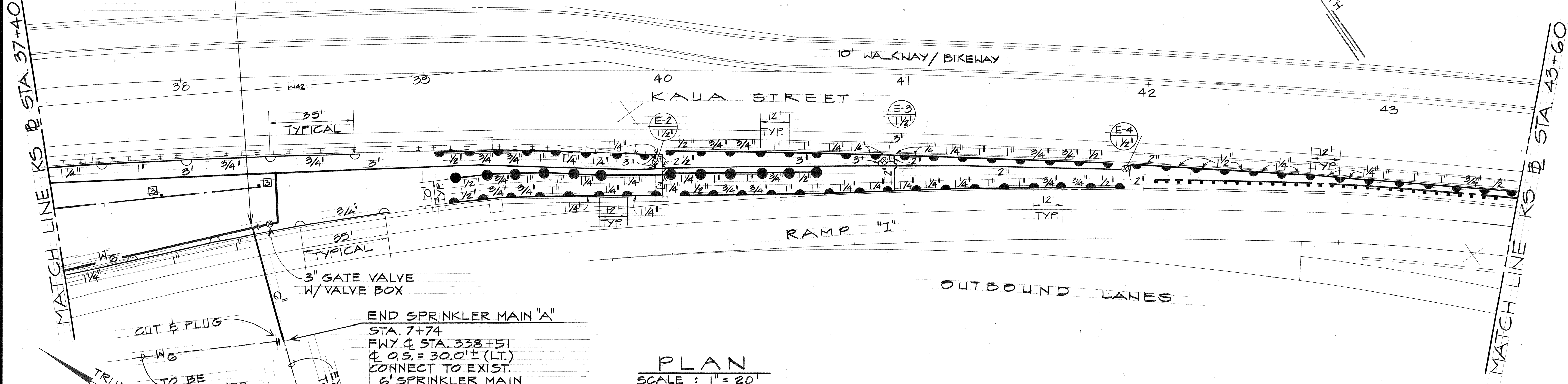


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	114	234

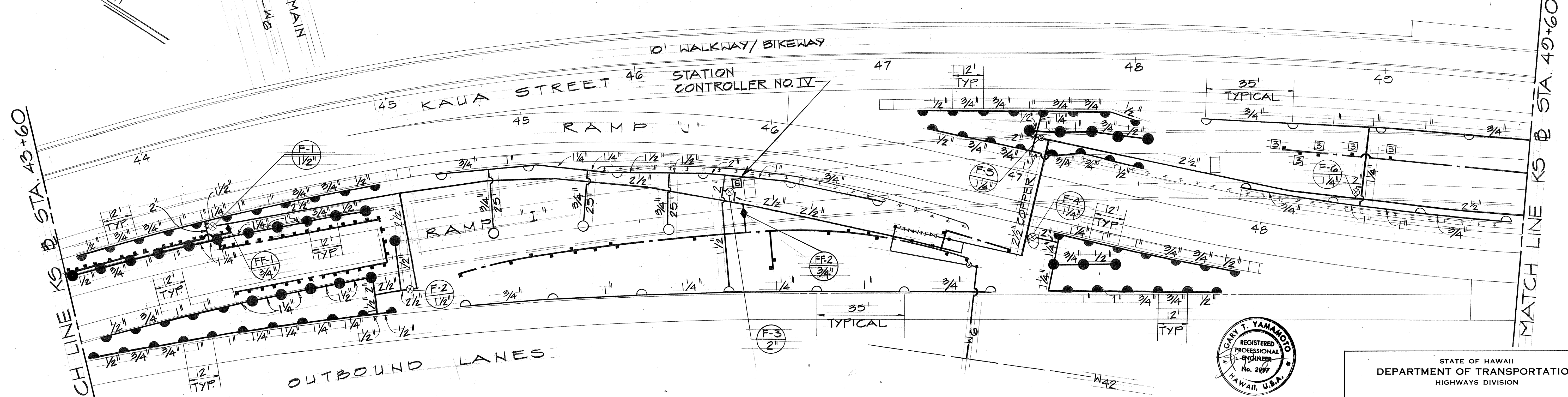
TRUE NORTH

SM-A
STA. 7+26
FWY ϕ STA. 338+46
 ϕ O.S. = 73.0' (RT.)
- 6" TEE
- 6" X 3" REDUCER
- CONC. BLOCK

NOTE:
EXISTING SPRINKLER SYSTEM IN FORT SHAFTER AREA AFFECTED BY CONSTRUCTION SHALL BE CUT & PLUGGED LOWERED OR EXTENDED AND RECONNECTED AS REQUIRED THIS WORK TO BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEM.

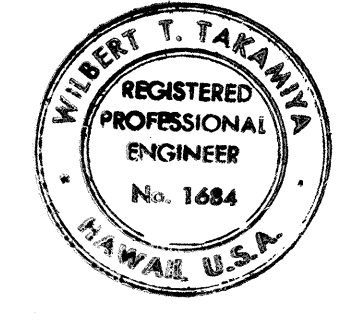
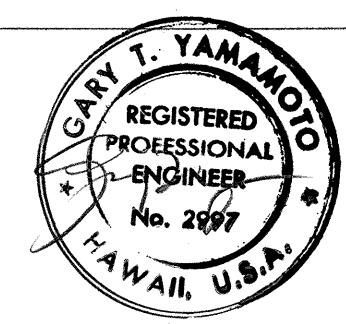


PLAN
SCALE: 1" = 20'



PLAN
SCALE: 1" = 20'

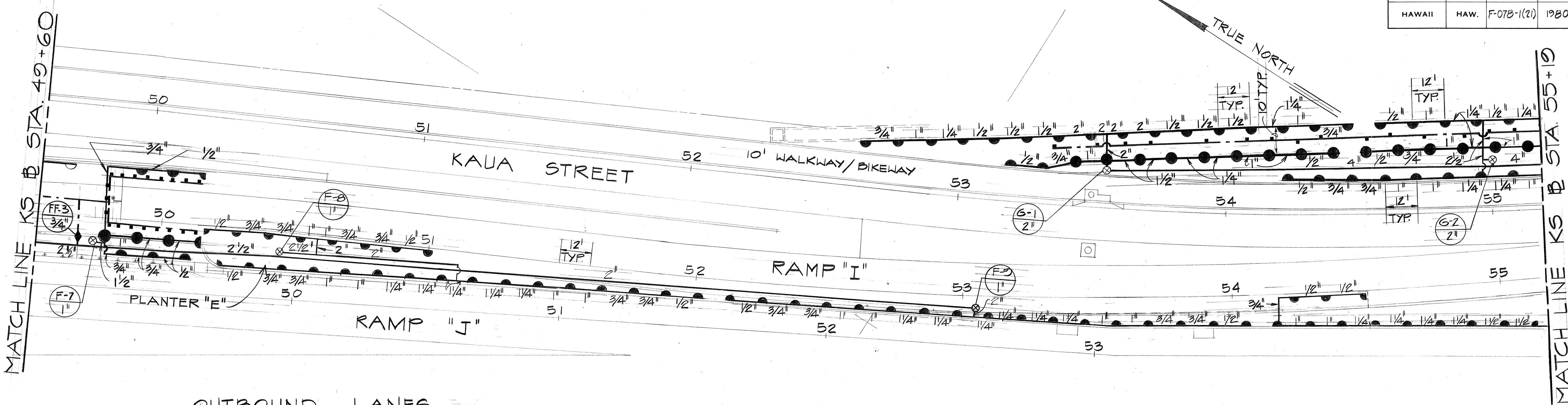
DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
NO.	_____



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SPRINKLER SYSTEM
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST.-UNIT 3B
FA. Proj. No. F-078-1(21)
SCALE: AS SHOWN DATE: AUG 1, 1979
SHEET NO. 2 OF 3 SHEETS

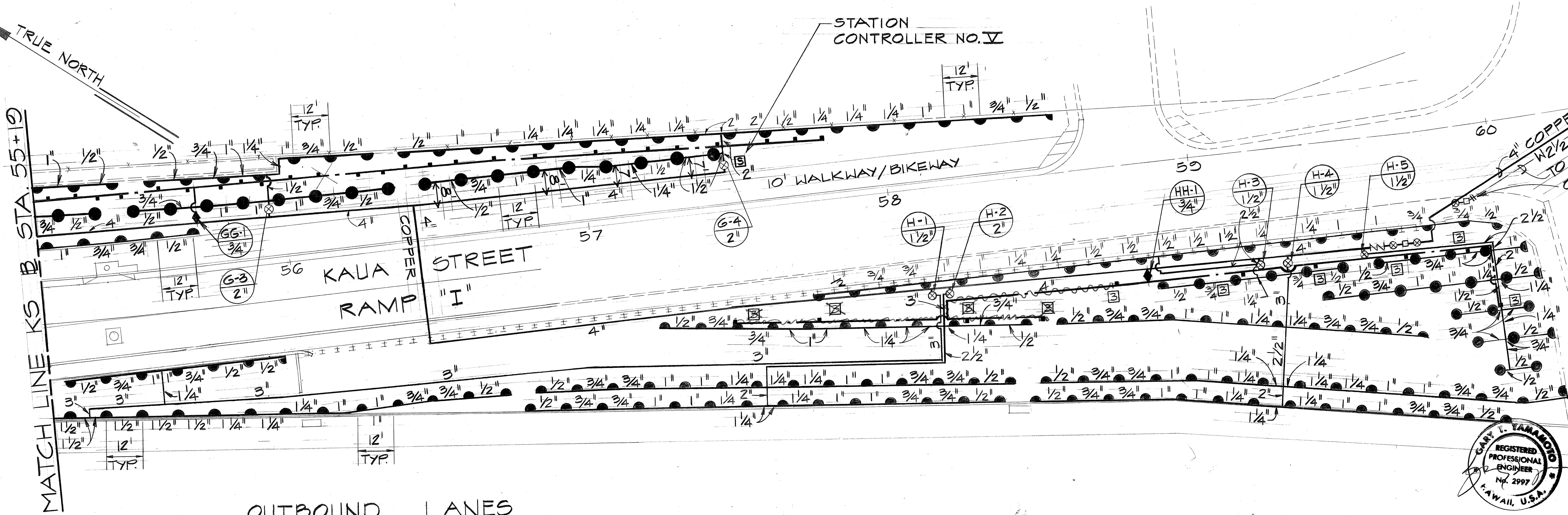
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	115	234



