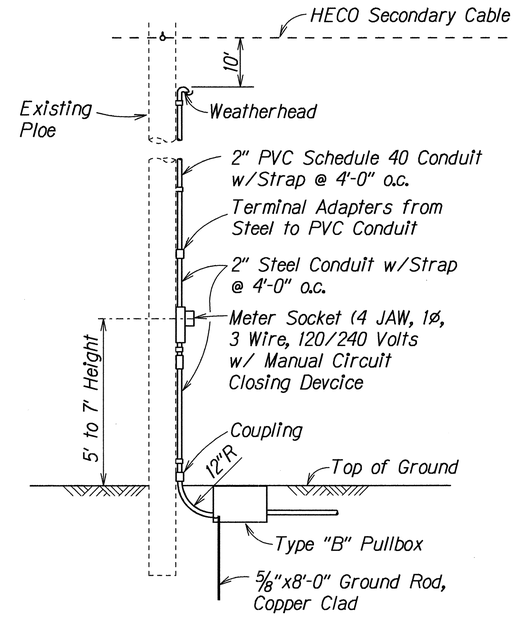
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	106	122

TRAFFIC SIGNAL NOTES

1. All traffic signal controller equipment shall be completely wired in the cabinet and shall control the traffic signals as called for in the plans.
2. Signal indications during clearance interval:
   - A. If a signal is G or ~~<G~~ and will remain G or ~~<G~~ during the next phase, it shall be G or ~~<G~~ during the clearance interval.
   - B. If a signal is G or ~~G~~ and will become R or extinguished during the next phase, it shall be Y of ~~<Y~~ during the clearance interval.
   - C. If a signal is R and will remain R or becomes G during the next phase, it shall remain R during the clearance interval.
3. A solid #8 bare copper wire shall be pulled with the traffic control cable for equipment ground. Cost shall be incidental to the installation of the control cable
4. Contractor shall install meter socket and breaker on the power pole as shown on the plans in accordance with HECO requirements. Meter shall be mounted between 5' and 7' above ground. Meter sockets shall be 4-prong, complete with a manual circuit closing device.
5. The loop amplifer units furnished for this project shall be capable of operating the loop detector configurations shown on the plans.
6. Detector assignment shall be per California Department of Transportation "Traffic Signal Control Local Intersection Program", July 1978.
7. The Contractor shall furnish 50 amp circuit breakers.

CONSTRUCTION NOTES

1. Locations of existing underground structures and utilities such as pipelines, conduits, cables, etc. shown on plans are approximate only. It is not the intent of these plans to show the exact location of all underground utilities and structures. It is the responsibility of the Contractor to verify the locations of all existing utilities with the respective owners. Existing utilities damaged by the Contractor shall be repaired by the Contractor at his own cost.
2. The locations of the traffic signal standards, traffic signal standards with mast-arm, pedestrian push buttons, traffic controller, pullboxes, conduits and loop detectors shall be staked out in the field by the Contractor and approval of the locations shall be obtained from the Engineer prior to construction and installation.
3. All traffic signal work shall conform to the requirements of the "Manual On Uniform Traffic Control Devices For Streets And Highways", Federal Highway Adminstration (1984) and Amendments.
4. Locations of traffic markings and markers (lane lines, stop lines, crosswalk, etc.) shown on the plans shall be verified with the Engineer prior to the installation of the traffic signal system.
5. Maintenence of traffic through the construction area shall be in accordance with part VI of the "Manual On Uniform Traffic Control Devices For Streets And Highways", Federal Highway Adminstration (1984) and as specified in the special provisions. The Constractor shall furnish and maintain adequate barricades, blinkers, construction signs, etc., for the safety of the motoring public.
6. Department of Transportation Services, City and County of Honolulu, will assist the Engineer in construction inspection for the traffic signal system.
7. Where required by the plans, signs and/or posts shall be removed. Costs shall be incidental to other items of work.



SERVICE POLE DETAIL

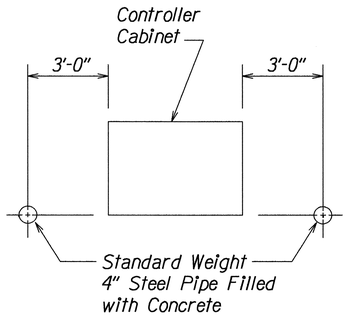
Not to Scale

LEGEND

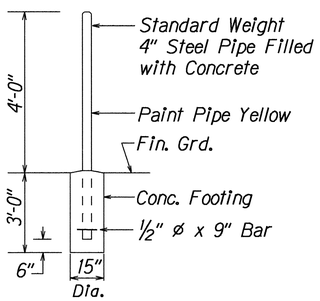
(Note: Existing shown as dashed on-plan)

- C — Controller Cabinet
- Type "A" Pullbox
- Type "B" Pullbox
- Type "Z" Pullbox
- Traffic Signal Standard
- Traffic Signal Heads Mounted on Type II Signal Standard, Arm Spread Shown is 30' and Distance Between Signal Head is 12' (30', 12')
- Standard Traffic and Pedestrian Signal Heads Mounted on Type I Signal Height - 10'
- 12" RY↑ Traffic Signal Head
- Opticom Receiver
- New 12" RY← Traffic Signal Head
- Loop Detector, Series-Parallel Connected
- Loop Detector, Series Connected

NOTE:
Cost of concrete filled galvanized posts shall be incidental to other items of work.



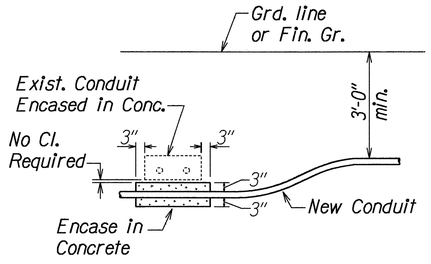
PLAN



TYP. ELEVATION

PIPE GUARD DETAIL

Not to Scale



CONDUIT BY-PASS DETAIL

Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 12/93
	DRAWN BY R. Ahi	
NOTE BOOK	TRACED BY R. Ahi	
	DESIGNED BY R. Chiba	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

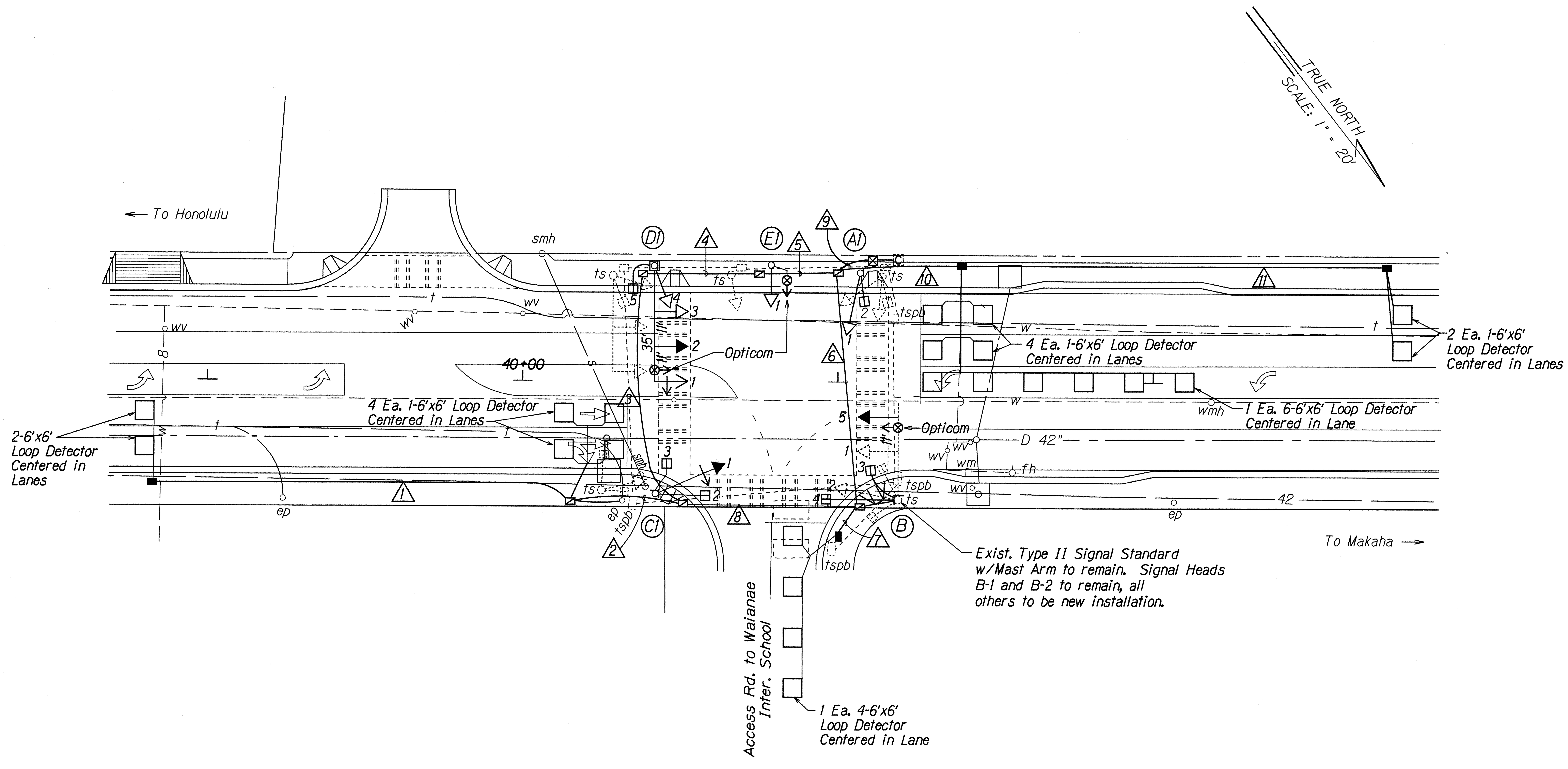
TRAFFIC SIGNAL LEGEND, DETAILS & NOTES

FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

Scale: As noted Date: Jan., 1994

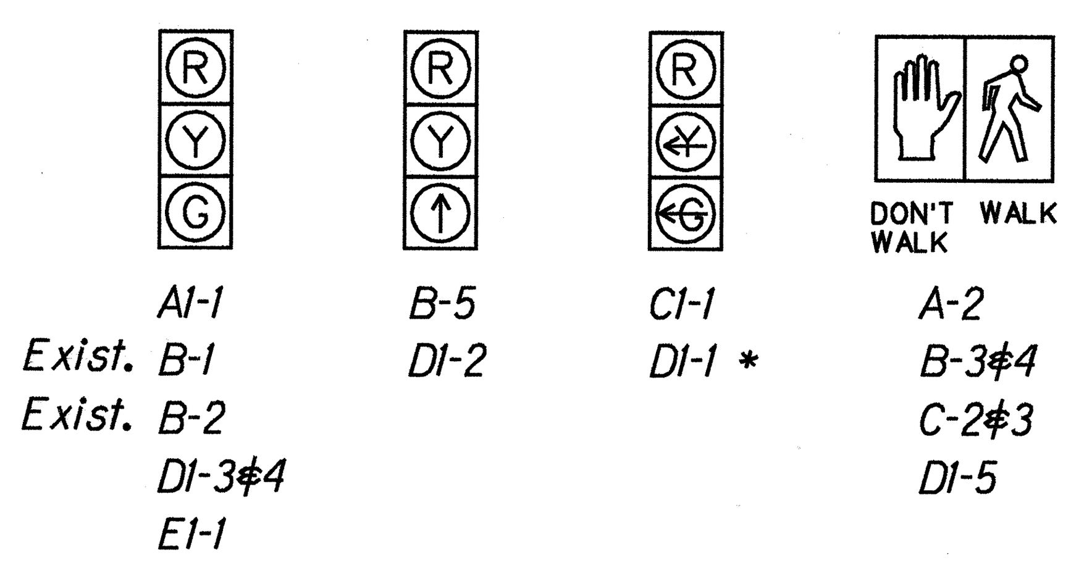
SHEET No. TS-1 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	C.O. 107	122



