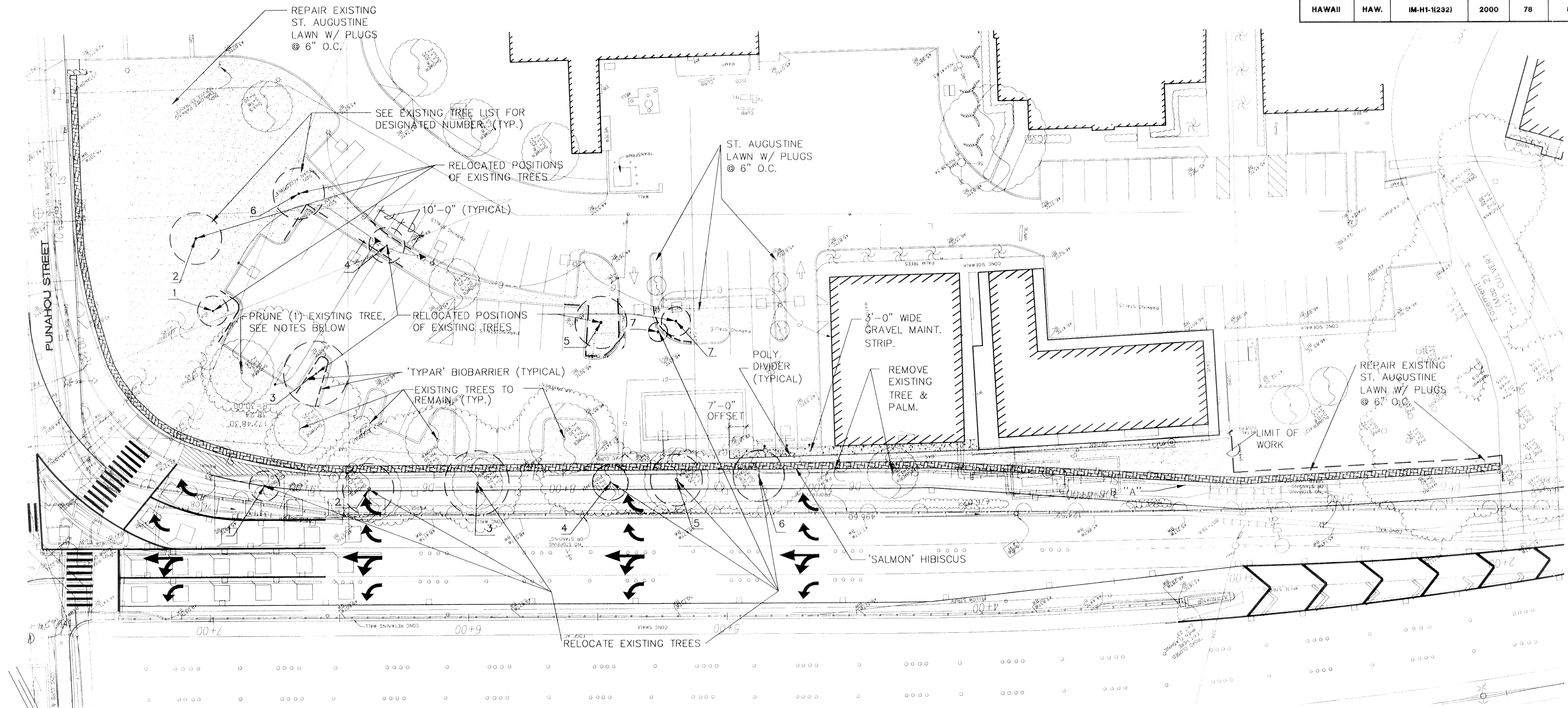


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H1-1(232)	2000	78	84



LANDSCAPE PLAN-1

SCALE: 1" = 20' - 0"

EXISTING TREE LIST

DESIGNATED NUMBER AND DESCRIPTION

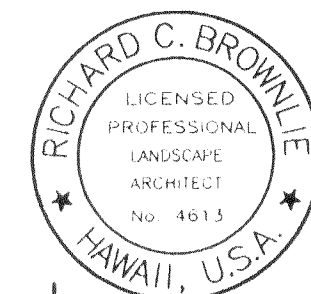
STATUS

- | | |
|---|-----------------|
| 1. COCONUT PALM, 35' TRUNK HEIGHT | TO BE RELOCATED |
| 2. RAINBOW SHOWER, 20' HT., 20' SPD., 18" CALIP. | TO BE RELOCATED |
| 3. RAINBOW SHOWER, 20' HT., 25' SPD., 24" CALIP. | TO BE RELOCATED |
| 4. ROYAL POINCIANA, 15' HT., 15' SPD., 12" CALIP. | TO BE RELOCATED |
| 5. ROYAL POINCIANA, 15' HT., 20' SPD., 18" CALIP. | TO BE RELOCATED |
| 6. ROYAL POINCIANA, 15' HT., 20' SPD., 18" CALIP. | TO BE RELOCATED |
| 7. ALLSPICE, 8' HT., 3' SPD., 2" CALIP. | TO BE RELOCATED |

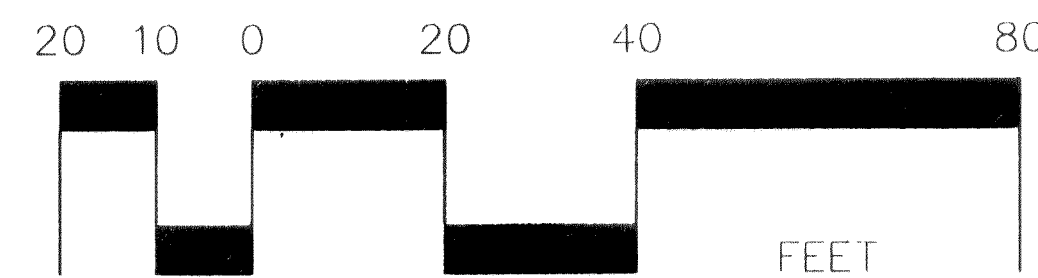
TREE PRUNING NOTES:

PRUNING OF EXISTING AND RELOCATED TREES SHALL BE PERFORMED BY EXPERIENCED CERTIFIED TREE ARBORIST TRIMMERS WHO, THROUGH RELATED TRAINING AND ON-THE-JOB EXPERIENCE, ARE FAMILIAR WITH THE TECHNIQUES AND HAZARDS OF THIS WORK.

1. PRUNE EXISTING AND RELOCATED TREES BY APPROXIMATELY 1/3 TO 1/2 ITS ORIGINAL SIZE. PRUNE IN A MANNER WHICH RETAINS THE NATURAL HABIT AND SHAPE OF THE TREE. PRUNE TREE UNDER THE DIRECTION OF THE ENGINEER AND TO HIS SATISFACTION.
2. PROTECT AREAS SUSCEPTIBLE TO PEDESTRIAN OR VEHICULAR TRAFFIC BY ERECTING BARRICADES PRIOR TO TRIMMING.
3. REMOVE AND DISPOSE OFF-SITE ALL DEBRIS RESULTING FROM THIS WORK.
4. COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR, OWNER AND ENGINEER.
5. COORDINATE MOVE OF RELOCATED TREES/PALMS TO PERMANENT LOCATION WITH GENERAL CONTRACTOR.
6. SEE DETAILS ON SHEET # L-3.



Richard C. Browne
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

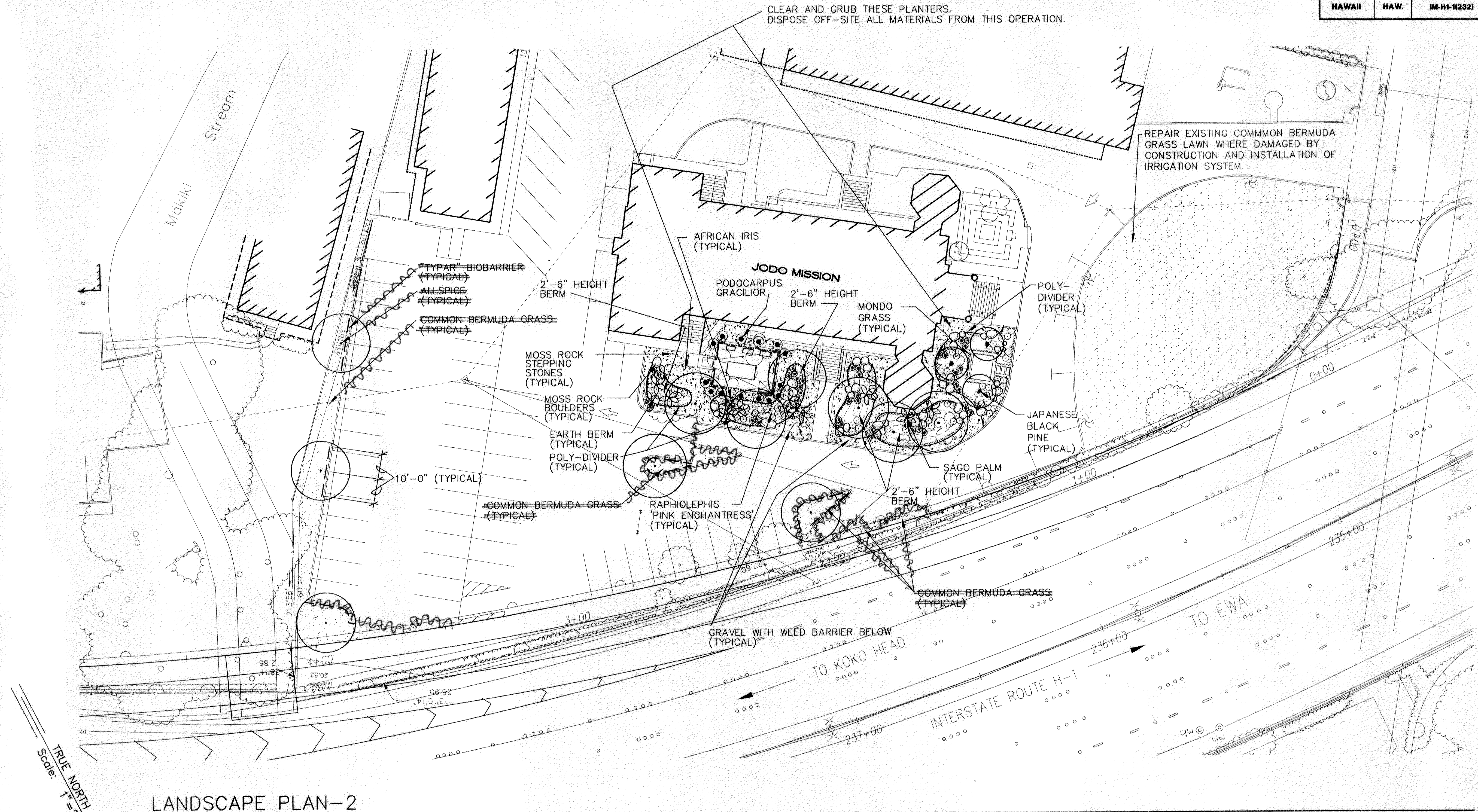
LANDSCAPE PLAN-1

INTERSTATE ROUTE H-1
PUNAHOU ST. OFF-RAMP IMPROVEMENTS
F.A.I. Proj. No. IM-H1-1(232)

Scale: 1" = 20' Date: 4/28/00

SHEET No. L-1 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H1-1(232)	2000	79	84



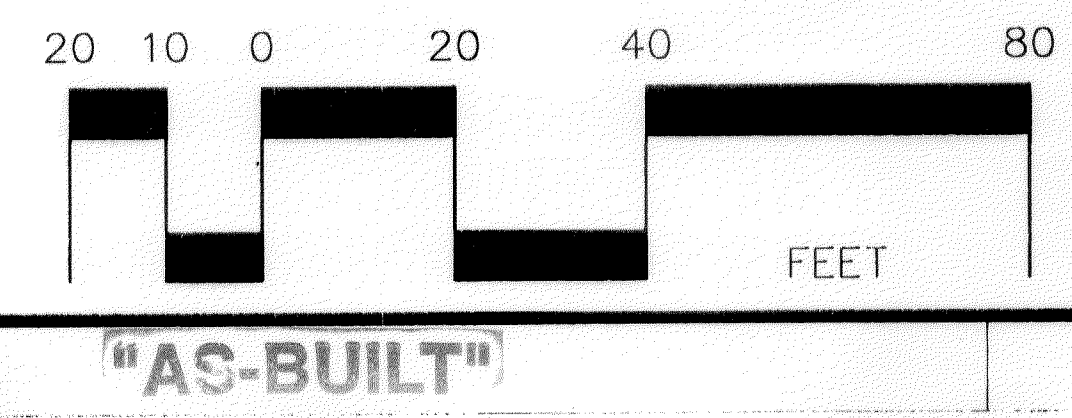
LANDSCAPE PLAN-2
SCALE: 1" = 20' - 0"

