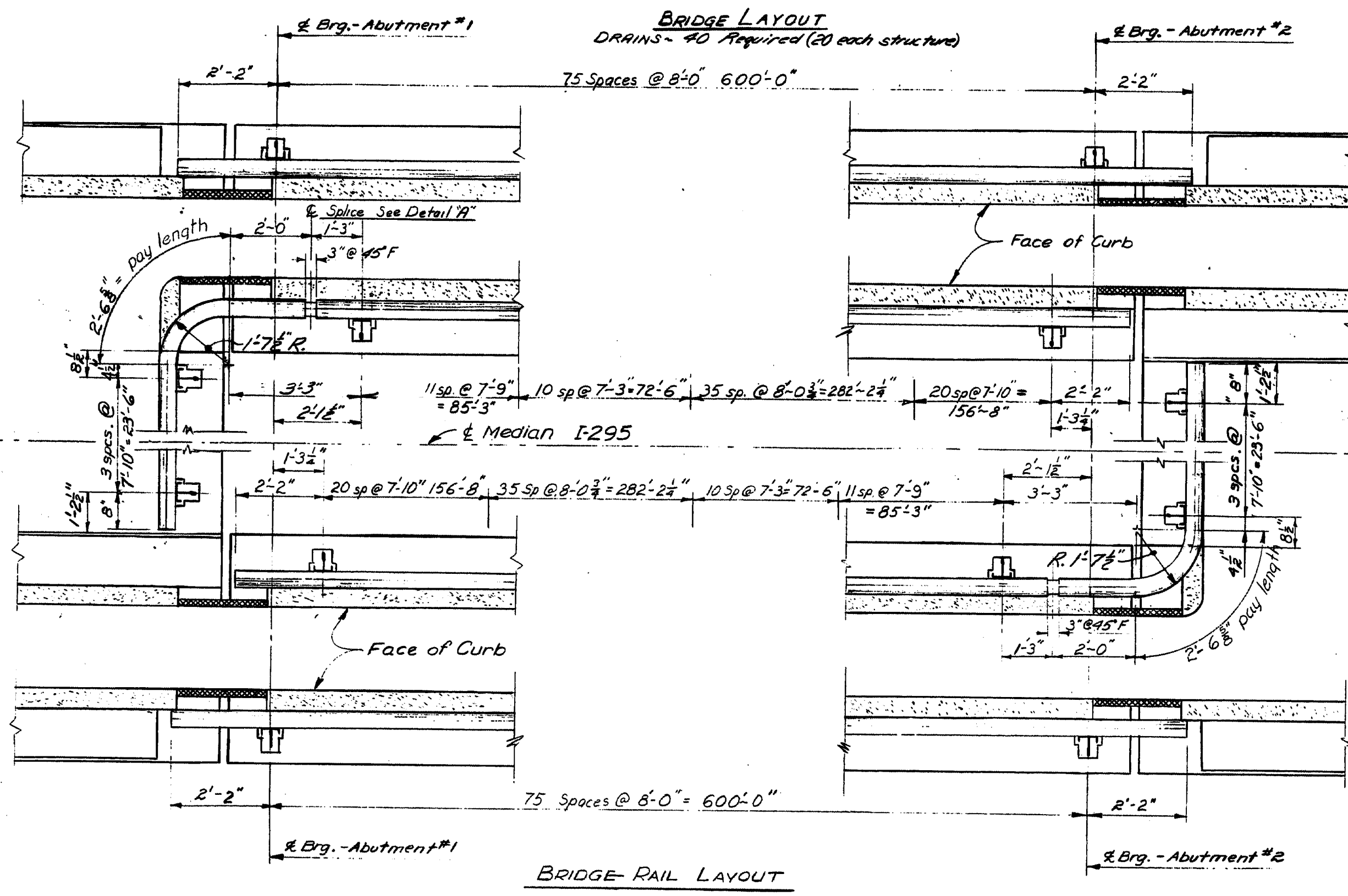
Reinforcing Steel to have a minimum concrete cover of 2" except as shown.

For Blocking Details - See sheet #18
For Drain details - See standard sheet BD 104-66
For Elastomeric Expansion Device, Type II details - See Sheet #15
Bridge Rails Details - See Stand. Sheets BD 106-69

Concrete Placement - May be either continuous or panel placement. If panel placement, place panels marked (A) before placing those marked (B) in each bridge. 2 days shall elapse between placements of successive panels (A).

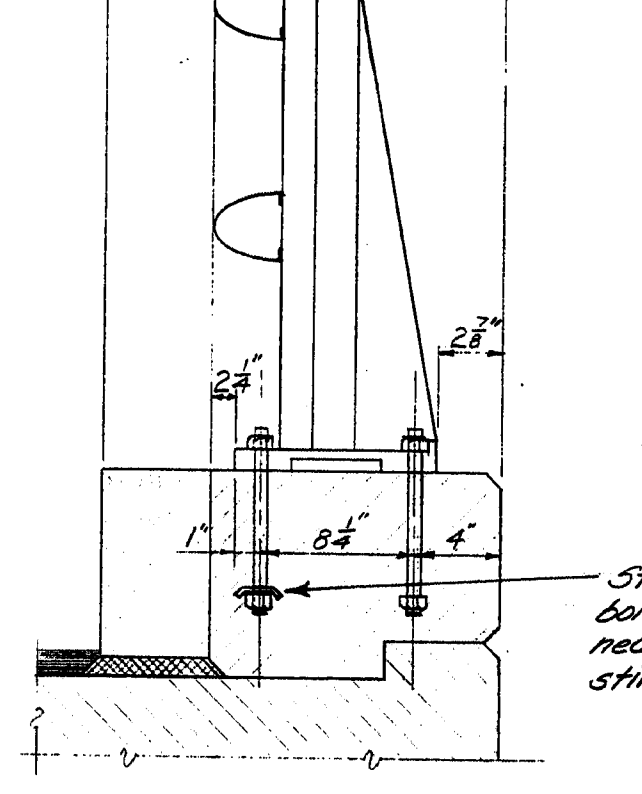
Provide a 1" plastic tube drain extending through slab to 2" below bottom of slab at low points of the slab adjacent to Expansion Joints of Abutments. Place in order for drip to clear bridge seats. Do not cover tube drains with membrane waterproofing. Payment to be incidental to Item 50R.26, Structural Concrete, Roadway and Sidewalk Slabs on Steel Bridges.

At all curb contraction joints break the band by coating contact areas with an approved clear form oil. Provide joints in Vertical Bridge Curb, Type 1 at each contraction joint in curb concrete.



CURB DETAIL

For removable curb only @ median, N.D. & S.D. Structures

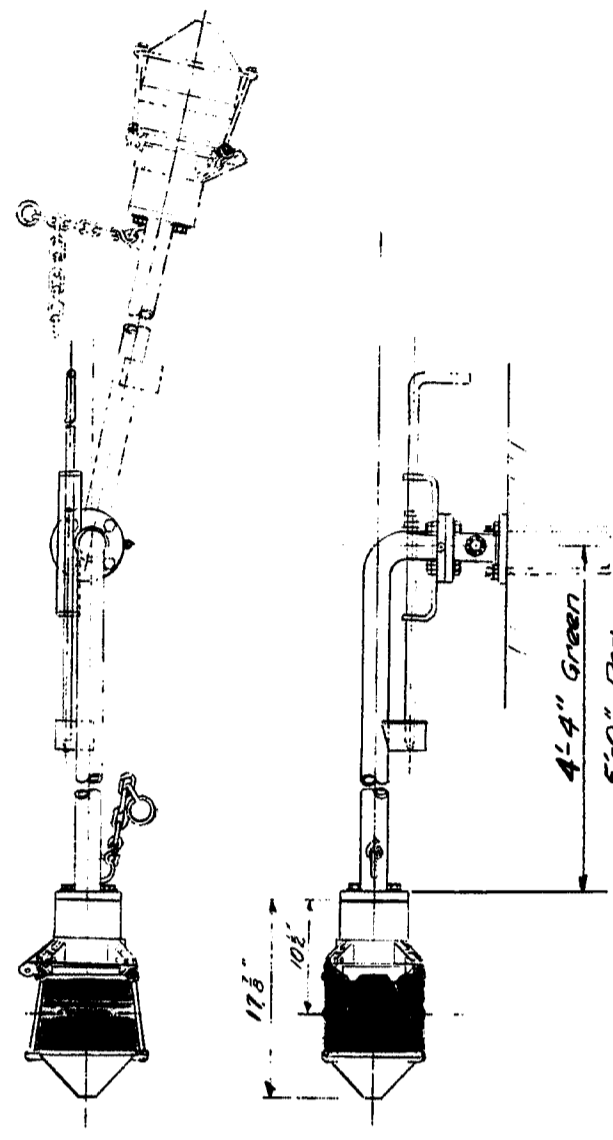


Steel spaces for Railing Anchor bolts shall be notched when necessary to fit reinforcing stirrups

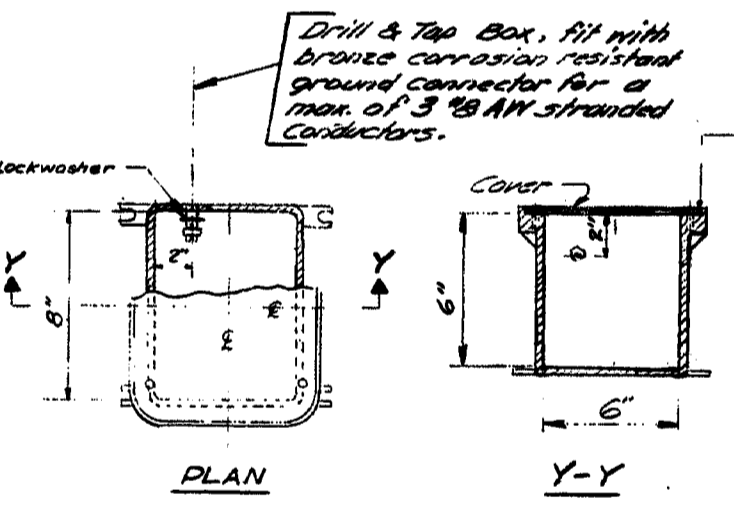
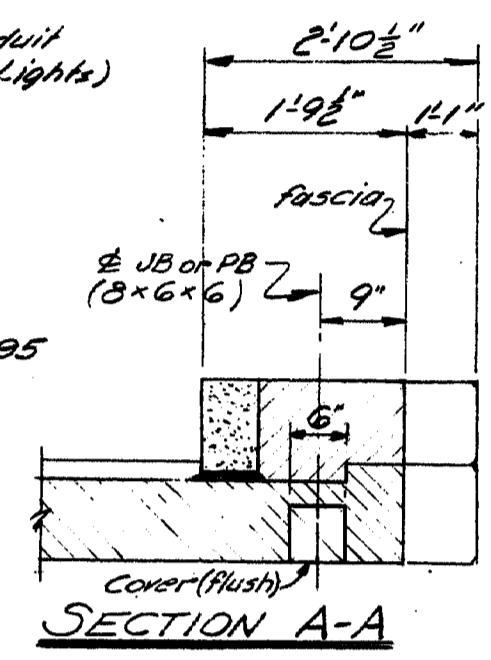
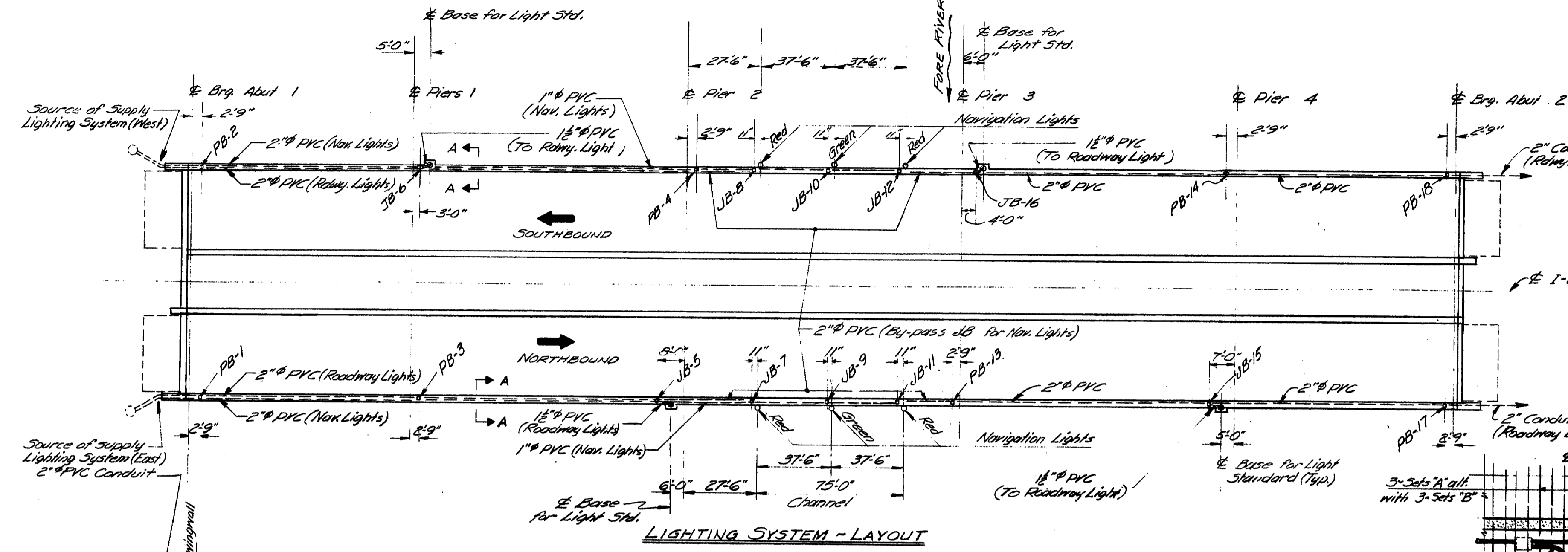
DESIGN - IIR	BRIDGE NO.
TRACE - DET	SURVEY -
CHECK - THE	PLOT -
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY SUPERSTRUCTURE SLAB-3	
SHEET 21 OF 27 AUGUSTA, MAINE MARCH 1969	

