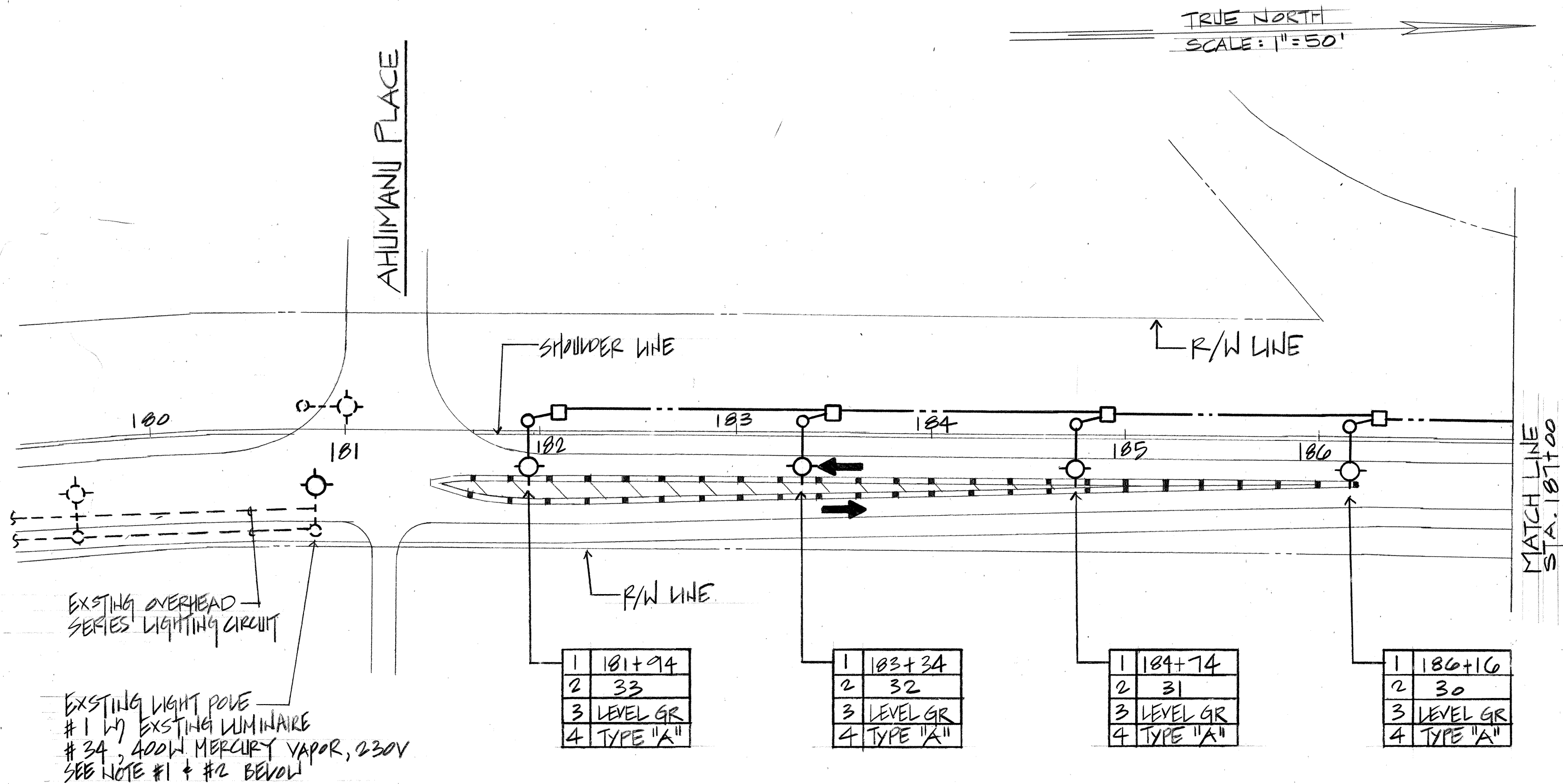


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-91	1991	3	7



ELECTRICAL PLAN

SCALE: 1"=50'

NOTE

1. REPLACE EXISTING LUMINAIRE #34 W/ 250W HPS LUMINAIRE
2. REPLACE EXISTING BALLAST OF LUMINAIRE #34 W/ 240V SERIES BALLAST COMPATIBLE TO EXST

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

WINN M. NAKAMURA
REGISTERED PROFESSIONAL ENGINEER
No. 573-E
HAWAII, U.S.A.

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Winn M. Nakamura
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CONSULTING ENGINEERS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN

STA. 180+00 TO 187+00

KAHELIU HIGHWAY ROADWAY LIGHTING

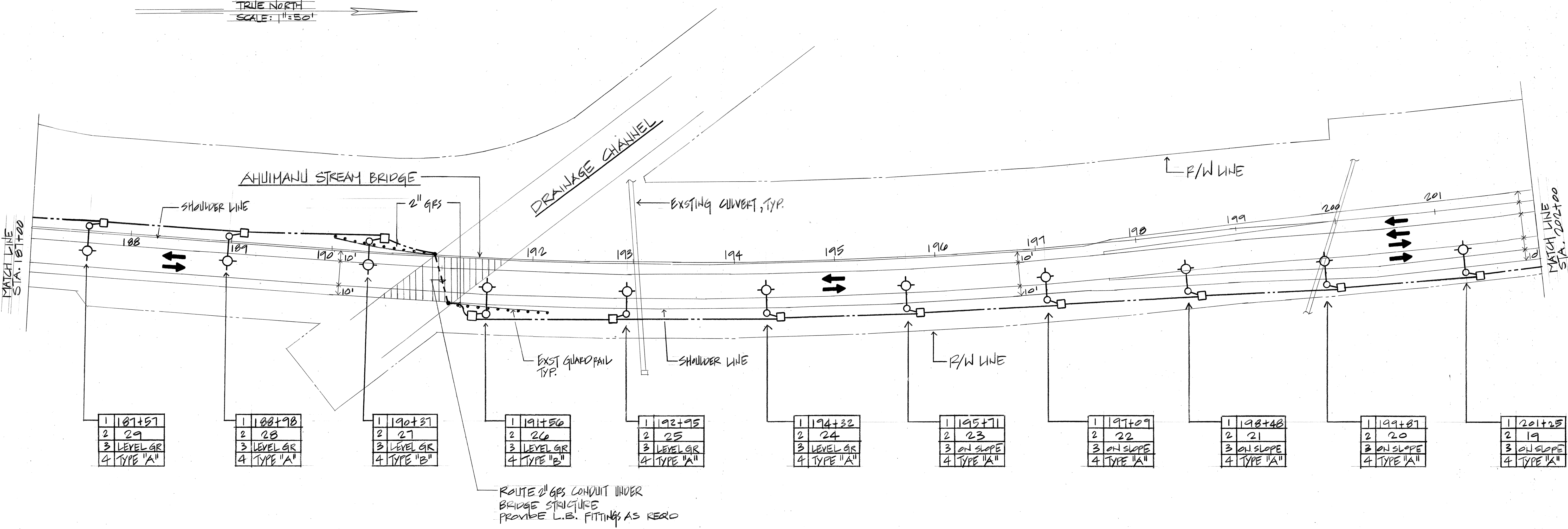
AHUMANI PLACE TO AHUMANI ROAD

PROJECT No. 83F-01-91

SCALE: AS NOTED DATE: SEPT. 9, 1991

SHEET No. 02 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-91	1991	4	7



ELECTRICAL PLAN SCALE: 1"=50'

