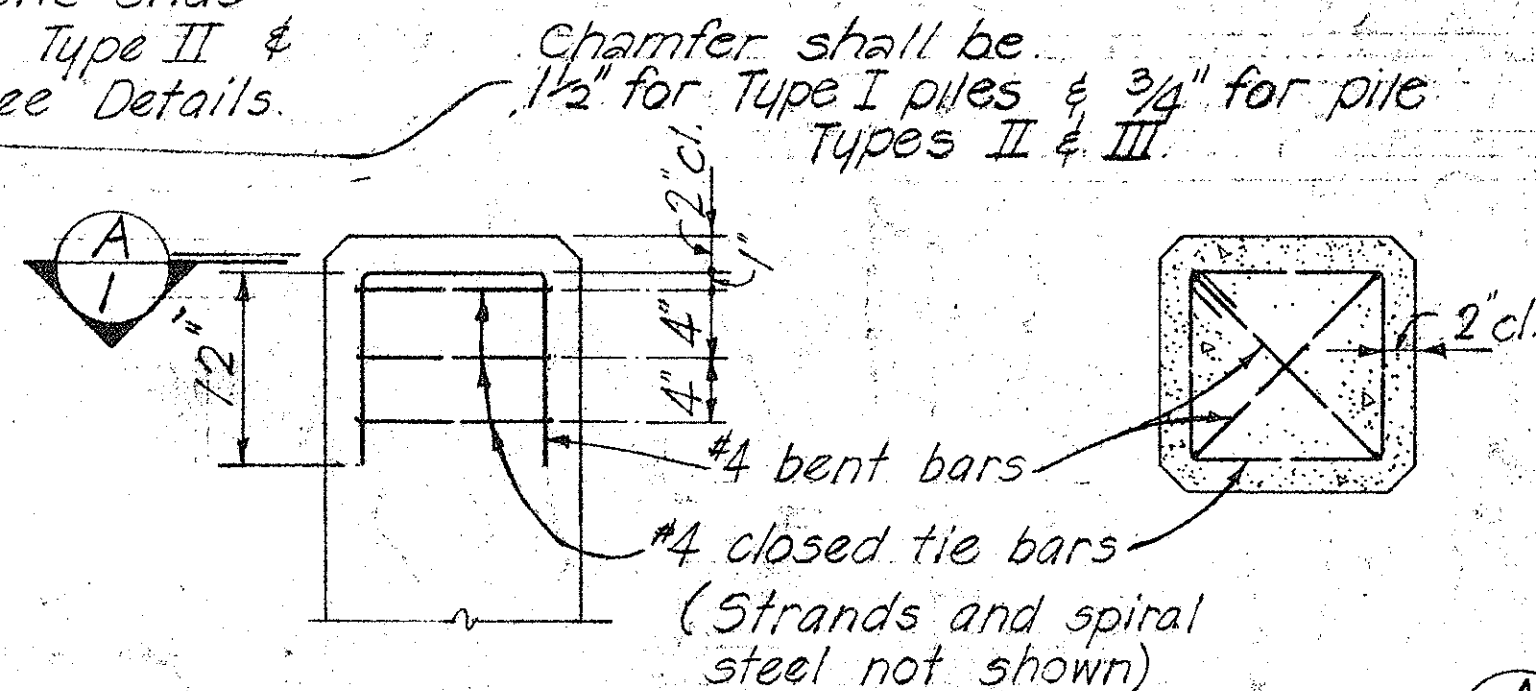
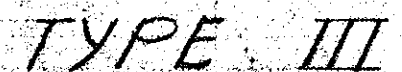




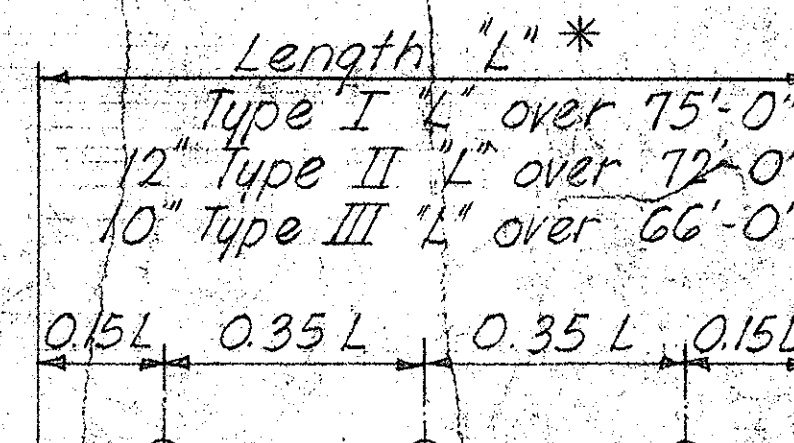
2" cl. cover (typ) to spiral

11-7/16" ϕ 7 wire stress relieved strand spaced equally. ASTM A 416

TYPE I



TYPICAL PILE DETAIL



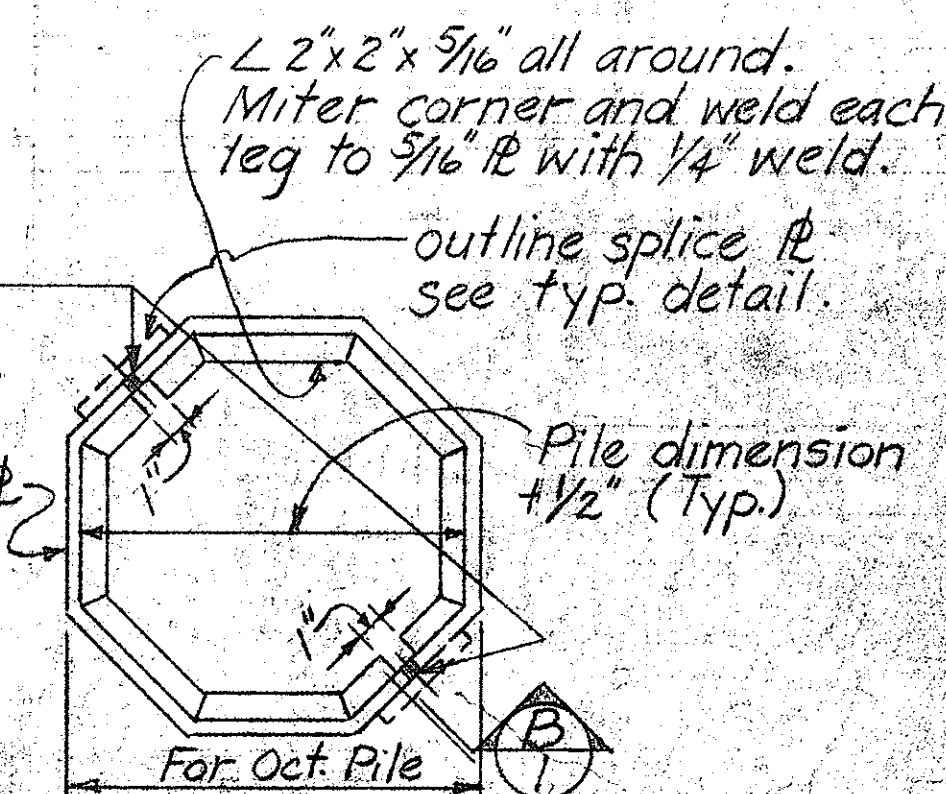
1 POINT PICK-UP 2 POINT PICK-UP 3 POINT PICK-UP

NOTE:

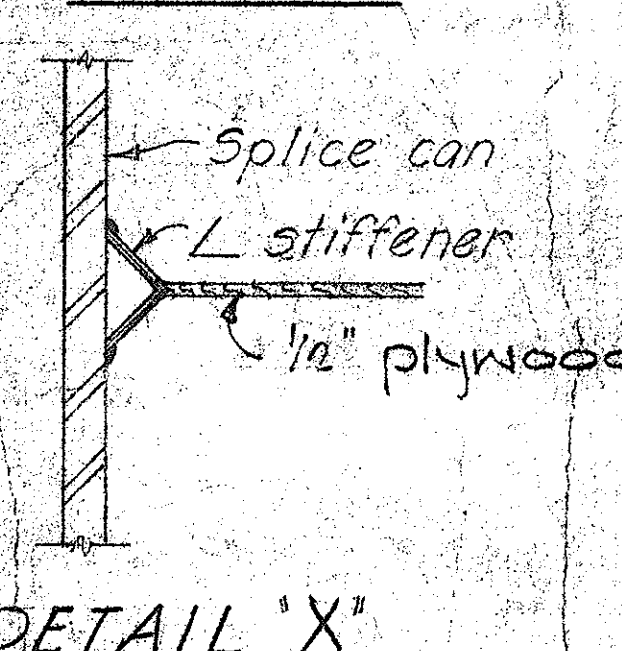
Technical drawing of a pile splice. The drawing shows a vertical pile with a splice. Key dimensions and labels include:

- Pile Diameter**: Indicated at the top of the pile.
- Splice Can**: A vertical dimension line on the left side of the splice area.
- 5" weld**: A dimension line indicating the weld size.
- all around**: Text indicating the weld is applied all around the splice.
- 2.5" x 5 1/4" x 3/8" Plate - Centered on seam top & bot.**: A label for the splice plate, with arrows pointing to its top and bottom edges.
- Full weld all seams. See corres. sections below**: A note at the bottom of the drawing.
- outline sp. see typ.**: A note on the right side of the drawing.
- Pile d. 1 1/2"**: A note on the right side of the drawing.

ΤΥΡΡΗ Π Ε ΙΙΙ



TYPE I



SECTION (B)

NOTE: All welding shall conform to the Specifications for "Welded Highway and Railway Bridges" of the American Welding Society.

