STATE OF CONNECTICUT

DANNEL P. MALLOY, GOVERNOR

DEPARTMENT OF CONSTRUCTION SERVICES
DONALD DEFRONZO
ACTING COMMISSIONER

SOUTHERN CONNECTICUT STATE UNIVERSITY
MARY A. PAPAZIAN
PRESIDENT

SCSU NEW ACADEMIC LABORATORY BUILDING

SOUTHERN CONNECTICUT STATE UNIVERSITY

485 FITCH STREET
NEW HAVEN, CONNECTICUT

PROJECT NO. BI-RS-283

BID DOCUMENTS
NOVEMBER 21, 2012

VOLUME 2 OF 2

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SITE PLAN

LOCATION PLAN

APPROVALS

PUBLIC WORKS DATE

AGENCY DATE

GENERAL NOTES:

1. DIMENSIONS SHOWN ON ARCHITECTURAL FLOOR PLANS AND ENLARGED PLAN DETAILS ARE TO FACE OF STUD, TO FACE OF MASONRY OR TO CENTER LINE OF COLUMN UNLESS OTHERWISE NOTED.
2. DO NOT SCALE OR MEASURE THESE DRAWINGS. REFER TO WRITTEN DIMENSIONS, NOTES AND DETAILS ON THE DRAWINGS TO LOCATE WALLS, CASEWORK AND EQUIPMENT. VERIFY THE FIGURES, DIMENSIONS AND DESIGN INTENTION SHOWN ON THE DRAWINGS BEFORE BEGINNING LAYOUT OF THE WORK, AND REPORT ANY ERRORS, INACCURACIES, MISSING DIMENSIONAL REQUIREMENTS OR CONFLICTS TO THE ARCHITECT IN WRITING BEFORE BEGINNING THE WORK. VERIFY THE PARTITION LAYOUT SHOWN IN THE FIELD WITH THE ARCHITECT BEFORE BEGINNING PARTITION WORK.
3. THE CONTRACTOR SHALL COORDINATE INSTALLATION DIMENSIONS OF FRAMED OPENINGS FOR ALL BUILT-IN ITEMS, INCLUDING EQUIPMENT, FIXTURES, SIGNAGE AND FURNITURE BASED ON THE ACTUAL ITEMS SELECTED BY THE ARCHITECT AND ENGINEERS.
4. REFER TO ROOM FINISH SCHEDULE FOR FINISH MATERIAL AND SUBSTRATE.
5. REFER TO CODE PLANS AND PARTITION LEGEND FOR WALL RATINGS TO BE PROVIDED. ALL PENETRATIONS THROUGH RATED WALLS SHALL HAVE A RATING EQUAL TO THAT OF THE WALL.
6. CONSTRUCTION MANAGER TO PROVIDE ALIGNMENTS SHOWN IN THE DRAWINGS. IF THE DIMENSIONS SHOWN CONFLICT WITH GRAPHIC ALIGNMENTS AND DESIGN INTENT DEMONSTRATED IN THE DRAWINGS, REVIEW THE DIMENSIONS WITH ARCHITECT PRIOR TO PROCEEDING.
7. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, LAWS AND STATUTES AS REQUIRED. REFER TO SPECICATIONS SECTION 01 42 20 REFERENCE STANDARDS AND DEFINITIONS.
8. STRICTLY ADHERE TO MANUFACTURER'S PRINTED INSTRUCTIONS
9. VERIFY ALL CHANGES TO THE WORK IN WRITING WITH THE ARCHITECT AND OWNER BEFORE BEGINNING RELATED WORK.
10. PROTECT EXISTING SPECIMEN TREES AND SHRUBS TO REMAIN. DISTURB ONLY THOSE AREAS OF THE SITE AFFECTED BY NEW CONSTRUCTION. UNLESS NOTED OTHERWISE, PROTECT ALL OTHER AREAS.
11. PROVED POSITIVE DRAINAGE AWAY FROM THE BUILDING PERIMETER MINIMUM 1/4" PER FOOT.
12. EXACT LOCATIONS AND MOUNTING HEIGHTS OF SWITCHES, THERMOSTATS, BOXES, PLATES, RECEPTACLES, ETC. SHALL BE LOCATED PER THOSE DESIGNATED ON A701. IT IS THE INTENTION OF THE ARCHITECT TO GROUP, ORGANIZE AND ALIGN ALL THE ABOVE-LISTED DEVICES TO THE GREATEST EXTENT POSSIBLE. DO NOT INSTALL DEVICES IN QUESTION PRIOR TO FIELD REVIEW WITH THE ARCHITECT.
13. PITCH SLABS (AND OTHER FLOORS) TO FLOOR DRAINS, AS INDICATED ON PLANS.
14. WHERE THERE IS A CONFLICT BETWEEN THE REFLECTED CEILING PLAN AND LOCATION OF FIXTURES AND DEVICES IN MECHANICAL, ELECTRICAL AND PLUMBING DRAWING, THE ARCHITECTURAL REFLECTED CEILING PLAN SHALL GOVERN.

15 1.BASE INFORMATION IS TAKEN FROM AVAILABLE SURVEY PLANS PREPARED BY MILONE AND MACBROOM FOR THIS PROJECT. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF NEW WORK. BVH INTEGRATED SERVICES ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE SURVEY NOR CHANGES TO THE WORK DUE TO ERROR IN THE SURVEY. 1.BASE INFORMATION IS TAKEN FROM AVAILABLE SURVEY PLANS PREPARED BY MILONE AND MACBROOM FOR THIS PROJECT. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF NEW WORK. BVH INTEGRATED SERVICES ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE SURVEY NOR CHANGES TO THE WORK DUE TO ERROR IN THE SURVEY.

16 PRIOR TO COMMENCING CONSTRUCTION NOTIFY "CALL BEFORE YOU DIG" (1-800-922-4455) FOR FIELD LOCATION AND MARKING OF SUBSURFACE UTILITIES AT LEAST 48 HOURS IN ADVANCE BUT NO MORE THAN 30 DAYS. THE CONTRACTOR SHALL ALSO OBTAIN THE SERVICES OF A QUALIFIED UNDERGROUND UTILITY LOCATION FIRM, AT NO COST TO THE OWNER, TO VERIFY LOCATIONS OF UNDERGROUND UTILITIES NOT IDENTIFIED BY "CALL BEFORE YOU DIG".

17 ALL CONSTRUCTION METHODS SHALL CONFORM TO THE DRAWINGS AND SPECIFICATIONS AND ANY REFERENCED STANDARDS SUCH AS BUT NOT LIMITED TO THE FOLLOWING:

A.THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION (FORM 816, AS AMENDED).

B.MATERIAL AND INSTALLATION SPECIFICATIONS OF EACH UTILITY COMPANY.

C.SPECIFIC CITY OF NEW HAVEN REQUIREMENTS.

D.CSUS SPECIFICATIONS AND REQUIREMENTS.

ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND SPECIFICATIONS AND REFERENCED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

18 PROVIDE ALL NECESSARY SURVEY WORK REQUIRED FOR THE CONSTRUCTION STAKE-OUT AND PRODUCTION OF AS-BUILT PLANS. AS-BUILT PLANS SHALL SHOW LOCATION AND ELEVATION OF CONSTRUCTED STRUCTURES, EQUIPMENT, PIPING AND CONDUITS. CONTRACTOR TO PROVIDE RECORD DRAWINGS TO THE OWNER AT THE END OF THE PROJECT. REFER TO GENERAL CONDITIONS OF SPECIFICATIONS FOR REQUIREMENTS.

19 OBTAIN ALL NECESSARY PERMITS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

20 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP THE CONSTRUCTION SCHEDULE AND PHASING, COORDINATE ALL ACTIVITIES WITH THE STATE OF CONNECTICUT AND THE CITY OF NEW HAVEN AND NOTIFY ADJACENT PROPERTY OWNERS, AS REQUIRED. NOTIFY NECESSARY PARTIES AT LEAST 5 DAYS IN ADVANCE.

21 ALL EXISTING SITE UTILITIES WHICH ARE NOT INDICATED ON PLANS SHALL NOT BE INTERRUPTED FROM CONTINUOUS SERVICE. CONTRACTOR TO NOTIFY ENGINEER OF ANY CONFLICTS OR CONCERNS. EXISTING UTILITIES TO REMAIN ARE TO BE PROTECTED DURING CONSTRUCTION.

22 ESTABLISH AND MAINTAIN AT LEAST TWO BENCHMARKS ON SITE FOR VERTICAL AND HORIZONTAL CONTROL.

23 SAFETY ISSUES & HOURS OF OPERATION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE COORDINATED & APPROVED BY THE OWNER.

ABBREVIATIONS:

2LN	SECOND LEVEL NORTH WING
2LS	SECOND LEVEL SOUTH WING
3LN	THIRD LEVEL NORTH WING
3LS	THIRD LEVEL SOUTH WING
@	AT
A/C	AIR CONDITIONING ACCESS
AB	ANCHOR BOLT
ABV	ABOVE
AC	ACOUSTICAL
ACC	ACCESS
ACFL	ACCESS FLOOR
ACP	ACOUSTICAL CEILING PANEL
ACR	ACRYLIC PLASTER
ACT	ACOUSTICAL TILE
AD	AREA DRAIN
ADD	ADDENDUM
ADH	ADHESIVE
ADJ	ADJUSTABLE
ADJT	ADJACENT
AFF	ABOVE FINISH FLOOR
AGG	AGGREGATE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
ANC	ANCHORAGE
ANOD	ANODIZED
AP	ACCESS PANEL
APPROX	APPROXIMATE
APT	APARTMENT
ARCH	ARCHITECTURAL
ASB	ASBESTOS
ASC	ABOVE SUSPENDING CEILING
ASPH	ASPHALT
AT	ASPHALT TILE
AUTO	AUTOMATIC
AV	AUDIO VISUAL
AWP	ACOUSTICAL WALL PANEL
BBD	BULLETIN BOARD
BBR	BASEBOARD RADIATION
BD	BOARD
BEL	BELOW
BIT	BITUMINOUS
BJT	BED JOINT
BLDG	BUILDING
BLK(G)	BLOCKING
BLST	BLUESTONE
BM	BEAM
BMK	BENCH MARK
BO	BY OWNER
BOT	BOTTOM
BP	BACK PLASTERED
BPL	BEARING PLATE
BRK	BRICK
BRZ	BRONZE
BS	BOTH SIDES
BSMT	BASEMENT
BTWN	BETWEEN
BUR	BUILT UP ROOF
BVL	BEVELED
BW	BOTH WAYS
CAB	CABINET
CAD	CADMIUM
CB	CATCH BASIN
CEM	CEMENT
CF	CUBIC FOOT
CFL	COUNTERFLASHING
CG	CORNER GUARD
CHAM	CHAMFER
CHBD	CHALKBOARD
CHT	CEILING HEIGHT
CI	CAST IRON
CIP	CAST-IN-PLACE
CIPC	CAST-IN-PLACE CONCRETE
CIR	CIRCLE
CIRC	CIRCUMFERENCE
CJT	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLK(G)	CAULK(ING)
CLL	CONTRACT LIMIT LINE
CLR	CLEAR
CLS	CLOSURE
CMT	CERAMIC MOSAIC TILE
CMU	CERAMIC MASONRY UNIT
COL	COLUMN
COMB	COMBINATION
COMP	COMPRESS(ED)(ION)(IBLE)
COMPO	COMPOSITE, COMPOSTION
COMPT	COMPARTMENT
CONC	CONCRETE
CONF	CONFERENCE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COR	CORRUGATED
CORR	CORRIDOR
CPG	COPING
CPR	COPPER
CPT	CARPET
CR	CHROMIUM PLATED
CRG	CROSS GRAIN
CRS	COURSE(S)
CS	COUNTERSINK
CSMT	CASEMENT
CST	CAST STONE
CT	CERAMIC TILE
CTHK	COATHOOK
CTR	COUNTER
CTSK	COUNTERSUNK SCREW
CW	CURTAIN WALL
CX	CONNECTION
CY	CUBIC YARD
D	DRAIN
DA	DOUBLEACTING
DEM	DEMOLISH, DEMOLITION
DEP	DEPRESSED
DET	DETAIL
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DIAG	DIAGONAL
DIAM	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DL	DEAD LOAD
DMPR	DAMPER
DMT	DEMOUNTABLE
DN	DOWN
DP	DAMPPROOFING
DPL	DISPOSAL
DPR	DISPENSER
DR	DOOR
DRB	DRAINBOARD
DS	DOWNSPOUT
DT	DRAIN TILE
DTA	DOVETAIL ANCHOR
DTS	DOVETAIL ANCHOR SLOT
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
DWTR	DUMBWAITER
E	EAST
EA	EACH
EB	EXPANSION BOLT
EF	EXHAUST FAN
EJT	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMER	EMERGENCY
EMI	ELECTROMAGNETIC INTERFERENCE
ENCL	ENCLOSURE
EPBD	ELECTRIC PANELBOARD
EPS	EXTERIOR PAINT SYSTEM
EQ	EQUAL
EQPT	EQUIPMENT
ESCL	ESCALATOR
ESTM	ESTIMATE
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EXCA	EXCAVATE
EXG	EXISTING
EXH	EXHAUST
EXMP	EXPANDED METAL PLATE
EXP	EXPOSED
EXS	EXTRA STRONG
EXT	EXTERIOR
FA	FIRE ALARM
FAI	FRESH AIR INTAKE
FAS	FASTENER
FB	FACE BRICK
FBD	FIBERBOARD
FBO	FURNISHED BY OTHERS
FBRK	FIRE BRICK
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FACTORY FINISH
FFE	FINISHED FLOOR ELEVATION
FFL	FINISHED FLOOR LINE
FG	FIXED GLASS
FGL	FIBERGLASS
FHMS	FLATHEAD MACHINE SCREW
FHS	FIRE HOSE STATION
FHWS	FLATHEAD WOOD SCREW
FIN	FINISH(ED)
FIXT	FIXTURE
FJT	FLUSH JOINT
FLCO	FLOOR CLEANOUT
FLG	FLASHING
FLR	FLOOR
FLUR	FLUORESCENT
FLX	FLEXIBLE
FN	FENCE
FNDN	FOUNDATION
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FP	FIRE PROTECTION
FP(G)	FIREPROOF(ING)
FPL	FLOOR PLATE
FR	FRAME(D)(ED)
FRC	FIRE-RESISTANT COATING
FRGD	FORGED
FRPL	FIREPLACE
FRT	FIRE RETARDANT TREATED
FS	FULL SIZE
FTG	FOOTING
FURR	FURRED, FURRING
FUT	FUTURE
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GF	GROUND FACE
GI	GALVANIZED IRON
GKT	GASKET
GL	GLASS, GLAZIING
GLB	GLASS BLOCK
GLF	GLASS FIBER
GLN	GROUND LEVEL NORTH WING
GLS	GROUND LEVEL SOUTH WING
GP	GALVANIZED PIPE
GPL	GYPSUM LATH
GPPL	GYPSUM PLASTER
GPT	GYPSUM TILE
GRD	GRADE, GRADING
GRN	GRANITE
GRPG	GLASS REINFORCED POLYMERIZED GYPSUM
GSS	GALVANIZED SHEET STEEL
GST	GLAZED STRUCTURAL TILE
GT	GROUT
GVL	GRAVEL
GWB	GYPSUM WALLBOARD
GYP	GYPSUM
H/C	HANDICAP(PED)
HB	HOSE BIB
HBD	HARDBOARD
HC	HOLLOW CORE
HD	HEAVY DUTY
HDNR	HARDNER
HDR	HEADER
HDWR	HARDWARE
HES	HIGH EARLY STRENGTH CEMENT
HH	HANDHOLE
HJT	HEADJOINT
HK(S)	HOOK(S)
HM	HOLLOW METAL
HORZ	HORIZONTAL
HPT	HIGH POINT
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWD	HARDWOOD
HWH	HOT WATER HEATER
HX	HEXAGONAL
ID	INSIDE DIAMETER
IGF	INTERIOR GLAZED FRAMES
IGU	INSULATED GLASS UNIT
ILK	INTERLOCK
INCIN	INCINERATOR
INCL	INCLUDE(D), INCLUDING
INS	INSULATE, INSULATION
INSC	INSULATING, INSULATION
INSF	INSULATING FILL
INT	INTERIOR
INTM	INTERMEDIATE
INV	INVERT
IPS	INTERIOR PAINT SYSTEM
JC	JANITOR CLOSET
JF	JOINT FILLER
JST	JOIST
JT	JOINT
KIT	KITCHEN
KO	KNOCKOUT
KPL	KICKPLATE
L	LENGTH
LAB	LABORATORY
LAD	LADDER
LAM	LAMINATE (D)
LAV	LAVATORY
LB	LAG BOLT
LBL	LABEL
LC	LIGHT CONTROL
LCC	LEAD COATED COPPER
LF	LINEAR FOOT
LH	LEFT HAND
LL	LIVE LOAD
LLN	LOWER LEVEL NORTH WING
LLS	LOWER LEVEL SOUTH WING
LMS	LIMESTONE
LPT	LOW POINT
LT	LIGHT
LTL	LINTEL
LVR	LOUVER
LW	LIGHT WEIGHT
LWC	LIGHT WEIGHT CONCRETE
LWF	LIGHT WEIGHT FILL
M	METER(S)
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MBR	MEMBER
MC	MEDICINE CABINET
MECH	MECHANICAL
MED	MEDIUM
MEP	MECHANICAL ELECTRICAL AND PLUMBING
MFD	METAL FLOOR DECKING
MFR	MANUFACTURER
MH	MANHOLE
MI	MALLEABLE IRON
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MLDG	MOLDING, MOULDING
MM	MILLIMETER(S)
MMA	MISC METAL ACCESSORY
MO	MASONRY OPENING
MOD	MODEL
MODU	MODULAR
MOV	MOVABLE
MR	MOP RECEPTOR
MR GWB	MOISTURE RESISTANT GWB
MT(D)	MOUNT(ED)
MTHR	METAL THRESHOLD
MTL	METAL
MULL	MULLION
MWK	MILLWORK
N	NORTH
NAT	NATURAL
NCX	NONCOMBUSTIBLE EXTERIOR
NGVD	NATIONAL GEOGRAPHICAL VERTICAL DATA
NI	NICKEL
NIC	NOT IN CONTRACT
NL	NAILABLE
NNT	NONMETALLIC
NOM	NOMINAL
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
OA	OVERALL
OBS	OBSCURE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OHMS	OVALHEAD MACHINE SCREW
OHWS	OVALHEAD WOOD SCREW
OJ	OPEN-WEB JOIST(S)
OP	OPAQUE
OPN	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPS	OPPOSITE SURFACE
PAR	PARALLEL
PB	PANIC BAR
PBD	PARTICLE BOARD
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PE	PORCELAIN ENAMEL
PERF	PERFORATED(D)
PERI	PERIMETER
PFB	PREFABRICATED
PG	PLATE GLASS
PJ	PANEL JOINT
PK	PARKING
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLF	POUNDS PER LINEAR FOOT
PLT	PLATE
PNL	PANEL
PNT(D)	PAINT(ED)
POLY	POLYETHYLENE
PR	PAIR
PRF	PREFORMED
PRN	PREFINISH
PSC	PRESTRESSED CONCRETE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTC	POST TENSIONED CONCRETE
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
PTR	PAPER TOWEL RECEPTOR
PVC	POLYVINYL CHLORIDE
PVG	PAVING
PVMT	PAVEMENT
PWD	PLYWOOD
QT	QUARREY TILE
R	RISER
RA	RETURN AIR
RAD	RADIUS
RAG	RETURN AIR GRILLE
RAI	REMOTE ALARM INDICATOR
RB	RUBBER BASE
RBS	RUBBLE STONE
RBT	RABBET
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
RE	REINFORCE(D), REINFORCING
REF	REFERENCE
REG	REGISTER
REGD	REQUIRED
REM	REMOVE
REQA	REQUIREMENTS
RES	RESILIENT
RET	RETURN
RETG	RETAINING
REV	REVISION
RF	RADIO FREQUENCY
RFG	ROOFING
RFH	ROOF HATCH
RFL	REFLECT(ED)(IVE)(OR)
RH	RIGHT HAND
RL	RAIL(ING)
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RT	RUBBER TILE
RTF	RESILIENT TILE FLOOR
RTG	RATING
RV	ROOF VENT
RVS	REVERSE SIDE
RVT	RIVET
RWC	RAINWATER CONDUCTOR
RWL	RAINWATER LEADER
S	SOUTH
SAB	SOUND ATTENUATION BATT
SC	SOLID CORE
SCH	SCHEDULE
SCN	SCREEN
SCT	STRUCTURAL CLAY TILE
SD	STORM DRAIN
SECT	SECTION
SF	SQUARE FOOT
SFGL	SAFETY GLASS
SG	SHEET GLASS
SH	SHELF, SHELVING
SHO	SHORE, SHORING
SHT	SHEET
SHTH	SHEATHING
SIM	SIMILAR
SKLT	SKYLIGHT
SL	SLEEVE
SLNT	SEALANT
SP	SOUNDPROOF
SPC	SPACER
SPEC(S)	SPECIFICATION(S)
SPKR	SPEAKER
SPL	SPECIAL
SQ	SQUARE
SSG	STRUCTURAL SILICONE GLAZED
SSK	SERVICE SINK
SSTL	STAINLESS STEEL
ST	STAIN
STA	STATION
STD	STANDARD
STG	SEATING
STL	STEEL
STN	STONE
STOR	STORAGE
STR	STRUCTURAL
SUS	SUSPEND(ED)
SYM	SYMMETRICAL
SYN	SYNTHETIC
SYS	SYSTEM
T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T.O.	TOP OF
TB	TOWEL BAR
TC	TERRA COTTA
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICK(NESS)
THR	THRESHOLD
TKBD	TACKBOARD
TKS	TACKSTRIP
TMPD	TEMPERED
TOC	TOP OF CURB
TOL	TOLERANCE
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TACK PANEL
TPD	TOILET PAPER DISPENSER
TPL	TOP OF PLATE
TPTN	TOILET PARTITION
TR	TRANSOM
TSL	TOP OF SLAB
TV	TELEVISION
TW	TOP OF WALL
TYP	TYPICAL
UC	UNDERCUT
UGD	UNDERGROUND
UNF	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
VAR	VARNISH
VB	VAPOR BARRIER
VC	VIBRATION CRITERION
VCT	VINYL COMPOSITION TILE
VERT	VETICAL
VF	VINYL FABRIC
VG	VERTICLE GRAIN
VGD	VARIABLE GEOMETRY DISCHARGE
VIF	VERIFY IN FIELD
VIN	VINYL
VJ	V-JOINTED
VNB	VINYL BASE
VNR	VENEER
VRM	VERMICULITE
VT	VINYL TILE
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET
WD	WOOD
WG	WIRE GLASS
WH	WALL HUNG
WHB	WHEEL BUMPER
WI	WROUGHT IRON
WIN	WINDOW
WM	WIRE MESH
WP	WATERPROOFING
WPT	WORKING POINT
WR	WASTE RECEPTACLE
WRP	WATER REPELLANT
WS	WATERSTOP
WS	WEATHER STRIP
WSCT	WAINSCOT
WTW	WALL TO WALL
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
ZOL	ZOLATONE

MATERIALS:

- EARTH
- GRAVEL
- CAST-IN-PLACE CONCRETE
- CONCRETE MASONRY UNIT
- BRICK WALL
- STONE
- SAND, MORTAR, PLASTER
- WOOD (ROUGH)
- WOOD (FINISH)
- PLYWOOD
- PARTICLE BOARD
- METAL (LARGE SCALE)
- BATT INSULATION
- RIGID INSULATION
- GYPSUM WALLBOARD
- SPRAY FOAM INSULATION
- PRECAST CONCRETE
- SPRAY FIRE PROOFING

SYMBOLS:

- + 368' — NEW SPOT ELEVATION
- + 368' — EXISTING SPOT ELEVATION
- 370 — NEW CONTOURS
- 370 — EXISTING CONTOURS
- ELEVATION LINE
- 206 — ROOM NUMBER
- 101A — DOOR NUMBER
- 2 — REVISION
- A — EXTERIOR WINDOW TYPE
- G3 / A3.1 — BUILDING SECTION
- L5 / A9.1 — WALL SECTION
- J4 / A5.1 — DETAIL REFERENCE
- N / W / E / S, G4 / A6.2 — INTERIOR ELEVATION REFERENCE
- C8 / A9.1 — DETAIL NUMBER; SHEET WHERE DETAIL APPEARS
- G6 / A3.1 — EXTERIOR ELEVATION

DRAWING LIST:

VOLUME 1

General
. COVER SHEET - Volume 1
G001 GENERAL INFORMATION
G002 PERMIT CHECKLIST
G100 CODE INFORMATION
G101 LOWER LEVEL CODE PLAN
G102 GROUND FLOOR CODE PLAN
G103 SECOND FLOOR CODE PLAN
G104 THIRD FLOOR CODE PLAN
G105 FOURTH FLOOR MECHANICAL ATTIC CODE PLAN
G106 ROOF CODE PLAN
G112 GROUND FLOOR STRUCTURE FIRE RATINGS
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MEPT ABBREVIATIONS

A	GENERAL SERVICE COMPRESSED AIR
a	48" ABOVE FINISHED FLOOR
A/AMP	AMPERE
AC	ACETYLENE
AC	AIR COMPRESSOR
AC	ALTERNATING CURRENT
ACD	AUTOMATIC COOLING CONDENSATE PUMP
ACF	AIRFLOW CENTRIFUGAL FAN
ACU	AIR CONDITIONING UNIT(S)
AD	ACCESS DOOR
AD	AREA DRAIN
AF	ARC FAULT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CURRENT
AMB	AMBIENT
ANN	ANNUNCIATOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APD	AIR PRESSURE DROP
APPROX	APPROXIMATE
AR	ARGON
ARV	AXIAL ROOF VENTILATOR
AS	AIR SEPARATOR
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AV	ACID VENT (CHEMICAL)
AVG	AVERAGE
AVTR	ACID VENT THRU ROOF
AW	ACID WASTE
AWG	AMERICAN WIRE GAUGE
AWT	AVERAGE WATER TEMPERATURE

b	42" ABOVE FINISHED FLOOR
BCT	BONDING CONDUCTOR FOR TELECOMMUNICATIONS
BDD	BACK DRAFT DAMPER
BHP	BRAKE HORSEPOWER
BICF	BACKWARD INCLINED CENTRIFUGAL FAN
BICSI	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
BMS	BUILDING MANAGEMENT SYSTEM
BNC	BAYONET NEIL-CONCELMAN
BSMT	BASEMENT
BTU	BRITISH THERMAL UNITS

C	CONDUIT(S)
c	CEILING
C/B	CIRCUIT BREAKER
CAT	CATEGORY ETHERNET CABLE
CATV	COMMUNITY ANTENNA TELEVISION
CC	COOLING COIL
CCTV	CLOSED CIRCUIT TELEVISION
CER/CEG	CEILING EXHAUST REGISTER/GRILLE
CFM	CUBIC FEET PER MINUTE
CFP	CHEMICAL FEED PUMPS
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPY
CI	CAST IRON
CKT	CIRCUIT
CLG	CEILING
CLGWTR	COOLING WATER
CLPS	CLEAN LOW PRESSURE STEAM
CMPS	CLEAN MEDIUM PRESSURE STEAM
CMV	CEILING MOUNTED VENTILATOR
CO	CLEANOUT
CO2	CARBON DIOXIDE
COAX	COAXIAL CABLING
COMP	COMPRESSOR
COND	CONDENSER
CONV	CONVECTOR
COP	COPPER CABLING
CP	CONDENSATE PUMP
CPU	CENTRAL PROCESSING UNIT
CRU	COMPUTER ROOM UNIT
CRV	CENTRIFUGAL ROOF VENTILATOR
CSG	CLEAN STEAM GENERATOR
CT	CABLE TRAY
CT	COOLING TOWER
CT	CURRENT TRANSFORMER
CU	CONDENSING UNIT
CU FT	CUBIC FEET
CUH	CABINET UNIT HEATER
CV	COEFFICIENT, VALVE FLOW
CV	CONSTANT VOLUME
CVP	CEILING VIDEO PRESENTATION
CW	COLD WATER
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWV	CENTRIFUGAL WALL VENTILATOR

D	DATA
D	DEPTH
DA	DISTRIBUTER A
DB	DISTRIBUTER B
DB	DRY BULB TEMPERATURE
dB	DECIBLE
DC	DIRECT CURRENT
DC	DISTRIBUTER C
DCV	DOUBLE CHECK VALVE
DE	DEIONIZED PROCESS WATER
DEG or °	DEGREE
DEMARC	DEMARCATION
DET	DOMESTIC EXPANSION TANK (PLUMBING)
DI	DISTILLED WATER
DIA or Ø	DIAMETER
DN	DOWN
DP	DIFFERENTIAL PRESSURE
DSA	DUCT SOUND ATTENUATOR
DWBP	DOMESTIC WATER BOOSTER PUMP

MEPT ABBREVIATIONS

DWG	DRAWING
DX	DIRECT EXPANSION

EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EBR	ELECTRIC BASEBOARD RADIATION
EDR	EQUIVALENT DIRECT RADIATION
EF	ENTRANCE FACILITY
EF	EXHAUST FAN
EFF	EFFICIENCY
EHC	ELECTRICAL HEATING CABLES
EIA	ELECTRONICS INDUSTRIES ALLIANCE
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EM/NL	EMERGENCY/NIGHT LIGHT WALK-THRU
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
ER	EQUIPMENT ROOM
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK (HVAC)
ETP	ELECTRIC TRAP PRIMER
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR
EWB	ENTERING WET BULB TEMPERATURE
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING EQUIPMENT TO REMAIN INTACT
EXH	EXHAUST
EXP	EXPANSION

F	FAHRENHEIT
FA	FIRE ALARM
FC	FOOT CANDLE
FCCF	FORWARD CURVE CENTRIFUGAL FAN
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FD	FLOOR DRAIN
FD/SB	FIRE DAMPER WITH INTEGRAL SECURITY BARS
FDC	FIRE DEPARTMENT CONNECTION
FDV	FIRE DEPARTMENT VALVE
FHC	FIRE HOSE CABINET
FM	FLOW METER
FMC	FLEXIBLE METALLIC TUBING
FOB	FLAT ON BOTTOM
FOF	FUEL OIL FILL
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FLAT ON TOP
FOV	FUEL OIL VENT
FP	FIRE PUMP
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRE	FREEZER
FS	FLOOR SINK
FT	FOOT OR FEET
FVC	FIRE VALVE CABINET

G	GAS
GA	GAUGE
GAL	GALLONS
GCC	GRAVITY COOLING CONDENSATE
GE	GROUNDING EQUALIZER
GEC	GROUNDING ELECTRODE CONDUCTOR
GF	GROUND FAULT
GND	GROUND
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRAINS
GWH	GAS WATER HEATER

H	HEIGHT
H/C	HEATING/COOLING
HC	HEATING COIL
HC	HORIZONTAL CROSS-CONNECT
HD	HEAD
HDCP	HANDICAP
HE	HELIUM
HP	HORSEPOWER
HPC	HIGH PRESSURE CONDENSATE
HPS	HIGH PRESSURE SODIUM
HPS	HIGH PRESSURE STEAM
HR	HOUR(S)
HT	HEAT
HTHW	HIGH TEMPERATURE HOT WATER
HTHWR	HIGH TEMPERATURE HOT WATER RETURN
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY
HTR	HEATER
HUM	HUMIDIFIER
HV	HEATING/VENTILATION UNIT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER
HWR	HOT WATER RETURN
HWRP	HOT WATER RETURN PUMP
HWRR	HOT WATER REVERSE RETURN
HWS	HOT WATER SUPPLY
HX	HEAT EXCHANGER
HZ	FREQUENCY (CYCLES PER SECOND)

IC	INTERMEDIATE CROSS-CONNECT
ICF	IN-LINE CENTRIFUGAL FAN
ID	INSIDE DIAMETER
IDC	INSULATION DISPLACEMENT CONNECTOR
IEF	IN-LINE EXHAUST FAN
IG	ISOLATE GROUND
IG	ISOLATED GROUND
IN	INCHES
IN WG	INCHES OF WATER, GAUGE (PRESSURE)
IW	INDIRECT WASTE

MEPT ABBREVIATIONS

JB	JUNCTION BOX
JP	JOCKEY PUMP

KVA	KILOVOLT AMPERE
KW	KILOWATT

L	LENGTH
L/LS	LOCAL SOUND SPEAKER
LA	LABORATORY COMPRESSED AIR
LAN	LOCAL AREA NETWORK
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LCW	LABORATORY COLD WATER
LF	LINEAR FEET
LG	LABORATORY GAS
LHW	LABORATORY HOT WATER
LHWR	LABORATORY HOT WATER RECIRCULATING
LIQ	LIQUID
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LV	LABORATORY VACUUM
LVP	LOW VIDEO PRESENTATION
LWT	LEAVING WATER TEMPERATURE

MA	MEDICAL COMPRESSED AIR
MA	MILLIAMPERE
MA	MIXED AIR
MAGP	MASTER ALARM GAS PANEL
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MC	MAIN CROSS-CONNECT
MC	METAL CLAD CABLE
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MFF	MIXED FLOW FAN
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MM	MULTI-MODE
MM	MULTI-MODE FIBER
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MUAU	MAKE UP AIR UNIT
MV	MEDICAL VACUUM

N	NITROGEN
N2O	NITROUS OXIDE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NL	NEW LOCATION OF RELOCATED EQUIPMENT
NL	NIGHT LIGHT WALK-THRU
NTS	NOT TO SCALE

O	OXYGEN
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
OF	OPTICAL FIBER
ORD	OVERFLOW ROOF DRAIN
ORWL	OVERFLOW RAIN WATER LEADER

P	POLE
PA	PUBLIC ADDRESS
PBX	PRIVATE BRANCH EXCHANGE
PCD	PUMPED CONDENSATE DRAIN (COOLING)
PCR	PUMPED CONDENSATE RETURN (DRAIN)
PD	PRESSURE DROP
PE	PRIMARY ELECTRIC SERVICE
PF	POWER FACTOR
PF	PROPELLOR FAN
PH / Ø	PHASE
PIV	POST INDICATOR VALVE
PLEF	PLENUM FAN
PLUF	PLUG FAN
PNL	PANELBOARD
POE	POWER OVER ETHERNET
PP	PATCH PANEL
PR	PAIR
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE

QTY	QUANTITY

RA	RETURN AIR
RAF	RETURN AIR FAN
RD	ROOF DRAIN
REF	REFRIGERANT PIPING (MULTIPLE PIPES)
REF	ROOF EXHAUST FAN
REG	REGISTER
RF	RELIEF FAN
RGS	RIGID GALVANIZED STEEL CONDUIT
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RHG	REFRIGERANT HOT GAS
RM	ROOM
RMS	ROOT MEAN SQUARED
RO	REVERSE OSMOSIS WATER
ROR	REVERSE OSMOSIS RETURN WATER
ROS	REVERSE OSMOSIS SUPPLY WATER
RPD	REDUCED PRESSURE DEVICE
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
RU	RACK UNIT
RV	RADON VENT
RWL	RAIN WATER LEADER

S	SLEEVE(S)

MEPT ABBREVIATIONS

S	SOIL
S&R	SUPPLY AND RETURN
SA	SUPPLY AIR
SAC	SHOP AIR COMPRESSOR
SCC	SPRINKLER CONTROL CABINET
SCP	STEAM CONDENSATE PUMP
SD	SMOKE DAMPER
SE	SECONDARY ELECTRIC SERVICE
SEP	SEWAGE EJECTOR PUMP
SG	STEAM GENERATOR
SM	SINGLE-MODE FIBER
SP	STANDPIPE
SP	STATIC PRESSURE
SP	SUMP PUMP
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPK	SPRINKLER
SPK/SP	COMBINED SPRINKLER/STANDPIPE
SPST	SINGLE POLE SINGLE THROW
SQ	SQUARE
SS	STAINLESS STEEL
ST	STORM
STD	STANDARD
STP	SHIELDED TWISTED PAIR
SUCT	SUCTION
SW	SWITCH
SWBD	SWITCHBOARD
SWH	STEAM WATER HEATER

T'STAT	THERMOSTAT
TAF	TUBEAXIAL FAN
TAG	IDENTIFICATION OF EQUIPMENT
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TD	TEMPERATURE DIFFERENCE
TE	TELECOMMUNICATIONS ENCLOSURE
TEBC	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TEL	TELECOMMUNICATIONS SERVICE
TEMP	TEMPERATURE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TMV	THERMOSTATIC MIXING VALVE
TP	TAMPERPROOF
TP	TRAP PRIMER
TR	TELECOMMUNICATIONS ROOM
TS	TELEPHONE SERVICE
TSP	TOTAL STATIC PRESSURE
TV	TELEVISION
TVS	TRANSIENT VOLTAGE SUPPRESSOR
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
TX	TRANSFORMER
TYP	TYPICAL

UF	UNFUSED
UH	UNIT HEATER
UPF	UPBLAST PROPELLER ROOF EXHAUST FAN
UPS	UNINTERRUPTIBLE POWER SUPPLY
UR	URINAL
USF	UTILITY SET FAN
UTP	UNSHIELDED TWISTED PAIR

V	VENT
V	VOICE
V	VOLTAGE
VA	VOLT AMPERE
VAC	VACUUM
VAF	VANEAXIAL FAN
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VFC	VARIABLE FREQUENCY CONTROLLER
VIF	VERIFY IN FIELD
VOIP	VOICE OVER INTERNET PROTOCOL
VOL	VOLUME
VTR	VENT THRU ROOF

W	WALL TELEPHONE
W	WASTE
W	WATT
WAO	WORK AREA OUTLET
WAP	WIRELESS ACCESS POINT
WB	WET BULB TEMPERATURE
WC	WATER CLOSET
WEF	WALL EXHAUST FAN
WG	WIREGUARD
WH	WALL HYDRANT (HOSE BIBB)
WHA	WATER HAMMER ARRESTER
WI	WIDTH
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WTG	WALL TRANSFER GRILLE
WTR	WATER
WV	WASTE AND VENT COMBINATION
WWM	WELDED WIRE MESH

MEPT GENERAL NOTES

GENERAL

1	THE PROJECT DRAWINGS AND SPECIFICATIONS ARE BASED ON THE CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) DOCUMENTATION FORMAT. SPECIFICATION AND DRAWING CONTENTS ARE ARRANGED BY TOPIC AND CATEGORY AND ARE NOT INTENDED TO AWARD DIVISION OF WORK.
2	THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED FIRE PROTECTION, PLUMBING, HVAC, ELECTRICAL AND SPECIAL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, CALIBRATED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
3	THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLIMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
4	THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST.
5	REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF VARIOUS EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT. MOUNTING HEIGHTS SHALL BE APPROVED BY THE ARCHITECT.
6	PERFORM ALL WORK IN COMPLIANCE WITH THE SPECIFICATIONS, APPLICABLE CODES, ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
7	INSTALL ALL EQUIPMENT IN ACCESSIBLE LOCATIONS. WHERE EQUIPMENT MUST BE INSTALLED ABOVE AN INACCESSIBLE CEILING OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED AND THE LOCATION SHALL BE COORDINATED WITH THE ARCHITECT.
8	COORDINATE PIPING AND CONDUITS ENTERING OR LEAVING THE BUILDING WITH THE SITE CONTRACTOR(S) BEFORE INSTALLATION. COORDINATE INVERTS WITH THE STRUCTURE AND SYSTEM REQUIREMENTS PRIOR TO INSTALLATION.
9	WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
10	BEFORE INSTALLATION, COORDINATE THE WORK WITH OWNER-FURNISHED EQUIPMENT, INCLUDING REQUIRED SERVICE CONNECTIONS, FACTORY START UPS AND INSTALLATION OF FIELD DEVICES.
11	PROVIDE THE REQUIRED/SPECIFIED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING INTERIOR AND EXTERIOR WALLS OR FLOOR SLABS.
12	INSTALL FLOOR-MOUNTED EQUIPMENT ON A CONCRETE HOUSEKEEPING PAD.
13	SEISMICALLY SUPPORT THE EQUPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT ON THE FINDINGS.
14	PROVIDE MEP COORDINATION DRAWINGS AS REQUIRED BY THE SPECIFICATIONS.
15	ENCLOSED CONTROLLERS SHALL BE PROVIDED BY THE CONTRACTOR PROVIDING THE EQUIPMENT REQUIRING AN ENCLOSED CONTROLLER. REQUIREMENTS ARE SPECIFIED UNDER DIVISION 16: "ENCLOSED CONTROLLERS". MOTOR EFFICIENCIES SHALL BE AS INDICATED IN THE SPECIFICATIONS.
16	PROVIDE PIPING, DUCTWORK, CONDUIT AND ALL OTHER ACCESSORIES AS REQUIRED FOR PROPER AND PROFESSIONAL SYSTEMS INSTALLATION.
17	TEST AND BALANCE ALL MECHANICAL AND ELECTRICAL SYSTEMS. PROVIDE ADDITIONAL TESTS AS REQUIRED BY THE SPECIFICATIONS.
18	DO NOT INSTALL PIPING OR DUCTWORK OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, ELEVATOR MACHINE ROOMS OR SHAFTS.
19	DO NOT INSTALL ANY SYSTEMS IN OR THROUGH ELEVATOR MACHINE ROOMS THAT DO NOT SERVE THE ROOM. MAINTAIN A MINIMUM OF SEVEN (7) FOOT HEAD CLEARANCE IN THE ELEVATOR MACHINE ROOM.
20	DO NOT INSTALL IN STAIRWELL OR STAIRWELL WALLS, PIPING, DUCTWORK, CONDUIT OR OTHER DEVICES OR EQUIPMENT NOT ASSOCIATED WITH OR SERVING THE RESPECTIVE STAIR.
21	PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.
22	PROVIDE ADDITIONAL TRANSITIONS AND OFFSETS IN ALL PIPING, DUCTWORK OR CONDUIT FOR COORDINATION WITH BUILDING STRUCTURE AND CONSTRUCTION.
23	NO MECHANICAL OR ELECTRICAL SYSTEM COMPONENTS MAY BE SUPPORTED FROM STRUCTURAL BRACED FRAMES.

