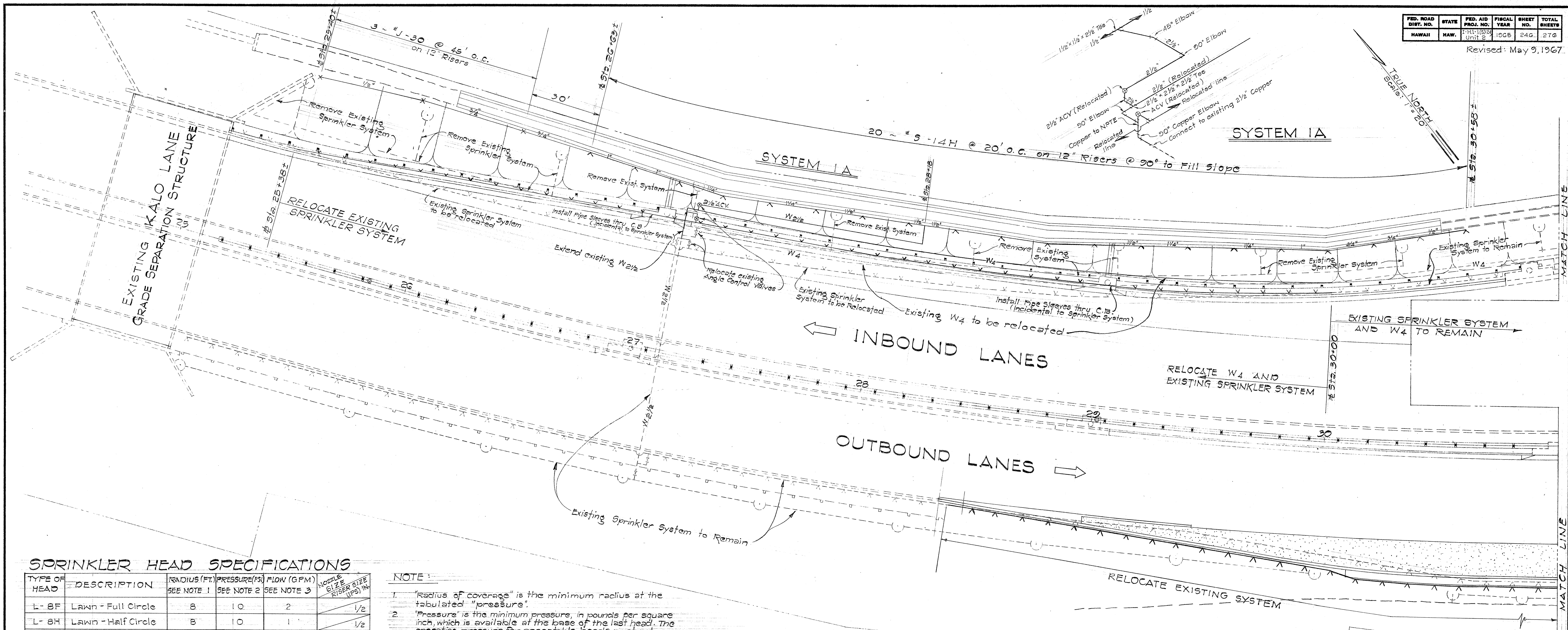




SPRINKLER HEAD SPECIFICATIONS

TYPE OF HEAD	DESCRIPTION	RADIUS (FT.) SEE NOTE 1	PRESSURE (PSI) SEE NOTE 2	FLOW (GPM) SEE NOTE 3	NOZZLE SIZE RISER SIZE (IPS) IN
L-8F	Lawn - Full Circle	8	10	2	1/2
L-8H	Lawn - Half Circle	8	10	1	1/2
L-8Q	Lawn - Quarter Circle	8	10	0.9	1/2
L-10F	Lawn - Full Circle	10	20	3	1/2
L-10H	Lawn - Half Circle	10	20	2.5	1/2
L-15F	Lawn Pop Up - Full Circle	15	30	6.0	1/2
L-15H	Lawn Pop Up - Half Circle	15	30	3.0	1/2
L-15Q	Lawn Pop Up - Quarter Circle	15	30	3.0	1/2
ST-3	Lawn Strip Spray - Half Circle	3' Strip	15	1.2	1/2
S-14H	Shrubbery - Half Circle	14	20	2.5	1/2
B-1	Bubbler Head	—	10	1	1/2
Nozzle	Spray Nozzle	8	15	0.75	—
J (20)	Rocker Jet - Part and Full Circle	20	20	2.8	3/16 1/2
J (25)	Rocker Jet - Part Circle	25	20	2.5	3/16 1/2
J (30)	Rocker Jet - Part and Full Circle	30	20	2.6	3/16 1/2
J (40)	Rocker Jet - Part Circle	40	25	3.5	5/16 3/4

NOTE:

- "Radius of coverage" is the minimum radius at the tabulated "pressure".
- "Pressure" is the minimum pressure, in pounds per square inch, which is available at the base of the last head. The operating pressure for acceptable heads must not exceed this value when operating at the tabulated flow and radius.
- "Flow" is the maximum flow, in gallons per minute which is discharged at the tabulated "pressure".

GENERAL NOTES

- Wherever removal of existing Sprinkler System is called for on the plans, the Contractor shall remove the sprinkler heads and return them to the State of Hawaii, Highways Division, Maintenance Office at 721 Keolu Street.
- All pipes under pavement shall be copper unless otherwise noted on plans.
- In the water piping diagrams, all pipes are to be galvanized iron screw pipes, and all fittings are to be galvanized malleable iron fittings unless otherwise noted on the plans.
- Unless otherwise stipulated or directed by the Engineer, the center line feeder pipe shall be located 3" back from concrete curb or green asphalt strip on shoulder and 12" from fence line or Right-of-Way line.
- After complete installation of the Sprinkler System, each sprinkler head shall be adjusted to the satisfaction of the Engineer.
- All angle control valves shall be enclosed in a Type A valve box and cover. (Refer to Board of Water Supply Std. Details)
- All backflow preventers (atmospheric vacuum breakers) shall be installed in accordance with the Plumbing Code of the City and County of Honolulu and at the locations shown on the piping diagrams.
- All shut-off valves shall be enclosed in a Type B Meter Box and the words "Meter Box" deleted from the cover. (Refer to Board of Water Supply Std. Details)

SPRINKLER LEGEND

- WATER METER
- ⊗ SHUTOFF VALVE
- ⊙ ANGLE CONTROL VALVE
- ⊙ ATMOSPHERIC VACUUM BREAKER
- ⊗ FULL CIRCLE SPRINKLER HEAD
- ⊗ HALF CIRCLE SPRINKLER HEAD
- ⊗ QUARTER CIRCLE SPRINKLER HEAD
- NOZZLE LINE
- BUBBLER HEADS
- - - - - EXISTING SPRINKLER SYSTEM