150-152

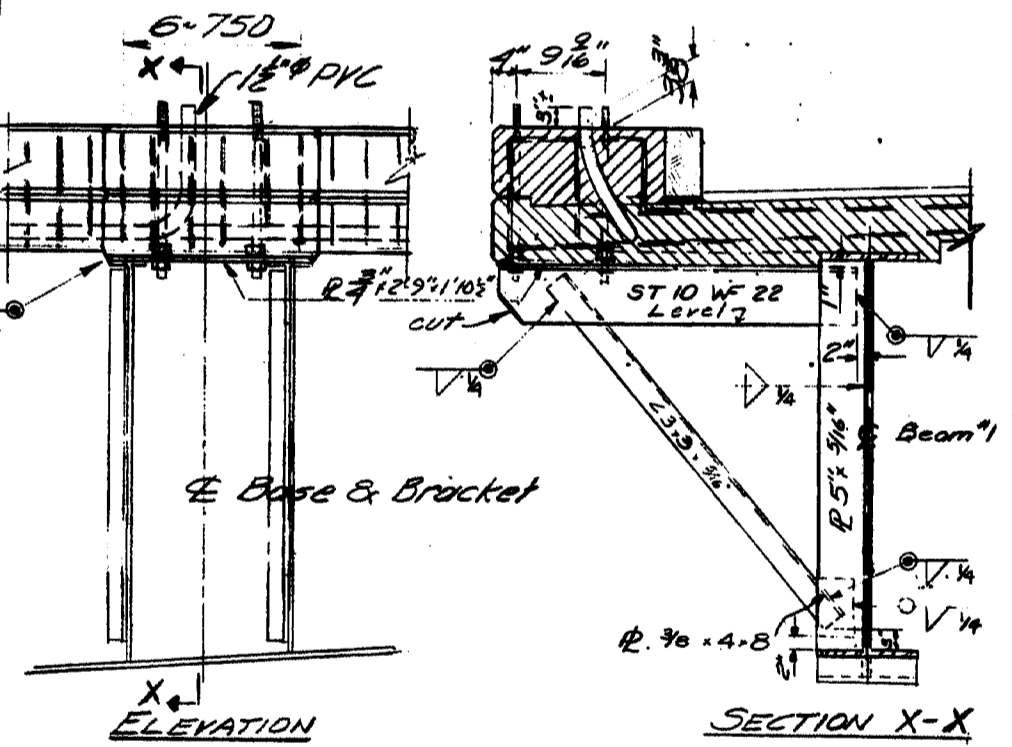
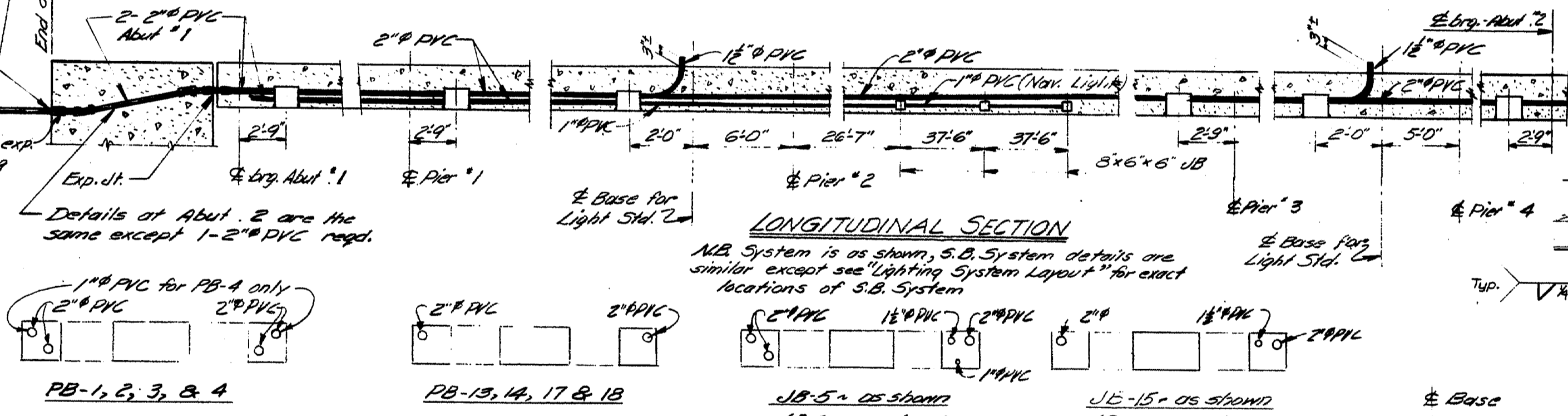
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
MAINE	I 295-3(40)	22	27



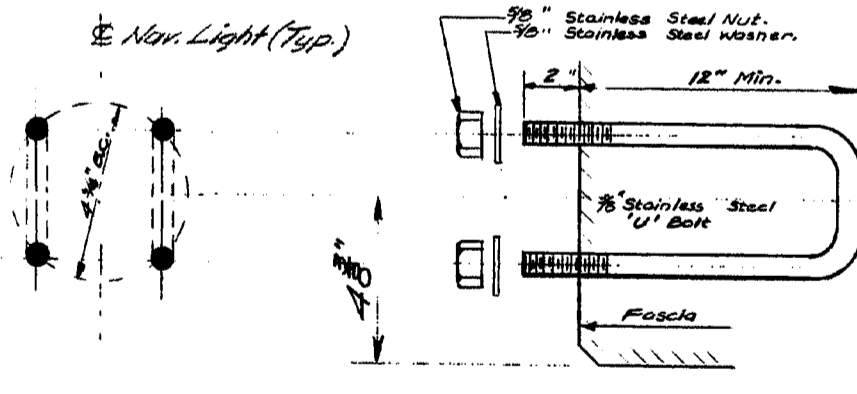
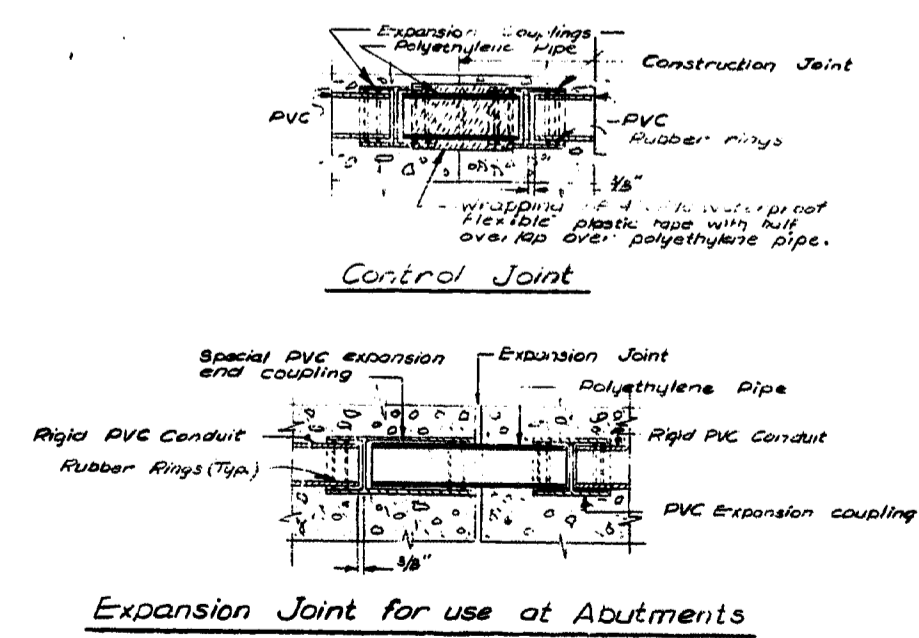
BRIDGE NAVIGATION LIGHT
 6 Required
 4-180° Red.
 2-360° Green.



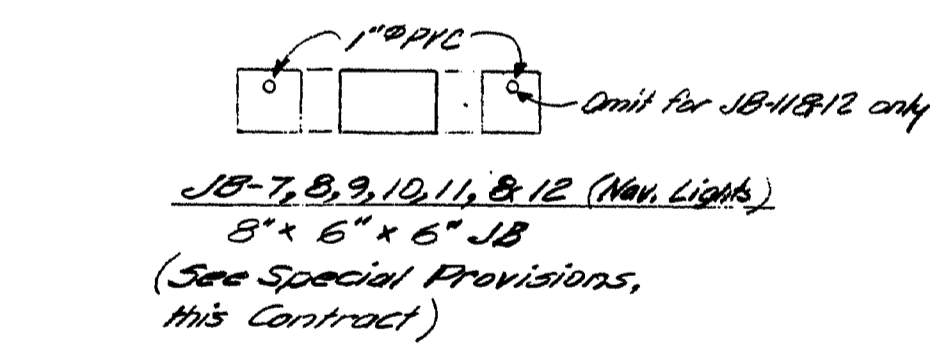
TYPICAL JB & PB DETAIL
 Both Cast Ferrous Alloy Boxes



BASE FOR LIGHT STANDARD (Typical)
 Payment for steel bracket supports for light standards shall be included in the 'Structural Steel Items'.



NAVIGATION LIGHT ANCHORAGE
 Anchorage shall be set by a template of the mounting flange of Navigation Light.



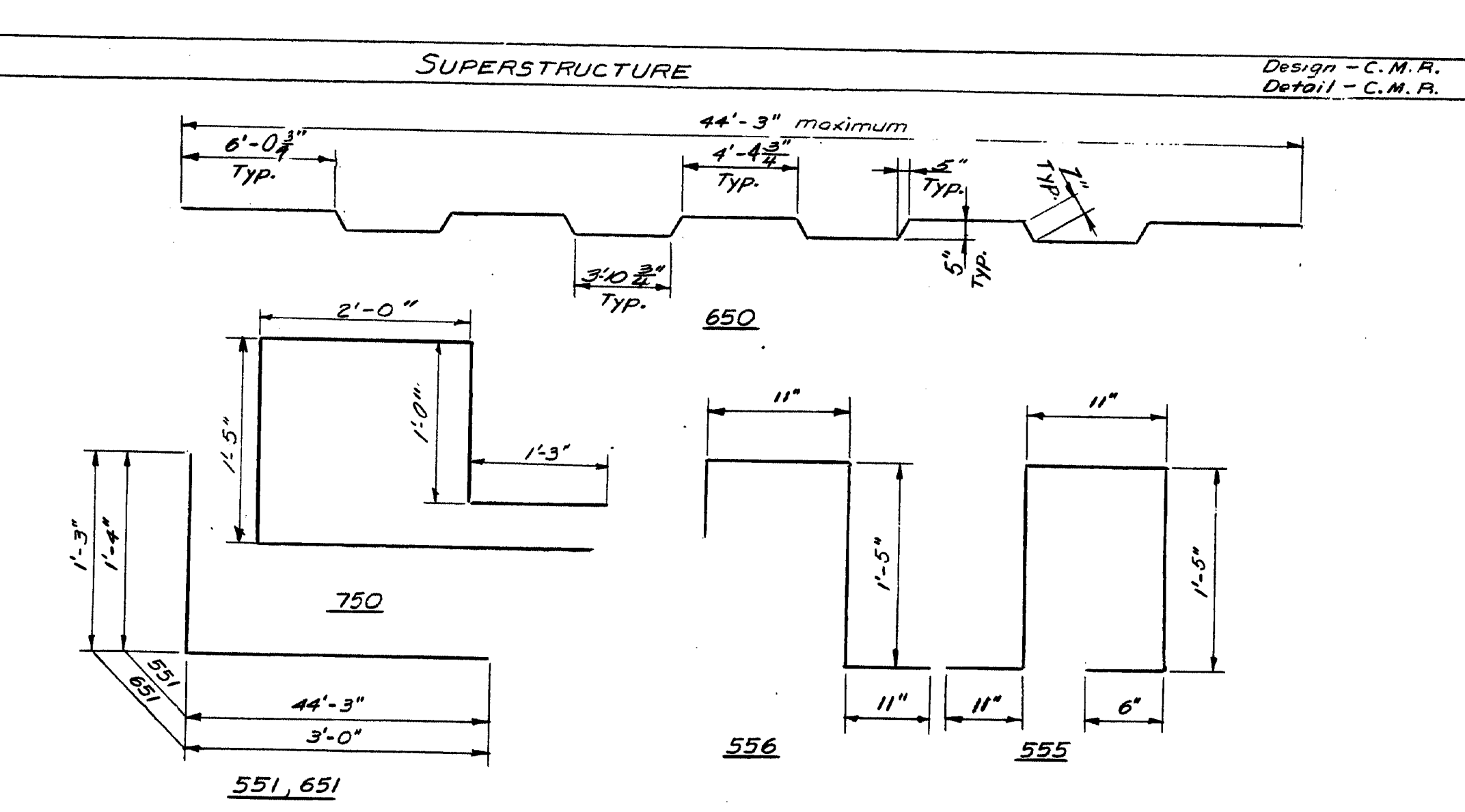
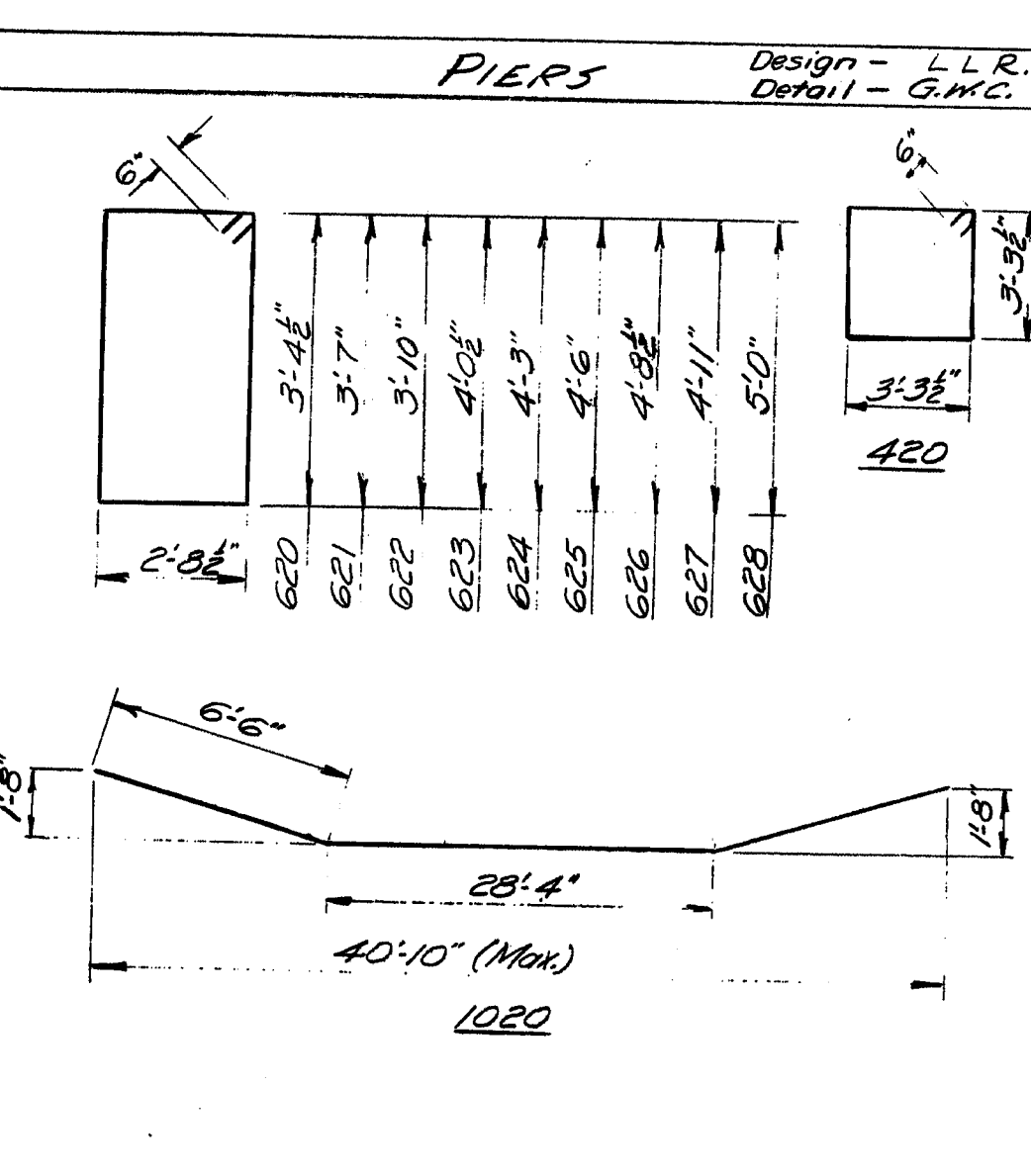
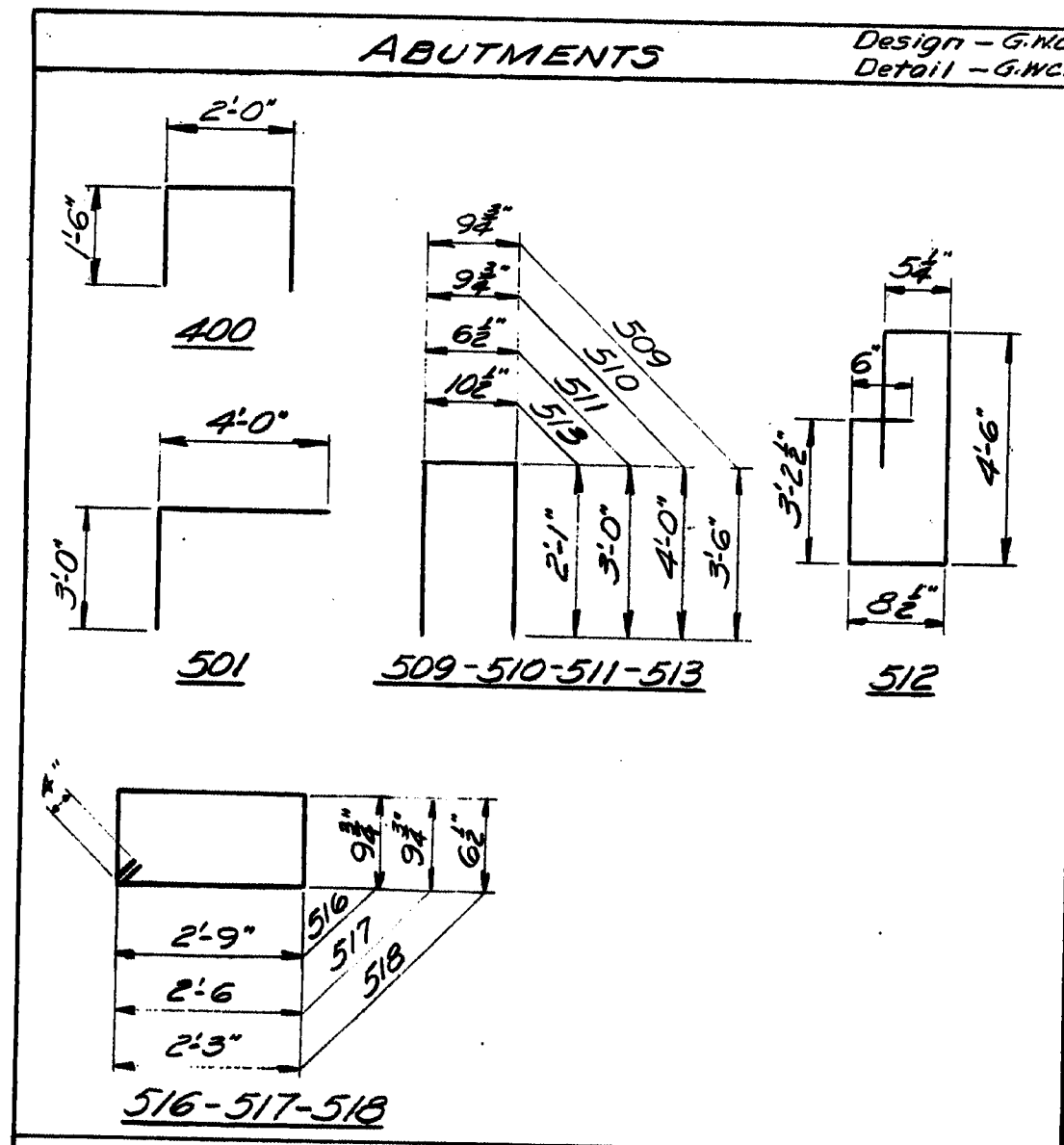
LIGHT STANDARD ANCHORAGE

