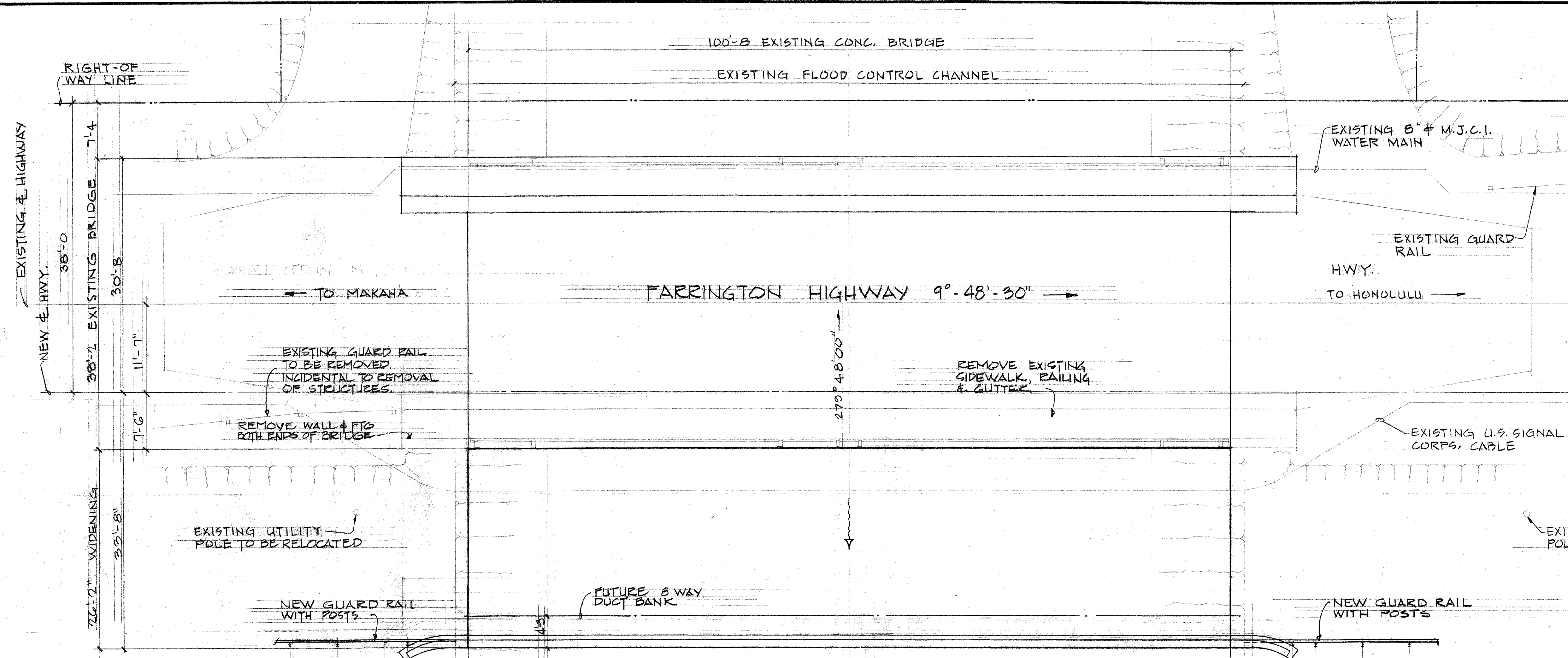


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1969	58	104

PROJECT 900 B-02-68 UNIT 2

ESTIMATED QUANTITIES

ITEM	QUANTITY
REMOVING PORTION OF EXISTING BRIDGE & STREAM CHANNEL - LUMP SUM	33 C.Y.
STRUCTURE EXCAVATION	62 C.Y.
TACK COAT	83 GAL
A.C. PAVEMENT } PAID UNDER	
ROAD ITEMS	30 TONS
CLASS A-1 CONC. FOR BRIDGE FOOTINGS-LUMP SUM	27 C.Y.
CLASS A-1 CONC. FOR BRIDGE EXCLUDING FOOTINGS-LUMP SUM	95 C.Y.
PRESTRESSED TEES - LUMP SUM	694 L.F.
REINFORCING STEEL - LUMP SUM	23,000 LB.
FURNISHING TYPE I PRESTRESSED CONC. PILES	690 L.F.
DRIVING " " " " " "	610 L.F.
BUILD UP OR EXTENSION OF " " " "	F.A.
METAL BRIDGE RAILING	100 L.F.
CONC. BRIDGE PARAPET INCLUDING END POSTS	120 L.F.



SITE PLAN

60' 1/8" = 1'-0"

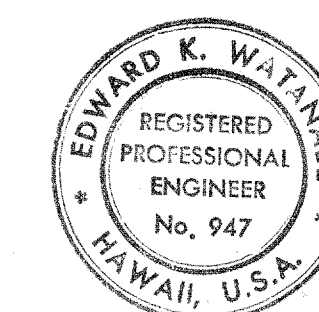
NOTES:

- FOR BALANCE OF UTILITIES SEE SH. NO. 10
- FOR LIMITS OF NEW GUARD RAIL, SEE SH. NO. 10

& PROFILE

60' 1/8" = 1'-0"

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	



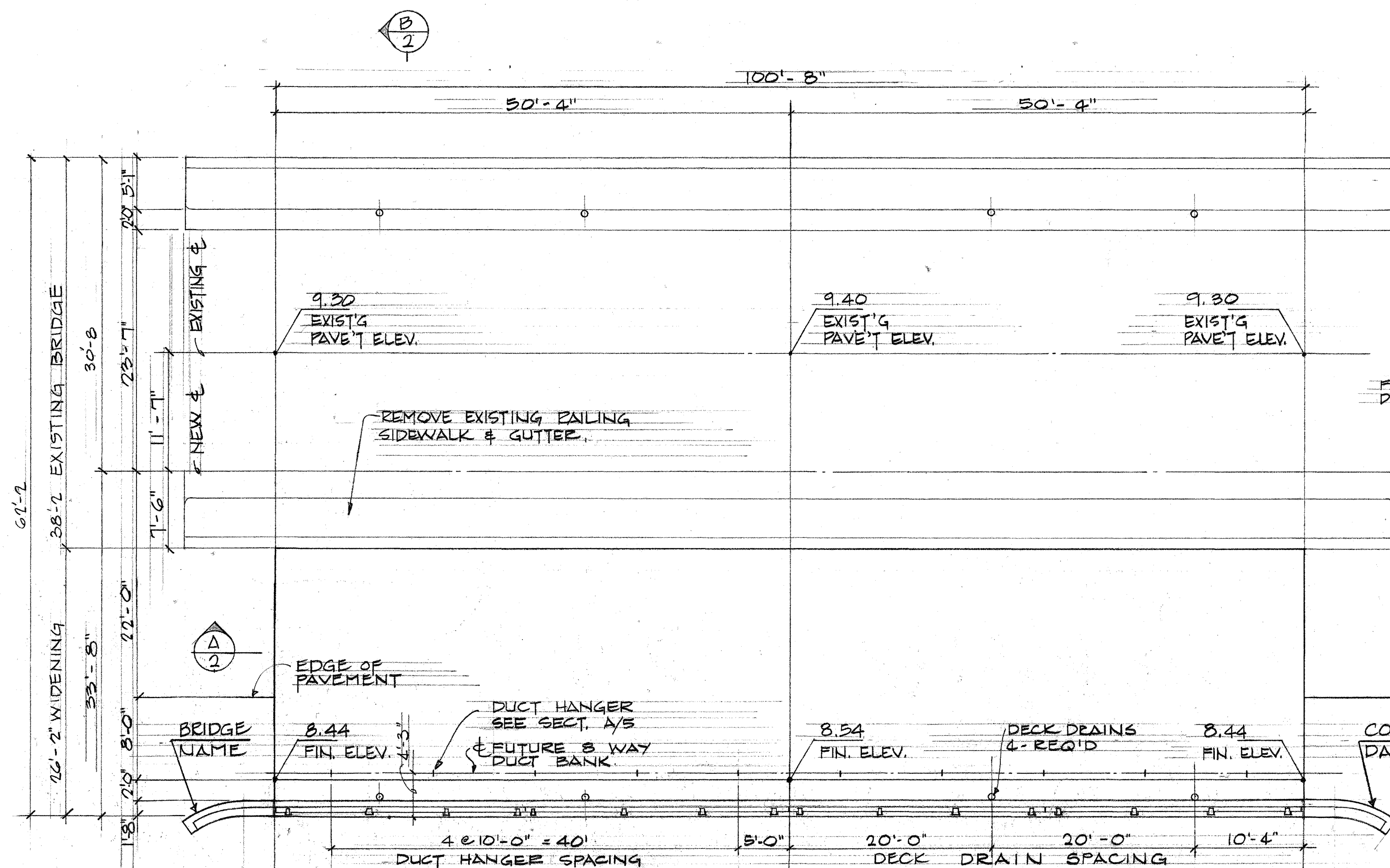
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WALTER LUM ASSOCIATES, INC.
E.K. Watanabe

