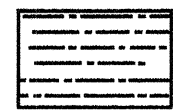



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19A-01-98	2000	17	22

STATE RIGHT-OF-WAY BACKFILL NOTES

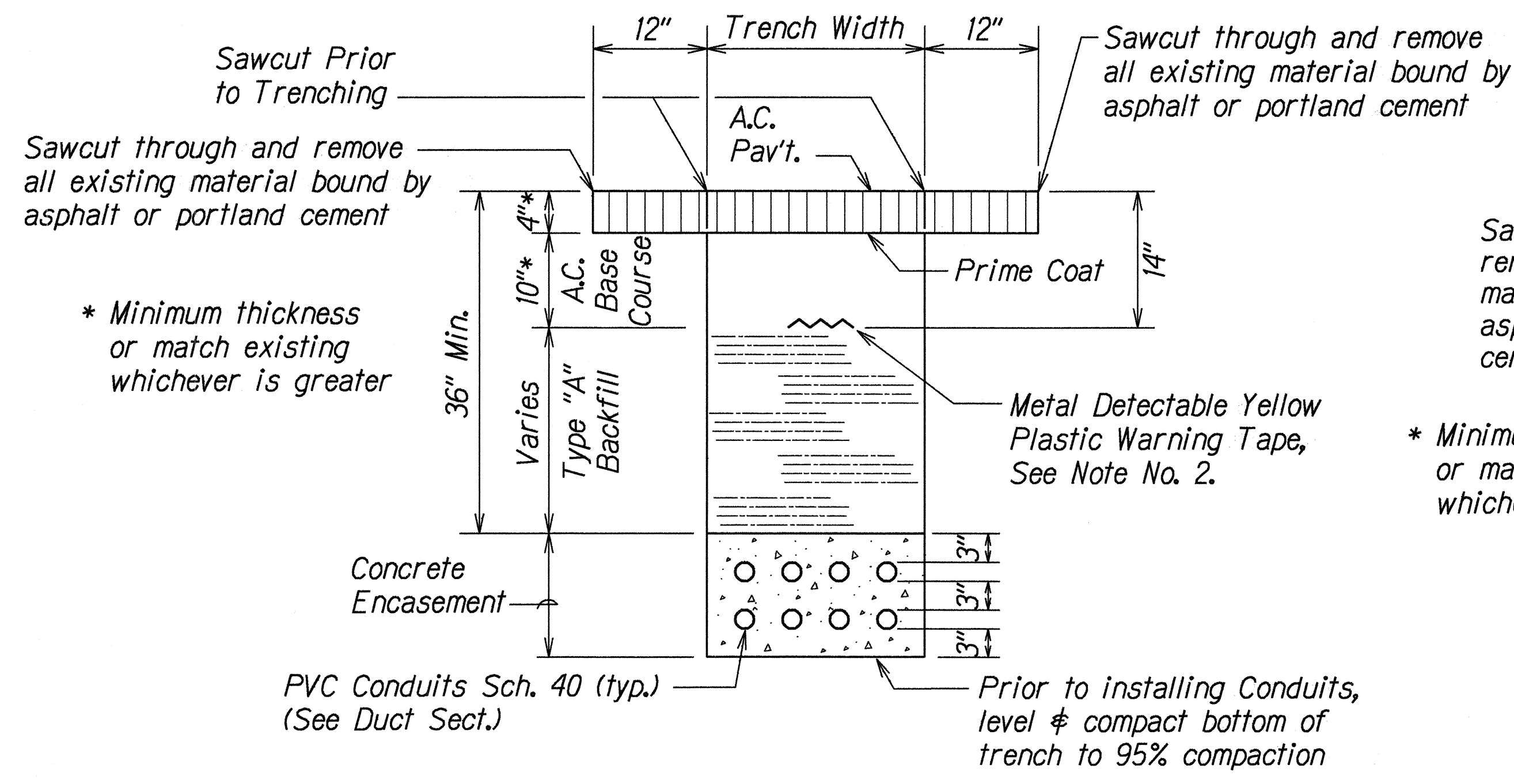
 Trench Backfill Material "A"
Beach Sand, Earth, or Earth and Gravel. If Earth and Gravel used, the maximum shall contain not more than 50% by volume of rock particles. Maximum 8" loose fill per lift. Obtain 95% compaction for each lift.

 Concrete
3000 psi compressive strength @ 3 days, unless noted otherwise.

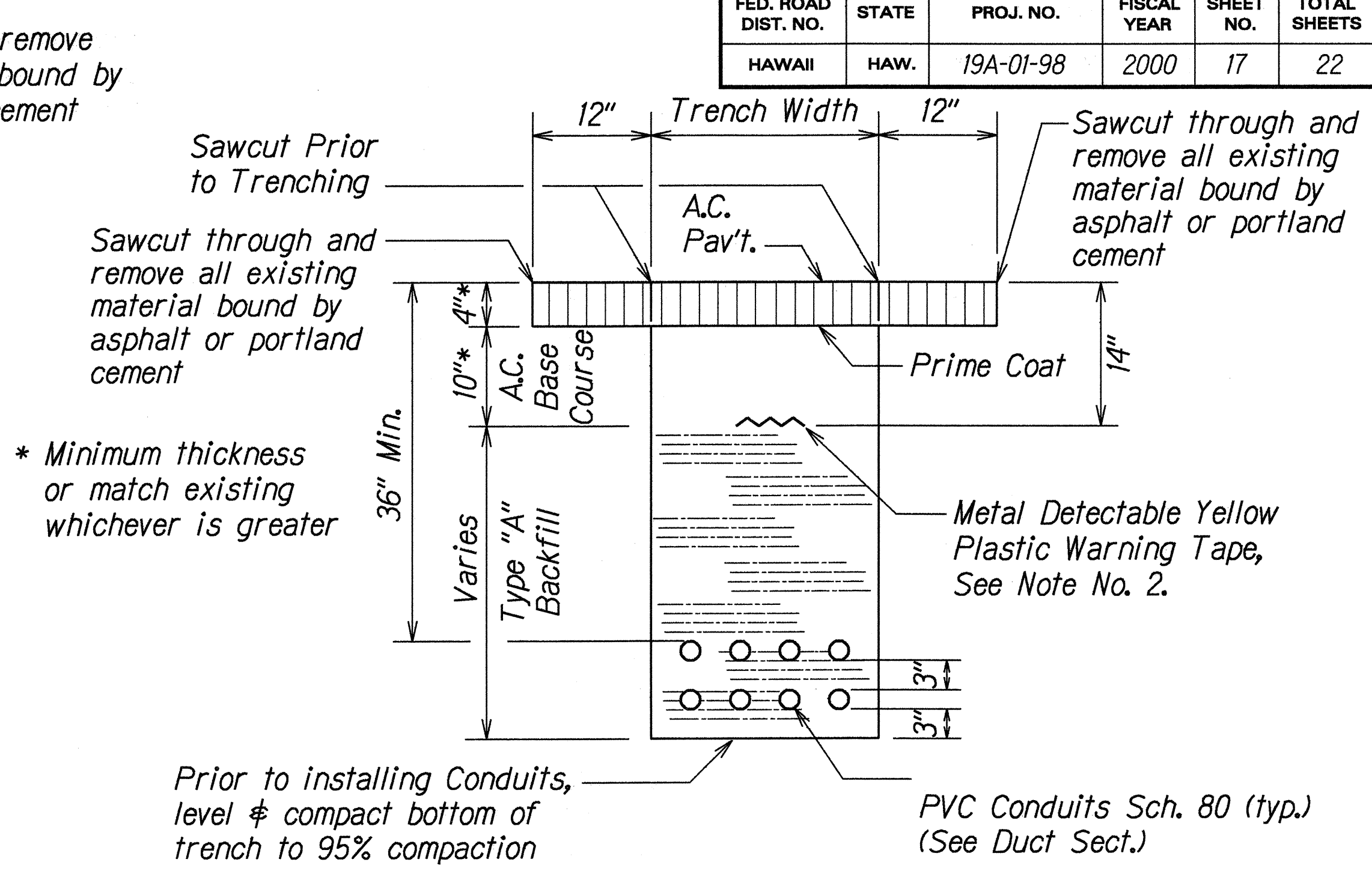
NOTE: Base Course & Sub-Base Course per 1994 State Standard Specifications for Highway Construction.

