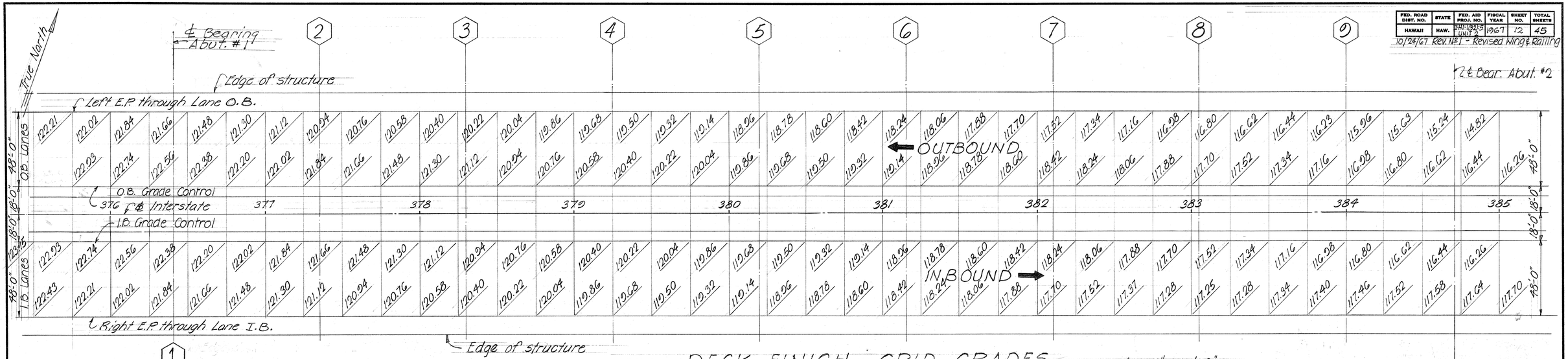
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FAH-1(32)5 UNIT 2	1967	12	45

10/24/67 REV. NO. 1 - Revised Wing & Railing



1 GENERAL NOTES

SPECIFICATIONS: AASHO

Standard Specifications for Highway Bridges (9th Edition) with subsequent additions and modifications.

DESIGN LOADS: HS-20-44

DESIGN STRESSES:

1. R.C. Beams & Slabs

See AASHO specifications except as otherwise noted and see special provisions.

f'c = 3,000 psi	n = 10
fc = 1,200 psi	fs = 20,000 psi tension

2. Prestressed Girders

f'c = 5,500 psi	½" dia. 7 wire strands
f'ci = 4,000 psi	Tensioning load = 25,200 lbs. per strand

Design load = 20,160 lbs. per strand

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 girders see Special Provisions and as noted above.
2. Preformed fabric bridge bearing pads are incidental to concrete and will not be paid for separately.
3. See Special Provisions for admixture in concrete.
4. All piles to be prestressed concrete piles Type I - see Standard Details Sht. #S-2
5. All reinforcing steel to be ASTM Designation A15 Billet Steel, intermediate grade except as otherwise noted.

CONSTRUCTION METHODS:

1. See Standard Specifications and Special Provisions.
2. Except for footings on piles and as otherwise noted, all other 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. For limits of excavation for pile footings see corresponding details.
3. The Contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation or pile driving.
4. Except at frame abutment, all fill behind abutments and wingwalls shall be complete in place before placing superstructure and prestressed concrete girders. Backfill behind frame abutment shall be placed only after the deck frame falsework have been removed.
5. In general, top of concrete deck of structure shall be constructed to follow the finish roadway vertical and horizontal curves and grades.
6. Concrete seats & creep blocks to be poured monolithically with pier or abutment sections. Seats shall receive a hard trowel finish, level & true elevations. Class 1 surface finish 46.3 (0) (2) shall be applied only to end posts & curbs.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE MAR '67
	DRAWN BY TM	" "
	TRACED BY KK	" "
NOTE BOOK	DESIGNED BY DO, MT, LC	" "
No.	CHECKED BY RK, PY	" "

DECK FINISH GRID GRADES

Scale: 1" = 30'-0"

REFERENCE:

Refer to Standard Detailed Drawing Shts. #51 thru #56 inclusive. for details not covered by these drawings.

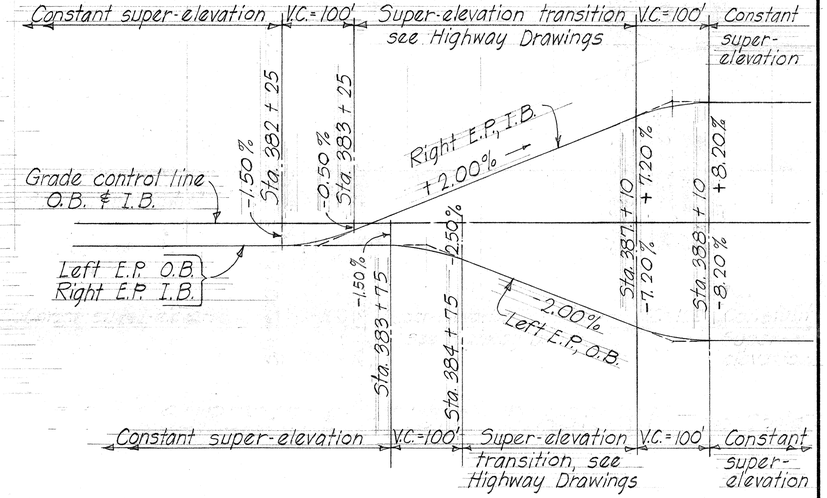
SYMBOLS & ABBREVIATIONS

(1A) — Pier column no.
(1) (A) — Location pier line number
(1) (2) — Location conc. seat line no.
(00.0) — Bottom footing elevation
[00.0] — Pile cut-off elevation
⬡ — Type I pile
(A) / (14) — Section designation / Sheet no. detail is drawn on
⊗ — Boring
(H.S.) — High strength reinf. bars, ASTM Designation A-432 Billet Steel
P32 — Pile footing type
F5 — Spread footing type
G-1, G-2 — Girder numbers
D.F.-1 — Deck Frame number
T-1-8E - AT Wing wall
Wall Type — MK No.

I.B. — Inbound
O.B. — Outbound
℄ — Baseline
Pt. — Point
Exp. — Expansion
No. — Number
Cont. — Continuous
E.F. — Each Face
B.F. — Both Face
N.F. — Near Face
F.F. — Front Face
W.P. — Working Point
ea. — each
Bal. — Balance
Bot, Bott. — Bottom
T — Top
EXT. - Exterior
INT. - Interior
O.C. — On Center

ESTIMATED QUANTITIES

Concrete — Lump Sum	(12,450		C.Y.
Reinforcing Steel — Lump Sum	(2,952,500		LBS.
Prestressed Girder — Lump Sum	(18,154		L.F.
Prestressed Concrete Piles Type I	15,537	~~14,694~~	L.F.
Metal Bridge Railing (1-Rail Traffic Type)	3,549.1	~~3,547~~	L.F.
Concrete Bridge Railing (1-Rail Traffic Type)	3,544.9	~~3,552~~	L.F.
Structural Excavation	9018.6	~~8,172~~	C.Y.
Filter Material	97.3	~~88~~	C.Y.



SUPER-ELEVATION DIAGRAM

No Scale

REVISION NO. 1

THIS SHEET SUPERSEDES SHEET NO. 12

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
FINISH GRADES, GENERAL NOTES & SCHEDULES

Proj. No. IHI-1(32):5, Unit 2 April 1967

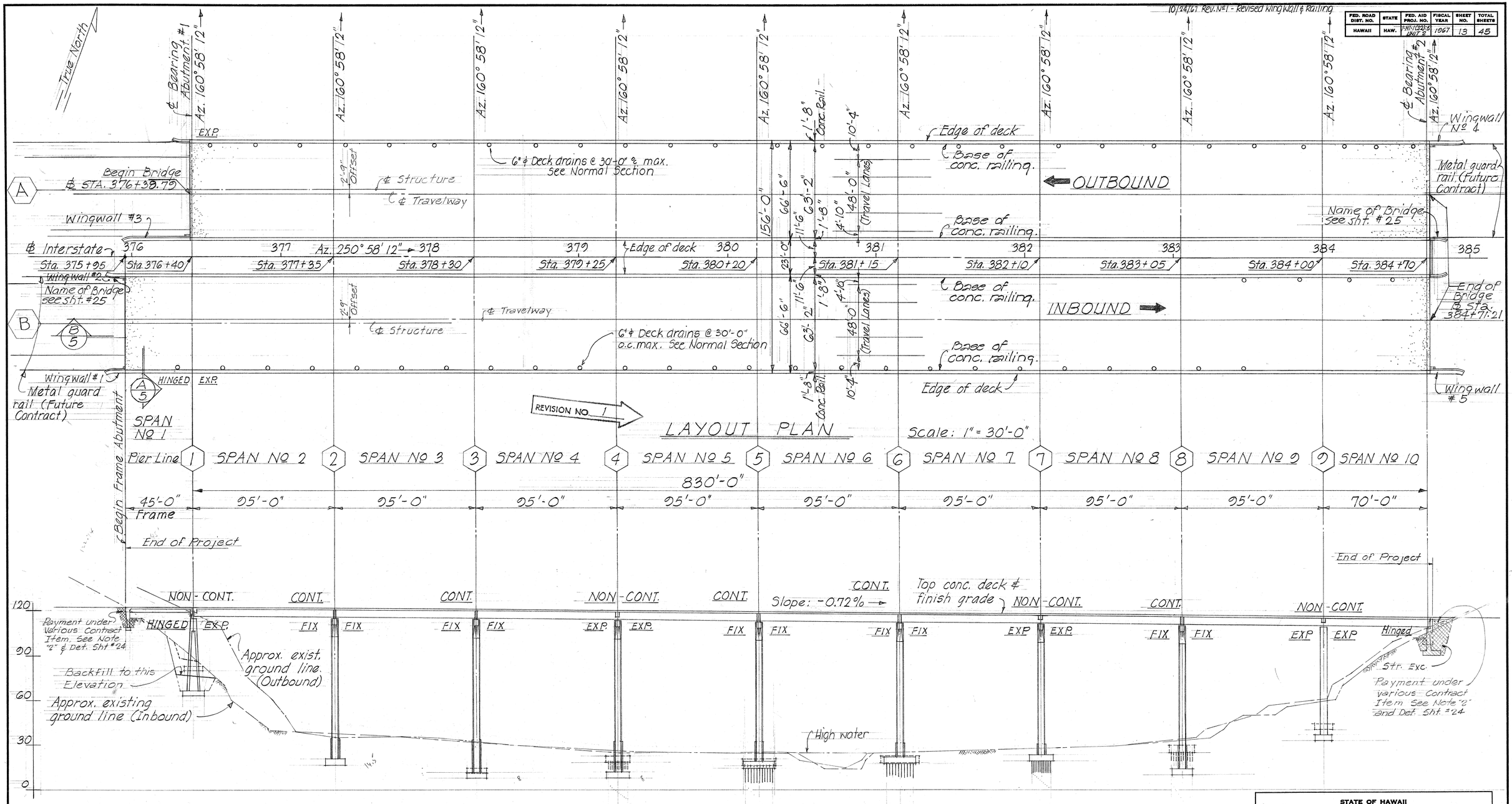
SHEET No. 7 OF 28 SHEETS

C 0 12

PRINTED ON NO. 1000H CLEARPRINT

10/24/67 Rev. No. 1 - Revised Wingwall & Railing

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHI-1(32):5 UNIT 2	1967	13	45



LONGITUDINAL SECTION ALONG INBOUND BRIDGE SCALE: 1"=30'-0"

(OUTBOUND BRIDGE SIMILAR)

NOTES: TOP OF CONCRETE DECK TO FOLLOW FINISH ROADWAY GRADES EXCEPT AS OTHERWISE NOTED ON PLANS.

THIS SHEET SUPERSEDES SHEET NO. 13

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

LAYOUT PLAN & SECTIONS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 2 OF 28 SHEETS

C 0 1 3

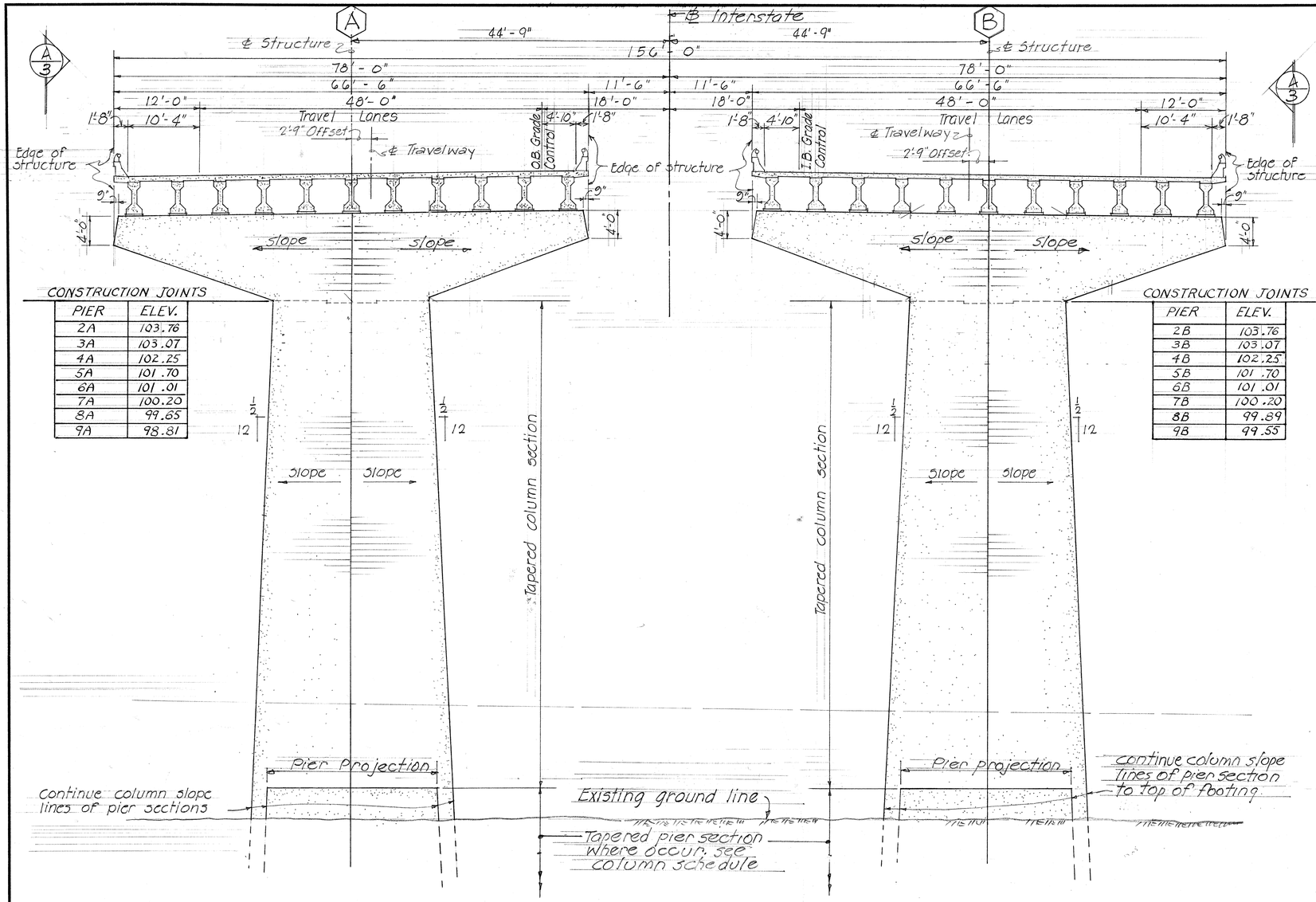
ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY N.Y.
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY R.K. P.Y.
DATE 11/67

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)5 UNIT 2	1967	14	45

10/24/67 REV. NO. 1 - Revised Railing

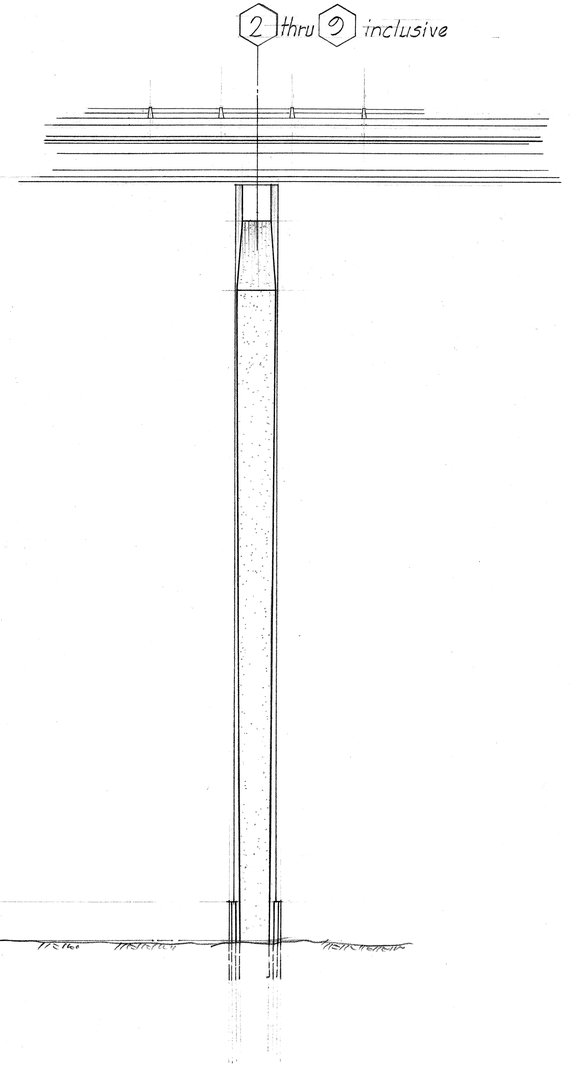


CONSTRUCTION JOINTS

PIER	ELEV.
2A	103.76
3A	103.07
4A	102.25
5A	101.70
6A	101.01
7A	100.20
8A	99.65
9A	98.81

CONSTRUCTION JOINTS

PIER	ELEV.
2B	103.76
3B	103.07
4B	102.25
5B	101.70
6B	101.01
7B	100.20
8B	99.89
9B	99.55



OUTBOUND BRIDGE

INBOUND BRIDGE

END ELEVATION A/3

REVISION NO. 1

TYPICAL SECTION THRU STRUCTURE

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

REVISION NO. 1

THIS SHEET SUPERSEDES SHEET NO. 14

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
TYPICAL BRIDGE SECTIONS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 3 OF 28 SHEETS

C01 4

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	MAR '67
	DRAWN BY	" "
	TRACED BY	" "
NOTE BOOK	DESIGNED BY DS	" "
No.	QUANTITIES BY	" "
	CHECKED BY DY RK	" "

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FAI-1(32)5 UNIT 2	1967	15A	45

10/24/67 Rev. No. 1
Revised Wingwall

Revised-8/4/67

FOUNDATION PLAN

Scale: 1"=20'-0"

REVISION NO. 1

NOTE: Longer dimension of footings, piers & pedestals shall be placed in the direction along pier lines (1) thru (9)
For typical foundation details & schedules, see Sht. # 9, #10, #11, #12
For boring logs, see sht. #26, #27, #28.

THIS SHEET SUPERSEDES SHEET NO. 15A

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
FOUNDATION PLAN

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 4 OF 28 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
No.	QUANTITIES BY	"
	CHECKED BY	"

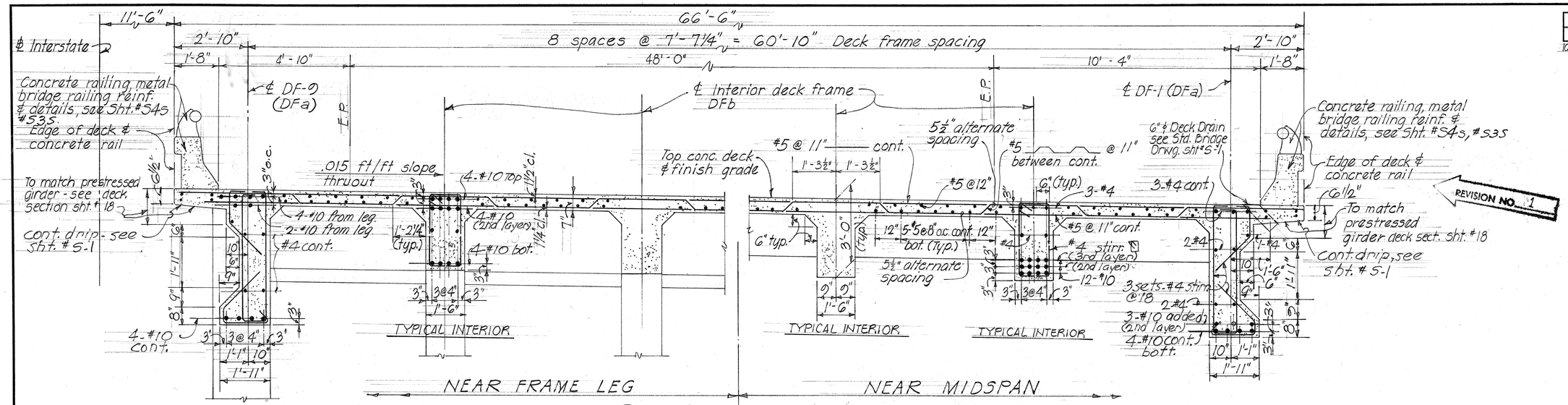
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-HI-1(32)-5 UNIT 2	1967	16	45

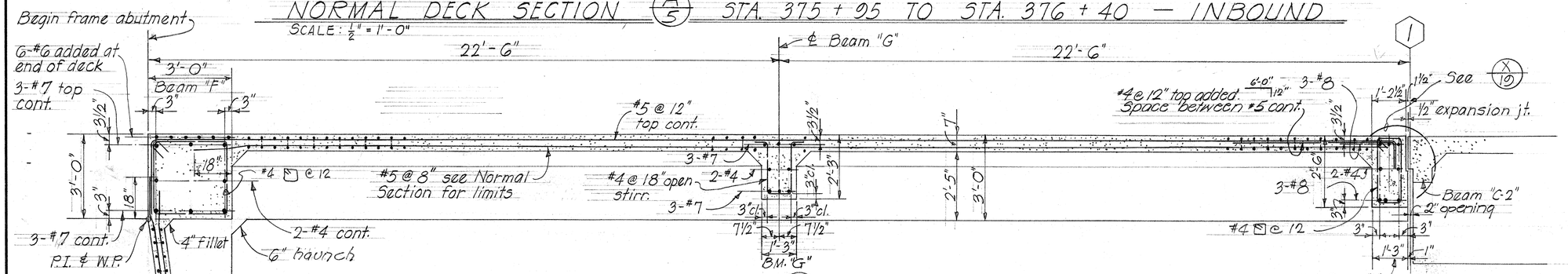
10/24/67 Rev. No. 1 - Revised Railing

REVISION NO. 1



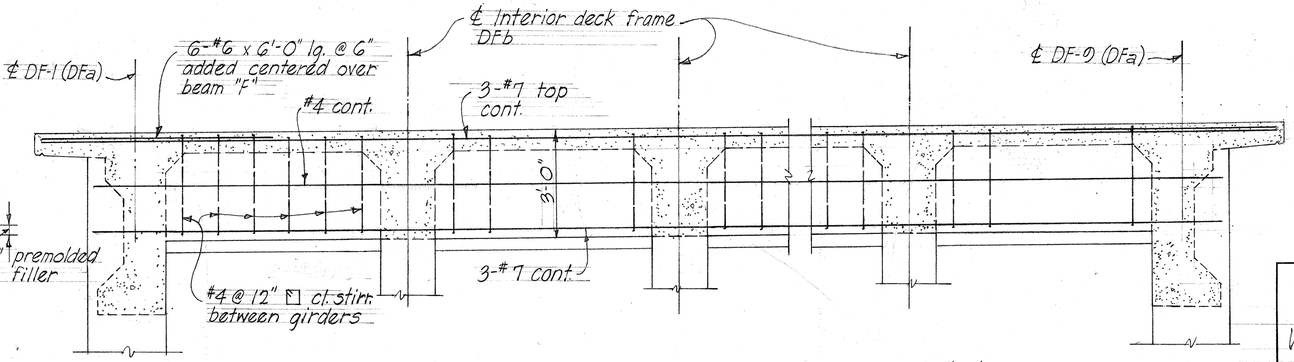
NORMAL DECK SECTION (A/5) STA. 375 + 95 TO STA. 376 + 40 — INBOUND

SCALE: ½" = 1'-0"



LONGITUDINAL SECTION (B/5) BETWEEN DECK FRAMES

Scale: ½" = 1'-0"



ELEVATION - TRANSVERSE BEAM "F"

Scale: ½" = 1'-0"

NOTES:

Reference - refer to Deck Framing Plan Sht. #16

THIS SHEET SUPERSEDES SHEET NO. 16

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
SPAN #1 - FRAME SECTIONS AND DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 5 OF 28 SHEETS

C 0 1 6

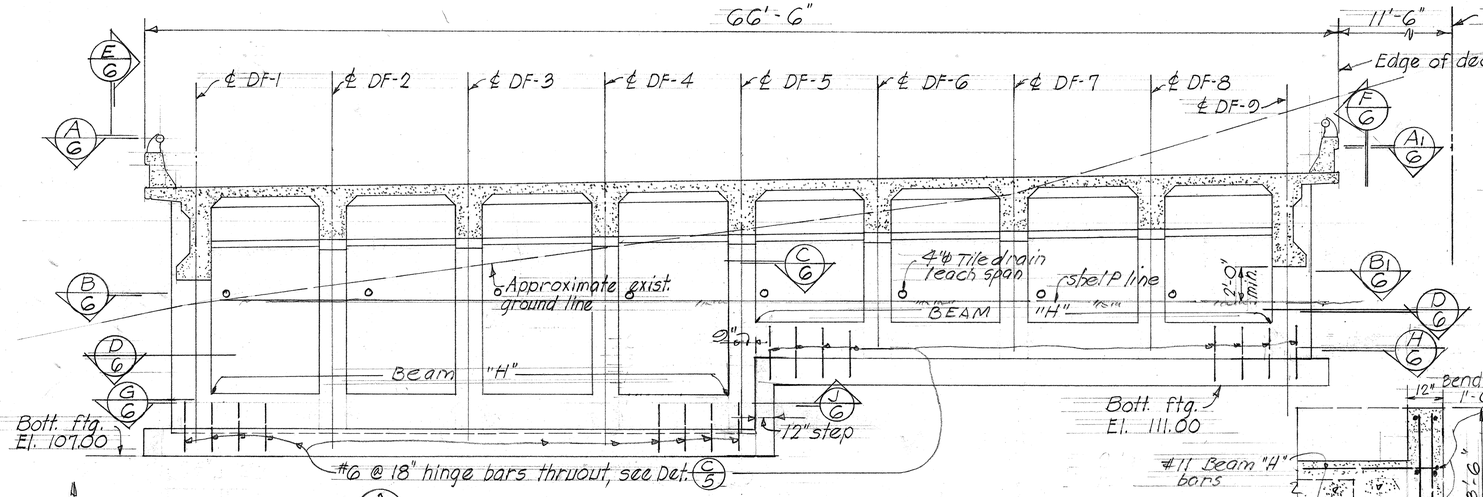
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY N.Y.	" "
NOTE BOOK	TRACED BY	" "
No.	DESIGNED BY K.Y. T.M.K. J.F.	" "
	QUANTITIES BY	" "
	CHECKED BY P.Y.	" "

PRINTED ON NO. 1000H CLEARPRINT

4/18

10/24/67 Rev. No. 1 - Revised Wingwall & Railing

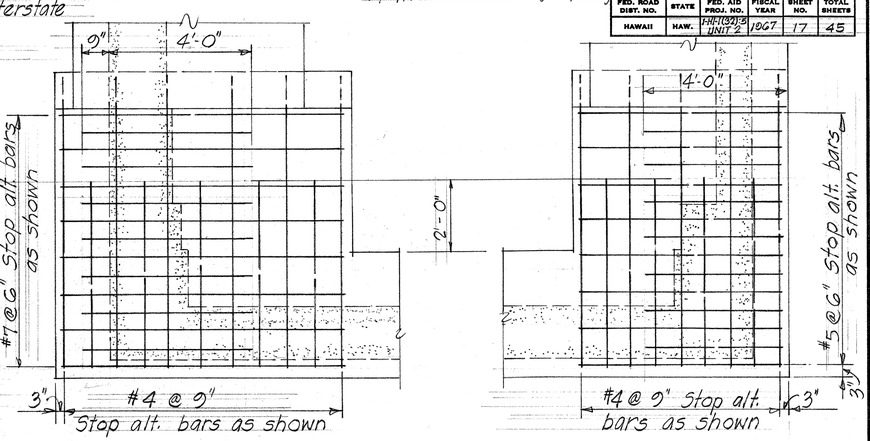
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHPI(32)-5 UNIT 2	1967	17	45



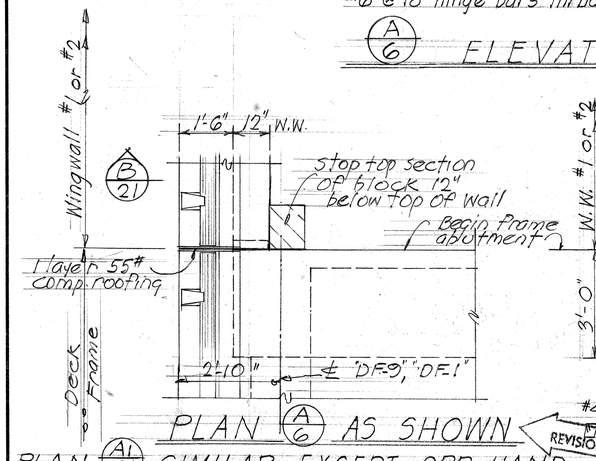
A/6 ELEVATION - FRAME ABUTMENT

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

REVISION NO. 1

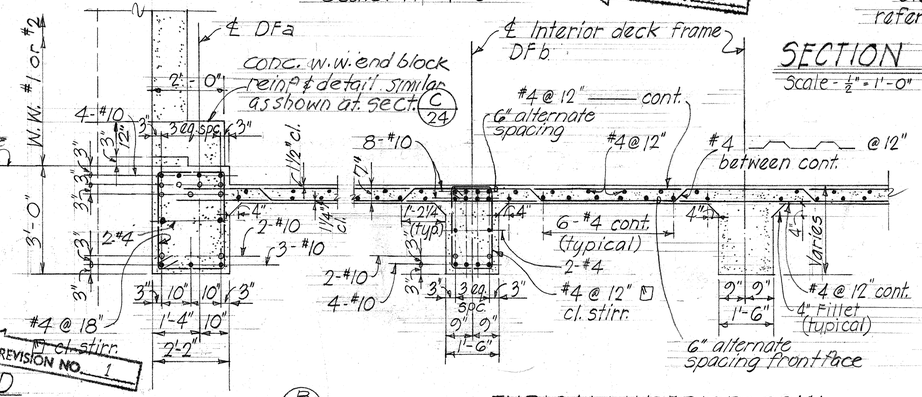


TOP LAYER REINFORCEMENT



PLAN A/6 AS SHOWN

PLAN A1/6 SIMILAR EXCEPT OPP HAND



SECTION B/6

SECTION B1/6 SIMILAR AS SHOWN EXCEPT OPPOSITE HAND

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

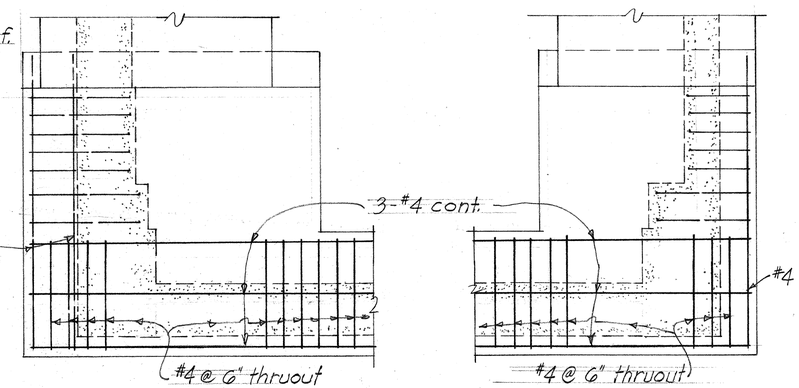
TYPICAL INTERIOR SPAN

SECTION C/6

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

SECTION J/6

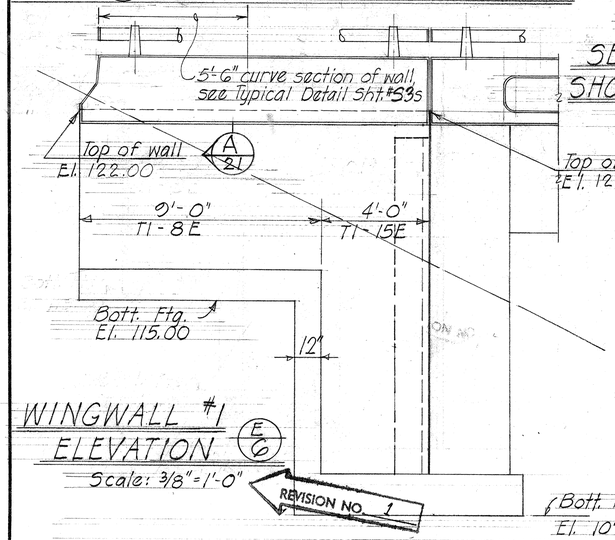
Scale - 1/2" = 1'-0"