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAIPALAOA
MAIPALAOA BRIDGE WIDENING
SITE PLAN & PROFILE
FARRINGTON HIGHWAY WIDENING
PROJECT 900 B-02-68
UNIT 2
SCALE: AS NOTED

SHEET No. 1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1969	59	104

PROJECT 900B-02-68 UNIT 2



BRIDGE PLAN

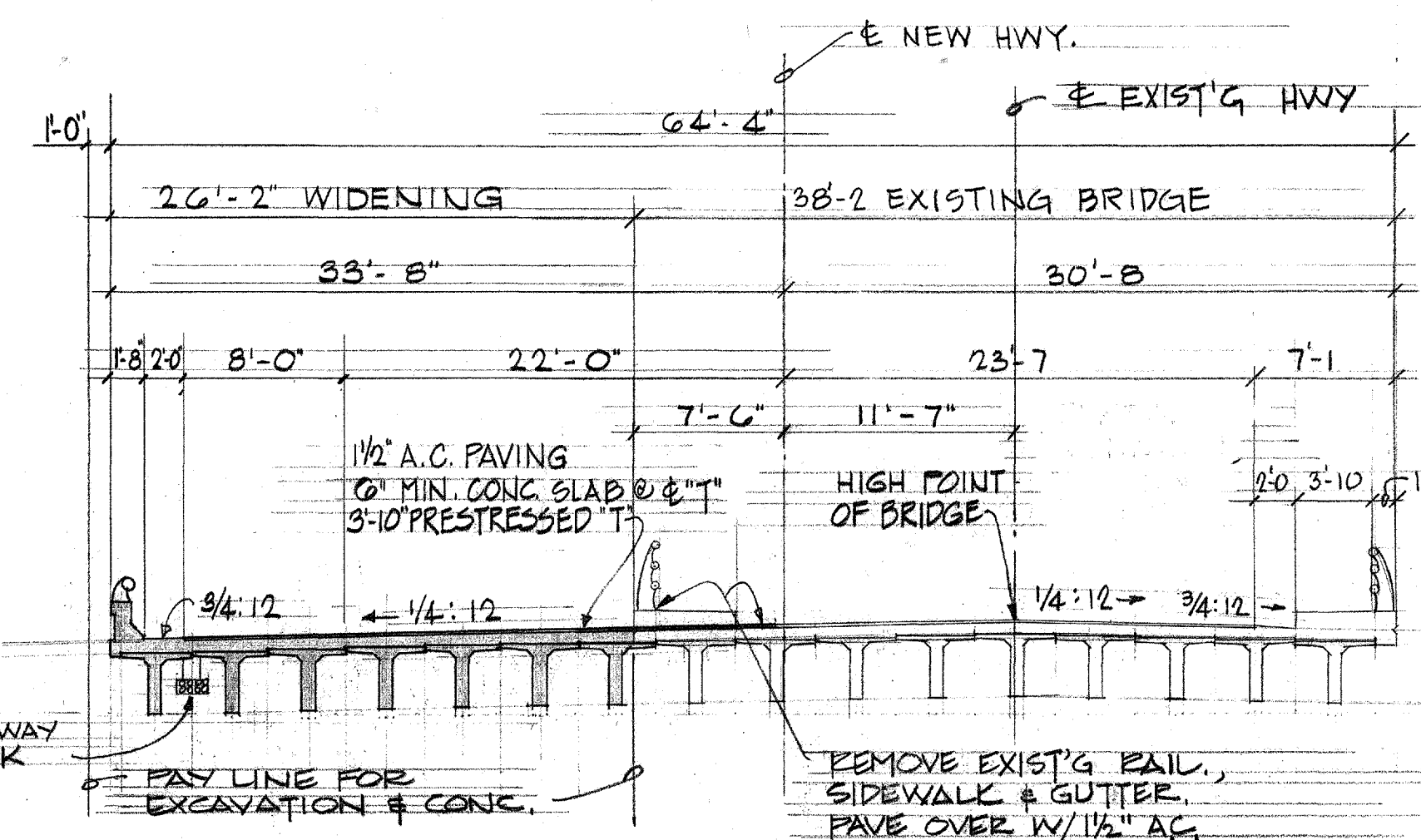
SC: 1/8" = 1'-0"

DOWNSTREAM ELEVATION

SC: 1/8" = 1'-0"

LONGITUDINAL SECTION

SC: 1/8" = 1'-0"



TYPICAL CROSS-SECTION

SC: 1/8" = 1'-0"

GENERAL NOTES

DESIGN SPECIFICATION - AASHTO
STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (9TH EDITION)
WITH SUBSEQUENT ADDITIONS AND MODIFICATIONS.

DESIGN LOADS: HS 20-44

DESIGN STRESSES

1. RC. BEAMS & SLABS.
SEE AASHTO SPECIFICATIONS EXCEPT AS OTHERWISE NOTED AND SEE SPECIAL PROVISIONS

a. $f'_c = 3,000$ PSI

b. $f'_c = 1,200$ PSI

c. $n = 10$

d. $f_s = 20,000$ PSI TENSION

2. PRESTRESSED MEMBERS

a. $f'_c = 4,000$ PSI

b. $f'_c = 4,000$ PSI

c. 7 WIRE STRANDS

DIAMETER

TENSION LOAD

DESIGN LOAD

PER STRAND

PER STRAND

1/2" ϕ

25,000 LBS.

