DRAWING ISSUE LOG

LEGEND

- ● ISSUED WITH THIS PACKAGE
- ○ PREVIOUSLY ISSUED
- NOT ISSUED

DATE	DESIGN REVIEW PACKAGE
3.21.2012	DESIGN DEVELOPMENT
4.30.2012	OWNER'S REVIEW SET
6.18.2012	CONSTRUCTION DOCUMENTS

UNIVERSITY OF SOUTHERN MAINE

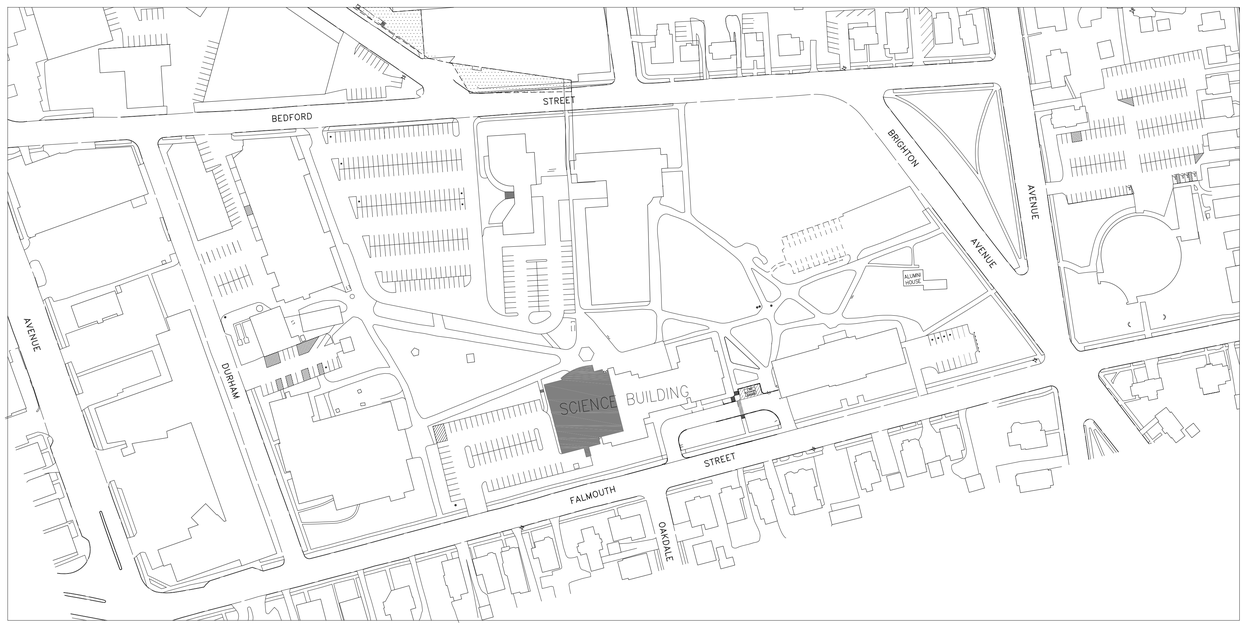
BIO-SCIENCE LABORATORY FIT-UP
FOURTH FLOOR

70 FALMOUTH STREET, PORTLAND, ME

CONSTRUCTION DOCUMENTS

JUNE 18, 2012

SMMA NUMBER 11082.01



CAMPUS MAP

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Cambridge • Providence • Chapel Hill

Architecture
Engineering
Planning
Interiors

ABV	ABOVE	FIXT	FIXTURE	PLT	PLATE
ACP	ACOUSTICAL CEILING PANEL	FLR	FLOOR	PLY	PLYWOOD
ADD	ADDENDUM	FNDN	FOUNDATION	PM	PRESSED METAL
AFF	ABOVE FINISHED FLOOR	FOC	FACE OF CONCRETE	PMU	PUMICE MASONRY UNIT
AHU	AIR HANDLING UNIT	FOM	FACE OF MASONRY	PNT(D)	PAINT(ED)
ALT	ALTERNATE	FOS	FACE OF STUDS	PR	PAIR
ALUM	ALUMINUM	FP	FIREPROOF(ING)	PSF	POUNDS PER SQUARE FOOT
APPROX	APPROXIMATE	FTG	FOOTING	PSI	POUNDS PER SQUARE INCH
ARCH	ARCHITECT(URAL)	FV	FIELD VERIFY	PT	POINT
BIT	BITUMINOUS	GA	GAUGE	PTN	PARTITION
BLDG	BUILDING	GALV	GALVANIZED	QT	QUARRY TILE
BOT	BOTTOM	GC	GENERAL CONTRACTOR	R	RISER
BRK	BRICK	GFCMU	GROUND FACE CMU	RA	RETURN AIR
BSMT	BASEMENT	GL	GLASS, GLAZING	RAD	RADIUS
BUR	BUILT UP ROOF	GWB	GYPSUM WALLBOARD	RB	RESILIENT BASE
CFMF	COLD-FORMED METAL FRAMING	H/C	HANDICAP(PED)	RD	ROOF DRAIN
			HIGH	REINF	REINFORCE(D), REINFORCING
CJT	CONTROL JOINT	HDWR	HARDWARE	REF	REFERENCE
CLG	CEILING	HM	HOLLOW METAL	REQD	REQUIRED
CLOS	CLOSET	HORZ	HORIZONTAL	RES	RESILIENT
CMU	CONCRETE MASONRY UNIT	HT	HEIGHT	RET	RETURN
COL	COLUMN	HVAC	HEATING, VENTILATING, AND AIR CONDITIONING	REV	REVISION
CONC	CONCRETE			RM	ROOM
CONF	CONFERENCE	ID	INSIDE DIAMETER	RO	ROUGH OPENING
CONST	CONSTRUCTION	INCL	INCLUDE(D), INCLUDING	RR	RIBBED RUBBER
CONT	CONTINUOUS	INFO	INFORMATION	RT	RUBBER TILE
CONTR	CONTRACTOR	INS	INSULATE, INSULATION	SCH	SCHEDULE
CORR	CORRIDOR	INT	INTERIOR	SECT	SECTION
CPT	CARPET	JC	JANITOR'S CLOSET	SF	SQUARE FOOT
CRS	COURSE(S)	JT	JOINT	SFF	SPECIAL FLOOR FINISH
CT	CERAMIC TILE	K/T	KITCHEN	SHR	SHOWER
CSMU	CAST STONE MASONRY UNIT		LENGTH/LONG	SIM	SIMILAR
DET	DETAIL	LAB	LABORATORY	SPEC(S)	SPECIFICATION(S)
DF	DRINKING FOUNTAIN	LAM	LAMINATE(D)	SQ	SQUARE
DIAM	DIAMETER	LAV	LAVATORY	STC	SOUND TRANSMISSION CLASS
DIM	DIMENSION	LF	LINEAR FOOT	STD	STANDARD
DR	DOOR	LVWC	LIQUID VINYL WALL COVERING	STL	STEEL
DWG	DRAWING	MAX	MAXIMUM	STOR	STORAGE
EIFS	EXTERIOR INSULATION FINISH SYSTEM	MB	MARKERBOARD	STR	STRUCTURAL
		MC	MAP CABINET	SV	SHEET VINYL
EL/ELEV	ELEVATION	MDO	MEDIUM DENSITY OVERLAY	SWC	SPECIAL WALL COVERING
EJC	EXPANSION JOINT COVER	MECH	MECHANICAL	SYM	SYMETRICAL
EJT	EXPANSION JOINT	MED	MEDIUM	SYS	SYSTEM
EL/ELEV	ELEVATION	MET	METAL	T	TREAD
ELEC	ELECTRIC(AL)	MFG	MANUFACTURING	T&G	TONGUE AND GROOVE
ELEVR	ELEVATOR	MFR	MANUFACTURER	TA	TOILET ACCESSORIES
EMER	EMERGENCY	MIN	MINIMUM	TB	TACKBOARD
EQ	EQUAL	MISC	MISCELLANEOUS	TEL	TELEPHONE
EQPT	EQUIPMENT	MO	MASONRY OPENING	TEMP	TEMPORARY
ERD	EXISTING ROOF DRAIN	MR	MOP RECEPTOR	THK	THICK(NESS)
ES	EMERGENCY SHOWER	MT(D)	MOUNT(ED)	TOM	TOP OF MASONRY
ETR	EXISTING TO REMAIN	MTG	MOUNTING	TOS	TOP OF STEEL
EWC	ELECTRIC WATER COOLER	NIC	NOT IN CONTRACT	TPTN	TOILET PARTITION
EXG	EXISTING	NO	NOT OPERABLE	TSL	TOP OF SLAB
EXH	EXHAUST	NOM	NOMINAL	TW	TOP OF WALL
EXP	EXPANSION	NTS	NOT TO SCALE	TYP	TYPICAL
EXT	EXTERIOR	OA	OVERALL	UC	UNDERCUT
FA	FIRE ALARM	OC	ON CENTER	UON	UNLESS OTHERWISE NOTED
FB	FACE BRICK	OD	OUTSIDE DIAMETER	VCT	VINYL COMPOSITE TILE
FBO	FURNISHED BY OTHERS/OWNER	OFCI	OWNER FURISHED CONTRACTOR INSTALLED	VERT	VERTICAL
				VVB	VENTED VINYL BASE
FD	FLOOR DRAIN	OFE	OWNER FURNISHED EQUIPMENT	VWC	VINYL WALL COVERING
FE	FIRE EXTINGUISHER	OH	OVERHEAD	W/	WITH
FEC	FIRE EXTINGUISHER CABINET	OPNG	OPENING	W/O	WITHOUT
FIN	FINISH(ED)	OPP	OPPOSITE	WD	WOOD
		PLBG	PLUMBING	WPT	WORKING POINT

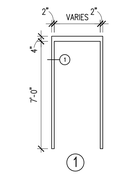
13 A0.01 ABBREVATIONS (FOR ARCHITECTURAL DRAWINGS ONLY.)

CONCRETE
CONCRETE MASONRY UNIT
GYPSUM BOARD
ALUMINUM
STEEL
ACOUSTIC TILE CEILING
WOOD BLOCKING
BRICK
BATT INSULATION
RIGID INSULATION
FINISHED WOOD

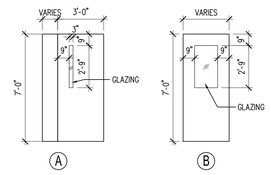
11 A0.01 MATERIAL LEGEND

ROOM NAME
NO.
ROOM NAME
ROOM NUMBER
492A
DOOR NUMBER
PLAN REFERENCES
SECTION DETAIL
DETAIL NUMBER
TITLE REFERENCE
ELEVATION
WALL SECTION
BUILDING SECTION
EWA
EXTERIOR WALL ASSEMBLY (SEE SHEET A3.5 FOR EXTERIOR WALL TYPES)
ERA
EXTERIOR ROOF ASSEMBLY (SEE SHEET A3.5 FOR EXTERIOR ROOF TYPES)
EQUIPMENT
EQUIPMENT DESCRIPTION (SEE SPECIFICATIONS FOR EQUIPMENT LIST)
INTERIOR ELEVATION REFERENCE ON PLAN
EXTERIOR ELEVATION REFERENCE ON PLAN
REVISION NUMBER
PARTITION TYPE
COLUMN CENTER LINE
PLAN NORTH
PLAN NORTH ARROW
BARSCALE
BR
BUMPER RAIL SEE DTL 11/A7.03
CR
CHAIR RAIL SEE DTL 9.10/A7.03
CG-1
STAINLESS STEEL CORNER GUARD
A
WINDOW TYPE (SEE SHEET A2.3 FOR WINDOW TYPES)

12 A0.01 SYMBOLS LEGEND



2 A0.01 HM FRAME TYPES SCALE: 1/4" = 1'-0"

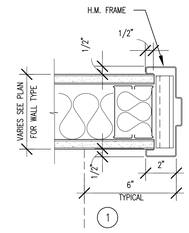


3 A0.01 DOOR TYPES SCALE: 1/4" = 1'-0"

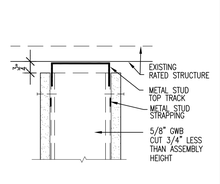
TYPICAL KICKPLATE

NOTE: SEE DOOR SCHEDULE FOR LOCATIONS OF KICKPLATES

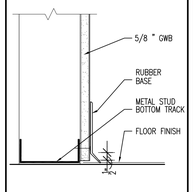
3A A0.01 TYPICAL DOOR GUARD TYPES SCALE: 1/4" = 1'-0"



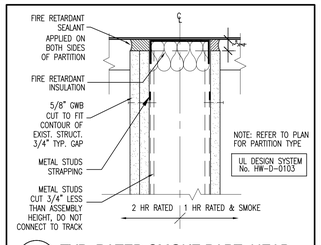
4 A0.01 DOOR DETAILS SCALE: 3"=1'-0"



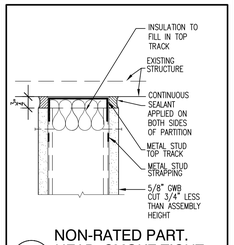
5 NON RATED PART. HEAD 3" = 1'-0"



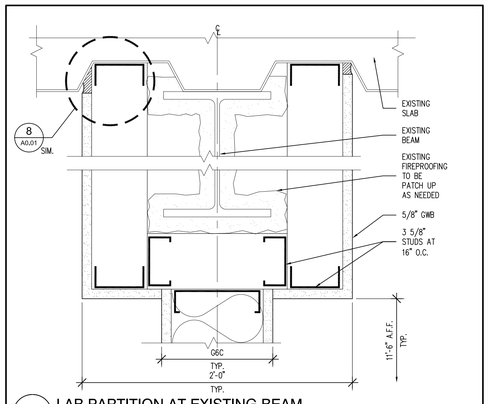
6 TYP. GWB PARTITION BASE 3" = 1'-0"



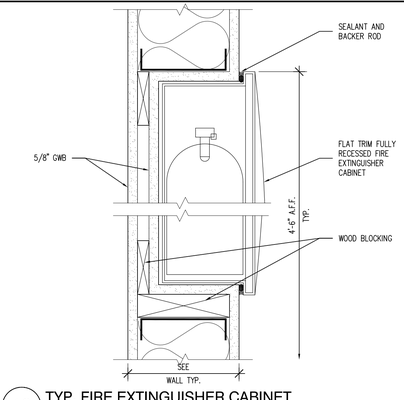
7 TYP. RATED SMOKE PART. HEAD 3" = 1'-0"



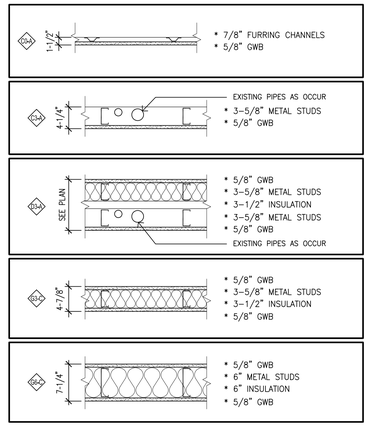
8 NON-RATED PART. HEAD, SMOKE TIGHT 3" = 1'-0"



9 LAB PARTITION AT EXISTING BEAM 3" = 1'-0"



10 TYP. FIRE EXTINGUISHER CABINET 3" = 1'-0"



1 A0.01 PARTITION TYPES SCALE: N.T.S.

GENERAL NOTES:

1. ALL PARTITIONS AND PARTITION COMPONENTS TO EXTEND TO THE EXISTING STRUCTURE, AND TO BE MADE SMOKE TIGHT, UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ON FLOOR PLANS GIVEN TO FACE OF FINISH.
3. ALL GYPSUM BOARD PARTITIONS WHETHER EXPOSED TO VIEW OR NOT SHALL HAVE CONTROL JOINTS. SEE SPECS. FOR TYPICAL SPACING.
4. REFER TO CODE SUMMARY SHEET A0.02 FOR PARTITION RATINGS & CODE INFORMATION.
5. PROVIDE FOR WOOD BLOCKING FOR ALL WALL MOUNTED EQUIPMENT.
6. GWB AT EXTERIOR WALL TO BE MOISTURE RESISTANT TYPE GWB.

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PORTLAND, MAINE

MARK:	DATE:	DESCRIPTION:
	6.18.2012	CONSTRUCTION DOCUMENTS
	4.30.2012	OWNER REVIEW SET
	3.21.2012	DESIGN DEVELOPMENT

ISSUE LOG
△ = CLOUDED CHANGE

SCALE	N.T.S.
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

ABBREVIATIONS, SYMBOLS, DOOR AND WALL TYPES

A0.01

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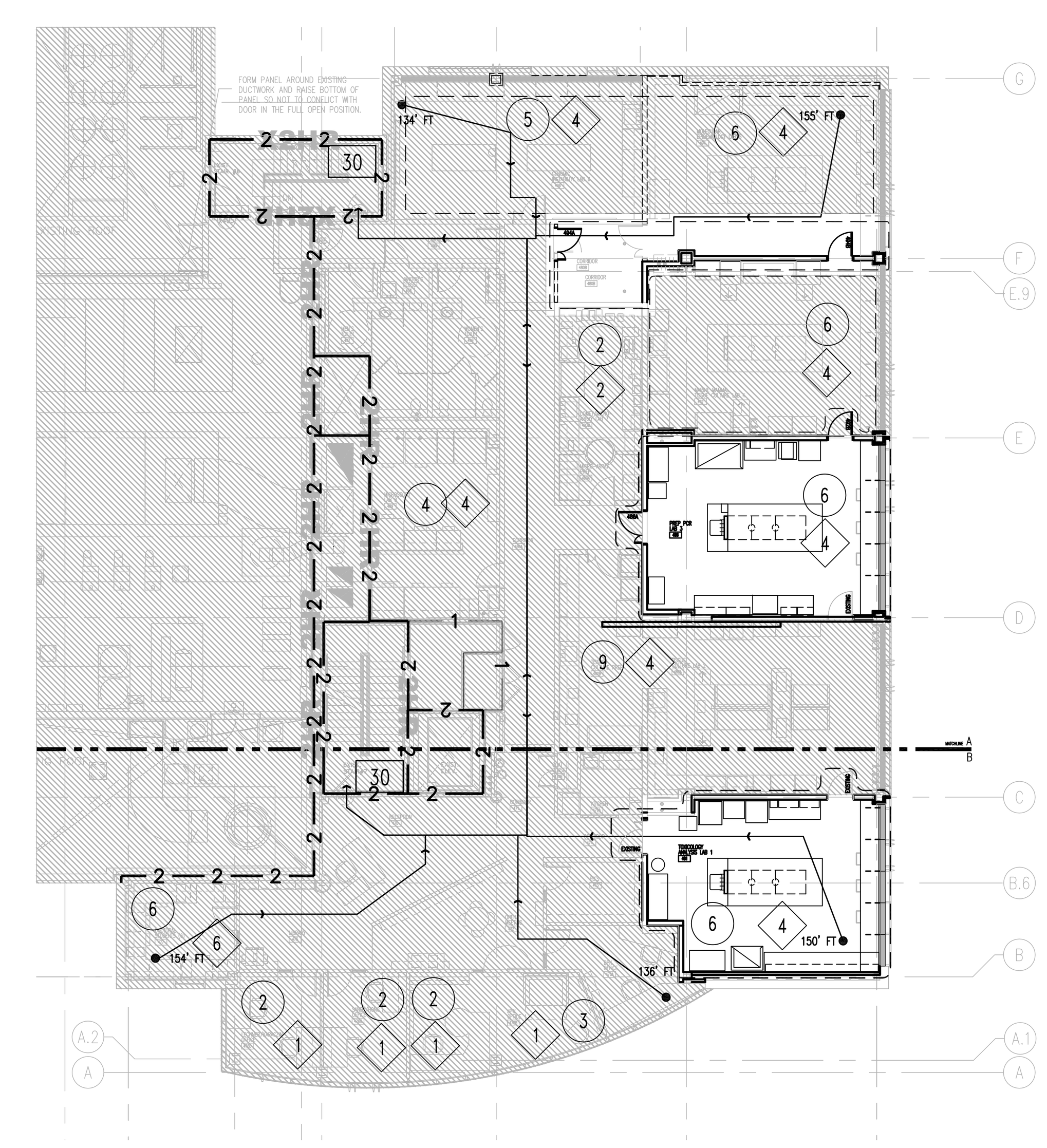
CODE PLAN LEGEND

- — S — SMOKE PARTITION
- — 1 — 1-HR RATED PARTITION
- — 2 — 2-HR RATED PARTITION
- — 2FW — 2-HR RATED FIREWALL
- 3FW 3FW — 3-HR RATED FIREWALL
- (X) CALCULATED OCCUPANTS
- ◇X ACTUAL OCCUPANTS
- ⇦ BUILDING EGRESS AND DIRECTION
- [X] EGRESS CAPACITY 0.15"/OCCUPANT AT DOORS
- TRAVEL DISTANCE = 152'-0" — EGRESS PATH
- ▨ AREA OUTSIDE SCOPE OF WORK



2 / A0.02 4TH FLOOR EGRESS PLAN
SCALE: 1/32"=1'-0"

TOTAL CALCULATED FLOOR OCCUPANCY: 59 OCC.

MARK:	DATE:	DESCRIPTION:
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	3.21.2012	DESIGN DEVELOPMENT

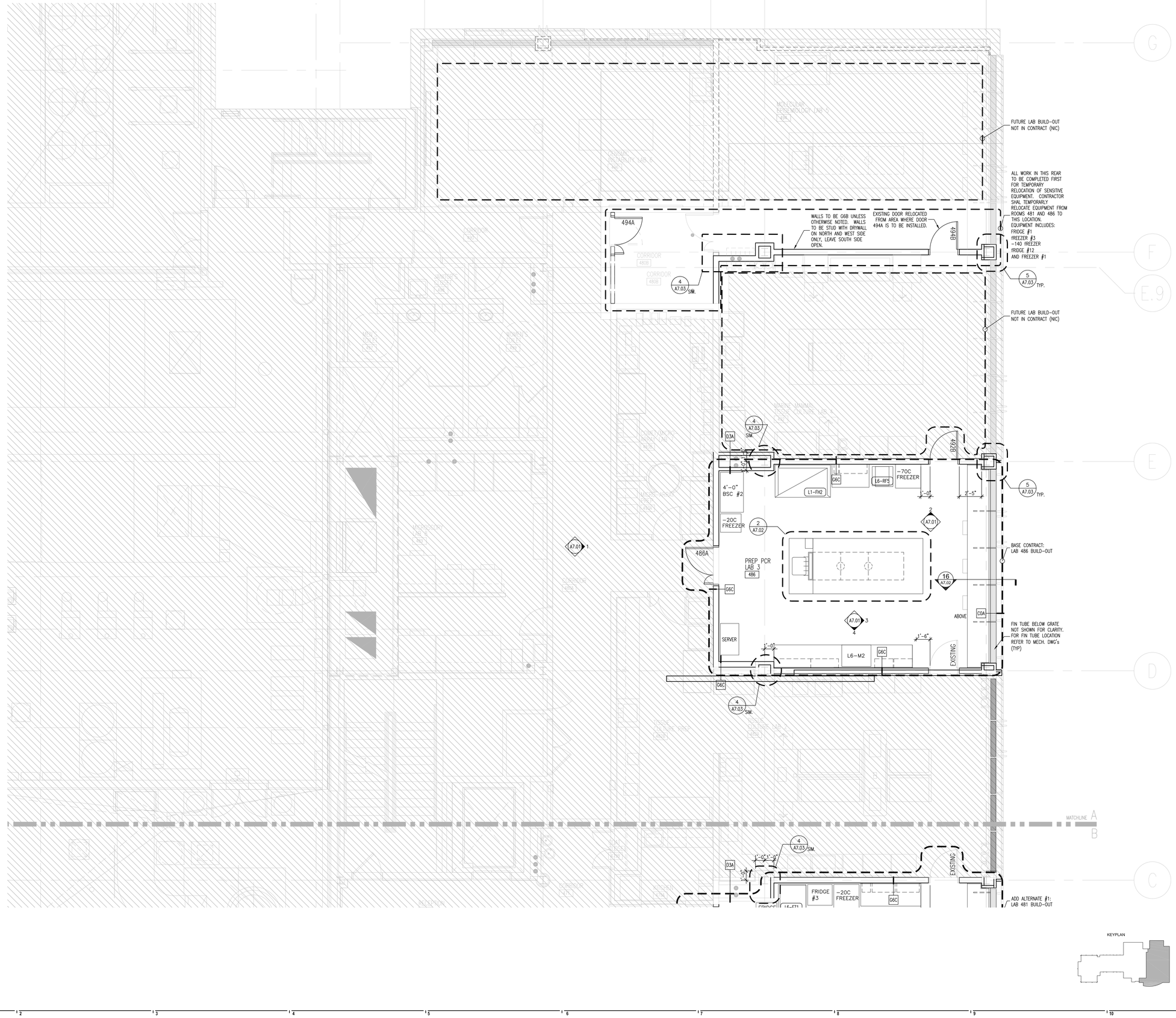
ISSUE LOG

△ = CLOUDED CHANGE

SCALE	N.T.S.
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

BUILDING CODE DESIGN SUMMARY

A0.02



KEYPLAN

PROJECT NORTH
TRUE NORTH

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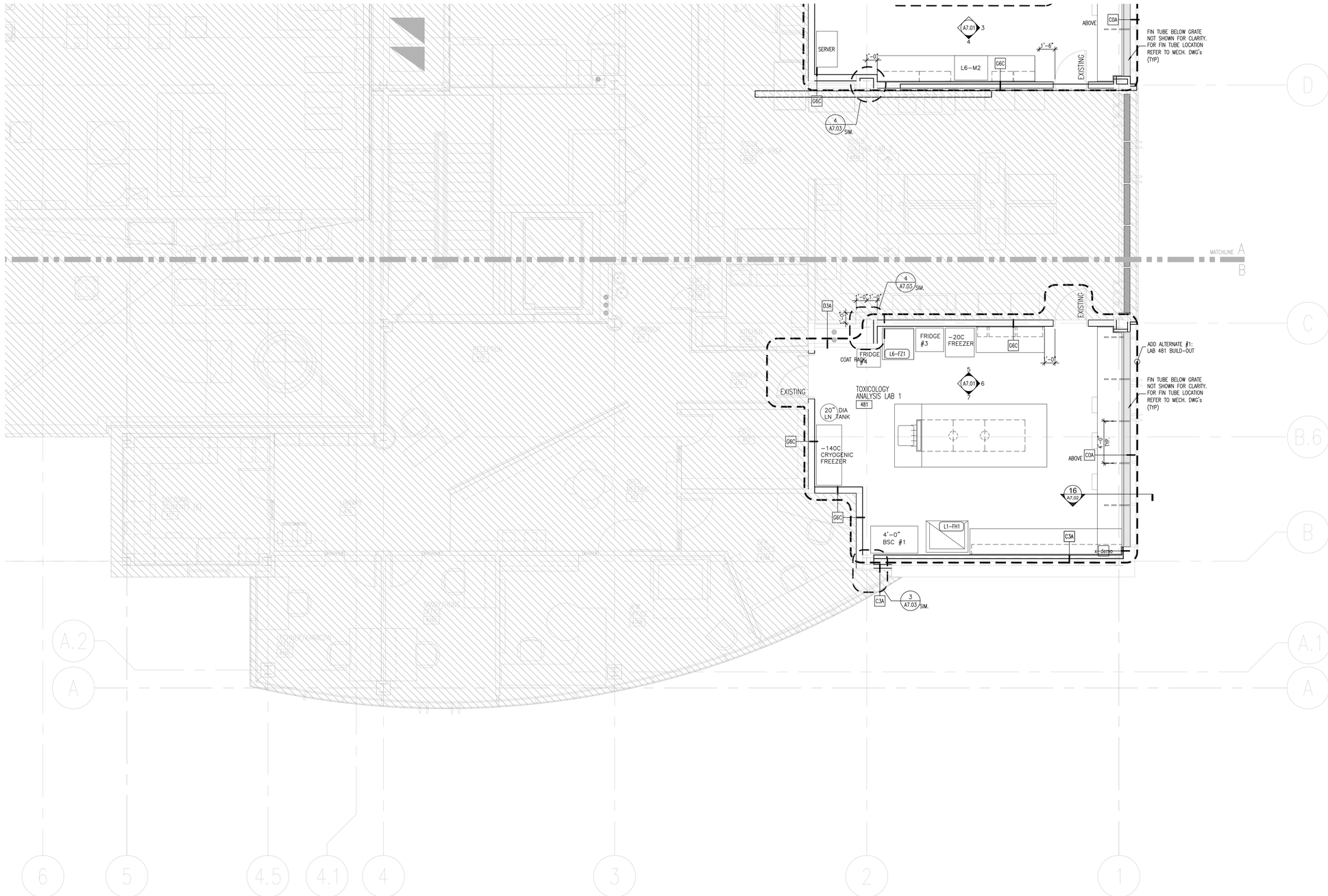
ISSUE LOG

△ = CLOUDED CHANGE

SCALE	1/4" = 1'-0"
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

4TH FLOOR PLAN PART A

A1.04A



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ISSUE LOG

△ = CLOUDED CHANGE

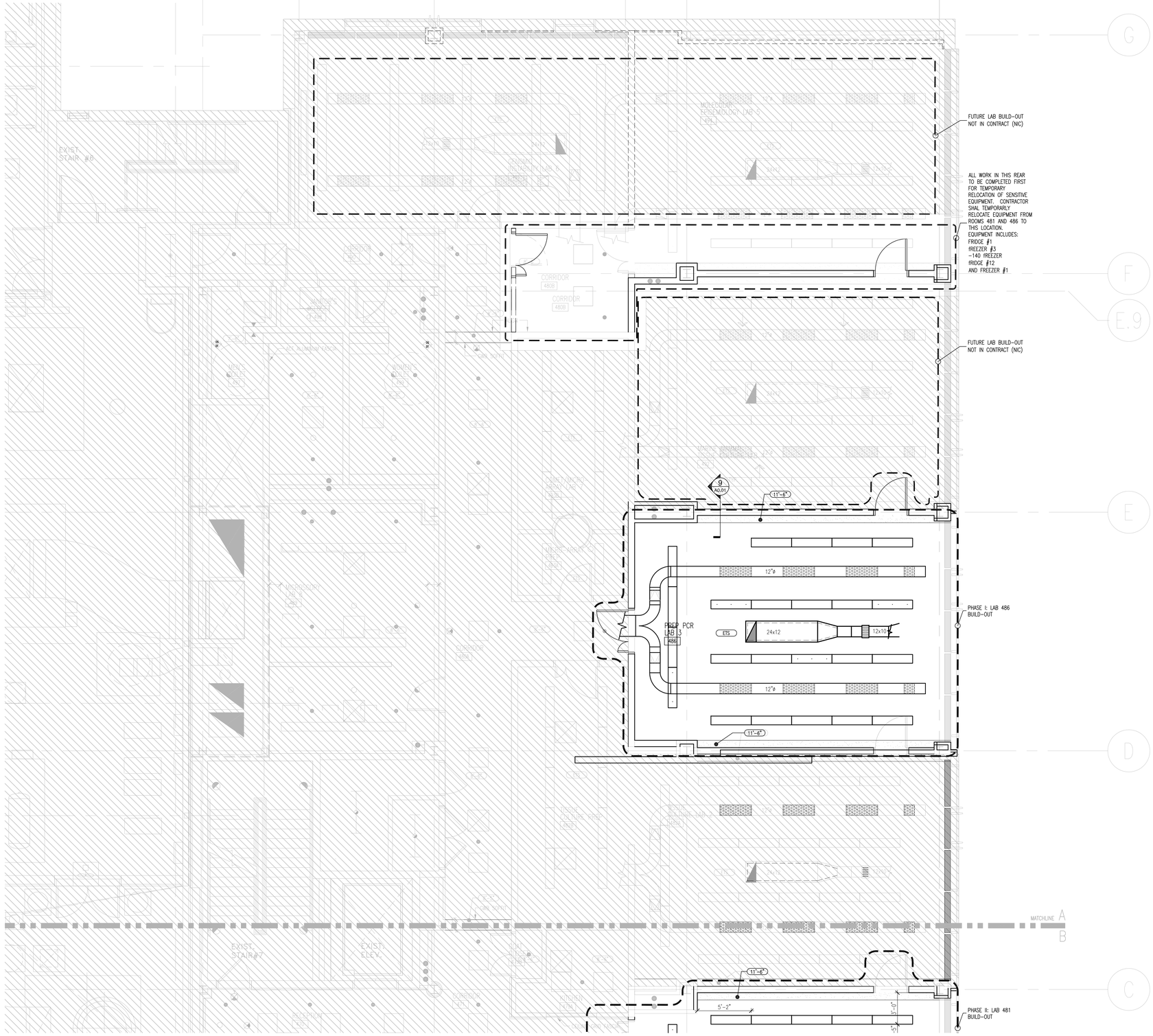
SCALE	1/4" = 1'–0"
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

