national accelerator laboratory

TM-235
0111

ACCELERATOR NOMENCLATURE

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Each of the Laboratory sections responsible for technical component design, in response to their own needs, has attempted to devise a nomenclature, or component identification system. This is an attempt to draw these efforts together, with the help of the Electrical Standards Committee and other representatives of these sections, and to produce a component identification numbering system suitable for use throughout the whole accelerator complex.

The following identification symbol system has evolved. It has the form

$$XX^{x}_{n}n\text{-}XX^{x}_{n}\text{-}nn,$$

where X is an alphabetical and n is a numerical character; $^{x}_{n}$ is either an alphabetical or numeric character.

The first field

$XX^{x}_{n}n$ is an area designator;

the second field

XX^{x}_{n} is a device designator,
(see page 8)

and the third field

nn is an item designator.

We would emphasize that the combined area-device designator symbol is intended to be applied to a particular piece of equipment located in a particular place in the accelerator complex. It is not intended to be a serial number for a particular make or model of apparatus. Thus, if a device is moved to a different area (as defined in this document) its identification symbol would change. Replacement of

a device in an area would cause the replacement device to assume the identification symbol of its predecessor (if they are equivalent in intended function, etc.).

Cable Labels

It is planned that cable logs will be stored in the control computer memory. It is suggested that cables be labelled at each end with the device name and location of the other end of the cable.

Area Designator

The first letter will always be used to delineate the accelerator area or general area involved. Thus we will have

B for Booster
C for Central Laboratory
E for Experimental Facility
F for Farms
I for Industrial Area
L for Linac
M for Main Accelerator
P for Proton Beam Lines
T for Beam Transfer
U for Utilities
X for Cross Gallery.

Succeeding alpha characters and the numeric character are used to complete the area designator with a mnemonic combination consistent with single use of a set of characters.

A list of the area identifiers in use to this time follows. It is, of course, intended that this listing is simply the beginning, to be added to as need arises. Prints of drawings showing the areas covered by the identifier are attached.

LINAC-AREA IDENTIFIERS
(see drawing 0260-MC-4262)

LB	0	Beam-transport area from preaccelerator room to tank-1 area
LB	9	Beam-transport area from tank 9 to Booster
LE	0	Equipment bay (upper level) near preaccelerator room
LE	1	Equipment bay for tank 1
LE	2	Equipment bay for tank 2
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.		
.		
LE	9	Equipment bay for tank 9 at end of linac
LP	0	Preaccelerator A/C and pump room
LP	1	Preaccelerator room
LP	2	Preaccelerator dome and column
LT	1	Tank-1 area from LB 0 to low-energy end of LT 2
LT	2	Tank-2 area from LT 1 to low-energy end of LT 3
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.		
.		
LT	9	Tank-9 area from LT 8 to LB 9
LU	0	Utility area (lower level) near preaccelerator room
LU	1	Utility area for tank 1
LU	2	Utility area for tank 2
.		
.		
.		
LU	9	Utility area for tank 9 at end of linac

X CROSS-GALLERY AREA IDENTIFICATION
(see drawing 0260-MC-4262)

X E 0	Equipment bay (upper level) nearest linac
X E 1	Equipment bay between column lines B and C
X E 2	Equipment bay between column lines C and D

X U 0	Utility area (lower level) nearest linac
X U 1	Utility area between column lines B and C
X U 2	Utility area between column lines C and D

BOOSTER-AREA IDENTIFIERS
(see drawing 0303-MB-2215)

BR 01 Booster Ring
.
.
.
BR 24 Booster Ring

BG 01 Booster West Gallery

BG 02 Booster West Gallery

BG 20 Booster West Gallery
.
.
.
BG 24 Booster West Gallery

BG 11 Booster East Gallery
.
.
.
BG 17 Booster East Gallery

BY 02 Booster Transformer Yard

BY 11 Booster Transformer Yard

MAIN-ACCELERATOR AREA IDENTIFIERS
(see drawings 0404-ME-553 and 0404-MR-1094, 1095)

The first letter "M," of the area designator is used to delineate the Main-Accelerator area. The second letter of the area designator is used to define the superperiod of the Main-Accelerator ring involved.