GENERAL NOTES

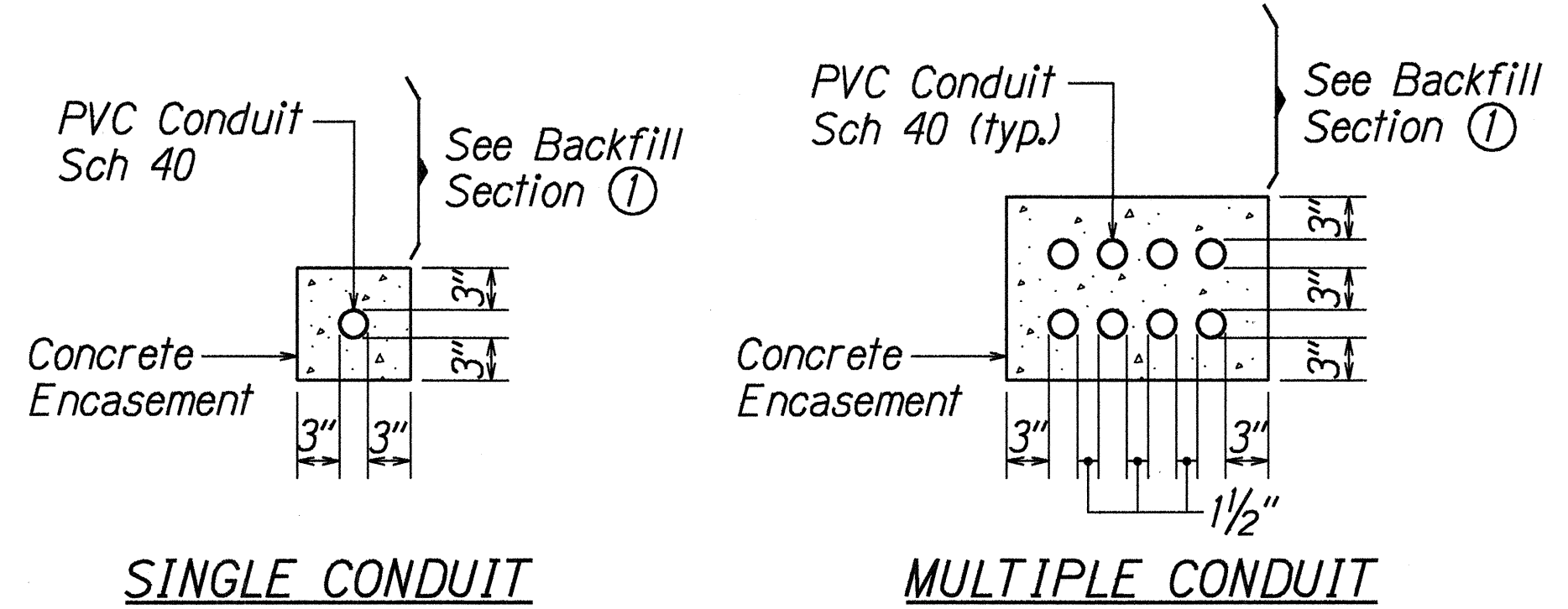
- If trench is located on unpaved area, the Contractor shall replace 10" A.C. Base Course and 4" A.C. Pavement with Type "A" backfill material.
- The Metal Detectable Yellow Plastic Warning Tape shall be a minimum 5 mils thick and 4" wide with a continuous metallic backing and corrosion resistant 1± mil thick foil core. The message on the tape shall read, "CAUTION - STATE TRAFFIC SIGNAL AND/OR HWY LIGHTING BURIED BELOW," utilizing 1/2 inches series "C" black lettering. The message will be repeated with a 4 1/4" spacing between top line of message and start of next repeat.
- The Contractor may begin backfilling the conduit trench when the concrete reaches 3000 psi compressive strength after 3 days.
- Maximum four (4) Conduits per row for multiple conduit duct section.
- 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.
- 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.