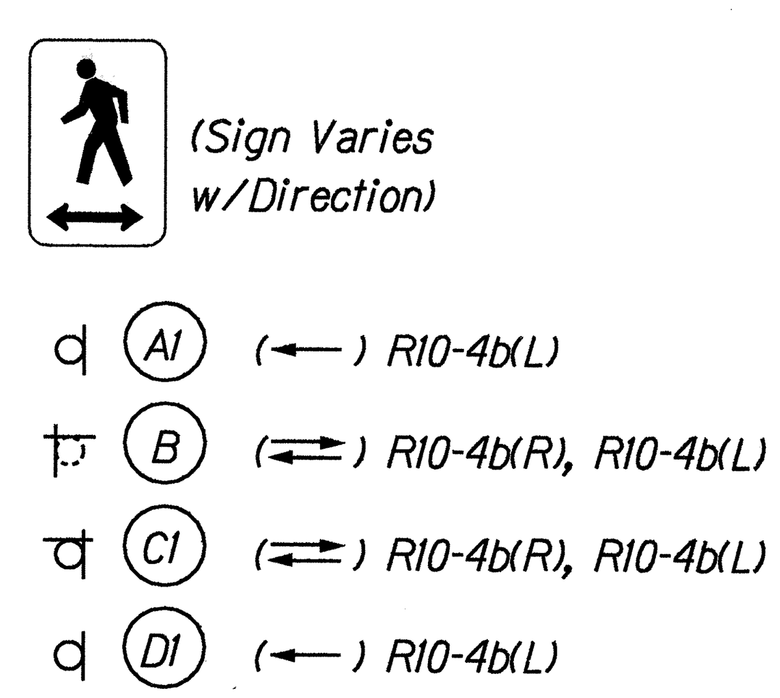
CONDUIT & CABLE SCHEDULE

△	CONDUIT	CABLE
1	1-2"	1 - 2c #14
2	2-2"	2 - 2c #14 1 - 3c #6
3	3-2"	1 - 26c #14 4 - 2c #14 1 - 3c #6
4	3-2"	1 - 26c #14 4 - 2c #14 1 - 3c #6
5	3-2"	1 - 26c #14 4 - 2c #14 1 - 3c #6
6	2-2"	1 - 2c #14 3 - 2c #14
7	1-2"	1 - 2c #14
8	2-2"	1 - 26c #14 Spare
9	5-2"	1 - 26c #14 1 - 2c #14 5 - 2c #14 5 - 2c #14 1 - 3c #6
10	1-2"	4 - 2c #14
11	1-2"	1 - 2c #14

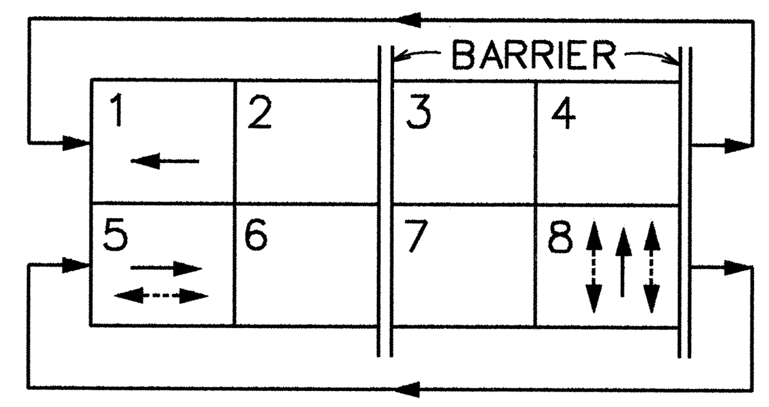


* Programmed Visibility Head

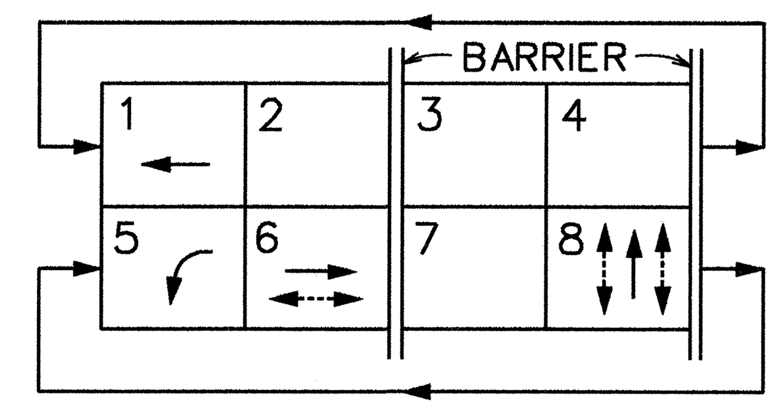
SIGNAL INDICATIONS



PEDESTRIAN PUSH BUTTON w/Sign (NEW)



EXISTING PHASE DIAGRAM



NEW PHASE DIAGRAM

DATE	REVISION
10/7/97	Revised Loop Detector Locations and Additional Loops Added to accomodate revised striping.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

Acess Road to Waianae Inter. School

FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

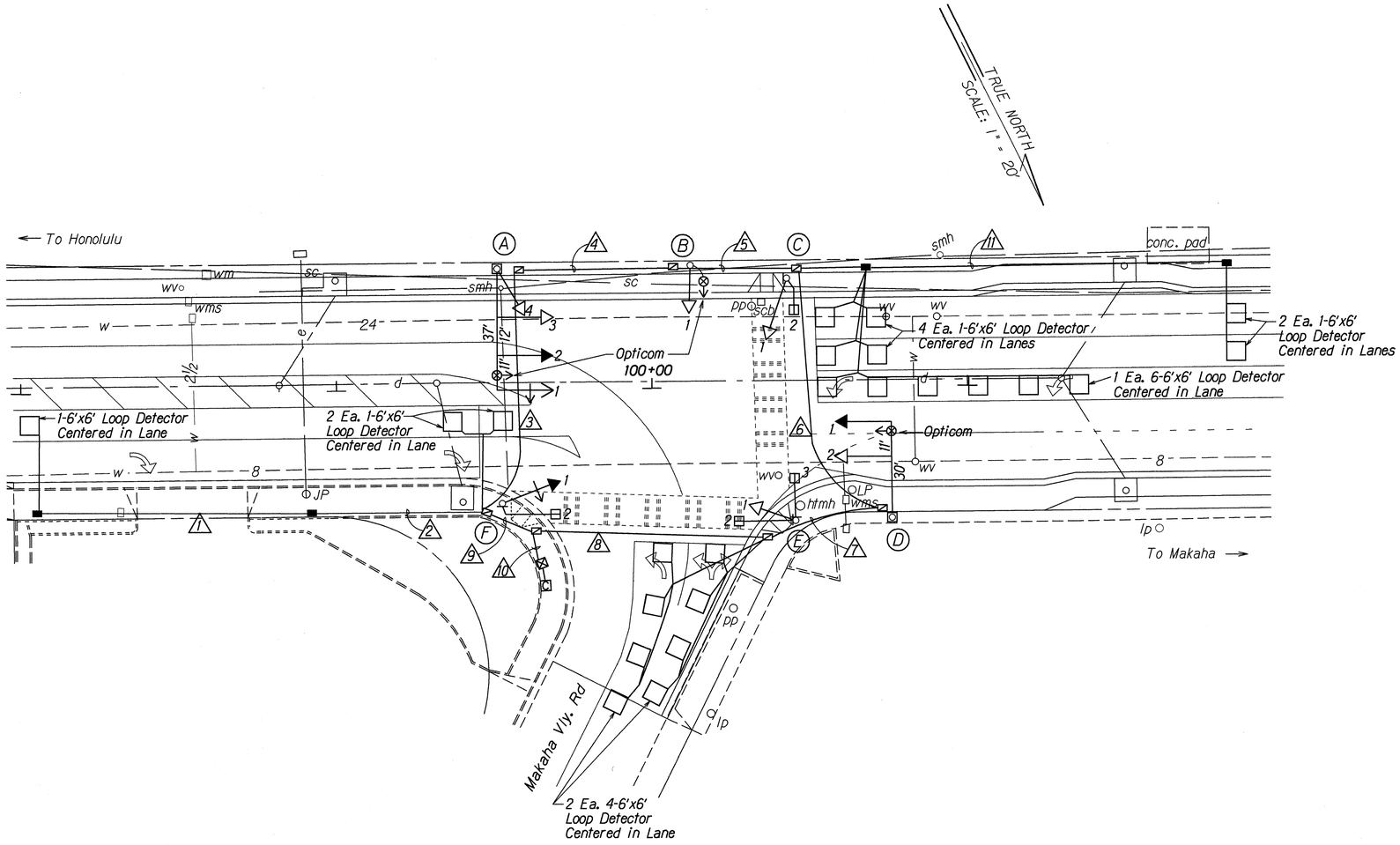
Scale: 1"=20' Date: Jan., 1994

SHEET No. TS-2 OF 4 SHEETS

C.O. 107

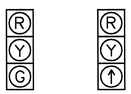
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY R. Arii | TRACED BY | DESIGNED BY B. Ching | QUANTITIES BY | CHECKED BY | DATE 12/93 | NOTE BOOK

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	C.O. 108	122



CONDUIT & CABLE SCHEDULE

△	CONDUIT	CABLE
1	1-2"	1 - 2c #14
2	2-2"	1 - 2c #14 1 - 3c #6
3	2-2"	1 - 26c #14 Spare
4	2-2"	1 - 26c #14 Spare
5	2-2"	1 - 26c #14 Spare
6	2-2"	1 - 26c #14 4 - 2c #14
7	2-2"	1 - 26c #14 4 - 2c #14
8	3-2"	1 - 26c #14 4 - 2c #14 2 - 2c #14
9	2-2"	1 - 26c #14 3 - 2c #14
10	5-2"	1 - 26c #14 1 - 26c #14 4 - 2c #14 5 - 2c #14 1 - 3c #6
11	1-2"	1 - 2c #14



A-3♯4
B-1
C-1
D-2
E-1

A-2
D-1

A-1 *
F-1

C-2
E-2♯3
F-2

* Programmed Visibility Head

SIGNAL INDICATIONS

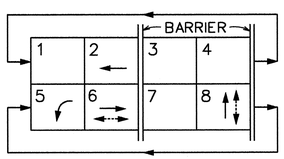
(Sign Varies w/Direction)

(C) (→) R10-4b(R)

(E) (⇄) R10-4b(R), R10-4b(L)

(F) (→) R10-4b(R)

PEDESTRIAN PUSH BUTTON w/Sign (NEW)



PHASE DIAGRAM

DATE	REVISION
10/7/97	Revised Loop Detector Locations to accomodate revised striping.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

Makaha Valley Road
FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

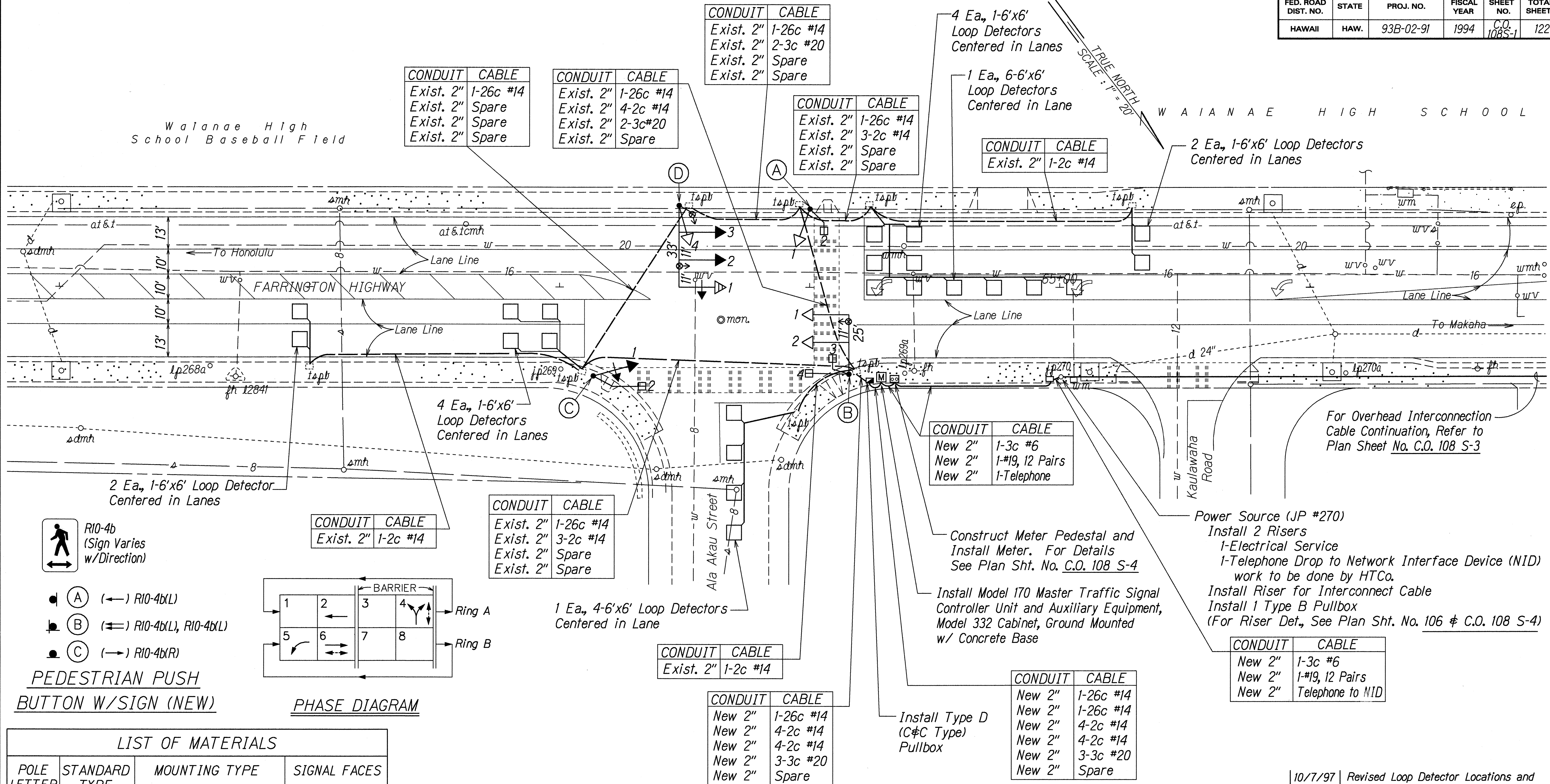
Scale: 1"=20' Date: Jan., 1994

SHEET No. TS-3 OF 4 SHEETS

ORIGINAL PLAN
NOTE MADE
SURVEY PLOTTED BY
DRAWN BY B. Ahi
TRACED BY
DESIGNED BY B. Ching
QUANTITIES BY
CHECKED BY
DATE 12/93

