



SiteMarker D™



Operation Manual

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Limited Warranty
Cirus Controls, LLC.

What and who is covered?

This warranty covers all defects in materials or workmanship in your Cirus Controls system under normal use, maintenance and service. This warranty coverage applies only to the original owner and is not transferable.

How long is the warranty period?

This warranty coverage runs for a period of 2 years from the date of initial installation. Replacement parts are warranted for the remaining portion of the original warranty period or thirty (30) days from date of shipment from our factory (whichever is greater).

How can you get service?

Cirus Controls' obligation under this warranty is limited to repairing and/or replacing, at Cirus Controls' option, any part or parts that are determined, by Cirus Controls, to be defective. To be eligible for any claim under this warranty, the owner (or Cirus authorized dealer) must return any defective part(s) to the factory, within the applicable warranty period (as set out above).

What will we do?

Cirus Controls' may, at its option, elect to grant adjustments in the field through an authorized representative and may thereby elect to waive the requirement that parts be returned to Cirus Controls' factory. The repair or replacement of defective parts under this warranty will be made without charge to the owner except for transportation of the part to our authorized repair location.

What is not covered under this warranty?

Cirus Controls will not assume any expense or liability for repairs made outside our plant without our prior written consent. We are not responsible for damage to any associated equipment or product and will not be liable for loss of profit or other special damages. Shadow imaging on the system display is considered normal and is not a defect covered by this warranty.

The provisions of this warranty do not apply to any product or parts which have been subject to misuse, negligence or accident, or which have been repaired or altered outside of Cirus Controls' factory in any way (in the judgment of Cirus Controls) so as to affect adversely its performance or reliability. Neither does this warranty apply to normal maintenance service and parts or to normal deterioration due to wear and exposure.

This warranty is expressly in lieu of other warranties, expressed or implied, in fact or by law, including any implied warranty of merchantability of fitness for a particular purpose. The remedies of repair or replacement as set forth are the only remedies under this warranty, Cirus Controls' disclaims any obligations or liability for loss of time, inconvenience, commercial loss or direct consequential, special or incidental damages. This warranty is in lieu of any other obligation or liability of Cirus Controls' of any nature whatsoever by reason of the manufacture, sale, lease or use of such products and Cirus Controls neither assumes, nor authorizes anyone to assume for it, any other obligation or liability in connection with such products.

Revision of this manual

<u>Date</u>	<u>Revision Letter</u>	<u>Description</u>
10/16/06	A	Initial Release.
05/18/07	B	Updated interface

Cirus Controls reserves the right to update this manual from time to time without notice.

Package Contents

A complete *SiteMarker D™* contains the following items:

- 1) *SiteMarker D™* keypad;
- 2) This manual
- 3) Power cable (MK-1003 or 12v cigarette lighter cable);
- 4) Cirus Bus Cable (HH-1001)

If any of these items are missing, please contact your distributor for replacement parts.

Support

If you have any questions about your *SiteMarker D™* system or its operation call the Cirus Controls Technical Support line at: (763) 493-9380.

Technical Support is available Monday thru Friday from 6:30 am to 5:00pm central time. You may also e-mail customer support with your questions at info@ciruscontrols.com.

Functional Overview

The *SiteMarker D™* is an additional input for the Cirus Controls data recording systems (*SpreadSmart™* and/or *DataShark™*). *SiteMarker D™* includes a display for the operator to view and record “switch triggered waypoints” with specific identifiers. Common identifiers include marking locations for potholes, road kill, downed mailboxes, signage, driveway locations, other “location controlled” permit applications, etc.

The *Site Marker D™* triggers the recording device to collect data in both ways listed below:
Switch triggered – when a switch is tripped, a data point is recorded showing the GPS location and the name of the switch that was tripped. Pressing a switch when the system is functioning properly and connected to a recording device will cause the switch indicator to light. This indicates to the operator that the waypoint has been recorded into digital memory.

Periodic logging of location: *SpreadSmart™* and *DataShark™* systems log latitude & longitude at specific log intervals (i.e. 5-120 seconds), position logging will occur at the frequency chosen, default is 60, refer to system setup in the *SpreadSmart™* and *DataShark™* manual to change this setting. This logging method results in a “trail of breadcrumbs” which keeps track of vehicle location, which can be mapped out on a Shape file compatible GIS system.



