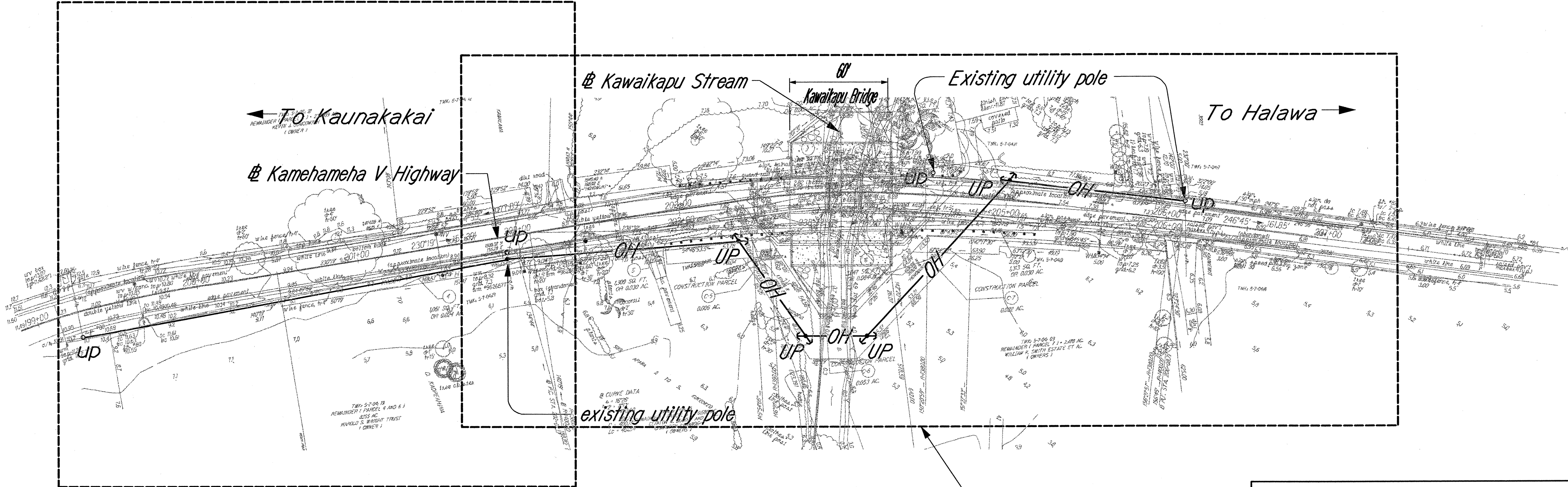


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(4)	2003	67	76



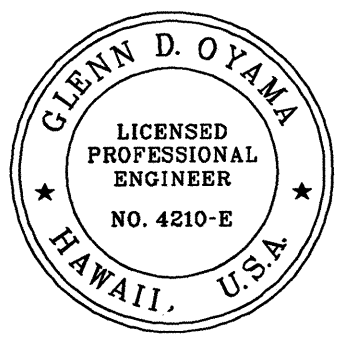
Electrical symbols		
Exist.	New	Electrical symbol list
UP _o	UP _•	Utility pole
-oh-	-OH-	Overhead utility lines
----->	----->	Downguy
	□ HH	Handhole
-e-	-E-	Underground electrical ductline
	○UP	Utility pole with riser
-t-	-T-	Underground tel/catv ductline

Temporary electrical site plan
Scale: 1"=40'

- NOTES:
- Coordinate & schedule work to relocate existing utility poles & overhead lines with MECO, Verizon and Hawaiian Cable Vision/Maui.
 - Relocated utility pole and line locations are shown for coordination only and should be confirmed with utility company. See MECO drawing no. 7-2-181 & Verizon drawing W.O. #50408P001A1.
 - Point of contact for utility company as follows MECO - Mark Fernandez ph. 871-2371, Verizon/Maui - Sheriann Tehada ph. 242-5289 and Hawaiian Cable Vision/Maui - Bill Hanke ph. 877-4425.
 - Contractor shall survey & stake out temporary & permanent boundaries & location of proposed new poles.

