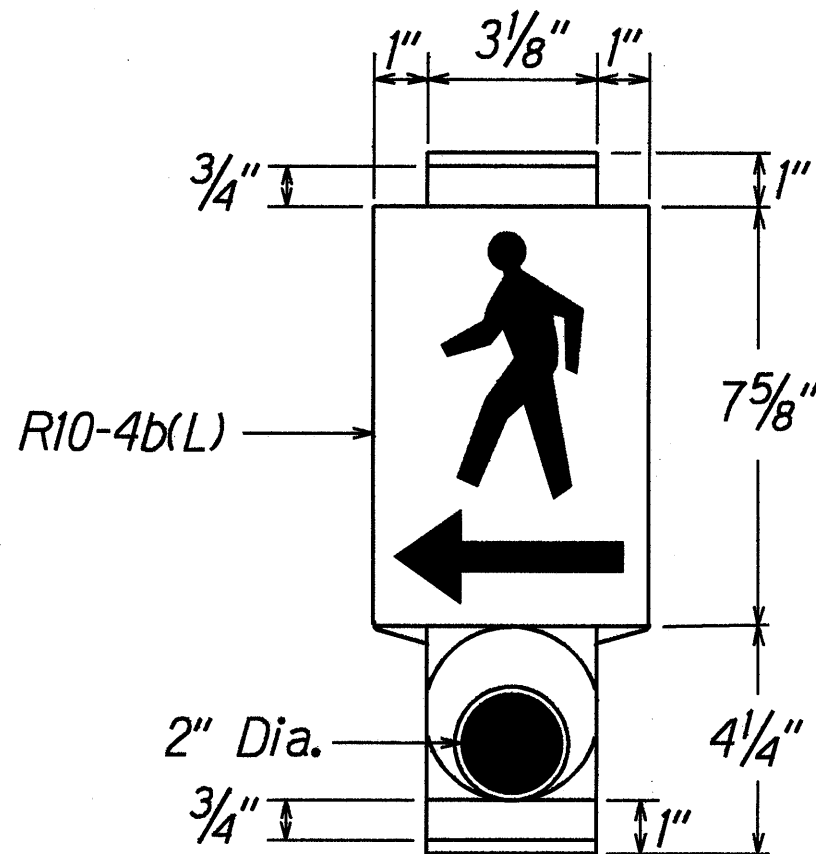
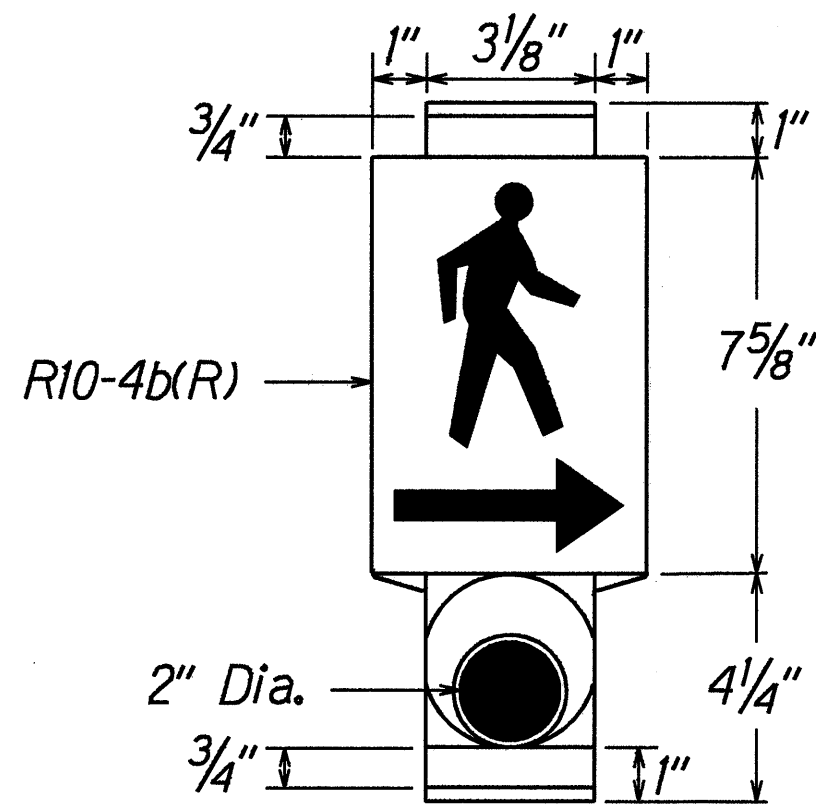


