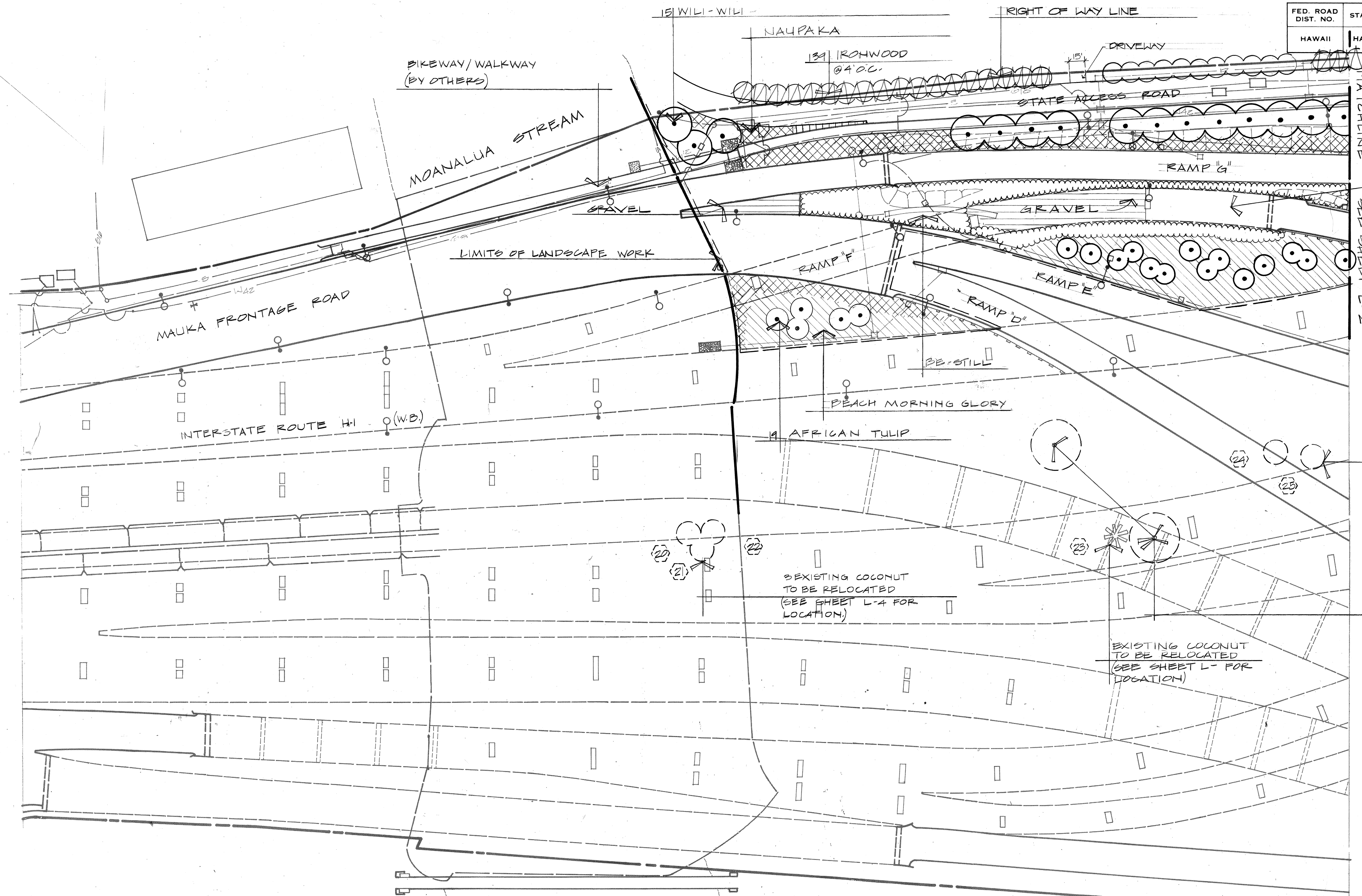


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	144(13):17	1977	196	394



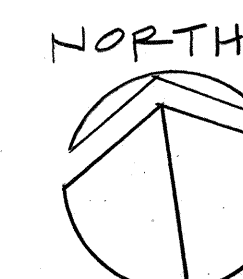
NO WORK REQUIRED THIS AREA.

2 EXISTING COCONUT TO BE RELOCATED (SEE SHEET L-4 FOR LOCATION)

EXISTING MONKEY POD TO BE RELOCATED (SEE SHEET L-4 FOR LOCATION)

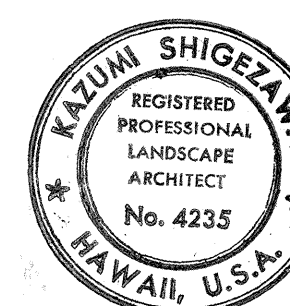
3 EXISTING COCONUT TO BE RELOCATED (SEE SHEET L-4 FOR LOCATION)

EXISTING COCONUT TO BE RELOCATED (SEE SHEET L-4 FOR LOCATION)



SCALE: 1" = 50' - 0"

SURVEY NOTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	



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NO.	REVISION	DATE
1	THIS SHEET SUPERSEDES PAGE 116 DATED JAN. 15, 1978	1-13-80

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

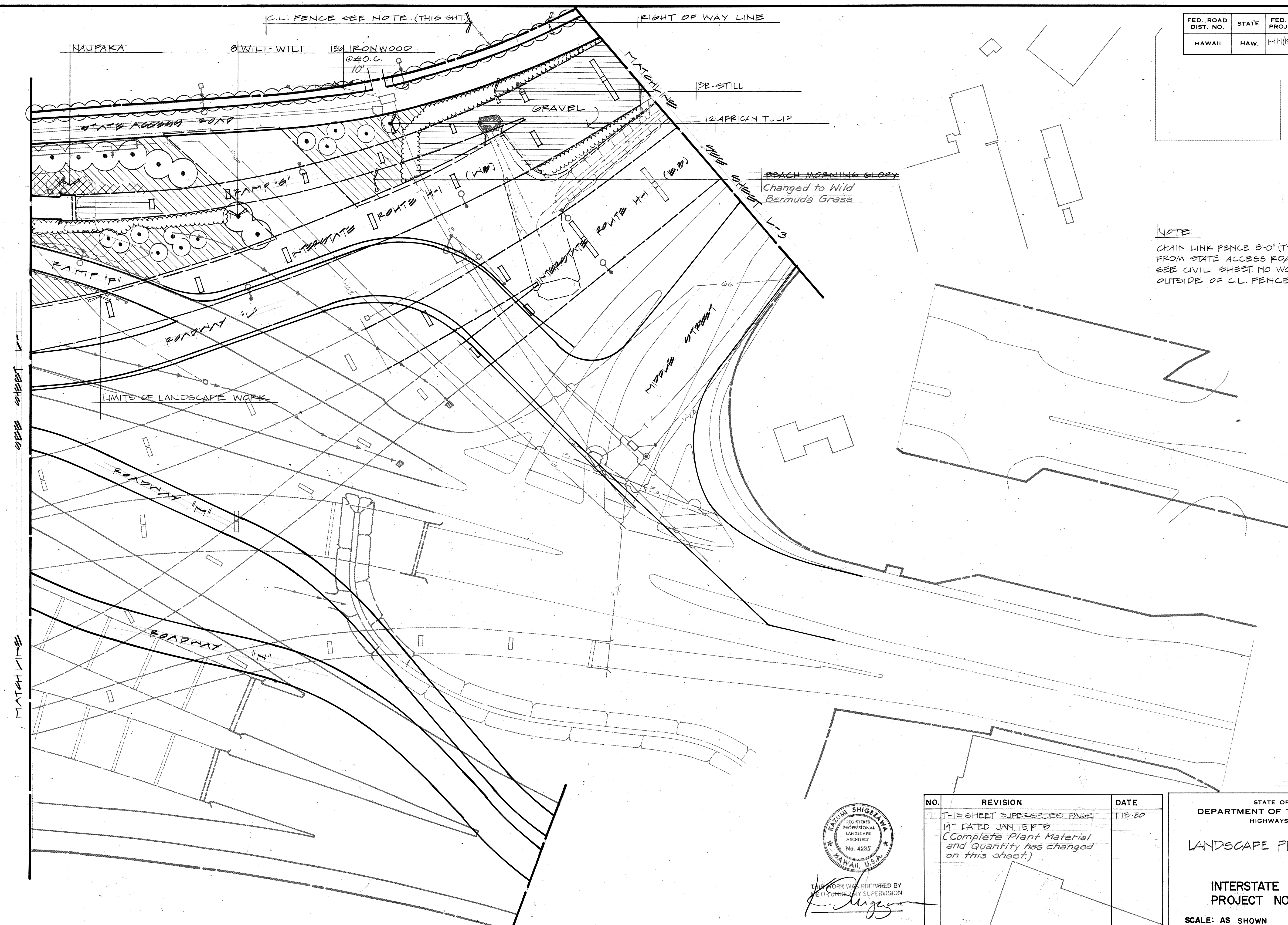
LANDSCAPE PLANTING PLAN

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1 (131):17

SCALE: AS SHOWN DATE: JAN 15, 1980

SHEET NO. L-1 OF 19 SHEETS

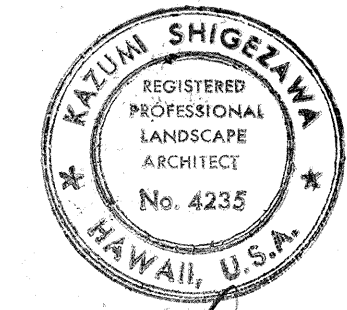
C.O.196



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HH(131):17	1977	197	394

NOTE:
CHAIN LINK FENCE 8'0" (TYP) IN FROM STATE ACCESS ROAD. SEE CIVIL SHEET NO WORK OUTSIDE OF C.L. FENCE (TYP)

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	



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K. Shigelawa
IN RECOGNITION OF SUPERVISION

NO.	REVISION	DATE
1	THIS SHEET SUPERSEDES PAGE 147 DATED JAN. 15, 1978 (Complete Plant Material and Quantity has changed on this sheet.)	1-18-80

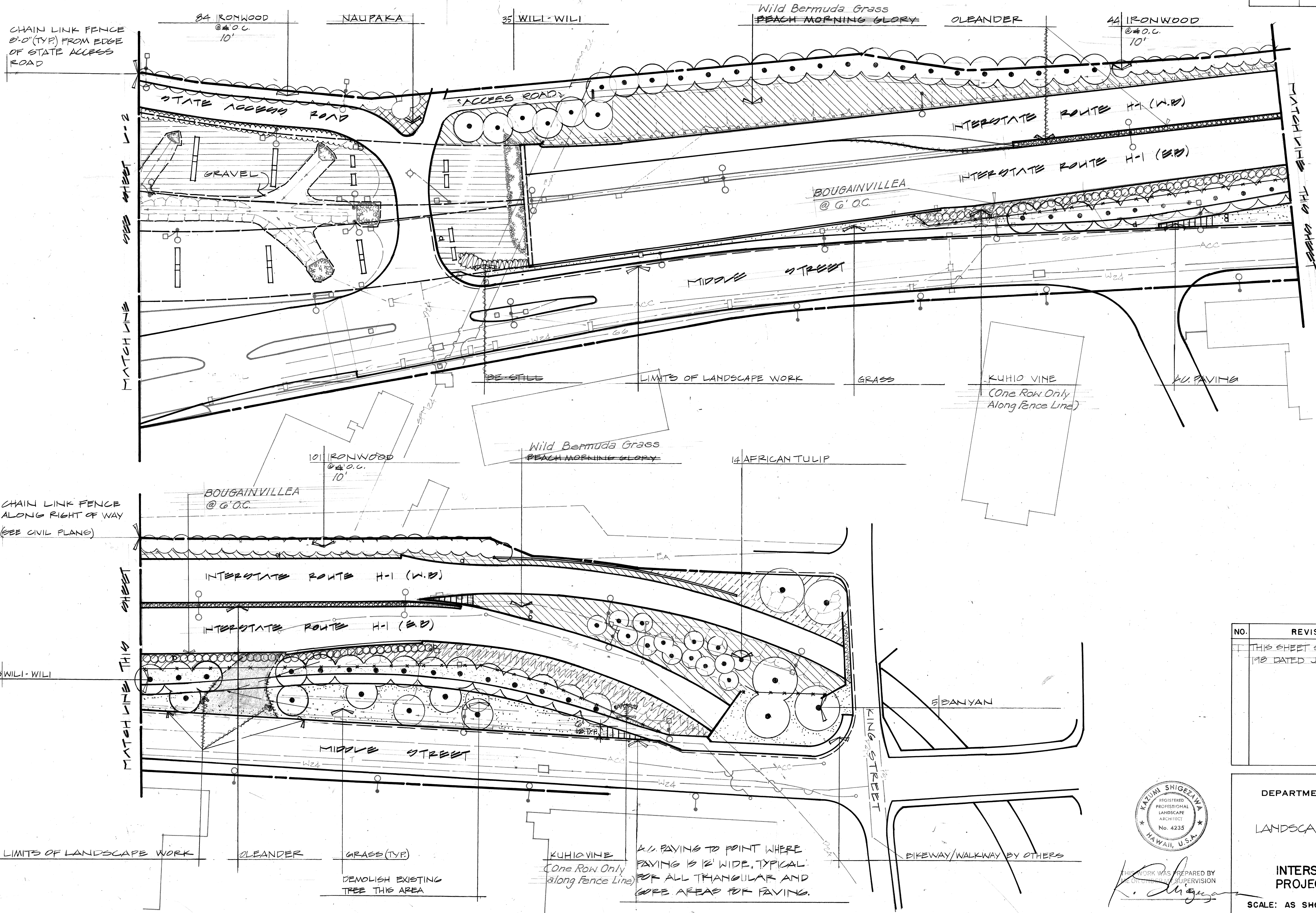
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1 (131):17

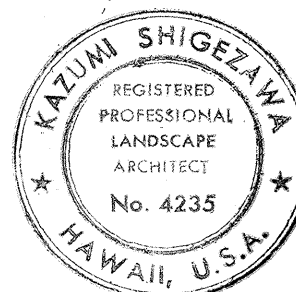
SCALE: AS SHOWN DATE: JAN 15, 1980

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H-1-1(131):17	1977	198	344



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

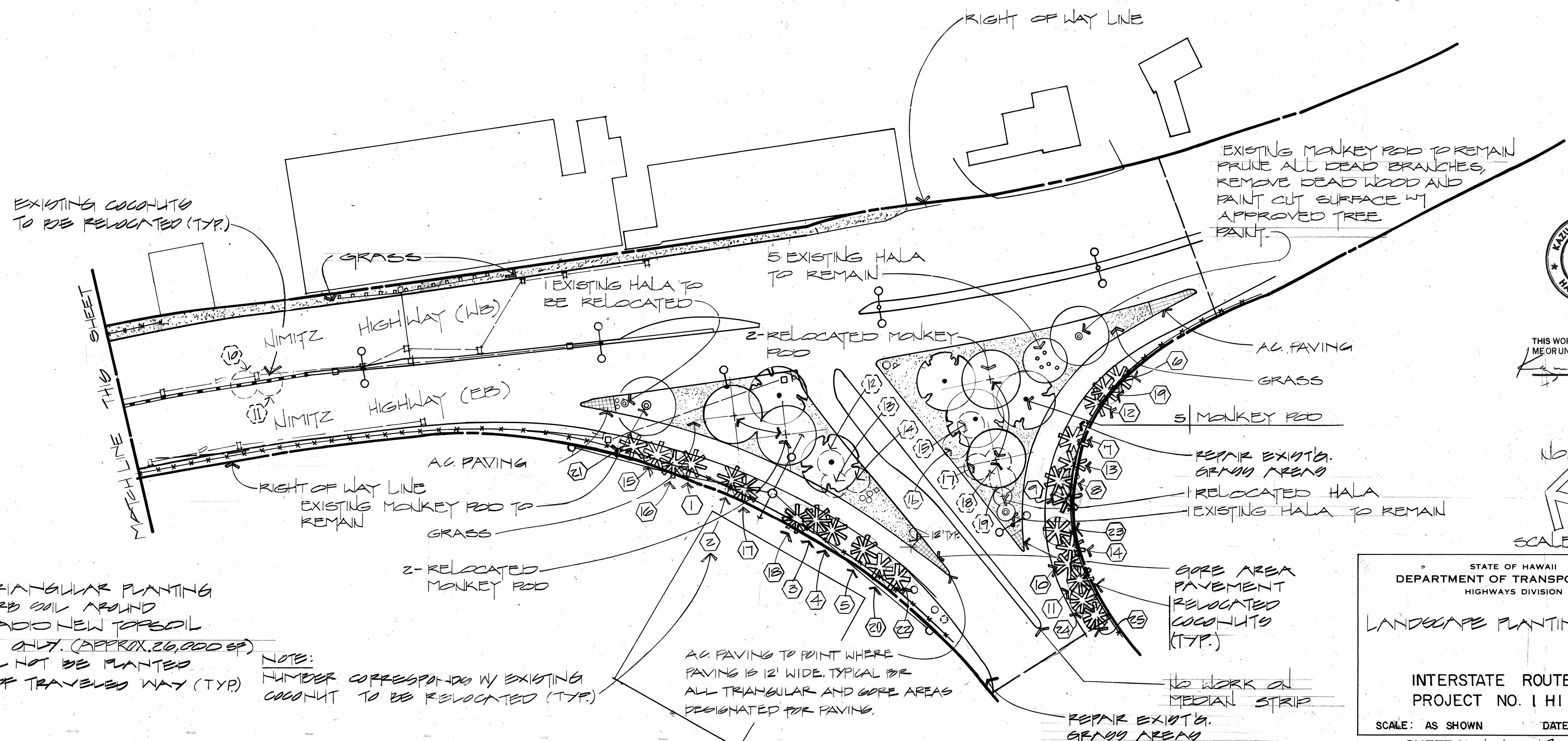
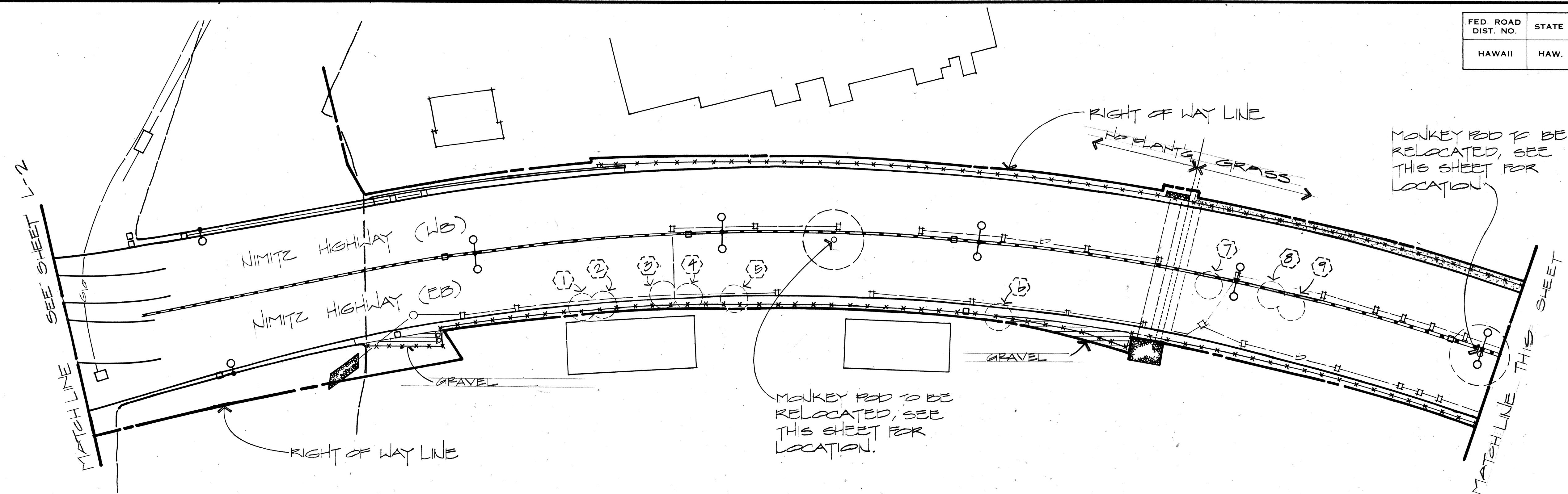
NO.	REVISION	DATE
1	THIS SHEET SUPERSEDES PAGE 198 DATED JAN. 15, 1978	1-15-80



THIS WORK WAS PREPARED BY
K. Shigemawa
UNDER THE CLOSE SUPERVISION
OF
K. Shigemawa

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
LANDSCAPE PLANTING PLAN
INTERSTATE ROUTE H-1 PROJECT NO. I-H-1 (131):17
SCALE: AS SHOWN DATE: JAN 15, 1978
SHEET NO. 198 OF 199 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H-1(131)17	1977	199	214



- NOTES:
- EXCAVATE 6" SOIL IN TRIANGULAR PLANTING ISLANDS. DO NOT DISTURB SOIL AROUND EXISTING TREE ROOTS. ADD NEW TOPSOIL IN EXCAVATED AREAS ONLY. (APPROX. 20,000 SF)
 - COCONUT TREES SHALL NOT BE PLANTED WITHIN 10'-0" OF EDGE OF TRAVELED WAY (TYP)

NOTE:
NUMBER CORRESPONDS W/ EXISTING COCONUT TO BE RELOCATED (TYP.)



