

**GENERAL NOTES:**

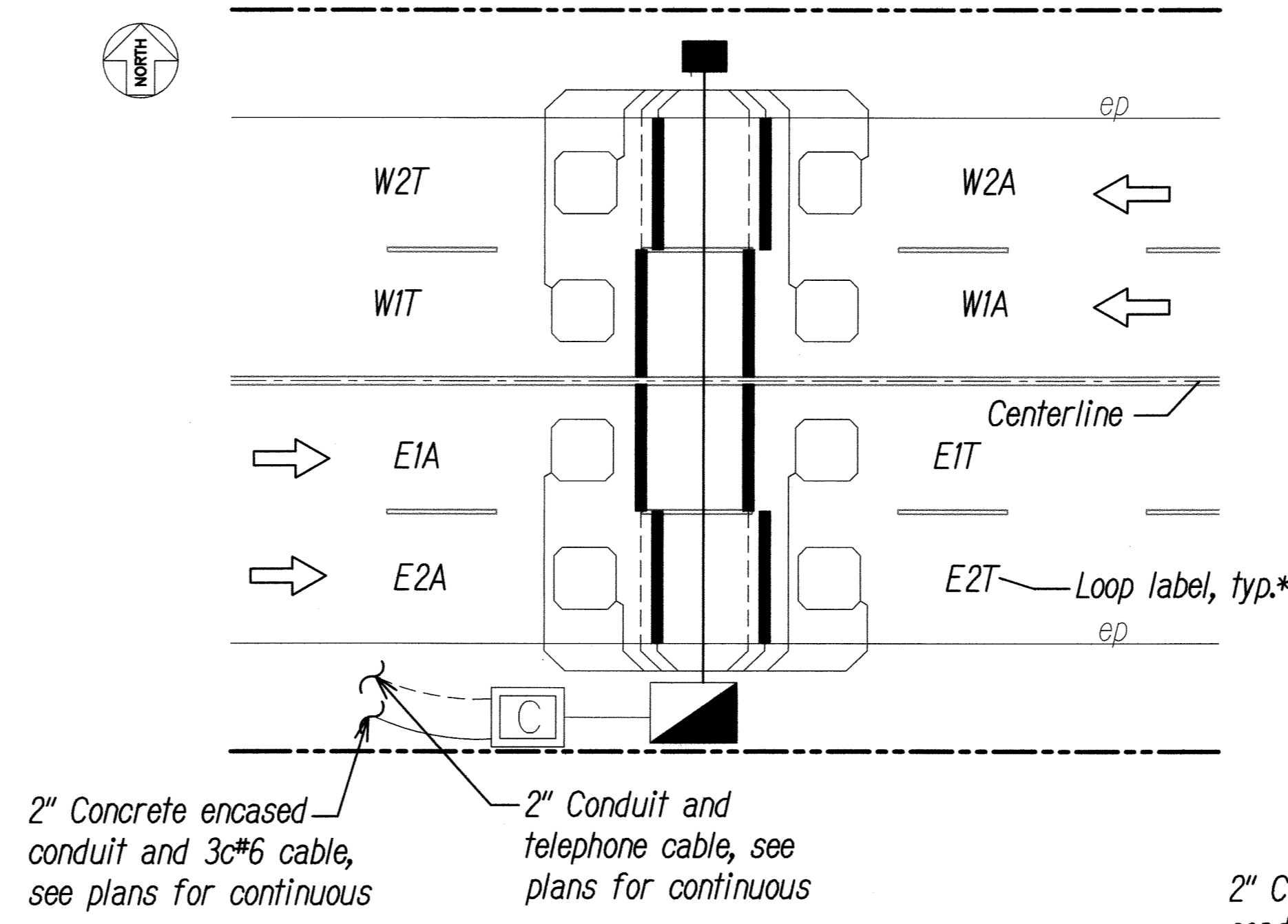
- The location of new inductance loops, pullboxes and cabinets/junction boxes shall be staked out in the field by the Contractor and approved by the Engineer prior to installation.
- The Contractor shall inform the Engineer at least three days prior to saw-cutting pavement and installing inductance loops.
- Continuity of inductance loops and lead-in wires shall be tested and warranted for one year from date of acceptance by the Contractor.
- Upon completion of sleeve, pull in in-bound lanes loop detectors cable and class 1 BL sensor cables, cables shall be tested for acceptance before and after installation into sleeve.
- The Contractor shall restore all affected areas to their original condition. this item of work shall not be paid for separately, but shall be considered incidental to work of other paid items.
- The Contractor shall verify the location of the existing utilities and underground structures whether or not shown on plans.
- The Contractor shall assume that existing underground utilities not shown on the plans may exist, therefore, he shall contact the different utility companies for information and toning.
- The Contractor shall be held liable for any damages incurred to the existing utilities and underground structures as a result of his operations. All damaged portions shall be replaced in accordance with the standards and specifications of the affected utility company at no cost to the State.
- Changes to the contract plans and specifications shall not be permitted, unless otherwise authorized by the Engineer upon written justification and request for approval by the Contractor.
- Highway crossing sleeve shall be provided with 36" cover.

**LOOP LAYOUT NOTES:**

- Detector loop shall consist of four turns of 1c#12 cable meeting IMSA spec 51-5 or equivalent embedded in a 3/8" minimum sawcut, except as noted.
- Loop and lead-in to the first pullbox shall be one continuous wire. Lead-in wires from the same loop shall be twisted in pairs, two turns per foot. Do not twist on loop-pair with another loop-pair.
- All lead-in wires shall be crimped with open end lugs that will fit into the terminal board snugly.
- Stagger traffic loops on roadway less than 12 foot lane width.
- The Contractor shall connect the inductance wires on each terminal slot.
- The left lane in the direction of traffic flow is designated as lane 1, and the lane next to its right as lane 2 and so on as indicated on plans.
- Vacuum and clean sawcut thoroughly before installing sensors and/or cables and filling with hot tar or epoxy sealant.
- All loop lead-in wires in all enclosures including pullboxes shall be identified and labeled by direction of traffic flow and lane number as shown on plans.
- All cable and wires terminated within an enclosure shall have a minimum 12" additional slack.

**LOOP LABEL LEGEND:**  
 E = East      W = West  
 N = North     S = South  
 A = Approaching    T = Trailing

E2T  
 ┌─ Indicates approaching or trailing loop  
 │─ Indicates lane number  
 └─ Indicates direction\*

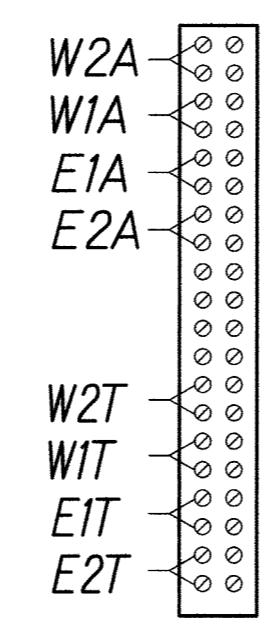


**NOTES:**  
 If roadway runs in the North and South direction the first letter on the loop label should read N for North and S for South. If roadway runs in the East and West direction the first letter on the loop label should read E for East and W for West.

**TYPICAL LABELING OF LOOPS**

Not to Scale

Top of terminal block

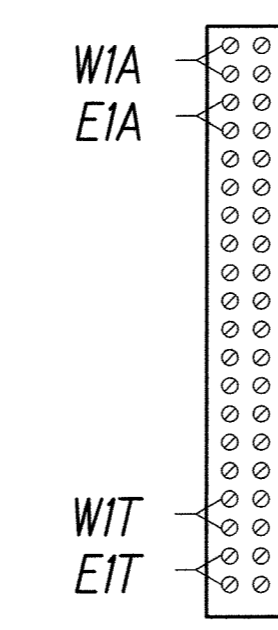


Bottom of terminal block  
 Connecting layout of loop lead-in wires to terminal block inside cabinet

