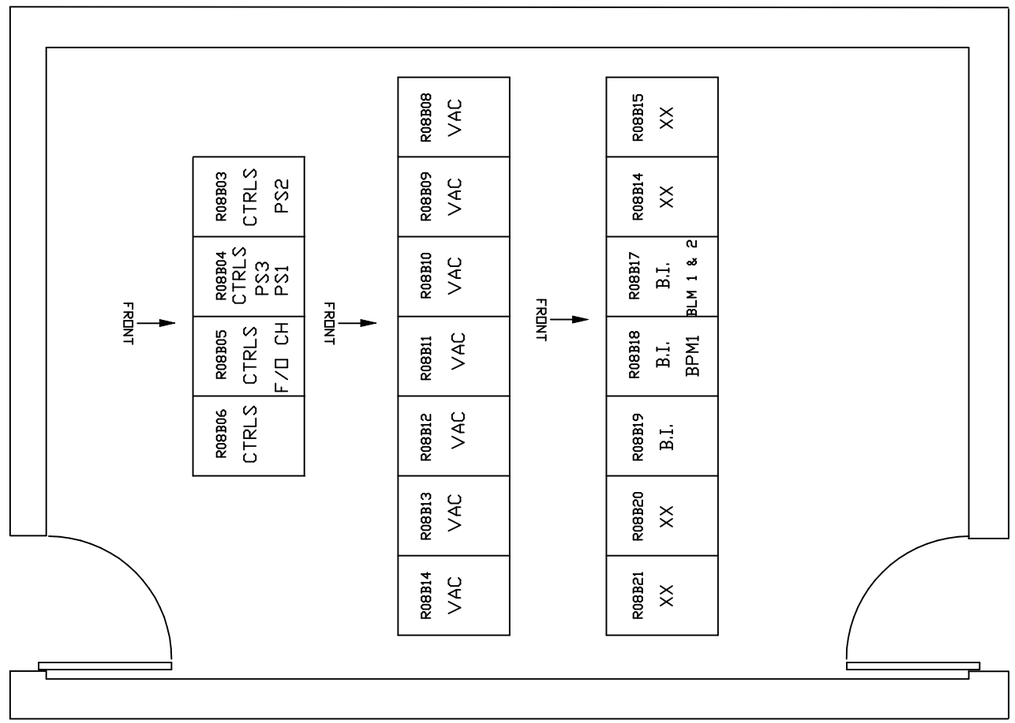
REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

Bill Venegas, BNL 6/30/2003 10:29 AM 8550.dwg



NOTE

M.E. - MAGNET ELECTRICAL
CTRLS - CONTROLS
VAC - VACUUM
B.I. - BEAM INSTRUMENTATION

QTY REQD -3	QTY REQD -2	QTY REQD -1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO./BNL NO.
		1	R08B03	5	RACK R08B03 ASSEMBLY	94028551
		1	R08B04	5	RACK R08B04 ASSEMBLY	94028552
		1	R08B05	4	RACK R08B05 ASSEMBLY	94028553
		1	R08B06	3	RACK R08B06 ASSEMBLY	94028554
				2		
		1		1	RHIC CONTROLS BLDG. 1008B WIRING DIAGRAM	94028559

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±NA
.XX ±NA
.XXX ±NA
ANGULAR TOLERANCE
± .5°

NA FINISH

BREAK SHARP EDGES MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

		DATE
DRAWN BY	Venegas	6/30/03
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL		
SUPVR. APPROVAL		

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973

RHIC CONTROLS

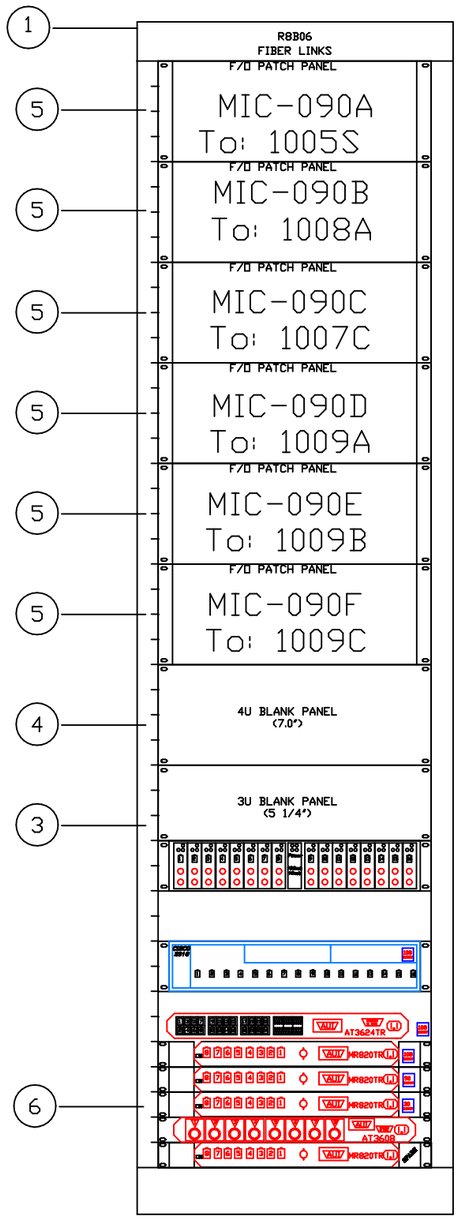
1008B FLOOR PLAN

SIZE D | DRAWING NUMBER 94028550 | REV. A

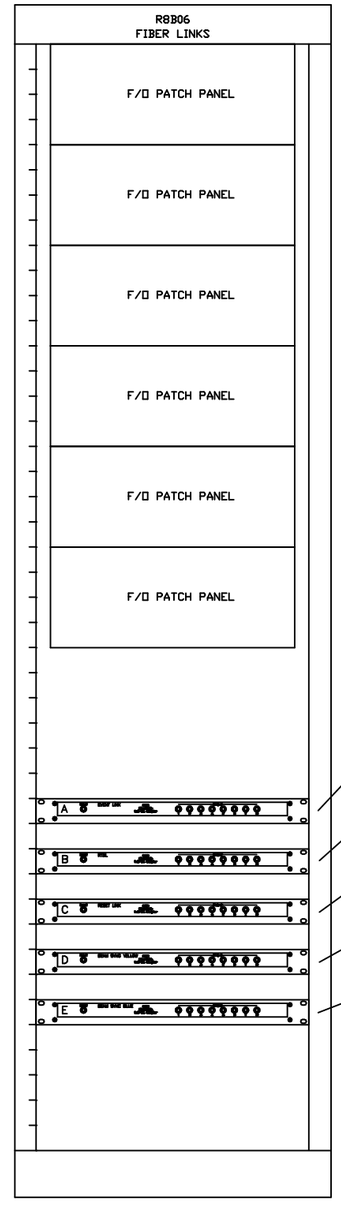
MATERIAL: ——— SCALE: NA WEIGHT: – SHEET 1 OF 1

*AUTOCAD

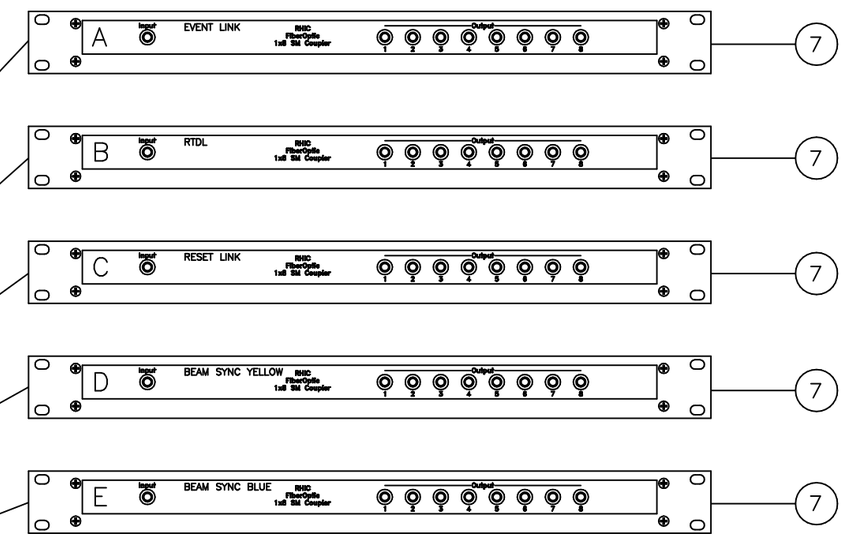
REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.



