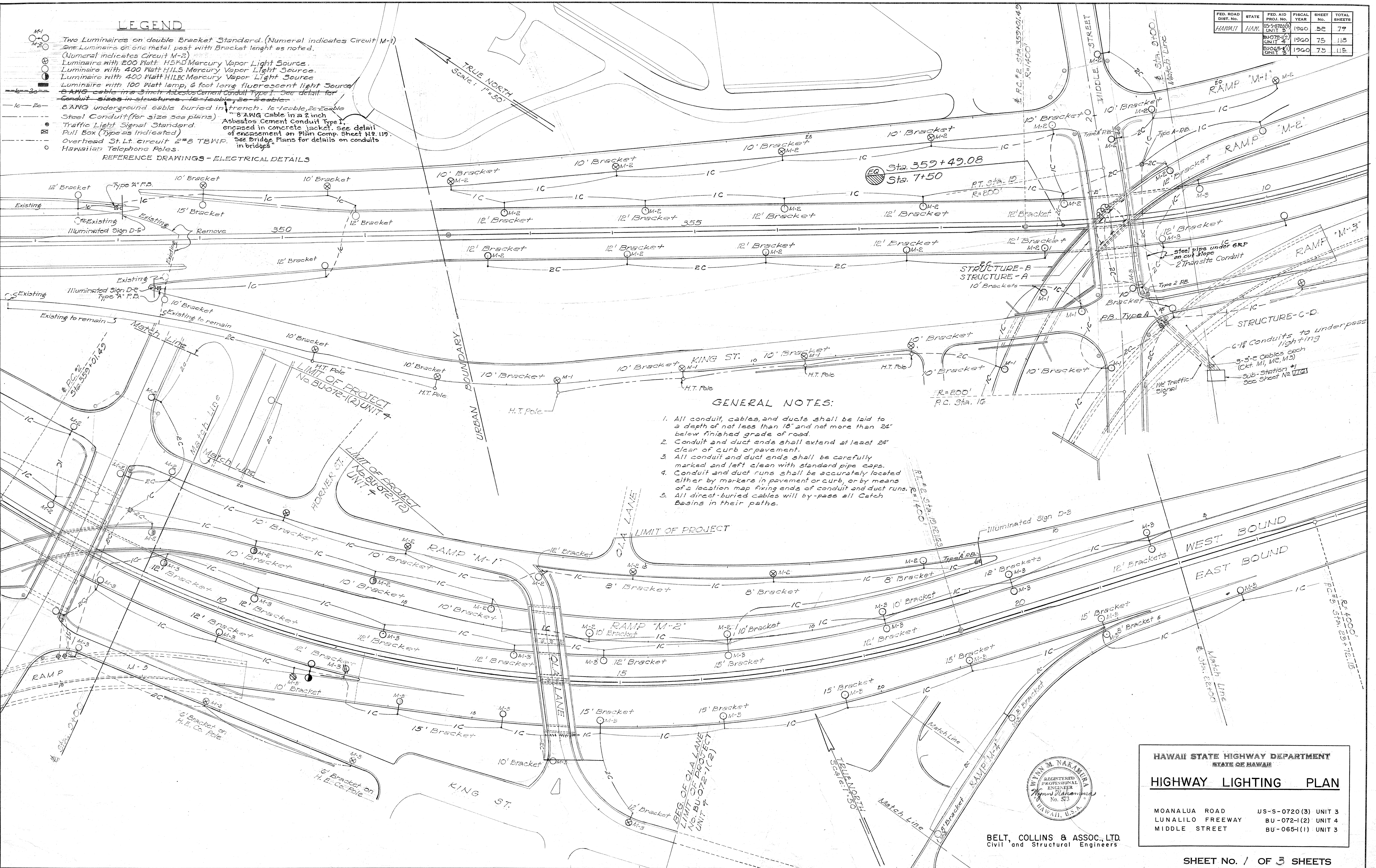


BEG. OF PROJ. 346+50 US-5-0720(3) UNIT 3

LEGEND

- M-1
M-2
- Two luminaires on double bracket standard. (Numeral indicates Circuit M-1)
One luminaire on one metal post with bracket length as noted.
(Numeral indicates Circuit M-2)
Luminaires with 200 Watt H.S.D. Mercury Vapor Light Source.
Luminaires with 400 Watt H.S.D. Mercury Vapor Light Source.
Luminaires with 400 Watt H.I.L.B. Mercury Vapor Light Source.
Luminaires with 100 Watt lamp, 6 foot long fluorescent light source.
6 AWG cable in 2 inch Asbestos Cement Conduit Type 1. See detail for conduit sizes in structure. 12' bracket, 20' bracket.
- 1c-2c
BANG underground cable buried in trench. 1c double, 2c cable
Steel Conduit (for size see plans) 8 AWG cable in 2 inch
Traffic Light Signal Standard. Asbestos Cement Conduit Type 1,
Pull Box (Type as Indicated) encased in concrete jacket. See detail
Overhead St. Lt. circuit 2" x 3 TBWP. See Bridge Plans for details on conduits
Hawaiian Telephone Poles. in bridges
- REFERENCE DRAWINGS - ELECTRICAL DETAILS

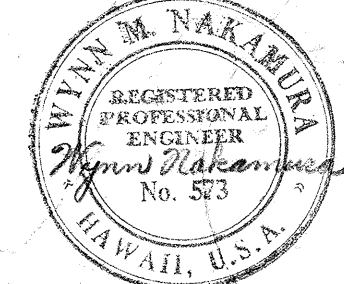
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	US-50720(3)	1960	52	79
		BU-072-1(2)	1960	75	118
		BU-065-1(1)	1960	75	118



GENERAL NOTES:

1. All conduit, cables and ducts shall be laid to a depth of not less than 18" and not more than 24" below finished grade of road.
2. Conduit and duct ends shall extend at least 24" clear of curb or pavement.
3. All conduit and duct ends shall be carefully marked and left clean with standard pipe caps.
4. Conduit and duct runs shall be accurately located either by markers in pavement or curb, or by means of a location map fixing ends of conduit and duct runs.
5. All direct-buried cables will by-pass all Catch Basins in their paths.