4TH FLOOR PLAN PART B

KEYPLAN

PROJECT NORTH
TRUE NORTH

A1.04B



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ISSUE LOG

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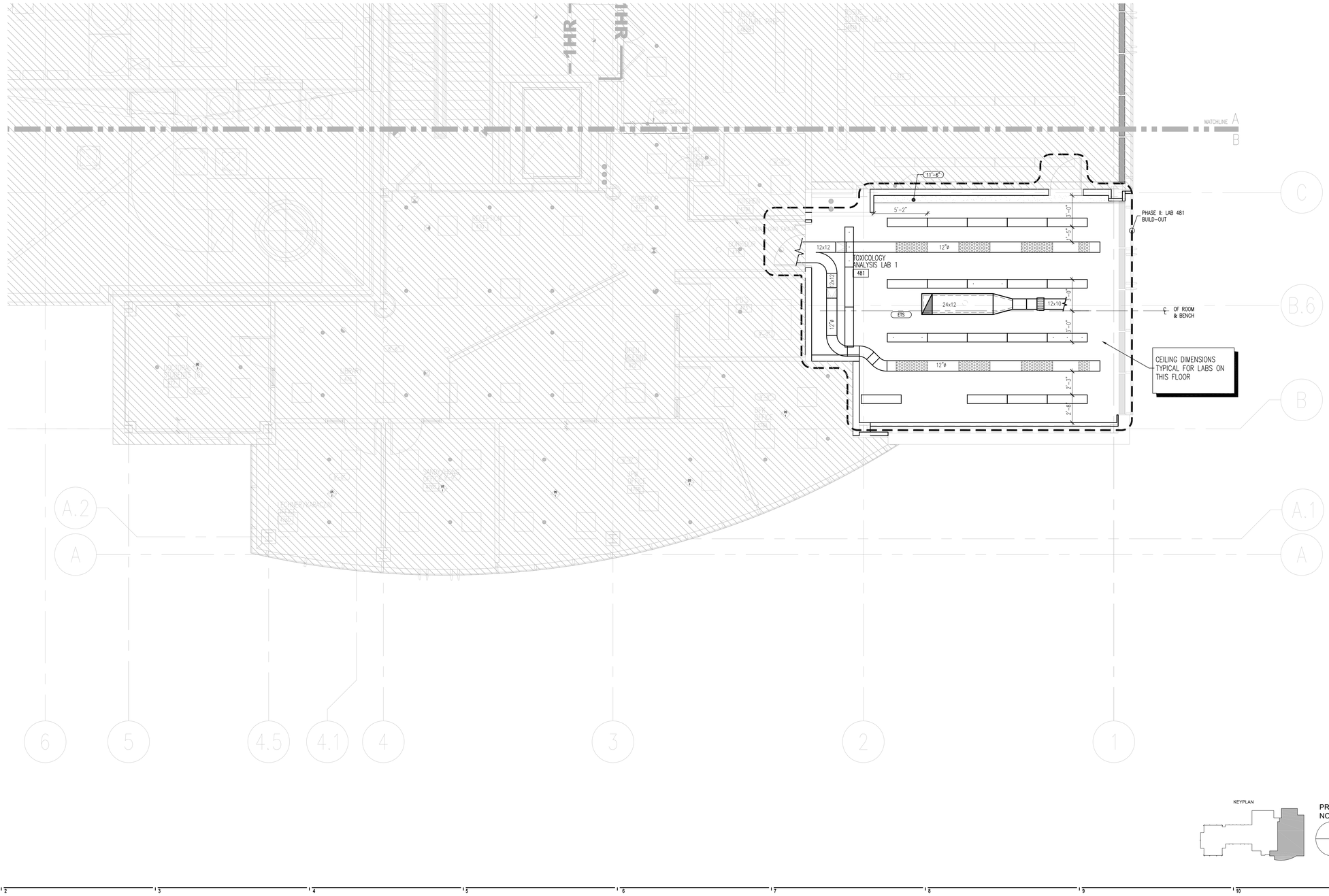
SCALE	1/4" = 1'-0"
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH/ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

4TH FLOOR REFLECTED CEILING PLAN PART A

A6.04A



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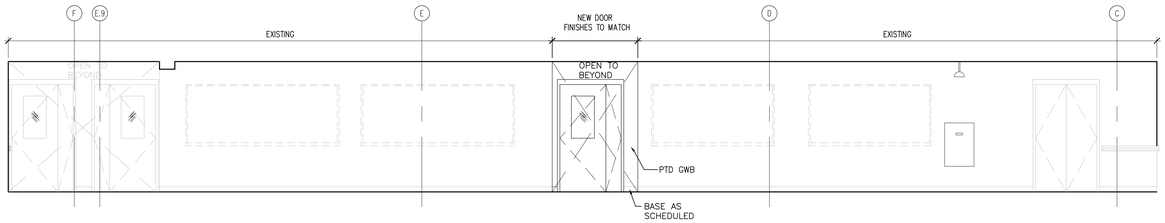
SCALE	1/4" = 1'-0"
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH/ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

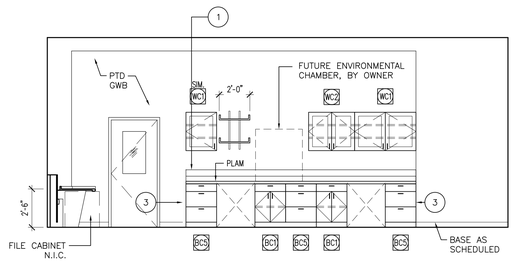
4TH FLOOR REFLECTED CEILING PLAN PART B

A6.04B

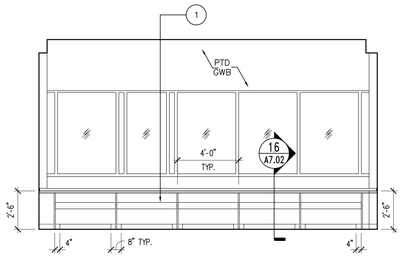
PHASE I



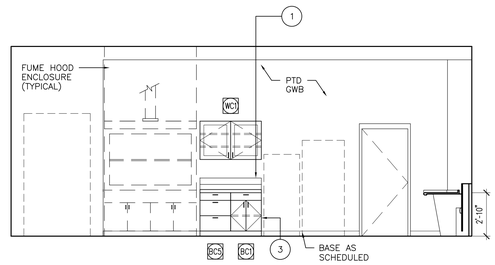
1 A7.01 CORRIDOR 480A – EAST ELEVATION
SCALE: 1/4" = 1'-0"



4 A7.01 LAB 486 – SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

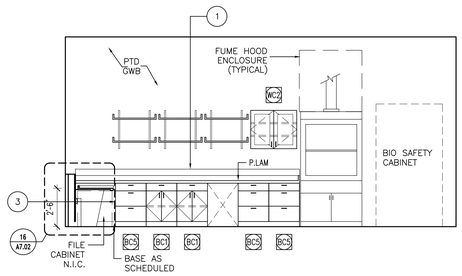


3 A7.01 LAB – EAST ELEVATION
SCALE: 1/4" = 1'-0"

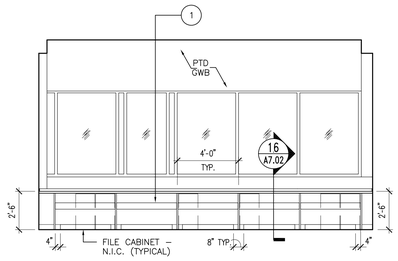


2 A7.01 LAB 486 – NORTH ELEVATION
SCALE: 1/4" = 1'-0"

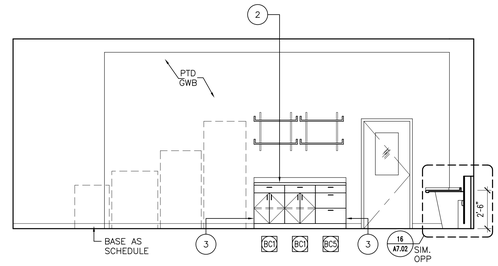
PHASE II



7 A7.01 LAB 481 – SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



6 A7.01 LAB – EAST ELEVATION
SCALE: 1/4" = 1'-0"



5 A7.01 LAB 481 – NORTH ELEVATION
SCALE: 1/4" = 1'-0"

INTERIOR ELEVATION GENERAL NOTES

SEE DETAIL 6a,b/A7.02 FOR LABORATORY AND KITCHEN CABINETS SCHEDULES.

INTERIOR ELEVATION KEY NOTES

1. PLUG MOLD SURFACE RACEWAY MOUNT AT 3'–4" TO BOTTOM OF PLUGMOLD (U.O.N.). REFER TO ELEC. DWG's
2. RELOCATE DESIGNATED CASEWORK / EQUIPMENT FROM FIRST FLOOR TO THIS LOCATION. PROVIDE NECESSARY SERVICE FOR INSTALLATION
3. EXPOSED END (FINISH TO MATCH FRONT FACE OF CABINETRY)

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SCALE	AS NOTED
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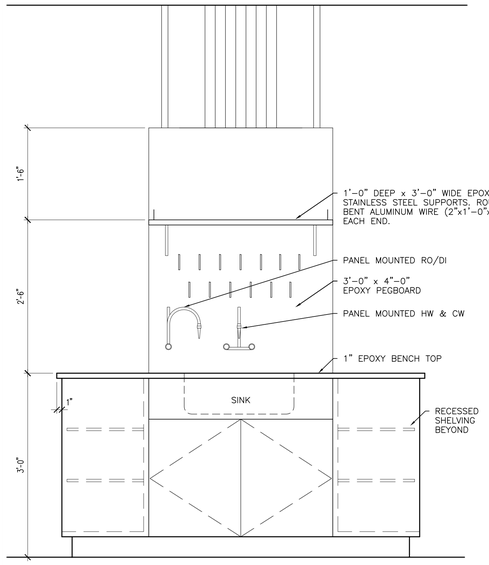
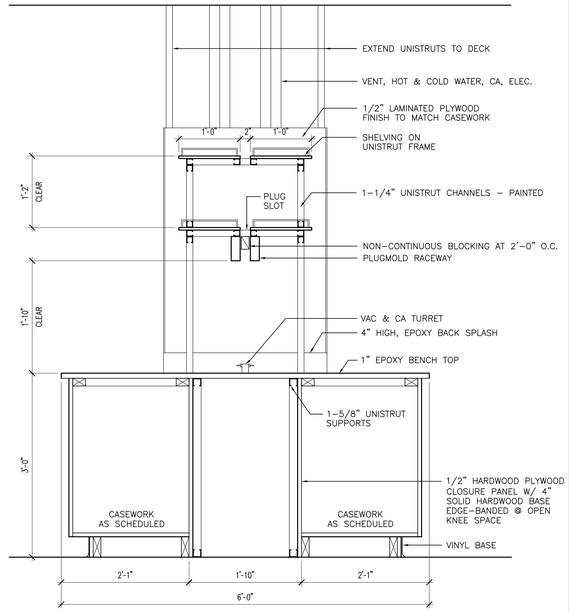
CHECK BY	DJO
PROJ.ARCH/ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

INTERIOR ELEVATIONS

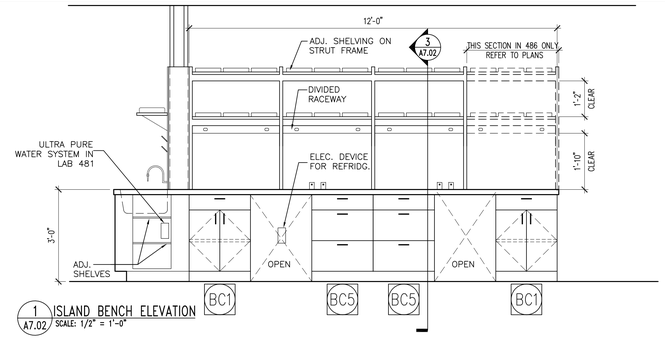
A7.01



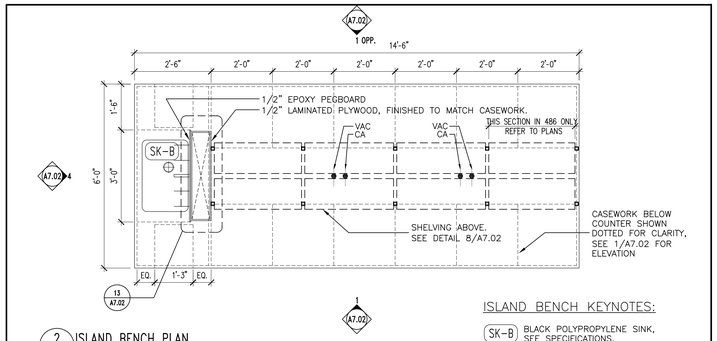
4 PENINSULA BENCH ELEVATION
A7.02 SCALE: 1" = 1'-0"



3 SECTION @ PENINSULA BENCH
A7.02 SCALE: 1" = 1'-0"



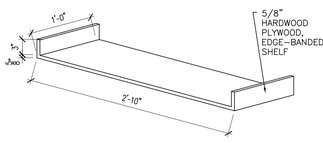
1 ISLAND BENCH ELEVATION
A7.02 SCALE: 1/2" = 1'-0"



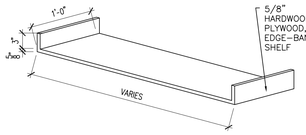
2 ISLAND BENCH PLAN
A7.02 SCALE: 1/2" = 1'-0"

ISLAND BENCH KEYNOTES:

SK-B BLACK POLYPROPYLENE SINK, SEE SPECIFICATIONS.



8 SHELF DETAIL @ ISLAND BENCH
A7.02 SCALE: 1" = 1'-0"



7 SHELF DETAIL @ PERIMETER BENCH
A7.02 SCALE: 1" = 1'-0"

LABORATORY CABINETS

ITEM	WIDTH	DEPTH	HEIGHT	DESCRIPTION
BC1	24"	24"	34"	BASE CABINET INCLUDES: –HINGED DOUBLE DOORS –ONE DRAWER –ONE ADJUSTABLE SHELF –COUNTERTOP –4" BACKSPLASH –DOOR PULL ON EACH DOOR & DRAWER
BC2	24"	24"	34"	BASE CABINET INCLUDES: –PULL OUT WORK SURFACE –HINGED DOUBLE DOORS –ONE DRAWER –ONE ADJUSTABLE SHELF –COUNTERTOP –4" BACKSPLASH –DOOR PULL ON EACH DOOR & DRAWER
BC3	18"	24"	34"	BASE CABINET INCLUDES: –HINGED DOOR –ONE DRAWER –ONE ADJUSTABLE SHELF –COUNTERTOP –4" BACKSPLASH –DOOR PULL ON DOOR & DRAWER
BC4	12"	24"	34"	BASE CABINET INCLUDES: –HINGED DOOR –ONE DRAWER –ONE ADJUSTABLE SHELF –COUNTERTOP –4" BACKSPLASH –DOOR PULL ON DOOR & DRAWER
BC5	24"	24"	34"	BASE CABINET INCLUDES: –ONE SHALLOW DRAWER –TWO EQUAL DEEP DRAWERS –COUNTERTOP –4" BACKSPLASH –CENTER PULL ON EACH DRAWER

LABORATORY CABINETS

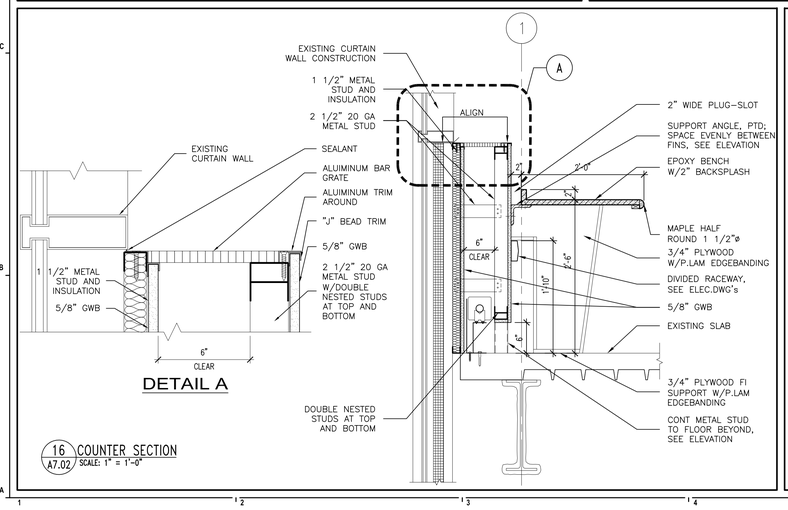
ITEM	WIDTH	DEPTH	HEIGHT	DESCRIPTION
SC1	36"	24"	34"	SINK CABINET INCLUDES: –CUT FOR SINK –HINGED DOUBLE DOORS –COUNTERTOP –4" BACKSPLASH –DOOR PULL ON EACH DOOR –FAKE DRAWER (NO PULLS) –SINK (REFER TO PLUMBING DWG's)
WC1	48"	12"	30"	WALL CABINET INCLUDES: –HINGED DOUBLE GLASS DOORS –TWO ADJUSTABLE SHELFS –DOOR PULL ON EACH DOOR
WC2	36"	12"	30"	WALL CABINET INCLUDES: –HINGED DOUBLE GLASS DOORS –TWO ADJUSTABLE SHELFS –DOOR PULL ON EACH DOOR
WC3	30"	12"	30"	WALL CABINET INCLUDES: –HINGED DOUBLE GLASS DOORS –TWO ADJUSTABLE SHELFS –DOOR PULL ON EACH DOOR

6a LABORATORY CABINETS SCHEDULE
A7.02 SCALE: N.T.S.

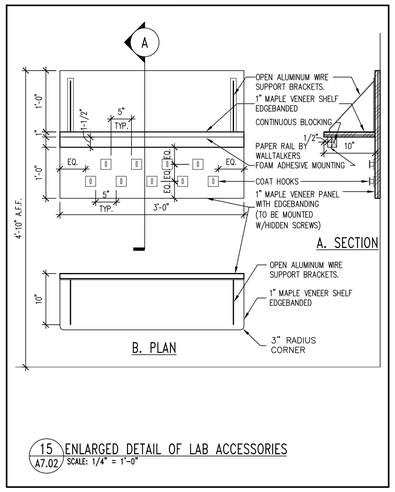
KITCHEN CABINETS

ITEM	WIDTH	DEPTH	HEIGHT	DESCRIPTION
SC2	36"	24"	34"	KITCHEN SINK CABINET INCLUDES: –CUT FOR SINK –HINGED DOUBLE DOORS –KNEE GUARD TO HIDE PIPNG –COUNTERTOP –4" BACKSPLASH –DOOR PULL ON EACH DOOR –FAKE DRAWER (NO PULLS) –SINK (REFER TO PLUMBING DWG's)
KC1	30"	24"	34"	KITCHEN BASE CABINET INCLUDES: –PULL OUT WORK SURFACE –HINGED DOUBLE DOORS –ONE DRAWER –ONE ADJUSTABLE SHELF –COUNTERTOP –4" BACKSPLASH –DOOR PULL ON EACH DOOR & DRAWER

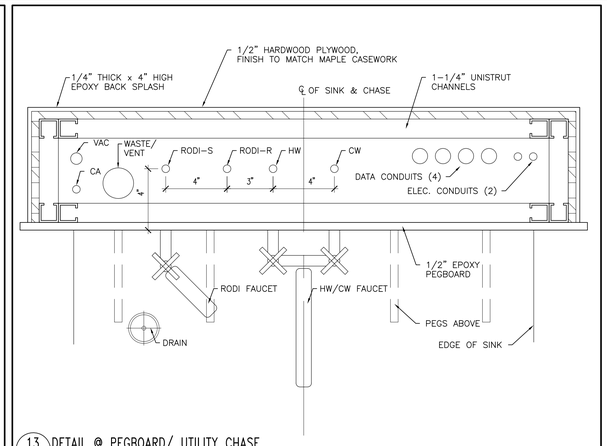
6b KITCHEN CABINETS SCHEDULE
A7.02 SCALE: N.T.S.



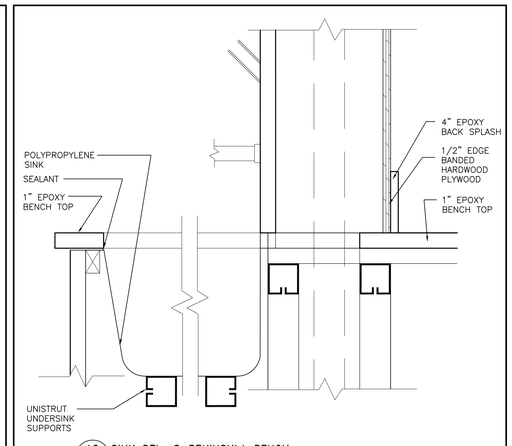
16 COUNTER SECTION
A7.02 SCALE: 1" = 1'-0"



15 ENLARGED DETAIL OF LAB ACCESSORIES
A7.02 SCALE: 1/4" = 1'-0"



13 DETAIL @ PEGBOARD/ UTILITY CHASE
A7.02 SCALE: 3" = 1'-0"



12 SINK DTL. @ PENINSULA BENCH
A7.02 SCALE: 3" = 1'-0"

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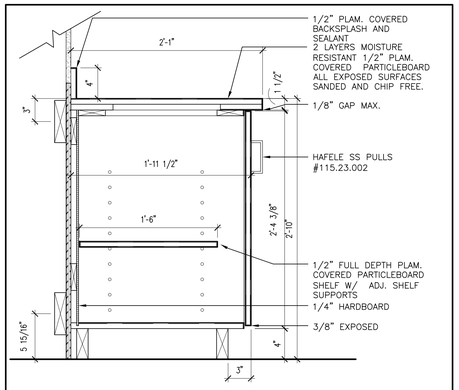
ISSUE LOG

△ = CLOUDED CHANGE

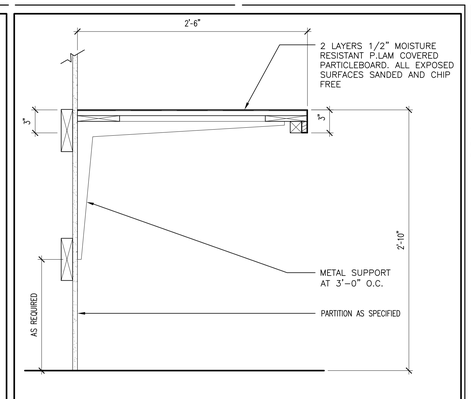
SCALE	AS NOTED
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

INTERIOR DETAILS

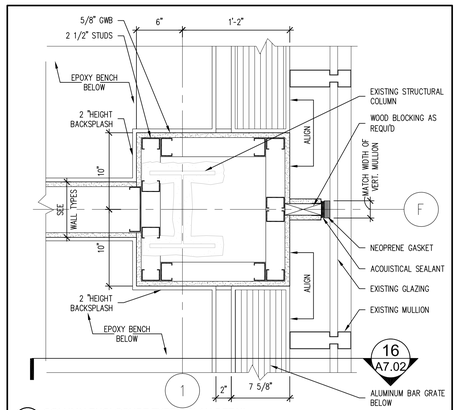
A7.02



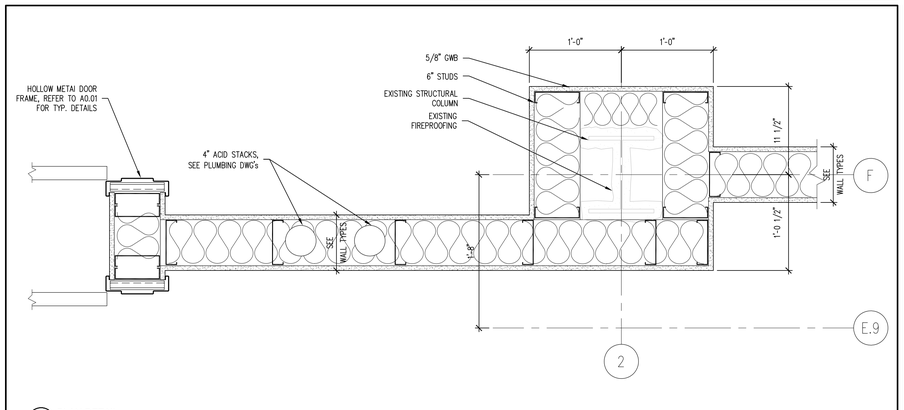
2 34" H BASE CABINET W/DOOR
1 1/2" = 1'-0"



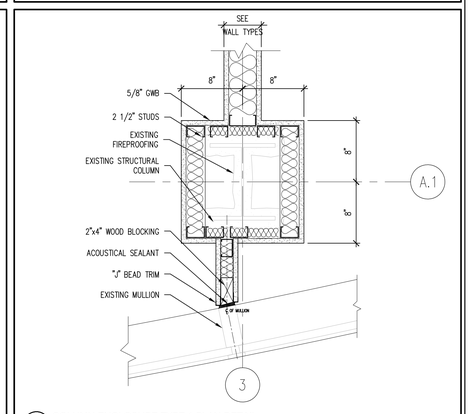
1 COUNTER WITH SUPPORT PANEL
1 1/2" = 1'-0"



5 COLUMN ENCLOSURE TYPE 3 PLAN DETAIL
1 1/2" = 1'-0"



4 PLAN DETAIL
1 1/2" = 1'-0"



3 COLUMN ENCLOSURE TYPE 1 PLAN DETAIL
1 1/2" = 1'-0"

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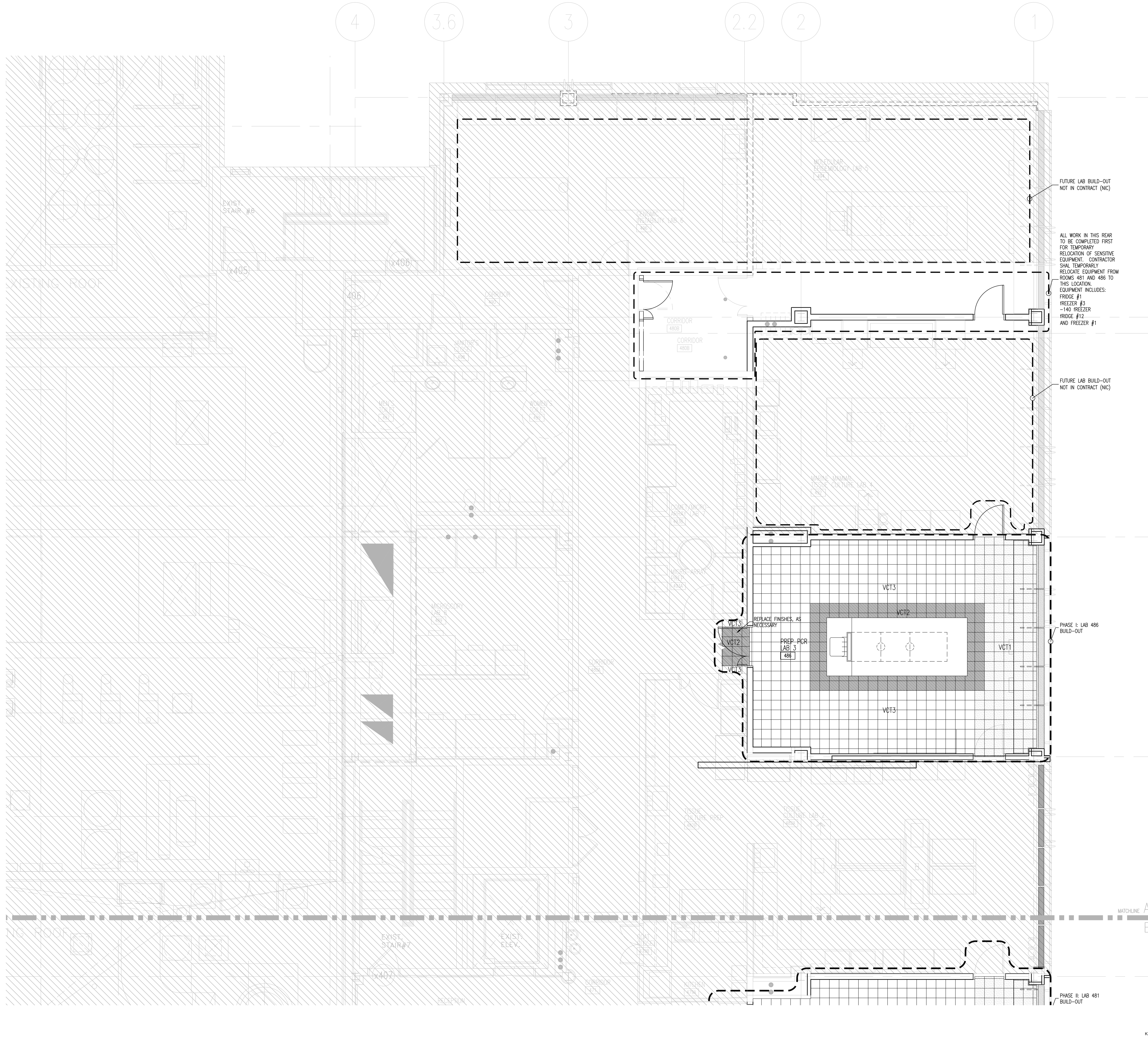
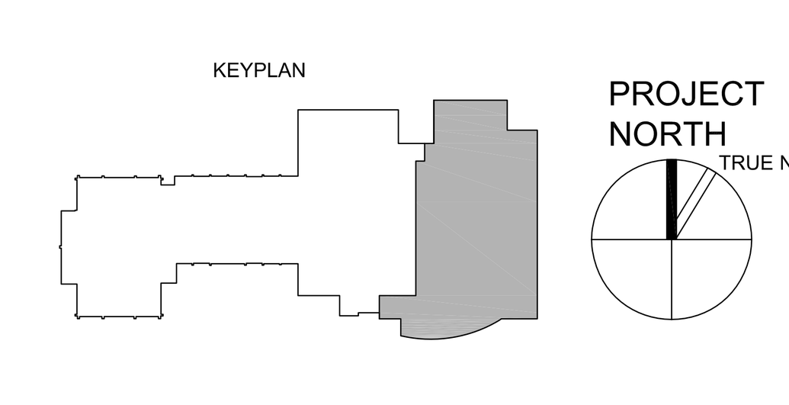
SCALE	AS NOTED
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

