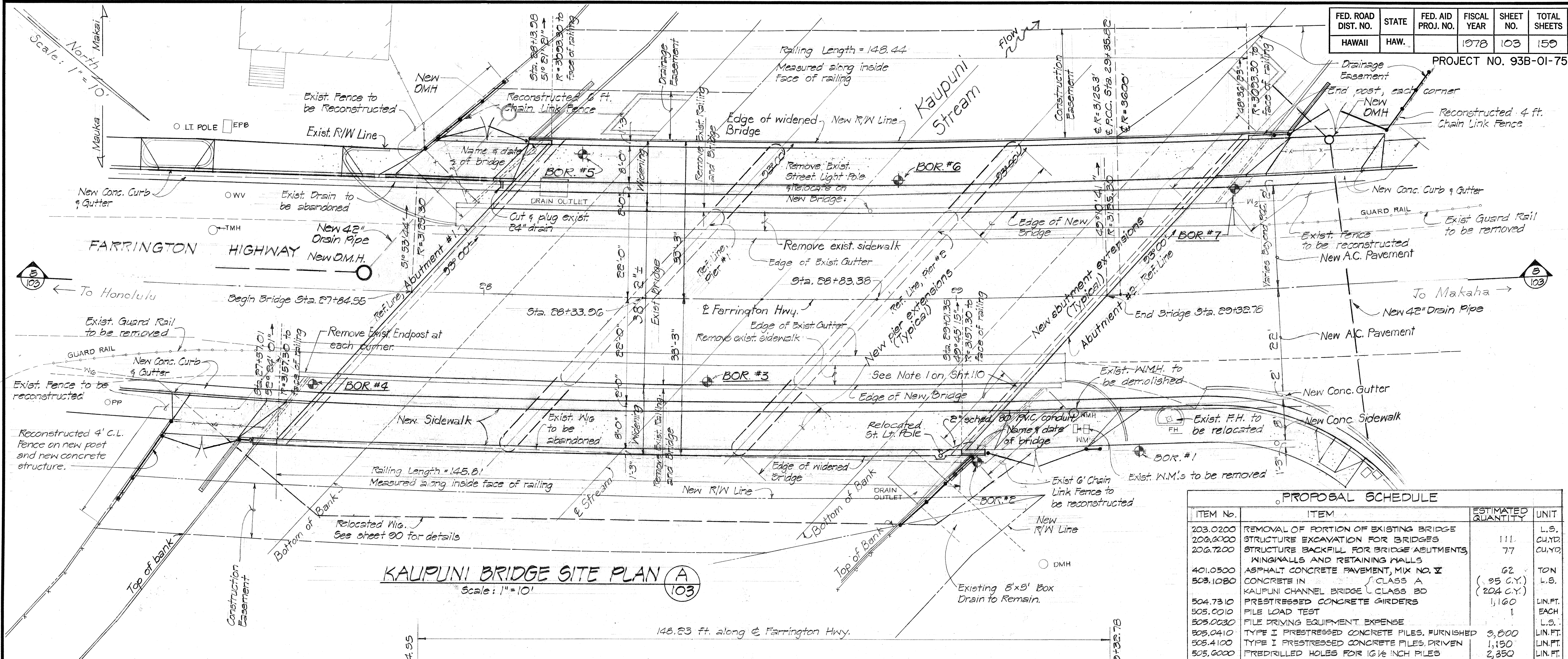


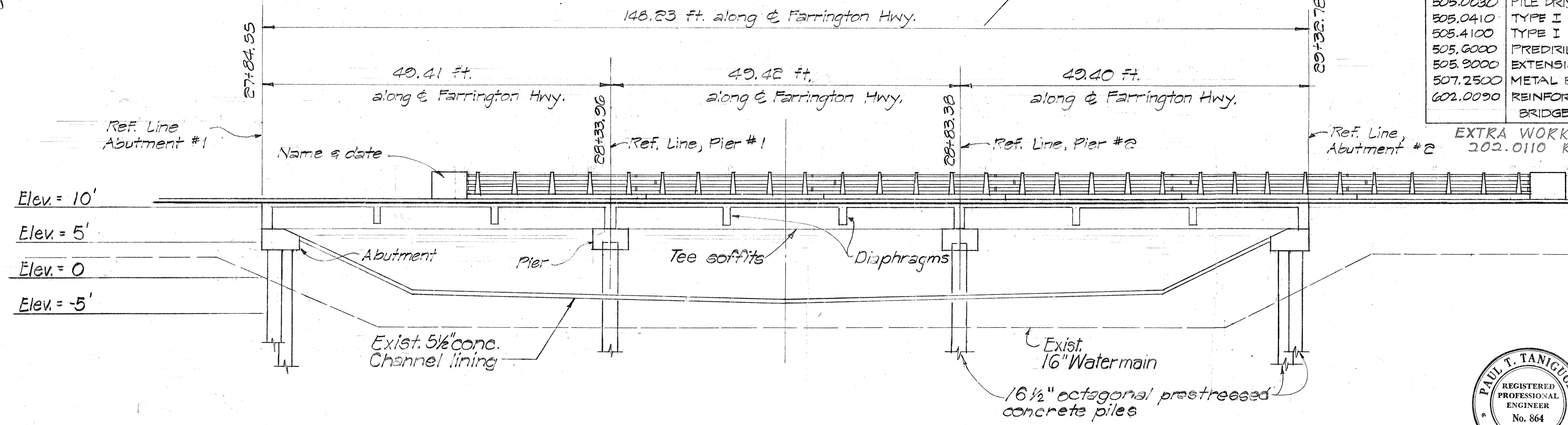
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	103	150

PROJECT NO. 93B-01-75



PROPOSAL SCHEDULE			
ITEM No.	ITEM	ESTIMATED QUANTITY	UNIT
203.0200	REMOVAL OF PORTION OF EXISTING BRIDGE	111	L.S.
206.6000	STRUCTURE EXCAVATION FOR BRIDGES	77	CUYD
206.7200	STRUCTURE BACKFILL FOR BRIDGE ABUTMENTS, WINGWALLS AND RETAINING WALLS		CUYD
401.0500	ASPHALT CONCRETE PAVEMENT, MIX NO. 3	62	TON
503.1080	CONCRETE IN KAUPUNI CHANNEL BRIDGE CLASS A	(.95 C.Y.)	L.S.
	CONCRETE IN KAUPUNI CHANNEL BRIDGE CLASS BD	(204 C.Y.)	L.S.
504.7310	PRESTRESSED CONCRETE GIRDERS	1,160	LIN. FT.
505.0010	PILE LOAD TEST	1	EACH
505.0030	PILE DRIVING EQUIPMENT EXPENSE		L.S.
505.0410	TYPE I PRESTRESSED CONCRETE PILES, FURNISHED	3,600	LIN. FT.
505.4100	TYPE I PRESTRESSED CONCRETE PILES, DRIVEN	1,150	LIN. FT.
505.6000	PREDRILLED HOLES FOR 16 1/2 INCH PILES	2,350	LIN. FT.
505.9000	EXTENSIONS OR "BUILD-UPS" OF PILES		P.A.
507.2500	METAL BRIDGE RAILING-THREE RAILS	205	LIN. FT.
602.0090	REINFORCING STEEL IN KAUPUNI CHANNEL BRIDGE	(66,963 LBS)	L.S.
EXTRA WORK-(CCO # 33)			
202.0110	REMOVAL OF BOULDERS FROM BRIDGE ABUTMENTS		

- Notes:
- See sheet 115 for General Notes on Bridge Construction.
 - See sheet 114 for Boring Logs.
 - Curb Line @ Makai-Makaha Corner of bridge shall be concentric with & of Roadway. Makai edge of bridge shall be concentric with 3,125.30 foot radius curve.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAUPUNI CHANNEL BRIDGE
LAYOUT PLAN & PROFILE SECTION
FARRINGTON HIGHWAY WIDENING
LUUALAEI HOMESTEAD ROAD TO JADE STREET
PROJECT NO. 93B-01-75, UNIT I
SCALE: 1" = 10' DATE: _____

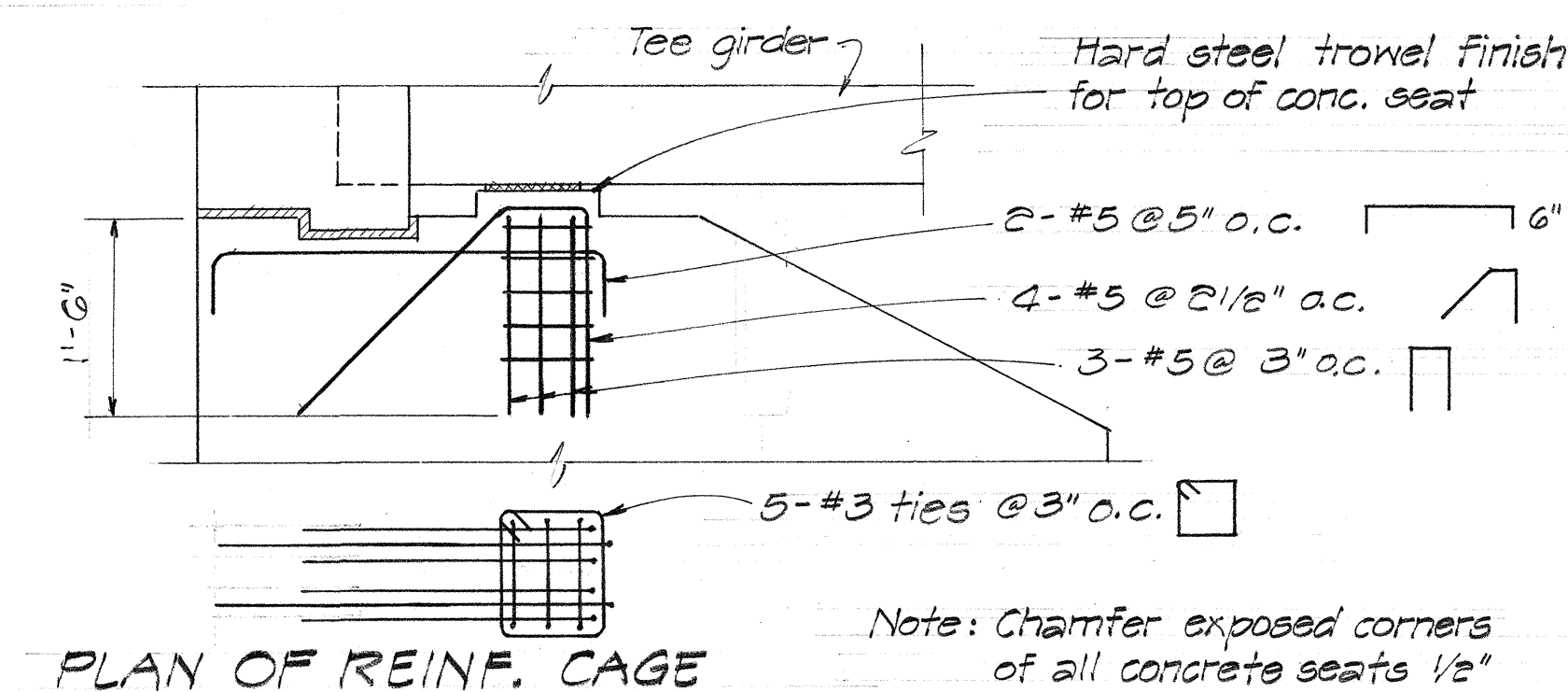
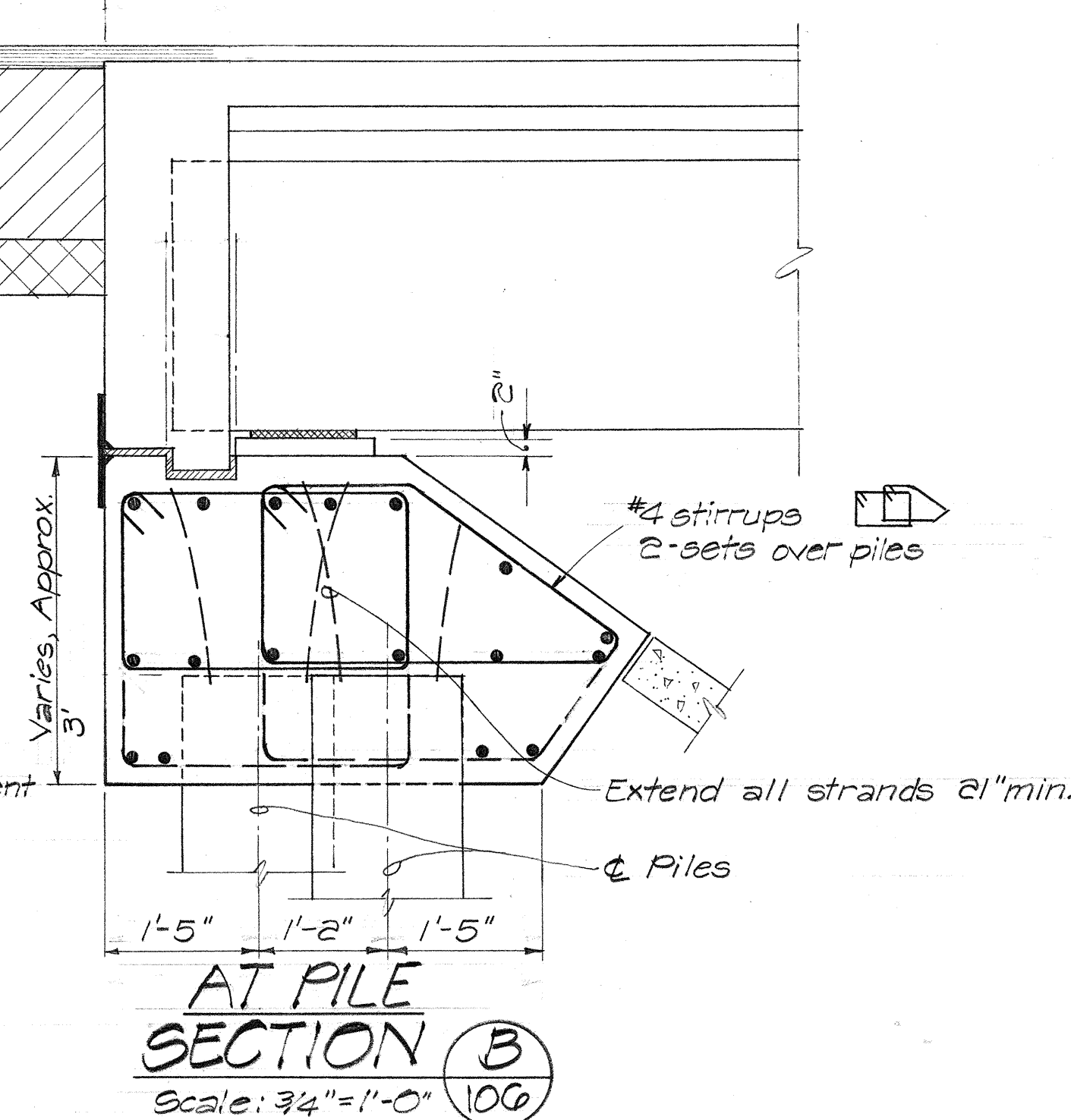
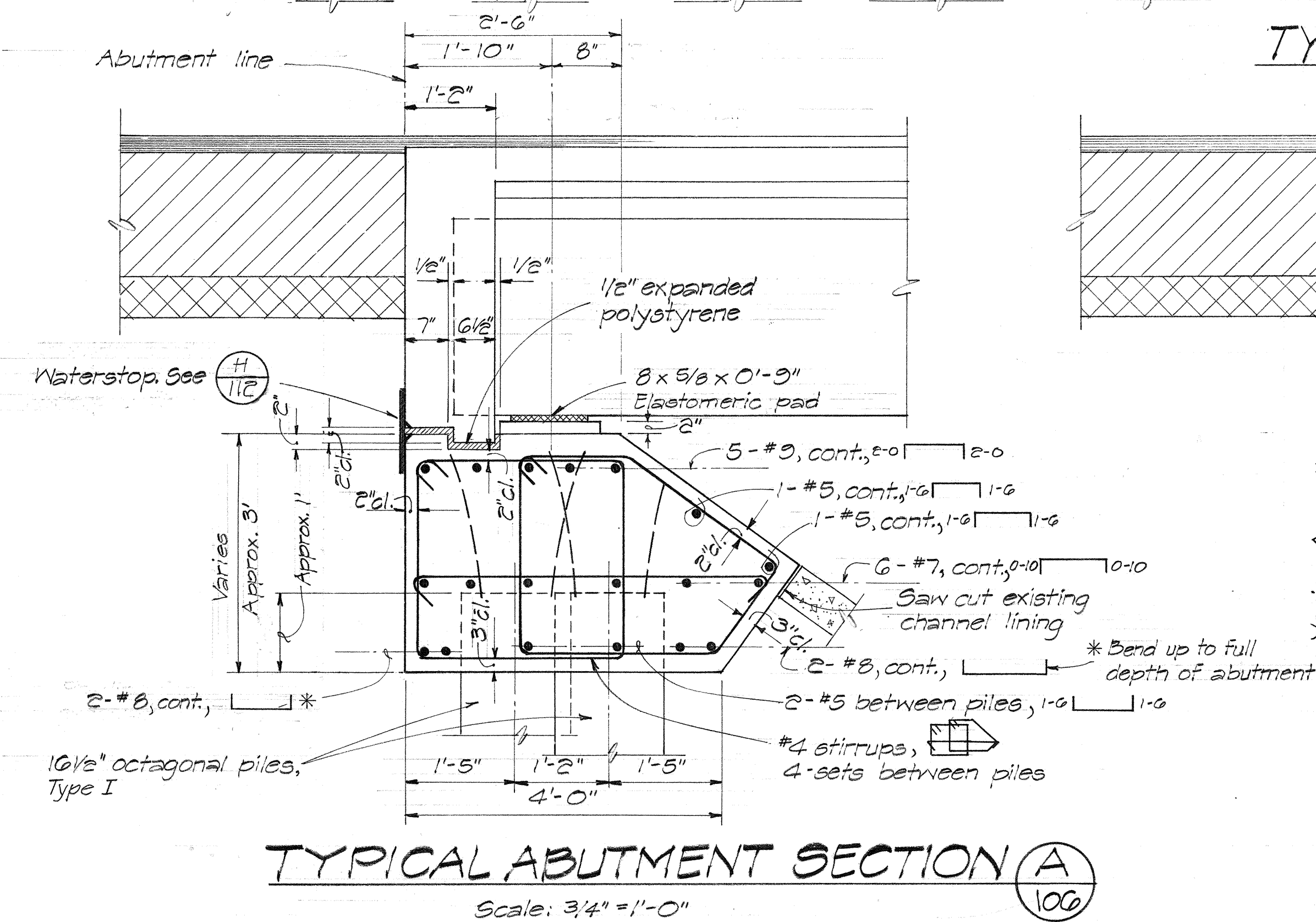
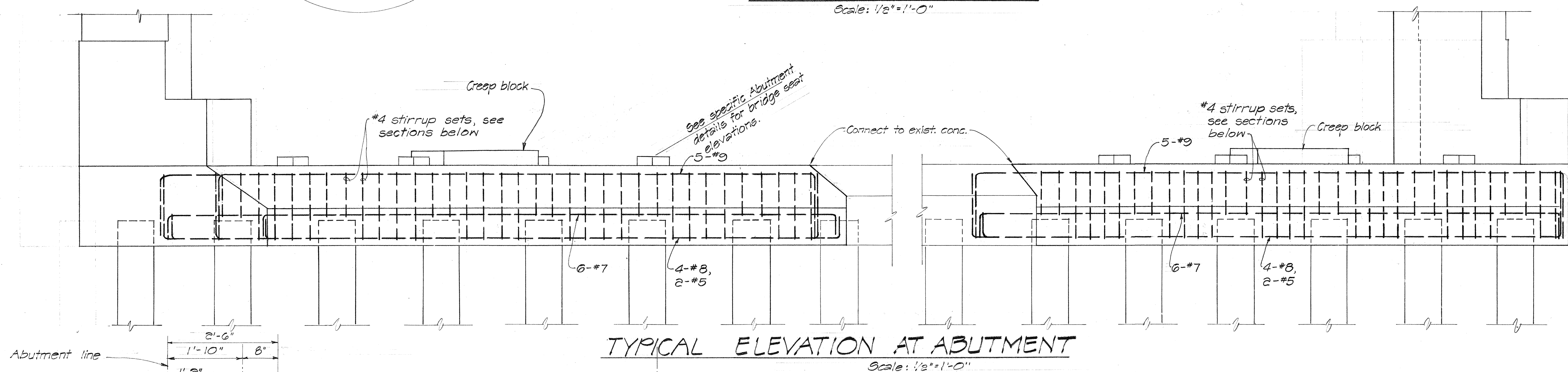
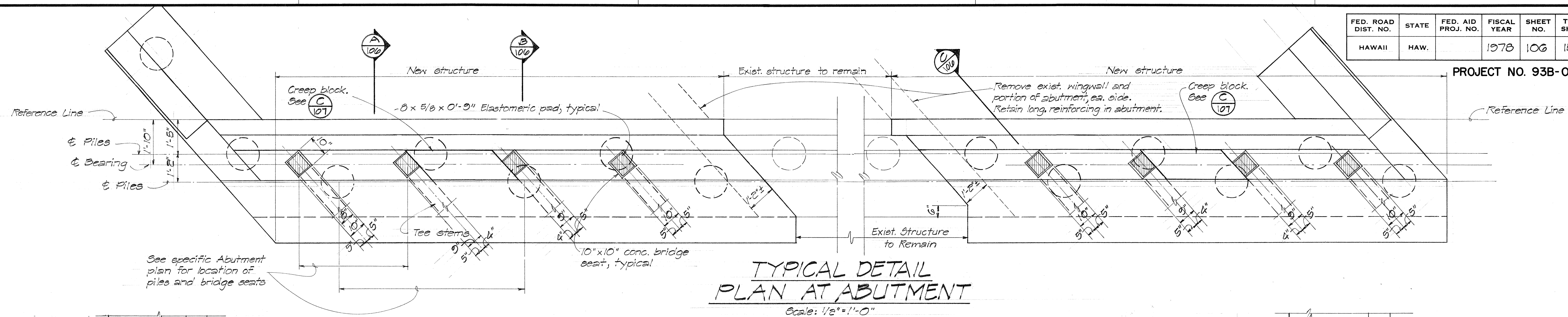
SHEET NO. 1 OF 13 SHEETS

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Paul T. Taniguchi

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

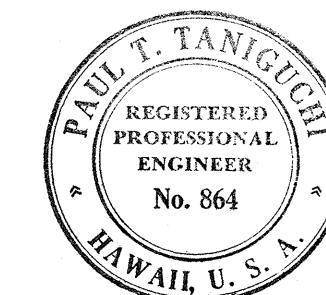
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	106	159

PROJECT NO. 93B-01-75



SECTION (C)
Scale: 3/4" = 1'-0"

Note: Chamfer exposed corners of all concrete seats 1/2" except adjacent to creep block.

