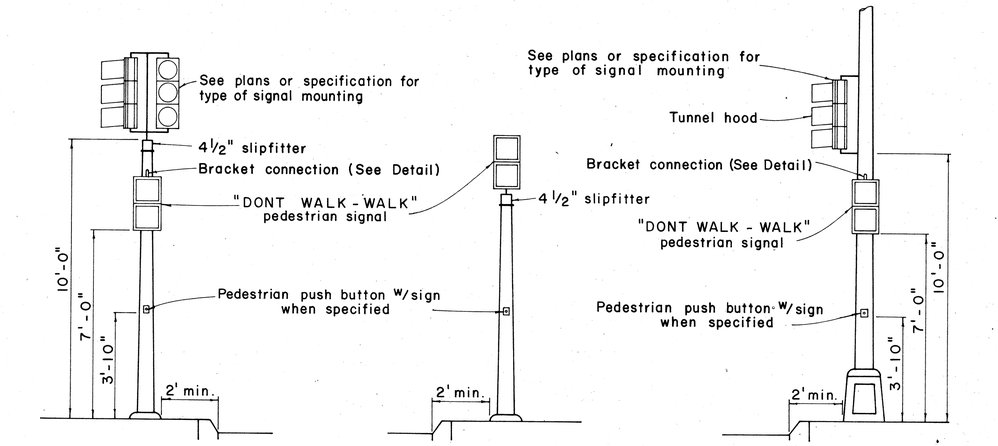
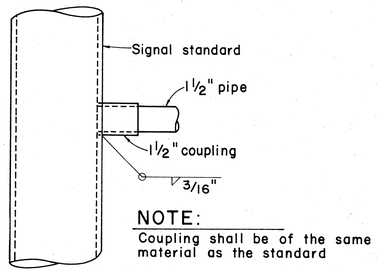
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	90A-01-72	1972	4	10

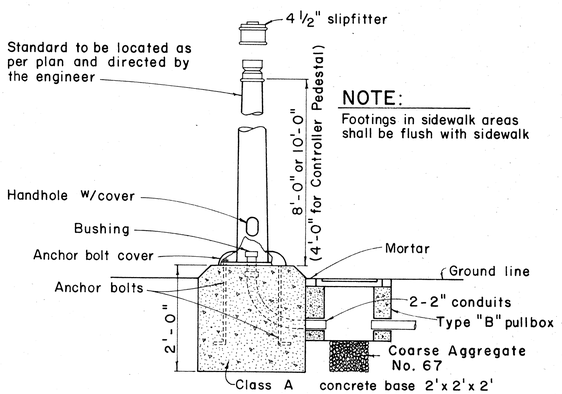


TYPICAL EQUIPMENT MOUNTINGS



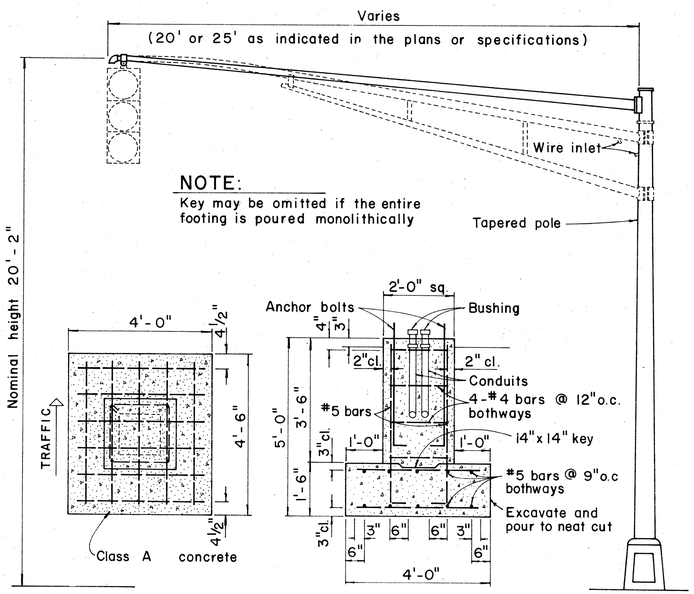
NOTE:
Coupling shall be of the same material as the standard

DETAIL OF BRACKET CONNECTION



NOTE:
Footings in sidewalk areas shall be flush with sidewalk

FOOTING FOR SIGNAL STANDARD OR CONTROLLER PEDESTAL



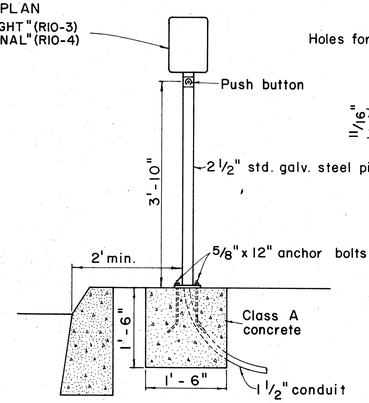
MAST ARM FOOTING AND STANDARD

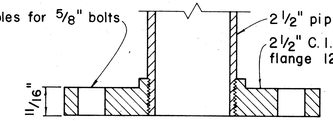
TRAFFIC SIGN AS SPECIFIED IN PLAN
1. "PUSH BUTTON FOR GREEN LIGHT"(R10-3)
2. "PUSH BUTTON FOR WALK SIGNAL"(R10-4)

R10-3
9" x 12"

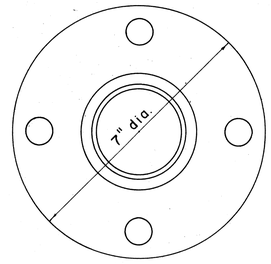
R10-4
9" x 12"

NOTE:
1. Conduits shall protrude 2"max. above finished surface of foundation.
2. Conduits shall slope away from pole foundation.
3. Post and base shall be painted with one coat of approved weather proof dark green enamel.