OUTBOUND LANES

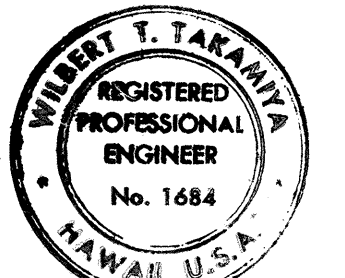
PLAN
SCALE : 1" = 20'

STATION
CONTROLLER NO. V



OUTBOUND LANES

PLAN
SCALE : 1" = 20'



Without J. Yamamoto
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM

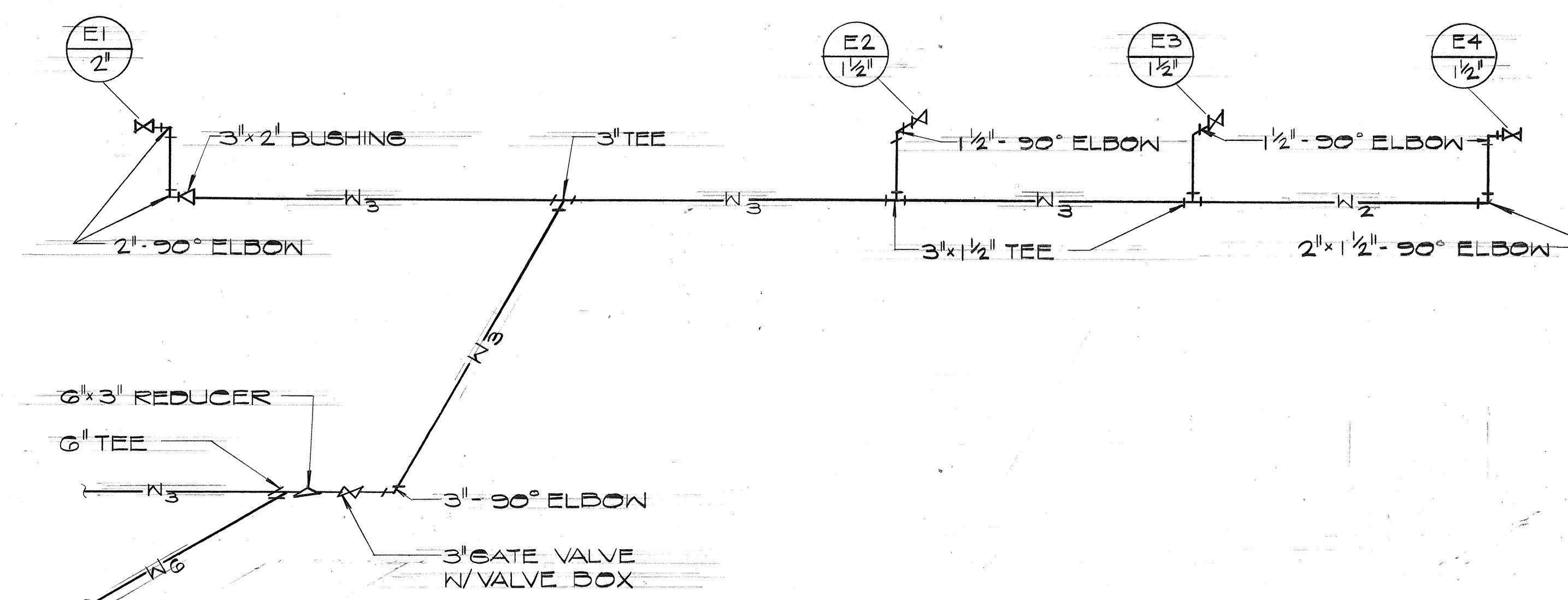
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST.-UNIT 3B
FA. Proj. No. F-078-1(21)

SCALE: AS SHOWN DATE: SEPT. 30, 1977

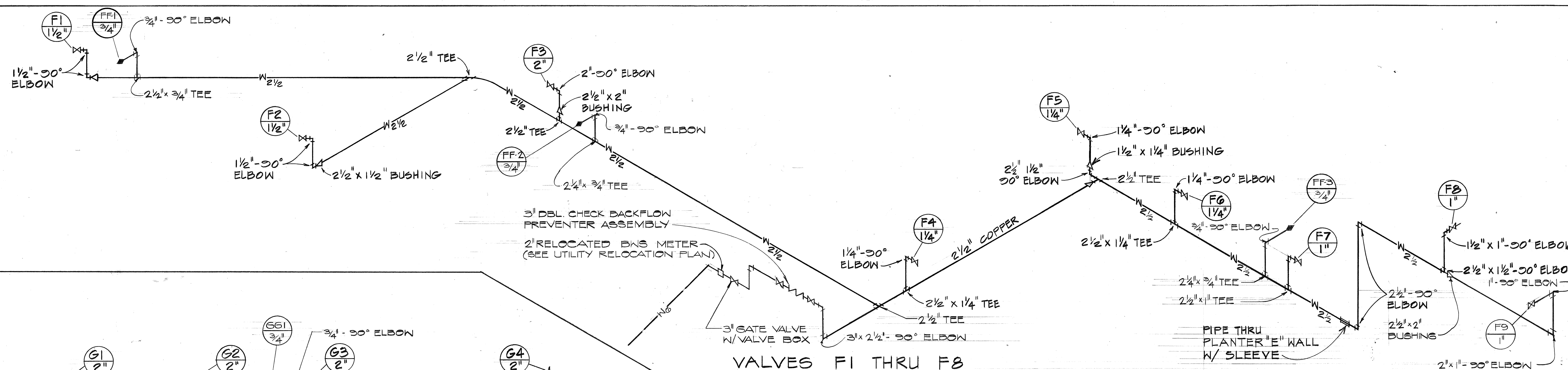
SHEET NO. 3 OF 3 SHEETS

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

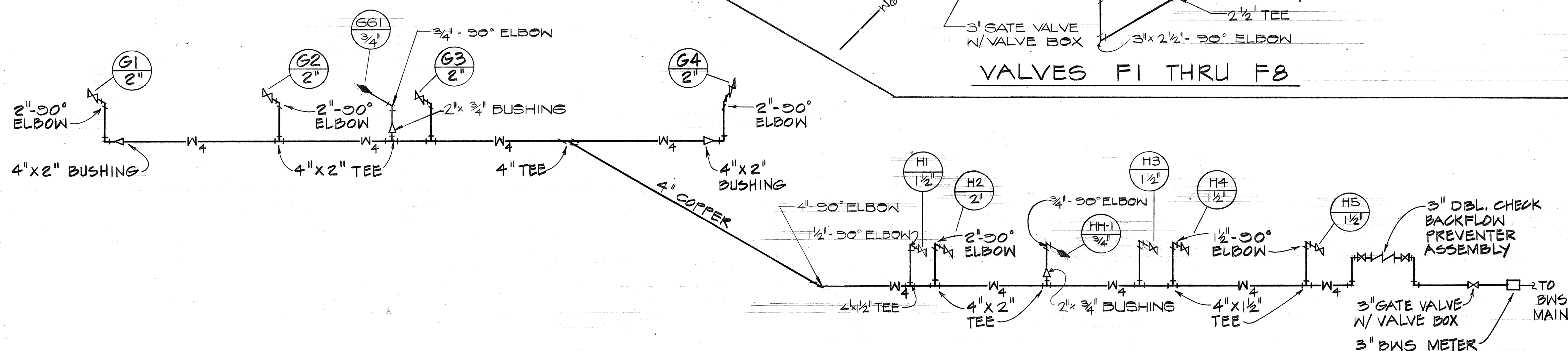
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	116	234



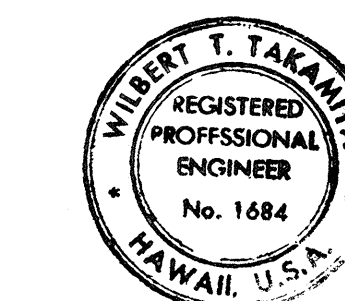
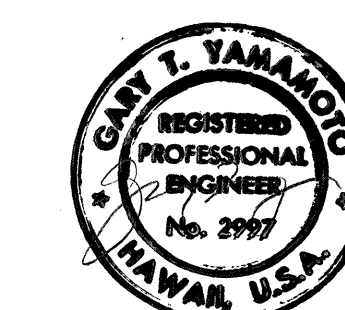
VALVES E1 THRU E4



