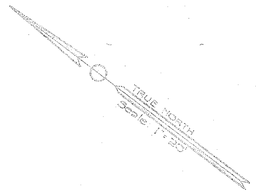
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1968	57	64



SPRINKLER HEAD SPECIFICATIONS

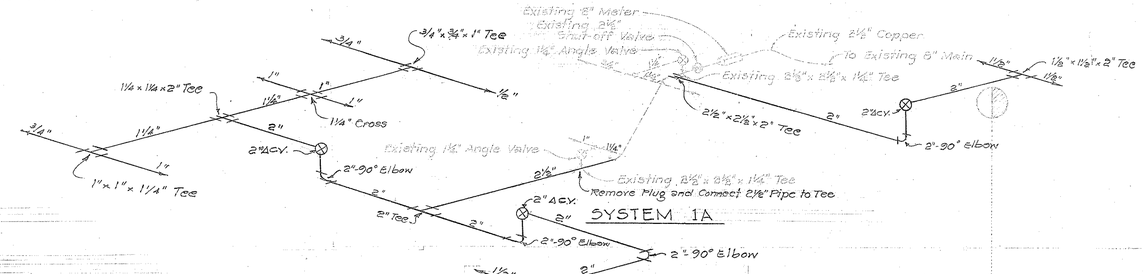
TYPE OF HEAD	DESCRIPTION	RADIUS (FT.) SEE NOTE 1	PRESSURE (PSI) SEE NOTE 2	FLOW (GPM) SEE NOTE 3	RISER SIZE (IPS) IN.
L-9 F	Lawn - Full Circle	9	15	2.5	½
L-10 F	Lawn - Full Circle	10	20	3.0	½
L-8 H	Lawn - Half Circle	8	10	1.0	½
L-9 H	Lawn - Half Circle	9	15	1.7	½
L-10 H	Lawn - Half Circle	10	20	2.5	½
L-8 Q	Lawn - Quarter Circle	8	10	0.9	½
L-9 Q	Lawn - Quarter Circle	9	15	1.5	½
L-10 Q	Lawn - Quarter Circle	10	20	2.0	½
S-9 H	Shrubbery Half Circle	11	15	1.7	½
S-10 H	Shrubbery Half Circle	14	20	2.5	½
J-(21) *	Rocker Jet Part Circle	21	10	2.7	¾

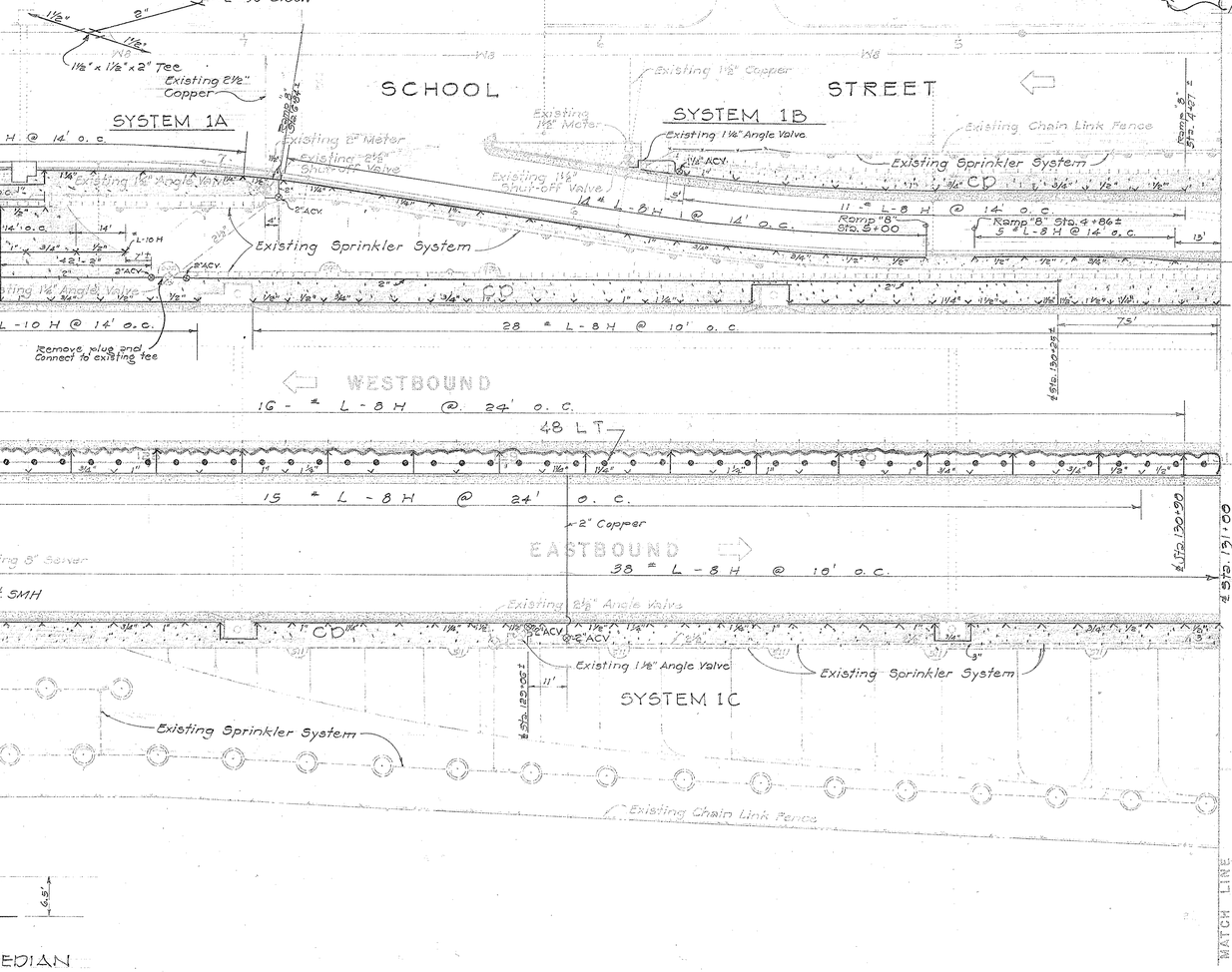
NOTE:
1. "Radius of coverage" is the minimum radius at the tabulated "pressure".
2. "Pressure" is the minimum pressure, in pounds per square inch, which is available at the base of the last head. The operating pressure for acceptable heads must not exceed this value when operating at the tabulated flow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

