

Quotation #7169  
 Company: Starkey Water

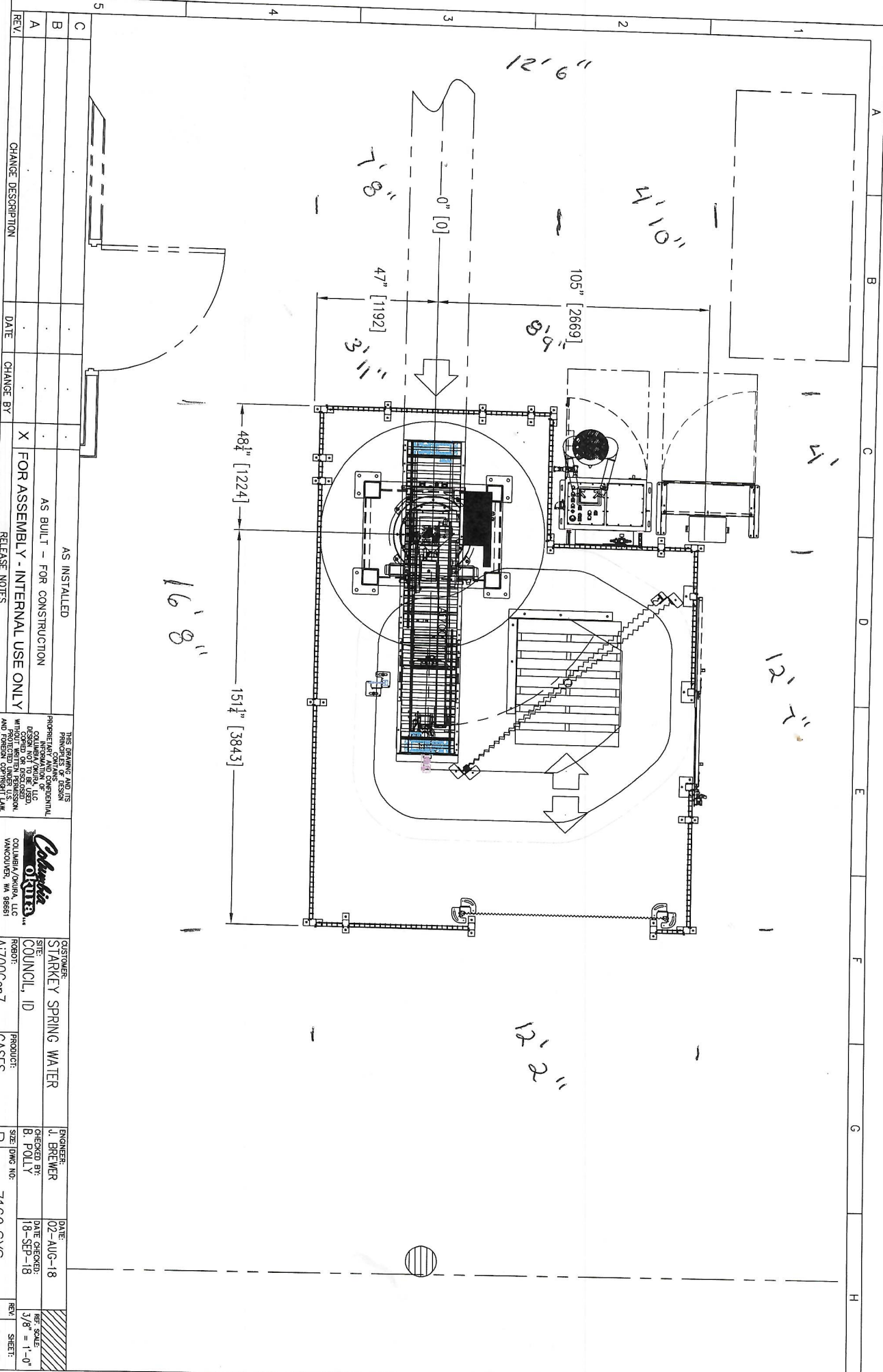
Date: July 6, 2018  
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**Section 2 – System Specifications**