Approvals

Maui Electric Company _____ Date _____
Verizon/Maui _____ Date _____
Hawaiian Cable Vision/Maui _____ Date _____



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

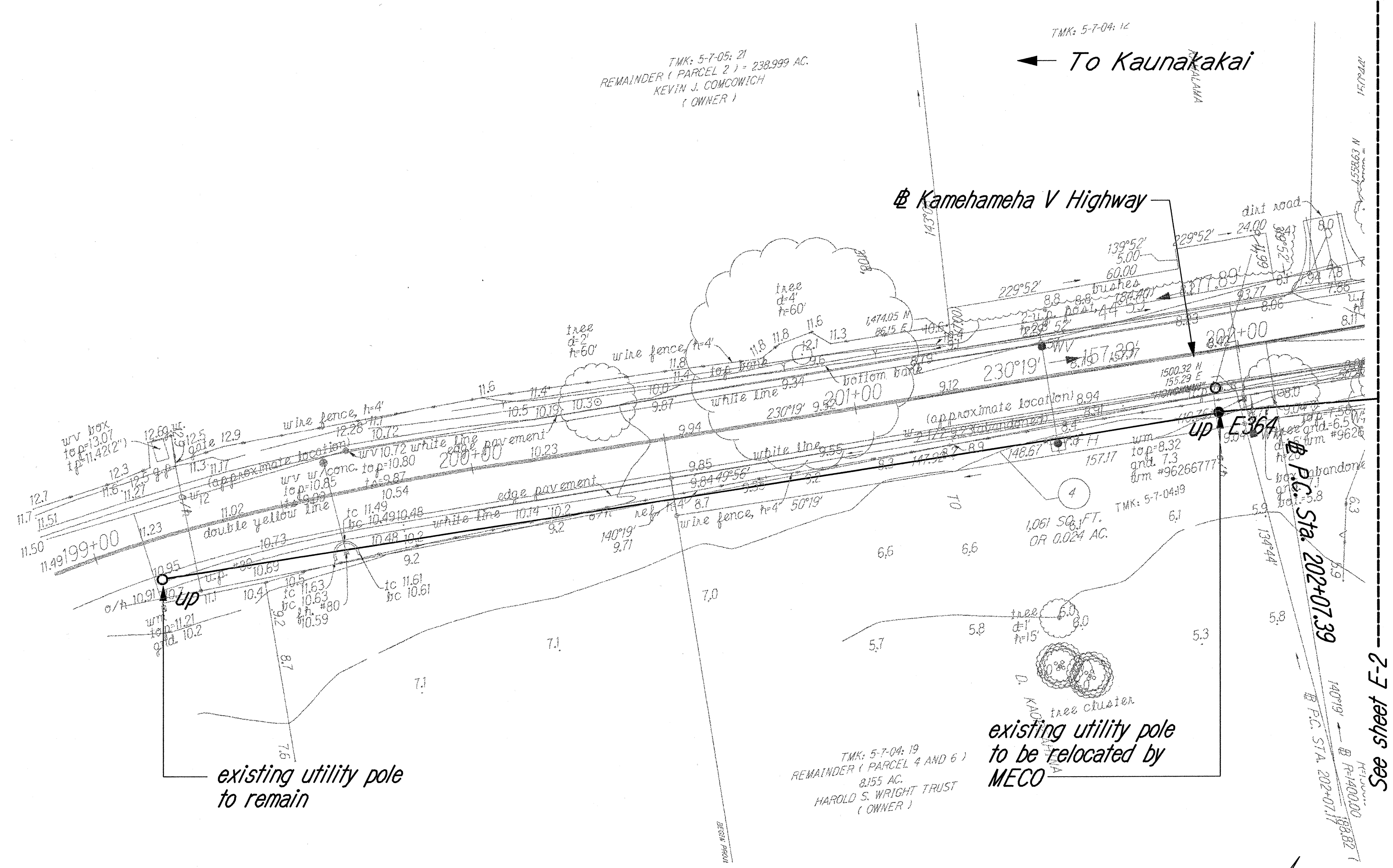
Glenn D. Oyama
SIGNATURE

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE
NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TEMPORARY ELECTRICAL SITE PLAN	
KAMEHAMEHA V HIGHWAY EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE FEDERAL AID PROJECT NO. ER-12(4)	
Scale: 1"=40'	Date: Nov. 25, 2002
SHEET No. E-1 OF 4 SHEETS	