VALVES F1 THRU F8



VALVES G1 THRU G4 AND H1 THRU H6



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

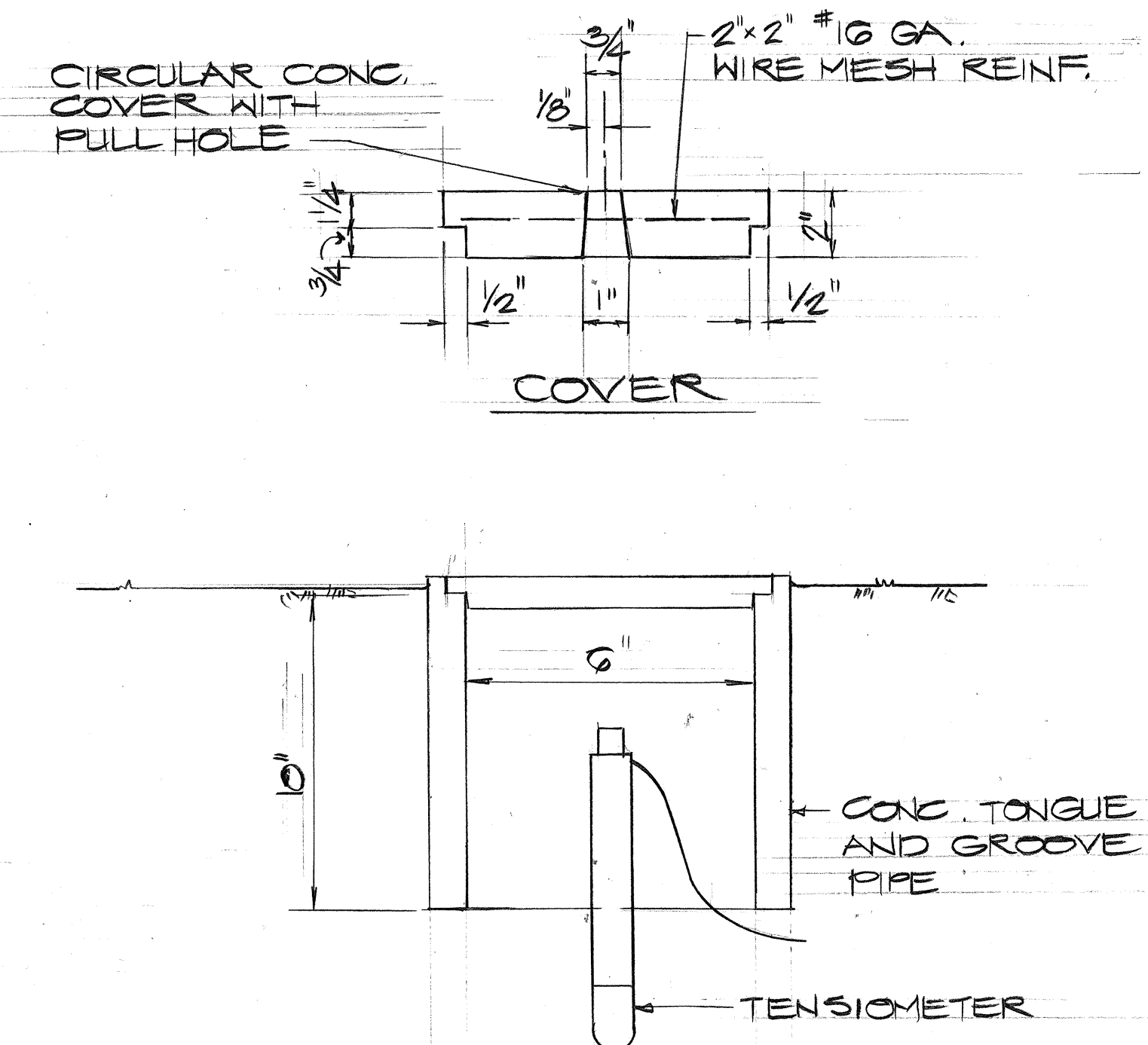
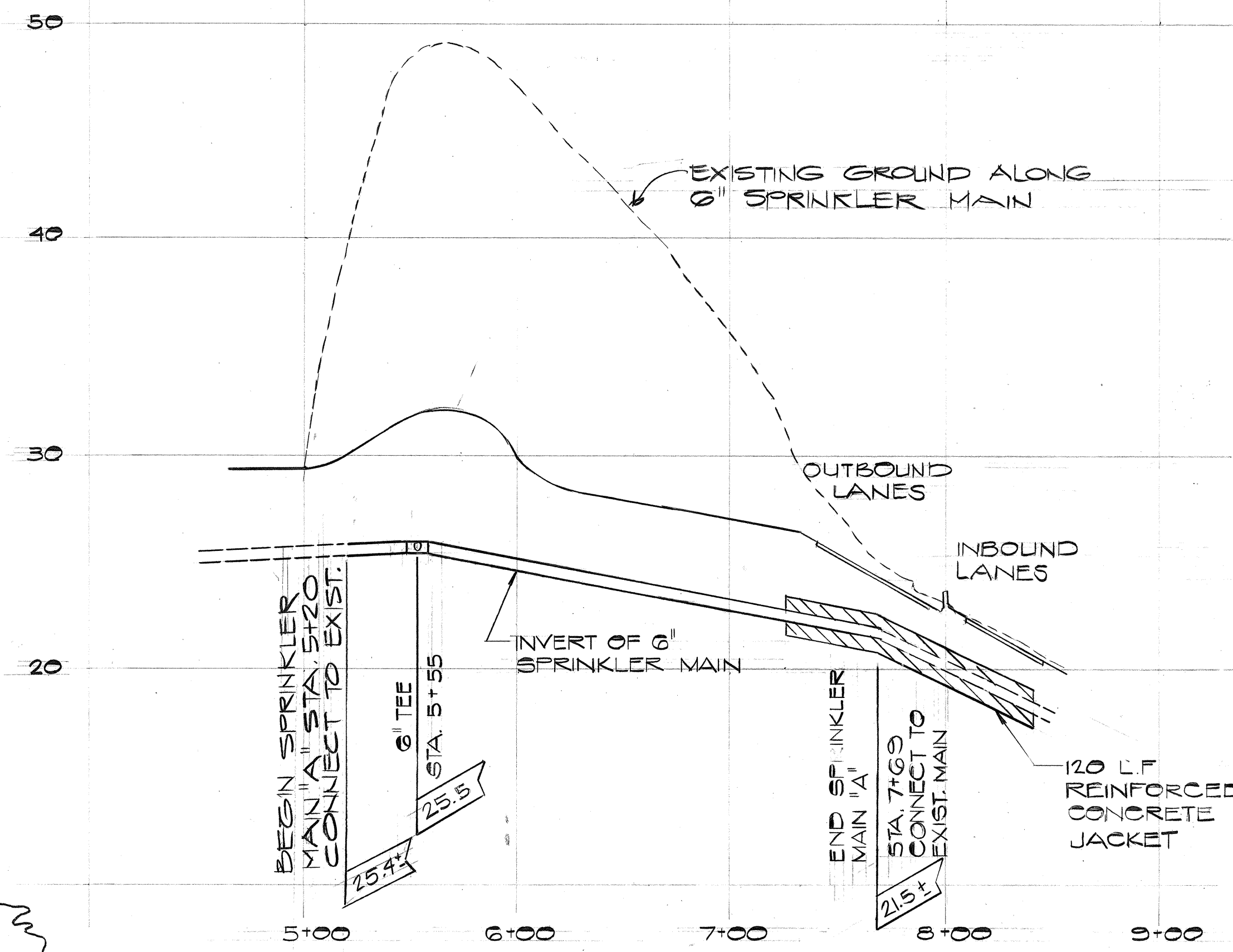
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM PIPING SCHEMATIC

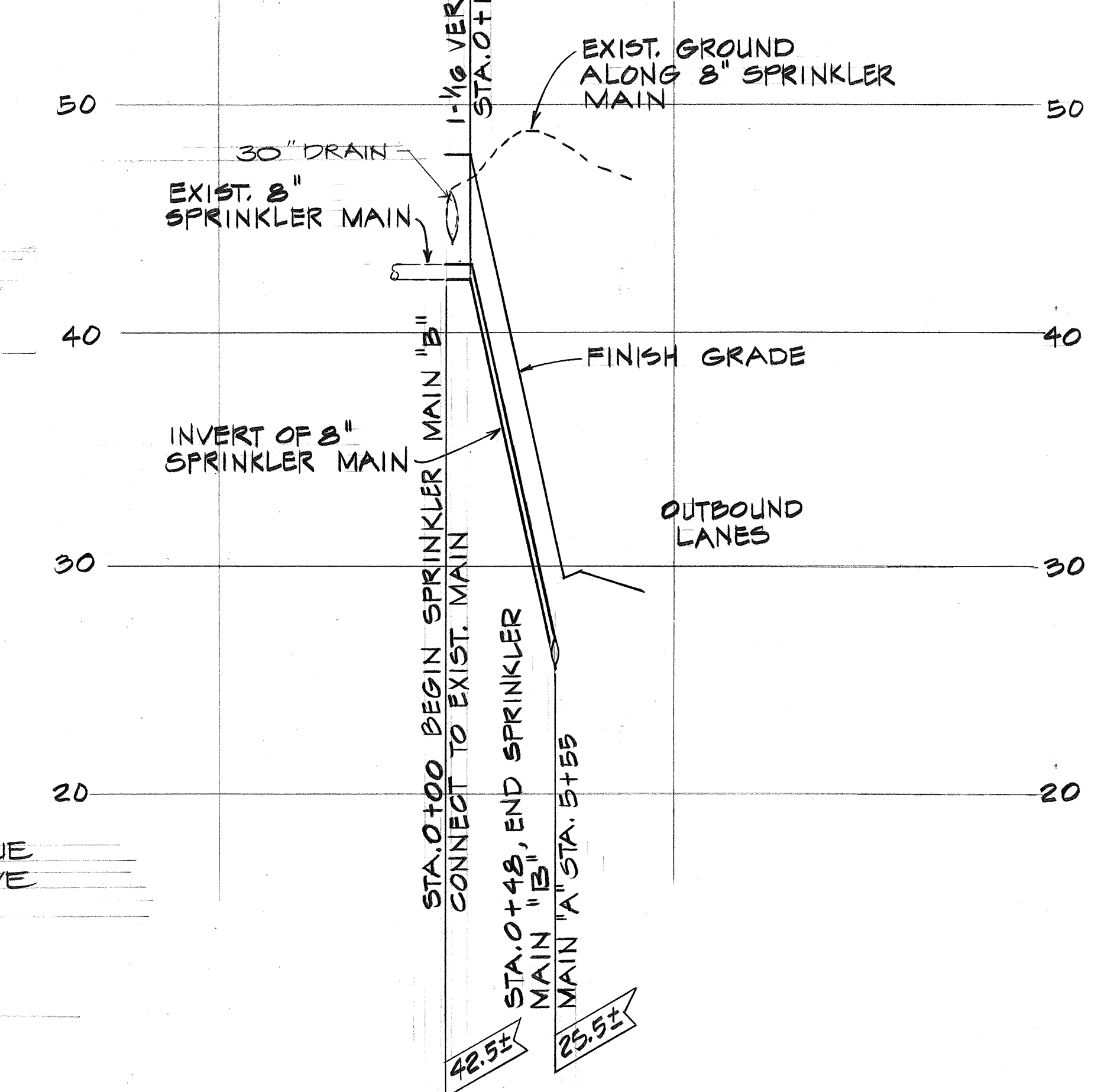
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3B
FA. Proj. No. F-078-1(21)