Item	Quantity	Description
Ai700 Robotic Arm and Control Panel	1 Only	<ul style="list-style-type: none"> <li>• 4 Axis articulating robotic arm                             <ul style="list-style-type: none"> <li>○ Four (4) AC servo motors, with absolute encoders</li> <li>○ 208 VAC, 60 Hz, 3 Phase</li> </ul> </li> <li>• Free standing control panel, NEMA 12 equivalent                             <ul style="list-style-type: none"> <li>○ Fully programmable, main control processor</li> <li>○ Color touch screen operator interface</li> </ul> </li> <li>• Painted standard "Okura white"</li> </ul>
Case Handling End Effector	1 Only	<ul style="list-style-type: none"> <li>• Includes all mechanisms, pneumatics and electrical components to pick up and place cases on the pallet</li> </ul>
Case Infeed/Station Conveyor	1 Only	<ul style="list-style-type: none"> <li>• Dual stage powered roller – 10' overall length</li> <li>• Photocells to identify product</li> <li>• Painted standard gray</li> </ul>
Peripheral Equipment Controls	1 Only	<ul style="list-style-type: none"> <li>• AB Compact Logix PLC with sufficient I/O to operate the quoted system</li> <li>• Complete motor control center for peripheral equipment functions utilizing IEC motor starters</li> <li>• Independent circuit breaker</li> <li>• 208/230/460 VAC, 60 Hz, 3 Phase, power</li> </ul>
VPN Router with Network Address Translation for Plant Ethernet Isolation and Remote Support Connection	1 Only	<ul style="list-style-type: none"> <li>• VPN Router w/ Network Address Translation (NAT).</li> <li>• Provides isolation between machine network (LAN) and plant network (WAN).</li> <li>• Translates standard robot system IP addresses to plant network IP addresses</li> <li>• Requires 1-2 IPv4 (xxx.xxx.xxx.xxx) addresses on plant network for VPN Router and robot PLC, if required.</li> <li>• Customer must take responsibility for connecting and providing an internet signal to the VPN router in order to activate the free one-year remote support subscription.</li> <li>• Remote support will not be possible if standard LAN side IP addresses are changed.</li> </ul>

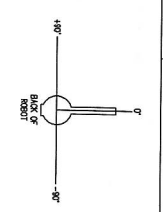
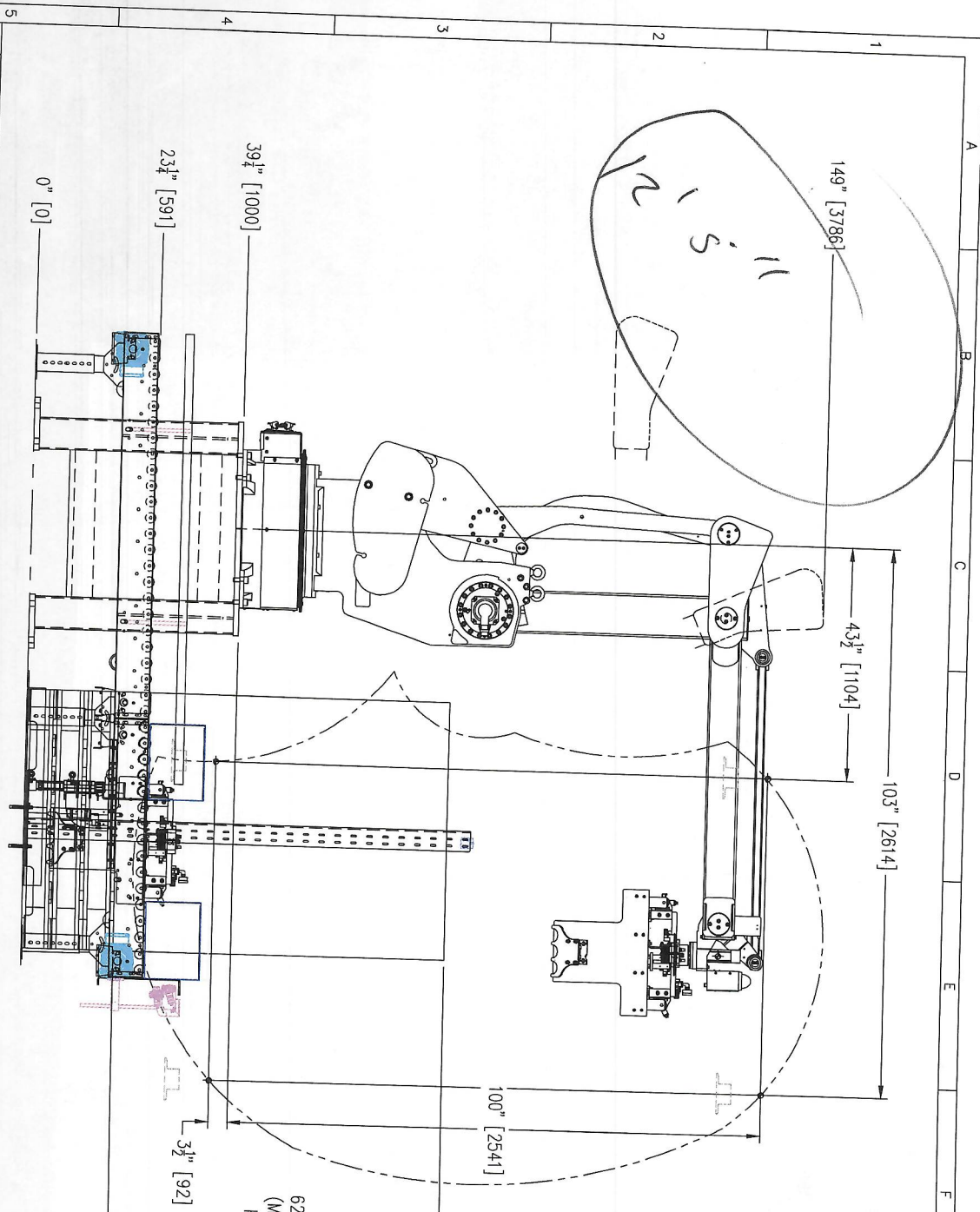
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C				AS INSTALLED							
B				AS BUILT - FOR CONSTRUCTION							
A				FOR ASSEMBLY - INTERNAL USE ONLY							

