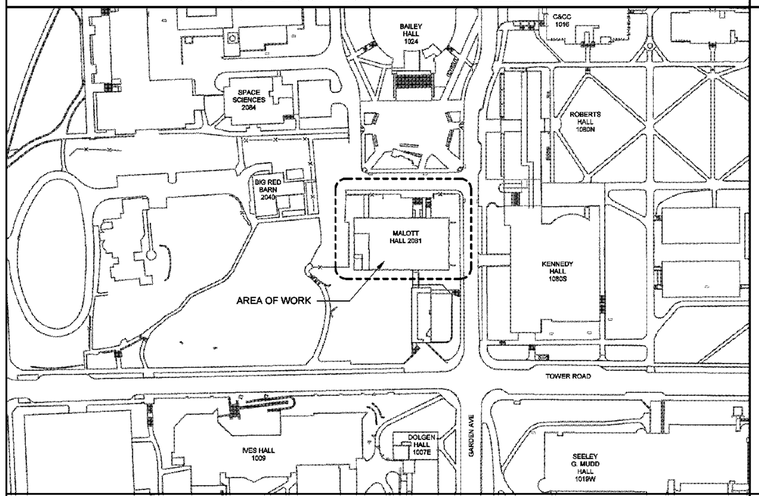
Cornell University

MALOTT HALL NORTH VESTIBULE REPLACEMENT

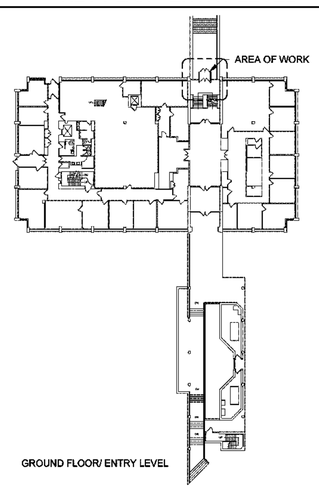
SITE LOCATION - MALOTT HALL



PERSPECTIVE VIEW

DRAWING INDEX

KEY PLAN - ENTRY LEVEL



PROJECT SCOPE

The purpose of this project is to remove and replace the existing north vestibule. Included in the project is new storefront system, new lighting, card access, fin tube radiation, and new epoxy terrazzo.

GENERAL SYMBOLS LEGEND

1 / 1 X-100 1 / 1	EXTERIOR ELEVATION
1 / 1 X-100 1 / 1	INTERIOR ELEVATION
1 / X-100	SECTION MARKER
1 / X-100	ENLARGED DETAIL
#	CONSTRUCTION KEYED NOTE
#	DEMOLITION KEYED NOTE
#	DRAWING REVISION NOTE
----------	LINETYPE: EXISTING TO REMAIN
- - - - - -	LINETYPE: DEMOLITION / TO BE RELOCATED
————	LINETYPE: TO BE PROVIDED / NEW

BUILDING CODE SUMMARY

APPLICABLE CODES
2015 (EXISTING) IBC (ADOPTED BY NEW YORK STATE)

PROJECT SUMMARY
THIS PROJECT INCLUDES THE RENOVATION OF NORTH VESTIBULE REPLACEMENT. THE WORK IS ALTERATION LEVEL 2.

BUILDING LIMITATIONS

CONSTRUCTION CLASSIFICATION:	1B
CLASSIFICATION OF HAZARDS:	NONE
HIGH-RISE BUILDING:	NO
EXTINGUISHING REQUIREMENT:	THE EXISTING BUILDING IS SPRINKLERED

OCCUPANCY

OCCUPANCY CLASSIFICATION:	BUSINESS (B)

FACILITIES ENGINEERING
WWW.IPP.CORNELL.EDU
ARCHITECTURAL, STRUCTURAL, CIVIL, ENVIRONMENTAL, MECHANICAL, AND ELECTRICAL ENGINEERING
201 HUMPHREYS SERVICE BLDG
ITHACA, NEW YORK 14853-3701

WARNING
IT IS A VIOLATION OF NEW YORK STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF THIS DOCUMENT IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO SUCH DOCUMENT THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

ARCH/STRUCT:
CIVIL/ENV:
ELECTRICAL:
MECHANICAL:

STATE OF NEW YORK — STEVE BETTEO — 085332 — LICENSED PROFESSIONAL ENGINEER

REVISIONS

1	02/22/18	ISSUE FOR 50% CD REVIEW
2	03/27/18	ISSUE FOR CONSTRUCTION

N

MALOTT HALL NORTH VESTIBULE REPLACEMENT

MALOTT HALL
ITHACA, NEW YORK

DATE:	MARCH 27, 2018
FACILITY:	2081
DESIGN:	FE DESIGN
DRAWN:	JGC

TITLE SHEET

ARCHIVE BAR CODE

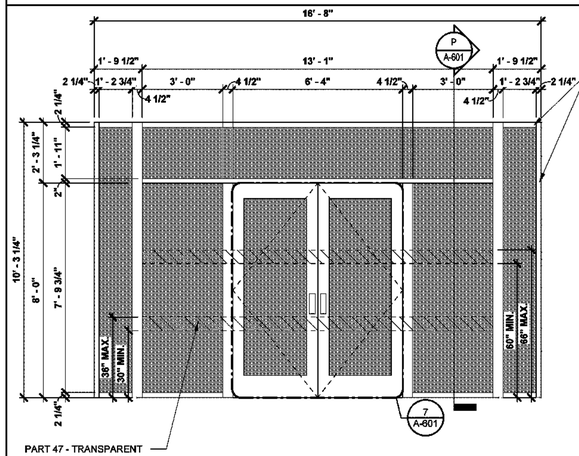
T-000
10361013

DOOR / HARDWARE SCHEDULE

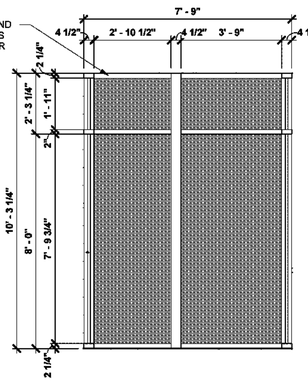
DOOR	DOOR LOCATION	HAND	PANEL SIZE # OF PANELS	PANEL SIZE WIDTH	PANEL SIZE HEIGHT	PANEL SIZE THICKNESS	DOOR MATERIAL	FRAME MATERIAL	FRAME FIRE RATING	HARDWARE: HINGES MCKINNEY T4A3786 X 26D X NRP	HARDWARE: POWER TRANSFER SECURITRON EL CEPT	HARDWARE: MCKINNEY CABLES QC-C300 36"	HARDWARE: MCKINNEY CABLES QC-C1500P 15'-2"	HARDWARE: SARGENT 55 X 56 X 8804 X J X 24 VOLTS X 810-PTB X LHRB X 32D X 3'-2"	HARDWARE: SARGENT 56-M1-8804 J X J X 24 VOLTS X BIFS X B X 814-PSB X RHRB X 32D X 3'-2"	HARDWARE: SARGENT L980 MULLION X ALUM PRIME COAT X 96"	HARDWARE: SARGENT PULL 810-PTB X 26D	HARDWARE: SARGENT DUMMY RAIL 8892 X 32D X 3'-2"	HARDWARE: SENTROL 1078	HARDWARE: RESTRICTED CYLINDER PROVIDE BY THE ZONE LOCKSMITH	HARDWARE: ARCHITECTURAL BUILDERS HARDWARE 1023SL X 32D X 110 DEGREE	HARDWARE: SARGENT MOUNTING PLATE 351B X EN	HARDWARE: CLOSER SARGENT 351 X O,OZ,OZA X EN X 120 DEGREE TOP JAMB APPLICATION	HARDWARE: MULLION SEALS NGP 51008 X 96"	HARDWARE: SWEEPS NGP D608A X DOOR WIDTHSURFACE MOUNT STOP SARGENT 596S X US10	HARDWARE: SEALS NGP 134NA X DOOR PERIMETER	HARDWARE: NGP THRESHOLD 613 X DOOR FRAME WIDTH	HARDWARE: SILENCERS DCI 8S	REMARKS
1	EXTERIOR FROM 30048	RHRB ACTIVE	(2)	3' - 2"	8' - 0"	1 3/4"	ALUM	ALUM	N	8	2	2	2	1	1	1		2	2		X	2	2	2	1	2	1	1	2	
2	30048 FROM 30002	RHRB ACTIVE	(2)	3' - 2"	8' - 0"	1 3/4"	ALUM	ALUM	N	8							2	2			2	2	2					2	

NOTES:

1. DOOR STOPS TO BE MOUNTED AT 110 DEGREES
2. CLOSERS TO BE MOUNTED TOP JAMB, FIELD DETERMINE DEPTH OF REVEAL.
3. DOOR CLOSERS SHALL BE MOUNTED AT 120 DEGREES.
4. POWER TRANSFER SHALL BE LOCATED BETWEEN THE 2ND AND 3RD HINGE FROM THE TOP OF DOOR.
5. THEORY OF OPERATION: FREE EGRESS FROM INSIDE AT ALL TIMES . CYLINDER IN THE HANDLE IS IF THE CARD ACCESS FAILS. REQUEST TO EXIT IN PANIC DEVICES TO ALLOW AUTHORIZED EXIT. PROGRAMMING FROM THE CARD ACCESS SYSTEM CAN LOCK AND UNLOCK THE EXTERIOR DOORS AT CERTAIN TIMES. WHEN THE BUILDING IS SECURE PRESENTING A VALID ID CARD, THE PANIC DEVICE WILL RETRACT AND THE DOOR CAN BE PULLED OPEN.



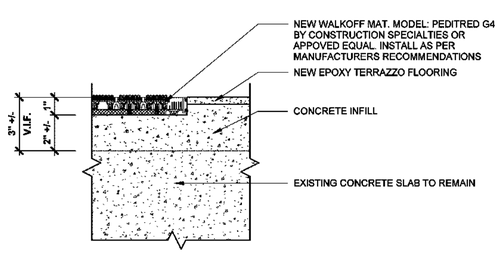
11 STOREFRONT ELEVATION
SCALE: NO SCALE



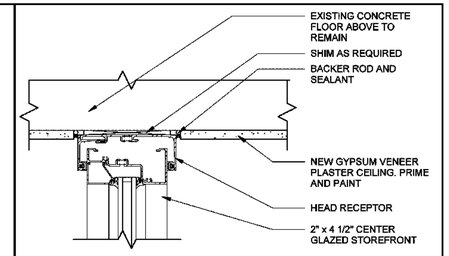
7 DOOR ELEVATION
SCALE: NO SCALE

BASIS OF DESIGN: STOREFRONT SYSTEM
- KAWNEER - TRIFAB VG 451T OR APPROVED EQUAL
  1. 2" X 4 1/2" CENTER GLASS APPLICATION
  2. OUTSIDE GLAZED
  3. SCREW SPLINE FRAME (SHEAR BLOCK AT DOOR FRAME)
  4. CLEAR ANODIZED FINISH
- KAWNEER - 500 DOORS OR APPROVED EQUAL
  1. 6" SIDE RAILS
  2. 7" TOP RAIL
  3. 10" BOTTOM RAIL

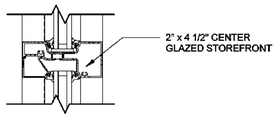
ALL STOREFRONT GLAZING TO BE 1" INSULATED GLASS UNITS:
- 1/4" LOW-E #2 SURFACE CLEAR TEMPERED GLASS
- 1/2" ARGON AIR SPACE WITH SPACER
- 1/4" CLEAR TEMPERED GLASS