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



HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

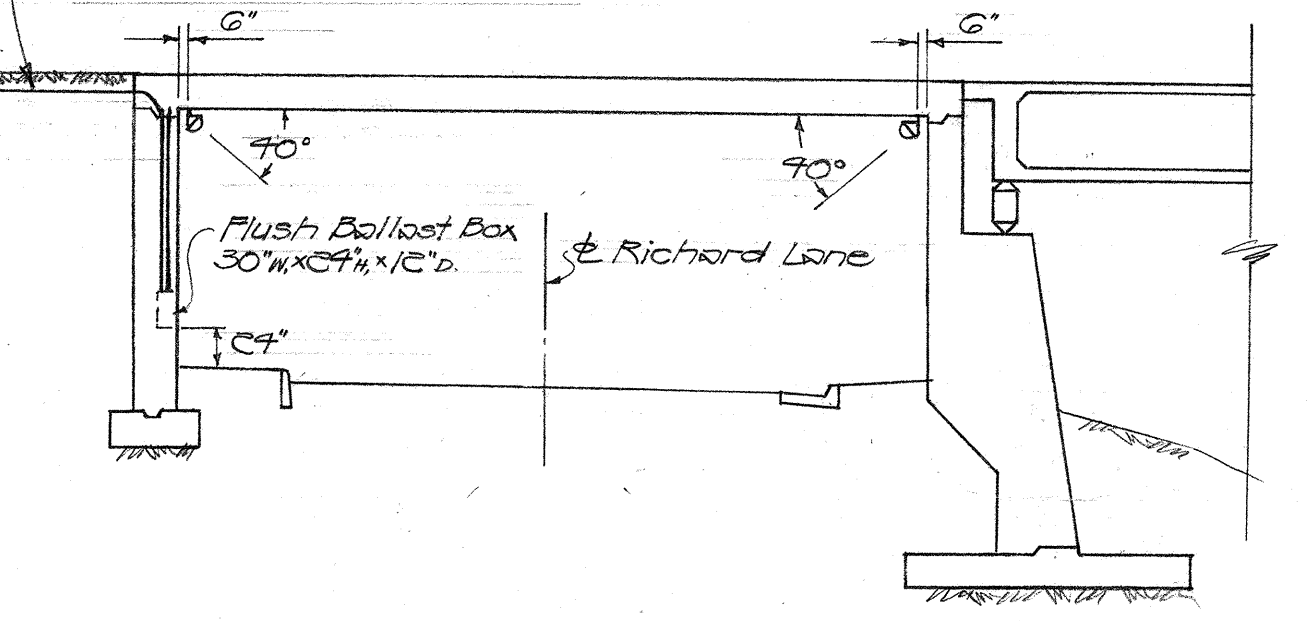
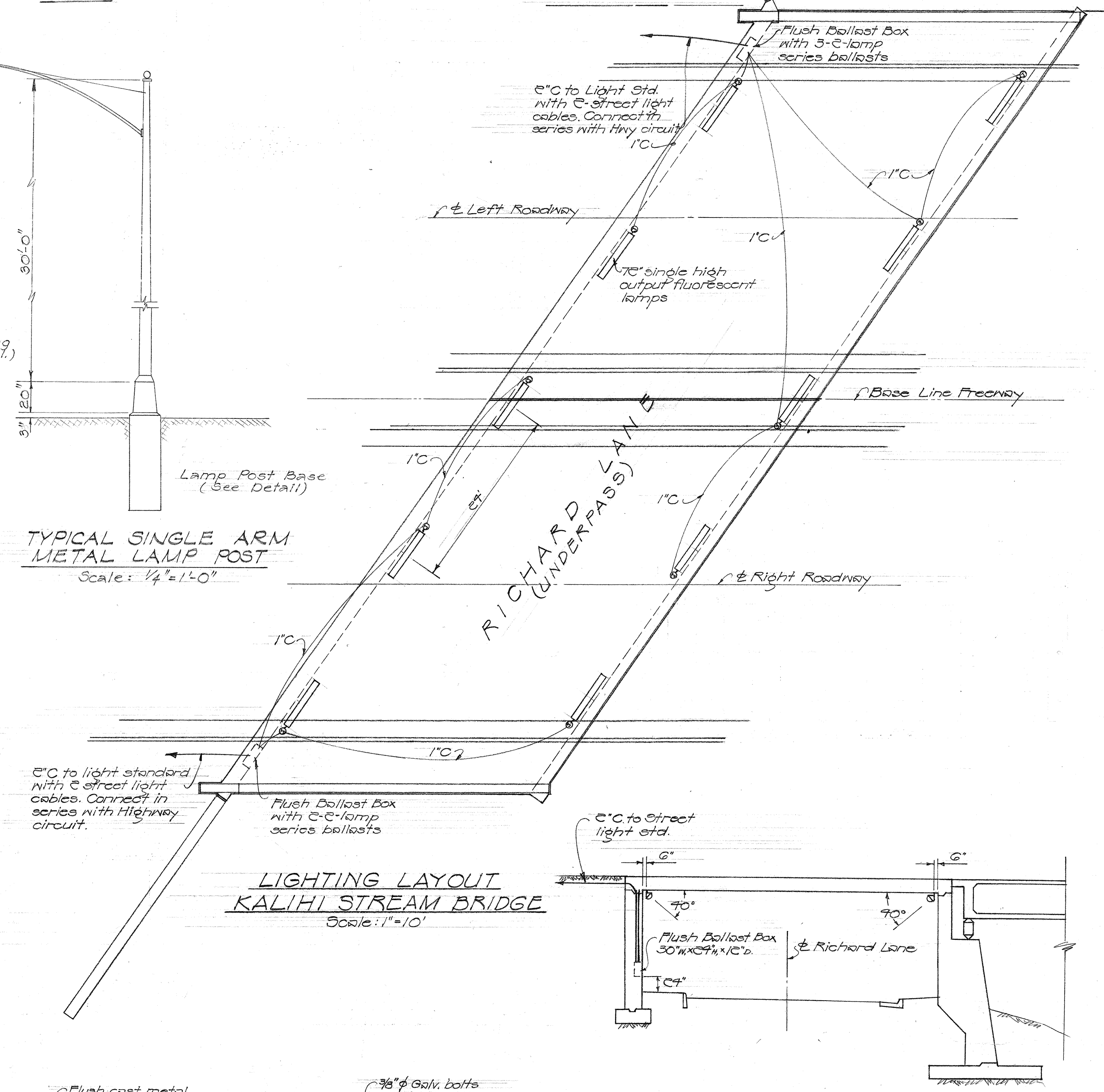
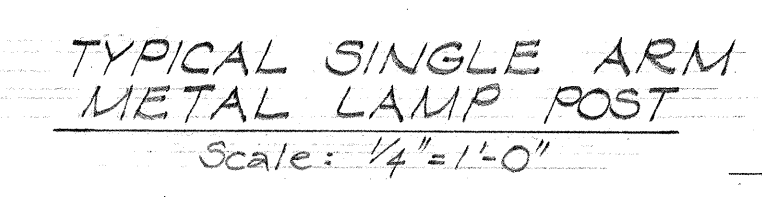
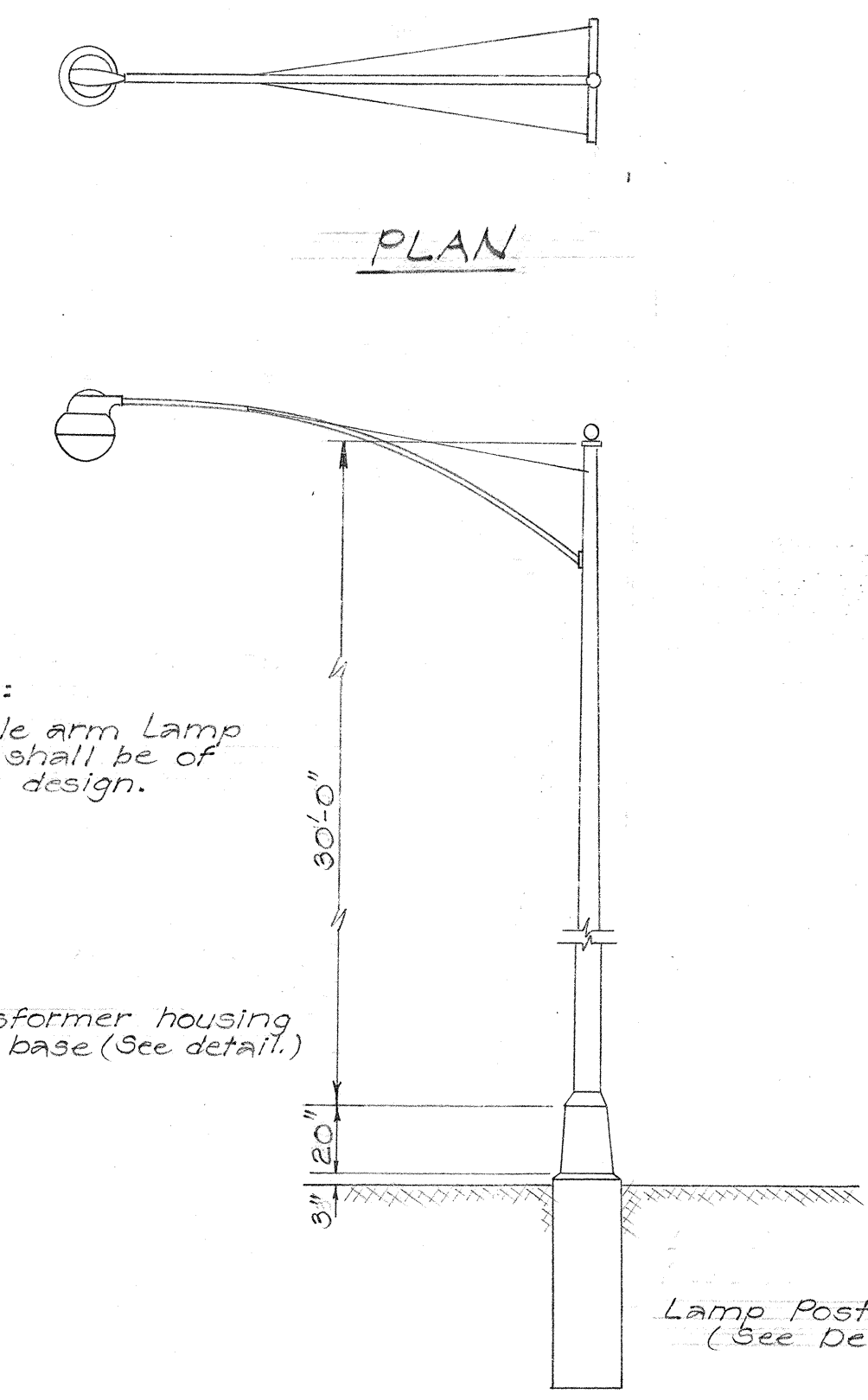
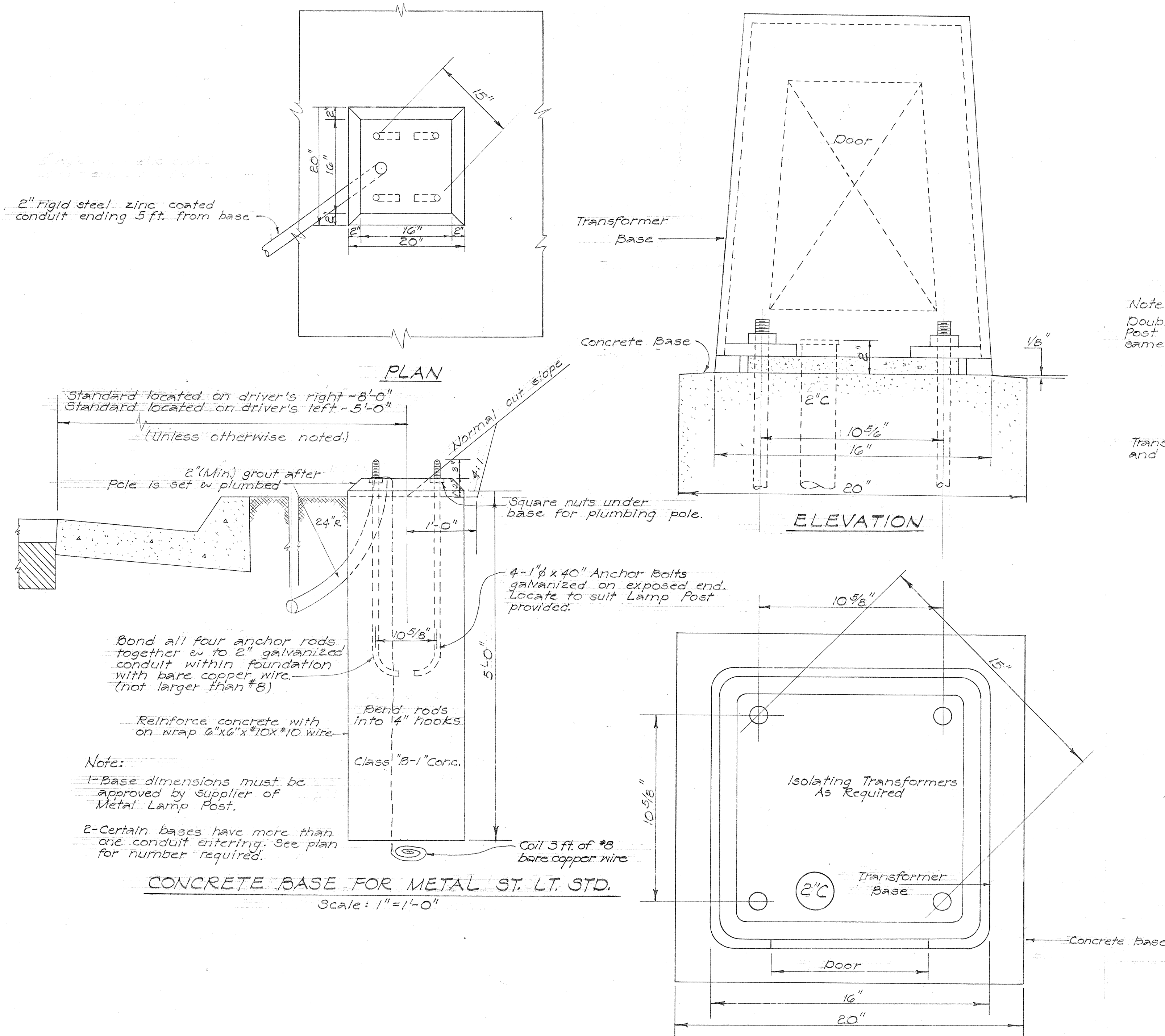
HIGHWAY LIGHTING PLAN

