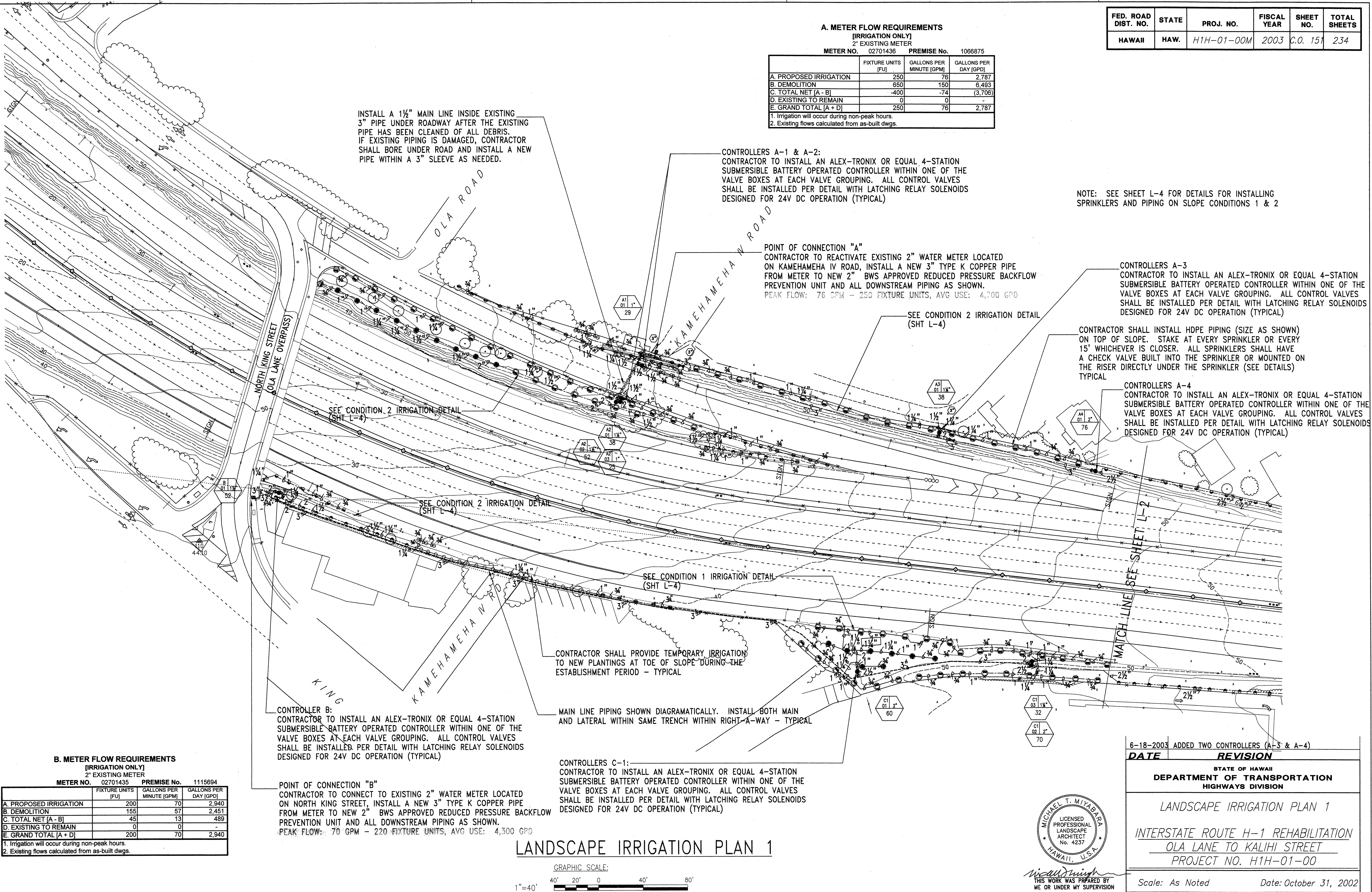


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	C.O. 151	234

A. METER FLOW REQUIREMENTS  
[IRRIGATION ONLY]  
2" EXISTING METER  
METER NO. 02701436PREMISE No. 1066875

	FIXTURE UNITS (FU)	GALLONS PER MINUTE (GPM)	GALLONS PER DAY (GPD)
A. PROPOSED IRRIGATION	250	76	2,787
B. DEMOLITION	650	150	6,493
C. TOTAL NET (A - B)	-400	-74	(3,706)
D. EXISTING TO REMAIN	0	0	-
E. GRAND TOTAL (A + D)	250	76	2,787

1. Irrigation will occur during non-peak hours.  
2. Existing flows calculated from as-built dwgs.

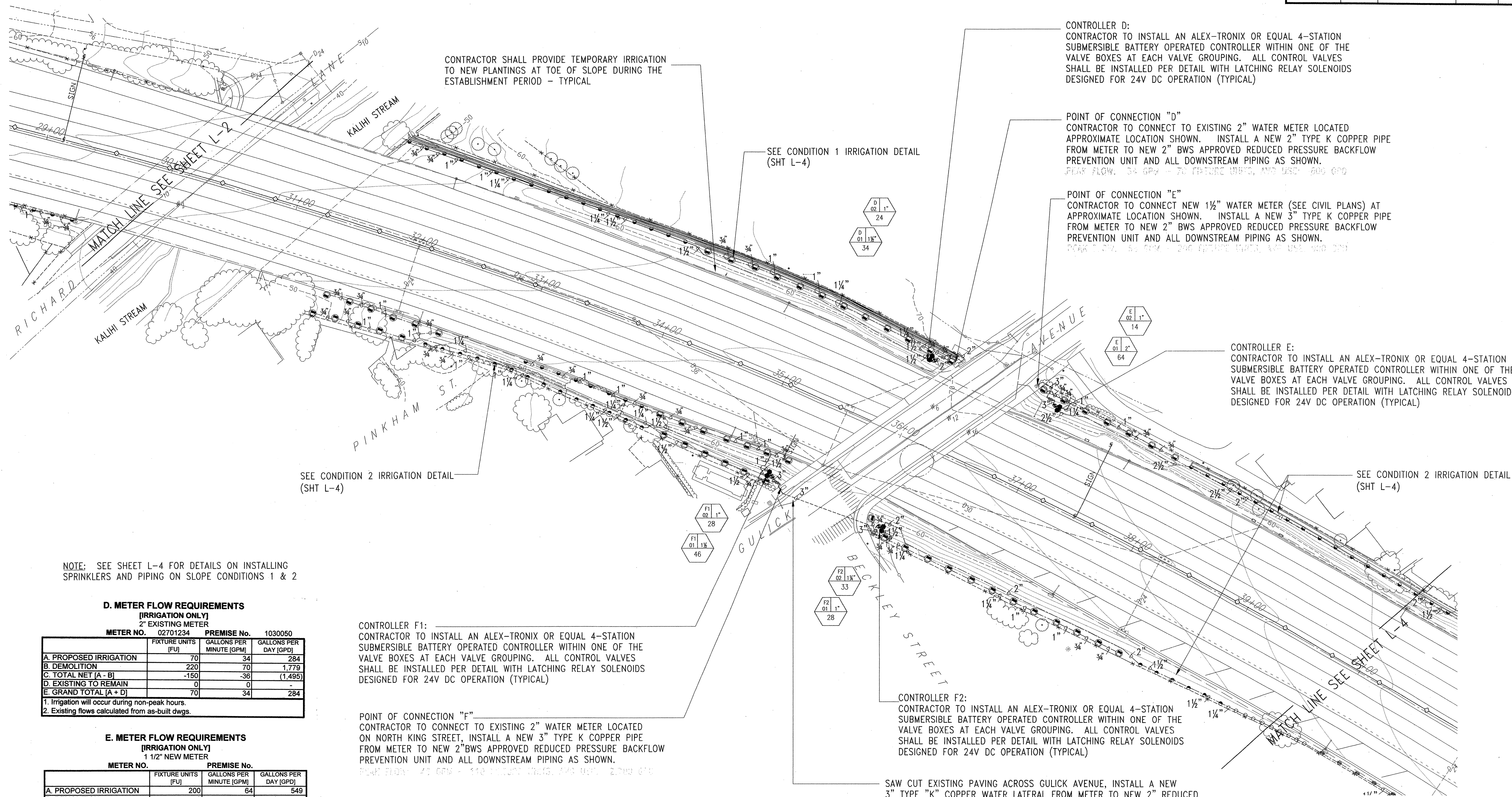


ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
NOTEBOOK	CHECKED BY	
	No.	





FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	153	234



NOTE: SEE SHEET L-4 FOR DETAILS ON INSTALLING SPRINKLERS AND PIPING ON SLOPE CONDITIONS 1 & 2

**D. METER FLOW REQUIREMENTS**  
[IRRIGATION ONLY]  
2" EXISTING METER

METER NO.	02701234	PREMISE No.	1030050
FIXTURE UNITS (FU)	GALLONS PER MINUTE (GPM)	GALLONS PER DAY (GPD)	
A. PROPOSED IRRIGATION	70	34	284
B. DEMOLITION	220	70	1,779
C. TOTAL NET [A - B]	-150	-36	(1,495)
D. EXISTING TO REMAIN	0	0	-
E. GRAND TOTAL [A + D]	70	34	284

1. Irrigation will occur during non-peak hours.
2. Existing flows calculated from as-built dwgs.

**E. METER FLOW REQUIREMENTS**  
[IRRIGATION ONLY]  
1 1/2" NEW METER

METER NO.	02701267	PREMISE No.	2030049
FIXTURE UNITS (FU)	GALLONS PER MINUTE (GPM)	GALLONS PER DAY (GPD)	
A. PROPOSED IRRIGATION	200	64	549
B. DEMOLITION	0	0	-
C. TOTAL NET [A - B]	200	64	549
D. EXISTING TO REMAIN	0	0	-
E. GRAND TOTAL [A + D]	200	64	549

1. Irrigation will occur during non-peak hours.
2. Existing flows calculated from as-built dwgs.

**F. METER FLOW REQUIREMENTS**  
[IRRIGATION ONLY]  
2" EXISTING METER

METER NO.	02701267	PREMISE No.	2030049
FIXTURE UNITS (FU)	GALLONS PER MINUTE (GPM)	GALLONS PER DAY (GPD)	
A. PROPOSED IRRIGATION	110	46	1,499
B. DEMOLITION	90	39	1,367
C. TOTAL NET [A - B]	20	7	132
D. EXISTING TO REMAIN	0	0	-
E. GRAND TOTAL [A + D]	110	46	1,499

1. Irrigation will occur during non-peak hours.
2. Existing flows calculated from as-built dwgs.

CONTROLLER F1:  
CONTRACTOR TO INSTALL AN ALEX-TRONIX OR EQUAL 4-STATION SUBMERSIBLE BATTERY OPERATED CONTROLLER WITHIN ONE OF THE VALVE BOXES AT EACH VALVE GROUPING. ALL CONTROL VALVES SHALL BE INSTALLED PER DETAIL WITH LATCHING RELAY SOLENOIDS DESIGNED FOR 24V DC OPERATION (TYPICAL)

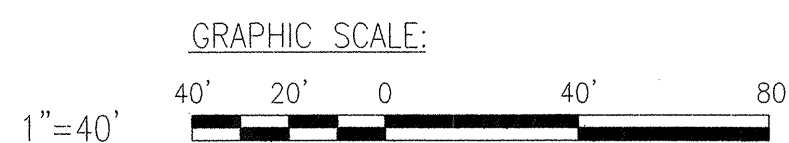
POINT OF CONNECTION "F"  
CONTRACTOR TO CONNECT TO EXISTING 2" WATER METER LOCATED ON NORTH KING STREET, INSTALL A NEW 3" TYPE K COPPER PIPE FROM METER TO NEW 2"BWS APPROVED REDUCED PRESSURE BACKFLOW PREVENTION UNIT AND ALL DOWNSTREAM PIPING AS SHOWN.

