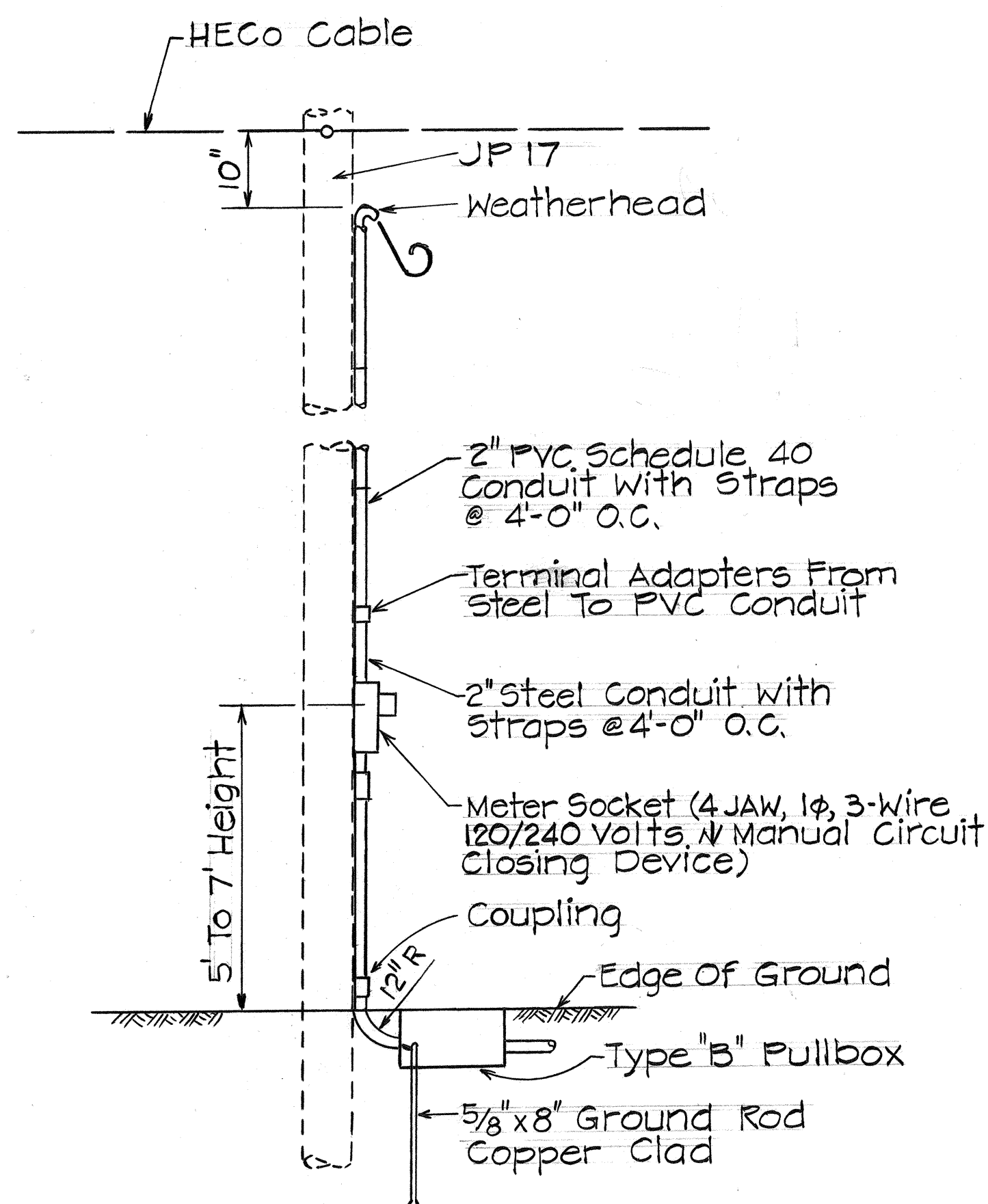


LEGEND

- Type B Pullbox
- Type A Pullbox
- ⊠ Relocated Controller and Cabinet with New Foundation
- ∴ Controller Barriers
- Relocated Existing 12" RY← Traffic Signal Head with New Bracket Mounting
- Relocated Existing 12" RY← Traffic Signal Head Revised to Display RY↑ with New Mast Arm Mounting
- ↕ Relocated Existing 12" RY← Traffic Signal Head w/New Bracket Mounting
- ↕ Relocated Existing 12" RY← Programmed Visibility Traffic Signal Head with New Bracket Mounting
- Relocated Existing Pedestrian Signal Head
- ⊠ Loop Detector Sensing Units (8'x6')

TRAFFIC SIGNAL NOTES

1. All Existing Traffic Signal Equipment not Incorporated Into The Final Traffic Signal System Shall Be Abandoned Or Removed As Directed By The Engineer Or As Noted on The Plans.
2. Existing Structures And Utilities Damaged By The Contractor shall Be Repaired By The Contractor At His Expense.
3. The Location Of Traffic Signal Standards, Controller, Pull-boxes, And Conduits Shall Be Staked Out By The Contractor And Approved By The Engineer Prior To Construction and Installation.
4. All New Conduits Under Roadways shall be Steel Or PVC Schedule 80 Unless Otherwise Noted.
5. Furnishing And Installing Controller Barriers, Risers On Poles And Conduit Stubouts (Pull Boxes To Edge Of Pavement) Shall Not Be Paid For Separately But Shall Be Considered Incidental To The Various Contract Items.
6. Conduit Between Signal Pole And Adjacent TSPB Shall Be One New 2" PVC Conduit Unless Noted Otherwise On The Plans. Ground Wire And Sufficient Number Of 1C, #14 Cables Shall Be Installed Within The Conduit To Service All Pedestrian And Vehicular Signals On That Pole.
7. All Splicing Shall Be Done In The Pullboxes.
8. The C & C Department Of Transportation Services will make All Connections And Splices At TSPB's, Signal Faces, Standards And Controller Terminal Blocks, But Not Work On Grounding Systems Nor Connections within The Controller Assembly. The Contractor Shall Notify The C & C DTS At Least Three (3) Working Days Prior To Start Of Construction On The Traffic Signal System.
9. Construction Of Signal Systems Will Be Subject To The Inspection Of The C & C DTS In Addition To That Of The State.
10. The Contractor shall Notify All Affected Utility Companies And Government Agencies Of His Intent To Begin Construction On Any Intersection Or Street At Least Two (2) Weeks Prior To The Start Of Such Construction.
11. The Existing/Temporary Traffic Signal System Shall Remain In Operation Until The New Traffic Signal System can be activated And Put Into Service. The Contractor shall arrange His Work Accordingly And Shall Provide Temporary Relocations And Wiring As Necessary. Payment will made in Accordance with Section 104.05 - Construction And Maintenance Of Detours.
12. A Solid #8 Bare Copper Wire Shall Be Pulled With The Traffic Signal Control Cable For Equipment Ground. Cost shall be Incidental To The Installation Of The Control Cable.
13. The Contractor Shall Relocate Meter Socket And Breaker On JP17 In Accordance With HECO Requirements. Meters Shall Be Mounted Between 5'-7' Above Ground. Meter Sockets Shall Be 4-Prong Complete With A Manual Circuit Closing Device. 50-Amp Circuit Breakers In Weatherproof Boxes Shall Be Provided.



