

GENERAL NOTES:

1. 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.
2. The Contractor shall inform the Engineer at least three days prior to saw-cutting pavement and installing inductance loops.
3. Continuity of inductance loops and lead-in wires shall be tested and warranted for one year from date of acceptance by the Contractor.
4. 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.
5. 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.
6. The Contractor shall verify the location of the existing utilities and underground structures whether or not shown on plans.
7. 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.
8. 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.
9. 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.
10. Highway crossing sleeve shall be provided with 36" cover.

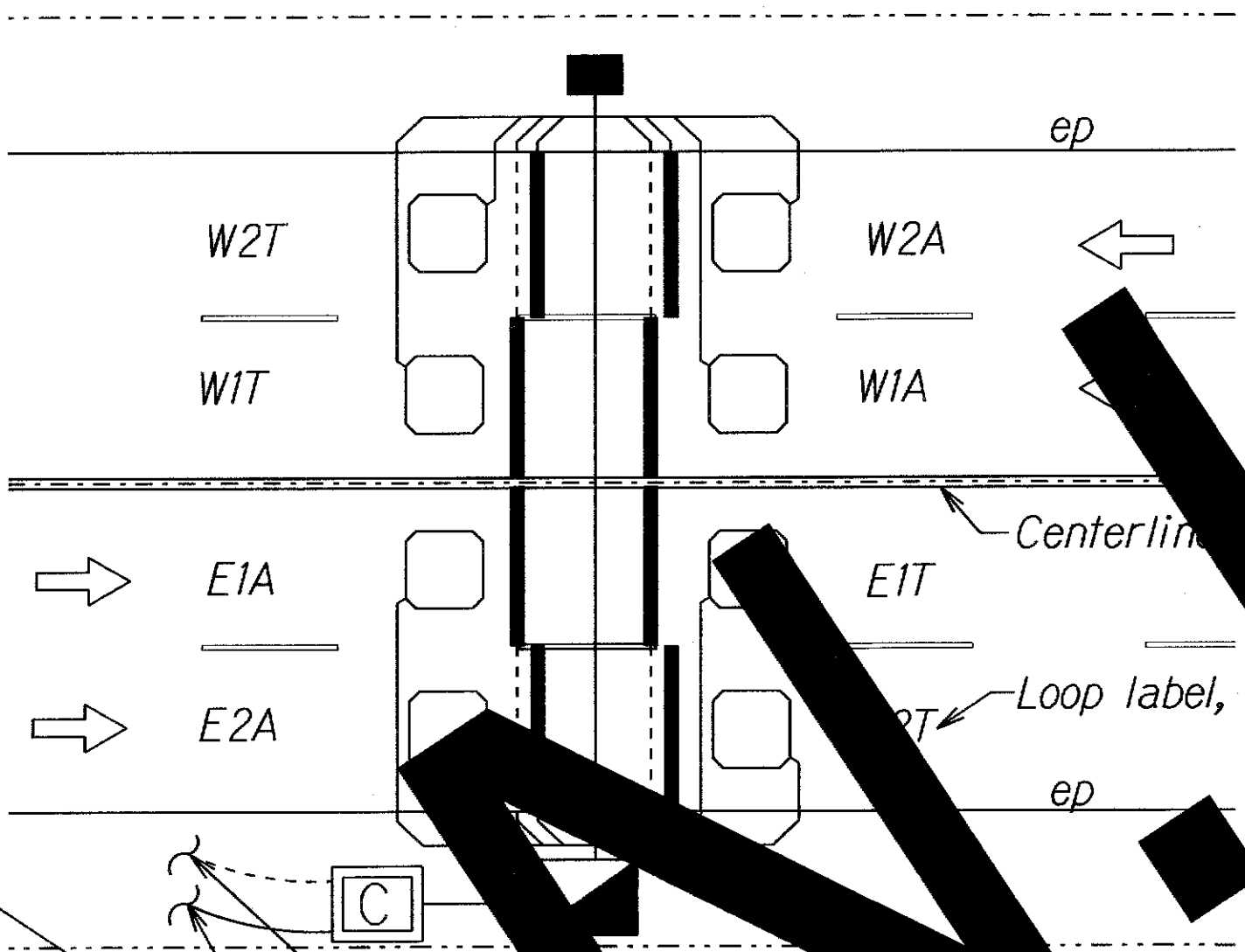
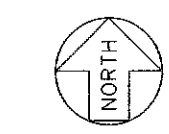
LOOP LAYOUT NOTES:

1. 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.
2. 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.
3. All lead-in wires shall be crimped with open end lugs that will fit into the terminal board slots snugly.
4. Stagger traffic loops on roadway less than 12 foot lane width.
5. The Contractor shall connect the inductance wires on each terminal slot.
6. 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.
7. Vacuum and clean sawcut thoroughly before installing sensors and/or cables and filling with hot tar or epoxy sealant.
8. 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.
9. All cable and wires terminated within an enclosure shall have a minimum 12" additional slack.