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN

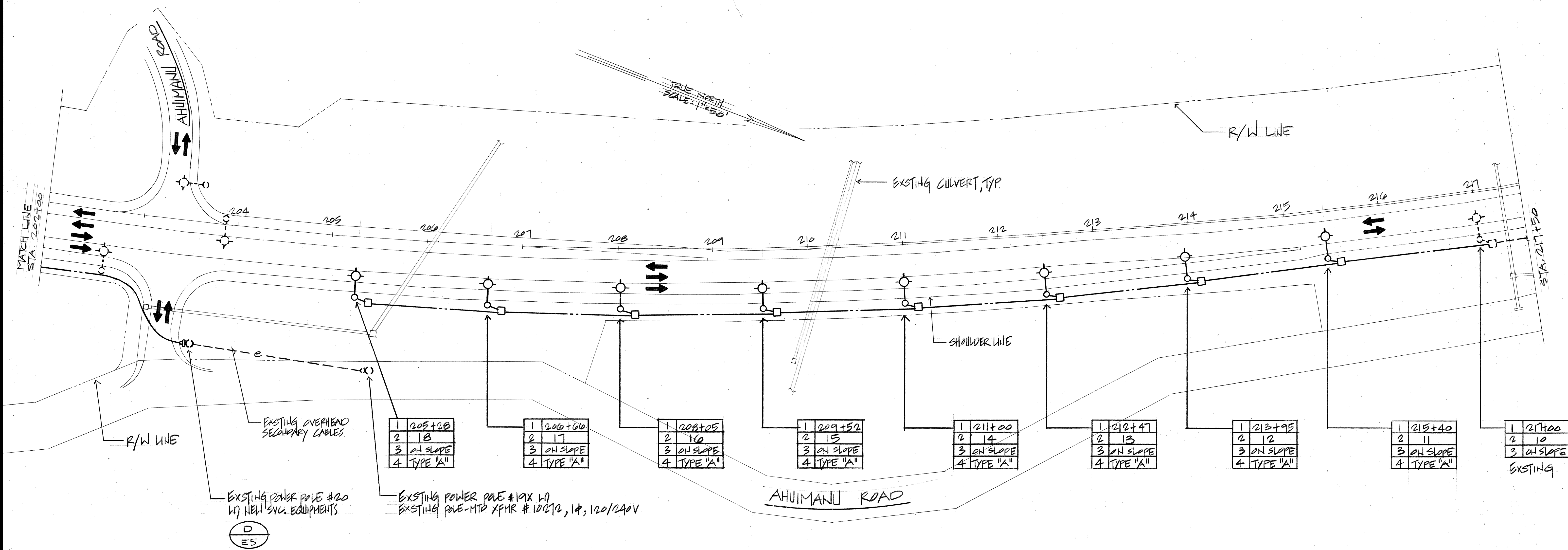
ST. 187+00 TO 202+00

KAHULUI HIGHWAY ROADWAY LIGHTING
AHUIMANU PLACE TO AHUIMANU ROAD
PROJECT NO. 83F-01-91

SCALE: AS NOTED DATE: SEPT. 5, 1991

SHEET NO. 03 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-91	1991	5	7



ELECTRICAL PLAN

SCALE: 1"=50'