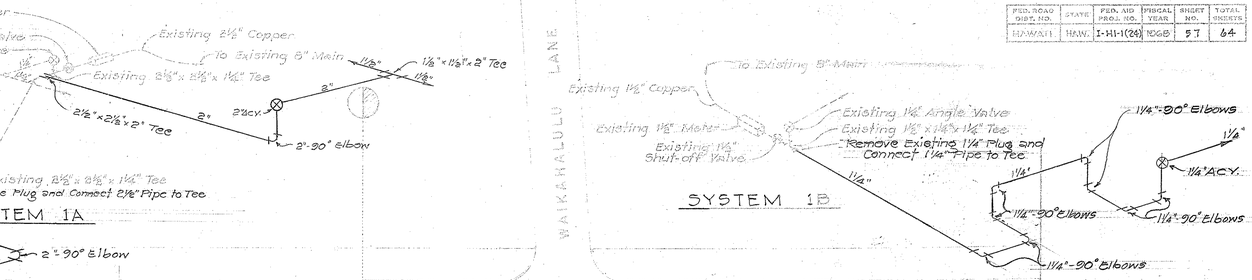
*# The J-21 sprinkler shall be an adjustable part circle-sprinkler with a 5/16" nozzle and a ¾" riser pipe size.

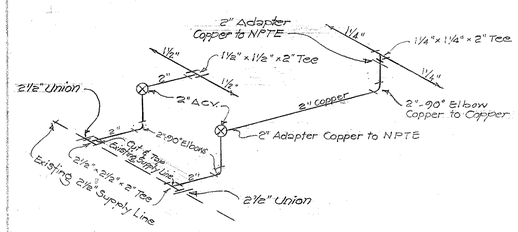
GENERAL NOTES:
1. All pipes under pavement shall be copper unless otherwise noted on plans.
2. In the water piping diagrams, all pipes are to be galvanized iron screw pipes, and all fittings are to be galvanized malleable iron fittings, unless otherwise noted on the plans.
3. Unless otherwise stipulated 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.
4. After complete installation of the Sprinkler system, each sprinkler head shall be adjusted to the satisfaction of the Engineer.
5. All angle control valves shall be furnished with precast concrete angle control box. See Sht. No. 62 for details.

END OF PROJECT
NO. U-072-1(3)
BEG. OF F.A.I. PROJ.
NO. I-HI-1(24)
STA. 127+17.95

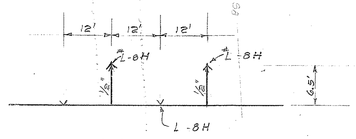








SYSTEM 1-C



TYPICAL LAYOUT - MEDIAN SPRINKLER SYSTEM
℄ STA. 127+18 TO 130+90

TOTAL PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY	SPECIFICATIONS
KEY	BOTANICAL NAME	COMMON NAME	QUANTITY	SPECIFICATIONS
LT	Ligustrum Texanum	Texas Privet	122 ea.	12"-18" Tall, 1 gt. can, Plant 8' apart or o.c.
WT	Wedelia Trilobata	Wedelia	2,161 ea	10" Runners, 1 gt. can, Plant 36" o.c. as ground cover
CD	Cynodon Dactylon	Bermuda Grass	48,552 sq.ft.	See Standard Specifications

PLANT LIST - THIS SHEET

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY
LT	Ligustrum Texanum	Texas Privet	48 ea.
CD	Cynodon Dactylon	Bermuda Grass	9,890 sq.ft.

