Figure 3  Topographic Survey Map for Mililani Wells IV Site
Figure 4  BWS Water System Infrastructure for Mililani Town & Mililani Mauka

Legend

- Well Location
- Reservoir Location and Capacity
- Water Transmission/Distribution Main

Scale: 1" = 1400' - 0"
Figure 6  Location of the New Well no. 12

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Marc M. Siah & Associates, Inc.
Consulting Civil, Structural, Environmental & Ocean Engineers
810 Richards Street, Suite 888, Honolulu, Hawaii 96813
WELD ANGLE IRON BRACKET & 
CLAMP HERE OR AS CONVENIENT 
AFTER TENSION NUT HAS BEEN 
INSTALLED IN ITS OPERATING 
POSITION & THE PIPING SHOWN 
HERE HAS BEEN INSTALLED AT 
THE JOBSITE.

PARTS WILL BE SUB-ASSEMBLED 
AND SHIPPED LOOSE FOR ASSEMBLY 
at the job site.

NOTES: 
1. ALL DIMENSIONS IN INCHES 
2. DRAWING SCALE = NONE 
3. DO NOT SCALE UNKNOWN DIMENSIONS 
4. NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED

PARTS LIST:

A Pipe Nipple 1/2 NPT x 1.5 Lg.
B Pipe Tee 1/2 NPT
C Pipe Nipple 1/2 NPT x 2.0 Lg.
D Pipe Elbow 1/2 NPT x 90 Degree
E Pipe Bushing 1/2 x 1/4 NPT
F Pressure Switch 1/4 NPT
G Pipe Union 1/2 NPT
H Flow Switch 1/2 NPT
I Pipe Nipple 1/2 NPT x 6.0 Lg.
J Sight Flow Indicator 1/2 NPT
K Pressure Gauge 1/4 NPT 0-100PSI
L Y Strainer 1/2 NPT
M Angle Iron 2.5x2.5x.31x3.0
N Pipe Clamp 1/2 Weld Mount

INJECTION LUBRICATION 
PIPING DRAWING

REV. BY DATE DESCRIPTION

DRAWN BY: 
DATE: 3/15/05 
DRAWING NUMBER: 5776801PPG
**VERTICAL TURBINE PUMP**

**TYPE "FN"**

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### SPECIAL FEATURES:
1. **DOUBLE KEYED AND POLISHED IMPELLERS**
2. **HORIZONTAL DISC SUCTION & THRUST BEARING JOURNALS AND 316SS CHROME PLATED IMPELLER O D THRUST BEARING**
3. **TAPER LOCK THRUST BEARING**
4. **TOP LIP COLUMN PIPE & COLUMN ADJUSTING NIPPLE w/API SHORT ROUNDED THREADS**
5. **LIP COLUMN PIPE LONG MOUTH STRETCH COLUMN ASSEMBLY**
6. **MAXIMUM 10" LONG COLUMN & SHAFT LENGTH**
7. **ALL COLUMN PIPE HOLLOW CALIBRATED ON THE OD & ID**
8. **UNIBUSH BEARING SPEED SPACING**
9. **THE ENCLOSURE PIPE HOLLOW CALIBRATED ON THE OD**
10. **BOTTOM LICENSED 316SS CHROME PLATED COLUMN JOURNALS**
11. **RUBBER TUBE STABILIZERS (QUANTITY 48)**
12. **SPECIAL STEEL SHIM SHEET SHIPPED FOR BOWL ASSEMBLY AND TUBE TRANSFER ASSEMBLY**
13. **10 FOOT LONG MID-STRETCH COLUMN ASSEMBLY**
14. **IMPELLERS LOADED AND TESTED SUPPLIED FOR DEPTH PIPE & SHAFTING**
15. **THE EXTERIOR WILL BE EPOXY two coats to 12 MILS minimum total**
16. **BOLTS AND NUTS**
17. **SPECIAL DISCH.**
18. **SPECIAL EXTERIOR**

### TESTING:
- **Hydrostatic testing:** The intake and discharge head will be hydrostatically tested in accordance with hydraulic Institute standards.

### DISCH. FLANGE
- **MAKE:** WEIR BLUE
- **SPEC. GRAVITY:** 0.25
- **VISCOSITY:** 1.0
- **TEMPERATURE AMBIENT:** 20°C
- **NPT TAP:** 2½ IN.
- **NPT FITTING:** 2½ IN.

### MATERIALS
- **COL PIPE:** 32-10 STAIR & STEEL (12-16)
- **ENCLOSING TUBE:** 30-10 STEEL (12-16)
- **BOWL SHALE:** 11/16-INCH STEEL
- **DISCH. HEAD:** 11/16 INCH STEEL
- **SHAFT PAD:** 3/4 INCH STEEL
- **PUMP BOWL:** 1/4 INCH STEEL
- **BEARINGS:** 9/16 INCH STEEL
- **TORQUE TRANSFER ASSEMBLY:** 1/4 INCH STEEL

### MOTOR
- **FRAME NO.:** 3510
- **VOLTAGE:** 230/460
- **60 HP:** 5300 RPM
- **50 HP:** 4160 RPM

### PUMP
- **FPM:** 125 GPM
- **HR:** 1100
- **IMP. MATERIAL:** 316Ss Chrome Oxide
- **BEARINGS:** 9/16 INCH STEEL
- **STRAINERS:** 1/4 INCH STEEL

### OUTLINE DRAWING

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**NOTES:**
1. **ALL DIMENSIONS IN INCHES**
2. **DRAWING SCALE = 1:33**
3. **DO NOT SCALE UNTIL CERTIFIED**
4. **NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED**

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**PROJECT:** MILILANI 1150' DEEP WELL No. 12

**CUSTOMER:** WATER RESOURCES INTERNATIONAL, INC.

**FLOWAY CO:** 57768

**FLOWAY SERIAL:** 57768-1-1

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**FILED DRAWING:**
- **DATE:** 3/15/05
- **DREW BY:** TL
- **REV:** A
- **DATE:** 3/15/05
- **DRAWING NO.:** 5776801COD

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**CUSTOMER WATER RESOURCES INTERNATIONAL, INC.**

**1100 ALAMA ST., SUITE 2900 HONOLULU, HAWAII 96813**

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**REV BY DATE DESCRIPTION**

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**OUTLINE DRAWING**

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**CUSTOMER WATER RESOURCES INTERNATIONAL, INC.**

**1100 ALAMA ST., SUITE 2900 HONOLULU, HAWAII 96813**
GENERAL SITE PLAN

SCALE 1"=40'

MILILANI 1150' RESERVOIR SITE

MILILANI WELLS IV SITE

DRAINAGE EASEMENT IN FAVOR OF RHG

EXISTING OVERHEAD ELECTRICAL LINE

EXISTING 5' FENCE LINE
1. For road grades 8% to 12% and prime coat is not available, none required. If prime coat is available, use prime coat.

2. For road grades 6% to 8%, 4" asphalt treated base shall be used in lieu of the 4" base course.

3. Install 4" H.T. non-metallic, blue colored, 6" wide warning tape over centerline of the pipe and behind the base course along the entire length of trench. Tape shall be marked with "CAUTION WATER LINE BURIED BELOW". Payment for furnishing and installation of the warning tape shall be residental to the unit price bid for the pipe.

**WATER MAIN TRENCH DETAIL**

**DRAIN LINE TRENCH DETAIL**

**SITE PIPING PLAN**

**CONNECTION SCHEMATIC**