FIRE PROTECTION

1	PROVIDE ALL PIPING, SUPPORTS, AND EQUIPMENT NECESSARY FOR A FULL COVERAGE SYSTEM IN CONFORMANCE WITH NFPA, STATE AND LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION.
2	COORDINATE SPRINKLER HEAD LOCATIONS WITH THE LATEST ARCHITECTURAL REFLECTED CEILING PLANS, HOWEVER, FULL SPRINKLER COVERAGE REMAINS THE RESPONSIBILITY OF THE INSTALLING PROFESSIONAL.
3	REFER TO THE LATEST ARCHITECTURAL PLANS FOR CEILING CONSTRUCTION, ELEVATIONS, SECTIONS, DETAILS, LOCATIONS OF SOFFITS, CEILING POCKETS, STEPPED CEILING, SKYLIGHT, ETC. PROVIDE ADDITIONAL PIPING AND SPRINKLER HEADS AS THE CONDITION WARRANTS.
4	WHERE SPRINKLER HEADS ARE SHOWN ON CONTRACT DOCUMENTS, THEY ARE INDICATED FOR GENERAL COORDINATION PURPOSES ONLY AND DO NOT RELIEVE THE CONTRACTOR FROM FULL COMPLIANCE WITH APPLICABLE CODES AND GOOD INSTALLATION PRACTICE.
5	ALL EQUIPMENT MAIN DRAINS AND INSPECTOR TEST DRAINS SHALL BE PIPED TO THE EXTERIOR OF THE BUILDING. PROVIDE CONCRETE SPLASH GUARDS AT EACH DRAIN LOCATION TO AVOID SOIL EROSION OR OTHER DAMAGE.
6	BRANCH PIPING TO SPRINKLER HEADS SHALL NOT BE INSTALLED DIRECTLY FROM THE BOTTOM OF HORIZONTAL SPRINKLER MAINS OR BRANCH LINES. ALL CONNECTIONS TO SPRINKLER HEADS SHALL BE MADE FROM THE TOP OR SIDES OF THE MAIN OR BRANCH LINES.
7	LOCATIONS OF FIRE DEPARTMENT CONNECTIONS AND FIRE PROTECTION SERVICE CONTROL VALVES SHALL BE COORDINATED WITH THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION.

PLUMBING

1	IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE; ONLY THE BRANCH PIPING TO GROUPS OF FIXTURES IS INDICATED. EACH AND EVERY FIXTURE SHALL BE PROPERLY PIPED TO WATER, WASTE, AND VENT PIPING SYSTEMS. REFER TO THE PLUMBING SCHEDULES FOR INDIVIDUAL PIPE SIZES TO EACH FIXTURE.
2	INSTALL TRAP PRIMERS FOR ALL FLOOR DRAINS AND WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES (FLUSH VALVES, SOLENOID VALVES, ETC.); SIZE SHALL BE BASED ON FIXTURE UNITS PER PDI STANDARDS.
3	INCLUDE NECESSARY PIPING OFFSETS AND TRANSITIONS AS REQUIRED TO INSTALL THE PLUMBING FIXTURES AND EQUIPMENT. PIPING, DRAINS AND VENTS SHALL BE THOROUGHLY CLEANED AND FLUSHED IMMEDIATELY BEFORE PROJECT COMPLETION. PROVIDE CERTIFICATION ON CONTRACTOR'S LETTER HEAD THAT THIS WORK HAS BEEN COMPLETED.
4	DOMESTIC WATER DROPS AND RISERS INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF INSULATION AND THE LOCATION SHALL BE MADE INFILTRATION FREE.
5	PROVIDE COOLING COIL CONDENSATE TRAPS AND DRAIN PIPING FOR ALL MECHANICAL EQUIPMENT REQUIRING SAME; PIPE CONDENSATE DRAINS BY GRAVITY TO INDIRECT WASTE FLOOR DRAIN OR OTHER APPROVED LOCATION.
6	COORDINATE EXACT LOCATION OF UNDERGROUND UTILITIES (WATER, GAS, SANITARY, ETC.) EXITING OR ENTERING THE BUILDING WITH THE SITE CONTRACTOR, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.

MEPT GENERAL NOTES

HVAC

1	PROVIDE THROTTLING VALVES AND SHUT-OFF VALVES AS SPECIFIED IN ADDITION TO THOSE INDICATED ON THE DOCUMENTS.
2	PROVIDE DUCT TAKE-OFF TYPES AND VOLUME DAMPERS PER THE SPECIFICATIONS AND DUCT TAKE-OFF DETAILS ON DRAWINGS. TAKE-OFFS SHOWN ON FLOOR PLANS DO NOT REPRESENT THE SPECIFIC TYPE OF TAKE-OFF REQUIRED. CONSULT THE DETAILS AND SPECIFICATIONS.
3	INSTALL SMOKE DETECTORS FOR AIR HANDLING EQUIPMENT PER THE MEP DETAILS. PROVIDE SMOKE DAMPERS AND INSTALL ASSOCIATED SMOKE DETECTORS AT DUCT PENETRATIONS OF SMOKE-BARRIERS, AT AIR HANDLING UNITS, AND AT ELEVATOR SHAFT VENTS PER THE MEP DETAILS AND CODE REQUIREMENTS.
4	PROVIDE AN AUTOMATIC TEMPERATURE CONTROL SYSTEM COMPLETE IN ALL REGARDS. ALL ZONES, VAV'S AND SYSTEMS SHALL BE THERMOSTATICALLY CONTROLLED. REVIEW THE PLANS AND SPECIFICATIONS OF ALL MEP TRADES FOR A COMPLETE SCOPE OF THE WORK.
5	PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE. TO MAXIMIZE HEAD ROOM, INSTALL TIGHT TO BOTTOM OF BEAMS WHEN RUNNING PERPENDICULAR TO BEAM. INSTALL PIPING TIGHT TO FLOOR SLAB WHEN RUNNING PARALLEL TO BEAM. PROVIDE ALL NECESSARY FITTINGS AND TRANSITIONS.
6	PROVIDE AIR VENTS AT ALL HIGHT POINTS AND DRAINS AT ALL LOW POINTS.
7	PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE-RATED CONSTRUCTION, INCLUDING WALLS, SHAFTS AND FLOOR PENETRATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS. ALL FIRE DAMPERS MUST BE EASILY ACCESSIBLE. PROVIDE OWNER WITH CHART OF LOCATION & SIZE OF ALL SMOKE /FIRE DAMPERS FOR REQUIRED NFPA MAINTENANCE.
8	PAINT AND INTERNALLY INSULATE ALL EXPOSED DUCTWORK PER THE SPECIFICATIONS.
9	PROVIDE PRESSURE RELIEF DOORS FOR AIR SYSTEMS PER THE SPECIFICATIONS.
10	PROVIDE MOTORIZED DAMPERS AT ALL PERMANENT OPENINGS (EXHAUST, SUPPLY, RELIEF, O.A. INTAKES, MAKE-UP AIR, SMOKE VENTS, ETC.) EXCEPT DRYER, KITCHEN, AND FUME EXHAUST AND PROVIDE A MEANS TO CONTROL THE DAMPER OPERATION.

ELECTRICAL

1	IT IS NOT THE INTENTION TO SHOW EVERY FITTING, WIRE, OR DEVICE. ALL SUCH ITEMS SHALL BE FURNISHED AND INSTALLED AS NECESSARY FOR A COMPLETE SYSTEM.
2	CONCEAL RACEWAYS IN FINISHED AREAS. RACEWAYS WITHIN MECHANICAL AND ELECTRICAL ROOMS MAY BE SURFACE-MOUNTED.
3	DO NOT INSTALL CONDUIT IN CONCRETE SLABS, UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER.
4	PROVIDE POWER TO MECHANICAL EQUIPMENT SHOWN ON MECHANICAL PLANS, RISERS, SCHEDULES, OR IN SPECIFICATIONS. MECHANICAL EQUIPMENT IS NOT NECESSARILY SHOWN ON ELECTRICAL PLANS. REFER TO MECHANICAL PLANS AND SCHEDULES ON MEP DRAWINGS FOR LOCATIONS AND SPECIFIC ELECTRICAL REQUIREMENTS. COORDINATE EXACT LOCATION AND ORIENTATION OF EQUIPMENT WITH OTHER TRADES.
5	PROVIDE INTERFACE CONNECTIONS TO THE FIRE ALARM SYSTEM AND FIRE PROTECTION SYSTEM EQUIPMENT SHOWN ON PLANS, SCHEDULES, RISERS, OR IN SPECIFICATIONS. THIS EQUIPMENT IS NOT NECESSARILY SHOWN ON ELECTRICAL PLANS. COORDINATE EXACT LOCATION AND QUANTITY WITH THE FIRE PROTECTION CONTRACTOR.
6	FURNISH AND COORDINATE THE LOCATION OF DUCT SMOKE DETECTORS. PROVIDE AND WIRE DEVICES TO THE FIRE ALARM SYSTEM; FURNISH DETECTORS TO THE MECHANICAL CONTRACTOR FOR INSTALLATION.
7	MAKE CONNECTIONS TO LUMINAIRES IN ACCORDANCE WITH THE DETAILS SHOWN ON THE DRAWINGS. PROVIDE SWITCHING, AND OCCUPANCY SENSORS AND NORMAL CIRCUIT MONITORING AS PER THE DETAILS.
8	EXIT SIGNS ARE NOT NECESSARILY SHOWN WIRED ON THE DRAWINGS. PROVIDE SINGLE CIRCUIT EXIT SIGNS WITH BATTERY BACKUP; CONNECT POWER TO THE UN-SWITCHED LIGHTING CIRCUIT IN THE AREA SERVED BY THE EXIT SIGN.
9	CONNECT EMERGENCY FLUORESCENT POWER UNITS (BATTERY BALLAST(S)) OR EMERGENCY LIGHTING UNITS TO LINE SIDE OF SWITCHING. THESE UNITS MUST MONITOR THE NORMAL LIGHTING CIRCUIT WITHIN THE SPACE.
10	INSTALL WIRING FROM AN EMERGENCY SOURCE OR EMERGENCY DISTRIBUTION OVERCURRENT PROTECTION TO EMERGENCY LOADS ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT EXCEPT WITHIN THE EQUIPMENT, EXIT SIGNS, AND EMERGENCY LUMINAIRES.
11	REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR THE EXACT LOCATION OF ALL CEILING MOUNTED LUMINAIRES SHOWN ON ELECTRICAL PLANS.
12	BOND ALL OF THE FOLLOWING SERVICES TOGETHER PER THE NEC: POWER, TELECOMMUNICATIONS, CATV AND LIGHTNING PROTECTION.
13	PROVIDE BRANCH CIRCUITS FROM ELECTRICAL PANELS WITH SUFFICIENT CAPACITY AND SPACE FOR MISCELLANEOUS SYSTEMS. THESE SYSTEMS SHALL INCLUDE, BUT ARE NOT LIMITED TO, MONITORING SYSTEMS, CONTROL PANELS, ANNUNCIATOR PANELS, PLUMBING ACCESSORIES, ETC. FURNISH AND INSTALL ALL BRANCH CIRCUIT WIRING AND CIRCUIT BREAKERS FOR THE EQUIPMENT SHOWN.
14	PROVIDE GROUND FAULT RECEPTACLES WITHIN SIX FEET (6') OF SINK OR OTHER WATER SOURCE; PROVIDE GROUND FAULT WEATHER PROOF RECEPTACLES AT ALL EXTERIOR LOCATIONS.
15	CONDUITS ARE NOT TO PENETRATE STAIRWELL FIRE RATED WALLS.

ENERGY SIMULATION CALCULATIONS

1	DURING THE DESIGN OF THIS PROJECT, COMPUTERIZED ENERGY SIMULATION CALCULATIONS WERE PERFORMED TO ESTIMATE THE DIFFERENCES IN ENERGY CONSUMPTION BETWEEN DIFFERENT BUILDING SYSTEMS AND DIFFERENT BUILDING ENVELOPES. THE INTENT OF THE CALCULATIONS IS TO ASSIST IN THE DESIGN OF THE BUILDING'S ENVELOPE AND ITS SYSTEMS.
2	ENERGY SIMULATION CALCULATIONS ARE NOT INTENDED TO PREDICT ACTUAL ENERGY CONSUMPTION OR ENERGY COSTS FOR THE BUILDING. ACTUAL EXPERIENCE WILL DIFFER FROM THE CALCULATIONS DUE TO VARIATIONS SUCH AS OCCUPANCY, BUILDING OPERATION AND MAINTENANCE, WEATHER, ENERGY USE NOT COVERED BY THE ENERGY SIMULATION, CHANGES IN ENERGY RATES BETWEEN THE DESIGN OF THE BUILDING AND OCCUPANCY, AND THE PRECISION OF THE ENERGY CALCULATION SOFTWARE.

TECHNOLOGY

2	BEFORE CONSTRUCTION CAN BEGIN IN ANY TELECOMMUNICATIONS ROOM (TR) OR TELECOMMUNICATIONS EQUIPMENT ROOM (ER) THE CONTRACTOR SHALL COORDINATE LAYOUT LOCATIONS AND CLEARANCES OF ALL EQUIPMENT WITH THE TECHNOLOGY OWNER TO APPROVE THE INSTALLATIONS AND ANY FUTURE SPACE.
3	REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF EQUIPMENT. ALL SUCH EQUIPMENT AND COLORS SHALL BE COORDINATED WITH THE ARCHITECT. CONTACT ARCHITECT FOR ANY CLARIFICATION.
4	REFER TO REFLECTIVE CEILING PLANS FOR FLUSH MOUNTED CEILING DEVICES.
5	PROVIDE SEPARATION BETWEEN RACEWAY, CABLES AND OTHER SOURCES (EMI) PER ANSI/TIA-569-B.
6	ELBOW RADIUS FOR RACEWAYS SMALLER THAN 2" TO BE (6) SIX TIMES THE RACEWAY DIAMETER. ELBOW RADIUS FOR CONDUITS 2" OR LARGER TO BE (10) TEN TIMES THE RACEWAY DIAMETER.
7	ALL EMPTY RACEWAYS SHALL BE PROVIDED WITH A (PLENUM RATED, IF PLENUM CEILING SPACE) NYLON PULL CORD.
8	COORDINATE PROPER METHODS FOR PENETRATIONS WITH FIRESTOPPING AS REQUIRED THROUGH FIRE/SMOKE RATED CONSTRUCTION PER DIVISION 07 SPECIFICATIONS.
9	NO PENETRATIONS ARE PERMITTED INTO ANY STAIRWELLS EXCEPT FOR SYSTEMS SERVING THAT STAIRWELL.
10	CONDUITS AND CABLING FOR SERVICE ENTRANCE SHALL BE PROVIDED PER SITE UTILITY DRAWINGS, TECHNOLOGY/ELECTRICAL POWER DRAWINGS AND DIVISION 26 SPECIFICATIONS. COORDINATE LOCATION OF DEMARCATION POINT.
11	LADDER RACKS, CONDUITS, D-RINGS, ETC. FOR CABLE SUPPORT IN ANY TELECOMMUNICATIONS ROOM (TR) OR TELECOMMUNICATIONS EQUIPMENT ROOM (ER) SHALL BE PROVIDED PER PLANS AND DIVISION 26 SPECIFICATIONS.
12	CABLE TRAYS, CONDUITS, SLEEVES AND J-HOOKS FOR FIBER BACKBONE CABLING AND OTHER BACKBONE CABLING SHALL BE PROVIDED PER DIVISION 26 SPECIFICATIONS.
13	CABLE TRAY, SURFACE MOUNTED RACEWAYS, CONDUITS, SLEEVES AND J-HOOKS FOR HORIZONTAL CABLING FROM COMMUNICATIONS EQUIPMENT ROOM TO THE TELECOMMUNICATIONS OUTLETS/CONNECTORS SHALL BE PROVIDED PER DIVISION 26 SPECIFICATIONS.
14	COORDINATE THE INSTALLATION OF ALL CABLE TRAYS, SURFACE MOUNTED RACEWAYS, CONDUITS, SLEEVES AND J-HOOKS PER DIVISION 26 SPECIFICATIONS.
15	COORDINATE OUTLET INSTALLATIONS, WALL: RECESSED OR SURFACE; CEILING; FLOOR: SLEEVE OR INFLOOR SYSTEM; UTILITY COLUMN; PER TECHNOLOGY/ELECTRICAL POWER DRAWINGS AND DIVISION 26 SPECIFICATIONS.
16	COORDINATE WITH CONSTRUCTION MANAGER, OWNER AND DIVISION 26 FOR TELEPHONE LINE CONNECTION TERMINATION FROM THE TELECOMMUNICATIONS EQUIPMENT ROOM (ER) TO THE FIRE ALARM CONTROL PANEL.
17	COORDINATE WITH CONSTRUCTION MANAGER, OWNER AND LOCAL SERVICE PROVIDER FOR PUBLIC PAY TELEPHONE SITE SURVEY AND INSTALLATION.
18	COORDINATE EXACT LOCATION(S) FOR MECHANICAL EQUIPMENT ETHERNET CONNECTION TERMINATION(S) WITH DIVISION 25.
19	COORDINATE ELEVATOR CAB TELEPHONE LINE CONNECTION TERMINATION. CONNECTION BETWEEN ELEVATOR MACHINE ROOM AND ELEVATOR CAB BY ELEVATOR CONTRACTOR.
20	COORDINATE WITH CONSTRUCTION MANAGER, OTHER TRADES AND THE OWNER DURING ALL PHASES. ALL COMMUNICATIONS MUST BE MAINTAINED AT ALL TIMES UNLESS PHASING REQUIRES OTHERWISE. INTERRUPTIONS AND SHUTDOWNS SHALL BE SCHEDULED IN ADVANCE AND APPROVED FOR TIME TO COMPLETE WORK. TAG CABLES TO REMAIN DURING ALL PHASES TO PROPERLY KEEP THE TELECOMMUNICATIONS ACTIVE. UPON COMPLETION OF CONSTRUCTION, ANY CABLES THAT ARE NOT ACTIVE OR TAGGED TO REMAIN FOR FUTURE USE SHALL BE REMOVED PER THE NEC.
21	PROVIDE FLEXABLE PATHWAY AND COILED CABLE SLACK FOR SEISMIC EXPANSION JOINTS.
22	PROVIDE ALL COMMUNICATIONS CABLING SHOWN ON RISER DIAGRAM DRAWINGS. COORDINATE WITH FLOOR PLANS FOR ALL COMMUNICATIONS OUTLET LOCATIONS AND COMMUNICATIONS ROOMS FOR BOTH HORIZONTAL AND BACKBONE CABLING. REFER TO DIVISION 27 SPECIFICATIONS FOR CABLING REQUIREMENTS.

21-10-038

drawing title
MEP GENERAL NOTES AND ABBREVIATIONS

R E V I S I O N S

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1393
project no. BI-RS-283-ARC

date 11-21-2012
scale N.T.S.
drawn by DJH
approved by GVD
drawing no.
MEP101

GENERAL SYMBOLS

	THICK, DARK SOLID LINES INDICATE NEW OR RELOCATED ITEMS OR NEW RACEWAY AND WIRING
	THIN, LIGHT LINES INDICATE EXISTING ITEMS OR RACEWAY TO REMAIN IN PLACE AND BE REUSED
	THICK, DASHED LINES INDICATE EXISTING ITEMS TO BE REMOVED
	POINT OF NEW TO EXISTING CONNECTION, INCLUDING TRANSITIONS
EX	SUB LETTERS "EX" INDICATES EXISTING EQUIPMENT TO REMAIN INTACT
RE	SUB LETTER "RE" INDICATES EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED
RL	SUB LETTER "RL" INDICATES EXISTING EQUIPMENT TO BE DISCONNECTED, REMOVED AND RELOCATED
NL	SUB LETTER "NL" INDICATES NEW LOCATION OF RELOCATED EQUIPMENT
NR	SUB LETTER "NR" INDICATES NEW EQUIPMENT TO REPLACE EXISTING
RR	SUB LETTER "RR" INDICATES REMOVE EQUIPMENT AND REPLACE ON NEW SURFACE

PLUMBING SYMBOLS

	COLD WATER
	HOT WATER
	HOT WATER RECIRCULATING
	VENT
RV	RADON VENT
S	SOIL OR WASTE ABOVE GRADE
S	SOIL OR WASTE BURIED
WV	WASTE & VENT COMBINATION ABOVE GRADE
WV	WASTE & VENT COMBINATION BURIED
GW	GREASE WASTE ABOVE GRADE
GW	GREASE WASTE BURIED
IW	INDIRECT WASTE
ORWL	OVERFLOW RAIN WATER LEADER
RWL	RAIN WATER LEADER
ST	STORM BURIED
C	CONDENSATE DRAIN
PCD	PUMPED CONDENSATE DRAIN
EHC	ELECTRICAL HEATING CABLE
G	GAS ABOVE GRADE
A	GENERAL SERVICE COMPRESSED AIR
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
ETP	ELECTRONIC TRAP PRIMER
A	AIR OUTLET
W	WATER METER ASSEMBLY
M	GAS METER ASSEMBLY
	FLOOR DRAIN
	ROOF DRAIN
	T&P RELIEF VALVE
	SHOWER HEAD - LOCATION
	EMERGENCY EYEWASH / DELUGE SHOWER
ROR	REVERSE OSMOSIS RETURN WATER
ROS	REVERSE OSMOSIS SUPPLY WATER
DI	DISTILLED WATER
DE	DEIONIZED PROCESS WATER
AC	ACETYLENE
AR	ARGON
HE	HELIUM
N	NITROGEN
AV	ACID (CHEMICAL) VENT
AW	ACID (CHEMICAL) WASTE ABOVE GRADE
AW	ACID (CHEMICAL) WASTE BELOW GRADE
LCW	LABORATORY COLD WATER
LHW	LABORATORY HOT WATER
LHWR	LABORATORY HOT WATER RECIRCULATING
LG	LABORATORY GAS
LA	LABORATORY COMPRESSED AIR
LV	LABORATORY VACUUM

FIRE PROTECTION SYMBOLS

F	FIRE SERVICE
SP/SPK	COMBINATION SP / SPK MAIN
SPK	WET SPRINKLER MAIN
SP	STANDPIPE MAIN
DRY	DRY SPRINKLER MAIN
PRE	PREACTION SPRINKLER MAIN
FDC	FIRE DEPT. CONNECTION SUPPLY LINE
	F.D.C. (WALL TYPE)
	F.D.C. (FREE STANDING)
	WALL INDICATOR VALVE
	FIRE HOSE VALVE
	FIRE HYDRANT
	CURB GATE VALVE
	ELECTRIC ALARM BELL
	WATER MOTOR GONG
	RISER (SPRINKLER OR STANDPIPE)
FVC	FIRE VALVE CABINET
FHC	FIRE HOSE CABINET
FVC	FIRE VALVE CABINET (RISER DIAGRAM)
FHC	FIRE HOSE CABINET (RISER DIAGRAM)
FP	FIRE PUMP
	INSPECTOR'S TEST MODULE (VALVE, ORIFICE, SIGHT GLASS)
	FIRE HOSE VALVE
	INSPECTOR'S TEST VALVE (W / ORIFICE)
	BACKFLOW PREVENTER ASSEMBLY OR BACKFLOW PREVENTER WITH TAMPER SWITCHES
	DOUBLE CHECK VALVE ASSEMBLY OR DOUBLE CHECK VALVE ASSEMBLY WITH TAMPER SWITCHES
	POST INDICATOR VALVE WITH TAMPER SWITCH
	PRESSURE SWITCH
	FLOW SWITCH
	LOW PRESSURE SWITCH
	OS&Y WITH TAMPER SWITCH ON PIPE RISE
	BUTTERFLY VALVE WITH TAMPER SWITCH
	OS&Y VALVE WITH TAMPER SWITCH
	FIRE PUMP TEST HEADER
	PENDANT SPRINKLER HEAD CONCEALED
	PENDANT SPRINKLER HEAD SEMI-RECESSED
	UPRIGHT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
Θ_R	RELOCATED EXISTING SPRINKLER HEAD
Θ_E	EXISTING SPRINKLER HEAD TO REMAIN
Θ_x	EXISTING SPRINKLER HEAD TO BE REMOVED
DP	DRY PENDANT SPRINKLER
DS	DRY SIDEWALL SPRINKLER
WG	WIRE GUARD OVER SPRINKLER HEAD
EC	EXTENDED COVERAGE SPRINKLER
H	HIGH TEMPERATURE SPRINKLER
AS	FULLY SPRINKLERED SPACE
AS	PARTIALLY SPRINKLERED SPACE
NS	NON-SPRINKLERED SPACE
AC	AIR COMPRESSOR
JP	JOCKEY PUMP
FPC	FIRE PUMP CONTROLLER
JPC	JOCKEY PUMP CONTROLLER
	WET ALARM CHECK VALVE OR ALARM CHECK VALVE WITH TAMPER AND PRESSURE SWITCHES
	PREACTION ALARM CHECK VALVE OR PREACTION VALVE WITH CONTROL PANEL
	DELUGE VALVE OR DELUGE VALVE WITH CONTROL PANEL
	DRY CHEMICAL OR CLEAN AGENT SYSTEM
	DRY ALARM CHECK VALVE OR DRY PIPE VALVE WITH COMPRESSOR, TAMPER SWITCH AND HIGH AND LOW PRESSURE SWITCHES

HVAC SYMBOLS

	RECTANGULAR, FLAT OVEL OR ROUND AIR DUCT
	AIR DUCT WITH ACOUSTICAL LINING
	SUPPLY AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT UP
	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT UP
	EXHAUST AIR DUCT DOWN
	ACCESS DOOR
	FLEXIBLE DUCT CONNECTION
	CEILING SUPPLY DIFFUSERS
	CEILING RETURN / EXHAUST GRILLE
H	HARD DUCTED DIFFUSER OR GRILLE WITH FULL SIZE BOTTOM TAKE-OFF
	DIRECTION OF SUPPLY OR OUTDOOR AIRFLOW
	DIRECTION OF RETURN OR EXHAUST AIRFLOW
	DOOR UNDERCUT
BDD	BACK DRAFT DAMPER
VD	VOLUME DAMPER
FD	FIRE DAMPER
FDSB	FIRE DAMPER WITH INTEGRAL SECURITY BARS
A	VAV BOX W / UNIT TYPE
	FAN POWERED VAV BOX
XXX	SUPPLY PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
XXX	RETURN PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
EHC	ELECTRICAL HEATING CABLE. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
	SMOKE DAMPER SYSTEM AND ASSOCIATED DEVICES PER SPECIFICATIONS AND MEP DETAILS
F S	COMBINATION FIRE AND SMOKE DAMPER
S	MOTORIZED DAMPER
H	HUMIDIFIER TUBE / PANEL
DSS	DUCT SMOKE DETECTOR WITH REMOTE INDICATING LIGHT AND TEST SWITCH
DSP	DUCT STATIC PRESSURE SENSOR
DP	DIFFERENTIAL PRESSURE SENSOR
VFC	VARIABLE FREQUENCY CONTROLLER
T	ROOM THERMOSTAT OR TEMPERATURE SENSOR
T	ROOM TEMPERATURE WITH CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
H	HUMIDISTAT
999 999 999	PERFORMANCE TAG
	SUPPLY/RETURN/EXHAUST AIR CONTROL VALVE (SINGLE)
	SUPPLY/RETURN/EXHAUST AIR CONTROL VALVE (DOUBLE)
	SUPPLY/RETURN/EXHAUST AIR CONTROL VAVLE (TRIPLE)
	NOTE - SUPPLY AIR CONTROL VALVES SHALL BE SUPPLIED WITH A REHEAT COIL.

DUCT SIZING

20x12	RECTANGULAR DUCT
20Ø	ROUND DUCT
20/12	FLAT OVAL DUCT

FITTINGS AND VALVES

	PIPE ANCHOR
	BACKFLOW PREVENTER
	STRAINER OR STRAINER WITH BLOW-DOWN VALVE HOSE END, CAP AND CHAIN
	WALL CLEANOUT OR BLIND FLANGE
	"P" TRAP
	PIPE TEE DOWN
	IN-LINE EXPANSION COMPENSATOR
	FLOOR CLEANOUT
T	STEAM TRAP ASSEMBLY
	STEEL PENETRATION / PIPE SLEEVE
	PIPE ELBOW UP OR PIPE TEE UP
	PIPE ELBOW DOWN
	COMPANION FLANGE
	PIPE CAP OR CAPPED END OF PIPE
	UNION
	PIPE GUIDES
	PUMP
	WATER HAMMER ARRESTOR
	TAKEOFF FROM TOP OF MAIN PIPE
	TAKEOFF FROM BOTTOM OF MAIN PIPE
	DIRECTION OF FLUID FLOW
	VALVE ON RISER
	VALVE ON DROP
	METERING ORIFICE
	AIR VENT
	FLOW SENSOR
	PIPE DROP WITH VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	BALL VALVE
	CALIBRATED BALANCING VALVE
	SHUT-OFF VALVE (SEE SPECIFICATIONS FOR APPLICATION TYPE)
	BUTTERFLY VALVE
	CHECK VALVE
	THERMOSTATIC MIXING VALVE
	GLOBE VALVE
	GATE VALVE
	PRESSURE REDUCING VALVE
	GAS COCK
	TRIPLE DUTY VALVE
	OS&Y VALVE
	FUSOMATIC VALVE (FIREMATIC)
	DRAIN VALVE WITH HOSE END, CAP & CHAIN OR WALL HYDRANT / HOSE BIBB
M	MOTORIZED BUTTERFLY VALVE
	PRESSURE RELIEF SAFETY VALVE
T	AQUASTAT
	SOLENOID VALVE
T	TEMPERATURE SENSOR WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
T	TEMPERATURE GAUGE WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
T	THERMOMETER WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
P	PRESSURE GAUGE
P	PRESSURE SENSOR WITH SYPHON (STEAM)
XXXX	FLEXIBLE CONNECTOR

ELECTRICAL SYMBOLS

	PENDANT LIGHT FIXTURE
	LINEAR LIGHT FIXTURE
	PENDANT MOUNTED LIGHT FIXTURE
	RECESSED DOWNLIGHT FIXTURE
	RECESSED WALL WASH DOWNLIGHT FIXTURE
	SURFACE-MOUNTED LIGHT FIXTURE
	WALL-MOUNTED LIGHT FIXTURE
	RECESSED OR SURFACE-MOUNTED FIXTURE
	OPEN LAMP LIGHT FIXTURE
	LIGHTING TRACK (NUMBER OF FIXTURES INDICATED ON PLANS)
	CEILING OR WALL-MOUNTED EXIT LIGHT FIXTURE
	CEILING OR WALL-MOUNTED EMERGENCY LIGHT UNIT
	LIGHT FIXTURE (PART OF EMERGENCY ILLUMINATION SYSTEM)
S	SINGLE-POLE SWITCH
2 S	DOUBLE-POLE SWITCH
3 S	3-WAY SWITCH
4 S	4-WAY SWITCH
P S	SINGLE-POLE SWITCH (TOGGLE LIGHTED - LOAD ON)
L S	LOW VOLTAGE SWITCH
E S	EMERGENCY OFF SWITCH
D S	SINGLE-POLE DIMMER SWITCH
D3 S	THREE-WAY DIMMER SWITCH
T S	SINGLE-POLE TIMER SWITCH
K S	SINGLE-POLE KEYED SWITCH
SC S	SPEED CONTROL SWITCH
OC	OCCUPANCY SENSOR W / POWER PACK (WALL / CEILING)
OC S	OCCUPANCY SENSOR SWITCH
VS S	VACANCY SENSOR SWITCH
DL	DAYLIGHTING SENSOR
PC	PHOTOCELL
	EMERGENCY OFF SWITCH WITH COVER
X	DUPLEX RECEPTACLE; REFER TO ABBREVIATION LIST (X)
X	DUPLEX RECEPTACLE SPLIT WIRED; REFER TO ABBREVIATION LIST (X)
X	DUPLEX RECEPTACLE ON EMERGENCY POWER; REFER TO ABBREVIATION LIST (X)
X	DOUBLE DUPLEX RECEPTACLE; REFER TO ABBREVIATION LIST (X)
X	DOUBLE DUPLEX RECEPTACLE ON EMERGENCY POWER; REFER TO ABBREVIATION LIST (X)
X	SINGLE RECEPTACLE; REFER TO ABBREVIATION LIST (X)
X	SPECIAL PURPOSE RECEPTACLE; VERIFY NEMA CONFIGURATION WITH EQUIPMENT; REFER TO ABBREVIATION LIST (X)
X	SPECIAL PURPOSE RECEPTACLE ON EMERGENCY POWER; VERIFY NEMA CONFIGURATION WITH EQUIPMENT; REFER TO ABBREVIATION LIST (X)

ELECTRICAL SYMBOLS

	FURNITURE PARTITION WHIP CONNECTION
FB	FLOOR SERVICE FITTING FOR FURNITURE WITH WHIP CONNECTIONS
PT	POKE-THROUGH ASSEMBLY FOR FURNITURE WITH WHIP CONNECTIONS
P	WALL BOX WITH PLATE FOR FURNITURE POWER WITH WHIP CONNECTIONS
T	WALL BOX WITH PLATE FOR FURNITURE TELECOMMUNICATIONS WITH WHIP CONNECTIONS
	SURFACE MOUNTED FACTORY PRE-WIRED MULTI-OUTLET RACEWAY
	SURFACE MOUNTED RACEWAY. SEE PLANS OR SCHEDULE FOR QUANTITY OF DEVICES
	POWER WIRING
	SWITCH LEG WIRING
	CONTROL WIRING
XXX	WIRING - REFER TO ABBREVIATION LIST (XXX)
(1) 20A- 1P LV-1	CIRCUIT BREAKER SIZE; HOME RUN; PANEL DESIGNATION
A N G	FEEDER TAG
	SURFACE ELECTRICAL PANEL, 480Y/277 OR 480 VOLT
	SURFACE ELECTRICAL PANEL, 208Y/120 OR 208 VOLT
	SURFACE SPECIAL-PURPOSE PANEL OR CABINET
	FLUSH ELECTRICAL PANEL, 480Y/277 VOLT
	FLUSH ELECTRICAL PANEL, 208Y/120 VOLT
	FLUSH SPECIAL-PURPOSE PANEL OR CABINET
TX	TRANSFORMER
TX	
	ENCLOSED SWITCH
	ELECTRIC MOTOR
J	JUNCTION BOX
F	MASTER FIRE ALARM PULL BOX
VFACP	VOICE FIRE ALARM CONTROL PANEL
FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM REMOTE ANNUNCIATOR
S	SMOKE DETECTOR
H	HEAT DETECTOR
RI	REMOTE INDICATOR
F	FIRE ALARM MANUAL PULL STATION
H	FIRE ALARM HORN / STROBE
	FIRE ALARM SPEAKER / STROBE
	FIRE ALARM STROBE
	FIRE ALARM CEILING-MOUNTED SPEAKER
F	FIREFIGHTER'S TELEPHONE JACK
B	PROGRAM BELL
PP	PUSH PLATE
DH	DOOR MAGNETIC HOLD
VM	VIDEO MONITOR
DLC	DISTRIBUTIVE LIGHTING CONTROLLER

COMMUNICATION SYMBOLS

X	VOICE OUTLET(S); REFER TO ABBREVIATIONS (X)
X/X	DATA AND VOICE OUTLET(S); REFER TO ABBREVIATIONS (X)
X	DATA OUTLET(S); REFER TO ABBREVIATIONS (X)
X/X	SPECIALTY OUTLET(S); REFER TO ABBREVIATIONS (X)
TV	TELEVISION CATV OUTLET
FB Y	FLOOR SERVICE FITTING WITH OUTLET(S); REFER TO SCHEDULE (Y)
PT Y	POKE-THRU ASSEMBLY WITH OUTLET(S); REFER TO SCHEDULE (Y)
TP	TELEPOWER POLE WITH OUTLETS
	CABLE TRAY
VC	SOUND SYSTEM VOLUME CONTROLLER
AMP	AUDIO AMPLIFIER UNIT
	PUBLIC ADDRESS SPEAKER WITH CLOCK IN COMMON ENCLOSURE
X X	CEILING OR WALL-MOUNTED SPEAKER. REFER TO ABBREVIATIONS (X)
	FLOOR OR WALL-MOUNTED SOUND SYSTEM MICROPHONE
	FLUSH WALL-MOUNTED CLOCK
	PLYWOOD BACKBOARD
	TELECOMMUNICATIONS EQUIPMENT RACK (TWO POST)
	TELECOMMUNICATIONS EQUIPMENT RACK (FOUR POST)
G	TELECOMMUNICATIONS GROUNDING BUSBAR (TGB)
	RACEWAY UP / DOWN

SECURITY SYMBOLS

ACCESS CONTROL

IC	INTERCOM STATION
EL	ELECRIC LOCK
PS	POWER SUPPLY
ELR	ELECTRONIC LATCH RETRACTION DOOR LOCK
CR	CARD READER
REX	REQUEST TO EXIT
DC	DOOR CONTROLLER
PP	PUSH PLATE
DO	DOOR OPENER

INTRUSION DETECTION

GB	GLASS BREAK ALARM
KP	KEYPAD
	DOOR CONTACT SWITCH
M	MOTION DETECTOR 360°
SD	SOUND DETECTOR

SURVEILLANCE

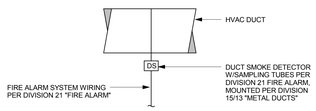
	VIDEO SURVEILLANCE FIXED DOME CAMERA WITH HORIZONTAL CABLE AND HARDWARE
	VIDEO SURVEILLANCE PAN/TILT/ZOOM DOME CAMERA WITH HORIZONTAL CABLING AND HARDWARE
SAS	SECURITY ALARM SYSTEM CABINET
VM	VIDEO MONITOR
VNR	NETWORK VIDEO MONITOR
DVR	DIGITAL VIDEO RECORDER
XDM	CHANNEL DUPLEX MULTIPLEXOR
VCTR	VIDEO SURVEILLANCE CONTROLLER

TECHNOLOGY RISER DIAGRAM SYMBOLS

	BACKBONE COAX CABLING
	BACKBONE FIBER CABLING
	BACKBONE UTP COPPER CABLING
	HORIZONTAL COAX CABLING
	HORIZONTAL UTP COPPER CABLING
XXX X	EQUIPMENT RACK

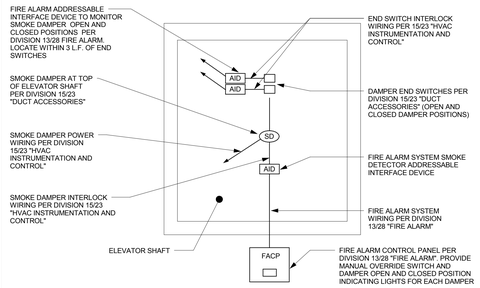
21-10-038

drawing title: MEP SYMBOL LIST	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume: 2 of 2
REVISIONS: mark / date / description: 1 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171	date: 11-21-2012; scale: 1/8" = 1'-0"
project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: DJH; approved by: GVD
CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: MEP102

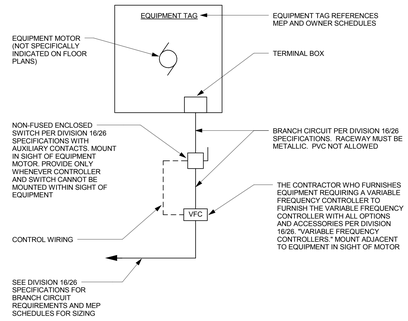


NOTE:
APPLY THIS DETAIL TO THE SYSTEM DIAGRAMS ON THIS DRAWING FOR A COMPLETE SYSTEM.