20,160 LBS.

d. FORMS MUST BE REMOVED AND THE BEAM INSPECTED BEFORE THE STRANDS ARE CUT.

MATERIALS

1. ALL CONCRETE SHALL BE CLASS A-1 EXCEPT AS OTHERWISE NOTED ON PLANS. CONCRETE FOR PRESTRESSED CONCRETE MEMBERS SEE SPECIAL PROVISIONS AND AS NOTED ABOVE. ALL CEMENT SHALL BE TYPE I OR TYPE II.

2. PREFORMED FABRIC BRIDGE BEARING PADS ARE INCIDENTAL TO CONCRETE AND WILL NOT BE PAID FOR SEPARATELY.

3. NEOPRENE PADS ARE INCIDENTAL TO PRESTRESSED CONCRETE MEMBERS AND WILL NOT BE PAID FOR SEPARATELY.

4. ALL REINFORCING STEEL TO BE ASTM DESIGNATION A 15 BILLET STEEL, INTERMEDIATE GRADE EXCEPT AS OTHERWISE NOTED.

PILE FOUNDATIONS

1. PILES

a. 32 TON, TYPE I, 16" PRESTRESSED OCTAGONAL PILES.

b. DRIVE TO TIP ELEVATIONS SHOWN ON PLANS.

c. DRIVE PILES WITH A HAMMER THAT DELIVERS APPROXIMATELY 15,000 FT. LBS. OF ENERGY.

d. DRIVE TO A RESISTANCE OF 50 BLOWS PER FOOT FOR THE LAST 2 FEET, BUT NOT MORE THAN 10 BLOWS PER INCH FOR THE LAST 2 INCHES OR 20 BLOWS FOR THE LAST FRACTION OF AN INCH.

e. PRE-DRILLING MAY BE REQUIRED TO REACH REQ'D TIP ELEVATIONS.

CONSTRUCTION METHODS

1. SEE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

2. ALL FOOTINGS SHALL BE EXCAVATED AND POURED TO NEAT LINES. IN CASE OF OVER EXCAVATION, SPACE BETWEEN FOOTING AND GROUND SHALL BE FILLED WITH CONCRETE AT THE CONTRACTOR'S EXPENSE. THE FILL CONCRETE SHALL HAVE A MINIMUM QUALITY OF CLASS D-1.

3. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITY LINES AND NOTIFY THE RESPECTIVE OWNERS BEFORE COMMENCING WORK OF EXCAVATION.

4. EXCEPT AT FRAME ABUTMENT, ALL FILL BEHIND ABUTMENTS AND WINGWALLS SHALL BE COMPLETE IN PLACE BEFORE PLACING SUPERSTRUCTURE AND PRESTRESSED CONCRETE MEMBERS. BACKFILL BEHIND FRAME ABUTMENT SHALL BE PLACED ONLY AFTER THE DECK FRAME FALSEWORK HAVE BEEN REMOVED.

5. IN GENERAL, TOP OF CONCRETE OF STRUCTURE SHALL BE CONSTRUCTED TO FOLLOW THE FINISH ROADWAY VERTICAL AND HORIZONTAL CURVES AND GRADES.

6. FOR CONCRETE FINISH SEE SPECIAL PROVISIONS. CONCRETE SEATS AND CREEP BLOCKS TO BE POURED MONOLITHICALLY WITH PIER OR ABUTMENT SECTIONS. SEATS SHALL RECEIVE A HARD TROWEL FINISH, LEVEL & TRUE ELEVATIONS.

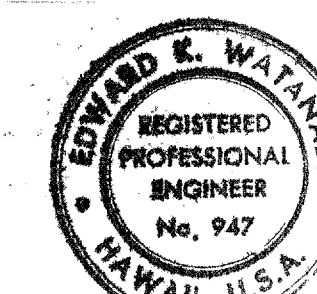
7. NEOPRENE PADS SHALL BE SECURED AGAINST DISPLACEMENT BY ADHESIVES, WHICH SHALL BE APPROVED BY THE ENGINEER.

8. PROVIDE 3/4" x 3/4" CHAMFER AT ALL EXPOSED CONCRETE EDGES.

EXISTING CONDITIONS

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS & DIMENSIONS.

2. ALL DETAILS, ELEVATIONS & DIMENSIONS SHOWN ON DRAWINGS SHALL BE ADJUSTED TO MATCH EXISTING CONDITIONS.



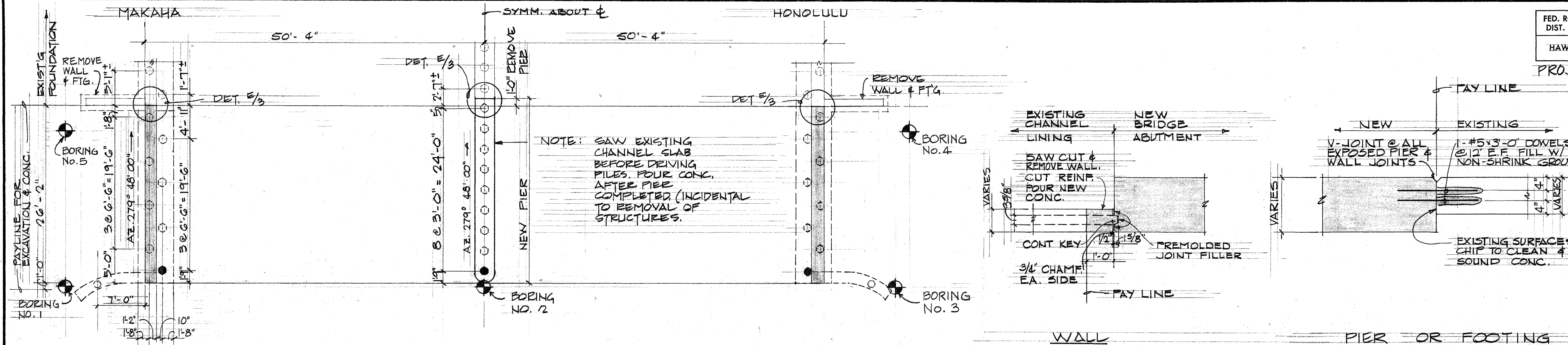
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E.K. Watanabe

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAIPALAOA
MAIPALAOA BRIDGE WIDENING
PLAN, SECTIONS & GENERAL NOTES
PARRINGTON HIGHWAY WIDENING
PROJECT 900B-02-68
UNIT 2
SCALE: AS NOTED

