

APPENDIX B - MOUNT SPECIFIC DATA For

Patriot 3.8m Mobile Antenna

REVISION HISTORY

29 December 2006, Software Version 1.58
27 October 2009, Software Version 1.59

1.2 RC3000 Features

All basic features of the RC3000 are utilized to provide the operations for this mount.

Hardware Configuration. A RC3000B version of hardware is utilized for this mount.

Software Configuration. The mount model will be designated as **PD**. Software will be designated as RC3K-PD-xxx.

1.3.2 System Interface Requirements

The PD mount follows the standard RC3000 interface requirements for mounts equipped with azimuth and elevation resolvers.

2.1.4 Inclinometer Orientation

The inclinometer should be rigged with the face of the reflector vertical. In order to achieve linear operation for RF look angles from 0 to 90 degrees, the inclinometer should be installed approximately 25 degrees from vertical.

2.3.2 Elevation Calibration

Elevation Reference Position

From the face vertical reflector position, the elevation reference voltage should be close to 0.8 V. The elevation displayed at this voltage will be 25.0 reflecting the RF offset of the antenna.

Elevation Resolver Reference

In order to characterize platform tilt, it is critical that the elevation resolver be calibrated with the mount level. With the face of the reflector horizontal, adjust the elevation resolver offset to yield a resolver derived angle of 25.0 shown on the Analog to Digital Voltage maintenance screen (3.2.2.1).

3.3.1.2 Reset Defaults

The following pages list the default configuration item values for this model of the RC3000.

NOTE: the list of default values is a convenient place to record installation specific changes to the configuration items. Note: recording of installation specific changes to defaults may prove valuable when trying to restore system configuration.

SYSTEM DEFINITION

```

SN:          0 SERIAL NUMBER<1-9999> (0=NOT ENTERED)
GPS:         1 <1>GPS PRESENT <0>NOT PRESENT
COMPASS:     2 <0>NONE <1>TRUCK MOUNT <2>ANTENNA MOUNT
MODE:        2 <1-LOCATE 2-MENU 3-MANUAL 4-VSAT 5-POS>
ANT_SIZE:    380 ANTENNA SIZE <1-9999 CM>
WAVEGUIDE:   0 WAVEGUIDE SWITCH <1>PRESENT <0>NONE

```

ELEVATION CALIBRATION

```

REF_V:       0.80 SET ZERO VOLTAGE <0.50 - 4.50>
OFF:         0.0 ELEVATION OFFSET <-25.0/+25.0 DEGREES>
UP:          90 SET UP LIMIT <0-90 DEGREES>
DOWN:        0 SET DOWN LIMIT <0-90 DEGREES>
SF:          50.00 SCALE FACTOR <30.00 - 60.00 mV/deg>
LOOK:        1 ELEV LOOK CONFIGURATION <1>HIGH <0>LOW
RES:        -155.00 ELEV RESOLVER OFFSET<+/-300.00 DEGREES>
REV:         0 ELEV RESOLVER<0-NORMAL 1-REVERSED>
EL_TIME:     0 ELEV STOW TIMER<0-DISABLE,1-99 SECONDS>

```

AZIMUTH CALIBRATION

```

FG:          0.0 FLUXGATE OFFSET <-180.0/+180.0 DEGREES>
CCW:         180 SET CCW LIMIT <0 TO 360 DEGREES>
CW:          180 SET CW LIMIT <0 TO 360 DEGREES>
RES:        -180.00 AZIM RESOLVER OFFSET<+/-300.00 DEGREES>
REV:         0 AZIM RESOLVER<0-NORMAL 1-REVERSED>

