

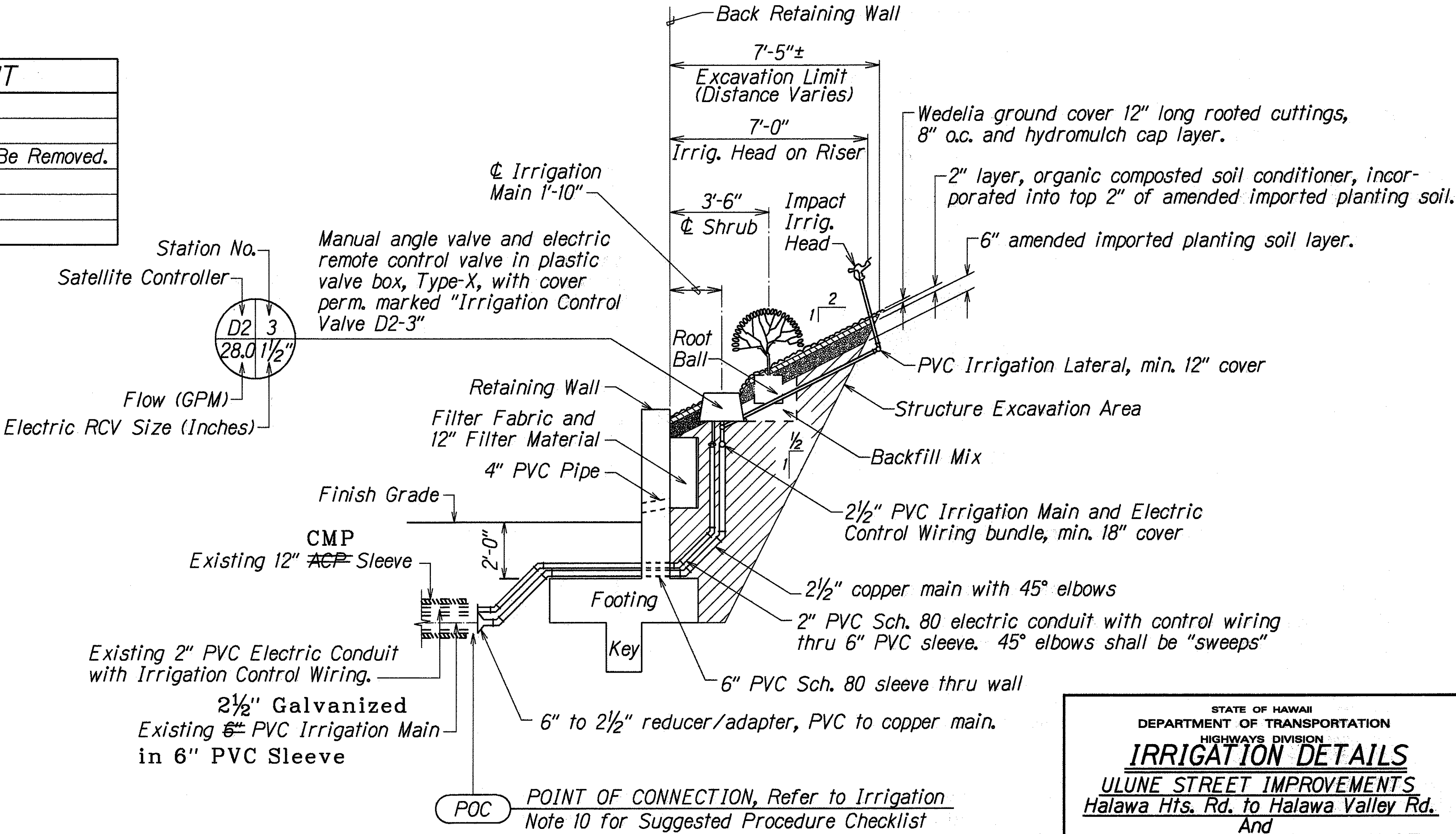
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(39)	1996	39	70

IRRIGATION MATERIALS LIST AND LEGEND MATERIALS LIST

SYMBOL	QUAN.	DESCRIPTION	LOCATION	SPACE	COVER	RAD	GPM	PSI	DETAIL	SPECS.	OTHER SPECS.
	10	Plastic, Impact Head on Riser	O.B. Sta. 39+75, Sta. 43+18	40'	160°-200°	25'-36'	2.8	25	F, Sht. L-5	712.12	Interchangeable Nozzles
	12	Plastic, Impact Head on Riser	O.B. Sta. 18+84, Sta. 39+26	50'	160°-200°	36'	2.8	35	F, Sht. L-5	712.12	Interchangeable Nozzles
	18	Plastic, Impact Rotor, 3" Pop-Up Head	O.B. Sta. 16+00, Sta. 24+73	50'	160°-200°	35'	2.8	25	G, Sht. L-5	712.12	Interchangeable Nozzles
	15	Plastic, Rotor, 12" Pop-Up Head	O.B. Sta. 19+39, Sta. 24+96	40'-45'	160°-200°	36'-41'	3.2-3.9	25-35	H, Sht. L-5	712.12	Pressure Compensating Nozzles
	2	Manual Angle Valve							B,C, Sht. L-5	712.13(C)	In Type-X Plastic Valve Box (P.V.B.)
	3	Brass, Elect. Remote Control Valve, Contam. Proof, Self-Flushing							B,D, Sht. L-5	712.13(F)	With Pressure Reg. in Type-X#B P.V.B.
		Satellite Controller/Sta. No.									
		Flow (GPM)/Elect. RCV Size									
	7	Plastic Valve Boxes, Types: A/10" Round, B/12"x18" Rect., X/15"x22" Rect.								712.49(A)	With Covers, Permanently Marked
	3	Ball Valve							E, Sht. L-5	712.13(L)	In Type-A P.V.B.
		Pipe, Main, Copper, Type K							A, Sht. L-4	707.11	POC, Thru Wall, To M.A.V.
		Pipe, Main, PVC Sch. 40								706.13	Min. 18" Cover
		Pipe, Lateral, PVC Cl. 200								706.13	Min. 12" Cover
		Pipe Sleeves Thru Ret. Wall & Under Drainage Ditch							A, Sht. L-4	706.13	See Plan Sht. No. 30
		Elect. Conduit/Wiring							A, Sht. L-4	712.27	POC, Thru Wall, To M.A.V.
		Elect. Control Wire Bundle								712.34(C)	Min. 18" Cover
		Gravel, #3 Fine (3/4"-#4) 4" Deep Layer On Bottom Of P.V.B.								703.25	Crushed Lava Rock

LEGEND

SYMBOL	DESCRIPTION AND CONSTRUCTION REQUIREMENT
	Existing Heads And Lateral Piping To Be Removed As Specified On Plans
	Existing Heads And Lateral Piping To Remain
	Existing Remote Control & Quick Coupling Valves, Piping, Control Wiring, To Be Removed.
	Existing Remote Control Valves To Remain
	Existing Controller, Approximate Location
	Existing Gate Valve To Remain



IRRIGATION MAIN, P.O.C., STA. 40+85  
(SCHEMATIC SECTION DETAIL)

A  
L-4

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

IRRIGATION DETAILS

ULUNE STREET IMPROVEMENTS

Halawa Hts. Rd. to Halawa Valley Rd.