SCALE: NO SCALE DATE: AUG 11, 1979

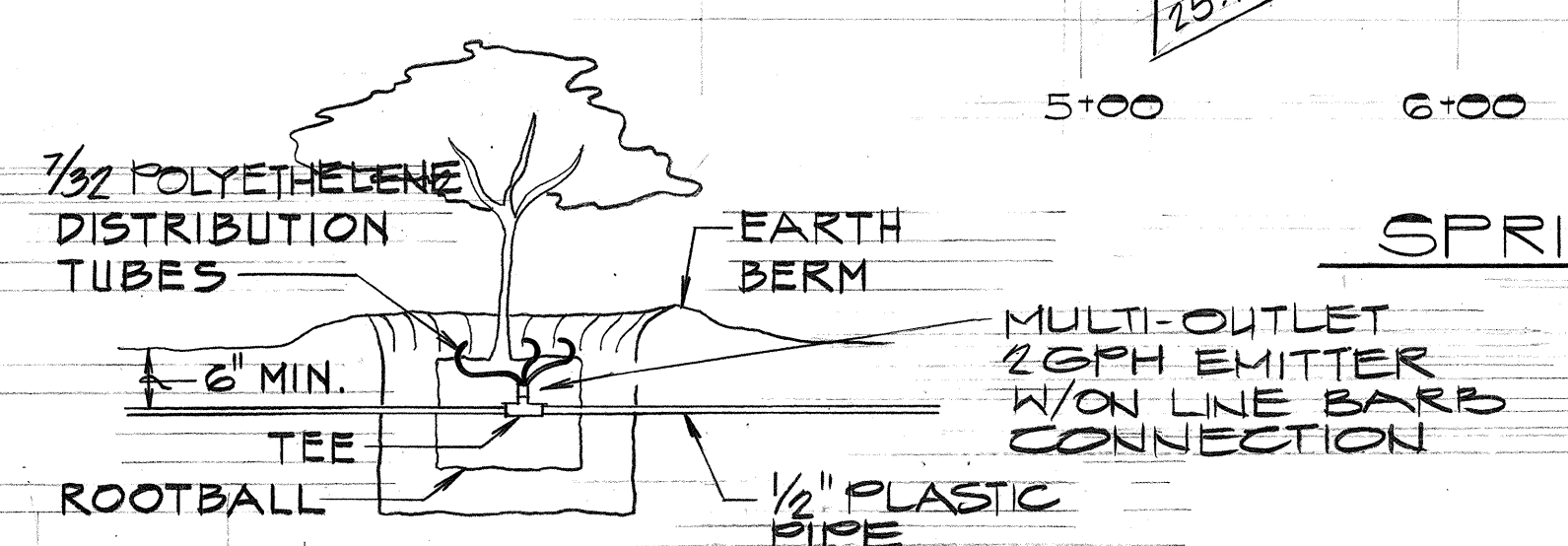
SHEET NO. 4 OF 3 SHEETS



TENSIO METER BOX
NO SCALE

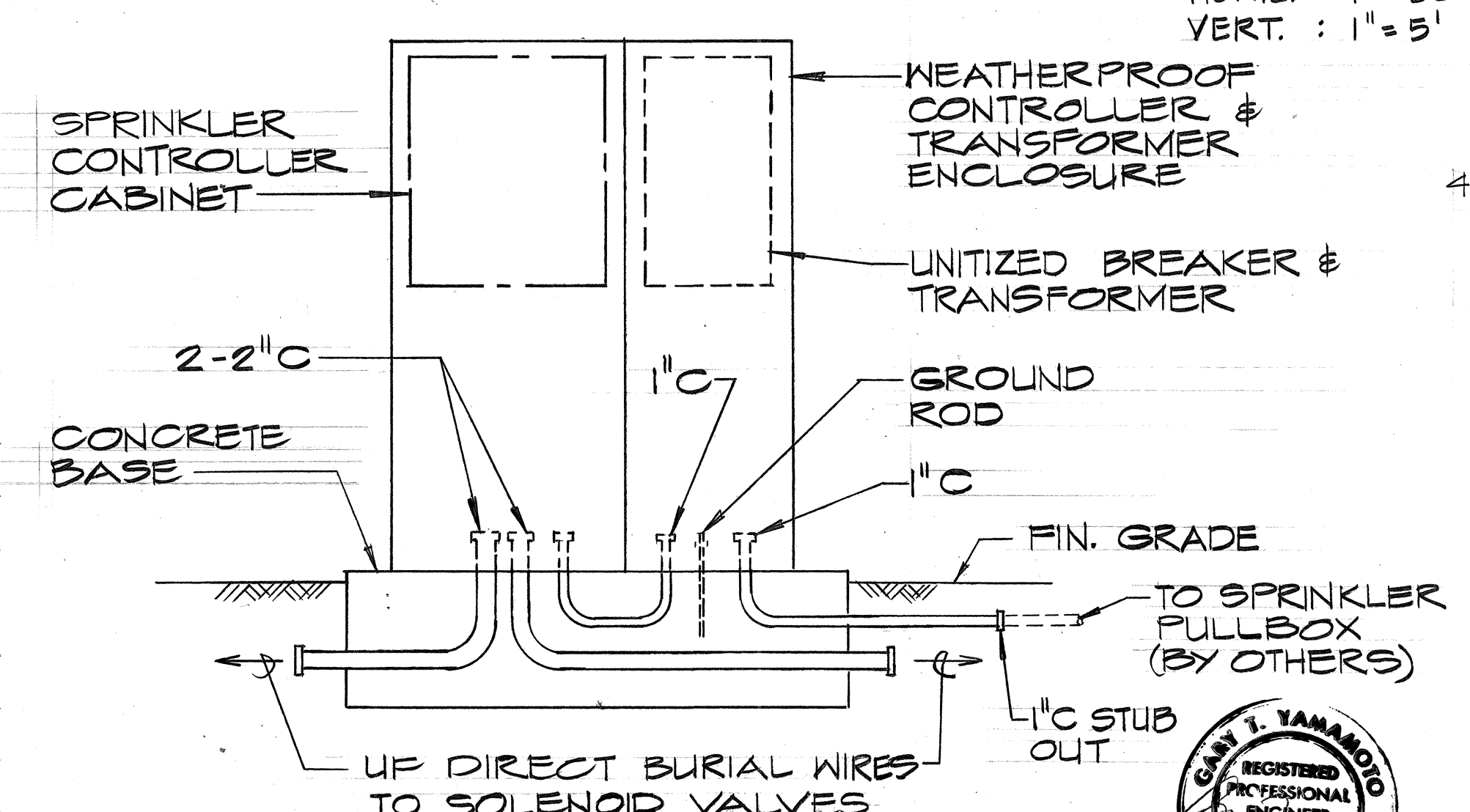


SPRINKLER MAIN "B"
HORIZ. : 1" = 50'
VERT. : 1" = 5'



NOTES: 1. PROVIDE 3-EMISSION POINTS PER TREE @ 2 GPH.
2. LOCATE EMISSION POINTS ABOVE ROOTBALL, MINIMUM 2' FROM TREE TRUNK.

EMITTER LAYOUT DET.
NO SCALE

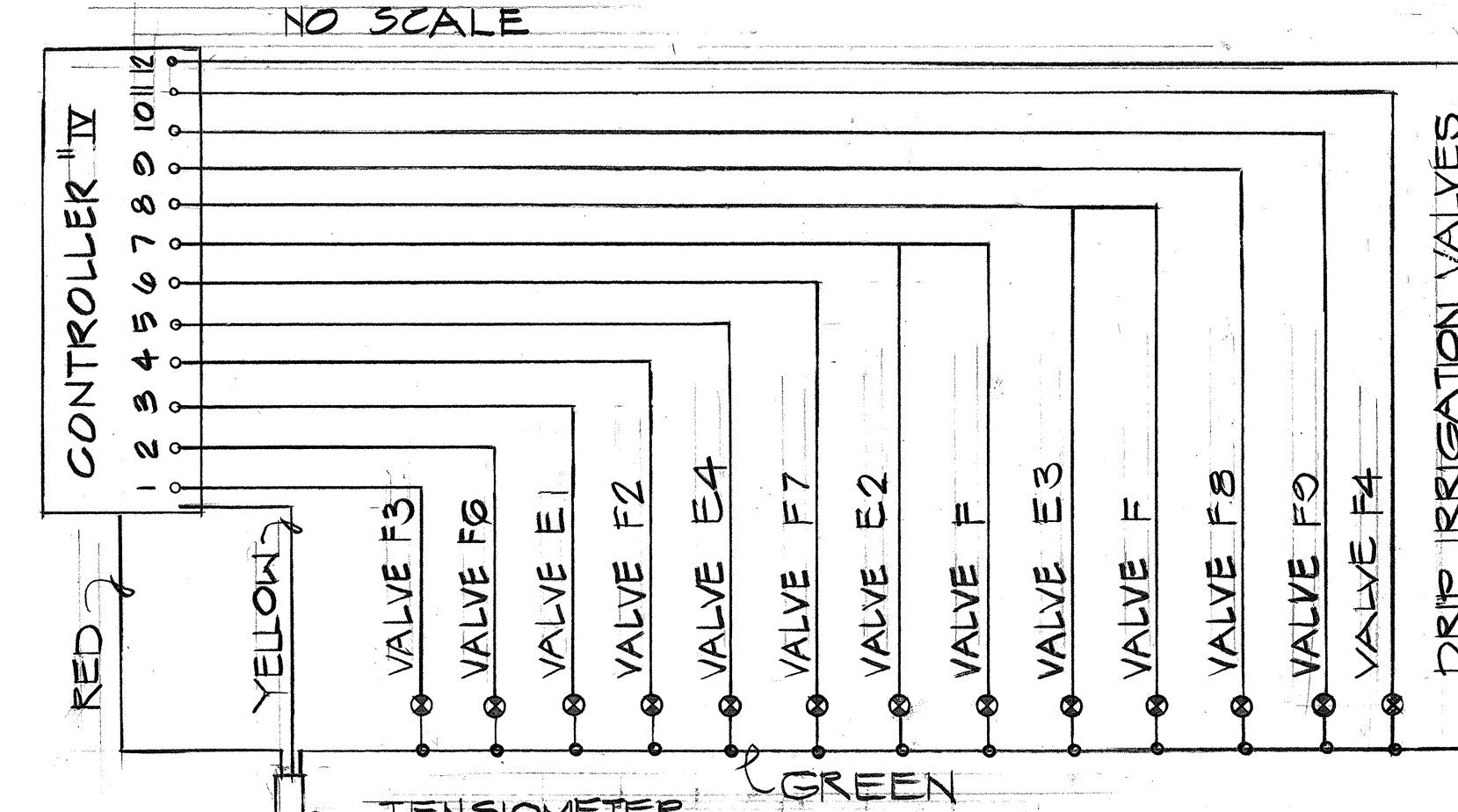


SPRINKLER CONTROLLER DETAIL
NO SCALE

NOTES:
1. CONCRETE BASE TO BE SIZED ACCORDING TO MANUFACTURER'S RECOMENDATION.
2. SEE SHEET 157 FOR ELECTRICAL DETAILS.
3. SPRINKLER CONTROLLER SHALL HAVE LONG TIMING CAPABILITY FOR DRIP IRRIGATION.

