FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(10)	1963	A20	45
		U-063-1(1)	1963	B17	45

PLANT LIST

KEY	NAME	QUANT.	HT.	CONT.	SPACING
	Tabebuia Donnell-Smithii Gold Tree	25	5'-7'	5 Gal.	As Indicated
	Plumeria Obtusa Singapore Plumeria	13	4'-6'	5 Gal.	
	Wedelia Trilobata	7450	** 12"-18"	1 Gal.	4' o.c.
	Grassed Area	See Standard Specifications.			
	Ligustrum Texanum *** Texas Privet	311	10"-12"	1 Qt.	8' o.c.

** Length of runner. (Several per container.)

NOTE: No planting is required on 1:1 Rockcuts.

*** All Ligustrum shall be planted in median strip at 8' o.c. Plant single centerline row. Grass median strip.

GENERAL NOTES

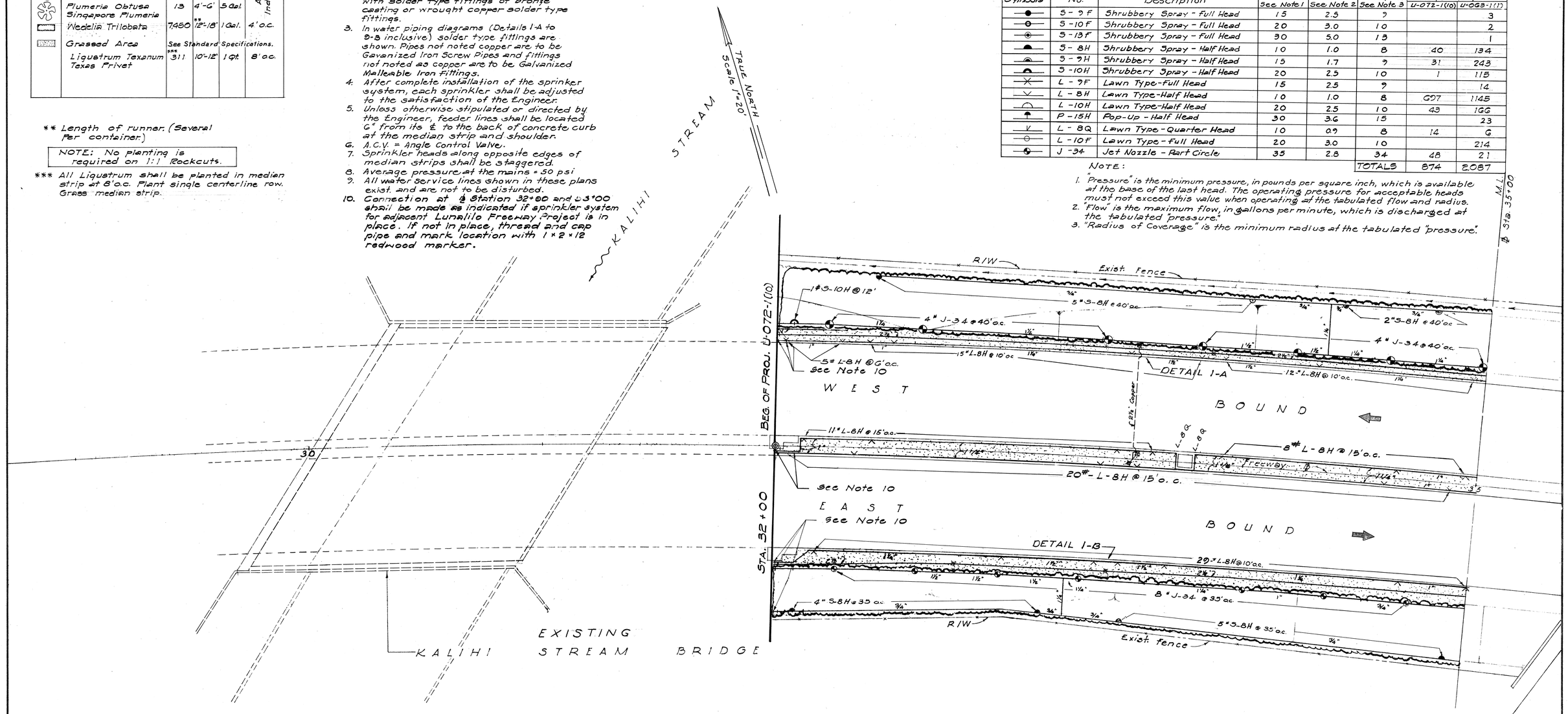
1. All pipes under pavement and risers are to be copper.
2. All copper pipes shall be connected with solder type fittings of bronze casting or wrought copper solder type fittings.
3. In water piping diagrams (Details 1-A to 9-B inclusive) solder type fittings are shown. Pipes not noted copper are to be Galvanized Iron Screw Pipes and fittings not noted as copper are to be Galvanized Malleable Iron Fittings.
4. After complete installation of the sprinker system, each sprinkler shall be adjusted to the satisfaction of the Engineer.
5. Unless otherwise stipulated or directed by the Engineer, feeder lines shall be located 6" from its ℄ to the back of concrete curb at the median strip and shoulder.
6. A.C.V. = Angle Control Valve.
7. Sprinkler heads along opposite edges of median strips shall be staggered.
8. Average pressure at the mains = 50 psi
9. All water service lines shown in these plans exist. and are not to be disturbed.
10. Connection at ℄ Station 32+00 and ℄ 3+00 shall be made as indicated if sprinkler system for adjacent Lunalilo Freeway Project is in place. If not in place, thread and cap pipe and mark location with 1 × 2 × 12 redwood marker.