And

HALAWA VALLEY RD. IMPROVEMENTS

Ulune St. to Iwaiwa St.

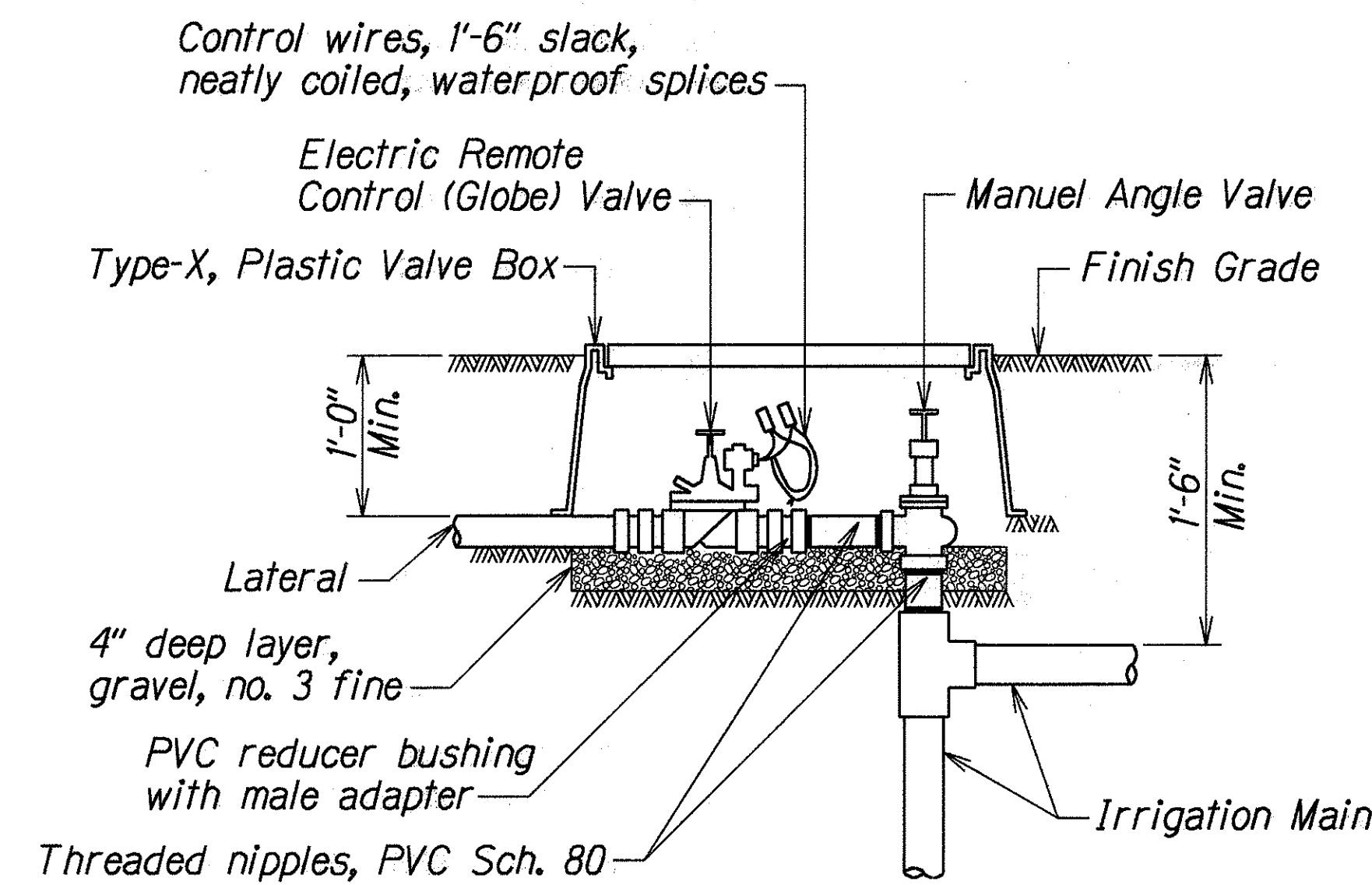
Fed. Aid Project No. STP-0300(39)