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN

STA. 202+00 TO 217+50

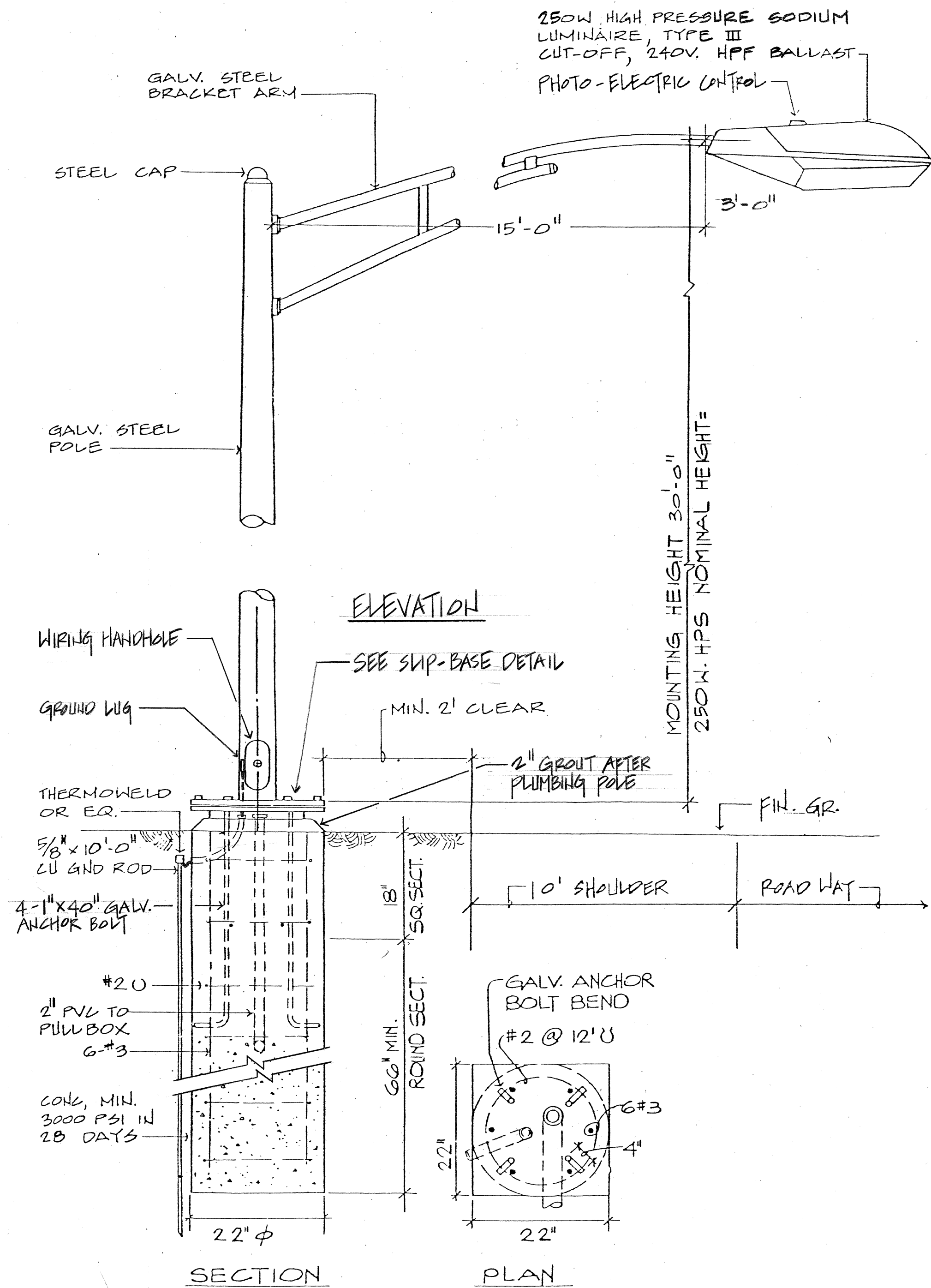
KAHEKILI HIGHWAY ROADWAY LIGHTING
AHUIMANU PLACE TO AHUIMANU ROAD

PROJECT NO. 83F-01-91

SCALE: AS NOTED DATE: SEPT. 9, 1991

SHEET No. 04 OF 7 SHEETS

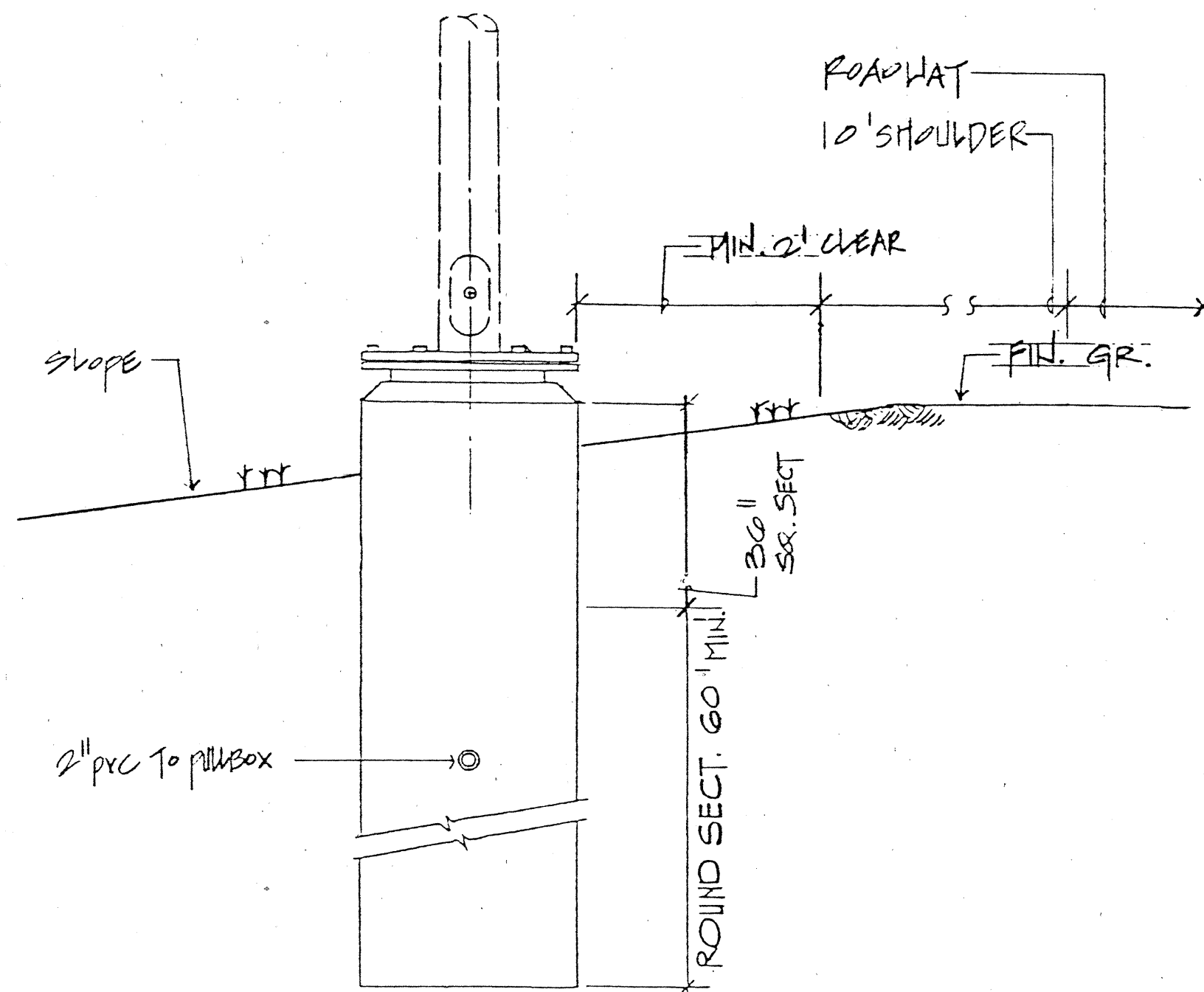
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-91	1991	6	7



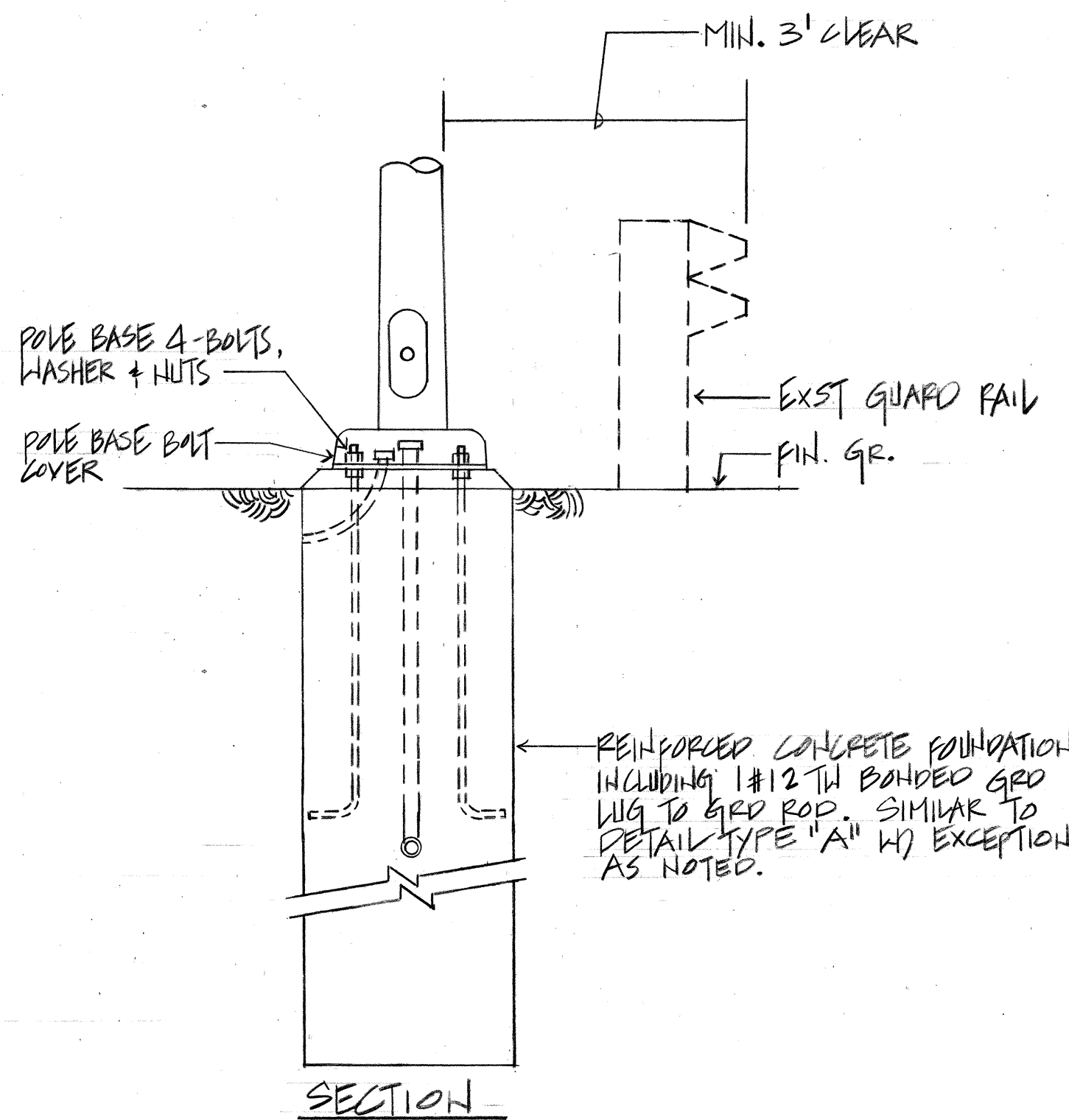
A
E-5
**HIGHWAY LIGHTING
STANDARD DETAIL
TYPE "A"**
N.T.S.