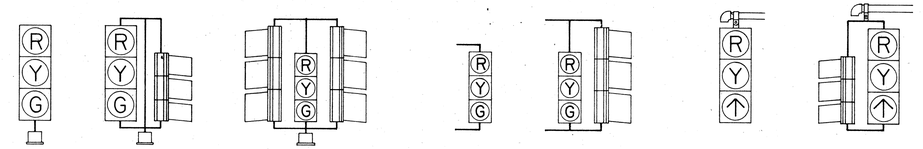


SECTION



BASE DETAIL

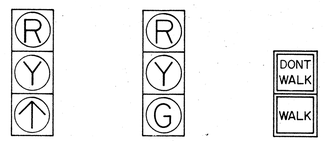
PEDESTRIAN PUSH BUTTON POST AND FOOTING



1 way (1 vert.) I
2 way (2 vert.) II
3 way (3 vert.) III
1 way (1 vert.) IV
2 way (2 vert.) V
1 way (1 vert.) VI
2 way (2 vert.) VII

SLIPFITTER MOUNTINGS — BRACKET MOUNTINGS — MASTARM MOUNTINGS

TYPICAL VEHICULAR AND PEDESTRIAN SIGNAL MOUNTINGS



1 - Vertical 3 - Section
1 - Vertical 3 - Section
1 - Dont Walk Walk

TYPICAL SIGNAL ARRANGEMENTS

NO.	REVISION	APPROVED BY	DATE
1	Revise code nos. for Pedestrian Push Button signs.	H.T.	3/23/72

APPROVAL RECOMMENDED:

Eiichi Tanaka — TRAFFIC ENGINEER — 12/29/69 DATE

Sheldon B. Sakai — ASSISTANT CHIEF, ENGINEERING — 12/30/69 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM

MISCELLANEOUS DETAILS

Project No. 90A-01-72

Not to Scale

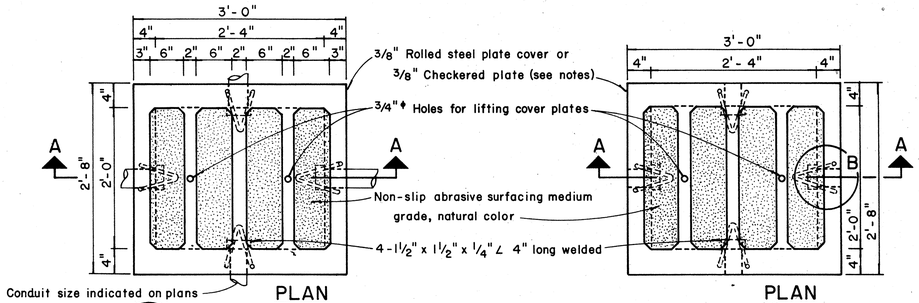
SHEET No. 1 OF 6 SHEETS DT 400

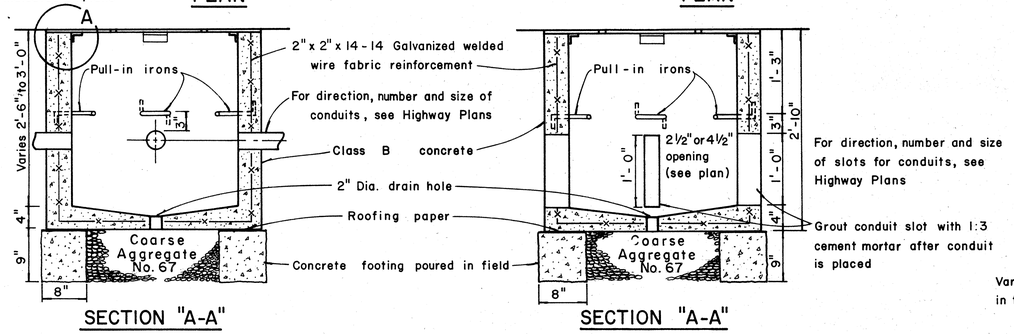
4

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

PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	90A-01-72	1972	5	10



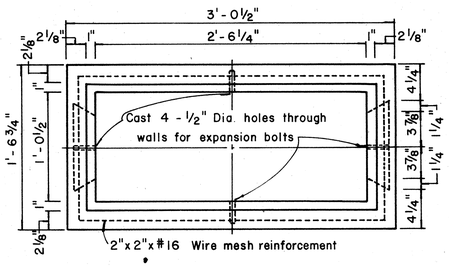


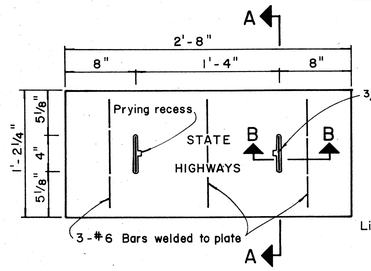
TYPE "A" PULLBOX CAST-IN-PLACE

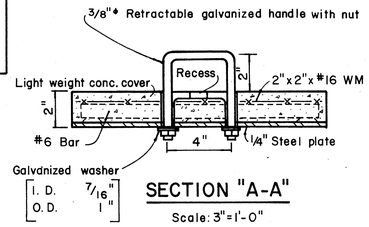
Scale: 1" = 1'-0"

