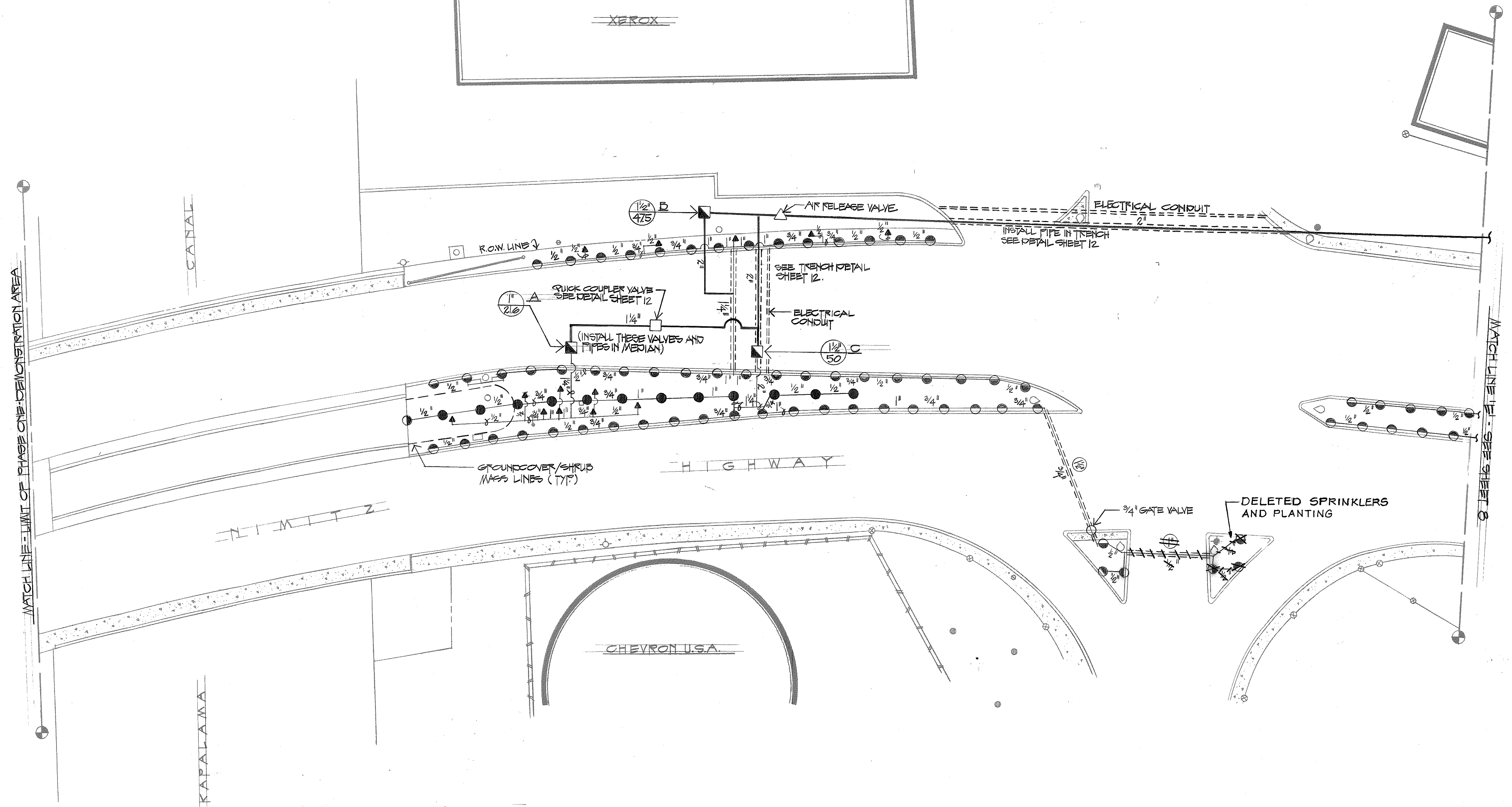
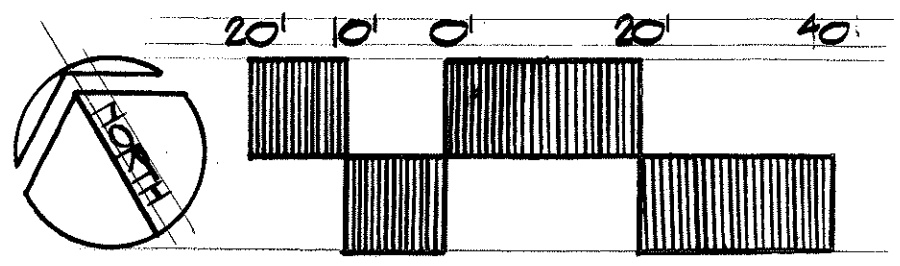


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	92A-04-81	1980	7	13



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



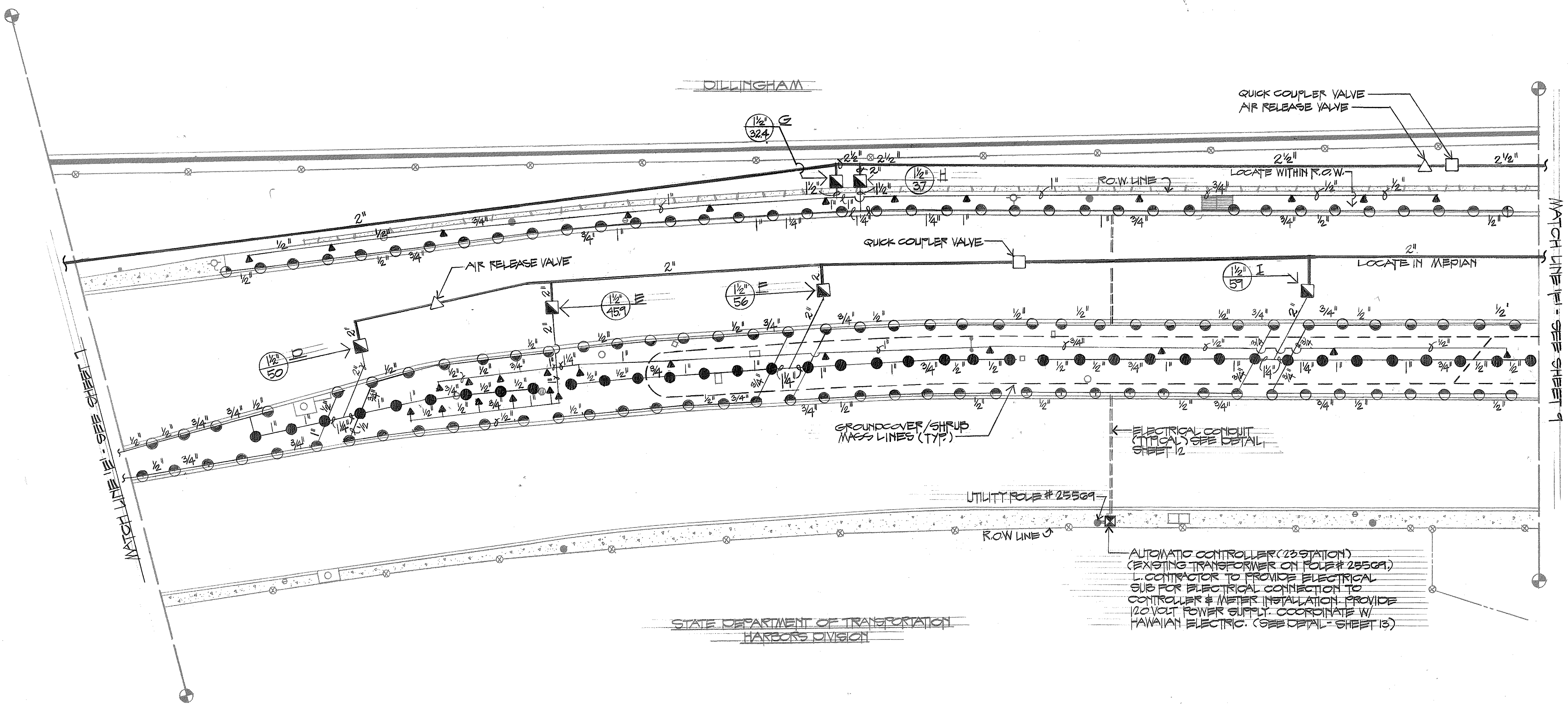
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