APPROVED Paul T. Krametschik 1-28-70
~~FOR~~ ASSISTANT CHIEF, ENGINEERING DATE

NOTE

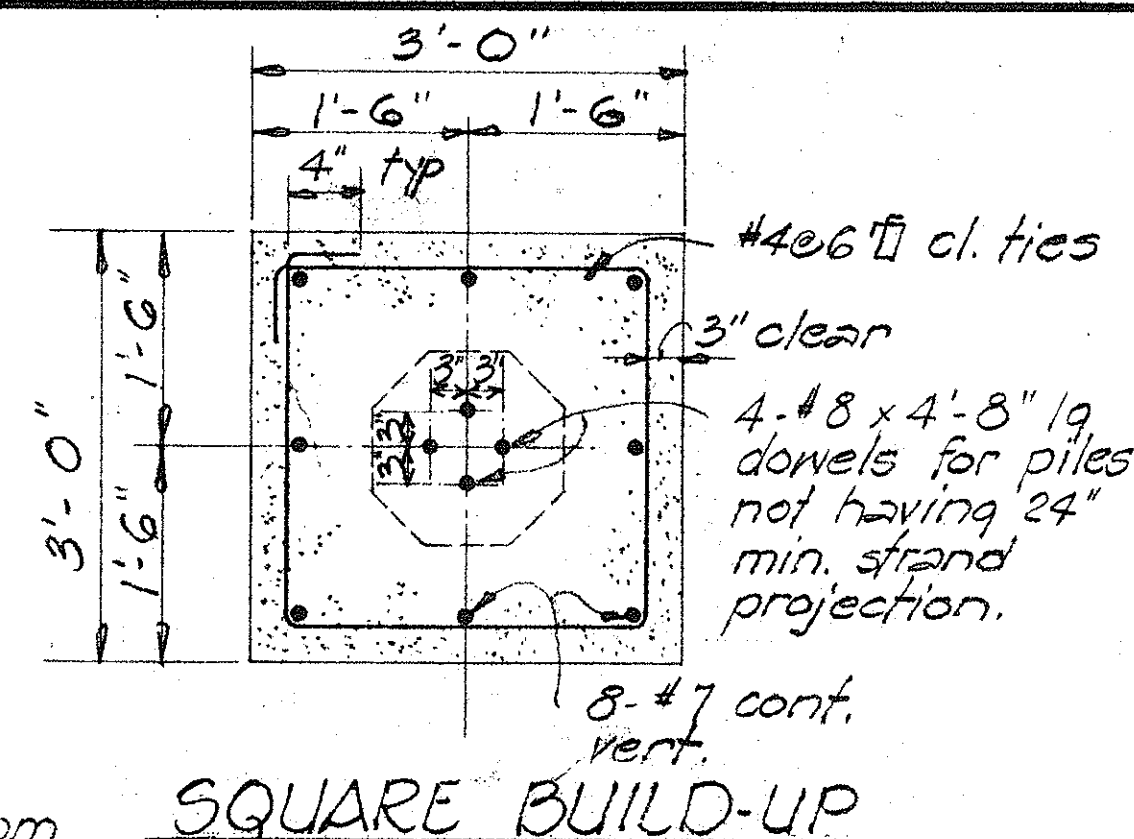
1. Splice detail shown above shall not be used except for pile length in excess of 100'-0" long.
2. Structural steel for splice can shall be ASTM A36.

SHEET No. 5- OF 5 SHEETS DB-300-

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(105):14	1973	13	16

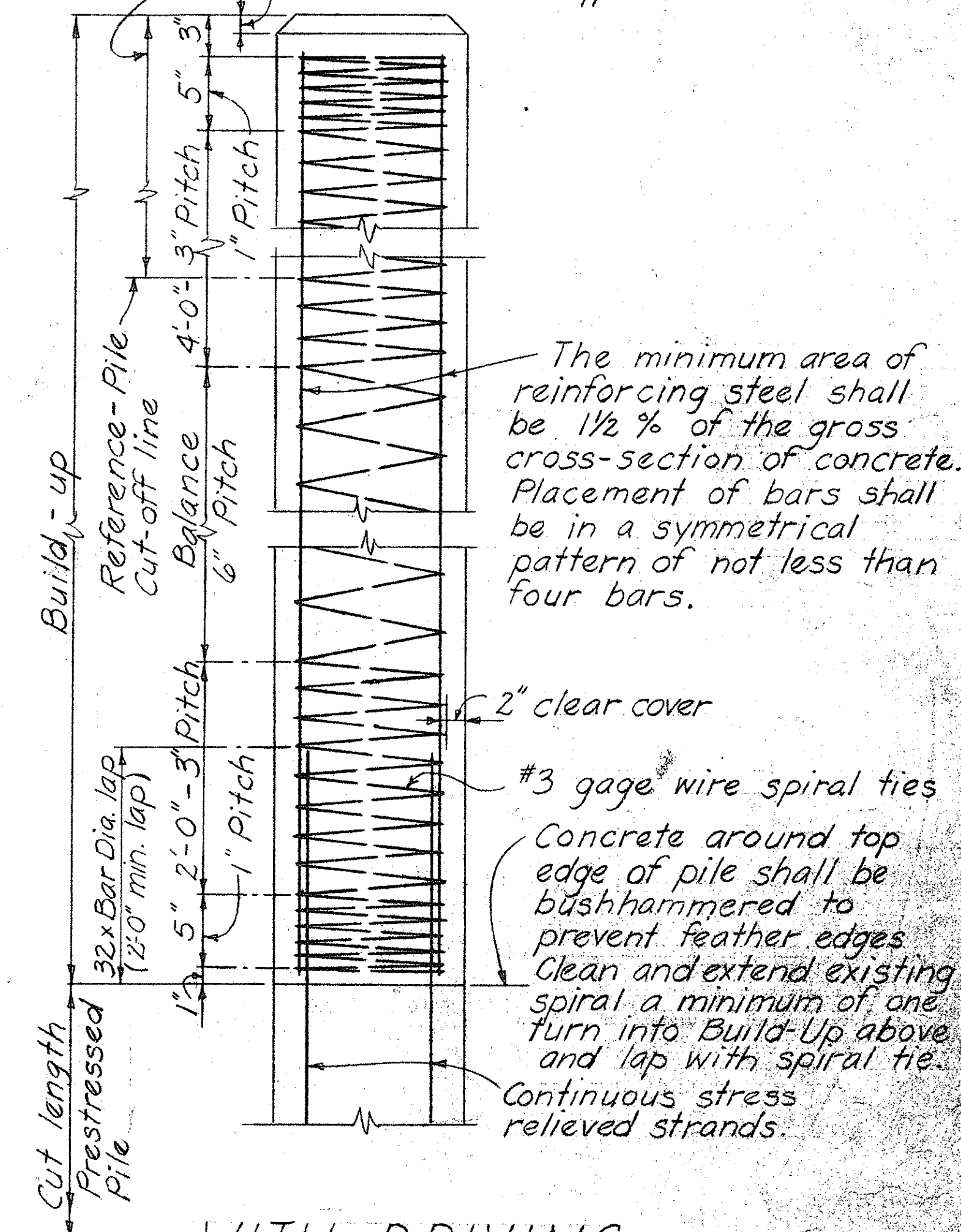
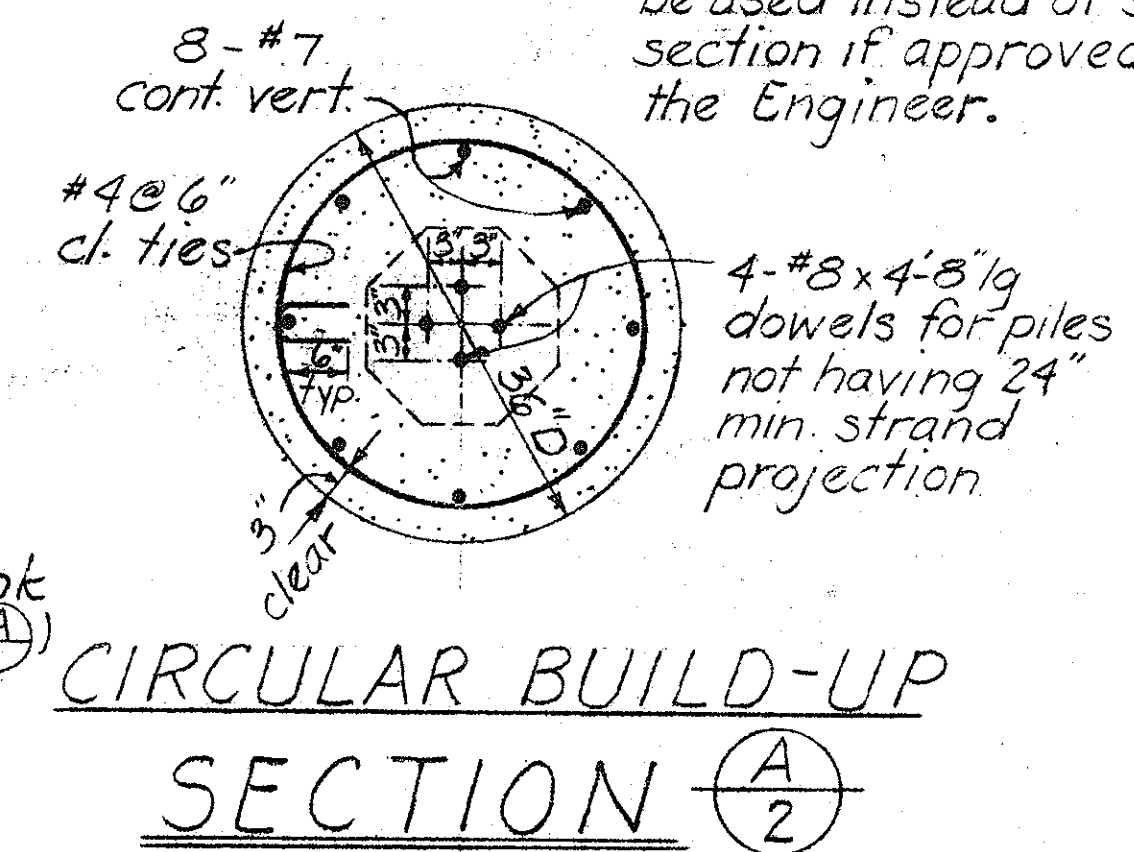
2'-6" min. unless otherwise directed by the Engineer.
Remove concrete after driving, leaving reinf. exposed

Chamfer - See Typical Pile Detail.