INTERIOR DETAILS

A7.03





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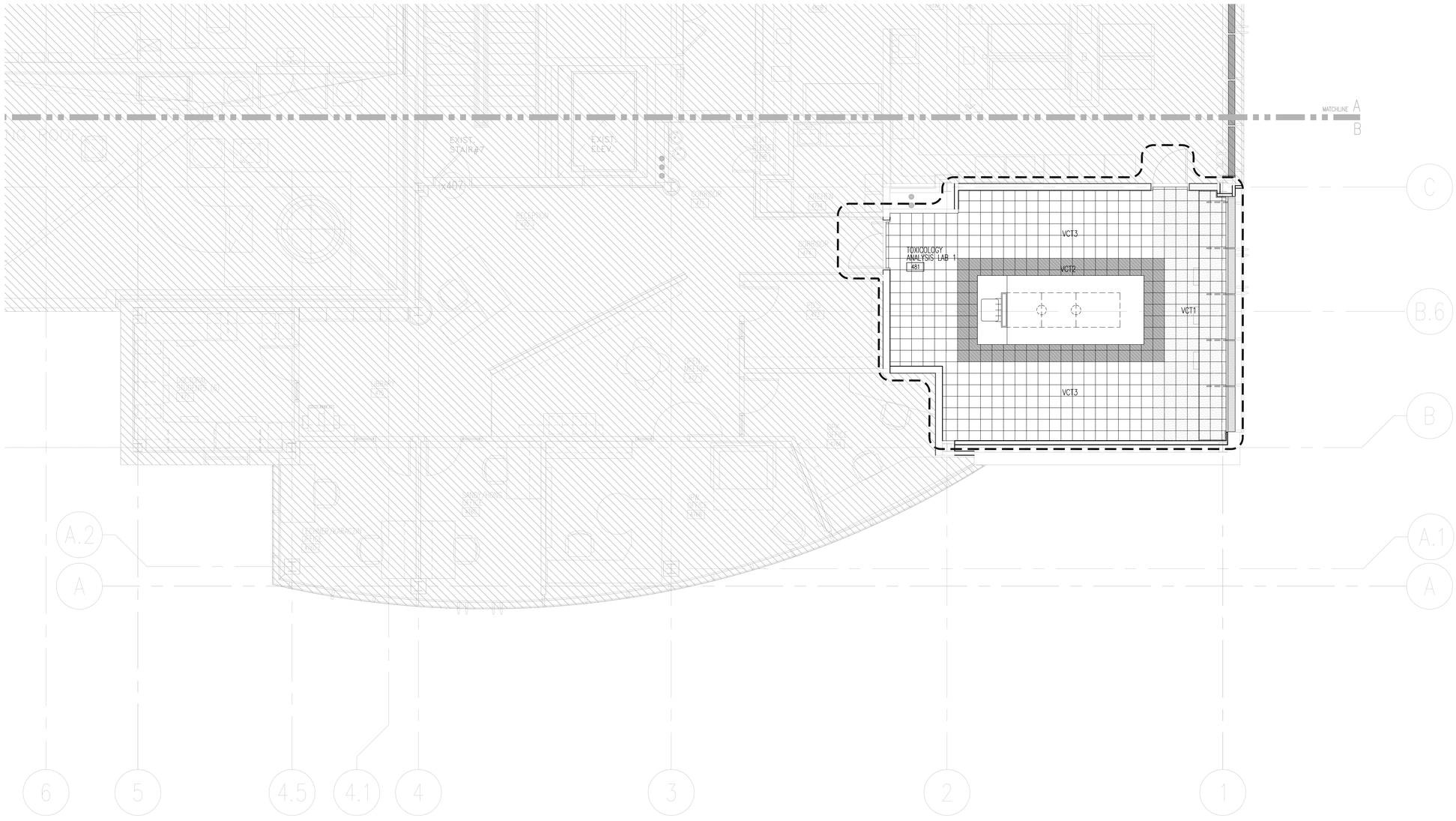
ISSUE LOG

△ = CLOUDED CHANGE

SCALE	1/4" = 1'-0"
DRAWN BY	DJO
CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

4TH FLOOR FINISH PLAN PART A

A10.04A



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CHECK BY	DJO
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
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4TH FLOOR FINISH PLAN PART B

A10.04B

SYMBOLS

	DN	PIPE DOWN THROUGH FLOOR
	UP	PIPE UP THROUGH FLOOR/ROOF ABOVE
		PIPE DROP
	WCO	WALL CLEANOUT
	CO	CLEANOUT
	GCO	GRADE CLEANOUT
	FCO	FLOOR CLEANOUT
	DCO	DANDY CLEANOUT
		CAP
		PIPE BREAK
		UNION
	SOV	SHUT-OFF VALVE (TYPE PER SPECS)
	BV	BALANCING VALVE
	VIV	VALVE IN VERTICAL
	DV	DRAIN VALVE W/VACUUM BREAKER
		FLOW ARROW
1/8"		PIPE SLOPE INDICATOR (DN/FT)
	AP	ACCESS PANEL
	TP-1	TRAP PRIMER & TYPE
	W&T	WASTE AND TRAP
	SA-1	SHOCK ABSORBER & TYPE
	HB-1	HOSE BIBB & TYPE
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
	BVS	HOT WATER BALANCING VALVE STATION
	FD-1	FLOOR DRAIN & TYPE
	RE	EXISTING FIXTURE TO BE REMOVED
		LIGHT LINE INDICATES EXISTING PIPING
		HEAVY LINE INDICATES NEW PIPING
		HEAVY DASHED LINE INDICATES BURIED PIPING
	RE	EXISTING PIPING TO BE REMOVED
	ETR	EXISTING TO REMAIN
	CTE	CONNECT TO EXISTING
	C&C	CUT & CAP
EXISTING TO BE REMOVED / EXISTING TO REMAIN		LIMITS OF DEMOLITION
SANITARY RISER / WATER RISER / DRAWING WHERE RISERS OCCUR (A 1 / P-601)		RISER DIAGRAM DESIGNATION
DETAIL NUMBER / DRAWING WHERE DETAIL OCCURS (5 / P-501)		DETAIL REFERENCE
EQUIPMENT TYPE / EQUIPMENT NUMBER (HTR 1)		EQUIPMENT TAG (ELECTRICAL EQUIPMENT)

	CW	DOMESTIC COLD WATER PIPING
	HW	DOMESTIC HOT WATER PIPING
	HWC	DOMESTIC HOT WATER CIRCULATION PIPING
	S	SANITARY PIPING ABOVE GRADE
	V	VENT PIPING
	PCW	PROTECTED COLD WATER PIPING
	PHW	PROTECTED HOT WATER PIPING
PHWC	PHWC	PROTECTED HOT WATER CIRCULATION
NPCW	NPCW	NON POTABLE COLD WATER PIPING
TW	TW	TEMPERED WATER PIPING
ROS	ROS	REVERSE OSMOSIS SUPPLY PIPING
AW	AW	ACID WASTE PIPING ABOVE GRADE
AV	AV	ACID VENT PIPING ABOVE GRADE
G	G	NATURAL GAS PIPING
CA	CA	COMPRESSED AIR PIPING
VAC	VAC	VACUUM PIPING
	CW	EXISTING DOMESTIC COLD WATER PIPING
	HW	EXISTING DOMESTIC HOT WATER PIPING
	HWC	EXISTING DOMESTIC HOT WATER CIRCULATION PIPING
	S	EXISTING SANITARY PIPING ABOVE GRADE
	V	EXISTING VENT PIPING
	PCW	EXISTING PROTECTED COLD WATER PIPING
	PHW	EXISTINGPROTECTED HOT WATER PIPING
PHWC	PHWC	EXISTING PROTECTED HOT WATER CIRCULATION
NPCW	NPCW	EXISTING NON POTABLE COLD WATER PIPING
TW	TW	EXISTING TEMPERED WATER PIPING
ROS	ROS	EXISTING REVERSE OSMOSIS SUPPLY PIPING
AW	AW	EXISTING ACID WASTE PIPING ABOVE GRADE
AV	AV	EXISTING ACID VENT PIPING ABOVE GRADE
G	G	EXISTING NATURAL GAS PIPING
CA	CA	EXISTING COMPRESSED AIR PIPING
VAC	VAC	EXISTING VACUUM PIPING
	OFCI	OWNER FINISHED/CONTRACTOR INSTALLED

LABORATORY EQUIPMENT CONNECTION SCHEDULE

EQUIPMENT DESIGNATION	EQUIPMENT DESCRIPTION	ACID WASTE	PCW	PHW	140° PHW	RO	VAC	CA	GAS	REMARKS
CA-1	COMPRESSED AIR TURRET	-	-	-	-	-	-	1/2"	-	TURRETS FURNISHED BY THE CASEWORK VENDOR (PER SPECIFICATION 12350) INSTALLED BY PLUMBING CONTRACTOR
VAC-1	VACUUM TURRET	-	-	-	-	-	3/4"	-	-	TURRETS FURNISHED BY THE CASEWORK VENDOR (PER SPECIFICATION 12350) INSTALLED BY PLUMBING CONTRACTOR
BSC-1	BIO-SAFETY CABINET (OFCI)	-	-	-	-	-	3/4"	-	1/2"	
FH-1	FUME HOOD (OFCI)	2"	1/2"	-	-	-	3/4"	1/2"	-	PROVIDE 2"ACID RESISTANT TRAP WITH 2" ACID RESISTANT VENT

SHOCK ABSORBER SCHEDULE

TYPE	FIXTURE UNIT RATING	BASIS OF DESIGN	
		MANUFACTURER	FIGURE NO.
SA'A'	1-11	JAY R. SMITH	5005
SA'B'	12-32	JAY R. SMITH	5010
SA'C'	33-60	JAY R. SMITH	5020
SA'D'	61-113	JAY R. SMITH	5030
SA'E'	114-154	JAY R. SMITH	5040
SA'F'	155-330	JAY R. SMITH	5050

DRAIN SCHEDULE

FIXTURE DESIG.	MANUFACTURER & MODEL	DESCRIPTION	REMARKS
FD 'A'	AS MANF. BY ORION	POLYPROPYLE BODY W/ MEDIUM DUTY ADJUSTABLE POLYPROPYLENE GRATE & SLOTTED SEDIMENT BUCKET	SOCKET HEAT FUSION OUTLET W/ 1/2" TRAP PRIMER CONNECTION

PLUMBING FIXTURE SCHEDULE

FIXTURE DESIG.	DESCRIPTION	MOUNTING	H / C	FIXTURE	STOP	TRAP	CARRIER	REMARKS
SK 'A'	LAB ISLAND SINK	COUNTER	YES	(SINK IS INTEGRAL PART OF COUNTERTOP & PROVIDED BY CASEWORK CONTRACTOR)	1/2" BALL VALVES	1-1/2" POLYPROPYLENE	NONE	FIXTURE & TRIM FURNISHED BY CASEWORK MANUFACTURER AND INSTALLED BY PLUMBING SUB-CONTRACTOR
CA-1	———	———	———	TURRETS FURNISHED BY THE CASEWORK VENDOR (PER SPECIFICATION 12350) INSTALLED BY PLUMBING CONTRACTOR	———	———	———	———
VAC-1	———	———	———	TURRETS FURNISHED BY THE CASEWORK VENDOR (PER SPECIFICATION 12350) INSTALLED BY PLUMBING CONTRACTOR	———	———	———	———

PLUMBING FIXTURE CONNECTION SCHEDULE

DESIG.	FIXTURE	WASTE	VENT	COLD WATER	HOT WATER	PCW WATER	PHW WATER	RO WATER	ACID WASTE	ACID VENT	REMARKS
SK 'A'	LAB ISLAND SINK	----	----	----	----	1/2"	1/2"	3/4"	2"	2"	

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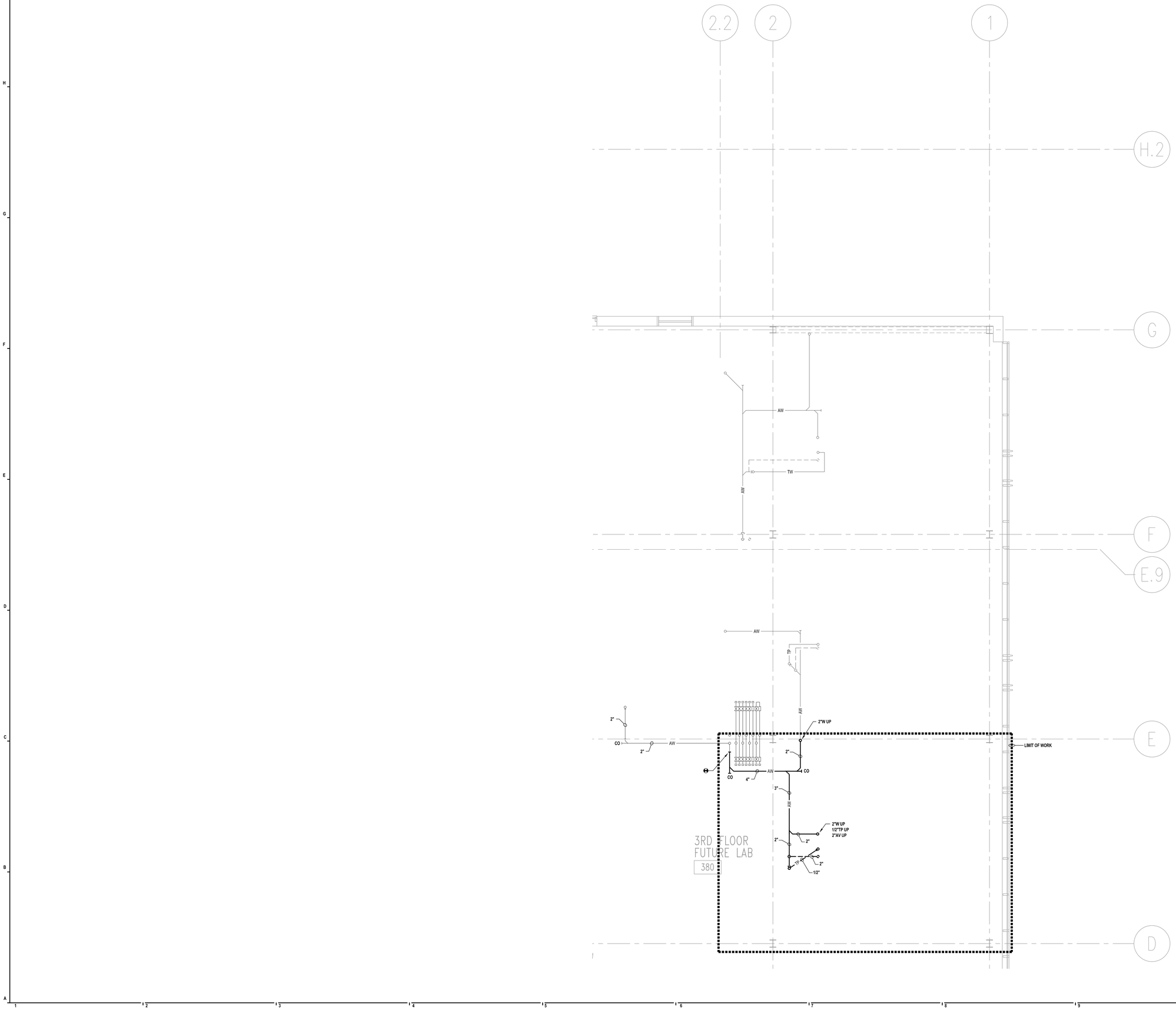
SCALE	NTS
DRAWN BY	JMS/MVR
CHECK BY	RBM
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

LEGEND AND SCHEDULES

P0.01



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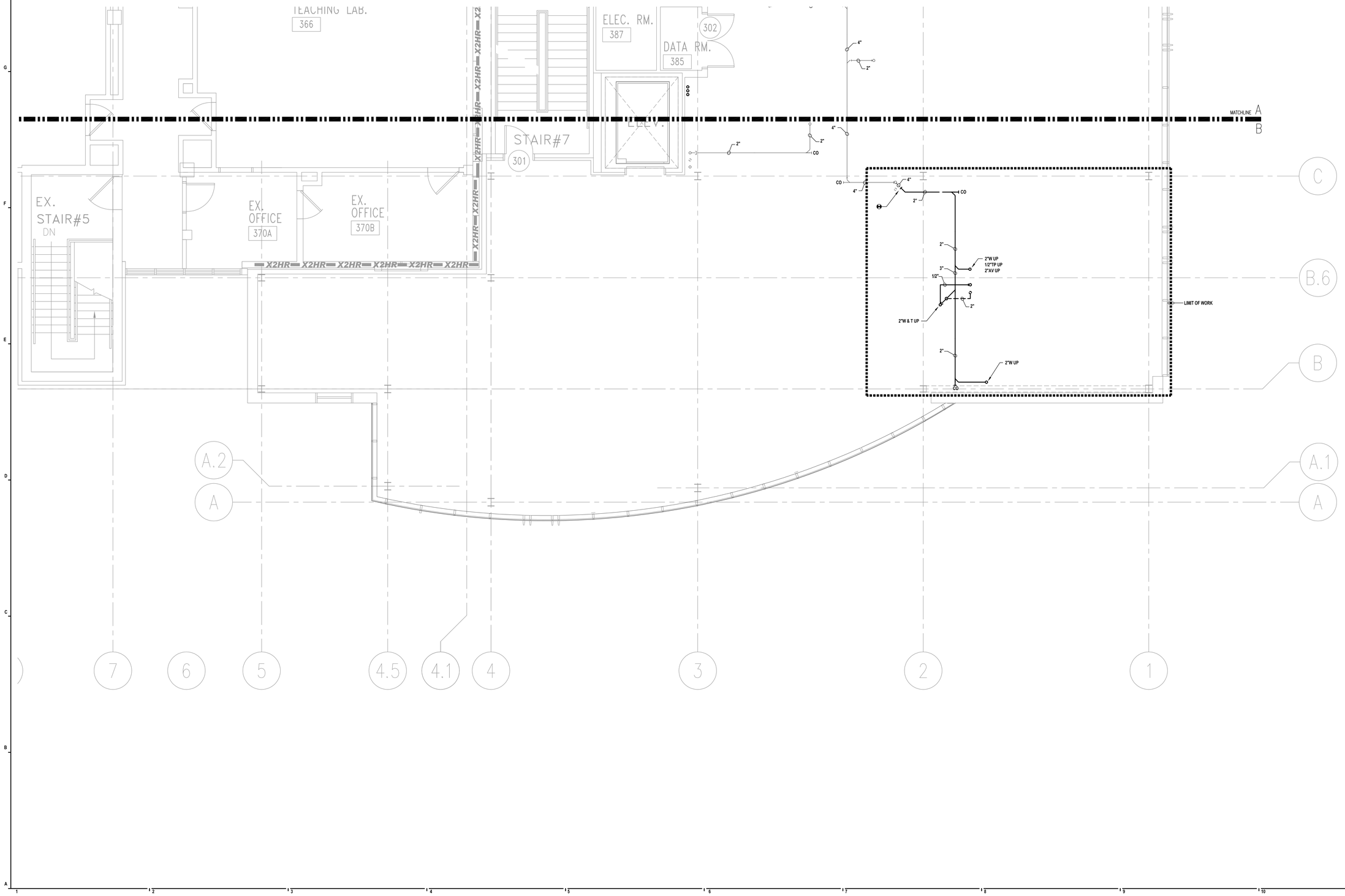
SCALE	1/4"=1'-0"
DRAWN BY	JMS
CHECK BY	RBM
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

THIRD FLOOR PART A PLAN

P1.03a



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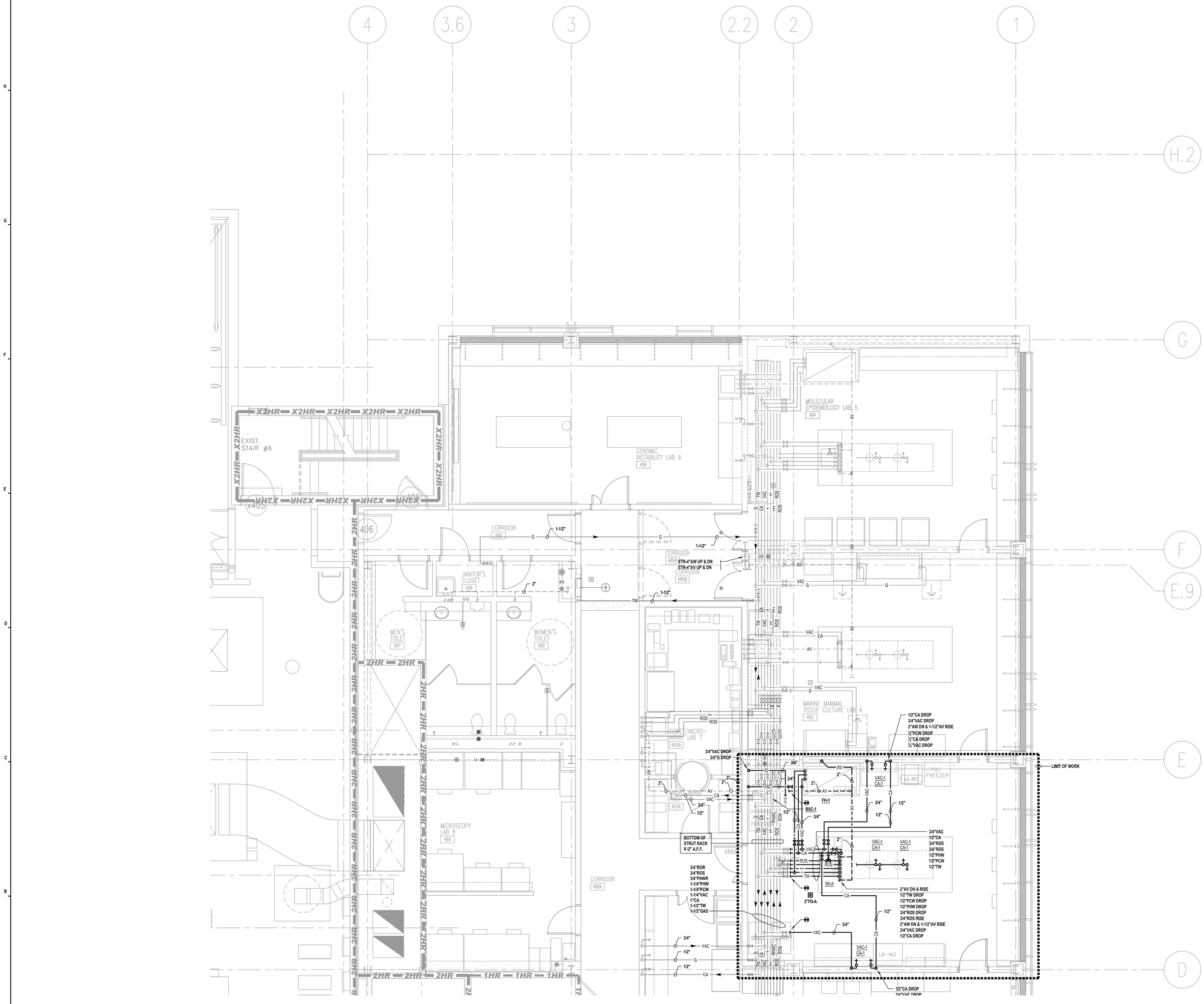
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

THIRD FLOOR PART B PLAN

P1.03b



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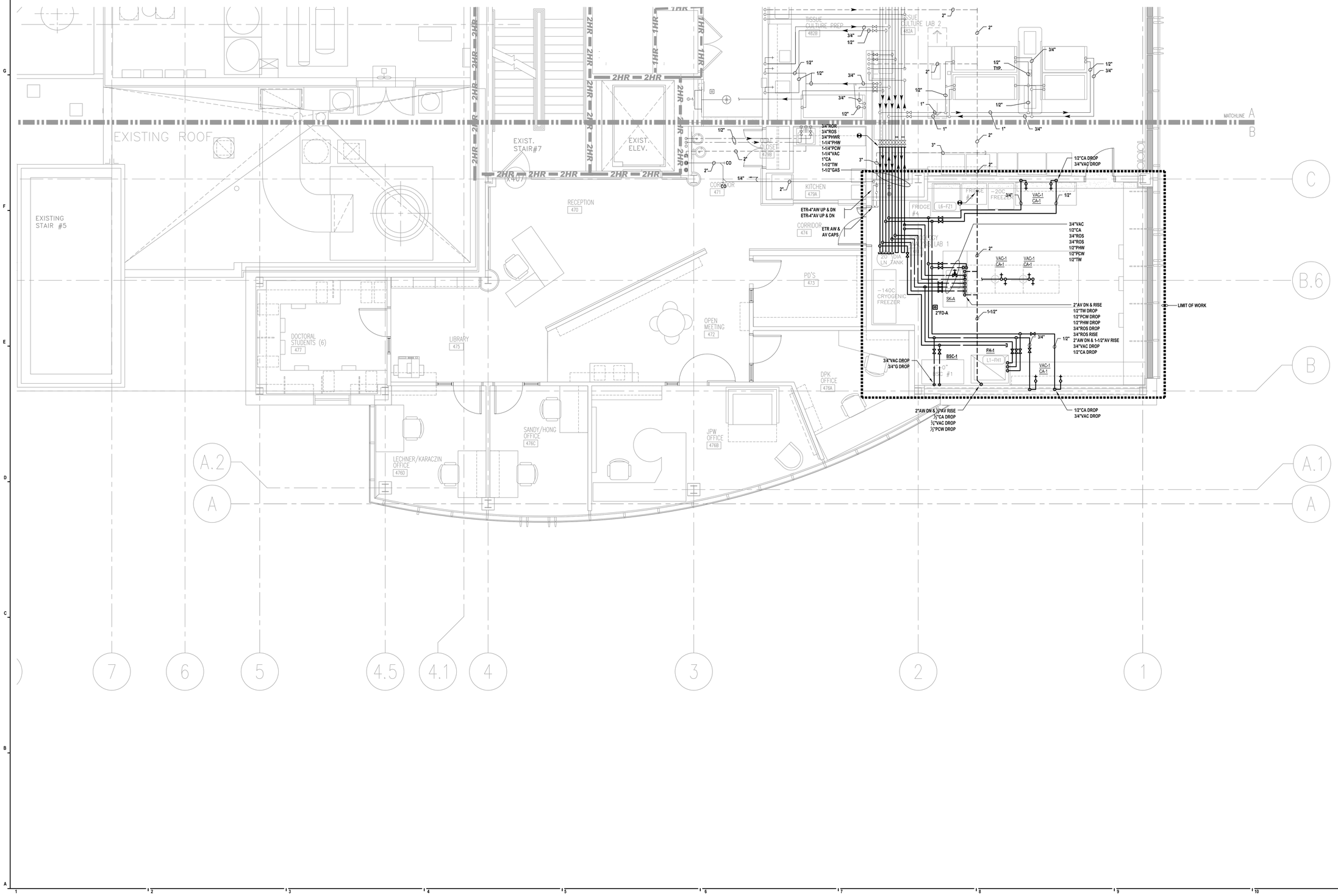
CHECK BY	RBM
PROJ.ARCH/ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

FOURTH FLOOR PART A PLAN

P1.04a



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UNIVERSITY OF SOUTHERN MAINE

UNIVERSITY OF SOUTHERN MAINE BIO-SCIENCES

70 FALMOUTH STREET
PORTLAND, MAINE

MARK:	DATE:	DESCRIPTION:
	6.18.2012	CONSTRUCTION DOCUMENTS
	4.30.2012	OWNER REVIEW SET
	3.21.2012	DESIGN DEVELOPMENT

ISSUE LOG

△ = CLOUDED CHANGE

SCALE	1/4"=1'-0"
DRAWN BY	JMS
CHECK BY	RBM
PROJ.ARCH/ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

FOURTH FLOOR PART B PLAN

P1.04b

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usm
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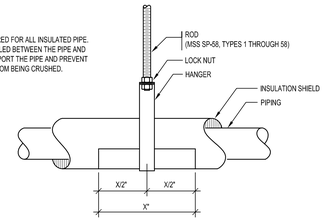
PORTLAND, MAINE

NOTES:

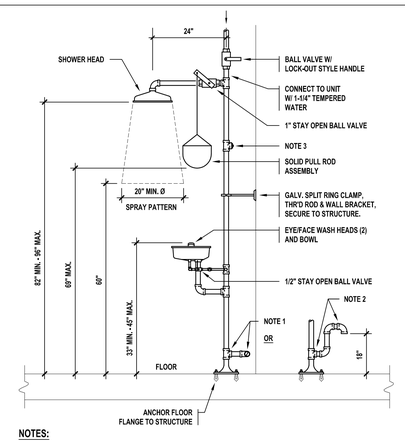
1. HANGER SHIELD IS REQUIRED FOR ALL INSULATED PIPE.
2. INSERTS SHALL BE INSTALLED BETWEEN THE PIPE AND HANGER SHIELD TO SUPPORT THE PIPE AND PREVENT THE PIPE INSULATION FROM BEING CRUSHED.



INSULATION SHIELD LENGTH				
PIPE SIZE	INSULATION THICKNESS			GAUGE
	1/2"	3/4"	1"	
1/2" TO 3"	12"	12"	12"	18
4"	12"	12"	12"	16
5"	18"	18"	18"	16
6"	18"	18"	18"	16
8" TO 14"	24"	24"	24"	14

D5 PIPE HANGER AND SHIELD DETAIL

SCALE: N.T.S.

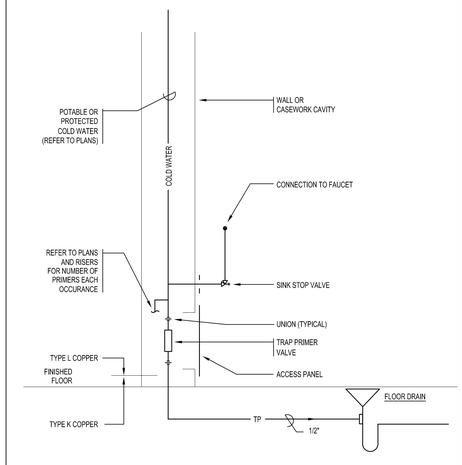


NOTES:

1. CONNECT TO UNIT DRAIN PORT W/ 1-1/4" SCH. 40 GALV. STEEL PIPING. SPILL TO THE NEAREST FLOOR DRAIN. WHEN PROVIDED.
2. CONNECT TO UNIT DRAIN PORT W/ 1-1/4" SCH. 40 GALV. STEEL PIPING. PROVIDE ELBOW AND NIPPLE CONFIGURATION AS SHOWN TO ALLOW FOR DRAINAGE OF WATER INTO A STD. 5 GAL. BUCKET.
3. ALTERNATE TEMPERED WATER INLET LOCATION. PLUG THE WATER INLET PORT WHICH IS NOT USED.