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NORTH
SCALE: 1" = 50'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING PLAN

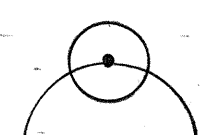
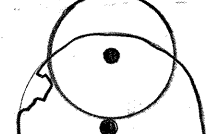
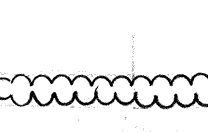
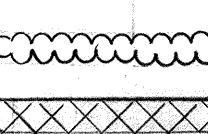
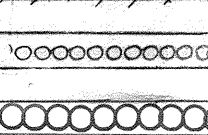
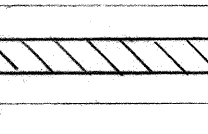
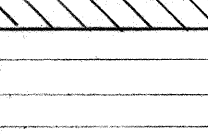
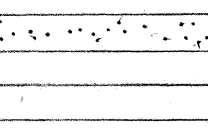
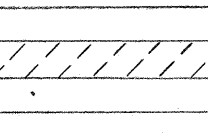
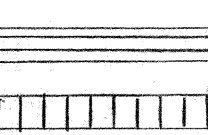
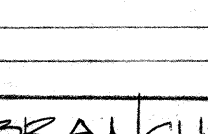
INTERSTATE ROUTE H-1
PROJECT NO. H-1(131)17
SCALE: AS SHOWN
DATE: JAN 13, 1978
SHEET NO. L-4 OF 19 SHEETS

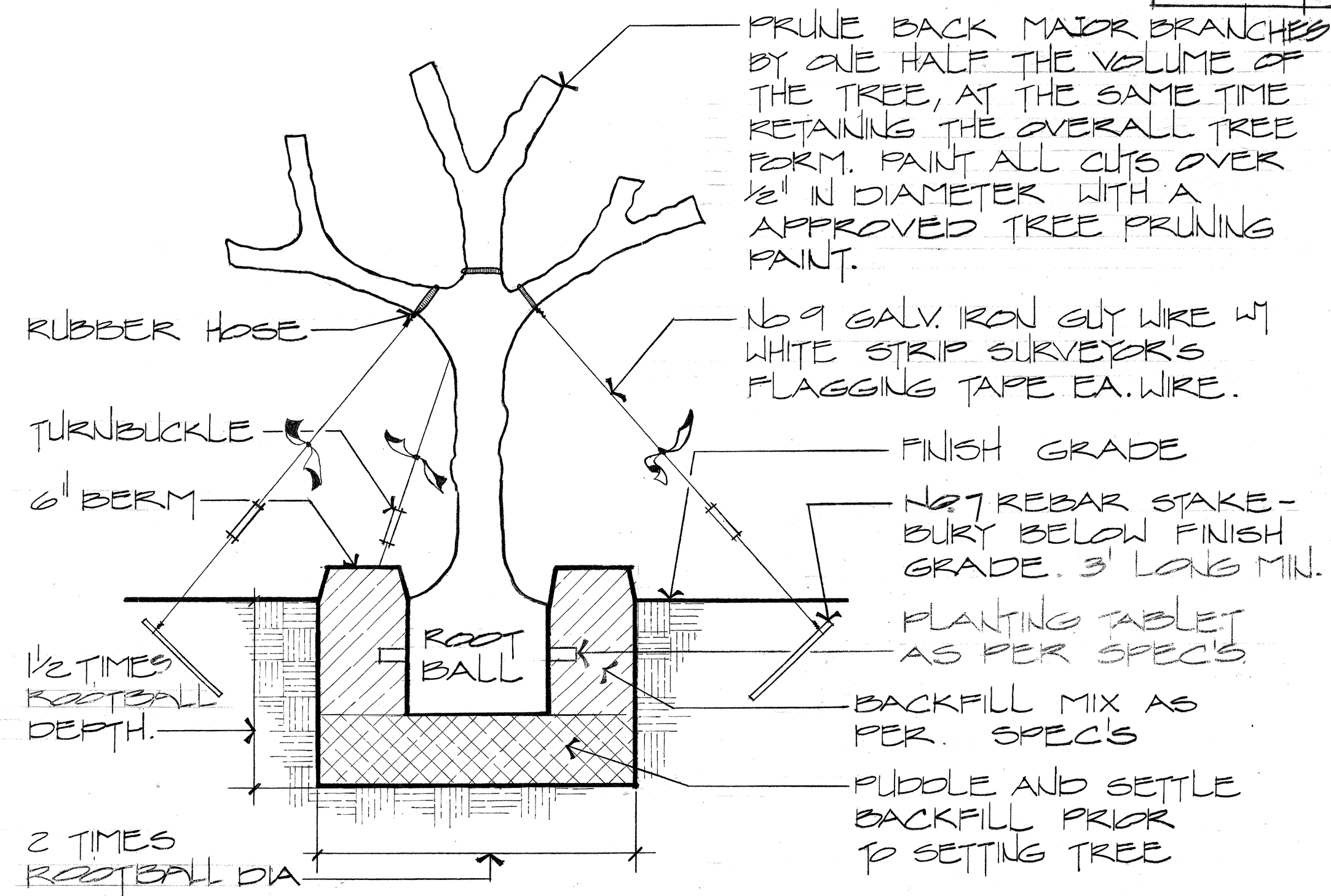
DATE	_____
SURVEY PLOTTED BY	_____
ORIGINAL PLAN	_____
DRAWN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
NO.	_____

GENERAL NOTES

1. ALL AREAS DESIGNATED FOR GORE AREA PAVEMENT SHALL BE CONSTRUCTED OF COMPACTED SUB-GR, 6" BASE COURSE AND
2. PLANT LIST DOES NOT INCLUDE PLANTS TO BE RELOCATED, REFER TO PLANS FOR LOCATIONS AND QUANTITY OF PLANTS DESIGNATED FOR RELOCATION.
3. FOR ALL GORE AREA PAVEMENT, INSTALL A 2'x6" CONSTRUCTION HEART ROND HEADERS ON PAVEMENT EDGE FACING PLANTING AREAS. HEADERS SHALL BE STAKED W/ 18 INCH LONG NO. 4 REBAR @ 3'-0" O.C. AND @ ENDS. REBARS SHALL NOT PROTRUDE ABOVE FINISH GRADE.

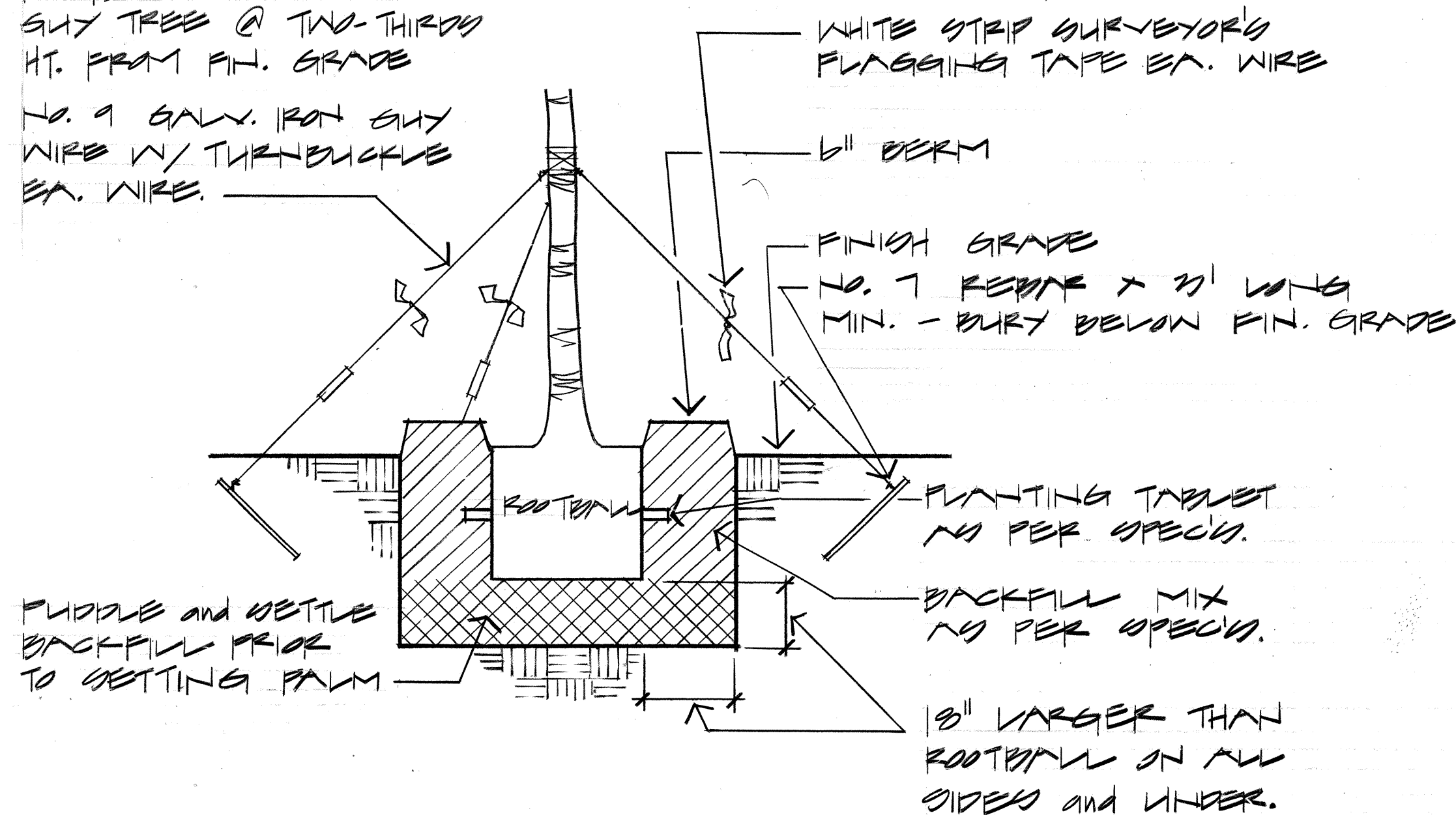
PLANT LIST

SYMBOLS	QUANT	BOTANICAL NAME	COMMON NAME	SIZE	CAL'R	HEIGHT	SPR'D	REMARKS
TREES:								
	45	SPATHODEA CAMPANULATA	AFRICAN TULIP	5 GAL.	1"	5'	2'	
	5	FICUS RETUSA	BANYAN	5 GAL.	1"	5'	3'	
	524	CASUARINA EQUISETIFOLIA	IRONWOOD	2 1/2 GAL.	1"	3'	2'	10' 4" O.C.
	79	ERYTHRINA SANDWICENSIS	WILI-WILI	5 GAL.	1"	5'	3'	
	5	SAMANEA SAMAN	MONKEY POD	5 GAL.	1"	5'	3'	
SHRUBS:								
	1,450	THEVETIA PERUVIANA	BE-STILL	5 GAL.		4'	2"	5' O.C.
	2,305	SCAEVOLA FRUTESCENS	NAUPAKA	1 GAL.		12"		3' O.C.
	420	NERIUM INDICUM (SINGLE PINK VAR. ONLY)	OLEANDER	1 GAL.		18"		3' O.C. / 2 ROWS
	150	BOUGAINVILLEA SPECTABILIS (ASSORTED COLORS)	BOUGAINVILLEA	1 GAL.		18"		6' O.C.
GROUND COVER:								
	105,325	IPOMOEA PES-CAPRAE	BEACH MORNING GLORY	CUTTINGS				IN FURROWS / 12" O.C.
GRASS:								
	69,965 #	CYNODON DACTYLON						HYDRO-MULCH (SEE SPEC'S)
VINES:								
	1,400	IPOMOEA HORSEFALLIAE	KUHIO VINE	1 GAL.				6' O.C.
MISCELLANEOUS:								
	57,350 #	GRAVEL						#4 COURSE / 6" LAYER
	4,700 #	AS PAVING						



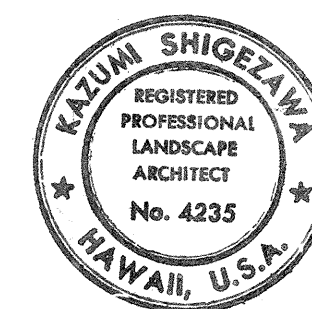
TRANSPLANTED TREES
NO SCALE

NOTE:
GUY TREE @ TWO-THIRD HT. FROM FIN. GRADE
NO. 9 GALV. IRON GUY WIRE W/ TURNBUCKLE EA. WIRE.



TRANSPLANTED COCONUTS
NO SCALE

NO.	REVISION	DATE
1	PLANT MATERIAL AND QUANTITIES	1-15-80



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Kaimi Shigezawa

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANT
LIST AND DETAILS

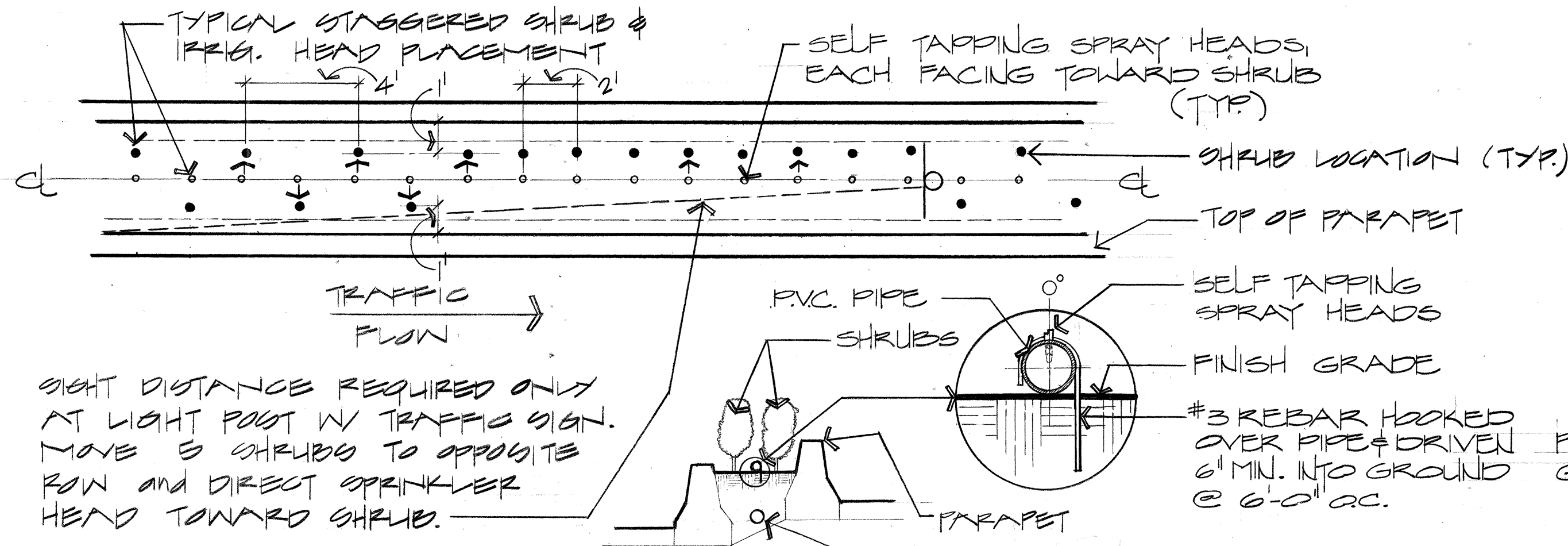
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1 (131)-17

SCALE: AS SHOWN DATE: JAN 13, 1978

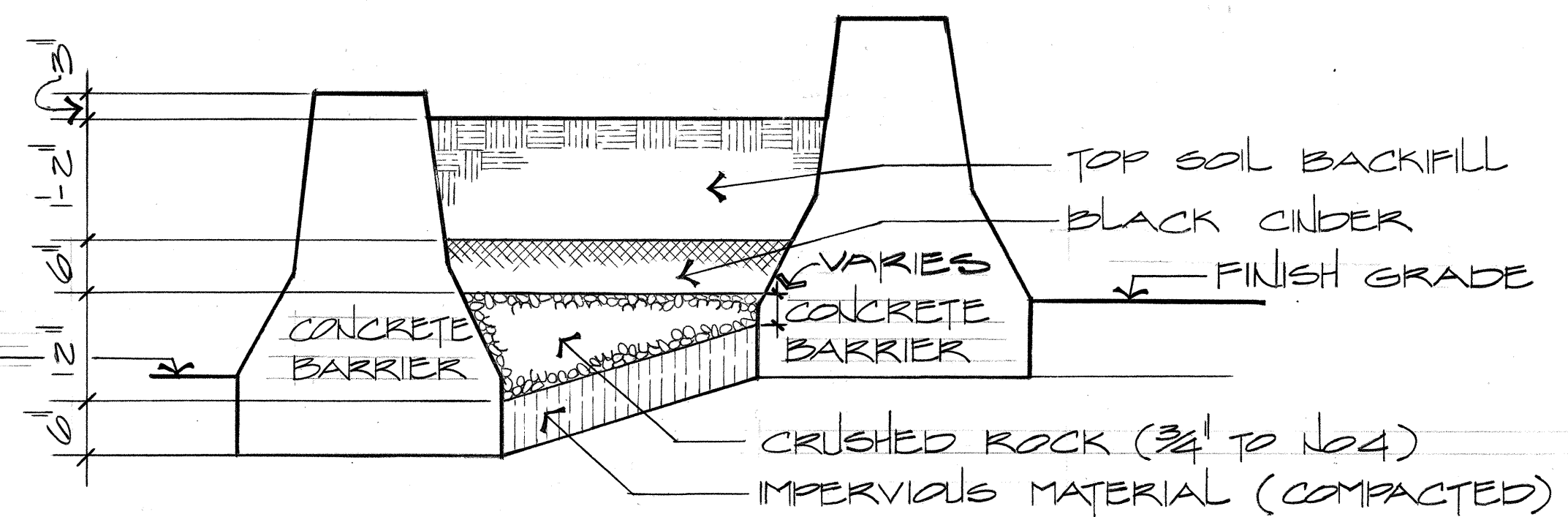
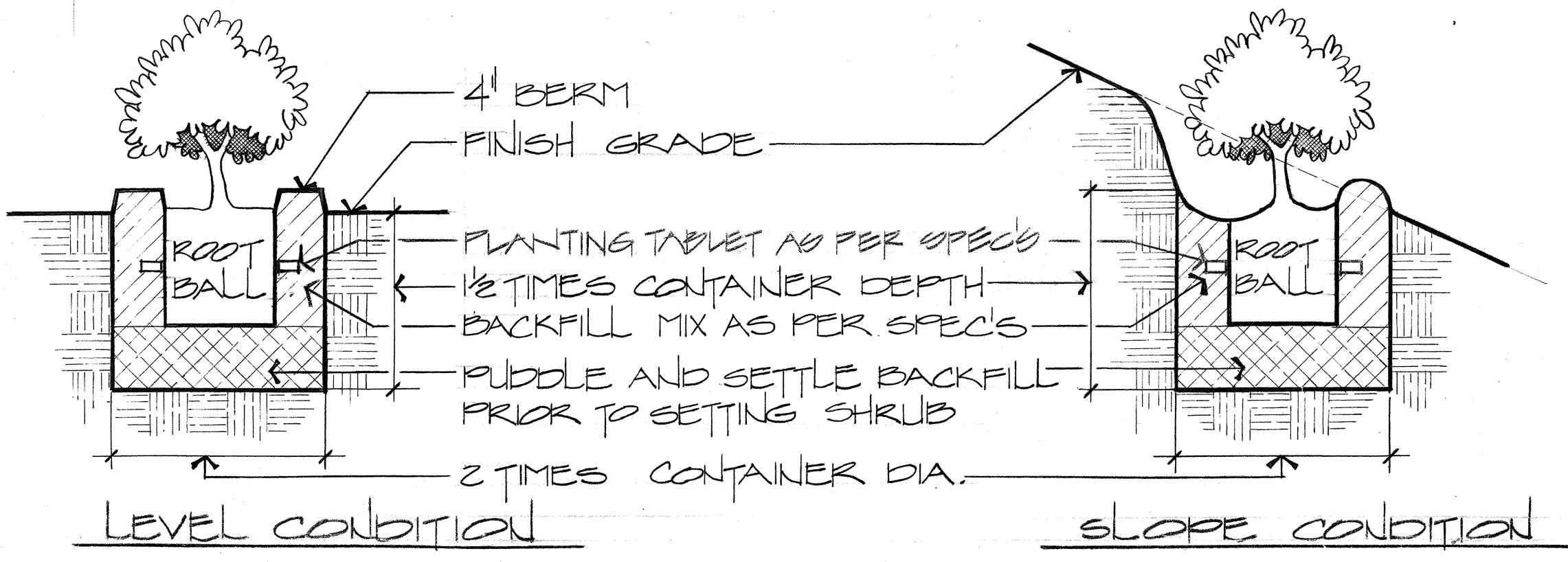
SHEET NO. 6 OF 19 SHEETS