PEAK FLOW: 40 GPM - 110 GALLONS PER DAY (GPD) - 2,700 GPD

CONTROLLER F2:  
CONTRACTOR TO INSTALL AN ALEX-TRONIX OR EQUAL 4-STATION SUBMERSIBLE BATTERY OPERATED CONTROLLER WITHIN ONE OF THE VALVE BOXES AT EACH VALVE GROUPING. ALL CONTROL VALVES SHALL BE INSTALLED PER DETAIL WITH LATCHING RELAY SOLENOIDS DESIGNED FOR 24V DC OPERATION (TYPICAL)

SAW CUT EXISTING PAVING ACROSS GULICK AVENUE, INSTALL A NEW 3" TYPE "K" COPPER WATER LATERAL FROM METER TO NEW 2" REDUCED PRESSURE BACKFLOW PREVENTION UNIT ON DIAMOND HEAD SIDE OF ROAD. REPAVE STREET TO MATCH EXISTING CONDITIONS.

## LANDSCAPE IRRIGATION PLAN 3



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

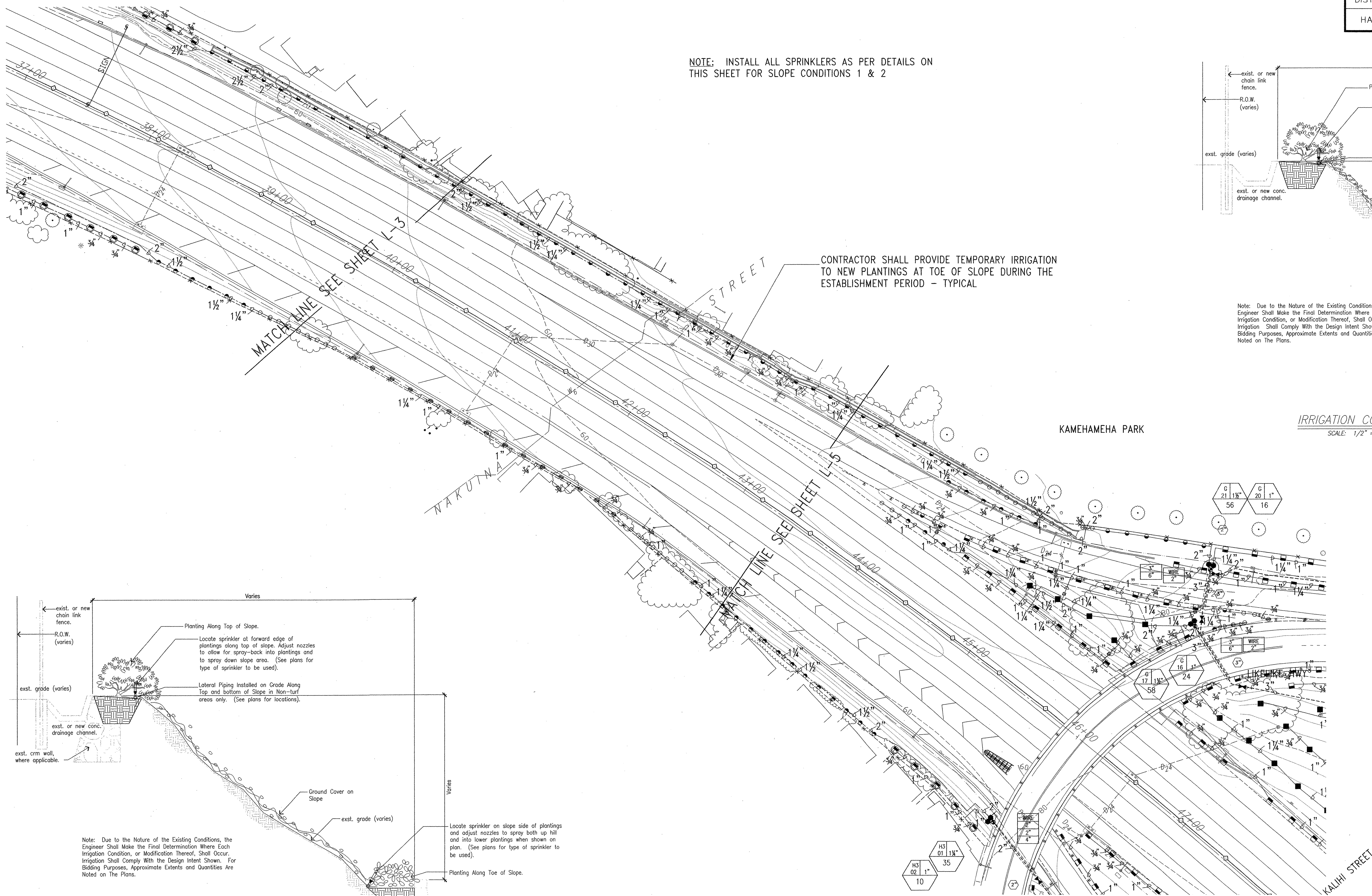
LANDSCAPE IRRIGATION PLAN 3  
INTERSTATE ROUTE H-1 REHABILITATION  
OLA LANE TO KALIHI STREET  
PROJECT NO. H1H-01-00M

Scale: As Noted Date: October 31, 2002

SHEET No. L-3 OF L-13 SHEETS

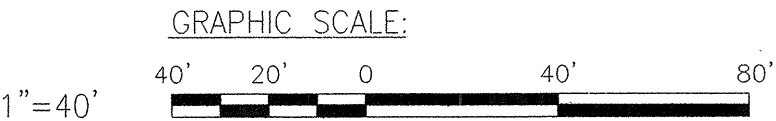


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	154	234



ORIGINAL PLAN	SURVEY PLOTTED BY _____		DATE _____
	DRAWN BY _____		_____
	DESIGNED BY _____		_____
	CHECKED BY _____		_____
NOTEBOOK	QUANTITIES BY _____		_____
	TRACED BY _____		_____
	DESIGNED BY _____		_____
	CHECKED BY _____		_____
No. _____			_____

# LANDSCAPE IRRIGATION PLAN 4

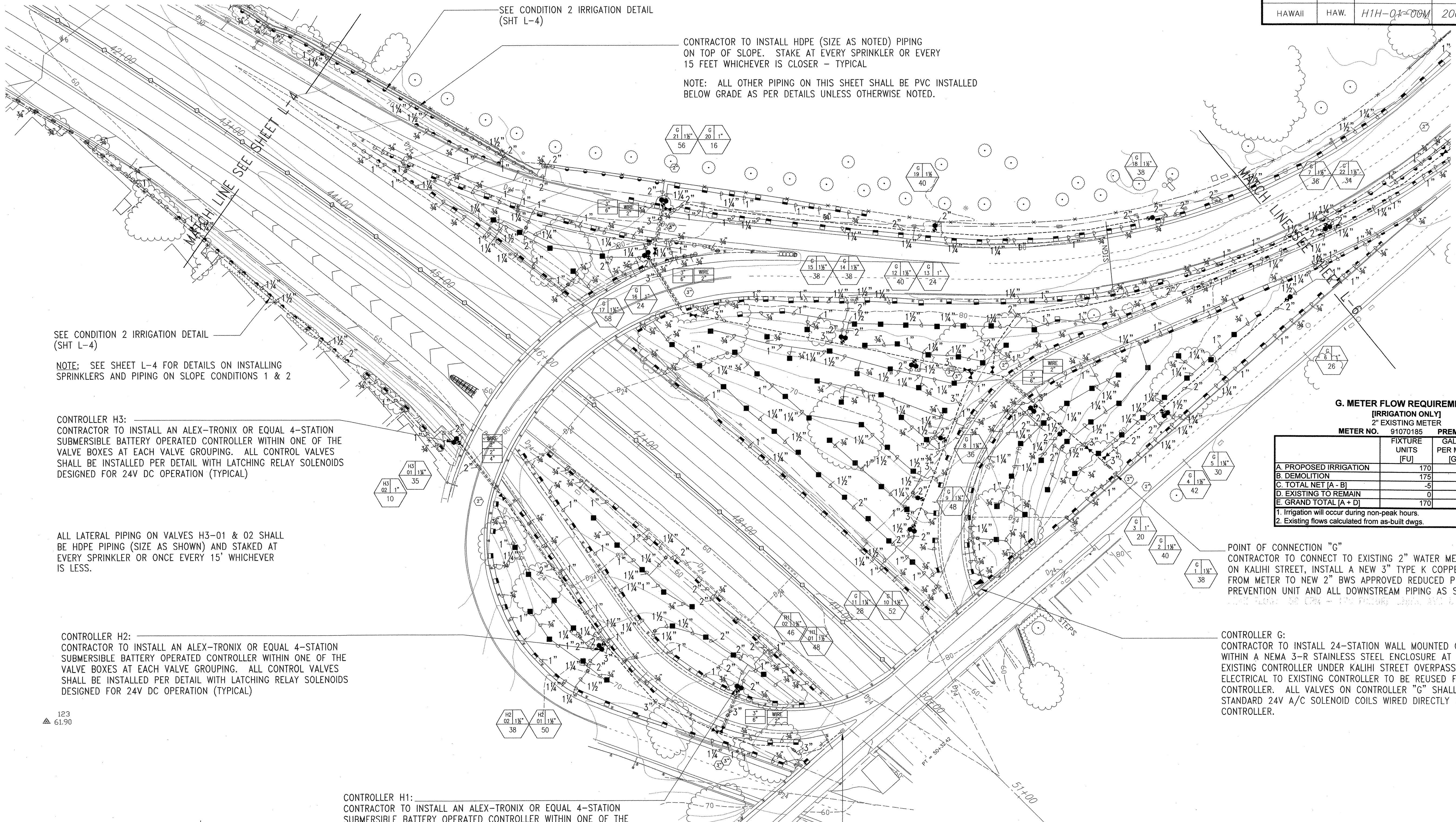


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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
LANDSCAPE IRRIGATION PLAN 4
INTERSTATE ROUTE H-1 REHABILITATION OLA LANE TO KALIHI STREET PROJECT NO. H1H-01-00M
Scale: As Noted Date: October 31, 2002
SHEET No. L-4 OF L-13 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	155	234



**G. METER FLOW REQUIREMENTS**  
[IRRIGATION ONLY]  
2" EXISTING METER

METER NO.	91070185	PREMISE No.	1063071
	FIXTURE UNITS [FU]	GALLONS PER MINUTE [GPM]	GALLONS PER DAY [GPD]
A. PROPOSED IRRIGATION	170	58	10,661
B. DEMOLITION	175	60	9,849
C. TOTAL NET [A - B]	-5	-2	812
D. EXISTING TO REMAIN	0	0	-
E. GRAND TOTAL [A + D]	170	58	10,661

1. Irrigation will occur during non-peak hours.  
2. Existing flows calculated from as-built dwgs.

POINT OF CONNECTION "G"  
CONTRACTOR TO CONNECT TO EXISTING 2" WATER METER LOCATED ON KALIHI STREET, INSTALL A NEW 3" TYPE K COPPER PIPE FROM METER TO NEW 2" BWS APPROVED REDUCED PRESSURE BACKFLOW PREVENTION UNIT AND ALL DOWNSTREAM PIPING AS SHOWN.