MOANALUA ROAD US-5-0720(3) UNIT 3
LUNALILO FREEWAY BU-072-1(2) UNIT 4
MIDDLE STREET BU-065-1(1) UNIT 3

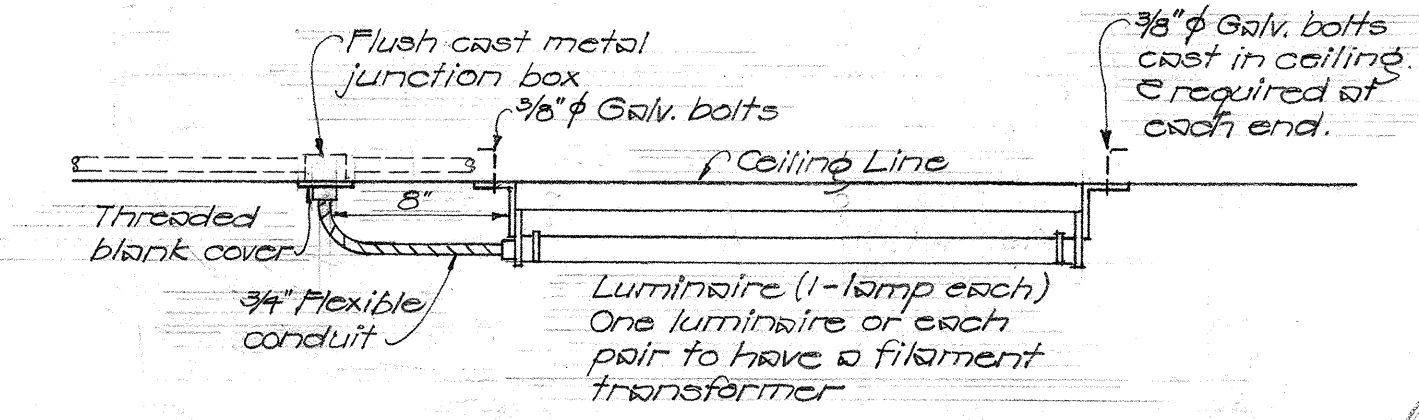
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Civil and Structural Engineers

SHEET No. / OF 3 SHEETS

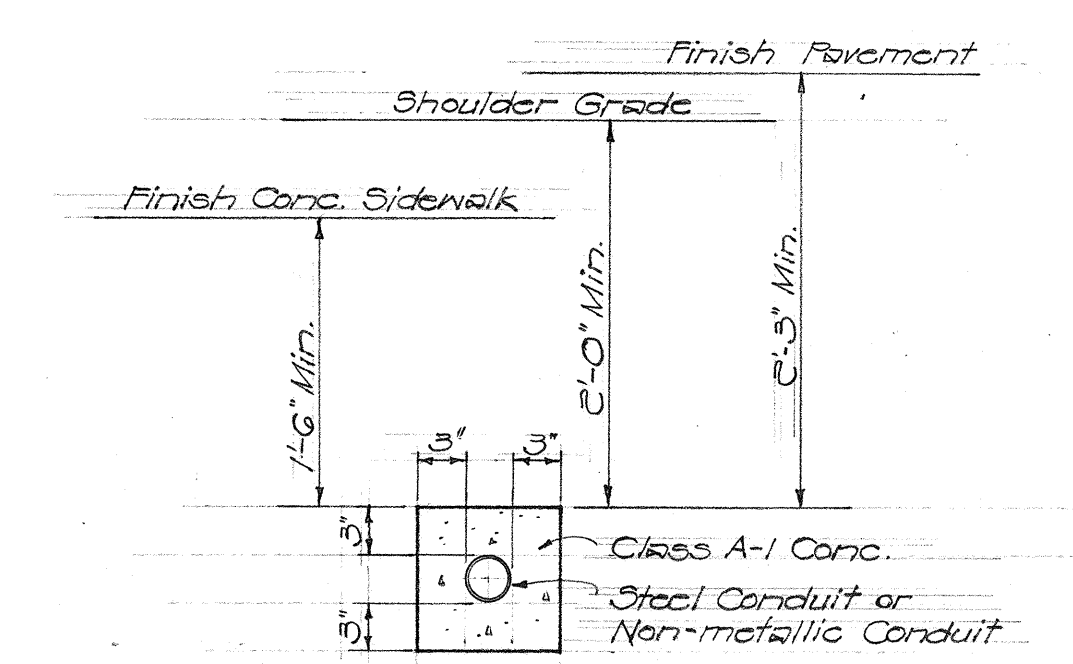
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	US-5-0720(3) UNIT 3	1960	53	79
		BU-07-10 UNIT 4	1960	81	118
		BU-06-5-1(1) UNIT 3	1960	76	115



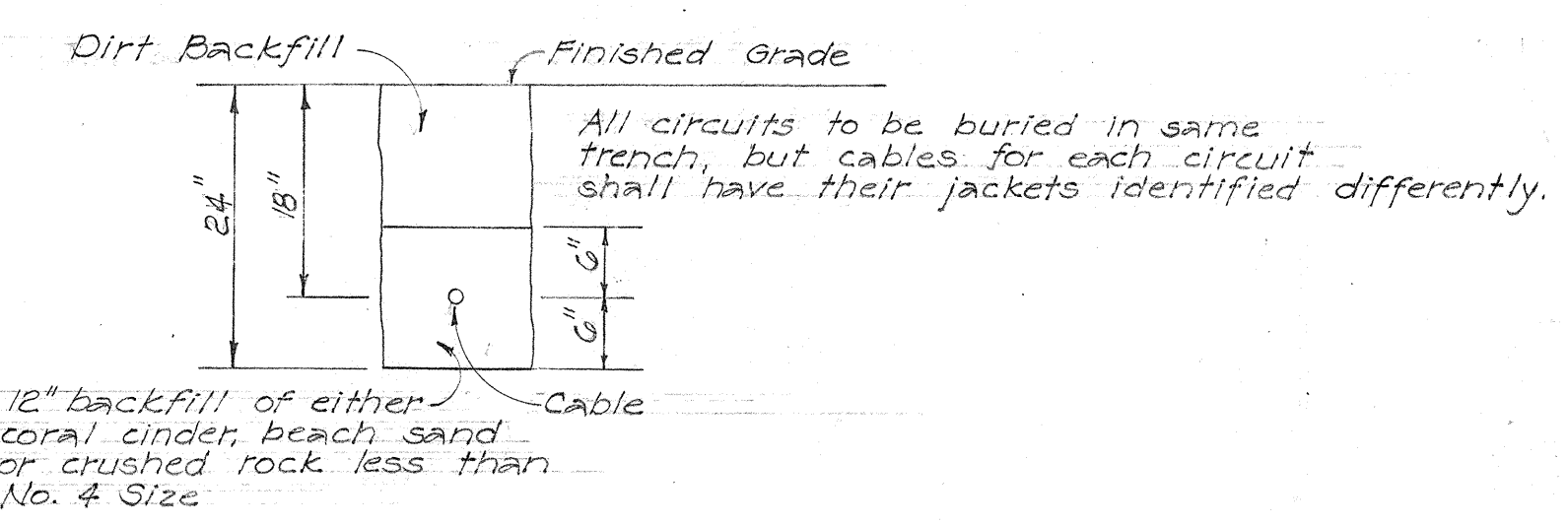
LONGITUDINAL SECTION
Scale: 1" = 10'



FIXTURE MOUNTING DETAIL
Not to scale



TYPICAL DETAIL OF CONDUITS
ENCASED IN CONCRETE JACKET
Scale: 1"=1'-0"



DETAIL OF BACKFILL FOR DIRECTLY BURIED CABLES
Scale: $\frac{3}{4}" = 1'-0"$

ORIGINAL PLAN	SURVEY PLOTTED BY DESIGNED BY DRAWN BY TRACED BY QUANTITIES BY QUANTITIES CHECKED BY CHECKED BY	DATE " 3-57 " 3-57 " " " " " " " " " "
NOTE BOOK No.		