The third and fourth characters in the typical case are numeric and designate the cell number within the superperiod. The first cell, containing the second half of the long straight section, being 01 as illustrated on drawing 0404-Me-553. Outside the enclosure, within the ring, the service buildings in each superperiod are defined in the third character by the use of a letter "S," followed by a number indicating the number of the building within the superperiod, the numbers increasing in the direction of the beam.

BEAM-TRANSFER AREA IDENTIFIERS
(see drawing 0500-MB-6276)

TG1	Beam-Transport Gallery,	adjacent to bottom
TG2	"	upstream center section
TG3	"	downstream center section
TG4	"	adjacent to Transfer Gallery
TG5	Beam-Transfer Gallery	columns 9 through 11
TG6	"	columns 7 through 9
TG7	"	columns 5 through 7
TG8	"	columns 3 through 5
TG9	"	downstream end to column 3

TE1	Beam-Transport Enclosure,	adjacent to booster
TE2	"	upstream center section
TE3	"	downstream center section
TE4	"	adjacent to Transfer Gallery
TE5	"	columns 9 through 11
TE6	"	columns 7 through 9
TE7	"	columns 5 through 7
TE8	"	columns 3 through 5
TE9	"	downstream end to column 3

DEVICE DESIGNATOR

Different section leaders desire to designate devices in different ways. Accordingly, the device designator may be made up in the most flexible manner possible. Space has been left for the entire name of a device if desired. One may, for example, put "Electrostatic Septum" in this space. On the other hand, several sections plan to use three-character codes to designate the device name or primary attribute or function, as follows:

A	for alternators, motors, generators, rotating machinery
B	for beam monitors and stops
C	for controls, computers
D	for
E	for electrostatic
F	for fans, blowers, refrigerating devices
F	for (compressed) gas
H	for hydraulic
I	for ion
J	for
K	for
L	for
M	for magnet
N	for
O	for
P	for power
Q	for energy storage (capacitors and chokes)
R	for radio frequency
S	for
T	for transformer
U	for
V	for vacuum
W	for water
X	for radiation devices and systems
Y	for
Z	for racks, cabinets, cable trays, and ducts

A listing of the device designators assigned to date follows:

AAG	A.C. generator
AAM	A.C. motor
AMG	Motor generator set
APM	Pulsed stepping motor

BBD	Beam dump
BIE	Beam intensity monitor, electrostatic
BIF	Beam intensity monitor, Faraday cup
BII	Beam intensity monitor, ion collecting
BIM	Beam intensity monitor, magnetic
BIS	Beam intensity monitor, second emission
BLD	Beam longitudinal oscillation damper
BPD	Beam phase detector
BPE	Beam position monitor, electrostatic
BPF	Beam position monitor, Faraday cup
BPI	Beam position monitor, ion collecting
BPM	Beam position monitor, magnetic
BPO	Beam position monitor, straight section
BPR	Beam profile monitor
BPS	Beam position monitor, second emission
BRF	Faraday cup
BRI	Beam profile monitor, ion collecting
BSC	Beam scraper
BSL	Beam scraper lip
BSH	Horizontal defining slit
BSS	Beam safety stop
BSV	Vertical defining slit
BTD	Beam Transverse Oscillation Damper
BTS	Beam Transverse Oscillation Damper P.S.

CC	Control computer
CAD	Computer interface, analog to digital
CBC	Computer interface, binary control
CBS	Computer interface, binary sense
CCB	Control computer booster
CCL	Control computer linac
CCM	Control computer main ring
CCP	Computer card punch
CCR	Computer card reader
CCT	Control computer 8-GeV transfers
CDA	Computer interface, digital to analog
CDK	Computer display, keyboard
CDM	Computer display, memory unit
CDS	Computer display, storage scope
CDT	Computer display CRT
CLP	Computer line printer
CMT	Computer magnetic tape unit
CMX	Multiplex station (module interface rack)
CPT	Computer paper tape unit
CPU	Computer central processing unit
CRM	Computer rotating memory
CSH	Computer interface, sample-and-hold
CSM	Computer interface, stepping motor control
CTM	Computer interface, timing generator