DAYS OF OPERATION: M, T, W, TH, F, S
STARTING TIME: 9:00 AM

OPERATING SCHEDULE									
CONTROLLER									
STA. NO.	VALVE NO.	OPER. TIME (MIN.)	VALVE NO.	OPER. TIME (MIN.)	VALVE NO.	OPER. TIME (MIN.)	VALVE NO.	OPER. TIME (MIN.)	VALVE NO.
1	A1, B3	30	C3	30	D2, D8	30	F3	28	H4
2	B4	15	C6	25	D9	30	F6	28	G1
3	B2	10	C1	10	D10	30	E1	25	G3
4	A3, B1	5	C2	10	D6	7	F2	16	G4
5	A4, B5	5	C8	10	D5, D7	6	E4	15	H2
6		5	C6	8	D12	6	F7	6	G2
7		5	C9	7	D13	6	E2, F	11	H1
8			C7	6	D1, D11	6	E3, F	13	H3
9			C4	5	D3, D14	5	F8	5	H5
10			C10		D4, D15	5	F9	7	G6, H1
11							F4	12	
12							E2-1, F2-2	300	



TYPICAL SCHEMATIC DIAGRAM
NOTE: ALL WIRE ARE NO. 14 WIRES

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER MAIN PROFILES

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3B
P.A. PROJ. No. F-078-1(21)

SCALE: AS SHOWN DATE: AUG. 1, 1979
SHEET No. 5 OF 3 SHEETS

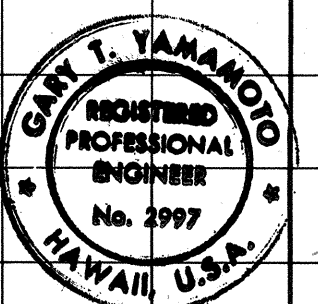
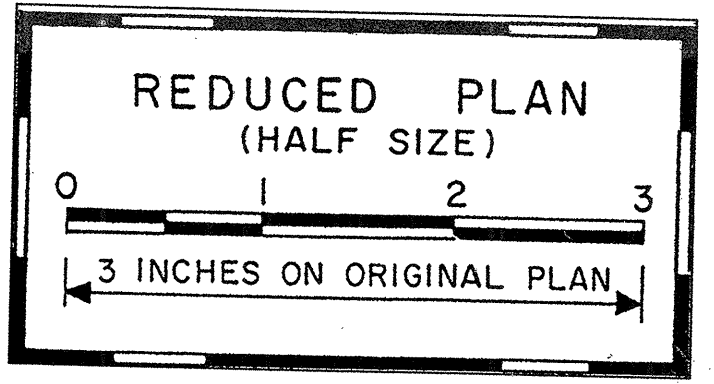
SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(2)	1980	118	234

E S T I M A T E D

QUANTITIES

SYSTEM NO.	ITEM NO.	616																												REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616		616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616	616



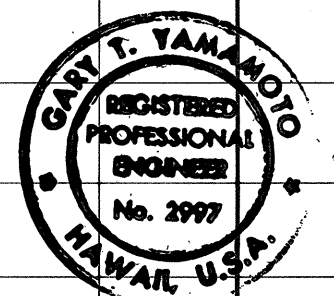
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	113	234

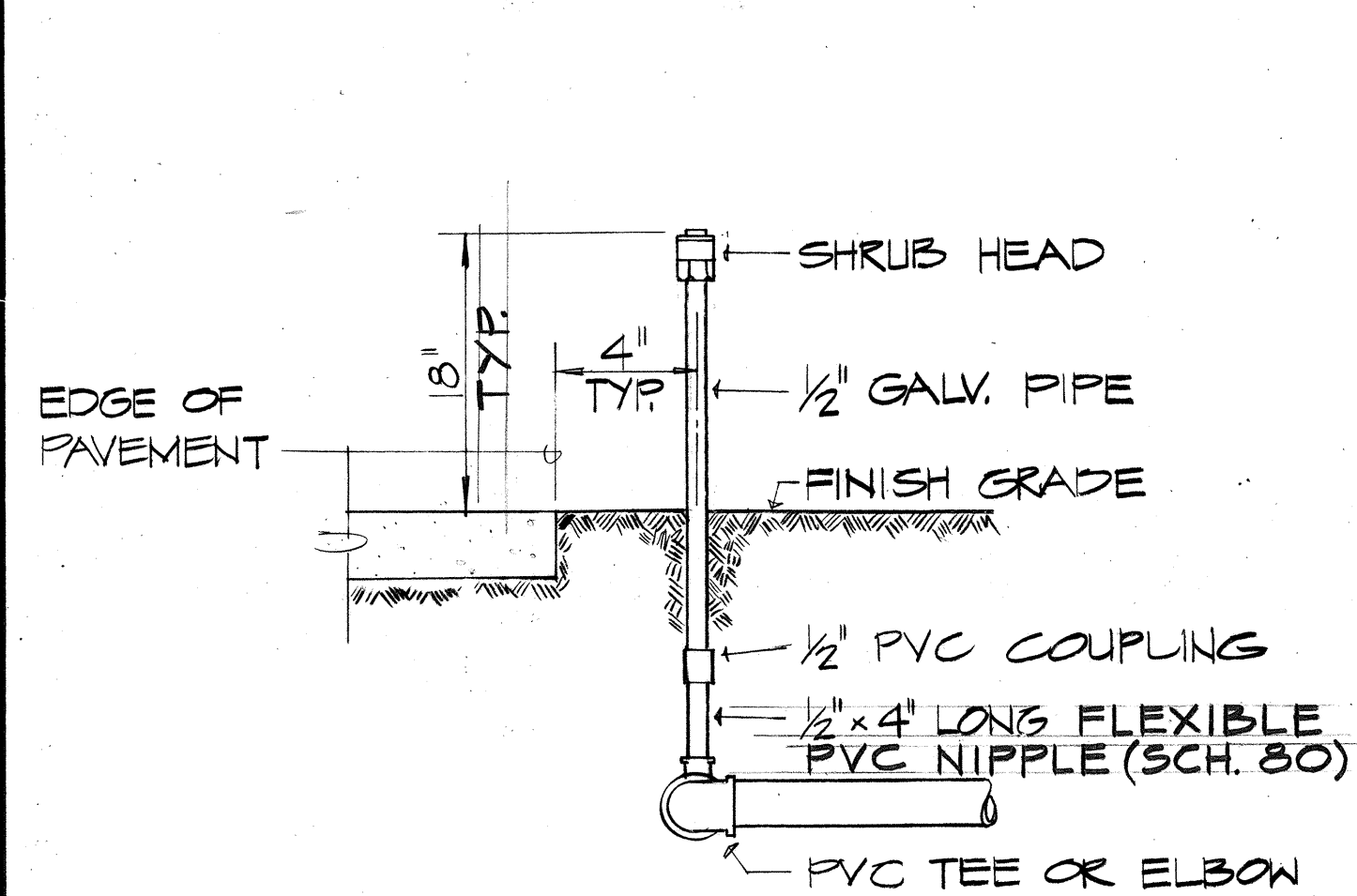
E S T I M A T E D

Q U A N T I T I E S

[illegible]

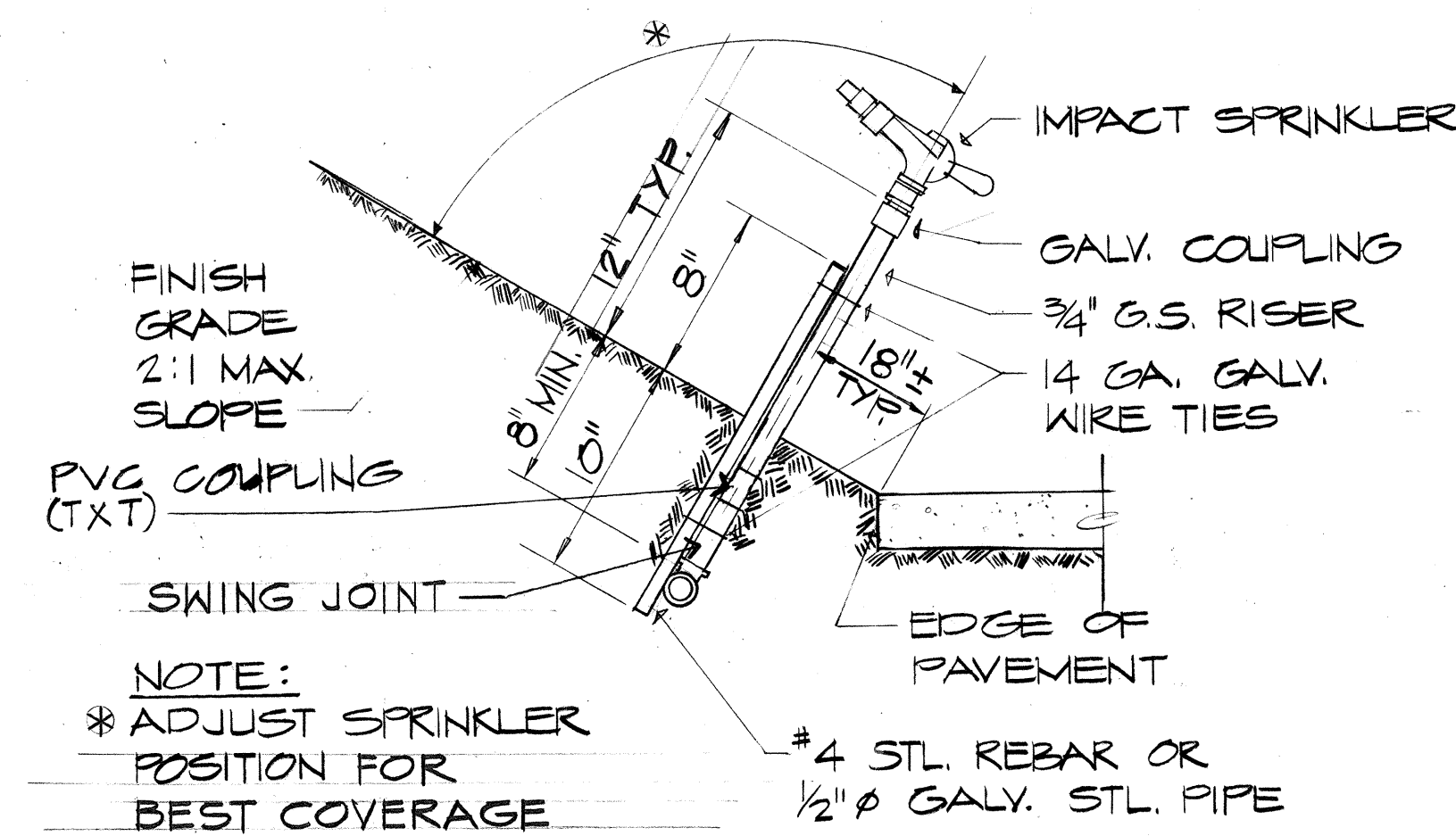
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-078-1(21)	1980	120	234