CONTROLLER G:  
CONTRACTOR TO INSTALL 24-STATION WALL MOUNTED CONTROLLER WITHIN A NEMA 3-R STAINLESS STEEL ENCLOSURE AT LOCATION OF EXISTING CONTROLLER UNDER KALIHI STREET OVERPASS. 120V ELECTRICAL TO EXISTING CONTROLLER TO BE REUSED FOR NEW CONTROLLER. ALL VALVES ON CONTROLLER "G" SHALL BE USE STANDARD 24V A/C SOLENOID COILS WIRED DIRECTLY BACK TO CONTROLLER.

POINT OF CONNECTION "H"  
CONTRACTOR TO CONNECT TO EXISTING 2" WATER METER LOCATED ON KALIHI STREET, INSTALL A NEW 3" TYPE K COPPER PIPE FROM METER TO NEW 2" BWS APPROVED REDUCED PRESSURE BACKFLOW PREVENTION UNIT AND ALL DOWNSTREAM PIPING AS SHOWN.

**H. METER FLOW REQUIREMENTS**  
[IRRIGATION ONLY]  
2" EXISTING METER

METER NO.	91070184	PREMISE No.	1063076
	FIXTURE UNITS [FU]	GALLONS PER MINUTE [GPM]	GALLONS PER DAY [GPD]
A. PROPOSED IRRIGATION	130	50	3,297
B. DEMOLITION	220	70	3,896
C. TOTAL NET [A - B]	-90	-20	(599)
D. EXISTING TO REMAIN	0	0	-
E. GRAND TOTAL [A + D]	130	50	3,297

1. Irrigation will occur during non-peak hours.  
2. Existing flows calculated from as-built dwgs.



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STATE OF HAWAII  
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HIGHWAYS DIVISION

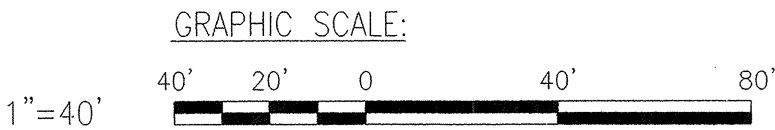
LANDSCAPE IRRIGATION PLAN 5  
INTERSTATE ROUTE H-1 REHABILITATION  
OLA LANE TO KALIHI STREET  
PROJECT NO. H1H-01-00M

Scale: As Noted      Date: October 31, 2002

SHEET N o. L-5    OF L-13 SHEETS

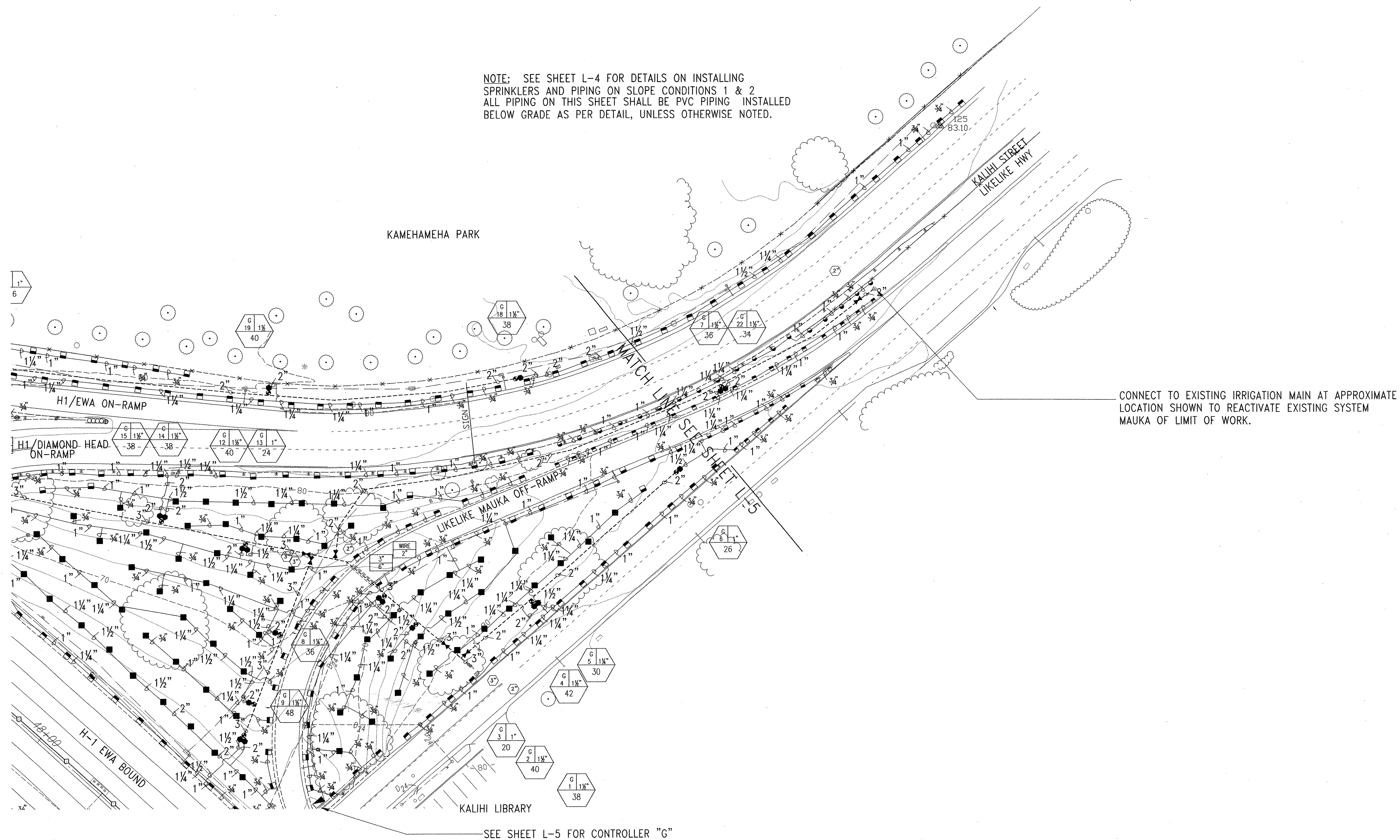
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
No.	

## LANDSCAPE IRRIGATION PLAN 5



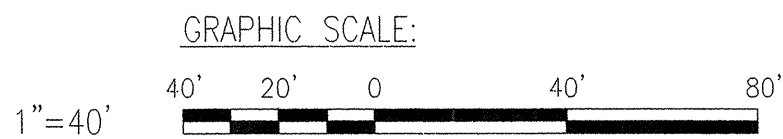


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	156	234



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

# LANDSCAPE IRRIGATION PLAN 6

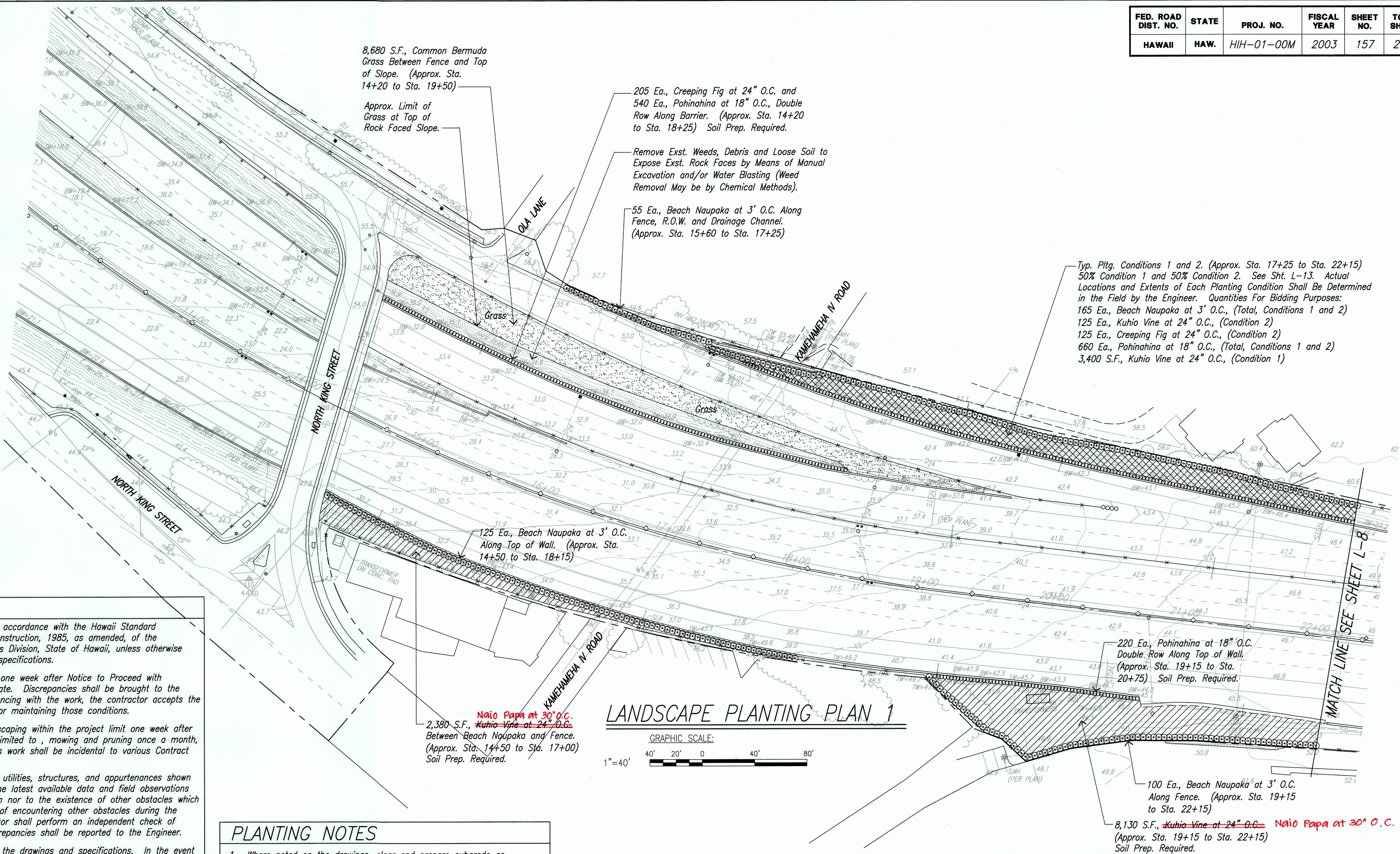


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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
LANDSCAPE IRRIGATION PLAN 6	
INTERSTATE ROUTE H-1 REHABILITATION OLA LANE TO KALIHI STREET PROJECT NO. H1H-01-00M	
Scale: As Noted	Date: October 31, 2002
SHEET No. L-6 OF L-13 SHEETS	