E2T
└─ Indicates approaching or trailing loop
└─ Indicates the lane number
└─ Indicates direction*

LOOP LABEL LEGEND:

E = East W = West
N = North S = South
A = Approaching T = Trailing



2" Concrete encased conduit and 3c#6 cable, see plans for continuous
2" Concrete encased conduit and 3c#6 cable, see plans for continuous

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

W2A
W1A
E1A
E2A

W2T
W1T
E1T
E2T

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

W1A
E1A

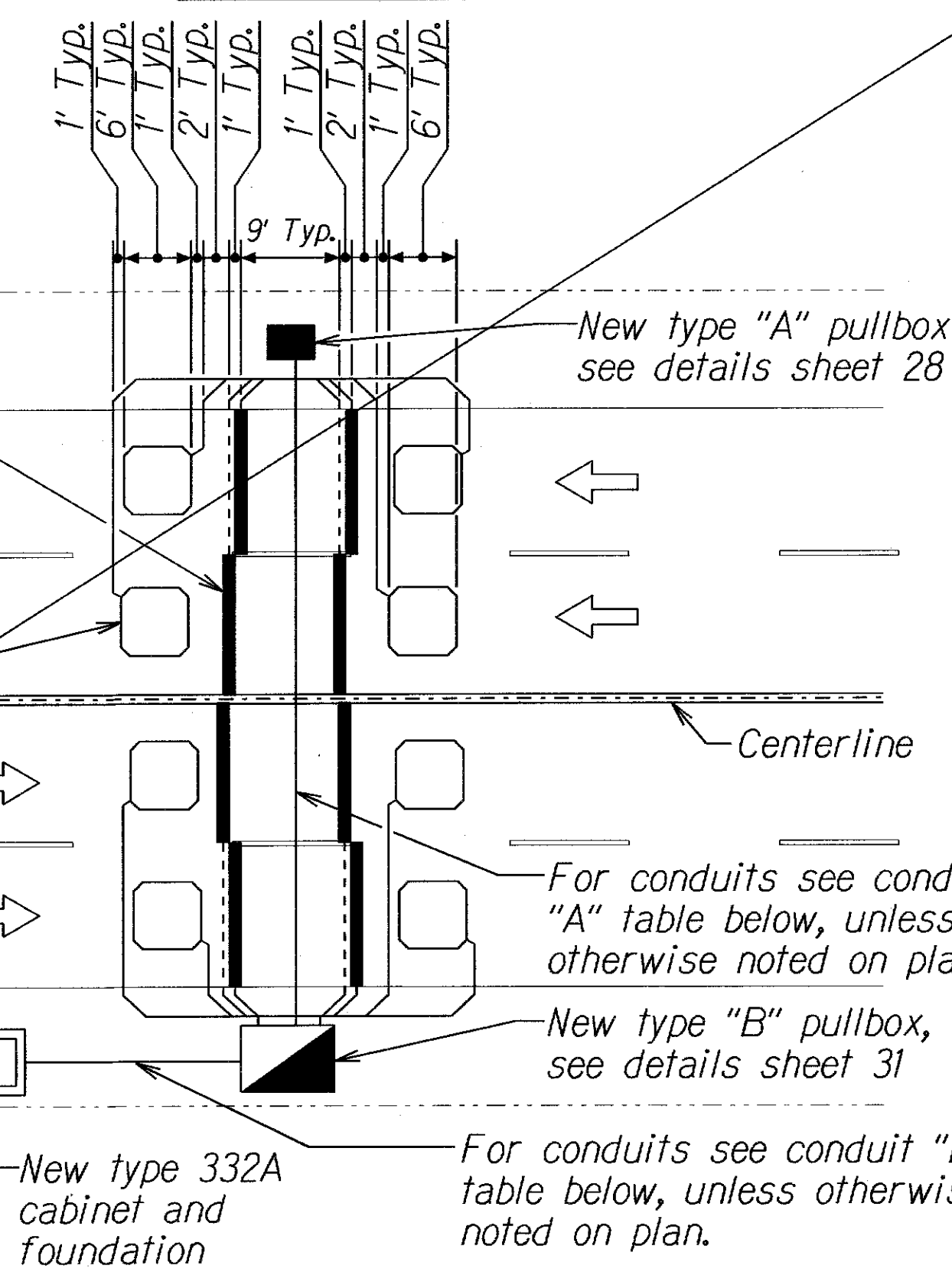
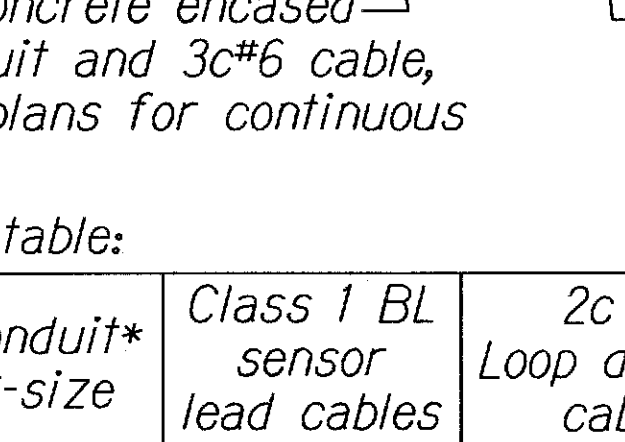
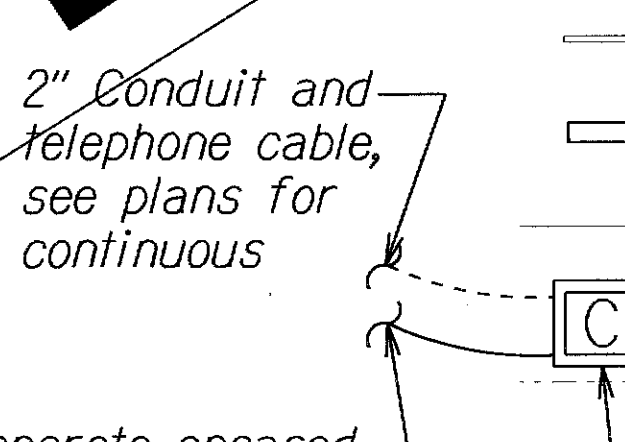
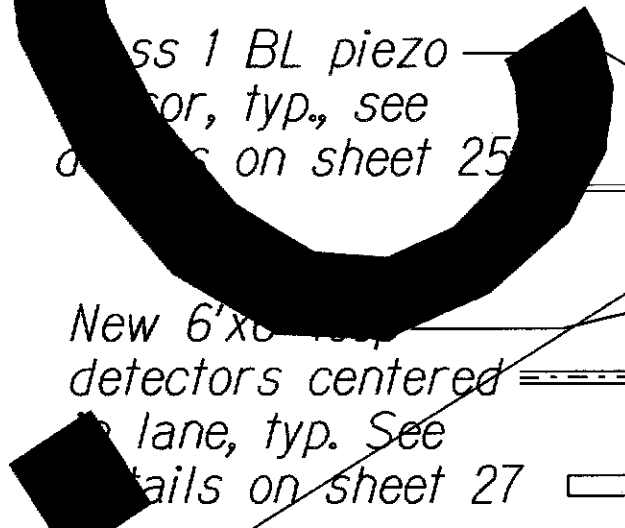
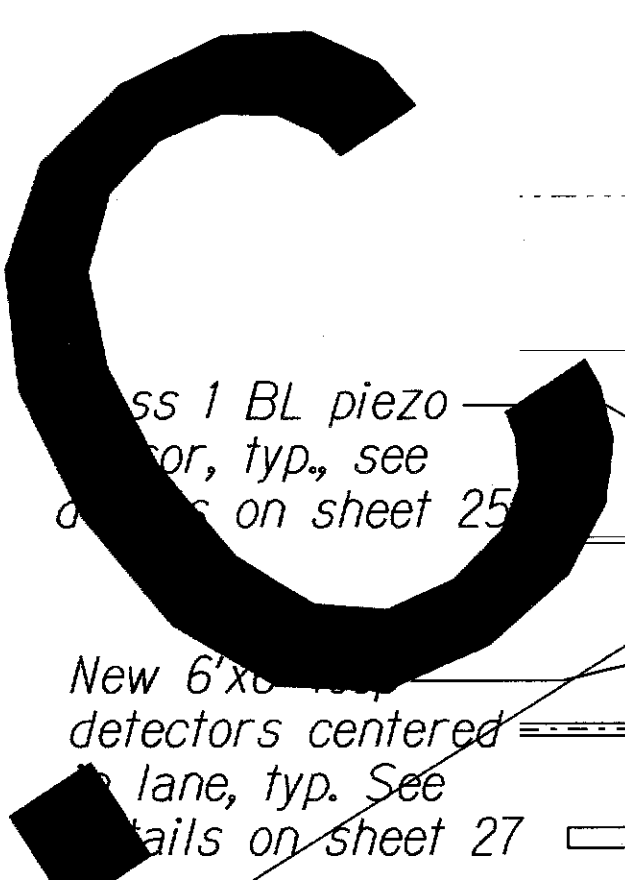
W1T
E1T