TYPICAL DUCT SMOKE DETECTOR DETAIL
NOT TO SCALE

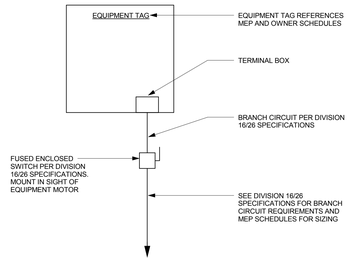


TYPICAL ELEVATOR SHAFT VENT SMOKE DAMPER CONTROL DETAIL
NOT TO SCALE



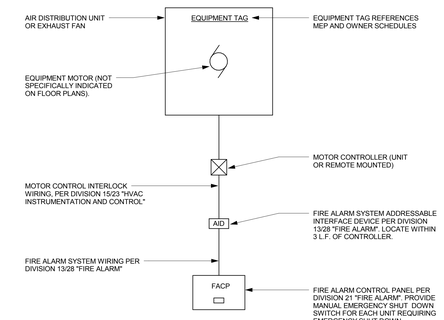
NOTE:
THIS DETAIL IS FOR ALL EQUIPMENT SPECIFIED WITH VARIABLE FREQUENCY CONTROLLERS, CONTRACTOR TO PROVIDE WIRING BETWEEN REMOTE DISCONNECTS, STARTERS AND MOTORS. SEE EQUIPMENT SCHEDULES AND SPECIFICATIONS.

TYPICAL MOTOR CONTROLLER AND VFC DETAIL
NOT TO SCALE



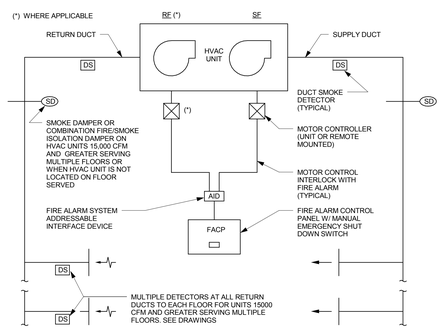
NOTE:
THIS DETAIL IS FOR ALL EQUIPMENT WHERE EQUIPMENT REQUIRES POWER AND WHERE THERE ARE NO MOTORS INVOLVED OR WHERE SPECIFICATIONS OR SCHEDULES FOR MULTIPLE MOTOR EQUIPMENT SPECIFICALLY INDICATE ONE POINT POWER CONNECTION. CONTRACTOR TO PROVIDE WIRING BETWEEN REMOTE DISCONNECTS, STARTERS AND MOTORS. SEE EQUIPMENT SCHEDULES AND SPECIFICATIONS.

TYPICAL EQUIPMENT CONNECTION DETAIL
NOT TO SCALE



NOTE:
APPLY THIS DETAIL TO THE SYSTEM DIAGRAMS ON THIS DRAWING FOR A COMPLETE SYSTEM.

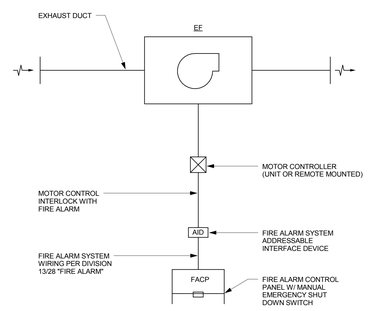
TYPICAL UNIT SMOKE/EMERGENCY SHUTDOWN CONTROL DETAIL
NOT TO SCALE



NOTES:

1. SEE DUCT SMOKE DETECTOR, SMOKE DAMPER ISOLATION CONTROL AND UNIT SMOKE/EMERGENCY SHUTDOWN CONTROL DETAILS FOR ADDITIONAL INFORMATION.
2. THIS DIAGRAM APPLIES TO ALL HVAC UNITS 2000 CFM AND GREATER.
3. SEE LISTED CFM IN EQUIPMENT SCHEDULES TO DETERMINE UNITS OVER 2000 CFM.
4. THIS DIAGRAM SHOWS GENERAL ARRANGEMENT. SEE DRAWINGS FOR DUCT SMOKE DETECTOR AND SMOKE DAMPER LOCATIONS.

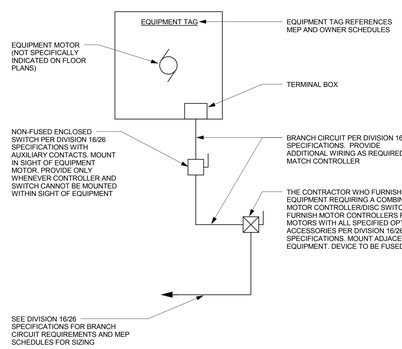
HVAC UNIT SMOKE / EMERGENCY SHUTDOWN AND SMOKE ISOLATION SYSTEM DIAGRAM
NOT TO SCALE



NOTES:

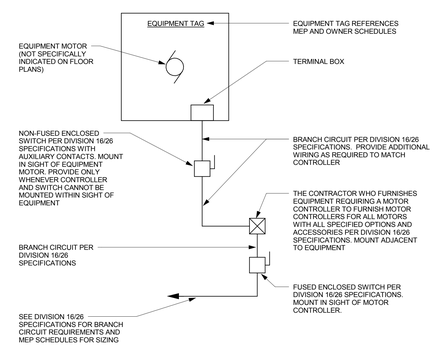
1. SEE UNIT EMERGENCY SHUTDOWN CONTROL DETAILS FOR ADDITIONAL INFORMATION.
2. THIS DIAGRAM APPLIES TO ALL EXHAUST FANS 2000 CFM AND GREATER, EXCEPT SPECIALTY EXHAUST FANS SUCH AS GREASE, FUME, HAZARDOUS AND INDUSTRIAL.
3. SEE LISTED CFM IN EQUIPMENT SCHEDULES TO DETERMINE EXHAUST FANS OVER 2000 CFM.

EXHAUST FAN EMERGENCY SHUTDOWN SYSTEM DIAGRAM
NOT TO SCALE



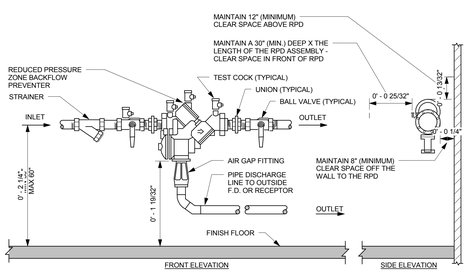
NOTE:
THIS DETAIL IS FOR ALL EQUIPMENT MOTORS. CONTRACTOR TO PROVIDE WIRING BETWEEN REMOTE COMBINATION MOTOR CONTROLLER/ DISC SWITCH AND MOTORS. SEE EQUIPMENT SCHEDULES AND SPECIFICATIONS. IF NOT NOTED OTHERWISE IN EQUIPMENT SCHEDULES, CONTRACTOR SHALL PROVIDE A COMBINATION MOTER CONTROLLER/DISC. SWITCH.

TYPICAL COMBINATION MOTOR CONTROLLER/DISC SWITCH DETAIL
NOT TO SCALE



NOTE:
THIS DETAIL IS FOR ALL EQUIPMENT MOTORS. CONTRACTOR TO PROVIDE WIRING BETWEEN REMOTE DISCONNECTS, STARTERS AND MOTORS. SEE EQUIPMENT SCHEDULES AND SPECIFICATIONS. IF NOT NOTED OTHERWISE IN EQUIPMENT SCHEDULES, CONTRACTOR SHALL PROVIDE A COMBINATION MOTOR CONTROLLER/DISC. SWITCH.

TYPICAL MOTOR, SWITCH AND CONTROLLER DETAIL
NOT TO SCALE

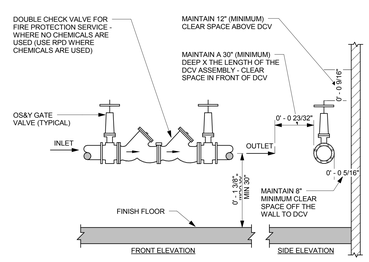


NOTE:
ALL ASSEMBLIES SHALL BE ADEQUATELY SUPPORTED AND/OR RESTRAINED TO PREVENT LATERAL MOVEMENT. PIPE HANGERS, BRACES, SADDLES, STANCHIONS, PIERS, ETC., SHOULD BE USED TO SUPPORT THE DEVICE AND SHOULD BE PLACED IN A MANNER THAT WILL NOT OBSTRUCT THE FUNCTION OF OR ACCESS TO THE RELIEFT VALVE, TEST PORTS OR VALVES.

NOTES:

1. REFER TO DRAWINGS FOR UNIT SIZE(S).
2. THE RPD MOUNTING HEIGHT AND CLEARANCES INDICATED ABOVE SHALL BE MAINTAINED FOR PROPER ACCESS TO UNIT FOR MAINTENANCE, TESTING AND INSPECTION PURPOSES.
3. THE LOCATION AND MOUNTING HEIGHT OF THE RPD SHALL BE APPROVED BY THE WATER COMPANY PRIOR TO INSTALLATION.
4. ACCESS TO THIS UNIT SHALL NOT REQUIRE THE USE OF A LADDER OR REMOVAL OF CEILING TILES OR OTHER PERMANENT OR SEMI-PERMANENT CONSTRUCTION.
5. DO NOT INSTALL UNIT ABOVE A CEILING.
6. THE AREA WHERE THE RPD IS TO BE INSTALLED SHALL BE WELL LIT, PROVIDED WITH ADEQUATE DRAINAGE AND SHALL NOT BE SUBJECT TO FLOODING.

TYPICAL REDUCED PRESSURE ZONE BACKFLOW PREVENTER INSTALLATION DETAIL
NOT TO SCALE

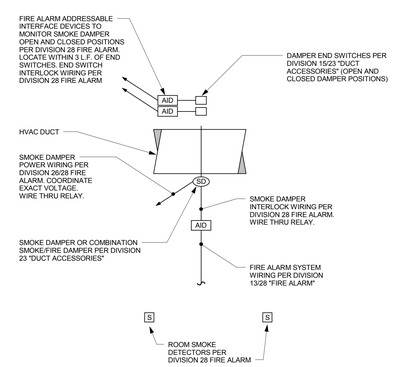


NOTE:
ALL ASSEMBLIES SHALL BE ADEQUATELY SUPPORTED AND/OR RESTRAINED TO PREVENT LATERAL MOVEMENT. PIPE HANGERS, BRACES, SADDLES, STANCHIONS, PIERS, ETC., SHOULD BE USED TO SUPPORT THE DEVICE AND SHOULD BE PLACED IN A MANNER THAT WILL NOT OBSTRUCT ACCESS TO THE TESTING PORTS OR VALVES.

NOTES:

1. REFER TO DRAWINGS FOR UNIT SIZE(S).
2. THE DCV MOUNTING HEIGHT AND CLEARANCES INDICATED ABOVE SHALL BE MAINTAINED FOR PROPER ACCESS TO UNIT FOR MAINTENANCE, TESTING AND INSPECTION PURPOSES.
3. THE LOCATION AND MOUNTING HEIGHT OF THE DCV SHALL BE APPROVED BY THE WATER COMPANY PRIOR TO INSTALLATION.
4. ACCESS TO THIS UNIT SHALL NOT REQUIRE THE USE OF A LADDER OR REMOVAL OF CEILING TILES OR OTHER PERMANENT OR SEMI-PERMANENT CONSTRUCTION.
5. DO NOT INSTALL UNIT ABOVE A CEILING.
6. THE AREA WHERE THE DCV IS TO BE INSTALLED SHALL BE WELL LIT, PROVIDED WITH ADEQUATE DRAINAGE AND SHALL NOT BE SUBJECT TO FLOODING.

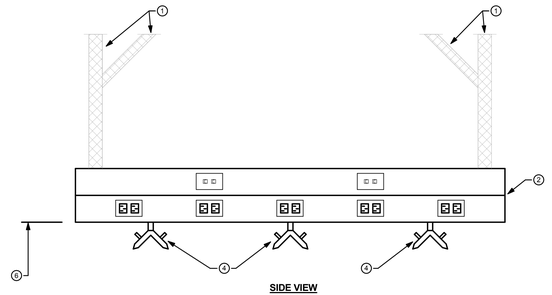
TYPICAL DOUBLE CHECK VALVE BACKFLOW PREVENTER INSTALLATION DETAIL
NOT TO SCALE



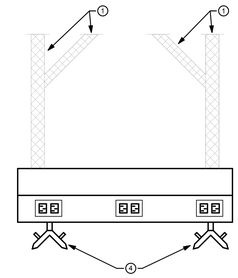
TYPICAL SMOKE DAMPER AND FIRE/SMOKE DAMPER ISOLATION CONTROL DETAIL
NOT TO SCALE

MEP DETAILS			STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	sheet no. 2 of 2
REVISIONS				
mark	date	description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171	date 11-21-2012
	11-21-2012	Bid Documents		NOT TO SCALE
			project: SCSU NEW ACADEMIC LABORATORY BUILDING	drawn by DJH
				checked by GVD
			CAD no. 1310 / project no. BI-RS-283-ARC	drawing no. MEP201

21-10-038



SIDE VIEW



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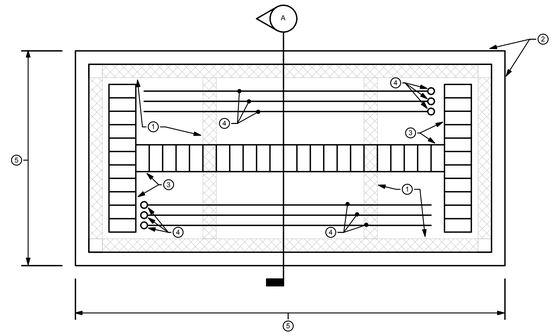
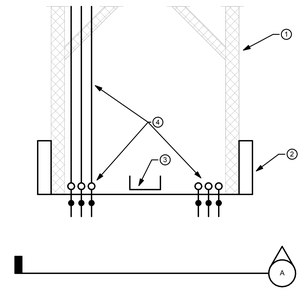


TOP VIEW

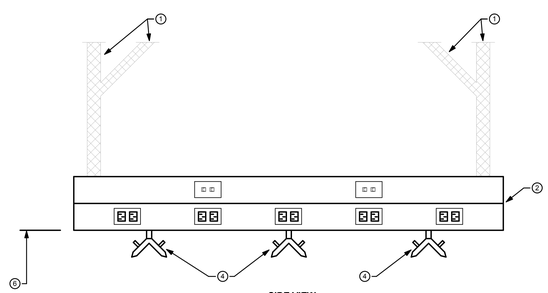


SECTION

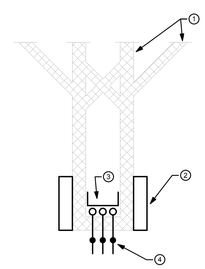
SERVICE CARRIER - "SC-A"
NOT TO SCALE

DRAWING NOTES

1. "U" CHANNEL SUPPORT SYSTEM. PROVIDE FULL SHOP DRAWINGS PER DIVISION 26 SPECIFICATION. SUPPORT & BRACING SHOWN FOR GENERAL INTENT ONLY.
2. DUAL CHANNEL RACEWAY PER DIVISION 26. NUMBER OF POWER OUTLETS, DATA/TEL. OUTLETS, CIRCUITS, DROPS, ETC. AS INDICATED ON FLOOR PLANS.
3. 6"x6" CABLE TRAY.
4. MECHANICAL, PLUMBING AND GAS SERVICES. SEE DOCUMENTS FOR TYPES AND QUANTITIES. GAS TURRETS TO BE 36" O.C. STAGGERED MAXIMUM. EQUALLY DISTRIBUTE ON ALL SIDES.
5. SERVICE CARRIER OUTSIDE DIMENSIONS SHALL BE INSET BY 6" FROM THE OUTSIDE EDGES OF THE BENCH IT SERVES. REVIEW AND CONFIRM MILLWORK DIMENSIONS.
6. MOUNT AT 74" AFF UNLESS OTHERWISE NOTED ON ELECTRICAL PART PLANS.



SIDE VIEW



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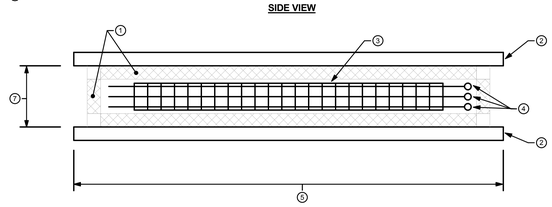
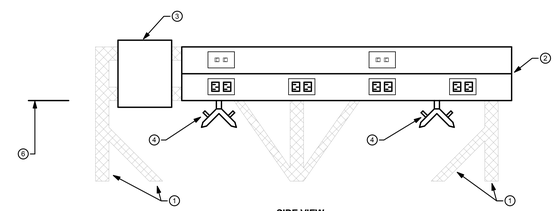


TOP VIEW

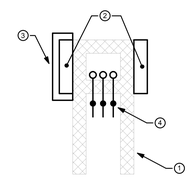
SERVICE CARRIER - "SC-B"
NOT TO SCALE

DRAWING NOTES

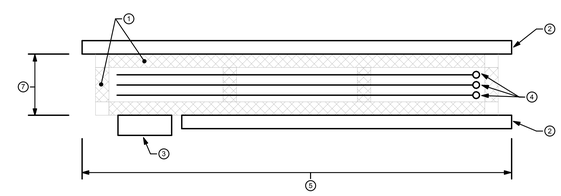
1. "U" CHANNEL SUPPORT SYSTEM. PROVIDE FULL SHOP DRAWINGS PER DIVISION 26 SPECIFICATION. SUPPORT & BRACING SHOWN FOR GENERAL INTENT ONLY.
2. DUAL CHANNEL RACEWAY PER DIVISION 26. NUMBER OF POWER OUTLETS, DATA/TEL. OUTLETS, CIRCUITS, DROPS, ETC. AS INDICATED ON FLOOR PLANS.
3. 6"x6" CABLE TRAY.
4. MECHANICAL, PLUMBING AND GAS SERVICES. SEE DOCUMENTS FOR TYPES AND QUANTITIES. GAS TURRETS TO BE 36" O.C. STAGGERED MAXIMUM. EQUALLY DISTRIBUTE ON ALL SIDES.
5. SERVICE CARRIER LENGTH DEPENDENT ON MILLWORK, FURNITURE AND EQUIPMENT DIMENSIONS.
   COORDINATE IN FIELD:
   - COMPLETELY OVER FIXED MILLWORK OR OTHERWISE NOTED TO BE INSET 6" FROM BENCH EDGES.
   - OVER WALKING ARES, MOVEABLE FURNITURE OR OTHERWISE NOTED AS EXTENDING BEYOND SERVICE AREA = EXTEND 18" BEYOND.
6. MOUNTING HEIGHT:
   - COMPLETELY OVER FIXED MILLWORK OR OTHERWISE NOTED = 74" A.F.F.
   - OVER WALKING ARES, MOVEABLE FURNITURE OR DIMENSION NOT NOTED = 80" A.F.F.
7. 12" WIDE INSIDE DIMENSION.



SIDE VIEW



END VIEW



TOP VIEW

SERVICE CARRIER - "SC-C"
NOT TO SCALE

DRAWING NOTES

1. "U" CHANNEL SUPPORT SYSTEM. PROVIDE FULL SHOP DRAWINGS PER DIVISION 26 SPECIFICATION. SUPPORT & BRACING SHOWN FOR GENERAL INTENT ONLY.
2. DUAL CHANNEL RACEWAY PER DIVISION 26. NUMBER OF POWER OUTLETS, DATA/TEL. OUTLETS, CIRCUITS, DROPS, ETC. AS INDICATED ON FLOOR PLANS.
3. 6"x6" DISCONNECT.
4. MECHANICAL, PLUMBING AND GAS SERVICES. SEE DOCUMENTS FOR TYPES AND QUANTITIES. GAS TURRETS TO BE 36" O.C. STAGGERED MAXIMUM. EQUALLY DISTRIBUTE ON ALL SIDES.
5. SERVICE CARRIER LENGTH DEPENDENT ON MILLWORK, FURNITURE AND EQUIPMENT DIMENSIONS.
   COORDINATE IN FIELD:
   - COMPLETELY OVER FIXED MILLWORK OR OTHERWISE NOTED TO BE INSET 6" FROM BENCH EDGES.
   - OVER WALKING ARES, MOVEABLE FURNITURE OR OTHERWISE NOTED AS EXTENDING BEYOND SERVICE AREA = EXTEND 18" BEYOND.
6. MOUNTING HEIGHT:
   - COMPLETELY OVER FIXED MILLWORK OR OTHERWISE NOTED = 74" A.F.F.
   - OVER WALKING ARES, MOVEABLE FURNITURE OR DIMENSION NOT NOTED = 80" A.F.F.
7. 12" WIDE INSIDE DIMENSION.

21-10-038

drawing title			
MEP DETAILS		STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume 2 of 2
REVISIONS			
mark	date	description	
	11-21-2012	Bid Documents	date 11-21-2012
		DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171	12" = 1'-0"
		project SCSU NEW ACADEMIC LABORATORY BUILDING	drawn by DJH
			checked by GVD
		CAD no. 1380 / project no. BI-RS-283-ARC	drawing no. MEP202

AIR COMPRESSOR AND VACUUM PUMP SCHEDULE

TYPE	EQUIPMENT	DESCRIPTION
AC-1	AIR COMPRESSOR	BEACON MEDAES #LAS-10T-200V-T TRIPLEX OIL-LESS SCROLL. SYSTEM SHALL CONSIST OF: 460/3/60 30HP SINGLE POINT ELECTRICAL CONNECTION, HEAVY DUTY ISOLATION SYSTEM, INTEGRALLY MOUNTED CORROSION RESISTANT 200 GALLON AIR RECEIVER, 705CFM @ 145 PSIG, ONE PUMP ON BACK-UP. PRE-PIPED AND WIRED DEW POINT HYGROMETER MONITOR WITH REMOTE CONTACTS FOR ALARM, DUPLEX DRYING SYSTEM WITH PURGE CONTROLLED DESICANT DRYERS WITH MOUNTED PRE-FILTERS, AFTER FILTERS, AND REGULATORS, OIL-LESS SCROLL TECHNOLOGY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
VP-1	LAB VACUUM PUMP (MEDICAL/LAB)	BEACON MEDAES #VHS-080D-120V-DCC DUPLEX CLAW MEDICAL VACUUM WITH VARIABLE SPEED DRIVE AND SINGLE POINT CONNECTION. SYSTEM SHALL CONSIST OF: 460/3/60 20HP SINGLE POINT MAIN ELECTRICAL CONNECTION, 120 GALLON RECEIVER, 77 SCFM @ 19" Hg. SYSTEM HORSEPOWER OF 18HP. TOUCH SCREEN CONTROL, NON-CONTACTING CLAW TECHNOLOGY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

AIR CompressOR AND VACUUM PUMP CIRCUIT SCHEDULE

TAG ID	VOLTS	HOMERUN			BRANCH CIRCUIT SIZE	SW/FUSE SIZE	REMARKS
		AMPS	POLES	PANEL			

COMMERCIAL LAV AND SINK SCHEDULE

TYPE	FIXTURE	SOIL	VENT	COLD	HOT	MOUNT	DESCRIPTION	NOTES
L-15	ADA HIGH EFFICIENCY LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"	COUNTER 34" AFF	KOHLER #K-2196, 20"x17", VITREOUS CHINA LAVATORY. TRUE-BRO "SOFT-GUARD" LAV GUARD INSULATION KIT TO COMPLY WITH 25 FLAME SPREAD/450 SMOKE INDEX. ZURN #Z6920-GEN-K-TMV-1 FAUCET SINGLE SUPPLY, 10 SECOND CONTINUOUS DISCHARGE CYCLE, 1.0 GPM, HYDROPOWER SELF-GENERATING POWER SYSTEM	
S-5	ADA SINK - SINGLE BOWL	1-1/2"	1-1/2"	1/2"	1/2"	COUNTER 34" AFF	ELKAY STAINLESS STEEL SINK #LRAD-2219, 22"x19", 6" DEEP BOWL, 2 FAUCET HOLES, REAR CENTER OFFSET DRAIN. TRUE-BRO "SOFT-GUARD" INSULATION KIT TO COMPLY WITH 25 FLAME SPREAD/450 SMOKE INDEX. SYMMONS "SYMMETRIX" #S-23-3-SM-VP SINGLE LEVER FAUCET WITH SINGLE HOLE MOUNTING, HOSE AND SPRAY, SWING SPOUT, VANDAL RESISTANT AERATOR.	
S-9	LAB SINK	1-1/2"	1-1/2"	1/2"	1/2"	COUNTER	REFER TO ARCHITECT'S DRAWINGS FOR SINK SPECIFICATIONS AND INFORMATION. T&S BRASS #BL-5700-08 FAUCET WITH GOOSENECK SPOUT, VACUUM BREAKER, AND SERRATED HOSE TIP.	

COMMERCIAL SHOWER, RECEPTOR, AND BASIN SCHEDULE

TYPE	FIXTURE	SOIL	VENT	COLD	HOT	MOUNT	DESCRIPTION	NOTES
MS-1	MOP SINK (24"x24")	3"	1-1/2"	1/2"	1/2"	FLOOR	FIAT #TSB-100, 24"x24" TERRAZZO MOP SERVICE BASIN WITH #830-AA SERVICE FAUCET AND VACUUM BREAKER, STAINLESS STEEL CAP ON ALL CURBS, STAINLESS STEEL WALL GUARD, MOP BRACKET, HOSE AND BRACKET, SILICONE SEALANT	
SH-1	SHOWER VALVE	--	--	1/2"	1/2"	WALL	SYMMONS "SAFETYMIX" #1-100-X SHOWER SYSTEM WITH #4-500 PRESSURE BALANCING MIXING VALVE, #4-231 SHOWER HEAD, INTEGRAL SERVICE STOPS	
SS-1	SERVICE SINK	3"	1-1/2"	1/2"	1/2"	FLOOR	KOHLER "BANNON" #K-6716, 24 1/4"x20 1/4" CAST IRON SERVICE SINK WITH ACID RESISTANT ENAMEL FINISH, DRILLED BACK, AND RIM GUARD. KOHLER "KNOXFORD" #K-8906 SERVICE SINK FAUCET WITH LEVER HANDLES, PAIL HOOK, LOOSE KEY STOPS, VACUUM BREAKER	

DOMESTIC WATER PIPING SPECIALTIES SCHEDULE

TYPE	SPECIALTY ITEM	DESCRIPTION
BV-1	BALANCING VALVE	BELL & GOSSETT CIRCUIT SETTER PLUS CALIBRATED BALANCING VALVE WITH BRONZE BODY
ETP-1	ELECTRONIC TRAP PRIMER	PRECISION PLUMBING PRODUCTS #MPB-500 ELECTRONIC TRAP PRIMING MANIFOLD TIMER BOX AND PRESET TIMER TO ACTIVATE SOLENOID VALVE ONCE FOR 10 SECONDS EVERY 24 HOURS. SERVES UP TO FOUR FLOOR DRAIN TRAPS. PROVIDE DISTRIBUTION UNIT FOR MULTIPLE FLOOR DRAIN TRAP INSTALLATION
HB-1	HOSE BIBB	WOODFORD #24P, BRASS CONSTRUCTION WALL FAUCET WITH VACUUM BREAKER, BACKFLOW PREVENTER
LC-1	LAUNDRY CONNECTION BOX	SYMMONS "LAUNDRY-MATE" #W-602-X SUPPLY AND DRAIN FIXTURE FOR 1/2" SUPPLY LINES AND 2" DRAIN CONNECTION
RPD-1	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS #009QT-S, ALL BRONZE BODY CONSTRUCTION WITH FDA EPOXY COATED STRAINER AND QUARTER TURN BALL VALVES, #909AG FIXED AIR GAP. PIPE RELIEF VALVE TO FLOOR DRAIN. SEE PLANS FOR SIZES
RPD-2	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS #009QT-SB-S, ALL BRONZE BODY CONSTRUCTION WITH QUARTER TURN BALL VALVES, #909AG FIXED AIR GAP. PIPE RELIEF VALVE TO FLOOR DRAIN. SEE PLANS FOR SIZES
TMV-1	THERMOSTATIC MIXING VALVE DOMESTIC WATER SYSTEM	SYMMONS "TEMPCONTROL" THERMOSTATIC CONTROLLER #S-900-W WITH SWIVEL ACTION CHECK STOPS, REMOVEABLE CARTRIDGE WITH STRAINER, ROUGH BRONZE FINISH, WALL MOUNTING BRACKET, AND MFR. REPRESENTATIVE VALVE SET-UP
TMV-2	THERMOSTATIC MIXING VALVE LAB WATER SYSTEM	SYMMONS "TEMPCONTROL" THERMOSTATIC CONTROLLER #S-900-W WITH SWIVEL ACTION CHECK STOPS, REMOVEABLE CARTRIDGE WITH STRAINER, ROUGH BRONZE FINISH, WALL MOUNTING BRACKET, AND MFR. REPRESENTATIVE SET-UP.
TMV-3	THERMOSTATIC MIXING VALVE	SYMMONS "TEMPCONTROL" THERMOSTATIC CONTROLLER #S-700-W WITH SWIVEL ACTION CHECK STOPS, REMOVEABLE CARTRIDGE WITH STRAINER, ROUGH BRONZE FINISH, WALL MOUNTING BRACKET, AND MFR. REPRESENTATIVE SET-UP.
TMV-4	EMERGENCY THERMOSTATIC MIXING VALVE	GUARDIAN #G3800 WITH HOT WATER SHUTOFF DURING COLD WATER INTERRUPTION AND COLD WATER ONLY FLOW DURING HOT WATER INTERRUPTION. PROVIDE SURFACE MOUNTED STAINLESS STEEL CABINET
TMV-5	EMERGENCY THERMOSTATIC MIXING VALVE	GUARDIAN #G3900 WITH HOT WATER SHUTOFF DURING COLD WATER INTERRUPTION AND COLD WATER ONLY FLOW DURING HOT WATER INTERRUPTION. PROVIDE SURFACE MOUNTED STAINLESS STEEL CABINET
WH-1	WALL HYDRANT	WOODFORD #867 RECESSED TYPE, AUTOMATIC DRAINING, NONFREEZE WALL HYDRANT WITH VACUUM BREAKER, LOOSE KEY OPERATION, POLISHED BRASS FINISH

DRAINAGE PIPING SPECIALTIES SCHEDULE

TYPE	SPECIALITY TYPE	DESCRIPTION
AD-1	AREA DRAIN	MIFAB #1320, CAST IRON AREA DRAIN WITH ANCHOR FLANGE, CAST IRON CLAMP RING WITH PRIMARY AND SECONDARY WEEPHOLES FOR WATERPROOFING MEMBRANES. PROVIDE DOME GRATE IN AREAS WITH NO PEDESTRIAN TRAFFIC.
FD-1	FLOOR DRAIN	MIFAB #F1000C, CAST IRON FLOOR DRAIN WITH ANCHOR FLANGE, WEEPHOLES, 1/2" TRAP PRIMER TAPPING, 6" DIAMETER POLISHED STAINLESS STEEL STRAINER, VANDAL RESISTANT SCREWS AND INTERNAL, STAINLESS STEEL SEDIMENT BUCKET
FD-10	FLOOR DRAIN	MIFAB #F1000-8-3-30-28 PVC BODY FLOOR DRAIN WITH ANCHOR FLANGE, WEEPHOLES, AND SOLID CAST 304 HEAVY DUTY 8" DIAMETER POLISHED STAINLESS STEEL STRAINER.
FS-1	FLOOR SINK	MIFAB #FS-1520, CAST IRON 8" SQUARE FLOOR SINK WITH 6" DEEP SUMP, A.R.E. INTERIOR, LIFT OUT ALUMINUM SEDIMENT BUCKET AND STAINLESS STEEL RIM AND GRATE. PROVIDE HALF GRATES IN AREAS RECEIVING INDIRECT WASTES. PROVIDE CLAMPING DEVICE WHERE WATERPROOF MEMBRANES ARE USED
FS-3	FLOOR SINK	MIFAB #FS-1700, CAST IRON 12" SQUARE FLOOR SINK WITH 10" DEEP SUMP, A.R.E. INTERIOR, LIFT OUT ALUMINUM SEDIMENT BUCKET AND STAINLESS STEEL RIM AND GRATE. PROVIDE HALF GRATES IN AREAS RECEIVING INDIRECT WASTES. PROVIDE CLAMPING DEVICE WHERE WATERPROOF MEMBRANES ARE USED
NT-2	ACID NEUTRALIZATION SYSTEM	BURT PROCESS EQUIPMENT BPDN SERIES DUAL STAGE PH NEUTRALIZATION SYSTEM INCLUDING THE FOLLOWING: PREPACKAGED SKID MOUNTED SYSTEM WITH AUTOMATIC CONTROLS AND INSTRUMENTATION AND INTERCONNECTING PLUMBING AND ELECTRIC SERVICES, INFLUENT AND EFFLUENT PUMP TRANSFER STATIONS, PRIMARY NEUTRALIZATION TANK, SECONDARY NEUTRALIZATION TANK, TANK MIXER, PH SENSORS, REAGENT LIQUID LEVEL CONTROLS, CHEMICAL METERING PUMPS, CONTROL PANEL AND COMPONENTS, PH ANALYZERS, PH FLOW RECORDER AND MONITOR, EFFLUENT MONITORING WELL, START-UP ASSISTANCE AND OPERATOR TRAINING. SYSTEM CAPACITY SHALL BE 300 GPM AND A PH OF 1-14. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
ORD-1	OVERFLOW ROOF DRAIN	MIFAB #R1200-W, CAST IRON CONSTRUCTION WITH ADJUSTABLE EXTENSION FOR INSULATION, CLAMPING COLLAR, 3" HIGH AND 6" DIAMETER INTERNAL STANDPIPE, CAST IRON DOME AND UNDER DECK CLAMP. PROVIDE MIFAB #R1940 SERIES SATIN NICKEL BRONZE DOWNSPOUT NOZZLE WITH THREADED OUTLET AND FLANGE FOR SECURING TO WALL. PIPE TO DISCHARGE 18" ABOVE GRADE. MIFAB #R1200-W, CAST IRON CONSTRUCTION WITH ADJUSTABLE EXTENSION FOR INSULATION, CLAMPING COLLAR, 3" HIGH AND 6" DIAMETER INTERNAL STANDPIPE, CAST IRON DOME AND UNDER DECK CLAMP. PROVIDE MIFAB #R1940 SERIES SATIN NICKEL BRONZE DOWNSPOUT NOZZLE WITH THREADED OUTLET AND FLANGE FOR SECURING TO WALL. PIPE TO DISCHARGE 18" ABOVE GRADE.
RD-1	ROOF DRAIN	MIFAB #R1200, CAST IRON CONSTRUCTION WITH ADJUSTABLE EXTENSION FOR INSULATION, CLAMPING COLLAR, CAST IRON DOME AND UNDER DECK CLAMP.
RD-2	ROOF DRAIN	ZURN #Z181, CAST IRON CONSTRUCTION WITH PLAIN BRONZE DOME, MEMBRANE FLASHING CLAMP.
ST-1	SEDIMENT TRAP	TOWN AND COUNTRY PLASTICS #SI-5 HIGH-DENSITY POLYETHYLENE PLASTIC, ACID RESISTANT SEDIMENT INTERCEPTOR, 5 GALLON CAPACITY, 1 1/2" INLET AND OULET.
TD-2	TRENCH DRAIN	J.R. SMITH #9816 MODULAR POLYMER CONCRETE CHANNEL PRE-SLOPED DRAIN WITH DUCTILE IRON FRAME SUPPORT, GALVANIZED CONCRETE ANCHORS, #9870 HEAVY-DUTY SLOTTED STAINLESS STEEL GRATE
TS-1	TRAP SEAL	PROSET TRAP GUARD ELASTOMERIC FLOOR DRAIN TRAP SEAL. COORDINATE EXACT MODEL NUMBER WITH THE FLOOR DRAIN MANUFACTURER THAT IS BEING PROVIDED.