NOTE
 Light Standards are not part of this Contract. Payment for bridge roadway lighting system shall be made under Item 635.01, "Embedded Work in Structures". Payment for navigation lighting system shall be made under Item 635.02, "Navigation Lights".

Four (4) rods per anchorage, required as detailed. Furnish each rod with three (3) Hwy Hex Nuts and 3 Std. washers. Anchor bolts, nuts and washers shall conform to ASTM A325. All bolts and exposed nuts and washers shall be galvanized.

DESIGN - L.L.R. & E.M.	BRIDGE NO. SURVEY -
TRACE - L.L.R. & E.M.	PLAT -
CHECK - L.L.R. & E.M.	
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY	
LIGHTING SYSTEM	
SHEET 22 OF 27 AUGUSTA, MAINE MARCH 1969	

150-153



BENT BARS					BENT BARS				
MARK	SIZE	No.	LENGTH	LOCATION	MARK	SIZE	No.	LENGTH	LOCATION
400	#4	80	5'-0"	Bearing Pools	420	#4	272	14'-2"	Pier Columns
501	#5	154	7'-0"	Breastwalls	620	#6	32	13'-2"	Pier Caps
509	6	6	7'-10"	End Posts @ Median	621			13'-7"	" "
510	2	2	8'-10"	" "	622			14'-1"	" "
511	2	2	6'-6"	" "	623			14'-6"	" "
512	18	18	12'-0"	End Posts	624			14'-11"	" "
513	32	32	5'-0"	Curb on Wings	625			15'-5"	" "
516	12	12	7'-10"	End Posts on Wings	626			15'-10"	" "
517	4	4	7'-4"	" "	627			16'-3"	" "
518	#5	4	6'-3"	" "	628	#6	400	16'-5"	" "

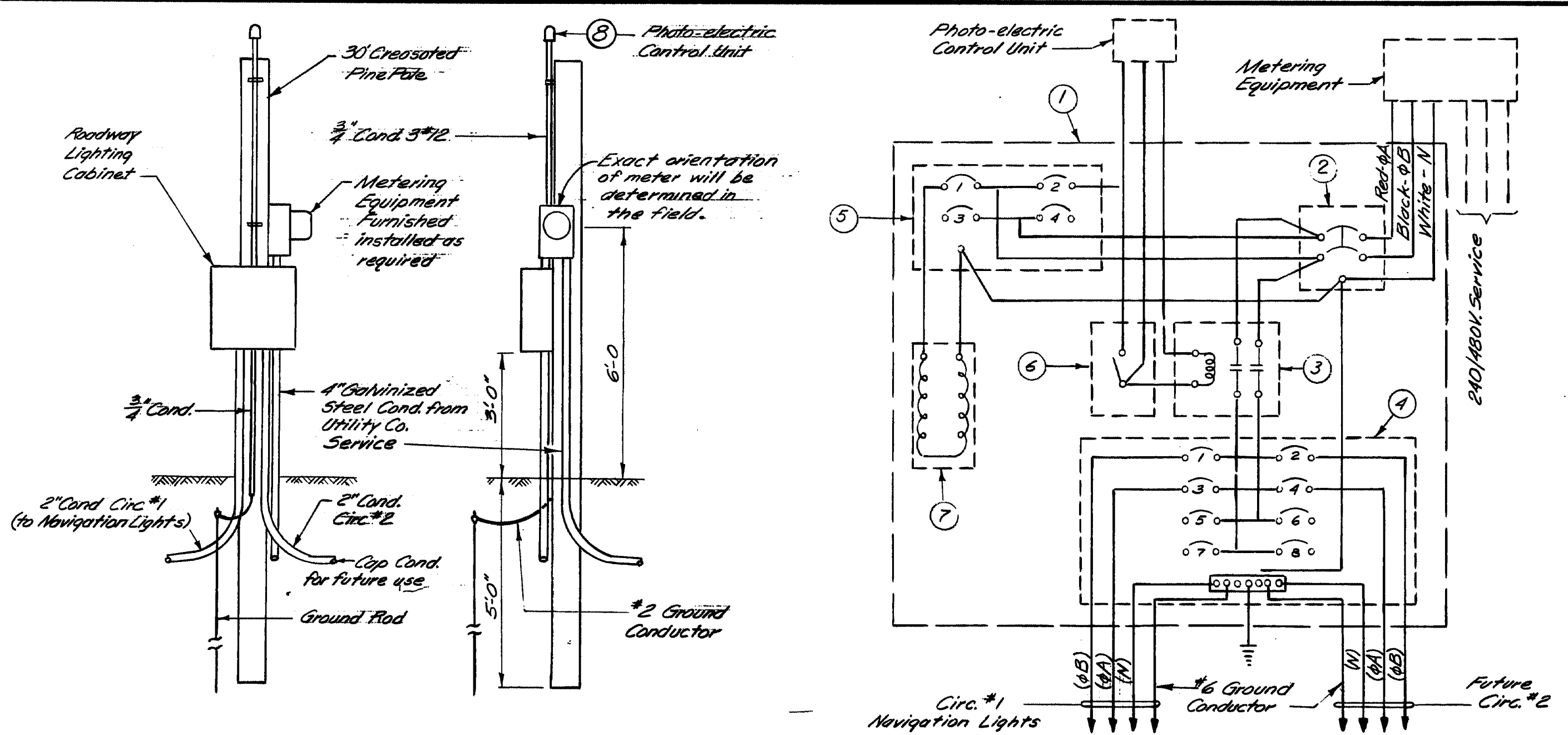
STRAIGHT BARS					STRAIGHT BARS				
MARK	SIZE	No.	LENGTH	LOCATION	MARK	SIZE	No.	LENGTH	LOCATION
401	#4	64	22'-9"	Backwalls	1020	#10	64	41'-4"	Pier Caps
402	#4	20	25'-0"	" "	720	#7	544	9'-0"	Distribution Slab
500	#5	308	3'-0"	Footings	721	#7	160	33'-6"	" "
502	194	194	5'-6"	Breastwalls	820	#8	48	40'-10"	Pier Caps
503	48	48	22'-9"	" "					
504	154	154	3'-6"	" "					
505	272	272	5'-0"	Backwalls					
506	12	12	25'-0"	Breastwalls					
507	84	84	6'-6"	Backwalls					
508	12	12	4'-6"	Start Wings @ Median	1019	#10	64	15'-0"	Pier Caps
514	36	36	10'-0"	Long Wings	1021	#10	128	12'-0"	Pier Caps
515	#5	80	7'-6"	" "	1022		64	40'-10"	" "
					1023		320	5'-6"	Seal & Dist. Slab
600	#6	84	40'-0"	Footings	1024		160	18'-6"	Column - Pier 1 & 4
601	#6	468	6'-0"	" "	1025	#10	160	23'-0"	" - Pier 2 & 3

STRAIGHT BARS					BENT BARS				
MARK	SIZE	No.	LENGTH	LOCATION	MARK	SIZE	No.	LENGTH	LOCATION
550	#5	1318	44'-3"	Slab ~ Transverse	555	#5	1316	5'-2"	Slab to Curb - Transverse
552	#5	232	40'-0"	Slab ~ Over Piers	556	#5	1316	3'-10"	" " "
560	120	120	14'-4"	Curb ~ Longitudinal	551	#5	1318	45'-7"	Slab Transverse
561	192	192	15'-8"	" "	650	#6	1312	45'-7"	Slab to Curb - Transverse
562	144	144	16'-2"	" "	651	#6	1316	4'-3"	Slab to Curb - Transverse
565	672	672	38'-3"	Slab ~ Longitudinal	750	#7	24	8'-5"	Curb @ Light Standards
566	672	672	45'-0"	" "					
567	1008	1008	35'-2"	" "					
568	#5	672	20'-2"	" "					
652	#6	48	8'-9"	End Haunches					

Notes:
 Dimensions to & bars
 Reinforcing Steel to be either
 Intermediate Grade or ASTM
 A615 Grade 60

DESIGN - AS NOTED	BRIDGE NO.
TRACE - T11K	SURVEY -
CHECK - T11K	PLOT -
STATE HIGHWAY COMMISSION BRIDGE DIVISION INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY REINFORCING STEEL SCHEDULE	
SHEET 23 OF 27 AUGUSTA, MAINE MARCH 1960	

150-154



RISER DETAIL
STANDARD LIGHTING DETAILS
ROADWAY LIGHTING SERVICE POLE
 No Scale

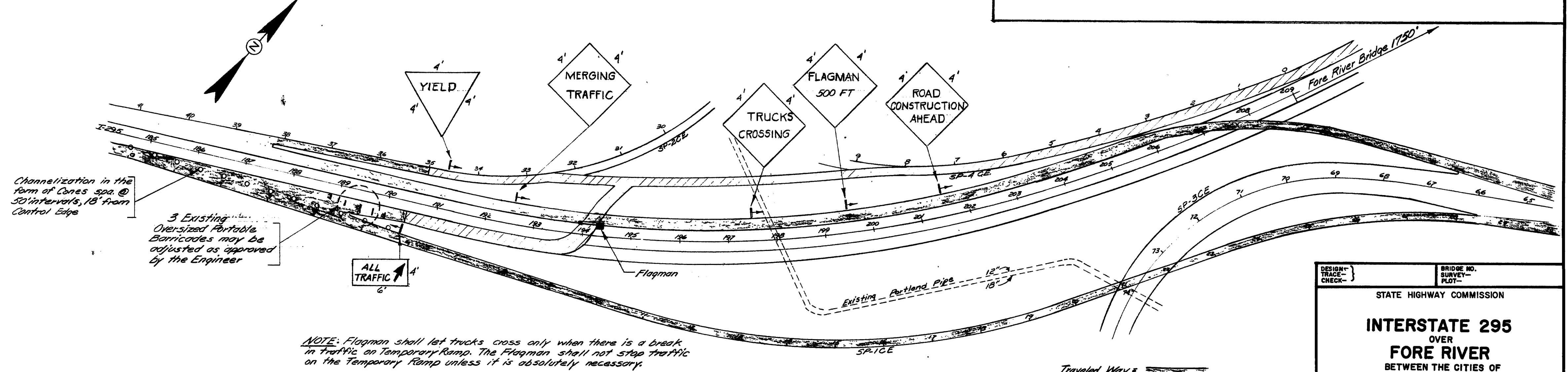
LIST OF EQUIPMENT

- ① Roadway Lighting Cabinet: H.D. Galv. Steel rain-tile. Fabricated of 10 ga. Sheet Steel with welded seams, drip cover over door, gasketed hinged door with provisions for padlocking & 2" dia. Weep holes with insect screens See Specs.
- ② Main Circuit Break: 240/480 V, 200 A., 2 Pole with groundable neutral, within NEMA I surface mounted enclosure.
- ③ Magnetic Contactor: 240/480 V, 200 A (Min) 2 Pole with 240 V control voltage, within NEMA I surface mounted enclosure.
- ④ Roadway Lighting Panel: Single phase, 3 wire, 240/480 V 5/11, 200A. Main with lugs, complete with Eight (8) single pole circuit breakers with 30A. trip within NEMA I. surf. mount enclosure.
- ⑤ Circuit Breaker Panel: Single phase, 3 wire, 240/480 V 5/11, 100 A. main with lugs complete with four (4) single pole circuit breakers with 15A. trip, within NEMA I surface mounted enclosure.
- ⑥ By-Pass Switch: Single pole, 20A, 277 V. toggle switch in conduit box with mounting lugs and cover.
- ⑦ Strip Heater: 300 W. 240 V chrome steel sheath temperature up to 1200° F max 1 1/2" wide with two bolt terminals at one side.
- ⑧ Photo-electric Control Unit: As approved by the Engineer.