16'8" 12'2" 12'6" 10'10" 105" [2669] 47" [1192] 0" [0] 7'8" 48 1/2" [1224] 151 1/4" [3843]



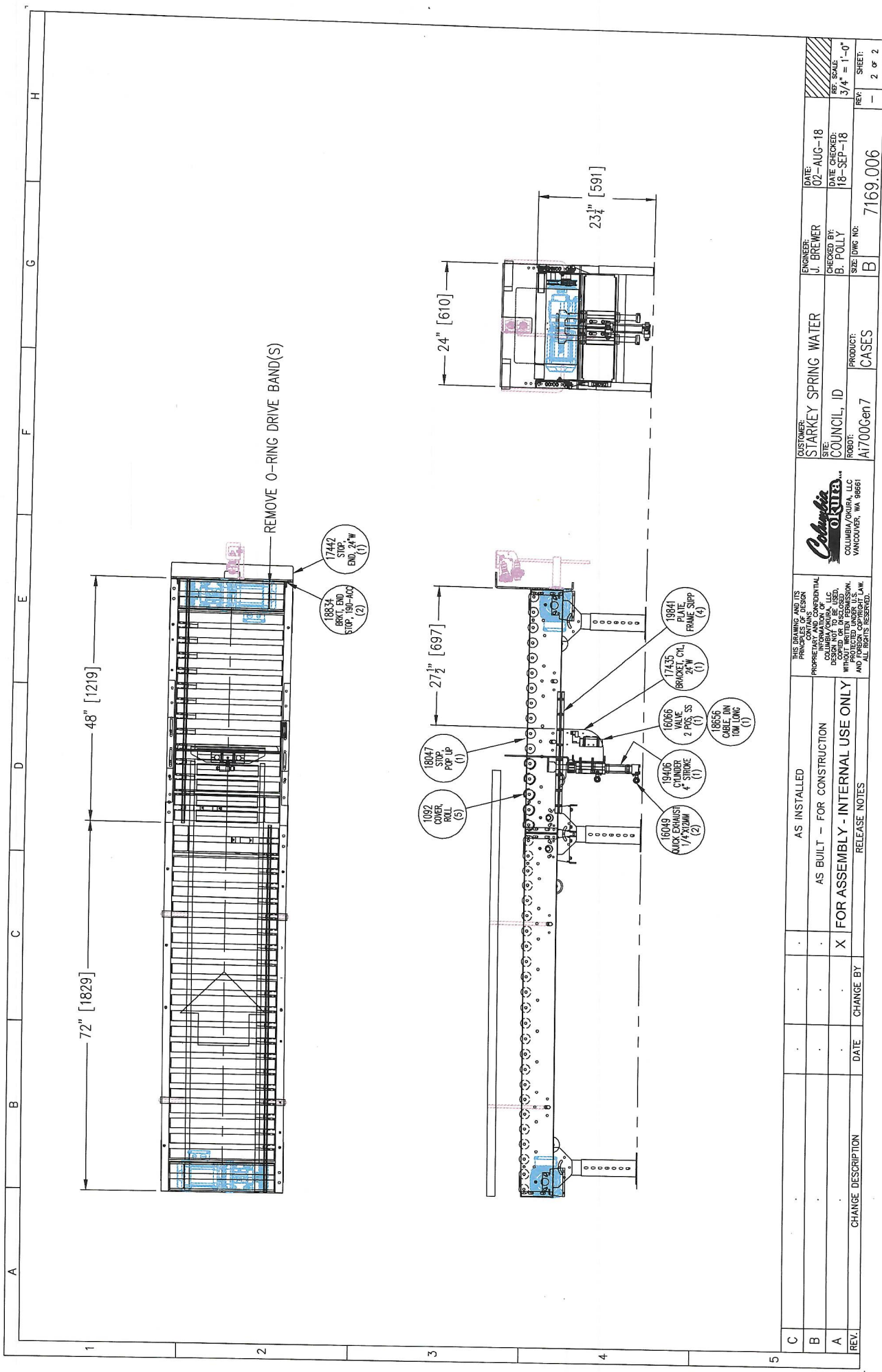
R-AXIS HARD STOP POSITION	
R (+)	R (-)
+999°	-999°