SERVICE POLE DETAIL
Not To Scale

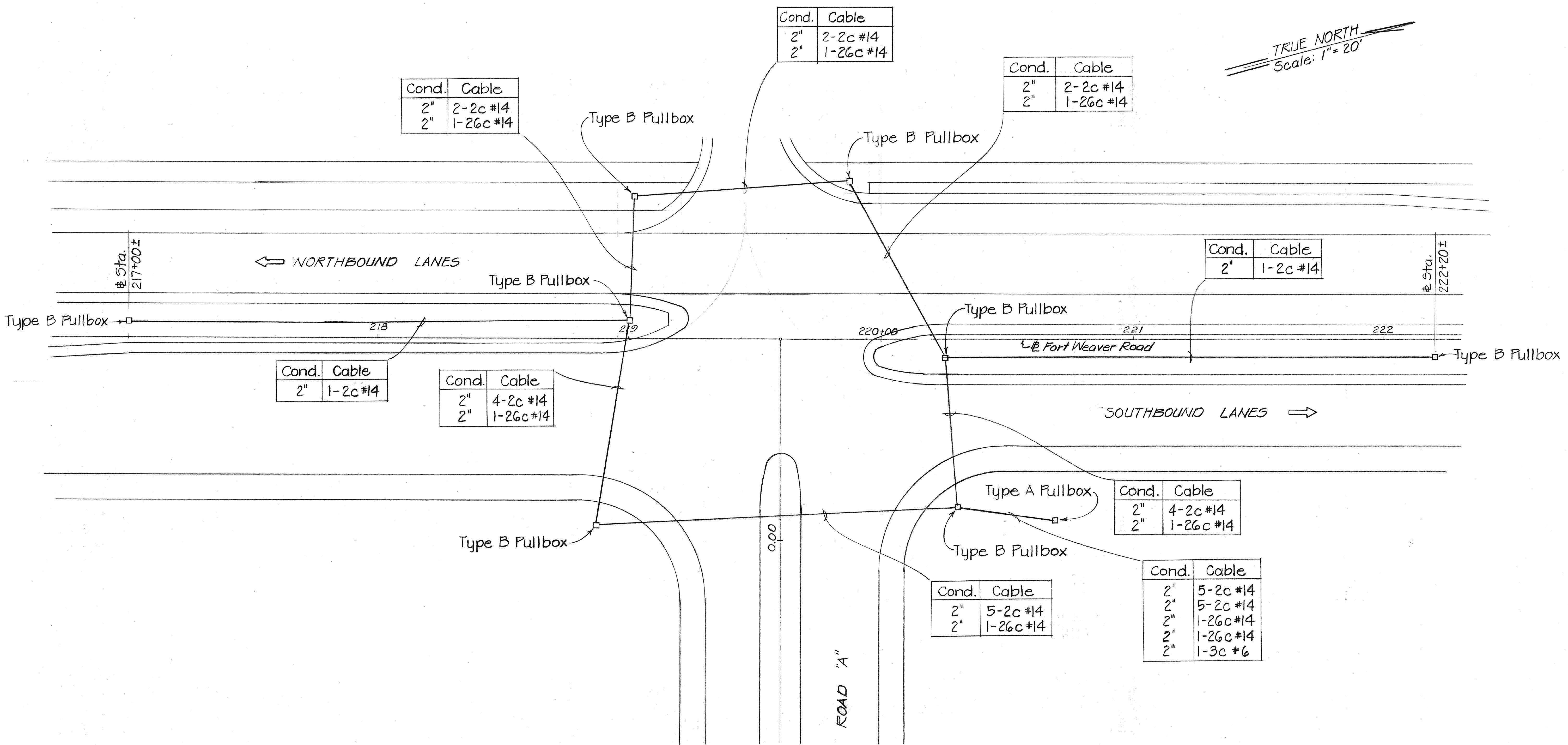
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(1)	1986	60	121

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

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DETAIL, LEGEND & NOTES	
FORT WEAVER ROAD Renton Road To Hanakahi Street	
F.A.P. Proj. No. F-076-1(1)	
Scale: 1" = 50'	Date: Aug. 1985
SHEET NO. 11 OF 6 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(1)	1986	ADD. 605-1	121

TRUE NORTH
Scale: 1" = 20'



PLAN - ROAD "A" INTERSECTION

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

1-6-86	Added traffic signal details for Road "A".
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

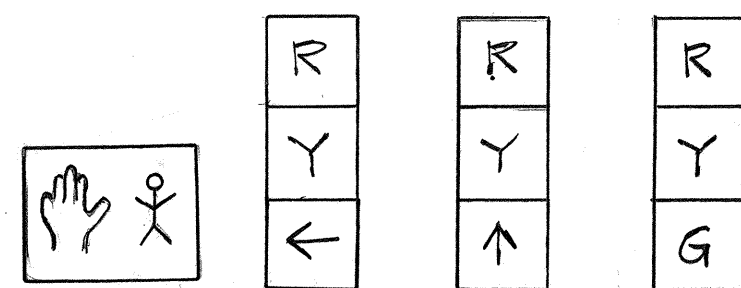
FORT WEAVER ROAD
Renton Road to Hanakahi Street

F.A.P. Proj. No. F-076-1(1)

Scale: 1" = 20' Date: Jan. 1986

SHEET No. 114 OF 6 SHEETS

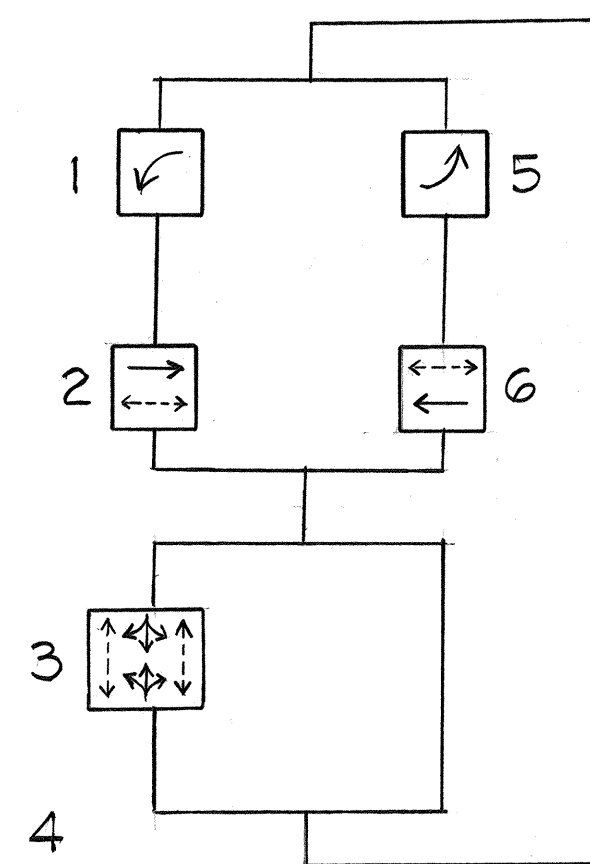
SIGNAL INDICATIONS



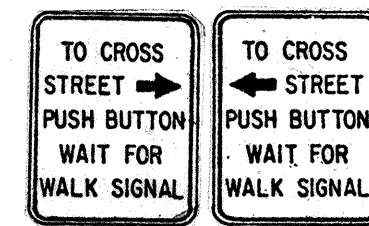
A-1,4	B-3	C-1,2	A-2,3,5
B-1,4	C-3	F-1,2	B-2
D-1,4	E-3		D-2,3,5
E-1,4	F-3		E-2

*Programmed Visibility Head

PHASE DIAGRAM



Install Signal Assemblies on Highway Lighting Standard w/ Pedestrian Pushbutton

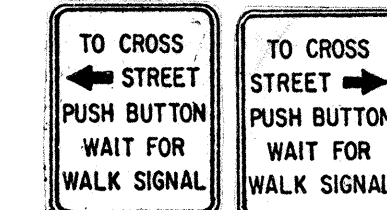


R10-4a(R) R10-4a(L)