NOTES:

1. Arrangement of equipment within Lighting cabinet shall be similar to that shown on this sheet and subject to Engineer's approval
2. Wiring entrance of each equipment enclosure shall be provided with an approved double insulating bushing.
3. Wiring within Lighting Cabinet shall be as shown on this sheet open wire, neatly arranged, laced and properly tagged in an approved manner.
4. Grounding and Bonding of Equipment shall be As Per Contract Specifications, NEC Code and Utility Company Requirements.

NOTES: Place Aggregate Subbase-Gravel as necessary to get adequate surface on N.B. I-295 from Sta. 19010 to Sta. 19110. (This is a cut area)
 All other are settlement areas - Contractor provide surface suitable to him.



Channelization in the form of cones spa @ 50' intervals, 18' from Center Edge
 3 Existing Oversized Portable Barricades may be adjusted as approved by the Engineer

NOTE: Flagman shall let trucks cross only when there is a break in traffic on Temporary Ramp. The Flagman shall not stop traffic on the Temporary Ramp unless it is absolutely necessary.

LAYOUT FOR SOUTHERLY ACCESS ROAD

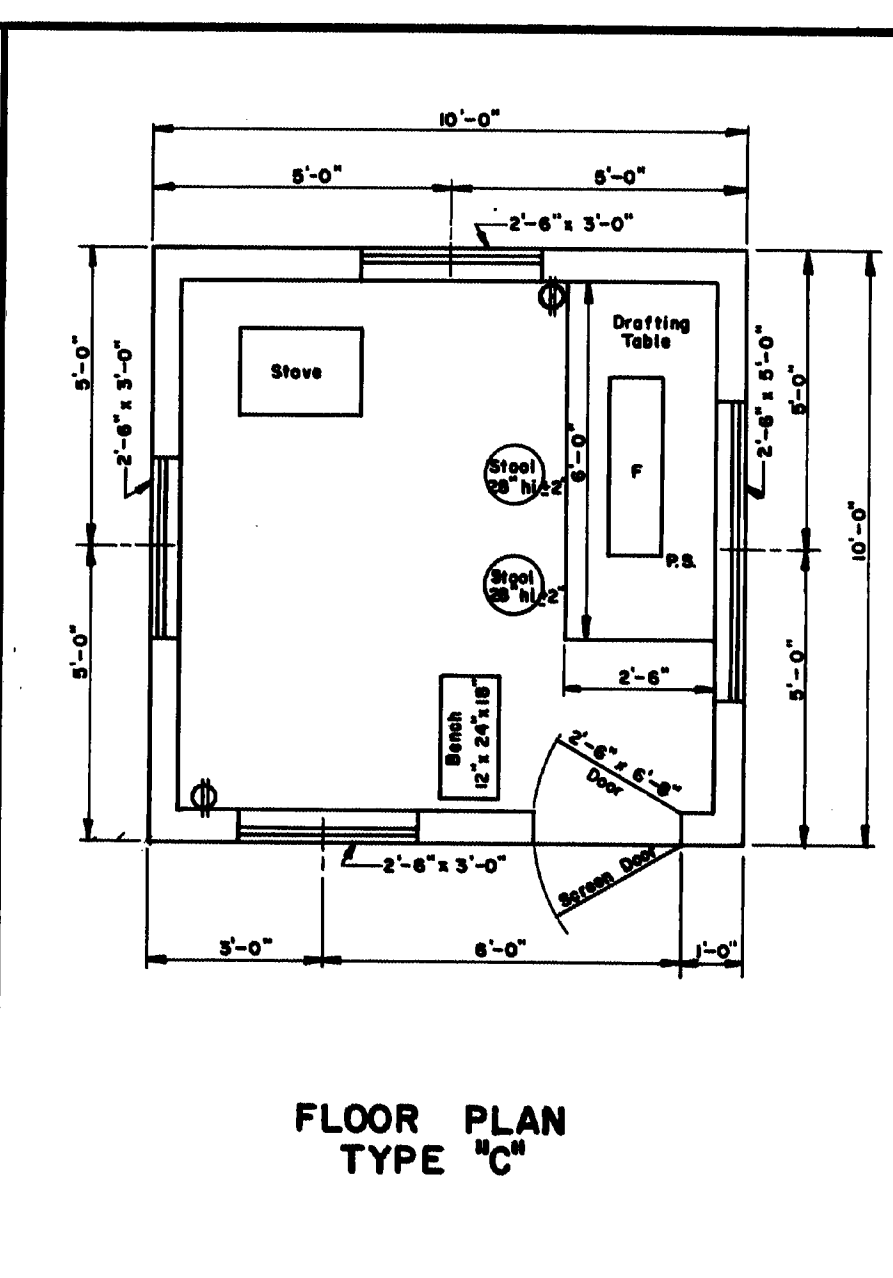
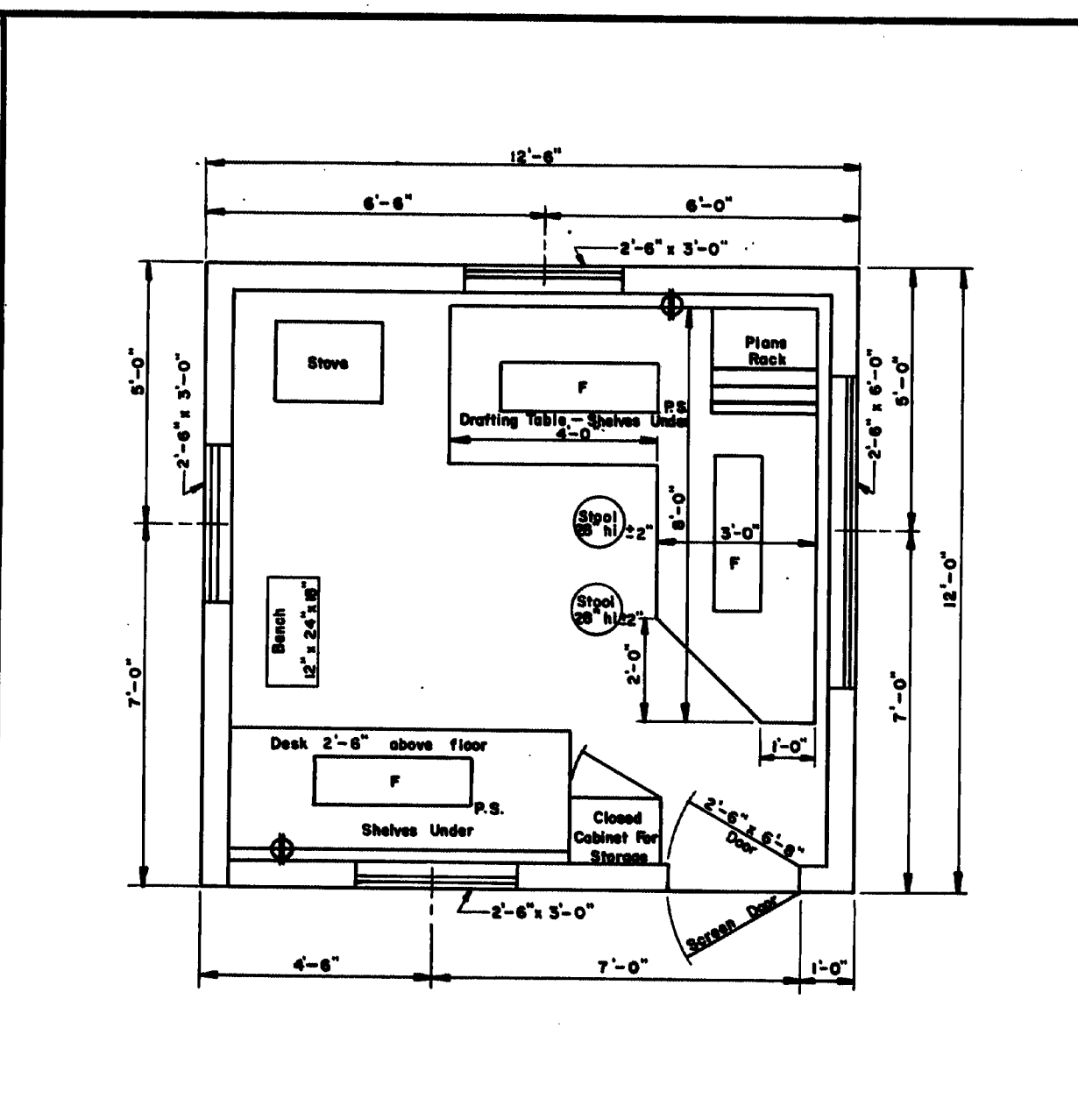
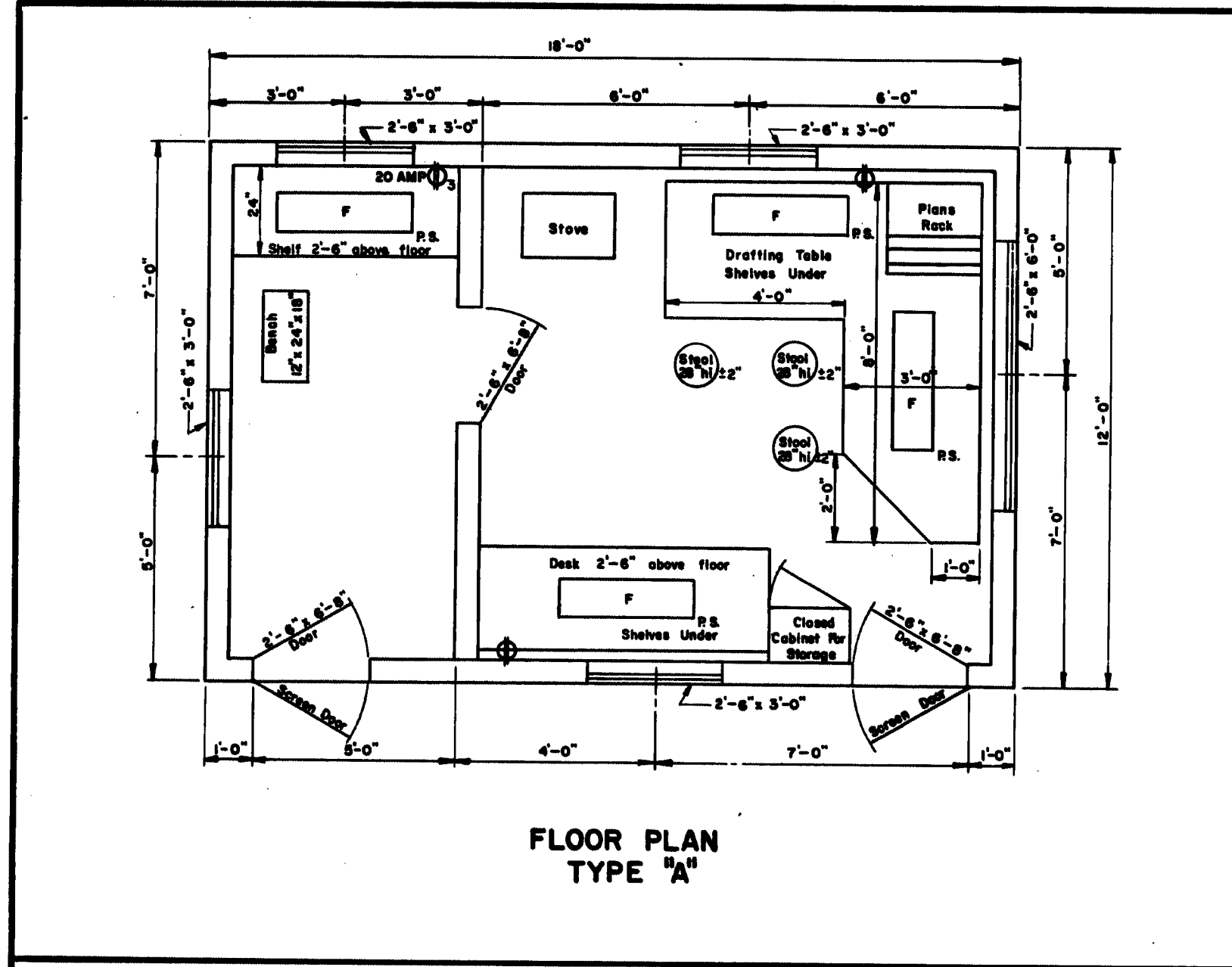
Traveled Way =
 Access Road =