Date: May 1996

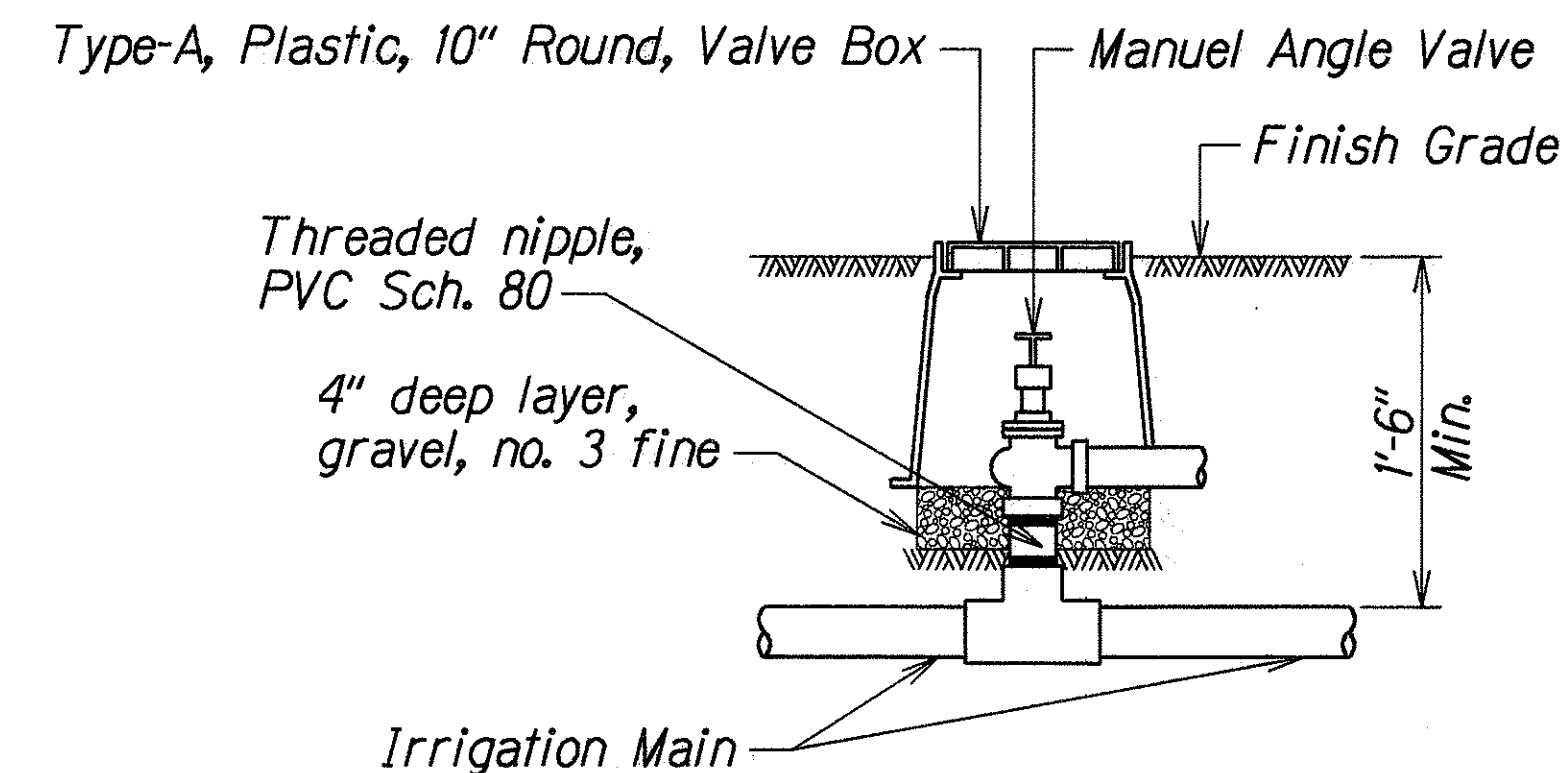
SURVEY PLOTTED BY	DATE
DRAWN BY	5/96
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
REVISIONS	
QUANTITIES BY	
CHECKED BY	

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

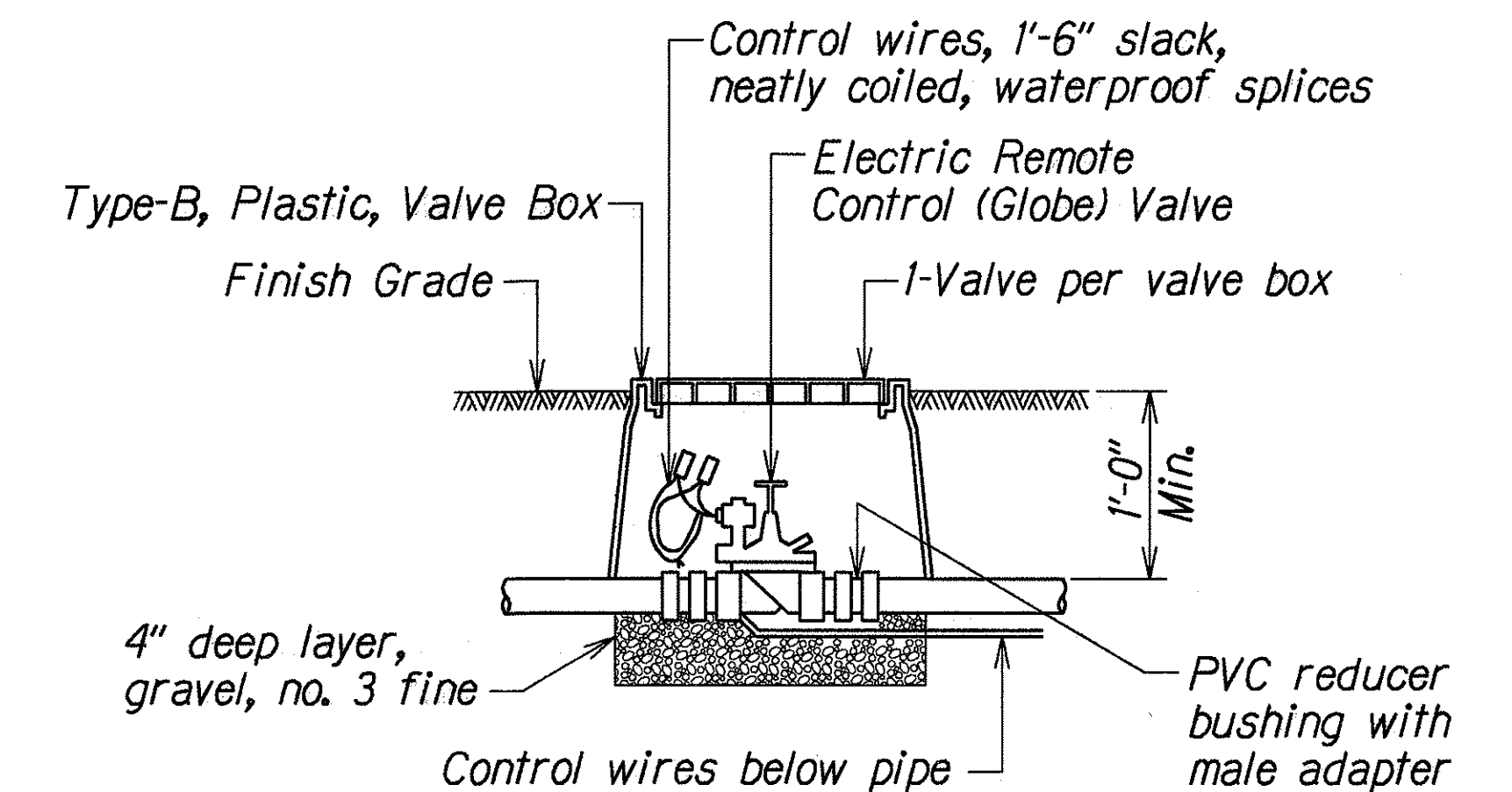
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(39)	1996	40	70