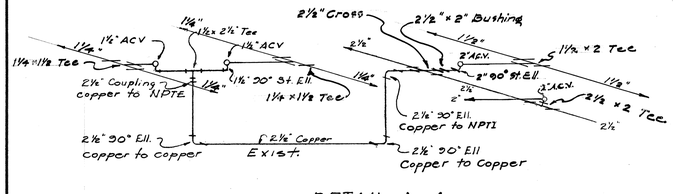
PROJECT No. U-072-1(10) & U063-1(1)
SPRINKLER HEADS

Symbols	No.	Description	Pressure See Note 1	Flow See Note 2	Rad. of Cov. See Note 3	Quantity U-072-1(10)	Quantity U-063-1(1)
	S-9F	Shrubbery Spray - Full Head	15	2.5	9		3
	S-10F	Shrubbery Spray - Full Head	20	3.0	10		2
	S-13F	Shrubbery Spray - Full Head	30	5.0	13		1
	S-8H	Shrubbery Spray - Half Head	10	1.0	8	40	134
	S-9H	Shrubbery Spray - Half Head	15	1.7	9	31	243
	S-10H	Shrubbery Spray - Half Head	20	2.5	10	1	115
	L-9F	Lawn Type-Full Head	15	2.5	9		14
	L-8H	Lawn Type-Half Head	10	1.0	8	607	1145
	L-10H	Lawn Type-Half Head	20	2.5	10	43	166
	P-15H	Pop-Up - Half Head	30	3.6	15		23
	L-8Q	Lawn Type-Quarter Head	10	0.9	8	14	6
	L-10F	Lawn Type-Full Head	20	3.0	10		214
	J-34	Jet Nozzle - Part Circle	35	2.8	34	48	21
					TOTALS	874	2,087

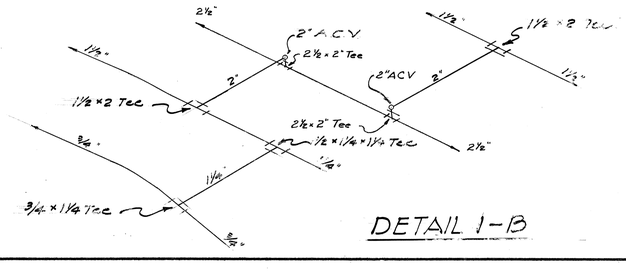
NOTE:

1. "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.
2. "Flow" is the maximum flow, in gallons per minute, which is discharged at the tabulated "pressure."
3. "Radius of Coverage" is the minimum radius at the tabulated "pressure."





DETAIL 1-A



DETAIL 1-B

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	TRACED BY: E. Hiraoka	3-67
	DRAWN BY: L. Matsuda	3-67
NOTE BOOK	QUANTITIES BY: E. Hiraoka	3-67
	QUANTITIES CHECKED BY:	
No.	CHECKED BY: R. Tagawa	3-67

ROBERT L. NORDLAND REGISTERED PROFESSIONAL ENGINEER No. 895 HAWAII, U.S.A.

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Civil and Structural Engineers

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY U-072-1(10)

LIKELIKE HIGHWAY U-063-1(1)

SHEET No. 1 OF 9 SHEETS

A 20 B 17

PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072(106)	1963	20	45

PLANT LIST

KEY	NAME	QUANT.	HT.	CONT.	SPACING
	Cynodon Dactylon Bermuda Grass	18,200#			
	Ligustrum Texanum Texas Privet	*270	10"-12"	1 Gt.	8' o.c.

* All Liguistrum shall be planted in median strip at 8' o.c. Plant single centerline row. Grass median strip.