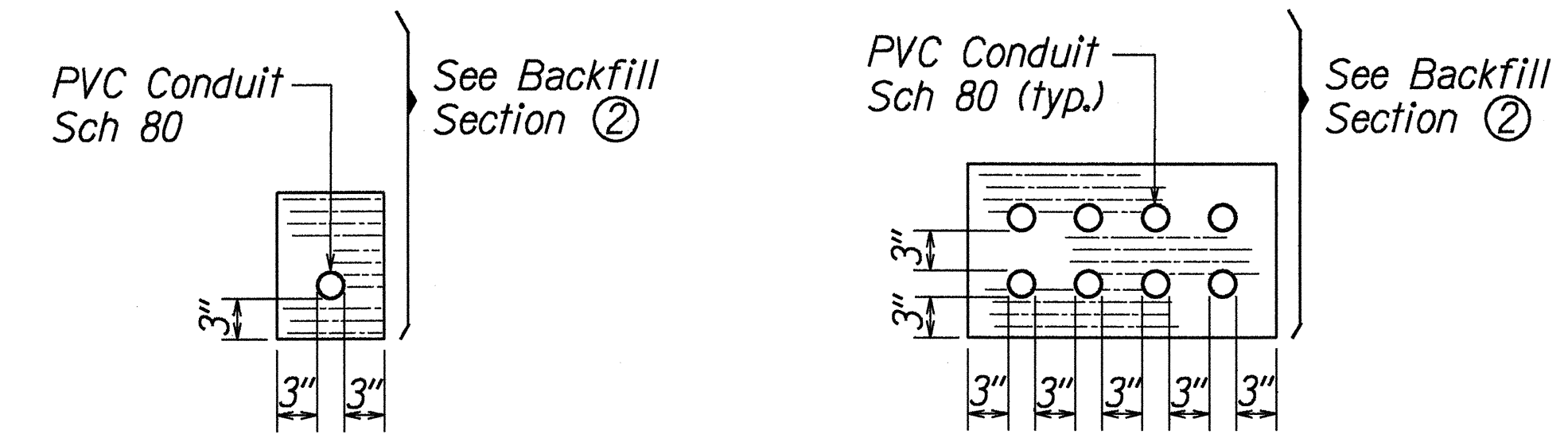
① TYPICAL BACKFILL SECTION WITH CONCRETE ENCASED DUCTS



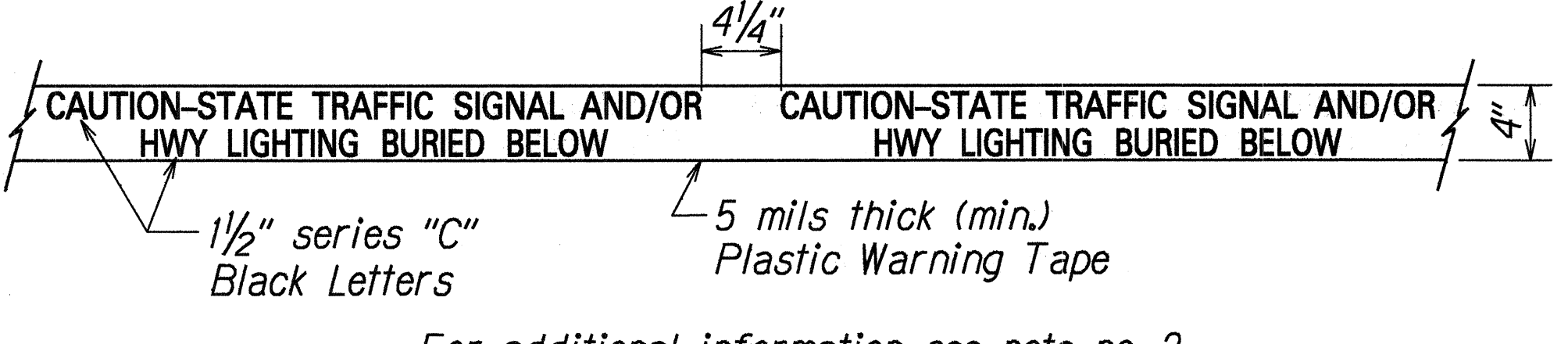
② TYPICAL BACKFILL SECTION DIRECT BURIED DUCTS



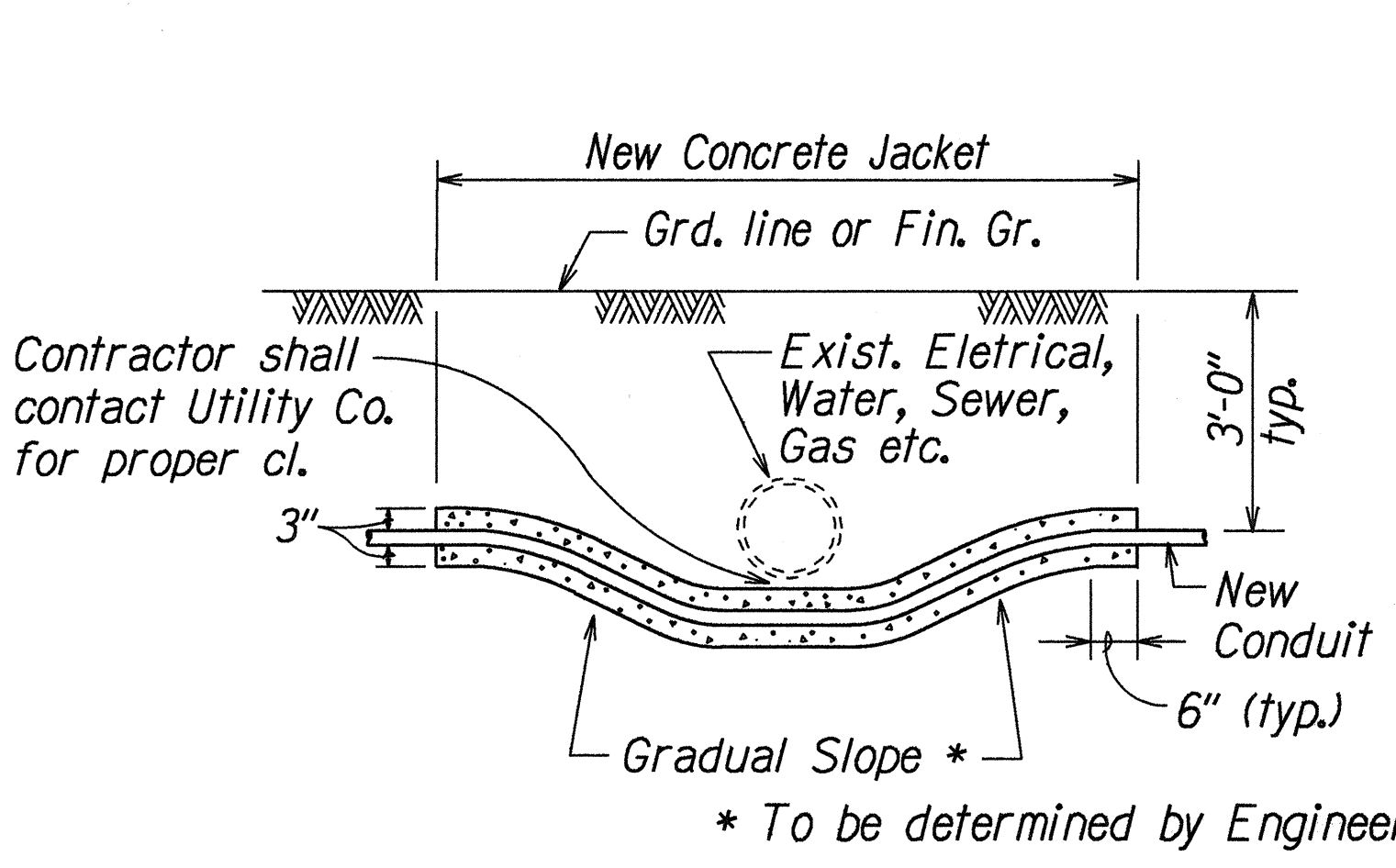
DUCT SECTIONS - CONC. ENCASED



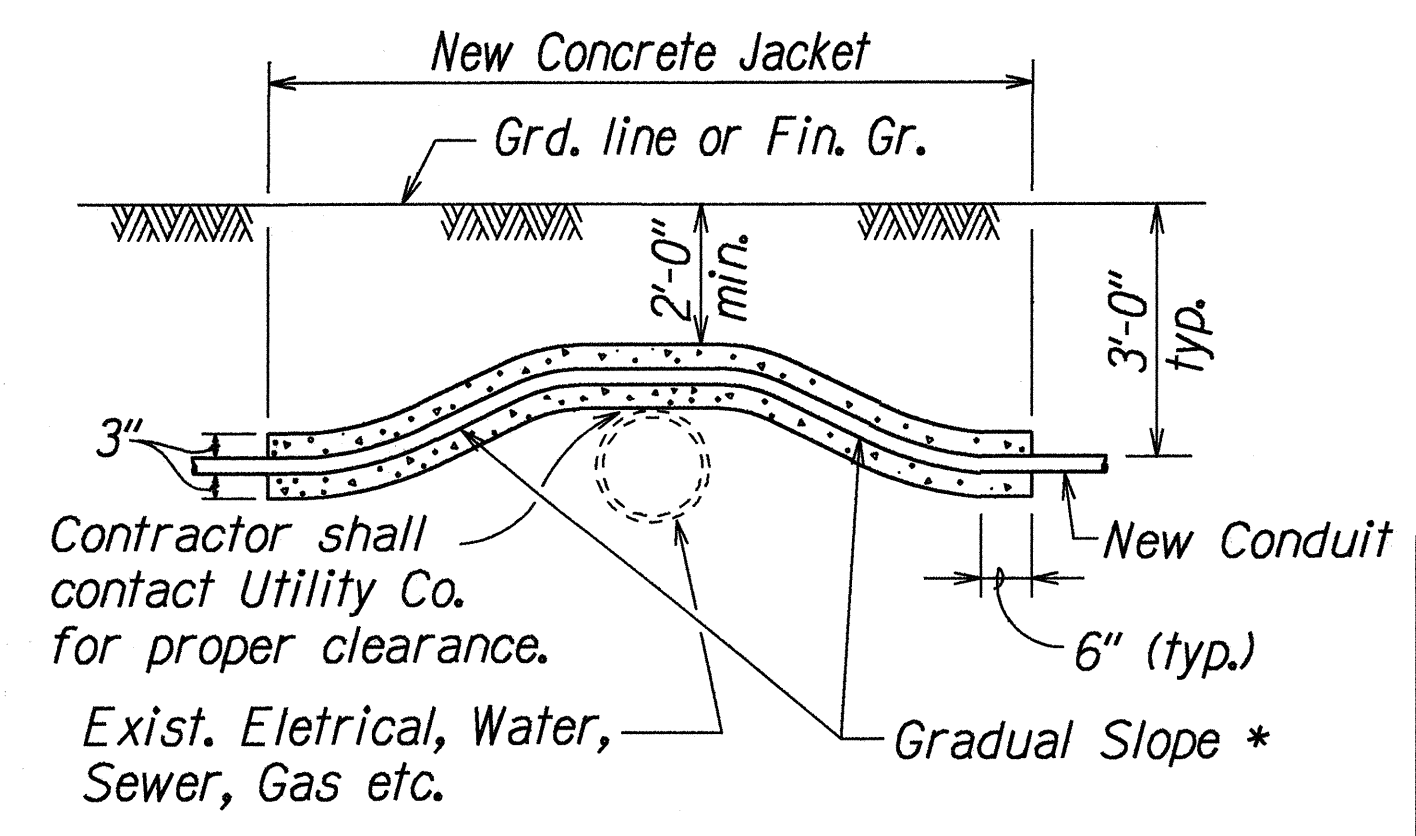
DUCT SECTIONS - DIRECT BURIED



METAL DETECTABLE YELLOW PLASTIC WARNING TAPE



CONDUIT BY-PASS DETAIL AT VARIOUS UTILITIES



Not to Scale

