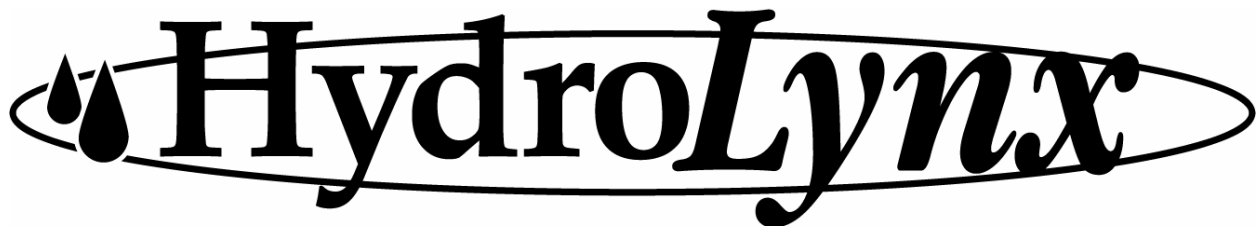


# HydroLynx Systems, Inc.

**Model 5454  
Satellite Rain Station**

**Instruction Manual**



Document No: A102671  
Document Revision Date: August, 2006

## Receiving and Unpacking

Carefully unpack all components and compare to the packing list. Notify HydroLynx Systems immediately concerning any discrepancy. Inspect equipment to detect any damage that may have occurred during shipment. In the event of damage, any claim for loss must be filed immediately with the carrier by the consignee. If the equipment was shipped via Parcel Post or UPS, contact HydroLynx Systems for instructions.

## Returns

If equipment is to be returned to the factory for any reason, call HydroLynx between 8:00 a.m. and 4:00 p.m. Pacific Time to request a Return Authorization Number (RA#). Include with the returned equipment a description of the problem and the name, address, and daytime phone number of the sender. Carefully pack the equipment to prevent damage during the return shipment. Call HydroLynx for packing instructions in the case of delicate or sensitive items. If packing facilities are not available, take the equipment to the nearest Post Office, UPS, or other freight service and obtain assistance with packaging. Please write the RA# on the outside of the box.

## Warranty

HydroLynx Systems warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from the date of shipment from the factory. HydroLynx Systems' obligations under this warranty are limited to, at HydroLynx's option: (i) replacing; or (ii) repairing; any product determined to be defective. In no case shall HydroLynx Systems' liability exceed product's original purchase price. This warranty does not apply to any equipment that has been repaired or altered, except by HydroLynx Systems, or that has been subjected to misuse, negligence, or accident. It is expressly agreed that this warranty will be in lieu of all warranties of fitness and in lieu of the warranty of merchantability.

## Address

**HydroLynx Systems, Inc.**  
**950 Riverside Pkwy., Suite 10**  
**West Sacramento, CA 95605**  
**Phone: (916) 374-1800**  
**Fax: (916) 374-1877**  
**E-mail: [hydro@hydrolynx.com](mailto:hydro@hydrolynx.com)**