IRRIGATION PLAN

HONOLULU GATEWAY
BEAUTIFICATION PROJECT
PHASE ONE - DEMONSTRATION AREA

DATE: DEC. 1980

SHEET NO. 1 OF 7 SHEETS

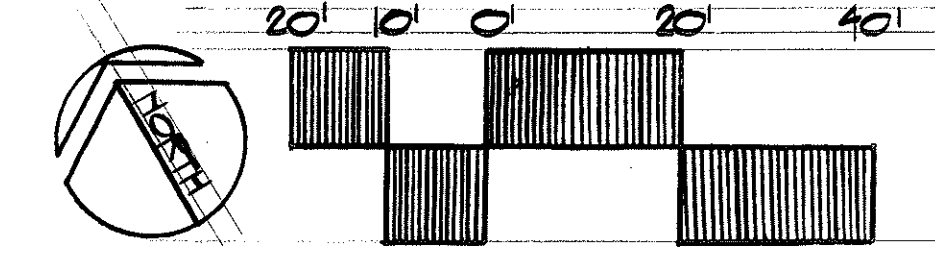


IRRIGATION LEGEND

SYMBOL	DESCRIPTION	RADIUS	G.P.M.	OPERATING PRESSURE (PSI)	REMARKS
▲	ADJ. STREAM BUBBLER	4.5'	1.5	10	
●	ADJ. FLOOD BUBBLER		2.1	10	
○	SPRAY SHRUB HEAD - FULL	12'	1.1	20	LOW ANGLE SPRAY
◐	" " " " - HALF	12'	.9	20	" " " "
◑	" " " " - QUARTER	12'	.4	20	" " " "
⊙	GEAR DRIVEN STREAM HEAD - FULL	38'	5.6	35	USE POP-UP MODEL IN TURF AREA
⊘	" " " " - THREE QUARTER	38'	4.2	35	" " " "
⊞	" " " " - HALF	38'	2.8	35	" " " "
⊠	" " " " - QUARTER	38'	1.4	35	" " " "
⊡	ELECTRIC VALVE				
⊡	VALVE SIZE				
⊡	TOTAL GPM				
⊡	2" BRASS GATE VALVE (BY CONTRACTOR)				
⊡	2" DOUBLE CHECK VALVE (PER CODE)				
⊡	EXISTING WATER METER				VERIFY LOCATION W/ B.W.S.
⊡	AUTOMATIC CONTROLLER (ELECTRIC)				23 STATION - PEDestal - MOUNTED (SEE DETAILS)
⊡	QUICK COUPLER VALVE				EXCEPT UNDER PAVING, SEE NOTE 6.
⊡	CLASS 200 PVC PIPE				
⊡	ELECTRICAL CONDUIT (SEE NOTE 5.)				
⊡	(SEE ALSO DETAIL SHEET 9)				
⊡	AIR RELEASE VALVE				

GENERAL NOTES:

1. ALL EXPOSED PIPE TO BE GRAY PVC OR PAINTED FLAT GRAY.
2. ALL SPRINKLERS IN GROUND COVER AND SHRUB AREAS SHALL BE INSTALLED ON PVC RISERS AT THE FOLLOWING HEIGHTS: TRAILING LANTANA - 12", RED YEW LANTANA - 15", CAPE HONEYSUCKLE & PLUMBAGO - 24", ICE PLANT - 8".
3. SPRINKLERS WITHIN 5 FEET OF SHOULDERS, CURBS, AND PAVED AREAS SHALL BE INSTALLED ON SWING JOINTS. ALL OTHER SPRINKLERS IN SHRUB AND GROUND COVER AREAS SHALL BE INSTALLED ON FLEX RISERS.
4. CONTROL VALVES, GATE VALVES, AND DOUBLE CHECK VALVES TO BE LOCATED AT LEAST 4 FEET FROM CURBS AND PAVED AREAS.
5. 1. CONTRACTOR TO PROVIDE CONDUIT FOR HECO. PRIMARY SERVICE CONDUCTORS SHALL BE CONCRETE ENCASED, NON-METALLIC CONDUIT RUN UNDER THE TRAVELED WAY OR UNDER SHOULDER SHALL BE CONCRETE ENCASED, STEEL OR PVC. CONDUIT RUN ELSEWHERE UNDERGROUND SHALL BE DIRECTLY BURIED, NON-METALLIC, MINIMUM 1" INCH SIZE. SEE DETAIL SHEET 9. EXPOSED CONDUIT SHALL BE STEEL.
6. ONLY SCHEDULE 80 PVC SHALL BE USED UNDER PAVING.
7. FLOOD BUBBLERS ARE USED TO IRRIGATE ALL TREES. CHECK PLANTING PLAN TO VERIFY TREE LOCATIONS. SEE 25 GAL. TREE DETAIL SHEET 5.
8. ALL SPRINKLER RISERS TO BE SCHEDULE 80 PVC.



STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

LAND TRANSPORTATION FACILITIES DIVISION

IRRIGATION PLAN

HONOLULU GATEWAY

BEAUTIFICATION PROJECT

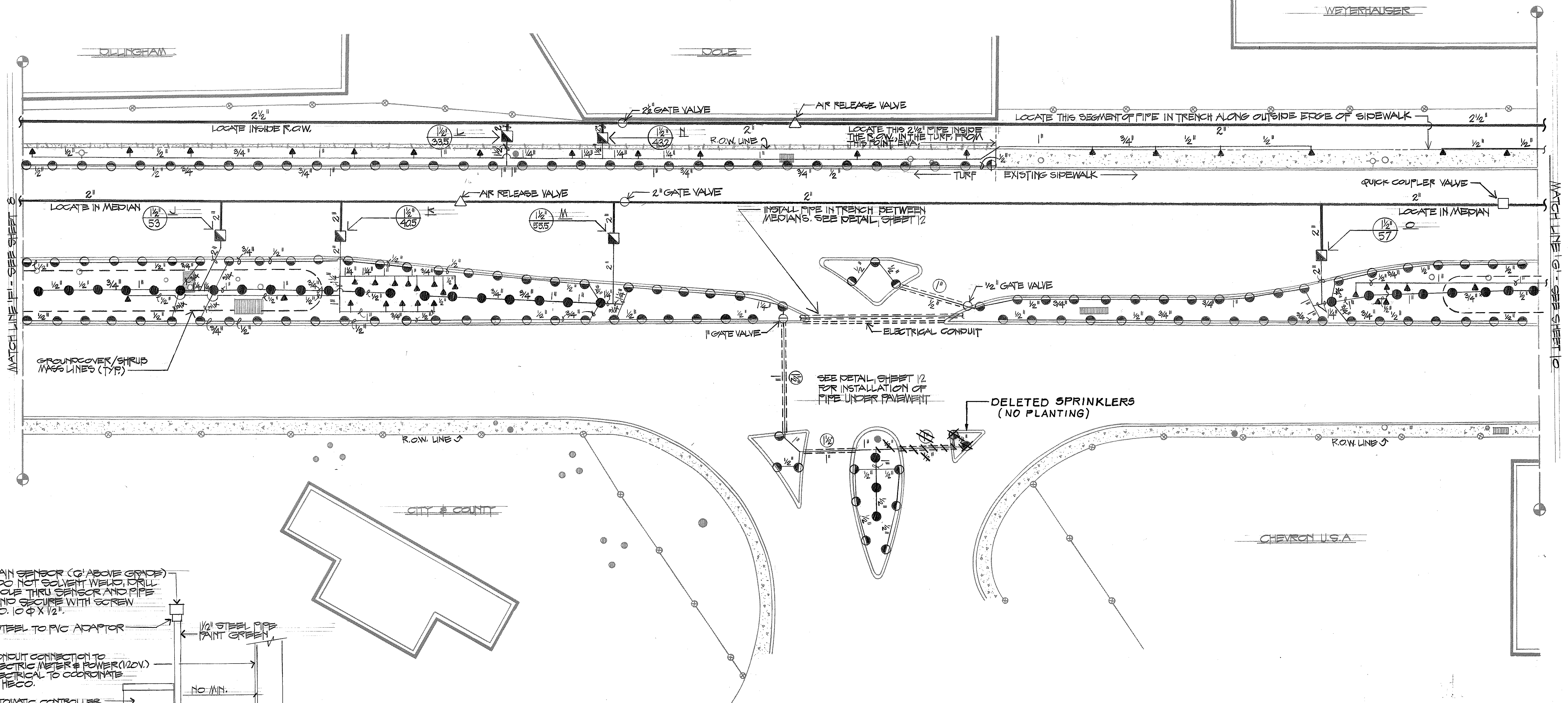
PHASE ONE - DEMONSTRATION AREA

DATE: DEC. 1980

SHEET NO. 2 OF 7 SHEETS

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	92A-04-81	1980	9	13



RAIN SENSOR (6" ABOVE GRADE)
(DO NOT SOLVENT WELD, DRILL
HOLE THRU SENSOR AND PIPE
AND SECURE WITH SCREW
NO. 10 ϕ X 1/2")

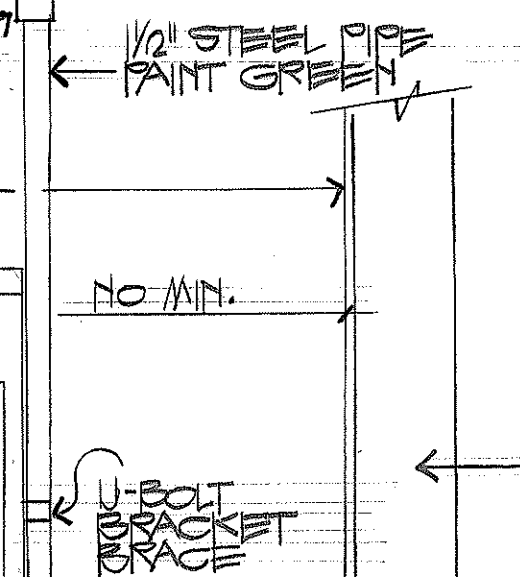
STEEL TO PVC ADAPTOR

CONDUIT CONNECTION TO
ELECTRIC METER & POWER (120V.)
ELECTRICAL TO COORDINATE
W/ HECO.

AUTOMATIC CONTROLLER
ANCHOR TO EXISTING
SIDEWALK PER MANUFAC.
SPECS. - LOCATE ON
DIAGONAL HEAD SIDE
OF UTILITY POLE AND 12"
FROM R.O.W. LINE.