ORIGINAL PLAN | SURVEY PLOTTED BY | DESIGNED BY | DRAWN BY | CHECKED BY | QUANTITIES BY | CHECKED BY | DATE | No. | REVISION | NOTE BOOK

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
INTERSTATE HIGHWAY (LUNALILO FWY)
F.A.I. PROJ. NO. I-HI-1(24)

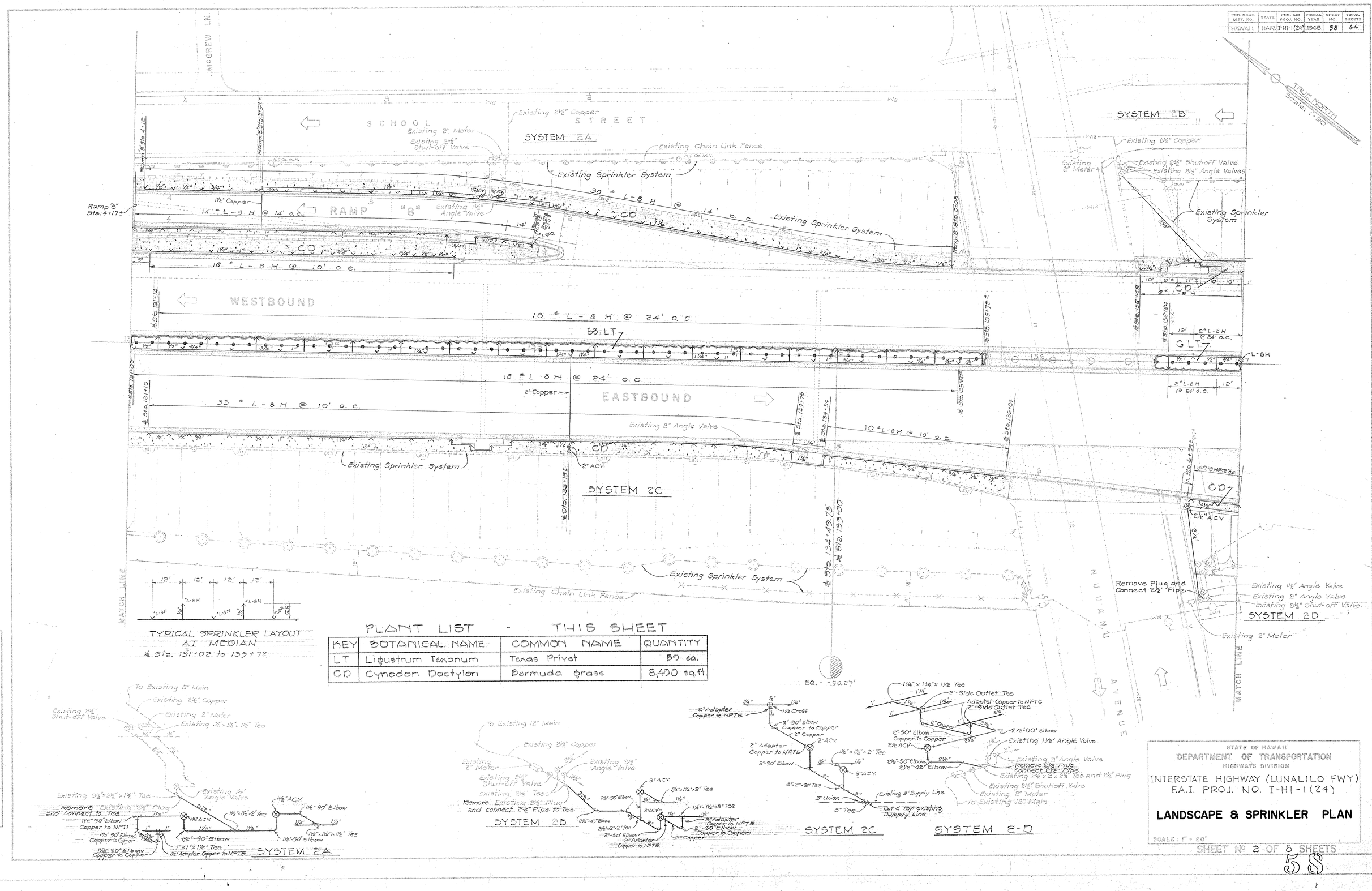
LANDSCAPE & SPRINKLER PLAN

SCALE: 1" = 20'

SHEET No. 1 OF 5 SHEETS

57

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1965	58	64



TYPICAL SPRINKLER LAYOUT AT MEDIAN
Sta. 131+02 to 135+72

PLANT LIST - THIS SHEET

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY
LT	Ligustrum Texanum	Texas Privet	59 ea.
CD	Cynodon Dactylon	Bermuda grass	8,400 sq.ft.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INTERSTATE HIGHWAY (LUNALILO FWY)
F.A.I. PROJ. NO. I-HI-1(24)