C.O. 108

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	C.O. 108S-1	122



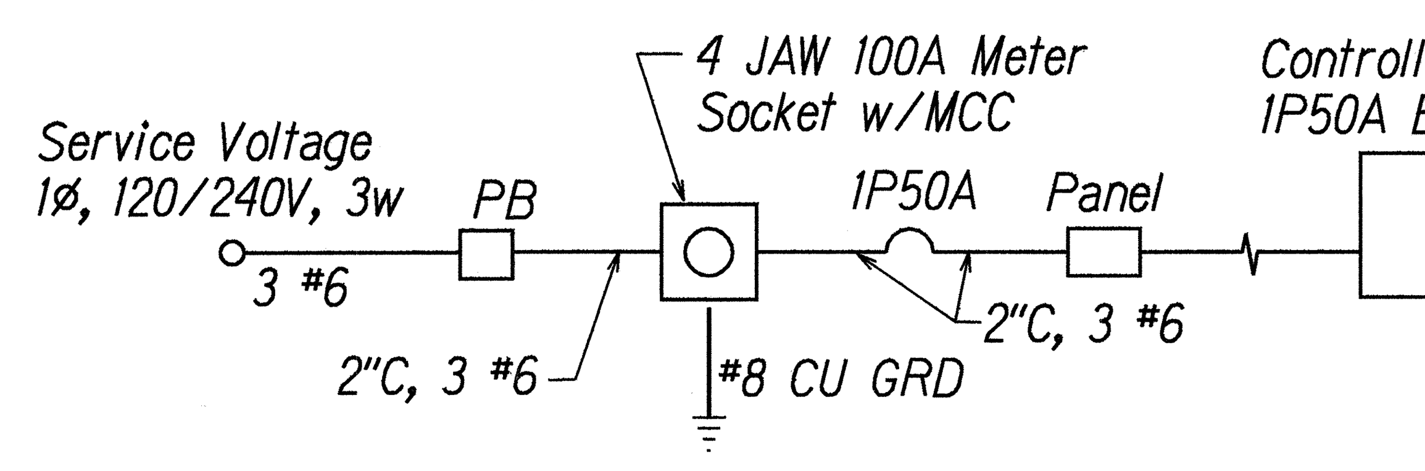
LIST OF MATERIALS

POLE LETTER	STANDARD TYPE	MOUNTING TYPE	SIGNAL FACES
A	I - 10	Slipfitter - One Way Cantilever - One way	R-Y-G← H-M
B	II - 25	Mast Arm - One Way Mast Arm - One Way 2 Brackets - One Way Mast Arm (Horizontal)	R-Y-G R-Y-G H-M, H-M Opticom
C	I - 10	Slipfitter - One Way Cantilever - One Way	R-Y-G← H-M
D	II - 33	Mast Arm - One Way Mast Arm - One Way Mast Arm - One Way Bracket - One Way Bracket (Vertical) Mast Arm (Horizontal)	R-Y-G← (PV) R-Y-G↑ R-Y-G↑ R-Y-G Opticom Opticom

TRAFFIC SIGNAL HEAD SCHEDULE

Traffic Signal Head Type and Description	12" RYG Traffic Signal Head	12" RY↑G Traffic Signal Head	12" RY←G Traffic Signal Head	Pedestrian Signal Head
Pole Letter Signal Head Number	A-1 B-1 B-2 D-4	D-2 D-3	C-1 D-1 *	A-2 B-3 B-4 C-2

* With Programmed Visibility
NOTE: All Red Signal Indication shall be LED Lamp



ONE LINE DIAGRAM

DATE	REVISION
10/7/97	Revised Loop Detector Locations and Additional Loops Added to accomodate revised striping.
2/7/97	Install a new traffic signal system.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

Ala Akau Street

FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

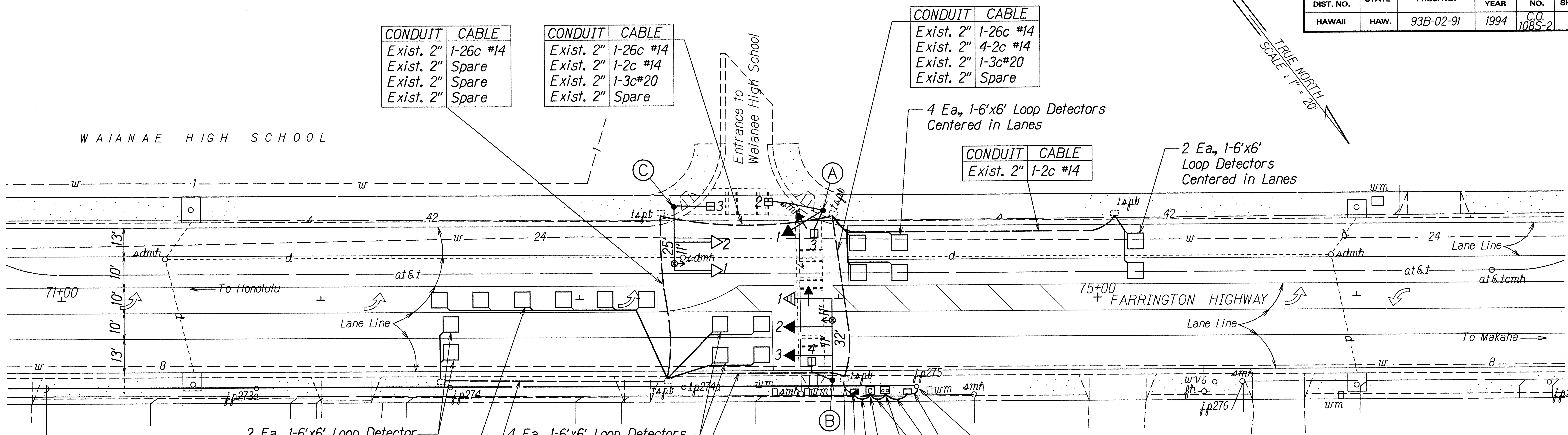
Scale: 1"=20' Date: Feb., 1997

SHEET No. TS-3 S-1 OF 4 SHEETS

C.O. 108 S-1

ORIGINAL PLAN | SURVEY | PLOTTED BY | DRAWN BY B. Arii | TRACED BY | DESIGNED BY G. Kakuhi | QUANTITIES BY | CHECKED BY | DATE 2/4/97
NOTE BOOK tot.mike | No. 1far1ts3

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	C.O. 108S-2	122



CONDUIT	CABLE
Exist. 2"	1-26c #14
Exist. 2"	Spare
Exist. 2"	Spare
Exist. 2"	Spare

CONDUIT	CABLE
Exist. 2"	1-26c #14
Exist. 2"	1-2c #14
Exist. 2"	1-3c #20
Exist. 2"	Spare

CONDUIT	CABLE
Exist. 2"	1-26c #14
Exist. 2"	4-2c #14
Exist. 2"	1-3c #20
Exist. 2"	Spare

CONDUIT	CABLE
Exist. 2"	1-2c #14

CONDUIT	CABLE
Exist. 2"	1-2c #14

CONDUIT	CABLE
Exist. 2"	1-26c #14
Exist. 2"	3-2c #14
Exist. 2"	Spare
Exist. 2"	Spare

CONDUIT	CABLE
New 2"	1-26c #14
New 2"	4-2c #14
New 2"	3-2c #14
New 2"	2-3c #20
New 2"	Spare

Install Type D (C&C Type) Pullbox

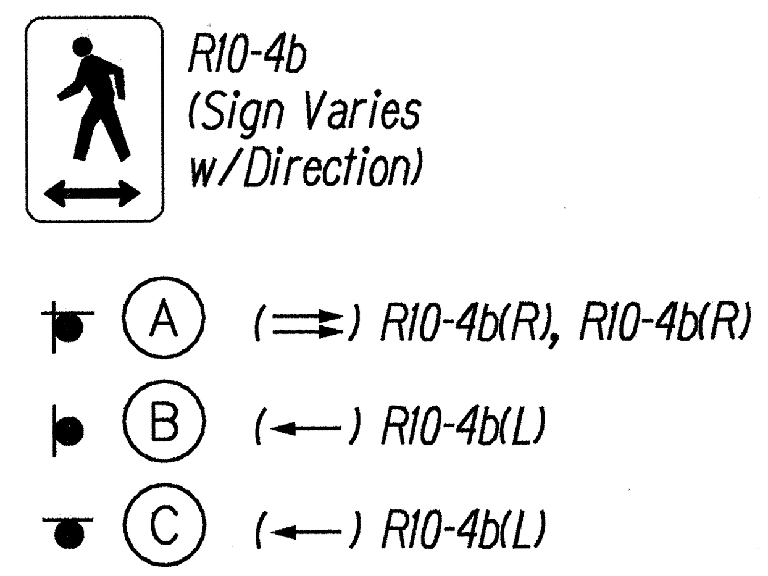
CONDUIT	CABLE
New 2"	1-26c #14
New 2"	1-26c #14
New 2"	4-2c #14
New 2"	3-2c #14
New 2"	2-3c #20
New 2"	Spare

Power Source (JP #275)
Install Riser for Electrical Service
Install Riser for Interconnect Cable
Install 1 Type B Pullbox
(For Riser Detail, See Plan Sht. No. 106 & C.O. 108 S-4)

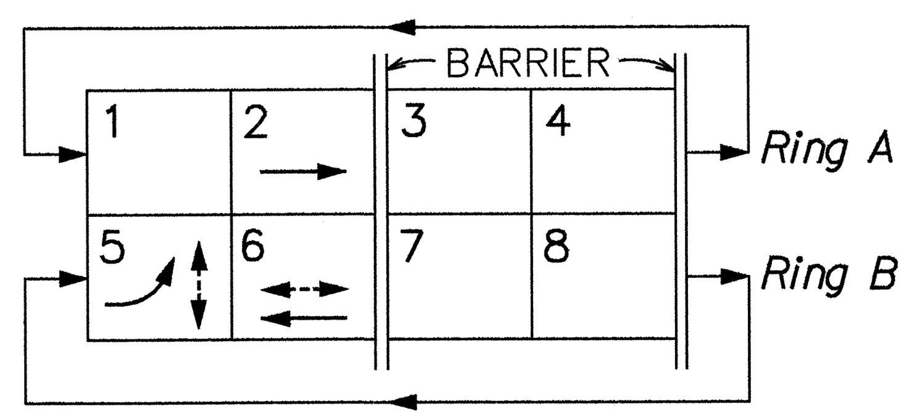
CONDUIT	CABLE
New 2"	1-3c #6
New 2"	1-#19, 12 Pairs

Construct Meter Pedestal and Install Meter. For Details See Plan Sht. No. C.O. 108 S-4

Install Model 170 Traffic Signal Controller Unit and Auxiliary Equipment, Model 332 Cabinet, Ground Mounted w/ Concrete Base



PEDESTRIAN PUSH BUTTON W/SIGN (NEW)