ELECTRIC HEATING CABLES SCHEDULE

TAG ID	SYSTEM PROTECTED	ELEC W/LF	DESCRIPTION
EHC-1	FREEZE PROTECTION	8	RAYCHEM XL SERIES SELF REGULATING HEATING CABLE, PROVIDE AND INSTALL ALL REQUIRED CONNECTION KITS, ACCESSORIES, AND SINGLE POINT HEAT TRACE CONTROLLER. HEAT TRACE SELECTION IS BASED ON 1 1/2" THICK MINERAL FIBER INSULATION. SEE "ES" SERIES DWGS FOR CIRCUITING INFORMATION.

ELECTRIC WATER COOLER AND DRINKING FOUNTAIN SCHEDULE

TYPE	FIXTURE	SOIL	VENT	COLD	HOT	MOUNT	DESCRIPTION	NOTES
EWC-1	ELECTRIC WATER COOLER (RECESSED SINGLE LEVEL)	1-1/2"	1-1/2"	1/2"	---	WALL-36"AFF MAX. SPOUT HEIGHT	HAWS #H1001.S STAINLESS STEEL ELECTRIC WATER COOLER, 18 GAUGE TYPE 304 STAINLESS STEEL WITH #4 SATIN FINISH RATED FOR 8 GPH OF CHILLED WATER WITH #5426 IN-LINE LEAD FILTER AND BOTTLE FILLER.	

EMERGENCY PLUMBING FIXTURE SCHEDULE

TYPE	FIXTURE	SOIL	VENT	COLD	HOT	MOUNT	DESCRIPTION	NOTES
ESS-1	EMERGENCY SAFETY STATION	---	---	1 1/4"	1 1/4"	FLOOR	GUARDIAN #G8F1909 BARRIER FREE SAFETY STATION WITH STAINLESS STEEL BOWL, ABS PLASTIC SHOWER HEAD, STAY-OPEN BALL VALVE FOR SHOWER AND EYE/FACE WASH. STAINLESS STEEL PULL ROD FOR SHOWER, AND SPRAY HEAD DUST COVERS FOR EYE/FACE WASH.	
ESS-2	EMERGENCY SAFETY STATION	---	---	---	---	CEILING/FLOOR	SEE LAB EQUIPMENT DRAWINGS FOR SPECIFICATION	

PLUMBING PUMP SCHEDULE

TYPE	EQUIPMENT	DESCRIPTION
BP-1	DOMESTIC WATER BOOSTER PUMP	ARMSTRONG SERIES 6535 TRIPLEX VARIABLE SPEED PACKAGED PUMP SYSTEM WITH SERIES 6000V CONTROLLER. PUMP PACKAGE SHALL BE RATED FOR 200 GPM AT A DISCHARGE PRESSURE OF 80 PSIG WHEN SUPPLIED WITH A MINIMUM SUCTION PRESSURE OF 50 PSIG. UNIT SHALL BE RATED FOR 150 PSI WORKING PRESSURE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
SEP-1	SEWAGE EJECTOR PUMP	HYDROMATIC DUPLEX PACKAGED SEWAGE EJECTOR PUMP SYSTEM WITH FIBERGLASS BASIN. EACH HYDROMATIC PUMP #HPGF500 IS RATED FOR 100 GPM AT 50' TDH DESIGN POINT. PUMPS SHALL BE EQUIPPED WITH DUAL STAINLESS STEEL CUTTERS. CONTROL PANEL SHALL BE HYDROMATIC 2000 NOVUS SERIES NEMA 3R. BASIN SHALL BE 60" DIAMETER x 84" DEEP WITH (2) HYDRO-RAIL QUICK DISCONNECT SYSTEM. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
SP-1	SUMP PUMP	HYDROMATIC DUPLEX PACKAGED SUMP PUMP SYSTEM WITH FIBERGLASS BASIN. EACH HYDROMATIC PUMP #SPD100H IS RATED FOR 36 GPM AT 48' TDH DESIGN POINT. CONTROL PANEL SHALL BE HYDROMATIC NEMA 4X. BASIN SHALL BE 42" DIAMETER x 72" DEEP WITH (2) HYDRO-RAIL QUICK DISCONNECT SYSTEM. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
SP-2	SUMP PUMP	SHIPCO DUPLEX PACKAGED CONDENSATE PUMP SYSTEM WITH 15 GALLON CAST IRON RECEIVER. EACH SHIPCO PUMP #64ECCD IS RATED FOR 9 GPM AT 40 PSIG. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PROCESS WATER EQUIPMENT SCHEDULE

TYPE	EQUIPMENT	DESCRIPTION
RO-1	REVERSE OSMOSIS WATER SYSTEM (CENTRAL SYSTEM)	HYDRO SERVICE PURIFIED WATER SYSTEM CONSISTING OF PRETREATMENT EQUIPMENT, PRIMARY TREATMENT EQUIPMENT, AND POST TREATMENT EQUIPMENT. SYSTEM SHALL PRODUCE 2,920 GALLONS PER 24 HOUR PERIOD AT 77 DEGREES F. AND SHALL CONSIST OF THREE FULLY RECIRCULATED PIPE DISTRIBUTION LOOPS. SYSTEM SHALL PRODUCE ASTM TYPE 2 WATER (1-3 MEG-OHM) AND EACH DISTRIBUTION LOOP SHALL HAVE A DISTRIBUTION FLOW RATE OF 20 GPM AT 80 PSI. PRETREATMENT EQUIPMENT SHALL INCLUDE MULTI-MEDIA TURBIDITY FILTER, DUPLEX ALTERNATING WATER SOFTENER, CARBON FILTER, AND 5 MICRON PRE-FILTER. PRIMARY TREATMENT SHALL INCLUDE REVERSE OSMOSIS UNIT AND MIXED BED DEIONIZERS. POST TREATMENT EQUIPMENT SHALL INCLUDE 500 GALLON STORAGE TANK, NORTH WING LOOP DISTRIBUTION PUMPS, SOUTH WING LOOP DISTRIBUTION PUMPS, CLEAN STEAM GENERATOR LOOP DISTRIBUTION PUMPS, NORTH WING UV STERILIZER AND FINAL FILTER, SOUTH WING UV STERILIZER AND FINAL FILTER, STEAM GENERATOR UV STERILIZER AND FINAL FILTER, AND PLC CONTROL PANEL. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

WATER CLOSET AND URINAL SCHEDULE

TYPE	FIXTURE	SOIL	VENT	COLD	HOT	MOUNT	DESCRIPTION	NOTES
UR-6	ADA HIGH EFFICIENCY URINAL	2"	1-1/2"	3/4"	--	WALL 17" AFF	ZURN #Z5798.263, VITREOUS CHINA, 1/8 GALLONS PER FLUSH, TOP SPUD, HIGH EFFICIENCY URINAL. MIFAB MC SERIES DUAL PLATE FOOT SUPPORTED CARRIER WITH HEAVY GAUGE STEEL UPRIGHTS AND INTEGRAL WELDED FEET. HIGH EFFICIENCY HYDROPOWER SELF GENERATING PISTON FLUSH VALVE, 1/8 GPF, ANGLE STOP AND VACUUM BREAKER, MANUAL OVERRIDE BUTTON, SWEAT ADAPTER KIT.	
WC-13	WATER CLOSET (WALL MOUNTED HIGH EFFICENCY)	4"	2"	1"	--	WALL	ZURN #Z5615-BWL, VITREOUS CHINA, 1.28 GALLONS PER FLUSH, TOP SPUD, ELONGATED BOWL, COMMERCIAL HEAVY DUTY OPEN FRONT SEAT. MIFAB "MC" SERIES CAST IRON CLOSET CARRIER. ZURN #ZGEN 6200EV HIGH EFFICIENCY HYDROPOWER SELF GENERATING PISTON FLUSH VALVE, 1.28 GPF, BUMPER ON ANGLE STOP, VACUUM BREAKER, MANUAL OVERRIDE BUTTON, SWEAT ADAPTER KIT, CAST BRASS CONSTRUCTION.	
WC-15	ADA WATER CLOSET (WALL MOUNTED HIGH EFFICENCY)	4"	2"	1"	--	WALL 18" AFF TO TOP OF SEAT	ZURN #Z5615-BWL, VITREOUS CHINA, 1.28 GALLONS PER FLUSH, TOP SPUD, ELONGATED BOWL, COMMERCIAL HEAVY DUTY OPEN FRONT SEAT. MIFAB "MC" SERIES CAST IRON CLOSET CARRIER. ZURN #ZGEN 6200EV HIGH EFFICIENCY HYDROPOWER SELF GENERATING PISTON FLUSH VALVE, 1.28 GPF, BUMPER ON ANGLE STOP, VACUUM BREAKER, MANUAL OVERRIDE BUTTON, SWEAT ADAPTER KIT, CAST BRASS CONSTRUCTION	

WATER HEATER SCHEDULE

TYPE	EQUIPMENT	DESCRIPTION
HTWH-1	HIGH TEMP WATER WATER HEATER - DOMESTIC HOT WATER SYSTEM	TWO ACE HORIZONTAL SEMI-INSTANTANEOUS DOUBLE WALL WATER TO WATER WATER HEATERS MOUNTED ON STEEL FRAMEWORK SURROUNDING ONE HORIZONTAL 275 GALLON 150 PSI ASME STORAGE TANK #S030604-K-J-M. EACH HEATER SHALL BE ACE MINI-PACK MODEL #SI-H8-DW-WE150-D WITH A WARREN SERIES 2800 TWO WAY SINGLE SEATED BRONZE BODY VALVE WITH AMURACT ELECTRIC FAIL SAFE ACTUATOR. SYSTEM PERFORMANCE IN WINTER IS 2,934 GALLONS PER HOUR @ 100 DEGREES F. TEMP RISE WHEN SUPPLIED WITH 350 DEGREE HOT WATER AT47 GPM. PERFORMANCE IN SUMMER IS 2,934 GALLONS PER HOUR @ 100 DEGREES F. TEMP RISE WHEN SUPPLIED WITH 240 DEGREE HOT WATER AT 58 GPM. PROVIDE START-UP BY FACTORY AUTHORIZED REPRESENTATIVE.
HTWH-2	HIGH TEMP WATER WATER HEATER - LAB HOT WATER SYSTEM	TWO ACE HORIZONTAL SEMI-INSTANTANEOUS DOUBLE WALL WATER TO WATER WATER HEATERS MOUNTED ON STEEL FRAMEWORK SURROUNDING ONE HORIZONTAL 275 GALLON 150 PSI ASME STORAGE TANK #S030604-K-J-M. EACH HEATER SHALL BE ACE MINI-PACK MODEL #SI-H8-DW-WE150-D WITH A WARREN SERIES 2800 TWO WAY SINGLE SEATED BRONZE BODY VALVE WITH AMURACT ELECTRIC FAIL SAFE ACTUATOR. SYSTEM PERFORMANCE IN WINTER IS 2,934 GALLONS PER HOUR @ 100 DEGREES F. TEMP RISE WHEN SUPPLIED WITH 350 DEGREE HOT WATER AT 47 GPM. PERFORMANCE IN SUMMER IS 2,934 GALLONS PER HOUR @ 100 DEGREES F. TEMP RISE WHEN SUPPLIED WITH 240 DEGREE HOT WATER AT 58 GPM. PROVIDE START-UP BY FACTORY AUTHORIZED REPRESENTATIVE.

FIRE PUMP SCHEDULE

TAG ID	EQUIPMENT	DESCRIPTION
EFP-1	ELECTRIC FIRE PUMP	PEERLESS #5AEF14 750 GPM ELECTRIC HORIZONTAL SPLIT CASE FIRE PUMP. 78 PSI RATED HEAD, 50 HORSEPOWER, 1,760 RPM. FIRETROL #FTA 1930 SOFT START CONTROLLER WITH TRANSFER SWITCH, #CR1-9 JOCKEY PUMP AND JOCKEY PUMP CONTROLLER. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
JP-1	JOCKEY PUMP	REFER TO SPECIFICATIONS FOR INFORMATION.

project
MEP SCHEDULES

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
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project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

21-10-038

date 11-21-2012
scale
drawn by DJH
approved by GVD
drawing no. MEP304

AIRFLOW CONTROL VALVE SCHEDULE - SUPPLY WITH HEATING COIL

TAG ID	AIR VALVE MFR	MODEL	QTY.	VALVE SIZE (IN)	CFM MAX	CFM MIN	HEATING COIL MFR	EAT (°F)	LAT (°F)	MAX APD (IN WC)	ROWS	MBH	GPM	PIPE RUNOUT SIZE (IN)	EWT (°F)	LWT (°F)	Sound Attenuator
003-S	PHOENIX	TSVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
004-S	PHOENIX	TSVA108M	1	8"	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
13-S	PHOENIX	MAVA212M	2	12"	1800		TRANE	55	85	0.6"	2	68.0	4.6	1"	180	150	SA-A
15-S	PHOENIX	MAVA112M	1	12"	900		TRANE	55	86.74	0.6"	2	34.0	2.3	3/4"	180	150	
19-S	PHOENIX	MAVA214M	2	14"	2700		TRANE	55	85	0.6"	2	102.1	6.9	1-1/4"	180	150	SA-A
022-S	PHOENIX	TSVA108M	1	8"	400		TRANE	55	87	0.6"	2	15.1	1.1	3/4"	180	150	
024-S	PHOENIX	TSVA108M	1	8"	400		TRANE	55	88.51	0.6"	2	15.1	1.1	3/4"	180	150	
25-S1	PHOENIX	TSVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
25-S2	PHOENIX	TSVA110M	1	10"	675		TRANE	55	87.04	0.6"	2	25.5	1.8	3/4"	180	150	
26-S	PHOENIX	TSVA110M	1	10"	700		TRANE	55	86.47	0.6"	2	26.5	1.8	3/4"	180	150	
27-S	PHOENIX	MAVA112M	1	12"	1200		TRANE	55	85.64	0.6"	2	45.4	3.1	3/4"	180	150	
29-S	PHOENIX	TSVA108M	1	8"	350		TRANE	55	85.52	0.6"	2	13.2	0.9	3/4"	180	150	
30-S	PHOENIX	TSVA108M	1	8"	500		TRANE	55	86.06	0.6"	2	18.9	1.3	3/4"	180	150	
31-S	PHOENIX	MAVA112M	1	12"	1050		TRANE	55	87.88	0.6"	2	39.7	2.7	3/4"	180	150	
32-S	PHOENIX	TSVA108M	1	8"	550		TRANE	55	85.78	0.6"	2	20.8	1.4	3/4"	180	150	SA-A
33-S	PHOENIX	MAVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
34-S	PHOENIX	TSVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	SA-A
36-S	PHOENIX	TSVA108M	1	8"	500		TRANE	55	86.06	0.6"	2	18.9	1.3	3/4"	180	150	
37-S	PHOENIX	MAVA210M	2	10"	1500		TRANE	55	85	0.6"	2	56.7	3.8	1"	180	150	
38-S	PHOENIX	TSVA108M	1	8"	400		TRANE	55	87	0.6"	2	15.1	1.1	3/4"	180	150	SA-A
42-S	PHOENIX	TSVA112M	1	12"	1200		TRANE	55	89.11	0.6"	2	45.4	3.1	3/4"	180	150	SA-A
45-S	PHOENIX	TSVA108M	1	8"	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
49-S	PHOENIX	TSVA108M	1	8"	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
51-S	PHOENIX	TSVA108M	1	8"	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
103-S	PHOENIX	MAVA214M	2	14"	2700		TRANE	55	85	0.6"	2	102.1	6.9	1-1/4"	180	150	SA-A
103A-S	PHOENIX	MAVA112M	1	12"	900		TRANE	55	86.74	0.6"	2	34.0	2.3	3/4"	180	150	
107-S	PHOENIX	TSVA108M	1	8"	400		TRANE	55	87	0.6"	2	15.1	1.1	3/4"	180	150	
109-S	PHOENIX	TSVA110M	1	10"	800		TRANE	55	86.06	0.6"	2	30.2	2.1	3/4"	180	150	
111-S	PHOENIX	TSVA112M	1	12"	1200		TRANE	55	85	0.6"	2	45.4	3.1	3/4"	180	150	
111A-S	PHOENIX	TSVA110M	1	10"	800		TRANE	55	85.41	0.6"	2	30.2	2.1	3/4"	180	150	
112-S1	PHOENIX	TSVA210M	2	10"	1200		TRANE	55	85	0.6"	2	45.4	3.1	3/4"	180	150	
115-S	PHOENIX	TSVA112M	1	12"	950		TRANE	55	85.78	0.6"	2	35.9	2.4	3/4"	180	150	
119-S	PHOENIX	MAVA114M	1	14"	1575		TRANE	55	85	0.6"	2	59.5	4	1"	180	150	
121-S	PHOENIX	TSVA108M	1	8"	500		TRANE	55	86.06	0.6"	2	18.9	1.3	3/4"	180	150	
123-S	PHOENIX	MAVA112M	1	12"	1200		TRANE	55	89.11	0.6"	2	45.4	3.1	3/4"	180	150	
124-S	PHOENIX	MAVA212M	2	12"	2000		TRANE	55	85	0.6"	2	75.6	5.1	1"	180	150	
125-S	PHOENIX	TSVA108M	1	8"	500		TRANE	55	86.06	0.6"	2	18.9	1.3	3/4"	180	150	
126-S	PHOENIX	TSVA110M	1	10"	700		TRANE	55	86.47	0.6"	2	26.5	1.8	3/4"	180	150	
127-S	PHOENIX	MAVA210M	2	10"	1500		TRANE	55	85	0.6"	2	56.7	3.8	1"	180	150	SA-A
131-S	PHOENIX	TSVA112M	1	12"	975		TRANE	55	87.85	0.6"	2	36.9	2.5	3/4"	180	150	
133-S	PHOENIX	TSVA108M	1	8"	350		TRANE	55	85.42	0.6"	2	13.2	0.9	3/4"	180	150	
135-S	PHOENIX	MAVA112M	1	12"	1000		TRANE	55	88.68	0.6"	2	37.8	2.6	3/4"	180	150	
139-S	PHOENIX	MAVA112M	1	12"	1000		TRANE	55	88.68	0.6"	2	37.8	2.6	3/4"	180	150	
141-S	PHOENIX	MAVA212M	2	12"	1625		TRANE	55	85	0.6"	2	61.4	4.1	1"	180	150	
201-S	PHOENIX	TSVA110M	1	10"	650		TRANE	55	87.64	0.6"	2	24.6	1.7	3/4"	180	150	
203-S	PHOENIX	MAVA212M	2	12"	2100		TRANE	55	85	0.6"	2	79.4	5.3	1"	180	150	
209-S	PHOENIX	TSVA112M	1	12"	1100		TRANE	55	89.12	0.6"	2	41.6	2.8	3/4"	180	150	
211-S	PHOENIX	MAVA214M	2	14"	3600		TRANE	55	85	0.6"	2	136.1	9.1	1-1/4"	180	150	
216-S	PHOENIX	TSVA108M	1	8"	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
219-S	PHOENIX	TSVA112M	1	12"	1100		TRANE	55	89.12	0.6"	2	41.6	2.8	3/4"	180	150	
220-S1	PHOENIX	TSVA108M	1	8"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
220-S2	PHOENIX	TSVA108M	1	8"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
221-S	PHOENIX	MAVA212M	2	12"	1650		TRANE	55	85	0.6"	2	62.4	4.2	1"	180	150	SA-A
223-S	PHOENIX	MAVA114M	1	14"	1500		TRANE	55	85	0.6"	2	56.7	3.8	1"	180	150	
225-S1	PHOENIX	TSVA108M	1	8"	475		TRANE	55	85.44	0.6"	2	18.0	1.2	3/4"	180	150	
226-S	PHOENIX	MAVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
229-S	PHOENIX	MAVA212M	2	12"	2400		TRANE	55	85	0.6"	2	90.7	6.1	1-1/4"	180	150	
230-S	PHOENIX	MAVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
233A-S1	PHOENIX	MAVA114M	1	14"	1230		TRANE	55	88.7	0.6"	2	46.5	3.1	3/4"	180	150	
233A-S2	PHOENIX	MAVA114M	1	14"	1230		TRANE	55	88.7	0.6"	2	46.5	3.1	3/4"	180	150	
233A-S3	PHOENIX	MAVA114M	1	14"	1230		TRANE	55	88.7	0.6"	2	46.5	3.1	3/4"	180	150	
233B-S	PHOENIX	TSVA108M	1	8"	75		TRANE	55	97.33	0.6"	2	2.8	0.2	3/4"	180	150	
234-S	PHOENIX	MAVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
235-S	PHOENIX	MAVA112M	1	12"	1200		TRANE	55	89.11	0.6"	2	45.4	3.1	3/4"	180	150	
237-S	PHOENIX	TSVA108M	1	8"	550		TRANE	55	85.78	0.6"	2	20.8	1.4	3/4"	180	150	
239-S	PHOENIX	MAVA108M	1	8"	550		TRANE	55	85.78	0.6"	2	20.8	1.4	3/4"	180	150	
241-S	PHOENIX	TSVA110M	1	10"	775		TRANE	55	86.13	0.6"	2	29.3	2	3/4"	180	150	
242-S	PHOENIX	TSVA110M	1	10"	800		TRANE	55	85.64	0.6"	2	30.2	2.1	3/4"	180	150	
243-S	PHOENIX	MAVA210M	2	10"	1500		TRANE	55	85	0.6"	2	56.7	3.8	1"	180	150	SA-A
301-S	PHOENIX	TSVA108M	1	8"	400		TRANE	55	87	0.6"	2	15.1	1.1	3/4"	180	150	
304-S	PHOENIX	TSVA108M	1	8"	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
305-S	PHOENIX	MAVA112M	1	12"	1200		TRANE	55	89.11	0.6"	2	45.4	3.1	3/4"	180	150	
307-S1	PHOENIX	TSVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
307-S2	PHOENIX	TSVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
308-S	PHOENIX	TSVA112M	1	12"	850		TRANE	55	87.65	0.6"	2	32.1	2.2	3/4"	180	150	
310-S	PHOENIX	TSVA108M	1	8"	275		TRANE	55	85.3	0.6"	2	10.4	0.7	3/4"	180	150	
312-S	PHOENIX	MAVA212M	2	12"	2250		TRANE	55	85	0.6"	2	85.1	5.7	1"	180	150	
313-S	PHOENIX	TSVA212M	2	12"	2000		TRANE	55	85	0.6"	2	75.6	5.1	1"	180	150	
314-S	PHOENIX	TSVA110M	1	10"	575		TRANE	55	85.11	0.6"	2	21.7	1.5	3/4"	180	150	
315-S	PHOENIX	MAVA212M	2	12"	1800		TRANE	55	85	0.6"	2	68.0	4.6	1"	180	150	
317-S	PHOENIX	TSVA214M	2	14"	2500		TRANE	55	85	0.6"	2	94.5	6.3	1-1/4"	180	150	
318-S	PHOENIX	TSVA108M	1	8"	550		TRANE	55	85.78	0.6"	2	20.8	1.4	3/4"	180	150	
322-S	PHOENIX	MAVA112M	1	12"	900		TRANE	55	86.74	0.6"	2	34.0	2.3	3/4"	180	150	
324-S	PHOENIX	TSVA112M	1	12"	1000		TRANE	55	88.7	0.6"	2	37.8	2.6	3/4"	180	150	
325-S1	PHOENIX	MAVA214M	2	14"	3210		TRANE	55	85	0.6"	2	121.3	8.1	1-1/4"	180	150	SA-A
325-S2	PHOENIX	MAVA212M	2	12"	2140		TRANE	55	85	0.6"	2	80.9	5.4	1"	180	150	SA-A
327-S1	PHOENIX	TSVA108M	1	8"	450		TRANE	55	85.17	0.6"	2	17.0	1.2	3/4"	180	150	
329-S1	PHOENIX	MAVA214M	2	14"	2800		TRANE	55	85	0.6"	2	105.8	7.1	1-1/4"	180	150	
331-S1	PHOENIX	MAVA112M	1	12"	900		TRANE	55	88.38	0.6"	2	34.0	2.3	3/4"	180	150	
334-S1	PHOENIX	MAVA212M	2	12"	1800		TRANE	55	85	0.6"	2	68.0	4.6	1"	180	150	
335-S1	PHOENIX	TSVA108M	1	8"	475		TRANE	55	86.06	0.6"	2	18.0	1.2	3/4"	180	150	
337-S1	PHOENIX	MAVA212M	2	12"	2200		TRANE	55	85	0.6"	2	83.2	5.6	1"	180	150	
337-S2	PHOENIX	MAVA212M	2	12"	2200		TRANE	55	85	0.6"	2	83.2	5.6	1"	180	150	
338-S1	PHOENIX	MAVA114M	1	14"	1500		TRANE	55	85	0.6"	2	56.7	3.8	1"	180	150	
341-S1	PHOENIX	MAVA312M	3	12"	3300		TRANE	55	85	0.6"	2	124.7	8.4	1-1/4"	180	150	
343-S1	PHOENIX	MAVA110M	1	10"	800		TRANE	55	85.64	0.6"	2	30.2	2.1	3/4"	180	150	
344-S	PHOENIX	TSVA110M	1	10"	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
345-S1	PHOENIX	MAVA312M	3	12"	3000		TRANE	55	85	0.6"	2	113.4	7.6	1-1/4"	180	150	SA-A
345-S2	PHOENIX	MAVA312M	3	12"	3300		TRANE	55	85	0.6"	2	124.7	8.4	1-1/4"	180	150	SA-A
349-S1	PHOENIX	TSVA214M	2	14"	2500		TRANE	55	85	0.6"	2	94.5	6.3	1-1/4"	180	150	
352-S1	PHOENIX	TSVA108M	1	8"	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	

GENERAL NOTES

1. ALL AIR VALVES SHALL BE PROVIDED WITH 3 FT MANUFACTURER SOUND ATTENUATOR.

AIRFLOW CONTROL VALVE SCHEDULE - EXHAUST

TAG ID	MFR	MODEL	QUANTITY	VALVE SIZE (IN)	VALVE COATING	CFM MAX	CFM MIN	SOUND ATTENUATOR
006-E	PHOENIX	TEVA108M	1	8"		250		SA-B
13-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	900		SA-B
13-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	900		SA-B
13-E3	PHOENIX	EXVB112M	1	12"		1500		SA-B
014-E	PHOENIX	TEVA108M	1	8"		575		SA-B
15-E1	PHOENIX	EXVB110M	1	10"		1000		SA-B
15-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
19-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
19-E2	PHOENIX	EXVB112M	1	12"		1500		SA-B
19-E3	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
19-E4	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
27-E	PHOENIX	TEVA108M	1	8"		450		SA-B
27-E1	PHOENIX	EXVB108M	1	8"	PHENOLIC	1000		SA-B
27-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
29-E	PHOENIX	TEVA108M	1	8"		450		SA-B
31-E1	PHOENIX	EXVB112M	1	12"		1200		SA-B
31-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
32-E	PHOENIX	TEVA112M	1	12"		650		SA-B
33-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	400		SA-B
34-E	PHOENIX	TEVA110M	1	10"		700		SA-B
36-E1	PHOENIX	EXVB110M	1	10"		600		SA-B
36-E2	PHOENIX	EXVB110M	1	10"		1000		SA-B
37-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
37-E2	PHOENIX	EXVB210M	2	10"		1200		SA-B
37-E3	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
38-E	PHOENIX	TEVA110M	1	10"		500		SA-B
41-E	PHOENIX	TEVA110M	1	10"		200		SA-B
42-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1350		SA-B
42-E2	PHOENIX	EXVB110M	1	10"		1000		SA-B
42-E3	PHOENIX	TEVA108M	1	8"	PHENOLIC	300		SA-B
103-E1	PHOENIX	EXVB114M	1	14"		1650		SA-B
103-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
103-E3	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
103-E4	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
103A-E1	PHOENIX	EXVB108M	1	8"		600		SA-B
103A-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
104-E	PHOENIX	TEVA108M	1	8"		300		SA-B
109-E	PHOENIX	TEVA108M	1	8"		500		SA-B
109-E	PHOENIX	TEVA108M	1	8"		500		SA-B
109B-E	PHOENIX	TEVA108M	1	8"		250		SA-B
111-E	PHOENIX	TEVA112M	1	12"		1350		SA-B
111-E	PHOENIX	TEVA112M	1	12"		1350		SA-B
111A-E	PHOENIX	TEVA110M	1	10"		950		SA-B
119-E1	PHOENIX	EXVB210M	2	10"		1700		SA-B
119-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
123-E1	PHOENIX	EXVB110M	1	10"		475		SA-B
123-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
123-E3	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
123-E4	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
124-E1	PHOENIX	EXVB212M	2	12"		2250		SA-B
124-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
125-E	PHOENIX	TEVA110M	1	10"		600		SA-B
126-E	PHOENIX	TEVA110M	1	10"		400		SA-B
127-E1	PHOENIX	EXVB214M	2	14"		1600		SA-B
127-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
131-E	PHOENIX	TEVA112M	1	12"		1100		SA-B
133-E	PHOENIX	TEVA110M	1	10"		400		SA-B
135-E1	PHOENIX	EXVB112M	1	12"		1100		SA-B
135-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
139-E1	PHOENIX	EXVB112M	1	12"		1100		SA-B
139-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
141-E1	PHOENIX	EXVB210M	2	10"		1975		SA-B
141-E2	PHOENIX	EXVB108M	1	8"	PHENOLIC	1000		SA-B
143-E	PHOENIX	TEVA110M	1	10"		75		SA-B
202-E	PHOENIX	TEVA110M	1	10"		300		SA-B
203-E1	PHOENIX	EXVB210M	2	10"		1600		SA-B
203-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
203-E3	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
203-E4	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
209-E	PHOENIX	TEVA112M	1	12"		1100		SA-B
211-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
211-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
211-E4	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
211-E5	PHOENIX	EXVB210M	2	10"		1600		SA-B
211-E6	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
219-E	PHOENIX	TEVA114M	1	14"		1200		SA-B
221-E1	PHOENIX	EXVB210M	2	10"		1800		SA-B
221-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
223-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
223-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
223-E3	PHOENIX	EXVB110M	1	10"		850		SA-B
225-E1	PHOENIX	EXVB108M	1	8"		500		SA-B
225-E2	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
226-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
226-E2	PHOENIX	EXVB108M	1	8"		350		SA-B
229-E1	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
229-E2	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
229-E3	PHOENIX	EXVB110M	1	14"		2440		SA-B
229-E4	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
230-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
230-E2	PHOENIX	EXVB108M	1	8"		350		SA-B
233A-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
233A-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
233A-E3	PHOENIX	EXVB214M	2	12"		2480		SA-B
233A-E4	PHOENIX	EXVB214M	2	8"		100		SA-B
233A-E5	PHOENIX	EXVB108M	1	12"		1240		SA-B
233A-E6	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
234-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
234-E2	PHOENIX	EXVB108M	1	8"		350		SA-B
235-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
235-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
235-E3	PHOENIX	EXVB108M	1	8"		600		SA-B
236-E	PHOENIX	TEVA108M	1	8"		475		SA-B
237-E	PHOENIX	TEVA108M	1	8"		650		SA-B
239-E1	PHOENIX	EXVB108M	1	8"		350		SA-B
239-E2	PHOENIX	EXVB108M	1	8"	PHENOLIC	700		SA-B
241-E	PHOENIX	TEVA110M	1	10"		700		SA-B
243-E1	PHOENIX	EXVB210M	2	10"		1600		SA-B
243-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
304-E	PHOENIX	TEVA108M	1	8"		300		SA-B
305-E1	PHOENIX	EXVB114M	1	14"		1050		SA-B
305-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
305-E3	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
310-E	PHOENIX	TEVA108M	1	8"		325		SA-B
311A-E	PHOENIX	TEVA108M	1	8"		350		SA-B
311F-E	PHOENIX	TEVA108M	1	8"		225		SA-B
312-E1	PHOENIX	EXVB114M	1	14"		2400		SA-B
312-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
313-E1	PHOENIX	EXVB110M	1	10"		600		SA-B
313-E2	PHOENIX	TEVA212M	2	12"		900		SA-B
314-E	PHOENIX	TEVA110M	1	10"		700		SA-B
315-E1	PHOENIX	EXVB112M	1	12"		1050		SA-B
315-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
315-E3	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
318-E	PHOENIX	TEVA110M	1	10"		325		SA-B
322-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
322-E2	PHOENIX	EXVB110M	1	10"		600		SA-B
324-E	PHOENIX	TEVA112M	1	12"		1275		SA-B
325-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
325-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
325-E3	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
325-E4	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
325-E5	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
325-E6	PHOENIX	EXVB114M	1	14"		1050		SA-B
325-E7	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
325-E8	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
325-E9	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
325-E10	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
327-E1	PHOENIX	EXVB110M	1	10"		500		SA-B
327-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
327-E3	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
329-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
329-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
329-E3	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
329-E4	PHOENIX	EXVB110M	1	10"		1000		SA-B
329-E5	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
331-E1	PHOENIX	EXVB114M	1	14"		1200		SA-B
331-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
334-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
334-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
334-E3	PHOENIX	EXVB112M	1	12"		1000		SA-B
335-E1	PHOENIX	TEVA110M	1	10"		500		SA-B
337-E1	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
337-E2	PHOENIX	EXVB114M	1	14"		1050		SA-B
337-E3	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
337-E4	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
337-E5	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
337-E6	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
337-E7	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
337-E8	PHOENIX	EXVB112M	1	8"	PHENOLIC	1500		SA-B
338-E1	PHOENIX	EXVB112M	1	12"		1000		SA-B
338-E2	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
338-E3	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
341-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
341-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
341-E3	PHOENIX	EXVB114M	1	14"		1000		SA-B
341-E4	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
341-E5	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
343-E1	PHOENIX	EXVB110M	1	10"		475		SA-B
343-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
345-E1	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
345-E2	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
345-E3	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
345-E4	PHOENIX	EXVB114M	1	14"		1575		SA-B
345-E5	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
345-E6	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
345-E7	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
345-E8	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
345-E9	PHOENIX	EXVB110M	1	10"	PHENOLIC	1000		SA-B
345-E10	PHOENIX	EXVB112M	1	12"	PHENOLIC	1500		SA-B
346-E	PHOENIX	TEVA110M	1	10"		500		SA-B

GENERAL NOTES

1. ALL AIR VALVES SHALL BE PROVIDED WITH 3 FT MANUFACTURER SOUND ATTENUATOR.

GRILLE AND DIFFUSER SCHEDULE

CEILING SUPPLY DIFFUSER			DUCTED CEILING RETURN/EXHAUST GRILLE		NON-DUCTED CEILING RETURN/EXHAUST GRILLE		FLEXIBLE DUCT SIZES TO SUPPLY DIFFUSERS	
CFM	SQUARE NECK SIZE	ROUND NECK SIZE	CFM	NECK SIZE	CFM	NECK SIZE	CFM	SIZE
0-100	6 X 6	6"	0-350	12 X 12	0-350	12 X 12	0-100	6"
101-250	9 X 9	8"	351-1000	22 X 22	351-1200	22 X 22	101-250	8"
251-400	12 X 12	10"					251-400	10"
401-600	15 X 15	12"					401-600	12"
601-800	18 X 18	14"					601-800	14"

TYPE	MODEL (TITUS)	DESCRIPTION: (ALL MODELS ARE BASED ON TITUS UNLESS NOTED OTHERWISE)
A1	TDC	SQUARE LOUVER FACE CEILING SUPPLY DIFFUSER WITH REMOVABLE CORE, LAY-IN, 1 WAY THROW. TRANSITIONAL ADAPTER.
A2	TDC	SQUARE LOUVER FACE CEILING SUPPLY DIFFUSER WITH REMOVABLE CORE, LAY-IN, 2 WAY CORNER THROW. TRANSITIONAL ADAPTER.
A3	TDC	SQUARE LOUVER FACE CEILING SUPPLY DIFFUSER WITH REMOVABLE CORE, LAY-IN, 3 WAY THROW. TRANSITIONAL ADAPTER.
A4	TDC	SQUARE LOUVER FACE CEILING SUPPLY DIFFUSER WITH REMOVABLE CORE, LAY-IN, 4 WAY THROW. TRANSITIONAL ADAPTER.
A5	TDC	SQUARE LOUVER FACE CEILING SUPPLY DIFFUSER WITH REMOVABLE CORE, LAY-IN, 2 WAY OPPOSITE THROW. TRANSITIONAL ADAPTER.
AA	271RL	EXTRUDED ALUMINUM DOUBLE DEFLECTION SIDEWALL SUPPLY GRILLE. 3/4" ADJUSTABLE (AIRFLOW) SPACING. FRONT BLADES PARALLEL TO LONG DIMENSION.
B	355RL	LOUVER TYPE CEILING/WALL RETURN OR EXHAUST GRILLE, 35° DEGREE FIXED DEFLECTION, 1/2" SPACING WITH BLADES PARALLEL TO THE LONG DIMENSION.
G	METAL-AIRE EPRH-1	POLYMER SQUARE LOUVER FACE RETURN/EXHAUST GRILLE. 45° FIXED BLADES, 3/4" SPACING.
J	CT-480	LINEAR BAR GRILLE, EXTRUDED ALUMINUM, 1/4" SPACING, 1/8" BARS, 0° DEFLECTION, PROVIDE ALL ACCESSORIES REQUIRED FOR APPLICATION. ANNODIZED FINISH.
L	TBD-80	PLENUM SLOT ADJUSTABLE DIFFUSER, WITH GASKETED BLADES. DIRECTION OF AIRFLOW ADJUSTABLE THROUGH A FULL 180° FROM FACE OF DIFFUSER. 1", 4-SLOT. 60" LONG, 12" NECK SIZE.
R	METAL-AIRE EP5000-1	POLYMER SQUARE LOUVER FACE CEILING SUPPLY DIFFUSER, LAY-IN, 4-WAY THROW. TRANSITIONAL ADAPTER.