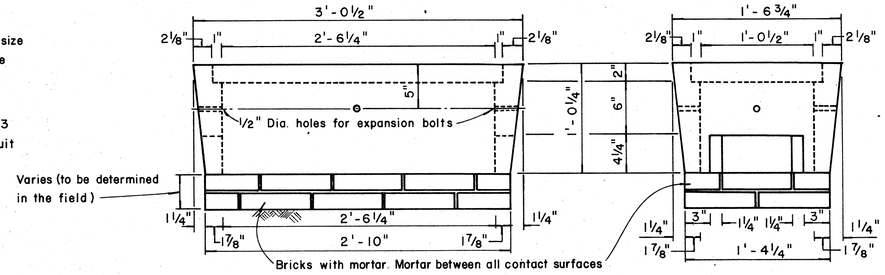
TYPE "A" PULLBOX PRECAST

Scale: 1" = 1'-0"



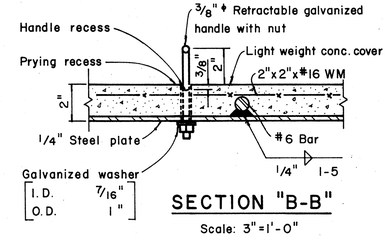


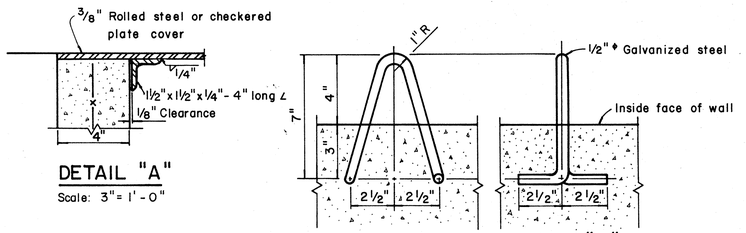




TYPE "C" PULLBOX

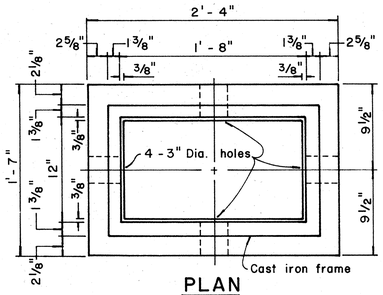
Scale: 1 1/2" = 1'-0"





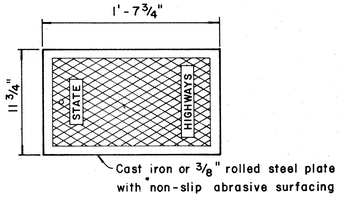
NOTES: (FOR TYPE "A" PULLBOX)

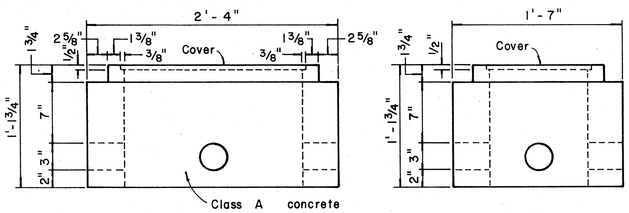
1. 3/8" Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
2. 3/8" Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are no pedestrians walking.
3. Pull irons shall be placed opposite each conduit slot.
4. Covers on all pullboxes located in sidewalk areas shall be set flush with the concrete sidewalk.
5. Each pullbox shall have a pair of pull irons opposite each other for lifting purposes.



NOTE:

Steel rim shall be welded to bottom of steel cover if necessary so that top of cover and frame are flush.





TYPE "B" PULLBOX

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

APPROVAL RECOMMENDED:

Eiichi Tanaka — TRAFFIC ENGINEER — 12/29/69 DATE

APPROVED:

[signature] — ASSISTANT CHIEF, ENGINEERING — 12-30-69 DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
PULLBOXES

Project No. 90A-01-72

Scale as noted

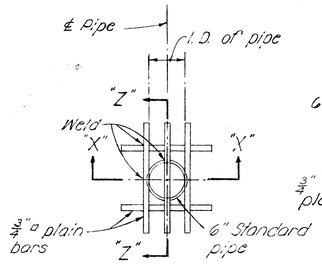
SHEET No. 2 OF 6 SHEETS DT 401

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

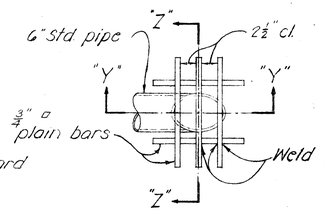
PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	D. H. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1972	6	10

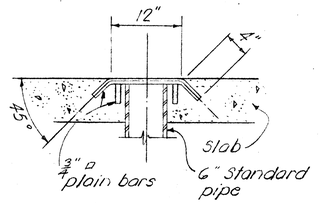
10A-01-72



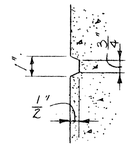
PLAN



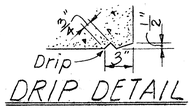
PLAN



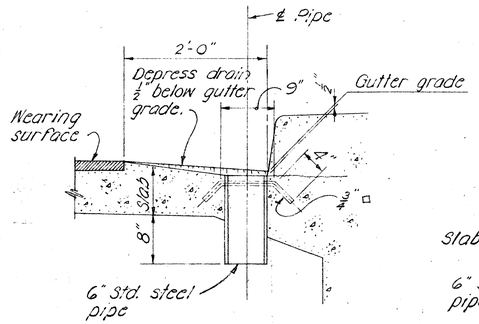
SECTION "Z-Z"



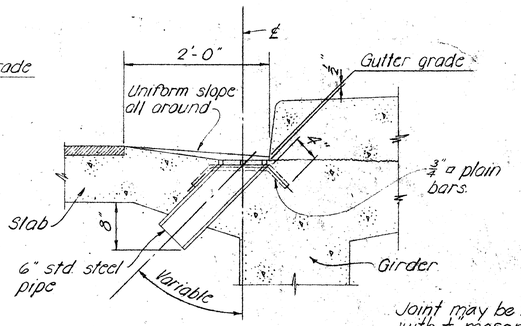
TYPICAL CONCRETE GROOVE DETAIL



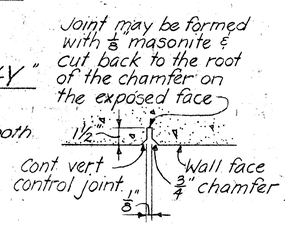
DRIP DETAIL



SECTION "X-X"