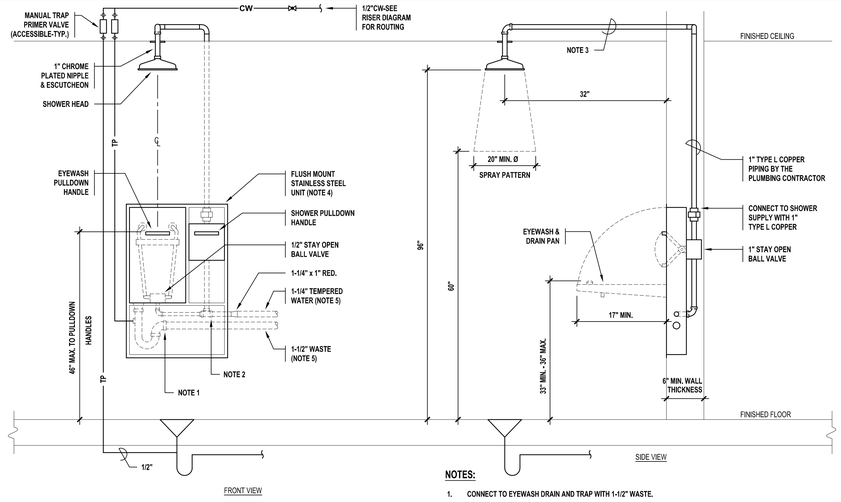
D7 EMERGENCY SHOWER/EYEWASH

SCALE: N.T.S.



D9 TRAP PRIMER DETAIL

SCALE: N.T.S.

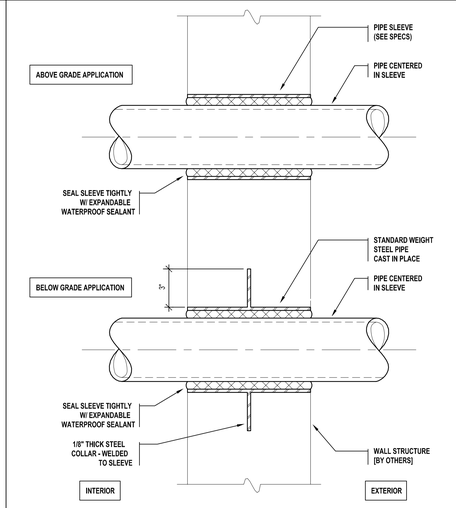


NOTES:

1. CONNECT TO EYEWASH DRAIN AND TRAP WITH 1-1/2" WASTE.
2. CONNECT TO UNIT SUPPLY WITH 1-1/4" TEMPERED WATER.
3. SUPPORT HORIZONTAL PIPING NEAR BOTH ENDS.
4. PROVIDE BLOCKING PER UNIT MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. RUN WASTE AND VENT FROM ES/EW TO NEAREST WASTE STACK AND VENT STACK. REFER TO PLANS FOR LOCATION OF WASTE AND VENT STACKS.

A5 EMERGENCY SHOWER/EYEWASH UNIT
(FINISHED SPACE APPLICATION)

SCALE: N.T.S.



A9 WATER TIGHT SLEEVES (WTS)

SCALE: N.T.S.

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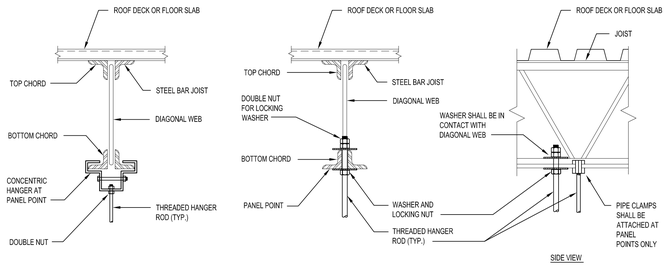
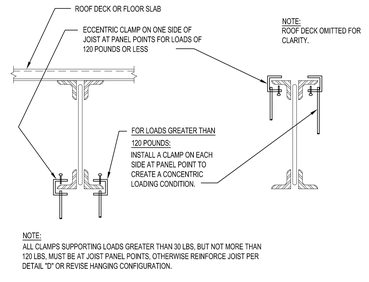
DETAILS

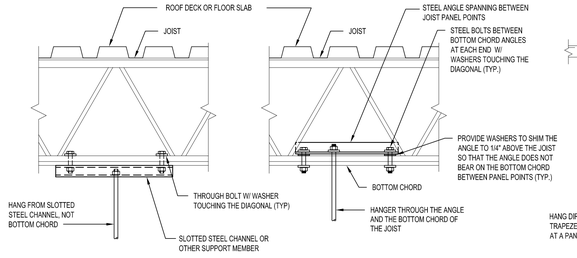
P3.01

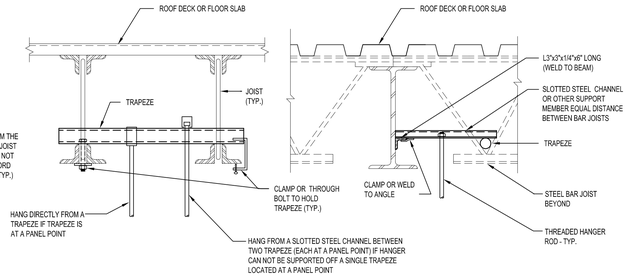


DETAIL "A" CONCENTRIC (AND ECCENTRIC) HANGERS

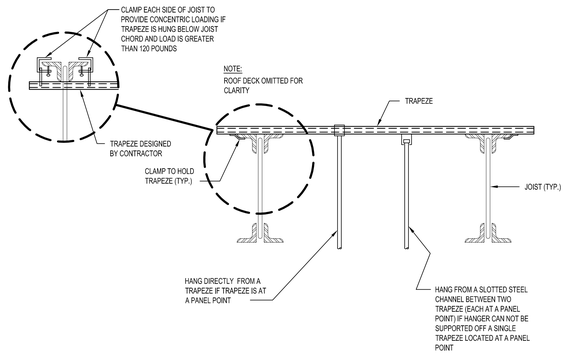
(ECCENTRIC HANGERS ONLY ALLOWED FOR LOADS OF 120 POUNDS OR LESS)

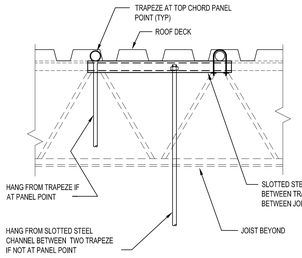


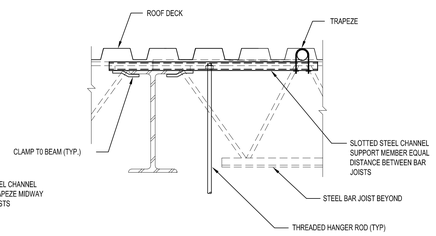




DETAIL "B" HANGING FROM BOTTOM CHORD







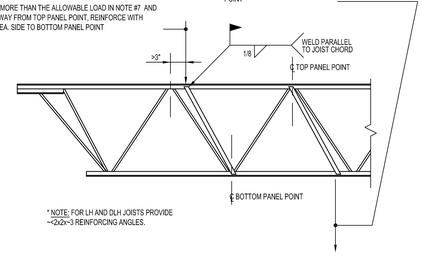
DETAIL "C" HANGING FROM TOP CHORD

(APPLICABLE AT LOCATIONS WITH 1-1/2" MIN. DEEP ROOF DECK)

NOTE: ALL FIELD WELDING OF JOISTS MUST OCCUR IN A DIRECTION PARALLEL TO THE CHORDS, NOT PERPENDICULAR.

* IF TOP LOAD IS MORE THAN THE ALLOWABLE LOAD IN NOTE #7 AND MORE THAN 3" AWAY FROM TOP PANEL POINT, REINFORCE WITH L1-1/2x1-1/2x3/16 EA. SIDE TO BOTTOM PANEL POINT

* IF BOTTOM LOAD IS MORE THAN THE ALLOWABLE LOAD IN NOTE #7 AND IS NOT AT BOTTOM CHORD PANEL POINT (OR HANGER IS NOT TOUCHING DIAGONAL WEB MEMBER), REINFORCE WITH L1-1/2x1-1/2x3/16 EACH SIDE TO TOP PANEL POINT



* NOTE: FOR LH AND DLH JOISTS PROVIDE ~2x2x~3 REINFORCING ANGLES.

DETAIL "D" TYPICAL JOIST REINFORCING DETAIL

(FOR LOADS NOT AT PANEL POINTS)

JOIST HANGING NOTES:

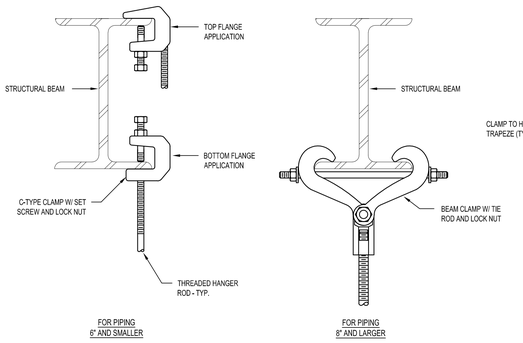
1. DO NOT HANG PIPES AND EQUIPMENT FROM STEEL DECK OR FROM BRIDGING ANGLES.
2. WHERE POSSIBLE SUSPEND HANGERS FROM WIDE-FLANGED BEAMS, NOT FROM BAR JOISTS.
3. UTILITIES, INCLUDING PIPING, DUCTWORK AND CONDUIT RUNNING PARALLEL TO BAR JOISTS, WHERE THE LOAD IS 25 POUNDS PER LINEAR FOOT OR LESS, MAY BE HUNG FROM A SINGLE JOIST.
4. UTILITIES, INCLUDING PIPING, DUCTWORK AND CONDUIT, RUNNING PARALLEL TO BAR JOISTS, WHERE THE LOAD IS GREATER THAN 25 POUNDS PER LINEAR FOOT, SHALL BE SUPPORTED MID-WAY BETWEEN TWO JOISTS.
5. WHERE PAIRS OF PIPES RUN PERPENDICULAR TO BAR JOISTS, STAGGER HANGERS BETWEEN ALTERNATE JOISTS, OR HANG FROM EVERY JOIST.
6. THE TOTAL WEIGHT OF ALL UTILITIES, SERVICES, PIPING, DUCTWORK AND CONDUIT HANGING FROM A SINGLE POINT SHALL NOT EXCEED 200 LBS FOR K-SERIES JOISTS AND 400 LBS. FOR LH AND DLH-SERIES JOISTS UNLESS OTHERWISE NOTED ON THE STRUCTURAL DRAWINGS. WHEN THIS WEIGHT IS EXCEEDED, SUBMIT A DETAIL OF PROPOSED METHOD OF HANGING TO THE ARCHITECT FOR APPROVAL.
7. HANGERS MAY BE LOCATED BETWEEN PANEL POINTS PROVIDED THAT THEY DO NOT EXCEED THE FOLLOWING LOADS:

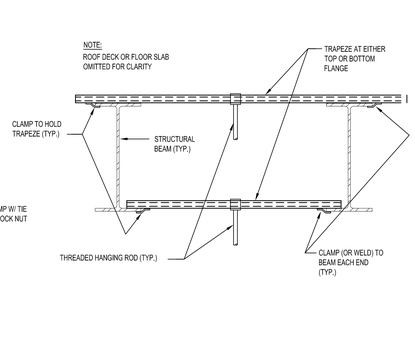
	K-SERIES JOISTS	LH & DLH-SERIES JOISTS
BETWEEN TOP CHORD PANEL POINTS	100 LBS	200 LBS
BETWEEN BOTTOM CHORD PANEL POINTS	50 LBS	100 LBS

8. ECCENTRIC HANGERS (C-CLAMPS) WILL BE ALLOWED FOR PIPING AND OTHER TRADES WHERE THE HANGER SPACING LIMITS THE TOTAL POINT LOAD TO 120 LBS OR LESS. C-CLAMPS FOR LOADS GREATER THAN 30 LBS, BUT NOT MORE THAN 120 LBS, MUST BE LOCATED AT JOIST PANEL POINTS UNLESS THE JOIST CHORD IS REINFORCED WITH AN ANGLE SIMILAR TO DETAIL "D".
9. WELDING OF JOISTS SHALL ONLY BE IN A DIRECTION PARALLEL TO JOIST CHORDS.

C1 JOIST HANGING DETAILS

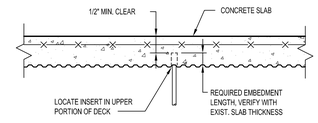
SCALE: NTS



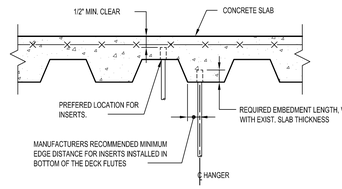


B1 BEAM HANGING DETAILS

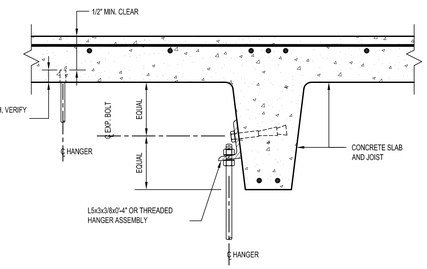
SCALE: NTS



SLABS ON FORM DECK



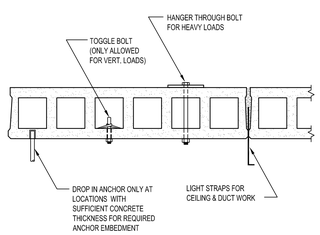
SLABS ON COMPOSITE DECK



FORMED SLABS

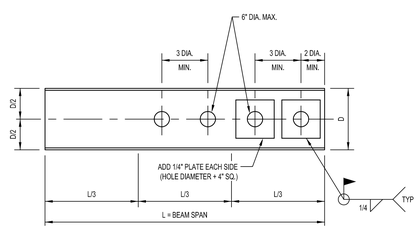
B3 FLOOR HANGING DETAILS (FOR PIPES 5" OR LESS)

SCALE: NTS



A1 TYPICAL DETAIL FOR HANGING FROM PRECAST PLANK

SCALE: NTS



A2 TYPICAL PIPE HOLE THRU BEAM DETAIL

SCALE: NTS (HOLES AND REINFORCING WORK IN FIELD BY TRADE CONTRACTOR)

GENERAL NOTES

1. COORDINATE HANGING LOCATIONS AND DETAILS WITH OTHER TRADES. ATTEND A PRE-INSTALLATION CONFERENCE WITH GENERAL CONTRACTOR, THE ARCHITECT, AND OTHER TRADES TO REVIEW HANGING METHODS AND COORDINATE HANGING LOCATIONS.
2. DO NOT HANG FROM ROOF DECK.
3. SUBMIT ALTERNATE METHODS FOR HANGING TO ARCHITECT FOR REVIEW AND DO NOT USE WITHOUT WRITTEN APPROVAL FROM ARCHITECT.
4. SEE SPECIFICATIONS FOR SEISMIC BRACING REQUIREMENTS.

A3 GENERAL NOTES

SCALE: NTS

A4 .....

SCALE: NTS

A5 .....

SCALE: NTS

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HANGING DETAILS

P3.02

ABBREVIATIONS

ALL ABBREVIATIONS SHOWN MAY NOT APPLY

ABBREV.	DEFINITION
ABV	ABOVE
ACT	ACOUSTICAL TILE CEILING
A/C	AIR CONDITIONING
AD	ACCESS DOOR
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AI	ANALOG INPUT
AO	ANALOG OUTPUT
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
APPR	APPROXIMATE
ARCH	ARCHITECT, ARCHITECTURE
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAUGE
BFS	BOILER FEED SYSTEM
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT/HOUR
BTW	BETWEEN
CC	CABINET CONVECTOR
CtoC	CENTER TO CENTER
CCW	COUNTER CLOCKWISE
CFM	CUBIC FEET PER MINUTE
CHAR	CHARCOAL
CLG	CEILING
CLR	CLEAR; CLEARANCE
COL	COLUMN
COND	CONDENSATE
CONN	CONNECTION
CONT	CONTINUATION
CTR	CENTER
CU.FT.	CUBIC FEET
CU.IN.	CUBIC INCH
DB	DRY BULB
dB	DECIBELS
DET	DETAIL
DH	DUCT HEATER
DI	DIGITAL INPUT
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DN	DOWN
DO	DIGITAL OUTPUT
DPI	DIFFERENTIAL PRESSURE INDICATOR
DTF	DOWN THRU THE FLOOR
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EFF	EFFICIENCY
ELEV	ELEVATION
ELEC	ELECTRICAL, ELECTRIC
EMER	EMERGENCY
ENCL	ENCLOSURE
EQ	EQUAL
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE
ETR	EXISTING TO REMAIN
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST.	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
°F	DEGREES FAHRENHEIT
FA	FREE AREA
FC	FAN COIL OR FAIL CLOSE
FF	FINAL FILTER
FIN	FINISH
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLR	FLOOR
FO	FAIL OPEN-FOR CV
FOB	FLAT ON BOTTOM
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOT	FLAT ON TOP
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT OR FEET
FUT	FUTURE
FV	FACE VELOCITY
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GALV	GALVANIZED
GA	GAUGE
GC	GENERAL CONTRACTOR
GE	GENERAL EXHAUST
GND	GRAOUND
GYP	GYPSUM
GWB	GYPSUM WALL BOARD
HB	HOSE BIB
HD	HEAD
HEPA	HIGH EFFICIANCY PARTICULATE AIR
HOA	HAND-OFF-AUTO
HP	HORSE POWER/HEAT PUMP
HR	HOUR
HT	HEIGHT
HTG	HEATING
HZ	FREQUENCY (HERTZ)
ID	INSIDE DIAMETER
IN	INCH(ES)
INCL	INCLUDE
INFO	INFORMATION
INSUL	INSULATION
IN.WG.	INCHES OF WATER GAUGE
KW	KILOWATT

ABBREV.	DEFINITION
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LB	POUND WEIGHT
LDB	LEAVING DRY BULB TEMPERATURE
LF	LINEAR FEET
LFU	LAMINAR FLOW UNIT
LG	LENGTH
LRA	LOCK ROTOR AMPS
LVG	LEAVING
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	1000Btuh
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC.	MISCELLANEOUS
MTD	MOUNTED
MUA	MAKE-UP AIR
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NOM	NOMINAL
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NO	NUMBER
NPT	NOMINAL PIPE THREAD
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OV	OUTLET VELOCITY
PD	PRESSURE DROP/DIFFERENTIAL
PE	PNUEMATIC ELECTRIC
PF	PRE-FILTER
PHC	PRE-HEAT COIL
PLUMB	PLUMBING
POC	POINT OF CONNECTION
PREFAB	PREFABRICATED
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FEET
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	PUNDS PER SQUARE IN GAUGE
QTY	QUANTITY
R	RISE
RA	RETURN AIR
RAD	RADIUS
REFR	REFRIGERANT
REG	REGISTER
REQD	REQUIRED
REV	REVISION
RH	RELATIVE HUMIDITY
RM	ROOM
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
SA	SUPPLY AIR/SOUND ATTENUATOR
SCHED	SCHEDULE
SENS	SENSIBLE
SEP	SEPARATOR
SHT	SHEET
SIM	SIMILAR
SP	STATIC PRESSURE/SETPOINT
SPEC	SPECIFICATION
SQ	SQUARE
SR	SUPPLY REGISTER
S/S	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STM	STEAM
STOR	STORAGE
STR	STRAINER
STRL	STRUCTURAL
SUSP	SUSPENDED
SV	SOLENOID VALVE
TEMP	TEMPERATURE
TG	TRANSFER GRILLE
THRU	THROUGH
TOD	TOP OF DUCT
TOP	TOP OF PIPE
TOS	TOP OF STEEL
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
U	UNDERCUT
ULPA	ULTRA LOW PENETRATION AIR FILTER
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VEL	VELOCITY
VENT	VENTILATION
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT TO ROOF
W	WIDTH/WATT
W/	WITH
WB	WET BULB
WC	WATER COLUMN
WG	WATER GAUGE
WMS	WIRE MESH SCREEN
W/O	WITHOUT
WPD	WATER PRESSURE DROP
WT	WEIGHT
XFER	TRANSFER
&	AND
@	AT
ø	DIAMETER/PHASE
#	POUND OR NUMBER

DUCTWORK SYMBOLS

ALL SYMBOLS SHOWN MAY NOT APPLY

SYMBOL	DESCRIPTION
(double line) / (single line)	
24x12	RECTANGULAR DUCT DIMENSIONS (I.D. IN INCHES) FIRST DIMENSION IS PLAN VIEWED (WIDTH), SECOND DIMENSION IS HEIGHT.
12ø	ROUND DUCT DIMENSION (IN INCHES)
	SUPPLY DUCT UP/ ROOF PENETRATION
	EXHAUST OR RETURN DUCT UP/ ROOF PENETRATION
	ROUND DUCT UP/ ROOF PENETRATION
	SUPPLY DUCT DOWN, OR AWAY FROM VIEWER
	EXHAUST OR RETURN DUCT DOWN
	ROUND DUCT DOWN, OR AWAY FROM VIEWER
	LINED DUCT - DIMENSION GIVEN IS INSIDE CLEAR
DN	DUCT DROP IN DIRECTION OF AIR FLOW
UP	DUCT RISE IN DIRECTION OF AIR FLOW
	FLEXIBLE DUCT CONNECTION
	SOUND ATTENUATOR
	DUCT MOUNTED COIL
	RECTANGULAR ELBOW
	RECTANGULAR ELBOW WITH TURNING VANES
	MITERED TEE DUCT JUNCTION WITH TURNING VANES
	DUCT TRANSITION (CONCENTRIC)
	DUCT TRANSITION (ECCENTRIC)
	BRANCH DUCT (NO SPLITTER W/ 45° FLARE)
AD	ACCESS DOOR INTO DUCT (PLAN & ELEV. SHOWN)
F/SD OR FD / AD	FIRE/SMOKE DAMPER OR FIRE DAMPER W/ ACCESS DOOR
	FLEXIBLE DUCT
	DUCT CAP
	CEILING DIFFUSER, SUPPLY GRILLE
	EXHAUST OR RETURN GRILLE OR REGISTER
	LINEAR SUPPLY AIR DIFFUSER
	HEPA FILTER
	FAN FILTER UNIT
	RADIANT CEILING PANEL

ANNOTATION/MISC. SYMBOLS

ALL SYMBOLS SHOWN MAY NOT APPLY

SYMBOL	DESCRIPTION
#	KEYED NOTE
	(THIS SIDE TO BE DEMOLISHED) / LIMIT OF DEMOLITION / (THIS SIDE TO REMAIN)
	DEMOLITION HATCH; INDICATES EQUIP. TO BE RELOCATED
	DEMOLITION HATCH; ITEMS TO BE REMOVED
BDD	BACKDRAFT DAMPER
FD	FIRE DAMPER
FD/SD	COMBINATION SMOKE AND FIRE DAMPER
SD	SMOKE DAMPER
	VOLUME DAMPER
H	HUMIDIFIER
M	MOTORIZED DAMPER
BD	BAROMETRIC DAMPER
OBD	OPPOSED BLADE DAMPER
PBD	PARALLEL BLADE DAMPER
SMD	SMOKE DETECTOR
T	THERMOSTAT
TS	TEMPERATURE SENSOR
H	HUMIDISTAT
P	PRESSURE SENSOR
	CONNECT TO EXISTING
	AIR FLOW (SUPPLY)
	AIR FLOW (RETURN OR EXHAUST)
	PITCH DIRECTIONAL ARROW
	DOOR UNDERCUT
	DOOR LOUVER

PIPE FITTING SYMBOLS

ALL SYMBOLS SHOWN MAY NOT APPLY

SYMBOL (double line)	SYMBOL (single line)	DESCRIPTION
		DOWN THRU FLR.
		UP THRU FLR. ABV.
		DROP
		DROP & RUN
		DROP & TURN
		OFFSET
		BRANCH RISE
		BLIND FLANGE
		CAP
		BRANCH DROP
		90° ELBOW
		45° ELBOW
		TEE
		BREAK
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		FLANGED CONNECTION
		FLEXIBLE CONNECTOR
		Y-TYPE STRAINER WITH GATE VALVE DRAIN & HOSE END CAP

EQUIPMENT DESIGNATION

ALL DESIGNATIONS SHOWN MAY NOT APPLY

SYMBOL	DEFINITION
ACU 1	AIR CONDITIONING UNIT
ACC 1	AIR COOLED CONDENSER
AV 1	LABORATORY SUPPLY AIR VALVE
EAV 1	LABORATORY EXHAUST AIR VALVE
ER CFM	EXHAUST REGISTER
FHAV 1	LABORATORY FUME HOOD EXHAUST AIR VALVE
FCU 1	FAN COIL UNIT
FTR-1 / 4'-0"	FINNED TUBE RADIATION TYPE / ACTIVE FINNED LENGTH
HC 1	HEATING COIL
RCP-1 LENGTH	RADIANT CEILING PANEL
RR-1 CFM	RETURN REGISTER
SD-1 THROW CFM	SUPPLY DIFFUSER
VAV 1	VARIABLE AIR VOLUME BOX (**WITH AN HOT WATER REHEAT COIL**)

GENERAL NOTES:

1. COORDINATE ANY SYSTEM SHUT DOWN WITH USM FACILITIES.

PIPING ABBREVIATIONS & SYMBOLS

ALL ABBREVIATIONS & SYMBOLS SHOWN MAY NOT APPLY

ABBREVIATION	DEFINITION
A	COMPRESSED AIR
AR	AIR RELIEF
ARV	AIR RELIEF VENT
BBO	BOILER BLOW OFF
BF	BOILER FEED
CF	CHEMICAL FEED
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN
COND	CONDENSATE
CW	COLD WATER
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
D	DRAIN
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
G	GAS
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
HPR	HIGH PRESSURE RETURN
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LPR	LOW PRESSURE RETURN
MPS	MEDIUM PRESSURE STEAM
MPR	MEDIUM PRESSURE RETURN
N	NITROGEN
O	OXYGEN
PC	PUMPED CONDENSATE
SCHS	SECONDARY CHILLED WATER SUPPLY
SCHR	SECONDARY CHILLED WATER RETURN
SHWS	SECONDARY HOT WATER SUPPLY
SHWR	SECONDARY HOT WATER RETURN
VAC	VACUUM
V	VENT

SYMBOL	DEFINITION
	ANGLE GLOBE VALVE
	AUTOMATIC AIR VENT
	BALANCING VALVE
	BALL JOINT
	CHECK VALVE
	COMBINATION BALANCE/SHUT-OFF VALVE
	CONCENTRIC REDUCER
	DRAIN TRAP
	ECCENTRIC REDUCER
	EXPANSION JOINT
	FINNED TUBE RADIATION
	FLANGE
	FLEXIBLE CONNECTION
	FLOW CONTROL BALANCING VALVE
	FLOW MEASURING STATION
	FUSIBLE LINK VALVE
	GEAR ACTUATOR
	HOSE END VALVE
	LEVER ACTUATOR
	LOCK SHIELD VALVE
	LUBRICATED PLUG VALVE
	MANUAL AIR VENT
M	METER
	NON-RISING STEAM ACTUATOR
	ORIFICE
	OS&Y ACTUATOR
	PETCOCK
A	PIPE ANCHOR
G	PIPE GUIDE
	PIPE TURNED DOWN
	PIPE TURNED UP
	PRESSURE GAUGE ASSEMBLY
	PRESSURE REDUCING VALVE
	PRESSURE TEMPERATURE TAP W/ CAP
	RELIEF VALVE OR SAFETY VALVE
	RISING STEAM ACTUATOR
	SHUT-OFF VALVE
	SOLENOID VALVE
T	STEAM TRAP
	STRAINER ASSEMBLY
	THERMOMETER
	THERMOMETER WELL
	THREE-WAY CONTROL VALVE
	THREE-WAY MOTOR OPERATED VALVE
	TRAP ASSEMBLY
	TWO-WAY CONTROL VALVE
	TWO-WAY MOTOR OPERATED VALVE
	UNION
	VACUUM BREAKER
	VENTURI METER ASSEMBLY
	CAP

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PORTLAND, MAINE

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ISSUE LOG
△ = CLOUDED CHANGE

SCALE	NONE
DRAWN BY	ADC
CHECK BY	JWJ
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PROJ. MRG.	RCH
JOB NO.	11082.01

LEGEND SHEET

M0.01

REGISTER, GRILLE & DIFFUSER SCHEDULE

TAG NO.	CFM RANGE	TYPE	INLET SIZE (IN.)	MATERIAL	MAX. P.D.	MAX. N.C.	BASIS OF DESIGN		REMARKS
							MANUFACTURER	MODEL NO.	
SD-7 THROW CFM	50 CFM/LIN.FT	DUCT	–	STEEL	.017	30	UNITED McGILL	DUCT-O-FUSER TYPE AD	

FINNED TUBE RADIATION SCHEDULE

TAG NO.	SERVICE	BTU/LF (180°F AVE. WATER TEMP.)	PROP. GLYCOL					ENCLOSURE			BASIS OF DESIGN		REMARKS
				TUBE	TUBE SIZE	FIN SIZE	ROWS	HEIGHT	WIDTH	MOUNTING HEIGHT	MANUFACTURER	MODEL NO.	
FTR-1 –	SEE PLAN	820	40%	COPPER	3/4"	2 3/4"x3"x48"	1	–	–	7 3/4"	VULCAN	LINOVECTOR BARE ELEMENTS	PROVIDE HANGER ASSEMBLY FOR CASE WORK MOUNTING

LABORATORY EXHAUST AIR VALVES

TAG NO.	ROOM #/SERVICE	AIR FLOW MIN (CFM)	AIR FLOW MAX (CFM)	OPERATING PRESSURE △P	INLET/OUTLET SIZE DIA. (in)	MANUFACTURE	MODEL #	REMARKS
FHAV 1	LAB 481/ FUME HOOD	220	525	0.3"-3"	12"	TRIATEK	VV-012-SS316-N-FA-0	
FHAV 2	LAB 486/ FUME HOOD	350	825	0.3"-3"	12"	TRIATEK	VV-012-SS316-N-FA-0	
GEAV 1	LAB 481/ GENERAL EXHAUST	90	1430	0.3"-3"	12"	TRIATEK	VV-012-SS316-N-FA-0	
GEAV 2	LAB 486/ GENERAL EXHAUST	90	1300	0.3"-3"	12"	TRIATEK	VV-012-SS316-N-FA-0	