BOTTOM LAYER REINFORCEMENT

PLAN G/6 PLAN H/6

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

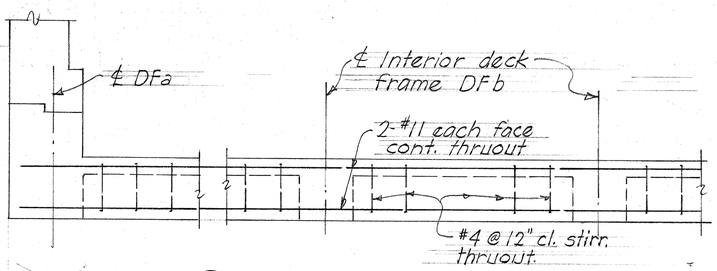


WINGWALL #1 ELEVATION E/6

Scale: 3/8" = 1'-0"

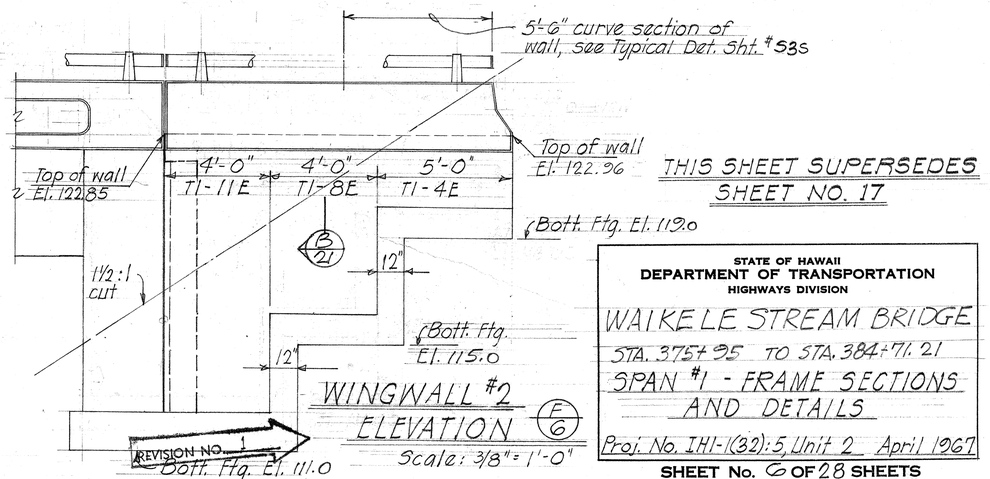
REVISION NO. 1

Bott. Ftg. El. 107.00



PLAN D/6 BEAM "H" REINFORCEMENT

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



WINGWALL #2 ELEVATION F/6

Scale: 3/8" = 1'-0"

THIS SHEET SUPERSEDES SHEET NO. 17

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

SPAN #1 - FRAME SECTIONS AND DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 6 OF 28 SHEETS

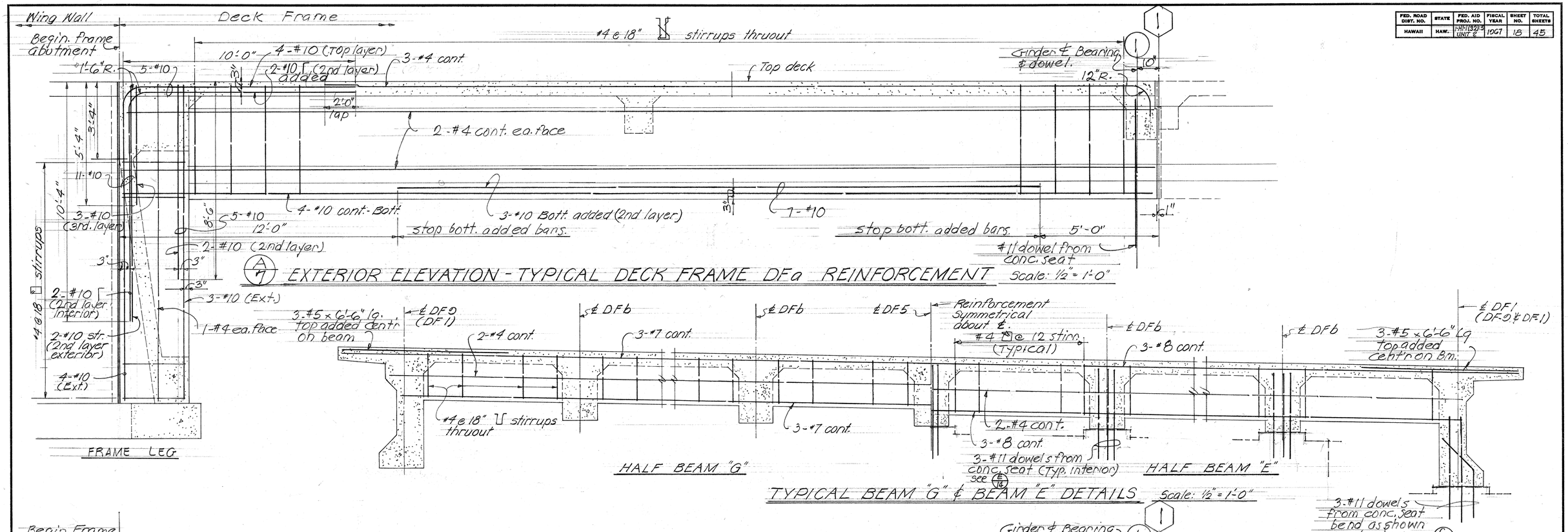
ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY	KY 3/67
	TRACED BY	KY
	DESIGNED BY	TN JF
NOTE BOOK	QUANTITIES BY	RK PY
No.	CHECKED BY	

PRINTED ON NO. 1000H CLEARPRINT

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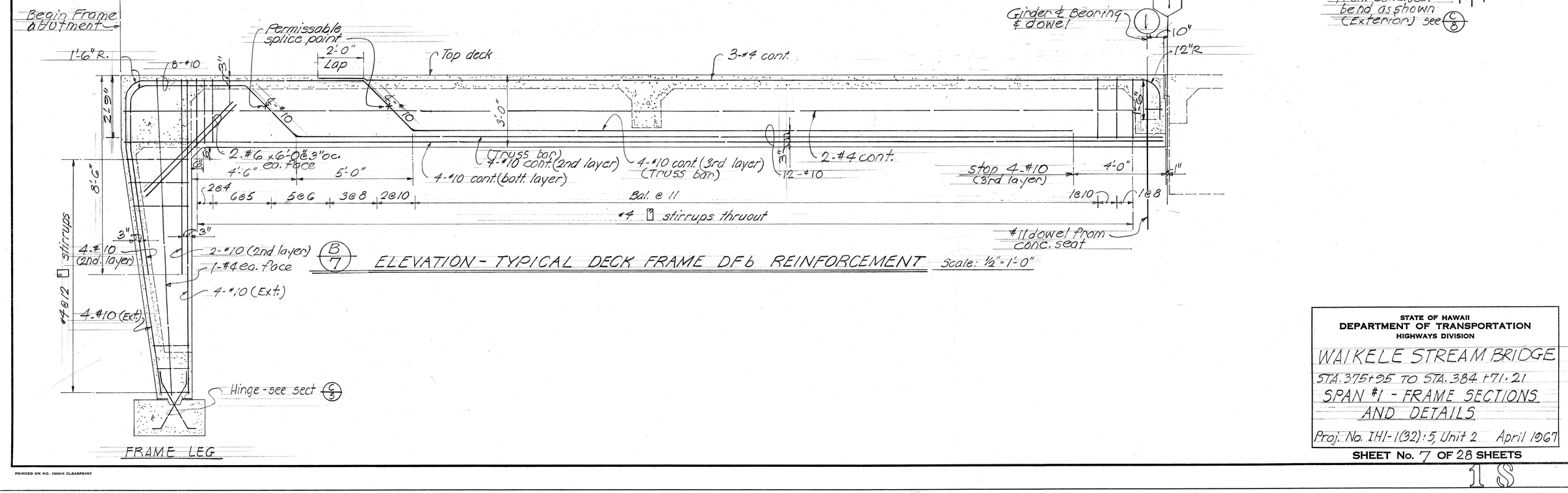
4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHH-1(32):5 UNIT 2	1967	18	45



A/7 EXTERIOR ELEVATION - TYPICAL DECK FRAME DFa REINFORCEMENT Scale: ½" = 1'-0"

TYPICAL BEAM "G" & BEAM "E" DETAILS Scale: ½" = 1'-0"



B/7 ELEVATION - TYPICAL DECK FRAME DFb REINFORCEMENT Scale: ½" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
No.	QUANTITIES BY	"
	CHECKED BY	"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

SPAN #1 - FRAME SECTIONS AND DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

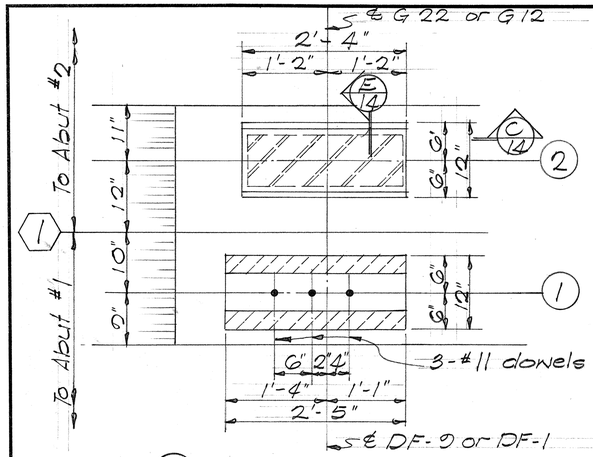
SHEET No. 7 OF 28 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

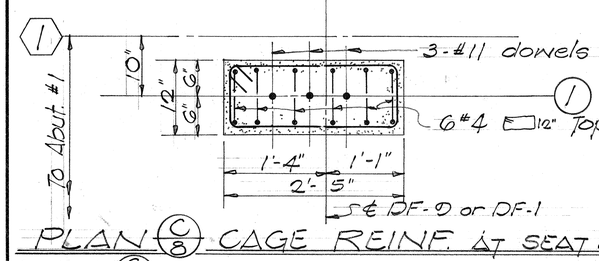
18

4/18

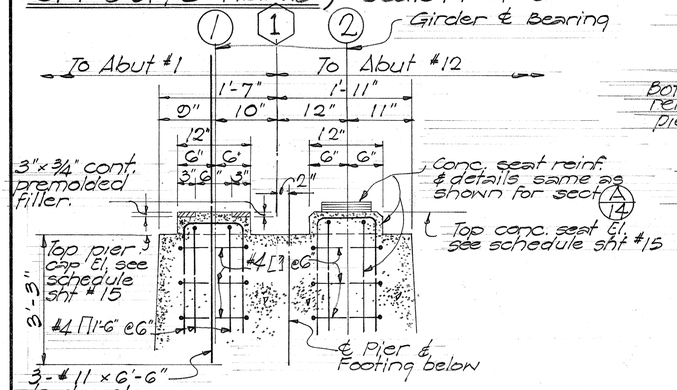
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FAH-1(32)5 UNIT 2	1967	19	45



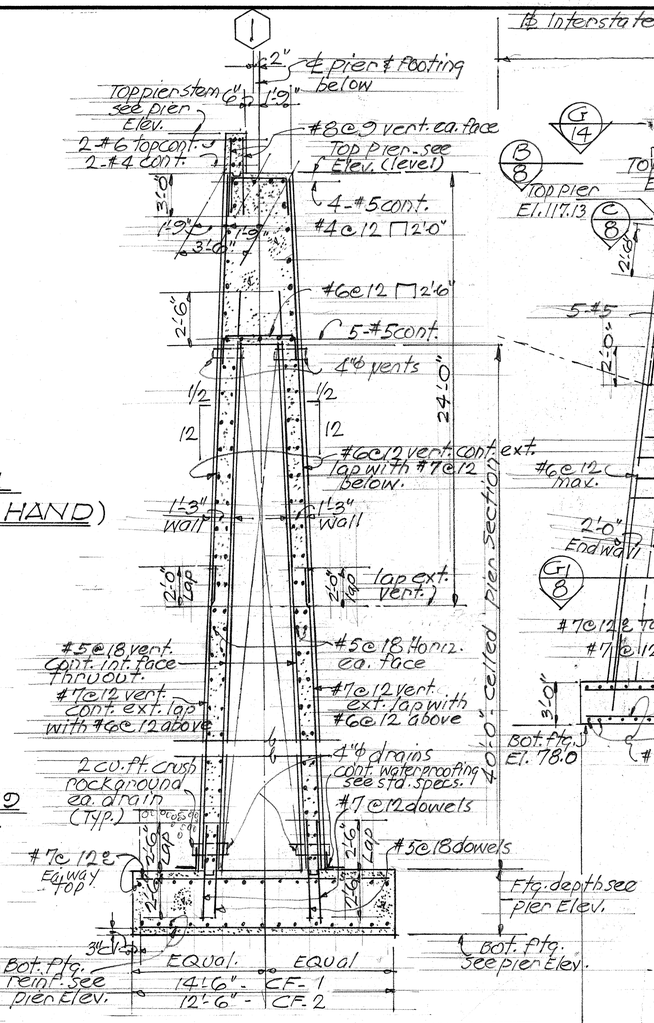
PLAN (B/8) SEAT DETAIL · AS SHOWN
(PLAN (B1/8) SIMILAR EXCEPT OPPOSITE HAND)
Scale : 1" = 1'-0"



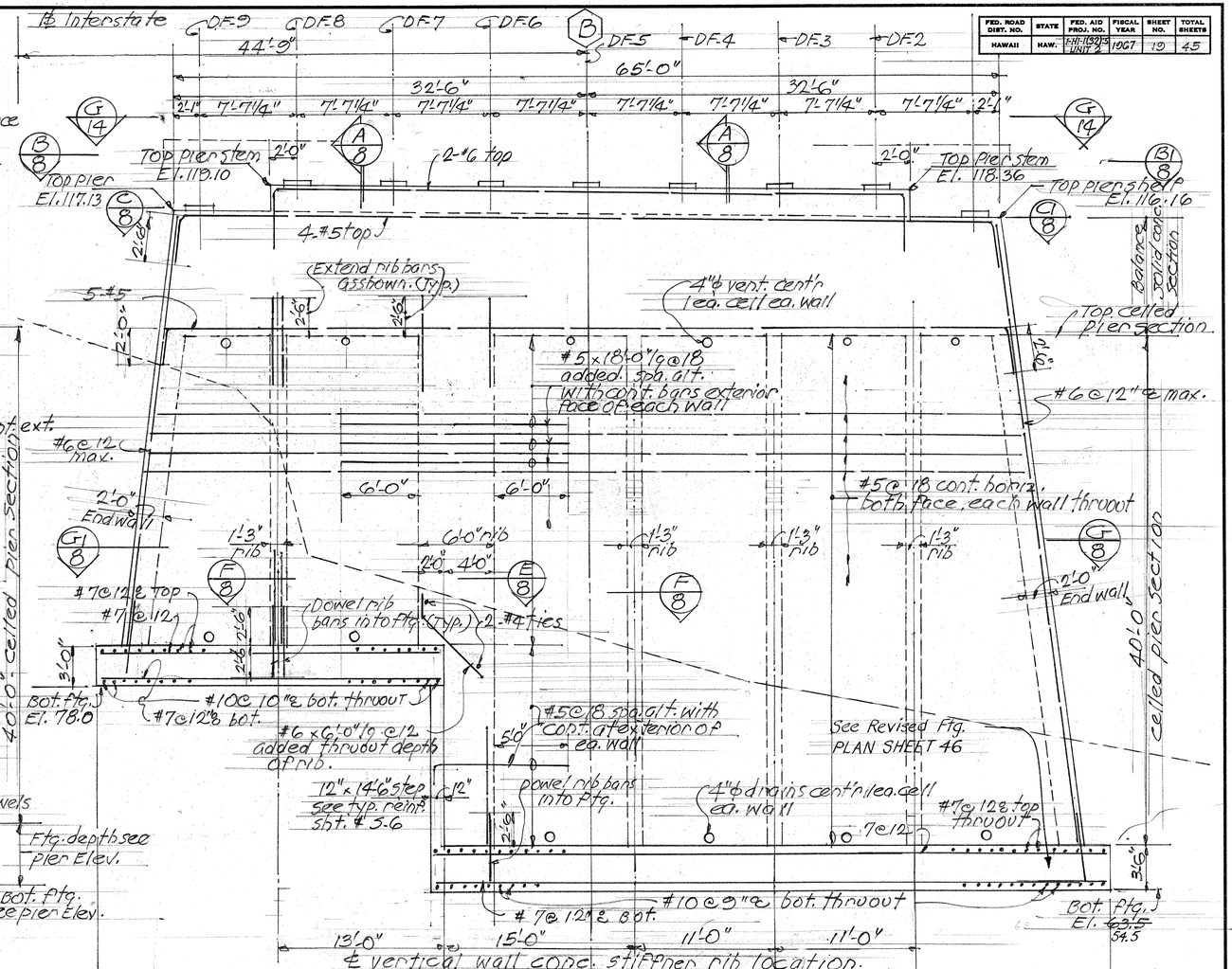
PLAN (C/8) CAGE REINF. AT SEAT DF-9
(PLAN (C1/8) AT SEAT DF-1 SIMILAR EXCEPT OPPOSITE HAND) Scale : 1" = 1'-0"



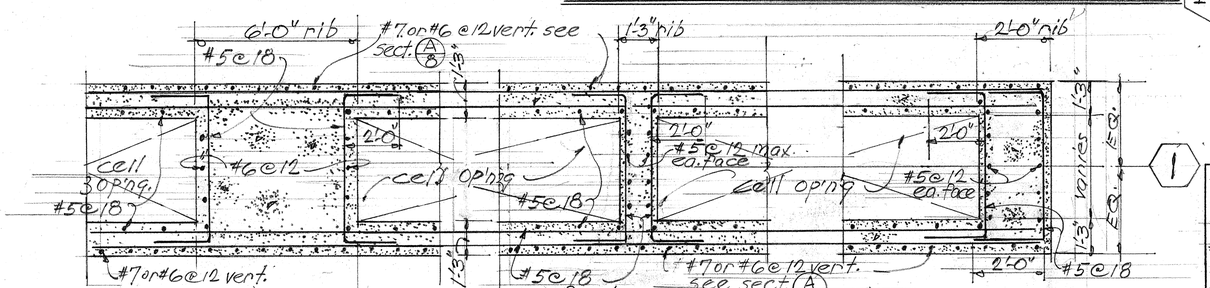
SECTION (E/14) Scale : 1" = 1'-0"



TYPICAL SECTION (A/8)
SCALE: 1/4" = 1'-0"



ELEVATION - PIER LINE 1B SCALE: 3/16" = 1'-0"



SECTION (E/8)
scale: 3/8" = 1'-0"

SECTION (F/8)
(TYP. 1'-3" RIB REINF.)
scale: 3/8" = 1'-0"

SECTION (G/8)
(SECT. (G1/8) SIMILAR EXCEPT OPPOSITE HAND) SCALE: 3/8" = 1'-0"

ORIGINAL PLAT	SURVEY PLOTTED BY:	DATE
	DRAWN BY:	"
	TRACED BY:	"
NOTE BOOK	DESIGNED BY:	"
	QUANTITIES BY:	"
No.	CHECKED BY:	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 to STA 384+71.21

PIER (1B) SECTIONS & DETAILS

Proj. No. I-HI-1(32):5, Unit 2 Apr. 1967

SHEET No. 8 OF 28 SHEETS

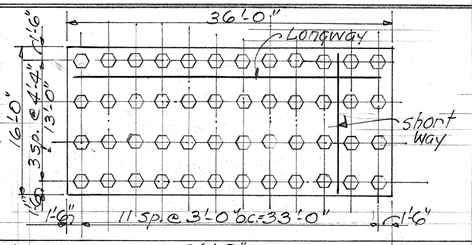
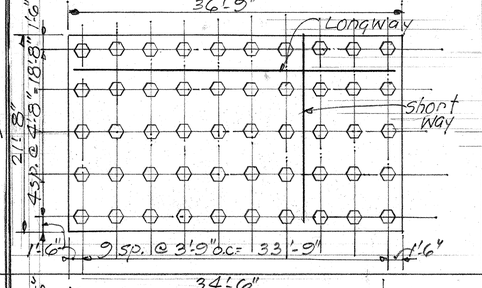
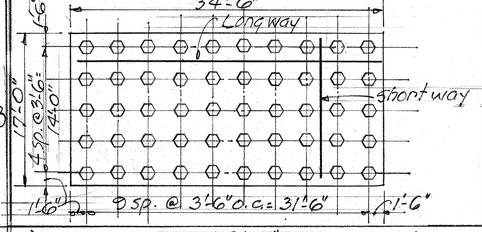
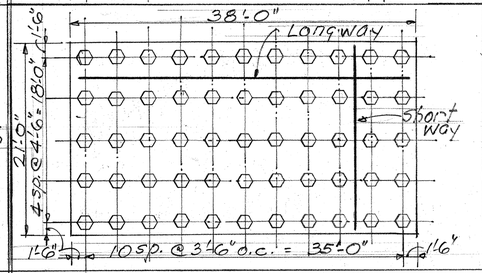
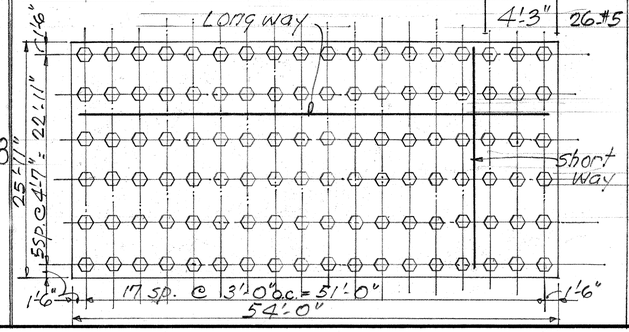
19

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4/18

NOTE: All piles to be Type I prestressed concrete piles - see standard details Sht. #S-2

PILE FOOTING SCHEDULE

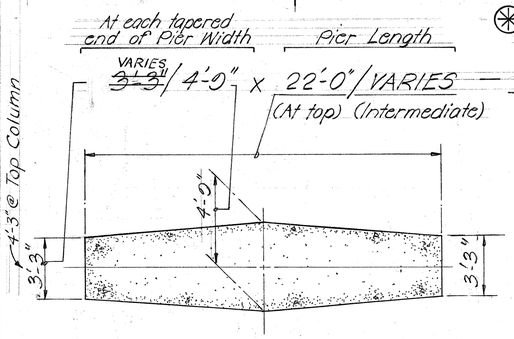
MARK	DESCRIPTION	DEPTH	TOP REINF. LONG WAY	TOP REINF. SHORT WAY	BOTT. REINF. LONG WAY	BOTT. REINF. SHORT WAY
P48		4'-3"	17-#5	37-#5	18-#9	72-#10
P50A		4'-6"	21-#5	37-#5	33-#7	80-#11
P50B		5'-0"	18-#5	35-#5	26-#8	52-#11
P55		4'-6"	22-#5	39-#5	21-#9	76-#11
P108		4'-3"	26-#5	55-#5	62-#10	81-#10

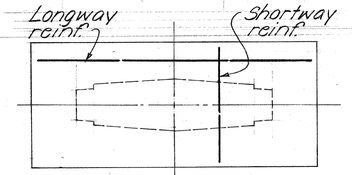
TAPERED PIER COLUMN SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	(32)5 UNIT 2	1967	20	45

PIER COLUMN No. / LOCATION	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	9A	9B
PIER CAP TYPE	I	I	I	I	II	II	I	I	I	I	II	II	I	I	II	II
TOP COLUMN EL.	103.76	103.76	103.07	103.07	102.25	102.25	101.70	101.70	101.01	101.01	100.20	100.20	99.65	99.80	98.81	~~99.77~~ 99.55
CONCRETE TAPERED COLUMN SECTION	3'-3"/4'-9" x 22'-0"/VARIES 114 BARS { 102-#11 CONT. 12-#11 ADDED	DO.	DO.	DO.	DO.	VARIES 3'-3"/4'-9" x 22'-0"/VARIES 114 BARS { 102-#11 CONT. 12-#11 ADDED	3'-3"/4'-9" x 22'-0"/VARIES 230 BARS { 114-#11 CONT. 48-#11 ADDED (EXT.) 68-#11 ADDED (INT.)	DO.	DO.	VARIES 3'-3"/4'-9" x 22'-0"/VARIES 114-#11 CONT. 230 BARS { 48-#11 ADDED (EXT.) 68-#11 ADDED (INT.)	VARIES 3'-3"/4'-9" x 22'-0"/VARIES 114-#11 CONT. 114 BARS { 102-#11 CONT. 12-#11 ADDED	DO.	DO.	VARIES 3'-3"/4'-9" x 22'-0"/VARIES 114-#11 CONT. 230 BARS { 48-#11 ADDED (EXT.) 68-#11 ADDED (INT.)	VARIES 3'-3"/4'-9" x 22'-0"/VARIES 114 BARS { 102-#11 CONT. 12-#11 ADDED	DO.
TOP PIER OR PEDESTAL																
TOP PIER EL.	35.76	35.76	35.07	35.07	34.25	34.25	33.70	33.70	33.01	33.01	32.20	32.20	31.65	31.89		
CONCRETE TAPERED PIER SECTION	SIZE - SEE T/P SECT. 154 { 40-#11 PIER BARS { (W/114-#11 COL.)	DO.	DO.	DO.	DO.	SIZE - SEE T/P SECT. 154 { 40-#11 PIER BARS { (W/114-#11 COL.)	SIZE - SEE T/P SECT. 278 { 48-#11 PIER BARS { (W/230-#11 COL.)	DO.	DO.	SIZE - SEE T/P SECT. 278 { 48-#11 PIER BARS { (W/230-#11 COL.)	SIZE - SEE T/P SECT. 154 { 40-#11 PIER BARS { (W/114-#11 COL.)	DO.	DO.	SIZE - SEE T/P SECT. 278 { 48-#11 PIER BARS { (W/230-#11 COL.)		
CONCRETE PEDESTAL SIZE					10'-0" x 30'-0"	X'-0" x 35'-0"	11'-0" x 31'-0"	11'-0" x 31'-0"	12'-0" x 38'-0"	11'-0" x 31'-0"	10'-0" x 30'-0"	10'-0" x 30'-0"				
CONCRETE PEDESTAL DEPTH					12"	2'-3"	1'-9"	2'-3"	12"	1'-9"	12"	12"				
COLUMN DOWELS ⊛	114-#11	114-#11	114-#11	114-#11	114-#11	114-#11	230-#11	230-#11	230-#11	230-#11	114-#11	114-#11	114-#11	230-#11	114-#11	114-#11
FOUNDATION FOOTING TYPE	~~F3~~ F6	F6	F4	F4	P48	~~F5~~ F7	P50A	P55	P108	P50A	P48	P48	F-4	P50B	F2	F1
GROUP LOADING	III	III	III	III	VII	III	VII	VII	VII	VII	VII	VII	III	VII	VII	VII
FTG. PRESSURE (PSF)	14,400	0,700	14,700	14,700		11,500							14,700		10,000	13,250
PILE CAPACITY (T.)					70		70	70	32	70	70	70		70		

⊛ Does not include the vertical pier bars that also bend into footing





SPREAD FOOTING SCHEDULE

TYPE	SIZE	DEPTH	BOTTOM REINFORCEMENT LONGWAY	BOTTOM REINFORCEMENT SHORT WAY
F1	11'-0" x 32'-0"	3'-9"	11-#10	36-#10
F2	12'-0" x 34'-0"	3'-9"	12-#10	44-#10
F3	13'-0" x 36'-0"	3'-9"	20-#11	65-#11
F4	13'-6" x 39'-0"	3'-6"	34-#11	96-#11
F5	15'-3" x 41'-0"	4'-0"	37-#11	96-#11
F6	16'-0" x 42'-0"	4'-3"	42-#11	77-#11
F7	24'-0" x 48'-0"	3'-3"	70-#11	147-#11