PHASE DIAGRAM

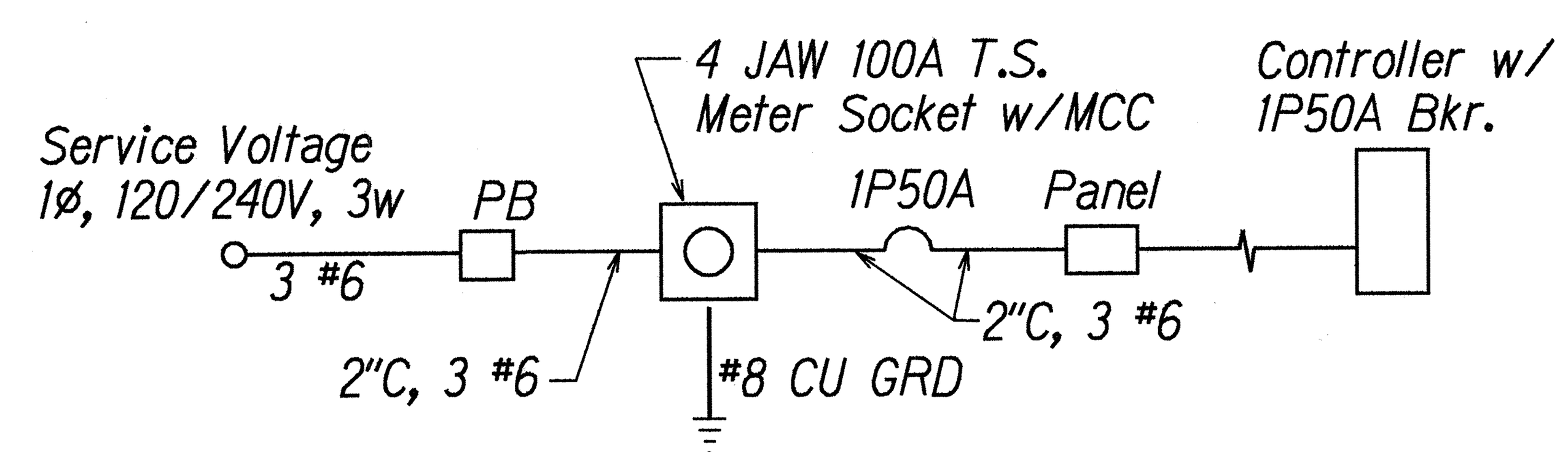
LIST OF MATERIALS

POLE LETTER	STANDARD TYPE	MOUNTING TYPE	SIGNAL FACES
A	I - 10	Slipfitter - One Way 2 Cantilever - One way	R-Y-G← H-M, H-M
B	II - 32	Mast Arm - One Way Mast Arm - One Way Mast Arm - One Way Bracket - One Way Mast Arm (Horizontal)	R-Y-G← (PV) R-Y-G↑ R-Y-G↑ H-M Opticom
C	II - 25	Mast Arm - One Way Mast Arm - One Way Bracket - One Way Mast Arm (Horizontal)	R-Y-G R-Y-G H-M Opticom

TRAFFIC SIGNAL HEAD SCHEDULE

Traffic Signal Head Type and Description	12" RYG Traffic Signal Head	12" RY↑G Traffic Signal Head	12" RY←G Traffic Signal Head	Pedestrian Signal Head
Pole Letter Signal Head Number	C-1 C-2	B-2 B-3	A-1 B-1 *	A-2 A-3 B-4 C-3

* With Programmed Visibility
NOTE: All Red Signal Indication shall be LED Lamp



ONE LINE DIAGRAM

DATE	REVISION
10/7/97	Revised Loop Detector Locations and Additional Loops Added to accomodate revised striping.
2/7/97	Install a new traffic signal system.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

Waianae High School

FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

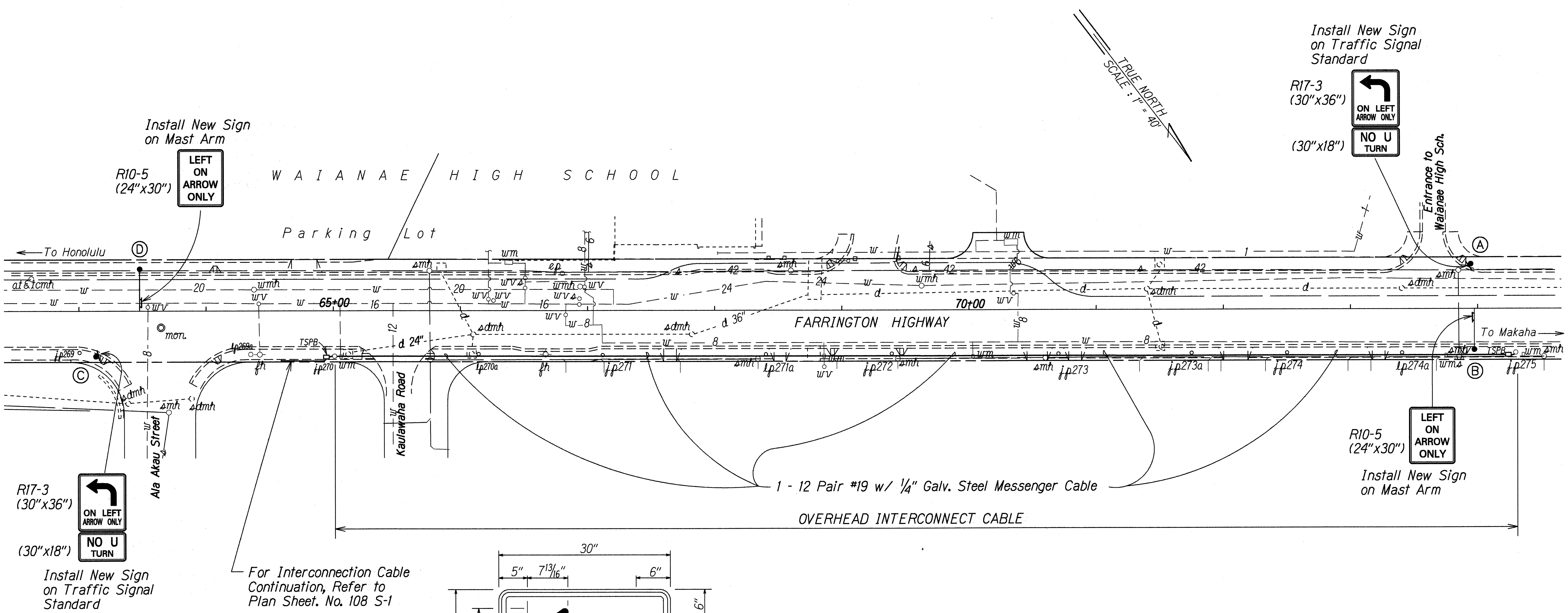
Scale: 1"=20' Date: Feb., 1997

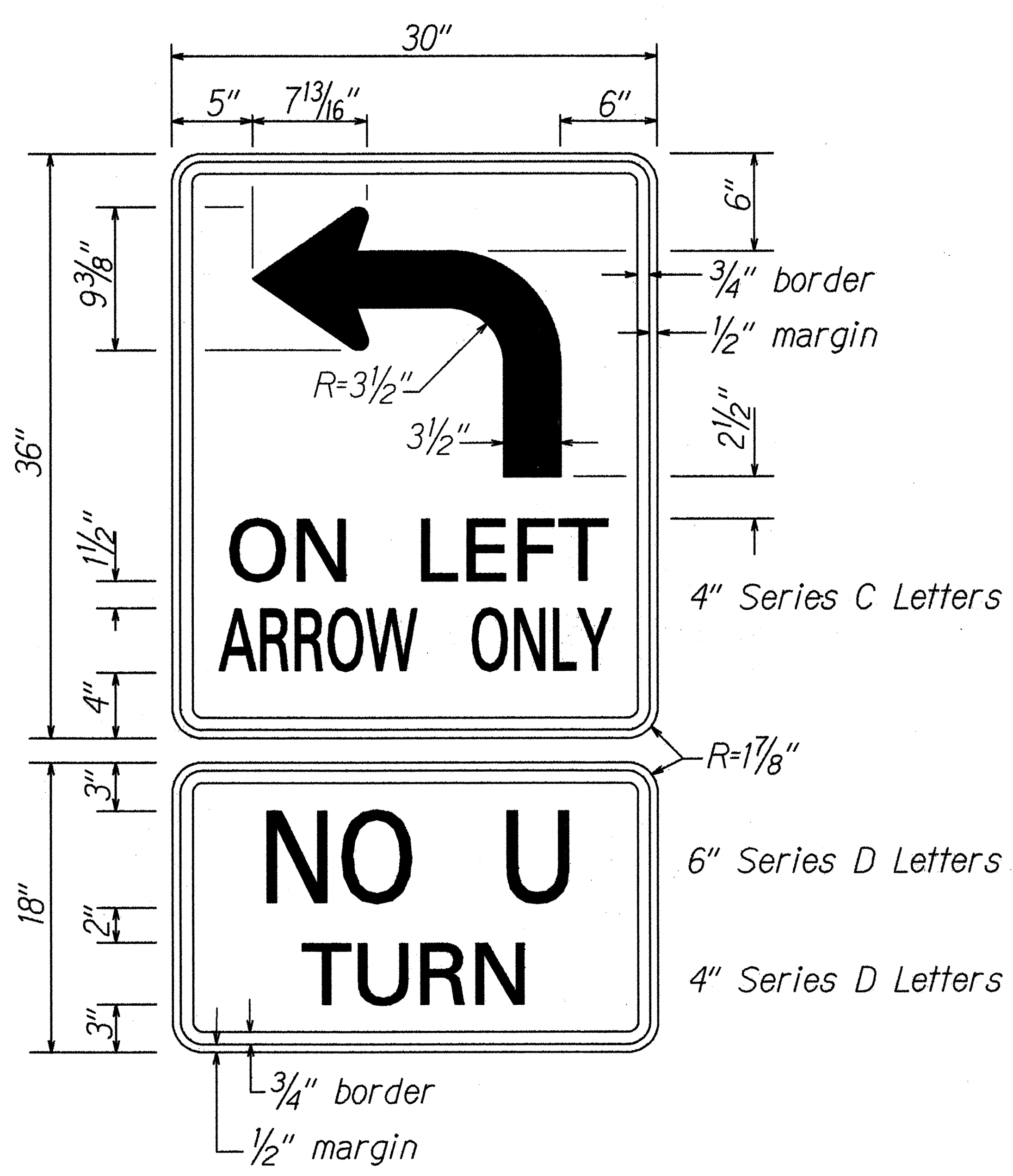
SHEET No. TS-3 S-2 OF 4 SHEETS

C.O. 108 S-2

ORIGINAL PLAN / NOTE BOOK tolmite / No. Tfarts4 / SURVEY PLOTTED BY / DRAWN BY R. Arii / TRACED BY / DESIGNED BY G. Kakehi / QUANTITIES BY / CHECKED BY / DATE 2/4/97

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02--91	1994	C.O. 108S-3	122





R17-3

Not to Scale

DATE	REVISION
2/7/97	Install new overhead interconnect cable and signing for new traffic signal system.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