NOTE:
FINISH GRADE IN PLANTERS (SOIL AND GRAVEL) SHALL BE 1/2" BELOW TOP OF CURB.
(TYPICAL)
Deleted Curbing and Plantings. Paved Instead

RICHARD C. BROWNIE
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 4613
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLAN-2
INTERSTATE ROUTE H-1
PUNAHOU ST. OFF-RAMP IMPROVEMENTS
F.A.I. Proj. No. IM-H1-1(232)
Scale: 1" = 20' Date: 4/28/00
SHEET No. L-2 OF 7 SHEETS



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

PLANT LIST & MISCELLANEOUS

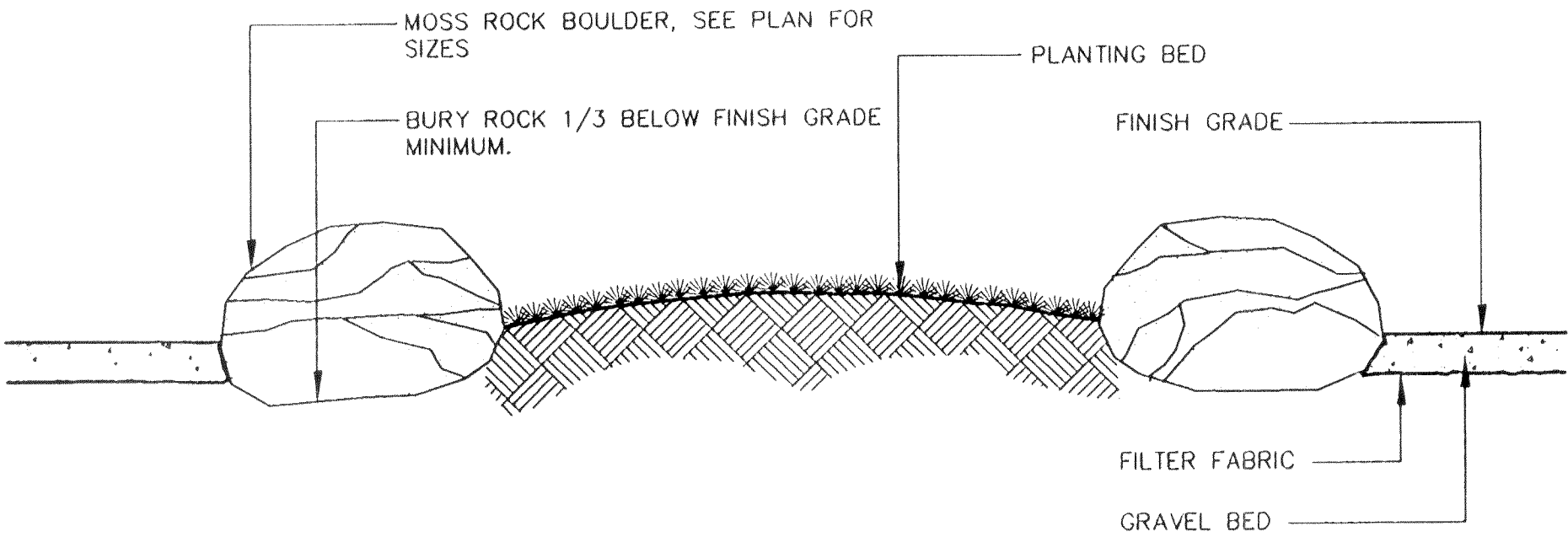
QUANTITY	COMMON / BOTANICAL NAME	SIZE & REMARKS
11	ALLSPICE / PIMENTA DIOICA	25 GAL. CAN, 8' HT., 3' SPD., 2" CALIP.
14	PODOCARPUS GRACILIOR / PODOCARPUS GRACILIOR	15 GAL. CAN, 5'-6' HT., 3' SPD., 1-1/2" CALIP.
10	SAGO PALM / CYCAS REVOLUTA	45 GAL. CAN, 4'-5' OVERALL HT.
3	JAPANESE BLACK PINE / PINUS THUNBERGII	25 GAL. CAN, 6'-7' HT., 3'-4' SPD., 2" CALIP.
45	AFRICAN IRIS / DIETES IRIODOSES	3 GAL. CAN, 24" HT., 18" SPD.
335	HYBRID HIBISCUS 'SALMON' / HIBISCUS SP.	1 GAL. CAN, 12"HT., 8" SPD., 2'-0" O.C.
60	RHAPHIOLEPIS 'PINK ENCHANTRESS' / RHAPHIOLEPIS X DELACOURII	3 GAL. CAN, 24" HT., 18" SPD.
+/-7,400 SF.	BERMUDA GRASS, COMMON / CYNODON DACTYLON	HYDROMULCH / SEED (SEE APPLICATION RATES BELOW)
+/-2,000 SF.	MONDO GRASS / OPHIOPOGON JAPONICUM	SPRIGS AT 4" O.C.
+/-17,700 SF.	ST. AUGUSTINE GRASS / STENOTAPHRUM SECUNDATUM	PLUGS AT 6" O.C.
+/-460 LF.	POLY DIVIDER	INSTALL PER MANF. INSTRUCTIONS
+/-2,000 SF.	WEED BARRIER UNDER GRAVEL	MIRAFI 700X
+/-360 LF.	'TYPAR' BIOBARRIER	INSTALL PER MANF. INSTRUCTIONS
+/-16 CY.	GRAVEL	NO. 3 'FINE' CRUSH BLUE ROCK, 3" DEPTH
47	MOSS ROCK BOULDERS	(18) 2', (13) 3', (16) 4', DIA., SPECIMEN
+/-30 CY.	EARTH BERM (IMPORTED SCREENED SOIL)	2'-6" MAXIMUM HEIGHT

APPLICATION RATES FOR:

- 1) COMMON BERMUDA GRASS (HYDROMULCH/SEED)
SEEDS SHALL BE APPLIED AT THE RATE OF 2 lbs. PER 1000 s.f. MINIMUM
MULCH SHALL BE APPLIED AT THE RATE OF 30 lbs. PER 1000 s.f. MINIMUM

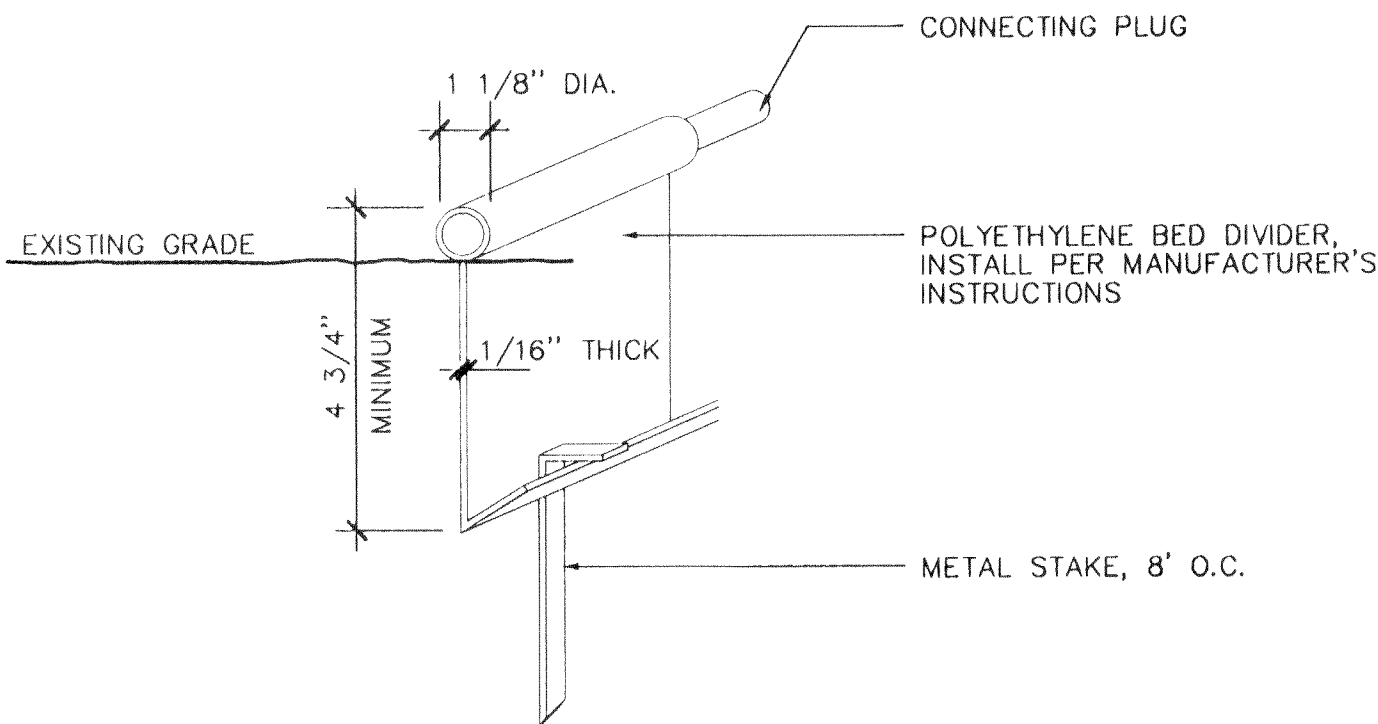
GENERAL NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES, MEASUREMENTS AND SITE CONDITIONS, INCLUDING LOCATION OF ALL EXISTING UTILITIES.
- PLANTING WILL NOT COMMENCE UNTIL THE PLANTING AREA IS PREPARED TO FINISH GRADE.
- PRIOR TO TREE AND SHRUB HOLE EXCAVATION, ALL PLANTING LOCATIONS SHALL BE STAKED OUT BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
- SHRUB AND TREE HOLES SHALL BE AT LEAST TWO TIMES THE DIAMETER OF THE ROOTBALL. TREE HOLES SHALL BE 14 INCHES DEEPER THAN THE DEPTH OF THE ROOTBALL, SHRUB HOLES SHALL BE 8 INCHES DEEPER THAN THE DEPTH OF THE ROOTBALL.
- IF ROCK, HARD PAN, OR UNSUITABLE MATERIAL IS ENCOUNTERED DURING EXCAVATION FOR THE PLANTING HOLE, THE MATERIAL SHALL BE BROKEN UP OR REMOVED AT LEAST 12 INCHES BEYOND THE NORMAL DIMENSIONS OF THE HOLE AS DIRECTED BY THE ENGINEER.
- BACKFILL MIX SHALL CONSIST OF 4 PARTS OF SOIL TO 1 PART MANURE.
- MULCH SHALL BE PLACED OVER THE ENTIRE WATERING BASIN WITHIN 2 WEEKS AFTER PLANTING.
- GUY WIRES, FLAGGING, STAKES, WINDBREAKS, ETC. SHALL BE MAINTAINED AND REPLACED IF NECESSARY BY THE CONTRACTOR UNTIL THE TREE OR SHRUB IS ABLE TO STAND BY ITSELF. WHEN IT BECOMES UNNECESSARY THE CONTRACTOR SHALL REMOVE AND DISPOSE.
- GUY WIRES SHALL BE NO. 9 GAGE GALVANIZED STEEL WIRE.
- ORGANIC SOIL CONDITIONERS, MULCH, GUY WIRES & TURNBUCKLES, YELLOW FLAGGING TAPES, STAKES, RUBBER HOSE, BACKFILL MIX AND WINDBREAKS SHALL BE CONSIDERED INCIDENTAL TO PLANTING AND TRANSPLANTING OF TREES AND SHRUBS AND WILL NOT BE MEASURED FOR PAYMENT.
- SECTION 619--PLANTING AND TRANSPLANTING OF THE LATEST DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", AS AMENDED, IS APPLICABLE TO THESE DETAILS.