SHEET No. 2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1969	60	104

PROJECT 900B-02-68 UNIT 2



FOUNDATION PLAN

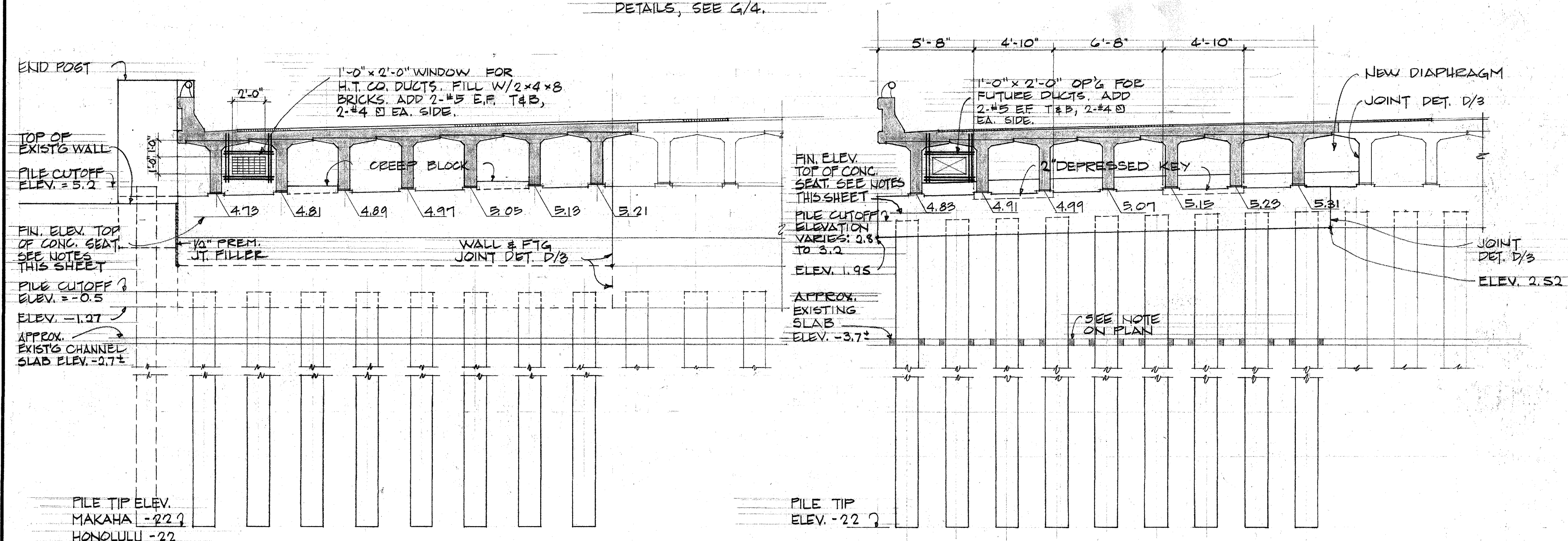
SCALE: 1/8" = 1'-0"

NOTES & LEGEND

- FOR BORING LOGS SEE SHT. C.
- BORING LOCATION
- TEST PILES
- FOR CONSTRUCTION JOINT DETAILS, SEE G/4.

D/3 DETAIL

SCALE: 1/2" = 1'-0"



ELEVATION - MAKAHA ABUTMENT

ELEVATION - HONOLULU ABUTMENT (OPPOSITE HAND)

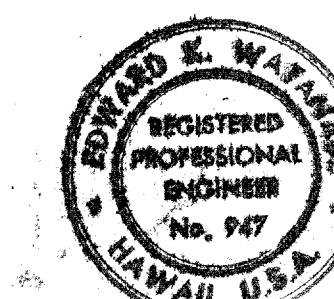
SCALE: 1/4" = 1'-0"

ELEVATION - PIER

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

NOTES:

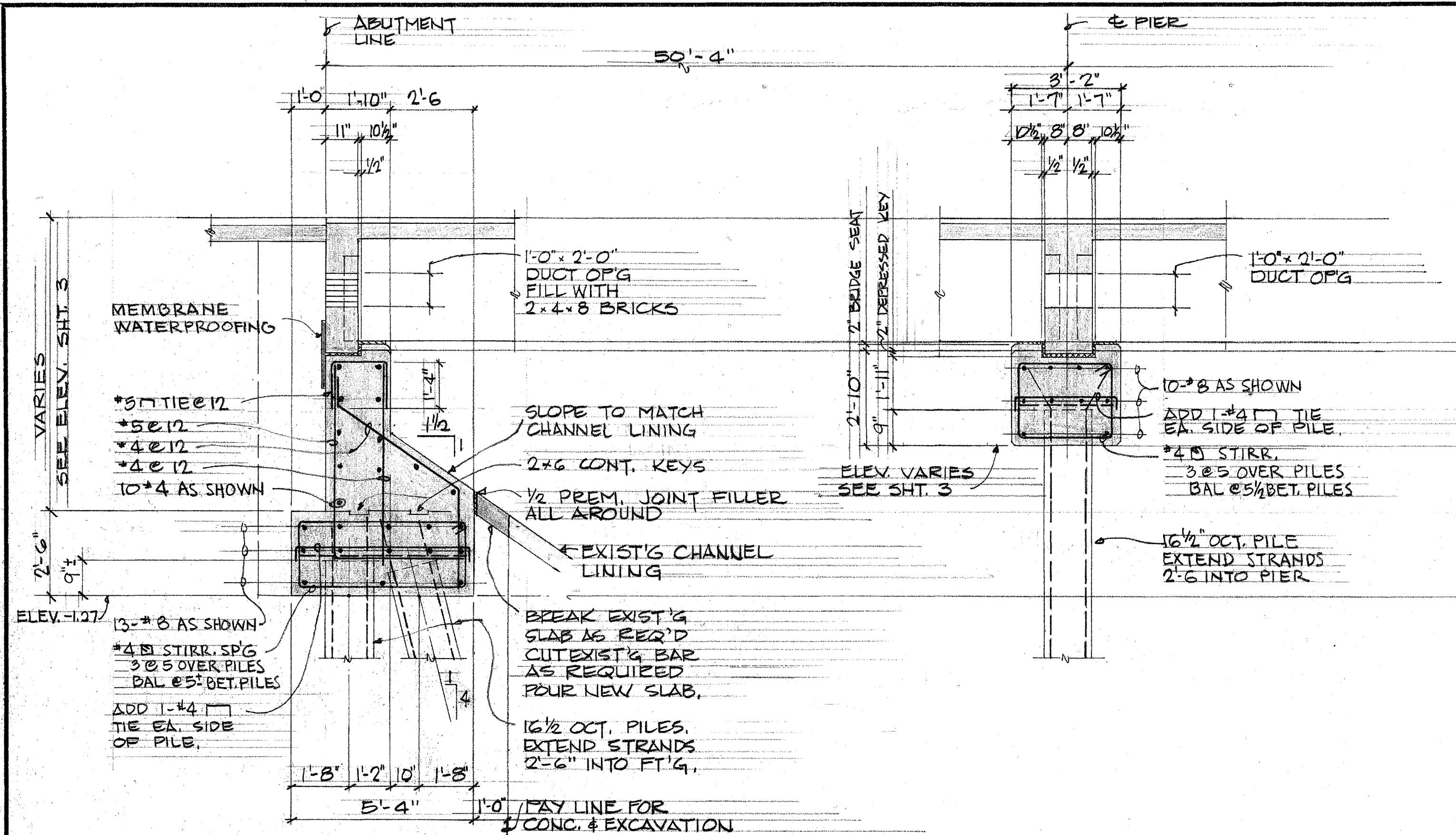
- SEAT ELEVATIONS SHALL BE LOWERED AS REQUIRED TO FIT CAMBER OF PRESTRESSED TEES SO FINISH DECK MATCHES EXISTING BRIDGE ELEVATIONS.
- WHERE SLAB THICKNESSES ARE GREATER THAN 6" DUE TO THE CAMBER OF THE "T'S" AND THE DEAD LOAD DEFLECTION OF THE DECK SLAB, THE EXTRA CONCRETE REQ'D ABOVE 6" SHALL BE INCIDENTAL TO THE 6" DECK SLAB.
- CAMBER DECK 1/8" FOR SLAB DEAD LOAD DEFLECTION.