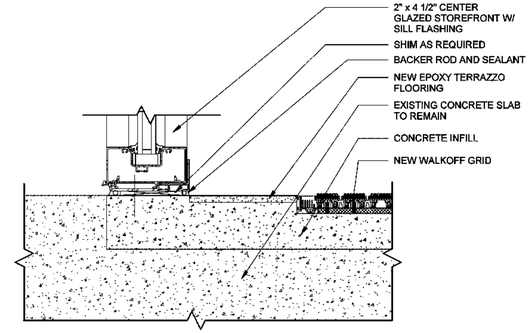
8 WALKOFF MAT DETAIL
SCALE: 3" = 1'-0"



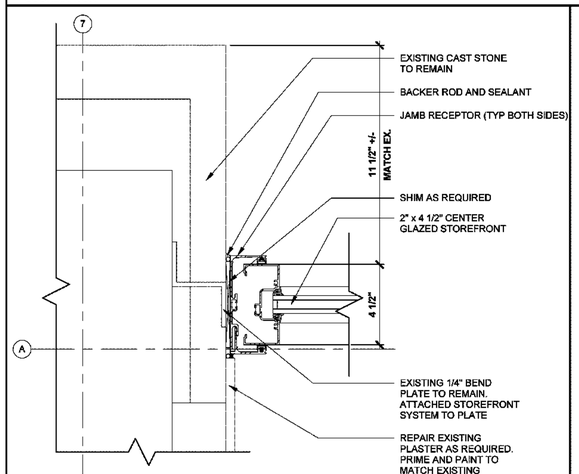
4 STOREFRONT DETAIL
SCALE: 3" = 1'-0"



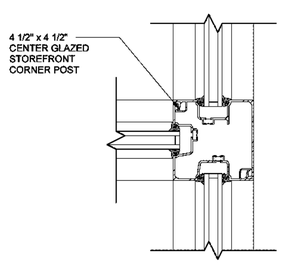
3 STOREFRONT DETAIL
SCALE: 3" = 1'-0"



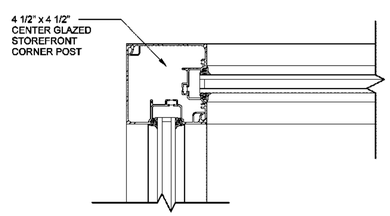
2 STOREFRONT DETAIL
SCALE: 3" = 1'-0"



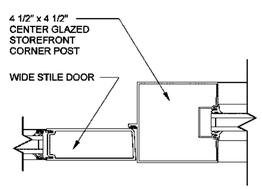
10 STOREFRONT DETAIL
SCALE: 3" = 1'-0"



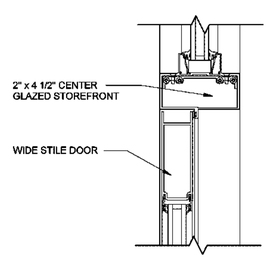
9 STOREFRONT DETAIL
SCALE: 3" = 1'-0"



6 STOREFRONT DETAIL
SCALE: 3" = 1'-0"



5 STOREFRONT DETAIL
SCALE: 3" = 1'-0"



1 STOREFRONT DETAIL
SCALE: 3" = 1'-0"

FACILITIES ENGINEERING
WWW.IPP.CORNELL.EDU
ARCHITECTURAL, STRUCTURAL, CIVIL, ENVIRONMENTAL, MECHANICAL, AND ELECTRICAL ENGINEERING
201 HUMPHREYS SERVICE BLDG
ITHACA, NEW YORK 14853-3701

WARNING
IT IS A VIOLATION OF NEW YORK STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF THIS DOCUMENT IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO SUCH DOCUMENT THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

ARCH/STRUCT:
CIVIL/ENV:
ELECTRICAL:
MECHANICAL:

STATE OF NEW YORK
STEVE BETSEN
085323
LICENSED PROFESSIONAL ENGINEER

REVISIONS

1	02/22/18	ISSUE FOR 50% CD REVIEW
2	03/27/18	ISSUE FOR CONSTRUCTION

0" 3" 6"
SCALE: 3"=1'-0"

MALOTT HALL NORTH VESTIBULE REPLACEMENT

MALOTT HALL
ITHACA, NEW YORK

DATE:	MARCH 27, 2018
FACILITY:	2081
DESIGN:	J. COOLBAUGH
DRAWN:	JGC

SCHEDULES

ARCHIVE BAR CODE

A-601
10361013

CONTROL SYMBOLOGY

	2-WAY CONTROL VALVE, DIGITAL
Φ_n	TEMPERATURE SENSOR

CONTROL ABBREVIATIONS

AI	ANALOG INPUT
AO	ANALOG OUTPUT
AV	ANALOG VALUE
BI	BINARY INPUT
BO	BINARY OUTPUT
BV	BINARY VALUE
F.L.	FAIL LAST
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
VFD	VARIABLE FREQUENCY DRIVE

MECHANICAL ABBREVIATIONS

BCU	BLOWER COIL UNIT
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CC	CLEAN CONDENSATE
CO	CLEAN OUT
CS	CLEAN STEAM
CD	CONDENSATE DRAIN
EA	EXHAUST AIR
EAG	EXHAUST AIR GRILLE
FD	FIRE DAMPER
GWR	GLYCOL HEATING RETURN
GWS	GLYCOL HEATING SUPPLY
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HWR	HOT WATER HEATING RETURN
HWS	HOT WATER HEATING SUPPLY
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
MU	MAKE UP WATER
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
NG	NATURAL GAS
PCWR	PROCESS CHILLED WATER RETURN
PCWS	PROCESS CHILLED WATER SUPPLY
HG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
RAG	RETURN AIR GRILLE
SA	SUPPLY AIR
SAD	SUPPLY AIR DIFFUSER
VD	VOLUME DAMPER

