HAMILTON AIR
MODEL HA-33
COMMERCIAL REMOTE
DRIVE-UP

OPERATING INSTRUCTIONS

INSTALLATION & SERVICE INFORMATION

The Hamilton Model HA-33 was designed to accommodate large heavy transactions typically required by commercial customers. It uses 10 inch Diameter steel tubing and tube bends with a centerline radius of 33 inches.
Past units designed by several manufacturers have all been very complicated machines, which were failure prone. Hamilton has designed the HA-33 as a less complicated machine that maintains the ease of operation. In surveying other units it was found that the highest service problems centered on the automatic opening and closing of the carrier. The HA-33 has a manually operated carrier door thereby eliminating dozens of components without compromising usability.
The HA-33 use many components and designs introduced in the reliable HA-1000 drive up unit.

Operation:

The teller station has three operator controls:

1. Teller Send
2. Teller Recall
3. Night Lock

The teller presses the send switch to send the carrier to the customer station. In addition, when the customer door has closed after a three-minute period of no activity, pressing the send button will reopen the customer door and present the carrier to the customer.

The teller can press the recall switch to bring the carrier to the teller station. The teller recall switch will stop the carrier if it is in transit to the customer and return it to the teller station.

The night lock switch is pressed to bring the carrier to the teller station but keeping both the teller door and customer door closed. This switch maintains it position when pressed. To remove the night lock the switch is again pressed (switch button extends out) and the teller door is opened. The send and recall switches on the teller station are disabled when the switch is depressed.

The customer station has two operator controls:

1. Send Carrier
2. Teller Call

The customer presses the Send switch to return the carrier to the teller.

The customer presses the Call switch to ring the teller call tone on the intercom system.

The Customer send and call switch are disabled when the night lock switch is activated.

If either the teller or customer fails to close the carrier door the door will strike a safety plate reopening the door and canceling the send function. The door can be closed and the send button pressed again to resume operation.

Motor run timers
The HA-33 has a maximum run time on each motor to prevent system damage. The system stops if any motor exceeds a preset time. The times exceed the normal time required to operate properly.
Maximum Run Times:

Door Motors	15 seconds
Turbine	60 seconds

After the system shuts down due to maximum run time it can be reset by pressing the teller Send /switch.

Service Information

A Programmable Logic Controller controls the HA 33. Each control switch provides 24 Volts DC to the PLC to signal an event. Door Open; Door Closed; carrier present … etc.
The switches on the HA 33 are as follows

Teller Unit
- Operators Control
  - Teller Send
  - Teller Recall
  - Night Lock
- Operational Control
  - Door Open
  - Door Closed
  - Carrier Present
  - Door Safety

Customer Unit
- Operators Control
  - Customer Send
  - Call Teller
- Operational Control
  - Door Open
  - Door Closed
  - Carrier Present
  - Door Safety

The PLC has an input from each of the above switches. When the switch is operated it signals the PLC and a light corresponding to the input is lighted.
The PLC has outputs to control external devices these outputs are relay closure and when an output is active a corresponding light is lighted
Troubleshooting is greatly aided by observing the input/output lights.
The following is a list of the input and outputs used in the HA 33.

Inputs are numbered 0 thru 10

Input #	Condition when Lighted
0	Teller Send Pressed
1	Customer Send Pressed
2	Teller Recall Pressed
3	Teller Door is closed & Sealed
4	Teller Door is Open
5	Customer Door is Closed & Sealed
6	Customer Door is Open
7	Night Lock Switch is on
8	Teller Door Safety is operated
9	Customer Door Safety is operated
10	Teller Carrier Present switch is operated
11	Customer Carrier Present is operated
12	Teller Call Button Pressed
13	Not Used
14	Not Used
15	Not Used
16	Not Used
17	Input for optional auto door close
18	Factory test only
19	Door test enabled by the switch on teller board

Outputs are numbered 0 through 11

Output #	Operation
0	Mute microphone on turbine run
1	Teller Call Tone to audio matrix
2	Start Vacuum Motor
3	Start Pressure Motor
4	Close Teller Door
5	Open Teller Door
6	Close Teller Door
7	Open Customer Door
8	Close Customer Door
9	Not used
10	Not used
11	Not used

The Control Board in the Customer Unit has the following components installed

Component	Function
Fuse FL1	5 amp slow blow for customer door motor
Motor Contactor M3	Open Customer Door
Motor Capacitor	Run capacitor for Door Motor
Motor Contactor M4	Close Customer Door
Terminal Strip TS2	Door motor connections
Terminal Strip TS3	Interconnect to Teller board (12 position)
Terminal Strip TS4	Audio interconnect to teller board
Terminal Strip TS5	Control Switch common connections

The Turbine Control Panel Located above the Customer Unit

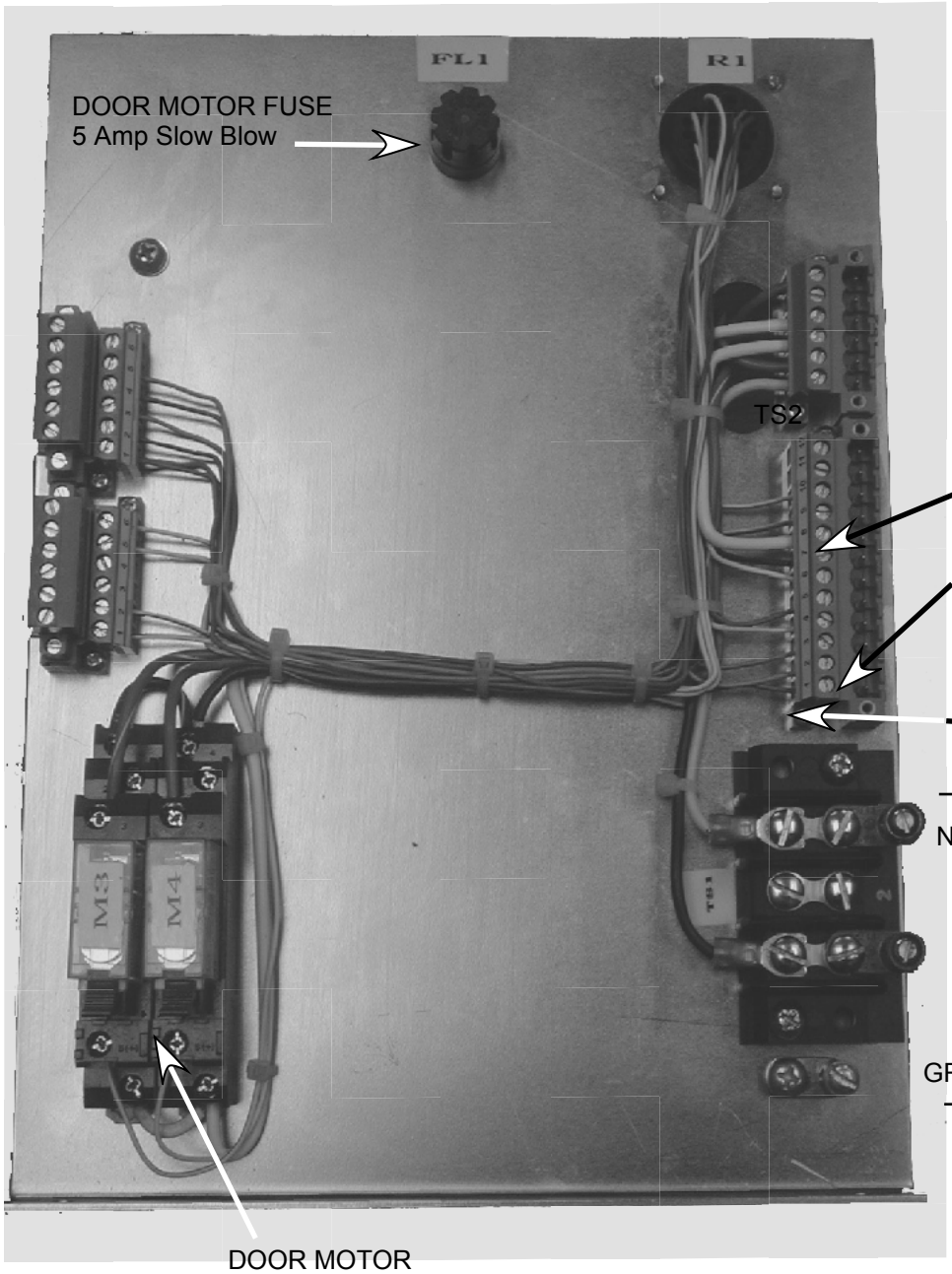
Motor Contactor M1	Vacuum turbine Motors
Motor Contactor M2	Pressure turbine Motors
Fuses F1 thru F4	20 amp slow blow for pressure motors
Turbine Power input terminals	2 circuits of 120 volt 30 amp OR 1 circuit 240 volt 30 amp with neutral