DESIGN	DATE
BY	
REVISIONS	
FIELD CHANGES	
PLANS	

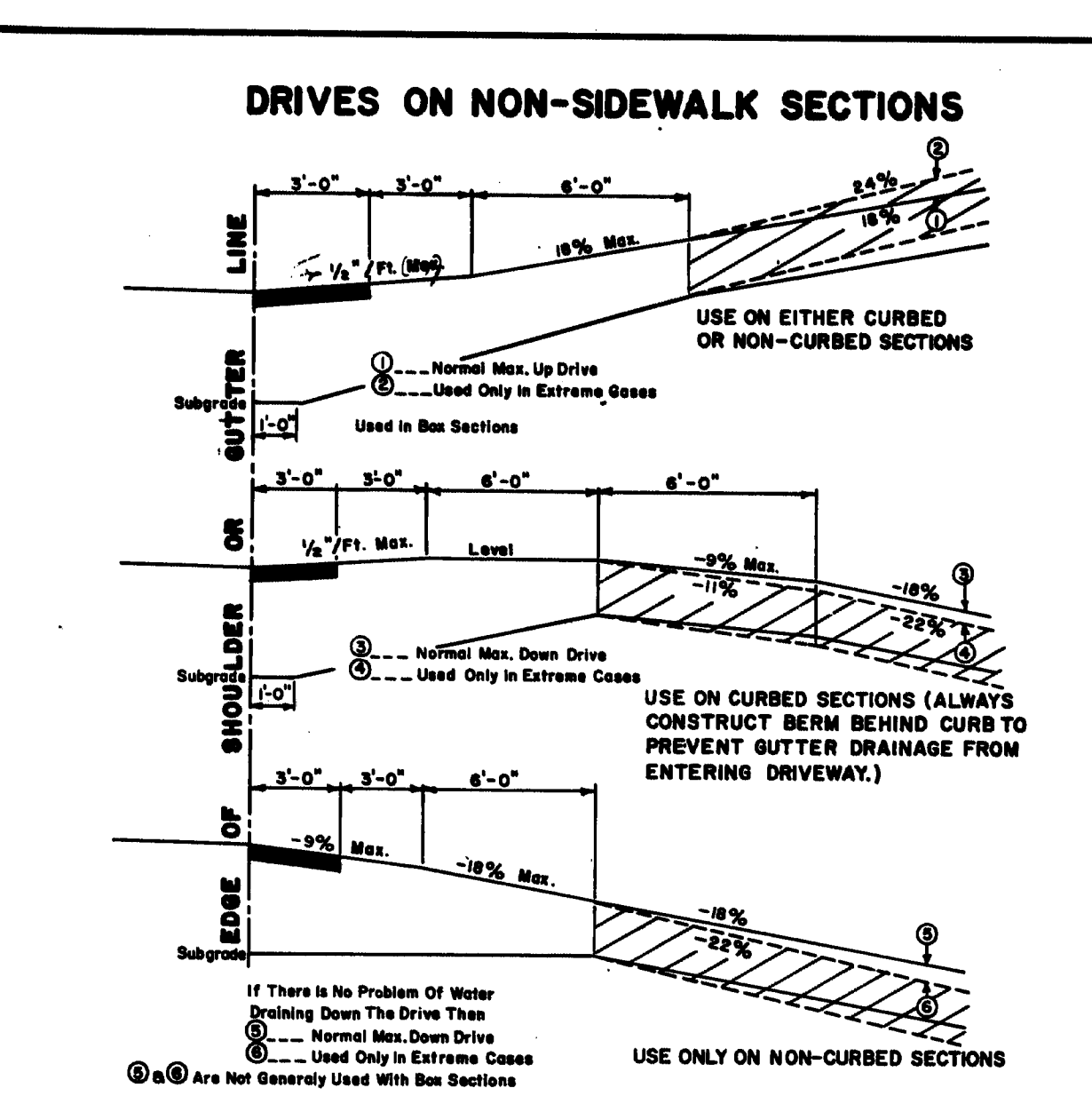
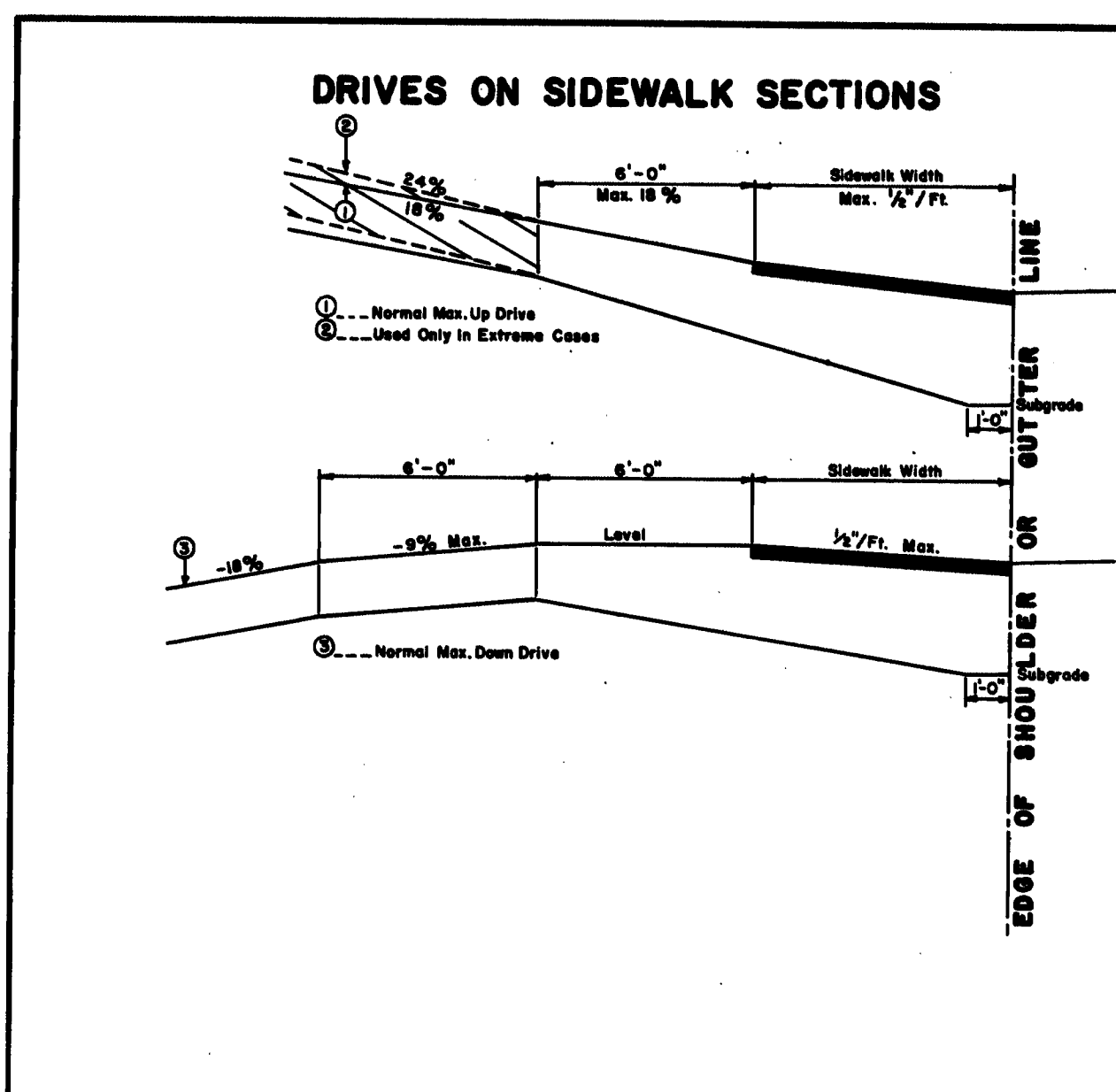
DESIGN CHECK	BRIDGE NO. SURVEY PLOT
STATE HIGHWAY COMMISSION	
INTERSTATE 295 OVER FORE RIVER BETWEEN THE CITIES OF PORTLAND & SOUTH PORTLAND CUMBERLAND COUNTY LIGHTING DETAILS & ACCESS ROAD	
SHEET 24 OF 27 AUGUSTA, MAINE	

150-155

S. P. R.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	F-295-3(4)	25	27

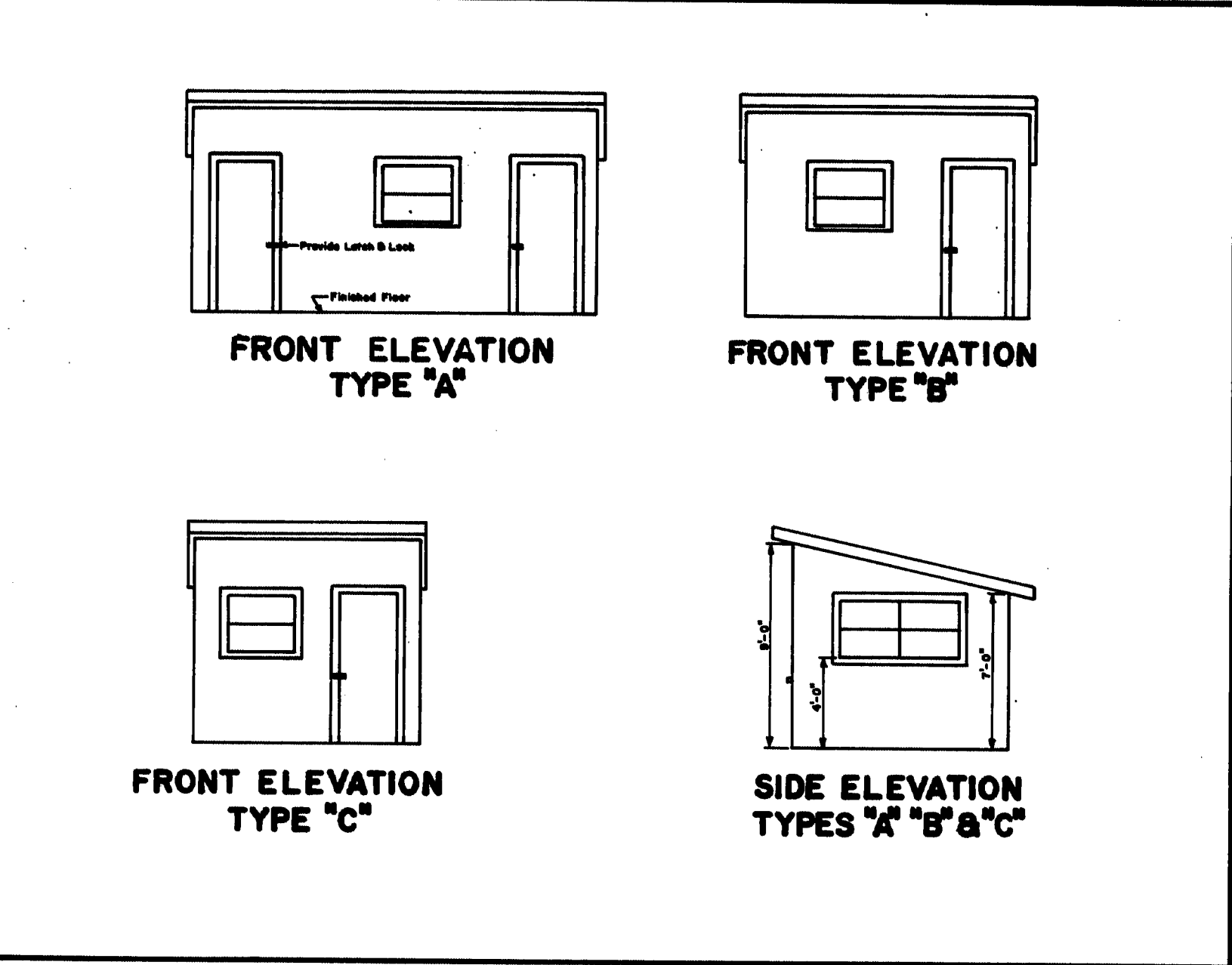


- GENERAL NOTES**
- Drafting table shall be 3'-6" high at front edge and placed 2" from studs to allow prints to hang down behind table when in use.
 - Shelves under desk shall be constructed to receive 1 1/2" x 14" x 25" transites.
 - Windows shall be double hung.
 - Stovepipe shall not be in direct contact with combustible material; the pipe shall be surrounded with at least 6" of fireproof material.
 - Continuous 110 volt 60 cycle electric service shall be supplied.
 - The engineer may rearrange the items shown on the plan views during construction of the field office.
 - FURNISHINGS TO BE SUPPLIED:
 - 2 Straight back chairs for types A and B
 - 1 Bench for types A, B & C
 - 3 Stool for type A
 - 2 Stools for types B & C
 - SYMBOLS:
 - F Fluorescent lights (2 light, rapid start 48" stripe and 40 watt bulb.)
 - R.S. Pull switch
 - D Duplex wall outlet - 15 amp unless otherwise noted.
 - ⊕ Triples Wall Outlet
 - For the Type "A" Field Office one clean 55 gal. drum shall be supplied, installed on a suitable rack and equipped with a siphon suitable for drawing off water. The drum shall be furnished with water at all times.



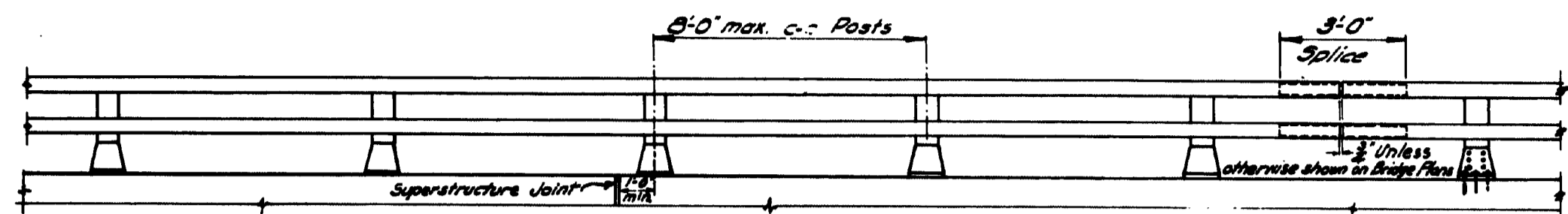
- GENERAL NOTES**
- The sidewalk width shall be paved in all cases.
 - All residential or commercial drives over 10% to be paved.
- NOTES ON MAXIMUM DRIVEWAY PROFILES**
- These profiles are a guide for the majority of cases, but should be field checked when the main line grade is steep (4% to 6% or greater) or the angle of approach to the drive is unusual.
 - Generally the majority of drives on a project will be built with flatter profiles than these maximum cases.
 - When grading drives which are flatter than the maximum profiles the following rule of thumb should be used, do not exceed a grade % change of more than 9% in a 6 foot increment of driveway length. This applies to both up and down profiles.

- GENERAL NOTES**
- The first 3' shown as pavement shall be paved only when abutting a paved area.
 - All residential or commercial drives over 10% to be paved.
- NOTES ON MAXIMUM DRIVEWAY PROFILES**
- These profiles are a guide for the majority of cases, but should be field checked when the main line grade is steep (4% to 6% or greater) or the angle of approach to the drive is unusual.
 - Generally the majority of drives on a project will be built with flatter profiles than these maximum cases.
 - When grading drives which are flatter than the maximum profiles the following rule of thumb should be used, do not exceed a grade % change of more than 9% in a 6 foot increment of driveway length. This applies to both up and down profiles.



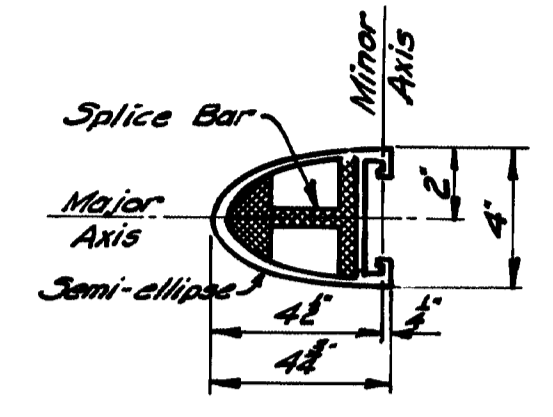
REVISIONS	MAINE STATE HIGHWAY COMMISSION AUGUSTA, MAINE
	STANDARD DETAILS DRIVEWAY DETAILS FIELD OFFICES TESTING LABORATORY 150-156 AUG. 1969

FORE RIVER BRIDGE, PORTLAND - S. PORTLAND

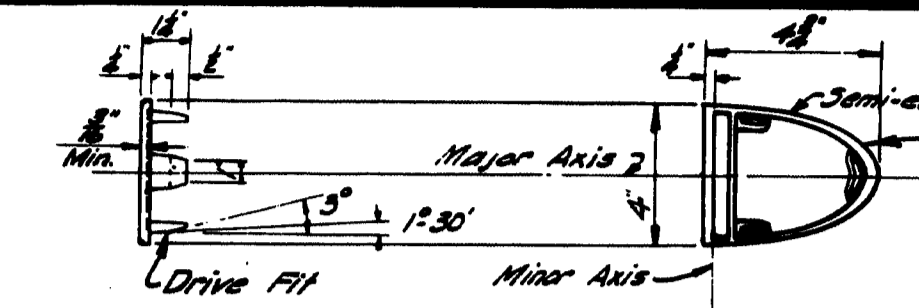


RAIL - ELEVATION

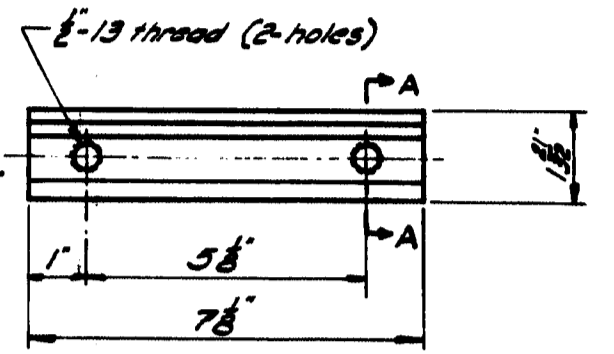
Lengths of rail shall be attached to a minimum of (4) four rail posts, wherever possible, and in any case never less than (2) two.