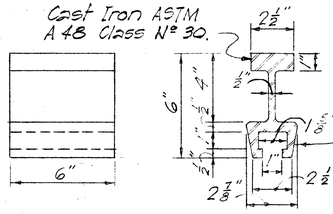


SECTION "Y-Y"

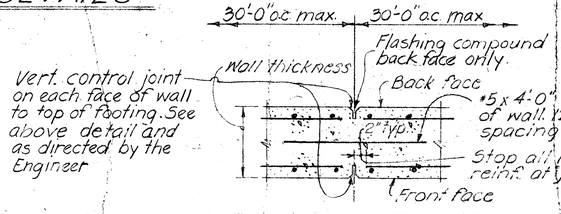


NOTE:
Metal drains shall be considered incidental to Class A Concrete in both concrete and steel bridges and will not be paid for separately.
Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.

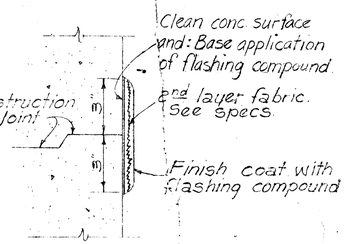
TYPICAL DRAINAGE DETAILS



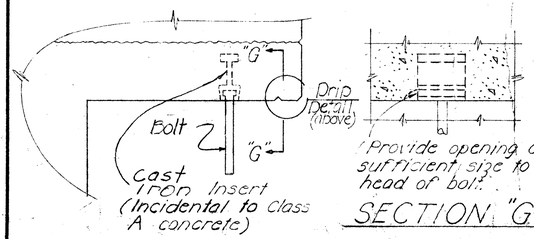
INSERT DETAIL



CONTROL JOINT DETAILS

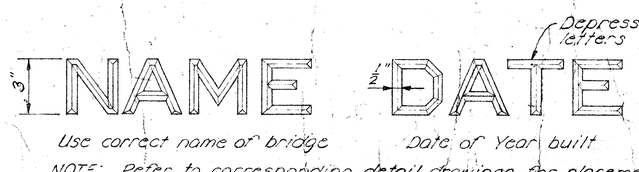


TYP. FLASHING COMPOUND WATERPROOFING DETAIL



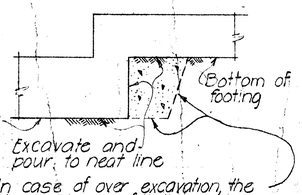
DETAIL of PIPE HANGERS & INSERTS

SECTION "G-G"



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

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST



Note! In case of over excavation, the contractor shall backfill this area with minimum class D concrete at his own expense.

TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

GENERAL NOTES

1 - All concrete shall be Class A unless otherwise noted.
2 - Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures 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 - 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 less than 1½ times the maximum size of the coarse aggregate.
5 - All dimensions relating to reinforcing are to centers of bars 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 - Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
8 - Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered ¾" x ¾".
9 - Concrete seats receiving steel plates, leadplates or neoprene pads shall be poured monolithically with supporting structures & top of concrete seats shall be finished with a steel trowel to a smooth level surface at the elevation shown on the plans.
10 - Elastomeric Pads: Bottom of bridge bearing pads shall be secured against displacement with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for separately.
11 - 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 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.
12 - Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.
13 - The contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation or driving of piles.
14 - Standard Detail Drawings refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.

APPROVAL RECOMMENDED:
Paul T. Yamashita — BRIDGE DESIGN ENGINEER — 1-23-70 DATE

APPROVED
Paul T. Yamashita — For ASSISTANT CHIEF, ENGINEERING — 1-28-70 DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
NOTES AND MISCELLANEOUS DETAILS

Project No. 10A-01-72

Date: October 1969

SHEET No. 3 OF 6 SHEETS DB-100

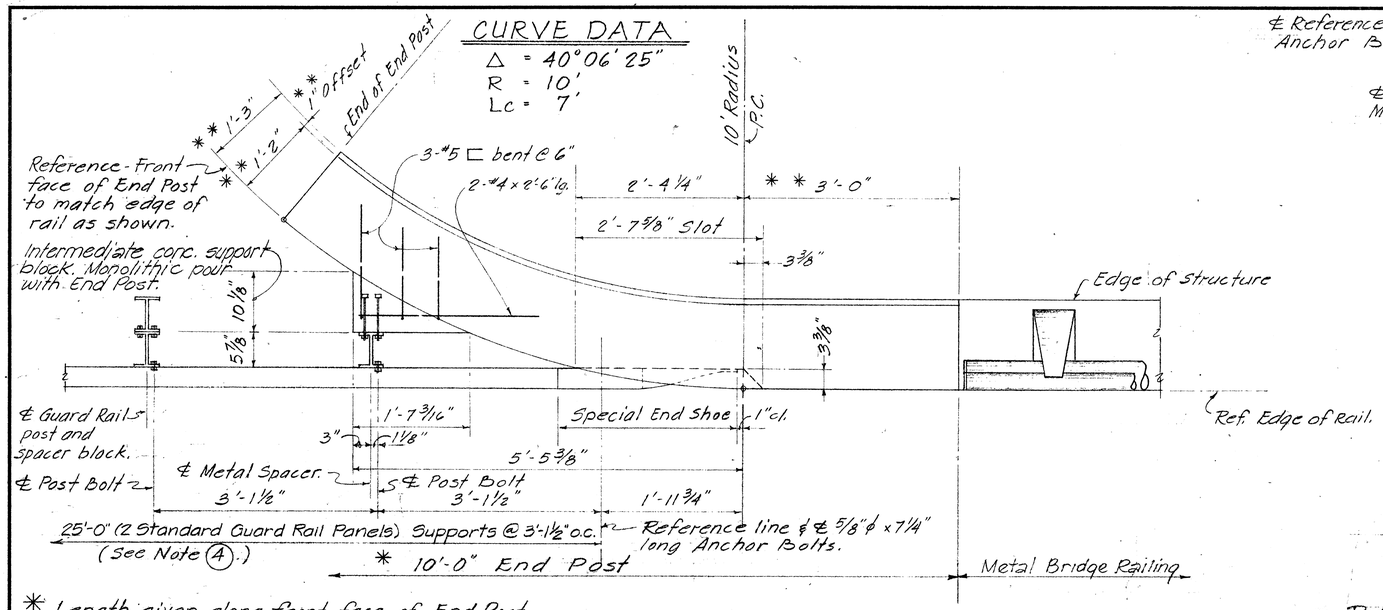
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	
	NOTE BOOK	
	No.	