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	130A-01-99	2000	13	18



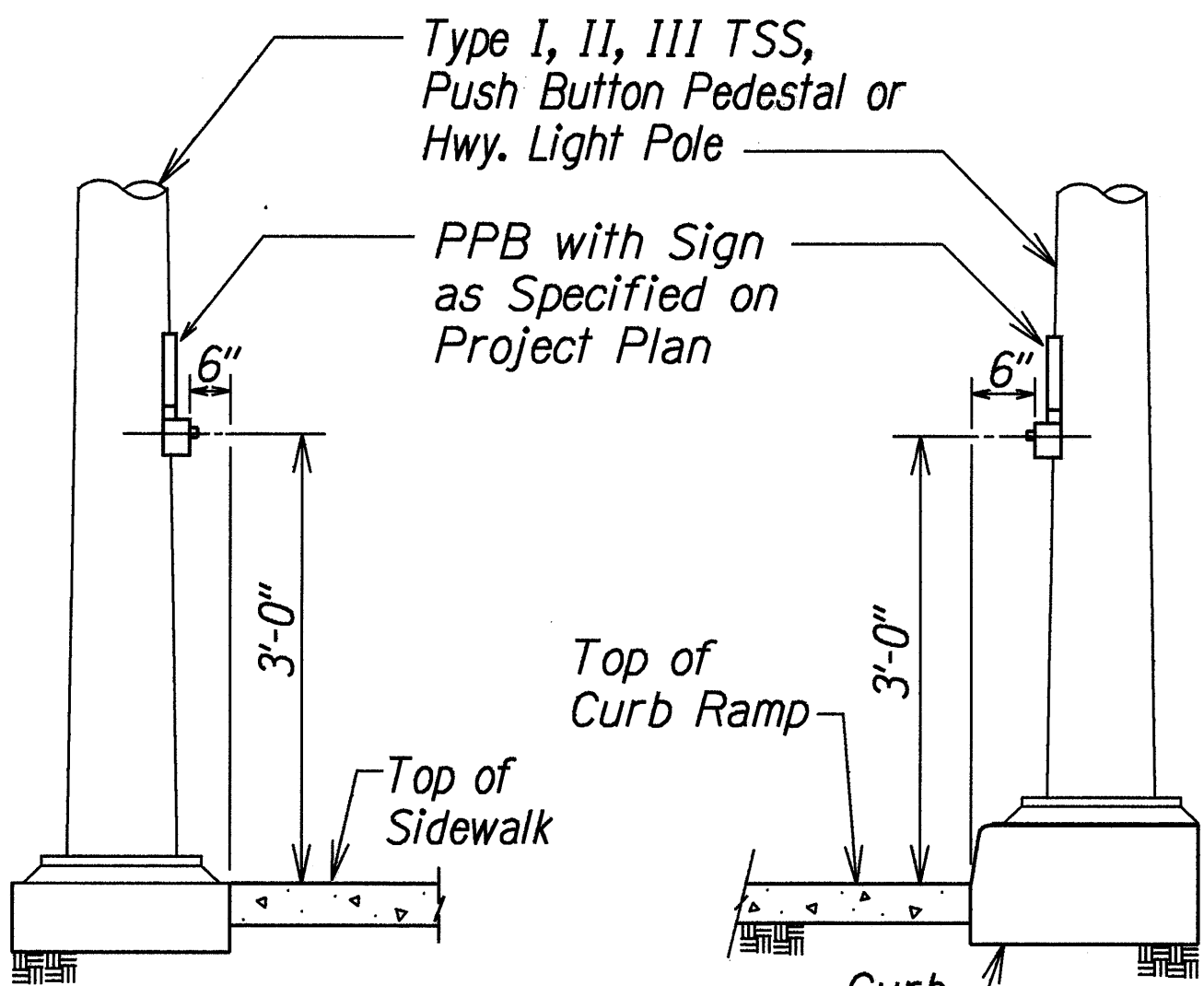
Left



Right

PEDESTRIAN PUSH BUTTON WITH SIGN

Man, Arrow & Push Button - White
Background - Black



DETAIL "A"

DETAIL "B"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED	DRAWN BY M. Takahashi	10/1/98
DESIGNED BY Richard Akana	CHECKED BY	
DATE 3/21/00		


RG/1/98


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAILS
PEDESTRIAN PUSHBUTTON DETAILS
KEAAU-PAHOA ROAD
Installation of Traffic Signals at
Pahoa-Kapoho Road
Project No. 130A-01-99
Scale: Not to scale Date: April, 2000
SHEET No. 1 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	130A-01-99	2000	14	18

STATE RIGHT-OF-WAY BACKFILL NOTES

 Trench Backfill Material "A"
Beach Sand, Earth, or Earth
and Gravel. If Earth and Gravel
used, the maximum shall contain
not more than 50% by volume of
rock particles. Maximum 8" loose
fill per lift. Obtain 95% compaction
for each lift.

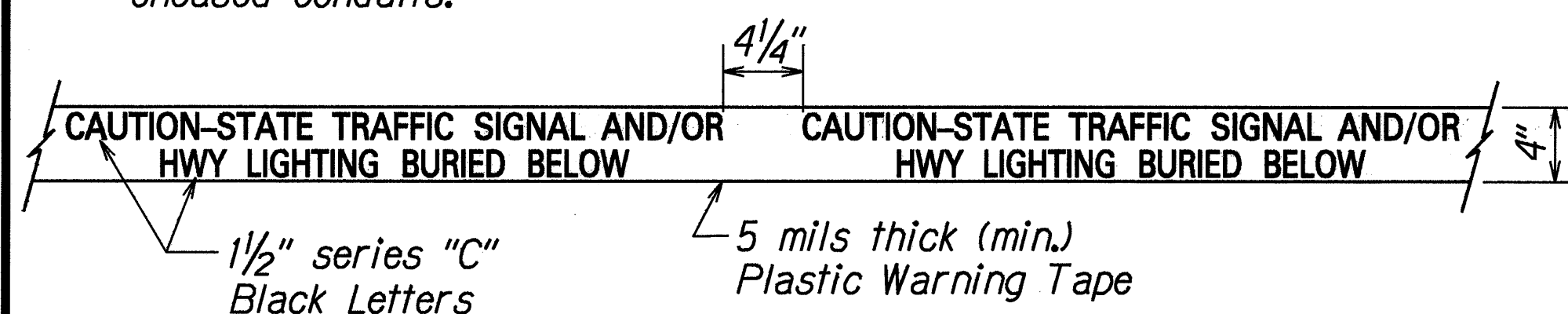


Concrete
3000 psi compressive strength
@ 3 days.

NOTE: Base Course & Sub-Base Course per 1994 State Standard Specifications for Highway Construction.