**TYPICAL FOUR-LANE ROADWAY TERMINAL BLOCK WIRING DETAILS**

Not to Scale

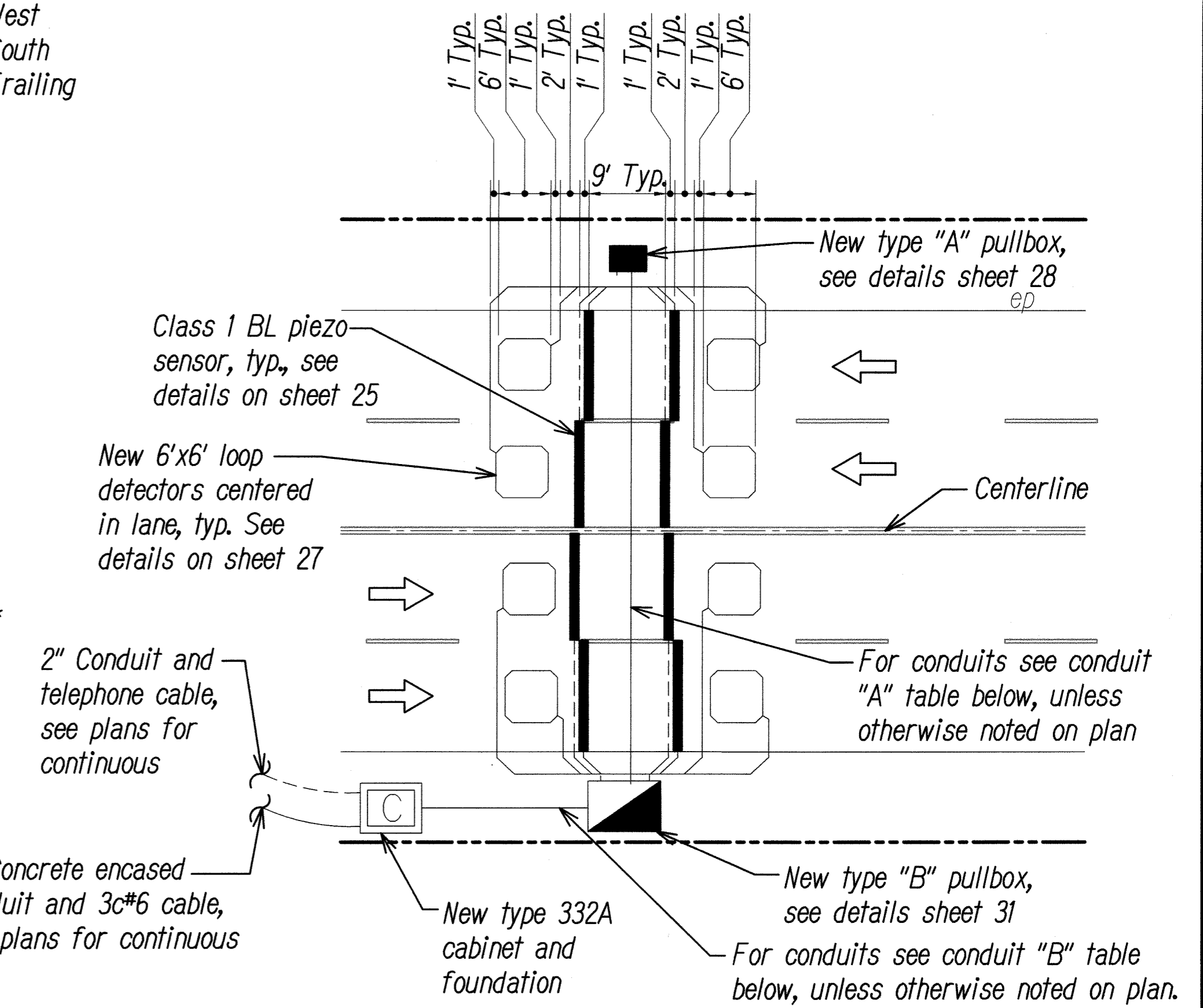
Top of terminal block



Bottom of terminal block  
 Connecting layout of loop lead-in wires to terminal block inside cabinet

**TYPICAL TWO-LANE ROADWAY TERMINAL BLOCK WIRING DETAILS**

Not to Scale



Conduit "A" table:

Number of lanes	Conduit* #size	Class 1 BL sensor lead cables	2c #14 Loop detector cables
2	1-4"	2	2
4	1-4", 1-2"	4	4

\*Conduits shall be concrete encased

Conduit "B" table:

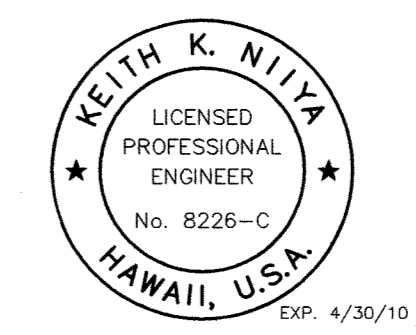
Number of lanes	Conduit* #size	Class 1 BL sensor lead cables	2c #14 Loop detector cables
2	1-4", 1-2"	4	4
4	3-4"	8	8

**NOTES:**

- All dimensions and callouts are typical unless otherwise noted on plan.
- 332A cabinets shall not be placed next to exist. sprinkler heads.
- Contractor shall coordinate service agreements and connections to electrical and communication service. Contractor shall also contact the appropriate State Dept. of Transportation representative for service agreement.  
 For Kauai District, contact Steve Kyono, P.E. at 241-3006.  
 For Oahu District, contact Pratt Kinimaka, P.E. at 831-6703.  
 For Maui District, contact Ferdinand Cajigal, P.E. at 873-3538.  
 For Hawaii District, contact Stanley Tamura, P.E. at 933-8620.

**TYPICAL TRAFFIC COUNTING STATION LAYOUT DETAIL**

Not to Scale

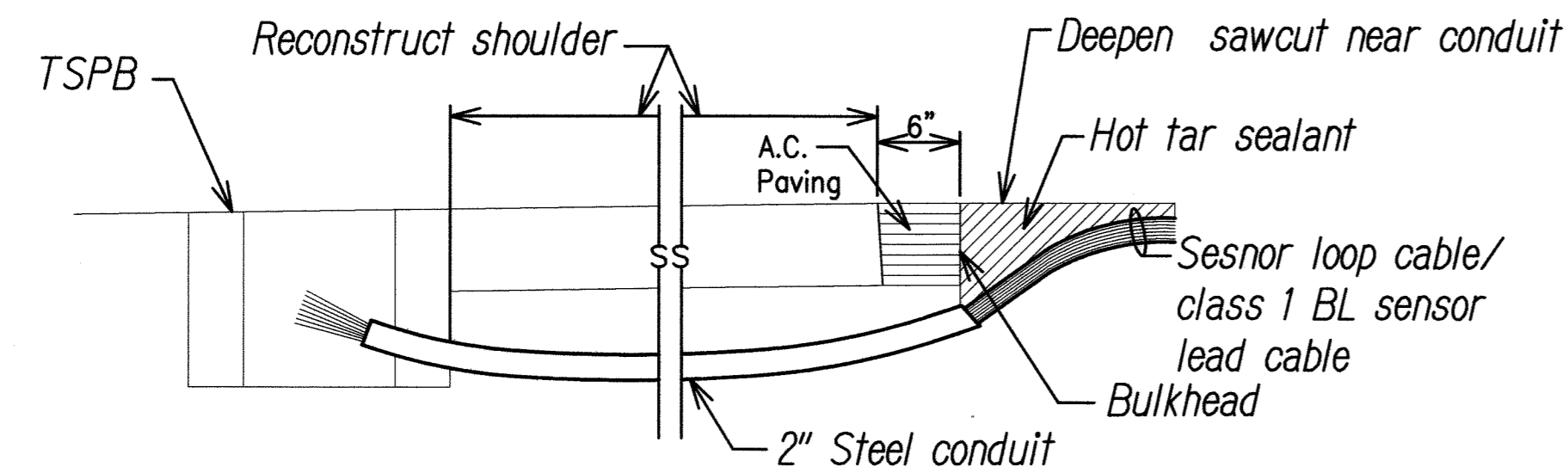


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STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**TRAFFIC COUNTING STATION DETAILS**  
 TRAFFIC COUNTING STATIONS  
 AT VARIOUS LOCATIONS  
 F.A.P. NO. STP-1500(35)  
 Scale: As Shown      Date: June 2008