```

POLARIZATION CALIBRATION

```

REF_V:       2.50 SET REFERENCE VOLTAGE <1.00 - 4.00>
SF:          55.31 SCALE FACTOR <1.00 - 180.00 deg/volt>
OFF:         0.0 POL OFFSET <-90.0/+90.0 DEGREES>
CW:          90.0 POL CW LIMIT<0.0 - 179.9 DEGREES>
CCW:         90.0 POL CCW LIMIT<0.0 - 179.9 DEGREES>
TYPE:        2 <1>CIRCULAR <2>SINGLE <3>DUAL
REF:         0 <0>HORIZONTAL <1>VERTICAL
H:           0.0 DEFAULT HORIZONTAL POS.<-180/+180 DEG.>
V:           90.0 DEFAULT VERTICAL POS.<-180/+180 DEG.>
AUTO:        1 LOCATE AUTOMOVE <0>DISABLE <1>ENABLE

```

SIG FACTORS

```

RF LOCK:     0 RF LOCK <0-NONE 1-1HI 2-1LO 3-2HI 4-2LO>
TIME:        0.1 RF DELAY TIME <0.1 - 9.9> SECONDS
SS1 LOCK:    0 SS1 LOCK TYPE <0>NONE <1>HI <2>LO
TIME:        0.1 SS1 DELAY TIME <0.1 - 9.9> SECONDS
TH:          100 SS1 MINIMUM SIGNAL THRESHOLD <0-999>
POL:         1 SS1 <0>NEGATIVE <1>POSITIVE INPUT SENSE
SS2 LOCK:    0 SS2 LOCK TYPE <0>NONE <1>HI <2>LO
TIME:        0.1 SS2 DELAY TIME <0.1 - 9.9> SECONDS
TH:          100 SS2 MINIMUM SIGNAL THRESHOLD <0-999>
POL:         1 SS2 <0>NEGATIVE <1>POSITIVE INPUT SENSE

```

AUTOPEAK

```

ON:          0 AUTOPEAK <0>DISABLED <1>ENABLED <2>+PEAK
SIG:         1 SIGNAL SOURCE <1>RF <2>SS1 <3>SS2
BAND:        1 BAND <0-C 1-Ku 2-CK 3-L 4-X 5-Ka 6-S>
SRCH_AZ:     3 SPIRAL SEARCH AZIM LIMIT <1-20 DEGREES>
SRCH_EL:     3 SPIRAL SEARCH ELEV LIMIT <1-15 DEGREES>
SRCH_TH:     200 SPIRAL SEARCH THRESHOLD <0-999>