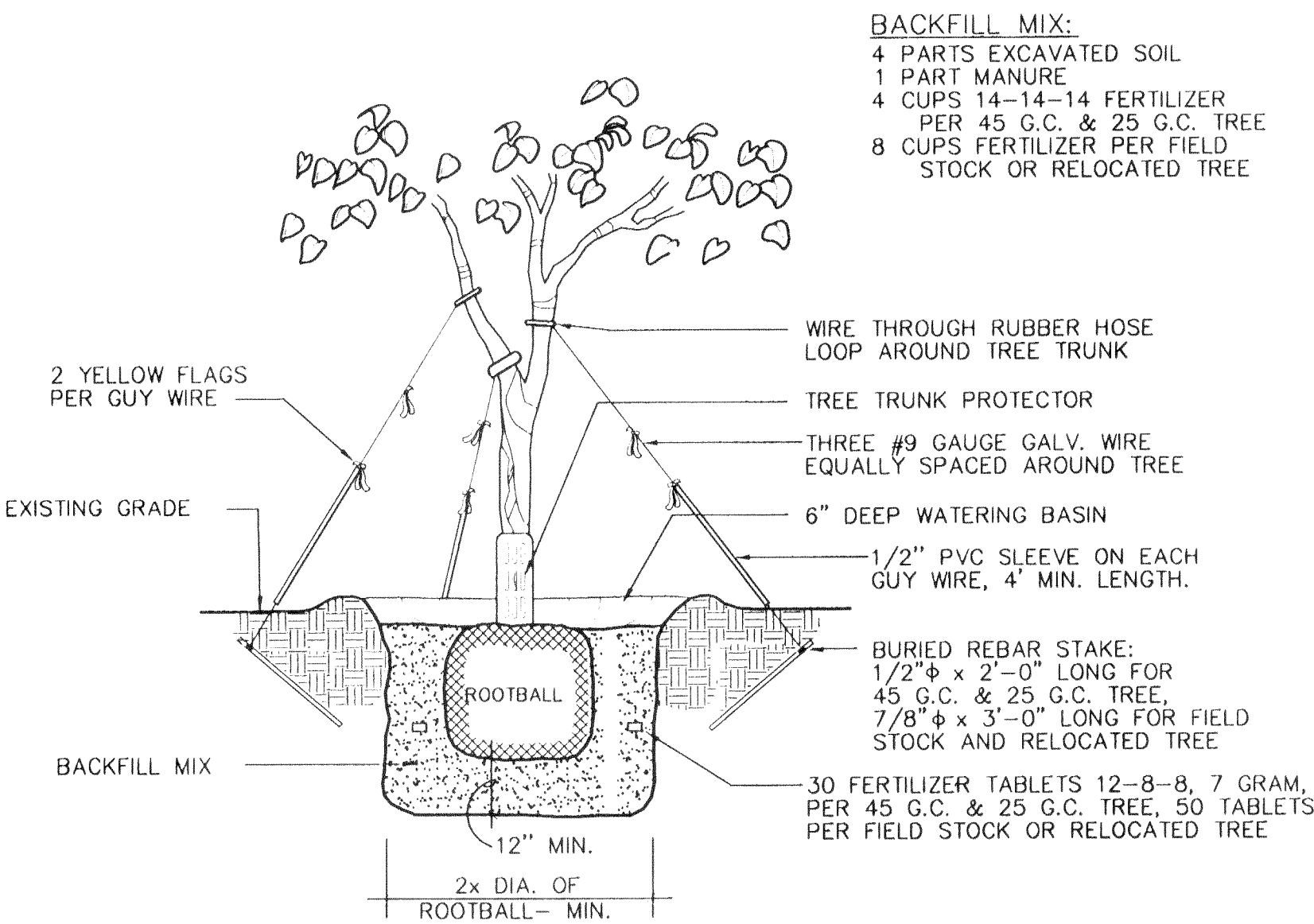
MOSS ROCK DETAIL

NOT TO SCALE



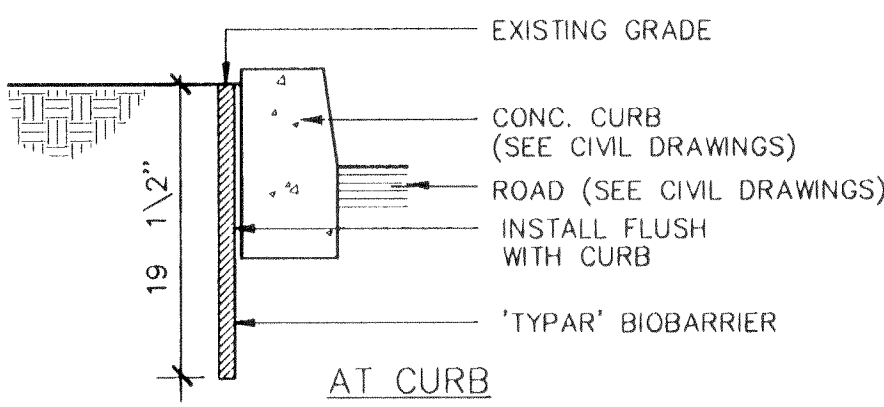
POLY DIVIDER

NOT TO SCALE



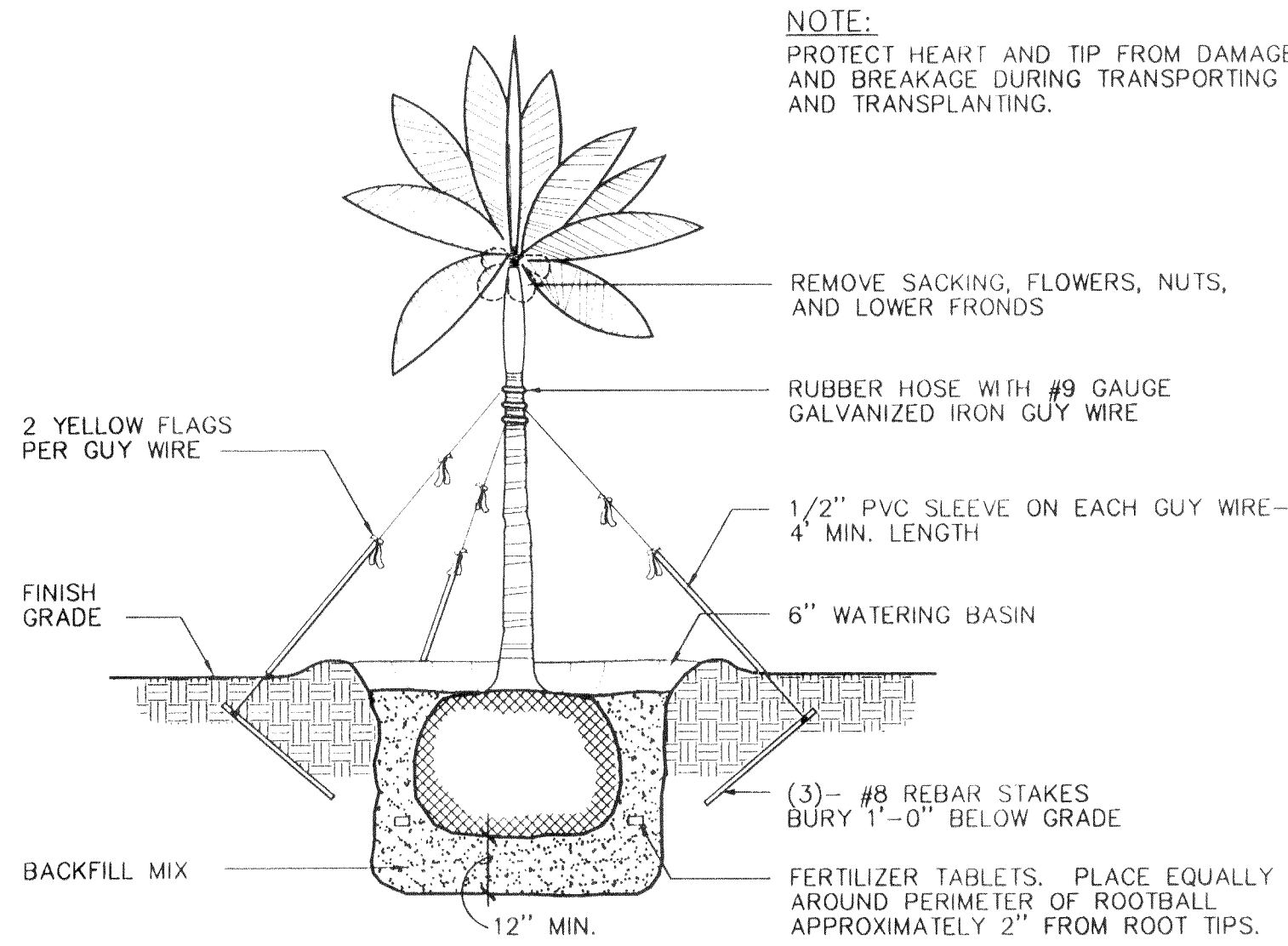
25 & 45 GALLON CAN / FIELD STOCK / RELOCATED TREE

NOT TO SCALE



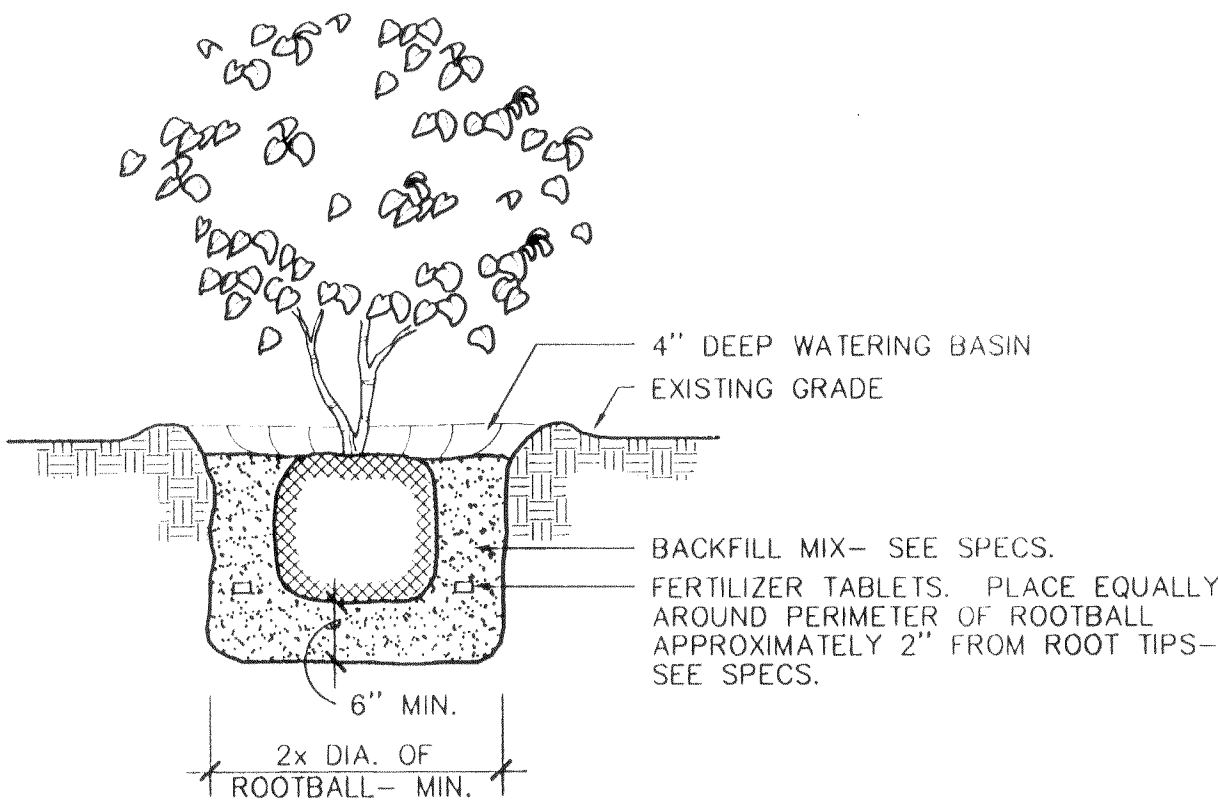
BIOBARRIER DETAIL

NOT TO SCALE



FIELD STOCK PALM / RELOCATION

NOT TO SCALE

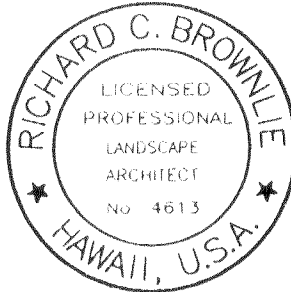


SHRUB PLANTING

NOT TO SCALE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H1-1(232)	2000	80	84