NOTES:

- 1) FOR USE ON SUP-BASE LIGHT POLES ON LEVEL GR. AS SHOWN ON PLAN
- 2) LUMINAIRE, LIGHT POLE, ARM LENGTH & MTD HT ARE TYPICAL FOR ALL CONDITIONS
- 3) SEE ALSO **B** FOR SUP-BASE LIGHT POLE ON SLOPE AS SHOWN ON PLAN

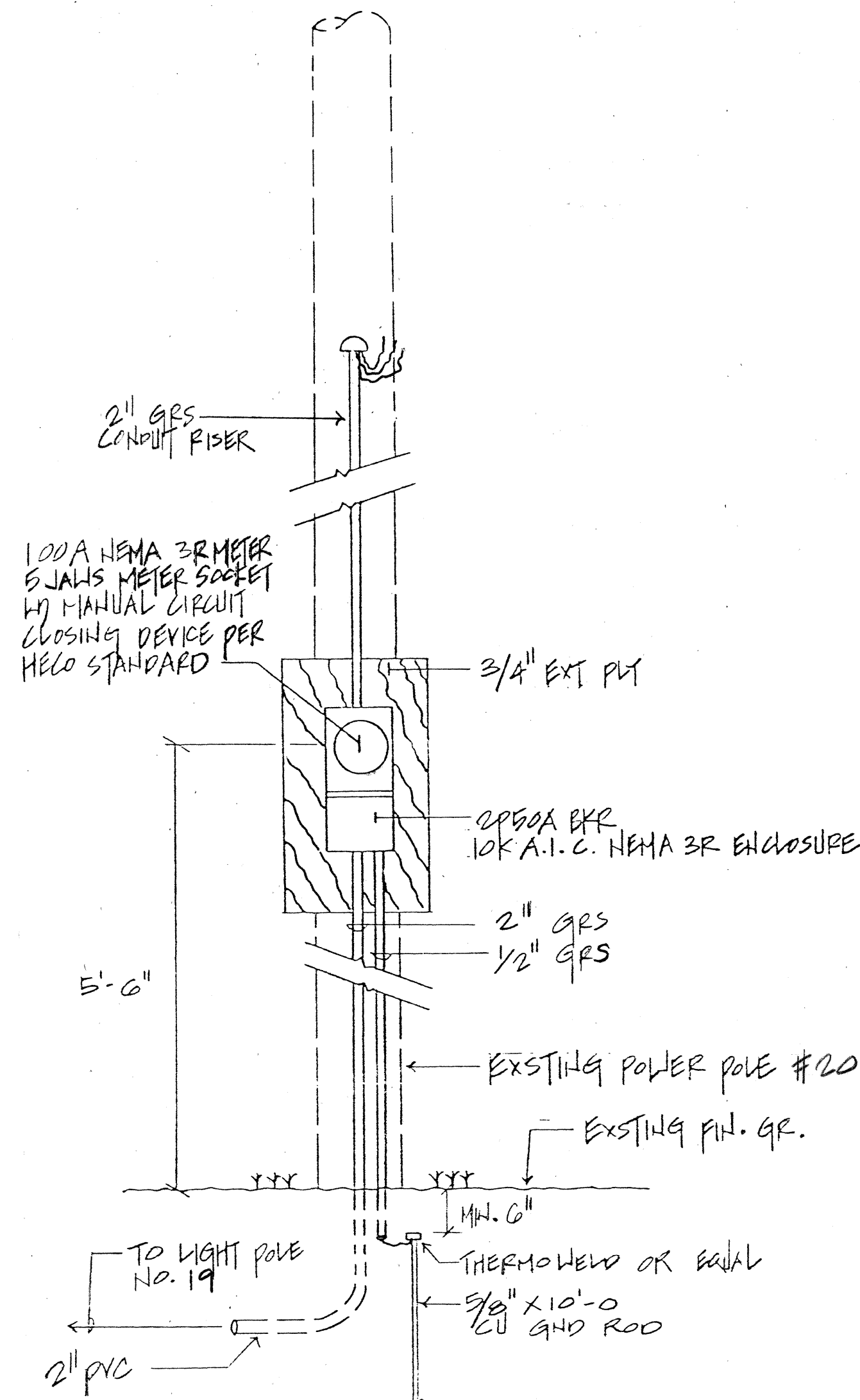


B
E-5
**FOUNDATION DETAIL
FOR LIGHT POLES ON SLOPE**
N.T.S.

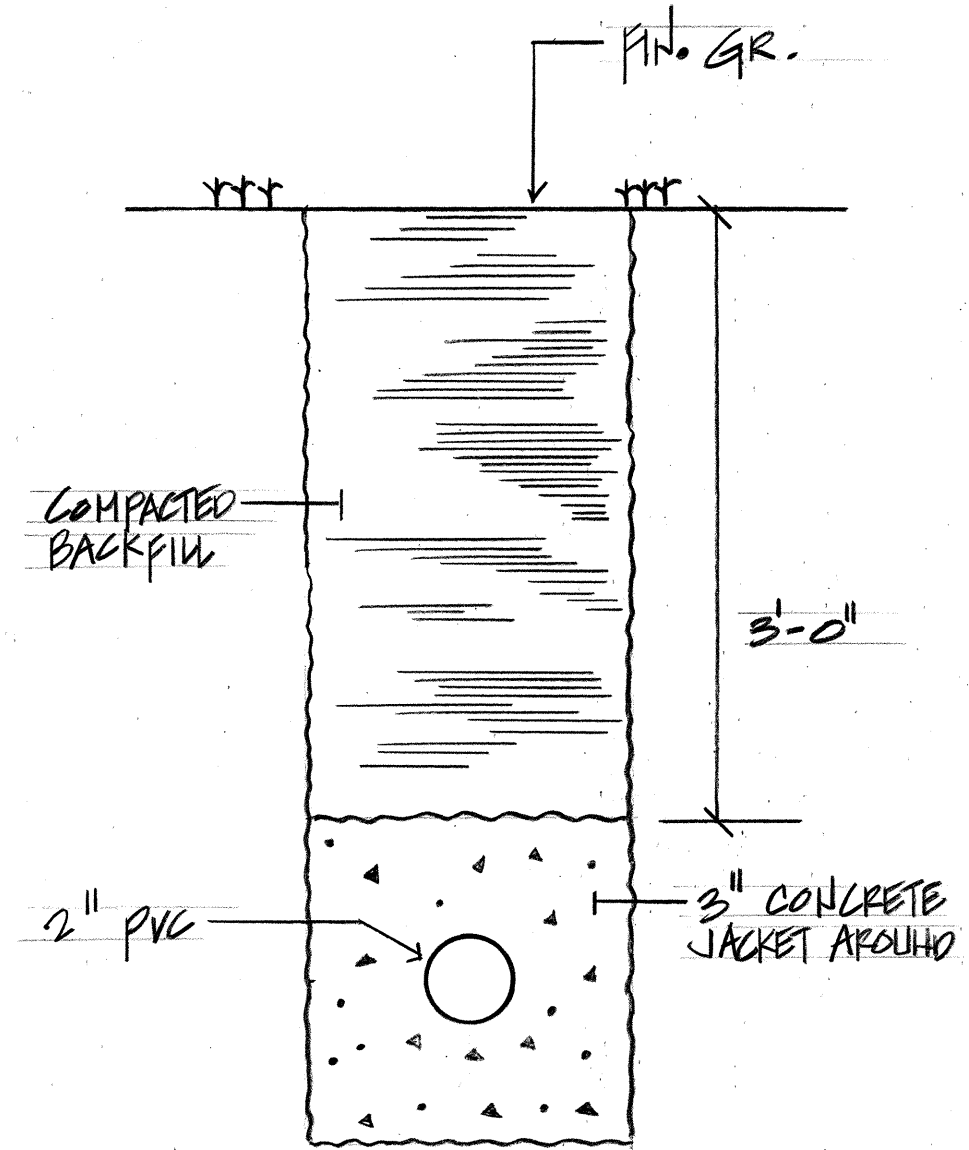


C
E-5
**HIGHWAY LIGHTING
STANDARD DETAIL
TYPE "B"**
N.T.S.