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIH-01-00M	2003	157	234



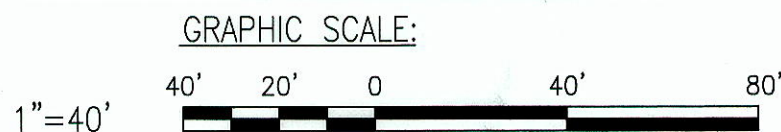
### GENERAL NOTES

- Applicable work shall be performed in accordance with the Hawaii Standard Specifications for Road and Bridge Construction, 1985, as amended, of the Department of Transportation, Highways Division, State of Hawaii, unless otherwise shown or noted in the drawings and specifications.
- Inspect the site and verify conditions one week after Notice to Proceed with applicable representatives from the State. Discrepancies shall be brought to the attention of the Engineer. By commencing with the work, the contractor accepts the existing conditions and responsibility for maintaining those conditions.
- The Contractor shall maintain all landscaping within the project limit one week after Notice to Proceed, including but not limited to , mowing and pruning once a month, and fertilizing every two months. This work shall be incidental to various Contract items.
- The existence and location of existing utilities, structures, and appurtenances shown or noted on the drawings are from the latest available data and field observations and are not guaranteed as to location nor to the existence of other obstacles which may be encountered. The possibility of encountering other obstacles during the course of work is high. The Contractor shall perform an independent check of elements and possible conflicts. discrepancies shall be reported to the Engineer.
- The Contractor shall not deviate from the drawings and specifications. In the event of errors or discrepancies, the contractor shall immediately notify the Engineer.
- Field layout the location, alignment and elevation profile of the proposed improvements and obtain approval of the layout and finish elevations prior to start of excavation and demolition. The Engineer reserves the right to revise the layout and finish elevations of the proposed improvements prior to start of excavation and demolition. The Contractor shall be responsible to make the adjustments at no additional cost.
- The Contractor shall erect silt fence prior to any trench excavation. See the Water Pollution and Erosion Control Notes on the Civil drawing, sheet no. C-3.
- The Contractor shall erect a temporary net at the toe of slopes to catch falling objects. The Contractor shall submit a detail of proposed catch net for approval. This work shall be incidental to various Contract items.

### PLANTING NOTES

- Where noted on the drawings, clear and prepare subgrade as necessary to install topsoil to depths indicated. The Contractor shall be responsible to determine and provide adequate quantities of topsoil. Carefully coordinate to insure placement to finish grades. It shall be the responsibility of the Contractor to maintain finish grades as designed, or to maintain existing drainage patterns.
- Where noted on the drawings, the existing soils shall be tilled and amended in accordance with the specifications. It shall be the responsibility of the Contractor to maintain finish grades as designed, or to maintain existing drainage patterns.
- Plant quantities noted on the drawings are approximate. The Contractor shall verify quantities and provide the quantity of plant materials required at the sizes and spacing shown or noted.
- See the Water Pollution and Erosion Control Notes on the Civil drawing, sheet no. C-2, in regards to fertilizer application.

### LANDSCAPE PLANTING PLAN 1



### PLANT LIST (Total All Sheets)

Quantity	Botanical Name	Common Name	Rootball	Height	Spread
830 Ea.	<i>Ficus pumila</i>	Creeping Fig	6" Pot	6"	12"
11,345 Ea.	<i>Ipomoea Horsfalliae</i>	Kuhio Vine	6" Pot	6"	12"
1,690 Ea.	<i>Scaevola frutescens</i> var. <i>sericea</i>	Beach Naupaka	1 Gal.	18"	18"
3,650 Ea.	<i>Vitex rotundifolia</i>	Pohinahina	6" Pot	12"	8"
77,780 S.F.	<i>Cynodon dactylon</i>	Common Bermuda Grass	Seed	-	-



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*Michael T. Miyabara*

### STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

#### LANDSCAPE PLANTING PLAN 1

INTERSTATE ROUTE H-1 RESURFACING  
OLA LANE TO KALIHI STREET  
PROJECT NO. HIH-01-00M

Scale: As Noted

Date: Oct. 31, 2002

SHEET No. L-7 OF L-13 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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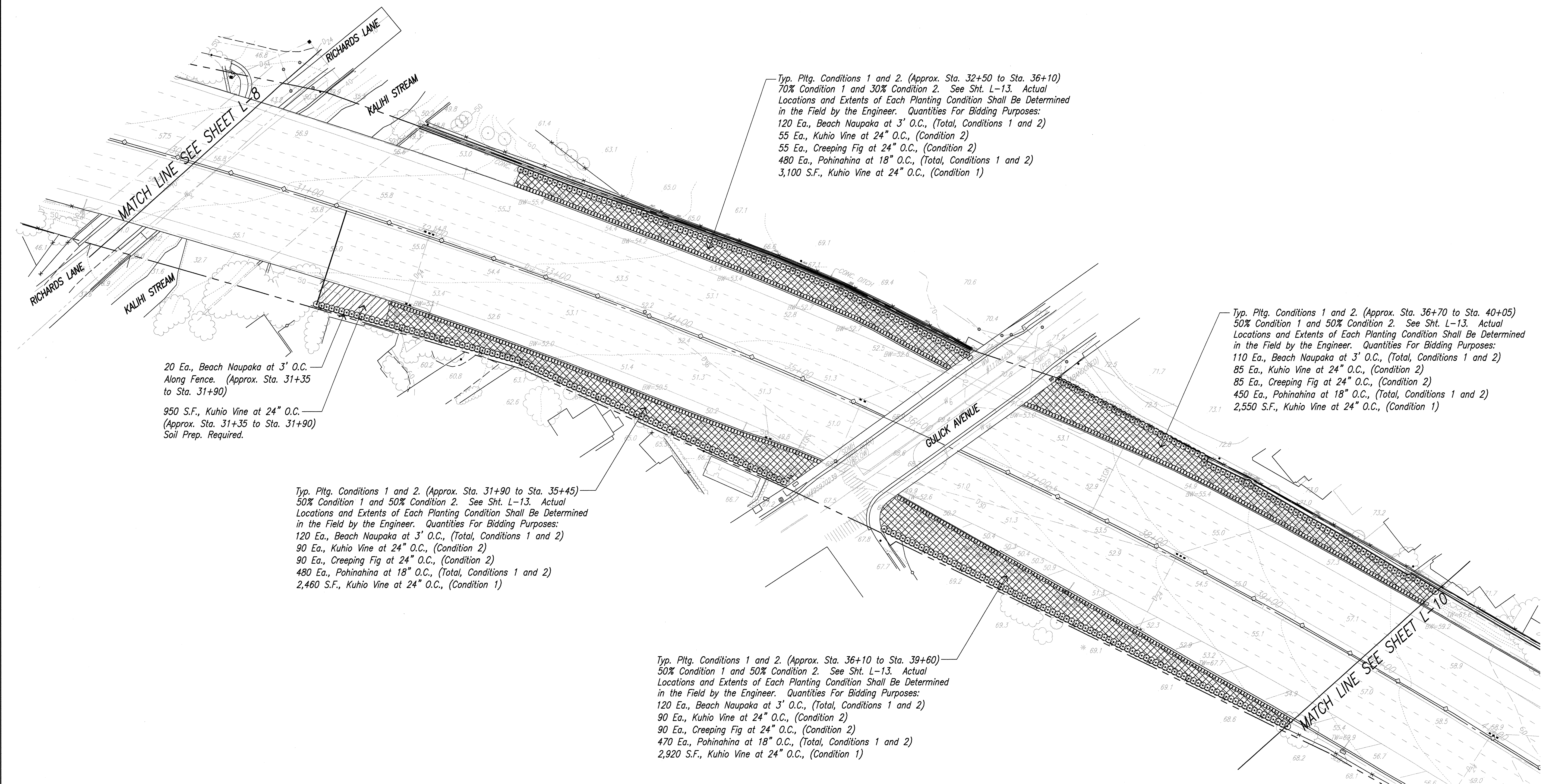
**"AS-BUILT"**





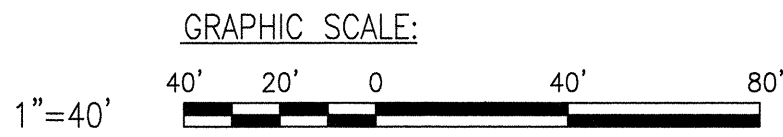


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIH-01-00M	2003	159	234



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

### LANDSCAPE PLANTING PLAN 3



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*Michael T. Miyahara*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### LANDSCAPE PLANTING PLAN 3