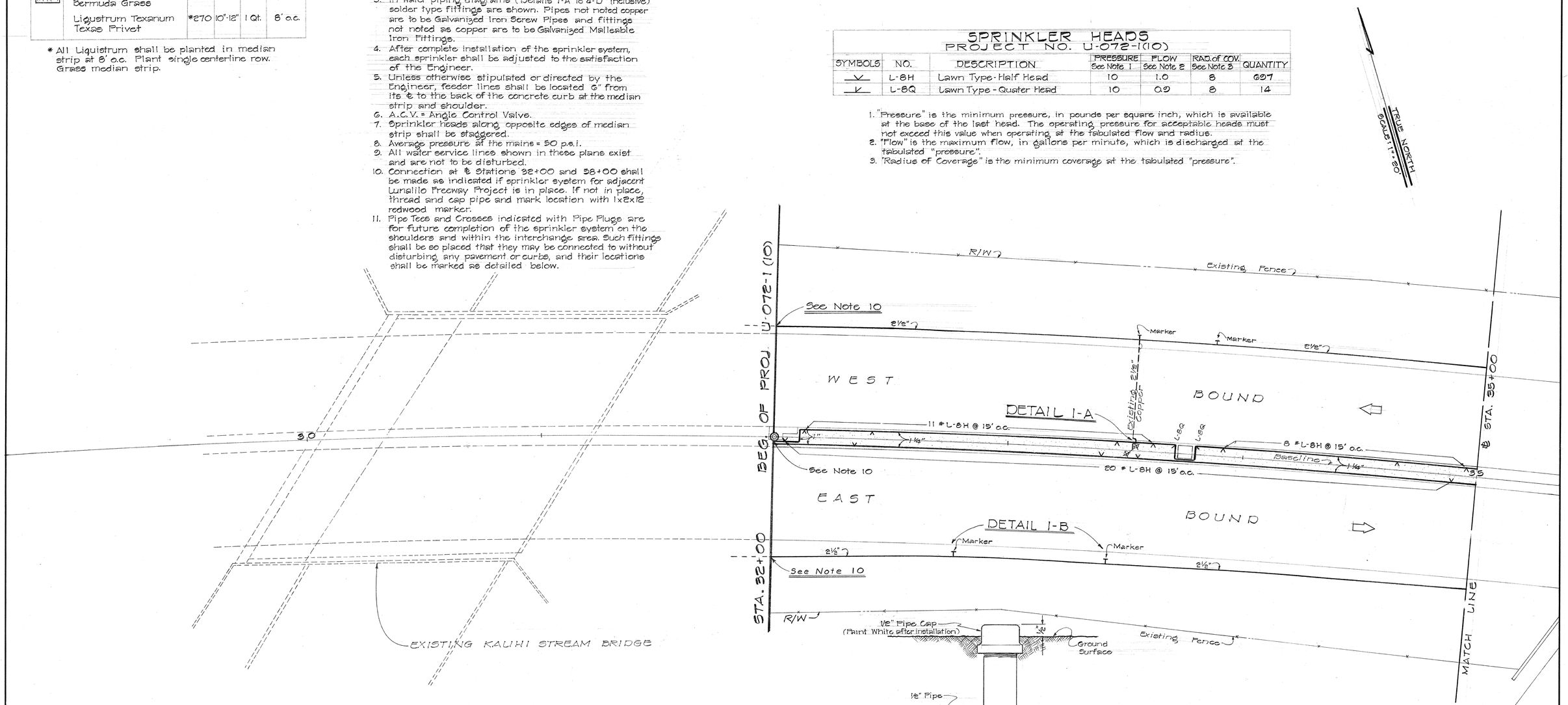
GENERAL NOTES

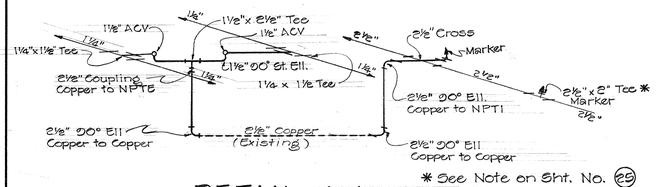
1. All pipes under pavement and risers are to be copper.
2. All copper pipes shall be connected with solder type fittings of Bronze casting or wrought copper solder type fittings.
3. In water piping diagrams (Details 1-A to 4-D inclusive) solder type fittings are shown. Pipes not noted copper are to be Galvanized Iron Screw Pipes and fittings not noted as copper are to be Galvanized Malleable Iron Fittings.
4. After complete installation of the sprinkler system, each sprinkler shall be adjusted to the satisfaction of the Engineer.
5. Unless otherwise stipulated or directed by the Engineer, feeder lines shall be located 6" from its ℄ to the back of the concrete curb at the median strip and shoulder.
6. A.C.V. = Angle Control Valve.
7. Sprinkler heads along opposite edges of median strip shall be staggered.
8. Average pressure at the mains = 50 p.s.i.
9. All water service lines shown in these plans exist and are not to be disturbed.
10. Connection at ℄ Stations 32+00 and 38+00 shall be made as indicated if sprinkler system for adjacent Lunalilo Freeway Project is in place. If not in place, thread and cap pipe and mark location with 1x2x12 redwood marker.
11. Pipe Tees and Crosses indicated with Pipe Plugs are for future completion of the sprinkler system on the shoulders and within the interchange area. Such fittings shall be so placed that they may be connected to without disturbing any pavement or curbs, and their locations shall be marked as detailed below.

SPRINKLER HEADS
PROJECT NO. U-072-1(10)

SYMBOLS	NO.	DESCRIPTION	PRESSURE See Note 1	FLOW See Note 2	RAD. of COV. See Note 3	QUANTITY
V	L-8H	Lawn Type-Half Head	10	1.0	8	627
V	L-8Q	Lawn Type-Quater Head	10	0.2	8	14

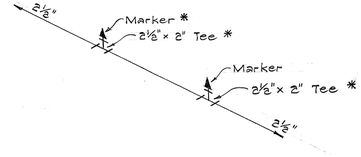
1. "Pressure" is the minimum pressure, in pounds per square inch, which is available at the base of the last head. The operating pressure for acceptable heads must not exceed this value when operating at the tabulated flow and radius.
2. "Flow" is the maximum flow, in gallons per minute, which is discharged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



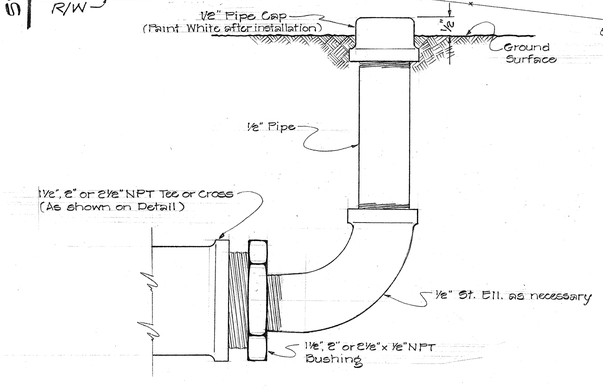


DETAIL 1-A

* See Note on Sht. No. 29



DETAIL 1-B



TYPICAL PIPE MARKER
(For Location of Future Connections)
Not to Scale

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY U-072-1 (10)

SHEET No. OF SHEETS

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

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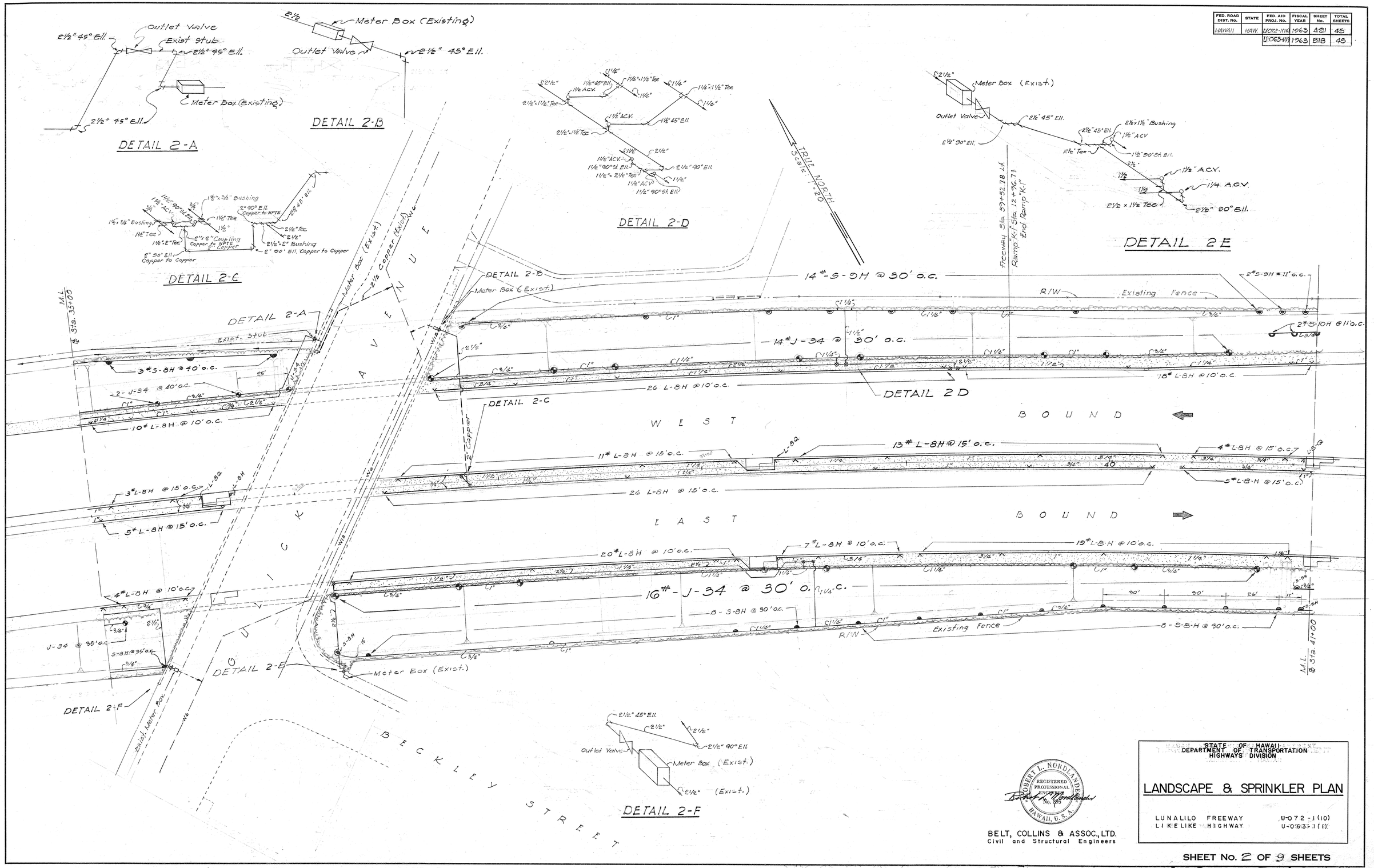
A 2 0 22

