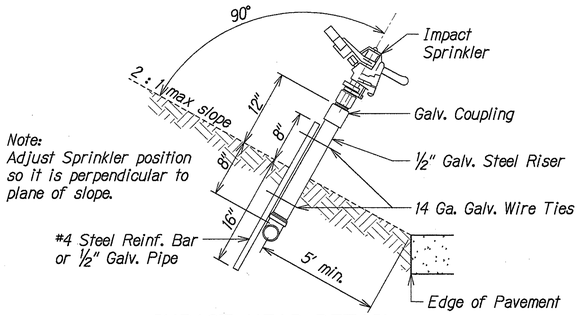
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	173	344

IRRIGATION AND NON-POTABLE WATER SYSTEM NOTES:

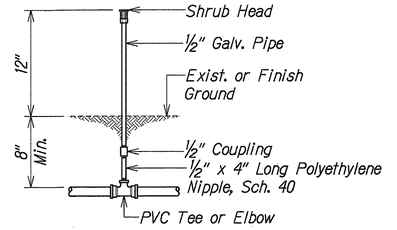
1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 1994, as amended, of the Hawaii Highways Division, Department of Transportation.
2. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy of encountering of other obstacles during the course of the work. The Contractor shall be responsible and pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, none exist.
3. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measure necessary to protect the water lines, such as constructing special reaction blocks and/or modifying his construction method.
4. Interconnection between irrigation/non-potable and potable mains shall not be allowed.
5. Prior to any excavating, the contractor shall verify in the field the location of existing water mains and appurtenances.
6. Minimum horizontal clearance of 3-feet and minimum vertical clearance of 6-inches shall be maintained between irrigation/non-potable and other pipelines.
7. Trench widths shall not be less than 12".
8. Polyvinyl Chloride (PVC) pipe and fittings shall be installed in strict accordance with the Manufacturer's recommendations.
9. All Polyvinyl Chloride (PVC) pipe deflections shall be accomplished only by the use of special PVC deflection couplings. Deflection around curves shall be accomplished only by the use of PVC deflection couplings.
10. Concrete reaction blocks shall be Class "B" concrete.
11. All wiring under roadway shall be installed in conduits.
12. No rocks or sharp objects one quarter (1/4) - inch in diameter or larger shall be used in the backfilling of trenches.
13. The Contractor shall adjust all sprinkler heads for proper coverage.

SPRINKLER LEGEND

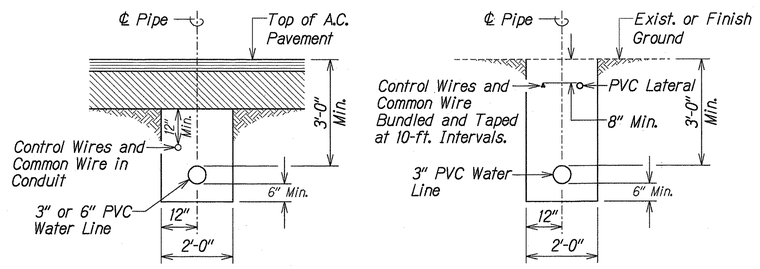
Sprinkler	Symbol	Description	Pressure psi	Coverage feet	Flow Rate gpm	Nozzle inches	Riser inches	Special Features
S-12		Shrub Spray - Half (180°)	20	10.5	1.05		½	
J-25		Jet - Full (360°)	35	25	4.1	5/32	½	Brass/Stainless Steel Construction. Adjustable positive locking arc stops. Break-up nozzle. Anti-backsplash device.
J-25		Jet - Part (Adj.)	35	25	4.1	5/32	½	



IMPACT HEAD DETAIL
Not to Scale



TYPICAL SHRUB HEAD DETAIL
Not to Scale



TYPICAL TRENCH SECTIONS
Scale: ½" = 1'-0"

DERRICK C. ELFALAN
LICENSED PROFESSIONAL ENGINEER
No. 5448-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

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

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES ON ORIGINAL PLAN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

IRRIGATION NOTES AND DETAILS

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
Waiawa Interchange to Keehi Interchange
PROJECT NO. HIEFG-01-96

