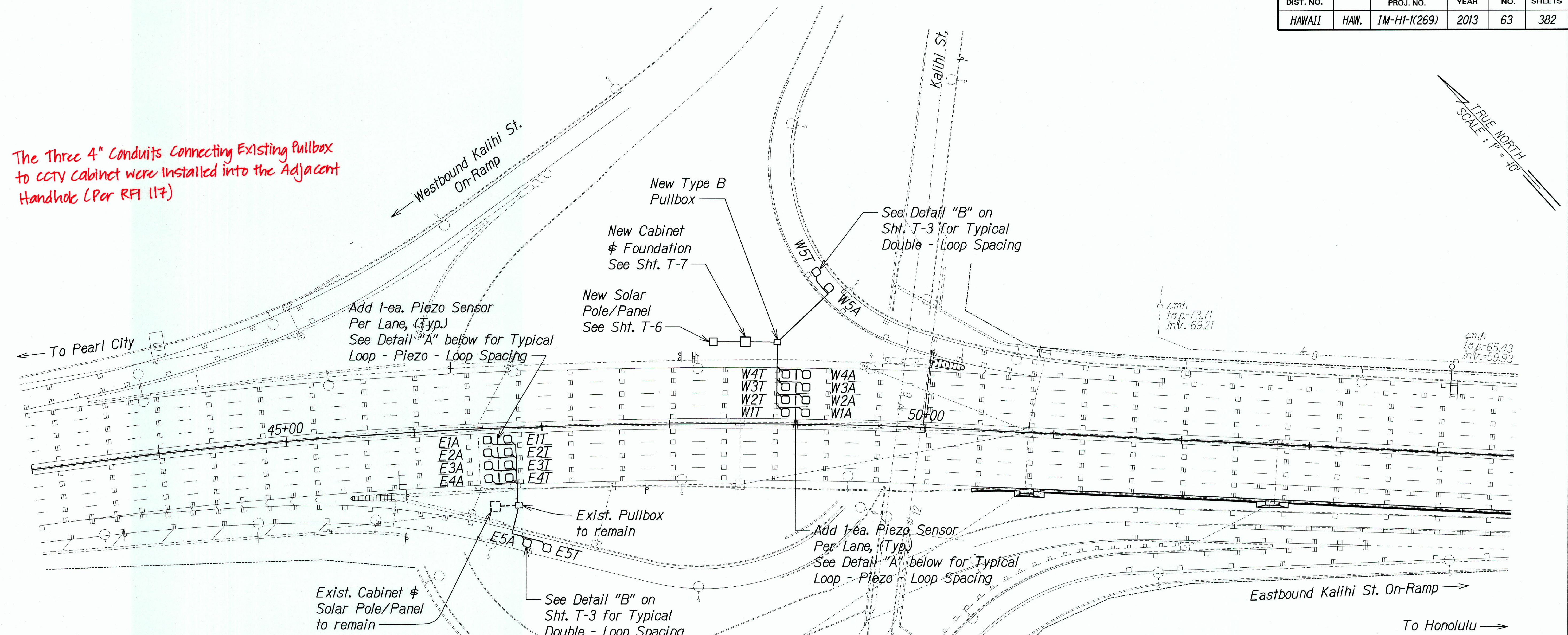
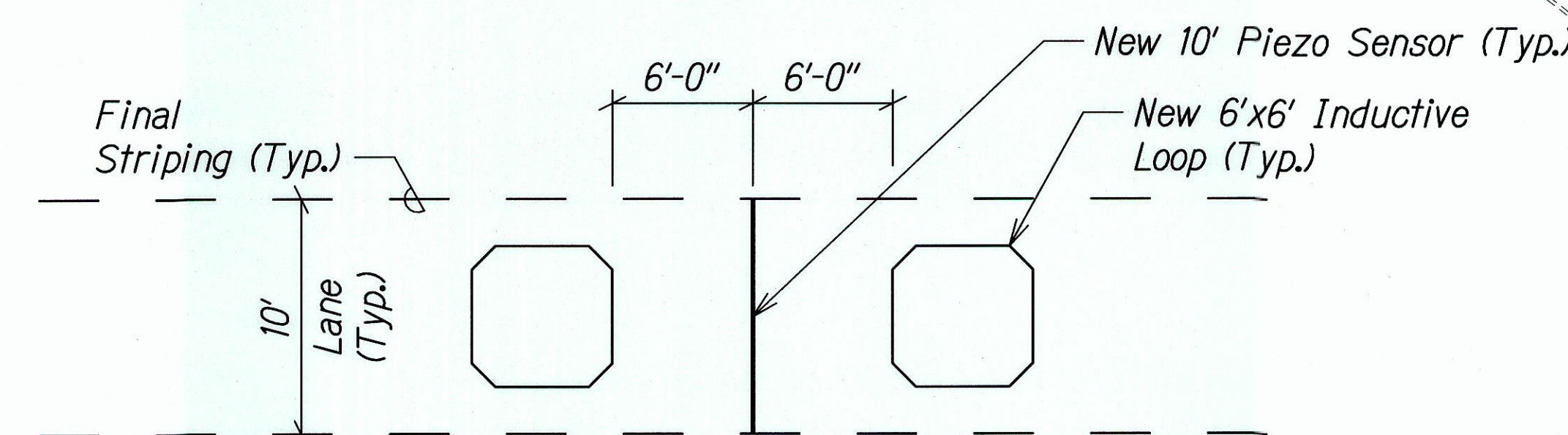


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-H1-1(269)	2013	63	382

The Three 4" Conduits Connecting Existing Pullbox to CCTV cabinet were installed into the Adjacent Handhole (Per RFI 117)



For VTC Stations at MP 19.56 & 20.22 the Sensor Requirement per lane is Loop-Piezo-Loop. at Locations MP 21.07 & 22.10, VTC stations only Require Double- Loop Sensors per lane (See RFI 045 for more info)



DETAIL "A"
TYPICAL LOOP - PIEZO - LOOP SPACING
Scale: NTS

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

T-164594 IDIQ PAVMT PREVENTIVE MAINTENANCE/HI-MIDDLE TO WARD/CADD/SHEETS/ROAD/T-1dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

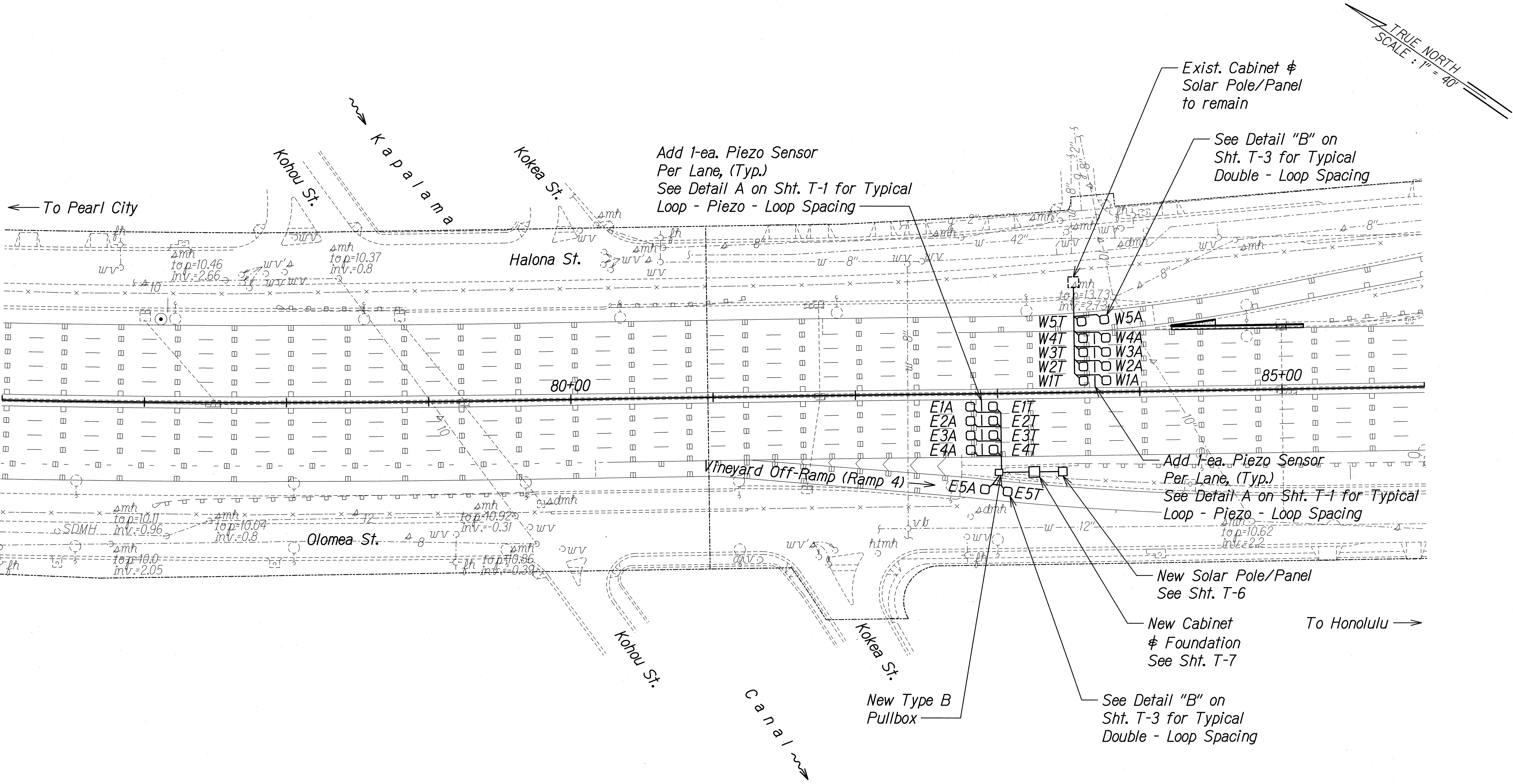
TRAFFIC COUNTING STATION
PLAN AT MILEPOST 19.56
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. 1M-H1-1(269)