SURVEY PLOTTED BY: _____ DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 QUANTITIES BY: _____
 CHECKED BY: _____

RT/10/98

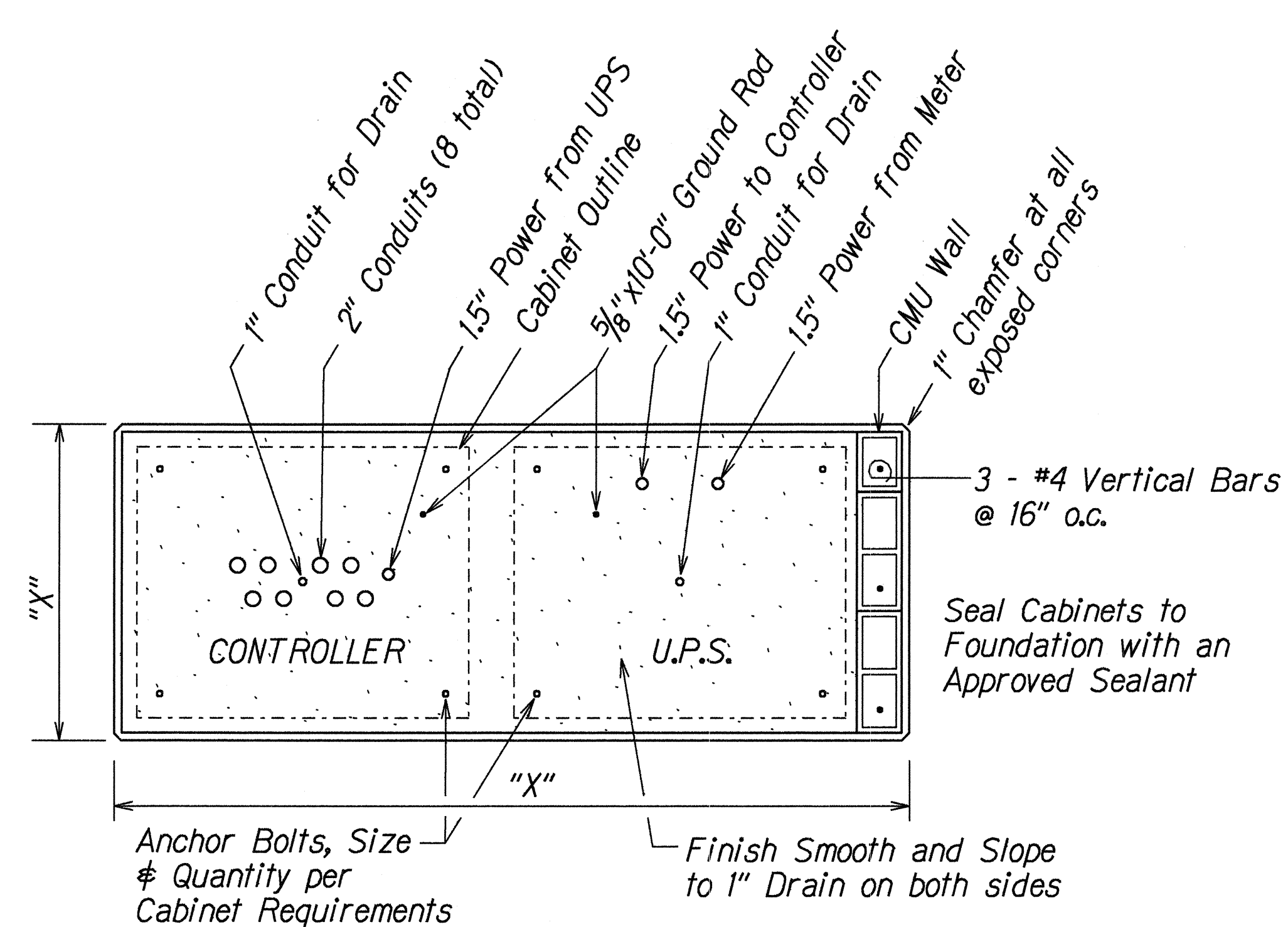
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAILS

QUEEN KAAHUMANU HIGHWAY
Installation of Traffic Signals
at Hina-Lani Street
Project No. 19A-01-98

Not to Scale Date: Feb., 2000
SHEET No. 1 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19A-01-98	2000	18	22