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
NO.	_____

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-1500(35)	2008	27	41

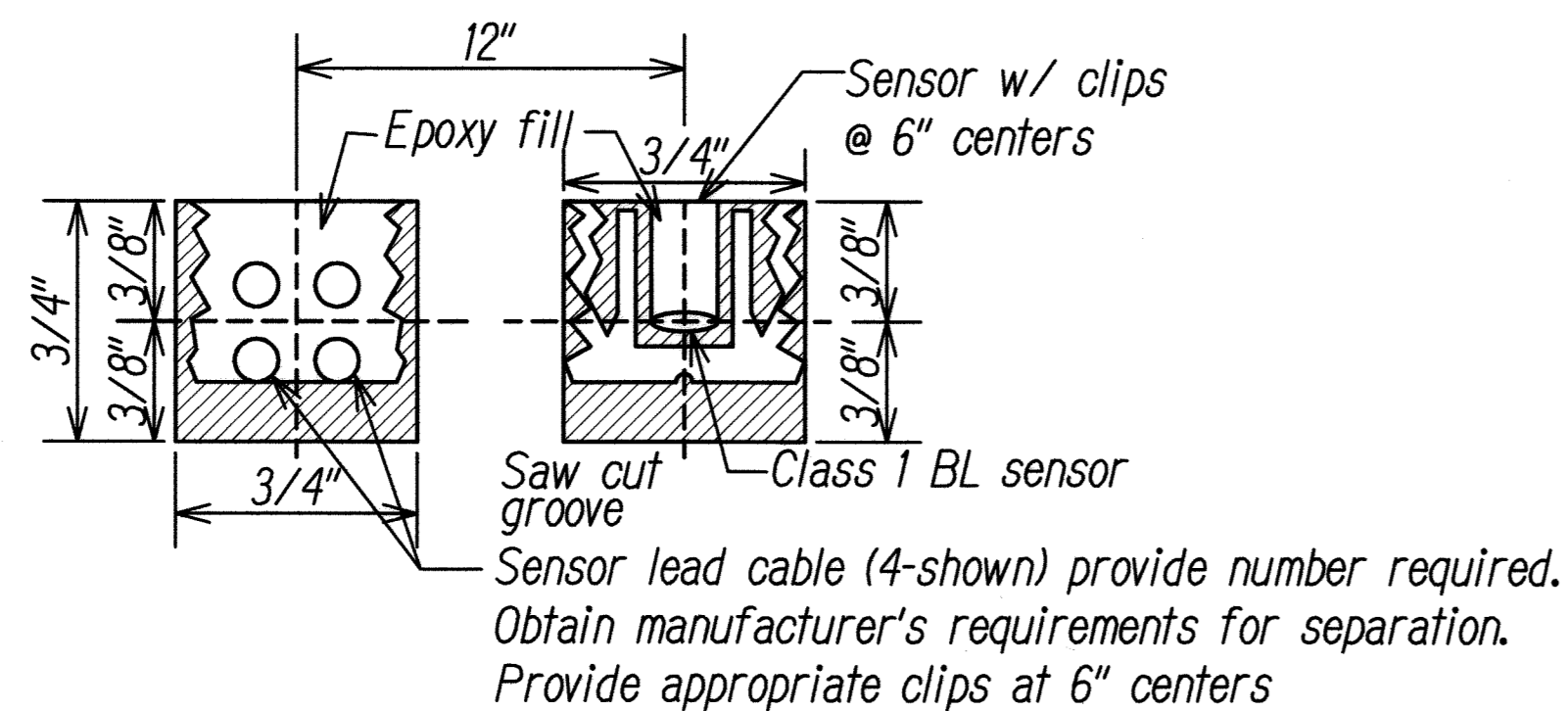


**NOTES ON CONSTRUCTION AT END OF SAWCUT**

1. Seal roadway end of conduit after installation of conductors.
2. Install bulkhead across conduit trench.
3. Place hot tar in sawcut.
4. Backfill over conduit with new A.C.
5. Reconstruct curb and gutter as required.