EXISTING SIDEWALK
CUTOUT AS NECESSARY TO
ACCOMMODATE CONDUITS

TO AUTOMATIC
VALVES



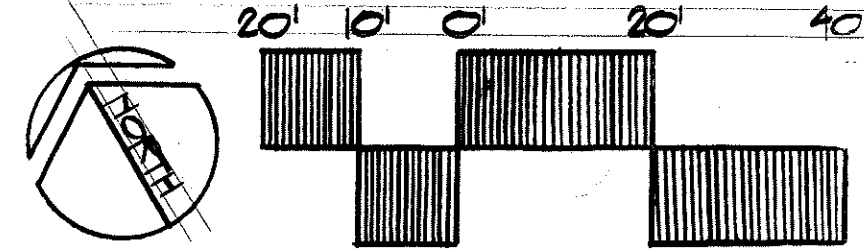
UTILITY POLE # 25509

AUTOMATIC CONTROLLER DETAIL
NO SCALE

NOTE: SEE ALSO DETAILS, SHS. 12 & 13

SEE DETAIL, SHEET 12
FOR INSTALLATION OF
PIPE UNDER PAVEMENT

DELETED SPRINKLERS
(NO PLANTING)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

IRRIGATION PLAN

HONOLULU GATEWAY
BEAUTIFICATION PROJECT
PHASE ONE - DEMONSTRATION AREA

DATE: DEC. 1980

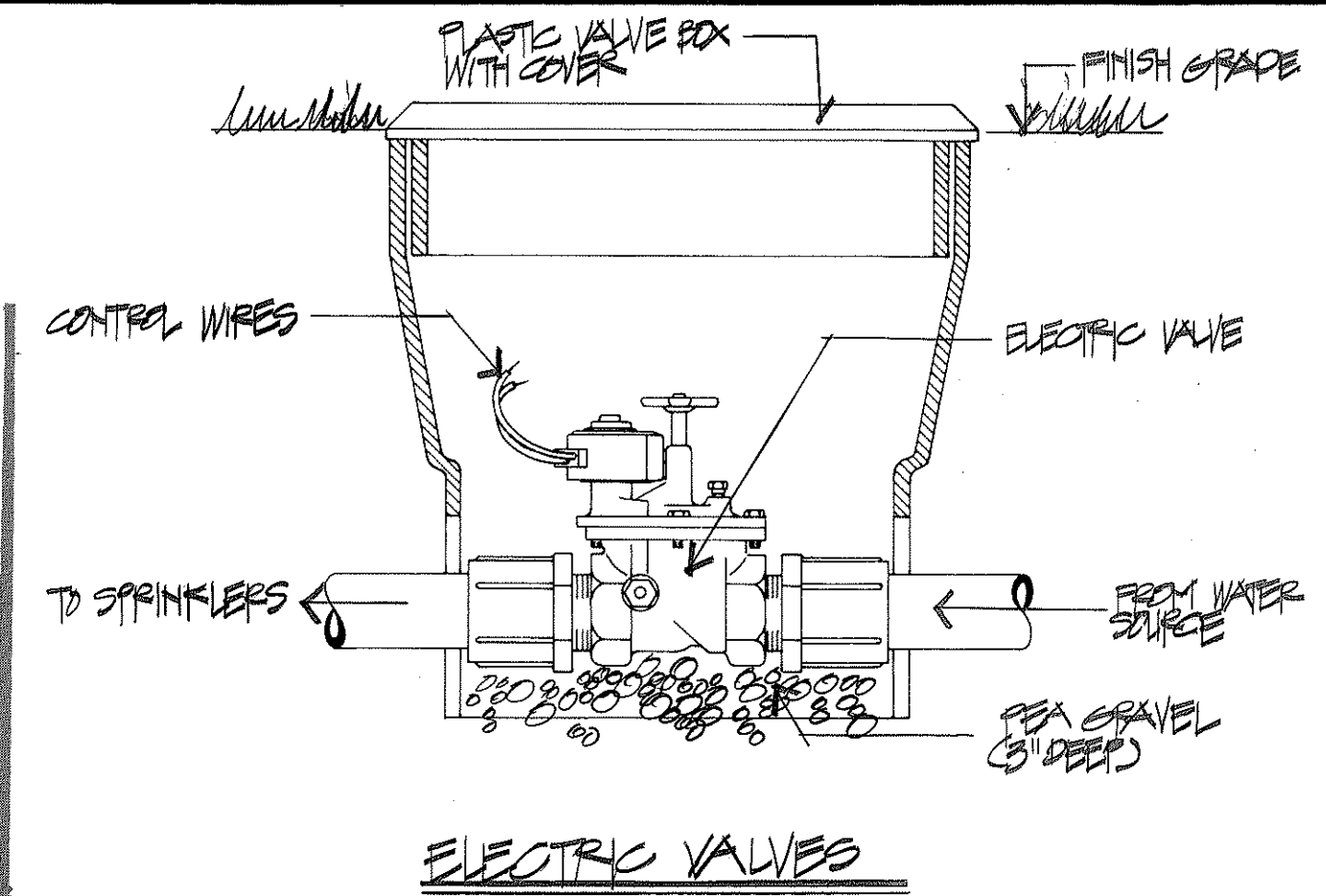
SHEET No. 3 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	92A-04-81	1980	10	13