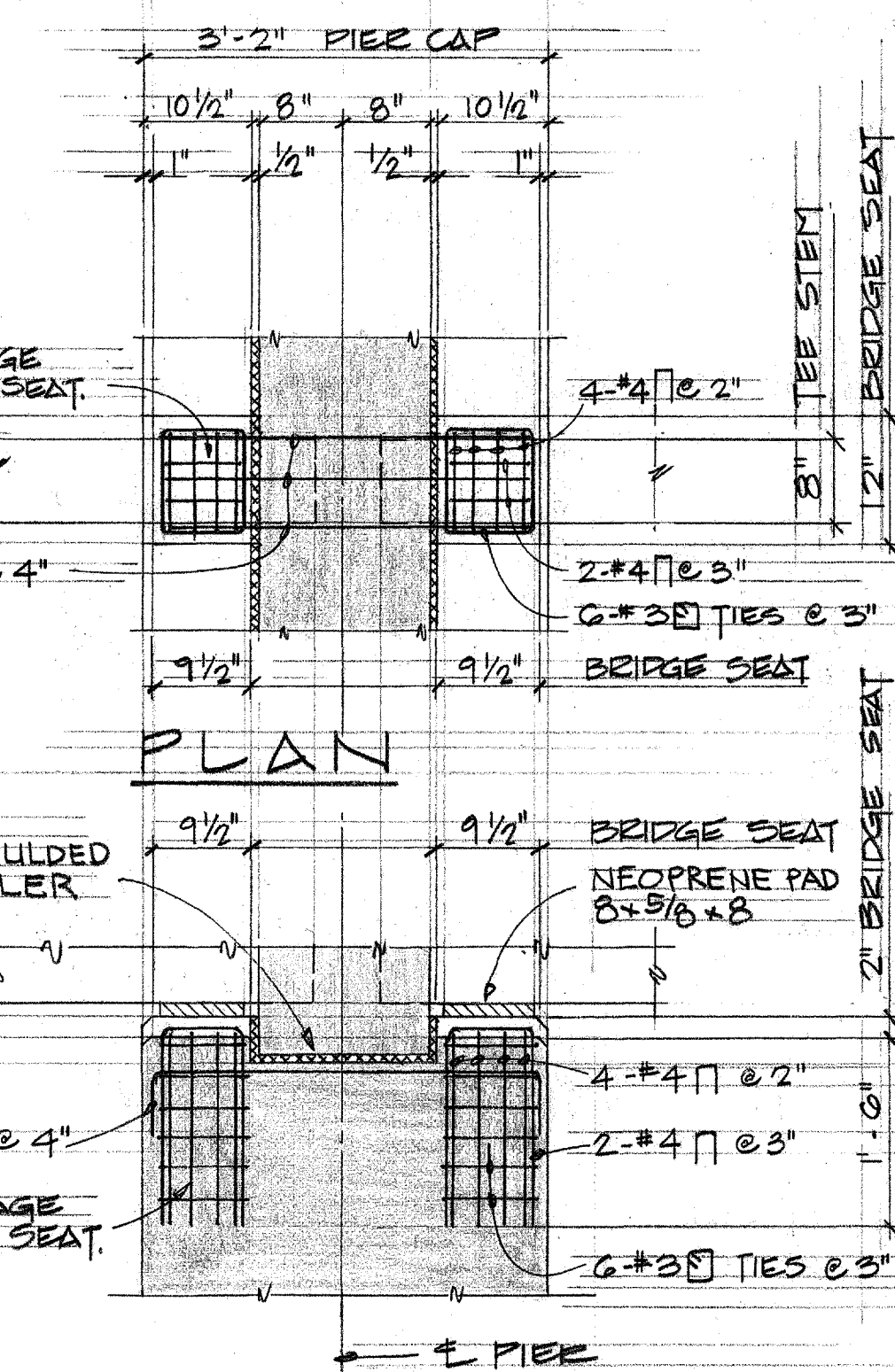
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAIPALAOA
MAIPALAOA BRIDGE WIDENING
FOUNDATION PLAN, ABUT & PIER ELEV.
FARRINGTON HIGHWAY WIDENING
PROJECT 900B-02-68
UNIT 2
SCALE: AS NOTED
SHEET No. 3 OF 7 SHEETS

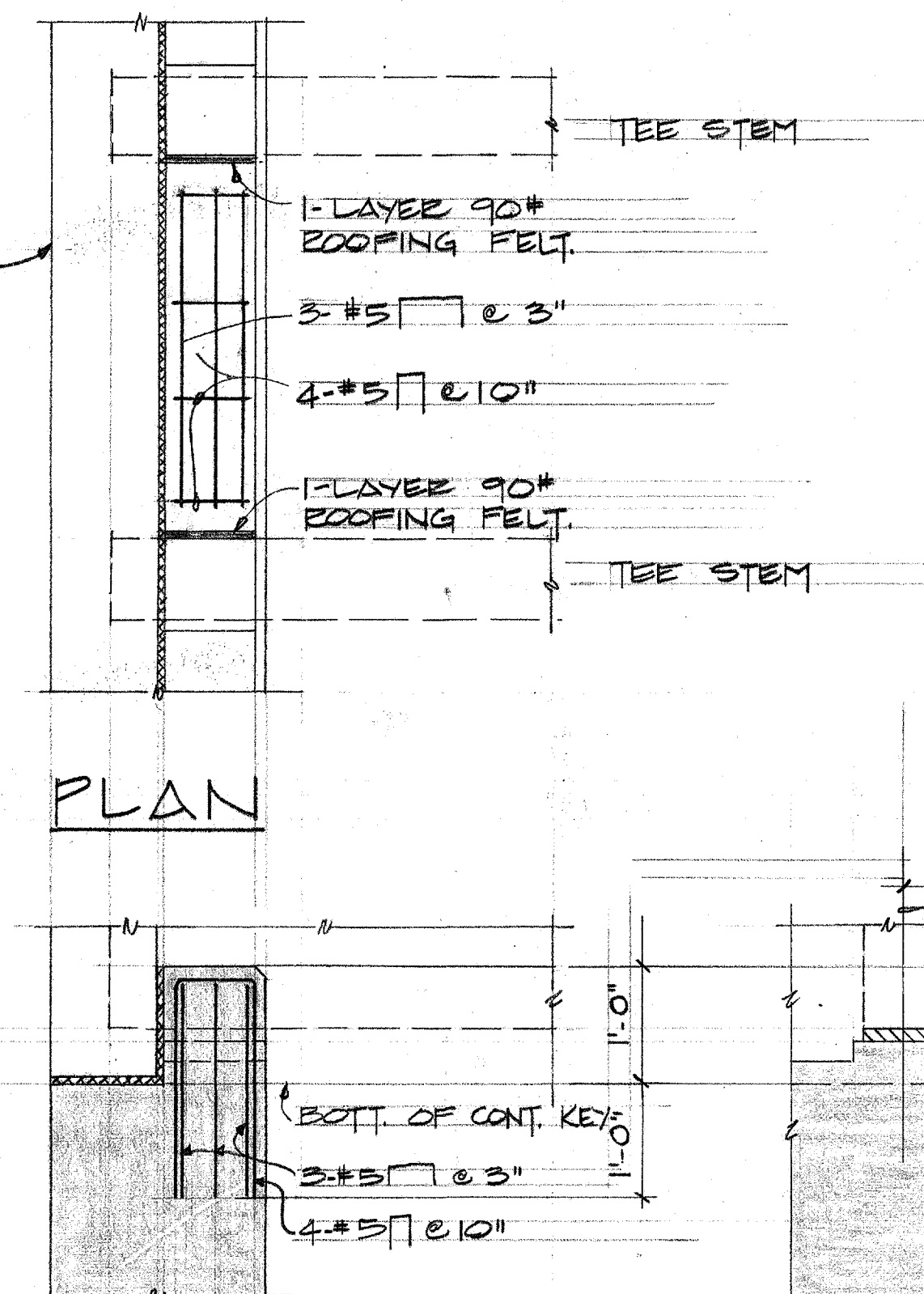
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1969	61	104