Note:

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



TYPICAL PILE BUILD-UP DETAIL

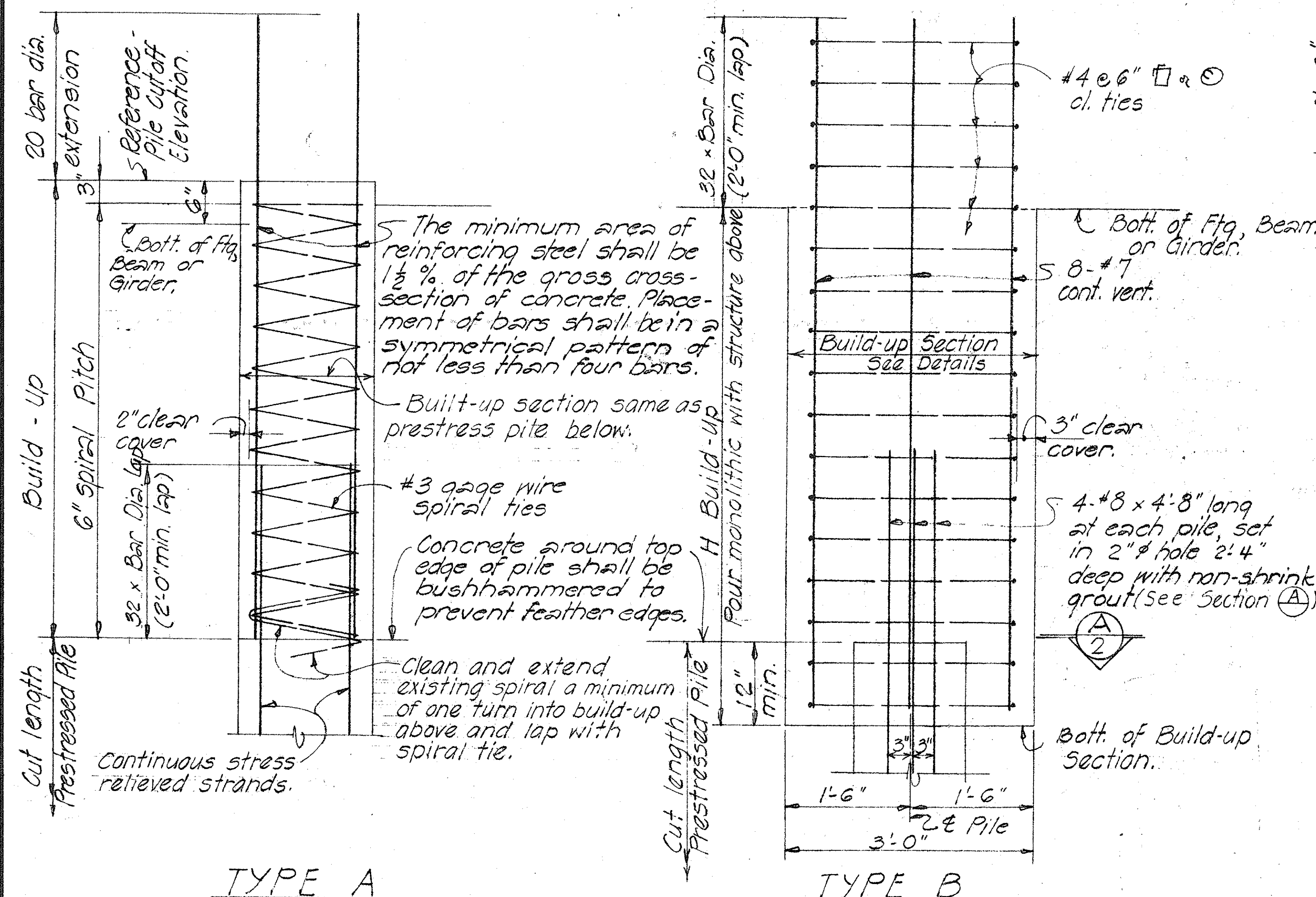
APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER 1-23-70
DATE

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
PRESTRESSED CONCRETE PILES
INTERSTATE ROUTE H-1 PEDESTRIAN OVERPASS AT MAKALAPA F.A.I. PROJ. NO. I-H-1(105):14
Date: Oct. 1968

SHEET No. 2 OF 5 SHEETS DB-300-2



Notes:

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

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

WITHOUT DRIVING TYPICAL PILE BUILD-UP DETAILS

GENERAL NOTES

- Work of cutting off prestressed conc. piles or concrete build-ups shall be performed in such a manner as to avoid spalling or damaging the pile below cut-off. In case of such damage, the pile shall be replaced or repaired by the Contractor at his expense as directed by the Engineer.
- Portion of pile embedded into footing shall be of sound concrete. Damaged portions shall be removed and pile cut-off elevation lowered as required by the Engineer.

DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	
NOTE BOOK	

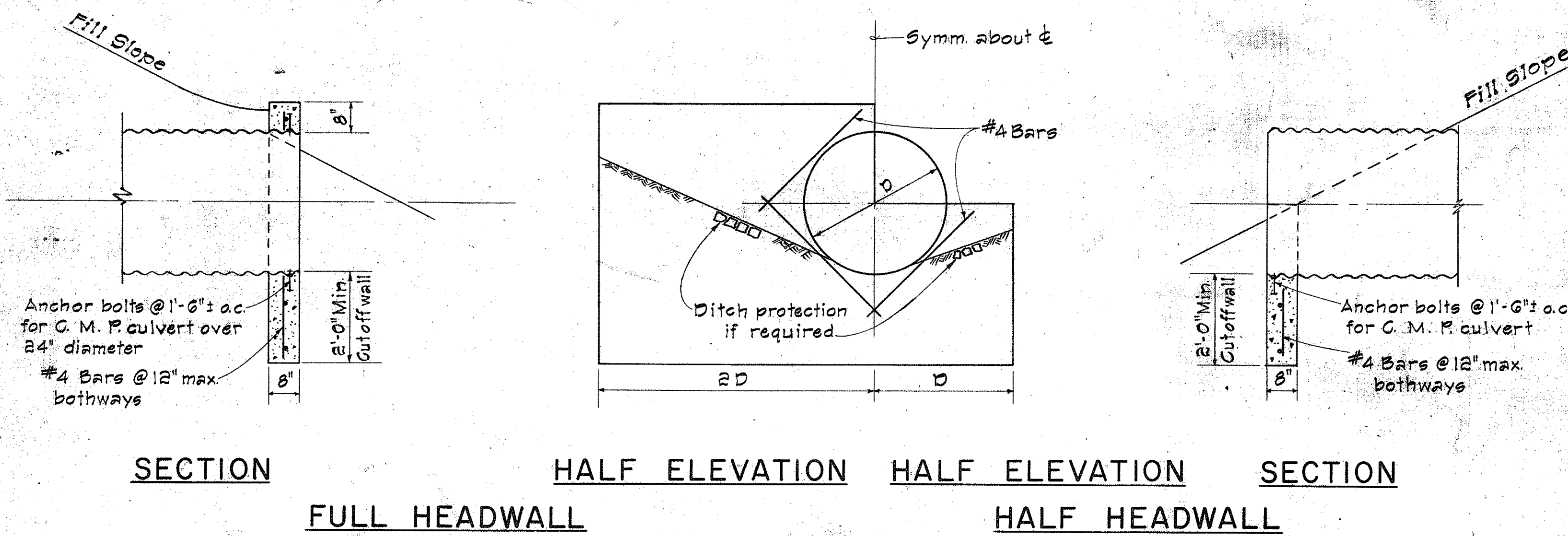
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CH-102-14	1973	14	16