A circular professional engineer seal for Winn M. Nakamura. The outer ring contains the name "WINN M. NAKAMURA" at the top and "HAWAII, U.S.A." at the bottom. The inner circle contains the text "REGISTERED PROFESSIONAL ENGINEER" and "No. 573". A handwritten signature, "Winn Nakamura", is written across the center of the seal.

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HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

ELECTRICAL DETAILS
LIGHTING ON KALIHI STREAM BRIDGE

MOANALUA ROAD	US-S-0720 (3)	UNIT 3
LUNALILO FREEWAY	BU-072-I (2)	UNIT 4
MIDDLE STREET	BU-065-I (1)	UNIT 3

SHEET No. 4 OF 6 SHEETS

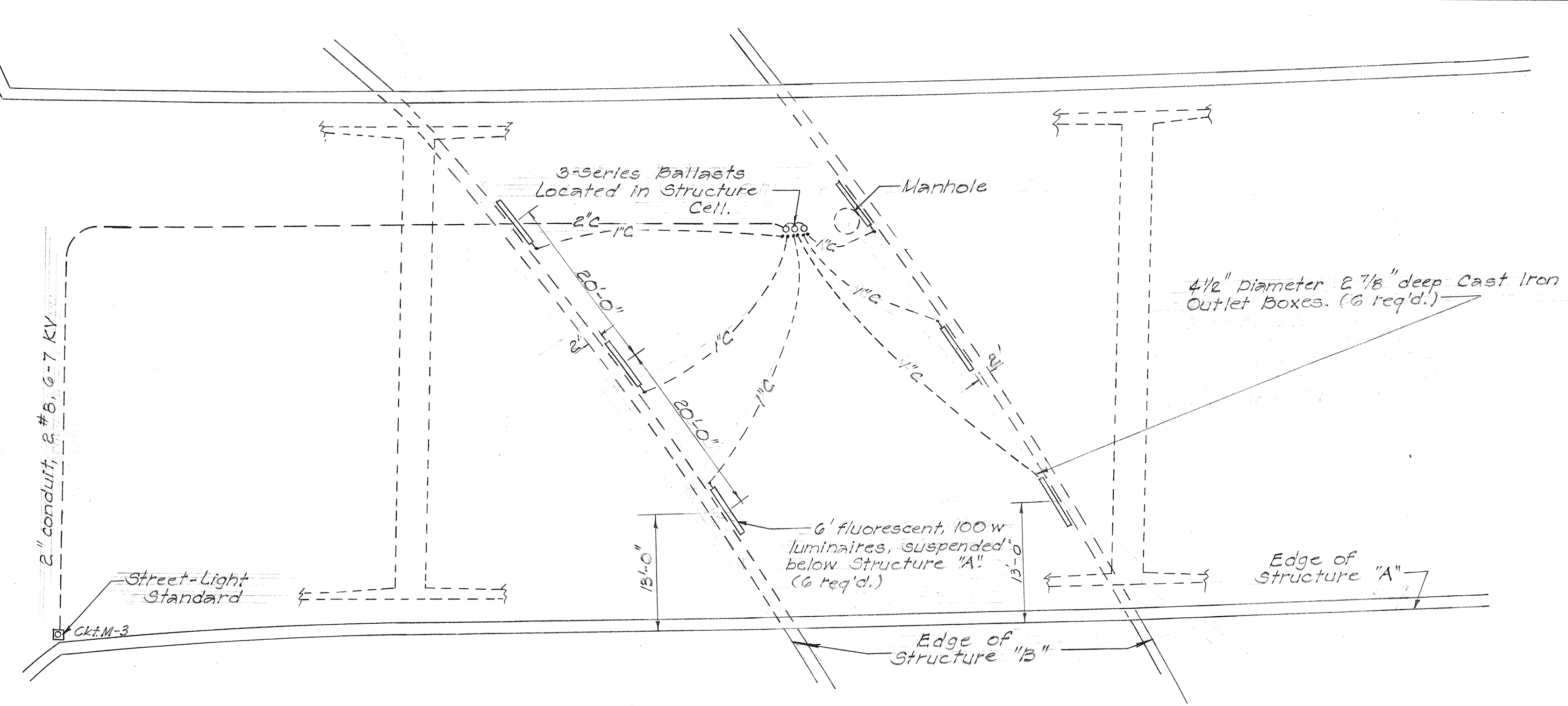
8526.53

\$174.51

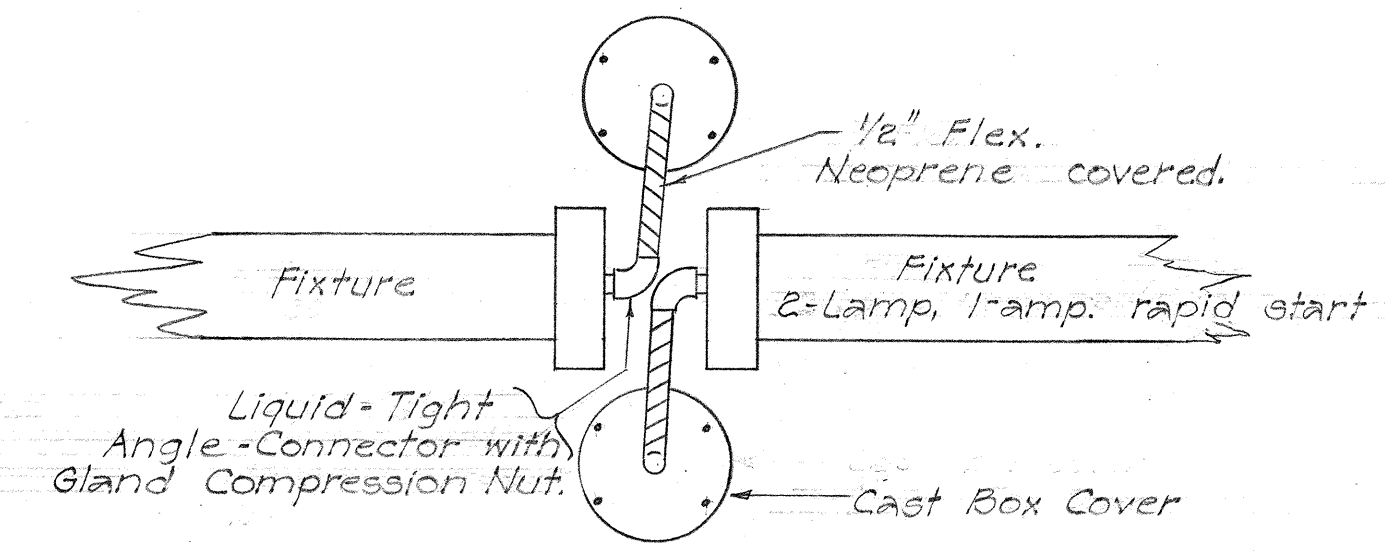
S I G 1 . P G

115

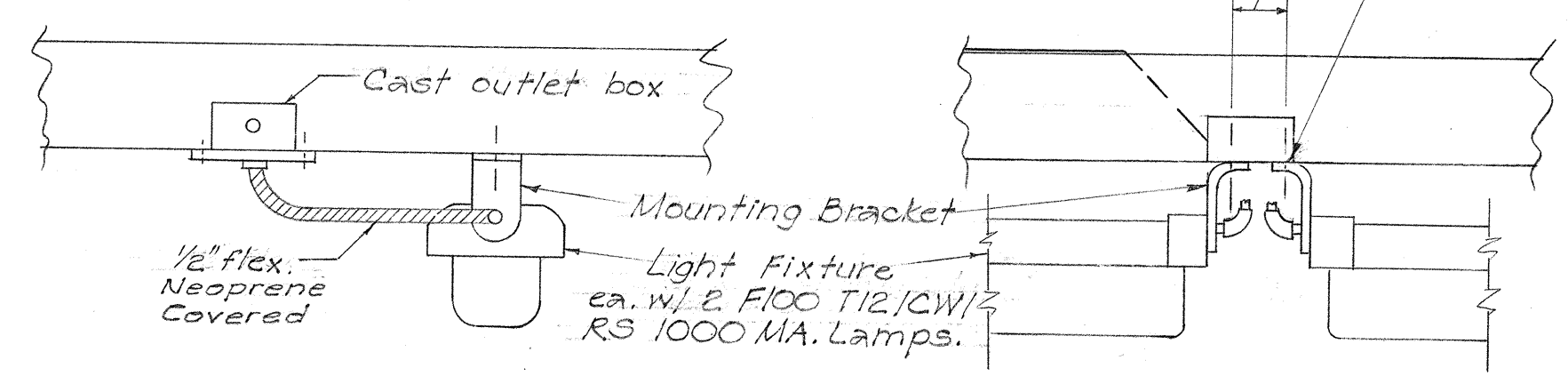
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	US-50720(3)	1960	54	79
		BU-072-1(2)	1960	80	118
		BU-065-1(1)	1960	77	118



