

LIGHTING & HVAC PLAN - AY/AZ CHANGE TRAILER

SCALE: 1/8"=1'-0"

SYMBOL LEGEND	
	CEILING LIGHT FIXTURE
	3-WAY SWITCH
	OUTDOOR LIGHT FIXTURE
	HVAC VENT DUCT



Features

- Fast personnel throughput with exceptional coverage due to optimized counting geometry, shielding and patented* detector technology
- The Argos-5AB provides the ultimate in (two-step) contoured body coverage
- The Argos-3AB provides lower cost contoured body coverage which outperforms all competitive "economy" models by removing detectors in areas least likely to have contamination. The Argos-3AB is easily field upgradeable to the 5AB by simply adding missing detectors
- Simultaneous monitoring of both sides of the hands with moveable detector for enhanced beta and alpha sensitivity
- Ergonomic and very easy-to-use with audible and visible messages on large LCD screen
- Space-saving design minimizes overall clearance requirements and allows for easy maintenance access from front and side of the unit
- Built-in computer with Windows® XP Embedded operating system with LAN capabilities and USB ports enables easy system management
- Same robust software and serial bus electronics as CANBERRA Argos-TPS, Sirius-3/-5, GEM™-5 and Cronos-4/-11 monitor families
- Compliant with IEC61098 Standard requirements
- Algorithm based on Gaussian or Bayesian statistics (compliant with the ISO 11929:2010 Standard requirements)

* Patent US 7,470,913 B1 High Efficiency and High Homogeneity Large-Area Gas-Filled Detectors

Argos™-AB Family of Gas Flow Whole Body Contamination Monitors

Description

CANBERRA's Argos-AB line of Whole Body Surface Contamination Monitors provide the ultimate in user-friendly operation and thorough, reliable detection of external contamination on personnel working in nuclear environments.

The Argos-5AB and Argos-3AB feature our most advanced gas flow detectors optimized for the best alpha and beta response possible (along with minimizing the gamma response). The detectors have been arranged in a configuration where dead space between detectors has been minimized. This arrangement provides optimal contour geometry and coverage for workers.

All Argos monitors use a sophisticated "fast following" background trending and release-limit algorithm to provide the best possible performance in stable or varying radiation fields.

Reliable industrial PC-based operation with intuitive software results in improved health physics programs, better tracking of contamination and faster, more thorough personnel throughput at boundary points.

Excellent detector protection, modularity of components, and extensive diagnostics result in direct reductions in consumable and work force maintenance costs.

Overview

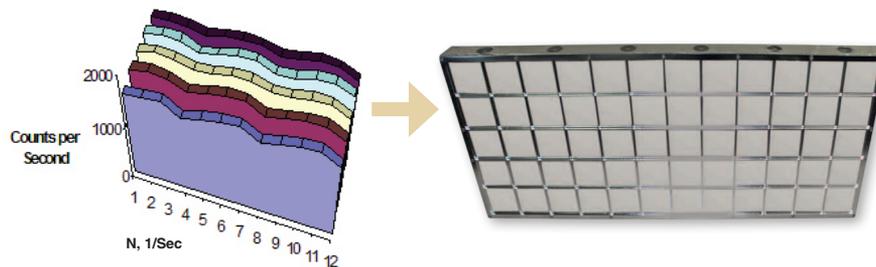
The Argos-AB design has been configured to contour the human body as closely as possible, improving overall detection ability. Gaps between detectors have also been minimized and detectors have been carefully arranged to pay particular attention to those parts of the body most likely to be contaminated. This arrangement results in excellent body coverage, as shown by the horizontal scan on the following page.

The Argos-3AB incorporates all of the characteristics of the Argos-5AB except that it has fewer detectors (18 versus 25). The removed detectors are replaced by blank plates and have been strategically chosen as those covering areas of the body least likely to be contaminated. Thus, this version provides the best value for the money in a surface contamination monitor when the budget is limited. The Argos-3AB is easily field upgradeable to the 5AB by simply adding the missing detectors.

The patented detector design makes use of three independent counting sections which reduce background and lead to better detection capability. This design further enhances uniform detector response as shown in the diagram on the following page.