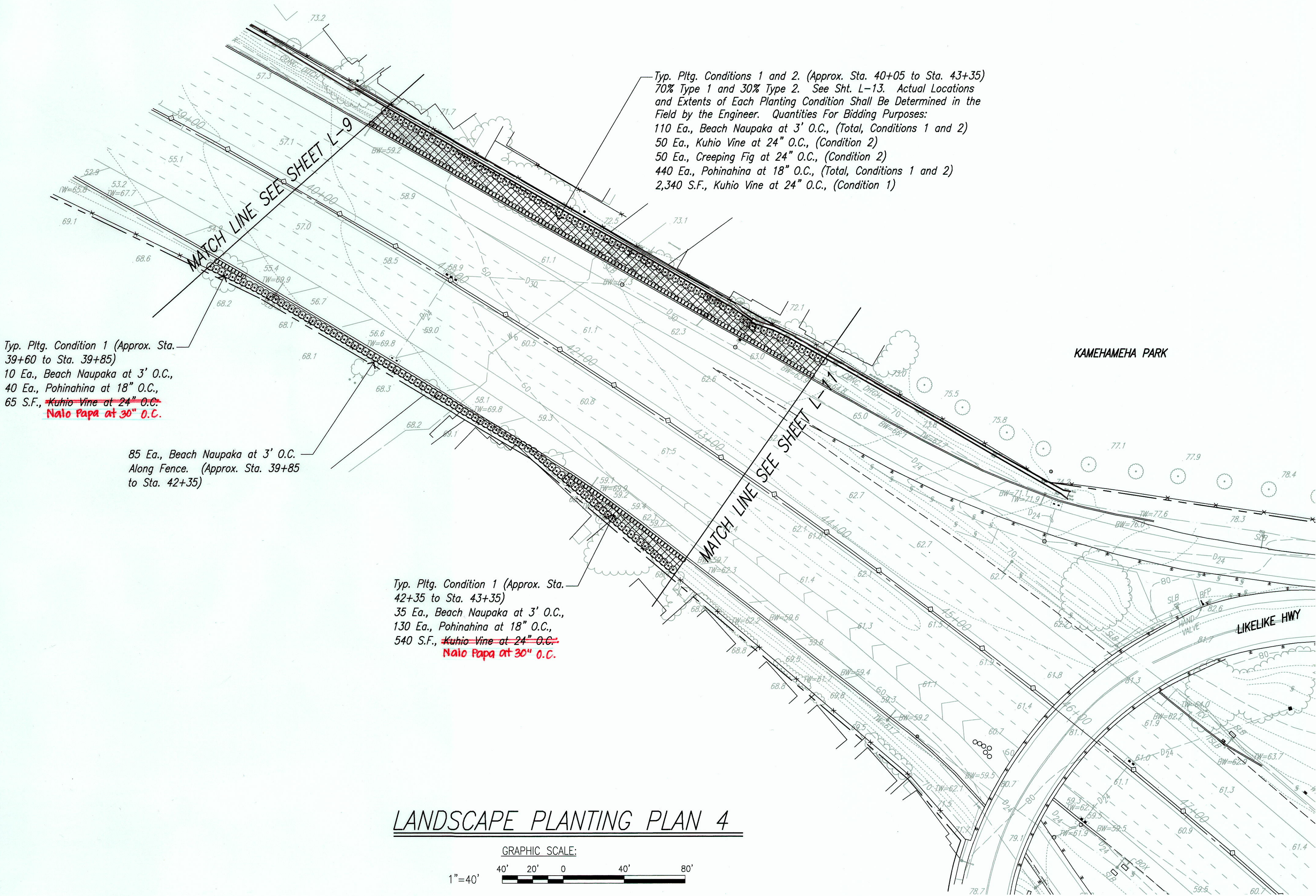
INTERSTATE ROUTE H-1 RESURFACING  
OLA LANE TO KALIHI STREET  
PROJECT NO. HIH-01-00M

Scale: As Noted Date: Oct. 31, 2002

SHEET No. L-9 OF L-13 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIH-01-00M	2003	160	234



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
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ORIGINAL PLAN	
NOTEBOOK	
No.	



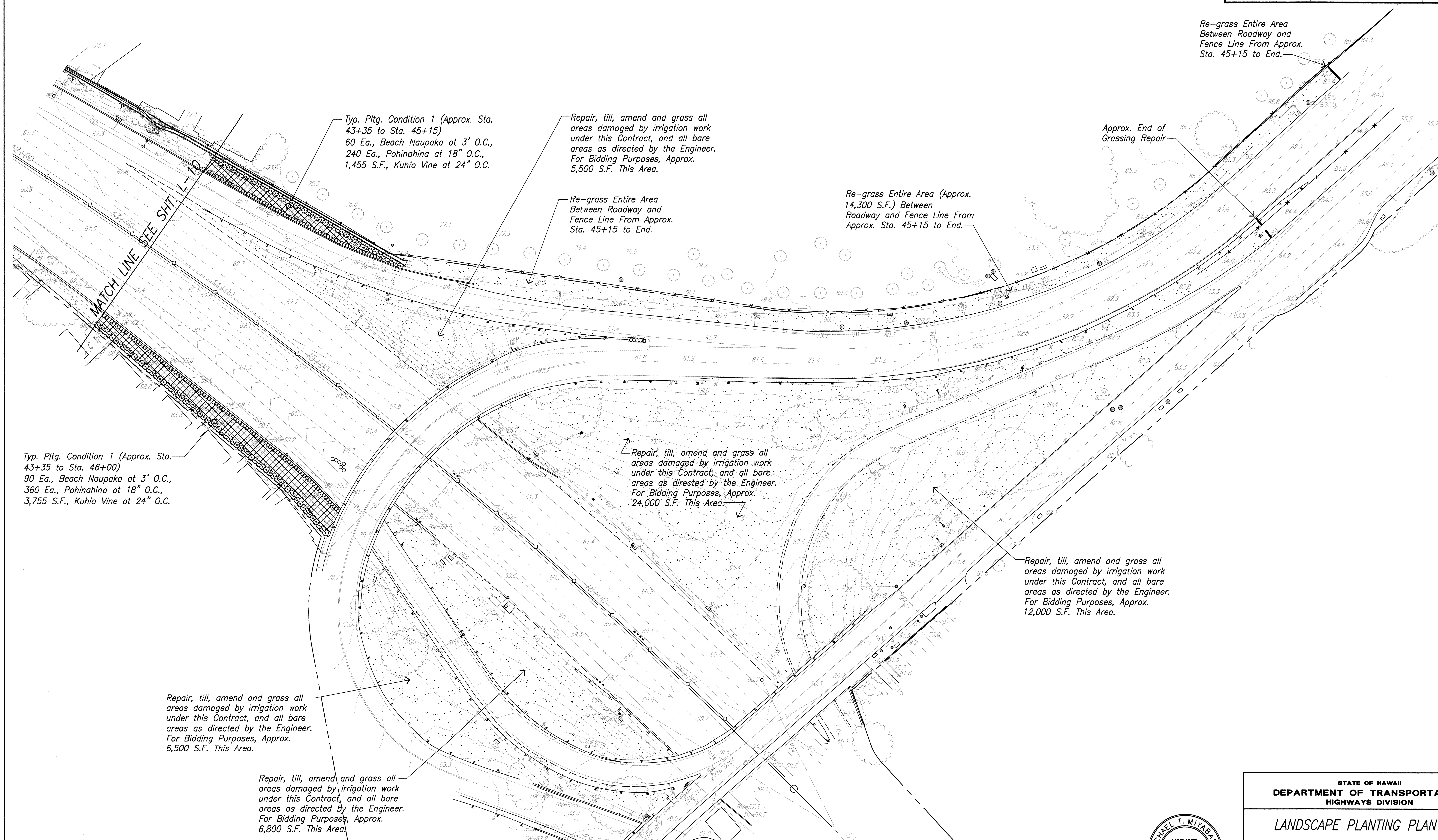
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.  
*Michael T. Miyabara*

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
LANDSCAPE PLANTING PLAN 4
INTERSTATE ROUTE H-1 RESURFACING OLA LANE TO KALIHI STREET PROJECT NO. HIH-01-00M
Scale: As Noted Date: Oct. 31, 2002
SHEET No. L-10 OF L-13 SHEETS

**"AS-BUILT"**

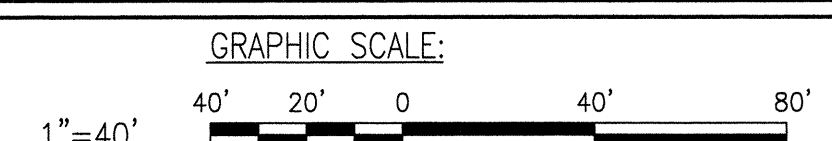


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIH-01-00M	2003	161	234



Typ. Pltg. Condition 1 (Approx. Sta. 43+35 to Sta. 46+00)  
90 Ea., Beach Naupaka at 3' O.C.,  
360 Ea., Pohinahina at 18" O.C.,  
3,755 S.F., Kuhio Vine at 24" O.C.

# LANDSCAPE PLANTING PLAN 5



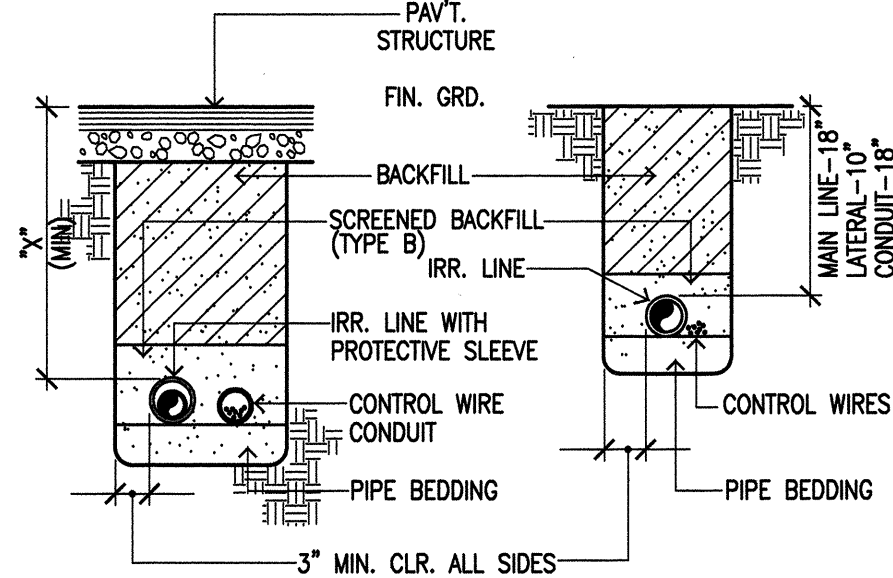
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OR UNDER MY SUPERVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
LANDSCAPE PLANTING PLAN 5	
INTERSTATE ROUTE H-1 RESURFACING OLA LANE TO KALIHI STREET PROJECT NO. HIH-01-00M	
Scale: As Noted	Date: Oct. 31, 2002
SHEET No. L-11 OF L-13 SHEETS	

SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	

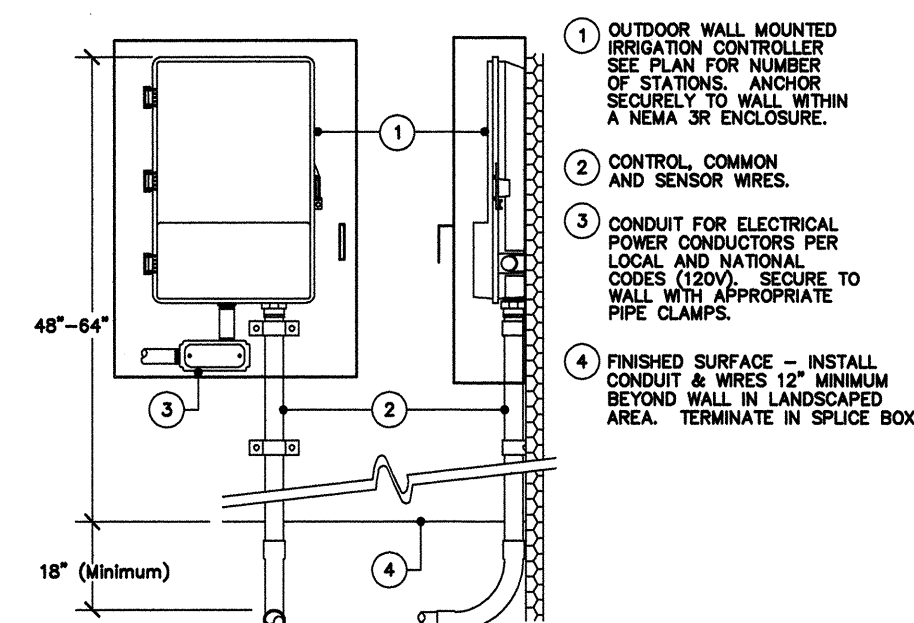


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H1H-01-00M	2003	162	234

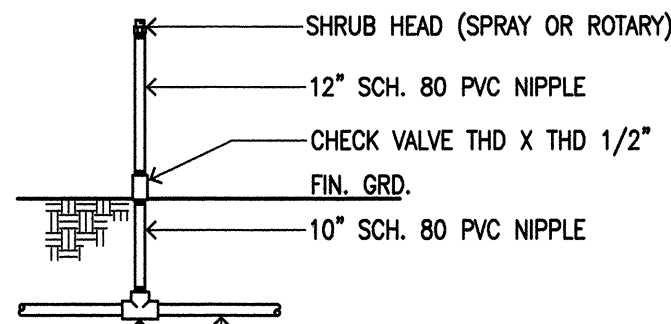


UNDER PAV'T. IN LANDSCAPED AREA  
NOTE: 7" DEPTH SHALL BE 36" MIN. UNDER VEHICULAR PAVEMENT, OR 18" MIN. FOR MAINS & 10" MIN. FOR LATERALS WHEN UNDER WALKWAYS.