VARIABLE AIR VOLUME BOX SCHEDULE - SUPPLY WITH HEATING COIL

TAG ID	VAV MFR	SIZE	CFM MAX	CFM MIN	HEATING COIL MFR	EAT (°F)	LAT (°F)	MAX APD (IN WC)	ROWS	MBH	GPM	PIPE RUNOUT SIZE (IN)	EWT (°F)	LWT (°F)	Sound Attenuator
001-S	ENVIRO-TEC	B	500		TRANE	55	85.3	0.6"	2	18.9	1.3	3/4"	180	150	
007-S	ENVIRO-TEC	D	1200		TRANE	55	85.41	0.6"	2	45.4	3.1	3/4"	180	150	
008-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
009-S1	ENVIRO-TEC	D	1200		TRANE	55	87.3	0.6"	2	45.4	3.1	3/4"	180	150	
009-S2	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
010-S	ENVIRO-TEC	F	3300		TRANE	55	85	0.6"	2	124.7	8.4	1"	180	150	
012-S	ENVIRO-TEC	B	400		TRANE	55	87	0.6"	2	15.1	1.1	3/4"	180	150	
021-S	ENVIRO-TEC	C	750		TRANE	55	85.41	0.6"	2	28.4	1.9	3/4"	180	150	
40-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
43-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
47-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
48-S	ENVIRO-TEC	A	300		TRANE	55	87.3	0.6"	2	11.3	0.8	3/4"	180	150	
105-S	ENVIRO-TEC	A	300		TRANE	55	87.3	0.6"	2	11.3	0.8	3/4"	180	150	
108-S	ENVIRO-TEC	F	2000		TRANE	55	85	0.6"	2	75.6	5.1	1"	180	150	
108A-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
108B-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
108C-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
108D-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
108E-S	ENVIRO-TEC	B	600		TRANE	55	87.3	0.6"	2	22.7	1.6	3/4"	180	150	
108F-S	ENVIRO-TEC	D	1050		TRANE	55	87.88	0.6"	2	39.7	2.7	3/4"	180	150	
110-S	ENVIRO-TEC	C	800		TRANE	55	85.64	0.6"	2	30.2	2.1	3/4"	180	150	
112-S2	ENVIRO-TEC	D	1200		TRANE	55	85	0.6"	2	45.4	3.1	3/4"	180	150	
112A-S	ENVIRO-TEC	C	950		TRANE	55	87	0.6"	2	35.9	2.4	3/4"	180	150	
116-S	ENVIRO-TEC	C	750		TRANE	55	85.41	0.6"	2	28.4	1.9	3/4"	180	150	
118-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
118A-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
118B-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
118C-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
118D-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
118E-S	ENVIRO-TEC	A	150		TRANE	55	85	0.6"	2	5.7	0.4	3/4"	180	150	
118F-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
122-S	ENVIRO-TEC	C	750		TRANE	55	85.41	0.6"	2	28.4	1.9	3/4"	180	150	
132-S1	ENVIRO-TEC	F	2000		TRANE	55	85	0.6"	2	75.6	5.1	1"	180	150	
132-S2	ENVIRO-TEC	F	2650		TRANE	55	85	0.6"	2	100.2	6.7	1-1/4"	180	150	
132-S3	ENVIRO-TEC	F	2000		TRANE	55	85	0.6"	2	75.6	5.1	1"	180	150	
205-S1	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
205-S2	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
206-S	ENVIRO-TEC	D	1000		TRANE	55	88.68	0.6"	2	37.8	2.6	3/4"	180	150	
207-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
207A-S	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
207B-S	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
208-S	ENVIRO-TEC	B	400		TRANE	55	85.64	0.6"	2	15.1	1.1	3/4"	180	150	
208A-S	ENVIRO-TEC	A	300		TRANE	55	87.3	0.6"	2	11.3	0.8	3/4"	180	150	
208B-S	ENVIRO-TEC	A	300		TRANE	55	87.3	0.6"	2	11.3	0.8	3/4"	180	150	
210-S	ENVIRO-TEC	F	2100		TRANE	55	85	0.6"	2	79.4	5.3	1"	180	150	SA-A
212-S1	ENVIRO-TEC	B	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
212-S2	ENVIRO-TEC	B	600		TRANE	55	88.96	0.6"	2	22.7	1.6	3/4"	180	150	
213-S1	ENVIRO-TEC	E	1700		TRANE	55	85	0.6"	2	64.3	4.3	1"	180	150	
213-S2	ENVIRO-TEC	E	1700		TRANE	55	85	0.6"	2	64.3	4.3	1"	180	150	
214-S	ENVIRO-TEC	D	1000		TRANE	55	88.68	0.6"	2	37.8	2.6	3/4"	180	150	
214A-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
218A-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
218B-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
218C-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
218D-S	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
222-S	ENVIRO-TEC	D	1500		TRANE	55	85	0.6"	2	56.7	3.8	1"	180	150	SA-A
240-S1	ENVIRO-TEC	F	2400		TRANE	55	85	0.6"	2	90.7	6.1	1-1/4"	180	150	
240-S2	ENVIRO-TEC	F	2400		TRANE	55	85	0.6"	2	90.7	6.1	1-1/4"	180	150	
240-S3	ENVIRO-TEC	F	2500		TRANE	55	85	0.6"	2	94.5	6.3	1-1/4"	180	150	
311-S	ENVIRO-TEC	A	300		TRANE	55	87.3	0.6"	2	11.3	0.8	3/4"	180	150	
311A-S	ENVIRO-TEC	A	300		TRANE	55	87.3	0.6"	2	11.3	0.8	3/4"	180	150	
311B-S	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
311C-S	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
311D-S	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
311E-S	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
311F-S	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
319-S	ENVIRO-TEC	D	1200		TRANE	55	85.3	0.6"	2	45.4	3.1	3/4"	180	150	
321-S1	ENVIRO-TEC	F	2800		TRANE	55	85	0.6"	2	105.8	7.1	1-1/4"	180	150	
328-S1	ENVIRO-TEC	B	500		TRANE	55	86.06	0.6"	2	18.9	1.3	3/4"	180	150	
332-S1	ENVIRO-TEC	C	850		TRANE	55	87.65	0.6"	2	32.1	2.2	3/4"	180	150	
339-S1	ENVIRO-TEC	B	500		TRANE	55	86.06	0.6"	2	18.9	1.3	3/4"	180	150	
339-S2	ENVIRO-TEC	C	750		TRANE	55	85.41	0.6"	2	28.4	1.9	3/4"	180	150	
340A-S1	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
340B-S1	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
340C-S1	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
340D-S1	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	
340E-S1	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
340F-S1	ENVIRO-TEC	A	100		TRANE	55	85	0.6"	2	3.8	0.3	3/4"	180	150	
342-S1	ENVIRO-TEC	A	250		TRANE	55	85.3	0.6"	2	9.5	0.7	3/4"	180	150	
354-S1	ENVIRO-TEC	F	2800		TRANE	55	85	0.6"	2	105.8	7.1	3/4"	180	150	
356-S1	ENVIRO-TEC	A	200		TRANE	55	88.51	0.6"	2	7.6	0.6	3/4"	180	150	

GENERAL NOTES

1. ALL VAVS SHALL BE PROVIDED WITH 3 FT MANUFACTURER SOUND ATTENUATOR.

drawing title: MEP SCHEDULES

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

volume: 2 of 2
date: 11-21-2012
scale:
drawn by: DJH
approved by: GVD
drawing no.: MEP302
CAD no.: 1393
project no.: BI-RS-283-ARC

21-10-038

AIR HANDLING UNIT SCHEDULE

TAG ID	MFR	MODEL	SERVICE	HEIGHT	LENGTH	WIDTH	COOLING CFM	HEATING CFM	MINIMUM O.A.
AHU-N/H2	TRANE	CUSTOM	N BLDG	9' - 10"	46' - 11"	15' - 2"	40,000	40,000	22,000
AHU-S/H1	TRANE	CUSTOM	S BLDG	13' - 7"	68' - 1"	16' - 0"	84,000	84,000	61,000

AHU - SUPPLY FAN

TAG ID	FAN TYPE	CFM/EA	TSP	ESP	RPM	BHP	HP	# OF FANS	WHEEL SIZE (IN.)	FAN CLASS
AHU-N/H2	EPFN	10000	9	4.5	2,524	19.4 0	25	4	22.25	III
AHU-S/H1	EPFN	21000	10.06	5.5	2,055	44.8 0	50	4	30	III

AHU - RETURN FAN

TAG ID	FAN TYPE	CFM	TSP	ESP	RPM	BHP	HP	FAN WHEEL TYPE	WHEEL SIZE	FAN CLASS
AHU-N/H2	-	0				0	0	-	-	-
AHU-S/H1	EPFN	21000	2.62	2.5	2,131	0	25	1	270	III

AHU - HOT WATER HEATING

TAG ID	EAT DB (°F)	LAT DB (°F)	MBH	FACE VELOCITY (FPM)	APD (IN WG)	GPM	PIPE RUNOUT SIZE (IN)	ROWS	FPI	COILS PER BANK
AHU-N/H2	10	75	2828	500	0.12	145	4	2	9	4
AHU-S/H1	10	75	5987	617	0.23	302	5	2	9	4

AHU - CHILLED WATER COOLING COIL

TAG ID	EAT DB/WB (°F)	LAT DB (°F)	TOTAL MBH	SENSIBLE MBH	FACE VELOCITY (FPM)	APD (IN WG)	GPM	WPD (FT)	PIPE RUNOUT SIZE (IN)	ROWS	FPI	COILS PER BANK
AHU-N/H2	89/73	54/53.9	2628	1550	500	0.70	502	15.25	6	6	10	4
AHU-S/H1	90/73.5	54/53.9	5677	3332	498	0.69	1090	15.71	8	6	10	4

AHU - DIRECT STEAM HUMIDIFIER SCHEDULE

TAG ID	MFR	MODEL	CFM	DUCT SIZE	MAX. ABSORPTION DISTANCE (IN)	STEAM (LBS/HR)	STEAM INLET PRESS (PSIG)	PIPE INLET SIZE (IN)	STEAM TRAP CAPACITY
AHU-N/H2	ULTRA-SORB	LV	40,000	173 X 105	18"	550.39	7	3	1
AHU-S/H1	ULTRA-SORB	LV	80,000	183 X 150	18"	1501.08	7	5	1.5

GENERAL NOTES

1.MANUFACTURER BASED UPON DRISTEEM ULTRA-SORB MODEL LV HUMIDIFIERS.

2.MAXIMUM ABSORPTION DISTANCE 18 INCHES.

3.MAIN HUMIDIFIER CAPACITY BASED UPON 100% OA OPERATION.

4.PROVIDE FACTORY PACKAGED CONTROLS CAPABLE OF INTERFACING WITH CONTROLS SYSTEM.

5. HUMIDIFIER DISPERSION TUBES ARE LOCATED IN AIR HANDLING UNITS COORDINATE WITH AHU MANUFACTURER FOR INSTALLATION REQUIREMENTS. DUCT SIZE IS PROVIDED FOR BIDDING PURPOSES ONLY.

6.AHU-N/H2 A& AHU-S/H1 SHALL BE PROVIDED WITH MERV 8 (30%-35%), PRE-FILTERS (0.30" INITIAL PD & 0.65" DIRTY PD) AND MERV 13 (80-85%) AFTER FILTERS (0.55" INITIAL PD & 0.90' DIRTY PD).

7. PROVIDE VFC FOR AHU-N/H2 & AHU-S/H1 SUPPLY AND RETURN FANS.

8. MOTOR STARTERS SHALL BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. FUSED DISCONNECT SWITCHES SHALL BE FURNISHED AND INSTALLED BY DIV. 26.

HEAT RECOVERY COIL

TAG ID	MFR	MODEL	CFM/FACE VELOCITY (FPM)	APD (IN WG)	HX PERFORMANCE (SUMMER) O.A. DB/WB (°F)	LEAVING S.A. DB/WB (°F)	RETURN AIR DB/WB (°F)	MIN. REC. EFFECT. (TOTAL)	HX PERFORMANCE (WINTER) O.A. DB/WB (°F)	LEAVING S.A. DB/WB (°F)	RETURN AIR DB/WB (°F)	MIN. REC. EFFECT. (TOTAL)	REMARKS
ERC-N1	GREENHECK	58S08D10	42,000/500	0.66									
ERC-N2	GREENHECK	58S08D10	10,500/425	0.79									
ERC-N3	GREENHECK	58S08D10	10,500/425	0.79									
ERC-S1	GREENHECK	58S08D10	84,000/500	0.66									
ERC-S2	GREENHECK	58S08D10	60,000/500	0.94									
ERC-S3	GREENHECK	58S08D10	60,000/500	0.94									

DUCT SOUND ATTENUATOR SCHEDULE

TAG	MFR	MODEL	SERVICE	TOTAL CFM	MAX PRESS DROP (IN WG)	OVERALL SIZE (IN) SECTION	LENGTH	DYNAMIC INSERTION LOSS OCTAVE BAND FREQUENCIES (Hz) 63	125	250	500	1K	2K	4K	8K	SERVES
SA-TT-1	PRICE	RLT36/WG	LAB EXHAUST FANS	21,000	0.15	72x96	36"	6	10	17	20	21	16	12	8	LEF-N1, N2, & N3
SA-TT-2	PRICE	RLT36/YF	LAB EXHAUST FANS	60,000	0.15	180x108	36"	7	10	13	15	15	14	12	10	LEF-S1, S2, S3, S4, & S5

GENERAL NOTES

1. DUCT SOUND ATTENUATORS SHALL MATCH DUCT SIZES WHERE CONNECTED.

FILTER BANK SCHEDULE

TAG	MFR	MODEL NO.	SERVING	OVERALL BANK SIZE	GROSS FILTER AREA (SF)	THICKNESS	FACE VELOCITY FPM	PLEATS PER LINEAL FT.	PREFILTER MERV 8	AVERAGE ARRESTANCE	INITIAL PD	DIRTY PD	COMMENTS
FB-1	**AAF**	**AM AIR 300X**	**LEF-N1,2,3**	**6'X8'8"**	**48.0**	**2"**	**438**	**14.0**	**30-35%**	**90-92%**	**0.20"**	**0.55"**	**SEE COMMENTS BELOW**
FB-2	**AAF**	**AM AIR 300X**	**LEF-S,1,2,3,4**	**15' x 9'**	**135.0**	**2"**	**445**	**14.0**	**30-35%**	**90-92%**	**0.22"**	**0.55"**	**SEE COMMENTS BELOW**

1. PROVIDE MAGNAHELIC DIFFERENTIAL PRESSURE GAUGE AND ELECTRONIC DP SENSOR INTERFACED WITH BMS FOR EACH FILTER BANK.
2. FILTER BANK SHALL INCLUDE FULLY WELDED GALVANIZED STEEL FRAME, GASKETED DOORS, ETC. REQUIRED TO ACCOMMODATE FILTER REPLACEMENT.

AIR DOOR SCHEDULE

TAG ID	MFR	MODEL	TYPE	ARRANGEMENT	SIZE	CFM	AIR VELOCITY	HP
AD-1	MARS	HEPAC	WALL	HORIZONTAL	HF40	1800	2175	1/2
AD-2	MARS	HEPAC	WALL	HORIZONTAL	HF40	1800	2175	1/2
AD-109	BERNER	ICA	CEILING	HORIZONTAL	2072	2752	1573	2@1/2

HOT WATER HEATING COIL

TAG ID	EAT (°F)	EWT (°F)	LWT (°F)	MBH	GPM	PIPE RUNOUT	REMARKS
AD-1	NA	NA	NA	NA	NA	NA	
AD-2	NA	NA	NA	NA	NA	NA	
AD-109	65	180	158	75	7.5	1.25	

CENTRIFUGAL WATER CHILLER SCHEDULE

TAG ID	MFR	MODEL	COMPRESSOR TYPE	TONS	EVAPORATOR EWT (°F)	LWT (°F)	GPM	MAX WPF (FT)	PASSES	FOULING FACTOR	WATER WORKING PRESSURE (PSIG)	REFRIG. TYPE
CH-1	MCQUAY	WMC400DBS25R	CENTRIFUGAL	390	54.1	44	924	15.9	2	0.00025	35	R134a
CH-2	MCQUAY	WMC400DBS25R	CENTRIFUGAL	390	54.1	44	924	15.9	2	0.00025	35	R134a

CENTRIFUGAL WATER CHILLER SCHEDULE

TAG ID	WATER COOLED CONDENSER EWT (°F)	LWT (°F)	GPM	MAX WPD (FT)	PASSES	FOULING FACTOR	WATER WORKING PRESSURE (PSIG)	FULL LOAD (KW/TON)	DESIGN NPLV (KW/TON)	OPERATING WEIGHT (LBS)	MCA
CH-1	85	94.1	1200	14	2	0.00025	35	0.602	0.329	14,122	360
CH-2	85	94.1	1200	14	2	0.00025	35	0.602	0.329	14,122	360

GENERAL NOTES

1. CHILLERS SHALL BE PROVIDED WITH FACTORY MOUNTED VFCS.

COOLING TOWER SCHEDULE

TAG ID	MFR	MODEL	TYPE	GPM	EWT (°F)	LWT (°F)	EAT WB (°F)	NO. OF CELLS	FAN dBa @ 5'	QTY	CFM	HP	VFC
CT-1	EVAPCO	LSTE-8P418	FORCED DRAFT	1200	95	85	78	3	81	3	88500	50	YES
CT-2	EVAPCO	LSTE-8P418	FORCED DRAFT	1200	95	85	78	3	81	3	88500	50	YES

GENERAL NOTES
1. (2) HEATERS @ 4 KW EACH.
2. EVAPAK FILL.
3. IBC COMPLIANT UP TO 1 G.
4. (5) PROBE ELECTRONIC WATER LEVEL CONTROL PACKAGE.
5. STAINLESS STEEL BASIN UP TO OVERFLOW LEVEL.
6. ROOF MOUNTING BRACKETS (COORDINATE WITH ARCHITECT).
7. MOTOR STARTERS SHALL BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. FUSED DISCONNECT SWITCHES SHALL BE FURNISHED AND INSTALLED BY DIV. 26.
8. COOLTING TOWERS SHALL BE PROVIDED WITH REMOTE MOUNTED VFCS.

CHILLED WATER BUFFER TANK SCHEDULE

TAG ID	MFR	MODEL	MINIMUM ACCEPTANCE (GALLONS)	DIAMETER	HEIGHT	SERVES	REMARKS
CHW-BT-1	HANSON	WL-029-B	1950	6' - 0"	10' - 4"	CHILLED WATER	
CHW-BT-2	HANSON	WL-029-B	1950	6' - 0"	10' - 4"	CHILLED WATER	

RADIANT FLOOR - SNOW MELT SYSTEM SCHEDULE

TAG ID	MFR	AREA SERVED	AREA SERVED (SF)	TOTAL FLOW (GPM)	MAX. PD MANIFOLD & PIPE (FT)	TUBE SPACING (IN)	TUBE SIZE (IN)	SUPPLY TEMP (°F)	RETURN TEMP (°F)	MAX. ACTIVE LOOP LENGTH (FT)
MF-1	COMFORT PRO	3RD FLOOR				6	5/8	125	105	360
MF-2	COMFORT PRO	3RD FLOOR				6	5/8	125	105	360
MF-3	COMFORT PRO	3RD FLOOR				6	5/8	125	105	360
MF-4	COMFORT PRO	3RD FLOOR				6	5/8	125	105	360
MF-5	COMFORT PRO	3RD FLOOR				6	5/8	125	105	360
MF-6	COMFORT PRO	BRIDGE				6	5/8	125	105	360
MF-7	COMFORT PRO	BRIDGE				6	5/8	125	105	360
MF-8	COMFORT PRO	2ND FLOOR				6	5/8	125	105	360
MF-9	COMFORT PRO	2ND FLOOR				6	5/8	125	105	360
MF-10	COMFORT PRO	2ND FLOOR				6	5/8	125	105	360
MF-11	COMFORT PRO	2ND FLOOR				6	5/8	125	105	360
MF-12	COMFORT PRO	2ND FLOOR				6	5/8	125	105	360
MF-13	COMFORT PRO	2ND FLOOR				6	5/8	125	105	360
MF-14	COMFORT PRO	2ND FLOOR				6	5/8	125	105	360
MF-15	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-16	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-17	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-18	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-19	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-20	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-21	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-22	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360
MF-23	COMFORT PRO	GROUND FLOOR				6	5/8	125	105	360

DUST COLLECTOR SCHEDULE

TAG ID	MFR	MODEL	TYPE	CFM	TSP (IN WC)	HP	DRIVE	SERVES
DCS-1	CAMFIL	GS12L	LOWBOY	8400	9.1	3	YES	RM 119
DCS-2	CAMFIL	GS2	LOWBOY	500	8.0	3	YES	RM 109A

HYDRONIC PUMP SCHEDULE

TAG ID	MFR	TYPE	SERIES/SIZE MODEL #	MINIMUM % EFFICIENCY	GPM	FT OF HEAD (TDH)
CHW-P-4A	TACO	BASE-MOUNTED	FI 5013	80%	1250	120
CHW-P-4B	TACO	BASE-MOUNTED	FI 5013	80%	1250	120
COND-P-3A	TACO	BASE-MOUNTED	TA 2538	83%	2400	80
COND-P-3B	TACO	BASE-MOUNTED	TA 2538	83%	2400	80
ERCP-N5A	TACO	BASE-MOUNTED	FI 2511	68%	250	85
ERCP-N5B	TACO	BASE-MOUNTED	FI 2511	68%	250	85
ERCP-S1	TACO	BASE-MOUNTED	FI 4013	80%	600	85
ERCP-S2	TACO	BASE-MOUNTED	FI 4013	80%	600	85
HW-P-1A	TACO	BASE-MOUNTED	FI 5011	83%	860	85
HW-P-1B	TACO	BASE-MOUNTED	FI 5011	83%	860	85
P-FP1	TACO	INLINE	KV 2508		150	15
P-FP2	TACO	INLINE	KV 4007		300	15
RF-P-2A	TACO	INLINE	1911	53%	55	80
RF-P-2B	TACO	INLINE	1911	53%	55	80

HYDRONIC PUMP SCHEDULE

TAG ID	RPM	MOTOR HP	BHP	VFC	SERVES	OPERATION
CHW-P-4A	1760	50		YES	CHILLED WATER SYSTEM	ONE RUN/ONE STANDBY
CHW-P-4B	1760	50		YES	CHILLED WATER SYSTEM	ONE RUN/ONE STANDBY
COND-P-3A	1160	75		YES	CONDENSER WATER	ONE RUN/ONE STANDBY
COND-P-3B	1160	75		YES	CONDENSER WATER	ONE RUN/ONE STANDBY
ERCP-N5A	1760	15		YES	ENERGY RECOVERY NORTH (30% GLYCOL)	ONE RUN/ONE STANDBY
ERCP-N5B	1760	15		YES	ENERGY RECOVERY NORTH (30% GLYCOL)	ONE RUN/ONE STANDBY
ERCP-S1	1760	30		YES	ENERGY RECOVERY SOUTH (30% GLYCOL)	ONE RUN/ONE STANDBY
ERCP-S2	1760	30		YES	ENERGY RECOVERY SOUTH (30% GLYCOL)	ONE RUN/ONE STANDBY
HW-P-1A	1760	25		YES	HYDRONIC HEATING SYSTEM	ONE RUN/ONE STANDBY
HW-P-1B	1760	25		YES	HYDRONIC HEATING SYSTEM	ONE RUN/ONE STANDBY
P-FP1	1160	1.5		NO	FREEZE PROTECTION	ON/OFF
P-FP2	1160	2		NO	FREEZE PROTECTION	ON/OFF
RF-P-2A	3500	3		YES	HYDRONIC HEATING SYSTEM	ONE RUN/ONE STANDBY
RF-P-2B	3500	3		YES	HYDRONIC HEATING SYSTEM	ONE RUN/ONE STANDBY

GENERAL NOTES:
1. SEE DETAILS FOR SUCTION AND DISCHARGE SIDE VALVE AND FITTING PROVISIONS TO BE PROVIDED WITH EACH PUMP.
2. PROVIDE PREFORMED REMOVABLE PVC INSULATED JACKET, 2.5" THICKNESS.
3. MOTOR STARTERS SHALL BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. FUSED DISCONNECT SWITCHES SHALL BE FURNISHED AND INSTALLED BY DIV. 26.

FAN COIL UNIT SCHEDULE

TAG ID	MFR	MODEL	TYPE	ARRANGEMENT	SIZE	CFM	RPM	HP
FCU-1	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	20	270	1075	1/30
FCU-3	ENVIRO-TEC	HPP	CEILING	HORIZONTAL	20	270	1075	1/30
FCU-4	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	20	270	1075	1/30
FCU-5	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	20	270	1075	1/30
FCU-7A	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	350	1450	1/15
FCU-9A	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	350	1450	1/15
FCU-9B	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	30	456	1080	1/10
FCU-15	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	300	1450	1/15
FCU-16	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	300	1450	1/15
FCU-17	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	400	1450	1/15
FCU-18	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	400	1450	1/15
FCU-19	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	369	1450	1/15
FCU-20	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	25	369	1450	1/15
FCU-039	ENVIRO-TEC		CEILING	HORIZONTAL		750		
FCU-101	ENVIRO-TEC	VLC	WALL	VERTICAL	02	145	1315	1/25
FCU-117	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	30	500	1080	1/10
FCU-145	ENVIRO-TEC	VFC	WALL	HORIZONTAL	30	410	1450	1/15
FCU-217	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	30	500	1080	1/10
FCU-247	ENVIRO-TEC	HLP	CEILING	HORIZONTAL	30	444	1080	1/10
FCU-301A	ENVIRO-TEC	HLP	CEILING	HORIZONTAL	30	444	1080	1/10
FCU-301B	ENVIRO-TEC	HLP	CEILING	HORIZONTAL	60	1300	2@1350	2@1/6
FCU-301C	ENVIRO-TEC	HLP	CEILING	HORIZONTAL	30	444	1080	1/10
FCU-323	ENVIRO-TEC	HLF	CEILING	HORIZONTAL	30	456	1080	1/10
FCU-349	ENVIRO-TEC	HLP	CEILING	HORIZONTAL	20	160	1075	1/30
FCU-401A	ENVIRO-TEC	HPP	CEILING	HORIZONTAL	20	270	1075	1/30
FCU-S1a	ENVIRO-TEC	VFE	WALL	VERTICAL	06	468	1050	1/20
FCU-S3a	ENVIRO-TEC	VFE	WALL	VERTICAL	02	218	1075	1/50
FCU-S3d	ENVIRO-TEC	VFE	WALL	VERTICAL	02	218	1075	1/50
FCU-ST1d	ENVIRO-TEC	VFE	WALL	VERTICAL	10	724	2@1050	2@1/20

CHILLED WATER COOLING COIL

TAG ID	EAT DB/WB (°F)	EWT (°F)	LWT (°F)	TOTAL MBH	SENSIBLE MBH	GPM	MAX WPD (FT)	ROWS	PIPE RUNOUT SIZE (IN)
FCU-1	80 / 67	44	54	10.5	7.2	2.1	7.8	3	3/4
FCU-3	80 / 67	44	54	10.5	7.2	2.1	7.8	3	3/4
FCU-4	80 / 67	44	54	10.5	7.2	2.1	7.8	3	3/4
FCU-5	80 / 67	44	54	10.5	7.2	2.1	7.8	3	3/4
FCU-7A	80 / 67	44	54	12	12	2.5	2.3	3	3/4
FCU-9A	80 / 67	44	54	12	12	2.5	2.3	3	3/4
FCU-9B	80 / 67	44	54	19.4	13.1	3.8	6.1	4	1
FCU-15	80 / 67	44	54	12.3	8.9	2.5	2.3	3	3/4
FCU-16	80 / 67	44	54	12.3	8.9	2.5	2.3	3	3/4
FCU-17	80 / 67	44	54	13.1	9.5	2.6	2.5	3	1
FCU-18	80 / 67	44	54	13.1	9.5	2.6	2.5	3	1
FCU-19	80 / 67	44	54	10.6	7.6	2.1	1.7	3	3/4
FCU-20	80 / 67	44	54	10.6	7.6	2.1	1.7	3	3/4
FCU-039	80 / 67	44	54	13.6					
FCU-101	80 / 67	44	54	3.5	2.6	0.7	1.3	2	3/4
FCU-117	80 / 67	44	54	20.3					
FCU-145	80 / 67	44	54	13.3	10	2.9	7.6	4	1
FCU-217	80 / 67	44	54	13.6					
FCU-247	80 / 67	44	54	15.4	10.9	3	3.4	3	1
FCU-301A	80 / 67	44	54	15.4	10.9	3	3.4	3	1
FCU-301B	80 / 67	44	54	41.3	29.4	8.3	10.1	3	1-1/4
FCU-301C	80 / 67	44	54	15.4	10.9	3	3.4	3	1
FCU-323	80 / 67	44	54	19.4	13.1	3.8	6.1	4	1
FCU-349	80 / 67	44	54	4.8	3.8	1	0.4	3	3/4
FCU-401A	80 / 67	44	54	10.5	7.2	2.1	7.8	3	3/4
FCU-S1a	80 / 67	44	54	12.9	8.7	2.6	14.6	2	1
FCU-S3a	80 / 67	44	54	5.5	4.6	1.1	0.6	3	3/4
FCU-S3d	80 / 67	44	54	5.5	4.6	1.1	0.6	3	3/4
FCU-ST1d	80 / 67	44	54	18.9	12.9	3.8	5.9	2	1

HOT WATER HEATING COIL

TAG ID	EAT (°F)	EWT (°F)	LWT (°F)	MBH	GPM	MAX WPF (FT)	ROWS	PIPE RUNOUT SIZE (IN)
FCU-1	NA	NA	NA	NA	NA	NA	NA	NA
FCU-3	NA	NA	NA	NA	NA	NA	NA	NA
FCU-4	NA	NA	NA	NA	NA	NA	NA	NA
FCU-5	70	180	160	9.6	1	0.6	1	3/4
FCU-7A	NA	NA	NA	NA	NA	NA	NA	NA
FCU-9A	NA	NA	NA	NA	NA	NA	NA	NA
FCU-9B	NA	NA	NA	NA	NA	NA	NA	NA
FCU-15	NA	NA	NA	NA	NA	NA	NA	NA
FCU-16	NA	NA	NA	NA	NA	NA	NA	NA
FCU-17	NA	NA	NA	NA	NA	NA	NA	NA
FCU-18	NA	NA	NA	NA	NA	NA	NA	NA
FCU-19	NA	NA	NA	NA	NA	NA	NA	NA
FCU-20	NA	NA	NA	NA	NA	NA	NA	NA
FCU-039	NA	NA	NA	NA	NA	NA	NA	NA
FCU-101	70	180	160	7.0	0.7	0.4	1	3/4
FCU-117	NA	NA	NA	NA	NA	NA	NA	NA
FCU-145	70	180	160	13.6	1.0	0.9	1	3/4
FCU-217	NA	NA	NA	NA	NA	NA	NA	NA
FCU-247	70	180	160	16.9	3.5	8.1	1	1
FCU-301A	70	180	160	16.9	3.5	8.1	1	1
FCU-301B	70	180	160	41.4	8.4	10.4	1	1-1/4
FCU-301C	70	180	160	16.9	3.5	8.1	1	1
FCU-323	NA	NA	160	NA	NA	NA	NA	NA
FCU-349	70	180	160	7.7	1.6	1.4	1	3/4
FCU-401A	NA	NA	NA	NA	NA	NA	NA	3/4
FCU-S1a	70	180	160	20.5	4.2	2.3	1	1
FCU-S3a	70	180	160	9	1.9	1.9	1	3/4
FCU-S3d	70	180	160	9	1.9	1.9	1	3/4
FCU-ST1d	70	180	160	31.4	6.5	7.0	1	1-1/4

GENERAL NOTES

1. MOTOR STARTERS SHALL BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. FUSED DISCONNECT SWITCHES SHALL BE FURNISHED AND INSTALLED BY DIV. 26.

SHELL AND TUBE HEAT EXCHANGER SCHEDULE - WATER TO WATER

TAG ID	MFR	MODEL	DIA.	LENGTH	MBH	FOULING FACTOR	NUM. OF PASSES	HEATING FLUID GPM	EWT (°F)	LWT (°F)	WPD (FT)	PIPE RUNOUT SIZE (IN)
ERN-HX	B & G	HTWU 8 5-2 4	2' - 0"	5' - 0"	4	0.0002		110	350	270	.89	
ERS-HX	B & G	HTWU 10 4-2 5	2' - 0"	5' - 0"	7	0.00002		195	350	270	.73	
HWHX-1A	TACO	P22410-18H	1' - 10"	6' - 0"	8735	0.0005	4	235	350	270	0.56	4"
HWHX-1B	TACO	P22410-18H	1' - 10"	6' - 0"	8735	0.0005	4	235	350	270	0.56	4"
RFHX-2A	TACO	P06410-6H	2' - 0"	5' - 0"	765	0.0005	4	35	350	300	0.29	2.5"
RFHX-2B	TACO	P06410-6H	2' - 0"	5' - 0"	765	0.0005	4	35	350	300	0.29	2.5"

SHELL AND TUBE HEAT EXCHANGER SCHEDULE - WATER TO WATER

TAG ID	HEATED FLUID GPM	EWT (°F)	LWT (°F)	WPD (FT)	PIPE RUNOUT SIZE (IN)	DESIGN PRESSURE TUBES (PSIG)	TUBES (°F)	SHELL (PSIG)	SHELL (°F)	SERVES
ERN-HX	100	51	140	6.85		400	350	150	140	
ERS-HX	175	51	140	7.36		400	350	150	140	
HWHX-1A	900	160	180	6.5	10	400	350	150	180	
HWHX-1B	900	160	180	6.5	10	400	350	150	180	
RFHX-2A	55	105	135	0.75		400	350	150	135	
RFHX-2B	55	105	135	0.75		400	350	150	135	

UNFIRED STEAM GENERATOR SCHEDULE

TAG ID	MFR	MODEL	HTHW INLET TEMP	OUTLET TEMP	GPM	STEAM LBS/HR	PSI	UNIT CONFIG.	NUMBER OF PASSES
CSG-1	CEMLINE	V1600561230-4P	350	280	87.8	2500	7	VERTICAL	4

GENERAL NOTES

1. MANUFATURER BASED CEMLINE.
2. PROVIDE FACTORY PACKAGED CONTROLS CAPABLE OF INTERFACING WITH CONTROLS SYSTEM.
3. UNFIRED STEAM GENERATOR VESSEL AND ALL PIPING SHALL BE 316-L STAINLESS STEEL.