SURVEY PLATTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(4)	2003	69	76



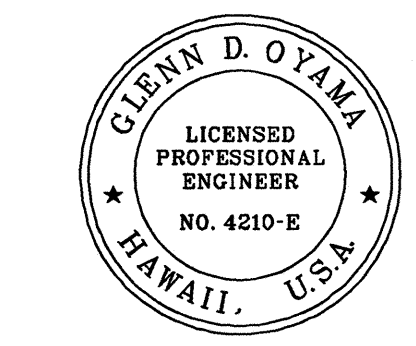
Temporary electrical plan (Kaunakakai side)
Scale: 1"=20'

Electrical symbols		
Exist.	New	Electrical symbol list
UP _o	UP _•	Utility pole
-oh-	-OH-	Overhead utility lines
----->	----->	Downguy
	□ HH	Handhole
-e-	-E-	Underground electrical ductline
	oUP	Utility pole with riser
-t-	-T-	Underground tel/catv ductline

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

Approvals

Maui Electric Company _____ Date _____
Verizon/Maui _____ Date _____
Hawaiian Cable Vision/Maui _____ Date _____



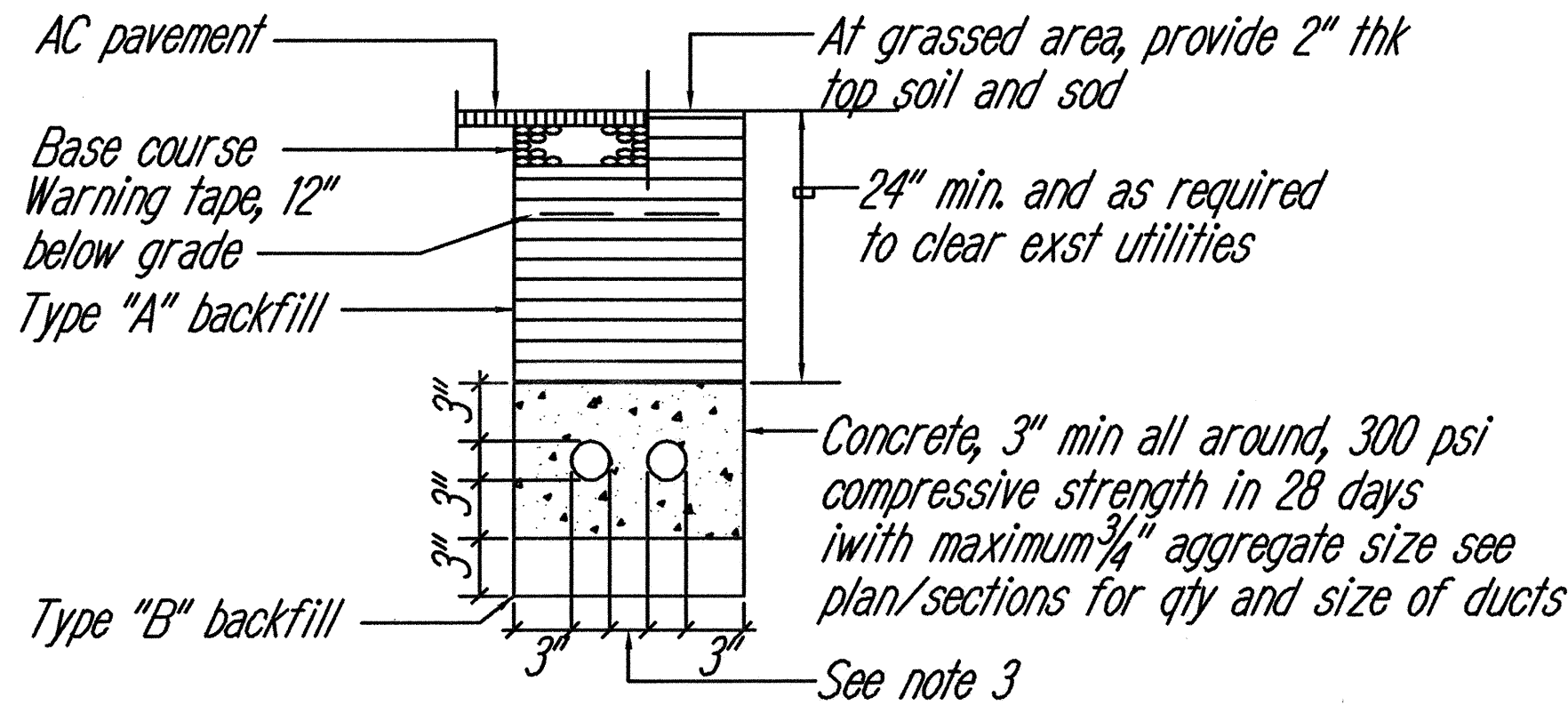
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Glenn D. Oyama
SIGNATURE