NOTE: 1) FOR USE ON ANCHOR-BASE LIGHT POLES ON LEVEL GR. AS SHOWN ON PLAN
2) SEE **A** FOR ELEVATION DETAIL



D
E-5
NEW METERING DETAIL
N.T.S.



E
E-5
TYPICAL DUCT SECTION
N.T.S.

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

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CONSULTING ENGINEERS

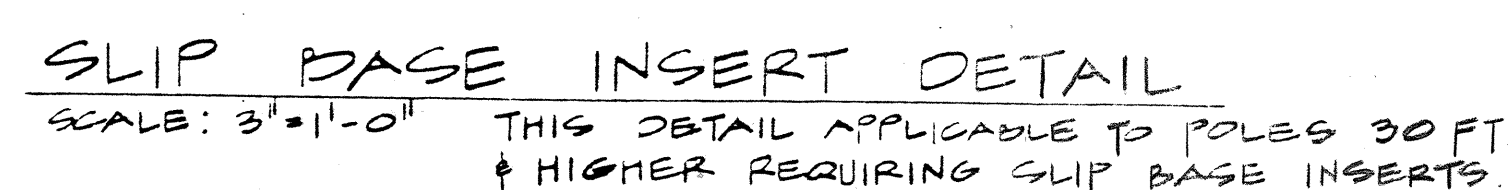
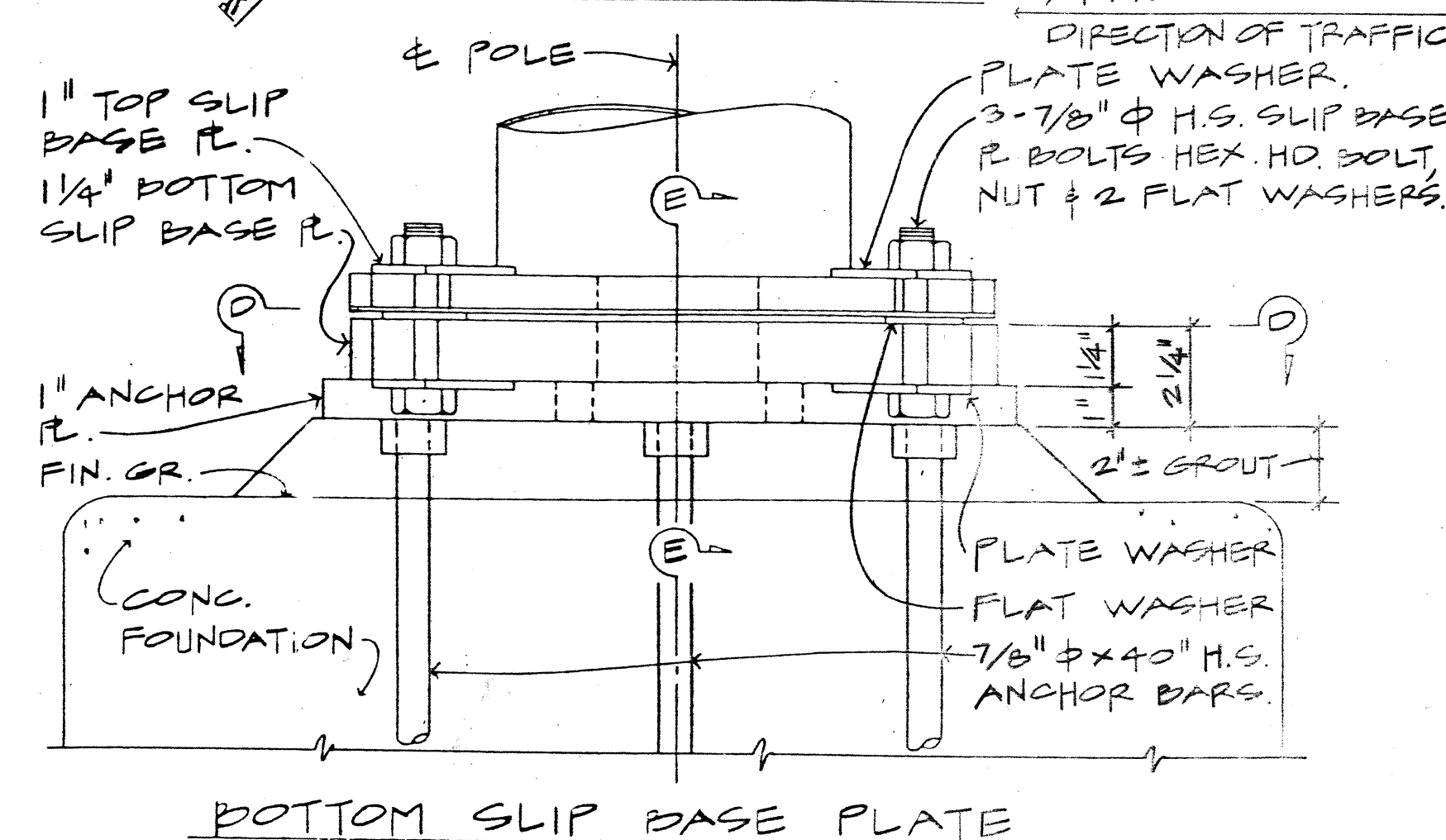
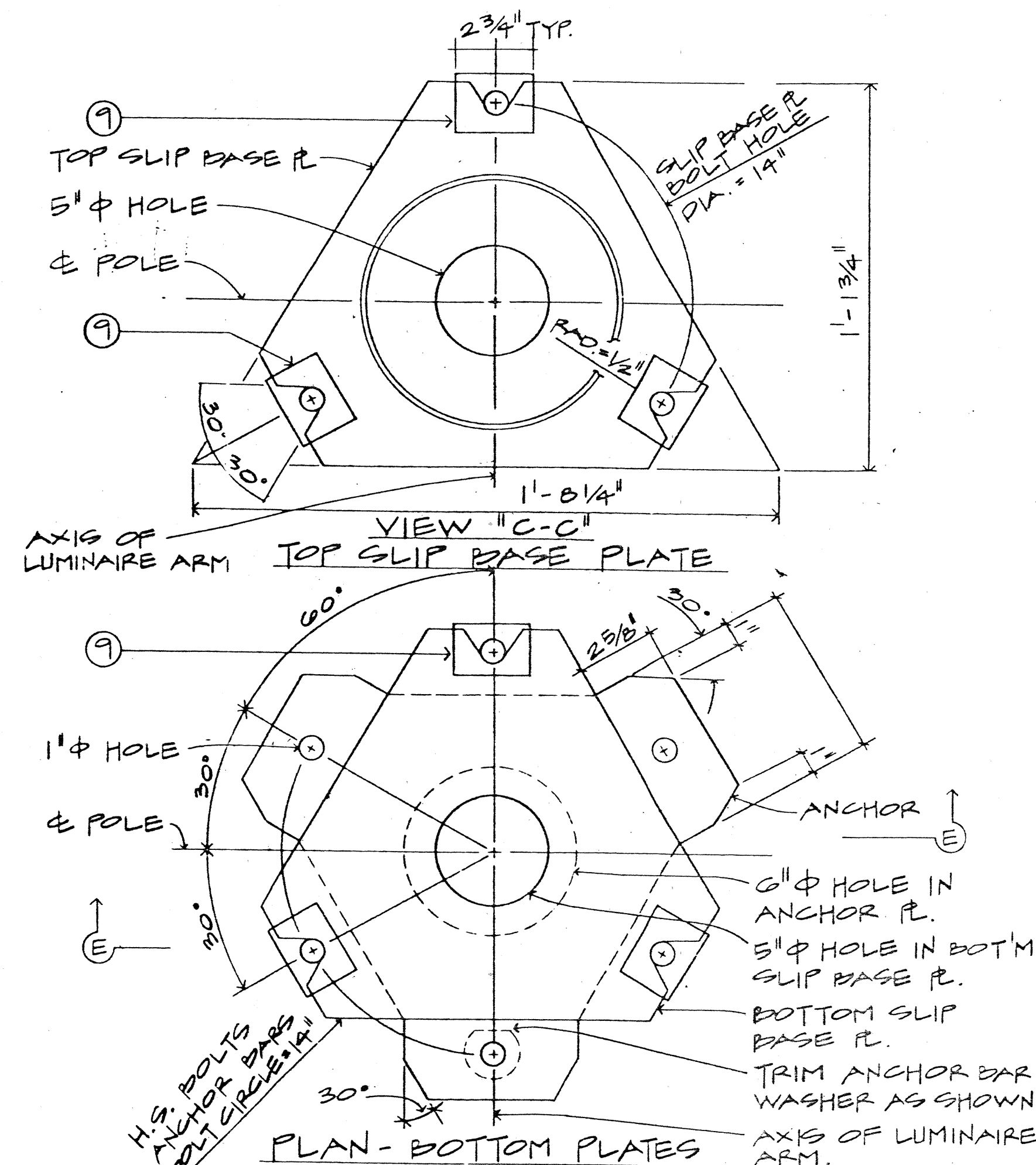
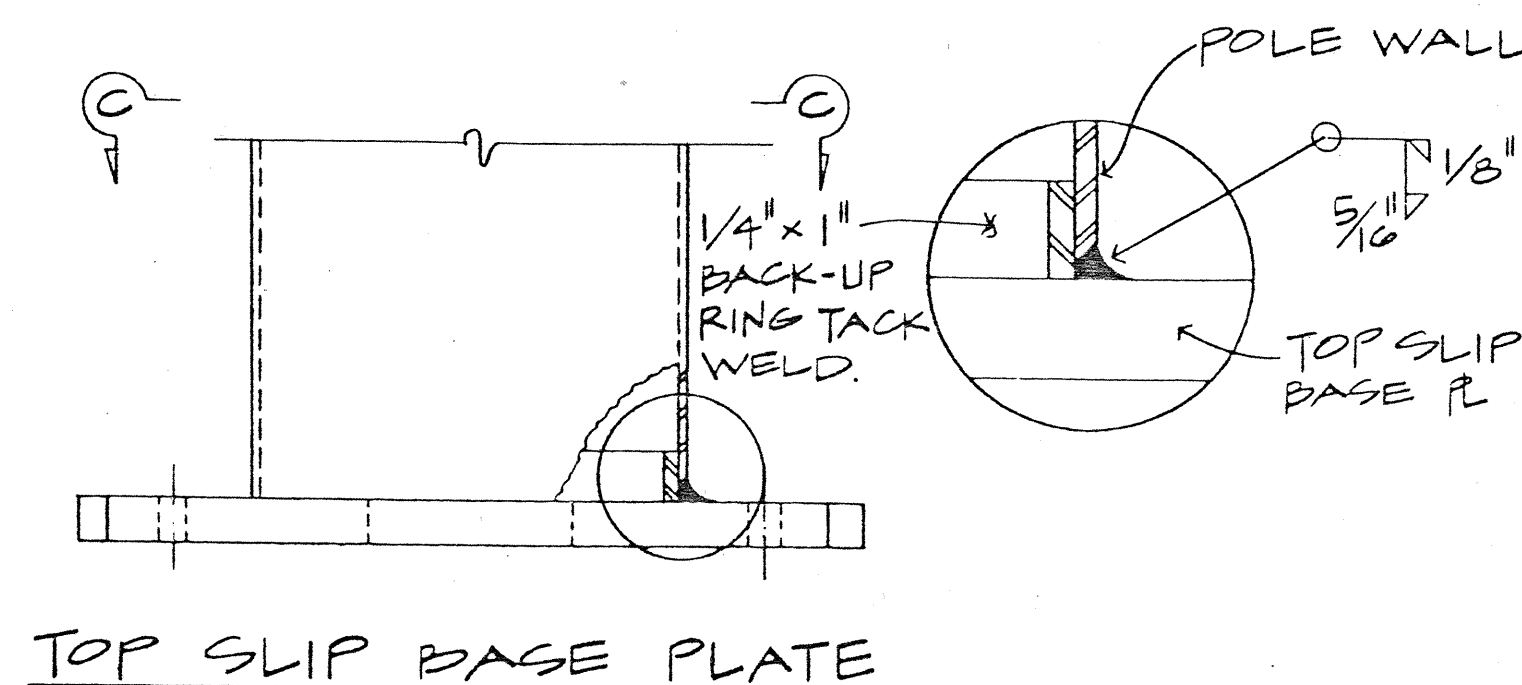
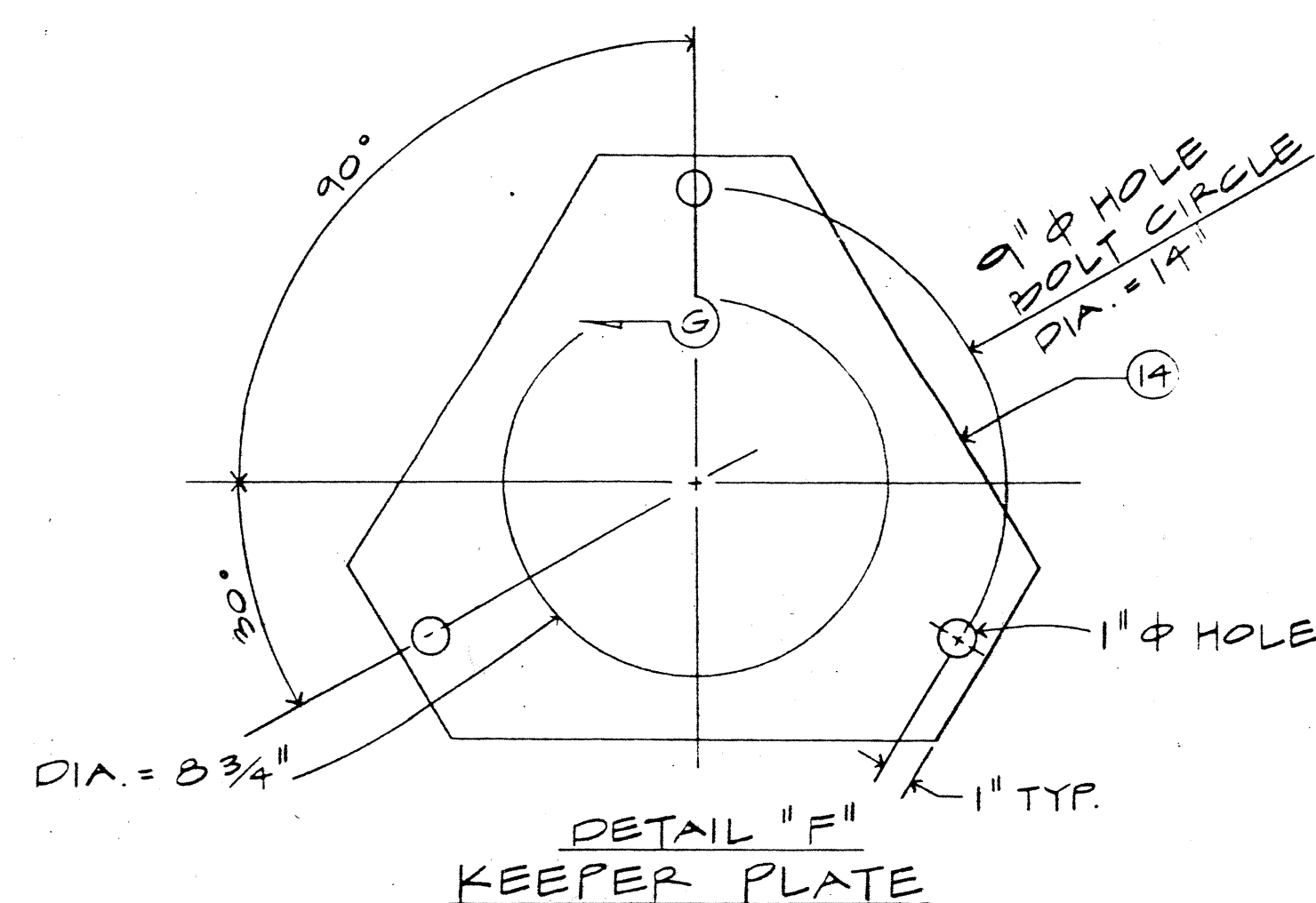