PLAN • TYPICAL SPREAD FOOTING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
TAPERED COLUMN & PIER SCHEDULES

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 9 OF 28 SHEETS

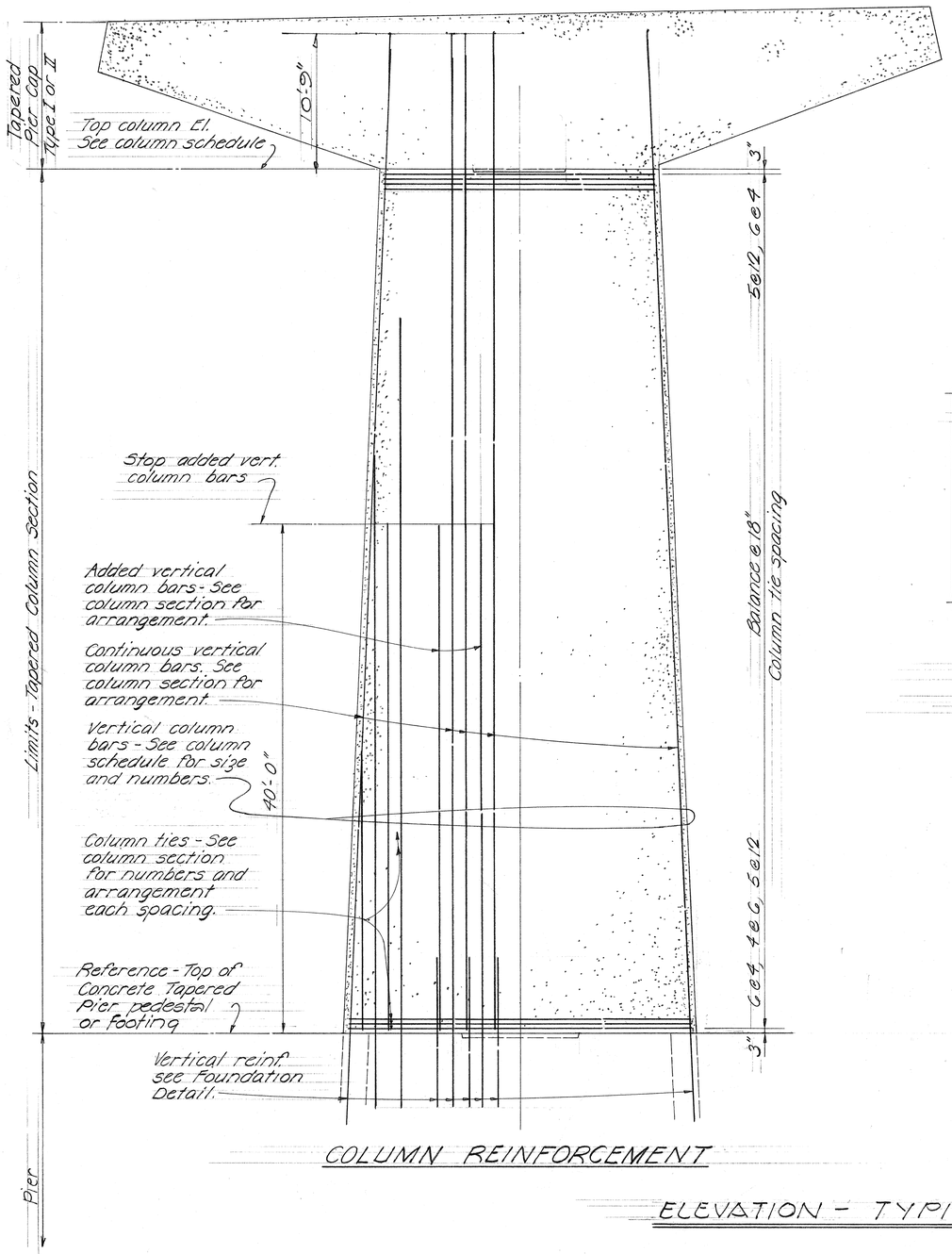
ORIGINAL PLAN		
NOTE BOOK	No.	
SURVEY PLOTTED BY		
DRAWN BY	PE	
TRACED BY	" " "	"
DESIGNED BY	MT	
QUANTITIES BY	" " "	"
CHECKED BY	RK	
DATE	3/67	

PRINTED ON NO. 1000H CLEARPRINT

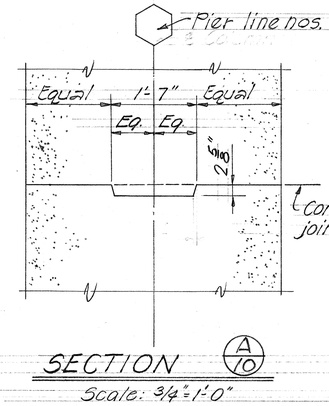
20

4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHF-1(32)-5 UNIT 2	1967	21	45

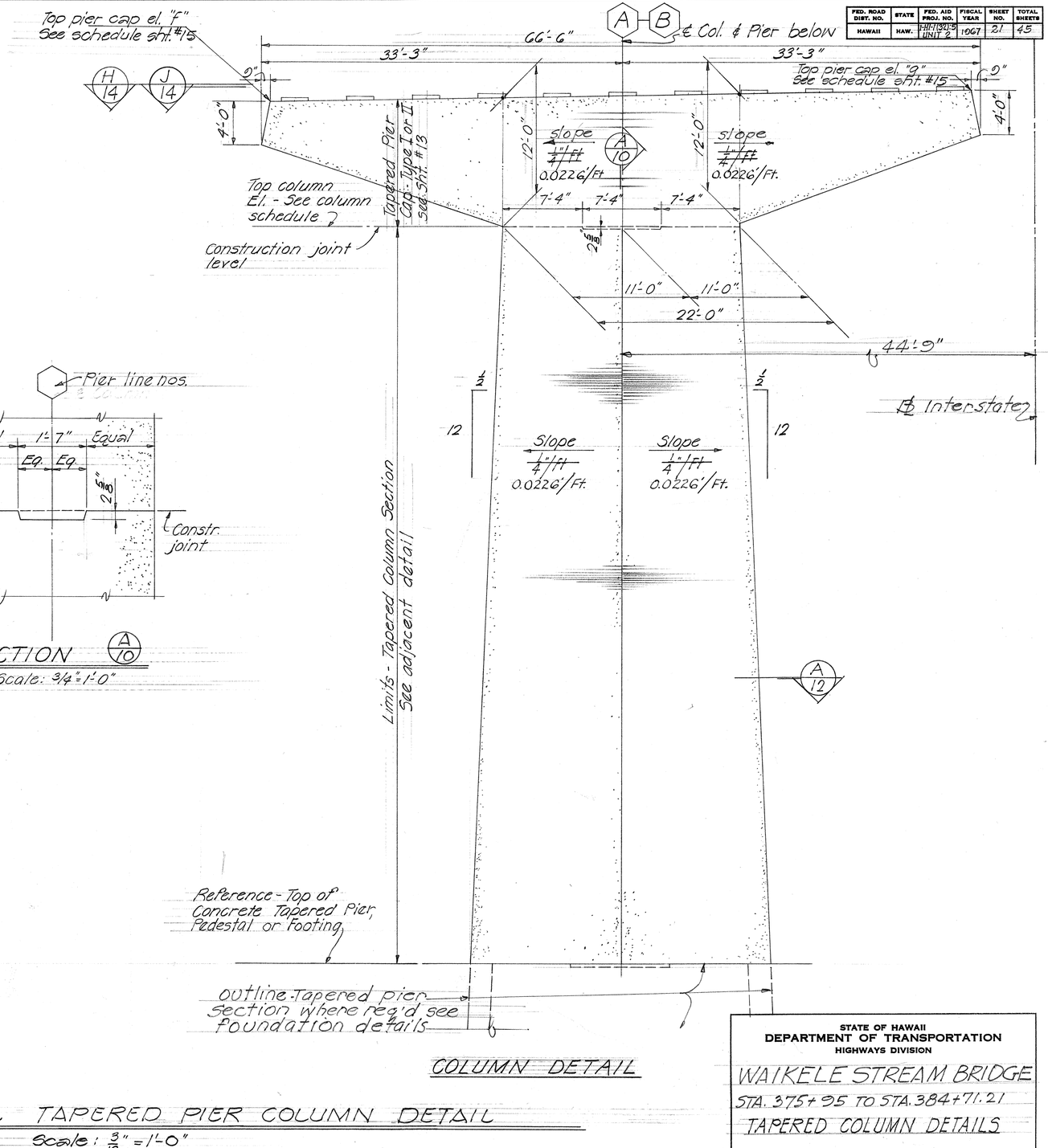


COLUMN REINFORCEMENT



SECTION (A/10)

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



COLUMN DETAIL

ELEVATION - TYPICAL TAPERED PIER COLUMN DETAIL

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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 2/67
	DRAWN BY EM	" " "
	TRACED BY MT	" " "
NOTE BOOK	QUANTITIES BY TM	" " "
No.	CHECKED BY RK	" " "

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
TAPERED COLUMN DETAILS

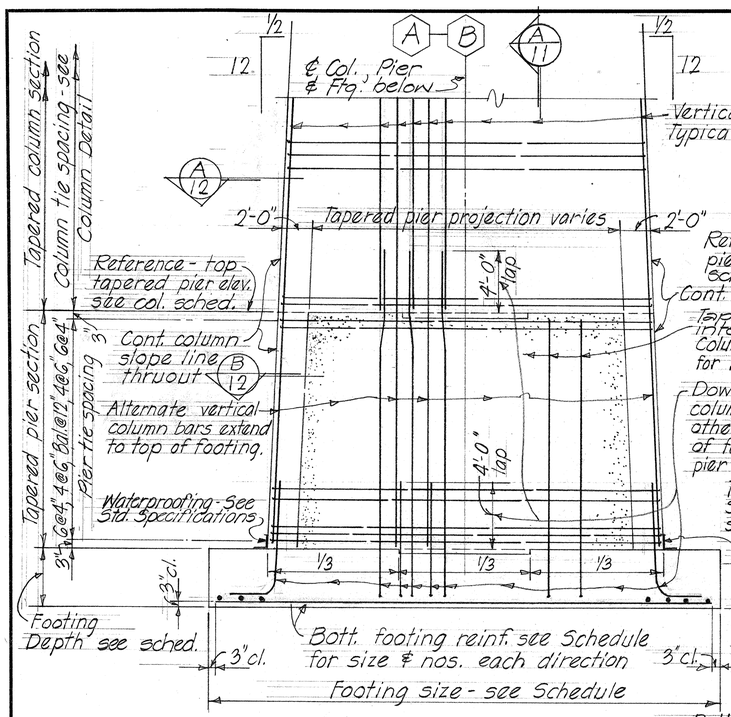
Proj. No. IHF-1(32):5, Unit 2 April 1967

SHEET No. 10 OF 28 SHEETS

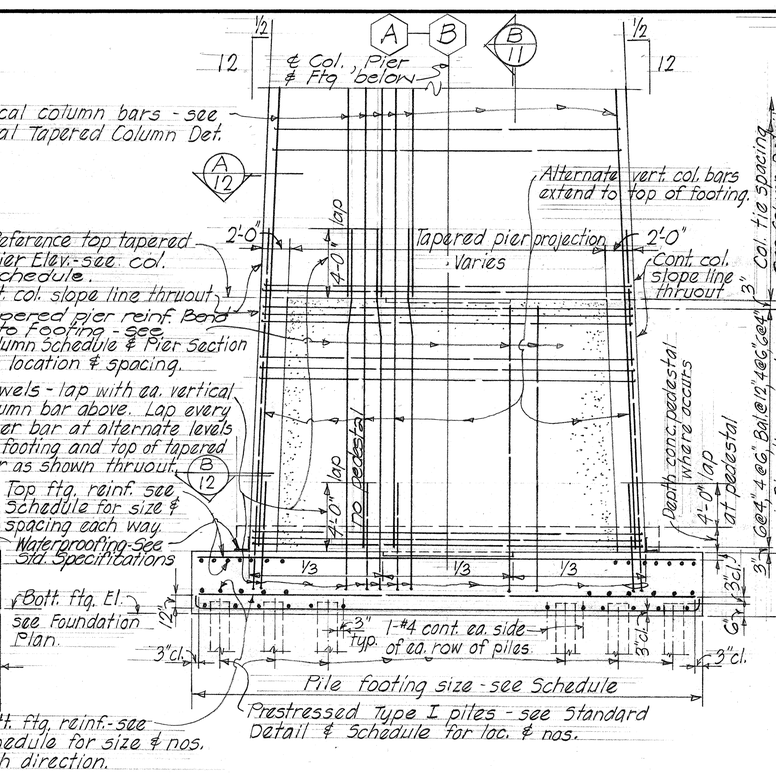
21

PRINTED ON NO. 1000H CLEARPRINT

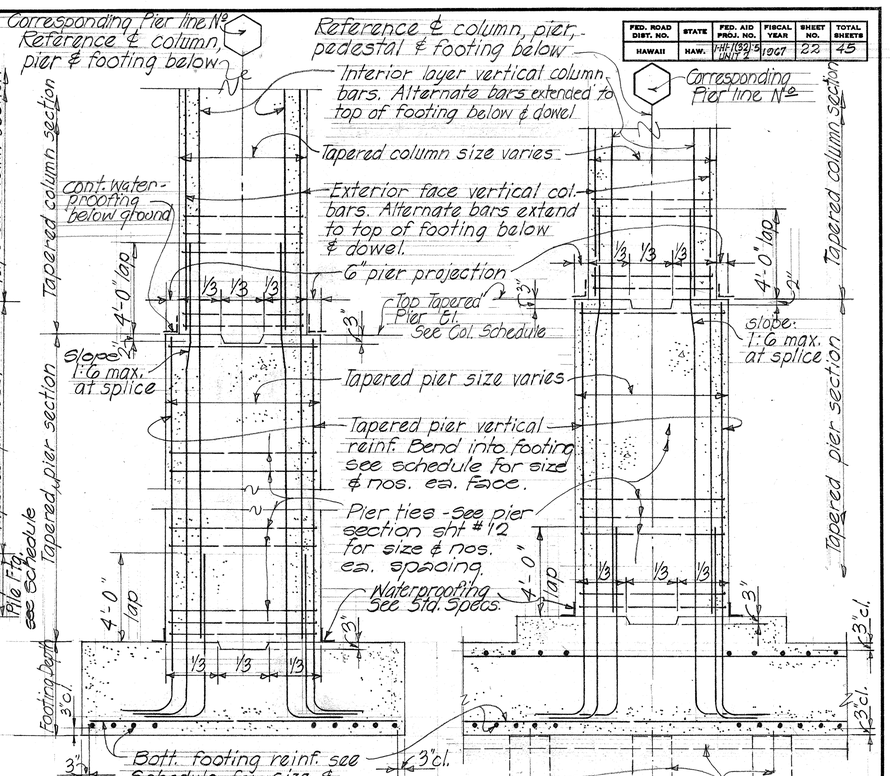
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHF(32)-5 UNIT 2	1967	22	45



SPREAD FOOTING AT TAPERED PIER

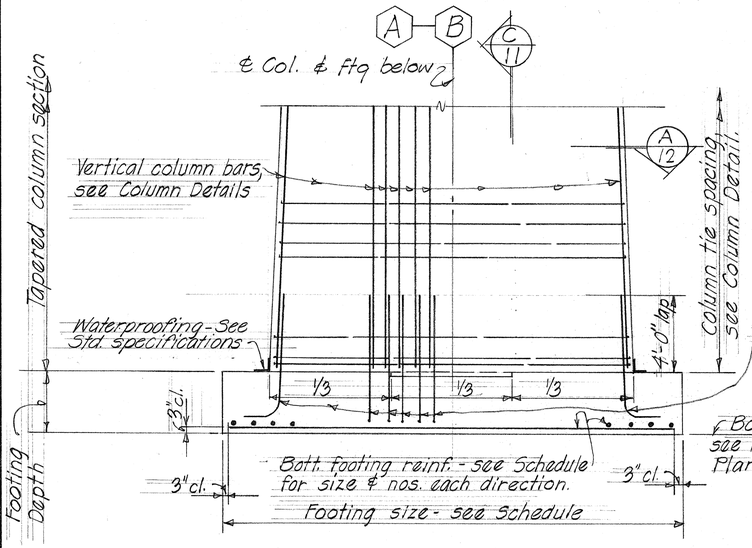


PILE FOOTING AT TAPERED PIER

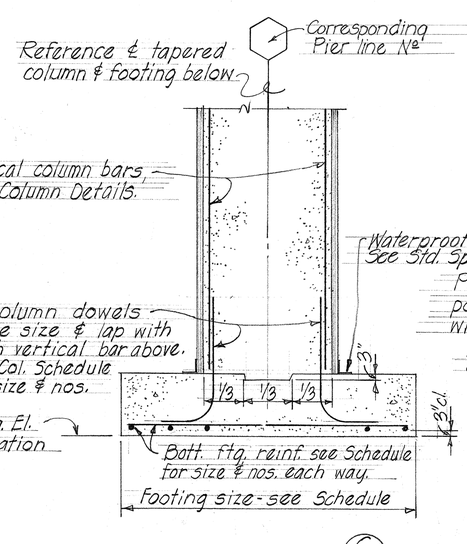


SECTION A/11

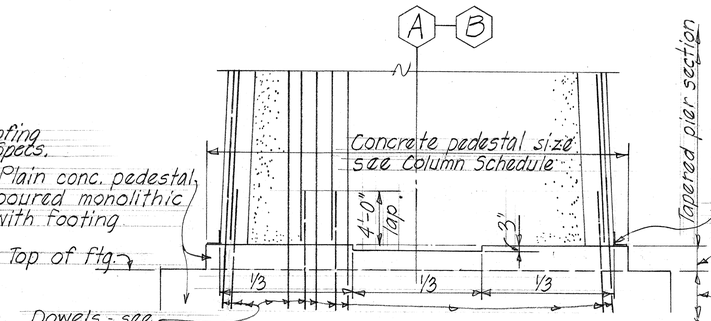
SECTION B/11



SPREAD FOOTING AT TAPERED COLUMN



SECTION C/11



TYPICAL CONCRETE PEDESTAL AT TAPERED PIER

TYPICAL PIER COLUMN FOUNDATION DETAILS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

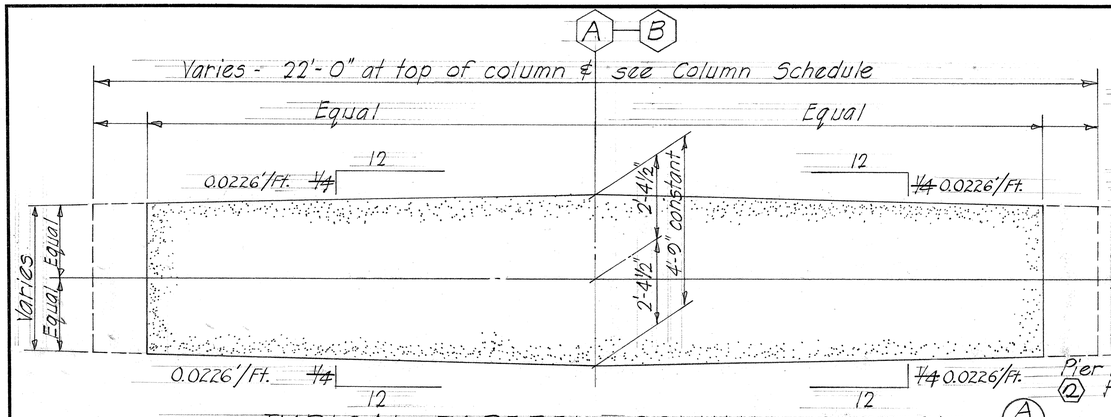
WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
TAPERED COLUMN & PIER FOUNDATION DETAILS
Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 11 OF 28 SHEETS

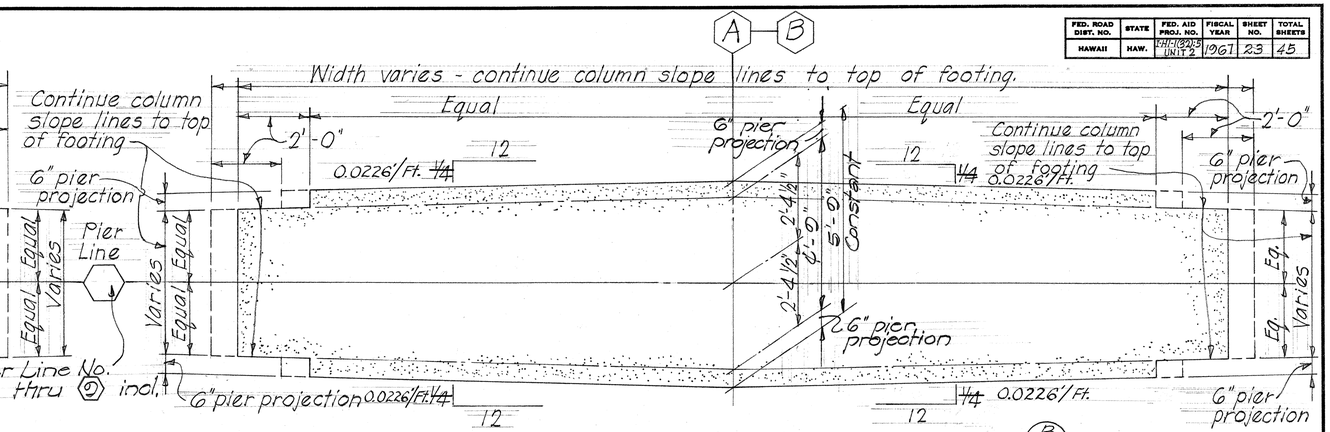
PRINTED ON NO. 1000H CLEARPRINT

4/18

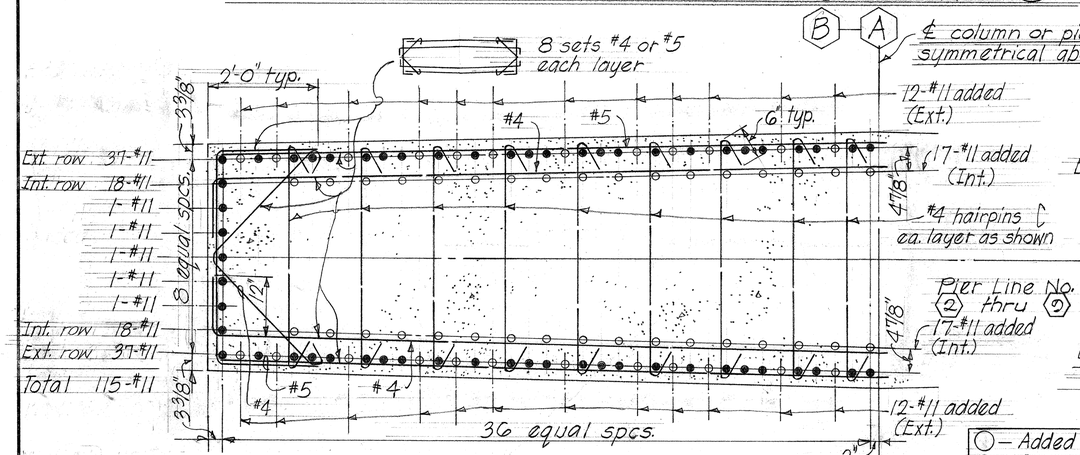
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)5 UNIT 2	1967	23	45



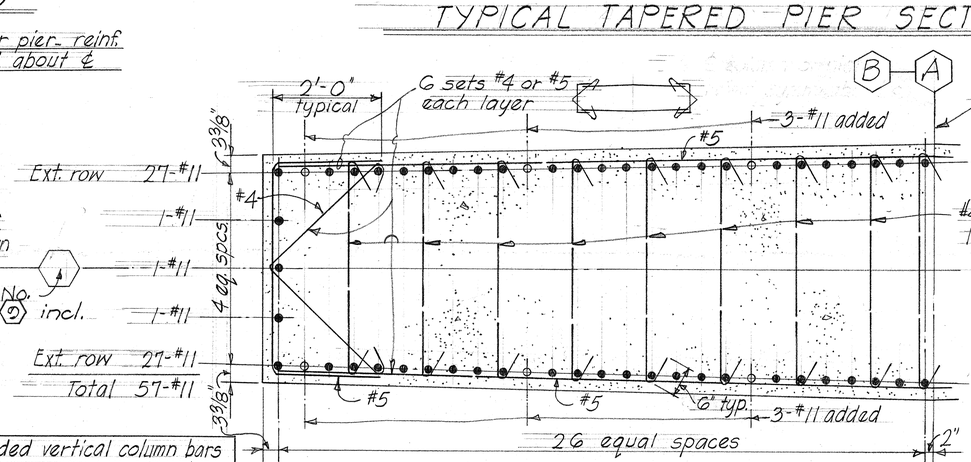
TYPICAL TAPERED COLUMN SECTION A/12



TYPICAL TAPERED PIER SECTION B/12

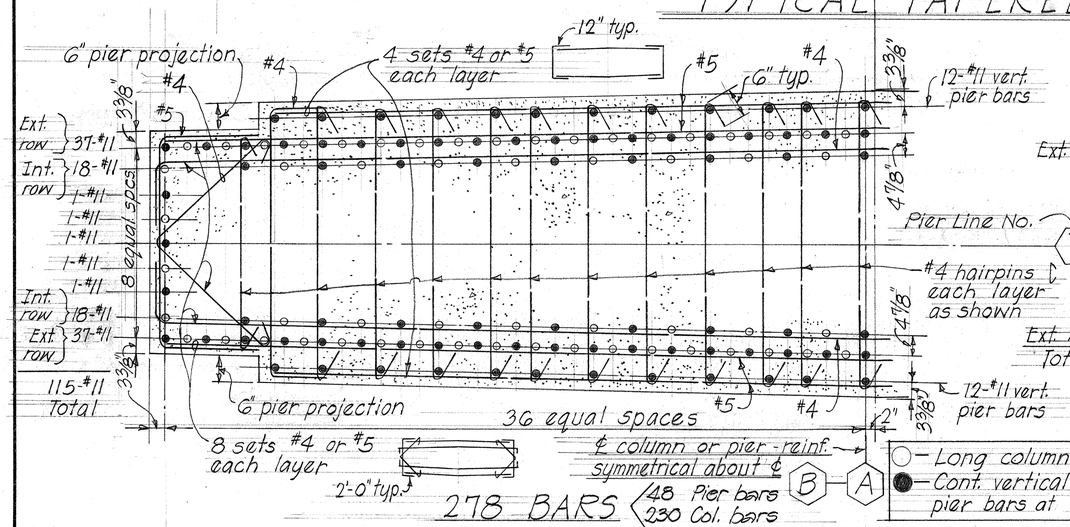


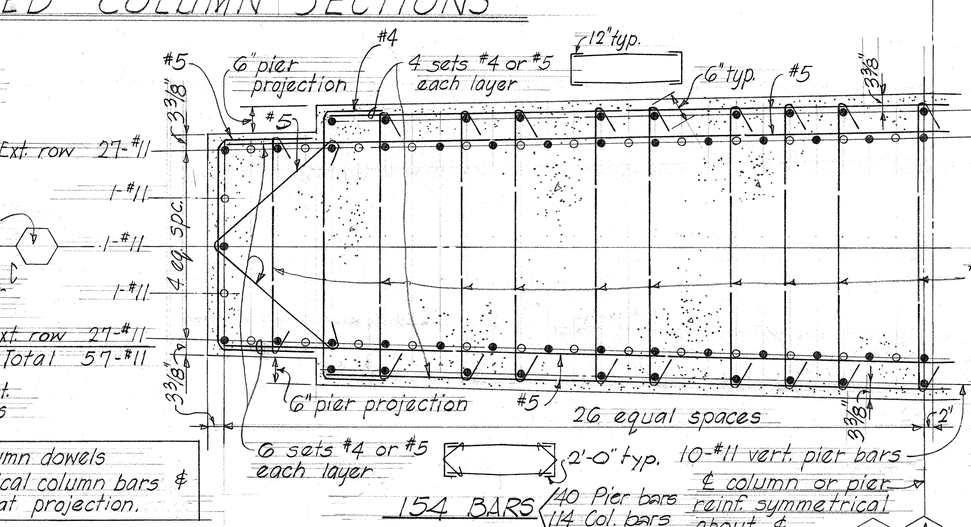
230 BARS



114 BARS

TYPICAL TAPERED COLUMN SECTIONS





TYPICAL TAPERED PIER SECTIONS

ORIGINAL PLAN		
NOTE BOOK		
No.		
SURVEY PLOTTED BY		
DRAWN BY	NY	
TRACED BY	"	"
DESIGNED BY	MT	TM
QUANTITIES BY	"	SK
CHECKED BY	"	"
DATE	3/67	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

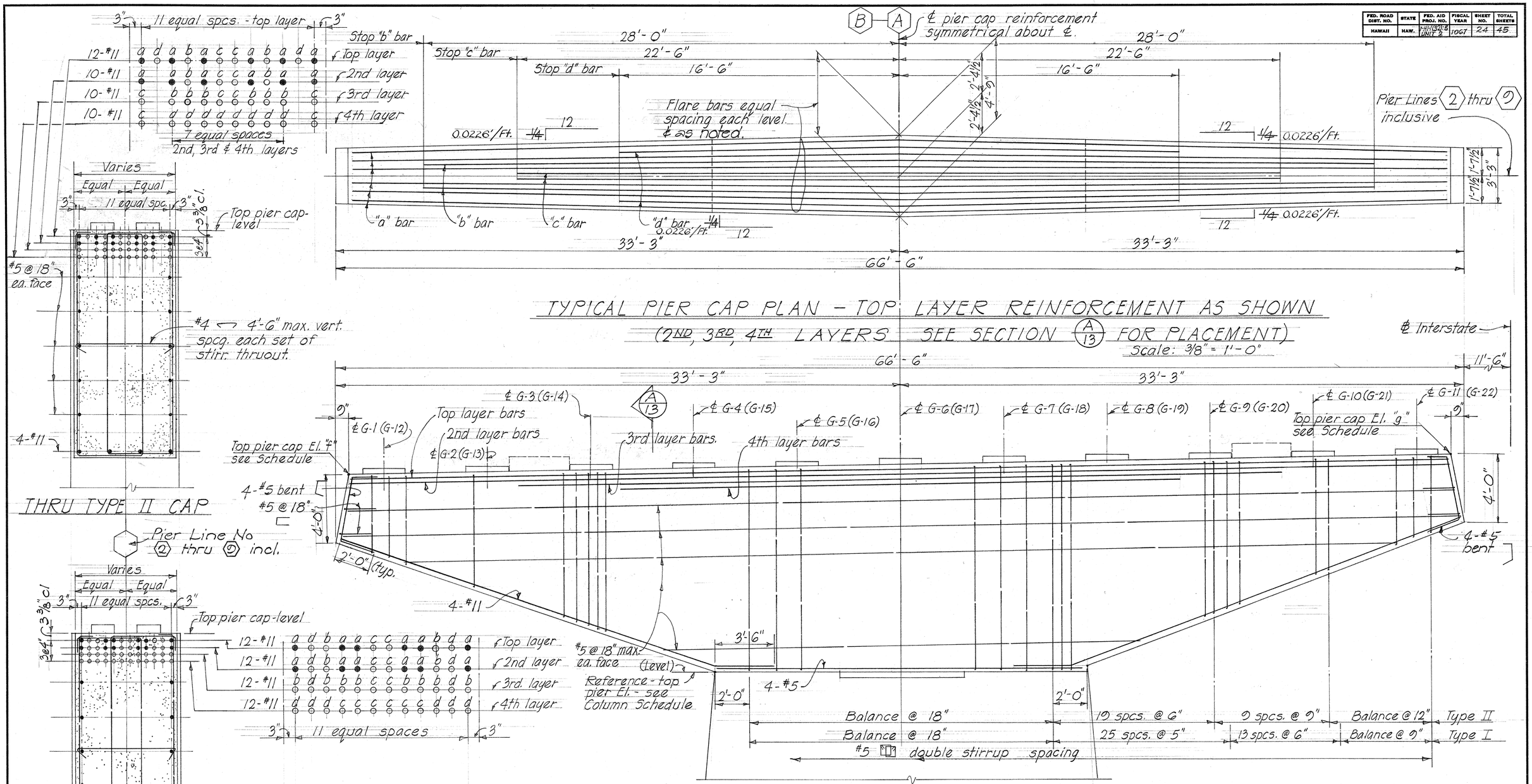
WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
TAPERED COLUMN & PIER SECTIONS & DETAILS
Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 12 OF 28 SHEETS

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23

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)-5 UNIT 2	1967	24	45



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY	" " "
	TRACED BY	" " "
NOTE BOOK	DESIGNED BY MT	TM JE
No.	QUANTITIES BY	RL
	CHECKED BY	" "

Reference Notes:
Refer to Sht. #15 Schedule for pier cap elevation "f" & "g"
See Column Schedule Sht. #15 for pier cap type for the various tapered columns.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