Figure 1.0

Internal Breaker: the *SiteMarker D™* keypad is internally fused with an auto-resetting breaker to protect the wiring and circuitry associated with the *SiteMarker D™* keypad. Should the breaker trip the backlighting will extinguish and all power to the unit will be disconnected. Once the short condition is resolved, the breaker will reset and normal operation will resume.

Pre-Delivery System Setup Checklist

	Description	Completed By/Date
Step 1	Install keypad and connect cables	
Step 2	Verify the keypad backlighting turns on when power is applied.	
Step 3	Verify the recording of switch presses by observing lighting of indicator next to switch. NOTE: The bus cable needs to be connected to an operating Cirrus recording device for indicators to light.	

Pre-Delivery

To install and run the *SiteMarker D™*, the following steps must be completed.

- 1) Mount the keypad unit in the vehicle cab;
- 2) Connect power cable and bus cable;
- 3) Power up the keypad, and the data recording unit (*SpreadSmart™* or *Data Shark™*);
- 4) Press switch 1-4 on the keypad, observe that the led indicator lights for correct functionality;

Installing the keypad

The keypad of the *SiteMarker D™* should be mounted in an easily accessible location such as underneath the dashboard, or integrated into a Cirrus Controls arm unit.

Guard against RF interference

Even properly guarded sources of radio frequency (RF) noise can “leak” and interfere with in-cab electronics. Take care when installing radios and radio antenna cables, keep at least 24” spacing between them and any cabling for the *SiteMarker D™*.



Figure 1.1
(Back panel)

Connecting the cabling:

- 1) Connect the bus cable (HH-1001-3M) to the bus connector on the *SiteMarker D™* (figure 1.1). Connect the other end of the bus cable to the bus port on either a *SpreadSmart™* or a *Data Shark™* system.
- 2) Next, connect the power cable (MK-1003) to the back of the unit. Note: make sure that the truck ignition is off before connecting the power and ground leads. The power cable should be connected to an ignition hot source capable of delivering a minimum of 2 amps.

Operation

The *SiteMarker D™* is designed to be functional *only* when used with a Cirrus Controls data recording system. NOTE: if the recording system is turned off (*SpreadSmart™* or *Data Shark™*) the backlighting will still light on the *SiteMarker D™* keypad, however the switch functions will not actuate, this will be noticed by the switch (1-4) LED's failure to illuminate.

Pressing a switch when the system is functioning properly and connected to a recording device will cause the switch's led to light. This indicates to the operator that the waypoint has been recorded by the data collection system. This also can be seen with the Lat & Long being displayed on the screen with the correct date and time.

Display Modes: the *SiteMarker D™* can display information about location or about switch names. Use the “Display Mode” switch to toggle between modes



Naming Switches: Press and hold down the Display/Mode switch for 2 seconds to enter the systems setup. Press the correct switch to enter “Waypoint names” mode (i.e. 1 = down, 2 = up, 3 = enter & 4 = go back). Use the 4 numbered switches to assign specific names/characters to each switch (1-4) for each bank of switches (A = 1-4, B = 5-8, and C = 9-12). A total of 12 switches can be named, after renaming all switches press the “go back (# 4)” switch to save the settings. When the switches are named using the keypad, the names become part of the data set that is downloaded and the GIS software (Arc View® or other) retains the name selected for each data point recorded.



Contrast Setting: to set the screen contrast, press and hold down the Display/Mode switch for 2 seconds this will allow entry into the system setup. Press the correct corresponding switch to highlight the contrast field (i.e. 1 = down, 2 = up, 3 = enter & 4 = go back) after adjusting use the “go back (# 4)” switch to save the settings.