REQUIRED TEACHING AREA SETTINGS

	+	-
AX	1104	2614
AZ	2541	92

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A			X	FOR ASSEMBLY - INTERNAL USE ONLY							
B				AS BUILT - FOR CONSTRUCTION							
C				AS INSTALLED							





ENGINEER: J. BREWER  
 DATE: 02-AUG-18  
 CHECKED BY: B. POLLY  
 DATE CHECKED: 18-SEP-18  
 SIZE: DWG NO. B  
 PRODUCT: CASES  
 ROBOT: A1700Gen7  
 REV: 2 OF 2



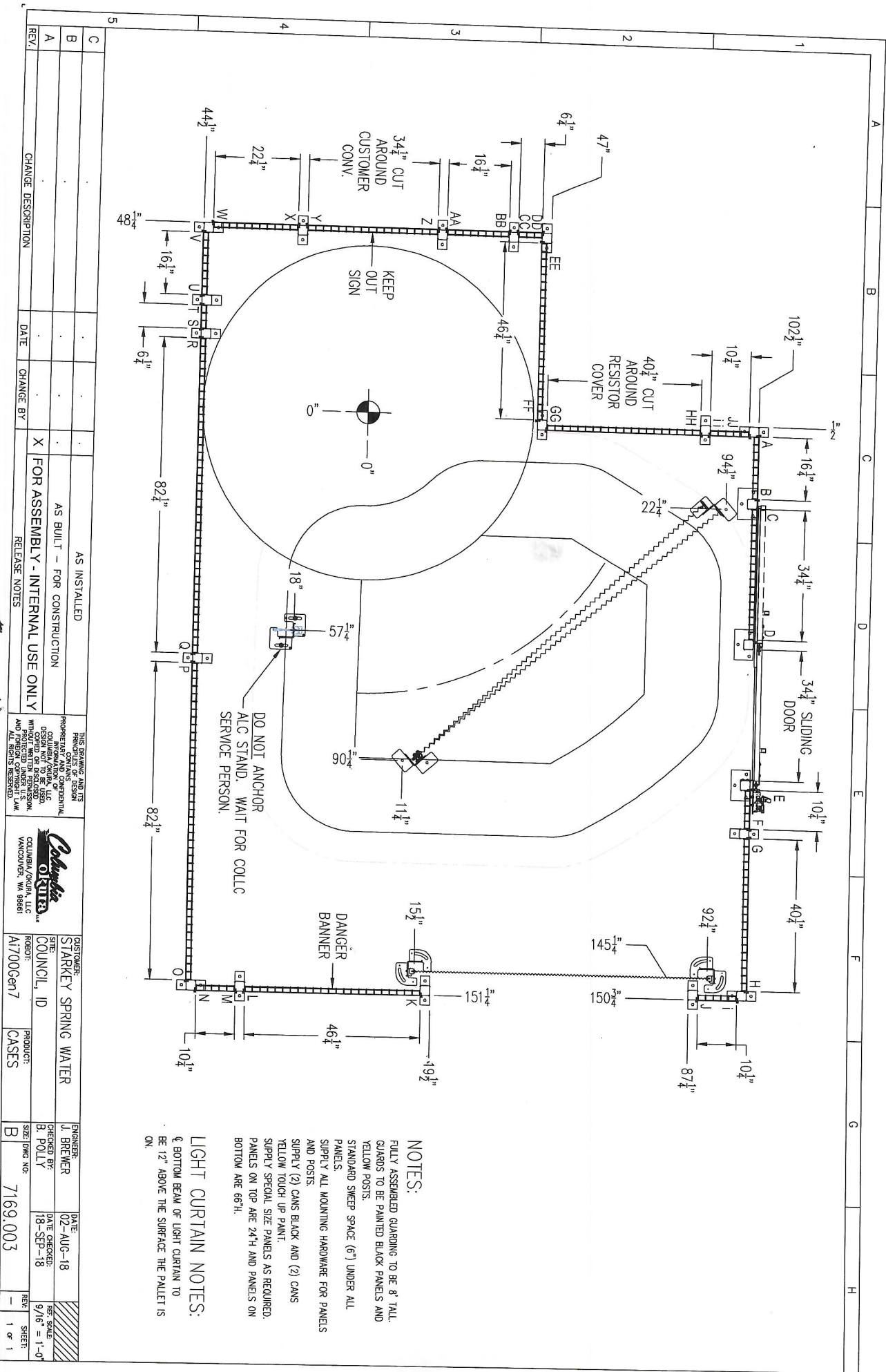
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AS INSTALLED  
 AS BUILT - FOR CONSTRUCTION  
 X FOR ASSEMBLY - INTERNAL USE ONLY  
 RELEASE NOTES