Install 4-8'x6'
Loop Detectors
Centered In Lane

COND	CABLE
2"	1-26C #14
2"	2-2C #14

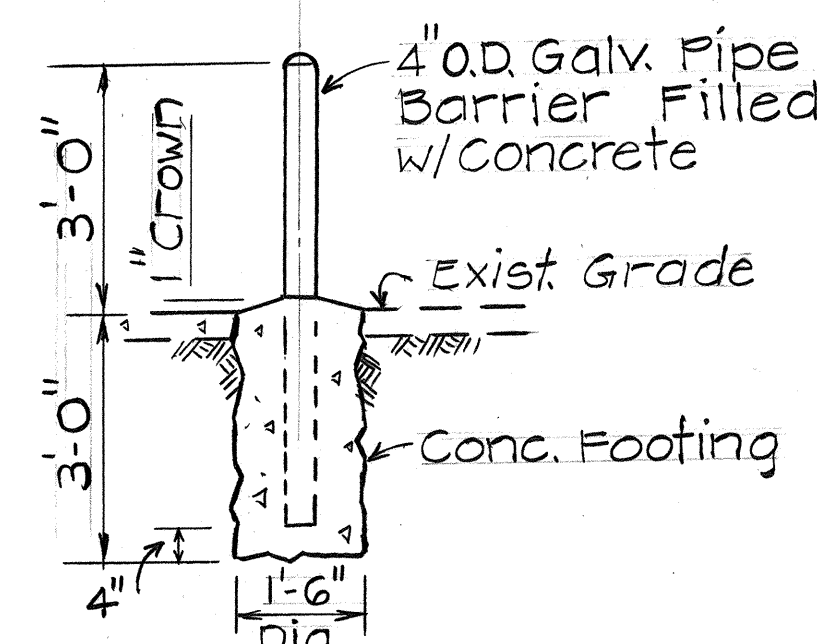
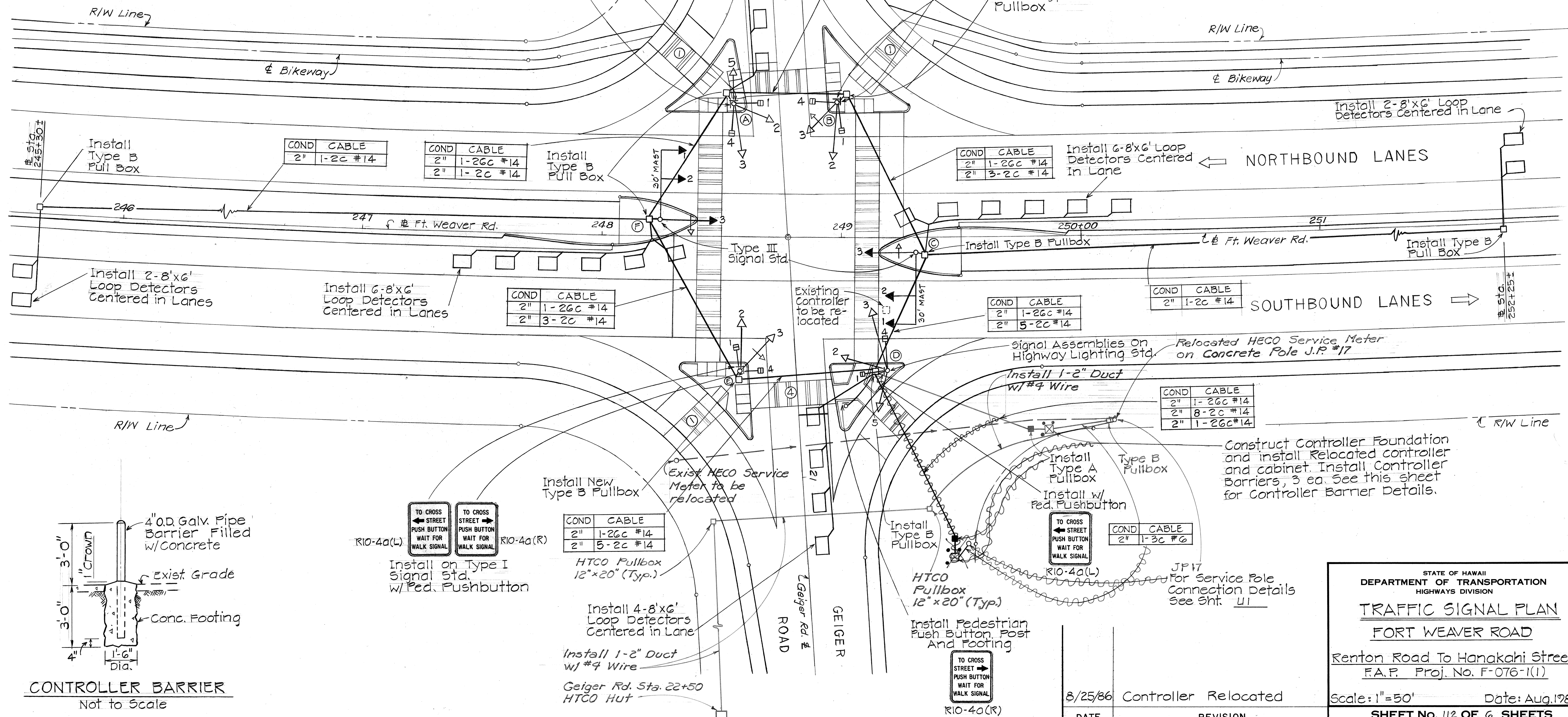
Install On Type I
Signal Std.
w/Ped. Pushbutton



R10-4a(L) R10-4a(R)

Install Type B Pullbox

TRUE NORTH
Scale: 1"=20'



CONTROLLER BARRIER

Not to Scale

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

8/25/86	Controller Relocated
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL PLAN

FORT WEAVER ROAD

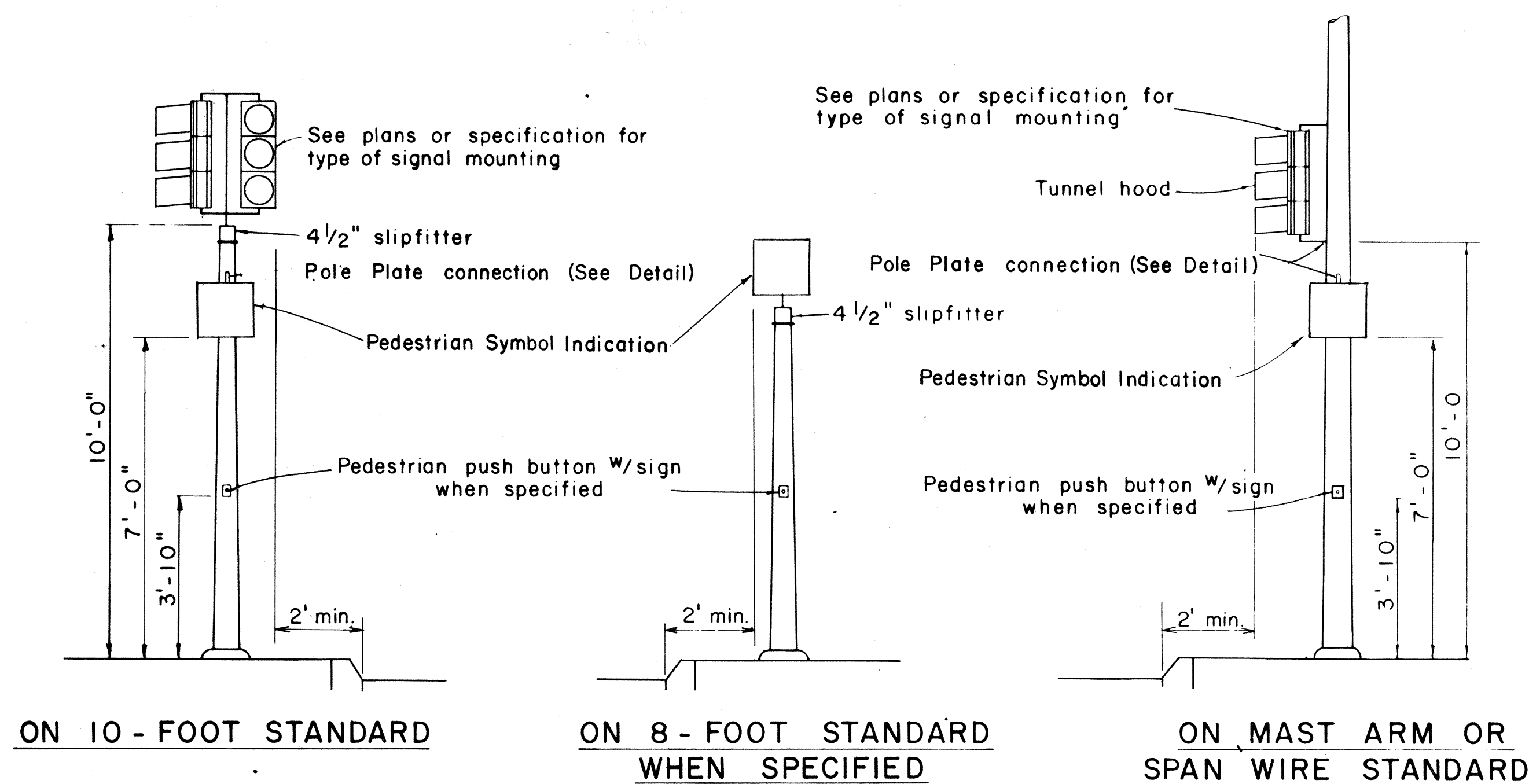
Renton Road To Hanakahi Street
F.A.P. Proj. No. F-076-1(1)