C.O.200

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(130):17	1977	201	214



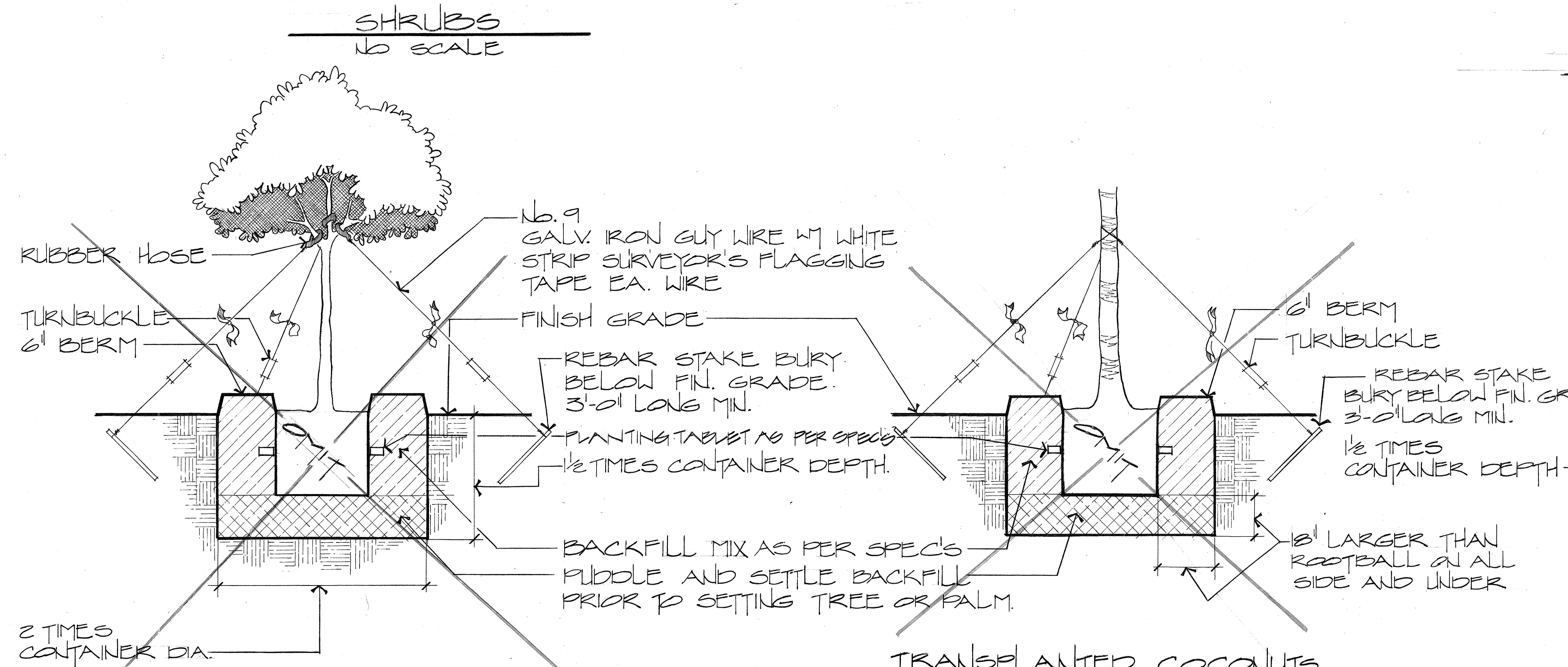
H-1 MEDIAN STRIP PLANTING AND IRRIGATION
NO SCALE



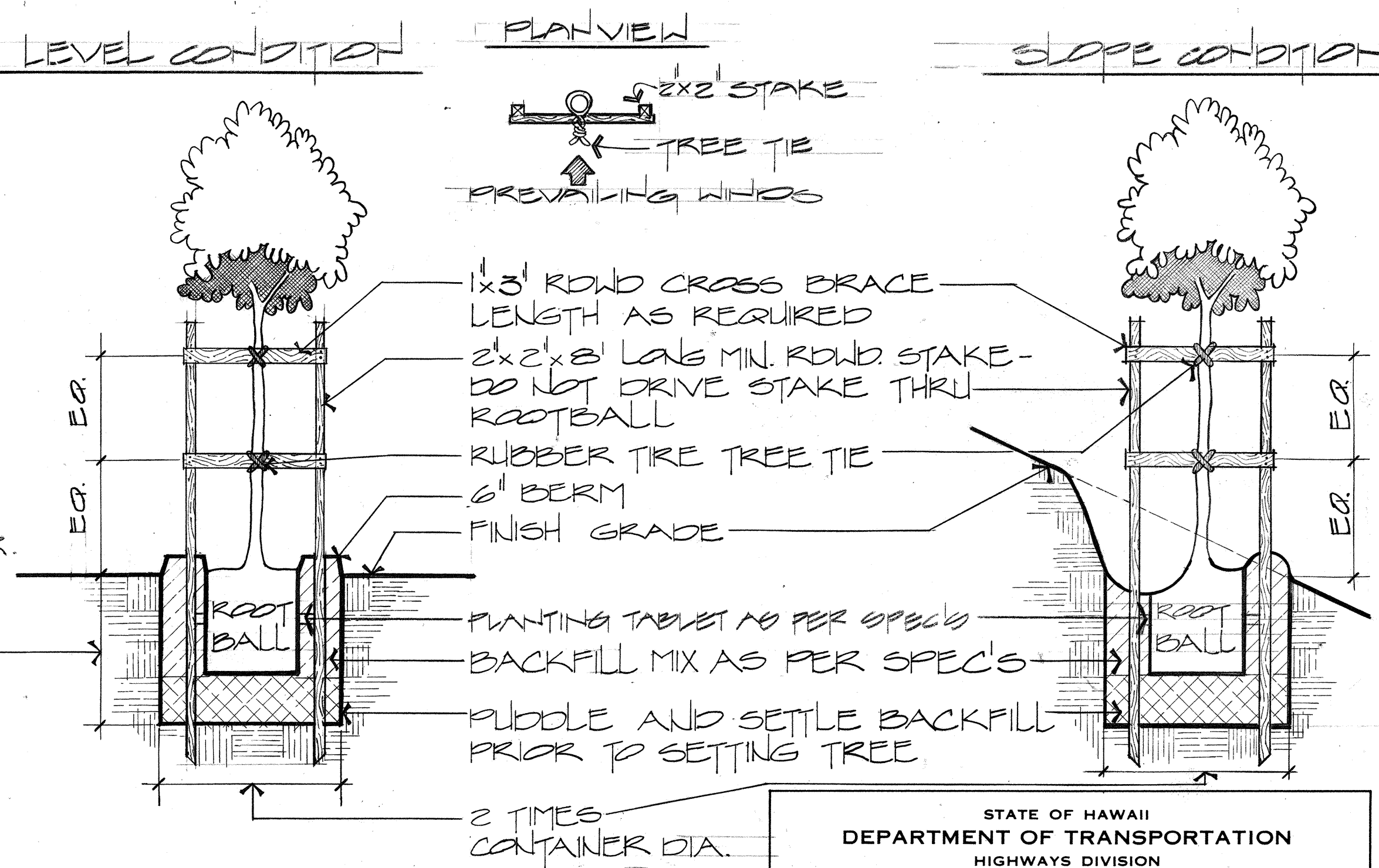
NOTE: CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR ALL MATERIALS USED AS BACKFILL WITHIN THE MEDIAN.

NOTE: SEE SECTION 617 TOPSOIL OF THE SPECIAL PROVISIONS FOR TOPSOIL BACKFILL MIX.

MEDIAN PLANTER BOX BACKFILL DETAIL
NO SCALE

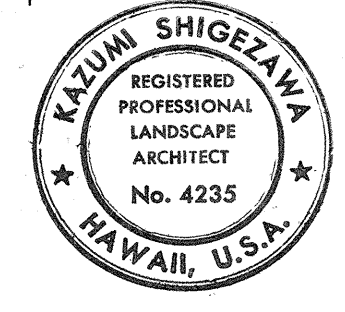


TRANSPLANTED COCONUTS
NO SCALE



5 GALLON TREES
NO SCALE

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
DESIGNED BY: _____
CHECKED BY: _____
NO. _____



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE PLANTING
DETAILS

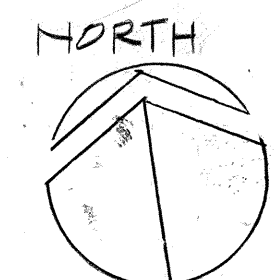
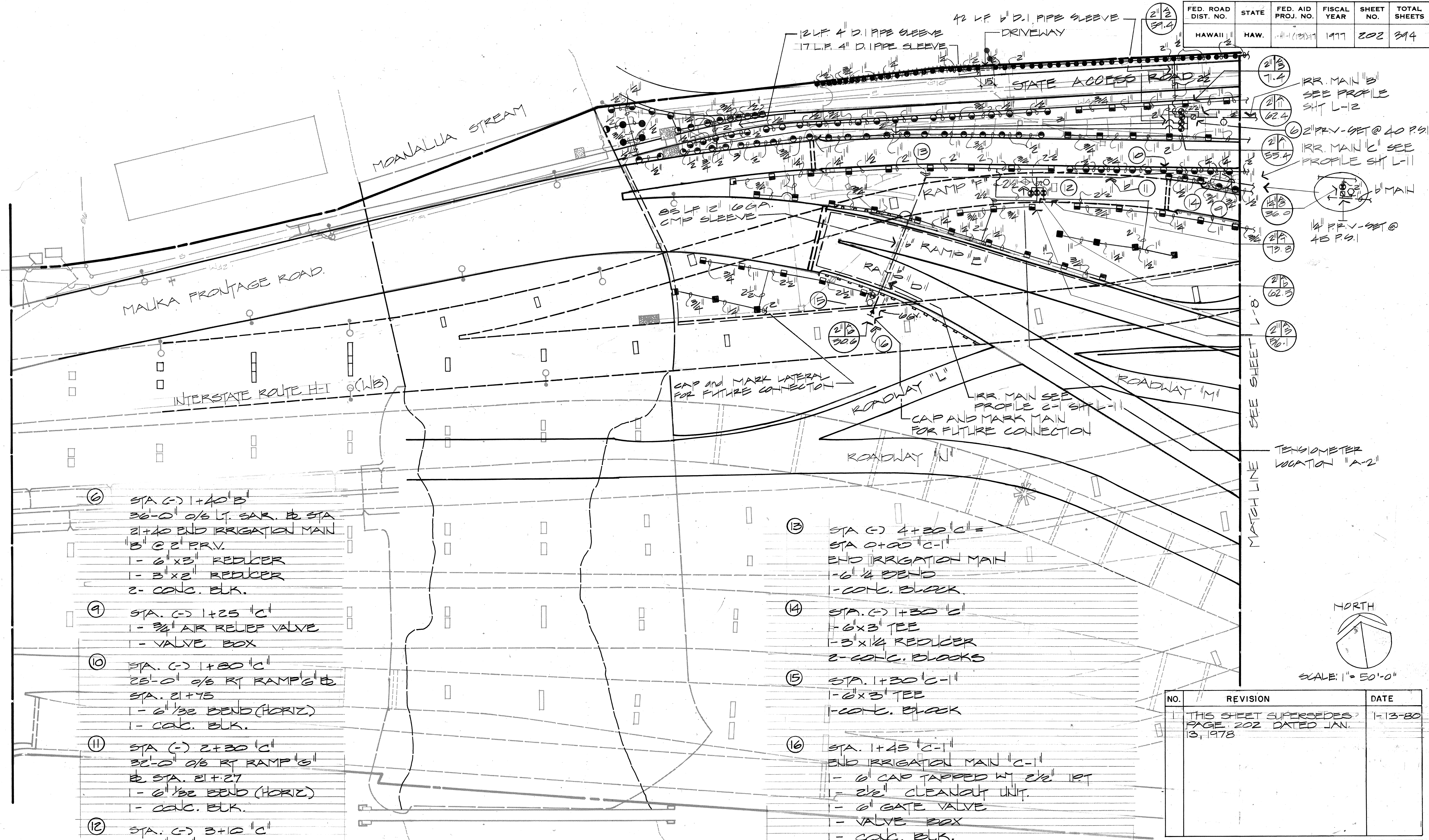
INTERSTATE ROUTE H-1
PROJECT NO. 1-HI-1(130):17

SCALE: AS SHOWN DATE: JAN 13, 1978

SHEET No. 201 OF 19 SHEETS

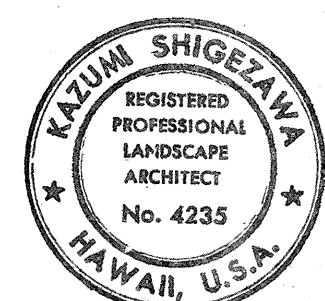
SURVEY PLOTTED BY _____ DATE _____
 DESIGNED BY _____
 QUANTITIES BY _____
 CHECKED BY _____
 ORIGINAL PLAN _____
 NOTE BOOK _____
 NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-1-1(13)17	1977	202	314



SCALE: 1" = 50'-0"

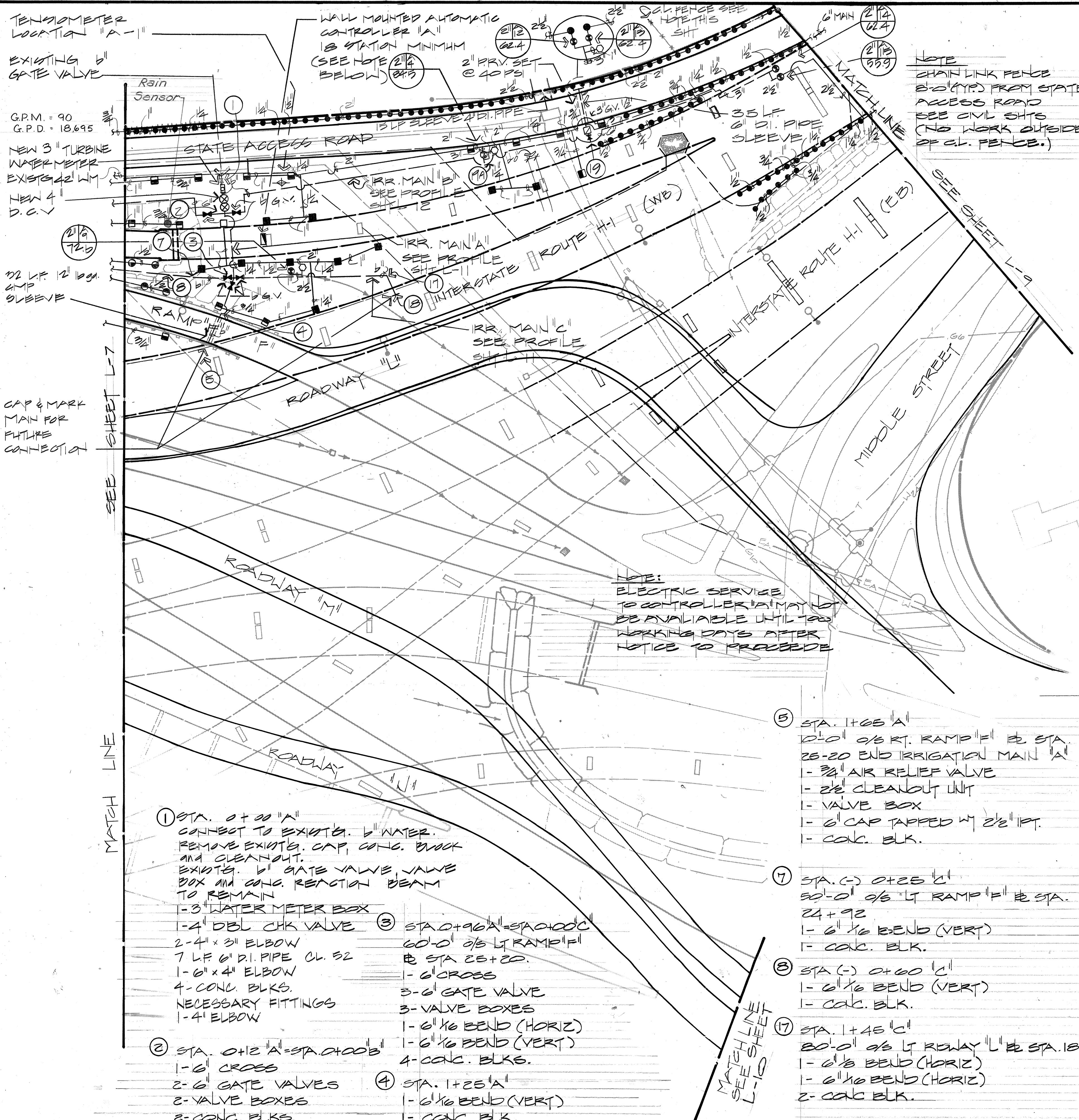
NO.	REVISION	DATE
1	THIS SHEET SUPERSEDES PAGE 202 DATED JAN. 13, 1978	1-13-80



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 ME OR UNDER MY SUPERVISION
 Kiyom Shigezawa

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 LANDSCAPE IRRIGATION PLAN
 INTERSTATE ROUTE H-1
 PROJECT NO. 1-HI-1(131):17
 SCALE: AS SHOWN
 DATE JAN 13, 1978
 SHEET NO. 6-7 OF 19 SHEETS

C.O. 202



BWS. PORTION (BETWEEN 42" MAIN AND NEW 3" METER)					
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1(13):17	1977	203	214

WATER NOTES

- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HONOLULU BOARD OF WATER SUPPLY'S 'WATER SYSTEMS STANDARDS DATED MARCH 1977, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS. NUTS AND BOLTS FOR FLANGED CONNECTIONS SHALL BE BRONZE OR STAINLESS STEEL EXCEPT AT COUPLING ADAPTORS WHERE "CORTEN" (U.S. STEEL) OR "MAYARI" (BETHLEHEM STEEL) MAY BE USED.
- LINES AND GRADES TO INCLUDE STAKE OUT, FITTINGS, CONCRETE REACTION BLOCKS, ETC., OF THE NEW LATERAL SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
- UNLESS OTHERWISE SPECIFIED, CONNECTIONS TO EXISTING WATER MAINS SHALL BE MADE BY THE CONTRACTOR, WITH THE BWS INSPECTOR COORDINATING THE WORK. FOR DETAILS, CONTRACT BWS PLANNING AND ENGINEERING DIVISION, CONSTRUCTION SECTION.
- ALL METER BOXES AND VALVE BOXES/MANHOLES INCLUDING FRAMES AND COVER SHALL BE FURNISHED, INSTALLED AND PAID FOR BY CONTRACTOR.
- TEST PRESSURE SHALL BE PREVAILING LIFE PRESSURE, JOINTS LEFT EXPOSED FOR 24 HOURS TO CHECK FOR LEAKS PRIOR TO BACKFILL.
- THE CONTRACTOR SHALL CHLORINATE THE ENTIRE INSIDE SURFACE OF EACH PIPE AND FITTING WITH DISINFECTION SOLUTION OF 5 OUNCES OF SODIUM HYPOCHLORITE MIXED WITH 10 GALLONS OF WATER.
- THE CONTRACTOR SHALL PROVIDE THREE SETS OF APPROVED PLANS AND PAY THE APPLICABLE WATER DEVELOPMENT AND/OR ONE-TIME SERVICE CHARGE AND FOR THE METER WHICH WILL BE FURNISHED BY BWS AND INSTALLED BY THE CONTRACTOR WHEN THE LATERAL IS INSTALLED.
- THE CONTRACTOR SHALL NOTIFY BWS PLANNING AND ENGINEERING DIVISION, CONSTRUCTION SECTION, ONE WEEK PRIOR TO COMMENCING WORK ON THE LATERAL.
- THE CONTRACTOR SHALL SECURE ALL REQUIRED UTILITY CLEARANCES AND OBTAIN EXCAVATION PERMIT.
- WHERE A POLICEMAN'S SERVICE IS DETERMINED TO BE REQUIRED FOR TRAFFIC CONTROL, THE CONTRACTOR SHALL ARRANGE AND PAY FOR SUCH SERVICE.
- IN THE EVENT THAT PIPES OTHER THAN DUCTILE IRON ARE TO BE USED, THE PLANS SHALL BE RESUBMITTED FOR APPROVAL.

(WATER NOTES TO CONT. ON SH. L-10)

APPROVED FOR CROSS-CONNECTION.	
<i>W. S. Shigenaga</i>	5/15/81
APPROVED BY	DATE
<i>John J. Miniseari</i>	6/19/81
CHIEF, PLANNING AND ENGINEERING DIVISION, BOARD OF WATER SUPPLY.	

NO.	REVISION	DATE
1	ADD IRRIGATION AT VALVES - A-14, A-15. SEE SHEET L-9	1-13-80
2	REVISION - NOTES	6-30-80



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Katsum Shigenaga

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
LANDSCAPE IRRIGATION PLAN	
INTERSTATE ROUTE H-1 PROJECT NO. 1-H-1(13):17	
SCALE: AS SHOWN	DATE: JAN 21, 1978
SHEET NO. 1-8 OF 19 SHEETS	

DATE	
SURVEY PLOTTED BY	
ORIGINAL DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
NO.	