FRONT VIEW



REAR VIEW



QTY REQD -3	QTY REQD -2	QTY REQD -1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO.,SHL NO.
		AR	PANELS	8	10-32 x 1/2" BINDING HEAD MACHINE SCREWS	T-32276
		5	A,B,C,D,E	7	1x8 FIBER OPTIC COUPLER	58030006
		3	NA	6	ETHERNET NETWORK REPEATERS	X
		6	NA	5	FIBER OPTIC PATCH PANEL (FONS RIC 72P)	X
		2	NA	4	4U x 19" BLANK PANEL (PREMIER METAL ARP-719-553)	X
		1	NA	3	3U x 19" BLANK PANEL (PREMIER METAL ARP-519-553)	X
				2		
		1	NA	1	19" RACK, 77" H RACK SPACE	X

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE
± .5°

OUTSTANDING ECN

NA FINISH

BREAK SHARP EDGES MAX. XX MIN. XX

Q.A. CATEGORY A-3		DATE
DRAWN BY	Ed Koropsak	6/5/98
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL	R. MICHNOFF	6/5/98
SUPVR. APPROVAL		
NEXT ASSEMBLY		

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973

RHIC CONTROLS
SERVICE BLDG. 1008B

RACK R02B11 ASSEMBLY

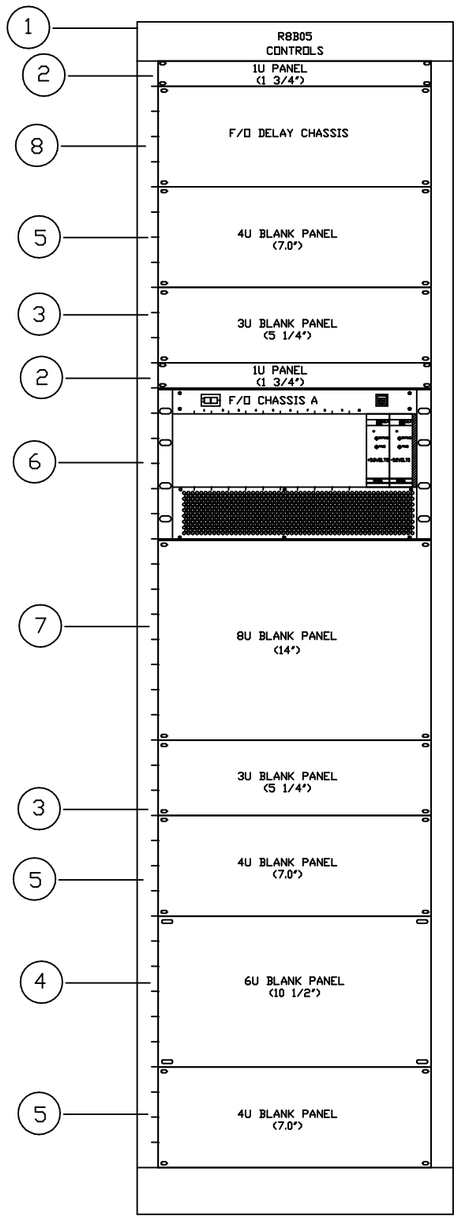
SIZE D | DRAWING NUMBER 94028551 | REV. A

MATERIAL: ——— | SCALE: NA | WEIGHT: – | SHEET 1 OF 1

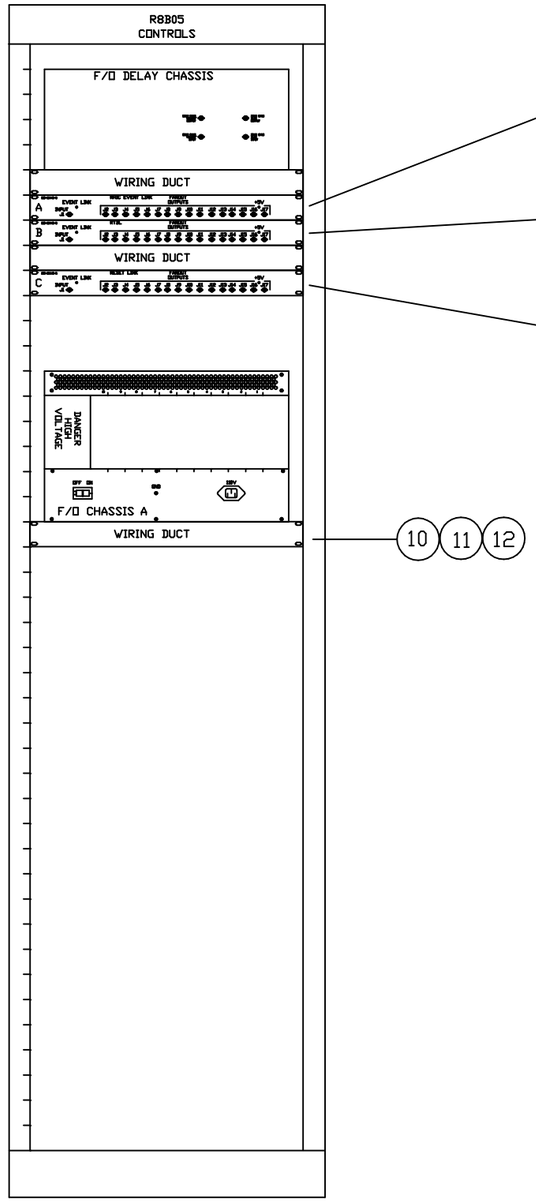
*AUTOCAD

REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

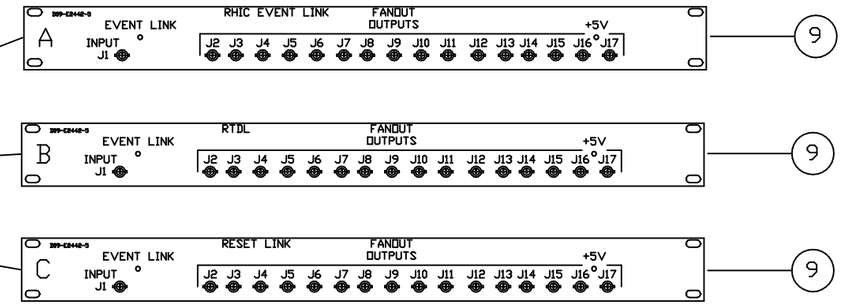
Controls 8/27/99 3:36 PM 8552.dwg



FRONT VIEW



REAR VIEW



-3	-2	-1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L. DWG NO.,SPEC. NO.
		-	-	-	-	-
		AR	PANELS	13	10-32 x 1/2" BINDING HEAD MACHINE SCREWS	T-32276
		6	NA	12	WIRING DUCT SPRING CLIPS 1.5"W (PANDUIT S1.5-C)	X
		3	NA	11	WIRING DUCT COVER 1.5"w (PANDUIT C1.5LG6)	X
		3	NA	10	WIRING DUCT 1.5"W x 4"D (PANDUIT E1.5X4LG6)	X
		3	A,B,C	9	FANOUT ASSEMBLY	D09-E2442
		1	NA	8	FIBER OPTIC DELAY CHASSIS ASSY.	94028277
		1	NA	7	8U x 19" BLANK PANEL (PREMIER METAL ARP-1419-553)	X
		1	NA	6	F/O CHASSIS A	94028555
		3	NA	5	4U x 19" BLANK PANEL (PREMIER METAL ARP-719-553)	X
		1	NA	4	6U x 19" BLANK PANEL (PREMIER METAL ARP-1019-553)	X
		2	NA	3	3U x 19" BLANK PANEL (PREMIER METAL ARP-519-553)	X
		2	NA	2	1U x 19" BLANK PANEL (PREMIER METAL ARP-119-553)	X
		1	NA	1	19" RACK, 77" H RACK SPACE	X

QTY REQD

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE
± .5°

NA FINISH

BREAK SHARP EDGES
MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

		DATE
DRAWN BY	Ed Koropsak	6/5/98
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL	R. MICHNOFF	6/5/98
SUPVR. APPROVAL		