```

```

SCAN_RG:      8    SCAN RANGE <1-20 DEGREES>
SCAN_TH:     200   SCAN THRESHOLD <0-999>
TILT:        0    POL TILT COMPENSATION <0>OFF <1>ON

AZIMUTH POT DRIVE
FAST/SLOW:    2.5   SET THRESHOLD <0.0-10.0 DEGREES>
MAX ERROR:   0.20  SET MAXIMUM ERROR <0.01 - 1.00 DEGREES>
COAST:       0.1   SET COAST RANGE <0.0 - 2.0 DEGREES>
TRIES:       3    SET MAX NUMBER OF TRIES <0-10>

AZIMUTH PULSE DRIVE
SCALE:       10431  AZIM SCALE FACTOR<1-32767 PULSES/RADIAN>
CW:         64000  AZIM CW PULSE LIMIT <0 - 65535>
CCW:        100   AZIM CCW PULSE LIMIT <0 - 65535>
FAST/SLOW:   50   SET THRESHOLD <0 - 999 PULSES>
MAX ERROR:   1    SET MAXIMUM ERROR <0 - 10 PULSES>
COAST:       3    SET COAST RANGE <0 - 999 PULSES>
TRIES:       3    SET MAX NUMBER OF TRIES <0 - 10>

AZIMUTH DRIVE MONITORING
JAM SLOP:    1    SET JAM SLOP <0 - 1023>
RUN SLOP:    200  SET RUNAWAY SLOP <0-1023>
FAST DEADBAND: 1000 SET FAST DEADBAND <0 - 9999 MSEC>
SLOW DEADBAND: 500  SET SLOW DEADBAND <0 - 9999 MSEC>

ELEVATION POT DRIVE
FAST/SLOW:    3.0   SET THRESHOLD <0.0-10.0 DEGREES>
MAX ERROR:   0.20  SET MAXIMUM ERROR <0.01-1.00 DEGREES>
COAST:       0.4   SET COAST RANGE <0.0-2.0 DEGREES>
TRIES:       3    SET MAX NUMBER OF TRIES <0-10>

ELEVATION PULSE DRIVE
SCALE:       10431  ELEV SCALE FACTOR<1-32767 PULSES/RADIAN>
UP:         64000  ELEV UP PULSE LIMIT <100 - 65535>
DOWN:       100   ELEV DOWN PULSE LIMIT <100 - 65535>
FAST/SLOW:   50   SET THRESHOLD <0-999 PULSES>
MAX ERROR:   1    SET MAXIMUM ERROR <0-10 PULSES>
COAST:       3    SET COAST RANGE <0-999 PULSES>
TRIES:       3    SET MAX NUMBER OF TRIES <0-10>

ELEVATION DRIVE MONITORING
JAM SLOP:    1    SET JAM SLOP <0 - 1023>
RUN SLOP:    200  SET RUNAWAY SLOP <0-1023>
FAST DEADBAND: 1000 SET FAST DEADBAND <0 - 9999 MSEC>
SLOW DEADBAND: 500  SET SLOW DEADBAND <0 - 9999 MSEC>

POLARIZATION DRIVE
FAST/SLOW:    2.0   SET THRESHOLD <0.0-10.0 DEGREES>
MAX ERROR:   0.50  SET MAXIMUM ERROR <0.01-1.00 DEGREES>
COAST:       0.3   SET COAST RANGE <0.0-2.0 DEGREES>
TRIES:       3    SET MAX NUMBER OF TRIES <0-10>

POL DRIVE MONITORING
JAM SLOP:    1    SET JAM SLOP <0-1023>
RUN SLOP:    200  SET RUNAWAY SLOP <0-1023>
FAST DEADBAND: 1000 SET FAST DEADBAND <0-9999 MSEC>
SLOW DEADBAND: 500  SET SLOW DEADBAND <0-9999 MSEC>

STOW / DEPLOY
AZ_STW:      0.0   AZIMUTH STOW <-180.0/180.0>

```

```

AZ_DEP:      0.0  AZIMUTH DEPLOY <-180.0/180.0>
EL_STW:     25.0  ELEVATION STOW <-90.0/120.0>
EL_DEP:     25.0  ELEVATION DEPLOY <-90.0/90.0>
EL_TIME:      0    ELEV STOW TIMER<0-DISABLE,1-99 SECONDS>
PL_STW:      0.0  POL STOW <-180.0/180.0>
PL_DEP:      0.0  POL DEPLOY <-180.0/180.0>
PL_ENABLE:   2    POL MOVE<0-NONE 1-STOW 2-DEPLOY 3-BOTH>

```

TRACK FACTORS

```

SEARCH:      0    <0>MANUAL <1-NARROW,3-NOMINAL,10-WIDE>
MAX ERROR:   3    ENTER MAX ERROR IN TENTHS OF A dB<1-30>
HOLDOFF:    120   SET PEAKUP HOLDOFF TIME<1 - 999 SECONDS>
  SIG:       2    SIGNAL SOURCE <2>SS1 <3>SS2
  TIME:      2    SIGNAL SAMPLE TIME <2-99 SECONDS>
  LOG:       0    <0>DISABLE <1>ENABLE TRACK DATA LOGGING
  MODE:      1    <1>STEP/MEMORY <2>STEP ONLY
  AZDP:     1.0   AZ/EL DELTA FACTOR <0.5 - 1.5>