MECHANICAL SYMBOLOGY

	2-WAY ELECTRIC CONTROL VALVE
	3-WAY ELECTRIC CONTROL VALVE
	ACOUSTICALLY ALIGNED DUCTWORK
	AIRFLOW
AS	AQUA STAT
AMD	AUTOMATIC LOUVERED DAMPER IN DUCT
BFP(S)	BACKFLOW PREVENTER
	BALANCE VALVE
	BALL VALVE
	BOTTOM PIPE CONNECTION
	BUTTERFLY VALVE
	CAP OR PLUG
	CHECK VALVE
	CIRCULATING PUMP
	DIRECTION OF FLOW
	DUCT AIRFLOW
	DUCT DOWN (EXHAUST OR RETURN)
	DUCT DOWN (SUPPLY)
	DUCT UP (EXHAUST OR RETURN)
	DUCT UP (SUPPLY)
	EXHAUST FAN
	EXHAUST OR RETURN UP THROUGH NEXT FLOOR OR ROOF
	EXPANSION COMPENSATOR WITH EXPANSION GUIDES
	EXPANSION JOINT
F/SDM	FIRE AND SMOKE DAMPER IN DUCT
FD	FIRE DAMPER IN DUCT
	FLANGE CONNECTION
	FLEX CONNECTOR
	FLEXIBLE CONNECTION
	FLEXIBLE DUCT
	FLOW METER
	FLOW SWITCH
	FUSIBLE LINK VALVE
	GLOBE VALVE
	MANUAL AIRVENT
	ORIFICE METER
	PIPE ANCHOR
	PIPE DOWN
	PIPE GUIDE
	PIPE UP
	PIPING REDUCER (CONCENTRIC)
	PIPING REDUCER (ECCENTRIC)
	PITCH PIPING (DOWN)
	PRESSURE GAUGE
	PRESSURE OR TEMPERATURE PETES PLUG
	PRESSURE REDUCING VALVE
	PRESSURE SWITCH
	RECTANGULAR ELBOW
	RECTANGULAR ELBOW WITH TURNING VANES
	RELIEF VALVE
	ROOF TOP HOOD
SMD	SMOKE DAMPER IN DUCT
	SOLENOID VALVE
	STANDARD BRANCH DUCT
	STEAM TRAP
	STRAINER (DUPLEX)
	STRAINER WITH BLOWDOWN VALVE AND CAP
	SUPPLY THROUGH NEXT FLOOR OR ROOF
	TEMPERATURE WELL
	THERMOMETER
	THERMOMETER (DIAL)
	TOP PIPE CONNECTION
	TRIPLE DUTY VALVE
	UNION CONNECTION
	VACUUM BREAKER
VD (MD)	VOLUME DAMPER IN DUCT

MECHANICAL SCOPE OF WORK

1.0 PROVIDE FINTUBE AND ASSOCIATED PIPING, HANGERS, HYDRONIC BALANCING, AND CONTROLS.

2.0 PROVIDE NON-ADJUSTABLE TEMPERATURE SENSOR AND TIE INTO EXISTING BMCS.

3.0 OPEN EXISTING WALL TO CONNECT NEW HOT WATER SUPPLY AND RETURN PIPING. PATCH WALL TO MATCH EXISTING.

4.0 MECHANICAL CONTRACTOR SHALL COORDINATE ALL FLOOR AND WALL PENETRATIONS WITH GENERAL CONTRACTOR. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WALL DEMO AND PATCHING.

FACILITIES ENGINEERING
WWW.IPP.CORNELL.EDU

ARCHITECTURAL, STRUCTURAL, CIVIL, ENVIRONMENTAL, MECHANICAL, AND ELECTRICAL ENGINEERING

201 HUMPHREYS SERVICE BLDG
ITHACA, NEW YORK 14853-3701

WARNING
IT IS A VIOLATION OF NEW YORK STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF THIS DOCUMENT IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO SUCH DOCUMENT THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

ARCH/STRUCT:
CIVIL/ENV:
ELECTRICAL:
MECHANICAL:

STATE OF NEW YORK
STEVE BETOR
065323
LICENSED PROFESSIONAL ENGINEER

REVISIONS

1	02/22/18	ISSUE FOR 50% CD REVIEW
2	03/27/18	ISSUE FOR CONSTRUCTION

MALOTT HALL
NORTH
VESTIBULE
REPLACEMENT

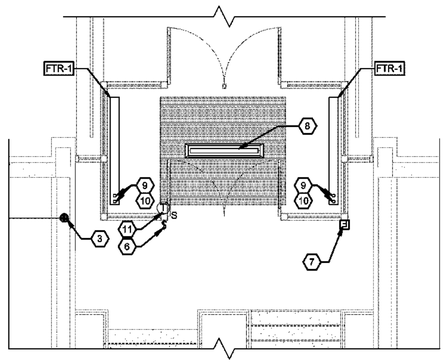
MALOTT HALL
ITHACA, NEW YORK

DATE:	MARCH 27, 2018
FACILITY:	2081
DESIGN:	P. OCKENFELS
DRAWN:	PCO

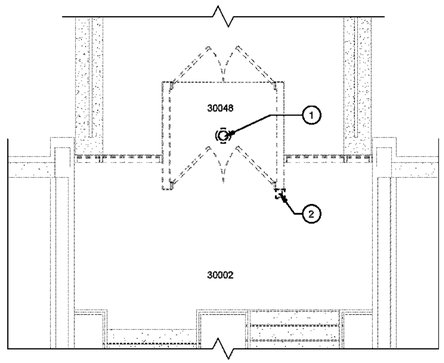
GENERAL NOTES AND SYMBOLS LEGEND

ARCHIVE BAR CODE

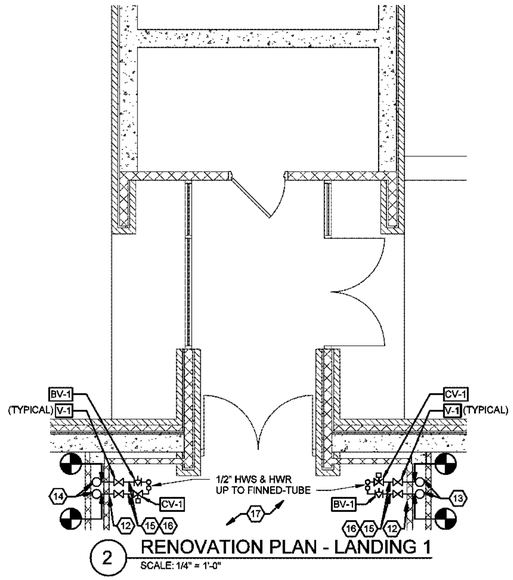
ME-001
10361013



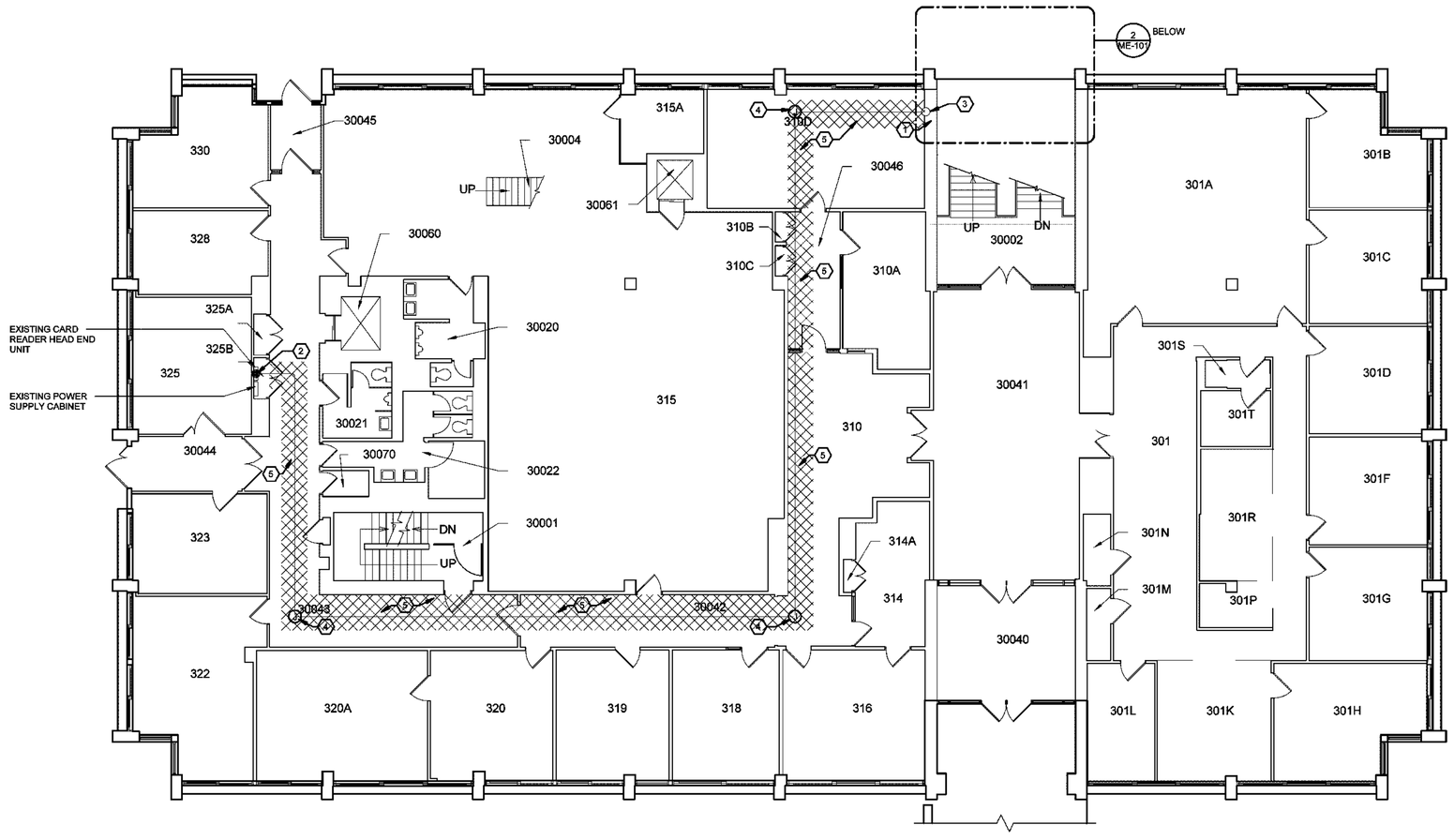
4 RENOVATION PLAN - ENTRY LEVEL
SCALE: 1/4" = 1'-0"



3 DEMOLITION PLAN - ENTRY LEVEL
SCALE: 1/4" = 1'-0"



2 RENOVATION PLAN - LANDING 1
SCALE: 1/4" = 1'-0"



1 RENOVATION PLAN - GROUND FLOOR
SCALE: 1/8" = 1'-0"

ME-101 DEMOLITION KEY NOTES

#	
1	REMOVE EXISTING SURFACE MOUNT LUMINAIRE. EXISTING LIGHTING CIRCUIT TO BE REUSED TO FEED THE NEW SWITCH AND LUMINAIRE.
2	EXISTING FIRE ALARM MANUAL PULL STATION TO BE RELOCATED.

