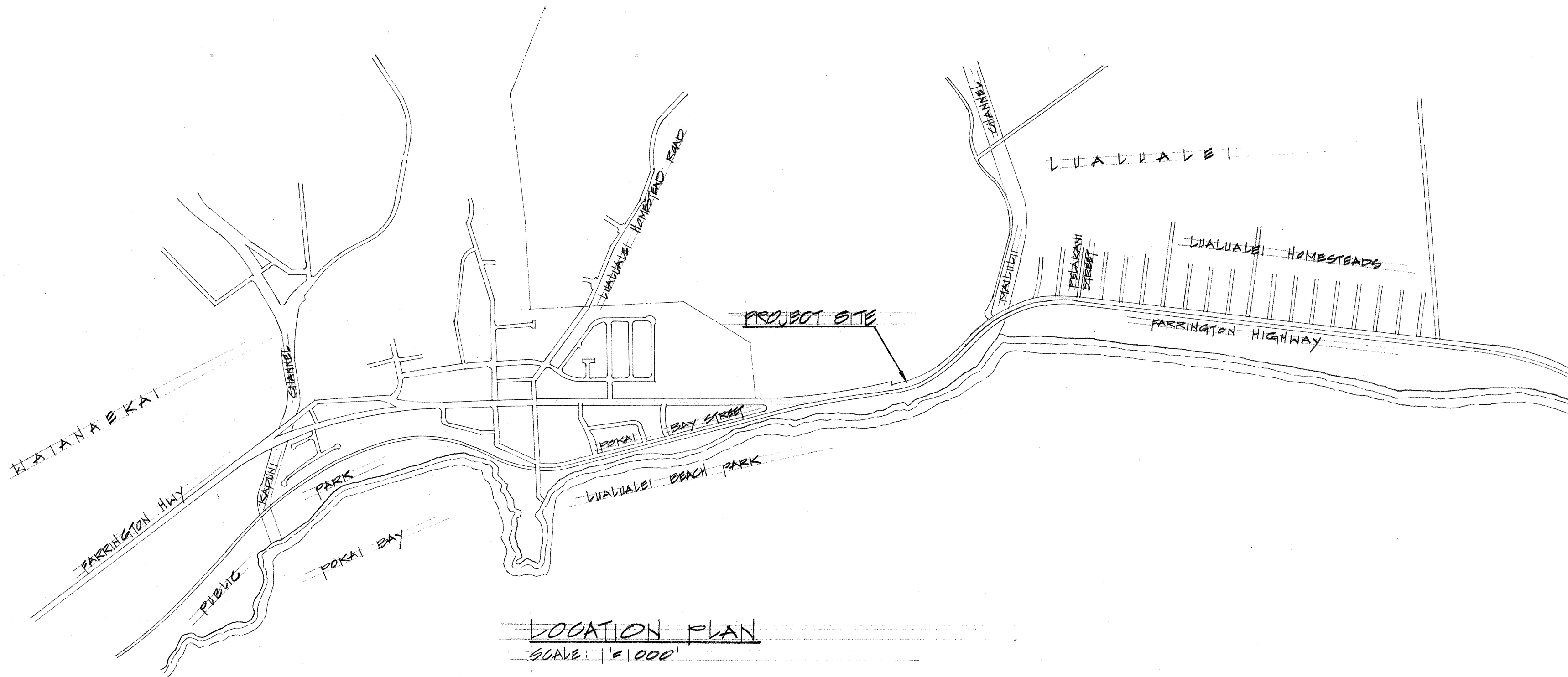


GENERAL CONSTRUCTION NOTES:

1. TELEPHONE AND CATV SYSTEMS:

- EXISTING WOOD UTILITY POLES AND ANCHORS SCHEDULED TO BE REMOVED OR RELOCATED SHALL BE BY UTILITY COMPANIES.
- EXISTING OVERHEAD TELEPHONE AND CATV CABLES AND EQUIPMENT IN CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE REMOVED AND/OR RELOCATED BY HAWAIIAN TELEPHONE CO. & CABLEVISION, RESPECTFULLY.
- EXISTING UNDERGROUND CABLES AND EQUIPMENT IN CONFLICT WITH PROPOSED CONSTRUCTION SHALL BE REMOVED AND/OR RELOCATED BY HAWAIIAN TELEPHONE CO. RACEWAYS TO COMPLETE THE RELOCATION OF EXISTING UNDERGROUND TELEPHONE CABLES AND EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR.
- EXISTING UNDERGROUND U.S. ARMY SIGNAL CORPS CABLES SHALL BE ABANDONED IN PLACE FROM STA 51450 TO STA 60100. NO RELOCATION WORK SHALL BE REQUIRED FOR THESE CABLES.

2. ELECTRIC SYSTEM:

- EXISTING WOOD UTILITY POLES AND ANCHORS SCHEDULED TO BE REMOVED OR RELOCATED SHALL BE BY UTILITY COMPANIES.
- EXISTING OVERHEAD ELECTRIC CABLES AND EQUIPMENT IN CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED AND/OR RELOCATED BY HAWAIIAN ELECTRIC CO.
- EXISTING UNDERGROUND ELECTRIC CABLES AND EQUIPMENT IN CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED AND/OR RELOCATED BY HAWAIIAN ELECTRIC CO. RACEWAYS TO COMPLETE THE RELOCATION OF THE EXISTING ELECTRIC CABLES AND EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR.

3. STREET LIGHTING SYSTEM:

- EXISTING STREET LIGHTING CIRCUITS AND EQUIPMENT IN CONFLICT WITH THE PROPOSED CONSTRUCTION SHALL BE REMOVED AND/OR RELOCATED BY THE CONTRACTOR.
- ALL SALVAGE EQUIPMENT SHALL BE CLEANED, BUNDLED AND DELIVERED TO LOCATION AS DIRECTED BY ENGINEER. COST OF SALVAGING EXISTING EQUIPMENT SHALL BE INCIDENTAL TO THE WORK OF THIS PROJECT CONTRACT.
- NEW STREET LIGHTING CIRCUITS AND EQUIPMENT SHALL BE PROVIDED BY CONTRACTOR AS SHOWN ON PLAN. CONNECTION OF STREET LIGHTING CIRCUITS TO SECONDARY POWER SOURCE SHALL BE PROVIDED BY HAWAIIAN ELECTRIC CO.

4. EXISTING JOINT POLE SHALL REMAIN IN PLACE.

5. EXISTING JOINT POLE AND ANCHOR SHALL REMAIN IN PLACE.

6. EXISTING JOINT POLE SCHEDULED TO BE REMOVED BY UTILITY COMPANY.

7. EXISTING JOINT POLE AND ANCHOR SCHEDULED TO BE REMOVED BY UTILITY COMPANY.

8. EXISTING JOINT POLE TO REMAIN WITH ANCHOR SCHEDULED TO BE REMOVED BY UTILITY COMPANY.

9. NEW JOINT POLE AND ANCHOR SCHEDULED FOR INSTALLATION BY UTILITY COMPANY.

10. NEW ANCHOR AT EXISTING JOINT POLE SCHEDULED FOR INSTALLATION BY UTILITY COMPANY.

11. NEW JOINT POLE SCHEDULED FOR INSTALLATION BY UTILITY COMPANY.

12. NEW HIGHWAY LIGHTING WOOD POLE TO BE INSTALLED BY CONTRACTOR.

- CONTRACTOR TO RESTORE EXISTING LANDSCAPING DAMAGED BY INSTALLATION OF STREET LIGHT POLES FROM STATION 29145 TO 37480.

SYMBOL LIST

SHEET NO.	TOTAL SHEETS
96	100
-EAT(01)-	EXISTING OVERHEAD ELECTRIC AND TELEPHONE EQUIPMENT SCHEDULED FOR REMOVAL BY RESPECTIVE UTILITY COMPANY.
--EAT(01)--	EXISTING OVERHEAD ELECTRIC, TELEPHONE AND STREET LIGHTING EQUIPMENT TO REMAIN IN PLACE.
---E1---	EXISTING UNDERGROUND ELECTRIC UTILITY RACEWAYS TO REMAIN IN PLACE.
---T1---	EXISTING UNDERGROUND TELEPHONE UTILITY RACEWAYS TO REMAIN IN PLACE.
---S1---	EXISTING UNDERGROUND U.S. ARMY SIGNAL CORPS CABLE.
•EP	JOINT POLE, EXISTING
—•—	JOINT POLE AND ANCHOR, EXISTING
[]	EXISTING HANDHOLE OR PULLBOX, TYPE AS NOTED ON PLAN
[S]	EXISTING MANHOLE, TYPE AS NOTED ON PLAN
o---*	EXISTING HIGHWAY LIGHTING STANDARD
—•—*	EXISTING HIGHWAY LIGHTING LUMINAIRE AND BRACKET ARM MOUNTED ON JOINT POLE
oJP	JOINT POLE, NEW (STAKE OUT BY CONTRACTOR, POLE BY UTILITY COMPANY)
—•—JP	JOINT POLE AND ANCHOR, NEW (STAKE OUT BY CONTRACTOR, POLE AND ANCHOR BY UTILITY COMPANY)
□	ELECTRIC PULLBOX, 2'x4', NEW
☒	TELEPHONE PULLBOX, 2'x4', NEW
—•—*	HIGHWAY LIGHTING LUMINAIRE WITH 400 WATT MERCURY VAPOR LAMP AND BRACKET ARM MOUNTED ON WOOD POLE
(A/BA)	DETAIL INDICATOR TOP HALF: DETAIL ASSIGNMENT BOTTOM HALF: SHEET ASSIGNMENT
—SL—	STREET LIGHT CIRCUIT, OVERHEAD, NEW, BY HECO.
oEP	WOOD STREET LIGHT POLE, NEW, BY CONTRACTOR
—•—EP	WOOD STREET LIGHT POLE WITH GUY AND ANCHOR, NEW, BY CONTRACTOR
CATV	TELEVISION CABLE

APPROVED:

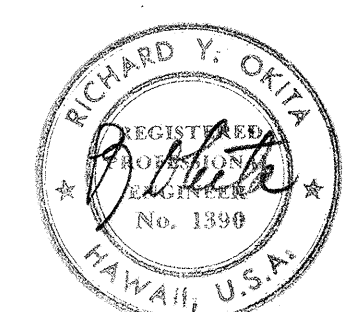
R. S. S. Inc.
HAWAIIAN ELECTRIC CO., INC. #10

5/2/73
DATE

R. S. S. Inc.
HAWAIIAN TELEPHONE CO.

4-18-73
DATE

E-1



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LOCATION PLAN, NOTES
AND SYMBOL LIST

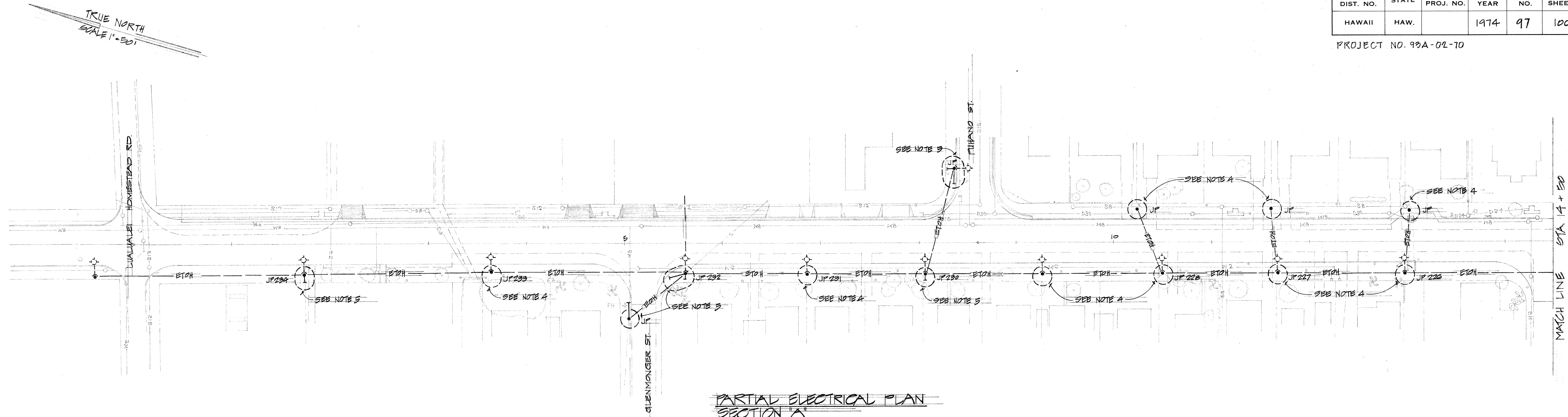
FARRINGTON HIGHWAY WIDENING
PROJECT 93A-02-70

SCALE: AS NOTED

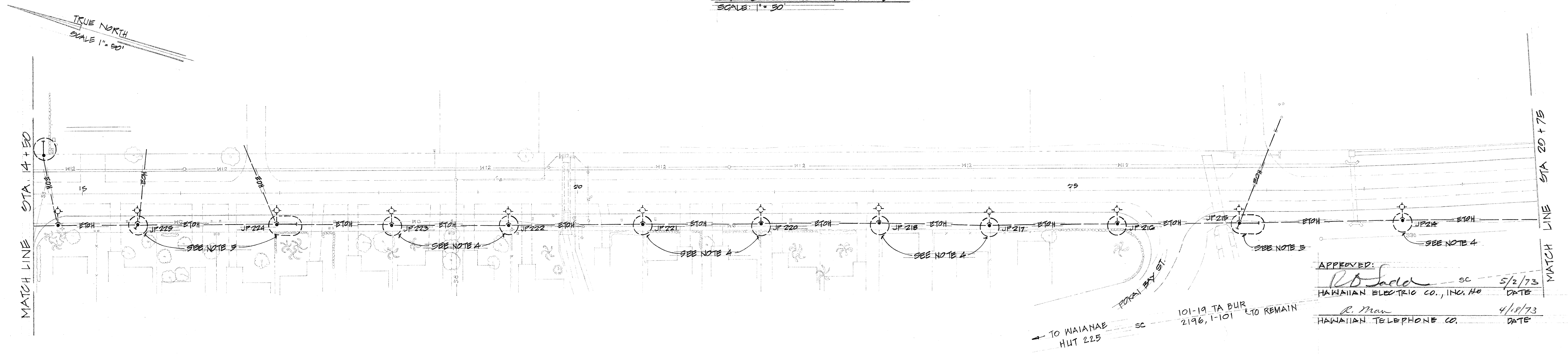
SHEET NO. 1 OF 5 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1974	97	100

PROJECT NO. 99A-02-70



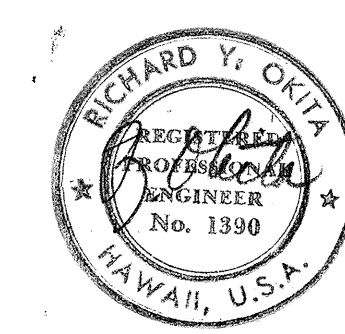
PARTIAL ELECTRICAL PLAN
SECTION "A"
STA. 0+00 TO STA. 14+50
SCALE: 1" = 50'



PARTIAL ELECTRICAL PLAN
SECTION "B"
STA. 14+50 TO STA. 29+75
SCALE: 1" = 50'

APPROVED:
R. D. Sader SC 5/2/73
HAWAIIAN ELECTRIC CO., INC. DATE
R. Man 4/18/73
HAWAIIAN TELEPHONE CO. DATE

TO WAIANAE HUT 225 SC 101-19 TA BUR 2196, 1-101 TO REMAIN



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PARTIAL ELECTRICAL PLAN

FARRINGTON HIGHWAY WIDENING

PROJECT 99A-02-70

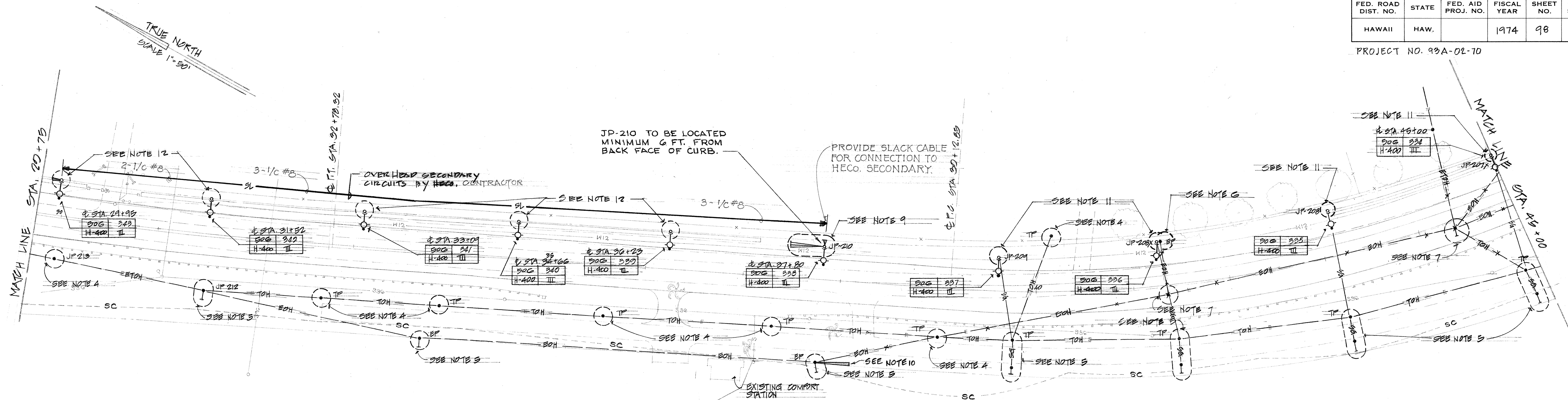
SCALE: AS NOTED

SHEET NO. 2 OF 5 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1974	98	100