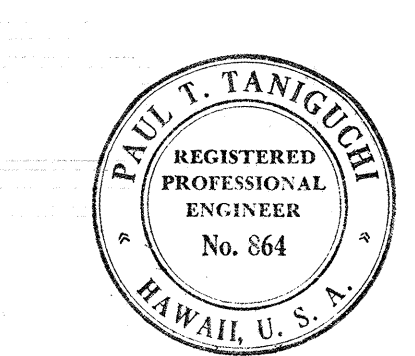
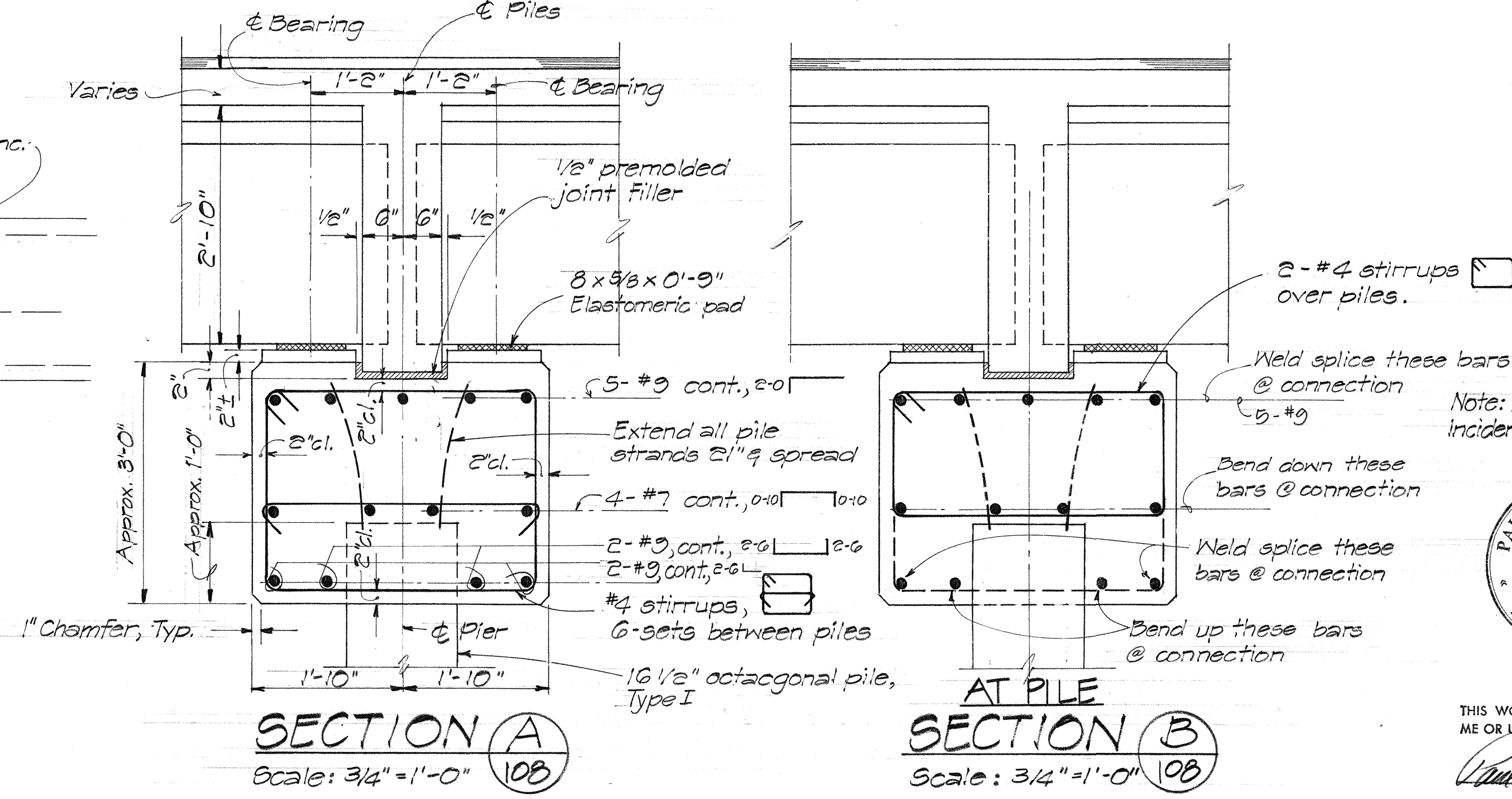
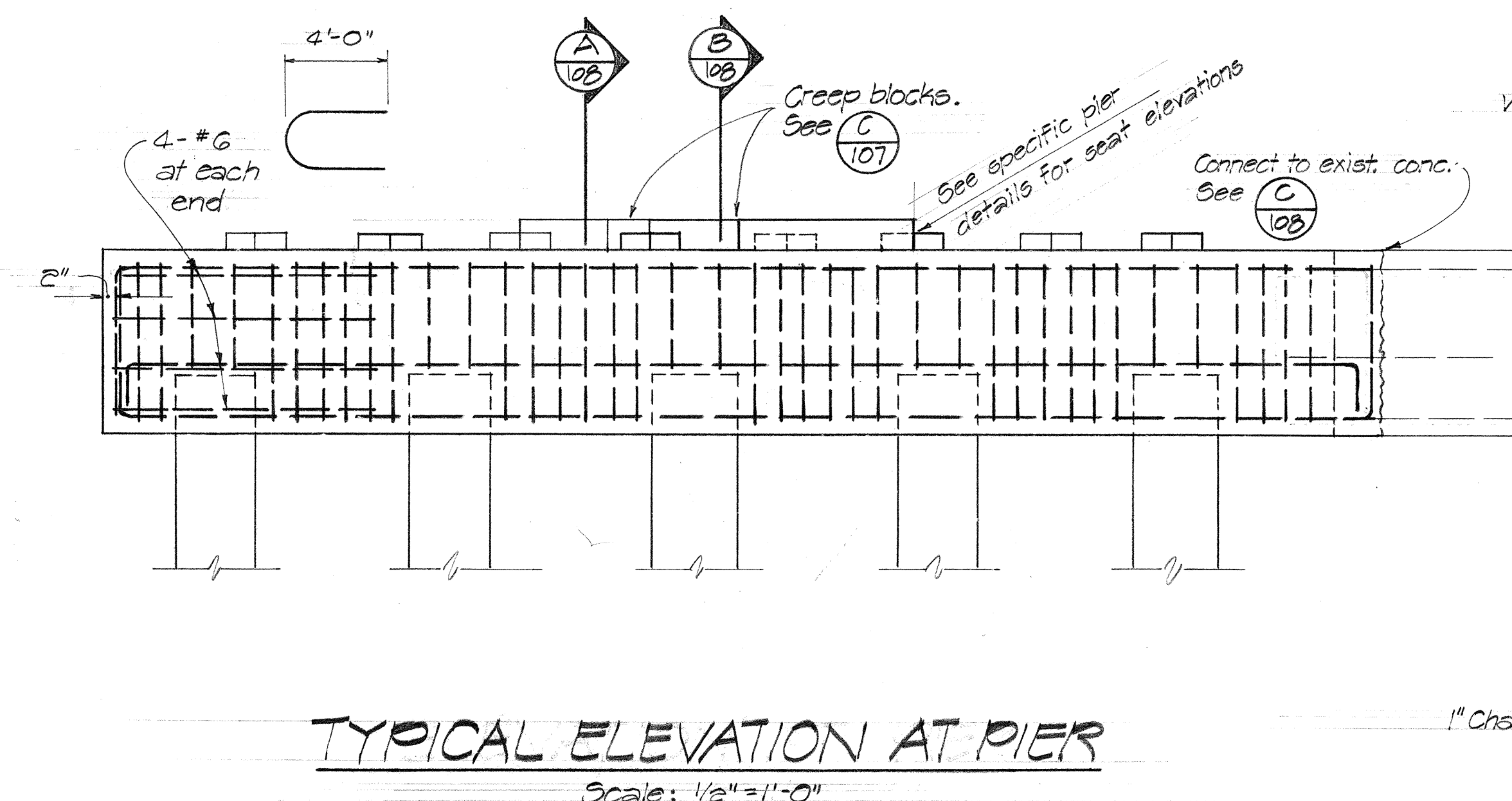
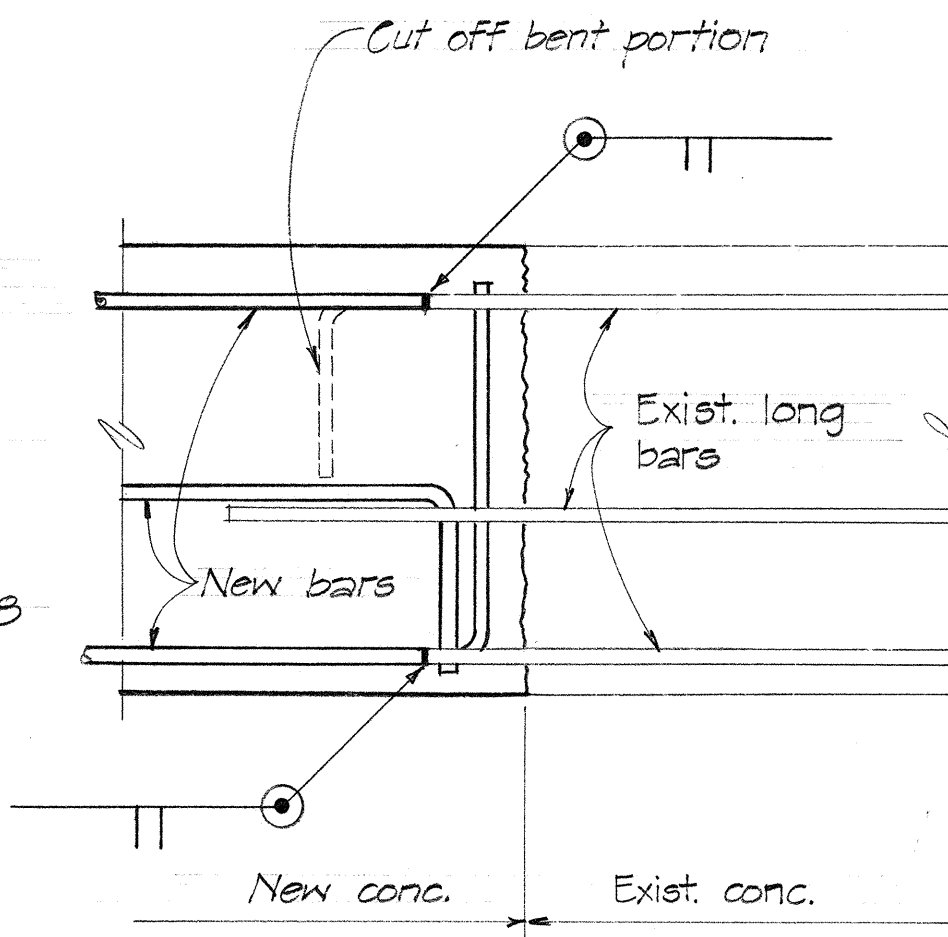
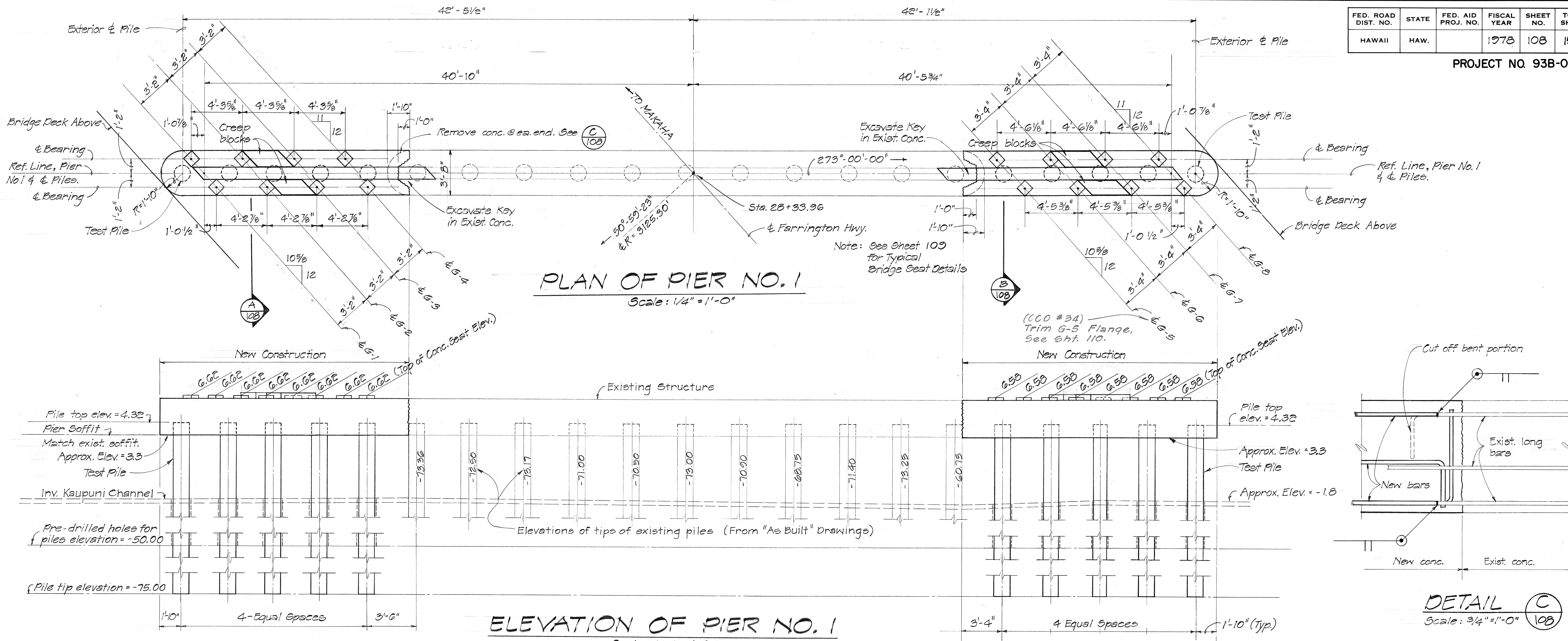


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUPLUNI CHANNEL BRIDGE
FARRINGTON HIGHWAY WIDENING
LUUALAE! HOMESTEAD ROAD TO JADE STREET
PROJECT NO. 93B-01-75, UNIT I
SCALE: AS SHOWN
DATE:
SHEET NO. 4 OF 12 SHEETS

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Paul T. Taniguchi

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	108	150

PROJECT NO. 93B-01-75



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAUPUNI CHANNEL BRIDGE

FARRINGTON HIGHWAY WIDENING
LUALUALEI HOMESTEAD ROAD TO JADE ST.
PROJECT NO. 93B-01-75, UNIT I
SCALE: AS SHOWN
DATE:

SHEET NO. 6 OF 13 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	

PROJECT NO. 93B-01-75



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



Scale: $\frac{1}{4}" = 1'-0"$



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



SECTION

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

Note: Chamfer exposed corners of all concrete seats $\frac{1}{2}$ " except adjacent to creep block.