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:

1. All dimensions and callouts are typical unless otherwise noted on plan.
2. 332A cabinets shall not be placed next to exist. sprinkler heads.
3. 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

LEGEND FOR AS-BUILT POSTINGS

~~~~~ Squiggly line for as-built deletion  
=00= Double line for as-built deletion  
Roadway Text for as-built posting

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

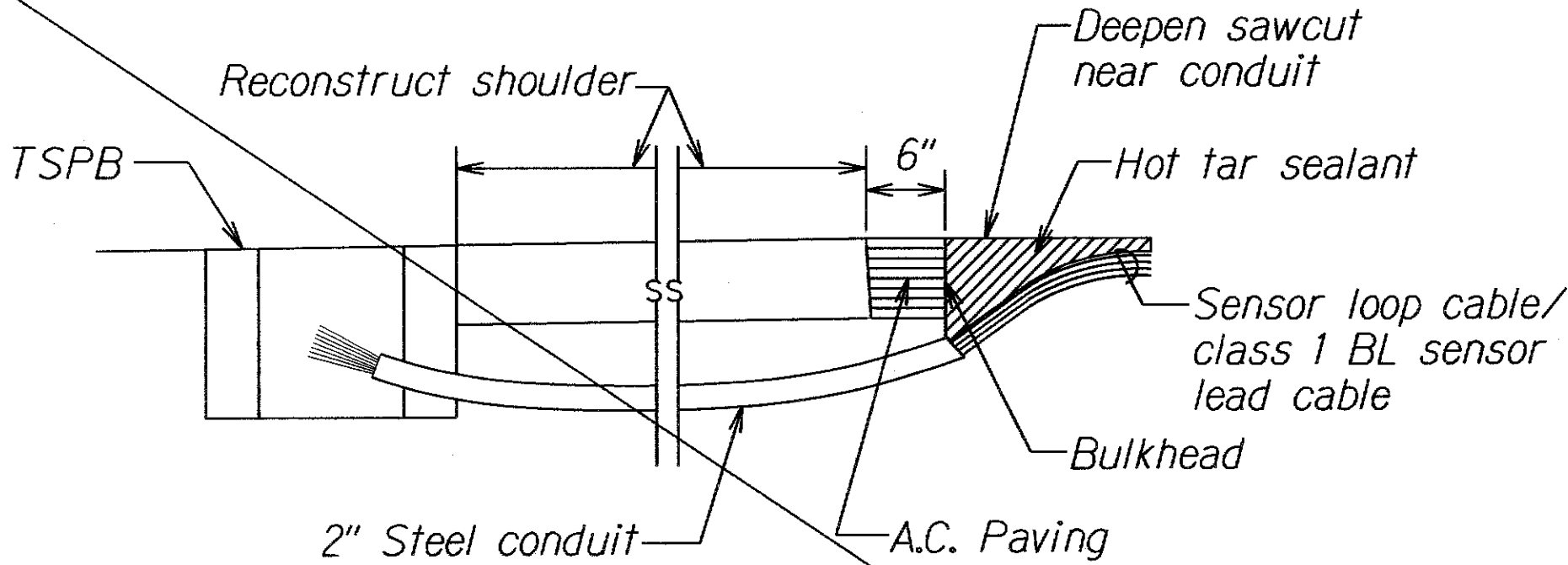
TRAFFIC COUNTING STATION DETAILS