TAPERED PIER COLUMN CAP DETAILS

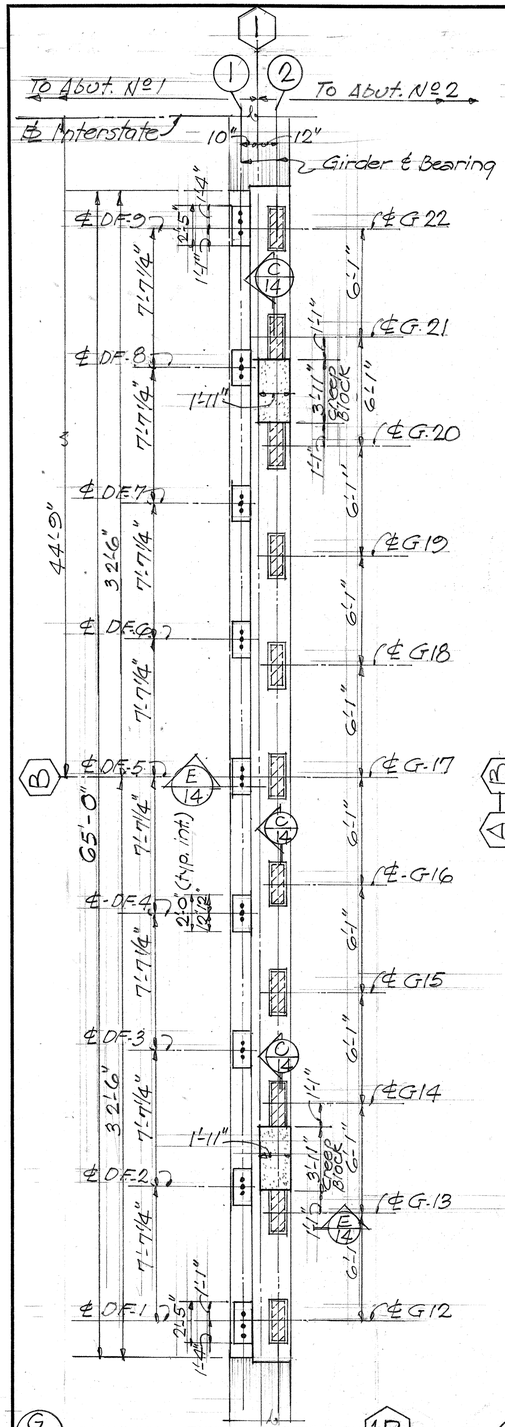
Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 13 OF 28 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

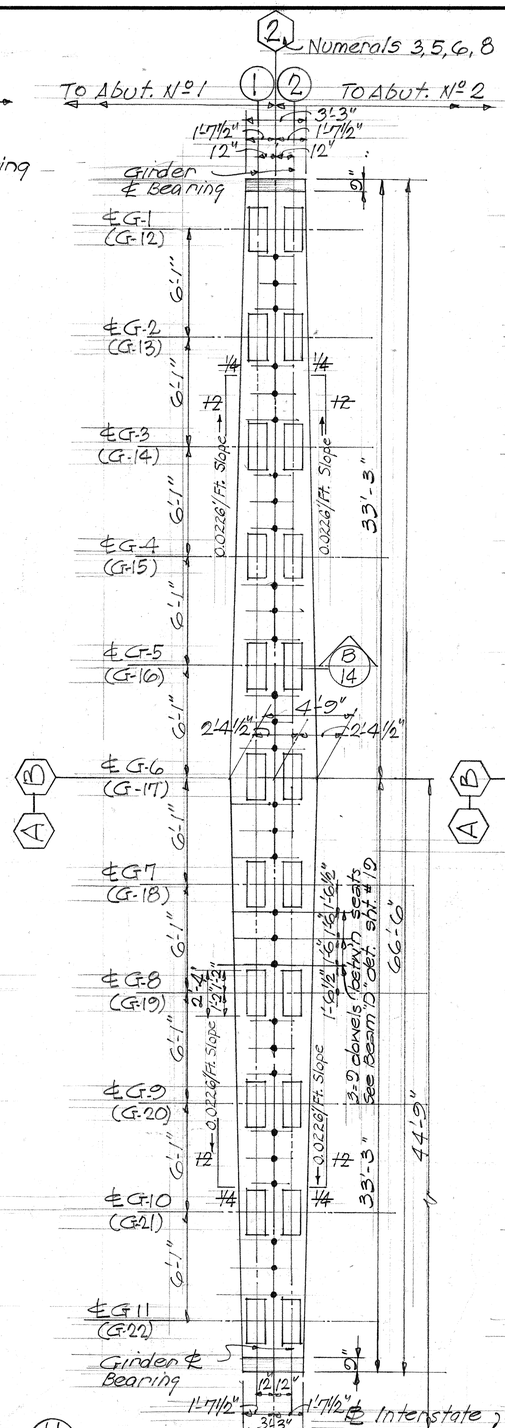
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHF-1(32)-5 UNIT 2	1967	25	45

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY JF	" "
	TRACED BY MT	" "
NOTE BOOK	DESIGNED BY TM	" "
	QUANTITIES BY JF	" "
No.	CHECKED BY RK	" "

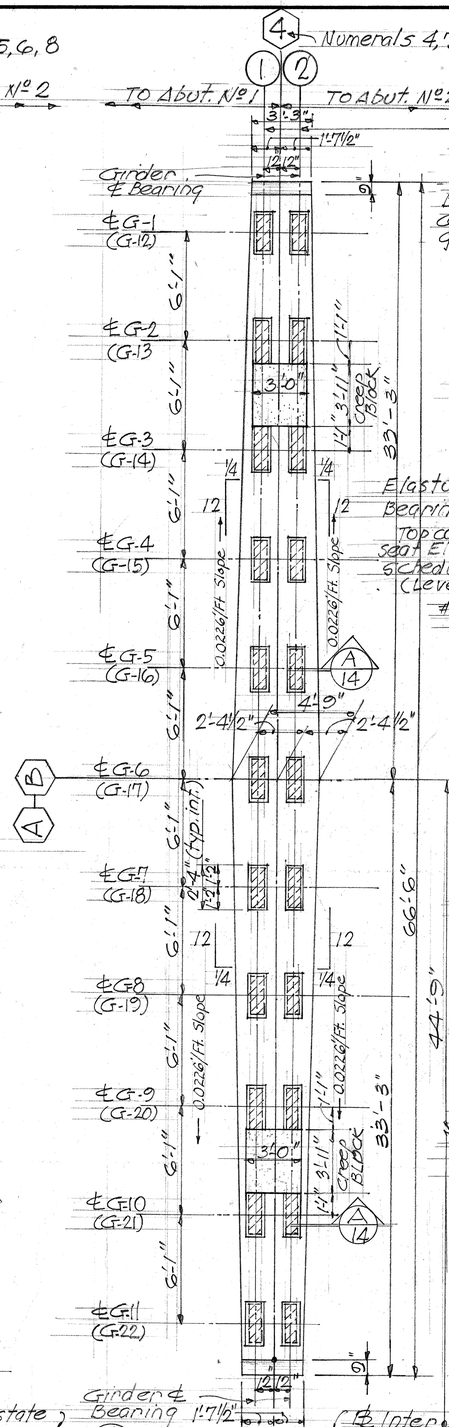


G/14 PLAN - PIER LINE 1B

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



H/14 PLAN - PIER LINE 2A, 3A, 5A, 6A, 8A, 2B, 3B, 5B, 6B, 8B

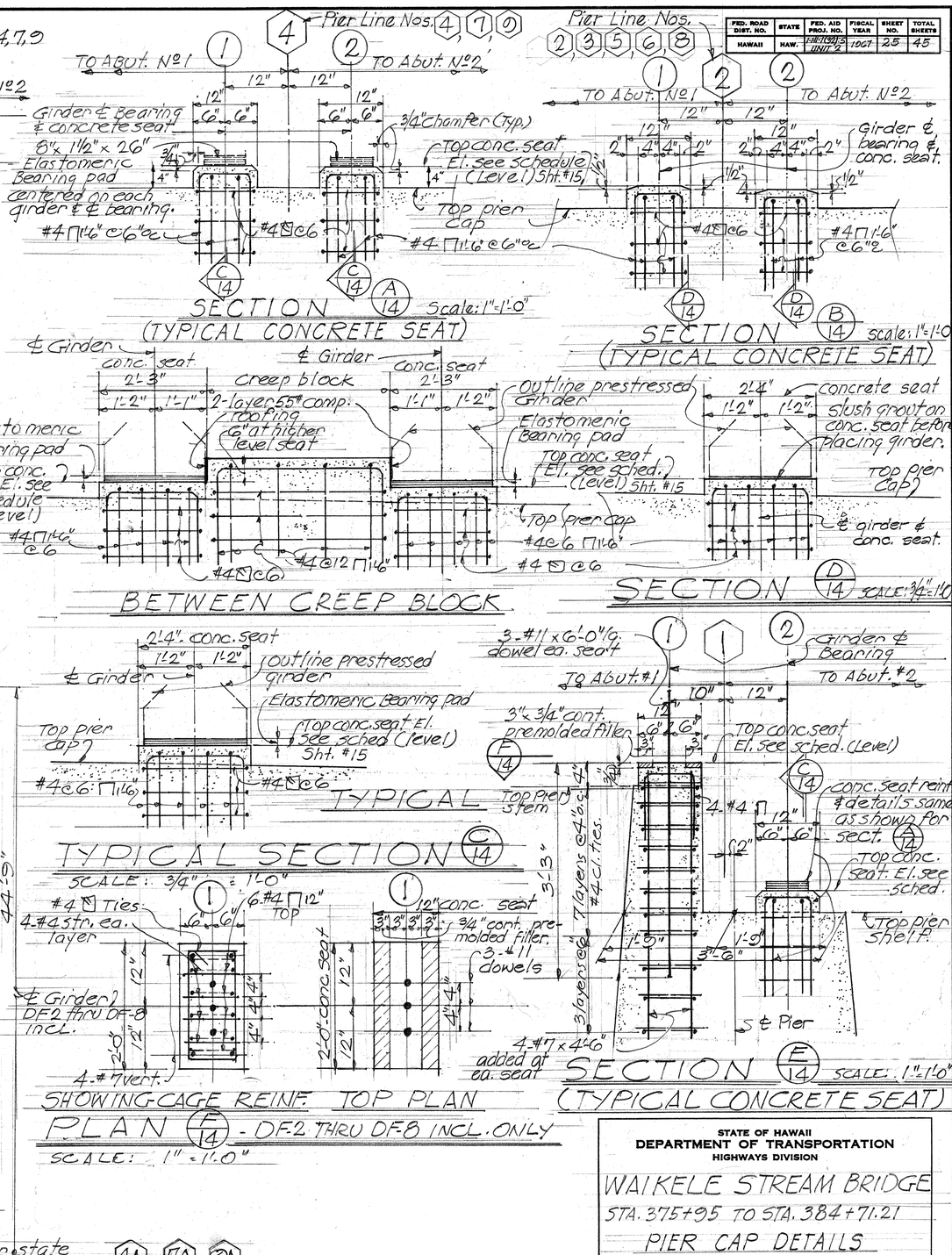


J/14 PLAN - PIER LINE

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

4A, 7A, 9A

4B, 7B, 9B



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

PIER CAP DETAILS

Proj. No. IHF-1(32):5 Unit 2 April 1967

SHEET No. 14 OF 28 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

25

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)5 UNIT 2	1967	26	45

TOP GIRDER CONCRETE SEAT ELEVATION SCHEDULE (AT GIRDER & BEARING)

LINE NO. / GIRDER NO.		ABUTMENT NO 1	PIER LINE	1		2		3		4		5		6		7		8		9		ABUTMENT NO 2
		①		①	②	①	②	①	②	①	②	①	②	①	②	①	②	①	②	①	②	
OUTBOUND BRIDGE	G-1	116.34				115.80	115.78	115.11	115.10	114.30	114.28	113.74	113.73	113.06	113.05	112.25	112.23	111.60	111.~~66~~ 68	110.84	110.83	109.92
	G-2	116.43				115.89	115.87	115.20	115.19	114.39	114.37	113.83	113.82	113.15	113.14	112.34	112.32	111.78	111.77	110.94	110.92	110.07
	G-3	116.52				115.98	115.96	115.29	115.28	114.48	114.47	113.93	113.91	113.24	113.23	112.43	112.41	111.87	111.86	111.03	111.02	110.22
	G-4	116.61				116.07	116.05	115.30	115.37	114.57	114.56	114.02	114.00	113.33	113.32	112.52	112.50	111.97	111.95	111.13	111.11	110.36
	G-5	116.70				116.16	116.15	115.48	115.46	114.66	114.65	114.11	114.09	113.42	113.41	112.61	112.60	112.06	112.04	111.22	111.21	110.51
	G-6	116.79				116.25	116.24	115.57	115.55	114.75	114.74	114.20	114.19	113.52	113.50	112.70	112.69	112.15	112.13	111.32	111.30	110.65
	G-7	116.88				116.34	116.33	115.66	115.64	114.85	114.83	114.29	114.28	113.61	113.59	112.79	112.78	112.24	112.22	111.41	111.40	110.80
	G-8	116.97				116.43	116.42	115.75	115.74	114.94	114.92	114.38	114.37	113.70	113.68	112.88	112.87	112.33	112.32	111.51	111.49	110.95
	G-9	117.07				116.53	116.51	115.84	115.83	115.03	115.01	114.47	114.46	113.79	113.78	112.98	112.96	112.42	112.41	111.60	111.59	111.09
	G-10	117.16				116.62	116.60	115.93	115.92	115.12	115.10	114.56	114.55	113.88	113.87	113.07	113.05	112.51	112.50	111.70	111.68	111.24
	G-11	117.25				116.71	116.69	116.02	116.01	115.21	115.20	114.66	114.64	113.97	113.96	113.16	113.14	112.60	112.59	111.79	111.78	111.38
INBOUND BRIDGE	G-22			117.25		116.71	116.69	116.02	116.01	115.21	115.20	114.66	114.64	113.97	113.96	113.16	113.14	112.58	112.57	111.70	111.68	111.19
	G-21			117.16		116.62	116.60	115.93	115.92	115.12	115.10	114.56	114.55	113.88	113.87	113.07	113.05	112.53	112.51	111.76	111.74	111.35
	G-20			117.07		116.53	116.51	115.84	115.83	115.03	115.01	114.47	114.46	113.79	113.78	112.98	112.96	112.48	112.46	111.82	111.81	111.50
	G-19			116.97		116.43	116.42	115.75	115.74	114.94	114.92	114.38	114.37	113.70	113.68	112.88	112.87	112.42	112.41	111.88	111.87	111.65
	G-18			116.88		116.34	116.33	115.66	115.64	114.85	114.83	114.29	114.28	113.61	113.59	112.79	112.78	112.37	112.36	111.94	111.93	111.79
	G-17			116.79		116.25	116.24	115.57	115.55	114.75	114.74	114.20	114.19	113.52	113.50	112.70	112.69	112.32	112.30	112.00	111.99	111.94
	G-16			116.70		116.16	116.15	115.48	115.46	114.66	114.65	114.11	114.09	113.42	113.41	112.61	112.60	112.27	112.25	112.06	112.05	112.08
	G-15			116.61		116.07	116.05	115.39	115.37	114.57	114.56	114.02	114.00	113.33	113.32	112.52	112.50	112.21	112.20	112.12	112.11	112.23
	G-14			116.52		115.98	115.96	115.29	115.28	114.48	114.47	113.93	113.91	113.24	113.23	112.43	112.41	112.16	112.15	112.19	112.17	112.38
	G-13			116.43		115.89	115.87	115.20	115.19	114.39	114.37	113.83	113.82	113.15	113.14	112.34	112.32	112.11	112.10	112.25	112.23	112.52
	G-12			116.34		115.80	115.78	115.11	115.10	114.30	114.28	113.74	113.73	113.06	113.05	112.25	112.23	112.06	112.04	112.31	112.29	112.67

INBOUND BRIDGE			
	DF-9		117.43
	DF-8		110.40
	DF-7		110.29
	DF-6		110.17
	DF-5		110.06
	DF-4		118.94
	DF-3		118.83
	DF-2		118.72
	DF-1		116.52

TOP PIER CAP ELEVATION SCHEDULE

PIER LINE NO. \ LOCATION	OUTBOUND BRIDGE		INBOUND BRIDGE	
	POINT "f"	POINT "g"	POINT "g"	POINT "f"
②	115.43	116.40	116.40	115.43
③	114.74	115.72	115.72	114.74
④	113.93	114.90	114.90	113.93
⑤	113.37	114.35	114.35	113.37
⑥	112.69	113.67	113.67	112.69
⑦	111.88	112.85	112.85	111.88
⑧	111.32	112.30	112.26	111.70
⑨	110.47	111.40	111.33	111.08

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY FC	" "
	TRACED BY	" "
NOTE BOOK	DESIGNED BY MT	" "
No.	QUANTITIES BY	" "
	CHECKED BY RK	" "

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+05 TO STA. 384+71.21
CONCRETE SEAT DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 15 OF 28 SHEETS

PRINTED ON NO. 5000H CLEARPRINT

26

4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)-5 UNIT 2	1967	27	45

OUTBOUND BRIDGE

℄ Bearing ABUT. #1

℄ Interstate

BM."F" BM."G" BM."E" BM."C-2" BM."B" BM."D" BM."C-1" BM."A" BM."G'" BM."C-2'"

PG-IV B L=95'-2½" | PG-IV C L=94'-2" | PG-IV A L=94'-6" | PG-IV B L=94'-6" | PG-IV C L=94'-2" | PG-IV A L=94'-6"

DF-9 DF-8 DF-7 DF-6 DF-5 DF-4 DF-3 DF-2 DF-1 DFa DFb DO.

G-1 G-2 G-3 G-4 G-5 G-6 G-7 G-8 G-9 G-10 G-11

PG-IV B L=94'-6" | PG-IV C L=94'-2" | PG-IV A L=94'-6" | PG-IV B L=94'-6" | PG-IV C L=94'-2" | PG-IV A L=94'-6"

G-22 G-21 G-20 G-19 G-18 G-17 G-16 G-15 G-14 G-13 G-12

31'-8" 31'-8" 31'-8" (TYPICAL)

SPAN #1 | SPAN #2 | SPAN #3 | SPAN #4 | SPAN #5 | SPAN #6 | SPAN #7

INBOUND BRIDGE

PG-IV B - L=94'-6" | PG IV A - L=94'-6" | PG-IV D - L=70'-6½"

G-1 G-2 G-3 G-4 G-5 G-6 G-7 G-8 G-9 G-10 G-11

PG-IV B - L=94'-6" | PG-IV A - L=94'-6" | PG-IV D - L=70'-6½"

G-22 G-21 G-20 G-19 G-18 G-17 G-16 G-15 G-14 G-13 G-12

31'-8" 31'-8" 31'-8" (TYPICAL) 35'-0" 35'-0"

SPAN #7 | SPAN #8 | SPAN #9 | SPAN #10

OUTBOUND BRIDGE

℄ Bearing ABUT. #2

TO ABUT. #1 TO ABUT. #2

Girder Depth — Slotted End

FIXED END — TYPE PG-IV A — EXP. END

Slotted End

EXP. OR ABUTMENT ENDS — TYPE PG-IV B — FIXED END

FIXED END — TYPE PG-IV C — FIXED END

Slotted End — Slotted End

EXP. END — TYPE PG IV D — ABUTMENT END

DIAGRAM - ELEVATION OF TYPICAL PRESTRESSED GIRDER

NO scale

Notes:

Lengths of prestressed girders as noted on plan are horizontal measurements-out to out of girder. Actual lengths to be determined by the Engineer.

ORIGINAL PLAN		DATE 3/67
	SURVEY PLOTTED BY	
	DRAWN BY EC	" "
NOTE BOOK	TRACED BY	" "
	DESIGNED BY DO	" "
No.	QUANTITIES BY	" "
	CHECKED BY RK	" "

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

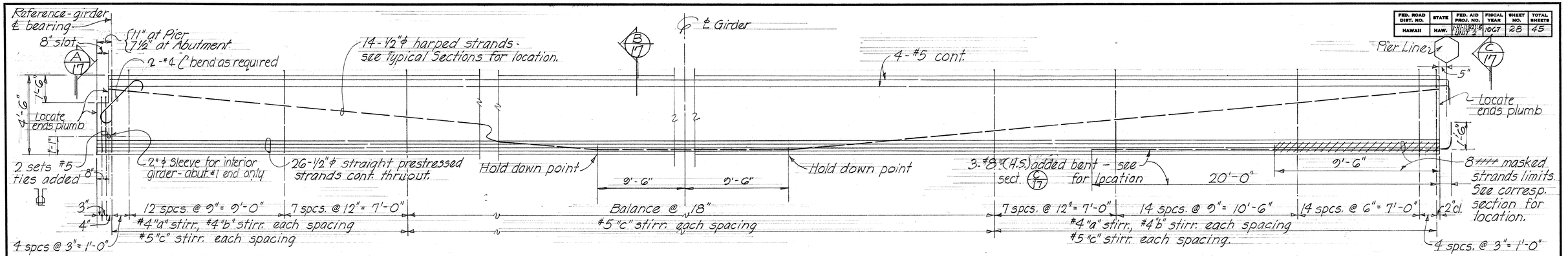
DECK FRAMING PLAN

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 16 OF 28 SHEETS

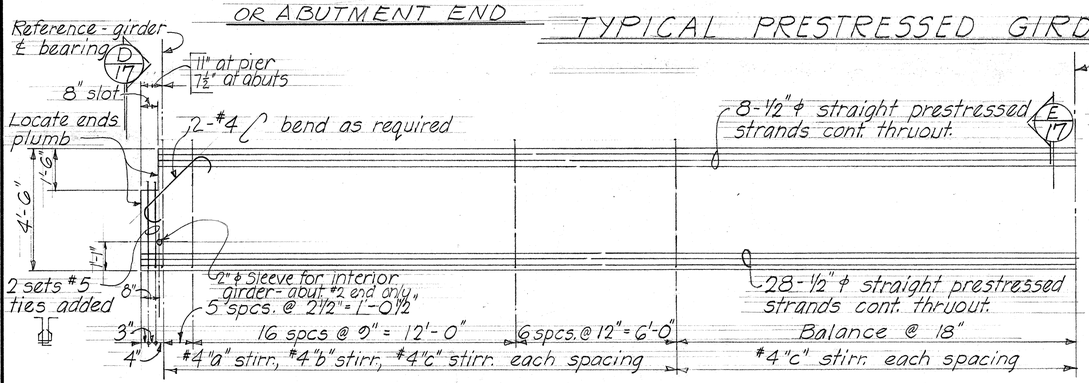
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(32)-5 UNIT 2	1967	28	45



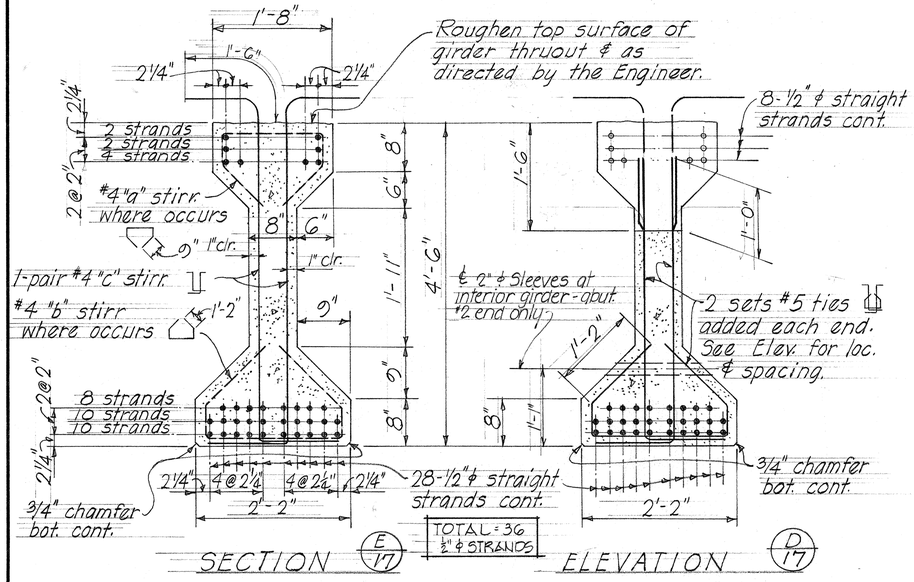
TYPICAL PRESTRESSED GIRDER TYPES PG-IV A, PG-IV B & PG-IV C

Scale: 3/8" = 1'-0"



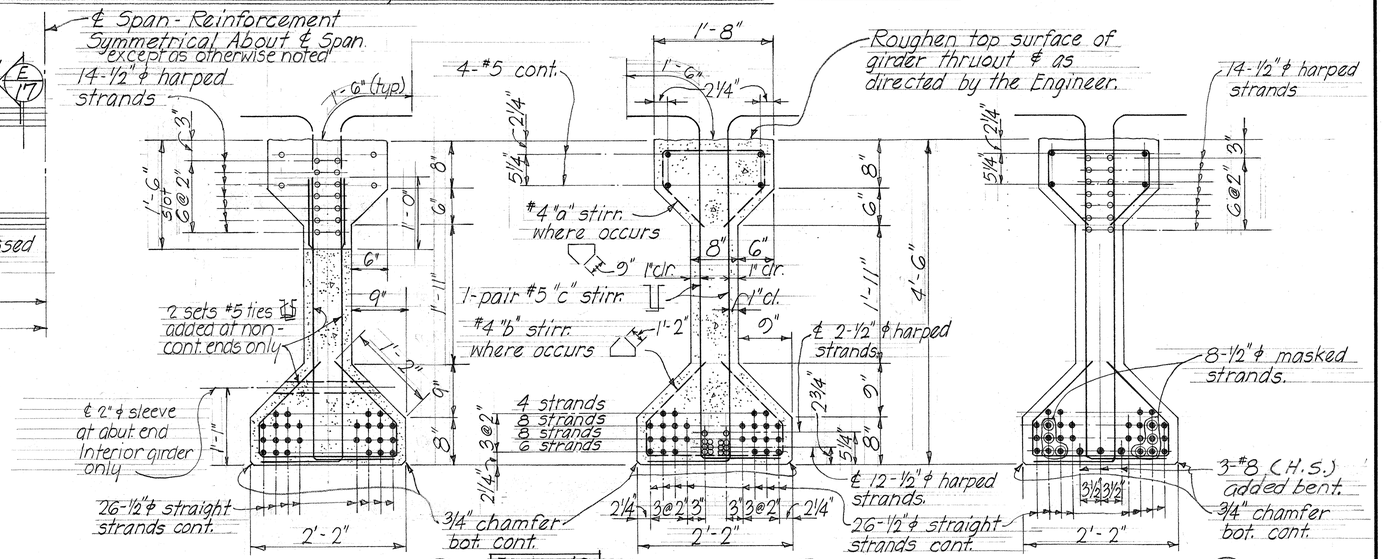
TYPICAL PRESTRESSED GIRDER TYPE PG-IV D

Scale: 3/8" = 1'-0"



TYPICAL - TYPE PG-IV D GIRDER DETAILS

Scale: 1" = 1'-0"



TYPICAL - TYPES PG-IV A, PG-IV B & PG-IV C GIRDER DETAILS

Scale: 1" = 1'-0"

NOTES: Reinf. bars followed by (H.S.) are ASTM Designation A432 Billet steel.

For additional anchors in prestress girder for beam connection see sht #18, #20.

ORIGINAL PLAN		
	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY NY	" "
	TRACED BY	" "
NOTE BOOK	DESIGNED BY DG	" "
	QUANTITIES BY TKY WB	" "
No.	CHECKED BY RK	" "

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
PRESTRESSED GIRDER DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 17 OF 28 SHEETS

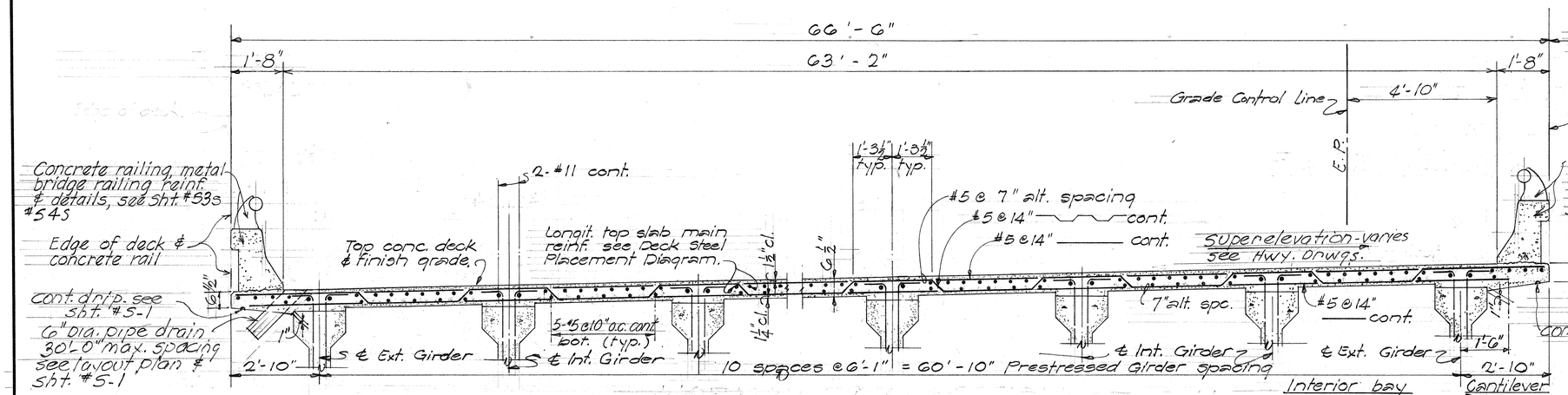
PRINTED ON NO. 1000H CLEARPRINT

28

4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32)5 UNIT 2	1967	29	45

10/24/67 Rev. No. 1 - Revised Railing



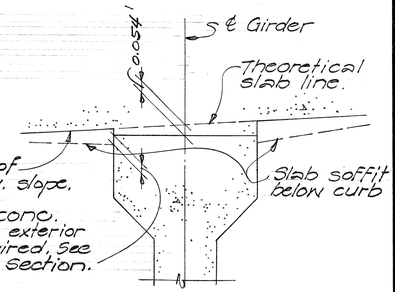
NOTES: All reinforcement in diagram are #11 except as otherwise noted.
Numbers at ends of bars indicate distance in feet from adjacent ℄ support.
All #5 @ 15 max. bars shall be extended & lapped 2'0" min. with the adjacent #11 bars as shown. #5 @ 15" max.