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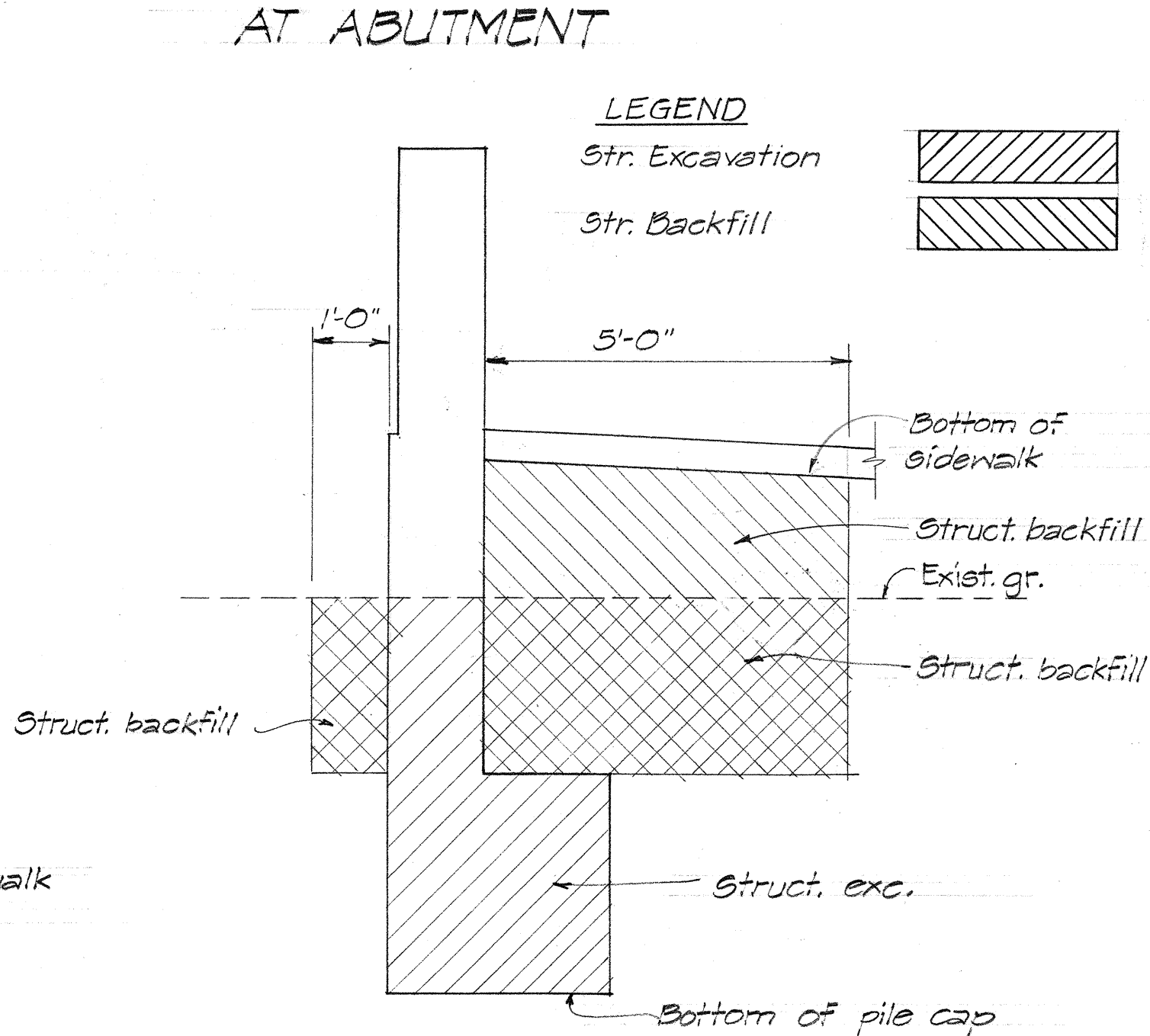
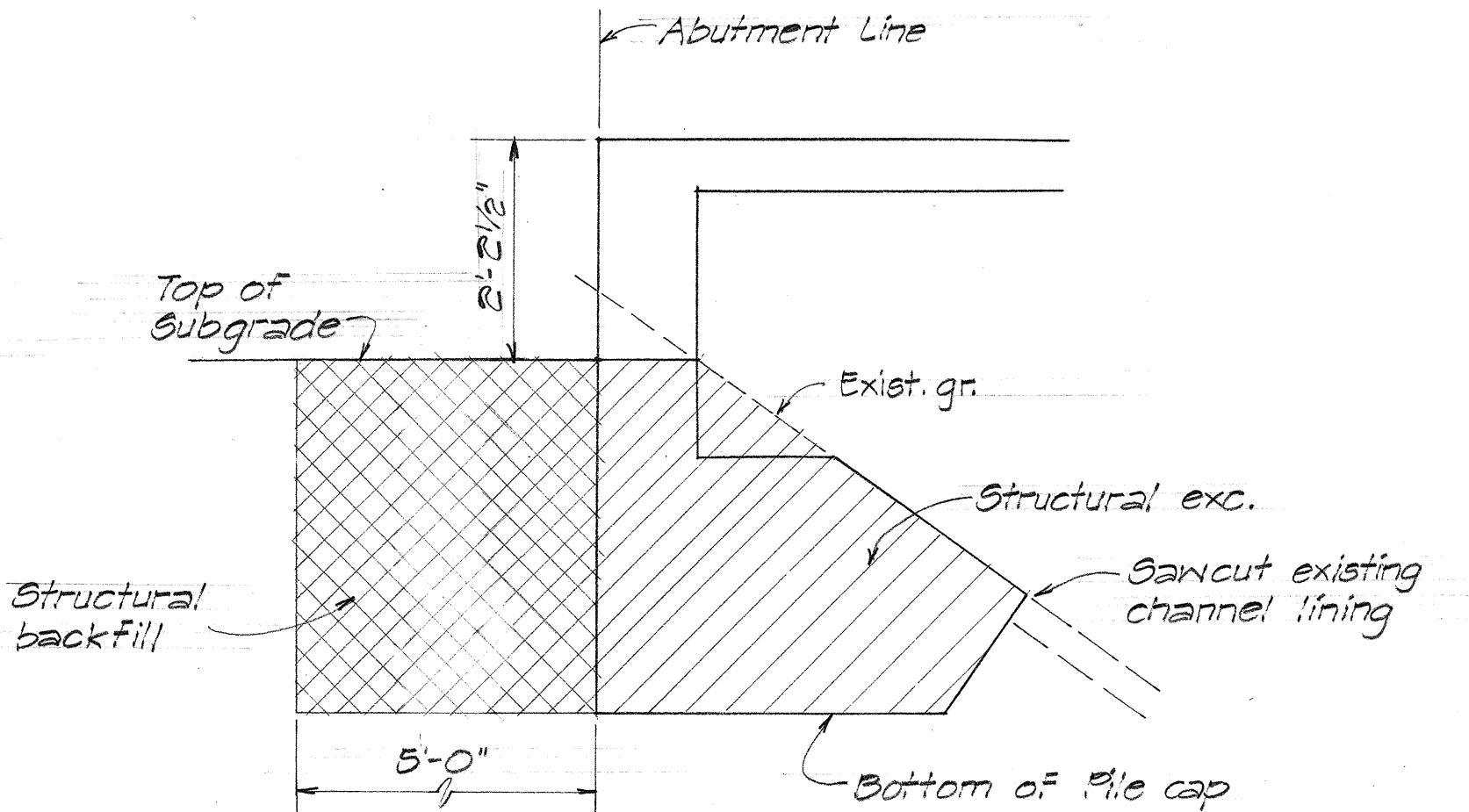
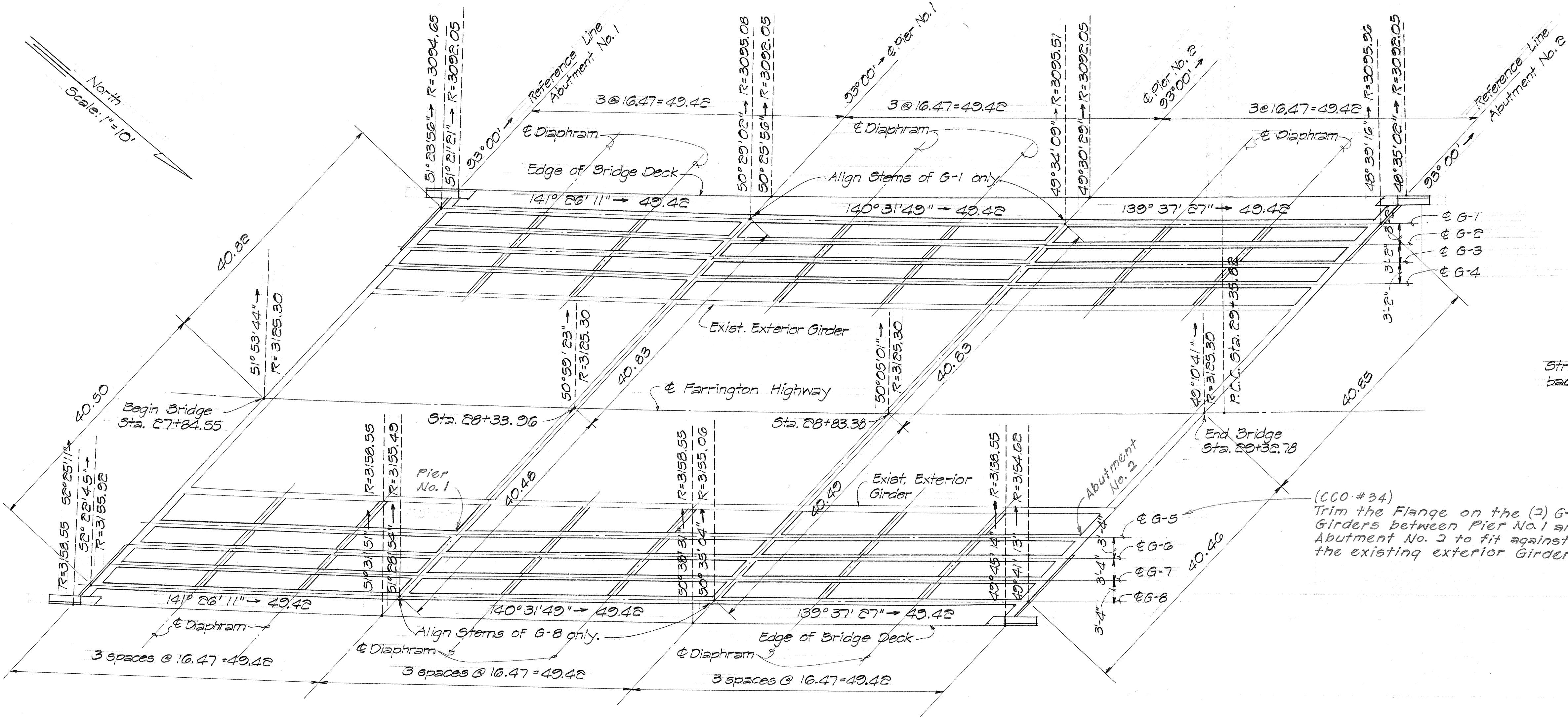
Page 1

Paul J. Tamm

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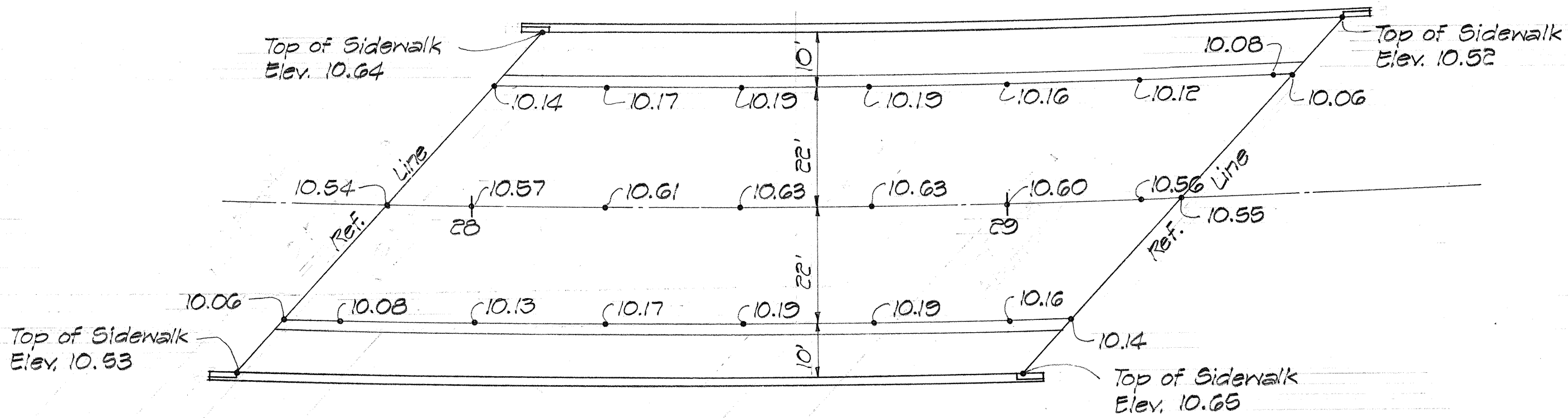
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	110	150

PROJECT NO. 93B-01-75

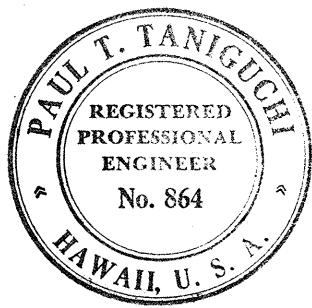


DECK FRAMING								
	LEFT				RIGHT			
	EDGE OF BRIDGE		G-1		G-8		EDGE OF BRIDGE	
	Station	Offset	Station	Offset	Station	Offset	Station	Offset
Abutment No. 1	28+13.98	33.25	28+11.64	30.65	27+58.17	30.62	27+55.96	33.25
Pier No. 1	28+64.37	33.25	28+61.35	30.22	28+07.12	30.19	28+04.44	33.25
Pier No. 2	29+14.77	33.25	29+11.45	29.79	28+56.07	29.76	28+52.92	33.25
Abutment No. 2	29+65.14	33.27	29+61.30	29.35	29+05.02	29.32	29+01.35	33.25

- NOTES:
- Girder locations shown were determined using the best available information. Actual girder azimuths and lengths may vary from those shown. Girders shall be fabricated and erected to suit the substructure on the basis of Actual Field Measurements.
 - Girders G-1 and G-8 shall be erected so their stem centerlines meet at a point on piers. All other girders shall be erected parallel to the exterior girders.



STRUCTURAL EXCAVATION & BACKFILL



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

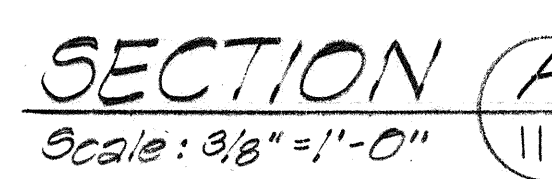
KAUPUNI CHANNEL BRIDGE

FARRINGTON HIGHWAY WIDENING
LUALUAEI HOMESTEAD ROAD TO JADE STREET
PROJECT NO. 93B-01-75 UNIT I
SCALE: AS SHOWN DATE: _____

SHEET NO. 8 OF 13 SHEETS

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

DATE: _____
SURVEY PLOTTED BY: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTED BY: _____
QUANTITIES BY: _____
DRAWN BY: _____

PROJECT NO. 93B-01-75

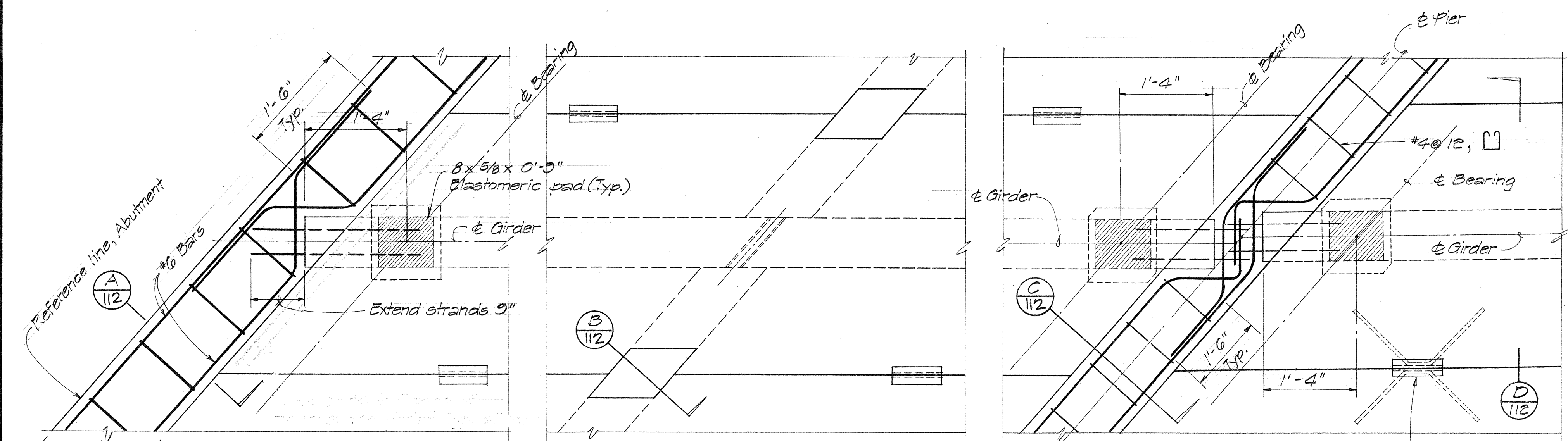
1. New piers, abutments, deck slabs, etc. shall be securely connected to existing counterparts. Cut and remove existing concrete leaving sound, rough contact surfaces free from dust and loose material. Existing reinforcing shall not be cut, but shall be cleaned, extended and imbedded into new concrete and spliced if required.

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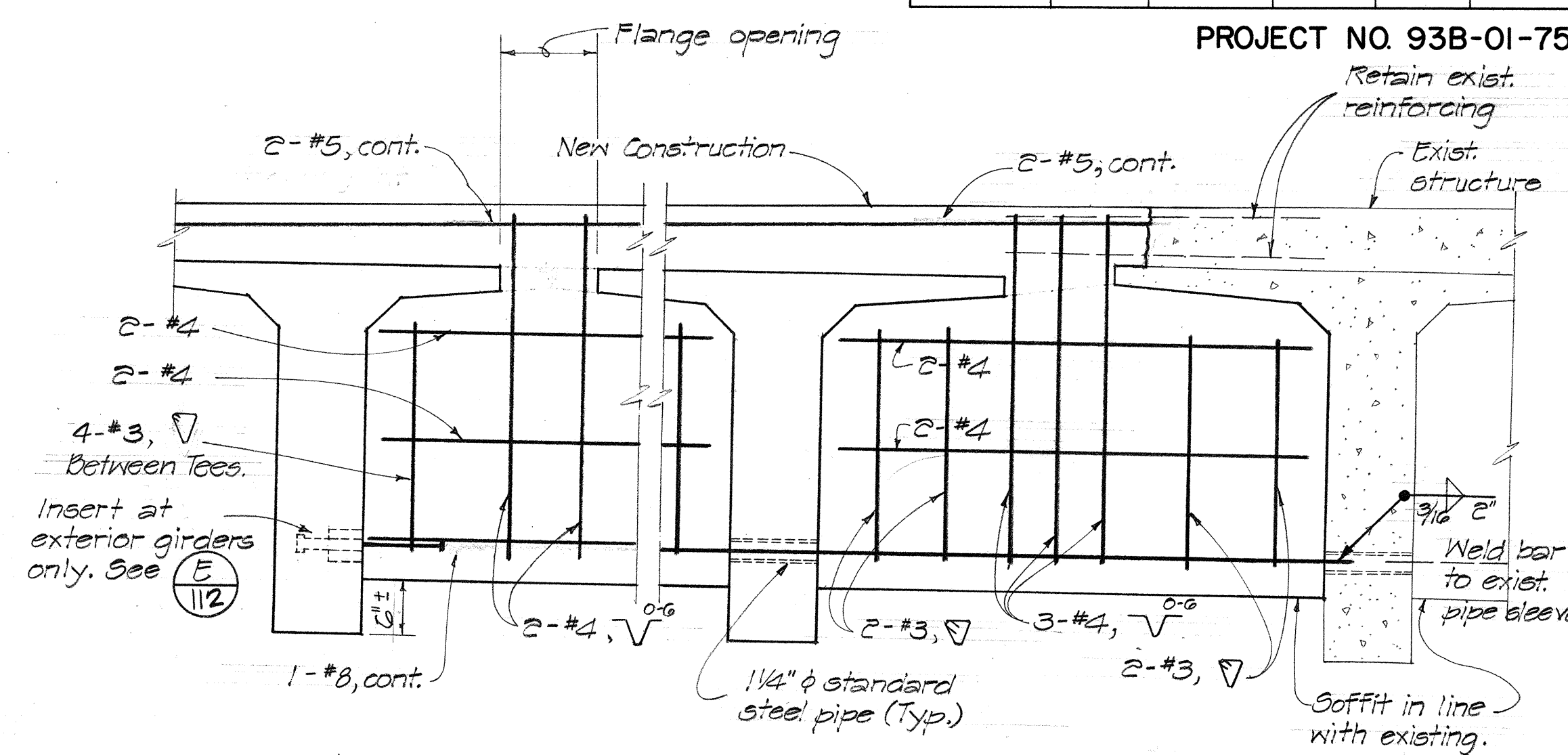
KAUPUNI CHANNEL BRIDGE
DECK FRAMING PLAN & SECTION
FARRINGTON HIGHWAY WIDENING
LUUALALEI HOMESTEAD ROAD TO JADE STREET
PROJECT NO. 93B-01-15, UNIT I
SCALE: AS SHOWN DATE:
SHEET NO. 2 OF 13 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	112	159