ME-101 CONSTRUCTION KEY NOTES

#	
1	EXISTING WALL CAVITY OF EXISTING RECESSED MOUNTED UNIT HEATER.
2	FROM THE EXISTING CARD READER HEAD END CABINET, PROVIDE (1) ORANGE STRIPE CABLE, (1) BLACK STRIPE CABLE, AND (1) GREEN STRIPE CABLE IN 1" EMT TO THE NEW EXTERIOR VESTIBULE DOOR. THE ORANGE STRIPE CABLE IS TO CONTROL THE DOOR CONTACT. THE BLACK STRIPE CABLE IS TO CONTROL THE POWER TRANSFER. THE GREEN STRIPE CABLE IS TO CONTROL THE CARD READER. THE DOOR CONTACT, THE POWER TRANSFER, AND THE CARD READER PROVIDED BY OTHERS. WIRING AND TERMINATIONS BY ELECTRICAL CONTRACTOR. PROGRAMMING BY STANLEY ACCESS CONTROL SECURITY PERSONNEL.
3	CONDUIT TO ENTER EXISTING WALL CAVITY OF EXISTING RECESSED MOUNTED UNIT HEATER. FROM WALL CAVITY, EXTEND CONDUIT AND WIRING TO THE NEW EXTERIOR VESTIBULE DOOR.
4	PROVIDE SURFACE MOUNTED 4" X 4" JUNCTION BOX.
5	ELECTRICAL CONTRACTOR TO COORDINATE CEILING REMOVAL AND REINSTALLATION WITH GENERAL CONTRACTOR. GENERAL CONTRACTOR TO REMOVE AND REINSTALL ALL CEILING GRID SYSTEMS AFTER CONDUIT AND WIRE HAS BEEN RUN TO NEW LOCATION.
6	PROVIDE RECESS MOUNT LIGHT SWITCH W/ STAINLESS STEEL BLANK PLATE.
7	RELOCATED FIRE ALARM PULL STATION MODIFY AND EXTEND EXISTING F.A. WIRING AS REQUIRED.
8	NEW PHILLIPS LEDALITE, VERGE SUSPENDED LED CAT. NO. 7606-LB-E-QG-04-1-120V-E-W-DS. MOUNT FIXTURE 18" BELOW THE CEILING.
9	CORE DRILL TO RECEIVE 3/4" HWS & HWR PIPING. EXTEND FLOOR PENETRATION SLEEVE A MINIMUM OF 1" ABOVE VESTIBULE FINISHED FLOOR ELEVATION. PROVIDE CHROME PLATED ESCUTCHEONS AT PIPE PENETRATIONS. PROVIDE 3/4" ELBOW WITH MANUAL AIR BLEEDER VALVE ON HWS PIPE.
10	HOT WATER PIPING SHALL NOT BE INSULATED WHERE LOCATED IN THE VESTIBULE.
11	SURFACE MOUNTED SPACE TEMPERATURE SENSOR (B.O.D. AUTOMATED LOGIC, MODEL RS STANDARD). RUN CONTROL WIRES INSIDE MULLION.
12	MECHANICAL CONTRACTOR TO MAKE GENERAL CONTRACTOR AWARE OF REQUIRED WALL AND PLASTER REPAIRS. OPEN UP EXISTING WALL TO MAKE HEATING HOT WATER PIPING CONNECTIONS. PATCH WALL TO MATCH EXISTING CONDITION ONCE PIPES ARE CONNECTED.
13	EXISTING 1" HWS AND 3/4" HWR RUNNING UP/DOWN IN WALL. CONNECT NEW 1/2" HWS & HWR INTO EXISTING LINE AND RUN PIPING TIGHT TO THE CEILING.
14	EXISTING 3/4" HWS AND 1" HWR RUNNING UP/DOWN IN WALL. CONNECT NEW 1/2" HWS & HWR INTO EXISTING LINE AND RUN PIPING TIGHT TO THE CEILING.
15	PROVIDE DRAIN VALVE WITH HOSE CONNECTION AND CAP.
16	INSULATE PIPING PER HVAC PIPE AND FITTING SCHEDULE AND SPECIFICATIONS ON ME-501.
17	COORDINATE WITH GENERAL CONTRACTOR FOR THE REPAIR OF PLASTER CEILING. REFER TO A-101 FOR DESIGN NOTES.

FACILITIES ENGINEERING
WWW.IPP.CORNELL.EDU

ARCHITECTURAL, STRUCTURAL, CIVIL, ENVIRONMENTAL, MECHANICAL, AND ELECTRICAL ENGINEERING

201 HUMPHREYS SERVICE BLDG
ITHACA, NEW YORK 14853-3701

WARNING
IT IS A VIOLATION OF NEW YORK STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF THIS DOCUMENT IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO SUCH DOCUMENT THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

ARCH/STRUCT:
CIVIL/ENV:
ELECTRICAL:
MECHANICAL:

STATE OF NEW YORK
STEVE BETEGE
065323
LICENSED PROFESSIONAL ENGINEER

REVISIONS

1	02/22/18	ISSUE FOR 50% CD REVIEW
2	03/27/18	ISSUE FOR CONSTRUCTION

N

SCALE: 1/8"=1'-0"
SCALE: 1/4"=1'-0"

MALOTT HALL
NORTH
VESTIBULE
REPLACEMENT

MALOTT HALL
ITHACA, NEW YORK

DATE:	MARCH 27, 2018
FACILITY:	2081
DESIGN:	P. OCKENFELS
DRAWN:	PCO

DEMOLITION & RENOVATION PLANS

ARCHIVE BAR CODE

ME-101
10361013

PIPING ACCESSORIES SCHEDULE AND SPECIFICATIONS

TAG	DEVICE	ACCEPTABLE MANUFACTURERS	BOD MANUFACTURER	MODEL	PRESSURE RATING	SPECIFICATIONS
V-1	SHUT-OFF BALL VALVE	APOLLO, WATTS	WATTS	B6000-SS	300 PSIG WOG, 150 PSIG WSP	MSS SP-110, 2-PIECE, STANDARD PORT, BRONZE BODY, 316 SS BALL & STEM, PTFE OR TFE SEAT
BV-1	BALANCE VALVE, NPS 1/2 - 2 INCH	ARMSTRONG, BELL & GOSSETT, TOUR & ANDERSON	BELL & GOSSETT	CB SERIES, CB 1/2	200 PSIG @ 250 °F	1.5 GPM AND LESS, BRONZE, BALL OR PLUG TYPE BODY WITH CALIBRATED ORIFICE OR VENTURI; GLASS AND CARBON FILLED TFE OR EPDM SEAT RINGS, EPDM STEM O-RING, WITH INTEGRAL SEALS FOR PORTABLE DIFFERENTIAL PRESSURE METER, WITH LEVEL HANDLE AND MEMORY STOP TO RETAIN SET POSITION.