PLATE HEAT EXCHANGER SCHEDULE - WATER TO WATER

TAG ID	MFR	MODEL	MBH	FOULING FACTOR	HOT SIDE GPM	EWT (°F)	LWT (°F)	MAX WPD (IN)	PIPE RUNOUT SIZE (IN)
PFHX	TACO	PF 205-97-4-NH	1202	0.0000055	240	65	55		3"

PLATE HEAT EXCHANGER SCHEDULE - WATER TO WATER (CONTINUED)

TAG ID	COLD SIDE GPM	EWT (°F)	LWT (°F)	MAX WPD (FT)	WORKING PRESSURE (PSIG)	PIPE RUNOUT SIZE (IN)	REMARKS
PFHX	240	50	60			3"	

FAN FILTER UNIT SCHEDULE

TAG ID	MFR	MODEL	SERVICE	LOCATION	TOTAL MEDIA AREA (SQ FT)	EFFICIENCY	CLEAN (IN WG)	REPLACE (IN WG)	MAXIMUM FACE VELOCITY (FPM)
FFU-A	PRICE	FFU	AIR	RM 225	8	99.99			90
FFU-B	PRICE	FFU	AIR	RM 229	8	99.99			90
FFU-C	PRICE	FFU	AIR	RM 233A	8	99.99			90
FFU-D	PRICE	FFU	AIR	RM 233B	8	99.99			90

FAN FILTER UNIT SCHEDULE (CONTINUED)

TAG ID	SECTION x LENGTH	FILTERS (NOM)	SYSTEM	NUMBER OF FILTERS	SYSTEM SERVED	REMARKS
FFU-A	2' X 4'	HEPA	AIR	1	AIR	PROVIDE WITH ECM FAN MOTORS
FFU-B	2' X 4'	HEPA	AIR	1	AIR	PROVIDE WITH ECM FAN MOTORS
FFU-C	2' X 4'	HEPA	AIR	1	AIR	PROVIDE WITH ECM FAN MOTORS
FFU-D	2' X 4'	HEPA	AIR	1	AIR	PROVIDE WITH ECM FAN MOTORS

GLYCOL MAKE-UP UNIT SCHEDULE

TAG ID	MFR	MODEL	TANK SIZE (GALLONS)	PUMP DISCHARGE	PUMP HP	SERVES
GFP-1	NEPTUNE	G-50-1A	50	1.5 @ 100 PSI	1/3	RHW SYSTEM
GFP-2	NEPTUNE	G-50-1A	50	1.5 @ 100 PSI	1/3	ER -N SYSTEM
GFP-3	NEPTUNE	G-50-1A	50	1.5 @ 100 PSI	1/3	ER -S SYSTEM

EXPANSION TANK SCHEDULE

TAG ID	MFR	MODEL	MINIMUM ACCEPTANCE (GALLONS)	DIAMETER	HEIGHT	SERVES	REMARKS
CHW-ET-1	TACO	CBX84-125	12	1' - 6"	3' - 4"	CHILLED WATER	
ERCN-ET-1	TACO	CX84-125	10	1' - 6"	3' - 0"	ENERGY RECOVERY NORTH	
ERCS-ET-1	TACO	CX84-125	10	1' - 6"	3' - 0"	ENERGY RECOVERY SOUTH	
HW-EXT-1	TACO	CA1100-125		2' - 6"	7' - 2"	HOT WATER	
HW-EXT-2	TACO	CA1100-125		2' - 6"	7' - 2"	HOT WATER	
RF-EXT-1	TACO	CBX300-125	43	2' - 0"	5' - 0"	RADIANT FLOOR	

AIR SEPARATOR SCHEDULE

TAG ID	MFR	MODEL	NOMINAL FLOW RATE	MIN AIR ELIMINATION EFF	MAX PRESS DROP (FT)	SYSTEM
CHW-AS	TACO	4910 AD	1250			CHILLED WATER
COND-AS	TACO	4916 AD	2400			CONDENSER WATER
ERCN-AS-1	TACO	4905 AD	250			ENERGY RECOVERY
ERCS-AS	TACO	4908 AD	600			ENERGY RECOVERY
HW-AS-1	TACO	4910 AD	860			HOT WATER
RF-AS-1	TACO	49025 AD	55			RADIANT FLOOR

FAN SCHEDULE

TAG ID	MFR	MODEL	TYPE	DRIVE	CFM	ESP (IN WC)	RPM	MOTOR HP	BHP	VFC
LEF-N1	GREENHECK	36-AFSW-41-4-50-I-200	AIRFOIL SINGLE WIDTH	DIRECT	10500	7.5	1325	20	15.8	YES
LEF-N2	GREENHECK	36-AFSW-41-4-50-I-200	AIRFOIL SINGLE WIDTH	DIRECT	10500	7.5	1325	20	15.8	YES
LEF-N3	GREENHECK	36-AFSW-41-4-50-I-200	AIRFOIL SINGLE WIDTH	DIRECT	10500	7.5	1325	20	15.8	YES
LEF-S1	GREENHECK	QUEID-30-70-300	MIXED FLOW	DIRECT	15000	7.5	1651	30	27	YES
LEF-S2	GREENHECK	QUEID-30-70-300	MIXED FLOW	DIRECT	15000	7.5	1651	30	27	YES
LEF-S3	GREENHECK	QUEID-30-70-300	MIXED FLOW	DIRECT	15000	7.5	1651	30	27	YES
LEF-S4	GREENHECK	QUEID-30-70-300	MIXED FLOW	DIRECT	15000	7.5	1651	30	27	YES
LEF-S5	GREENHECK	QUEID-30-70-300	MIXED FLOW	DIRECT	15000	7.5	1651	30	27	YES
MREF-1	GREENHECK	QEID-16-80	WT	DIRECT	3600	1.5	1770	1.5	1.38	NO
PEF-1	MK PLASTICS	CH-200	BLOWER	DIRECT	680	1.5		5	0	NO
PEF-2	MK PLASTICS	CH-200	BLOWER	DIRECT	680	1.25		5	0	NO
PEF-3	MK PLASTICS	CH-250	BLOWER	DIRECT	1550	1.75		7.5	0	NO
RF-N	GREENHECK	QEID-36-80-C150	MIXED FLOW	DIRECT	18000	2.5	870	15	10.65	YES
RLF-N	GREENHECK	QEID-36-80-C150	MIXED FLOW	DIRECT	18000	2.5	870	15	10.65	YES
RLF-S	GREENHECK	QEID-33-95-B200	MIXED FLOW	DIRECT	23300	2.5	1170	20	15.92	YES
SEF-1	GREENHECK	QEID-30-80-B100	MIXED FLOW	DIRECT	16500	1.5	1170	10	8.31	NO
SEF-2	GREENHECK	QEID-30-80-B100	MIXED FLOW	DIRECT	16500	1.5	1170	10	8.31	NO
SEF-3	GREENHECK	QEID-36-85-C150	MIXED FLOW	DIRECT	23000	1.5	870	15	9.46	NO
SEF-4	GREENHECK	QEID-40-90-C200	MIXED FLOW	DIRECT	33000	1.5	870	20	15.29	NO
SMF-N	GREENHECK	QEID-18-80-A30	MIXED FLOW	DIRECT	5000	1.5	1770	3	2.47	NO
SMF-S	GREENHECK	QEID-18-80-A30	MIXED FLOW	DIRECT	5000	1.5	1770	3	2.47	NO

FAN SCHEDULE (CONTINUED)

TAG ID	1ST OCTAVE	2ND OCTAVE	3RD OCTAVE	4TH OCTAVE	5TH OCTAVE	6TH OCTAVE	7TH OCTAVE	8TH OCTAVE
LEF-N1	102	105	101	94	90	88	84	81
LEF-N2	102	105	101	94	90	88	84	81
LEF-N3	102	105	101	94	90	88	84	81
LEF-S1	91	92	95	96	95	89	84	77
LEF-S2	91	92	95	96	95	89	84	77
LEF-S3	91	92	95	96	95	89	84	77
LEF-S4	91	92	95	96	95	89	84	77
LEF-S5	91	92	95	96	95	89	84	77
MREF-1								
PEF-1								
PEF-2								
PEF-3								
RF-N	83	91	88	94	85	81	72	65
RLF-N	83	91	88	94	85	81	72	65
RLF-S	84	92	90	96	87	83	75	66
SEF-1	88	91	90	92	90	85	80	69
SEF-2	88	91	90	92	90	85	80	69
SEF-3	84	92	90	96	87	84	75	67
SEF-4	87	95	93	99	90	88	79	70
SMF-N	86	79	85	85	85	81	77	66
SMF-S	86	79	85	85	85	81	77	66

GENERAL NOTES

1. ACOUSTICAL DATA IS FOR SOUND POWER AT FAN OUTLET.
2. MOTOR STARTERS SHALL BE FURNISHED BY DIV. 23 AND INSTALLED BY DIV. 26. FUSED DISCONNECT SWITCHES SHALL BE FURNISHED AND INSTALLED BY DIV. 26.

drawing title: MEP SCHEDULES

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

volume: 2 of 2
date: 11-21-2012
scale:

DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

drawn by: DJH
approved by: GVD
drawing no.: MEP303

CAD no. 1393
project no. BI-RS-283-ARC

21-10-038

EQUIPMENT ELECTRICAL CIRCUIT SCHEDULE

CIRCUIT ID	VOLTS	AMPS	POLES	PANEL	BRANCH CIRCUIT SIZE	SW/FUSE SIZE	REMARKS
EQUIP ID	**MCA**	**KW**	**HP #1**	**HP #2**			
AHU-N/H2	480 V	70 A	3	SHDPP	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/50A	
AHU-N/H2			25	0			
AHU-S/H1 RETURN	480 V	70 A	3	SHDPP	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/50A	
AHU-S/H1			50	25			
AHU-S/H1 SUPLY	480 V	150 A	3	SHDPP	(3) #1/0 & (1) #6 GND IN 2"C.	200A/100A	
AHU-S/H1			50	25			
AWP-1	480 V	30 A	3	HMPB		30A/12A	
AWP-1							
BP-1	480 V	50 A	3	HMPB		60A/30A	
BP-1							
CH-1	480 V	600 A	3	SHDPB	2 SETS (3) #250 & (1) #2 IN 3"C.	600A/500A	
CH-1	360						
CH-2	480 V	600 A	3	SHDPB	2 SETS (3) #250 & (1) #2 IN 3"C.	600A/500A	
CH-2	360						
CHW-P-4A	480 V	150 A	3	SHDPB	(3) #1/0 & (1) #6 GND IN 2"C	200A/100A	
CHW-P-4A			50				
CHW-P-4B	480 V	150 A	3	SHDPB	(3) #12 & (1) #12 GND IN 3/4"C	200A/100A	
CHW-P-4B			50				
COND-P-3A	480 V	200 A	3	SHDPB	(3) #2/0 & (1) #6 GND IN 2-1/4"C	200A/150A	
COND-P-3A			75				
COND-P-3B	480 V	200 A	3	SHDPB	(3) #2/0 & (1) #6 GND IN 2-1/4"C	200A/150A	
COND-P-3B			75				
CT-1	480 V	150 A	3	SHDPP	(3) #1/0 & (1) #6 GND IN 2"C.	200A/100A	
CT-1			50				
CT-2	480 V	400 A	3	MDB	(3) #1/0 & (1) #6 GND IN 2"C.	200A/100A	
CT-2			50				
DCS	480 V	20 A	3	HMPB	(3) #12 & (1) #12 GND IN 3/4"C.	30A/8A	
DCS-1			3				
DCS-2	480 V	20 A	3	HMPB	(3) #12 & (1) #12 GND IN 3/4"C.	30A/8A	
DCS-2			3				
EFP-1	480 V	150 A	3	UTILITY TX		200A/125A	
EFP-1			54				
ERCP-N5A	480 V	40 A	3	HMPB	(3) #8 & (1) #10 GND IN 1"C.	60A/30A	
ERCP-N5A			15				
ERCP-N5B	480 V	40 A	3	HMPB	(3) #8 & (1)#10 GND IN 1"C.	60A/30A	
ERCP-N5B			15				
ERCP-S1	480 V	80 A	3	HMPB	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/60A	
ERCP-S1			30				
ERCP-S2	480 V	80 A	3	HMPB	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/60A	
ERCP-S2			30				
GFP-1	120 V	20 A	1	LMPB		30A/3A	
GFP-1			1/3				
GFP-2	120 V	20 A	1	LMPB		30A/3A	
GFP-2			1/3				
GFP-3	120 V	20 A	1	LMPB		30A/3A	
GFP-3			1/3				
HTWH-1	120 V	20 A	1	LMPB		30A/5A	
HTWH-1							
HTWH-2	120 V	20 A	1	LMPB		30A/5A	
HTWH-2							
HW-P-1A	480 V	80 A	3	SHDPB	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/60A	
HW-P-1A			25				
HW-P-1B	480 V	80 A	3	SHDPB	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/60A	
HW-P-1B			25				
JP-1	480 V	20 A	3	ELHDPB		30A/3A	
JP-1							
LAC-1	480 V	150 A	3	SHDPB	(3) #1/0 & (1) #6 GND IN 2"C.	200A/125A	
LAC-1							
LEF-N1	480 V	80 A	3		(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/60A	
LEF-N1			20				
LEF-N2	480 V	80 A	3	SHDPP	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/60A	
LEF-N2			20				
LEF-N3	480 V	80 A	3	SHDPP	(3) #4 & (1) #8 GND IN 1-1/4"C.	100A/60A	
LEF-N3			20				
LVP-1	480 V	50 A	3	SHDPB	(3) #8 & (1) #10 GND IN 1"C.	60A/40A	
LVP-1							
MREF-1	480 V	20 A	3	SHDPP	(3) #12 & (1) #12 GND IN 3/4"C.	30A/6A	
MREF-1			1.5				
P-FP1	480 V	20 A	3	SHDPP	(3) #12 & (1) #12 GND IN 3/4"C.	30A/6A	
P-FP1			1.5				
P-FP2	480 V	20 A	3	SHDPP	(3) #12 & (1) #12 GND IN 3/4"C.	30A/6A	
P-FP2			2				
PEF-1	480 V	20 A	3	SHDPP	(3) #12 & (1) #12 GND IN 3/4"C.	30A/12A	
PEF-1			5				
PEF-2	480 V	20 A	3	SHDPP	(3) #12 & (1) #12 GND IN 3/4"C.	30A/12A	
PEF-2			5				
PEF-3	480 V	40 A	3	SHDPP	(3) #8 & (1) #10 GND IN 1"C.	60A/30A	
PEF-3			7.5				
RF-N	480 V	40 A	3	SHDPB	(3) #8 & (1) #10 GND IN 1"C.	60A/30A	
RF-N			15				
RF-P-2A	480 V	20 A	3	SHDPB	(3) #12 & (1) #12 GND IN 3/4"C.	30A/8A	
RF-P-2A			3				
RF-P-2B	480 V	20 A	3	SHDPB	(3) #12 & (1) #12 GND IN 3/4"C.	30A/8A	
RF-P-2B			3				
RLF-N	480 V	40 A	3	SHDPP	(3) #8 & (1) #10 GND IN 1"C.	60A/30A	
RLF-N			15				
RLF-S	480 V	50 A	3	RHDPP	(3) #8 & (1) #10 GND IN 1"C.	60A/40A	
RLF-S			20				
SEF-1	480 V	30 A	3	RHDPP	(3) #10 & (1) #10 GND IN 1"C.	60A/20A	
SEF-1			10				
SEF-2	480 V	30 A	3	RHDPP	(3) #10 & (1) #10 GND IN 1"C.	60A/20A	
SEF-2			10				
SEF-3	480 V	40 A	3	RHDPP		60A/30A	
SEF-3			15				
SEF-4	480 V	50 A	3	RHDPP		60A/40A	
SEF-4			20				
SEP-1	480 V	30 A	3	SHDPB		30A/20A	
SEP-1							
SMF-N	480 V	30 A	3	RHDPB	(3) #12 & (1) #12 GND IN 3/4"C.	30A/8A	
SMF-N			3				
SMF-S	480 V	30 A	3	RHDPB	(3) #12 & (1) #12 GND IN 3/4"C.	30A/8A	
SMF-S			3				
SP-1	480 V	20 A	3	SHDPB	(3) #12 & (1) #12 GND IN 3/4"C.	30A/6A	
SP-1							
SP-2	480 V	20 A	3	HMPB		30A/5A	
SP-2							
SP-2	480 V	20 A	3	SHDPB		30A/5A	
SP-2							

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TYPE	MANUFACTURER	FIXTURE DESCRIPTION	VOLTS	LAMP	APPARENT LOAD
HA1	FOCAL POINT #: FSM4-FLXP-1T5-277-S-T1-WH-2' NEO-RAY #: 23-D-R-1-T5-ETG-2'-2-EB-S94HT GAMMALUX #: GB33RC2-114T5-277V-ERS-2'-REC-ASL-WH	RECESSED 2' T5 LINEAR FLUORESCENT LUMINOUS SLOT FOR 15/16" TEGULAR GRID CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, HIGH PERFORMANCE FLUSH LENS, NON-DIM.	277 V	(1) F14T5/3500K	17
HA1E	FOCAL POINT #: FSM4-FLXP-1T5-277-S-T1-WH-2' NEO-RAY #: 23-D-R-1-T5-ETG-2'-2-EB-S94HT GAMMALUX #: GB33RC2-114T5-277V-ERS-2'-REC-ASL-WH		277 V	(1) F14T5/3500K	17
HA2	FOCAL POINT #: FSM4-FLXP-1T5-277-S-TF-WH-2' NEO-RAY #: 23-D-R-1-T5-SR-2'-2-EB-S94HT GAMMALUX #: GB33RC2-114T5-277V-ERS-2'-REC-ASL-WH	RECESSED 2' T5 LINEAR FLUORESCENT LUMINIOUS SLOT FOR GYPSUM CEILING, EXTRUDED ALUMINUM HOUSING, WHITE TRIM FLANGE, HIGH PERFORMANCE FLUSH LENS, NON-DIM.	277 V	(1) F14T5/3500K	17
HA2E	FOCAL POINT #: FSM4-FLXP-1T5-277-S-TF-WH-2' NEO-RAY #: 23-D-R-1-T5-SR-2'-2-EB-S94HT GAMMALUX #: GB33RC2-114T5-277V-ERS-2'-REC-ASL-WH		277 V	(1) F14T5/3500K	17
HA3	FOCAL POINT #: FSM4-FLXP-2T5-277-S-T1-WH-2' NEO-RAY #: 23-D-R-2-T5-ETG-2'-2-EB-S94HT GAMMALUX #: GB33RC2-214T5-277V-ERS-2'-REC-ASL-WH	RECESSED 2' T5 LINEAR FLUORESCENT LUMINOUS SLOT FOR 15/16" TEGULAR GRID CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, HIGH PERFORMANCE FLUSH LENS, NON-DIM.	277 V	(2) F14T5/3500K	34
HA4	FOCAL POINT #: FSM4-FLXP-2T5HO-277-D-T1-WH-2' NEO-RAY #: 23-D-R-2-T5HO-ETG-2'-2-DB-S94HT GAMMALUX #: GB33RC2-224T5HO-277V-DIM-2'-REC-ASL-WH	RECESSED 2' T5HO LINEAR FLUORESCENT LUMINIOUS SLOT FOR 15/16" TEGULARGRID CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, HIGH PERFORMANCE FLUSH LENS, DIMMABLE BALLAST.	277 V	(2) F24T5/HO/3500K	17
HA4E	FOCAL POINT #: FSM4-FLXP-2T5HO-277-D-T1-WH-2' NEO-RAY #: 23-D-R-2-T5HO-ETG-2'-2-DB-S94HT GAMMALUX #: GB33RC2-224T5HO-277V-DIM-2'-REC-ASL-WH		277 V	(2) F24T5/HO/3500K	17
HA5	FOCAL POINT #: FSM4-FLXP-1T5-277-D-TF-WH-2' NEO-RAY #: 23-D-R-1-T5-SR-2'-2-DB-S94HT GAMMALUX #: GB33RC2-114T5-277V-DIM-2'-REC-ASL-WH	RECESSED 2' T5 LINEAR FLUORESCENT LUMINIOUS SLOT FOR GYPSUM CEILING, EXTRUDED ALUMINUM HOUSING, WHITE TRIM FLANGE, HIGH PERFORMANCE FLUSH LENS, DIMMABLE BALLAST.	277 V	(1) F14T5/3500K	34
HA5E	FOCAL POINT #: FSM4-FLXP-1T5-277-D-TF-WH-2' NEO-RAY #: 23-D-R-1-T5-SR-2'-2-DB-S94HT GAMMALUX #: GB33RC2-114T5-277V-DIM-2'-REC-ASL-WH		277 V	(1) F14T5/3500K	34
HB1	FOCAL POINT #: FSM4A-NS-1T5-277-S-T1-WH-2' NEO-RAY #: 23X-R-1-T5-ETG-2'-2-EB GAMMALUX #: GB33WWRC-1ASY14T5-277V-ERS-2'-REC/T1W-OP-WH	RECESSED 2' T5 LINEAR FLUORESCENT LUMINOUS SLOT WALL WASHER FOR 15/16" TEGULAR GRID CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, OPEN OPTIC, NON-DIM.	277 V	(1) F14T5/3500K	17
HB1E	FOCAL POINT #: FSM4A-NS-1T5-277-S-T1-WH-2' NEO-RAY #: 23X-R-1-T5-ETG-2'-2-EB GAMMALUX #: GB33WWRC-1ASY14T5-277V-ERS-2'-REC/T1W-OP-WH		277 V	(1) F14T5/3500K	17
HB2	FOCAL POINT #: FSM4A-NS-1T5-277-S-TF-WH-2' NEO-RAY #: 23X-R-1-T5-SR-2'-2-EB GAMMALUX #: GB33WWRC-1ASY14T5-277V-ERS-2'-REC/GFR-OP-WH	RECESSED 2' T5 LINEAR FLUORESCENT LUMINOUS SLOT WALL WASHER FOR GYPSUM CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, OPEN OPTIC, NON-DIM.	277 V	(1) F14T5/3500K	17
HB3	FOCAL POINT #: FSM4A-NS-1T5HO-277-S-T1-WH-4' NEO-RAY #: 23X-R-1-T5HO-ETG-4'-2-EB GAMMALUX #: GB33WWRC-1ASY54T5HO-277V-ERS-4'-REC/T1W-OP-WH	RECESSED 4' T5HO LINEAR FLUORESCENT LUMINOUS SLOT WALL WASHER FOR 15/16" TEGULAR GRID CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, OPEN OPTIC, NON-DIM.	277 V	(1) F54T5HO/3500K	60
HB5	FOCAL POINT #: FSM4A-NS-1T5HO-277-D-TF-WH-4' NEO-RAY #: 23X-R-1-T5HO-SR-4'-2-DB GAMMALUX #: GB33WWRC-1ASY54T5HO-277V-DIM-4'-REC/GFR-OP-WH	RECESSED 4' T5HO LINEAR FLUORESCENT LUMINOUS SLOT WALL WASHER FOR GYPSUM CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, OPEN OPTIC, DIMMABLE BALLAST.	277 V	(1) F54T5HO/3500K	60
HB6	FOCAL POINT #: FSM4A-NS-1T5HO-277-D-TF-WH-8' NEO-RAY #: 23X-R-1-T5HO-SR-8'-2-DB GAMMALUX #: GB33WWRC-1ASY54T5HO-277V-DIM-8'-REC/GFR-OP-WH	RECESSED 8' T5H0 LINEAR FLUORESCENT LUMINOUS SLOT WALL WASHER FOR GYPSUM CEILING, EXTRUDED ALUMINUM HOUSING, MATTE SATIN WHITE FLANGE, OPEN OPTIC, DIMMABLE BALLAST.	277 V	(2) F54T5HO/3500K	120
HC	FOCAL POINT #: FEQ-22-B-3-T5-D-277-G1-WP-WH NEO-RAY #: 282-R-3-T5-ESTG-2-EB CORELITE #: Z3-W-L-3-N5-1-D-277-22-T1	RECESSED 2'x2' T5 LINEAR FLUORESCENT FOR 15/16" TEGULAR GRID CEILING, STEEL REFLECTOR AND HOUSING, MATTE WHITE POWDER COAT, WHITE ACRLIC DIFFUSER, DIMMABLE.	277 V	(3) F14T5/3500K	51
HD	COLUMBIA LIGHTING #: CRS-22-3-14-G-FSS-A12-EP-U-1T KENALL #: CSEG122-3-14-RS-1-277-TBD-TBD-1 LITHONIA LIGHTING #: 2SP5-G-3-14T5-TBD-A12-277	RECESSED LENSED 2'x2' LINEAR FLUORESCENT CLEAN CLASSROOM FIXTURE FOR 15/16" TEGULAR GRID CEILING, DIE-FORMED CODE GAUGE STEEL HOUSING, ANODIZED EXTRUDED ALUMINUM DOOR FRAME, STAINLESS STEEL DOOR, WHITE PATTERN ACRYLIC LENS, DIMMABLE BALLAST.	277 V	(3) F14T5/3500K	51
HDE	COLUMBIA LIGHTING #: CRS-22-3-14-G-FSS-A12-EP-U-1T KENALL #: CSEG122-3-14-RS-1-277-TBD-TBD-1 LITHONIA LIGHTING #: 2SP5-G-3-14T5-TBD-A12-277		277 V	(3) F14T5/3500K	51
HG	LIGHTOLIER #: C6L1520-DL-30K-W-CCD-W, C6L15-N-2-BLANK FOCAL POINT #: FL6D-13LED-L30-277-RO-T-TBD-L6-RO-DN-CD-WP EDISON PRICE LIGHTING #: LED-FTD-DL/5-1300-3000-277-COL	RECESSED 5" OR 6" ROUND LED DOWNLIGHT, INTEGRAL REMOTE PHOSPHOR LED MODULE, ALUMINUM REFLECTOR, CLEAR DIFFUSE LENS, WHITE TRIM, DIMMED, DRIVER COMPATIBLE WITH 0-10V DIMMER, 5 YEAR WARRANTY.	277 V	3000K 1500 LUMENS LED	27
HGE	LIGHTOLIER #: C6L1520-DL-30K-W-CCD-W, C6L15-N-2-BLANK FOCAL POINT #: FL6D-13LED-L30-277-RO-T-TBD-L6-RO-DN-CD-WP EDISON PRICE LIGHTING #: LED-FTD-DL/5-1300-3000-277-COL		277 V	3000K 1500 LUMENS LED	27
HH	LIGHTOLIER #: C6L1520-LW-30K-CCD-W, C6L15-N-2-BLANK FOCAL POINT #: FL6W-13LED-L30-277-RO-T-L6-RO-WW-CD-WP EDISON PRICE LIGHTING #: LED-FTD-WL/5-1300-3000-277-COL	RECESSED 5" OR 6" ROUND LED LENSED WALL WASHER, INTEGRAL REMOTE PHOSPHOR LED MODULE, ALUMINUM REFLECTOR, CLEAR DIFFUSE LENS, WHITE TRIM, DIMMED, DRIVER COMPATIBLE WITH 0-10V DIMMER, 5 YEAR WARRANTY.	277 V	3000K 1500 LUMENS LED	27
HHE	LIGHTOLIER #: C6L1520-LW-30K-CCD-W, C6L15-N-2-BLANK FOCAL POINT #: FL6W-13LED-L30-277-RO-T-L6-RO-WW-CD-WP EDISON PRICE LIGHTING #: LED-FTD-WL/5-1300-3000-277-COL	RECESSED 5" OR 6" ROUND LED LENSED WALL WASHER, INTEGRAL REMOTE PHOSPHOR LED MODULE, ALUMINUM REFLECTOR, CLEAR DIFFUSE LENS, WHITE TRIM, DIMMED, DRIVER COMPATIBLE WITH 0-10V DIMMER, 5 YEAR WARRANTY.	277 V	3000K 1500 LUMENS LED	27
HI1	LIGHTOLIER #: C2L-04-DL-30K-25-R-1, C2L-DL-CCD-WH, C2LMP CREATIVE SYSTEMS LIGHTING #: EDLM-RM-SW-1, EDLM-1006-1-25° OPTIC LUCIFER LIGHITNG #: DL1ZP-RM-W-TBD-8007-30-2, PS-LED-RM-8007-UNIVL3-EDL-ZF	RECESSED 1.75" OR 2" ROUND LED ACCENT DOWNLIGHT FOR GRID CEILING, 25 OR 40 DEGREE BEAM, CLEAR COMFORT DIFFUSE REFLECTOR FINISH, WHITE OVERLAP FLANGE, NEW CONSTRUCTION MOUNTING PAN. 5 YEAR WARRANTY.	277 V	3000K OR 3500K LED	11
HI2	LIGHTOLIER #: C2L-04-DL-30K-25-R-1, C2L-DL-CCD-BK CS LIGHTING #: EDLM-RM-SW-1, BLACK TRIM-25° OPTIC LUCIFER LIGHITNG #: DL1ZP-RM-B-TBD-8007-30-2, PS-LED-RM-8007-UNIVL3-EDL-ZF	RECESSED 1.75" OR 2" ROUND LED ACCENT DOWNLIGHT FOR WOOD CEILING, 25 OR 40 DEGREE BEAM, CLEAR COMFORT DIFFUSE REFLECTOR FINISH, BLACK REFLECTOR AND OVERLAP FLANGE. 5 YEAR WARRANTY.	277 V	3000K OR 3500K LED	11

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TYPE	MANUFACTURER	FIXTURE DESCRIPTION	VOLTS	LAMP	APPARENT LOAD
HI3	LIGHTOLIER #: C2L-04-DL-30K-38-R-1, C2L-DL-CCD-BK CS LIGHTING #: EDLM-RM-SW-1, BLACK TRIM-45° OPTIC LUCIFER LIGHITNG #: DL1ZP-RM-B-TBD-8007-30-2, PS-LED-RM-8007-UNIVL3-EDL-ZF	RECESSED 1.75" OR 2" ROUND LED ACCENT DOWNLIGHT FOR WOOD CEILING, 38 OR 40 DEGREE BEAM, CLEAR COMFORT DIFFUSE REFLECTOR FINISH, BLACK REFLECTOR AND OVERLAP FLANGE. 5 YEAR WARRANTY.	277 V	3000K OR 3500K LED	11
HI4	LIGHTOLIER #: C2L-04-DL-30K-17-R-1, C2L-LW-CCD-BK CS LIGHTING #: EDLM-RM-SW-1, BLACK TRIM-85° OPTIC LUCIFER LIGHITNG #: DL5ZP-RM-B-TBD-8007-30-2, PS-LED-RM-8007-UNIVL3-EDL-ZF	RECESSED 1.75" OR 2" ROUND LED ACCENT WALLWASHER FOR WOOD CEILING, 17 OR 40 DEGREE BEAM OR 85 DEGREE WALLWASHER OPTIC, CLEAR COMFORT DIFFUSE REFLECTOR FINISH, BLACK REFLECTOR AND OVERLAP FLANGE. 5 YEAR WARRANTY.	277 V	3000K OR 3500K 400 LUMENS LED	11
HJ1	LIGHTING SERVICES INC. #: V-LX2044-F3M4-5A-W EDISON PRICE LIGHTING #: MAX LED XSM O-OBM-1300-3000-FL-WH PHILIPS COLOR KINETICS #: 523-000036-WH, 120-000103-WH, 120-000080-02	J-BOX MOUNTED LED ACCENT LIGHT, ALUMINUM HOUSING, CANOPY FOR PERMANENT MOUNTING ON 4" OCTAGONAL OUTLET BOX, 40 DEGREE REFLECTOR, WHITE HOUSING, SHIELD AND CANOPY FINISH, NON-DIM. 5 YEAR WARRANTY. MOUNTING CONDITIONS VARY, REFER TO ARCHITECTURAL PLANS.	277 V	3000K OR 4000K 1120 LUMENS LED	25
HJ2	LIGHTING SERVICES INC. #: V-LX2044-F3M2-54-W-AA998 EDISON PRICE LIGHTING #: MAX LED XSM O-OBM-1300-3000-SP-WH-CLR/4.75 PHILIPS COLOR KINETICS #: 523-000036-WH, 120-000103-WH, 120-000080-00	J-BOX MOUNTED LED ACCENT LIGHT, ALUMINUM HOUSING, CANOPY FOR PERMANENT MOUNTING ON 4" OCTAGONAL OUTLET BOX, 14, 20 OR 21 DEGREE REFLECTOR, WHITE HOUSING AND CANOPY FINISH, BEAM SOFTENER, NON-DIM. 5 YEAR WARRANTY. MOUNTING CONDITIONS VARY, REFER TO ARCHITECTURAL PLANS.	277 V	3000K OR 4000K LED	25
HK1	PHILIPS COLOR KINETICS #: 523-000036-CUSTOM FINISH, 120-000103-CUSTOM FINISH LUMEN PULSE #: LBM-277-30K-NS-CC-NO-CRC, LBM-SN-CC-BK SISTEMALUX #: S.1068W-120-CC, S.1024	VERTICALLY SURFACE MOUNTED TO EXTERIOR J-BOX LED ACCENT LIGHT, 7, 8 OR 10 DEGREE BEAM, HOUSING AND FULL HEIGHT GLARE SHIELD TO BE CUSTOM COLOR TO MATCH EXTERIOR WALL PANELS VALSPAR 399A540 CHAMPAGNE GOLD, NON-DIM, UL LABEL, 5 YEAR WARRANTY.	277 V	3000K, 3200K OR 4000K 1478 LUMENS LED	30
HK1E	PHILIPS COLOR KINETICS #: 523-000036-CUSTOM FINISH, 120-000103-CUSTOM FINISH LUMEN PULSE #: LBM-277-30K-NS-CC-NO-CRC, LBM-SN-CC-BK SISTEMALUX #: S.1068W-120-CC, S.1024		277 V		30
HK3	PHILIPS COLOR KINETICS #: 523-000059-03 120-000103-11 120-000080-06 LUMEN PULSE #: LBS-277-40K-FL-BK-NO-CN, CRC SISTEMALUX #: S.1053W-120	SURFACE MOUNTED LED ACCENT, 22, 36, OR 41 DEGREE BEAM SPREAD LENS, HOUSING TO BE GRAY OR BLACK, NON-DIM, UL LABEL, 5 YEAR WARRANTY.	277 V	3000K, 3200K OR 4000K 646 LUMENS LED	15
HL1	AXIS LIGHTING #: BMD-PL-8-T5H0-1-AP-277-D-1-CA# ARCHITECTURAL LIGHTING WORKS #: LPL35S-D-8'-1-FHO-R-LED-DIM-277-LV-AL FOCAL POINT #: FAVDS-PL-1T5H0-1C-277-D-C24-TS-8'	SUSPENDED 3.2" TO 3.5" WIDE 8' LINEAR FLUORESCENT DIRECT LUMINARIE OF EXTRUDED ALUMINUM WITH (2) 4' T5HO LAMPS, SEMI-SPECULAR PARABOLIC LOUVER, ALUMINUM PAINT OR TITANIUM SILVER FINISH, 24" TO 36" STANDARD CABLE, DIMMABLE.	277 V	(2) F54T5/HO/3500K	120
HL2	AXIS LIGHTING #: BMD-PL-S#-T5H0-1-MR16#-AP-277-D-+M-CA# ARCHITECTURAL LIGHTING WORKS #: LPL35S-D-15'-1-FHO-R-MR16-DTRIAC-SOL-4-LED-DIM-277-LV-AL FOCAL POINT #: FAVDS-PL-1T5H0-2C-277-D-C24-4FM-SFL-TS-14'	SUSPENDED 3.2" TO 3.5" WIDE 14' TO 15' LINEAR FLUORESCENT DIRECT LUMINARIE OF EXTRUDED ALUMINUM WITH (3) 4' T5 HIGH OUTPUT LAMPS, (2) 6" OR 9" CHANNELS WITH MR16 HALOGEN ACCENT LIGHTS TO BE AT FIXTURE'S ENDS AND (2) ADDITIONAL IN BETWEEN LINEAR FLUORESCENTS, LINEAR COMPONENT TO HAVE SEMI-SPECULAR PARABOLIC LOUVER, MR16 HALOGEN COMPONENT TO HAVE SOLITE LENS, ALUMINUM PAINT OR TITANIUM SILVER FINISH, CABLE HUNG, 2-CIRCUIT OPERATION WITH DIMMING.	277 V	(3) F54T5/HO/3500K, (4) 35MR16/FL36	180
HM	ARTEMIDE #: COSMIC ROTATOIN SUSPENSION	PENDANT MOUNTED COMPACT FLUORESCENT DECORATIVE, PAINTED ALUMINUM HOUSING, MOLDED OPAL METHANCRYLATE DIFFUSER, WHITE FINISH, NON-DIM, BOTTOM OF PENDANT TO BE 8'-0" A.F.F.	120 V	(2) 42W/GX24q-4/T4	92
HN	AXIS LIGHTING #: BMD-A-8-T5H0-1-AP-277-D-1-SA# ARCHITECTURAL LIGHTING WORKS #: CML-8'-54-36"-LED-DIM-JBOX4-277- AL PEERLESS LIGHTING #: LLMA-1-54T5HO-SSB-8-RB-277-DIM-SCT-FINISH-24	SUSPENDED LINEAR FLUORESCENT WALL WASHER EXTRUDED ALUMINUM WITH RADIAL CUT-OFF LOUVER, CABLE HUNG, FINISH TO BE DETERMINED, DIMMABLE. SUSPENDED WITH BOTTOM OF FIXTURE AT 8'-0" A.F.F.	277 V	(2) F54HO30	120
HP	DELRAY LIGHTING #: 7702-2-42-UE PHILIPS LIGHTOLIER #: 40431-40724XU3 D'AC LIGHTING #: D5030-1F70-277-AL-WET	PENDANT MOUNTED COMPACT FLUORESCENT OR LED LENSED INDIRECT/DIRECT, SPUN ANODIZED ALUMINUM HOUSING, SUSPENDS FROM AIRCRAFT CABLES, BOTTOM OF FIXTURE TO BE 7'-6" A.F.F., NON-DIM.	277 V	(2) OR (3) 42W/GX24q-4/T4 OR (1) 70W TRIPLE TUBE	140
HQ	LIGHTOLIER #: DSS01WLSA-120 WAC LIGHTING #: WL-LED200-C-WT-BN WINONA LIGHTING #: LED-STEP01-RECT-M-001/HO-ND277V-BAL-X-STD	J-BOX MOUNTED LED STEPLIGHT, DIE-CAST ALUMINUM HOUSING, SATIN ALUMINUM OR BRUSHED NICKEL FINISH WITH CLEAR COAT, CLEAR ACRYLIC LENS, INTEGRAL DRIVER, 5 YEAR WARRANTY. FIXTURE TO BE MOUNTED 18" TO CENTER.	277 V	3000K LED	4
HQE	LIGHTOLIER #: DSS01WLSA-120 WAC LIGHTING #: WL-LED200-C-WT-BN WINONA LIGHTING #: LED-STEP01-RECT-M-001/HO-ND277V-BAL-X-STD		277 V	LED 30 LUMENS	4
HR2	MODA LIGHT #: SIGNEX-FPCB-3000K-115, MRT50, MRT51, MRT52 (AS NEEDED) LED LINEAR #: VARIOLED FLEX VENUS W830/A TV IP67, 13000010 (AS NEEEDED) TIVOLI: TVFP-WH-24-PSU, TVFP-NOTCHH-6.5, TVFP-ENDCAP	WET LOCATION, LOW PROFILE TOP VIEW LED ROPE LIGHT, SILICONE SLEEVE HOUSING, MOUNTING CLIPS OR CHANNELS AND END CAPS, COORDINATE POWER REQUIRED WITH FIELD CONDITIONS, PROVIDE WET LABEL ENCLOSURES FOR DRIVERS AS NEEDED, IN LENGTHS AS SHOWN ON PLAN, NON-DIM. 5 YEAR WARRANTY. REFER TO ARCHITECTURAL MOUNTING DETAIL.	120 V	3000K OR 3200K 132 LUMENS PER FOOT LED	95
HR3	MODA LIGHT #: SIGNEX-FPCB-3000K-115, MRT50, MRT51, MRT52 (AS NEEDED) LED LINEAR #: VARIOLED FLEX VENUS W830/A TV IP67, 13000010 (AS NEEEDED) TIVOLI: TVFP-WH-24-PSU, TVFP-NOTCHH-6.5, TVFP-ENDCAP	WET LOCATION, LOW PROFILE TOP VIEW LED ROPE LIGHT, SILICONE SLEEVE HOUSING, MOUNTING CLIPS OR CHANNELS AND END CAPS, COORDINATE POWER REQUIRED WITH FIELD CONDITIONS, PROVIDE WET LABEL ENCLOSURES FOR DRIVERS AS NEEDED, IN LENGTHS AS SHOWN ON PLAN, NON-DIM. 5 YEAR WARRANTY. REFER TO ARCHITECTURAL MOUNTING DETAIL.	120 V	3000K OR 3200K 132 LUMENS PER FOOTLED	95
HS	LUMEN PULSE #: LBL-120-30K-NF-SI-NO SISTEMALUX #: S.1077W-120 IGUZZINI #: I.BB31-120-15 ALTMAN LIGHTING INC. #: B-10	SURFACE MOUNTED WHITE LED 20, 22 OR 30 DEGREE ACCENT, DIE-CAST ALUMINUM HOUSING, STEEL YOKE AND HARDWARE, NON-DIM. 5 YEAR WARRANTY. MOUNT TO ALTMAN LIGHTING INC. #B-10 WEIGHTED BASE, PROVIDE 6' POWER CABLE.	120 V	3000K, 3100K OR 3200K 2645 LUMENS LED	55
HT	LUMIERE #: 904-10LED3041-12-NSS-DIF WINSCAPE #: GELED-3004-277V-L3-STAINLESS STEEL-F0-SH0-C2-STD B-K LIGHTING #: EC-LED-E22-MFL-POL-12-90	EXTERIOR WALL MOUNTED LED DOWNLIGHT, CAST ALUMINIUM HOUSING, CAP, STEM AND CUSTOM MOUNTING PLATE, 36 OR 41 DEGREE BEAM SPREAD, BOROSILICATE GLASS LENS, METAL FINISH TO MATCH STAINLESS STEEL CAPITOLS, PROVIDE REMOTE 12V ELECTRONIC TRANSFORMER IN JUNCTION BOX. NON-DIM. 5 YEAR WARRANTY. FIXTURE MOUNTS POINTING DOWN.	277 V	3000K 255 LUMENS LED	10
HTE	LUMIERE #: 904-10LED3041-12-NSS-DIF WINSCAPE #: GELED-3004-277V-L3-STAINLESS STEEL-F0-SH0-C2-STD B-K LIGHTING #: EC-LED-E22-MFL-POL-12-90		277 V	3000K 255 LUMENS LED	10
HU	WINONA LIGHTING #: 1000-1CFTR42-WW-277V-TBD-00-STD	EXTERIOR GRADE COMPACT FLUORESCENT AREA LIGHT MOUNTED WITHIN DECORATIVE SHROUD DESIGNED BY ARCHITECT, FINISH TO BE DETERMINED BY ARCHITECT, NO CAGE, NON-DIM, UL LABEL.	277 V	(1) CFTR42W/GX24Q-4	46
HV	PHILIPS COLOR KINETICS #: (AS NEEDED) 523-000004-16, (AS NEEDED) 120-000076-00, (AS NEEDED) 108-000033-07, (AS NEEDED) 120-000125-00 TRAXON TECHNOLOGIES #: (AS NEEDED) MB.CL.5070100	SURFACE MOUNTED LINEAR WHITE LED 12" STRIPS, QUICK CONNECT CONNECTIONS, WIDE BEAM DISTRIBUTION, ROTATABLE AIMING, HOLOGRAPHIC LENS, INTEGRAL DRIVER, DIMMABLE WITH ELV DIMMER, WIRING COMPARTMENT WITH TERMINATOR, JUMPER CABLE AND MOUNTING TRACK AS NEEDED. PROVIDE QUANTITY IN 12" LENGTHS AS NEEDED. 5 YEAR WARRANTY.	0 V		50
HX	PHILIPS COLOR KINETICS #: (30) 523-000004-16, (1) 120-000076-00, (1) 108-000033-06, (8) 120-000125-00 TRAXON TECHNOLOGIES #: (30) MB.CL.5070100	LINEAR WHITE LED BACKLIGHT, 12" STRIPS, QUICK CONNECT CONNECTIONS, WIDE BEAM DISTRIBUTION, ROTATABLE AIMING, HOLOGRAPHIC LENS, INTEGRAL DRIVER, DIMMABLE WITH ELV DIMMER, WIRING COMPARTMENT WITH TERMINATOR, 1' JUMPER CABLE, WHITE 4' MOUNTING TRACK. 5 YEAR WARRANTY.	120 V	3500K OR 4000K 245 LUMENS PER FOOT LED	50
HY	PHILIPS COLOR KINETICS #: 523-000001-00, 523-000009-06, 523-000011-02 MP LIGHTING #: L134-10-W30S-60-NA-MA	SURFACE MOUNTED 7.5" x 7.5" SQUARE LED DOWNLIGHT, METAL BEZEL COVER, FINISH TO BE DETERMINED BY ARCHITECT, WITH DIRECT LINE VOLTAGE CONNECTOR FOR DIMMING. 5 YEAR WARRANTY.	277 V	2700K OR 3000K 527 LUMENS LED	15
HYE	PHILIPS COLOR KINETICS #: 523-000001-00, 523-000009-06, 523-000011-02 MP LIGHTING #: L134-10-W30S-60-NA-MA		277 V	2700K OR 3000K 527 LUMENS LED	15