The Control Board in the Teller Unit has the following components installed

24 Volt transformer	Low voltage control power 24 Volts AC for relay coils
Bridge rectifier	24 volt DC for PLC power & Signal for switches to PLC inputs
Motor Contactor M5	Open Teller Door
Motor Capacitor	Run capacitor for Door Motor
Motor Contactor M6	Close Teller Door
Fuse FL2	5 amp slow blow for teller door motor
Fuse FL3	3 amp slow blow for 24 volt power supply
Terminal Strip TS6	Interconnect to Teller board (12 position)
Terminal Strip TS7	Turbine Control

Terminal Strip TS8	Audio interconnect to teller board
Terminal Strip TS9	Door motor connections
Terminal Strip TS10	Control Switch common connections
Terminal Strip TS11	24 Volt transformer connections
Programmable Logic Controller (PLC)	See control board sheet for details.
Switch SW1	Up for door test. Door test turns off Regular program and allows the Teller Send and Teller Recall to open and close teller door. Customer send and Call Teller will open and close Customer door. Down for normal operation

HA-33 Customer unit control board



DOOR MOTOR FUSE
5 Amp Slow Blow

TS5

TS4

TS2

INTERCONNECT
TERMINAL STRIP
12 POSITION (TS3)

CONNECT TO TELLER
UNIT WITH MULTI
CONDUCTOR CABLE
1 TO 1, 2 TO 2, 3 TO 3
4 TO 4 .....etc

TERMINAL #1

Loosen this screw
(2 places) to remove
terminal strip
for ease of wiring

NEUTRAL

HOT

GROUND

TS1
AC POWER
INPUT
120 VAC
5 Amp

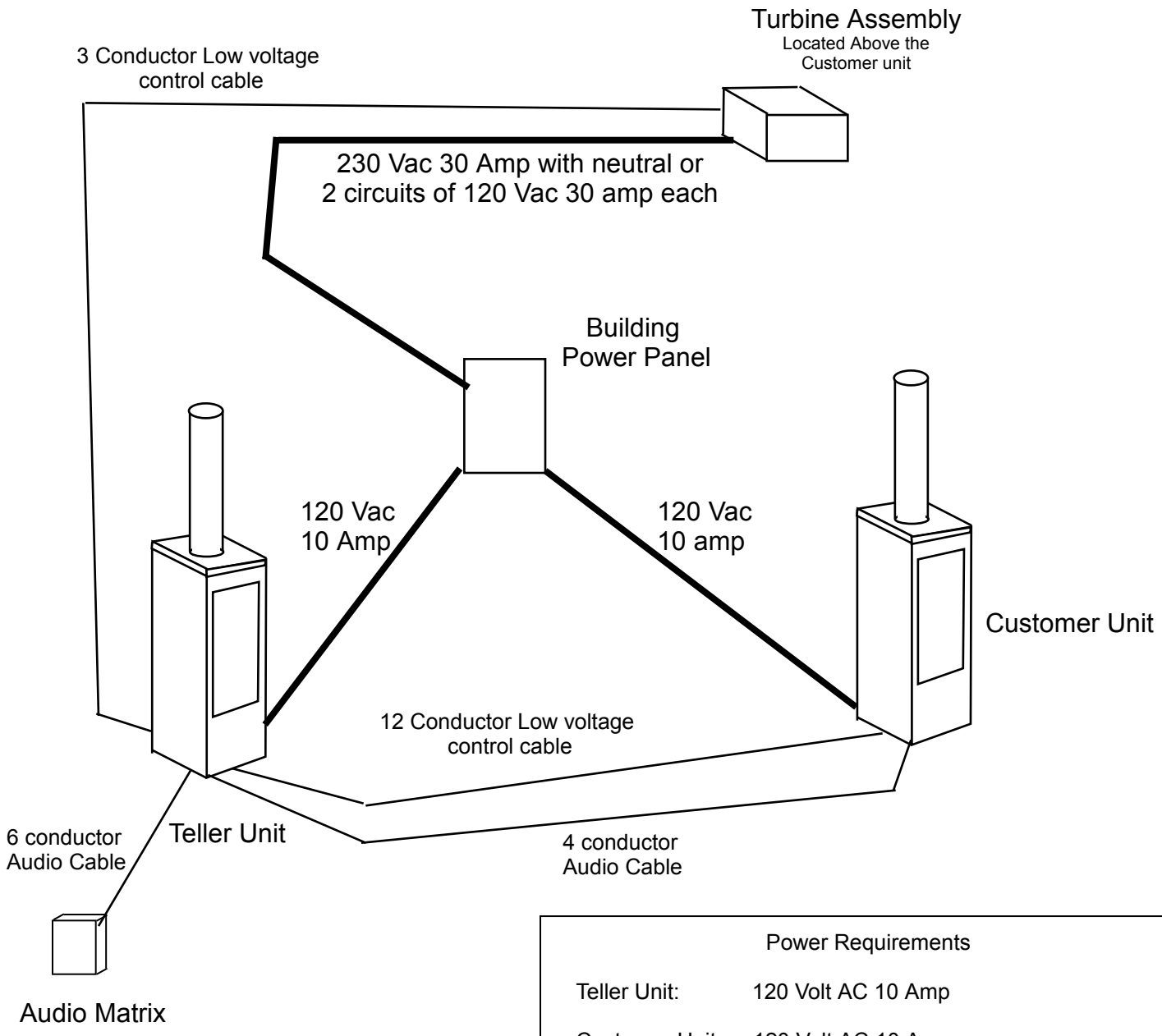
DOOR MOTOR
CONTROL RELAYS

Audio Terminal Strip
6.Speaker
5.Speaker
4.no connection*
3.no connection*
2.Microphone Ground
1.Microphone Signal

Connect Audio cable from this terminal
to the Audio Strip in the Teller Unit
*Do not connect to terminals 3&4