GENERAL NOTES

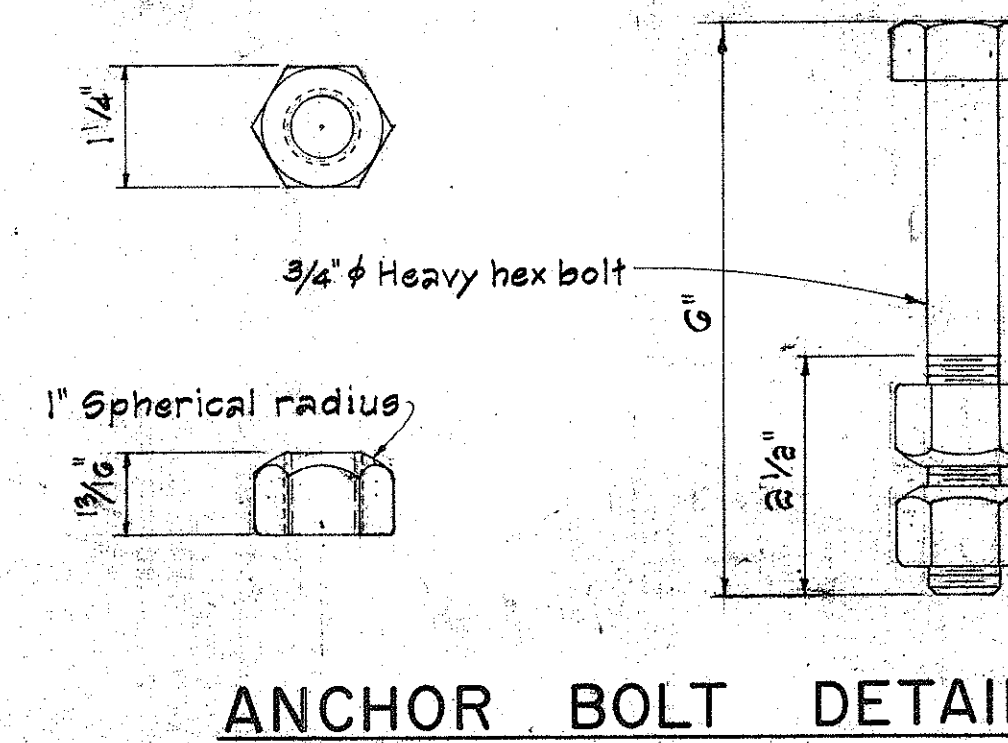
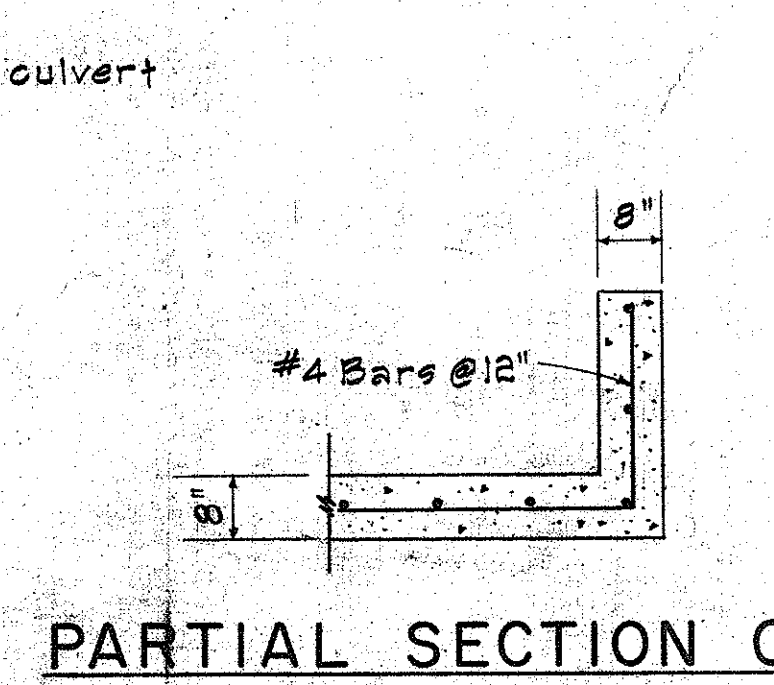
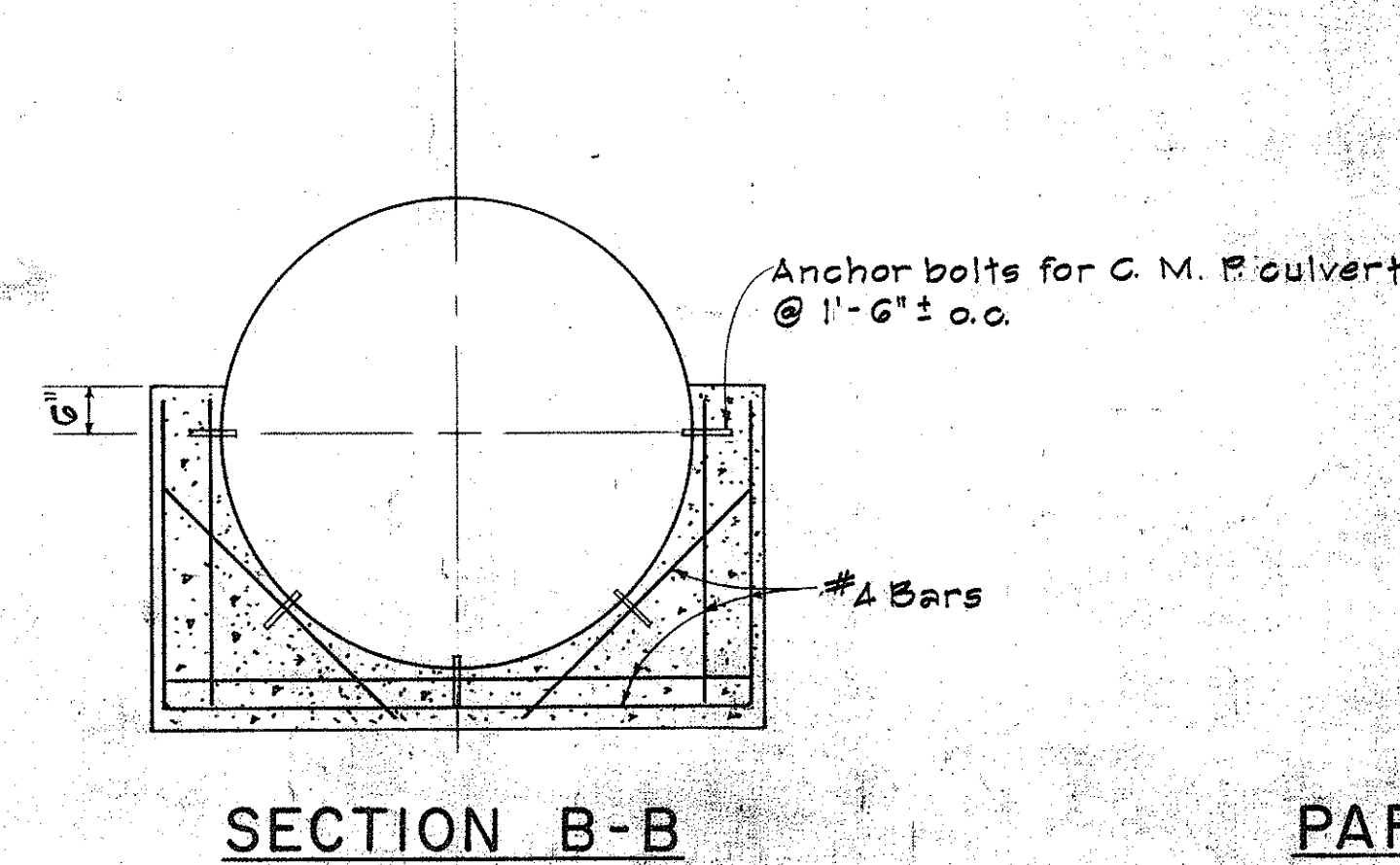
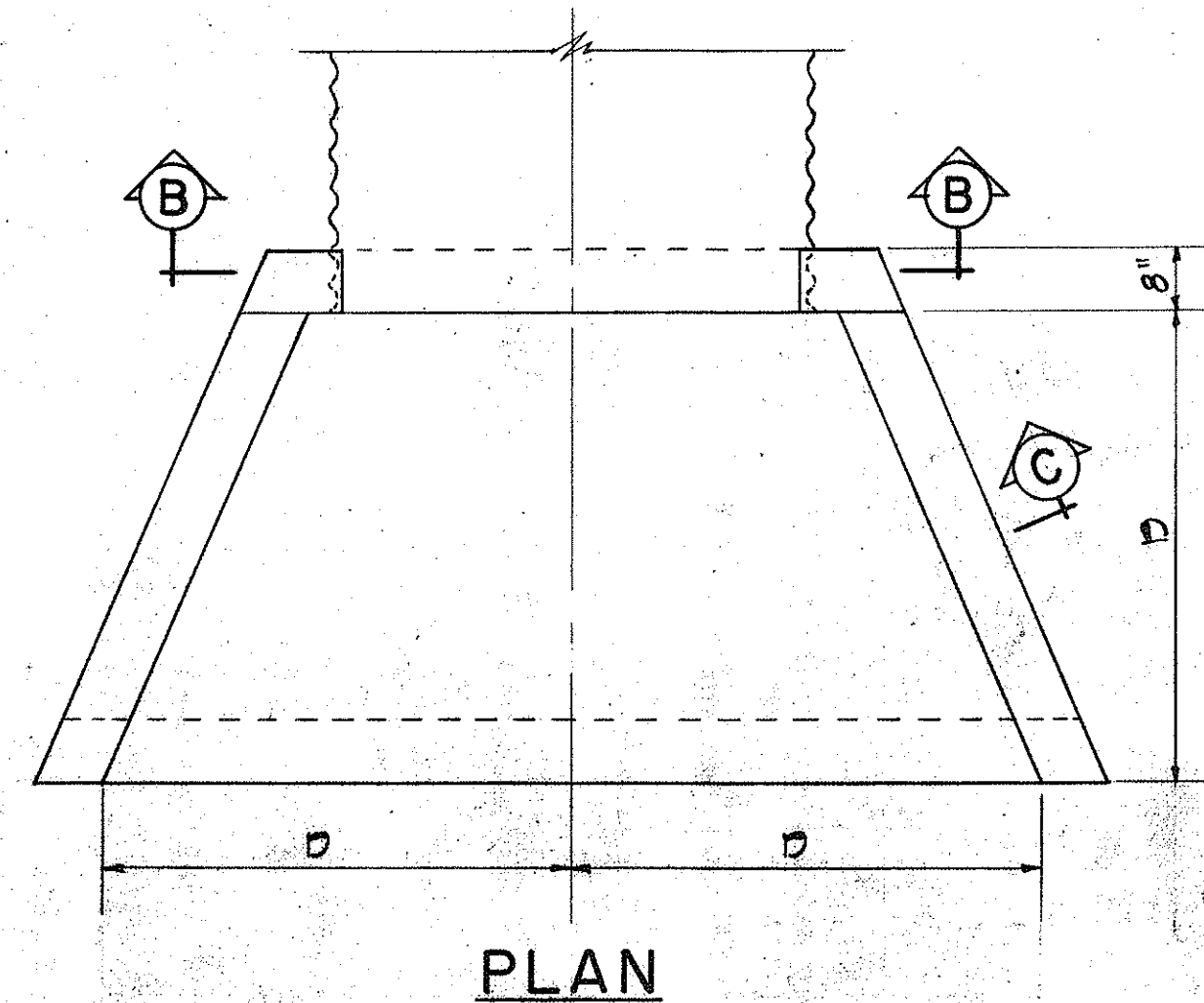
- Concrete: All concrete shall be Class A.
- Cutoff Wall: The depth of wall shown on the plan may be reduced if rock is encountered at a higher elevation.
- Multiple Pipe Installations: To permit careful placing and tamping of back fill material, clear spacing for multiple pipe installations shall be not less than one-half the diameter of the larger pipe between sides of adjacent pipes, but not required to exceed three feet, and in no case less than one foot.
- Anchor Bolts: Anchor Bolts are not required for concrete pipe.