PRINTED ON NO. 1000M CLEARPRINT

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	900A-01-72	1072	7	10

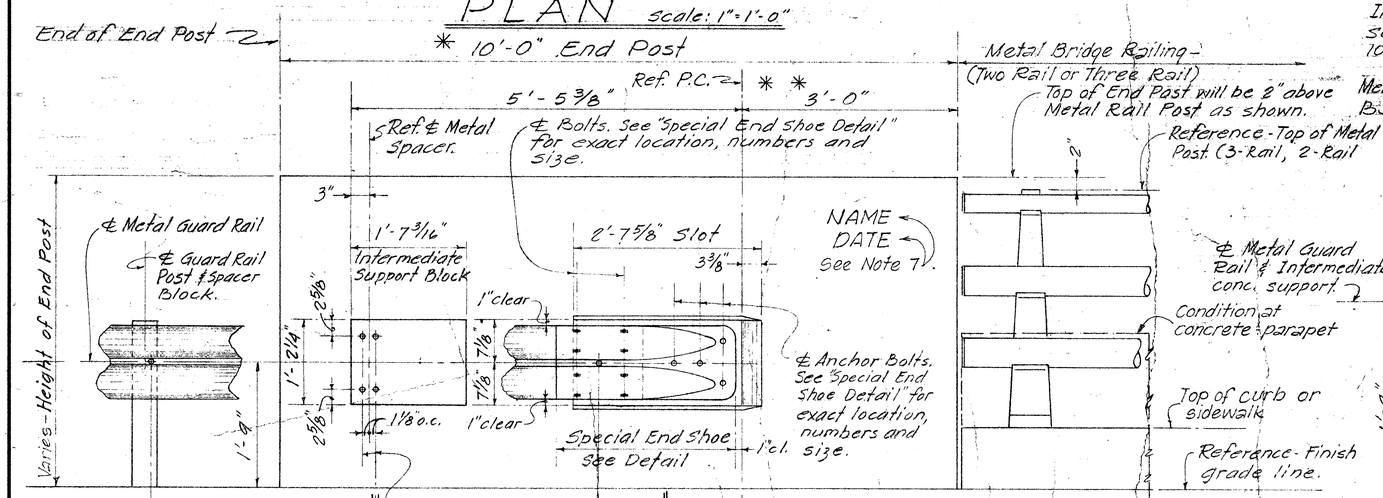
CURVE DATA

$\Delta = 40°06'25"$
$R = 10'$
$Lc = 7'$



* Length given along front face of End Post.

PLAN Scale: 1" = 1'-0"



ELEVATION

Scale: 1" = 1'-0"

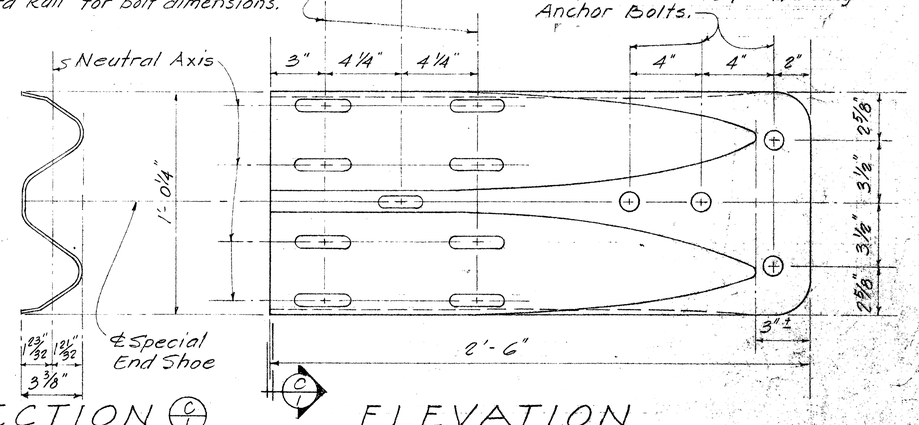
NOTES:

1. All Anchor Bolts shall be High Strength bolts conforming to the requirements of ASTM A-325.
2. All shoe assembly, including anchor bolts, nuts and washers, shall be galvanized.
3. Special End Shoe shall be Fabricated from 10 gage steel conforming to the requirements of AASHO 180.
4. First 25'-0" of guard rail adjoining "Special End Shoe" shall be galvanized steel.
5. Anchor Bolt length given under bolt head.
6. These details are applicable for Connections to Retaining walls also.
7. Place name of structure as shown. For location, see "Plan" on Contract Drawing. Date shown will be year structure is completed. Letter size and detail see standard Drawing DB-100.