Scale: 1" = 50' Date: Aug. 1985

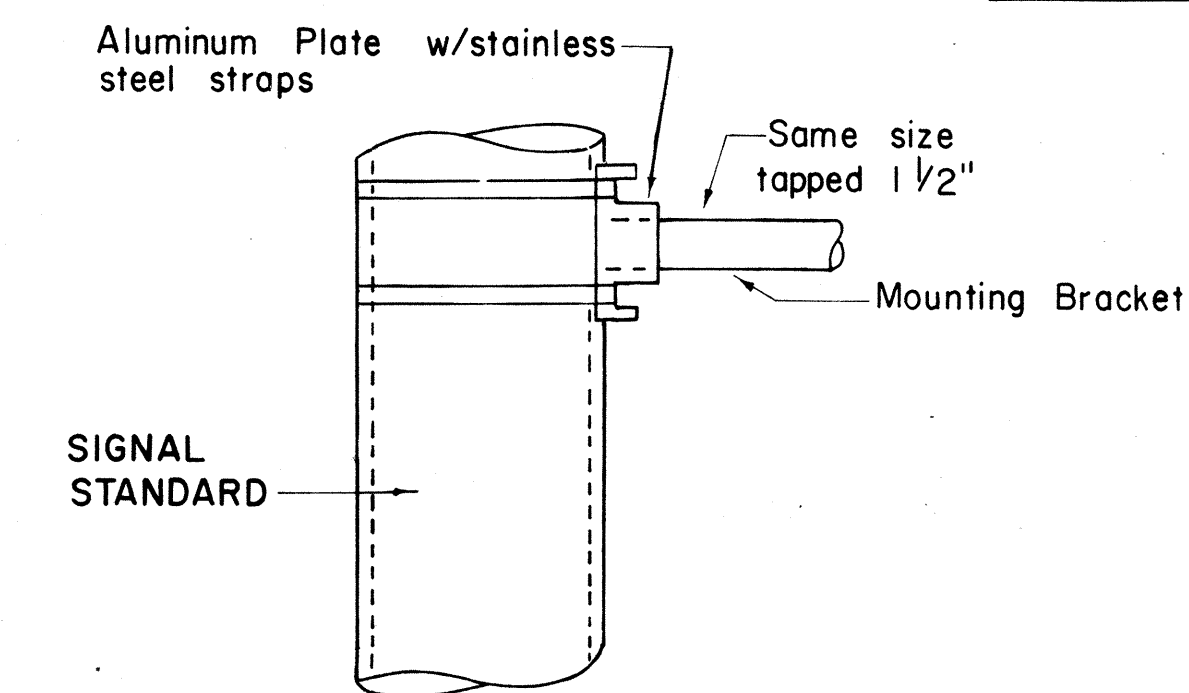
SHEET No. 42 OF 6 SHEETS

62

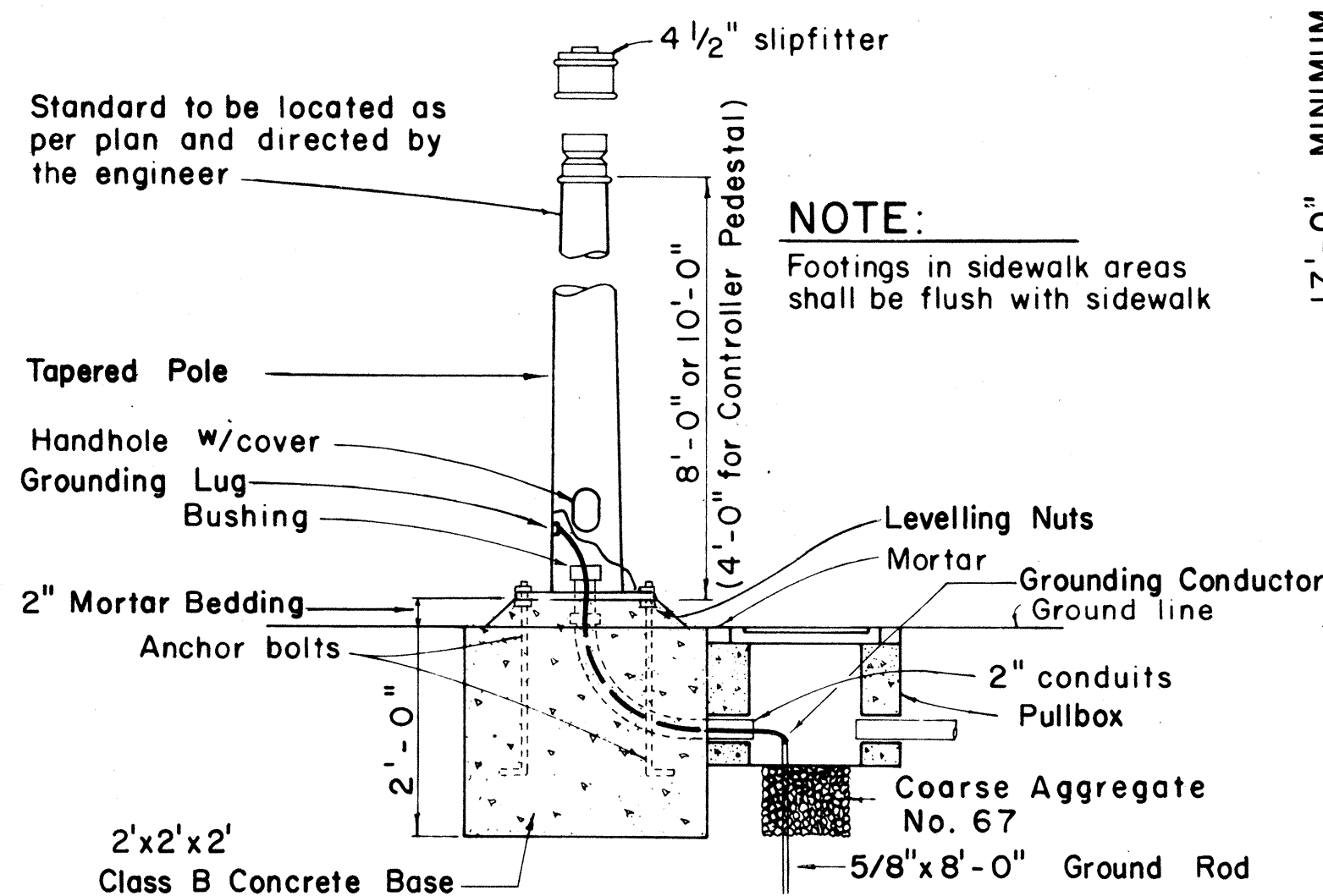
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(1)	1986	63	121