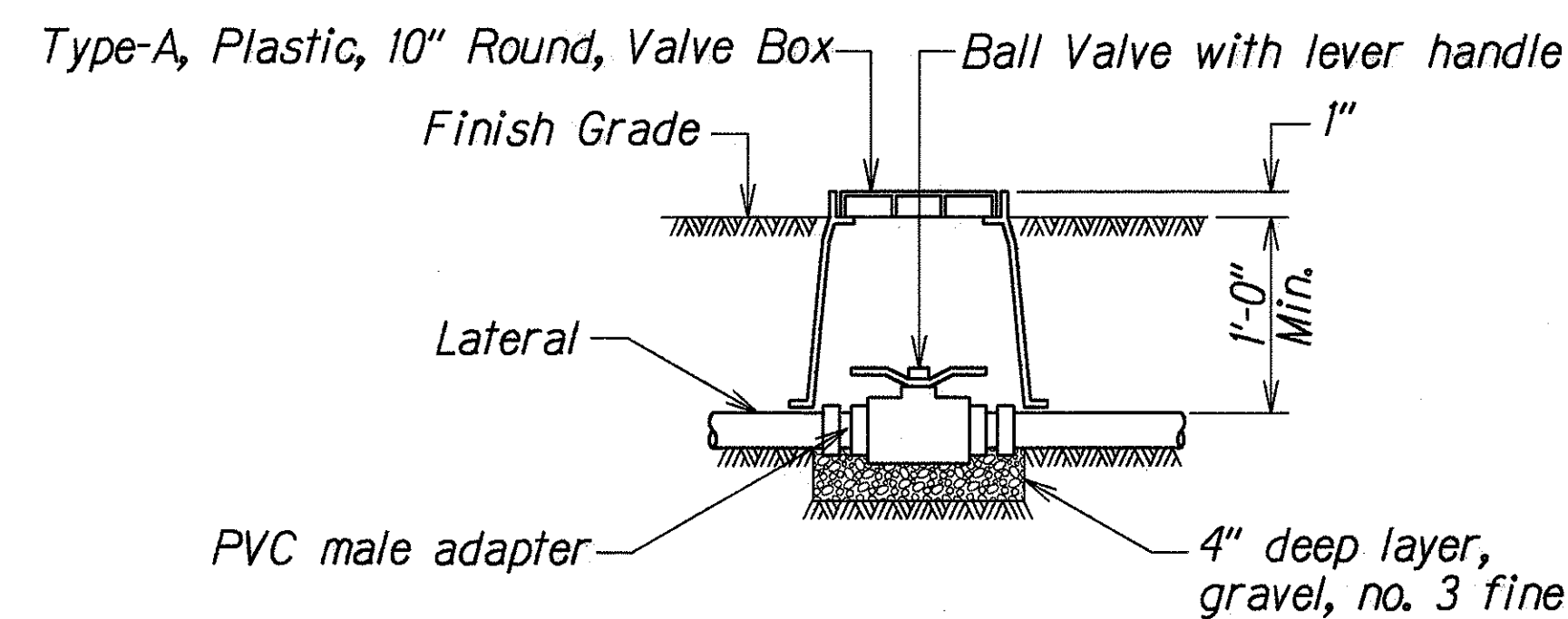
**ELECTRIC REMOTE CONTROL AND  
MANUAL ANGLE VALVES DETAIL** (B)  
L-5



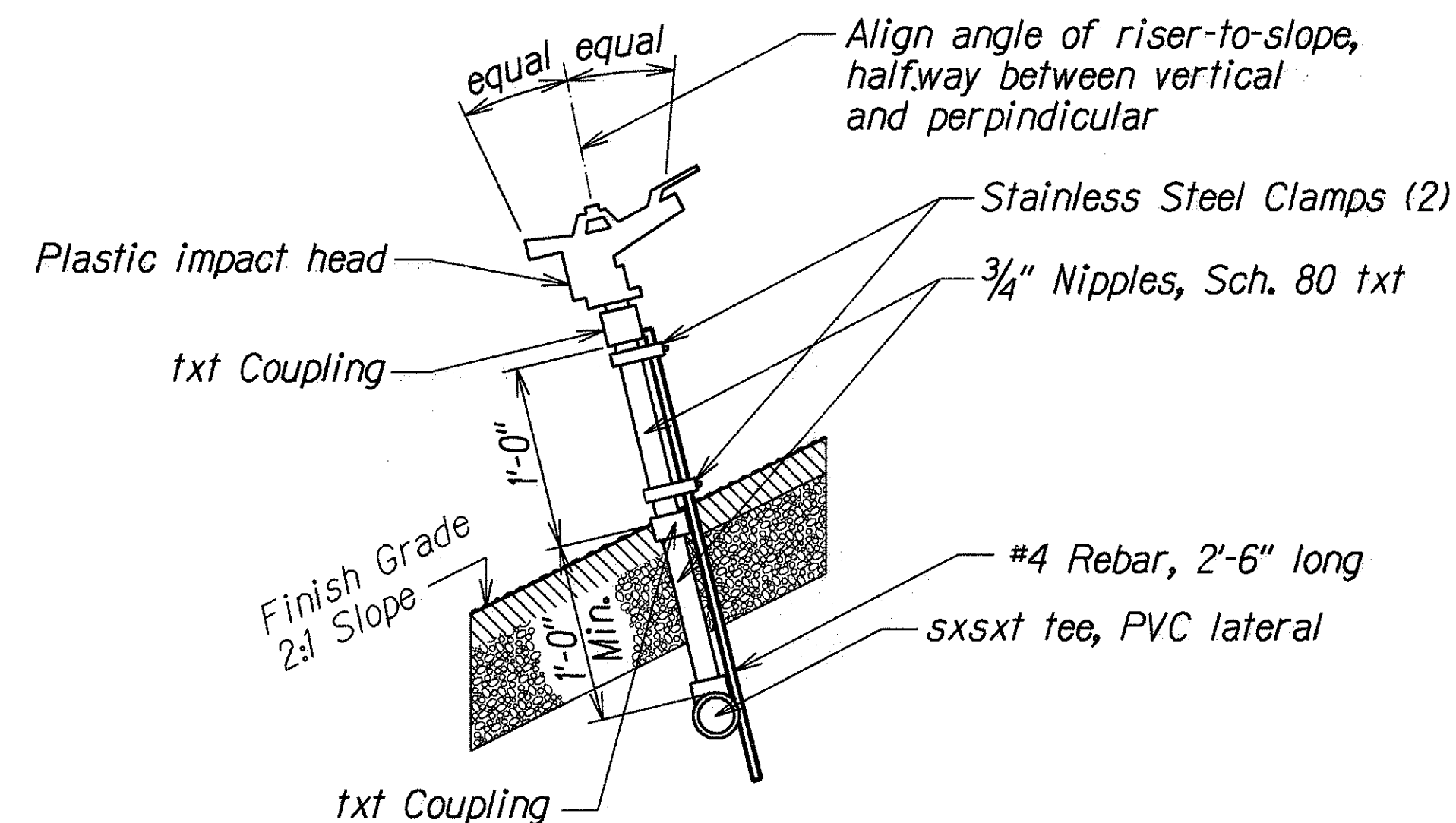