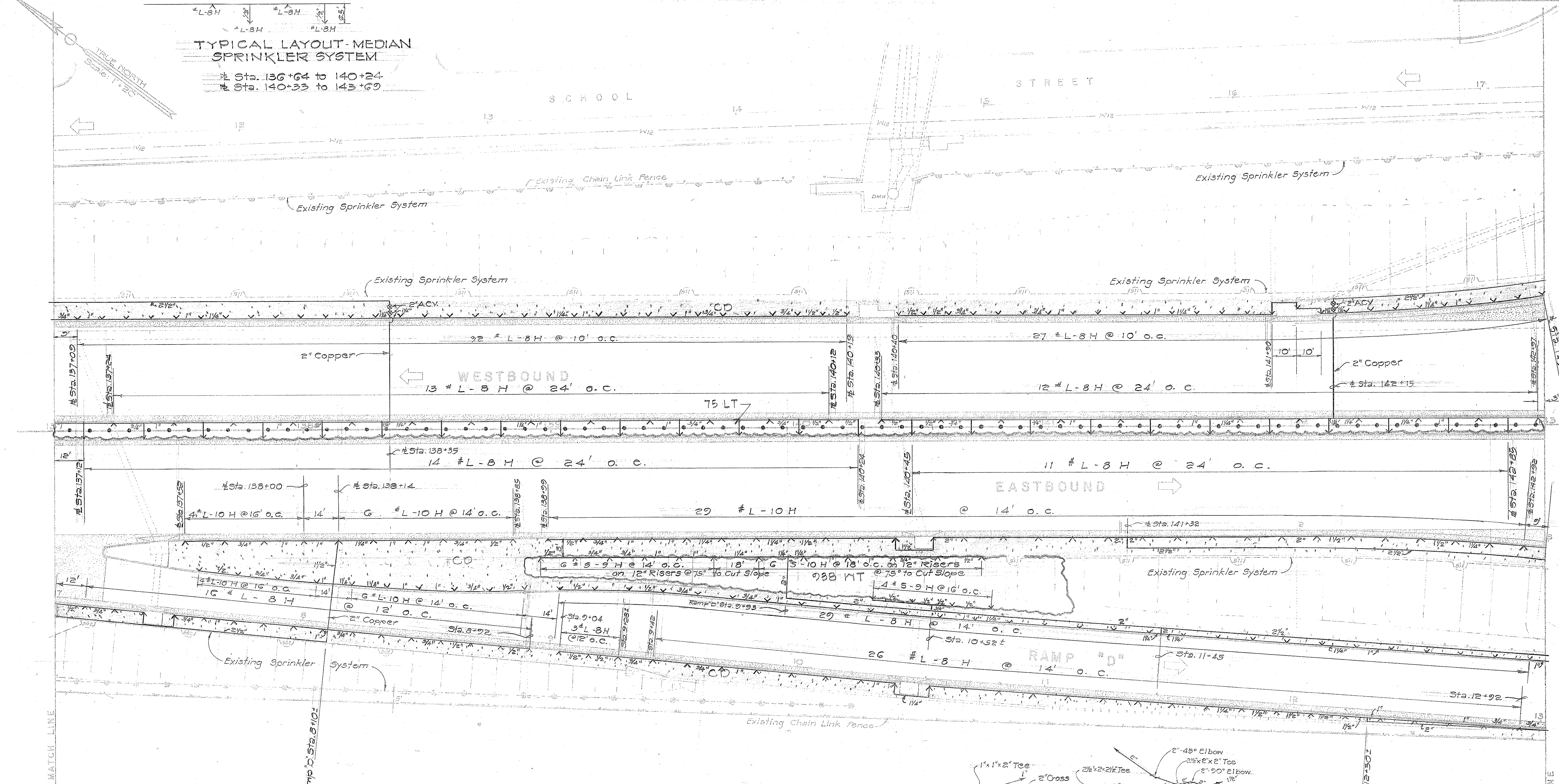
LANDSCAPE & SPRINKLER PLAN

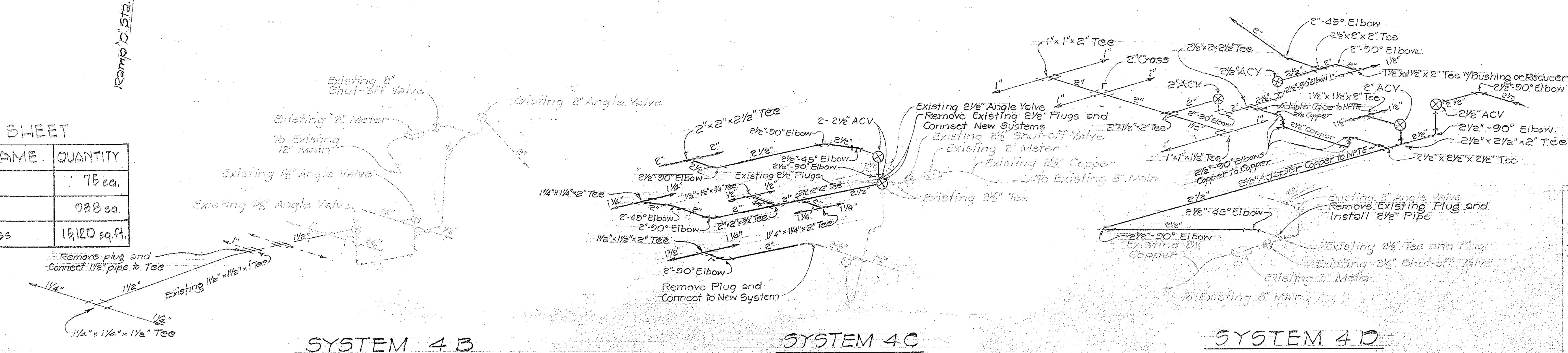
SCALE: 1" = 20'

SHEET № 2 OF 8 SHEETS

58

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1965	59	64





PLANT LIST - THIS SHEET

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY
LT	Ligustrum Texanum	Texas Privet	75 ea.
WT	Wedelia Trilobata	Wedelia	938 ea.
CD	Cynodon Dactylon	Bermuda Grass	15,120 sq.ft.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INTERSTATE HIGHWAY (LUNALILO FWY)
F.A.I. PROJ. NO. I-HI-1(24)

LANDSCAPE & SPRINKLER PLAN

SCALE: 1" = 20'