Culvert Dia. (inches)	Full Headwall		Half Headwall	
	Concrete (Cu. Yd.)	Reinf. Steel (Lbs)	Concrete (Cu. Yd.)	Reinf. Steel (Lbs)
18	0.57	45	0.18	15
24	0.85	65	0.26	20
30	1.15	85	0.34	25
36	1.50	115	0.43	35

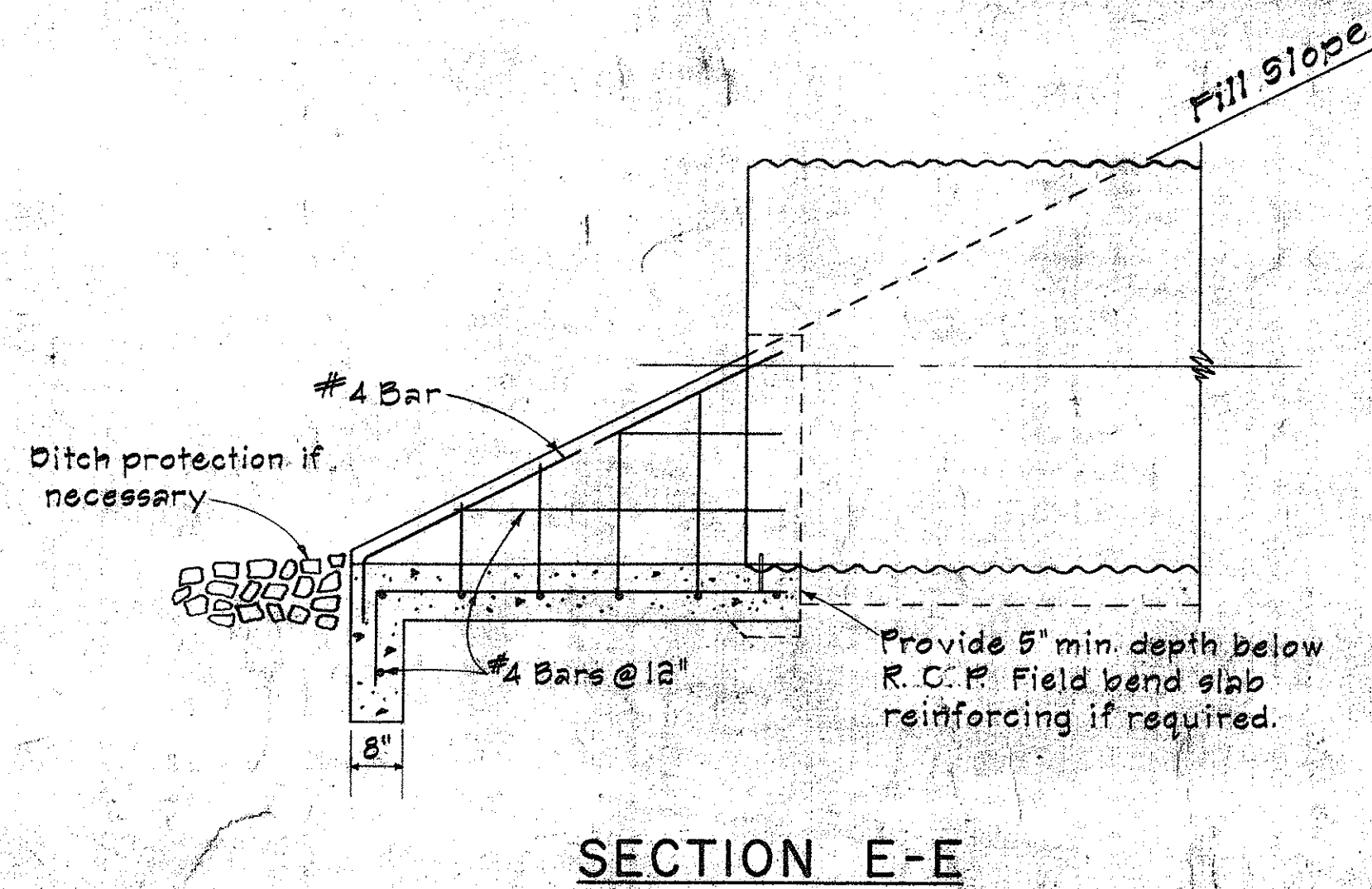
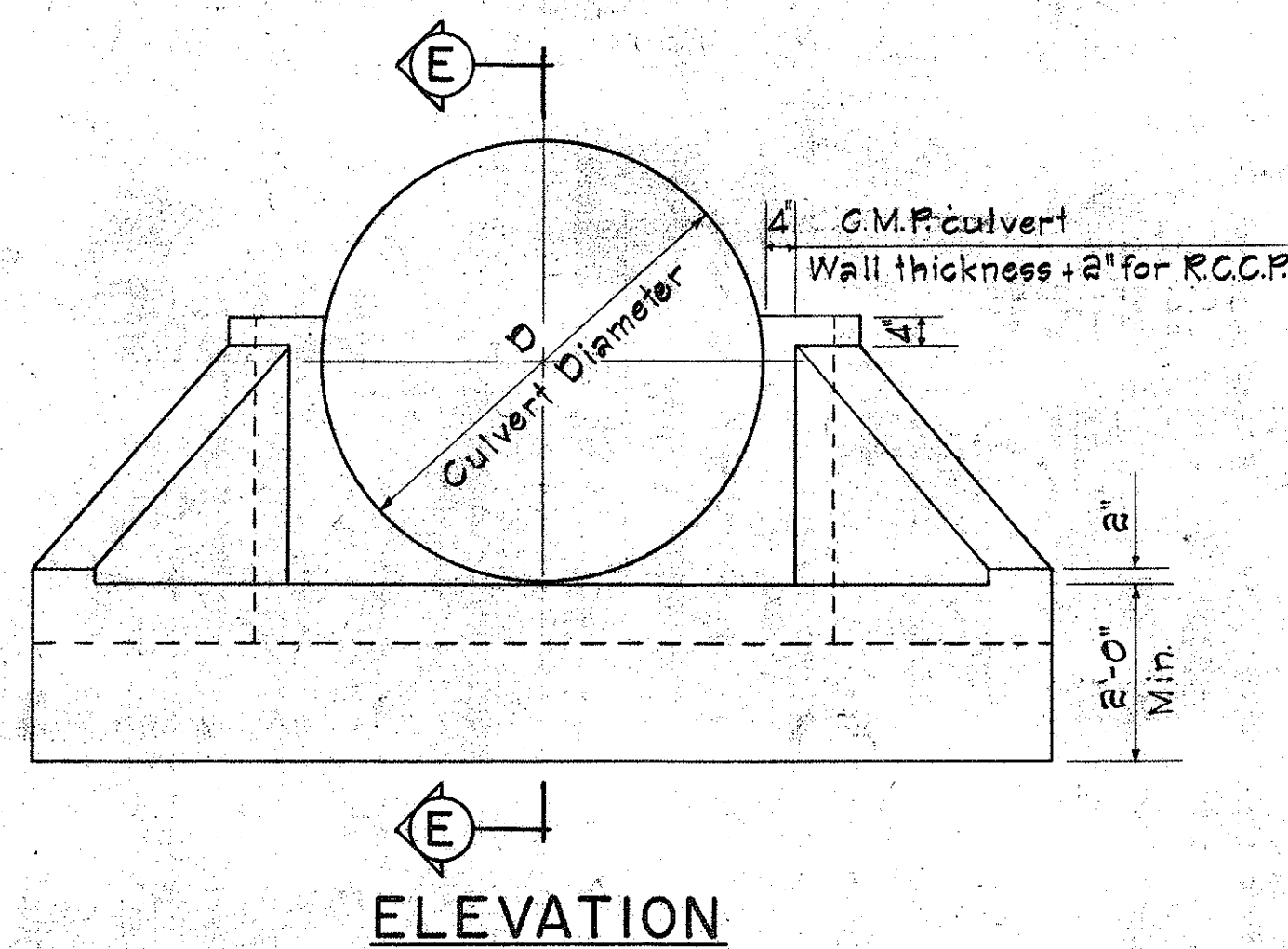
Note: Quantities shown are for G.M.P. culvert.



OUTLET STRUCTURE FOR CULVERT SIZES 18 IN. TO 36 IN. DIAMETER



Bolt and nut to be cleaned after galvanizing to provide a free running fit.



SUMMARY OF QUANTITIES		
Culvert Dia. (inches)	Concrete (Cu. Yd.)	Reinf. Steel (Lbs)
36	1.0	70
42	1.2	90
48	1.5	100
54	1.7	125
60	2.1	140

Note: Quantities shown are for G.M.P. culvert.

OUTLET STRUCTURE FOR CULVERT SIZES 36 IN. TO 60 IN. DIAMETER

APPROVAL RECOMMENDED:

HYDRAULIC DESIGN ENGINEER

12-17-69

DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-17-69

DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STANDARD DETAILS

OUTLET STRUCTURES

NOT TO SCALE

DATE: July, 1969

SHEET No. 14 OF 15 SHEETS

ORIGINAL	DATE
PLAN	
DESIGNED BY	
NOTED BY	
CHECKED BY	

GENERAL NOTES

-
- FULL HEADWALL HALF ELEVATION**
- FULL HEADWALL SECTION A-A**
- HALF HEADWALL SECTION A-A**

Note: Quantities shown are for
C.M.P. culvert.

INLET STRUCTURES FOR CULVERT SIZES 18 IN. TO 36 IN. DIAMETER

Note: Quantities shown are
for C.M.P. culvert.