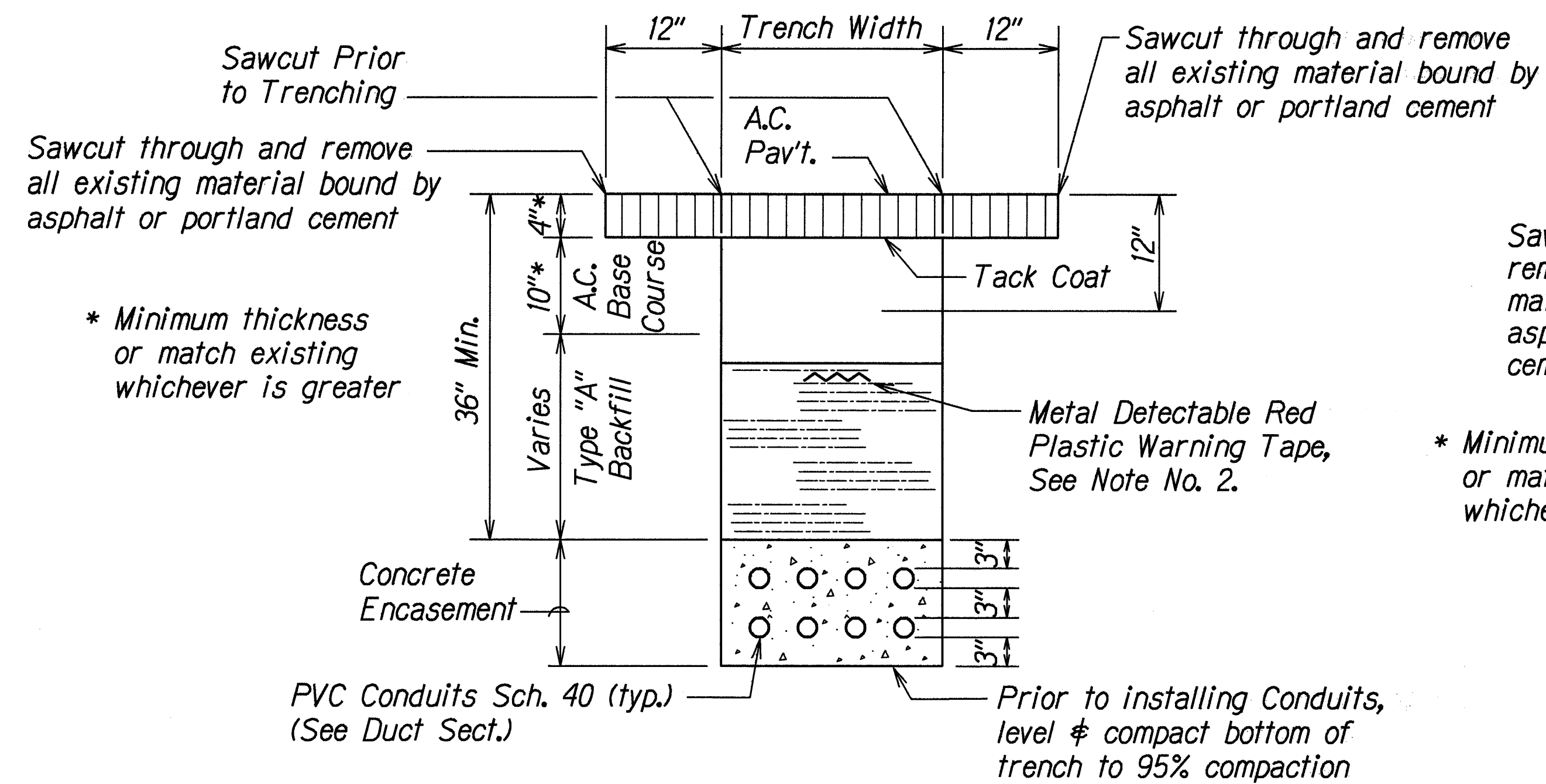
GENERAL NOTES

1. If trench is located on unpaved area, the Contractor shall replace 10" A.C. Base Course and 4" A.C. Pavement with Type "A" backfill material.
2. The Metal Detectable Red Plastic Warning Tape shall be a minimum 5 mils thick and 4" wide with a continuous metallic backing and corrosion resistant $1\pm$ mil thick foil core. The message on the tape shall read, "CAUTION - STATE TRAFFIC SIGNAL AND/OR HWY LIGHTING BURIED BELOW," utilizing $1\frac{1}{2}$ inches series "C" black lettering. The message will be repeated with a $4\frac{1}{4}$ " spacing between top line of message and start of next repeat.
3. The Contractor may begin backfilling the conduit trench when the concrete reaches 3000 psi compressive strength after 3 days.
4. Maximum four (4) Conduits per row for multiple conduit duct section.
5. For direct buried duct sections, the concrete jacket required at the conduit by-pass for various utilities, shall not be paid for separately but considered incidental to the direct buried conduits.
6. After installing all the traffic signal cables, the Contractor shall duct seal all conduits in the pullboxes, traffic signal standards and traffic signal controller cabinet concrete base. The duct seal material shall be approved by the Traffic Signal Inspector/Engineer and shall not be paid for separately but considered incidental to the direct buried and/or concrete encased conduits.

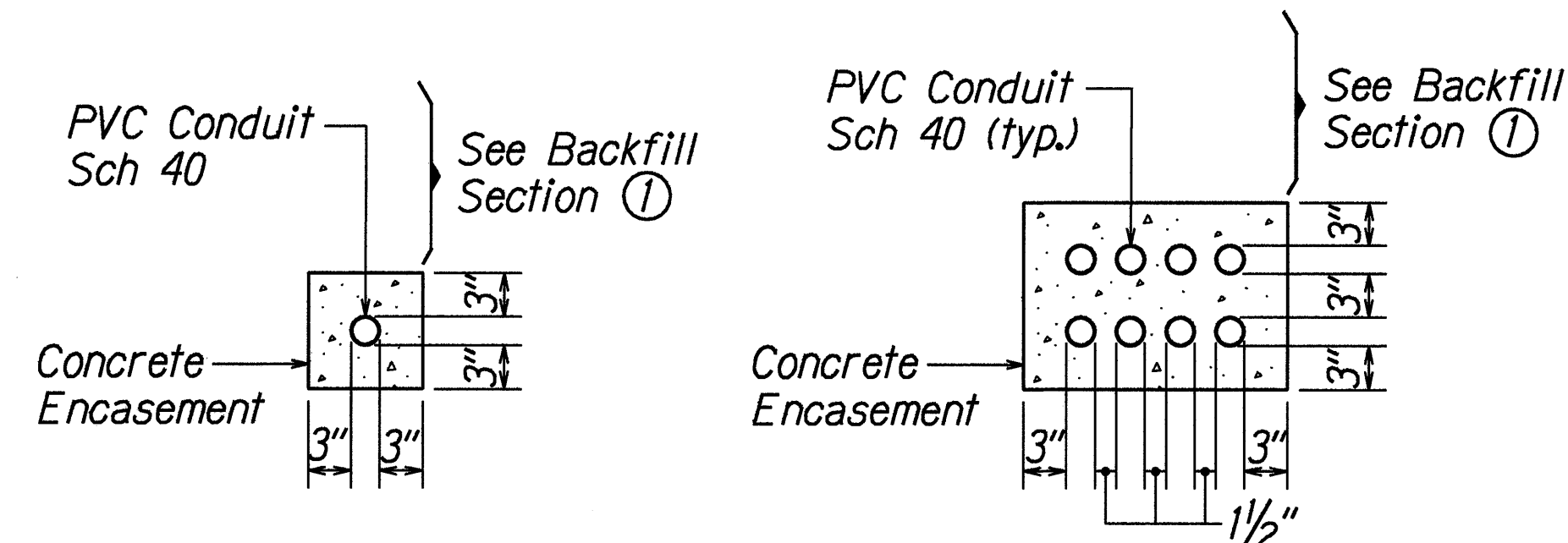


For additional information see note no. 2.