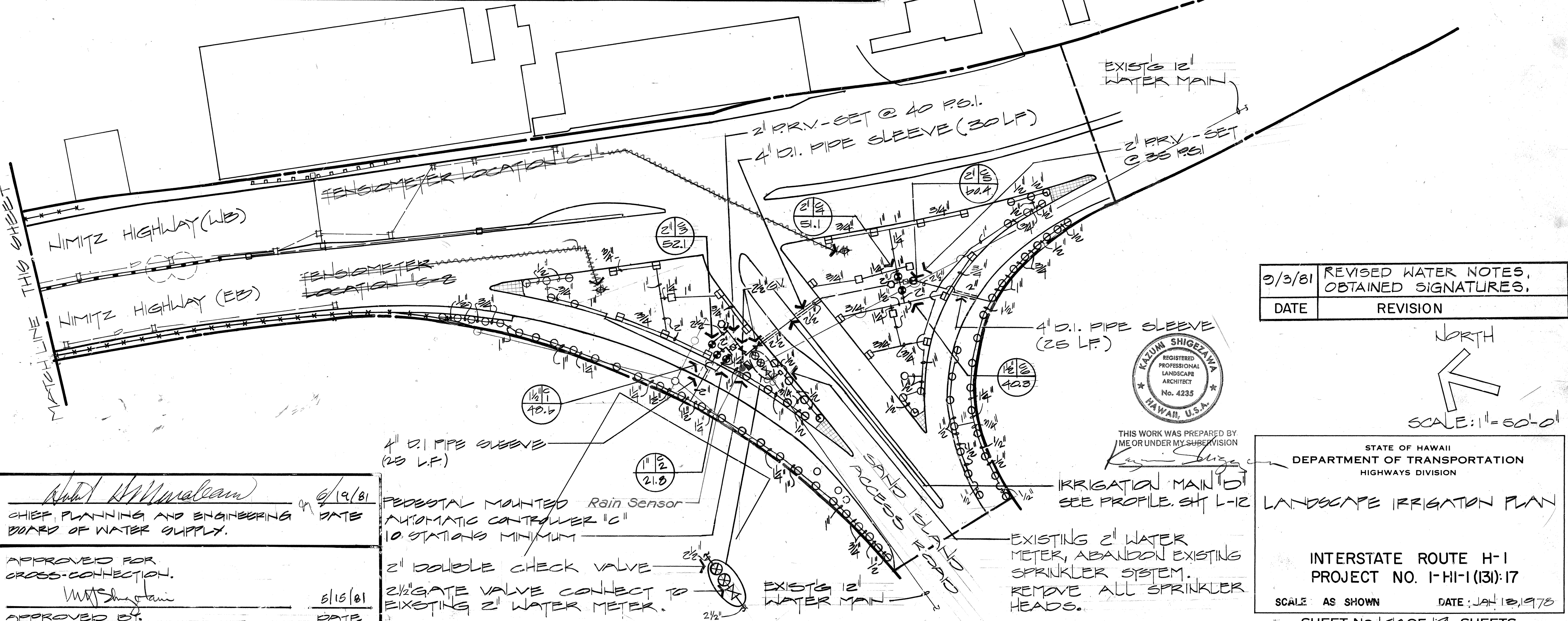
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(131):17	1977	205	214

WATER NOTES (CONT. FROM L-8)

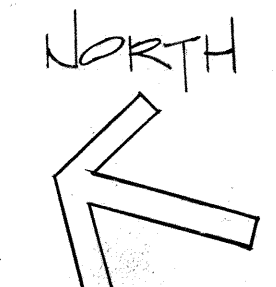
- CONTRACTOR SHALL PICK UP METER AT BWS. STOREROOM DELIVER TO JOB SITE AND INSTALL; BWS. INSPECTOR SHALL ARRANGE FOR PICK UP.
- VALVE I.D. TAGS SHALL BE AFFIXED ON THE UNDERSIDE OF ALL NEW MAN-HOLES AND VALVE BOX COVERS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE METER FROM THE TIME OF PICK UP TO THE TIME THE PROJECT IS ACCEPTED BY BWS. ALL WATER USED THROUGH THE METER SHALL BE PAID FOR BY THE CONTRACTOR.
- DISTANCE FROM METER DIAL TO BOTTOM OF METER BOX COVER SHALL BE A MINIMUM OF 6 INCHES AND A MAXIMUM OF 12 INCHES.
- CONTRACTOR SHALL CUT ALL EXISTING UNUSED LATERALS AT MAIN WHETHER OR NOT SHOWN ON PLANS.
- MAXIMUM DEPTH FOR DIMENSION "G" ON FIGURE 200A THE STANDARD DETAILS SHALL BE
- CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL FITTINGS IF NECESSARY TO MEET FIELD CONDITIONS.
- AFTER INSTALLATION OF TAPPING SLEEVE AND VALVE, THE ASSEMBLY SHALL BE TESTED WITH PREVAILING LINE PRESSURE PRIOR TO ACTUAL TAPPING OPERATIONS.

- ALL CAST IRON (GRAY OR DUCTILE) WATER PIPES, FITTINGS, AND VALVES SHALL BE ENCLOSED IN PLASTIC MATERIAL IN ACCORDANCE WITH A.S.I. SPECIFICATIONS A21.5-1972 OR AWWA SPECIFICATIONS C105-72 POLYETHYLENE ENCASUREMENT FOR GRAY AND DUCTILE CAST IRON PIPING FOR WATER AND OTHER LIQUIDS.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY

(CONT. ON L-15)



9/3/81	REVISED WATER NOTES, OBTAINED SIGNATURES.
DATE	REVISION



SCALE: 1" = 50'-0"

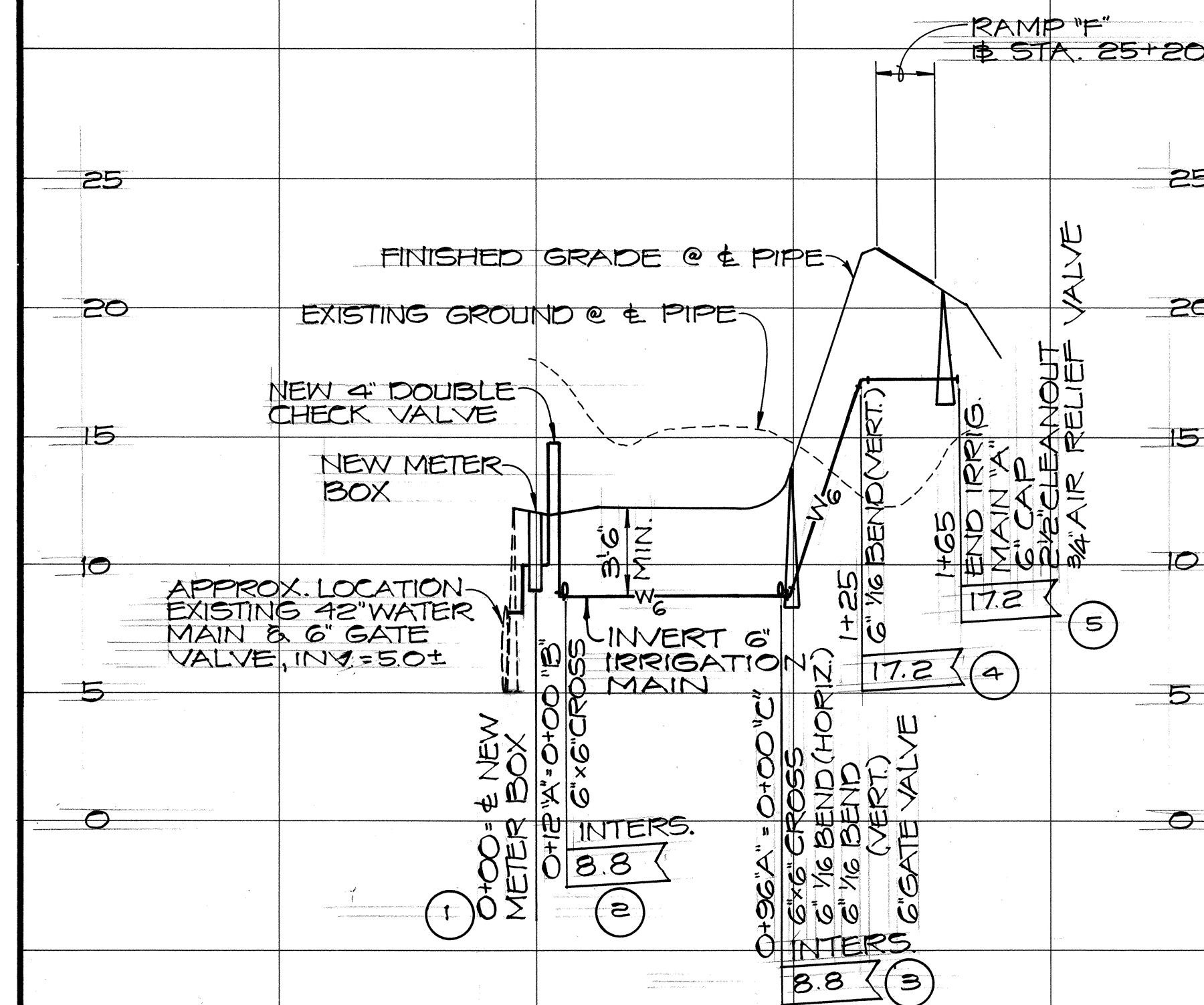
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE IRRIGATION PLAN

INTERSTATE ROUTE H-1
PROJECT NO. 1-HI-1(131):17
SCALE: AS SHOWN DATE: JAN 10, 1978
SHEET NO. L10 OF 19 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	

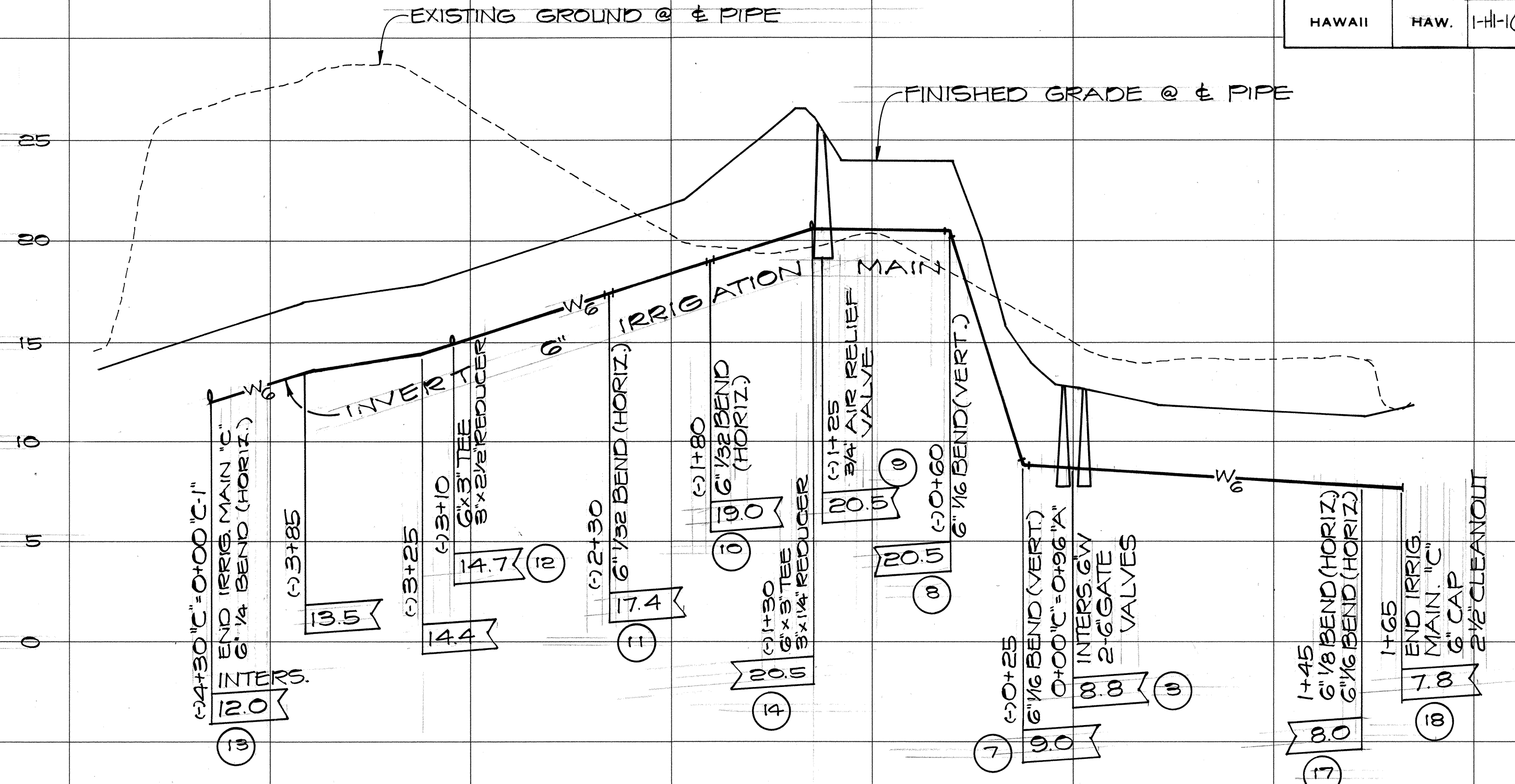
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1(13)17	1977	206	214



PROFILE - IRRIGATION MAIN "A"

SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

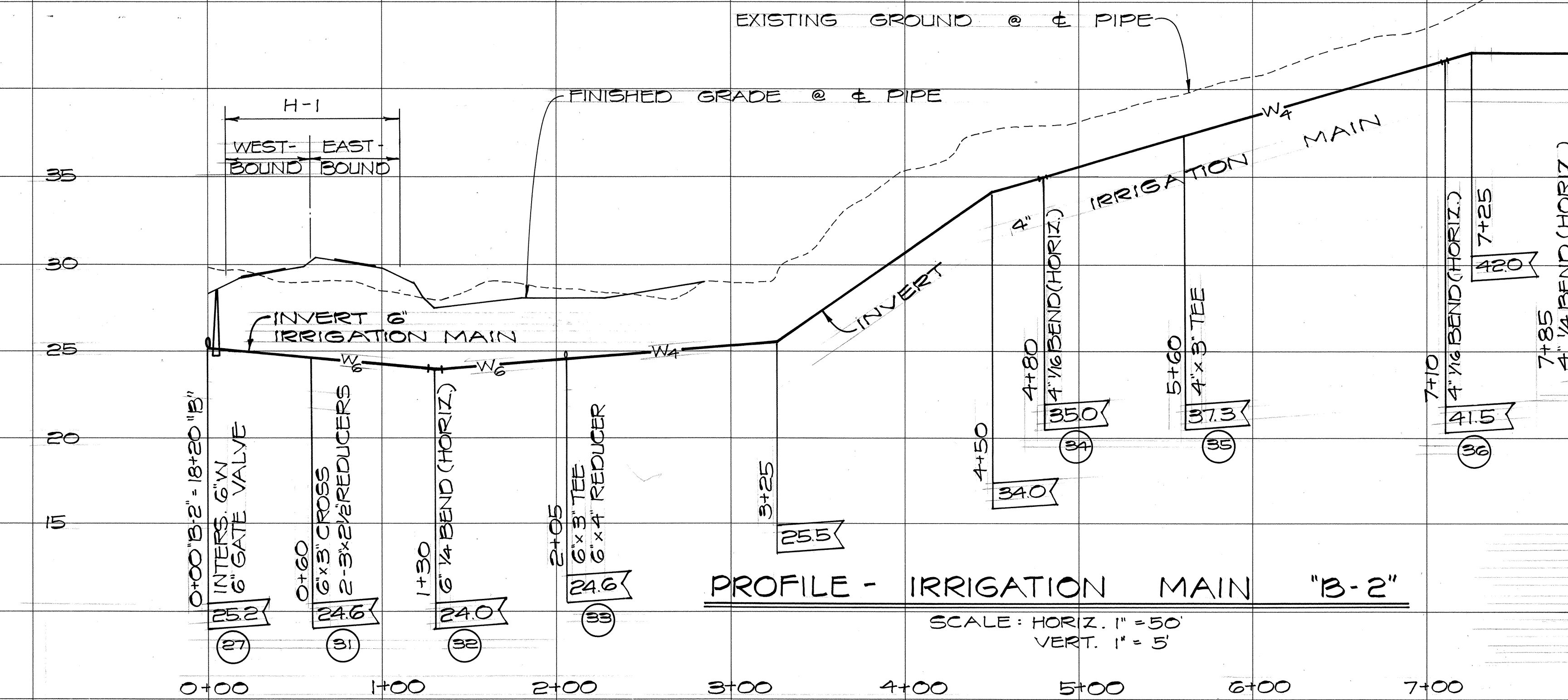
0+00 1+00 2+00



PROFILE - IRRIGATION MAIN "C"

SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

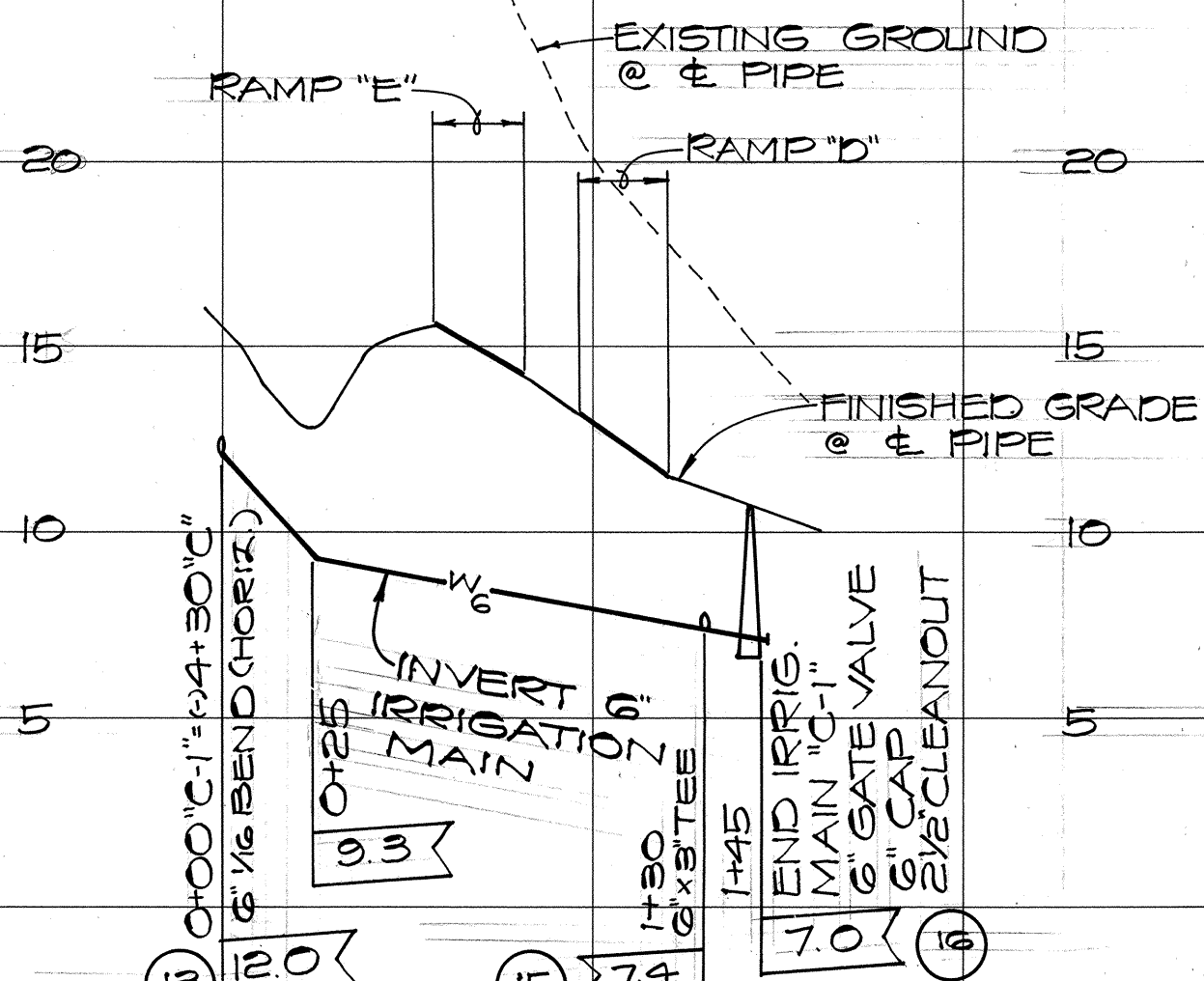
0+00 1+00 2+00



PROFILE - IRRIGATION MAIN "B-2"

SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00



PROFILE - IRRIGATION MAIN "C-1"

SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'

0+00 1+00 2+00

- NOTES:
1. PROFILES TO BE ADJUSTED AS NECESSARY TO CLEAR UTILITIES AND OTHER OBSTRUCTIONS.
 2. INDICATES CORRESPONDING NOTE ON IRRIGATION MAIN PLAN.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Gordon Y. Ma

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROFILES -
IRRIGATION MAINS "A", "B-2", "C", & "C-1"

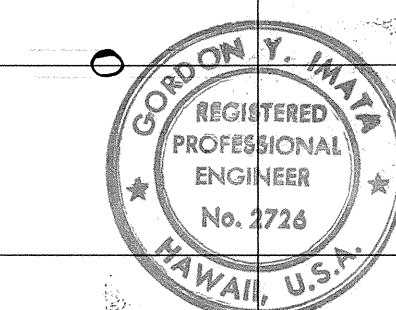
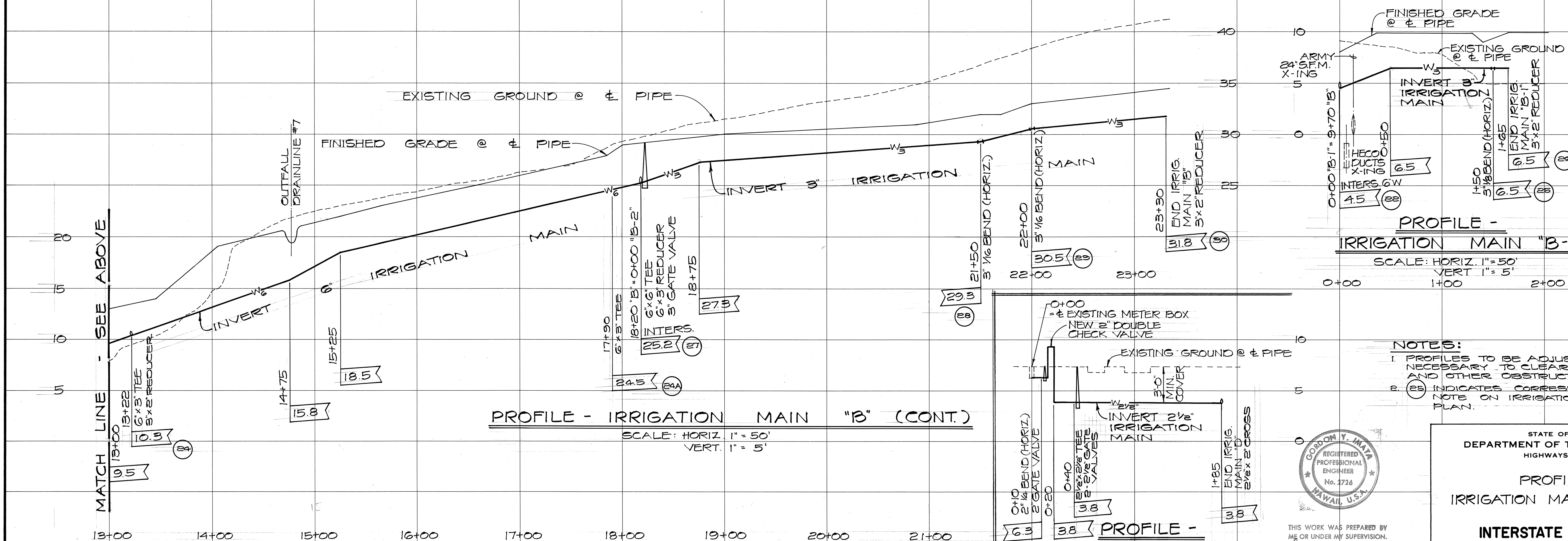
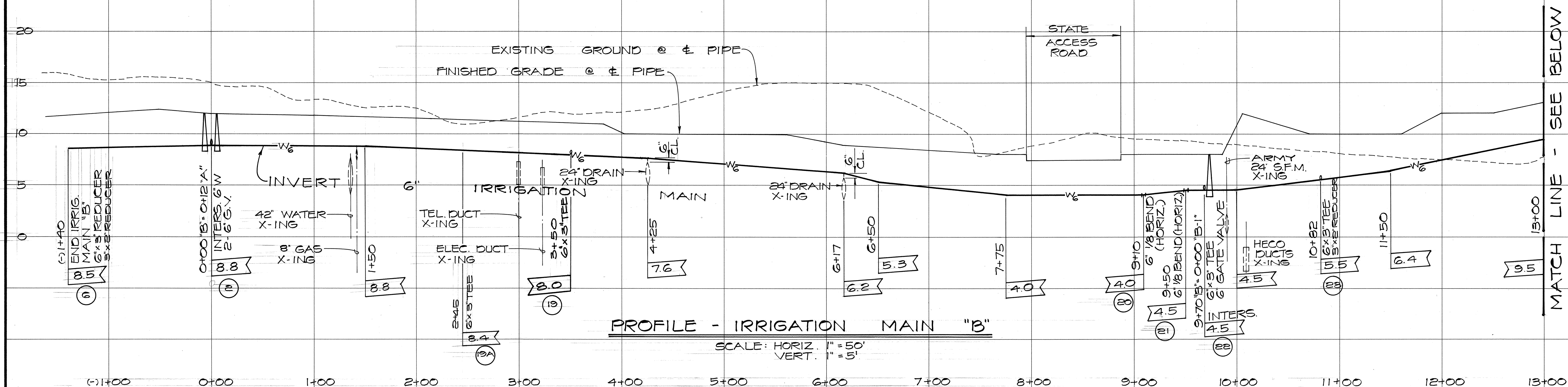
INTERSTATE ROUTE H-1
PROJECT NO. 1-H-1(13)17