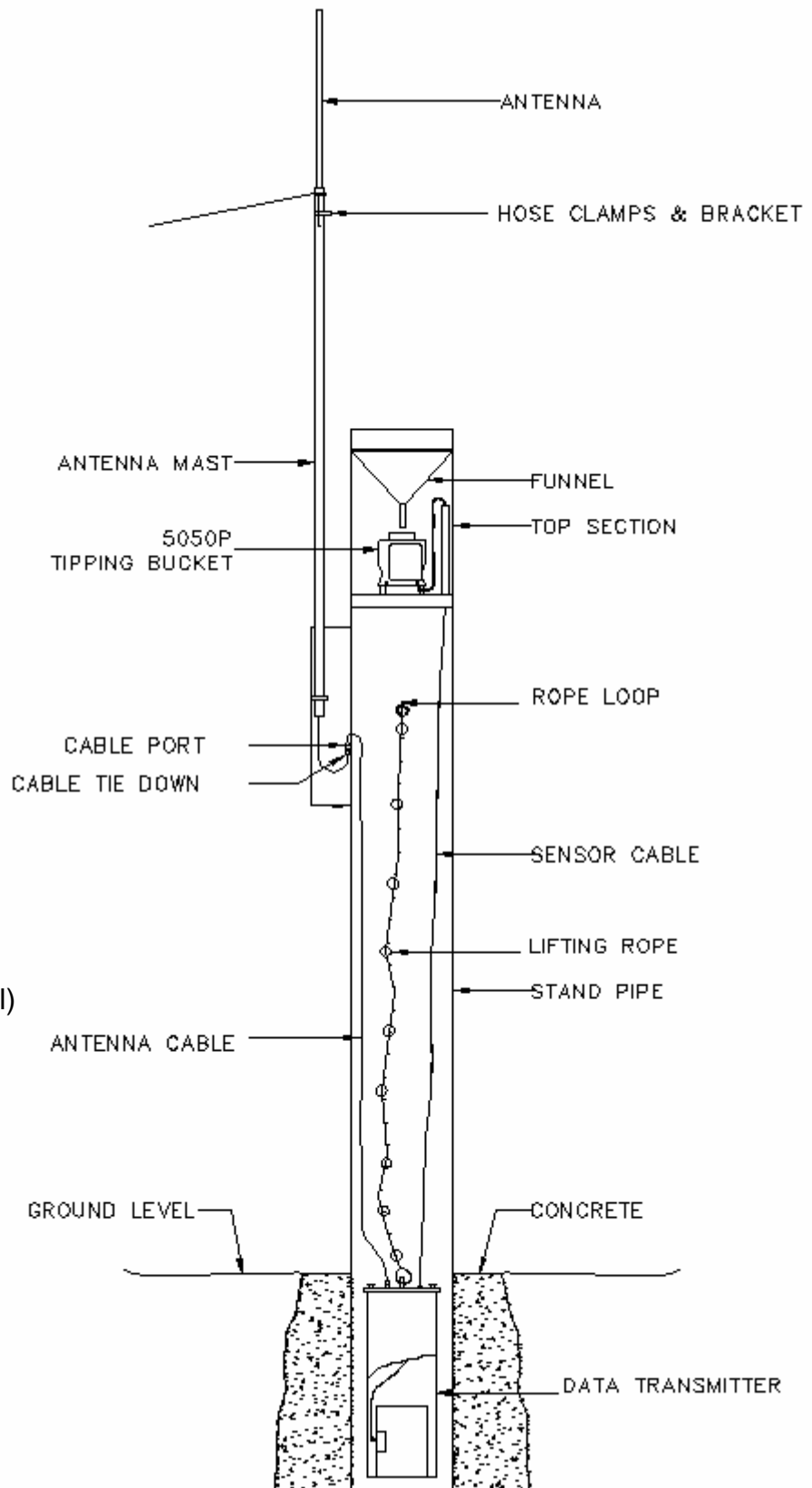
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Equipment Configuration and Parts Identification

- 1> Standpipe
- 2> Antenna mast
- 3> Antenna
- 4> Antenna cable
- 5> Data Transmitter
- 6> 5054TS
- 7> 5050P
- 8> Access door (optional)



## 1.0 INTRODUCTION

### 1.1 General Description

The Model 5454 Satellite Rain Stations are complete packaged gauges which transmit precipitation data on a real-time basis.

### 1.2 Equipment Included

- 1> Standpipe
- 2> Antenna mast
- 3> Antenna
- 4> Antenna cable
- 5> Data Transmitter
- 6> 5054TS
- 7> 5050P
- 8> Access door (optional)

### 1.3 Specifications

Height of mast:	13'2" above ground level
Material:	Aluminum and stainless steel
Transmitter:	5400 Satellite Data Transmitter
Sensor:	5050P
Orifice size:	12"
Protective screens:	2 in the collection funnel
Drain holes:	4 each, 7/8" diameter

## 2.0 INSTALLATION

Refer to the Basic Gauge Installation Manual for information on setting up the standpipe. Note that the 5054TS is used instead of the standpipe cap, refer to the 5054TS Manual.

### 2.1 Site Selection

#### 2.1.1 Radio Path

The satellite radio will communicate with any Orbcomm low earth orbiting satellite that is above the horizon and in line of sight.

### 2.1.2 Data Collection

The site should be representative of the area being monitored for rain fall amounts. Consider these factors while selecting the site:

**Obstructions:** As a general rule the height of nearby objects above the gauge should be no greater than half their distance from the gauge.

**Protected sites:** High winds and wind turbulence generally reduce the accuracy of a rain gauge. Therefore, when the gauge is shielded from the wind its accuracy is better than in an open, unshielded area.

**Open sites:** Avoid areas where individual or small groups of objects may set up troublesome eddy currents near the gauge. It is usually better to have the gauge in a completely open area rather than near an isolated object.