**MANUAL ANGLE VALVE DETAIL** (C)  
L-5



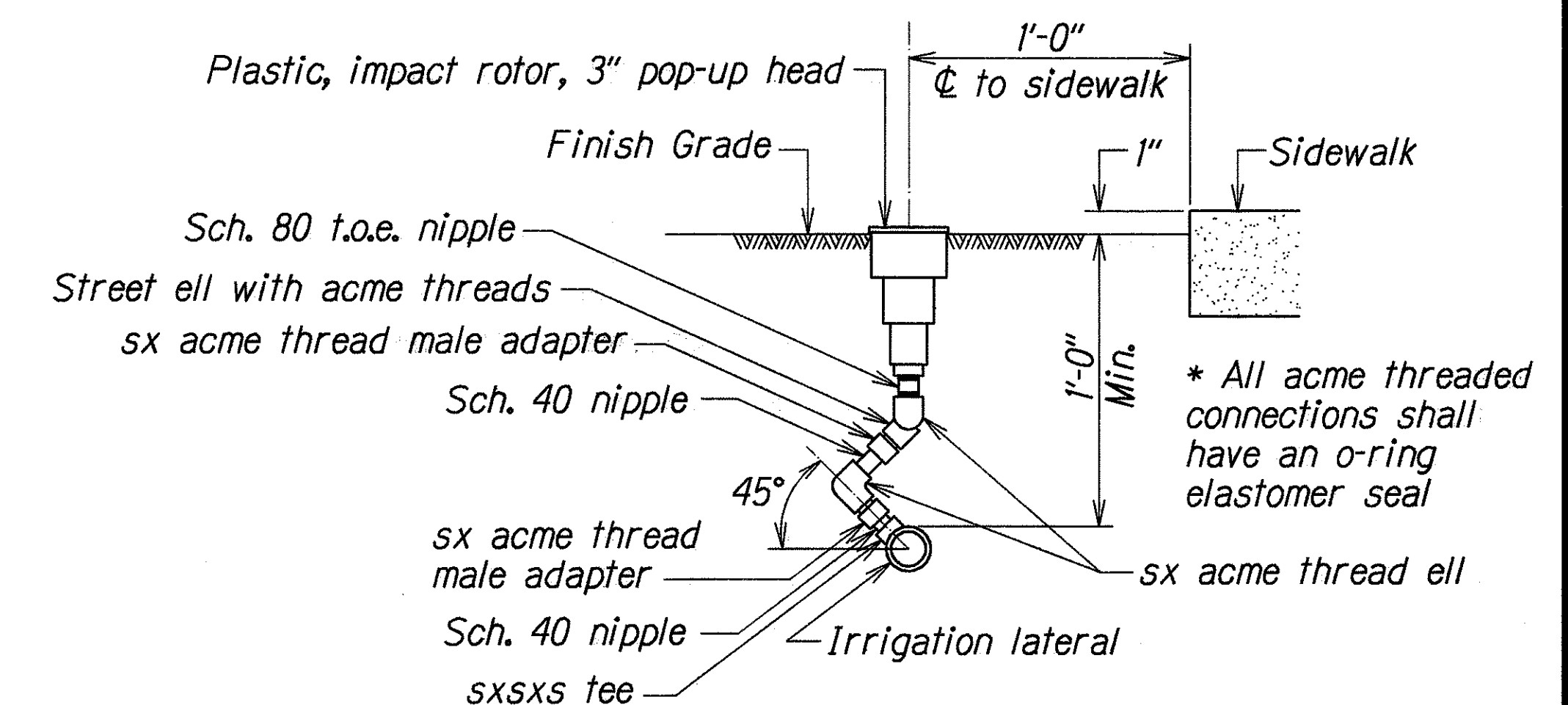
**ELECTRIC REMOTE CONTROL  
VALVE DETAIL** (D)  
L-5



