Model 910

Operation, Maintenance, and Installation Manual

ComCo Systems
INNOVATION AT WORK

OPERATOR INSTRUCTIONS

MODEL910
REMOTE TELLER SYSTEM

BY

ComCo Systems

I SYSTEM DESCRIPTION

The Model 910 Remote Teller System is an underground pressure/vacuum system which utilizes a 4" x 7" tube system and carrier. The carrier travels from the teller unit to the customer unit under vacuum and returns under pressure. The blowers are located in the customer unit.

The carrier travels under pressure or vacuum until it reaches and activates a "carrier arrival photosensor". This action causes the blowers to be turned off, and the carrier settles onto a carrier catch. The carrier access door also opens at the terminal that received the carrier.

Each unit incorporates a carrier catch which is spring loaded to allow the carrier to push past the catch coming into the unit. The catch then springs back into the catch position to prevent the carrier from falling back down into the transmission tube. A motor driven cam is used to move the carrier catch out of the transmission tube. This allows the carrier to drop into the transmission tube at the start of any send cycle.

The carrier "settles" in a tip tube, which is connected to the unit door. When the door opens, the tip tube is rotated outward toward the user for presentation of the carrier.

II THEORY OF OPERATION

Power ON/OFF:

The power switch in the middle of the teller unit control is the ON/OFF power switch. The switch is a rocker "ON/OFF" type. A power ON indicator illuminates when power is applied.

Pressing the POWER switch applies power to the system and turns the power indicator lamp on. If closed, the teller unit door will open.

Turning power off will cause both the teller and customer unit doors to close (for night time shutdown).

The power switch may be used to recover from unusual operating circumstances just by turning power OFF and back ON again.

SEND:

The SEND switch on the teller unit initiates the send cycle to transport a carrier from the teller unit to the customer unit. The Send LED is illuminated when the system is in the Send cycle. When the Send switch is pressed the teller door closes, the carrier release motor activates and the carrier drops into the tube. Two seconds after the Send switch is pressed (door close time), the vacuum blowers turn on at the customer unit and draws the carrier through the tube into the customer unit.

The carrier interrupts the carrier arrival photosensor, which turns the vacuum blowers off. The carrier settles onto the carrier catch and the customer unit door opens.

The send function incorporates a preset timer which will turn the vacuum blower off if the carrier does not reach the carrier arrival photosensor in a pre-determined time period. The customer unit door opens at the end of the timer time out.

RECALL:

The RECALL switch on the teller unit initiates a Recall cycle. The Recall LED is illuminated when the system is in a Recall cycle. This function is provided to enable the teller to "recall" a carrier from the customer unit. Also, when the customer unit send switch is pressed, the system enters the Recall cycle.

The recall function may also be required to clear a carrier from a 4" x 7" transmission tube or from the customer unit in the event of a problem. When the recall switch is pressed, the customer door will close (if it is open), the carrier release motor will activate and the pressure blower will turn on. The carrier will drop into the tube and be driven to the teller unit.

The carrier interrupts the carrier arrival photosensor in the teller unit, which turns the pressure blower off. The carrier drops onto the carrier catch and the teller unit door opens.

The recall function incorporates a preset timer which will turn the pressure blower off if the carrier does not reach the carrier arrival photosensor in a pre-determined time period. The teller unit door opens at the end of the timer time out.

OPEN/CLOSE

The Open and Close switches control the door on the customer unit. The teller unit door responds just the opposite to the customer unit door. This control function is required to allow the teller to (1) send a carrier to the customer unit if a customer happens to drive off with a carrier or (2) close the customer unit door for any other reason.

The Open and Close switches may need to be cycled when trying to clear a problem with carrier transmission into the teller unit.

CARRIERS:

Proper operation of the system requires that the carrier latch be securely fastened prior to being inserted into the teller or customer unit. If the carrier is not securely latched, it may open during transmission and cause faulty operation of the system upon its arrival at the teller or customer unit.

Coins (including rolled coins) should be in a bag for transfer between units. Tellers should advise customers against overloading the carrier or sending coins without bags. Also, all contents of the carrier must be fully within the carrier and not caught between the top and bottom edges of the carrier. Multiple carrier transmissions should be used if larger quantities of coin or bills must be transferred between units.

CUSTOMER UNIT SWITCHES:

Two switches are located on the panel of the customer unit. One is a CALL switch and the other is a SEND switch.

CALL:

The CALL switch is connected to the audio system and alerts the teller that the customer has a question or request.

SEND:

The SEND switch on the customer unit is used by the customer to initiate a carrier send function from the customer unit. The carrier should be inserted in the customer unit before the customer Send switch is pressed. When the customer Send switch is pressed, the system responds as defined in the RECALL section above.

SAFETY ACTUATOR SWITCHES:

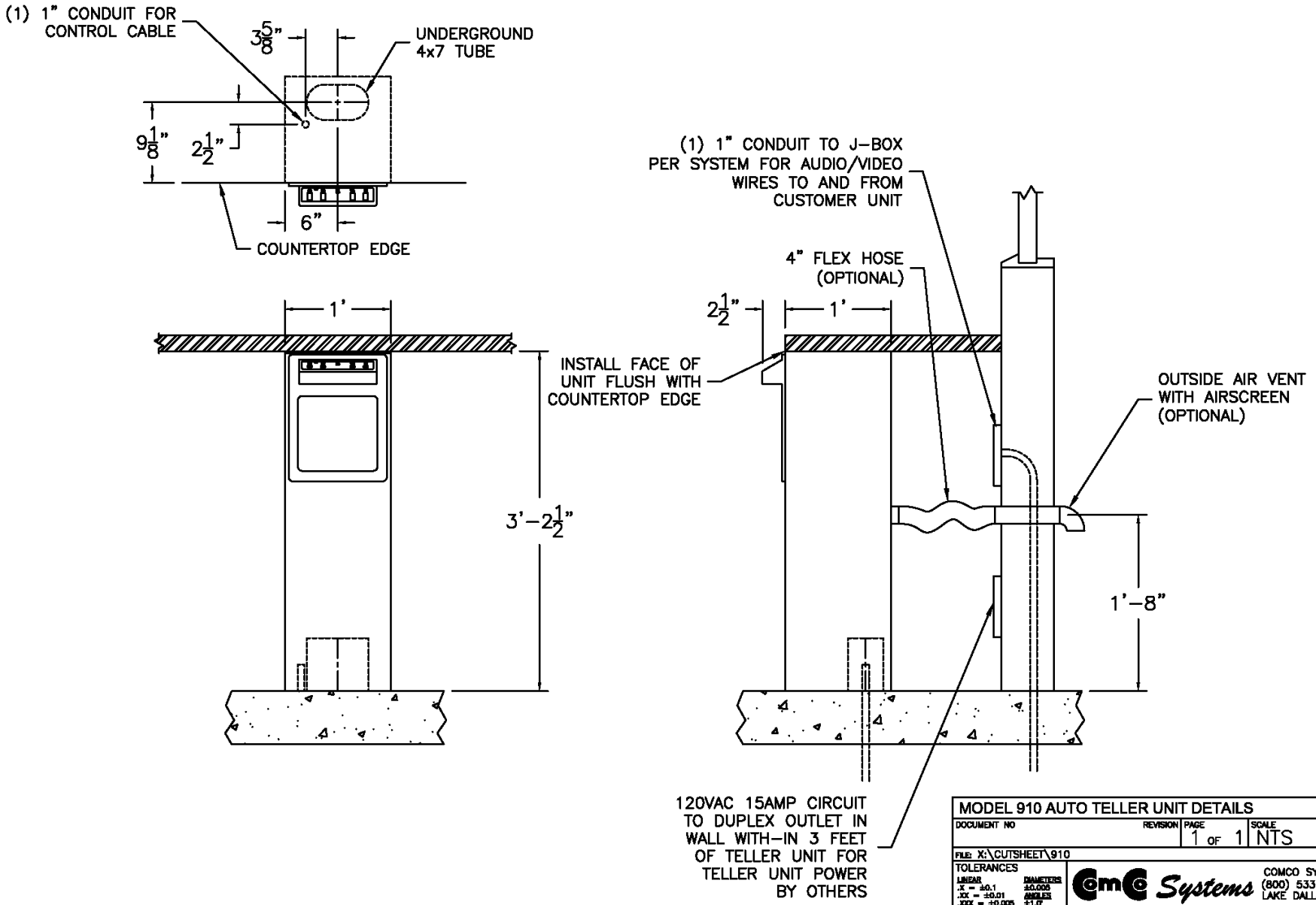
A safety switch actuator is located at the top of both the teller and customer unit door openings. If, during the door closing sequence, the safety actuator is raised, safety switches will be activated, and the door closing action will automatically be reversed. On the teller unit, when the safety switches are cleared, the door closing sequence will resume. The customer unit door will remain open until the customer Send switch is pressed again. This is a safety feature to protect personnel from having fingers caught in the door upon closing.