Scale: 1"=40' Date: Apr. 26, 2013

SHEET No. T-1 OF 7 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	64	382



ORIGINAL PLAN	DATE
DESIGNED BY	
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DATE	

T-16459A IDIQ PAVMT PREVENTIVE MAINTENANCE/HI MIDDLE TO WARD/CADD/SHEETS/ROAD/T-2.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

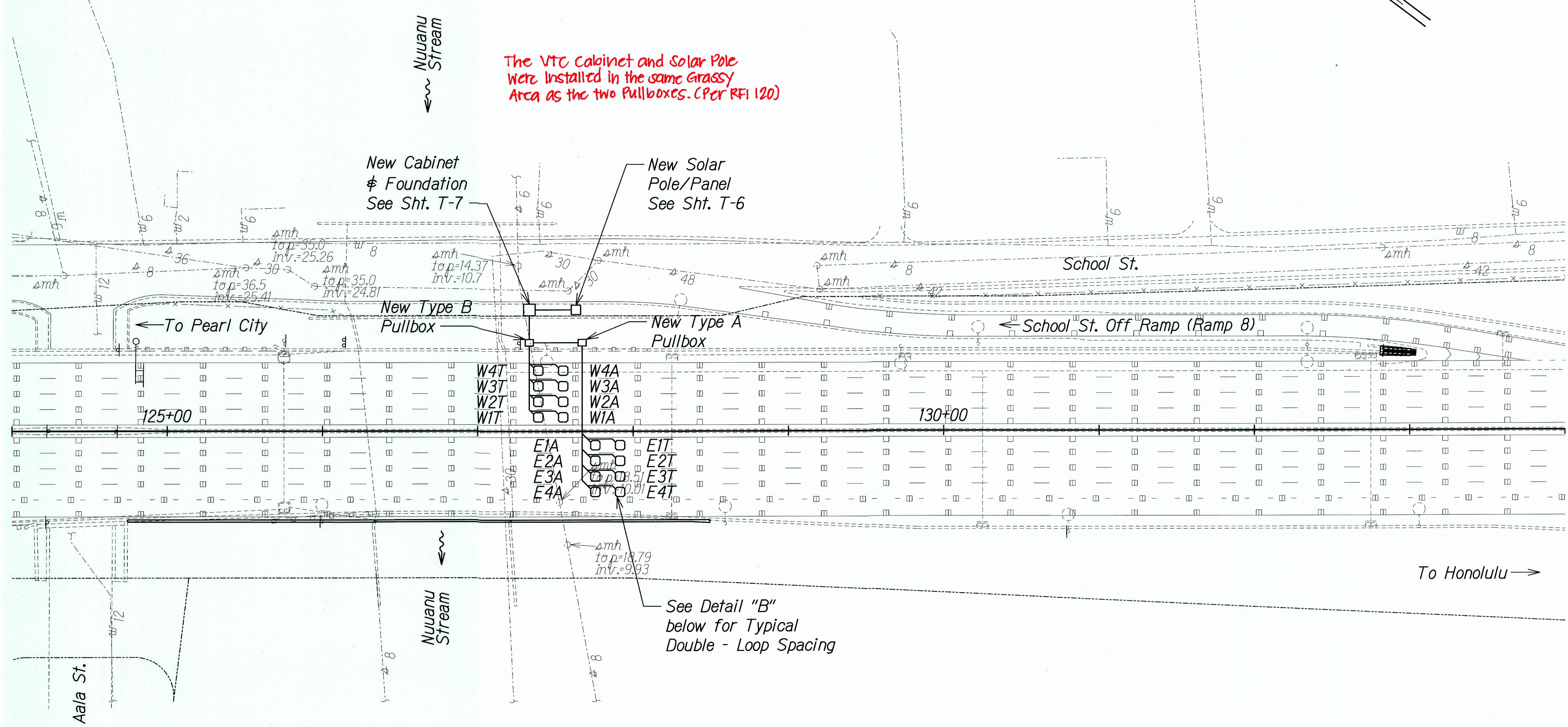
TRAFFIC COUNTING STATION
PLAN AT MILEPOST 20.22
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

Scale: 1"=40'
Date: Apr. 26, 2013

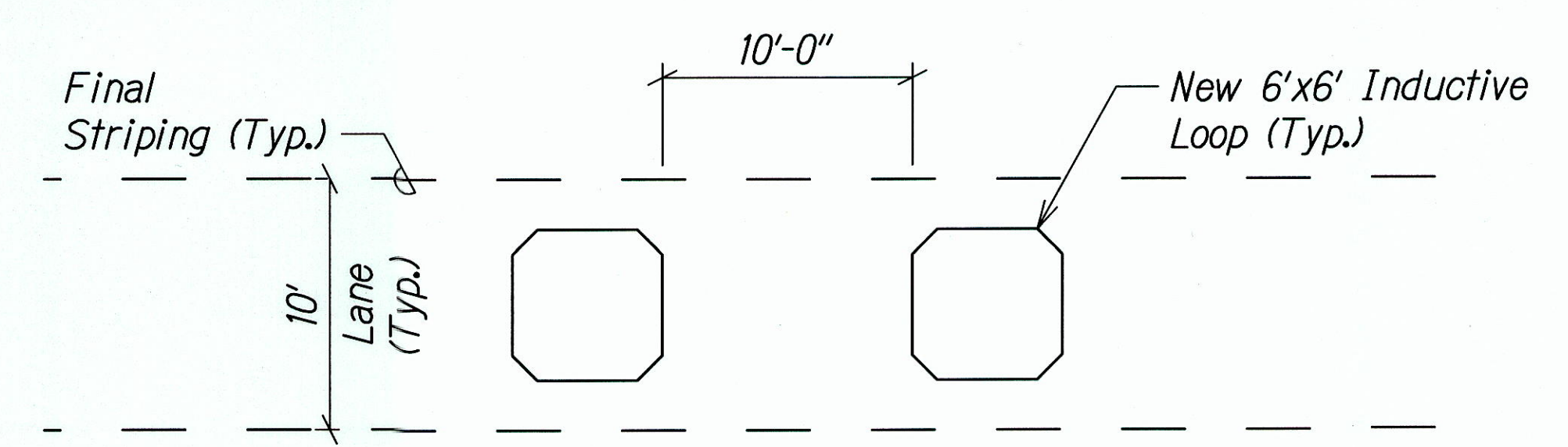
SHEET No. T-2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	65	382

TRUE NORTH
SCALE: 1" = 40'



The VTC Cabinet and Solar Pole were installed in the same grassy area as the two pullboxes. (Per RFI 120)



DETAIL "B"
TYPICAL DOUBLE - LOOP SPACING
Scale: NTS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC COUNTING STATION
PLAN AT MILEPOST 21.07
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. 1M-HI-1(269)

Scale: 1"=40' Date: Apr. 26, 2013

SHEET No. T-3 OF 7 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

T-1/16459A IDIQ PAVMT PREVENTIVE MAINTENANCE/HI MIDDLE TO WARD/CADD/SHEETS/ROAD/T-3.dgn

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	66	382

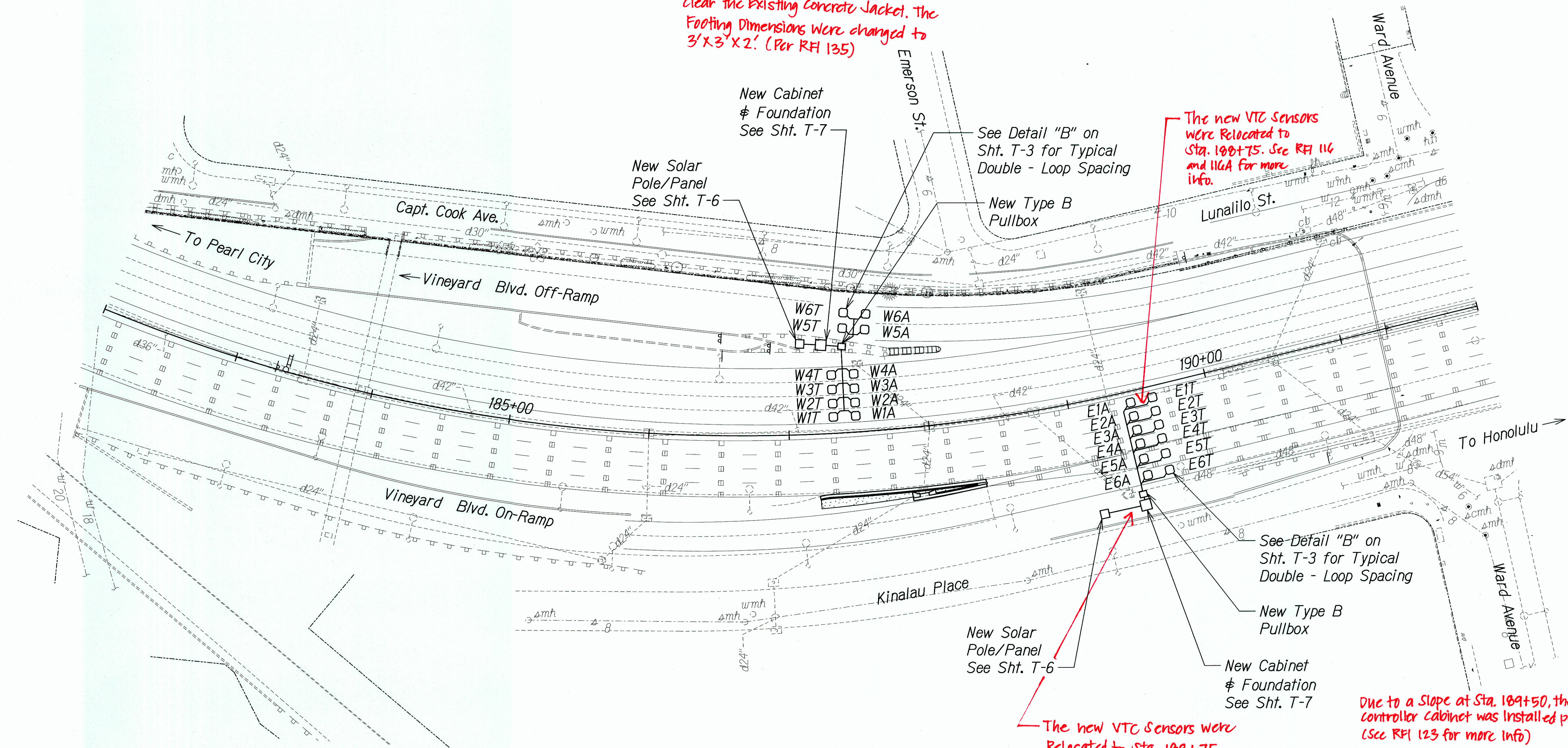
TRUE NORTH
SCALE: 1" = 40'