```

SHAKE

```

AZ 1:      -10.0  MOVE 1 AZIM <-180.0/180.0>
EL 1:       85.0  MOVE 1 ELEV <-90.0/90.0>
PL 1:      -10.0  MOVE 1 POL <-180.0/180.0>
  2:        10.0  MOVE 2 AZIM <-180.0/180.0>
  2:        45.0  MOVE 2 ELEV <-90.0/90.0>
  2:        10.0  MOVE 2 POL <-180.0/180.0>
  3:         0.0  MOVE 3 AZIM <-180.0/180.0>
  3:         5.0  MOVE 3 ELEV <-90.0/90.0>
  3:         0.0  MOVE 3 POL <-180.0/180.0>
CYCLE:      5    NUMBER OF SHAKE CYCLES <1-9999>
DELAY:      1    DELAY <0-999 SECONDS>

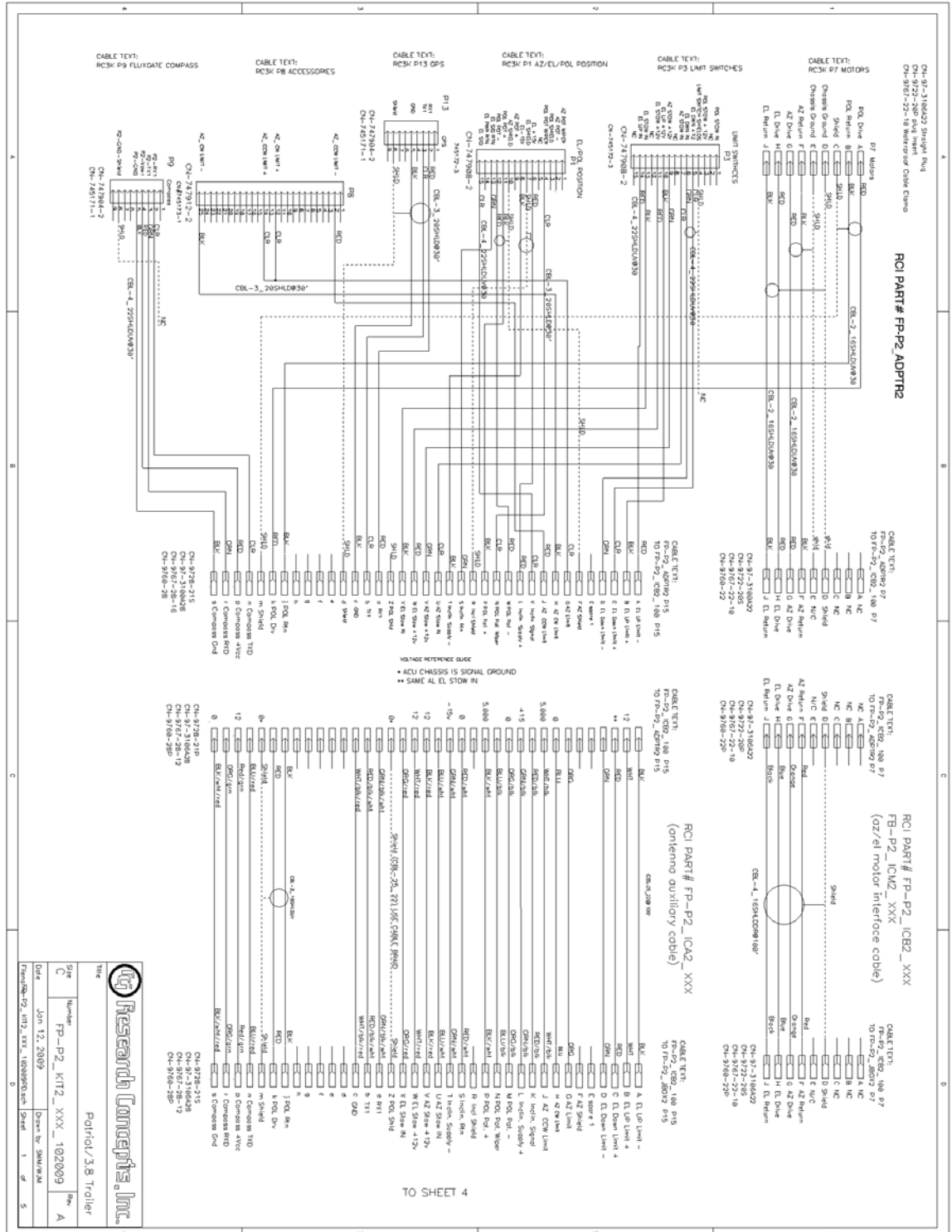
```