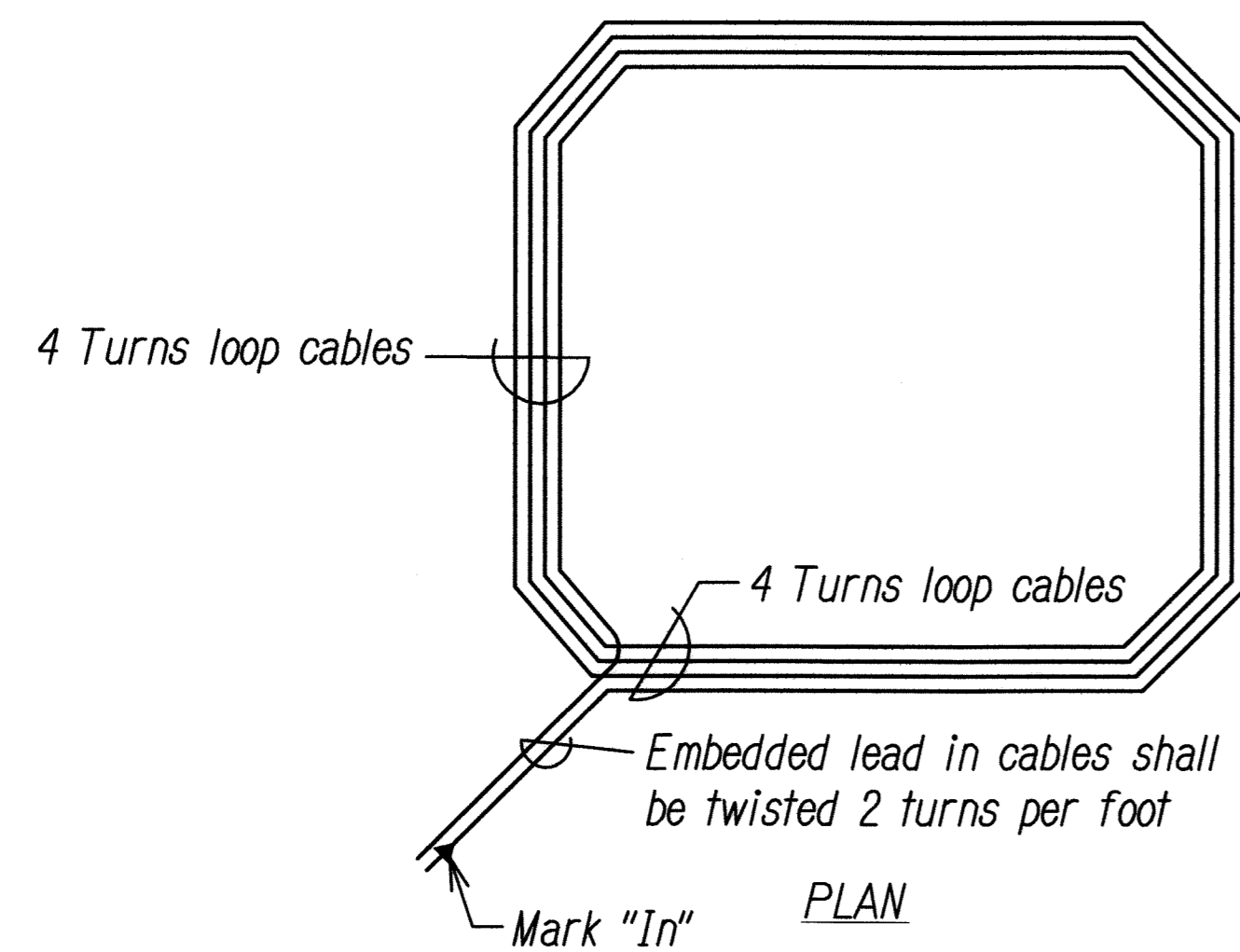
**DETAIL OF SENSOR LOOP/ CLASS 1 BL SENSOR AT EDGE OF ROADWAY**

NOT TO SCALE



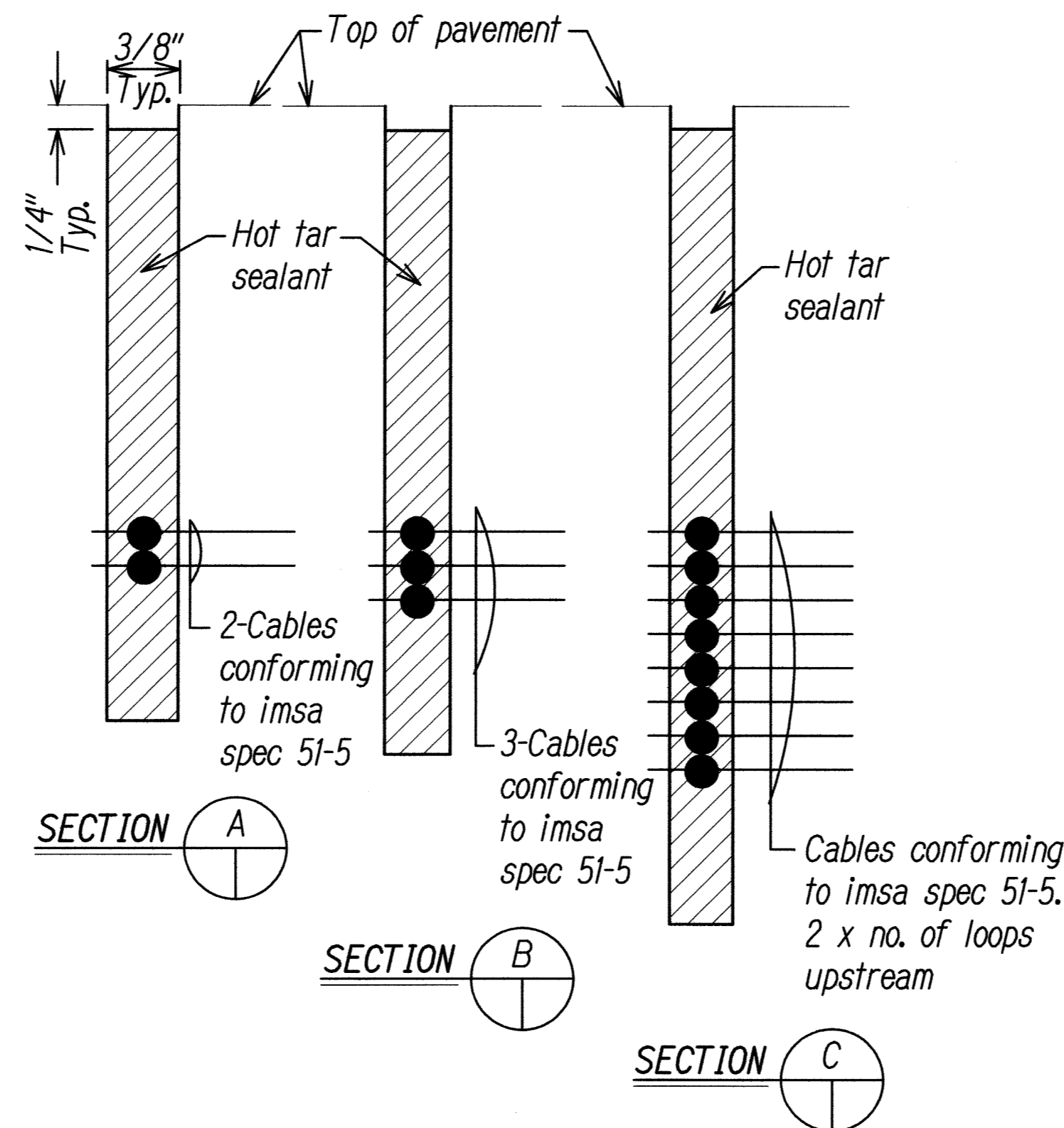
**CLASS 1 BL SENSOR AND LEAD INSTALLATION DETAIL**

NOT TO SCALE



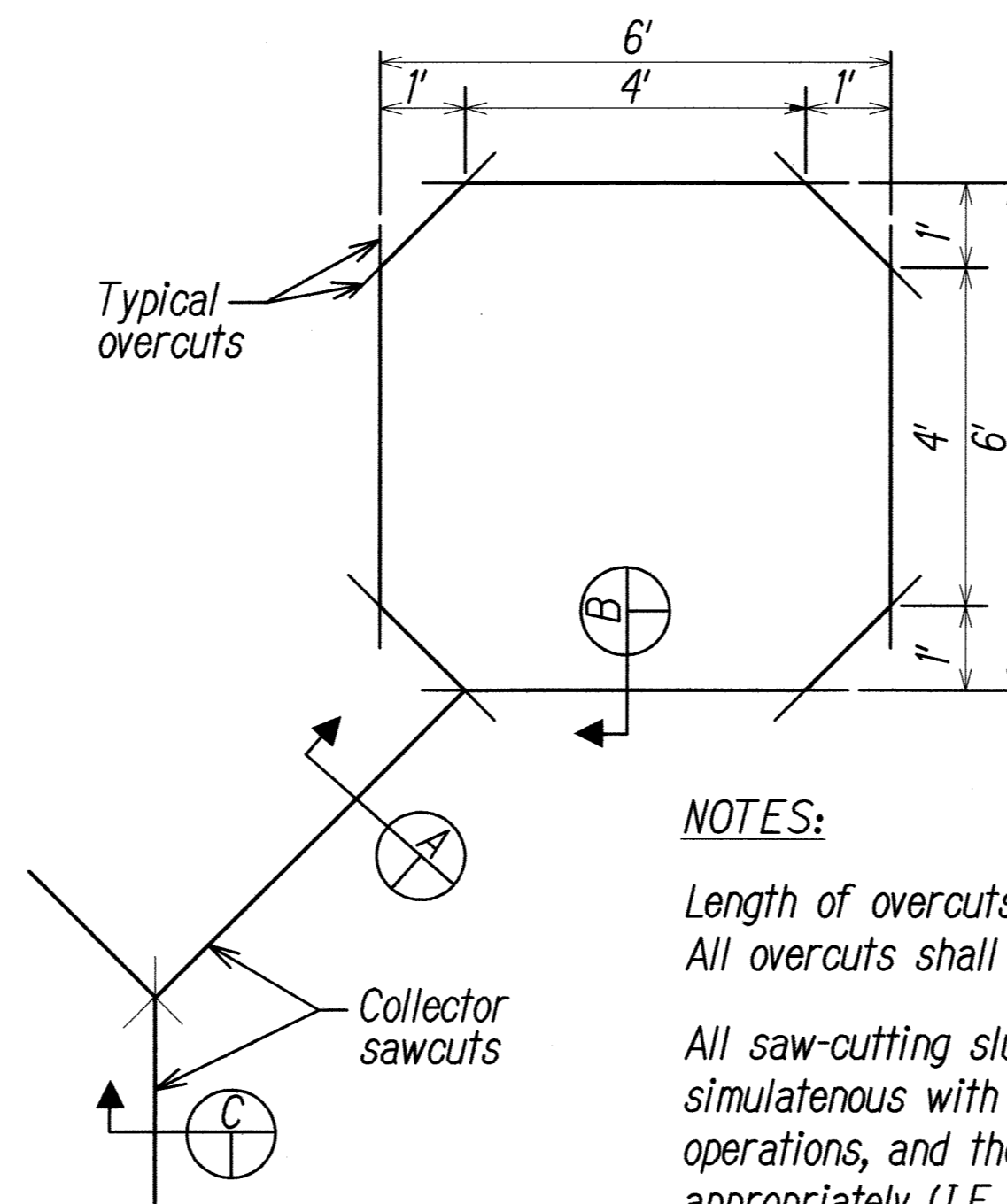
**TYPICAL SENSOR LOOP WIRING DIAGRAM**

NOT TO SCALE



**TYPICAL SECTION THROUGH SENSOR LOOP**

NOT TO SCALE



**NOTES:**

Length of overcuts shall be kept to a minimum. All overcuts shall be backfilled with hot tar.

All saw-cutting slurry shall be wet vacuumed, either simultaneous with or immediately after the saw-cutting operations, and the collected slurry disposed of appropriately (I.E., either, placed in a filter fabric lined filtration box or in a filter fabric lined dug up retention/percolation basin, and after filtration/percolation, the filter fabric and the retained sediments, disposed of appropriately).

**TYPICAL SENSOR LOOP SAWCUT DETAIL**

NOT TO SCALE

**NOTES:**

1. Pole and solar panel assembly, including pole, solar panel and foundation shall withstand winds up to 108 mph gusting without permanent deformation.
2. Provide wiring between solar panel assembly and cabinet.
3. Provide surge protection for solar power system.
4. Solar panel assembly shall be capable of providing 200 watts per minute.

Handhole, gasketed cover with flush stainless steel allen head screws.