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973

RHIC CONTROLS

SERVICE BLDG. 1008B

RACK R8B05 ASSEMBLY

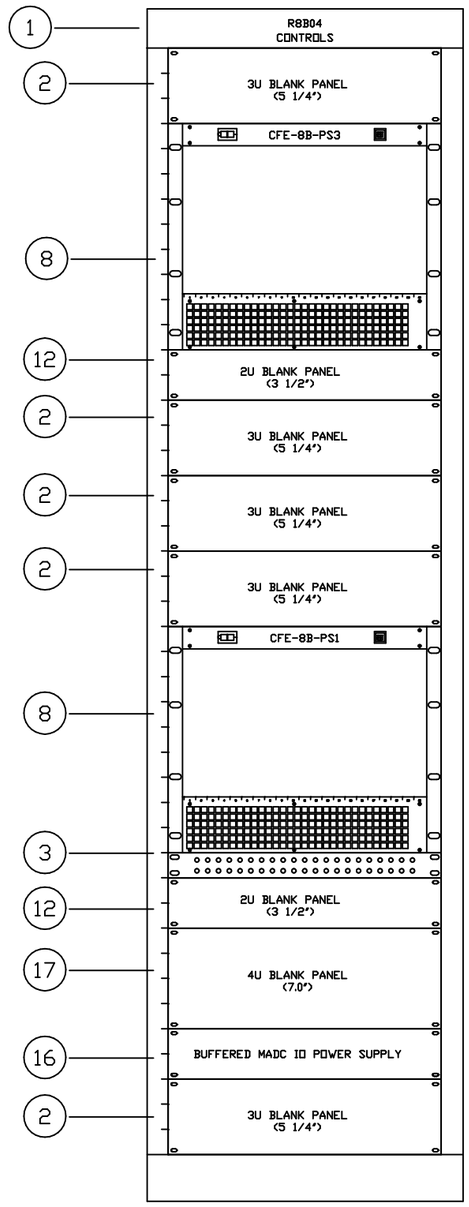
SIZE D | DRAWING NUMBER 94028552 | REV. A

MATERIAL: ——— | SCALE: NA | WEIGHT: – | SHEET 1 OF 1

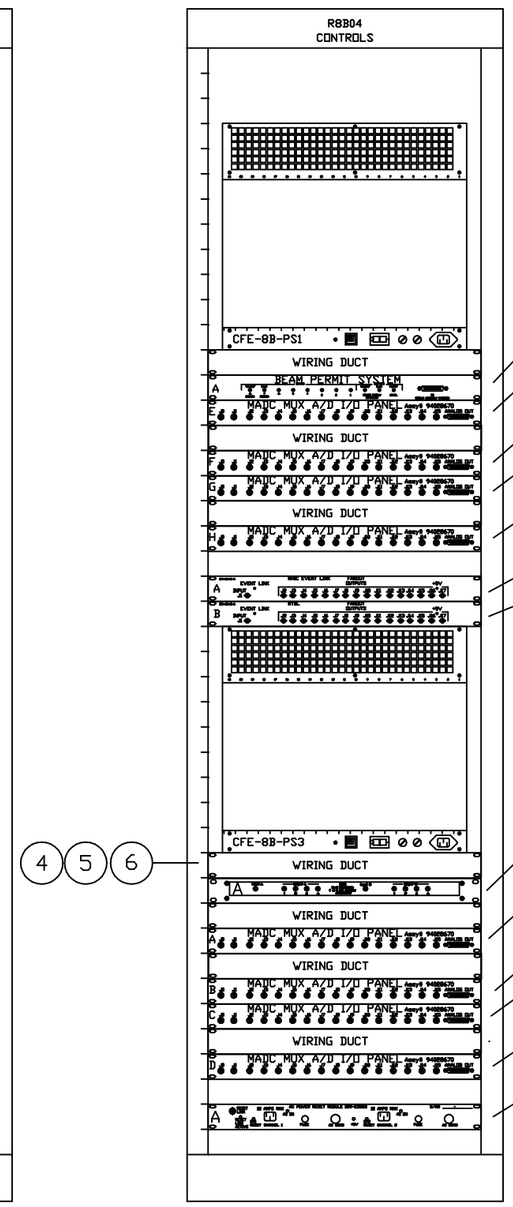
*AUTOCAD

REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

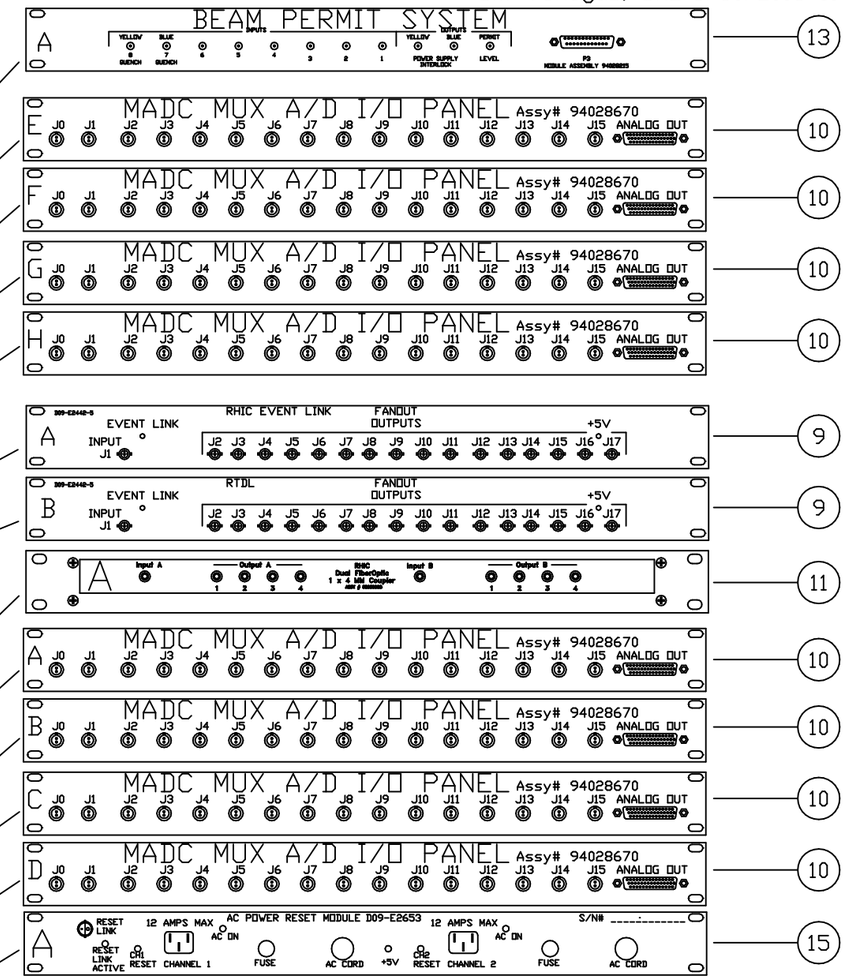
Bill Venegas, BNL 6/30/2003 10:36 AM 8553.dwg



FRONT VIEW



REAR VIEW



QTY REQD -3	-2	-1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO.,SPEC. NO.
		1	NA	17	4U x 19" BLANK PANEL (PREMIER METAL APR-719-553)	
		1	A	16	BUFFERED MADC I/O POWER SUPPLY	94028808
		1	NA	15	AC POWER RESET MODULE	D09-2653
		AR	PANELS	14	10-32 x 1/2" BINDING HEAD MACHINE SCREWS	T-32276
		1	NA	13	BEAM PERMIT SYSTEM INTERFACE PANEL	94028215
		2	NA	12	2U x 19" BLANK PANEL (PREMIER METAL ARP-319-553)	X
		1	A	11	DUAL 1 x 4 MM COUPLER	58030008
		8	A-H	10	BUFFERED MADC A/D I/O PANEL	94028670
		2	A,B	9	FANOUT ASSEMBLY	D09-E2442
		2	NA	8	VME CHASSIS CFE-8B-PS1 & CFE-8B-PS3 ASSY.	94028556
		X	X	7	X	X
		14	NA	6	WIRING DUCT SNAP CLIPS 1.5"W (PANDUIT S1.5-C)	X
		7	NA	5	WIRING DUCT COVER 1.5"W (PANDUIT C1.5LG6)	X
		7	NA	4	WIRING DUCT 1.5"W x 4"D (PANDUIT E1.5X4LG6)	X
		1	NA	3	GROMMET PANEL	94028410
		6	NA	2	3U x 19" BLANK PANEL (PREMIER METAL ARP-519-553)	X
		1	NA	1	19" RACK, 77" H RACK SPACE	X

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

NA FINISH

BREAK SHARP EDGES MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

		DATE
DRAWN BY	Venegas	6/30/03
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL		
SUPVR. APPROVAL		