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(10)	1963	A21	45
		U-063-1(11)	1963	B18	45



ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DESIGNED BY	2-57
	DRAWN BY	3-57
	TRACED BY	
NOTE BOOK	QUANTITIES BY	2-57
	QUANTITIES CHECKED BY	2-57
No.	CHECKED BY	

ROBERT L. NORDLANDER
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HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY — U-072-1(10)
LIKELIKE HIGHWAY — U-063-1(11)

SHEET No. 2 OF 9 SHEETS

A 21 B 18

23

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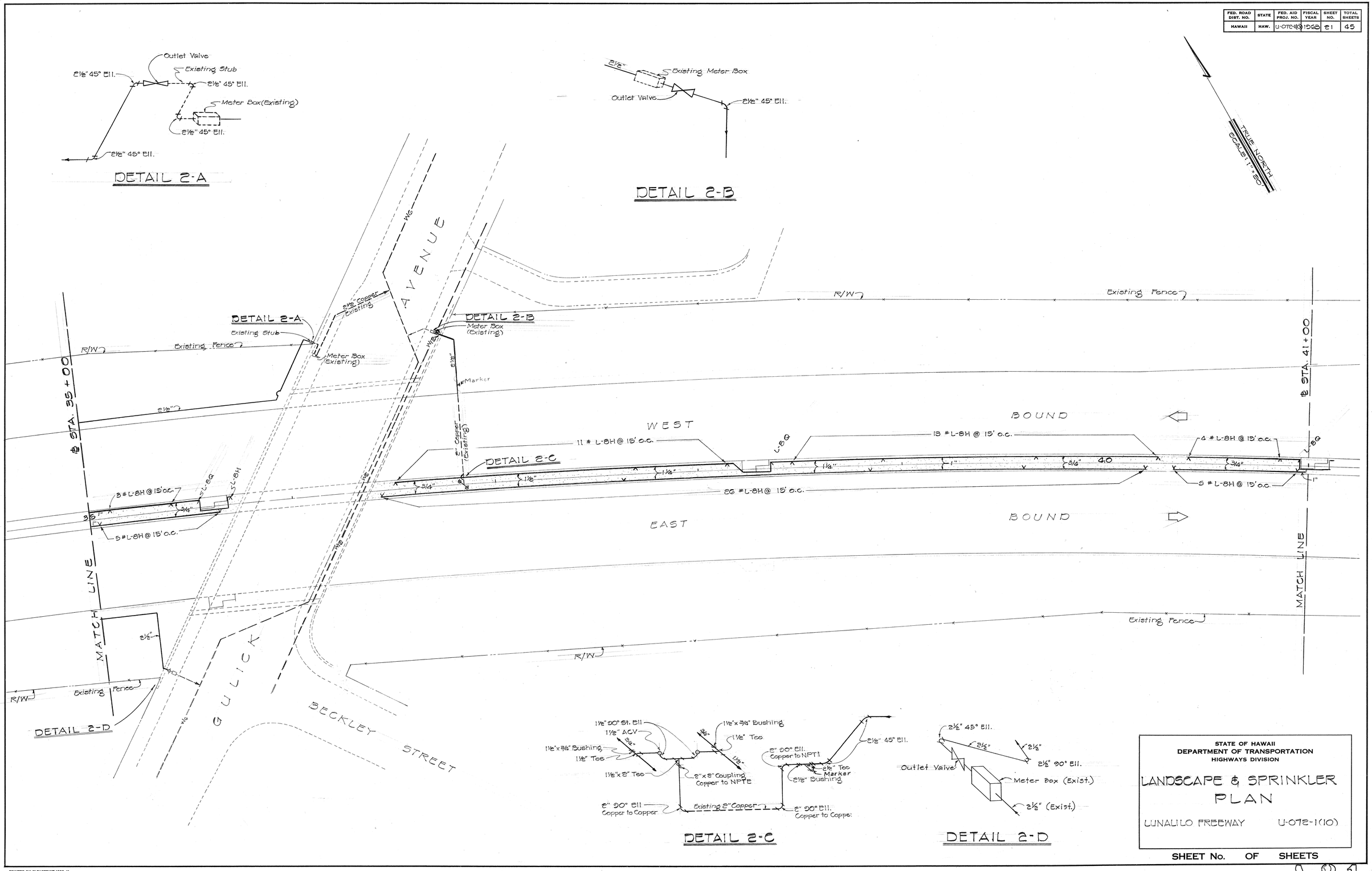
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(10)	1968	21	45



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY U-072-1(10)