REV.	CHANGE DESCRIPTION	DATE	CHANGE BY







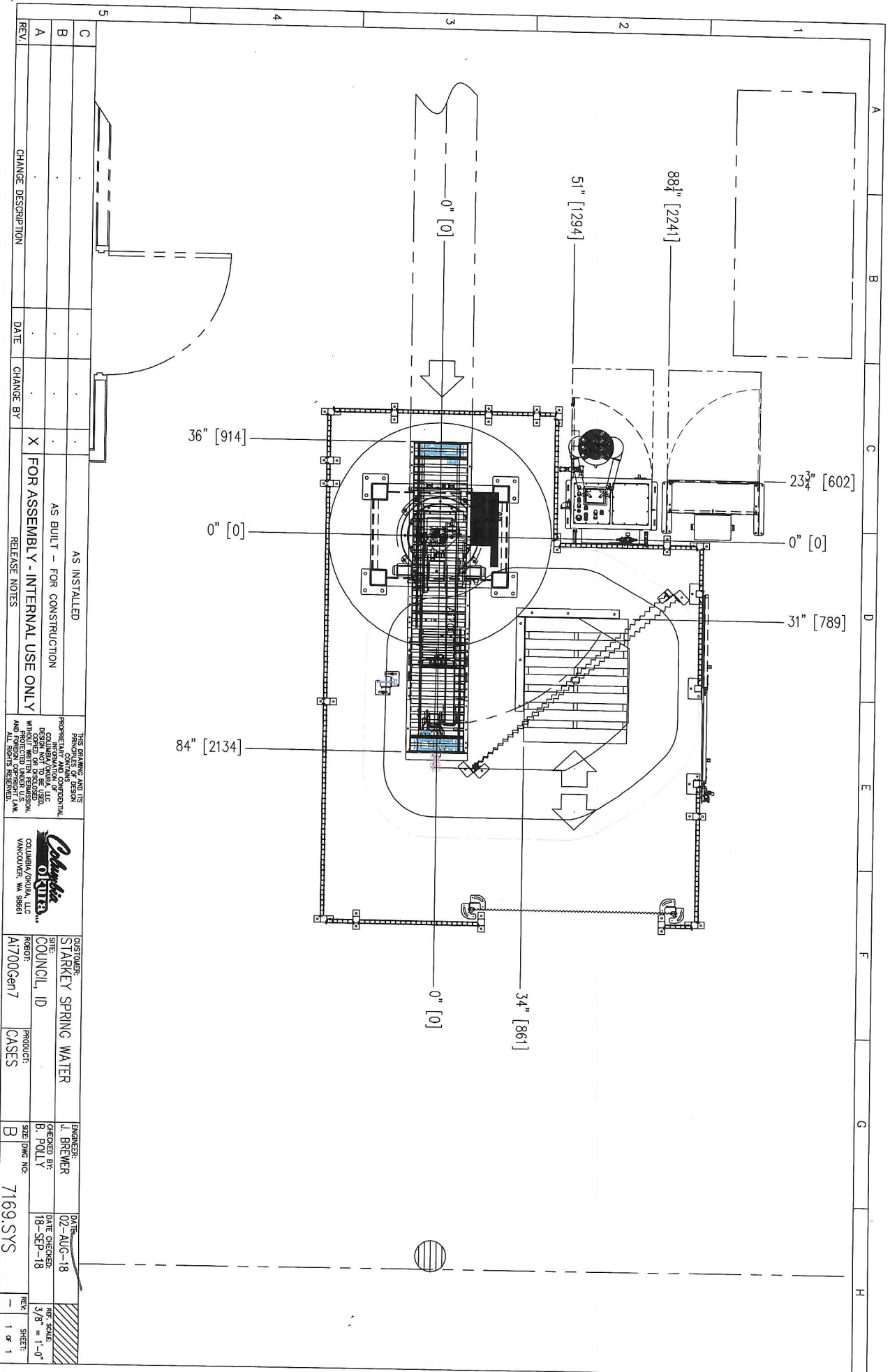
REV.	DESCRIPTION	DATE	CHANGE BY	AS BUILT - FOR CONSTRUCTION	AS INSTALLED
A					
B					
C					