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:

HYDRAULIC DESIGN ENGINEER

12-17-69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-17-59
DATE

ferred: Incorporate groove
d of pipe into headwall
d omit top ring.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

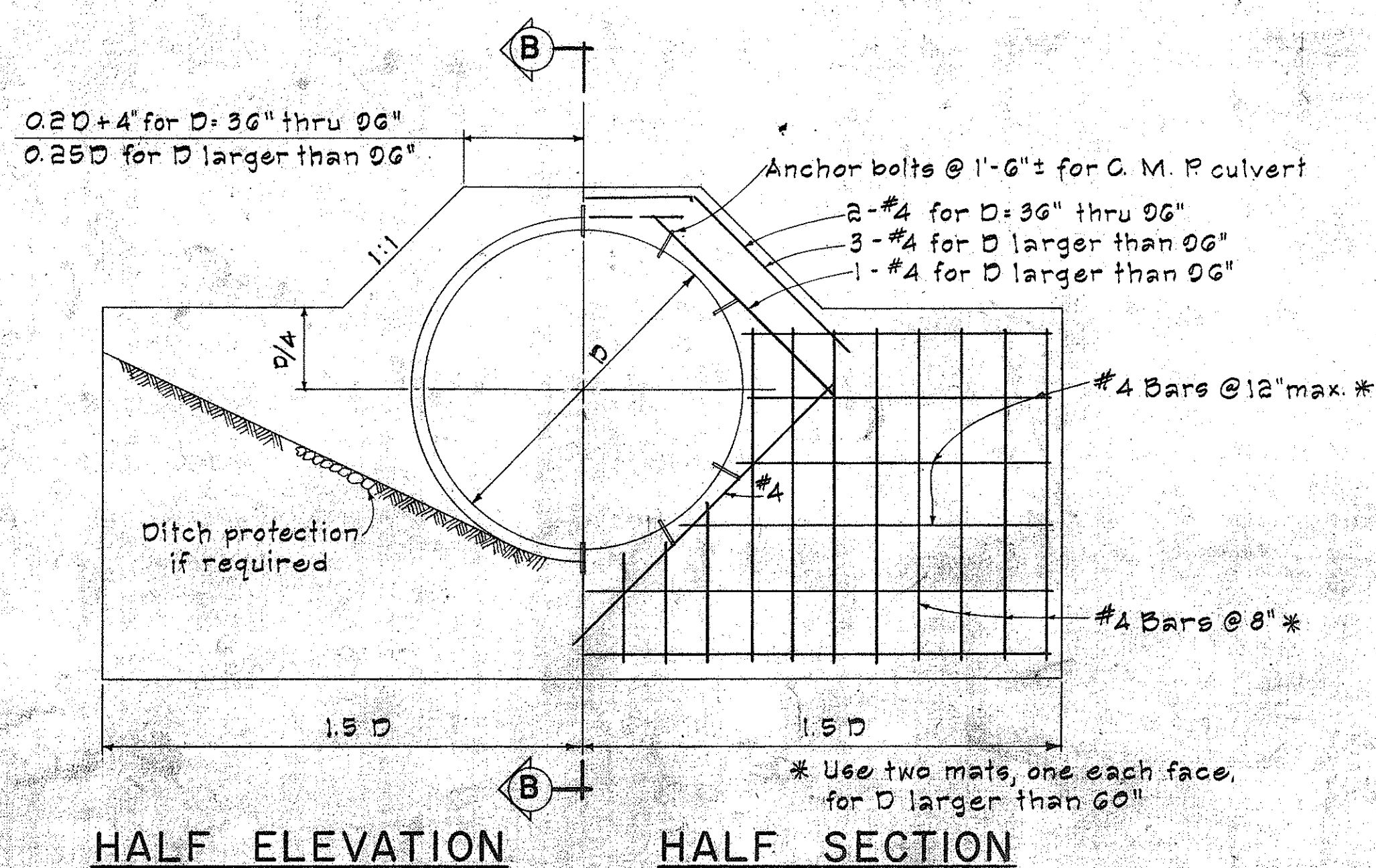
STANDARD DETAILS INLET STRUCTURES

INTERSTATE ROUTE 4-1
PEDESTRIAN OVERPASS AT MAKALAPA
F.A.I. PROJ. NO. I-HI-1(105):14

Not To Scale Date: July, 1969

SHEET No. 5-4 OF 4 SHEETS PH 1

—

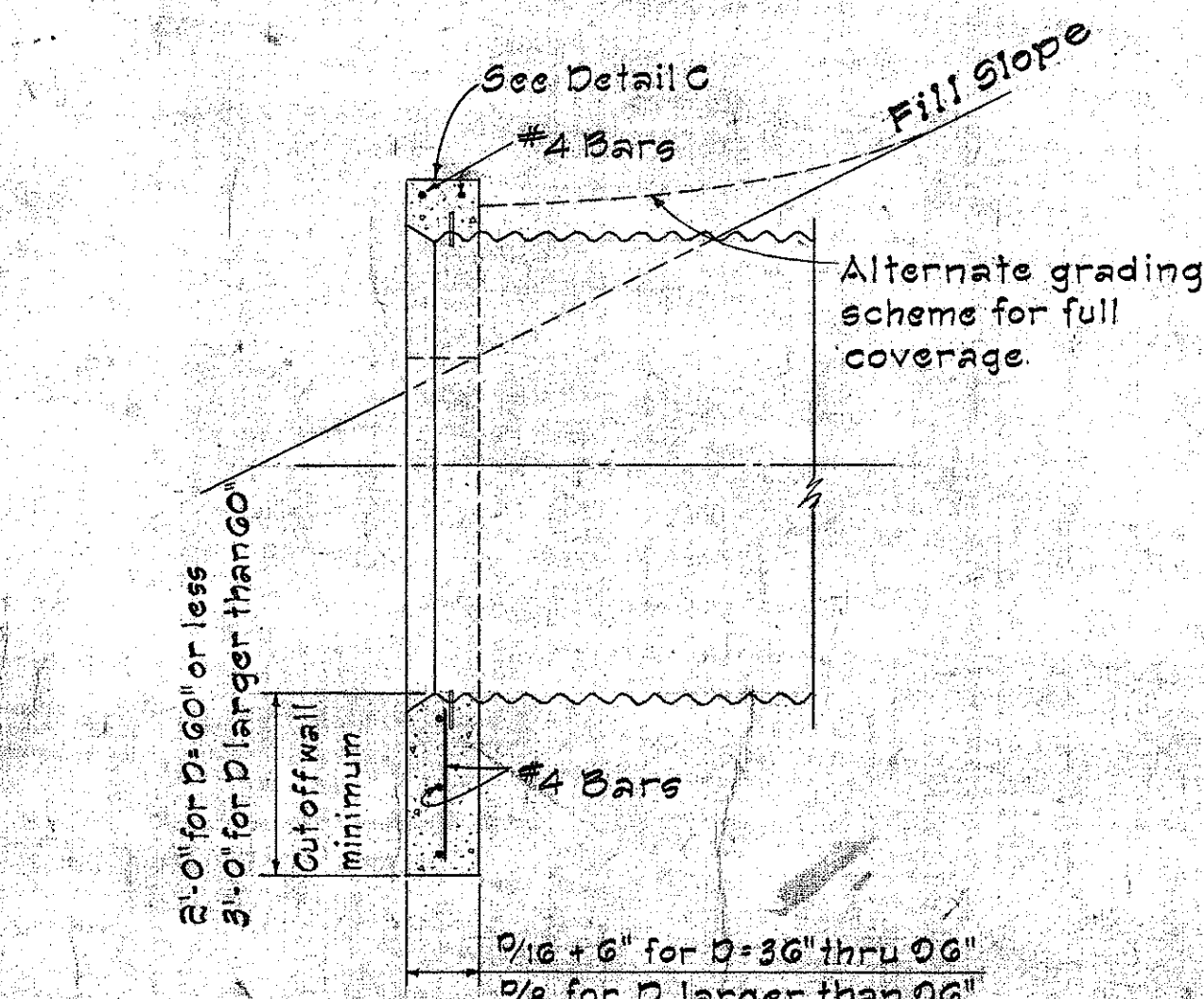


* Use two mats, one each face, for D larger than 60"