We Relocated the Solar Panel a few Feet Away Towards Diamond Head to clear the Existing Concrete Jacket. The Footing Dimensions Were changed to 3'x3'x2'. (Per RFI 135)

The new VTC Sensors were Relocated to Sta. 188+75. See RFI 116 and 116A for more info.

The new VTC Sensors were Relocated to Sta. 188+75. See RFI 116 & 116A for more info.

Due to a Slope at Sta. 189+50, the VTC controller cabinet was Installed per C-116A. (See RFI 123 for more info)



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED	DRAWN BY	
	DESIGNED BY	
	CHECKED BY	

16/16659A IDIQ PAYMT PREVENTIVE MAINTENANCE/HI MIDDLE TO WARD/CADD/SHEETS/ROAD/T-4.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC COUNTING STATION
PLAN AT MILEPOST 22.10
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

Scale: 1"=40' Date: Apr. 26, 2013

SHEET No. T-4 OF 7 SHEETS

"AS-BUILT"

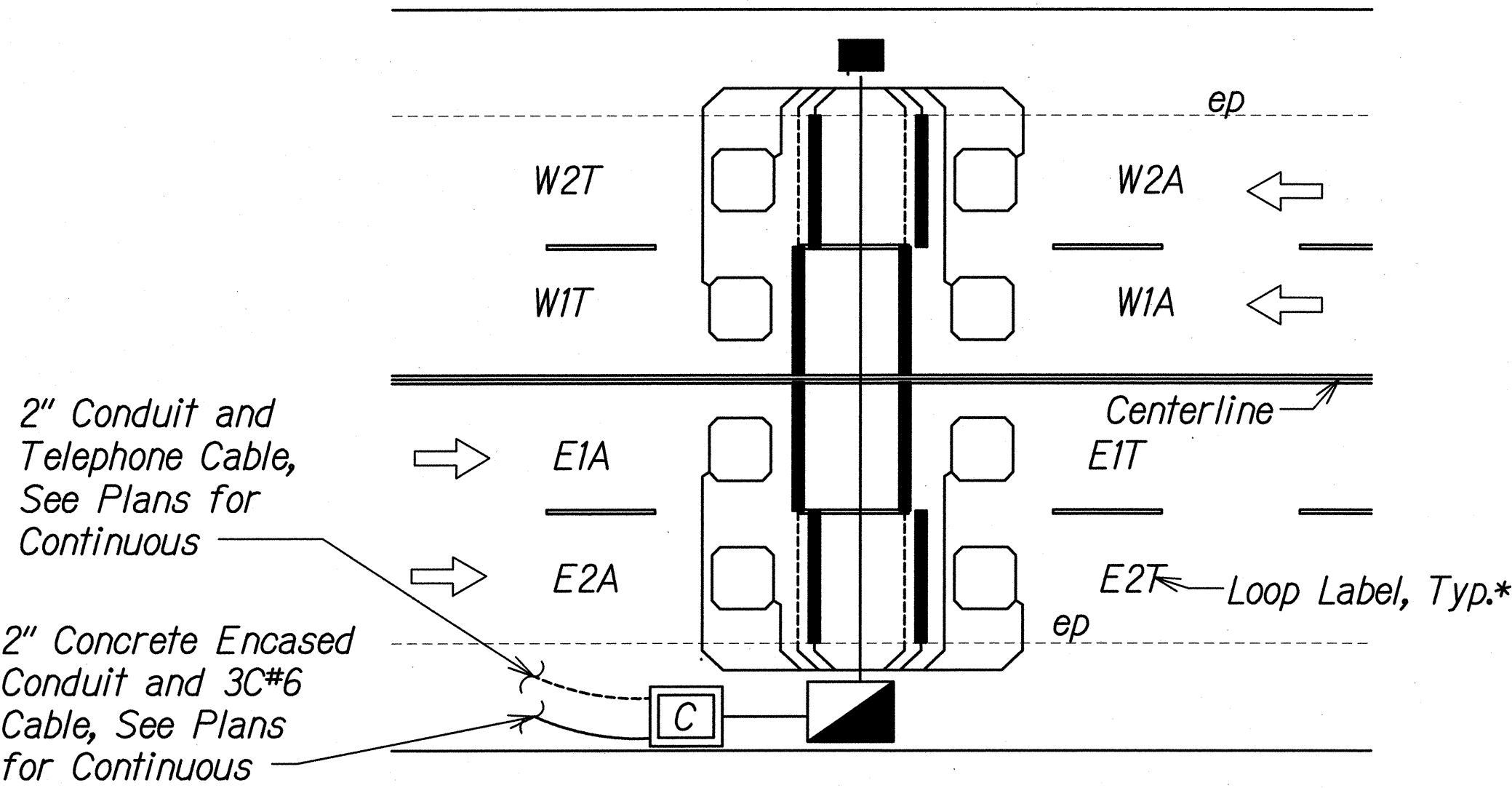
GENERAL NOTES:

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 inductive 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. 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 damages 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 will not be permitted, unless approval by the Engineer in writing.
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 pairs.
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 lane number
└─┬─┐ Indicates directions*



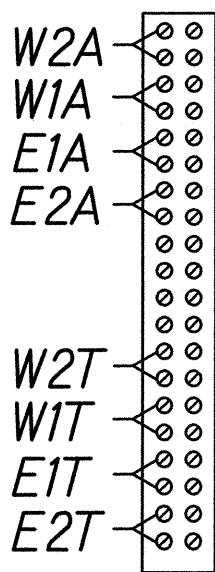
*NOTE:

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

Scale: NTS

Top of Terminal Block



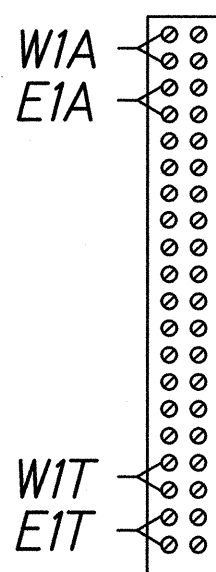
Bottom of Terminal Block

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

TYPICAL FOUR-LANE ROADWAY TERMINAL BLOCK WIRING DETAILS

Scale: NTS

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

Scale: NTS

LOOP LABEL LEGEND:

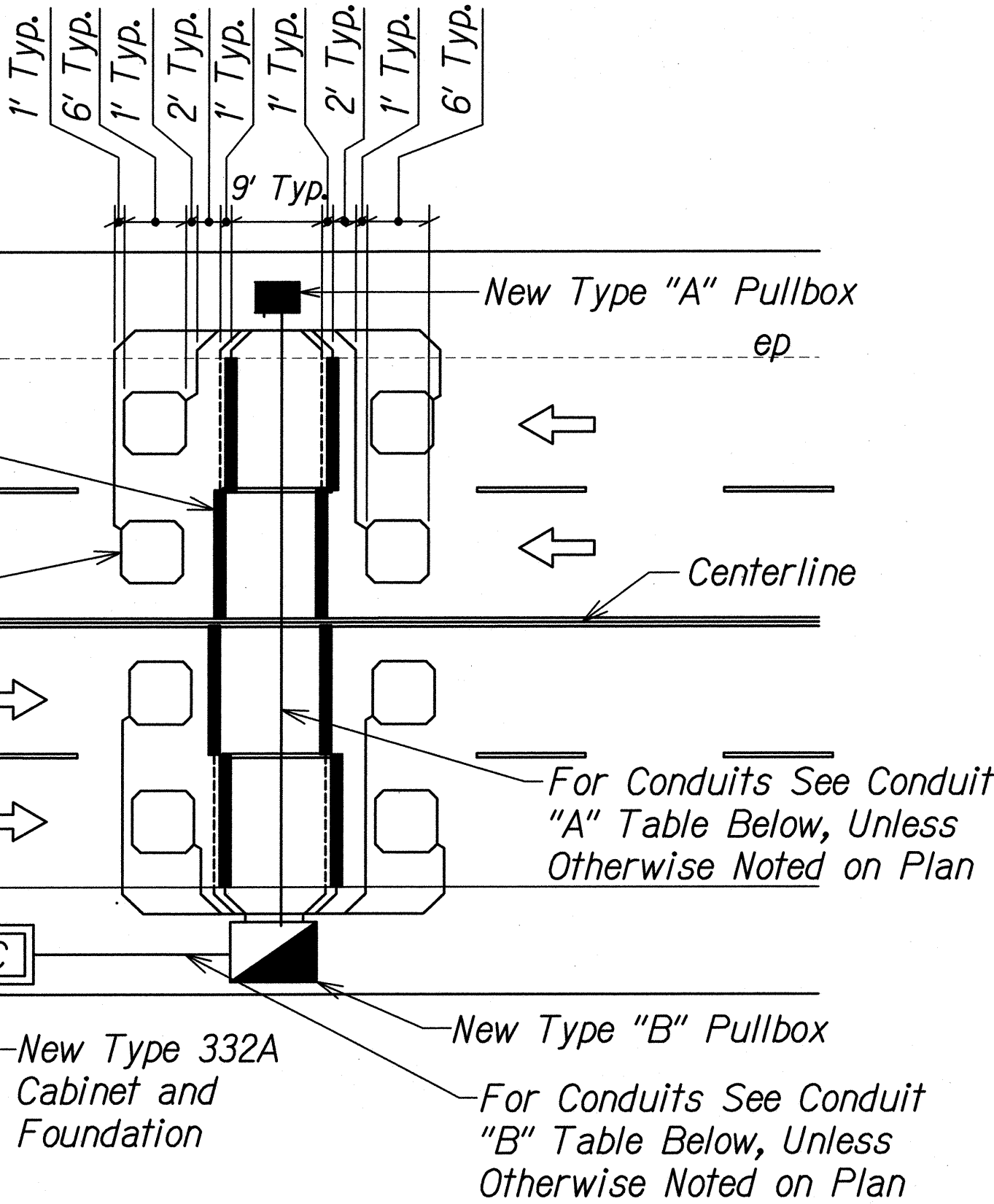
E = East
W = West
N = North
S = South
A = Approaching
T = Trailing