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NOTES:  
 FULLY ASSEMBLED GUARDING TO BE 8" TALL  
 GUARDS TO BE PAINTED BLACK PANELS AND  
 YELLOW POSTS.  
 STANDARD SWEEP SPACE (6") UNDER ALL  
 PANELS.  
 SUPPLY ALL MOUNTING HARDWARE FOR PANELS  
 AND POSTS.  
 SUPPLY (2) CANS BLACK AND (2) CANS  
 YELLOW TOUCH UP PAINT.  
 SUPPLY SPECIAL SIZE PANELS AS REQUIRED.  
 PANELS ON TOP ARE 24"H AND PANELS ON  
 BOTTOM ARE 69"H.

LIGHT CURTAIN NOTES:  
 @ BOTTOM BEAM OF LIGHT CURTAIN TO  
 BE 12" ABOVE THE SURFACE THE PALLET IS  
 ON.

1  
 16 1/2  
 181.5  
 129.5  
 79  
 124.0  
 battery  
 121

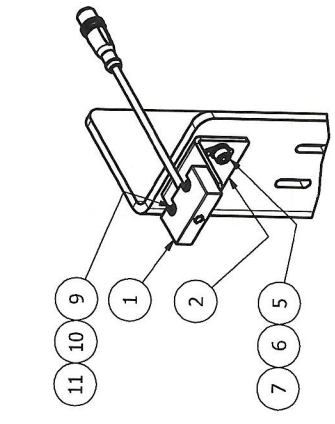


REV.	CHANGE DESCRIPTION	DATE	CHANGE BY	RELEASE NOTES
A				
B				
C				
AS BUILT - FOR CONSTRUCTION				
X FOR ASSEMBLY - INTERNAL USE ONLY				
AS INSTALLED				
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 COLUMBIA DESIGN CONSULTANTS, LLC WASHINGTON, DC 20004				
CUSTOMER: STARKLEY SPRING WATER SITE: COUNCIL, ID PROJECT: CASES				
ENGINEER: J. BREWER CHECKED BY: B. POLLY DATE: 02-AUG-18 DATE CHECKED: 18-SEP-18				
SIZE: 1/8" = 1'-0" SHEET: 7169.SYS REV: 1 OF 1				