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM

F.A.I. Project No. 1-HI-1(5):24, Unit 2

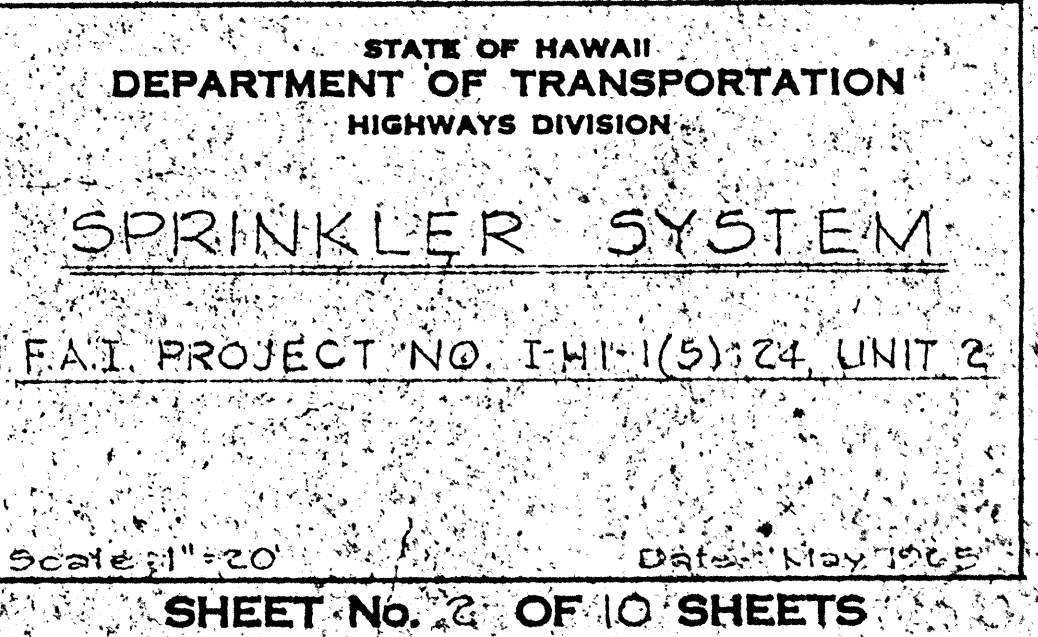
Scale: 1" = 20' Date: May, 1965

SHEET No. 1 OF 10 SHEETS

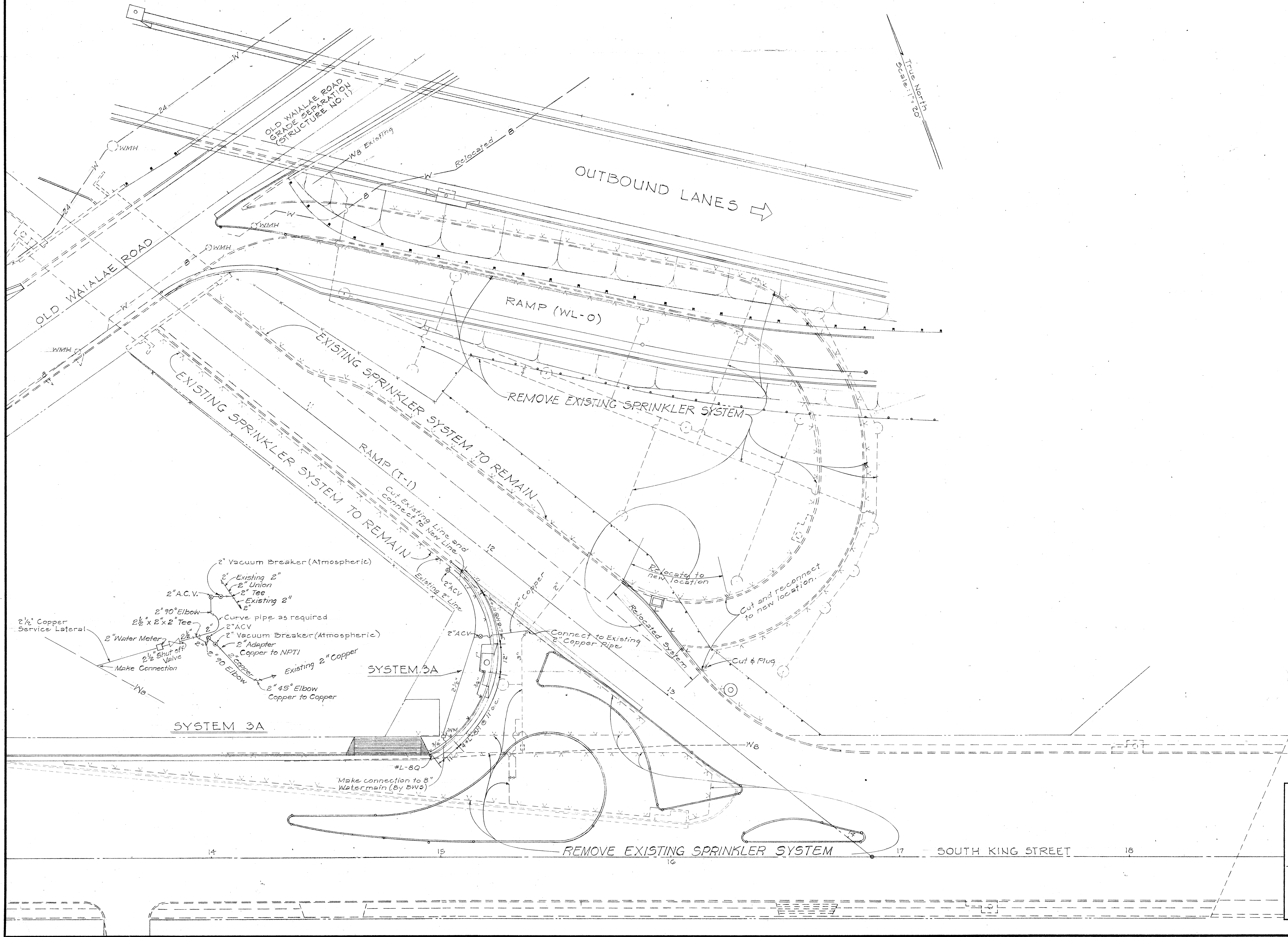
C. O. 246

DATE
DESIGNED BY
CHECKED BY
NOTED BY
ORIGINAL PLAN
NOTE BOOK
No.

Revised: May 9, 1967



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	PH-1(5)24 Unit 2	1965	248	276



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

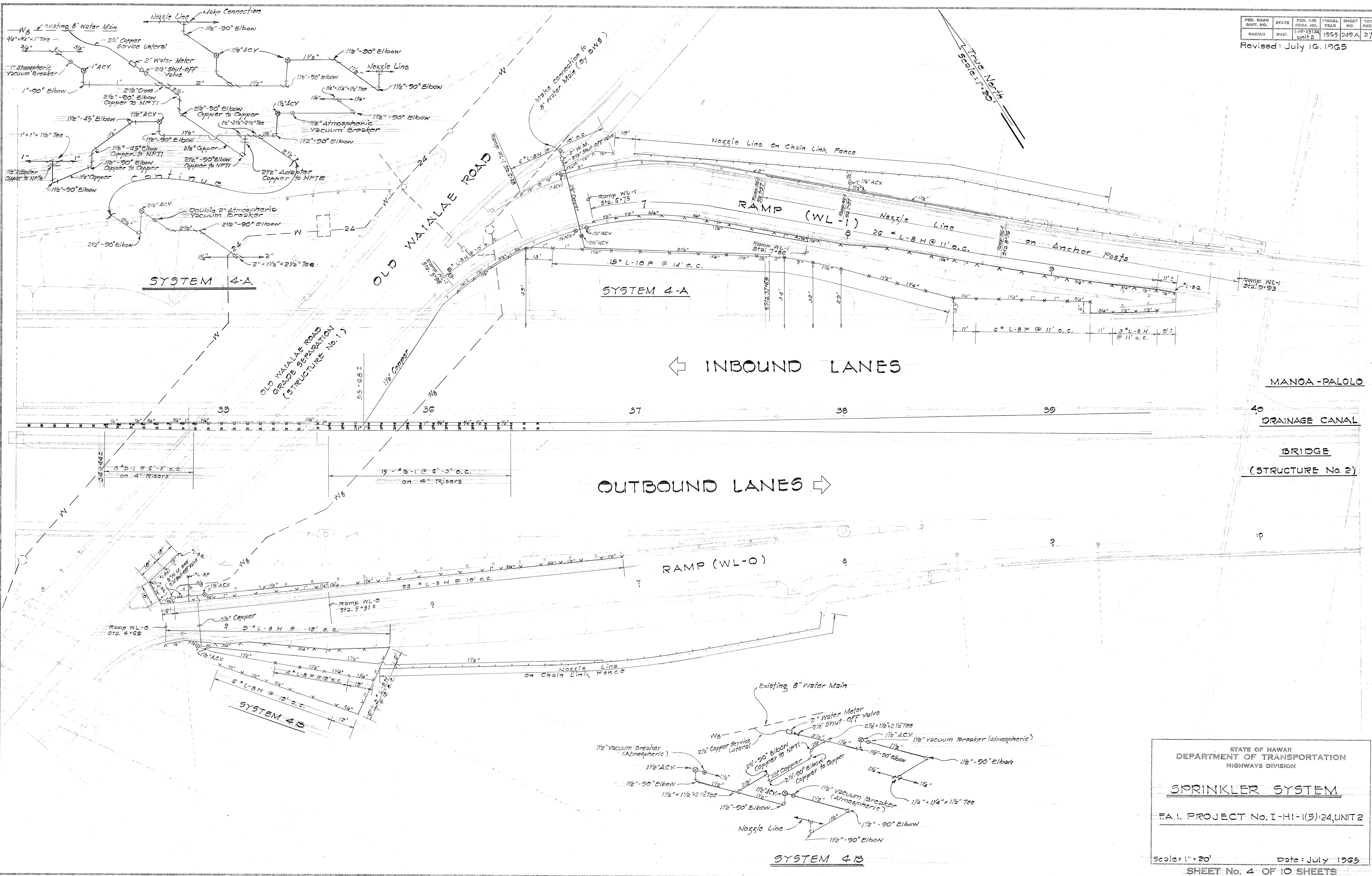
SPRINKLER SYSTEM
FAI PROJECT NO. I-H-1(5) 24 UNIT 2
Scale: 1"=20'
Date: May 1965