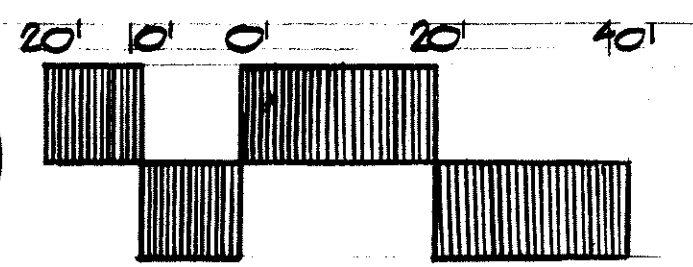
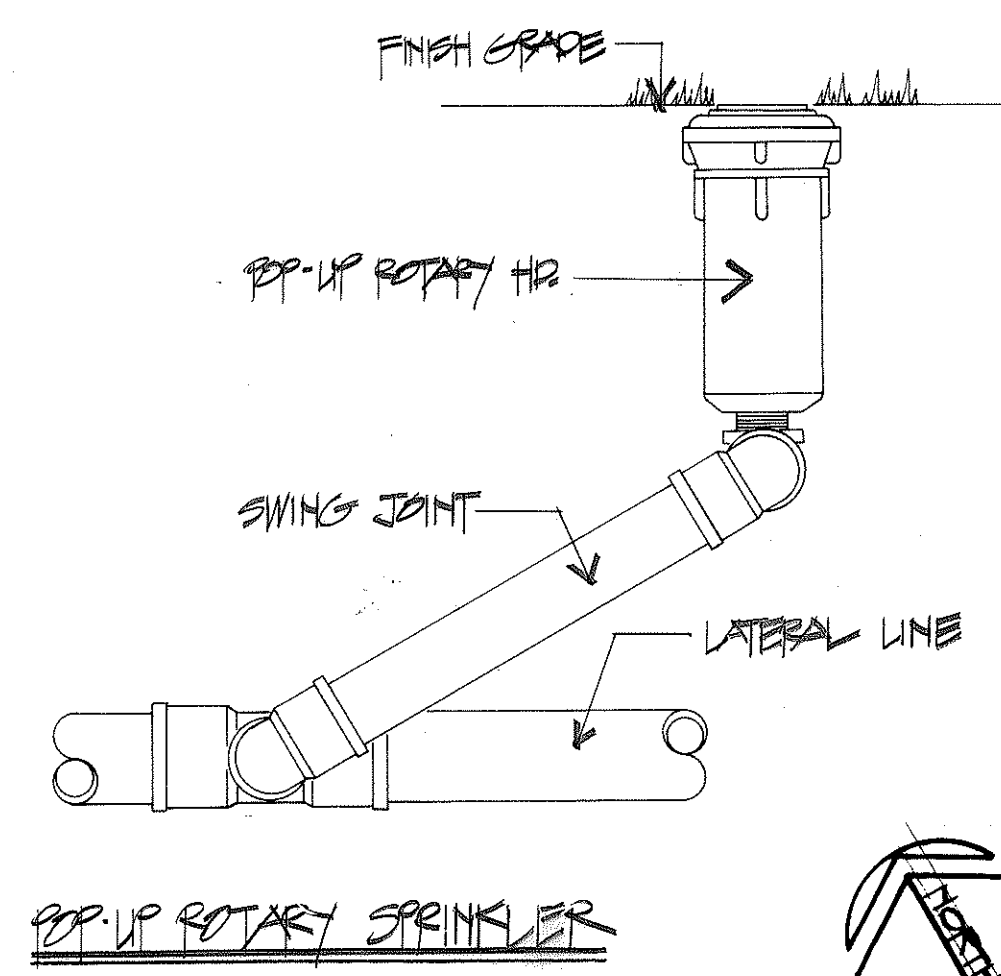
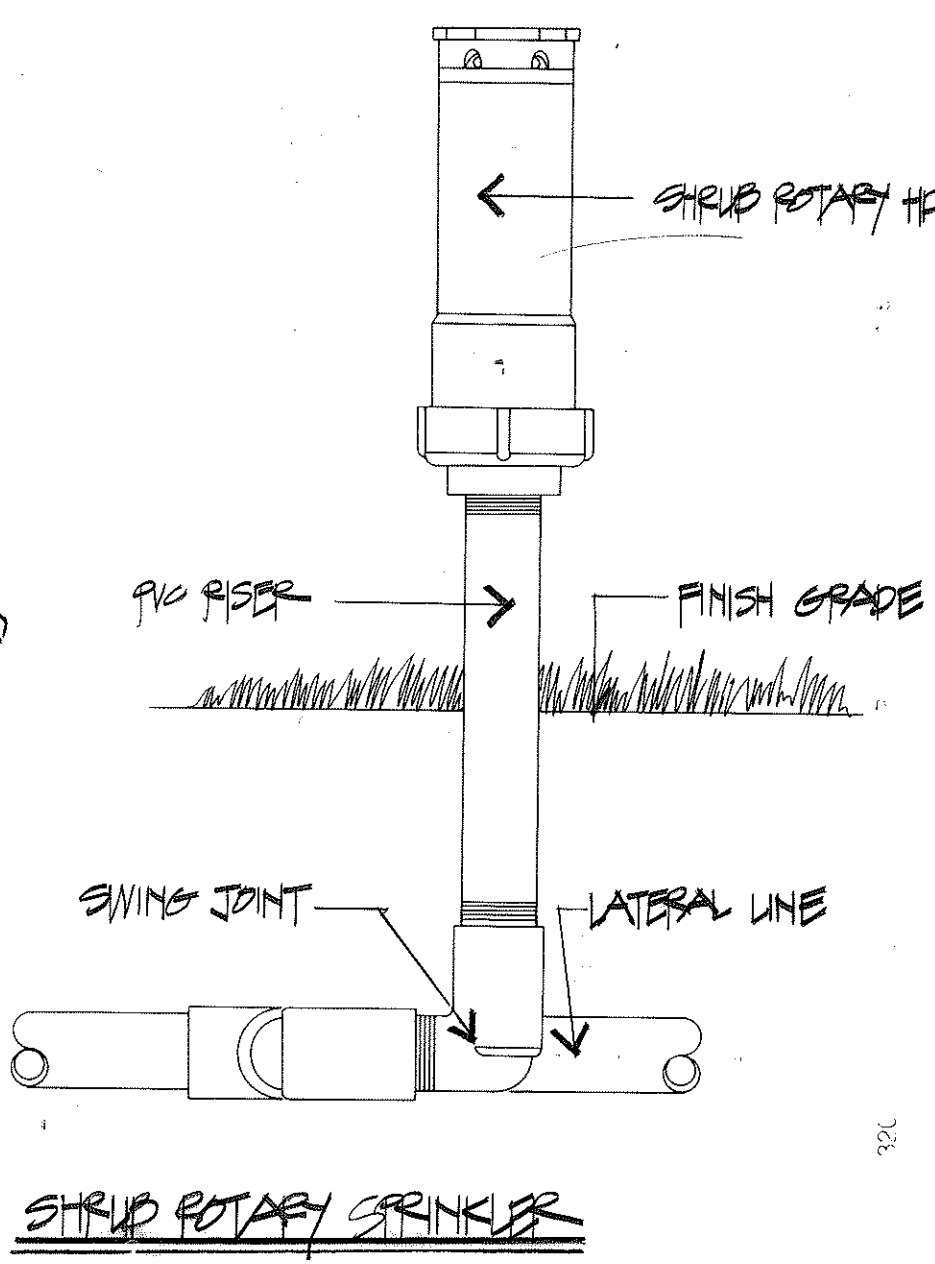
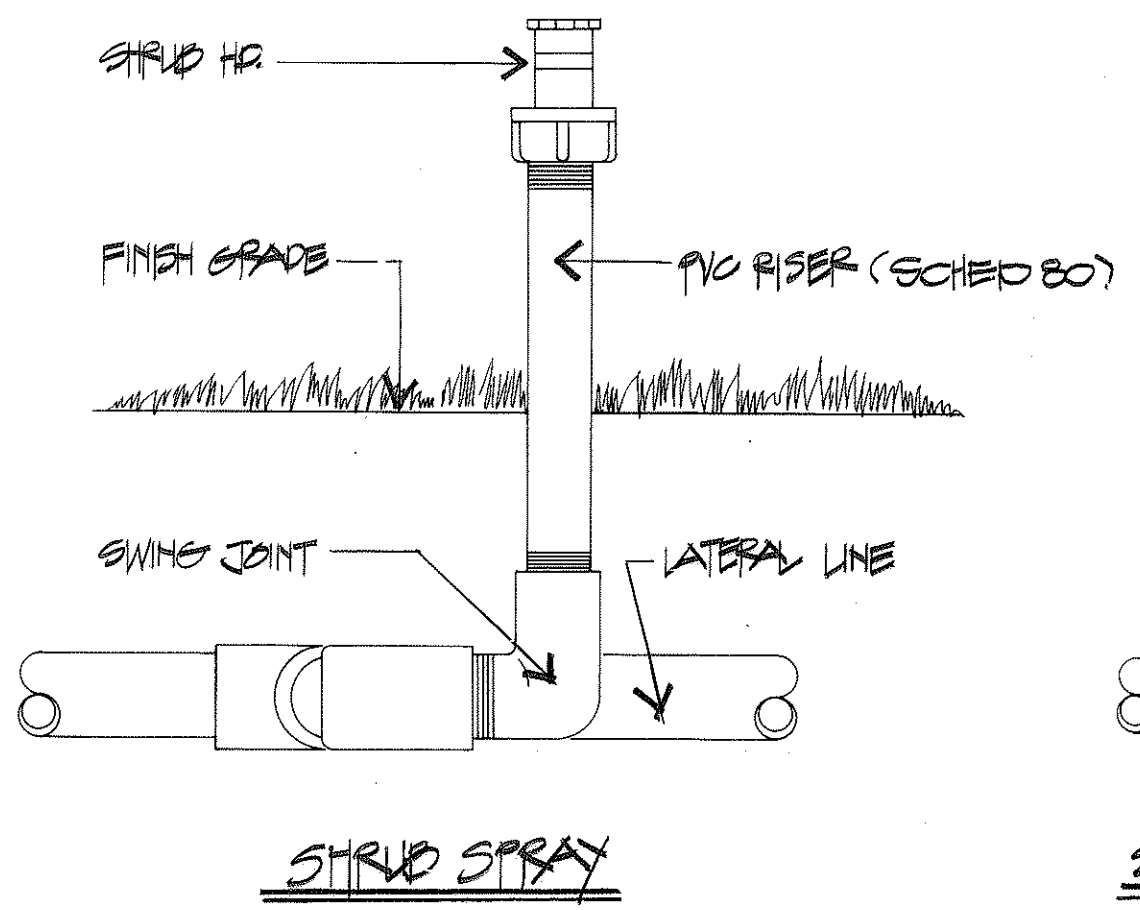
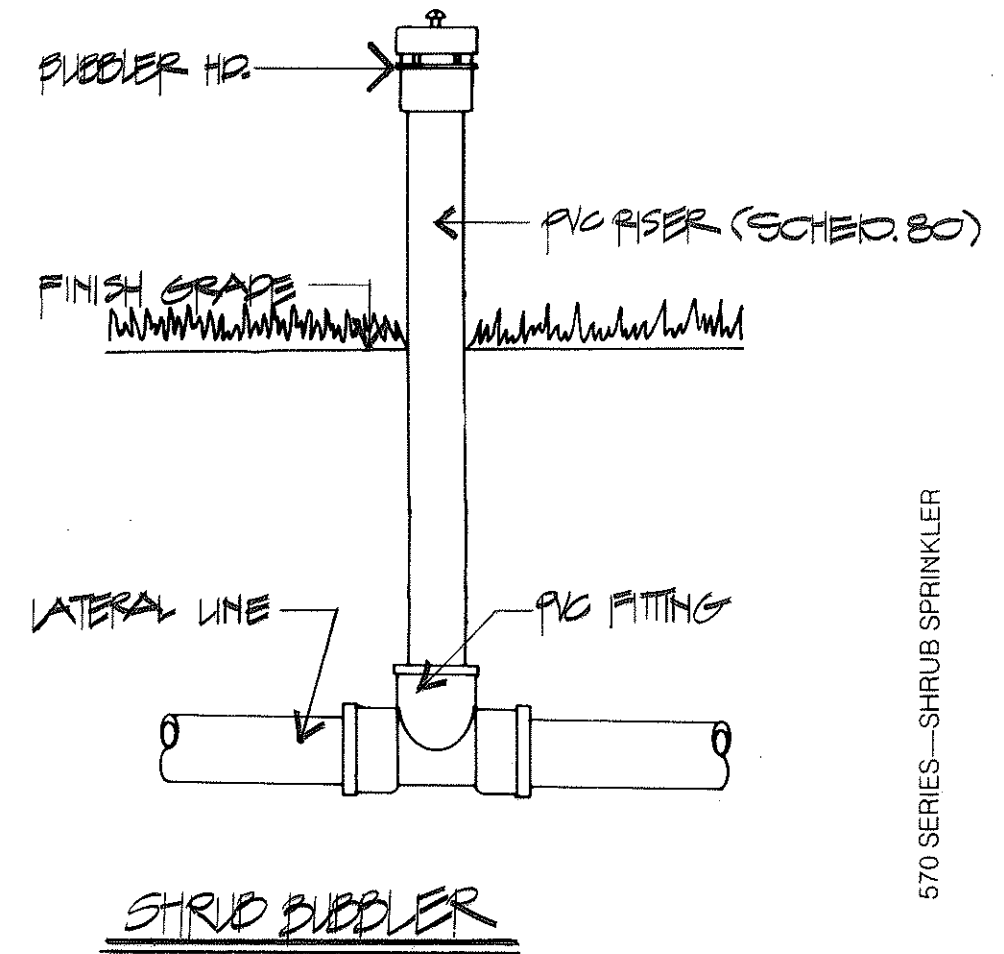
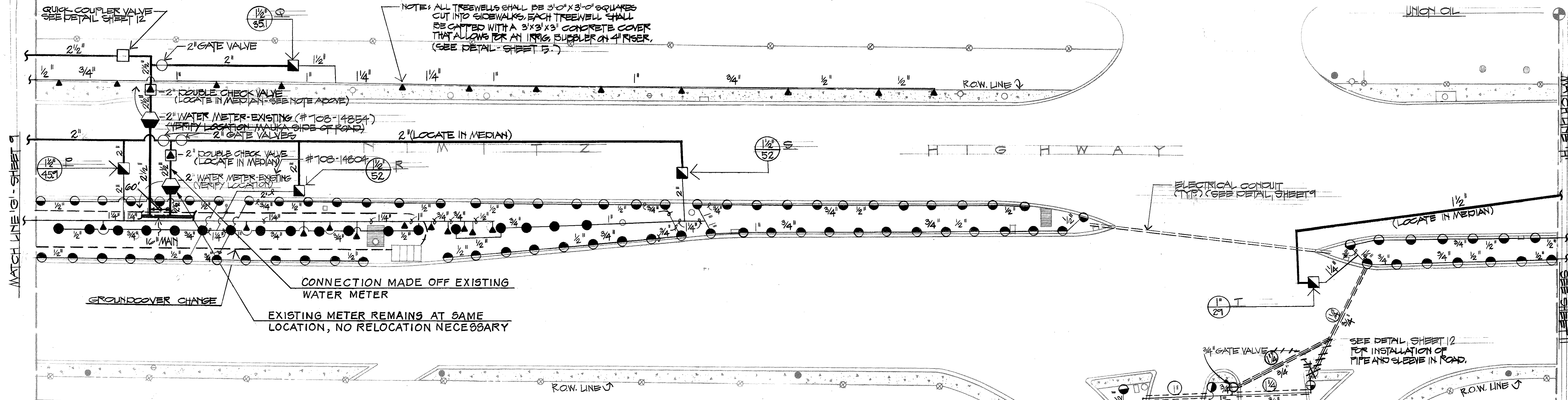
WATER METER DATA:
 METER # 108-14854
 1. HIGH GPM: 59 GPM
 2. LOW GPM: 40 GPM
 3. GAL/DAY: 6122 GAL.
 METER # 108-14804
 1. HIGH GPM: 11 GPM
 2. LOW GPM: 22 GPM
 3. GAL/DAY: 3695 GAL.