Grand total: 982

LUMINAIRE SCHEDULE - BVH

TYPE	MANUFACTURER	FIXTURE DESCRIPTION	VOLTS	LAMP	APPARENT LOAD
A1	COLUMBIA "CRC" SERIES OR LIITHONIA 'SRH' SERIES OR DAY-BRITE 'DESIGNER CLEAN ROOM' SERIES OR FAIL-SAFE 'CFG' SERIES OR LIGHTOLIER 'CSXW' SERIES	RECESSED 2' X 2' FLUORESCENT LUMINAIRE; SEALED TROFFER, CLASS 1000 CLEANROOM, STEEL HOUSING, FLUSHED ALUMINUM DOOR, ACRYLIC LENS, ELECTRONIC BALLAST.	277 V	(2) 24W T5HO	54
A1E	COLUMBIA "CRC" SERIES OR LIITHONIA 'SRH' SERIES OR DAY-BRITE 'DESIGNER CLEAN ROOM' SERIES OR FAIL-SAFE 'CFG' SERIES OR LIGHTOLIER 'CSXW' SERIES	SAME LUMINAIRE AS TYPE "A1" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(2) 24W T5HO	54
A2	COLUMBIA "CRC" SERIES OR LIITHONIA 'SRH' SERIES OR DAY-BRITE 'DESIGNER CLEAN ROOM' SERIES OR FAIL-SAFE 'CFG' SERIES OR LIGHTOLIER 'CSXW' SERIES	RECESSED 2' X 2' FLUORESCENT LUMINAIRE; SEALED TROFFER, CLASS 1000 CLEANROOM, STEEL HOUSING, FLUSHED ALUMINUM DOOR, ACRYLIC LENS, ELECTRONIC BALLAST.	277 V	(3) 24W T5HO	81
A2E	COLUMBIA "CRC" SERIES OR LIITHONIA 'SRH' SERIES OR DAY-BRITE 'DESIGNER CLEAN ROOM' SERIES OR FAIL-SAFE 'CFG' SERIES OR LIGHTOLIER 'CSXW' SERIES	SAME LUMINAIRE AS TYPE "A2" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(3) 24W T5HO	81
AA	HOLOPHANE "GRANVILLE" SERIES	10' TALL 4" Ø BLACK POLE MOUNTED LUMINAIRE. PRISMATIC GLASS REFLECTOR WITH STANDARD FINIALS AND FULL COVER. PROVIDE WITH 120V 20A-1P GFI OUTLET.	277 V	S67513 SYLVANIA	150
B1	BETALED 'THE EDGE' SERIES OR TERSEN 'TLRCB10' SERIES OR BEACON 'METRO' SERIES	36" BOLLARD LED LUMINAIRE. TYPE V LIGHTING DISTRIBUTION. FINISH TO BE COORDINATE WITH ARCHITECT.	277 V	1350 LUMENS LED 4000K	22
B1E	BETALED 'THE EDGE' SERIES OR TERSEN 'TLRCB10' SERIES OR BEACON 'METRO' SERIES	SAME LUMINAIRE AS TYPE "B1" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	1350 LUMENS LED 4000K	22
BB	ARCHITECTURAL AREA LIGHTING 'INDC' SERIES OR LIGMAN LIGHTING 'FS-U20641' SERIES OR LOUIS POULSEN 'KIPP POST LED' SERIES OR BEACON 'SETI' SERIES	EXTERIOR POLE MOUNTED LED AREA LUMINAIRE. SQUARE UPPER REFLECTOR OF CAST ALUMINUM HOUSING, CLEAR & TEMPERED TOP GLASS,	277 V	1000 LUMENS LED	33
C1	ALERA 'ACCENT LIGHT' SERIES OR MARK LIGHTING 'MP' SERIES OR DAY-O-LITE 'PNR' SERIES OR NEO-RAY ' 76PF' SERIES OR LIGHTOLIER 'PTS5 LENS' SERIES	RECESSED FLUROESCENT WALL WASH. WHITE GLOSS REFLECTOR, 1" REGRESS ACRYLIC LENS, ELECTRONIC BALLAST.	277 V	(1) 28W T5	31
CC	ERCO 'PANORAMA' SERIES OR BEACON 'METRO LED' SERIES	18" BOLLARD LUMINAIRE, ALUMINUM HOUSING, ALUMINUM SPECULAR 360° REFLECTOR. IP65 RATED.	277 V	(1) 39W T6	43
D1	BETA LED "ESSENTIA" SERIES OR PATHWAY LIGHTING '6SQLED 2800' SERIES OR PORTFOLIO '6LSQ' SERIES OR CALCULITE '6X6' SERIES OR SPECTRUM LIGHTING 'INFINIUM LES' SERIES	RECESSED OPEN REFLECTOR LED DOWNLIGHT; OPEN; 6"x6" SQUARE APERTURE; 8" MAXIMUM DEPTH, MEDIUM DISTRIBUTION.	277 V	2600 LUMENS LED	53
D2	BETA LED "ESSENTIA" SERIES OR PATHWAY LIGHTING '6SQLED 2800' SERIES OR PORTFOLIO '6LSQ' SERIES OR CALCULITE '6X6' SERIES OR SPECTRUM LIGHTING 'INFINIUM LES' SERIES	SAME AS TYPE 'D1' EXCEPT WET LOCATION LISTED.	277 V	2600 LUMENS LED	53
K1	COLUMIBA "LUN" SERIES OR LITHONIA 'DMW' SERIES OR DAY-BRITE 'VAPORLUME' SERIES OR METALUX 'VT2' SERIES OR LIGHTOLIER 'STW' SERIES	4' FIBERGLASS HOUSING, LENS TYPE, CHAIN HUNG INDUSTRIAL, ELECTRONIC BALLAST.	277 V	(2) 28W T5	62
K1B	COLUMIBA "LUN" SERIES OR LITHONIA 'DMW' SERIES OR DAY-BRITE 'VAPORLUME' SERIES OR METALUX 'VT2' SERIES OR LIGHTOLIER 'STW' SERIES	SAME AS TYPE "K1" EXCEPT PROVIDE WITH EMERGENCY BATTERY PACK.	277 V	(2) 28W T5	62
K1E	COLUMIBA "LUN" SERIES OR LITHONIA 'DMW' SERIES OR DAY-BRITE 'VAPORLUME' SERIES OR METALUX 'VT2' SERIES OR LIGHTOLIER 'STW' SERIES	SAME AS TYPE "K1" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(2) 28W T5	62
K2	COLUMIBA "LUN" SERIES OR LITHONIA 'DMW' SERIES OR DAY-BRITE 'VAPORLUME' SERIES OR METALUX 'VT2' SERIES OR LIGHTOLIER 'STW' SERIES	4' FIBERGLASS HOUSING, LENS TYPE, CHAIN HUNG INDUSTRIAL, ELECTRONIC BALLAST.	277 V	(1) 28W T5	31
K2E	COLUMIBA "LUN" SERIES OR LITHONIA 'DMW' SERIES OR DAY-BRITE 'VAPORLUME' SERIES OR METALUX 'VT2' SERIES OR LIGHTOLIER 'STW' SERIES	SAME AS TYPE "K1" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(1) 28W T5	31
K3	COLUMBIA "FNPV" SERIES OR LITHONIA 'DMW' SERIES OR DAY-BRITE 'VAPORLUME' SERIES OR METALUX 'VT2' SERIES OR LIGHTOLIER 'STW' SERIES	4' FIBERGLASS HOUSING, OPAL LENS VAPOR TIGHT CHAIN HUNG INDUSTRIAL, COLD WEATHER ELECTRONIC BALLAST.	277 V	(2) 28W T5	62
K3E	COLUMBIA "FNPV" SERIES OR LITHONIA 'DMW' SERIES OR DAY-BRITE 'VAPORLUME' SERIES OR METALUX 'VT2' SERIES OR LIGHTOLIER 'STW' SERIES	SAME AS TYPE "K2" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(2) 28W T5	62
L1	FC LIGHTING 'FCSL300' SERIES OR WINONA 'STEP13-12' SERIES OR SSL 'IDG' SERIES	RECESSED LED STEPLIGHT 5"x20" 3" MAXIMUM DEPTH. MARINE GRADE STAINLESS STEEL HOUSING, TAMPER RESISTANT SCREWS, GASKETED.	277 V	3000K LED	16
L1E	FC LIGHTING 'FCSL300' SERIES OR WINONA 'STEP13-12' SERIES OR SSL 'IDG' SERIES	SAME AS TYPE "L1" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	3000K LED	16
N1	MCGRAW-EDISON "ISS IMPACT ELITE LED" SERIES OR HUBBELL 'QSP SPHERE' SERIES OR LITHONIA 'WSQ-LED' SERIES OR QUALITY 'QLW16' SERIES OR GARDCO '100 LINE LED' SERIES	DIRECTIONAL WALL MOUNTED LUMINAIRE.QUARTER SPHERE SHAPED ALUMINUM HOUSING, TYPE IV DISTRIBUTION, IP66 RATING.	277 V	1700 LUMENS LED	27
N1E	MCGRAW-EDISON "ISS IMPACT ELITE LED" SERIES OR HUBBELL 'QSP SPHERE' SERIES OR LITHONIA 'WSQ-LED' SERIES OR QUALITY 'QLW16' SERIES OR GARDCO '100 LINE LED' SERIES	DIRECTIONAL WALL MOUNTED LUMINAIRE.QUARTER SPHERE SHAPED ALUMINUM HOUSING, TYPE IV DISTRIBUTION, IP66 RATING.	277 V	1700 LUMENS LED	27
N2	BRUCK 'LEDRA FLEX' SERIES OR MP LIGHTING 'L81' SERIES OR WAC 'LED-SL-101' SERIES OR ACDC 'ODYSSEY' SERIES	J-BOX MOUNTED FLEXIBLE GOOSE NECK LUMINAIRE. INTEGRAL SWITCH, INTEGRAL DRIVER. COORDINATE FINISH WITH ARCHITECT.	120 V	140 LUMENS LED	0
P1	AXIS "WET BEAM DI" SERIES OR LITE CONTROL 'P-ID-46' SERIES OR PINNACLE 'EDGE EX4DI' SERIES	CONTINUOUS PENDANT MOUNTED GASKETED FLUORESCENT LUMINAIRE. LAMP DISTRIBUTION (2) LAMPS DOWN (1) LAMP UP, FROSTED LENS TO PROVIDE 85% TRANSPARENCY. EXTRUDED ALUMINUM HOUSING . PROVIDE COUNTINOUS FIXTURE LENGTHS AS SHOWN ON FLOOR PLANS. ELECTRONIC BALLAST.	277 V	(3) 28W T5	93
P1E	AXIS "WET BEAM DI" SERIES OR LITE CONTROL 'P-ID-46' SERIES OR PINNACLE 'EDGE EX4DI' SERIES	SAME LUMINAIRE AS TYPE 'P1' EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(3) 28W T5	93
P2	AXIS "WET BEAM DI" SERIES OR LITE CONTROL 'P-ID-46' SERIES OR PINNACLE 'EDGE EX4DI' SERIES	CONTINUOUS PENDANT MOUNTED GASKETED FLUORESCENT LUMINAIRE. LAMP DISTRIBUTION (1) LAMP DOWN (1) LAMP UP, FROSTED LENS TO PROVIDE 85% TRANSPARENCY. EXTRUDED ALUMINUM HOUSING. PROVIDE COUNTINOUS FIXTURE LENGTHS AS SHOWN ON FLOOR PLANS. ELECTRONIC BALLAST.	277 V	(2) 28W T5	62
P2E	AXIS "WET BEAM DI" SERIES OR LITE CONTROL 'P-ID-46' SERIES OR PINNACLE 'EDGE EX4DI' SERIES	SAME LUMINAIRE AS TYPE 'P2' EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(2) 28W T5	62
P3	AXIS "WET BEAM DI" SERIES OR LITE CONTROL 'P-ID-46' SERIES OR PINNACLE 'EDGE EX4DI' SERIES	SAME LUMINAIRE AS TYPE 'P1' EXCEPT WITH ELECTRONIC DIMMING BALLAST.	277 V	(3) 28W T5	93
P3E	AXIS "WET BEAM DI" SERIES OR LITE CONTROL 'P-ID-46' SERIES OR PINNACLE 'EDGE EX4DI' SERIES	SAME LUMINAIRE AS TYPE 'P3' EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(3) 28W T5	93
U1	KENALL "STRATALUME UC" SERIES OR AIREY-THOMPSON '12-SERIES' OR LEGION '316' SERIES OR ALKCO 'LITTLE INCH' SERIES	4' UNDERCABINET FLUROESCENT LUMINAIRE. POWDER COATED ALUMINUM HOUSING, EXTRUDED WRAPAROUND OPAL ACRYLIC LENS, PROVIDE WITH INTEGRAL SWITCH.	120 V	(1) 28W T5	0
U2	KENALL "STRATALUME UC" SERIES OR AIREY-THOMPSON '12-SERIES' OR LEGION '316' SERIES OR ALKCO 'LITTLE INCH' SERIES	2' UNDERCABINET FLUROESCENT LUMINAIRE. POWDER COATED ALUMINUM HOUSING, EXTRUDED WRAPAROUND OPAL ACRYLIC LENS, PROVIDE WITH INTEGRAL SWITCH.	120 V	(1) 14W T5	0
V1	AXIS "DAY 2X2" SERIES OR FOCAL POINT 'FEQ-22-B' SERIES OR PINNACLE 'CONVERJ' SERIES OR CORELITE 'Z3' SERIES OR LIGHTOLIER 'SKWAY' SERIES	RECESSED HIGH EFFENCIENT 2' X 2' FLUORESCENT LUMINAIRE; STEEL HOUSING, EXTRUDED ALUMINUM REFLECTOR. SATIN CURVED CENTER LENS.	277 V	(2) 14W T5	34
V1E	AXIS "DAY 2X2" SERIES OR FOCAL POINT 'FEQ-22-B' SERIES OR PINNACLE 'CONVERJ' SERIES OR CORELITE 'Z3' SERIES OR LIGHTOLIER 'SKWAY' SERIES	SAME LUMINAIRE AS TYPE 'V2' EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(2) 14W T5	34
V2	AXIS "DAY 2X2" SERIES OR FOCAL POINT 'FEQ-22-B' SERIES OR PINNACLE 'CONVERJ' SERIES OR CORELITE 'Z3' SERIES OR LIGHTOLIER 'SKWAY' SERIES	RECESSED HIGH EFFENCIENT 2' X 2' FLUORESCENT LUMINAIRE; STEEL HOUSING, EXTRUDED ALUMINUM REFLECTOR. SATIN CURVED CENTER LENS.	277 V	(2) 24W T5HO	54
V2E	AXIS "DAY 2X2" SERIES OR FOCAL POINT 'FEQ-22-B' SERIES OR PINNACLE 'CONVERJ' SERIES OR CORELITE 'Z3' SERIES OR LIGHTOLIER 'SKWAY' SERIES	AME LUMINAIRE AS TYPE 'V3' EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(2) 24W T5HO	54
V3	AXIS "DAY 2X2" SERIES OR FOCAL POINT 'FEQ-22-B' SERIES OR PINNACLE 'CONVERJ' SERIES OR CORELITE 'Z3' SERIES OR LIGHTOLIER 'SKWAY' SERIES	SAME LUMINAIRE AS TYPE 'V3' EXCEPT WITH DIMMING BALLAST.	277 V	(3) 24W T5HO	81
V3E	AXIS "DAY 2X2" SERIES OR FOCAL POINT 'FEQ-22-B' SERIES OR PINNACLE 'CONVERJ' SERIES OR CORELITE 'Z3' SERIES OR LIGHTOLIER 'SKWAY' SERIES	SAME AS TYPE "V4" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(3) 24W T5HO	81
V4	AMERLUX "GRUV" SERIES OR ZUMTOBEL 'SPOTLIGHT' SERIES OR PINNACLE 'EDGE 2A' SERIES OR LIGHTOLIER 'CT3GLAS4U2' SERIES OR MARK LIGHTING 'SLOT 2' SERIES	RECESSED 1'x4' LINEAR FLUORESCENT, STEEL HOUSING, ACRYLIC LENS, STAGGERED LAMPING. LENGTH AS SHOWN ON FLOOR PLANS.	277 V	(1) 28W T5	31
W1	ELLIPTIPAR "F147" SERIES OR LITE CONTROL 'V3 W-AX-3400' SERIES	2' WALL MOUNTED UPLIGHT. ENCLOSED ALUMINUM HOUSING, ACRYLIC LENS. ELECTRONIC BALLAST, ENCLOSED FIXTURE, DECORATIVE FRONT. COORDINATE ILLUMINATION DESIGN WITH ARCHITECT.	277 V	(1) 24W T5HO	27
W1E	ELLIPTIPAR "F147" SERIES OR LITE CONTROL 'V3 W-AX-3400' SERIES	SAME AS TYPE "W1" EXCEPT CONNECTED TO EMERGENCY OR STANDBY CIRCUIT AS INDICATED ON FLOOR PLANS.	277 V	(1) 24W T5HO	27
W2	ARCHITECTURAL AREA LIGHTING 'INDC' SERIES OR LIGMAN LIGHTING 'FS-U20641' SERIES OR LOUIS POULSEN 'KIPP POST LED' SERIES OR BEACON 'SETI' SERIES OR HESS AMERICA 'CAMPO' SERIES	SAME AS TYPE 'BB' EXCEPT WALL MOUNTED VERSION.	277 V	1000 LUMENS LED	33
X1	LITHONIA "LRP" SERIES OR EELP 'EDG' SERIES OR DAY-BRITE 'ERX7145' SERIES OR ASTRALITE 'AEL' SERIES OR LIGHTOLIER 'LG' SERIES	EXIT SIGNS TO BE ARCHITECTURAL ALUMINUM HOUSING WITH CHEVRON ARROWS, OPTIONS FOR SIGNS WITH HANDICAP ACCESSIBILITY SYMBOL. ALL LOCATIONS TO INCLUDE LOW PROXIMITY PHOTO LUMINESCENT TYPE SIGN LOW ON WALL.	277 V	LED	0
X2	LITHONIA "LRP" SERIES OR EELP 'EDG' SERIES OR DAY-BRITE 'ERX7145' SERIES OR ASTRALITE 'AEL' SERIES	SAME AS TYPE "X1" EXCEPT WALL MOUNTED.	277 V	LED	0
X3	LITHONIA "LV" SERIES OR EQUAL BY DAY-BRITE, ASTRALITE OR EELP	EXTREME ALL CONDITIONS EXIT SIGN. CAST-ALUMINUM CONSTRUCTION WITH MINIMUM .250" THICK HOUSING. .130" THICK CLEAR POLYCARBONATE COVER.	277 V	LED	0
X4	LITHONIA "LV" SERIES OR EQUAL BY DAY-BRITE, ASTRALITE OR EELP	SAME AS TYPE "X3" EXCEPT WALL MOUNTED.	277 V	LED	0
X5	LITHONIA 'LE' SERIES OR EQUAL BY DAY-BRITE, ASTRALITE OR EELP	'LASER IN USE' SIGN. BRUSHED ALUMINUM HOUSING	277 V	LED	0

Grand total: 1314

FLOOR BOX SCHEDULE

	BOX					COVER		DEVICES # GANGS			
TAG ID	APPROX. SIZE	DEPTH BEHIND PLATE	# GANG	MATERIAL	SHAPE	TYPE	MATERIAL	POWER	TELECOM	AUDIO VISUAL	NOTES
FB-A	15 1/8" x 11 3/16" x 4 1/16"	3 7/8"	6	STEEL	RECT.	FLUSH	CAST ALUM.	4	1	-	

POKE-THRU SCHEDULE

	BOX				COVER		DEVICES # GANGS			
TAG ID	APPROX. SIZE	# GANG	MATERIAL	SHAPE	TYPE	MATERIAL	POWER	TELECOM	AUDIO VISUAL	NOTES
PT-A	7 1/4" Ø x 16"	3	STEEL	CIRCULAR	FLANGELESS	CAST ALUM.	2	1	-	
PT-B	7 1/4" Ø x 16"	2	STEEL	CIRCULAR	FLANGELESS	CAST ALUM.	2	-	-	
PT-D	7 3/4" Ø x 16"	8	STEEL	CIRCULAR	FLANGED	CAST ALUM.	4	4	-	FURNITRE WHIP
PT-E	7 1/4" Ø x 16"	3	STEEL	CIRCULAR	FLANGELESS	CAST ALUM.	2	2	-	PROVIDE (2) 1" EMPTY CONDUITS FOR DATA WITH PULL STRING.

21-10-038

drawing title
MEP SCHEDULES

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1393
project no. BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale
drawn by DJH
approved by GVD
drawing no. MEP304