SHEET No. 3 OF 10 SHEETS

248

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-1(5)24	1965	249A	276

Revised: July 16, 1965



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM

F.A.I. PROJECT No. I-HI-1(5)24, UNIT 2

Scale: 1" = 20' Date: July 1965

SHEET No. 4 OF 10 SHEETS

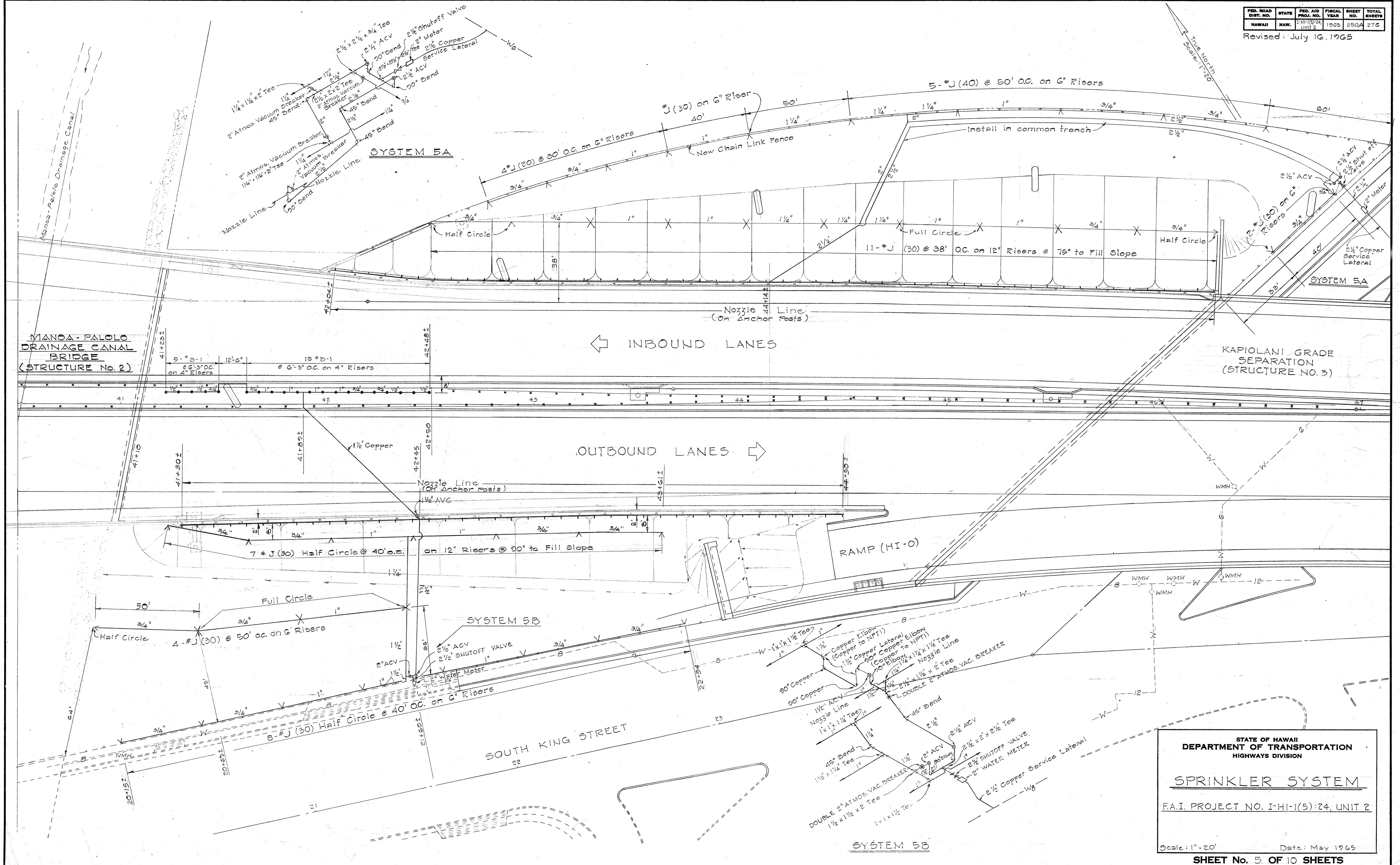
249A

ORIGINAL	DATE
PLAN	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

PRINTED ON NO. 10000 CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	100-1(5)-24	1965	250A	276

Revised: July 16, 1965



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM

F.A.I. PROJECT NO. I-HI-1(5)-24, UNIT 2

Scale: 1" = 20'

Date: May 1965

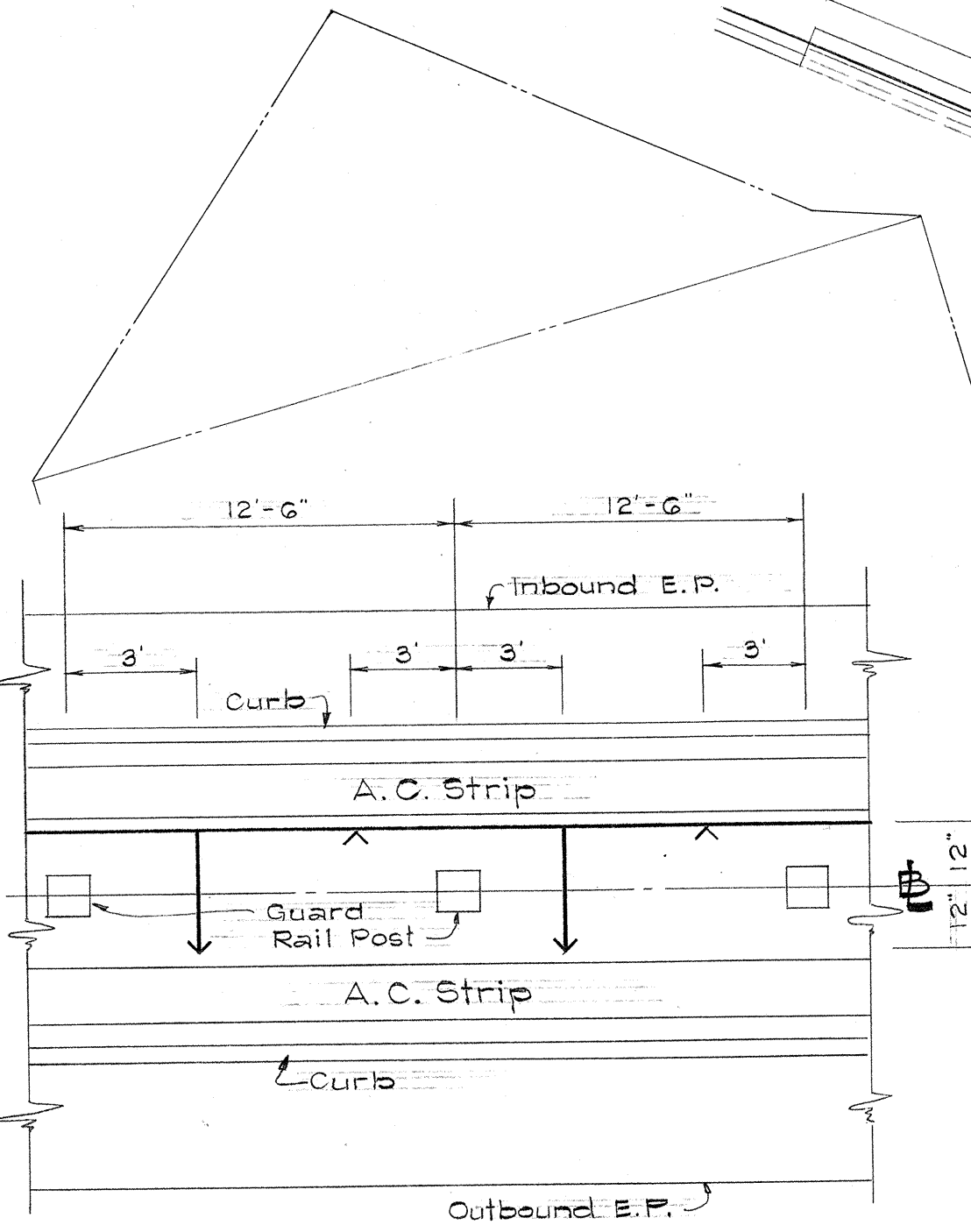
SHEET No. 5 OF 10 SHEETS

250A



KAPIOLANI GRADE SEPARATION
(Structure No. 3)