℄ Reference line and ℄ 3/4" x 2 1/2" bolt slot for 5/8" ϕ x 7 1/4" long Anchor Bolt.

℄ 29/32" x 3" slots. See "Standard Details Metal Guard Rail" for bolt dimensions.

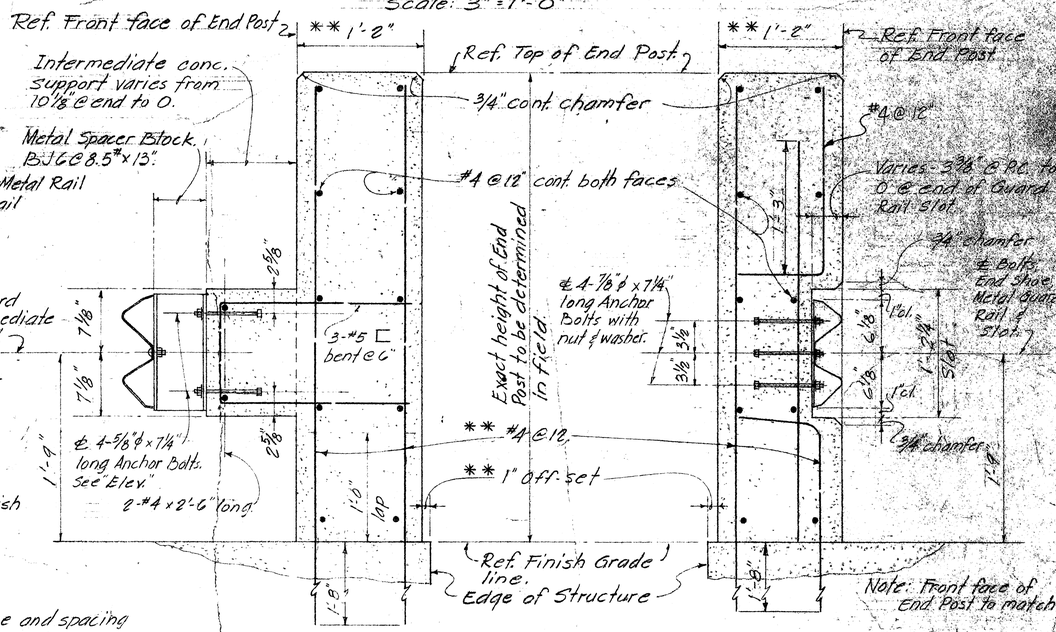
℄ 1" ϕ holes for 7/8" ϕ x 7 1/4" long Anchor Bolts.



SECTION C/1 ELEVATION

SPECIAL END SHOE DETAILS

Scale: 3" = 1'-0"



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

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

** Dimensions and Reinf. size and spacing to be as detailed except as otherwise noted on detail drawings.

NO.	REVISION	APPROVED BY	DATE
1	Note 4 revised; 3'-1 1/2" post spacing extended to 25'-0". Note 7 added.	H.T.	2-27-72

APPROVAL RECOMMENDED: Paul T. Yamashita — BRIDGE DESIGN ENGINEER — 1-23-70 DATE

APPROVED: Paul T. Yamashita — for ASSISTANT CHIEF, ENGINEERING — 1-24-70 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS METAL GUARD RAIL CONNECTION AT VERTICAL FACE TYPE END POST