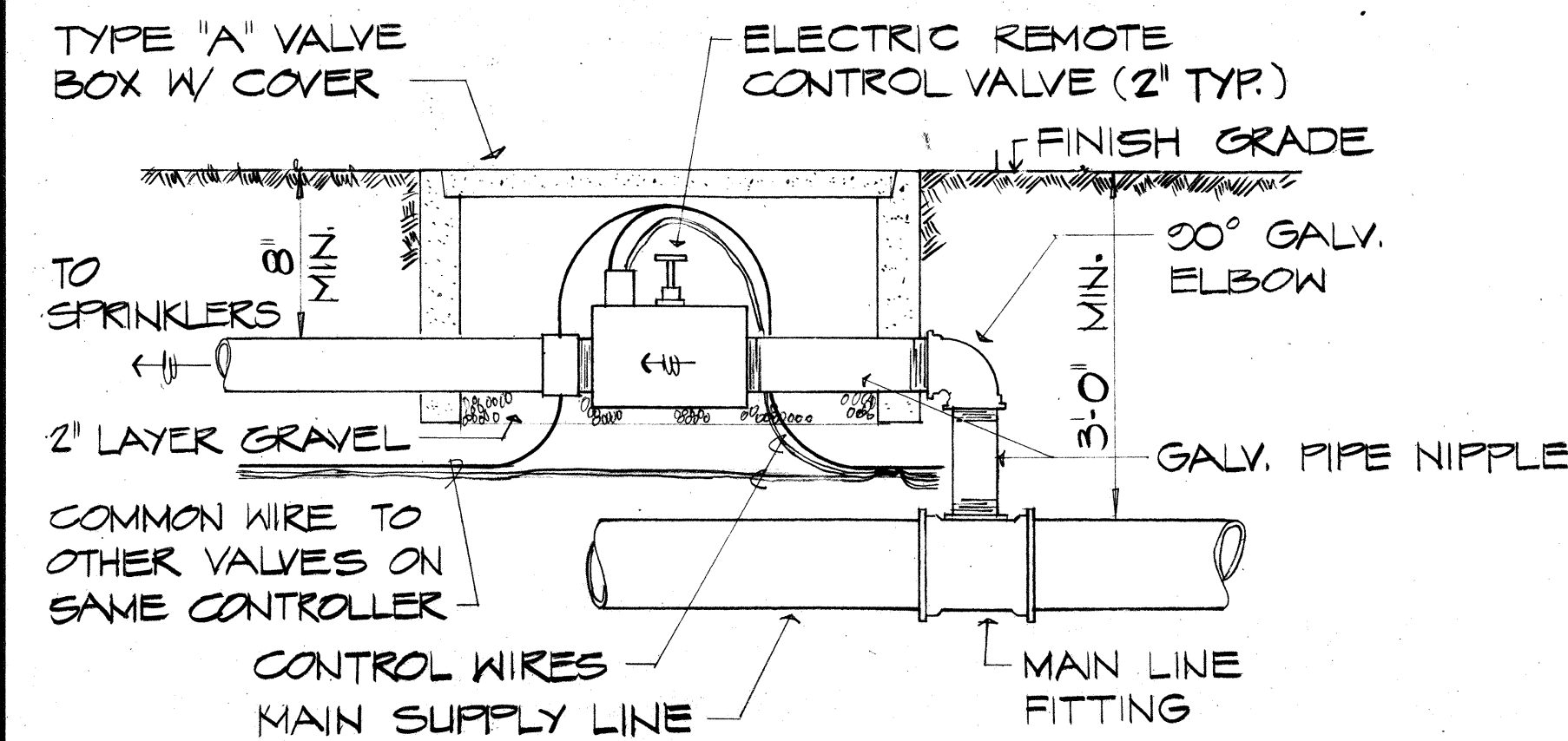
TYP. SHRUB HEAD DETAIL

NO SCALE



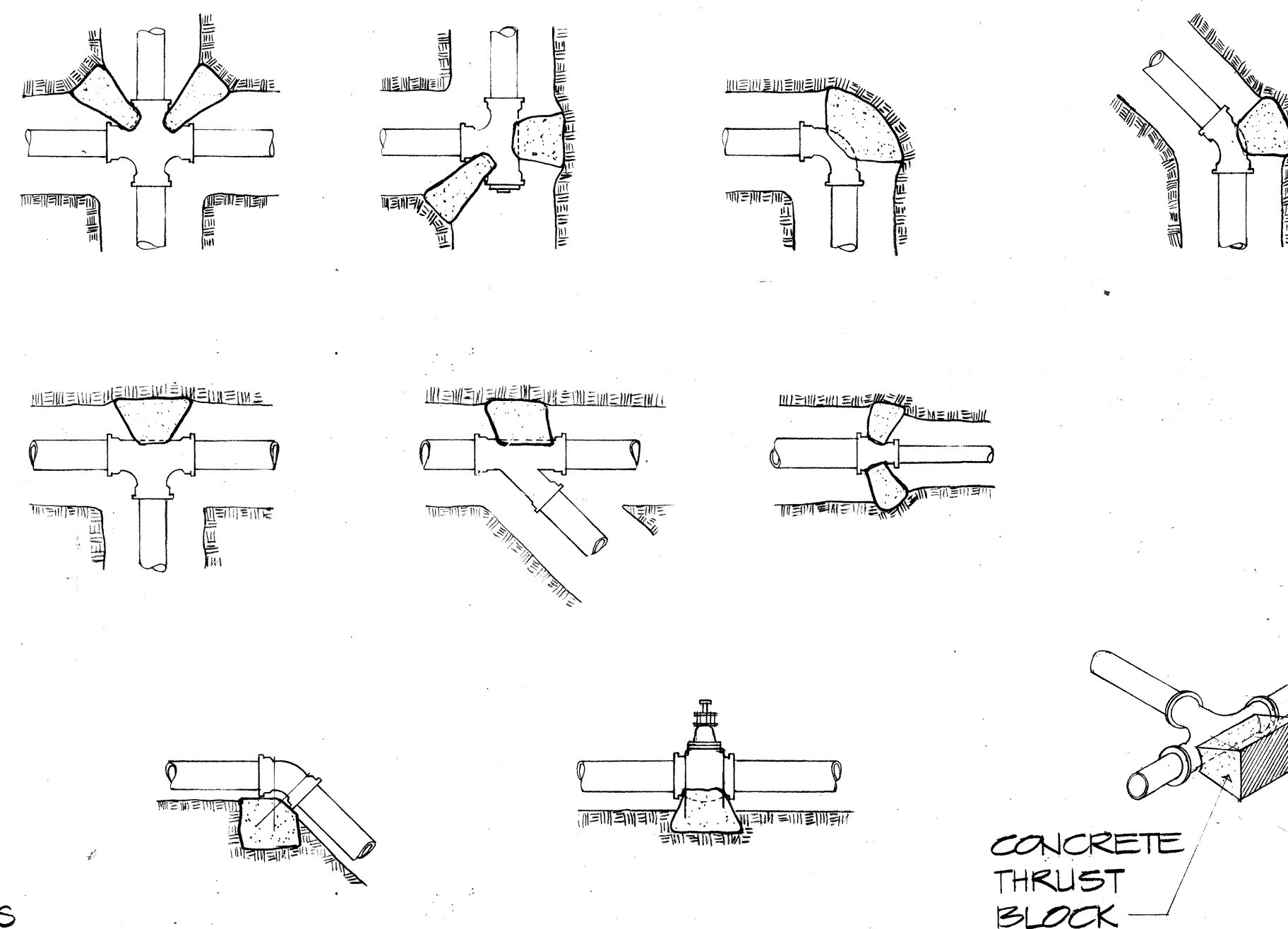
TYP. IMPACT HEAD DETAIL

NO SCALE



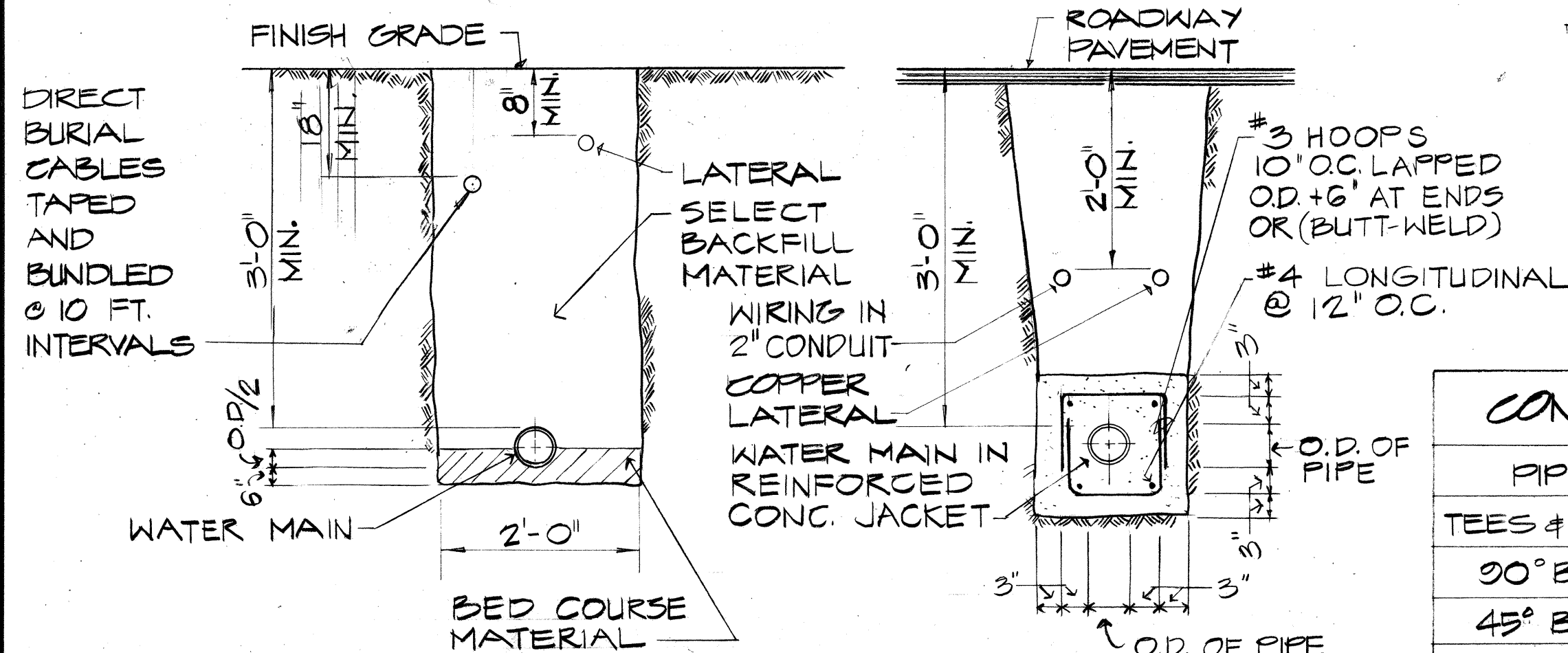
TYP. SOLENOID VALVE DETAIL

NO SCALE



CONC. THRUST BLOCK DETAILS

NO SCALE

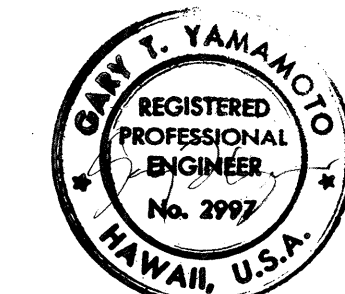


TYPICAL TRENCHING DETAILS

NO SCALE

CONCRETE THRUST BLOCK BEARING AREA (SQ. FT.)								
PIPE SIZES	6"	4"	2 1/2"	2"	1 1/2"	1 1/4"	1"	3"
TEES & CROSSES	3.00	1.25	0.50	0.50	0.50	0.50	—	1.00
90° BENDS	4.00	2.00	0.75	0.50	0.50	0.50	—	1.25
45° BENDS	2.25	1.00	0.50	0.50	0.50	0.50	—	0.75