1 TRENCHING  
L-12 NOT TO SCALE

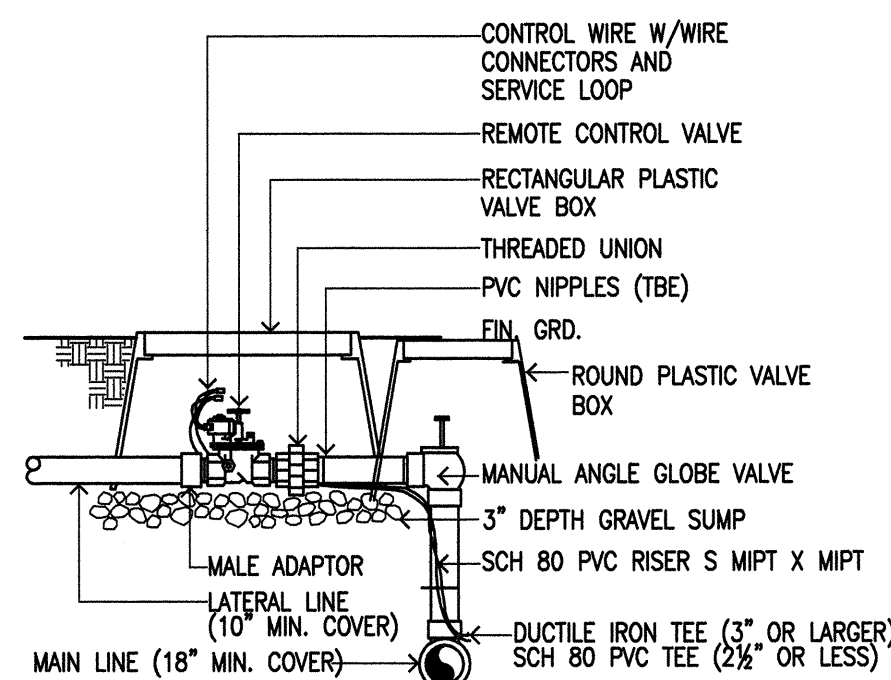


5 SECTION/FRONT SECTION/ELEVATION  
CONTROLLER WALL MOUNT  
L-12 NOT TO SCALE



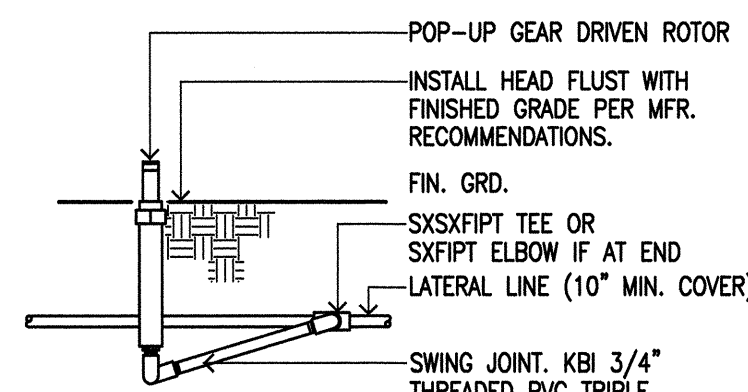
NOTE: HEAD SHALL BE INSTALLED 12" CLR. FROM ROAD OR FENCE. DO NOT INSTALL NEXT TO ROAD IF NO GUARD RAIL.

8 SHRUB HEAD  
L-12 NOT TO SCALE



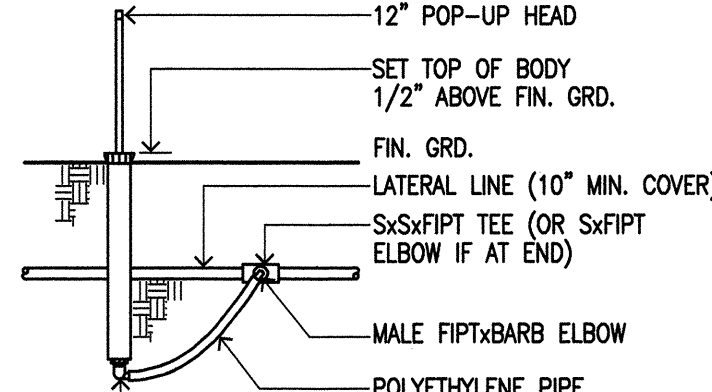
NOTE: 1. TOP OF VALVE BOX SHALL BE FLUSH WITH FIN. GRD. IN GRASS, 2" ABOVE GRADE IN GROUND COVER.  
2. PROVIDE REDUCER BUSHINGS AS REQ'D.

2 REMOTE CONTROL VALVE-A/C  
L-12 NOT TO SCALE



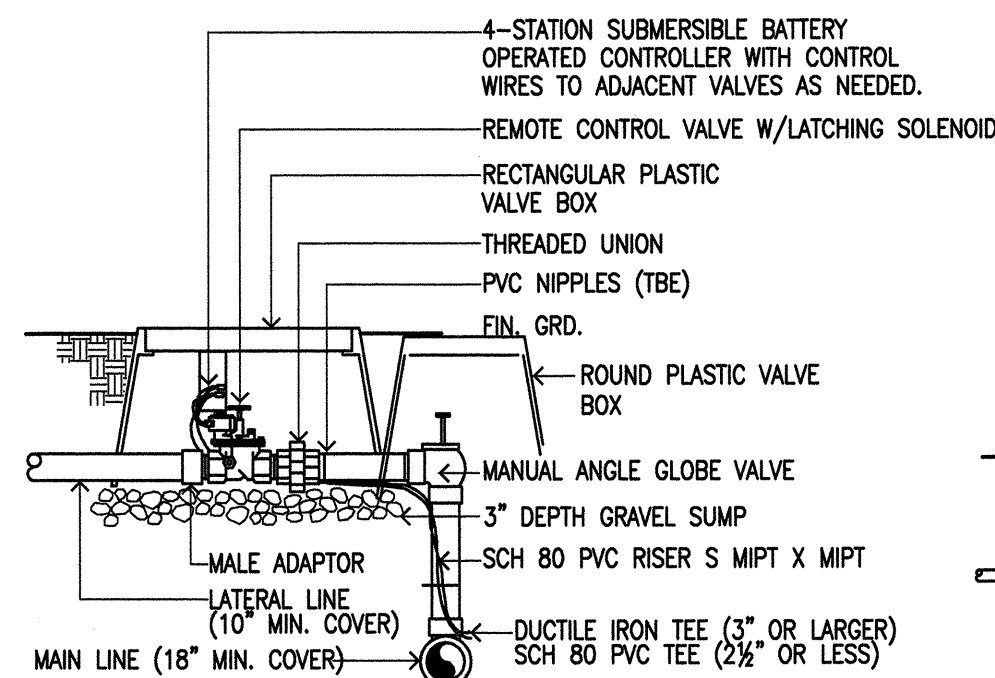
NOTE: HEAD SHALL BE INSTALLED 18" CLR. FROM EDGE OF BUILDING OR ROAD AND 6" AWAY FROM WALKWAYS.

6 POP-UP GEAR DRIVEN ROTOR  
L-12 NOT TO SCALE



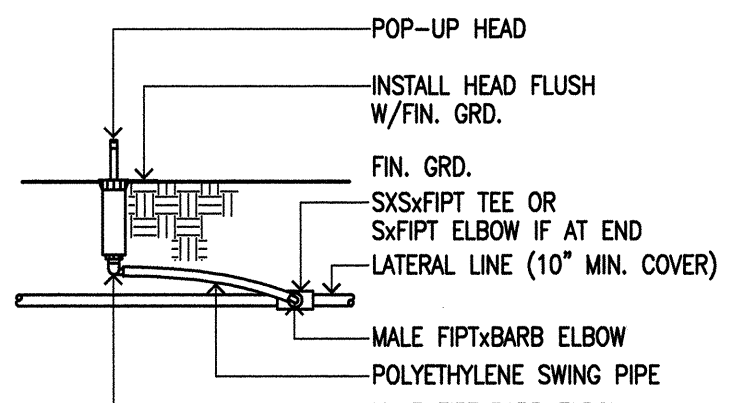
NOTE: HEAD SHALL BE INSTALLED 12" CLR. FROM ROAD.

9 12" POP-UP HEAD  
L-12 NOT TO SCALE



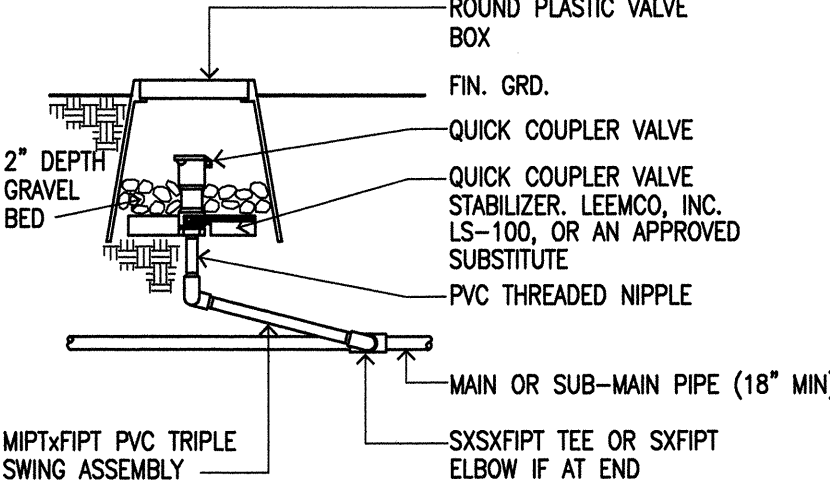
NOTE: 1. TOP OF VALVE BOX SHALL BE FLUSH WITH FIN. GRD. IN GRASS, 2" ABOVE GRADE IN GROUND COVER.  
2. PROVIDE REDUCER BUSHINGS AS REQ'D.