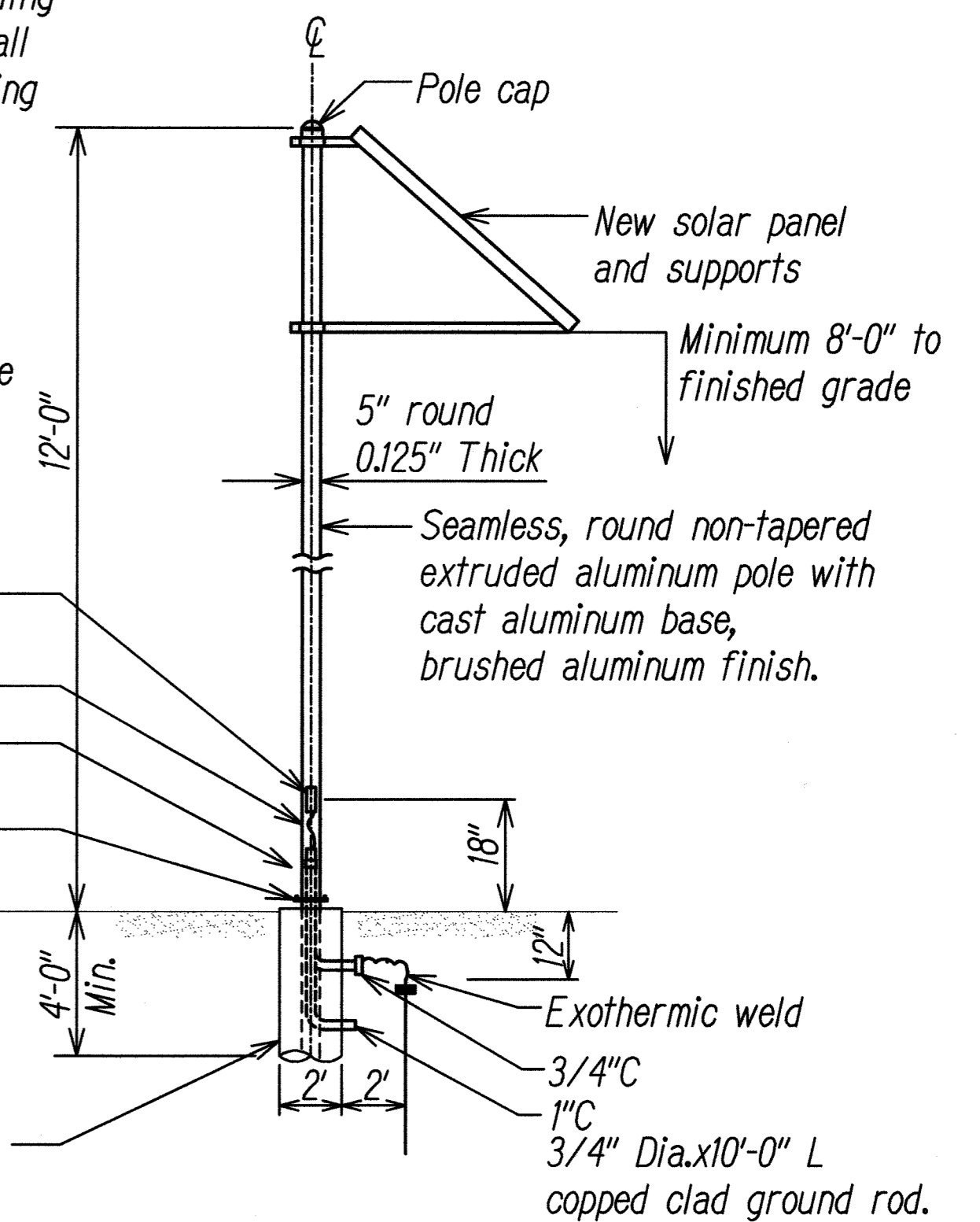
Ground lug and # 8 B.C. ground wire.

Base cover

Breakaway base see detail

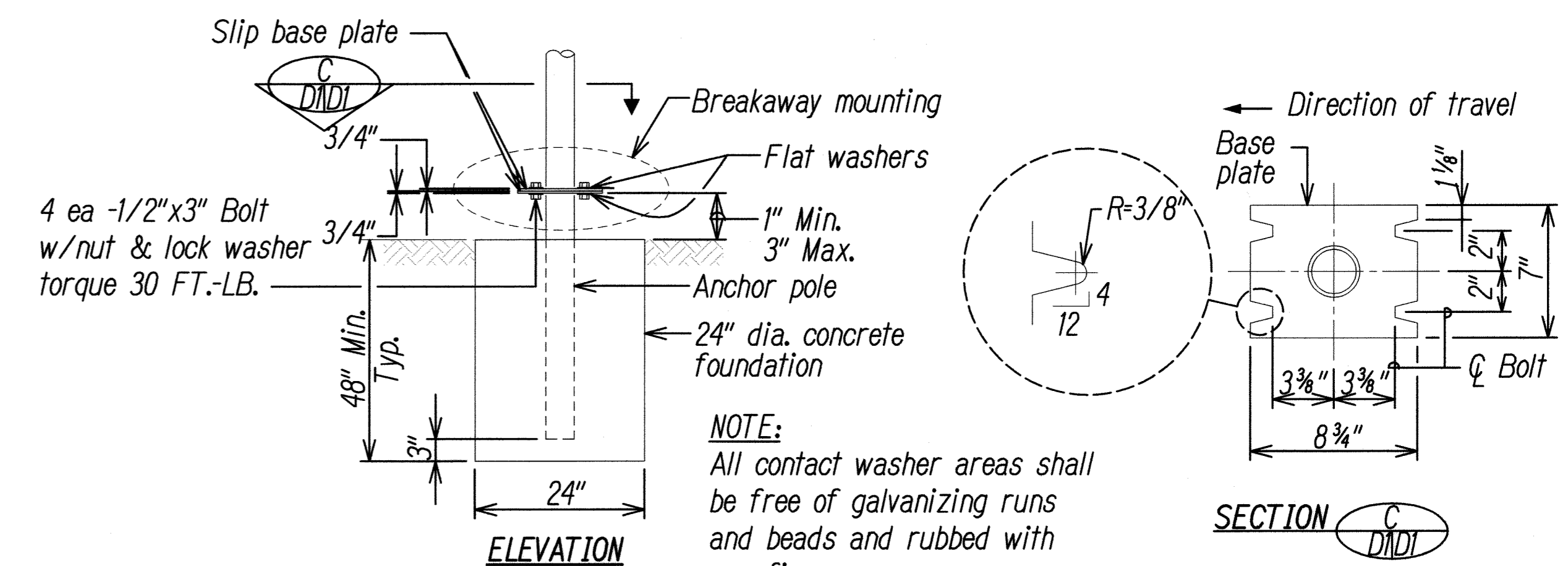
Finished grade

Concrete-drilled-in-hole concrete foundation



**POLE AND SOLAR PANEL ASSEMBLY**

NOT TO SCALE



**NOTE:**

All contact washer areas shall be free of galvanizing runs and beads and rubbed with parafin.

**CIDH CONC. FOUNDATION W/ BREAKAWAY MOUNTING**

NOT TO SCALE



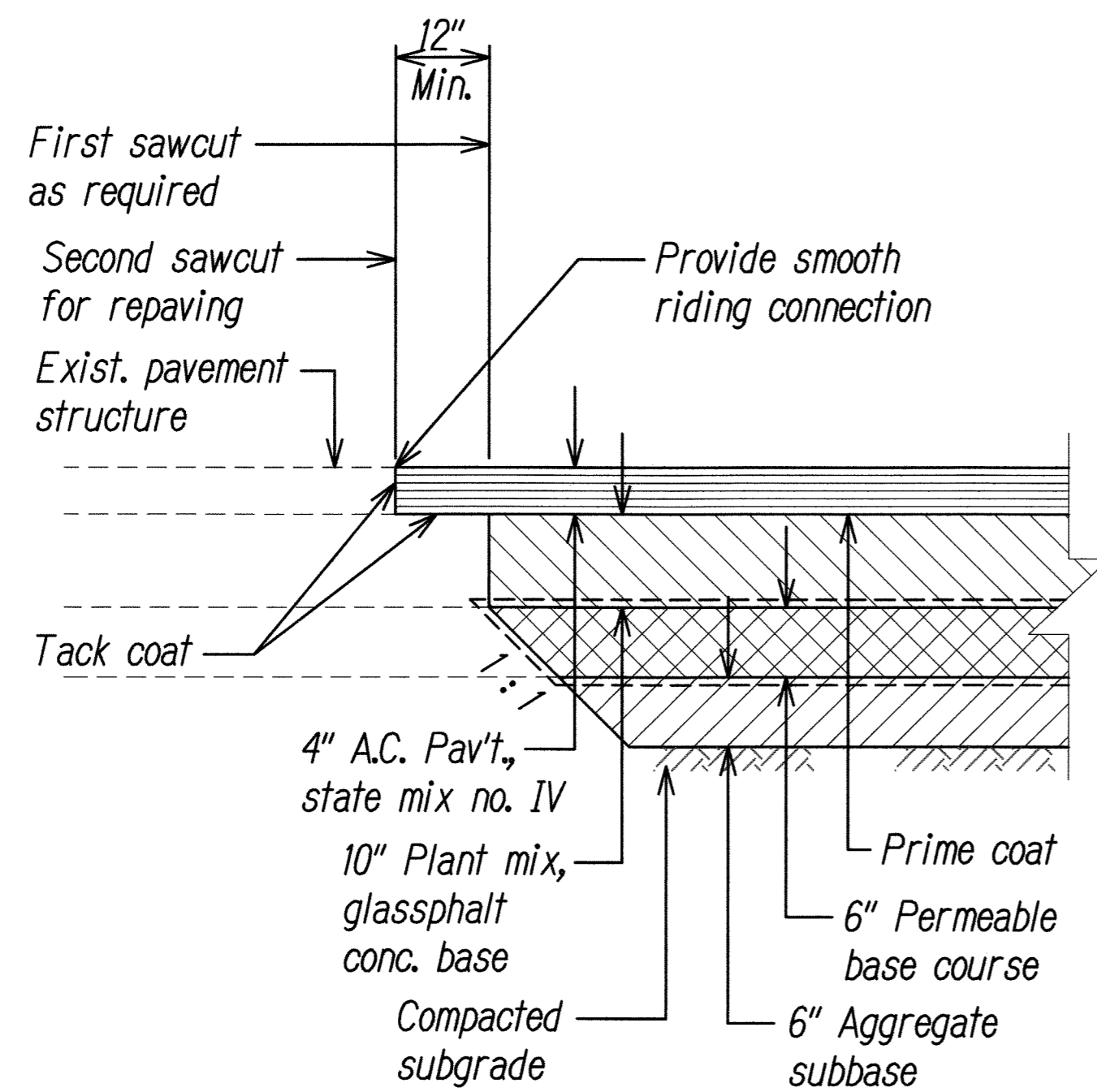
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HIGHWAYS DIVISION  
**TRAFFIC COUNTING STATION DETAILS**  
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Scale: As Shown Date: June 2008