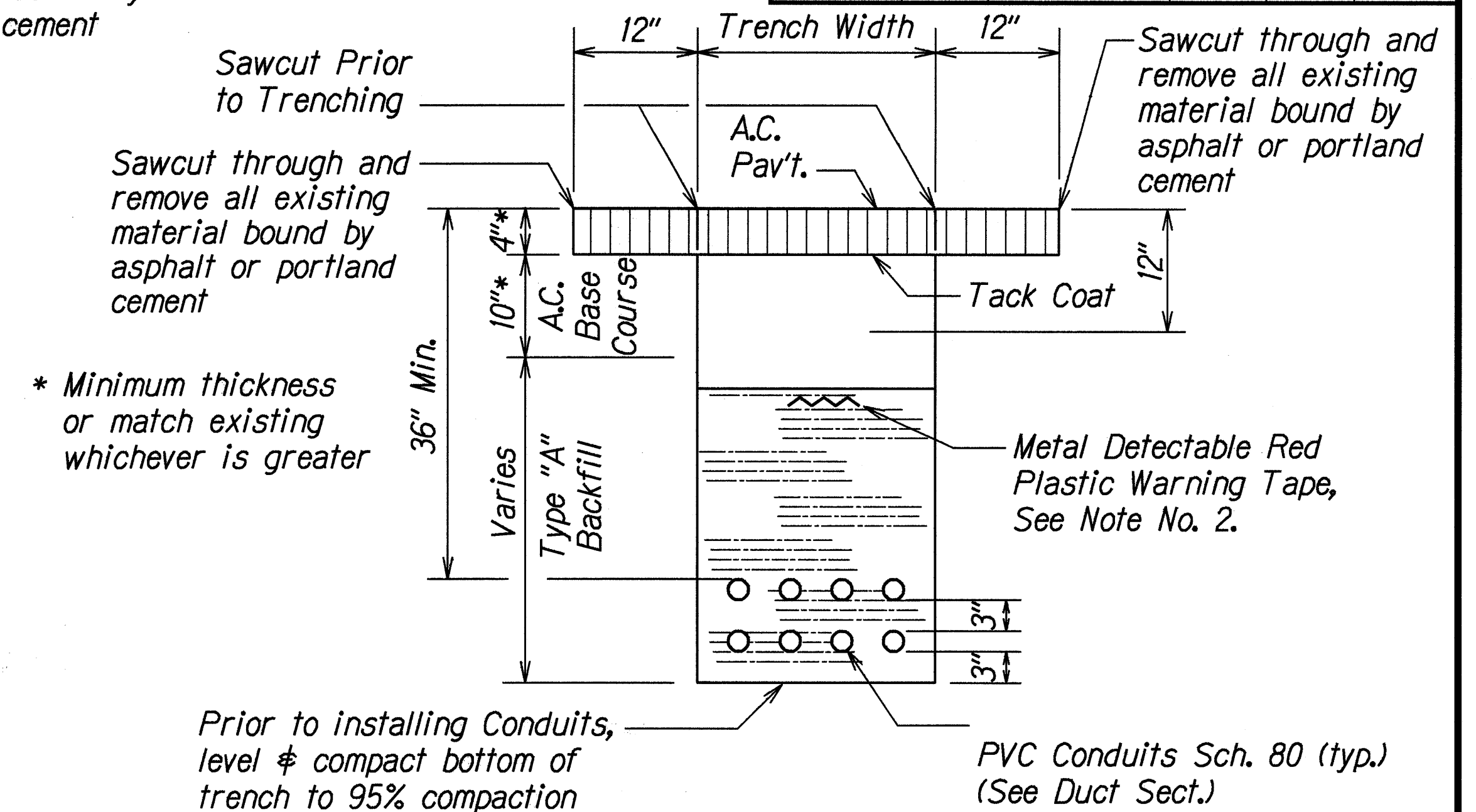
METAL DETECTABLE RED PLASTIC WARNING TAPE



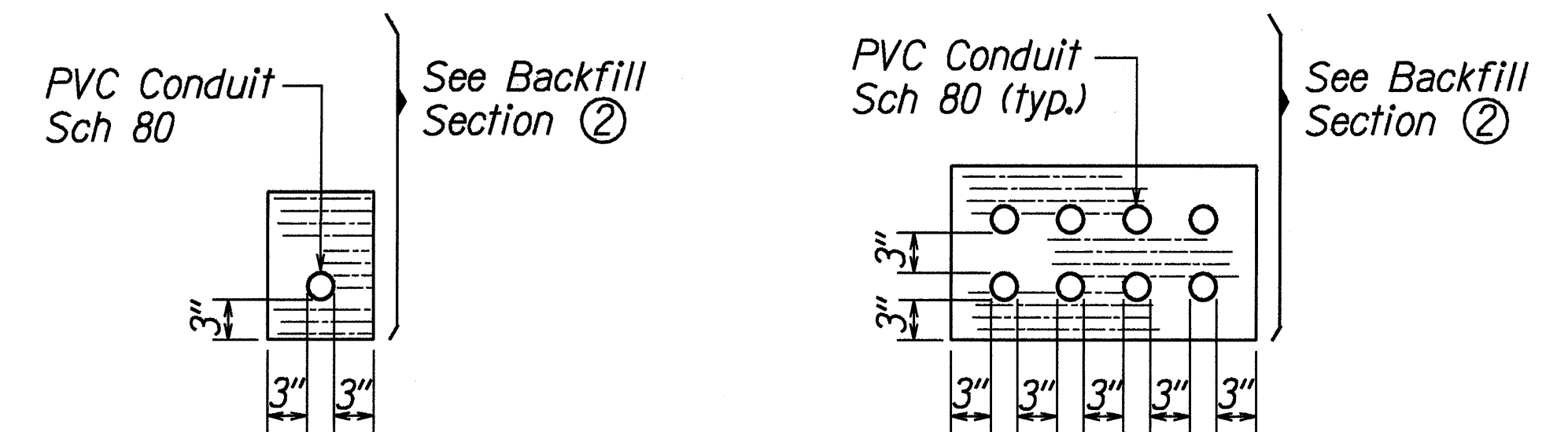
① TYPICAL BACKFILL SECTION
WITH CONCRETE ENCASED DUCTS



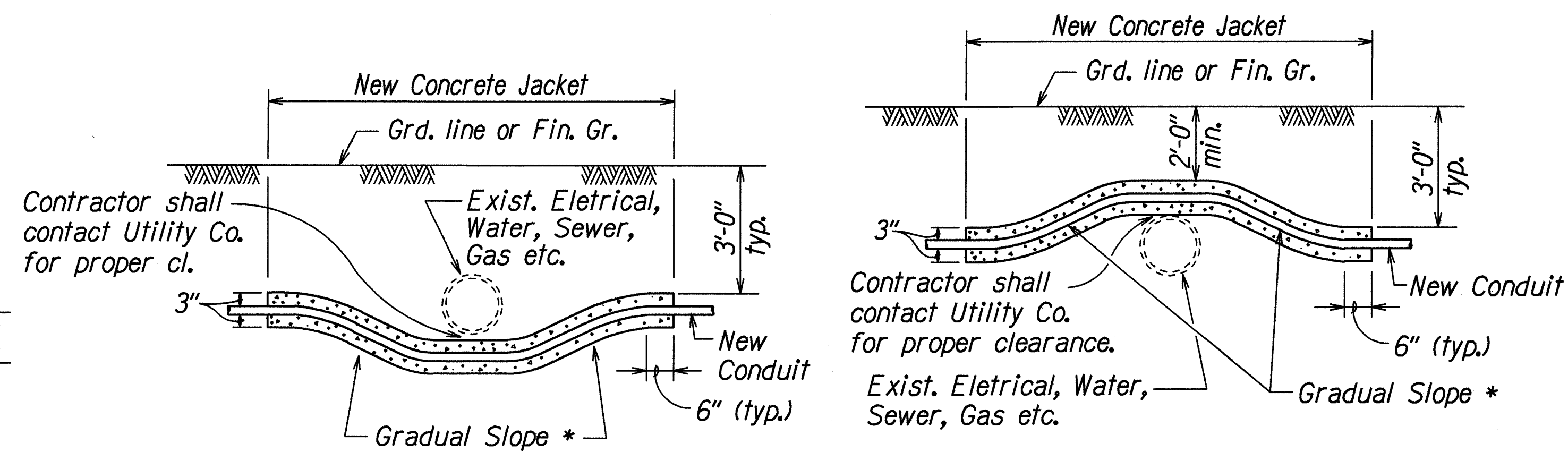
SINGLE CONDUIT MULTIPLE CONDUIT
DUCT SECTIONS - CONC. ENCASED



② TYPICAL BACKFILL SECTION
DIRECT BURIED DUCTS



SINGLE CONDUIT MULTIPLE CONDUIT
DUCT SECTIONS - DIRECT BURIED



* To be determined by County Electrical Inspector/Engineer