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973

RHIC CONTROLS

SERVICE BLDG. 1008B

RACK R8B04 ASSEMBLY

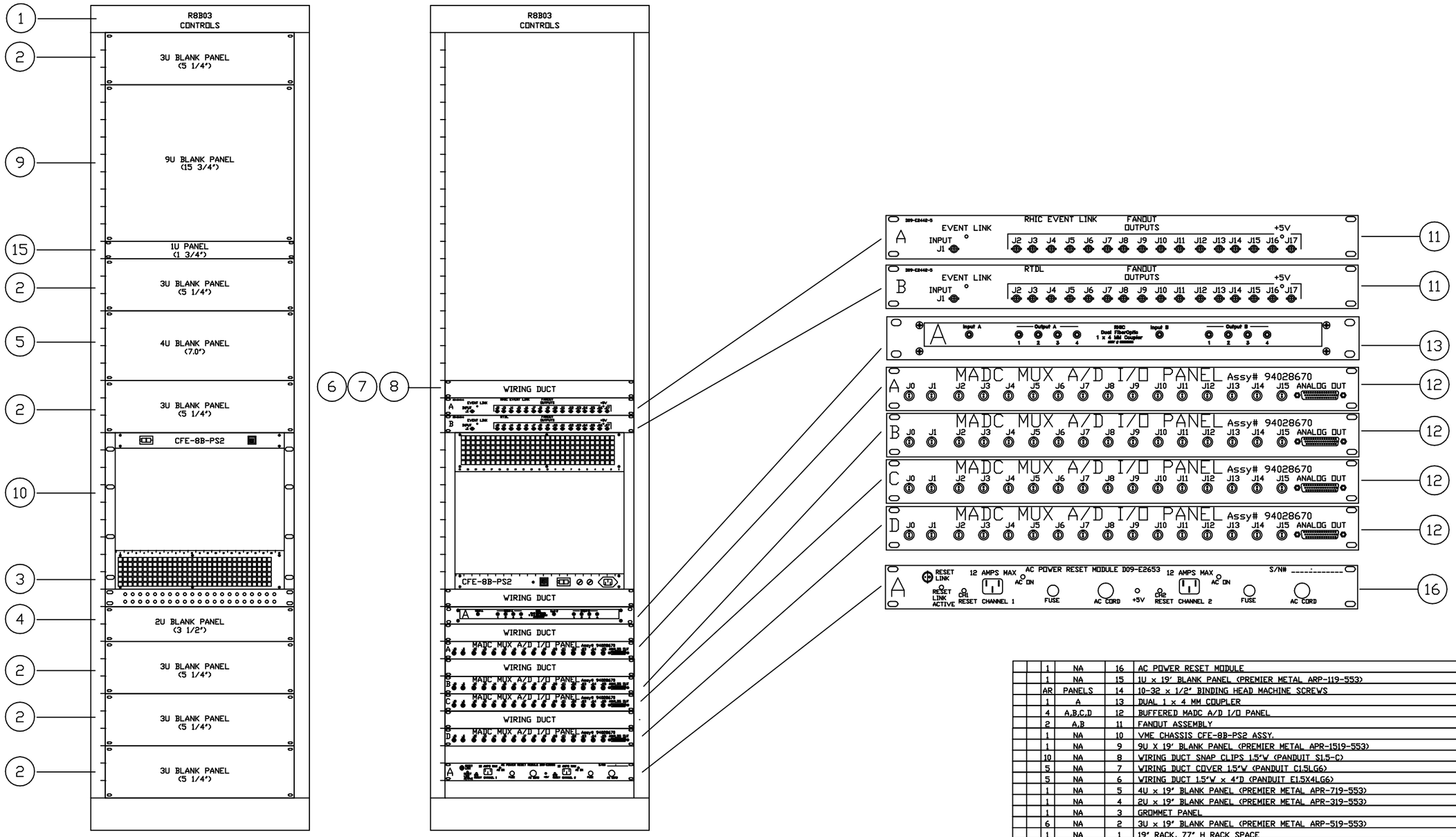
SIZE D | DRAWING NUMBER 94028553 | REV. A

MATERIAL: ——— SCALE: NA WEIGHT: – SHEET 1 OF 1

*AUTOCAD

REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

CONTROLS- 3/15/01 3:30 PM 8554.dwg



-3	-2	-1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO./INL NO.
		1	NA	16	AC POWER RESET MODULE	D09-2653
		1	NA	15	1U x 19" BLANK PANEL (PREMIER METAL ARP-119-553)	X
		AR	PANELS	14	10-32 x 1/2" BINDING HEAD MACHINE SCREWS	T-32276
		1	A	13	DUAL 1 x 4 MM COUPLER	58030008
		4	A,B,C,D	12	BUFFERED MADC A/D I/O PANEL	94028670
		2	A,B	11	FANOUT ASSEMBLY	D09-E2442
		1	NA	10	VME CHASSIS CFE-8B-PS2 ASSY.	94028558
		1	NA	9	9U X 19" BLANK PANEL (PREMIER METAL APR-1519-553)	X
		10	NA	8	WIRING DUCT SNAP CLIPS 1.5"W (PANDUIT S1.5-C)	X
		5	NA	7	WIRING DUCT COVER 1.5"W (PANDUIT C1.5LG6)	X
		5	NA	6	WIRING DUCT 1.5"W x 4"D (PANDUIT E1.5X4LG6)	X
		1	NA	5	4U x 19" BLANK PANEL (PREMIER METAL APR-719-553)	
		1	NA	4	2U x 19" BLANK PANEL (PREMIER METAL APR-319-553)	
		1	NA	3	GROMMET PANEL	94028410
		6	NA	2	3U x 19" BLANK PANEL (PREMIER METAL ARP-519-553)	X
		1	NA	1	19" RACK, 77" H RACK SPACE	X

QTY REQD

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE
± .5°

OUTSTANDING ECN

NA FINISH

BREAK SHARP EDGES
MAX. XX MIN. XX

Q.A. CATEGORY A-3

		DATE
DRAWN BY	Ed Koropsak	6/5/98
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL	R. MICHNOFF	6/5/98
SUPVR. APPROVAL		