DOCUMENTATION:

Cut sheets are attached which define the installation requirements for the system, including power requirements and other signal cable requirements.

Wiring Diagram number 500264 defines the field wiring from the customer unit to the teller unit.

Document number 500356 defines the adjustments to the 521K controller.



MODEL 910 AUTO TELLER UNIT DETAILS

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
		1 OF 1	NTS	A

FILE: X:\CUTSHEET\910

TOLERANCES
LINEAR .X = ±0.1 .XX = ±0.01 .XXX = ±0.005
DIAMETERS ±0.005
ANGLES ±1.0°

THIRD ANGLE PROJECTION

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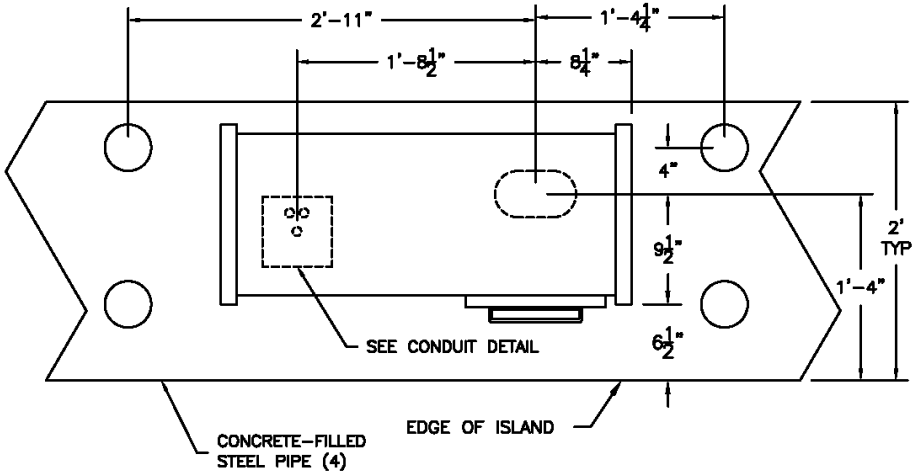
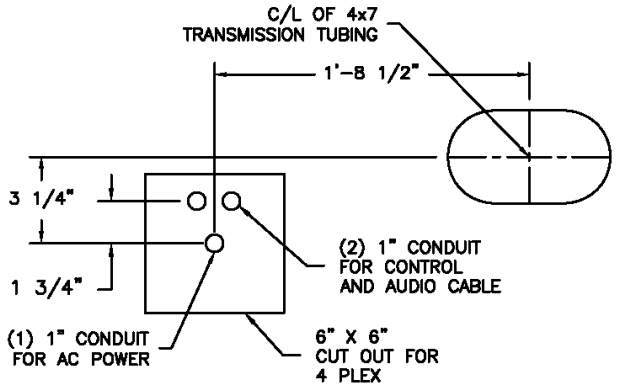
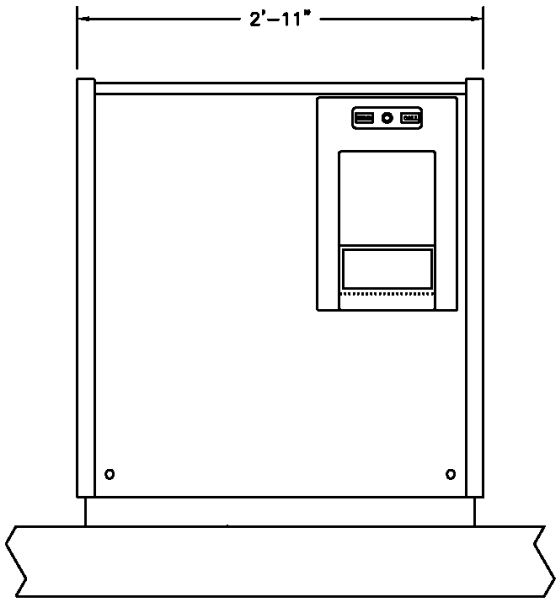
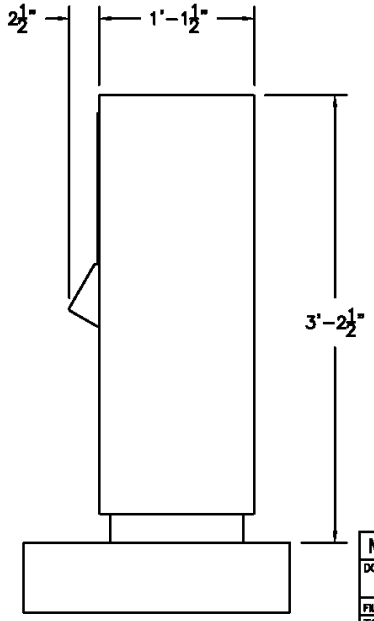




CONDUIT DETAIL

(4x) DEDICATED 120VAC 20 AMP SERVICE TO 4-PLEX OUTLET WITHIN UNIT REQUIRED (BY OTHERS)