D TYP. SECT. @ PIER
SCALE: 3/8" = 1'-0"
(SEE ELEV. F/4)



F ELEVATION
SCALE: 3/8" = 1'-0"



B CREEP BLOCK DETAILS
SCALE: 3/4" = 1'-0"

G ABUTMENT, PIER & FOOTING

H DECK SLAB

I CONSTRUCTION JOINT DETAILS

SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

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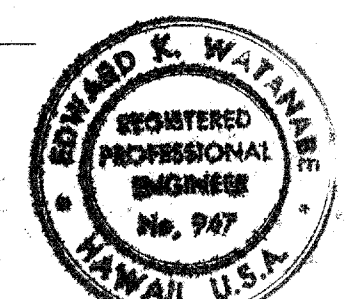
SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

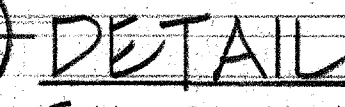
SCALE: 1/2" = 1'-0"

DATE	BY
DESIGNED BY	CHECKED BY
NOTED BY	QUANTITIES BY
NO.	



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WALTER LUNA ASSOCIATES, INC.
BY E.K. Watanabe

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAIPALAOA
MAIPALAOA BRIDGE WIDENING
ABUTMENT & PIER DETAILS
FARRINGTON HIGHWAY WIDENING
PROJECT 900B-02-68
UNIT 2
SCALE: AS NOTED
SHEET No. 4 OF 7 SHEETS



• SYMM. @ ϕ



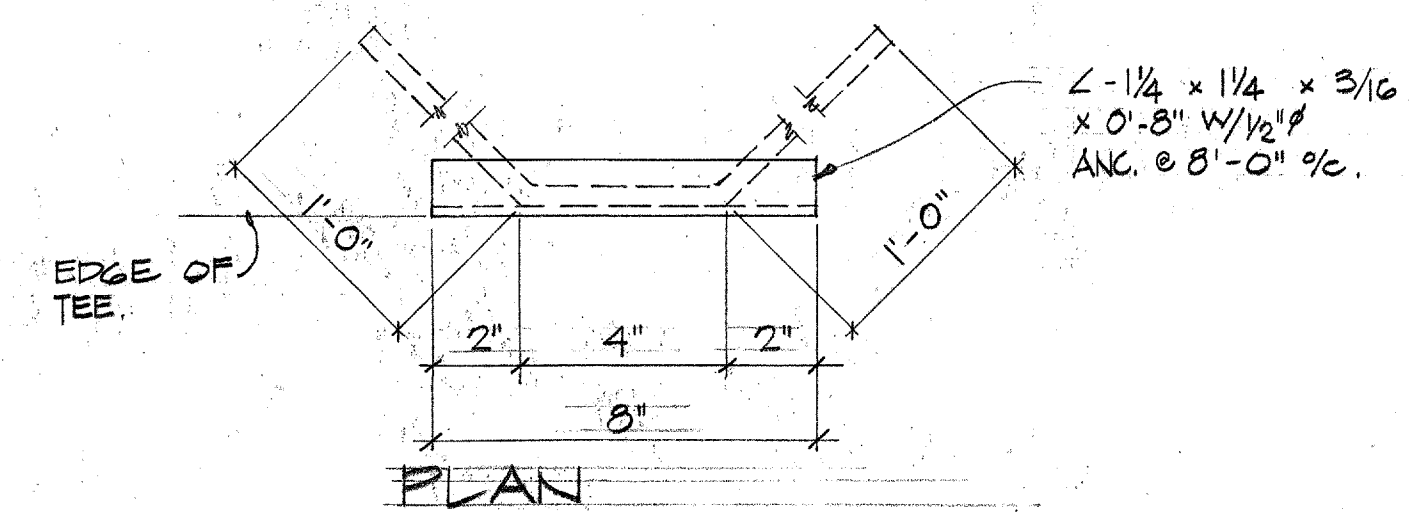
SCALE: 1/2" = 1'-0"