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973

RHIC CONTROLS

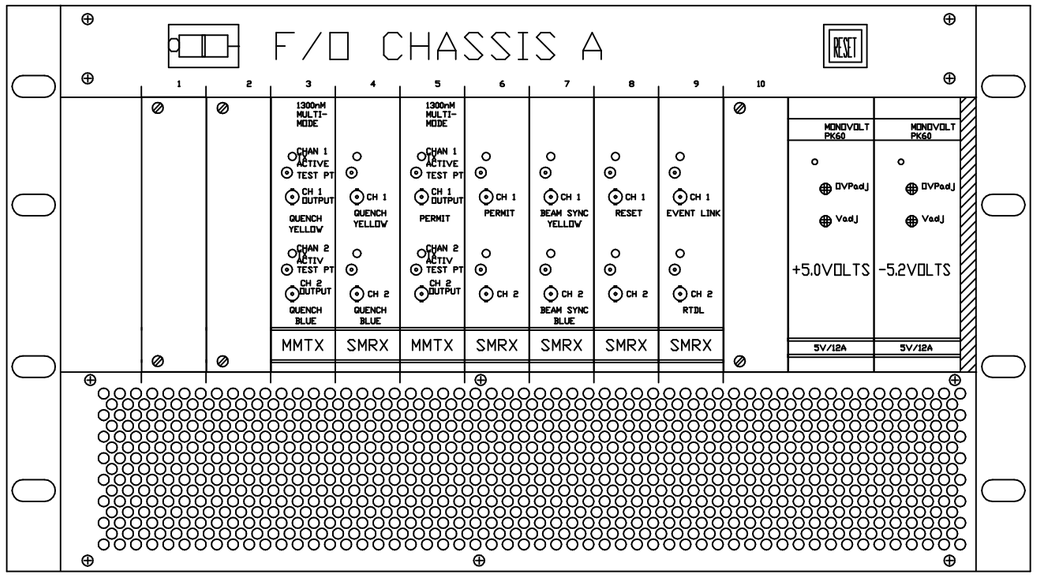
SERVICE BLDG. 1008B

RACK R8B03 ASSEMBLY

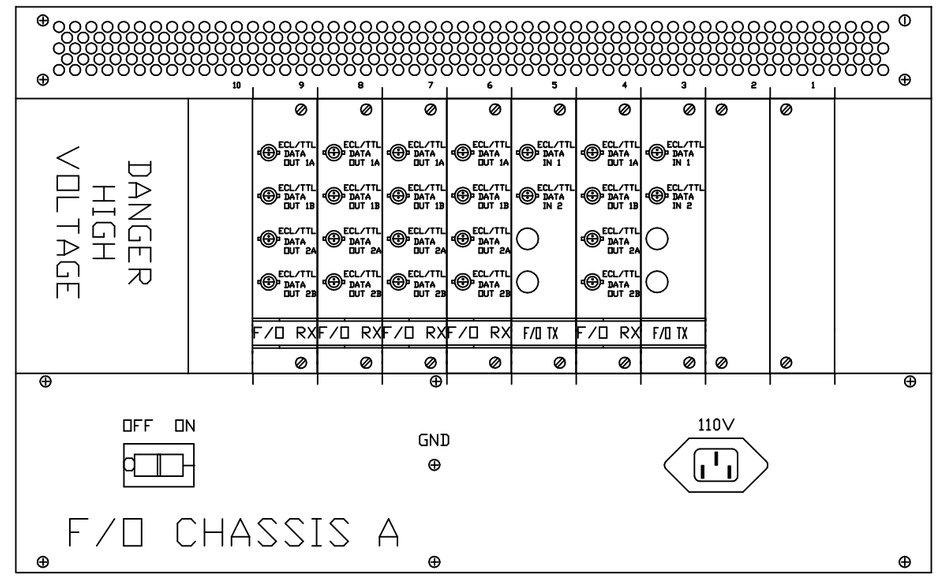
SIZE D | DRAWING NUMBER 94028554 | REV. A

MATERIAL: ——— SCALE: NA WEIGHT: – SHEET 1 OF 1

1 *AUTOCAD



FRONT VIEW



REAR VIEW

REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

-3	-2	-1	QTY REQD	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO.,SPEC NO.
			1	SLOT 7	7	3U FIBER OPTIC RECEIVER TRANSISTION MODULE, ECL	D09-E2541-3
			6	ALL UNUSED	6	3U x 6HP BLANK PANEL (ELECTRO-SPACE ESFE-3032)	X
			4	SLOT4,6,8,9	5	3U FIBER OPTIC RECEIVER TRANSITION MODULE, TTL	D09-E2542-3
			5	SLOT4,6,7-9	4	3U FIBER OPTIC RECEIVER MODULE, MULTIMODE/SINGLEMODE	94028101
			2	SLOT 5,6	3	3U FIBER OPTIC TRANSMITTER TRANSITION MODULE, TTL	D09-E2495-3
			2	SLOT 3,5	2	3U FIBER OPTIC TRANSMITTER MODULE, MULTIMODE	94028168
			1	N/A	1	3U FIBER OPTIC CHASSIS	94028261

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

OUTSTANDING ECN

NA FINISH

BREAK SHARP EDGES
MAX. XX MIN. XX

Q.A. CATEGORY A-3		DATE	
DRAWN BY	Ed Koropsak	6/5/97	
CHECKED BY			
DESIGN APPROVAL			
ENGINEER APPROVAL	R. MICHNOFF	6/5/98	
SUPVR. APPROVAL			

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973

RHIC CONTROLS

1008B RACK R08B04

F/O CHASSIS A ASSY.

SIZE D

DRAWING NUMBER 94028555

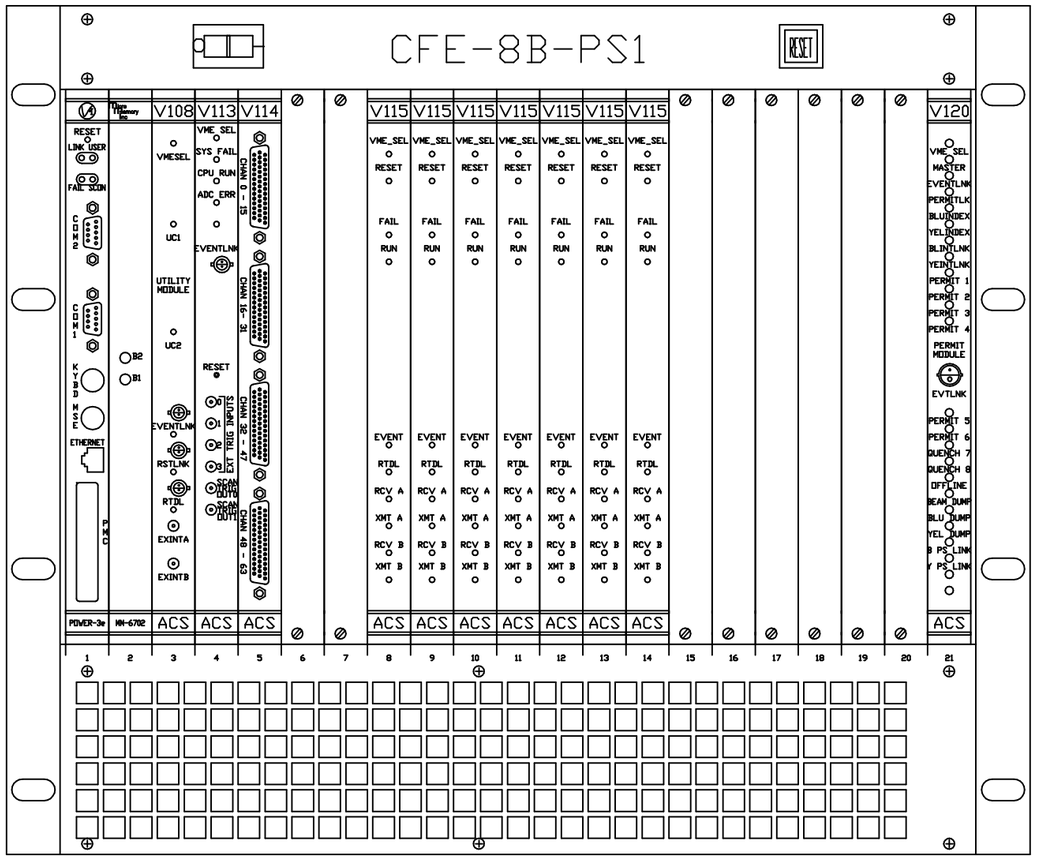
REV. A

MATERIAL: ——— SCALE: NA WEIGHT: – SHEET 1 OF 1

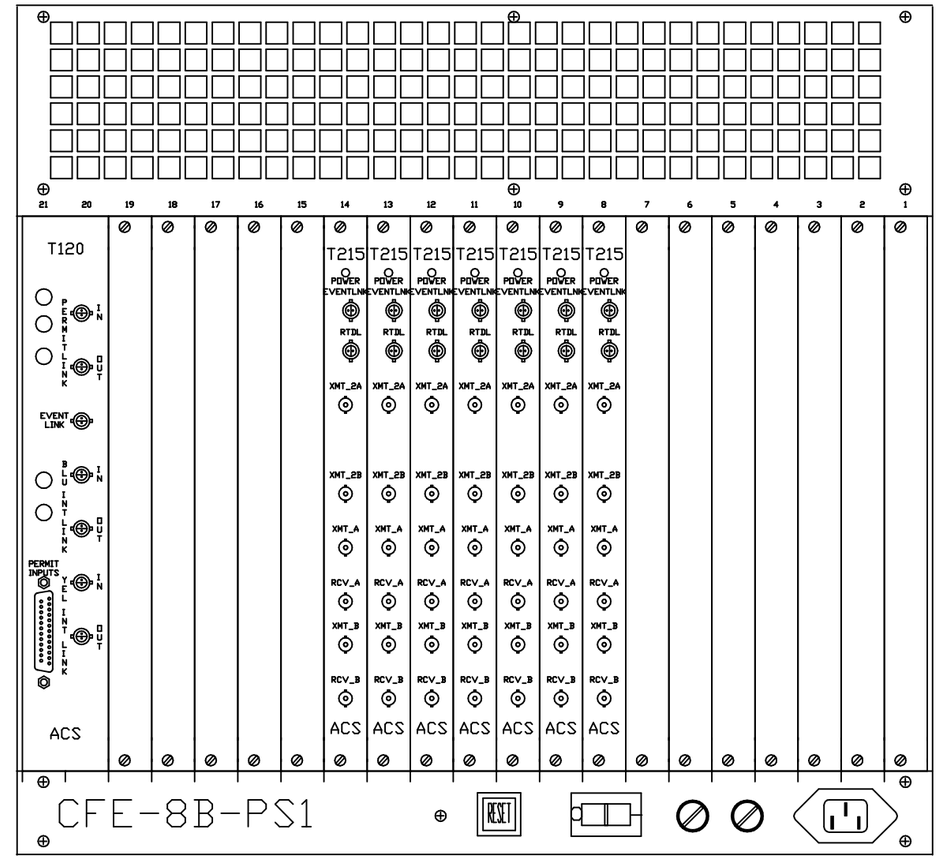
*AUTOCAD

REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

Bill Venegas, BNL 6/30/2003 10:42 AM 8556.dwg



FRONT VIEW



REAR VIEW

NOTE:

1. ALL UNUSED SLOTS, FRONT AND REAR

-3	-2	-1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO./BNL NO.
		1	SLOT 2	12	MEMORY BOARD	MM-6702
		1	SLOT 20,21	11	T120 PERMIT SYSTEM TRANSITION MODULE	94028199-2
		1	SLOT 21	10	V120 PERMIT SYSTEM MODULE	94028077
		x	SEE NOTE 1	9	VME BLANK PANEL (ELECTRO-SPACE ESFE-2985)	
		1	SL 13	8	T215 WAVEFORM GENERATOR TRANSITION MODULE	94028441-1
		6	8-12,14	7	T215 WAVEFORM GENERATOR TRANSITION MODULE	94028441-2
		7	SLOT 8-14	6	V115 WAVEFORM GENERATOR MODULE	94028108
		1	SLOT 5	5	V114 MADC A/D CONVERTER MODULE	94028226
		1	SLOT 4	4	V113 MADC CONTROLLER MODULE	94028140
		1	SLOT 3	3	V108 UTILITY MODULE	94028094
		1	SLOT 1	2	FRONT END COMPUTER	POWER-3e
		1	N/A	1	VME CHASSIS	RHIC-93008000

QTY REQD

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

NA FINISH

BREAK SHARP EDGES MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

		DATE
DRAWN BY	Venegas	6/30/03
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL		
SUPVR. APPROVAL		

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973

RHIC CONTROLS

SERVICE BLDG 1008B

VME CHASSIS CFE-8B-PS1

SIZE D

DRAWING NUMBER 94028556

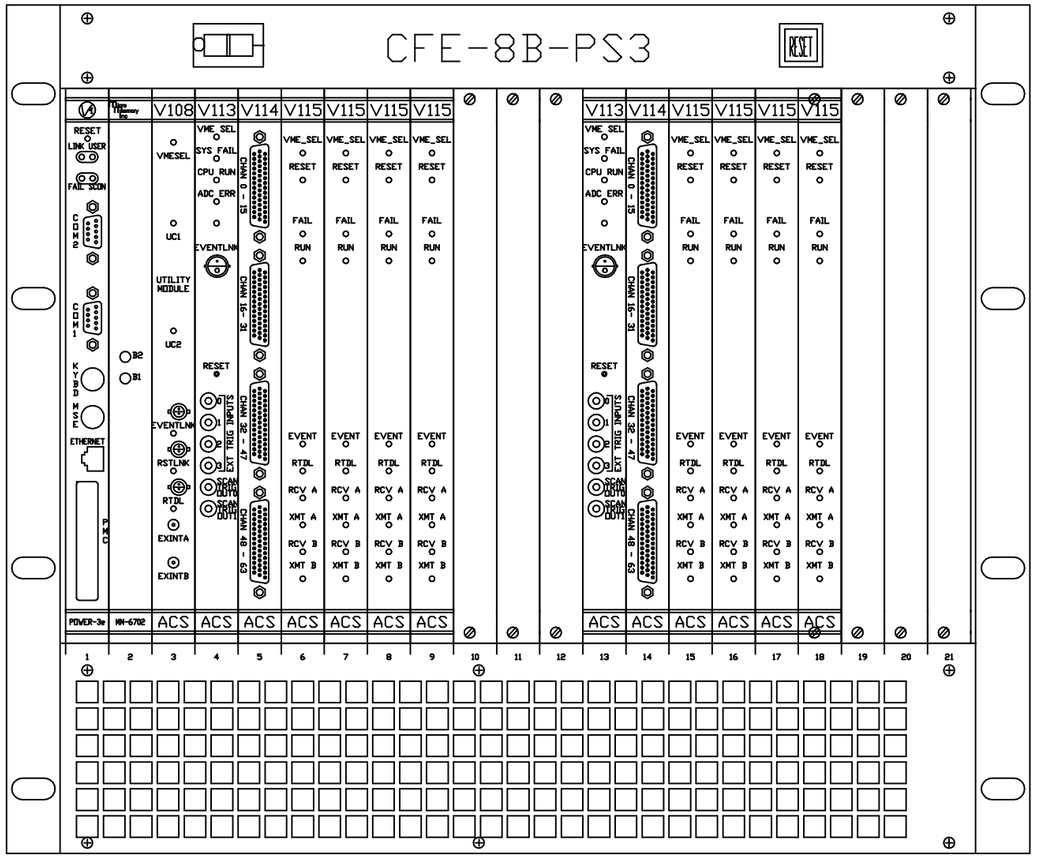
REV. A

MATERIAL: ——— SCALE: NA WEIGHT: – SHEET 1 OF 1

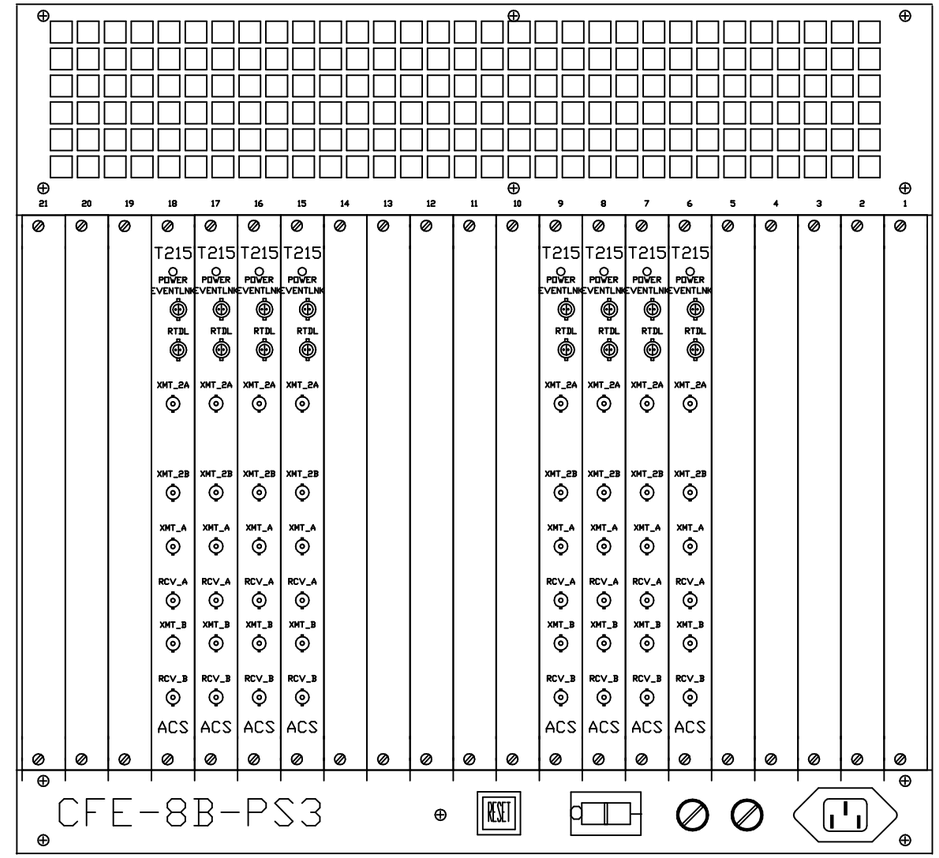
*AUTOCAD

REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

Bill Venegas, BNL 6/30/2003 10:58 AM 8557.dwg



FRONT VIEW



REAR VIEW

NOTE:

1. ALL UNUSED SLOTS, FRONT AND REAR

QTY REQD -3	QTY REQD -2	QTY REQD -1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO.,SPEC NO.
		5	7,8, 16,18	10	T215 WAVEFORM GENERATOR TRANSITION MOUDLE	94028441-1
		3	6,9,15	9	T215 WAVEFORM GENERATOR TRANSITION MOUDLE	94028441-2
		x	SEE NOTE 1	8	VME BLANK PANEL (ELECTRO-SPACE ESFE-2985)	
		8	6-9,15-18	7	V115 WAVEFORM GENERATOR MODULE	94028108
		1	SLOT 5	6	V114 MADC A/D CONVERTER MODULE	94028226
		1	SLOT 4	5	V113 MADC CONTROLLER MODULE	94028140
		1	SLOT 2	4	MEMORY BOARD	MM-6702
		1	SLOT 3	3	V108 UTILITY MODULE	94028094
		1	SLOT 1	2	FRONT END COMPUTER	
		1	N/A	1	VME CHASSIS	RHIC-93008000

