

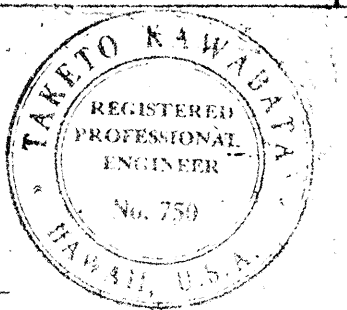
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H1-1(12)	1979	11	175

GENERAL NOTES

1. SYMBOLS (SEE) DENOTE RELOCATION OF LIGHT ASSEMBLY DIRECTLY OUTBOARD OF EXIST. LIGHT POLE, UNLESS OTHERWISE NOTED.
FOR LIGHT POLE SET BACK DISTANCE SEE SH. 7.6.8.1. ALL OTHER OPT. BACK TO 11'-0" FROM EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
2. HWY. LITS. 159, 161 (SH. 5.) TO BE LOCATED BETWEEN EXIST. GUARD RAIL & CONC. RETAINING WALL.
3. FOR GROUNDING SYSTEM, SEE NOTE 19, SH. 12.
4. FOR BARRIER TYPES SEE STRUCTURAL DWGS. & PROVIDE 3-FOOT SECTION FOR MOUNTING OF POLES. ALSO PROVIDE #6 TIE BARS BETWEEN 3-FOOT SECTION & ADJACENT WALLS PER STRUCTURAL DWGS.
5. FOR HWY. ILLUM. SIGN WIRING, SEE STATE HWY. DIV. STD. CH. D. 10THRU 13.
6. FOR HWY. LITS. #63 & #65, MODIFY EXIST. CHAIN LINK FENCE & RETAINING WALL TO ACCOMMODATE POLES, SEE STATE HWY. DIV. SH. 165 & SH. 91.
OF THESE PLANS FOR REFERENCES.
7. PROVIDE 10 EA. SERIES 2, 20 EA. MULT. 40W BALLAST FOR REPLACEMENT DUE TO CORROSION AS DIRECTED BY ENGINEER IN THE FIELD & WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
8. ALL PULLBOXES TO BE 11'-0" MIN. FROM EXIST. EDGE OF PAVEMENT UNLESS OTHERWISE NOTED, SEE SH. 7.
9. ALL MERCURY-VAPOR LAMPS AFFECTED BY POLE REINSTALLATION SHALL BE REPLACED WITH NEW FOR SERIES AND MULTIPLE CIRCUITS & WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
10. HWY. LIGHTING SYSTEMS PARTS, HARDWARE AND COMPONENTS DAMAGED SHALL BE REPLACED BY NEW AND CONSIDERED INCIDENTAL TO THE CONTRACT.
11. STUB-OUT 2" PVC, 5 FEET LONG, TERMINATE W/ DUCT SEAL & BUSHING, FOR ALL STUB-OUTS.
12. PROVIDE 3 EA. TWIN 400W SERIES CRT. BALLAST FOR REPLACEMENT AT CONC. BARRIER POLE MTG. & WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
13. ALL REMOTE BALLAST LOCATED IN FB. TO BE EPOXY ENCAPSULATED TYPE.

ELECTRICAL SYMBOLS

EXST.	NEW	DESCRIPTION
	○	HWY. LT. SHOWN IN NEW LOCATION UNLESS NOTED OTHERWISE. ALSO SEE NOTE 1, SH. 11.
○	○	HWY. LT., NO CHANGE. UNLESS NOTED OTHERWISE.
○	○	HWY. LT. ASSY & FOUNDATION TO BE REMOVED.
□	○	HWY. LT., MT. ON CONC. RETAINING WALL.
	○	HWY. LT., NEW POLE & BRACKET, NEW LUMINAIRE AS NOTED.
	○	REPLACE ST. LT. HANDHOLE INDICATED
	■	HANDHOLE, STATE HWY. DIV. TYP. TYPE 'C', NOTE #8
	□	HWY. SIGN W/ SHO FLUOR, STATE HWY. DIV. STD. SH. 105 TO 129
	○	400W Hg - VAPOR
	○	700W Hg - VAPOR
	○	1000W Hg - VAPOR
---	X---	DIRECT BURIED CABLES TO BE ABANDON.
---	---	DIRECT BURIED SERIES CRT. 1/6 CABLE
---	2---	DIRECT BURIED SERIES CRT. 2 1/6 CABLE
---	---	DIRECT BURIED PVC SCH'D. 40 OR ABS CONDUIT, SH. 161
---	---	CONC. ENCASED 2" CONDUIT, SH. 161 OR W/ IN CONC. STRUC. SH. 161
	1 2 3 4 5 6 7	1. POLE NUMBER 2. CIRCUIT ASSIGNMENT NUMBER 3. LETTERS. SEE REFERENCE 4. LUMINAIRE MTG. HT. FOR NEW POLE ONLY 5, 6, 7 SEE REFERENCES
	W	INDICATES - POLE TO BE MTD. ON CONC. WALL, DET. 9/1
	BW	INDICATES - POLE TO BE MTD. ON OR BACK OF CONC. WALL, DET. 9/1
	T	INDICATES - NEW BREAK AWAY TRANSFORMER BASE
	R	INDICATES - REINSTALL HWY. LT. ASSY.
	M/R	INDICATES - PROVIDE POLE HANDHOLE MODIFICATION, ADD 3/8" & REINSTALL HWY. LT. ASSY.
	S/B	INDICATES - SLIP BASE, SH. 141
	T/R	INDICATES - NEW TRANS. BASE & REINSTALL HWY. LT. ASSY.
	B	INDICATES - HWY. LT. ASSY. MTD. ON CONC. BARRIER, SH. 101
	A	INDICATES - MODIFY POLE FOR NEW TRUSS ARM BRACKET, SEE SH. 151
	N/C	INDICATES - NO CHANGES FOR POLE, ASSY.
	700W	INDICATES - NEW 700W. Hg VAPOR LUMINAIRE.
	C	INDICATES - NEW TRUSS ARM BRACKET, LENGTH AS NOTED
	PL/A	INDICATES - HWY. LT. INSTALLATION, SEE PLAN 'A' SH. 81
	□	HANDHOLE, STATE HWY. DIV. TYP. TYPE 'C', SH. 111
	Ⓢ	INDICATES - HWY RAMP IDENTIFICATION.
---	---	DIRECT BURIED MULTI. CRT. 1/6 CABLE.
---	2---	DIRECT BURIED MULTI. CRT. 2 1/6 CABLE.
	□	PULLBOX, STATE HWY. DIV. TYPE 'X', SH. 121
	Ⓢ	PHOTO ELEC. SN. W/ RPT, STATE HWY. DIV. STD. SH.
	Ⓢ	FLUOR. BALLAST IN NEMA-3R ENCL.
	---	CONDUIT CONN. BETWEEN NEW & EXST., SH. 161
	N.I.C.	NOT IN CONTRACT.
	---	RE-USE LUMINAIRE
	HT:	INDICATES-NEW POLE HEIGHT
	S/R	INDICATES-PROVIDE 3/8" & REINSTALL POLE ASSY.
	W/R	INDICATES-REINSTALL POLE ASSY. ON WALL.
	S/R	INDICATES-REINSTALL POLE ASSY. ON CONC. BARRIER.
	(176)	INDICATES-ITEM NUMBER IN THE 622 SERIES OF PROPOSAL ITEMS



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING
SYMBOLS

SAFETY IMPROVEMENT

KALIHI STREET TO PALI HIGHWAY

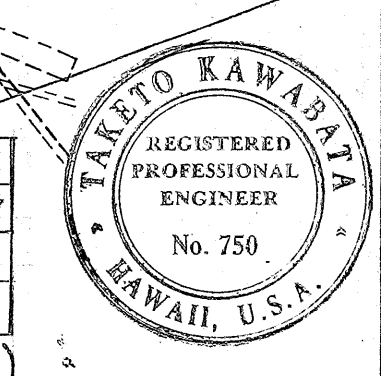
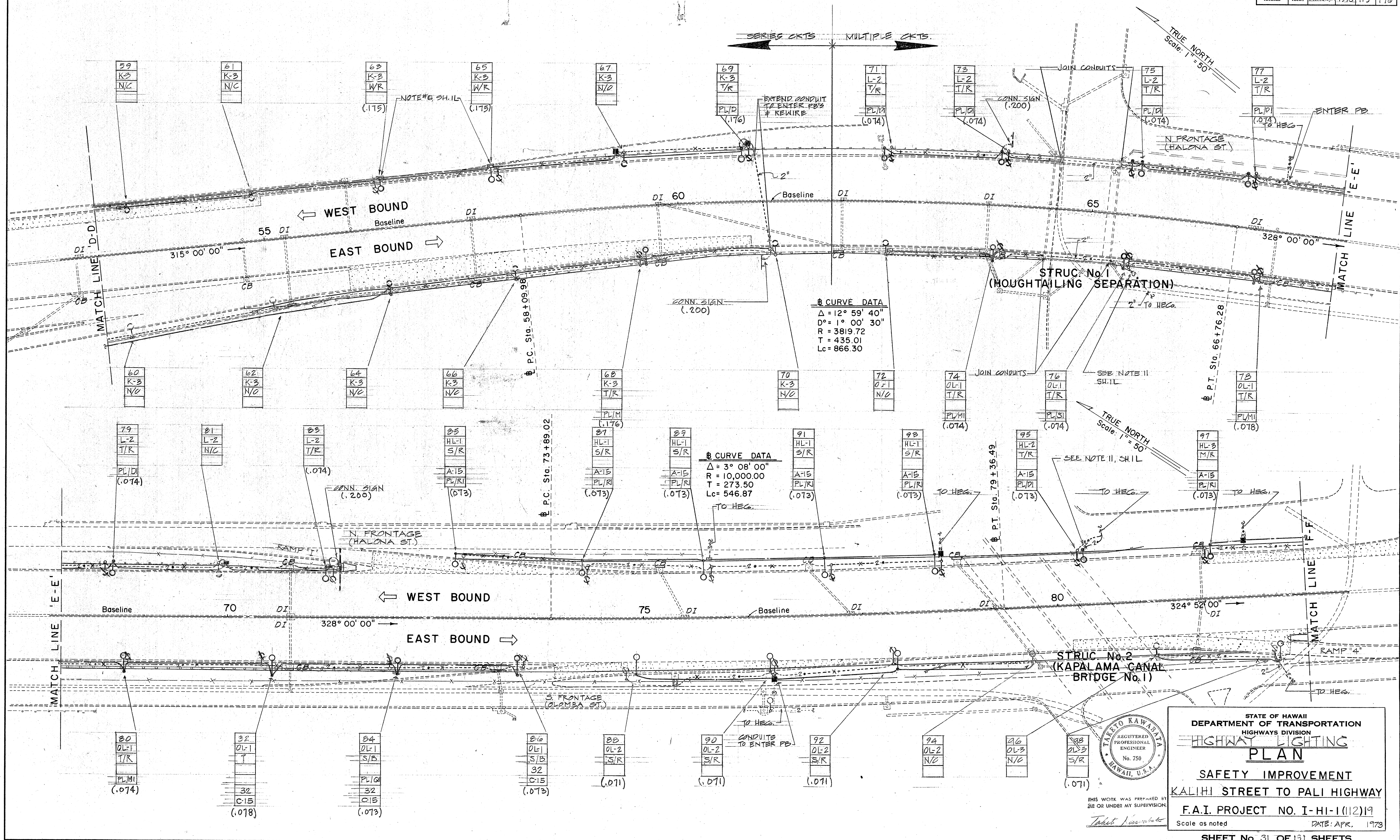
EAI PROJECT NO. 1-H1-1(12) 11

SCALE: NO SCALE DATE: APR 1979

SHEET No. 11 OF 181 SHEETS

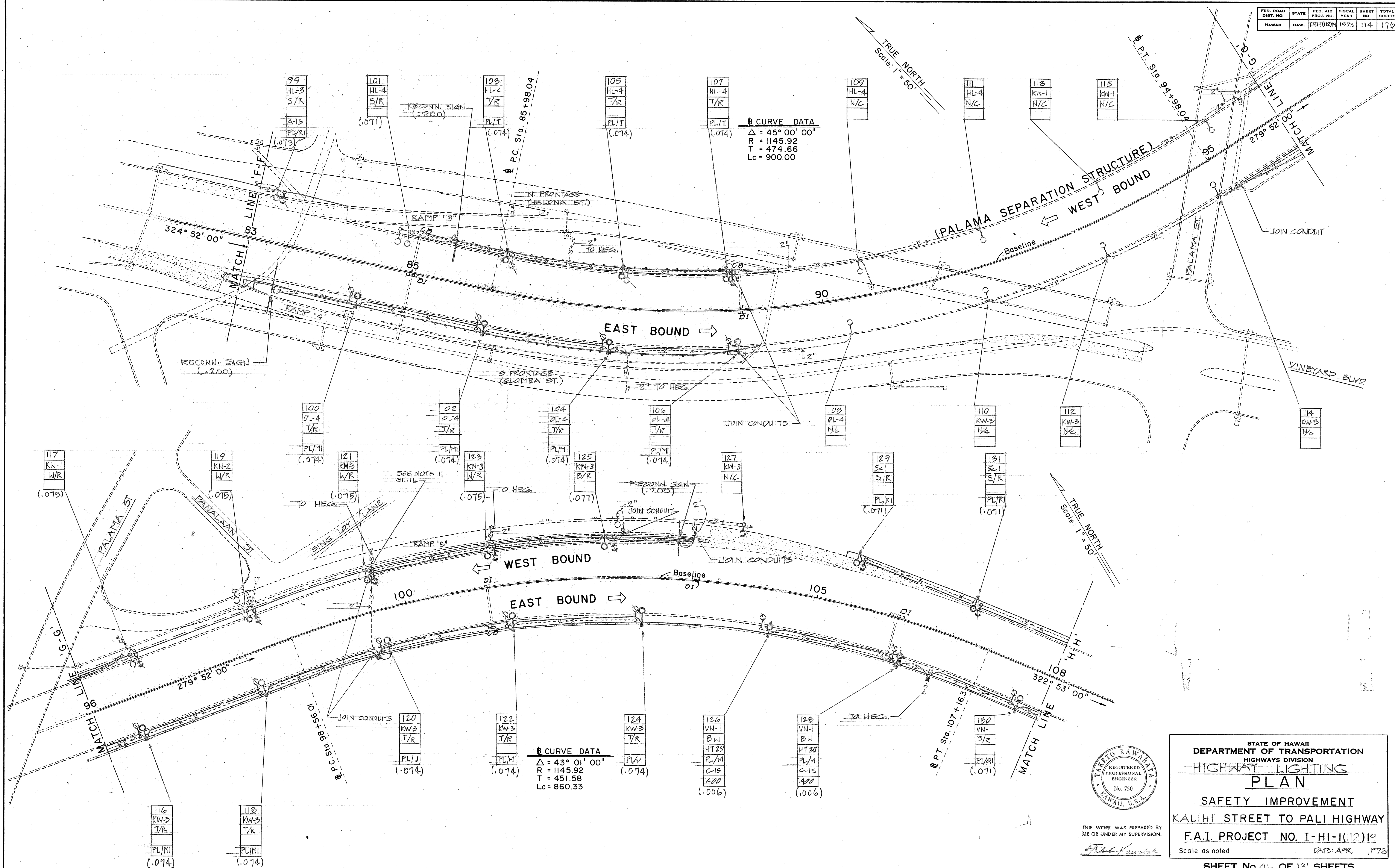
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DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
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ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(12)19	1973	113	176

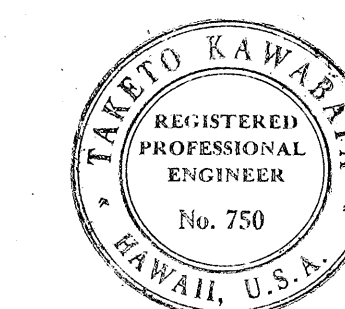


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS LIGHTING
PLAN
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
F.A.I. PROJECT NO. I-HI-1(12)19
Scale as noted
DATE: APR. 1973
SHEET No. 31 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	234-010	1973	114	176



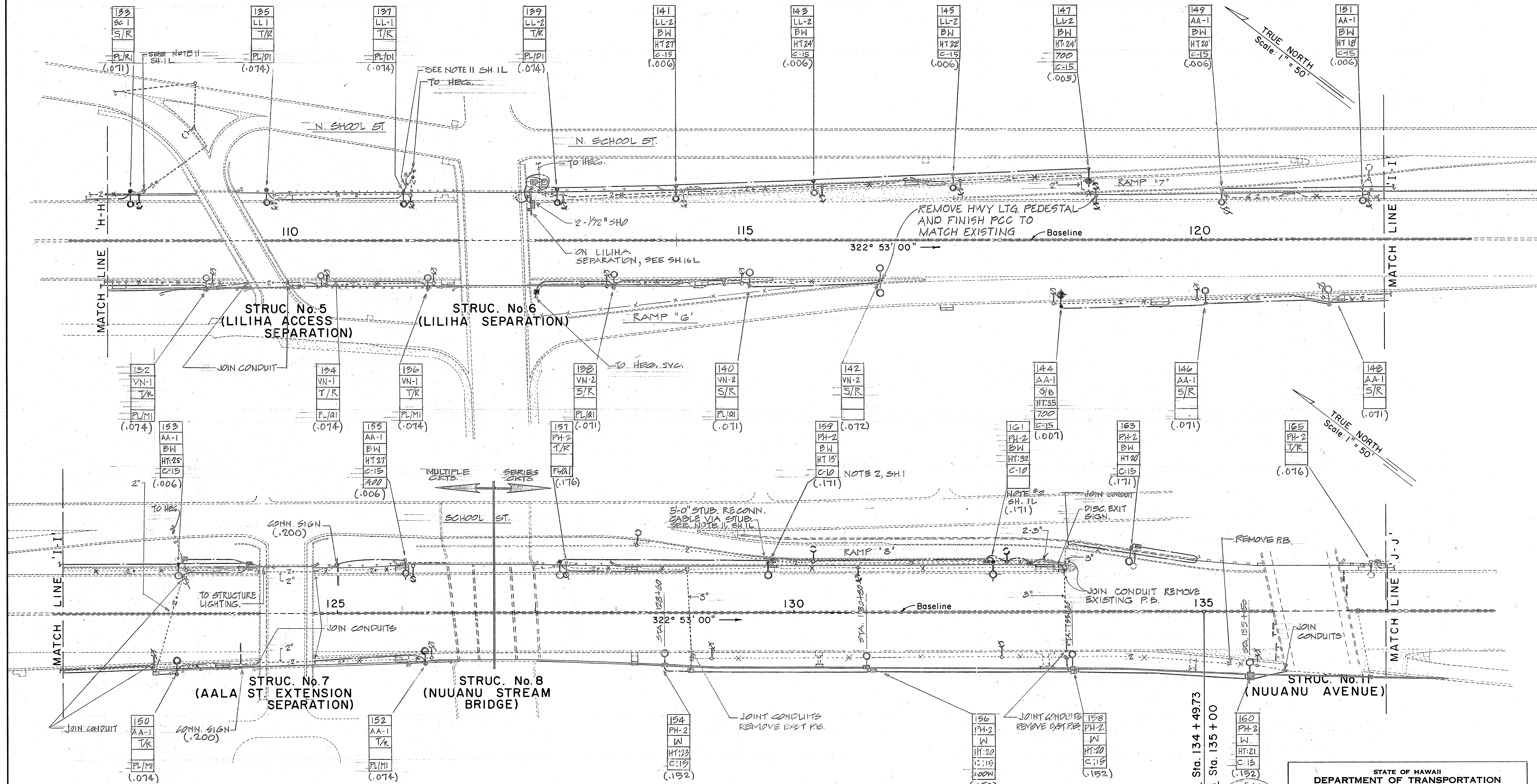
ORIGINAL PLAN	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
NO.	



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
HIGHWAY LIGHTING PLAN
 SAFETY IMPROVEMENT
 KALIHI STREET TO PALI HIGHWAY
 F.A.I. PROJECT NO. I-HI-1(12)19
 Scale as noted
 DATE: APR, 1973
 SHEET No. 41 OF 131 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	111(12)19	1973	115	176



DATE	*****
SURVEY PLOTTED BY	
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NOTED BY	
NO.	

Sta. 134 + 49.73
Sta. 135 + 00
EQ. -50.47



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

HIGHWAY LIGHTING
PLAN

SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY

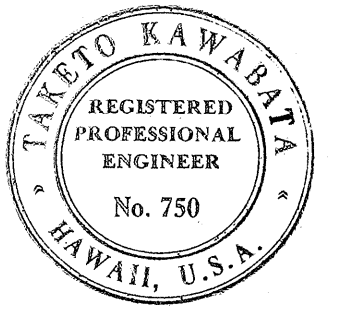
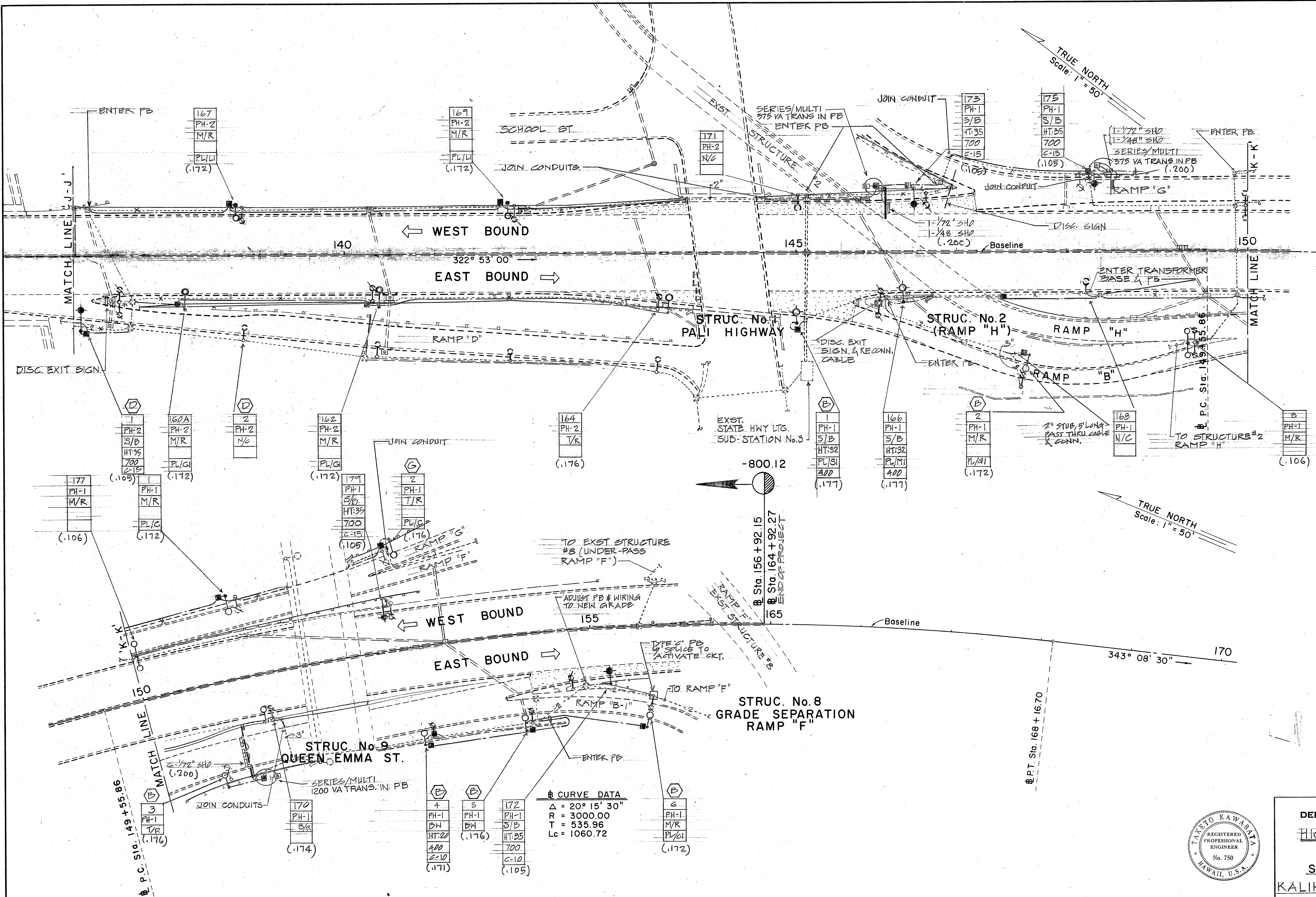
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Scale as noted

DATE: APR. 1973

SHEET No. 51 OF 181 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-1(12)19	1973	116	176



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING PLAN
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
F.A.I. PROJECT NO. I-HI-1(112)19
Scale as noted
DATE: APR. 1973
SHEET No. 61 OF 181 SHEETS