PROJECT NO. 93A-02-70



**PARTIAL ELECTRICAL PLAN
SECTION C
STA 29+75 TO STA 45+00
SCALE: 1"=50'**

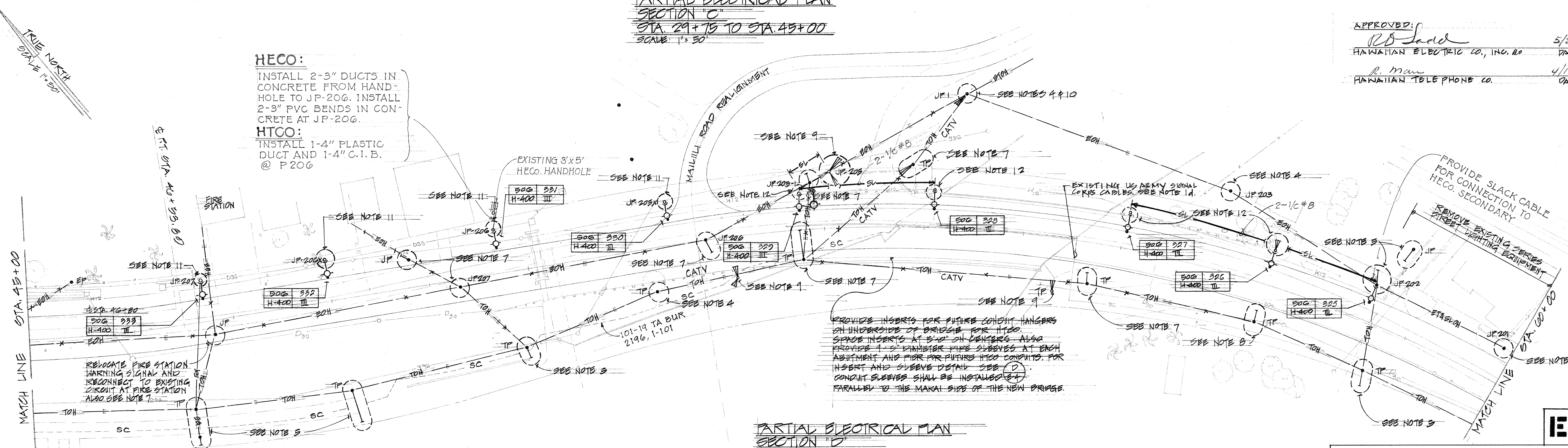
HECO:

INSTALL 2-3" DUCTS IN CONCRETE FROM HANDHOLE TO JP-206. INSTALL 2-3" PVC BENDS IN CONCRETE AT JP-206.

HTCO:

INSTALL 1-4" PLASTIC DUCT AND 1-4" C.I.B. @ P 206

APPROVED:
R.D. Sado 5/2/73
HAWAIIAN ELECTRIC CO., INC. DATE
P. Man 4/18/73
HAWAIIAN TELEPHONE CO. DATE



**PARTIAL ELECTRICAL PLAN
SECTION D
STA 45+00 TO STA 60+00
SCALE: 1"=50'**

E-3

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

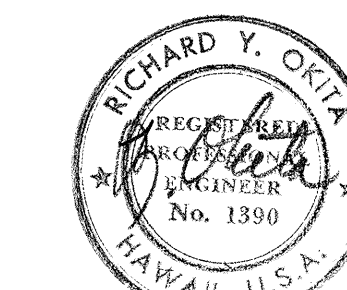
PARTIAL ELECTRICAL PLANS

FARRINGTON HIGHWAY WIDENING

PROJECT 93A-02-70

SCALE: AS NOTED

SHEET NO. 3 OF 5 SHEETS

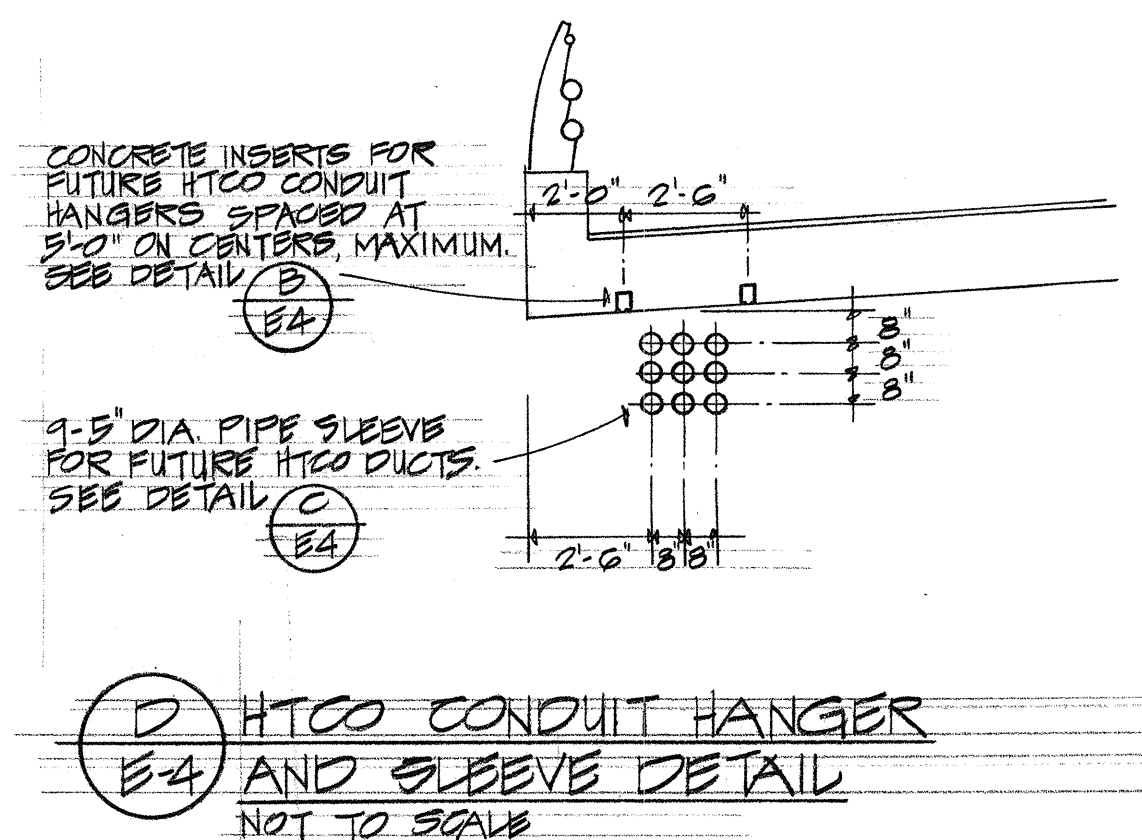
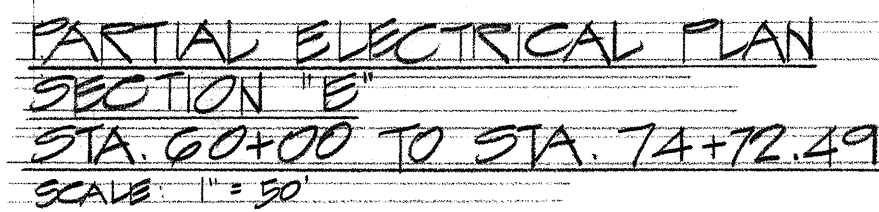


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

3/17/76	Change Light Nos.
DATE	REVISION

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
QUANTITIES BY	
NO.	

PROJECT NO. 93A-02-70



IE-4

SHEET NO. 4 OF 5 SHEETS

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

152.076

C.O. 999

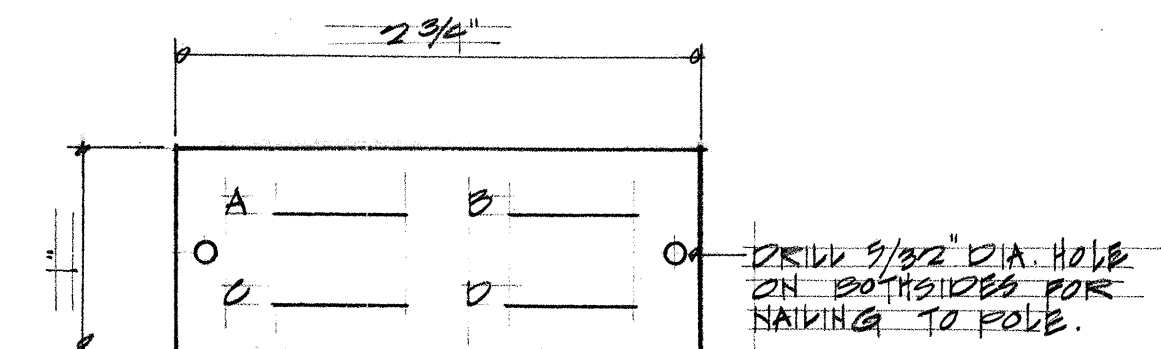
DATE	REVISION
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ORIGINAL PLAN	NOTE BOOK	NO. _____
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PRINTED ON NO. 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.		1974	100	100

PROJECT NO. 93A-02-70



POLE TAGS

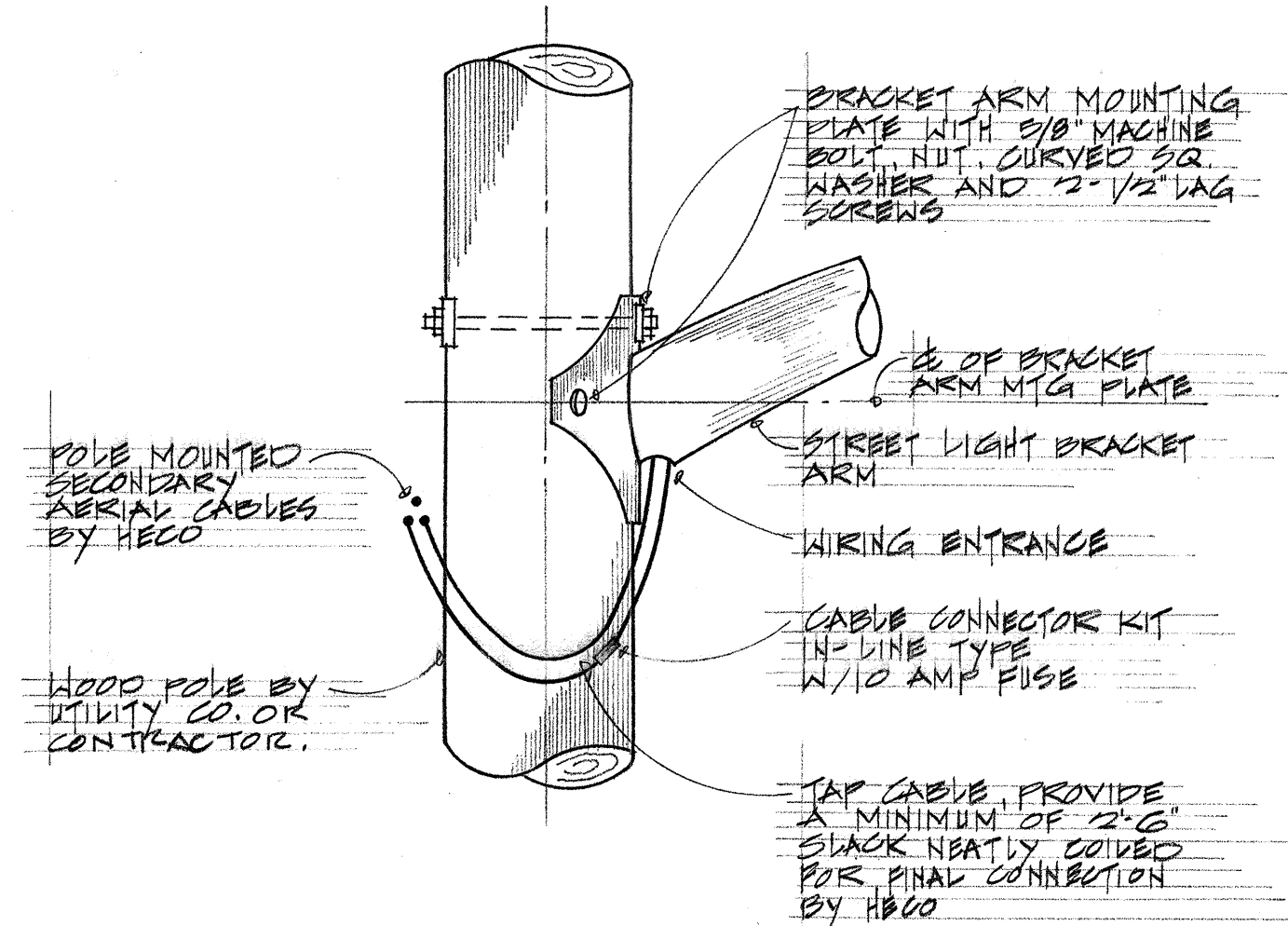
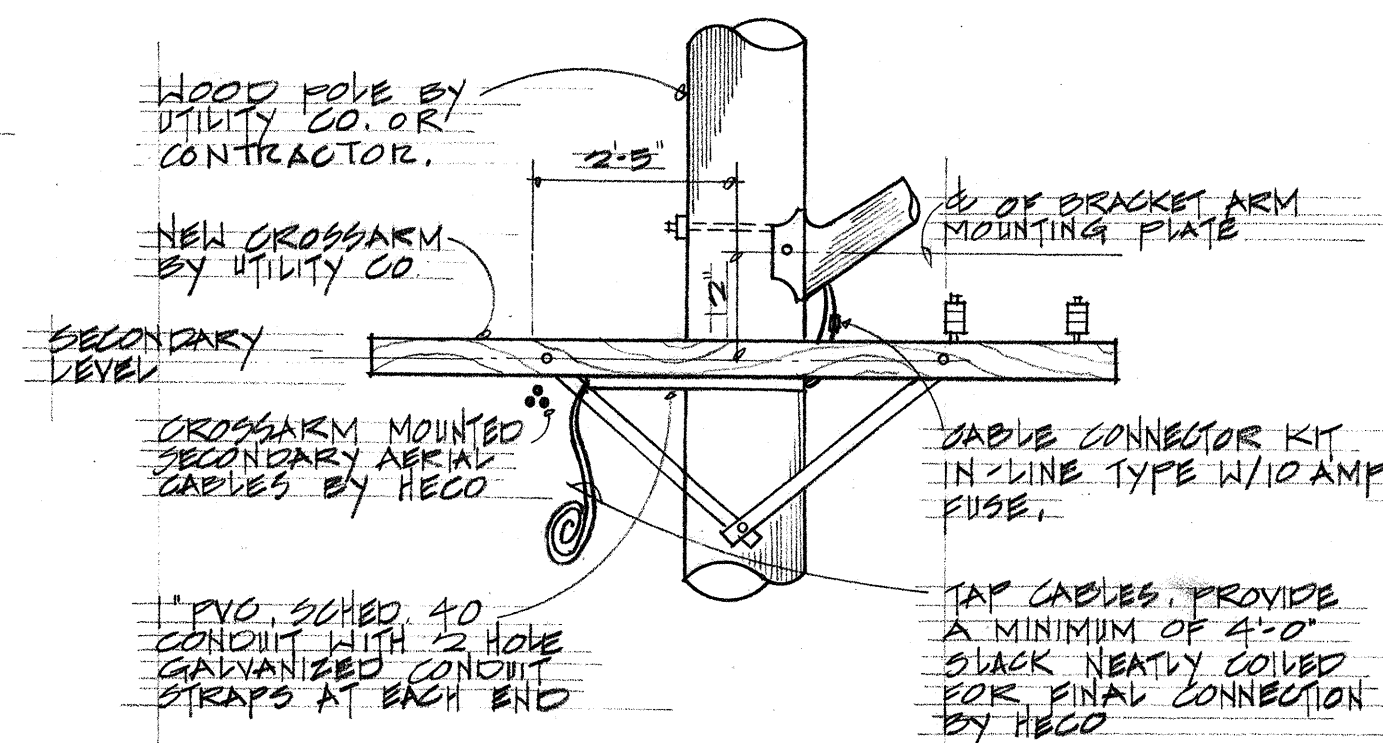
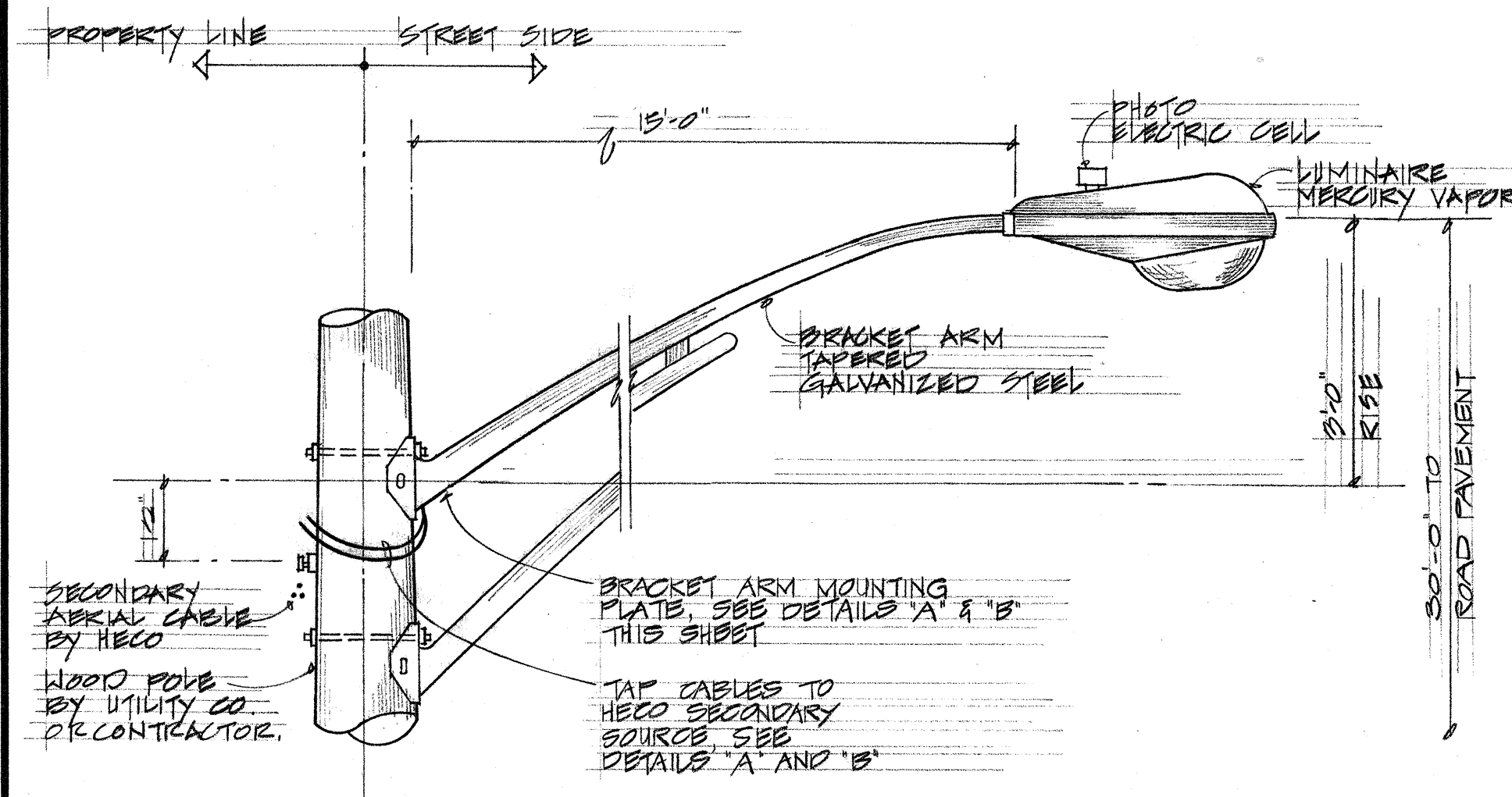
- FABRICATE POLE TAG FROM LAMINATED PLASTIC MATERIAL (BLACK-WHITE-BLACK). ENGRAVE OR STENCIL LUMINAIRE DATA ON POLE TAG USING LETTERS AND NUMBERS. NO. 5 REDUCTION 1/8"
- MOUNT POLE TAG USING 4d ALUMINUM NAILS AND 6'-0" ABOVE FINAL GRADE.