Project No: 900A-01-72

Scale: As shown

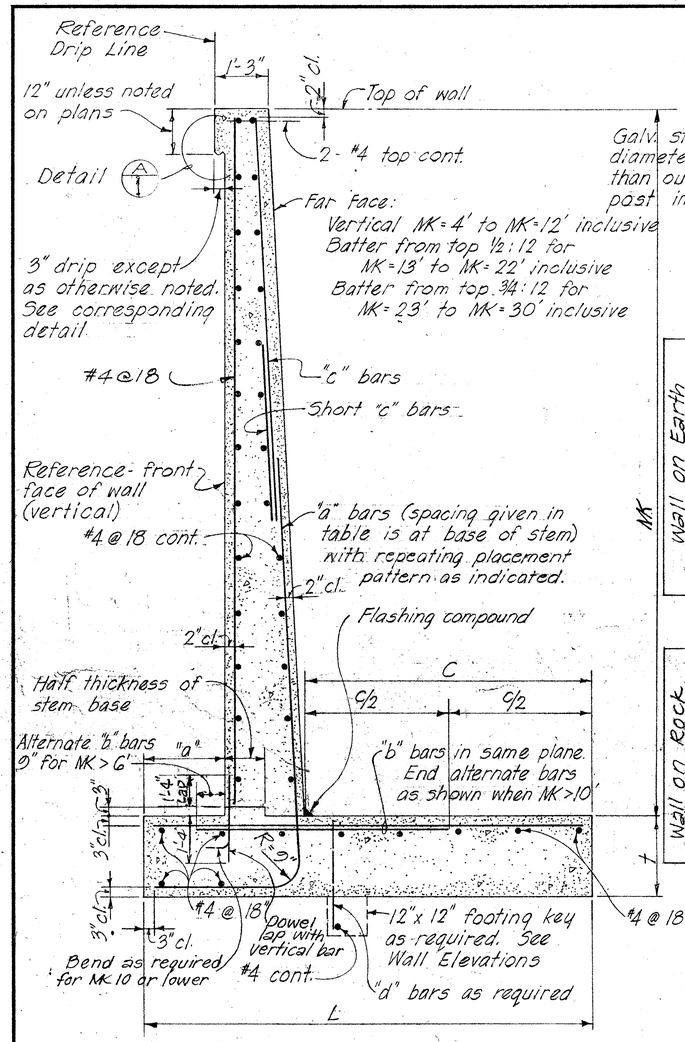
SHEET No. 4 OF 6 SHEETS DB-204

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

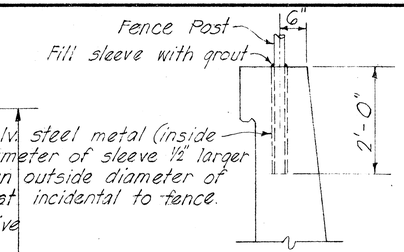
K&E CRYSTALENE LA 2020 TRACING PAPER

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1972	8	10

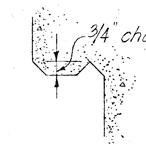
00A-01-72



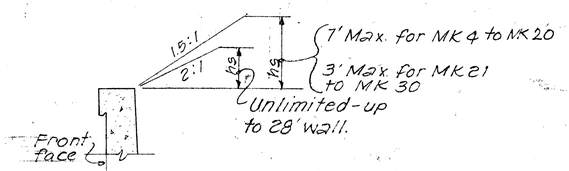
WALL SECTION



CHAIN LINK FENCE POST DETAIL



DETAIL A/1



DESIGN LIMITS OF WALL SURCHARGE AND SLOPES

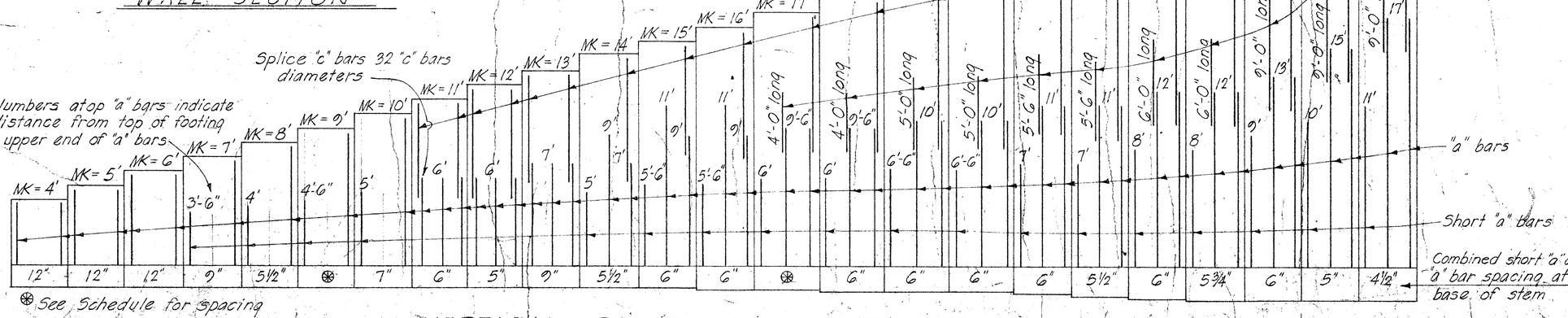
SCHEDULE OF DIMENSIONS AND REINFORCING STEEL

Wall on Earth

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"

Wall on Rock

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"



VERTICAL REINFORCING STEEL ARRANGEMENT

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED
Paul T. Yamashita — BRIDGE DESIGN ENGINEER — 1-23-70 DATE

APPROVED
For Paul T. Yamashita — ASSISTANT CHIEF, ENGINEERING — 1-28-70 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RETAINING WALL TYPE, T-1

Project No. 00A-01-72

SCALE: AS NOTED

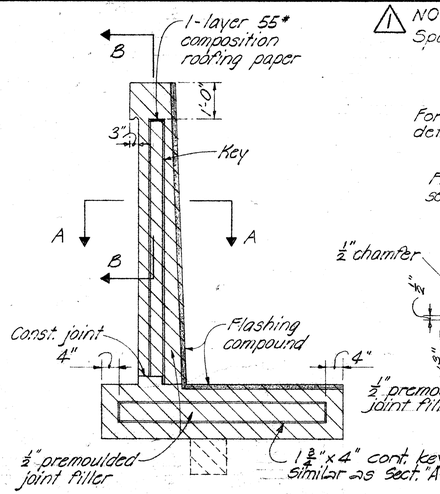
SHEET No. 5 OF 6 SHEETS DB-207

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	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	'	1972	7)	10

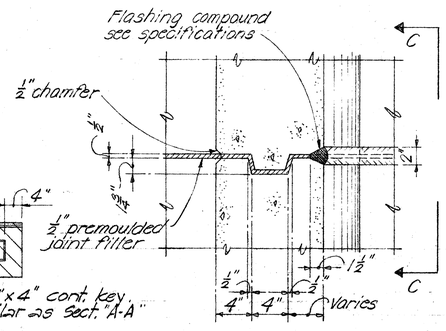
900A-01-72



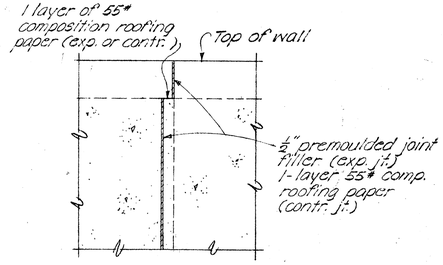
JOINT ELEVATION

NOTE:
Spacing of joints
Expansion = 96'-0" max.
Contraction = 32'-0" max.