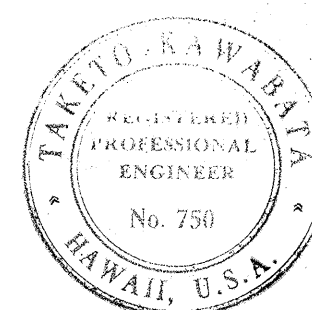
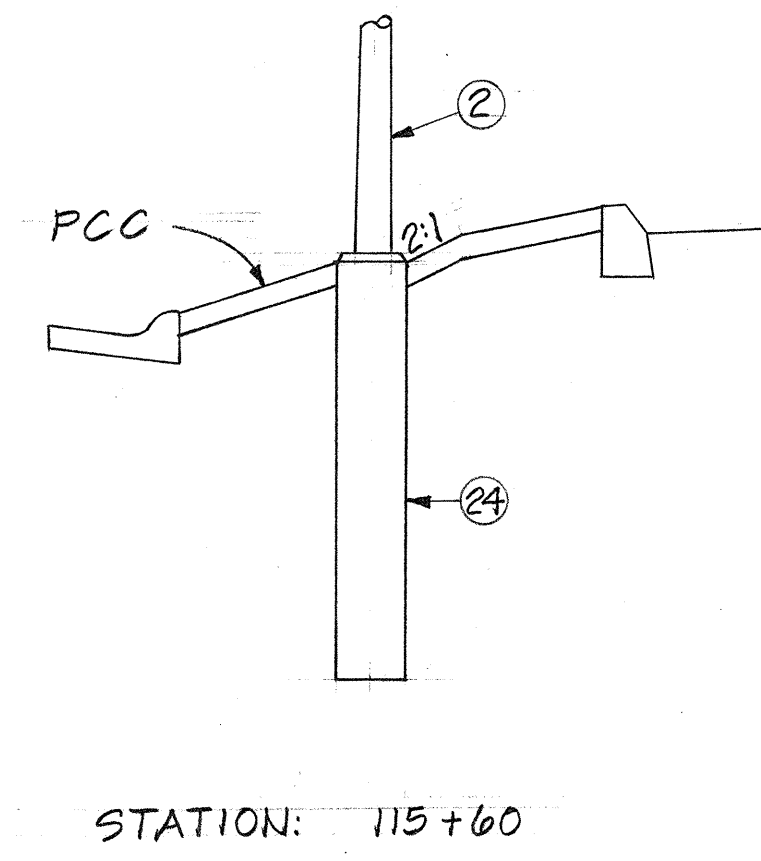
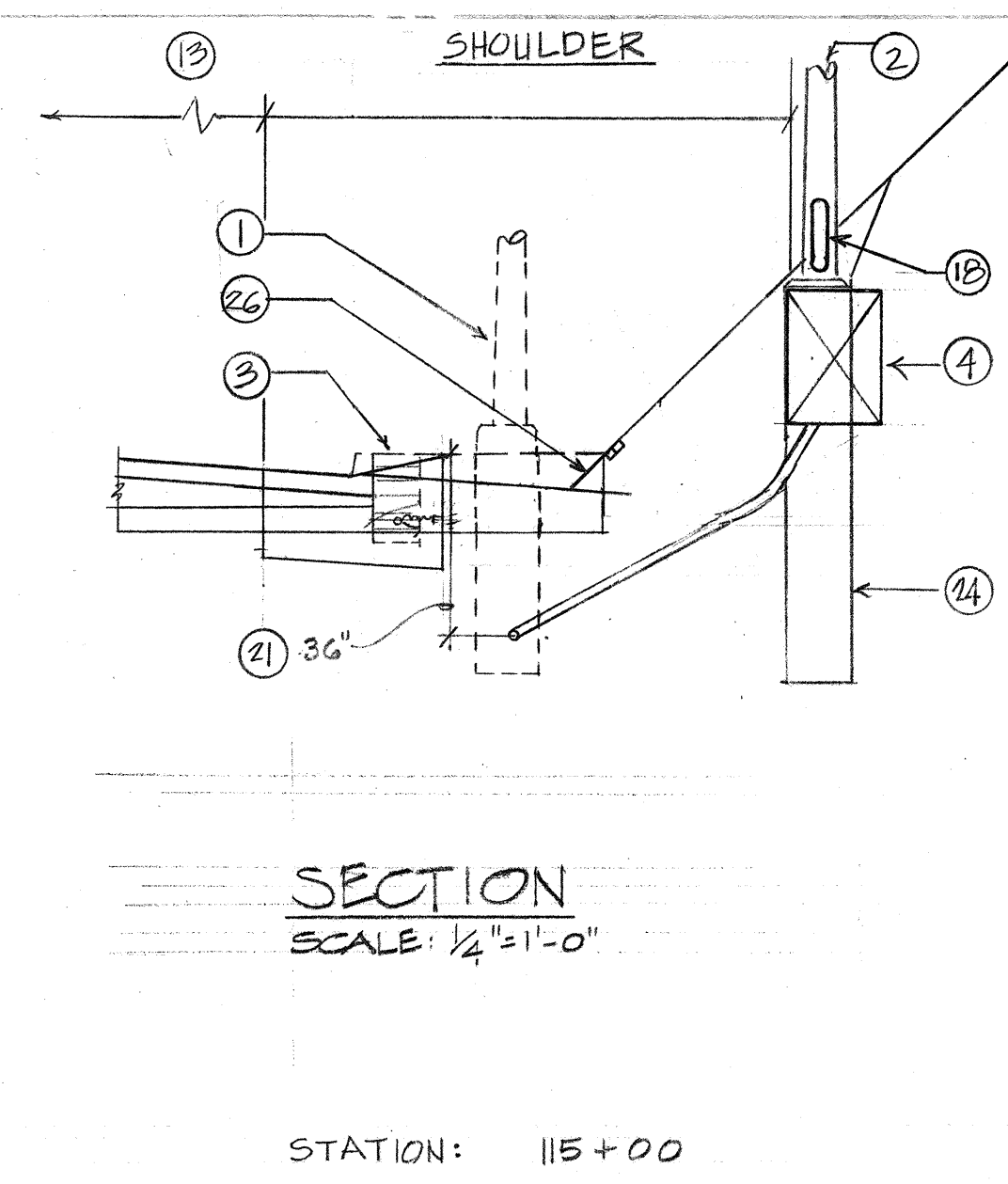
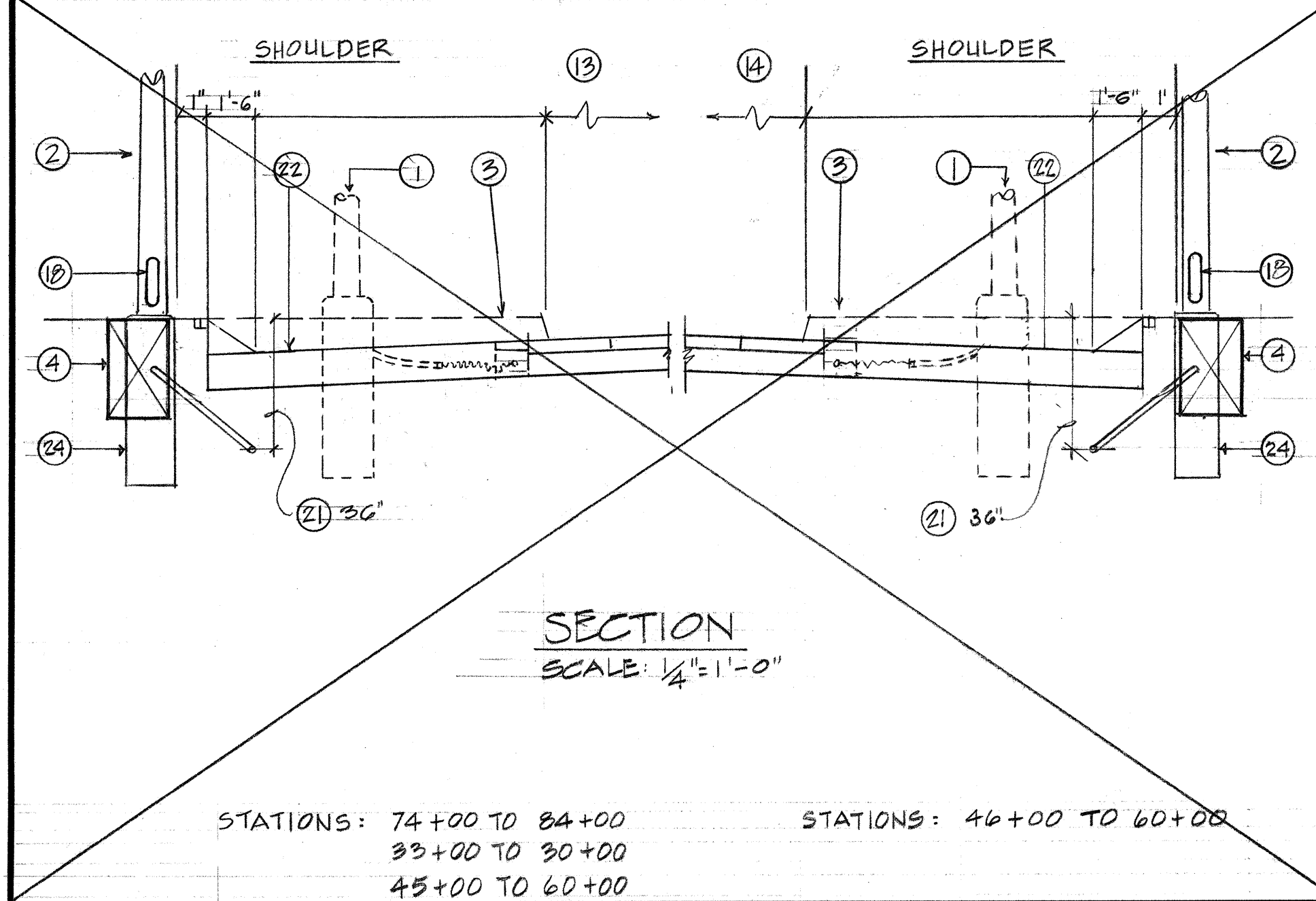
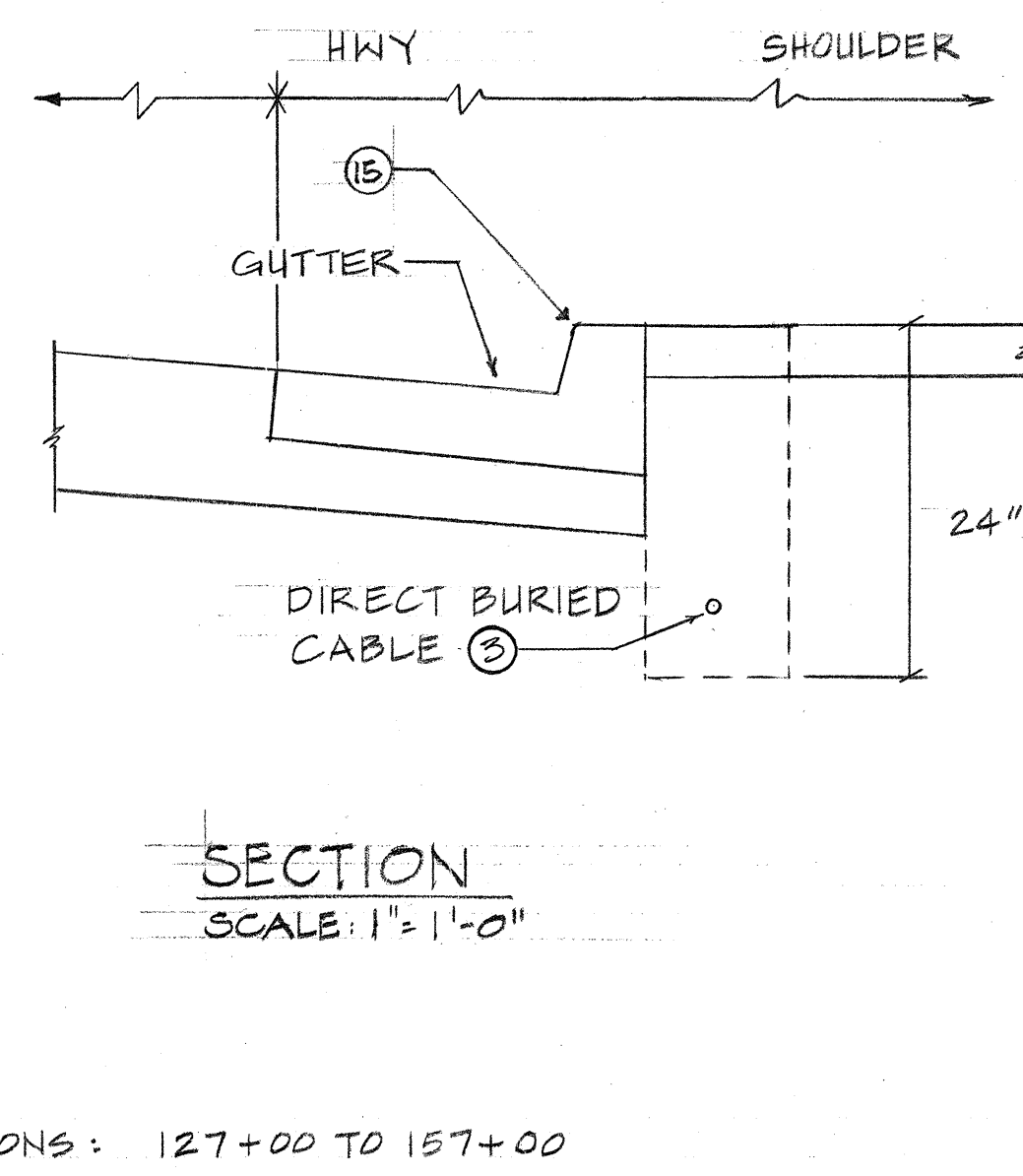
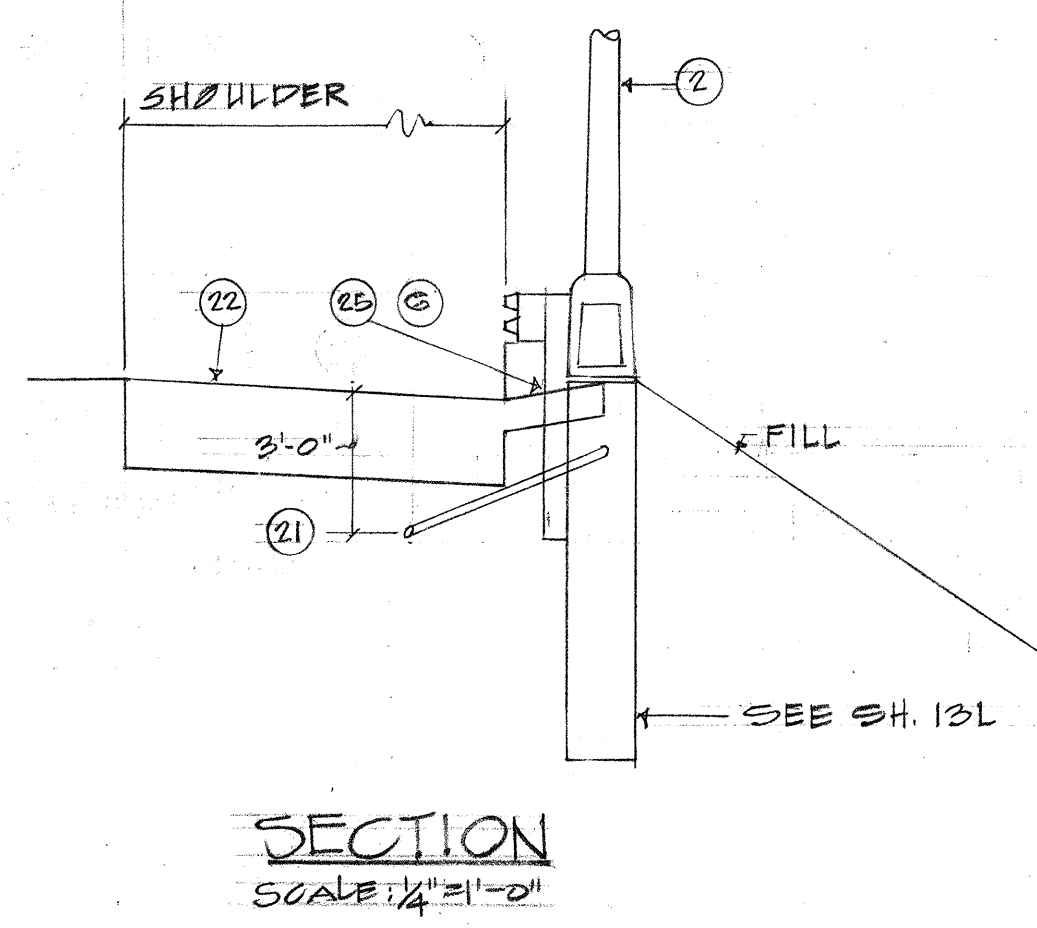
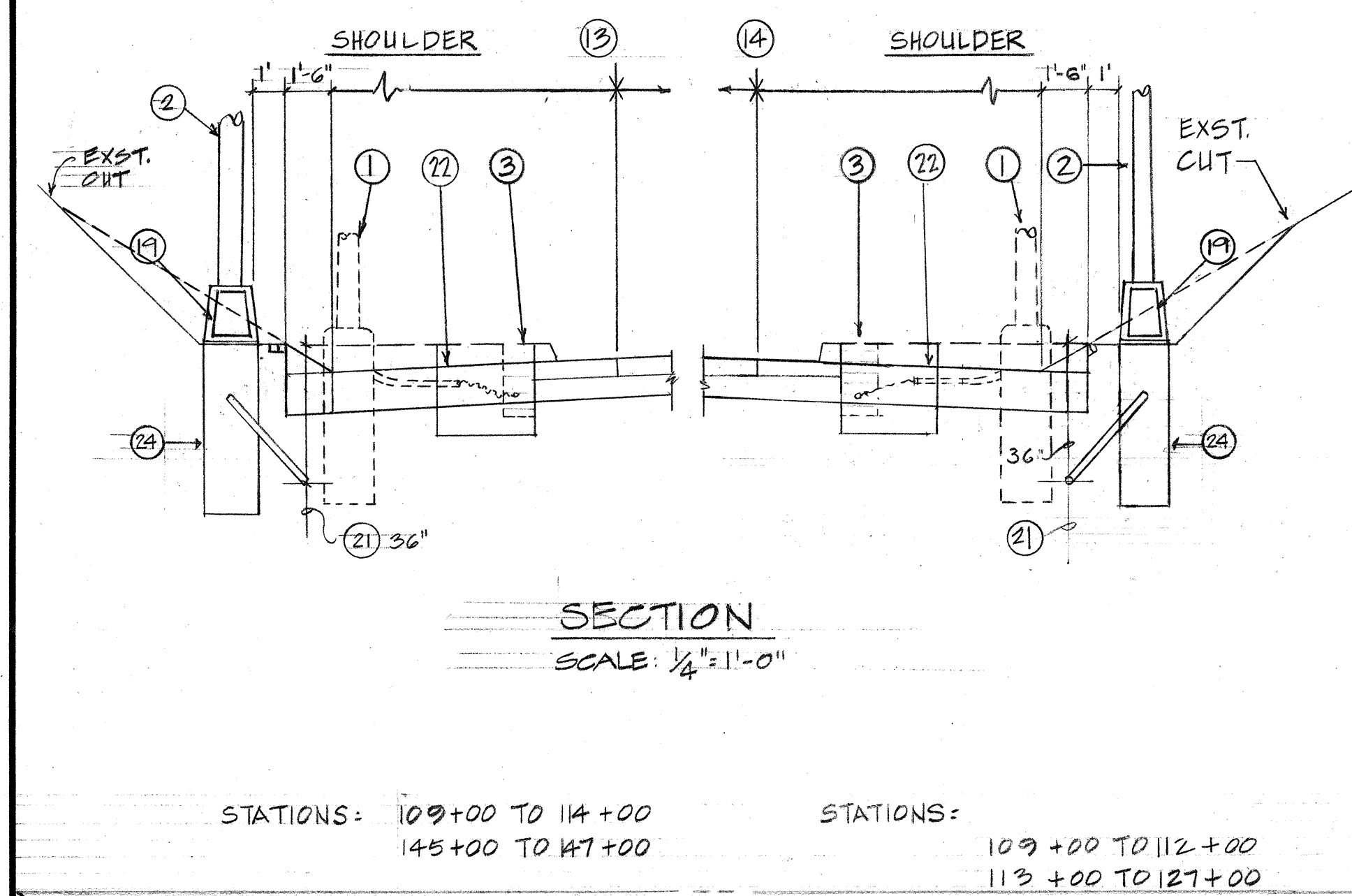
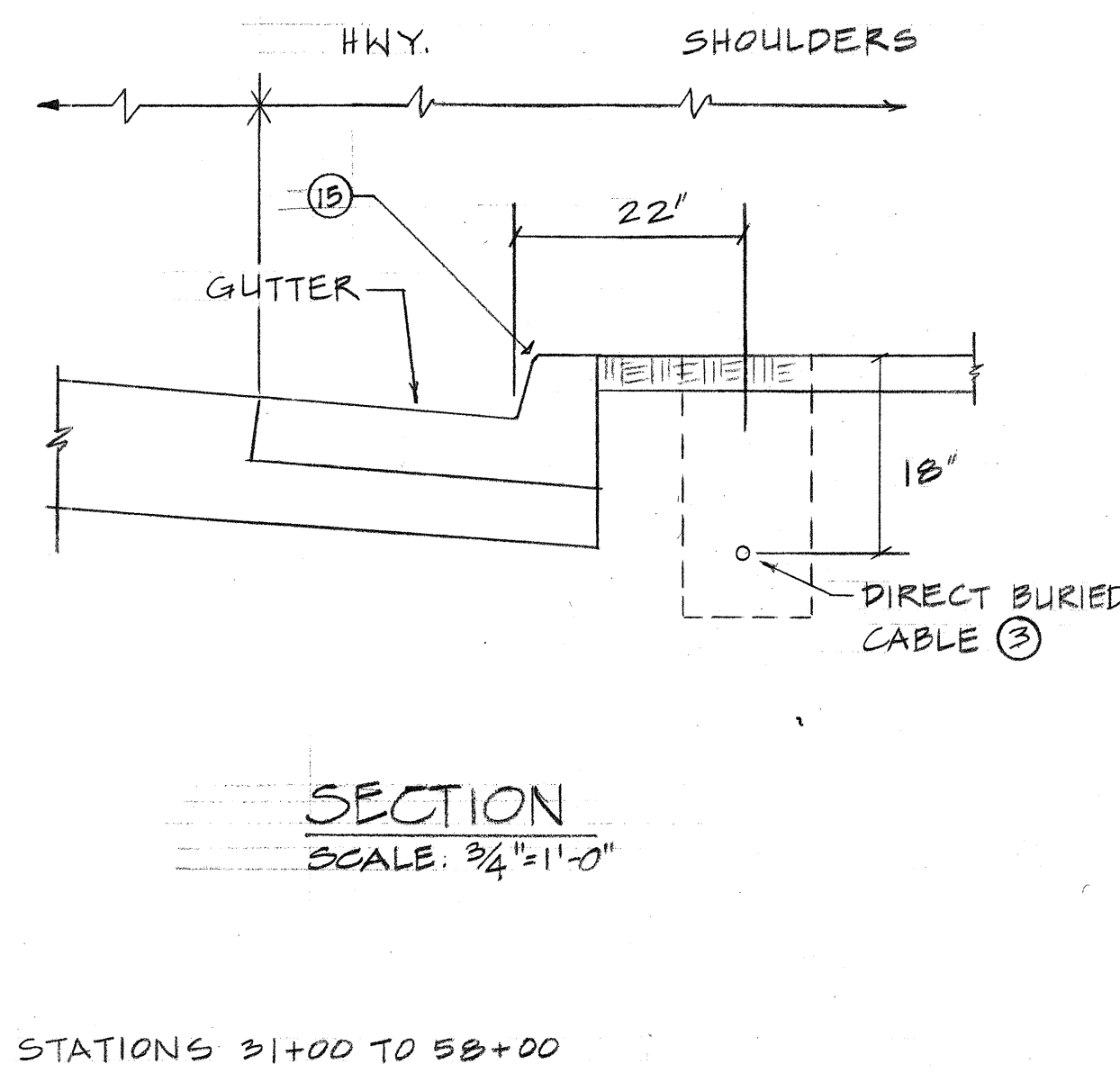
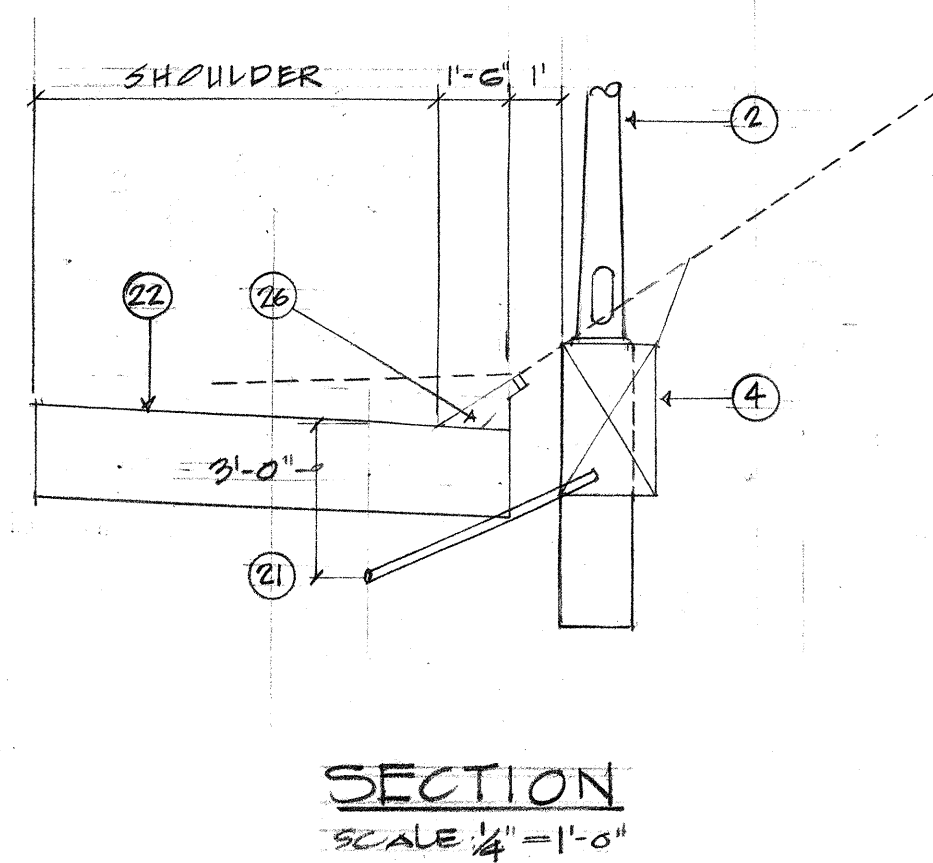
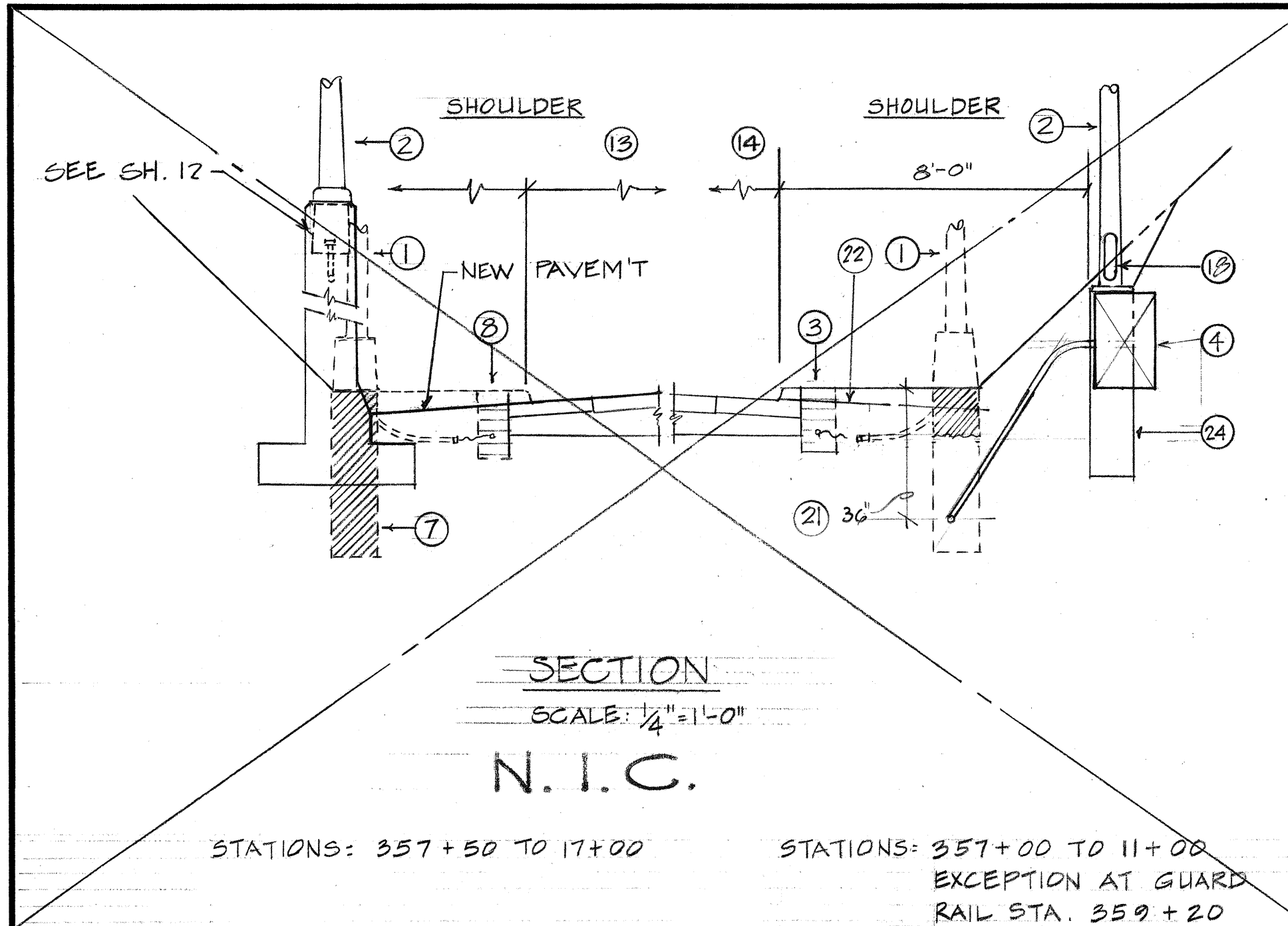
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Tareto Kawia

DATE	
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ORIGINAL PLAN	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(112)19	1973	117	176

NOTES

- EXST. HWY. LIGHT ASS'Y.
- NEW HWY LIGHT ASS'Y.
- EXST. DIRECT BURIED CABLE TRENCH, LOCATION VARIES. ALL OTHER AREA, CABLE ROUTE DEPTH UNKNOWN.
- NEW STATE HWY. TYP "C" PULL BOX W/2" CONDUIT TO LIGHT POLE ASS'Y BALLAST IN PB FOR 'SERIES' CKT. SEAL CONDUIT OPENING W/ SEAL COMPOUND.
- NEW "CUT" AT HWY LIGHT ASSY.
- RAIL
- ALL ABANDONED HWY. LIGHT CONC. FOUNDATIONS TO BE REMOVED UNLESS OTHERWISE DIRECTED BY ENGINEER.
- ABANDON DIRECT BURIED CABLE
- SERIES CKT. CABLES
- SERIES CKT. CABLES W/ EPOXY RESIN SPlice TO EXST.
- MULTI-CKT CABLES W/ EPOXY RESIN SPlice W/ EXISTING UNLESS OTHERWISE SHOWN.
- SERIES CKT. CABLE
- WEST BOUND H-1
- EAST BOUND H-1
- INSIDE FACE OF CURB
- UNASSIGNED
- FOR CKT. ASSIGNMT, SEE PLANS & DIAGRAM.
- POLE ACCESS HANDHOLE
- TRANS. BASE ACCESS COVER.
- 2" PVC, SCH'D 40 CONDUIT
- 2" PVC, SCH'D 40 CONDUIT TO ADJACENT HWY LTG.
- SHOULDER PAVEMENT
- REFER TO HWY, LTG. PLAN
- FOR POLE FOUNDATION DET. SEE SH. 13L.
- BITUMINOUS GUTTER
- BITUMINOUS CURB
- BITUMINOUS GUTTER OUTBOARD EDGE.