CTY Computer typewriter (Teletype) unit

CVM Computer interface, video select matrix

DBN Debuncher

EI	Electrostatic septum
EIS	Electrostatic septum power supply
EK	Electrostatic kicker
EKS	Electrostatic kicker power supply

G	Air equipment or gas equipment
GP	Air pump, compressor
GT	Gas supply tank
GFS	Air flow switch
GPR	Gas (or air) pressure regulator
GPS	Air pressure switch
GVM	Air valve, manual
GVP	Air valve, relief
GVS	Air valve, solenoid operated

I	Ion source equipment
ICC	Instrumentation and control cabinet
IES	Extractor power supply
IFS	Filament power supply
IHV	Ion source Greinacher HV power supply
IMS	Magnet power supply
IPD	Palladium leak
IPS	Palladium leak heater power supply
ISP	Ion source pulser

MA	Momentum analyzing magnet
MB	Bump magnet
MC	Correcting magnet
ME	Sweeping magnet (for emittance meas.)
MG	Gradient magnet
MH	Horizontal bending magnet
MK	Fast kicker magnet
ML	Pulsed bending magnet
MP	Pulsed septum magnet
MQ	Quadrupole magnet
MS	DC septum magnet
MT	Trim steering magnet
MV	Vertical bending magnet
MY	Switching magnet
MAS	Power supply for analyzing magnet
MB1	Main-Accelerator bending magnet, type B1
MB2	Main-Accelerator bending magnet, type B2
MBS	Power supply for bump magnet
MCS	Power supply for correcting magnet
MD4	Main-Accelerator, 4 ft quadrupole magnet, defocusing
MD7	Main-Accelerator, 7 ft quadrupole magnet, defocusing
MES	Power supply for sweeping magnet
MF4	Main-Accelerator, 4 ft quadrupole magnet, focusing
MF7	Main-Accelerator, 7 ft quadrupole magnet, focusing

MHS	Power supply for bending magnet (horizontal)
MKS	Power supply for kicker magnet
MLS	Power supply for pulsed bending magnet
MPS	Power supply for pulsed septum magnet
MQB	Quadrupole magnet base
MQF	Quadrupole magnet, focusing
MQS	Power supply for quadrupole magnet
MQT	Quadrupole magnet, trim
MRD	Booster ring magnet "D"
MRF	Booster ring magnet "F"
MRS	Booster ring magnet power supply
MSR	Ring magnet support
MSS	Power supply for dc septum magnet
MTS	Power supply for trim steering magnet
MVS	Power supply for vertical bending magnet
MYS	Power supply for switching magnet

PD	Disconnect
PDP	480 V distribution panel
PLP	Lighting panel
PMC	Motor control center
POA	Power outlet--120 V
POB	Power outlet--208 V, 3 phase
POC	Power outlet--480 V, 3 phase
PTA	Dry transformer
PTO	Oil transformer
PTV	High voltage power transformer
PUS	Unit substation

QCB Capacitor bank

QCH Choke (energy storage)