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1965	60	64

SCHOOL STREET

SYSTEM 4A

Existing 2½" Copper
Existing 2" Meter
Existing 2½" Shut-off Valve
Existing 2½" Angle Valve
Existing Sprinkler System
Remove Plug and Connect 2½" Pipe
Existing Sprinkler System
Existing Sprinkler System
Existing Sprinkler System
Existing Sprinkler System
Existing 1½" Angle Valve
Existing 1½" Copper
Existing Sprinkler System
Existing Sprinkler System
Remove Plug and Connect 1½" Pipe
Existing 1½ x 1½ x 1" Tee and ½" Plug
L-8 Q
CD
10' 7 #L-8H @ 10' o.c.
3 #L-8H@24' o.c.
10 LT
3' 3 #L-8H@24' o.c.
Sta. 143+69
Sta. 143+57
Sta. 144+65
Sta. 144+75
23 #L-8H @ 10' o.c.
Sta. 146+34
WESTBOUND
FUTURE
End of New Pavement
END OF F.A.I PROJ. No I-HI-1(24) Sta. 145+25
End of New Pavement
6 #L-10 H @ 14' o.c.
CD
Existing Sprinkler System
Remove plug and connect 2½" Pipe
Existing 2½" Angle Valve
Remove plug and connect
2½" ACV
Existing 2½" Shut-off Valve
Existing 2" Copper
Existing 2" Meter
RAMP "D"
6 #L-8H @ 14' o.c.
3 #L-8H@14' o.c.
Sta. 13+06
Remove plug and connect 2" pipe to existing system
Existing 2½" x 2½" x 2" Tee and 2½" Plug
SYSTEM 4C
SYSTEM 4D
Existing 2½" Angle Valve
Existing Sprinkler System
Sta. 4+87±
Remove Plug and connect 2½" Pipe
Existing Sprinkler System
Existing 2½" Shut-off Valve
Existing 2½" Angle Valve
Existing 2" Copper
Existing 2" Meter
SYSTEM 4D
Existing Ch. Lk. Fence
Existing Sprinkler System
TRUE NORTH
Scale: 1" = 20'
EASTBOUND
FUTURE
4 #L-10 H
#5-10H on 12" risers
#J(21) 3/16" on 12" riser @ 90° to slope
#J(21) 3/16" on 12" riser @ 90° to slope
EXIST. RAMP "H"
Existing Sprinkler System
Sta. 6+51
#5-10H @ 20' o.c. on 6" Risers
1190 WT @ 90° to Slope
RAMP "B"
17 #L-9H @ 13' o.c.
7 #L-9H @ 13' o.c.
Sta. 7+05
4 #L-10 H
45'
Existing Chain Link Fence
9 #L-9H @ 14' o.c.
Existing Sprinkler System
Existing 2" Meter
To Existing 12" Main
R/W Line
Existing 2½" Shut-off Valve
Existing 2" Angle Valve
Existing 2½" Angle Valve
Existing 2½" Tee
Remove Existing 2½" Plug and Connect 2½" Pipe to Tee
2½" 90° Elbow
2½" 90° Elbow
2½" ACV
2" ACV
2½" ACV
2½"x1½"x2" Tee
2"x2½"x2" Tee
2" 90° Elbow
2" Adapter Copper to NPTE
1½"x1½"x2" Tee
2" Copper
2" 90° Elbow Copper to Copper
2" Adapter Copper to NPTE
SYSTEM 4A

PLANT LIST - THIS SHEET

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY
LT	Ligustrum Texanum	Texas Privet	10 ea.
WT	Wedelia Trilobata	Wedelia	1190 ea
CD	Cynodon Dactylon	Bermuda Grass	12730 sq.ft.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
INTERSTATE HIGHWAY (LUNALILO FWY)
F.A.I. PROJ. NO. I-HI-1(24)

LANDSCAPE & SPRINKLER PLAN

SCALE: 1" = 20'

SHEET No 4 OF 8 SHEETS

60

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1965	61	64

SCHOOL STREET

IOLANI AVENUE

RAMP "G" (FUTURE)

RAMP "F"

EXIST. RAMP "H"

EXIST. RAMP "B-1"

WESTBOUND (FUTURE)

EASTBOUND (FUTURE)

QUEEN EMMA ST.

BASE LINE

MATCH LINE

TRUE NORTH

Existing Chain Link Fence

Existing Sprinkler System

Existing 2½" Shut-off Valve

Existing 2½" Copper

Existing 2" Meter

Existing 2½" Angle Valve

Existing 2" Angle Valves

Existing 2" Shut off Valve

Existing 2" Copper

Existing 1½" Angle Valve

Existing 2" Angle Valve

Existing 2½" Tee and Plug

Existing 3"x2"x 3/4" Tee and 2" Plug

Existing 2½" Shut-off Valve

Existing Plug

Future

Connect to existing 1¼" x 1¼" x ¾" Tee

Existing ¾" and 1½" Plug

Existing 2" Meter

Demolish Existing C.B. and Construct New SDMH

End of New Pavement

Future P.C.C. Pavement

New Type A C.B.

New 24" SD

Cut

Plug

Relocated Sprinkler Line

Existing Sprinkler Line and Sprinkler Heads to be removed

Existing Sprinkler Line to be relocated

4 @ L-8'H @ 13' o.c.