NORMAL DECK SECTION

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

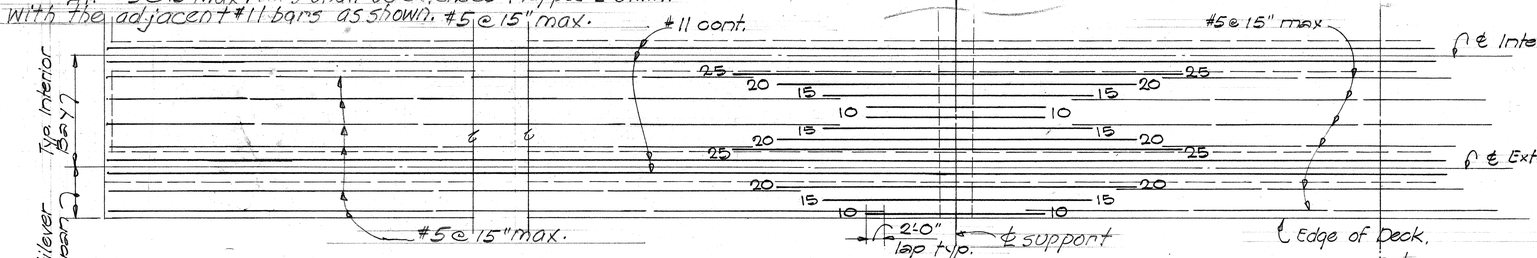
℄ STA. 376+40 TO STA. 384+70 - I.B AND O.B. BRIDGES

REVISION NO. 1



PRESTRESSED GIRDER DROP PANEL DETAIL

NOT TO SCALE

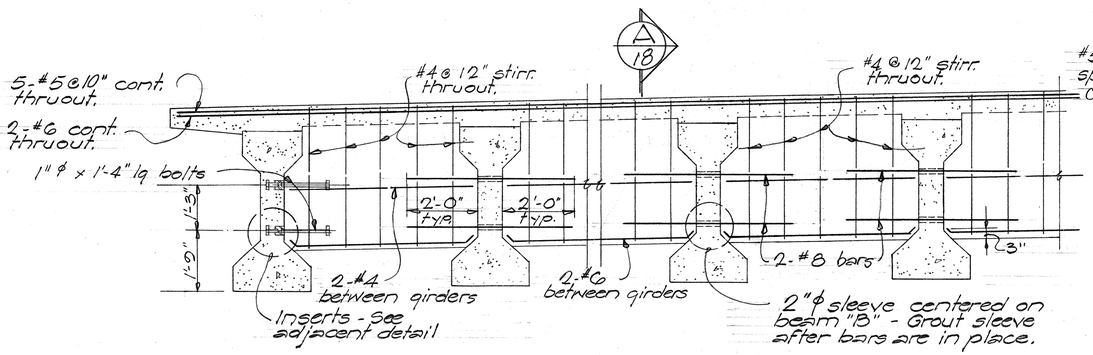


AT NON-CONTINUOUS SUPPORT (EXPANSION END & ABUTMENT END)

AT CONTINUOUS SUPPORT (FIXED END)

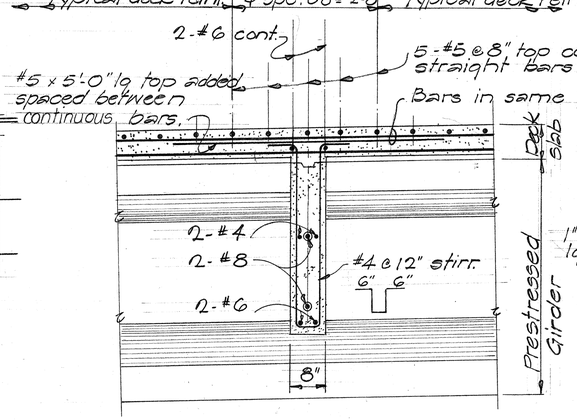
TYPICAL TOP SLAB MAIN REINFORCEMENT PLACEMENT DIAGRAM

Scale: Transverse: 1/4" = 1'-0"
Longit. 1/8" = 1'-0"



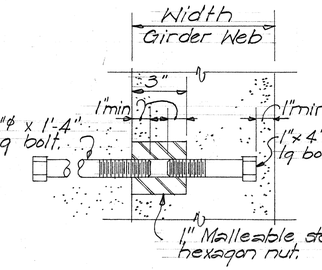
TYPICAL BEAM "B" DETAILS

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



SECTION A 18

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



INSERT DETAIL

Scale: 3" = 1'-0"

THIS SHEET SUPERSEDES SHEET NO. 29

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

PRESTRESSED GIRDER SUPERSTRUCTURE DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 18 OF 28 SHEETS

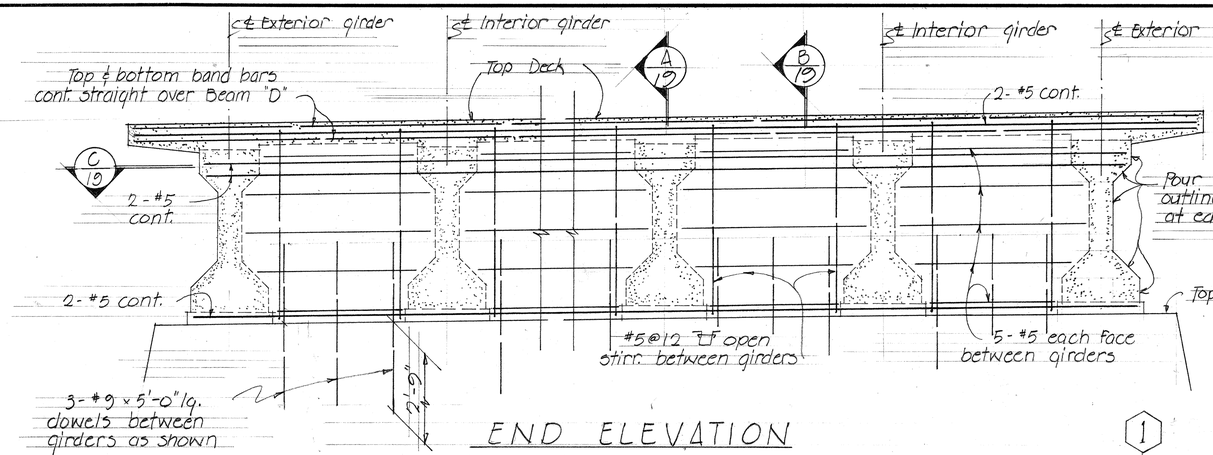
C 0 29

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY	" " " "
	TRACED BY	" " " "
NOTE BOOK	DESIGNED BY D.O.	" " " "
	QUANTITIES BY TM	" " " "
No.	CHECKED BY W.E.	" " " "

PRINTED ON NO. 1000H CLEARPRINT

4/18

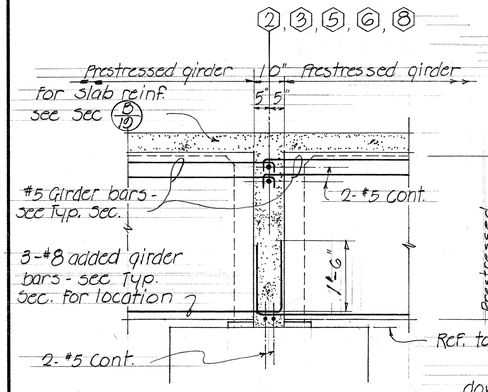
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)-5 UNIT 2	1967	30	45



END ELEVATION

TYPICAL TRANSVERSE BEAM "D"

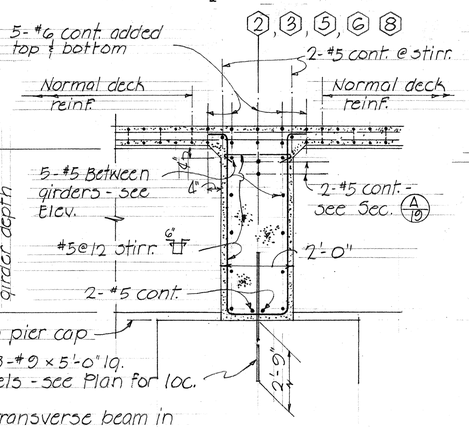
Scale: 1/2" = 1'-0"



(AT GIRDERS)

SECTION A/19

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

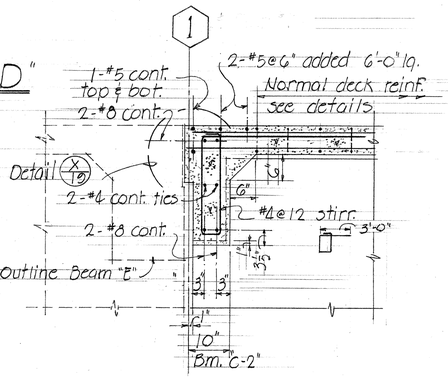


Note: Pour transverse beam in direct contact with top of pier.

(BETWEEN GIRDERS)

SECTION B/19

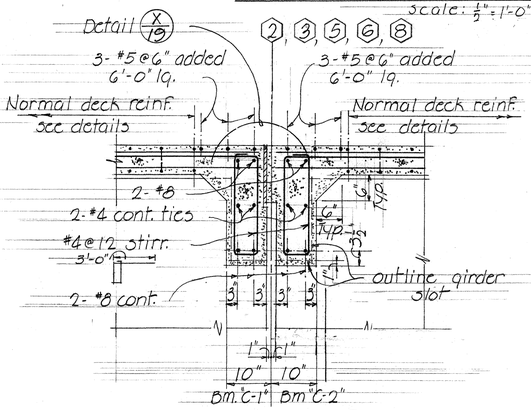
Scale: 1/2" = 1'-0"



SECTION E/19

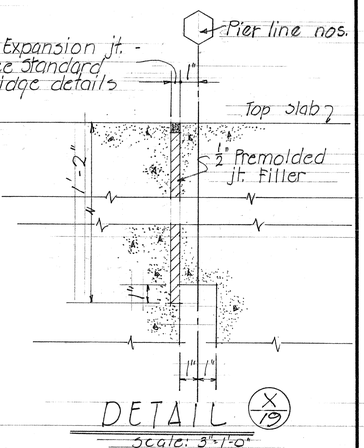
BEAM C-2 AT BEAM "E"

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



SECTION D/19

BEAM "C-1" & "C-2" Scale: 3/4" = 1'-0"



DETAIL X/19

Scale: 3" = 1'-0"

Expansion - Sht. # 2 of 28
PLAN SHEET CO 12

TRANSVERSE BEAM "D" - PLAN C/19

TYPICAL ARRANGEMENT & LOCATION OF TRANSVERSE BEAM REINFORCMENT AT GIRDERS

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

Fixed - Sht. # 2 of 28
PLAN SHEET CO 13

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY	" " "
	TRACED BY	" " "
NOTE BOOK	DESIGNED BY	D.O.
	QUANTITIES BY	T.M.
No.	CHECKED BY	W.S.
		P.Y.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

PRESTRESSED GIRDER SUPERSTRUCTURE DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 19 OF 28 SHEETS

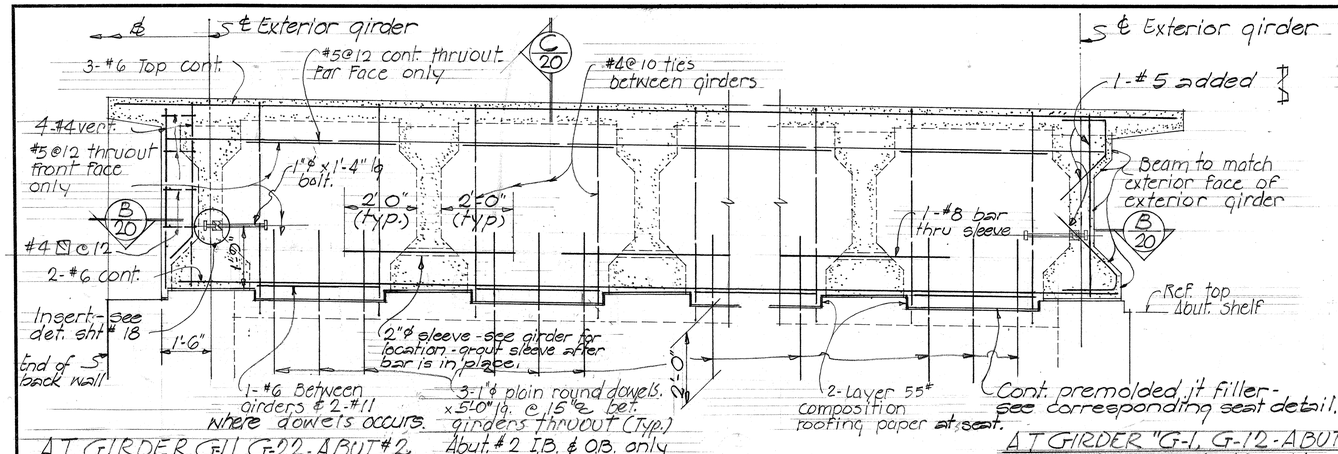
PRINTED ON NO. 1000H CLEARPRINT

33 01

4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-(32)-5 UNIT 2	1967	31	45

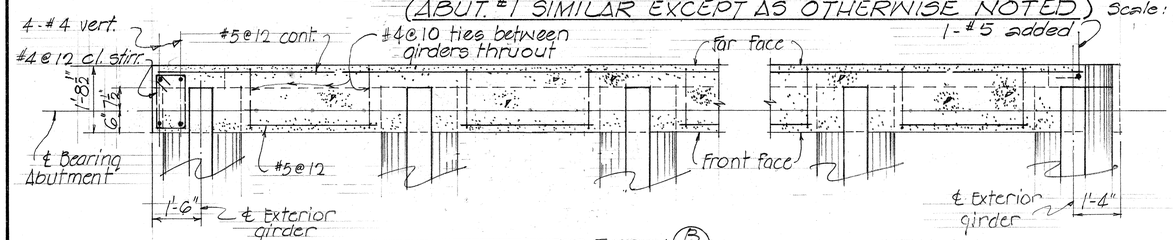
Revised: 10/24/67
Dimension



ELEVATION (A/20) BEAM "A" DETAIL ABUT. #2 AS SHOWN

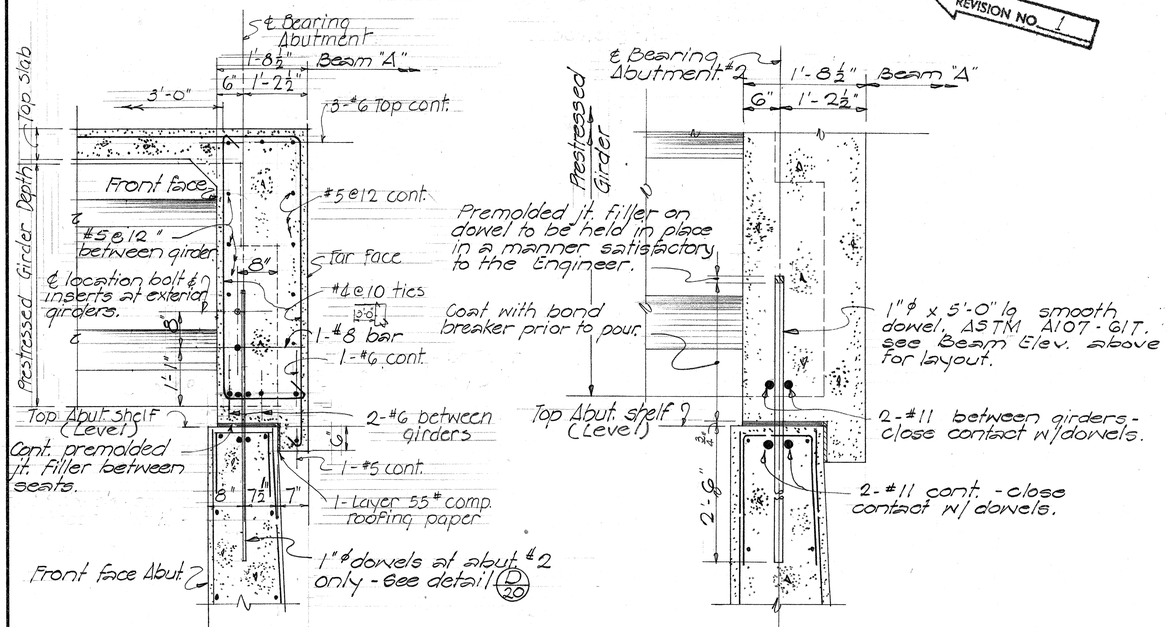
(ABUT. #1 SIMILAR EXCEPT AS OTHERWISE NOTED) Scale: 1/2" = 1'-0"

REVISION NO. 1



SECTION (B/20) SCALE: 1/2" = 1'-0"

REVISION NO. 1



SECTION (C/20) AS SHOWN

SCALE: 3/4" = 1'-0"

TYPICAL ABUTMENT DOWEL DETAIL (D/20) Scale: 1" = 1'-0"

ABUTMENT # 2 I.B. & O.B. ONLY

ORIGINAL PLAN		DATE 5/67
	SURVEY PLOTTED BY	W.B.
	DRAWN BY	"
	TRACED BY	"
	DESIGNED BY	D.D.
NOTE BOOK	QUANTITIES BY	T.M. W.B.
No.	CHECKED BY	P.Y.

THIS SHEET SUPERSEDES SHEET NO. 31

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
PRESTRESSED GIRDER SUPERSTRUCTURE DETAILS
Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 20 OF 28 SHEETS

C O 31

PRINTED ON NO. 1000H CLEARPRINT

4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)5 UNIT 2	1967	32	45

10/24/67 Rev. #1
Revised Wing Wall & Railing

REVISION NO. 1

PLAN ABUTMENT Nº 1 - OUTBOUND

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

30'-0" Wing Wall #3

Curve section of wall and railing above - see details - sht. #535.

Hatched areas denote limits of 1" premolded filler at abutment shelf.

Edge of deck

℄ G-11 ℄ G-10 ℄ G-9 ℄ G-8 ℄ G-7 ℄ G-6 ℄ G-5 ℄ G-4 ℄ G-3 ℄ G-2 ℄ G-1

11'-6" 1'-6" 1'-4"

10 spcs. @ 6'-1" = 60'-10"
℄ concrete seat location

Edge of deck (above)

℄ Interstate

Front face Wing Wall and end Abut. wall

℄ Bearing Abut. #1

63'-2"

Hatched areas denote limits of 1/2" thick premolded filler

Finish conc. deck line

Approx. existing ground line

Top of shelf El. 116.85 @ ℄ Bearing

4" ϕ drain 10'-0" o.c.

For conc. seat see detail below

Finish grade shelf line

Top of shelf El. 115.88 @ ℄ Bearing

Wing Wall face

67'-6"

Abutment Wall Type AW-1 - See Sht. #24

10'-6"

Bott. ftg. El. 103.0

Bott. ftg. El. 105.0

SECTION (B/21)

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

For concrete rail details and reinf. - see sht. #535.

To match edge deck

Reference Top Wall El. at F.P. Wall.

Continue roadway grade thruout

Retaining wall cantilever slab

Front face wall Normal Wing Wall reinf. - See Std. Det. Sht. #55, #56

#5 @ 5 1/2"

#5 @ 11"

4'-6"

2'-0"

ELEVATION WING WALL Nº 3 (C/21)

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

30'-0" Wingwall #3
See Ret. Wall Type T-1 Sht. #55, #56

10'-0" T1-7E | 10'-0" T1-11E | 10'-0" T1-15E | 3'-7"

For concrete rail details and reinf. - see sht. #535

Top Wall El. 122.77

Approx. existing ground line

4" ϕ drain 10'-0" o.c.

℄ Bearing Abut. #1

Top Wall El. 122.55

Front face Abut. Wall

Batt. ftg. El. 115.33

12" step - see typical reinf.

Batt. ftg. El. 110.50

Batt. ftg. El. 107.0

1'-6" Step-up for reinf. see Std. Details - sht. #56.

Batt. ftg. El. 103.0

ELEVATION ABUTMENT Nº 1 OUTBOUND

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

2-layer 55# comp. roofing paper

1-layer 55# comp. roofing paper

Elastomeric bearing pad 8"x1 1/2"x 26"

PLAN

Cross hatched area to be 1 1/2" premoulded Filler.

Hatched area to be 1" premoulded Filler.

Ref: girder ℄ brg. Abut.

SECTION (F/21)

Ref: girder ℄ brg. Abut. #1

Ref: Top of Abut. Shelf line

Top conc. seat (level)

1/2" elastomeric bearing pad

#4 @ 4 each way

1-layer 55# comp. roofing paper

#4 @ 6 ties

Front Face of wall

SECTION (G/21)

℄ Girder ℄ conc. seat

1 1/2" premoulded Filler

2-layer 55# composition roofing paper

Top conc. seat (level) see schedule Sht. #15

#4 @ 4 each way

ELEV. (D1/21) SIMILAR EXCEPT OPPOSITE HAND

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

TYPICAL CONCRETE SEAT DETAILS FOR ABUTMENT Nº 1 - OUTBOUND

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

11'-4"

For concrete rail details & reinf. - see sht. #535

MAUKA WALL

Top Wall Elev. 121.68

~~Top Wall Elev. 121.65~~

3-#6 ⌐ top

Top Wall Elev. 121.60

#4 @ 12 cl. stirrups

#4 @ 18 cl. stirrups

#4 @ 18 ea. face

℄ Bearing Abut.

3-#6 vert - stop center bar 4'-0" below conc. shelf See sect. (C/24) for location

2-#4 diagonal

3-#4 Front face

2-#4 vert. each face

3-#6 ⌊ bent back face

TYPICAL ELEVATION (D/21)

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

1'-8" | 1'-0" 8"

For concrete rail details & reinf. - see sht. #535

Finish grade

3-#6 ⌐

#4 @ 18 cl. stirrups

#4 @ 18 ea. face

2'-0"

2-#4

TYPICAL SECTION (E/21)

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

THIS SHEET SUPERSEDES SHEET NO. 32

REVISION NO. 1

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE

STA. 375+95 TO STA. 384+71.21

ABUTMENT #1 - SECTIONS & DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 21 OF 28 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE 3/67
	DRAWN BY	" "	
	TRACED BY	" "	
NOTE BOOK	DESIGNED BY	M.T.	T.M.
No.	QUANTITIES BY	A.E.	P.Y.
	CHECKED BY		

PRINTED ON NO. 1000H CLEARPRINT

(C) (D) 33 2

4/18

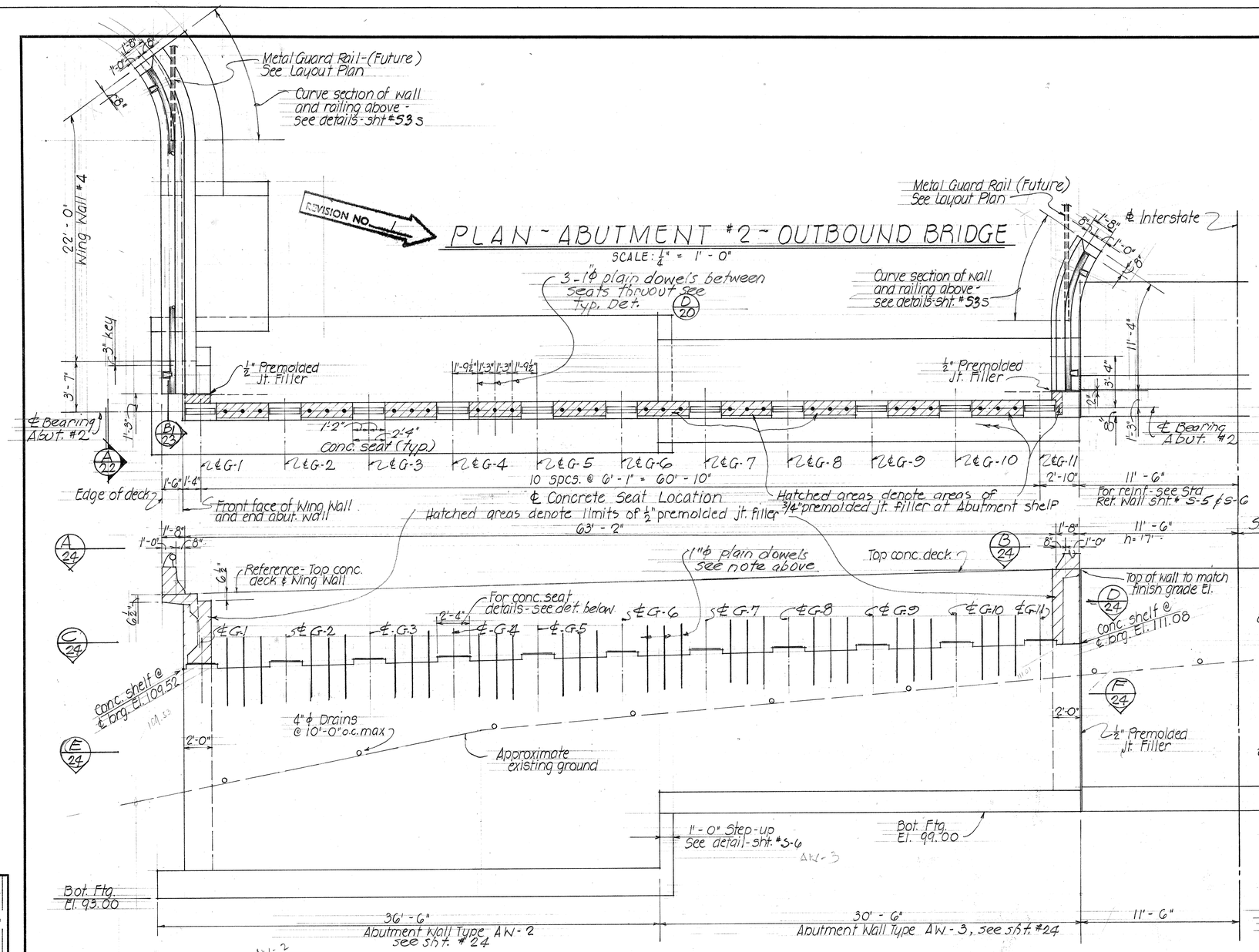
10/24/67 Rev. 1 #1 - Revised Wing Wall & Railing

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)5 UNIT 2	1967	33	45

REVISION NO. 1

PLAN - ABUTMENT #2 - OUTBOUND BRIDGE

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



REVISION NO. 1

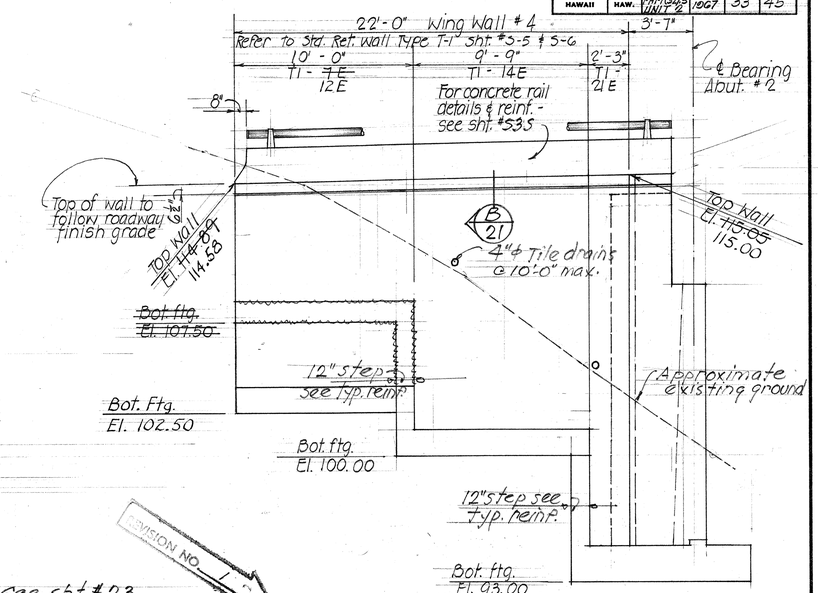
ELEVATION - ABUTMENT #2 - OUTBOUND BRIDGE

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

REVISION NO. 1

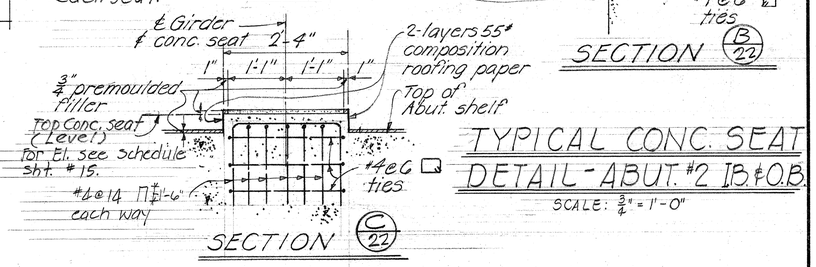
ELEVATION (A 22) WING WALL #4

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



TYPICAL CONC. SEAT DETAIL - ABUT. #2 IB. & O.B.