NOTE: BOTH EXISTING WATER METERS ARE LOCATED IN THE MAUKA SIDEWALK.

DOUBLE CHECK VALVE NOTE:
 INSTALL DOUBLE CHECK VALVES FOR MAUKA WATER METERS IN THE ROADWAY MEDIAN. DOUBLE CHECK VALVES CANNOT BE LOCATED OUTSIDE R.O.W. LINE.



WATERHAUSER



STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

LAND TRANSPORTATION FACILITIES DIVISION

IRRIGATION PLAN

HONOLULU GATEWAY

SEWAGE TREATMENT PROJECT

PHASE ONE - DEMONSTRATION AREA

DATE: DEC. 1980

SHEET NO. 4 OF 7 SHEETS

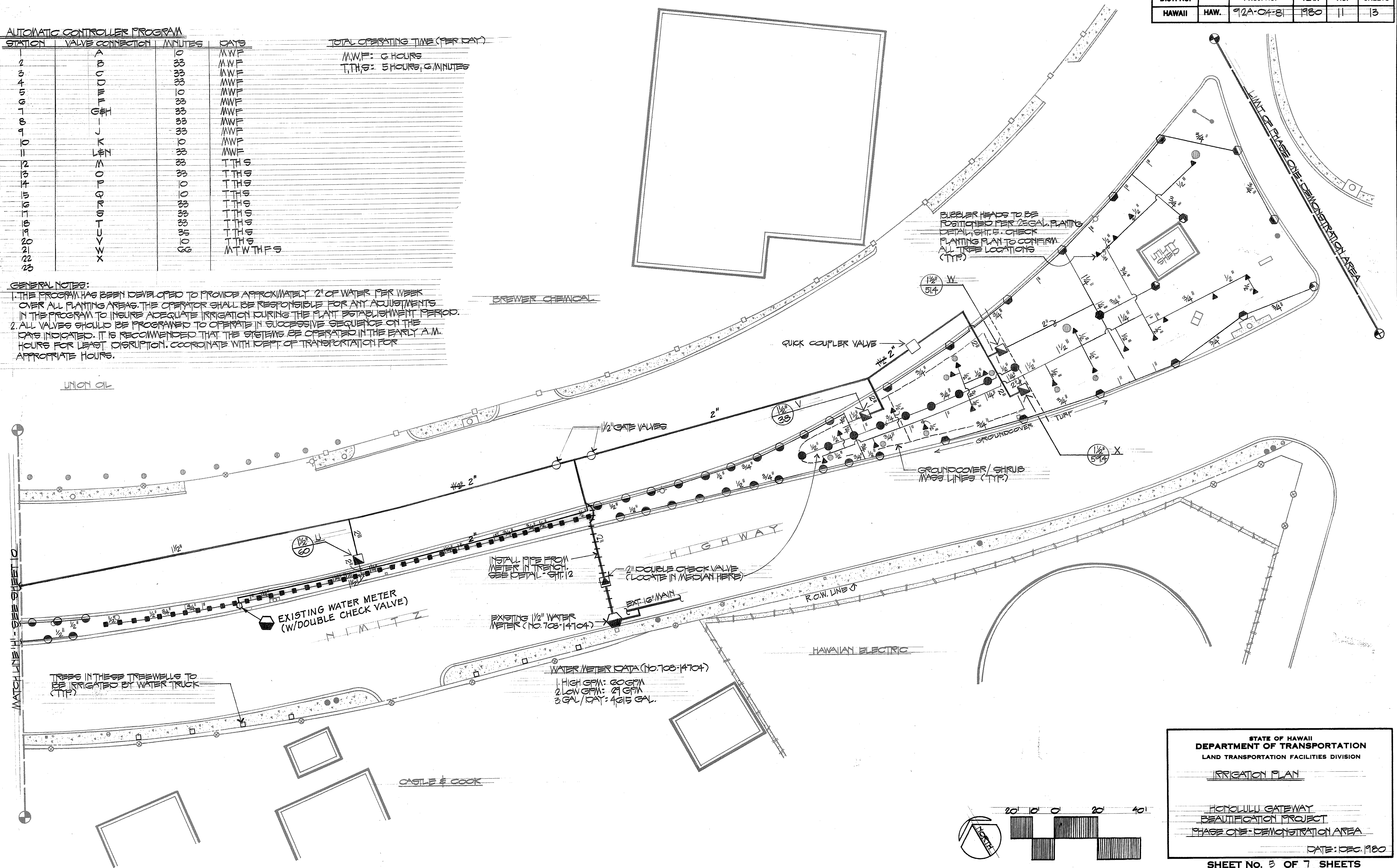
SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	92A-04-B	1980	11	13

STATION	VALVE CONNECTION	MINUTES	DAYS
2	A O O D D L L E E	0	MWF
3		33	MWF
4		33	MWF
5		33	MWF
6		10	MWF
7		33	MWF
8		33	MWF
9		33	MWF
10		0	MWF
11		33	MWF
12	V V K O O L O O L L E E	33	TTHS
13		33	TTHS
14		0	TTHS
15		0	TTHS
16		33	TTHS
17		33	TTHS
18		33	TTHS
19		33	TTHS
20		0	TTHS
21		0	TTHS
22	X X	0	MTWTHFS
23		0	MTWTHFS

TOTAL OPERATING TIME (PER DAY)
MWF: 6 HOURS
TTHS: 5 HOURS, 6 MINUTES

GENERAL NOTES:
1. THE PROGRAM HAS BEEN DEVELOPED TO PROVIDE APPROXIMATELY 2" OF WATER PER WEEK OVER ALL PLANTING AREAS. THE OPERATOR SHALL BE RESPONSIBLE FOR ANY ADJUSTMENTS IN THE PROGRAM TO INSURE ADEQUATE IRRIGATION DURING THE PLANT ESTABLISHMENT PERIOD.
2. ALL VALVES SHOULD BE PROGRAMMED TO OPERATE IN SUCCESSIVE SEQUENCE ON THE DAYS INDICATED. IT IS RECOMMENDED THAT THE SYSTEMS BE OPERATED IN THE EARLY A.M. HOURS FOR LEAST DISRUPTION. COORDINATE WITH DEPT. OF TRANSPORTATION FOR APPROPRIATE HOURS.