4 @ L-9'H @ 14' o.c.

58 MT @ 10'

CD

PLANT LIST - THIS SHEET

KEY	BOTANICAL NAME	COMMON NAME	QUANTITY
MT	Wedelia Trilobata	Wedelia	58 ea.
CD	Cynodon Dactylon	Bermuda Grass	2752 sq. ft.

ORIGINAL PLAN — STRUCT. DRAFTED BY — DESIGNED BY — DRAWN BY — TRACED BY — QUANTITIES BY — CHECKED BY — DATE — NOTE BOOK — No.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
INTERSTATE HIGHWAY (LUNALILO FWY)
F.A.I. PROJ. NO. I-HI-1(24)

LANDSCAPE & SPRINKLER PLAN

SCALE: 1" = 20'

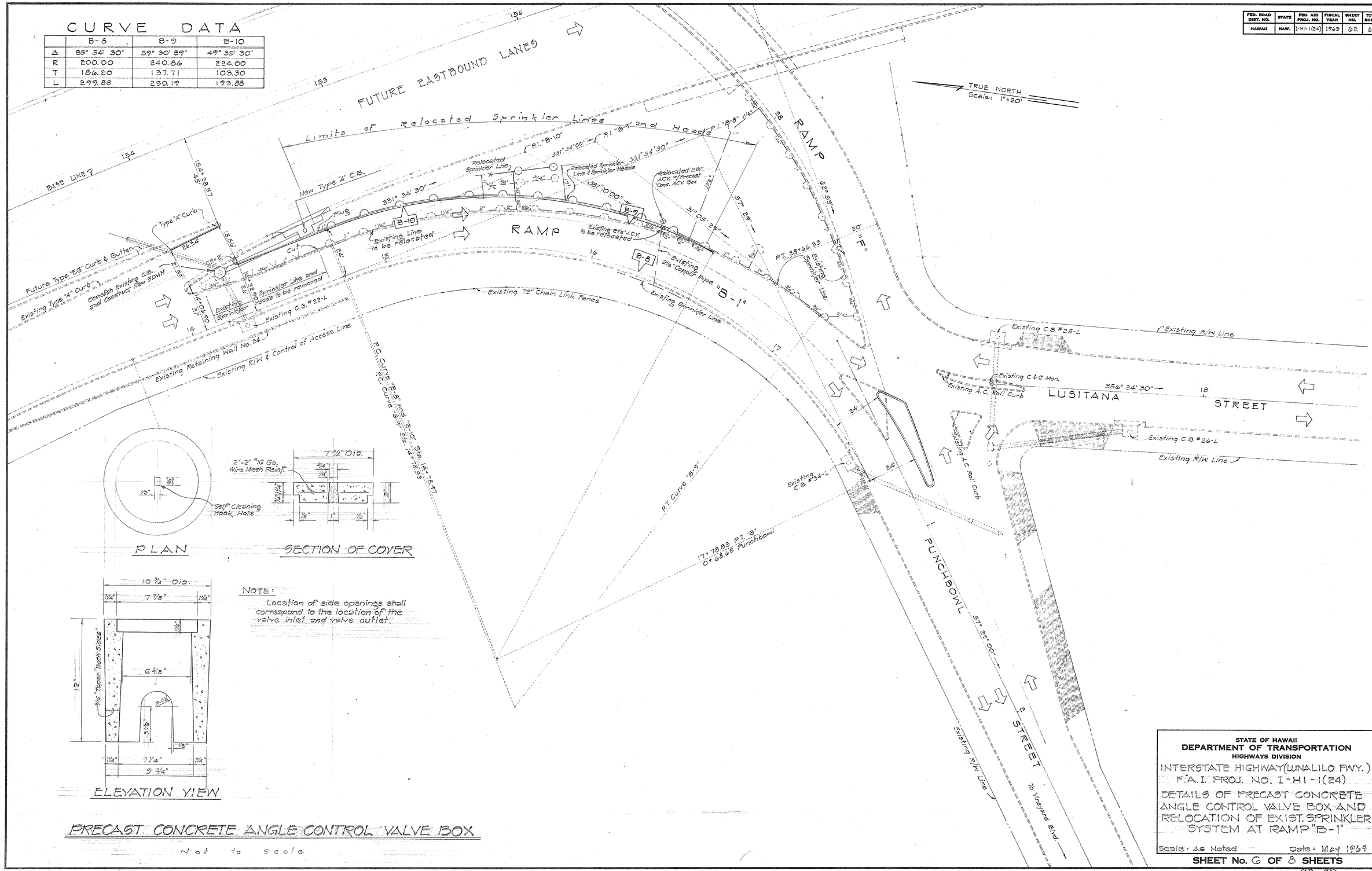
SHEET No 5 OF 8 SHEETS

61

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1965	62	64

CURVE DATA

	B-8	B-9	B-10
Δ	85° 54' 30"	59° 30' 59"	49° 35' 30"
R	200.00	240.86	224.00
T	186.20	137.71	103.30
L	299.88	250.19	193.88



NOTE:
Location of side openings shall correspond to the location of the valve inlet and valve outlet.