MODEL 910 CUSTOMER UNIT DETAILS

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
		1 OF 1	NTS	A

FILE: X:\CUTSHEET\910

TOLERANCES
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DIAMETERS ±0.005
ANGLES ±1.0°

THIRD ANGLE PROJECTION

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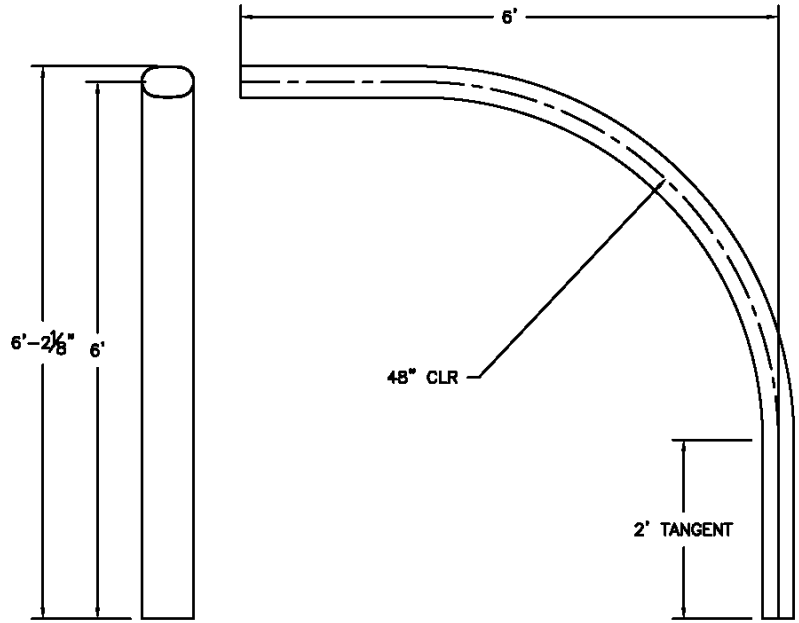
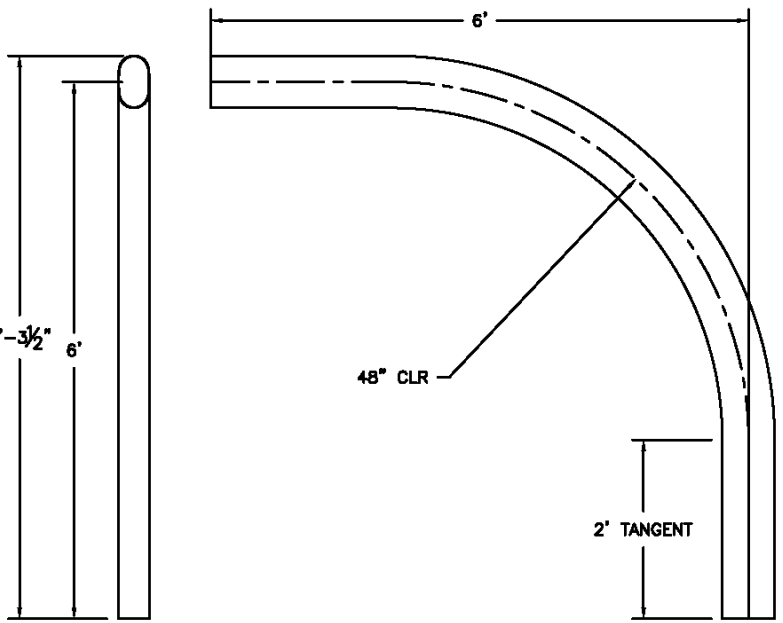


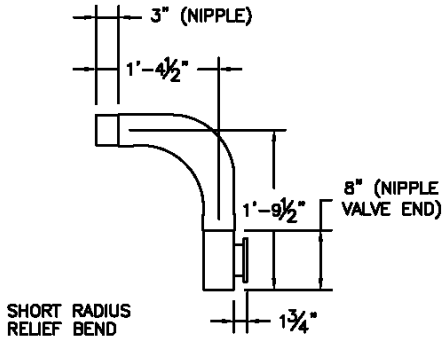
STANDARD "FLAT" BEND

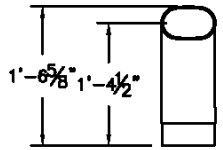
STANDARD VERTICAL BEND FOR CHANGES IN ELEVATION

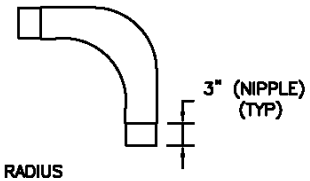


STANDARD "EDGE" BEND

STANDARD HORIZONTAL BEND FOR LATERAL TURNS

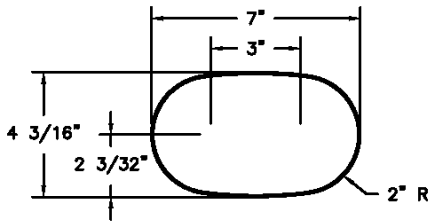






SHORT-RADIUS "FLAT" BENDS

FOR 900 SYSTEMS ONLY



4x7 TUBING SECTION

NOT TO SCALE

MODEL 900/910 PNEUMATIC TUBE STANDARD BENDS DETAIL

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DATE	SCALE	DRAWN	APPROVED	DRAWING #
12-11-98	1/2"=1'	EOS		0900052

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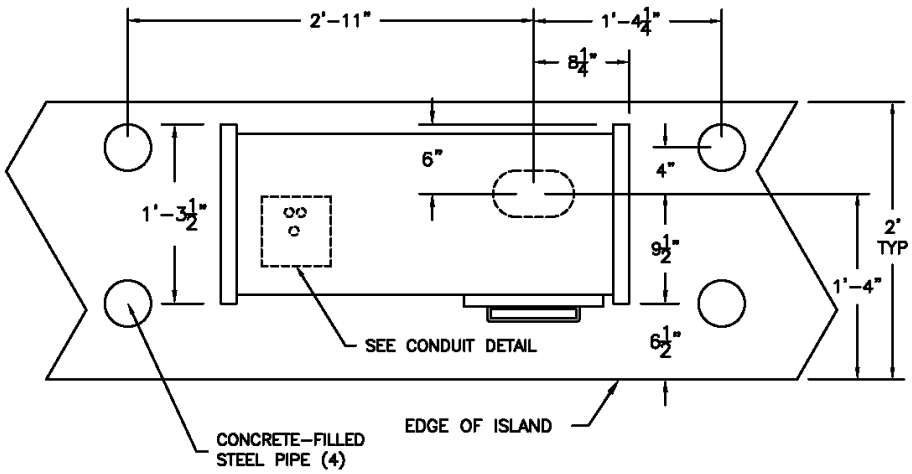