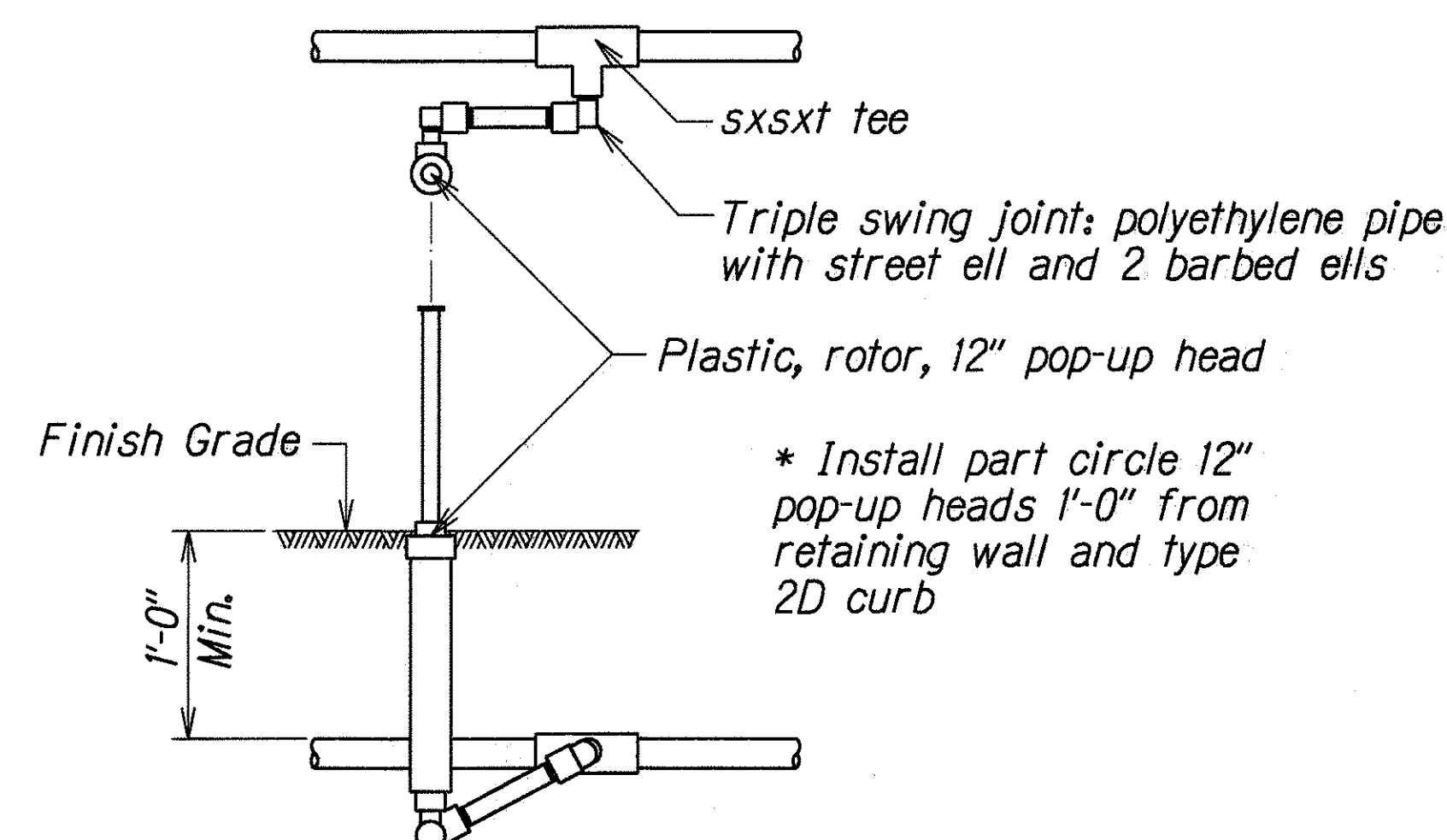
**BALL VALVE DETAIL** (E)  
L-5



**PLASTIC IMPACT HEAD  
ON RISER DETAIL** (F)  
L-5



**PLASTIC, IMPACT ROTOR,  
3" POP-UP HEAD DETAIL** (G)  
L-5



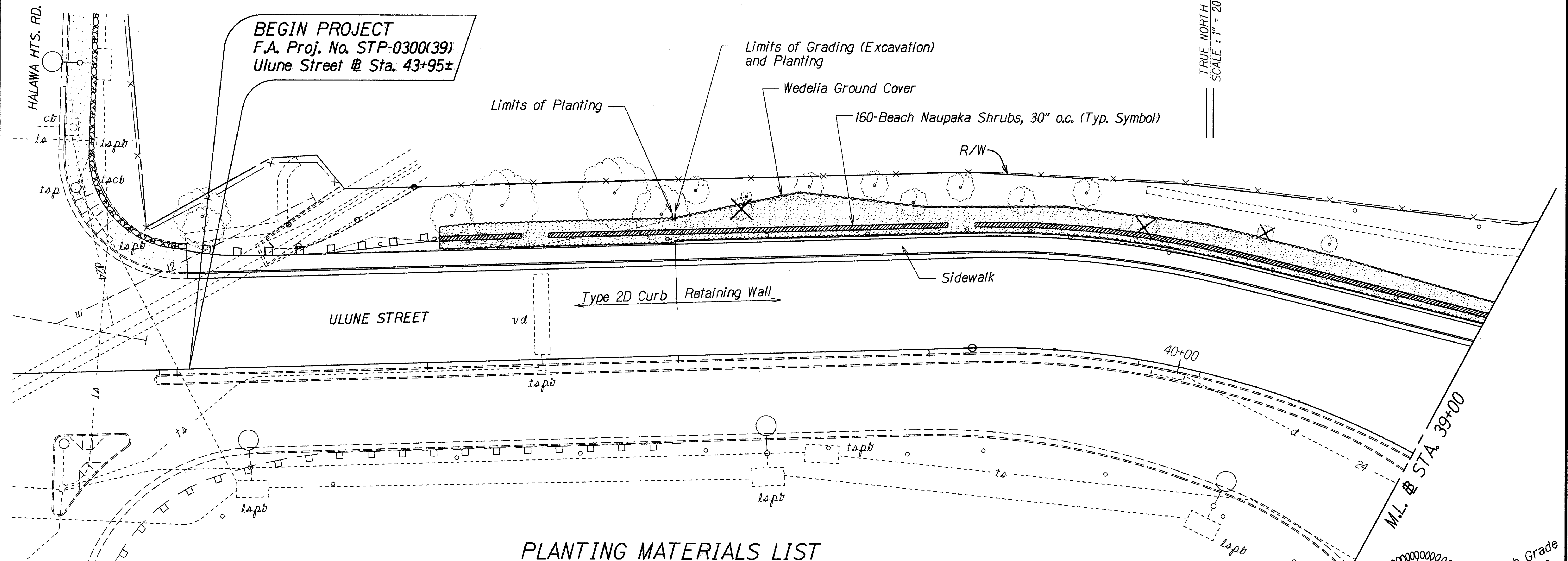
**PLASTIC, ROTOR, 12"  
POP-UP HEAD DETAIL** (H)  
L-5

ORIGINAL PLAN	DATE	3/29/96
SURVEY PLOTTED BY		
DRAWN BY		
DESIGNED BY		
CHECKED BY		

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**IRRIGATION DETAILS**  
ULUNE STREET IMPROVEMENTS  
Halawa Hts. Rd. to Halawa Valley Rd.  
And  
HALAWA VALLEY RD. IMPROVEMENTS  
Ulune St. to Iwaiwa St.  
Fed. Aid Project No. STP-0300(39)  
Scale: Not to Scale Date: May, 1996  
SHEET No. L5 OF 8 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(39)	1996	41	70



### PLANTING MATERIALS LIST

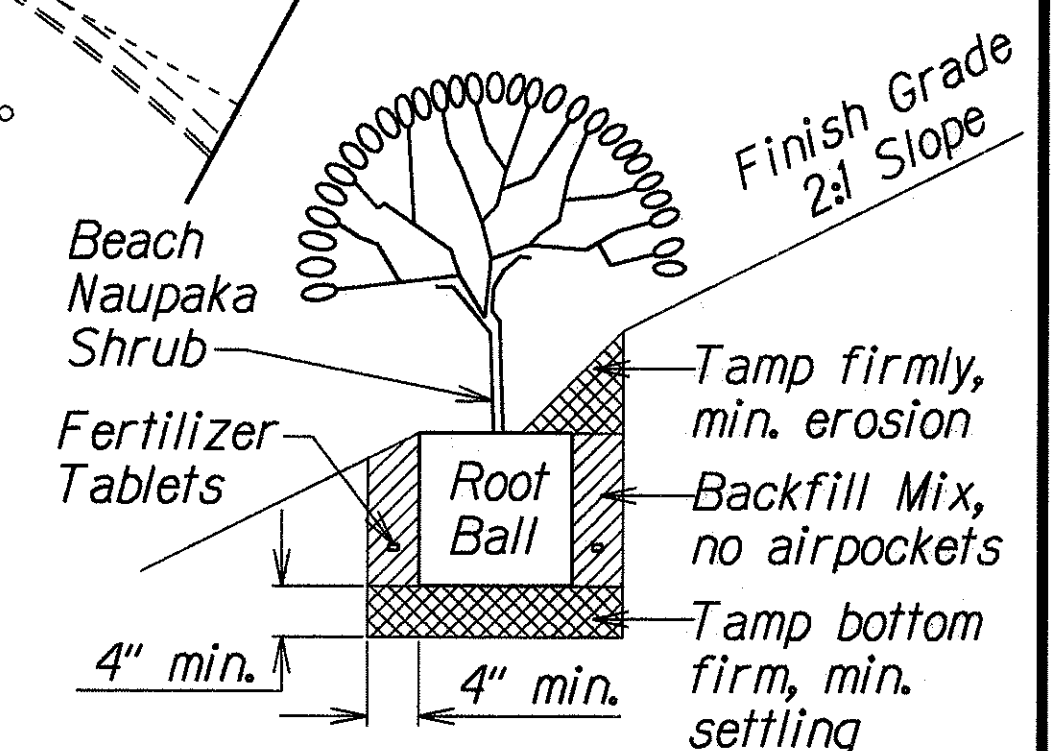
SYMBOL	TYPE	QUAN.	COMMON NAME	BOTANICAL NAME	SIZE	OTHER SPECS
	Shrubs	372	Beach Naupaka	Scaevola Sericea	2-Gal.	24" High, 30" o.c. See Detail I, this sheet
	Ground Cover	16,000 S.F.	Wedelia	Wedelia Trilobata	12" Long	Rooted Cuttings, 8" o.c. with Hydromulch Cap
	Turfgrass	2,700 S.F.	Common Bermuda	Cynodon Dactylon	Plugs	1" Sq. 4" o.c. with Hydromulch Cap