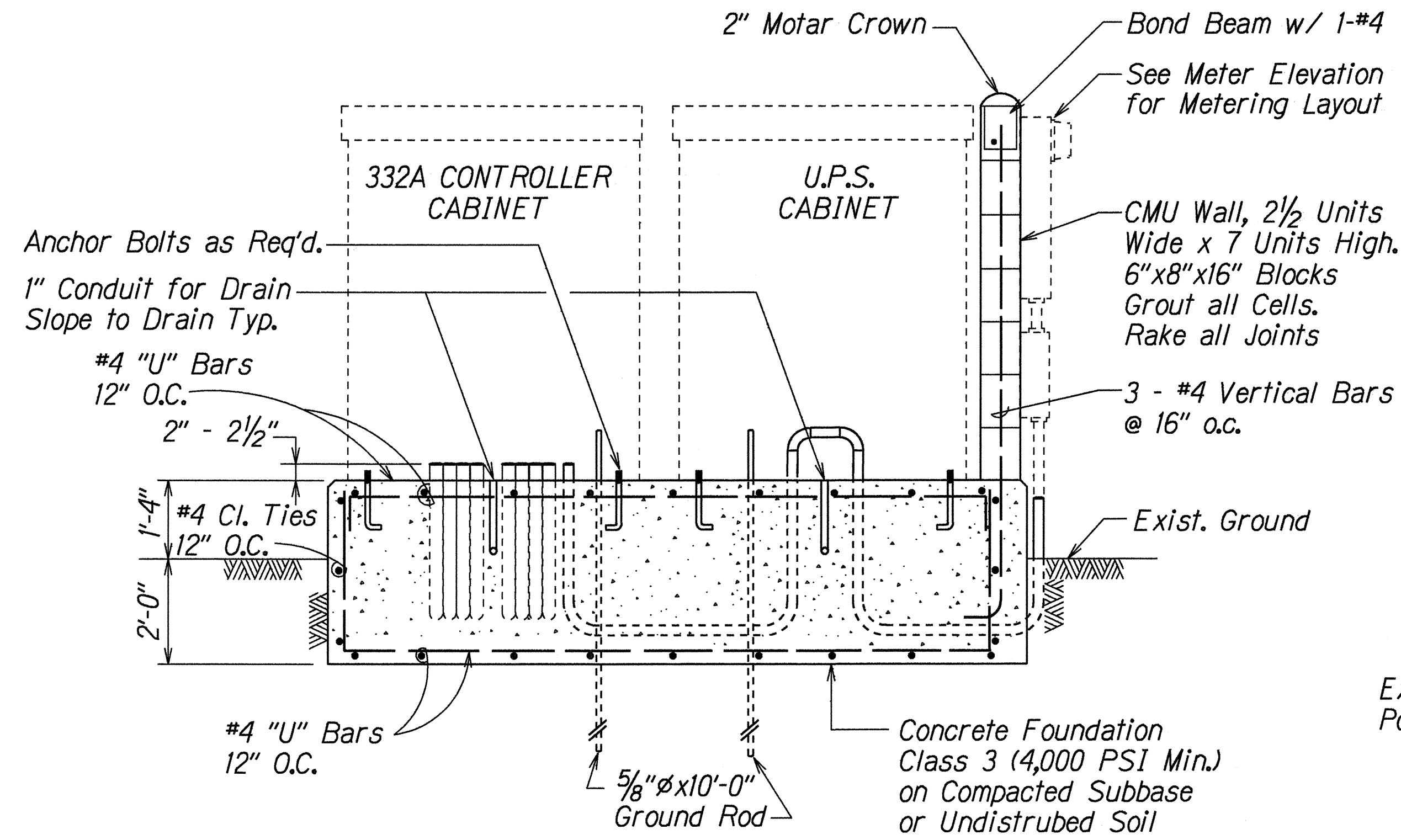


"X" = Size of Concrete Foundation. To be 3" larger than Cabinet all around.