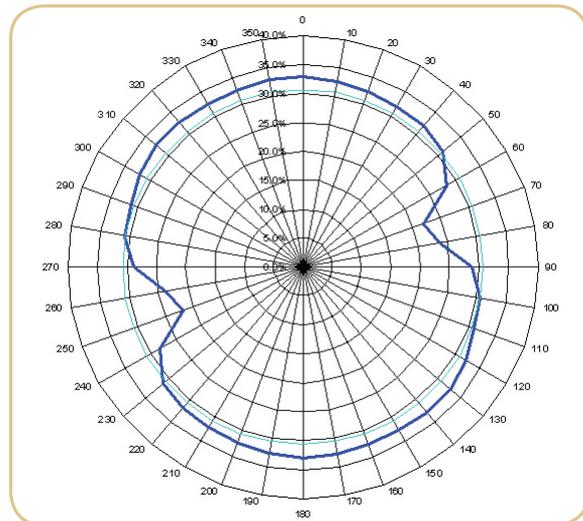
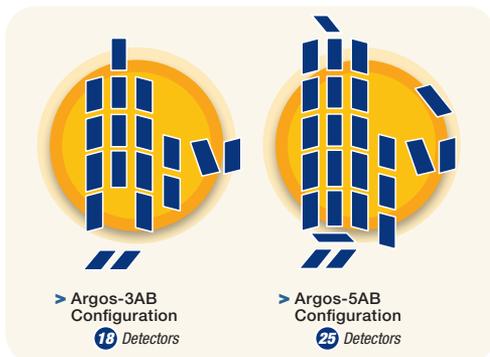
Argos-AB Family of Gas Flow Whole Body Contamination Monitors



This diagram shows the counts detected by placing a button source in 60 different positions along and across the detector. The uniformity of response is remarkable ($\pm 8\%$). The huge degradation ($\pm 50\%$) exhibited by some of CANBERRA's competitors in such areas as the corners has been significantly minimized.

The overall benefit of CANBERRA's geometry and patented detector design is that count times will be reduced by as much as 25% compared to similar systems.

Additionally, the Argos radon daughter rejection software is a useful tool to help to reduce radon interference and minimize false alarms. The software is designed to provide the user with flexibility in setting up its parameters and related outcomes.



Argos-5AB Horizontal Scan Efficiency for ^{36}Cl , Phantom 5 cm from Center Detector.

Electronics and Computer

An electronics module box (the "pre-amplifier") is connected to the back of each detector and performs amplification discrimination, counting, high voltage and pulse generation.

The built-in computer manages the system operation. The computer runs Windows XP Embedded and uses USB flash for transferring data. Data may be retrieved either this way or via a LAN.

A removable keyboard interface is used for parameter setting, testing, calibration and maintenance.

Setting Parameters

Sensitivity of detection by detector/zone, alpha, beta and gamma alarm levels in dpm, dpm/cm², Bq, Bq/cm², nCi, nCi/cm², pCi, pCi/cm², μCi or $\mu\text{Ci}/\text{cm}^2$, false alarm non-detection probabilities and Figure of Merit adjustments, etc.

Monitoring and Alarms

Indicator lights at the entry show the monitor is ready to use. While the occupant is being monitored, messages and a count down are given both on the LCD screen and audibly (multiple languages are available).

Verification of proper occupant positioning is ensured with the help of photoelectric sensors. Visual and voice prompts are also provided.

Argos-AB Family of Gas Flow Whole Body Contamination Monitors

Gamma Detection (Zeus™) Option



Zeus gamma detectors

Argos monitor with Zeus option.

- The Zeus option adds full gamma detection capability
- Three large plastic scintillators monitor body contamination
- Smaller scintillator monitors the head
- Scintillators are shielded with 10 mm (~0.4 in.) of lead
- A 25 mm (~1.0 in.) lead curtain minimizes self-shielding effects

Other Available Options include

- ID Readers
- Frisker
- CRemote: Centralized Remote Control and Data Access software
- Local Database Support
- Doors or barriers (entrance, exit or both)
- Small Item Monitors
- Top of shoe detector (gamma)
- Automatic movable alpha/beta head detector
- IP Camera
- Spare Purging Detector
- LCD/Keyboard Options

Consult the CANBERRA Contamination Monitor Configuration Guide for details of options that will enhance the use of the Argos AB system.

Visible and audible alarms are given if contamination is detected. A "CONTAMINATED" result is shown on a large color LCD display with voice reinforcement and also visually with an LED beside each contaminated detector.