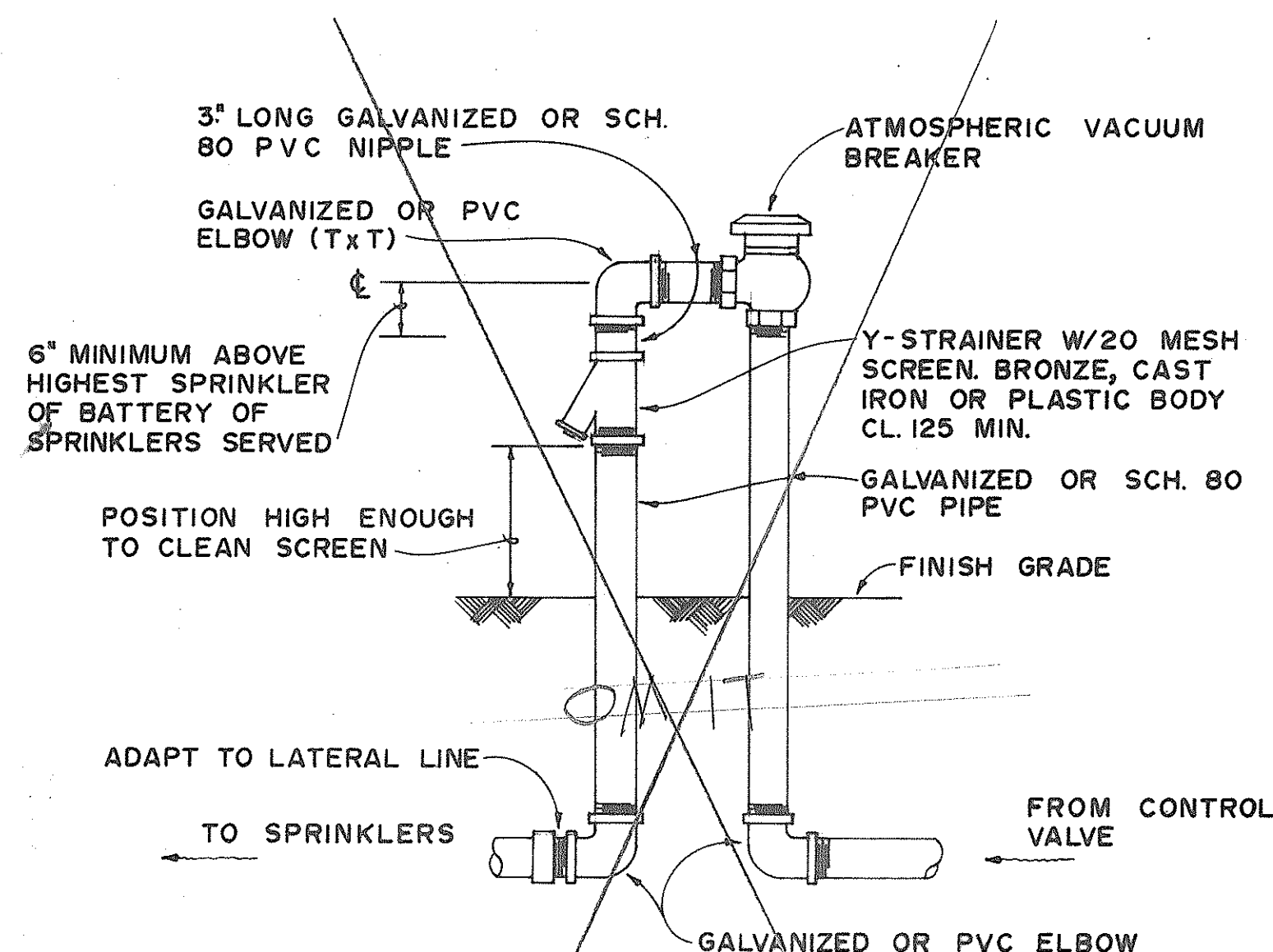


SURVEY PLANNED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

IRRIGATION PLAN
HONOLULU GATEWAY
BEAUTIFICATION PROJECT
PHASE ONE - DEMONSTRATION AREA
DATE: DEC. 1980

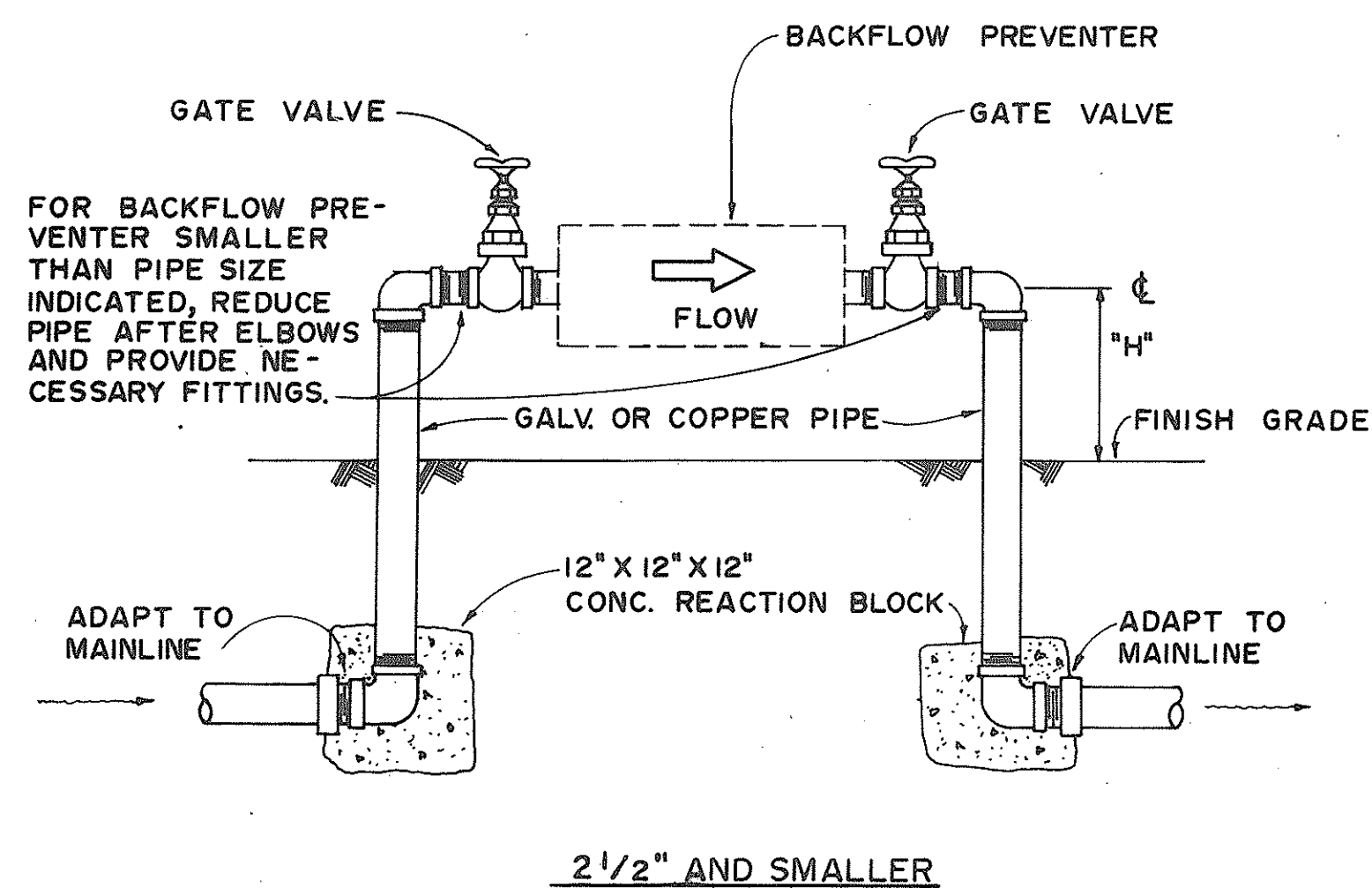
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19A-01-01	1980	12	13



ATMOSPHERIC VACUUM BREAKER UNIT DETAIL

NOTES:

1. ATMOSPHERIC VACUUM BREAKER, Y-STRAINER AND PIPE ABOVE FINISH GRADE SHALL BE PRIME COATED AND PAINTED WITH TWO COATS OF DARK GREEN ENAMEL PAINT.
2. GALVANIZED PIPE BELOW FINISH GRADE SHALL BE PAINTED WITH TWO COATS OF ASPHALT PAINT.