SCALE: $\frac{3}{4}" = 1'-0"$



SCALE: $\frac{3}{4}" = 1' - 0"$

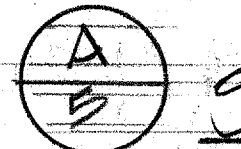


ELEVATION

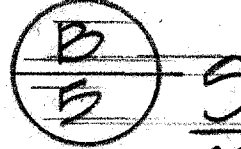
SECTION



SCALE: $1\frac{1}{2}" = 1' - 0"$



SCALE: $3/8" = 1'-0"$



SCALE: $\frac{1}{2}" = 1'-0"$



SCALE: $\frac{1}{2}'' = 1'-0''$



SCALE: $\frac{1}{2}'' = 1'-0''$

BORING No. 1

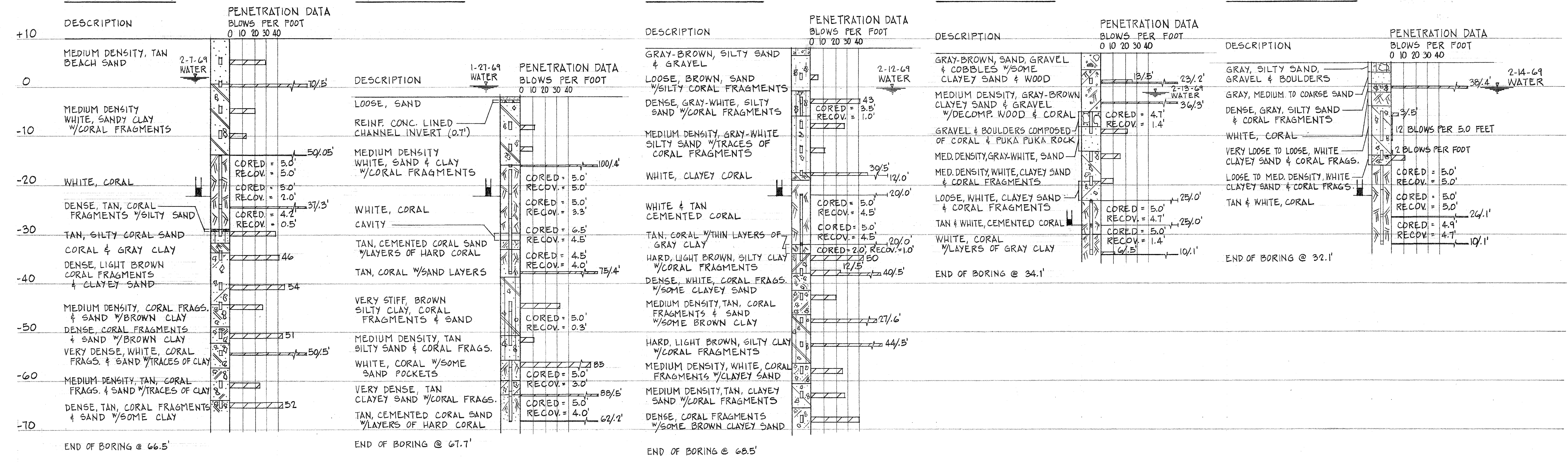
BORING No. 2

BORING No. 3

BORING No. 4

BORING No. 5

ELEVATION



A
6 BORING LOGS

NOTE:
BORING LOGS TAKEN FROM REPORT
PREPARED BY WALTER LUM ASSOCIATES, INC.
"FARRINGTON HIGHWAY WIDENING, MAIPALOA
BRIDGE" DATED FEBRUARY 26, 1969.

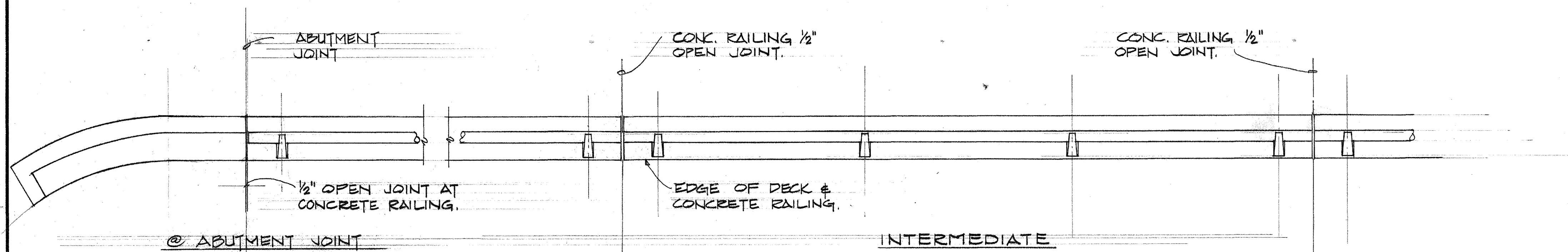
LEGEND
■ ESTIMATED PILE TIP ELEV.

SURVEY PLOTTED BY	DATE
PLAN	
DESIGNED BY	
NOTED BY	
CHECKED BY	



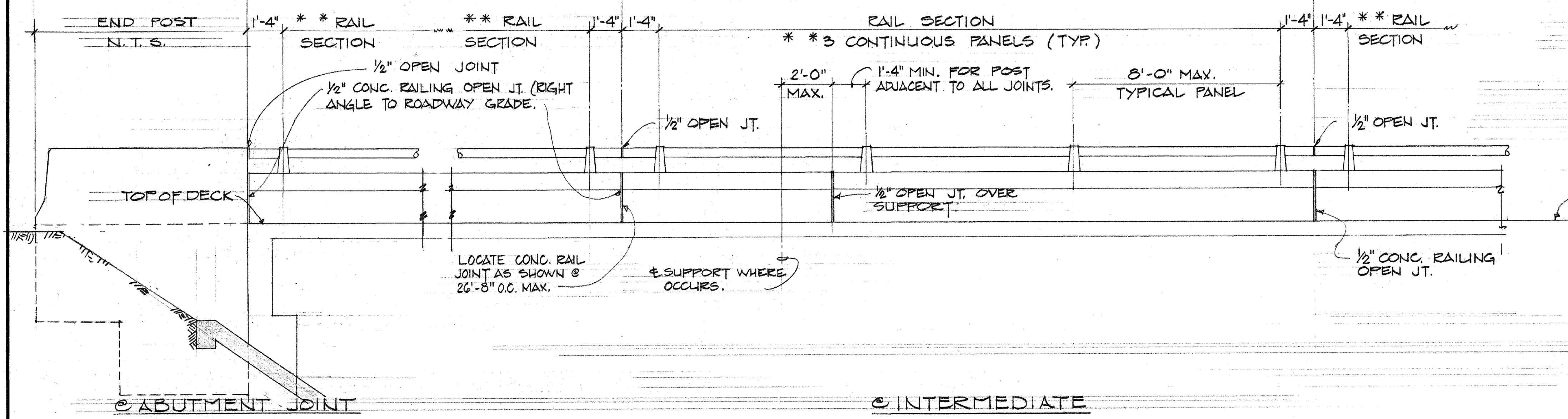
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E.E. Watanabe

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAIPALAOA
MAIPALAOA BRIDGE WIDENING
BORING LOGS
FARRINGTON HIGHWAY WIDENING
PROJECT 900B-02-68
UNIT 2
SCALE: AS NOTED
SHEET No. 6 OF 7 SHEETS