The display shows the type (alpha, beta or gamma), the quantity (cps, cpm, dpm, dpm/cm², Bq, Bq/cm², nCi, nCi/cm², pCi, pCi/cm², μCi or μCi/cm²) and the location (alarming detector flashing on a graphical figure and LED on alarming detector itself). Date-stamp log of system monitoring: number of times used, contaminated staff, used parameters, checking of calibration and faults, etc. is available.

Up to four contact closure relays are available for remote signaling of the monitor's status (e.g. "In Operation", "Contaminated", "Clean", "Fault" etc. or some combinations thereof).

Remote Monitoring and Reporting

The Argos family of monitors is fully compatible with CANBERRA's CRemote software. CRemote enables the status and reporting monitoring over Ethernet to a central monitoring station.

Maintenance and Calibration

A separate LED on each detector shows which detector is alarming and/or being addressed on the LCD screen.

For easy diagnostic purposes, information is readily available on the precise monitor status, parameter changes, including high voltage, discrimination thresholds of each detector. To provide further assistance, live-time rate meters show counts seen by each detector.

The Argos-AB is designed to inherently minimize gas usage. Therefore, no "gas management system" is required.

Calibration of every detector and alarm testing can each be done in less than 30 minutes.

Efficiency

Typical 4π efficiency, rounded to the nearest whole number, measured with 10 cm x 10 cm plate source placed in the center of the detector. Those that used a button source are marked with an "*" and average values were calculated based on multiple locations on the detector.

Isotope	Efficiency on contact, with fine mesh	Efficiency on contact, with foot grill, with fine mesh
¹⁴ C*	9%	6%
⁹⁹ Tc	18%	14%
⁶⁰ Co	16%	14%
¹³⁷ Cs	29%	22%
³⁶ Cl	29%	23%
⁹⁰ Sr/ ⁹⁰ Y	36%	26%
²⁴¹ Am*	20%	13%
²³⁹ Pu	19%	12%

Gas Flow Proportional Detectors	LFP-579
Quantity	Argos-5AB: 25
Quantity	Argos-3AB: 18
Type	Gas Flow
Window (Note that the window assembly is field replaceable)	Multilayer Aluminized Mylar® at typically 0.8 ±12% mg/cm ²
Radiation Monitored	Alpha, Beta

Argos-AB Family of Gas Flow Whole Body Contamination Monitors

Specifications

PHYSICAL	MODEL	
	Argos-5AB	Argos-5AB Zeus
SIZE (w x h [§] x d)*:	91.4 x 225 x 102 cm (36.0 x 88.6 x 40.2 in.)	92 x 229 x 104.8 cm (36.2 x 90.1 x 41.3 in.)
WEIGHT**:	321 kg (706 lb)	883 kg (1942 lb); Add 476 kg (1048 lb) for removable lead brick ingots
[§] ...feet fully extended add 3.3 cm (1.3 in.) * ...Argos-3AB and Argos-3AB Zeus are the same size as their Argos-5 counterparts ** ...or less for Argos-3 configurations		

ELECTRICAL

Power Requirements:

- 220 V ac/50 Hz/1.0 A or 110 V ac/60 Hz/2.0 A mains 3 m (~10 ft) IEC standard cable (supplied; specify voltage and any special cable requirements on order; contact local CANBERRA affiliate for further information).

CERTIFICATION



- IEC 61098 compliant.
- ISO 11929:2010 compliant.

ENVIRONMENTAL

Temperature Range:

- Operating (meets IEC61098): 0–40 °C (32–104 °F).
- Storage: 0–50 °C (32–122 °F).

Relative Humidity:

- Operating (per IEC61098): ≤85% non-condensing at 35 °C (95 °F) maximum.
- Storage: ≤95% non-condensing.

Power Consumption:

Model	Power Consumption
Argos-3AB:	160 VA
Argos-5AB:	170 VA
Argos-3/5 with Door/Barrier options*:	+90 VA

*If installed and applicable; add this value to the above numbers.

Ordering Information:

- 7062322 – ARGOS-3AB, 2-Step Whole Body Mon.
- 7061780 – ARGOS-5AB, 2-Step Whole Body Mon.
- 7062229 – ZEUS3G, GAMMA CAPABILITY FOR ARGOS-3.
- 818002 – ZEUS5G, GAMMA CAPABILITY FOR ARGOS-5.
- Consult the CANBERRA Contamination Monitor Configuration Guide for additional options that will enhance the use of the Argos AB system.