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE
NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS

DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TEMPORARY ELECTRICAL PLAN (KAUNAKAKAI SIDE) KAMEHAMEHA V HIGHWAY EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE FEDERAL AID PROJECT NO. ER-12(4) Scale: 1"=20' Date: Nov. 25, 2002	
SHEET No. E-3 OF 4 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-12(4)	2003	70	76

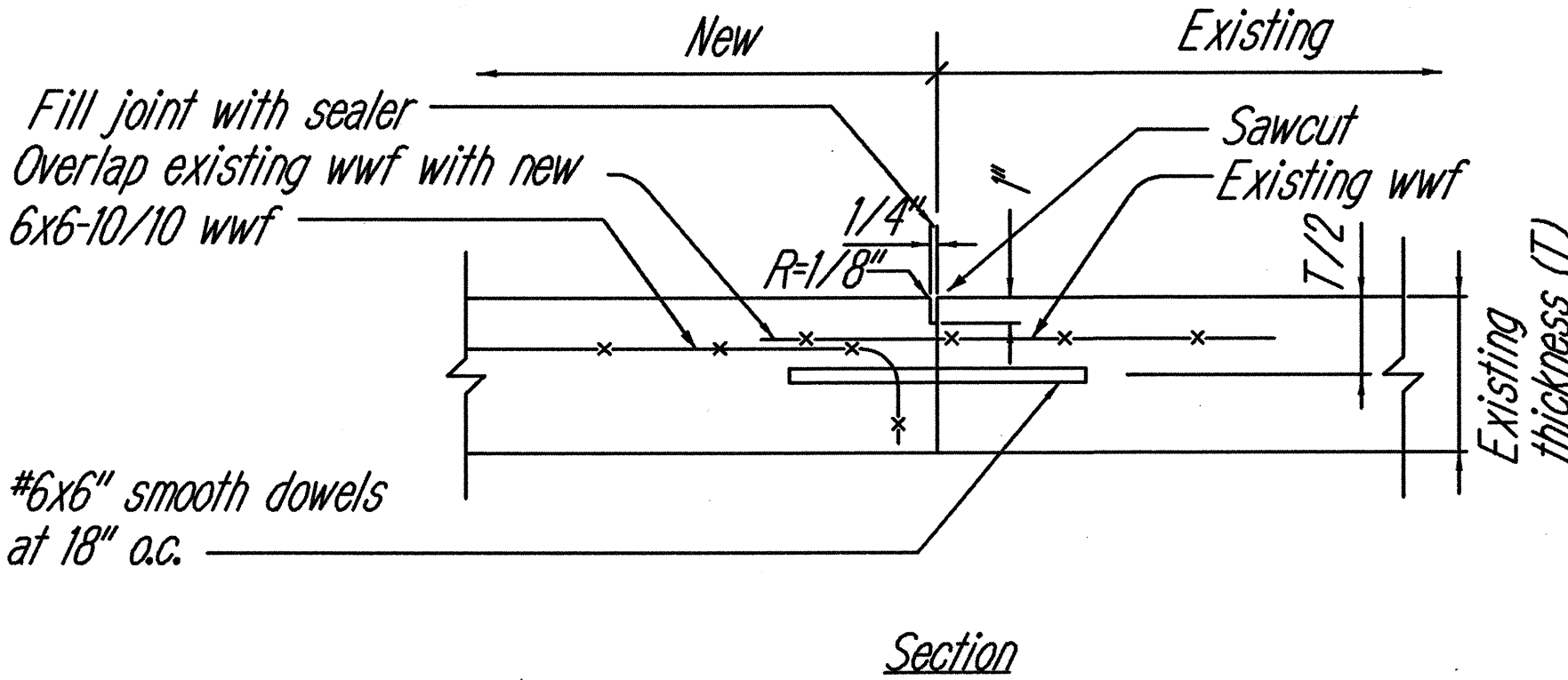


Typical duct section

Notes:

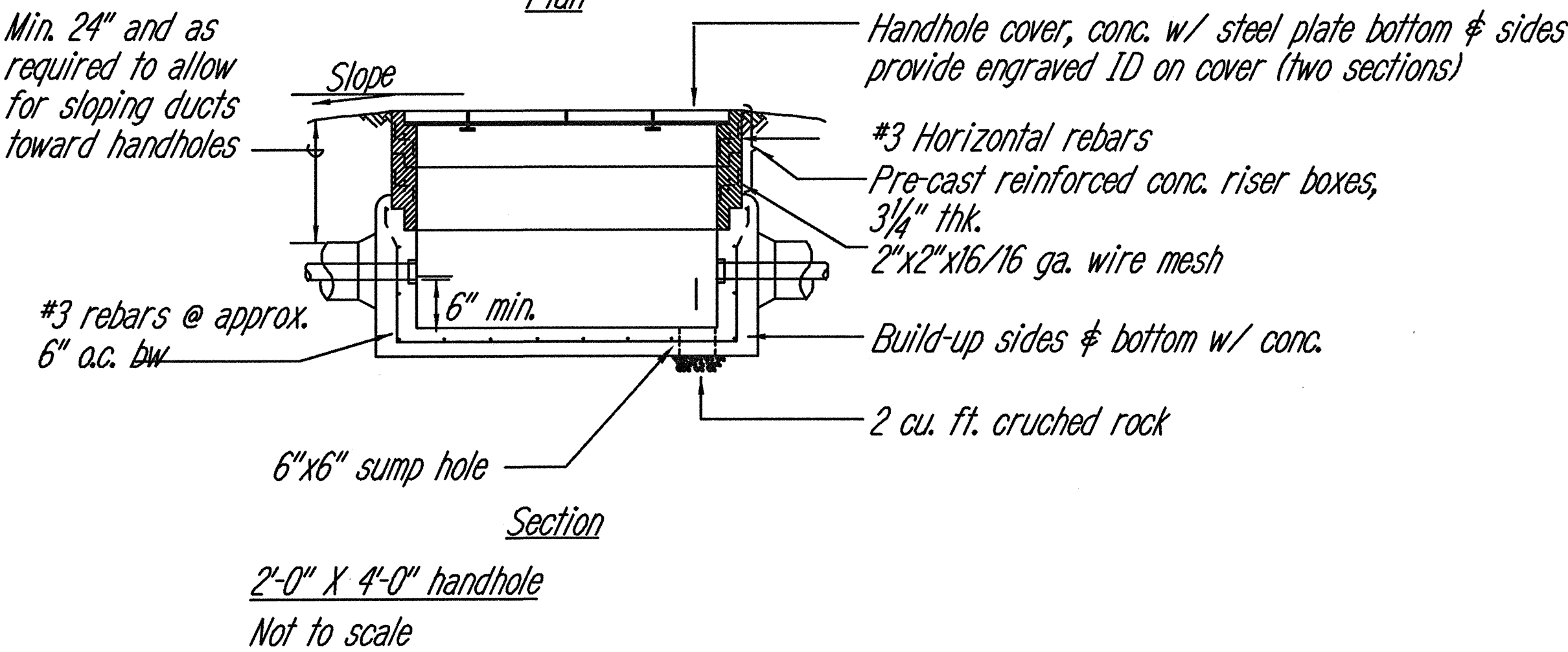
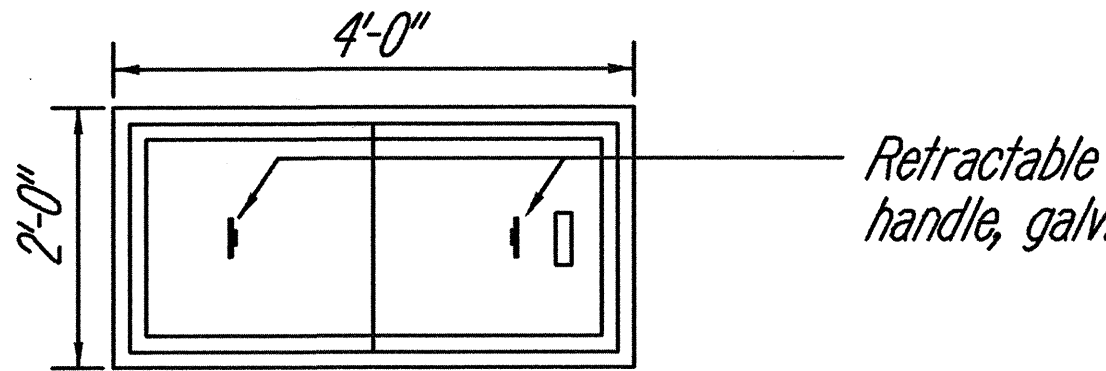
- All ducts shall be schedule 40 PVC & provide with a polyefin pull line (jet line cat. #232 or equivalent).
- Backfill data:
Type "A" backfill: earth & gravel, maximum rock size shall be 1" and the mixture shall contain not more than 50% by volume of rock particles, 95% compaction. Install type "A" backfill in maximum 6" layers loose thickness prior to compaction.