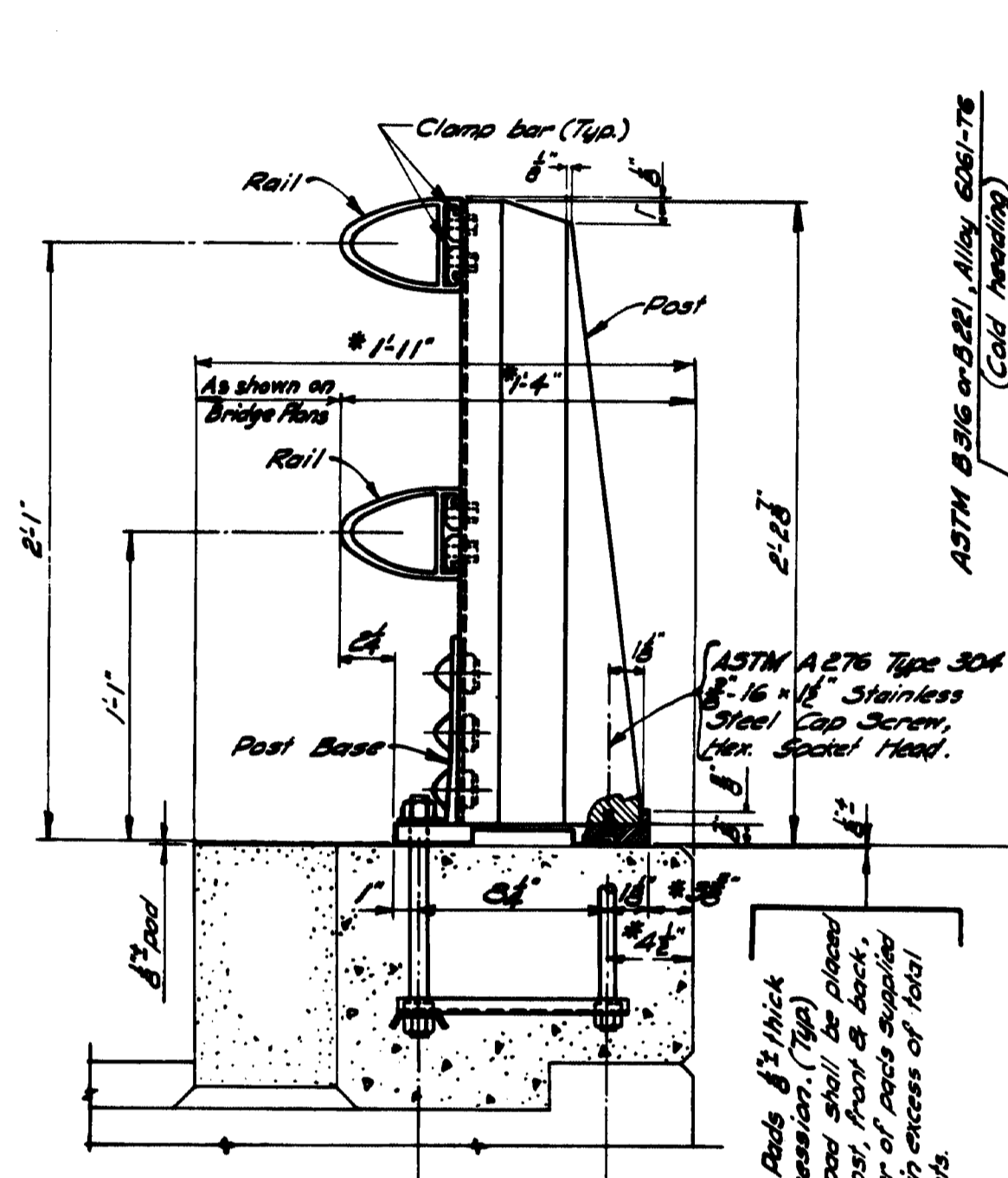
RAIL SECTION
See "Rail Detail"



RAIL CAP
ASTM B26 or B108, Aluminum Assoc. Alloy 43-F or 356-F



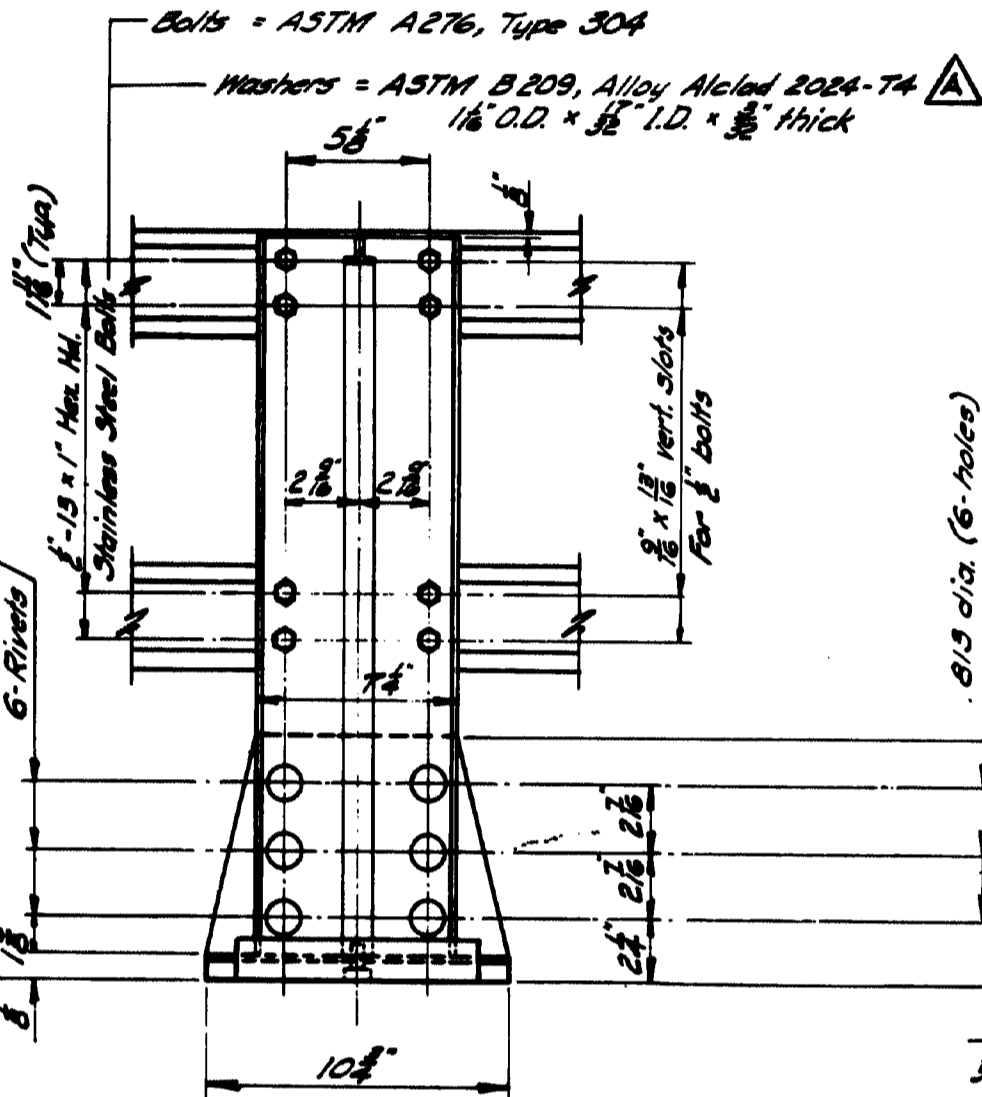
CLAMP BAR



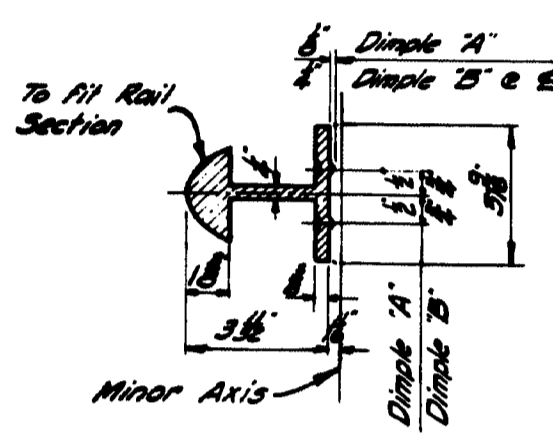
BRIDGE RAIL Assembly

* Preferable minimum dimensions.

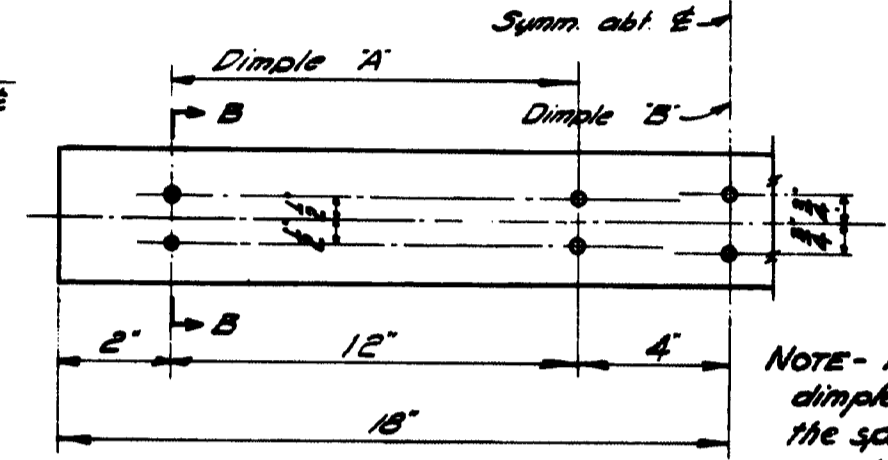
Preformed Pads 1/2" thick after compression. (Type) At least one pad shall be placed under each post, front & back, and the number of pads supplied shall be 10% in excess of total number of posts.



REAR ELEV

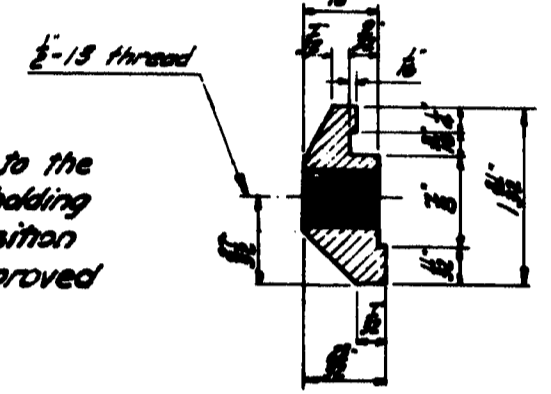


SECTION B-B

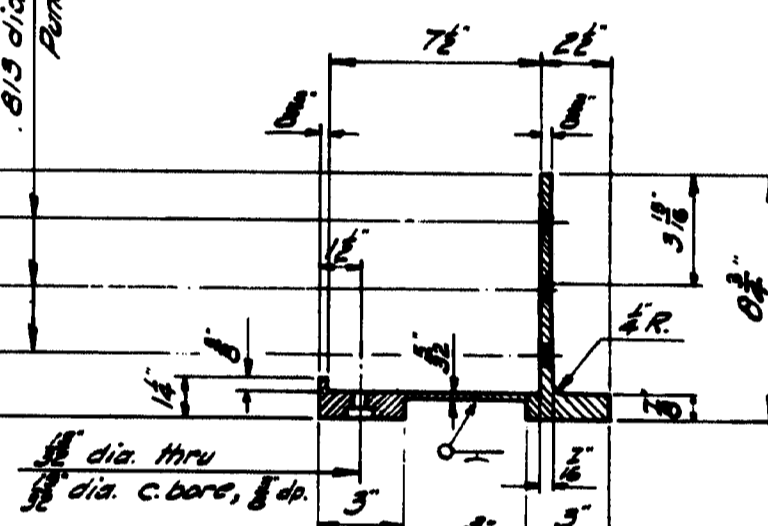


SPLICE BAR

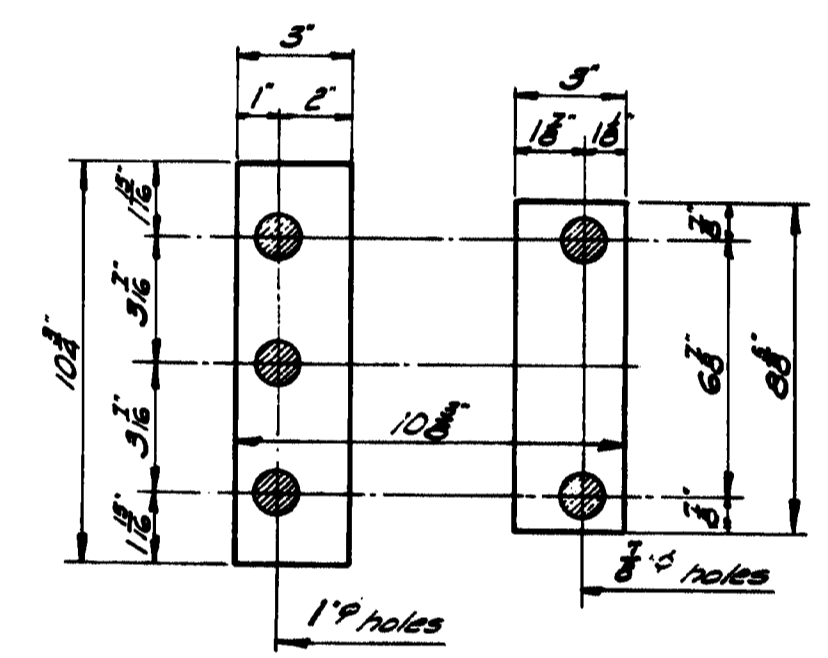
▲ Rail, Splice Bar, & Clamp Bar = ASTM B221, Alloy 6351-T5 or 6061-T6.



SECTION A-A

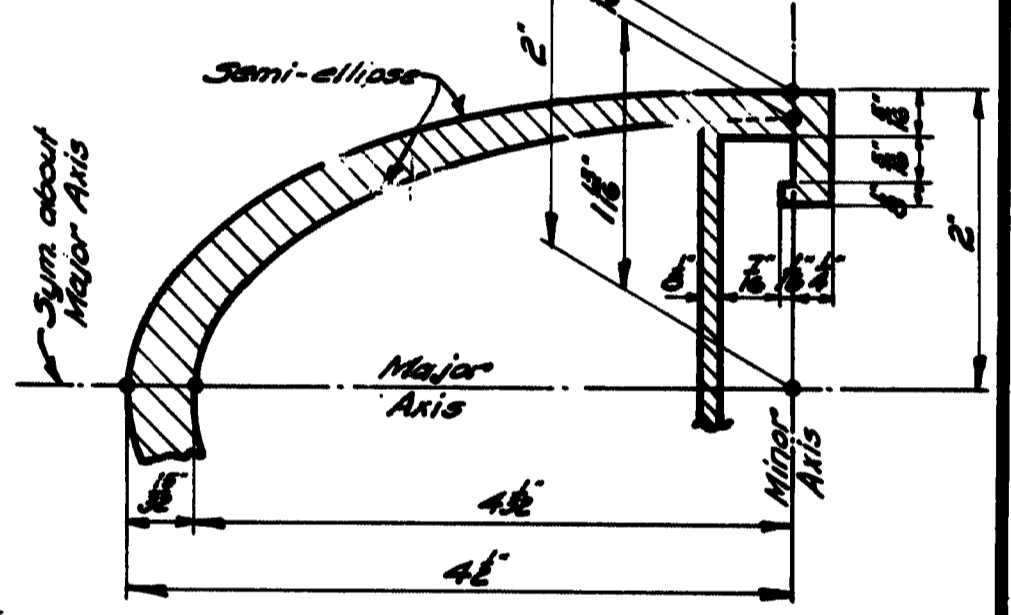


POST BASE SECTION

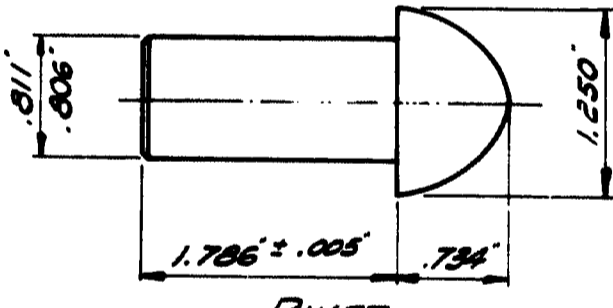


PREFORMED PADS

See Subsection 713.03 Standard Specifications Revision of June 1968 for pad.