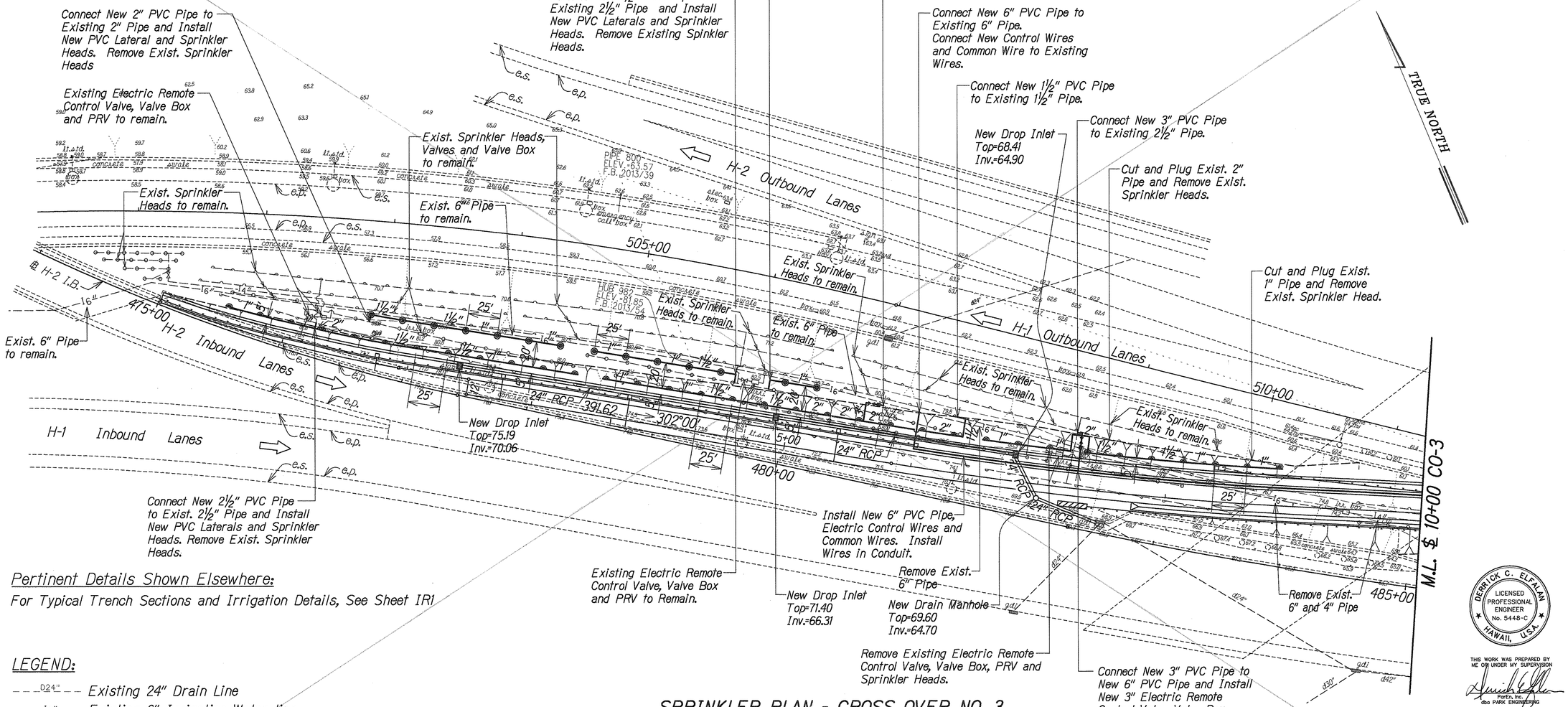
Scale: As Shown Date: October, 1997

SHEET No. IRI OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	C.O. 174	344

NOTE:

The Layout and Location of the Existing Sprinkler System, including the Electric Remote Control Valves, Pressure Reducing Valves, Valve Boxes, Laterals and Sprinkler Heads, as indicated on this Plan, were obtained from the Construction Plans for "Waiawa Interchange, Water Sprinkler System", F.A.P. No. I-HI_1 (102):8, dated 1973. The Contractor shall verify the location of the Existing Sprinkler System in the Field.