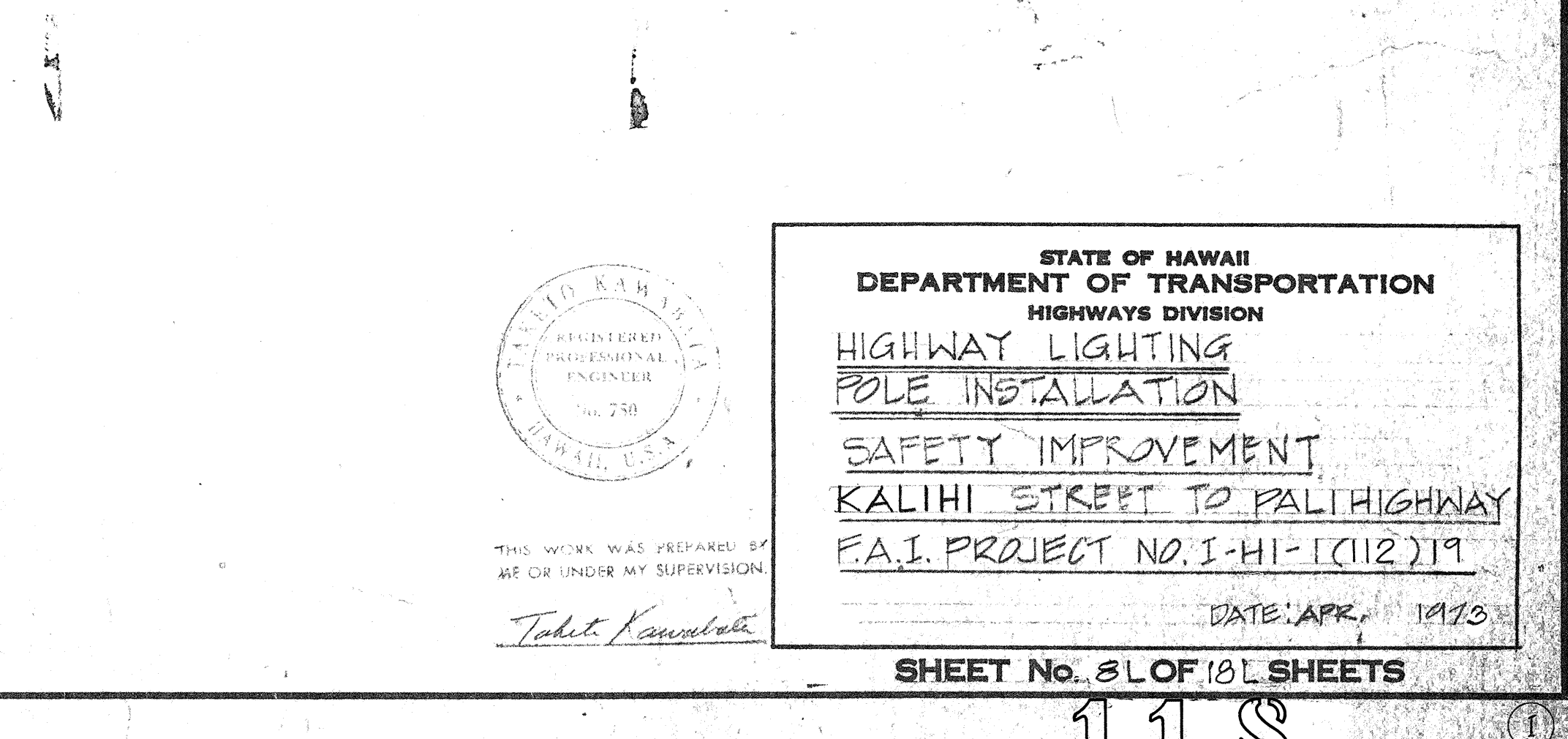
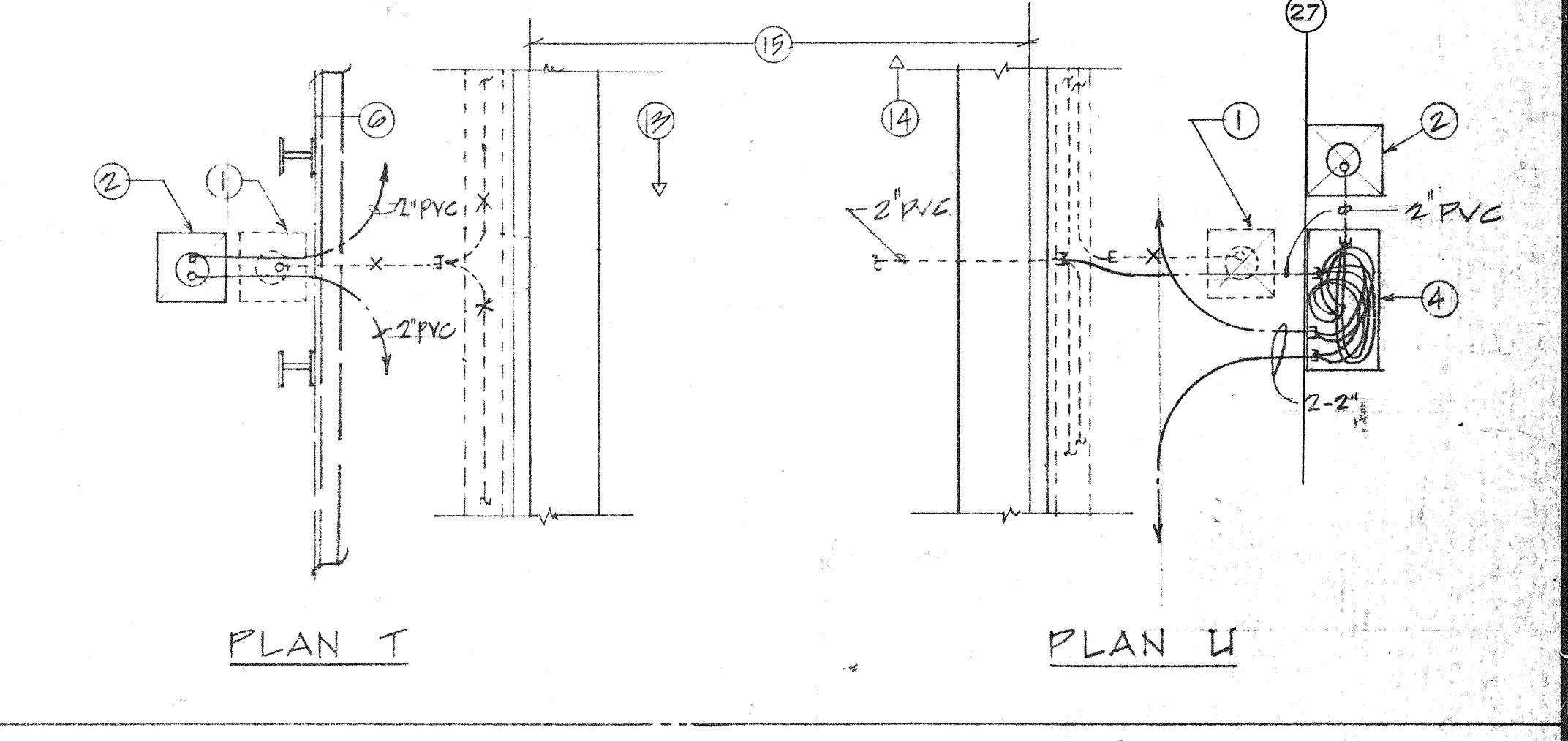
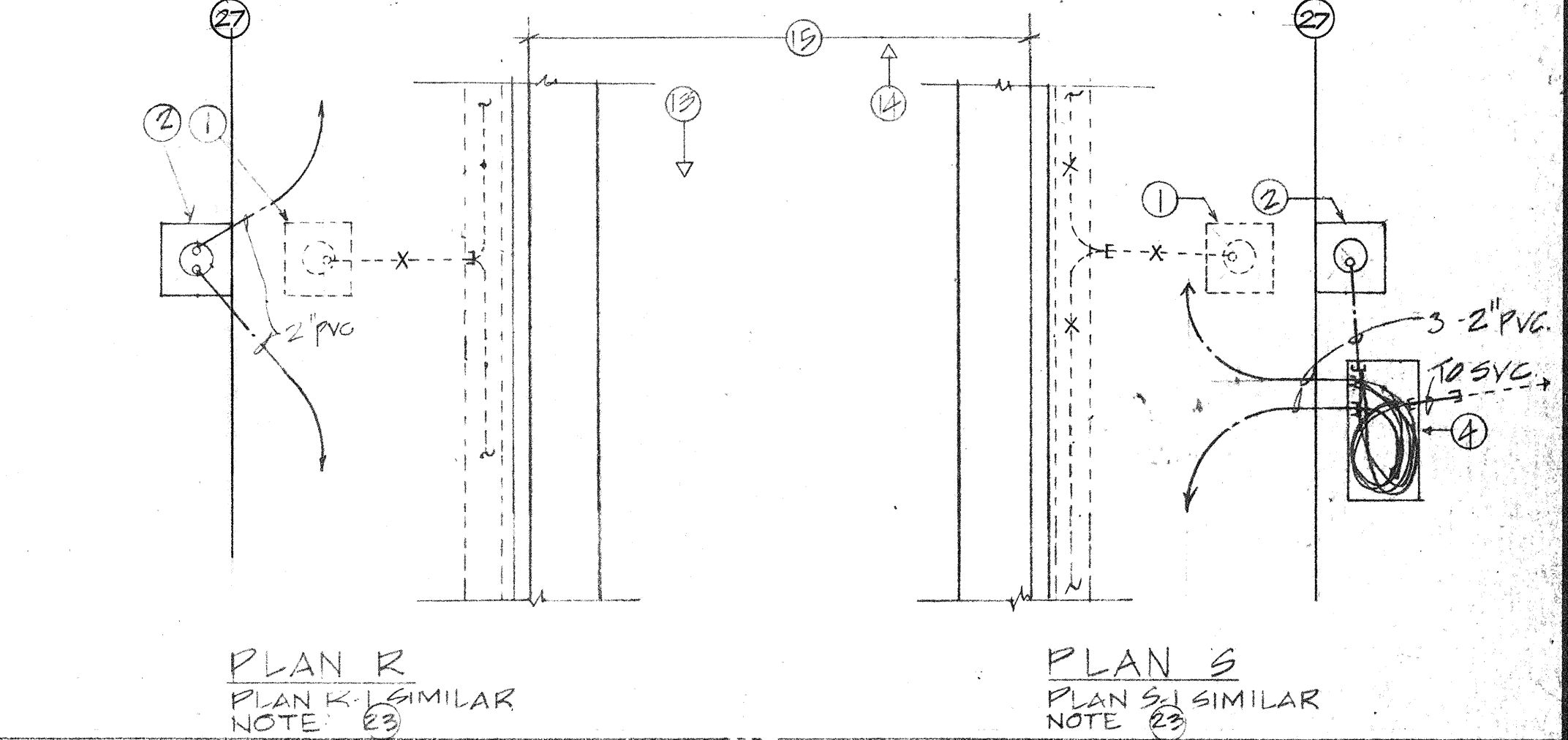
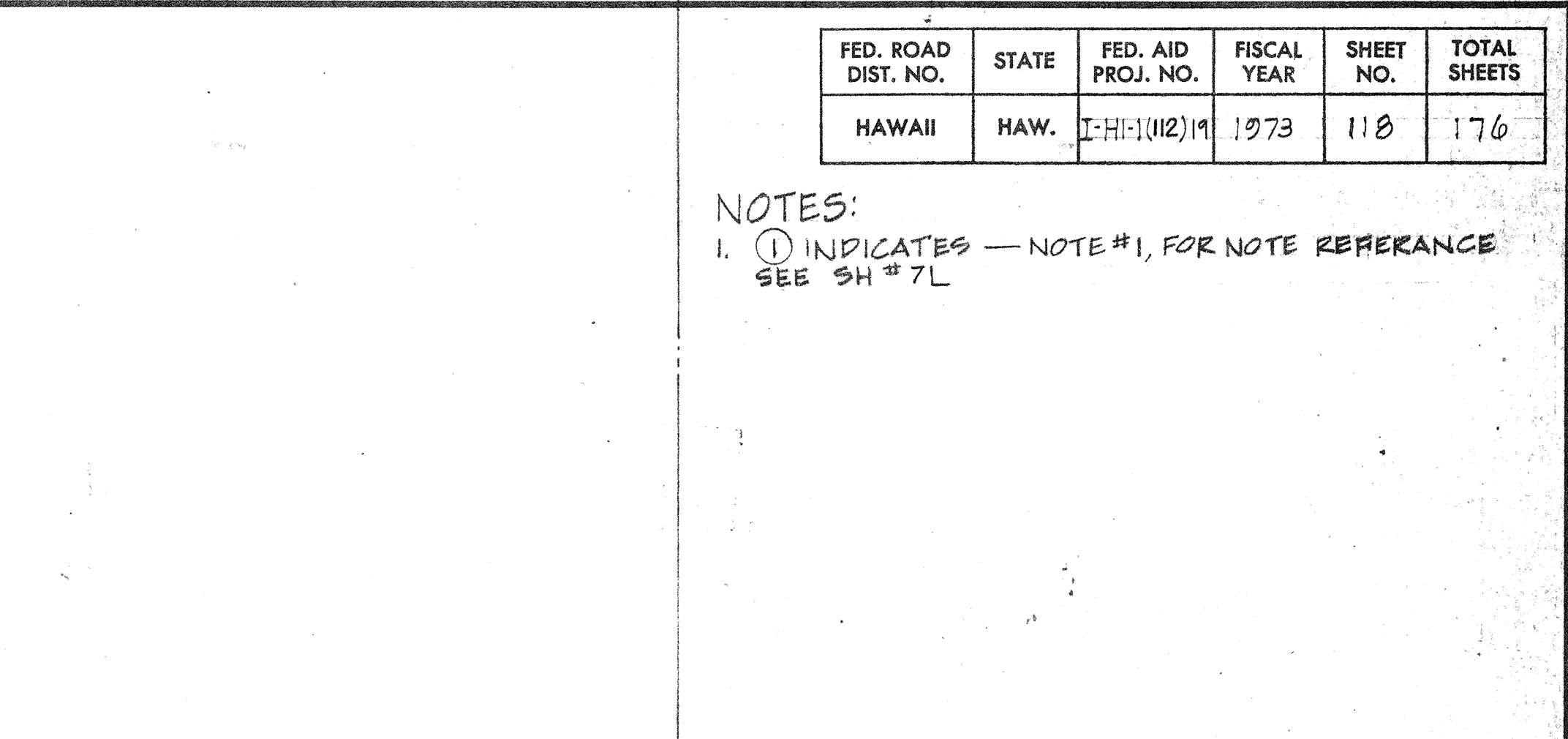
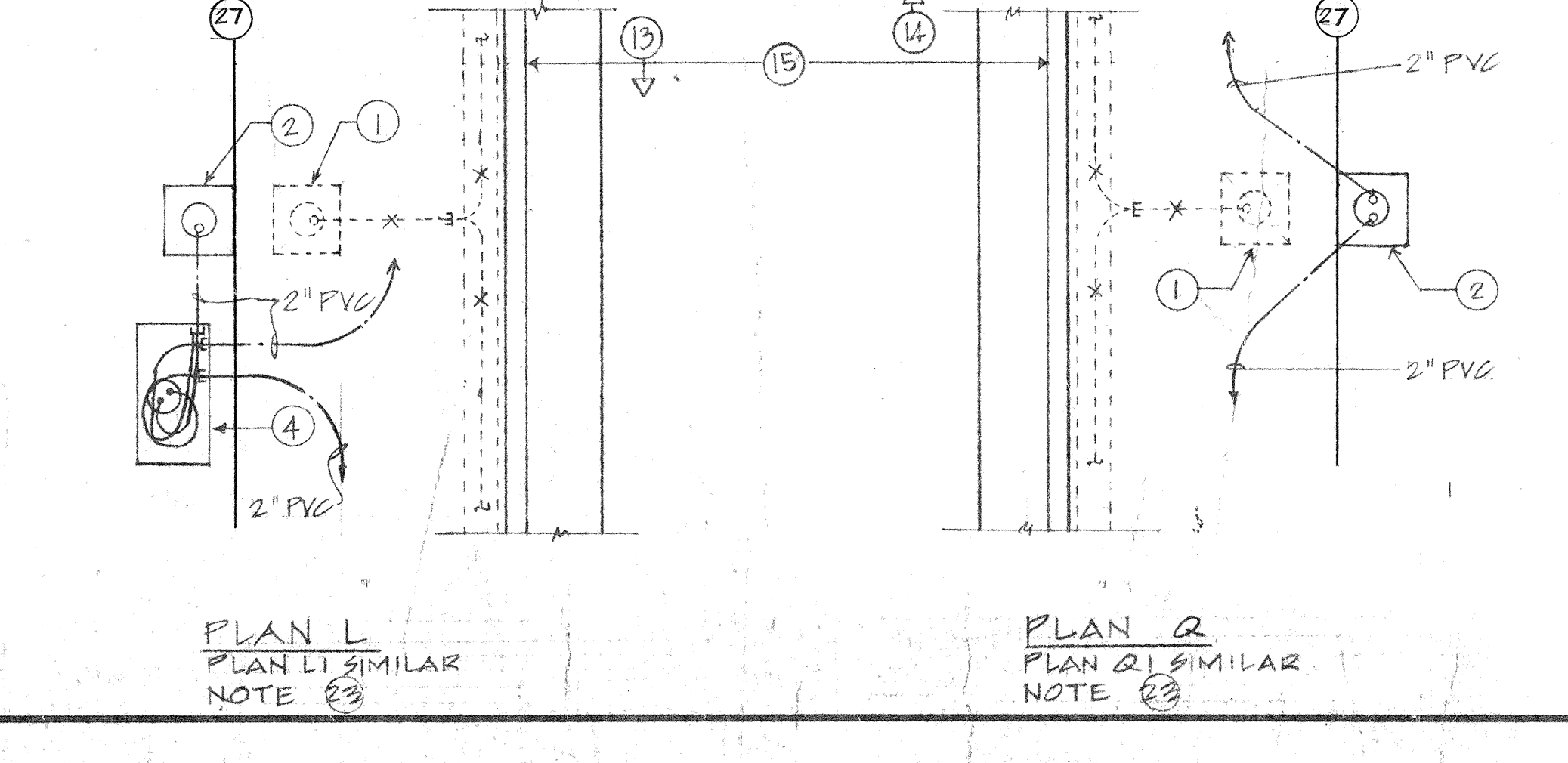
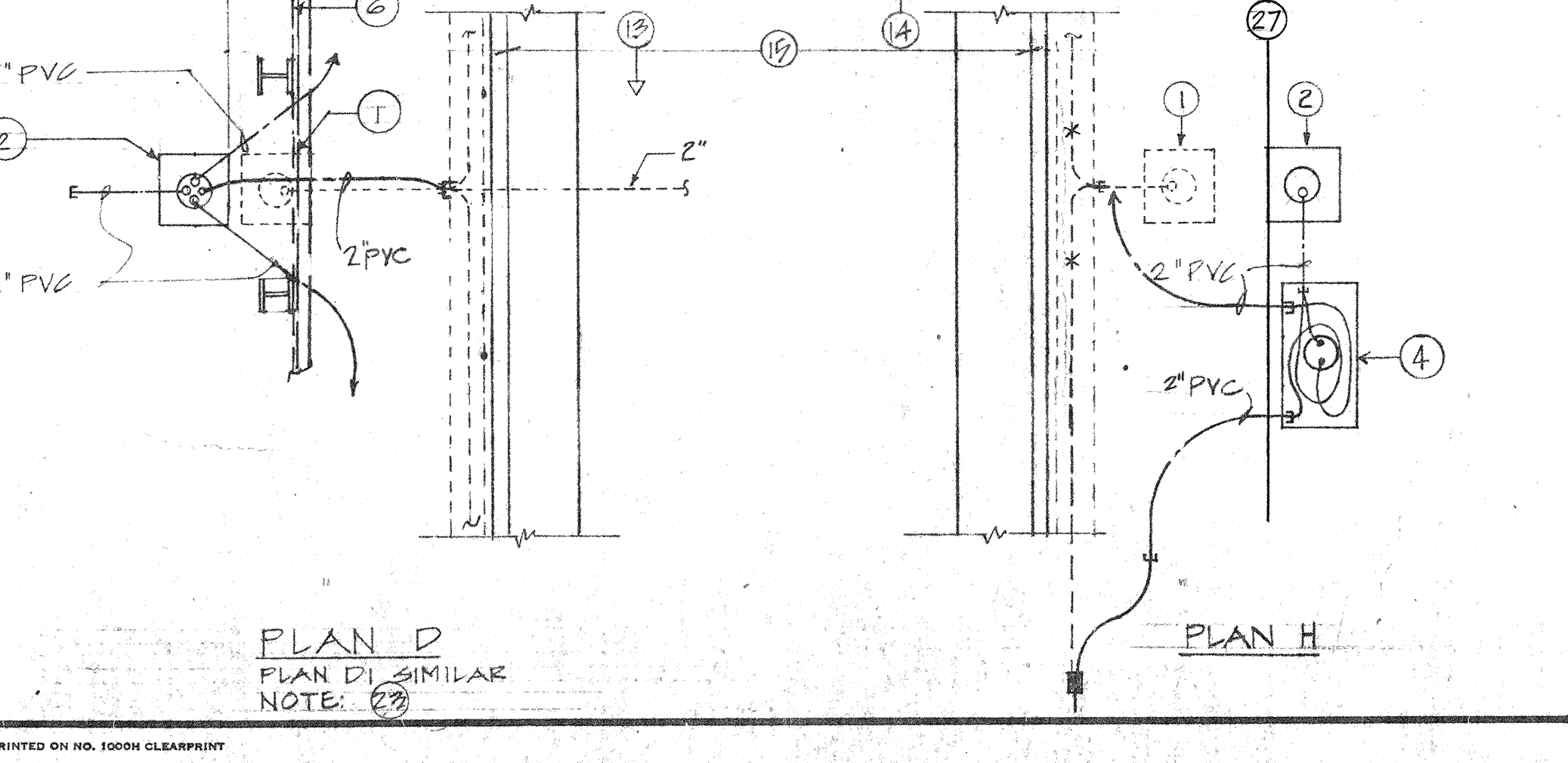
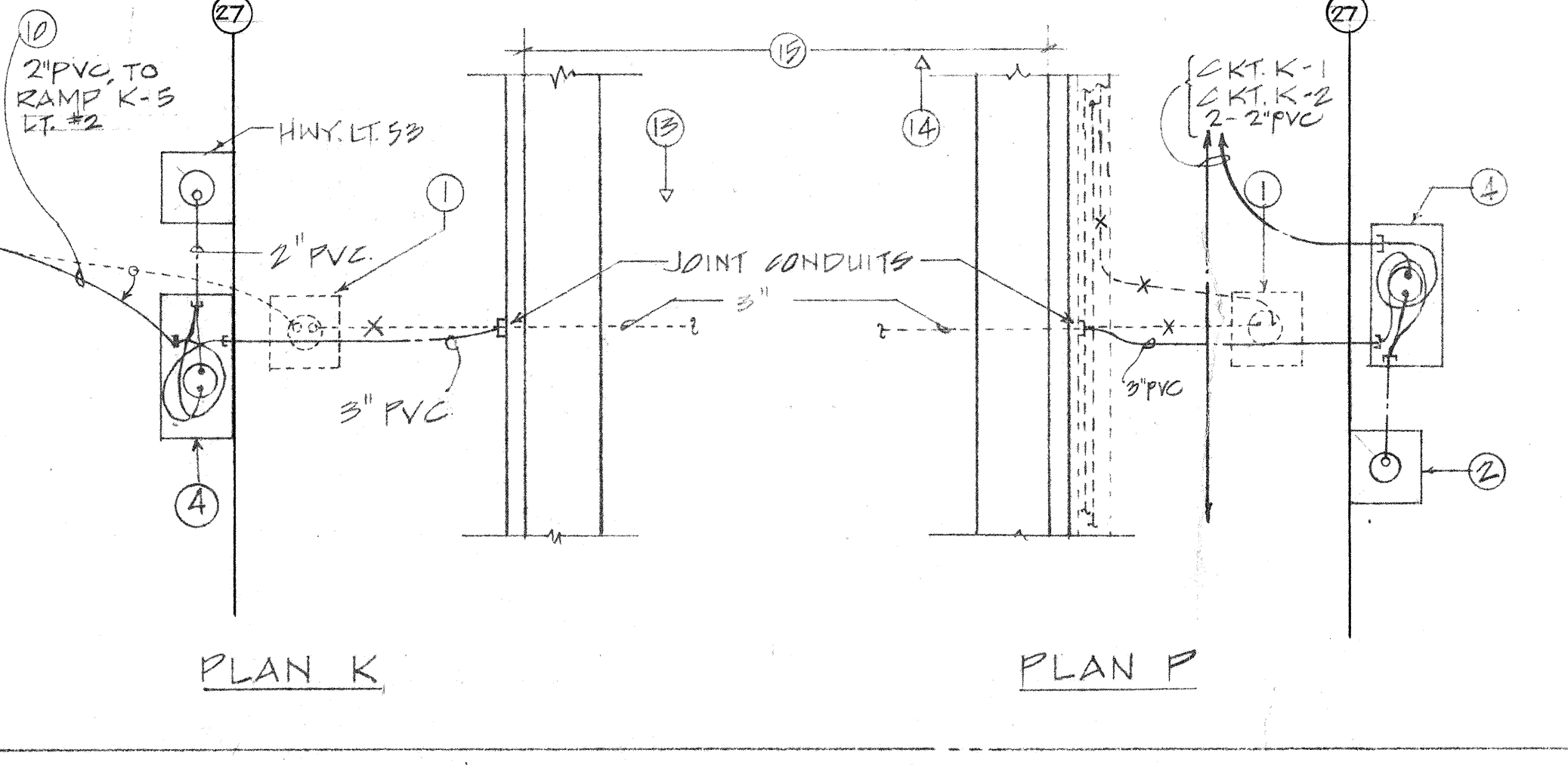
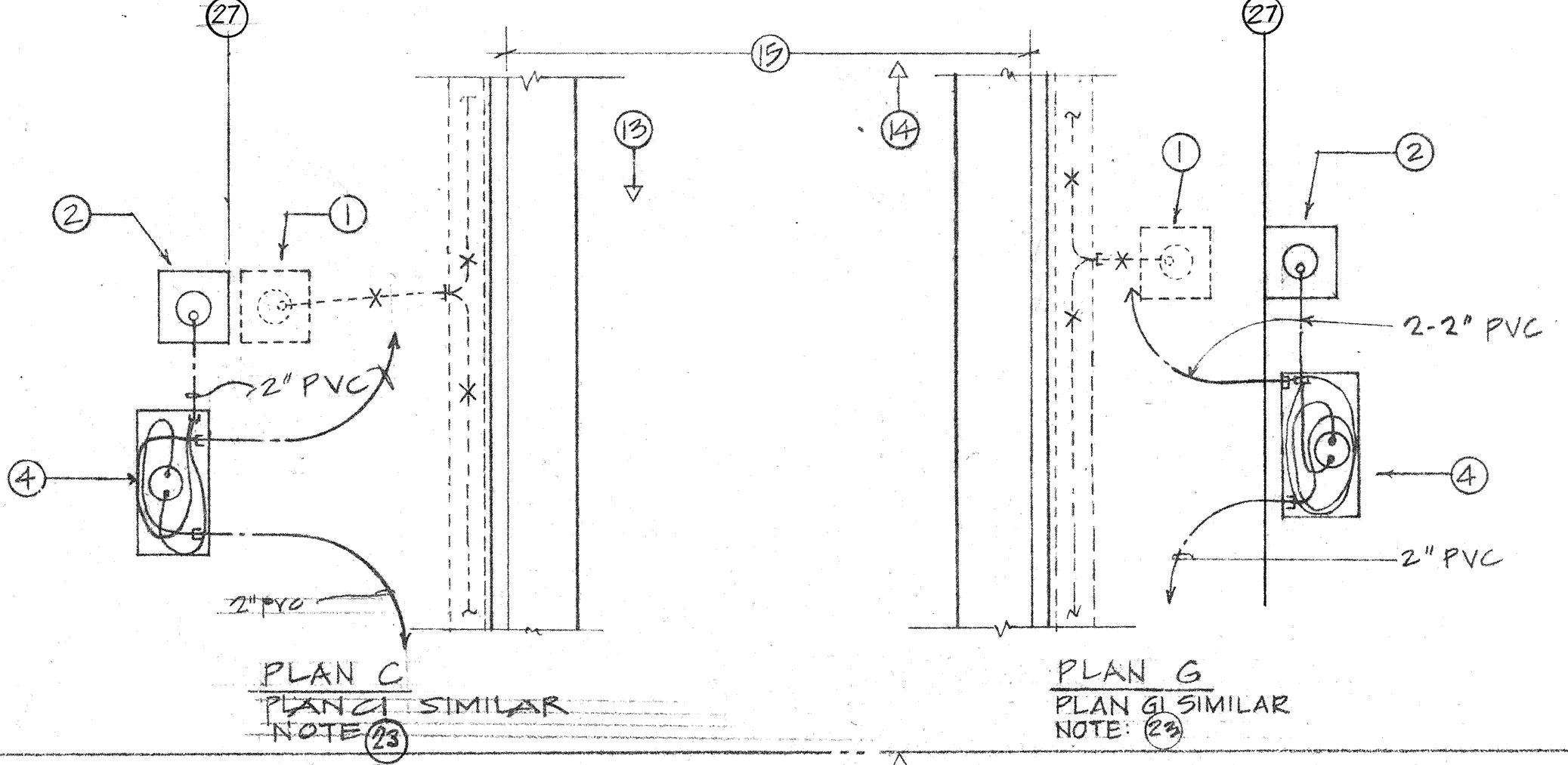
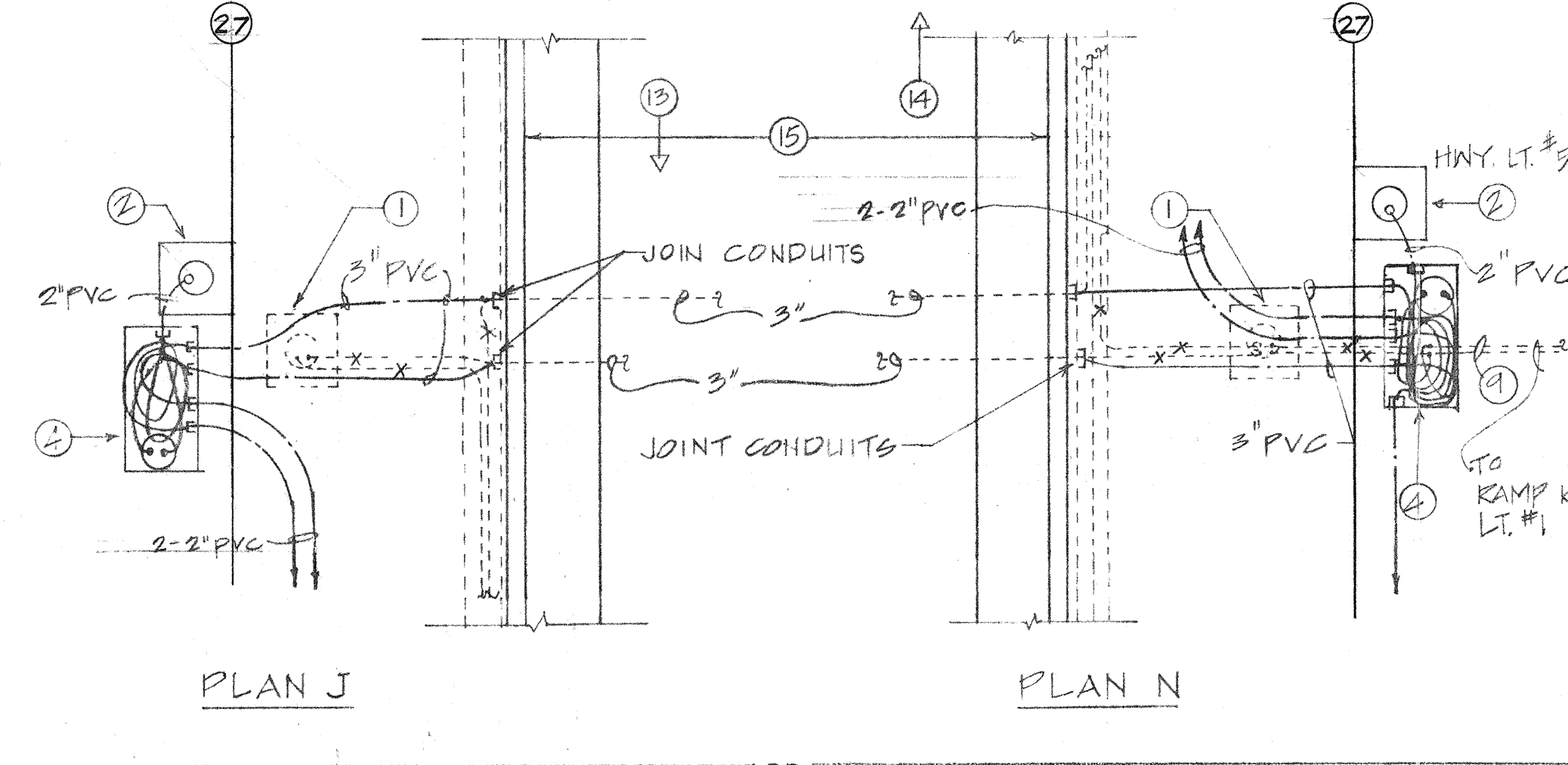
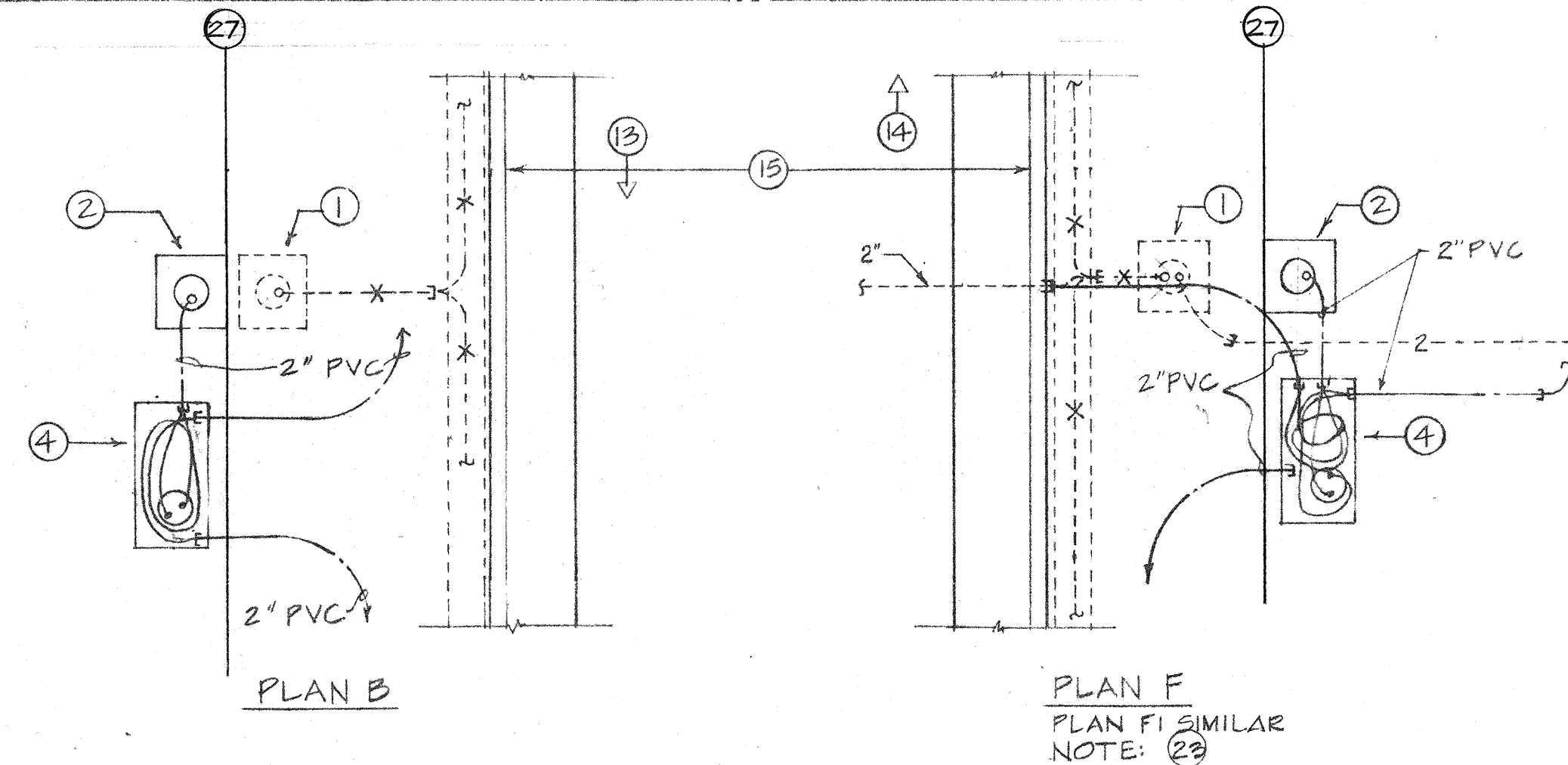
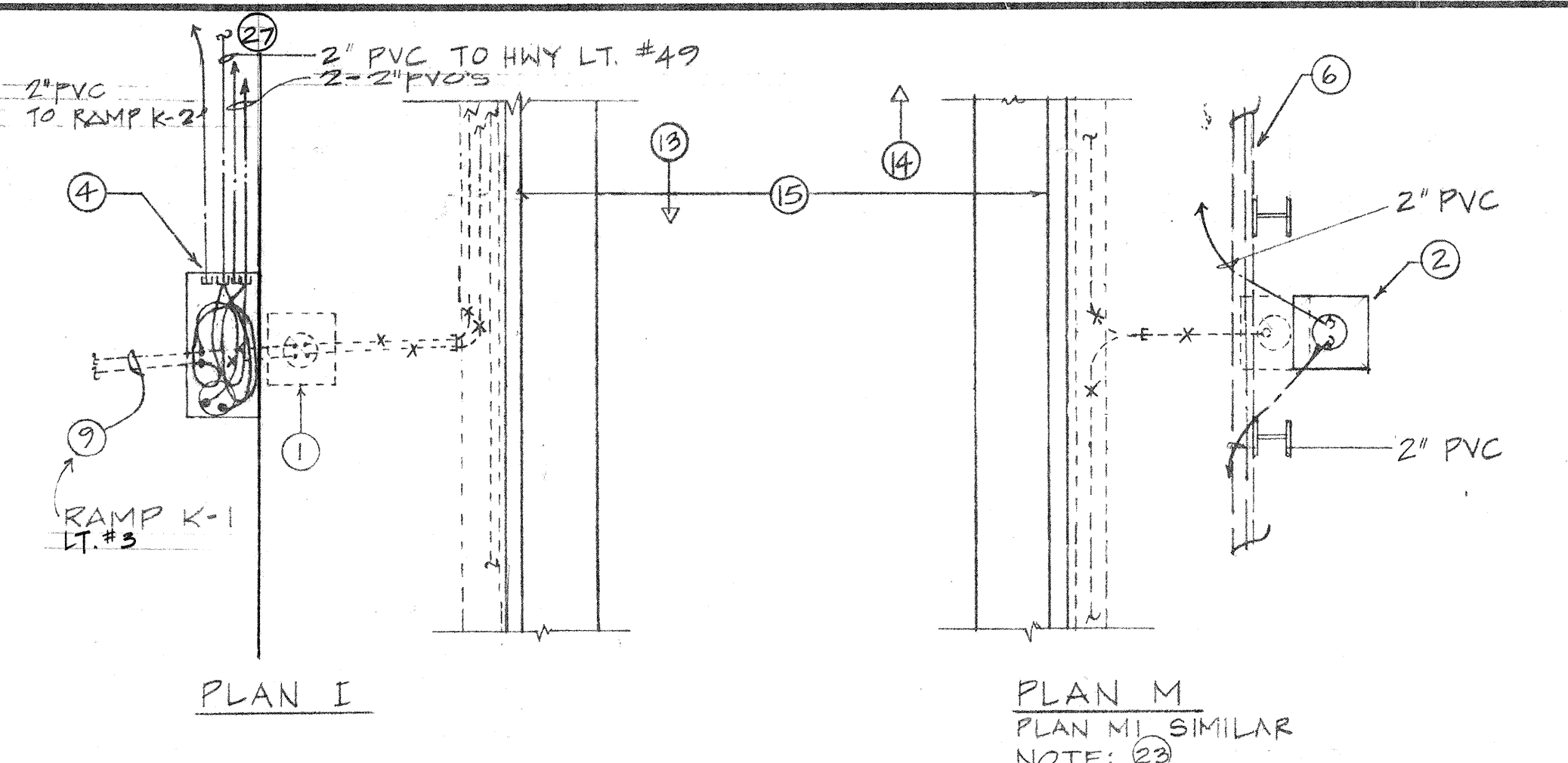
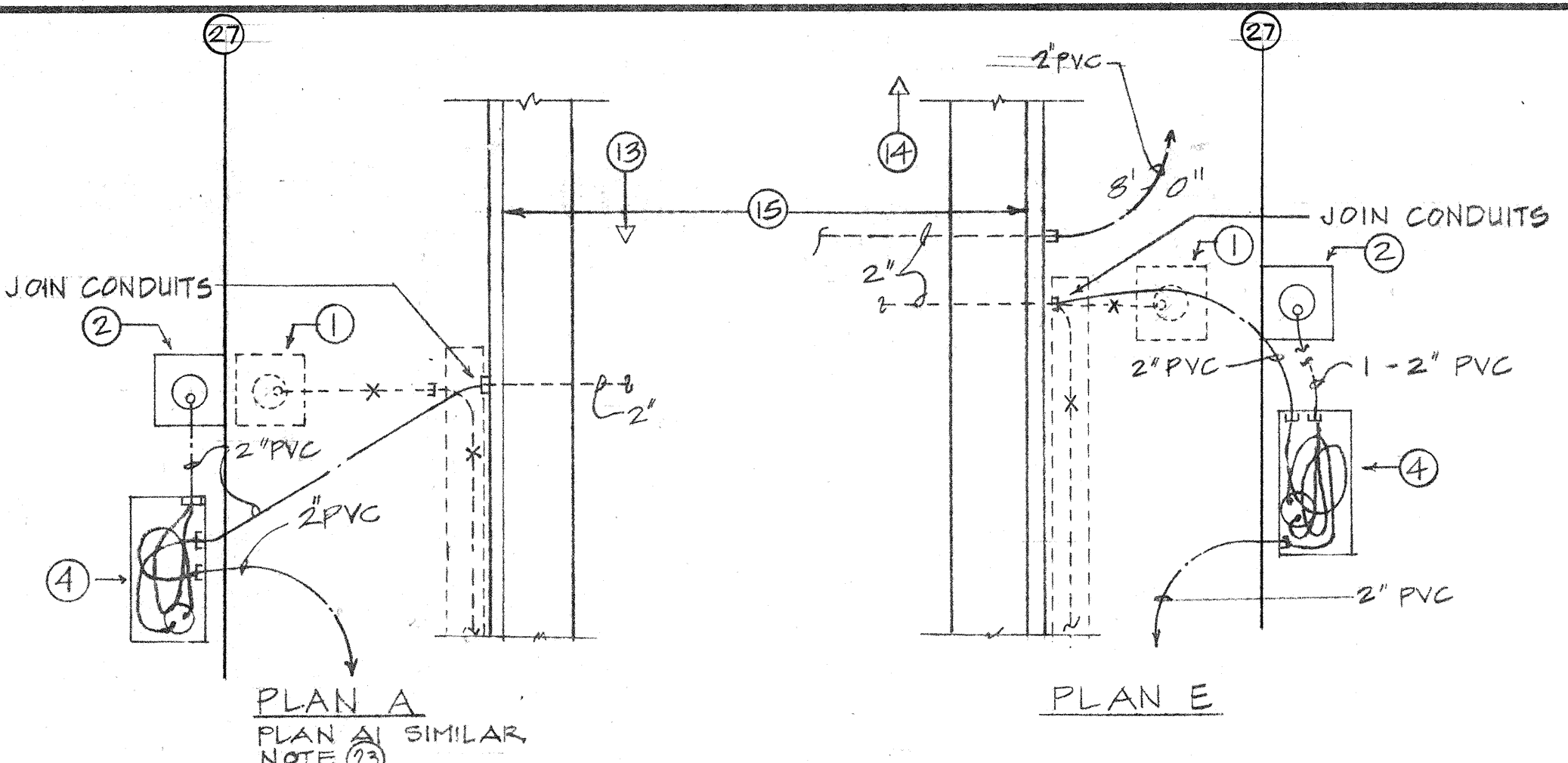


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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING
POLE INSTALLATION SECTIONS
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
F.A.I. PROJECT NO. I-HI-1(112)19
SCALE AS NOTED DATE: APR. 1973

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(112)19	1973	118	176

NOTES:
1. ① INDICATES — NOTE #1, FOR NOTE REFERENCE
SEE SH #7L



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

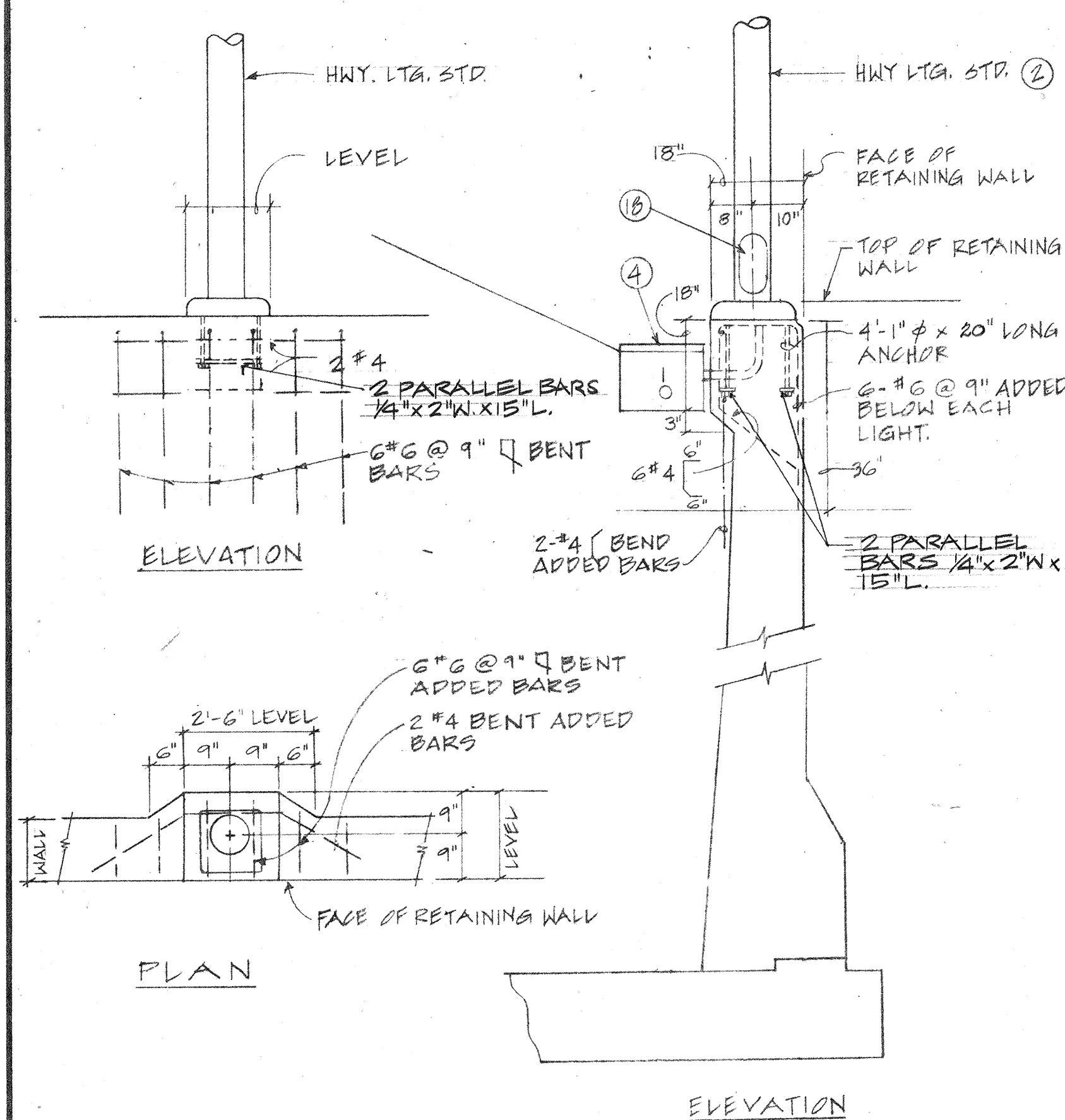


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING
POLE INSTALLATION
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
F.A.I. PROJECT NO. I-HI-1(112)19
DATE: APR. 1973
SHEET No. 8 OF 18 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-101219	1973	119	176

NOTES:

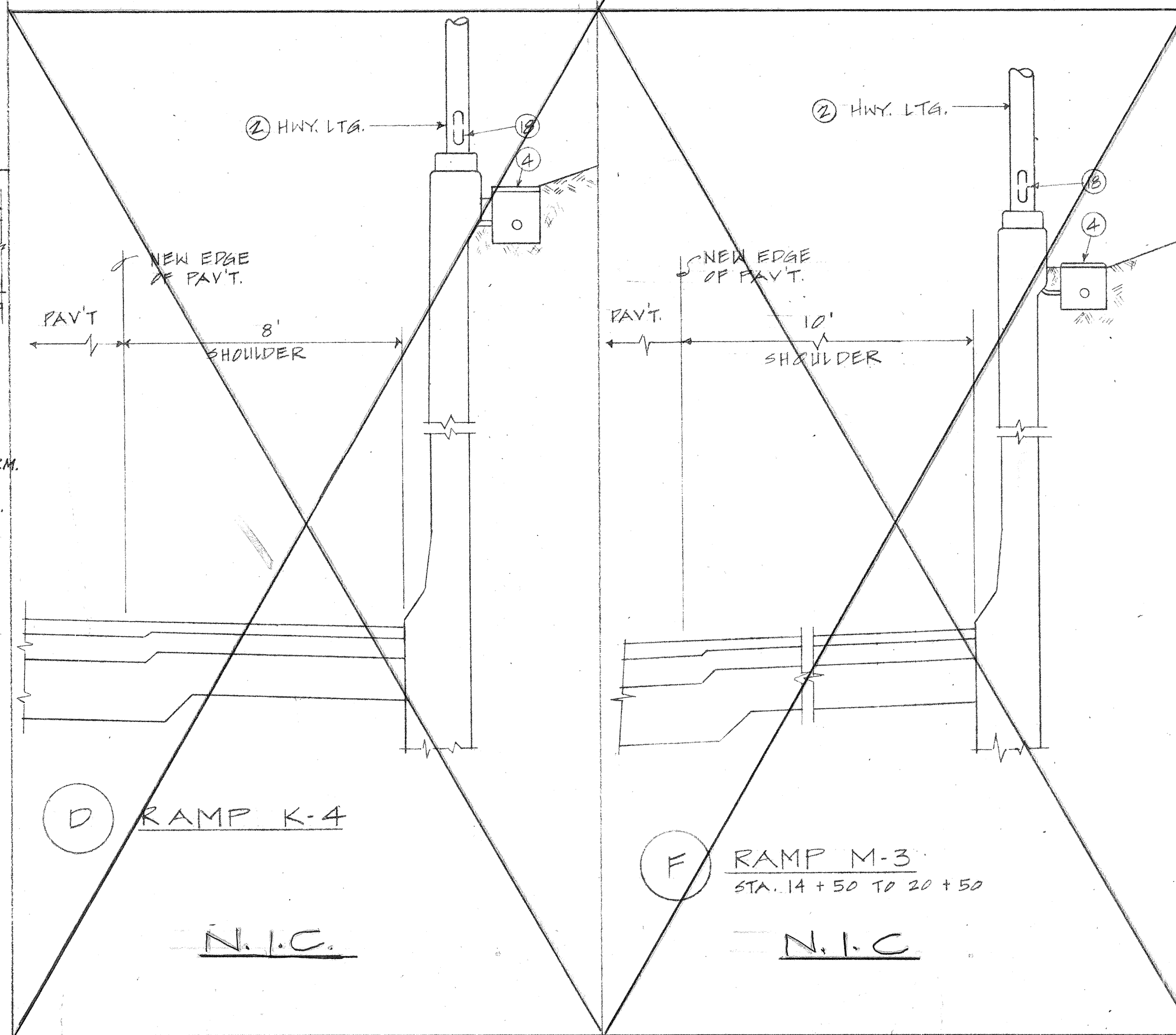
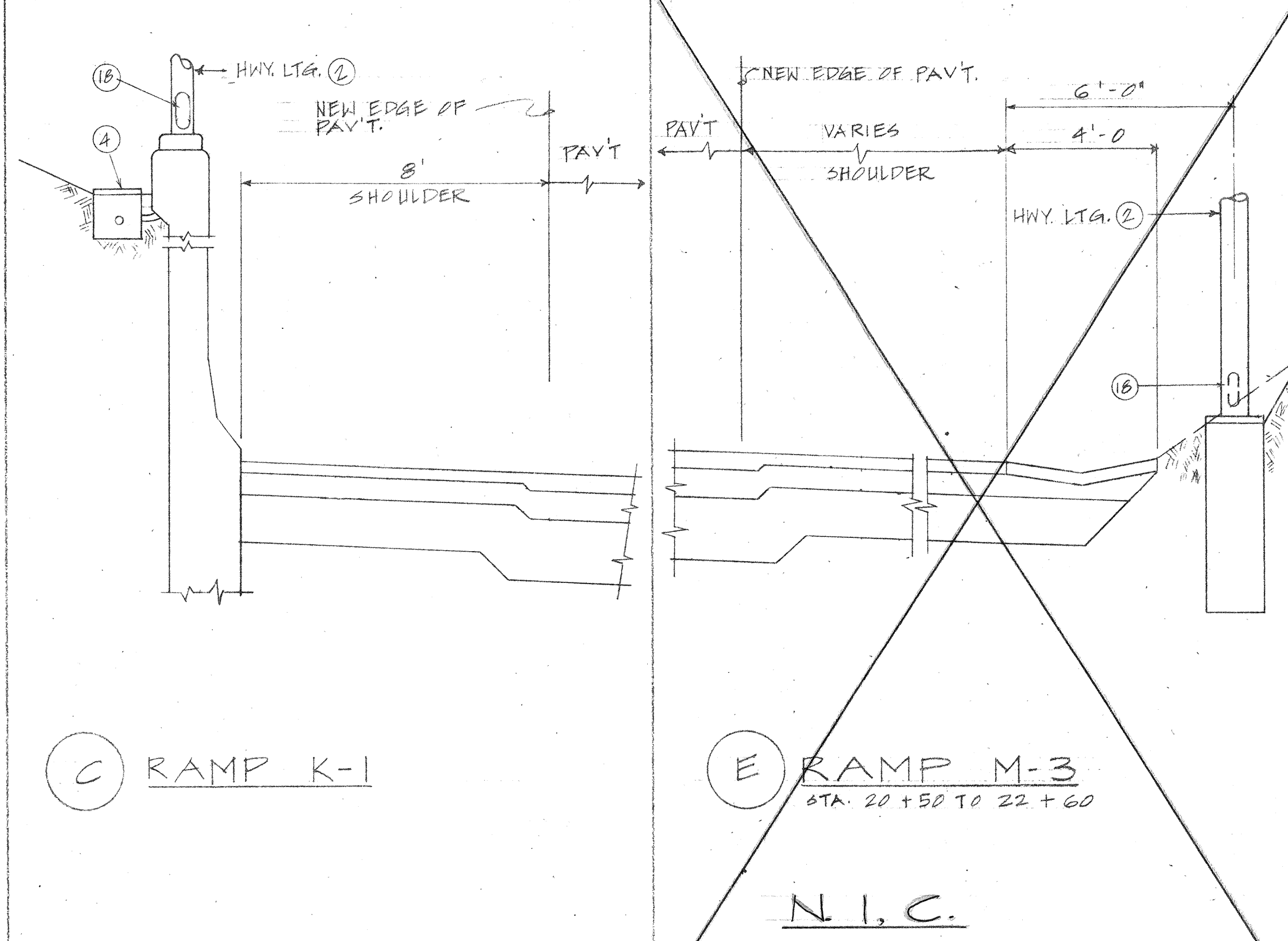
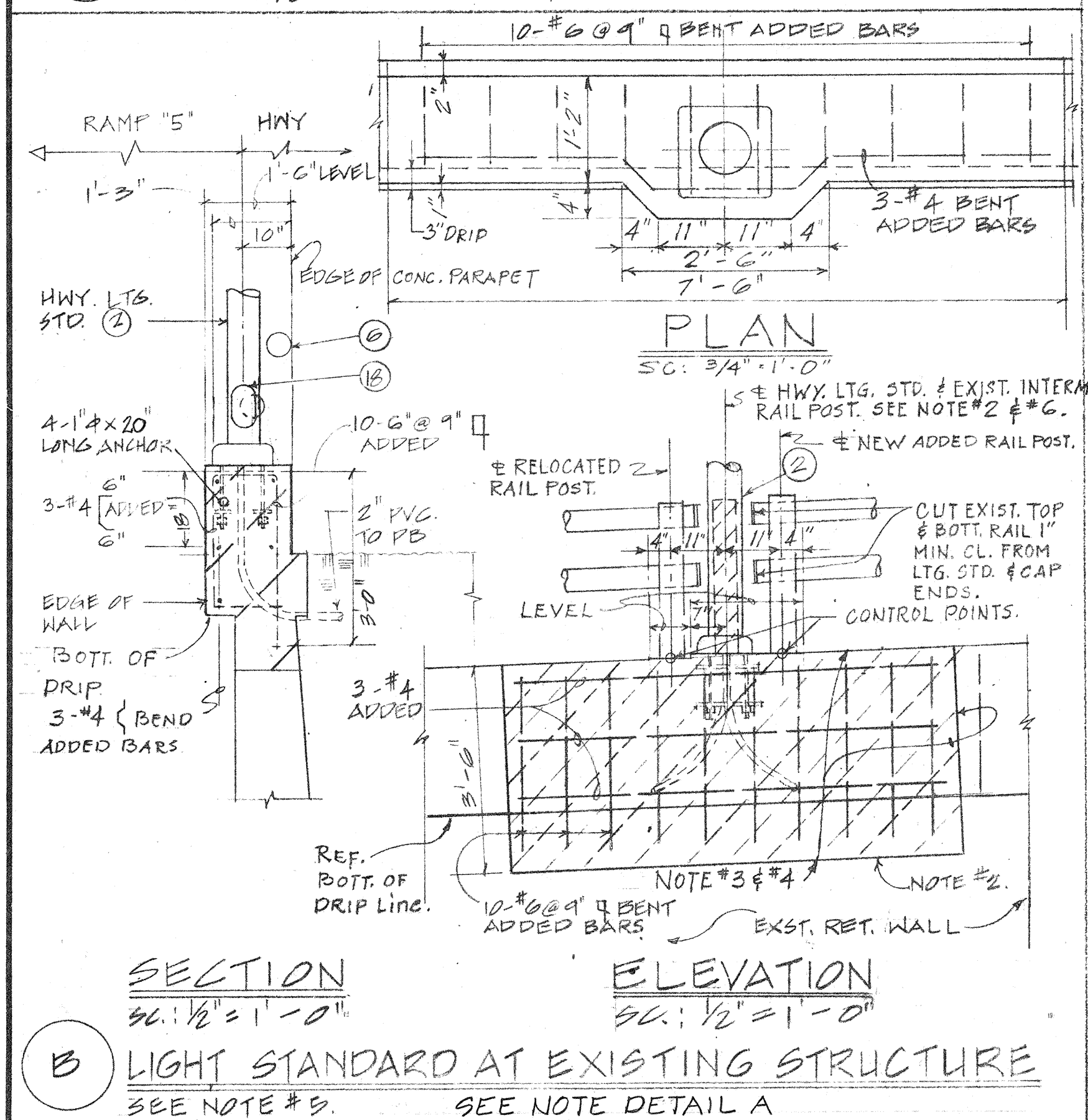
- ① INDICATES NOTE #1, FOR NOTE REFERENCES SEE SHT. 7L.
- CENTER LINE OF LT. STD 3'-0" MIN. FROM ANY LTS. & TO BE PLACED AT 1/2 OF EXIST. INTERM. RAIL POST. POSTS AT APPROX. STA. SHOWN ON HWY. LTG. PLAN.
- EXIST. STRUC. LIMITS OF REMOVAL OF EXST. CONC. WALL SHOWN HATCHED AREA. REMOVE CONC. ONLY. ALL EXST. EXPOSED REINF. TO REMAIN & CLEANED. EXST. REINF. NOT SHOWN IN DETAILS.
- EXIST. STRUC. SAW CUT TOP & BOTH FACES OF EXST. WALL IN A STRAIGHT & CLEAN LINE TO THE PLANE OF THE OUTER EDGE OF THE REINF.
- RET. 3/4" APPLICABLE HWY. LTG. POLE NOS. 117, 119, 121, 123.
- REMOVE & RELOCATE EXIST. INTERM. RAIL POST AS SHOWN IN DETAIL ②.