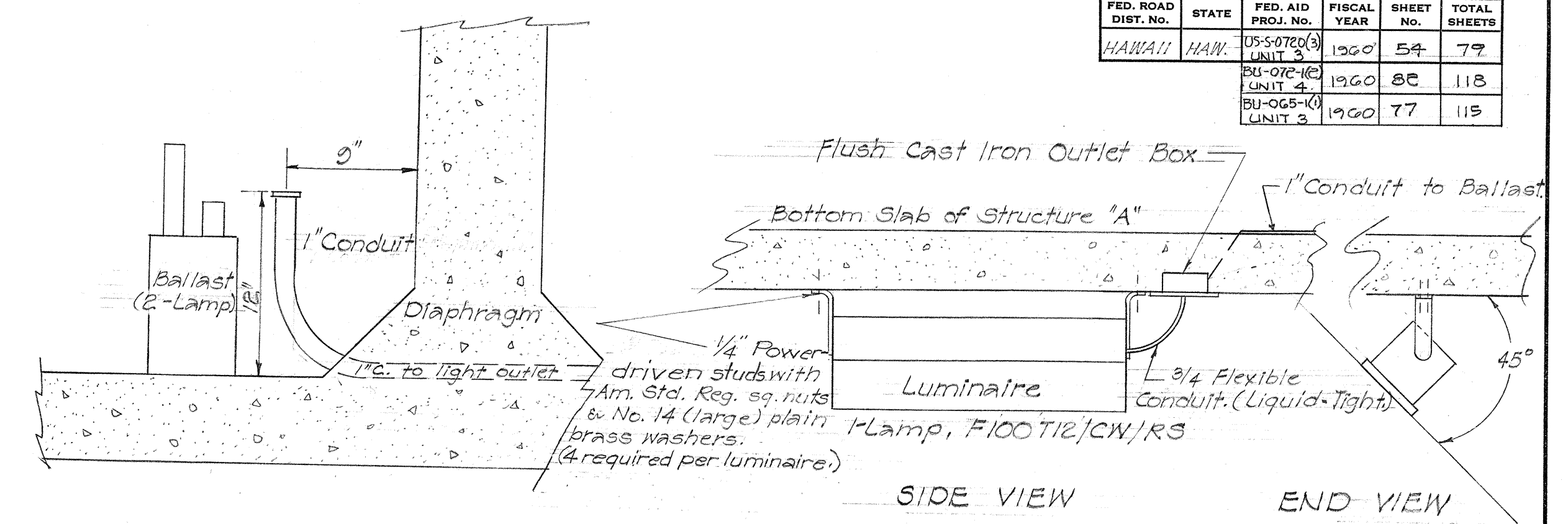
PLAN
FLUORESCENT LUMINAIRES AT STRUCTURE "A"
Scale: 1"=10'



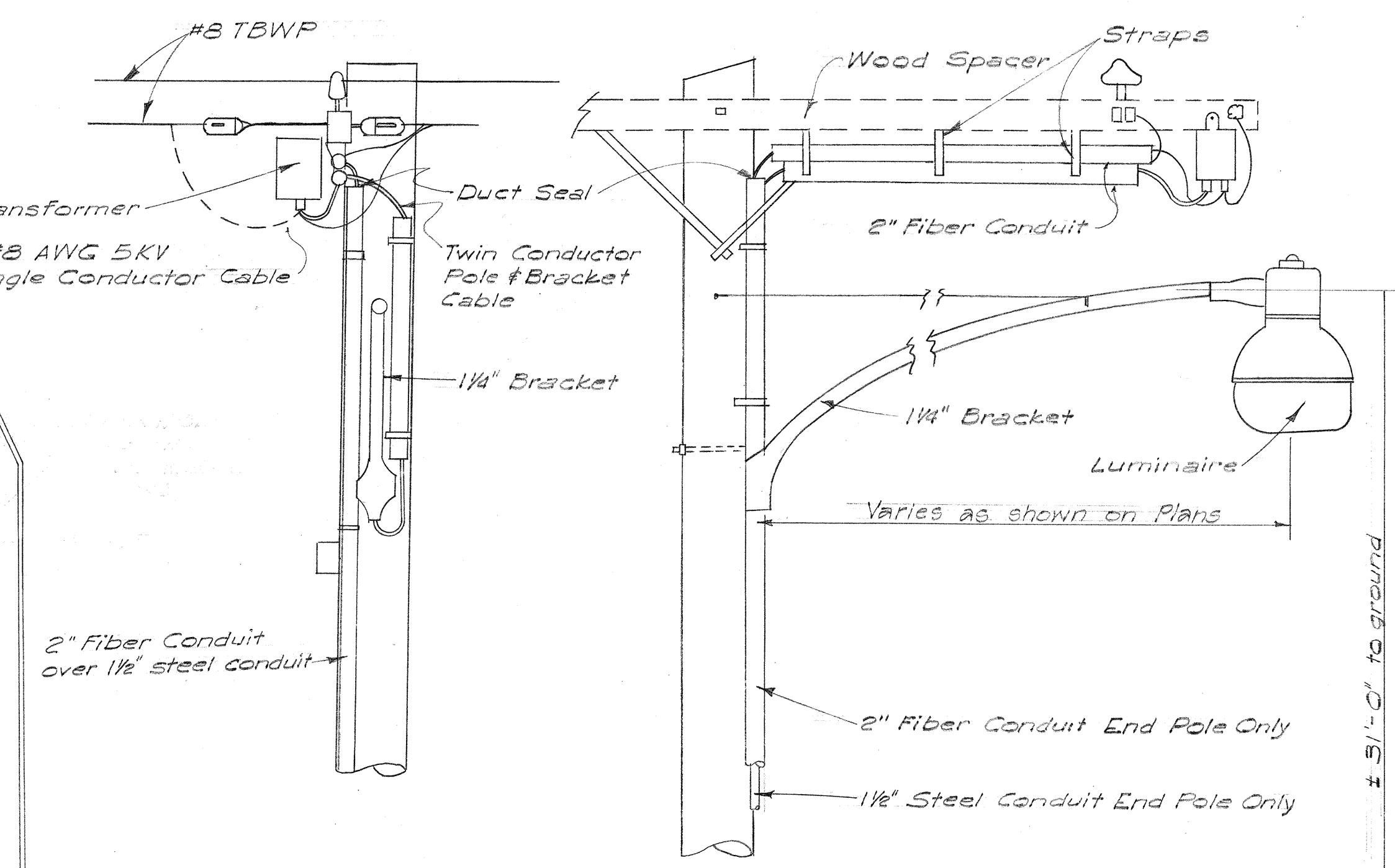
DETAIL OF FIXTURE CONNECTION TO OUTLET BOXES
No Scale



END VIEW No Scale
SIDE VIEW No Scale



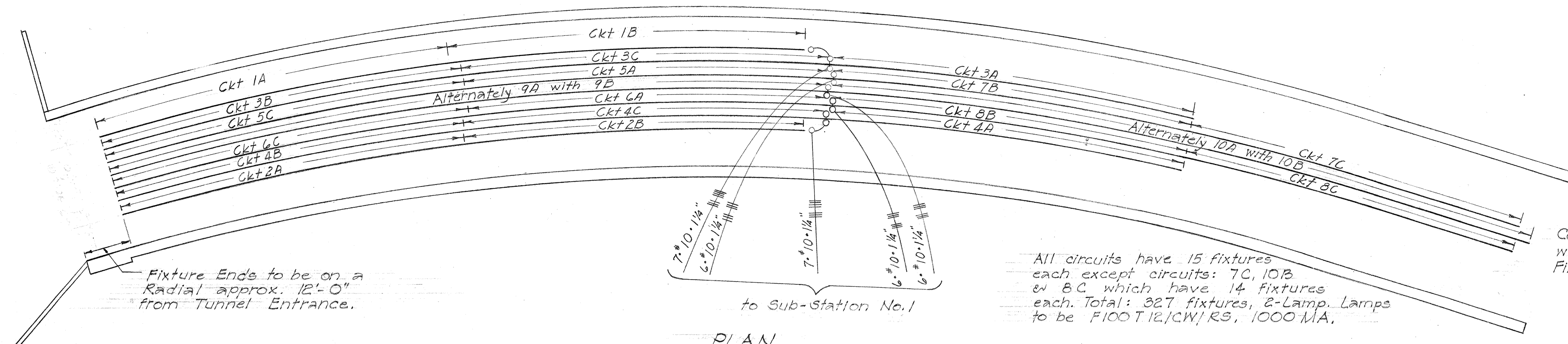
DETAIL OF BALLAST IN STRUCTURE CELL Scale: 1 1/2"=1'-0"
DETAIL OF FLUORESCENT LUMINAIRE AT STRUCTURE "A" Scale: 1/2"=1'-0"



FRONT ELEVATION
SIDE ELEVATION

MOUNTING DETAIL OF LUMINAIRE BRACKET ON UTILITY POLE

NOTE:
Pole Top Isolating Transformers Shall Be Used Where Lamp Posts are Mounted on Wing Walls of Structure "A"



PLAN
LIGHTING LAYOUT ~ STRUCTURE "C-D"
Scale: 1"=20'

All circuits have 15 fixtures each except circuits: 7C, 10B & 8C which have 14 fixtures each. Total: 327 fixtures, 2-Lamp Lamps to be F100 T12/CW/R3, 1000 MA.