REMOTE CONTROL

```

ENABLED:     1    REMOTE CONTROL <0>DISABLED <1>ENABLED
ADDRESS:     50   BUS ADDRESS <49-111>
BAUD_RATE:   6    BAUD<1-3 2-6 3-12 4-24 5-48 6-96>(*100)
  JOG:       20   REMOTE JOG HOLD <1-40>

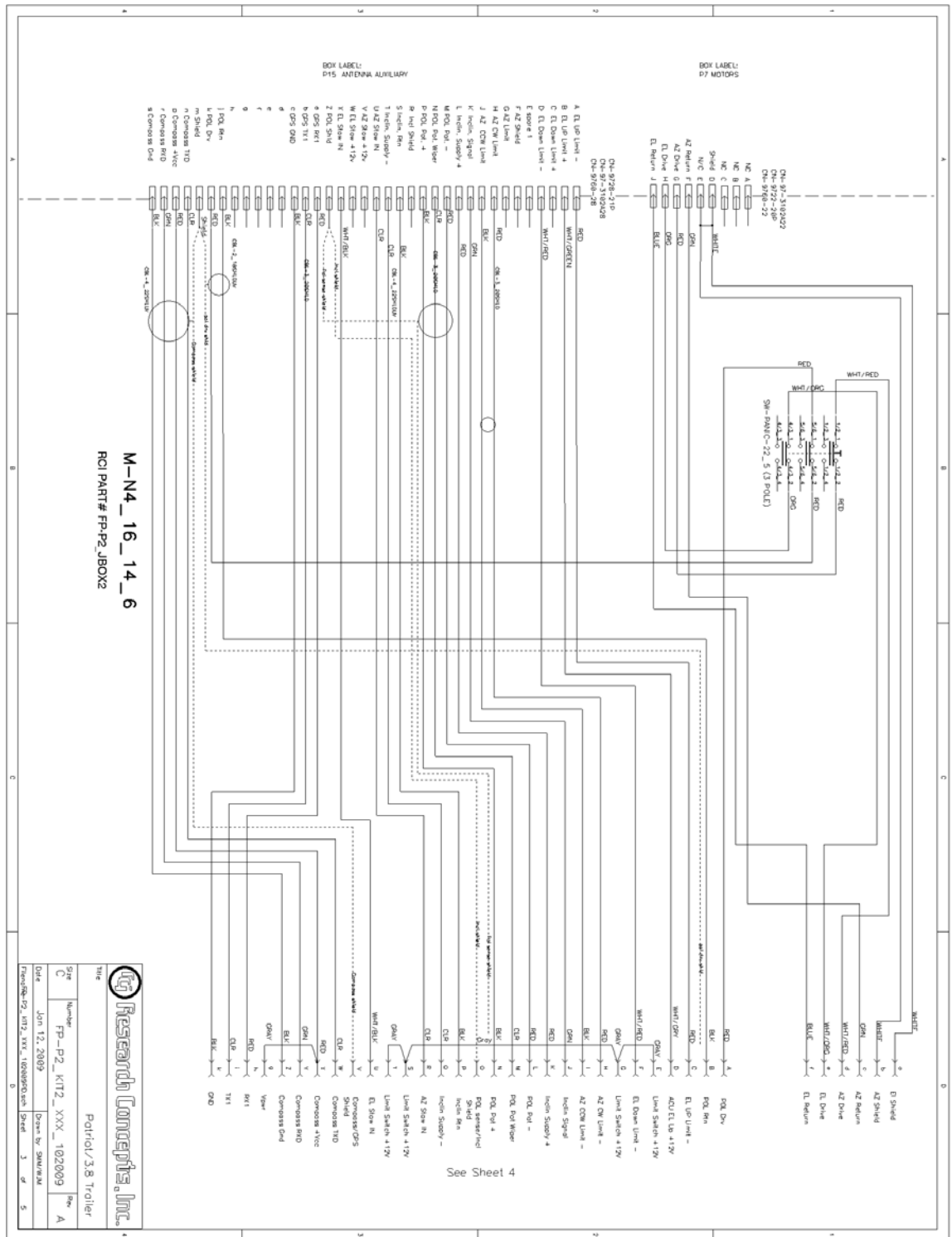
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Part of 3.8 Trailer

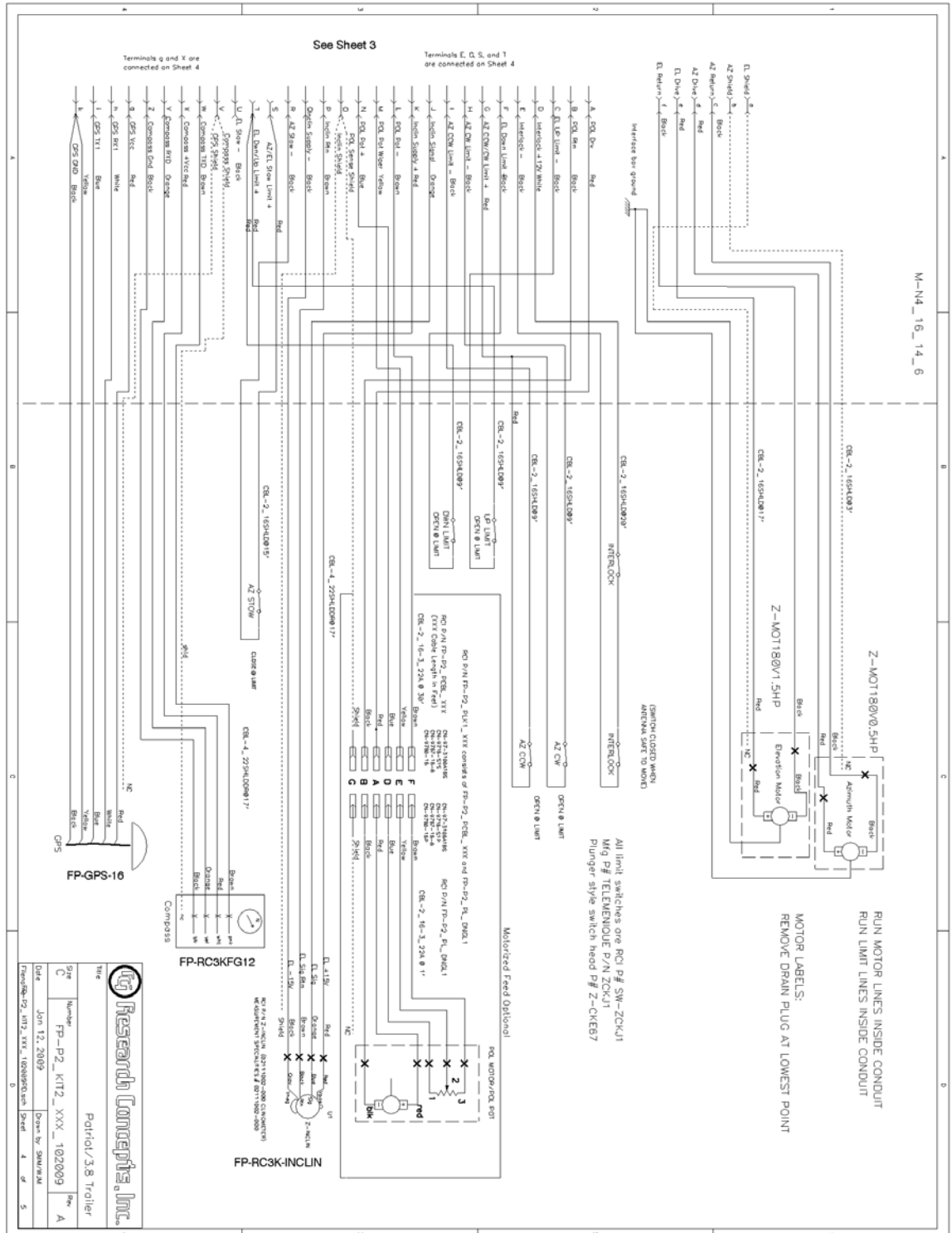
DATE	NUMBER	REV
Jan 12, 2009	FP-P2_KIT2_XXX_102009	A
Drawn by	SMU/AM	



M-N4_16_14_6
ROI PART# FP-P2_JBOX2

Research Concepts, Inc.
 Title: P01R01/3.8 Trailer
 Part: FP-P2_KIT2_XXX_102009
 Date: Jan 12, 2009
 Drawn by: SML/VM

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Size	Number	Rev
C	FP-P2_K12_XXX_102009	A
Date	Jun 12, 2009	Drawn by: SMM/WJM
Product: FP_P2_K12_XXX_102009	Sheet	4 of 5

Revision Note Table

File Name: Patrol3.SM.sch
 Title Block: FP-P2_KIT2_XXX
 Title Block Date: 29 Dec 2008
 Description: Original Schematic. For use with original RC3000B. Az limit switches input to oz pot input. Junction box label D create 35minFPN11L.doc.
 File Date: 23 Dec 2008