CONTROL VALVE SCHEDULE

TAG	MANUF (BOD)	VALVE MODEL (BOD)	ACTUATOR MODEL (BOD)	SERVICE	VALVE SIZE (IN)	CV	CAPACITY (GPM)	MAX PD (PSIG)	VALVE TYPE	FAIL POSITION
CV-1	BELIMO	CCV - B211	TR24-SR US	FINTUBE	1/2	1.9	0.5 - 4.1	4	2-WAY, PROPORTIONAL	LAST POSITION

MECHANICAL PIPING SUPPORT SCHEDULE

PIPE MATERIAL	PIPE SIZE (IN)	MAXIMUM SPAN (FT)	MINIMUM ROD SIZE (IN)	HANGER TYPE	NOTES
METAL PIPING	1/2"	6	3/8	CARBON STEEL, ADJUSTABLE SWIVEL, SPLIT RING	1, 2, 3, 4, 5, 6,7

NOTES:
1. USE SPLIT RING/CLEVIS TYPE HANGERS FOR HORIZONTAL PIPING RUNS. USE VERTICAL PIPING CLAMPS FOR VERTICAL PIPING RUNS.
2. PROVIDE 180° PROTECTION SHIELDS ON INSULATED PIPING SYSTEMS.
3. USE MECHANICAL EXPANSION ANCHORS COMPLYING WITH ICC-ES AC193 FOR USE IN HARDENED CONCRETE
4. PROVIDE HANGERS AND SUPPORTS THAT COMPLY WITH MSS SP-58
5. INSTALL IN ACCORDANCE WITH ASME B31.9.
6. INSTALL HANGERS WITHIN 12 INCHES OF EACH HORIZONTAL ELBOW.
7. INSTALL HANGERS AND SUPPORTS COMPLETE WITH NECESSARY BOLTS, RODS, NUTS WASHERS, AND SHIELDS.

HVAC PIPE AND FITTING SCHEDULE AND SPECIFICATIONS

PIPE SERVICE	ABBREVIATION	PIPE SIZE	MATERIAL	FITTINGS	JOINT	INSULATION			
						CONDUCTIVITY (BTU-IN/HR-FT²-°F)	INSULATION MEAN TEMP (°F)	THICKNESS & MATERIAL	NOTES
HOT WATER	HWS&R	1-1/4" & BELOW	ASTM B88 TYPE L COPPER	ASTM B16.22 STD WROUGHT COPPER	ASTM B32 SOLDER	0.25 - 0.29	125	1-1/2", TYPE A WITHOUT VAPOR RETARDER	1 THROUGH 12

NOTES:
1. SOLDER FILLER METALS: ASTM B32, LEAD-FREE ALLOYS. INCLUDE WATER FLUSHABLE FLUX ACCORDING TO ASTM B813.
2. DIELECTRIC FITTINGS: USE FLANGES OR COUPLINGS. UNIONS ARE UNACCEPTABLE.
3. INSTALL ESCUTCHEONS FOR PENETRATIONS OF WALLS, CEILING, AND FLOORS.
4. INSTALL PIPING SYSTEMS TO FACILITATE SERVICE, MAINTENANCE AND REPAIR OR REPLACEMENT OF COMPONENTS.
5. ALL INSULATION AND ADHESIVE SHALL HAVE A MAXIMUM FLAME-SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.
6. TYPE A INSULATION: PRE-FORMED MINERAL FIBERGLASS, ASTM C547 TYPE I, ASTM C1136 FACTORY APPLIED SELF-SEALING ALL SERVICE JACKET.
7. ALL PIPING AND INSULATION SYSTEM EXPOSED TO VIEW SHALL BE PAINTED TO MATCH SURROUNDING SURFACES.
8. MAINTAIN INDICATED FIRE RATING OF WALLS, PARITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. SEAL PIPE PENETRATIONS WITH FIRESTOP MATERIALSMAINTAIN INDICATED FIRE
9. RATING OF WALLS, PARITIONS, CEILINGS, AND FLOORS AT PIPE PENETRATIONS. SEAL PIPE PENETRATIONS WITH FIRESTOP MATERIALS.
10. INSTALL UNIONS IN PIPING, NPS 2 AND SMALLER, ADJACENT TO VALVES, AT FINAL CONNECTIONS OF EQUIPMENT, AND ELSEWHERE AS INDICATED.
11. PROVIDE PIPE LABLES AND DIRECTIONAL ARROWS ON ALL NEW PIPING SYSTEMS. LABELS SHALL BE PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT ADHESIVE BACKING. LETTERS SHALL BE 1/4-INCH IF VIEWING DISTANCE IS LESS THAN 24 INCHES, 1/2-INCH FOR VIEWING DISTANCES UP TO 72 INCHES, AND PROPORTIONATELY LARGER LETTERING FOR GREATER VIEWING DISTANCES.
12. TESTING OF HYDRONIC SYSTEMS:
    FILL SYSTEM WITH AMBIENT TEMPERATURE WATER. USE VENTS INSTALLED AT HIGH POINTS OF SYSTEM TO RELEASE AIR.
    USE DRAINS INSTALLED AT LOW POINTS FOR COMPLETE DRAINING OF TEST LIQUID.
    ISOLATE EXPANSION TANKS AND DETERMINE THAT HYDRONIC SYSTEM IS FULL OF WATER. SUBJECT PIPING SYSTEM TO HYDROSTATIC TEST PRESSURE THAT IS NOT LESS THAN 1.5 TIMES THE SYSTEM WORKING PRESSURE.
    TEST PRESSURE SHALL NOT EXCEED MAXIMUM PRESSURE FOR DEVICE IN THE SYSTEM UNDER TEST.
    AFTER HYDROSTATIC TEST PRESSURE HAS BEEN APPLIED FOR AT LEAST 10 MINUTES, EXAMINE PIPING, JOINTS, AND CONNECTIONS FOR LEAKAGE.
    ELIMINATE LEAKS BY TIGHTENING, REPAIRING, OR REPLACING COMPONENTS, AND REPEAT HYDROSTATIC TEST UNTIL THERE ARE NO LEAKS.
    ARRANGE FOR INSPECTION BY FACILITIES MANAGEMENT PIPE SHOP.