SCALE: AS SHOWN DATE: JAN 13, 1978

SHEET NO. 11 OF 19 SHEETS

SURVEY PLOTTED BY	DATE
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	141-1(13):17	1977	207	244



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Gordon Y. Matsu

- NOTES:**
1. PROFILES TO BE ADJUSTED AS NECESSARY TO CLEAR UTILITIES AND OTHER OBSTRUCTIONS.
 2. (EB) INDICATES CORRESPONDING NOTE ON IRRIGATION MAIN PLAN.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROFILES -
IRRIGATION MAINS "B", "B-1", & "D"

INTERSTATE ROUTE H-1
PROJECT NO. 141-1(13):17

SCALE: AS SHOWN DATE: JAN 13, 1978

SHEET No. 12 OF 19 SHEETS

IRRIGATION EQUIPMENT SCHEDULE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	141-K(13)11	1977	208	394

SYMBOL	TYPE SPRINKLER	QUANTITY	TYPICAL SPACING	SPRAY PATTERN	RISE CONNECTION (IPS)	OPERATING PRESSURE (PSI)	NOZZLE SIZE	MAXIMUM DISCHARGE (GPM)	MINIMUM RADIUS	ADJ. ARC. SPR	DISCHARGE ADJUSTMENT	BACKSLASH PREVENTION DEVICE	MATERIAL	ADJ. DIST. CONTROL	REMARKS
■	IMPACT	6	45'	F/P	3/4"	50	7/32"	10.0	49'				BB	BAFFLE	
■	IMPACT	64	42'	P	3/4"	50	5/32"	5.1	45'			●	BB	BAFFLE	
□	ROTARY POP-UP	24	40'	F	1"	50	5/64"	10.8	41'				SEE SPEC.		MIN. 2" POP-UP; BB, AL, OR C.I. HOUSING
■	ROTARY POP-UP	24	40'	P	3/4"	50	11/64"	5.9	41'			●	SEE SPEC.	ADJ. NOZZLE / BAFFLE	MIN. 2" POP-UP; BB, AL, OR C.I. HOUSING
●	STREAM SPRAY-SHRUB	49	20'	F	1/2"	30		2.4	21'		●		BB		RISER MOUNTED
○	STREAM SPRAY-SHRUB	242	20'	H	1/2"	30		1.7	21'		●		BB		RISER MOUNTED
○	STREAM SPRAY-SHRUB	8	20'	Q	1/2"	30		.9	21'		●		BB		RISER MOUNTED
○	STREAM SPRAY POP-UP	26	20'	F	1/2"	30		2.4	21'		●		BB		MIN. 2" POP-UP
○	STREAM SPRAY POP-UP	196	20'	H	1/2"	30		1.7	21'		●		BB		MIN. 2" POP-UP
○	STREAM SPRAY POP-UP	6	20'	Q	1/2"	30		.9	21'		●		BB		MIN. 2" POP-UP
○	QUICK COUPLING VALVE - 1"	17			1"								BB		TWO-PIECE, CONTRACTOR SHALL PROVIDE 9/16" HEX AND HOOD UNIVER.
●	FLAT SHRUB SPRAY	127	10'	H	1/2"	30		1.3	9'		●		BB		RISER MOUNTED
▲	CENTER STRIP SPRAY	16	15'		1/2"	30		2.0	5'x32'				BB		RISER MOUNTED
#202	SELF TAPPING SPRAY HQ	109	3'	H		15		.25	3'				BB		FOR MEDIAN STRIP PLANTER BOX, SEE SH. 1-9

MISCELLANEOUS EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY	REMARKS
□	WATER METER - 3"	1	MAXIMUM FLOW 200 GPM
⊗	DOUBLE CHECK VALVE	2	SIZE AS NOTED
⊗	GATE VALVE IN BOX	13	SIZE AS NOTED
□	PRESSURE REGULATOR IN BOX	9	SIZE AS NOTED
○	REMOTE CONTROL VALVE IN BOX	26	SIZE AS NOTED
■	AUTOMATIC ELECTRIC CONTROLLER	2	SIZE AND MOUNTING AS NOTED. - CONTROLLERS SHALL HAVE MULTI-CYCLE (6 MINIMUM) CAPABILITY AND BE EQUIPED WITH TENSIO-METER OVERRIDE.
⊕	TENSIO-METER, ELECTRIC CONTROL 30 VOLTS, AC MAX.	12	4 PER BOX, 2 BOXES PER CONTROLLER, CAPABLE OF OVER RIDING CONTROLLER PROGRAM.

KEY

F - FULL CIRCLE
P - PART CIRCLE
H - HALF CIRCLE
Q - QUARTER CIRCLE
BB - BRASS OR BRONZE
PL - PLASTIC
AL - ALUMINUM
CI - CAST IRON

NOTES:

1. REMOTE CONTROL VALVES SHALL OPEN AND CLOSE EFFICIENTLY AT THE FOLLOWING MINIMUM FLOW RATES. ANY VALVE REQUIRING GREATER FLOW FOR GREATER PRESSURE DROP SHALL NOT BE USED
2" - 50.6 GPM
1 1/2" - 40.3 GPM
1 1/4" - 26.0 GPM
1" - 21.8 GPM

2. THE SPRINKLER HEAD SPACINGS LISTED AS TYPICAL IN THE IRRIGATION EQUIPMENT SCHEDULE SHALL BE CONSIDERED PREDOMINANT SPACINGS. THE CONTRACTOR SHALL FOLLOW THE PLANS AND ADJUST SPRINKLERS ACCORDINGLY WHEN SPRINKLER HEAD SPACING VARIES FROM THE INDICATED TYPICAL SPACING.

NO.	REVISION	DATE
1	CHANGE EQUIPMENT SCHEDULE QUANTITIES	1-13-80
2	CHANGE MISCELLANEOUS SCHEDULE QUANTITIES	1-13-80
3	CHANGED METER SIZE	5-29-80



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

IRRIGATION EQUIPMENT
SCHEDULE

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1 (131):17

SCALE: NONE DATE: JAN 13, 1978

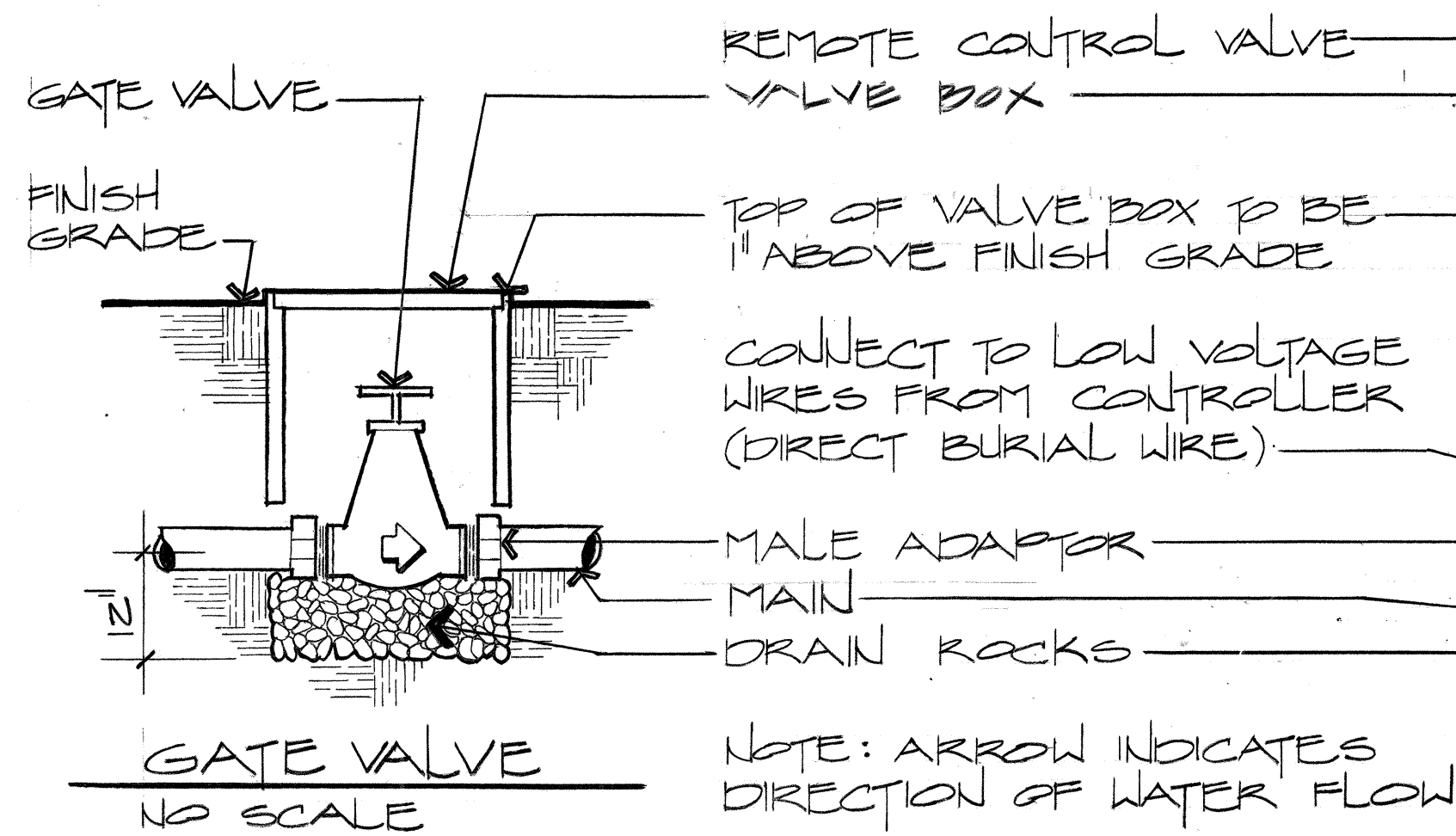
SHEET NO. 13 OF 19 SHEETS

C.O.208

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

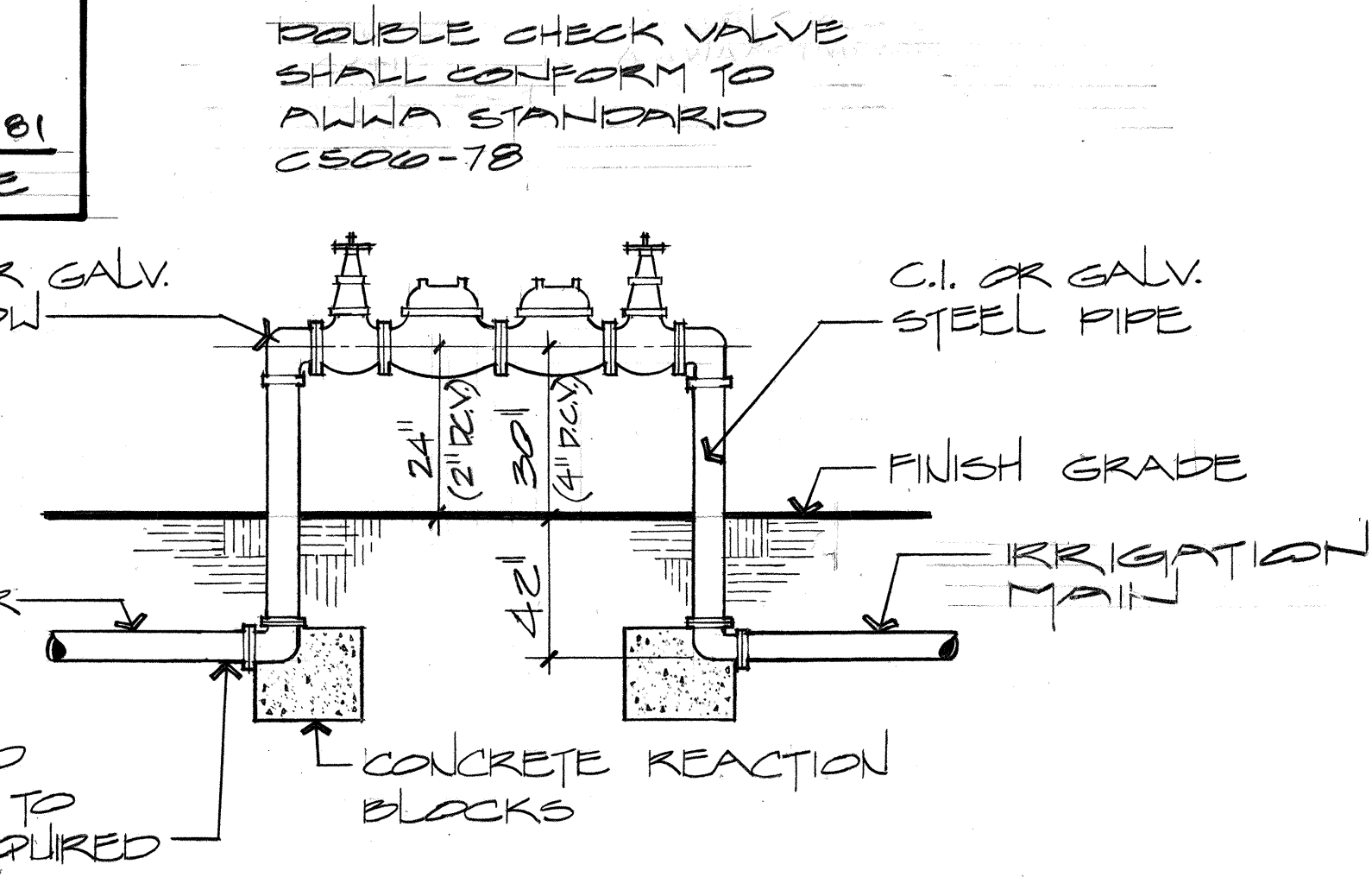
RCV SIZE
CONTROLLER AND STATION NUMBER
DESIGN GPM OF CIRCUIT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(131)17	1977	209	244

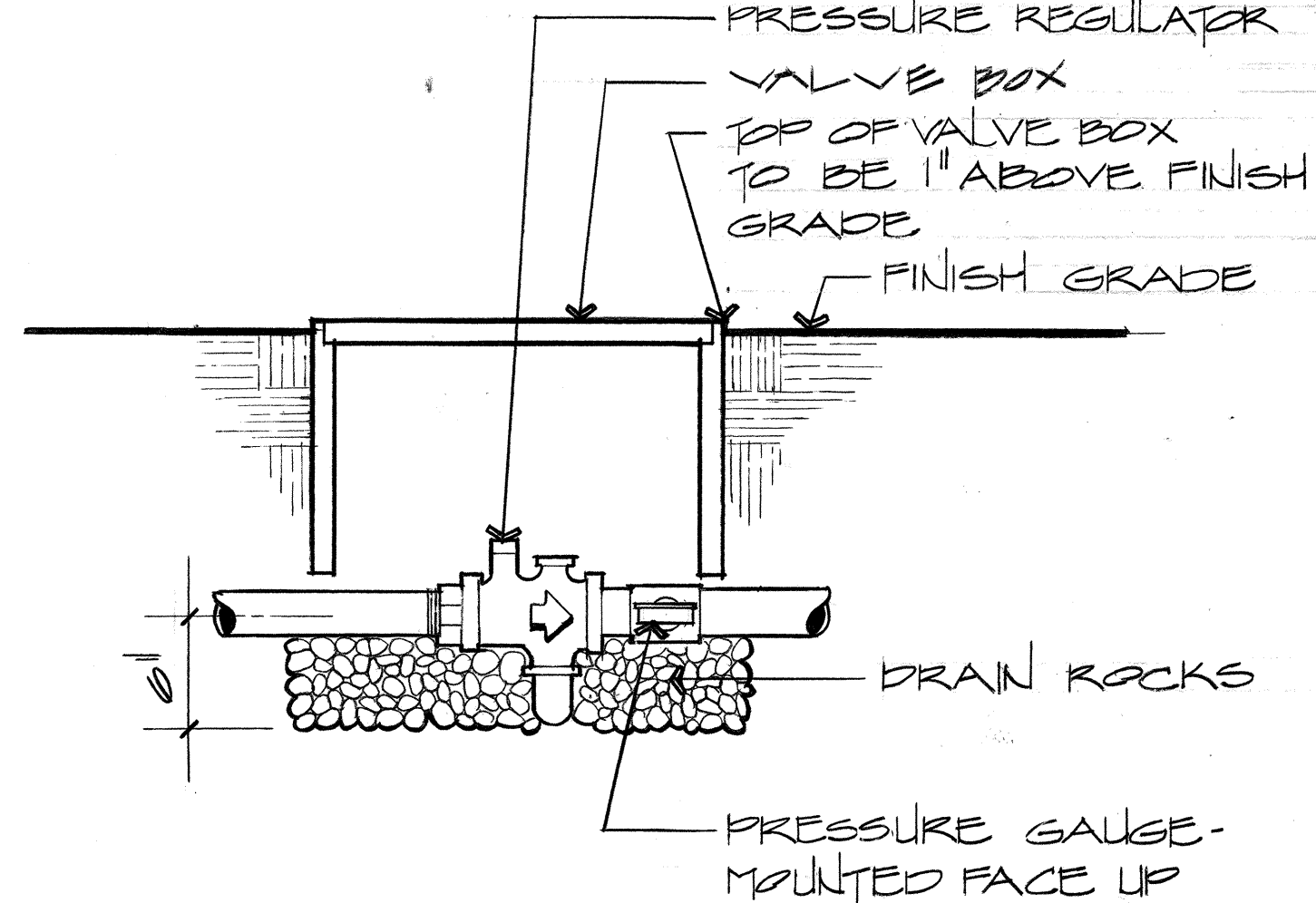


REMOTE CONTROL VALVE
NO SCALE

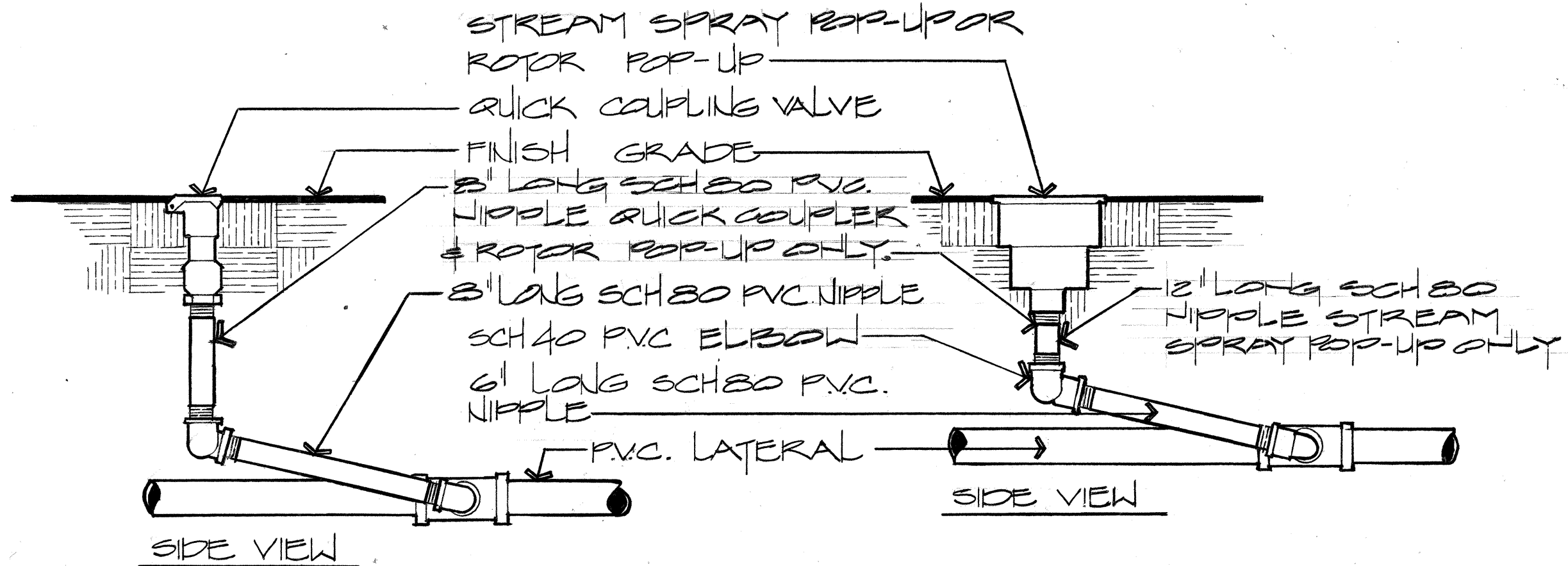
APPROVED FOR CROSS-CONNECTION.
Must Shigezawa
APPROVED BY: _____ DATE: 5/15/81