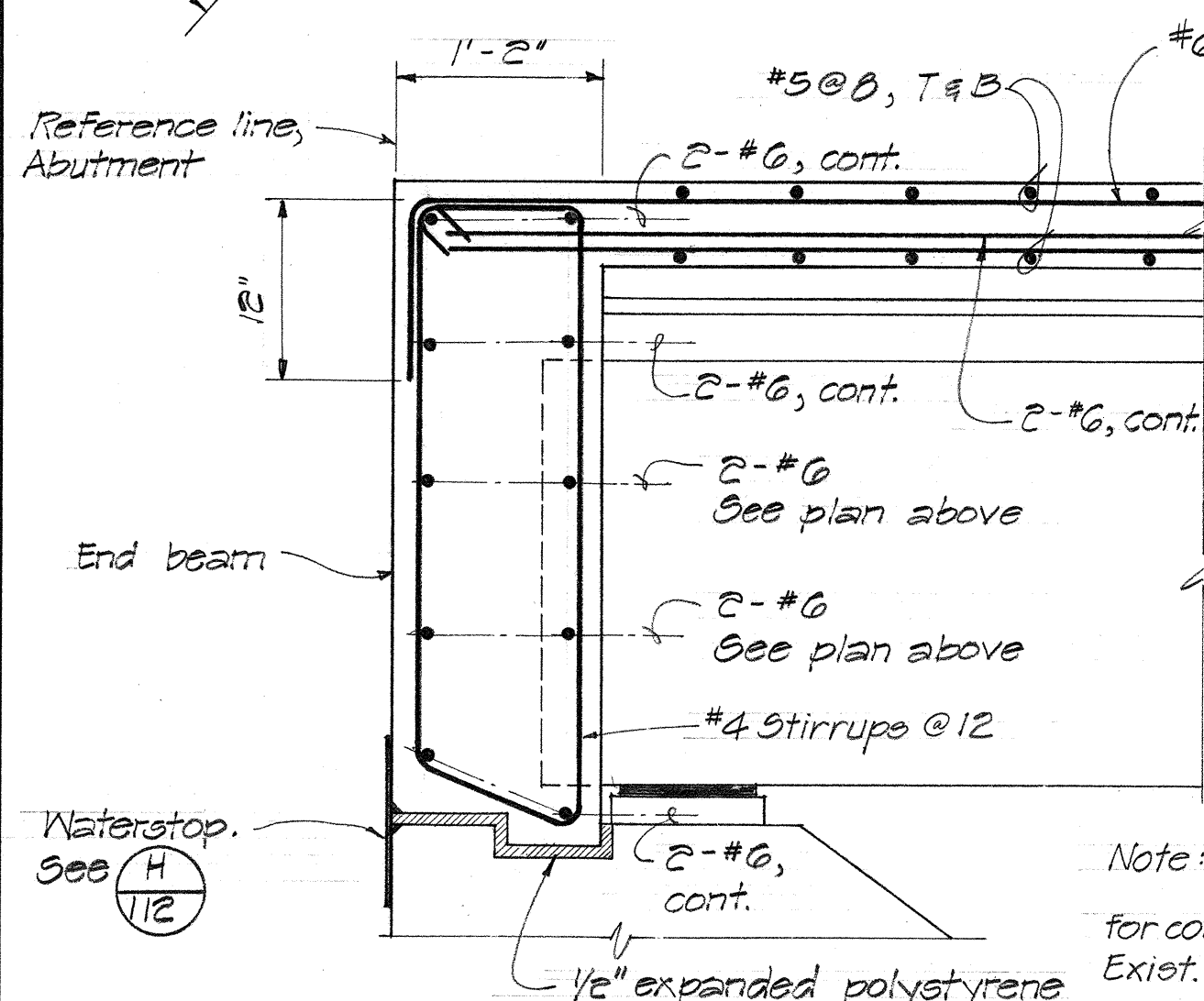
PROJECT NO. 93B-01-75



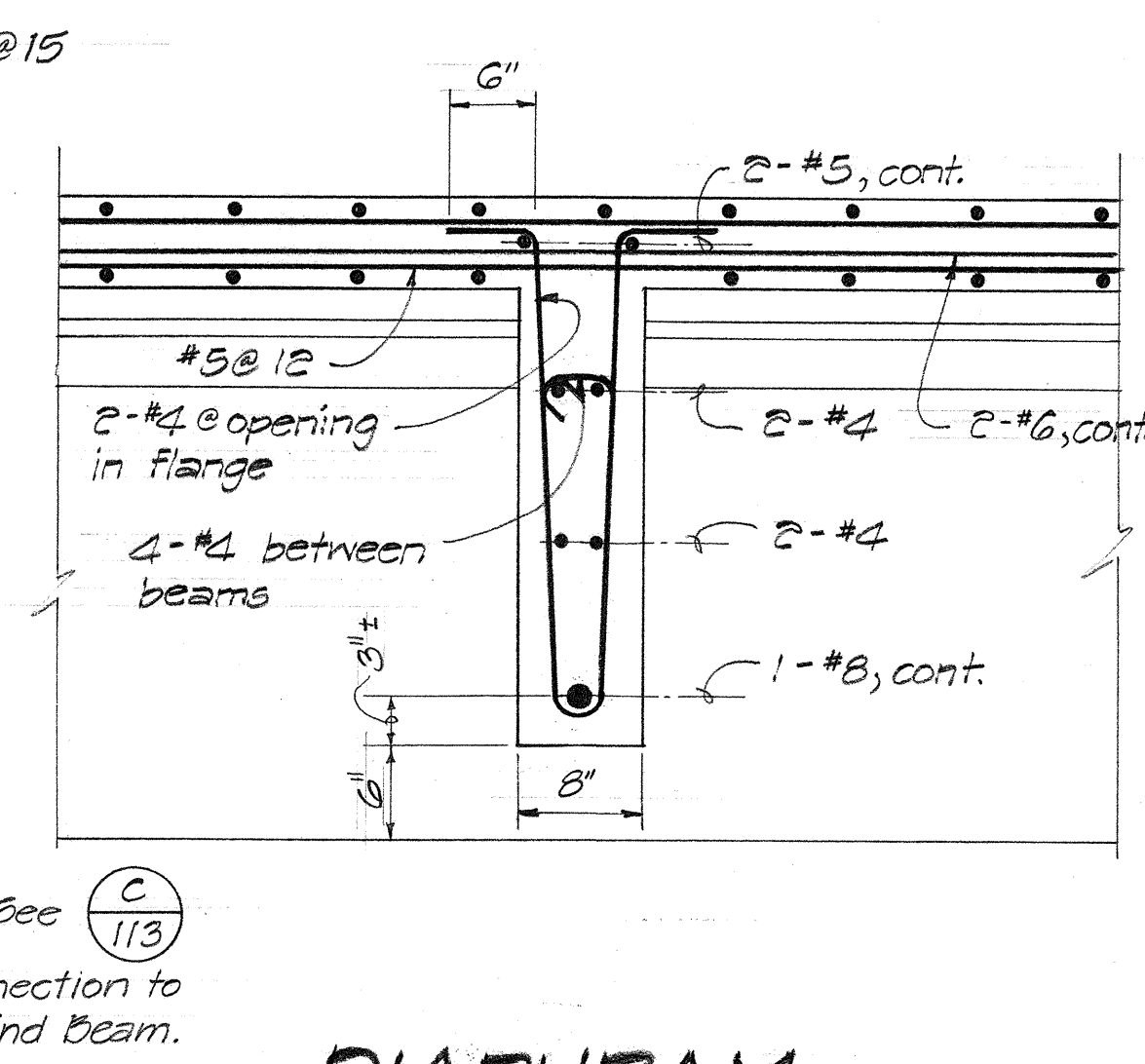
PLAN-PRECAST TEE GIRDERS
Scale: 1"=1'-0"



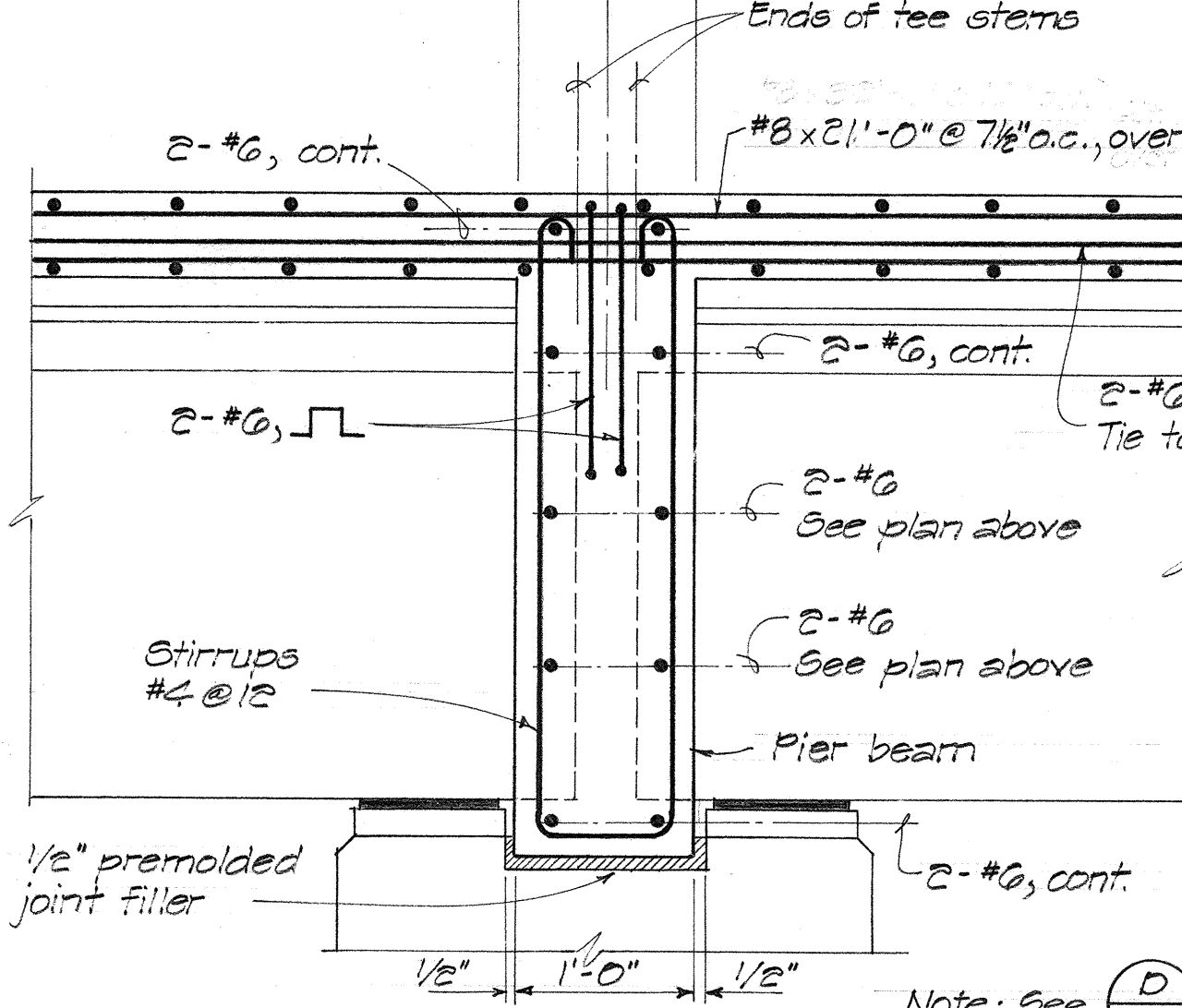
ELEVATION OF DIAPHRAM
Scale: 1"=1'-0"



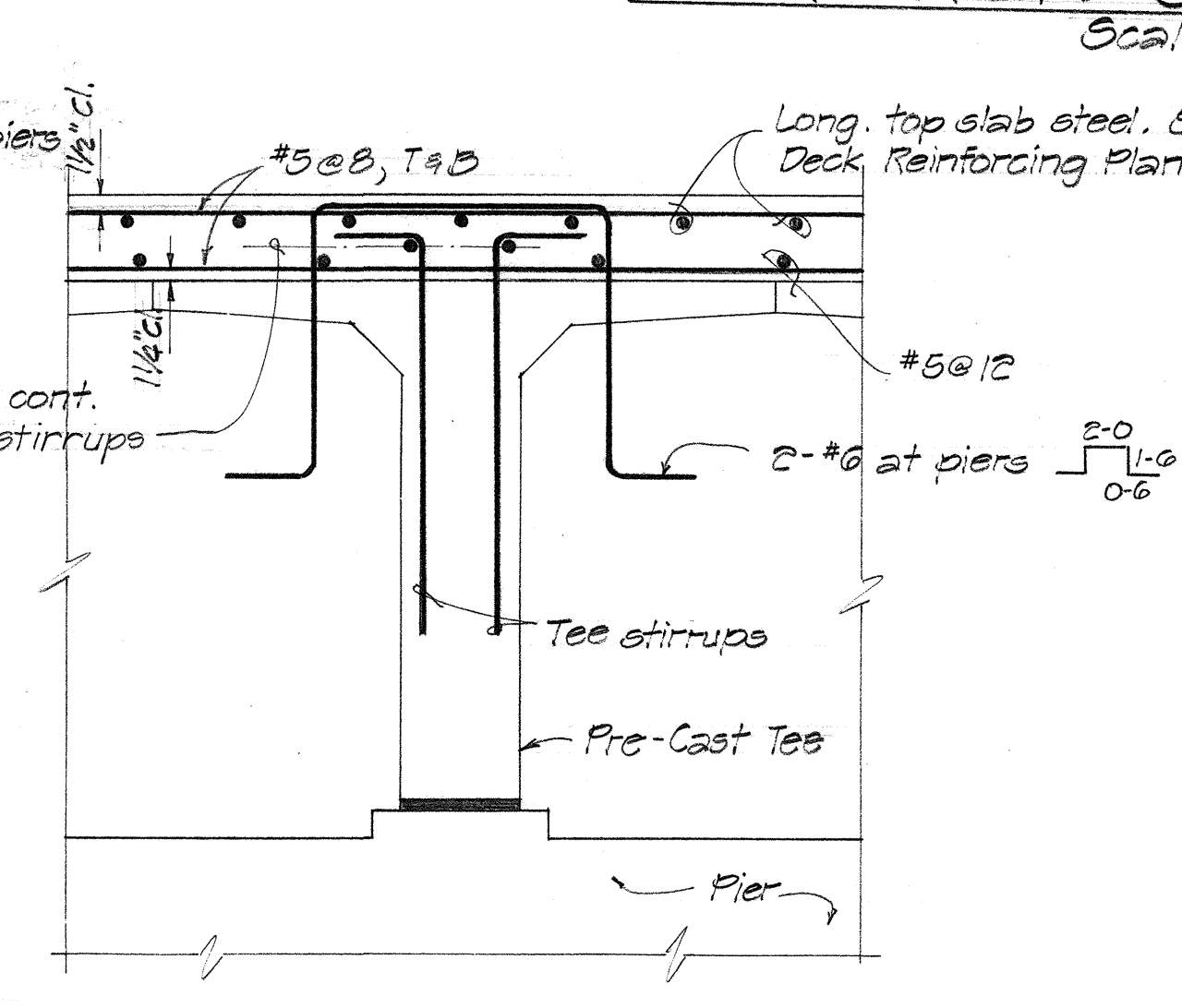
SECTION A
Scale: 1"=1'-0"



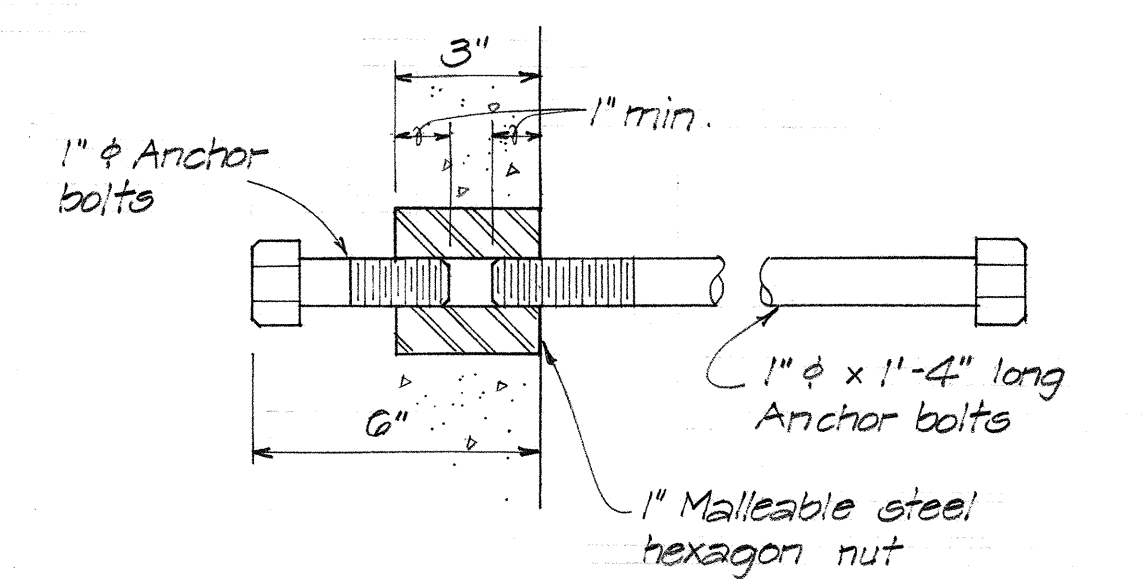
SECTION B
Scale: 1"=1'-0"



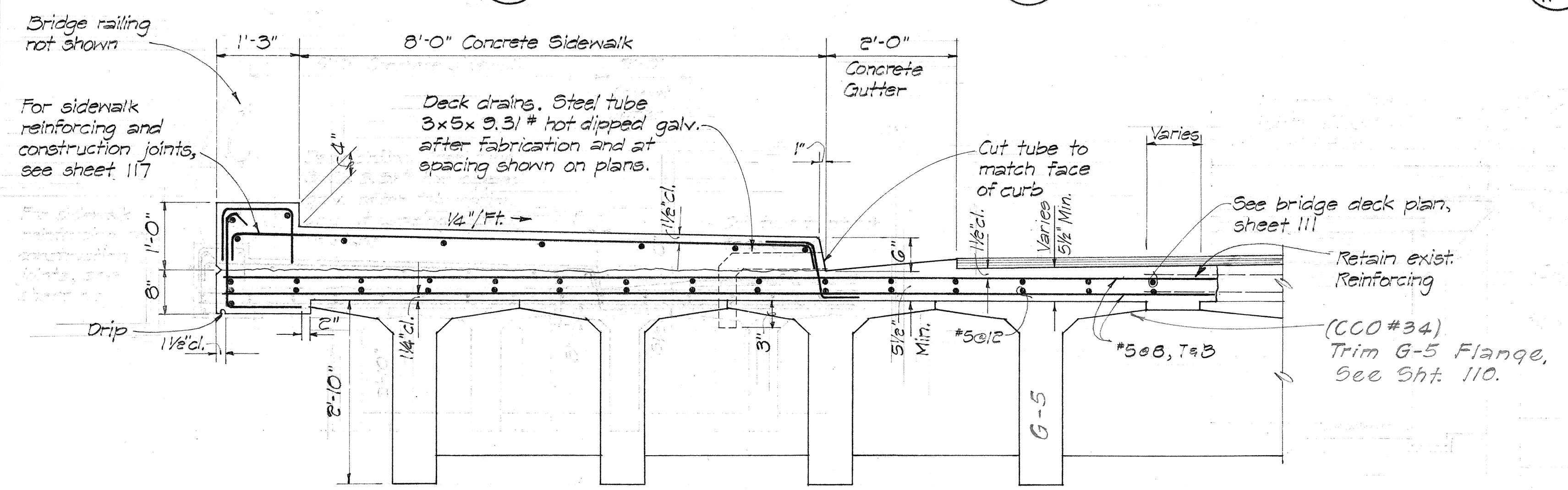
SECTION C
Scale: 1"=1'-0"



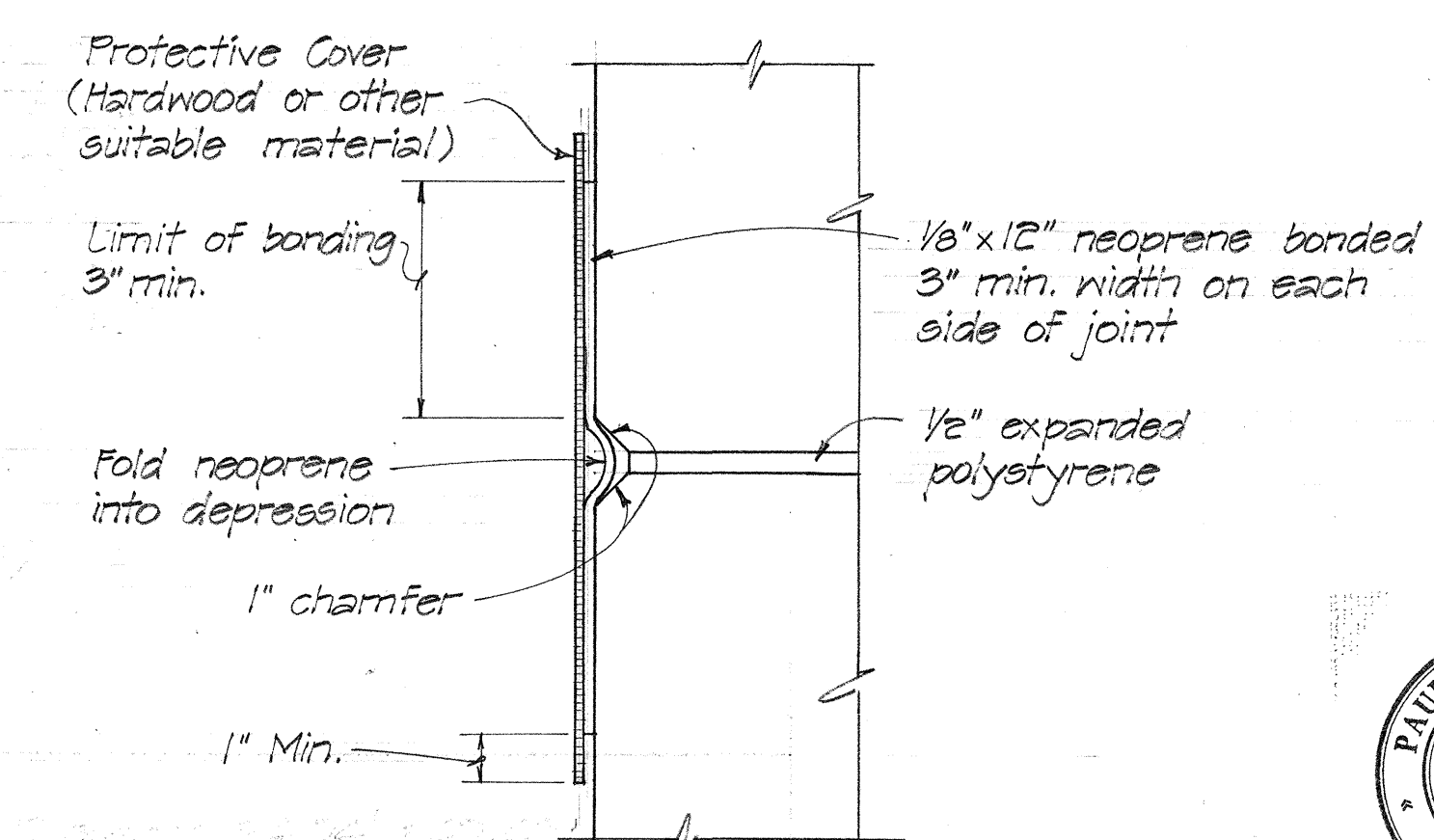
SECTION D
Scale: 1"=1'-0"