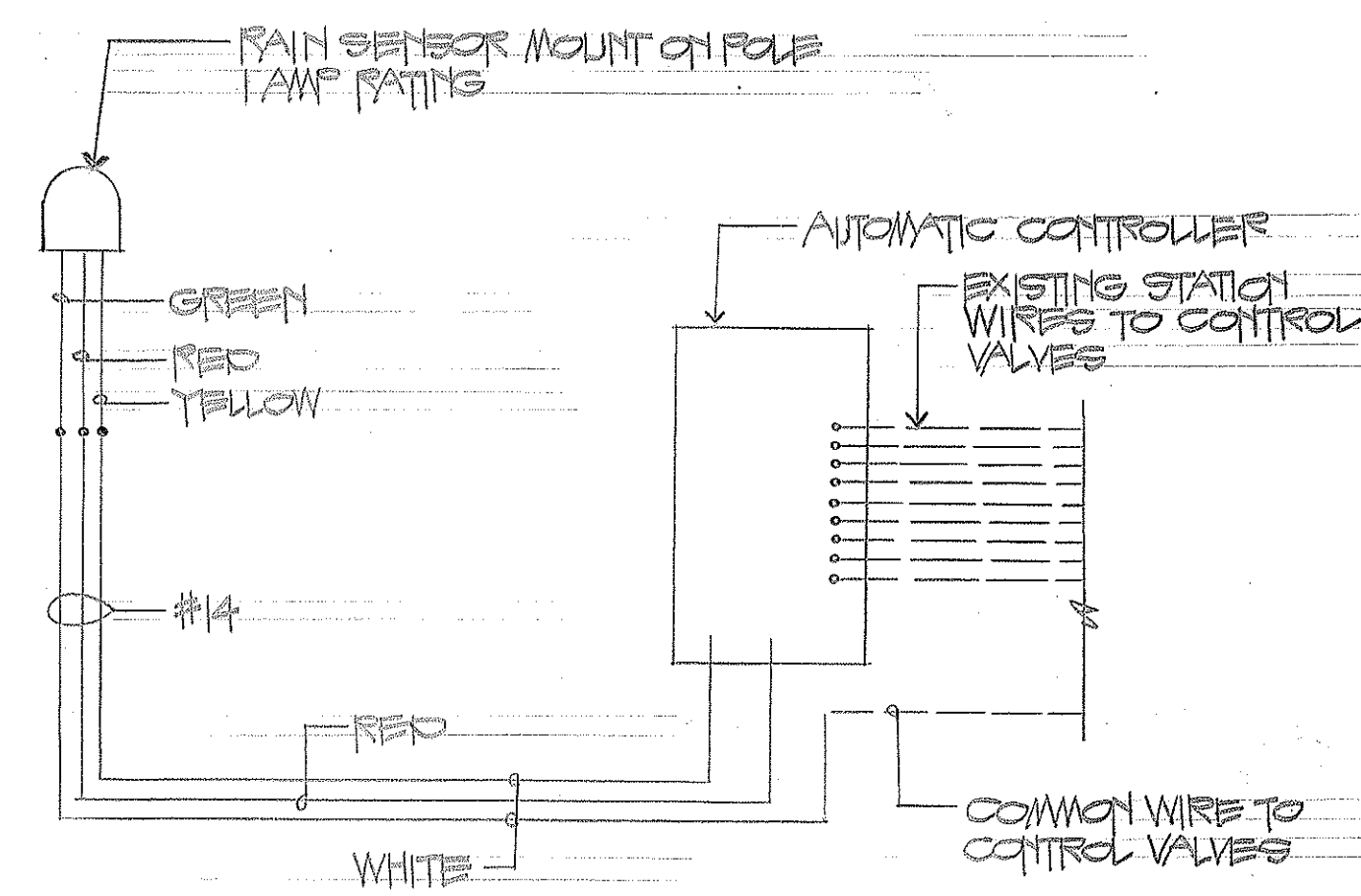
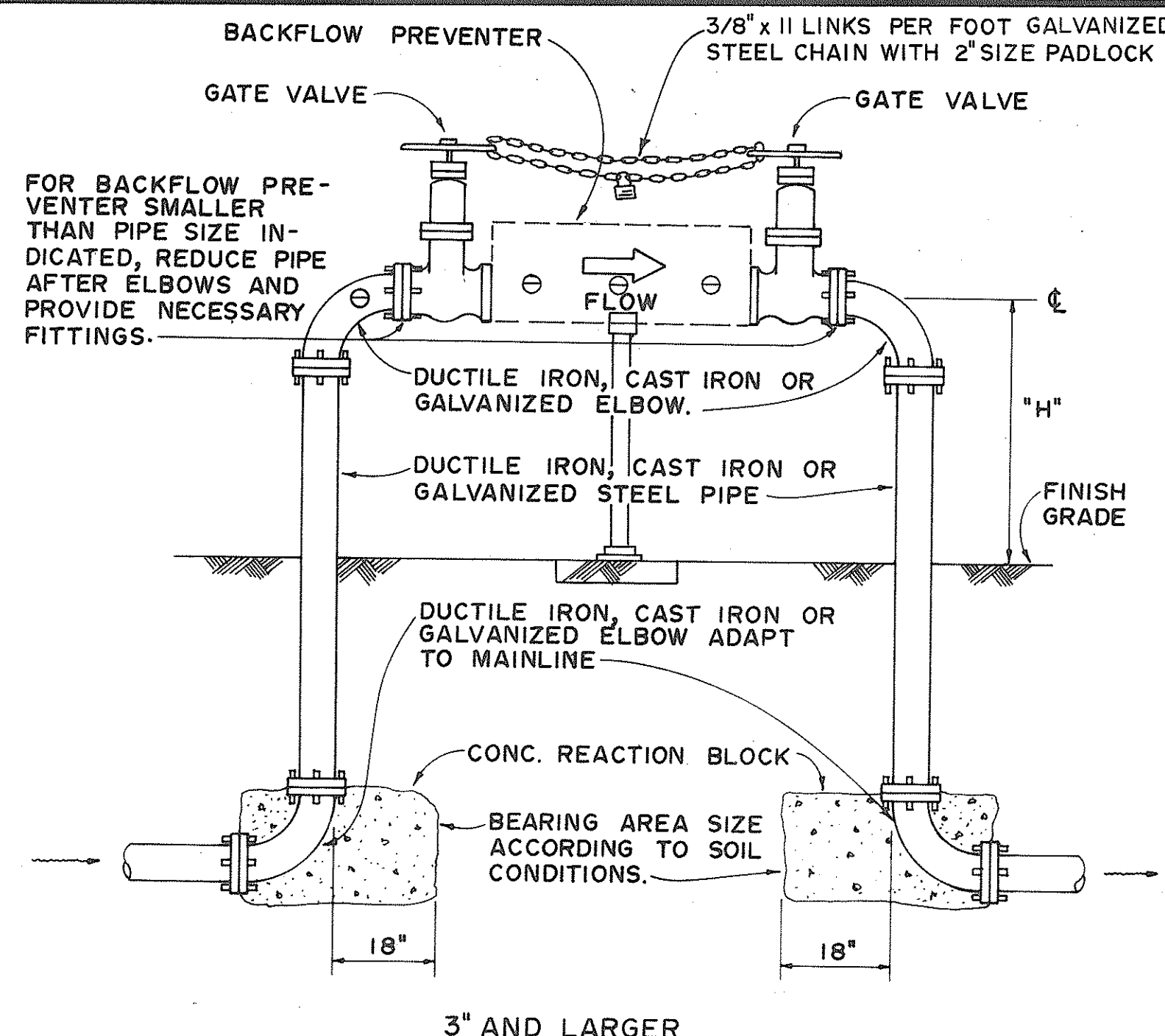


BACKFLOW PREVENTION UNIT DETAIL

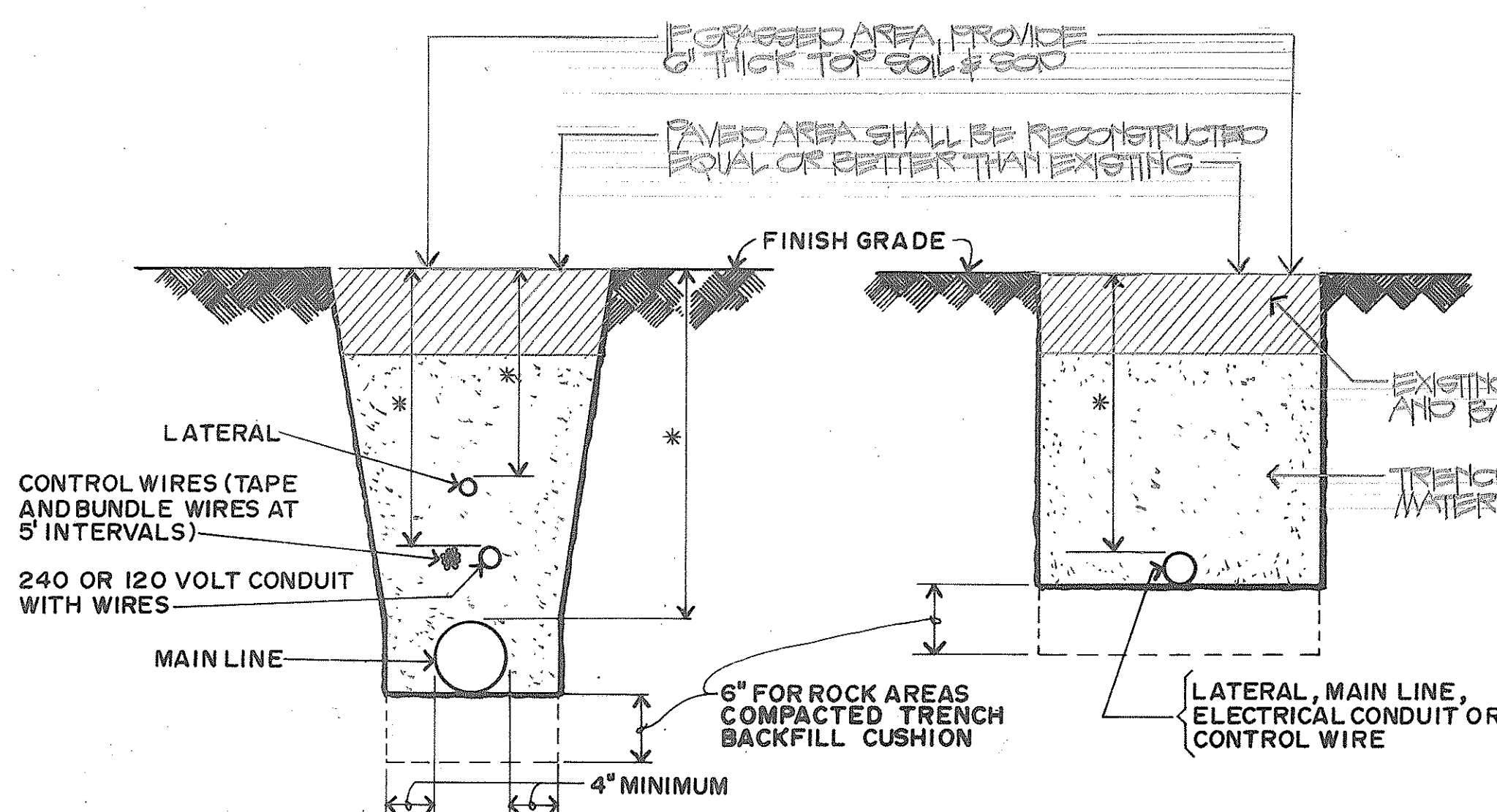
NOTES:

1. ONLY ONE TYPE OF PIPE AND FITTINGS SHALL BE USED.
2. BACKFLOW PREVENTION UNIT SHALL BE PRIME COATED AND PAINTED WITH TWO COATS OF DARK GREEN ENAMEL PAINT TO THE FINISH GRADE.
3. DUCTILE IRON, CAST IRON OR GALVANIZED PIPE BELOW FINISH GRADE SHALL BE PAINTED WITH TWO COATS OF ASPHALT PAINT.
4. THERE SHALL BE NO OBSTRUCTION WITHIN A DISTANCE OF TWO (2) FEET SURROUNDING THE BACKFLOW PREVENTION UNIT.