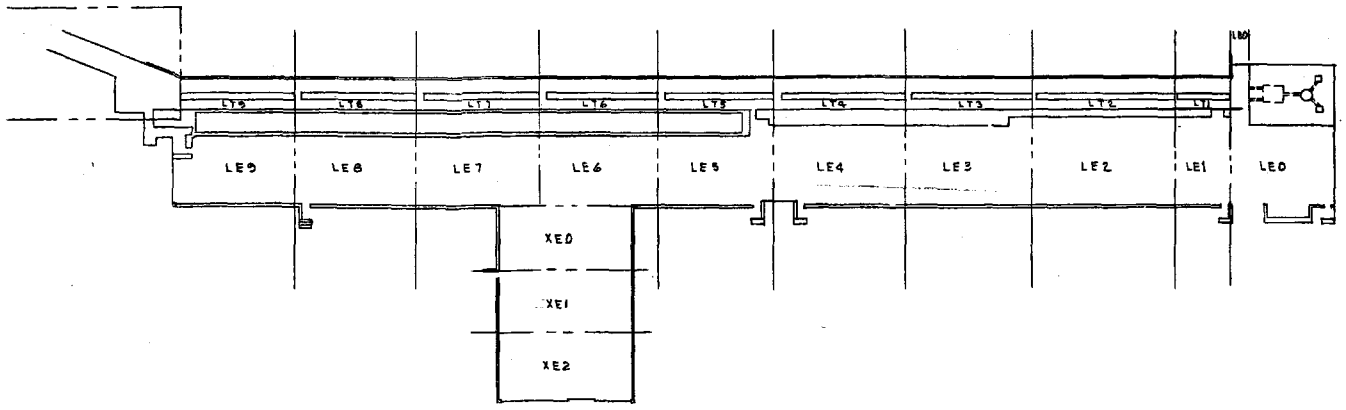
RAC	Accelerating cavity
RAM	Anode modulator
RAP	Anode power supply
RAT	Accelerating cavity tuner
RBU	Buncher
RCC	RF control center
RDL	Dummy load
RDT	Drift tube
RFB	Ferrite bias power supply
RFC	Radio frequency cabinet
RFS	Power supply for RF
RFT	Ferrite tuner
RLL	RF (low level) equipment
RMD	Modulator
RMU	Module interface rack
ROS	Oscillator
RSC	RF cavity support
RSL	Sampling loop
RPA	Power amplifier

VC	Vacuum-chamber segment (outside a magnet)
VJ	Vacuum joint
VGC	Ion gage control unit
VGI	Vacuum gage, ionization
VGT	Vacuum gage, thermocouple
VPI	Vacuum pump, ion
VPM	Vacuum pump, mechanical
VPO	Vacuum pump, oil diffusion
VPR	Vacuum pump, sorption
VPS	Ion pump power supply
VPT	Vacuum pump, turbo molecular
VPU	Vacuum pump, sublimation
VTC	Cold finger
VTN	Trap, nitrogen
VVA	Air-operated vacuum valve
VSV	Vacuum sector valve

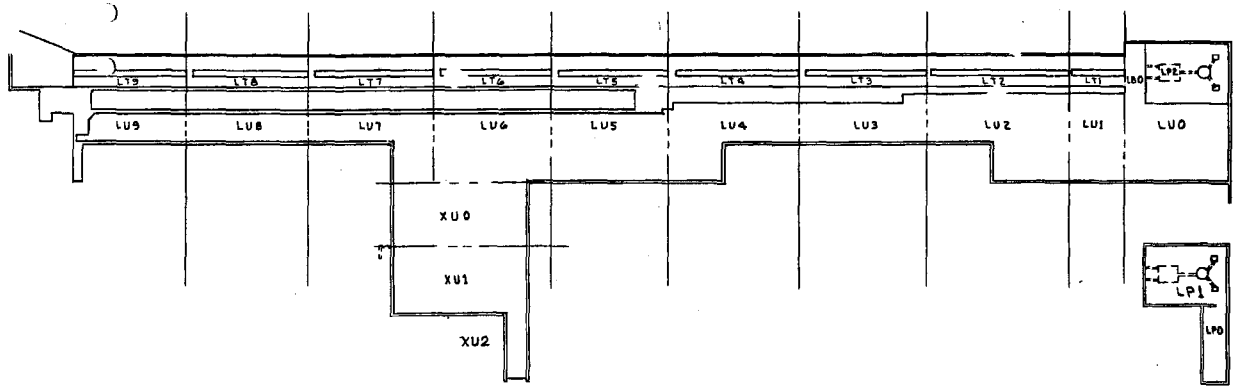
WD	Deionizer
WF	Water filter and drinking fountain
WM	Water flow monitor
WP	Water pump
WS	Floor drain
WT	Water tank
WFS	Water flow switch
WHA	Water/air heat exchanger
WHW	Water/water heat exchanger
WPR	Water pressure regulator
WPS	Water pressure switch
WTM	Water temperature monitor
WVM	Water valve, manual
WVR	Water valve, relief
WVS	Water valve, solenoid operated

Z	Racks, cabinets, cable trays, trenches, and miscellaneous enclosures or containers
ZCT	Cable tray
ZRR	Relay rack
ZWT	Wire trench

The above listing is certainly incomplete and will be added to by all having equipment in areas requiring identification on drawings, property records, etc. If you need an addition to the listing, we recommend that you attempt to devise a designator for such areas and equipment, consistent with the foregoing. That effort should be communicated to F. T. Cole who will approve the proposal as presented and add it to the listing for use, or suggest an alternative identification symbol. Additions to the listing will be distributed monthly to all holders of the list.