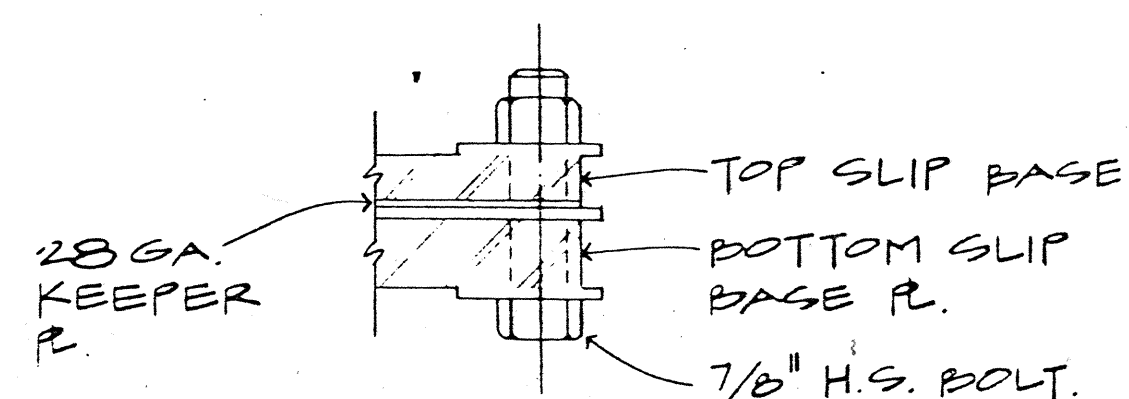
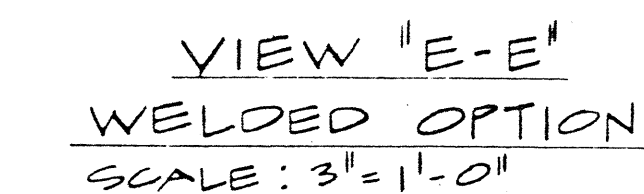
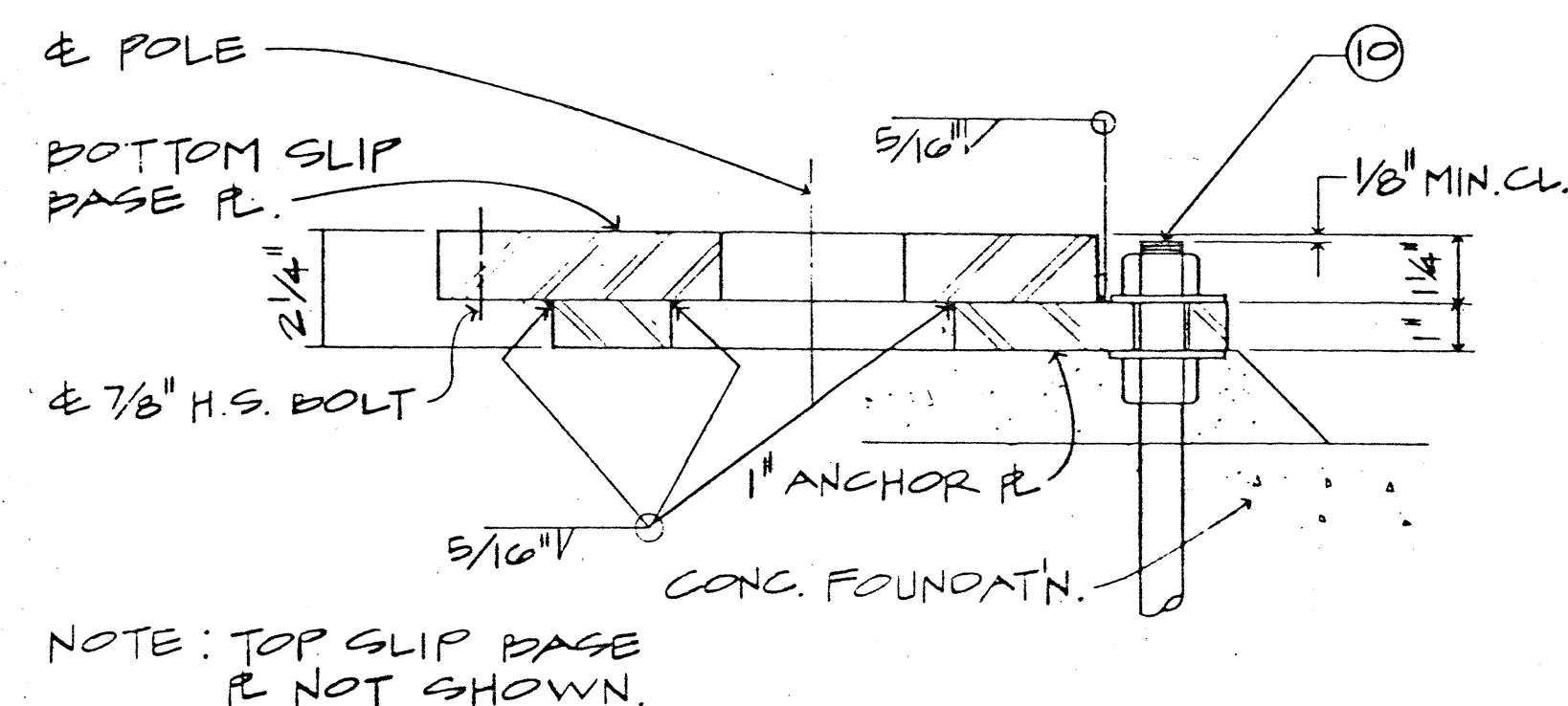
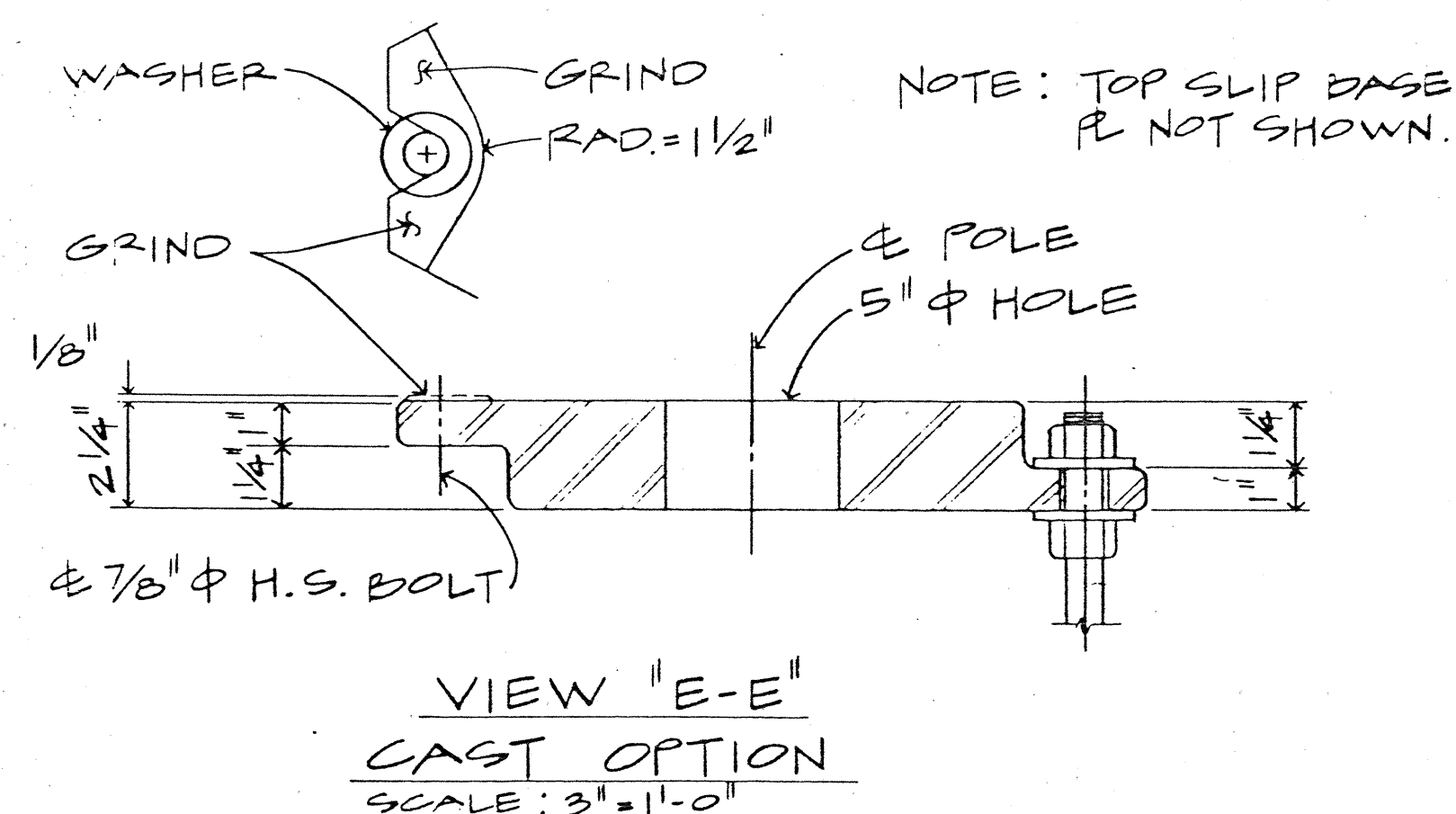
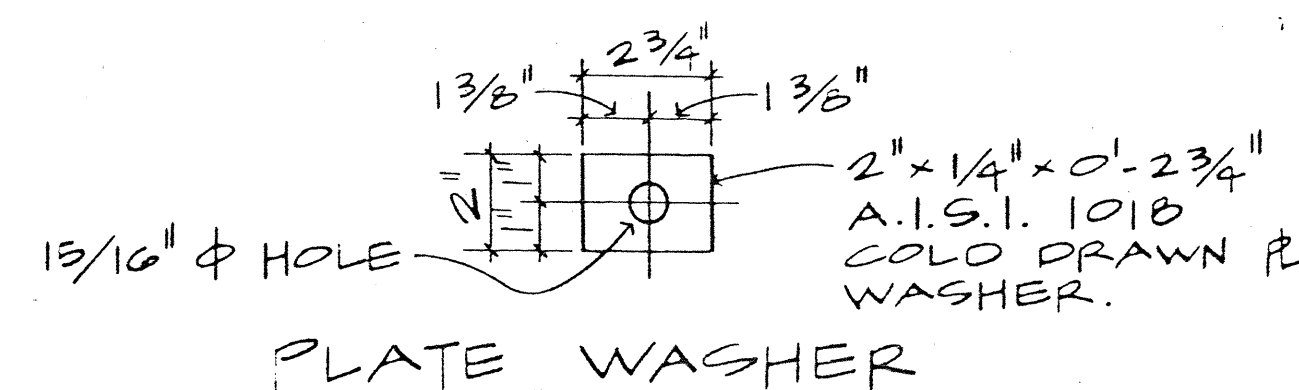
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILS

KAHEKILI HIGHWAY ROADWAY LIGHTING
AHIUMANU PLACE TO AHIUMANU ROAD
PROJECT NO. 83F-01-91
SCALE: AS NOTED DATE: SEPT. 9, 1991

SHEET NO. E5 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	83F-01-91	1991	7	7



- NOTES:

- ① ALL STEEL SHAFTS, PL'S, MAST ARMS, BOLTS, SCREWS, NUTS & WASHERS TO BE GALV. AFTER FAB. OR MODIFICATION.
- ② PL'S TO CONFORM TO ASTM A-36.
- ③ CAST OPTION TO CONFORM TO ASTM A-486 CL.90.
- ④ TORQUE $\frac{7}{8}$ " ϕ H.S. SLIP BASE PL BOLTS TO 1000 INCH LBS.
- ⑤ $\frac{7}{8}$ " ϕ H.S. ANCHOR BARS, WRENCH TIGHTEN-TORQUE REQ'MT. WAIVED.
- ⑥ FABRICATORS ELECTING LARGER THAN MIN. ARM DIAMETERS MUST ADJUST DETAILS AS REQ'D. TO PERMIT SOLID SEATING OF CAP SCREWS. IN LIEU OF TORQUE REQ'MTS. FOR H.S. BOLTS, CAP SCREWS SHALL BE TIGHTENED BY THE TURN-OF-NUT METHOD $\frac{1}{6}$ TURN FROM SNUG TIGHT CONDITION. NO WASHER WILL BE REQ'D.
- ⑦ 4" X $6\frac{1}{2}$ " HANDHOLE REINF. W/#3 GA. RING $1\frac{1}{2}$ " WIDE WELDED TO OUTSIDE OF POLE COVER OF 10 GA. PL LOCATE 90° OF MAST ARM UNLESS SHOWN OTHERWISE
- ⑧ UNASSIGNED.
- ⑨ PLATE WASHER
- ⑩ 3- $\frac{7}{8}$ " ϕ H.S. BARS, THREAD 6" & GALV. 10', W/ HEX. HD. NUT, LEVELING NUT & WASHER.
- ⑪ HEX. HD. NUT SHOWN OR AS ALT. DET. ANCHOR PL'S MAY BE RETAINED W/ $\frac{5}{16}$ " FILLET WELOS ALL ROUND OR FORMED HEADS.
- ⑫ ROUND TAPERED STEEL TUBE W/MAX. TAPER OF 0.15"/FT.
- ⑬ NO. 11 GA. SHT. STEEL OF WELDABLE GRADE ACCEPTABLE IF STEEL AFTER FAB. HAS A MIN. YIELD STRENGTH OF 40,000 PSI.
- ⑭ 28 GA. KEEPER PL, PLACE ON TOP OF FLAT WASHER, ASTM A526, 125 COMMERCIAL.
- ⑮ SLIP BASE INSERT DET. ON THIS SHT. APPLICABLE FOR POLE STDs. TALLER THAN 25'-0"



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SLIP-BASE DETAIL

KAHEKILI HIGHWAY ROADWAY LIGHTING
AHUMANU PLACE TO AHUMANU ROAD
PROJECT NO. 83F-01-91

SCALE: AS NOTED DATE: SEPT. 5, 99

SHEET No. EG OF 1 SHEETS