11/10/00

Customer Field Wiring.cnv



Power Requirements	
Teller Unit:	120 Volt AC 10 Amp
Customer Unit:	120 Volt AC 10 Amp
Turbine Unit:	2 Circuits 120 Volt AC 30 Amp each or 1 circuit 230 Volts AC 30 Amp with neutral

Low Voltage & Audio Cables

1 each 12 conductor 18 ga control

1 each 3 conductor 18 ga control

1 each 6 conductor Audio

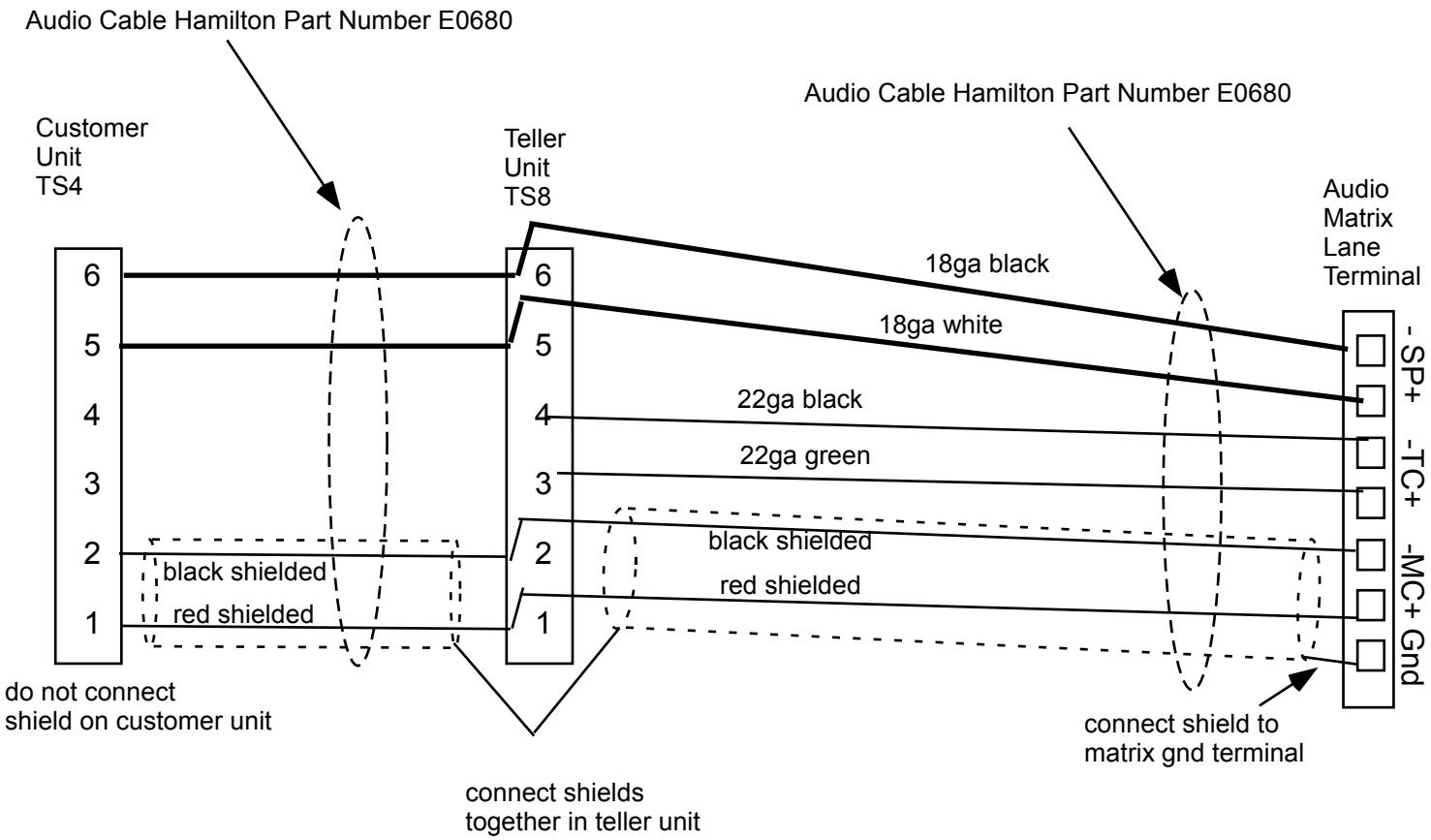
1 each 4 conductor Audio*

* use 4 conductors of a 6 conductor cable

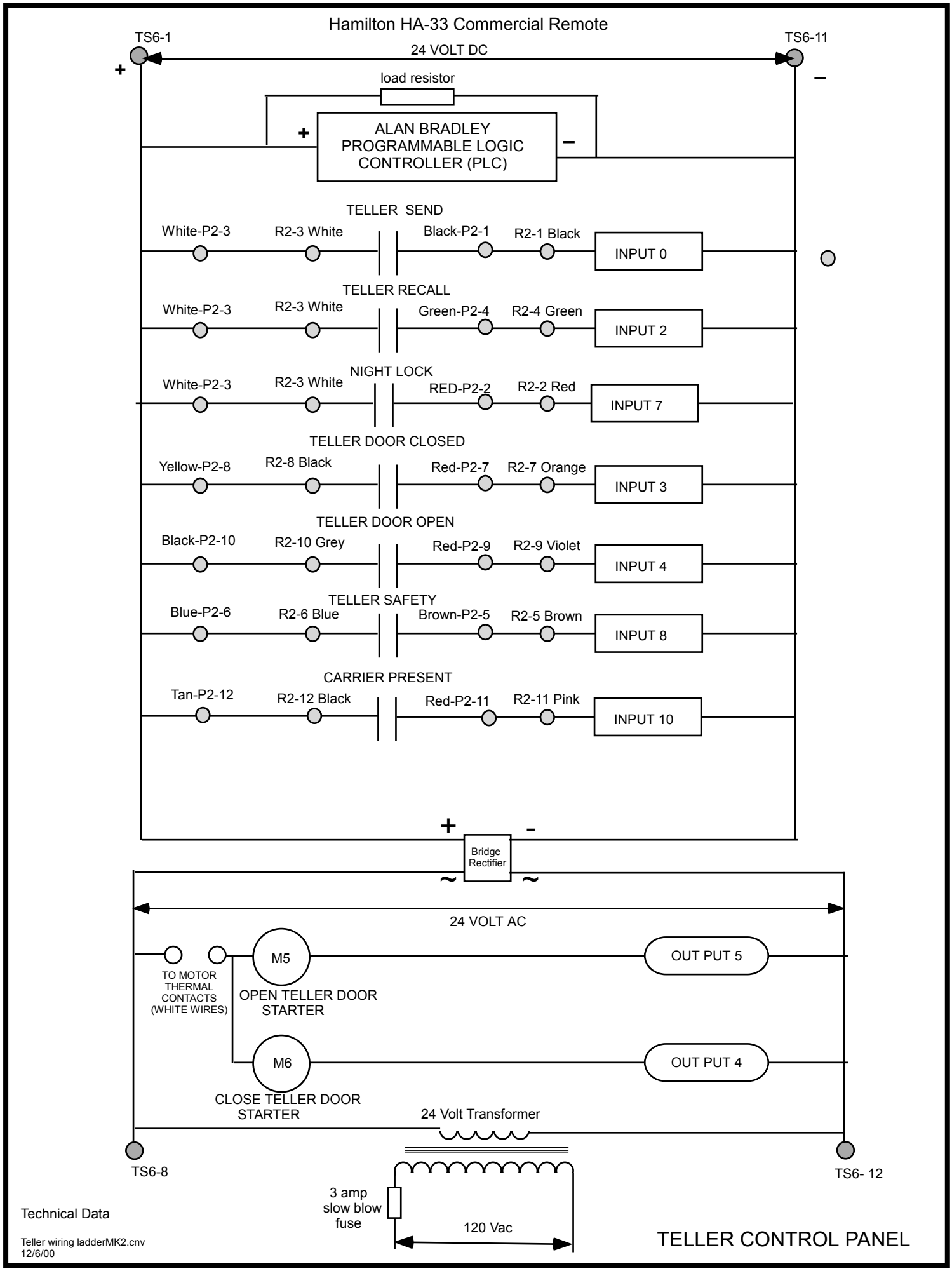
11/14/00

HA-33 Power and Cable Details

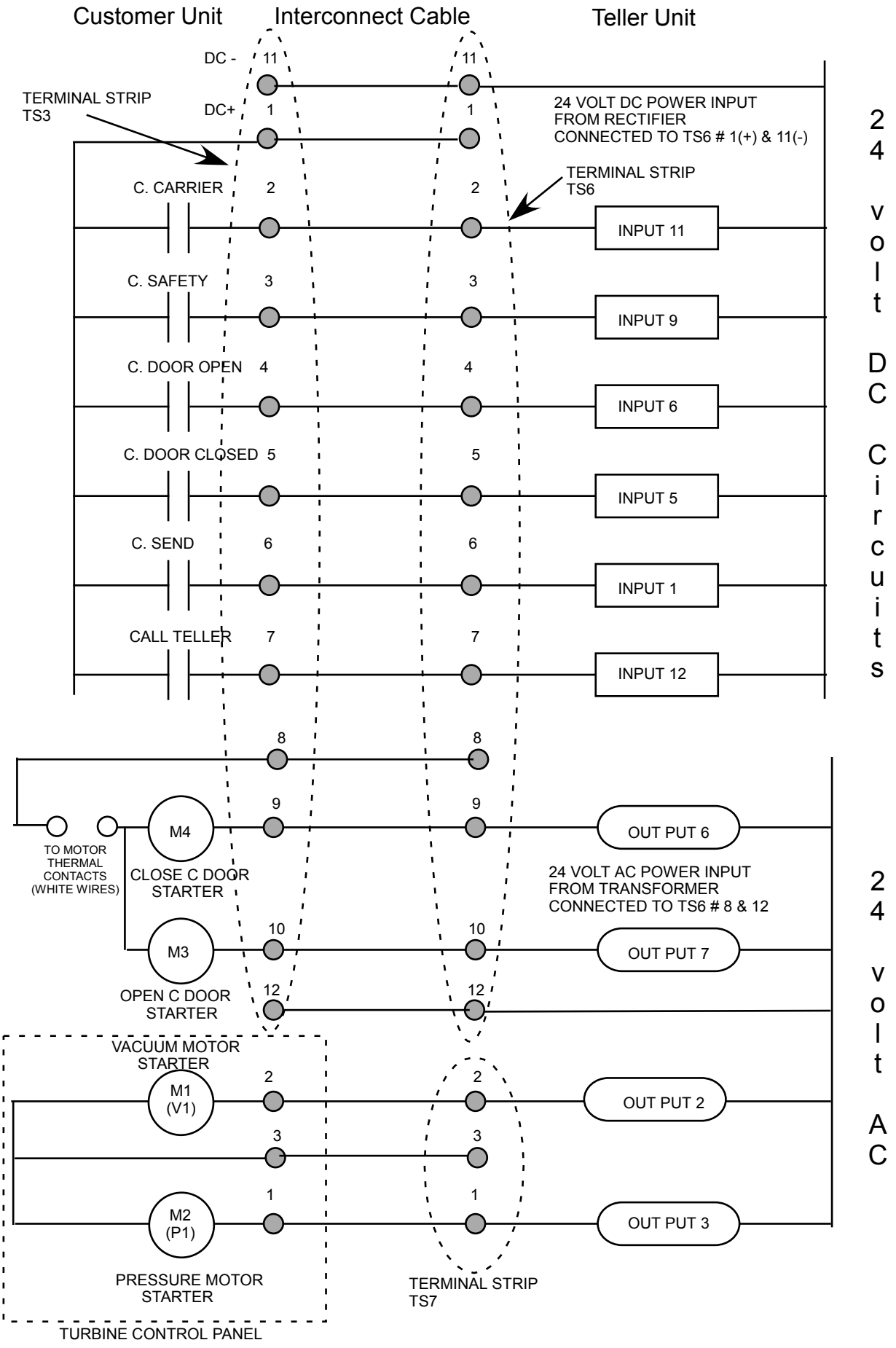
33 power & cable.cnv



Audio Cable Connections
HA-33

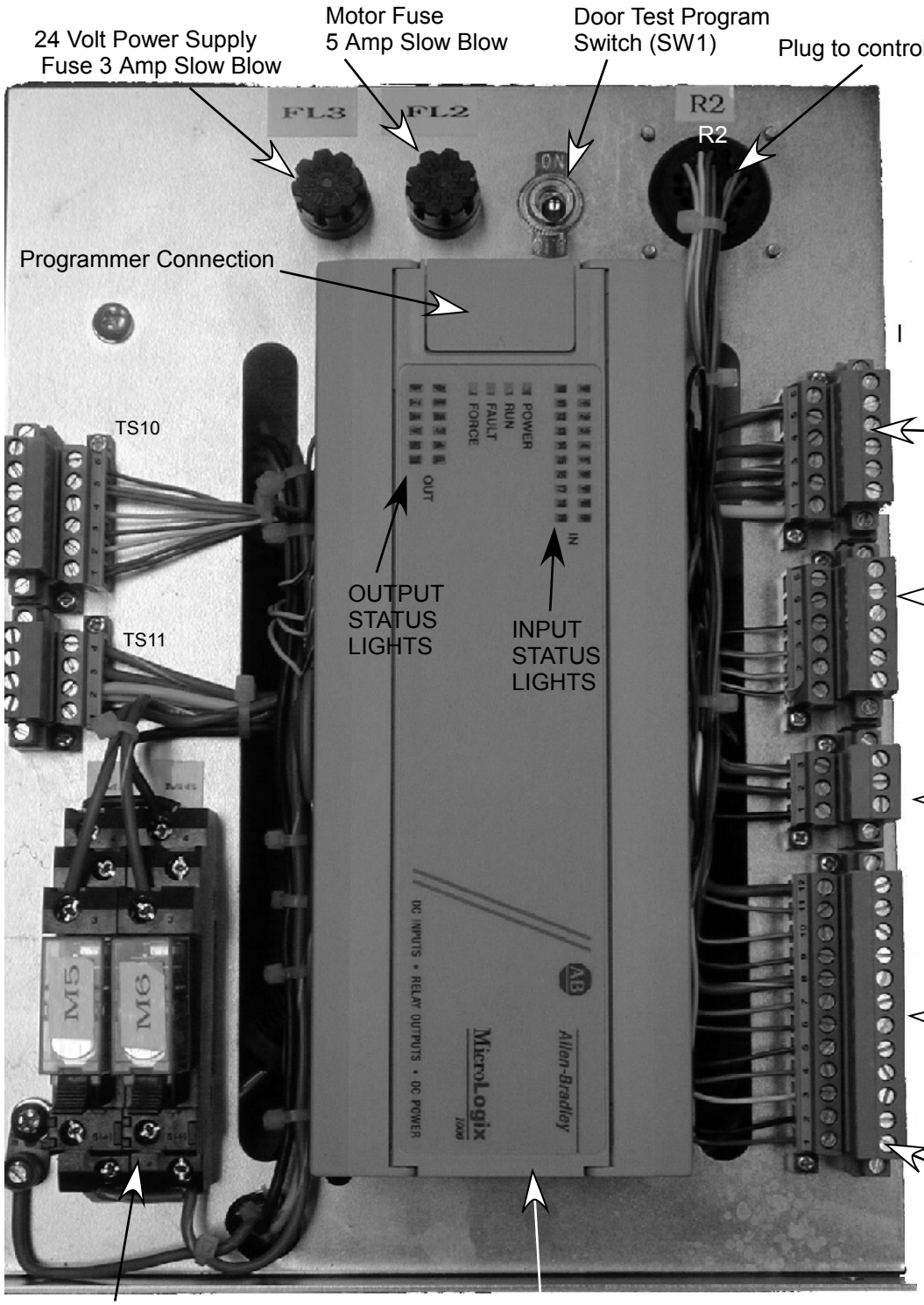

Hamilton HA-33 Commercial Remote
TS6-1
TS6-11
24 VOLT DC
+
–
load resistor
+
ALAN BRADLEY
PROGRAMMABLE LOGIC
CONTROLLER (PLC)
–
TELLER SEND
White-P2-3
R2-3 White
Black-P2-1
R2-1 Black
INPUT 0
TELLER RECALL
White-P2-3
R2-3 White
Green-P2-4