Overhead Interconnect Cable & Signing

FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

Scale: 1"=40' Date: Feb., 1997

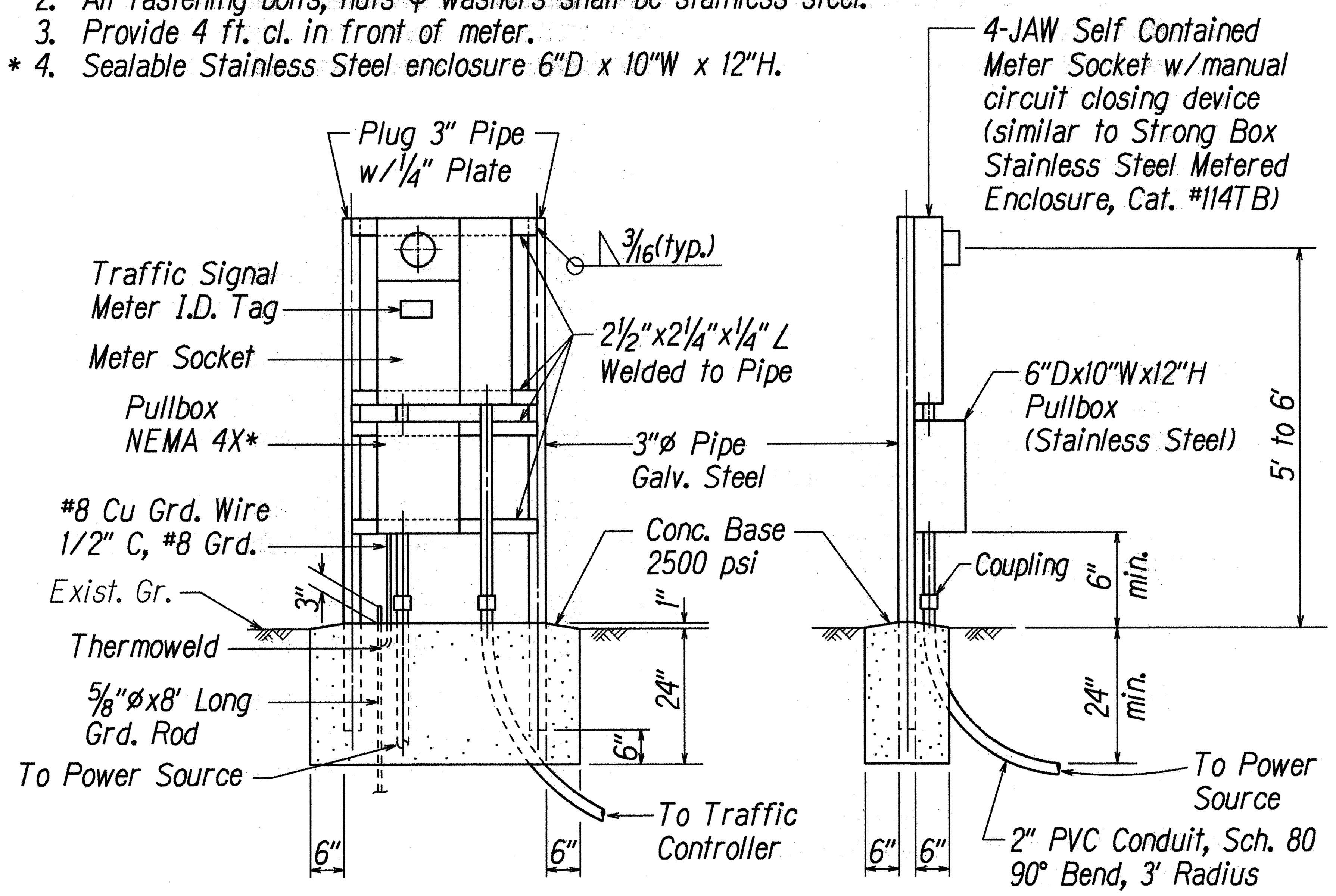
SHEET No. TS-3 S-3 OF 4 SHEETS

C.O. 108 S-3

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	C.O. 108 S-4	122

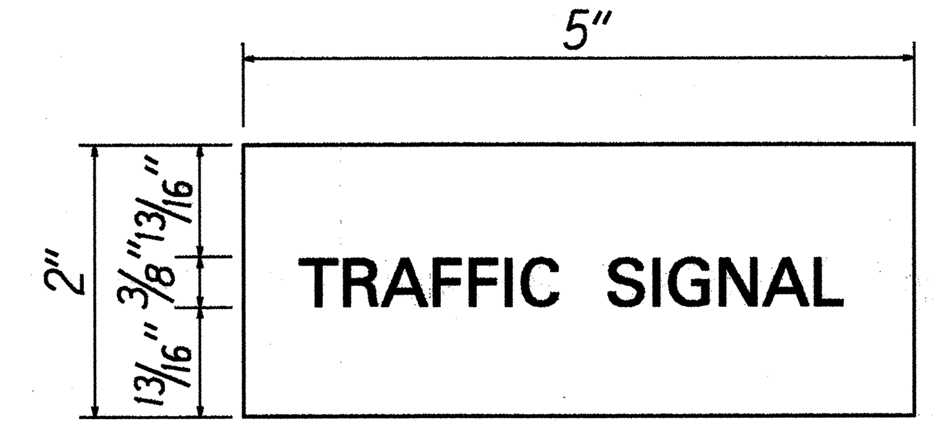
Notes:

1. Pedestal shall be hot-dipped galv. after fabrication.
2. All fastening bolts, nuts & washers shall be stainless steel.
3. Provide 4 ft. cl. in front of meter.
* 4. Sealable Stainless Steel enclosure 6"D x 10"W x 12"H.



METER PEDESTAL FOR UNDERGROUND SERVICE

Not to scale

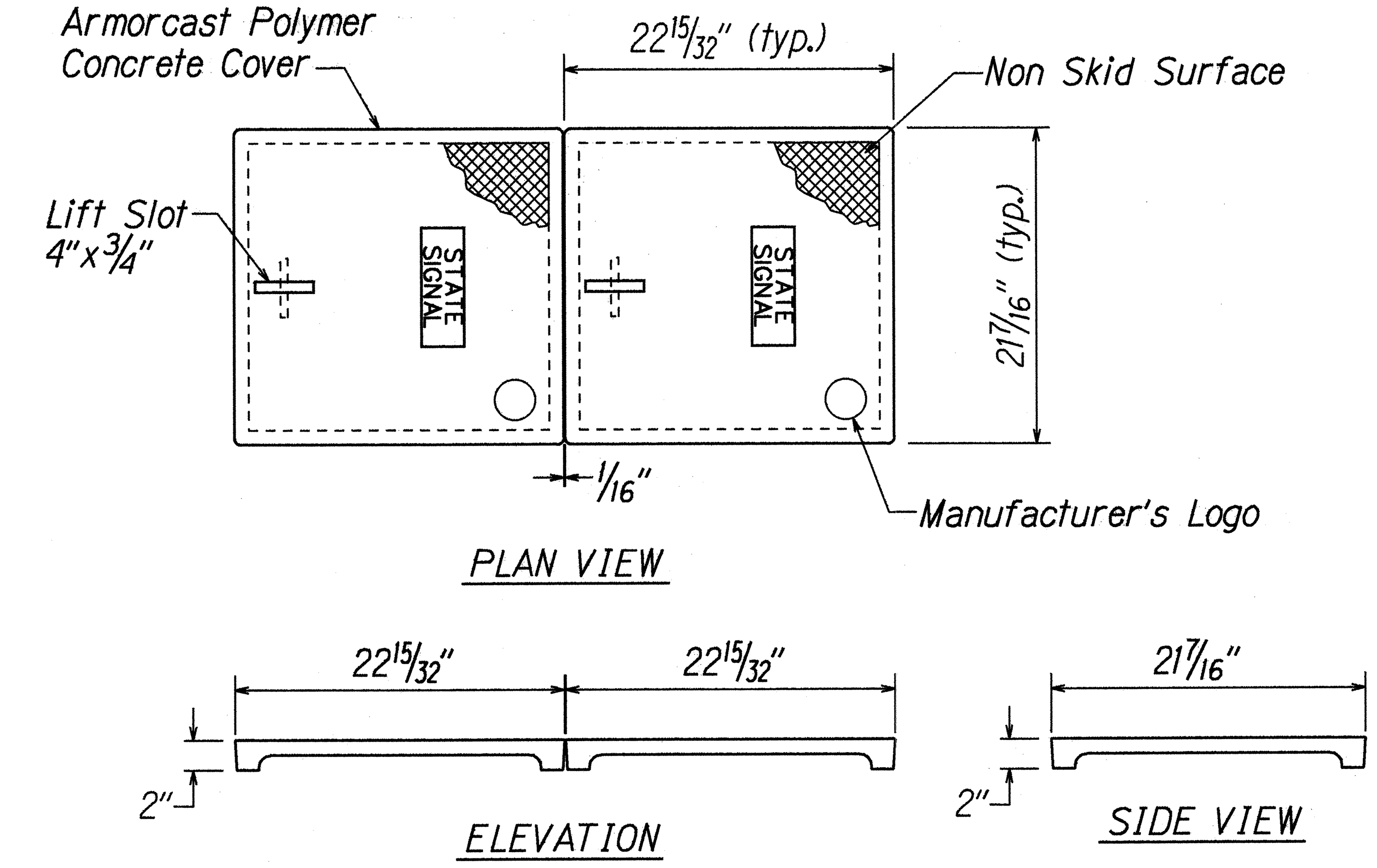


NOTES:

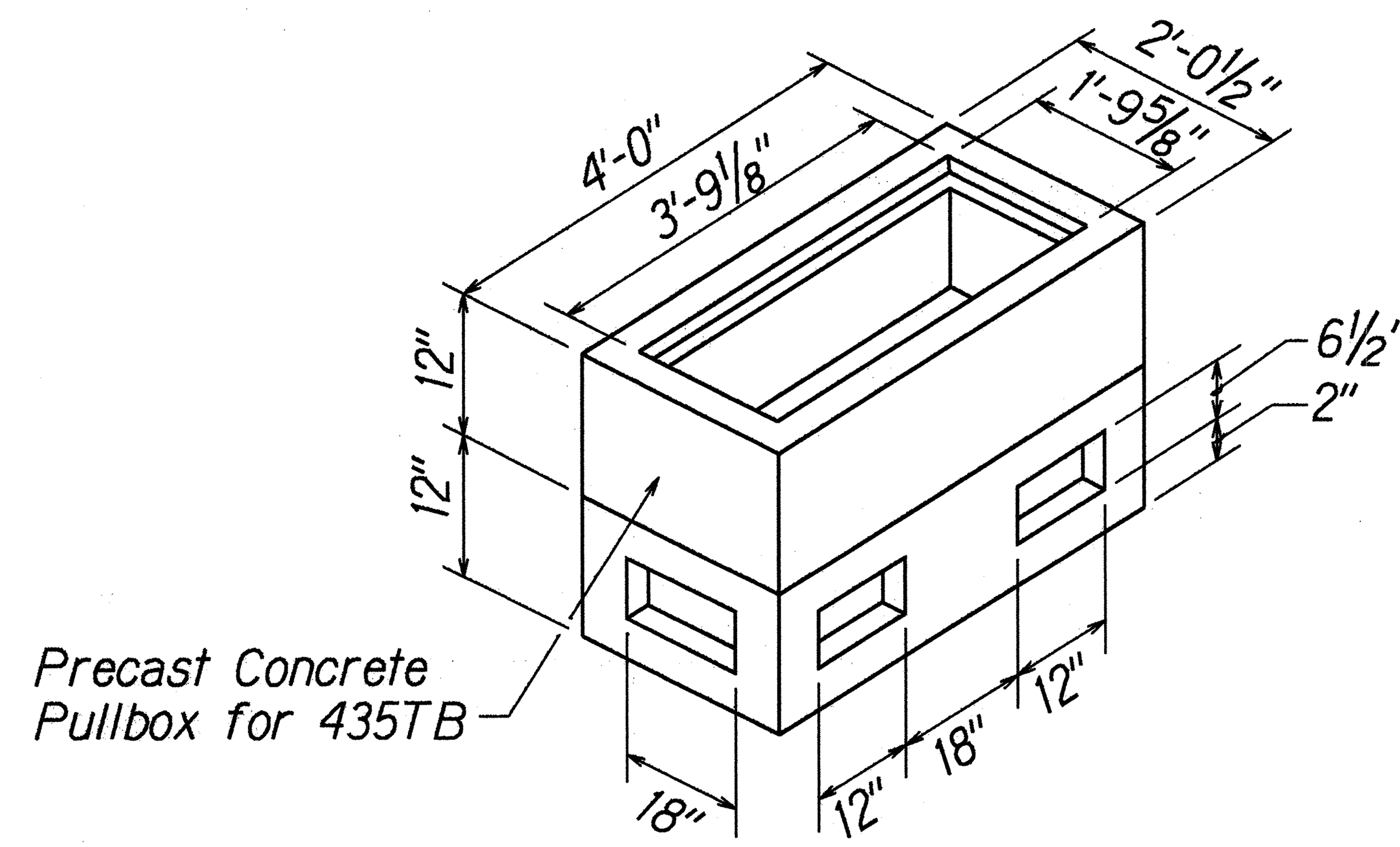
1. Use 3-ply laminated flexible plastic, black-white-black thickness: black cap sheet - 0.010", white base sheet - 0.052", black base sheet - 0.010".
2. Attach to Meter Socket using Scotch 3M Brand very high bond (VHB) double coated acrylic foam tape or equivalent.
3. Letters/Numbers shall be 3/8" high, 1/16" stroke, (white in color).
4. Letters/Numbers area inscribed by cutting through "black cap sheet" to expose white letters/numbers.