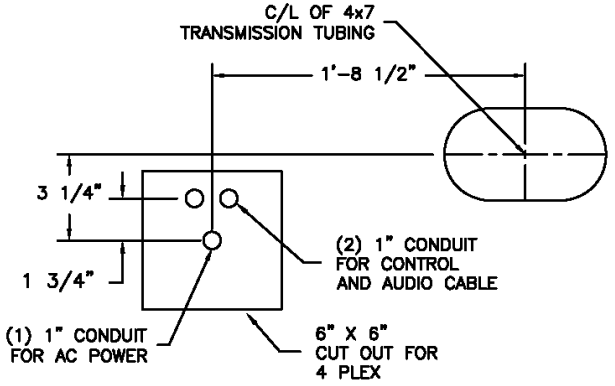

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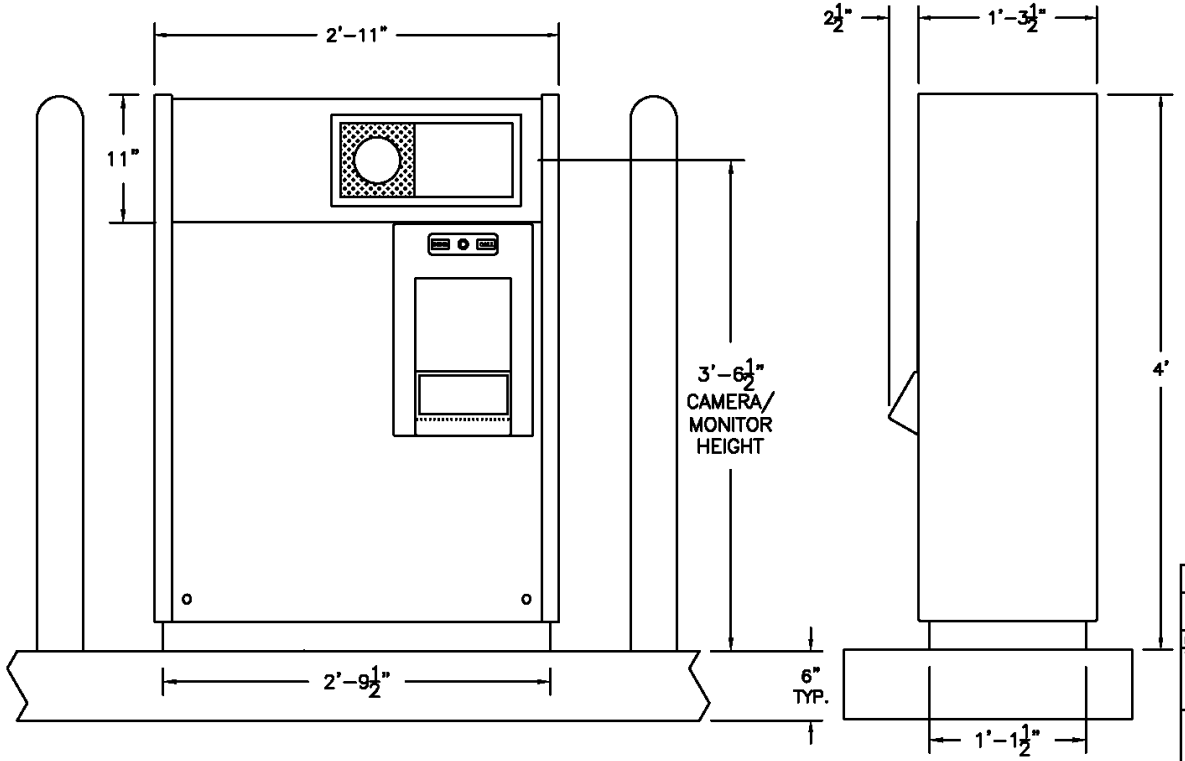

MODEL 910TV CUSTOMER UNIT DETAILS

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
		1 OF 1	NTS	A

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TOLERANCES
LINEAR .X = ±0.1 .XX = ±0.01 .XXX = ±0.005
DIAMETERS ±0.005
ANGLES ±1.0°

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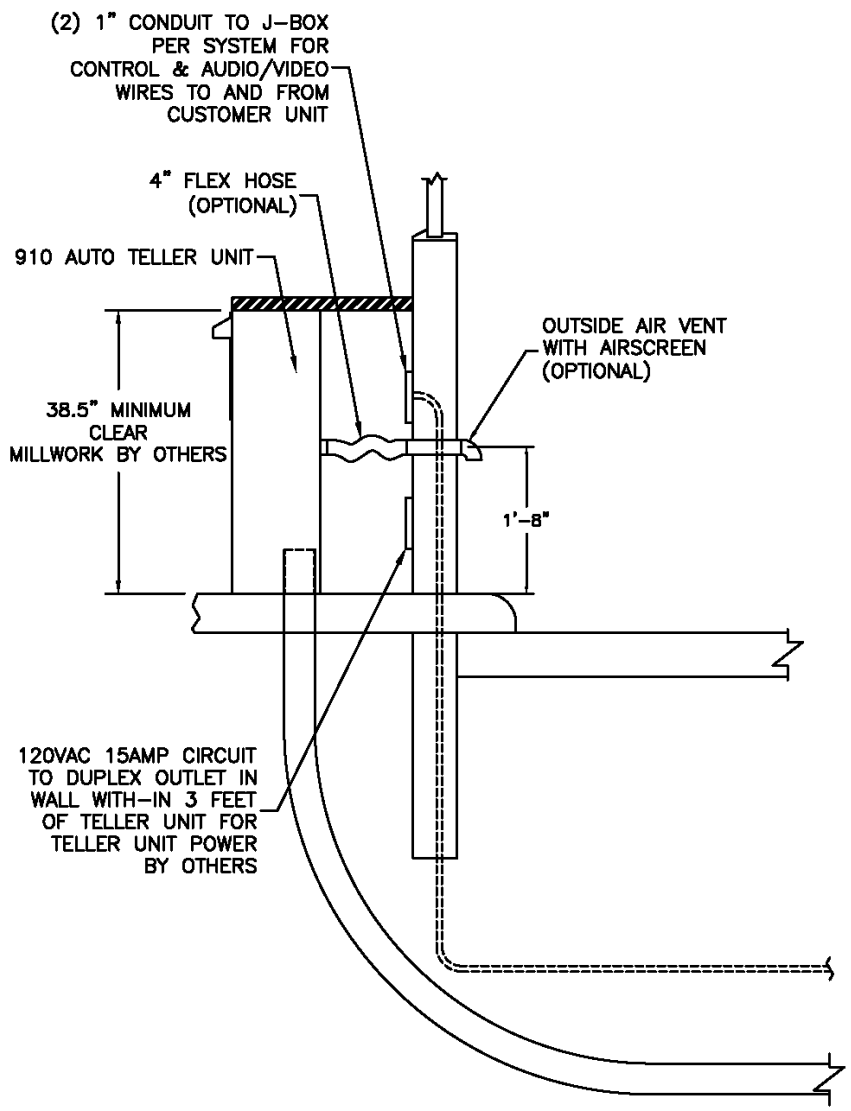
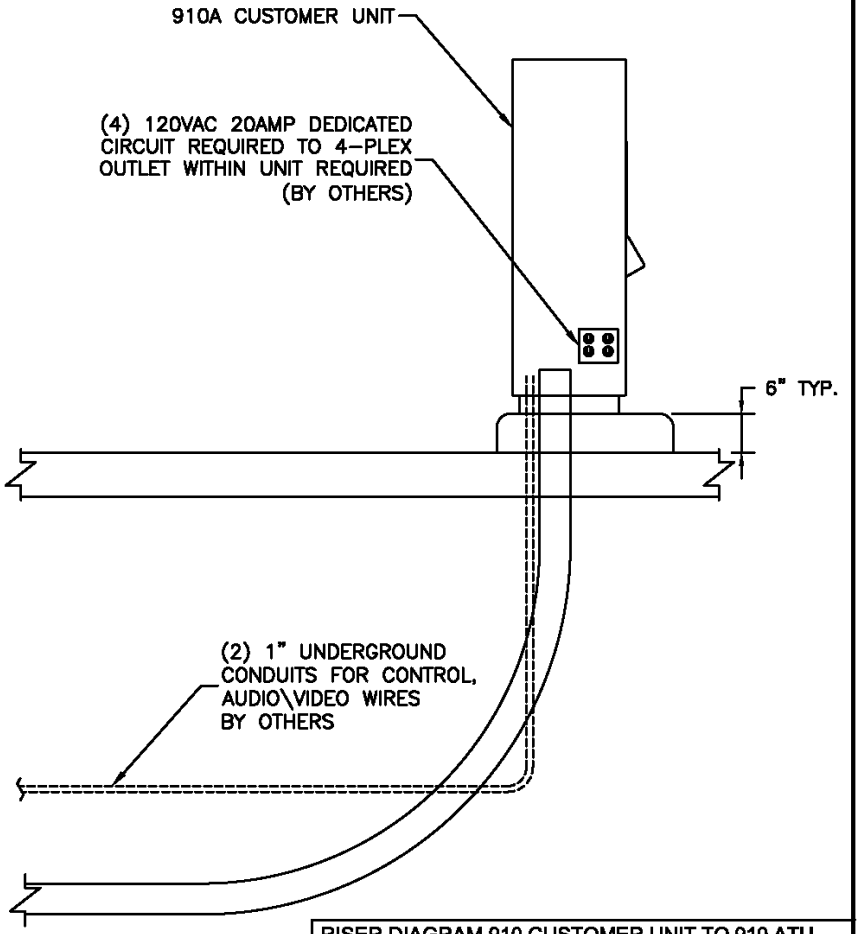
THIRD ANGLE PROJECTION