3 REMOTE CONTROL VALVE-BATTERY  
L-12 NOT TO SCALE

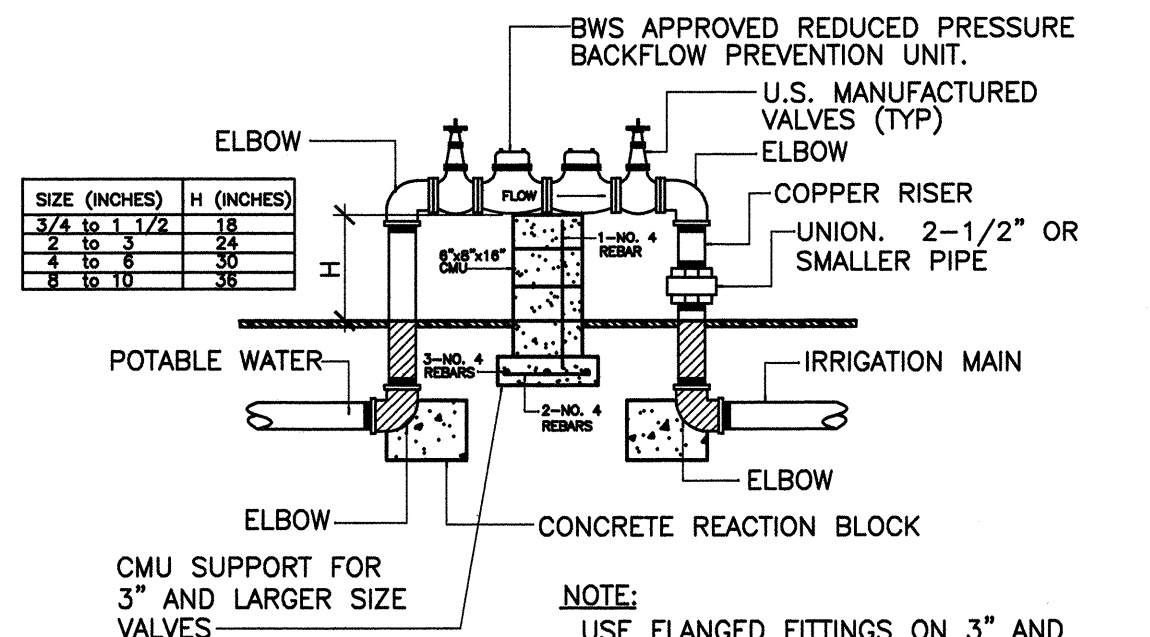


NOTE: HEAD SHALL BE INSTALLED 12" CLR. FROM BLDG. FACE AND 6" CLR. FROM EDGE OF WALK OR GRAVEL STRIP

7 4" POP-UP HEAD  
L-12 NOT TO SCALE



10 QUICK COUPLER VALVE  
L-12 NOT TO SCALE



NOTE: USE FLANGED FITTINGS ON 3" AND LARGER PIPE. ADAPT INLET AND OUTLET FITTINGS TO MAIN LINE AS REQUIRED. UNIT SHALL BE BWS APPROVED.

4 REDUCED PRESSURE BACKFLOW DETAIL  
L-12 NOT TO SCALE

SYMBOL	DESCRIPTION	MANUFACTURER/ CATALOG NUMBER
	24 STA. CONTROLLER	RAINBIRD ESP-MC-24 SERIES OR ACCEPTABLE EQUAL WITHIN A STRONGBOX NEMA 3R ENCLOSURE
	REMOTE CONTROL VALVE	RAIN BIRD EFB-CP-PRS-B, GRISWOLD DWS-PRV OR ACCEPTABLE EQUAL, SIZE AS NOTED
	REMOTE CONTROL VALVE	RAIN BIRD EFB-CP-PRS-B, GRISWOLD DWS-PRV WITH LATCHING SOLENOID WHEN NOTED
	MANUAL ANGLE VALVE	CHAMPION 300 SERIES OR EQUAL (SAME SIZE AS LARGEST DOWNSTREAM REMOTE CONTROL VALVE).
	GATE VALVE (FULL LINE SIZE)	NIBCO T-113 OR APPROVED EQUAL, 3" OR LESS EPOXY COATED AWWA RESILIENT SEAT 4" OR LARGER
	IRRIGATION MAINLINE - PVC	SCH 40 PVC 2" OR SMALLER WITH WARNING TAPE SDR-21 2 1/2", OR LARGER WITH WARNING TAPE (SIZE AS SHOWN - SEE SPEC'S - 18" MIN. DEPTH)
	IRRIGATION LATERAL	CLASS 200 PVC, SIZE AS NOTED, 10" MIN. DEPTH
	PVC SLEEVE UNDER PAVEMENT	SCH 40 PVC PIPE (SIZE AS NOTED) 24" DEPTH
	IRRIGATION LATERAL OR MAIN HOPE TUBING ABOVE GRADE	DR-11.5, HDPE TUBING SIZE AS SHOWN
	GATE VALVE SIZE	GATE VALVE OR MANUAL ANGLE VALVE SIZE
	SLEEVE SIZE	PIPE SIZE (TOP) WITHIN SLEEVE SIZE (BOTTOM)
	CONDUIT RACEWAY SIZE	CONDUIT RACEWAY FOR 24V WIRING (INSTALL ONE EXTRA WIRE THROUGH RACEWAY FOR FUTURE USE)
	BWS APPROVED RPBPU	REDUCED PRESSURE BACKFLOW PREVENTION UNIT (SEE PLAN FOR SIZE)
	CONTROLLER No. STATION NUMBER	VALVE SIZE FLOW THROUGH VALVE (GPM)

## IRRIGATION NOTES

- IRRIGATION SYSTEMS ARE DIAGRAMMATIC AND SUBJECT TO MINOR ADJUSTMENTS DUE TO UNANTICIPATED FIELD CONDITIONS. IRRIGATION HEADS SHALL BE INSTALLED WHERE SHOWN, ADJUSTMENTS TO HEAD PLACEMENT MAY BE MADE IN THE FIELD ONLY TO AVOID OBSTACLES OR TO IMPROVE COVERAGE. HEADS SHALL NOT BE SPACED FURTHER THAN SHOWN ON THE DRAWINGS. VALVES SHALL BE INSTALLED IN THE VICINITY OF THE LOCATIONS SHOWN AND BE ACCESSIBLE FOR SERVICE AND USE. AVOID CONFLICTS WITH PLANTINGS, UTILITIES AND ARCHITECTURAL ELEMENTS.
- PRIOR TO EXCAVATION FOR IRRIGATION LINES, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE EXACT LOCATION AND DEPTH OF ALL UTILITIES IN THE AREA AND EXERCISE CAUTION WHEN EXCAVATING.
- COORDINATE WITH OTHER TRADES TO INSURE INSTALLATION OF IRRIGATION LINES AND APPURTENANCES. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO COORDINATE WITH OTHER CONTRACTORS ON THE JOB TO INSURE THEIR INSTALLATION AND TO PROVIDE PROPER CLEARANCES FOR CONNECTIONS.
- REFER TO ELECTRICAL DRAWINGS FOR 120V WIRING TO CONTROLLERS AND PUMP STATION.
- THE IRRIGATION SYSTEM DESIGN IS BASED ON A MINIMUM STATIC PRESSURE OF 65 PSI AT EACH POINT OF CONNECTION. THESE PRESSURES WERE VERIFIED AT TIME OF DESIGN, BUT CONTRACTOR SHALL RE-VERIFY PRIOR TO INSTALLATION.
- INSTALL THE IRRIGATION CONTROLLERS AS NOTED ON THE DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR, TOGETHER WITH THE APPROPRIATE OWNER'S REPRESENTATIVE, SHALL PROGRAM THE CONTROLLER TO ACCOMMODATE THE LANDSCAPE AND SITE REQUIREMENTS.
- IRRIGATION SYSTEMS SHALL BE OPERATED DURING "OFF PEAK" EVENING HOURS. OPERATION DURING OTHER TIMES SHALL BE WITH THE APPROVAL OF THE PROJECT MANAGER.

HEAD SYMBOL	ANGLE	MANUFACTURER/ CATALOG NUMBER	G.P.M.	P.S.I.	RAD.
SHRUB SPRAY SPRINKLER		RAIN BIRD PA-BS OR ACCEPTABLE EQUAL			
RISER MOUNTED LOW-ANGLE NOZZLE	90°	PA-BS-SAM-PRS-BQ	0.24	30	8'
	120°	PA-BS-SAM-PRS-BT	0.30	30	8'
	180°	PA-BS-SAM-PRS-BH	0.50	30	8'
	240°	PA-BS-SAM-PRS-BTT	0.70	30	8'
	270°	PA-BS-SAM-PRS-BTQ	0.76	30	8'
	360°	PA-BS-SAM-PRS-BF	1.00	30	8'
SHRUB SPRAY SPRINKLER		RAIN BIRD PA-BS OR ACCEPTABLE EQUAL			
RISER MOUNTED STANDARD NOZZLE	90°	PA-BS-SAM-PRS-15Q	0.85	30	15'
	120°	PA-BS-SAM-PRS-15T	1.10	30	15'
	180°	PA-BS-SAM-PRS-15H	1.65	30	15'
	240°	PA-BS-SAM-PRS-15TT	2.30	30	15'
	270°	PA-BS-SAM-PRS-15TQ	2.60	30	15'
	360°	PA-BS-SAM-PRS-15F	3.60	30	15'
		END STRIP PA-BS-SAM-PRS-15EST	0.45	30	4'X15'
		SIDE STRIP PA-BS-SAM-PRS-15SST	0.85	30	4'X15'
LAWN SPRAY POP-UP SPRINKLER		RAIN BIRD 1804-SAM-PRS OR ACCEPTABLE EQUAL			
4" POP-UP LOW-ANGLE NOZZLE	90°	1804-SAM-PRS-BQ	0.24	30	8'
	120°	1804-SAM-PRS-BT	0.30	30	8'
	180°	1804-SAM-PRS-BH	0.50	30	8'
	240°	1804-SAM-PRS-BTT	0.70	30	8'
	270°	1804-SAM-PRS-BTQ	0.76	30	8'
	360°	1804-SAM-PRS-BF	1.00	30	8'
LAWN SPRAY POP-UP SPRINKLER		RAIN BIRD 1804-SAM-PRS OR ACCEPTABLE EQUAL			
4" POP-UP STANDARD NOZZLE	90°	1804-SAM-PRS-15Q	0.85	30	15'
	120°	1804-SAM-PRS-15T	1.10	30	15'
	180°	1804-SAM-PRS-15H	1.65	30	15'
	240°	1804-SAM-PRS-15TT	2.30	30	15'
	270°	1804-SAM-PRS-15TQ	2.60	30	15'
	360°	1804-SAM-PRS-15F	3.60	30	15'
		END STRIP 1804-SAM-PRS-15EST	0.45	30	4'X15'
		SIDE STRIP 1804-SAM-PRS-15SST	0.85	30	4'X15'
RISER MOUNTED ROTARY SPRINKLER		HUNTER PGP-XXX-XLA (TORO S700S-XX-XLA OR ACCEPTABLE EQUAL			
LOW ANGLE NOZZLE	180°	PGS-ADJ-5LA (S700C-PC-30LA)	1.90	40	27'
	360°	PGS-360-7LA (S700C-PC-30LA)	3.90	40	37'
LAWN ROTOR POP-UP SPRINKLER		HUNTER PGP-XXX-XLA (TORO S700C-XX-XLA OR ACCEPTABLE EQUAL			
4" POP-UP LOW ANGLE NOZZLE	90°	PGP-ADJ-4LA (S700C-PC-20LA)	1.70	40	24'
	180°	PGP-ADJ-7LA (S700C-PC-30LA)	1.90	40	27'
	360°	PGP-360-7LA (S700C-PC-30LA)	3.90	40	37'