Pertinent Details Shown Elsewhere:

For Typical Trench Sections and Irrigation Details, See Sheet IR1

LEGEND:

- Existing 24" Drain Line
- Existing 6" Irrigation Water line
- Existing Electric Remote Control Valve (⋈) and Pressure Reducing Valve, PRV (□)
- Existing Sprinkler Head - Half (180°)
- Existing Sprinkler Head - Full (360°)
- New PVC Water Line (Size as Indicated)
- New Jet Sprinkler Head - Half (180°)
- New Jet Sprinkler Head - Full (360°)
- New Electric Remote Control Valve and PRV (Size and Pressure Setting as indicated)

SPRINKLER PLAN - CROSS OVER NO. 3

Scale: 1" = 40'

N. I. C.

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES ON ORIGINAL PLAN

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

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PorEn, Inc.
dba PARK ENGINEERING

DATE	REVISION
3/25/98	Revised 24" Drainline

"AS-BUILT"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER PLAN
CROSS OVER NO. 3

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

Scale: 1"= 40' Date: October, 1997

SHEET No. IR2 OF 4 SHEETS

C.O. 174

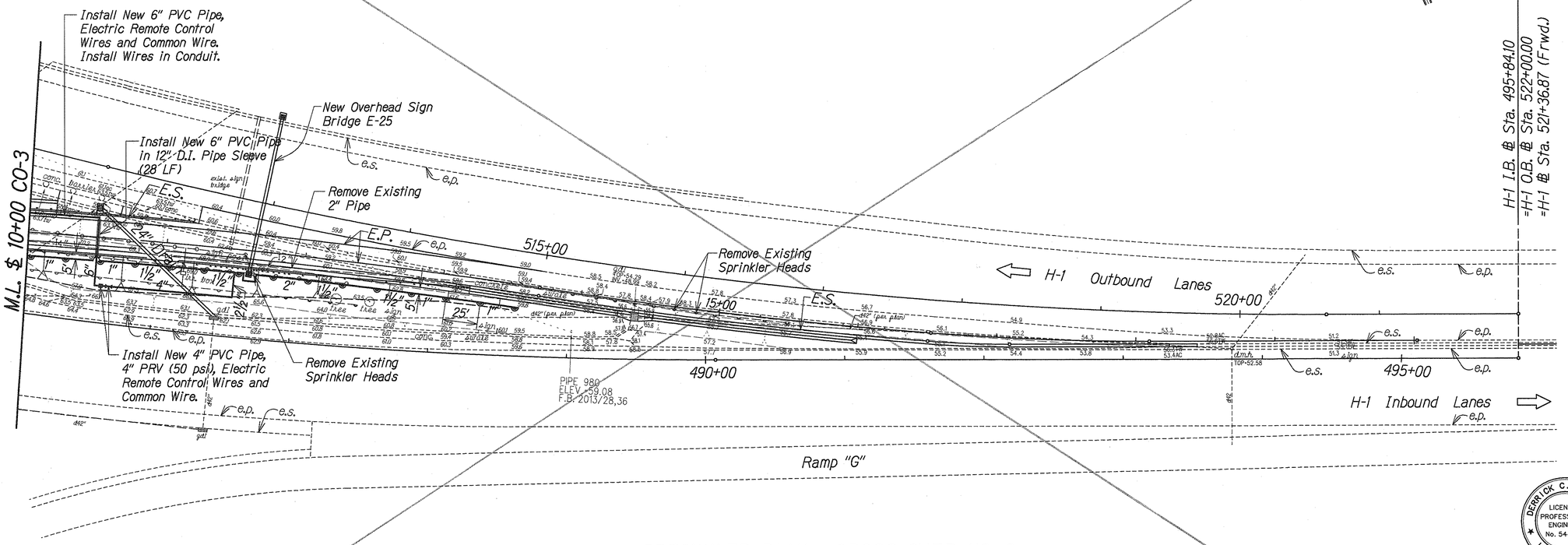
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	175	344

NOTE:

The Layout and Location of the Existing Sprinkler System, including the Electric Remote Control Valves, Pressure Reducing Valves, Valve Boxes, Laterals and Sprinkler Heads, as indicated on this Plan, were obtained from the Construction Plans for "Waiawa Interchange, Water Sprinkler System", F.A.P. No. I-HI 1 (102):8, dated 1973. The Contractor shall verify the location of the Existing Sprinkler System in the Field.

Pertinent Details Shown Elsewhere:

For Typical Trench Sections and Irrigation Details, See Sheet IR1



SPRINKLER PLAN - CROSS OVER NO. 3

Scale: 1" = 40'

LEGEND:

- Existing 24" Drain Line
- Existing 6" Irrigation Water line
- Existing Electric Remote Control Valve (⋈) and Pressure Reducing Valve, PRV (□)
- Existing Sprinkler Head - Half (180°)
- Existing Sprinkler Head - Full (360°)
- New PVC Water Line (Size as Indicated)
- New Jet Sprinkler Head - Half (180°)
- New Jet Sprinkler Head - Full (360°)
- New Electric Remote Control Valve and PRV (Size and Pressure Setting as indicated)

N.I.C.