RISER DIAGRAM 910 CUSTOMER UNIT TO 910 ATU

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
		1 OF 1	NTS	A

FILE: X:\CUTSHEETS\910

TOLERANCES
LINEAR .X = ±0.1 .XX = ±0.01 .XXX = ±0.005
DIAMETERS ±0.005
ANGLES ±1.0°

THIRD ANGLE PROJECTION

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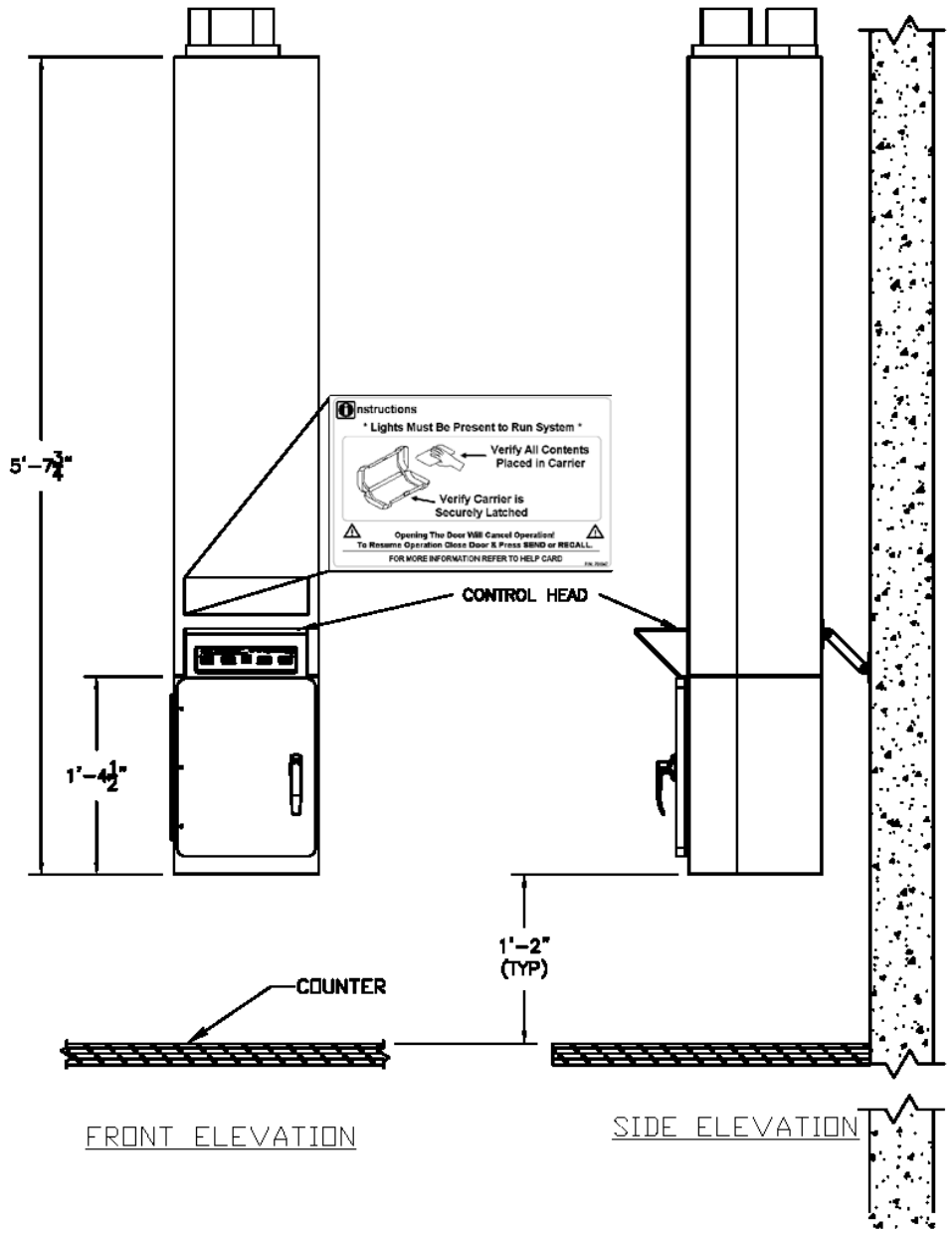
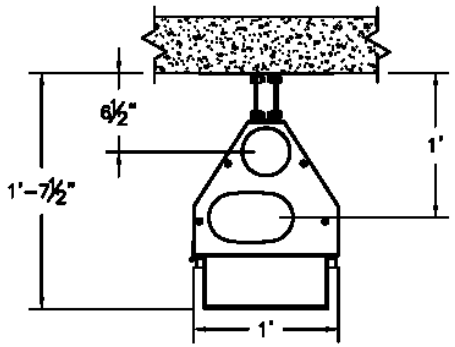
LAKE DALLAS, TX



FRONT ELEVATION

SIDE ELEVATION



PLAN VIEW

NOTES:
TELLER UNIT RECEIVES LOW VOLTAGE POWER FROM BLOWERS LOCATED REMOTLY.
STANDARD UNIT COVER ACCOMODATES 40" COUNTER TOP WITH 9 FOOT CEILINGS. DIFFERENT COUNTERTOP OR CEILING HEIGHT WILL REQUIRE A DIFFERENT COVER. COMCO MUST BE NOTIFIED OF DIFFERENT HEIGHTS.