ENGRAVING SOMEONE

- HECO CONTRACT NUMBER (.506)
- LUMINAIRE NUMBER (SEE PLAN)
- LAMP WATTAGE AND TYPE (H-400)
- IES LIGHT DISTRIBUTION TYPE (II)

C IDENTIFICATION TAG FOR MULTIPLE STREET LIGHTING

NOT TO SCALE

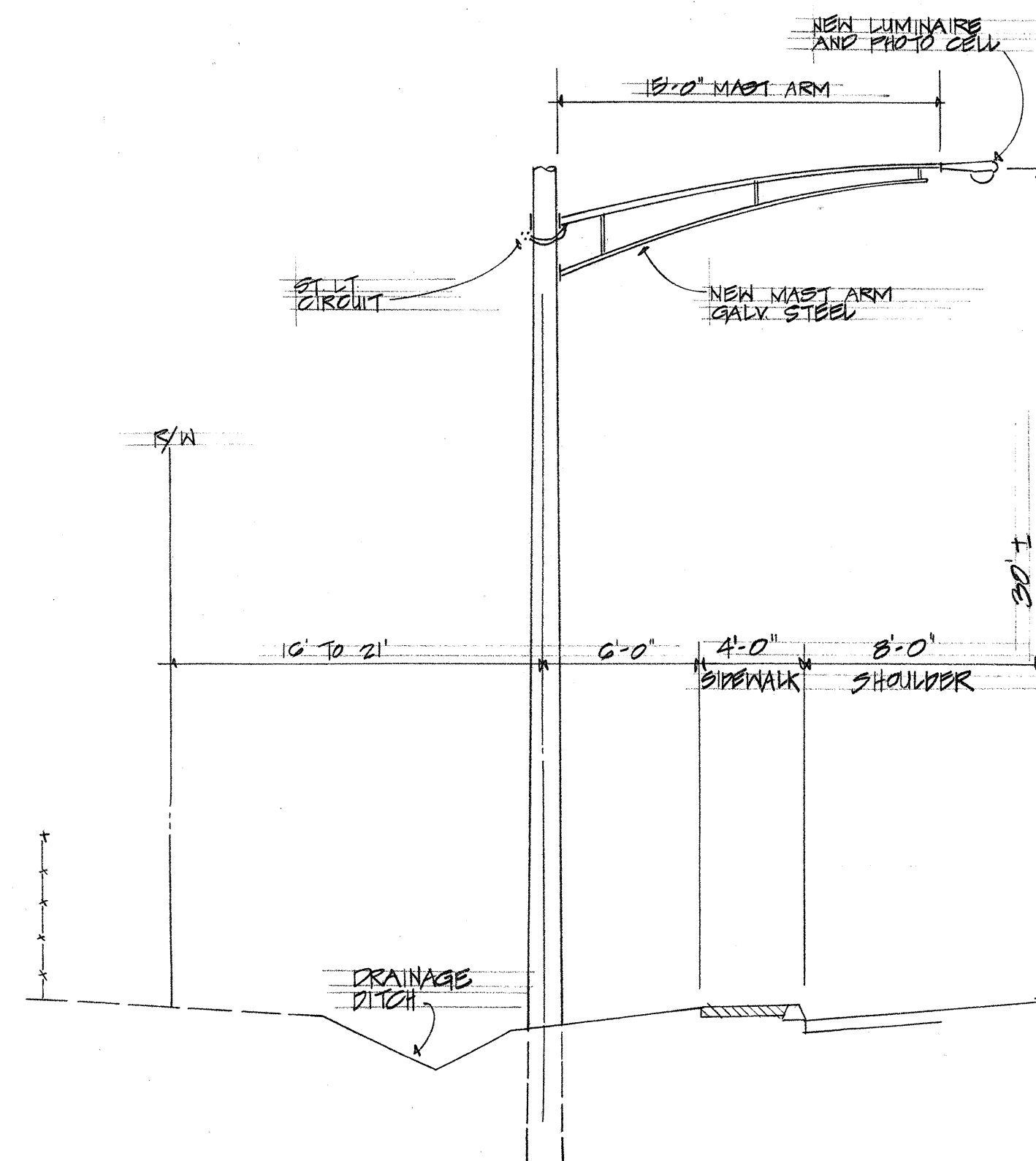
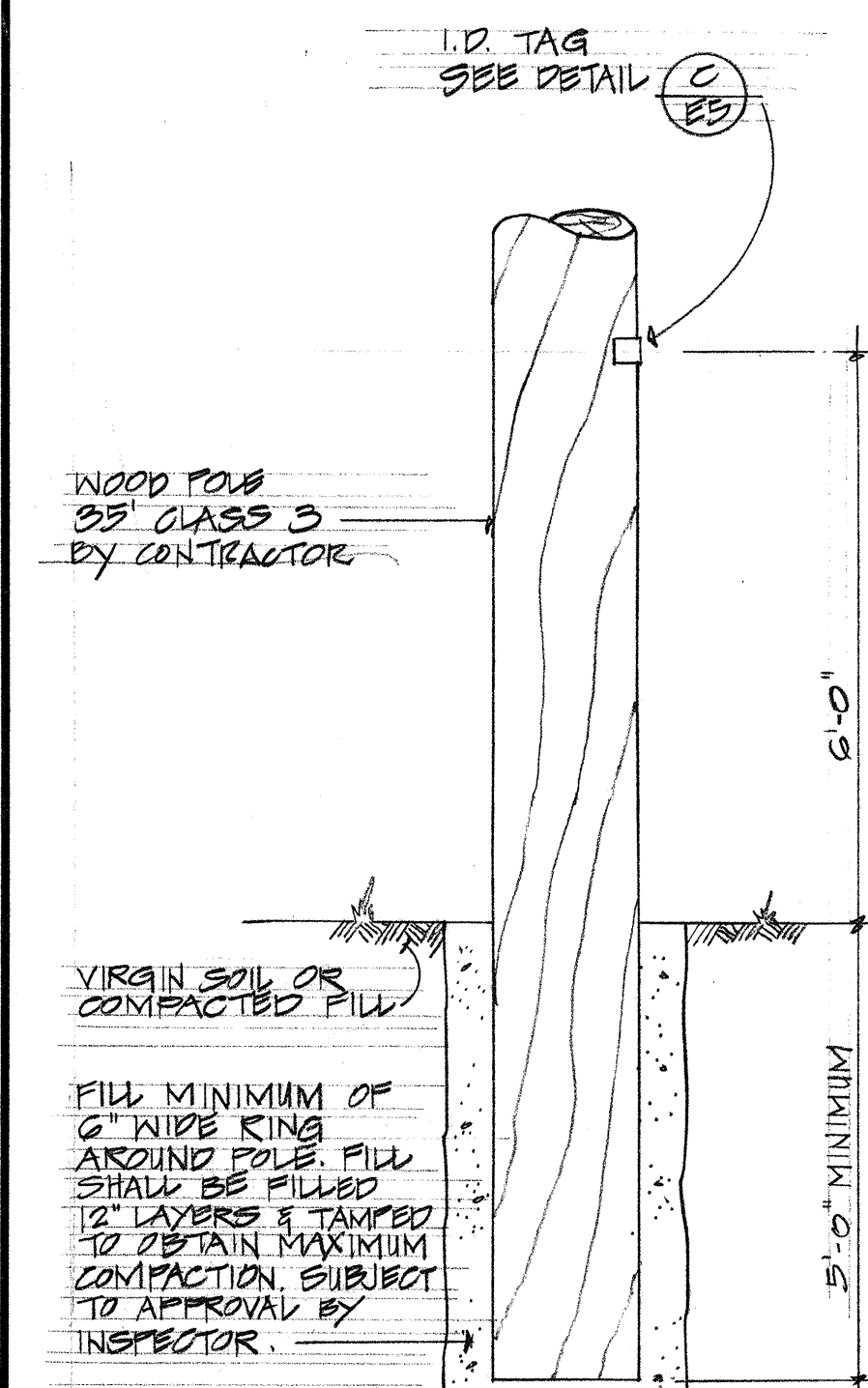