CONDUIT BY-PASS DETAIL AT VARIOUS UTILITIES

Not to Scale

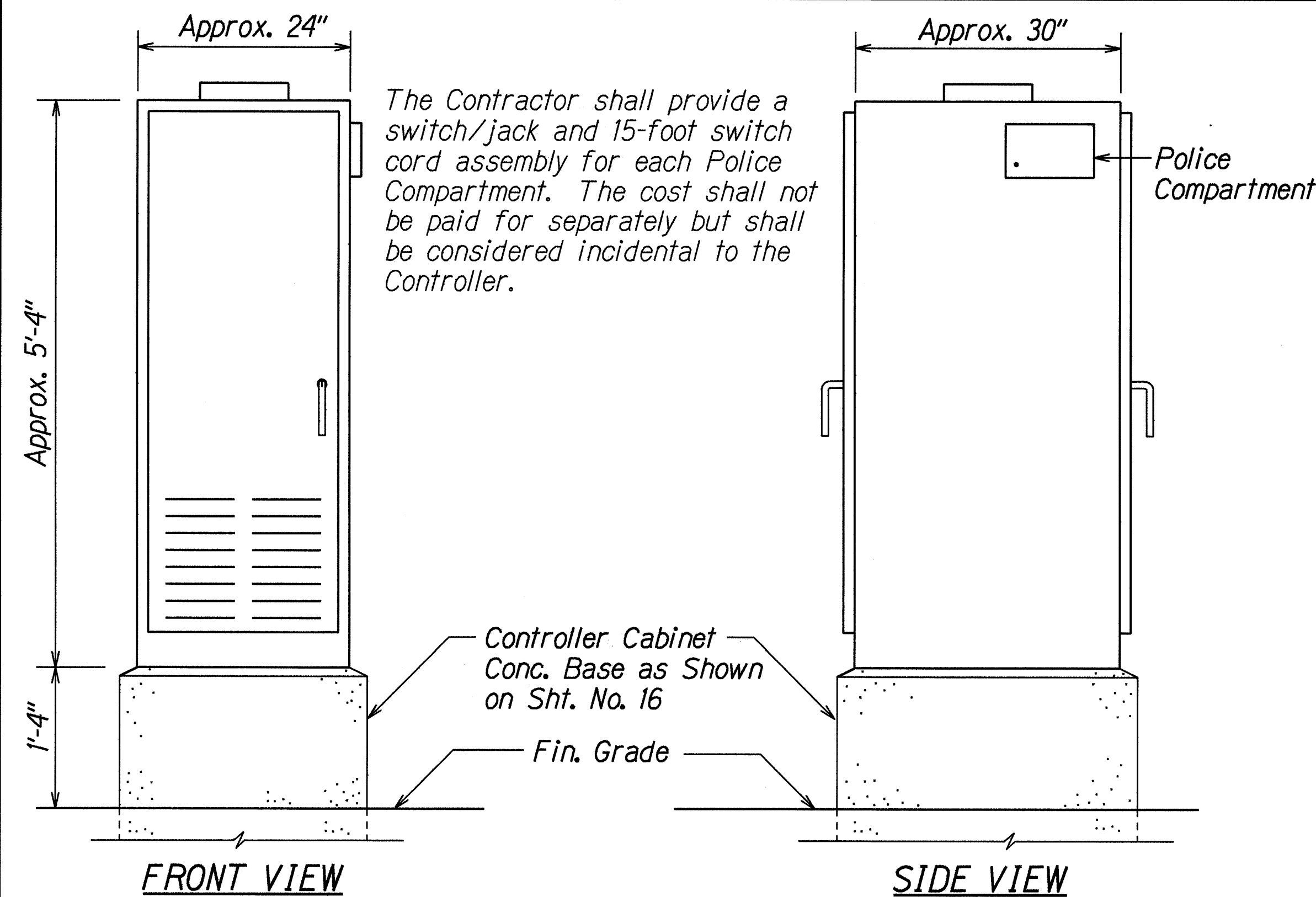
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL DETAILS

KEAAU-PAHOA ROAD
Installation of Traffic Signals at
Pahoa-Kapoho Road
Project No. 130A-01-99

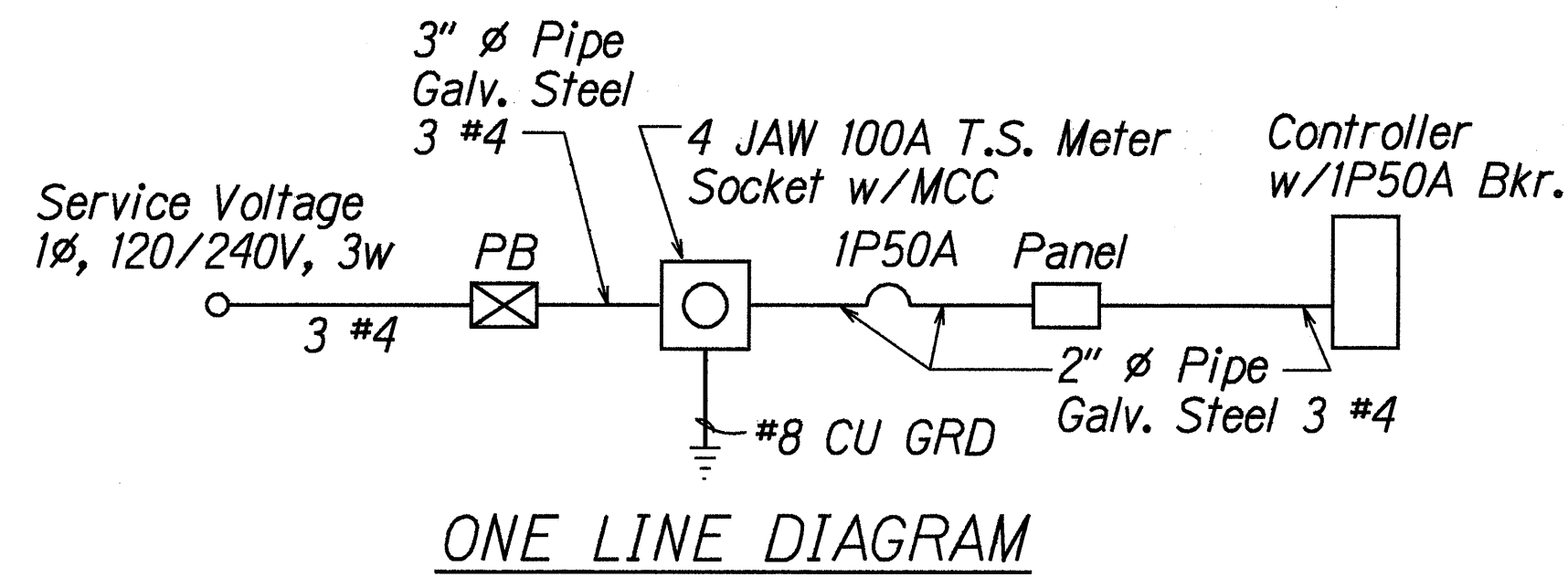
Not to Scale Date: April, 2000

SHEET No. 2 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	130A-01-99	2000	15	18