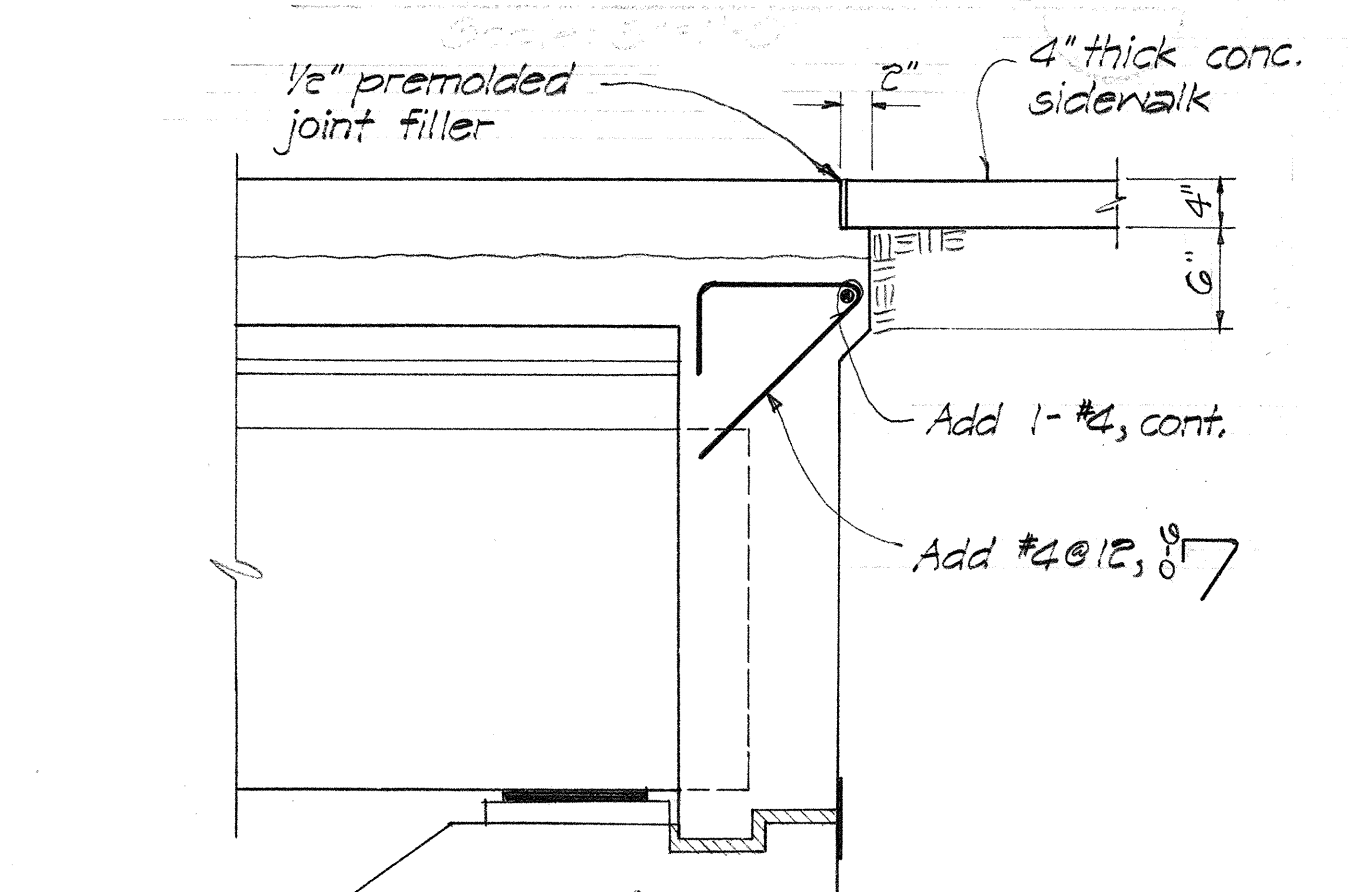
INSERT DETAIL E
Scale: 3"=1'-0"



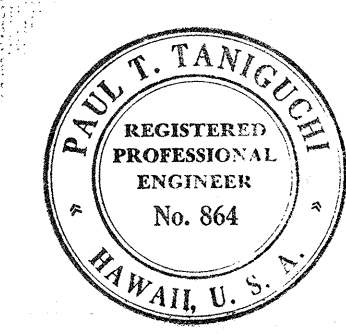
SECTION F
Scale: 3/4"=1'-0"



STRIP WATERSTOP DETAIL H
Scale: 3"=1'-0"



DETAIL @ SIDENWALK G
Scale: 3/4"=1'-0"



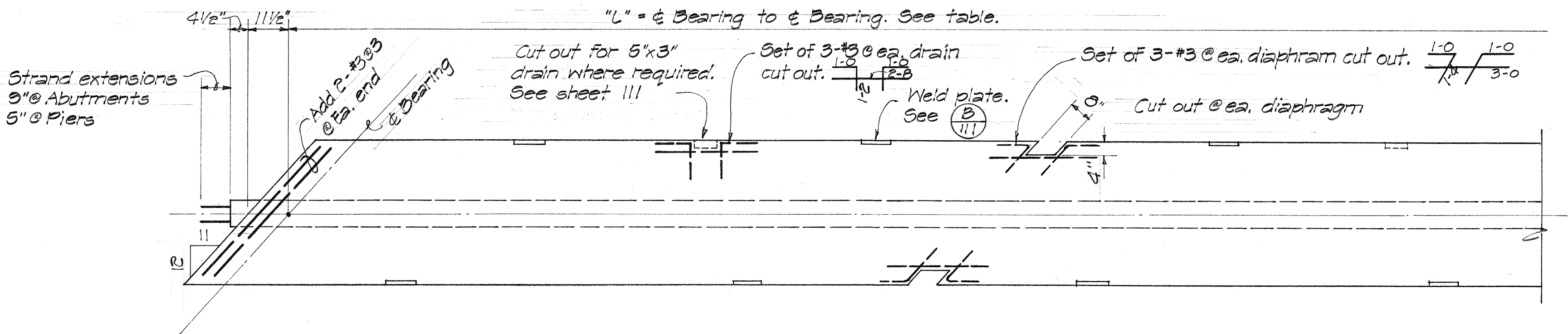
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUPUNI CHANNEL BRIDGE
FARRINGTON HIGHWAY WIDENING
LUALUALEI HOMESTEAD ROAD TO JADE STREET
PROJECT NO. 93B-01-75, UNIT I
SCALE: AS SHOWN
DATE: _____
SHEET NO. 10 OF 13 SHEETS

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Paul J. Taniguchi

DATE: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTED BY: _____
ORIGINAL PLAN: _____
NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	113	150

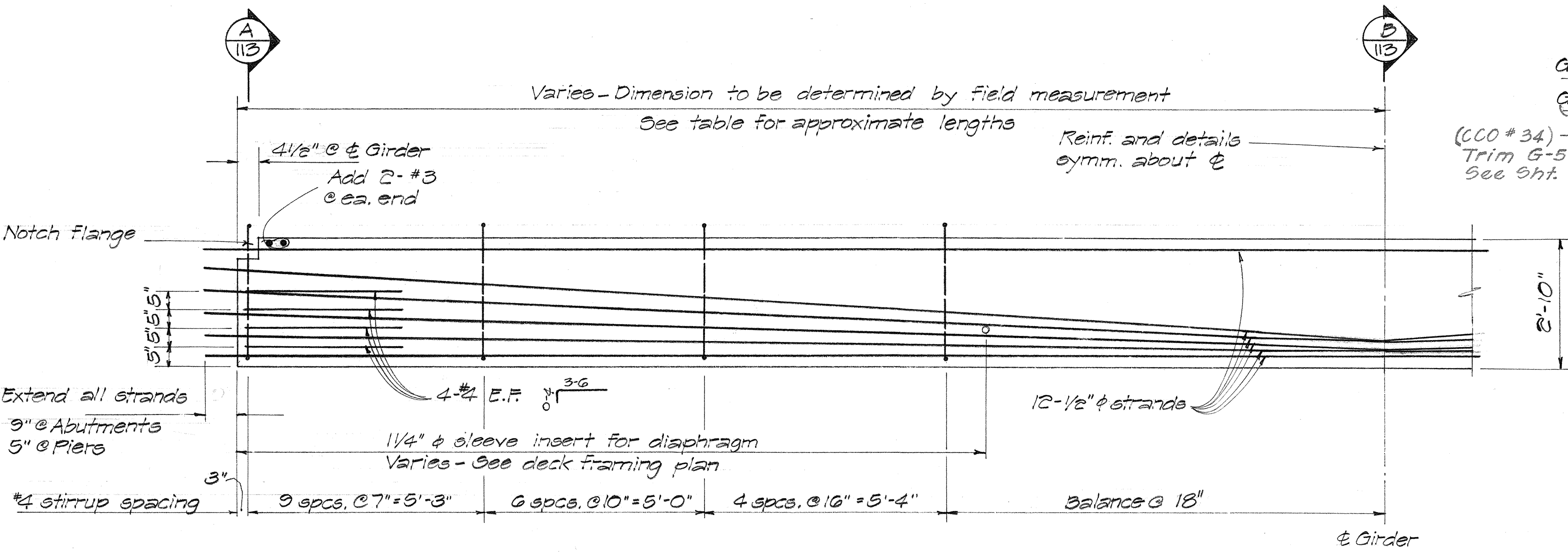
PROJECT NO. 93B-01-75



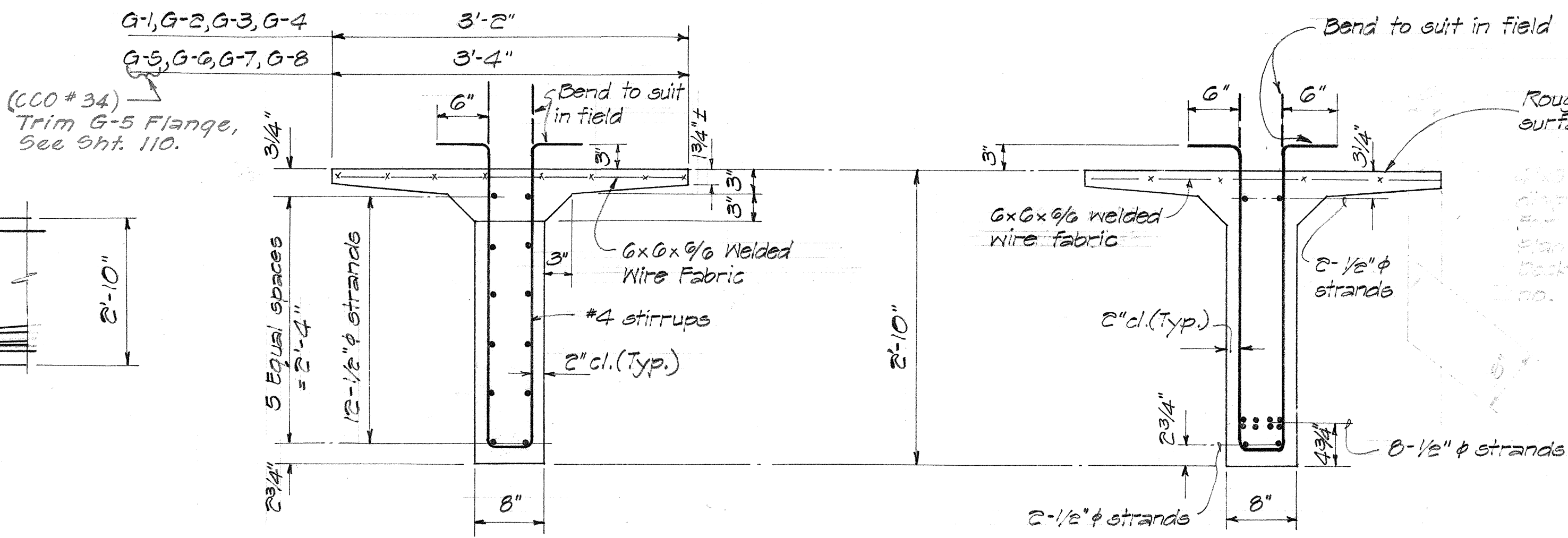
PLAN OF PRESTRESSED GIRDER
Scale: 1/2"=1'-0"

* GIRDER LENGTH			
	SPAN 1	SPAN 2	SPAN 3
"L"	45'-5"	46'-3 1/8"	45'-3 1/2"
Girder Length	48'-1"	48'-11 1/8"	47'-11 1/2"

* Girder lengths in table are approximate only. Girders shall be fabricated on the basis of actual field measured lengths.

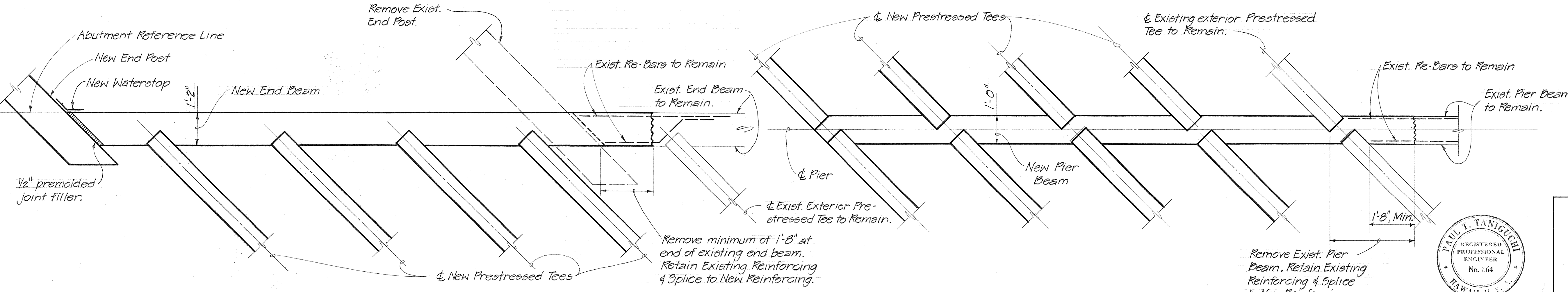


HALF ELEVATION OF PRECAST TEE GIRDER
Scale: 1/2"=1'-0"



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

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



PLAN OF END BEAM @ ABUTMENT C
Scale: 1/2"=1'-0"

PLAN OF TYPICAL PIER BEAM D
Scale: 1/2"=1'-0"

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTE BOOK NO. _____



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Paul F. Taniguchi

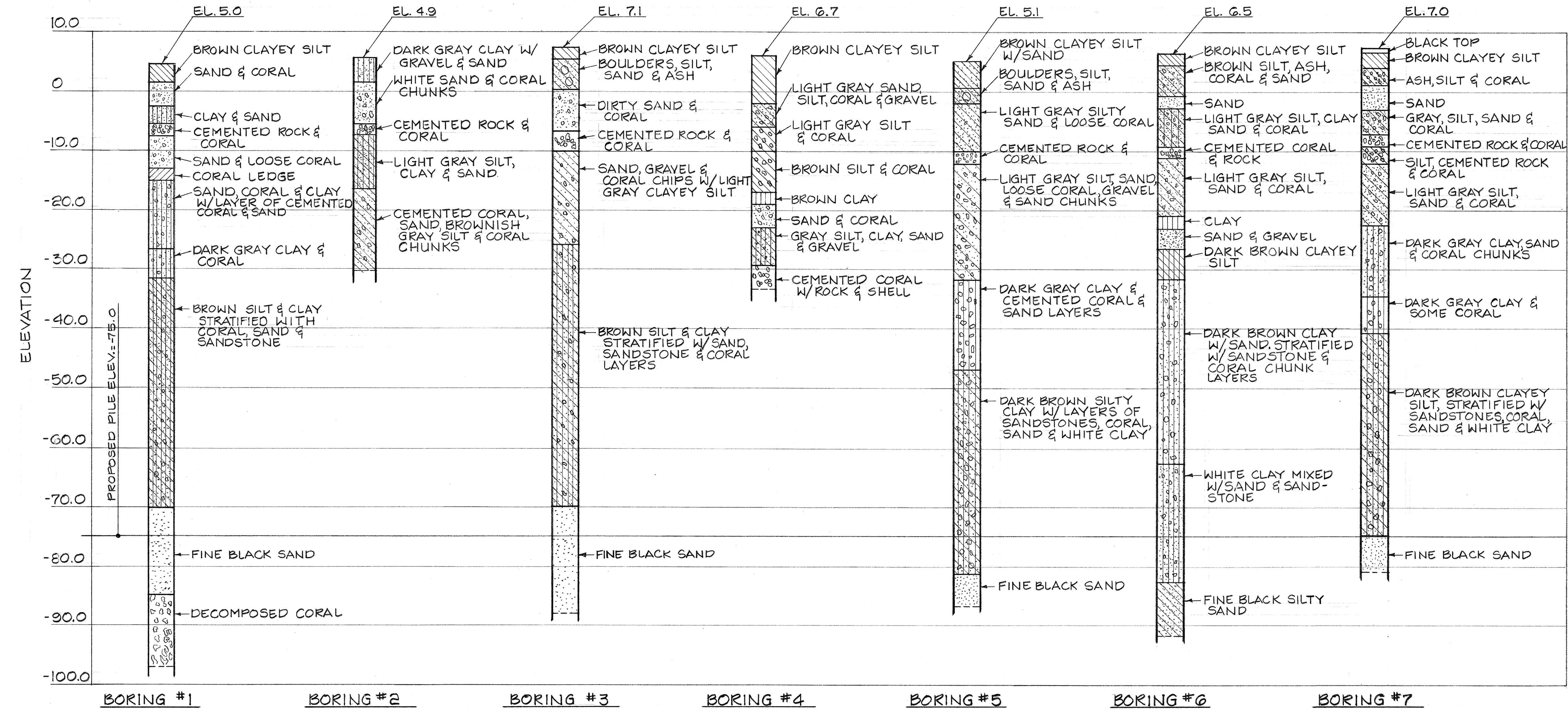
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAUPUNI CHANNEL BRIDGE

FARRINGTON HIGHWAY WIDENING
LUALUAE HOMESTEAD ROAD TO JADE STREET
PROJECT NO. 93B-01-75, UNIT I
SCALE: AS SHOWN DATE: _____
SHEET NO. 11 OF 13 SHEETS

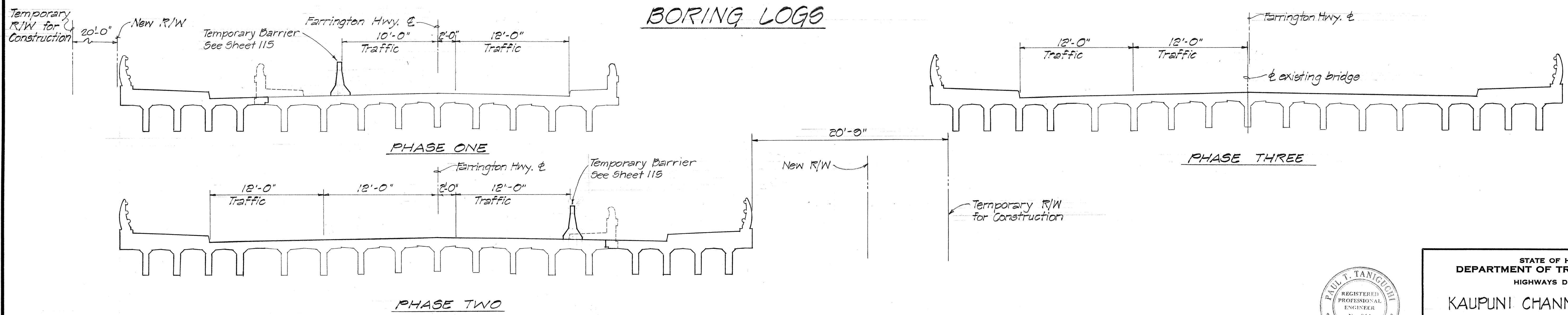
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	114	159

PROJECT NO. 93B-01-75



- Notes:
- For boring locations, see bridge layout plan, sheet 103.
 - Boring locations and data were obtained from drawings of existing bridge, dated 1964, available at the City & County Division of Engineering, File no. 9-7-1-53 to 58.
 - Boring data are provided for the convenience of the bidders only and their use is subject to all the conditions and limitations set forth in Subsection 102.09 of the Standard Specifications.