STREET LIGHT MAST ARM MOUNTING - DETAIL A

STREET LIGHT MAST ARM MOUNTING - DETAIL B

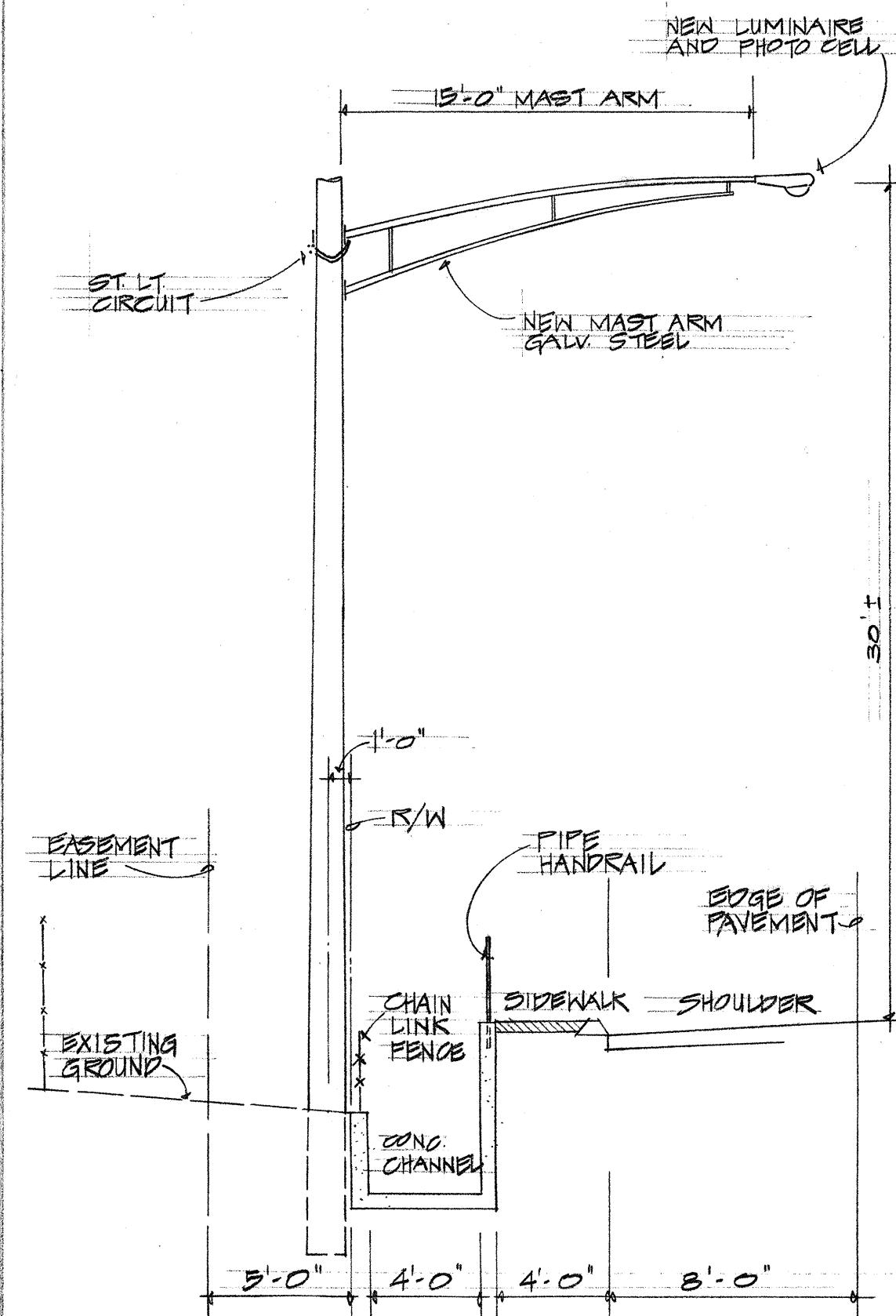
B STREET LIGHT ON WOOD POLE DETAIL

NOT TO SCALE



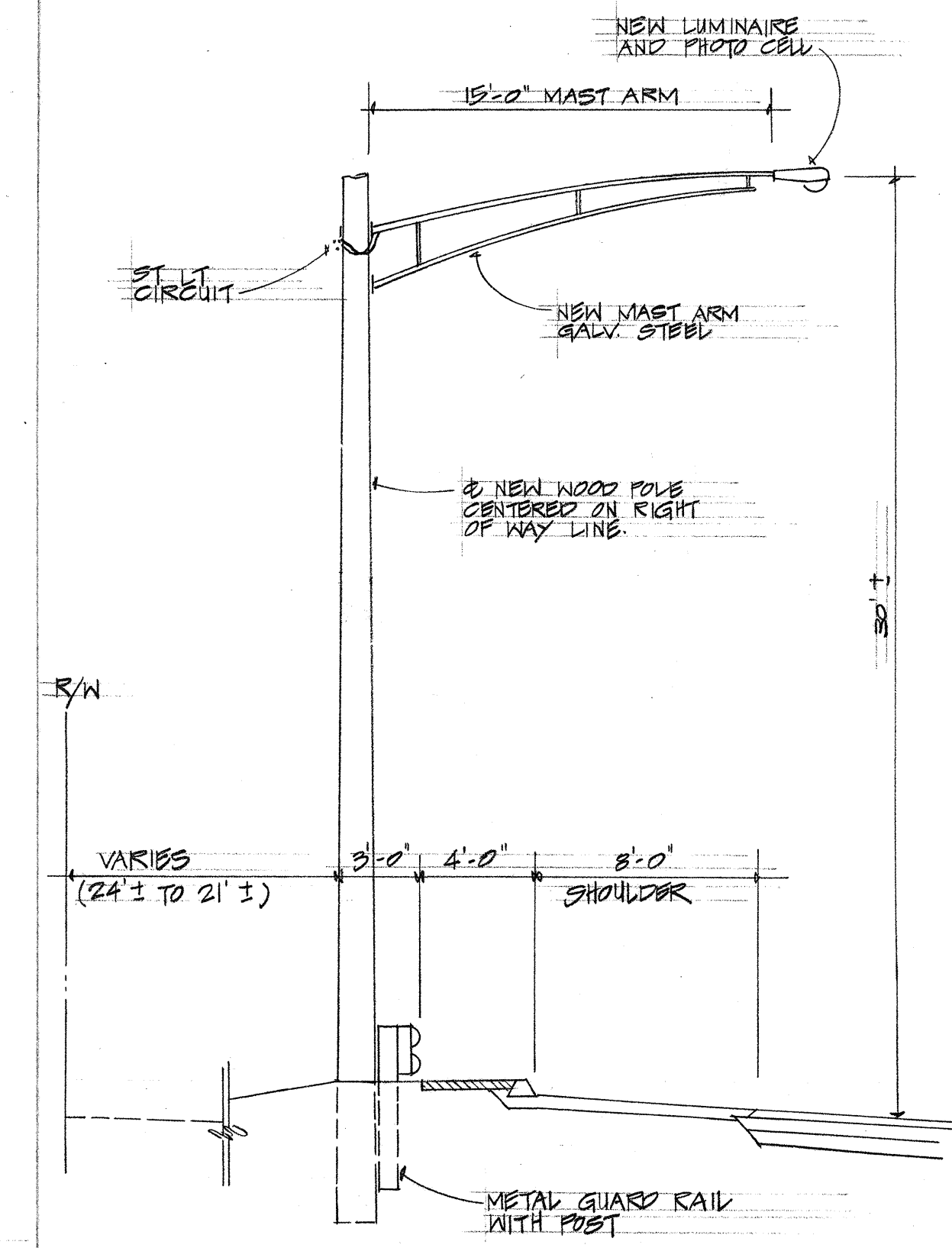
TYPICAL POLE LOCATION

STA 30+50 TO STA 50+00



TYPICAL POLE LOCATION

STA 27+00 TO STA 37+00

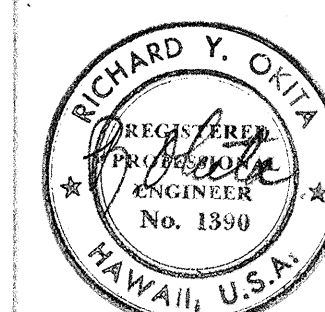


TYPICAL POLE LOCATION

STA 37+00 TO STA 47+00

APPROVED:

R. S. Ladd 5/2/73
HAWAIIAN ELECTRIC CO., INC. H.O. DATE
R. M. Mow 4-18-73
HAWAIIAN TELEPHONE CO. DATE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHTING DETAILS

FARRINGTON HIGHWAY WIDENING
PROJECT 93A-02-70

SCALE: AS NOTED

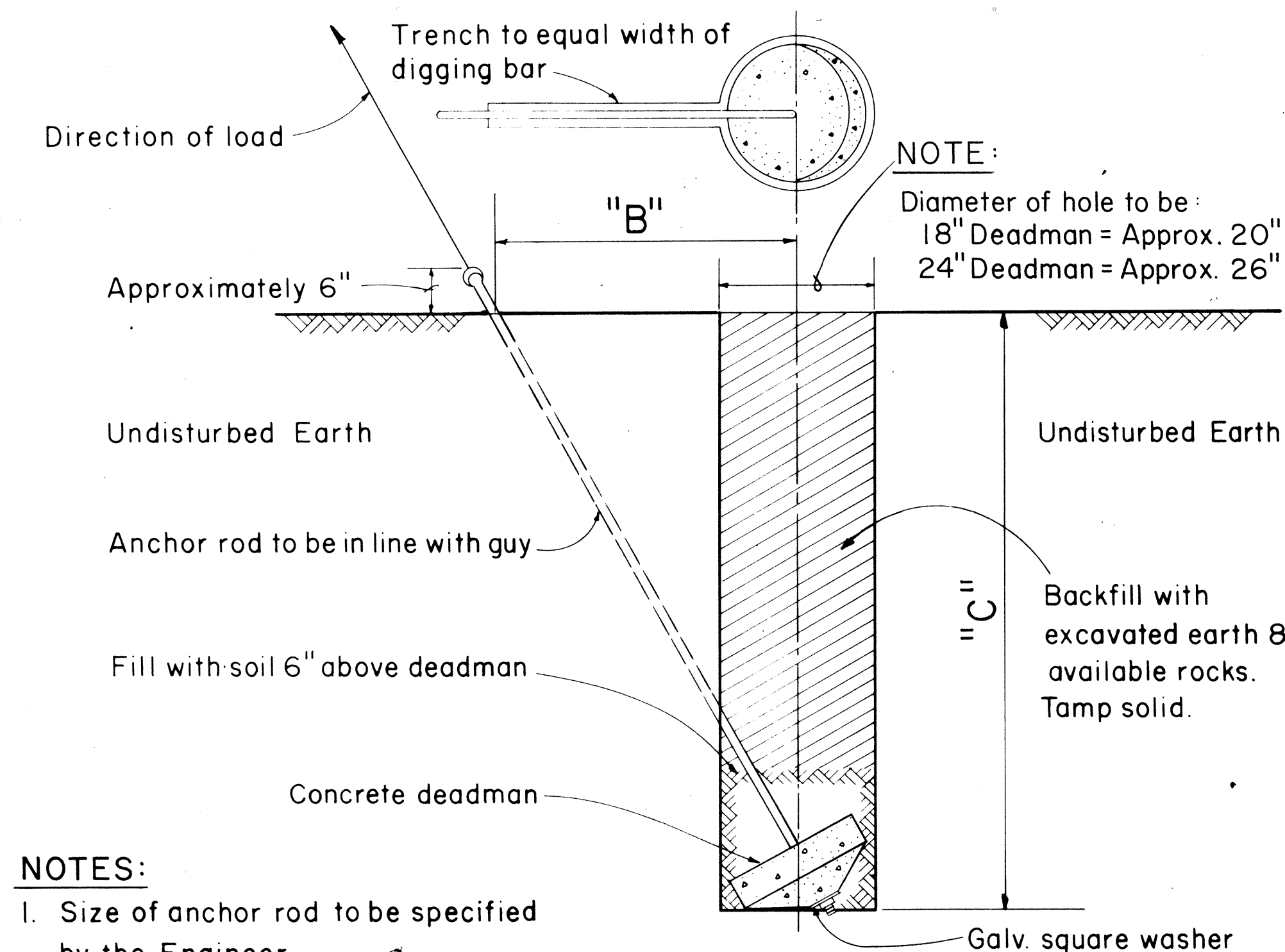
SHEET NO. 5 OF 5 SHEETS

THIS WORK WAS PREPARED BY
FOR OR UNDER MY SUPERVISION.

PROJECT NO. 93A-02-70

FOR 25', & 30' POLES WITH 8'-0" ANCHOR RODS				
"A"	"B"	"C"		"D" = ("A" + "B")
LEAD-ANCHOR ROD TO ϕ OF POLE	ANCHOR ROD TO ϕ OF HOLE	VERTICAL DEPTH 18" D.M.	24" D.M.	TOTAL DISTANCE POLE TO HOLE
5'-0"	1'-8"	7'-1"	7'-4"	6'-8"
10'-0"	3'-0"	6'-7"	7'-0"	13'-0"
15'-0"	4'-0"	6'-1"	6'-6"	19'-0"
20'-0"	4'-8"	5'-6"	5'-10"	24'-8"
25'-0"	5'-2"	4'-11"	5'-4"	30'-2"
FOR 35' THRU 70' POLES WITH 8'-0" ANCHOR RODS				
5'-0"	1'-0"	7'-3"	7'-4"	6'-0"
10'-0"	1'-11"	7'-1"	7'-3"	11'-11"
15'-0"	2'-8"	6'-9"	7'-1"	17'-8"
20'-0"	3'-3"	6'-6"	6'-10"	23'-3"
25'-0"	3'-10"	6'-2"	6'-7"	28'-10"
FOR 40' THRU 70' POLES WITH 1 1/4" x 10'-0" ANCHOR RODS				
5'-0"	1'-7"		9'-4"	6'-7"
10'-0"	3'-0"		9'-0"	13'-0"
15'-0"	4'-2"		8'-6"	19'-2"
20'-0"	5'-3"		7'-11"	25'-3"
25'-0"	6'-2"		7'-3"	31'-2"

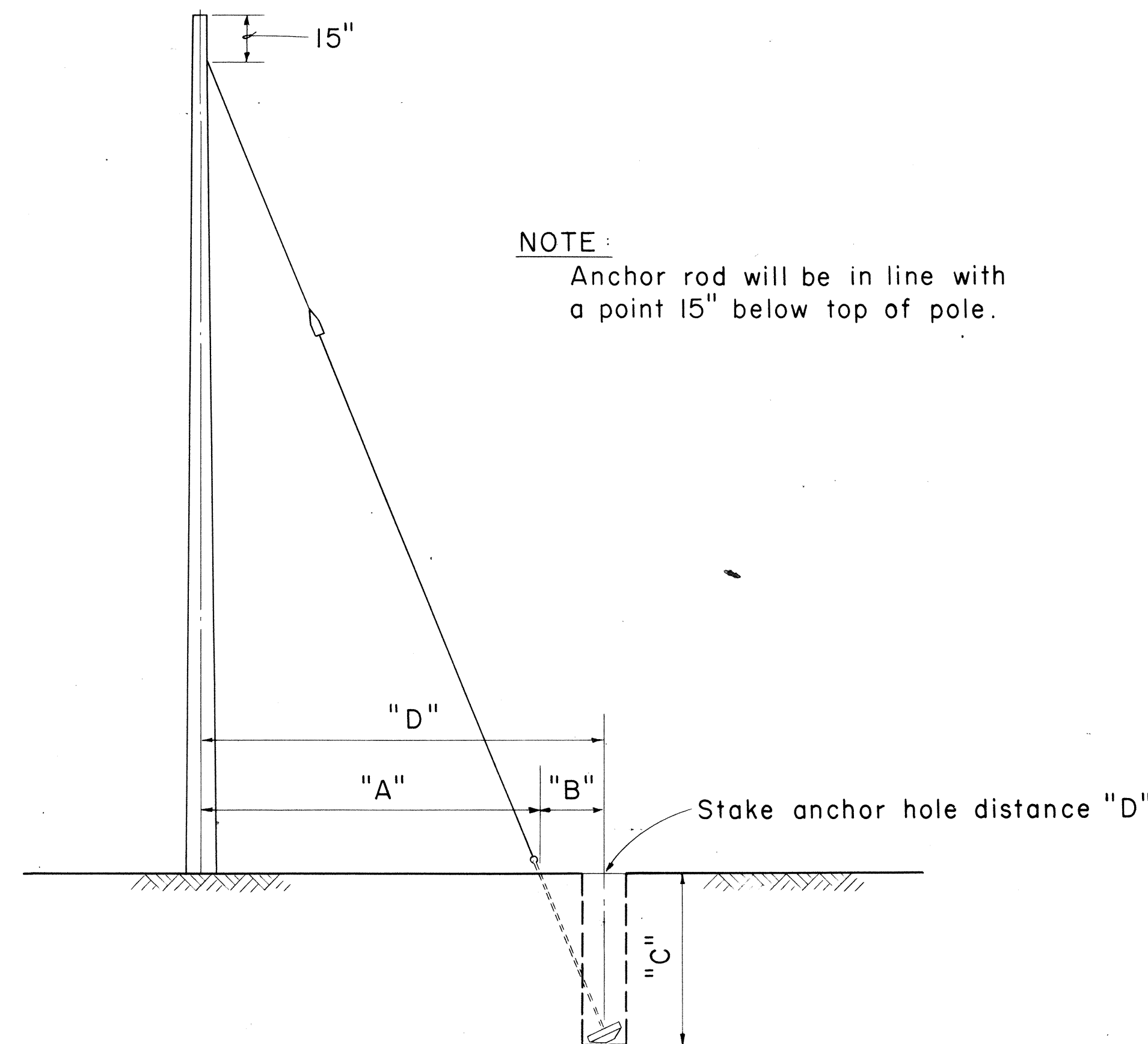
D. M. = Deadman



- NOTES:
1. Size of anchor rod to be specified by the Engineer
 2. Use Anchoring Data.

GUY ANCHOR DEADMAN

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



- NOTE:
- Anchor rod will be in line with a point 15" below top of pole.

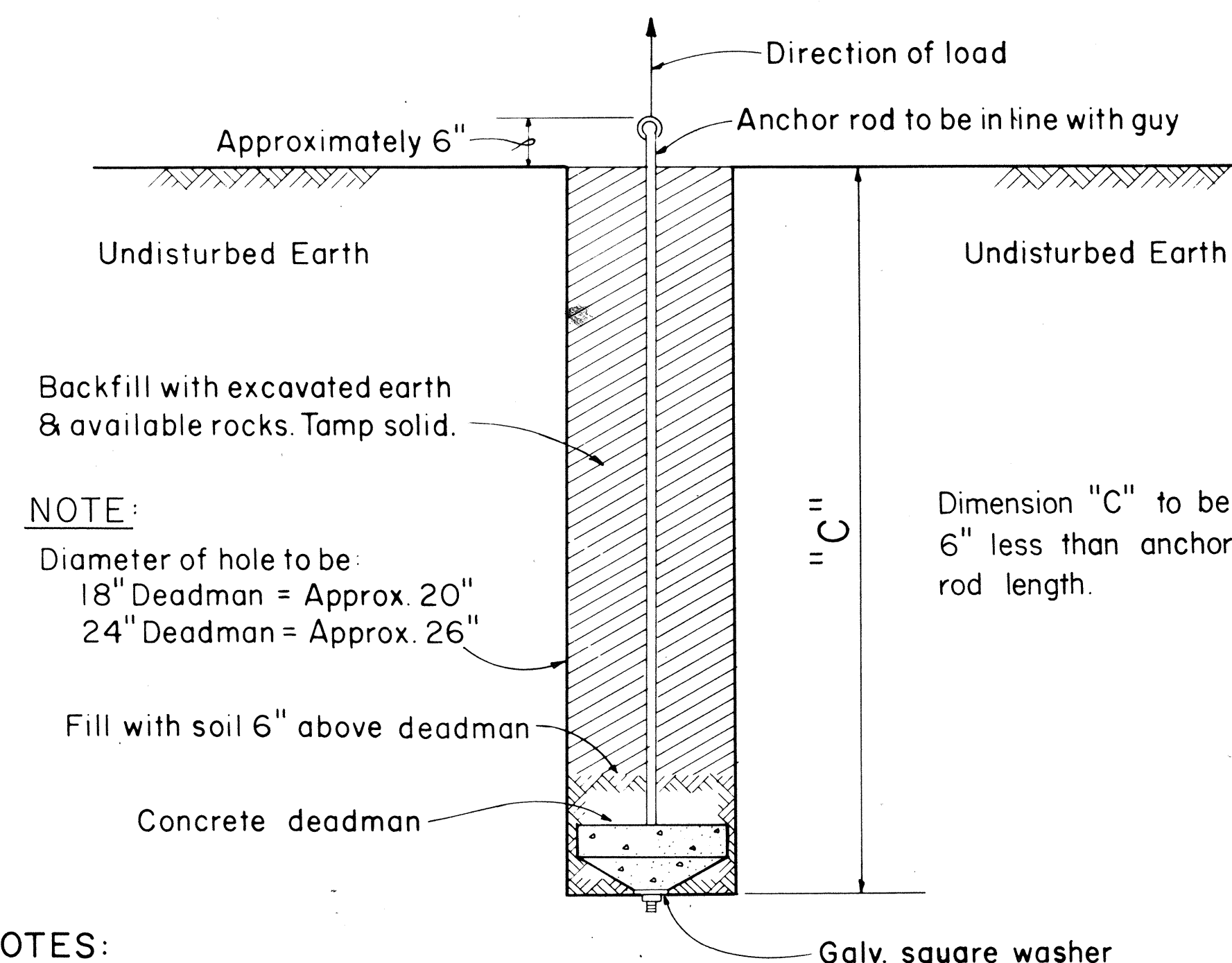
Not to Scale

TABLE 2 ANCHOR ROD - ANCHOR SLUG - SQUARE WASHER COMBINATION

H.E. CODE NO.	ANCHOR ROD	WORKING TENSION 1/2 ULT (LBS.)	H.E. CODE NO.	CONC. ANC. (IN.)	H.E. CODE NO.	WASHER SIZE	QTY.
617	5/8" x 8'-0" Steel	8,000	518	18	2320	4" x 4" x 3/16"	2
615	5/8" x 8'-0" Cu Cov Stl	9,250	518	18	**	3" x 3" x 1/8"	2
618	3/4" x 8'-0" Steel	11,500	518	18	2330	6" x 6" x 3/8"	1
619	1" x 8'-0" Steel	18,000	524	24	2331	6" x 6" x 1/2"	1
616	1" x 8'-0" Cu Cov Stl	22,500	524	24	**	4" x 4" x 3/16"	2
613	1 1/4" x 10'-0" Steel	29,000	524	24	2330	6" x 6" x 3/8"	2