SURVEY PLOTTED BY _____ DATE _____
ORIGINAL PLAN _____
BY _____
CHECKED BY _____
DATE _____



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

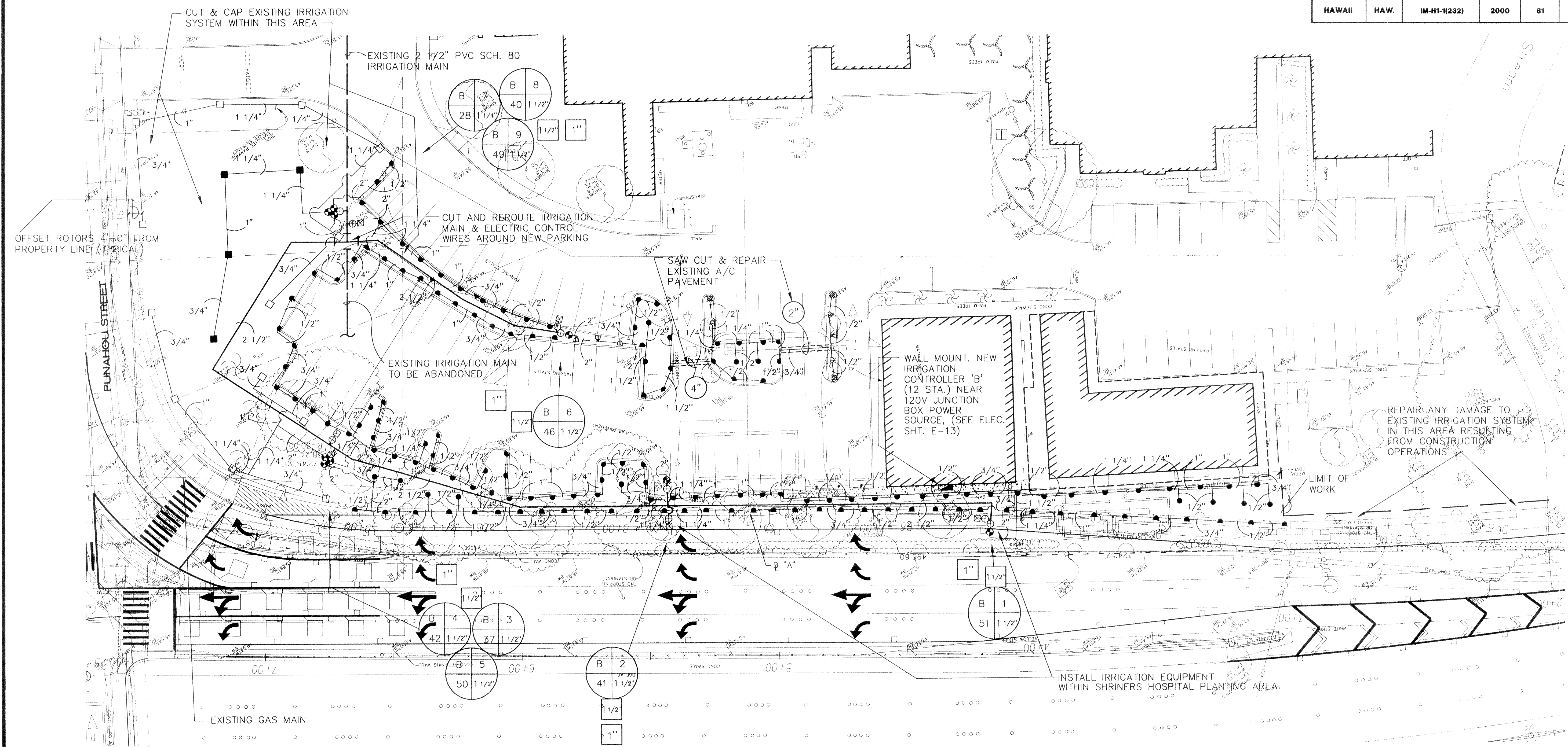
PLANT DETAILS AND LIST

INTERSTATE ROUTE H-1
PUNAHOU ST. OFF-RAMP IMPROVEMENTS
F.A.I. Proj. No. IM-H1-1(232)

Scale: As Noted Date: 4/28/00

SHEET No. L-3 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H1-1(232)	2000	81	84



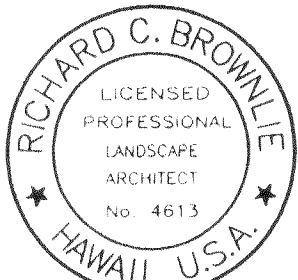
IRRIGATION PLAN-1

SCALE: 1" = 20' - 0"

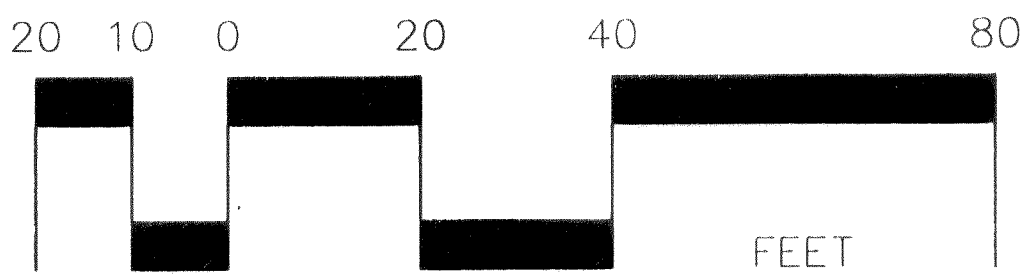
TRUE NORTH
Scale: 1" = 20'

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY LOCATION OF EXISTING GAS MAIN. EXERCISE CAUTION WHEN WORKING AROUND GAS LINE. DEPTH OF MAIN VARIES.
2. CONTRACTOR SHALL EXERCISE CAUTION WHILE TRENCHING AROUND EXISTING AND RELOCATED TREES / PALMS.
3. WATER SOURCE: 180' RESERVOIR
4. FOR LEGEND SEE SHT. L-6.
5. INSTALL ALL SPRINKLER HEADS, VALVES, AND PIPES WITHIN LANDSCAPE PLANTING AREAS, UNLESS OTHERWISE NOTED ON PLAN.



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

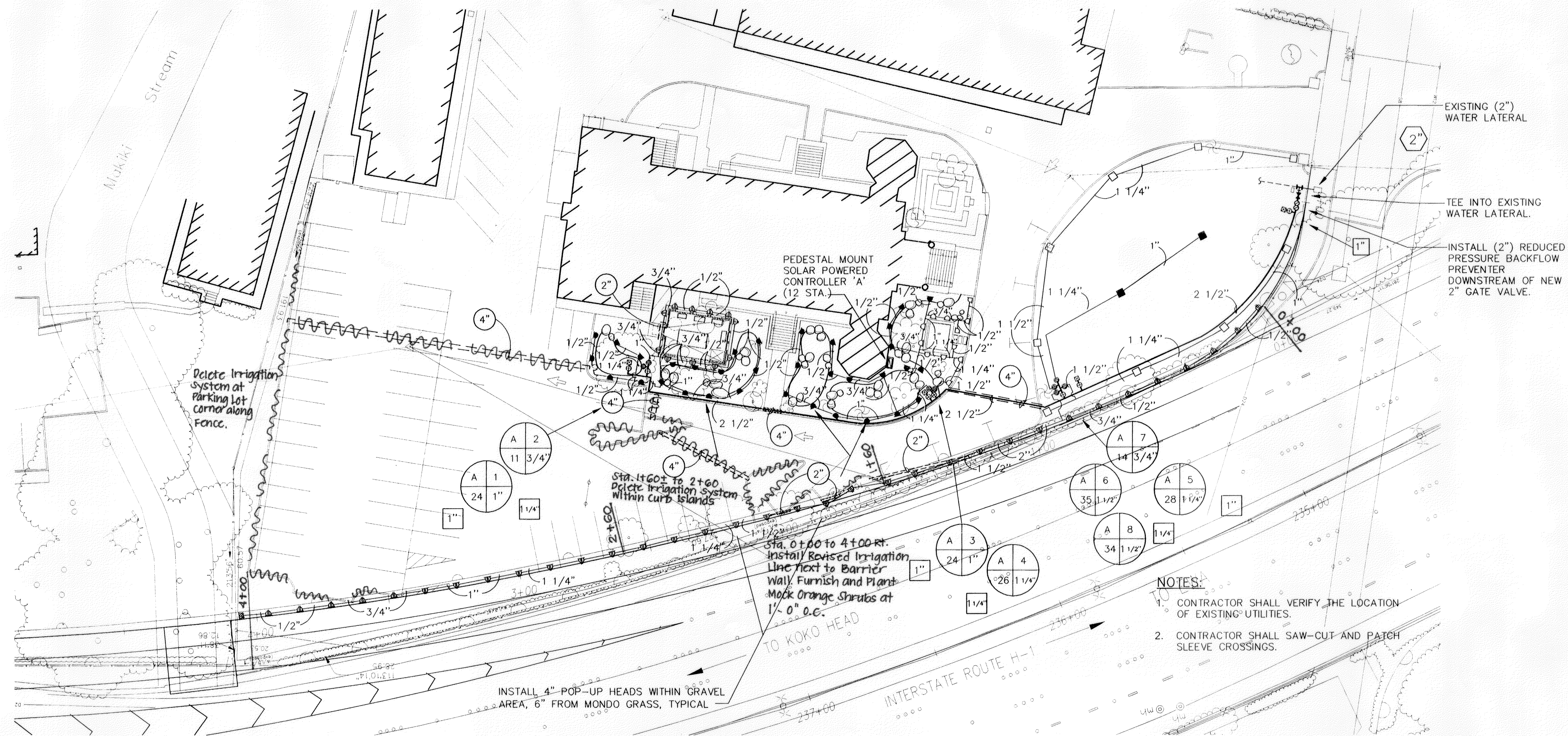
IRRIGATION PLAN-1

INTERSTATE ROUTE H-1
PUNAHOU ST. OFF-RAMP IMPROVEMENTS
F.A.I. Proj. No. IM-H1-1(232)

Scale: 1" = 20' Date: 4/28/00

SHEET No. L-4 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H1-1(232)	2000	C.O.82	84



NOTES:

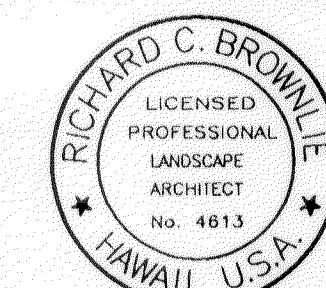
1. CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
2. CONTRACTOR SHALL SAW-CUT AND PATCH SLEEVE CROSSINGS.

IRRIGATION PLAN-2

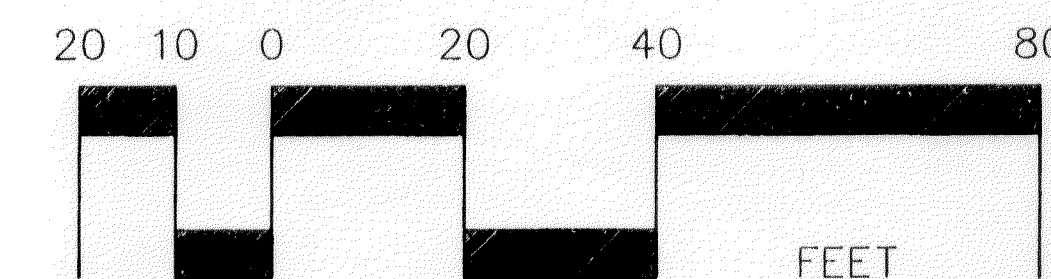
SCALE: 1" = 20' - 0"

TRUE NORTH
Scale: 1" = 20'

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



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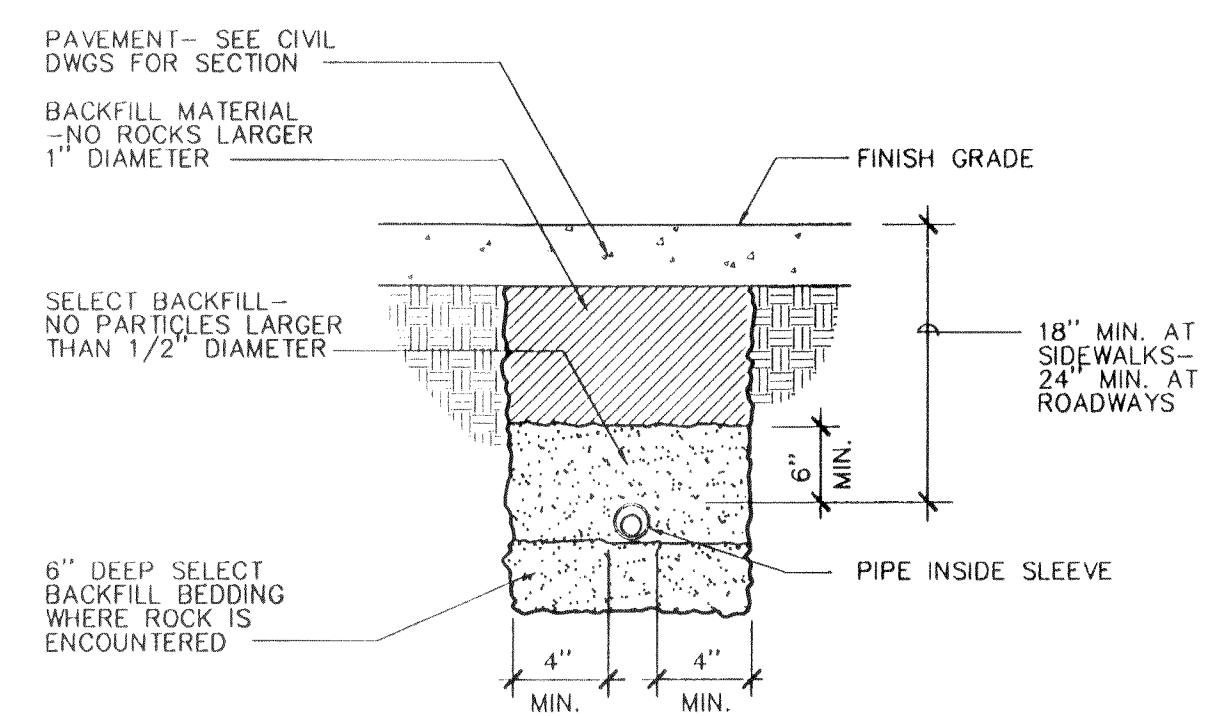
"AS-BUILT"