METER ID TAG DETAIL

Not to scale



COVER



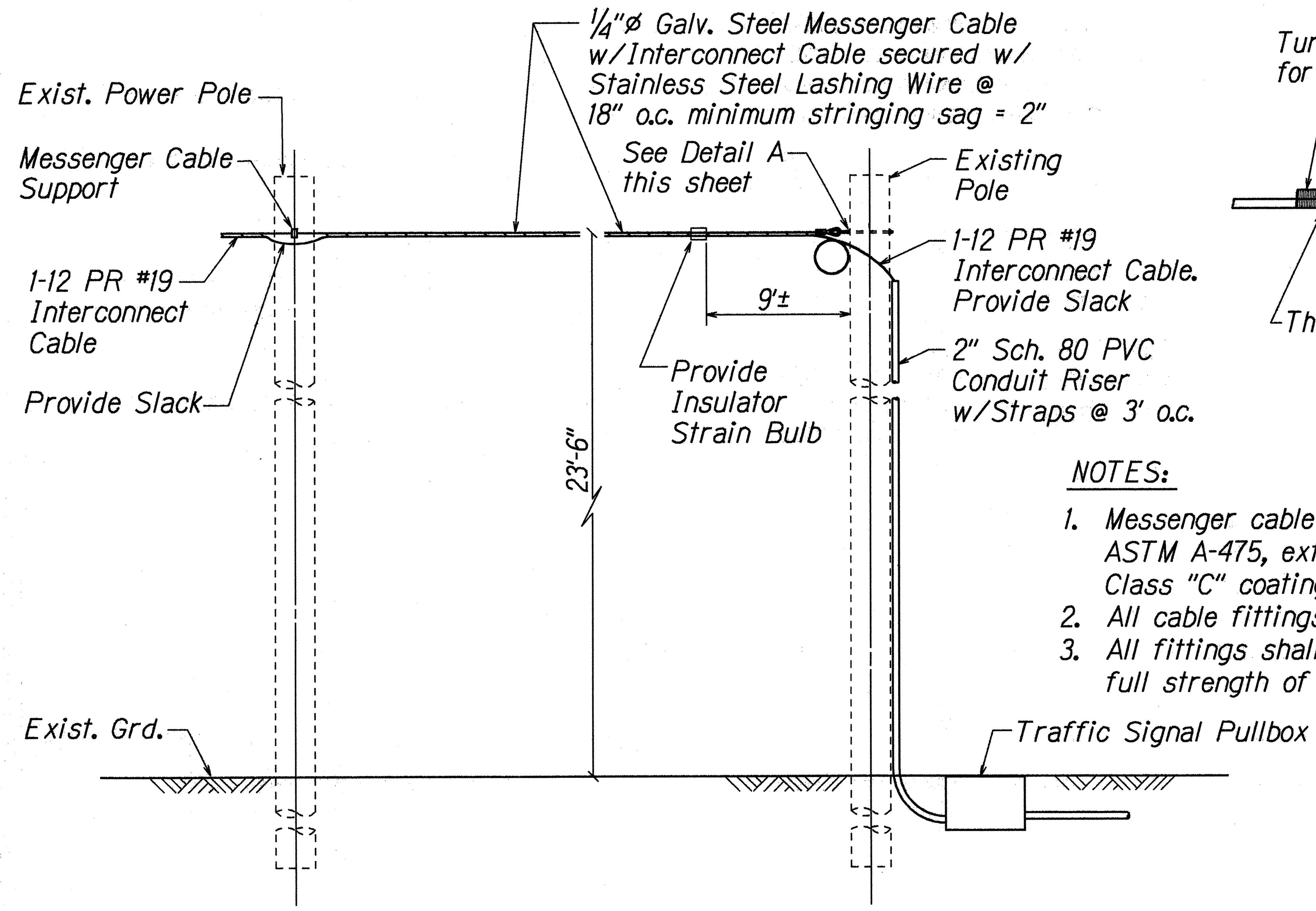
PULLBOX

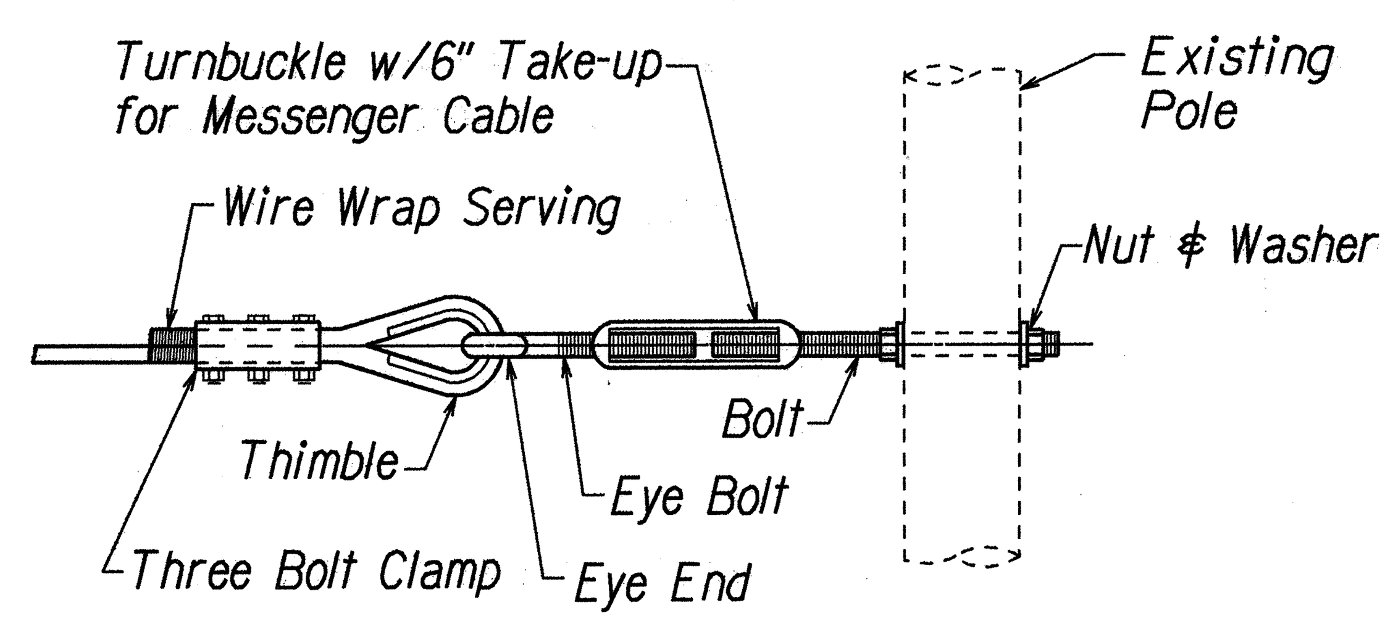
NOTES:

1. Provide Armorcast Polymer Concrete Cover.
2. Install on 6" bed of #3 Crushed Rock.
3. Provide sufficient amount of 5/8"ø x 8' Copperweld Ground Rods as directed by the Traffic Signal Inspector/Engineer. Cost shall be incidental to the various Traffic Signal Items.

TYPE "D" PULLBOX & COVER (C&C Type)

Not to Scale





DETAIL A

Not to Scale

NOTES:

1. Messenger cable shall conform to ASTM A-475, extra high strength Class "C" coating.
2. All cable fittings shall be galvanized.
3. All fittings shall be of design for full strength of messenger cable.

TYPICAL OVERHEAD INTERCONNECT CABLE INSTALLATION DETIAL

Not to Scale

SURVEY PLOTTED BY	DATE
DRAWN BY X	2/13/97
TRACED BY	
DESIGNED BY X	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK tol.mike No. Ifartms2	

DATE	REVISION
2/7/97	Additional Details for New Traffic Signal System

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAILS

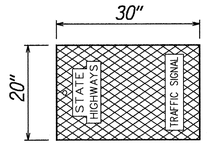
FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

Scale: As Shown — Date: Feb., 1997

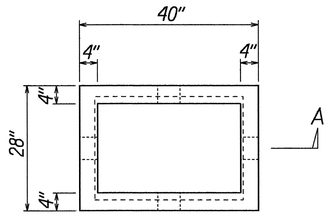
SHEET No. TS-3 S-4 OF 4 SHEETS

C.O. 108 S-4

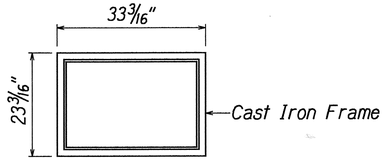
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	109	122



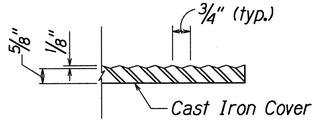
PLAN OF COVER



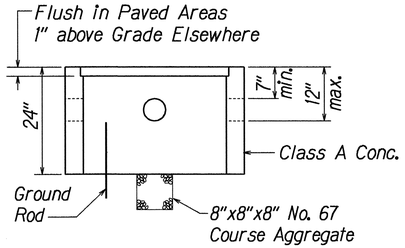
PLAN OF PULLBOX



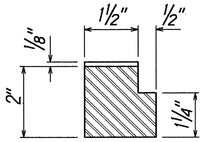
PLAN OF FRAME



SECTION THROUGH COVER



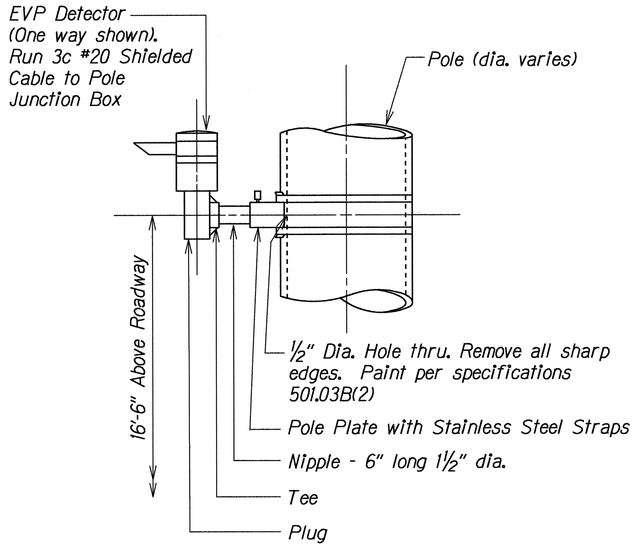
SECTION A-A



SECTION THROUGH FRAME

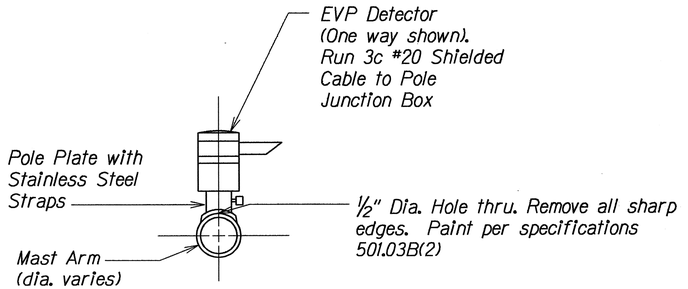
TYPICAL PULLBOX TYPE Z

Not to Scale



TYPICAL VERTICAL MOUNT OF EVP DETECTOR

Not to Scale



TYPICAL HORIZONTAL MOUNT OF EVP DETECTOR

Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 12/93
	DRAWN BY R. Acil	
NOTE BOOK	TRACED BY	
	DESIGNED BY B. Chiba	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL DETAILS

FARRINGTON HIGHWAY WIDENING
Ala Hema Street to Jade Street
Project No. 93B-02-91

Scale: As Shown Date: Jan., 1994

SHEET No. TS-4 OF 4 SHEETS

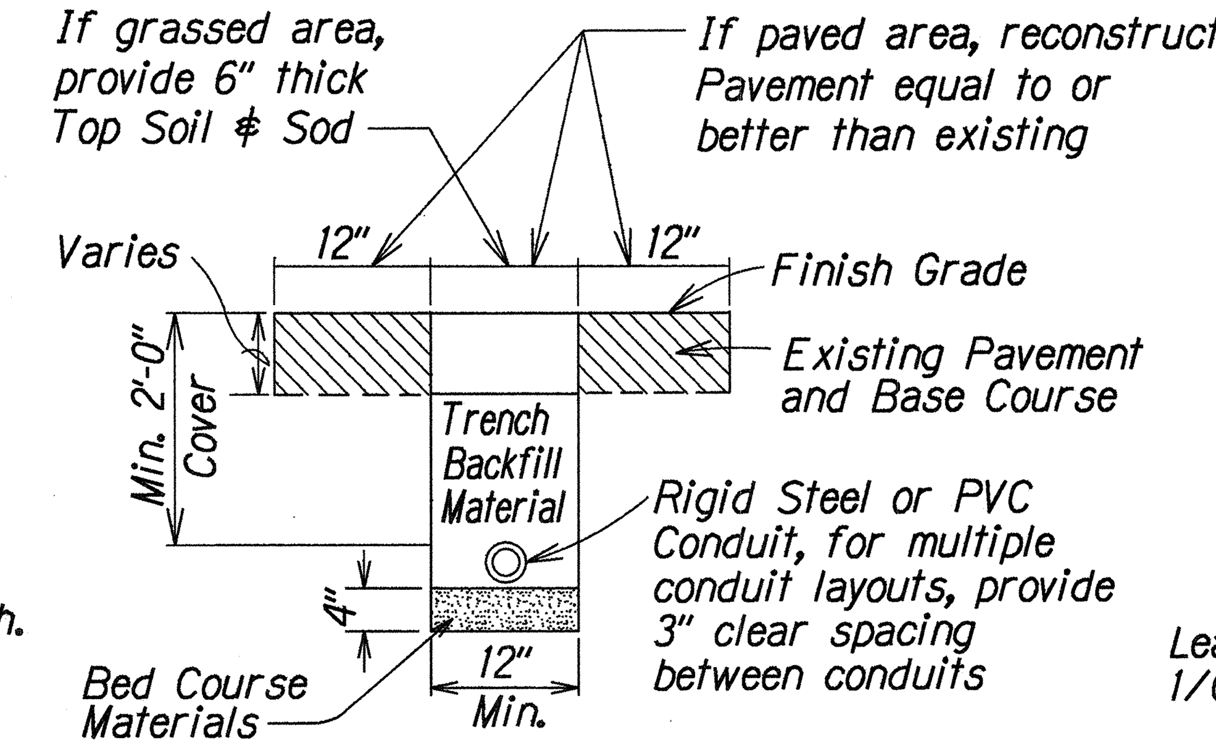
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	109 S-1	122

GENERAL NOTES

1. The locations 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 one day prior to pouring of the concrete slab/pad, 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. 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.
5. The Contractor shall verify the locations of the existing utilities and underground structures whether or not shown on plans.
6. 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.
7. 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.
8. 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.