SIZE OF PIPE	"H"
3/4" - 1 1/2"	18"
2" - 3"	24"
4" - 6"	30"



RAIN SENSOR WIRE DIAGRAM AT AUTOMATIC CONTROLLER

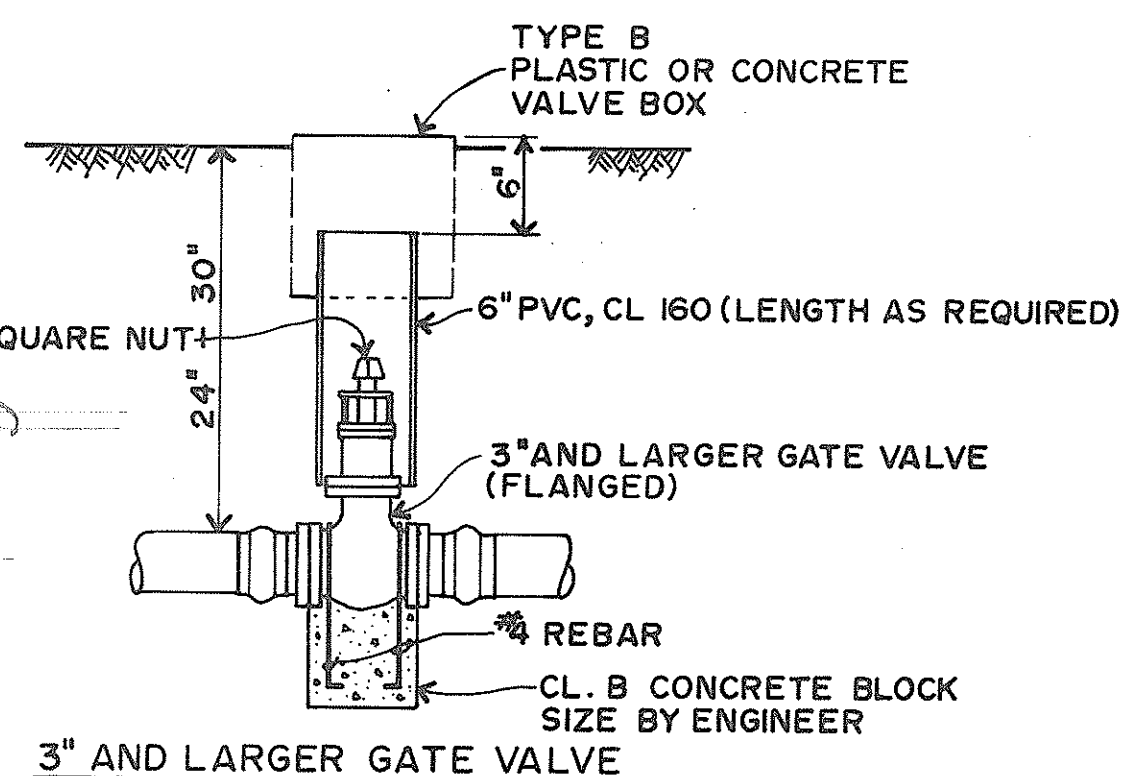


TRENCH DETAIL

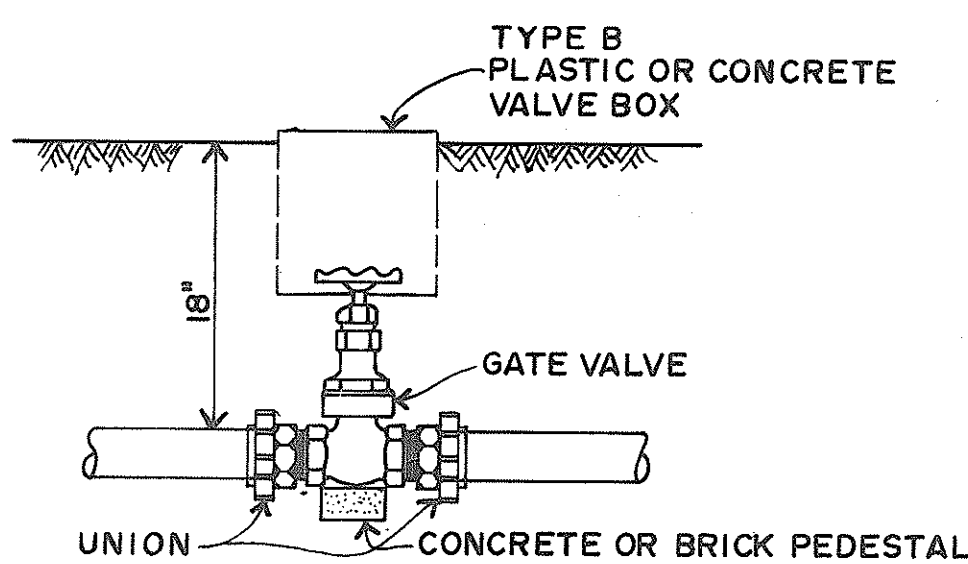
NOTES:

1. PIPES UNDER ROADWAY SHALL HAVE MINIMUM COVER OF 30 INCHES AND SHALL BE SCHEDULE 80 PVC.
2. THERE SHALL BE A 3" MINIMUM CLEARANCE BETWEEN CONTROL WIRE BUNDLE, CONDUIT, MAIN AND LATERAL LINES.
3. THE WIDTH OF THE TRENCH SHALL BE AS NARROW AS PRACTICAL TO FACILITATE INSTALLATION. APPROXIMATELY TWICE THE OUTSIDE DIAMETER OF THE PIPE WITH A MINIMUM OF 8".

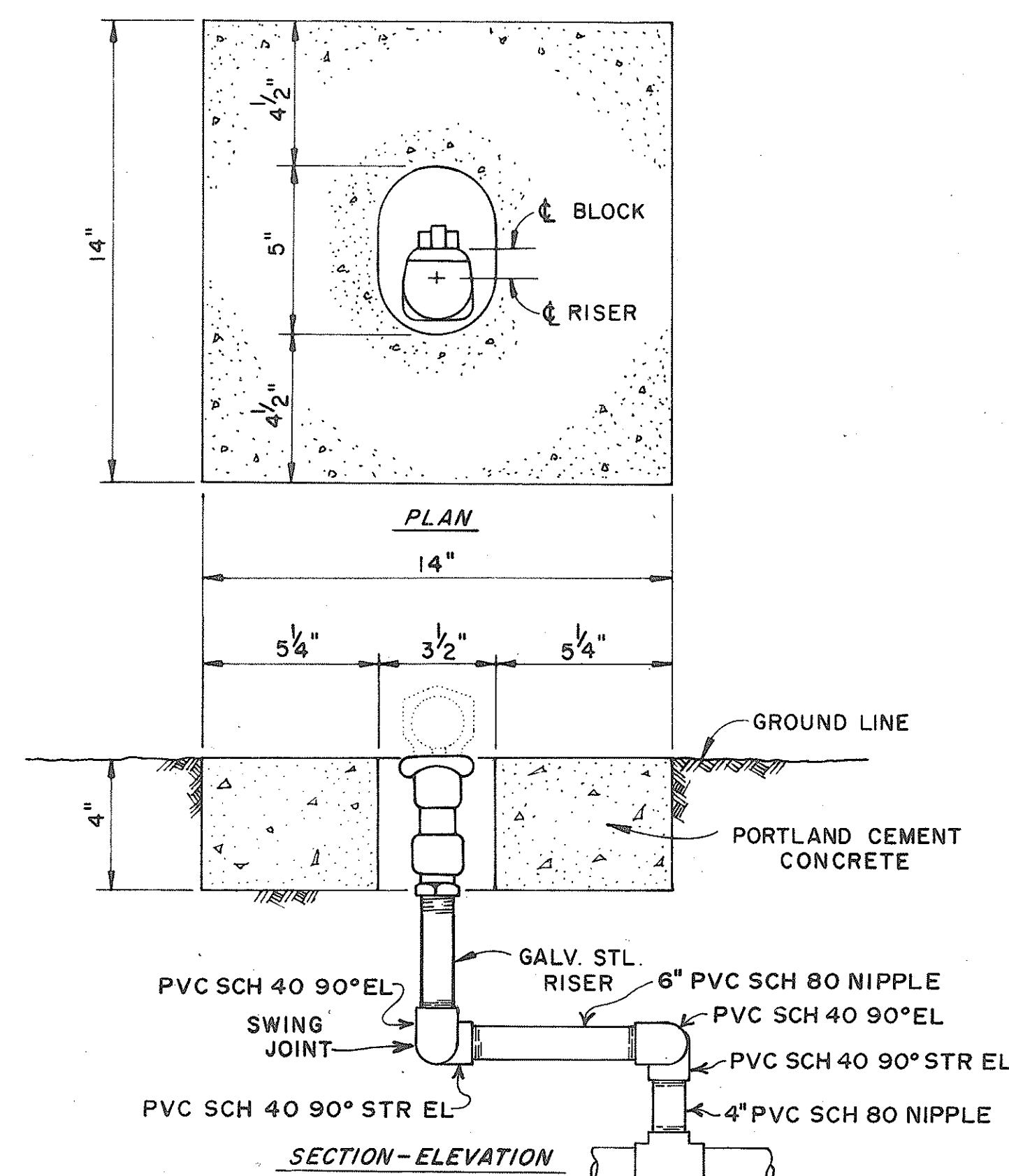
	MINIMUM * COVER
SPRINKLER LATERALS	24"
SPRINKLER MAINS	24"
1/2" TO 2 1/2"	18"
3" OR 4"	24"
OVER 4"	30"
ELECTRICAL CONDUIT	24"
CONTROL WIRES	24"



3" AND LARGER GATE VALVE



2 1/2" AND SMALLER GATE VALVE



VALVE PROTECTOR AND CONNECTION FOR QUICK COUPLING VALVE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

IRRIGATION DETAILS

HONOLULU GATEWAY
REHAUSICATION PROJECT
PHASE ONE - DEMONSTRATION AREA

DATE: DEC. 1980

SHEET NO. 6 OF 7 SHEETS