Pavement Preventive Maintenance, I/B Lanes  
Keaau Bypass Road to Panaewa Bridge  
Federal-Aid Project No. STP-011-2(39)  
Scale: As Shown Date: May, 2011

SHEET No. 1 OF 2 SHEETS

"AS-BUILT"

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | STP-011-2(39)      | 2011        | 8         | 33           |

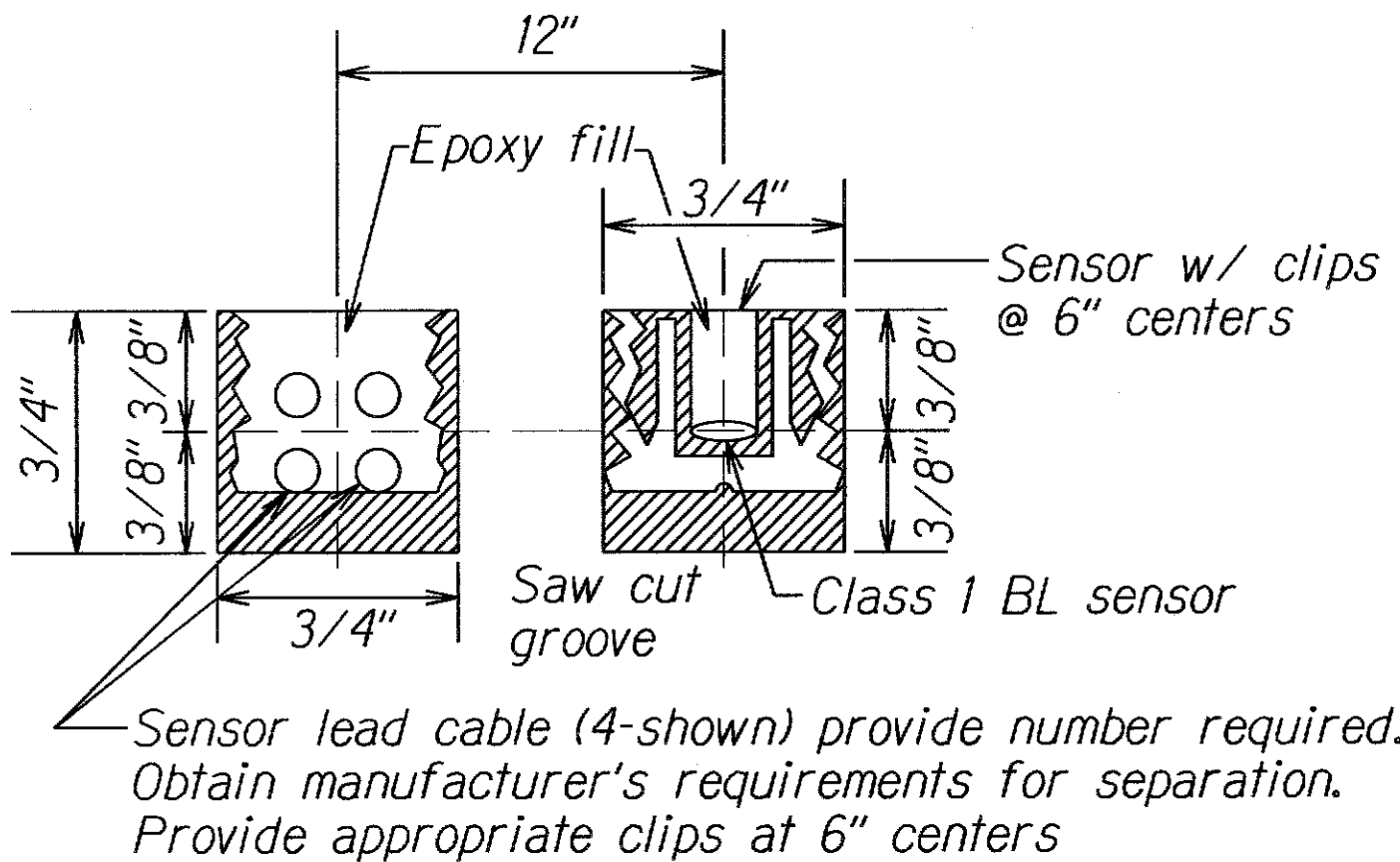


NOTES ON CONSTRUCTION AT END OF SAWCUT

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.

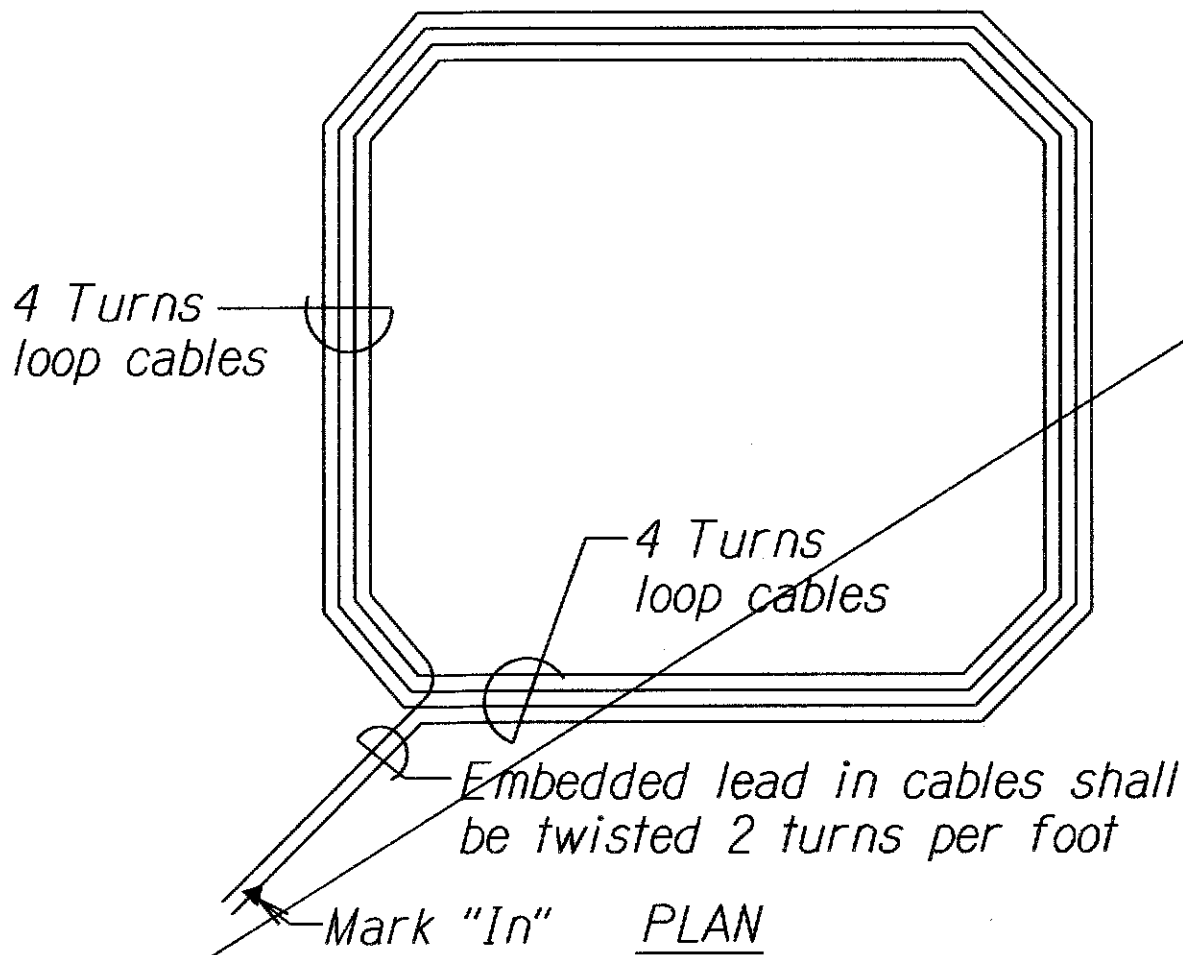
DETAIL OF SENSOR LOOP/ CLASS 1 BL SENSOR AT EDGE OF ROADWAY