** Use bronze square washers included in anchor rod assembly on copper covered steel (Cu Cov Stl) anchor rods.

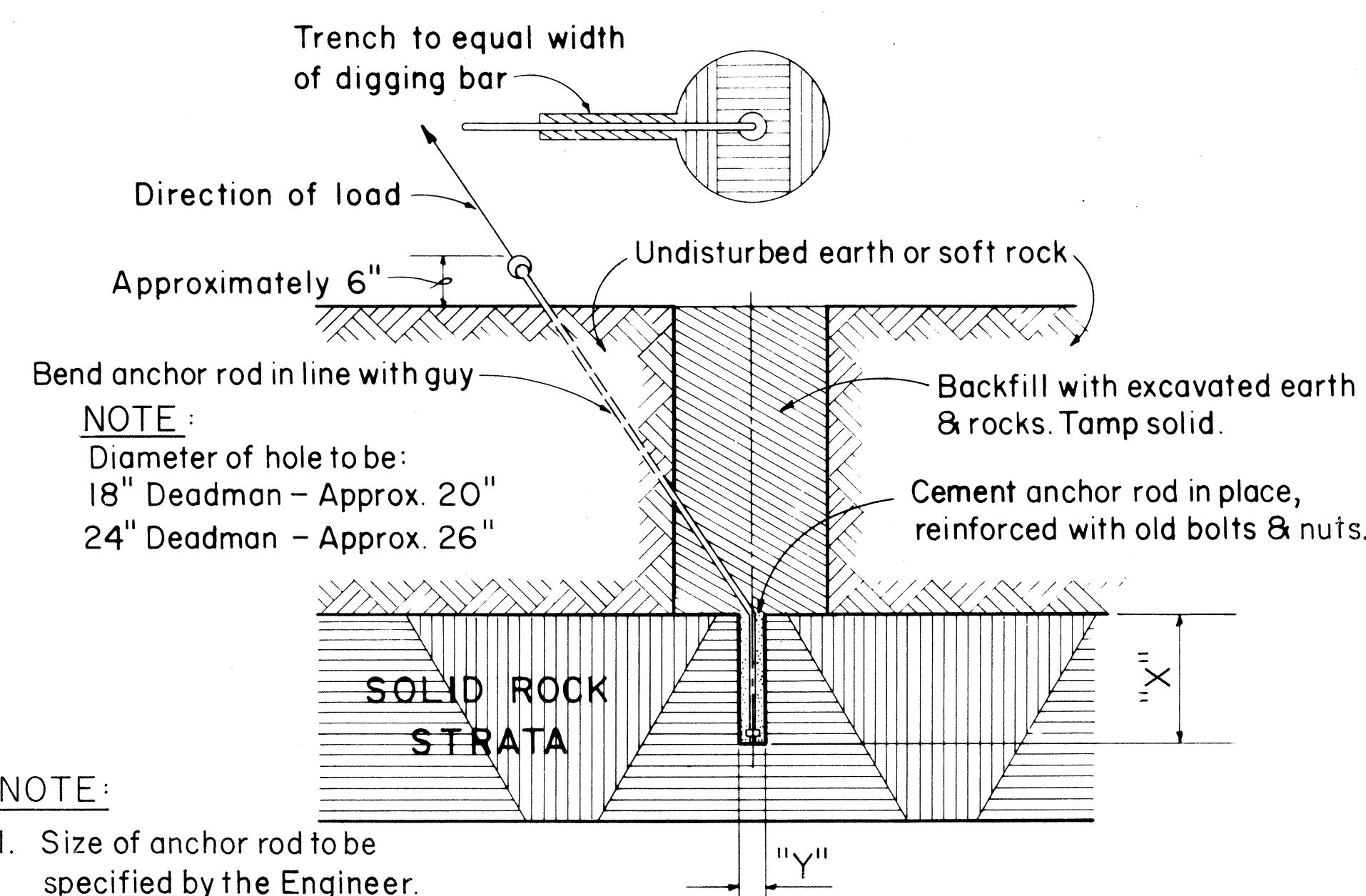
ANCHORING DATA



- NOTES:
1. Size of anchor rod to be specified by the Engineer.
 2. Use Anchoring Data.

SIDE - WALK ANCHOR

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



- NOTE:
1. Size of anchor rod to be specified by the Engineer.
 2. "X" Should not be less than 24". If "X" is less than 24" complete hole & install anchor.
 3. "Y" 5/8" Anchor rod drill 2" hole
3/4" Anchor rod drill 2" hole
1" Anchor rod drill 2 1/2" hole
1 1/4" Anchor rod drill 3" hole
 4. Use Anchoring Data.

ROCK ANCHOR

Not to Scale

APPROVED:

HAWAIIAN ELECTRIC Co., Inc. DATE

HAWAIIAN TELEPHONE Co. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

ANCHOR DETAILS AND
ANCHORING DATA

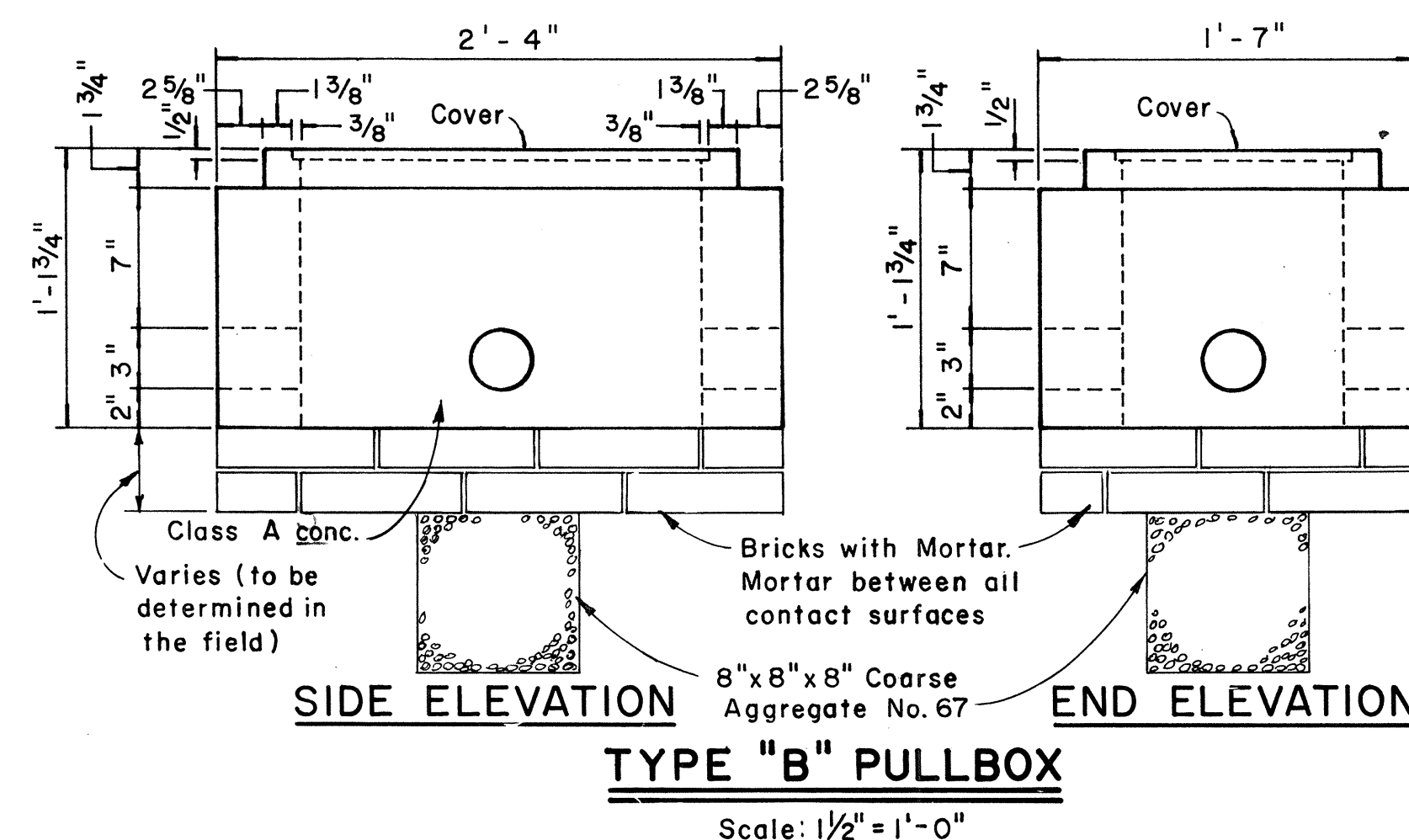
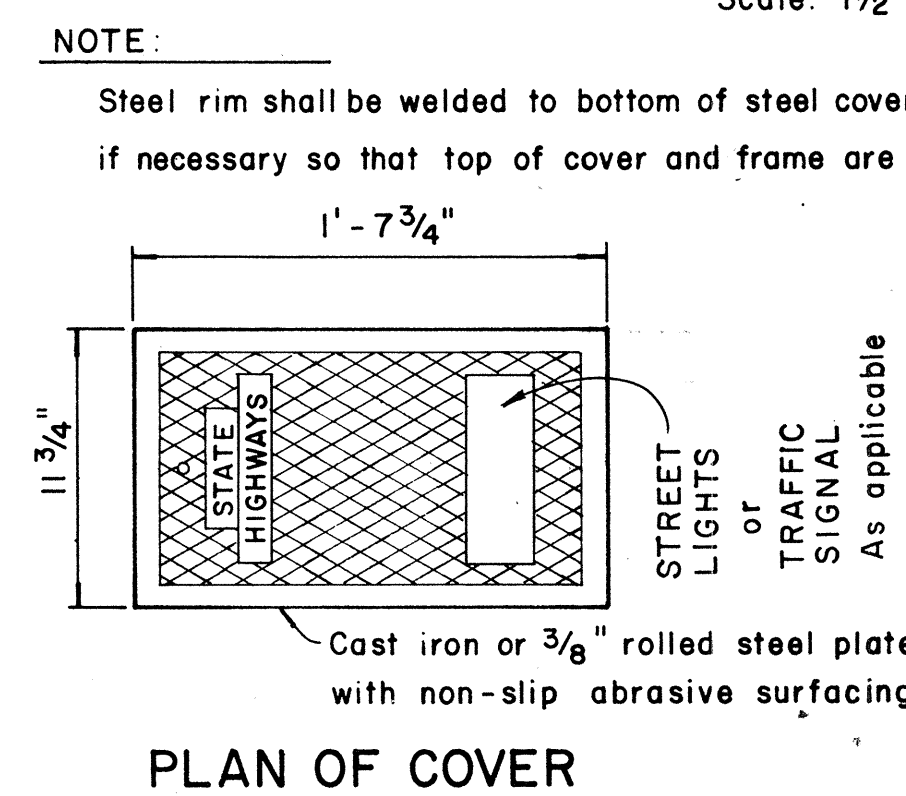
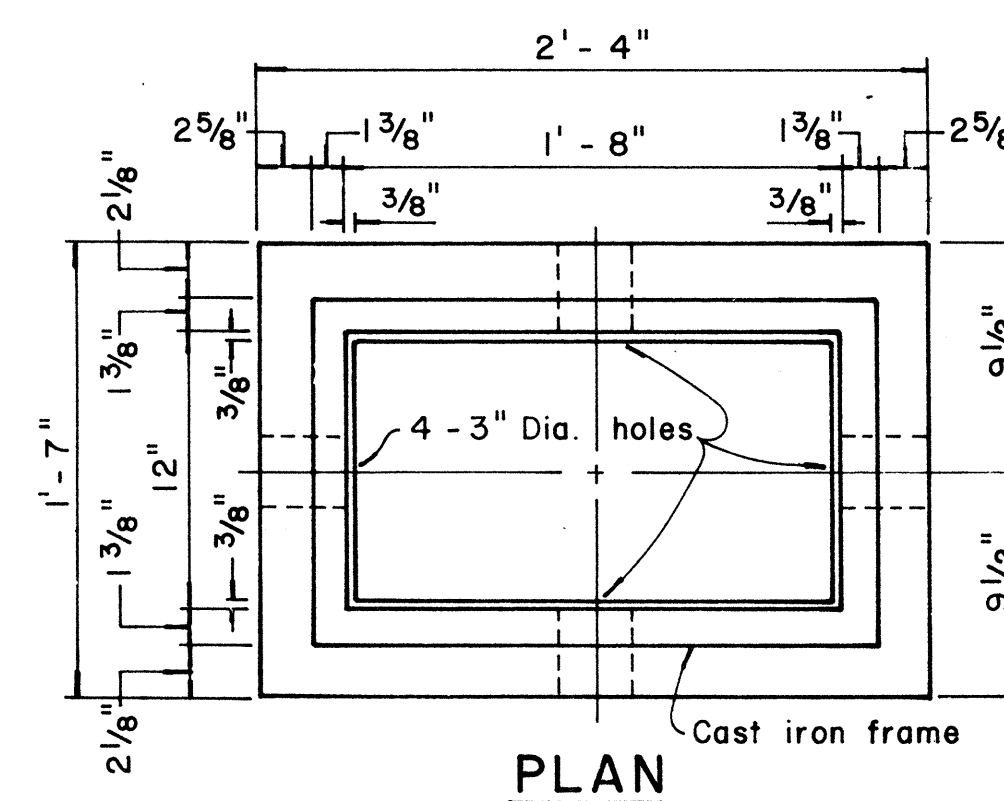
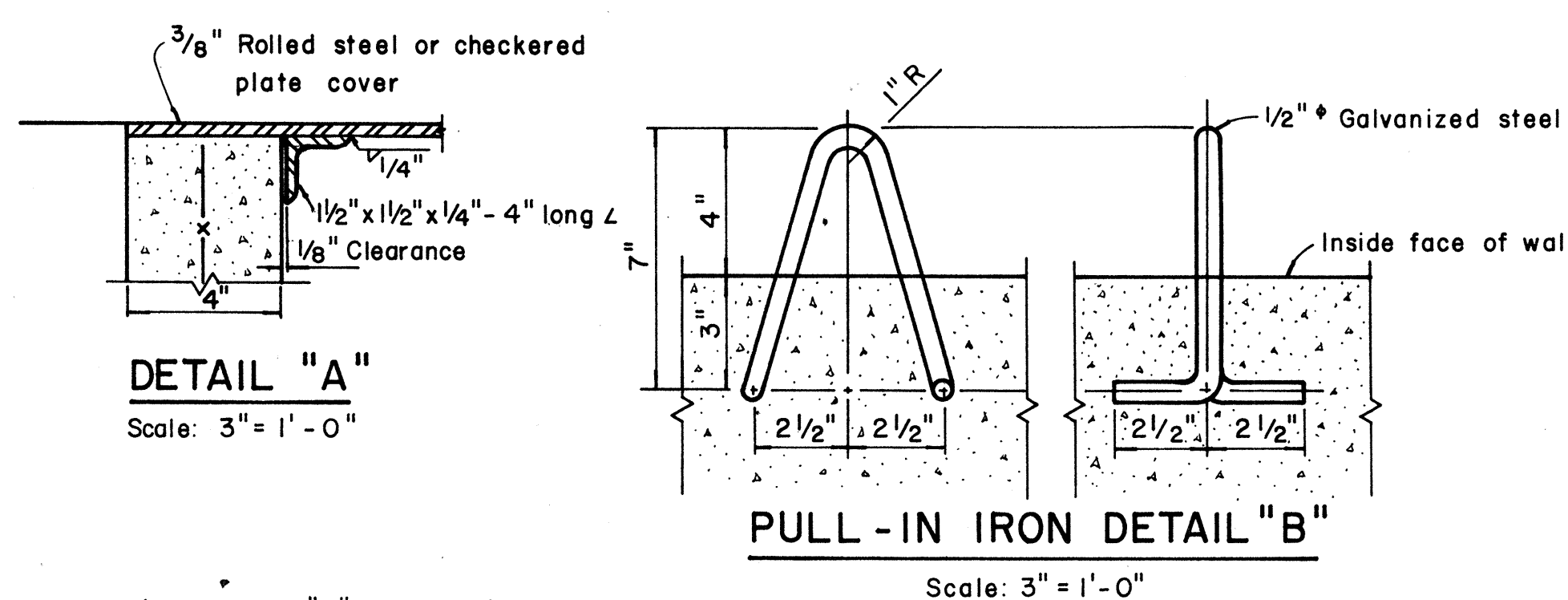
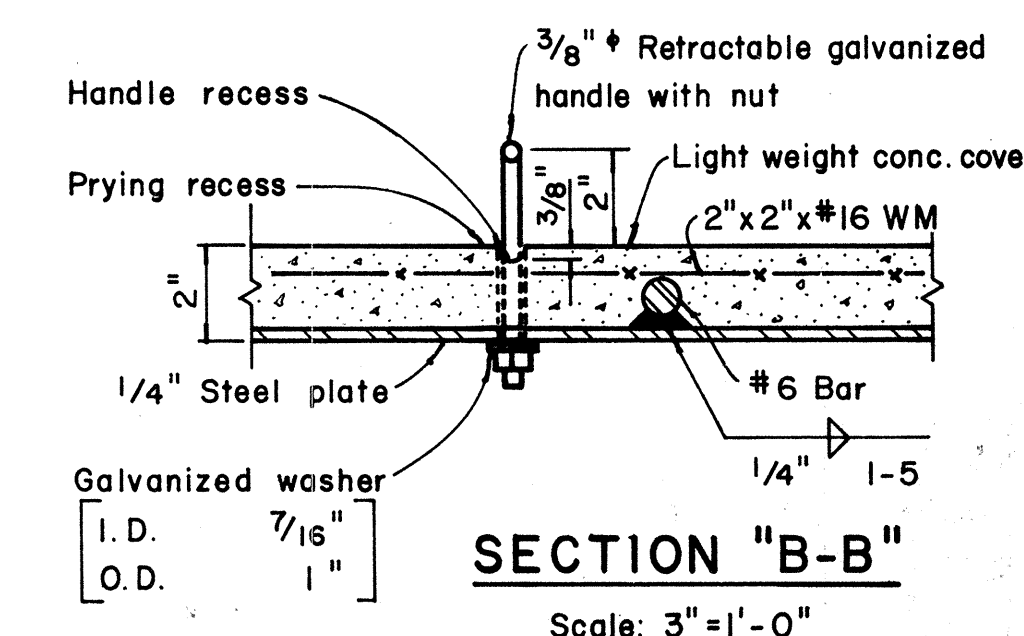
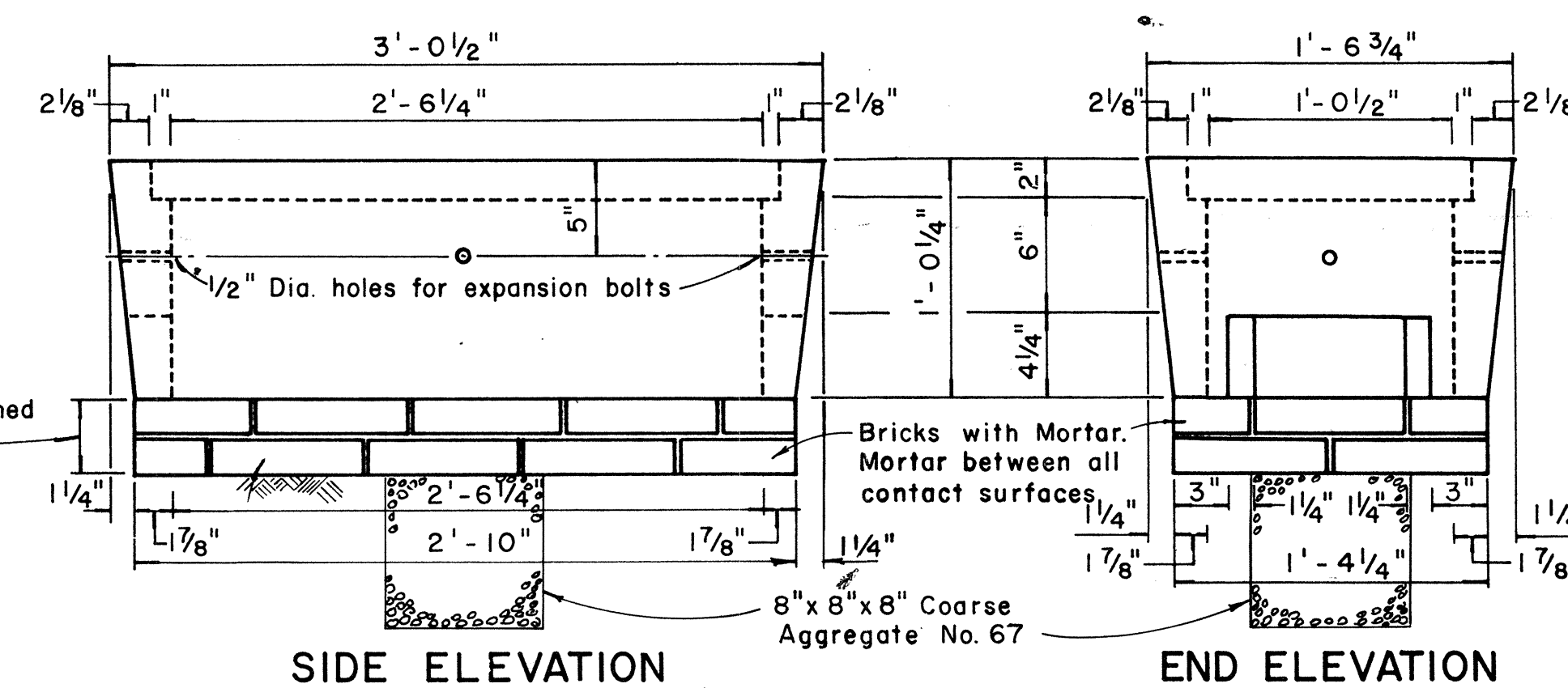
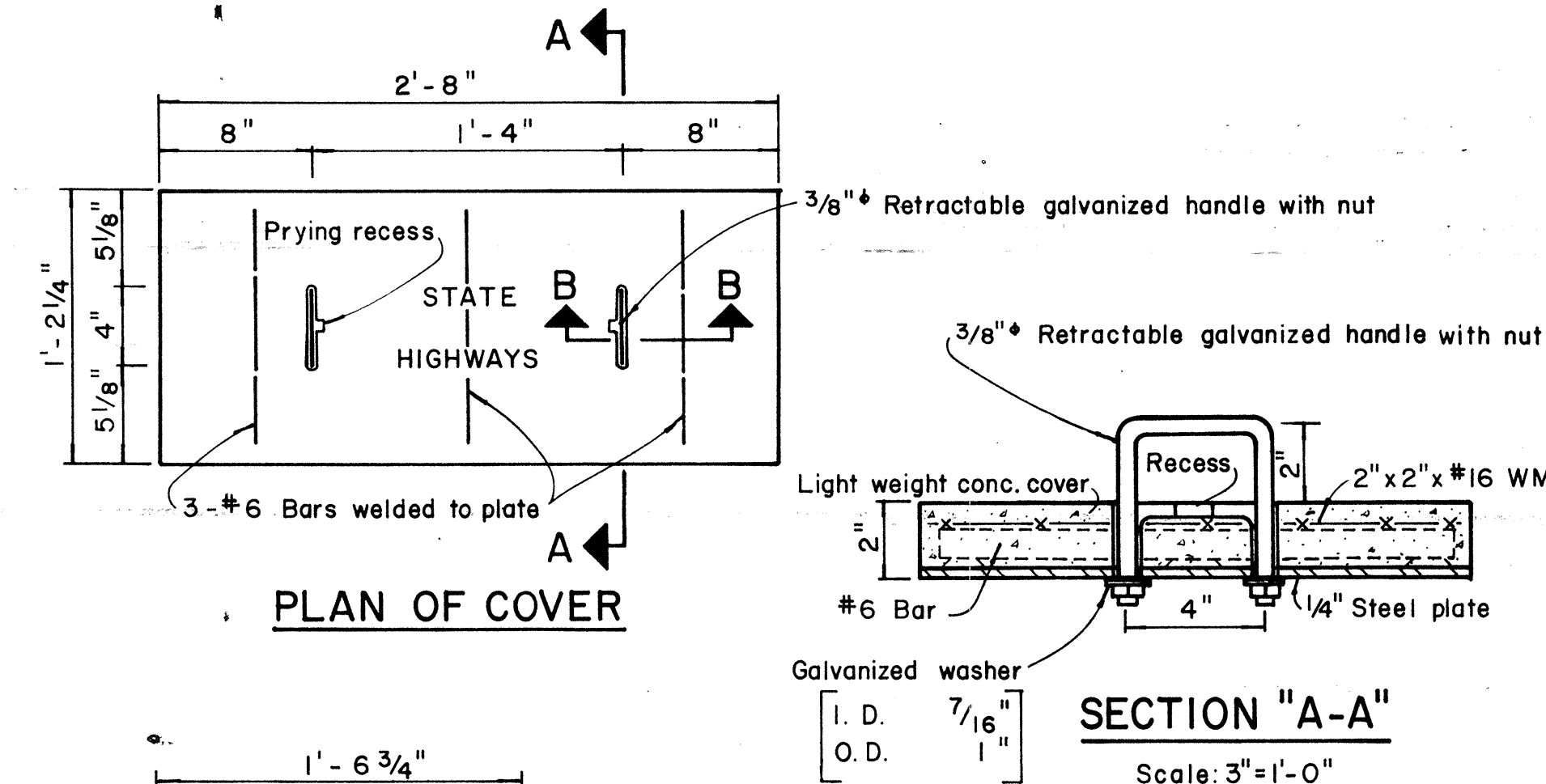
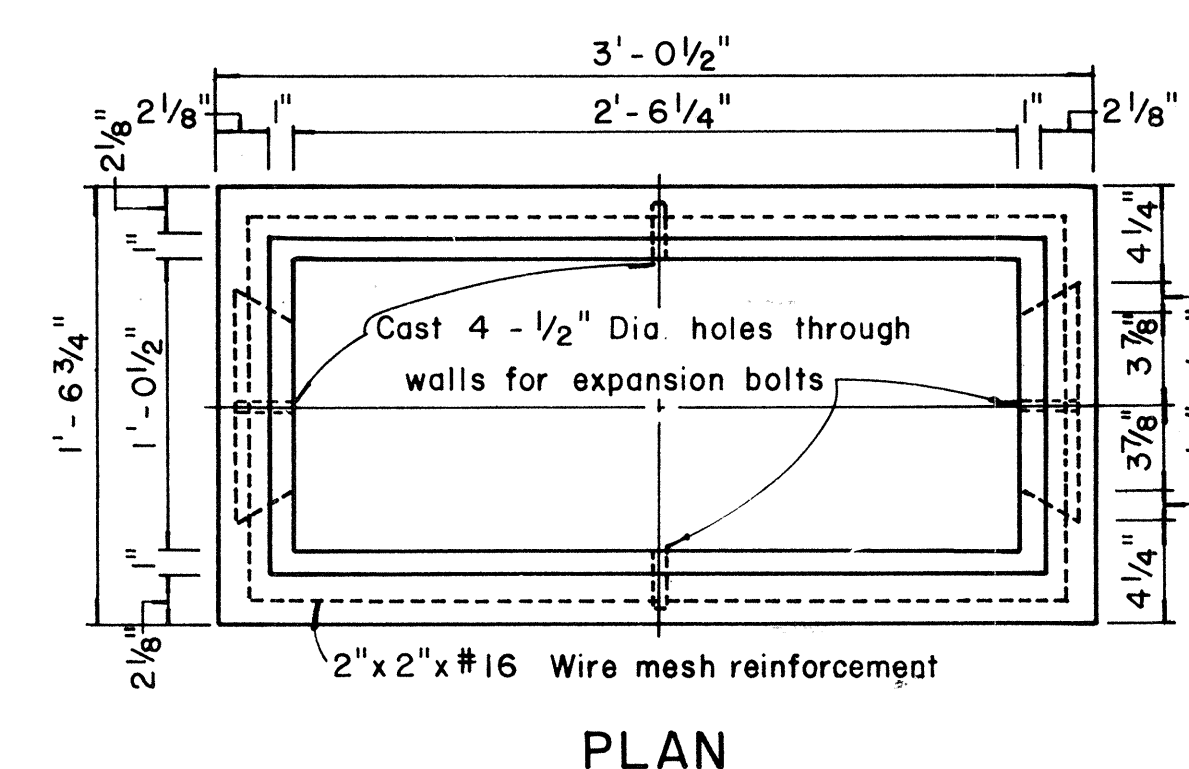
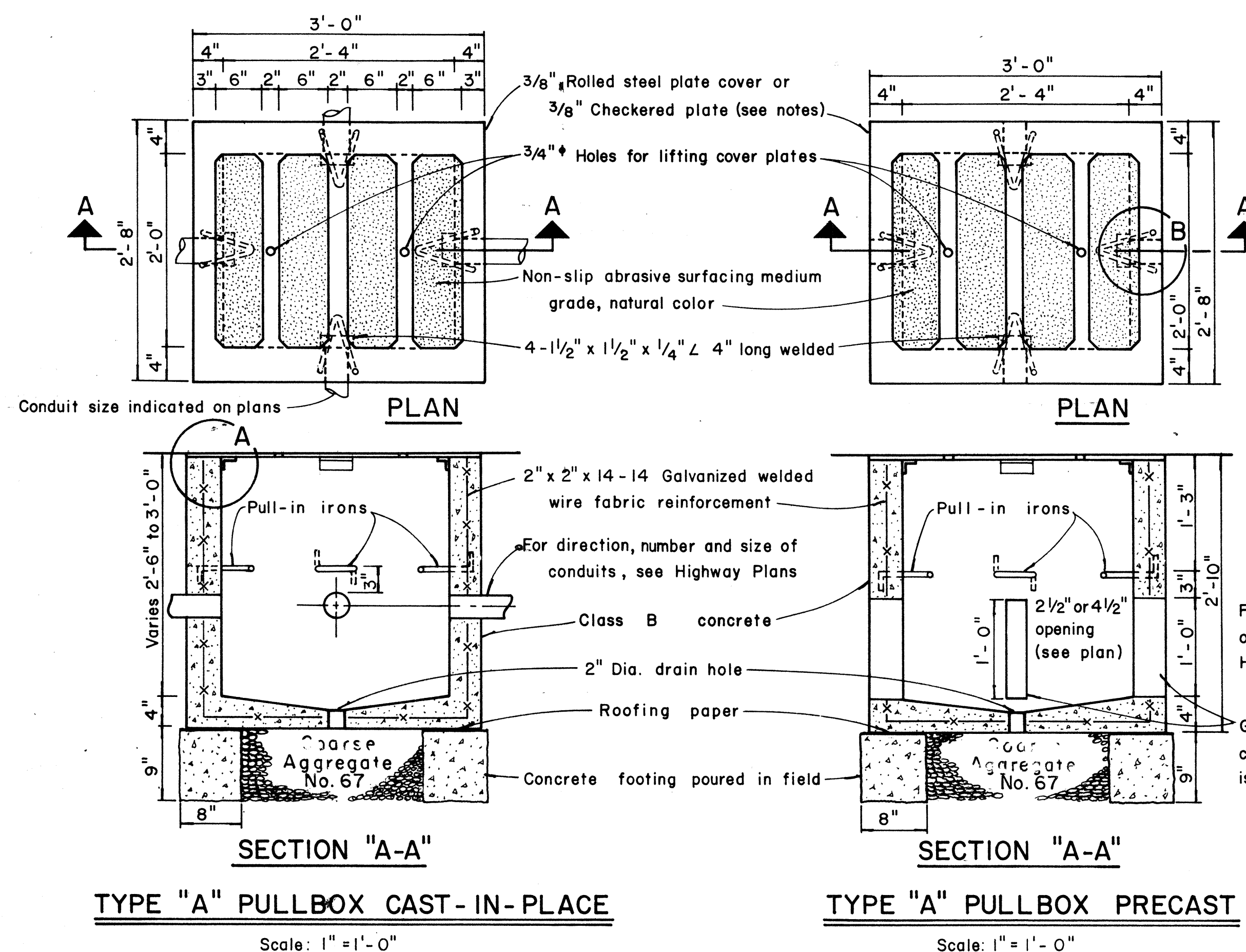
Scales: As Noted

Date

SHEET No. OF SHEETS

July 25, 1974

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET
HAWAII	HAW.	93A-02-70	1977	69,100 SHEET	100



NOTE:

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

NOTES: (FOR TYPE "A" PULLBOX)

1. $\frac{3}{8}$ " 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. $\frac{3}{8}$ " 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.