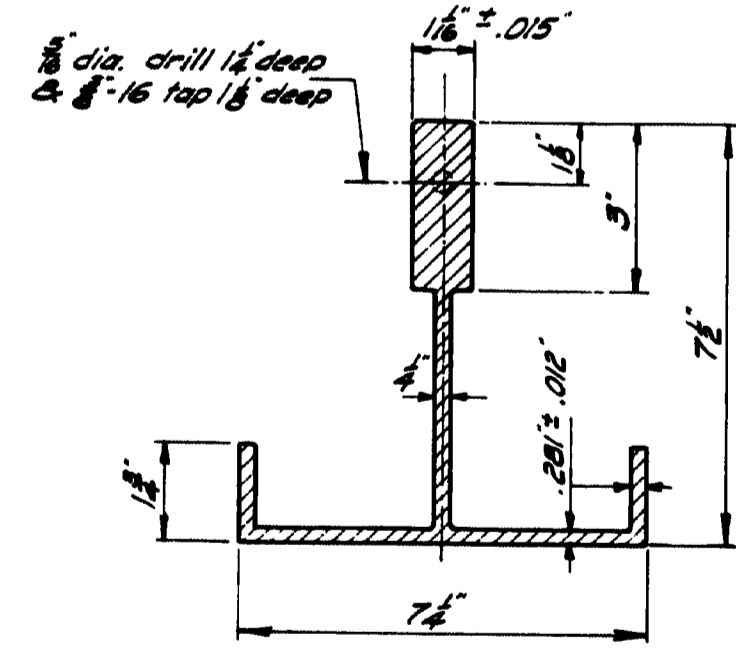


RAIL DETAIL



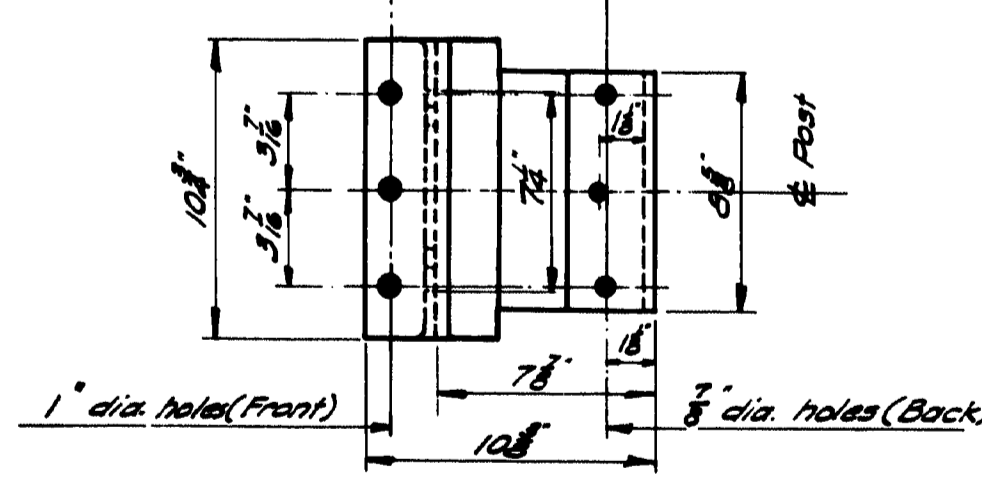
RIVET

Shop rivet rail post to base

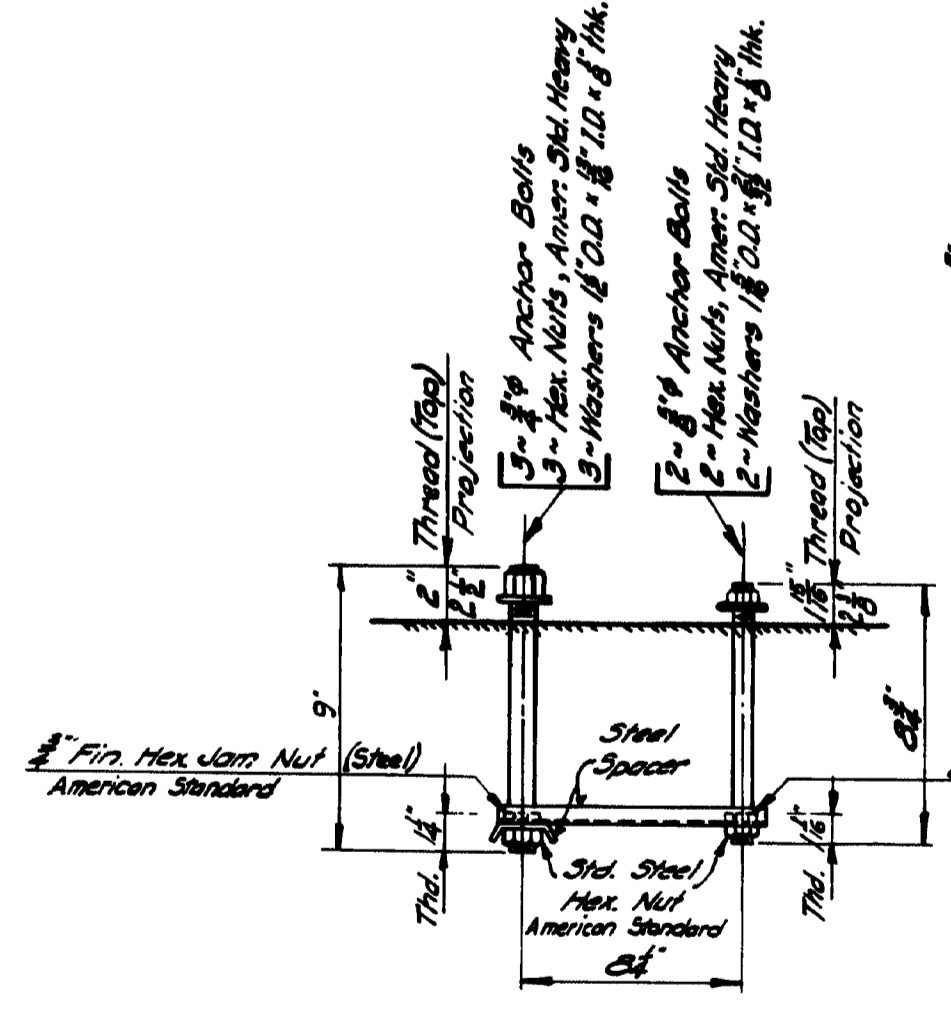


POST SECTION

Post & Post Base = ASTM B221, Alloy 6061-T6.



POST BASE (Bottom View)



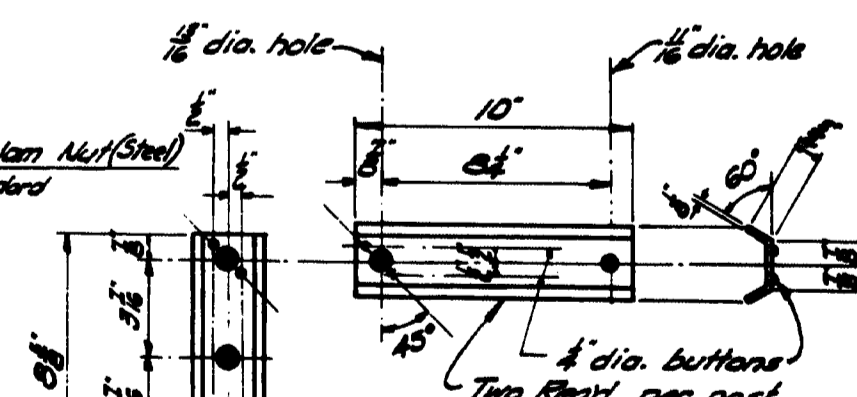
RAIL POST ANCHORAGE Assembly

NOTE: Anchor Bolts, exposed Hex. Nuts (Amer. Std. Heavy) and washers shall conform to Designation 'Stainless' ASTM A276 Type 403, Ultimate Tensile Strength 100,000 psi minimum, Elongation 15% minimum. Hex. Nuts embedded in concrete shall conform to Steel Designation ASTM A 307.



ANCHOR BOLTS

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



STEEL SPACERS FOR ANCHORAGE ASTM A36

DESIGN SPECIFICATIONS
A.A.S.H.O. 1969 and Interim Specifications.

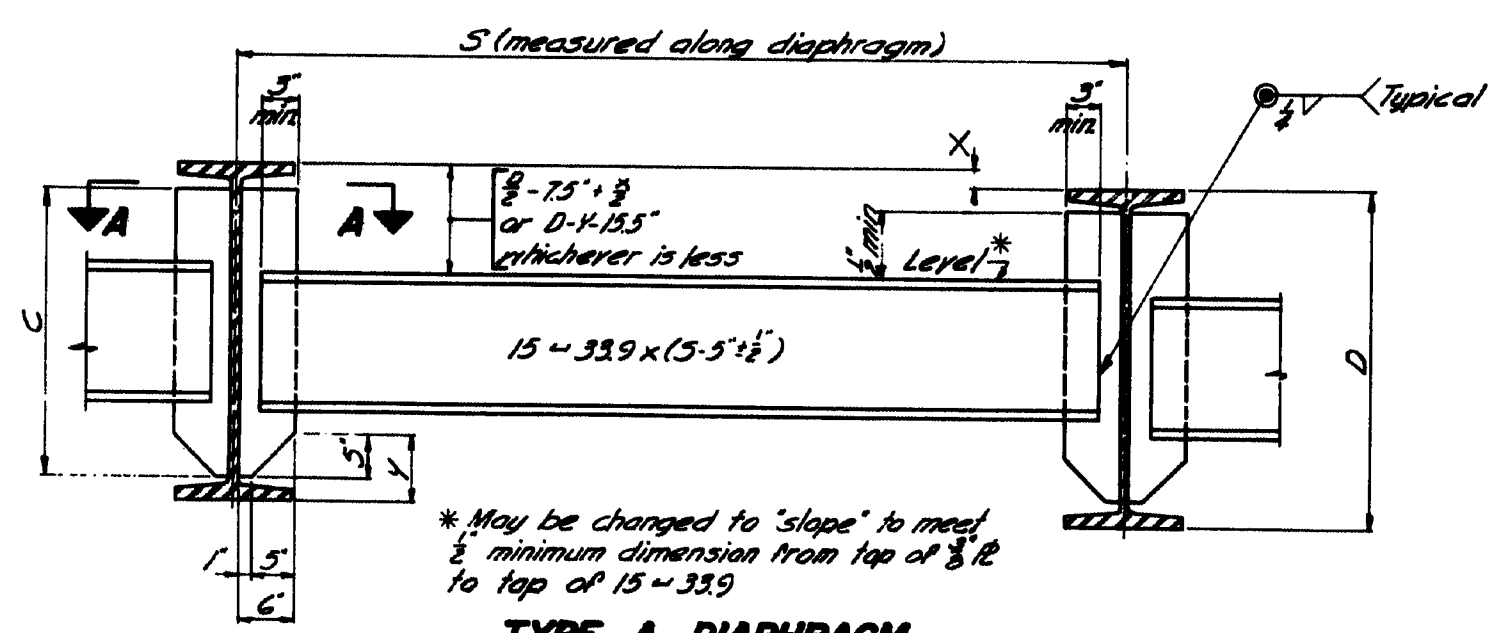
<p>Changed ASTM B221, to include Alloy 6351-T5 for Rail, Splice & Clamp Bars.</p> <p>Changed ASTM Designations A276 & B209 A276 - Type 430 to 403 (Post Anchorage) B209 - T3 to T4 (Washers)</p> <p>Changed AASHTO Design Specifications from 1965 to 1969.</p>
<p>MARK ALTERATIONS</p>

MAINE STATE HIGHWAY COMMISSION
AUGUSTA, MAINE

STANDARD DETAILS
(BD 106 - 69)

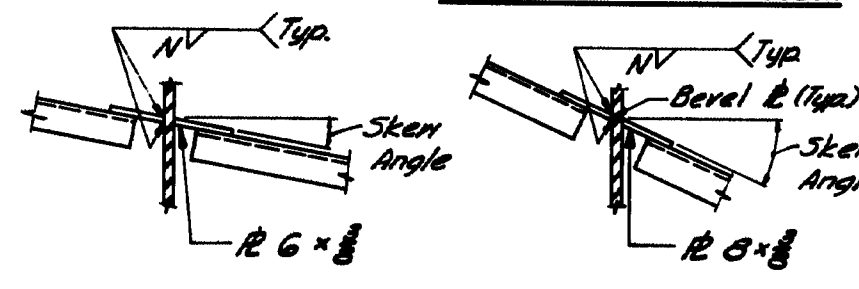
ALUMINUM RAILING
2 - BAR (SEMI-ELLIPTICAL)
EXTRUDED POST

JANUARY 1969



TYPE A DIAPHRAGM

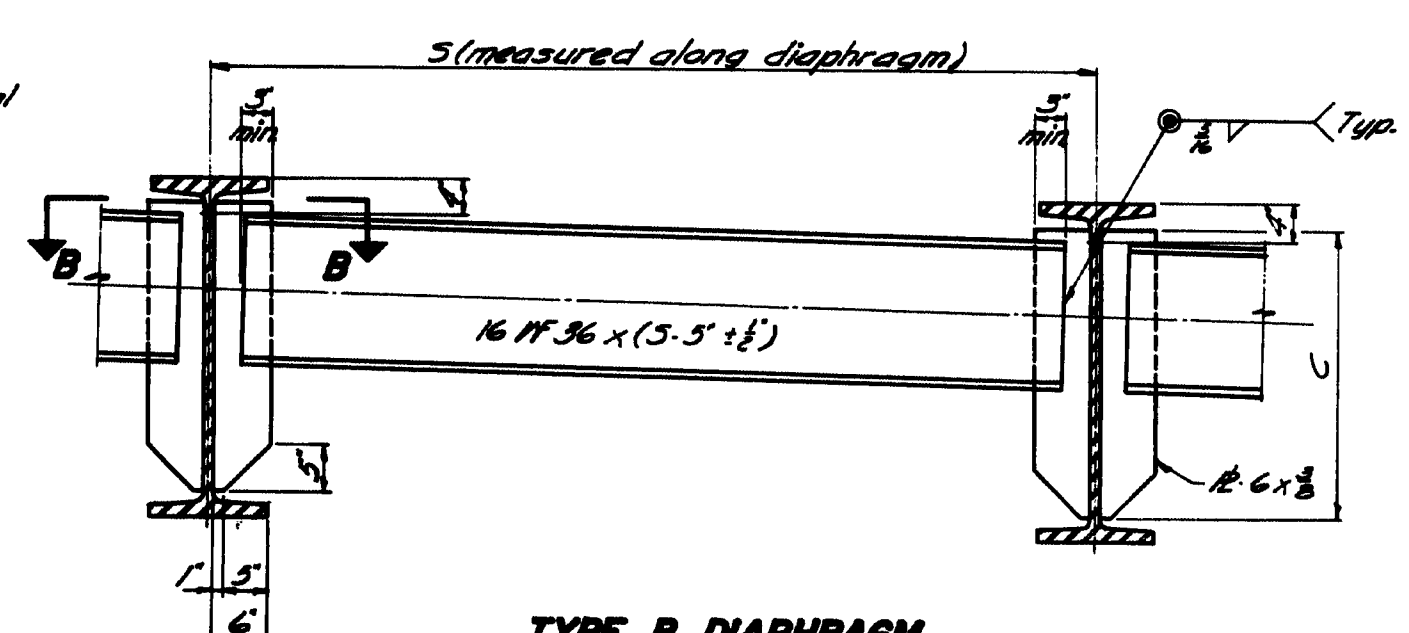
* May be changed to "slope" to meet 1/2" minimum dimension from top of 3/8" R to top of 15-33.9



SECTION A-A
Skew Angle 0° to 10° 00'

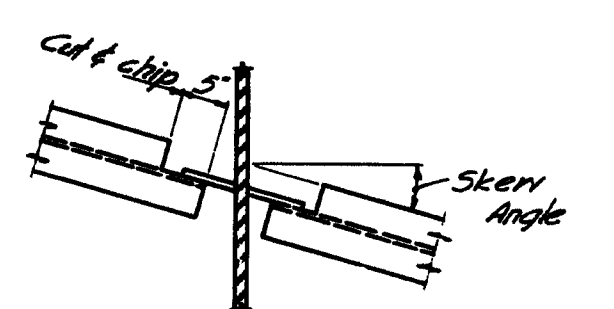
SECTION A-A
Skew Angle over 10° 00' to 20° 00'

FILLET WELD SIZE "N" & DIMENSION "C" FOR DIAPHRAGM PLATES		
BEAM	C	N
27 WF 84 to 114 incl.	1'-1"	3/8"
30 WF 99 to 132 incl.	2'-2"	3/8"
33 WF 118 to 152 incl.	2'-5"	3/8"
36 WF 135 to 194 incl.	2'-7"	3/8"
36 WF 230 to 300 incl.	2'-6"	3/8"



TYPE B DIAPHRAGM

Welding 6 x 3/8 plates to web same as for Type A Diaphragm.