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

NA FINISH

BREAK SHARP EDGES MAX. XX MIN. XX

OUTSTANDING ECN

Q.A. CATEGORY A-3

		DATE
DRAWN BY	Venegas	6/30/03
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL		
SUPVR. APPROVAL		

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC.
UPTON, N.Y. 11973

RHIC CONTROLS

SERVICE BLDG 1008B

VME CHASSIS CFE-8B-PS3

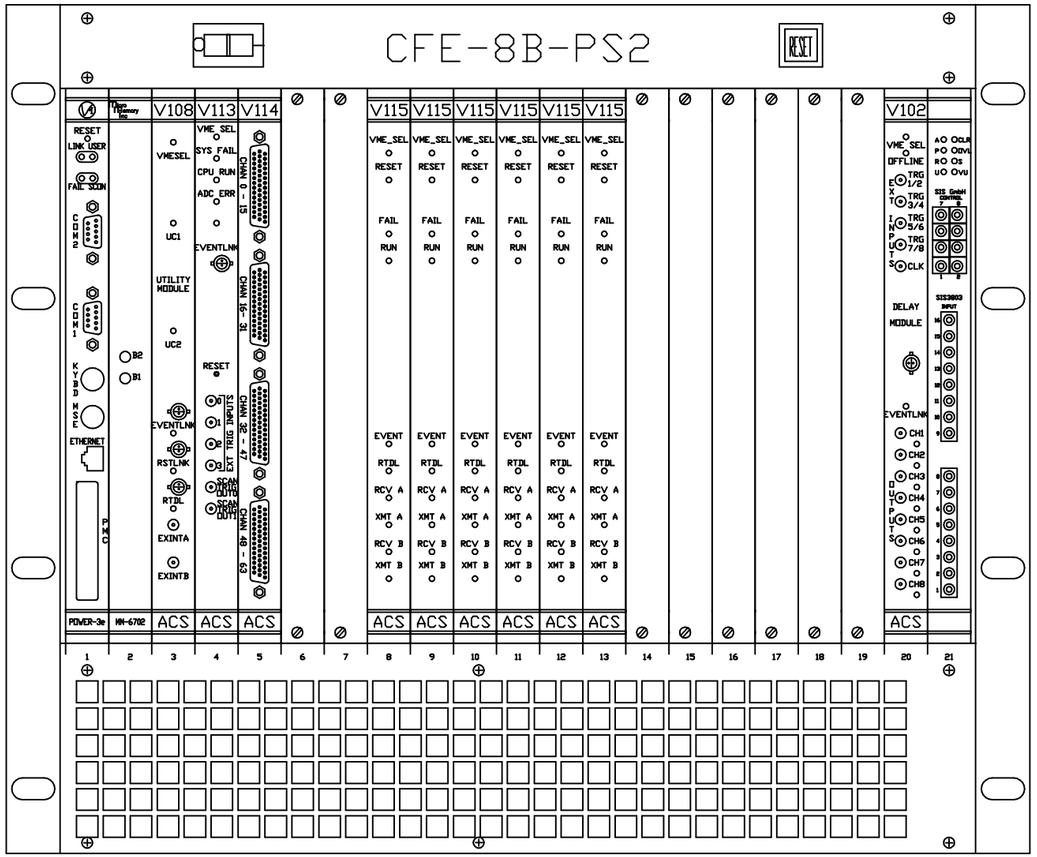
SIZE D | DRAWING NUMBER 94028547 | REV. A

MATERIAL: ——— SCALE: NA WEIGHT: – SHEET 1

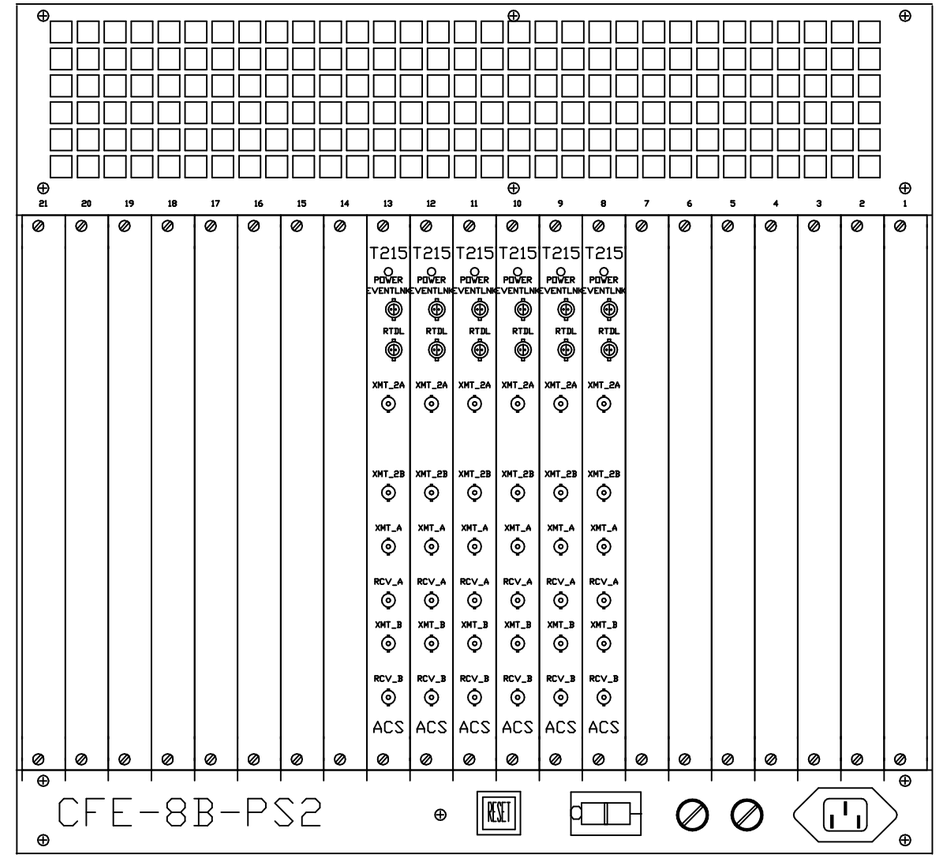
*AUTOCAD

REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

Bill Venegas, BNL 6/30/2003 10:51 AM 8558.dwg



FRONT VIEW



REAR VIEW

NOTE:

1. ALL UNUSED SLOTS, FRONT AND REAR

-3	-2	-1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MAT'L DWG NO.,SPEC NO.
		1	SLOT 2	12	MEMORY BOARD	MM-6702
		1	SLOT 21	11	SIS3803 SCALER MODULE (CHIPMUNKS)	
		1	SLOT 20	10	V102 DELAY MODULE	94028072
		x	SEE NOTE 1	9	VME BLANK PANEL (ELECTRO-SPACE ESFE-2985)	
		1	13	8	T215 WAVEFORM GENERATOR TRANSITION MODULE	94028441-1
		5	8-12	7	T215 WAVEFORM GENERATOR TRANSITION MODULE	94028441-2
		6	SLOT 8-13	6	V115 WAVEFORM GENERATOR MODULE	94028108
		1	SLOT 5	5	V114 MADC A/D CONVERTER MODULE	94028226
		1	SLOT 4	4	V113 MADC CONTROLLER MODULE	94028140
		1	SLOT 3	3	V108 UTILITY MODULE	94028094
		1	SLOT 1	2	FRONT END COMPUTER	POWER-3e
		1	N/A	1	VME CHASSIS	RHIC-93008000