APPROVAL RECOMMENDED:
Eishi Tanaka
TRAFFIC ENGINEER

12/20/22
DATE

APPROVED: Jim L. 22 Feb 12-30-60
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Revised Type B & C Pullbox details	H.T.	3-5-

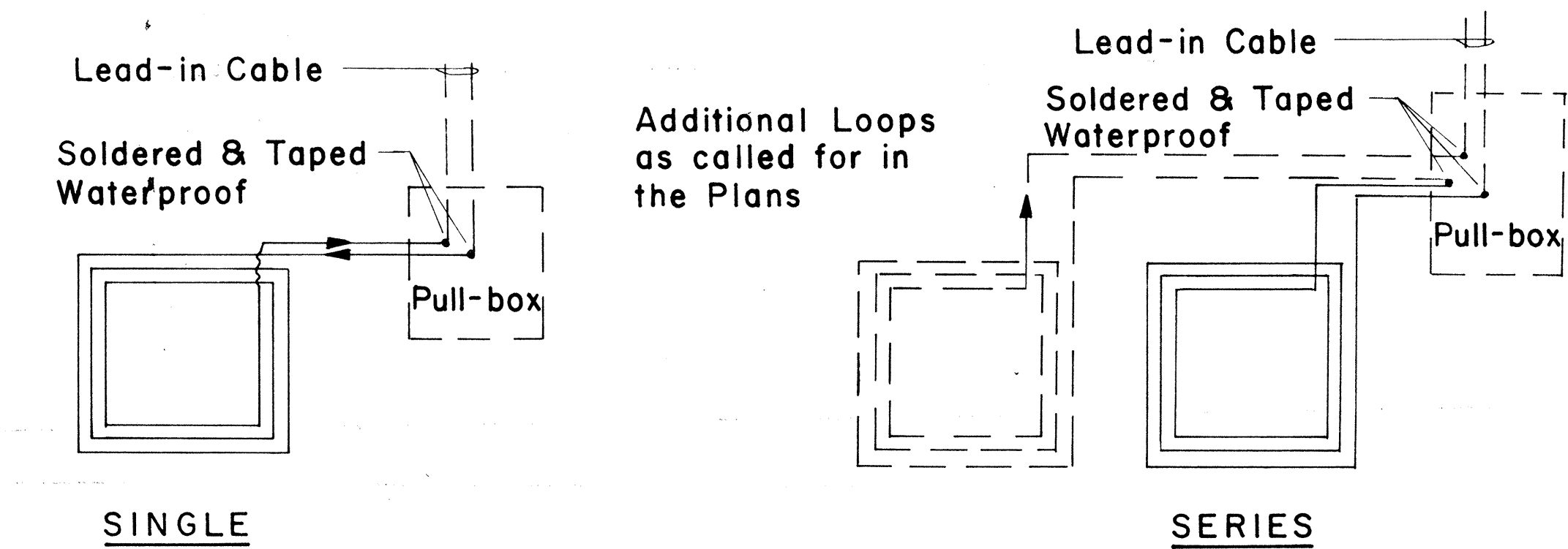
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
PULLBOXES

Scale as noted Date

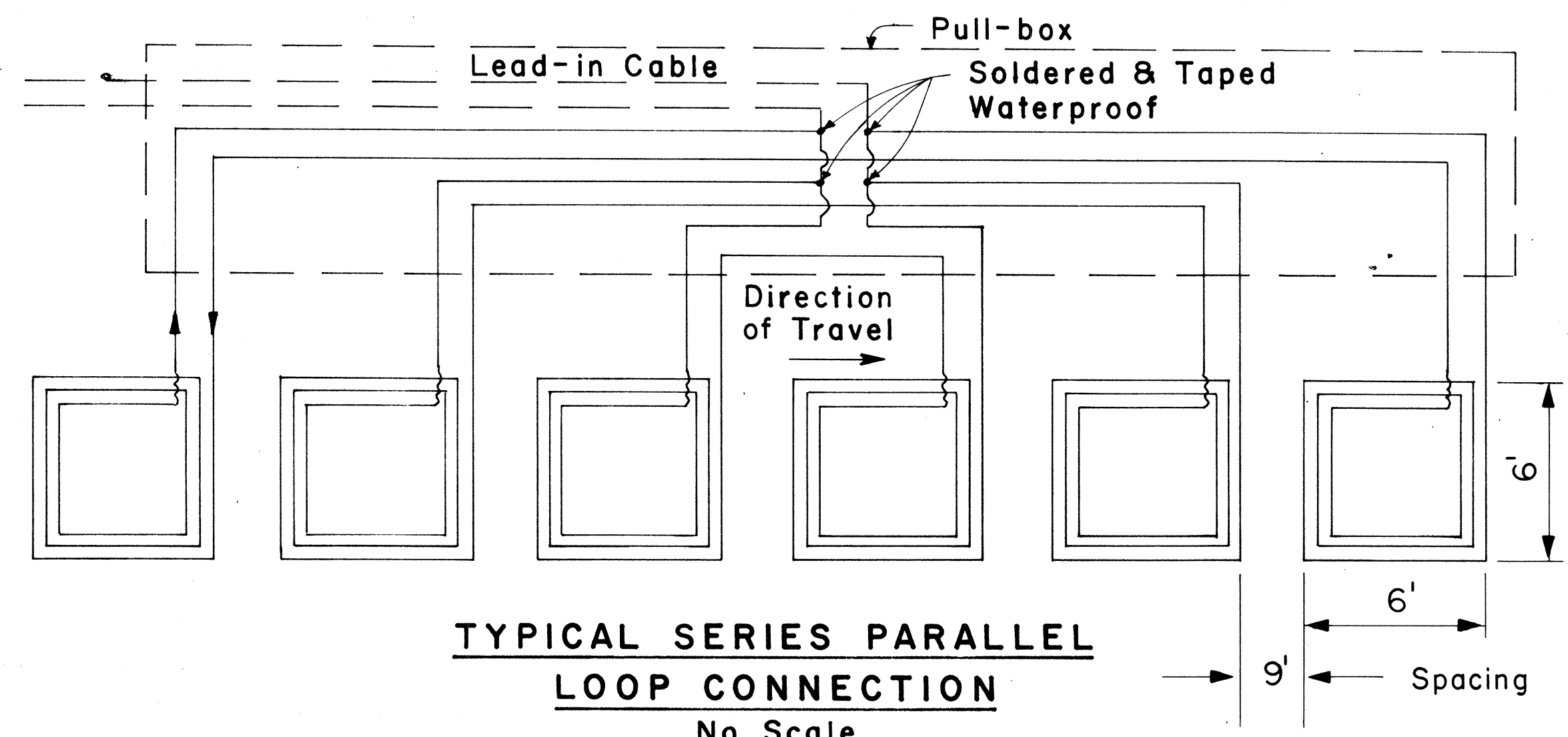
SHEET No. OF SHEETS DT 40

C.O. 100 S-1

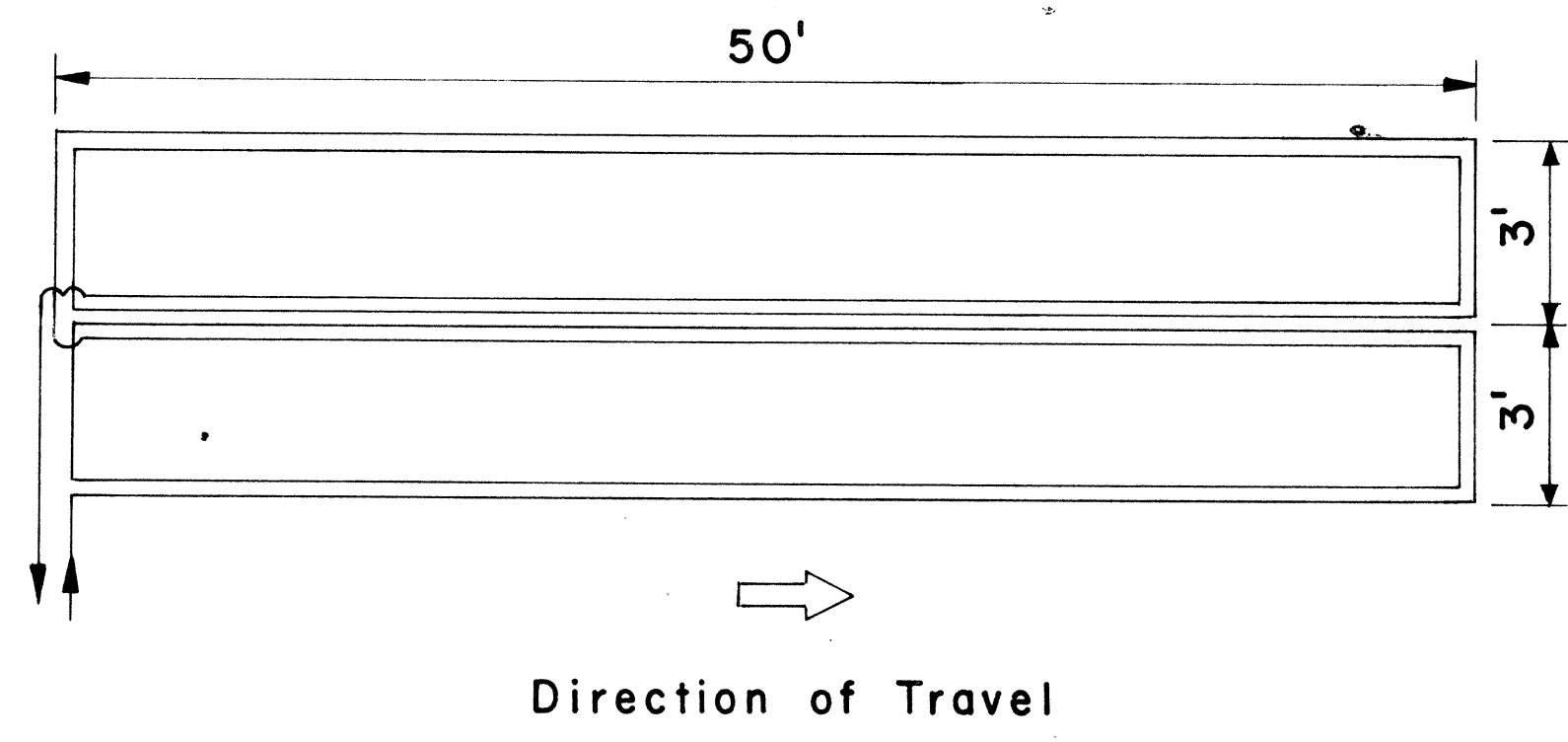
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HAWAII	HAW.	93A-02-7D	1971	20100 S-2	100



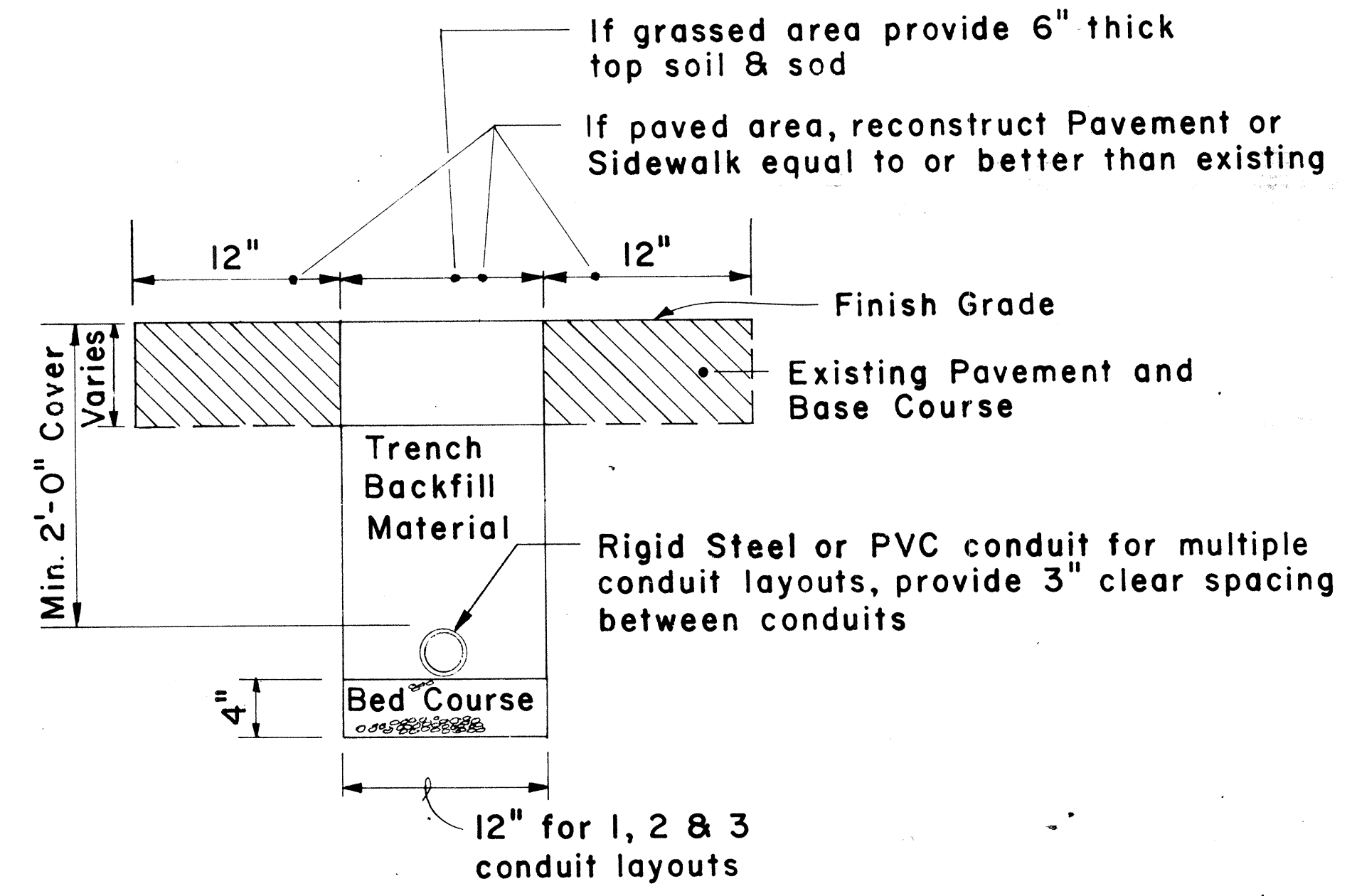
TYPICAL LOOP CONFIGURATIONS
No Scale



TYPICAL SERIES PARALLEL LOOP CONNECTION
No Scale

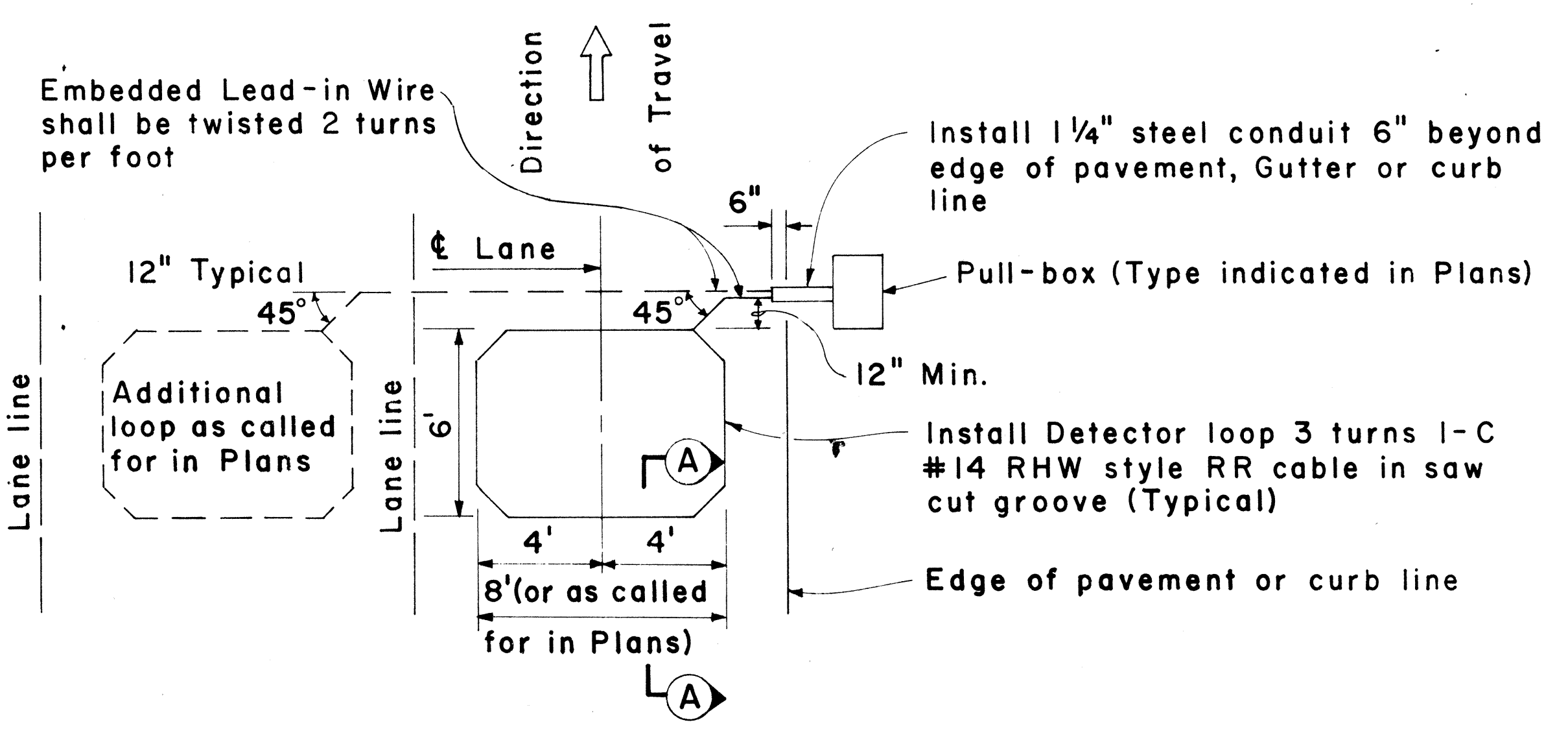


WIRING FOR 6' x 50' LOOP DETECTOR
No Scale

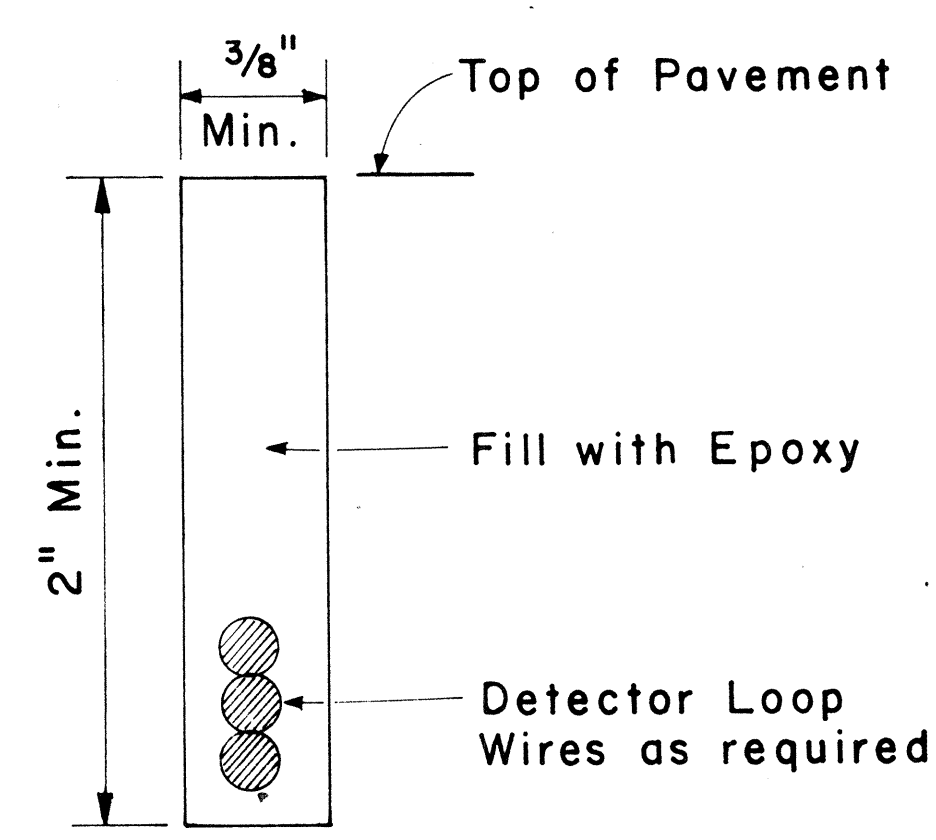


TYPICAL TRENCH SECTION FOR CONDUIT
Scale : 1 1/2" = 1' - 0"

NOTE:
1. All conduits under roadways shall be steel or PVC schedule 80. All other conduits shall be steel or PVC schedule 40.