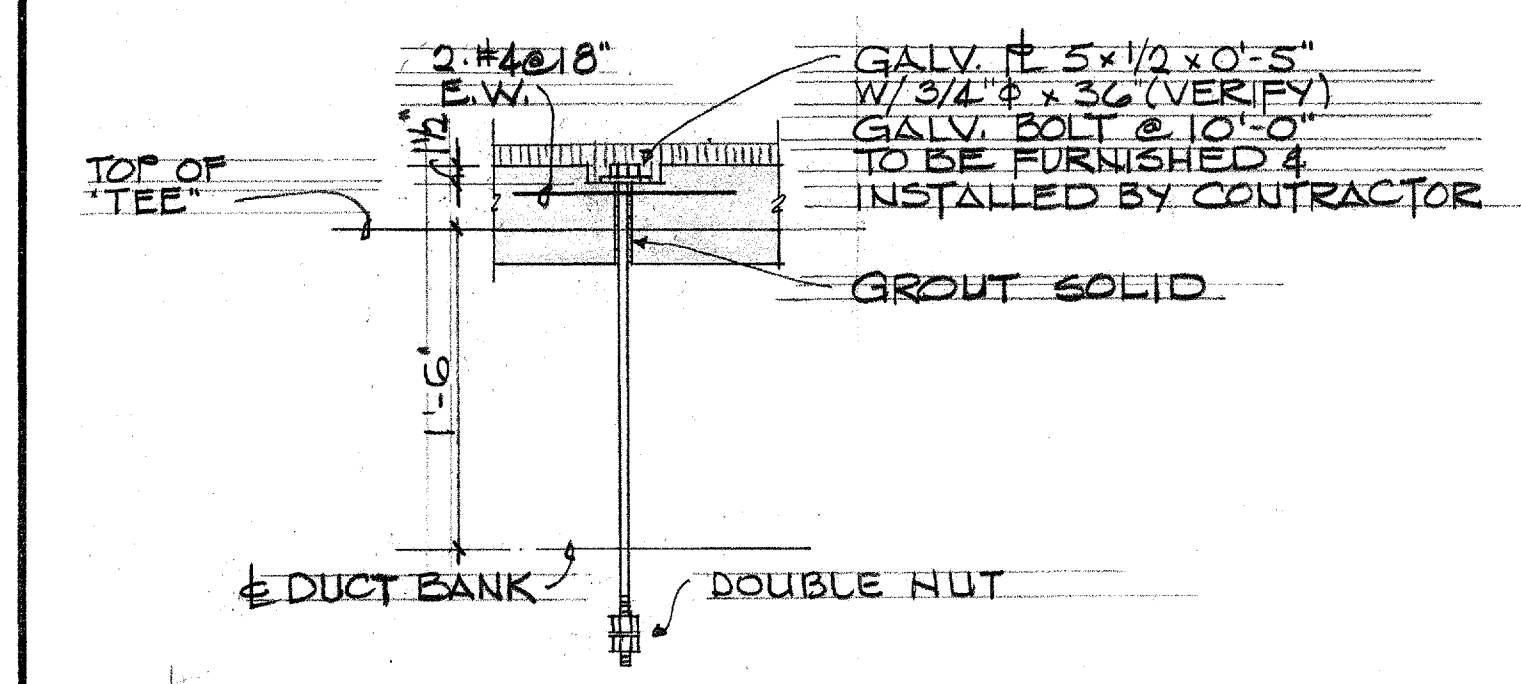
RAILING PLAN
SCALE: 3/8" = 1'-0"

**** NOTE:** THE CONTRACTOR SHALL LAY OUT THE RAILING TO PROVIDE 3 CONT. PANELS WHENEVER POSSIBLE. 2 OR 4 CONT. PANELS WILL BE PERMITTED TO COMPLETE THE LAYOUT WHEN 3 CONT. PANELS CANNOT BE MADE. SINGLE PANELS WILL NOT BE PERMITTED. RAIL POSTS SHALL BE NORMAL TO GRADE. PROVIDE DOUBLE POSTS AT EACH EXPANSION JT, FIXED BRIDGE JT, AND AS SHOWN ON DETAILED DWGS.

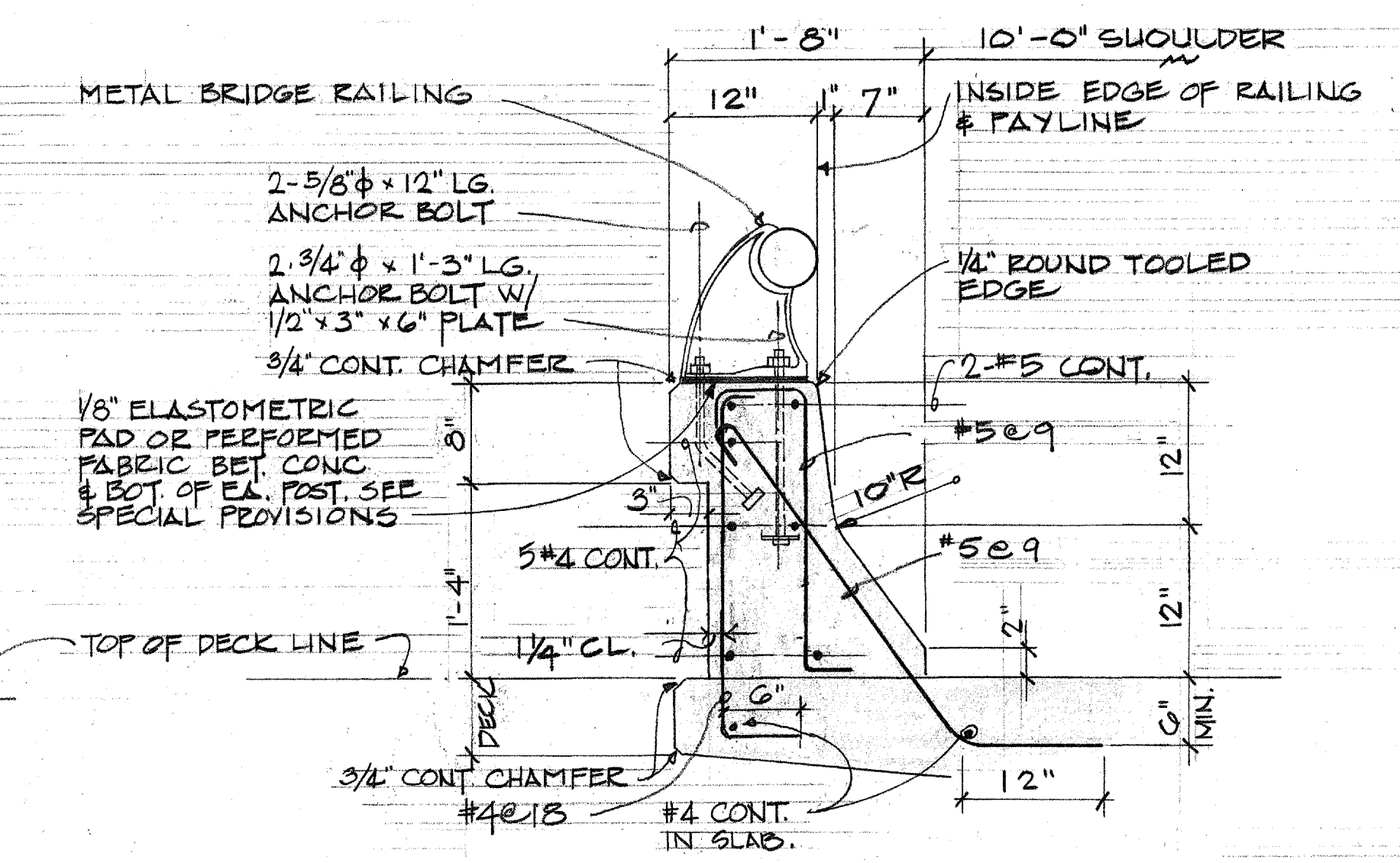


EXTERIOR RAILING ELEVATION
SCALE: 3/8" = 1'-0"

A
7 **RAILING DETAILS**



B
7 **TELEPHONE DUCT HANGER**



TYPICAL RAILING SECTION
SCALE: 1" = 1'-0"



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WALTER LUM ASSOCIATES, INC.
E. K. Watanabe

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MAIPALAOA
MAIPALAOA BRIDGE WIDENING
RAILING DETAILS
FARRINGTON HIGHWAY WIDENING
PROJECT 900 B-02-68
UNIT 2
SCALE: AS NOTED
SHEET No. 7 OF 7 SHEETS