> Gas flow detectors have three zones per detector.



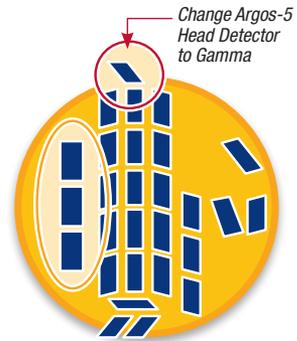
> **7062322** Argos-3AB Configuration
18 Detectors



> **7061780** Argos-5AB Configuration
25 Detectors



> **7062229** Zeus-3G, gamma capability for Argos-3

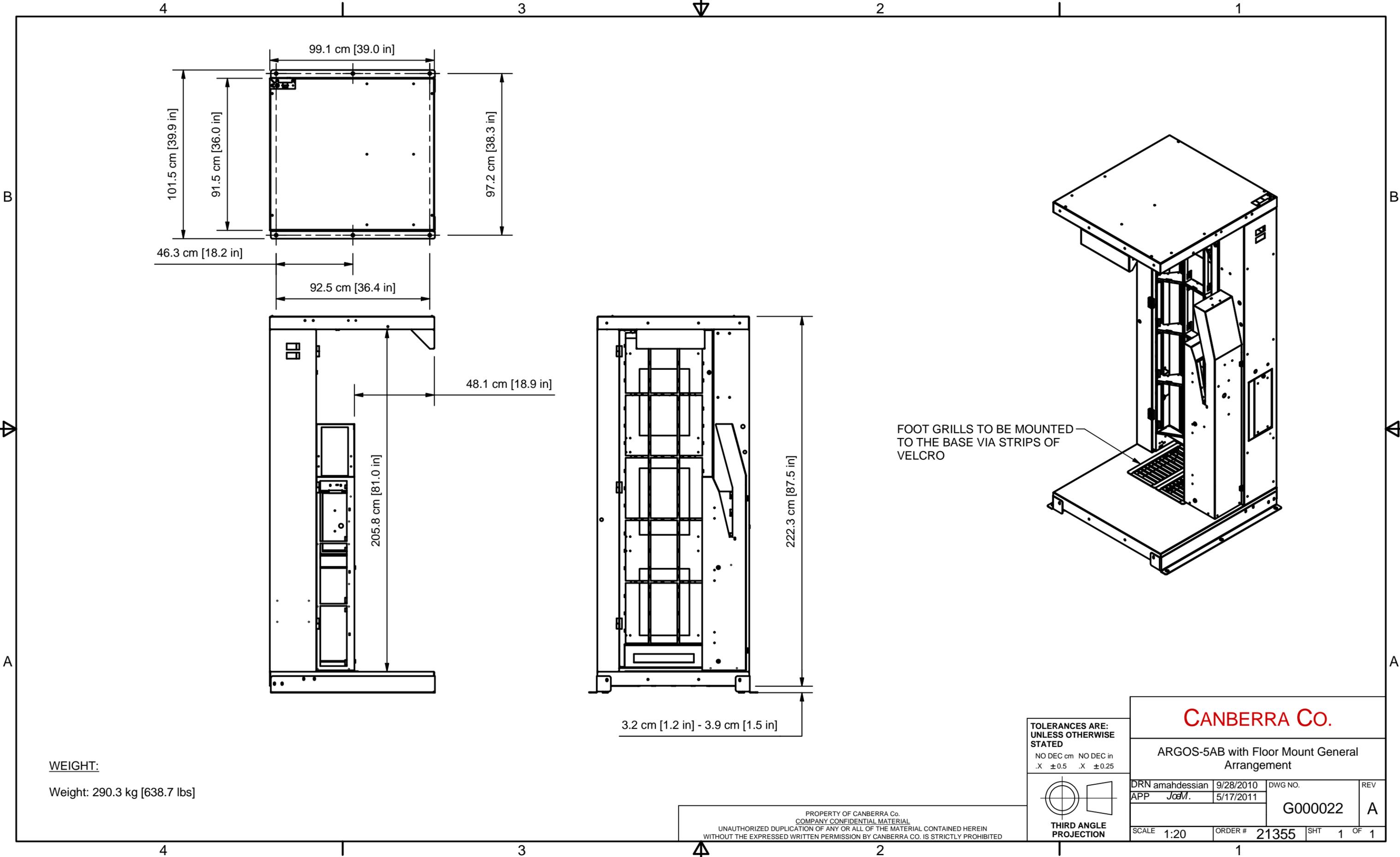


> **818002** Zeus-5G, gamma capability for Argos-5

Argos, Sirius and GEM are trademarks of CANBERRA Co.
Zeus is a trademark of Canberra Industries, Inc.

Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.
Mylar is a registered trademark of E.I. du Pont de Nemours and Company or its affiliates.

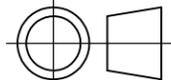
©2012 Canberra Industries, Inc. All rights reserved.



WEIGHT:
Weight: 290.3 kg [638.7 lbs]

FOOT GRILLS TO BE MOUNTED TO THE BASE VIA STRIPS OF VELCRO

TOLERANCES ARE:
UNLESS OTHERWISE STATED
NO DEC cm NO DEC in
.X ±0.5 .X ±0.25



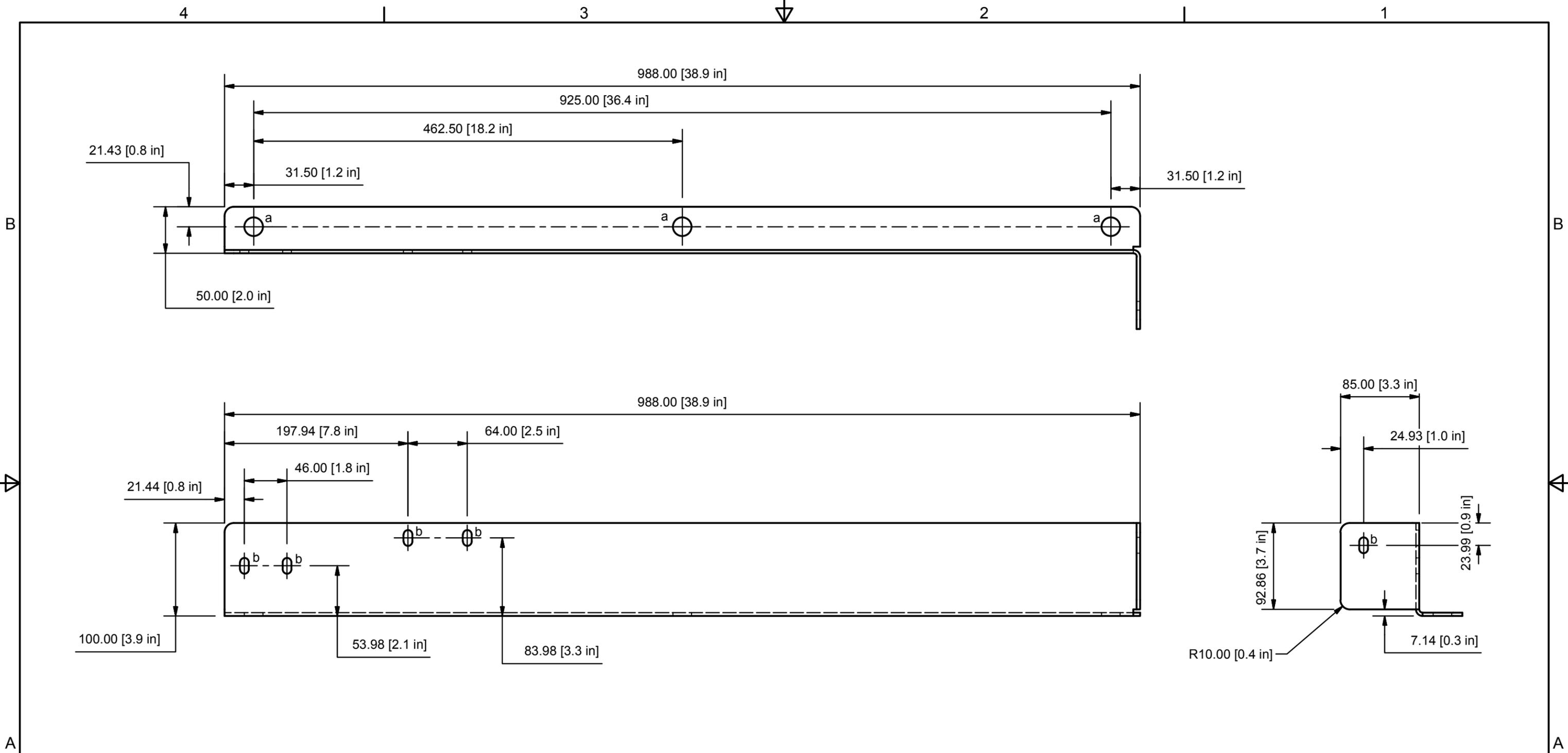
THIRD ANGLE PROJECTION

CANBERRA Co.