NOTE

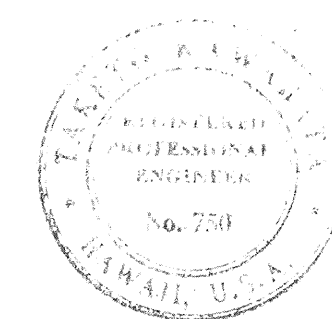
Concrete and Reinf. Steel for rebuilt wall section will be paid under "Concrete other than in Bridges" and "Reinf. Steel other than in Bridges" respectively.

A LIGHT STANDARD AT RETAINING WALL SCALE: 1/2" = 1'-0" SEE NOTE #2.



G LIGHT STANDARD BACK OF WALL SCALE: 1/8" = 1'-0"

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

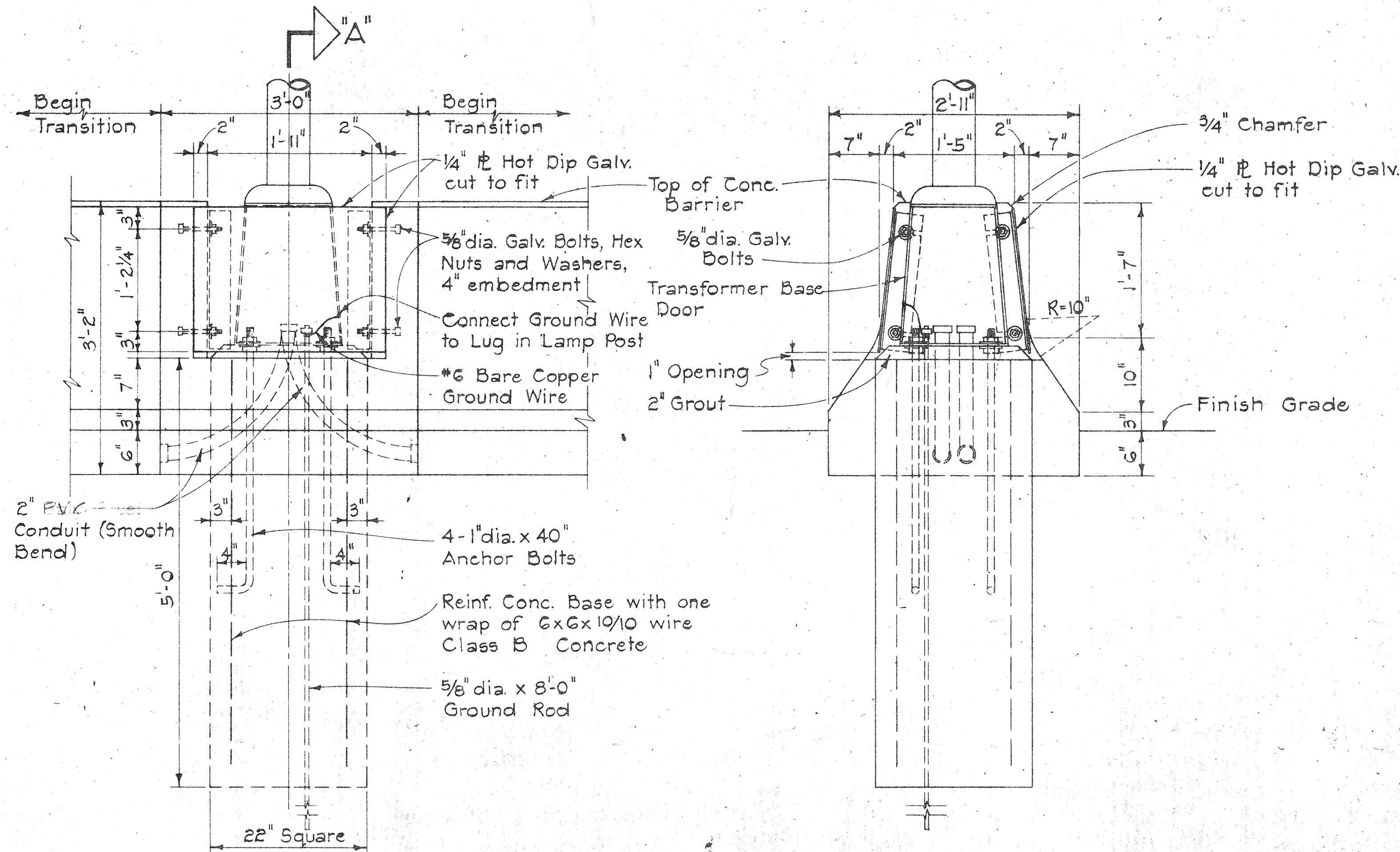


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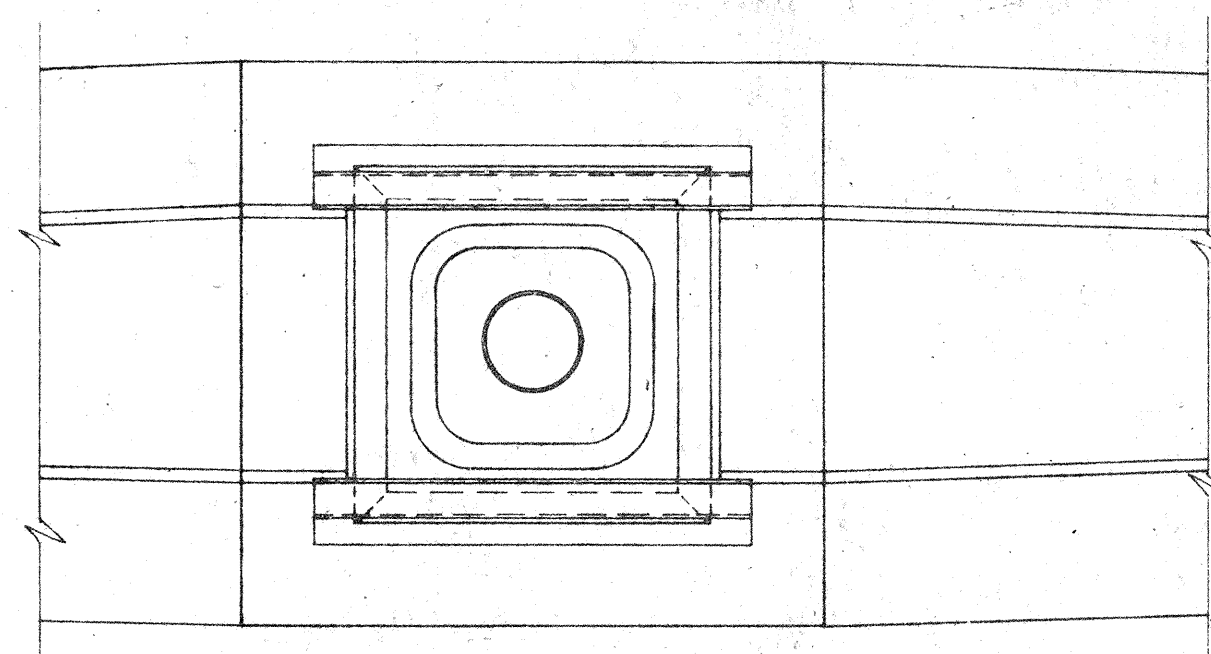
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAY LIGHTING
POLE ASSEMBLY ON STRUCTURES
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
FAI PROJECT NO. I-HI-101219
SCALE: NO SCALE DATE: APR. 1973
SHEET No. 91 OF 181 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(112)19	1973	120	176

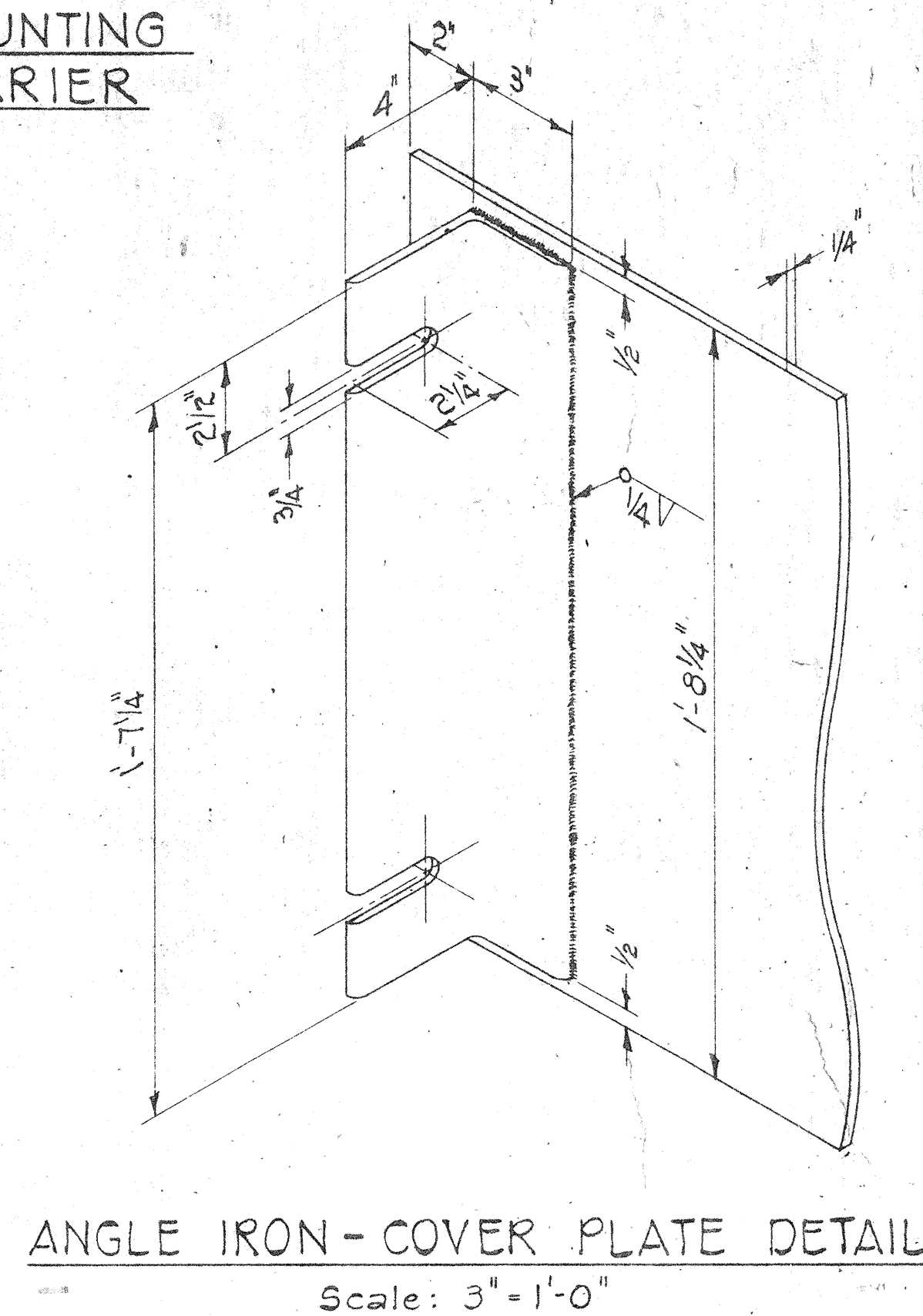


ELEVATION

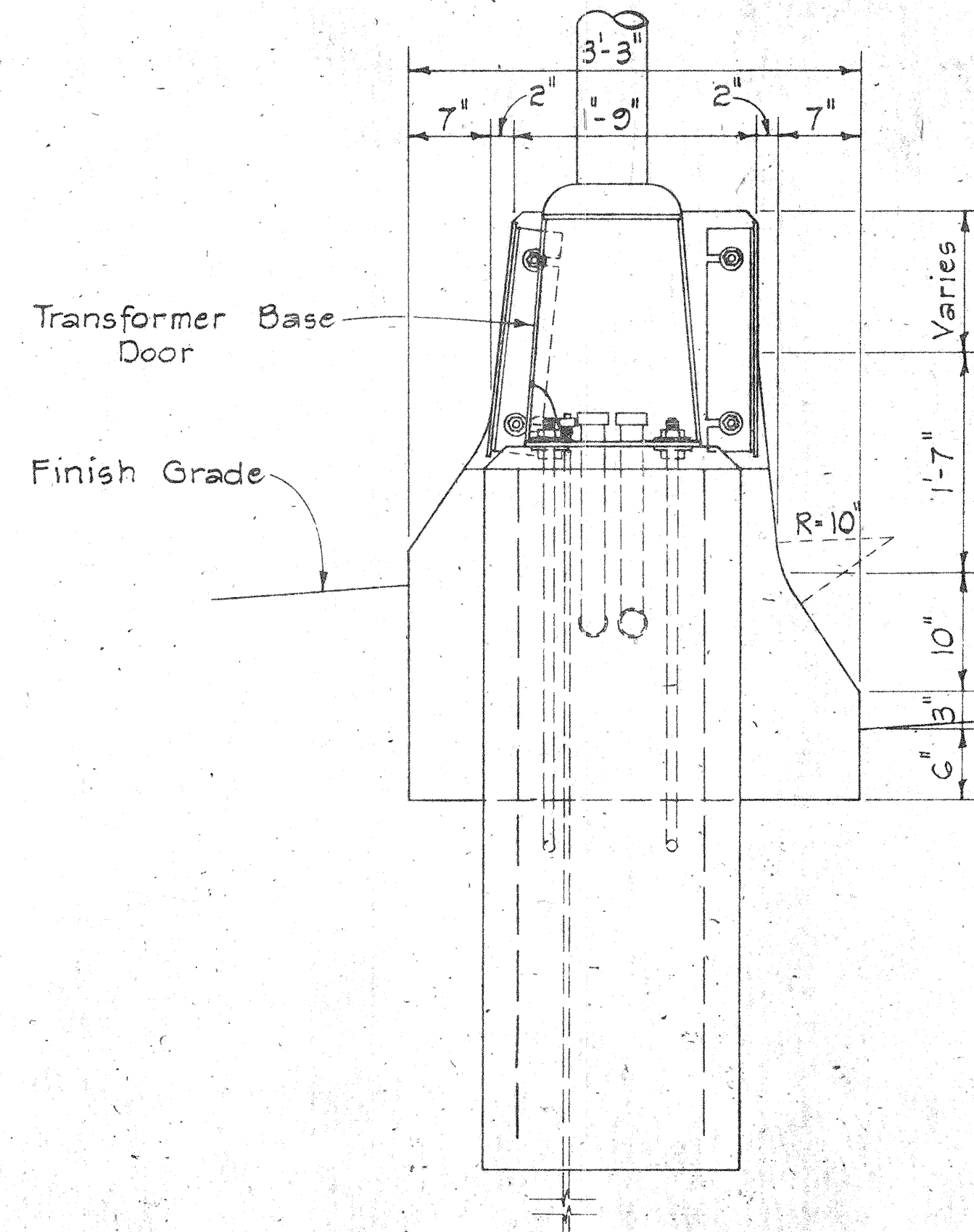
HIGHWAY LIGHTING STANDARD MOUNTING
DETAIL ON TYPE 'A' CONCRETE BARRIER
Scale: 1" = 1'-0"



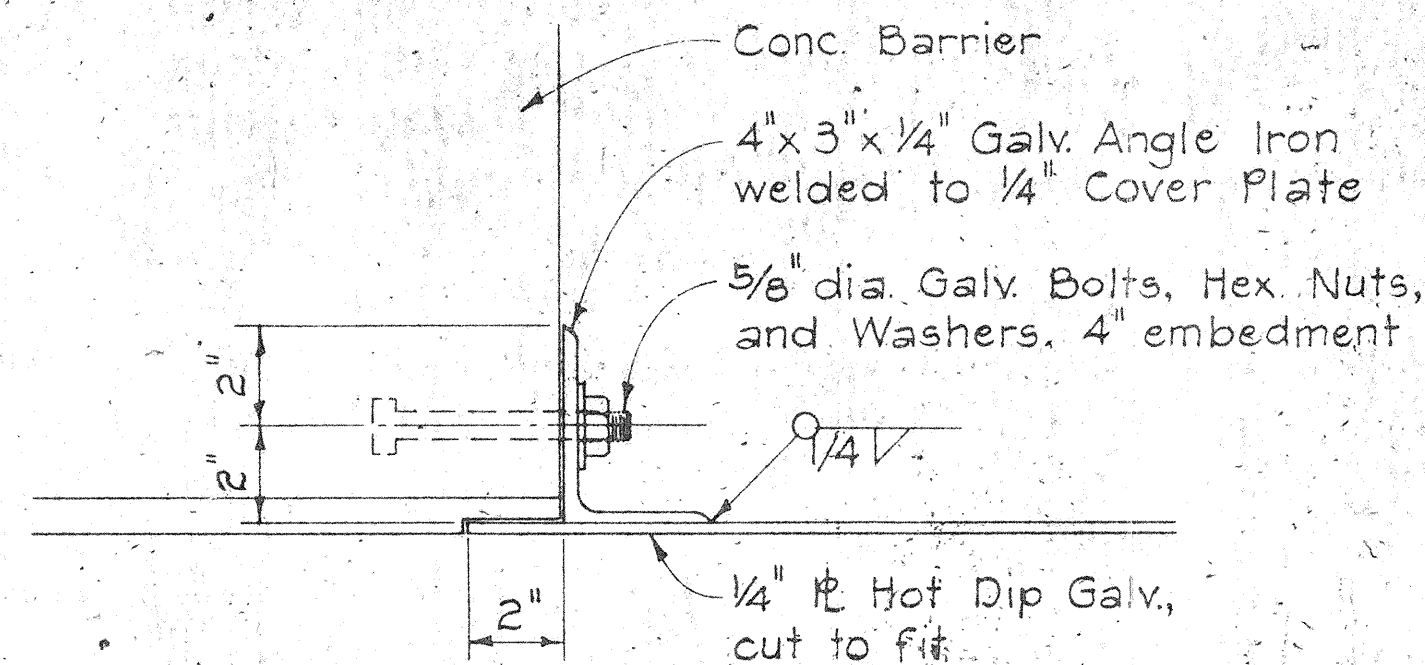
TYPICAL PLAN
Scale: 1" = 1'-0"



ANGLE IRON - COVER PLATE DETAIL
Scale: 3" = 1'-0"



HIGHWAY LIGHTING STANDARD MOUNTING
DETAIL ON TYPE 'B' CONCRETE BARRIER
Scale: 1" = 1'-0"



COVER PLATE ANCHOR DETAIL
Scale: 3" = 1'-0"

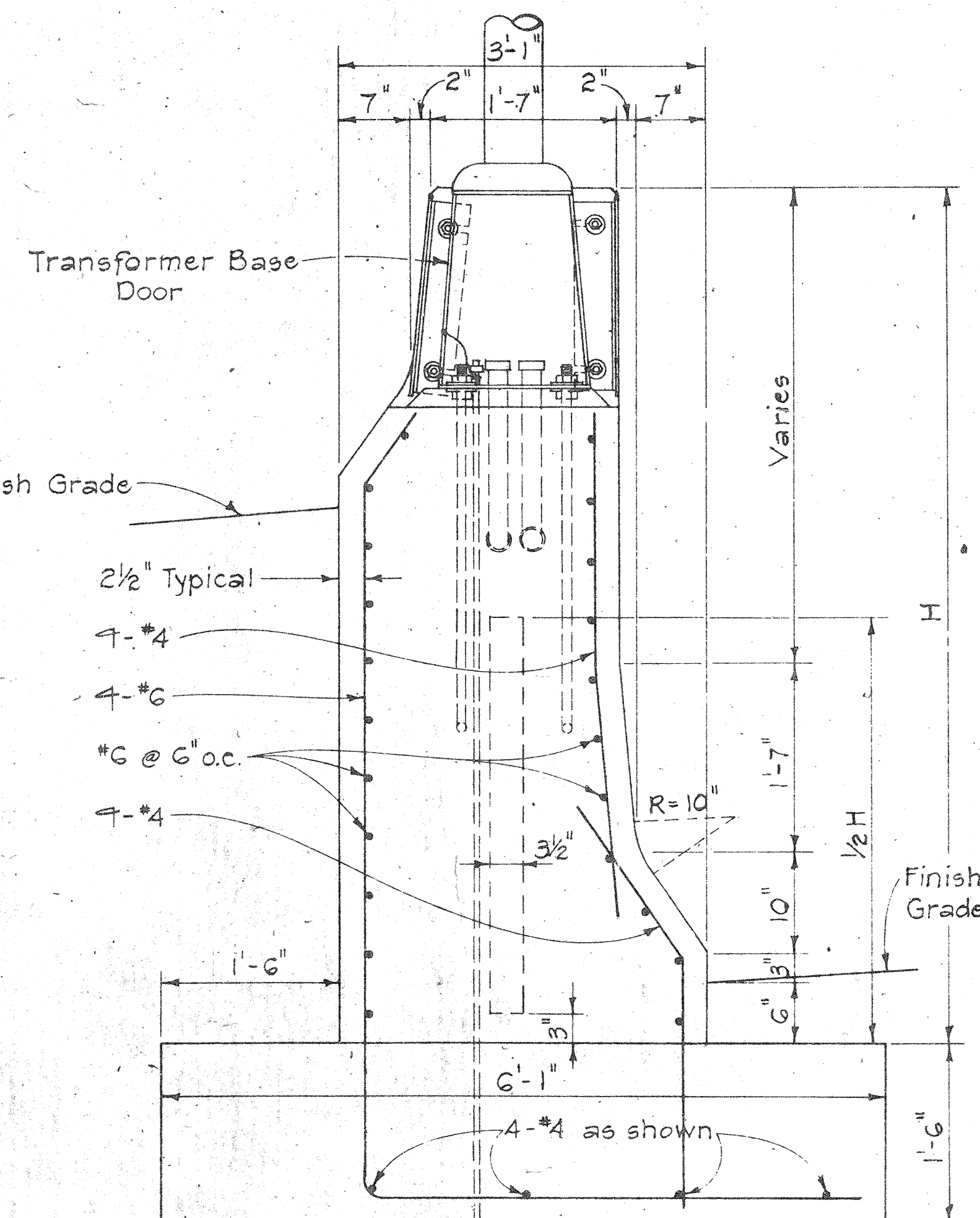
NOTES:

- Constructing conc. barrier foundation for Hwy. Lighting Standards shall consist of all work and materials necessary for constructing the 3'-0" concrete barrier section as shown on the plans. The work shall include furnishing and installing cover plate, angle iron, nuts and bolts and all other appurtenances, and labor including galvanizing, as shown and necessary to complete the work.

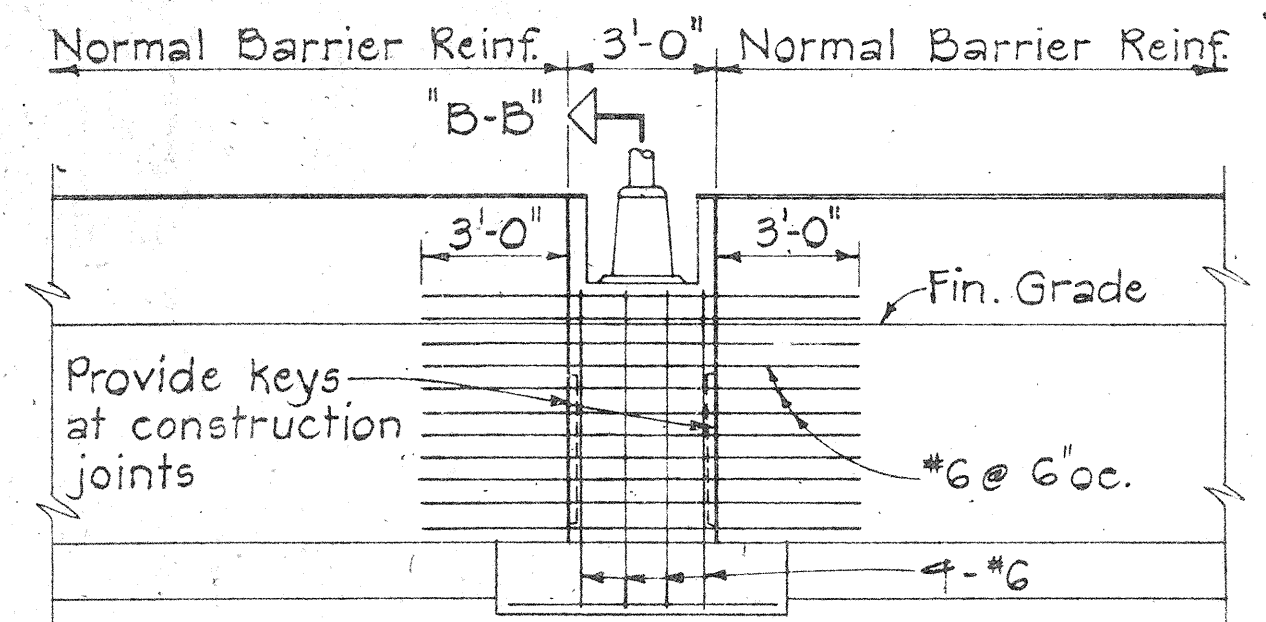
APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
12/29/69
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

NO	REVISION	APPROVED BY	DATE



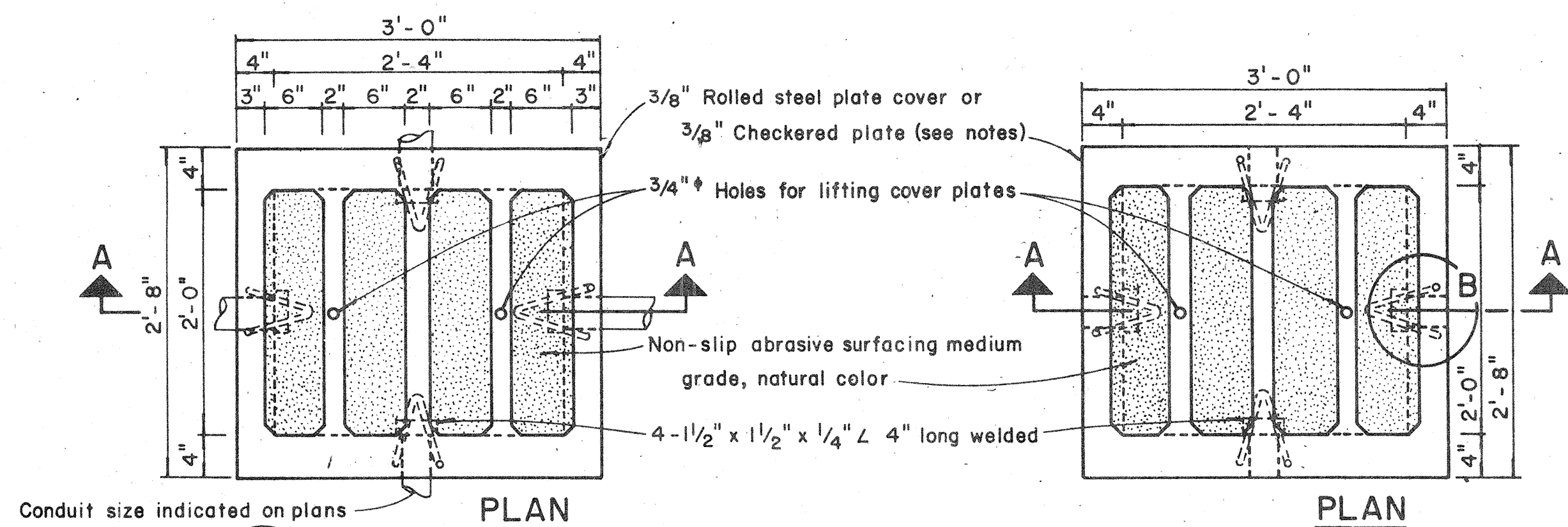
SECTION "B-B"
Scale: 1" = 1'-0"



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

HIGHWAY LIGHTING STANDARD MOUNTING
DETAIL ON TYPE 'C' & 'D' CONC. BARRIER

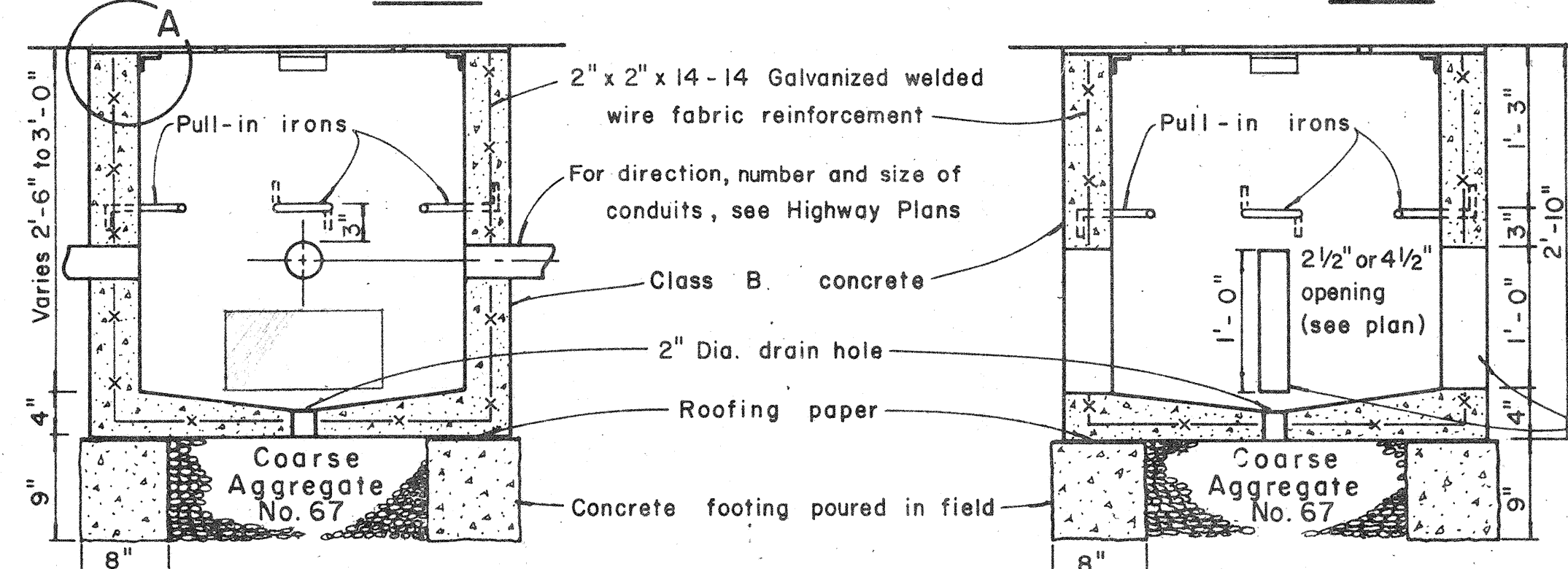
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING
STANDARD DETAIL
HIGHWAY LIGHTING
STANDARD MOUNTING
DET. ON CONG. BARRIER
Scale: As Shown Date: APR. 1973
SHEET No. 12 OF 181 SHEETS DT 513



Conduit size indicated on plans

PLAN

PLAN



SECTION "A-A"