CORR. METAL PIPE

SECTION B-B

INLET STRUCTURE FOR CULVERT SIZES 36 IN. TO 180 IN. DIAMETER

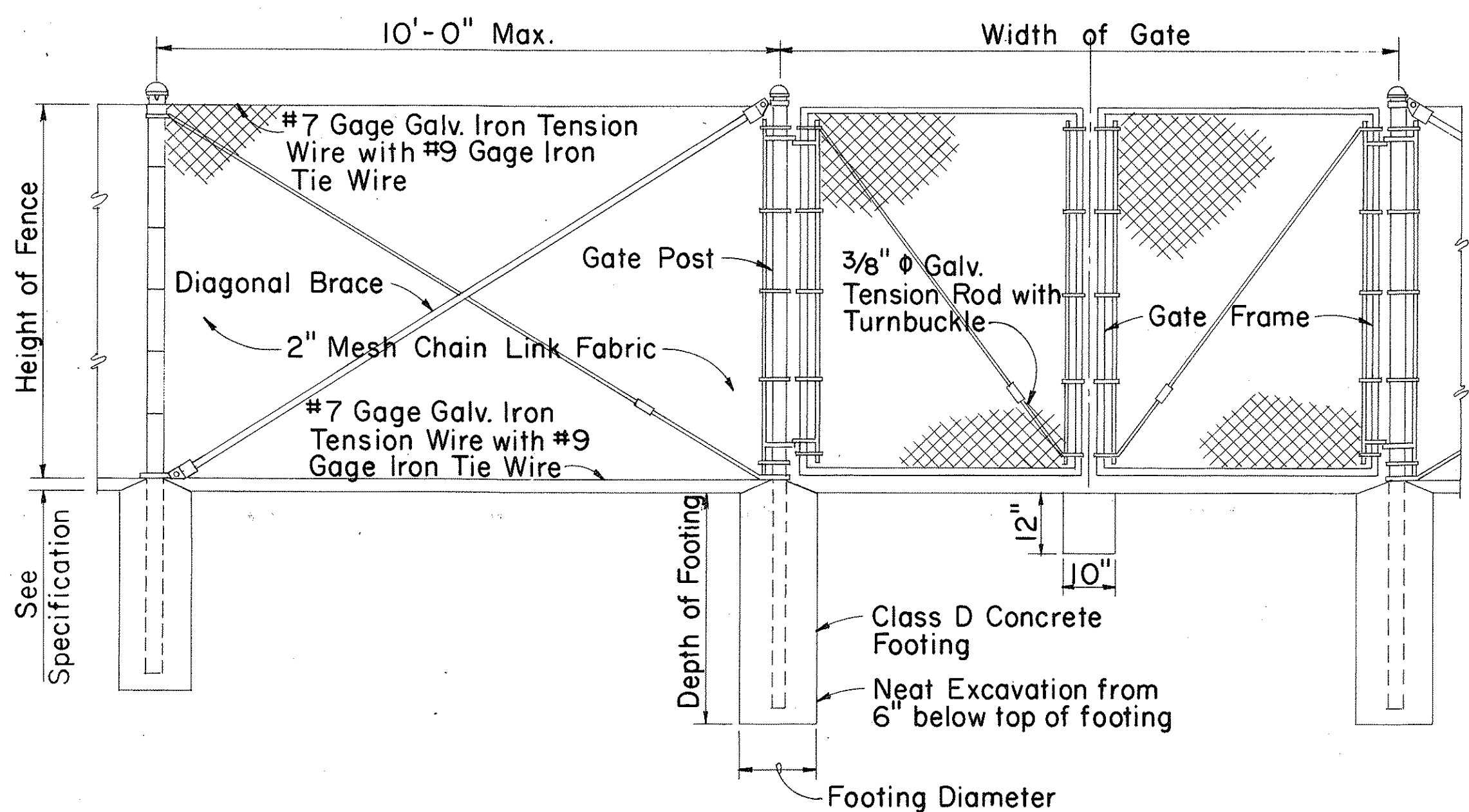


Technical drawing of a pipe headwall detail. The drawing shows a cross-section of a pipe with a headwall. The headwall is reinforced with a top ring and a cutoff wall. The cutoff wall is labeled "Cutoff wall minimum" and has a height of "3'-0\" for D=60\" or less" and "3'-0\" for D larger than 60\"". The headwall is labeled "Width, bevel and reinforcing same as Detail C". The headwall is also labeled "Splay reinf mesh into headwall when pipe is cut". The headwall is labeled "D/32 with 3\" min." and "D/16 + 6\" for D=36\" thru 60\" and "D/8 for D larger than 60\"". The headwall is labeled "Top ring" and "Cutoff wall minimum". The headwall is labeled "D/32 with 3\" min." and "D/16 + 6\" for D=36\" thru 60\" and "D/8 for D larger than 60\"".

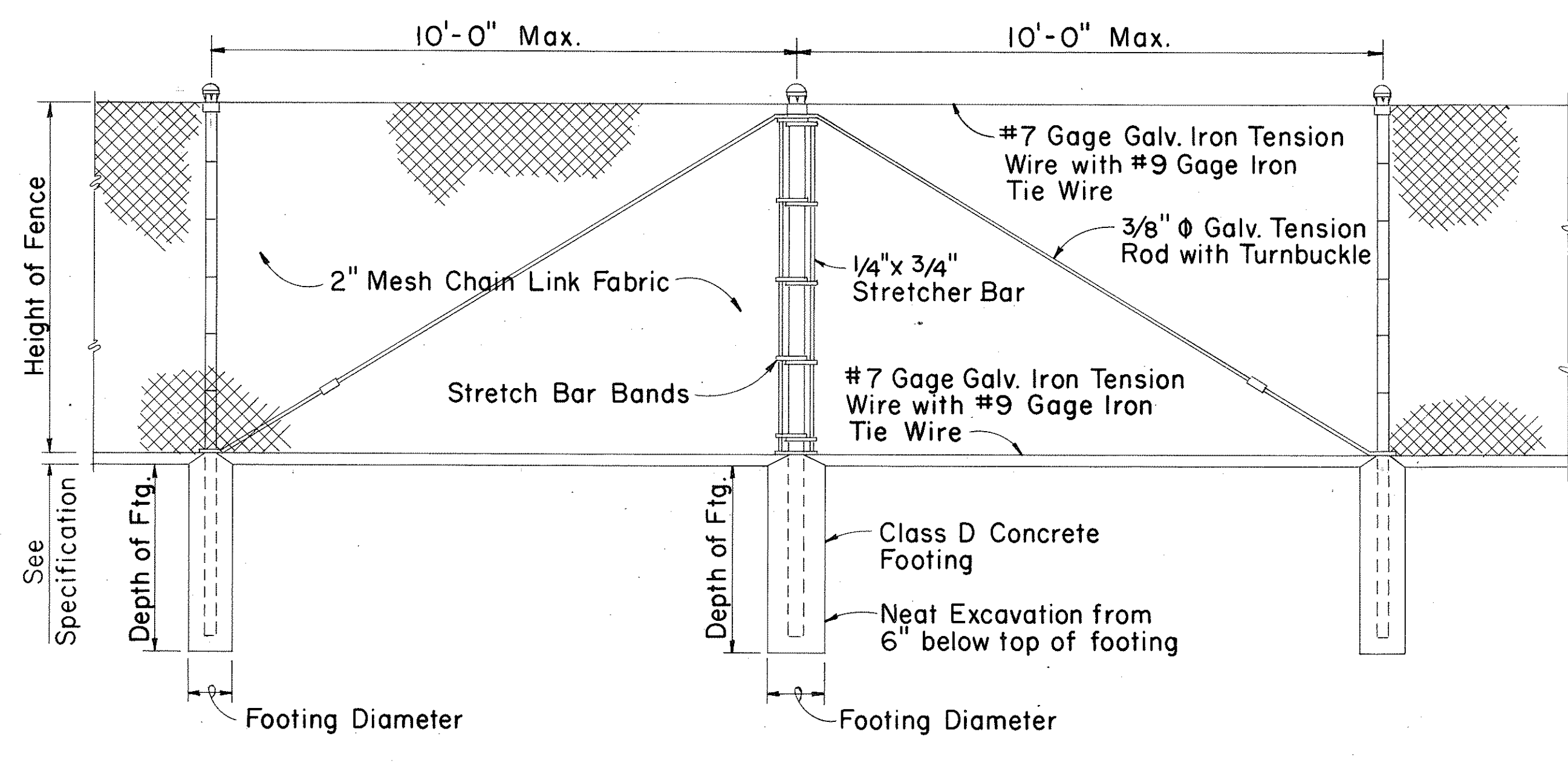
CONCRETE PIPE

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____ DRAWN BY _____ TRACTED BY _____ DESIGNED BY _____ QUANTITIES BY _____ CHECKED BY _____
No. _____	

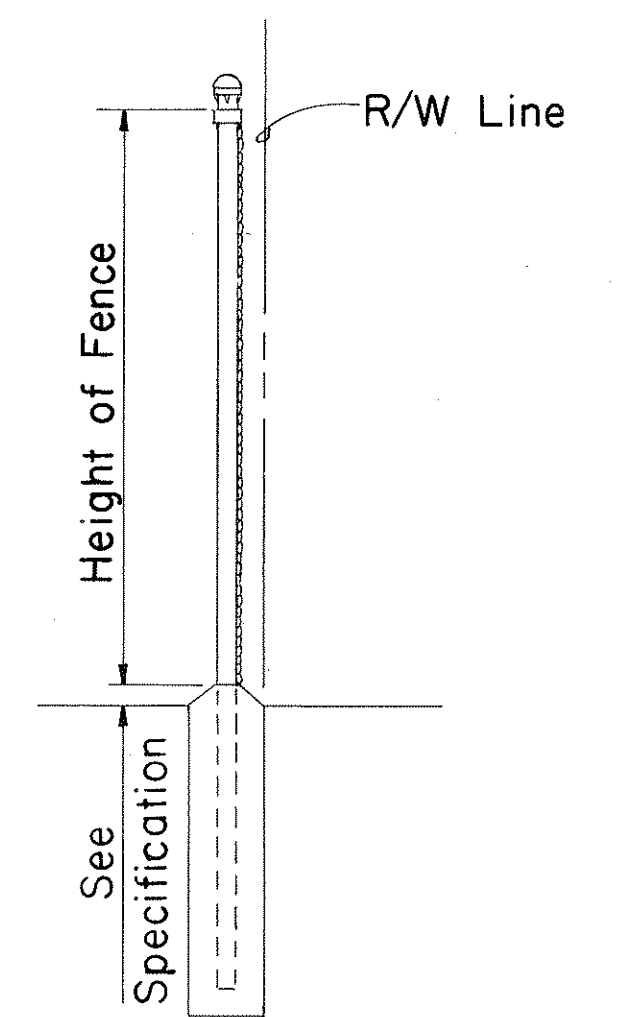
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-1(105)14	1973	16	16