R2-4 Green
INPUT 2
NIGHT LOCK
White-P2-3
R2-3 White
RED-P2-2
R2-2 Red
INPUT 7
TELLER DOOR CLOSED
Yellow-P2-8
R2-8 Black
Red-P2-7
R2-7 Orange
INPUT 3
TELLER DOOR OPEN
Black-P2-10
R2-10 Grey
Red-P2-9
R2-9 Violet
INPUT 4
TELLER SAFETY
Blue-P2-6
R2-6 Blue
Brown-P2-5
R2-5 Brown
INPUT 8
CARRIER PRESENT
Tan-P2-12
R2-12 Black
Red-P2-11
R2-11 Pink
INPUT 10
+
-
Bridge
Rectifier
~
~
24 VOLT AC
M5
OUT PUT 5
TO MOTOR
THERMAL
CONTACTS
(WHITE WIRES)
OPEN TELLER DOOR
STARTER
M6
OUT PUT 4
CLOSE TELLER DOOR
STARTER
24 Volt Transformer
TS6-8
TS6- 12
3 amp
slow blow
fuse
120 Vac
Technical Data
Teller wiring ladderMK2.cnv
12/6/00
TELLER CONTROL PANEL

Hamilton HA-33 Commercial Remote



Wiring tree.cnv

HA33 TELLER UNIT CONTROL BOARD



* Audio Connections:

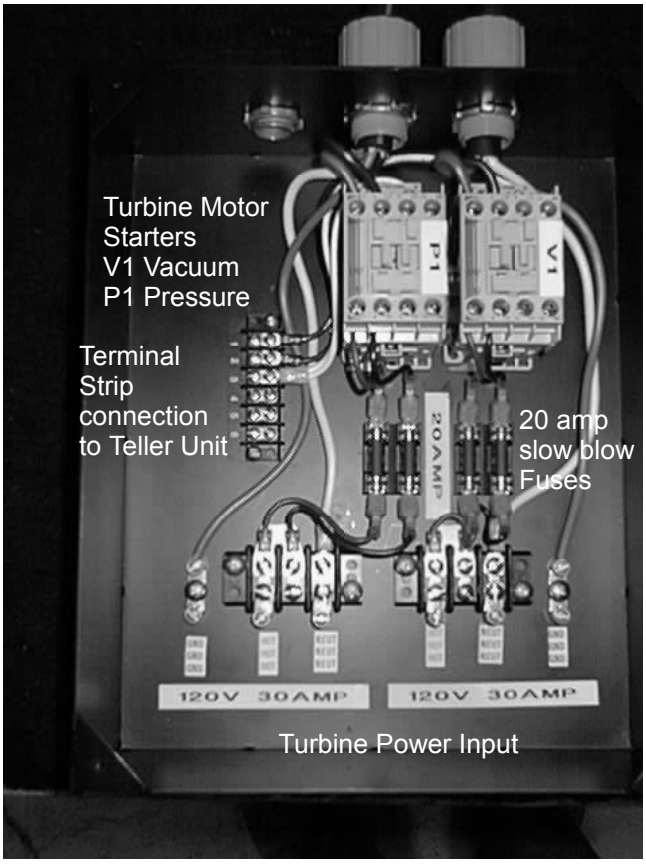
1. Run a Audio cable from the teller unit to the customer unit. This cable will will be for the customer speaker and microphone. Note: The call button is not connected to the customer unit. See the notes on each terminal strip