Class 1 BL Piezo Sensor, Typ.

New 6'x6' Loop Detectors Centered in Lane, Typ.

2" Conduit and Telephone Cable, See Plans for Continuous

2" Concrete Encased Conduit and 3C#6 Cable, See Plans for Continuous



Conduit "A" Table:

Number of Lanes	Conduit* #Size	Class 1 BL Sensor Lead Cables	2C #14 Loop Detector Cable
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 Cable
2	1-4", 1-2"	4	4
4	3-4"	8	8

NOTES:

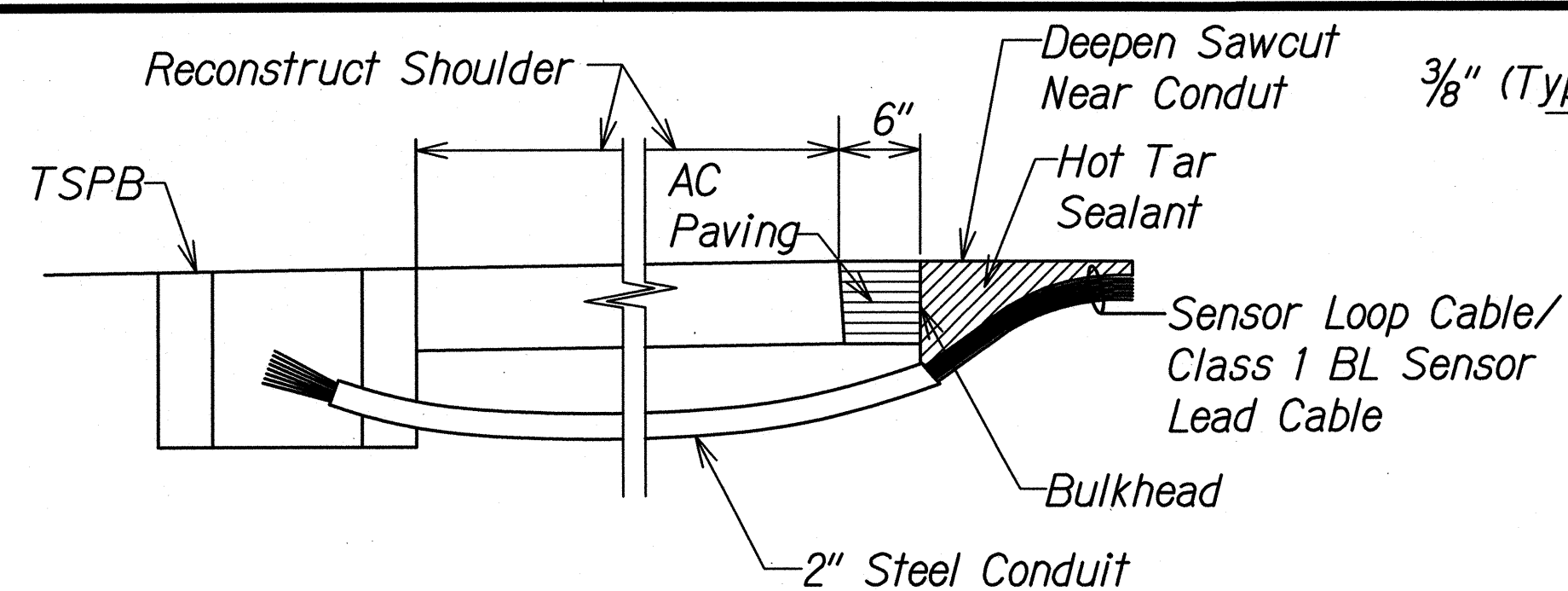
1. All dimensions and callouts are typical unless otherwise noted on plan.
2. 332A Cabinets shall not be placed next to exist. sprinkler heads.

TYPICAL TRAFFIC COUNTING STATION LAYOUT DETAIL

Scale: NTS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TRAFFIC COUNTING
STATION DETAILS**
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-H1-K269
Scale: NTS Date: Apr. 26, 2013
SHEET No. T-5 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	68	382

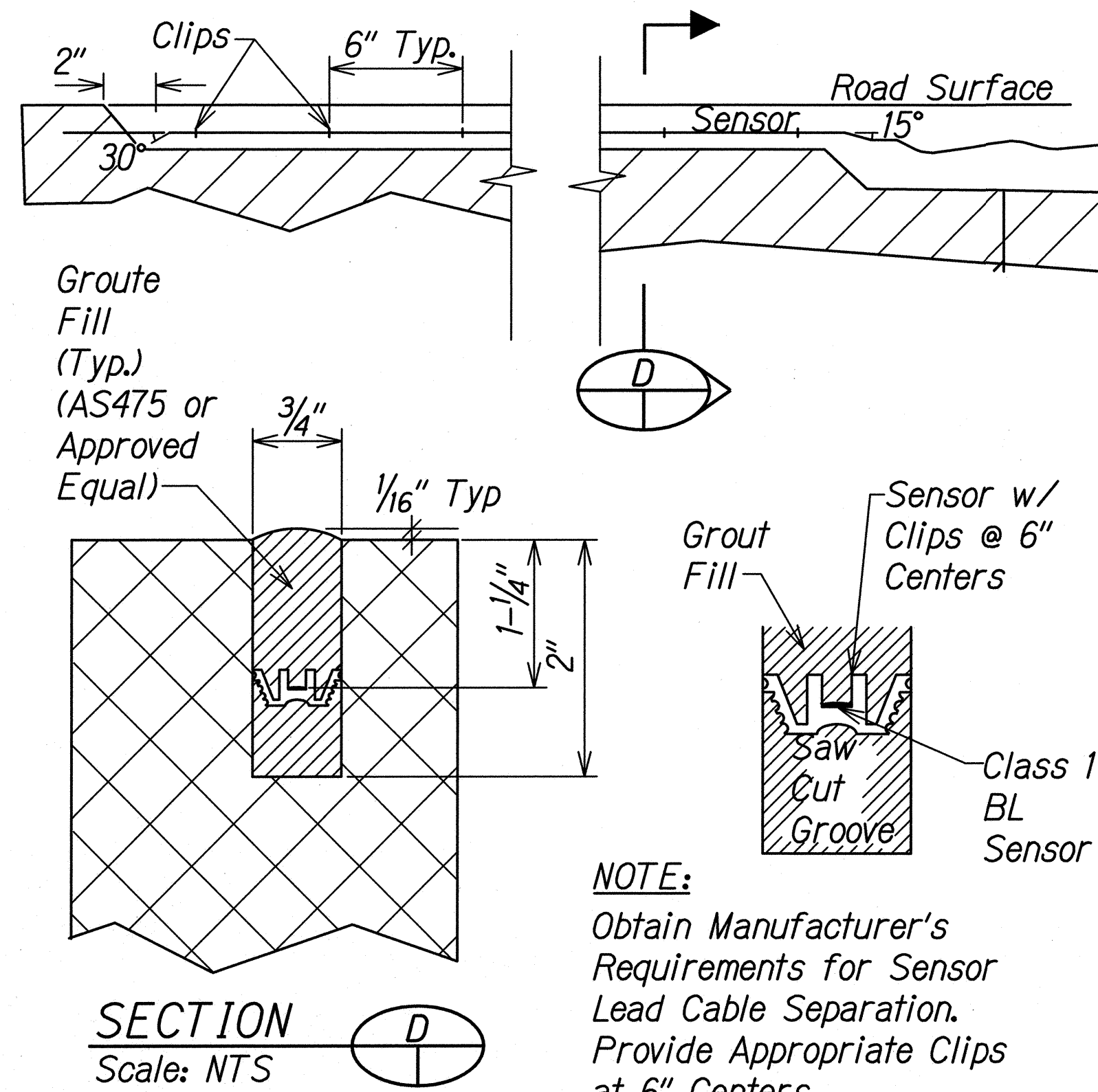


NOTES ON CONSTRUCTION AT END OF SAWCUT:

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 AC.
5. Reconstruct curb and gutter as required.