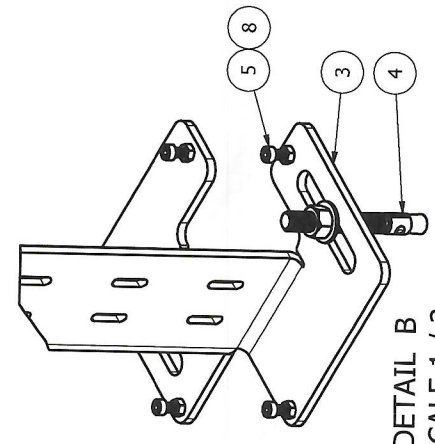


A B C D E F G H

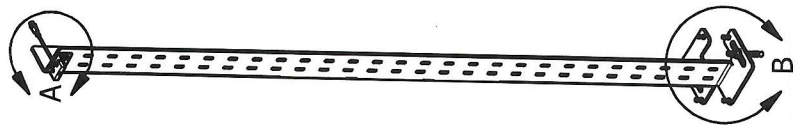
NO.	PART #	DESCRIPTION	QTY
1	20452	SWITCH, MAGNETIC, GEN7 HOME	1
2	20682	BRKT, ALC, AIGen7, SWITCH	1
3	20683	STAND, ALC, AIGen7, 7"H	1
4	1895	ANCHOR, MECH, 1/2"-13, 4.25"L	2
5	FLRSTK	SHCS, M6, 1.0P, 20L	6
6	FLRSTK	WASHER, FLAT, M6	2
7	FLRSTK	NUT, NYLOCK, M6, 1.0P	2
8	FLRSTK	NUT, M6, 1.0P	4
9	FLRSTK	SHCS, M3, .5P, 18L	2
10	FLRSTK	NUT, NYLOCK, M3, .5P	2
11	FLRSTK	WASHER, FLAT, M3	2



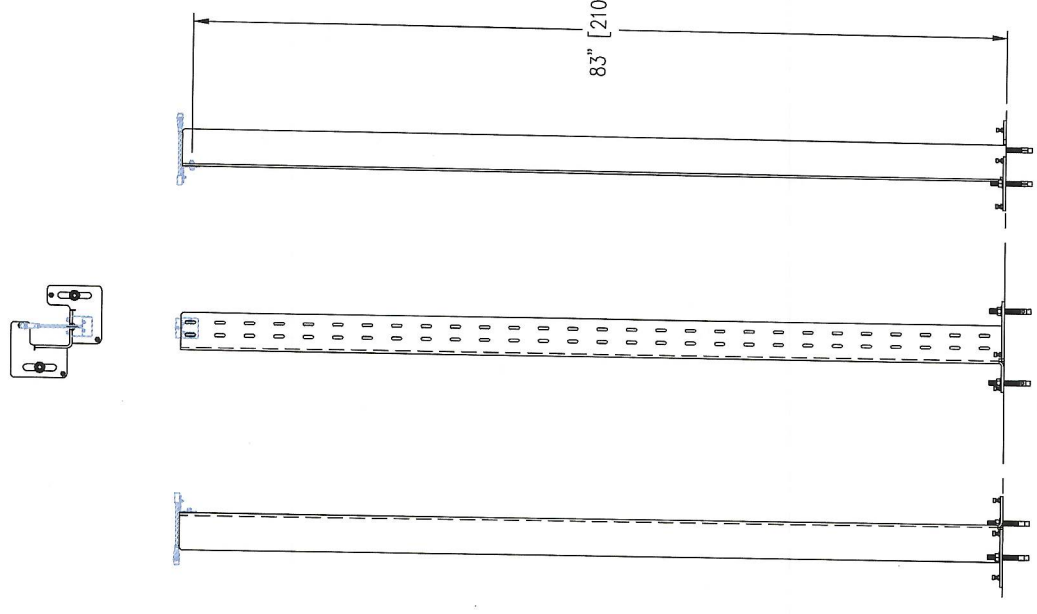
DETAIL A  
SCALE 1 / 3



DETAIL B  
SCALE 1 / 3



83" [2109]



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B	AS BUILT - FOR CONSTRUCTION		SITE: COUNCIL, ID	CHECKED BY: B. POLLY	DATE CHECKED: 18-SEP-18
A	X FOR ASSEMBLY - INTERNAL USE ONLY		ROBOT: A1700Gen7	SIZE (DWG NO.): B	REV: -
REV.	CHANGE DESCRIPTION	DATE	CHANGE BY	PRODUCT: CASES	SHEET: 2 of 2