SYSTEM GA



SYSTEM 6B

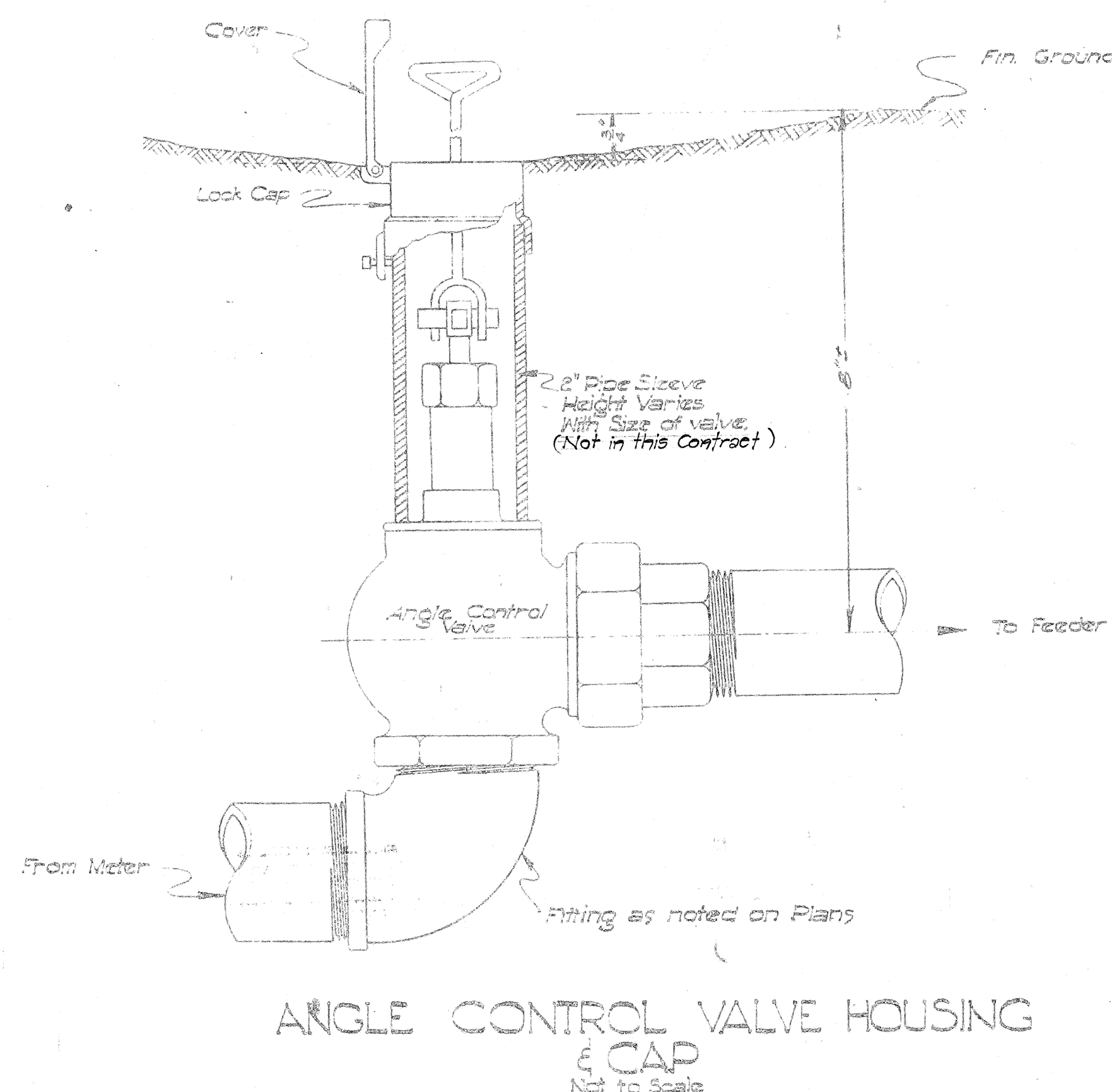
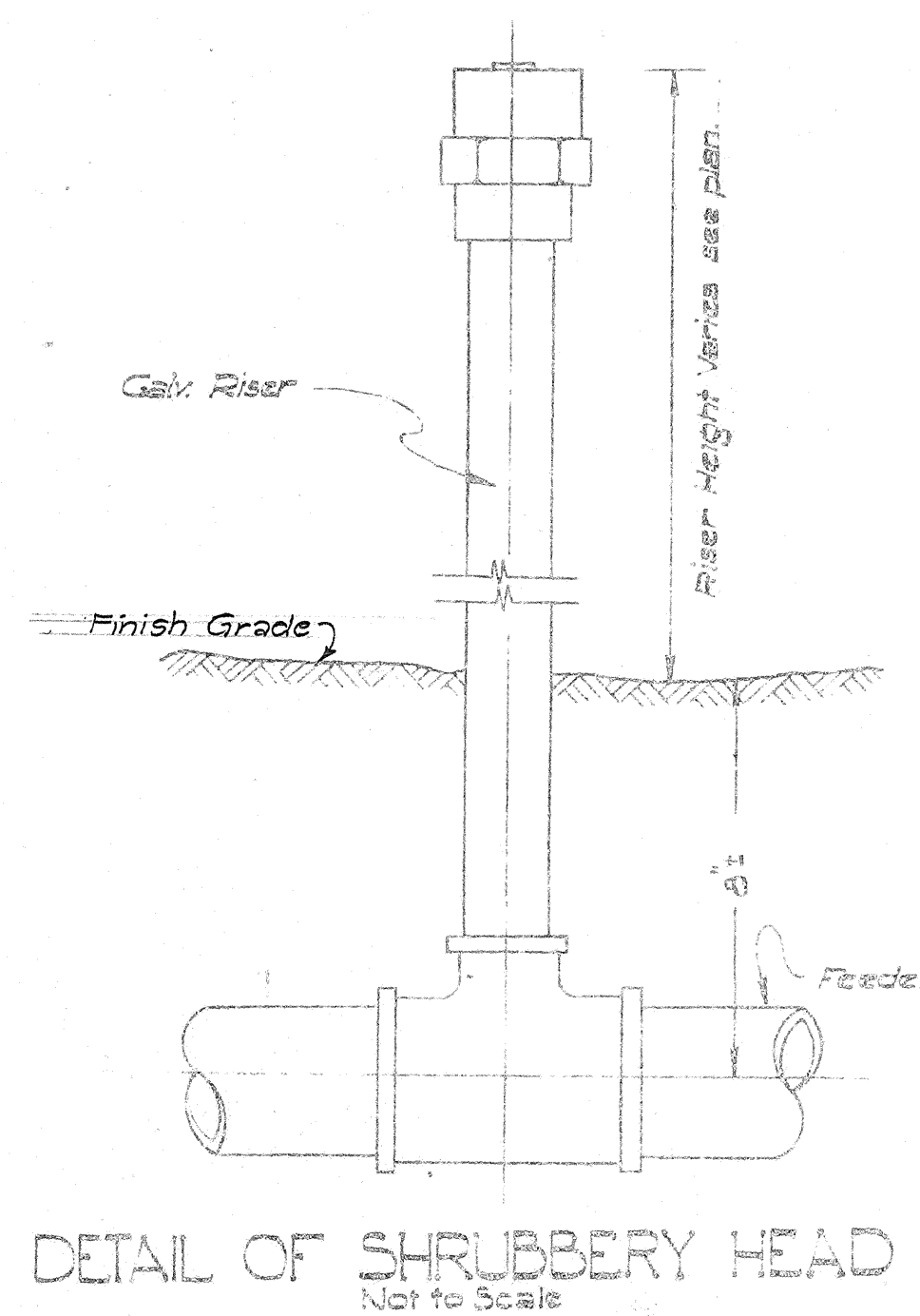