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

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

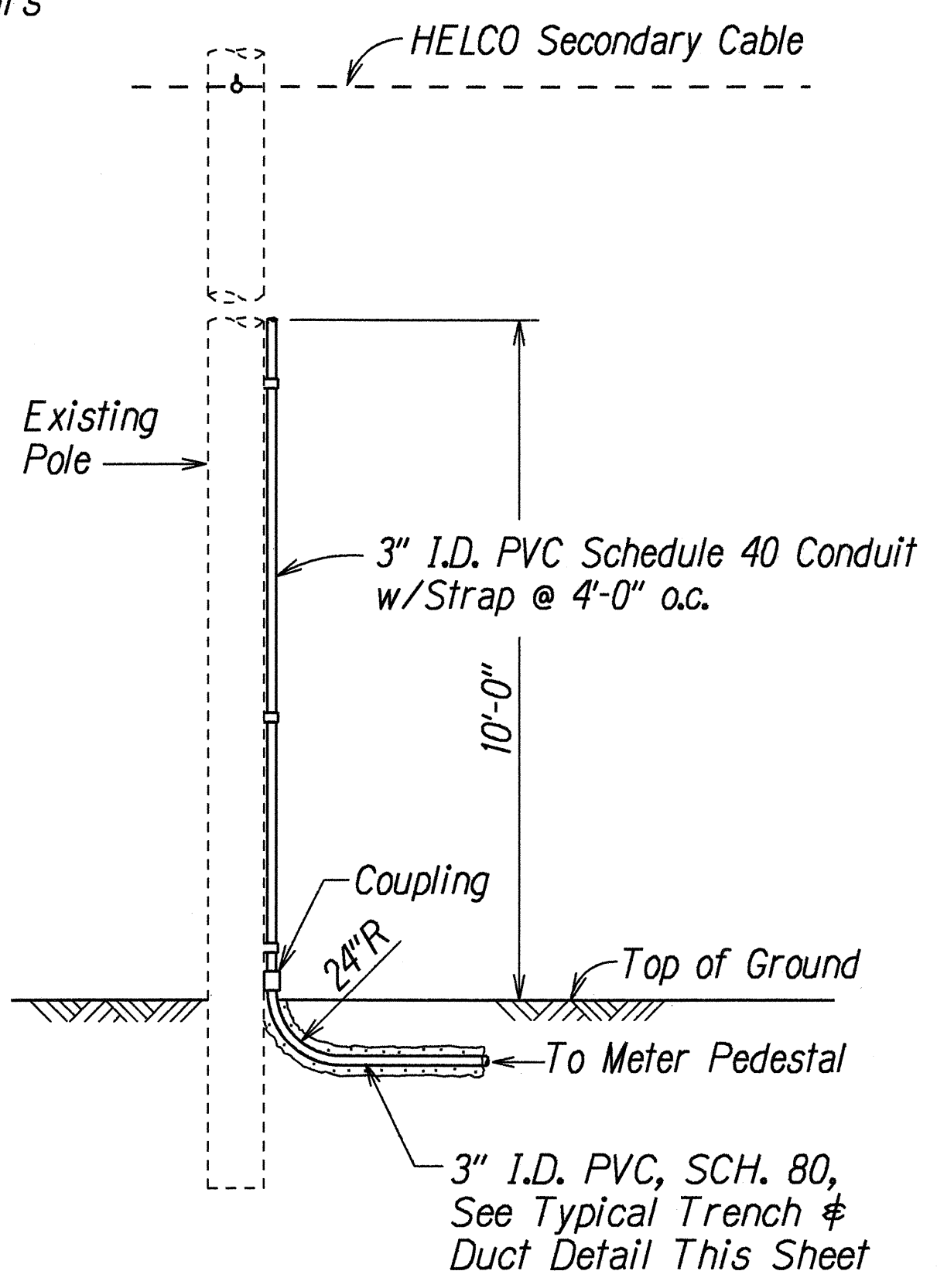
PLAN



SECTION

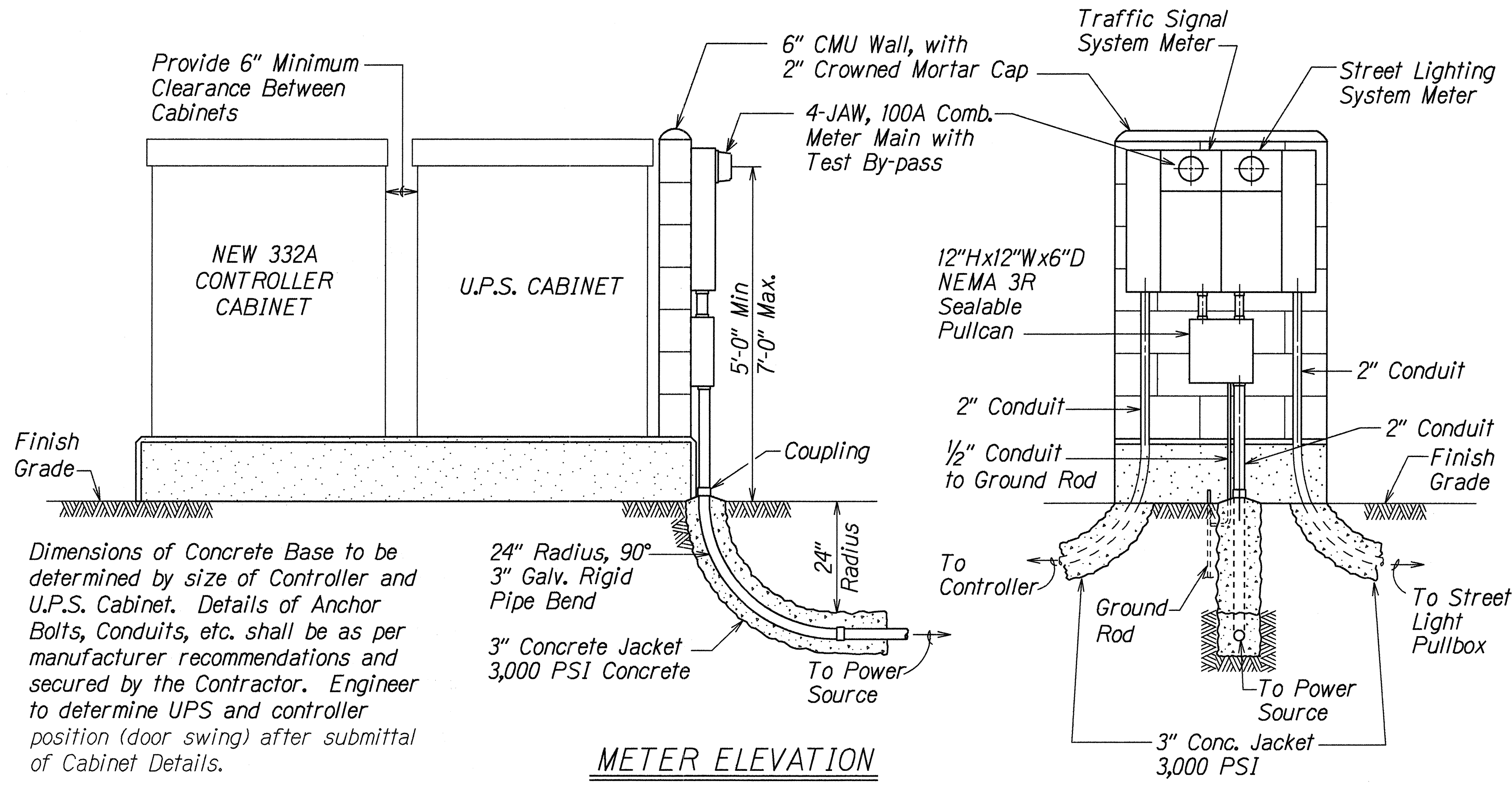
UNINTERRUPTED POWER SUPPLY (UPS) UNIT & CONTROLLER CABINET FOUNDATION

Not to Scale



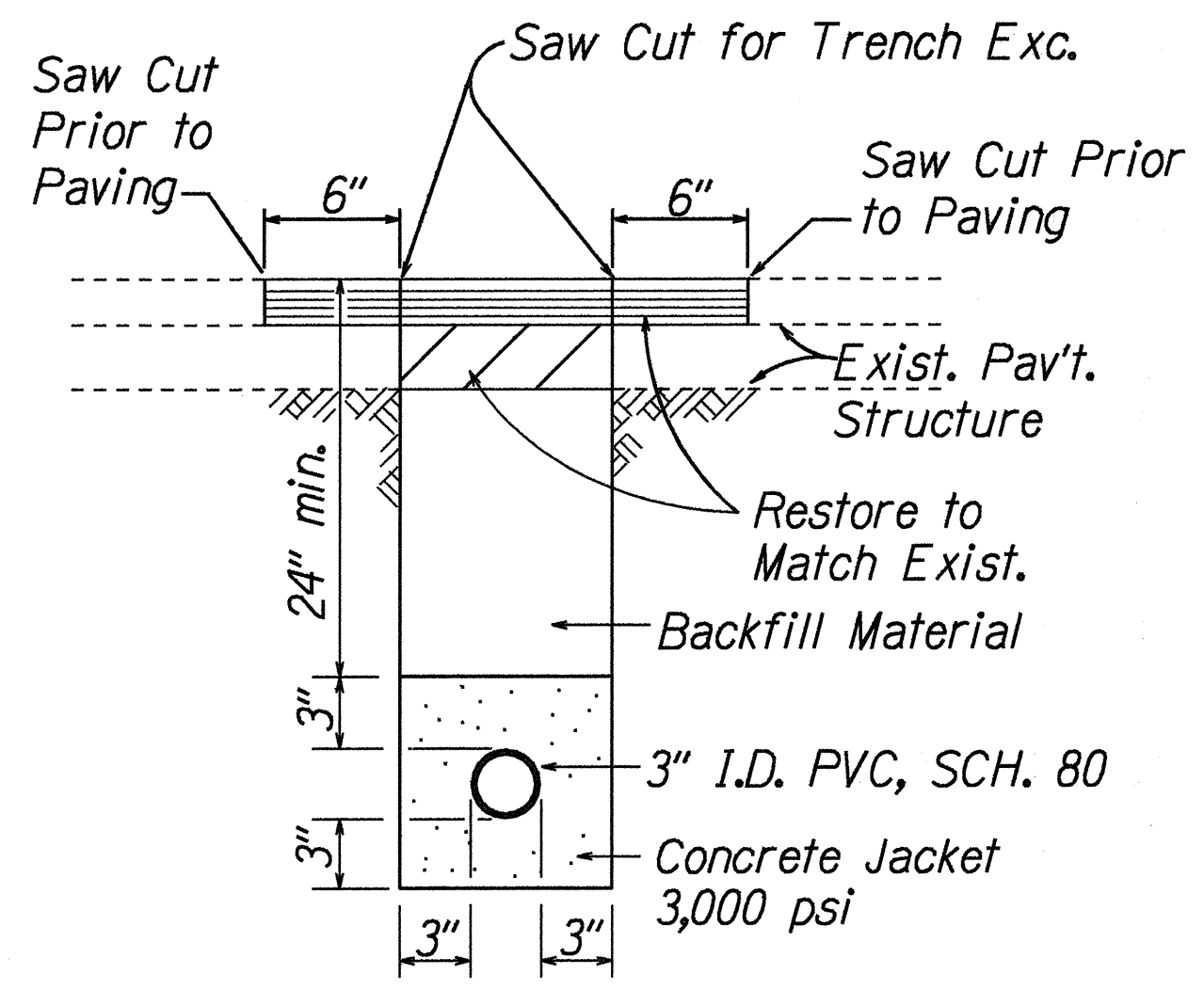
SERVICE POLE DETAIL

Not to Scale



METER ELEVATION

Not to Scale



TYPICAL TRENCH AND CONCRETE JACKET DETAIL

Not to Scale

Dimensions of Concrete Base to be determined by size of Controller and U.P.S. Cabinet. Details of Anchor Bolts, Conduits, etc. shall