TYPE 332A TRAFFIC SIGNAL
CONTROLLER CABINET DETAIL
N.T.S



ONE LINE DIAGRAM

NOTES:

- Contractor shall make all electrical connections to controller, provide 2-1P50A breaker, ground and concrete-encased 2" conduit.
- All conduits to contain a polyolefin pull line (Jet Line cat. #232 or equivalent).
- Pedestal conduits shall be hot-dipped galv. after fabrication.
 - All fastening bolts, nuts & washers shall be stainless steel.
 - Provide 4" cl. in front of meter.
 - * Sealable enclosure 6"Dx10"Wx12"H.

ELECTRICAL SERVICE DETAIL

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAILS

KEAAU-PAHOA ROAD

Installation of Traffic Signals at

Pahoā-Kapoho Road

Project No. 130A-01-99

Scale: As Noted

Date: April, 2000

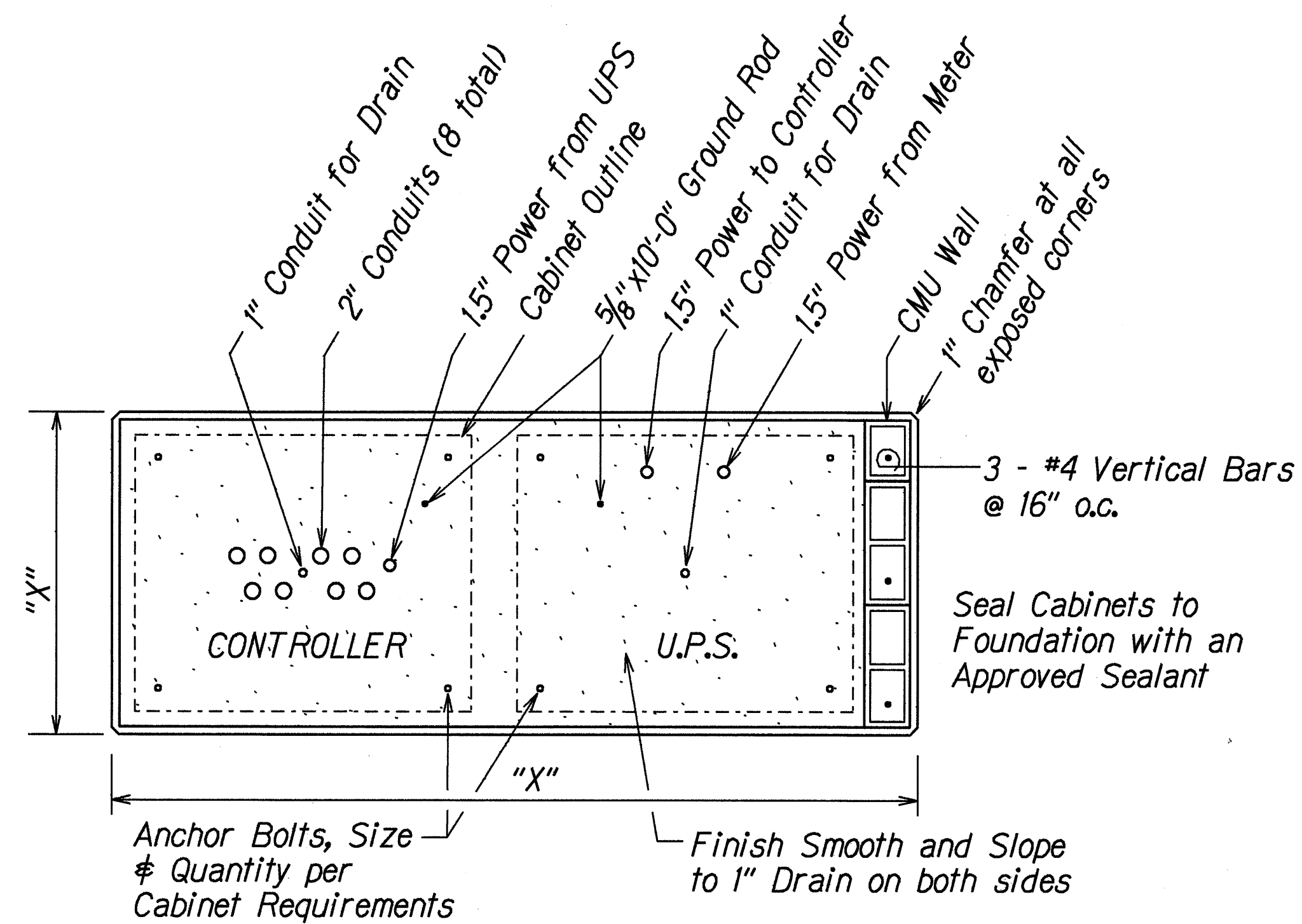
SHEET No. 3

OF 4

SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTES MOVED TO 10/1/00	DRAWN BY	
10/1/00	CHECKED BY	
10/1/00	DESIGNED BY	
10/1/00	CONSTRUCTED BY	
10/1/00	CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	130A-01-99	2000	16	18