LABORATORY SUPPLY AIR VALVES

	SUPPLY AIR VALVE – INDEPENDENT							
TAG NO.	LOCATION ROOM #	AIR FLOW MIN (CFM)	AIR FLOW MAX (CFM)	OPERATING PRESSURE △P	INLET/OUTLET SIZE WxH (IN)	MANUFACTURE	MODEL #	REMARKS
AV 1	LAB 481	550	1500	0.5	12x10	TEK-AIR	PVT-2000	SCHEDULE SHOW FOR REFERENCE ONLY
AV 3	LAB 486	750	1500	0.5	12x10	TEK-AIR	PVT-2000	SCHEDULE SHOW FOR REFERENCE ONLY

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CHECK BY	JWJ
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JOB NO.	11082.01

SCHEDULE SHEET

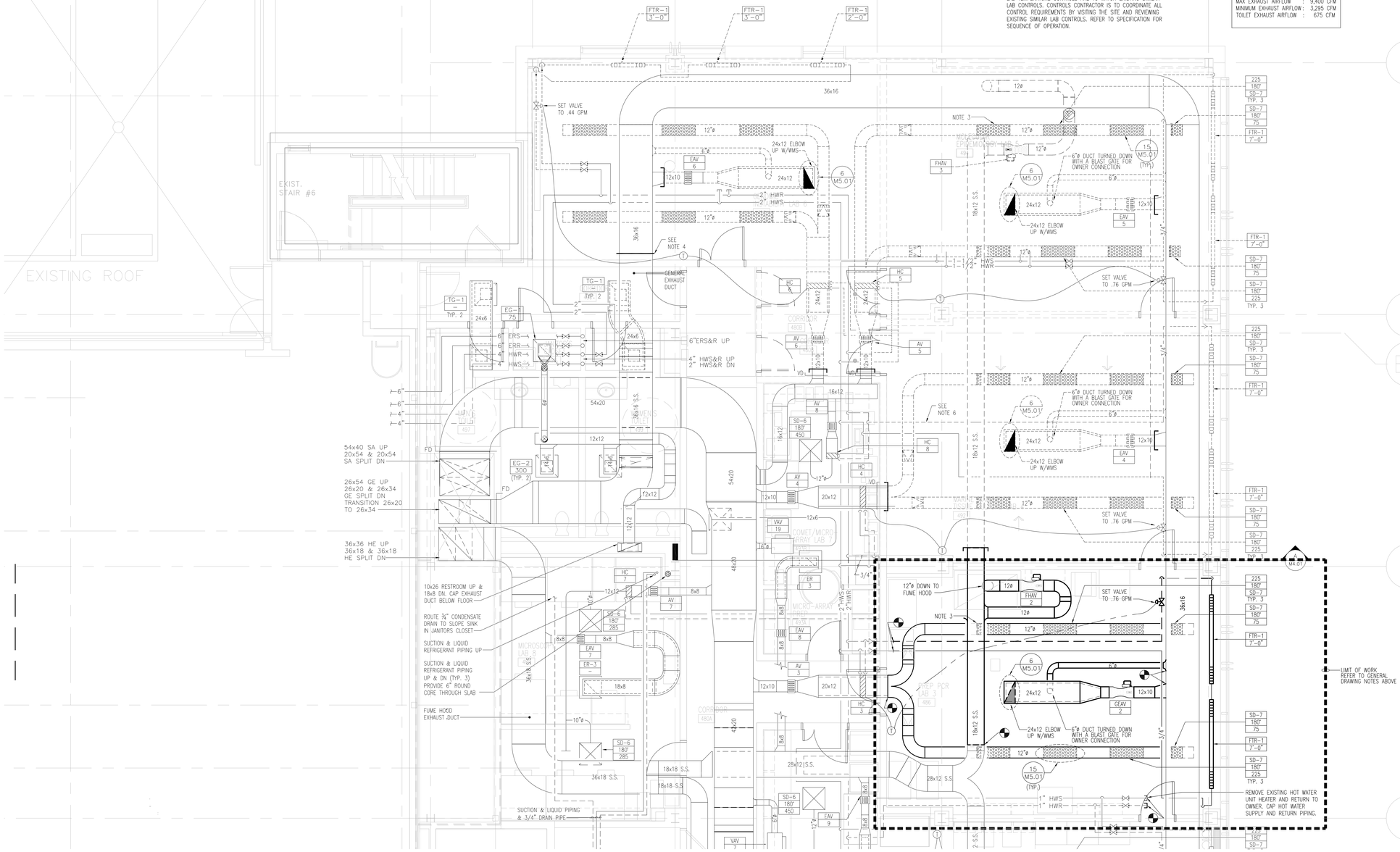
M0.02

GENERAL DRAWING NOTES

1. CLOSE HOT WATER SUPPLY AND RETURN SHUT-OFF VALVES TO UNIT HEATERS. REMOVE BRANCH PIPING FROM VALVES TO HEATERS, UNIT HEATERS, ELECTRICAL WIRING, AND ASSOCIATED CONTROLS FOR ALL UNIT HEATERS EXCEPT FOR HEATERS INSTALLED IN LABS 1, 3, 5 & 6. RETURN ALL UNIT HEATERS TO THE BUILDING OWNER UPON COMPLETION.
2. ALL MECHANICAL WORK ASSOCIATED WITH LABS 5 & 6 IS SHOWN AS DASHED. ALL WORK INDICATED AS DASHED IS FOR FUTURE INSTALLATION, BUT IS SHOWN TO COORDINATE OTHER SERVICES THAT ARE ROUTED THROUGH FUTURE LABS TO SUPPORT LABS BEING FIT-OUT. INSTALL ALL SUPPLY AND EXHAUST TAKE-OFF FITINGS ON MAIN DUCTS WITH VOLUME DAMPERS FOR FUTURE CONNECTIONS.
3. SUPPLY DIFFUSER LOCATED IN FRONT OF FUME HOODS SHALL BE ROTATED SO AIRFLOW IS BLOWING AWAY FROM HOOD.
4. GENERAL EXHAUST DUCTWORK SHALL BE STAINLESS STEEL FROM SHAFT TO POINT INDICATED, ALL OTHER GENERAL EXHAUST DUCTWORK SHALL BE GALVANIZED.
5. ALL FUME HOOD DUCTWORK SHALL BE STAINLESS STEEL.
6. RE-LOCATE ONE OF THE EXISTING UNIT HEATERS THAT WAS REMOVED AND INSTALL IN LAB # 4. CONNECT HOT WATER SUPPLY AND RETURN PIPE THAT WAS TO BE INSTALLED FOR FIN TUBE BASEBOARD.
7. ALL HVAC SERVICES THAT ARE SERVING LABS 1,3,4,5,&6 ARE SHOWN AS DASHED AND ALL WORK SHALL BE PROVIDED IN THE FUTURE. PROVIDE VOLUME DAMPERS AND CAPS FOR DUCTWORK AND VALVES AND CAPS FOR PIPING AT ALL POINTS INDICATED ON HVAC SERVICES THAT ARE GOING TO BE INSTALLED NOW, BUT ARE SERVING THE FUTURE LABS.
8. PROVIDE ALL REQUIRED DDC CONTROLS FOR LAB FIT-OUT TO PROVIDE A COMPLETE OPERATIONAL SYSTEM. FUME HOOD AND LAB TEMPERATURE CONTROLS ARE TO MATCH EXISTING SIMILAR LAB CONTROLS. CONTROLS CONTRACTOR IS TO COORDINATE ALL CONTROL REQUIREMENTS BY VISITING THE SITE AND REVIEWING EXISTING SIMILAR LAB CONTROLS. REFER TO SPECIFICATION FOR SEQUENCE OF OPERATION.

4TH FLOOR AIRFLOW SUMMARY

MAX SUPPLY AIRFLOW	11,135 CFM
MINIMUM SUPPLY AIRFLOW	5,030 CFM
MAX EXHAUST AIRFLOW	9,400 CFM
MINIMUM EXHAUST AIRFLOW	3,295 CFM
TOILET EXHAUST AIRFLOW	675 CFM



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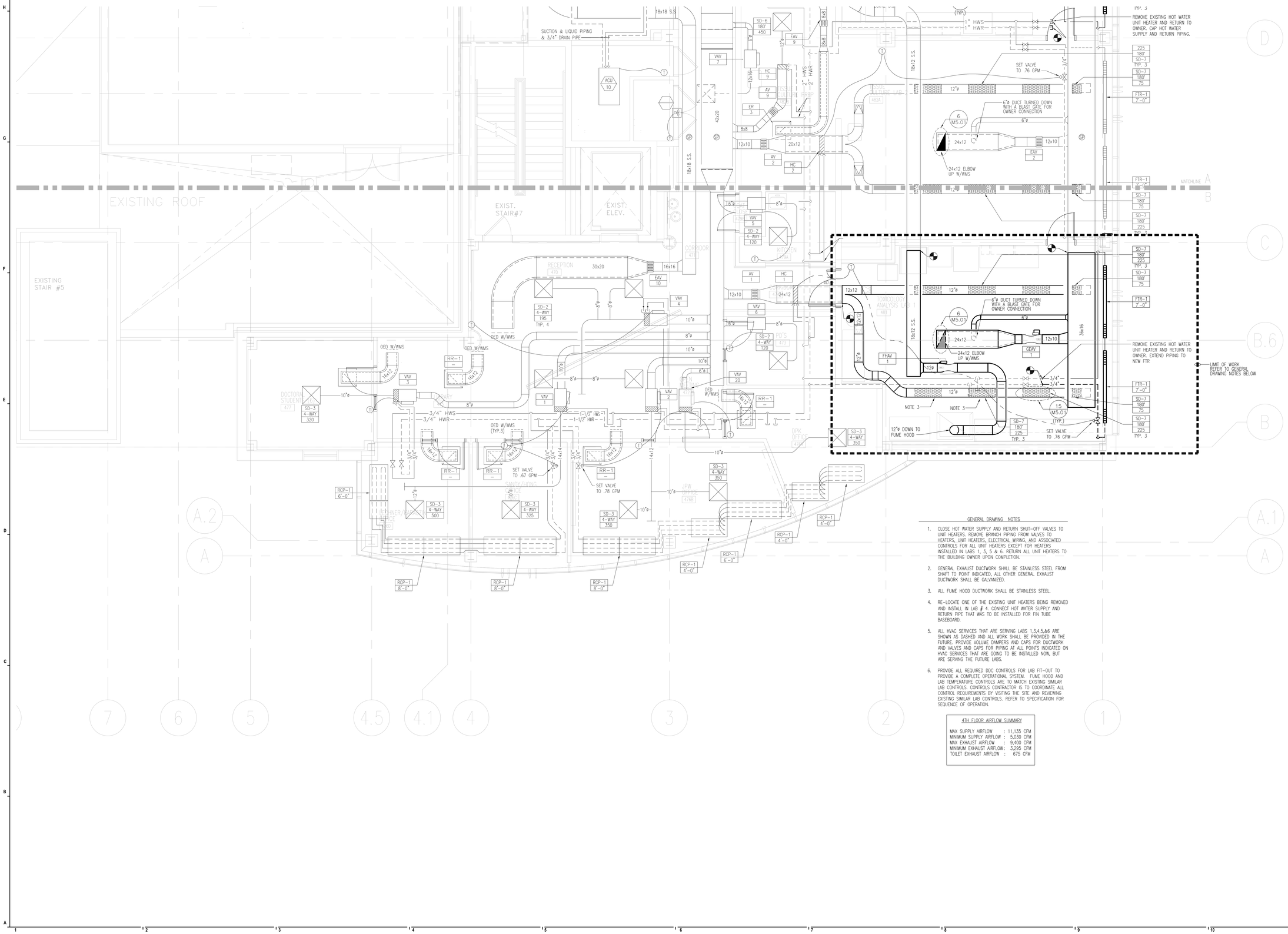
DRAWN BY	ADC
CHECK BY	JMJ
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

FOURTH FLOOR PART A PLAN

M1.04a



GENERAL DRAWING NOTES

1. CLOSE HOT WATER SUPPLY AND RETURN SHUT-OFF VALVES TO UNIT HEATERS. REMOVE BRANCH PIPING FROM VALVES TO HEATERS, UNIT HEATERS, ELECTRICAL WIRING, AND ASSOCIATED CONTROLS FOR ALL UNIT HEATERS EXCEPT FOR HEATERS INSTALLED IN LABS 1, 3, 5 & 6. RETURN ALL UNIT HEATERS TO THE BUILDING OWNER UPON COMPLETION.
2. GENERAL EXHAUST DUCTWORK SHALL BE STAINLESS STEEL FROM SHAFT TO POINT INDICATED, ALL OTHER GENERAL EXHAUST DUCTWORK SHALL BE GALVANIZED.
3. ALL FUME HOOD DUCTWORK SHALL BE STAINLESS STEEL.
4. RE-LOCATE ONE OF THE EXISTING UNIT HEATERS BEING REMOVED AND INSTALL IN LAB # 4. CONNECT HOT WATER SUPPLY AND RETURN PIPE THAT WAS TO BE INSTALLED FOR FIN TUBE BASEBOARD.
5. ALL HVAC SERVICES THAT ARE SERVING LABS 1,3,4,5,&6 ARE SHOWN AS DASHED AND ALL WORK SHALL BE PROVIDED IN THE FUTURE. PROVIDE VOLUME DAMPERS AND CAPS FOR DUCTWORK AND VALVES AND CAPS FOR PIPING AT ALL POINTS INDICATED ON HVAC SERVICES THAT ARE GOING TO BE INSTALLED NOW, BUT ARE SERVING THE FUTURE LABS.
6. PROVIDE ALL REQUIRED DDC CONTROLS FOR LAB FIT-OUT TO PROVIDE A COMPLETE OPERATIONAL SYSTEM. FUME HOOD AND LAB TEMPERATURE CONTROLS ARE TO MATCH EXISTING SIMILAR LAB CONTROLS. CONTROLS CONTRACTOR IS TO COORDINATE ALL CONTROL REQUIREMENTS BY VISITING THE SITE AND REVIEWING EXISTING SIMILAR LAB CONTROLS. REFER TO SPECIFICATION FOR SEQUENCE OF OPERATION.

4TH FLOOR AIRFLOW SUMMARY

MAX SUPPLY AIRFLOW	:	11,135 CFM
MINIMUM SUPPLY AIRFLOW	:	5,030 CFM
MAX EXHAUST AIRFLOW		9,400 CFM
MINIMUM EXHAUST AIRFLOW	:	3,295 CFM
TOILET EXHAUST AIRFLOW	:	675 CFM

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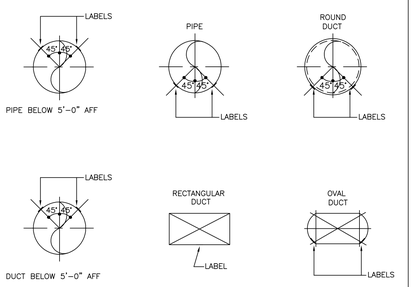
PROJ. MRG.	RCH
JOB NO.	11082.01

FOURTH FLOOR PART B PLAN

M1.04b

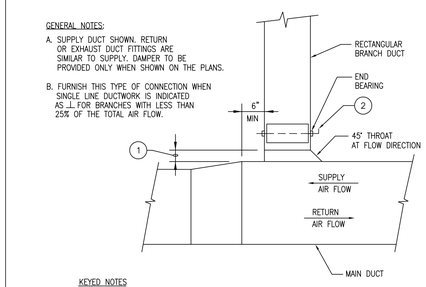


NOTE:

1. LABEL LOCATIONS SHALL BE COORDINATED WITH OTHER WORK/TRADES, SUCH THAT LABELS ARE FULLY VISABLE.
2. REFER TO SPECIFICATION FOR ADDITIONAL LABELING INFORMATION.

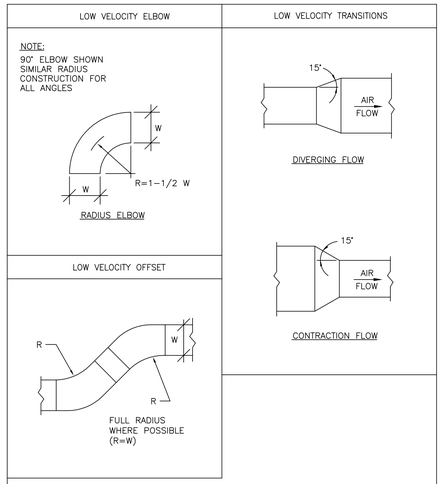
1 DUCT & PIPE IDENTIFICATION LABELING

SCALE: NONE



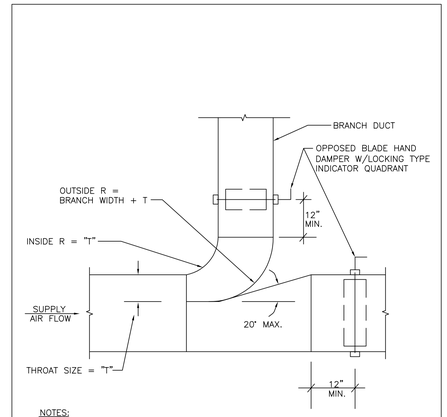
2 RECTANGULAR 45° DUCT TAP WITH VOLUME DAMPER

SCALE: NONE



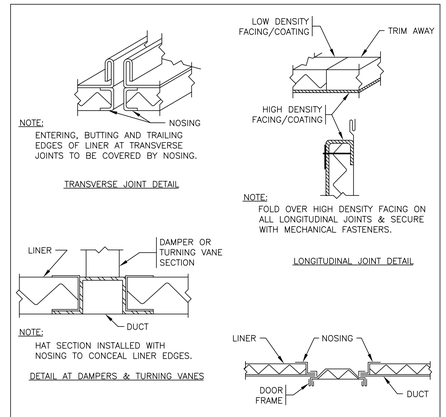
3 LOW PRESSURE TRANSITIONS, OFFSETS, & ELBOWS

SCALE: NONE



4 RECTANGULAR LOW PRESSURE DUCT BRANCH W/ THROAT & VOLUME DAMPER

SCALE: NONE



5 DUCT LINING NOSING

SCALE: NONE

6 TYPICAL PERFORATED INLINE RETURN

SCALE: NONE

NOTE: ALTERNATE FITTINGS SHALL BE USED WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF THE PREFERRED FULL SIZE BELLMOUTH SUBMIT FITTINGS FOR REVIEW BY ENGINEER PRIOR TO INSTALLATION

7 LOW PRESSURE DUCT TAKEOFFS

SCALE: NONE

8 TYPICAL DIFFUSER TAKEOFF

SCALE: NONE

9 VOLUME DAMPER (SINGLE BLADE)

SCALE: NONE

10 DUCT ACCESS DOOR

SCALE: NONE

NOTES:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

11 VOLUME DAMPER DETAIL

SCALE: NONE

12 DUCT HANGER <52" WIDE DETAIL

SCALE: NONE

13 ROUND DUCT HANGERS

SCALE: NONE

14 BLAST GATE DETAIL

SCALE: NONE

15 DUCT-D-FUSER DETAIL

SCALE: NONE

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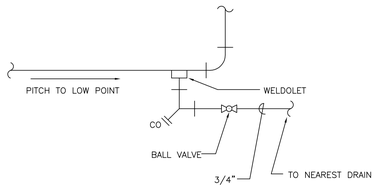
PROJ. MRG.	RCH
JOB NO.	11062.01

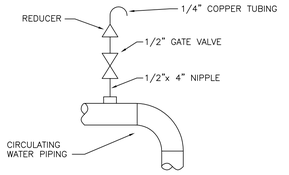
DETAILS
SHEET 1 OF 2

M5.01



1 LOW POINT DRAIN DETAIL

SCALE: NONE

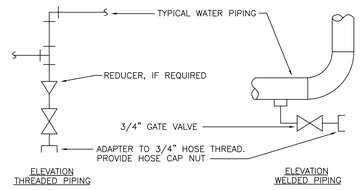


NOTES:

1. VENT ALL HIGH POINTS INDICATED ABOVE.
2. IF AUTOMATIC AIR VENTS ARE USED, PIPE DISCHARGE TO DRAIN.

2 TYPICAL AIR VENT

SCALE: NONE



NOTES:

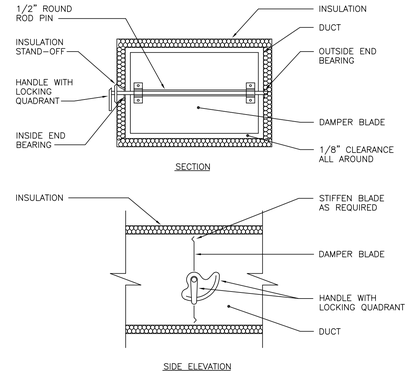
1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS, LOCATE DRAIN AT BOTTOM OF SCALE POCKET.

DESIGNER'S NOTE:

SHOW SCALE POCKETS ON MAJOR CIRCULATING WATER PIPING RISER DIAGRAMS AND/OR PLANS.

3 TYPICAL CHILLED AND HOT WATER PIPING DRAIN VALVE CONNECTIONS

SCALE: NONE

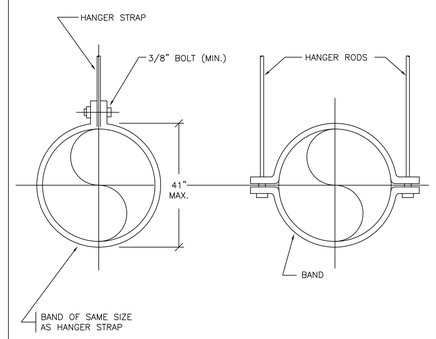


NOTES:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

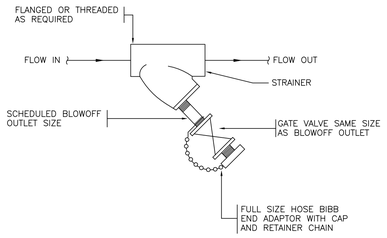
4 VOLUME DAMPER DETAIL

SCALE: NONE



5 ROUND DUCT HANGERS

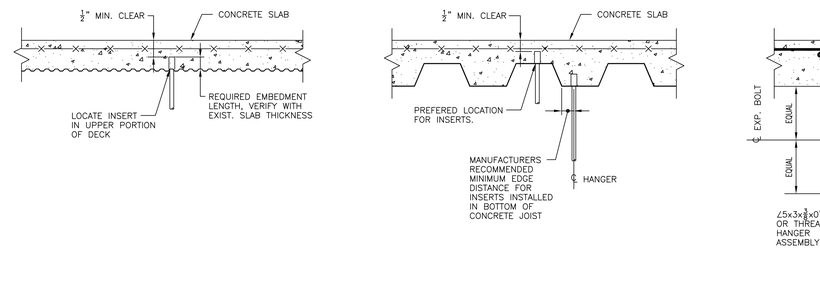
SCALE: NONE



STRAINER SIZE (IN.)	BLOWOFF OUTLET MIN. SIZE (IN.)
3/4	1/2
1 TO 2 1/2	3/4
3 & 4	1
5 & ABOVE	2

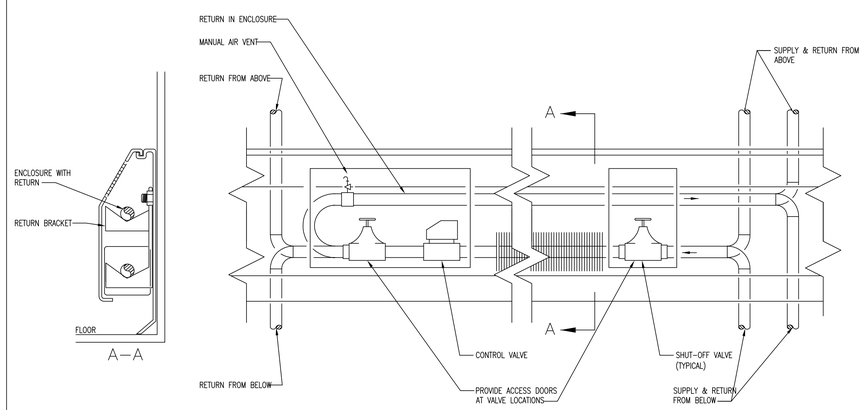
6 STRAINER ASSEMBLY

SCALE: NONE



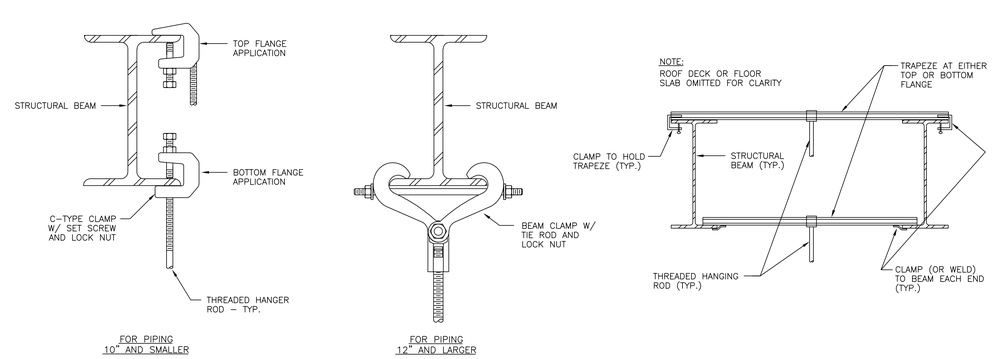
7 FLOOR HANGING DETAILS

SCALE: NONE



8 FIN TUBE RADIATION PIPING DETAIL – END PIECE

NTS



BEAM HANGING DETAILS

9 BEAM HANGING DETAILS

SCALE: NONE

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DETAILS
SHEET 2 OF 2

M5.02

LIGHTING FIXTURE SCHEDULE

FIXT. TYPE	MANUFACTURER	CATALOG NO.	VOLTS	NO. OF LAMPS	LAMP TYPE	MOUNTING	DESCRIPTION
A	FINELITE	S10-PLV-STO-XX-2T8-SC-91W-277-AC/XX-FE (3)	277	2 (1)	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	PENDANT	DIRECT/INDIRECT FIXTURE, 35% UP AND 65% DOWN, FOR FIXTURE LENGTH AND NO. OF SECTIONS SEE PLANS. STEEL HOUSING.
A1	FINELITE	S10-PLV-STO-XX-3T8-SC-91W-277-AC/XX-FE (3)	277	3 (1)	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	PENDANT	SAME AS FIXTURE TYPE "A" EXCEPT WITH 3 LAMPS AND TWO CIRCUITS FOR INNER/ OUTSIDE LAMP CONTROL.
B	FINELITE	S10-PLV-TDO-XX-2T8-SC-91W-277-AC/XX-FE (3)	277	2 (1)	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	PENDANT	SAME AS FIXTURE TYPE "A" EXCEPT 100% DOWN.
G	PRESCOLITE	CFR618EB-WT372A	277	2	CF18DT/E/IN/835	RECESSED	6" DIA. OPEN DOWNLIGHT WITH CLEAR REFLECTOR AND WHITE TRIM, ELECTRONIC BALLAST.
G1	PRESCOLITE	CFR618EB-WT372AWW	277	2	CF18DT/E/IN/835	RECESSED	6" DIA. OPEN WALLWASH WITH CLEAR REFLECTOR AND WHITE TRIM, ELECTRONIC BALLAST.
H	LINEAR LIGHTING	WW2-D-I-ET8- (3) 277-PBL-R-NO-XX (2)	277	1 (1)	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	RECESSED	LINEAR COVE LIGHT WITH BLADES, LENGTH AS SHOWN ON DRAWINGS.
J	COLUMBIA	P422-240TT-G LD-XX-277 (3)	277	2	FT40DL/835/RS	RECESSED	2'x2' FLUORESCENT FIXTURE WITH PARABOLIC LOUVERS.
J2	COLUMBIA	STR24-232-G MPO-XX277 (3)	277	2	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	RECESSED	2'X4' FLUORESCENT DIRECT/INDIRECT FIXTURE WITH PERFORATED LAMP ENCLOSURE.
S	NEORAY	41/2T8-S72-XFT (3)	277	2 (1)	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	RECESSED	FLUORESCENT RECESSED LINEAR FIXTRE WITH BOLD BAFFLES 1.2" O.C. FOR SECTIONS LENGTH REFER TO PLANS
S1	NEORAY	41/2T8-S72-XFT-DIM (3)	277	2 (1)	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	RECESSED	SAME AS TYPE "S" EXCEPT WITH DIMMING BALLAST. FOR SECTION LENGTH REFER TO PLANS.
(4) T	CORELITE	NAVIGATOR N8LM2T8-1C(IE)-AC (3)	277	2 (1)	FO32/835/XPS/ECO OR F32T8/SXL/SP35/ECO	PENDANT	DIRECT/INDIRECT FIXTURE, 30% UP AND 70% DOWN, FOR FIXTURE LENGTH AND NO. OF SECTIONS SEE PLANS. ALUMINUM HOUSING.
Z	ALKCO	EG-12-FL-2-DS	120	2	6WT5	WALL	"IN-USE" LIGHT
EB	LITHONIA	ELU4N-V-H1212 ELA MS4/8 – SHELF	120	2	12 W INC.	WALL	BATTERY PACK WITH TWO LAMPS, BATTERY – NICKEL CADMIUM, 50W CAPACITY
X	LIGHT PANEL TECHNOLOGIES, LLC	DCA-AC-2A	277	–	ELECTROLUMINESCENT	UNIVERSAL	DIE CAST ALUMINUM EXIT SIGN, W/ ELECTROLUMINESCENT LAMP LIGHT SOURCE, GREEN LETTERS, ARROWS AND FACE, REFER TO DRAWING

(1) NUMBER OF LAMPS IN CROSS SECTION.
(2) PROVIDE WALL-TO-WALL FIXTURE WITH STRAIGHT EXTENSION AS REQUIRED.
(3) PROVIDE MATCHING SYLVANIA QUICKTRONIC OR GE ULTRAMAX BALLASTS.
(4) MATCH EXISTING FIXTURE (CORELITE) ON 2ND FLOOR.