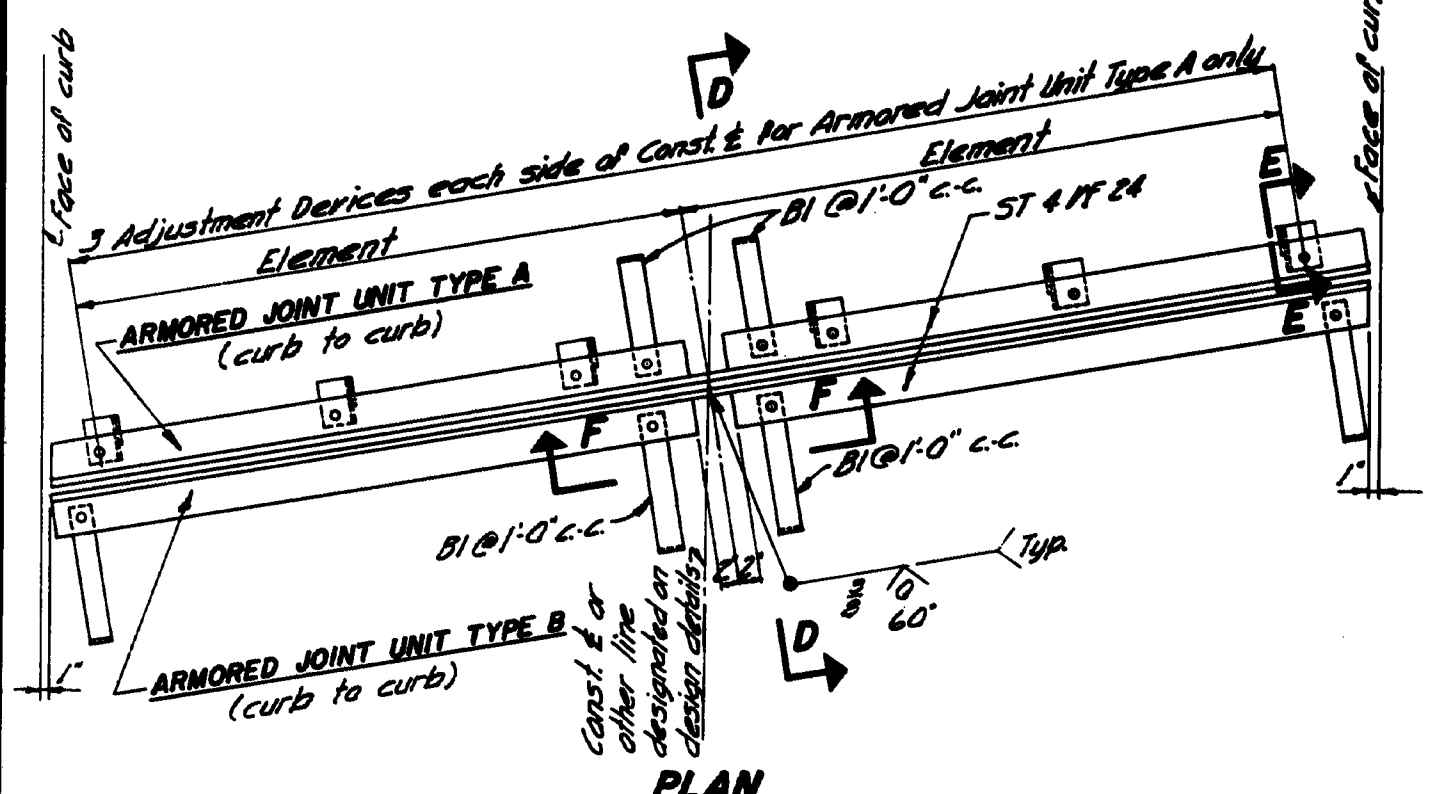


SECTION B-B
Skew Angle 0° to 10° 00'

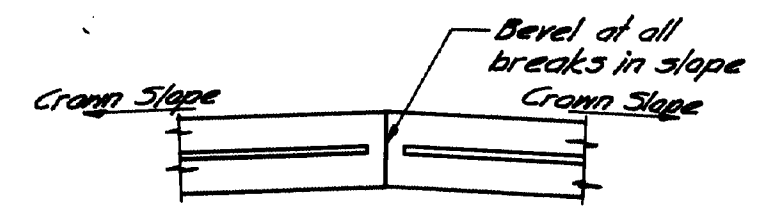
SECTION B-B
Skew Angle over 10° 00'

NOTE
See design details for diaphragm type, location and skew.

DIAPHRAGMS



PLAN



SECTION F-F

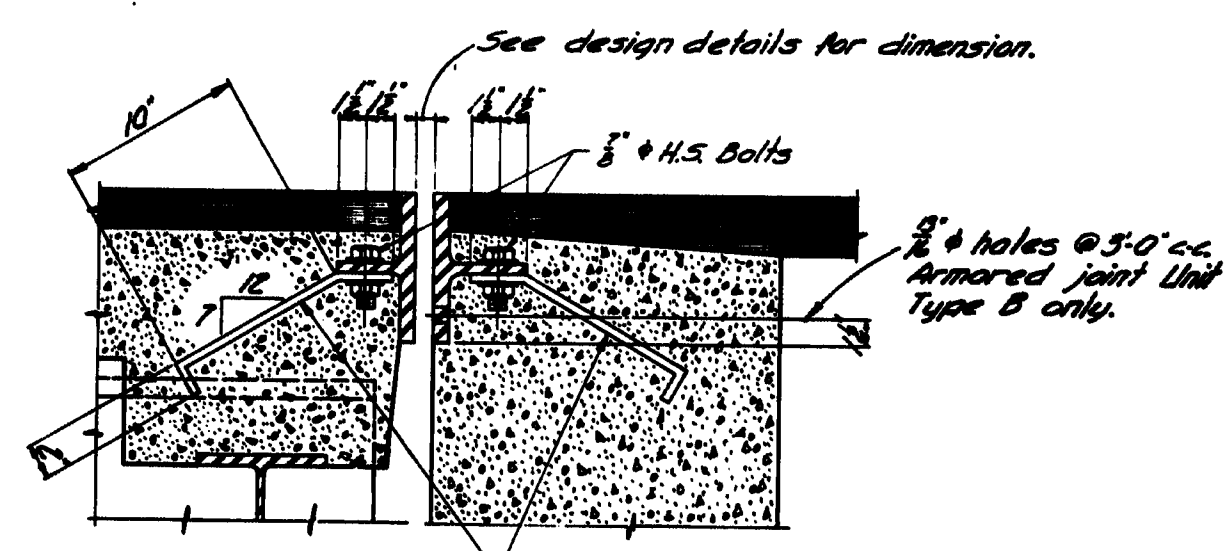
Note: See design details for Const. & to curb dimensions, skew, crown slope, slab thickness, other dimensions necessary to complete the fabrication details, and location.

NOTE

1. Type A Armored Joint Units are intended to be used for attachment to superstructures. Type B Armored Joint Units are intended to be used for attachment to abutments. At armored joints over piers, two (2) Type A Armored Joint Units shall be used.
2. If more elements than the two shown in the 'Plan' are required by the design details, there shall be three adjustment devices for each element for Armored Joint Unit Type A and the elements of both units shall be field welded together in the same manner as shown in the 'Plan'.
3. Armored Joints to be paid for as Structural Steel.

ARMORED JOINT

An armored joint consists of two armored joint units. See note 1.



ARMORED JOINT UNIT TYPE A

ARMORED JOINT UNIT TYPE B

SECTION D-D

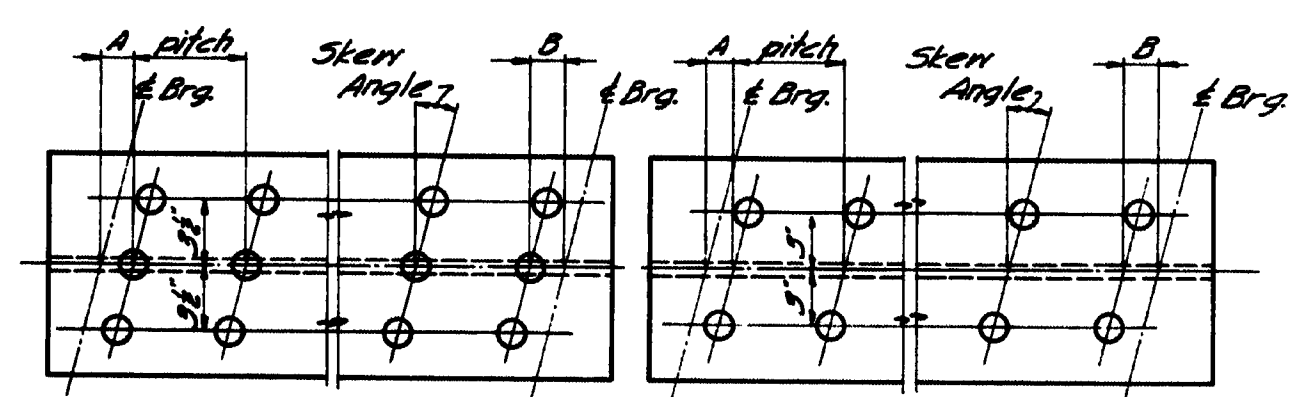


SECTION E-E

Shoring Adjustment Device Armored Joint Unit Type A only - After Unit is in final position weld 3/8" R to angle with 1/2" fillet

SHEAR CONNECTOR NOTE

The connectors may be either steel studs or spirally formed bars. At the request of the contractor a plan for using spirally formed bars will be provided.

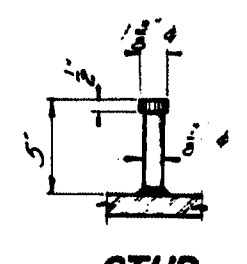


TRIPLE STUDS

DOUBLE STUDS

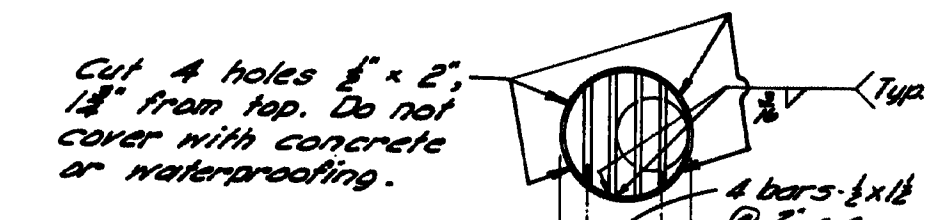
NOTE

1. Studs shall be granular or solid flux filled and automatically welded to top flange in the shop or field.
2. See the design details for Dimensions 'A' & 'B', stud pitch and skew angle for studs.



STUD DETAIL

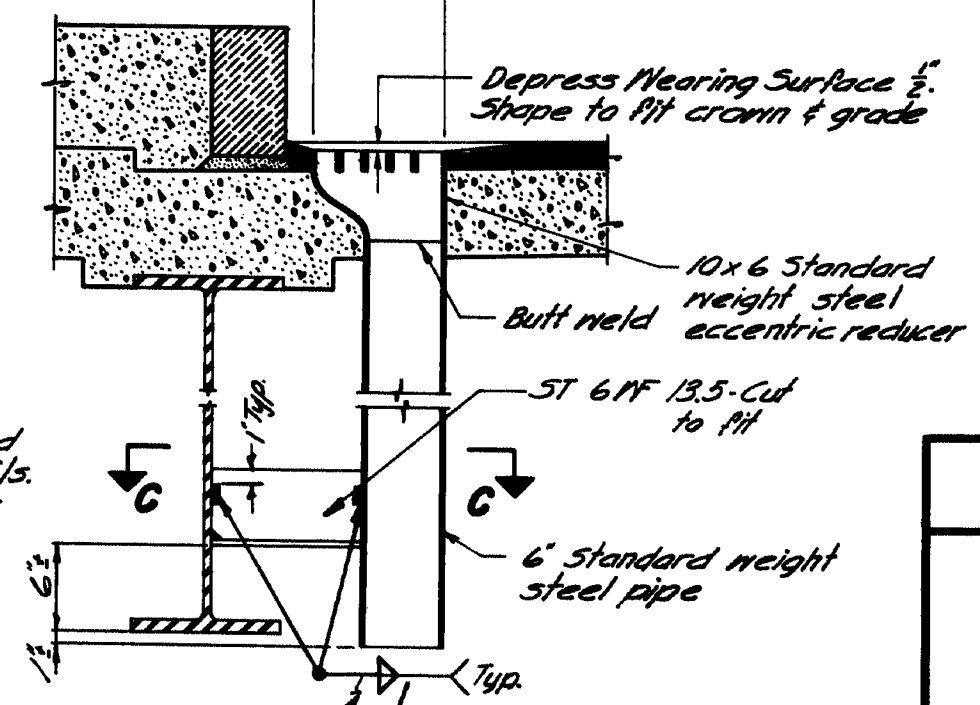
SHEAR CONNECTORS



SECTION C-C

NOTE

1. Drain may be rotated 180°. See design details.
2. See design details for location and number of drains and beam size to which it is connected.



DRAIN

GENERAL NOTE

Use only those items called for on design details. In case of conflict between these Standard Details and the design details, the requirements of the design details shall be followed.

MAINE STATE HIGHWAY COMMISSION
AUGUSTA, MAINE

STANDARD DETAILS
(BD 104-66)
**DIAPHRAGMS, ARMORED JOINT,
SHEAR CONNECTORS, DRAIN**

SEPTEMBER 1966

150-158