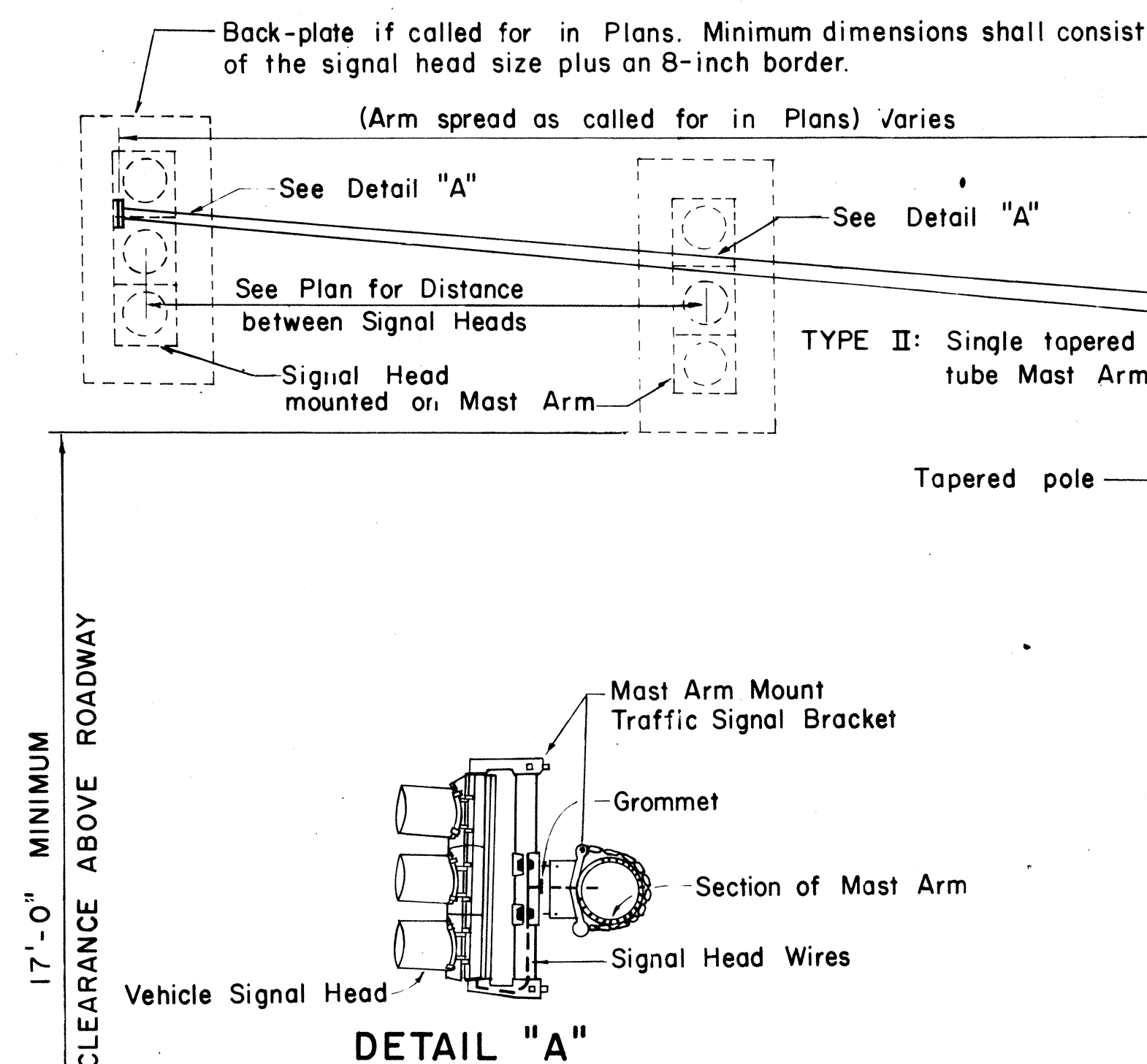
TYPICAL EQUIPMENT MOUNTINGS



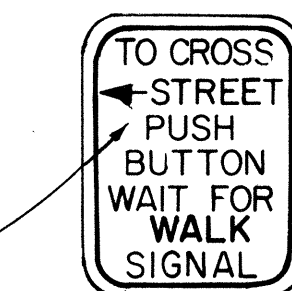
DETAIL OF POLE PLATE CONNECTIONS



TYPE I SIGNAL STANDARD OR CONTROLLER PEDESTAL AND FOOTING



TYPE II MAST ARM AND STANDARD

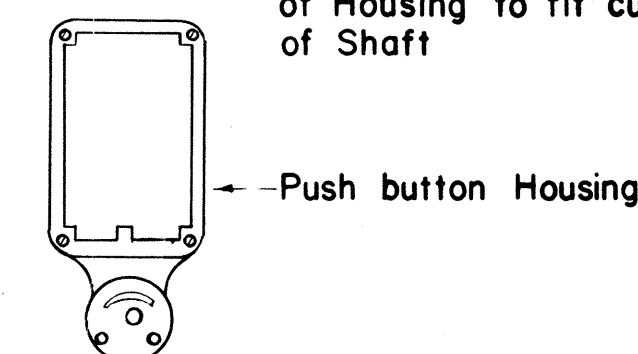


RIO-4a(L)
5" x 7"

PEDESTRIAN
PUSH BUTTON

NOTE:

1. Conduits shall protrude 2" max. above finished surface of foundation.
2. Conduits shall slope away from pole foundation.



TRAFFIC SIGN AS SPECIFIED IN PLAN
"TO CROSS STREET (ARROW) PUSH BUTTON
WAIT FOR WALK SIGNAL", RIO-4a(L)
RIO-4a(R) or RIO-4a(L & R)

Holes for 5/8" bolts

2 1/2" pipe

2 1/2" C.I. companion flange 125* F.D.

1 1/2" conduit

5/8" x 12" anchor bolts

2' min.

Class B concrete

1' - 6"

3' - 10"

2 1/2" std. galv. steel pipe

Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

1' - 6"

1 1/2" conduit

2' min.

3' - 10"

2 1/2" std. galv. steel pipe

Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

1' - 6"

1 1/2" conduit

2' min.

3' - 10"

2 1/2" std. galv. steel pipe

Push button

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Push button

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Push button

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Push button

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5/8" x 12" anchor bolts

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Push button

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5/8" x 12" anchor bolts

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Push button

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2' min.

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Class B concrete

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1 1/2" conduit

2' min.

3' - 10"

2 1/2" std. galv. steel pipe

Push button

2' min.

5/8" x 12" anchor bolts

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Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

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2 1/2" std. galv. steel pipe

Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

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3' - 10"

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Push button

2' min.

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Push button

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Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

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2' min.

3' - 10"

2 1/2" std. galv. steel pipe

Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

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1 1/2" conduit

2' min.

3' - 10"

2 1/2" std. galv. steel pipe

Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

1' - 6"

1 1/2" conduit

2' min.

3' - 10"

2 1/2" std. galv. steel pipe

Push button

2' min.

5/8" x 12" anchor bolts

Class B concrete

1' - 6"

1 1/2" conduit

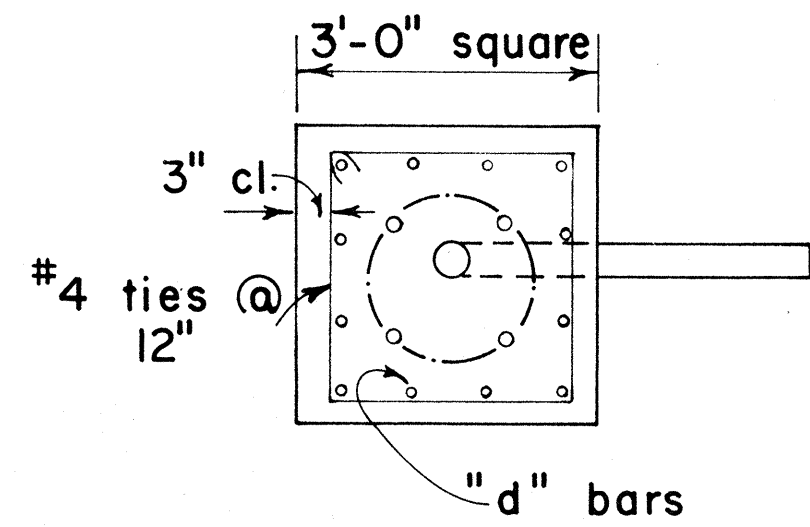
2' min.

3' - 10"

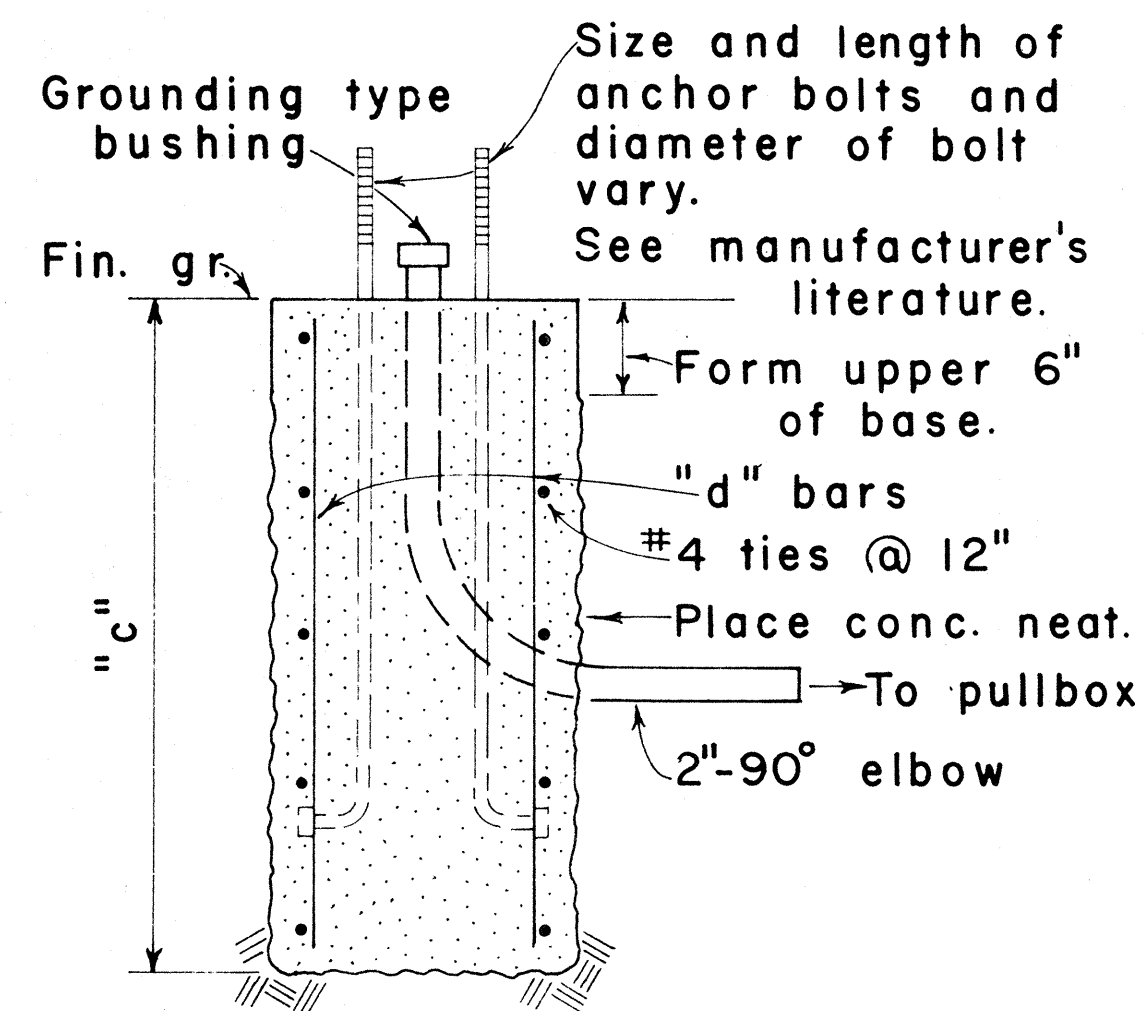
2 1/2" std. galv. steel pipe

Push button

2' min.