## 3.0 THEORY OF OPERATION

The 5454 Rain Station's tipping bucket generates a digital signal whenever one millimeter of rainfall drains through the top section assembly. A timer is started that transmits one minute rainfall accumulations every five minutes until the rainfall stops. Data packets are sent through the Orbcomm satellite to a land based internet server where they are retrieved by your base station software. The rainfall counter and battery voltage are also transmitted on a programmable timed interval.

## 4.0 TESTING AND MAINTENANCE

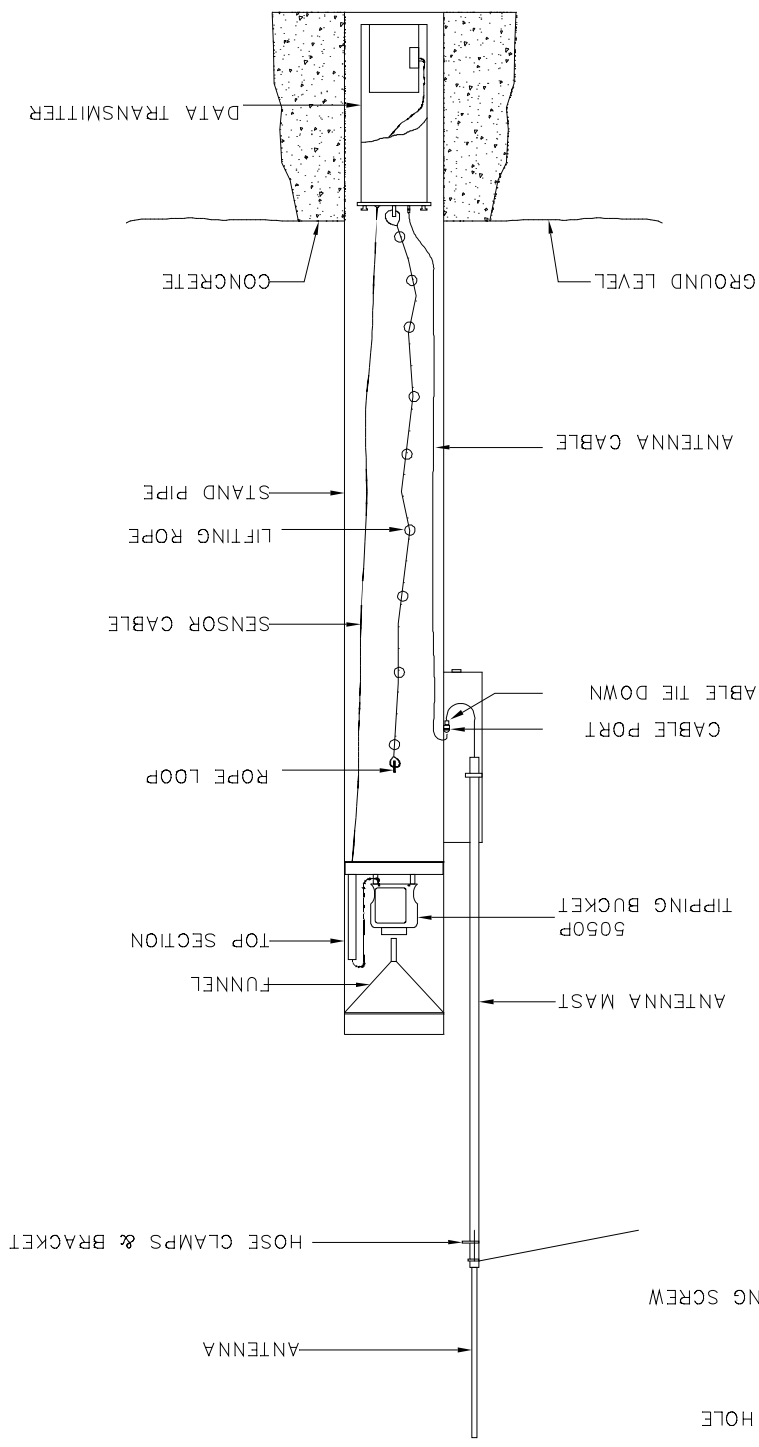
The 5454 is a packaged station and consists of separate components; refer to the 5050P, 5054TS and 5400 Manuals for testing and maintenance of these parts. Also, the Basic Gauge Manual describes a standard test procedure and includes a Maintenance Report form for all packaged stations.

### 4.1 Site Maintenance

- ! Trim trees and other vegetation which interferes with gauge operation.
- ! Check standpipe grounding. As standpipe installations age the electrical ground, provided by the contact of aluminum pipe to concrete, deteriorates at some locations. A symptom of this is a high rainfall count. Model 5454SG Standpipe Ground Kit can be installed to provide a reliable ground.