SPECIAL PURPOSE RECEPTACLE SCHEDULE

SYMBOL	NEMA	HOMERUN	CIRCUIT BREAKER	NOTES
A	L5-30R	3/4" C – 2#10 & #10G	30A/2P	120V
B	L14-30R	3/4"C – 2#10, #10N & #10G	30A/2P	120/208V
C	–	–	–	–

MISCELLANEOUS SYMBOLS

SYMBOL	DESCRIPTION
(2)	MOTOR. NUMERAL INDICATES HORSEPOWER.
H	NON-FUSED DISCONNECT SWITCH. 3 POLE, 30 AMP, UNLESS OTHERWISE NOTED.
30A 20A H	FUSED 3 POLE DISCONNECT SWITCH. "30A" DENOTES SWITCH SIZE, "20A" DENOTES FUSE SIZE.
J 30A 20A	COMBINATION STARTER/NON-FUSED DISCONNECT SWITCH. 3 POLE, 30 AMP SWITCH, WITH NEMA SIZE 1 STARTER UNLESS OTHERWISE NOTED. (WITH FUSED DISCONNECT SWITCH)
	MAGNETIC MOTOR STARTER.
	PUSHBUTTON CONTROL STATION, FUNCTION AS INDICATED ON PLAN.
J	JUNCTION BOX.
	SURFACE MOUNTED 120/208 VOLT PANELBOARD 6'-6" A.F.F. TO TOP. (FLUSH MOUNTED)
	SURFACE MOUNTED 277/480 VOLT PANELBOARD 6'-6" A.F.F. TO TOP. (FLUSH MOUNTED)
	SURFACE MOUNTED CONTROL PANEL 6'-6" A.F.F. TO TOP. (FLUSH MOUNTED)
T	DRY TYPE TRANSFORMER, RATING AS INDICATED ON SCHEMATIC RISER DIAGRAM.
	PLUGMOLD STRIP WITH GROUNDING RECEPTACLES. SEE SPECIFICATIONS.
	WIREMOLD WITH DUPLEX GROUNDING RECEPTACLES. SEE SPECIFICATIONS.
TC	TIME CLOCK. REFER TO SPECIFICATIONS.
C	CONTACTOR. REFER TO SPECIFICATIONS.
MOD	MOTORIZED DAMPER.
R	RELAY
	EMERGENCY POWER OFF MUSHROOM TYPE PUSHBUTTON PROVIDED WITH FULL ALUMINUM GUARD, MOUNTED AT 54" A.F.F. UNLESS OTHERWISE NOTED.
	PROGRAM OR DOOR BELL.
	PUSHBUTTON STATION.
N	NURSE CALL STATION.
N	NURSE CALL DOME INDICATOR LIGHT.
S	LIGHTNING PROTECTION AIR TERMINAL ("S" DENOTES SPRING BASE).

GENERAL ABBREVIATIONS

ABBREVIATIONS	DEFINITION
WP	WEATHERPROOF.
N.I.C.	NOT IN CONTRACT.
A.F.F.	ABOVE FINISHED FLOOR.
XP	EXPLOSION PROOF.
N.T.S.	NOT TO SCALE.
PIR	PASSIVE INFRARED.
ER	EXISTING DEVICE SHALL REMAIN.
EX	EXISTING DEVICE SHALL BE REMOVED.
XR	EXISTING DEVICE SHALL BE RELOCATED AS DIRECTED BY ARROW ON PLANS.

RECEPTACLE SYMBOLS

SYMBOL	DESCRIPTION
S	DUPLEX RECEPTACLE – GROUNDING TYPE – MOUNTED 18" A.F.F. UNLESS OTHERWISE INDICATED. NUMERAL INDICATES CIRCUIT NUMBER.
	DUPLEX RECEPTACLE – GROUNDING TYPE – MOUNTED AT 42" A.F.F. OR 6" ABOVE COUNTER TOP OR BACK SPLASH WHERE EXISTENT.
GFI	DUPLEX RECEPTACLE – GROUNDING TYPE – "GFI" INDICATES GROUND FAULT INTERRUPTING TYPE – MOUNTED 42" A.F.F. OR 6" ABOVE COUNTER TOP OR BACK SPLASH WHERE EXISTENT.
	DUPLEX RECEPTACLE – GROUNDING TYPE WITH SURGE SUPPRESSION PROTECTION MOUNTED AT 18" A.F.F. UNLESS OTHERWISE INDICATED.
	DUPLEX RECEPTACLE – ISOLATED GROUND TYPE – MOUNTED AT 18" A.F.F. UNLESS OTHERWISE INDICATED.
	SINGLE RECEPTACLE – GROUNDING TYPE – MOUNTED AT 18" A.F.F. UNLESS OTHERWISE INDICATED.
	DOUBLE DUPLEX RECEPTACLE – GROUNDING TYPE – MOUNTED AT 18" A.F.F. UNLESS OTHERWISE INDICATED.
	FLOOR OUTLET BOX WITH DUPLEX RECEPTACLE; REFER TO SPECIFICATIONS.
	FLOOR OUTLET BOX WITH DOUBLE DUPLEX RECEPTACLE; REFER TO SPECIFICATIONS.
	FLOOR OUTLET BOX WITH SINGLE RECEPTACLE; REFER TO SPECIFICATIONS.
	CEILING MOUNTED BOX WITH DUPLEX RECEPTACLE; REFER TO SPECIFICATIONS.
A	SPECIAL PURPOSE RECEPTACLE – "A" INDICATES TYPE AS SHOWN IN SPECIAL PURPOSE SCHEDULE ON THIS DRAWING.
A	SPECIAL PURPOSE RECEPTACLE – FLOOR OUTLET BOX – "A" INDICATES TYPE AS SHOWN ON DRAWINGS OR IN SPECIFICATIONS.
	POWER POLE; REFER TO SPECIFICATIONS AND DRAWINGS FOR RECEPTACLE CONFIGURATION.

FIRE ALARM SYMBOLS

SYMBOL	DESCRIPTION
F	FIRE ALARM PULL STATION MOUNT BOTTOM OF DEVICE AT 4'-0" A.F.F.
F 110cd	FIRE ALARM HORN / STROBE COMBINATION MOUNT BOTTOM OF DEVICE AT 6'-8" A.F.F. OR 6" BELOW CEILING, WHICHEVER IS LOWER. "110cd" DENOTES STROBE CANDELA RATING. NO "cd" VALUE INDICATES PROVIDE "75cd" STROBE.
F 110cd	FIRE ALARM STROBE ONLY. MOUNT BOTTOM OF DEVICE AT 6'-8" A.F.F. OR 6" BELOW CEILING, WHICHEVER IS LOWER. "110cd" DENOTES STROBE CANDELA RATING. NO "cd" VALUE INDICATES PROVIDE "75cd" STROBE.
M	FIRE ALARM MINI-HORN / STROBE COMBINATION MOUNT BOTTOM OF DEVICE 6'-8" A.F.F. OR 6" BELOW CEILING, WHICHEVER IS LOWER.
F 135°	FIRE ALARM HEAT DETECTOR, FIXED TEMPERATURE TYPE. "135" INDICATES TEMPERATURE SETTING.
R 135°	FIRE ALARM HEAT DETECTOR, COMBINATION RATE OF RISE / FIXED TEMPERATURE. "135" INDICATES TEMPERATURE SETTING.
S	FIRE ALARM SMOKE DETECTOR.
S D	FIRE ALARM DUCT TYPE SMOKE DETECTOR.
S E	FIRE ALARM SMOKE DETECTOR WITH AUXILIARY CONTACTS FOR CROSS ZONING (ELEV. LOBBY).
S R	FIRE ALARM SMOKE DETECTOR WITH RELAY BASE.
S	FIRE ALARM SMOKE DETECTOR; STAND ALONE TYPE (120V.).
H S	FIRE ALARM SMOKE DETECTOR BEAM TYPE – TRANSMITTER UNIT REFER TO PLANS FOR MOUNTING HEIGHT.
H S	FIRE ALARM SMOKE DETECTOR BEAM TYPE – RECEIVER UNIT REFER TO PLANS FOR MOUNTING HEIGHT.
M	MAGNETIC DOOR HOLDER.
DH	DOOR HOLD OPEN DEVICE.
TS	TAMPER SWITCH.
FS	FLOW SWITCH.
PS	PRESSURE SWITCH.
FACP	FIRE ALARM CONTROL PANEL.
FAA	FIRE ALARM ANNUNCIATOR PANEL.
TPR	TRANSPONDER.
	REMOTE (LED) INDICATOR LIGHT.
F	EXTERIOR STROBE LIGHT.
F	FIRE ALARM MASTER BOX. SEE SPECIFICATIONS FOR MOUNTING.
K	FIRE ALARM KEY LOCK BOX.
RTS	DUCT SMOKE DETECTOR REMOTE INDICATOR/TEST STATION MOUNTED 6'-8" A.F.F. OR 6" BELOW FINISHED CEILING WHICHEVER IS LOWER.

COMMUNICATION AND SIGNAL SYMBOLS

SYMBOL	DESCRIPTION
	TELEPHONE OUTLET MOUNTED 18" A.F.F.: PROVIDE 4" SQUARE BOX WITH SINGLE GANG PLASTER RING AND 3/4" CONDUIT STUBBED UP 6" ABOVE CEILING AT 90 DEGREE ANGLE, TERMINATE WITH PLASTIC BUSHING. JACK AND CABLE-N.I.C. "W" INDICATES MOUNTED 54" A.F.F. "P" INDICATES PAY PHONE. "C" INDICATES MOUNTED 42" A.F.F. OR 6" ABOVE COUNTER.
	DATA OUTLET MOUNTED 18" A.F.F.: PROVIDE 4" SQUARE BOX WITH SINGLE GANG PLASTER RING AND 3/4" CONDUIT STUBBED UP 6" ABOVE CEILING AT 90 DEGREE ANGLE, TERMINATE WITH PLASTIC BUSHING. JACK AND CABLE-N.I.C. "C" INDICATES MOUNTED 42" A.F.F. OR 6" ABOVE COUNTER.
	COMBINATION DATA/TELEPHONE OUTLET MOUNTED 18" A.F.F.: PROVIDE 4" SQUARE BOX WITH SINGLE GANG PLASTER RING AND 3/4" CONDUIT STUBBED UP 6" ABOVE CEILING AT 90 DEGREE ANGLE, TERMINATE WITH PLASTIC BUSHING. JACK AND CABLE-N.I.C. "C" INDICATES MOUNTED 42" A.F.F. OR 6" ABOVE COUNTER.
	FLOOR OUTLET BOX WITH TELEPHONE OUTLET; REFER TO SPECIFICATIONS.
	FLOOR OUTLET BOX WITH DATA OUTLET; REFER TO SPECIFICATIONS.
	FLOOR OUTLET BOX WITH COMBINATION DATA/TELEPHONE OUTLET; REFER TO SPECIFICATIONS.
TV	FLOOR MOUNTED CABLE TELEVISION OUTLET.
TV	CABLE TELEVISION OUTLET MOUNTED AT 18" A.F.F. UNLESS OTHERWISE NOTED.
	CLOCK HANGER RECEPTACLE MOUNTED AT 7'-6" A.F.F. UNLESS OTHERWISE NOTED.
VI	DATA AND CABLE TELEVISION OUTLET MOUNTED 18" A.F.F. UNLESS OTHERWISE NOTED. REFER TO TECHNOLOGY OUTLET CONFIGURATION DRAWINGS FOR DETAILS.

CONDUIT AND WIRE SYMBOLS

SYMBOL	DESCRIPTION
LA-1,3,5	HOMERUN TO PANELBOARD "LA", CIRCUIT NUMBERS 1,3,5. DIAGONAL LINES INDICATE NUMBER OF PHASE AND NEUTRAL WIRES, NO DIAGONAL LINES INDICATES 1/2"C.– 2#12 & 1#12 GND., UNLESS OTHERWISE NOTED.
	RACEWAY CONCEALED IN CEILING OR WALLS, OR EXPOSED IN UNFINISHED AREAS.
	RACEWAY CONCEALED IN FLOOR SLAB.
	FLEXIBLE RACEWAY; SIZE AS REQUIRED.
	CONDUIT UP.
	CONDUIT DOWN.
XP	EXPLOSION PROOF SEAL ON CONDUIT RUN.

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION
A 2 b	CEILING OR WALL SURFACE OR RECESSED MOUNTED FLUORESCENT LIGHTING FIXTURE; "A" DENOTES TYPE (REFER TO FIXTURE SCHEDULE), NUMERAL DENOTES CIRCUIT NUMBER, "b" DENOTES FIXTURE CONTROLLED BY SWITCH "b".
A 2 b	SURFACE MOUNTED STRIP FLUORESCENT LIGHTING FIXTURE, "A" DENOTES TYPE (REFER TO FIXTURE SCHEDULE), NUMERAL DENOTES CIRCUIT NUMBER, "b" DENOTES FIXTURE CONTROLLED BY SWITCH "b".
B 3 b	CEILING RECESSED OR SURFACE MOUNTED INCANDESCENT, COMP. FLUOR OR HID LIGHTING FIXTURE. "B" DENOTES TYPE, NUMERAL DENOTES CIRCUIT NUMBER, AND "b" DENOTES FIXTURE CONTROLLED BY SWITCH "b". (WALL MOUNTED).
	EXIT LIGHT CEILING MOUNTED WITH DIRECTIONAL ARROW AS INDICATED ON PLAN. (WALL MOUNTED WITHOUT ARROWS).
A	WALL WASHING LIGHTING FIXTURE; ARROW INDICATES AIMING. SEE FIXTURE SCHEDULE FOR MOUNTING.
	TRACK LIGHTING WITH QUANTITY OF LIGHTHEADS AS INDICATED ON PLANS.
NL NL	LIGHTING FIXTURE WIRED TO NIGHT OR EMERGENCY LIGHTING CIRCUIT.
EB	EMERGENCY BATTERY UNIT WITH UNIT MOUNTED LIGHTHEADS. NUMBER OF LIGHTHEADS AS INDICATED ON PLANS.
	REMOTE EMERGENCY LIGHTHEAD.
EB	EMERGENCY BATTERY UNIT WITH REMOTE LIGHTHEADS AS INDICATED ON PLANS.
F	COMBINATION FAN/LIGHT UNIT.
	POLE MOUNTED FLOODLIGHT UNIT; NUMBER OF FIXTURE HEADS AS INDICATED ON PLANS.
	POST

SWITCHING DESIGNATIONS

SYMBOL	DESCRIPTION
S	SINGLE POLE SWITCH MOUNTED 4'-0" A.F.F.
S_2	TWO POLE SWITCH MOUNTED 4'-0" A.F.F.
S_3	THREE WAY SWITCH MOUNTED 4'-0" A.F.F.
S_4	FOUR WAY SWITCH MOUNTED 4'-0" A.F.F.
S_D	DIMMER SWITCH MOUNTED 4'-0" A.F.F.
S_K	SINGLE POLE SWITCH – KEY OPERATED – MOUNTED 4'-0" A.F.F.
S_P	SINGLE POLE SWITCH AND PILOT LIGHT MOUNTED 4'-0" A.F.F.
S_M	MOTOR RATED SWITCH WITH THERMAL OVERLOAD PROTECTION.
S_F	VARIABLE SPEED FAN SWITCH MOUNTED AT 4'-0" A.F.F.
S_T	TIME SWITCH MOUNTED 4'-0" A.F.F.
S_L	LOW VOLTAGE SWITCH 4'-0" A.F.F.
S_{MC}	MOMENTARY CONTACT SWITCH MOUNTED 4'-0" A.F.F.
PC	PHOTOCELL CONTROL DEVICE
PS W	DAYLIGHT SENSOR ; "W" INDICATES MOUNTING HEIGHT OF 4'-0" A.F.F.
US W	ULTRASONIC OCCUPANCY SENSOR; "W" INDICATES MOUNTING HEIGHT OF 4'-0" A.F.F.
IR W	INFRA-RED OCCUPANCY SENSOR; "W" INDICATES MOUNTING HEIGHT OF 4'-0" A.F.F.
DT W	DUAL TECHNOLOGY OCCUPANCY SENSOR; "W" INDICATES MOUNTING HEIGHT OF 4'-0" A.F.F.

SOUND SYMBOLS

SYMBOL	DESCRIPTION
	COMBINATION CLOCK/SPEAKER UNIT, FLUSH WALL MOUNTED.
S	CEILING MOUNTED SPEAKER.
	SPEAKER; FLUSH WALL MOUNTED.
	LOUDSPEAKER; SURFACE WALL MOUNTED.
M W	MICROPHONE OUTLET. "W" INDICATES WALL MOUNTED.
A	AMPLIFIER
V	VOLUME CONTROL MOUNTED AT 48" A.F.F. UNLESS OTHERWISE NOTED.

SECURITY SYMBOLS

SYMBOL	DESCRIPTION
	SECURITY MOTION DETECTOR (CEILING MOUNTED RADIAL TYPE).
	SECURITY MOTION DETECTOR (WALL MOUNTED DIRECTIONAL TYPE).
DS	DOOR SECURITY SWITCH.
KP	KEY PAD.
CR	CARD KEY ACCESS READER.
DL	DOOR LOCK (ELECTRIC STRIKE).
	SIREN.
	CLOSED CIRCUIT TV CAMERA.

NOTE: ALL SYMBOLS ON THIS LIST ARE NOT NECESSARILY USED ON THIS JOB.

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USM UNIVERSITY OF SOUTHERN MAINE

UNIVERSITY OF SOUTHERN MAINE BIO-SCIENCES

70 FALMOUTH STREET
PORTLAND, MAINE

MARK	DATE	DESCRIPTION
	6.18.2012	CONSTRUCTION DOCUMENTS
	4.30.2012	OWNER REVIEW SET
	3.21.2012	DESIGN DEVELOPMENT

ISSUE LOG
△ = CLOUDED CHANGE

SCALE	N.T.S.
DRAWN BY	MJB
CHECK BY	MJB
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

LEGEND AND FIXTURE SCHEDULE

E0.01

NOTES:

1. SURFACE MOUNTED NON-METALLIC THREE-COMPARTMENT RACEWAY (ONE COMPARTMENT FOR POWER WIRING, ONE FOR COMMUNICATION SYSTEMS' WIRING, AND ONE FOR FUTURE USE), HUBBELL BASETRAK PB3GC OR EQUAL. FURNISH WITH ALL REQUIRED FITTINGS AND ACCESSORIES. RACEWAY SHALL BE "OFFICE WHITE" COLOR, SAMPLE SHALL BE SUBMITTED WITH SHOP DRAWINGS FOR APPROVAL BY ARCHITECT. FOR MOUNTING HEIGHT AND EXACT LENGTH OF RACEWAY SECTIONS REFER TO RESPECTIVE ARCHITECTURAL ELEVATION DETAILS.

   PROVIDE ONE-GANG AND TWO-GANG "IN-LINE" TYPE OUTLET BOXES AS REQUIRED FOR FLUSH INSTALLATION OF DUPLEX RECEPTACLES AND COMMUNICATION (DATA/VOICE) OUTLETS.

   PROVIDE DUPLEX RECEPTACLES 18" O.C. (NOT SHOWN ON PLAN) AND WIRE THEM ALTERNATELY.

   PROVIDE QUANTITY OF COMMUNICATION OUTLET BOXES AS INDICATED ON PLAN. AT EACH COMMUNICATION OUTLET BOX LOCATION FURNISH AND INSTALL 4-PORT DATA/VOICE OUTLET. COORDINATE WITH THE OWNER THE EXACT OUTLET AND PLATE CONFIGURATIONS.

   PROVIDE (2) 1" CONDUITS FROM COMMUNICATION COMPARTMENTS RUNNING UP (IN THE WALL WHERE APPLICABLE) AND TERMINATE AS FOLLOWS:
   - IN ROOMS WITH SUSPENDED ACCESSIBLE CEILINGS - STUB UP BOTH CONDUITS 6" ABOVE THE FINISHED ACCESSIBLE CEILING, FURNISH WITH 90° ELBOWS AND BUSHINGS;
   - IN ROOMS WITHOUT SUSPENDED CEILINGS: ON 4TH FLOOR - EXTEND BOTH CONDUITS TOWARDS CORRIDOR, STUB OUT BOTH CONDUITS 6" INTO THE CORRIDOR SUSPENDED CEILINGS, FURNISH WITH 90° ELBOWS AND BUSHINGS. ON OTHER FLOORS - REFER TO INDIVIDUAL NOTES ON DRAWINGS. PROVIDE PULL WIRES IN ALL CONDUITS. INSTALLATION OF COMMUNICATION CABLES - N.I.C.

2. SAME AS NOTE 1 EXCEPT RECEPTACLES SHALL BE GFI TYPE.

3. RELOCATE EXISTING DEVICE AS INDICATED AND EXTEND WIRING TO NEW LOCATION. MAINTAIN/RESTORE CONTINUITY OF EXISTING BRANCH/LOOP WIRING TO REMAINING EXISTING DEVICES.

4. MAKE POWER CONNECTION TO FUME HOOD JUNCTION BOX.

5. EXACT LOCATION AND MOUNTING HEIGHT FOR BIO-SAFETY CABINET RECEPTACLE SHALL BE COORDINATED IN FIELD.

6. SAME AS NOTE 1 EXCEPT RECEPTACLES SHALL BE INSTALLED 24" O.C.

7. "uc" DENOTES UNDER COUNTER RECEPTACLE, FOR MOUNTING HEIGHT AND EXACT LOCATION REFER TO ARCHITECTURAL ELEVATIONS.

8. DEDICATED OUTLET FOR REFRIGERATOR.

9. RUN POWER AND DATA CONDUITS VIA DEDICATED VERTICAL CHASE, REFER TO ARCHITECTURAL DETAILS. (2)-1"CONDUITS FROM EACH RACEWAY SHALL BE EXTENDED AS DESCRIBED BY NOTE 1.

10. "E" DENOTES "EMERGENCY RECEPTACLE". PROVIDE RED DEVICE/NYLON COVERPLATE. SUPPLEMENT WITH ENGRAVED "EMERGENCY POWER" LABEL.

11. "c" DENOTES ABOVE COUNTER INSTALLATION.

12. FOR GROUP MOUNTED DEVICES DETAIL REFER TO DETAIL ON DWG. E7.01.

13. WIRED VIA THREE-POSITION CONTROL SWITCH, EXACT LOCATIONS TO BE VERIFIED IN FIELD.

14. SPACE RESERVED FOR FUTURE WALL-MOUNTED 120/208V, 3ø, 4W DISTRIBUTION PANEL AND 150KVA OR 75KVA TRANSFORMER.

15. ALUMINUM TWO-COMPARTMENT POWER/COMMUNICATION POLE, BENCH-TO-CEILING, OR FLOOR-TO-CEILING HEIGHT, TERMINATED IN 4" SQUARE J-BOX WITH EXTENSION RING AND DIVIDER, FINISH- BY ARCHITECT. INSTALL (4) 120V 1 PHASE DUPLEX RECEPTACLES, WIRED ALTERNATELY. EXTEND 1" CONDUIT WITH PULL WIRE FROM COMMUNICATION COMPARTMENT TOWARDS THE CORRIDOR ON 4TH FLOOR; EXTEND 1" EMT 6" UP ABOVE THE POLE ON OTHER FLOORS, AND TERMINATE WITH BUSHING. PROVIDE COMMUNICATION DEVICES - QUANTITY/TYPE SHALL BE COORDINATED WITH THE OWNER.

16. ALUMINUM POWER POLE, BENCH-TO-CEILING HEIGHT, TERMINATED IN 4" SQUARE J-BOX WITH EXTENSION RING AND DIVIDER, FINISH BY ARCHITECT. INSTALL (6) 120V 1 PHASE DUPLEX RECEPTACLES: TWO SHALL BE INSTALLED AT THE TOP (APPROX. 8'-0" A.F.F.) AND WIRED TO TWO DEDICATED CIRCUITS - FOR PLUGGING OF TWO BIO SAFETY CABINETS, REMAINING FOUR RECEPTACLES SHALL BE INSTALLED ABOVE THE BENCH AND WIRED ALTERNATELY TO REMAINING CIRCUITS.

17. "EMERGENCY POWER OFF" BUTTON. PROVIDE CONTACTOR WITH POWER RESTORE BUTTON ADJACENT TO PANEL "EPPS".

18. WALL SPACE RESERVED FOR FUTURE 120/208V, 3ø, 4W DISTRIBUTION TYPE PANEL.

19. WALL SPACE RESERVED FOR FUTURE 150 KVA OR 75 KVA TRANSFORMER.

20. WALL SPACE ABOVE THE DOOR RESERVED FOR FUTURE 30 KVA TRANSFORMER.

21. WALL SPACE RESERVED FOR FUTURE 120/208V, 3ø, 4W EMERGENCY PANEL.

22. "ER" DENOTES TYPICAL EXISTING DEVICE WITH ASSOCIATED WIRING TO REMAIN. LABEL PROPERLY AND PROTECT FROM DAMAGE DURING CONSTRUCTION. DEVICE AND WIRING SHALL BE EXAMINED AND REPAIRED IF REQUIRED.

23. FLUSH FLOOR DEVICE: PROVIDE POKE-THRU UNIT WITH TWO DUPLEX RECEPTACLES AND TWO COMMUNICATION DEVICES AS INDICATED.

24. 3/4"C.-3#12, 3#10 NEUTRALS, 2#12 GND.

25. PROVIDE (2) 4-GANG BOXES FOR FOR COMMUNICATION WIRING AND (1) 2-GANG BOX FOR POWER WIRING, COORDINATE LOCATIONS OF J-BOXES IN FIELD. PROVIDE POWER AND COMMUNICATION CONNECTIONS TO ELECTRIFIED FURNITURE, IN FLEX CONDUIT.

26. EXTEND 1" EMT WITH PULL WIRE FROM EACH OF COMMUNICATION J-BOXES UP AND TERMINATE WITH BUSHING AT 8'-0" A.F.F.

27. WIRING TO EXISTING PANEL: CIRCUIT NUMBERS OF SPARE CIRCUIT BREAKERS ARE GIVEN TO REFERENCE ONLY. COORDINATED AVAILABLE BREAKERS IN FIELD.

28. ALUMINUM TWO-COMPARTMENT POWER/COMMUNICATION POLE, FLOOR-TO-CEILING-HEIGHT TO ACCOMMODATE INSTALLATION OF POWER AND COMMUNICATION WIRING TO ELECTRIFIED FURNITURE. EXTEND (2)-1" EMT 6" UP ABOVE THE POLE AND TERMINATE WITH BUSHINGS.

29. EXTEND 3/4" EMT WITH PULL WIRE UP AND TERMINATE WITH BUSHING AT 8'-0" A.F.F.

30. PROVIDE EXTERNAL TVSS DEVICE FOR EXISTING PANEL, RETROFIT AS REQUIRED.

31. PROVIDE DEDICATED NEUTRAL WITH EACH CONDUCTOR SUPPLYING POWER TO COMPUTER LOADS.

32. EXTEND IN THE WALL AND STUB-UP 6" ABOVE THE FINISHED CEILING, FURNISH WITH 90° ELBOW AND TERMINATE WITH THE BUSHING.

33. PROVIDE NEW 20A/1P CIRCUIT BREAKER(S) IN EXISTING PANEL "PP41".

34. PROVIDE DEDICATED OUTLET FOR MICROWAVE. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.

35. TERMINATE AT CEILING FOR FUTURE OWNER'S USE.

36. PROVIDE POWER DOOR CARD READER. CARD READER AND WIRING - N.I.C.

37. INSTALL POWER WIRING AND COMMUNICATION CONDUITS CONCEALED WITHIN WALLS OR COLUMN ENCLOSURES.

38. PROVIDE WIRING TO DISHWASHER IN LIQUID-TIGHT FLEX CONDUIT.

39. DEDICATED OUTLET FOR ICE MACHINE.

40. IN AREA IDENTIFIED AS "N.I.C." - INSTALL RESPECTIVE ROOM PANEL IN CORRIDOR AND ELECTRICAL ROOM, ROUGH-IN ALL INDICATED POWER AND LIGHTING CIRCUITS AND TERMINATE IN PULL BOX AT THE CEILING IN RESPECTIVE ROOMS. FOR LIGHTING CIRCUITS REFER TO LIGHTING PLANS. FURNISH, INSTALL AND WIRE FIRE ALARM HORN/STROBES AS INDICATED.

41. WIRE TO 30A/3P CIRCUIT BREAKER. PROVIDE 1/2"C., 2#10 & 1#10G. POWER FEED.

42. WIRE TO 30A/1P CIRCUIT BREAKER. PROVIDE 1/2"C., 2#10 & 1#10G. POWER FEED.

43. DEDICATED OUTLET FOR UNDER COUNTER MILLI-Q ULTRA PURE WATER PURIFICATION SYSTEM.

44. PROVIDE 120V POWER AT DOOR 180A ON FIRST FLOOR (NOT SHOWN ON ELECTRICAL DRAWINGS, BUT INDICATED IN ARCHITECTURAL SET) FOR DOOR CARD READER. PROVIDE WIRING FROM SPARE 20A/1PC.B. IN EXISTING PANEL PP1 LOCATED IN ELECTRICAL ROOM ON 1ST FLOOR.

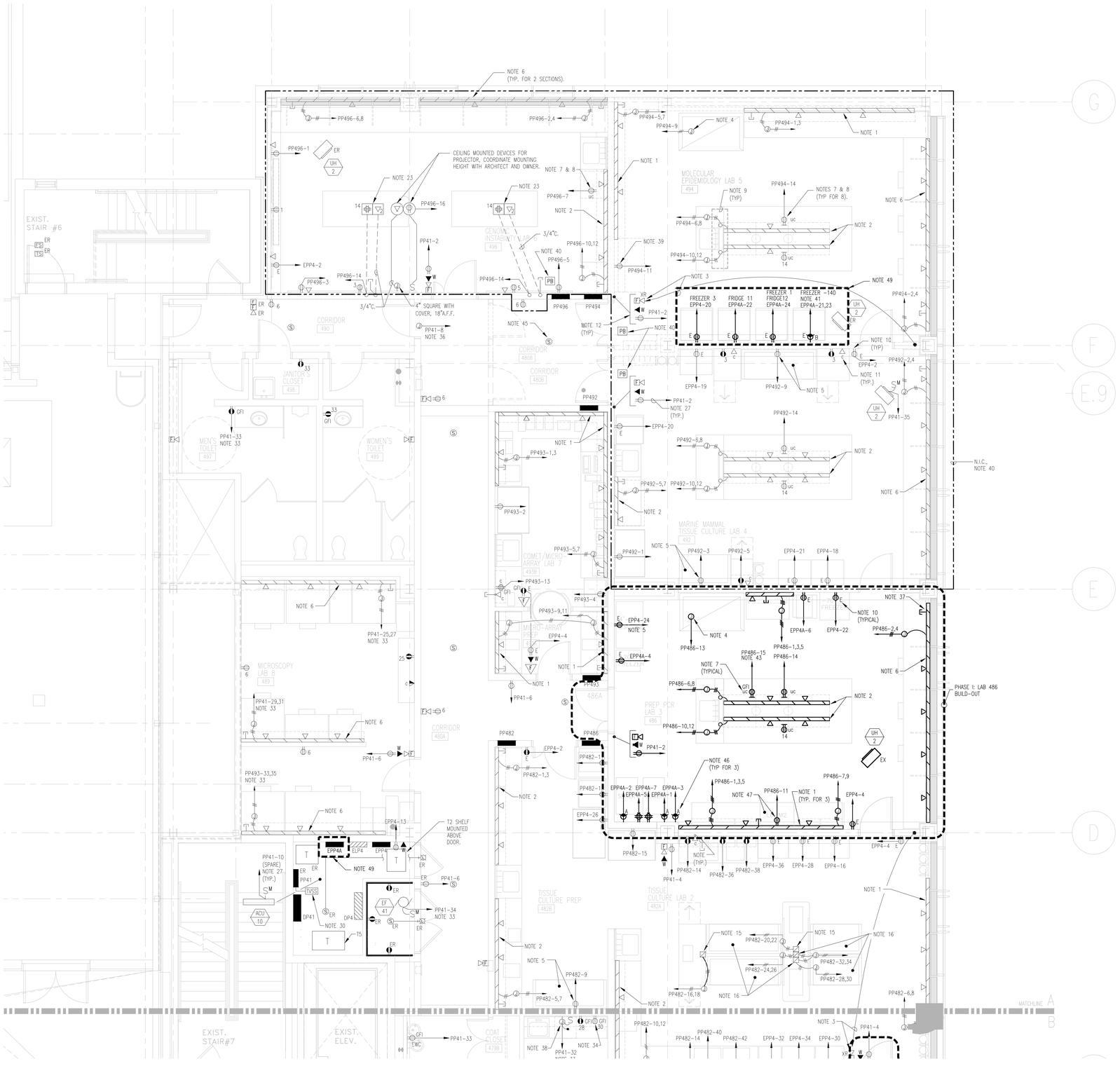
45. INSTALLED IN OPEN CEILING. PROVIDE 10 FEET EXTRA WIRE TO RE-INSTALL THIS SMOKE DETECTOR IN SUSPENDED CEILING IN FUTURE.