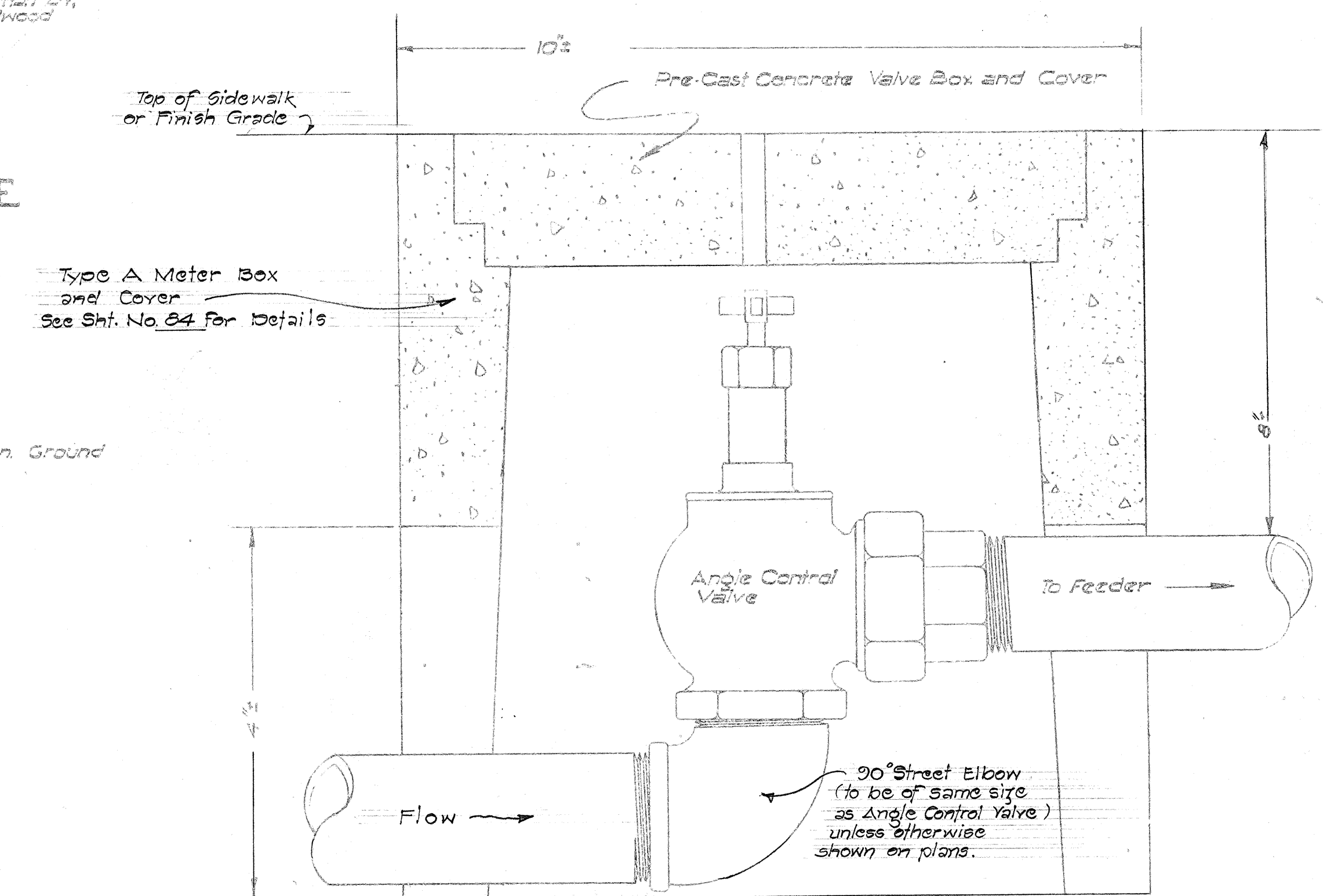
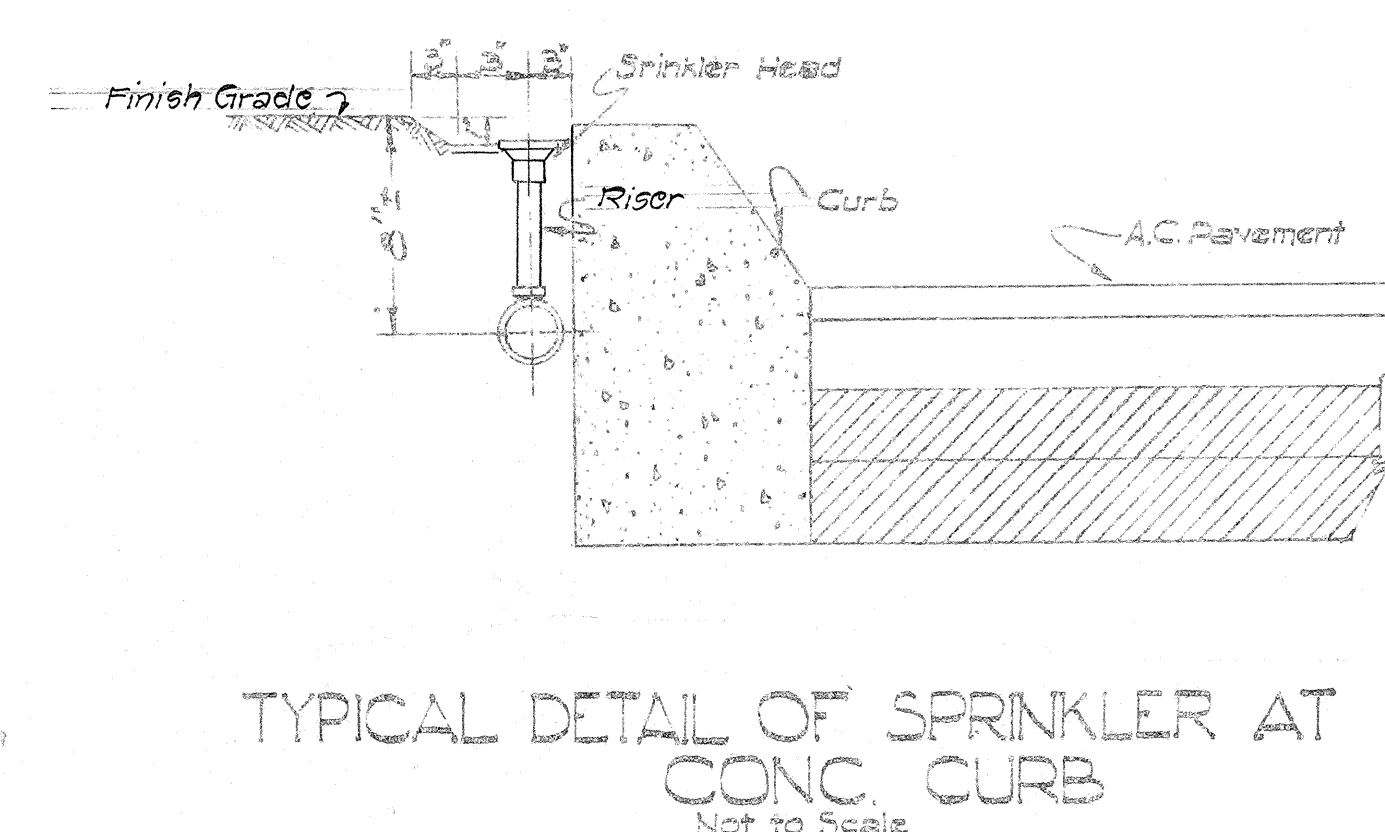
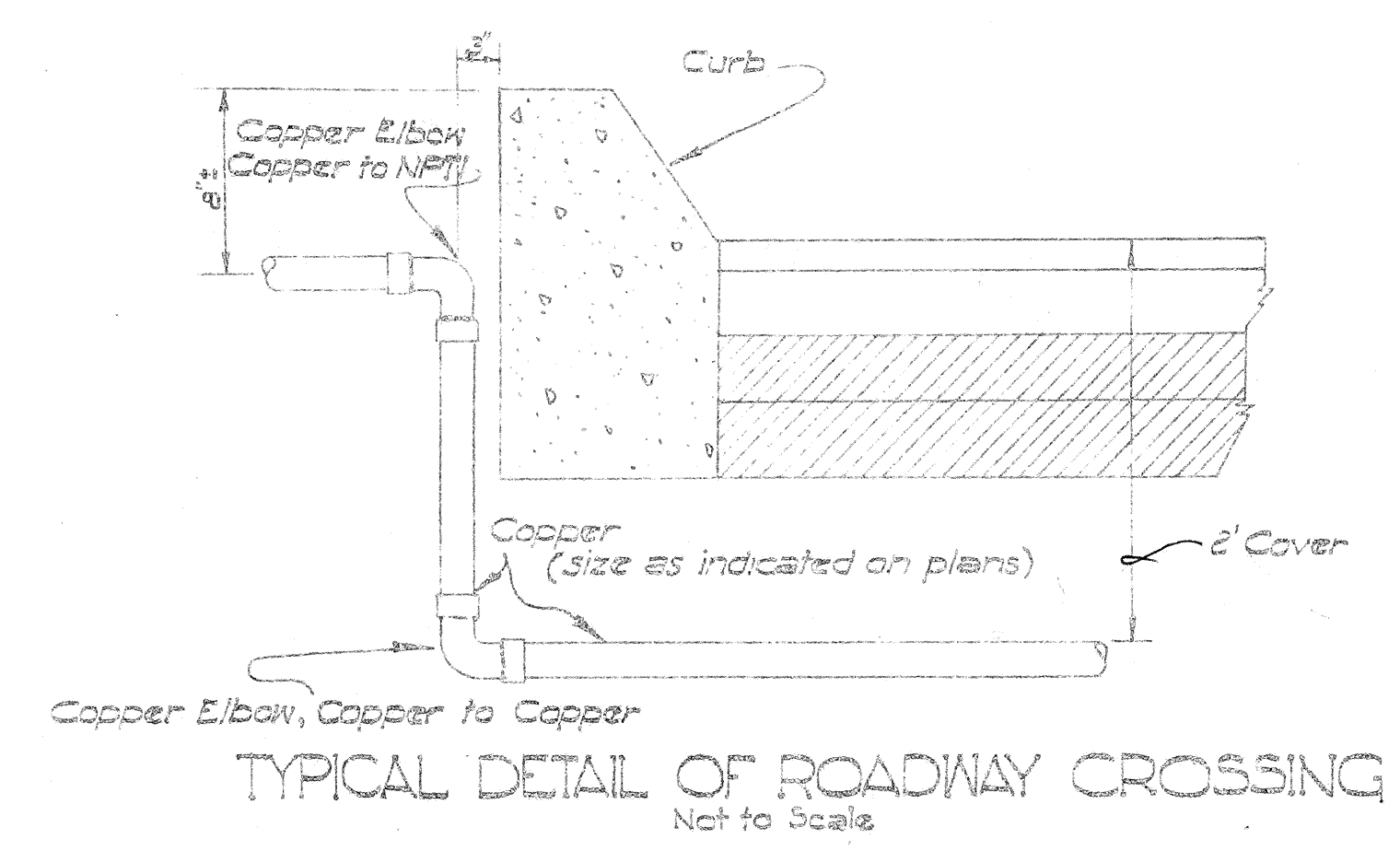