**SYS#7169 STARKEY WATER Ai700VII — Recommended Spare Parts List**

**End Effector**

Quantity	Item Number	Description	Price	Total
2	16578	CYL, 2"B, 9.5"S, CM	\$ 338.94	\$ 677.88
2	5392	QUICK EXHAUST, 1/4"X10MM	\$ 31.66	\$ 63.32
1	1674	REED SWITCH	\$ 39.76	\$ 39.76
2	4899	SHAFT, IDLER, R-77,R-89	\$ 220.22	\$ 440.44
2	5759	SPACER, PULLEY IDLER,16MM	\$ 34.33	\$ 68.66
2	1451	PULLEY, IDLER TYPE TPBSN70	\$ 25.73	\$ 51.46
1	16875	BELT, TIMING, 1460L, T10	\$ 102.27	\$ 102.27
1	4294	REGULATOR AND BRACKET	\$ 47.43	\$ 47.43
1	16067	VALVE, 3 POSITION, DS	\$ 217.08	\$ 217.08
1	14872	LINEAR SLIDE, 50MM STROKE	\$ 494.10	\$ 494.10
1	16066	VALVE, 2 POSITION, SS	\$ 133.19	\$ 133.19
1	21995	PALM, STL, 600LX450H, SF, 2N	\$ 242.86	\$ 242.86
1	21996	PALM, STL, 600LX450H, 2N	\$ 226.19	\$ 226.19
4	1572	PRODUCT GRIP	\$ 36.76	\$ 147.04

**Conveyor**

5	1092	ROLL COVER - PLASTIC	\$ 26.00	\$ 130.00
2	16049	QUICK EXHAUST, 1/4"X12MM	\$ 42.94	\$ 85.88
1	19406	LINEAR SLIDE, 1.38Bx4S, CSH	\$ 1,518.75	\$ 1,518.75
1	16066	VALVE, 2 POSITION, SS	\$ 133.19	\$ 133.19
1	21645	LASER DISTANCE, .025-1.5M 2PT	\$ 226.19	\$ 226.19
2	15704	CABLE, MICRO QD, 4P, 5M	\$ 16.46	\$ 32.92
2	15717	PC, POLAR RETRO, PNP	\$ 73.82	\$ 147.64
2	3459	REFLECTOR, SQUARE, 2X2	\$ 10.62	\$ 21.24
1	18548	LASER DISTANCE, .03-2M 1PT	\$ 231.75	\$ 231.75
1	19312	CABLE, MICRO QD, 4P, 10M, 90	\$ 21.82	\$ 21.82

**Robot**

1	20583	Ai700 D,O& R AXES MOTOR - GEN7	\$ 1,939.00	\$ 1,939.00
1	20582	Ai700 T/C-AXIS MOTOR	\$ 2,636.16	\$ 2,636.16
1	8143	Ai700 REDUCER, GEAR, T AXIS	\$ 1,772.02	\$ 1,772.02
1	20587	Ai700 D & O REDUCER - GEN7	\$ 3,376.91	\$ 3,376.91
1	5733	Ai 700 R-AXIS REDUCER	\$ 3,012.53	\$ 3,012.53
1	20452	SWITCH, MAGNETIC, GEN7 HOME	\$ 142.62	\$ 142.62
1	20592	Ai1800 EE CABLE - GEN7	\$ 337.00	\$ 337.00
1	20593	AI1800 OPTION EE CABLE - GEN7	\$ 367.66	\$ 367.66
1	9527	ASSY, MESH SLEEVE, 87"L STD	\$ 46.35	\$ 46.35

Panel

1	18454	FILTER REGULATOR ASSY	\$ 356.63	\$ 356.63
10	9209	FUSE, 0.5A	\$ 3.80	\$ 38.00
1	10492	FUSE, 25A	\$ 21.74	\$ 21.74
3	12162	FUSE, 30A	\$ 23.79	\$ 71.38
1	16724	FUSE, J 45A	\$ 21.97	\$ 21.97
1	17339	FUSE, 5A, CC	\$ 10.64	\$ 10.64
2	14055	FUSE, 5A	\$ 1.43	\$ 2.86
2	5513	RELAY, 24 VDC	\$ 27.44	\$ 54.89
1	17999	CONTACTOR, SAFETY, 23A	\$ 135.62	\$ 135.62
1	15862	CONTACTOR, IEC, 12A, 24V, ELE	\$ 88.44	\$ 88.44
1	17466	VFD, PWRFLEX, 525, 1HP, 600V	\$ 1,139.67	\$ 1,139.67
2	6139	MOTOR PROTECTOR, 4-6.3A	\$ 162.51	\$ 325.02

Project total: \$21,398.17