### SOIL AND CONDITIONER

335 C.Y. Imported Planting Soil, Amended To Above Planting Fertility Req., 6" Deep Layer  
127 C.Y. Organic, Composted, Local Vegetation-Recycled, Soil Conditioner, 2" Deep Layer

### LEGEND

SYMBOL	DESCRIPTION AND CONSTRUCTION REQUIREMENT
	Existing Tree To Be Removed. 8 Of 10 Are Small, 8" Diam., 10' Ht., 10' Spread
	Existing Tree To Remain



SHRUB PLANTING DETAIL I  
Not to Scale

GENERAL PLAN	DATE	5/1/96
DESIGNED BY	TRACED BY	NOTED BY
QUANTITIES BY	CHECKED BY	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

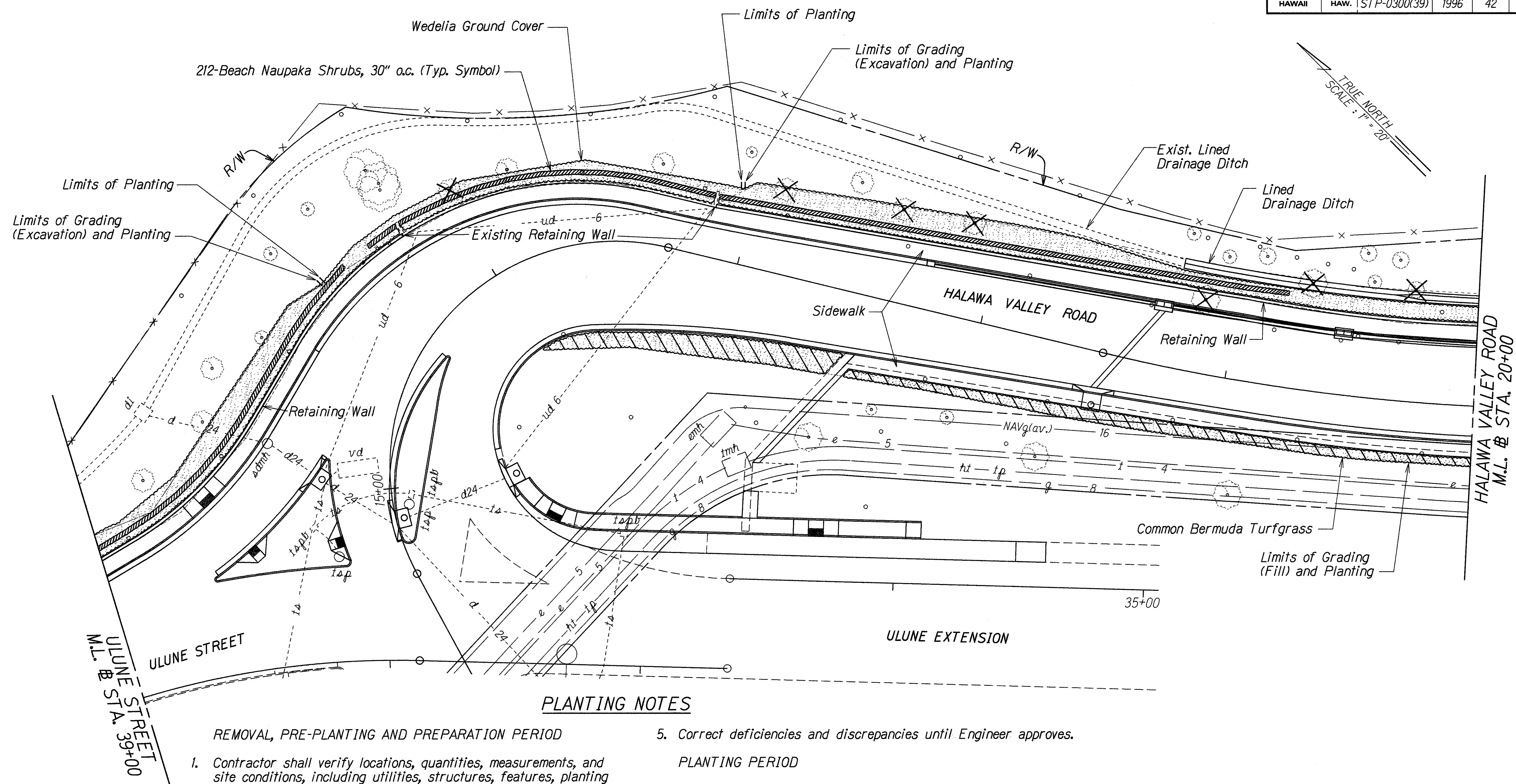
### PLANTING PLAN

ULUNE STREET IMPROVEMENTS  
Halawa Hts. Rd. to Halawa Valley Rd.  
And  
HALAWA VALLEY RD. IMPROVEMENTS  
Ulune St. to Iwaiwa St.  
Fed. Aid Project No. STP-0300(39)

Scale: 1" = 20'      Date: May, 1996

SHEET No. L6 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(39)	1996	42	70



### PLANTING NOTES

#### REMOVAL, PRE-PLANTING AND PREPARATION PERIOD

- Contractor shall verify locations, quantities, measurements, and site conditions, including utilities, structures, features, planting and planting areas that might be adversely affected; and protect the latter from destruction and damage.
- Insure that planting areas are prepared according to contract, including furnishing, amending and placing of the Amended Imported Planting Soil and Organic Composted Soil Conditioner.
- No planting shall be allowed until completion of fully operational irrigation systems, planting area preparation and finish grading.
- Request Engineer inspect/approve Pre-Planting Period contract work completion.