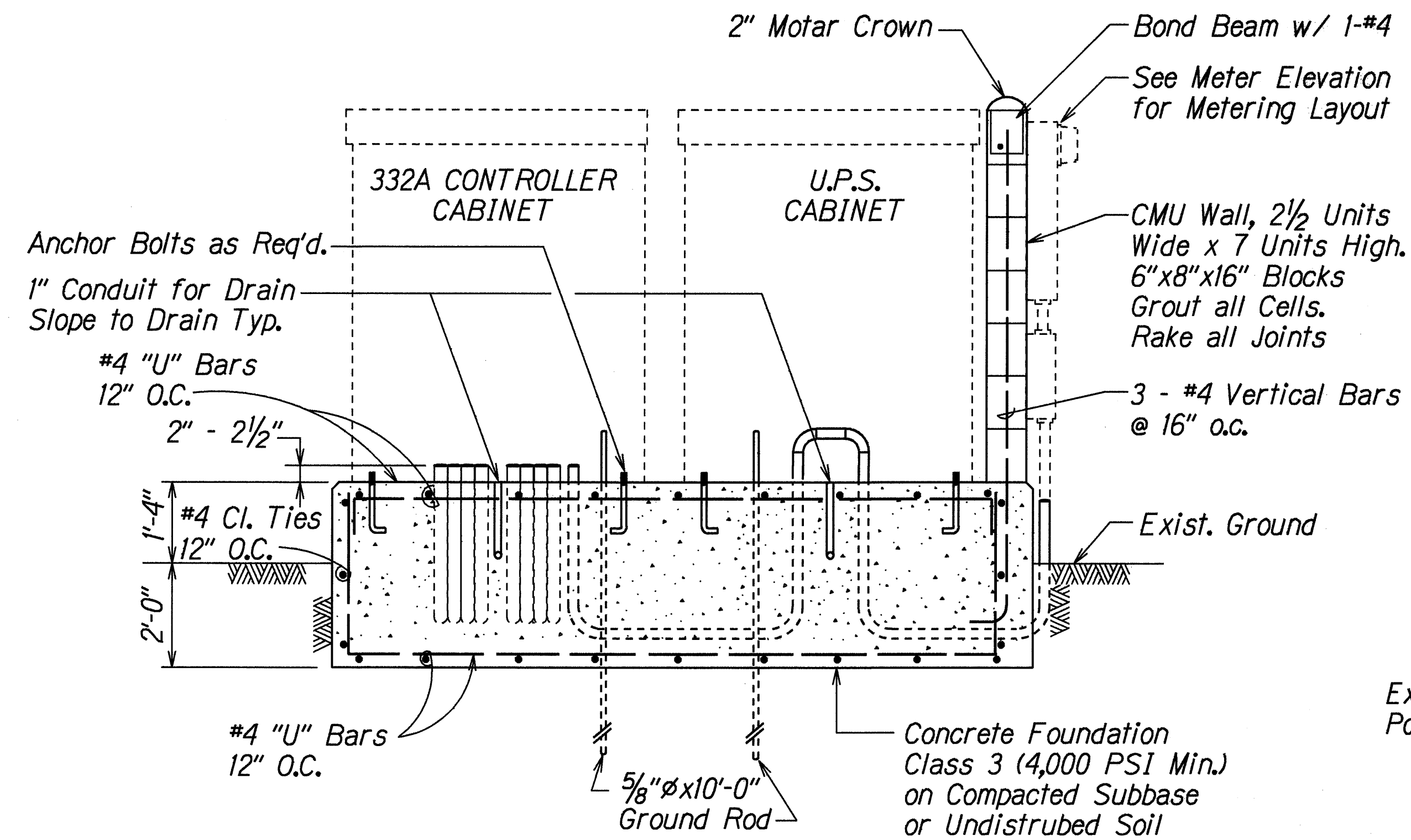


"X" = Size of Concrete Foundation.
To be 3" larger than Cabinet all around.

NOTE: The Contractor shall verify all conduit requirements prior to installation.

NOTE: The Contractor shall verify all conduit requirements prior to installation.