PLAN - SECTION

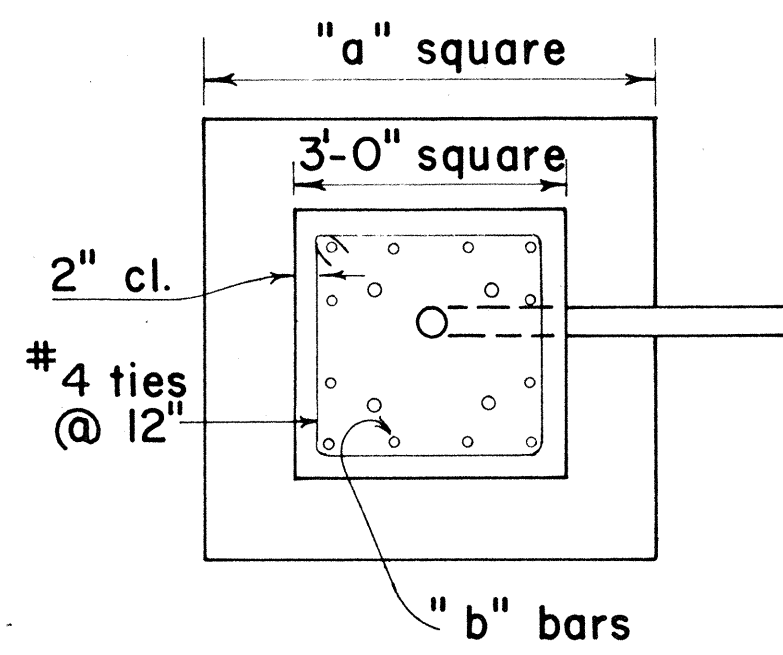


NOTE:
Concrete shall be Class B.

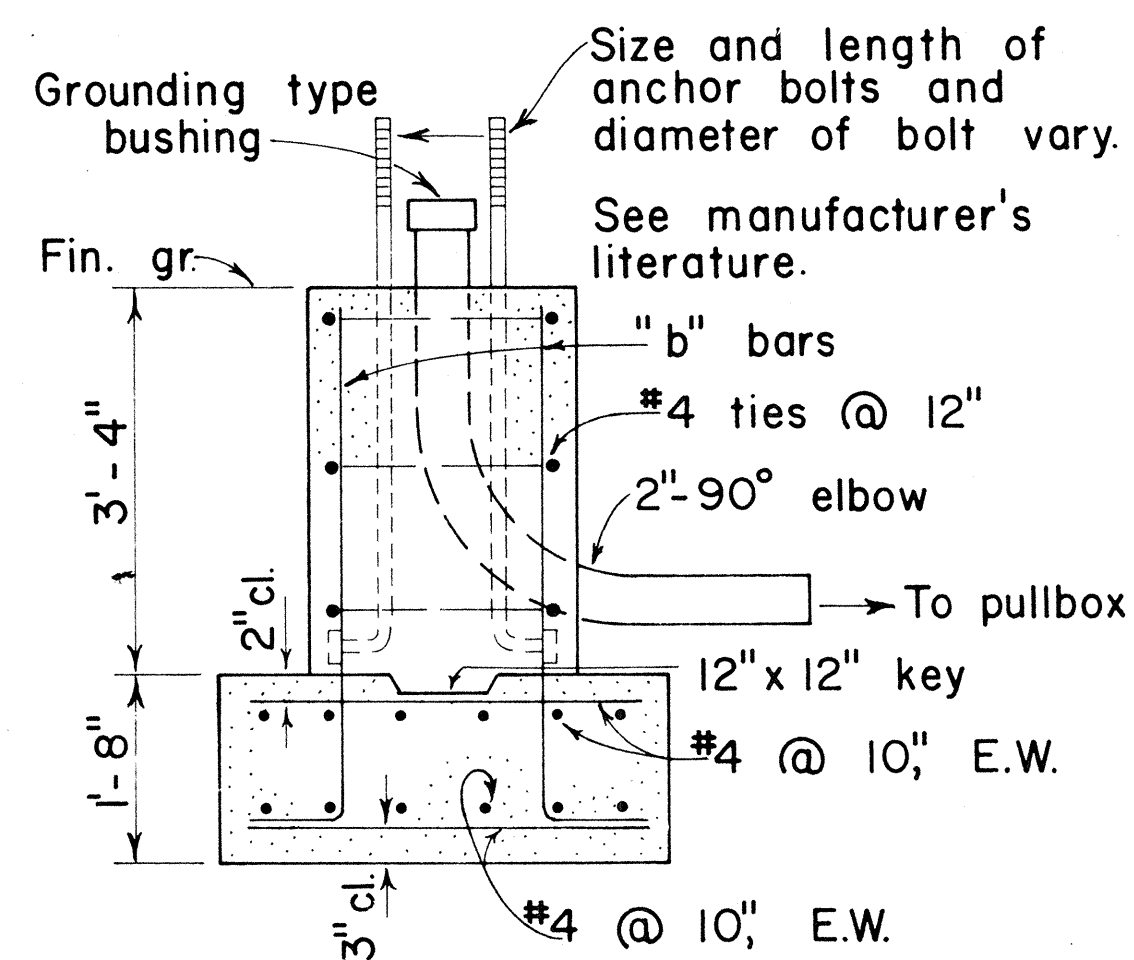
SECTION

MAST ARM LENGTH	"c"	"d" BARS
16' - 18'	5' - 0"	12 - #6
20'	5' - 6"	12 - #6
25'	6' - 0"	12 - #6
30'	6' - 6"	12 - #6
35'	7' - 0"	12 - #8
40'	8' - 0"	12 - #8

TYPE II



PLAN - SECTION



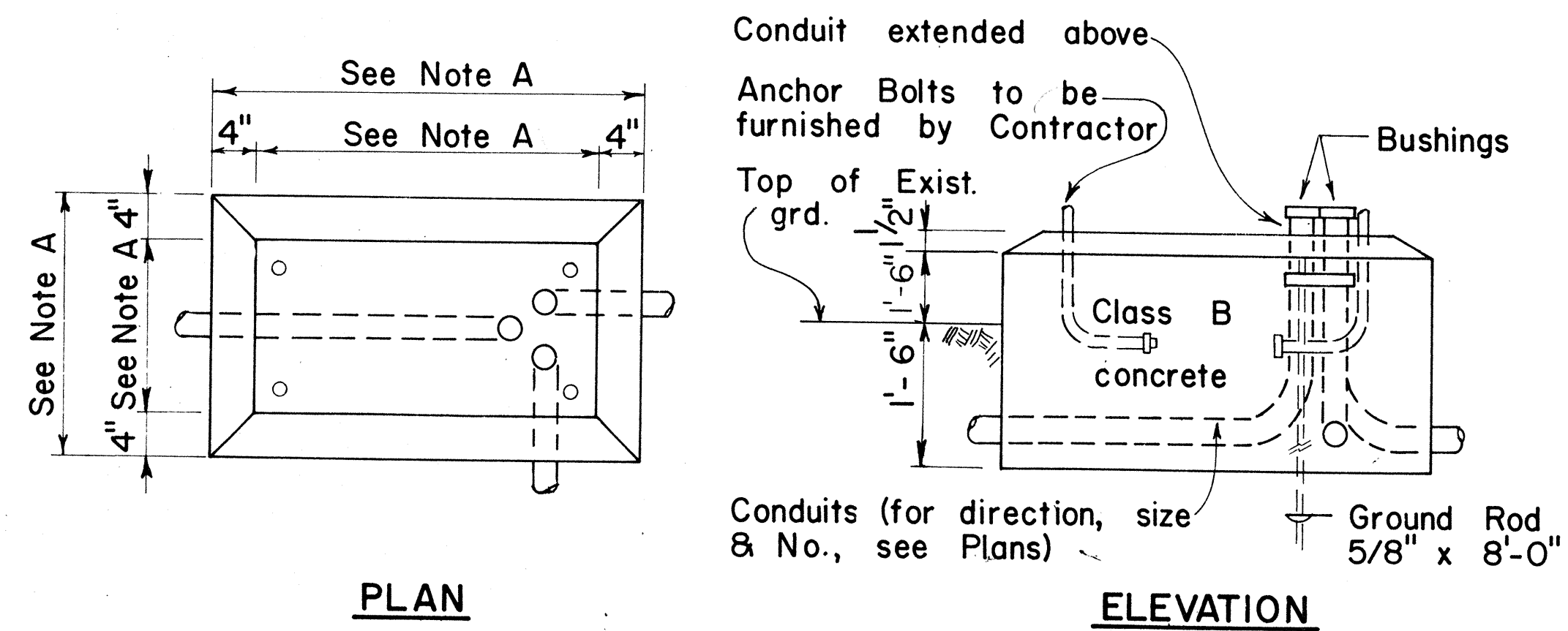
NOTE:
Concrete shall be Class B.