DOUBLE CHECK VALVE
NO SCALE

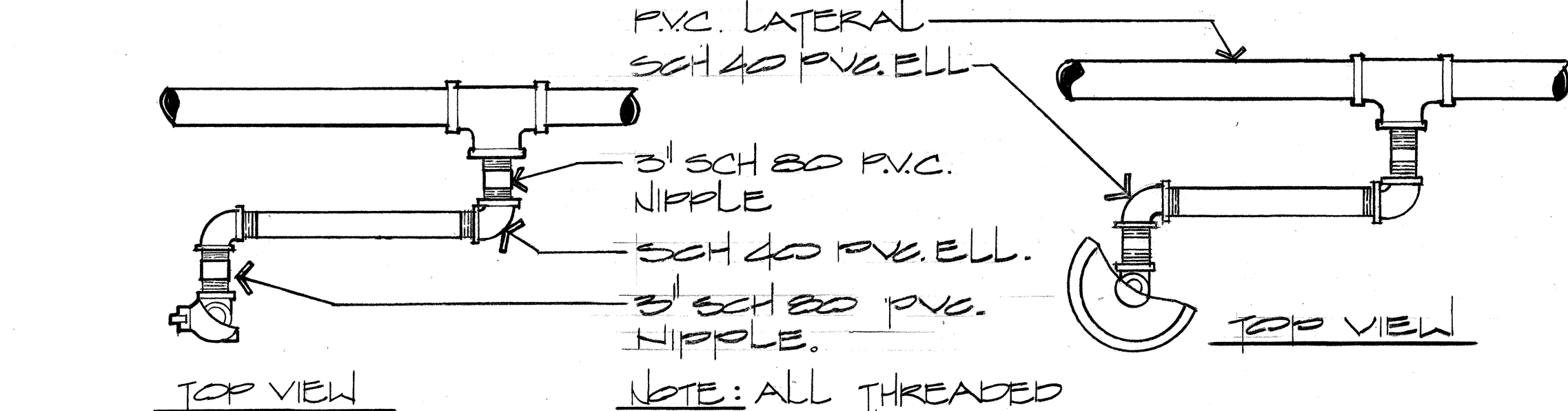


PRESSURE REGULATOR W/ GAUGE
NO SCALE



SIDE VIEW

SIDE VIEW



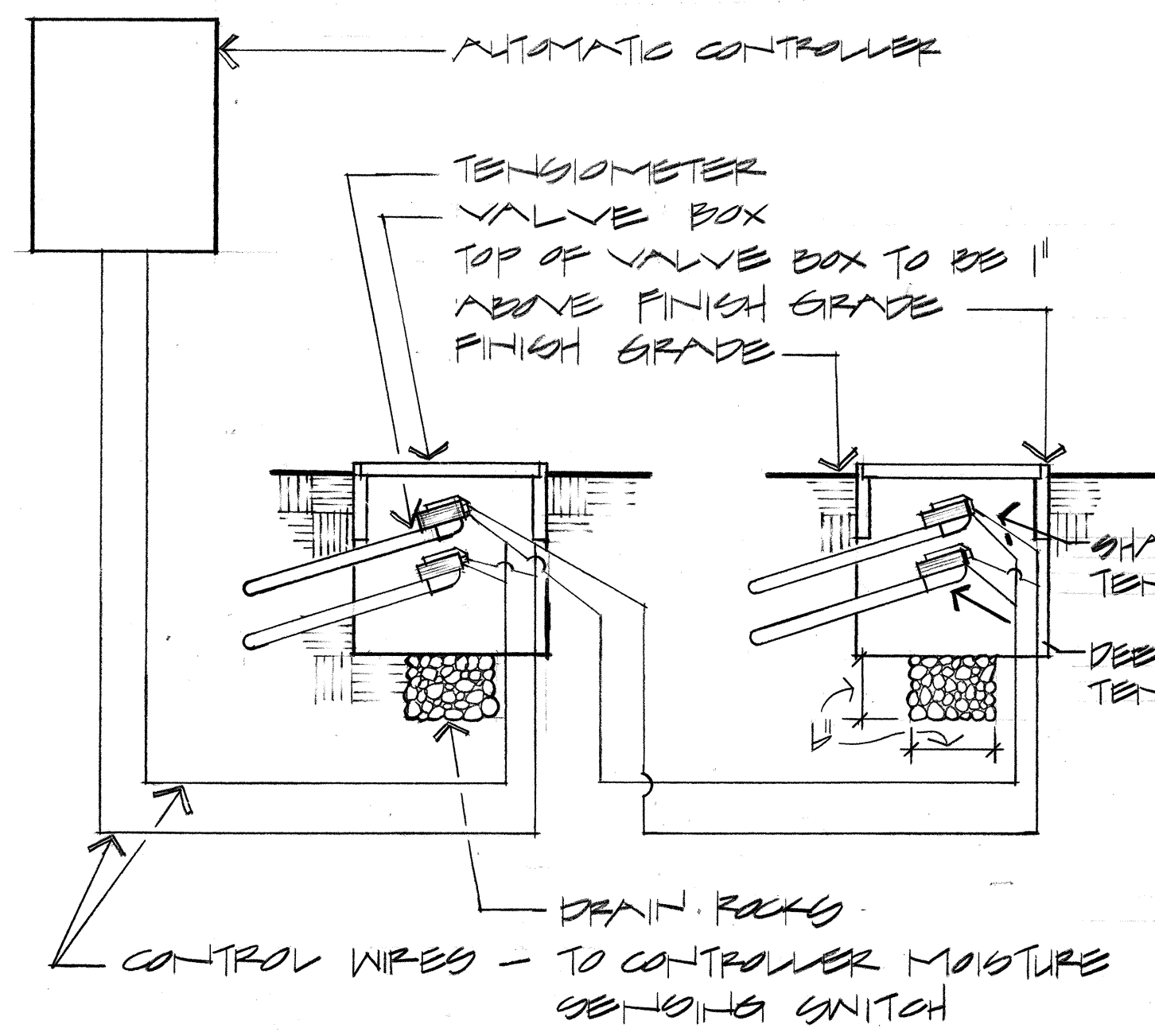
TOP VIEW

TOP VIEW

QUICK COUPLING VALVE
NO SCALE

ROTOR POP-UP
NO SCALE

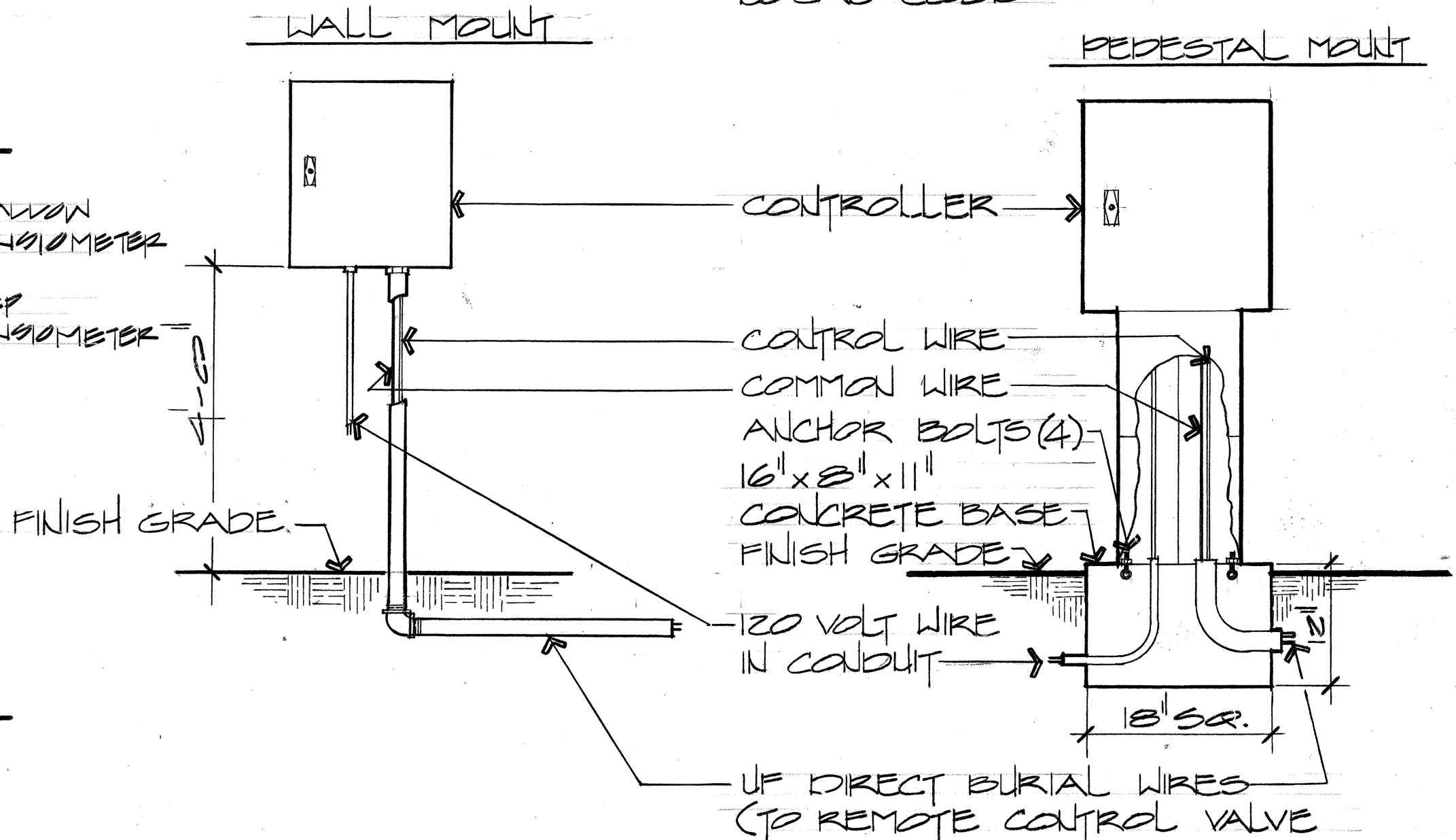
NOTE: SHALLOW TENSIO METER SHALL BE INSTALLED W/ TIP 4\"/>



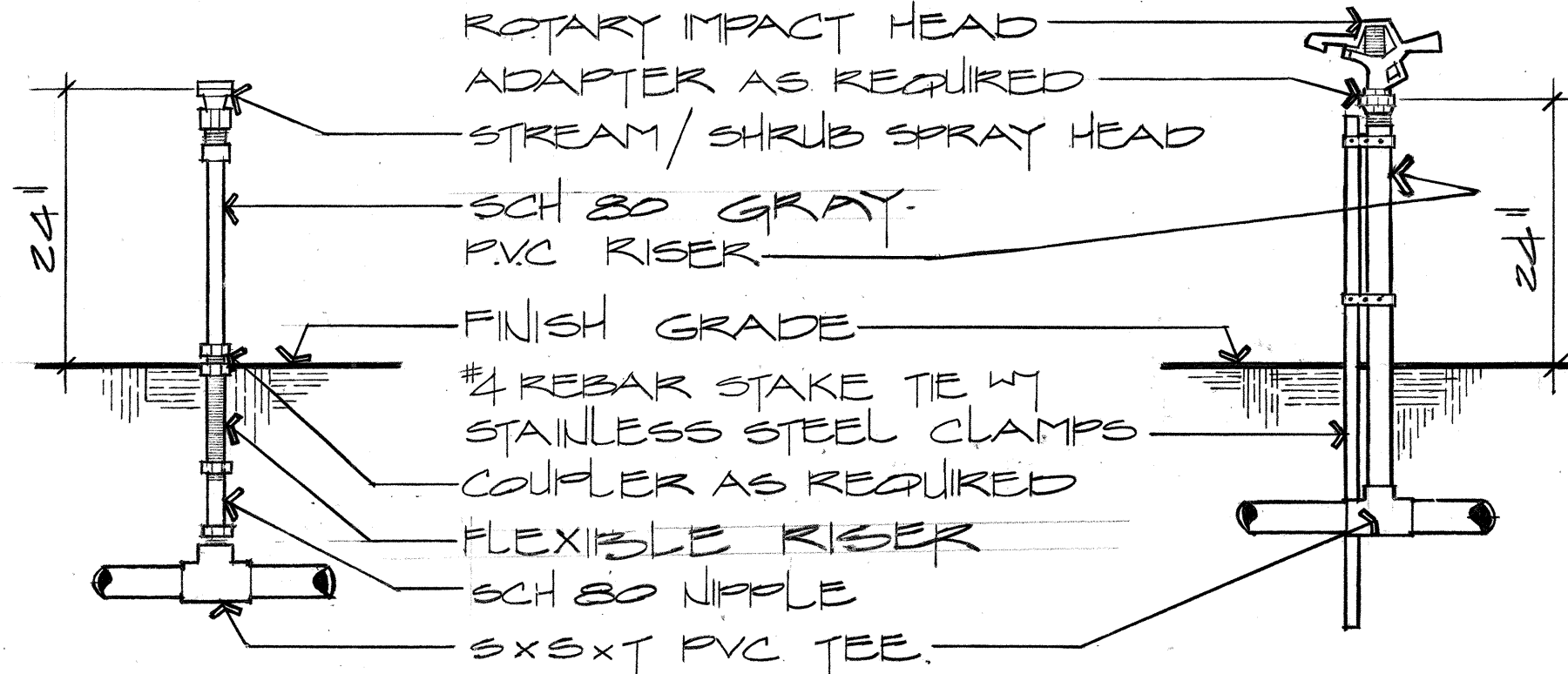
TENSIO METER DETAIL
NO SCALE

NOTE: SEE MANUAL FOR MOUNTING INSTRUCTIONS

NOTE: ALL WIRING TO BE INSTALLED AS PER LOCAL CODE



CONTROLLER DETAIL
NO SCALE

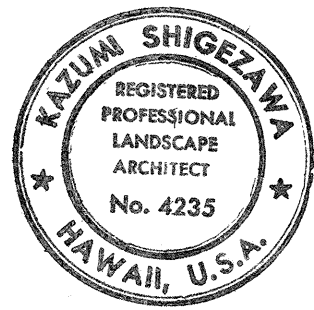


STREAM/SHRUB DETAIL
NO SCALE

ROTARY IMPACT DETAIL
NO SCALE

NOTE: FOR STREAM/SHRUB DETAIL. HEADS ADJACENT TO WALKS, CURBS, OR PAVG USE DETL AS SHOWN. ALL OTHER AREAS, PROVIDE THREADED P.V.C. RISER ONLY

NOTE FOR ROTARY IMPACT DETAIL. 2 CLAMPS PER STAKE FOR REBAR 2' ABOVE GROUND



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Kazumi Shigezawa

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE IRRIGATION
DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. 1-HI-1(131)17

SCALE: AS SHOWN DATE: JAN 13, 1978

SHEET NO. 14 OF 19 SHEETS

IRRIGATION NOTES

1. NO IRRIGATION MAINS OR LATERALS SHALL CROSS OVER VIADUCT PIER FOOTING.
2. FILL ALL PIPE SLEEVE ENDS W/ CLASS "C" CONC. AFTER ALL PIPING AND WIRING HAS BEEN INSTALLED IN SLEEVE.
3. CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING IRRIGATION MAINS (DOWN STREAM OF WATER METERS.) OF THE FOLLOWING MATERIALS:
D.I. PIPE CLASS 62
P.V.C. PIPE CLASS 200
C.U. PIPE TYPE K.
4. ALL IRRIGATION LATERALS SIZE $\frac{1}{2}$ " SHALL BE P.V.C. PIPE CLASS 315. ALL LATERALS $\frac{3}{4}$ " AND LARGER SHALL BE P.V.C. PIPE CLASS 200.

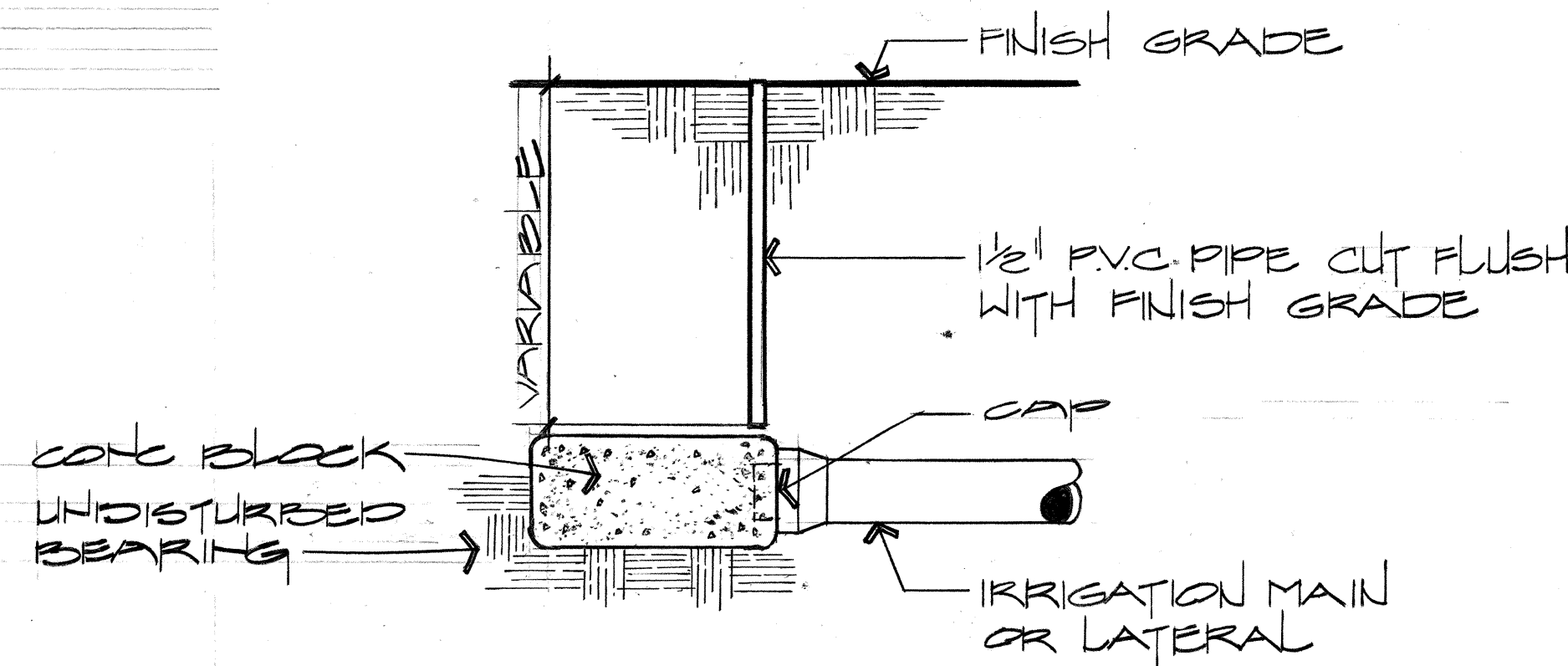
WATER NOTES

(CONT. FROM L-10)

22. FOR METERS 3" AND LARGER (COMPOUND AND DETECTOR CHECK), CONTRACTOR SHALL NOTIFY CUSTOMER SERVICE DIVISION IN WRITING, NO LATER THAN 120 DAYS, PRIOR TO WITHDRAWING METER FROM BWS STOREYARD. SUCH NOTICE SHALL INDICATE THE NUMBER, SIZE, AND TYPE OF METER (COMPOUND OR DETECTOR CHECK) AND APPROXIMATE MONTH AND YEAR METER IS ANTICIPATED TO BE DRAWN OUT.
23. REAPPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTR UCTION WITHIN A PERIOD OF ONE YEAR.
24. BOARD OF WATER SUPPLY APPROVAL OF THESE PLANS DOES NOT CONSTITUTE A WATER COMMITMENT. AVAILABILITY OF WATER WILL BE DETERMINED WHEN BUILDING PERMIT IS PRESENTED TO THE DEPARTMENT. WATER COMMITMENT WILL DEPEND UPON THE STATUS OF THE WATER SYSTEM AT THAT TIME. SHOULD WATER SERVICE BE MADE AVAILABLE, THE WATER COMMITMENT WILL BE EFFECTIVE WHEN THE PROJECT RECEIVED AN APPROVED BUILDING PERMIT FROM THE BUILDING DEPARTMENT. ALL WATER COMMITMENTS WILL BE CANCELLED IN THE EVENT THE BUILDING PERMIT IS CANCELLED.
25. THE PROJECT SHALL BE SUBJECT TO THE BOARD OF WATER SUPPLY'S CROSS-CONNECTION CONTROL REQUIREMENTS PRIOR TO ISSUANCE OF THE BUILDING PERMIT.
26. ANY ADJUSTMENTS TO THE EXISTING WATER SYSTEM REQUIRED DURING CONSTRUCTION TO MEET REQUIREMENTS OF BWS STANDARDS, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD.