## 5.0 FORMS AND DRAWINGS

AC108035 Outline - Rain Gauge  
AC107251 Outline - Antenna Assembly  
AC102302 Assembly - Rain Gauge

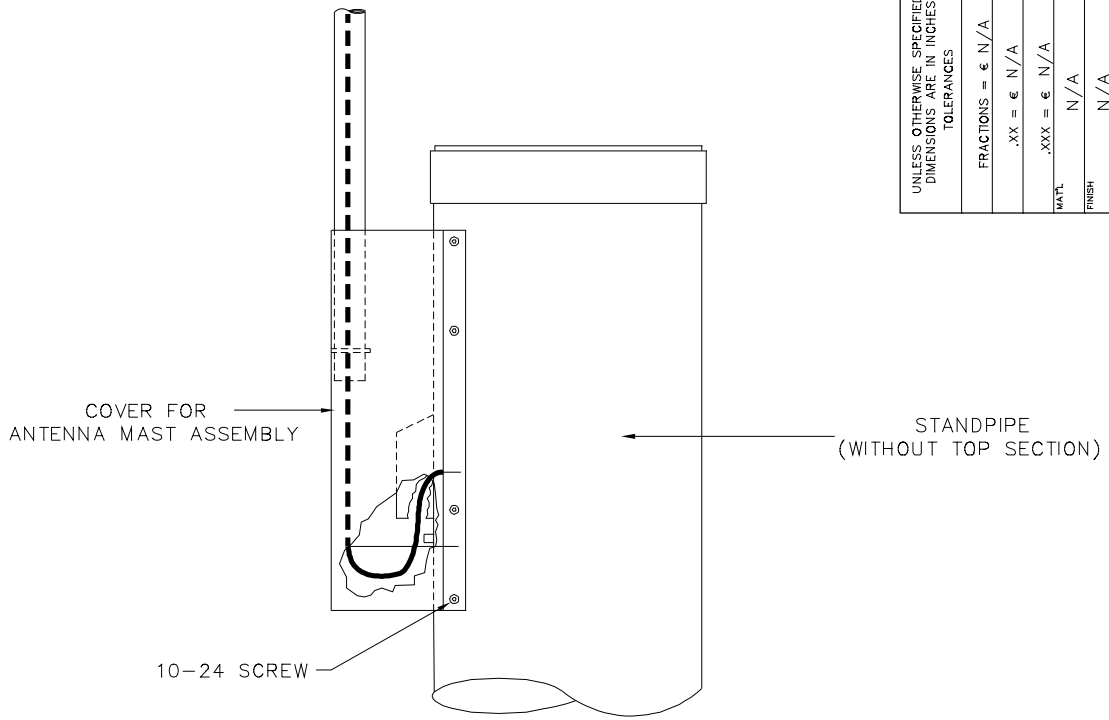
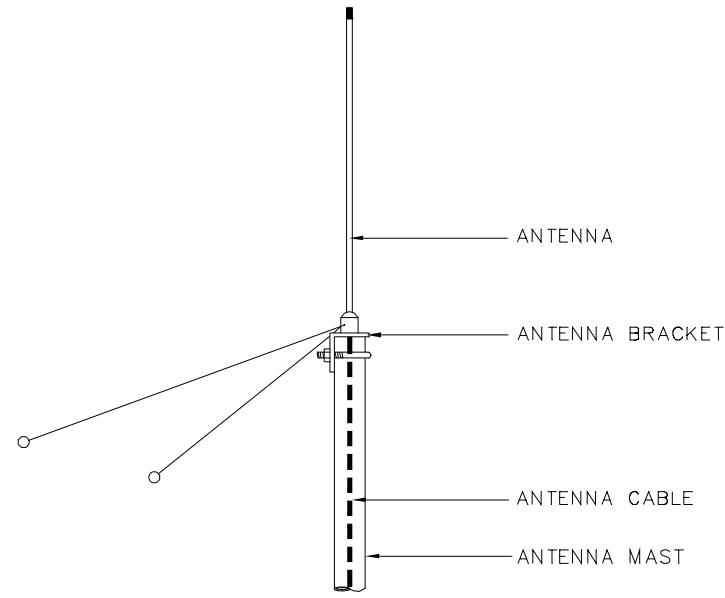