2. Run a 6 conductor Audio cable from the Teller Unit to the audio Matrix. Note the call button is connected from the teller to the matrix.

PLC CONTROL UNIT STATUS LIGHTS

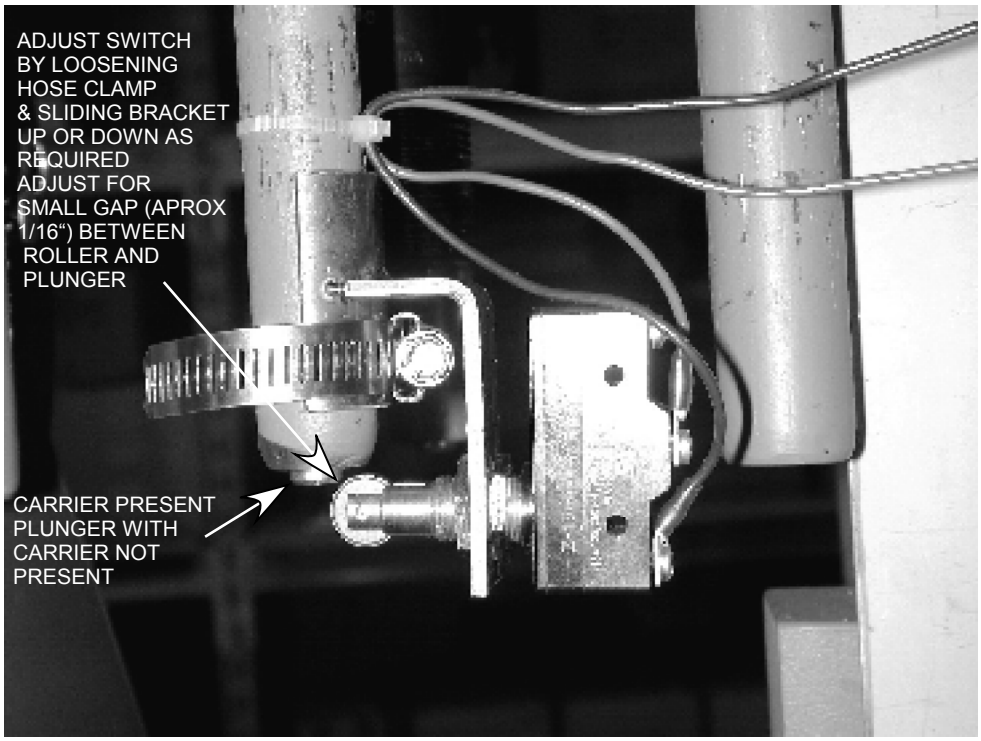
INPUT	OUTPUT
0 Teller Send	0 Microphone muted
1 Customer Send Button	1 Teller Call Out to Matrix
2 Teller Recall Button	2 Vacuum Motor
3 Teller Door is closed	3 Pressure Motor
4 Teller Door is open	4 Close Teller Door
5 Customer door is closed	5 Open Teller Door
6 Customer door is open	6 Close customer door
7 Night Lock switch	7 Open Customer door
8. Teller door safety	
9 Customer door safety	
10 Carrier in Teller unit	
11 Carrier in Customer Unit	
12 Teller Call button	
13 through 16 not used	
17 Enable customer door auto close	
18 Test Mode(for factory test use only)	
19 Door test program switch	