ARGOS-5AB with Floor Mount General Arrangement

DRN amahdessian	9/28/2010	DWG NO.	REV
APP JcM.	5/17/2011	G000022	A
SCALE 1:20	ORDER # 21355	SHT 1	OF 1

PROPERTY OF CANBERRA Co.
COMPANY CONFIDENTIAL MATERIAL
UNAUTHORIZED DUPLICATION OF ANY OR ALL OF THE MATERIAL CONTAINED HEREIN
WITHOUT THE EXPRESSED WRITTEN PERMISSION BY CANBERRA CO. IS STRICTLY PROHIBITED



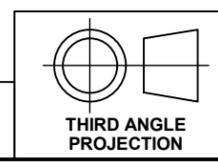
NOTES:

1. REMOVE BURRS & SHARP EDGES
2. REF: UNLESS OTHERWISE STATED DIMENSIONS ARE EXTERNAL

HOLE LEGEND:

- a, $\varnothing 20.00$ [0.8 in] HOLE, 3 PLCS
- b, 9.53 x 17.03 [0.4 in x 0.7 in] CUTOUT, 5 PLCS

PROPERTY OF CANBERRA Co.
 COMPANY CONFIDENTIAL MATERIAL
 UNAUTHORIZED DUPLICATION OF ANY OR ALL OF THE MATERIAL CONTAINED HEREIN
 WITHOUT THE EXPRESSED WRITTEN PERMISSION BY CANBERRA CO. IS STRICTLY PROHIBITED