Type "B" backfill: earth & gravel, mixture must pass a 1/2" mesh in additional 3" shall be excavated and type "B" backfill provided, 95% compaction. If materials at bottom of trench in not type "B", screen & contain not more than 20% by volume of rock particles.
- Duct separation requirements:
Elec to elec. 2"
Elec to signal/comm. 3"
Signal/comm to signal/comm. 2"
- See plans or diagrams for size & number of ducts. Flatten duct bank as required to pass over or under existing and new utilities.
- Comply with EIA/TIA 569 & applicable utility company requirements. Prefirm a mandek test after ducts are installed.
- Excess excavated materials shall be hauled and disposed by the contractor.
- It is not the intent of these plans and specifications to imply that all existing utilities are shown on the plans. Only those known to exist by the engineer from his search of records at the time of design are indicated on these plans.
- Investigate, probe, and tone traverse of new ductline. Expose, locate and protect the existing underground utilities including irrigation, drainage, sewage, electrical, communication and water system lines on the site affected by this project
- Operate the existing irrigation, drainage, sewage, communication and water systems to help determine the location and condition of the various systems prior to start of construction.
- The contractor to arrange with the respective utility companies to tone and mark the location and depth of the existing utilities.
- Exercise proper care by hand trenching when excavating in nearby existing underground facilities. The contractor to be responsible to repair and/or pay any damages to the existing facilities. Damages to the existing facilities to be reported immediately to all concerned parties. All repair work shall be done within 36 hours to match its original condition and in accordance with the standards of the various utility companies and agencies.
- Pavement and/of concrete sidewalk restoration shall be equal or better than original in quality and thickness. Cut pavement 6" beyond trench.
- Grassed areas and plants damaged during construction shall be restored to as close as thier original condition as practicable. Suitable topsoil shall be provided for top 6" of backfill.
- Contractor shall use heavy machine equipment to excavate if basalt and large rocks are encountered.
- Contractor shall shore, brace and dewater within the excavated trenched as required.



Concrete walkway restoration deatil
Not to scale

Note: use for trenching across walkway

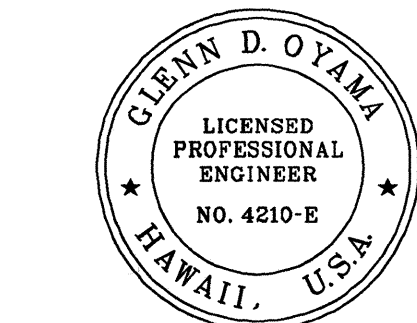


Notes:

- One cover section engraved w/ 4" high lettering MECO or HTCO as applicable per plans.
- Comply with MECO & Verizon requirements as applicable.