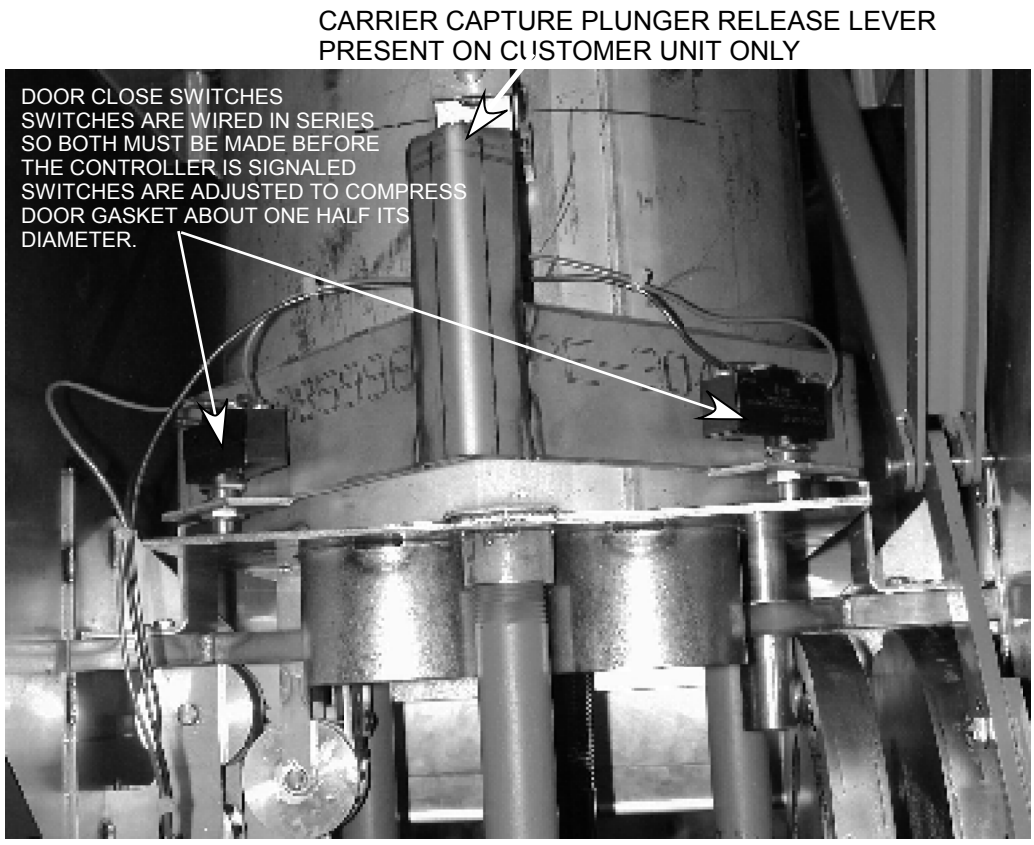
HA-33 Mark 2
Turbine Control Panel



Note: In Vacuum mode (Teller Send) the Vacuum motor starter V1 pulls in first followed one second later by the pressure motor starter P1.

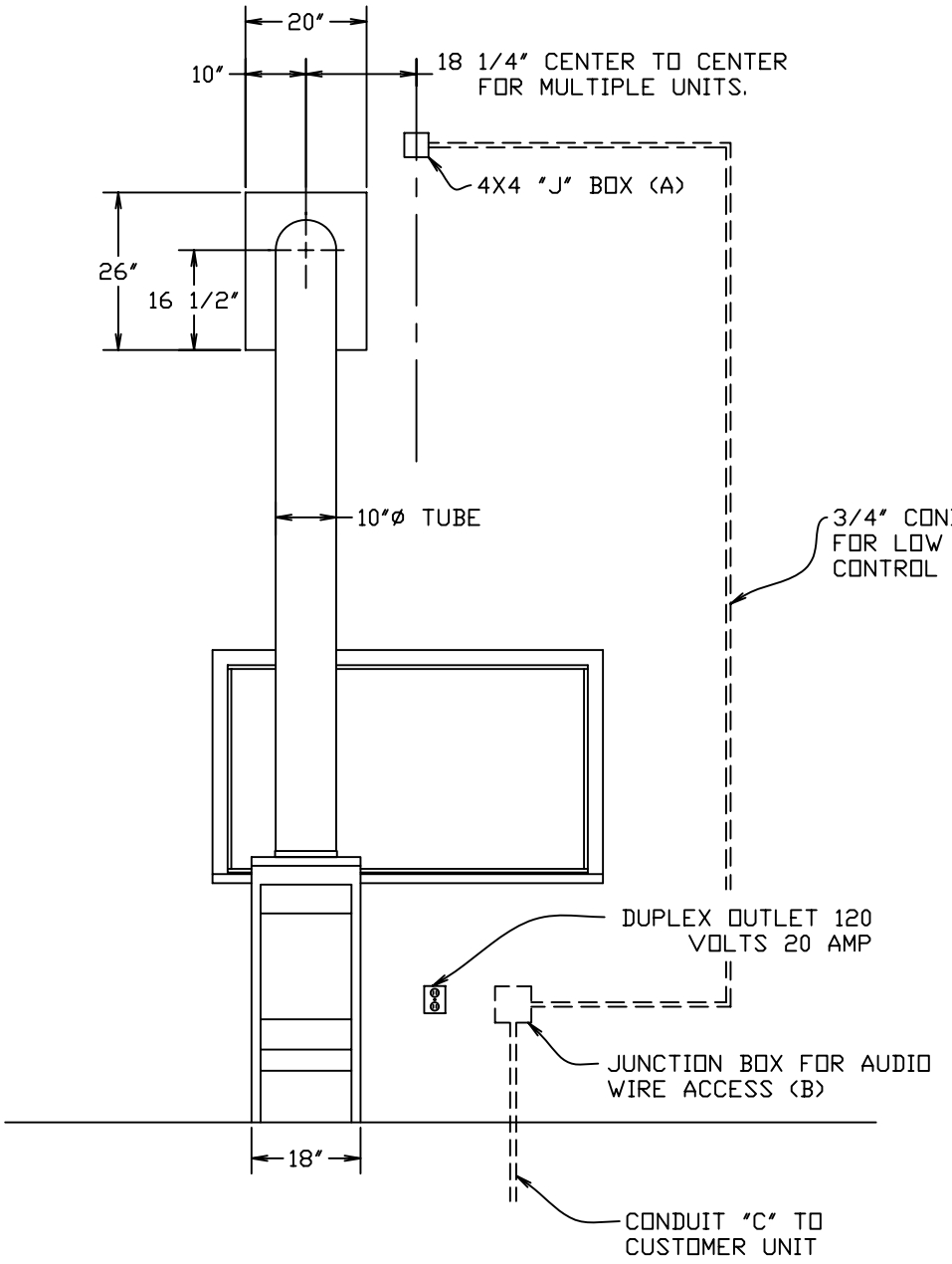
In pressure mode (Customer send) the pressure motor starter pulls in first followed one second later by the vacuum motor starter.