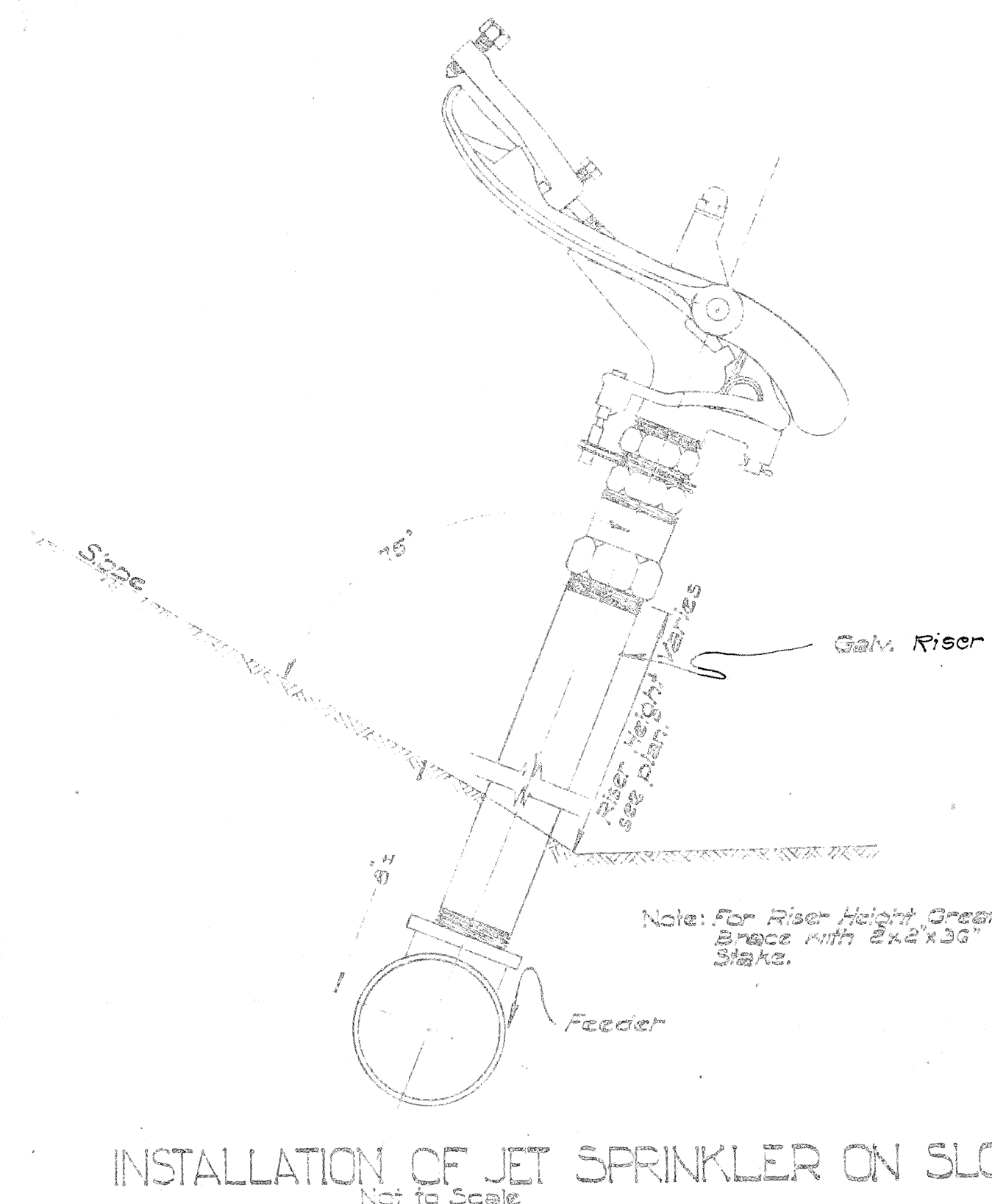
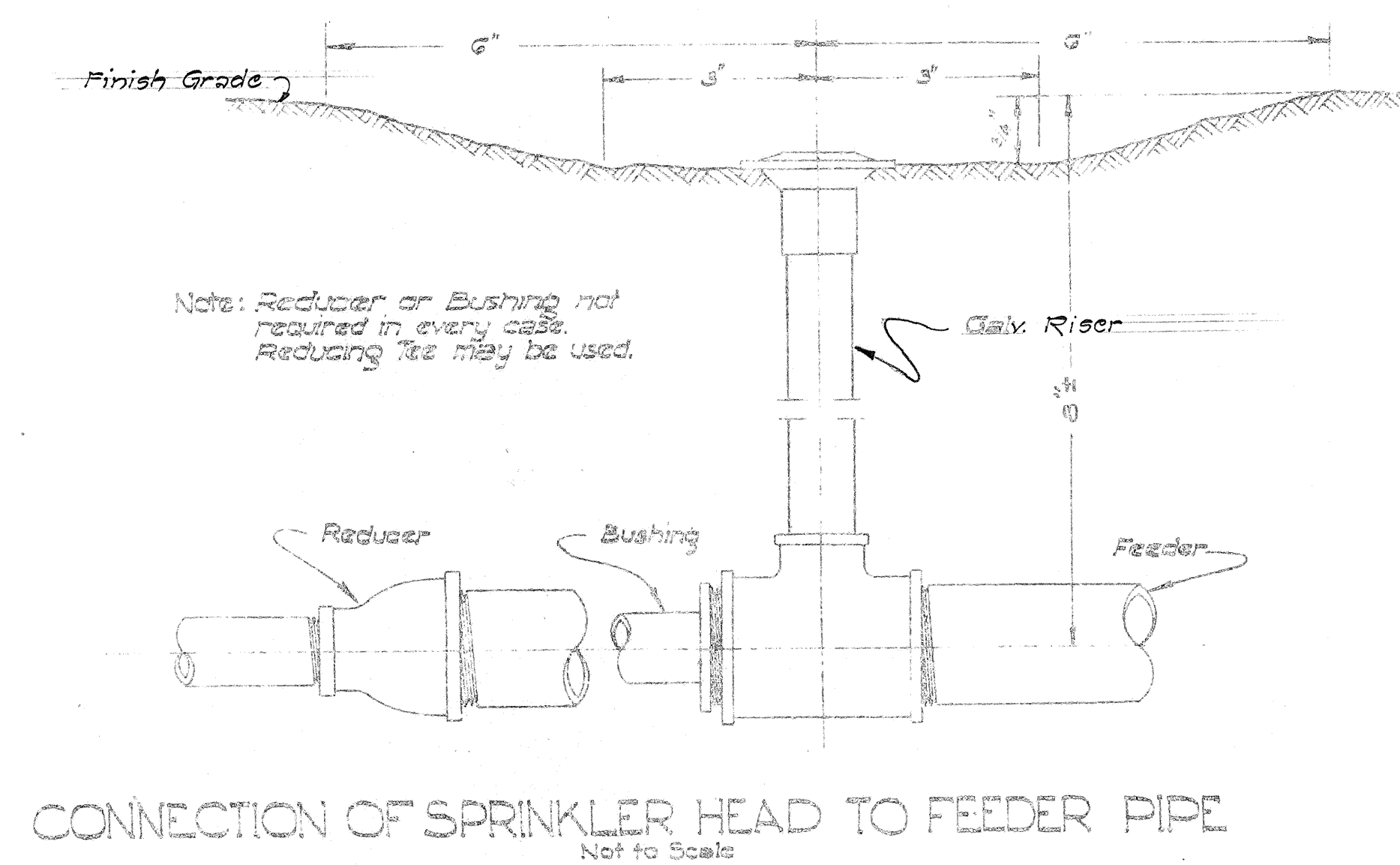
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM

F.A.I. Project No. I-HI-1(5):24, Unit 2

Scale: 1" = 20' Date: May, 1965

SHEET No. 6 OF 10 SHEETS



- GENERAL NOTES**
1. All copper pipes shall be connected with solder type fittings of bronze castings or wrought copper.
 2. Pipes not noted "Copper" are to be Galvanized Steel Pipes, and fittings not noted "Copper" are to be Galvanized/available iron fittings.
 3. After complete installation of the sprinkler system, each sprinkler head shall be adjusted to the satisfaction of the Engineer.

APPROVED: _____ DATE Aug. 25, 1959

STATE HIGHWAY ENGINEER

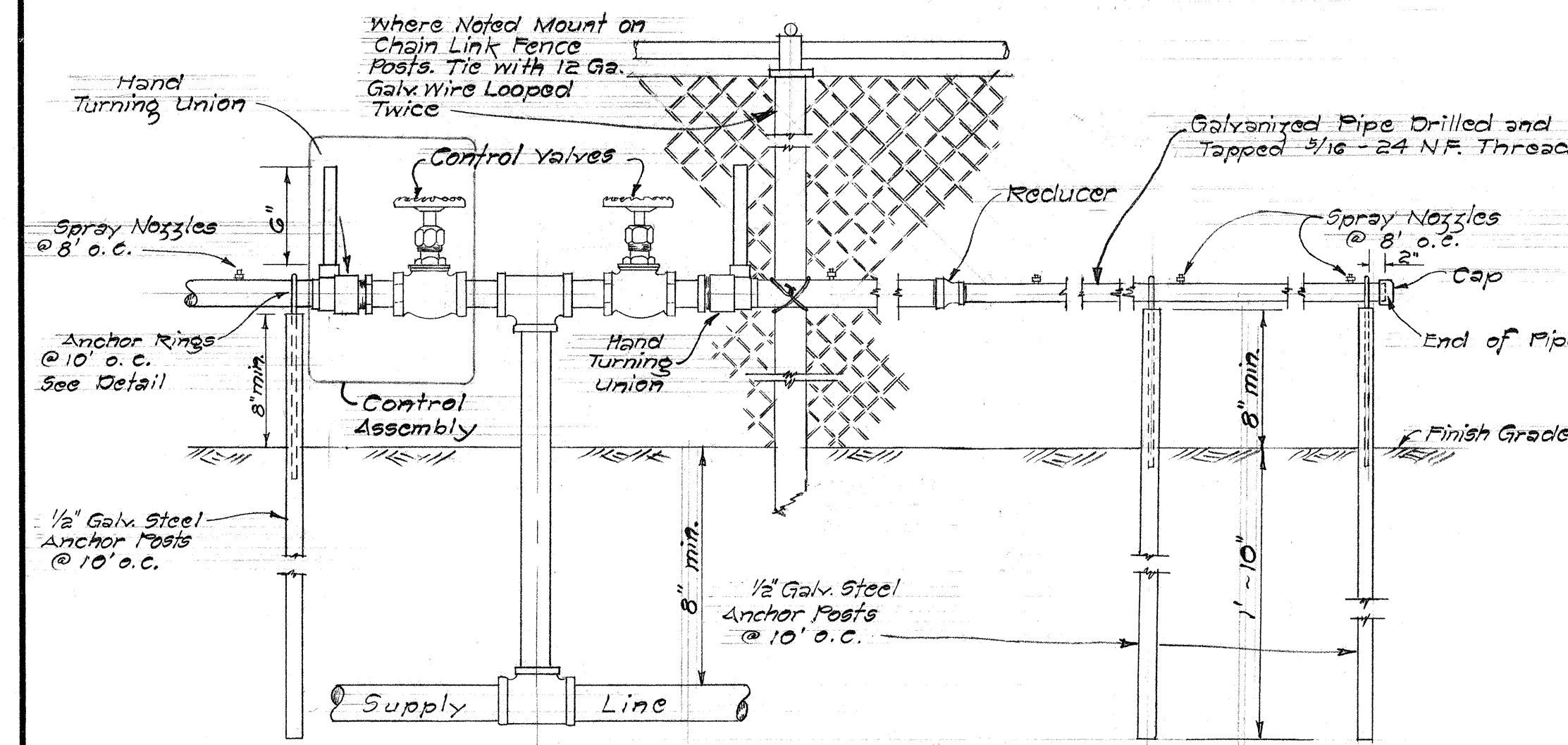
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OF HAWAII