900 TELLER UNIT CUT SHEET	D 1.X

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DRAWN	SCALE	DESIGN	APPROVED	REVISED
09/25/09	NTS	MPV		

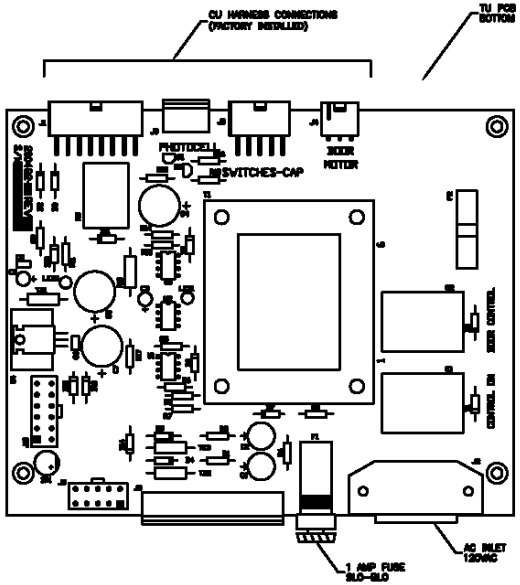
FILE: \EXTERNAL\CUT SHEETS\900\900 TELLER UNIT

NOTES (UNLESS OTHERWISE SPECIFIED):

1. REMOVE ALL BURRS AND SHARP EDGES.
2. DIMENSIONS APPLY BEFORE FINISHING.
3. ALL THREADED SURFACES ARE TO BE PAINT-FREE.

REVISIONS

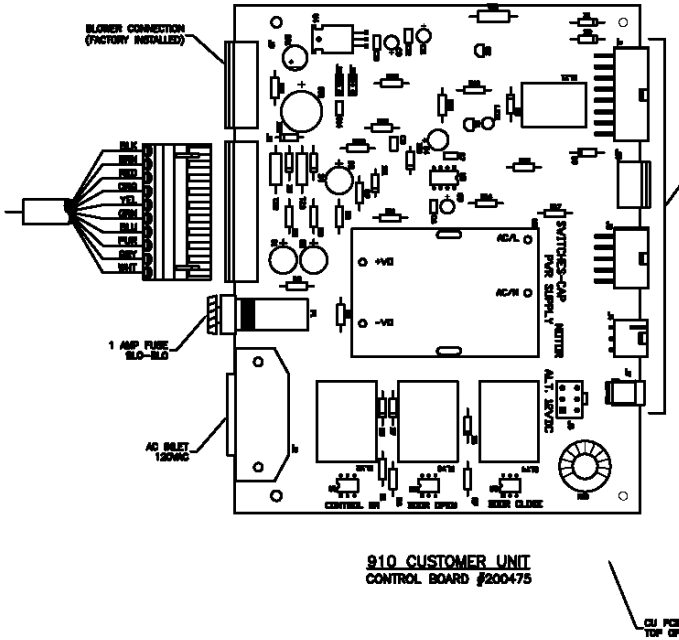
REV	DESCRIPTION / REFERENCE	DATE:	BY:
NC	INITIAL RELEASE	01-30-2006	JDD
A	ADDED CONTROL BOARD SETTINGS	03-16-2017	NDJ



910A AUTO TELLER UNIT
CONTROL BOARD #200452

200155 SETTINGS
TURN 1,2,5,8 ON
REMOVE SHUNT FROM J4

10 COND/18 AWG



910 CUSTOMER UNIT
CONTROL BOARD #200475

1	M	ITEM DESCRIPTION	N	-------
ITEM	M/F	DESCRIPTION / REFERENCE	QTY	P/N

MATERIAL/FINISH SCHEDULE

FIELD WIRING, 910A CU TO 910A ATU

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
500264	A	1 OF 1	NTS	A

FILE: INTERNAL\500K\5000264.DWG

TOLERANCES
LINEAR
X = ±0.1
XX = ±0.01
XXX = ±0.005
DIAMETERS ±0.005
ANGLES ±1.0°

COMCO SYSTEMS
(800) 533-3794
LAKE DALLAS, TX

THIRD ANGLE PROJECTION

NOTES (UNLESS OTHERWISE SPECIFIED):

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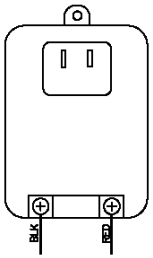
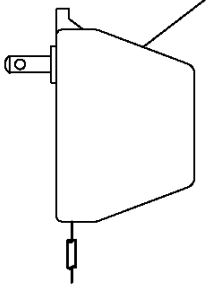
2. DIMENSIONS APPLY BEFORE FINISHING.
3. ALL THREADED SURFACES ARE TO BE PAINT-FREE.

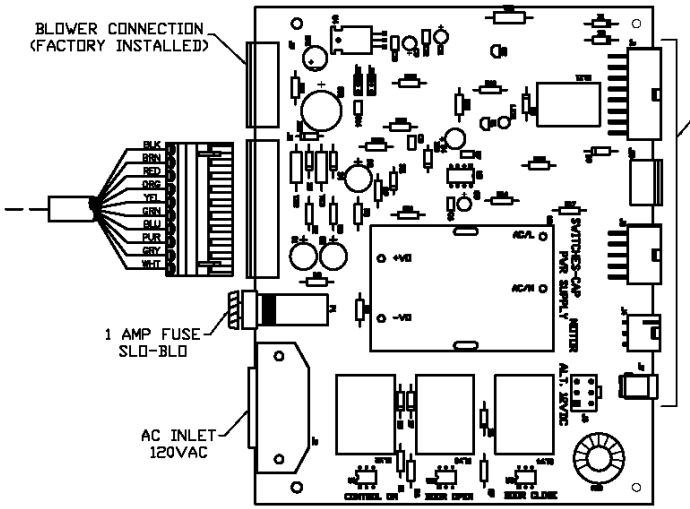
REVISIONS			
REV	DESCRIPTION / REFERENCE	DATE:	BY:
NC	INITIAL RELEASE	03-14-2007	BLB
A	UPDATED TO REV. K BOARD	12-16-2009	BLB