9/25/2001	DELETE IRRIGATION SYSTEM IN PARKING AREA. ADD CIRCUIT A8
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
INTERSTATE ROUTE H-1 PUNAHOU ST. OFF-RAMP IMPROVEMENTS F.A.I. Proj. No. IM-H1-1(232)	
Scale: 1" = 20'	Date: 4/28/00
SHEET No. L-5 OF 7 SHEETS	

C.O.82

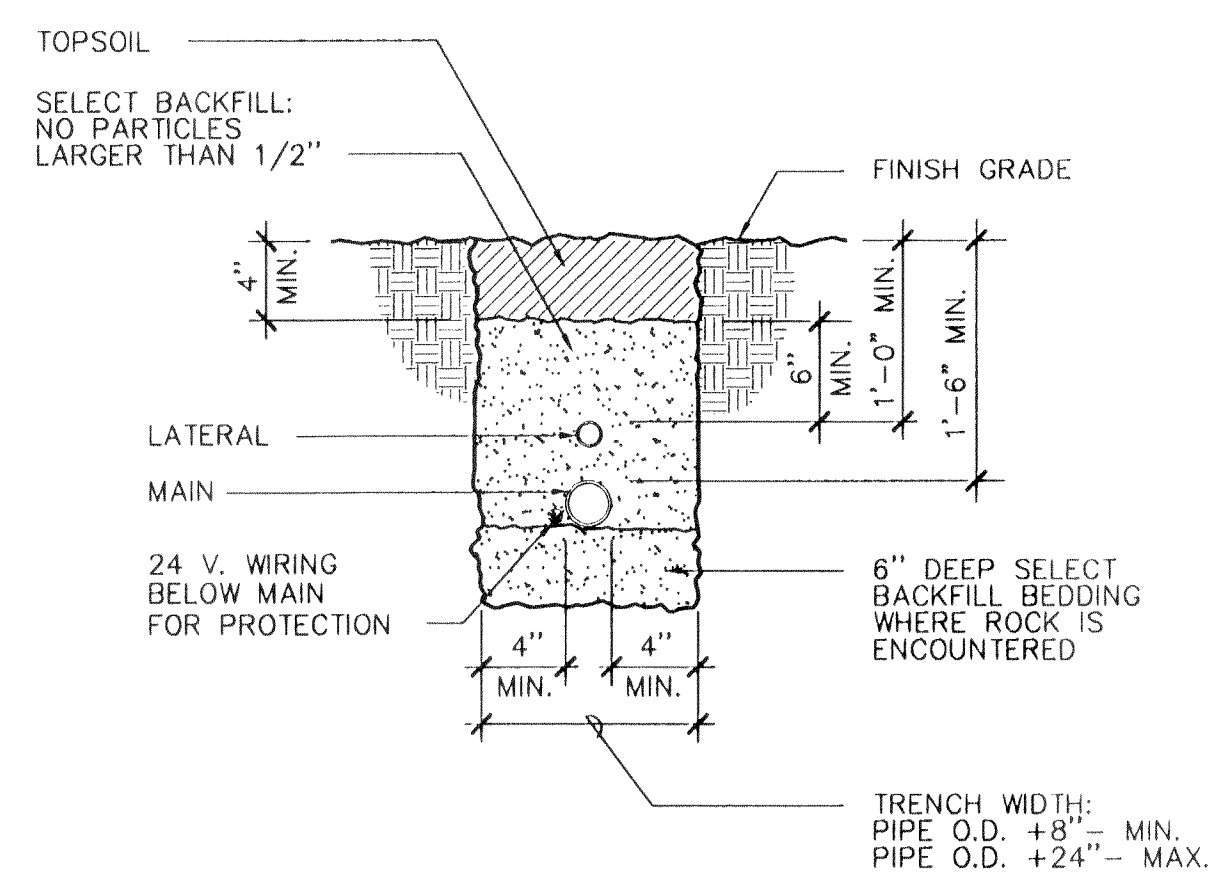
IRRIGATION LEGEND

SYMBOL	DESCRIPTION	P.S.I.	G.P.M.	RAD.	MANUFACTURER & MODEL No. (or approved equal)
● ● ● ●	4" POP-UP SPRAY HEAD FULL, 1/2, 1/3, 1/4 CIRCLE	20-30	4/2/1.5/1	4'-15'	RAINBIRD 1804-SAM-15, BUCKNER SP-4/CV-P-15
○ □ ▽ ▢	12" POP-UP SPRAY HEAD: FULL, 1/2, 1/3, 1/4 CIRCLE	20-30	4/2/1.5/1	4'-15'	RAINBIRD 1812-SAM-15, BUCKNER SP-12/CV-P-15
⊞ ⊞	4" POP-UP SPRAY HEAD: SIDE, END STRIP	20-30	1.5/.5	4'x30'/4'x15'	RAINBIRD 1804-SAM-15SST, -15EST, BUCKNER SP-4/CV-P-15-SST, -EST
■ □	LAWN POP-UP ROTOR HEAD: FULL, PART CIRCLE	35-45	6-8	26'-45'	TORO S700C-FC-7.5SA, -PC-7.5SA, RAINBIRD T-4SAM-FC-T40-6.0, T-4SAM-PC-T40-6.0
▬	IRRIGATION CONTROLLER, 12 STATION, WALL MOUNT				RAINBIRD ESP-12LX+
▭	SOLAR IRRIGATION CONTROLLER, 12 STATION W/ PEDESTAL				ALTEC LEIT 8000 CW12
⊞	GATE VALVE / SIZE				NIBCO T-113 (3" & SMALLER) WITH BRONZE HANDWHEEL
⊞	ANGLE VALVE / SIZE				BUCKNER VBM, CHAMPION 200
⊞	ELECTRIC VALVE				RAINBIRD GB, BUCKNER VB (WITH ELECTRIC VALVE ACTUATOR, SEE SOLAR CONTROLLER MANUFACTURER'S RECOMMENDATION)
⊞	ELECTRIC VALVE				RAINBIRD GB, BUCKNER VB
⊞	REDUCE PRESSURE BACKFLOW PREVENTER				FEBCO 860 (2")
⊞	QUICK COUPLER VALVE				RAINBIRD 44NP, BUCKNER QB-44-NP-10
▬	IRRIGATION MAIN				PVC SCH. 40
▬	IRRIGATION LATERAL				PVC CLASS 200
▬	IRRIGATION SLEEVE / SIZE				PVC SCH. 80