BEARING AREA OF THRUST BLOCK (SHOWN HATCHED) TO REST AGAINST THE UNDISTURBED TRENCH WALLS. (SEE THRUST BLOCK DETAILS FOR SHAPES)



WILBERT T. TAKAMIYA
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER DETAILS

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 3B
F.A. Proj. No. F-078-1(21)

SCALE: AS SHOWN DATE: AUG. 1, 1979

SHEET No. 8 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE
HAWAII	HAW.

3"

Curb

3"

Finished Surface

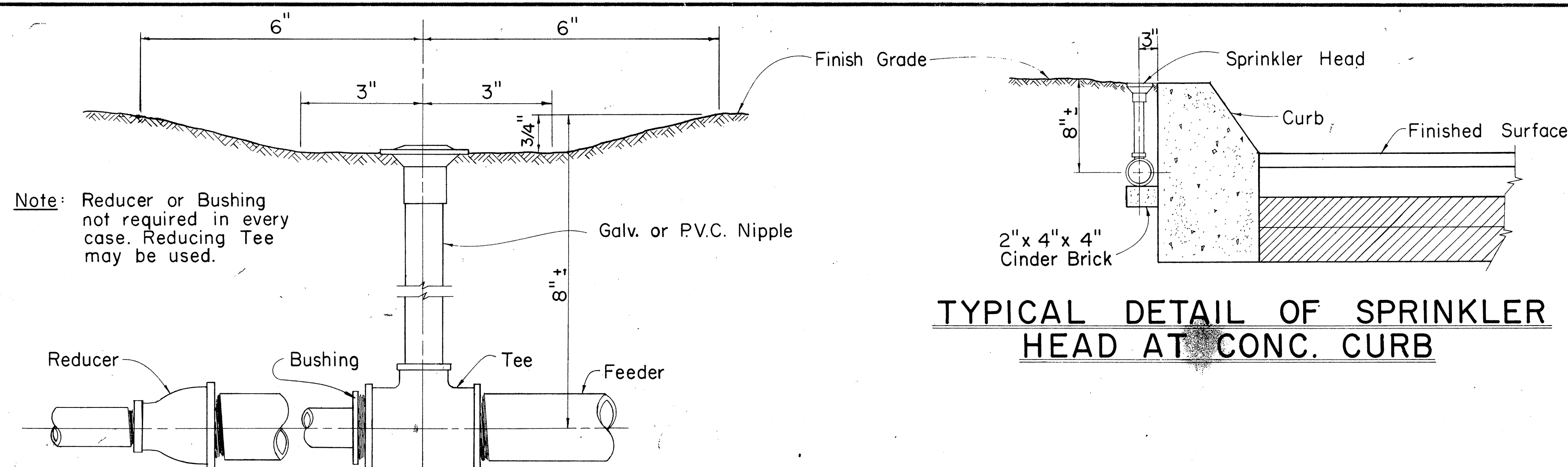
2' Cover

Copper or P.V.C. Elbow
(Copper or P.V.C. to NPTI)

Copper or P.V.C. Elbow
(Copper to Copper or P.V.C. to P.V.C.)

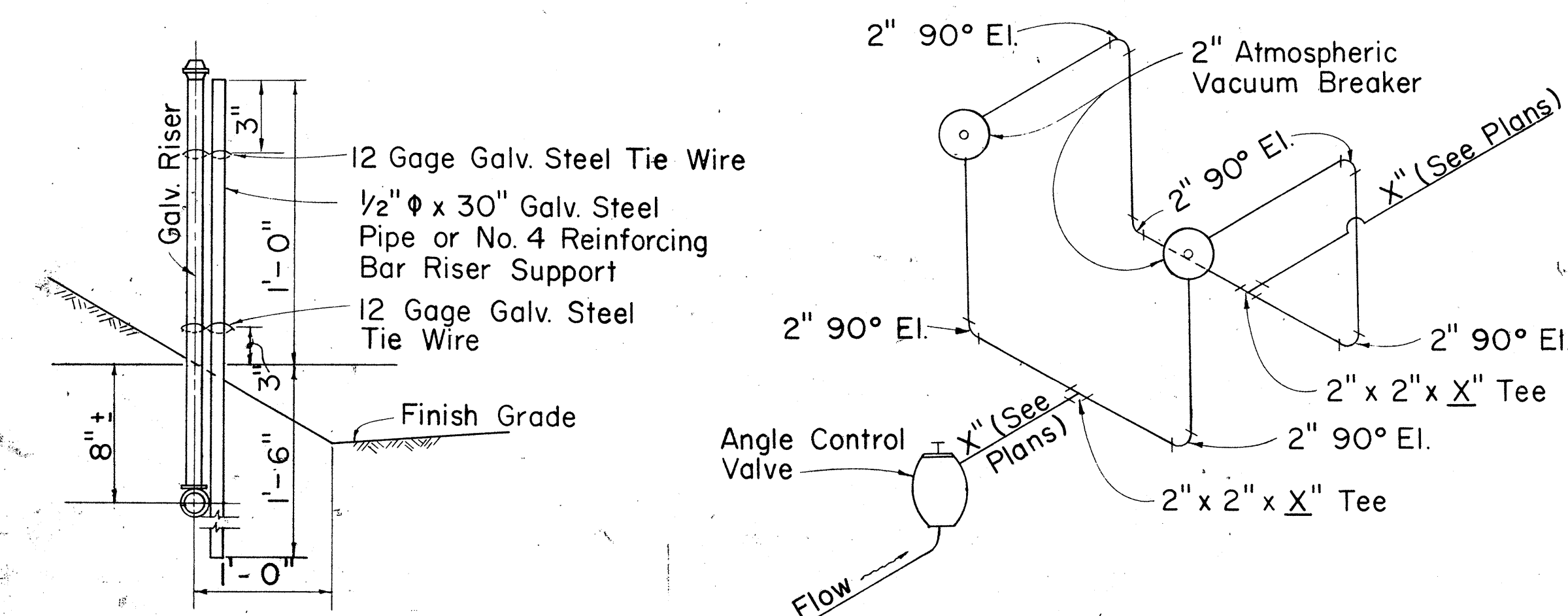
Copper or P.V.C.
(size as indicated on plans)