FLOOR PLAN UPPER LEVEL



FLOOR PLAN LOWER LEVEL

ITEM No.	QTY. REQ'D	IDENT. No.	DESCRIPTION

LIST OF MATERIALS OR PARTS

SYM	LOCATION, DESCRIPTION, BY, DATE
	REVISIONS

UNLESS OTHERWISE SPECIFIED TOLERANCES:
FRACTIONS: ± DECIMALS: ± ANGLES: ±

1. BREAK ALL SHARP EDGES 1/64 MAX.
2. DIMENSIONING IN ACCORD WITH USASI Y14.5-1966

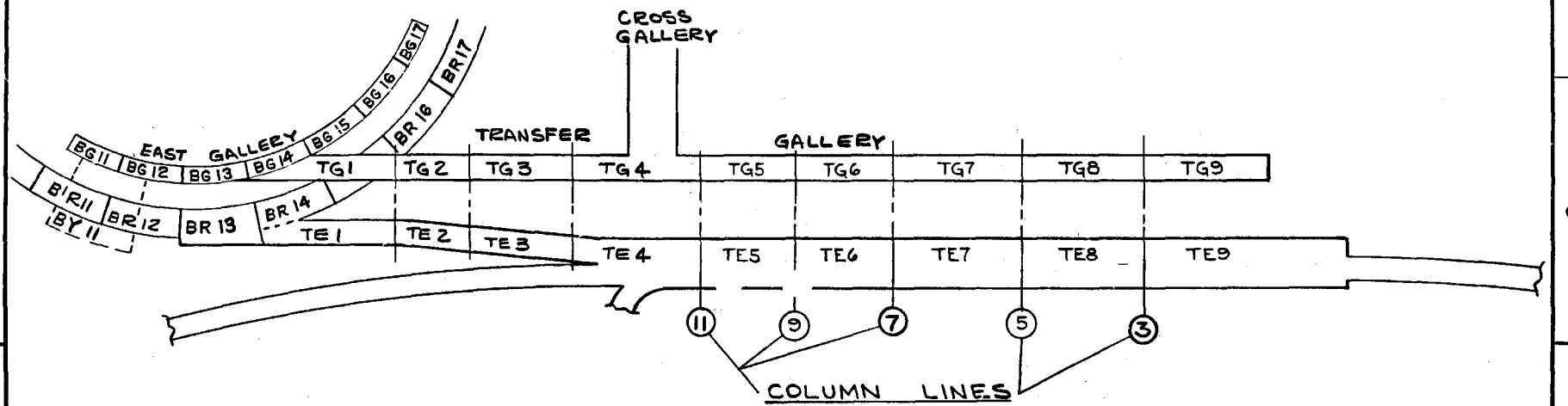
ISSUED ON DWG. NO.

ORIGINATED	A.R. DONALDSON	DATE 10-31-72
DRAWN	G. ZIBRUN	11-15-72
CHECKED	A.R.D.	11-15-72
PROJ. ENGINEER	A.R.D.	11-15-72
APPROVED	A.R.D.	11-15-72

NATIONAL ACCELERATOR LABORATORY
U.S. ATOMIC ENERGY COMMISSION

TITLE
LINAC AREA IDENTIFICATION

SCALE	SHEET 1 OF 1	DRAWING No.	REV.
—		0260.MC-4262	



NOTE:
BEAM TRANSFER EQUIPMENT IDENTIFICATION IS AS FOLLOWS:
EQUIPMENT IN AREAS TE1 AND TG1 WILL BE NUMBERED 10 THRU 19; IN TE2 AND TG2, 20 THRU 29 AND SO ON FOR EACH AREA.