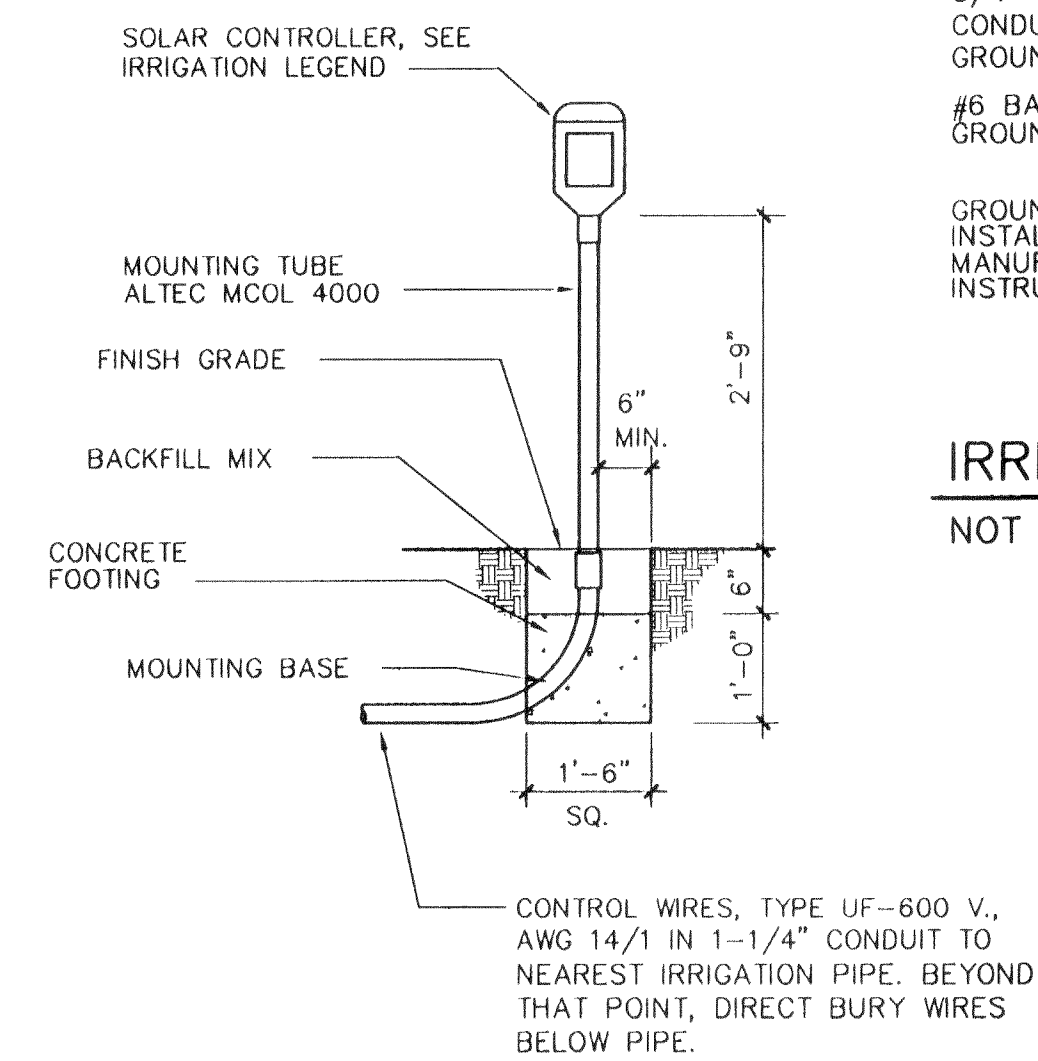
PIPE TRENCH- PAVED AREAS

NOT TO SCALE



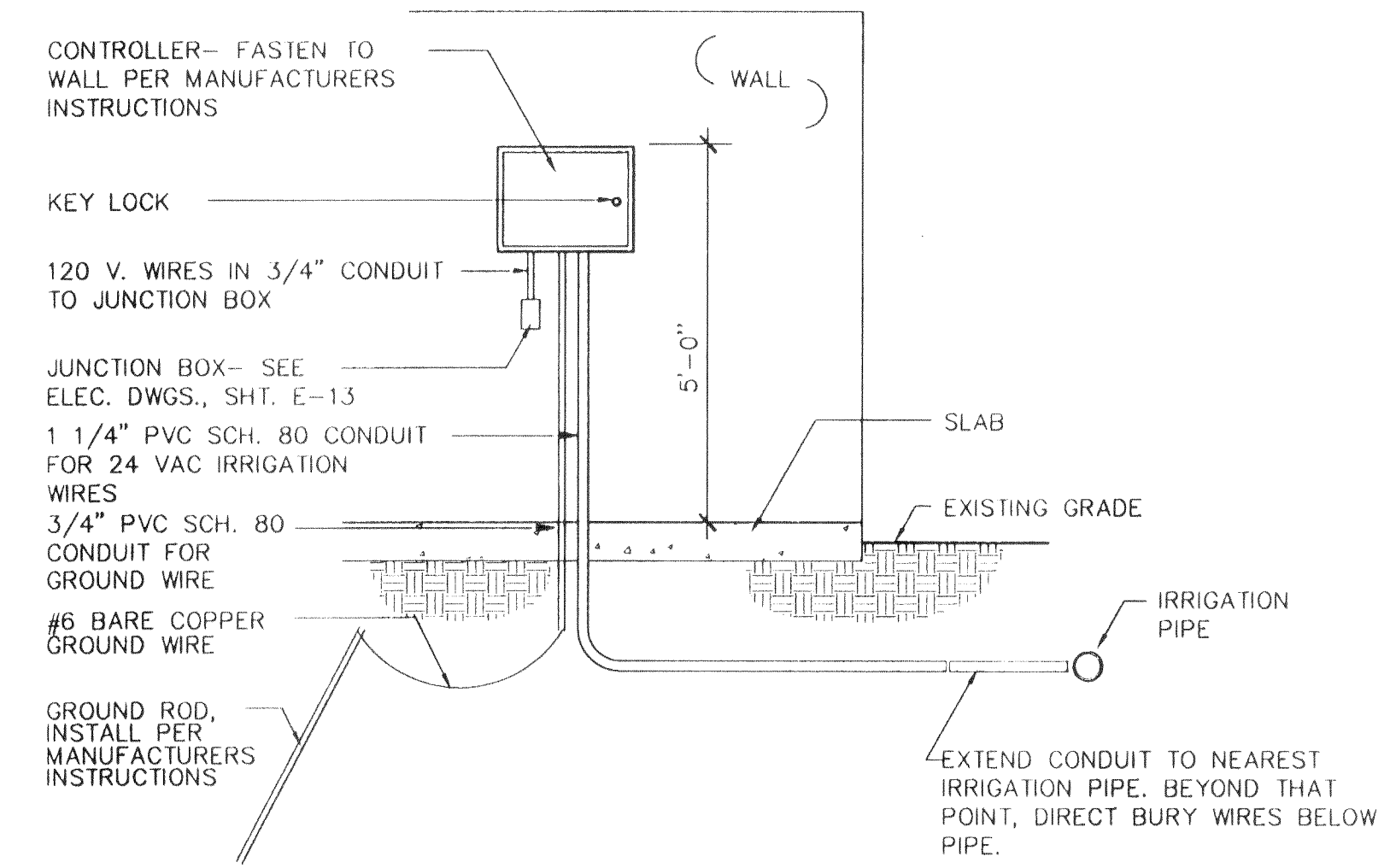
PIPE TRENCH- PLANTING AREAS

NOT TO SCALE



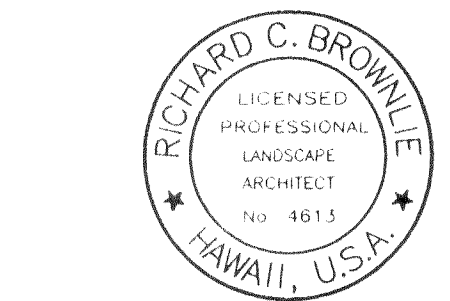
SOLAR IRRIGATION CONTROLLER

NOT TO SCALE



IRRIGATION CONTROLLER

NOT TO SCALE



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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H1-1(232)	2000	83	84

- NOTES:
- ALL PIPE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTALLATION SPECIFICATIONS.
 - PIPING TO BE SNAKED SIDE TO SIDE IN TRENCH TO ALLOW FOR EXPANSION AND CONTRACTION.
 - ALL WIRING IN CONDUIT TO BE INSTALLED IN ACCORDANCE WITH LOCAL CODES.
 - PROVIDE MINIMUM COVERS AS FOLLOWS:
MAINS = 18"
LATERALS = 12"
LATERALS UNDER PAVING (EXCLD. ROADWAYS) = 18"
CONDUIT = 18"
 - WHEN TRENCHING THROUGH EXISTING PAVEMENT, RESTORE PAVEMENT TO ORIGINAL CONDITION.
 - WHEN INSTALLING MORE THAN ONE PIPE PER TRENCH, CLEARANCE BETWEEN PIPES SHALL BE PER SPECIFICATIONS.