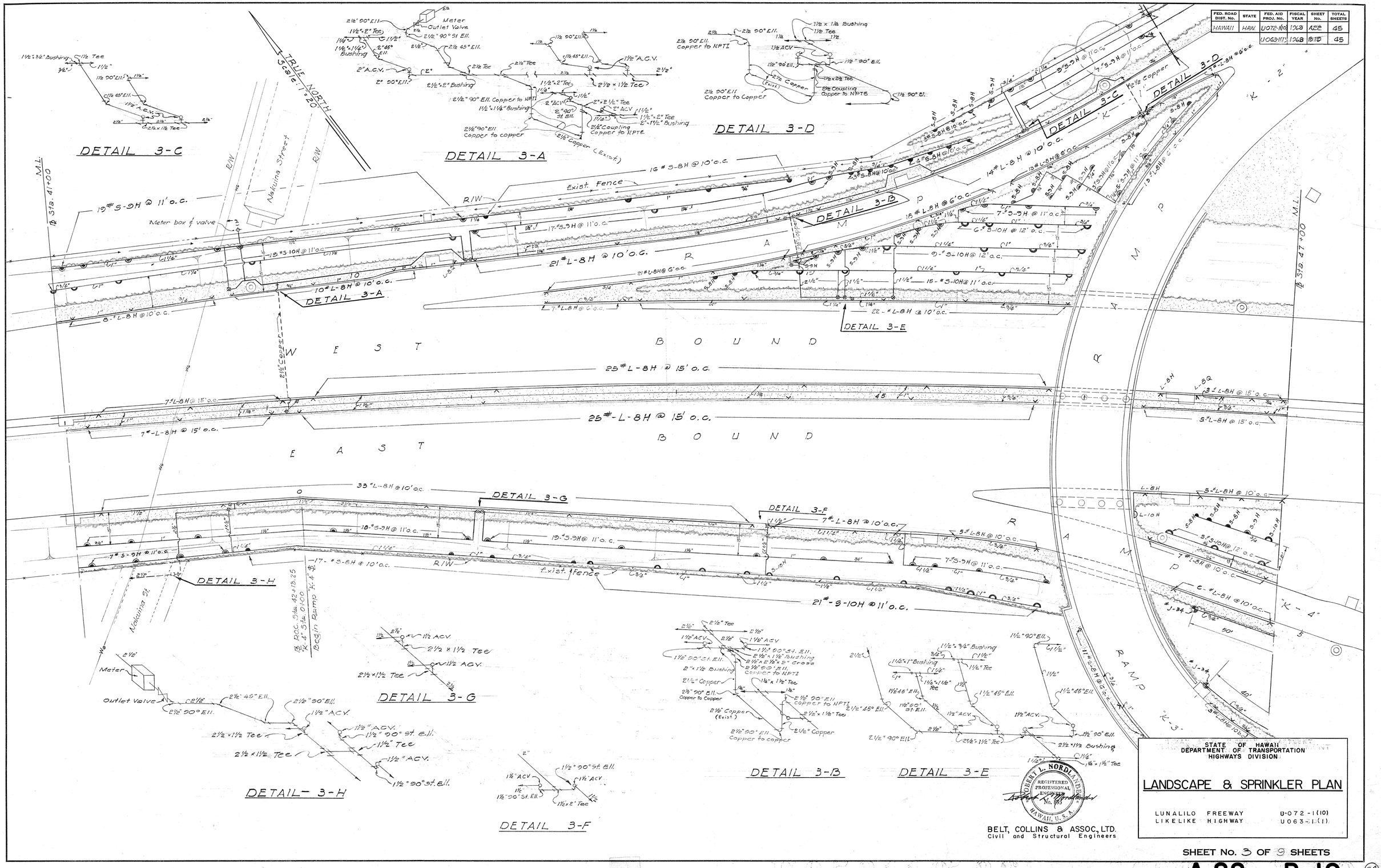
SHEET No. OF SHEETS

21 (23)

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

PRINTED ON CLEARPRINT 1000-H

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U072-1(10)	1968	22B	45
		U063-1(1)	1968	19B	45



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LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY U-072-1(10)
LIKELIKE HIGHWAY U063-1(1)

SHEET No. 3 OF 9 SHEETS

A 22 B 19

(24)

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	8-67
	SURVEY CHECKED BY K. Hiranaka	8-67
	DRAWN BY K. Watanabe	
NOTE BOOK	TRACED BY D. Chung	
	QUANTITIES BY	8-67
No.	QUANTITIES CHECKED BY	8-67
	CHECKED BY R. Yamada	

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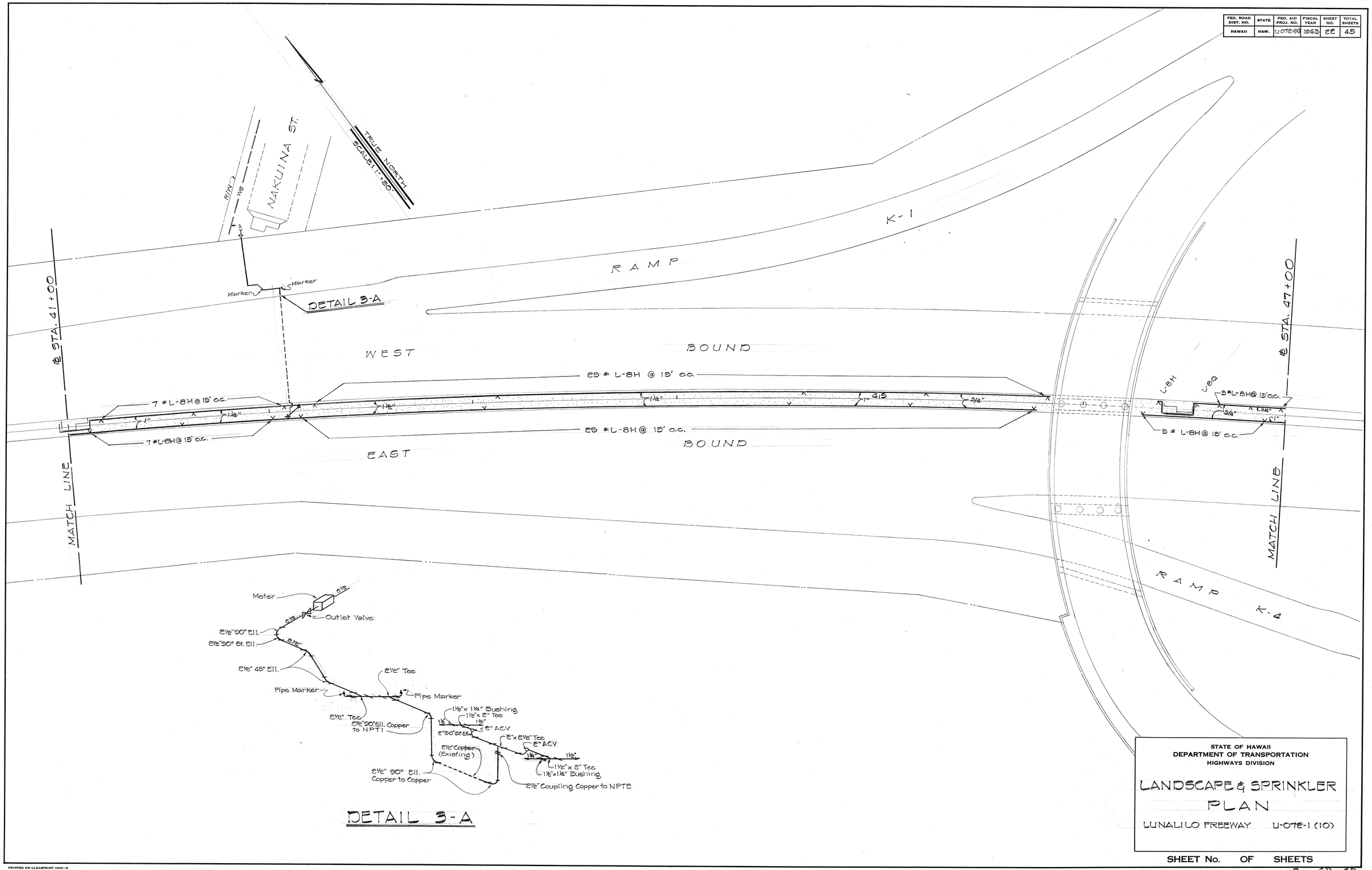
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(10)	1963	22	45