WIRING DETAIL FOR TRANSFORMER



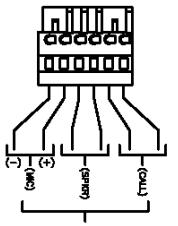
NOTE: USE 24VAC TRANSFORMER (612807)



910 CUSTOMER UNIT
CONTROL BOARD #200475

MATING HEADER LOCATED UPPER RIGHT OF THE CUSTOMER FRAME

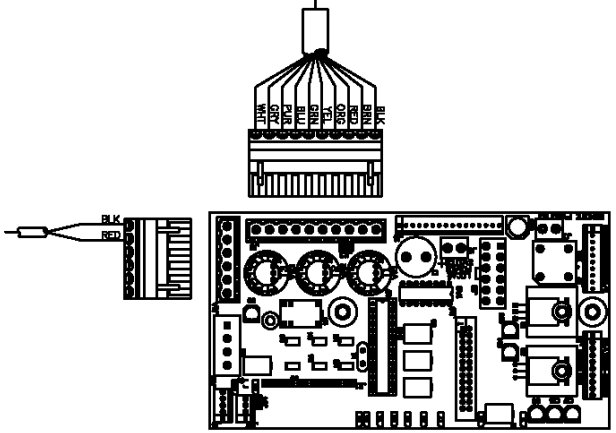
HOLD PLUG AS SHOWN WHEN TERMINATING WIRES



RECOMMEND CABLE 3-PR SHIELDED/ 22 GA UNLESS PREWIRED BY FACTORY

10 COND/18 AWG

2 COND/18 AWG



900A MANUAL TELLER UNIT
INTERFACE BOARD #200354

1	M	ITEM DESCRIPTION	N	------
ITEM	M/F	DESCRIPTION / REFERENCE	QTY	P/N

MATERIAL/FINISH SCHEDULE

FIELD WIRING, 910A CU TO 900A MTU

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
500303	A	1 OF 1	1=1	A

FILE: INTERNAL\500K\5000303.DWG

TOLERANCES
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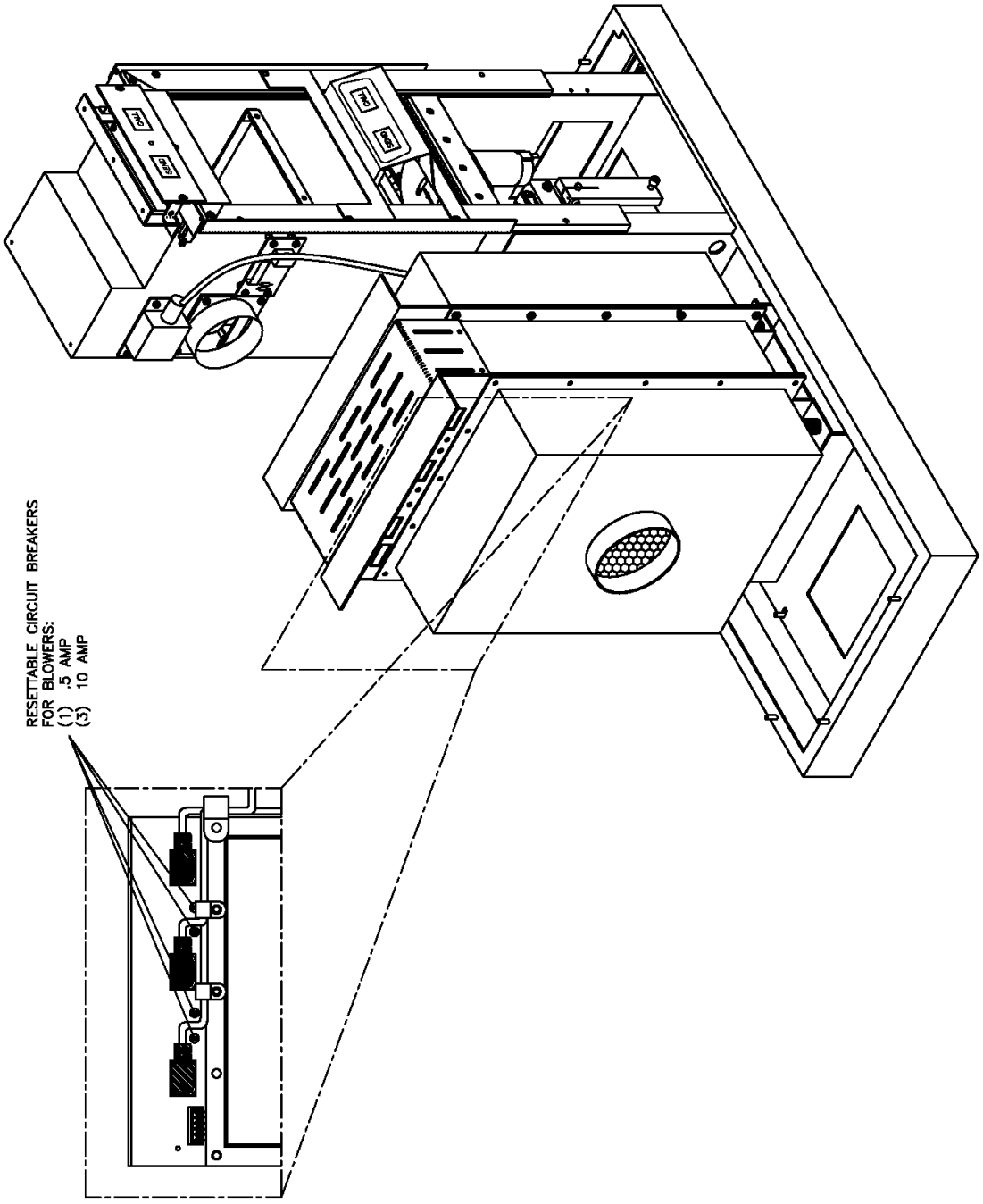
THIRD ANGLE PROJECTION


RESETTABLE CIRCUIT BREAKERS
FOR BLOWERS:
(1) .5 AMP
(3) 10 AMP

NOTES:

TIMERS

(T1) CYCLE TIMER. CONTROL TIME RANGE WITH OPTION SWITCH 6.

(T2) DOOR OPEN DELAY TIMER. DELAY DOOR OPENING WITH OPTION SWITCH 3.

(T3) SELECT PROCESSOR VER. LEVEL
(CHIP VER. 2.0 AND HIGHER)
SOLENOID ENGAGE TIMER. SWITCH 4 NOT USED.
TIME SOLENOID STAYS ENGAGED, RANGE 5–15 SEC.
(CHIP VER. PRIOR TO 2.0)
STOP VALVE DELAY. NOT NORMALLY USED.
ACTIVATE/DEACTIVATE WITH OPTION SWITCH 4.