SCALE: 3/4" = 1'-0"



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY JE	" " " "
NOTE BOOK	TRACED BY MT	" " " "
	DESIGNED BY	" " " "
	QUANTITIES BY JE	T.M.
No.	CHECKED BY	P.Y.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+35 TO STA. 384+71.21
ABUTMENT #2 - SECTIONS & DETAILS

Proj. No. IHI-1(32)5, Unit 2 April 1967

THIS SHEET SUPERSEDES SHEET NO. 33

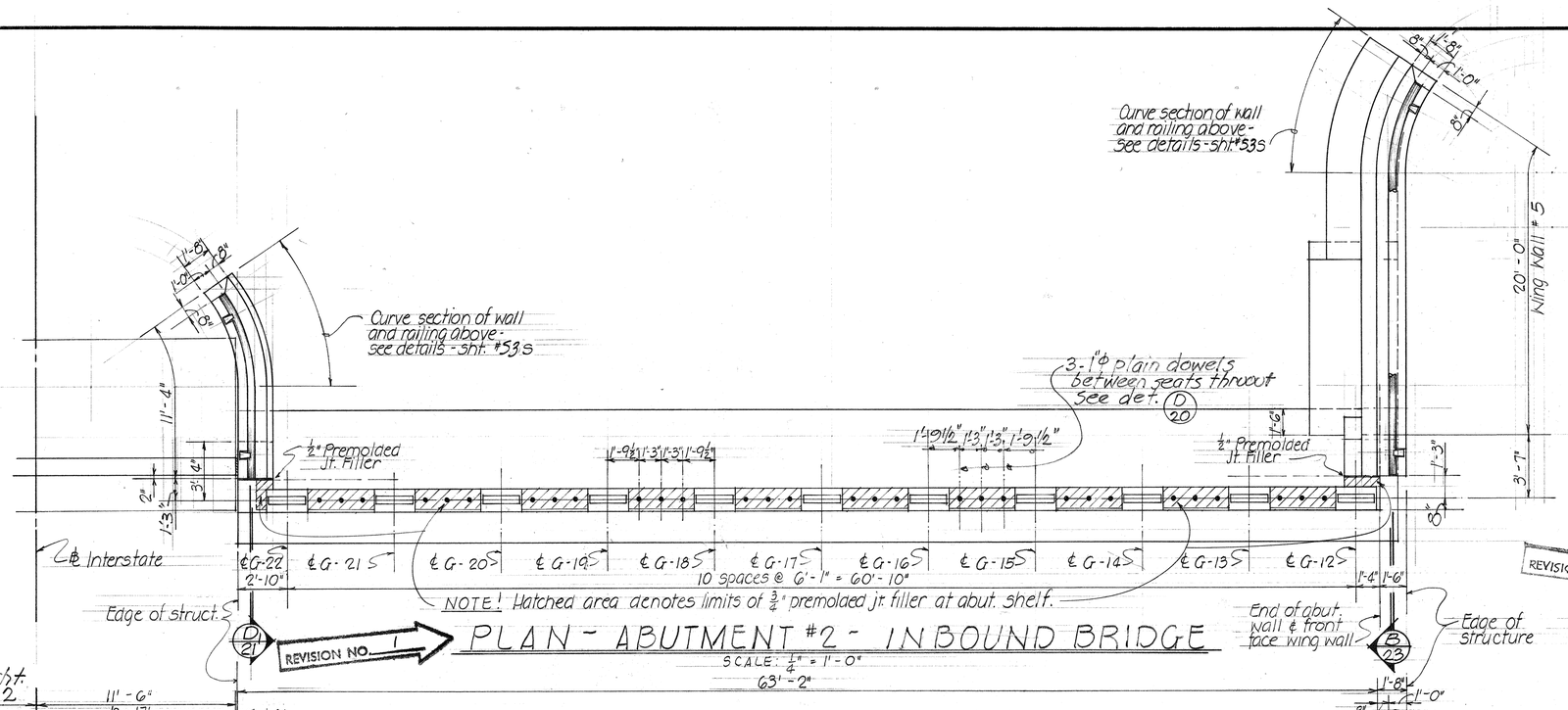
SHEET No. 22 OF 28 SHEETS

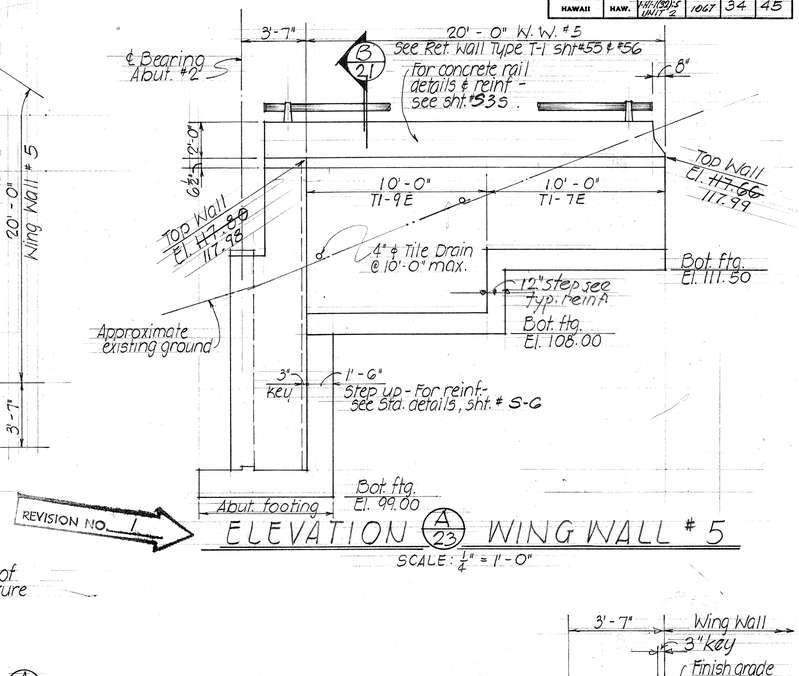
C 0 33

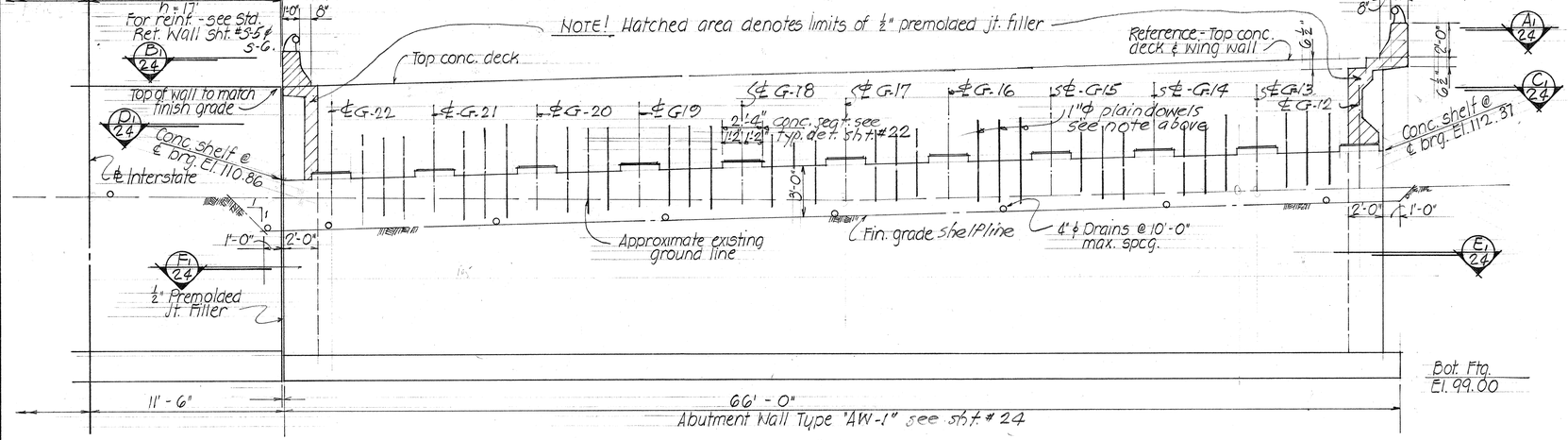
PRINTED ON NO. 1000H CLEARPRINT

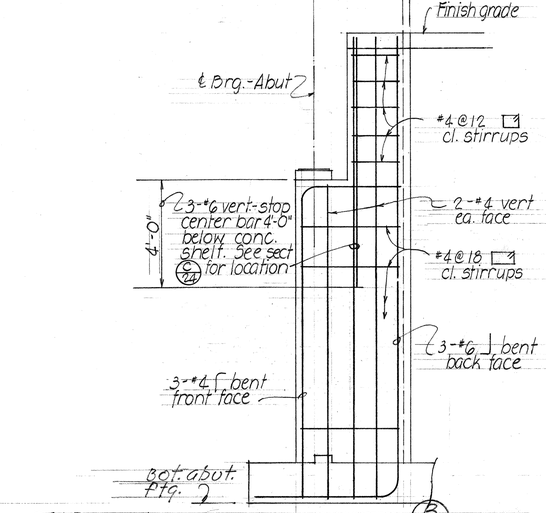
10/24/67 Rev. 11-21 - Revised Wing Wall & Railing

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-HI-1(32)5E UNIT 2	1967	34	45









ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DRAWN BY	NF
	TRACED BY	"
	DESIGNED BY	"
	QUANTITIES BY	NF
	CHECKED BY	PY
NOTE BOOK		
No.		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
ABUTMENT #2 - SECTIONS & DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

THIS SHEET SUPERSEDES SHEET NO. 34

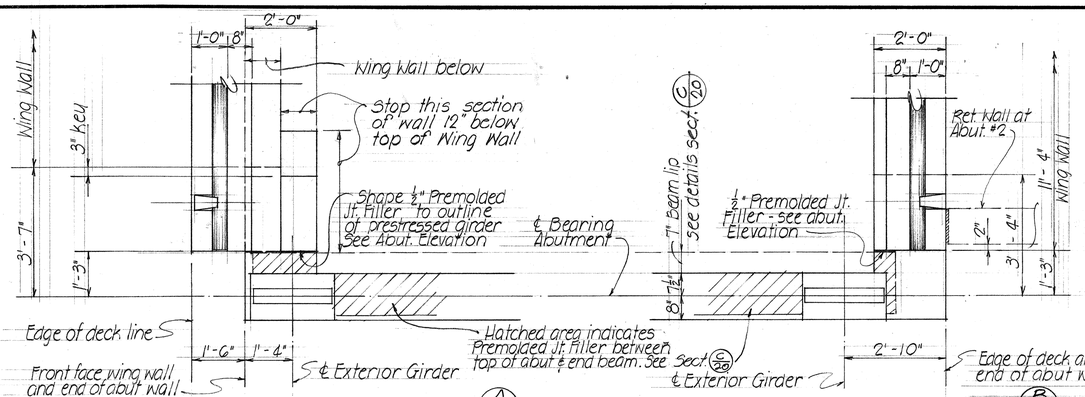
SHEET No. 23 OF 28 SHEETS

PRINTED ON NO. 1000H CLEARPRINT

4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)-5 UNIT 2	1967	35	45

10/24/67 REV. NO. 1 - Revised Wing Wall & Railing



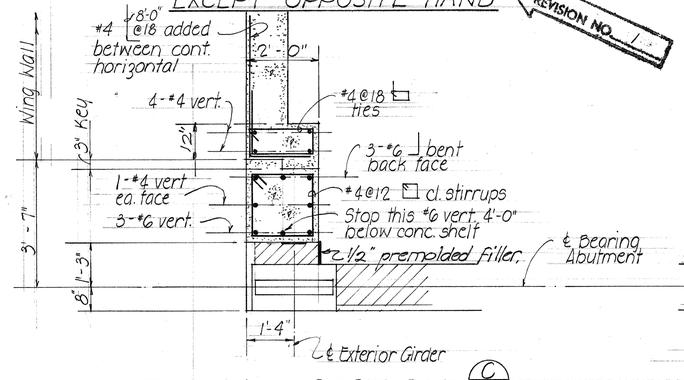
TYPICAL SECTION (A/24) Scale: ½" = 1'-0"

SECTION (A1/24) SIMILAR
EXCEPT OPPOSITE HAND

TYPICAL SECTION (B/24)

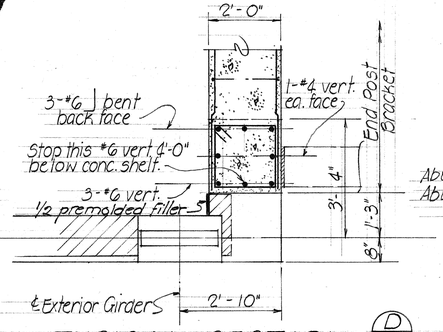
SECTION (B1/24) SIMILAR
EXCEPT OPPOSITE HAND

REVISION NO. 1



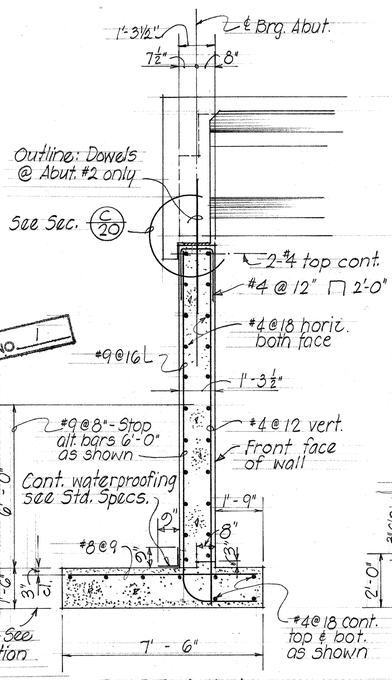
TYPICAL SECTION (C/24) Scale: ½" = 1'-0"

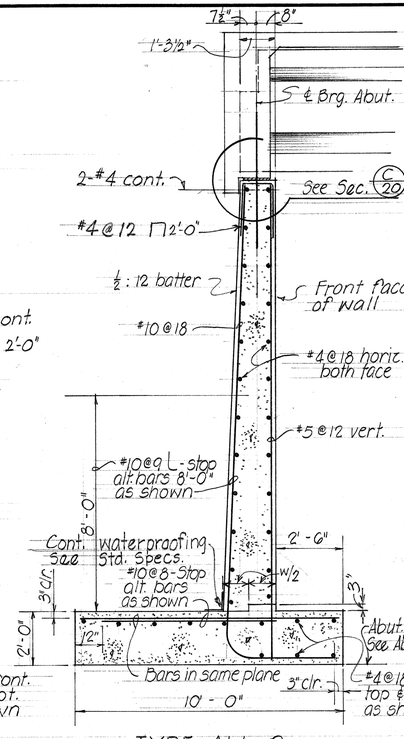
SECTION (C1/24) SIMILAR
EXCEPT OPPOSITE HAND

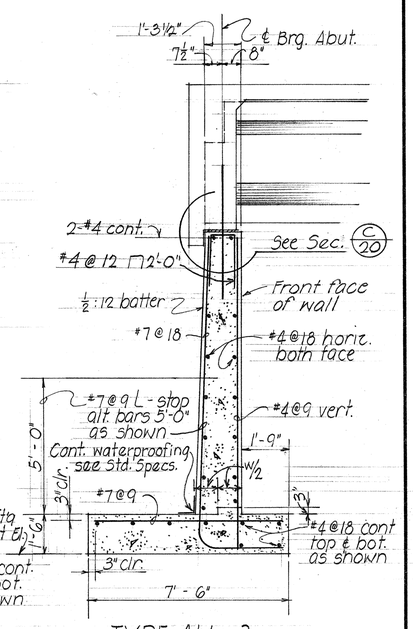


TYPICAL SECTION (D/24)

SECTION (D1/24) SIMILAR
EXCEPT OPPOSITE HAND

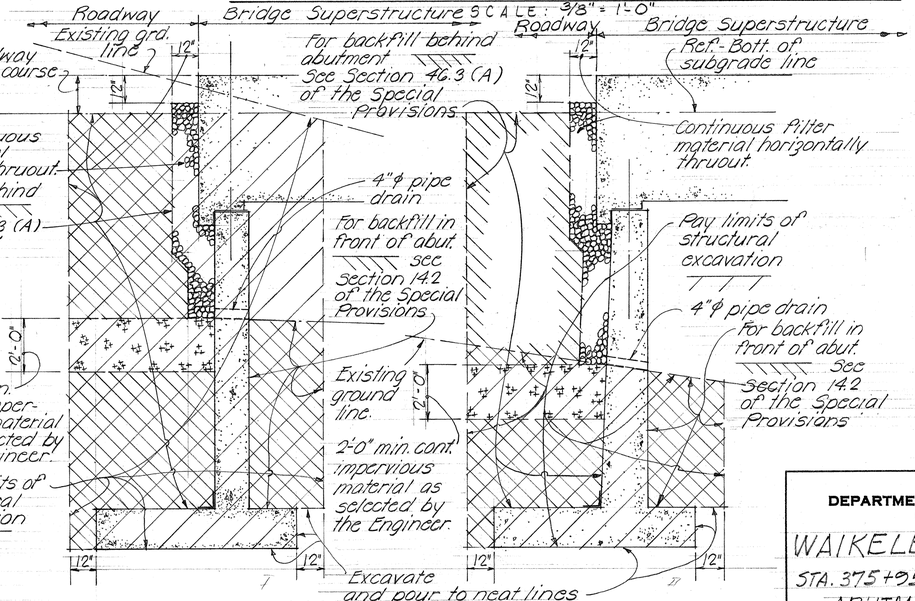






TYPICAL ABUTMENT WALL SECTIONS

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



TYPICAL LIMITS OF STRUCTURAL EXCAVATION
PAYLINE AND BACKFILL AT ABUTMENTS Nº 1 & Nº 2
NO SCALE

NOTE "2":
All wingwalls shall be backfilled at least to the existing ground line.
Contractor shall provide temporary drainage system for the area behind abutments as directed by the Engineer.
All backfill materials and work involved in providing temporary drainage system for the area behind abutments shall be incidental to various Contract items & will not be paid for separately.

THIS SHEET SUPERSEDES SHEET NO. 35

ORIGINAL PLAN	SURVEY PLOTTED BY	JE	DATE	3/67
	DRAWN BY		"	"
	TRACED BY	MT	"	"
NOTE BOOK	DESIGN BY		"	"
	QUANTITIES BY	JE	TH	
No.	CHECKED BY		PY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
ABUTMENTS #1 & #2
SECTIONS & DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 24 OF 28 SHEETS

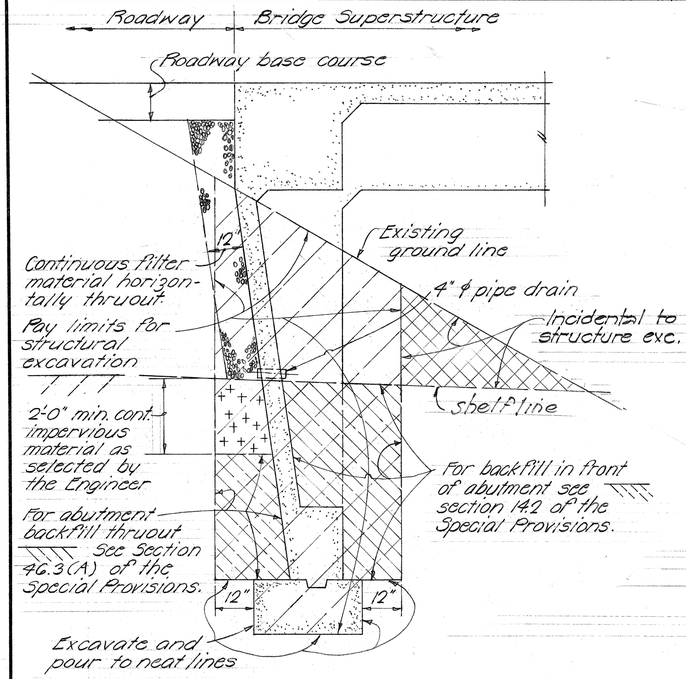
C O 3 5

PRINTED ON NO. 1000H CLEARPRINT

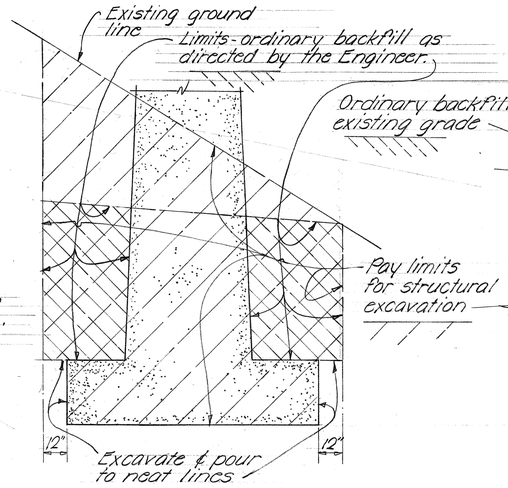
4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(32)5 UNIT 2	1967	36	45

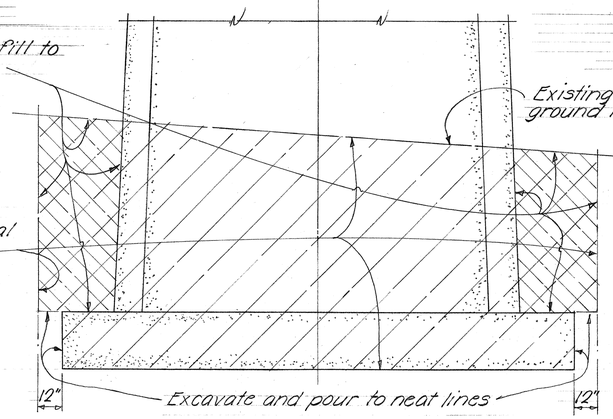
10/24/67 Rev. #1 Revise railing.



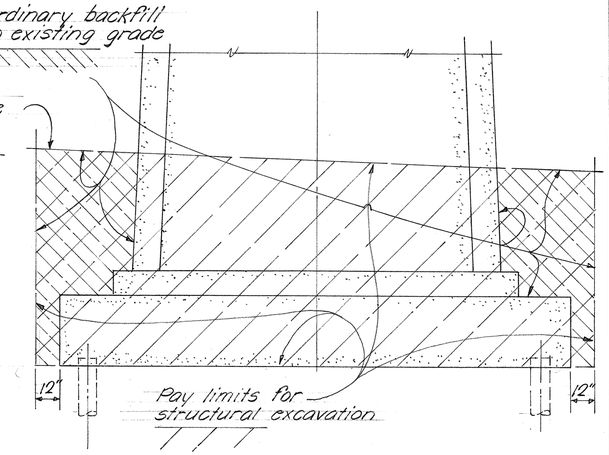
AT ABUTMENT FRAME



AT PIER LINE (1B) INBOUND



SPREAD FOOTING

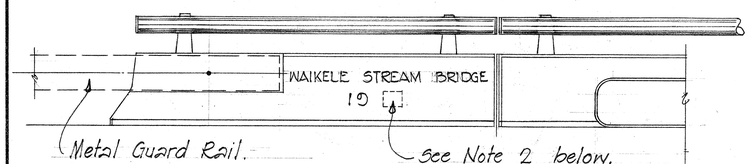


PILE FOOTING

AT TAPERED PIER FOUNDATION

TYPICAL LIMITS OF STRUCTURAL EXCAVATION, PAY LINE & BACKFILL No Scale

NOTE:
For additional excavation pay limits for abutment structures, see sht. #24. Refer to Standard Retaining Wall drawings for Wing Wall excavation pay limits.



TYPICAL GUARD RAIL CONNECTION DETAIL
AT BRIDGE CONCRETE RAILING Scale: ½"= 1'-0"

REVISION NO. 1

Note !! 1. Place name of structure as shown ~ for location see Layout Plan.
2. Year shown will be year structure is completed.
3. Letter size & detail ~ See Standard Bridge Drawing ~ sht. # 51.

THIS SHEET SUPERSEDES SHEET NO. 36

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
MISCELLANEOUS DETAILS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 25 OF 28 SHEETS

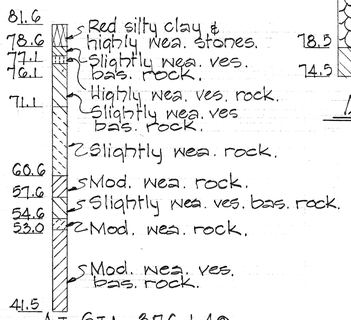
C 0 3 6

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY TM	" " "
	TRACED BY	" " "
NOTE BOOK	DESIGNED BY	" " "
No.	QUANTITIES BY RK	" " "
	CHECKED BY	" " "

PRINTED ON NO. 1000H CLEARPRINT

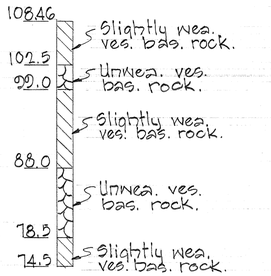
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)5 UNIT 2	1967	37	45

S-29
70' % R



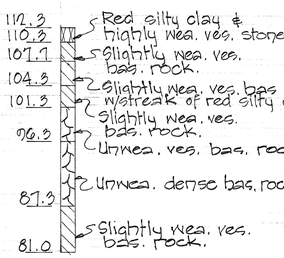
AT STA 376 + 40

S-30
18' % R



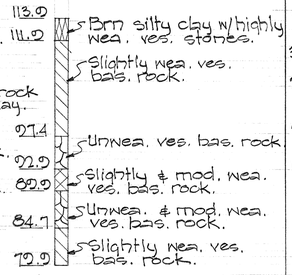
AT STA 376 + 37

S-31
18' % L



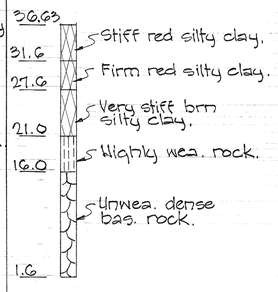
AT STA 376 + 37

S-32
58' % L



AT STA 376 + 40

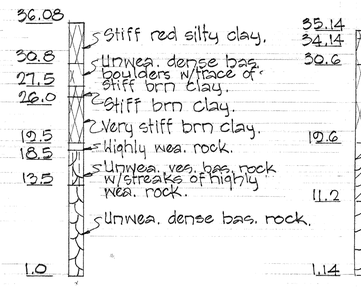
S-33
72' % R



AT STA 377 + 43

S-34
16' % R

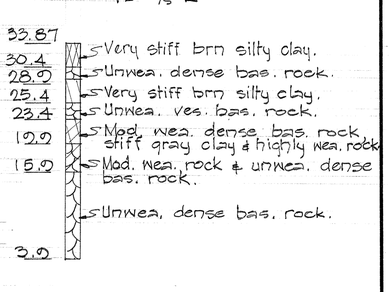
S-35
16' % L



AT STA 377 + 52

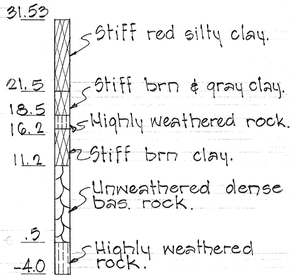
AT STA 377 + 61

S-36
72' % L

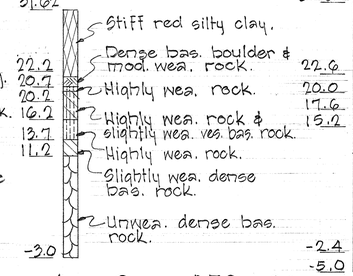


AT STA 377 + 73

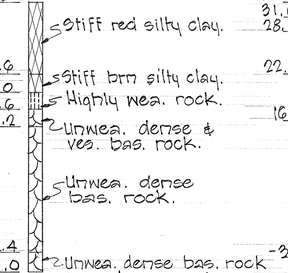
S-37
72' % R



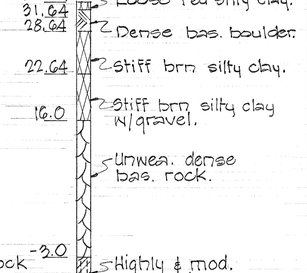
S-38
16' % R



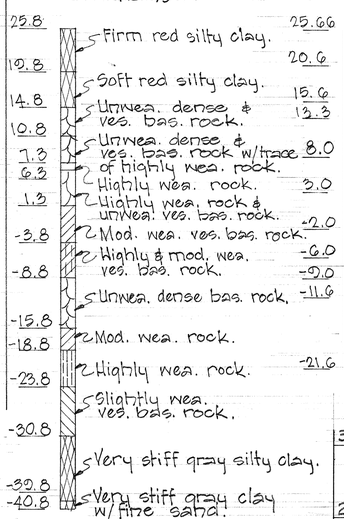
S-39
16' % L



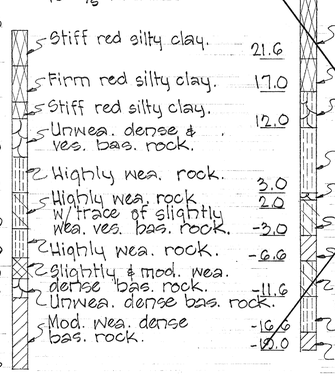
S-40
72' % L



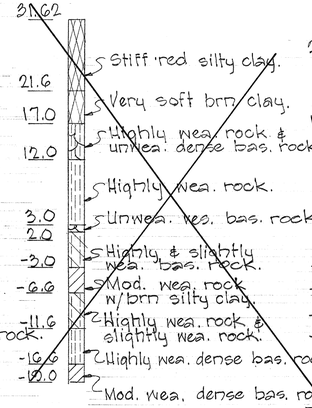
S-41
72' % R



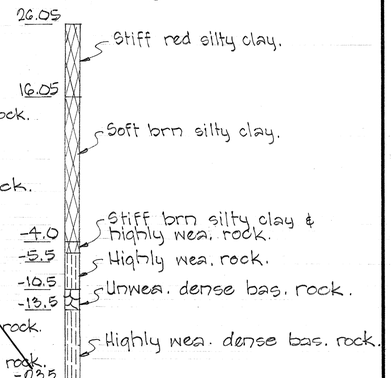
S-42
16' % R



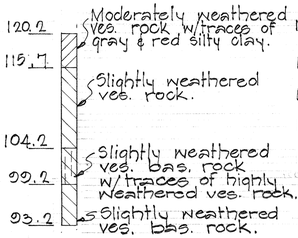
S-43
16' % L



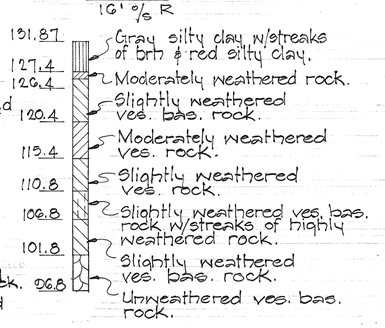
S-44
72' % L



S-27
72' % R



S-28
16' % R



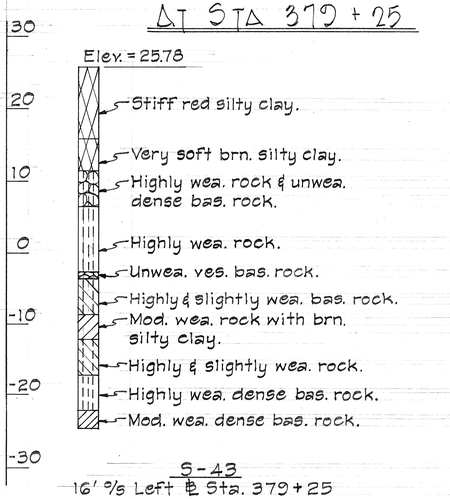
AT STA. 375 + 00

AT STA. 378 + 30

ABBREVIATIONS!!

brn. = brown
bas. = basaltic
ves. = vesicular
mod. = moderately
wea. = weathered
unwea. = unweathered

S-43
16' % Left ℄ Sta. 379 + 25



AT STA 379 + 25

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 T.O STA. 384+71.21
LOGS OF BORINGS

Proj. No. IHI-1(32):5, Unit 2 April 1967

SHEET No. 26 OF 28 SHEETS

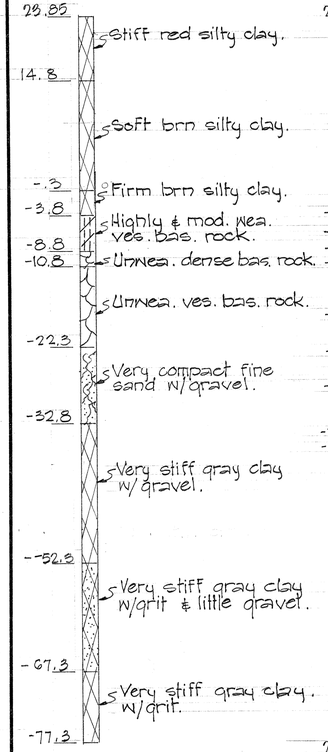
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 3/67
	DRAWN BY SY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
No.	QUANTITIES BY	"
	CHECKED BY RK	"

