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ORIGINAL PLAN	NOTED BOOK	No.	SURVEY PLOTTED BY	DATE
			DRAWN BY	
			DESIGNED BY	
			CHECKED BY	

SYMBOLS AND ABBREVIATIONS

& And
@ At
Ø Diameter
Number

Abbr. Abbreviation
Add. Additional, Added
Alt. Alternate
AB Anchor Bolt
AC Asphaltic Concrete
Approx. Approximate
Az. Azimuth

Bk. Back
Bal. Balance
B Baseline
Bm. Beam
Brg., Brgs. Bearing, Bearings
BVC Beginning of Vertical Curve
Bet. Between
BF Both Faces, Back Face
BW Both Ways
BFE Bottom of Footing Elevation
Bot., Bott., B Bottom
Br. Bridge
Blt. Bolt

Cant. Cantilever
CIP Cast-in-Place
CL Centerline
CG Center of Gravity
cgs Center to Gravity of Strands
cc Center to Center
Cl. Class
Clr. Clearance
CO Clean Out
Col. Column
Conc. Concrete
CRM Concrete Rubble Masonry
Conn. Connection
Const. Construction
CJ Control Joint
Const. Jt. Construction Joint
Cont. Continuous
CF Cubic Feet
CY, Cu. Yd. Cubic Yard

Det. Detail
Dia. Diameter
Diaph. Diaphragm
Dim. Dimension
Dist. Distance

DO Ditto
Dwls. Dowels
Dn. Down
Dbl. Double
DI Drain Inlet, Ductile Iron
Dwg., Dwgs. Drawing, Drawings

E East
EA, Ea., ea. Each
EF Each Face
EFH Each Face Horizontal
EFV Each Face Vertical
EP Edge of Pavement
ES Edge of Shoulder
EW Each Way
Elec. Electrical
EMH Electrical Manhole
El., Elev. Elevation
Emb. Embankment
EVC End of Vertical Curve
Eq. Equal
Est. Estimated
Exc. Excavation
Excl. Excluding
Exist., Ex. Existing
Exp., (E) Expansion
EJ Expansion Joint
Ext. Exterior

FF Far Face, Front Face
f'c Specified Compressive Strength
of Concrete at 28 days
f'ci Specified Compressive Strength of
Concrete at Time of Initial Prestress
Ft. Feet, Foot
Fig. Figure
Fin. Gr. Finish Grade
(F) Fixed
FB Flat Bar
Ftg. Footing
FA Force Account
f's Ultimate Tensile Strength of Tendon

Ga. Gage, Gauge
Galv. Galvanized
GFRP Glass Fiber Reinforced Polymer
Gr. Grade
Grd. Ground
GRP Grouted Rubble Pavement

Ht. Height
(H) Hinge
Horiz., H Horizontal

HDOT State of Hawaii Department
of Transportation
HS High strength
HECO Hawaiian Electric Company

IB Inbound
In. Inch
ID Inside Diameter
IF Inside Face
Int. Interior
Inv. Invert

Jt. Joint

K Kips
KF Kip Foot
KSF Kips Per Square Foot
KSI Kips Per Square Inch
KLF Kips Per Linear Foot

L Length
lb., lbs., LBS. Pound, Pounds
Ltg. Std. Lighting Standard
LF, Lin. Ft. Linear Feet/Foot
LS Lump Sum
Longit. Longitudinal

M Modified
MH Manhole
Max. Maximum
Mech. Mechanical
Min. Minimum
Misc. Miscellaneous
MPH Miles Per Hour

NF Near Face
N North
NIC Not in Contract
No. Number
NTS Not to Scale

O/S Offset
oc On Center
Opn'g Opening
OB Outbound
OD Outside Diameter
OG Outside Girder, Outbound Girder

Perf. Perforated
PL Plate
PCC Portland Cement Concrete
PC Point of Curvature
PCF Pounds per Cubic Foot
PSF Pounds per Square Foot
PSI Pounds per Square Inch
PLF Pounds per Linear Foot
PI Point of Intersection
of Tangents
PIVC Point of Intersection of
Vertical Curve
PT Point of Tangency
Pt., Pts. Point, Points
PRC Point of Reverse Curvature
PVC Polyvinyl Chloride
Prest. Prestressed
P/S Prestressed Strands
PB Pull Box

Rad., R Radius
RF Rear Face
Rebar Reinforcing Bar
Ref. Reference
Reinf. Reinforced, Reinforcing,
Reinforcement
Req'd. Required
Ret. Retaining
Rt. Right
ROW Right of Way
Rdwy. Roadway

Sect. Section
Sht. Sheet
Sim. Similar
Sl. Slope
S South
Spc., Spg. Spaces, Spacing
Sprd. Spread
Spec. Specification
SF Square Feet
SY Square Yard
SS Stainless Steel
Std. Standard
Sta. Station
Stiff. Stiffener
Stirr. Stirrup
Stl. Steel
Str. Straight
Struct. Structure
SE Super Elevation
Symm. Symmetrical

W/C Water/Cement Ratio
w/ With
W West
WWF Welded Wire Fabric
WP Work Point, Working Point
WS Water Surface

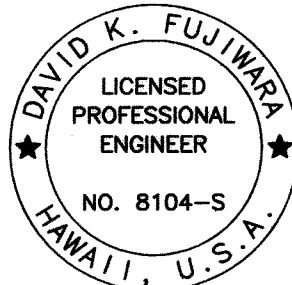
Yr. Year

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-072-1(51)	2007	28	106

Tan. Tangent
Temp. Temporary
Thk. Thick
T Top
T&B Top and Bottom
TFE Top of Footing Elevation
Tot. Total
Transv. Transverse
TS Structural Tubing
Typ. Typical

Undergrd. Underground

Var. Varies
Vert., V Vertical
VC Vertical Curve



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

SIGNATURE: David K. Fujiwara
EXPIRATION DATE OF THE LICENSE: 4-30-08

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
SYMBOLS AND ABBREVIATIONS

*Kalanianaʻole Highway Improvements
Retaining Wall at Makapuu, Oahu
Federal-Aid Project No. NH-072-1(51)*
Scale: Date: April 2007
SHEET No. S-2 OF 15 SHEETS