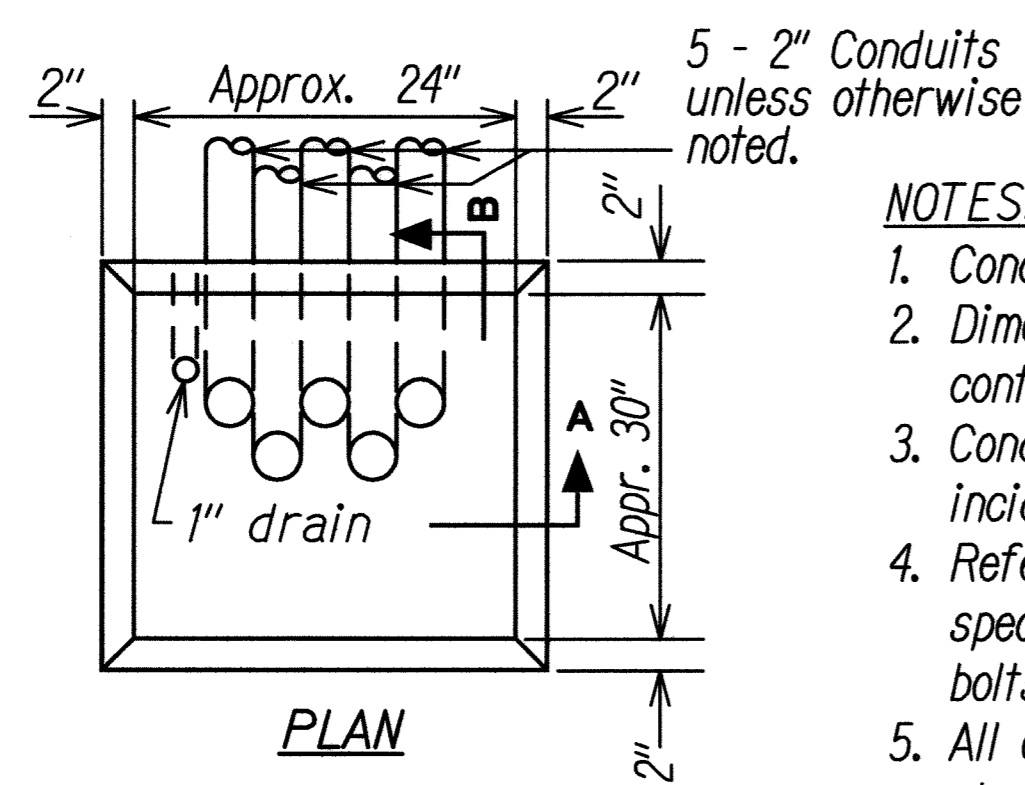
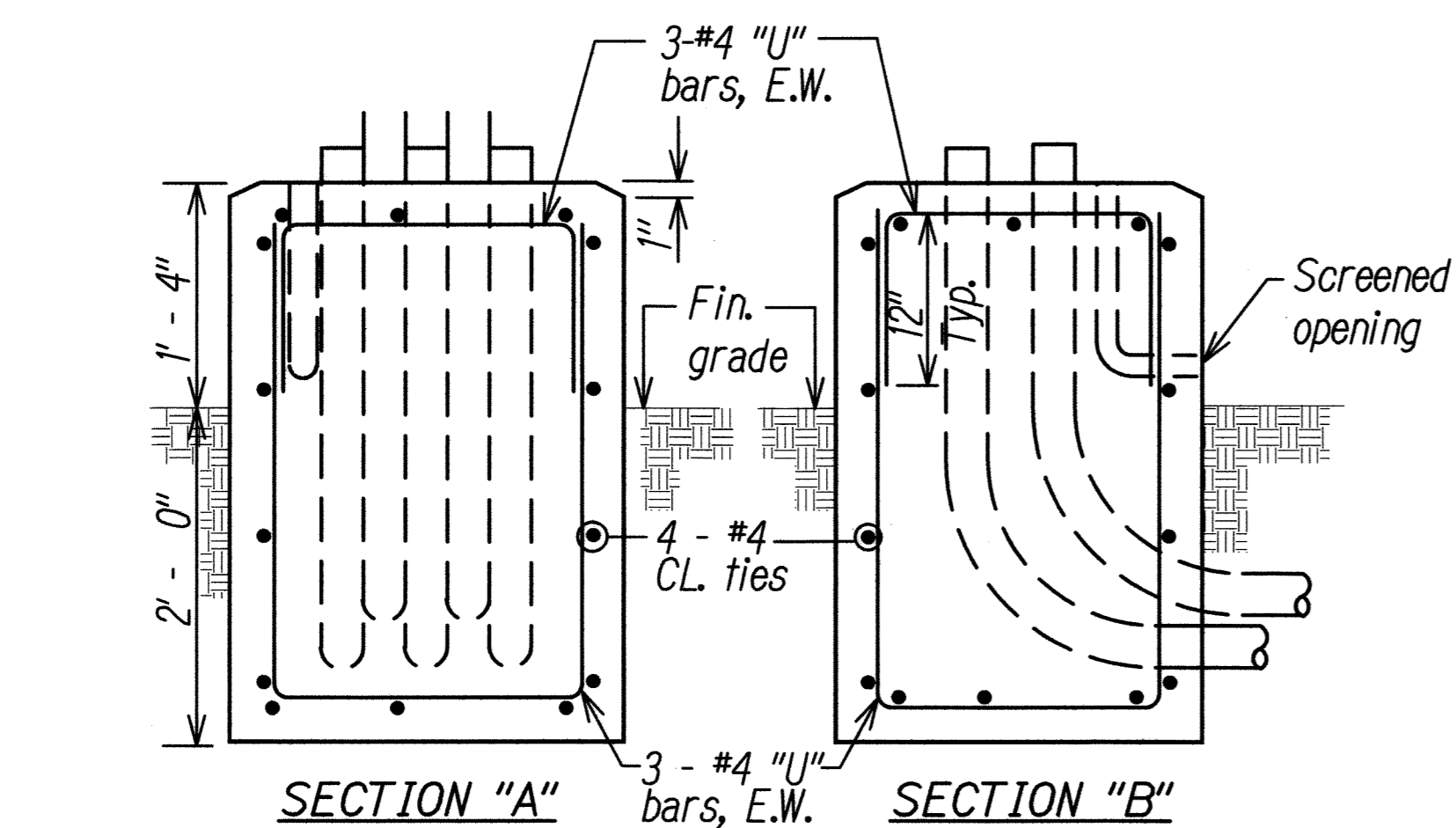
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-1500(35)	2008	28	41