DETAIL 3-A

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY U-072-1 (10)

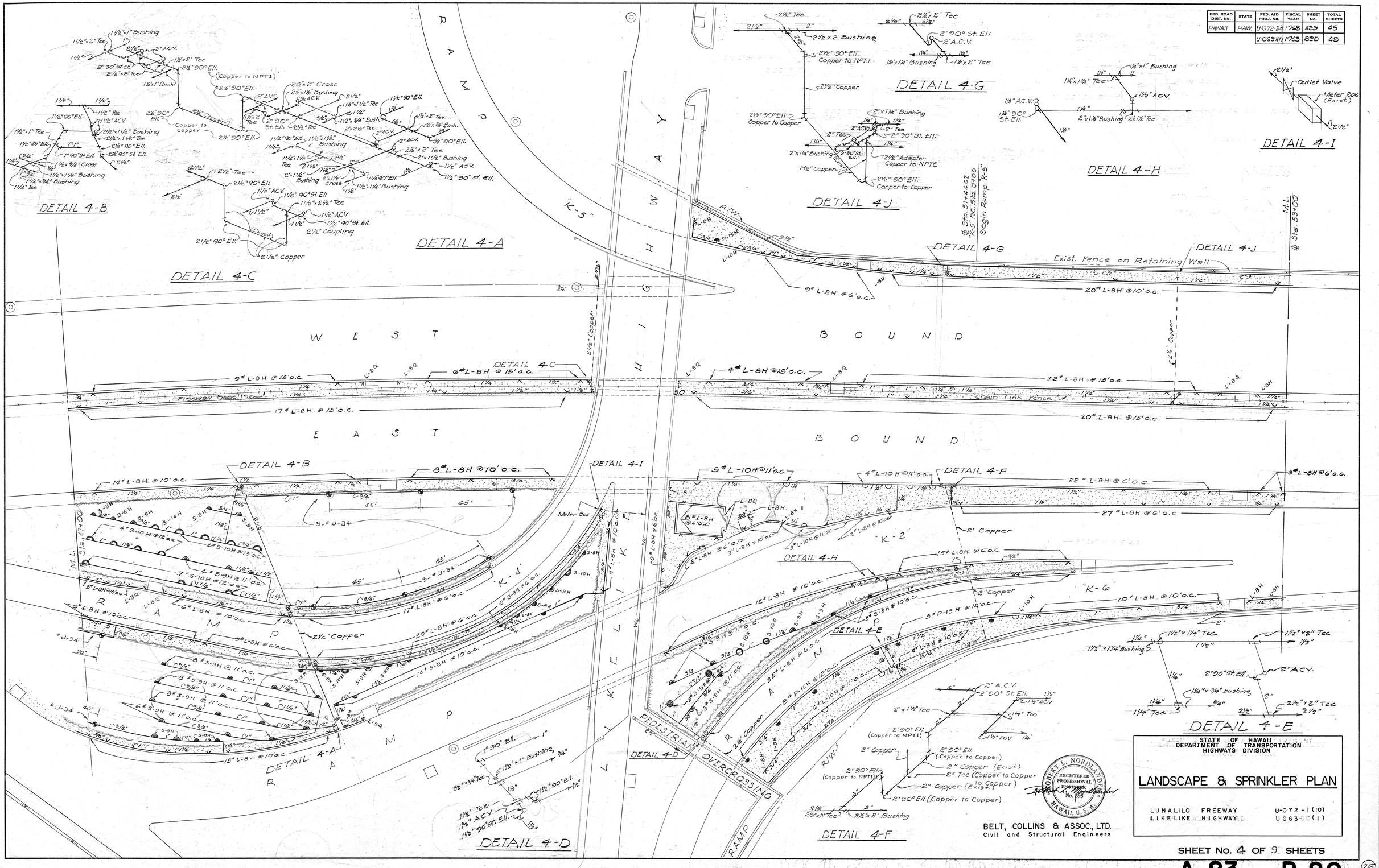
SHEET No. OF SHEETS

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

PRINTED ON CLEANPRINT 1000-H

A22 (24)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(8)	1963	A23	45
		U-063-1(1)	1963	B20	45



		DATE
ORIGINAL PLAN	SURVEY PLOTTED BY	2-87
	TRACED BY D. Chung	4-87
	DRAWN BY R. Kalinowski	3-87
	QUANTITIES	
NOTE BOOK	QUANTITIES CHECKED BY	8-87
No.	CHECKED BY R. Nagaoka	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY U-072-1(10)
LIKELIKE HIGHWAY U063-1(1)

ROBERT L. NORDLANDER
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SHEET No. 4 OF 9 SHEETS