SEQUENCE OF OPERATION

SYSTEM DESCRIPTION

FINTUBE RADIATION HEATING. EXTEND EXISTING BUILDING AUTOMATION AND CONTROL SYSTEM TO SERVE NEW VESTIBULE. PROVIDE ALL PROGRAMING AND EQUIPMENT TO ACCOMPLISH THE FOLLOWING SEQUENCE OF OPERATIONS.

GENERAL

SYSTEM SHALL BE CONTROLLED THROUGH THE BUILDING AUTOMATION AND CONTROL SYSTEM (BACS).

ALL SETPOINTS SHALL BE ADJUSTABLE THROUGH THE BASC.

DESIGN INTENT: HEATING SHALL BE ACCOMPLISHED BY FINTUBE RADIATION AND CONTROLLED BY ONE TEMPERATURE SENSOR, NON-ADJUSTABLE. SPACE TEMPERATURE SETPOINT SHALL BE SET BY THE BASC.

SETPOINTS

SPACE HEATING TEMPERATURE SETPOINTS:

55 °F +/- 4°F

OPERATION

FINTUBE RADIATION SHALL BE ACTIVATED WHEN THE OUTSIDE AIR TEMPERATURE IS EQUAL TO OR BELOW 55°F (ADJ).

ALARMS

- SPACE TEMPERATURE IS BELOW 40°F FOR MORE THAN 5 MINUTES.
- FINTUBE RADIATION IS ACTIVE AND THE CONTROL VALVE IS CLOSED.

CONTROL AND ALARM POINTS SCHEDULE

FINTUBE RADIATION	HARDWARE POINTS				SOFTWARE POINTS							SHOW ON GRAPHIC	NOTES
	BI	BO	AI	AO	AV	BV	SCH	TREND	ALARM				
									BACS	EMCS	DESCRIPTION		
SPACE TEMPERATURE			X					X	X		+/- 4 DEG F FROM SETPOINT	X	
FINTUBE RADIATION CONTROL				X				X				X	FAIL LAST
SPACE TEMPERATURE SETPOINT					X			X				X	

FINTUBE RADIATION SCHEDULE

TAG	LOCATION	MANF (BOD)	ENCLOSURE (BOD)	MODEL (BOD)	CATALOG DESIGNATION (BOD)	TUBE DIA (IN)	FIN SIZE (IN)	FIN THK (IN)	FIN SPACING (FPF)	TIERS	HEAT OUTPUT (BTUH/LF)	FINNED LENGTH (LF)	TOTAL OUTPUT (BTUH)	WTD (°F)	FLOW RATE (GPM)	ENT AIR TEMP (°F)	AVG WATER TEMP (°F)	NOTES
FTR-1	VESTIBULE	VULCAN	LV4-PM	LINOVECTOR-II	LV4-PM	3/4"	3-5/8 x 4-1/4	0.02	50	1	868	5'-0"	4340	6	0.5	55	170	1,2,3,4,5

NOTES:
1. PEDESTAL MOUNTED FINTUBE ENCLOSURE WITH THREE EQUALLY SPACED PEDISTALS.
2. HIGH POLYMER/HIGH SOLIDS BAKED ENAMEL, COLOR TO BE SELECTED BY ARCHITECT PRIOR TO ORDERING.
3. PROVIDE END CAPS.
4. PROVIDE 6" X 9" ACCESS DOOR AT PIPE FLOOR PENETRATION. ACCESS DOOR SHALL BE HINGED AT TOP WITH TAMPER RESISTANT LATCHES OF TYPE THAT REQUIRE A SPECIAL TOOL TO OPERATE.
5. HOT WATER RETURN LINE SHALL RUN BELOW THE ELEMENT.

FACILITIES ENGINEERING
WWW.IPP.CORNELL.EDU
ARCHITECTURAL, STRUCTURAL, CIVIL, ENVIRONMENTAL, MECHANICAL, AND ELECTRICAL ENGINEERING
201 HUMPHREYS SERVICE BLDG
ITHACA, NEW YORK 14853-3701

WARNING
IT IS A VIOLATION OF NEW YORK STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF THIS DOCUMENT IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO SUCH DOCUMENT THEIR SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

ARCH/STRUCT:
CIVIL/ENV:
ELECTRICAL:
MECHANICAL:

STATE OF NEW YORK
STEVE BEYER
065323
LICENSED PROFESSIONAL ENGINEER

REVISIONS

1	02/22/18	ISSUE FOR 50% CD REVIEW
2	03/27/18	ISSUE FOR CONSTRUCTION

MALOTT HALL
NORTH
VESTIBULE
REPLACEMENT

MALOTT HALL
ITHACA, NEW YORK

DATE:	MARCH 27, 2018
FACILITY:	2081
DESIGN:	P. OCKENFELS
DRAWN:	PCO

SCHEDULES AND HVAC CONTROLS

ARCHIVE BAR CODE

ME-501
10361013