STANDARD DETAILS
SPRINKLER SYSTEM

Not to Scale

SHEET No. 7 OF 10 SHEETS

252



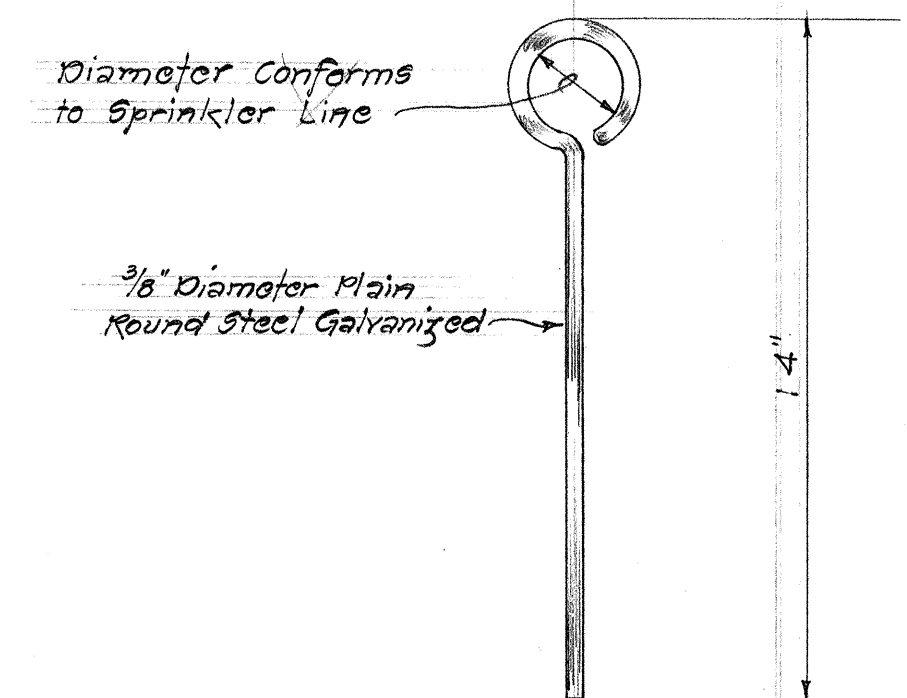
NOZZLE LINE AND DOUBLE ASSEMBLY DETAILS

Not to Scale

LENGTH OF NOZZLE LINE	MAX. LENGTH OF EACH SIZE PIPE			SIZE OF TURNING UNION
	3/4" PIPE	1" PIPE	1 1/4" PIPE	
72' or less	Up to 72'			3/4"
73' to 128'	72'	Up to 56'		1"
129' to 264'	72'	56'	Up to 136'	1 1/4"

NOTE:

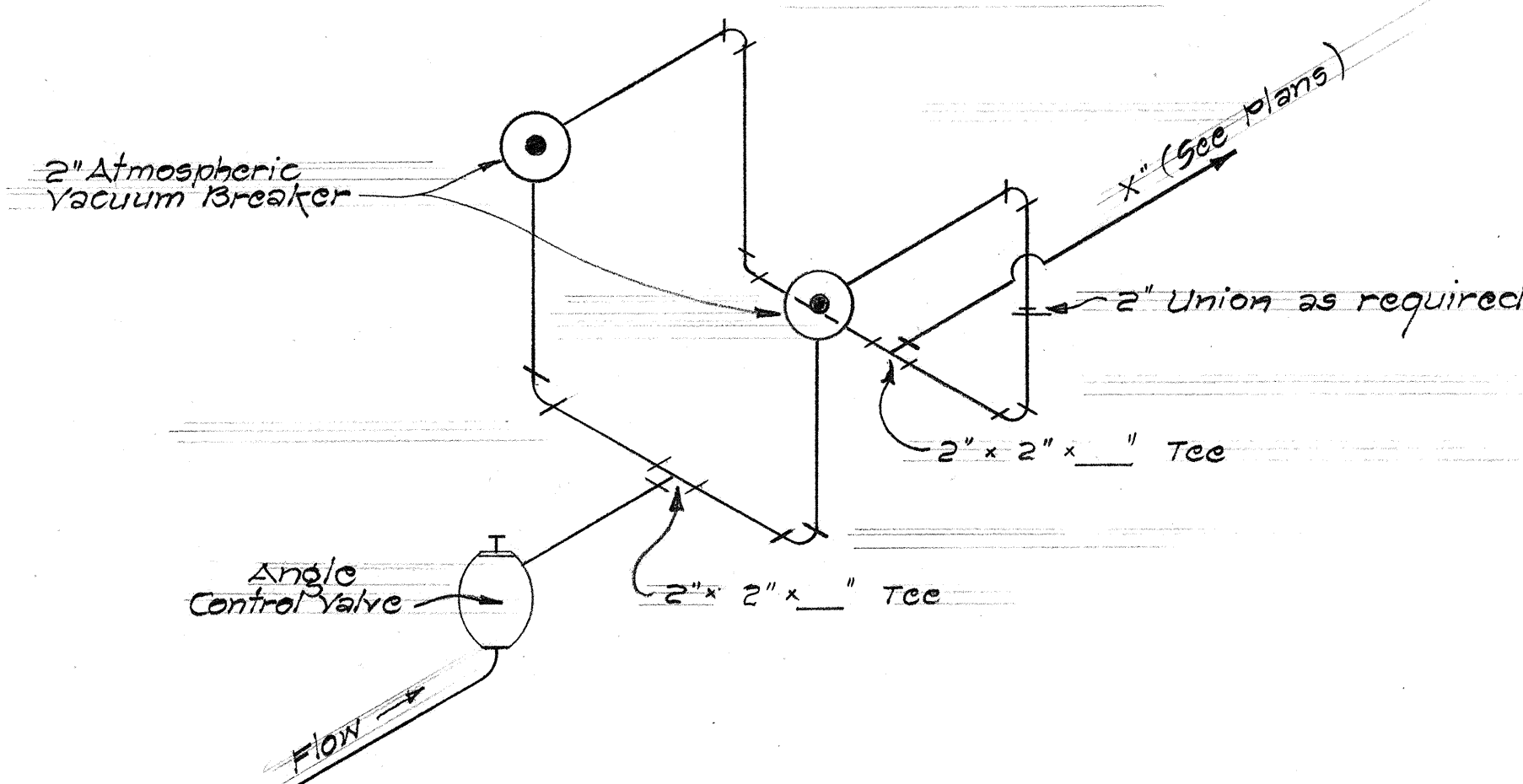
If installing a single control assembly, an angle control valve maybe installed in place of the straight globe valve.
See Sprinkler Specifications for Type of Spray Nozzles.



ANCHOR RING

Not to Scale

NOZZLE LINE DETAILS



DOUBLE - 2" VACUUM BREAKER
(ATMOSPHERIC TYPE)

Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SYSTEM

F.A.I. Project No. I-HI-1(5)24, Unit 2

Scale: As Noted Date: May, 1965

SHEET No. 8 OF 10 SHEETS

253

SUMMARY

Revised: July 16, 1965

2 5 4 1

SPRINKLER SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(3):24 Unit 2	1965	255	276

SYSTEM NO.	LOCATION		ESTIMATED QUANTITIES														REMARKS
	FROM	TO	Nozzle Line on Anchor Bolt	L.F.	Nozzle Line on Chain Link Fence	L.F.	Control Assembly for Nozzle Line	L.F.	2 1/2 inch Copper Service Lateral with 2 1/2 inch Copper Appurtenances and 2 1/2 inch Copper Box with Cover for Sprinkler System	Ea.	2 1/2 inch Globe Shut Off Valve	Ea.	Type B Meter Box with Cover for Shut Off Valve	Ea.			
1 A	Sta. 25+38 ± (I. B.)	Sta. 30+00 (I. B.)															
2 A	Sta. 31+63 ± (I. B.)	Sta. 35+10 ± (I. B.)															
2 B	Sta. 32+02 ± (O. B.)	Sta. 34+30 ± (O. B.)															
3 A	Ramp (T-1) Sta. 11+91	So. King St. Sta. 14+96							1	1	1	1					
4 A	Ramp (WL-1) Sta. 5+97 ±	Ramp (WL-1) Sta. 9+75 ±	214	248	4				1	1	1	1					
4 B	Ramp (WL-0) Sta. 4+66 ±	Ramp (WL-0) Sta. 7+87 ±			224	2			1	1	1	1					
5 A	Sta. 41+27 ± (I. B.)	Sta. 46+90 (I. B.)	500			2			1	1	1	1					
5 B	Sta. 41+23 ± (O. B.)	Sta. 43+61 ± (O. B.)	305			2			1	1	1	1					
6 A	Sta. 55+62 ± (I. B.)	Sta. 58+16 ± (I. B.)															
6 B	Sta. 55+05 ± (O. B.)	Sta. 58+33 ± (O. B.)															
6 C	Sta. 54+56 ± (Med.)	Sta. 56+24 ± (Med.)															

DESIGNED BY	CHIEF ENGINEER
DRAWN BY	IN CHARGE
CHECKED BY	IN CHARGE
DATE	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER SUMMARY
SPRINKLER SYSTEM

F.A.I. Project No. I-HI-1(3):24 Unit 2

Date: May, 1965

10 10 255