SECTION

MAST ARM LENGTH	"a"	"b" BARS
16' - 18'	5' - 0"	12 - #6
20'	5' - 6"	12 - #6
25'	6' - 0"	12 - #6
30'	6' - 6"	12 - #8
35'	6' - 6"	12 - #8
40'	7' - 0"	12 - #8

TYPE IIA

FOOTING FOR MAST ARM STANDARD



PLAN
CONCRETE BASE FOR CONTROLLER CABINET

- NOTES:
- Dimensions to be determined by the size of the Controller Cabinet to be furnished under this Contract.
 - Details of Conduits, Anchor Bolts, etc., are approximate only. Exact details shall be secured by the Contractor from Manufacturer.

APPROVAL RECOMMENDED:
Erich Tanaka 3/4/76
TRAFFIC ENGINEER DATE

APPROVED:
Robert Z. Zerkow 2-5-76
ASSISTANT CHIEF, ENGINEERING DATE

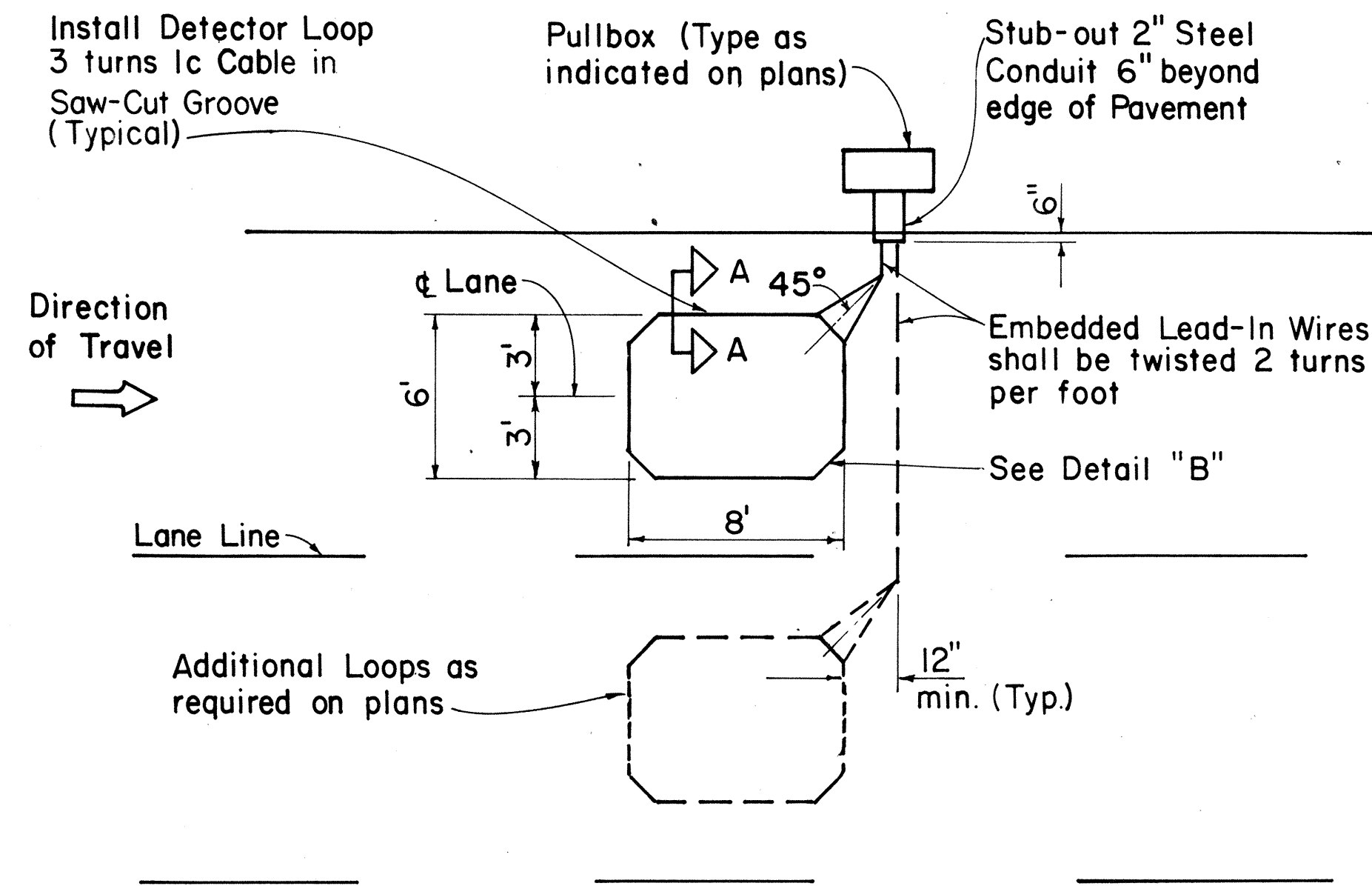
NO.	REVISION	APPROVED BY	DATE
1	Revised Cabinet Base Design	<i>[Signature]</i>	1-31-85

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

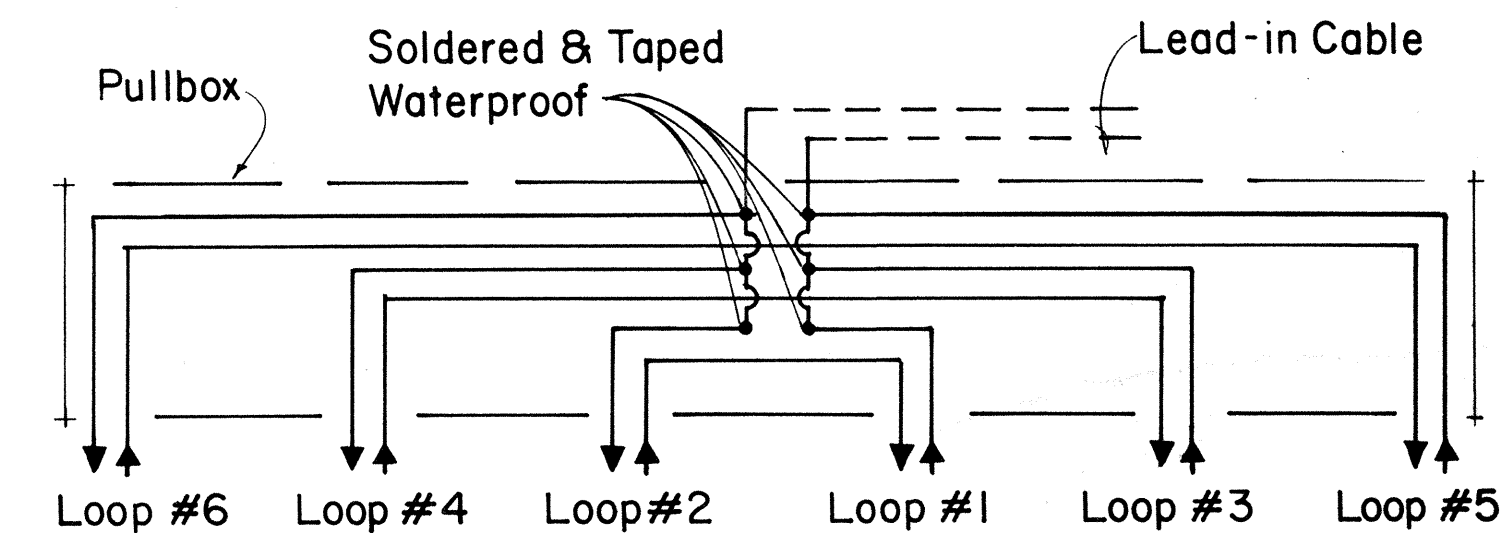
TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS

Not to Scale

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-076-1(1)	1986	65	121

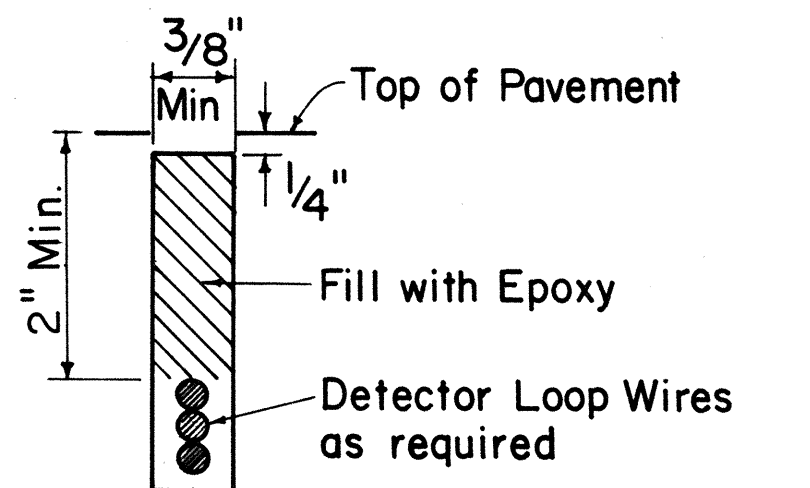


SINGLE LOOP LAYOUT



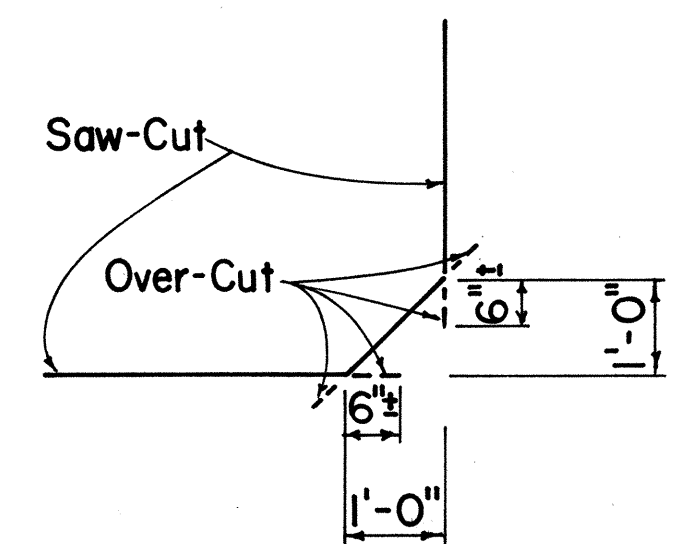
DETAIL "A"

TYPICAL SERIES-PARALLEL LOOP CONNECTION



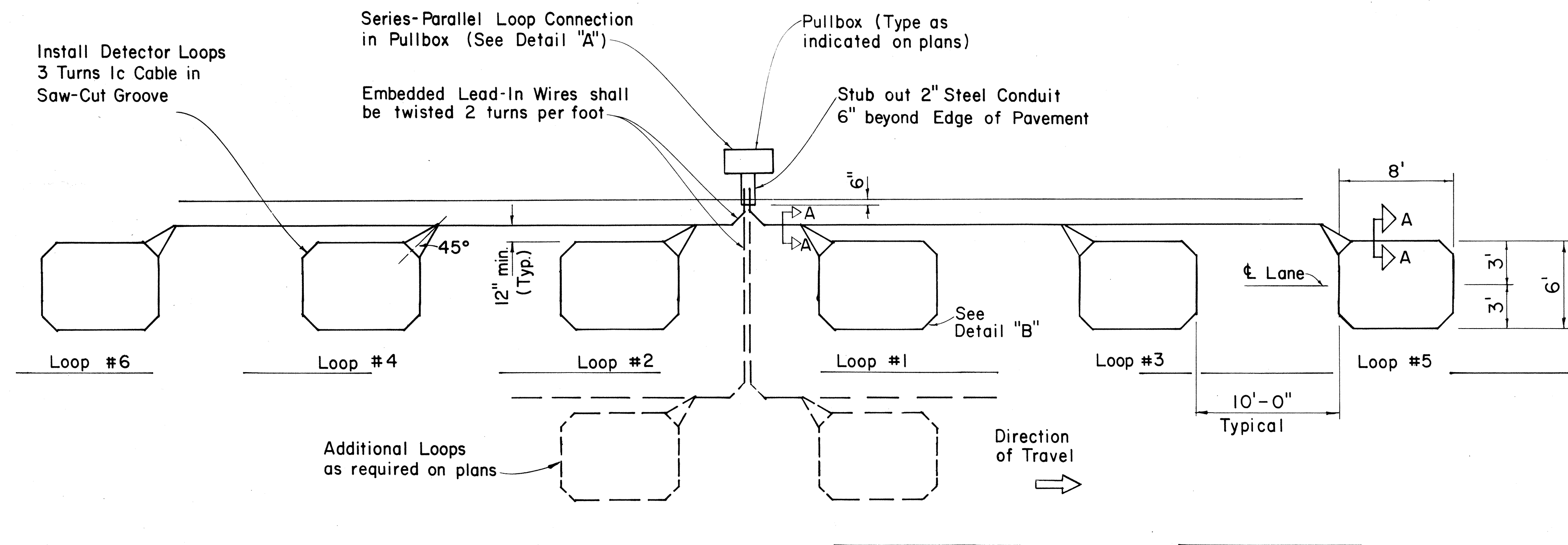
DETECTOR LOOP SAW-CUT SECTION A-A, (TYPICAL)

Note: Back-Fill Over-Cuts with Epoxy

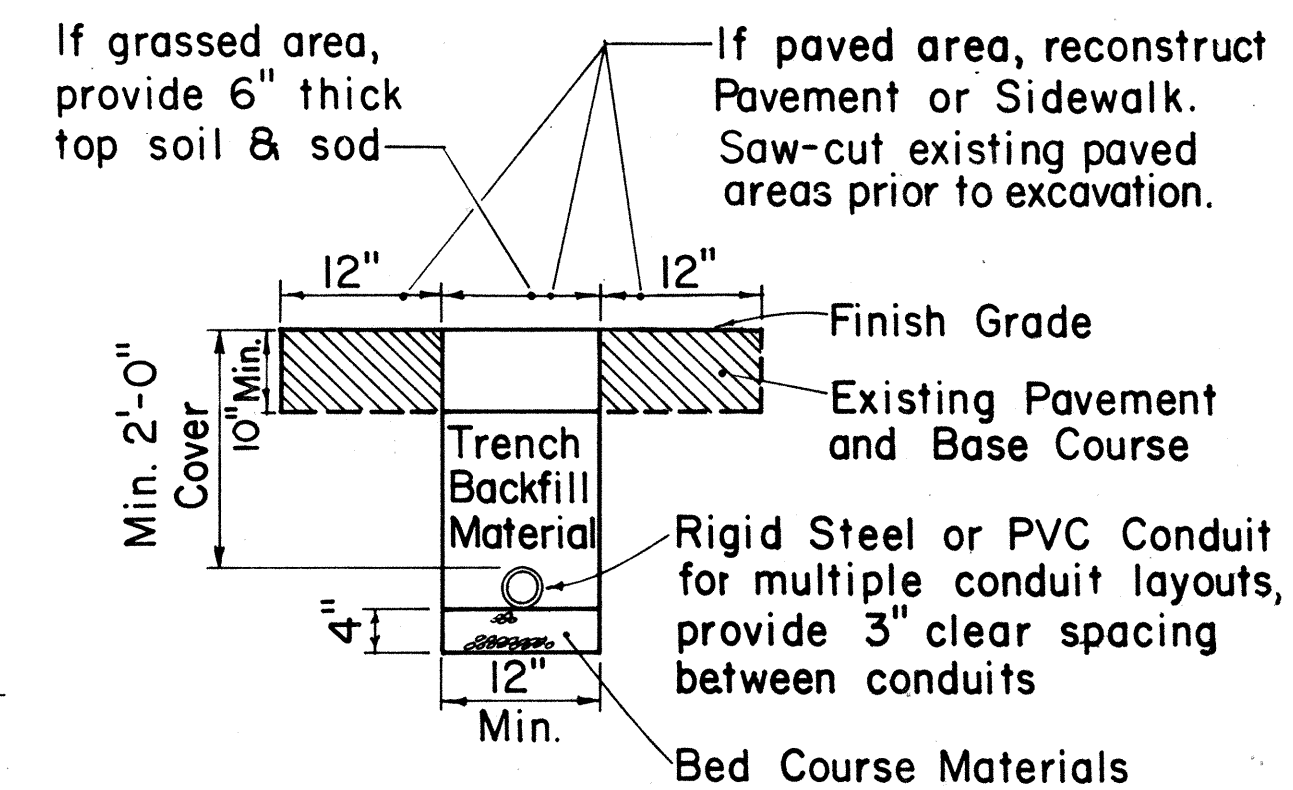


DETAIL "B"

SAW-CUT AT CORNERS



MULTIPLE LOOP LAYOUT



TYPICAL TRENCH SECTION FOR CONDUIT

NOTE:

- All conduits under roadways shall be steel or PVC schedule 80.

APPROVAL RECOMMENDED:

Erich Tanaka 9/26/80
TRAFFIC ENGINEER DATE

APPROVED:

Shabaz Zafar 9/30/80
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Replaces Sht. DT 405 dated 3/5/76	H.T.	9/30/80
2	Revised Section A-A	H.T.	5/15/81
3	Revised Loop Design & Deleted Wiring Diagram	P.T.	2-4-85
4	Revised Typical Section for conduit and note Deleted #14 from Loop Layout	E.T.	9/18/85

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

LOOP DETECTORS

Not to Scale

SHEET NO. 46 OF 6 SHEETS DT 405

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