QTY REQD

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

DECIMAL TOLERANCES
.X ±.030
.XX ±.015
.XXX ±.005
ANGULAR TOLERANCE ± .5°

OUTSTANDING ECN

NA FINISH

BREAK SHARP EDGES MAX. XX MIN. XX

Q.A. CATEGORY A-3

		DATE
DRAWN BY	Venegas	6/30/03
CHECKED BY		
DESIGN APPROVAL		
ENGINEER APPROVAL		
SUPVR. APPROVAL		

NEXT ASSEMBLY

BROOKHAVEN NATIONAL LABORATORY
UPTON, N.Y. 11973
RHIC CONTROLS
SERVICE BLDG 1008B
VME CHASSIS CFE-8B-PS2

SIZE D | DRAWING NUMBER 94028558 | REV. A

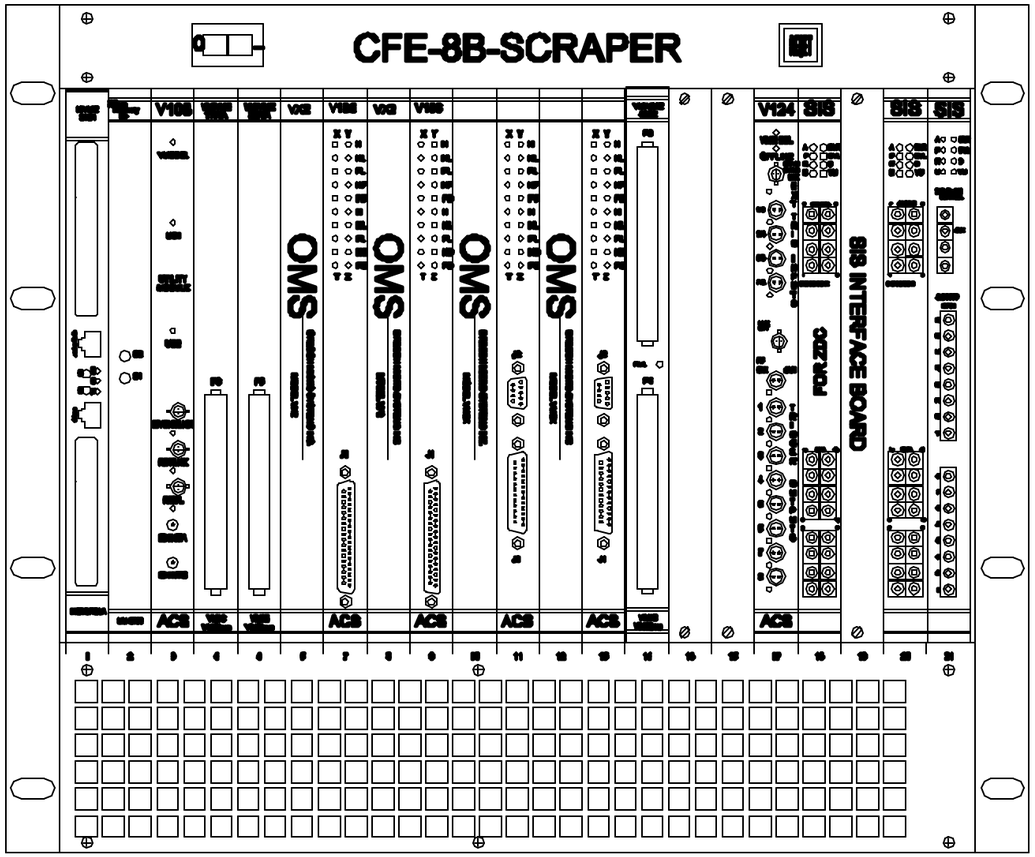
MATERIAL: ——— SCALE: NA WEIGHT: – SHEET 1 OF 1

*AUTOCAD

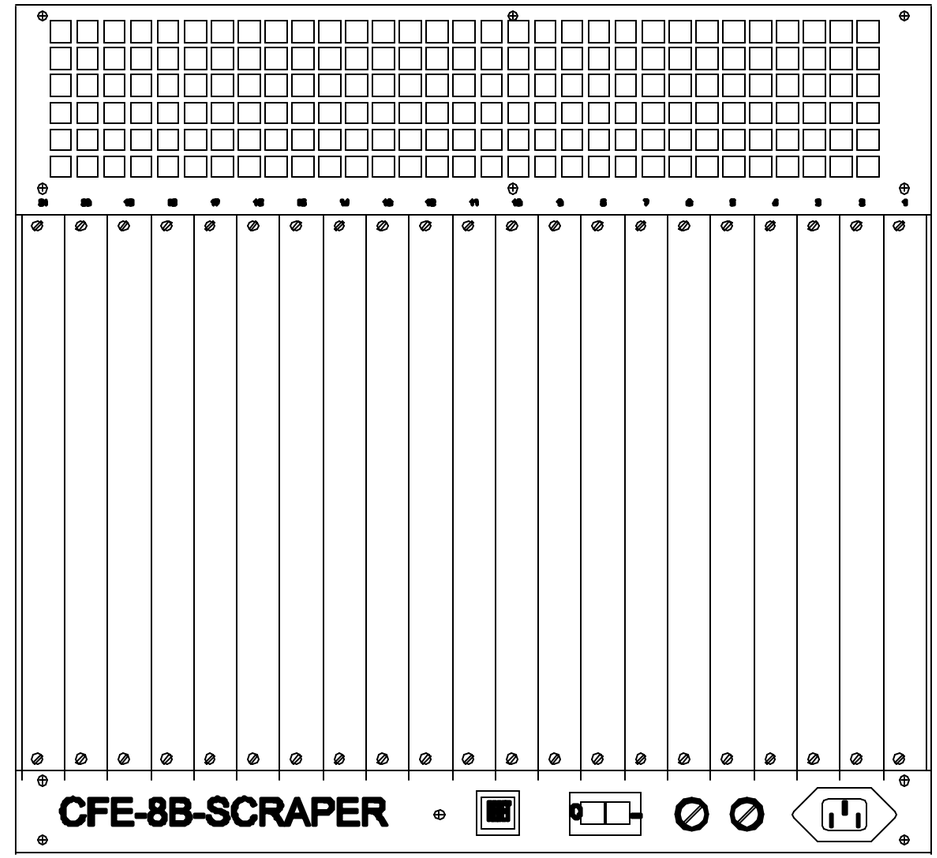
REV.	ZONE	ECN NO.	DATE	BY	CKR	APP.

Controls, bnl 2/2/2005 2:50 PM BS_Scraper_Chassis.dwg

FRONT VIEW



REAR VIEW



NOTE 1:

ALL UNUSED SLOTS REQUIRE BLANK PANELS.

		20	SLOT 20	13	VME BLANK PANEL (SLOTTED-SPACE SAVE-SAVE)	
		1	SLOT 17	14	VME SIMS RAID TRIGGER MODULE	[illegible]
		4	12-11, 10-19	12	BACKPLANE JUMPER CABLE FOR V124/V114, CONTROLS	[illegible]
			Ref. 5-6	10		
		2	SLOT 15,16-21	12	[illegible] SCALER BOARD	
		1	SLOT 13	11	SIS INTERFACE BOARD	
		1	SLOT 14	10	VME-DIO-142	
		2	SLOT 11-10	9	STEPPER MOTOR CONTROL MODULE	[illegible]
		2	SLOT 7-8	8	VME STEPPER MOTOR DRIVERS	
		2	SLOT 10-12	7	GREENHILL MICRO-STEPPER MOTOR CONTROLLER	VME1-4
		2	SLOT 5-6	6	GREENHILL MICRO-STEPPER MOTOR CONTROLLER	[illegible]
		1	SLOT 5	5	VME-[illegible]	
		1	SLOT 4	4	VME-[illegible]	
		1	SLOT 3	3	VME UTILITY MODULE	[illegible]
		1	SLOT 1	2	FRONT END CONTROLLER	[illegible]
		1	N/A	1	VME CHASSIS	[illegible]
-3	-2	-1	REF DESIGNATOR	ITEM NO.	DESCRIPTION	MFG. PART NO./INT. NO.
BY ECO						

INTERPRET IN GENERAL ACCORDANCE WITH ASME Y14.24M-1989	Q.A. CATEGORY A-3	DATE	BROOKHAVEN NATIONAL LABORATORY
	DRAWN BY JOHN PEPE	12/3/02	UPTON, N.Y. 11973
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CHECKED BY		RHIC CONTROLS
DECIMAL TOLERANCES .X ±.030 .XX ±.015 .XXX ±.003 ANGULAR TOLERANCE ± .5°	DESIGN APPROVAL		SERVICE BLDG. 1008B
	ENGINEER APPROVAL		VME CHASSIS CFE-8B-SCRAPER
	SUPVR. APPROVAL		SIZE D — 9402XXXX — REV. A
OUTSTANDING ECN	NA FINISH	BREAK SHARP EDGES MAX. XX MIN. XX	NEXT ASSEMBLY — DRAWING NUMBER
			MATERIAL: SCALE: NA WEIGHT: SHEET 1

*AUTOCAD