OPTION SWITCHES

(1) 521/LOBBY TELLER APPLICATION:
OFF=521 APPLICATION(STD)
ON=LOBBY TELLER APPLICATION

(2) DISABLES AUTOSEND:
OFF=MANUAL TELLER
ON=MOTORIZED TELLER

(3) DOOR OPEN DELAY AFTER CYCLE:
OFF=NO DELAY AFTER CYCLE
ON=ADJUSTABLE DELAY WITH TIMER #2.

(4) STOP VALVE DELAY: SELECT PROCESSOR VER. LEVEL
(FOR VERY SHORT RUNS OR OTHER NONSTANDARD INSTALLATIONS).
NORMALLY "OFF".
(CHIP VER. 2.0 AND HIGHER)
OFF=INACTIVE
ON=ACTIVE (500 MILLISECOND–FIXED)
(CHIP VER. PRIOR TO 2.0)
OFF=INACTIVE
ON=ACTIVE, ADJUST DELAY WITH T3, RANGE 100–400MS

(5) SELECT PROCESSOR VER. LEVEL
(CHIP VER. 2.0 AND HIGHER)
DIVERTER OPTION:
OFF=INACTIVE
ON=ACTIVE (DOOR OPENS EACH CYCLE)
(CHIP VER. PRIOR TO 2.0)
NOT USED:

(6) CYCLE TIMER RANGE:
OFF=T1 RANGE 0–100 SEC.(10–SECOND INCREMENTS)
ON=T1 RANGE 0–10 SEC.(1–SECOND INCREMENTS)

(7) SELECT PROCESSOR VER. LEVEL
(CHIP VER. 2.0 AND HIGHER)
900A OPTION: (CARRIER DETECT, DOOR CONTROL)
OFF=INACTIVE
ON=ACTIVE
(CHIP VER. PRIOR TO 2.0) NOT USED:

(8) SELECT PROCESSOR VER. LEVEL
(CHIP VER. 2.0 AND HIGHER)
DOOR REVERSAL OPTION: (LTS TO 521TU)
OFF=INACTIVE
ON=ACTIVE
(CHIP VER. PRIOR TO 2.0) NOT USED:

CONNECTORS

(J1) FIELD WIRES: ALL SIGNALS FROM REMOTE UNIT

(J2) CONTROL SWITCHES: TELLER UNIT CONTROLS

(J3) MOTOR/LIMIT SWITCHES: TELLER UNIT OPERATIONS

(J4) REMOTE DOOR: JUMPER ON PINS 4–5 IF NO REMOTE DOOR, OTHERWISE REMOTE DOOR SIGNALS

(TB1) REMOTE POWER: USED TO CONTROL POWER RELAY AT CVM OR OTHER REMOTE ACCESSORY

RELAY/LED FUNCTIONS

(RLY5) LOCAL DOOR: CONTROLS TELLER UNIT AUTOMATIC DOOR (IF PRESENT). LEDs INDICATE DOOR OPEN/CLOSED STATE–CONTROLLED BY RELAY.

(RLY4) VACUUM: CONTROLS VACUUM BLOWER. LED INDICATES VACUUM SIGNAL ACTIVE.

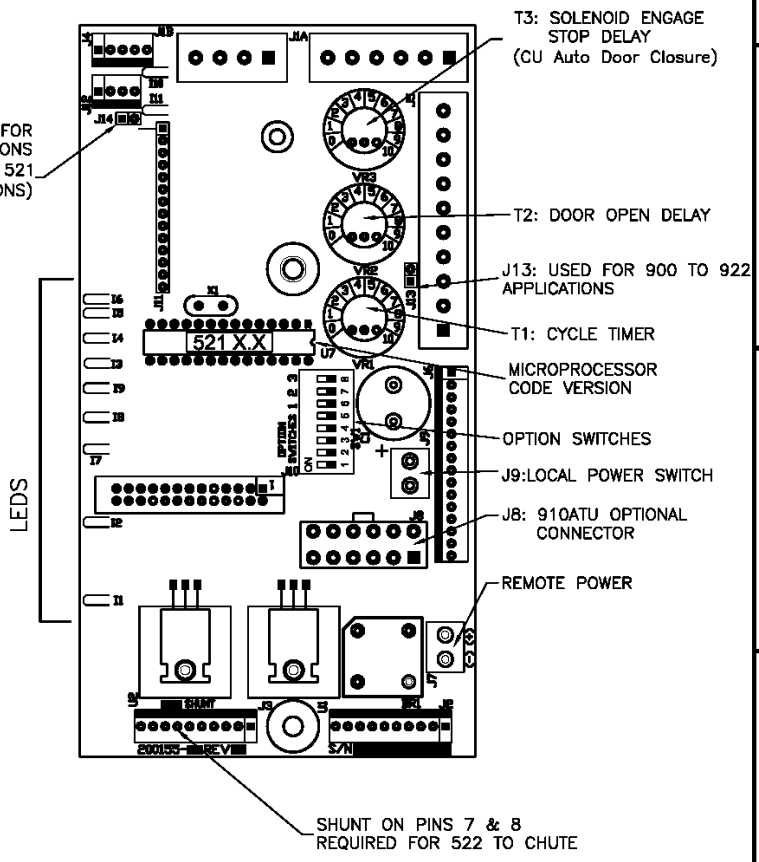
(RLY3) PRESSURE: CONTROLS PRESSURE BLOWER. LED INDICATES PRESSURE SIGNAL ACTIVE.

(RLY2) SOLENOID: CONTROLS STOP SOLENOID. LED INDICATES SOLENOID SIGNAL ACTIVE.

(RLY1) REMOTE DOOR: CONTROLS CUSTOMER UNIT AUTOMATIC DOOR (IF PRESENT). LEDs INDICATE DOOR OPEN/CLOSED STATE–CONTROLLED BY RELAY.

REVISIONS

REV	DESCRIPTION / REFERENCE	DATE	BY
NC	INTIAL RELEAS – NEW REV K CONTROLLER	12-13-2007	JNB
A	PCB LAYOUT REVISED, ADDED LED LEGEND	12-15-2007	JNB
B	ADDED NOTE FOR SHUNT ON PINS 7 & 8 (522 TO CHUTE)	01-22-2007	SJM
C	ADDED J14 JUMPER SHUNT	04-01-2008	BLB
D	ADDED NOTE FOR J-13	08-05-2008	SJM
E	UPDATED J13	01-14-2015	NDJ



LED LEGEND

(I1): Local Door Closed
(I2): Local Door Open
(I3): Send
(I4): Recall
(I5): All Doors Closed
(I6): Decel Switch
(I7): Solenoid
(I8): Vacuum
(I9): Pressure
(I10): Remote Door Closed
(I11): Remote Door Open

GUIDE, ADJUSTMENT, CONTROLLER, 521-K

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
500356	E	1 OF 1	2=1	A

FILE: INTERNAL\\500K\500356.DWG

TOLERANCES
LINEAR .X = ±0.1 .XX = ±0.01 .XXX = ±0.005
DIAMETERS ±0.005
ANGLES ±1.0°

COMCO SYSTEMS
(800) 533-3794
LAKE DALLAS, TX

THIRD ANGLE PROJECTION