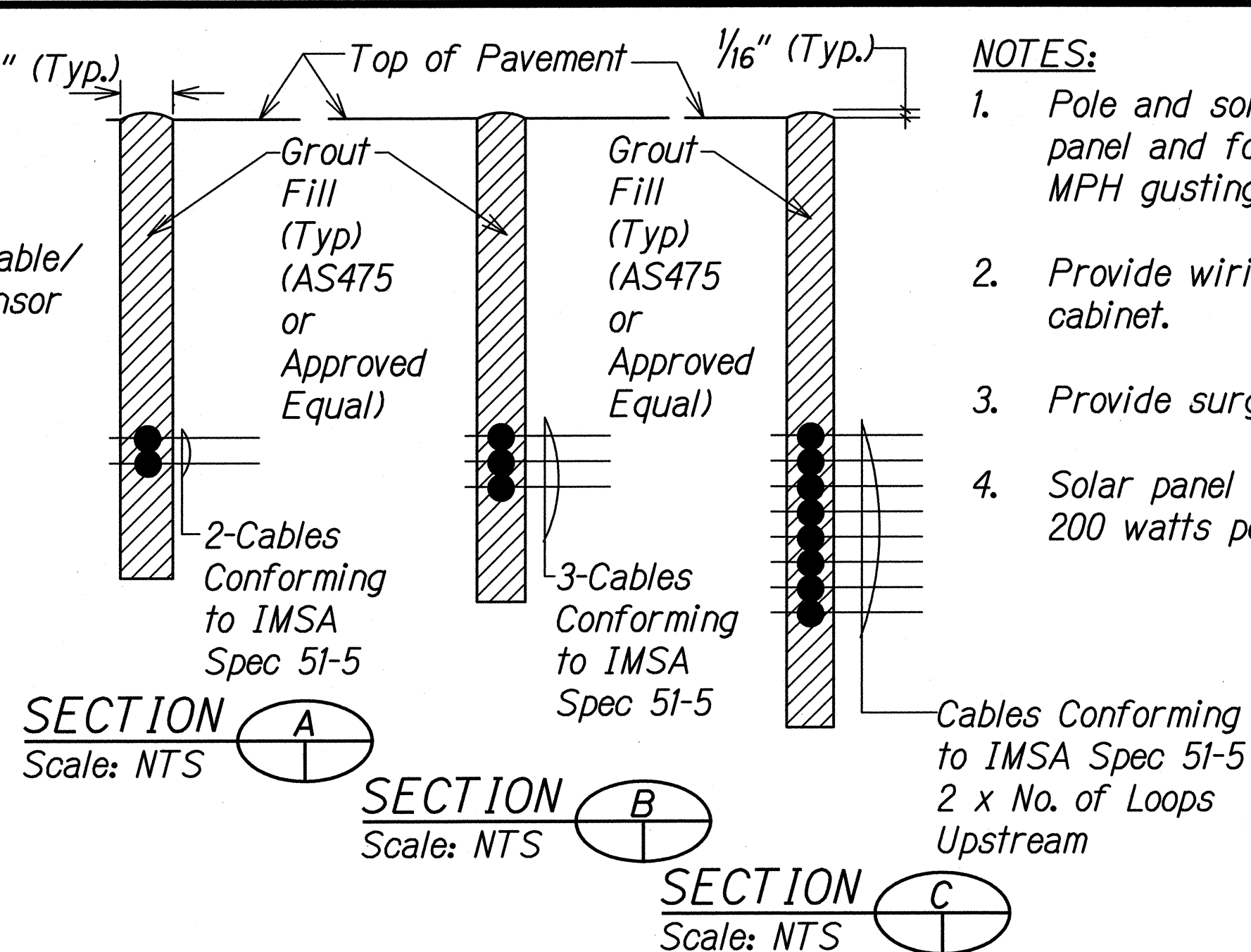
DETAIL OF SENSOR LOOP/CLASS 1 BL SENSOR AT EDGE OF ROADWAY

Scale: NTS



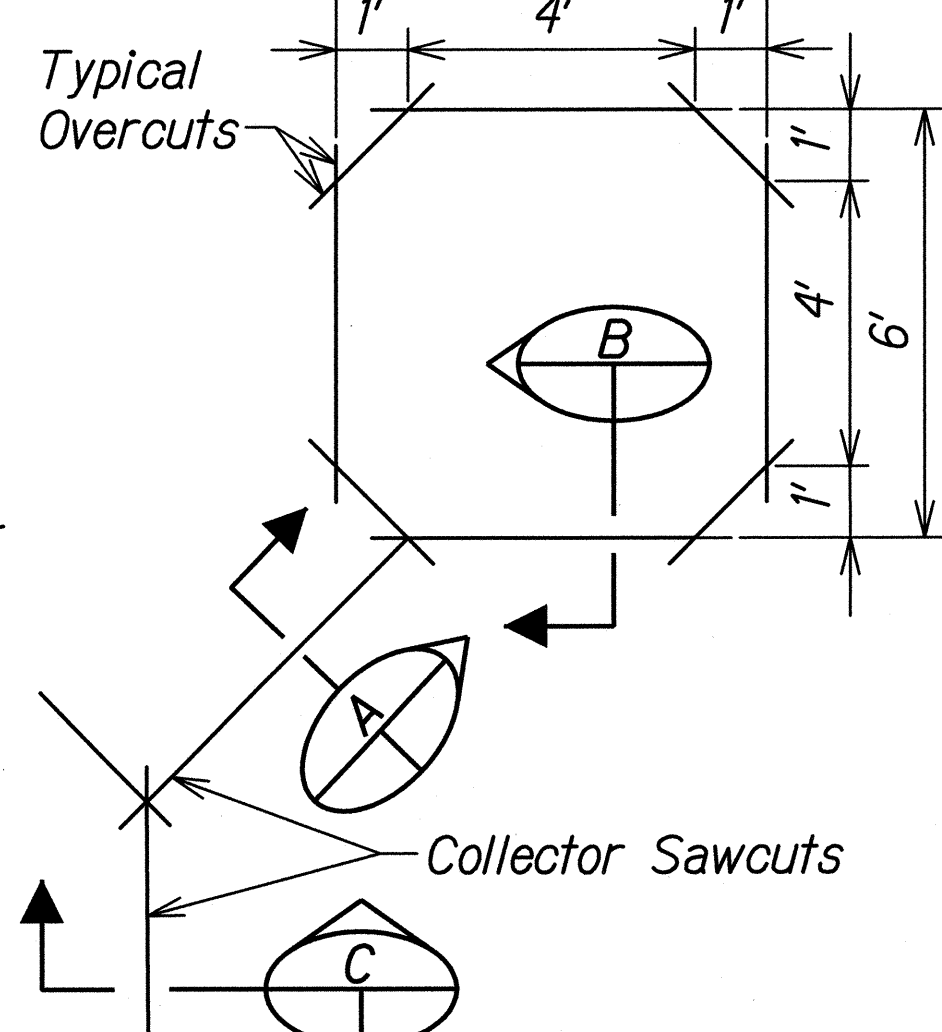
CLASS 1 BL PIEZOELECTRIC SENSOR INSTALLATION DETAIL

Scale: NTS



TYPICAL SECTION THROUGH SENSOR LOOP

Scale: NTS

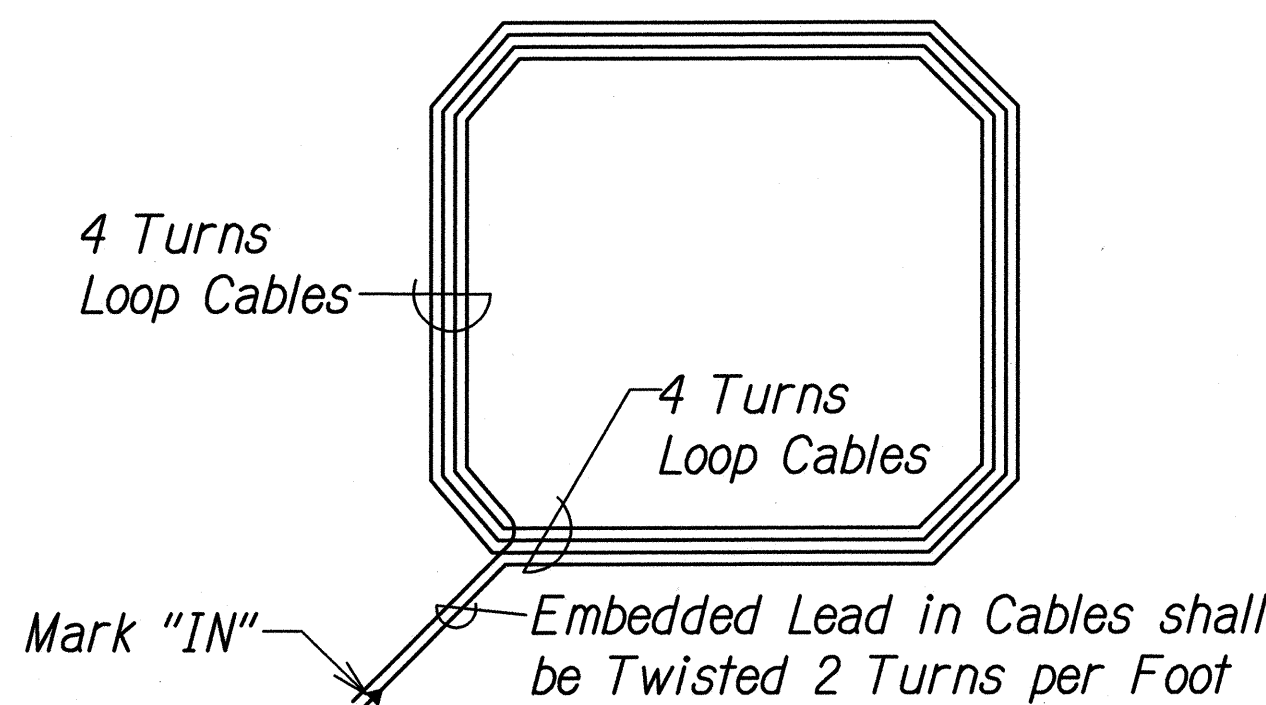


NOTES:

1. Length of overcuts shall be kept to a minimum. All overcuts shall be backfilled with hot tar.
2. 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

Scale: NTS

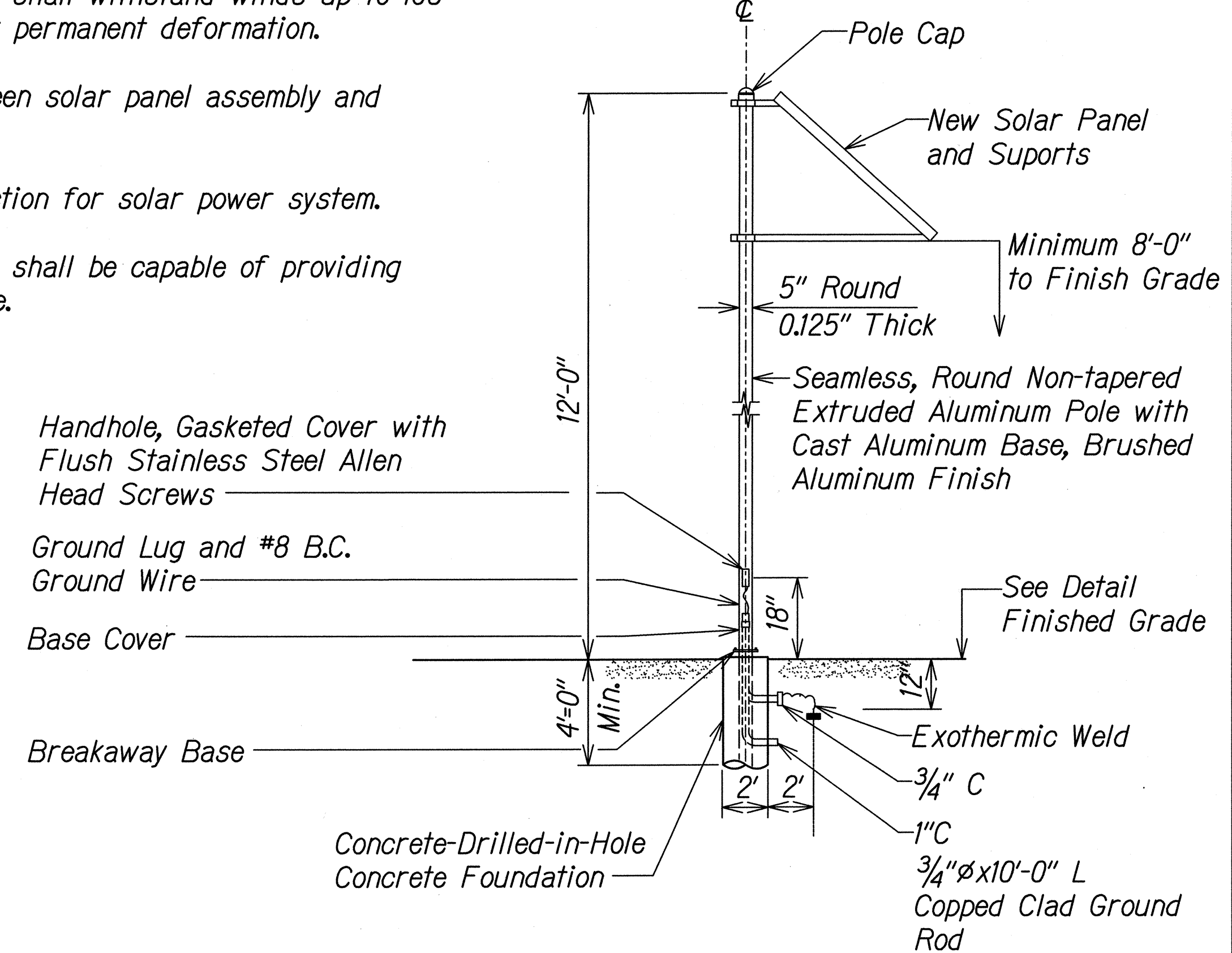


TYPICAL SENSOR LOOP WIRING DIAGRAM

Scale: NTS

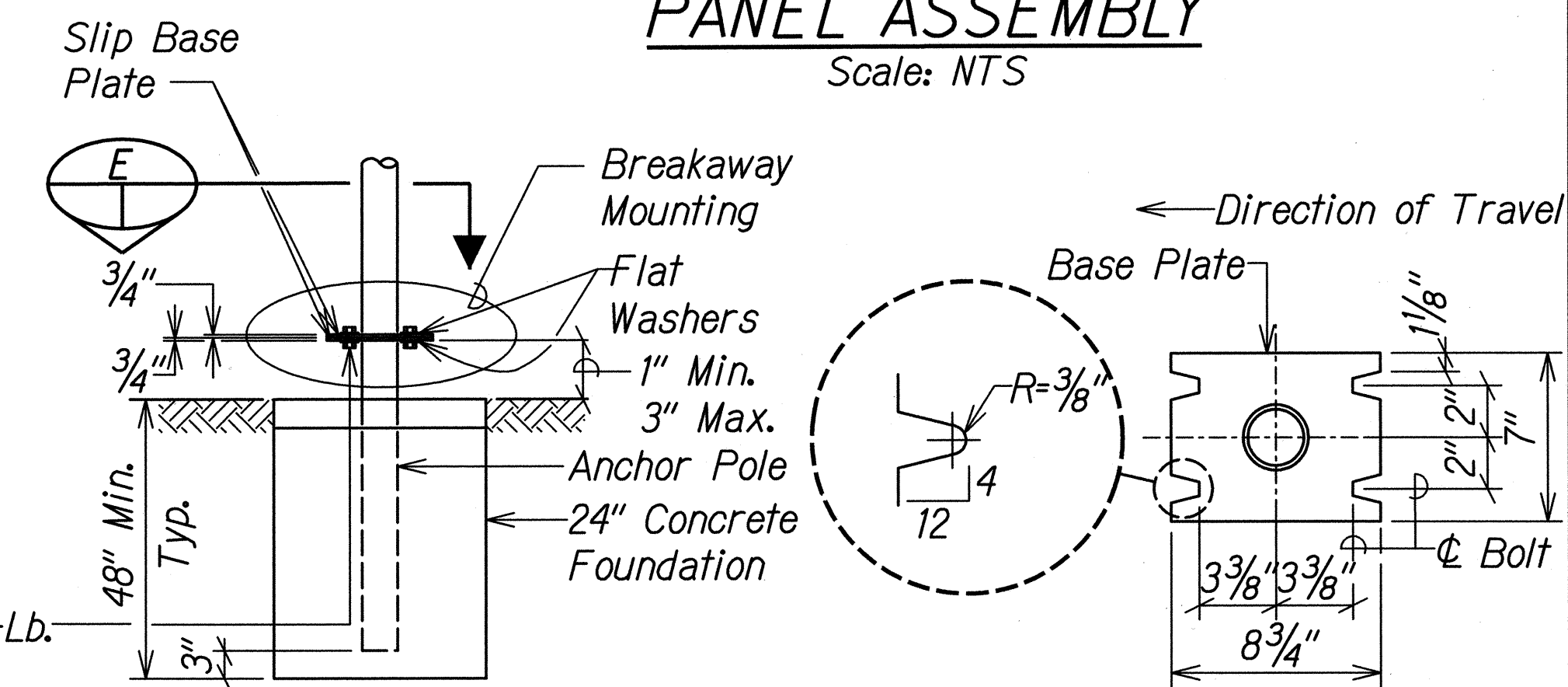
NOTES:

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.



POLE AND SOLAR PANEL ASSEMBLY

Scale: NTS



ELEVATION

NOTE:

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

CIDH CONC. FOUNDATION W/ BREAKAWAY MOUNTING

Scale: NTS

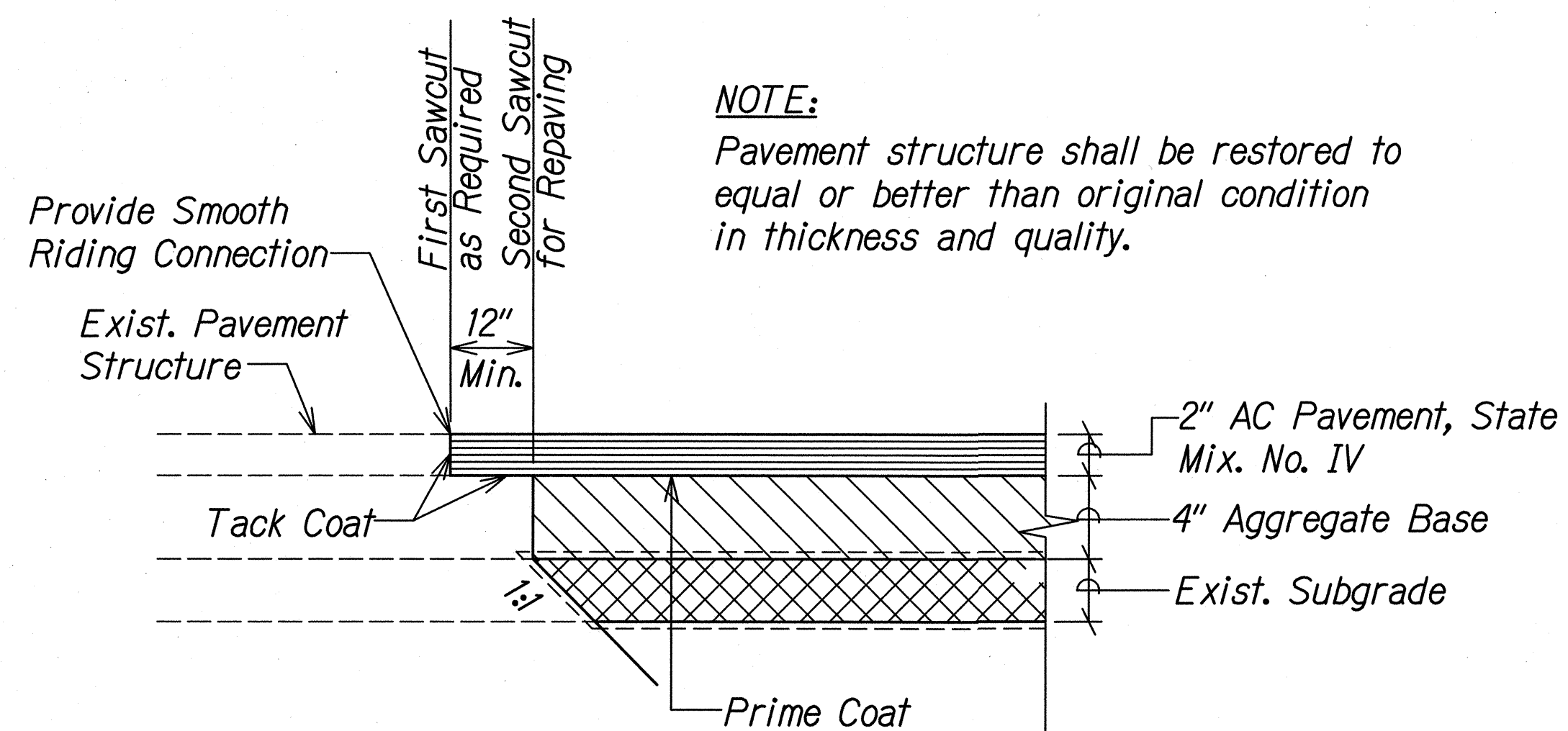
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TRAFFIC COUNTING
STATION DETAILS**