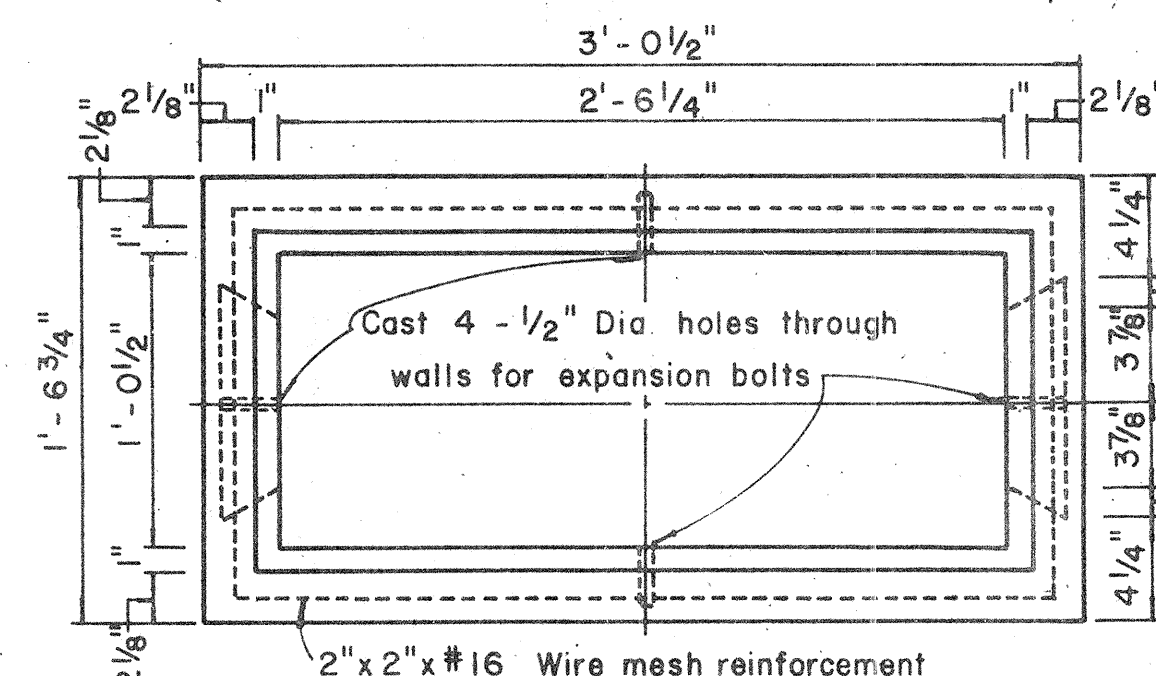
TYPE "A" PULLBOX CAST-IN-PLACE

Scale: 1" = 1'-0"
NOTE NO. 2

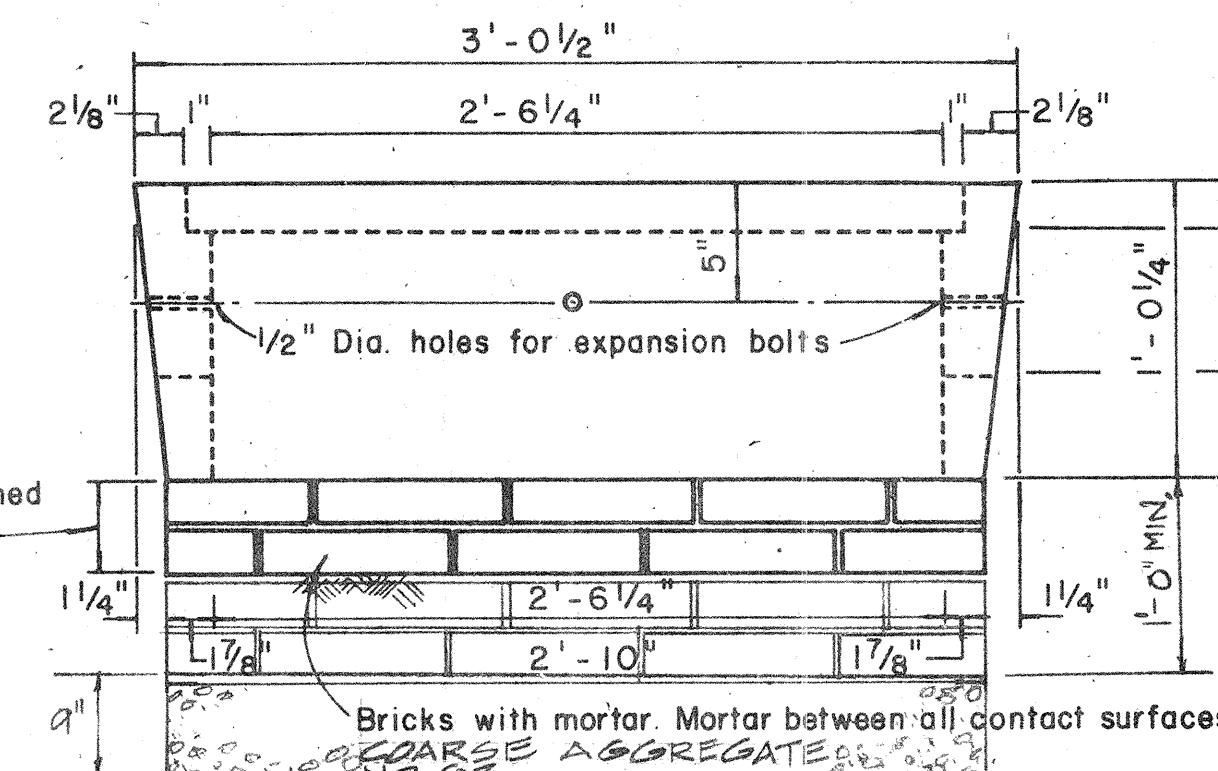
SECTION "A-A"

TYPE "A" PULLBOX PRECAST

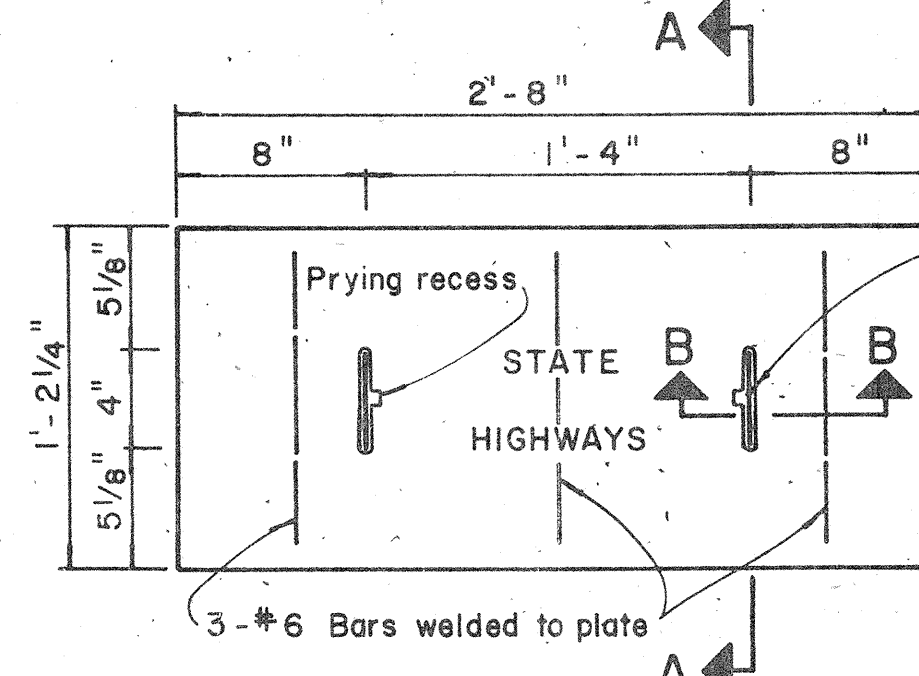
Scale: 1" = 1'-0"
NOTE NO. 2



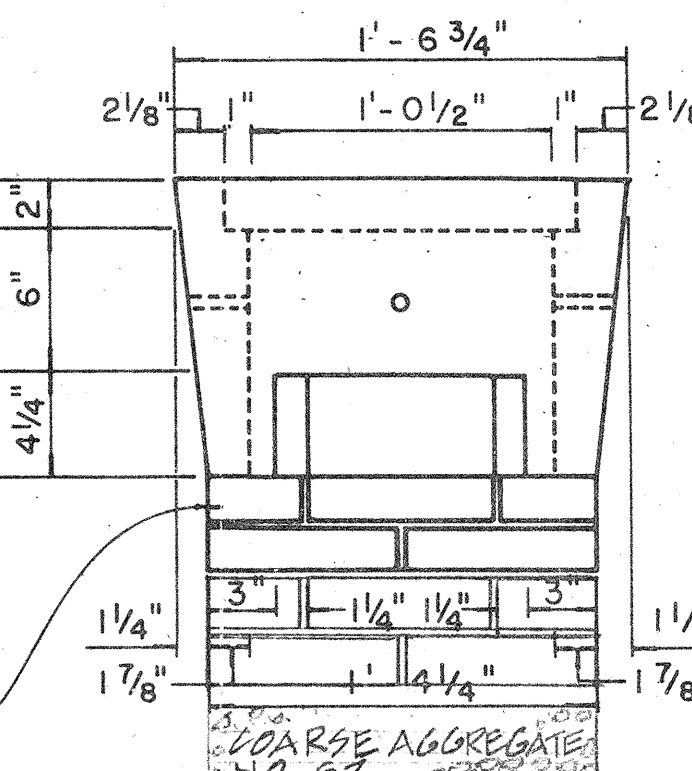
PLAN



SIDE ELEVATION



PLAN OF COVER



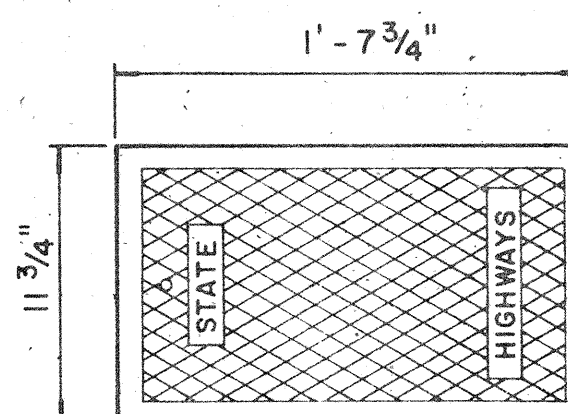
END ELEVATION

TYPE "C" PULLBOX

Scale: 1 1/2" = 1'-0"
NOTE NO. 2

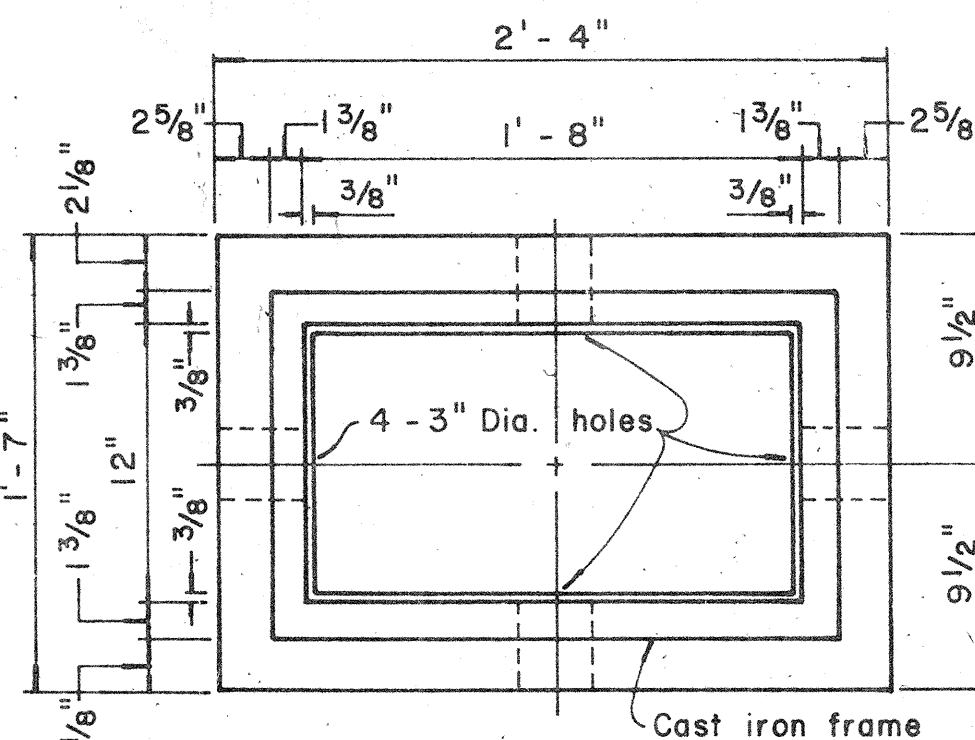
NOTE:

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

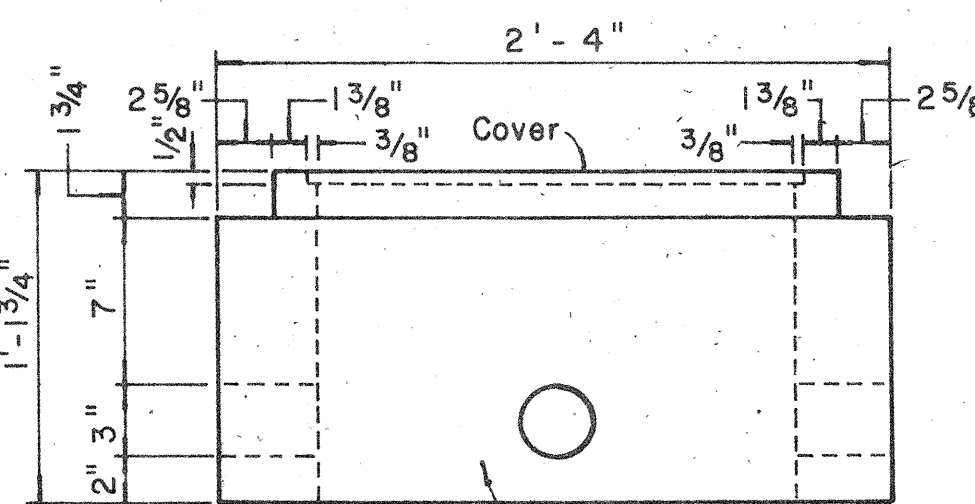


Cast iron or 3/8" rolled steel plate with non-slip abrasive surfacing

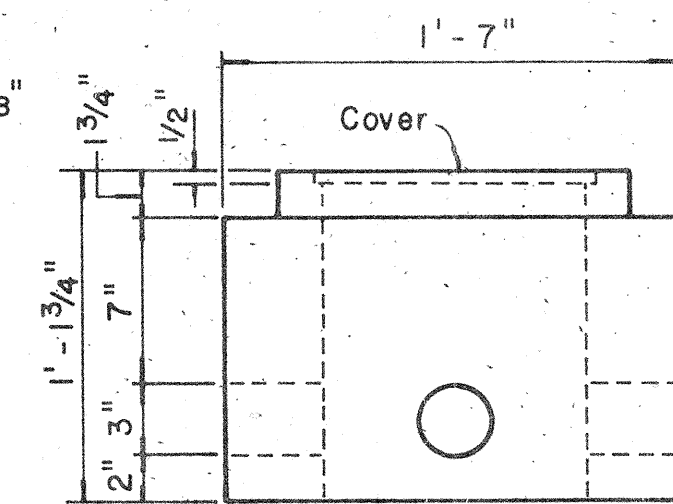
PLAN OF COVER



PLAN



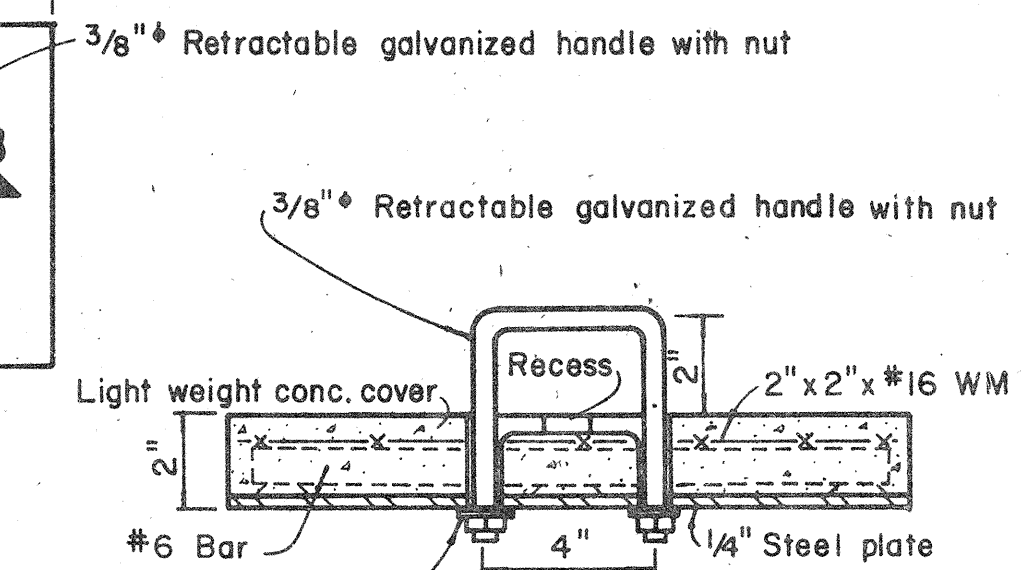
SIDE ELEVATION



END ELEVATION

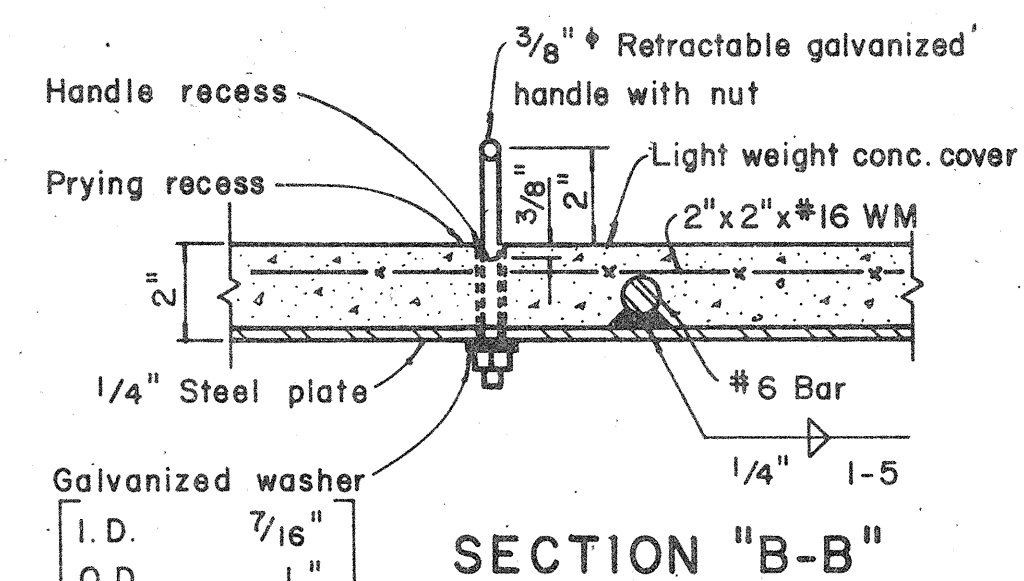
TYPE "B" PULLBOX (NIC)

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



SECTION "A-A"

Scale: 3" = 1'-0"

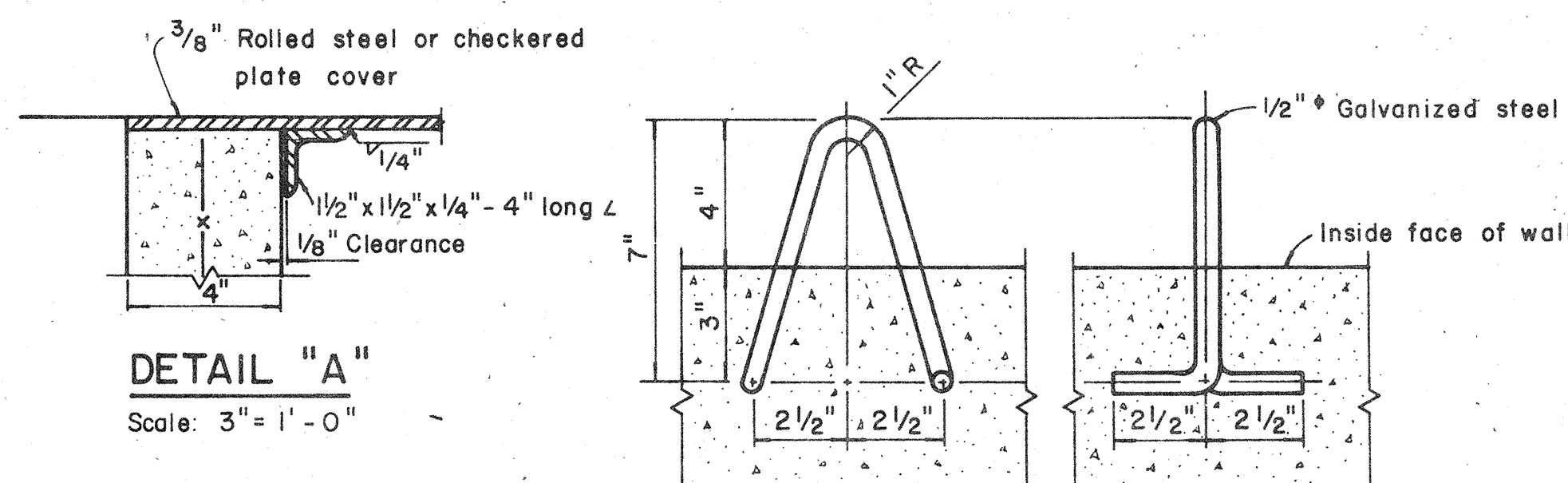


SECTION "B-B"

Scale: 3" = 1'-0"

NOTES:

1. PROVIDE 9/8" X 8'-0" LONG COPPERCLAD GRD. ROD W/ BRONZE SQ. HD SET SCREW & CLAMP IN ALL PULLBOXES. SEE NOTE #1, & #20 SHEET 121.
2. ALL PULLBOXES W/ BALLAST OR ISOLATING TRANSFORMER SHALL HAVE 4' X 4' X 16" CONC. BLOCK (CMU).



DETAIL "A"

Scale: 3" = 1'-0"

PULL-IN IRON DETAIL "B"

Scale: 3" = 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.

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING

PULLBOXES
TYPES "A" "B" & "C"

Scale as noted

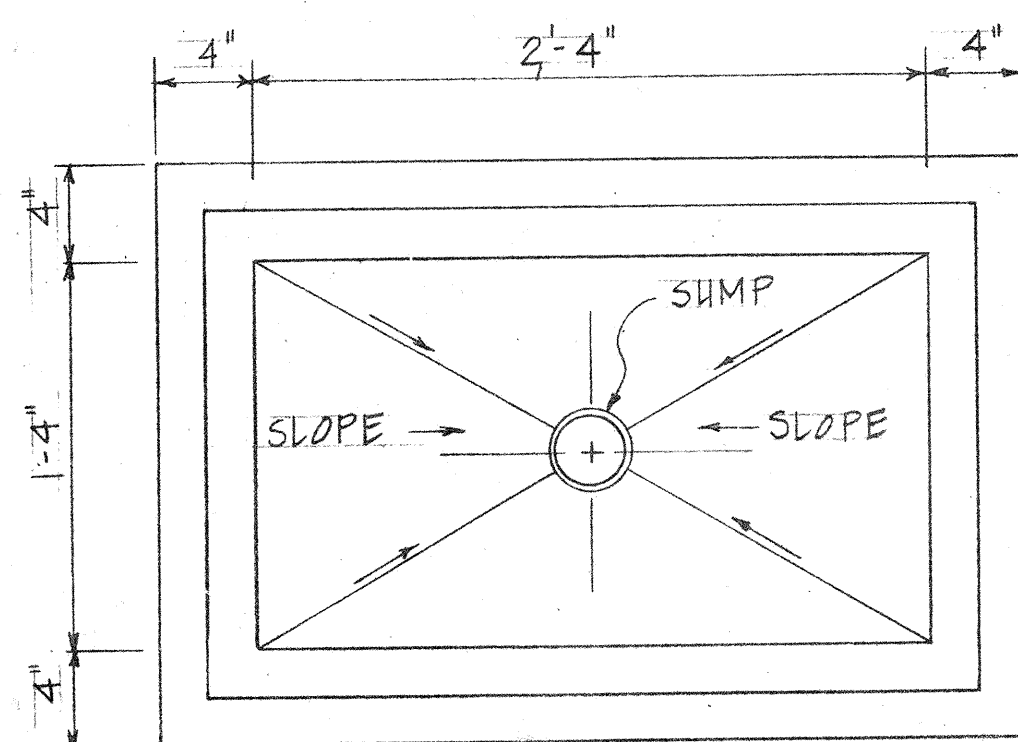
Date APR. 1973

SHEET No. 121 OF 181 SHEETS DT 401

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	T-H-1(1)(2)19	1973	122	176

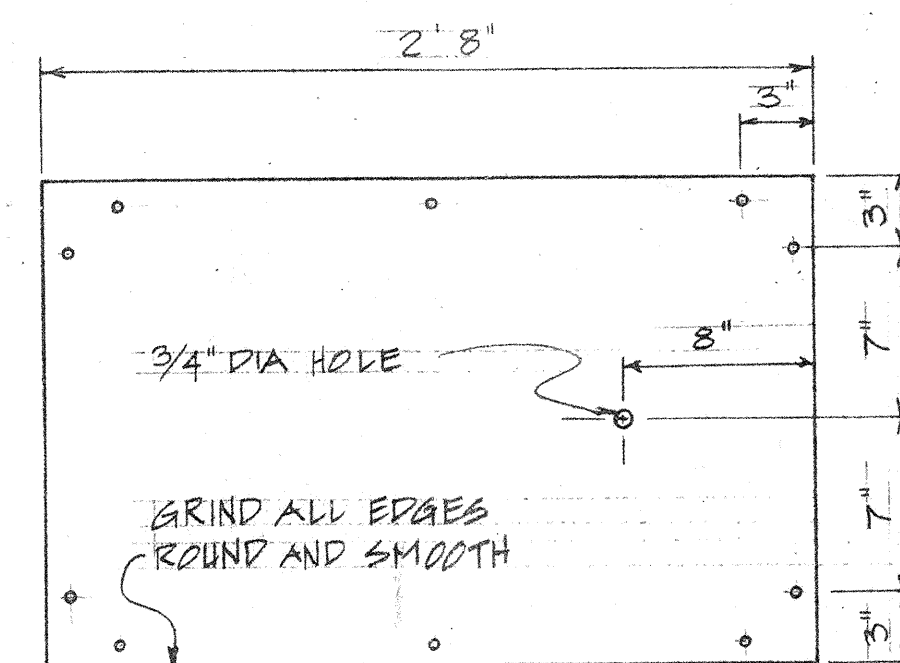
NOTES:

1. ALL PULLBOXES W/ BALLAST OR ISOLATING TRANSFORMER SHALL HAVE 4"x4"x16" CONC. BLOCK (C.M. U.).
2. SEE NOTE #1, SH. 11L.
3. SEE NOTE #19 & #20, SH. 13L..



PLAN

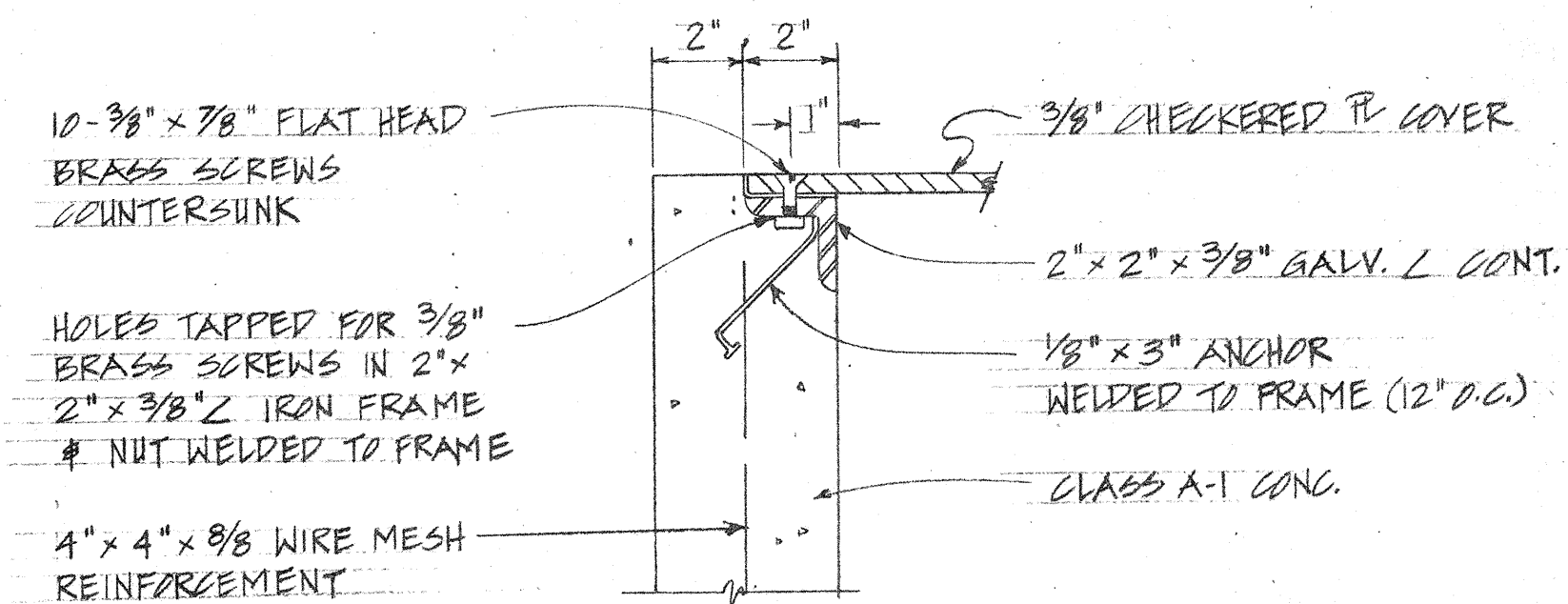
SCALE: $1\frac{1}{2}'' = 1' - 0''$



3/8" CHECKED PLATE COVER

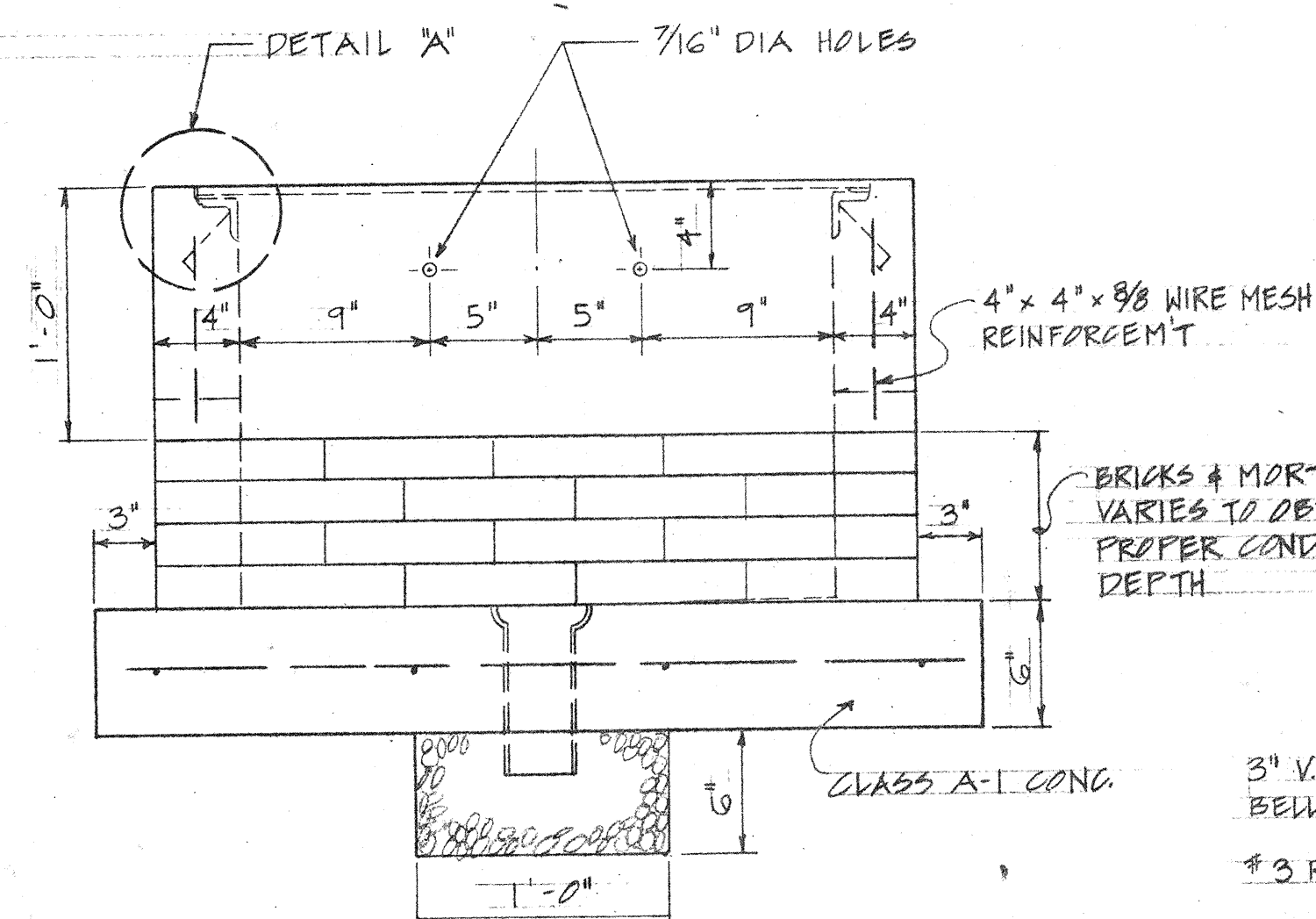
(HOT DIP GALV. CHECKERED TP AFTER DRILLING
COUNTERSINKING & GRINDING EDGE)

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



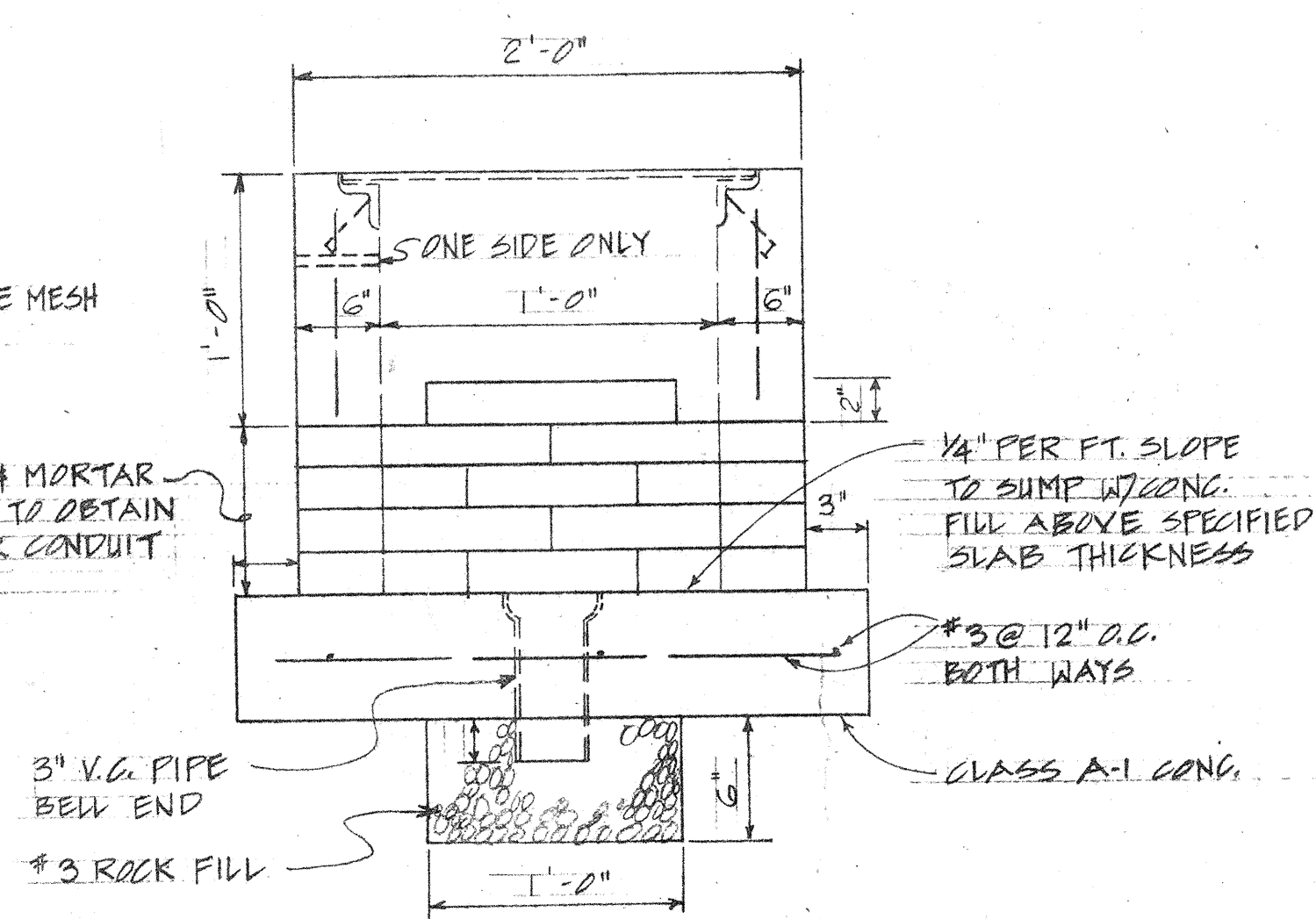
DETAIL "A"

SCALE: 3" = 1' - 0"



SIDE VIEW

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



END VIEW

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

2'-0" x 3'-0" CONCRETE PULLBOX

SEE NOTE NO. 1

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING
STANDARD DETAILS-PULL BOX
TYPE "X"
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
F.A.I. PROJECT NO. I- HI - 1(112)19
SCALE: AS NOTED DATE: APR. 1973
SHEET No. 121 OF 181 SHEETS