 Folder: \\Gulmon\Engineering\RC3K\Patrol_38_Ka
 File Name: FP-P2_KIT2_XXX.sch
 Title Block: FP-P2_KIT2_XXX
 Title Block Date: 22 July 2008
 Description: Derived from Patrol3.SM.sch. Drawing revised to 4 sheets from 3 sheets. Extra terminal strip added to junction box to support GPS interface (previously GPS interfaced directly to the RC3000B). Junction box label D Modify 35minFPN11L.doc by adding text for the GPS terminal strip to create 35minFPN11L.doc.
 File Date: 27 Oct 2008
 Folder: \\Gulmon\Engineering\RC3K\Patrol_38_Ka\BEL_38m_Trolley
 File Name: FP-P2_KIT2_XXX_AZLM_MOD.sch
 Title Block: FP-P2_KIT2_XXX
 Title Block Date: 22 July 2008
 Description: Derived from FP-P2_KIT2_XXX.sch. Corrects a problem with the oz limit switches. In previous versions, the oz limit switches were routed to the RC3000B az potentiometer inputs on P1. In this version az limits routed to oz limit inputs on 48.
 File Date: 15 Oct 2008
 Folder: \\Gulmon\Engineering\RC3K\Patrol_38_Ka\BEL_38m_Trolley
 File Name: FP-P2_KIT2_XXX_AZLM_MOD_NEWB.sch