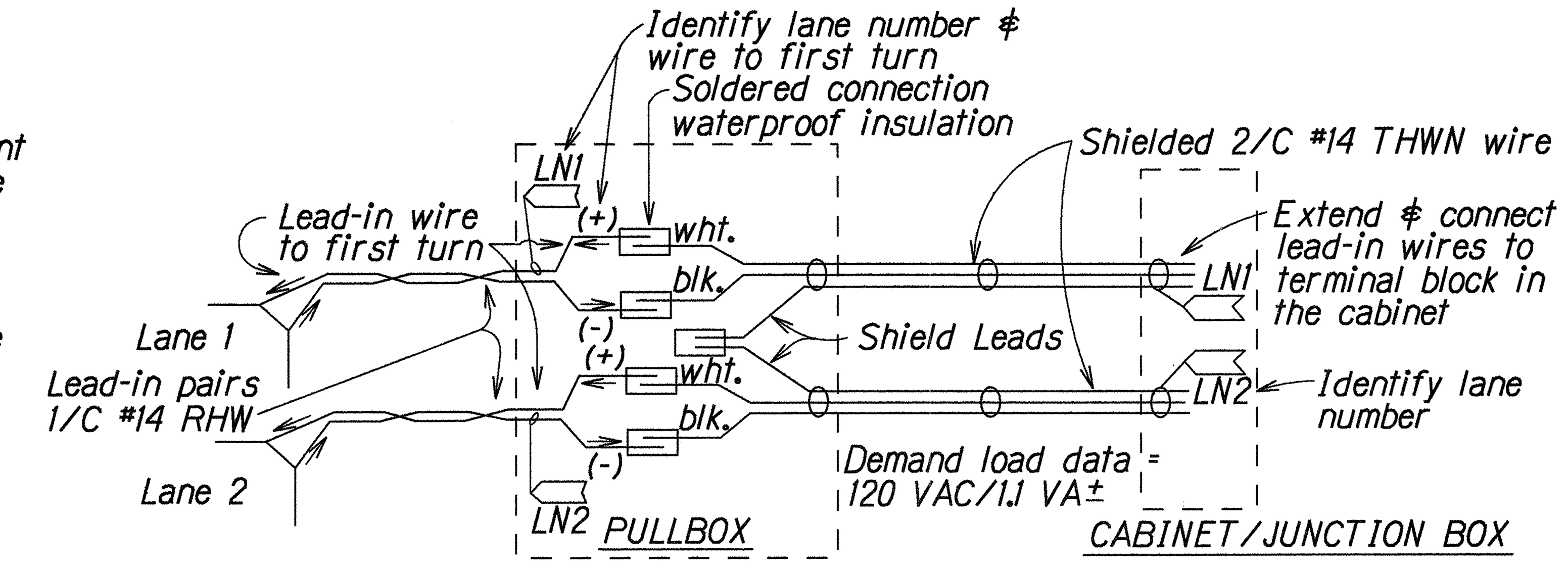
LOOP LAYOUT NOTES

1. Detector loop shall consist of three turns of 1/C 14 AWG RHW-USE-XLP wire or equivalent embedded in a 3/8" minimum saw cut, 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 one loop-pairs 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 to its right as lane 2 and so on as indicated on plans.
7. Clean sawcut thoroughly before filling with 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 numbers as shown on plans.
9. All cables and wires teminated within an enclosure shall have a minimum 12" additional slack.



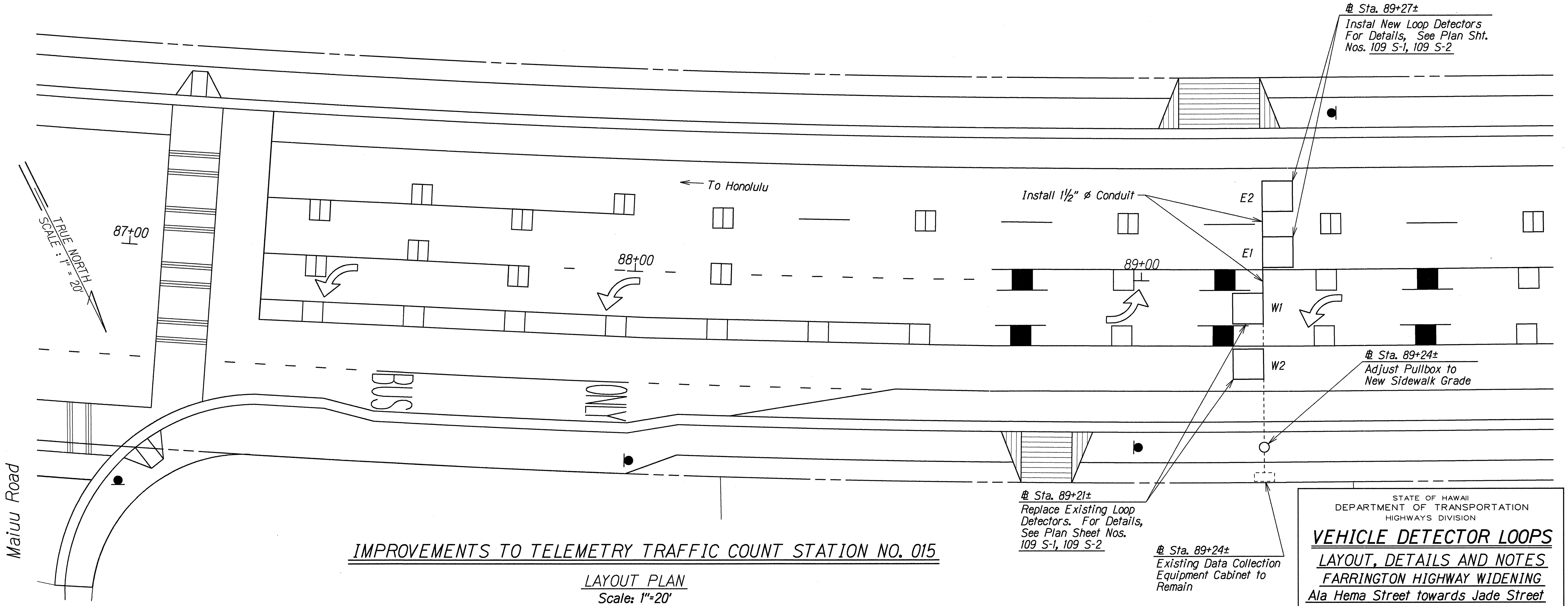
TYPICAL TRENCH SECTION FOR CONDUIT

Not to Scale



DETECTOR LOOP LEAD-IN WIRING AND IDENTIFICATION IN PULLBOX AND CABINET

Not to Scale



IMPROVEMENTS TO TELEMETRY TRAFFIC COUNT STATION NO. 015

LAYOUT PLAN

Scale: 1"=20'

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY G. Milburin	1-11-95
NOTE BOOK dd/george	TRACED BY	
ITurovidiign	DESIGNED BY R. Hironaka	
	QUANTITIES BY	
No.	CHECKED BY	

DATE	REVISION
1-9-95	Sheet Added to Contract Plan Set

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VEHICLE DETECTOR LOOPS

LAYOUT, DETAILS AND NOTES

FARRINGTON HIGHWAY WIDENING

Ala Hema Street towards Jade Street

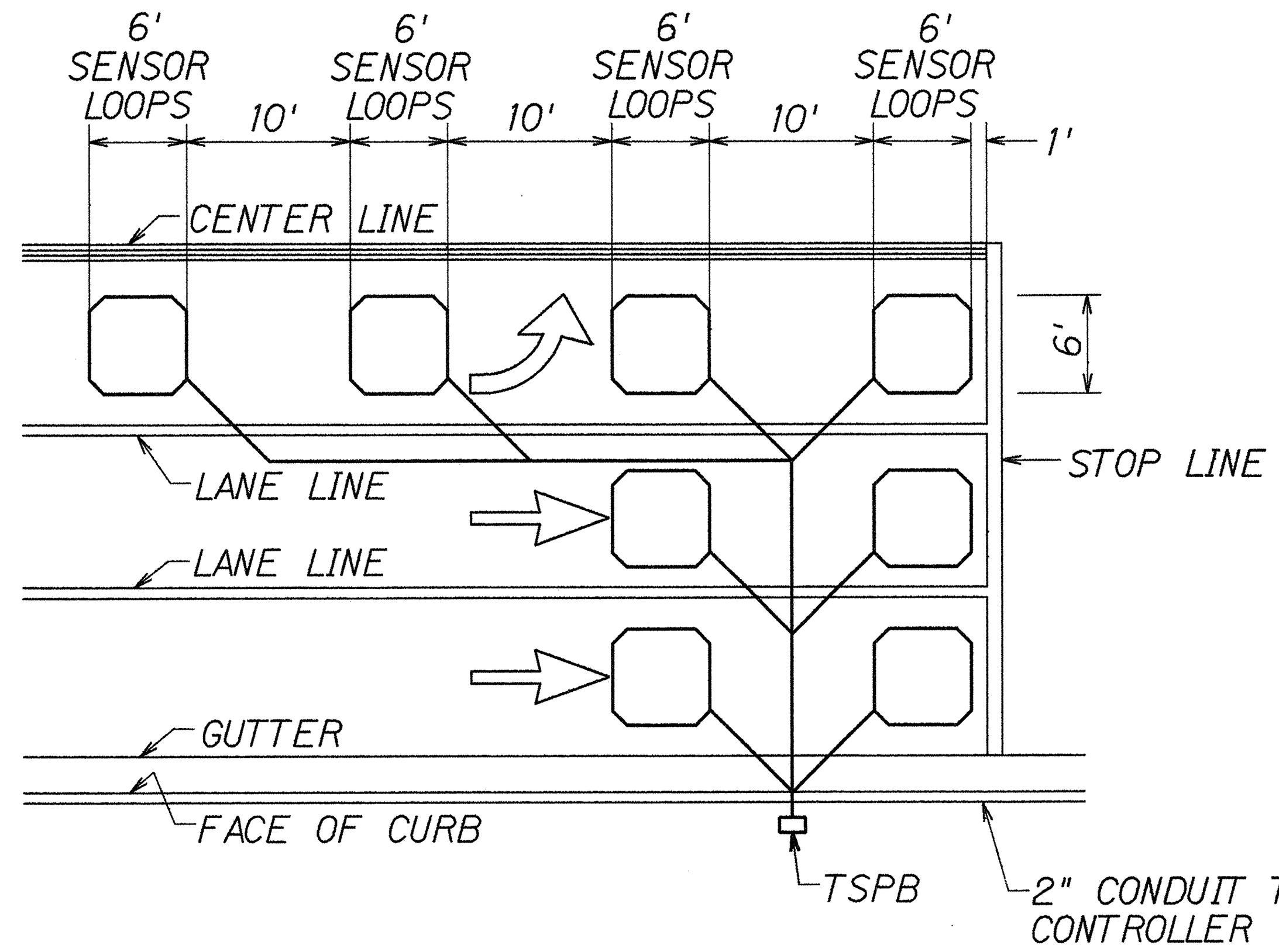
Project No. 93B-02-91

Scale: As Shown — Date: Jan., 1995

SHEET No. 1 OF 2 SHEETS

C.O. 109 S-1

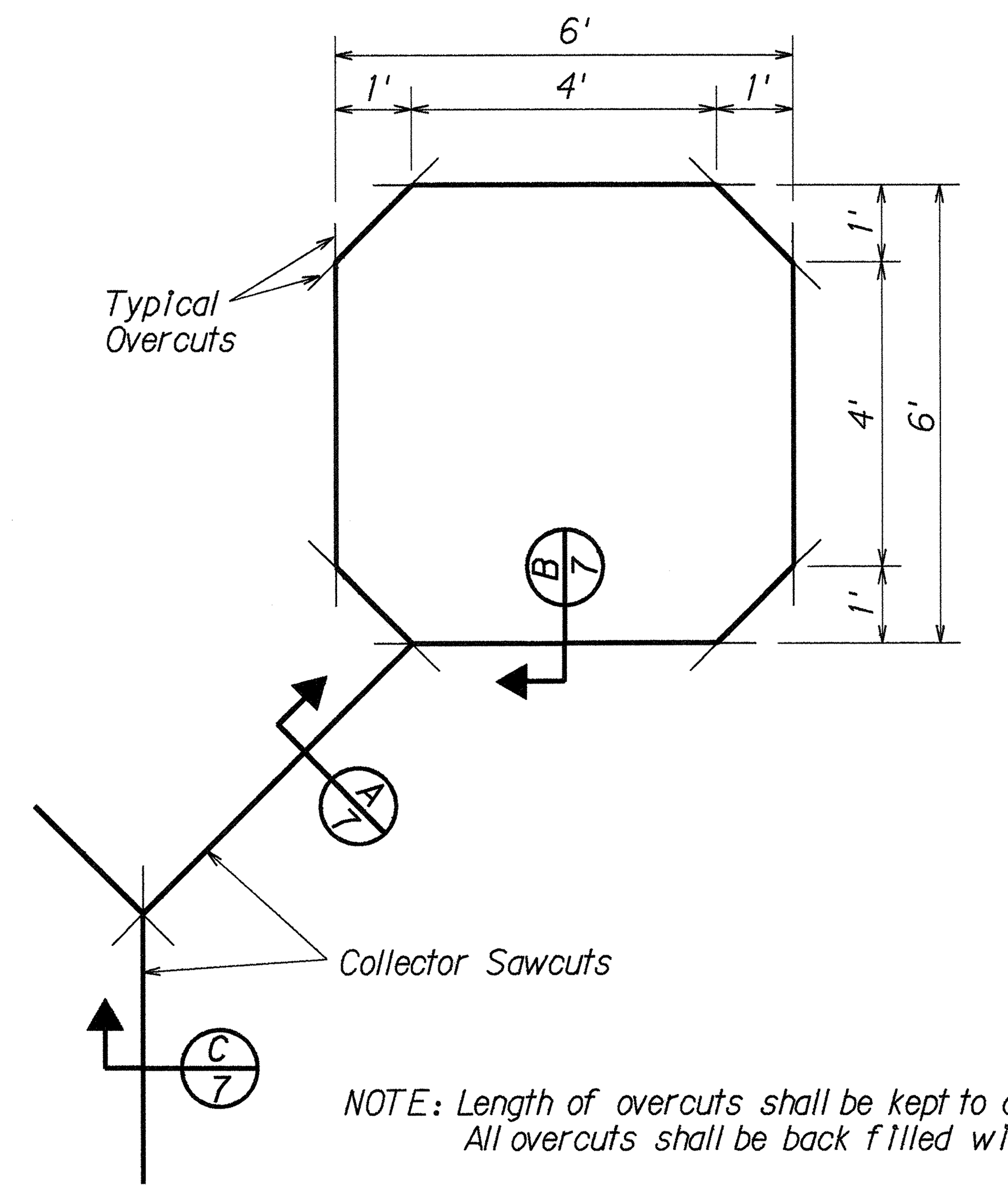
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	109 S-2	122