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

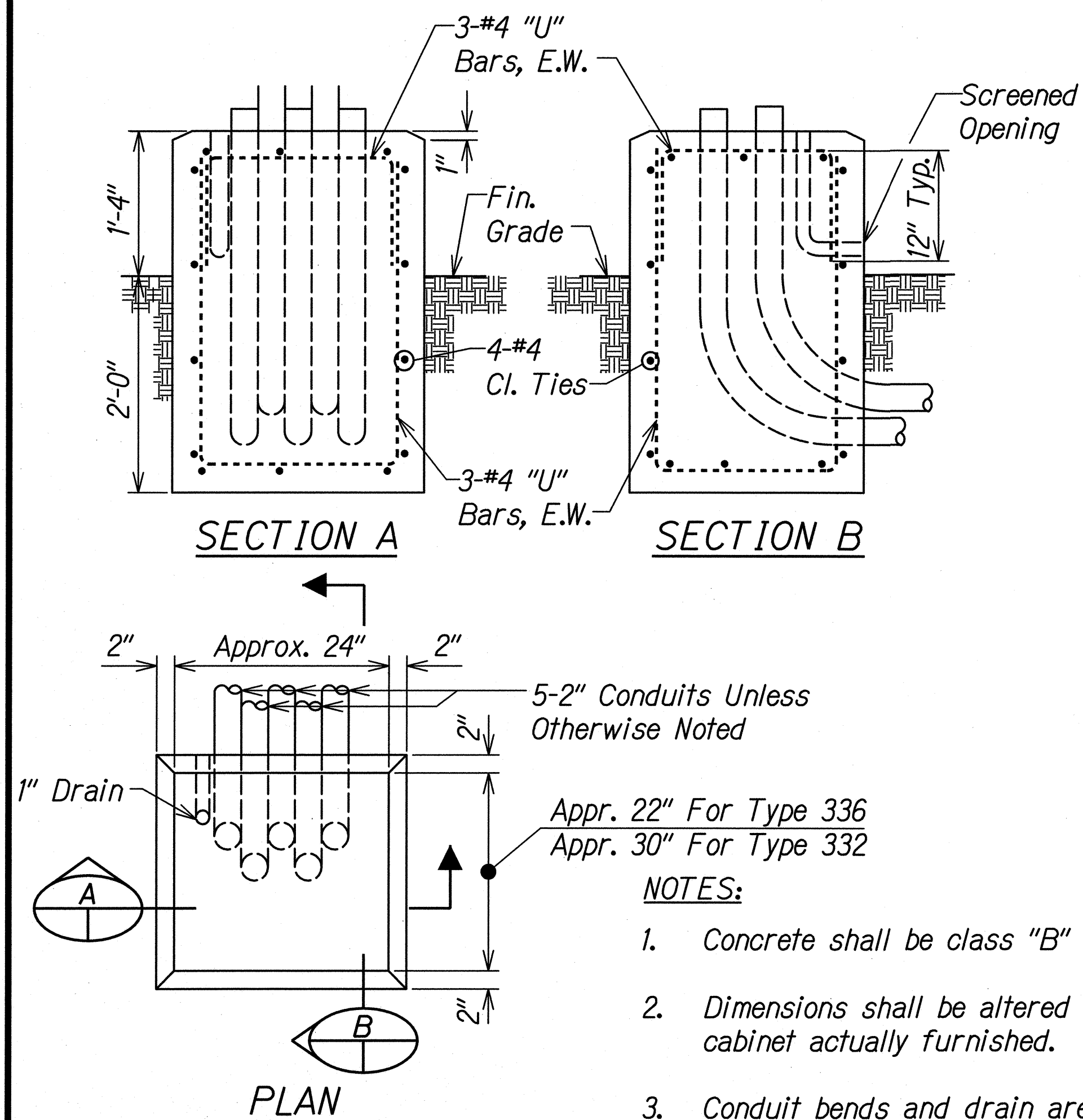
Scale: NTS Date: Apr. 26, 2013

SHEET No. T-6 OF 7 SHEETS



EXIST. AC PAVEMENT RESTORATION DETAIL

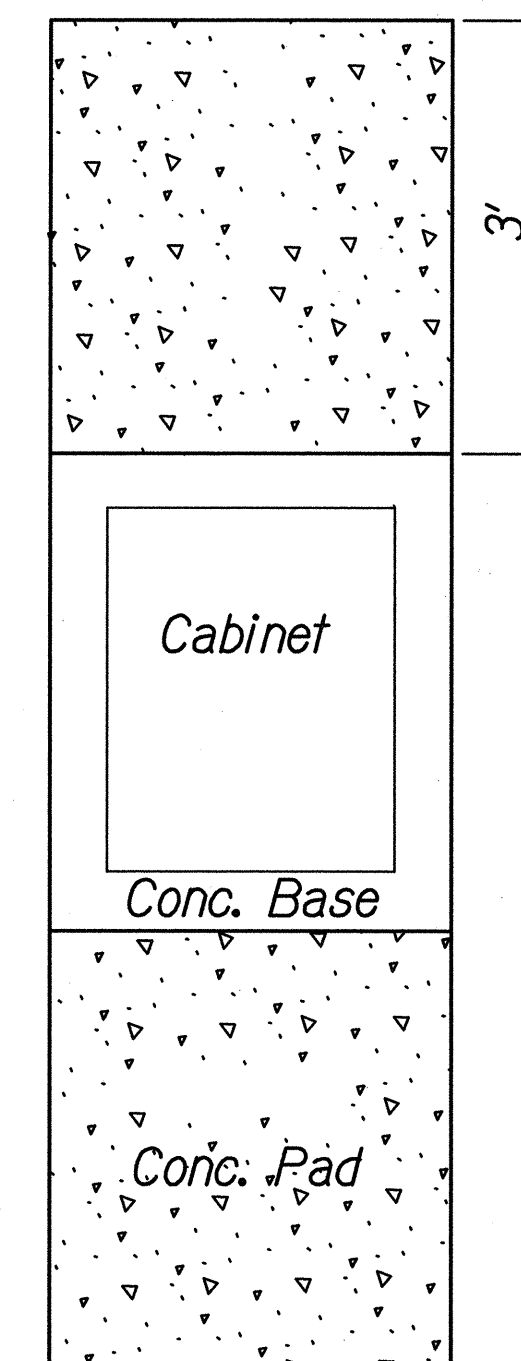
Scale: NTS



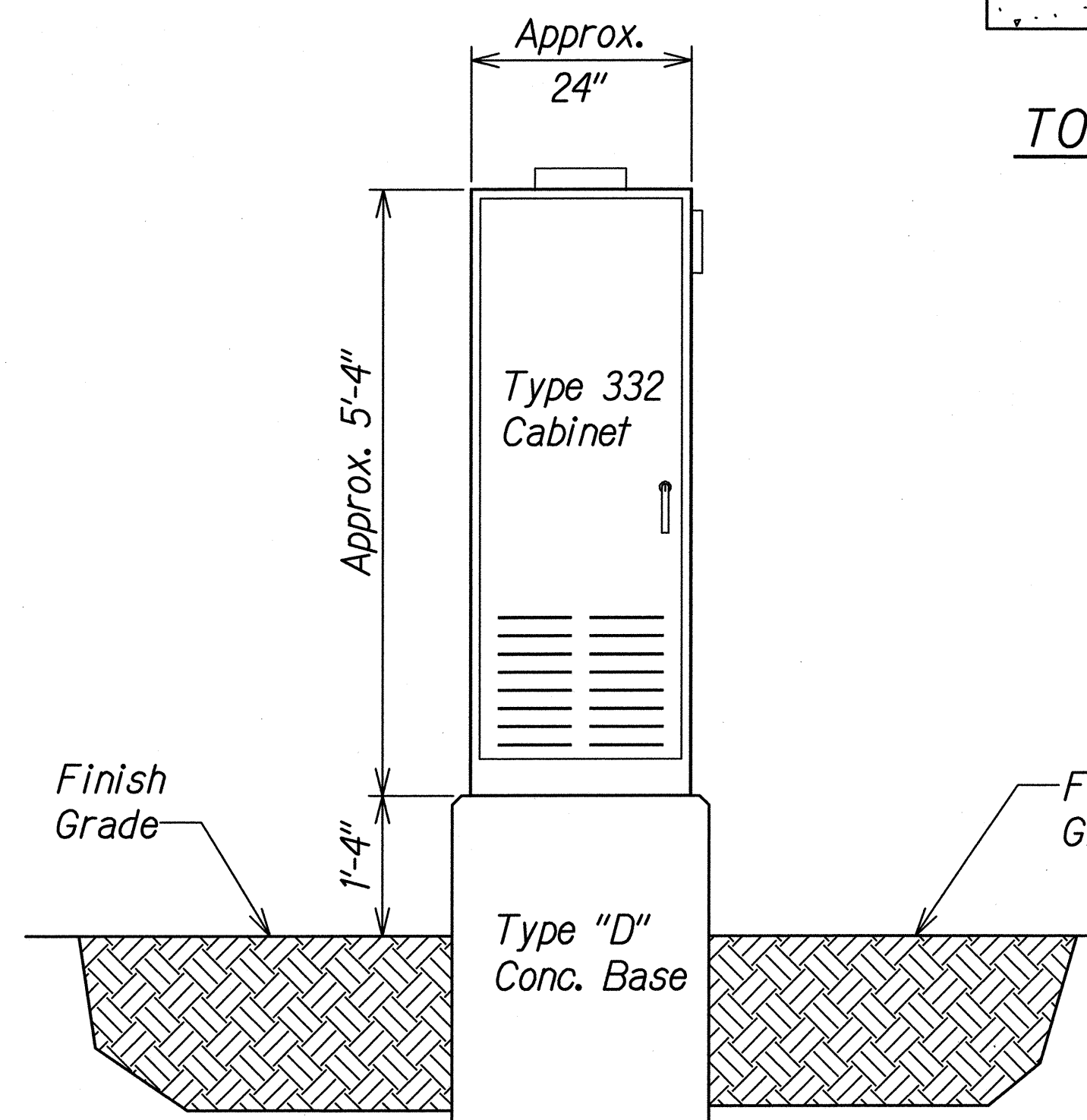
TYPE "D" CONC. BASE FOR CONTROLLER CABINETS

Scale: NTS

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