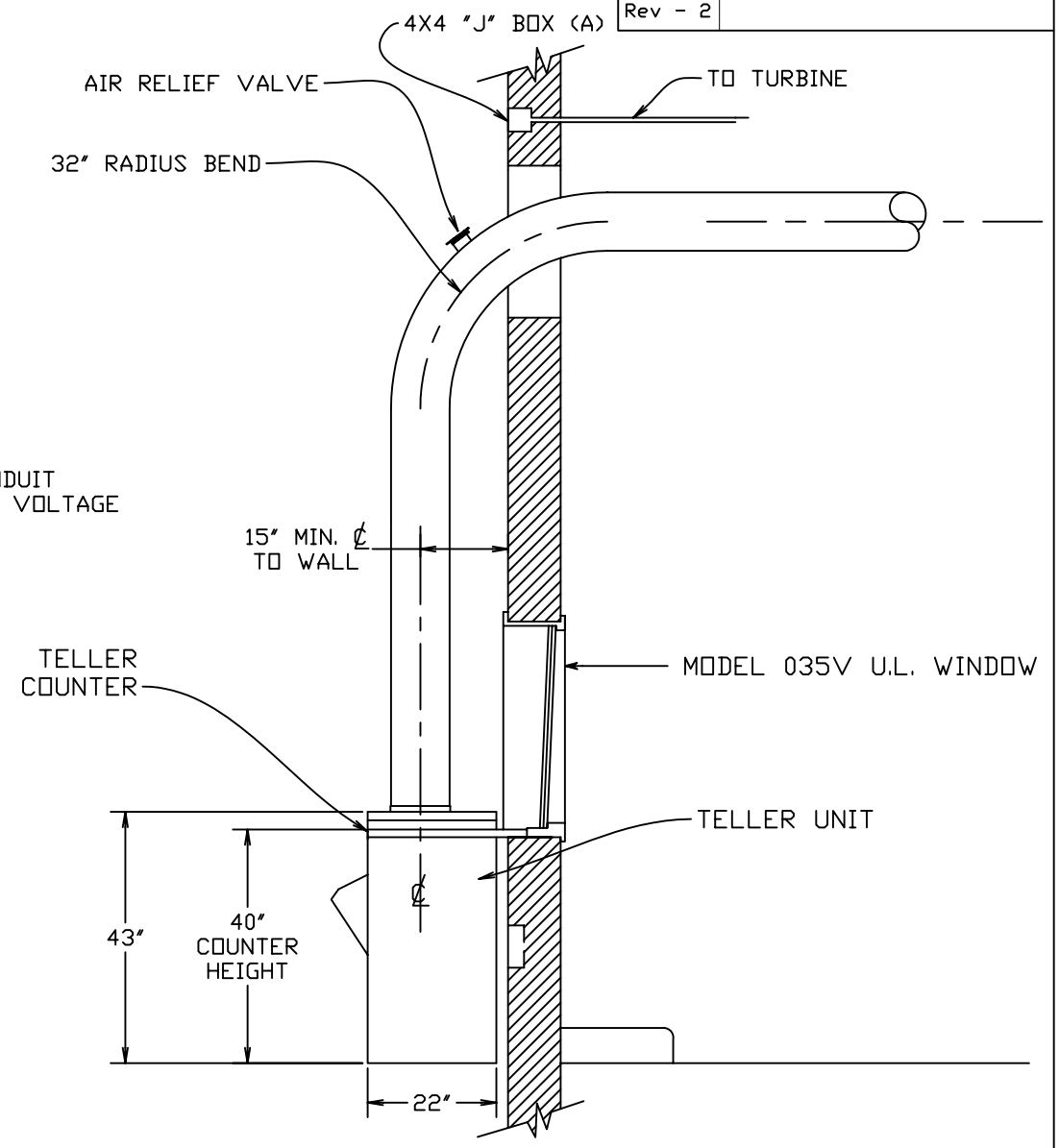


DOOR CLOSED AND CARRIER ARRIVAL SWITCHES

Rev - 1	6/19/00 MOVED TURBINE
Rev - 2	



INTERIOR ELEVATION

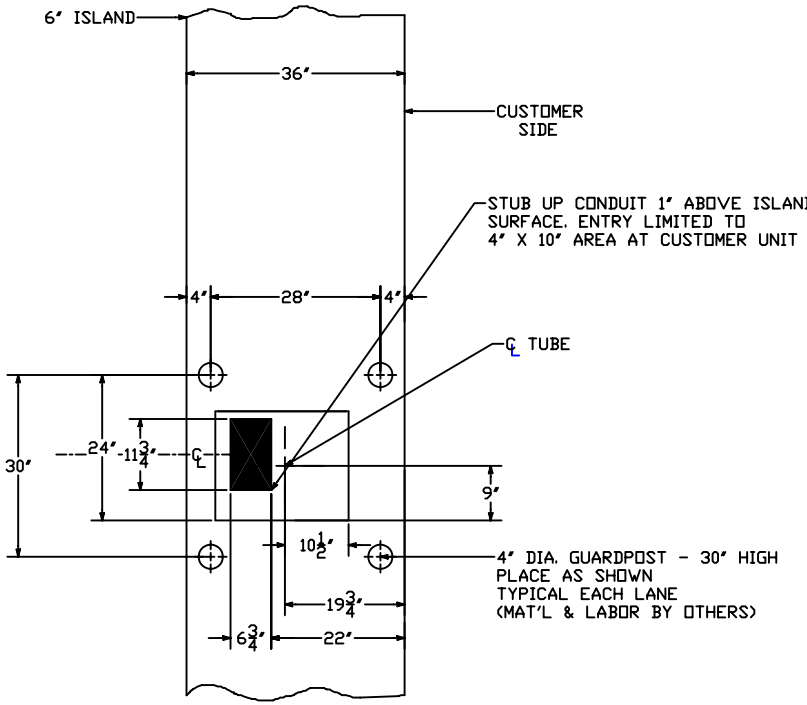


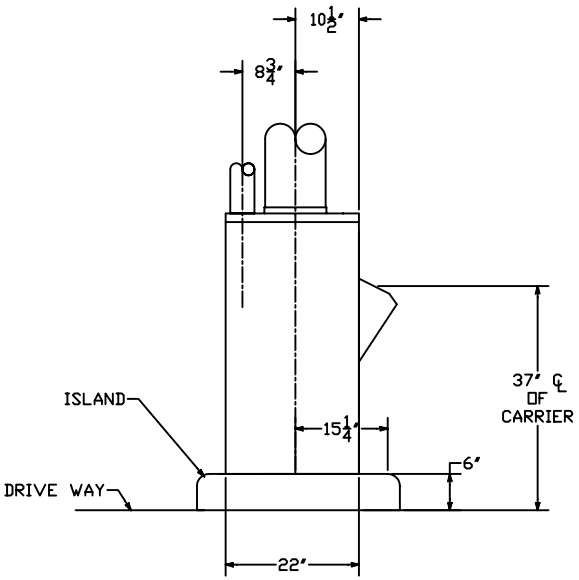
SECTION

HAMILTON AIR

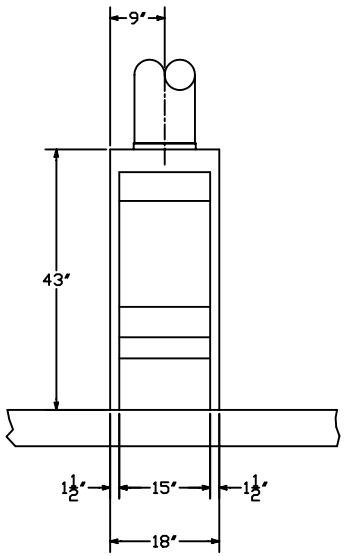
MODEL HA-33
UPSEND TELLER UNIT
(10″ TUBE SYSTEM)