Trouble Shooting Guide

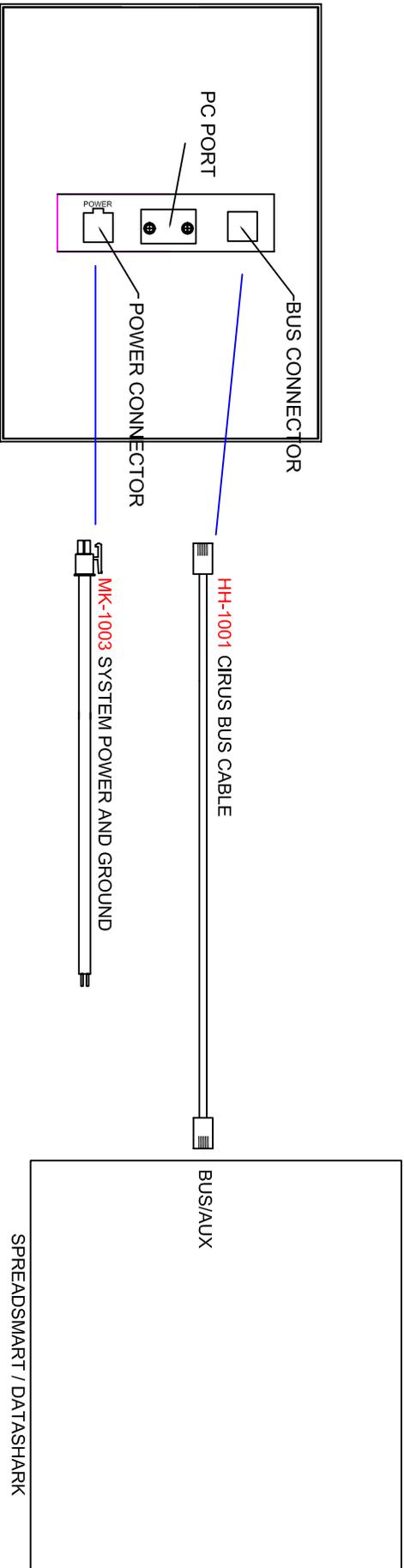
Complaint	Cause (s)	Correction (s)
Power Isn't On	Bad Power or Ground connection;	Verify power/ground connections.
<i>SiteMarker D</i> ™ keypad cuts out or acts strange;	Low power supply voltage from truck battery/alternator;	Minimum truck voltage must be > 11.9 volts;
<i>SiteMarker D</i> ™ keypad lights up but switch presses do not result in an indicator lighting up;	a) Bus cable not connected correctly; b) Cirus recording device not powered up; c) Cirus recording device firmware incompatible;	a) Verify bus cable wiring to a suitable Cirus Bus port. b) Verify the recording device is powered up and functional. c) <i>SpreadSmart Rx</i> ™ firmware needs to be 4.14 or higher, <i>Data Shark</i> ™ firmware needs to be 3.04 or higher.
<i>SiteMarker D</i> ™ display shows "cycle display"	Display is waiting for input signal	Wait 5 seconds for system to cycle image; Push "Cycle display" button

Appendix A – Spare Parts List

Part #	Description
STMD 300	SiteMarker D keypad with enclosure
MK-1003	12V power cable
HH-1001-3M	Data cable

Appendix B – Cable Connections

(see attached wiring diagrams).



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 PROPRIETARY. NO REPRODUCTION IN WHOLE OR PART
 WITH OUT PERMISSION IS ALLOWED.

REV	DATE	DESCRIPTION
A	5-21-07	ADDED PORTS TO D VERSION
B	-	-
C	-	-
D	-	-
E	-	-

DESIGN: MVM
 DRAWN: MVM
 AS BUILT: -

CIRUS
CONTROLS LLC
 9210 WYOMING AVE. N. SUITE 200
 BROOKLYN PARK, MN 55445

Phone: (763) 493-9380
 Fax: (763) 493-9340

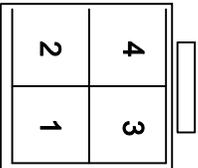
SITEMARKER "D" WAYPOINT SYSTEM

CABLE OVERVIEW

PROJECT NUMBER: SMCA-OV
 SCALE: NONE
 DATE: 5-21-07
 SHT 1 OF 1

REV. Q

B.O.M.