LINE POST GATE POST GATE POST



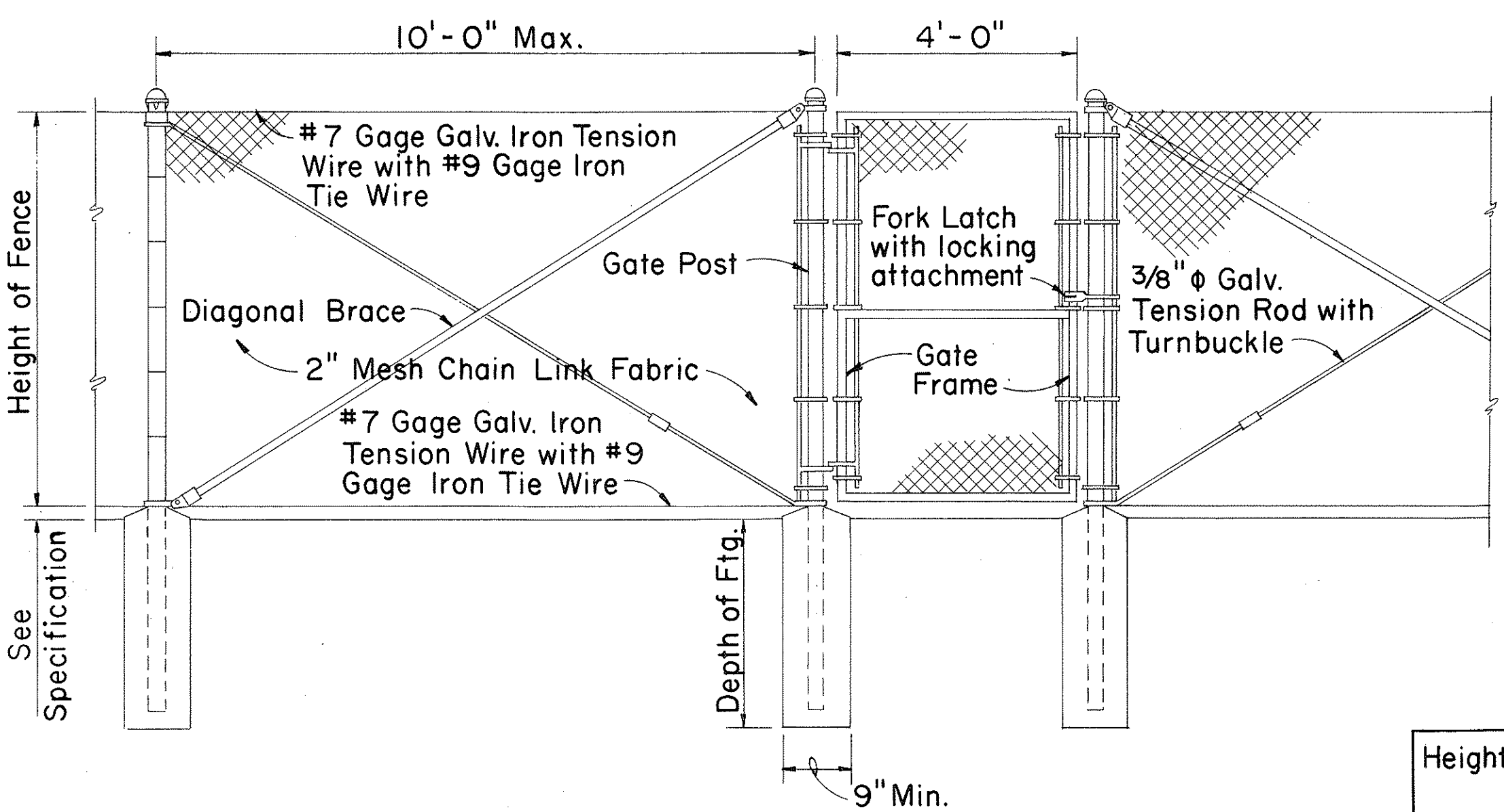
LINE POST PULL POST LINE POST



TYPICAL SECTION
(WITH CONCRETE FOOTING)

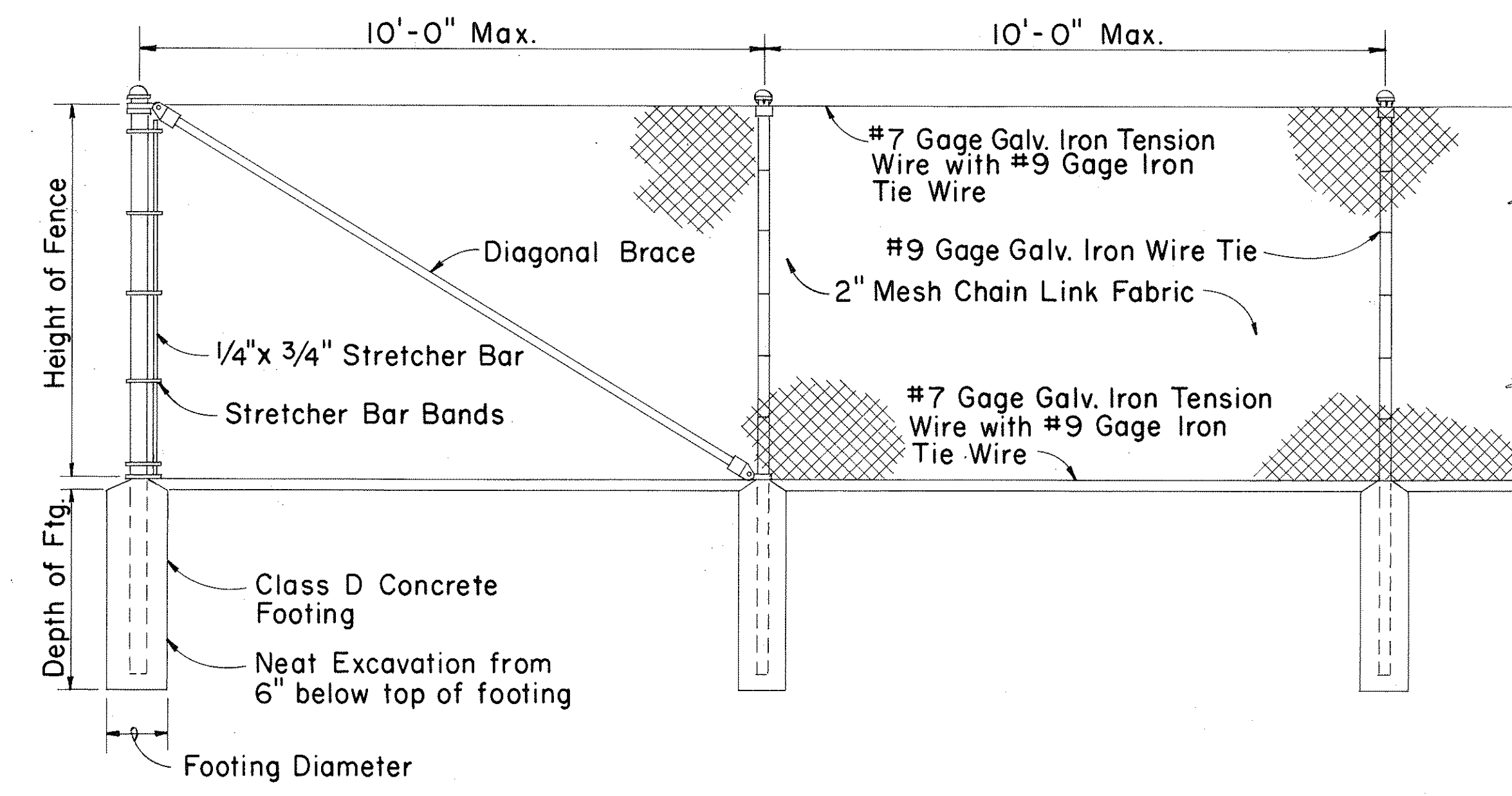
DETAIL OF CHAIN LINK GATE

- NOTE: 1. Gate fork latch and lock, flush plate and anchor, and plunger shall be installed with Gates, and shall be considered as incidental to Chain Link Fence Gate.
2. Gate frames shall be mitered and welded at corners.
3. Fence detail not shown shall be in accordance with the Standard Specifications.

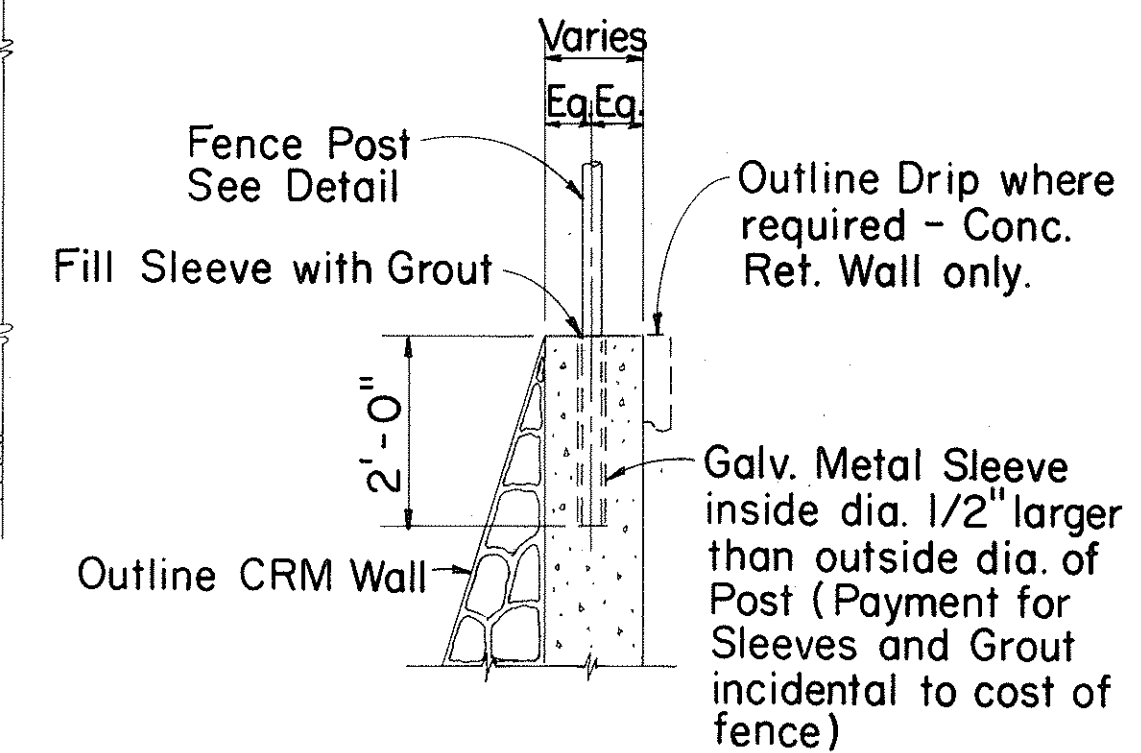


LINE POST GATE POST GATE POST

DETAIL OF 4 FT. CHAIN LINK GATE



END POST LINE POST LINE POST



TYPICAL SECTION
(ON CRM & CONC. RET. WALL)

CHAIN LINK FENCE DETAILS

Height of Fence	Minimum Depth of Footing		Minimum Footing Diameter	
	Line Post	Corner, Pull, End and Gate Posts	Line Post	Corner, Pull and End Posts
3'	2'-0"	2'-6"	8"	8"
4'	2'-6"	2'-6"	8"	8"
5'	3'-0"	3'-0"	8"	8"
6'	3'-0"	3'-0"	8"	9"

APPROVAL RECOMMENDED:

 HIGHWAY DESIGN ENGINEER 12-4-69
 DATE

APPROVED:

 ASSISTANT CHIEF, ENGINEERING 12-10-69
 DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CHAIN LINK FENCE
(WITHOUT TOPRAIL)

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