Not to Scale



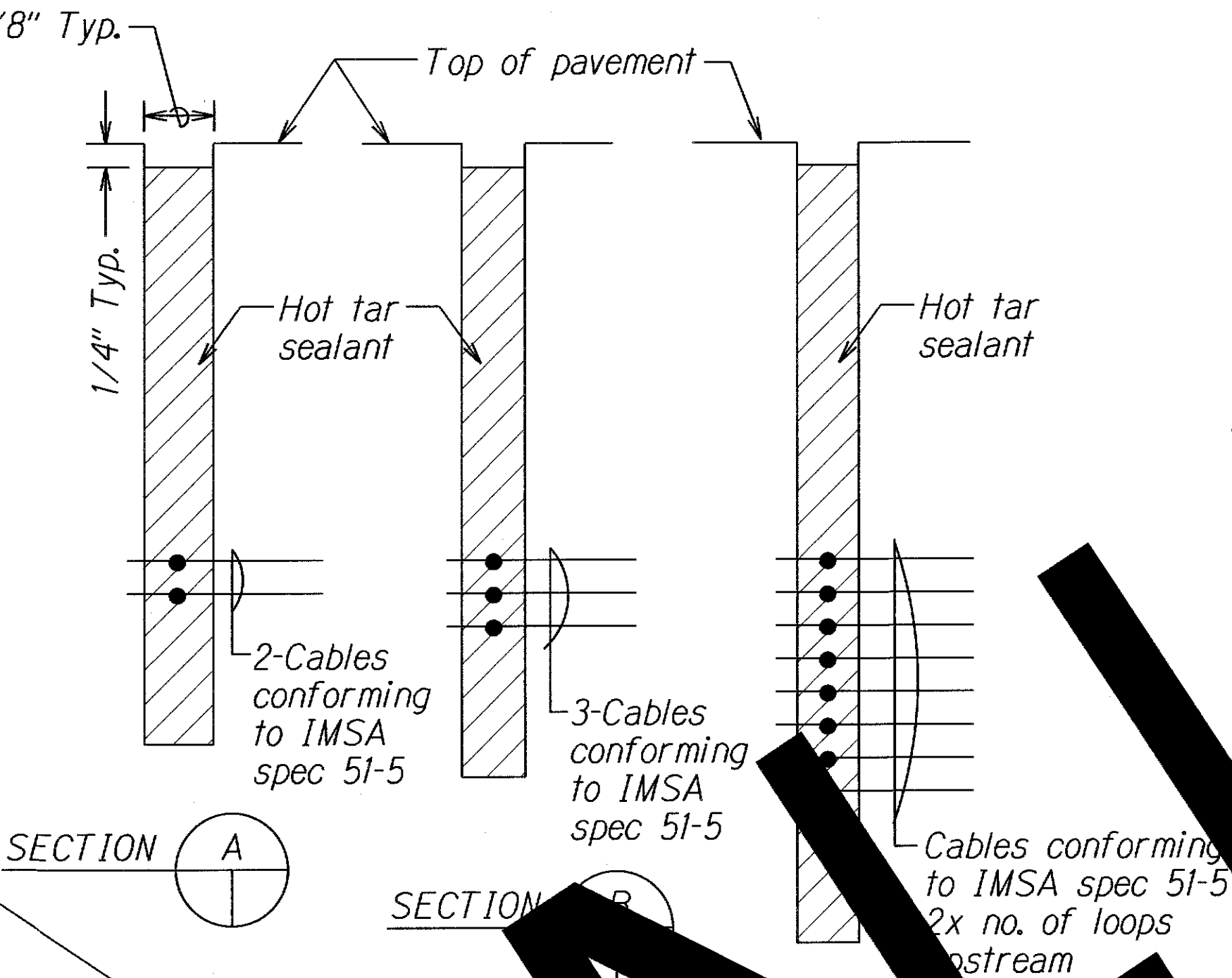
CLASS 1 BL SENSOR AND LEAD INSTALLATION DETAIL

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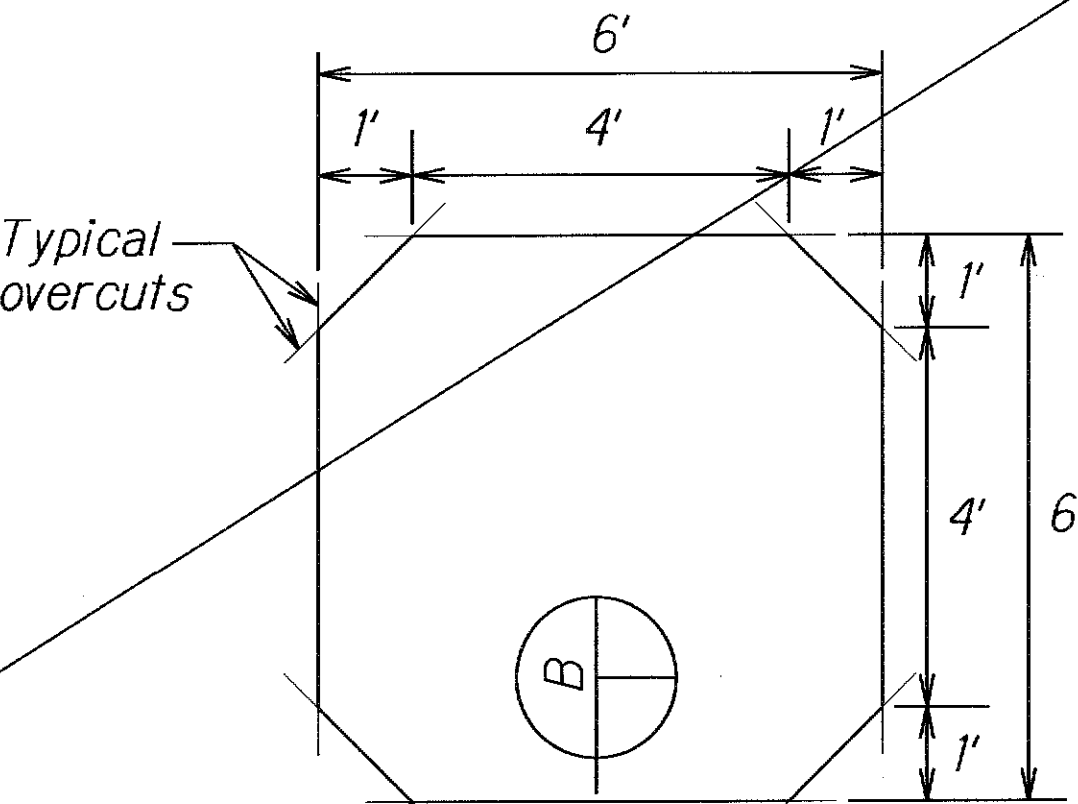
TYPICAL SENSOR LOOP WIRING DIAGRAM

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 SENSORLOOP 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 on solar panel assembly.
3. Provide surge protection for solar power system.
4. Solar panel assembly shall be capable of producing 200 watts per minute.

Handheld basketed cover with flange stainless steel head screw