MOLEX PIN#	SIGNAL
1	GROUND : WHITE (18AWG)
2	+12 VDC : RED (18AWG)
3	GROUND : WHITE (18AWG)
4	+12 VDC : RED (18AWG)

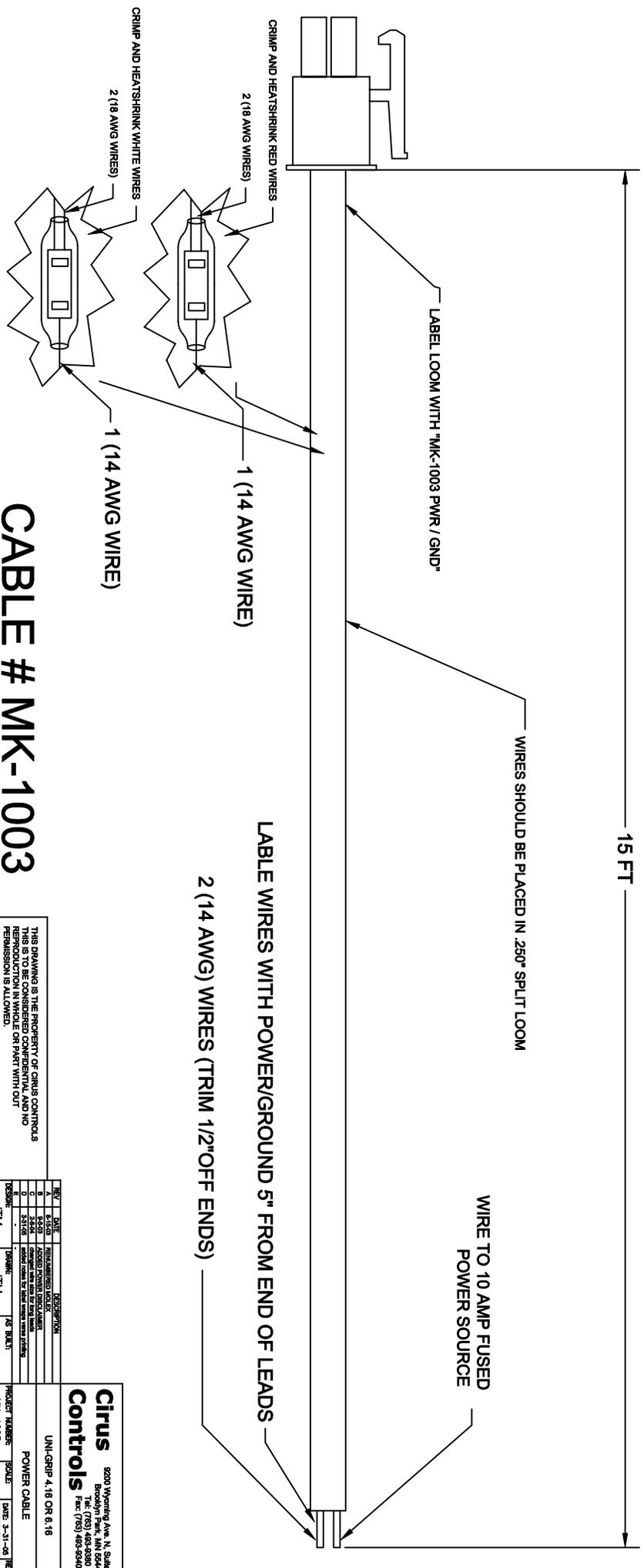
BACK VIEW

(SIDE PINS ARE INSERTED FROM)

QTY	PART NUMBER	DESCRIPTION
1	39-01-2040 (DigI-Key WMM3701-ND)	MOLEX RECEPTACLE 4 PIN
4	39-00-0039 (DigI-Key WWM2501-ND)	MOLEX TERMINALS FEMALE 18-24 AWG
14-1/2 FT	LCP-250	.250" SPLIT LOOM

NOTES:

1. LABEL WIRES WITH SIGNAL EVERY 12 INCHES
2. TAPE SPLIT LOOM EVERY 12 INCHES



CABLE # MK-1003

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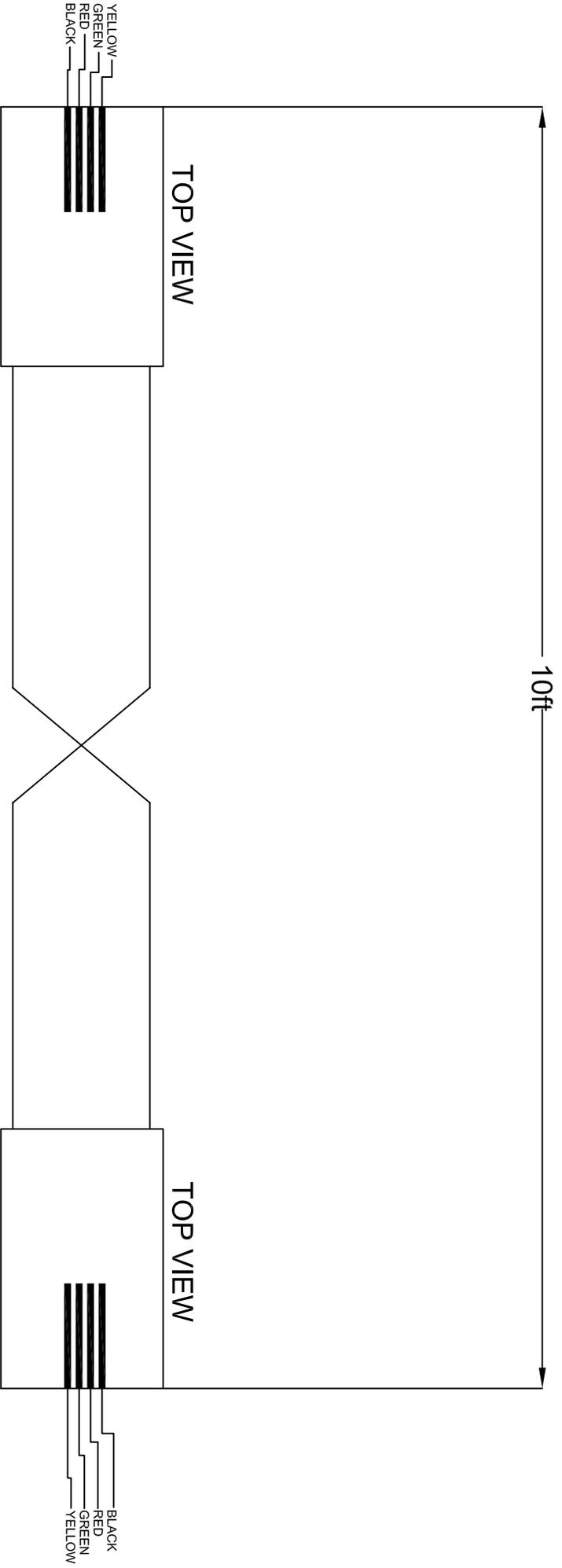
REV	DATE	DESCRIPTION
A	8/15/03	INITIAL RELEASE
B	8/22/03	ADD POWER REQUIREMENTS
D	5/31/05	ADD COMMENTS TO LABEL WIRE LISTING
DESIGNER	JTM	
DRAWN	JTM	
CHKD	JTM	
DATE	3-31-05	REV
SHEET	1 OF 1	

Cirius Controls
 9200 Wyoming Ave. N. Suite 320
 Brooklyn Park, MN 55445
 Tel: (763) 483-8380 Fax: (763) 483-8380

UNI-GRIP 4, 18 OR 6, 16
 POWER CABLE
 PROJECT NUMBER: MK-1003
 SCALE: NONE

BILL OF MATERIALS

QUR #	PART #	QTY	DESCRIPTION
000394	A9091-ND (NO SUBS)	2	4 PIN PLUG
001236	H0042-100-ND	10 FT	4 CONDUCTOR PHONE CORD



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REV	DATE	DESCRIPTION
A	12-20-05	SWITCHED PART TO AMP PLUG WITH NO SUBS
B	-	-
C	-	-
E	-	-

CIRUS CONTROLS LLC
 9200 WYOMING AVE. N. SUITE 320
 BROOKLYN PARK, MN 55445

Phone: (763) 493-9380
 Fax: (763) 493-9340

PROJECT NUMBER: HH-1001-3M
 SCALE: NONE
 DATE: 5-22-07
 SHEET: 1 OF 1

HAMMERHEAD
 BUS CABLE

DESIGN	DRAWN	AS BUILT	REV
JTM	JTM	-	A