ITEM No.	QTY. REQ'D	IDENT. No.	DESCRIPTION
LIST OF MATERIALS OR PARTS			

SYM	LOCATION, DESCRIPTION, BY, DATE
REVISIONS	

UNLESS OTHERWISE SPECIFIED
TOLERANCES:
FRACTIONS: ± | DECIMALS: ± | ANGLES: ±
1. BR[illegible] ALL SHA[illegible]EDGES 1/64 MAX.
2. DI[illegible]IONING [illegible]CORD WITH USASI Y14.5 - 1966

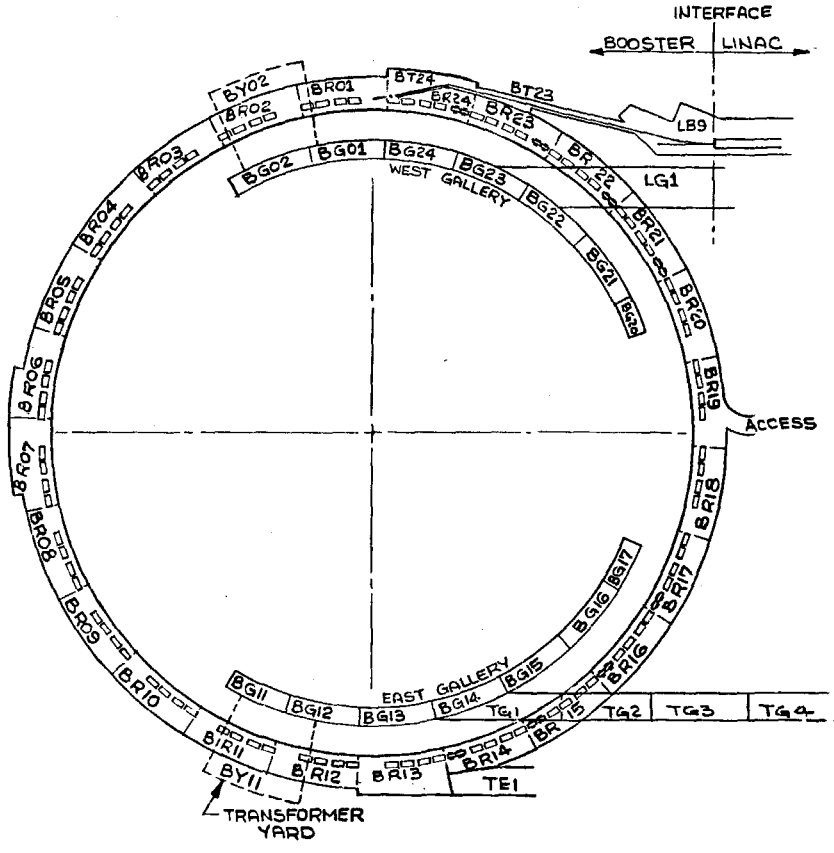
USED ON DWG. NO.

		DATE
ORIGINATED		
DRAWN	H.J.S	10/69
CHECKED		
PROJ. ENGINEER		
APPROVED		

NATIONAL ACCELERATOR LABORATORY
U.S. ATOMIC ENERGY COMMISSION

TITLE BEAM TRANSFER AREA IDENTIFICATION

SCALE	SHEET	DRAWING No.	REV.
NONE	OF	0500-MB-6276	



NOTE:
SEE DRG. *0303-ME-2341 FOR BOOSTER AREA EQUIPMENT DESIGNATIONS

ITEM No.	QTY. REQ'D	IDENT. No.	DESCRIPTION
			LIST OF MATERIALS OR PARTS

SYM	LOCATION. DESCRIPTION. BY. DATE REVISIONS
2	ADDED NOTE RLU 3/14/69
1	ADDED "B" PREFIX TO AREA NOS.

UNLESS OTHERWISE SPECIFIED
TOLERANCES:
FRACTIONS: ± DECIMALS: ± ANGLES: ±
1. BREAK ALL SHARP EDGES 1/64 MAX.
2. D SIONING CORD WITH USASI Y14.5 - 1966

USED ON DWG. NO.