 Title Block: FP-P2_KIT2_XXX
 Title Block Date: 22 July 2008
 Description: Derived from FP-P2_KIT2_XXX_AZLM_MOD.sch. Updated to include antenna mount cable lengths.
 File Date: 17 Dec 2008
 Folder: \\Gulmon\Engineering\RC3K\Patrol_38_Ka\BEL_38m_Trolley
 File Name: FP-P2_KIT2_XXX_011209.sch
 Title Block: FP-P2_KIT2_XXX
 Title Block Date: 22 July 2008
 Description: Derived from FP-P2_KIT2_XXX_AZLM_MOD.sch. Revise drawing to accommodate feed boom interlock switch. Add Revision history
 File Date: 17 Dec 2008
 Folder: \\Gulmon\Engineering\RC3K\Patrol_38_Ka\BEL_38m_Trolley
 File Name: FP-P2_KIT2_XXX102009.sch
 Title Block: FP-P2_KIT2_XXX
 Title Block Date: 22 July 2008
 Description: Derived from FP-P2_KIT2_XXX_011209.sch. Separated AZ CW and CCW limit switches/Removed Feed Boom from Interlock text/Removed EL slow switch/Changed all limit switch wiring to 2-15and cable

Controller information:
RC3000B PD/ACU



Patrol/3.8 Trolley

Site	Number	Rev
C	FP-P2_KIT2_XXX_102009	A
Date	Jun 12, 2009	Drawn by: SMM/WJM
Printed: FP-KIT2_XXX_102009.sch	Sheet	5 of 5