PLAN - MULTIPLE LOOP LAYOUT
Scale : 1/4" = 1' - 0"



Detector Loop Saw-Cut SECTION A-A (TYPICAL)
No Scale

APPROVAL RECOMMENDED:
Erichi Tanaka 3/4/76
TRAFFIC ENGINEER DATE

APPROVED:
Hubert B. Ralston 2-5-76
ASSISTANT CHIEF, ENGINEERING DATE

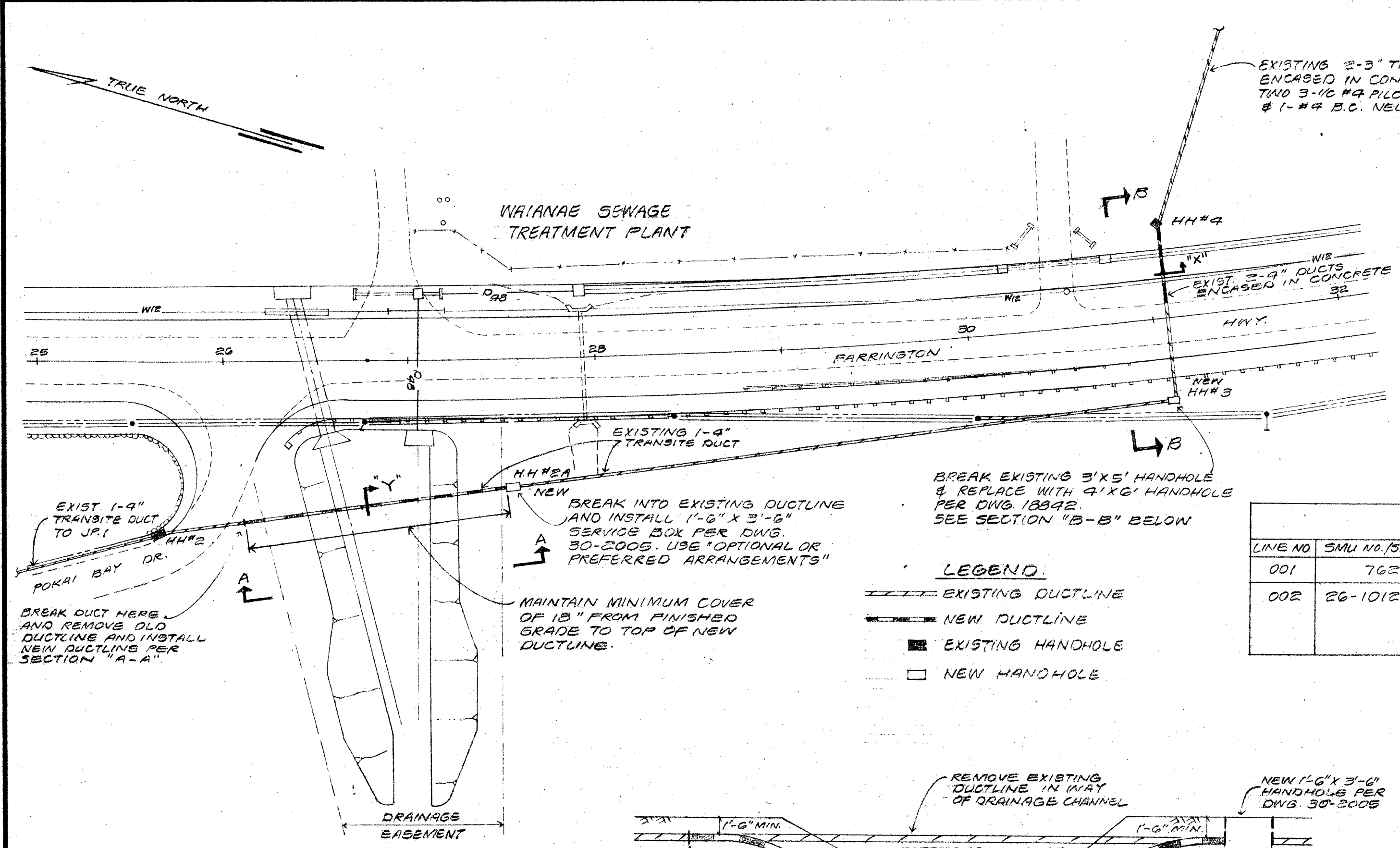
NO.	REVISION	APPROVED BY	DATE
1	Add dimensions to Loop Configurations	H.T.	9-22-76

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

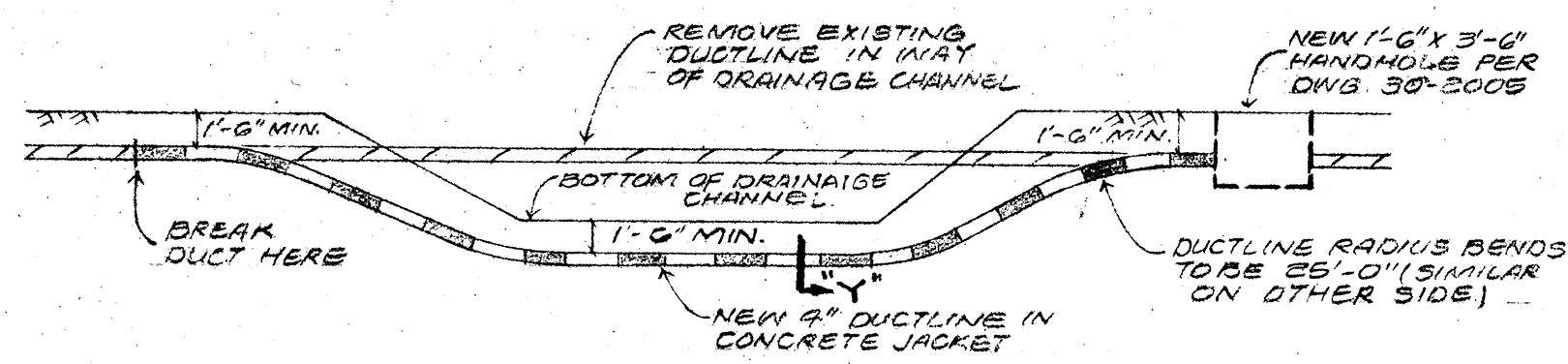
**TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS**

Scale: As Noted
SHEET NO. OF SHEETS DT 405

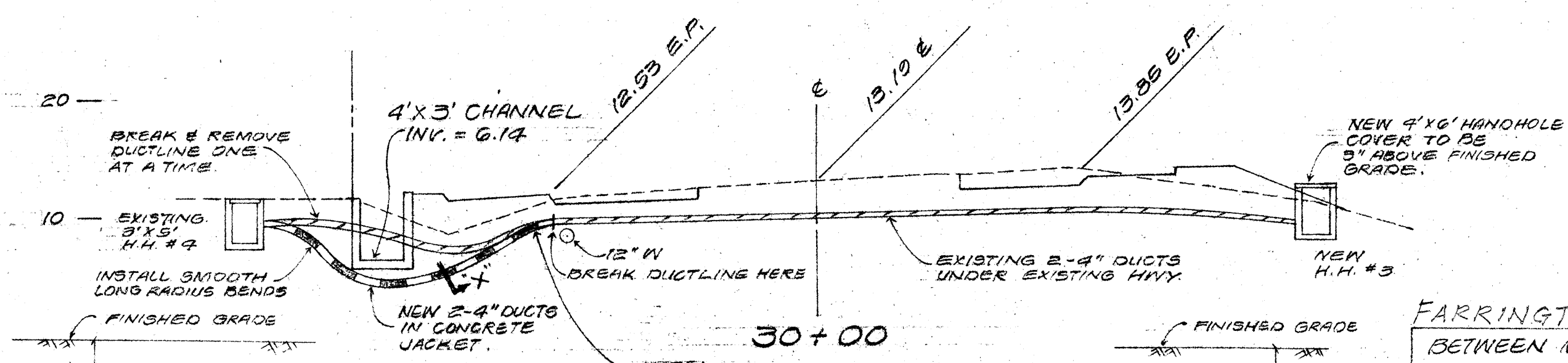
DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____



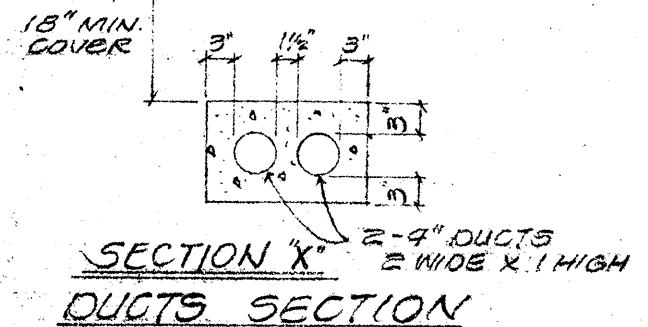
PARTIAL PLAN VIEW
SCALE: 1" = 50'



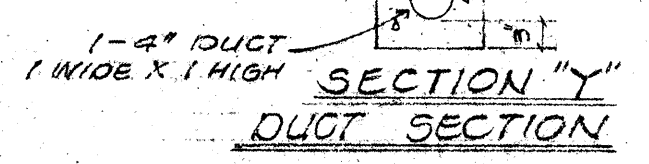
SECTION "A-A"
N.T.S.



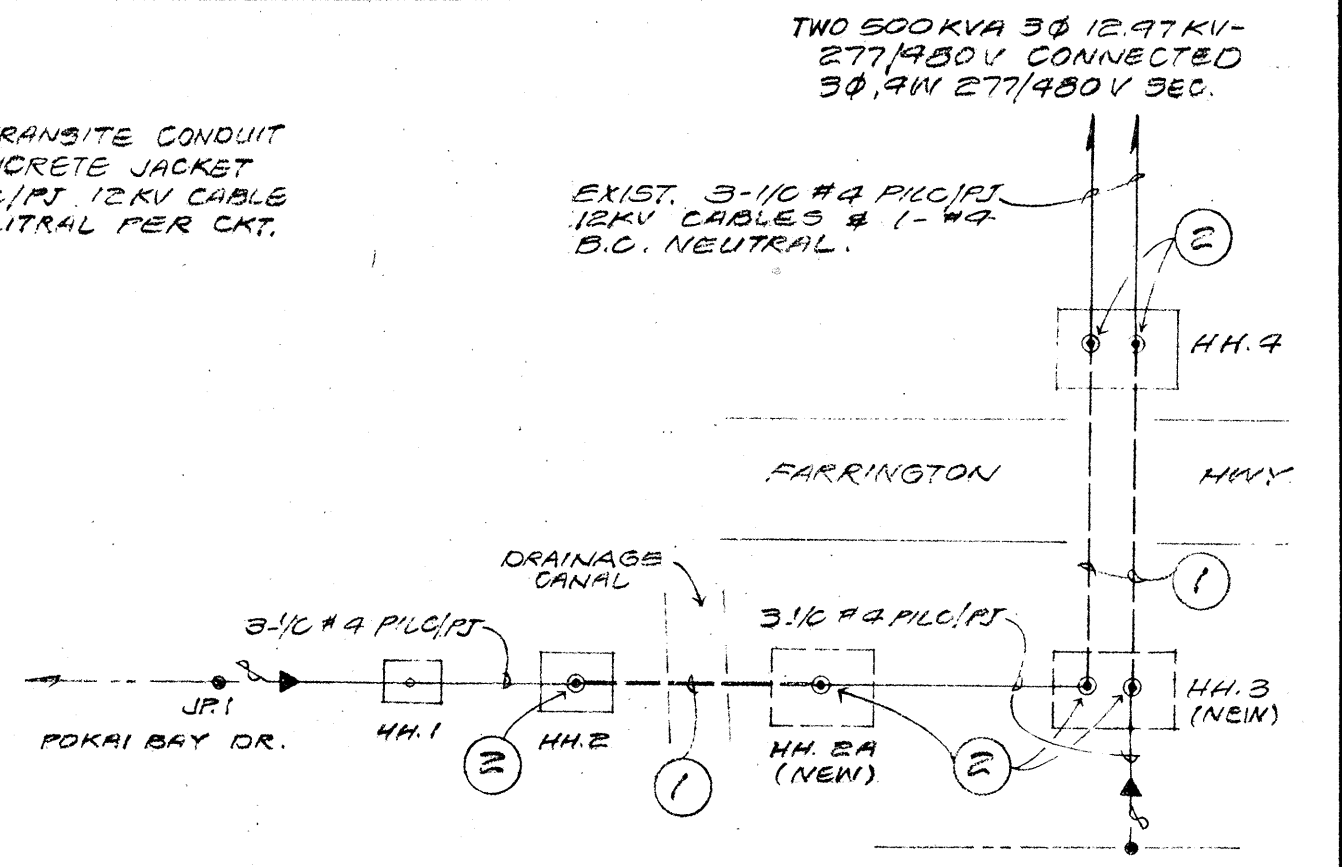
SECTION "B-B"
N.T.S.



SECTION "X"
DUCTS SECTION



SECTION "Y"
DUCT SECTION



SINGLE LINE DIAGRAM
N.T.S.

SMU LIST				
LINE NO.	SMU NO./STOCK	VARI.	DESCRIPTION	QTY.
001	7623	—	COND. XLPE/CN #2 AL. 3-1/2 12KV	350'
002	26-1012-1	—	3-1/2 SPLICE #4 CU PILC-PJ TO #2 AL PE/CN, 15KV	15

H.E.CO. NOTE:
1. H.E.CO. OR ITS CONTRACTOR TO BREAK EXISTING DUCTLINES & DEMOLISH HANDHOLE #3.

GENERAL NOTE:
1. RELOCATION OF DUCTLINE TO WAIANAE SEWAGE PUMP AND TREATMENT PLANT DUE TO HIGHWAY WIDENING PROJECT.

REFERENCE DRAWING:
15335 WAIANAE SEWAGE PUMP & TREATMENT PLANT
FARRINGTON HWY., NEXT TO CBC CORP. YARD

FARRINGTON HWY WIDENING
BETWEEN MAILILI AND WAIANAE
HWY. PROJ. NO. 93A-02-70

J.P. APPL. NO. 43156
PROJECT NO. 0009970

NO.	DATE	REVISIONS	BY	CHK'D	APP'D
STATE DEPARTMENT OF TRANSPORTATION FARRINGTON HIGHWAY WIDENING UNDERGROUND LINES -- 12KV					
DESIGNED	H. H. H.	DRAWN	R. C.	DATE	3-25-75
CHECKED	ELEG.	MECH.	STRUC.	SCALE	AS SHOWN
APPROVAL R. H. H. R. L. L.				ENGINEERING DESIGN DEPARTMENT HAWAIIAN ELECTRIC CO., INC. HONOLULU, HAWAII	
DRAWING NUMBER				REV.	
42423				○	