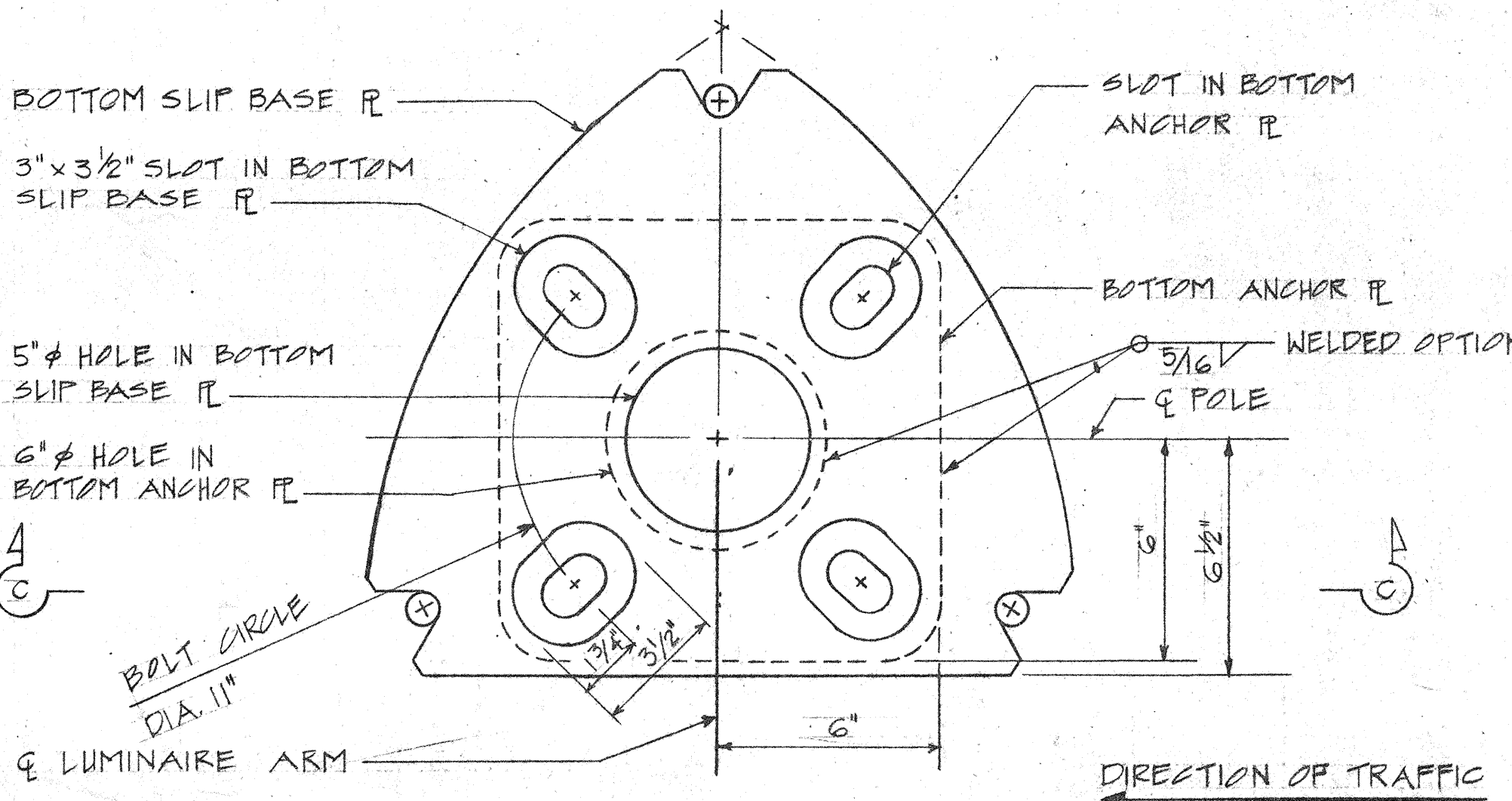
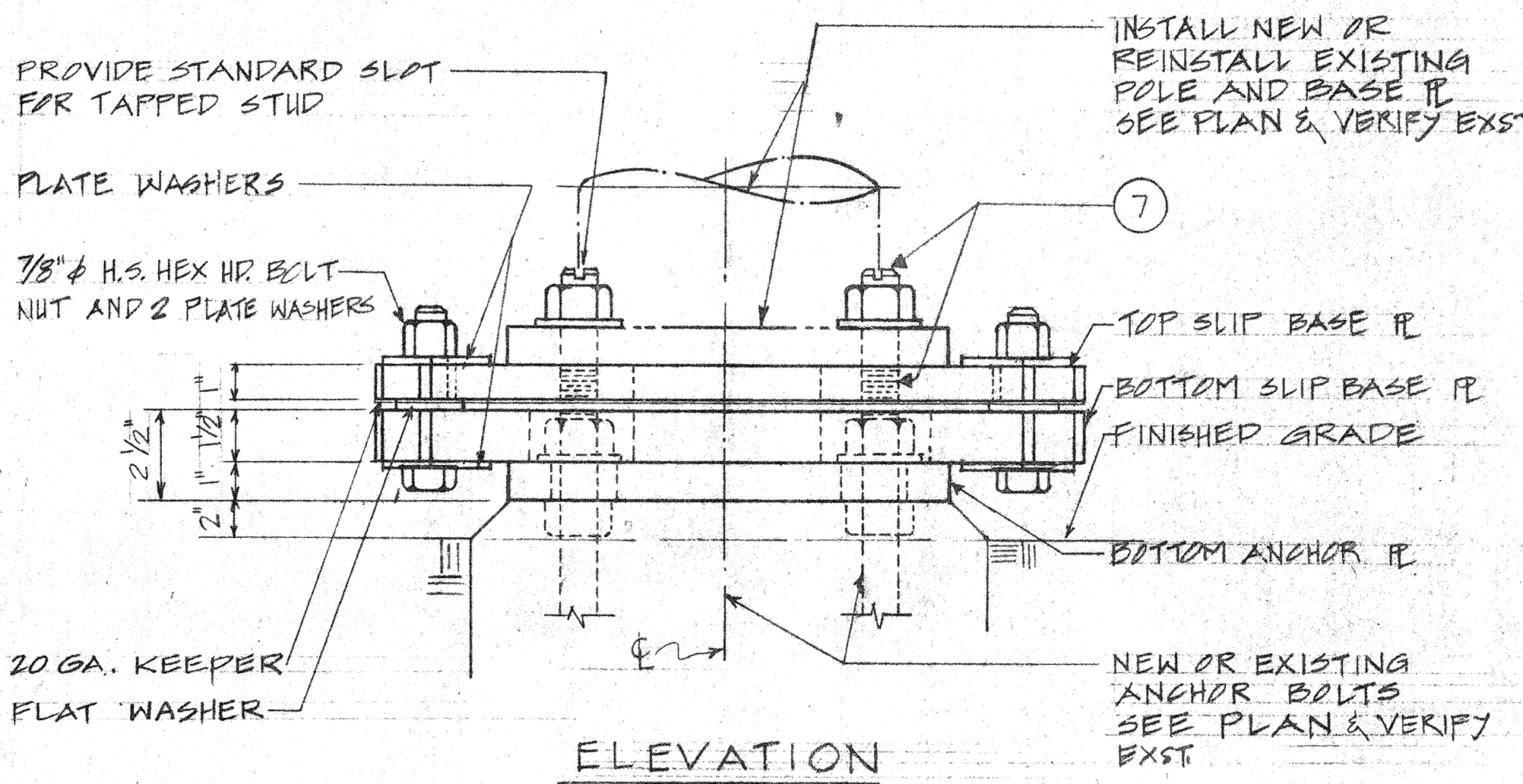
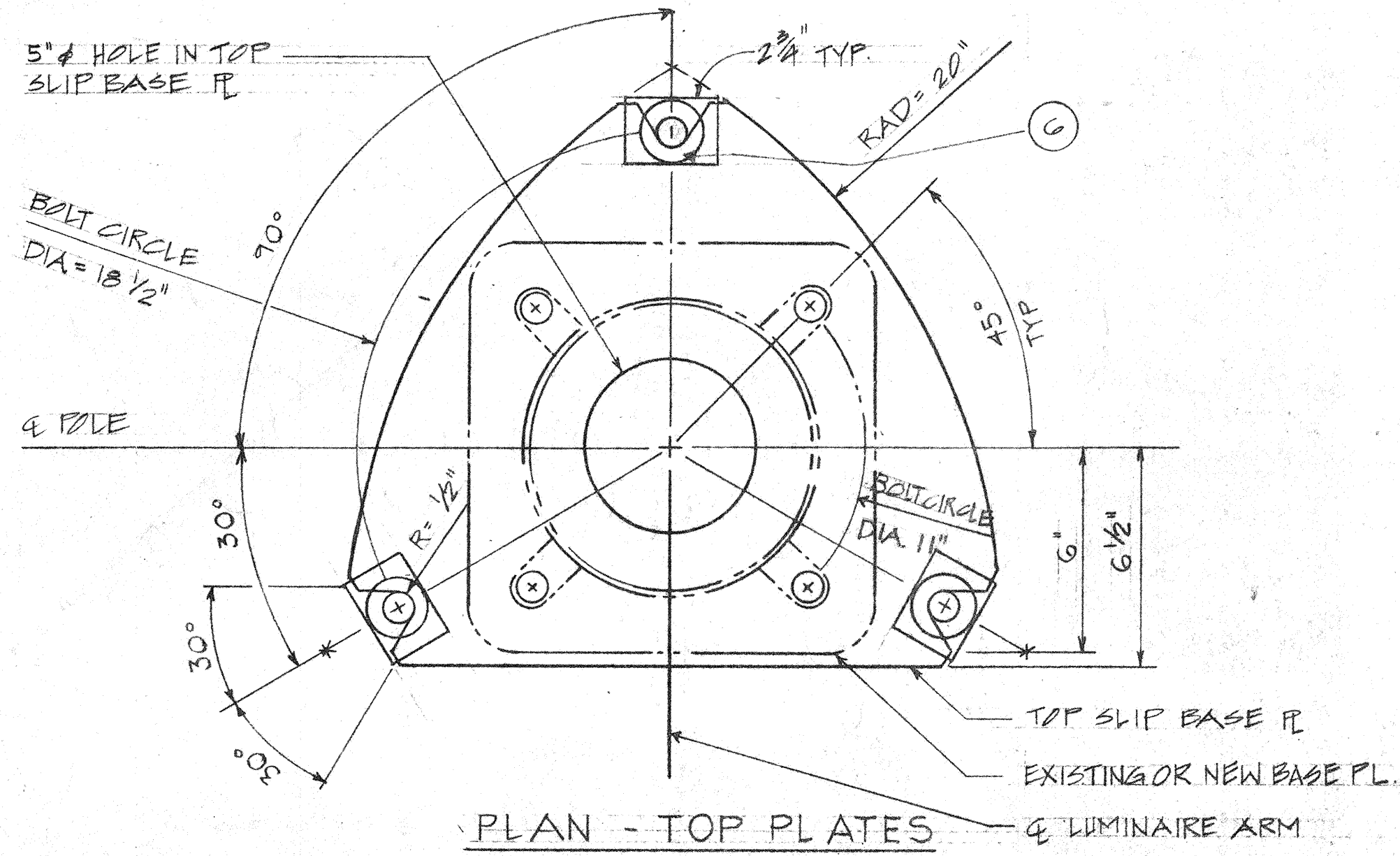
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(12)19	1973	123	176

MATERIAL LIST

- ① MERCURY-VAPOR LUMINAIRE
- ② PHOTO ELEC. SW. (MULTIPLE CKT. ONLY)
- ③ TRUSS BRACKET
- ④ POLE
- ⑤ POLE BASE 4-BOLTS, WASHERS & NUTS
- ⑥ POLE BASE BOLT COVER
- ⑦ GROUNDING LUGS
- ⑧ TRANSFORMER BASE W/ ACCESS COVER
- ⑨ 4-1" X 40" GALV. ANCHOR BOLTS
- ⑩ GRD ROD 5/8" ϕ X 10'-0" COPPERCLAD
- ⑪ PVC SCH'D. 40, 36" DEEP MIN.
- ⑫ CONC. W/ 6#3 BARS UNLESS OTHERWISE NOTED.
- ⑬ WIRING ACCESS HANDHOLE, SEE DET. SH. 13L
- ⑭ SLIP BASE INSERT STD, SEE DET. SH. 14L.
- ⑮ REINFORCED CONC. FOUNDATION INCLUDING 1" MIN. BONDED GRD. LUGS TO GRD. ROD, SIMILAR TO DET. 'A' W/ EXCEPTIONS AS NOTED.
- ⑯ FOR POLES 60, 71, 73, 75, 77, 79, 88, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 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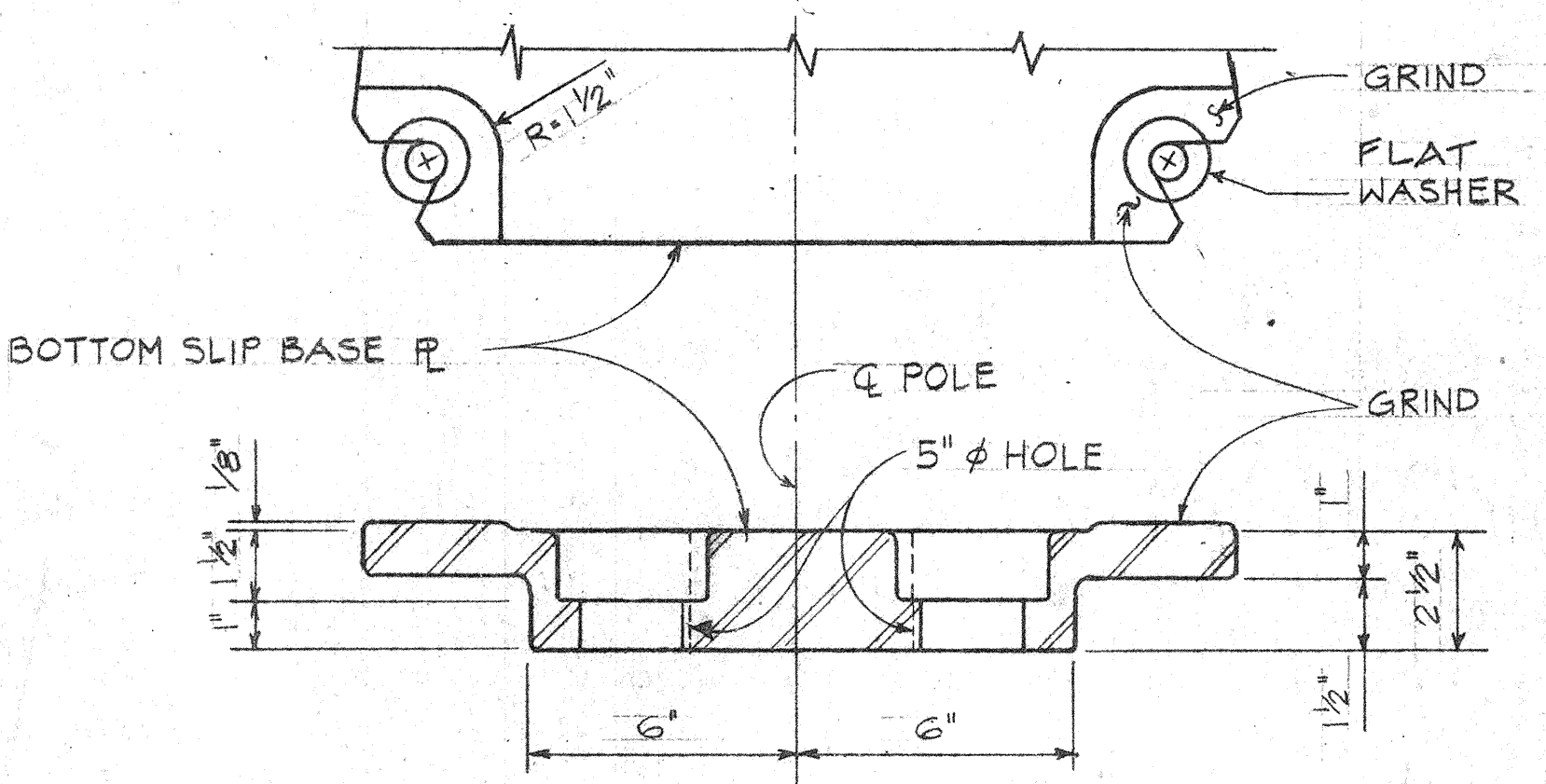
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(112)19	1973	124	176

- NOTES:
- ALL NEW MATERIAL TO BE GALV. AFTER FABRICATION.
 - TORQUE 7/8" H.S. SLIP BASE PL BOLTS TO 1000 INCH LBS.
 - ALL SLOTS TO BE FILLED W/ MASTIC
 - PL'S SHALL CONFORM TO A.S.T.M. A-36
 - CAST OPTION SHALL CONFORM TO A.S.T.M. A-486 CL. 90.
 - FLAT WASHER SHALL CONFORM TO A.S.T.M. A-325.
 - 1" ϕ DRILLED & TAPPED STUD IN TOP SLIP BASE PL. INSERT STUD & CENTER PUNCH @ BOTTOM PERIPHERY TO LOCK TAPPED BOLT IN PLACE PRIOR TO GALV. OR 1" ϕ THREADED STUDS CONN. W/ FULL PENETRATION BUTT WELD.
 - 20 GA. KEEPER PL. PLACE ON TOP OF MIDDLE FLAT WASHER A.S.T.M. A-325 COMMERCIAL
 - FOR MULTIPLE CKT. POLE, USE 11" DIA. BOLT CIRCLE SLIP BASE PL. INSERT DETAILS.
 - WHERE SLIP BASE IS REQUIRED FOR EXIST. SERIES CKT. POLE THAT IS NOT RELOCATED, USE 15" DIA. BOLT CIRCLE SLIP BASE PL. INSERT, REMOVE TRANSFORMER BASE AND PROVIDE HANDHOLE IN SHAFT PER DETAIL ON SHEET 15L MOUNT POLE DIRECTLY ON SLIP BASE PLATE.



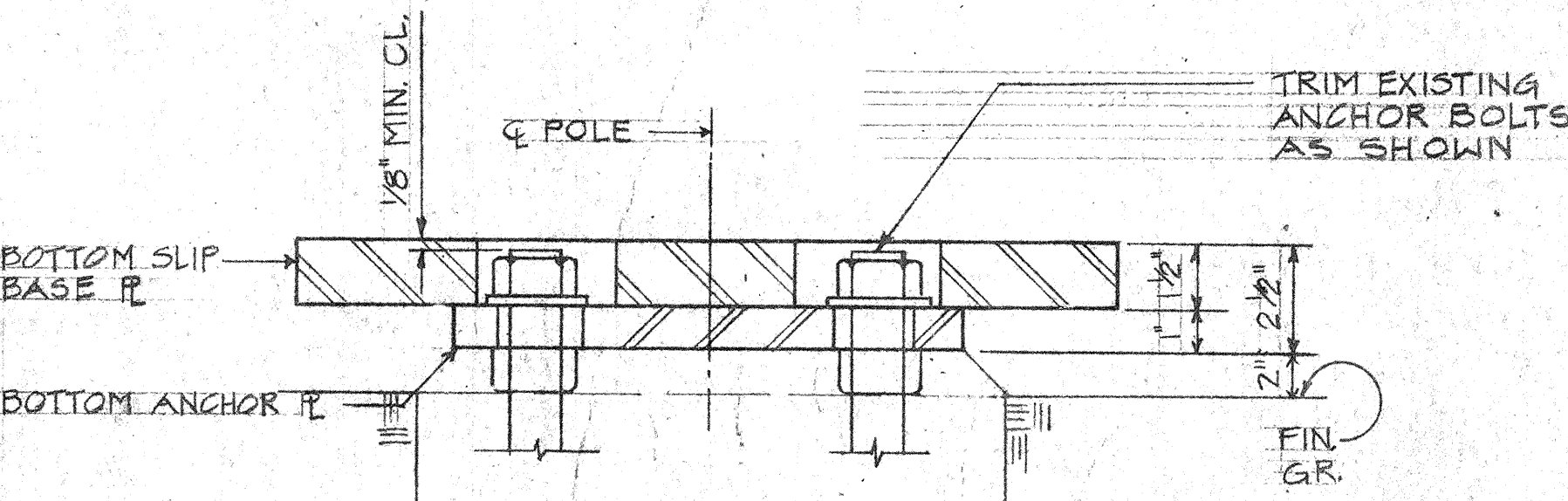
PLAN - BOTTOM PLATES
NOTE: THIS DETAIL APPLICABLE TO POLE REQUIRING SLIP BASE INSERT.
SEE NOTE #9.

SLIP BASE PL INSERT DETAILS



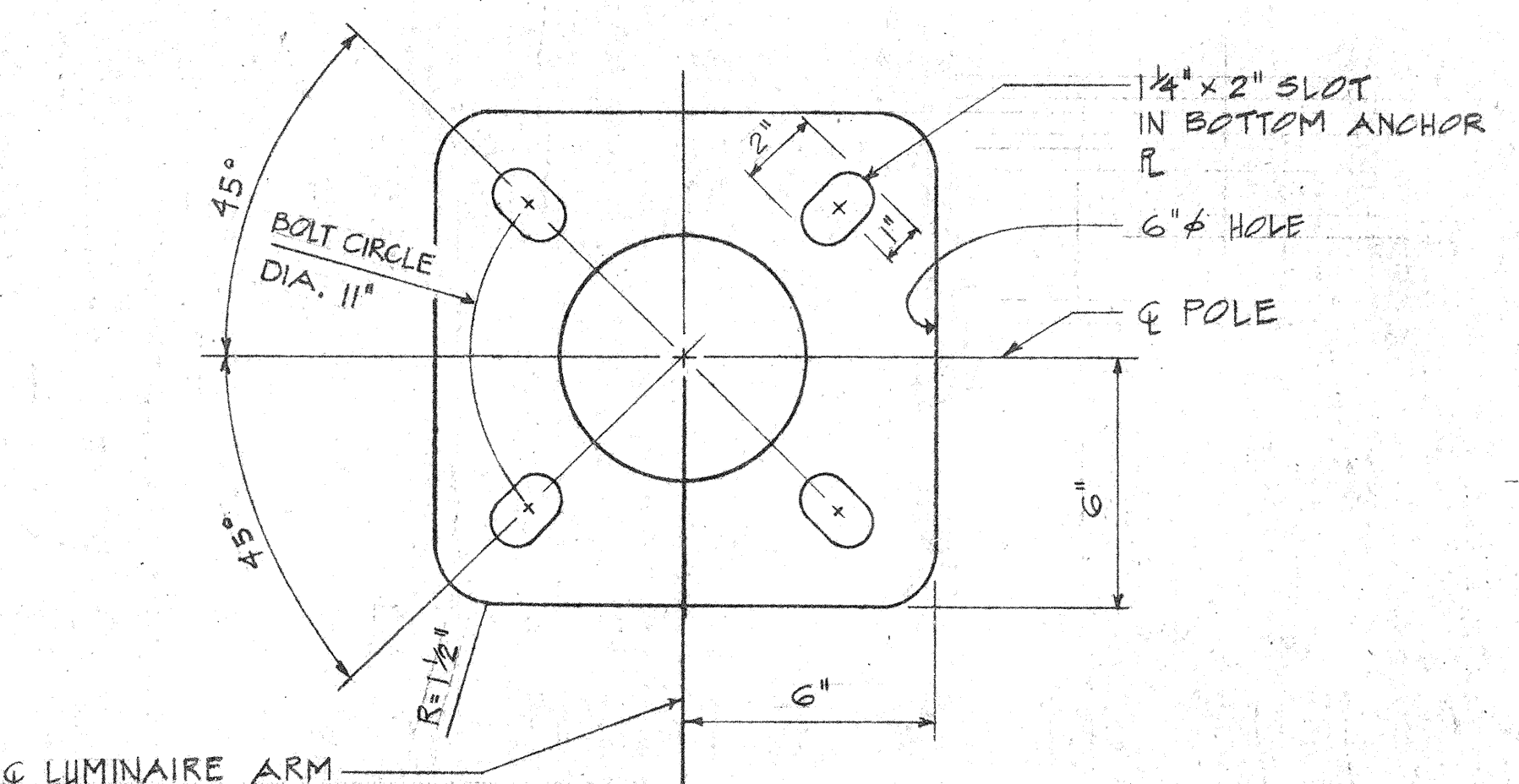
SECTION C-C

CAST OPTION



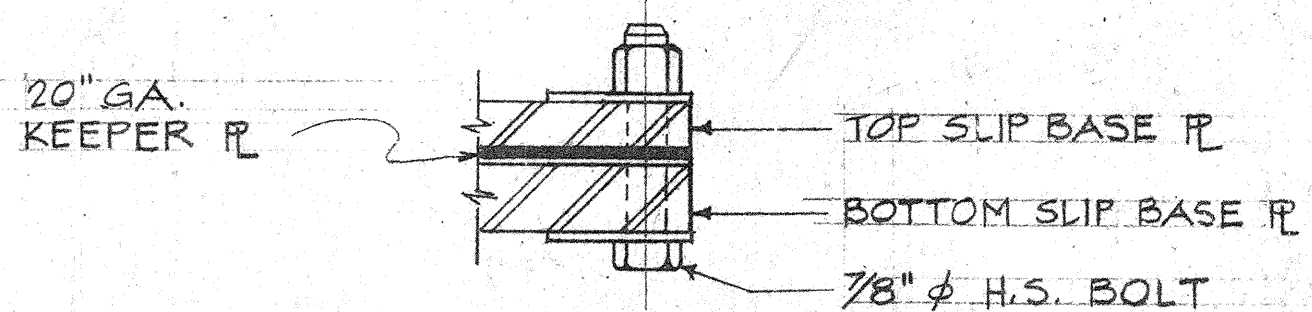
SECTION C-C

WELDED OPTION

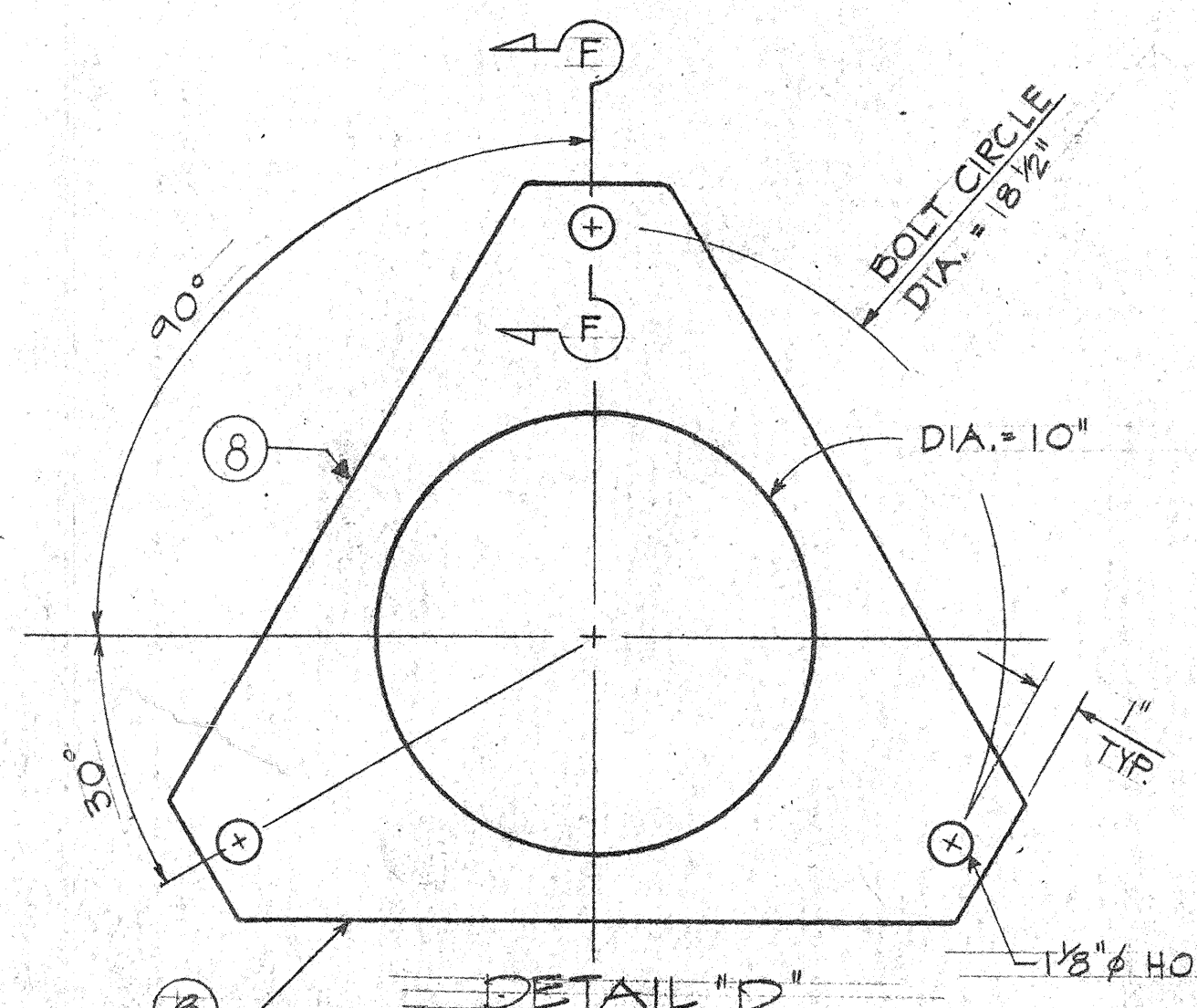


PLAN

BOTTOM ANCHOR PL DETAILS

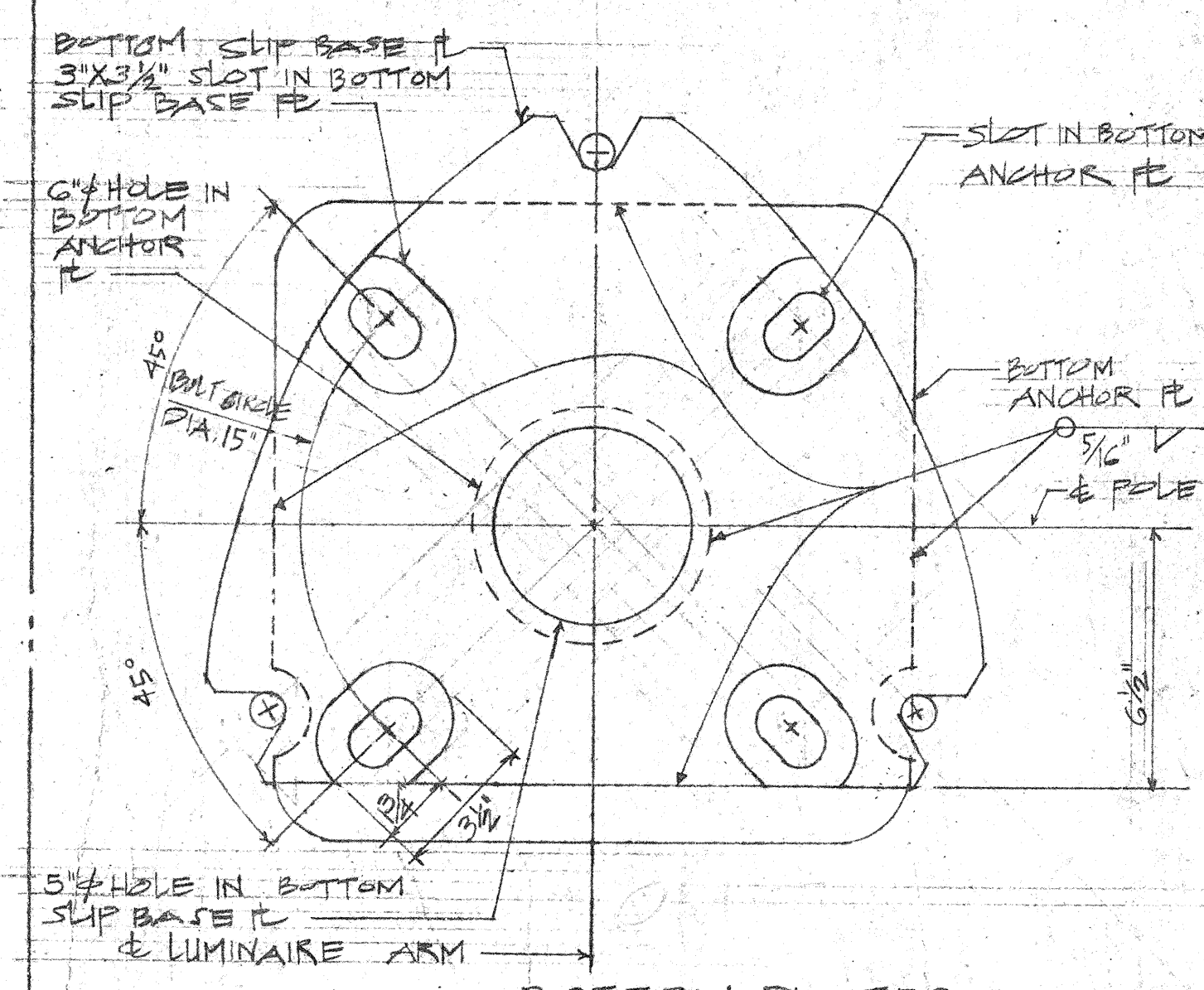


SECTION F-F



DETAIL 'D'