PRINTED ON NO. 1000H CLEARPRINT

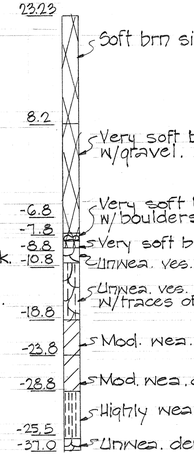
4/18

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)-5 UNIT 2	1967	38	45

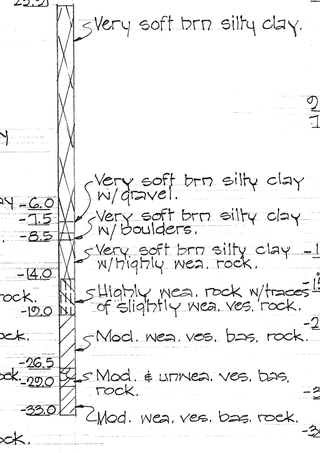
S-45
72' ℄ R



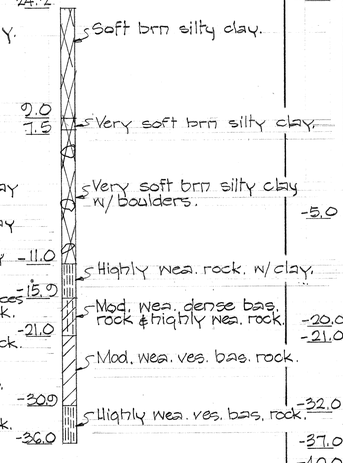
S-46
10' ℄ R



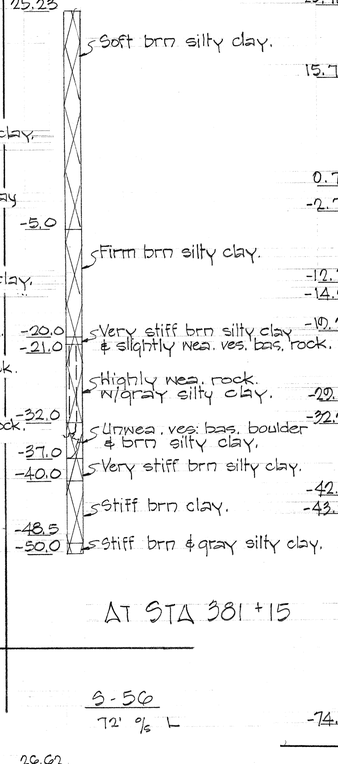
S-47
10' ℄ L



S-48
72' ℄ L



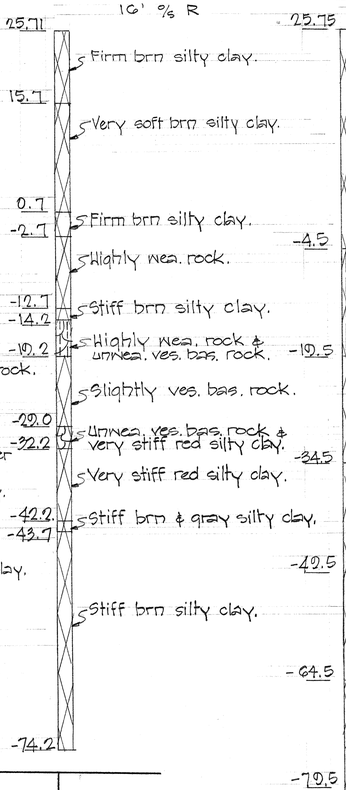
S-49
72' ℄ R



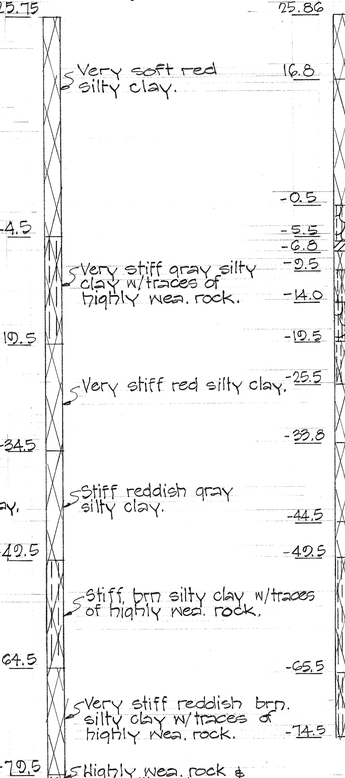
AT STA 380 + 20

AT STA 381 + 15

S-50
10' ℄ R

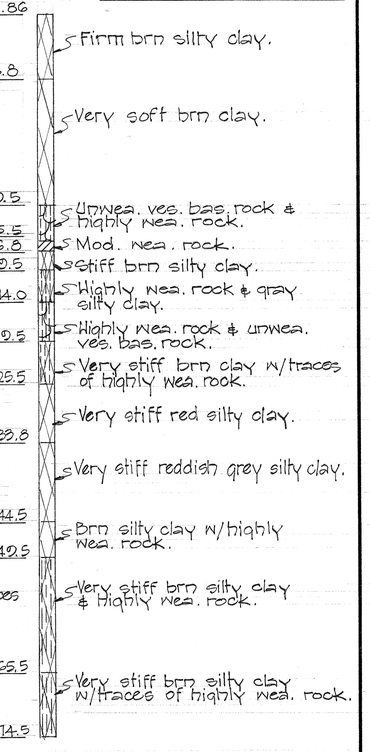


S-51
10' ℄ L



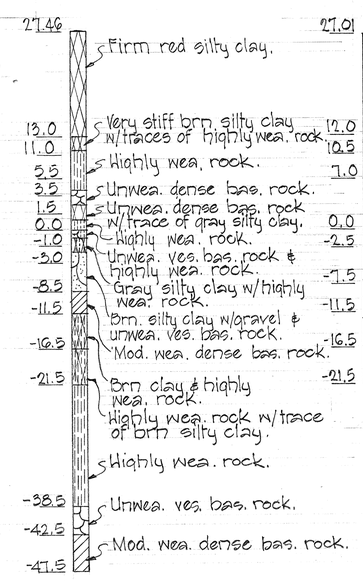
AT STA 381 + 15

S-52
72' ℄ L

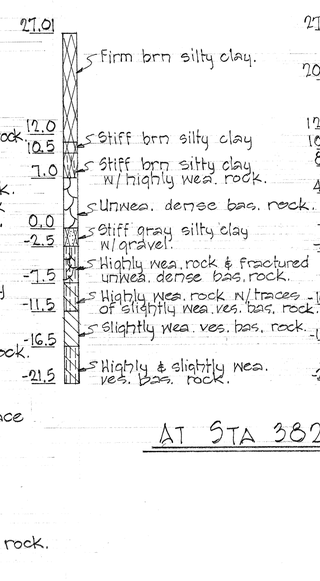


AT STA 381 + 15

S-53
72' ℄ R

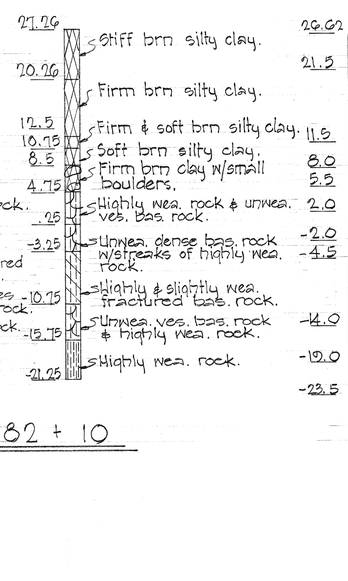


S-54
10' ℄ R

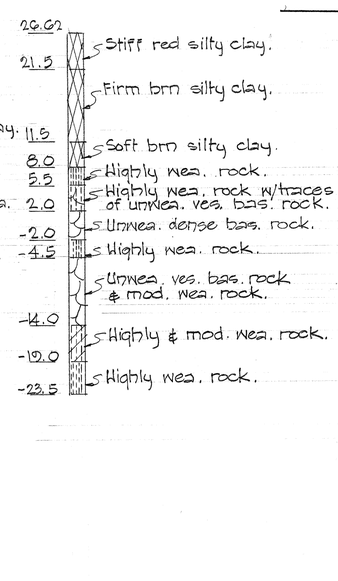


AT STA 382 + 10

S-55
10' ℄ L



S-56
72' ℄ L



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
LOGS OF BORINGS

Proj. No. IHI-1(32):5, Unit 2 April 1967

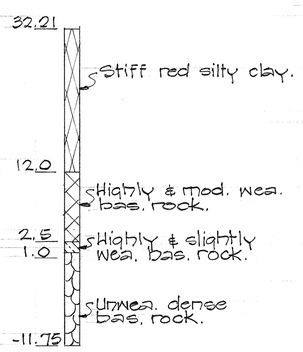
SHEET No. 27 OF 28 SHEETS

ORIGINAL PLAN		DATE 3/67
	SURVEY PLOTTED BY	
	DRAWN BY SY	" "
	TRACED BY	" "
NOTE BOOK	DESIGNED BY	" "
No.	QUANTITIES BY	" "
	CHECKED BY RK	" "

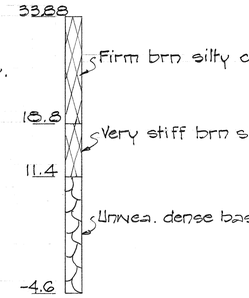
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32)5 UNIT 2	1067	39	45

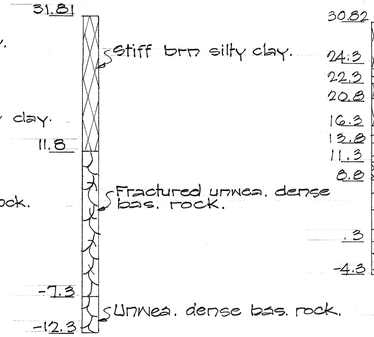
S-57
72' ℄ R



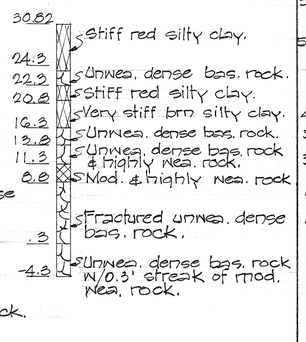
S-58
16' ℄ R



S-59
16' ℄ L

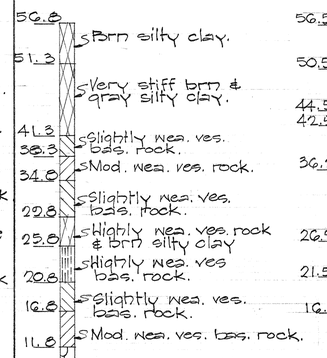


S-60
72' ℄ L



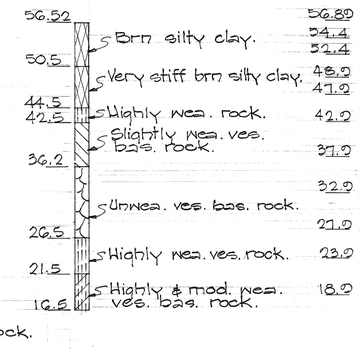
AT STA. 383 + 05

S-61
72' ℄ R



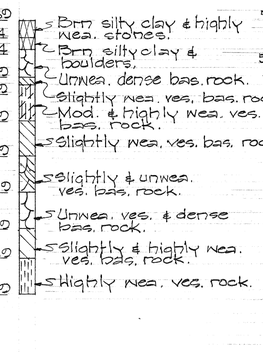
AT STA 383 + 94

S-62
16' ℄ R

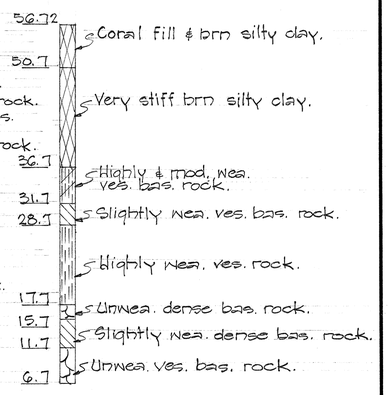


AT STA 383 + 96

S-63
16' ℄ L

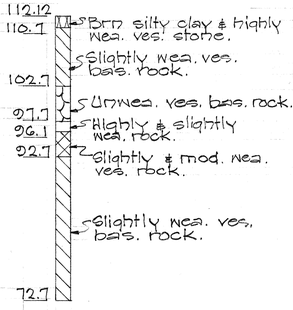


S-64
72' ℄ L

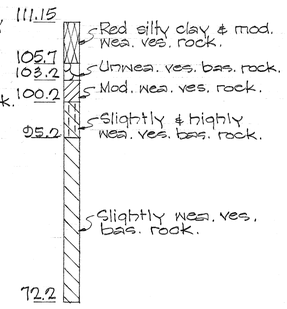


AT STA 384 + 00

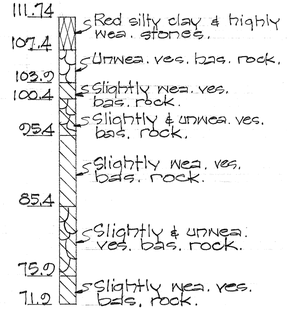
S-65
72' ℄ R



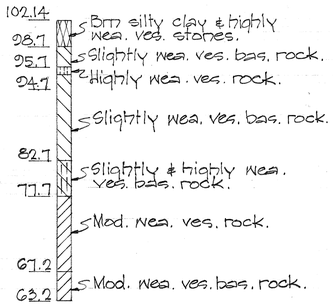
S-66
16' ℄ R



S-67
16' ℄ L



S-68
72' ℄ L



AT STA 384 + 70

SURVEY PLOTTED BY SY
DRAWN BY "
TRACED BY "
DESIGNED BY "
QUANTITIES BY "
CHECKED BY BK
DATE 3/67

ORIGINAL PLAN
NOTE BOOK
No.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 TO STA. 384+71.21
LOGS OF BORINGS

Proj. No. IHI-1(32):5, Unit 2 April 1067

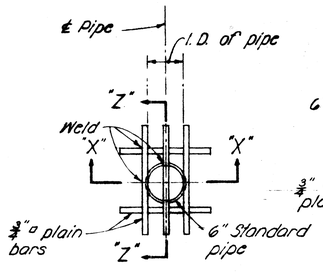
SHEET No. 28 OF 28 SHEETS

39

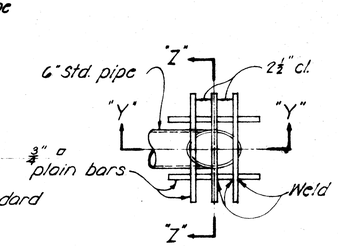
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	(1)(2)(3)(4) & UNIT 2	1967	45	45

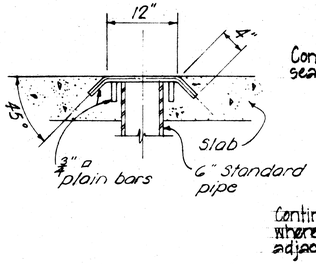
REVISION
Jan. '67
Feb '67



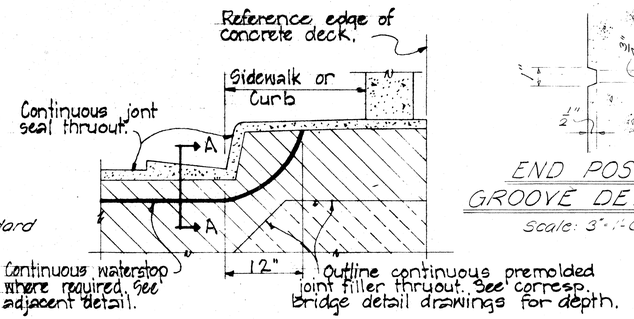
PLAN



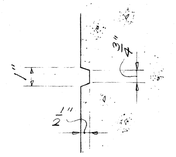
PLAN



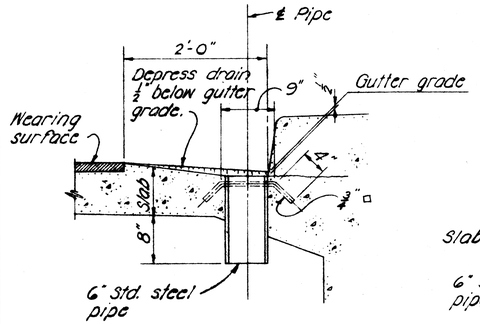
SECTION "Z-Z"



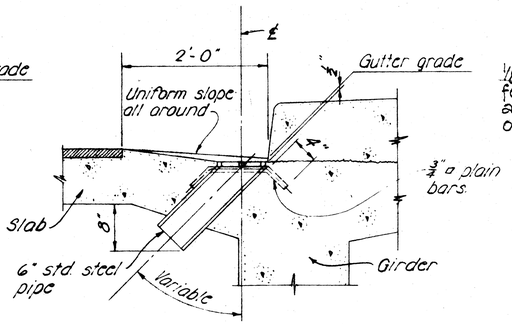
ELEVATION



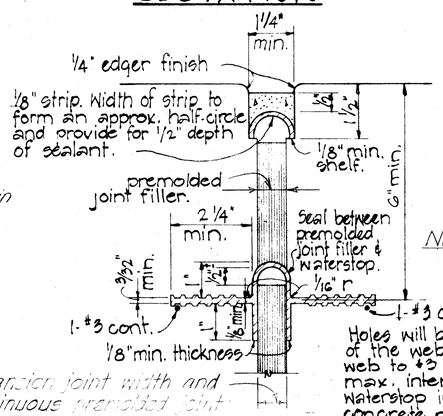
END POST GROOVE DETAIL
Scale: 3"=1'-0"



SECTION "X-X"



SECTION "Y-Y"



Expansion joint width and continuous premolded joint filler, see contract drawings.

Waterstop to have 5 or more pairs of raised ribs to provide 0.1 sq. in. min. rib cross. section area on each half of the waterstop. Height of ribs to be 3/32" min.

Nailing Strip:
Nail or staple to form or premolded joint filler.

Holes will be permitted in the outer ½" of the web for wires, rings, etc. Tie web to #3 reinforcing bars at 12" max. intervals to support the waterstop in proper position during concrete placement. Alternative detail may be submitted for approval of the Engineer.

SECTION "A-A"

TYPICAL EXPANSION JOINT DETAIL

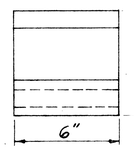
GENERAL NOTES

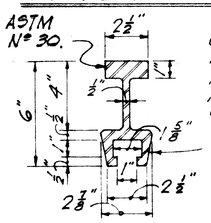
Elastomeric Pads: Top & bottom of bridge bearing pads shall be secured against displacement with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for seperately.

1. The Contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation.
2. All concrete shall be Class A-1 unless otherwise noted.
3. Clearance for reinforcing bars shall be as follows, unless otherwise noted:
   a. - 1½" For stirrups of beams & pier caps.
   b. - 2" For ties of columns.
   c. - 2" For formed walls.
   d. - 3" For footings.
4. Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top surfaces of the concrete seats shall be finished with a steel trowel to a smooth level at the elevation shown on the plans.
5. Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
6. 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.
7. Splices of reinforcing - See Special Provisions.
8. Minimum spacing between parallel bars shall be 2½ times the diameter of bars, but in no case shall the clear distance between the bars be 1½ times the maximum size of the coarse aggregate.
9. All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
10. 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.
11. Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
12. Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered ¾" x ¾". See Standard Specifications.
13. Concrete finish - See Special Provisions.
14. All welders and welding procedures shall be qualified according to the requirements of the Special Provisions.

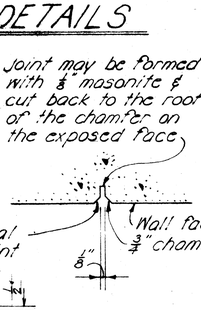
NOTE: Metal drains shall be considered incidental to Class A-1 Concrete in both concrete and steel bridges and will not be paid for separately.
Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.

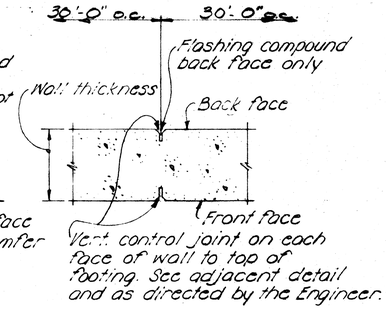
TYPICAL DRAINAGE DETAILS



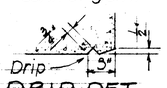


Contractor to take proper precautions to prevent the concrete from flowing into the opening of the inserts.



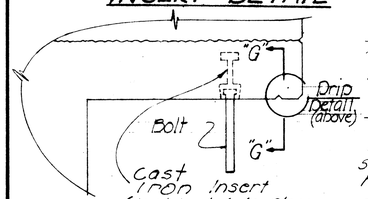


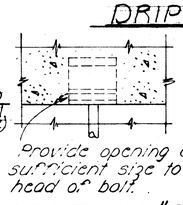
CONTROL JOINT DETAIL



DRIP DET.

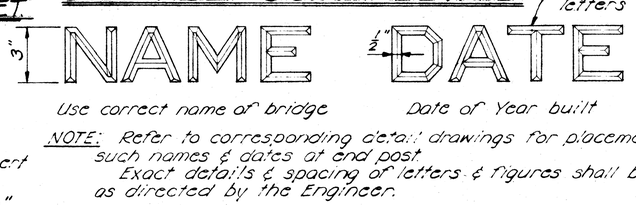
INSERT DETAIL





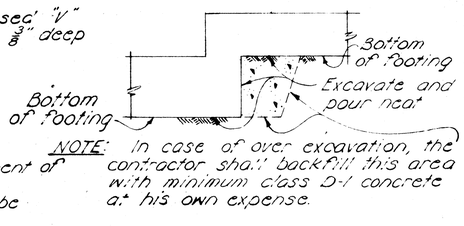
SECTION "G-G"

DETAIL of PIPE HANGERS & INSERTS



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.

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST



NOTE: In case of over excavation, the contractor shall backfill this area with minimum class D-1 concrete at his own expense.

TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD BRIDGE DETAILS

Scale as Noted Date: Apr. 1967

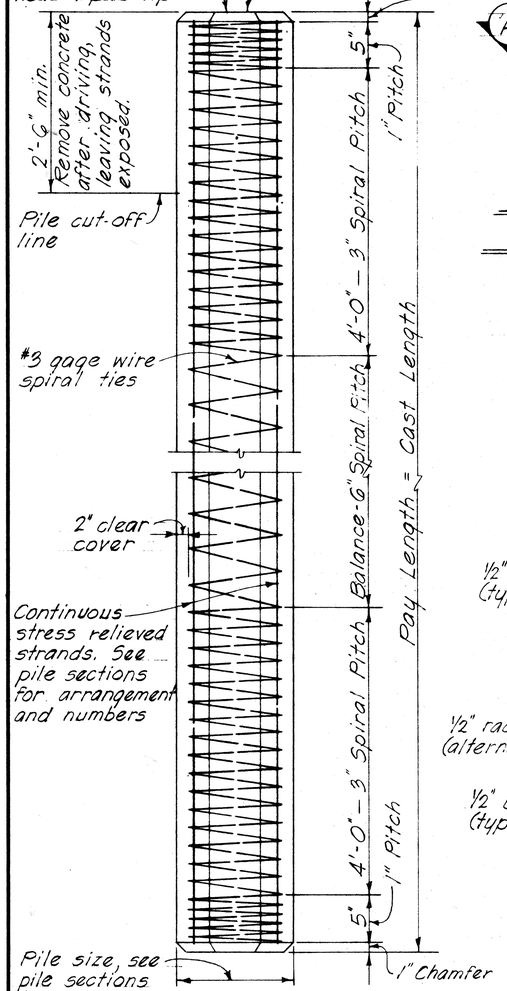
SHEET No. 51 OF 6 SHEETS

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

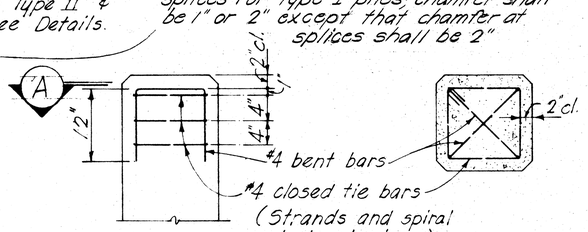
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HPT-1(32)5 UNIT 2	1967	41	45

Revision - Feb. '67
March '67

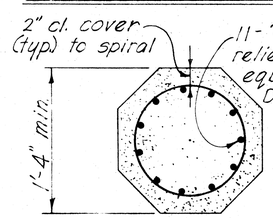


TYPICAL PILE DETAIL



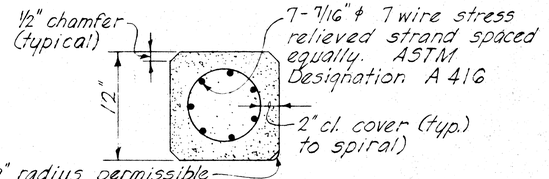
PART ELEVATION SECTION (A)

TYPICAL ADDED REINFORCEMENT PILE ENDS - TYPE II & III ONLY

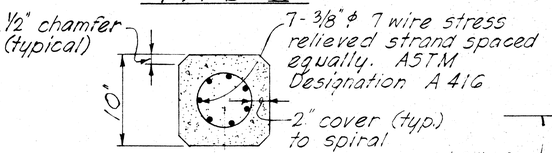


Note: All types of pile spiral reinforcement shall be cold drawn steel wire ASTM A-82

TYPE I



TYPE II



TYPE III

TYPICAL SECTIONS THRU PILES

Max. Length "L" *	Max. Length "L" *	Length "L" *
Type I "L" = 53'-0"	Type I "L" = 75'-0"	Type I "L" over 75'-0"
12" Type II "L" = 50'-0"	12" Type II "L" = 72'-0"	12" Type II "L" over 72'-0"
10" Type III "L" = 46'-0"	10" Type III "L" = 66'-0"	10" Type III "L" over 66'-0"
0.30 L — 0.70 L	0.21 L — 0.58 L — 0.21 L	0.15 L — 0.35 L — 0.35 L — 0.15 L

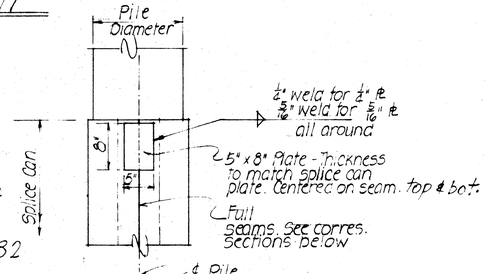
* The length "L" is the distance end to end of pile.

1 POINT PICK-UP 2 POINT PICK-UP 3 POINT PICK-UP

NOTE: Unless special lifting devices are attached for pick-up points, pick-up points shall be plainly marked on all piles after removal of the forms and all lifting shall be done at these points. The use of special embedded or attached lifting devices, the employment of other pick-up points or any other method of pick-up shall be subject to approval by the Engineer.

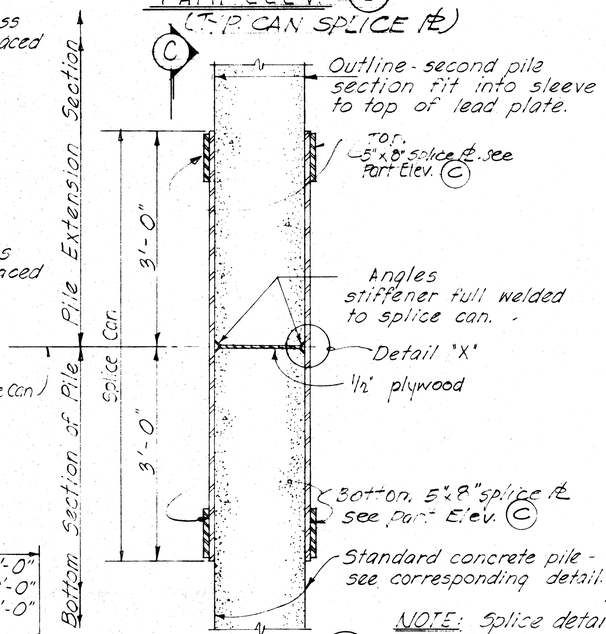
2'-6" min. unless otherwise directed by the Engineer. Remove concrete after driving, leaving reinf. exposed.

NOTE:
Concrete in pile build-ups without driving shall be Class A-1 Concrete. Concrete in pile build-ups with driving shall have a minimum compressive cylinder strength fc of 5000 p.s.i. at 28 days. Build-ups may be driven if the specimen of concrete from which the piles were poured develops a strength of at least 3500 p.s.i. but not earlier than 7 days.



PART ELEV. (C)

(T.P. CAN SPLICE ℄)



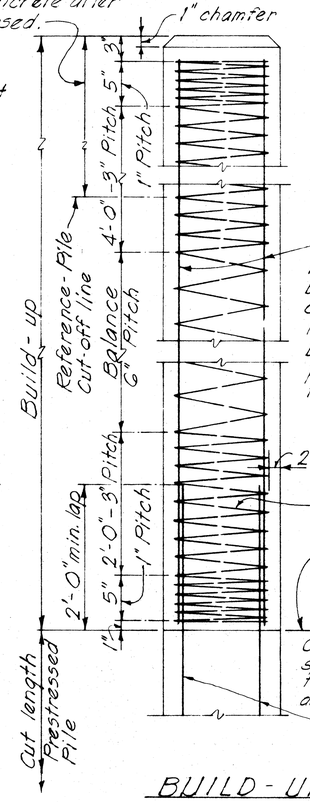
SECTION (B)

TYPICAL PILE SPLICE DETAILS

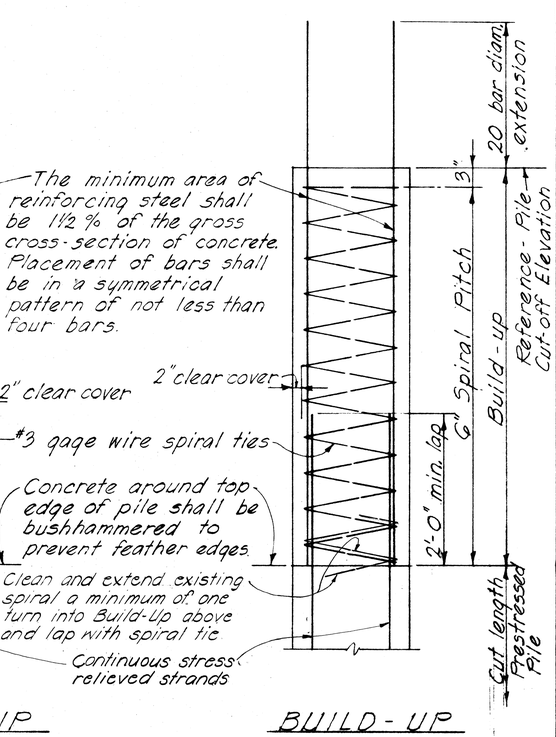
(FOR PRESTRESSED CONCRETE PILES WHEN CAST IN TWO OR MORE SECTIONS)

NOTE: Splice detail shown above shall not be used unless the location of the splice within a given length of pile is indicated elsewhere on the bridge plans.

NOTE: All welding shall conform to the latest Specifications for Welded Highway & Railway Bridge of the American Welding Society.

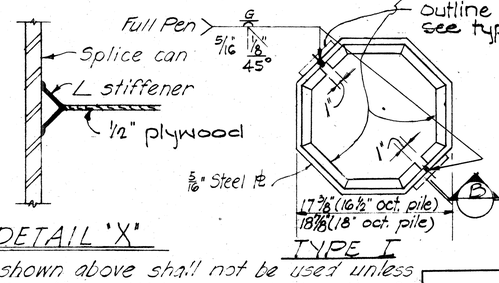


BUILD - UP WITH DRIVING



BUILD - UP WITHOUT DRIVING

TYPICAL PILE BUILD-UP DETAILS



DETAIL 'X'

TYPE I

TYPE II & III

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

PRESTRESSED CONCRETE PILES

Scale: as Noted Date: April, 1967

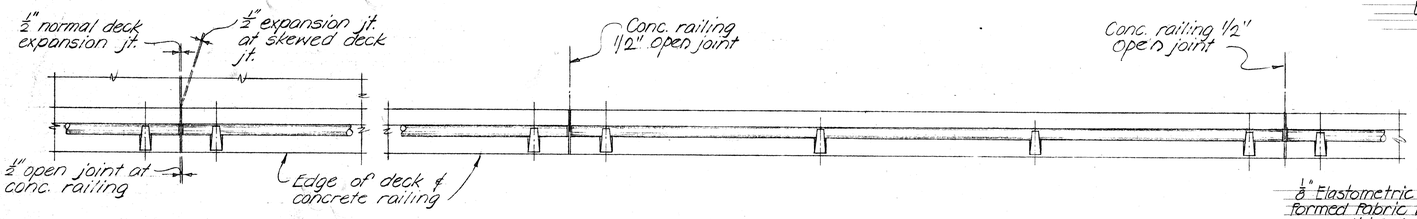
SHEET No. 52 OF 6 SHEETS

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

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(32) :5 Unit 2	1967	C042	45

Revised: 10/24/67 Rev. No 1
concrete railing at end of bridge & railing detail.



AT DECK EXPANSION JOINT

INTERMEDIATE

** NOTE !!

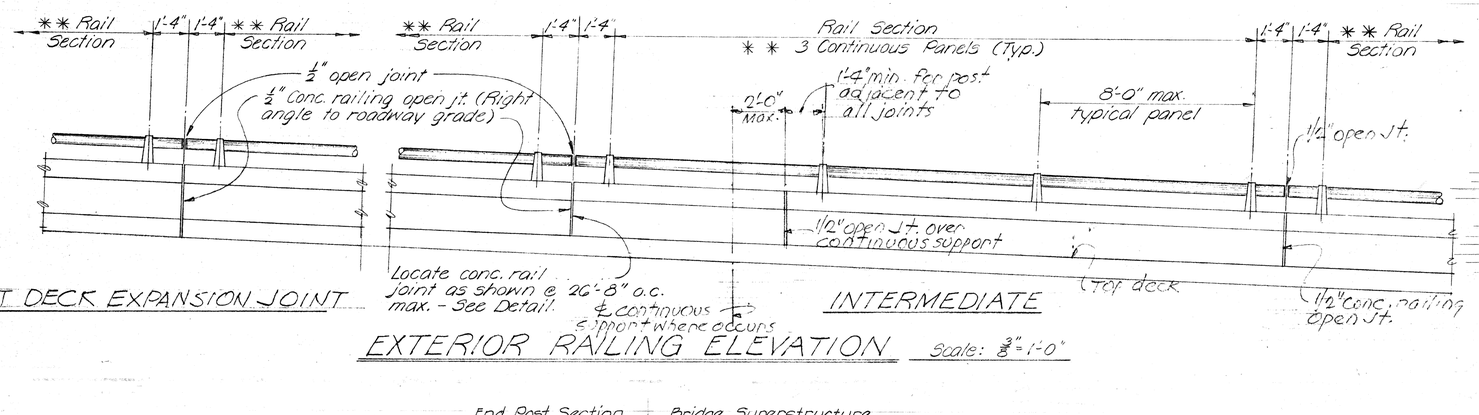
The contractor shall layout the railing to provide 3 cont panels whenever possible. 2 or 4 cont panels will be permitted to complete the layout when 3 cont panels cannot be made. Single panels will not be permitted.