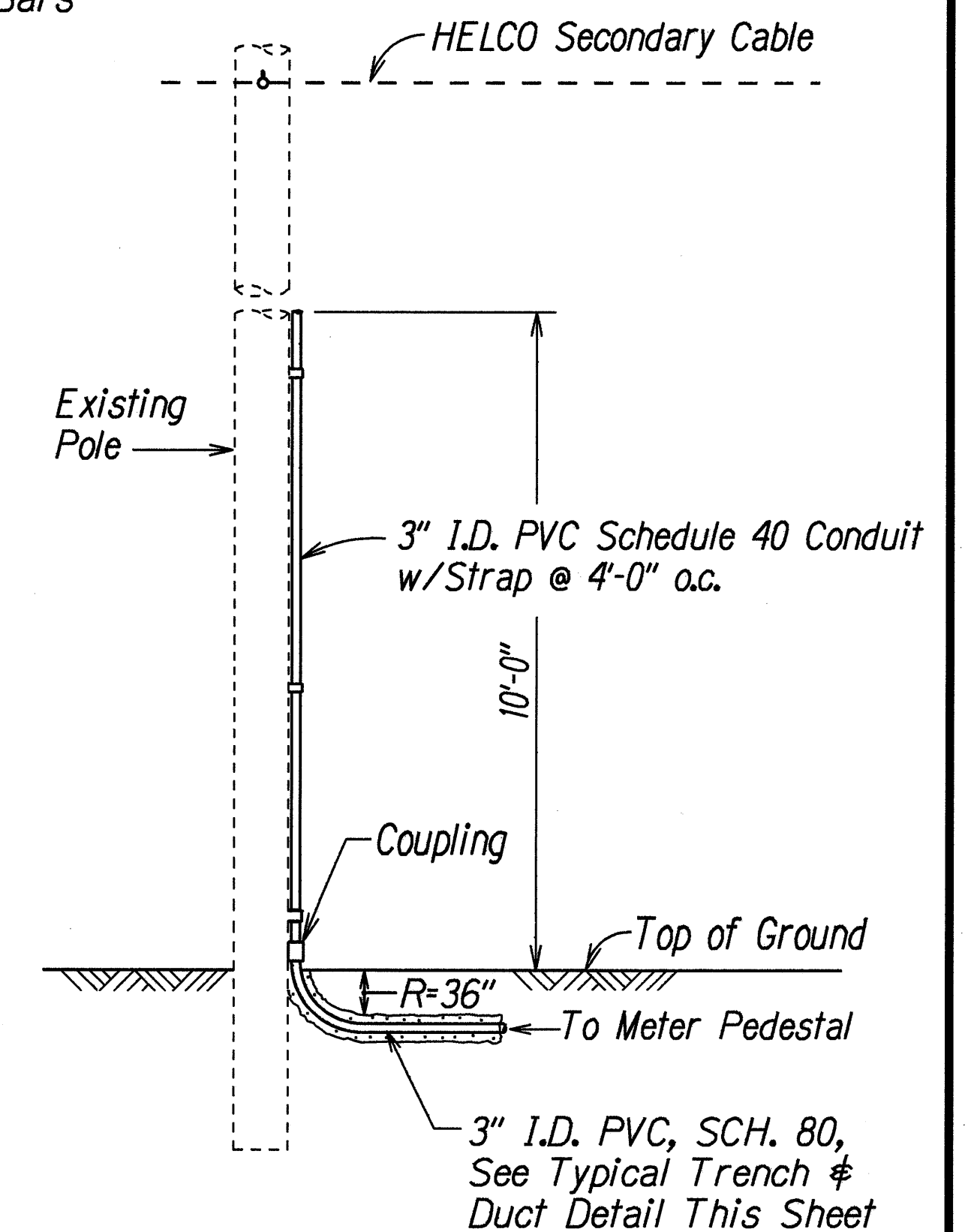
PLAN



SECTION

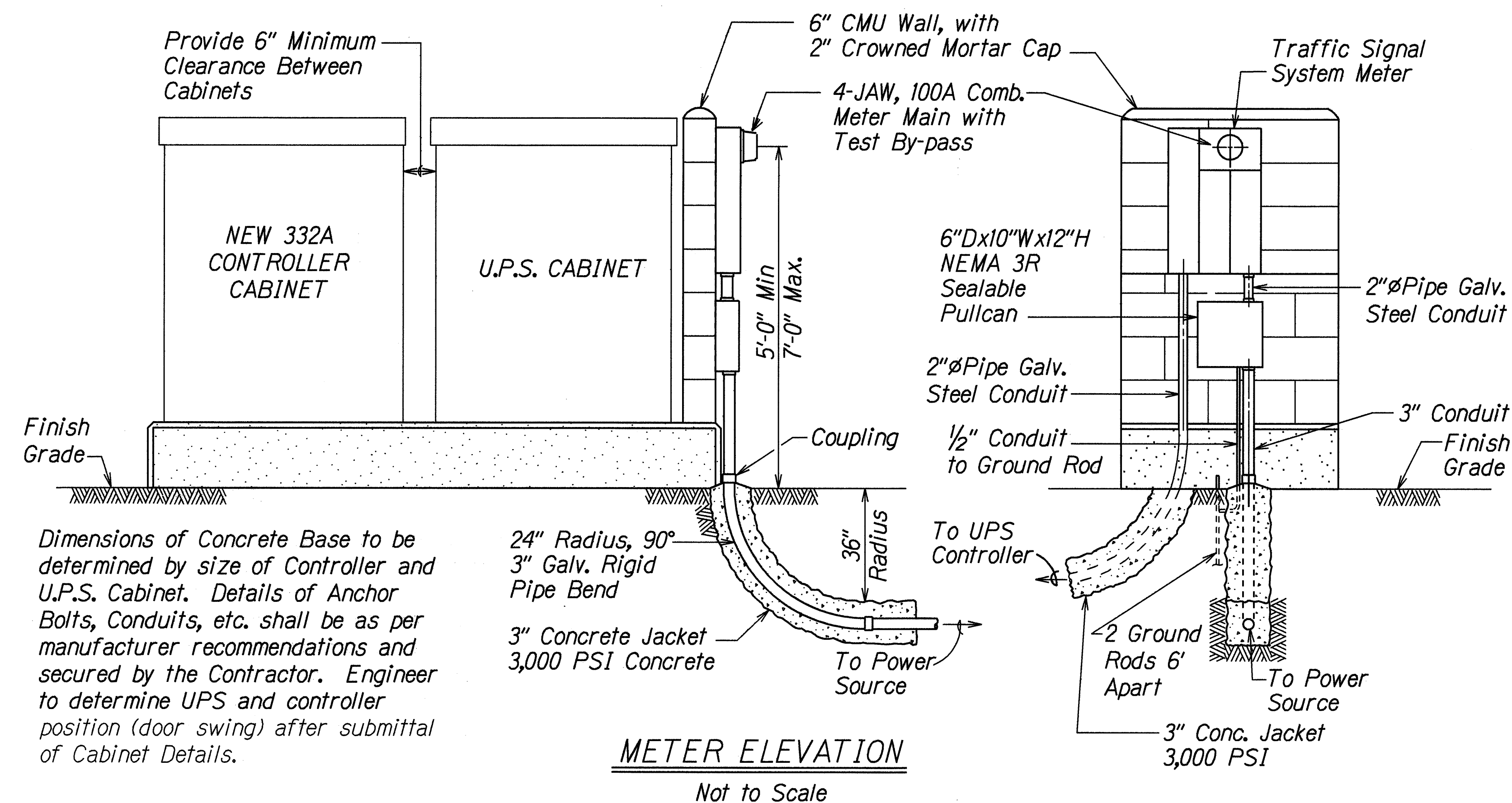
UNINTERRUPTED POWER SUPPLY (UPS) UNIT & CONTROLLER CABINET FOUNDATION

Not to Scale



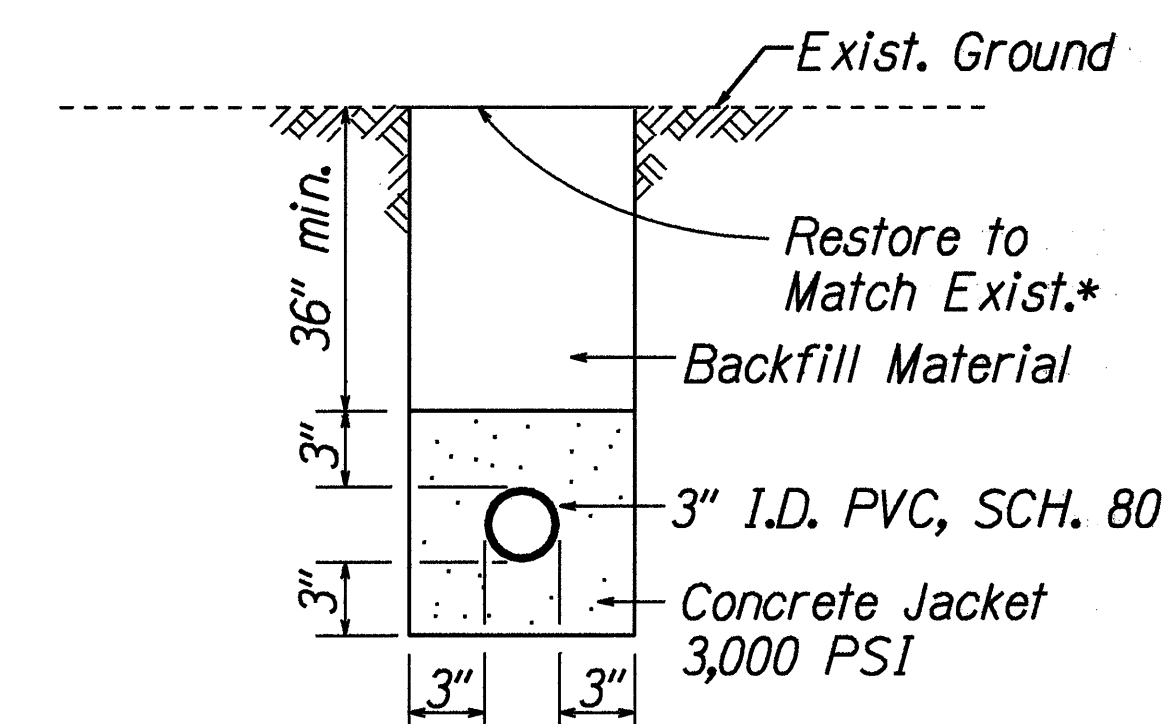
SERVICE POLE DETAIL

Not to Scale



METER ELEVATION

Not to Scale



TYPICAL TRENCH AND CONCRETE JACKET DETAIL FOR SERVICE CONNECTION

Not to Scale

*Add 6-Inches top soil if necessary. This work shall be considered incidental to Service Ductline.

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAIL

KEAAU-PAHOA ROAD

Installation of Traffic Signals

at Pahoa-Kapoho Road

Project No. 130A-01-99

Scale: As Noted

Date: May, 2000

SHEET No. 4 OF 4

SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
APPROVED BY	
NOTED BY	
REVISIONS	
1. 3/1/00	
2. 3/1/00	
3. 3/1/00	
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