KEEPER PLATE



BOTTOM PLATES

5" DIA. BOLT CIRCLE SLIP BASE PLATE INSERT DETAIL

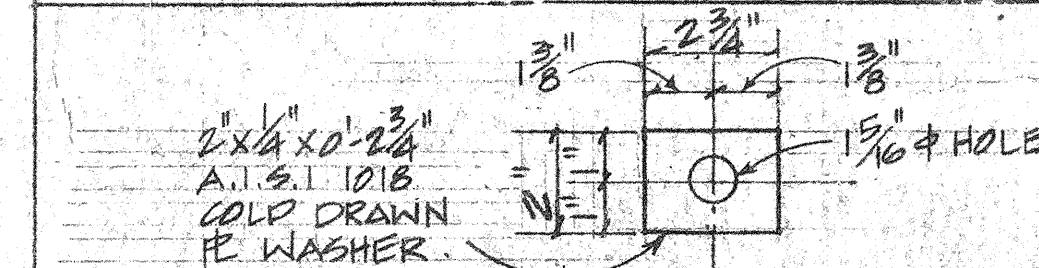


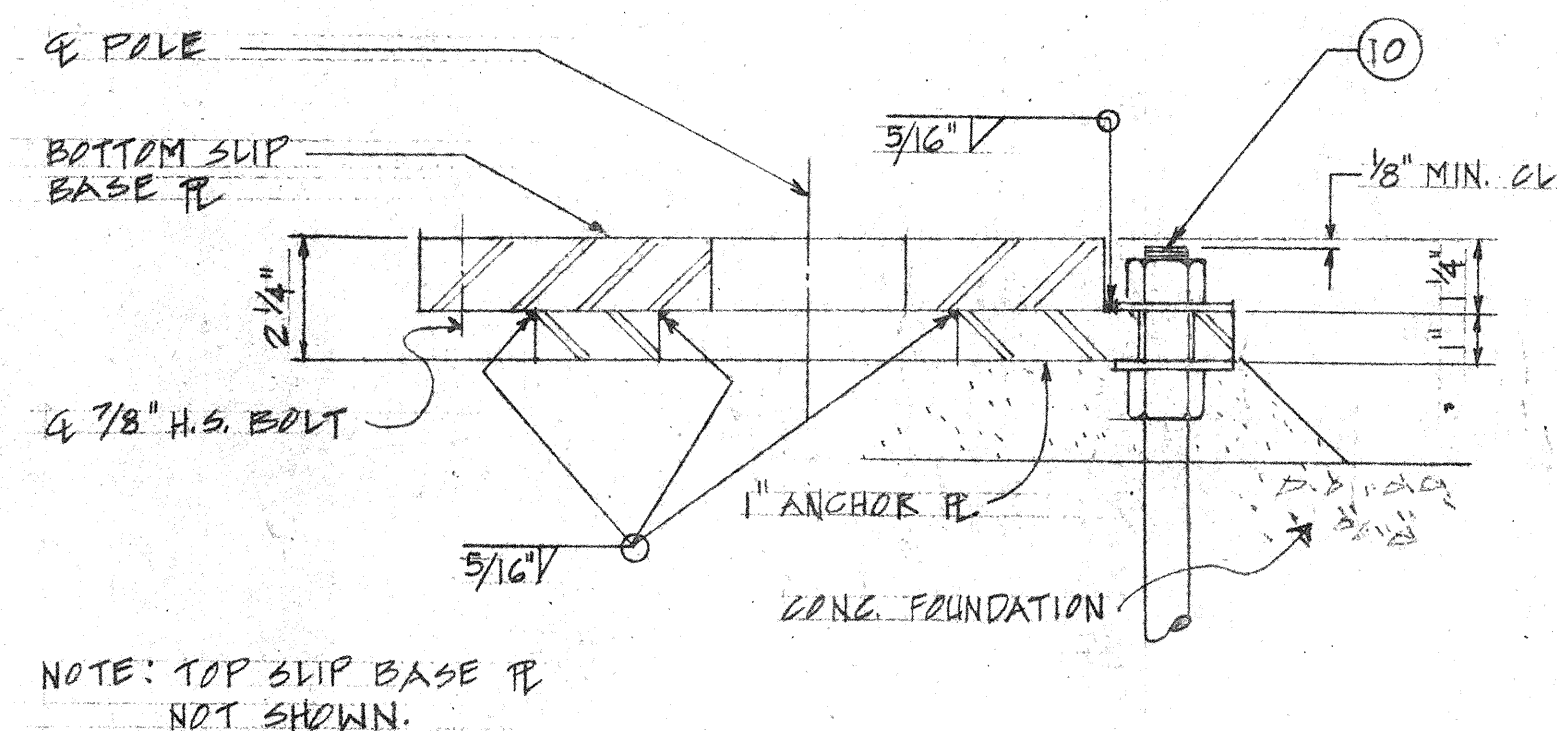
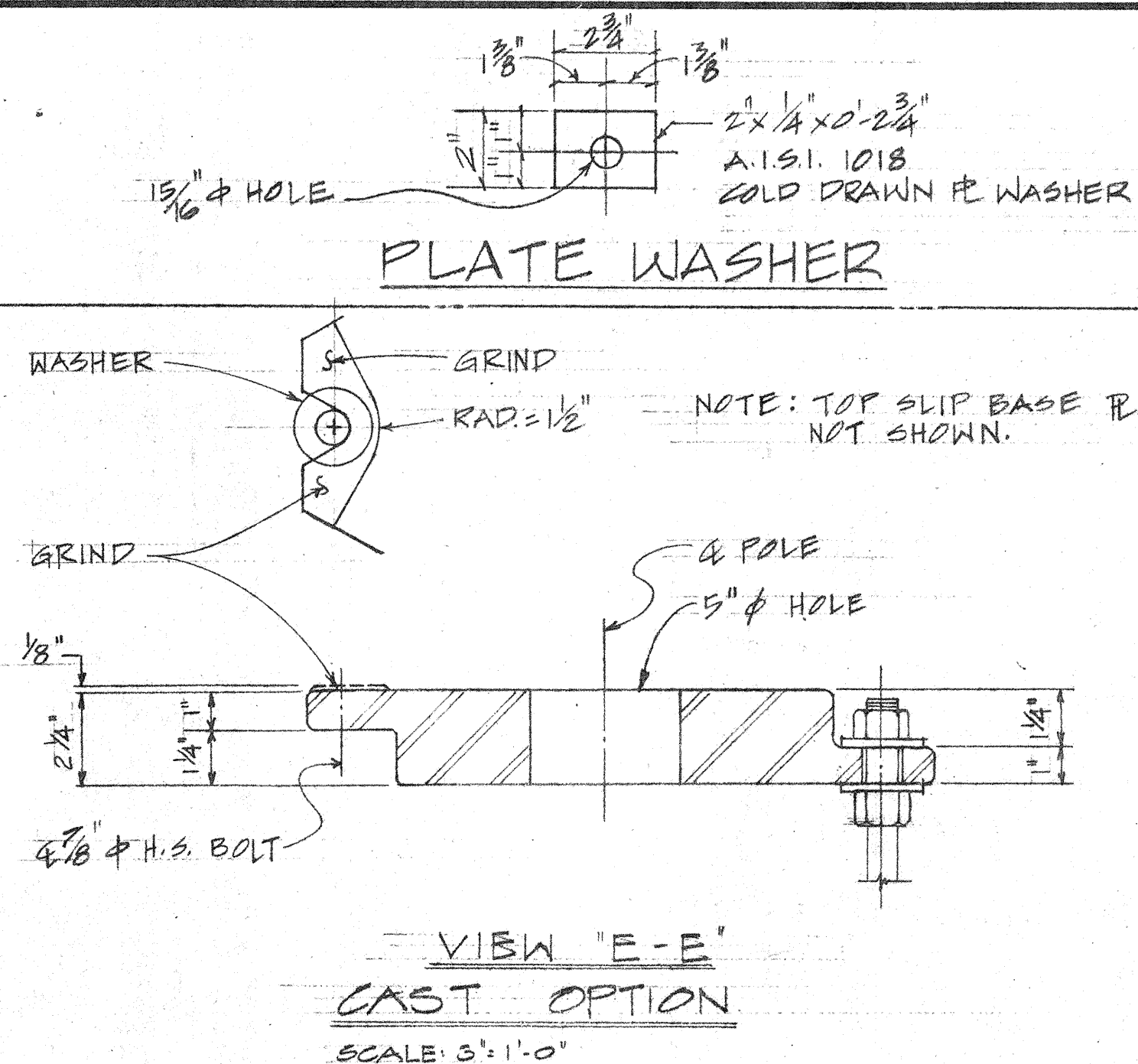
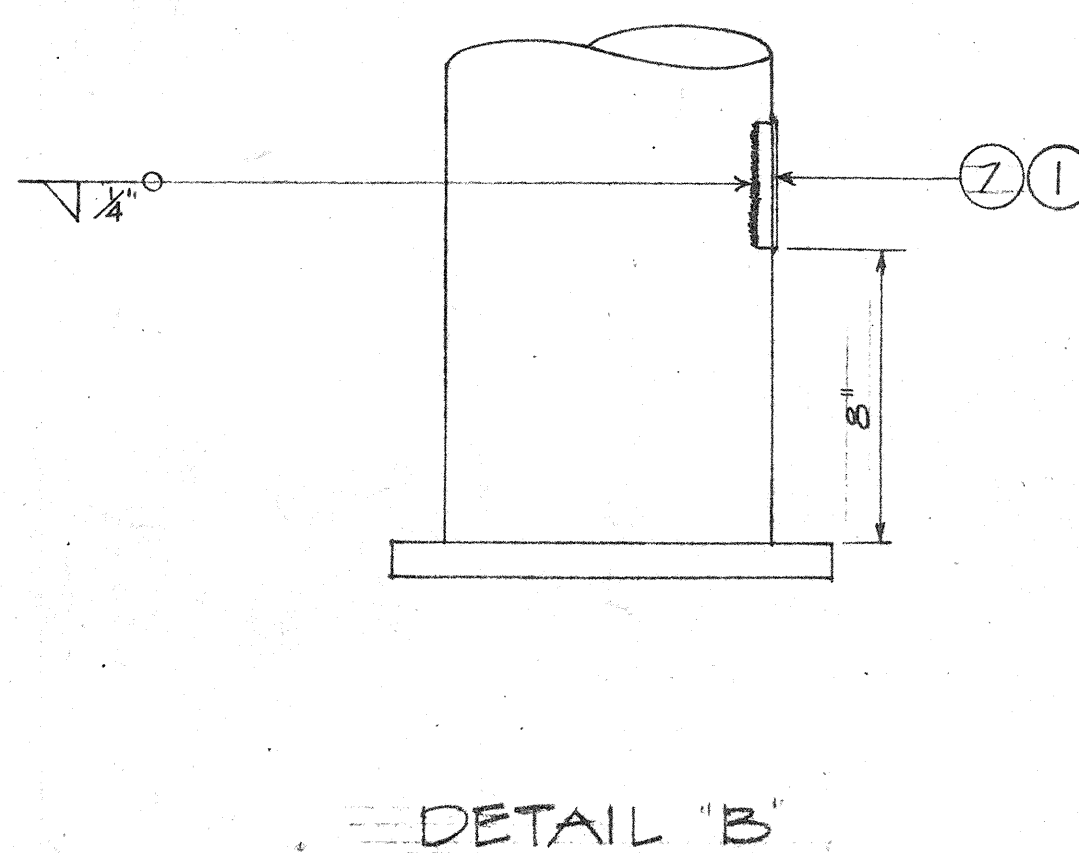
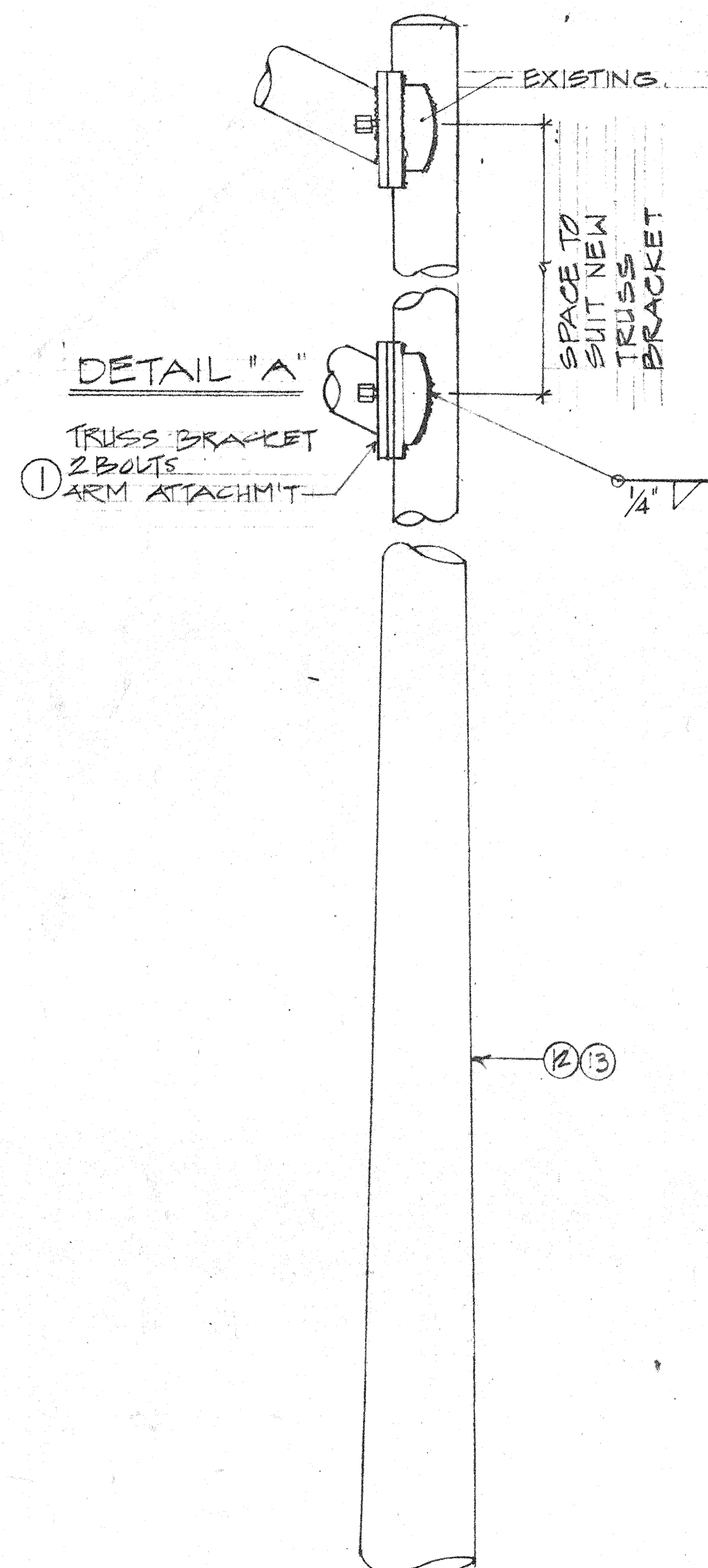
PLATE WASHER

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SLIP BASE INSERT STANDARD
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
F.A.I. PROJECT NO. I-HI-1(112)19
SCALE AS NOTED DATE APR., 1973
SHEET No. 14 OF 181 SHEETS

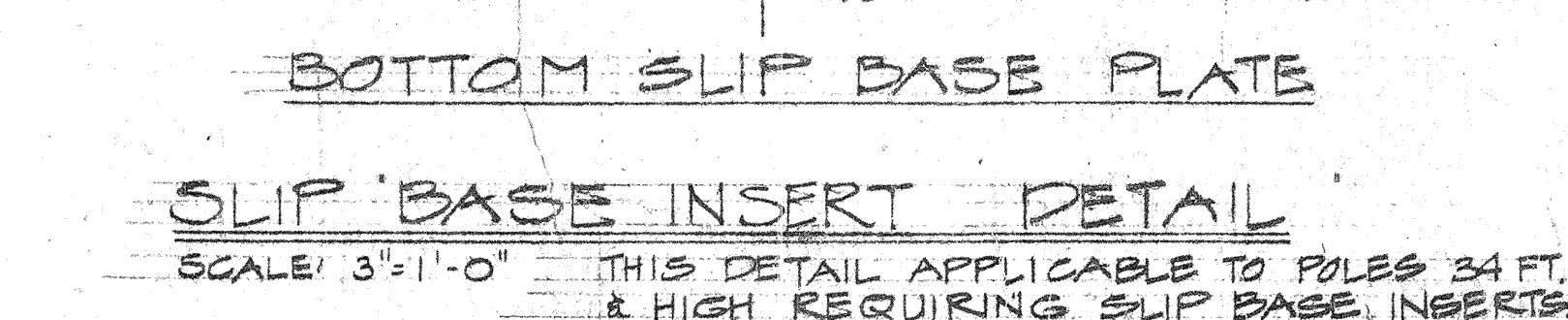
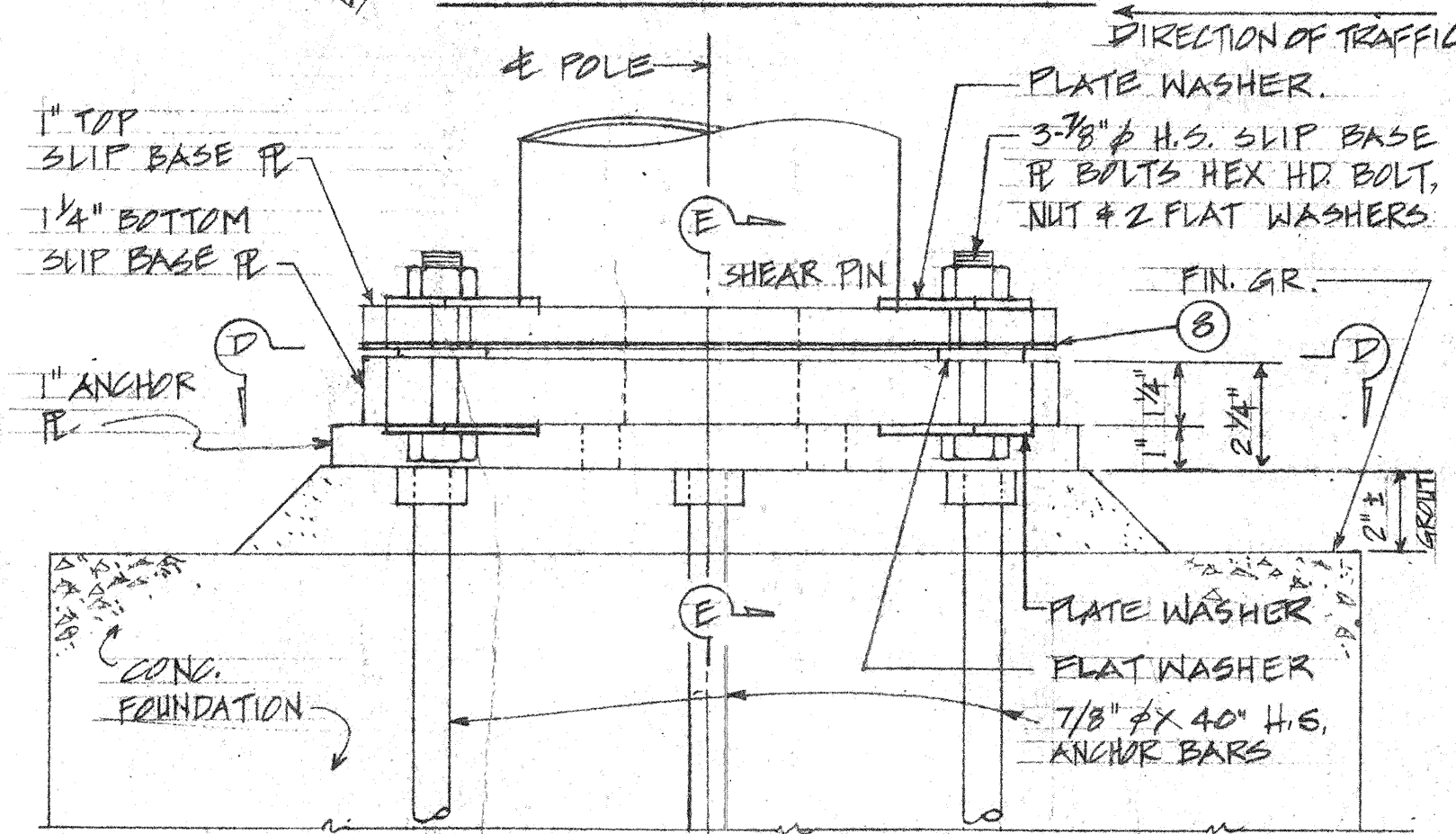
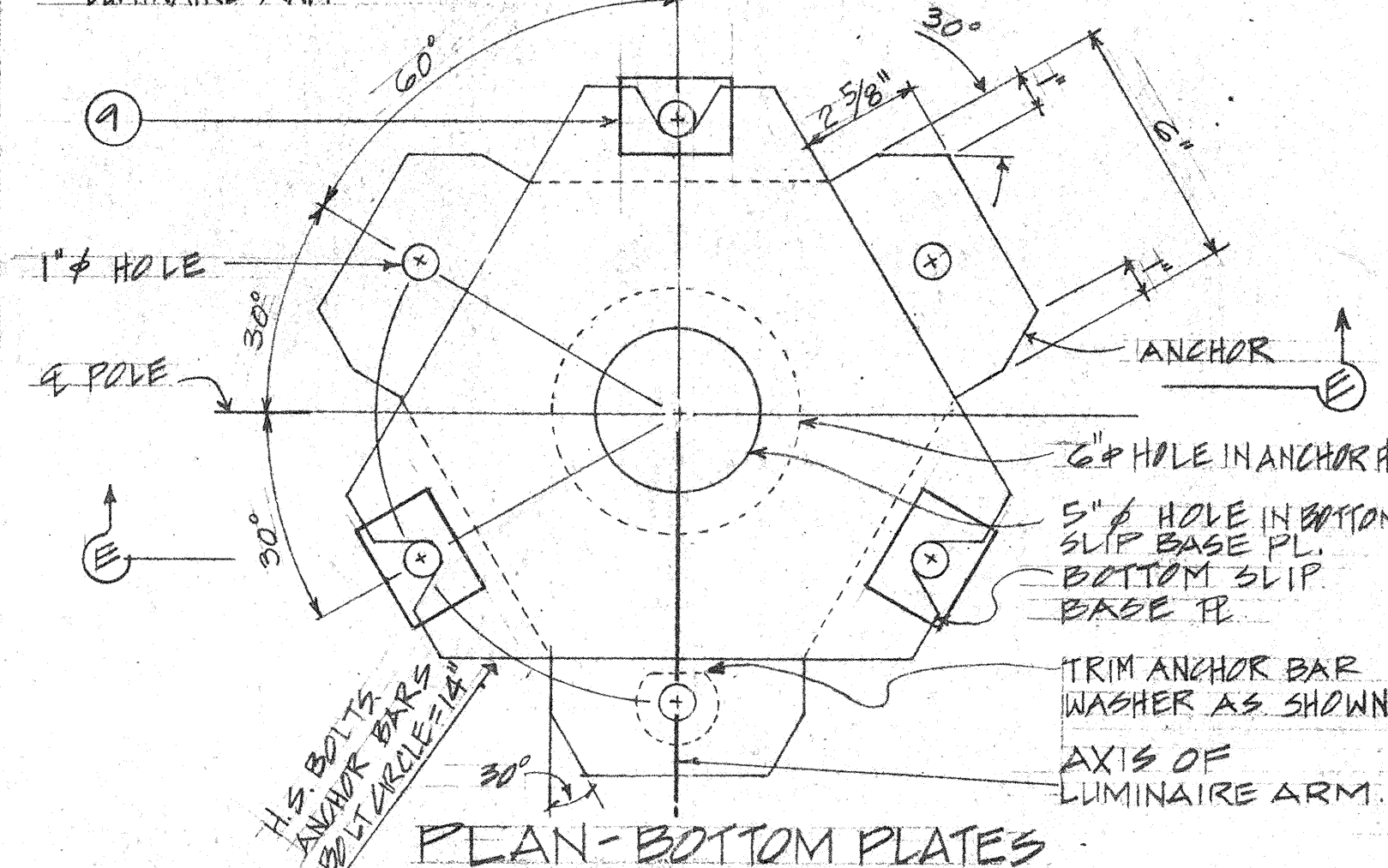
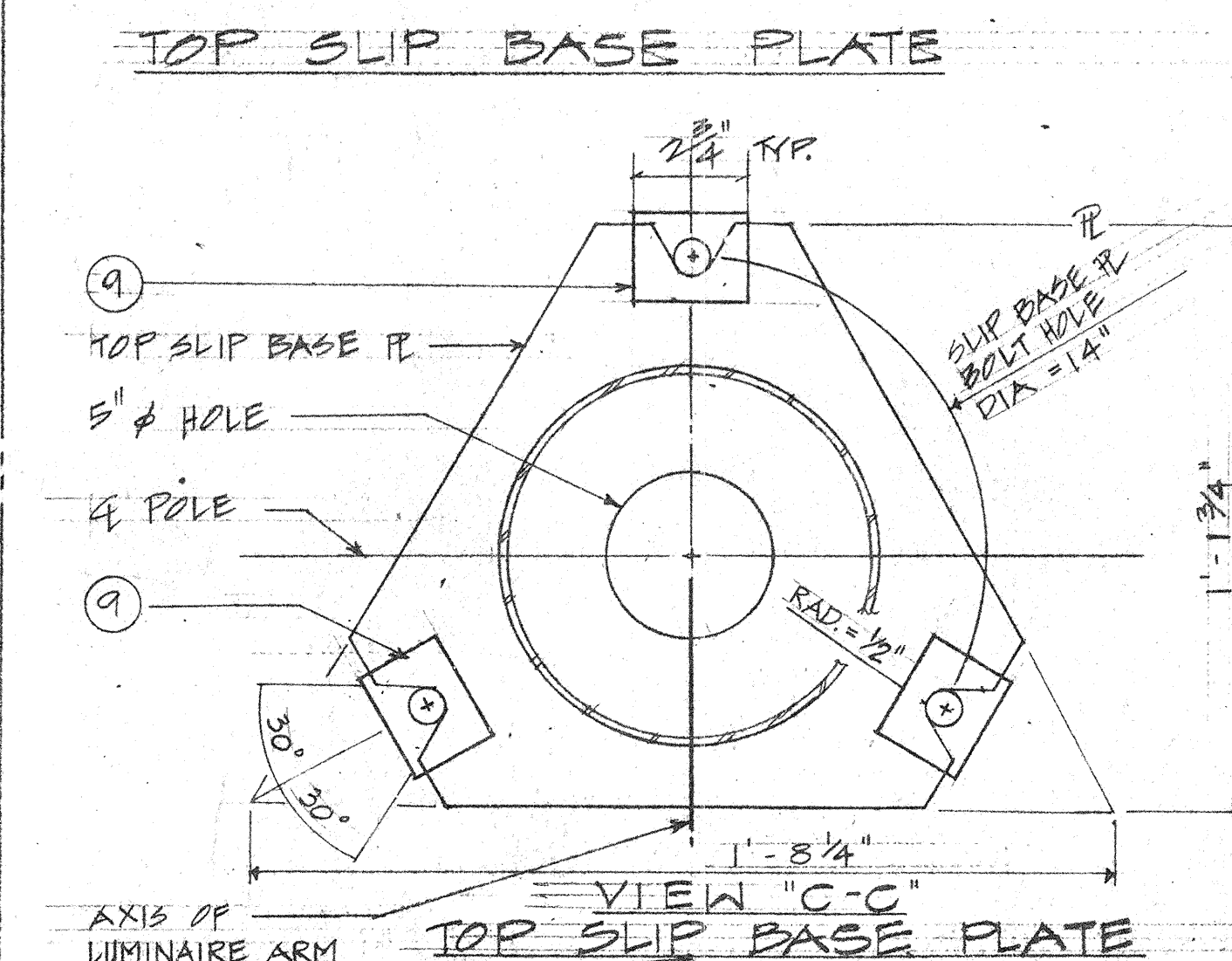
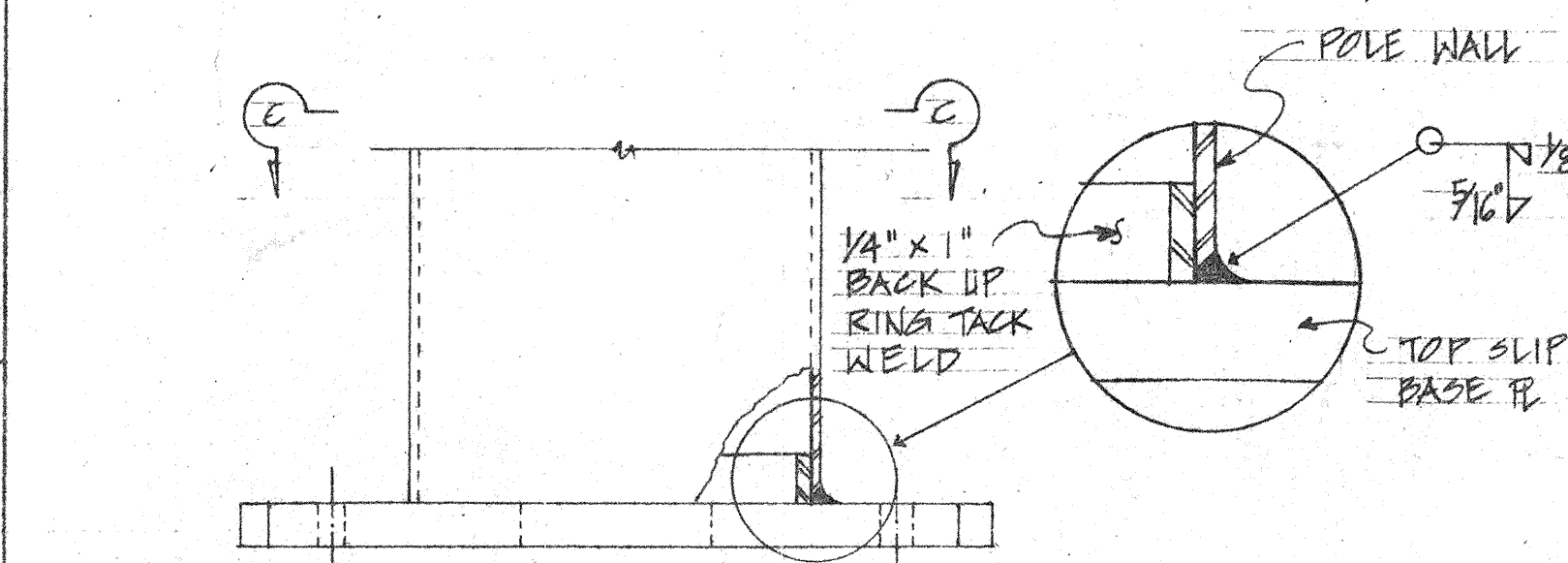
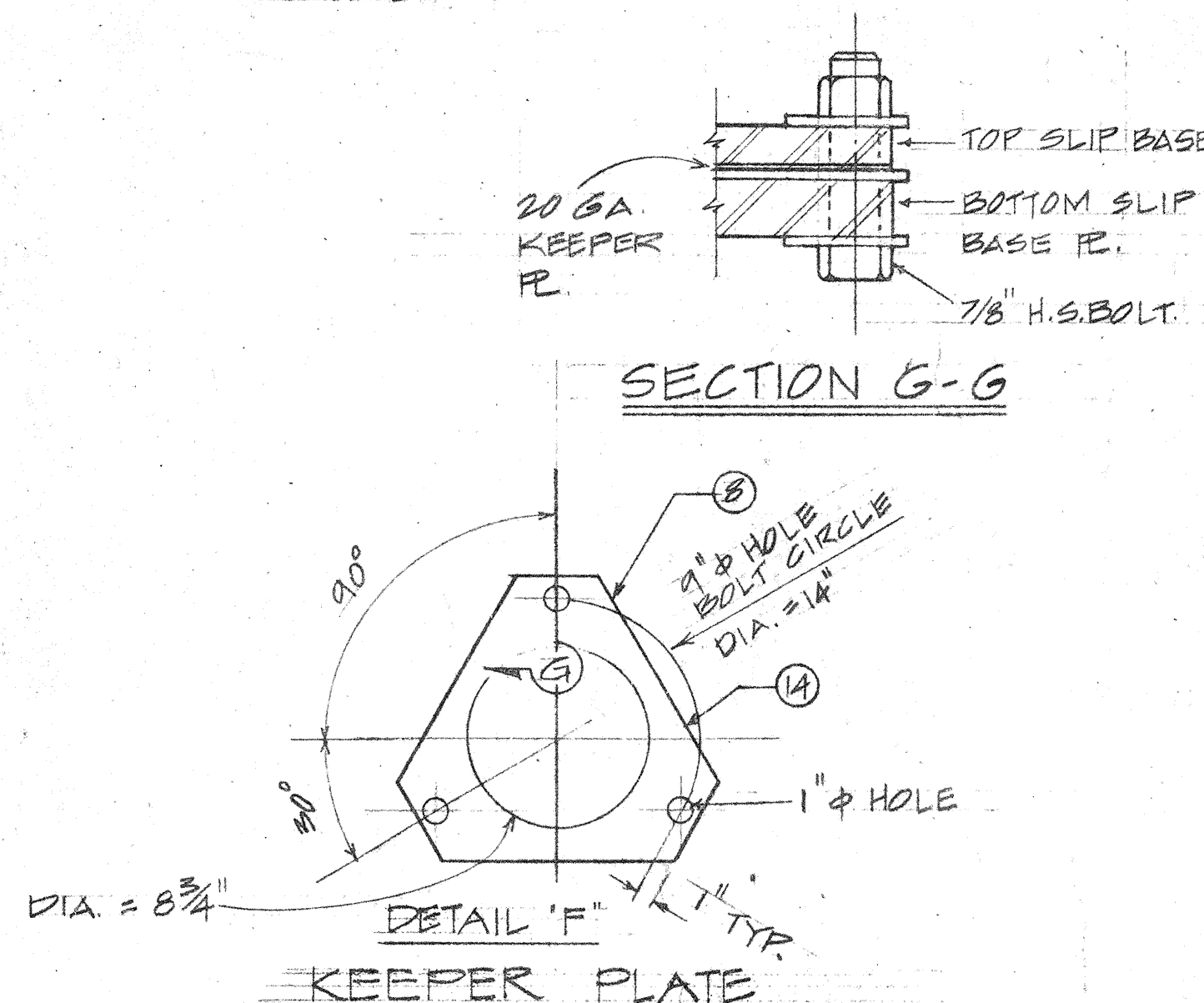
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(112)19	1973	125	170

NOTES:

- ALL STEEL SHAFTS, P'S, MAST ARMS, BOLTS, SCREWS, NUTS & WASHERS TO BE GALV. AFTER FAB. OR MODIFICATION.
- P'S TO CONFORM TO ASTM A-36.
- CAST OPTION TO CONFORM TO ASTM A-486 CL. 90.
- TORQUE $\frac{7}{8}$ " H.S. SLIP BASE P. BOLTS TO 1000 INCH LBS.
- $\frac{7}{8}$ " H.S. ANCHOR BARS, WRENCH TIGHTEN - TORQUE REQUIREM'T. WAIVED.
- FABRICATORS ELECTING LARGER THAN MIN. ARM DIAMETERS MUST ADJUST DETAILS AS REQ'D TO PERMIT SOLID SEATING OF CAP SCREWS. IN LIEU OF TORQUE REQUIREM'TS FOR H.S. BOLTS, CAP SCREWS SHALL BE TIGHTENED BY THE TURN-OF-NUT METHOD $\frac{1}{8}$ TURN FROM SNUG TIGHT CONDITION. NO WASHER WILL BE REQ'D.
- 4" x 6 1/2" HANDHOLE REINFORCED W/ #3 GA. RING 1 1/2" WIDE WELDED TO OUTSIDE OF POLE COVER OF 10 GA. P. LOCATE 90 DEGREES OF MAST ARM UNLESS SHOWN OTHERWISE. SEE 7L & 9L.
- 20 GA. KEEPER P., PLACE ON TOP OF MIDDLE FLAT WASHER ASTM A446 GR. "A".
- PLATE WASHER.
- 3-7/8" H.S. BARS, THREAD 6" & GALV. 10", W/ HEX HD NUT, LEVELING NUT & WASHER.
- HEX HD. NUT SHOWN OR AS AN ALT. DET. ANCHOR P'S MAY BE RETAINED W/ 5/16" FILLET WELDS ALL ROUND OR FORMED HEADS.
- ROUND TAPERED STEEL TUBE W/ MAX. TAPER OF 0.15"/FOOT.
- NO. 11 GAGE SHEET STEEL OF WELDABLE GRADE ACCEPTABLE IF STEEL AFTER FABRICATION HAS A MIN. YIELD STRENGTH OF 40,000 PSI.
- 20 GA. KEEPER P., PLACE ON TOP OF FLAT WASHER, A.S.T.M. A526, 125 COMMERCIAL.
- SLIP BASE INSERT DET. ON THIS SHEET APPLICABLE FOR POLE STD. TALLER THAN 34'-0".

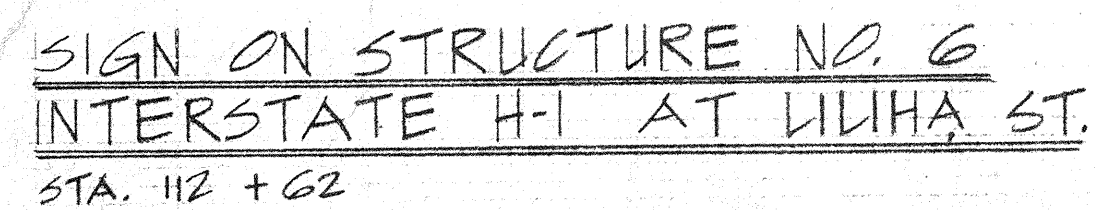


VIEW 'E-E' WELDED OPTION SCALE: 3" = 1'-0"

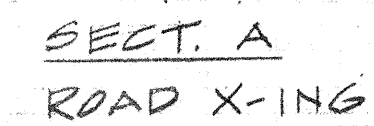


STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION HIGHWAY LIGHTING SLIP BASE INSERT AND POLE MODIFICATION SAFETY IMPROVEMENT KALIHI STREET TO PALI HIGHWAY FAI PROJECT NO. I-HI-1(112)19 SCALE AS NOTED DATE: APR., 1973

SHEET No. 125 OF 181 SHEETS

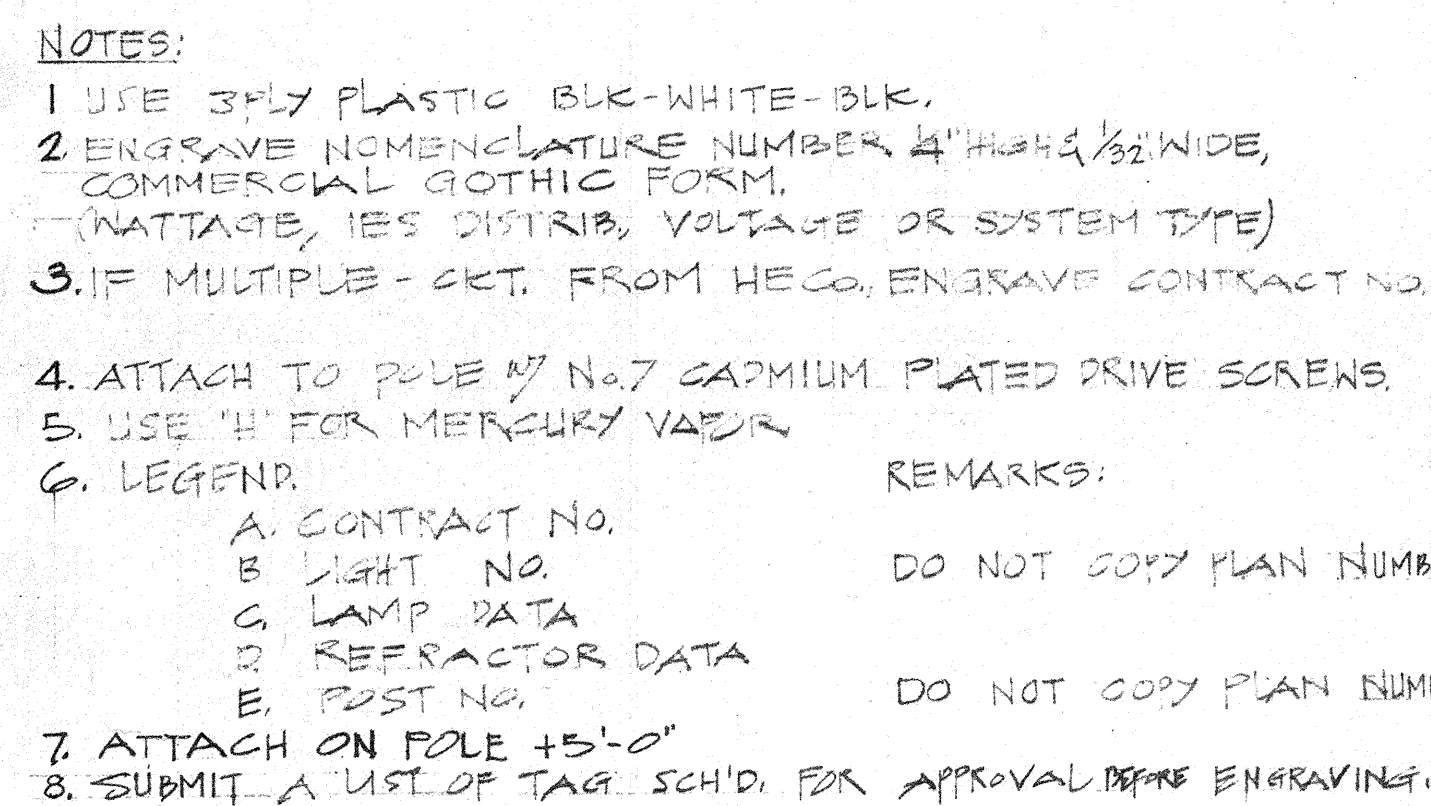


N.T.S.
NOTE #4.



TYPICAL DUCT SECTIONS

NOTE # 5



IDENTIFICATION TAG

N.T.S. NOTE # 7



N.T.S.



N.T.S.



N.T.S.