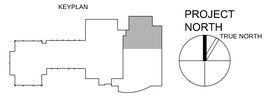
46. REFER TO SPECIAL PURPOSE RECEPTACLE SCHEDULE ON DRAWING E0.01 FOR ADDITIONAL INFORMATION.

47. MOUNT RECEPTACLE ABOVE SURFACE MOUNTED NON-METALLIC RACEWAY.

48. MOUNT RECEPTACLE ON SURFACE MOUNTED NON-METALLIC RACEWAY FOR REFRIGERATOR.

49. INSTALL PANEL EPP4A AND PROVIDE INDICATED CIRCUITS TO TEMPORARY EQUIPMENT LOCATION. CIRCUITS SHALL BE OPERATIONAL PRIOR TO START OF FIT UP OF LABS 481 AND 486. UPON COMPLETION OF LAB FIT OUT, DISCONNECT CIRCUITS AND LABEL ASSOCIATED CIRCUIT BREAKERS AS SPARE.





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70 FALMOUTH STREET
PORTLAND, MAINE

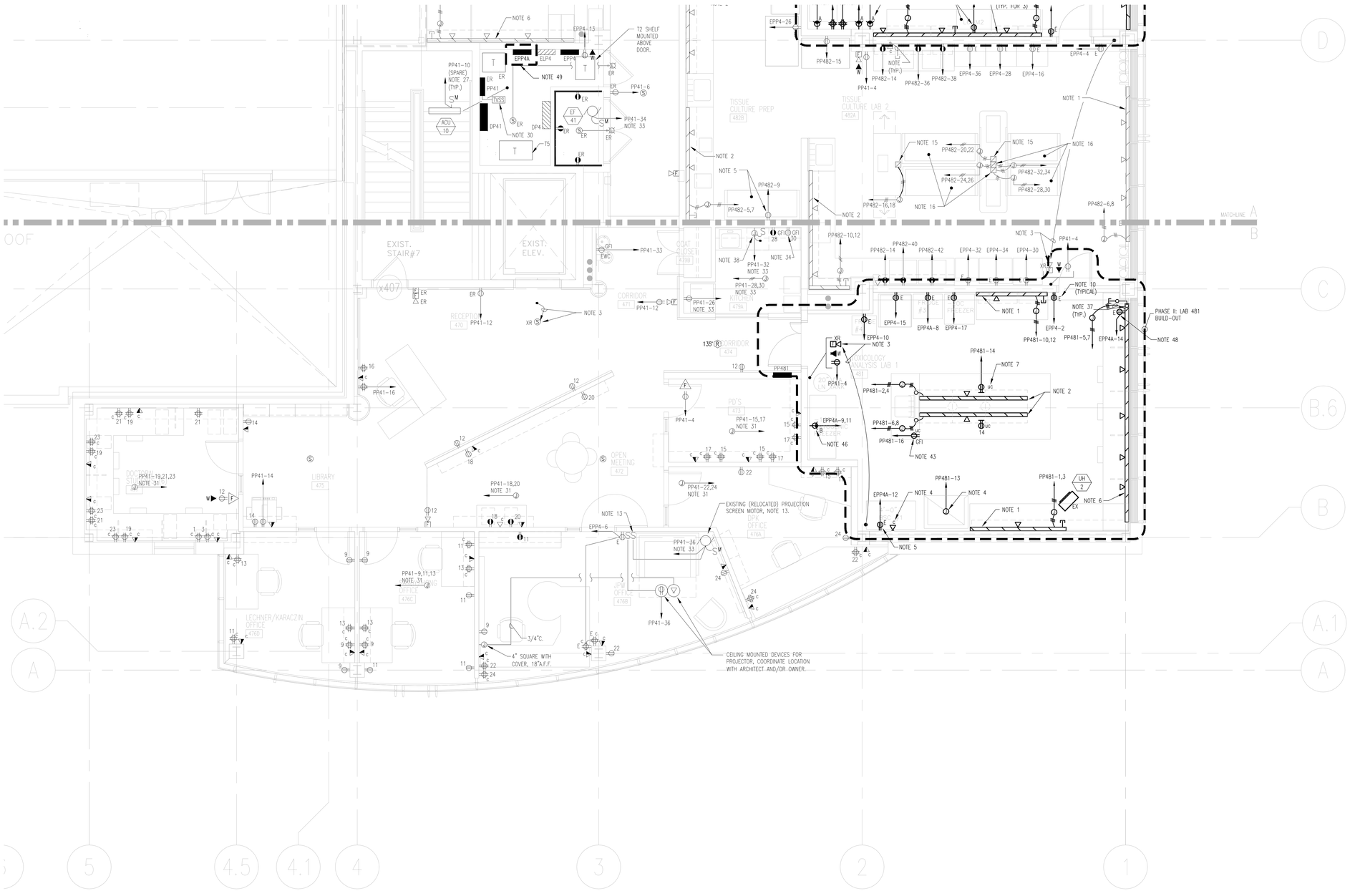
MARK	DATE:	DESCRIPTION:
	6.18.2012	CONSTRUCTION DOCUMENTS
	4.30.2012	OWNER REVIEW SET
	3.21.2012	DESIGN DEVELOPMENT

ISSUE LOG
△ = CLOUDED CHANGE

SCALE	1/4"=1'-0"
DRAWN BY	MJB
CHECK BY	MJB
PROJ.ARCH/ENGR.	DJO
PROJ. MRG.	ROH
JOB NO.	11082.01

FOURTH FLOOR POWER PLAN PART A

E1.04A



FOR NOTES REFER TO DRAWING E1.04A.

KEYPLAN

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TRUE NORTH

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FOURTH FLOOR POWER PLAN PART B

E1.04B

NOTES:

1. PROVIDE 9'-0" A.F.F. TO BOTTOM OF "A" AND "A1" FIXTURES AND 8'-0" TO BOTTOM OF FIXTURES TYPE "B" UNLESS INDICATED OTHERWISE.

2. PROVIDE WIRING TO REVOLVING DOOR SAFE LIGHT.

3. TYPICAL 3-LAMP DOUBLE-SWITCHED FIXTURE. SWITCH "S_D" CONTROLS TWO OUTER LAMPS, SWITCH "S_S" CONTROLS ONE CENTRAL LAMP IN ALL FIXTURES.

4. PROVIDE "NORMAL/EMERGENCY" RELAY BY-PASS WIRING, REFER TO DETAIL ON DWG. E7.01.

5. "ER" DENOTES TYPICAL EXISTING LIGHT TO REMAIN WITH ASSOCIATED WIRING. PROTECT FROM DAMAGE DURING CONSTRUCTION. LIGHT AND WIRING SHALL BE EXAMINED AND REPAIRED IF REQUIRED.

6. RELOCATE EXISTING LIGHT AS INDICATED AND EXTEND EXISTING WIRING TO NEW LOCATION. MAINTAIN/RESTORE CONTINUITY OF EXISTING WIRING TO REMAINING EXISTING LIGHTS.

7. INSTALL AND WIRE A SURFACE-MOUNTED 2-LAMP WRAPAROUND FIXTURE FURNISHED BY OWNER. PROVIDE NEW LAMPS.

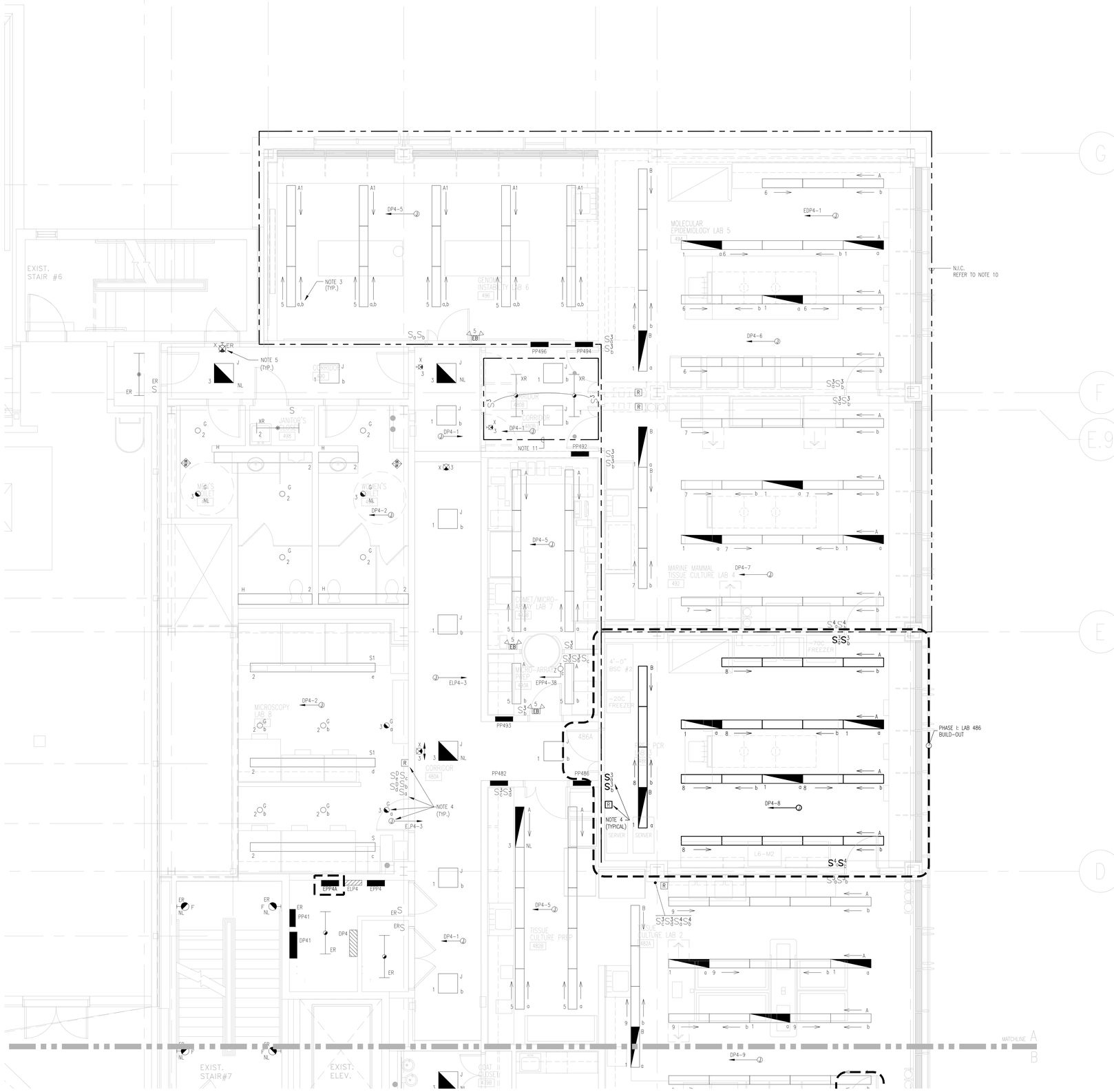
8. CEILING OR WALL-MOUNTED OCCUPANCY SENSOR. FOR WIRING REFER TO LIGHTING CONTROL DIAGRAM ON DWG. E7.01. EXACT LOCATION OF OCCUPANCY SENSOR SHALL BE COORDINATED WITH MANUFACTURER'S RECOMMENDATIONS.

9. WIRE TO SPARE 20A/1P CIRCUIT BREAKER IN EXISTING PANEL. CIRCUIT NUMBERS ARE SHOWN FOR REFERENCE ONLY, VERIFY AVAILABLE SPARE CIRCUIT BREAKERS IN FIELD.

10. IN AREA IDENTIFIED AS "N.I.C." - INSTALL TEMPORARY LIGHTING CONSISTING OF (5) EXISTING CHAIN-MOUNTED INDUSTRIAL STRIPS REMOVED FROM OTHER AREAS, WALL-MOUNTED LIGHTING SWITCH AND ASSOCIATED WIRING IN EACH OF IDENTIFIED LABS. REFER TO NOTE 40 ON DWG. E1.02 FOR CIRCUIT ROUGH-IN INFORMATION. REMAINING INFORMATION SHOWN ON PLAN WITHIN N.I.C. AREA IS SHOWN FOR REFERENCE ONLY.

11. WITHIN THIS AREA INSTALL TEMPORARY LIGHTING CONSISTING OF (2) STRIPS, (2) 3-WAY SWITCHES AND EXIT SIGN WITH WIRING. 2'x2' "J" FIXTURES WITH CIRCUITING INFORMATION ARE SHOWN FOR REFERENCES ONLY.

12. INSTALL TEMPORARY LIGHTING IN THE FUTURE BATHROOM AREA AS SHOWN ON PLAN.



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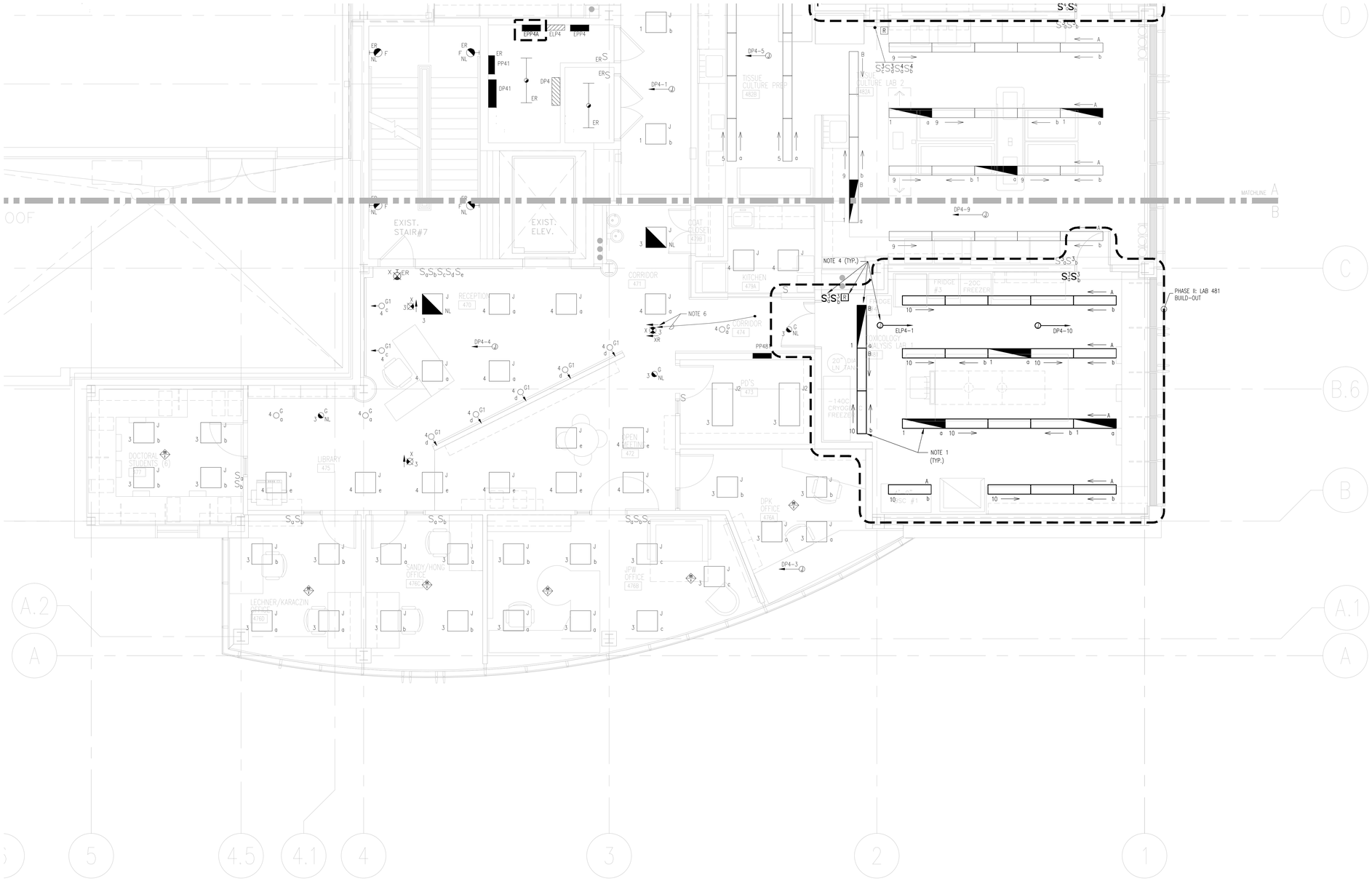
JOB NO.	11082.01

FOURTH FLOOR LIGHTING PLAN PART A

E2.04A



FOR NOTES REFER TO DRAWING E2.04A.

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FOURTH FLOOR LIGHTING PLAN PART B

E2.04B

NOTES:

1. 1"C. – (1)#4/0 SERVICE GROUNDING CONDUCTOR FROM SWITCHBOARD GROUND BUS TO DOMESTIC WATER SERVICE PIPE.
2. BUILT-IN TRANSIENT VOLTAGE SURGE SUPPRESSER (SEE SPECIFICATION).
3. PROVIDE FULLY RATED VERTICAL AND HORIZONTAL BUS SECTIONS.
4. INSTALL FEEDER IN EXISTING (3)-4" CONDUITS.
5. WITH ISOLATED GROUND BUS.
6. FOR FEEDER ROUTING IN EXISTING BUILDING REFER TO POWER PLANS. PENETRATIONS/SLEEVES THROUGH EXISTING ROOF AND NEW MECHANICAL PENTHOUSE FLOOR SHALL BE SEALED.
7. FOR FEEDER SIZES NOT IDENTIFIED ON ONE-LINE DIAGRAM, REFER TO RESPECTIVE PANELBOARD SCHEDULES ON DWG E8.1 OR TRANSFORMER FEEDER SCHEDULE ON THIS DWG.
8. GROUNDING CONDUCTOR TO PAD-MOUNTED TRANSFORMER GROUNDING LOOP, REFER TO POWER PLAN.
9. SLEEVE FOR 1" CONDUIT, REFER TO SPECIFICATION AND NOTE #67 ON DRAWING E2.0 FOR REQUIREMENTS.
10. SLEEVE FOR 3" CONDUIT, REFER TO SPECIFICATION AND NOTE #67 ON DRAWING E2.0 FOR REQUIREMENTS.
11. FINISH AND INSTALL NEW C.B. OF IDENTIFIED SIZE IN EXISTING PANEL.
12. PROVIDE NEW 80A/3P CIRCUIT BREAKER IN EXISTING PANEL.
13. REFER TO GENERAL NOTE ON THIS DRAWING.
14. NOT USED.
15. REMOVE EXISTING CIRCUIT BREAKER AND PROVIDE NEW 60A/3P CIRCUIT BREAKER IN EXISTING PANEL TO FEED NEW PANEL. NEW PANEL SHALL BE OPERATIONAL FOR TEMPORARY EQUIPMENT POWER SERVICE PRIOR TO STARTING FIT UP WORK.
16. EXTEND 3" CONDUIT.
17. VIA FLOOR SLEEVE.
18. EXTEND 1" CONDUIT.
19. INSTALL NEW WIRING. FOR FEEDER SIZE REFER TO TRANSFORMER SCHEDULE ON THIS DRAWING.
20. INSTALL NEW WIRING. FOR FEEDER SIZE REFER TO SWITCHBOARD OR RESPECTIVE PANELBOARD SCHEDULE, UNLESS SPECIFIED ON THIS DRAWING.

FEEDER SCHEDULE

	CONDUIT	FEEDER
1	(8)-4"C.	(8) 4#500kcmil
2	(2)-4"C.	(2)-(4#600kcmil & 1#1/0 GND.)
3	(3)-4"C.	(3)-(4#500kcmil & 1#3/0 GND.)
4	(2)-3"C.	(2)-(3#350kcmil & 1#1 GND.)
5	2"C.	3#3/0 & 1#4GND.
6	1 1/4"C.	4#3 & 1#8 GND.
7	1"C.	4#6, 1#6 I.G., & 1#10 GND.
8	(2)-3"C.	2 SETS (3-350kcmil & 1#1/0 GND.)
9	1"C.	4#6 & 1#10 GND.
10	2"C.	4#1/0 & 1#6 GND.

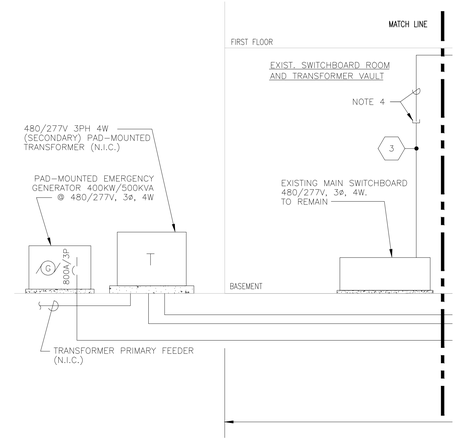
DRY TYPE TRANSFORMER SCHEDULE

ID	KVA	480 VOLT OVER CURRENT	208 VOLT OVER CURRENT	480V FEEDER	120/208V FEEDER	GROUNDING (5)
T1	15	30A, 3P	50A, 3P	3#10 & 1#10GND. – 3/4"C.	4#6 & 1#10GND. – 1"C.	1#6 – 3/4"C
T2	30	60A, 3P	100A, 3P	3#6 & 1#10GND. – 1"C.	4#3 & 1#8GND. – 1 1/4"C.	1#6 – 3/4"C
T3	45	80A, 3P	150A, 3P	3#4 & 1#8GND. – 1 1/4"C.	4#1/0 & 1#6GND. – 2"C.	1#6 – 3/4"C
T4	75	150A, 3P	250A, 3P	3#1/0 & 1#6GND. – 1 1/2"C.	4#250kcmil & 1#4GND. – 3"C.	1#2 – 3/4"C
T5	150	300A, 3P	500A, 3P	(3)-(3"C., 3#350kcmil & 1#4 GND.)	(2)-(3"C., 8#250kcmil & 2#2GND.)	1#2/0 – 3/4"C.

TRANSFORMER NOTES:

1. BOND NEUTRAL OF TRANSFORMER SECONDARY TO THE TRANSFORMER CASE, WITH BONDING JUMPER.
2. GROUND THE CASING OF THE TRANSFORMER TO NEAREST AVAILABLE EFFECTIVELY GROUNDED WATER PIPE, STRUCTURAL STEEL AND/OR DRIVEN GROUND ROD IN ACCORDANCE WITH N.E.C. 250-50 AND 250-52.
3. ALL CONDUCTOR SIZES ARE FOR COPPER CONDUCTORS. N.E.C. TABLE 310-16.
4. SECONDARY OVER CURRENT PROTECTION SHALL BE LOCATED WITHIN TEN (10) FEET OF THE TRANSFORMER SECONDARY TERMINALS EITHER IN A PANELBOARD (MAIN BREAKER) OR A INDIVIDUALLY MOUNTED CIRCUIT BREAKER.
5. TRANSFORMER BONDING JUMPER AND GROUNDING ELECTRODE CONDUCTOR, EXCEPT NOTED OTHERWISE.
6. TRANSFORMER BONDING JUMPER (1-300kcmil)

KEY
- FUTURE
- NEW
- EXISTING

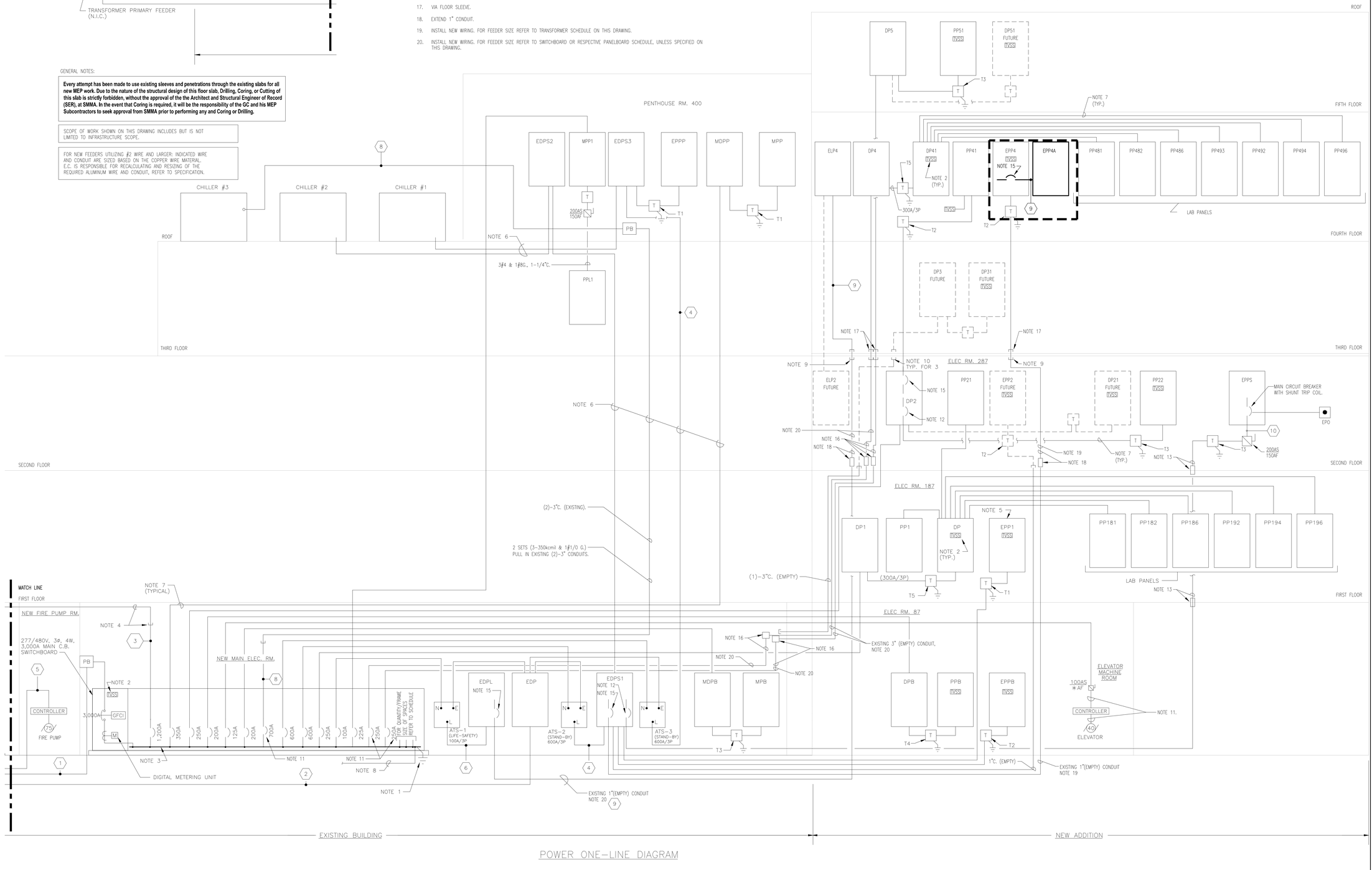


GENERAL NOTES:

Every attempt has been made to use existing sleeves and penetrations through the existing slabs for all new MEP work. Due to the nature of the structural design of this floor slab, Drilling, Coring, or Cutting of this slab is strictly forbidden, without the approval of the the Architect and Structural Engineer of Record (SER), at SMMA. In the event that Coring is required, it will be the responsibility of the GC and his MEP Subcontractors to seek approval from SMMA prior to performing any and Coring or Drilling.

SCOPE OF WORK SHOWN ON THIS DRAWING INCLUDES BUT IS NOT LIMITED TO INFRASTRUCTURE SCOPE.

FOR NEW FEEDERS UTILIZING #2 WIRE AND LARGER: INDICATED WIRE AND CONDUIT ARE SIZED BASED ON THE COPPER WIRE MATERIAL. E.C. IS RESPONSIBLE FOR RECALCULATING AND RESIZING OF THE REQUIRED ALUMINUM WIRE AND CONDUIT, REFER TO SPECIFICATION.



POWER ONE-LINE DIAGRAM

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CHECK BY	MJB
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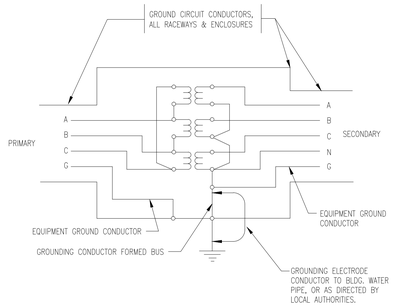
PROJ. MRG.	RCH
JOB NO.	11082.01

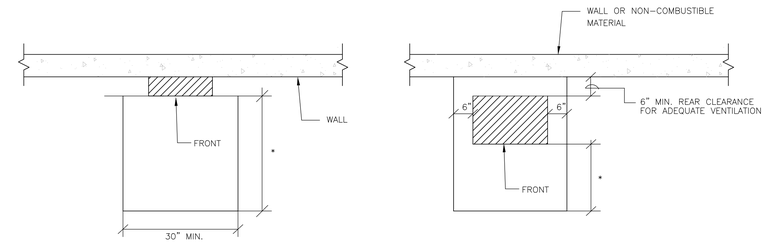
ONE-LINE DIAGRAM

E4.01



1 DRY TYPE TRANSFORMER GROUNDING DETAIL

SCALE: N.T.S.



WALL MOUNTED PANELS

(INCLUDING POWER PANELS, CONTACTORS, CONTROL CABINETS, DISCONNECT SWITCHES, MOTOR STARTERS, TIME CLOCK AND SIMILAR ELECTRIC EQUIPMENT).

FLOOR MOUNTED TRANSFORMER

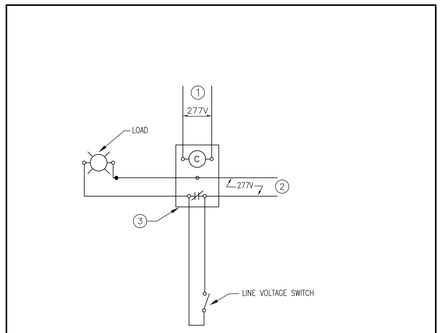
* MIN. WORKING CLEARANCE (IN THE DIRECTION OF ACCESS TO LIVE PARTS) REQUIRED BY NEC 110-16(a), CONDITION 2 :

– 3 FT. FOR 0-150 VOLT TO GROUND ELECTRIC EQUIPMENT
– 3 1/2 FT. FOR 150-600 VOLT TO GROUND ELECTRIC EQUIPMENT

THE MINIMUM HEADROOM OF WORKING SPACE SHALL BE 6 1/2 FT.