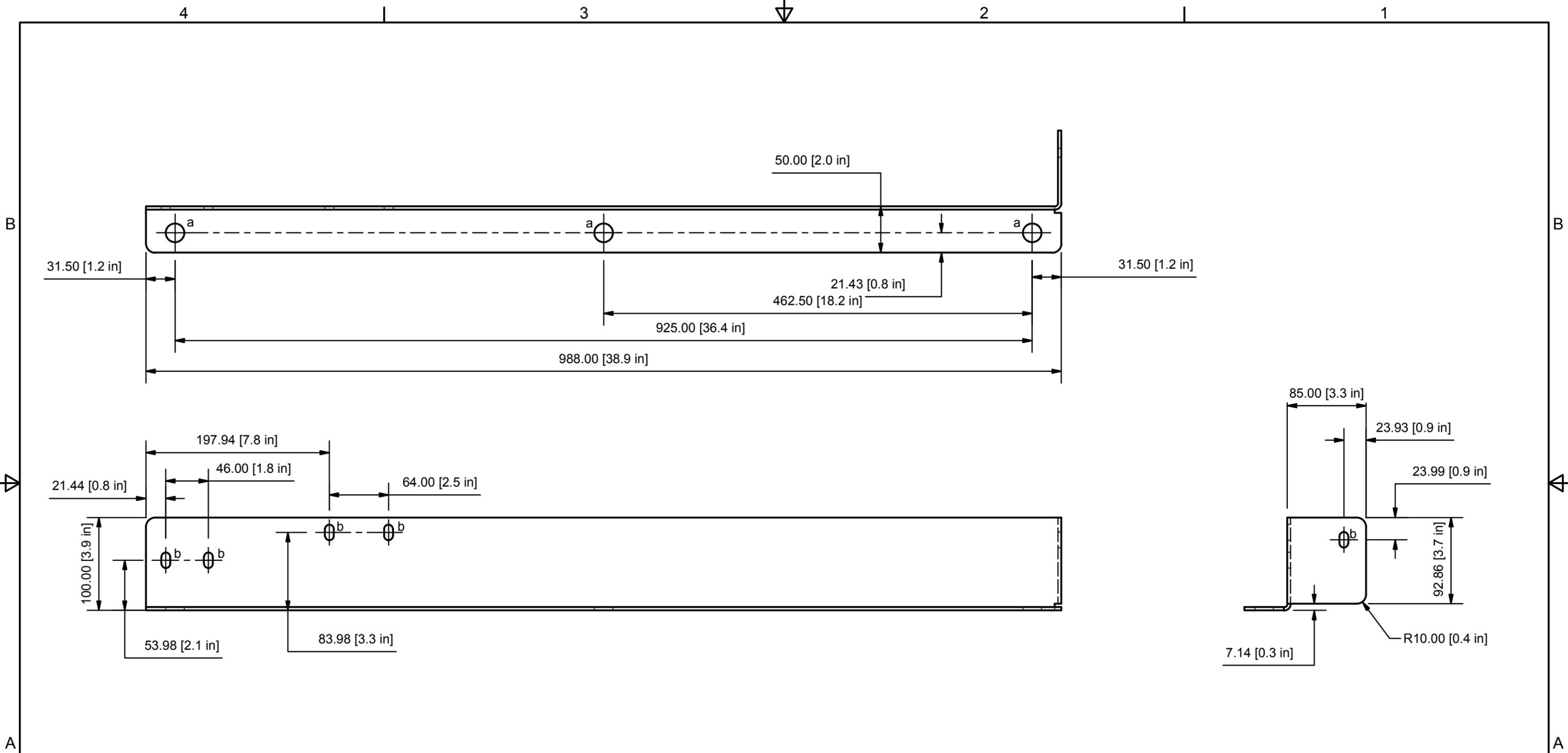


UNLESS OTHERWISE STATED		
DIMENSIONS ARE: <input type="checkbox"/> INCHES <input checked="" type="checkbox"/> mm <input type="checkbox"/> cm		
(IN BRACKETS) <input type="checkbox"/> INCHES <input type="checkbox"/> mm <input type="checkbox"/> cm		
TOLERANCES ARE:		
DEC. INCH	NO DEC mm	ANGLES DEG
.XX ±.020	.X ±0.30	.X°XX' ±0°30'
.XXX ±.005	.XX ±0.15	
MATERIAL: #10 Ga (0.1406") ST-STL		
FINISH: SEE NOTE		

CANBERRA Co.

BASE MOUNTING SUPPORT, ENTRY

DRN amahdessian	4/28/2011	DWG NO/SCN	REV
APP Joe.M.	5/17/2011	7072223	A
SCALE 1:4		SHT 1 OF 1	



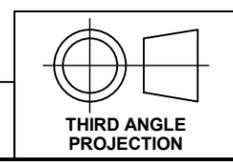
NOTES:

1. REMOVE BURRS & SHARP EDGES
2. REF: UNLESS OTHERWISE STATED DIMENSIONS ARE EXTERNAL

HOLE LEGEND:

- a, Ø20.00 [0.8 in] HOLE, 3 PLCS
- b, 9.53 x 17.03 [0.4 in x 0.7 in] CUTOUT, 5 PLCS

PROPERTY OF CANBERRA Co.
 COMPANY CONFIDENTIAL MATERIAL
 UNAUTHORIZED DUPLICATION OF ANY OR ALL OF THE MATERIAL CONTAINED HEREIN
 WITHOUT THE EXPRESSED WRITTEN PERMISSION BY CANBERRA CO. IS STRICTLY PROHIBITED



UNLESS OTHERWISE STATED		
DIMENSIONS ARE: <input type="checkbox"/> INCHES <input checked="" type="checkbox"/> mm <input type="checkbox"/> cm		
(IN BRACKETS) <input type="checkbox"/> INCHES <input type="checkbox"/> mm <input type="checkbox"/> cm		
TOLERANCES ARE:		
DEC. INCH	NO DEC mm	ANGLES DEG
.XX ±.020	.X ±0.30	.X°XX' ± 0°30'
.XXX ±.005	.XX ±0.15	
MATERIAL: #10 Ga (0.1406") ST-STL		
FINISH: SEE NOTE		

CANBERRA Co.			
BASE MOUNTING SUPPORT, EXIT			
DRN amahdessian	4/28/2011	DWG NO/SCN	REV
APP <i>Joe.M.</i>	5/17/2011	7072224	A
SCALE 1:4		SHT 1 OF 1	