NOTES:

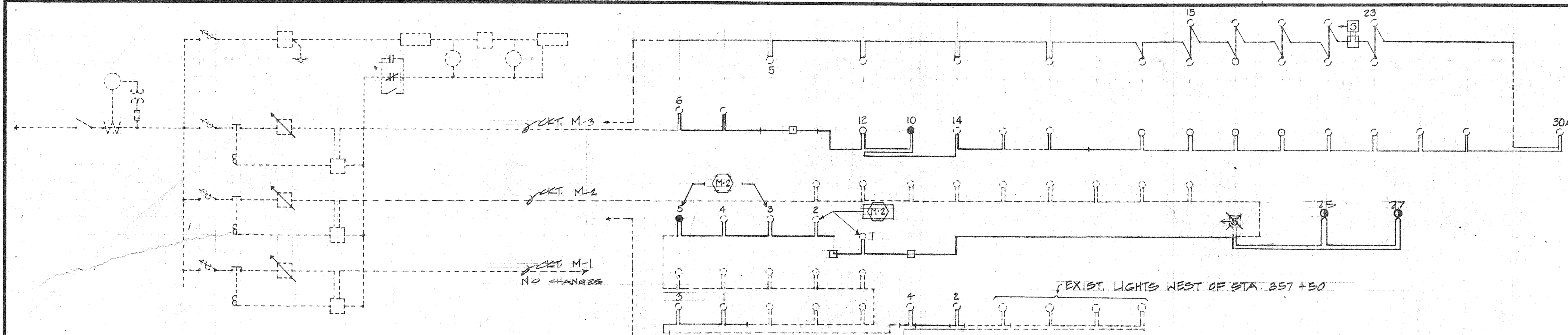
1. BACKFILL, TYPE A, BEACH SAND, EARTH OR EARTH & GRAVEL. IF EARTH & GRAVEL THE MAX. ROCK SIZE SHALL BE 1" & THE MIX. SHALL NOT CONTAIN MORE THAN 50 % BY VOL. OF ROCK PARTICLES.
2. BACKFILL, TYPE B, BEACH SAND, EARTH OR EARTH & GRAVEL, IF EARTH & GRAVEL THE MIX. MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20 % BY VOL. OF ROCK PARTICLES.
3. CONDUIT, 2" PVC. SCH'D. 40.
4. PRIM. CONN. USED ONLY BETWEEN BALLASTS & LUMINAIRE IN POLE SHAFT ACCESSIBLE VIA HANDHOLE FOR SERIES-CET.
5. FOR CONDUIT POSITION, SEE SH. 7L.
6. 2" HIGH X 1/2" DEEP LETTER ENGRAVED IN MARKER.
7. REPLACE MULTIPLECKT: ID TAG AFFECT BY CHANGES IN REQUIREMENTS (CONTRACT NO., LT. NO, LAMP DATA, REFRACTOR DATA OR POST NO.)

THIS WORK WAS PREPARED BY

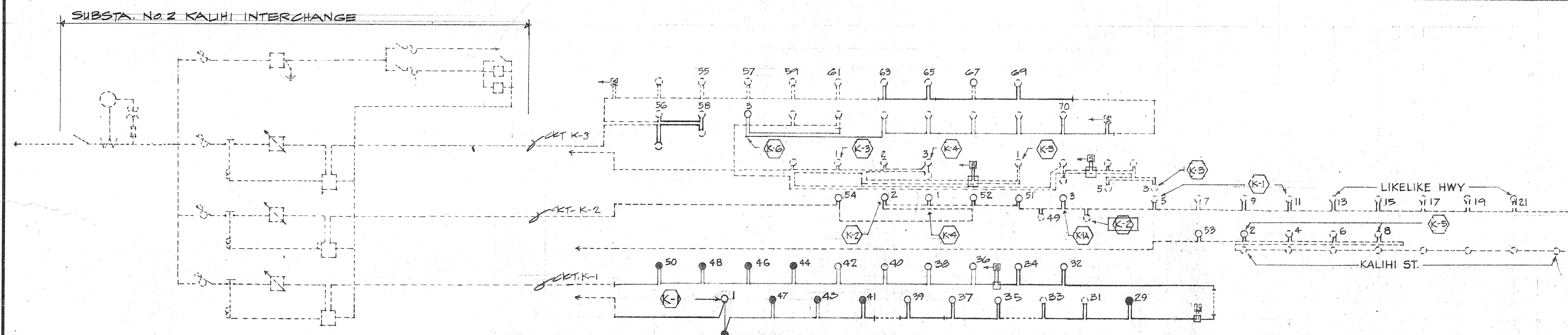
Taketo Kawabata.

SHEET No. 16 OF 18 SHEETS

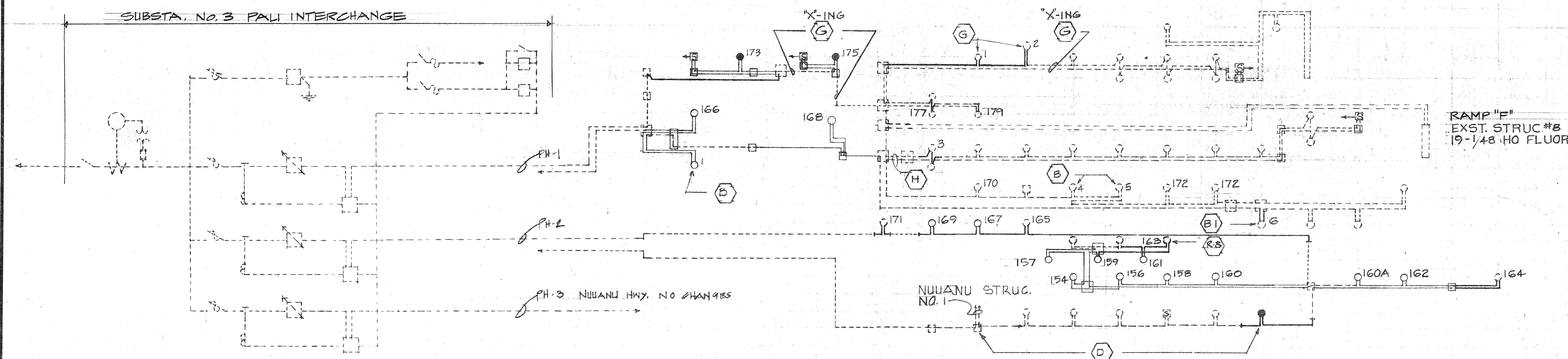
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(12)19	1973	127	176



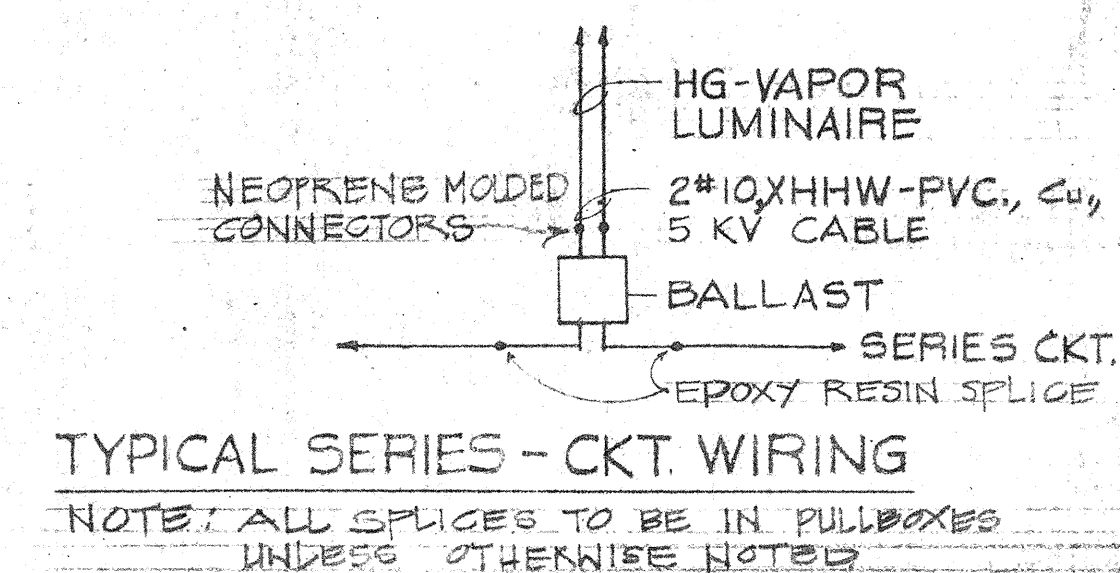
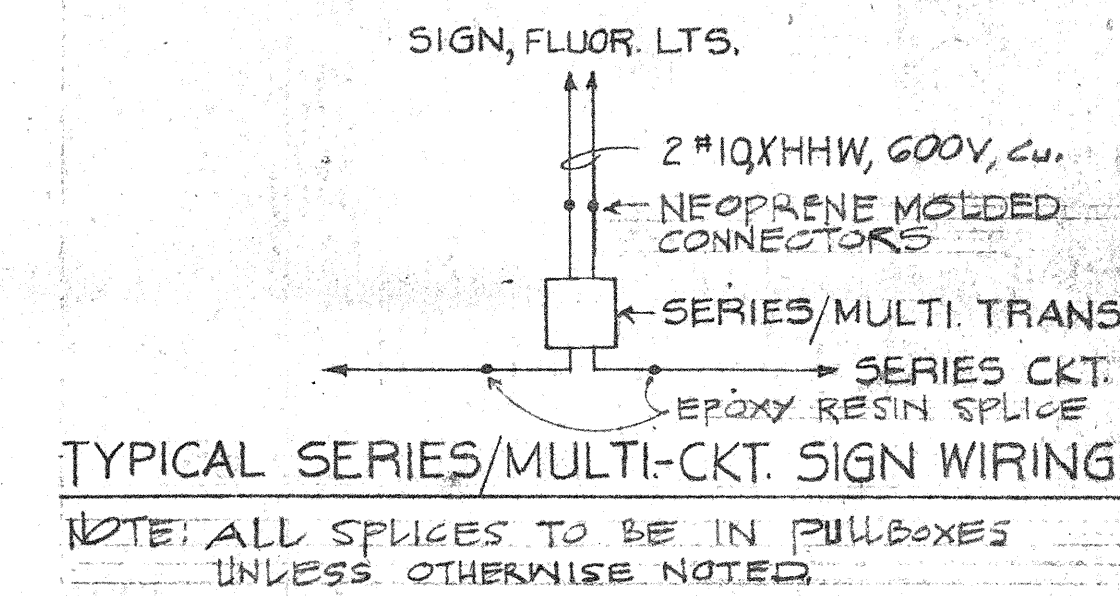
SUBSTATION NO. 1 ONE-LINE DIAGRAM



SUBSTATION NO. 2 ONE-LINE DIAGRAM



SUBSTATION NO. 3 ONE-LINE DIAGRAM

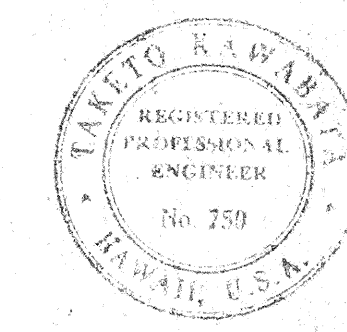


SYMBOLS

(K-3)	INDICATOR FOR RAMP ASSIGNMENT
●	700W HG-VAPOR
○	400W HG-VAPOR
+	ILLUM. SIGN
---	EXIST. CABLE
---	NEW CABLE W/2" PVC, 36" DEEP
①	1000W HG-VAPOR

NOTES:

1. BROKEN LINES DENOTE EXST, SOLID LINES DENOTE NEW WORK.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HIGHWAY LIGHTING
SERIES SYSTEMS
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
F.A.I. PROJECT NO. I-H-1(12)19
DATE APR. 1973
SHEET No. 17 OF 18 SHEETS

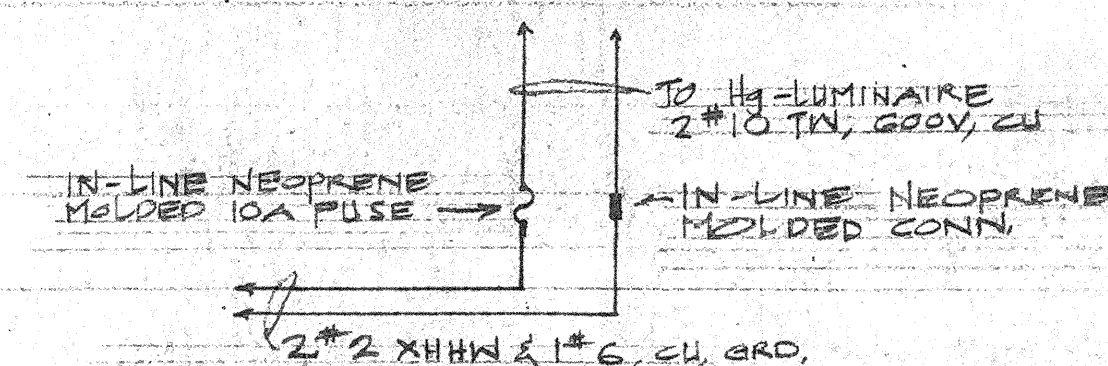
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Taketo Kawanishi

DATE	
DESIGNED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(112)19	1973	128	176

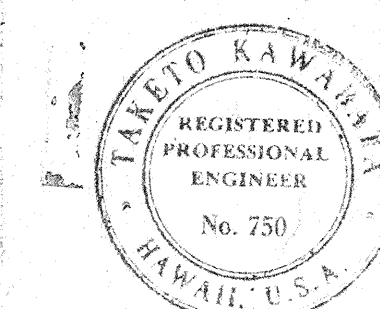
SYMBOLS

- 400W Hg. VAPOR
- 700W Hg. VAPOR
- ILLUM. SIGN
- EXIST. CABLE
- NEW CABLES W/ 2" PVC, 36" DEEP



TYPICAL TERMINAL MULTI-CKT. WIRING

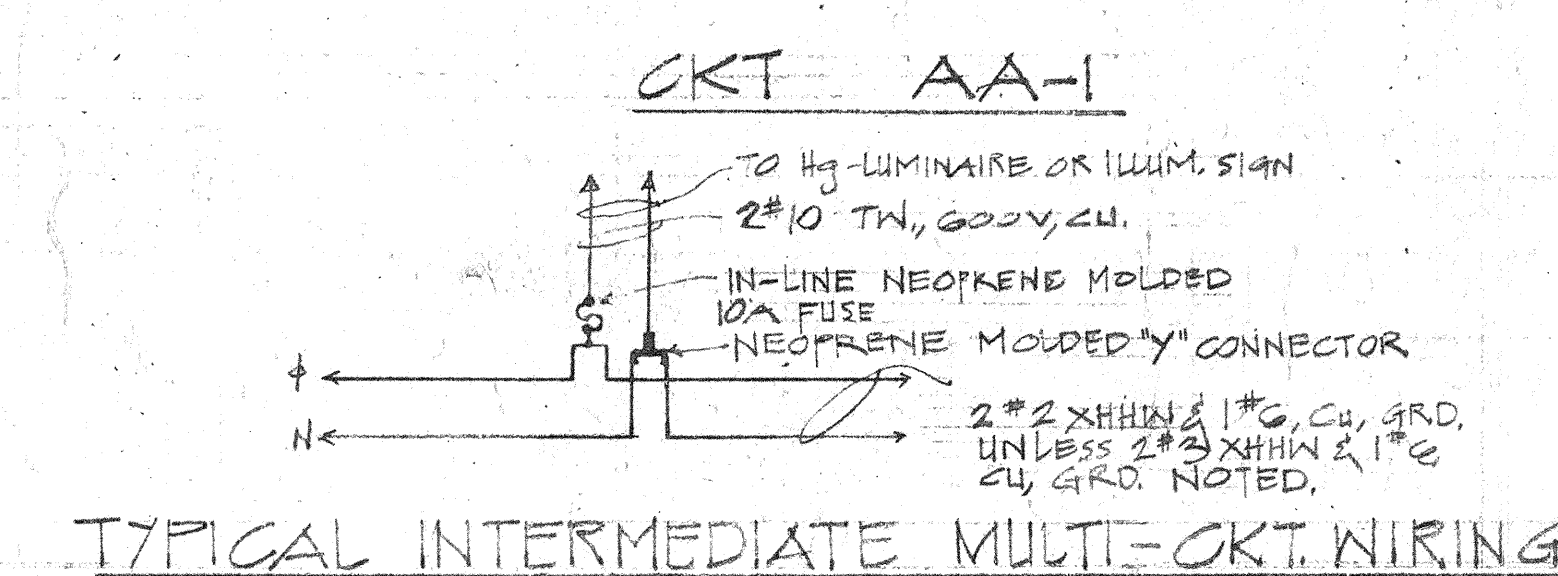
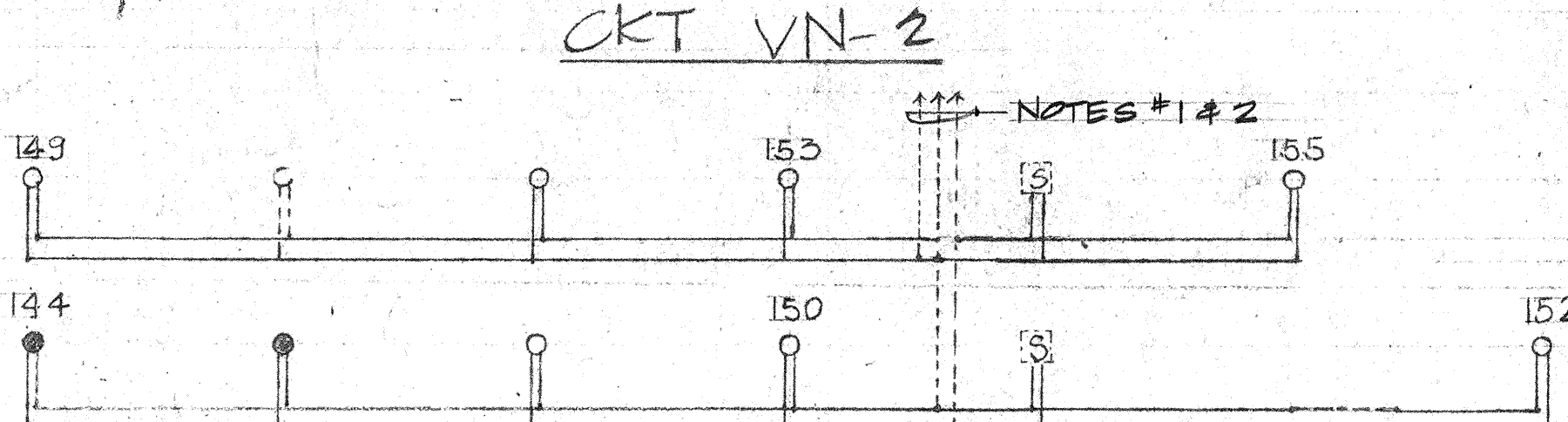
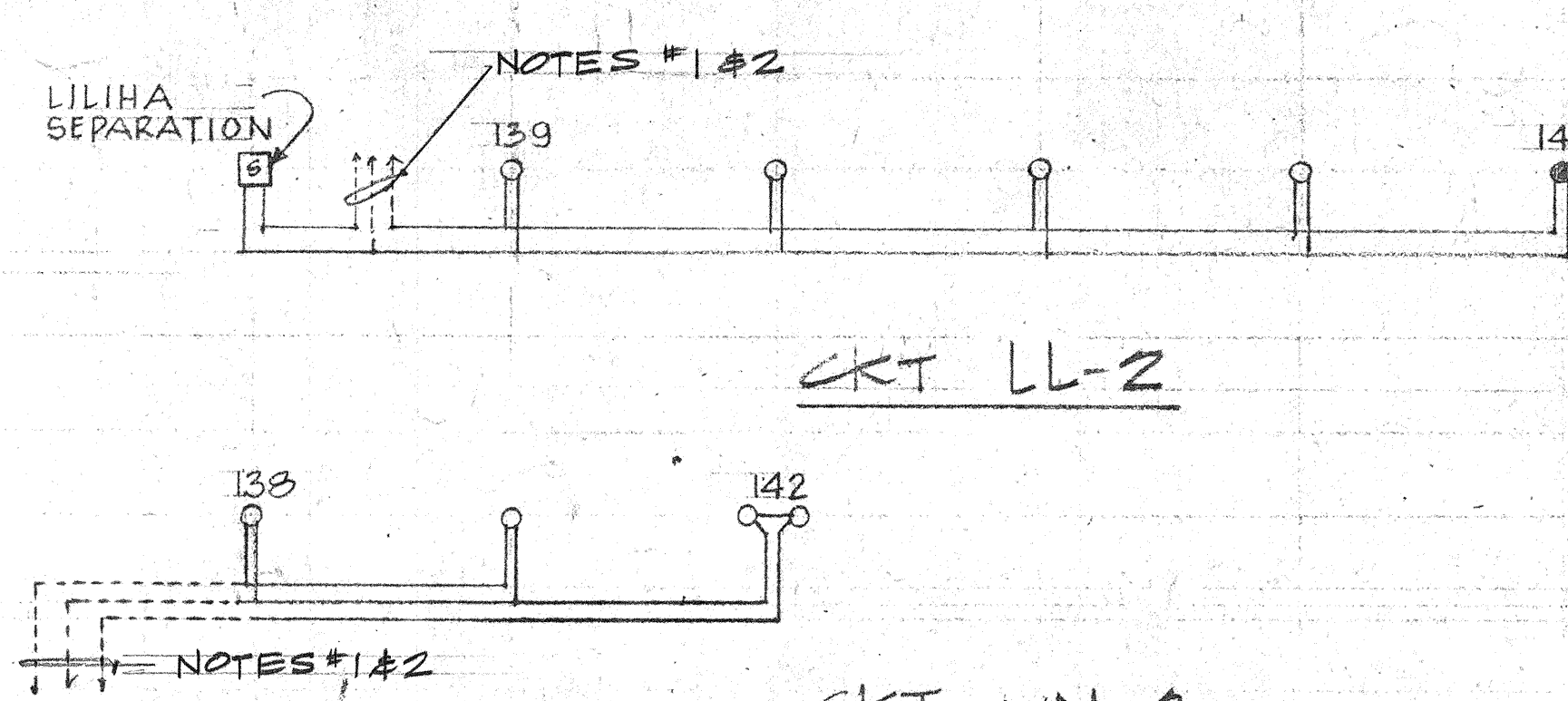
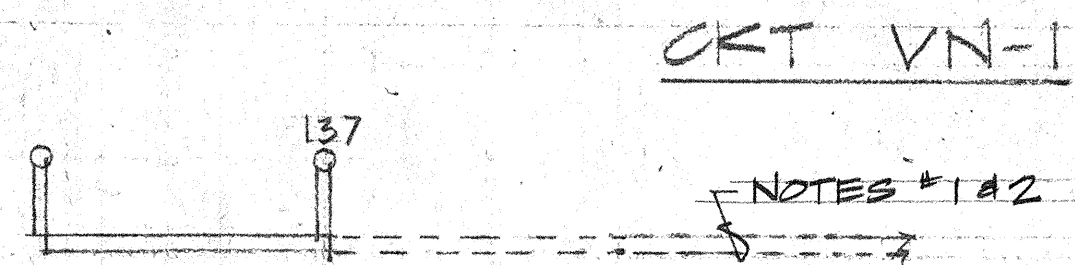
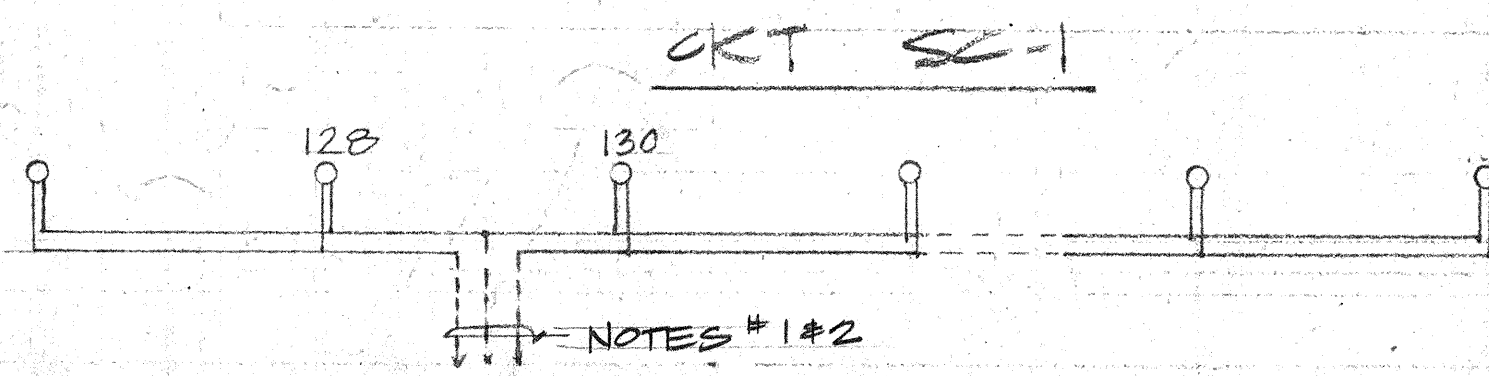
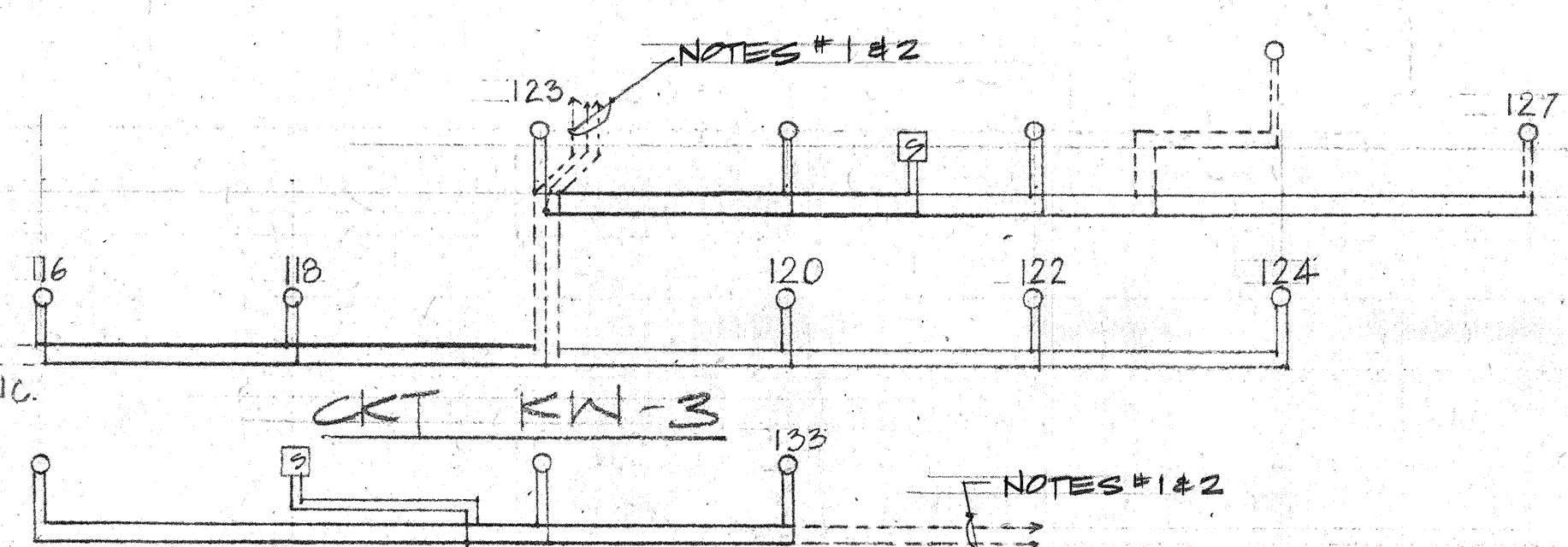
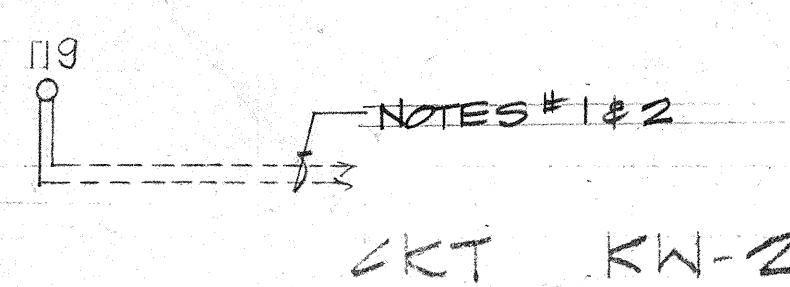
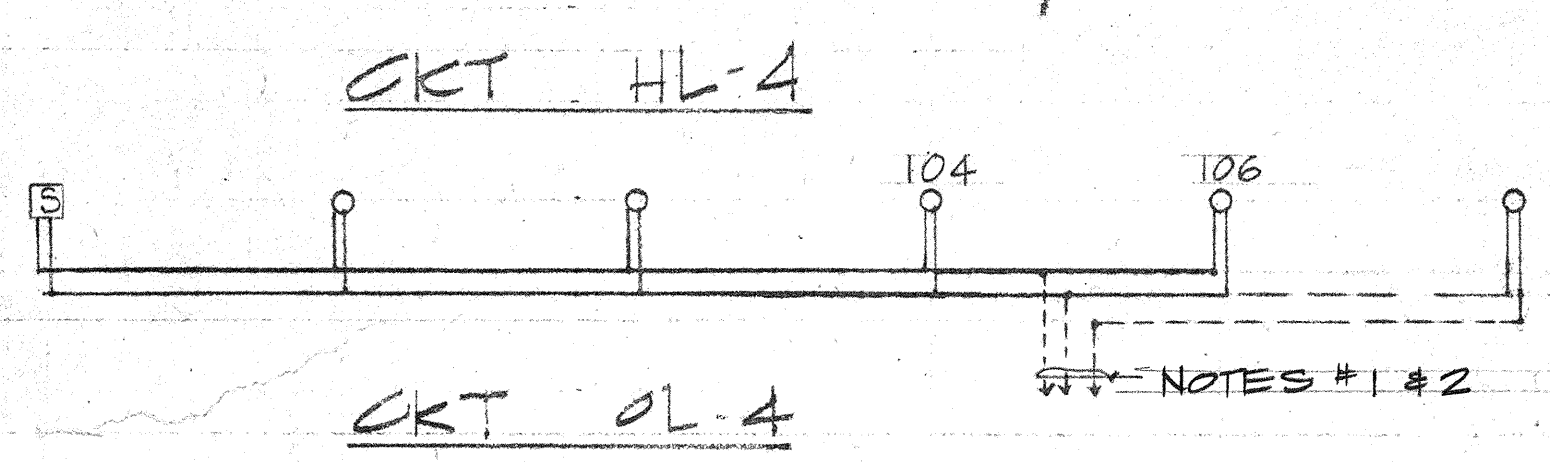
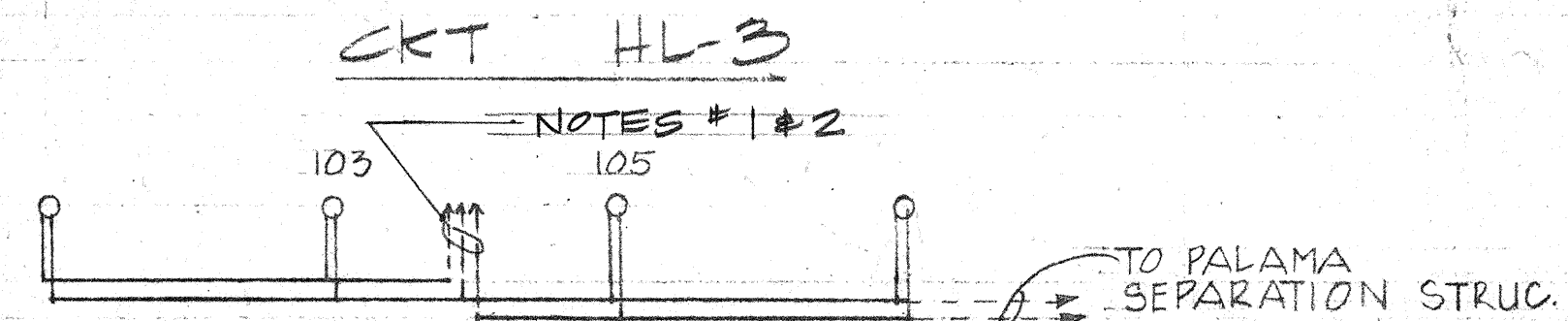
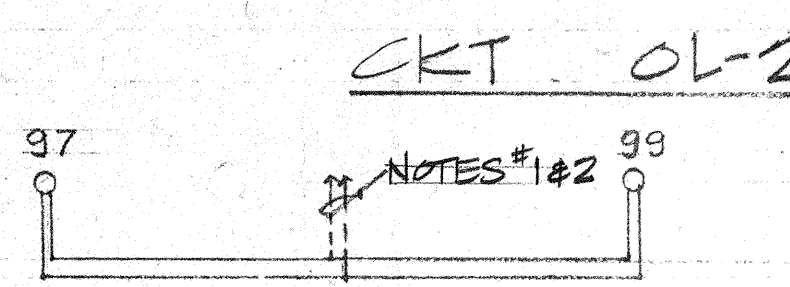
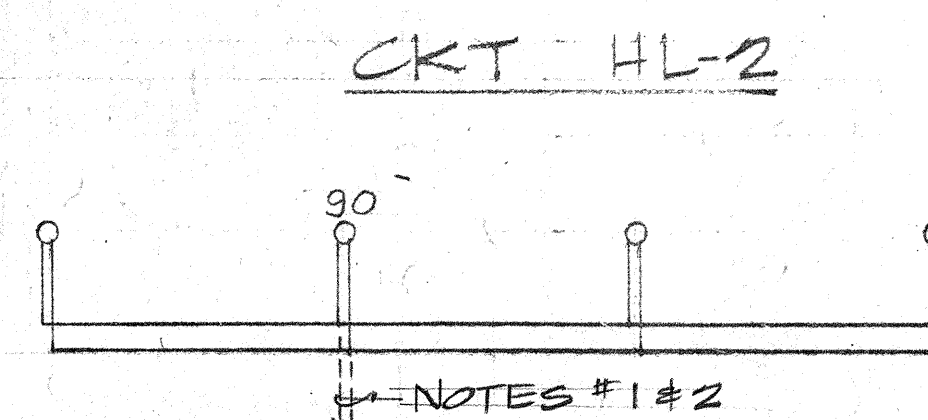
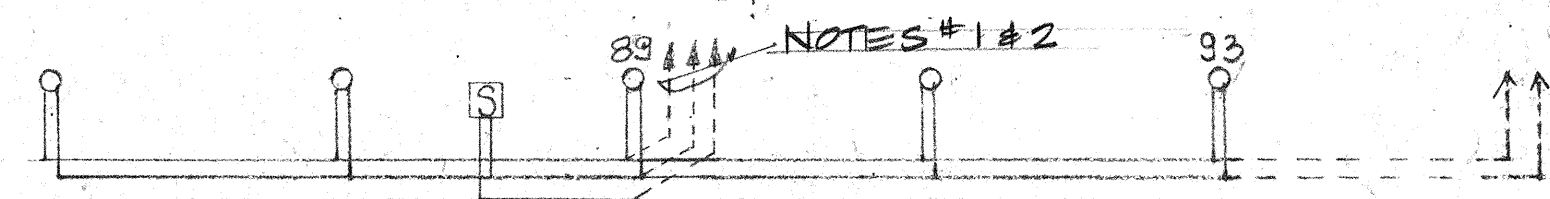
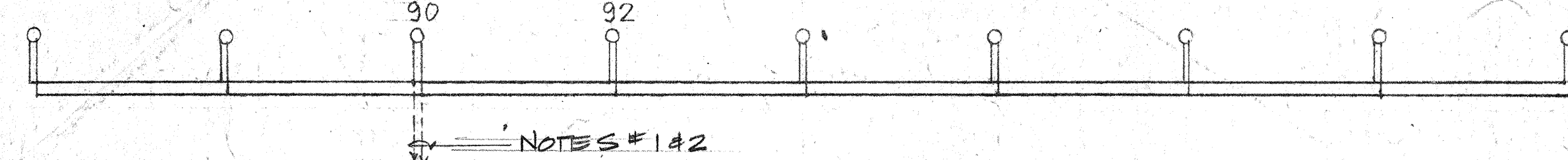
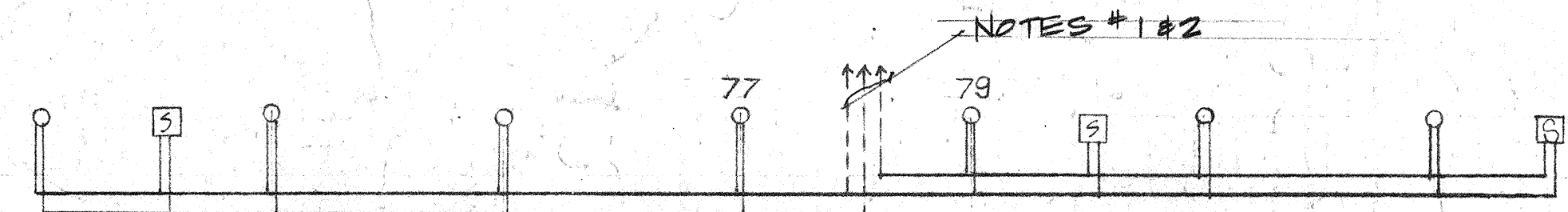
- NOTES:
- , INDICATES 1/2" CABLES TO HECO. SVC.
 - BROKEN LINE DENOTES EXST., SOLID LINE DENOTES NEW WORK.
 - TO RECONN. HECO. SVC., COMPLY W/ UTILITY REQUIREMENTS & PAY FOR ANY FEES REQUEST BY UTILITY COMPANIES.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Taieto Kawakawa

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HIGHWAY LIGHTING
MULTIPLE SYSTEMS**
SAFETY IMPROVEMENT
KALIHI STREET TO PALI HIGHWAY
FAI PROJECT NO. I-HI-1(112)19
DATE: APR. 1973
SHEET No. 18 OF 18 SHEETS



TYPICAL INTERMEDIATE MULTI-CKT. WIRING

- NOTES:
- FOR SIGNS, PROVIDE IN-LINE 15A FUSE

DATE	_____
SURVEY PLOTTED BY	_____
PLAN	_____
DESIGNED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
NO.	_____