TYPICAL DETAIL OF ROADWAY CROSSING



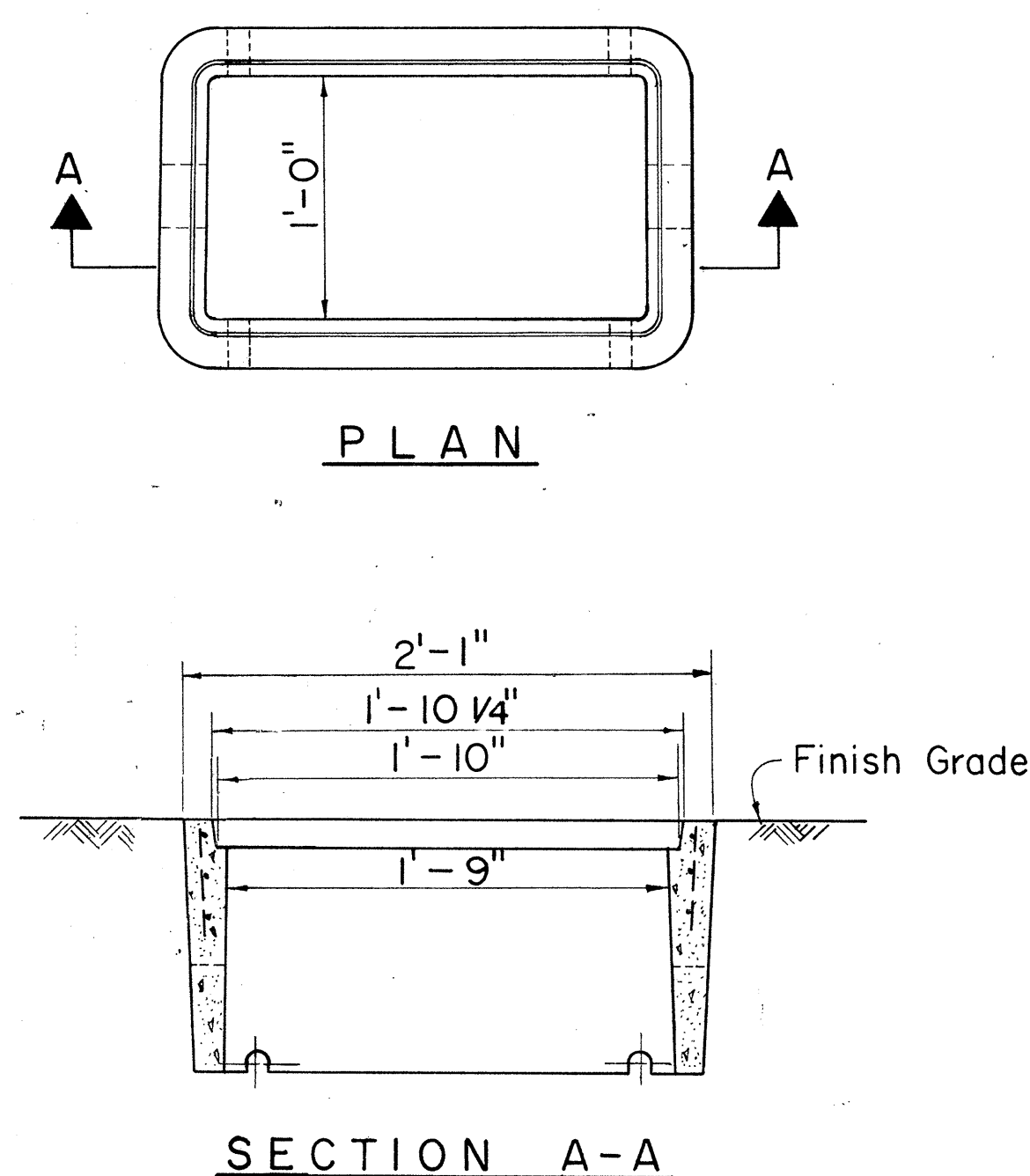
TYPICAL DETAIL OF SPRINKLER
HEAD AT CONC. CURB

CONNECTION OF SPRINKLER HEAD TO FEEDER

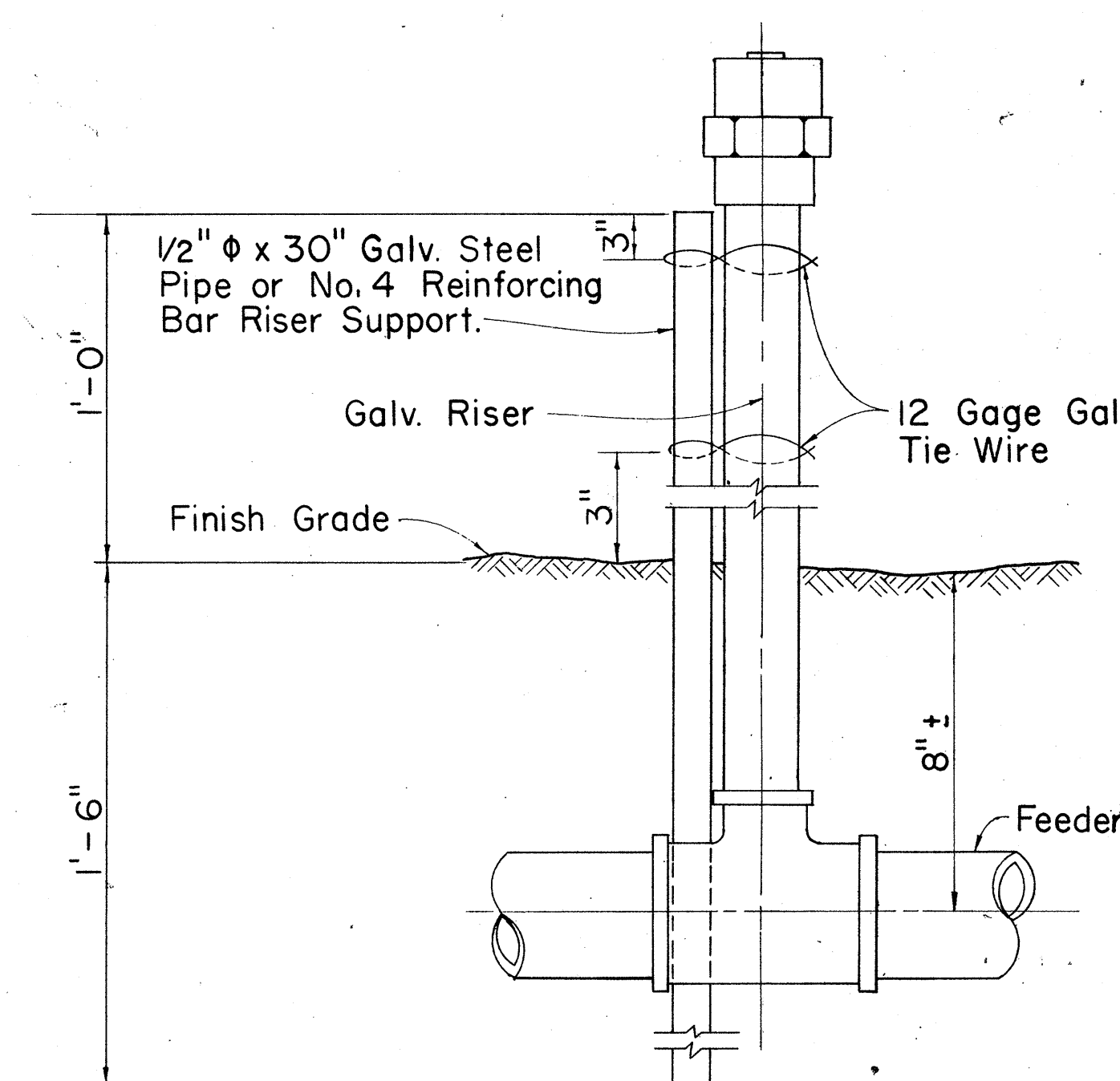


INSTALLATION OF SPRINKLER ON SLOPE

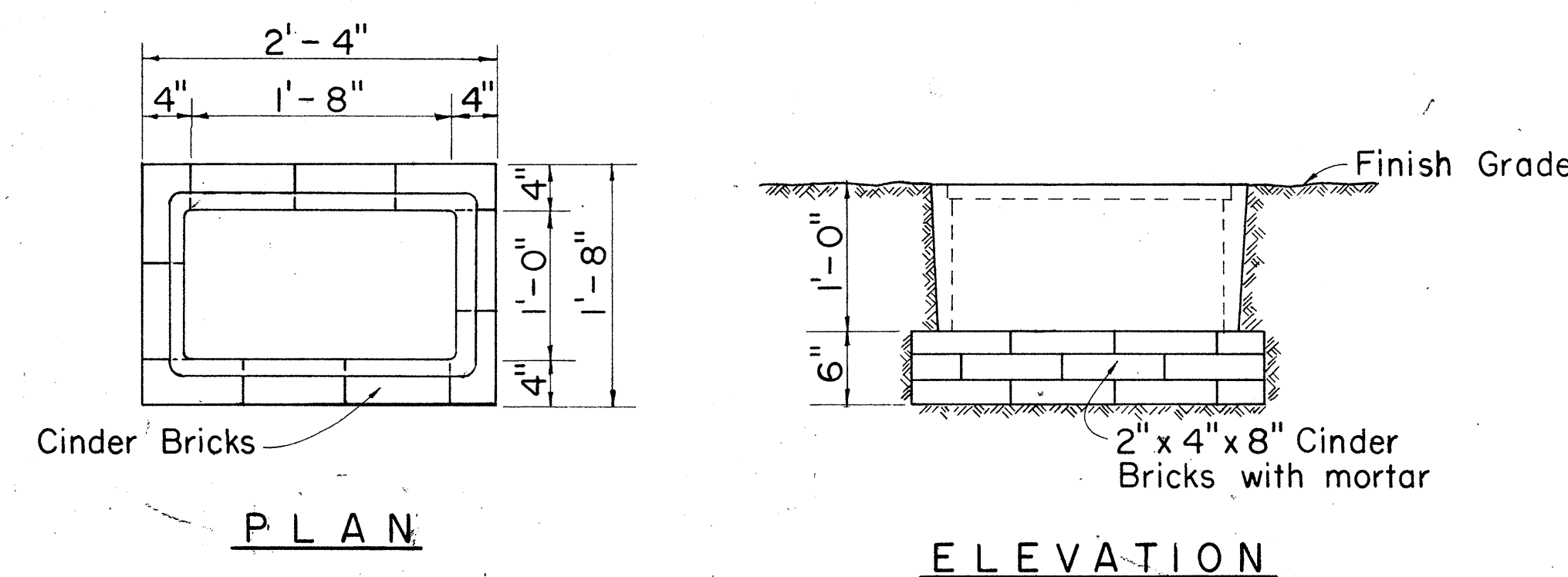
DOUBLE - 2" VACUUM BREAKER
(ATMOSPHERIC TYPE)



TYPE "A" VALVE BOX



DETAIL OF SPRINKLER HEAD ON RISER



PRESSURE REGULATOR BOX

APPROVAL RECOMMENDED:

P. Sakam 6-5-71
HYDRAULIC DESIGN ENGINEER DATE

APPROVED :

2/10/22 22/10/22 6-5-1
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
I.	This sheet supersedes sheet DH18 dated December 17, 1969.	H.T.	6-5-

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

SPRINKLER SYSTEM

Not to Scale

SHEET No. 5 OF 5 SHEETS DH 18