APPROVED BY:

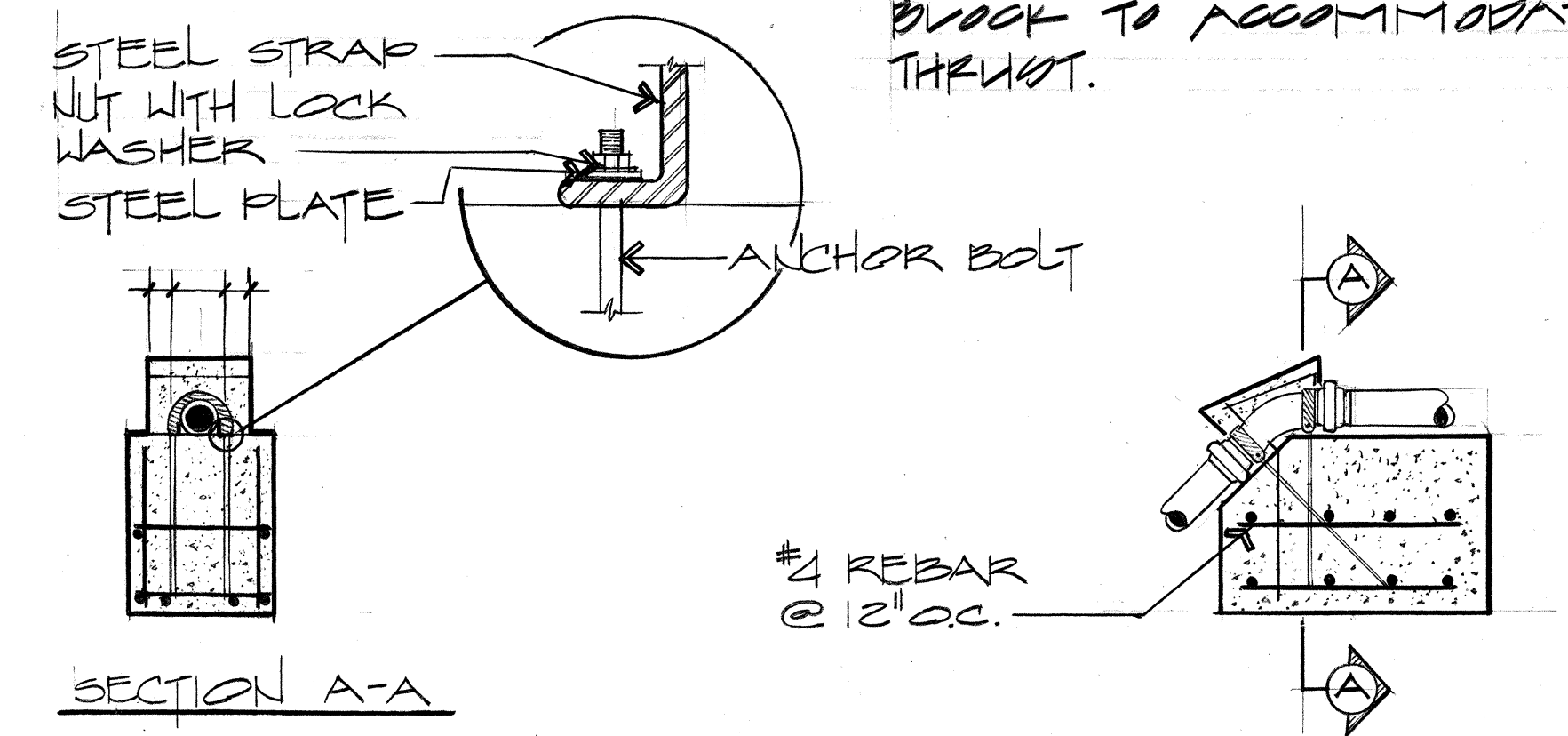
John A. Mankin 6/19/81
CHIEF, PLANNING AND ENGINEERING
BOARD OF WATER SUPPLY.



DETAIL - PIPE MARKER
NO SCALE

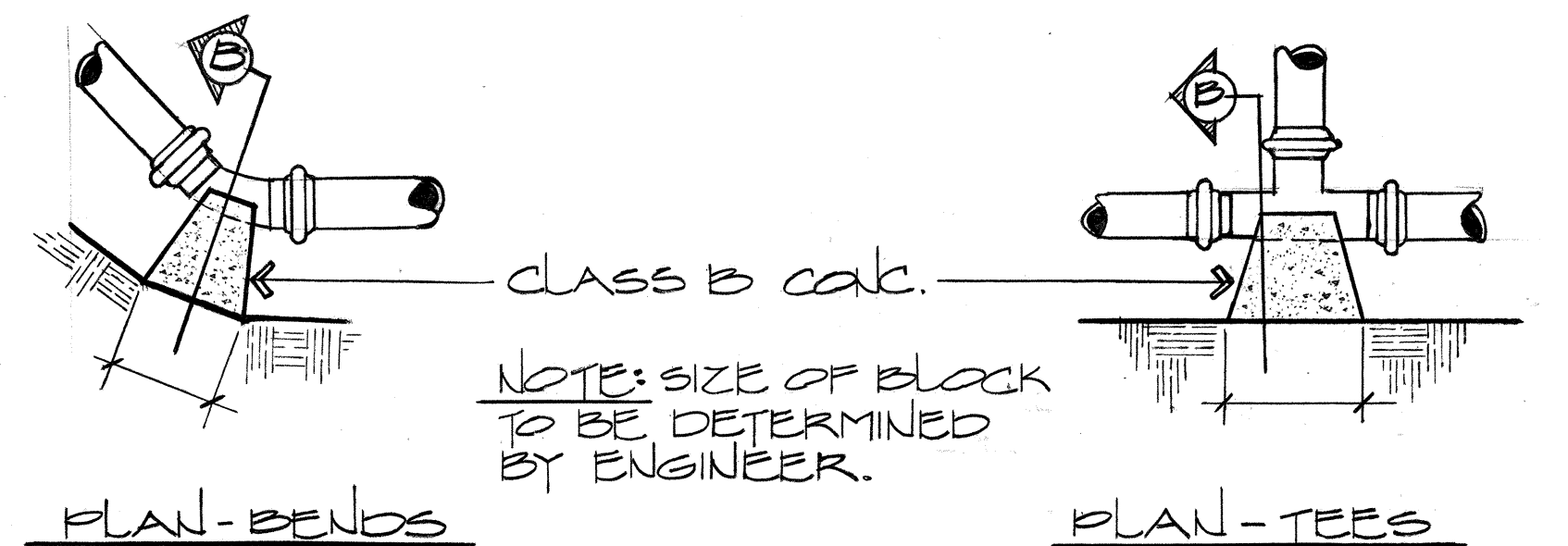
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1(13)197	1977	210	394

NOTE:
BEARING AREA OF REACTION BLOCK TO ACCOMMODATE THRUST.



NOTE: SIZE OF BLOCK, ANCHOR BOLTS AND STEEL STRAPS TO BE DETERMINED BY ENGINEER.

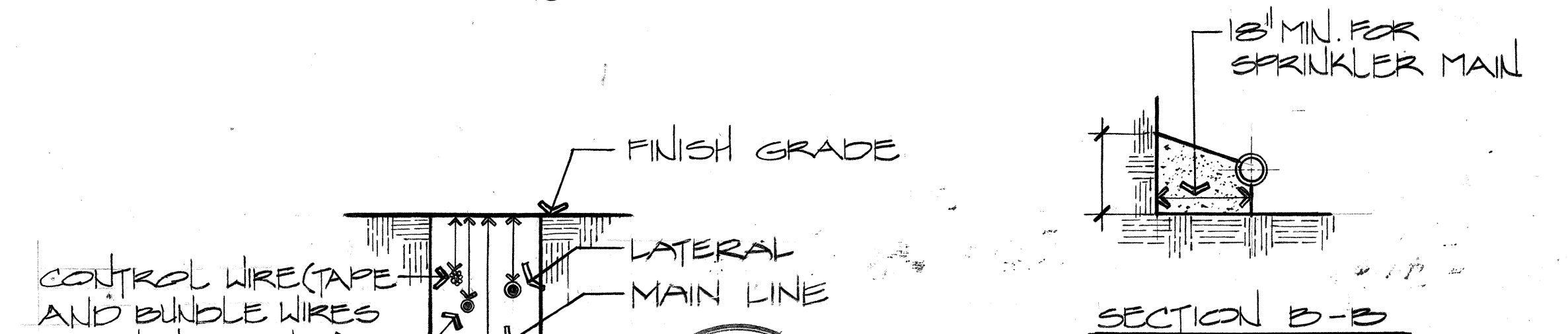
DETAILS AT VERTICAL BEND
NO SCALE



PLAN-BENDS

PLAN-TEES

DETAILS AT HORIZONTAL BEND
NO SCALE



SECTION

TRENCH DETAIL (NO SCALE)

TYPICAL PIPE COVER.	MIN. COVER
SPRINKLER LATERALS	18"
SPRINKLER MAINS	
4" AND SMALLER	30"
6"	36"
ELECTRICAL CONDUITS	24"
CONTROL WIRES	18"

9/3/81	ADDED WATER NOTES. OBTAINED SIGNATURE.
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

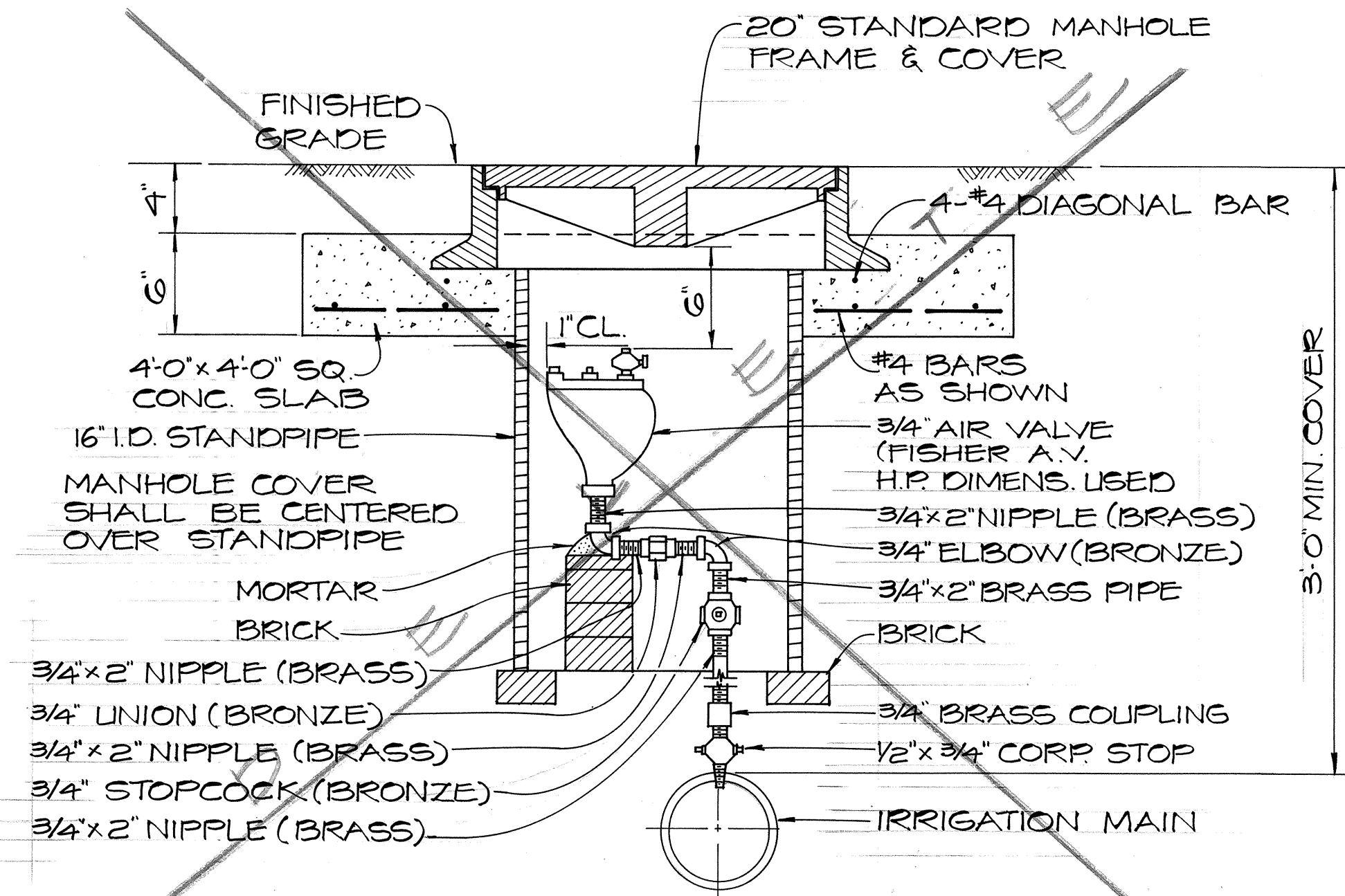
LANDSCAPE IRRIGATION
DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. 1-H-1(13)17

SCALE: AS SHOWN DATE: JAN 13, 1978

SHEET NO. 15 OF 19 SHEETS

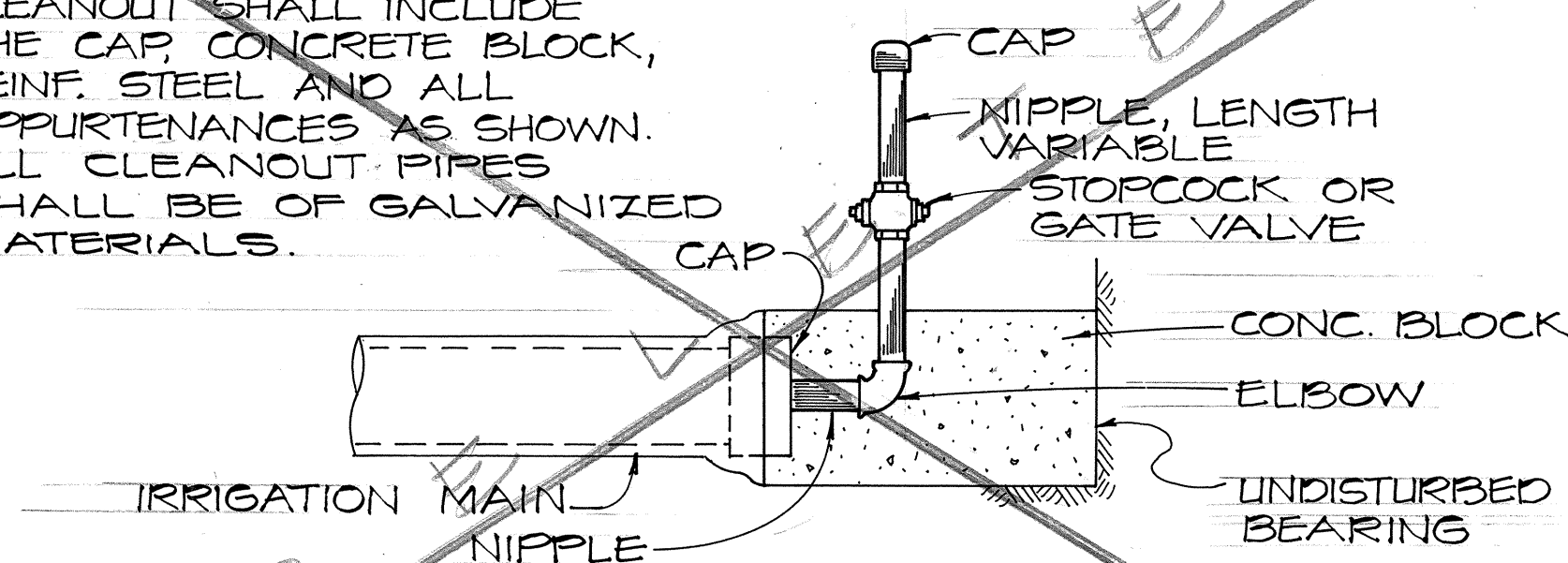
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(131)-17	1977	212	394



3/4" AIR RELIEF VALVE & VALVE BOX
NOT TO SCALE

NOTES:

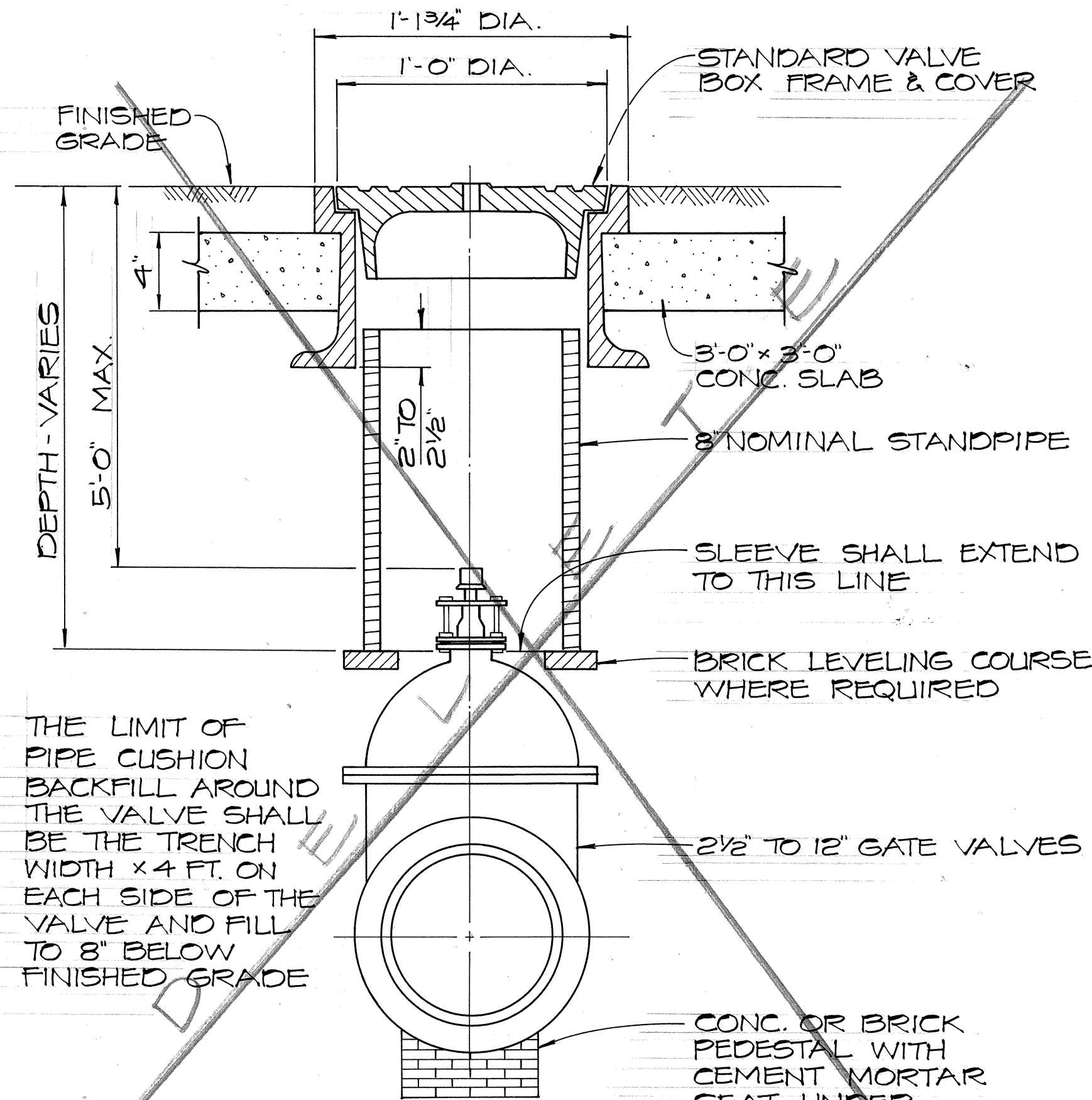
- CLEANOUT SHALL INCLUDE THE CAP, CONCRETE BLOCK, REINF. STEEL AND ALL APPURTENANCES AS SHOWN.
- ALL CLEANOUT PIPES SHALL BE OF GALVANIZED MATERIALS.



2 1/2" CLEANOUT
NOT TO SCALE

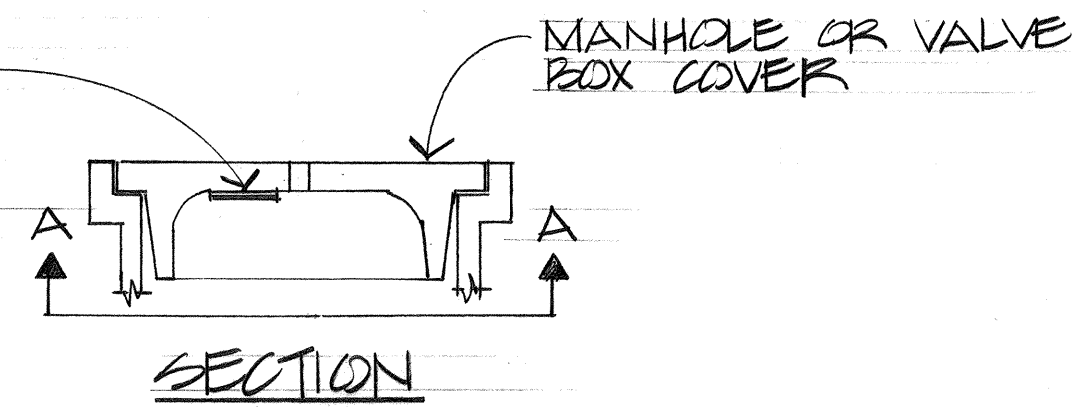
NOTE:

THESE DETAILS ARE TAKEN FROM THE HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS."