be as per manufacturer recommendations and secured by the Contractor. Engineer to determine UPS and controller position (door swing) after submittal of Cabinet Details.

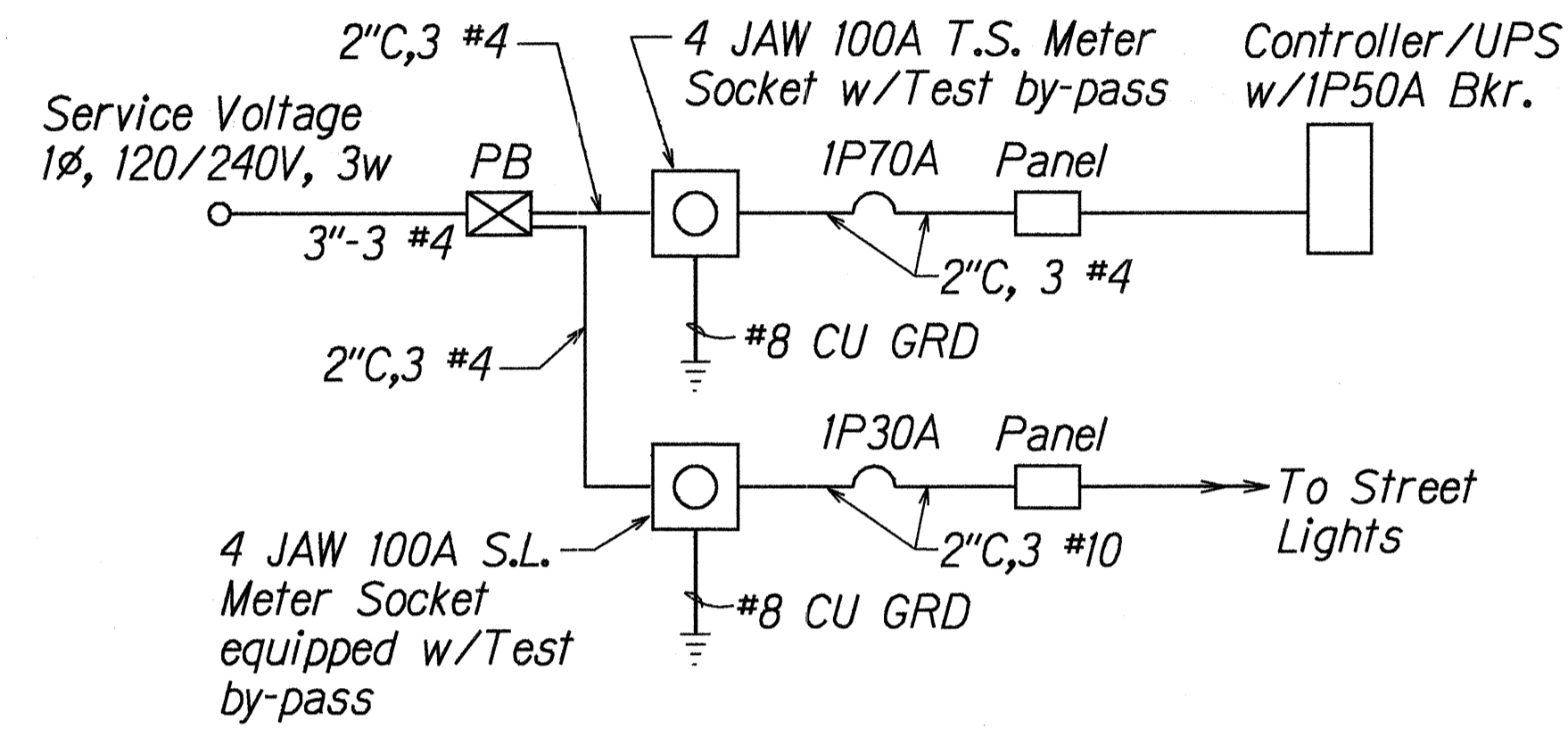
SURVEY PLOTTED BY	DATE
DRAWN BY M. Fakhri	X
TRACED BY RICHARD AKOBA	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
REVISIONS	
NO. 1	
NO. 2	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

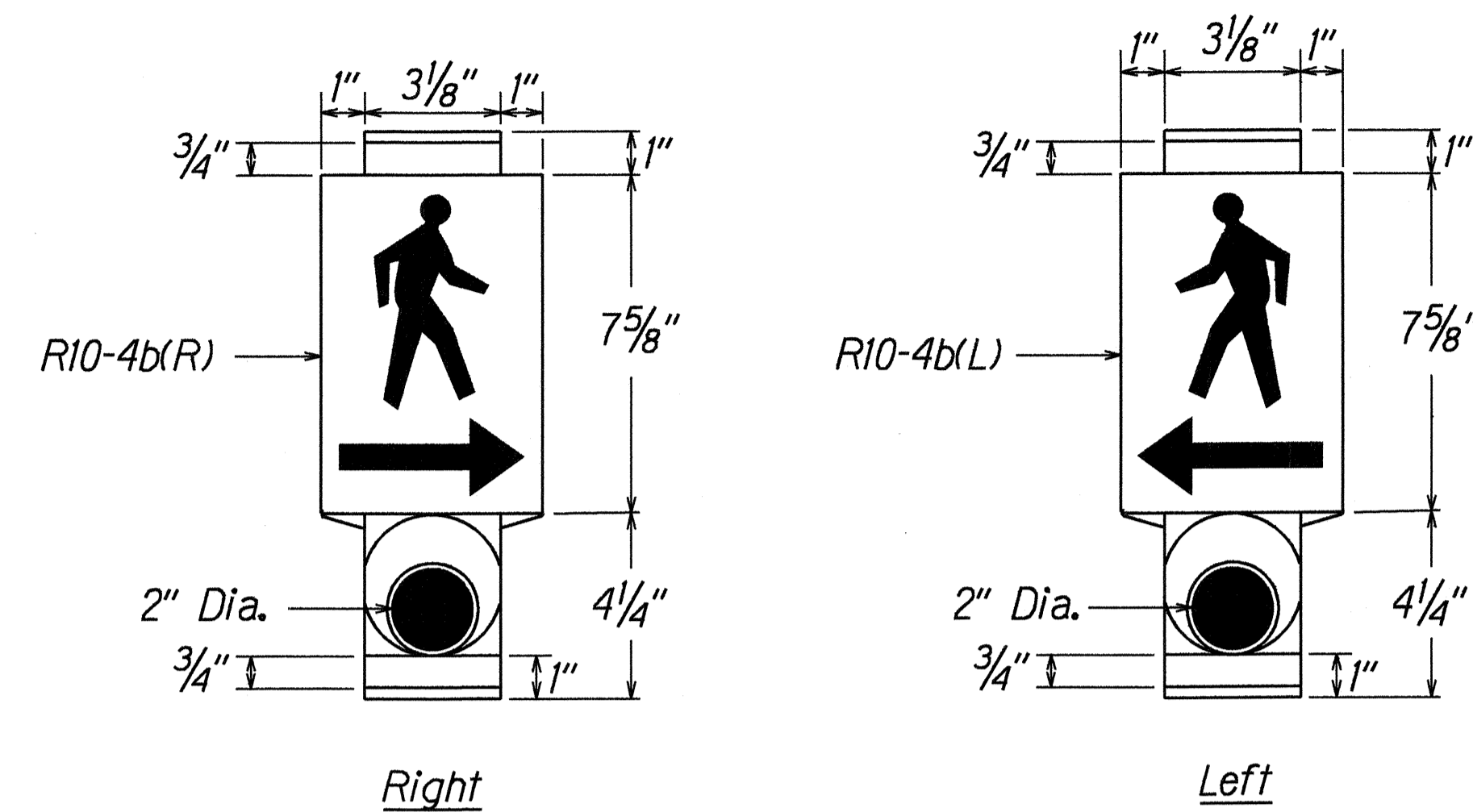
TRAFFIC SIGNAL DETAIL
QUEEN KAAHUMANU HIGHWAY
Installation of Traffic Signals
at Hina-Lani Street
Project No. 19A-01-98