2 REQUIRED CLEARANCE FOR ELECTRICAL EQUIPMENT

SCALE: N.T.S.

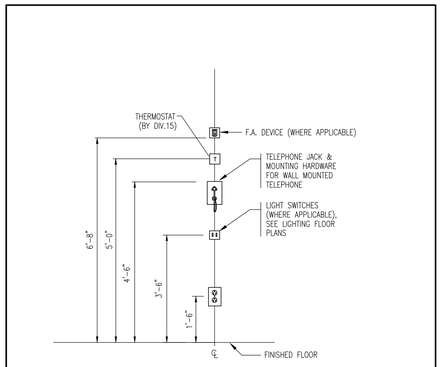


NOTES:

1. NORMAL UNSWITCHED LIGHTING CIRCUIT, PROVIDED IN ADJACENT SPACE (CORRIDOR).
2. NORMAL/EMERGENCY LIGHTING CIRCUIT, PROVIDED IN ROOM.
3. SWITCH BYPASS RELAY – 120/277V, 60HZ, 20AMP, UL LISTED – BODINE GTD20 OR EQUAL.

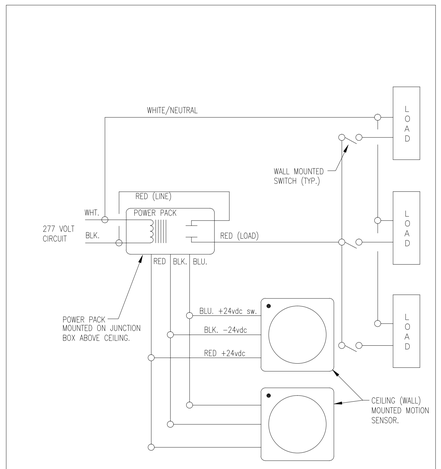
3 NORMAL/EMERGENCY LIGHTING BY-PASS WIRING DIAGRAM

SCALE: N.T.S.



4 GROUP MOUNTED DEVICES

SCALE: N.T.S.



5 TYPICAL OCCUPANCY SENSOR WIRING DIAGRAM

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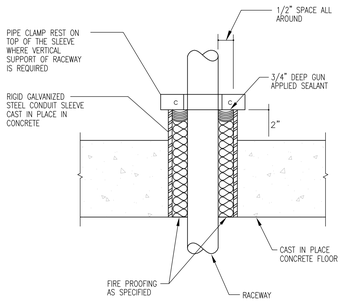
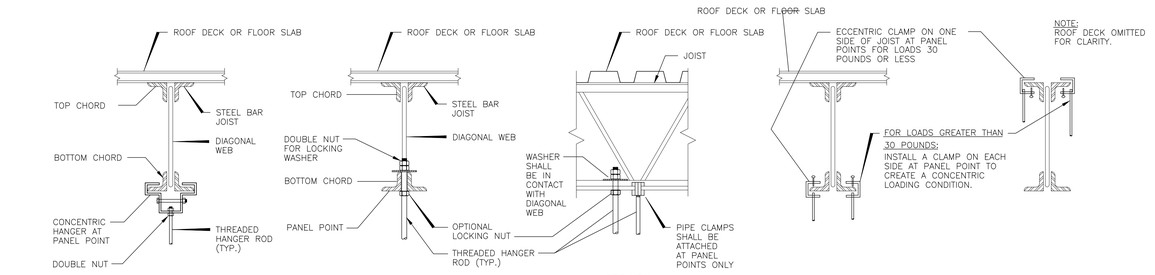
DETAILS

E7.01



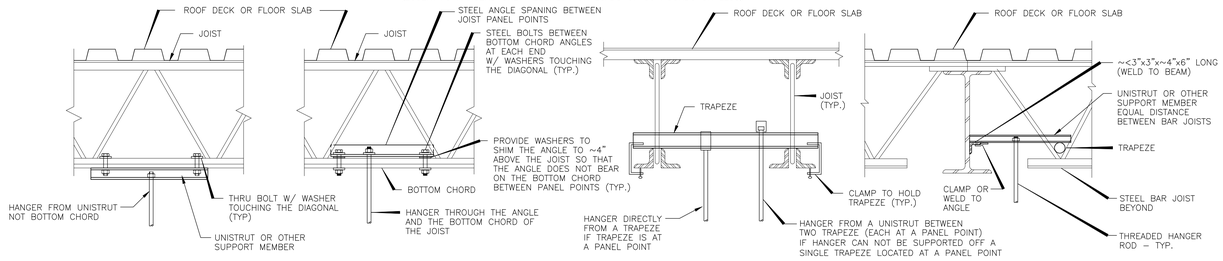
1 CAST-IN-PLACE SLEEVE FOR RACEWAY OR ELECTRICAL CABLES (WET OR DRY LOCATIONS)

SCALE: N.T.S.



DETAIL "A" CONCENTRIC (AND ECCENTRIC) HANGERS

(ECCENTRIC HANGERS ONLY ALLOWED FOR LOADS OF 30 POUNDS OR LESS)



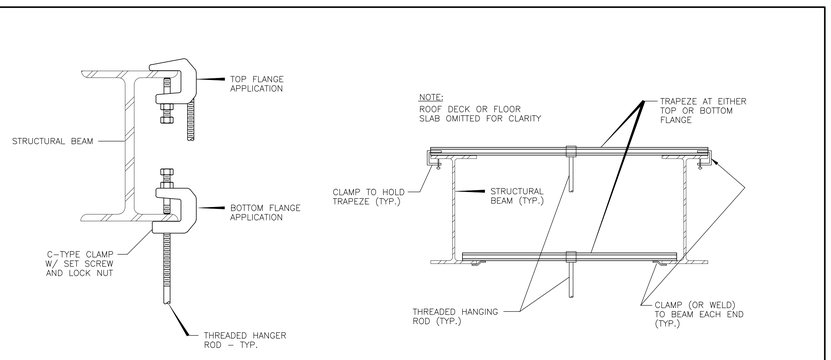
DETAIL "B" HANGING FROM BOTTOM CHORD

2 JOIST HANGING DETAILS

SCALE: N.T.S.

JOIST HANGING NOTES:

1. HANGERS AND SUPPORTING MEMBERS SHALL BE LOCATED AT PANEL POINTS OF JOISTS.
2. CONDUITS AND EQUIPMENT SHALL NOT BE HUNG FROM STEEL DECK OR FROM BRIDGING ANGLES.
3. WHERE POSSIBLE ALL HANGERS SHALL BE SUSPENDED FROM WIDE-FLANGED BEAMS INSTEAD OF BAR JOISTS.
4. CONDUITS 2 1/2" AND SMALLER RUNNING PARALLEL TO BAR JOISTS MAY BE HUNG FROM A SINGLE JOIST.
5. PIPING 3" AND LARGER RUNNING PARALLEL TO BAR JOISTS SHALL BE SUPPORTED MID-WAY BETWEEN TWO JOISTS AND SHALL BE HUNG FROM PANEL POINTS AT APPROXIMATELY 5'-0" SPACING.
6. PIPING 4" AND LARGER IN SIZE RUNNING PERPENDICULAR TO AND SUSPENDED FROM JOISTS SHALL BE SUPPORTED FROM EVERY JOIST AT PANEL POINT.
7. PAIRS OF CONDUITS SHALL HAVE HANGERS STAGGERED BETWEEN ALTERNATE JOISTS OR SHALL BE HUNG FROM EVERY JOIST.
8. THE SUM OF ALL BUILDING TRADES HANGING FROM A PANEL POINT SHALL NOT EXCEED 200 LBS. WHEN THIS MAXIMUM IS EXCEEDED, A DETAIL OF PROPOSED METHOD OF HANGING SHALL BE SUBMITTED FOR APPROVAL.
9. ECCENTRIC HANGERS (C-CLAMPS) WILL BE ALLOWED FOR PIPING SIZED 1~8" AND SMALLER AND OTHER TRADES WHERE THE HANGER SPACING LIMITS THE TOTAL POINT LOAD TO LESS THAN 30 LBS. ECCENTRIC HANGERS SHALL BE SECURED TO JOISTS ON TOP OR BOTTOM CHORD AT PANEL POINTS ONLY.
10. ALL WELDING OF JOISTS SHALL BE PARALLEL TO JOIST CHORDS.
11. COORDINATE HANGING LOCATIONS AND DETAILS WITH ALL OTHER TRADES. ATTEND A PRE-HANGING CONFERENCE WITH GENERAL CONTRACTOR, THE ARCHITECT, AND ALL OTHER TRADES TO REVIEW HANGING METHODS AND COORDINATE HANGING LOCATIONS.
12. SUBMIT ALTERNATE METHODS FOR HANGING TO ARCHITECT FOR REVIEW AND DO NOT USE WITHOUT WRITTEN APPROVAL FROM ARCHITECT.

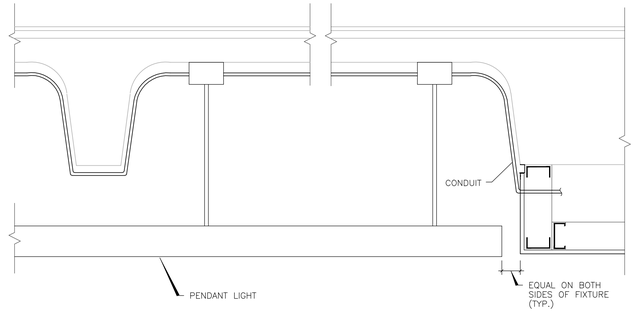


3 BEAM HANGING DETAILS

SCALE: N.T.S.

4 FLOOR HANGING DETAILS

SCALE: N.T.S.



5 LIGHTING/CONDUIT INSTALLATION IN EXISTING COFFERS

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USM UNIVERSITY OF SOUTHERN MAINE

UNIVERSITY OF SOUTHERN MAINE BIO-SCIENCES

70 FALMOUTH STREET
PORTLAND, MAINE

MARK	DATE	DESCRIPTION:
	6.18.2012	CONSTRUCTION DOCUMENTS
	4.30.2012	OWNER REVIEW SET
	3.21.2012	DESIGN DEVELOPMENT

ISSUE LOG

△ = CLOUDED CHANGE

SCALE	N.T.S.
DRAWN BY	MJB
CHECK BY	MJB
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

DETAILS

E7.02

MAIN SWITCHBOARD "MSB"

277/480V, 3ø, 4W
3,000A MCB

S.C.I.= 50,000A
MAIN ELEC. RM.

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	1200	3	–	450.0	(3)-(4"C., 4#500kcmil & 1 #3/0 GND.)	EXISTING MAIN SWITCHBOARD
④ 2	125	3	40	43.0	1 1/4"C., 3#4 & 1#6 GND.	ELEVATOR
3	700	3	–	430.0	SEE ONE-LINE DIAGRAM	CHILLER #3
4	350	3	–	* 212.0	3 1/2"C.-4#500kcmil & 1#3 GND.	PANEL "MDPP"
5	250	3	–	* 140.0	3"C.-4#300kcmil, & 1#4 GND.	PANEL "DP2"
6	②	3	–	(* 140)	3"C. (EMPTY)	SPACE (FOR FUTURE PANEL "DP3")
7	250	3	–	127.0	3"C.-4#300kcmil, & 1#4 GND.	PANEL "DP4"
8	250	3	–	*140	3"C.-4#300kcmil, & 1#4 GND.	PANEL "DP5"
9	250	3	–	163.0	3"C.-4#300kcmil & 1#4 GND.	PANEL "DP1"
10	100	3	–	* 26.0	1 1/4"C.-4#3 & 1#8 GND.	ATS-1 (PANEL "EDPL")
11	600	3	–	* 466.0	(2)-(3"C., 3#350kcmil & 1#1 GND.)	ATS-2 (PANEL "EDPS1")
12	600	3	–	* 435.0	(2)-(3"C., 3#350kcmil & 1#1 GND.)	ATS-3 (PANEL "EDPS3")
13	200	3	–	102.0	2 1/2"C.-4#4/0 & 1#6 GND.	PANEL "DPB"
14	200	3	–	* 98.0	2 1/2"C.-4#4/0 & 1#6 GND.	PANEL "MDPB"
15	60	3	–	–	INTERNAL CONNECTION	TVSS
16						SPACE
17						SPACE
18						SPACE
19	225	3	–	–	2 1/2"C.-3#4/0 & 1#4 GND.	PANEL "MPP1"

* – INCLUDING FUTURE ESTIMATED LOADS

PANELBOARD "MDPP"

277/480V, 3ø, 4W
400A MLO

S.C.I.=35,000A
MECH. PENTHOUSE RM.

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	100	3	50.0	54.0	1"C. – 3#4 & 1#8GND.	AHU-3
2	30	3	–	10.0	1"C. – 3#10 & 1#10GND.	15 KVA TRANSFORMER (PANEL "MPP")
3	125	3	60	64.0	1 1/2"C. – 3#2 & 1#6GND.	AHU-4
4	70	3	25.0	28	3/4"C. – 3#8 & 1#8GND.	EF-22
5	50	3	15.0	17.5	3/4"C. – 3#10 & 1#10GND.	PUMP P-6
6	50	3	15.0	17.5	3/4"C. – 3#10 & 1#10GND.	PUMP P-7
7	20	1	–	2.0	1/2"C. – 2#12 & 1#12GND.	LIGHTING
8	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	EF-4
9	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	EF-9
10	15	3	2.0	2.8	1/2"C. – 3#12 & 1#12GND.	EF-8
11	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	EF-10
12	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	EF-7
13	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	EF-14
14	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	EF-15
15	15	3	3.0	4.0	1/2"C. – 3#12 & 1#12GND.	EF-18
16	50	3	15	17.5	3/4"C. – 3#10 & 1#10GND.	PUMP P-8
17	50	3	15	17.5	3/4"C. – 3#10 & 1#10GND.	PUMP P-10
18		3				SPACE
19	20	1	–	1.2	1/2"C. – 3#12 & 1#12GND.	4th & 5th FL. LTG.
20		1				SPACE
21		1				SPACE
22		1				SPACE

PANELBOARD "MDPB"

277/480V, 3ø, 4W
225A MLO

S.C.I.=35,000A
MAIN ELEC. RM.

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	15	3	2(1.5)	2.2	1/2"C. – 3#12 & 1#12GND.	CP-1
2	15	3	2(1.0)	3.0	1/2"C. – 3#12 & 1#12GND.	EJ-1, EJ-2
3	20	3	5.0	6.5	1/2"C. – 3#12 & 1#12GND.	VAC-1
4	15	2	–	1.5	1/2"C. – 2#12 & 1#12GND.	HTR-3
5	20	3	–	12.0	1/2"C. – 3#12 & 1#12GND.	HTR-4
6	15	3	3(1.0)	5.5	1/2"C. – 3#12 & 1#12GND.	AD-1
7	③	3	(5.0)	(6.5)	–	SPACE (FOR FUTURE EQUIPMENT-VAC-2)
8	③	3	(15.0)	(17.5)	–	SPACE (FOR FUTURE EQUIPMENT-AC-2)
9	15	3	2(1.0)	3.3	1/2"C. – 3#12 & 1#12GND.	AD-2
10	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	EF-5
11	15	3	0.75	1.2	1/2"C. – 3#12 & 1#12GND.	FCU-1
12	15	3	0.5	0.9	1/2"C. – 3#12 & 1#12GND.	FCU-2
13	20	3	5.0	6.5	1/2"C. – 3#12 & 1#12GND.	DOCK LIFT
14	15	3	2(3.0)	4.0	1/2"C. – 4#12 & 1#12GND.	BOILER FEED SYSTEM
15	15	3	0.75	1.2	1/2"C. – 3#12 & 1#12GND.	STEAM BOILER
16	80	3	–	25.0	1 1/4"C. – 3#4 & 1#8GND.	45 KVA TRANSFORMER (PANEL "MPB")
17	15	3	1.0	1.5	1/2"C. – 3#12 & 1#12GND.	OA SUPPLY
18		3				SPACE
19		3				SPACE
20		3				SPACE

PANELBOARD "EDP"

277/480V, 3ø, 4W
800A MLO

S.C.I.=35,000A
MAIN ELEC. RM.

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	100	3	–	* 26.0	1 1/4"C. – 4#3 & 1#8 GND.	ATS-1 (PANEL "EDPL")
2	600	3	–	* 466.0	(2)-(3"C., 3#350kcmil & 1#1 GND.)	ATS-2 (PANEL "EDPS1")
3	600	3	–	* 435.0	(2)-(3"C., 3#350kcmil & 1#1 GND.)	ATS-3 (PANEL "EDPS3")
4	⑥	3				SPACE

* – INCLUDING FUTURE ESTIMATED LOADS

NOTE:

1. PROVIDE NEW CIRCUIT BREAKER IN THE EXISTING SPACE. THE CIRCUIT BREAKER SHORT-CIRCUIT INTERRUPTING RATING SHALL MATCH EXISTING DEVICES.

PANELBOARD "DPB"

277/480V, 3ø, 4W
225A MLO

S.C.I.=35,000A
ELEC. RM. 87

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	150	3	–	61.0	1 1/2"C. – 3#1/0 & 1#6GND.	75 KVA TRANSFORMER (PANEL "PPB")
2	25	3	–	10.0	1/2"C. – 3#12 & 1#10GND.	CAGE/RACK WASHER
3	20	1	–	2.0	1/2"C. – 2#12 & 1#12GND.	LIGHTING
4	20	1	–	3.2	1/2"C. – 2#12 & 1#12GND.	LIGHTING
5	20	1	–	3.0	1/2"C. – 2#12 & 1#12GND.	LIGHTING
6	20	1	–	2.0	3/4" – 2#10 & 1#12 GND.	SITE LIGHTING
7	20	1	–	2.0	3/4" – 2#10 & 1#12 GND.	SITE LIGHTING
8	20	3	–	10.8	1/2"C. – 3#12 & 1#12GND.	GLASS DRYER, RM. 89
9	20	3	–	3.0	1/2" C. – 3#12 & 1#12GND.	GLASS WASHER, RM. 89
10	20	1	–	2.0	1/2"C. – 2#12 & 1#12GND.	LIGHTING
11	20	3				SPARE
12		3				SPACE
13		3				SPACE
14		3				SPACE
15		1				SPACE
16		1				SPACE
17		1				SPACE
18		1				SPACE
19		1				SPACE
20		1				SPACE

PANELBOARD "DP"

120/208V, 3ø, 4W
500A MCB
W/ TVSS DEVICE

S.C.I.=22,000A
ELEC. RM. 187

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	150	3	–	40.0	2"C. – 4#1/0 & 1#6GND.	PANEL "PP1"
2	80	3	–	16.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP181"
3	80	3	–	16.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP182"
4	80	3	–	16.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP186"
5	80	3	–	16.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP192"
6	80	3	–	16.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP194"
7	40	3	–	10.0	1 1/4"C. – 4#8 & 1#10GND.	PANEL "PP196"
8	100	3	–	16.0	1 1/4"C. – 4#3 & 1#8GND.	PANEL "PP21"
9		3				SPACE
10		3				SPACE
11	60	3	–	–	INTERNAL CONNECTION	TVSS

PANELBOARD "EDPS1"

480V, 3ø, 3W
600A MLO

S.C.I.=35,000A
MAIN ELEC. RM.

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	70	3	25.0	28.0	3/4"C. – 3#8 & 1#8GND.	AHU-1
2	70	3	25.0	28.0	3/4"C. – 3#8 & 1#8GND.	AHU-2
3	30	3	(2)5.0	10.5	1/2"C. – 3#10 & 1#10GND.	RO-1 & RO-2 SYSTEM
4	450	3	–	* 305.5	(2)-(2"C., 3#4/0 & 1#2GND.)	PANEL "EDPS2"
5	60	3	–	32.0	1"C. – 3#6 & 1#10GND.	30 KVA TRANSFORMER (PANEL "EPPB")
6	③	3	–	(* 20.0)	1"C. (EMPTY)	SPACE (FOR FUTURE TRANSF., PANEL "EPP2")
7	60	3	–	*20.0	1"C. – 3#6 & 1#10GND.	30 KVA TRANSFORMER (PANEL "EPP4")
8	30	3	–	4.0	3/4"C. – 3#10 & 1#10GND.	15KVA TRANSFORMER (PANEL "EPP1")
9	50	3	15.0	17.5	3/4"C. – 3#10 & 1#10GND.	AC-1
10	20	3	–	6.5	3/4"C. – 4#12 & 1#12GND.	AIR SHOWER
11	–				(EXISTING)	HUMIDIFIER 1 & 2
12	15	3	(2)1.0	1.5	(2) – (1/2"C., 3#12 & 1#12GND.)	GAS BOOSTER PUMPS
13	80	3		47.0	2"C., 4#1/0 & 1#6GND.)	45 KVA TRANSFORMER (PANEL "EPPS")

PANELBOARD "EDPS2"

480V, 3ø, 3W
600A MLO

S.C.I.=35,000A
MECHANICAL PENTHOUSE

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	80	3	30.0	33.0	3/4"C. – 3#8 & 1#8GND.	EF-2
2	70	3	25.0	28.0	3/4"C. – 3#8 & 1#8GND.	P-3
3	400	3	–	194.0	2 1/2"C. – 3#300kcmil & 1#3GND.	CH-2
4	80	3	30	28.0	3/4"C. – 3#8 & 1#8GND.	FAN EF-19
5	70	3	25	28.0	3/4"C. – 3#8 & 1#8GND.	PUMP P-9
6		3				SPACE
7		3				SPACE
8		3				SPACE

PANELBOARD "EDPS3"

480V, 3ø, 3W
600A MLO

S.C.I.=35,000A
MECHANICAL PENTHOUSE

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	80	3	30.0	33.0	3/4"C. – 3#8 & 1#8GND.	EF-1
2	80	3	30.0	33.0	3/4"C. – 3#8 & 1#8GND.	EF-3
3	70	3	25.0	28.0	3/4"C. – 3#8 & 1#8GND.	P-1
4	70	3	25.0	28.0	3/4"C. – 3#8 & 1#8GND.	P-2
5	30	3	7.5	9.1	1/2"C. – 3#12 & 1#12GND.	P-4
6	30	3	7.5	9.1	1/2"C. – 3#12 & 1#12GND.	P-5
7	400	3	–	194.0	2 1/2"C. – 3#300kcmil & 1#3GND.	CH-1
8	80	3	30	28.0	3/4"C. – 3#8 & 1#8GND.	FAN EF-20
9	80	3	30	28.0	3/4"C. – 3#8 & 1#8GND.	FAN EF-21
10	③	3	(30)	(33.0)	–	SPACE (FOR FUTURE EQUIPMENT-EF)
11	30	3	–	2.0	1"C. – 3#10 & 1#10GND.	15 KVA TRANSFORMER (PANEL "EPPP")
12		3				SPACE
13		3				SPACE
14		3				SPACE

SCHEDULE OF PANELBOARDS

PANEL	MOUNTING	VOLTAGE	MAINS TYPE	MAINS SIZE	15/1	20/1	25/1	30/1	35/1			15/2	20/2	30/2	50/2	60/2			80/3	15/3	20/3	25/3	30/3	50/3	60/3	100/3	150/3	300/3		SPARE 20A/1P	SPACE –/1P	TOTAL POLES	S.C.I. RATING
PP181	RECESSED	120/208V, 3ø, 4W	MLO	125A		14																								6	10	30	10K
PP182	RECESSED	120/208V, 3ø, 4W	MLO	125A		14																								6	10	30	10K
PP186	RECESSED	120/208V, 3ø, 4W	MLO	125A		15																								5	10	30	10K
PP192	RECESSED	120/208V, 3ø, 4W	MLO	125A		15																								5	10	30	10K
PP194	RECESSED	120/208V, 3ø, 4W	MLO	125A		15																								5	10	30	10K
PP196	RECESSED	120/208V, 3ø, 4W	MLO	125A		11																								4	9	24	10K
PP481	RECESSED	120/208V, 3ø, 4W	MLO	100A		15																								7	8	30	10K
PP482	RECESSED	120/208V, 3ø, 4W	MLO	100A		29																								6	7	42	10K
PP486	RECESSED	120/208V, 3ø, 4W	MLO	100A		15																								7	8	30	10K
PP492	RECESSED	120/208V, 3ø, 4W	MLO	100A		13																								7	10	30	10K
PP493	RECESSED	120/208V, 3ø, 4W	MLO	100A		9																								9	12	30	10K
PP494	RECESSED	120/208V, 3ø, 4W	MLO	100A		13																								7	10	30	10K
PP496	RECESSED	120/208V, 3ø, 4W	MLO	100A		11																								9	10	30	10K
⑦ PPB	SURFACE	120/208V, 3ø, 4W	MCB	250A		37						2	2	1											2					8	11	72	10K
PP1	SURFACE	120/208V, 3ø, 4W	MLO	225A		56						2																		4	8	72	18K
MPB	SURFACE	120/208V, 3ø, 4W	MCB	150A		15							6	1																5	8	42	18K
MPP	SURFACE	120/208V, 3ø, 4W	MCB	50A		10							1	1																4	11	30	10K
⑦ EPPB	SURFACE	120/208V, 3ø, 4W	MCB	100A		31								1											1					12	24	72	10K
EPP4	SURFACE	120/208V, 3ø, 4W	MCB	100A		26								2											1					5	4	42	10K
⑦⑤ EPP1	SURFACE	120/208V, 3ø, 4W	MCB	50A		6																			1					4	11	24	10K
EPPP	SURFACE	120/208V, 3ø, 4W	MCB	50A		4																								4	10	18	10K
EDPL	SURFACE	277/480V, 3ø, 4W	MLO	125A		7														1					1					5	17 ①	42	35K
③ ELP4	SURFACE	277/480V, 3ø, 4W	MLO	100A		4																								8	9	24	35K
DP1	SURFACE	277/480V, 3ø, 4W	MLO	400A		9																						1		7	14 ①	42	35K
DP2	SURFACE	277/480V, 3ø, 4W	MLO	400A															1						1			⑧		10	11 ①	42	35K
DP4	SURFACE	277/480V, 3ø, 4W	MLO	400A		10																						1		8	12 ①	42	35K
DP5	SURFACE	277/480V, 3ø, 4W	MLO	400A		6													1	1										10	8 ①⑧	42	35K
PP41	SURFACE	120/208V, 3ø, 4W	MCB	100A		34																			1					0	4	42	10K
PP21	SURFACE	120/208V, 3ø, 4W	MLO	100A		22																								2	18	42	10K
MPP1	SURFACE	277/480V, 3ø, 4W	SEE DRAWINGS 04045.00																														
PPL1	SURFACE	120/208V, 3ø, 4W	SEE DRAWINGS 04045.00																														
PP51	SURFACE	120/208V, 3ø, 4W	MCB	150A		32								3											1					0	0	42	10K
PP22	SURFACE	120/208V, 3ø, 4W	MCB	150A		30																			1					6	3	42	10K
EPPS	SURFACE	120/208V, 3ø, 4W	MCB ④	150A		6		10						3																6	11	42	10K
EPP4A	SURFACE	120/208V, 3ø, 4W	MLO	100A		7		3						2																5	4	24	10K

PANELBOARD "DP41"

120/208V, 3ø, 4W
400A MCB
W/ TVSS DEVICE

S.C.I.=22,000A
ELEC. RM. 487

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	100	3	–	–	–	SPACE
2	80	3	–	15.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP481"
3	100	3	–	25.0	1 1/4"C. – 4#3 & 1#8GND.	PANEL "PP482"
4	80	3	–	15.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP486"
5	80	3	–	14.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP492"
6	80	3	–	13.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP494"
7	80	3	–	10.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP496"
8	80	3	–	14.0	1 1/4"C. – 4#4 & 1#8GND.	PANEL "PP493"
9	100	3	–	–	–	SPACE
10	100	3	–	–	–	SPACE
11	60	3	–	–	INTERNAL CONNECTION	TVSS

SCOPE OF WORK SHOWN ON THIS DRAWING INCLUDES BUT IS NOT LIMITED TO INFRASTRUCTURE SCOPE.

FOR NEW FEEDERS UTILIZING #2 WIRE AND LARGER: INDICATED WIRE AND CONDUIT ARE SIZED BASED ON THE COPPER WIRE MATERIAL. E.C. IS RESPONSIBLE FOR RECALCULATING AND RESIZING OF THE REQUIRED ALUMINUM WIRE AND CONDUIT, REFER TO SPECIFICATION.

PANELBOARD "MPP1"

480V, 3ø, 3W
225A MLO
SURFACE MOUNTED

S.C.I.=35,000A
MECHANICAL PENTHOUSE

CKT. NO.	CKT. BKR. AMPS	CKT. BKR. POLES	LOAD (CONN.) HP	LOAD (CONN.) KVA	FEEDER	EQUIPMENT
1	100	3	40.0	43.0	1 1/4"C. – 3#4 & 1#8GND.	AHU-5
2	80	3	30.0	33.0	1 1/4"C. – 3#6 & 1#8GND.	EF-24
3	80	3	–	45.0	1 1/4"C. – 3#4 & 1#8GND.	PANEL "PPL1" VIA 45 KVA XFMR.
4	15	3	1.5	2.2	1/2"C. – 3#12 & 1#12GND.	EF-25
5	15	3	1.5	2.2	1/2"C. – 3#12 & 1#12GND.	EF-26
6	20	3	3	3.8	1/2"C. – 3#12 & 1#12GND.	VACUUM UNIT
7		3				SPACE
8		3				SPACE
9		3				SPACE
10		3				SPACE

NOTES:

① – PROVIDE SPACE FOR (3)100A FRAME SIZE, 3 POLE CIRCUIT BREAKERS.
② – PROVIDE SPACE FOR 250A, 3 POLE CIRCUIT BREAKER.
③ – PROVIDE SPACE FOR 100A FRAME SIZE, 3 POLE CIRCUIT BREAKER.
④ – PROVIDE SHUNT TRIP, 120V COIL.
⑤ – PROVIDE PANEL WITH ISOLATED GROUND BUS.
⑥ – PROVIDE SPACE FOR 200A, 3 POLE CIRCUIT BREAKER.
⑦ – PROVIDE PANEL WITH TVSS DEVICE.
⑧ – PROVIDE SPACE FOR 300A, 3 POLE CIRCUIT BREAKER.

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UNIVERSITY OF SOUTHERN MAINE

UNIVERSITY OF SOUTHERN MAINE BIO-SCIENCES

70 FALMOUTH STREET
PORTLAND, MAINE

MARK:	DATE:	DESCRIPTION:
	6.18.2012	CONSTRUCTION DOCUMENTS
	4.30.2012	OWNER REVIEW SET
	3.21.2012	DESIGN DEVELOPMENT

ISSUE LOG

△ = CLOUDED CHANGE

SCALE	N.T.S.
DRAWN BY	MJB
CHECK BY	MJB
PROJ.ARCH./ENGR.	DJO
PROJ. MRG.	RCH
JOB NO.	11082.01

PANELBOARD SCHEDULES

E8.01