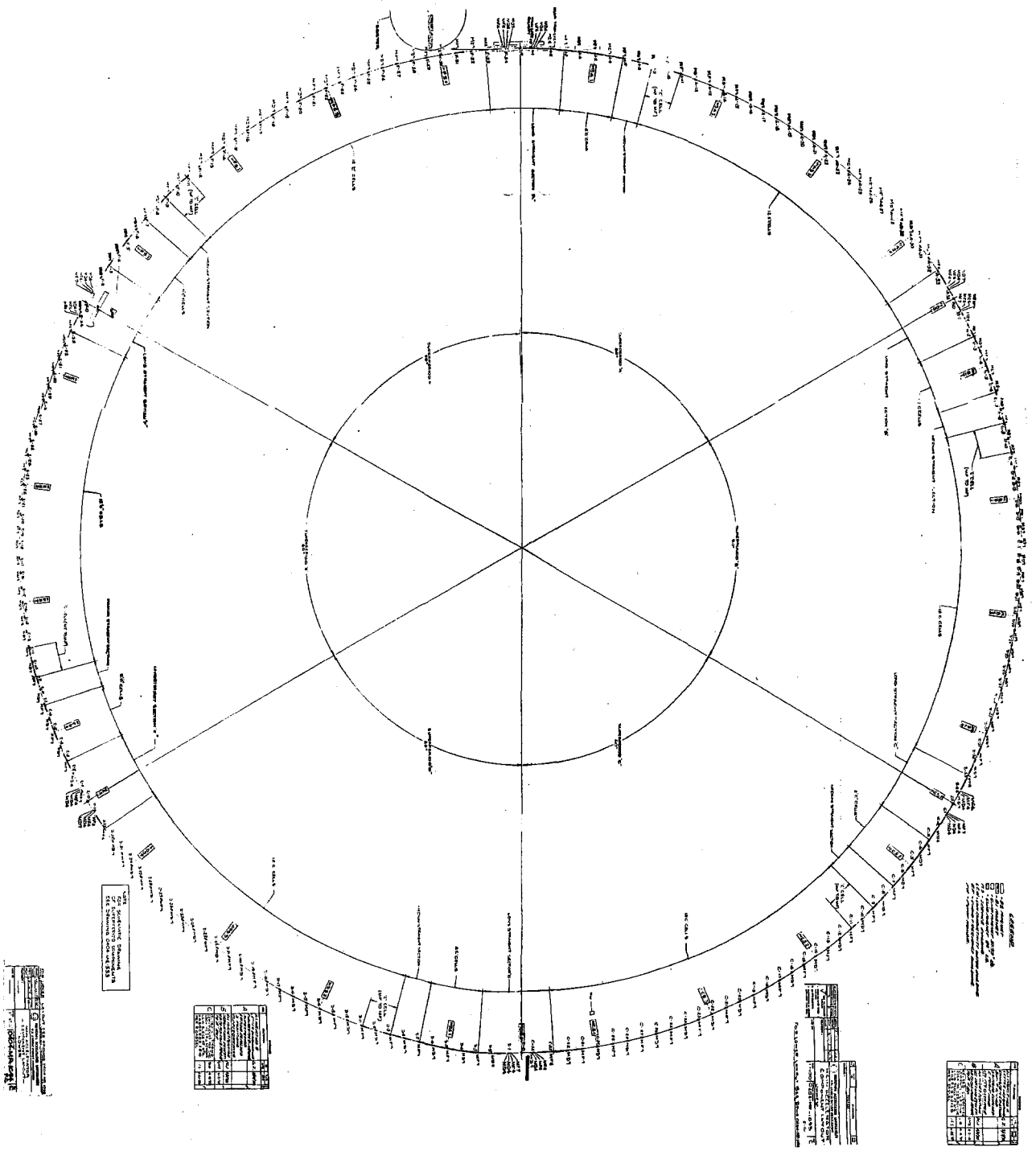
ORIGINATED	E. HUBBARD	DATE
DRAWN	L. MAPALO	4/10/69
CHECKED		
PROJ. ENGINEER		
APPROVED		

NATIONAL ACCELERATOR LABORATORY
U.S. ATOMIC ENERGY COMMISSION

TITLE
BOOSTER SYNCHROTRON
BOOSTER AREA IDENTIFICATION

SCALE	SHEET	DRAWING No.	REV.
	OF	0303-MB-2215	A

Best Available Figure



Best Available Figure