 - INSTALL SPRINKLER HEADS, VALVES, AND PIPES WITHIN LANDSCAPE AREAS, UNLESS OTHERWISE NOTED ON PLAN.
 - INSTALL IRRIGATION HEADS ADJACENT TO PARKING SPACES ON ENDS OF STALL LINES TO PREVENT VEHICULAR DAMAGE TO HEADS.
 - ADJUST SPRINKLER HEAD NOZZLES FOR HEAD-TO-HEAD COVERAGE WHILE MINIMIZING OVERSPRAY.
 - ADJUST FLOW CONTROL ON ELECTRIC VALVES TO MINIMIZE MISTING.
 - COORDINATE SLEEVE INSTALLATION WITH SITE CONTRACTOR. COORDINATE CONTROLLER INSTALLATION WITH ELECTRICAL CONTRACTOR.
 - IRRIGATION SYSTEMS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND ARE SUBJECT TO ADJUSTMENTS DUE TO UNANTICIPATED FIELD CONDITIONS.
 - INSTALL IRRIGATION WIRES UNDER MAIN FOR PROTECTION. IF IRRIGATION WIRES DO NOT FOLLOW MAIN, INSTALL IN PVC SCH. 80 CONDUIT 18" (MIN.) BELOW FINISH GRADE.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

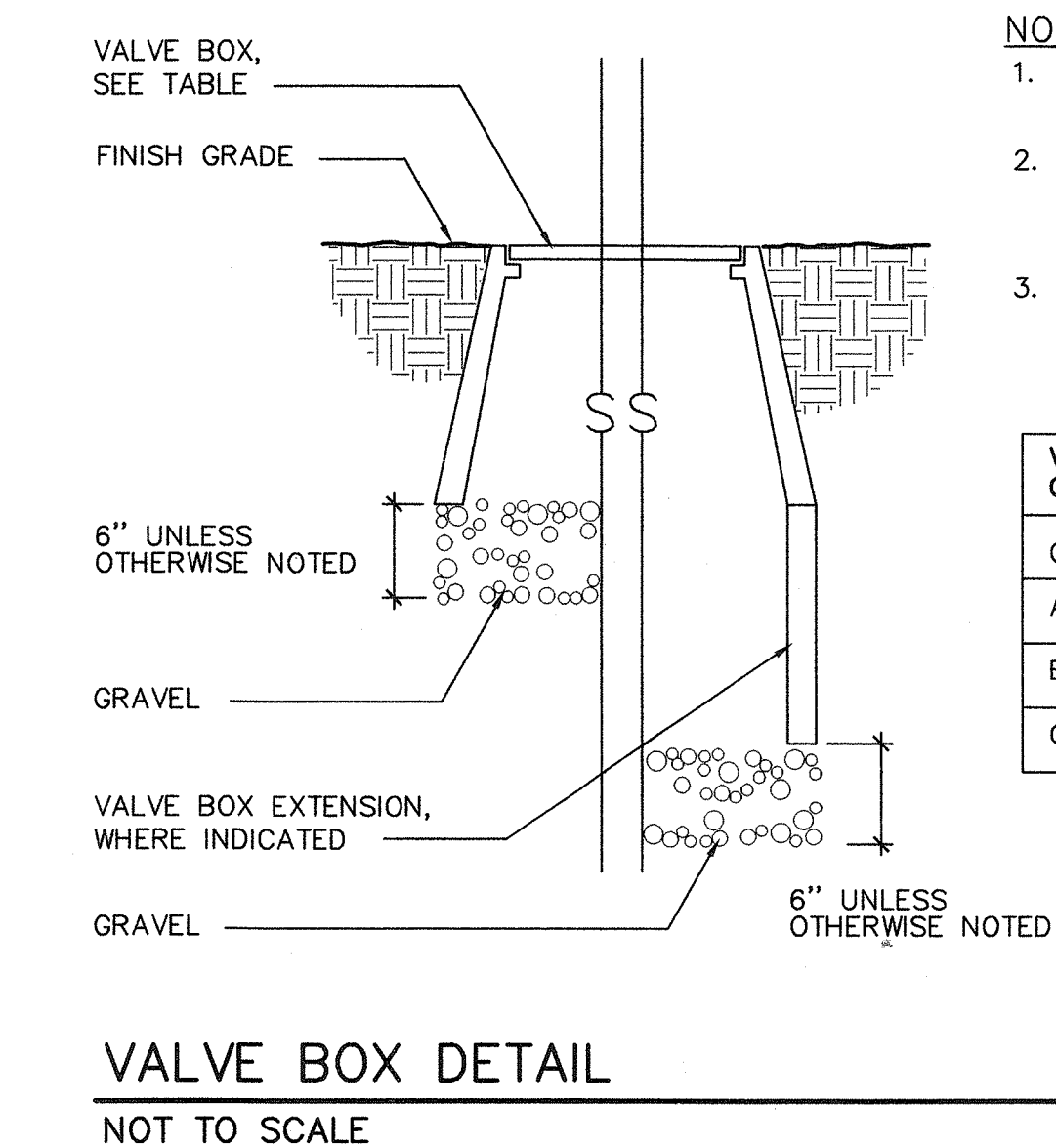
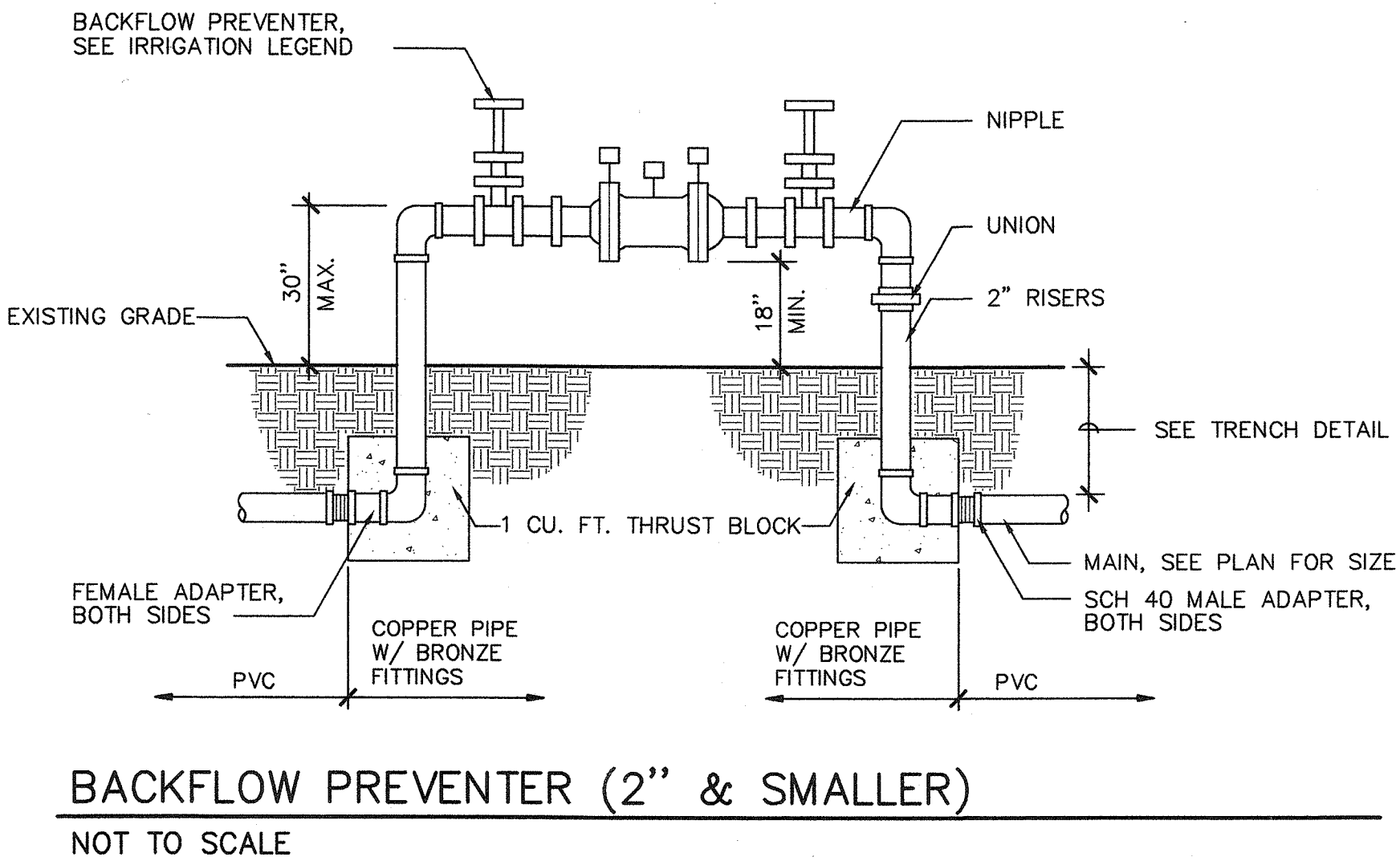
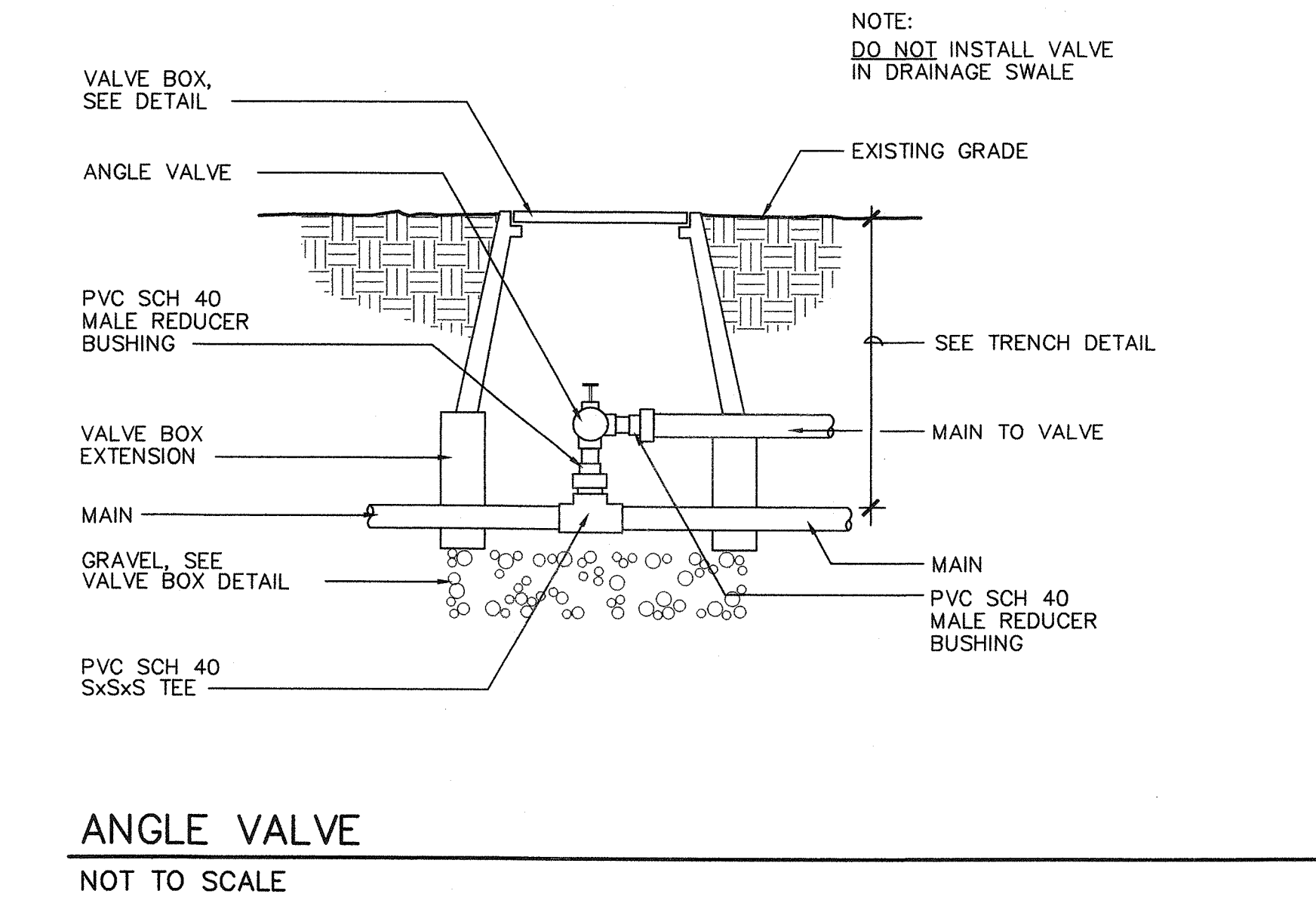
IRRIGATION DETAILS-1