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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES		
FRACTIONS = €		
.XX = €		
.XXX = €		
MATERIAL		
FINISH		
TREATMENT		
DATE	DATE	DATE
BY	BY	BY
8-25-99	8-25-99	8-25-99
RANDERSON	RANDERSON	RANDERSON
CHECKED BY	DATE	DATE
SIZE	SIZE	SIZE
B	B	B
FIG. NO.	FIG. NO.	FIG. NO.
AC108035	AC108035	AC108035
REV	REV	REV
A	A	A



MODEL NO. 5054  
TITLE RAIN GAUGE

OUTLINE  
AC108035

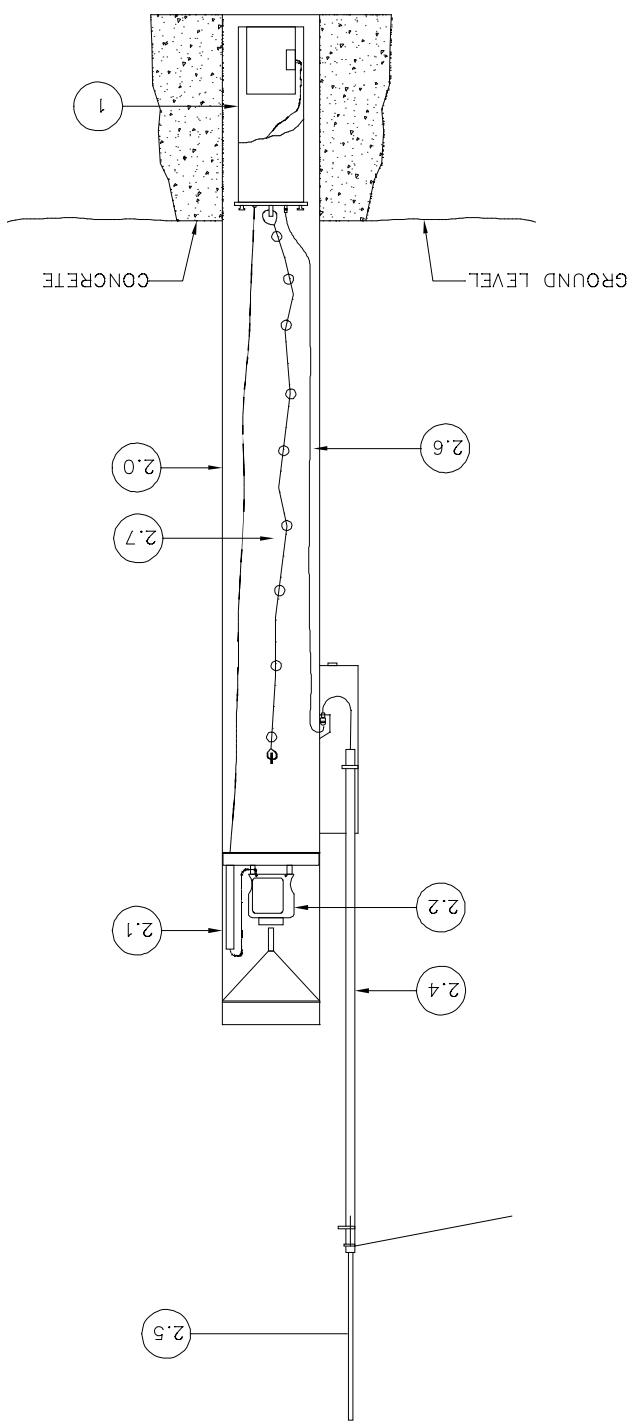


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<b>HydroLynx</b>		
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		TYPICAL INSTALLATION VIEW
DRAWN BY	DATE	DWG TYPE
M. DEVAUGHN	9/30/98	OUTLINE
CHECKED BY	DATE	SIZE
		B
	DWG NO.	AC107251
		REV
		A


UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
TOLERANCES

FRACTIONS =  $\epsilon$  N/A  
 .XX =  $\epsilon$  N/A  
 .XXX =  $\epsilon$  N/A

MAT'L N/A  
 FINISH N/A  
 TREATMENT N/A



NOTE 1. 1.0 NUMBER IN BUBBLE IS BOM REF NO.  
 2. TOP BOM REF NO IS 1.0

N/A	REDRAWN ON NEW BORDER	3/5/99
ECN #	DESCRIPTION	DATE
		
MODEL USAGE		
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DRAWN BY G. BARRITT		
DATE 3/5/1999	DWG TYPE ASSEMBLY	REV A
CHECKED BY	SIZE B	DWG NO. AC102302