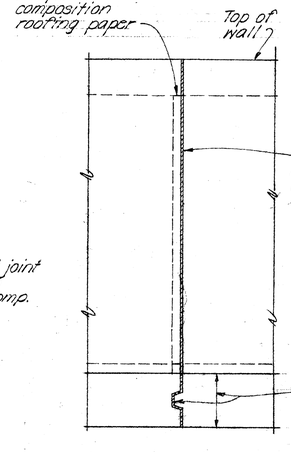
For alternate contraction joint and control joint details - See Standard Details: Sht #DB-100



SECTION A-A

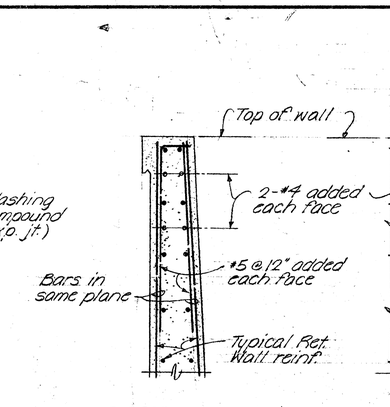


SECTION B-B



SECTION C-C

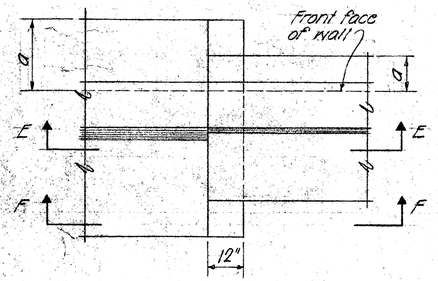
TYPICAL EXPANSION JOINT DETAILS No Scale



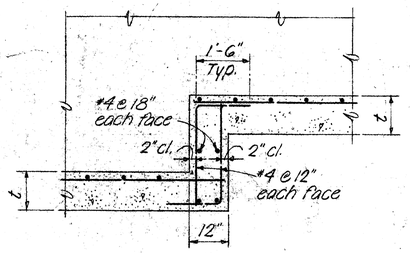
SECTION D-D

ELEVATION

TYPICAL ADDED REINFORCEMENT AT LIGHT STANDARD BASE No Scale

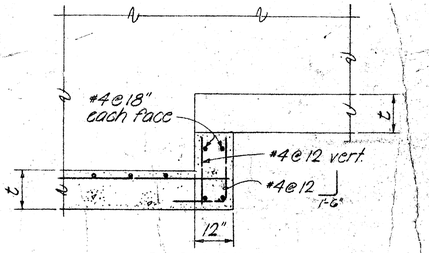


PLAN

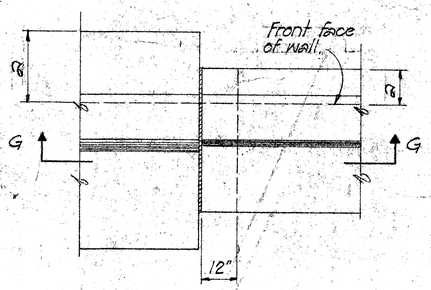


SECTION E-E

AT CONTINUOUS FOOTING

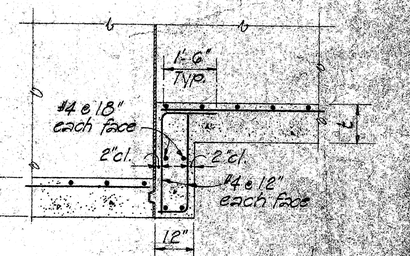


SECTION F-F



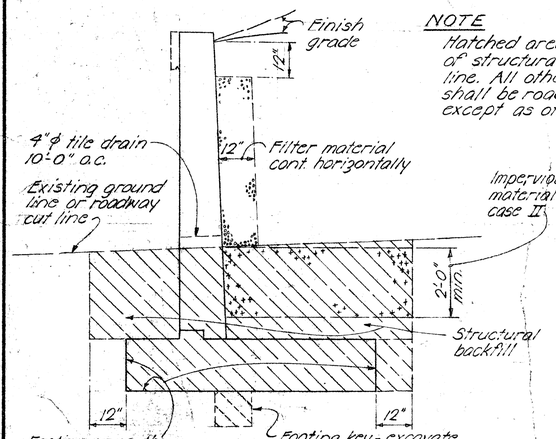
PLAN

AT EXPANSION JOINT



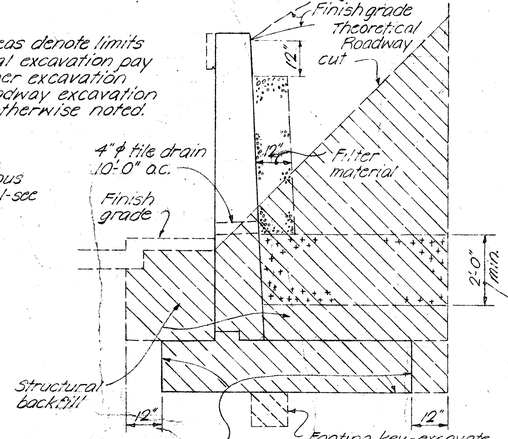
SECTION G-G

TYPICAL FOOTING STEP-UP DETAILS No Scale



CASE I

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



CASE II

Impervious material as selected by the Engineer incidental to structural excavation. The subgrade upon which filter material is to be placed shall be made as impervious as possible by pneumatic tamping or other approved methods.

Impervious material shall be incidental to roadway excavation or imported borrow when used in embankment area.

STRUCTURAL EXCAVATION & DRAINAGE DETAILS No Scale

APPROVAL RECOMMENDED:
Paul T. Yamashita — BRIDGE DESIGN ENGINEER — 1-23-70 DATE

APPROVED
Paul T. Yamashita — For ASSISTANT CHIEF, ENGINEERING — 1-24-70 DATE

NO.	REVISION	APPROVED BY	DATE
1	Change note spacing of joints.	H.F.	9-4-72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RETAINING WALL TYPE T-1

Project No. 900A-01-72

SCALE AS NOTED

SHEET No. 6 OF 6 SHEETS DB-207-2

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NO. | REVISION

PRINTED ON NO. 1000H CLEARPRINT