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES ON ORIGINAL PLAN

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DERRICK C. ELFALAN
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No. 5448-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

ParEn, Inc.
dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER PLAN
CROSS OVER NO. 3

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

Scale: 1"= 40' Date: October, 1997

SHEET No. IR3 OF 4 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HIEFG-01-96	1998	176	344

TRUE NORTH

Ramp NW

Ramp EK

To Waianae

(CONCRETE)

Ramp EN

Cut and Plug Exist. 1" Pipes and Remove Exist. Shrub Heads

H-1 Outbound Lanes

Existing No. 14 Wire in 2-1/2" Conduit

Relocated Sign E-7

existing sign E-7

Existing 6" Pipe in 12" CIP Sleeve Under Roadway

6" Irrigation Line (per plan)

Install New 6" PVC Pipe Under New Concrete Median Barrier and A.C. Pavement. Connect to Existing 6" Pipe. Relocate Exist. No. 14 Wire and 2-1/2" Conduit

Install New 1" PVC Water Line See Mechanical Drawings for Continuation, Sht. M-1

Remove Existing Electric Remote Control Valve and Shrub Head Cluster

Ramp EN

Install New PVC lateral and Shrub Heads Connect New 1¼" PVC Water Line to Exist. 1¼" Pipe. Remove Exist. Shrub Heads.

Exist. PVC Laterals and Shrub Heads to Remain

To Honolulu

100+00

105+00

110+00

Express Lane

H-1 Inbound Lanes

E.P.

E.S.

Ramp KE

Ramp NW

C.N. 987
ELEV. +61.59
F.B. 2013/49

Existing Electric Remote Control Valve to Remain

Connect New 3" PVC Water Line to Existing 3" PVC Water Line

Install New 3" PVC Water Line Relocate Exist. Control Wires and Common Wire Install Wires in Conduit

Exist. No. 14 Wire in 2-1/2" Conduit

Remove Existing Electric Remote Control Valve and Shrub Head Cluster

Install 6" PVC Sleeve

Install New 3" PVC Water Line Relocate Exist. Control Wires and Common Wire Install Wires in Conduit

Remove Existing Electric Remote Control Valve and Shrub Head Cluster

C.N. 988
ELEV. +65.41
F.B. 2013/58

Ramp NE

Exist. Electric Remote Control Valve to Remain

Cut and Plug Exist. 1" Pipe and Remove Exist. Shrub Heads

Install New 3" PVC Water Line and Connect to Exist. 2" Electric Remote Control Valve. Relocate Exist. Control Wires and Common Wire Install Wires in Conduit

Pertinent Details Shown Elsewhere

For Typical Trench Sections and Irrigation Details, See Sheet IR1

SPRINKLER PLAN - BTV STORAGE SITE

Scale: 1" = 40'

LEGEND:

- D24" Existing 24" Drain Line
- 14" Existing 4" Irrigation Water line
- Existing 2" Electric Remote Control Valve
- Existing Shrub Spray Sprinkler Head - Half (180°)
- New PVC Water Line (Size as Indicated)
- New Shrub Spray Sprinkler Head - Half (180°)

REDUCED PLAN
(HALF SIZE)
0 1 2 3
3 INCHES OF ORIGINAL PLAN

ORIGINAL PLANS: SURVEY PLOTTED BY ____ DATE ____; DRAWN BY ____; TRACED BY ____; DESIGNED BY ____; QUANTITIES BY ____; CHECKED BY ____; NOTE BOOK ____; No. ____

DERRICK C. ELFALAN LICENSED PROFESSIONAL ENGINEER No. 5448-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

PorEn, Inc. dba PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SPRINKLER PLAN
BARRIER TRANSFER VEHICLE (BTV) STORAGE SITE

INTERSTATE ROUTE H-1
CONTRAFLOW AND SHOULDER LANE
PROJECT NO. HIEFG-01-96

Scale: 1" = 40' Date: October, 1997

SHEET No. IR4 OF 4 SHEETS

"AS-BUILT"