Center Row to Coincide with E. of Road Bed.
Fixture Rows to be 3'-0" o.c.



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HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

ELECTRICAL DETAILS
LIGHTING LAYOUT ON STRUCTURES

MIDDLE STREET	BU-065-1(1) UNIT 3
LUNALILO FREEWAY	BU-072-1(2) UNIT 4
MOANALUA ROAD	US-S-0720 (3) UNIT 3

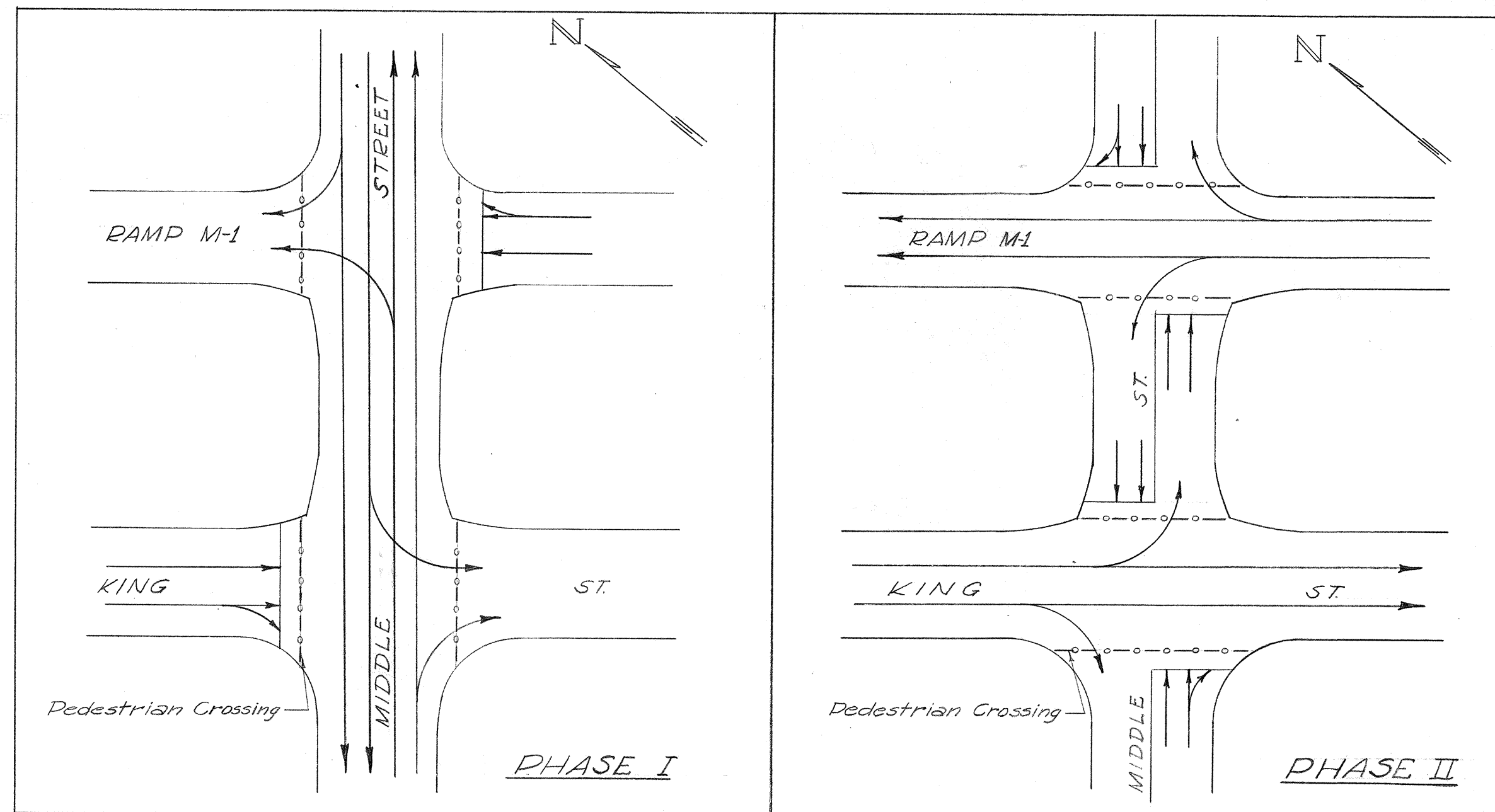
ORIGINAL PLAN	DESIGNED BY	DATE
	TRACED BY	8-27
	QUANTITIES BY	8-27
	CHECKED BY	
NOTE BOOK	CHECKED BY	
	NO.	

LEGEND:

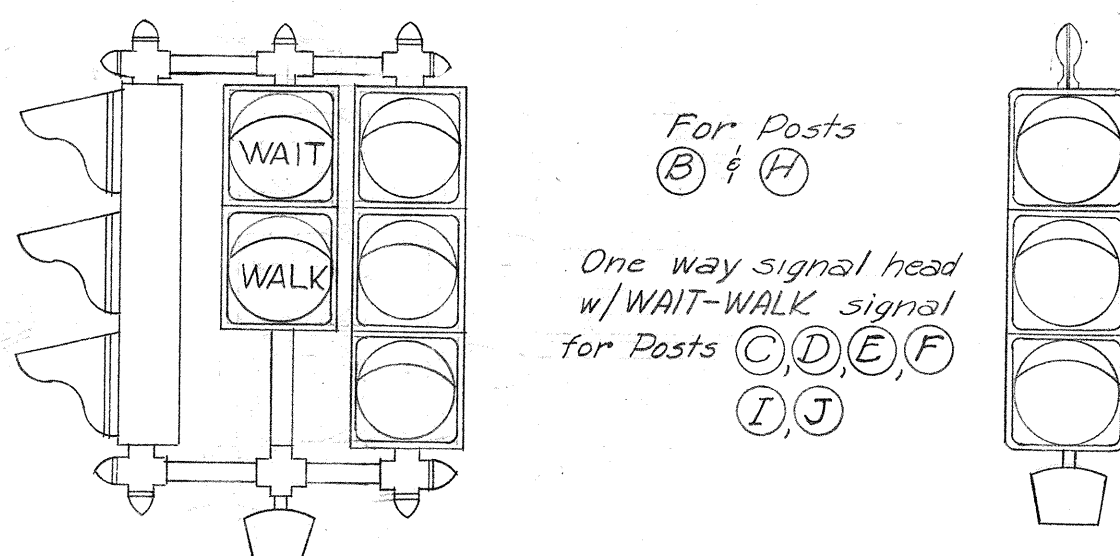
- New Traffic Signal Standard
- New Dispatcher Box
- ▢ New Type 1 Pull Box
- 2" New Asbestos Cement Conduit Type I encased in concrete jacket (Size indicated)
- Exist. Traffic Signal Stds.
- Pedestrian Crossing

GENERAL NOTES:

1. Exact location of Traffic Signal Stds. to be determined in the field by the Engr.
2. For detail of Type A Pull Box see Elec. detail sht No. 4 of G
3. H.E. Co. to install electric meter & power source hook-up.
4. All conduits not in structures shall be encased in concrete jacket. See Sht. 7 of G for details.