A 23 B 20

25

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(10)	1965	23	45

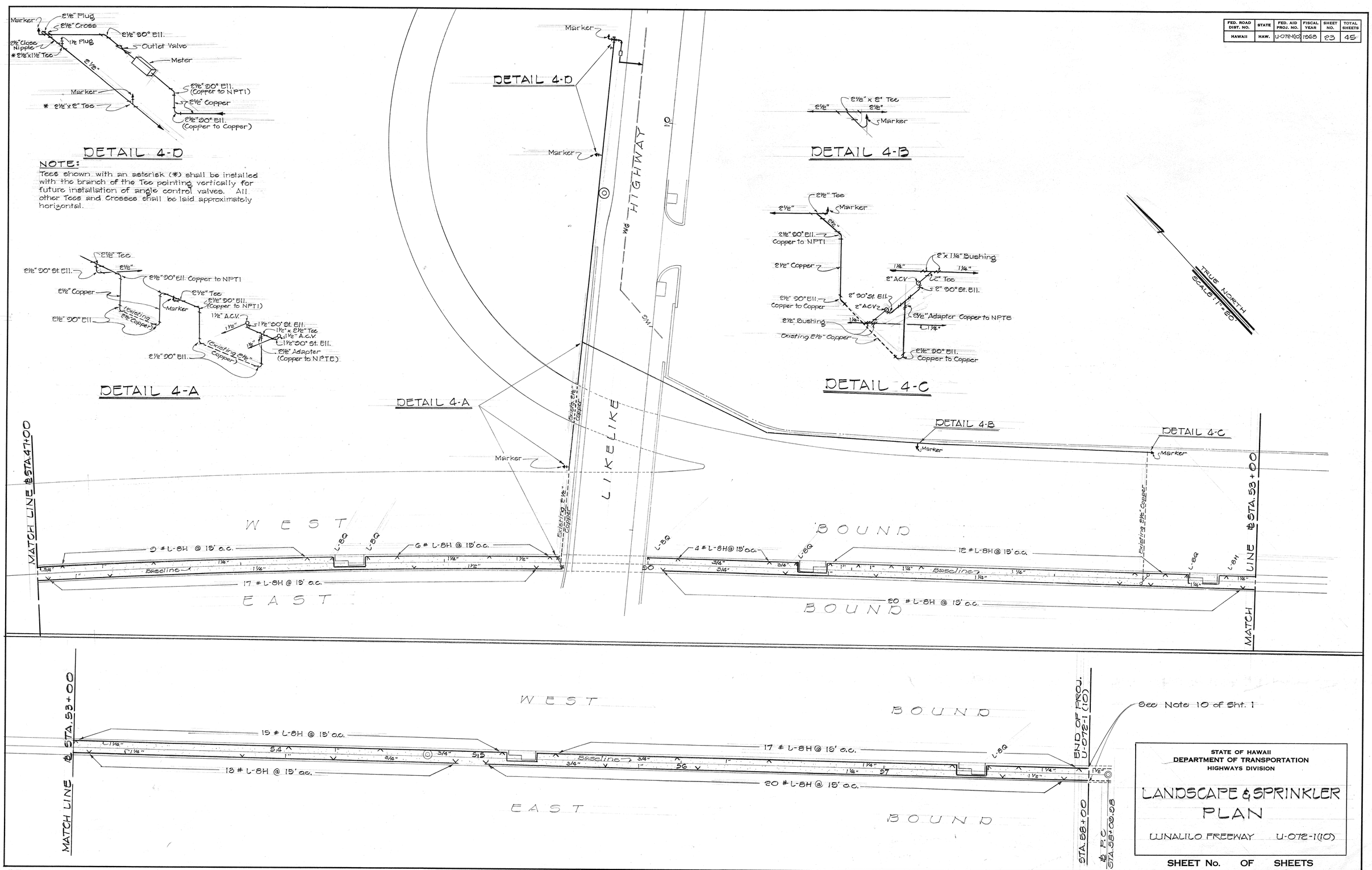
DETAIL 4-D

NOTE:
Tees shown with an asterisk (*) shall be installed with the branch of the Tee pointing vertically for future installation of angle control valves. All other Tees and Crosses shall be laid approximately horizontal.

DETAIL 4-A

DETAIL 4-B

DETAIL 4-C



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

WAILUILO FREEWAY U-072-1(10)

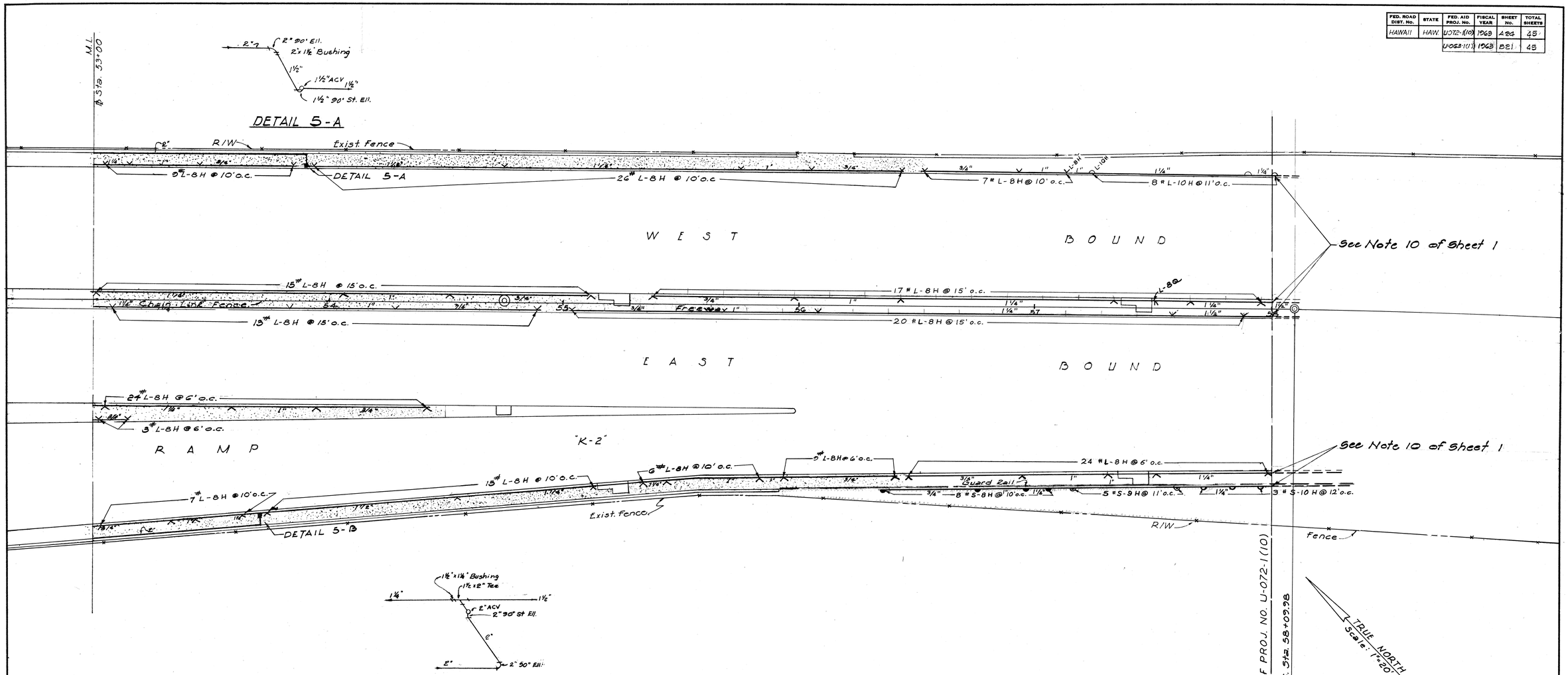
SHEET No. OF SHEETS

23 (25)