NOTES:

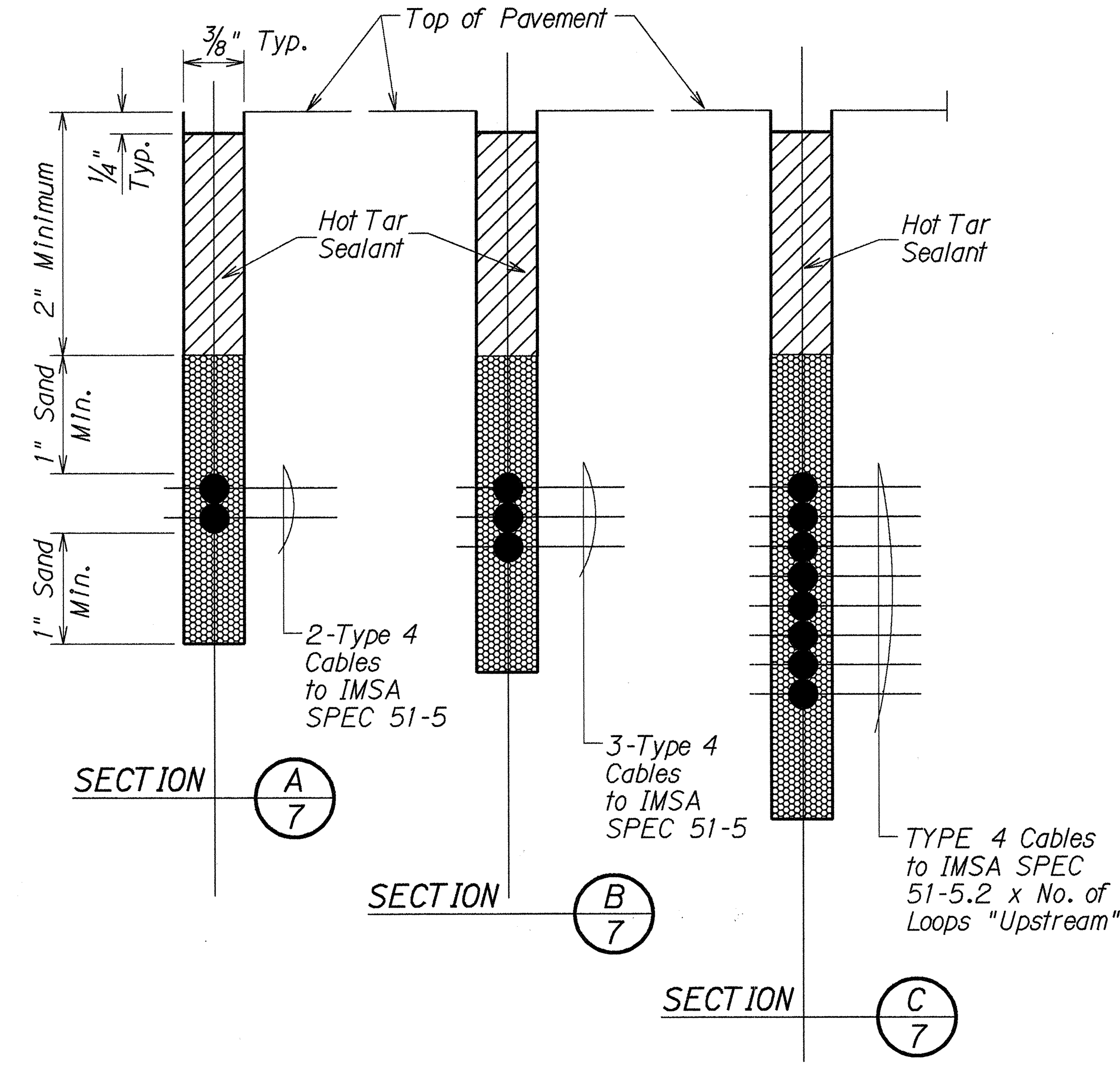
1. Center sensor loops in lanes.
2. Collector cables shall be twisted 2 turns per foot.
3. Number of loops and locations vary. See project plans.
4. Number and locations of collector sawcuts may be varied in the field to suit.

TYPICAL SENSOR LOOP LAYOUT

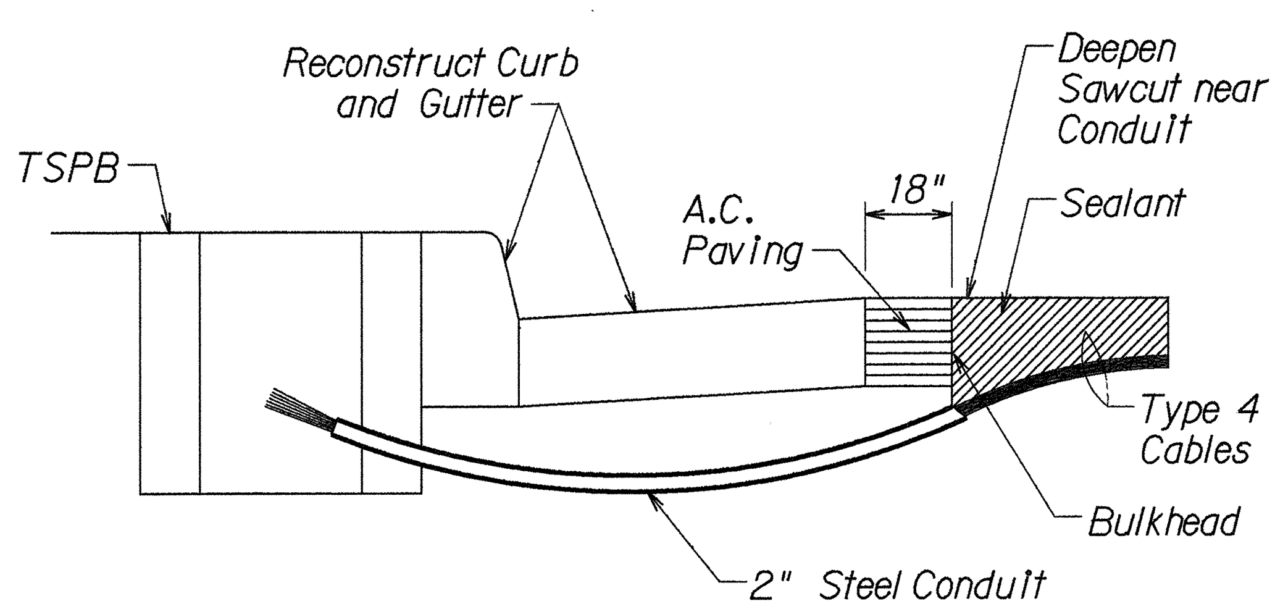


NOTE: Length of overcuts shall be kept to a minimum. All overcuts shall be back filled with hot tar.

TYPICAL SENSOR LOOP SAWCUT DETAIL



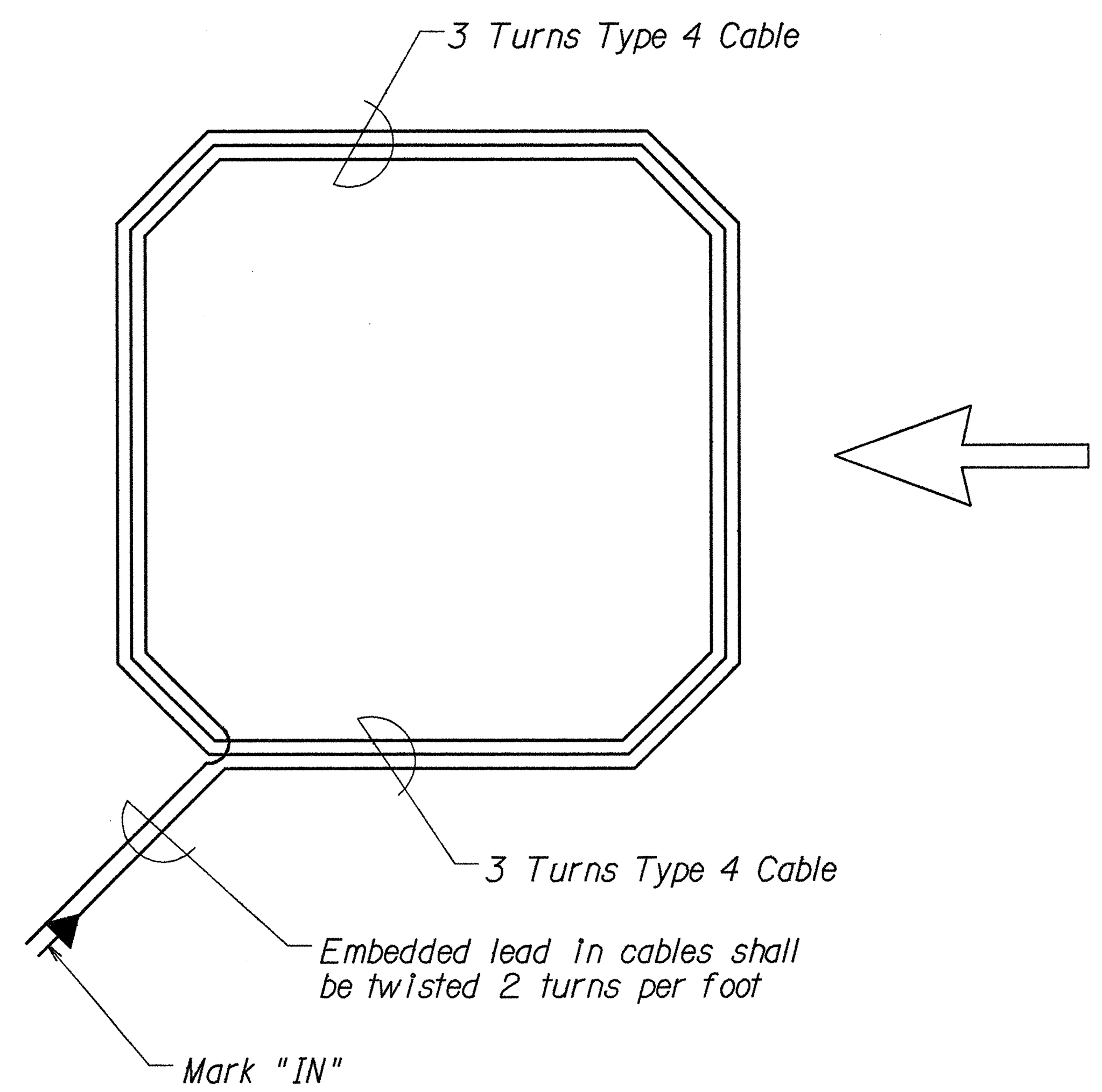
TYPICAL SECTION THROUGH SENSOR LOOP



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 INSTALLATION AT EDGE OF ROADWAY



TYPICAL SENSOR LOOP WIRING DIAGRAM

TYPES OF CABLES

TYPE 1	Signal Loop Cable: Stranded No. 14, 26 conductors
TYPE 2	Detector Lead-In Cable and Pedestrian Push Button Circuit Cable: Stranded, No. 14, 2 Conductors
TYPE 3	Interconnect Cable: Solid No. 20, 12 Pairs
TYPE 4	Loop Sensor Cable: Solid No. 12, Single Conductor to IMSA SPEC 51-5
TYPE 5	Cable from Signal Loop to Signal Head: Stranded, No. 14, Single Conductor
TYPE 6	Service Cable: Solid, No. 6, 3 Conductors

DATE	REVISION
1-9-95	Sheet Added to Contract Plans

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

VEHICLE DETECTOR LOOPS

DETAILS

FARRINGTON HIGHWAY WIDENING
Ala Hema Street towards Jade Street
Project No. 93B-02-91

Not to Scale — Date: Jan., 1995

SHEET No. 2 OF 2 SHEETS

C.O. 109 S-2

ORIGINAL PLAN — SURVEY PLOTTED BY — DRAWN BY G. Alburcin — TRACED BY — DESIGNED BY B. Hironaka — QUANTITIES BY — CHECKED BY — DATE 1-11-95