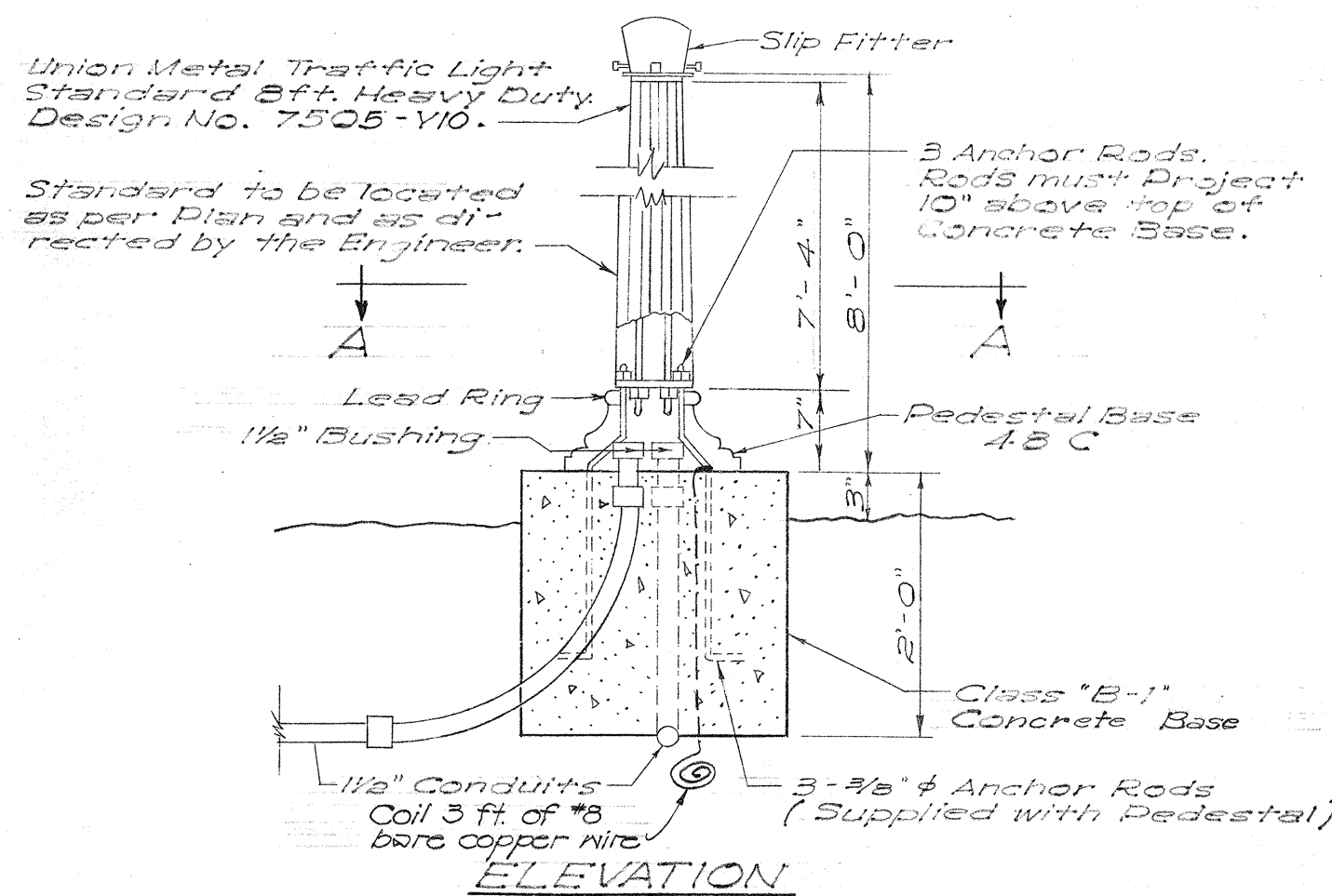


PHASE DIAGRAMS

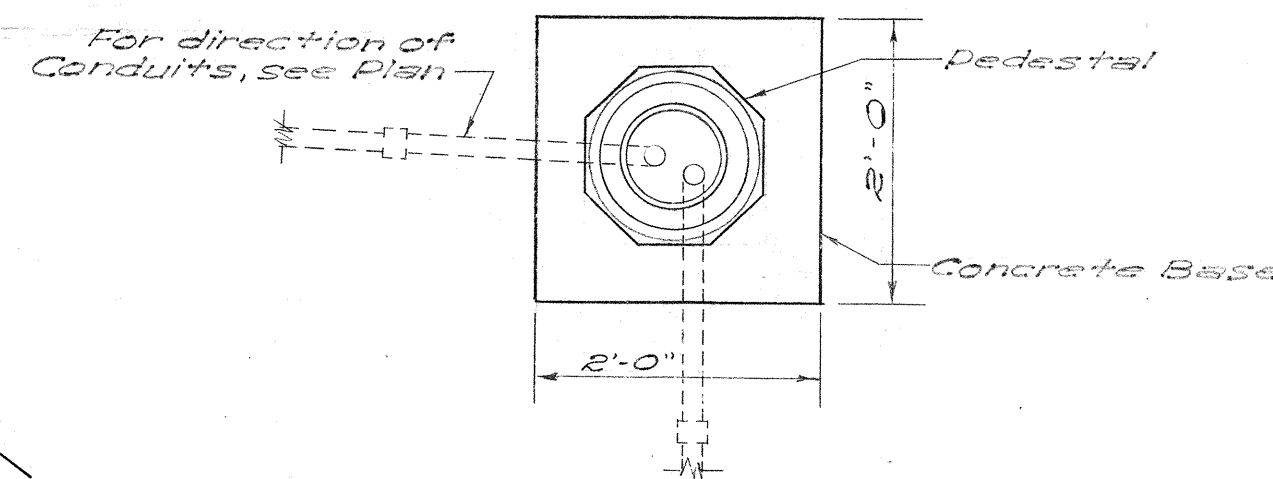


THREE-WAY SIGNAL HEAD

ONE-WAY SIGNAL HEAD



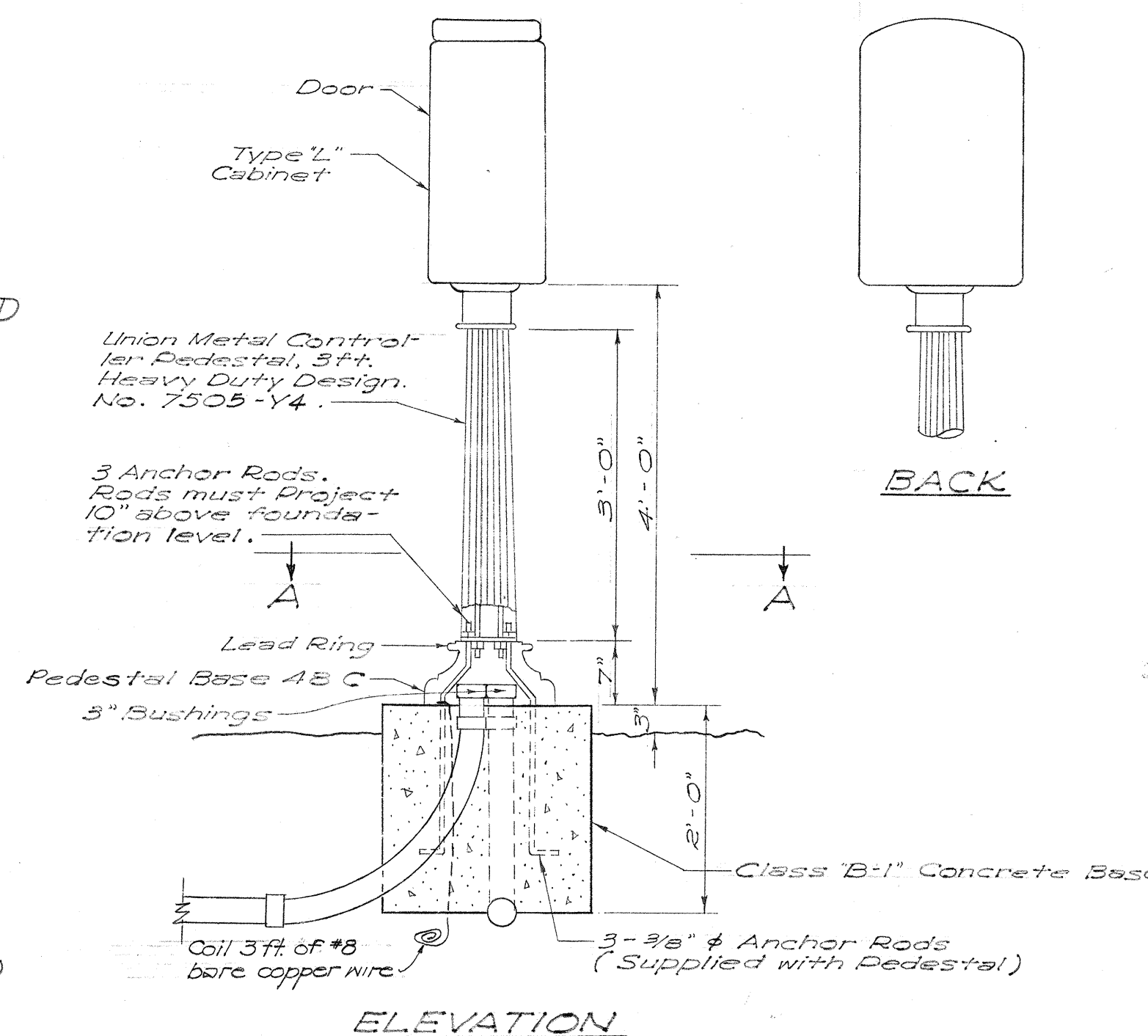
ELEVATION



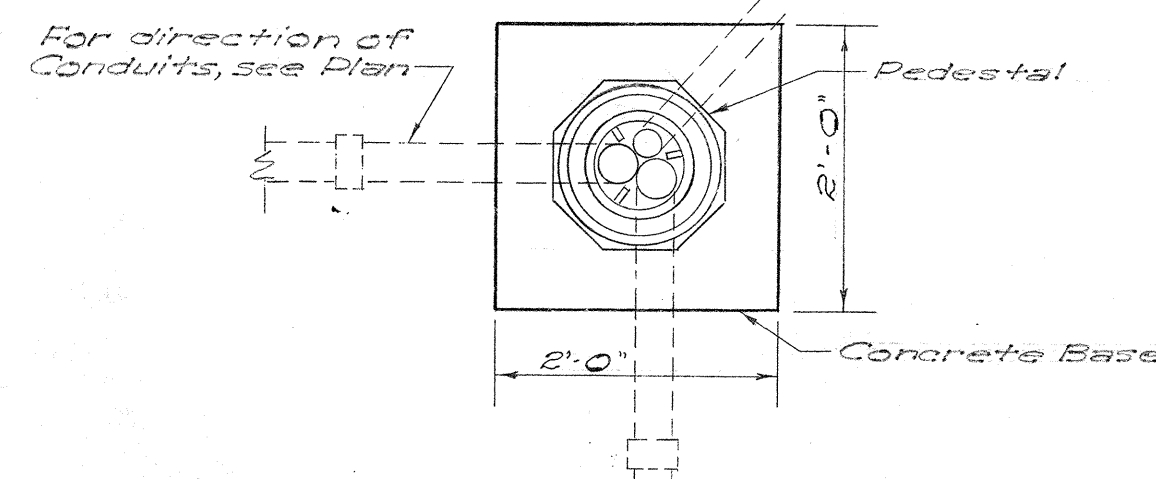
SECTION "A-A"