**NOTE:**  
Pavement structure shall be restored to equal or better than original condition in thickness and quality.



**EXIST. AC. PAVEMENT RESTORATION DETAIL**  
Not to Scale



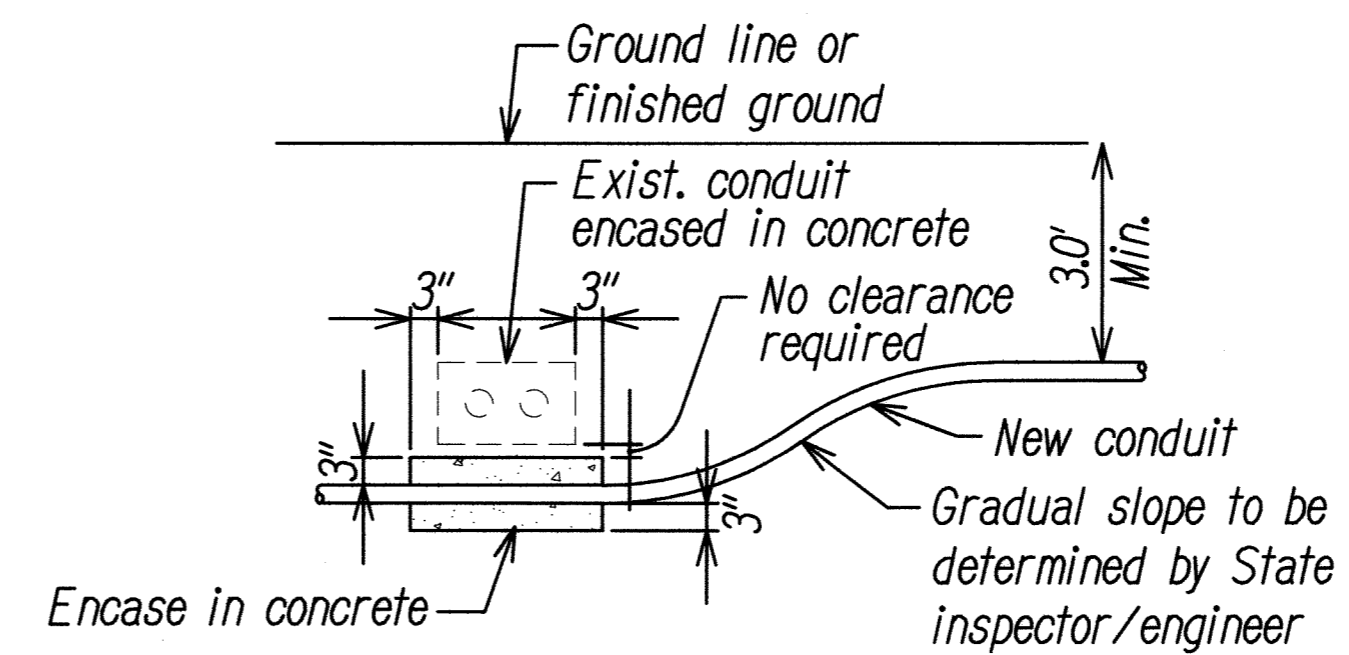
- NOTES:**
1. Concrete shall be class "B".
  2. Dimensions shall be altered to suit controller cabinet actually furnished.
  3. Conduit bends and drain are incidental to concrete base.
  4. Refer to cabinet manufacturer's specifications for details of anchor bolts and base setting.
  5. All exposed surfaces of concrete base shall have a class 2, rubbed finish.

**TYPE "D" CONC. BASE FOR CONTROLLER CABINETS**  
Not to Scale

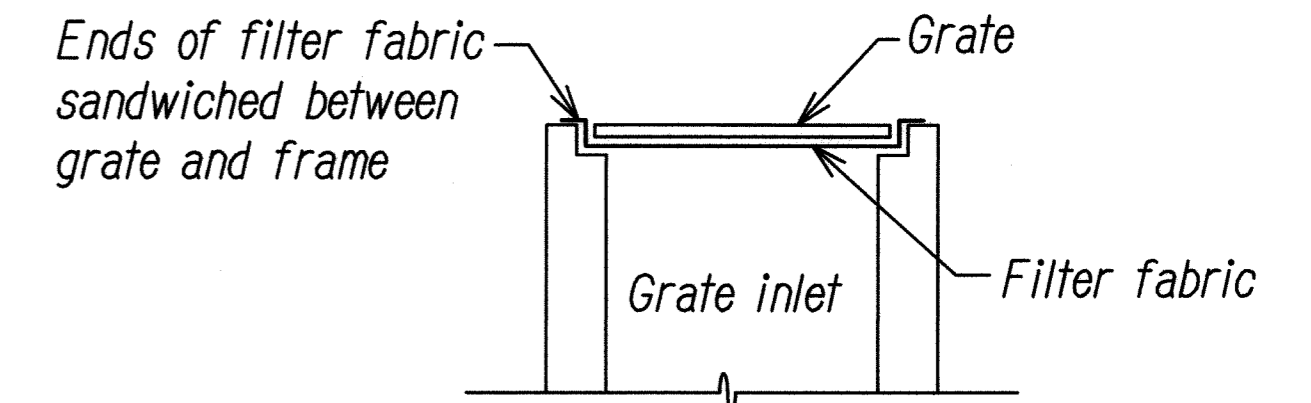


- NOTES:**
1. For sign post detail, see state standard plans TE-01 thru TE-04.
  2. Two (2) warning signs shall be placed on each sign post "Back-to-Back".
  3. Text on sign shall be centered both ways.

**WARNING SIGN DETAIL**  
Not to Scale



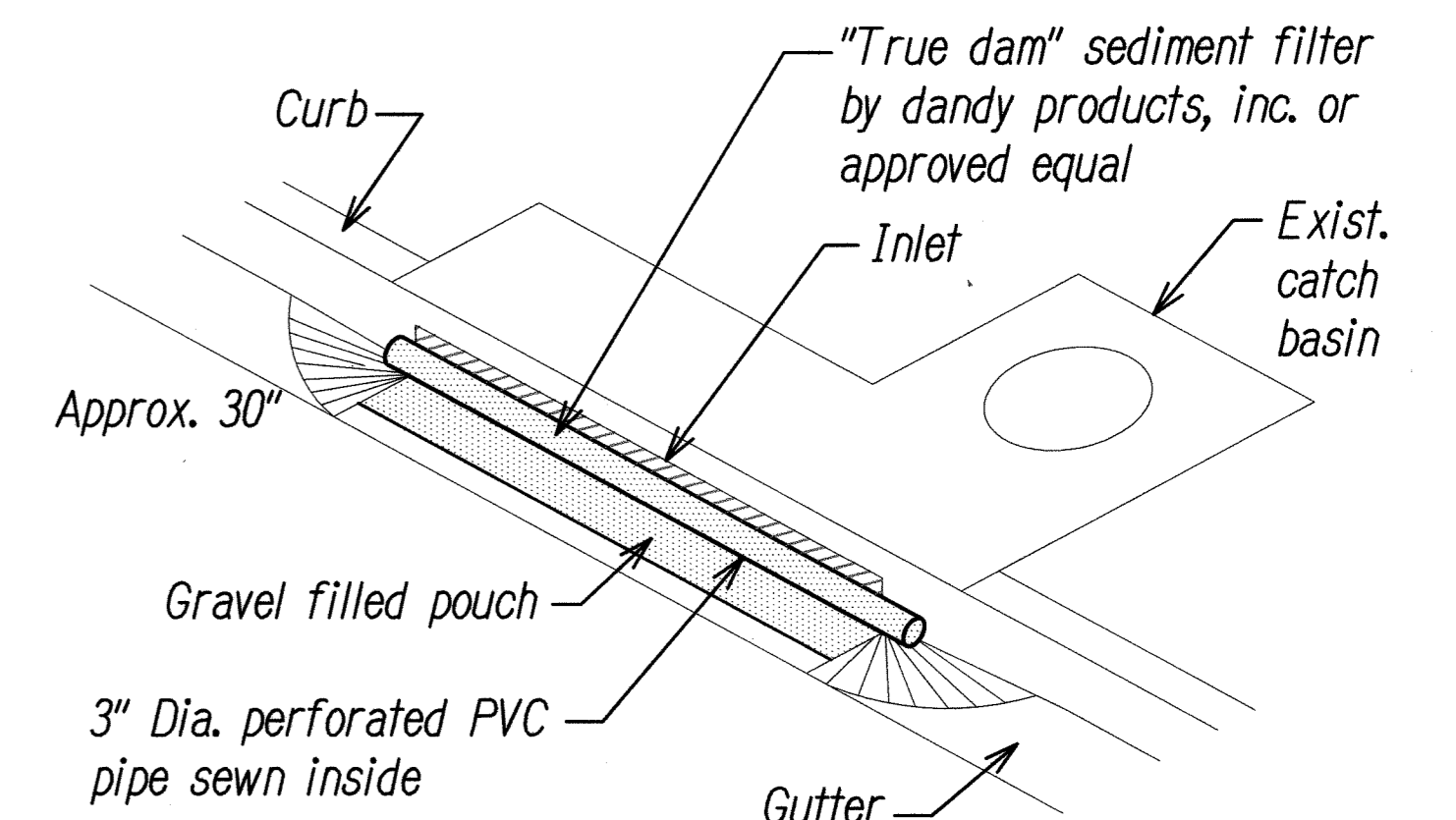
**CONDUIT BY-PASS DETAIL**  
Not to Scale