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

PRINTED ON CLEARPRINT 1000-H

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U072-1(10)	1968	A24	45
		U063-1(1)	1968	B21	45



DETAIL 5-B

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	
	DESIGNED BY R. Delmando	2-67
	DRAWN BY R. Delmando	2-67
	TRACED BY	
NOTE BOOK	QUANTITIES BY D. Chang	2-67
No.	QUANTITIES CHECKED BY	
	CHECKED BY R. Delmando	2-67

ROBERT L. NORDLANDER
REGISTERED PROFESSIONAL ENGINEER
No. 4[illegible]
HAWAII, U.S.A.

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STATE OF HAWAII
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HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LUNALILO FREEWAY U-072-1 (10)
LIKELIKE HIGHWAY U-063-1 (1)

SHEET No. 5 OF 9 SHEETS

A 24 B 21

(26)

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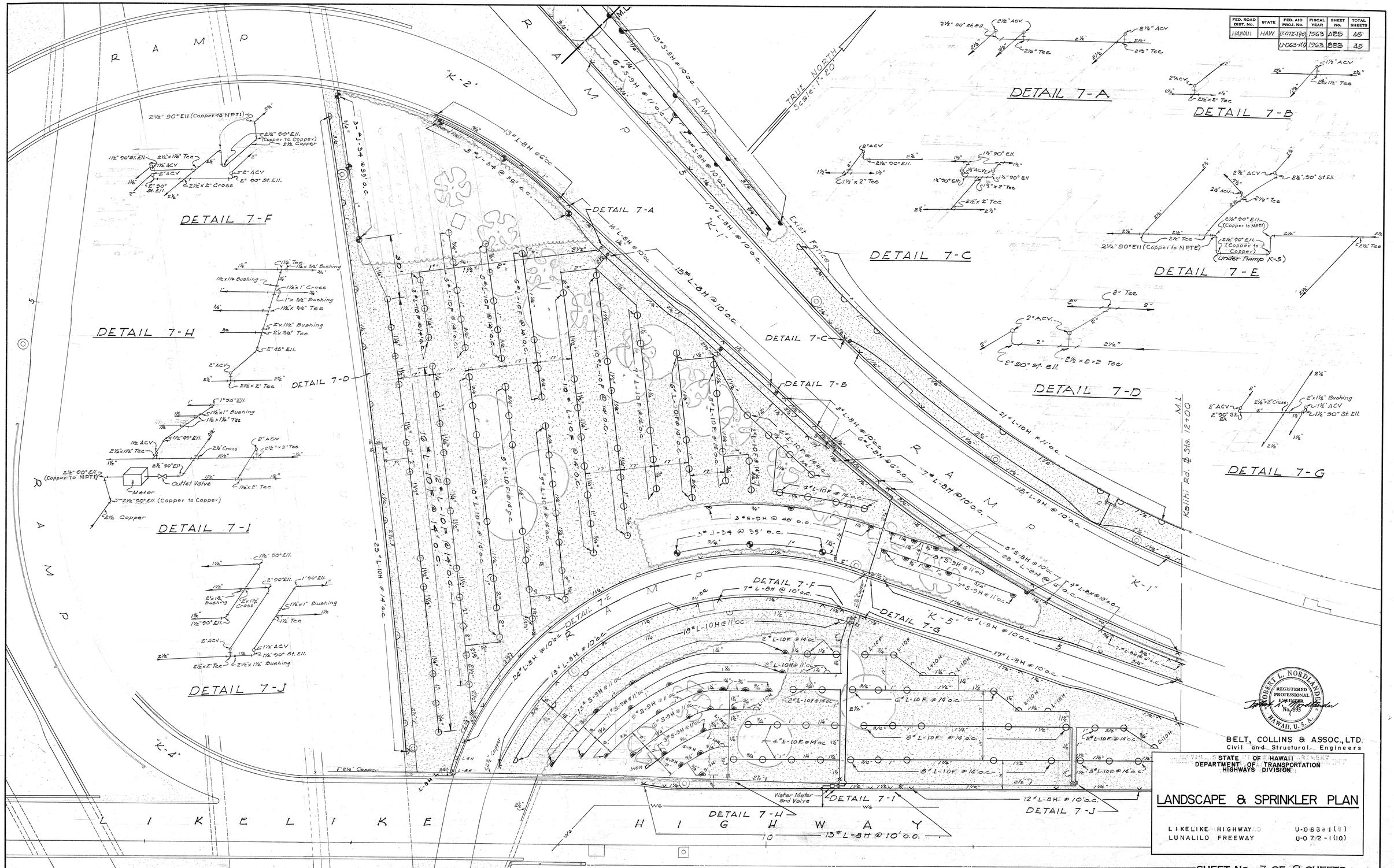
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(10)	1963	A25	45
		U-063-1(1)	1963	B23	45



ORIGINAL PLAN		NOTE BOOK No.
SURVEY PLOTTED BY		
DRAWN BY	R. Fujiwara	
TRACED BY	R. Miranda	
QUANTITIES	D. Otsuka	
QUANTITIES CHECKED BY		
CHECKED BY	B. Fujiuchi	

DATE
3-27
3-27
: : : : :
3-27
3-27

ROBERT L. NORDLANDER
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HIGHWAYS DIVISION

LANDSCAPE & SPRINKLER PLAN

LIKELIKE HIGHWAY U-063-1(1)
LUNALILO FREEWAY U-072-1(10)

SHEET No. 7 OF 9 SHEETS

A 25 B 23

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