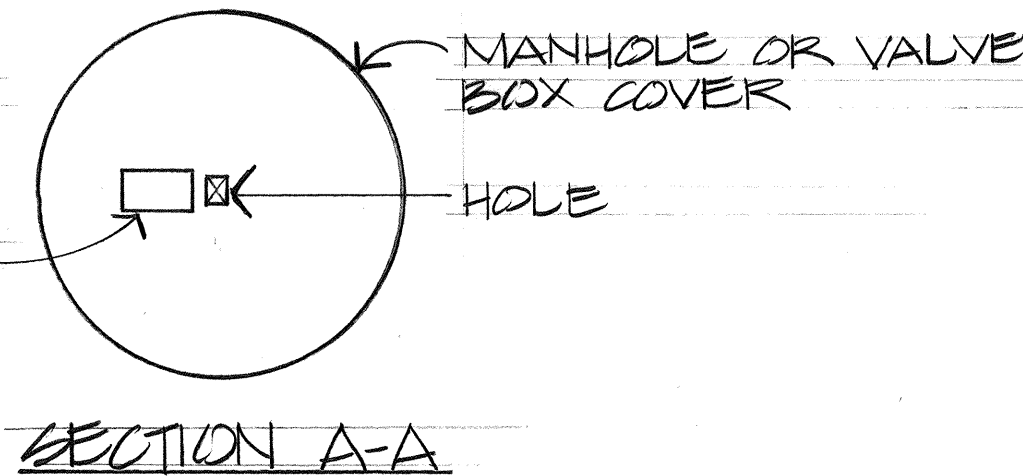


GATE VALVE & VALVE BOX
NOT TO SCALE

ID TAG - SEE
DETAIL BELOW

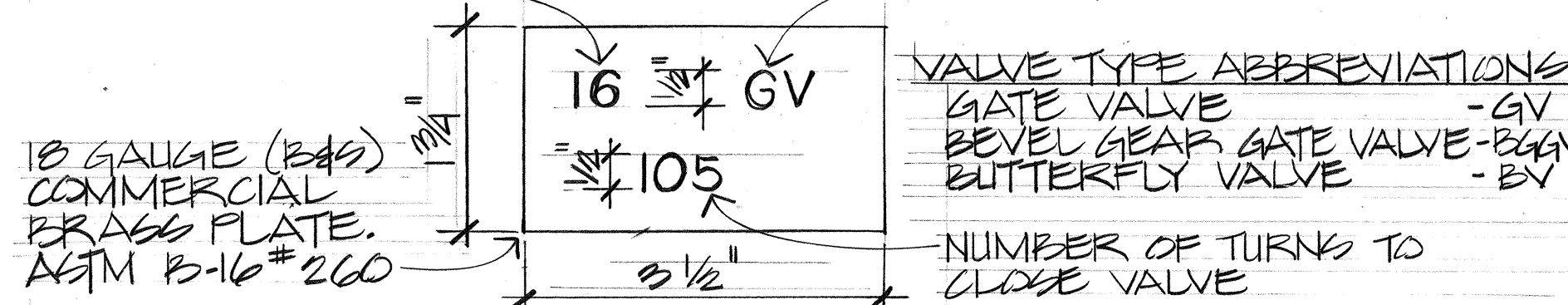


ID TAG - AFFIXED
WITH EPOXY ADHESIVE
"CONCRESSIVE 1220
RAPID SET" OR
APPROVED EQUAL



VALVE SIZE

VALVE TYPE



NOTE

- THE CONTRACTOR SHALL VERIFY VALVE DATA WITH THE VALVE MANUFACTURER PRIOR TO STAMPING ID TAG.
- ID TAG SHALL BE INSTALLED ON UNDERSIDE OF ALL NEW MANHOLE OR VALVE BOX COVER.
- PAYMENT FOR THE FURNISHING AND INSTALLATION OF ID TAGS WILL NOT BE MADE DIRECTLY BUT SHALL BE INCLUDED IN THE UNIT PRICE BIDS FOR VALVES.

IDENTIFICATION TAG FOR MANHOLE OR VALVE BOX COVER
NOT TO SCALE

APPROVED BY

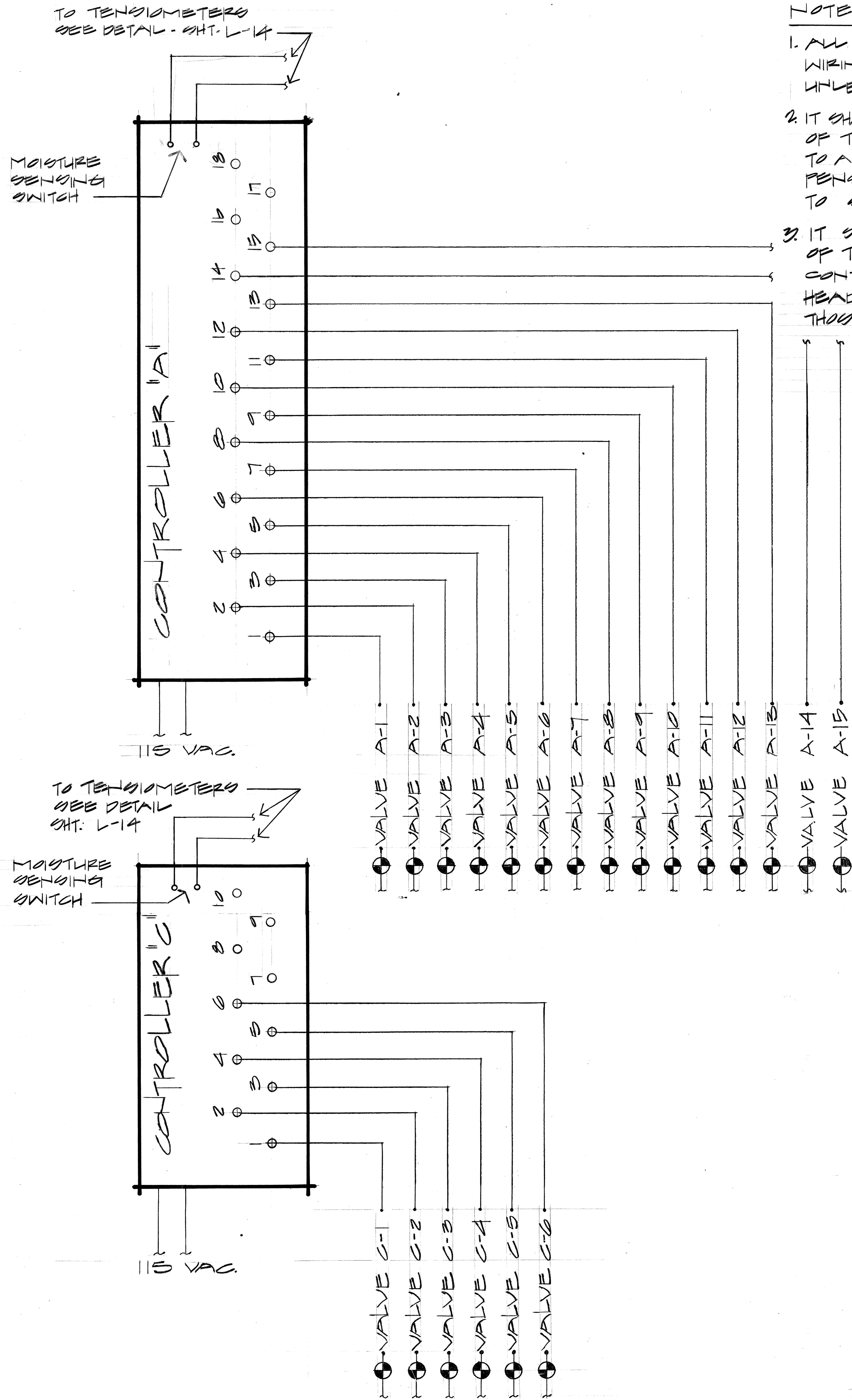
[Signature]
CHIEF PLANNING AND ENGINEERING
BOARD OF WATER SUPPLY. DATE 6/19/81



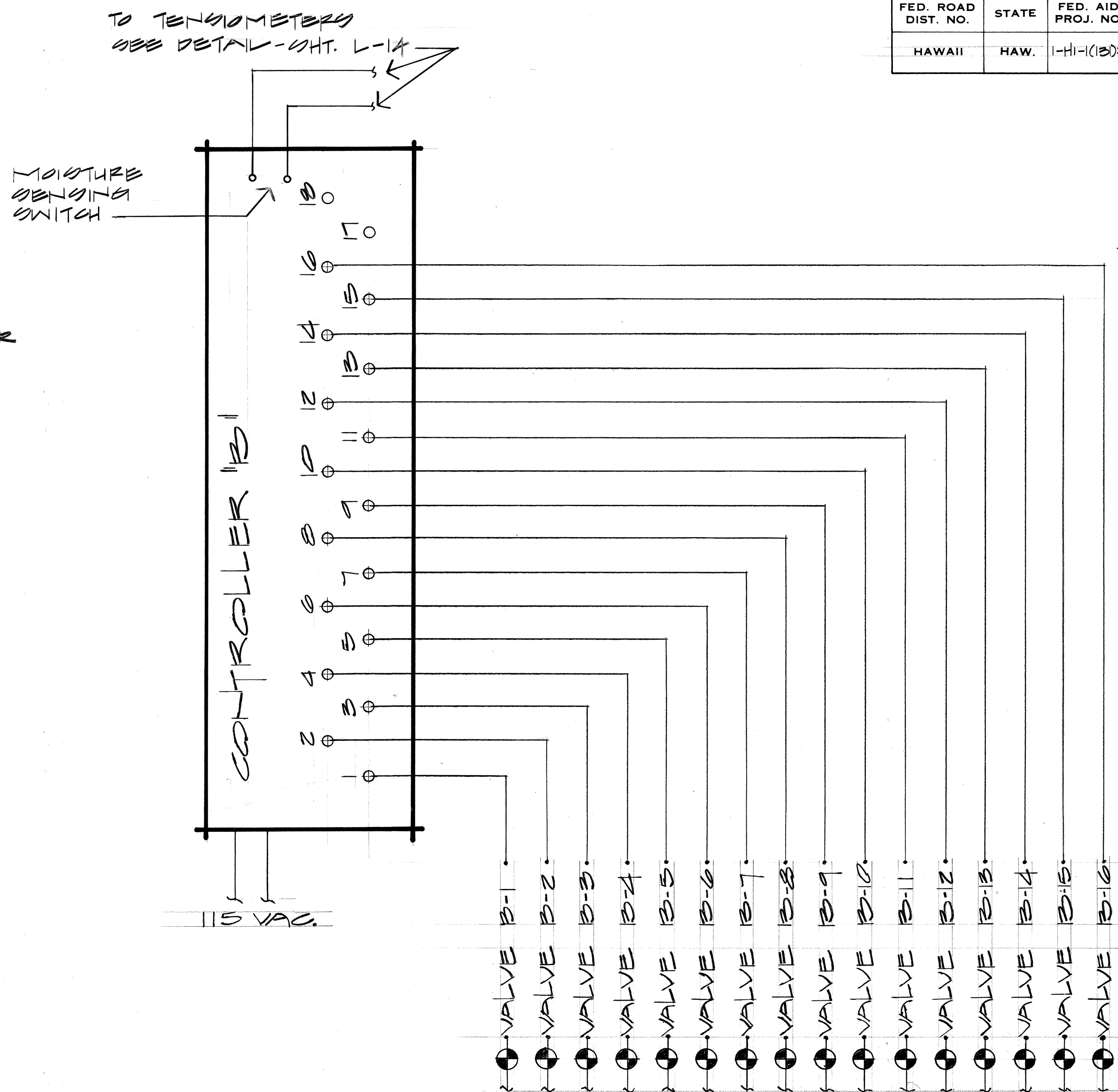
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
[Signature]

2	DELETE DETAILS	6-30-80
1	ADDED ID TAG DETAIL	5-22-80
No.	REVISION	DATE
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION		
IRRIGATION MAIN DETAILS		
INTERSTATE ROUTE H-1 PROJECT NO. 1-HI-1(131)-17		
SCALE: AS SHOWN		DATE: JAN 13, 1978
SHEET No. 17 OF 19 SHEETS		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1(13)17	1977	213	294

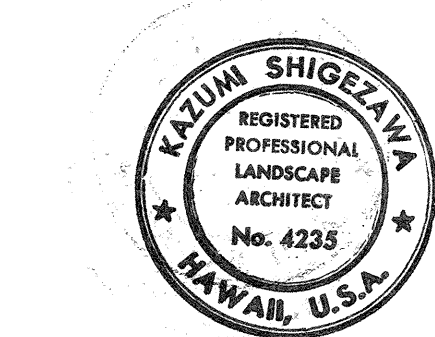


- NOTES:
1. ALL REMOTE CONTROL VALVE WIRING SHALL BE 14 GAUGE UNLESS SHOWN OTHERWISE.
 2. IT SHALL BE THE RESPONSIBILITY OF THE CONTROLLER OPERATOR TO ADJUST PROGRAMS TO COMPENSATE FOR CHANGES DUE TO WEATHER AND SITE CONDITIONS.
 3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST CONTROLLER PROGRAMS IF SPRINKLER HEADS WITH DISCHARGES LESS THAN THOSE SPECIFIED ARE INSTALLED.



ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	
NO.	

NO.	REVISION	DATE
1	REMOVE CONTROLLER PROGRAM SCHEDULE-TO SHEET 214	1/13/80



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Kazum Shigezawa

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
WIRING DIAGRAMS AND OPERATIONAL SCHEDULE
INTERSTATE ROUTE H-1 PROJECT NO. 1-H-1(13)17
SCALE: NONE DATE JAN 13, 1978
SHEET NO. 13 OF 19 SHEETS

ESTIMATED PIPING QUANTITIES

ITEM	QUANTITY
1/2-INCH PVC PIPE FOR LATERALS	3,310 LF
3/4-INCH PVC PIPE FOR LATERALS	3,270 LF
1-INCH PVC PIPE FOR LATERALS	4,750 LF
1 1/4-INCH PVC PIPE FOR LATERALS	3,030 LF
1 1/2-INCH PVC PIPE FOR LATERALS	1,060 LF
2-INCH PVC PIPE FOR LATERALS	1,900 LF
2 1/2-INCH PVC PIPE FOR LATERALS	1,605 LF
3-INCH PVC PIPE FOR LATERALS	850 LF
1/2-INCH SCH. 80 PVC PIPE FOR RISERS	2,090 LF
3/4-INCH SCH. 80 PVC PIPE FOR RISERS	290 LF
1-INCH SCH. 80 PVC PIPE FOR RISERS	35 LF
2 1/2-INCH IRRIGATION MAIN (COPPER OR PVC)	185 LF
3-INCH IRRIGATION MAIN (COPPER OR PVC)	840 LF
4-INCH IRRIGATION MAIN (COPPER OR DUCTILE IRON) OR PVC	790 LF
6-INCH IRRIGATION MAIN (COPPER OR DUCTILE IRON) OR PVC	2,975 LF

Note: Contractor used PVC pipe for all mains.

CONTROLLER PROGRAM SCHEDULES

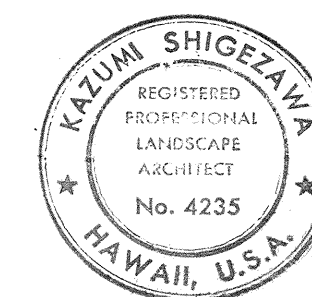
CONTROLLER	A	B	C
DAY OF OPERATION AND START TIMES	STA. 1 ST WK. SUN, TUE, THUR, SAT. 2 ND WK. MON, WED, FRI. 12 A.M., 2 A.M. & 4 A.M.	STA. 1 ST WK. MON, WED, FRI. 2 ND WK. SUN, TUE, THUR, SAT. 11 P.M., 1 A.M. & 3 A.M.	STA. 1 ST WK. SUN, TUE, THUR, SAT. 2 ND WK. MON, WED, FRI. 11 P.M., 1 A.M. & 3 A.M.
NOTE: CONTROLLER SCH. I THIS SCHEDULE SHALL START AT THE END OF THE MAINTENANCE PERIOD AND SHALL RUN FOR 6 MONTHS. AT THE END OF THE FIRST 6 MONTHS THE CONTROLLER SHALL BE RE-ADJUSTED TO SCHEDULE II BELOW.	1 6 MIN. 2 6 MIN. 3 6 MIN. 4 6 MIN. 5 6 MIN. 6 6 MIN. 7 6 MIN. 8 6 MIN. 9 6 MIN. 10 6 MIN. 11 3 MIN. 12 3 MIN. 13 3 MIN. 14 3 MIN. 15 3 MIN.	1 6 MIN. 2 6 MIN. 3 6 MIN. 4 6 MIN. 5 3 MIN. 6 6 MIN. 7 3 MIN. 8 3 MIN. 9 3 MIN. 10 3 MIN. 11 3 MIN. 12 3 MIN. 13 3 MIN. 14 6 MIN. 15 6 MIN.	1 3 MIN. 2 3 MIN. 3 3 MIN. 4 3 MIN. 5 3 MIN. 6 3 MIN. 7 8 9 10 11 12 13 14 15
TOTAL No. OF GALLONS NEEDED FOR 6 MONTH PERIOD: 3,569,804	GALLONS PER DAY 13,950	GALLONS PER DAY 18,095	GALLONS PER DAY 6,584
TOTAL TIME	1 HR. 15 MIN. 2 STARTS	1 HR. 42 MIN. 2 STARTS	45 MIN. 2 STARTS

CONTROLLER	A	B	C
DAY OF OPERATIONS AND START TIMES	STA. 1 ST WK. SUN, TUE, THUR, SAT. 2 ND WK. MON, WED, FRI. 12 A.M. & 2 A.M.	STA. 1 ST WK. MON, WED, FRI. 2 ND WK. SUN, TUE, THUR, SAT. 1 A.M. & 3 A.M.	STA. 1 ST WK. SUN, TUE, THUR, SAT. 2 ND WK. MON, WED, FRI. 11 P.M. & 1 A.M.
NOTE: CONTROLLER SCH. II THIS SCHEDULE SHALL START AT THE END OF THE FIRST 6 MONTH SCHEDULE AND SHALL RUN FOR A SECOND 6 MONTH PERIOD. AT THE END OF THIS 6 MONTH PERIOD THE CONTROLLER SHALL BE RE-ADJUSTED TO SCHEDULE III AT LEFT.	1 6 MIN. 2 6 MIN. 3 6 MIN. 4 6 MIN. 5 6 MIN. 6 6 MIN. 7 6 MIN. 8 6 MIN. 9 6 MIN. 10 6 MIN. 11 3 MIN. 12 3 MIN. 13 3 MIN. 14 3 MIN. 15 3 MIN.	1 6 MIN. 2 6 MIN. 3 6 MIN. 4 6 MIN. 5 3 MIN. 6 6 MIN. 7 3 MIN. 8 10 MIN. 9 10 MIN. 10 10 MIN. 11 10 MIN. 12 10 MIN. 13 10 MIN. 14 6 MIN. 15 6 MIN.	1 10 MIN. 2 10 MIN. 3 10 MIN. 4 10 MIN. 5 10 MIN. 6 10 MIN. 7 8 9 10 11 12 13 14 15
TOTAL No. OF GALLONS NEEDED FOR 6 MONTH PERIOD: 2,608,697	GALLONS PER DAY 9,302	GALLONS PER DAY 13,880	GALLONS PER DAY 5,486
TOTAL TIME	1 HR. 15 MIN. 2 STARTS	1 HR. 54 MIN. 2 STARTS	1 HR. 0 MIN. 2 STARTS

CONTROLLER	A	B	C
DAY OF OPERATION AND START TIMES	STA. 1 ST WK. WED. 2 ND WK. WED. 12 A.M., 2 A.M. & 4 A.M.	STA. 1 ST WK. THUR. 2 ND WK. THUR. 12 A.M., 2 A.M. & 4 A.M.	STA. 1 ST WK. WED. 2 ND WK. WED. 11 P.M., 1 A.M. & 3 A.M.
NOTE: CONTROLLER SCH. III THIS SCHEDULE SHALL BE THE FINAL SETTING.	1 6 MIN. 2 6 MIN. 3 6 MIN. 4 6 MIN. 5 6 MIN. 6 6 MIN. 7 6 MIN. 8 6 MIN. 9 6 MIN. 10 6 MIN. 11 3 MIN. 12 3 MIN. 13 3 MIN. 14 3 MIN. 15 3 MIN.	1 6 MIN. 2 6 MIN. 3 6 MIN. 4 6 MIN. 5 3 MIN. 6 6 MIN. 7 3 MIN. 8 10 MIN. 9 10 MIN. 10 10 MIN. 11 10 MIN. 12 10 MIN. 13 10 MIN. 14 6 MIN. 15 6 MIN.	1 10 MIN. 2 10 MIN. 3 10 MIN. 4 10 MIN. 5 10 MIN. 6 10 MIN. 7 8 9 10 11 12 13 14 15
TOTAL No. OF GALLONS NEEDED ANNUALLY: 2,236,465	GALLONS PER DAY 13,957	GALLONS PER DAY 20,123	GALLONS PER DAY 8,229
TOTAL TIME	1 HR. 15 MIN. 2 STARTS	1 HR. 54 MIN. 2 STARTS	1 HR. 0 MIN. 2 STARTS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(131)-17	1977	214	334

2	ADDED GALLONAGE QUANTITIES	6-1-80
2	ADDED CONTROLLER SCH. III	1-13-80
1	CHANGED PIPE QUANTITIES	1-13-80
NO.	REVISION	DATE

THIS WORK WAS PREPARED BY
K. Shigetawa
UNDER MY SUPERVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION
ESTIMATED PIPING QUANTITIES & CONTROLLER SCHEDULES
INTERSTATE ROUTE H-1 PROJECT NO. I-HI-1(131)-17
SCALE: NONE DATE: JAN 13, 1978
SHEET NO. 113 OF 13 SHEETS