Drawing Number : 99-722	Date : 1/28/00

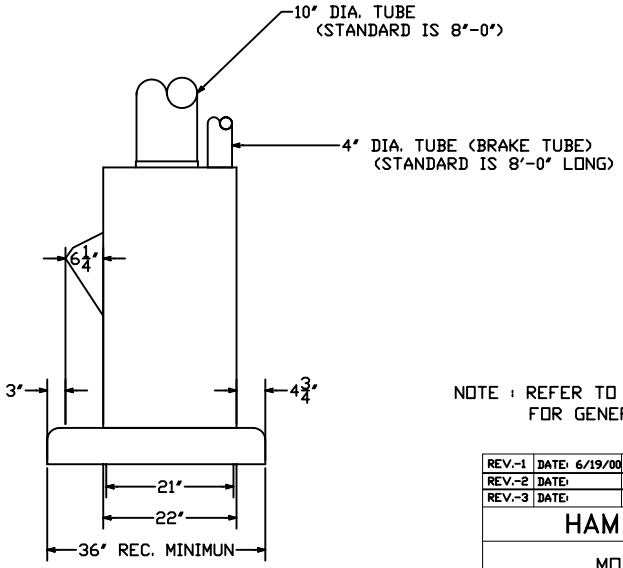




LEFT SIDE ELEVATION



FRONT ELEVATION



RIGHT SIDE ELEVATION

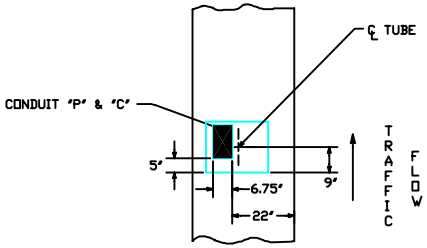
NOTE : REFER TO DRAWING No 99-719 FOR GENERAL SPECIFICATIONS.

REV.-1	DATE: 6/19/00	MOVED TURBINE PLACEMENT
REV.-2	DATE:	
REV.-3	DATE:	

HAMILTON AIR

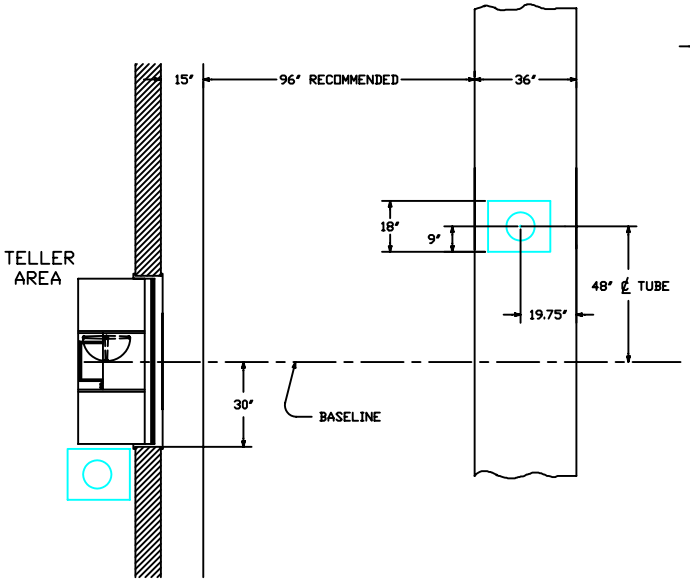
MODEL HA-33
UPSEND CUSTOMER UNIT
(10" TUBE SYSTEM)

Drawing Number : 99-721 | Date : 11-9-99

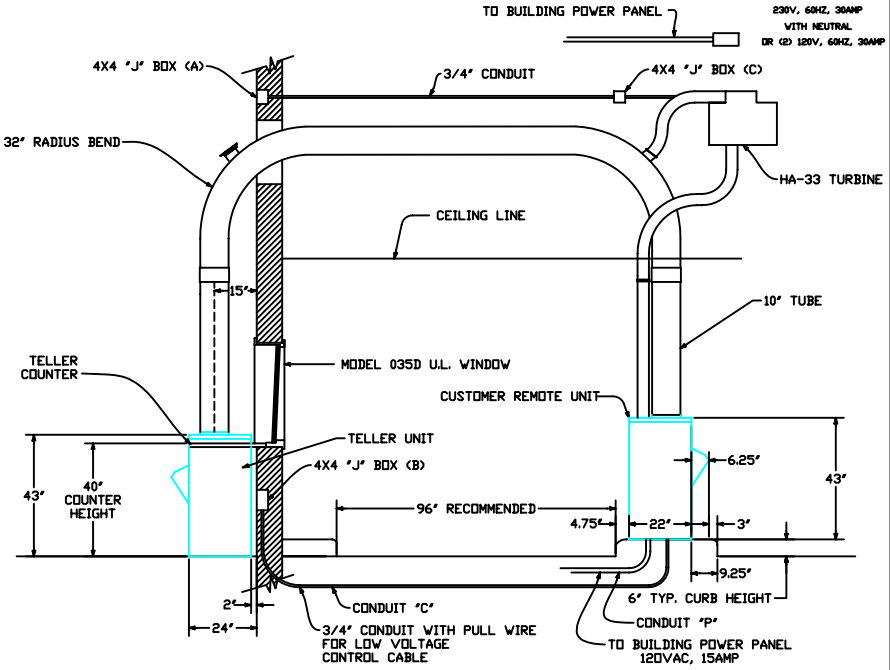


ISLAND DETAIL

(REFERENCE DRAWING NUMBER # 99-721)



PLAN



(REFERENCE DRAWING NUMBER # 99-719)

SECTION

CONDUIT REQUIRMENTS

1 - 3/4' WITH PULL WIRE FROM A TO C IN CANOPY

1 - 3/4' TO BUILDING POWER PANEL (230V AC 30AMP)

1 - 3/4' FROM A TO B (TELLER STATION)

1 - 3/4' FROM B TO CUSTOMER UNIT (UNDERGROUND) (CONDUIT C)

1 - 3/4' FROM CUSTOMER UNIT TO BUILDING POWER (CONDUIT P) 120V AC 15AMP

REV.-1	DATE: 6/19/00	MOVED TURBINE PLACEMENT
REV.-2	DATE: 10/4/00	ADDED NOTE
REV.-3	DATE:	

HAMILTON AIR

MODEL HA-33
111 SYSTEM - UPSEND
(10' TUBE SYSTEM)

Drawing Number : 99-720 | Date : 11-9-99