BORING LOGS



CONSTRUCTION PHASE DIAGRAMS

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



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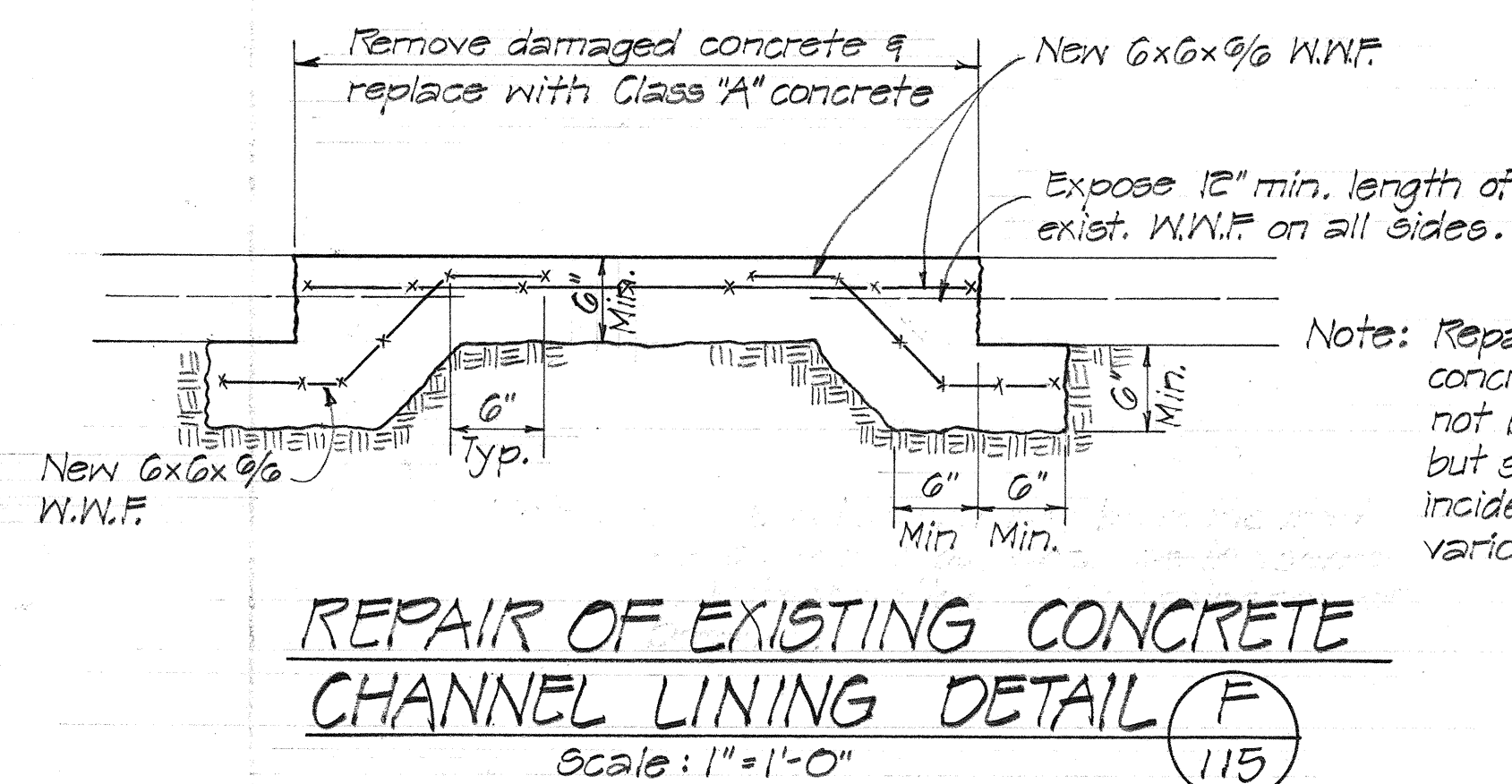
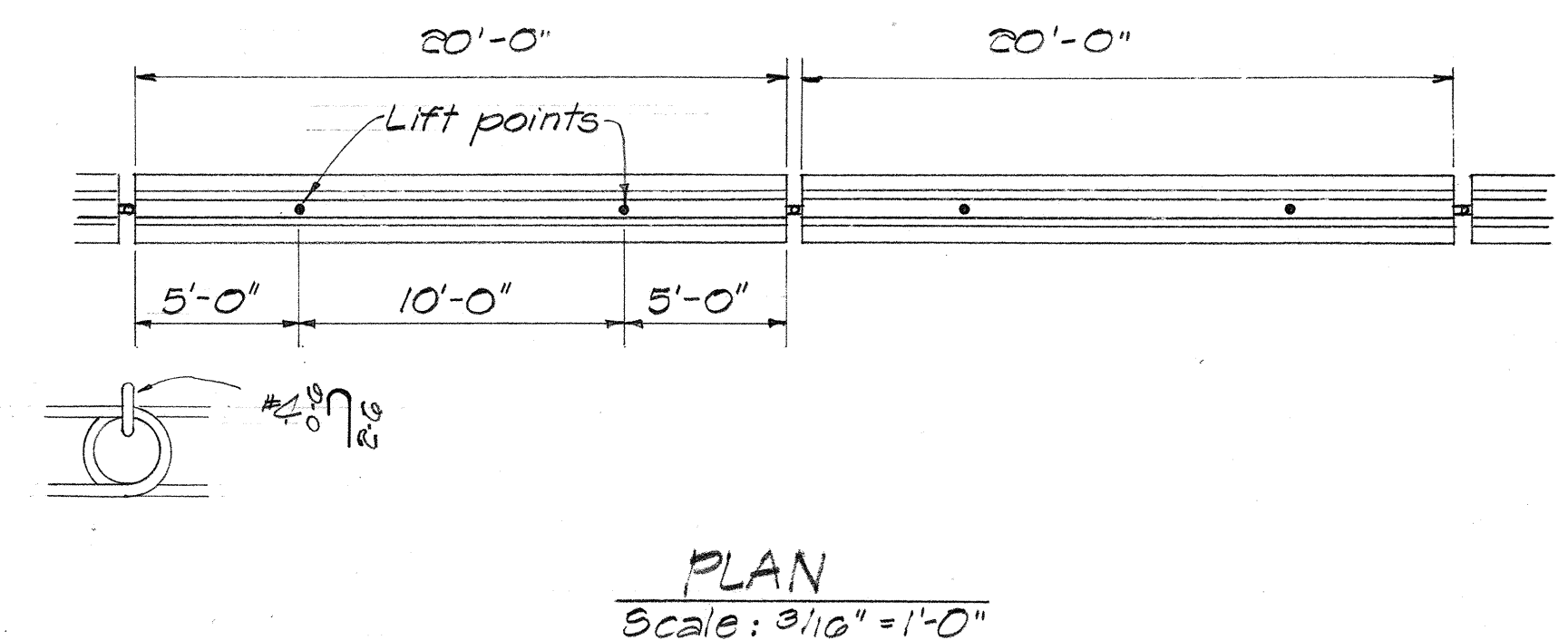
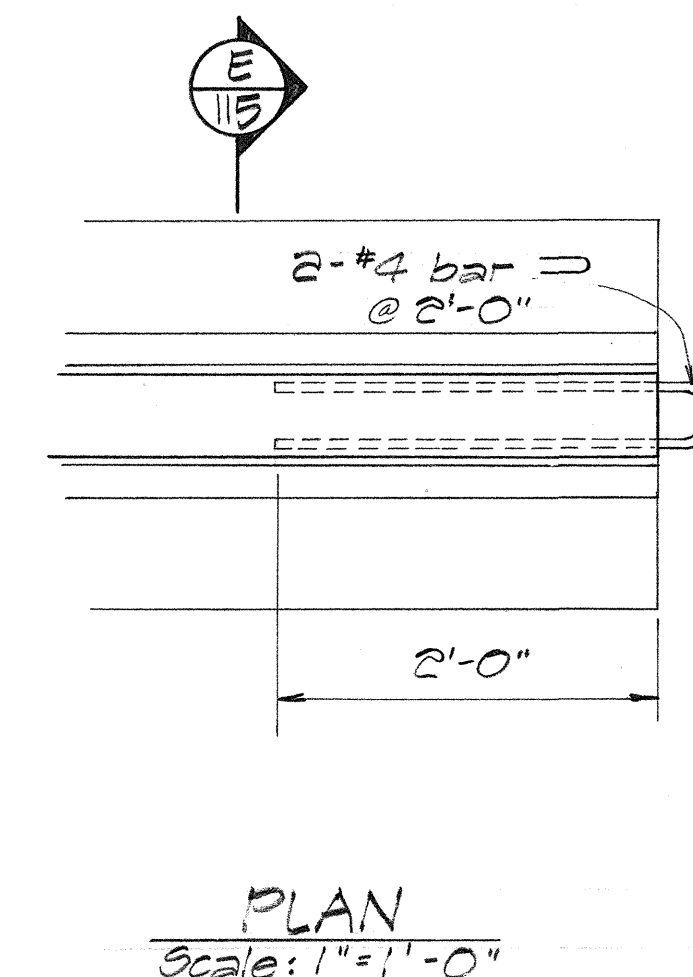
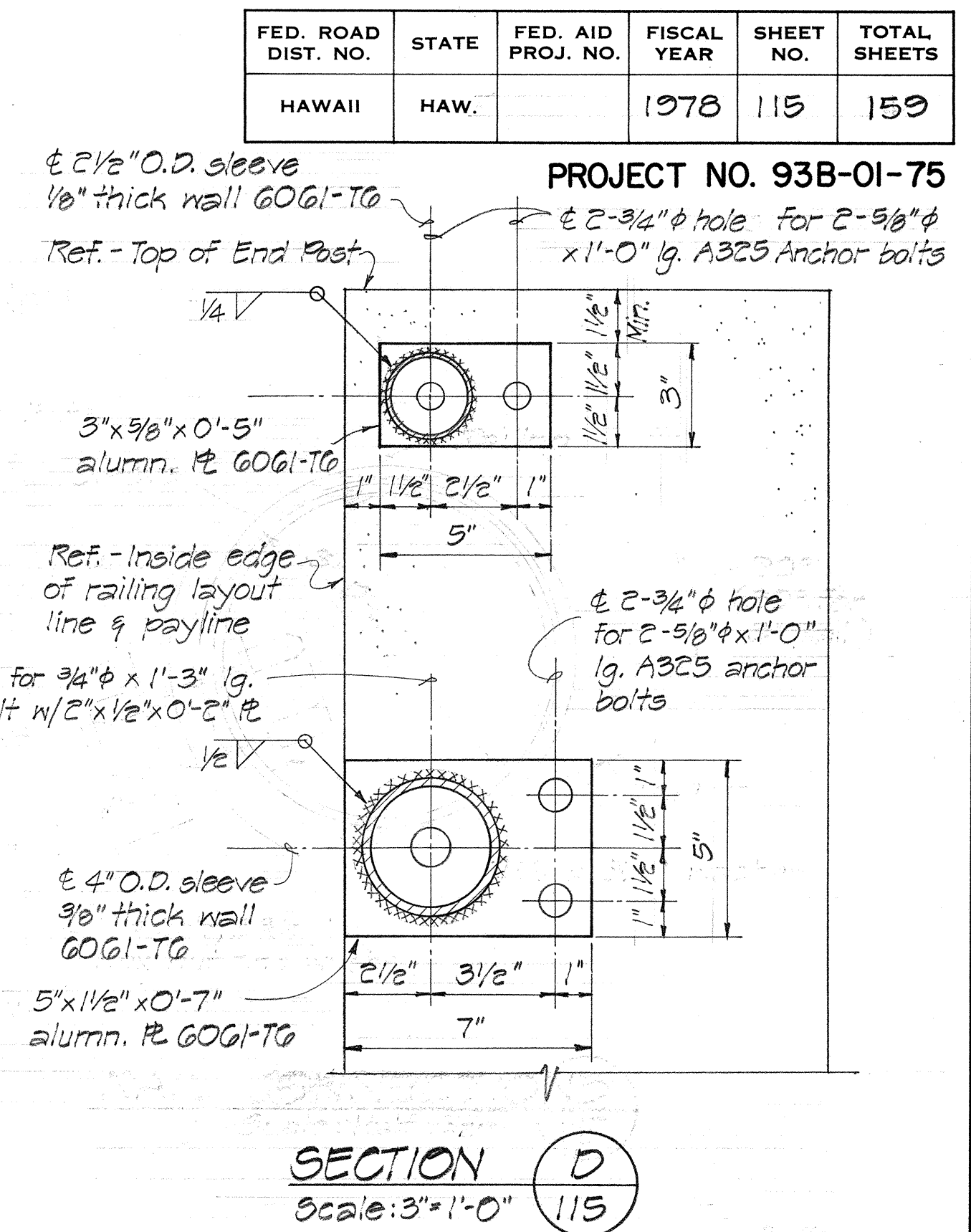
Paul T. Taniguchi

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAUPUNI CHANNEL BRIDGE
BORING LOGS AND PHASE DIAGRAMS
FARRINGTON HIGHWAY WIDENING
LUALUALEI HOMESTEAD ROAD TO JADE STREET
PROJECT NO. 93B-01-75, UNIT I
SCALE: AS SHOWN DATE:
SHEET NO. 12 OF 13 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

1. DESIGN SPECIFICATIONS FOR Highway Bridges, AASHTO, 12th edition, 1977, including subsequent interim specifications.
2. DESIGN LOADING : HS-20-44
3. Concrete Classes:
 - A. Prestressed Piles : $f'_b = 5,000$ psi.
 - B. Prestressed Girders : $f'_c = 6,000$ psi ($f'_{ci} = 4,000$ psi).
 - C. Cast-In-Place Concrete in Superstructure : Class BD.
 - D. All others : Class A.
4. Reinforcing Steel : $f_y = 40,000$ psi.
5. Prestressing Strands
 - A. Prestressed Girders : $f'_s = 270$ ksi. Prestress at transfer shall be 0.70 f'_s . Final design stress is based on loss of 45,000 psi.
 - B. Prestressed Piles : $f'_s = 250$ ksi.
6. Top of bridge shall conform to finish roadway grades and geometrics.
7. The following work items will not be paid for separately but shall be considered incidental to the various contract items :
 - A. Elastomeric bearing pads (GO durometer)
 - B. Premolded joint filler, joint sealer, waterstop
 - C. Structural steel, welding
 - D. Street light conduit, deck drains.
 - E. Repair of existing stream lining
 - F. Demolition of existing drain and headwall
 - G. Bituminous tack coat
8. Refer to Standard Detail drawings for details not covered by project drawings.
9. Pile driving from the existing bridge will not be permitted.
10. The following regulations of the U.S. Corps of Engineers shall govern work on this project.
 - A. Fill shall not be placed in the proximity of a public water supply intake.
 - B. Fill shall not be placed in an area of concentrated shellfish production.
 - C. Fill shall not disrupt the movements of those species of aquatic life indigenous to the water body.
 - D. Fill will consist of suitable material free from toxic pollutants in other than trace quantities.
 - E. Any fills created shall be properly maintained to prevent erosion and other non-point sources of pollution.
 - F. Discharge shall not destroy a threatened or endangered species as identified under the Endangered Species Act.
 - G. Fill shall not be placed in a component of the National Wild and Scenic River System or in a component of a State wild and scenic river system.
11. Piles shall be driven in 10 1/2" ϕ holes predrilled to Elevation -50.0
12. Maximum Pile Loads = 75 Kips.
13. Dimensions of the existing structure shown on the drawings are based on the best data available and should be verified prior to the casting of prestressed girders. The Engineer shall be promptly notified of any significant discrepancies between actual dimensions and those shown on the drawings.
14. Stream Flow Data :
Recurrence Interval = 50 yrs.
Design Flow = 8,050 cfs
Design H.G.L. = 5.20
15. The Contractor shall protect existing concrete channel lining from damage due to his operations. Where damage is unavoidable the Contractor shall repair such damage as shown in detail. Repair of damaged lining will not be measured for payment but shall be considered incidental to the various contract items.



Note: Repair of existing concrete lining will not be paid for directly but shall be considered incidental to the various contract items.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAUPUNI CHANNEL BRIDGE

FARRINGTON HIGHWAY WIDENING

LUUALALEI HOMESTEAD ROAD TO JADE STREET

PROJECT NO. 93B-01-75, UNIT I

SCALE: AS SHOWN DATE:

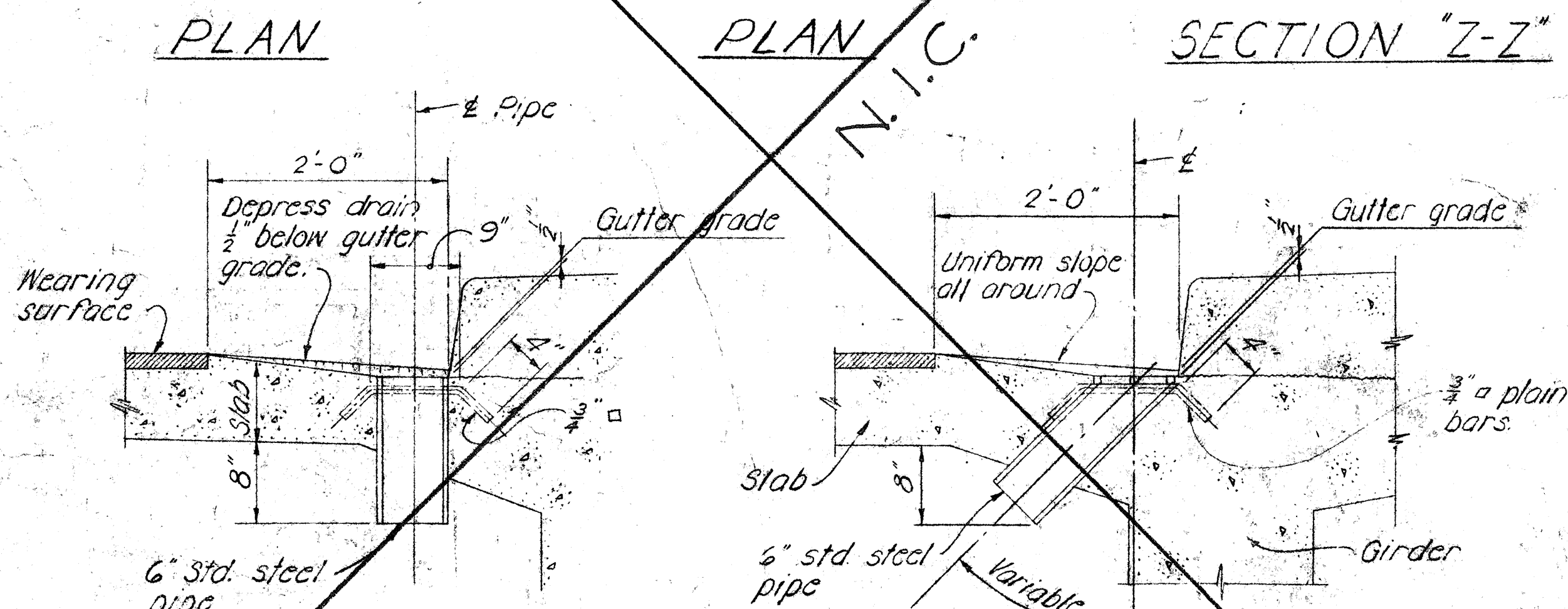
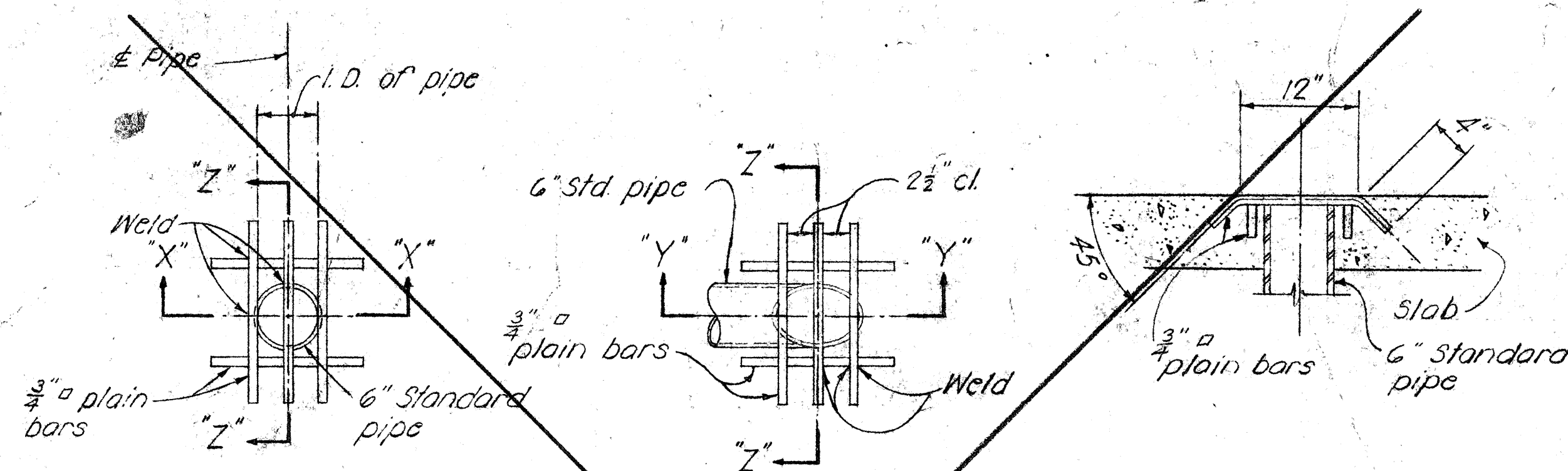
SHEET No. 13 OF 13 SHEETS

GENERAL NOTES

- All concrete shall be Class A unless otherwise noted.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
 - 1/2" For stirrups of beams & pier caps.
 - 2" For ties of columns.
 - 2" For formed walls.
 - 3" For footings.
- Minimum spacing between parallel bars shall be 2 1/2 times the diameter of bars, but in no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate.
- All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
- Reinforcing bars shall be securely tied at all intersections & lap splices & shall be held in place during pouring to maintain their proper locations as shown on plans.
- Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
- Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered 3/4" x 3/4".
- Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top of concrete seats shall be finished with a steel trowel to a smooth level surface at the elevation shown on the plans.
- Elastomeric Pads: Bottom of bridge bearing pads shall be secured against displacement with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for separately.
- Forms for all exposed surfaces of separation structures and surfaces of retaining walls visible from a traveled way or from a populated area shall be plywood except that metal forms may be permitted provided a surface finish satisfactory to the Engineer can be obtained and the use of such forms is approved in writing by the Engineer. Forms for round columns shall be made of materials that will give a smooth finish and true dimensions as given in the plans. Forms for prestressed concrete members shall be either metal or plywood.
- Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.
- The contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work at excavation or driving of piles.
- Standard Detail Drawings refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.