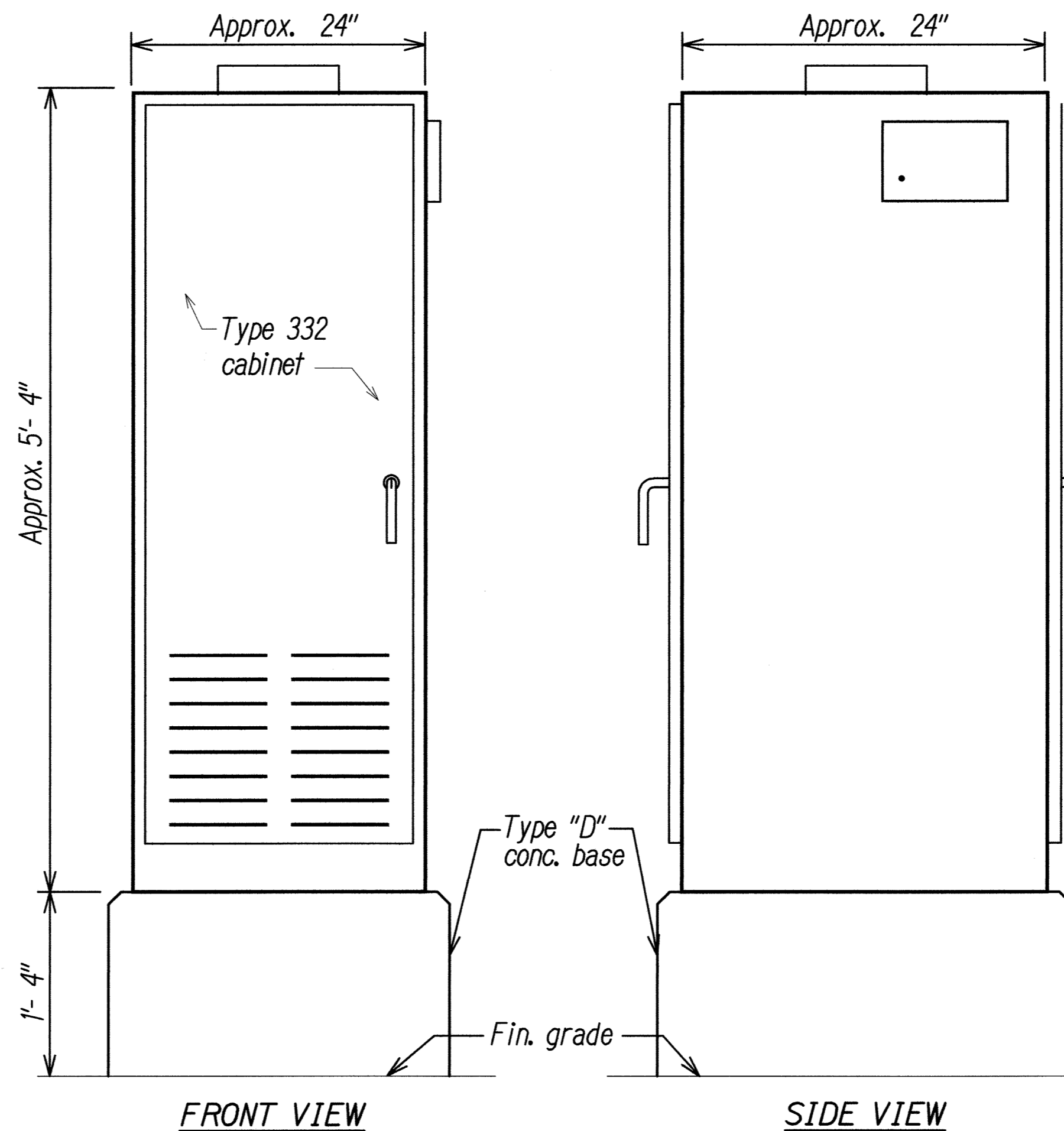
- NOTES:**
1. Contractor shall install sediment barrier at drain inlets located downstream of construction site.
  2. Filter fabric shall be 15 mil (min.) "envirofence #10800" by nicolon corp. or approved equal.
  3. Contractor shall check the condition of the filter at the beginning and ending of each work day and repair/clean as necessary.

**TEMPORARY SEDIMENT BARRIER AT DRAIN INLET**  
Not to Scale

- NOTES:**
1. Contractor shall install sediment control filter at catch basins located downstream of construction site.
  2. During an above normal rainfall event, contractor shall remove sediment filters from curb opening and replace once the event has passed. Contractor shall check the condition of filter after each storm and clean/repair as necessary.



**SEDIMENT CONTROL FILTER AT CATCH BASIN**  
Not to Scale



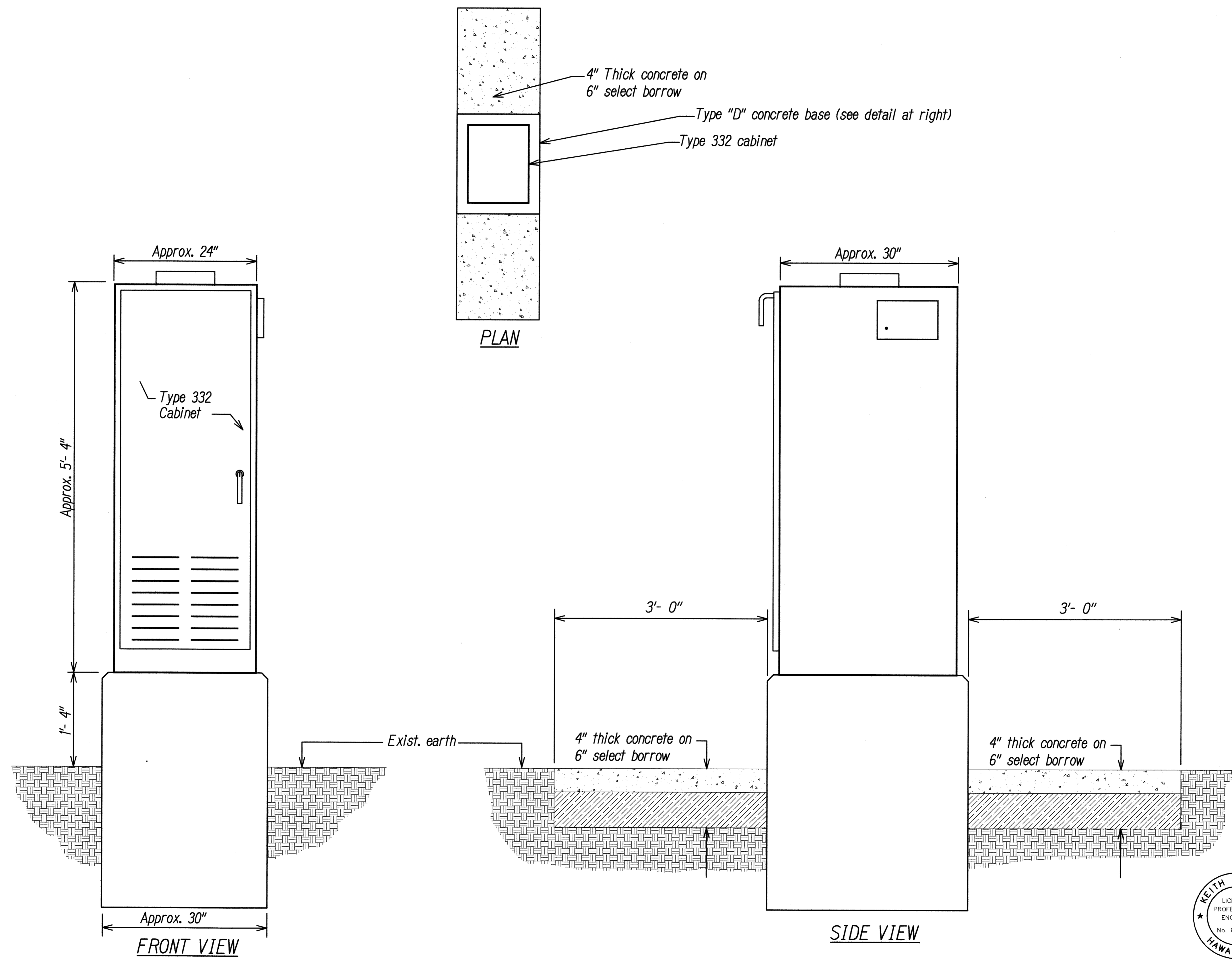
**332 CABINET**  
Not to Scale



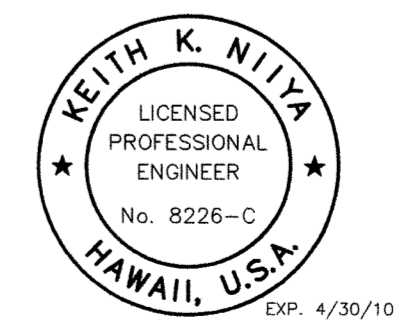
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**332 CABINET (FOR ISLAND OF MAUI AND LANAI ONLY)**  
*Not to Scale*



STATE OF HAWAII  
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 HIGHWAYS DIVISION  
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