PRECAST CONCRETE ANGLE CONTROL VALVE BOX

Not to Scale

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INTERSTATE HIGHWAY(LUNALILO FWY.)
F.A.I. PROJ. NO. I-HI-1(24)

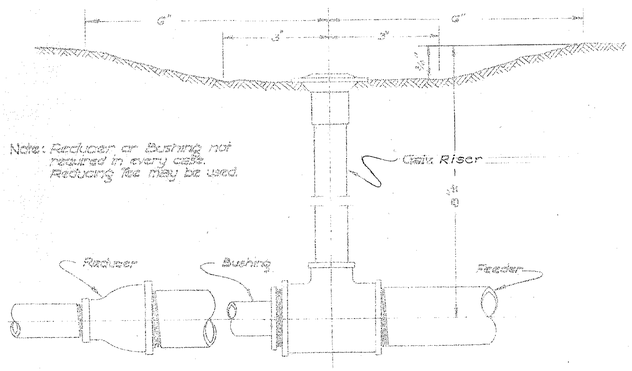
DETAILS OF PRECAST CONCRETE ANGLE CONTROL VALVE BOX AND RELOCATION OF EXIST. SPRINKLER SYSTEM AT RAMP "B-1"

Scale: As Noted Date: May 1965

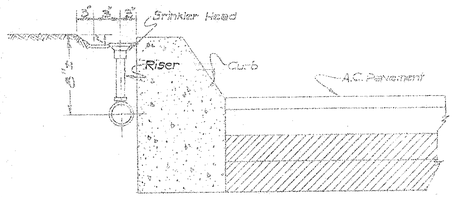
SHEET No. 6 OF 8 SHEETS

62

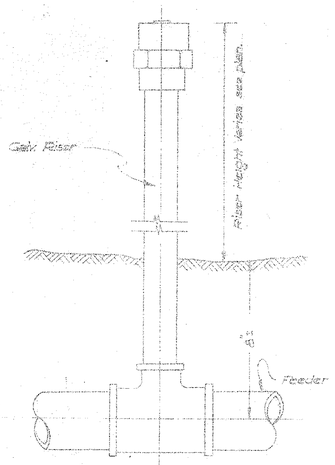
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1965	63	64



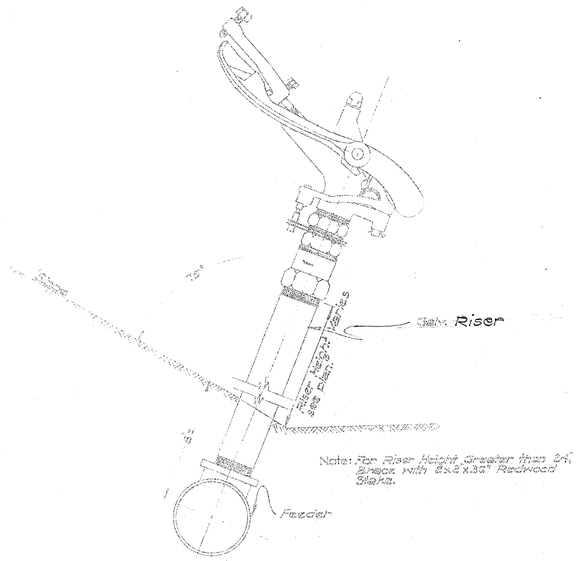
CONNECTION OF SPRINKLER HEAD TO FEEDER PIPE
Not to Scale



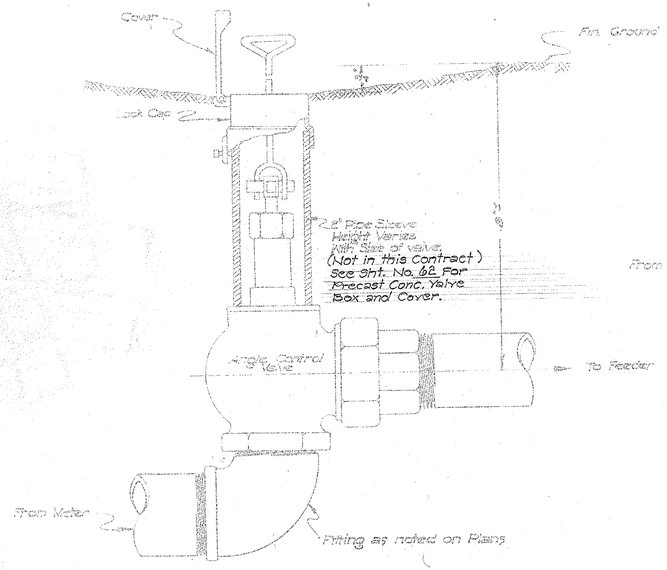
TYPICAL DETAIL OF SPRINKLER AT CONC. CURB
Not to Scale