TRAFFIC SIGNAL ASSEMBLY

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



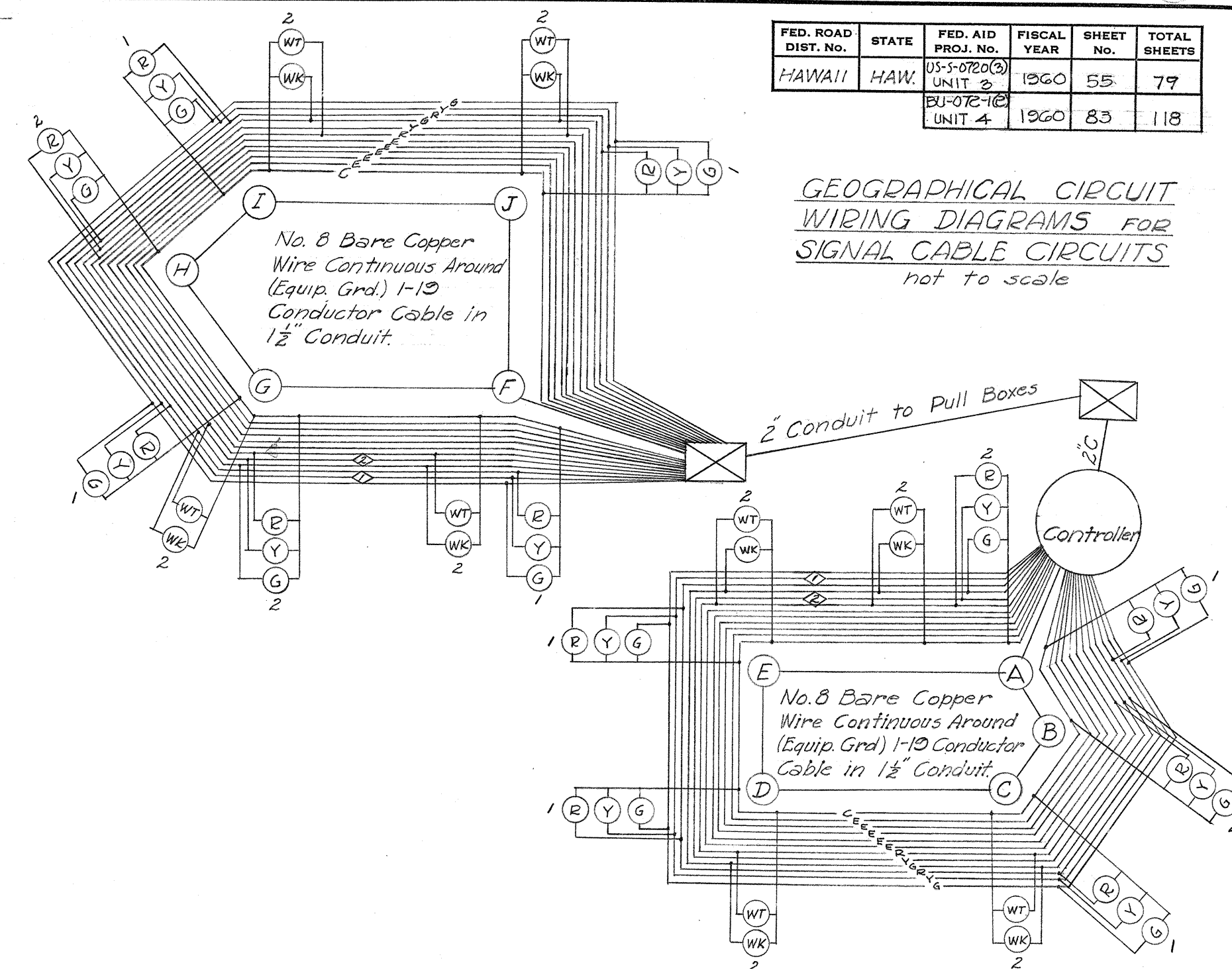
ELEVATION



SECTION "A-A"

DISPATCHER CABINET ASSEMBLY

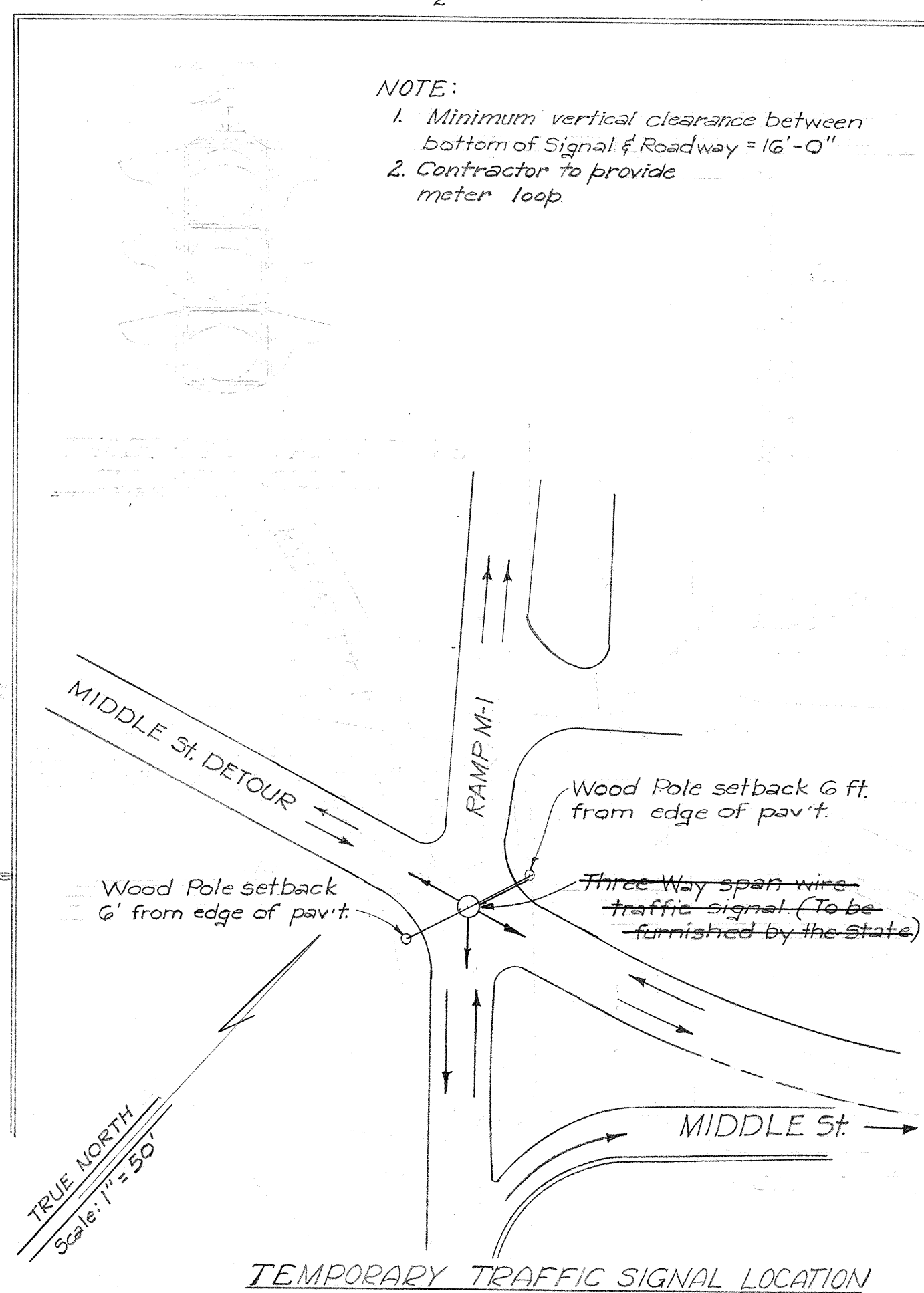
Scale: 3/4" = 1'-0"



GEOGRAPHICAL CIRCUIT WIRING DIAGRAMS FOR SIGNAL CABLE CIRCUITS not to scale

NOTE:

1. Minimum vertical clearance between bottom of signal & roadway = 16'-0"
2. Contractor to provide meter loop.



TEMPORARY TRAFFIC SIGNAL LOCATION

HAWAII STATE HIGHWAY DEPARTMENT
STATE OF HAWAII

ELECTRICAL DETAILS

INSTALLATION OF TRAFFIC SIGNAL EQUIPMENT

MOANALUA ROAD US-S-0720(3) UNIT 3
LUNALILO FREEWAY BU-072-1(2) UNIT 4



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