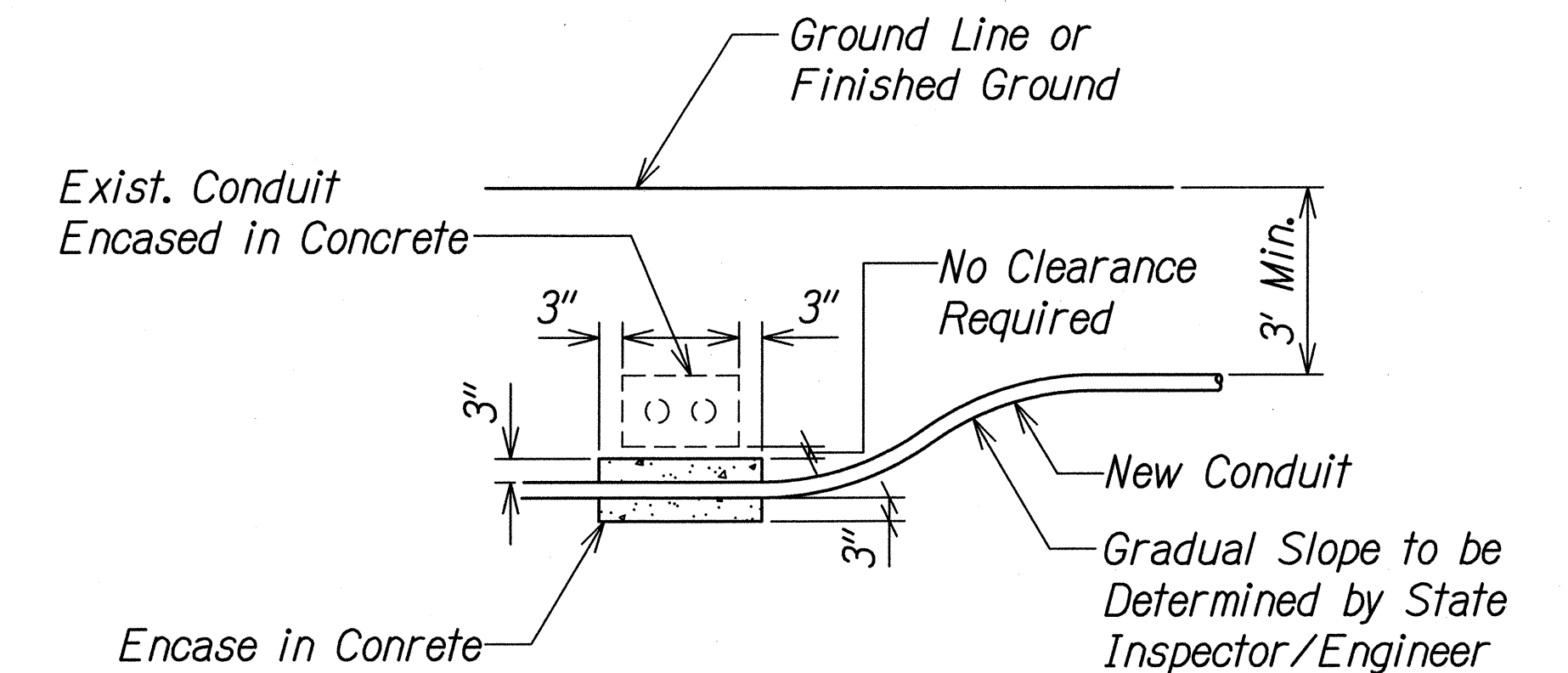


TOP VIEW



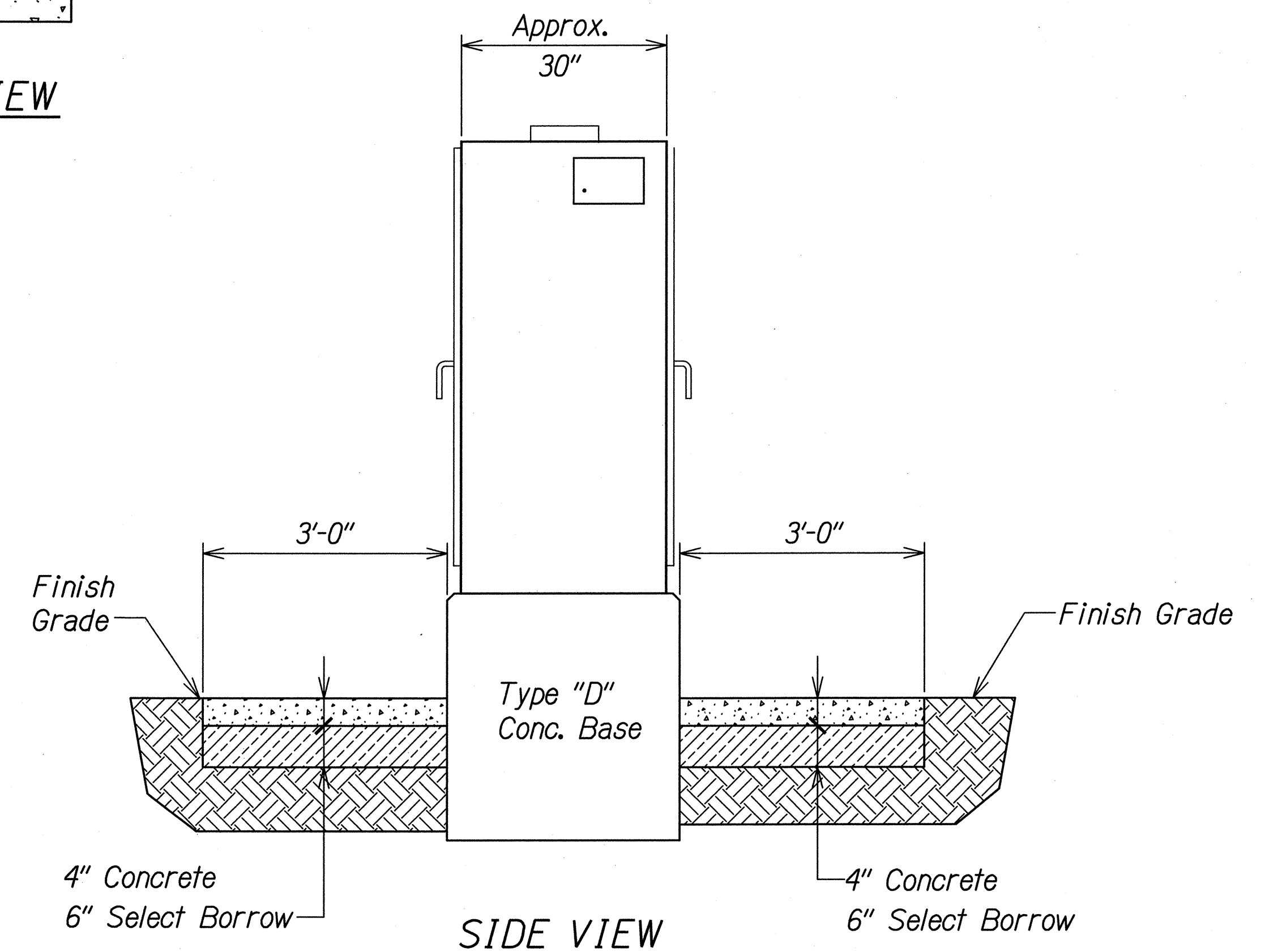
332 CABINET

Scale: NTS



CONDUIT BY-PASS DETAIL

Scale: NTS



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CABINET FOUNDATION AND MISC. DETAILS

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

Scale: NTS Date: Apr. 26, 2013

SHEET No. T-7 OF 7 SHEETS