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



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

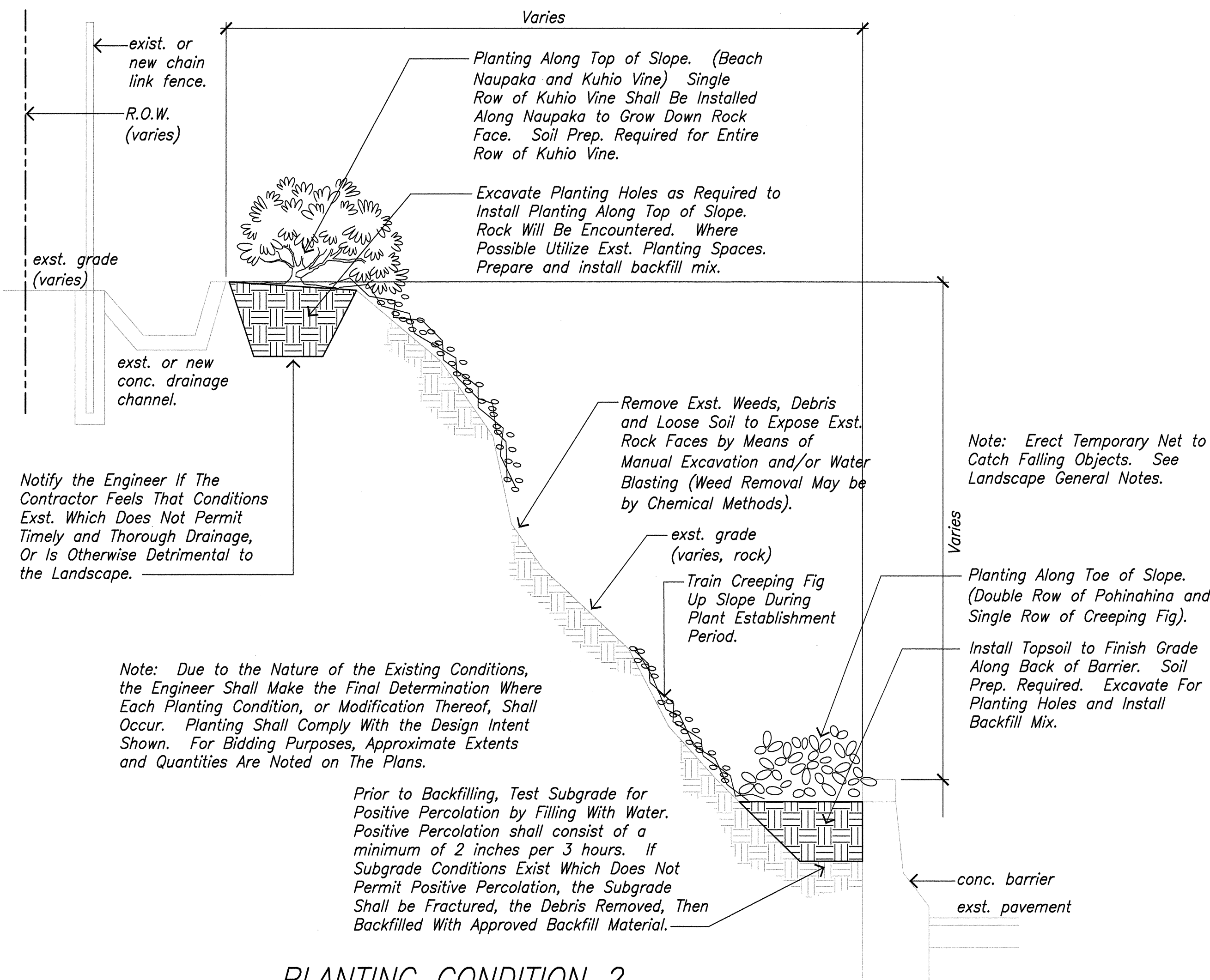
IRRIGATION LEGEND,  
NOTES & DETAILS  
INTERSTATE ROUTE H-1 REHABILITATION  
OLA LANE TO KALIHI STREET  
PROJECT NO. H1H-01-00M

Scale: As Noted Date: October31, 2002

SHEET No. L-12 OF 13 SHEETS

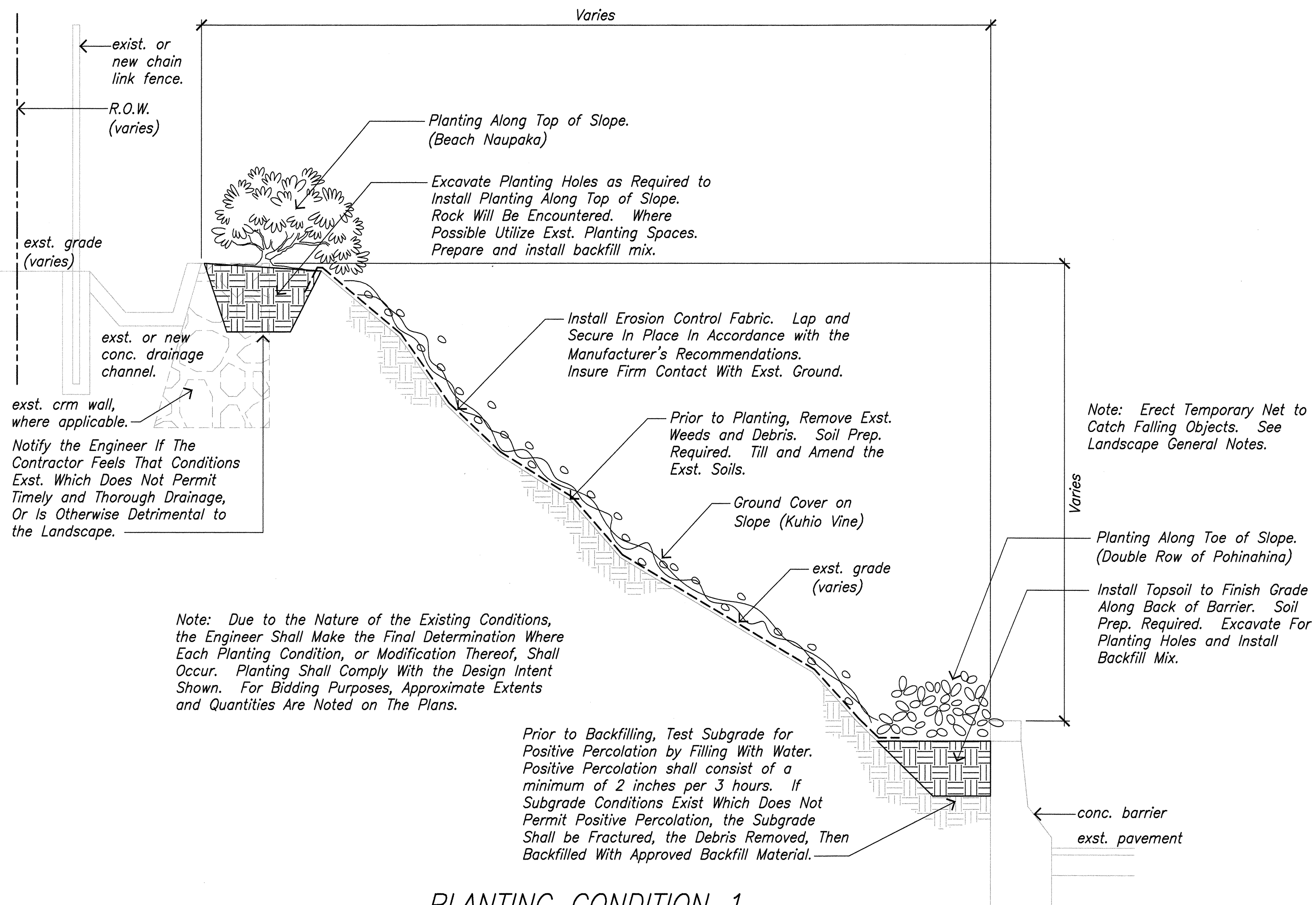


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIH-01-00M	2003	163	234



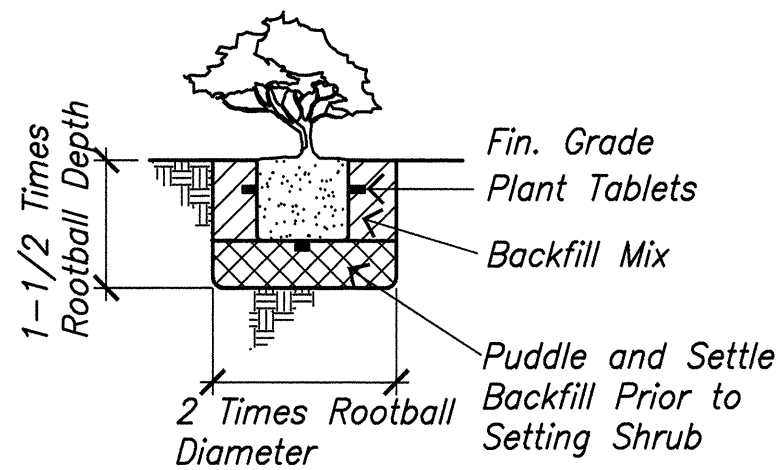
### PLANTING CONDITION 2

SCALE: 1/2" = 1'-0"



### PLANTING CONDITION 1

SCALE: 1/2" = 1'-0"



### SHRUB PLANTING

NOT TO SCALE

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

ORIGINAL PLAN	No.
NOTEBOOK	



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*Michael T. Miyabara*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

LANDSCAPE PLANTING DETAILS  
INTERSTATE ROUTE H-1 RESURFACING  
OLA LANE TO KALIHI STREET  
PROJECT NO. HIH-01-00M

Scale: As Noted Date: Oct. 31, 2002

SHEET NO. L-13 OF L-13 SHEETS