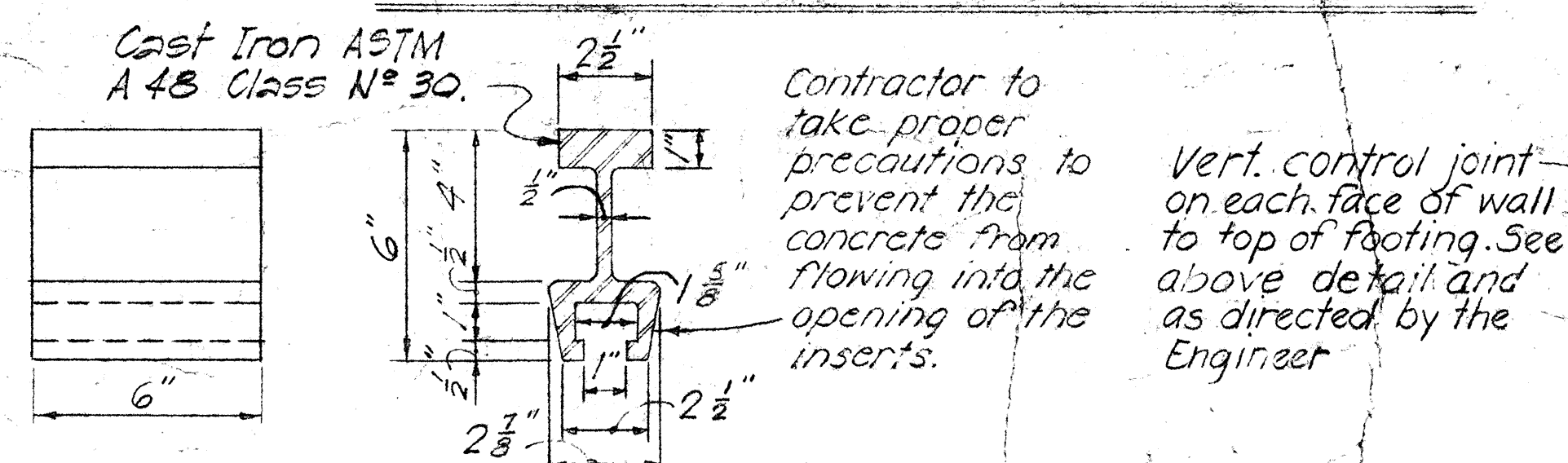
TYPICAL CONCRETE GROOVE DETAIL

DRIP DETAIL

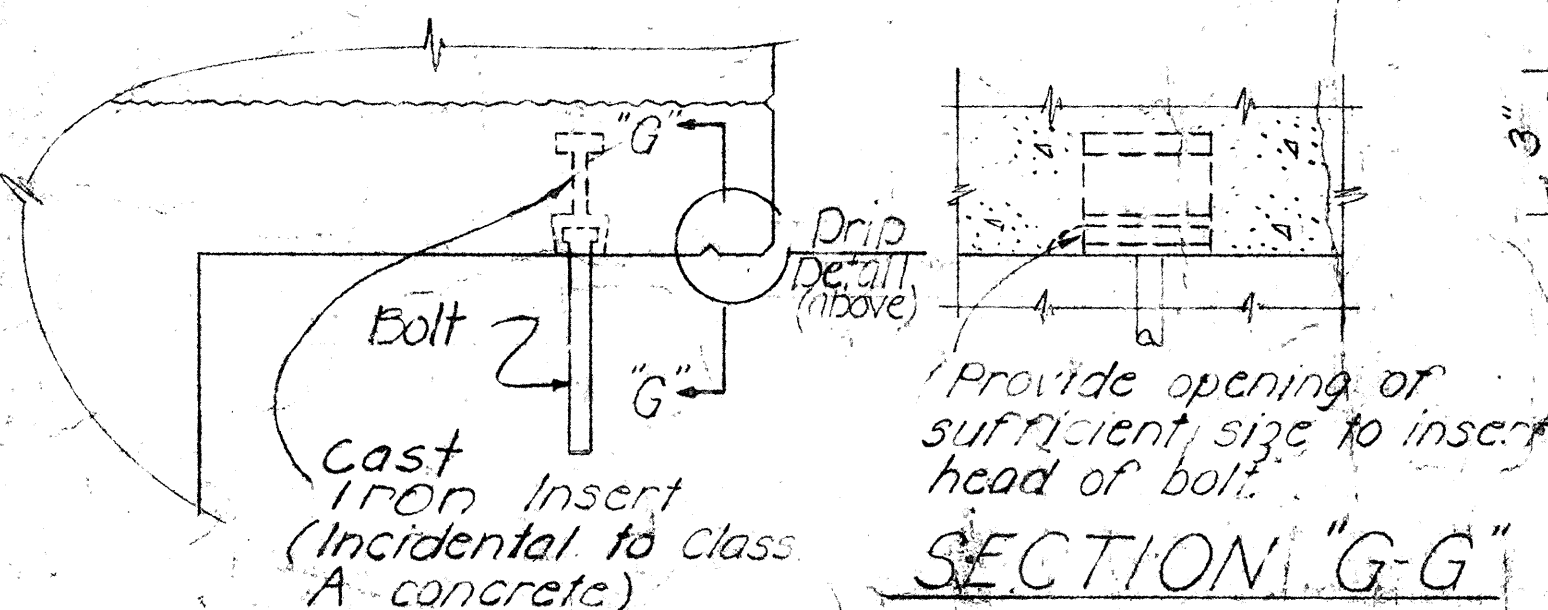


NOTE: Metal drains shall be considered incidental to Class A Concrete in both concrete and steel bridges and will not be paid for separately. Assembly of grillage and pipe shall be hot-dip galvanized after all welding is completed.

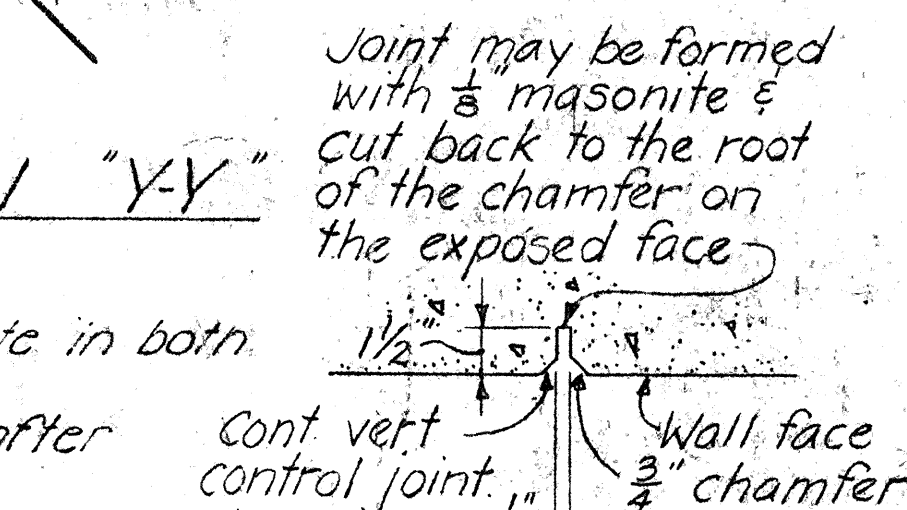
TYPICAL DRAINAGE DETAILS



INSERT DETAIL

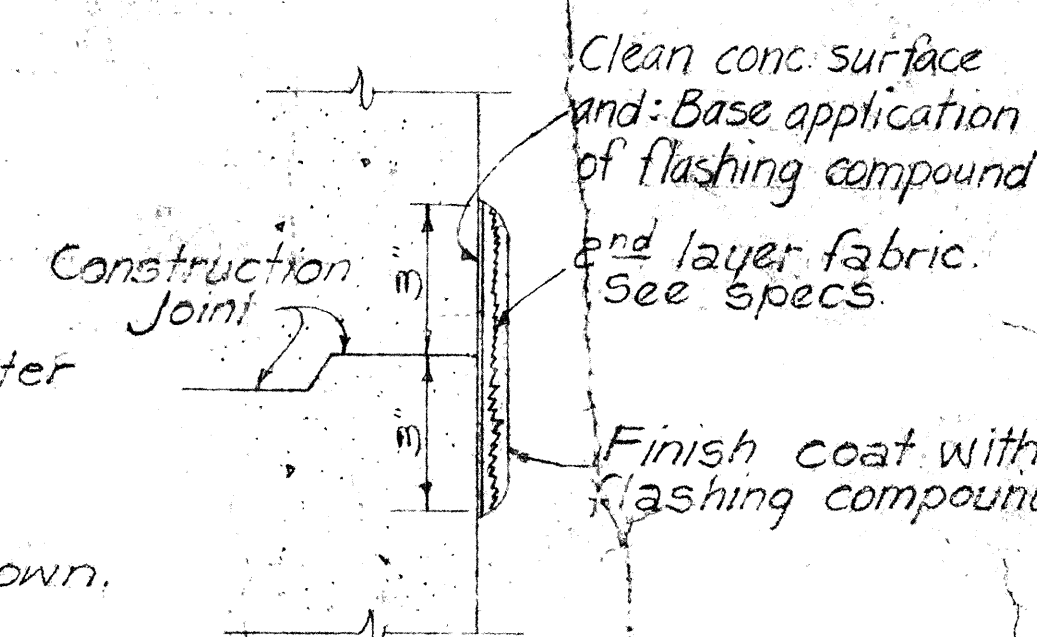


DETAIL OF PIPE HANGERS & INSERTS



CONTROL JOINT DETAILS

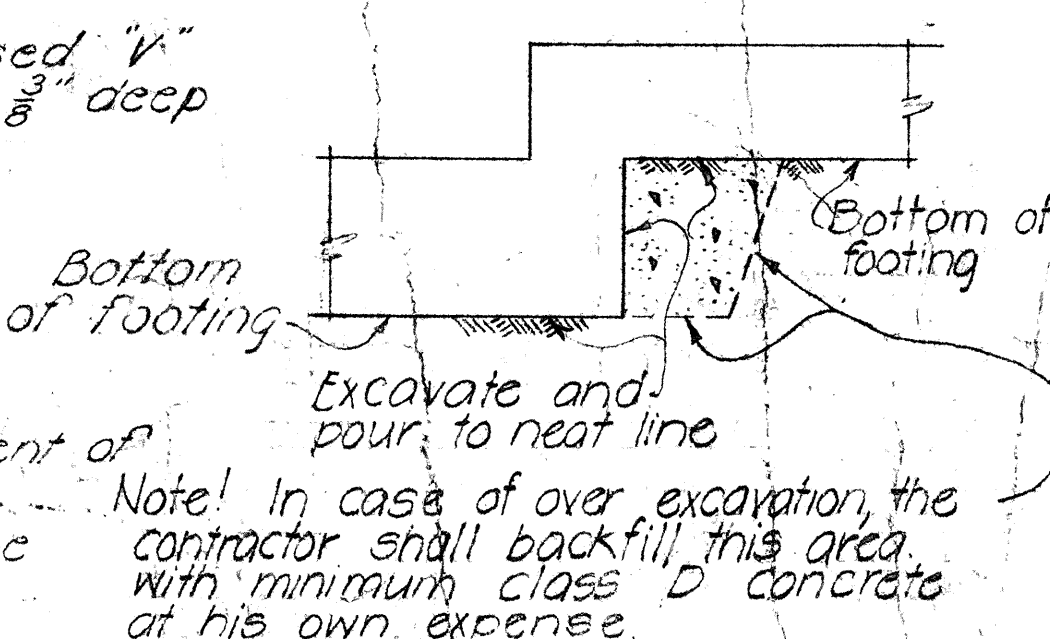
TYP. FLASHING COMPOUND WATERPROOFING DETAIL



NAME DATE

Use correct name of bridge Date of Year built
NOTE: Refer to corresponding detail drawings for placement of such names & dates at end post. Exact details & spacing of letters & figures shall be as directed by the Engineer. See Note #12