Approvals

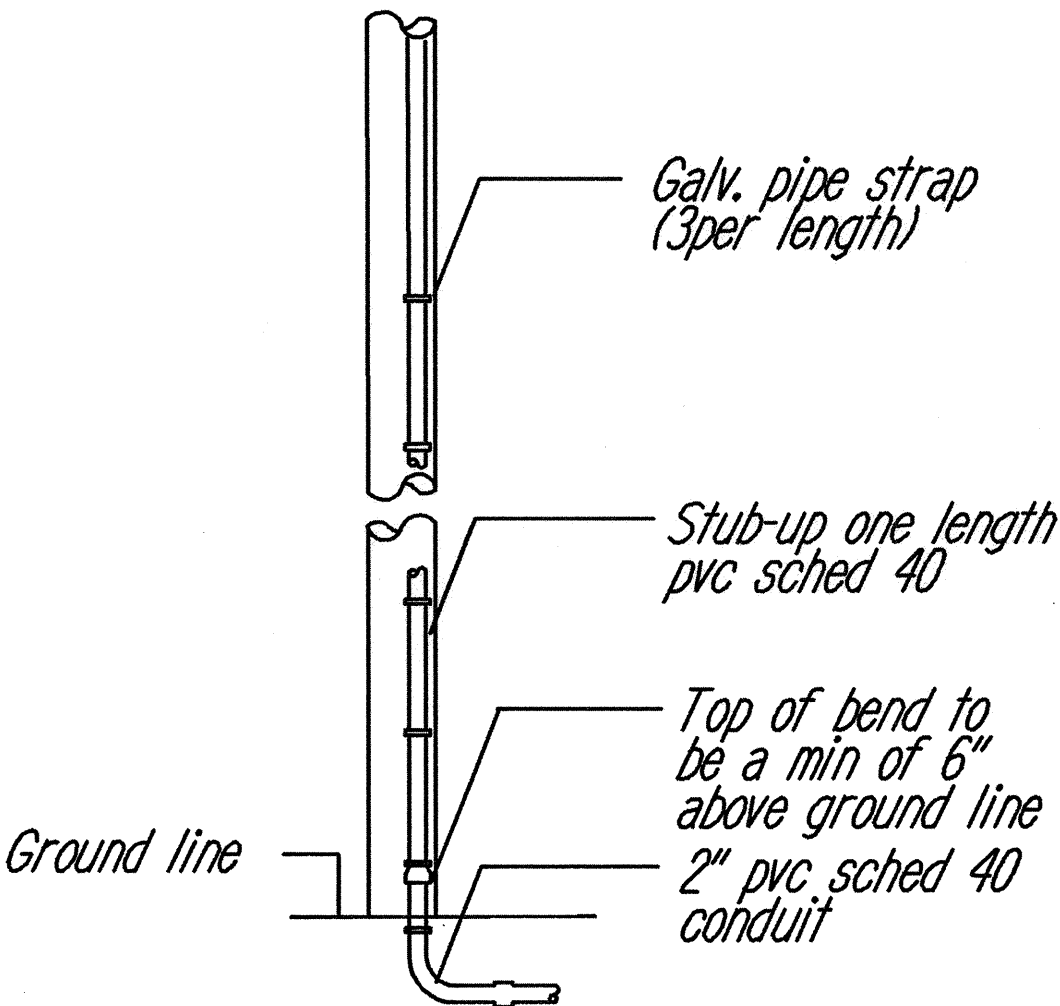
Maui Electric Company _____ Date _____
Verizon/Mauit _____ Date _____
Hawaiian Cable Vision/Mauit _____ Date _____



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Glenn D. Oyama
SIGNATURE

APRIL 30, 2004
EXPIRATION DATE OF THE LICENSE
NAKAMURA, OYAMA & ASSOC., INC.
CONSULTING ENGINEERS



Conduit riser up pole
Not to scale

Note:
1. Comply with MECO, Verizon and HCTV requirements.

SURVEY PLOTTED BY _____	DATE _____
DRAWN BY _____	DATE _____
CHECKED BY _____	DATE _____
ORIGINAL PLAN _____	DATE _____
NOTE BOOK _____	DATE _____
CHECKED BY _____	DATE _____
DATE _____	DATE _____

DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ELECTRICAL DETAILS KAMEHAMEHA V HIGHWAY EMERGENCY REPLACEMENT OF KAWAIKAPU BRIDGE FEDERAL AID PROJECT NO. ER-12(4) Scale: As Noted Date: Nov. 25, 2002 SHEET No. E-4 OF 4 SHEETS	