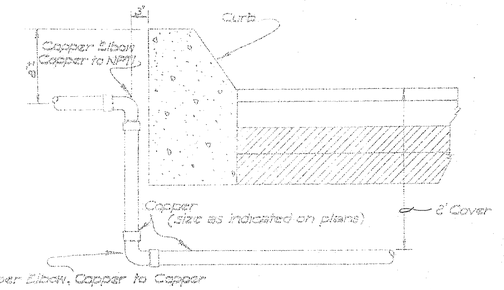
DETAIL OF SHRUBBERY HEAD
Not to Scale



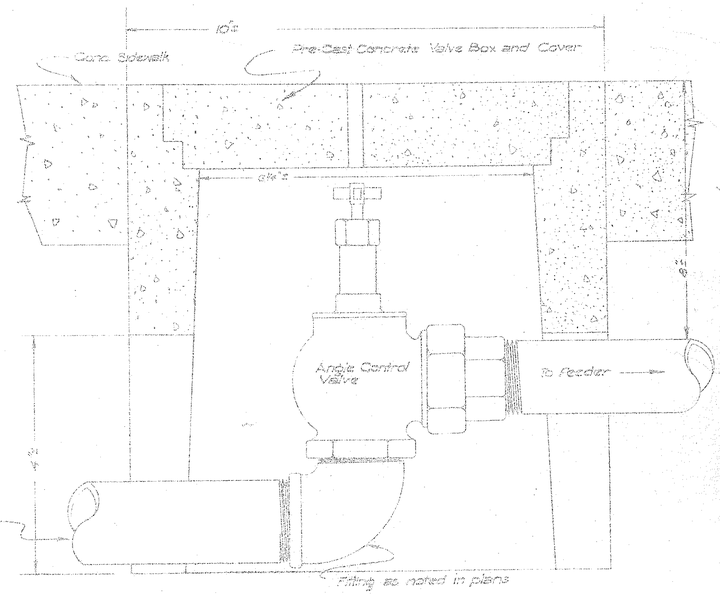
INSTALLATION OF JET SPRINKLER ON SLOPE
Not to Scale



ANGLE CONTROL VALVE HOUSING & CAP
Not to Scale



TYPICAL DETAIL OF ROADWAY CROSSING
Not to Scale



ANGLE CONTROL VALVE IN SIDEWALK AREA
Not to Scale

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 Malleable 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, 1965

STATE HIGHWAY ENGINEER

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OF HAWAII

STANDARD DETAILS SPRINKLER SYSTEM

Not to Scale

SHEET No. 7 OF 8 SHEETS

63

ORIGINAL PLAN	SURVEY PLOTTED BY	
	DESIGNED BY	
	DRAWN BY T. A. Merrick	Aug. 65
	TRACED BY	
	QUANTITIES BY	
NOTE BOOK No.	QUANTITIES CHECKED BY	
	CHECKED BY	
	DATE	

PRINTED ON DIETZ 1000R CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(24)	1965	64	64

SPRINKLER SUMMARY

SYSTEM NO.	LOCATION FROM	LOCATION TO	½" Galvanized Steel Pipe L.F.	¾" Galvanized Steel Pipe L.F.	1" Galvanized Steel Pipe L.F.	1¼" Galvanized Steel Pipe L.F.	1½" Galvanized Steel Pipe L.F.	2" Galvanized Steel Pipe L.F.	2½" Galvanized Steel Pipe L.F.	3" Galvanized Steel Pipe L.F.	1½" Copper Pipe L.F.	2" Copper Pipe L.F.	2½" Copper Pipe L.F.	L-9F Sprinkler Head Ea.	L-10F Sprinkler Head Ea.	L-8H Sprinkler Head Ea.	L-9H Sprinkler Head Ea.	L-10H Sprinkler Head Ea.	L-8Q Sprinkler Head Ea.	L-10Q Sprinkler Head Ea.	S-9H Sprinkler Head Ea.	S-10H Sprinkler Head Ea.	J(21) Sprinkler Head Ea.	1¼" Angle Control Valve Ea.	1½" Angle Control Valve Ea.	2" Angle Control Valve Ea.	2½" Angle Control Valve Ea.	Precast Concrete Angle Control Valve Box Ea.	Structure Excavation for Sprinkler System C.Y.	Cushion Material for Sprinkler System C.Y.	Relocation of Existing Sprinkler System L.S.	REMARKS
1A	℄ Sta. 127+14±	Ramp "B" Sta. 5+00	240	234	253	296	30	314							5	58		22		1						3		3	35			
1B	Ramp "B" Sta. 5+80±	Ramp "B" Sta. 4+27±	34	42	70	20										11								1				1	4			
1C	℄ Sta. 127+20	℄ Sta. 131+00	250	206	206	212	40	12				45				69			2							2		2	24	2		
2A	Ramp "B" Sta. 4+17±	Ramp "B" Sta. 0+08	140	206	238	126	146				21					49			1						2			2	24	1		
2B	℄ Sta. 136+49	℄ Sta. 140+19	236	180	220	246		5	223			45				69										2		2	30	2		
2C	℄ Sta. 131+02	℄ Sta. 135+84	245	116	190	392	30	4		3		44				79										2		2	26	2		
2D	Ramp "D" Sta. 6+74±	Ramp "D" Sta. 8+92	150	182	143	34	18		187			20				19		20									1	1	19	1		
4A	℄ Sta. 140+33	℄ Sta. 143+70±	212	164	220	204			215			46				63										2		2	29	2		
4B	℄ Sta. 144+65	℄ Sta. 146+94	52	80	60	60	14									23			1								1		7			
4C	℄ Sta. 138+99	℄ Sta. 144+00±	318	254	405	438	173	454	540							67		35			10	6					2	2	70			
4D	Ramp "B" Sta. 4+87±	Ramp "B" Sta. 9+43±	330	250	305	401	163	135	362				20	4	10	4	64	13				4	7			2	2	4	52	1		
Ramp "B"																															1	

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