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST



TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER

1-23-79
DATE

APPROVED
Paul T. Yamashita
FOR ASSISTANT CHIEF, ENGINEERING

1-28-79
DATE

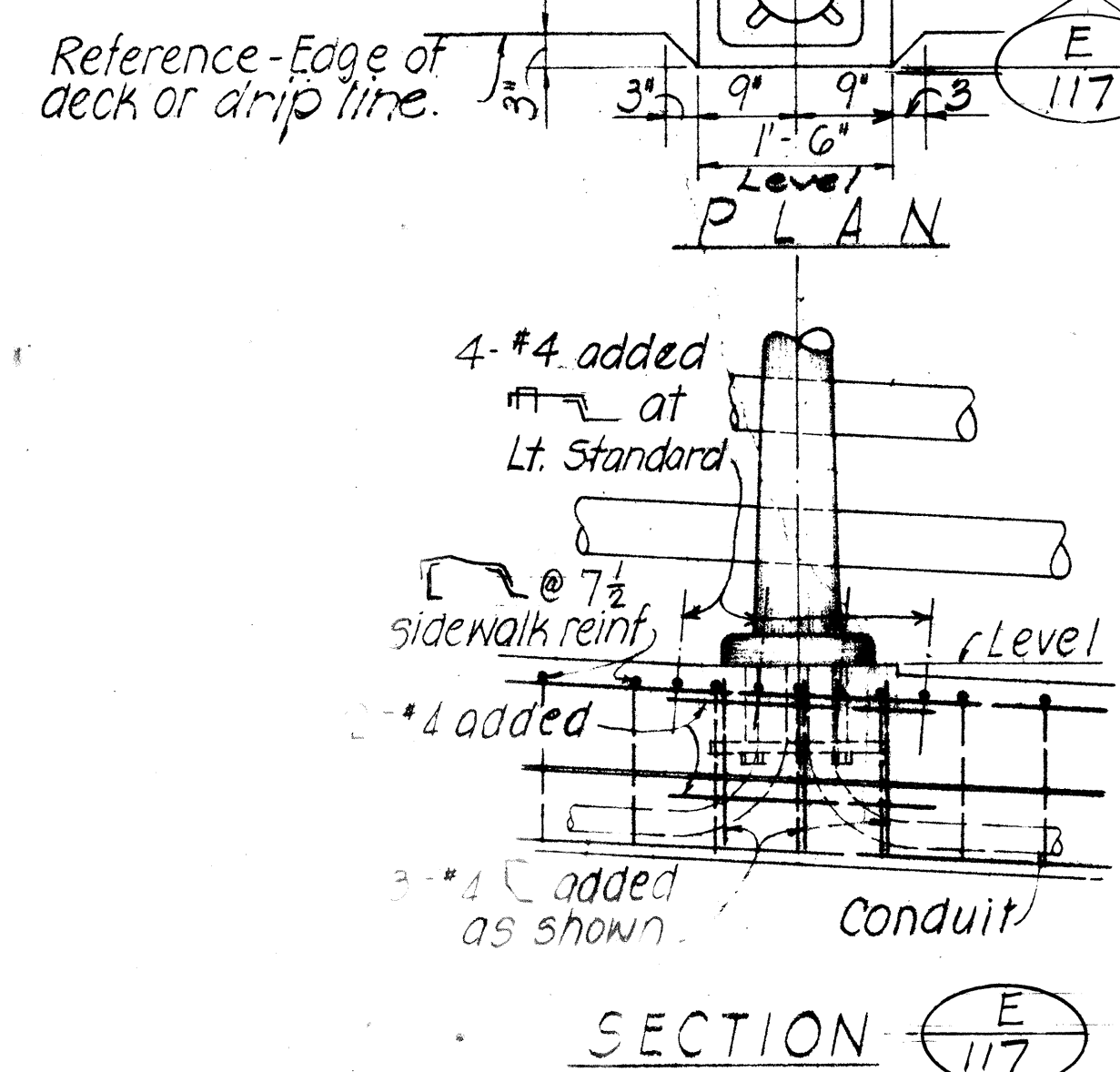
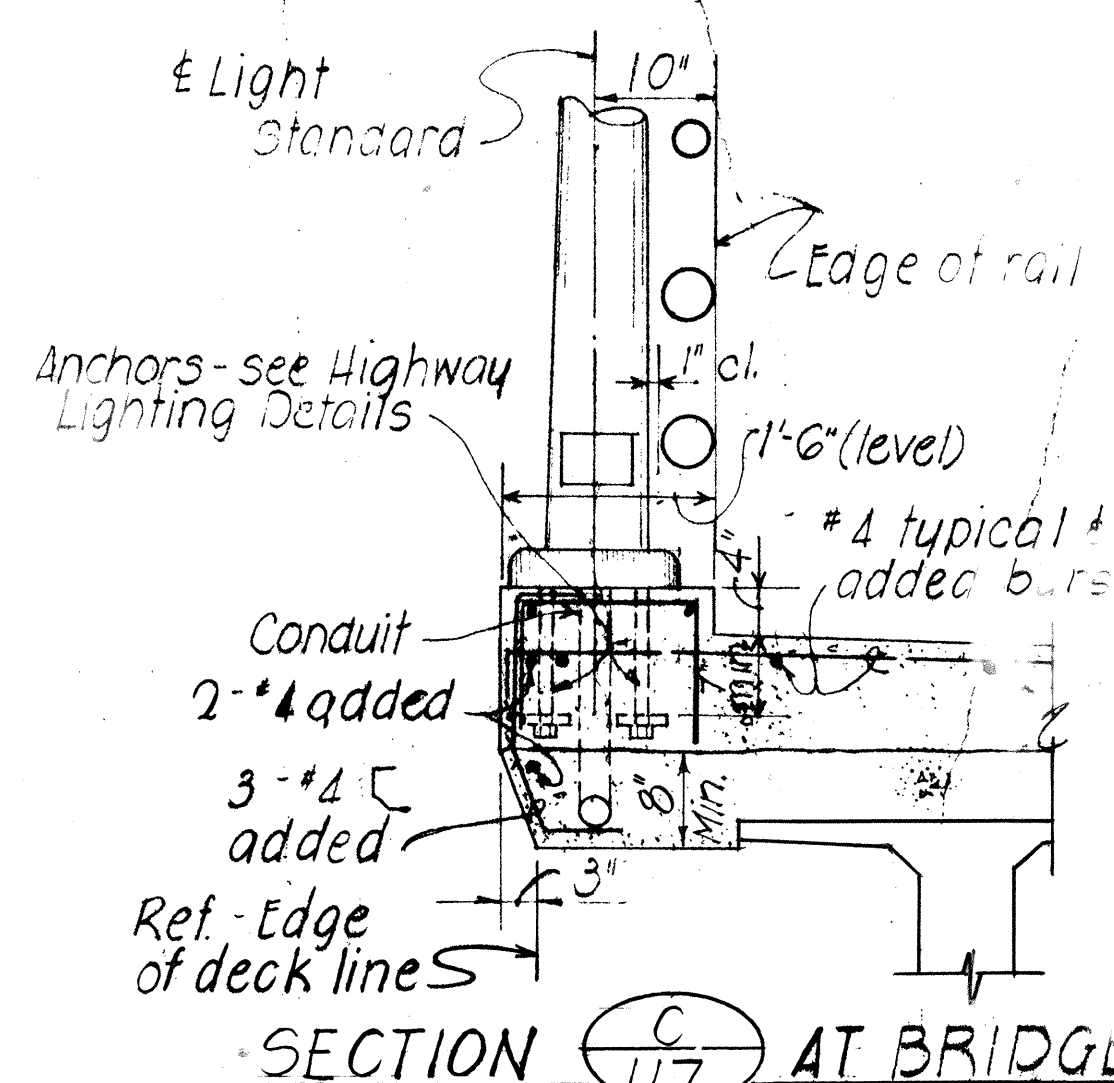
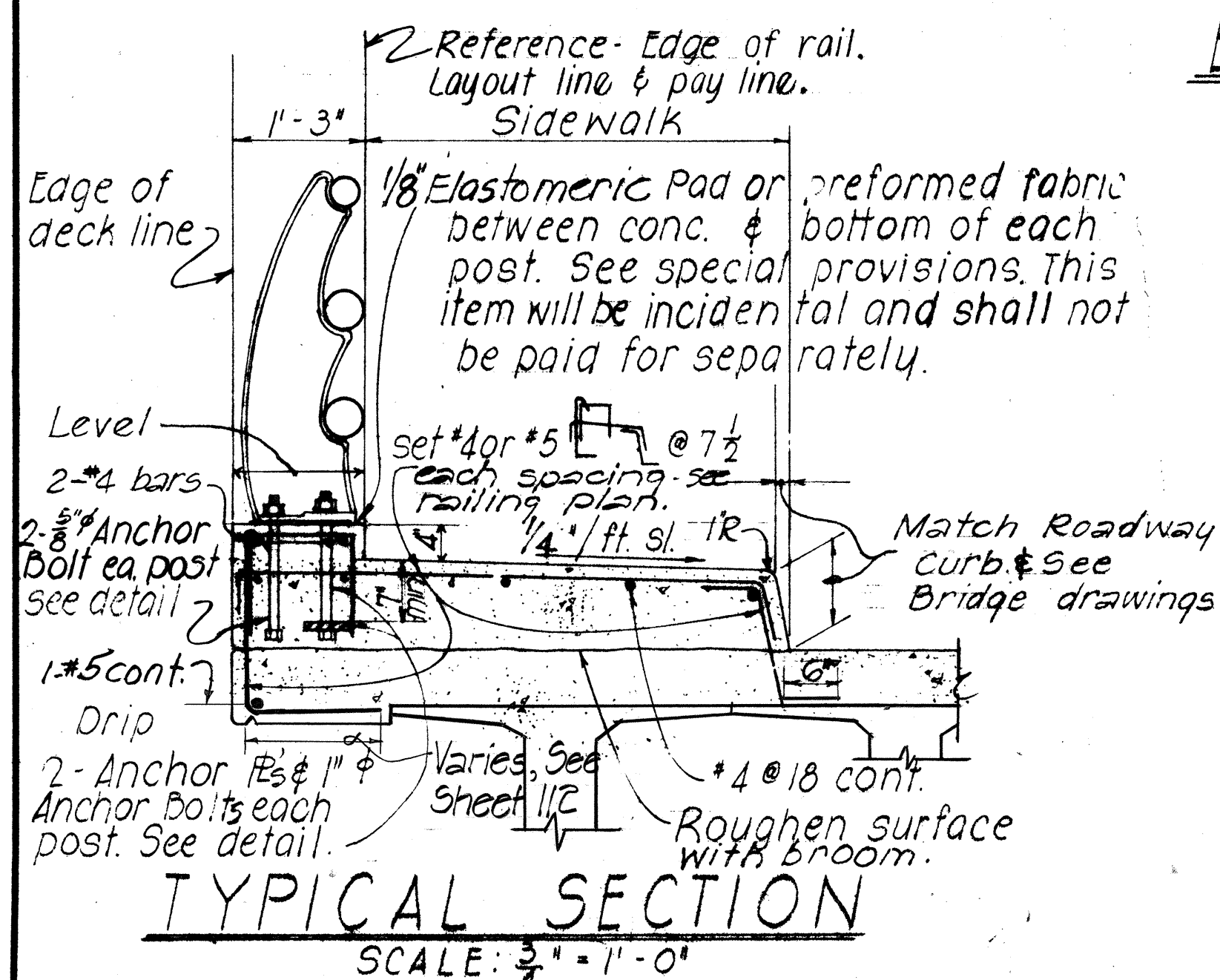
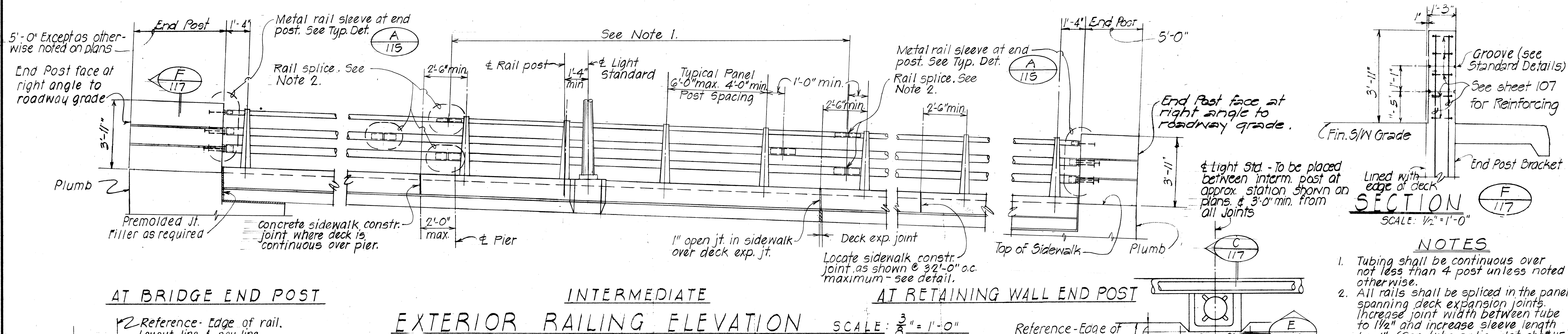
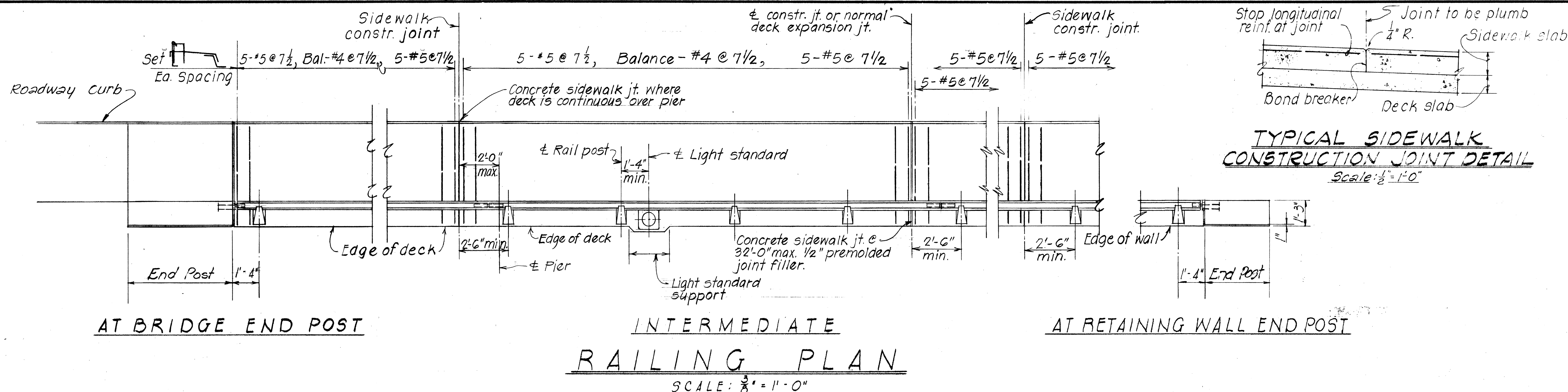
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
NOTES AND MISCELLANEOUS
DETAILS

Date: October 1989

SHEET No. 1 OF 1 SHEETS DB-100

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT. SHEETS
HAWAII	HAW.		1978	117	15



- ## NOTES
1. Tubing shall be continuous over not less than 4 post unless noted otherwise.
 2. All rails shall be spliced in the panel spanning deck expansion joints. Increase joint width between tube to $1\frac{1}{2}$ " and increase sleeve length by 1". (See tube splice det. sheet #115)
 3. Rail post shall be normal to grade.
 4. No more than one tube splice per panel shall be permitted except as noted.

APPROVAL RECOMMENDED:

BRIDGE DESIGN ENGINEER _____ DATE _____

APPROVED:

ASSISTANT CHIEF, ENGINEERING DATE

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

TYPICAL DETAILS
ALUMINUM BRIDGE RAILING

Date _____

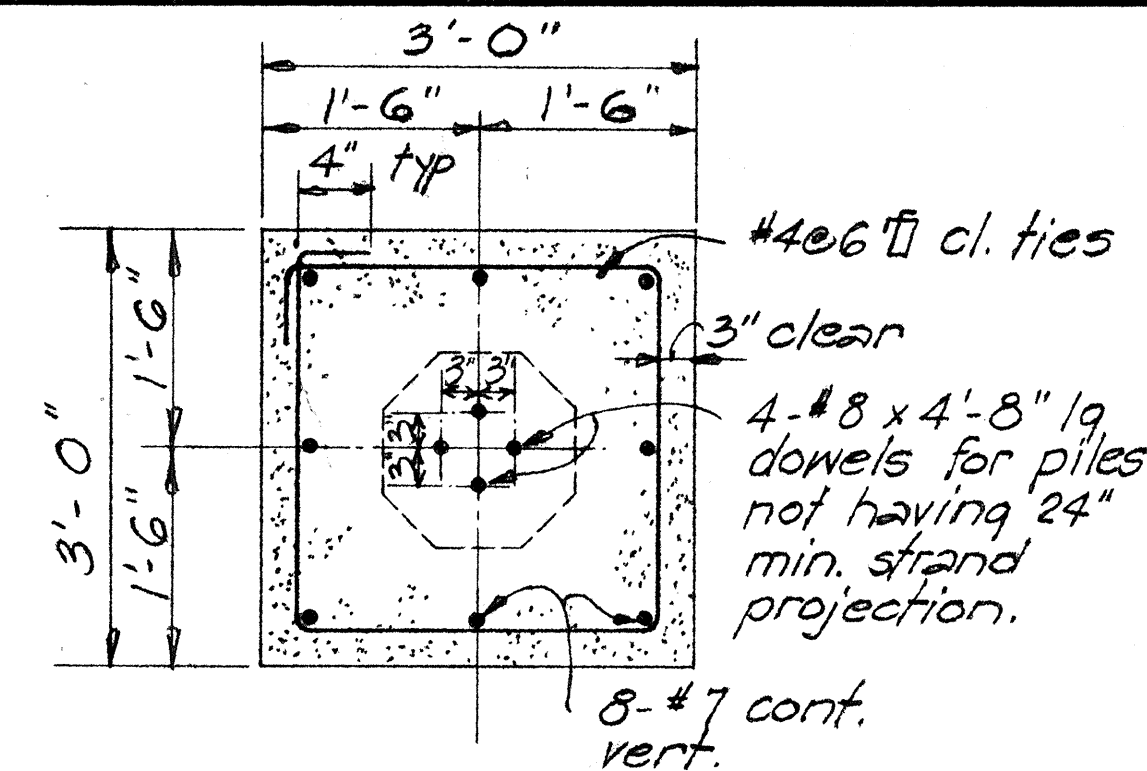
SHEET No. 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1978	120	159

PROJECT NO. 93B-01-75

2'-6" min. unless otherwise directed by the Engineer. Remove concrete after driving, leaving reinf. exposed

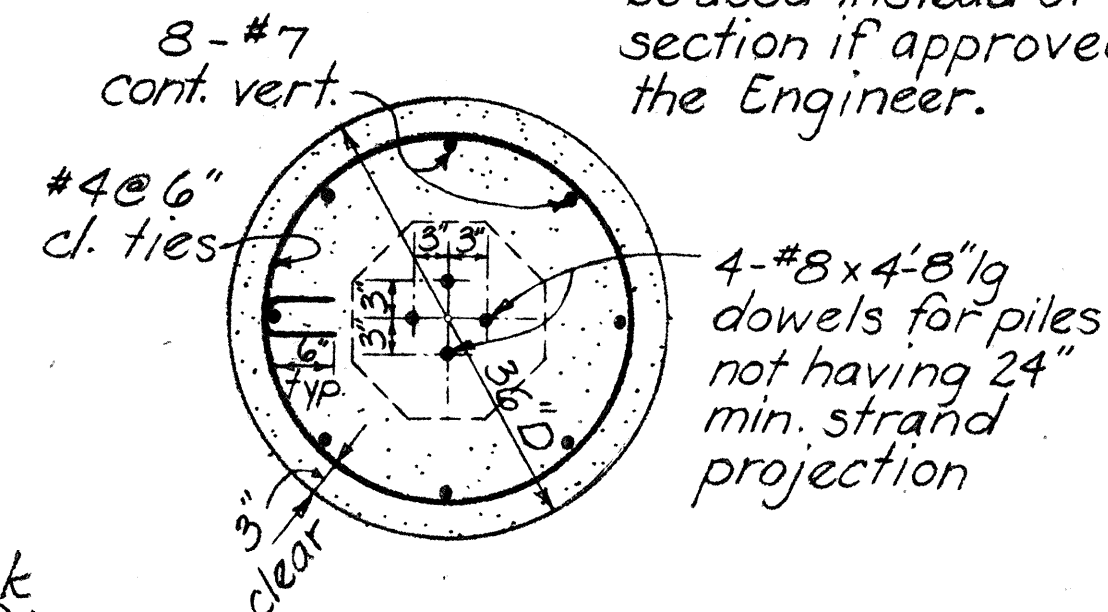
Chamfer - See Typical Pile Detail.



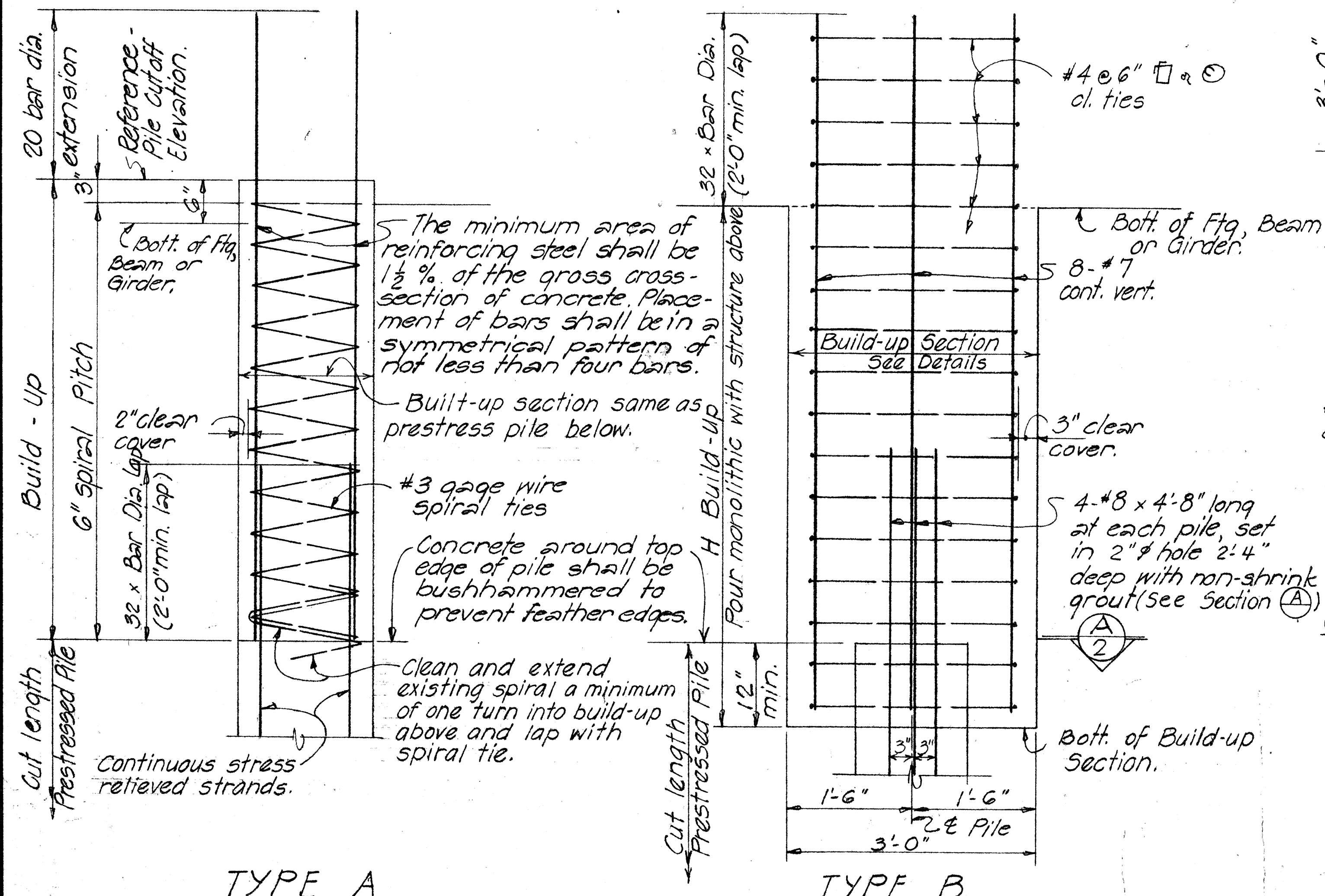
SQUARE BUILD-UP

Note:

Circular section may be used instead of square section if approved by the Engineer.



2) CIRCULAR BUILD-UP
SECTION $\left(\frac{A}{2} \right)$



TYPE A

Notes:

Selection of pile build-up type without driving to be determined by the Engineer.
When height of depressed portion of footing (H) exceeds 4', the depressed section shall be poured separately from the main body of the footing.

Depressed portion of footing may be omitted for pile heads embedded at least 4" into footing provided at least 90% of the piles in each footing have the minimum embedment into footing as shown in contract plans.

WITHOUT DRIVING
TYPICAL PILE BUILD-UP DETAILS

GENERAL NOTES

1. Work of cutting off prestressed conc. piles or concrete build-ups shall be performed in such a manner as to avoid spalling or damaging the pile below cut-off. In case of such damage, the pile shall be replaced or repaired by the Contractor at his expense as directed by the Engineer.

2. Portion of pile embedded into footing shall be of sound concrete. Damaged portions shall be removed and pile cut-off elevation lowered as required by the Engineer.

WITH DRIVING

TYPICAL PILE BUILD-UP DETAIL

APPROVAL RECOMMENDED:

Paul T. Yamashita
BRIDGE DESIGN ENGINEER

1-23-70
DATE

APPROVED

For Paul T. Yamashita
ASSISTANT CHIEF, ENGINEERING

100

1-28-70
DATE

NO	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

PRESTRESSED CONCRETE PILES

Date: Oct. 1968

SHEET No. 2 OF 2 SHEETS DB-300-2

120

ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DRAWN BY	
	TRACER BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

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