- Correct deficiencies and discrepancies until Engineer approves.

#### PLANTING PERIOD

- Insure that planting and post-planting care are provided according to the contract; Engineer will resolve questions, if any, as they arise concerning plant material acceptability, location, "facing", planting operations, plant-care requirements and whatever else may arise.
- Maintain plants and planted areas in optimum growing condition and appearance. Continual care shall include watering, weeding (removal of undesirable vegetation, and its root systems, including nut grass), trimming, fertilizing, pruning, herbiciding; maintaining grades and elevations; and other operations necessary to establish and sustain healthy, vigorous growing, good-looking, deep/well rooted plants and planting areas.

(CONTINUE NOTES NEXT SHEET)

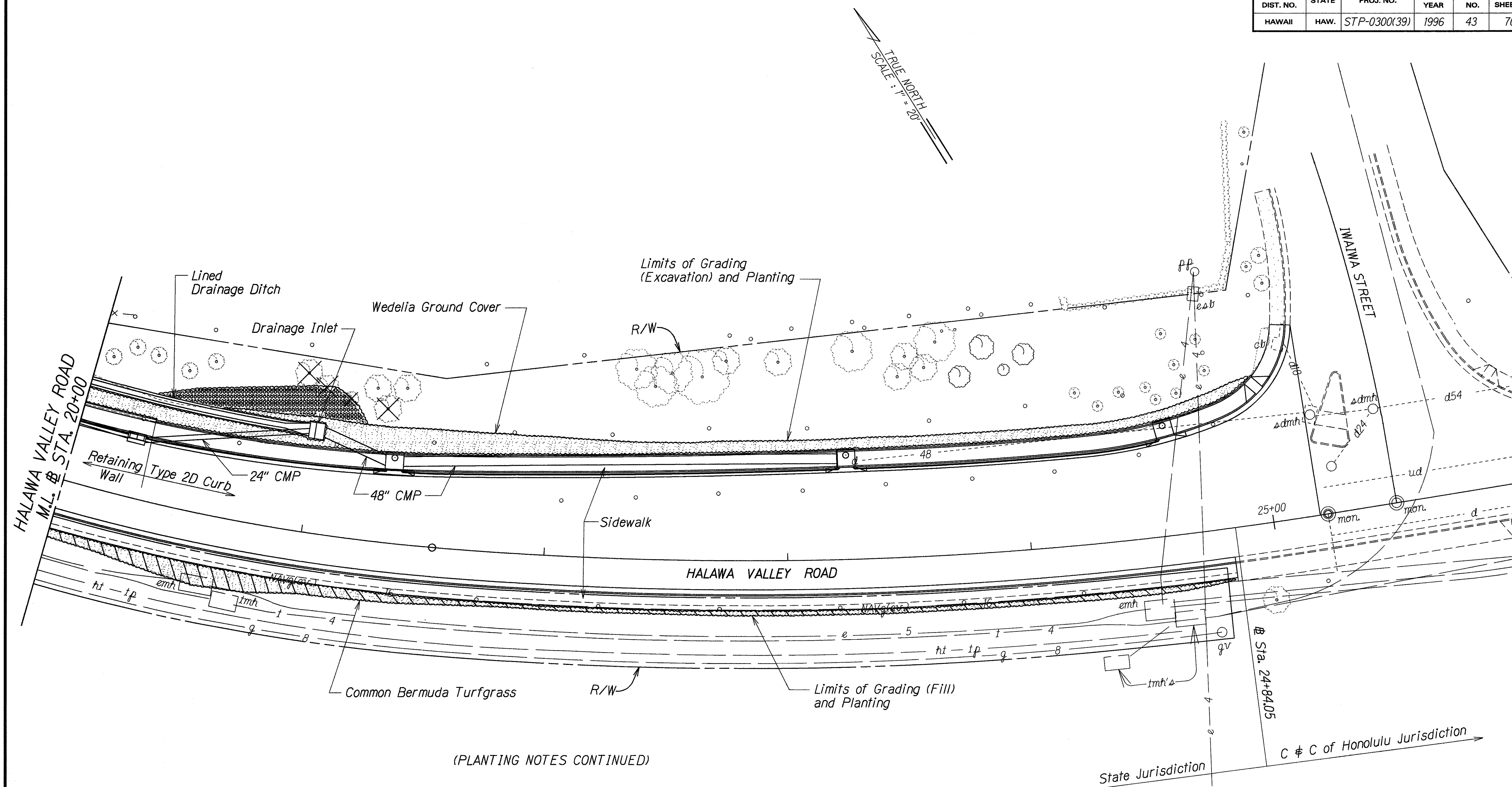
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Nomura	5/3/96
CHIEF ENGINEER	DESIGNED BY R. Kasebuchi	
	CHECKED BY	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PLANTING PLAN**  
ULUNE STREET IMPROVEMENTS  
Halawa Hts. Rd. to Halawa Valley Rd.  
And  
HALAWA VALLEY RD. IMPROVEMENTS  
Ulune St. to Iwaiwa St.  
Fed. Aid Project No. STP-0300(39)  
Scale: 1" = 20'      Date: May, 1996  
SHEET No. L7 OF 8 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0300(39)	1996	43	70



(PLANTING NOTES CONTINUED)

8. Replace plants and planting areas that fail to develop and sustain healthy, vigorous, good-looking growth or are damaged or destroyed.

9. Request Engineer inspect/approve Planting Period contract work upon completion.

10. Correct deficiencies and discrepancies until Engineer approves.

PLANT ESTABLISHMENT PERIOD

11. Follow items 7, 8 & 9 above.
12. Request Engineer inspect/approve Plant Establishment Period contract work upon completion at the end of the period. Make request at least two weeks in advance of proposed completion/inspection date.

13. Correct deficiencies and discrepancies until Engineer approves and accepts.

⊗ Location of existing vertical wiliwili tree to be relocated

○ Location of Relocated Vertical Wiliwili Tree

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	5/13/96
DRAWN BY A. MAMURA	
DESIGNED BY R. KARADOLU	
CHECKED BY	
APPROVED BY	

8/6/97	Relocate 4 Vertical Wiliwili Trees and Revise Grading Limits.
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PLANTING PLAN**

**ULUNE STREET IMPROVEMENTS**  
*Halawa Hts. Rd. to Halawa Valley Rd.*  
And  
**HALAWA VALLEY RD. IMPROVEMENTS**  
*Ulune St. to Iwaiwa St.*  
**Fed. Aid Project No. STP-0300(39)**

Scale: 1" = 20' Date: May, 1996

SHEET No. **L8** OF **8** SHEETS