Rail Posts shall be normal to grade.

Provide double posts at each expansion jt., fixed bridge jt. and as shown on detailed drawings.

RAILING PLAN

Scale: 3/8" = 1'-0"

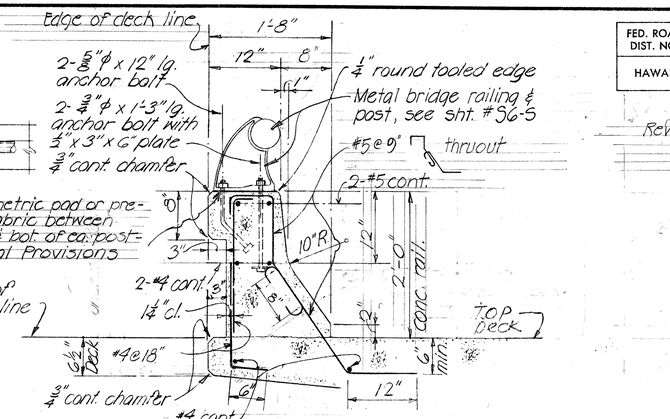


AT DECK EXPANSION JOINT

INTERMEDIATE

EXTERIOR RAILING ELEVATION

Scale: 3/8" = 1'-0"

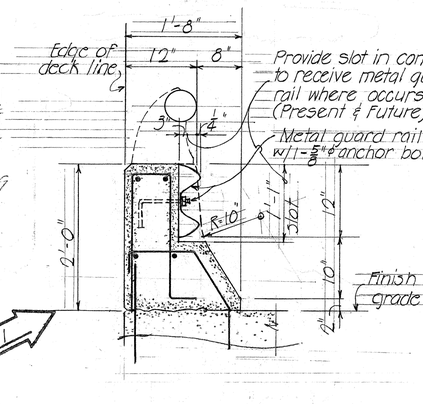


SECTION

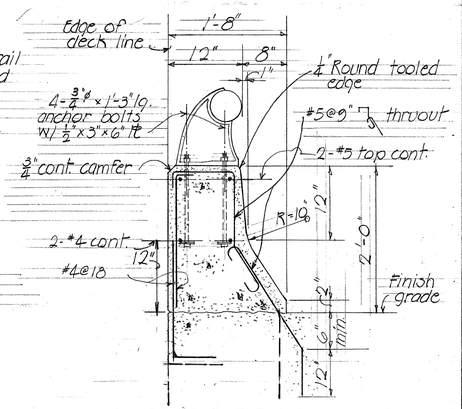
(A/285)

Scale: 1" = 1'-0"

REVISION NO. 1



AT METAL GUARD RAIL



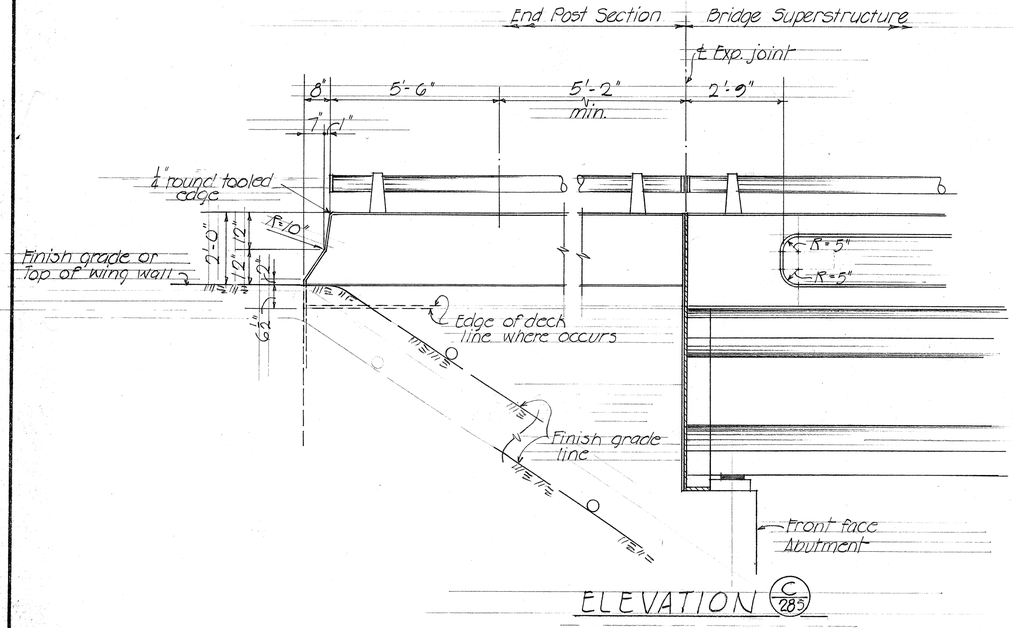
SHOWING REINFORCEMENT

TYPICAL SECTION

(B/285)

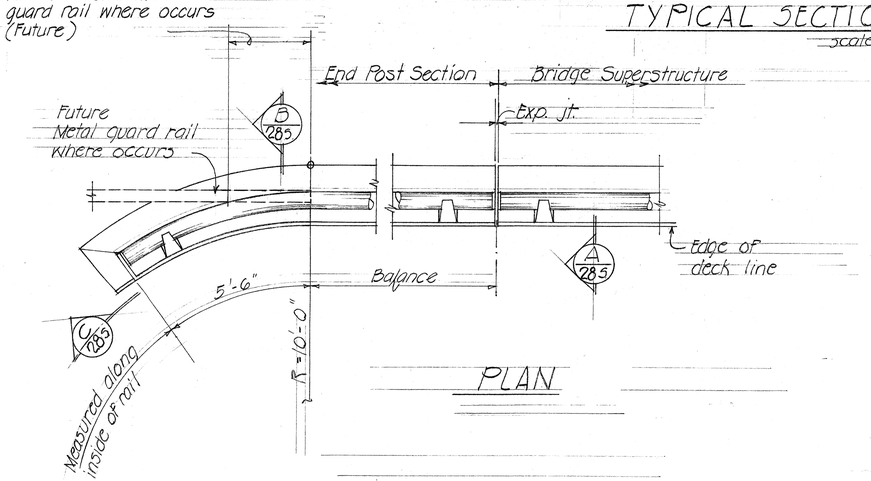
Scale: 1" = 1'-0"

REVISION NO. 1



ELEVATION

(C/285)



PLAN

TYPICAL CONCRETE RAILING DETAIL AT END OF BRIDGE

Scale: ½" = 1'-0"

This drawing supersedes and replaces original Contract Drawing Sht. No 42

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WAIKELE STREAM BRIDGE
STA. 375+95 to STA. 384+71.21
TYPICAL RAILING DETAILS

PROJ. IHI-1(32):5 UNIT 2 APRIL 1967

SHEET No. 935 OF 6 SHEETS

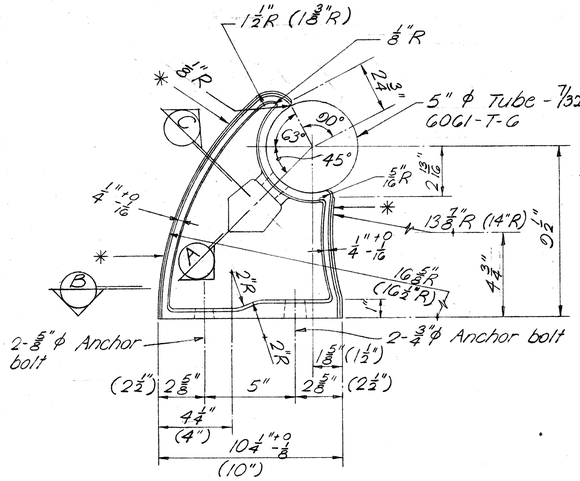
C 0 4 2

ORIGINAL PLAN		
NOTE BOOK		
No.		
SURVEY PLOTTED BY		
DRAWN BY	TM	DATE 12-67
TRACED BY		
DESIGNED BY		
QUANTITIES BY		
CHECKED BY	A.R.K.PTT	

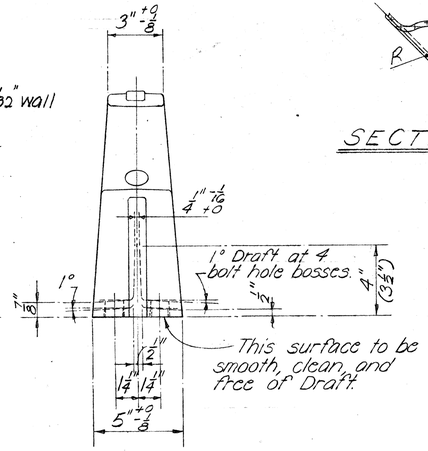
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1302(5)	1967	0043	45

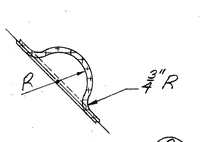
Unit 2



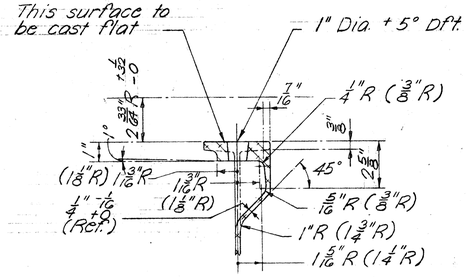
SIDE ELEVATION



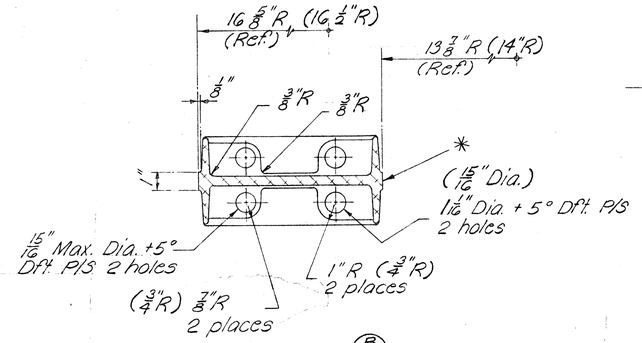
END ELEVATION



SECTION (C)



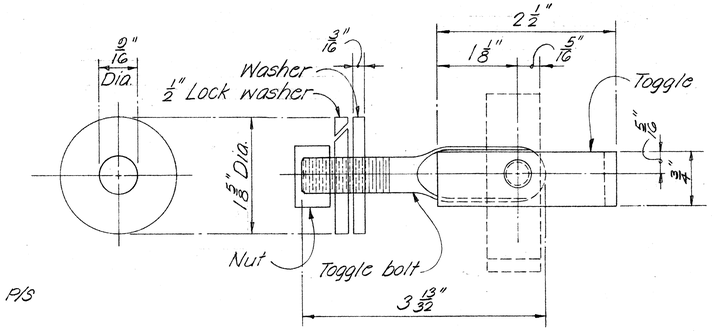
SECTION (A)



SECTION (B)

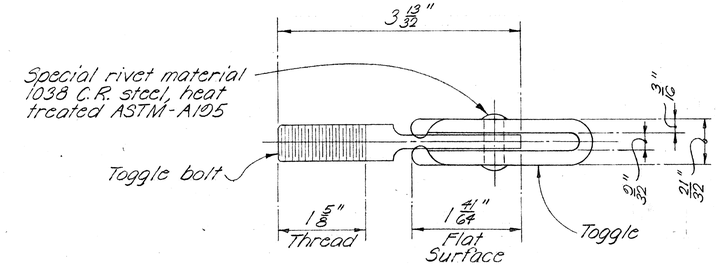
NOTE:

Toggle Bolt Material - 1/2" - 13 N.C. 1335 C.R. - Steel heat treated R.C. 32-38 ASTM-A354.
Toggle Material - 1015 H.R. steel pickled and oiled. Round edges ASTM-A303.
Washer Material - SAE 1020 H.R. steel plates. ASTM-A-7. Break sharp edges.
Nut - 1/2" - 13 American hex. nut - Heavy Material 1035 C.R. - Steel heat treated ASTM A325 Grade 2H.
Cadmium plating on steel - Type N.S. .0005" thick ASTM-A165. (all parts).
For cast post specifications, see Special Provisions.



WASHER

SIDE ELEVATION ASSEMBLAGE



TOP PLAN

1/2" ϕ TOGGLE BOLT DETAILS

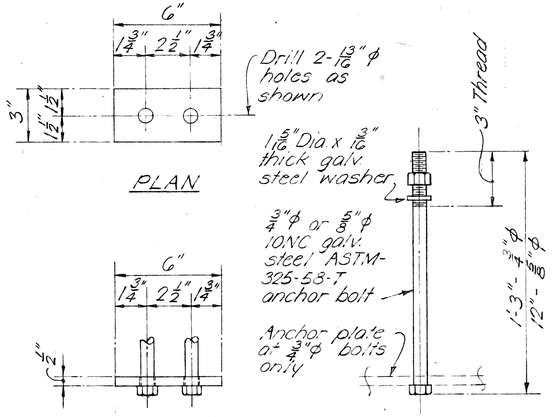
Full Scale

NOTE:

* Casting to be supplied with a standard scratch brush finish on entire gating rib surface and as indicated by an asterisk (*). Finish shall be approved by the Engineer.
Casting to be neatly trimmed and any protruding flash to be broken off.
For cast post specifications, see Special Provisions.
Unless otherwise specified, draft angles to be 3°, corner radii to be 3/32" R, fillet radii to be 3/8" R, casting tol. to be ± 1/16", wall thickness to be ± 1/32".
Dimensions may be as shown or as shown in parenthesis ( ).

TYPICAL RAIL POST DETAILS

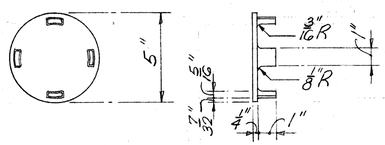
Scale: 3" = 1'-0"



ANCHOR ϕ DETAIL ANCHOR BOLT

TYPICAL RAIL POST ANCHOR BOLT ASSEMBLY

Scale: 3" = 1'-0"



All draft angles = 3°

RAIL CAP DETAIL

Scale: 3" = 1'-0"

GENERAL NOTES

Metal bridge railing shown is for Aluminum bridge railing. See Special Provisions for alternate railing in steel.

This drawing supersedes and replaces original Contract Drawing Sht. No. 43

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS METAL BRIDGE RAILINGS SINGLE RAIL

scale as noted Date: April, 1967

SHEET No. 45 OF 6 SHEETS

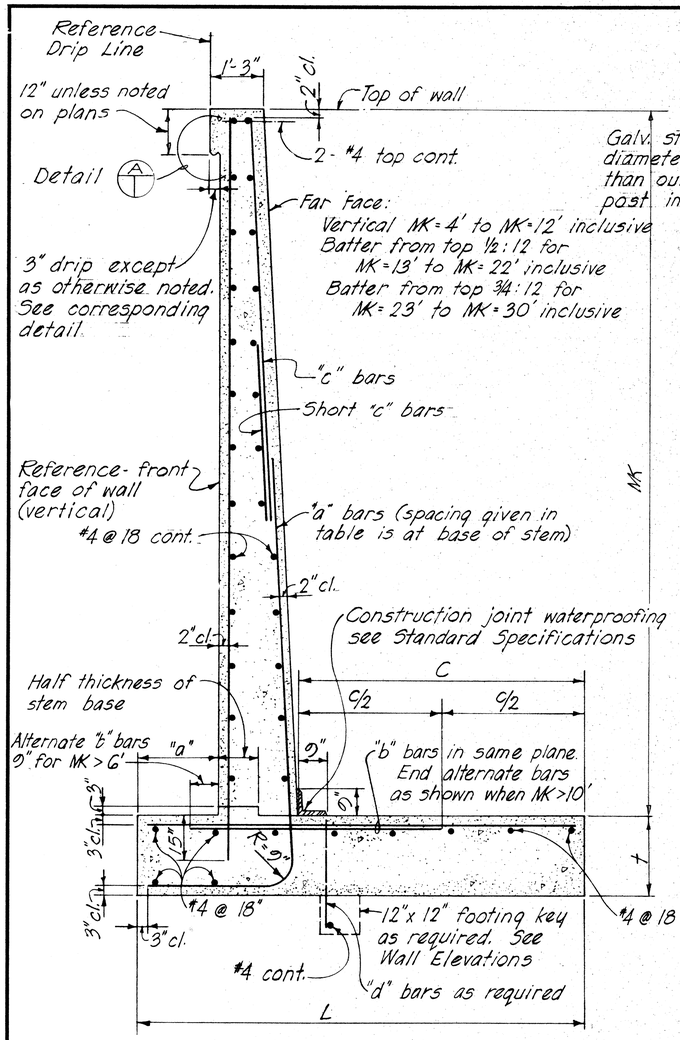
C 0043

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

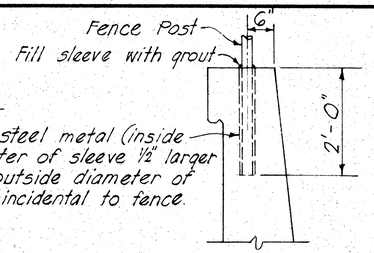
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RH-1(62)3 UNIT 2	1967	44	45

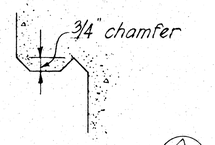
Revision - Dec. 1966
Revision - Jan. 1967



WALL SECTION



CHAIN LINK FENCE POST DETAIL

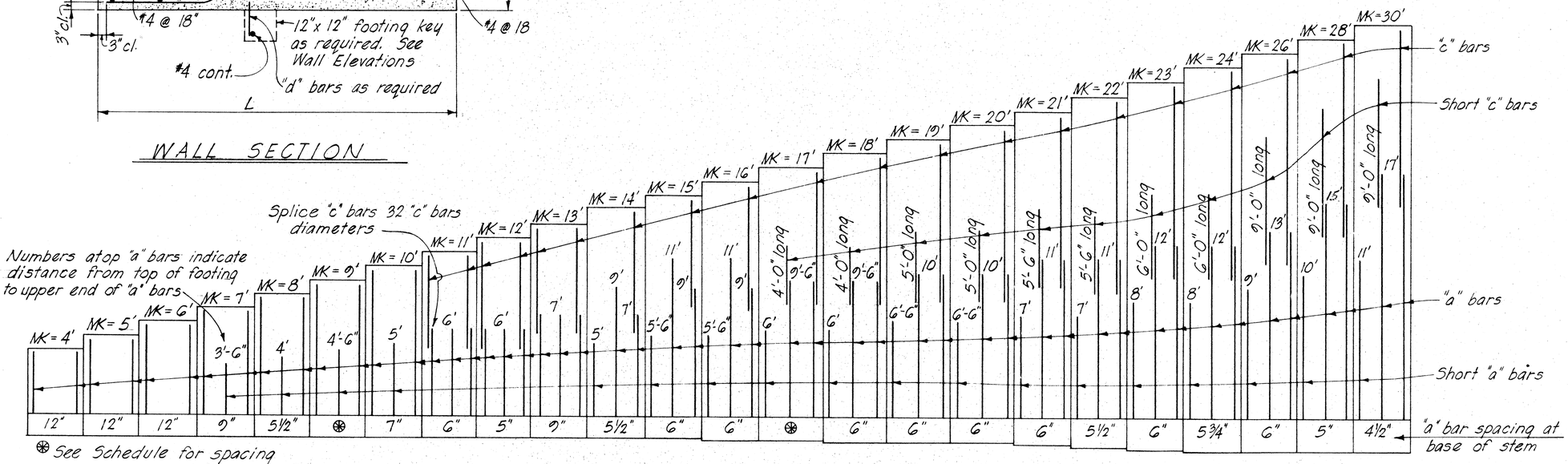


DETAIL A

SCHEDULE OF DIMENSIONS AND REINFORCING STEEL

Maximum "MK"	4E	5E	6E	7E	8E	9E	10E	11E	12E	13E	14E	15E	16E	17E	18E	19E	20E	21E	22E	23E	24E	26E	28E	30E
a	6"	6"	6"	12"	12"	12"	12"	12"	12"	12"	15"	18"	21"	24"	24"	24"	27"	30"	33"	36"	39"	54"	60"	72"
t	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	18"	18"	21"	21"	24"	24"	24"	27"	30"	31"	33"	36"	39"	42"
L	2.5'	3.0'	3.5'	4.0'	4.5'	5.0'	5.5'	6.0'	6.5'	7.0'	7.75'	8.25'	9.0'	9.75'	10.5'	11.5'	12.5'	13.5'	14.5'	15.25'	16.0'	18.0'	20.0'	21.0'
"a" bars	#3@12"	#3@12"	#4@12"	#4@9"	#4@5½"	#5@7"	#6@7"	#6@6"	#6@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#8@5¾"	#9@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#11@6"	#11@5"	#11@4½"
"b" bars	#3@12"	#3@12"	#3@12"	#3@9"	#4@11"	#4@7"	#5@7"	#5@6"	#5@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#7@5¾"	#8@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#11@6"	#11@5"	#11@4½"
"c" bars								#4	#4	#4	#4	#4	#5	#5	#5	#6	#6	#6	#7	#7	#7	#7	#7	#7
"d" bars	#3@12"	#3@12"	#3@12"	#3@12"	#4@18"	#4@15"	#4@15"	#4@12"	#4@11"	#4@9"	#5@12"	#5@12"	#5@10"	#5@9"	#5@9"	#5@8"	#6@10"	#6@9"	#7@12"	#7@11"	#7@10"	#7@	#7@	#7@6"

Maximum "MK"	4R	5R	6R	7R	8R	9R	10R	11R	12R	13R	14R	15R	16R	17R	18R	19R	20R	21R	22R	23R	24R	26R	28R	30R
a	6"	6"	6"	12"	12"	12"	12"	12"	12"	12"	15"	18"	21"	21"	21"	21"	24"	24"	27"	30"	33"	39"	39"	51"
t	14"	14"	14"	14"	14"	14"	14"	18"	18"	18"	18"	18"	18"	18"	18"	21"	21"	21"	21"	24"	24"	27"	30"	36"
L	2.5'	3.0'	3.5'	4.0	4.5'	5.0'	5.5'	6.0'	6.5'	6.75	7.25'	7.75	8.25'	8.75'	9.25'	9.75'	10.25'	10.5'	11.0'	11.5'	12.0'	13.0'	14.0'	15.0'
"a" bars	#3@12"	#3@12"	#4@12"	#4@9"	#4@5½"	#5@6"	#6@7"	#6@6"	#6@5"	#7@9"	#6@5½"	#7@6"	#8@6"	#8@6"	#9@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#11@6"	#11@5"	#11@4½"
"b" bars	#3@12"	#3@12"	#3@12"	#3@9"	#4@11"	#4@6"	#5@7"	#5@6"	#5@5"	#7@9"	#6@5½"	#7@6"	#7@6"	#8@6"	#9@6"	#9@6"	#10@6"	#10@6"	#10@5½"	#10@6"	#10@5¾"	#10@6"	#10@5"	#9@4½"
"c" bars								#4	#4	#4	#4	#4	#5	#5	#5	#6	#6	#6	#7	#7	#7	#7	#7	#7
"d" bars	#3@12"	#3@12"	#3@12"	#3@12"	#4@18"	#4@15"	#4@15"	#4@12"	#4@11"	#4@9"	#5@12"	#5@12"	#5@10"	#5@9"	#5@9"	#5@8"	#6@10"	#6@9"	#7@12"	#7@11"	#7@10"	#7@	#7@	#7@6"



⊛ See Schedule for spacing

VERTICAL REINFORCING STEEL ARRANGEMENT

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

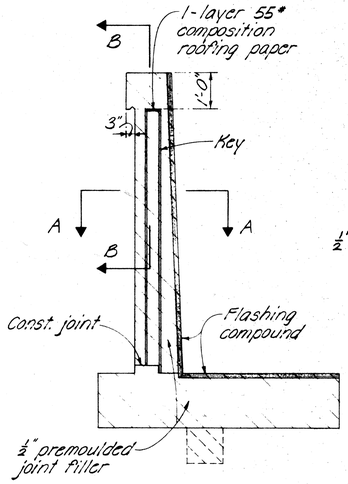
RETAINING WALL TYPE T-1

SCALE AS NOTED DATE: APRIL, 1967

SHEET No. 55 OF 6 SHEETS

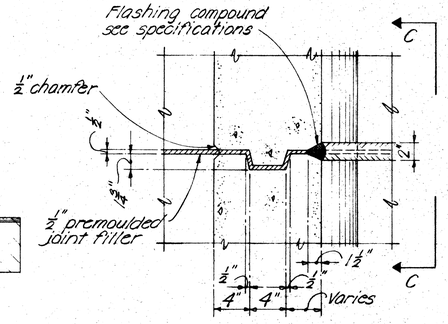
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	(HAWAII) UNIT-B	1967	45	45

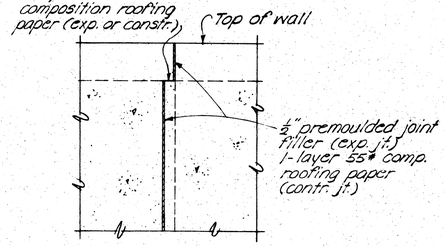


JOINT ELEVATION

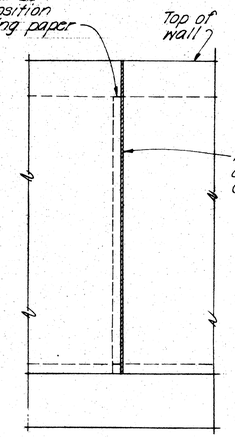
NOTE
Spacing of joints
Exp. = 90'-0" max.
Contr. = 30'-0" max.
For alternate contraction joint and control joint details - see Standard Bridge Details.



SECTION A-A



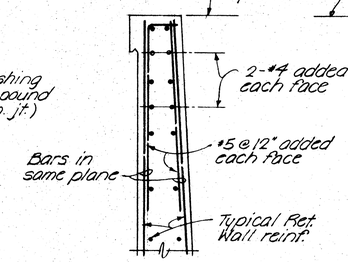
SECTION B-B



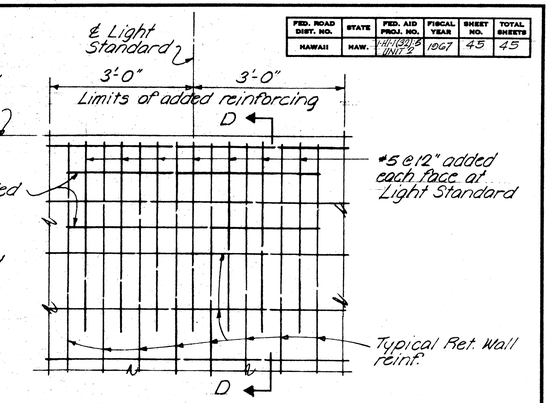
SECTION C-C

TYPICAL EXPANSION JOINT DETAILS No Scale

NOTE:
Limits of added reinf:
Height 0'-18' L = $\frac{h}{2}$
Height 19'-30' L = 6'-0"

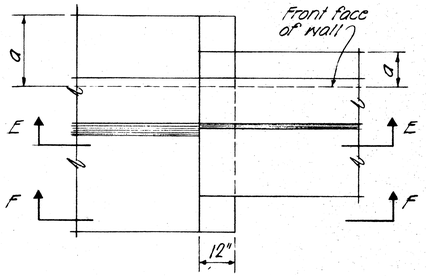


SECTION D-D

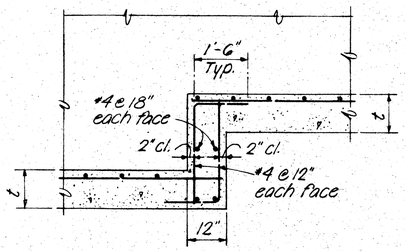


ELEVATION

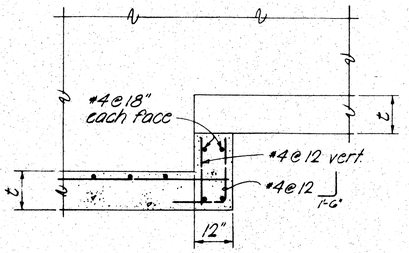
TYPICAL ADDED REINFORCEMENT AT LIGHT STANDARD BASE No Scale



PLAN



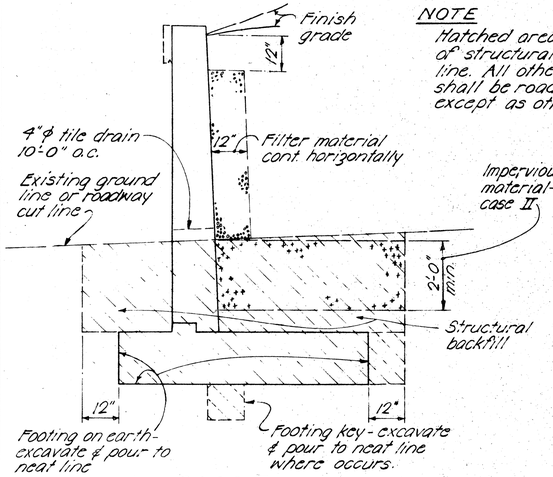
SECTION E-E



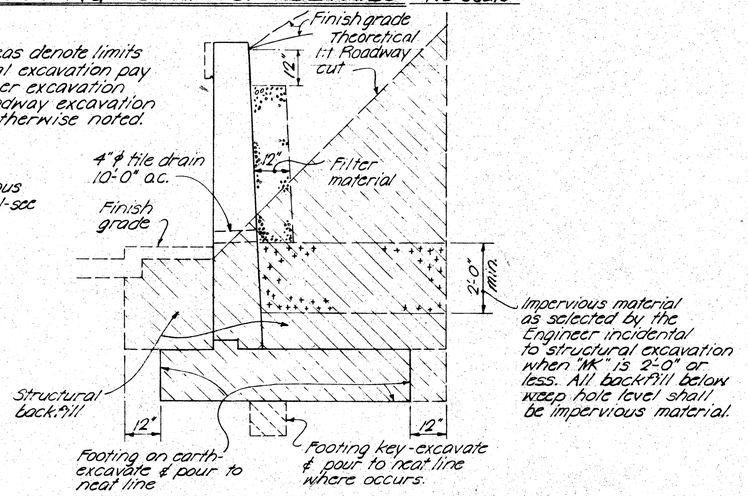
SECTION F-F

FOOTING STEP-UP DETAILS No Scale

NOTE
Hatched areas denote limits of structural excavation pay line. All other excavation shall be roadway excavation except as otherwise noted.



CASE I



CASE II

STRUCTURAL EXCAVATION & DRAINAGE DETAILS No Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RETAINING WALL TYPE T-1

SCALE AS NOTED DATE: APRIL, 1967
SHEET No. 56 OF 6 SHEETS

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