INTERSTATE ROUTE H-1
PUNAHOU ST. OFF-RAMP IMPROVEMENTS
F.A.I. Proj. No. IM-H1-1(232)

Scale: As Noted Date: 4/28/00

SHEET No. L-6 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-H1-1(232)	2000	84	84

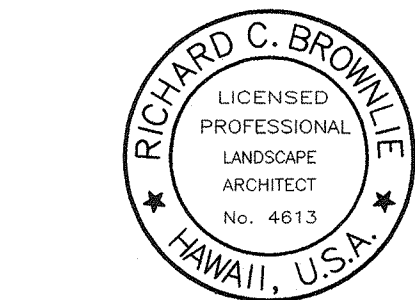
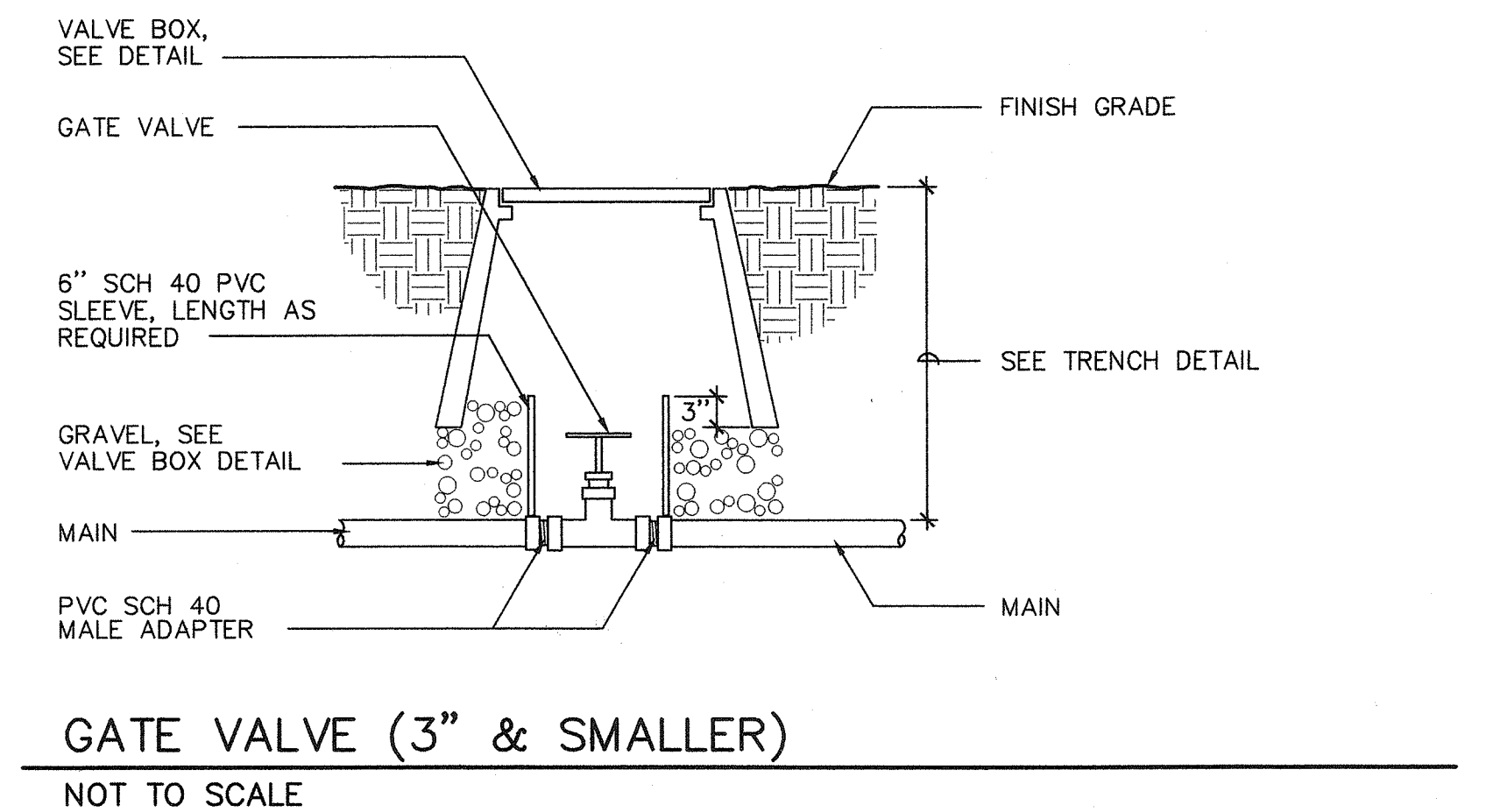
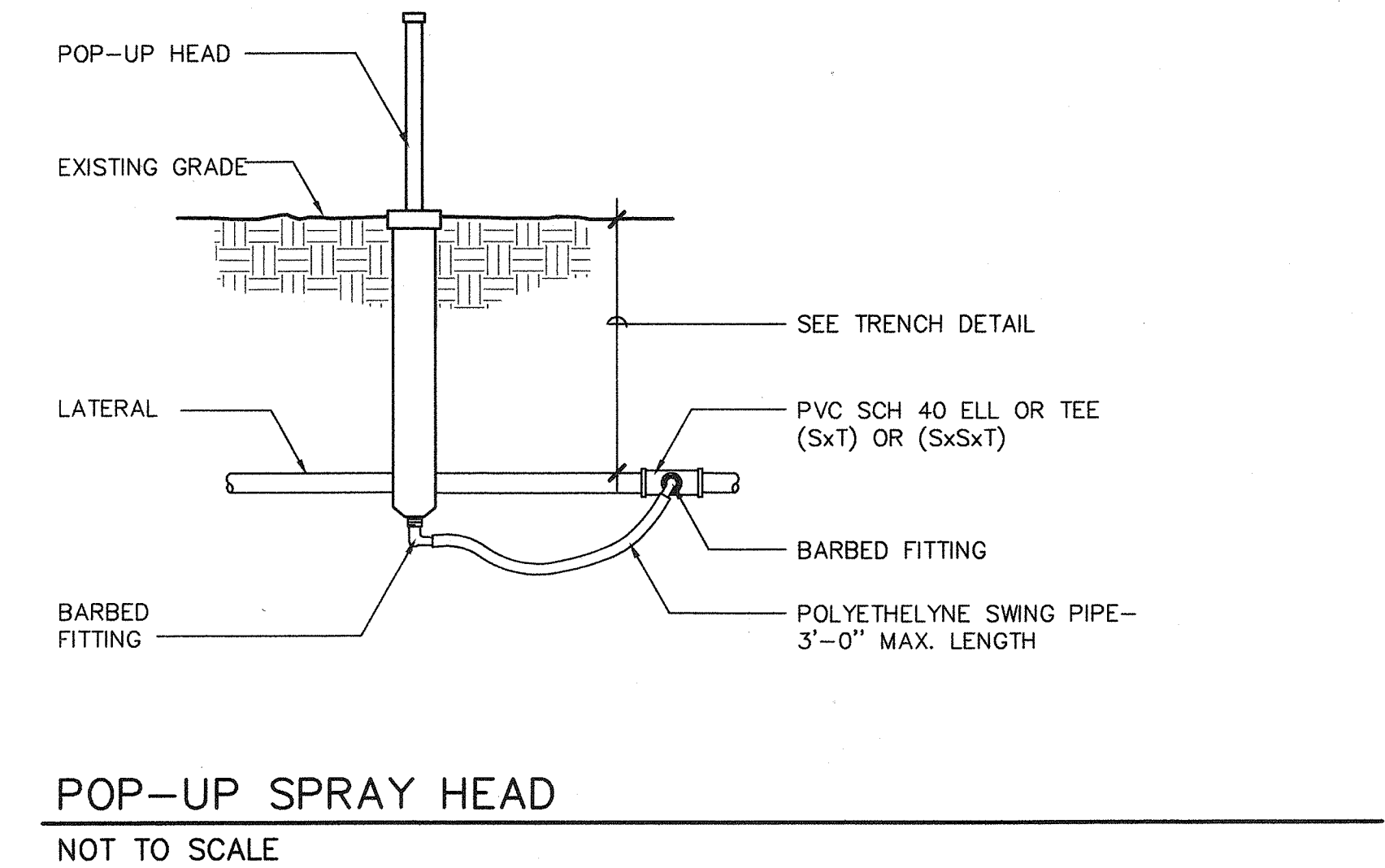
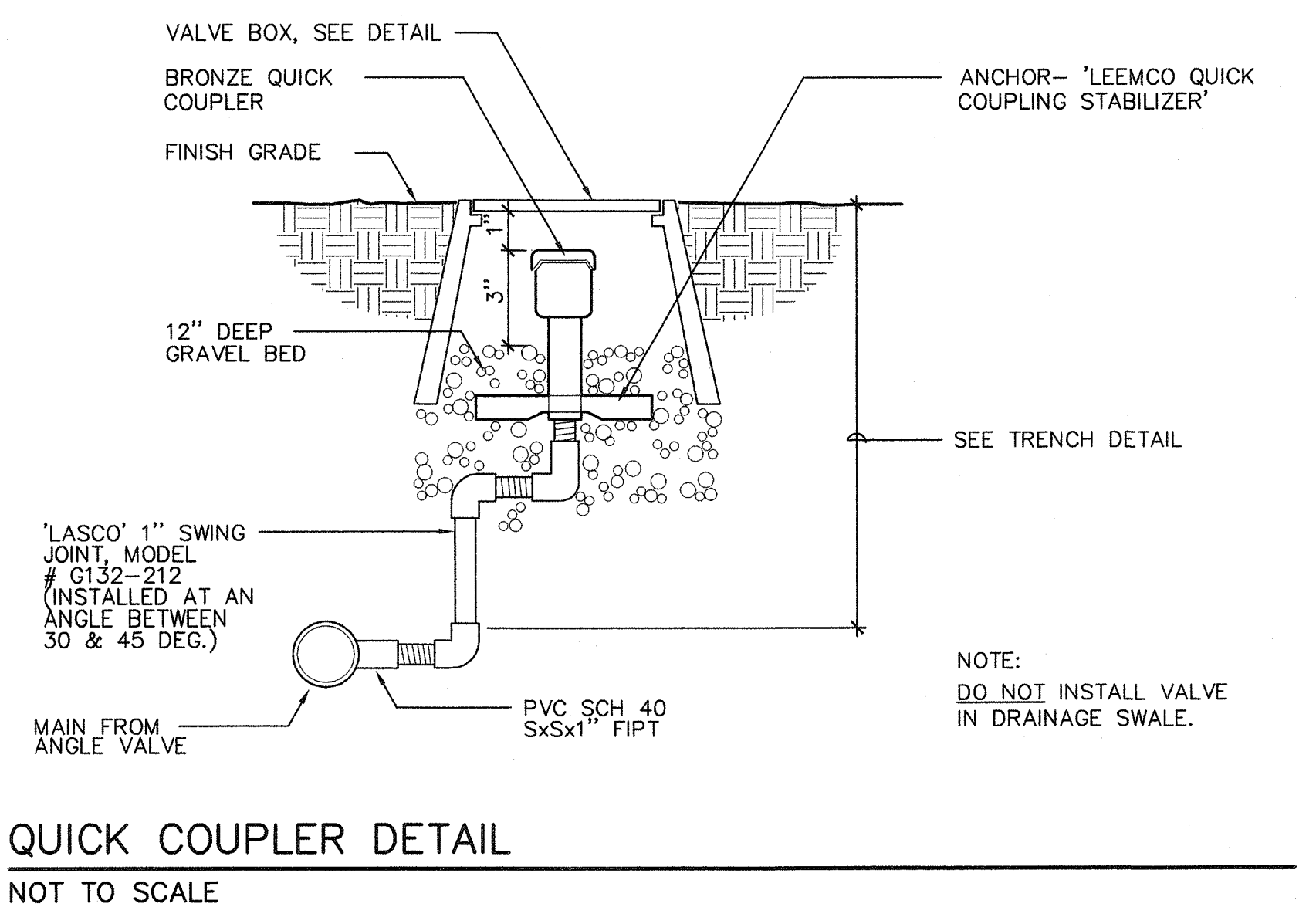
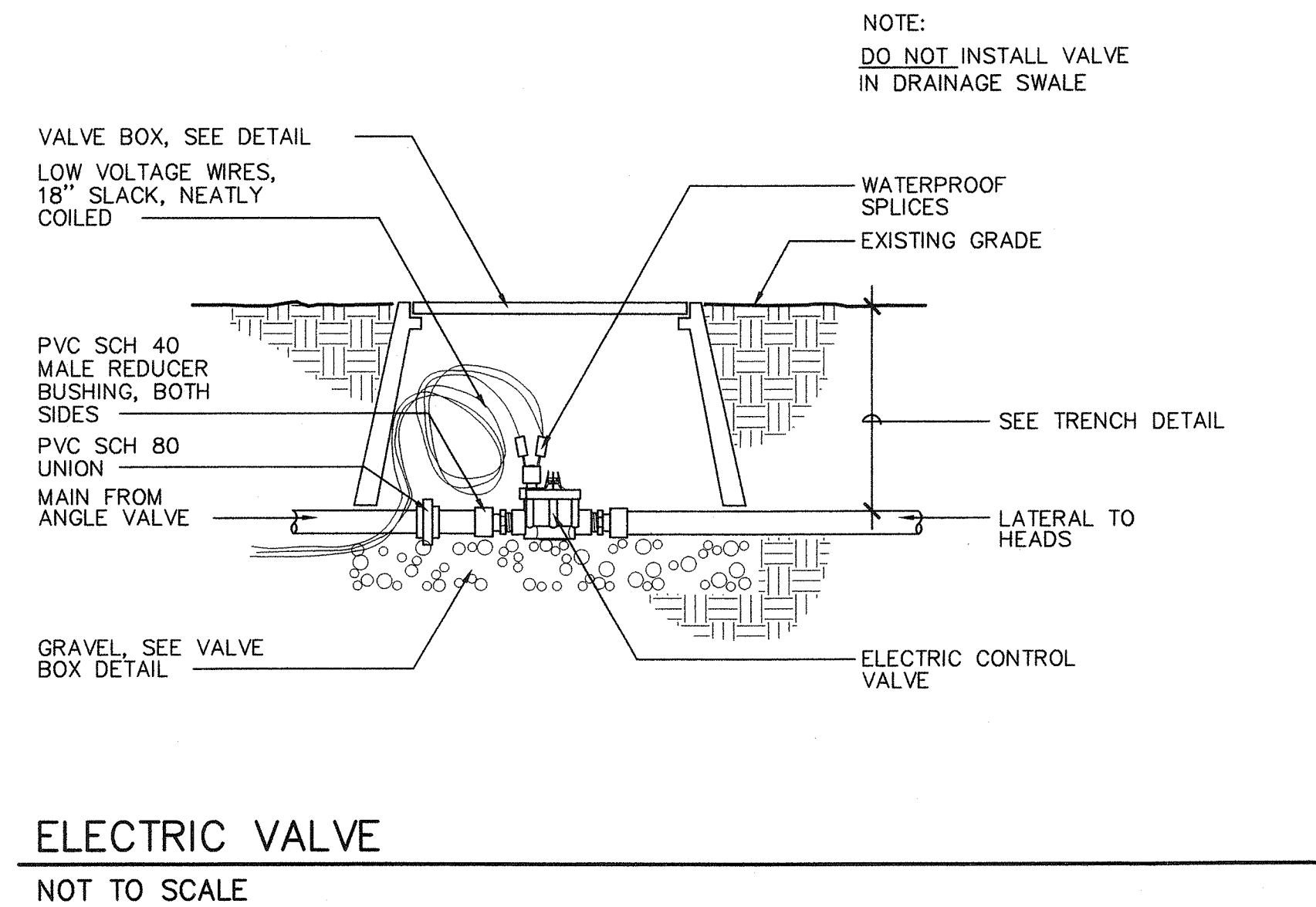
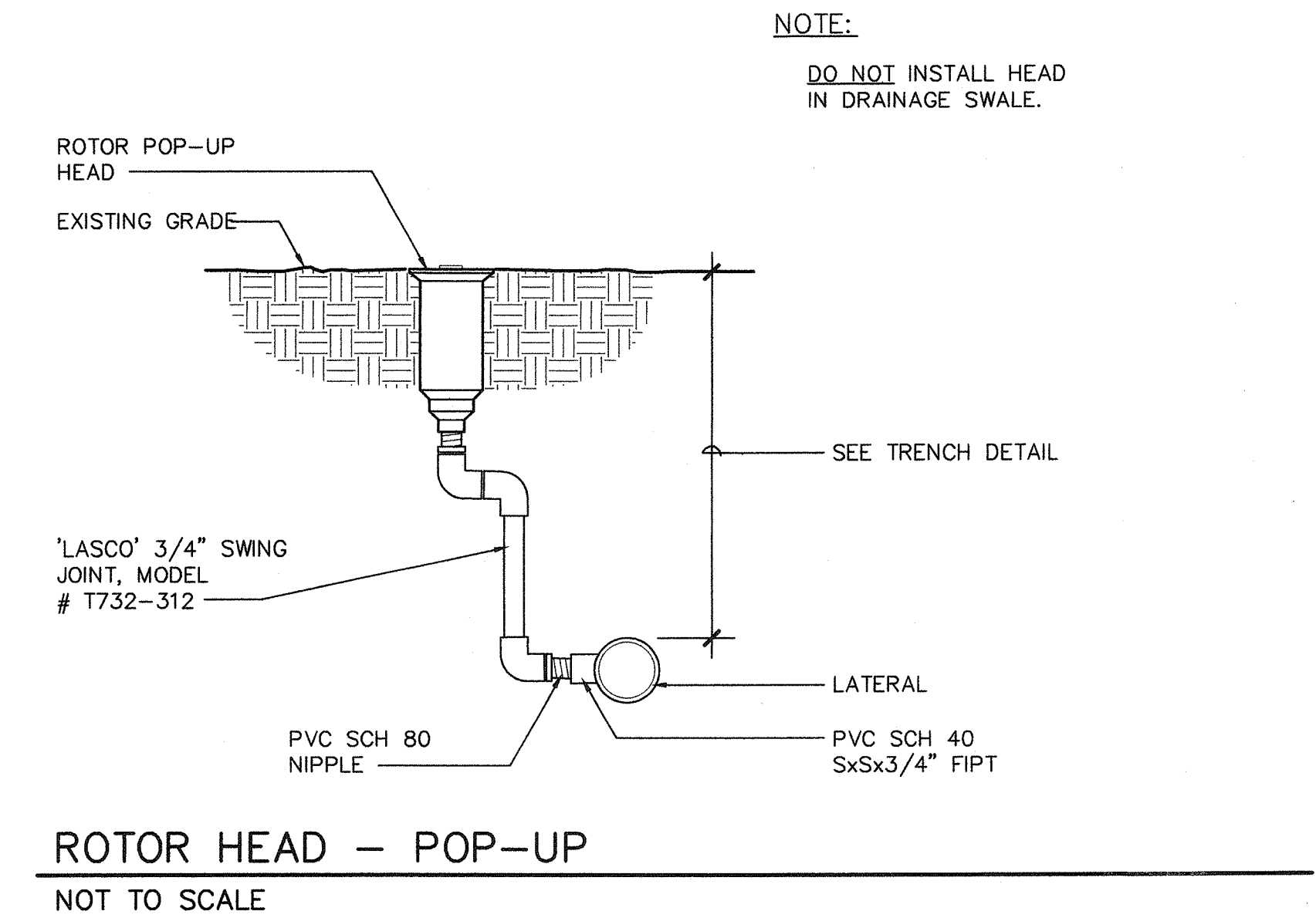


NOTES:

- DO NOT INSTALL VALVE BOX IN DRAINAGE SWALE
- VALVE BOX EXTENSIONS SHALL BE COMPATIBLE WITH CORRESPONDING VALVE BOX
- 1 VALVE PER VALVE BOX UNLESS OTHERWISE NOTED

VALVE BOX CONTENTS	VALVE BOX MODEL NO. (OR APPROVED EQUAL)
GATE VALVE	'CARSON' 910-10-4
ANGLE VALVE	'CARSON' 910-10-4
ELECTRIC VALVE	'CARSON' 1419B-12-4
QUICK COUPLER	'CARSON' 809-9-4

VALVE BOX TABLE



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

IRRIGATION DETAILS-2

INTERSTATE ROUTE H-1
PUNAHOU ST. OFF-RAMP IMPROVEMENTS
F.A.I. Proj. No. IM-H1-1(232)
Scale: As Noted Date: 4/28/00
SHEET No. L-7 OF 7 SHEETS

ORIGINAL
PLAN
DATE: _____
DRAWN BY: _____
DESIGNED BY: _____
CHECKED BY: _____
No. _____

SURVEY PLOTTED BY: _____
NOTE BOOK
QUANTITIES BY: _____
DESIGNED BY: _____
CHECKED BY: _____
No. _____