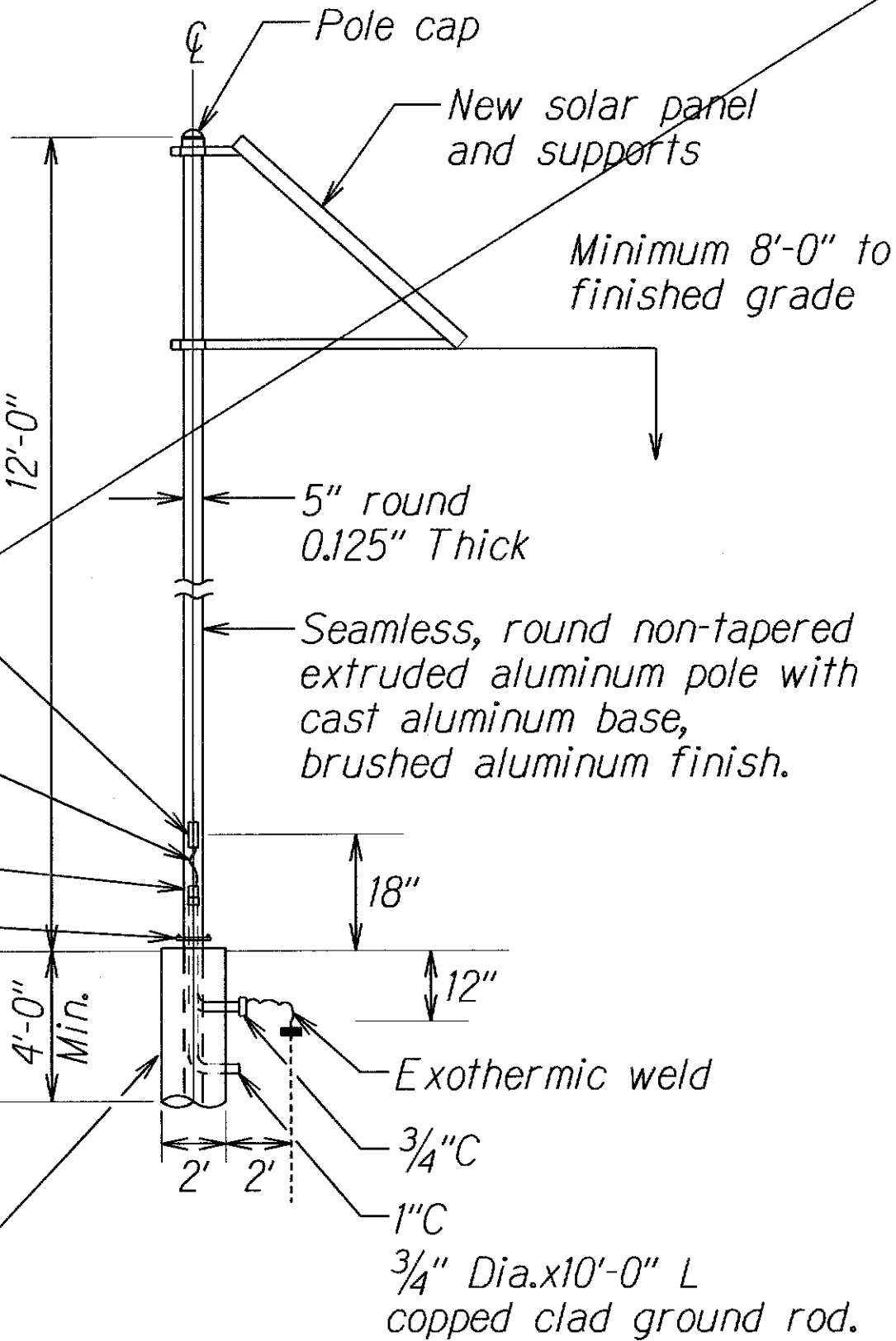
Ground lug and ground wire.

Base

Breakaway base

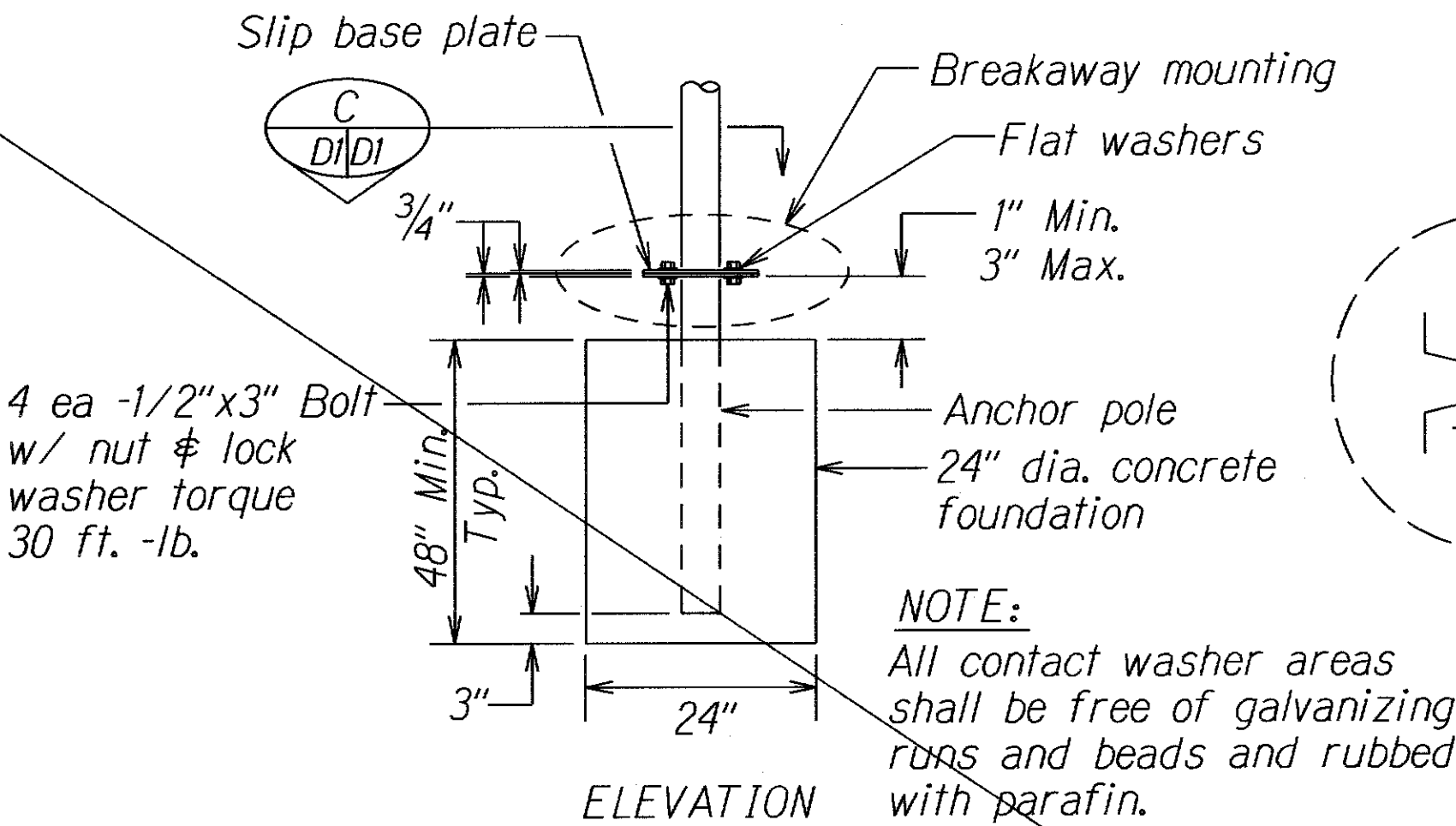
Finished grade

Concrete-drilled-in-hole concrete foundation



POLE AND SOLAR PANEL ASSEMBLY

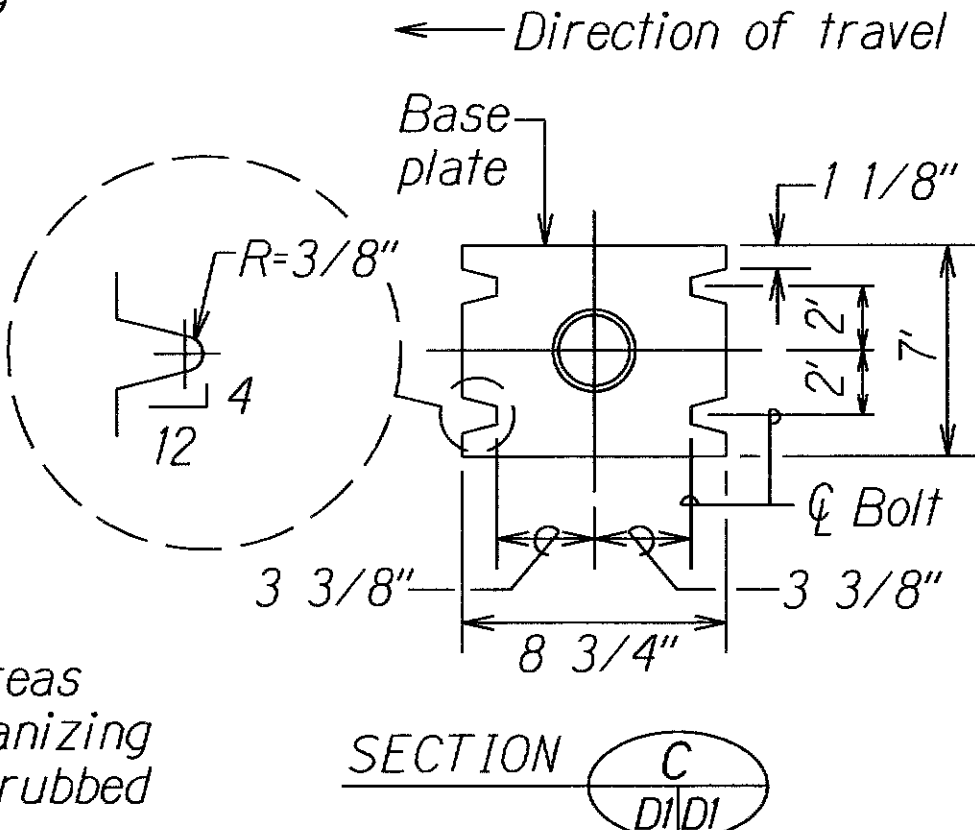
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NOTE: All contact washer areas shall be free of galvanizing runs and beads and rubbed with parafin.

CIDH CONC. FOUNDATION W/ BREAKAWAY MOUNTING

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LEGEND FOR AS-BUILT POSTINGS

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|---------|-------------------------------------|
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|         | Double line for as-built deletion   |
| Roadway | Text for as-built posting           |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
TRAFFIC COUNTING  
STATION DETAILS

Pavement Preventive Maintenance, 1/8 Lanes  
Kaaau Bypass Road to Panaewa Bridge  
Federal-Aid Project No. STP-011-2(39)

Scale: None Date: May, 2011

SHEET No. 2 OF 2 SHEETS

"AS-BUILT"