Scale: As Noted Date: Feb., 2000
SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19A-01-98	2000	19	22



ONE LINE DIAGRAM



PEDESTRIAN PUSH BUTTON WITH SIGN

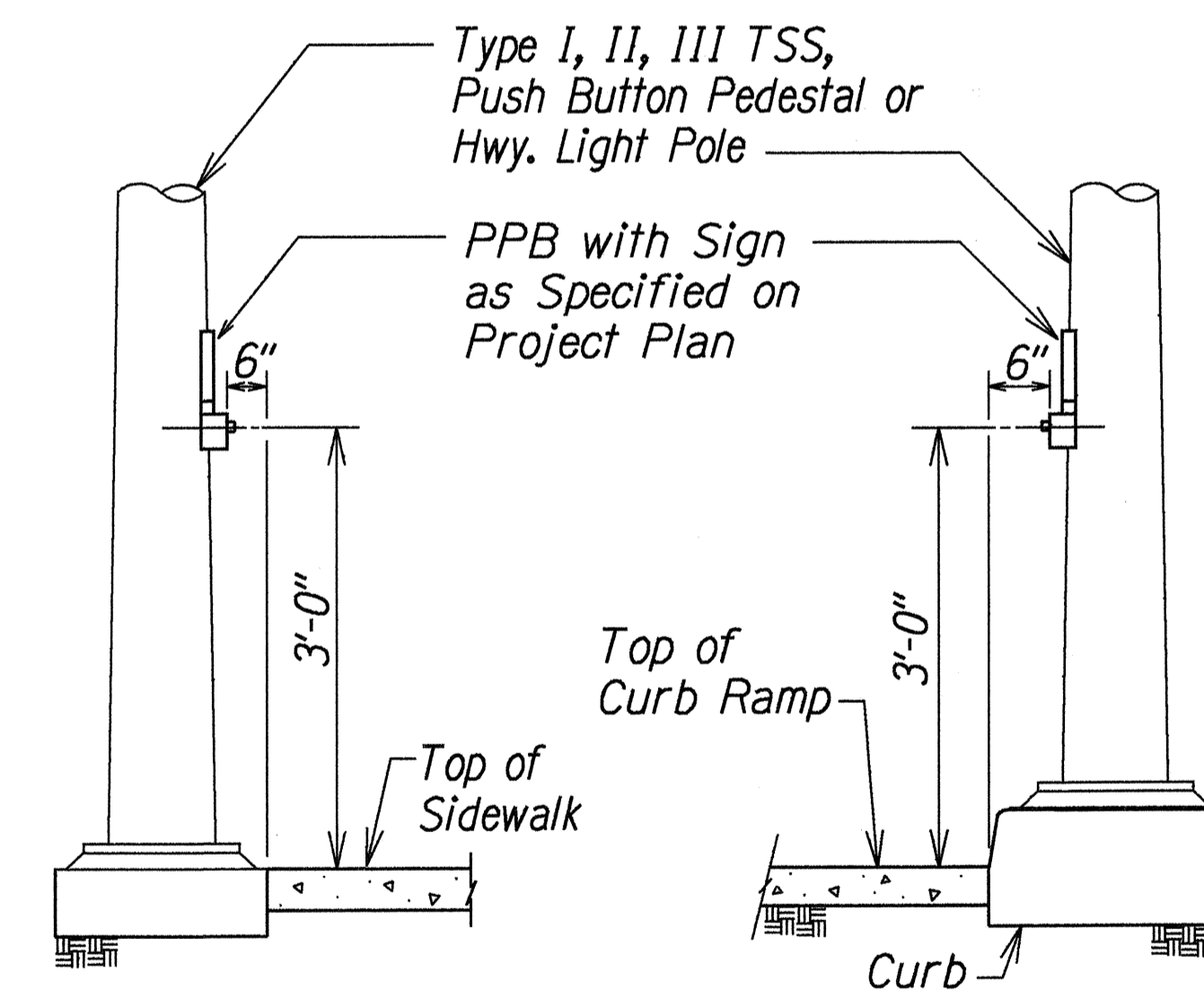
Man, Arrow & Push Button - White
Background - Black

SERVICE DATA

1. Service Voltage: 1Ø, 120/240V, 3W
2. Load Data: Connected 2.5KVA
Estimated Demand - 1.5KVA
3. Service Conductors: 3 #6
4. Metering: Meter Standard B5: Rate G
5. Type: Underground
6. Billing Information: Highways Division
Department of Transportation
State of Hawaii
50 Makaala Street
Hilo, Hawaii 96720

SERVICE DATA

1. Service Voltage: 1Ø, 120/240V, 3W
2. Load Data: Connected 1.5KVA
Estimated Demand - 1.5KVA
3. Service Conductors: 3 #6
4. Metering: Meter Standard B5: Rate G
5. Type: Underground
6. Billing Information: Highways Division
Department of Transportation
State of Hawaii



DETAIL "A"

DETAIL "B"

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NOTE BOOK	
10/1/00	
10/1/00	
10/1/00	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TRAFFIC SIGNAL DETAIL
QUEEN KAAHUMANU HIGHWAY
Installation of Traffic Signals
at Hina-Lani Street
Project No. 19A-01-98
Scale: As Noted Date: Feb., 2000
SHEET No. 3 OF 3 SHEETS