Program No.	Space Name	Equip No.	Description	Quantity	Plumbing	HVAC	Electrical
B01	Microbiology R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
B01	Microbiology R.T. Lab	EQ-020	BioSafety Cabinet - Type II A2 - 4'	2	4		
B01	Microbiology R.T. Lab	EQ-038	Still Incubator (27°C & 37°C)	2	4		
B01	Microbiology R.T. Lab	EQ-039	Shaking Incubator (27°C & 37°C)	1	4		
B01	Microbiology R.T. Lab	EQ-126	Water Bath (120V, 20A)	2			
B01	Microbiology R.T. Lab	EQ-127	Fluorometer	1			
B01	Microbiology R.T. Lab	EQ-128	Spectrophotometer (120V, 20A)	1			
B01	Microbiology R.T. Lab	EQ-129	Electroporator	1			
B01	Microbiology R.T. Lab	EQ-130	Spiral Plater (230V, 20A)	1			
B01	Microbiology R.T. Lab	EQ-131	Laser Colony Counter	1			
B01	Microbiology R.T. Lab	EQ-132	Microcentrifuge	1			
B01	Microbiology R.T. Lab	EQ-133	Thermocycler	1			
B01	Microbiology R.T. Lab	EQ-134	Sonicator (120V, 20A)	1			
B01	Microbiology R.T. Lab	EQ-135	Computer	2			
B01	Microbiology R.T. Lab	FH-04	ADA Fume Hood - 4'	1			
B02	Molecular Biology R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
B02	Molecular Biology R.T. Lab	EQ-025	Chromatography Refrigerator (120V, 20A)	1			1
B02	Molecular Biology R.T. Lab	EQ-031	(-20°C) Freezer	1			
B02	Molecular Biology R.T. Lab	EQ-040	Air Incubator	3	4		
B02	Molecular Biology R.T. Lab	EQ-136	Clinical Centrifuge	1			
B02	Molecular Biology R.T. Lab	EQ-137	Coulter Counter	1			
B02	Molecular Biology R.T. Lab	EQ-138	UV-Cross Linker	1			
B02	Molecular Biology R.T. Lab	EQ-139	UV-Vis Spec.	1			
B02	Molecular Biology R.T. Lab	EQ-140	Water Bath	2			
B02	Molecular Biology R.T. Lab	EQ-141	Speed Vac Centrifuge	1			
B02	Molecular Biology R.T. Lab	EQ-142	Micro Centrifuge	2			
B02	Molecular Biology R.T. Lab	EQ-143	Compound Microscope	4			
B02	Molecular Biology R.T. Lab	FH-03	Fume Hood - 4'	1			
B02	Molecular Biology R.T. Lab	FH-04	ADA Fume Hood - 4'	1			
B04	(CCRI) Tissue Culture Room	EQ-004	DI Water Polisher (120V, 20A)	1	3		
B04	(CCRI) Tissue Culture Room	EQ-019	BioSafety Cabinet - Type II A2 - 6'	3	4		
B04	(CCRI) Tissue Culture Room	EQ-024	(4°C) Refrigerator	1			
B04	(CCRI) Tissue Culture Room	EQ-034	Liquid N2 Freezer	1			
B04	(CCRI) Tissue Culture Room	EQ-041	CO2 Incubator	4	4		
B04	(CCRI) Tissue Culture Room	EQ-144	Microscope	1			
B04	(CCRI) Tissue Culture Room	EQ-145	Liquid N2 Dewar	1			
B05	(CCRI) Molecular Biology Room	EQ-004	DI Water Polisher (120V, 20A)	1	3		
B07	(CCRI) Microscopy Room	EQ-146	Microscope	4			
B07	(CCRI) Microscopy Room	EQ-147	Computer Station	4			
B08	(CCRI) Histology Room	EQ-148	Microtome	3			
B08	(CCRI) Histology Room	EQ-149	Water Bath	1			
B08	(CCRI) Histology Room	EQ-150	Microscope	2			
B08	(CCRI) Histology Room	EQ-151	Centrifuge - Regular Speed	1			
B08	(CCRI) Histology Room	FH-02	ADA Fume Hood - 6'	1			
B09	Molecular Biology Microscope Room	EQ-152	LSCM Confocal Microscope	1			
B09	Molecular Biology Microscope Room	EQ-153	DSU Spinning Disk Confocal Microscope	1			
B09	Molecular Biology Microscope Room	EQ-154	Computer Station	1			
B10	Molecular Biology Cold Room	EQ-008	Controlled Environmental Room	1		9	1,2
B10	Molecular Biology Cold Room	EQ-155	Centrifuge	2			
B10	Molecular Biology Cold Room	EQ-156	Coolers with frozen plants and soil.	2			
C01	Biochemistry R.T. Lab	EQ-004	DI Water Polisher (120V, 20A) (120V, 20A)	1	3		
C01	Biochemistry R.T. Lab	EQ-005	Ice Maker (120V, 15A)	1	1,8		
C01	Biochemistry R.T. Lab	EQ-019	BioSafety Cabinet - Type II A2 - 6'	2	4		
C01	Biochemistry R.T. Lab	EQ-021	Refrigerator (Undercounter)	1			
C01	Biochemistry R.T. Lab	EQ-027	(-20°) Freezer	1			
C01	Biochemistry R.T. Lab	EQ-028	(-70°) Freezer (115V, 60Hz, 16A/20Breaker, NEMA plug 5-20P)	1			
C01	Biochemistry R.T. Lab	EQ-036	Incubator	1	4		
C01	Biochemistry R.T. Lab	EQ-037	Incubator (Roll-In)	1	4		
C01	Biochemistry R.T. Lab	FH-01	Fume Hood - 6'	1			
C01	Biochemistry R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
C02a	Organic R.T. Lab	EQ-004	DI Water Polisher (120V, 20A) (120V, 20A)	1	3		
C02a	Organic R.T. Lab	EQ-029	Freezer (120V)	1			
C02a	Organic R.T. Lab	EQ-042	Glove Box	1			
C02a	Organic R.T. Lab	EQ-044	Glove Box Vacuum Pump	1		13	
C02a	Organic R.T. Lab	EQ-052	Rotovap	1			
C02a	Organic R.T. Lab	EQ-053	Rotovap Chiller (115V)	1			
C02a	Organic R.T. Lab	EQ-054	Rotovap Pump (115V)	1			
C02a	Organic R.T. Lab	EQ-062	Balance	1			
C02a	Organic R.T. Lab	EQ-069	Oven (120V, 11A)	1			
C02a	Organic R.T. Lab	EQ-077	Vacuum Pump (120V)	3		13	
C02a	Organic R.T. Lab	EQ-101	Microwave Reactor (230V, 15A)	1		9	
C02a	Organic R.T. Lab	EQ-102	Freezer Compressor	1			
C02a	Organic R.T. Lab	FH-01	Fume Hood - 6'	4			
C02a	Organic R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
C02b	Organic R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
C02b	Organic R.T. Lab	EQ-024	(4°C) Refrigerator	1			
C02b	Organic R.T. Lab	EQ-030	Freezer (120V)	1			
C02b	Organic R.T. Lab	EQ-060	Solvent Purification System	1		13,15	
C02b	Organic R.T. Lab	EQ-061	Vacuum Pump for Solvent Purification System (115V, 1.2A, 60Hz)	1		13	
C02b	Organic R.T. Lab	EQ-082	Vacuum Pump	3		13	
C02b	Organic R.T. Lab	FH-01	Fume Hood - 6'	2			
C02b	Organic R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
C02b	Organic R.T. Lab	FH-03	Fume Hood - 4'	1			
C03	Inorganic R.T. Lab	EQ-022	Refrigerator	1			
C03	Inorganic R.T. Lab	EQ-055	Rotovap (Does it need Chiller & Pump?)	1			
C03	Inorganic R.T. Lab	EQ-071	Drying Oven	2			
C03	Inorganic R.T. Lab	EQ-082	Vacuum Pump	3		13	
C03	Inorganic R.T. Lab	FH-01	Fume Hood - 6'	2			
C03	Inorganic R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
C04	Physical Chem R.T. Lab	EQ-103	Air Compressor for NMR	1			
C04	Physical Chem R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
C05	Analytical Instrument R.T. Lab	EQ-011	Local Exhaust for AA	1			
C05	Analytical Instrument R.T. Lab	EQ-083	LCMS	1	4		1,1,1
C05	Analytical Instrument R.T. Lab	EQ-084	LCMS - Prominence UFLC System	1			
C05	Analytical Instrument R.T. Lab	EQ-085	LCMS - System Controller	1			
C05	Analytical Instrument R.T. Lab	EQ-086	LCMS - UV-VIS Detector	1			
C05	Analytical Instrument R.T. Lab	EQ-087	LCMS - On-Line Degasser	1			
C05	Analytical Instrument R.T. Lab	EQ-088	LCMS - Solvent Delivery Unit	1			
C05	Analytical Instrument R.T. Lab	EQ-089	LCMS - Auto Sampler	1			
C05	Analytical Instrument R.T. Lab	EQ-090	LCMS - PC & Printer	1			
C05	Analytical Instrument R.T. Lab	EQ-091	LCMS - Vacuum Pump	1		13	
C05	Analytical Instrument R.T. Lab	EQ-099	Atomic Absorption Spectrophotometer (AA) (230V,32A, 50/60Hz)	1	4	13	2
C05	Analytical Instrument R.T. Lab	EQ-104	GCMS (208V, 1Ph)	2			
C05	Analytical Instrument R.T. Lab	EQ-105	GCMS -Vacuum Pump	2	4,8	13	
C05	Analytical Instrument R.T. Lab	EQ-106	UV-VIS Spectrometer	1		13	
C05	Analytical Instrument R.T. Lab	EQ-107	Luminescence Spectrometer	1			
C05	Analytical Instrument R.T. Lab	EQ-108	FTIR	3			
C05	Analytical Instrument R.T. Lab	EQ-109	Luminescence	1			
C05	Analytical Instrument R.T. Lab	EQ-110	Elemental Analyzer	1			
C05	Analytical Instrument R.T. Lab	EQ-111	Printer	1			
C05	Analytical Instrument R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
C06	Generic Chemistry R.T. Lab	FH-01	Fume Hood - 6'	1			
C06	Generic Chemistry R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
C07	Organic Chem Teaching Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
C07	Organic Chem Teaching Lab	EQ-056	Rotovap (Does it need Chiller?)	1			
C07	Organic Chem Teaching Lab	EQ-057	Rotovap -Vacuum Pump	1			
C07	Organic Chem Teaching Lab	EQ-063	Balance	4			
C07	Organic Chem Teaching Lab	EQ-070	Oven (120V, 11A)	1			
C07	Organic Chem Teaching Lab	EQ-112	GC (Does it need PC & Printer?)	3			
C07	Organic Chem Teaching Lab	EQ-113	Microwave Reactor	1			
C07	Organic Chem Teaching Lab	FH-01	Fume Hood - 6'	5			
C07	Organic Chem Teaching Lab	FH-02	ADA Fume Hood - 6'	1			
C07	Organic Chem Teaching Lab	FH-03	Fume Hood - 4'	2			
C08	Inorganic Chem Teaching Lab	EQ-023	Refrigerator	1			
C08	Inorganic Chem Teaching Lab	EQ-058	Rotovap (Does it need Chiller?)	4			
C08	Inorganic Chem Teaching Lab	EQ-059	Rotovap -Vacuum Pump	4			
C08	Inorganic Chem Teaching Lab	EQ-060	Solvent Purification System	1		13,15	
C08	Inorganic Chem Teaching Lab	EQ-061	Vacuum Pump for Solvent Purification System (115V, 1.2A, 60Hz)	1		13	
C08	Inorganic Chem Teaching Lab	EQ-064	Balance	4			
C08	Inorganic Chem Teaching Lab	EQ-075	Drying Glass Oven	2			
C08	Inorganic Chem Teaching Lab	EQ-078	Vacuum Pump	6		13	
C08	Inorganic Chem Teaching Lab	FH-01	Fume Hood - 6'	5			
C08	Inorganic Chem Teaching Lab	FH-02	ADA Fume Hood - 6'	1			
C09	Inorganic Chem Prep Lab	EQ-005	Ice Maker (120V, 15A)	1	1,8		
C09	Inorganic Chem Prep Lab	EQ-043	Glove Box	1			
C09	Inorganic Chem Prep Lab	EQ-044	Glove Box Vacuum Pump	1		13	
C09	Inorganic Chem Prep Lab	EQ-067	Magnetic Balance	1			
C09	Inorganic Chem Prep Lab	EQ-114	Dry Ice Box	1			
C09	Inorganic Chem Prep Lab	EQ-115	UV Light (TLC)	2			
C09	Inorganic Chem Prep Lab	EQ-116	Melting Points	3			
C09	Inorganic Chem Prep Lab	EQ-362	Small N2 Dewar	1			
C09	Inorganic Chem Prep Lab	EQ-363	Solvent Drum	4			
C10	Organic Chem Prep Lab	EQ-005	Ice Maker	1	1,8		
C10	Organic Chem Prep Lab	FH-02	ADA Fume Hood - 6'	1			
C11	NMR Lab	EQ-117	300 / 400 MHz Magnet	1			
C11	NMR Lab	EQ-118	Cryo Cooling Unit	1	4,4	9,15	2
C11	NMR Lab	EQ-119	HPPR	1			2
C11	NMR Lab	EQ-120	He Compressor	1			2
C11	NMR Lab	EQ-121	Buck Booster	1			
C11	NMR Lab	EQ-122	Avance Console	1			1
C11	NMR Lab	EQ-123	Workstation	1			
C11	NMR Lab	EQ-124	BCU-05	1			2
C11	NMR Lab	EQ-125	Video Monitor	1			
E??	TBD	EQ-202	Meteorology Instrument Suite	1			
E??	TBD	EQ-203	Meteorology Instrument Server	1			
E??	TBD	EQ-204	Seismometer Instrument	1			
E??	TBD	EQ-205	Seismometer Instrument Server	1			
E01	Cathodoluminescence / Fluid Inclusion R.T. Lab	EQ-079	Vacuum Pump	1		13	
E01	Cathodoluminescence / Fluid Inclusion R.T. Lab	EQ-145	Liquid N2 Dewar	1			
E01	Cathodoluminescence / Fluid Inclusion R.T. Lab	EQ-157	Cathodoluminescence Microscope	1			
E01	Cathodoluminescence / Fluid Inclusion R.T. Lab	EQ-158	Raman Microscope	1			
E01	Cathodoluminescence / Fluid Inclusion R.T. Lab	EQ-159	Polarization Microscope	1			
E01	Cathodoluminescence / Fluid Inclusion R.T. Lab	EQ-160	Fluid Inclusion Microscope	1			
E02a	Generic Earth Sci R.T. Lab	FH-04	ADA Fume Hood - 4'	1			
E02b	Generic Earth Sci R.T. Lab	FH-05	Future Fume Hood - 4'	1			
E02c	Generic Earth Sci R.T. Lab	FH-05	Future Fume Hood - 4'	1			
E02d	Generic Earth Sci R.T. Lab	FH-05	Future Fume Hood - 4'	1			
E03	Mineralogy / Petrology Teaching Lab	EQ-161	Microscope	20			
E03	Mineralogy / Petrology Teaching Lab	FH-02	ADA Fume Hood - 6'	1			
E04	Structural Geology Teaching Lab	FH-02	ADA Fume Hood - 6'	1			
E04-1	Structural Geology Sample Storage	EQ-364	File Cabinets	2			
E05	Historical / Soft Rock Teaching Lab	FH-02	ADA Fume Hood - 6'	1			
E06	X-Ray Analysis Lab	EQ-017	Horizontal Laminar Flow Hood Workstation- 6' (Polypropylene)	1			
E06	X-Ray Analysis Lab	EQ-145	Liquid N2 Dewar	1			
E06	X-Ray Analysis Lab	EQ-162	X-Ray Fluorescence Spectrometer (208V, 35A, 3Ph)	1			2
E06	X-Ray Analysis Lab	EQ-162a	Computer Station for (X-Ray Fluorescence Spectrometer, EQ-162)	1	4	9,13	
E06	X-Ray Analysis Lab	EQ-162b	Ion Exchange Assembly for (X-Ray Fluorescence Spectrometer, EQ-162)	1	4	9,13	
E06	X-Ray Analysis Lab	EQ-162c	Water Chiller for (X-Ray Fluorescence Spectrometer, EQ-162)	1	4	9,13	
E06	X-Ray Analysis Lab	EQ-163	X-Ray Diffractometer (110V)	1		13	
E06	X-Ray Analysis Lab	EQ-163a	PC, Monitor & Printer for (X-Ray Diffractometer, EQ-163)	1			
E06	X-Ray Analysis Lab	EQ-163b	Chiller for (X-Ray Diffractometer, EQ-163)	1			
E06	X-Ray Analysis Lab	EQ-164	X-Ray Fluorescence Analytical Microscope (Micro XRF) (110V)	1			
E06	X-Ray Analysis Lab	EQ-164a	X-Ray Controller for (Micro XRF, EQ-164)	1			
E06	X-Ray Analysis Lab	EQ-164b	X-Ray Stage Controller for (Micro XRF, EQ-164)	1			
E06	X-Ray Analysis Lab	EQ-164c	PC, Monitor & Printer for (Micro XRF, EQ-164)	1			
E06	X-Ray Analysis Lab	EQ-164d	Vacuum Pump for (Micro XRF, EQ-164)	1			
E06	X-Ray Analysis Lab	EQ-165	X-Ray Chiller	1			
E06	X-Ray Analysis Lab	EQ-166	X-Ray Computer	1			
E06	X-Ray Analysis Lab	EQ-167	Desiccator Cabinet	4			
E07	X-Ray Sample Prep Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
E07	X-Ray Sample Prep Lab	EQ-024	(4°C) Refrigerator	1			
E07	X-Ray Sample Prep Lab	EQ-065	Analytical Balance	1			
E07	X-Ray Sample Prep Lab	EQ-072	Oven (110V)	1			
E07	X-Ray Sample Prep Lab	EQ-168	Muffle Furnace (110V)	2	4		
E07	X-Ray Sample Prep Lab	EQ-169	Ultra Sonic Bath (110V)	1	4		
E07	X-Ray Sample Prep Lab	EQ-170	Fusion System (110V)	1			
E07	X-Ray Sample Prep Lab	EQ-171	Mixer / Mill (110V)	1			
E07	X-Ray Sample Prep Lab	EQ-172	Hydraulic Press	1			
E07	X-Ray Sample Prep Lab	EQ-173	Magnetic Separator (110V)	1			
E07	X-Ray Sample Prep Lab	FH-01	Fume Hood - 6'	1			
E07	X-Ray Sample Prep Lab	FH-04	ADA Fume Hood - 4'	1			
E08	Laser Ablation, ICP-MS Lab	EQ-013	Vent Port	2			
E08	Laser Ablation, ICP-MS Lab	EQ-017	Horizontal Laminar Flow Hood Workstation- 6' (Polypropylene)	1			
E08	Laser Ablation, ICP-MS Lab	EQ-174	ICP-MS Magnetic Sector field (230/400V ± 10%, 3Ph, 50/60Hz, 32A/Ph)	1	4	15	2
E08	Laser Ablation, ICP-MS Lab	EQ-175	ICP-MS Laser Ablation System (230/400V ± 10%, 3Ph, 50/60Hz, 32A/Ph)	1			2
E08	Laser Ablation, ICP-MS Lab	EQ-176	ICP-MS Water Chiller	1		9	
E08	Laser Ablation, ICP-MS Lab	EQ-365	Liquid Argon Dewar	1			
E08	Laser Ablation, ICP-MS Lab	FH-11	Vertical Laminar Flow Hood - 4' (Polypropylene)	1			
E09	Clean Geo Chemistry Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
E09	Clean Geo Chemistry Lab	EQ-006	Pass-Through Box	1			
E09	Clean Geo Chemistry Lab	EQ-018	Horizontal Laminar Flow Cabinet - 4' (Polypropylene)	1			
E09	Clean Geo Chemistry Lab	EQ-068	Analytical Balance	1			
E09	Clean Geo Chemistry Lab	FH-08	Perchloric Fume Hood - 4' (Polypropylene)	1			
E09	Clean Geo Chemistry Lab	FH-09	Horizontal Laminar Flow Hood -	1			
E09	Clean Geo Chemistry Lab	FH-10	Vertical Laminar Flow Hood - 6' (Polypropylene)	2			
E09-1	Clean Geo Chem Vestibule / Gowning						
E10	General Geo Chem Student R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
E10	General Geo Chem Student R.T. Lab	EQ-068	Analytical Balance	2			
E10	General Geo Chem Student R.T. Lab	FH-03	Fume Hood - 4'	1			
E10	General Geo Chem Student R.T. Lab	FH-04	ADA Fume Hood - 4'	1			
E11	Rock Sample Storage	EQ-015	High Density Shelving System	1			
E12	Mineralogy Sample Storage Secure Room	EQ-364	File Cabinets	2			
E13	Structural Geology Field Equipment Storage Room	EQ-177	Ground Penetration Radar (GPR)	1			
E13	Structural Geology Field Equipment Storage Room	EQ-178	Magnetometer	1			
E13	Structural Geology Field Equipment Storage Room	EQ-179	Ground Conductivity Meter	1			
E13	Structural Geology Field Equipment Storage Room	EQ-180	Resistivity Array	1			
E13	Structural Geology Field Equipment Storage Room	EQ-181	Vibracorer	1			
E13	Structural Geology Field Equipment Storage Room	EQ-182	12 Channel Seismic Array	1			
E13	Structural Geology Field Equipment Storage Room	EQ-183	Gravity Meter	1			
E14	Historical, Soft Rock Geology Large Prep / Stg Room						
E15	Rock Sample Prep Dirty-Wet Lab	EQ-007	Dust Extractor Arm	3			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-014	Dust Ventilation System	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-016	Downdraft Booth	2			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-184	Slab Saw (30") (110V)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-185	Sand Pit (Box)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-186	Large Jaw Crusher (220V, 30A)	1			2
E15	Rock Sample Prep Dirty-Wet Lab	EQ-187	Large Ring / Puck Mill (208V)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-188	Hydraulic Rock Splitter (110V)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-189	Drill Press (110V)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-190	RO-TAP Sieve Shaker (110V)	2			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-191	Large Disc Mill (220V, 30A)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-192	Small Jaw Crusher (110V)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-193	Small Disc Mill (110V)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-194	Small Ring / Puck Mill (110V)	1			
E15	Rock Sample Prep Dirty-Wet Lab	EQ-195	Trim Saw (110V)	2	1,8		
E15	Rock Sample Prep Dirty-Wet Lab	FH-02	ADA Fume Hood - 6'	1			
E16	Rock Sample Prep Dirty-Dry Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
E16	Rock Sample Prep Dirty-Dry Lab	EQ-035	Chest Freezer	1			
E16	Rock Sample Prep Dirty-Dry Lab	EQ-073	Oven (110V)	2			
E16	Rock Sample Prep Dirty-Dry Lab	EQ-196	Vibratory Lap (110V)	2			
E16	Rock Sample Prep Dirty-Dry Lab	EQ-197	Thin Section Machine (110V)	1	1,8		
E16	Rock Sample Prep Dirty-Dry Lab	EQ-198	Polishing Wheels	2	8		
E16	Rock Sample Prep Dirty-Dry Lab	EQ-199	Grounding & Polishing Counsel (208V, 3Ph)	2			
E16	Rock Sample Prep Dirty-Dry Lab	EQ-200	Small Muffle Furnace (110V)	3			
E16	Rock Sample Prep Dirty-Dry Lab	EQ-201	Large Muffle Furnace (110V)	1			
E16	Rock Sample Prep Dirty-Dry Lab	FH-04	ADA Fume Hood - 4'	1			
P01	High Resolution Optics R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P01	High Resolution Optics R.T. Lab	EQ-019	BioSafety Cabinet - Type II A2 - 6'	1	4		
P01	High Resolution Optics R.T. Lab	EQ-206	N-Strom Microscope (110V, 10A, 60Hz, 1Ph)	1			
P01	High Resolution Optics R.T. Lab	EQ-207	Optics Table	1			
P01	High Resolution Optics R.T. Lab	FH-04	ADA Fume Hood - 4'	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-045	Glove Box (110V, 20A)	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-046	Glove Box Purifier (110V, 20A)	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-047	Glove Box Vacuum Pump	1		13	
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-208	Furnace	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-209	Computer Station	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-210	Cryo Cooler ARS Displex (208V, 20A)	1		9	
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-211	Cryo Cooler Table	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-212	Cryo Cooler Compressor	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-213	Cryo Cooler Vacuum Pump	1		13	
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-214	Cryo Cooler Control Board	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-215	Cryostat	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-216	Cryostat Compressor	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-217	Magnet	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-218	Electromagnet Power Supply	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-219	Voltage / Current Source	1			2
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-220	Sensitive Digital Voltmeter	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-221	Programmable Current Source	1			2
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-222	**???**	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-223	Switch System	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-224	Multimeter	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-225	DC Power Supply	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-226	Autoranging Multimeter	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-227	Temperature Controller	1			
P02	Synthesis & Electrical Characterization R.T. Lab	EQ-228	Tube Furnace	1			
P02	Synthesis & Electrical Characterization R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
P03	Materials Science R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P03	Materials Science R.T. Lab	EQ-229	Optical Microscope	1			
P03	Materials Science R.T. Lab	EQ-230	Optical Microscope	1			
P03	Materials Science R.T. Lab	EQ-231	Electron Microscope (SEM)	1		13	2
P03	Materials Science R.T. Lab	EQ-232	Electron Microscope - X-Ray Controller	1			
P03	Materials Science R.T. Lab	EQ-233	Electron Microscope - Computer Table	1			
P03	Materials Science R.T. Lab	EQ-234	Electron Microscope - Pump	1		13	
P03	Materials Science R.T. Lab	EQ-235	UV-VIS Spectrophotometer (120V)	1			
P03	Materials Science R.T. Lab	EQ-236	Elipsometer	1			
P03	Materials Science R.T. Lab	EQ-237	X-ray Fluorescence Spectroscopy	1			
P03	Materials Science R.T. Lab	EQ-238	Indentation Tester	1			
P03	Materials Science R.T. Lab	EQ-239	Tensile Strength Tester	1			
P03	Materials Science R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
P04	Nanomaterials R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P04	Nanomaterials R.T. Lab	EQ-048	Glove Box (110V, 20A)	1			
P04	Nanomaterials R.T. Lab	EQ-049	Glove Box Purifier	1			
P04	Nanomaterials R.T. Lab	EQ-050	Glove Box Vacuum Pump	1		13	
P04	Nanomaterials R.T. Lab	EQ-051	Glove Box Heavy Duty Table (Granite)	1			
P04	Nanomaterials R.T. Lab	EQ-240	Atomic Force Microscope (AFM) (110V, 10A)	1			
P04	Nanomaterials R.T. Lab	EQ-241	Computer Station	1			
P04	Nanomaterials R.T. Lab	EQ-242	Turbomolecular Pump	2			
P04	Nanomaterials R.T. Lab	EQ-243	Vacuum Chamber	1		13	
P04	Nanomaterials R.T. Lab	EQ-244	Mechanical Pump	1			
P04	Nanomaterials R.T. Lab	EQ-245	Optics Table	1			
P04	Nanomaterials R.T. Lab	EQ-246	Eximer Laser (110V, 20A)	1	1,8	9	
P04	Nanomaterials R.T. Lab	EQ-247	Pump for Eximer Laser	1			
P04	Nanomaterials R.T. Lab	EQ-248	ND YAG Laser (208V, 30A, 3Ph)	1			2
P04	Nanomaterials R.T. Lab	EQ-249	Toxic Gas Cylinder Storage Cabinet	2			
P05	Photonics R.T. Lab	EQ-250	Large Laser Table	2			
P05	Photonics R.T. Lab	EQ-251	Small Laser Table	2			
P05	Photonics R.T. Lab	EQ-252	Titanium Sapphire Laser	1	1,1,3,4,5,8	9	
P05	Photonics R.T. Lab	EQ-253	Argon-Ion Laser (208V, 3Ph, 35A/Ph rated, 50A/Ph service)	1	1,1,3,4,5,8	9	2
P05	Photonics R.T. Lab	FH-04	ADA Fume Hood - 4'	1			
P06	Generic Physics R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P06	Generic Physics R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
P07	Astronomical Instrument & Imaging R.T. Lab	EQ-254	Computer Station (Mobile Control)	2			
P07-1	Imaging Room	EQ-255	Optics Table	1			
P07-1	Imaging Room	EQ-256	High Grade Astronomical Camera	3			
P07-1	Imaging Room	EQ-257	Multi-Channel Photon Correlator System	1			
P08	Nanotechnology Teaching Lab	FH-01	Fume Hood - 6'	1			
P08	Nanotechnology Teaching Lab	FH-02	ADA Fume Hood - 6'	1			
P08-1	Nanotechnology Project Storage / Prep Lab	FH-04	ADA Fume Hood - 4'	1			
P09	Optics Teaching Lab	EQ-258	Optics Table	4			
P09	Optics Teaching Lab	EQ-259	ADA Optics Table	1			
P09	Optics Teaching Lab	EQ-260	Optical Microscope	1			
P09	Optics Teaching Lab	FH-04	ADA Fume Hood - 4'	1			
P10	NTC AFM / FIB Instrument Lab	EQ-261	Atomic Force Microscope (AFM) (110V, 10A)	1			
P10	NTC AFM / FIB Instrument Lab	EQ-262	Atomic Force Microscope (AFM) - SPM Controller & Monitor	1			
P10	NTC AFM / FIB Instrument Lab	EQ-263	Atomic Force Microscope (AFM) - PC & Monitor	1			
P10	NTC AFM / FIB Instrument Lab	EQ-264	Atomic Force Microscope (AFM) - BalanceTable	1			
P10	NTC AFM / FIB Instrument Lab	EQ-265	FIB (208V, 20A)	1	4,4	13,15	2
P10	NTC AFM / FIB Instrument Lab	EQ-266	FIB - Connection Box	1			
P10	NTC AFM / FIB Instrument Lab	EQ-267	FIB - Mechanical Pump	1			
P10	NTC AFM / FIB Instrument Lab	EQ-268	FIB - Mechanical Console	1			
P10	NTC AFM / FIB Instrument Lab	EQ-269	FIB - Control Desk	1			
P10	NTC AFM / FIB Instrument Lab	EQ-270	FIB - Electric Console	1			2
P10	NTC AFM / FIB Instrument Lab	EQ-271	FIB - OneAC Transformer	1			
P10	NTC AFM / FIB Instrument Lab	EQ-272	FIB - UPS	1			2
P10	NTC AFM / FIB Instrument Lab	EQ-273	FIB - Chiller	1		9	1
P10	NTC AFM / FIB Instrument Lab	EQ-366	FIB - Air Compressor	1			2
P10	NTC AFM / FIB Instrument Lab	EQ-367	FIB - Loader (Crane)	1			
P11	NTC Microtomy Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P11	NTC Microtomy Lab	EQ-274	Microtome & table	1			
P11	NTC Microtomy Lab	EQ-275	Microtome & table	1			
P11	NTC Microtomy Lab	EQ-276	Microtome & table	1			
P11	NTC Microtomy Lab	EQ-277	Knifemaker	1			
P12	NTC SEM Lab	EQ-278	FESEM - Field Emission Scanning Electron Microscope	1	4,4		
P12	NTC SEM Lab	EQ-279	FESEM - Rotary Pump	1			
P12	NTC SEM Lab	EQ-280	FESEM - Static Damping Block	1			
P12	NTC SEM Lab	EQ-281	FESEM - Closed-Circuit Cooling Devise	1		9	
P12	NTC SEM Lab	EQ-282	FESEM - Cooling Devise Water Kit	1			
P12	NTC SEM Lab	EQ-283	FESEM - Air Compressor	1			
P12	NTC SEM Lab	EQ-284	FESEM - Control Desk	1			
P12	NTC SEM Lab	EQ-285	FESEM - Support PC & Monitor	1			
P12	NTC SEM Lab	EQ-286	FESEM - Microscope Controller & Monitor	1			
P12	NTC SEM Lab	EQ-287	Microscope	1			
P13	NTC TEM Lab	EQ-288	TEM - Transmitting Electron Microscope	1	4,4	13	2
P13	NTC TEM Lab	EQ-289	TEM - TEM Cabinet	1			
P13	NTC TEM Lab	EQ-290	TEM - Power Cabinet	1			
P13	NTC TEM Lab	EQ-291	TEM - High Tension Generator	1			2
P13	NTC TEM Lab	EQ-292	TEM - X-FEG Chamber	1			
P13	NTC TEM Lab	EQ-293	TEM - High Tension Tank	1			
P13	NTC TEM Lab	EQ-294	TEM - Flow Meter Rack	1			
P13	NTC TEM Lab	EQ-295	TEM - Pump	1			
P13	NTC TEM Lab	EQ-296	TEM - Accessories Cabinet	1			
P13	NTC TEM Lab	EQ-297	TEM - STEM / Acc Cabinet	1			
P13	NTC TEM Lab	EQ-298	TEM - System PC	1			
P13	NTC TEM Lab	EQ-299	TEM - Control Desk	1			
P13	NTC TEM Lab	EQ-300	TEM - Support PC w/ 2 monitors	1			
P13	NTC TEM Lab	EQ-301	TEM - Closed-Loop Cooling Unit	1			
P13	NTC TEM Lab	EQ-302	TEM - Cooling Unit Water Filter Kit	1		9	
P13	NTC TEM Lab	EQ-303	TEM - Safety Transformer	1			
P13	NTC TEM Lab	EQ-304	TEM - Air Compressor	1			
P13	NTC TEM Lab	EQ-305	TEM - Power Supply Unit	1			2
P13	NTC TEM Lab	EQ-306	Microscope	1			
P14	NTC Multi Purpose Support / Prep	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P14	NTC Multi Purpose Support / Prep	EQ-066	Analytical Balance	1			
P14	NTC Multi Purpose Support / Prep	EQ-074	Oven	1			
P14	NTC Multi Purpose Support / Prep	EQ-307	Metallurgical Optical Microscope Workstation	1			
P14	NTC Multi Purpose Support / Prep	EQ-308	Polishing Wheels				
P14	NTC Multi Purpose Support / Prep	EQ-309	Diamond Cutting Saw	1			
P14	NTC Multi Purpose Support / Prep	EQ-310	Tools				
P14	NTC Multi Purpose Support / Prep	EQ-311	Optical Light Microscope	1			
P14	NTC Multi Purpose Support / Prep	EQ-312	Optical Microscope	1			
P14	NTC Multi Purpose Support / Prep	EQ-313	Multiprep Polishing System	1			
P14	NTC Multi Purpose Support / Prep	EQ-314	Polishing Station	1			
P14	NTC Multi Purpose Support / Prep	EQ-315	Polishing Station	1			
P14	NTC Multi Purpose Support / Prep	EQ-316	Polishing Station	1			
P14	NTC Multi Purpose Support / Prep	EQ-317	Multiprep system w/fluid dispenser	1			
P14	NTC Multi Purpose Support / Prep	EQ-318	Multiprep 43 Polishing Wheel	1			
P14	NTC Multi Purpose Support / Prep	EQ-319	Ultrasonic Cleaner	1			
P14	NTC Multi Purpose Support / Prep	FH-01	Fume Hood - 6'	2			
P14	NTC Multi Purpose Support / Prep	FH-02	ADA Fume Hood - 6'	1			
P15	NTC Specimen Prep Specialized Process	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P15	NTC Specimen Prep Specialized Process	EQ-012	Exhaust Canopy	1			
P15	NTC Specimen Prep Specialized Process	EQ-080	Vacuum Pump	2			
P15	NTC Specimen Prep Specialized Process	EQ-320	Carbon Sputter Coater	1		13	
P15	NTC Specimen Prep Specialized Process	EQ-321	Gentle Mill Ion Mill	1		13	
P15	NTC Specimen Prep Specialized Process	EQ-322	Vented Box	1		15	
P15	NTC Specimen Prep Specialized Process	EQ-323	Multiprep Polishing System	1			
P15	NTC Specimen Prep Specialized Process	EQ-324	Fluid Dispensing System	1			
P15	NTC Specimen Prep Specialized Process	EQ-325	Gentle Mill	1			
P15	NTC Specimen Prep Specialized Process	EQ-326	Critical Point Dryer	1			
P15	NTC Specimen Prep Specialized Process	FH-03	Fume Hood - 4'	1			
P15	NTC Specimen Prep Specialized Process	FH-04	ADA Fume Hood - 4'	1			
P16	NTC Utility Room	EQ-050	Glove Box Purifier	1			
P16	NTC Utility Room	EQ-081	Vacuum Pump	2		13	
P16	NTC Utility Room	EQ-145	Liquid N2 Dewar	2			
P16	NTC Utility Room	EQ-244	Turbomolecular Pump - Mechanical Pump	1			
P16	NTC Utility Room	EQ-249	Toxic Gas Cylinder Storage Cabinet	2			
P16	NTC Utility Room	EQ-267	FIB - Mechanical Pump	1			
P16	NTC Utility Room	EQ-272	FIB - UPS	1			2
P16	NTC Utility Room	EQ-273	FIB - Chiller	1		9	1
P16	NTC Utility Room	EQ-281	FESEM - Closed-Circuit Cooling Devise	1		9	
P16	NTC Utility Room	EQ-282	FESEM - Cooling Devise Water Kit	1			
P16	NTC Utility Room	EQ-283	FESEM - Air Compressor	1			
P16	NTC Utility Room	EQ-301	TEM - Closed-Loop Cooling Unit	1			
P16	NTC Utility Room	EQ-302	TEM - Cooling Unit Water Filter Kit	1		9	
P16	NTC Utility Room	EQ-303	TEM - Safety Transformer	1			2
P16	NTC Utility Room	EQ-304	TEM - Air Compressor	1			
P16	NTC Utility Room	EQ-305	TEM - Power Supply Unit	1			
P16	NTC Utility Room	EQ-366	FIB - Air Compressor	1			2
P17	Prep Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
P17	Prep Lab	EQ-327	Optical Microscope	1			
P17	Prep Lab	EQ-328	Elipsometer	1			
P17	Prep Lab	FH-07	Perchloric Fume Hood - 4'	1			
P18	Rooftop Astronomy Telescope Storage Room	EQ-329	Dobsonian Telescope	6			
P18-1	Rooftop Astronomy Control Room	EQ-330	Computer Station	4			
P18-1	Rooftop Astronomy Control Room	EQ-331	Printer	1			
S01	Ground Floor Wet Lab / Mud Room	EQ-024	(4°C) Refrigerator	1			
S01	Ground Floor Wet Lab / Mud Room	EQ-352	Laundry Washer	1	1,1,8		
S01	Ground Floor Wet Lab / Mud Room	EQ-353	Laundry Dryer	1		15	
S02	Shared Computer Lab	EQ-354	Computer Station	8			
S02	Shared Computer Lab	EQ-355	Printer	1			
S02	Shared Computer Lab	EQ-356	Printer	1			
S03	Shared Equipment Lab	EQ-005	Ice Maker (120V, 15A)	1	1,8		
S03	Shared Equipment Lab	EQ-024	(4°C) Refrigerator	1			
S03	Shared Equipment Lab	EQ-031	(-20°C) Freezer	1			
S03	Shared Equipment Lab	EQ-033	(-80°C) Freezer (208V)	2			
S03	Shared Equipment Lab	EQ-357	Superspeed Refrigerated Centrifuge (208V, 30A)	1			2
S03	Shared Equipment Lab	EQ-358	Micro Ultracentrifuge (208V, 6A)	1			
S03	Shared Equipment Lab	EQ-359	Micro Ultracentrifuge (208V, 6A)	1			
S03	Shared Equipment Lab	EQ-360	Ultra Centrifuge (240V, 20A)	1			
S03	Shared Equipment Lab	EQ-361	Centrifuge	1			
S05	Waste Marshalling						
S06	Growth Chamber	EQ-009	Pre-Fabricated Growth Chamber Unit	1			
S06-1	Reach-In Growth Chambers Room	EQ-010	Reach-In Growth Chamber Unit (120V,20A)	2	3,4	9	1,2
S06-1	Reach-In Growth Chambers Room	EQ-026	Chromatography Refrigerator	1			
S06-1	Reach-In Growth Chambers Room	EQ-032	(-20° C) Freezer (120V, 20A)	1			
S07	Autoclave Room (Decontamination)	EQ-003	Autoclave (208V, 20A)	1			1
S07	Autoclave Room (Decontamination)	EQ-012	Exhaust Canopy	1			
S08	Chemical Stock Room						
S09	Media Prep, Glass Wash & Sterilization Autoclave	EQ-002	Glassware Washer / Dryer (208V, 50A)	1	1,3,8	15	1
S09	Media Prep, Glass Wash & Sterilization Autoclave	EQ-003	Autoclave (208V, 20A)	1	1,1,3,4,8	15	1,2
S09	Media Prep, Glass Wash & Sterilization Autoclave	EQ-012	Exhaust Canopy	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-001	Glassware Washer (Flask Scrubber)	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
V01	Coastal & Marine Studies R.T. Lab	EQ-011	Local Exhaust for AA	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-024	(4°C) Refrigerator	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-030	Freezer (120V)	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-076	Oven	2			
V01	Coastal & Marine Studies R.T. Lab	EQ-092	LCMS	1	4		
V01	Coastal & Marine Studies R.T. Lab	EQ-093	LCMS - System Controller	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-094	LCMS - UV-VIS Detector	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-095	LCMS - On-Line Degasser	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-096	LCMS - Solvent Delivery Unit	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-097	LCMS - Auto Sampler	1		13	
V01	Coastal & Marine Studies R.T. Lab	EQ-098	LCMS - PC & Printer	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-099	Atomic Absorption Spectrophotometer (AA) (230V,32A, 50/60Hz)	1	4	13	2
V01	Coastal & Marine Studies R.T. Lab	EQ-332	Water Still (208V,28A, 50/60Hz)	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-333	Acid Bath	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-334	Mercury Analyzer, Controller, & Screen	1	4	13	
V01	Coastal & Marine Studies R.T. Lab	EQ-335	Freeze Dryer & Pump	1		13	
V01	Coastal & Marine Studies R.T. Lab	EQ-336	Vertical Clean Bench	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-337	Vertical Clean Bench	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-338	Centrifuge	1			
V01	Coastal & Marine Studies R.T. Lab	EQ-339	Muffle Furnace	2			
V01	Coastal & Marine Studies R.T. Lab	FH-01	Fume Hood - 6'	1			
V01	Coastal & Marine Studies R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
V01	Coastal & Marine Studies R.T. Lab	FH-06	Perchloric Fume Hood - 6'	1			
V02	Generic Environ. R.T. Lab	EQ-024	(4°C) Refrigerator	1			
V02	Generic Environ. R.T. Lab	EQ-076	Oven	1			
V02	Generic Environ. R.T. Lab	EQ-340	Particle Size Distribution Analyzer	1			
V02	Generic Environ. R.T. Lab	EQ-341	Freeze Dryer & Pump	1		13	
V02	Generic Environ. R.T. Lab	EQ-342	Computer Station	2			
V02	Generic Environ. R.T. Lab	EQ-343	Desiccator	2			
V02	Generic Environ. R.T. Lab	EQ-345	Muffle Furnace	4			
V02	Generic Environ. R.T. Lab	FH-01	Fume Hood - 6'	1			
V02	Generic Environ. R.T. Lab	FH-02	ADA Fume Hood - 6'	1			
V03	Coastal & Marine Studies Teaching Lab	EQ-004	DI Water Polisher (120V, 20A)	1			
V03	Coastal & Marine Studies Teaching Lab	EQ-024	(4°C) Refrigerator	1			
V03	Coastal & Marine Studies Teaching Lab	EQ-030	Freezer (120V)	1			
V03	Coastal & Marine Studies Teaching Lab	EQ-346	Computer Station	3			
V03	Coastal & Marine Studies Teaching Lab	FH-01	Fume Hood - 6'	2			
V03	Coastal & Marine Studies Teaching Lab	FH-02	ADA Fume Hood - 6'	1			
V04	Coastal & Marine Studies Prep Lab	EQ-001	Glassware Washer (Flask Scrubber)	1	1,3,8		
V04	Coastal & Marine Studies Prep Lab	EQ-004	DI Water Polisher (120V, 20A)	1	3		
V04	Coastal & Marine Studies Prep Lab	FH-02	ADA Fume Hood - 6'	1			
V05	Field Equipment Storage Room	EQ-347	Ro-Tap Sieve Shaker	1			
V06	Saltwater Aquarium Room	EQ-348	Wave Tank	1			
V06	Saltwater Aquarium Room	EQ-349	Water Flume	1			
V06	Saltwater Aquarium Room	EQ-350	Touch Tank	1			
V07	Phytoplankton Room	EQ-351	Phytoplankton Grow Tank	3			
V08	Storage Room						
V09	Freezers Room	EQ-005	Ice Maker (120V, 15A)	1	1,8		
V09	Freezers Room	EQ-024	(4°C) Refrigerator	4			
V09	Freezers Room	EQ-030	Freezer	1			
V09	Freezers Room	EQ-344	Chest Freezer	6			

drawing title: LAB EQUIPMENT CONNECTION SCHEDULE

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

volume: 2 of 2
date: 11-21-2012
scale:

DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

drawn by: DJH
approved by: GVD
drawing no.: MEP401

CAD no.: 1393
project no.: BI-RS-283-ARC

21-10-038

HVAC LAB EQUIPMENT CONNECTIONS

H1 CAPTURE HOOD - COORDINATE EXACT SIZE & LOCATION WITH ACTUAL EQUIPMENT IN FIELD. REFER TO DETAIL H1- TYPICAL CAPTURE HOOD CONSTRUCTION DETAIL.

H2 OVEN VENT - COORDINATE EXACT SIZE & LOCATION WITH ACTUAL EQUIPMENT IN FIELD. REFER TO DETAILS H2 A&B- TYPICAL OVEN VENT CONSTRUCTION DETAIL.

H3 PUMP VENT - COORDINATE EXACT SIZE & LOCATION WITH ACTUAL EQUIPMENT IN FIELD. SEE MANUFACRURERS DATA.

H4 CABINET VENT - COORDINATE EXACT SIZE & LOCATION WITH ACTUAL EQUIPMENT IN FIELD. REFER TO DETAILS H4 A&B- TYPICAL CABINET CONTRUCTION DETAIL.

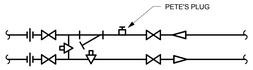
H5 HARD DUCT TO EQUIPMENT - TRANSITION AS REQUIRED TO ACTUAL CONNECTION SIZE.

H6 EXHAUST COLUMN - COORDINATE EXACT LOCATION WITH ACTUAL EQUIPMENT IN FIELD.

H7 PROCESS COOLING - COORDINATE EXACT SIZE & LOCATION WITH ACTUAL EQUIPMENT IN FIELD.

H8 VENT THRU ROOF CONNECTION DETAIL

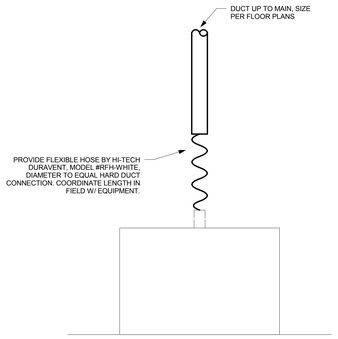
H9 CHILLED/HOT WATER CONNECTION DETAIL



H11 EQUIPMENT VESSEL DRAIN DETAIL

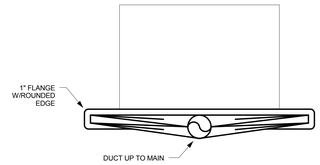
H10 SEE SPECIFICATIONS FOR PROCESS CHILLED WATER LEAK MONITORING.

NOTES:
1. VERIFY EXACT CONNECTION STYLE, REQUIREMENTS AND LOCATIONS WITH INSTALLED EQUIPMENT.
2. COORDINATE PVC HOSE COLOR TO MATCH GAS COLOR SCHEME.
3. FLEXIBLE TYPE CONNECTIONS SHALL BE 2'-0" LONGER THAN THE REQUIRED CONNECTION LENGTH.

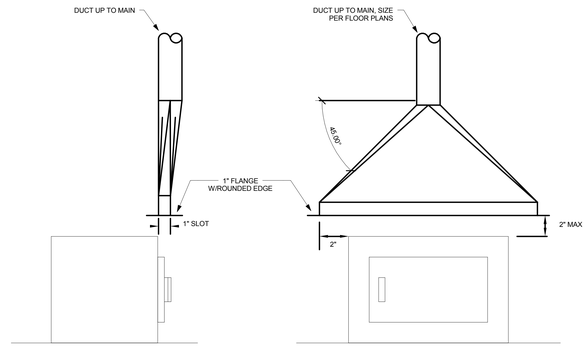


NOTE:
PROVIDE THE END USER THE OPTION OF USING DETAIL H2 INSTEAD OF THE ABOVE.

H10 TYPICAL TRUNK/ FLEX VENT CONSTRUCTION
NOT TO SCALE



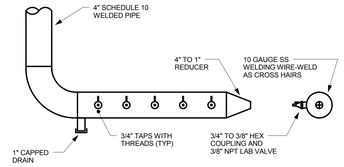
TOP VIEW



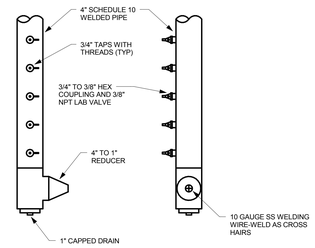
SIDE VIEW

FRONT VIEW

H12 TYPICAL CAPTURE HOOD CONSTRUCTION
NOT TO SCALE

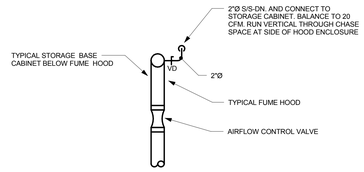


HORIZONTAL EXHAUST COLUMN

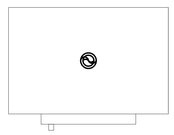


VERTICAL EXHAUST COLUMN

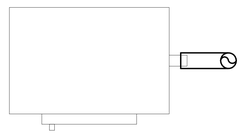
H13 TYPICAL EXHAUST COLUMN DETAIL
NOT TO SCALE



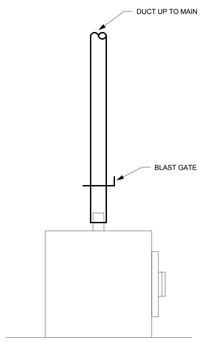
TYPICAL VENTING DETAIL FOR CHEMICAL STORAGE CABINET BELOW FUME HOOD
H14 NOT TO SCALE



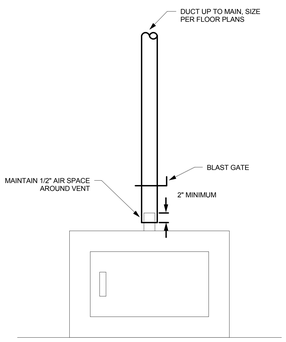
TOP VIEW



TOP VIEW

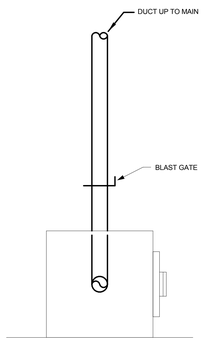


SIDE VIEW

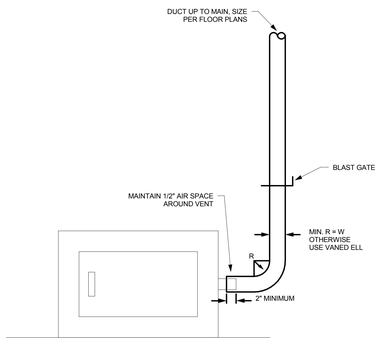


FRONT VIEW

A TYPICAL OVEN TOP- VENT CONSTRUCTION
NOT TO SCALE



SIDE VIEW



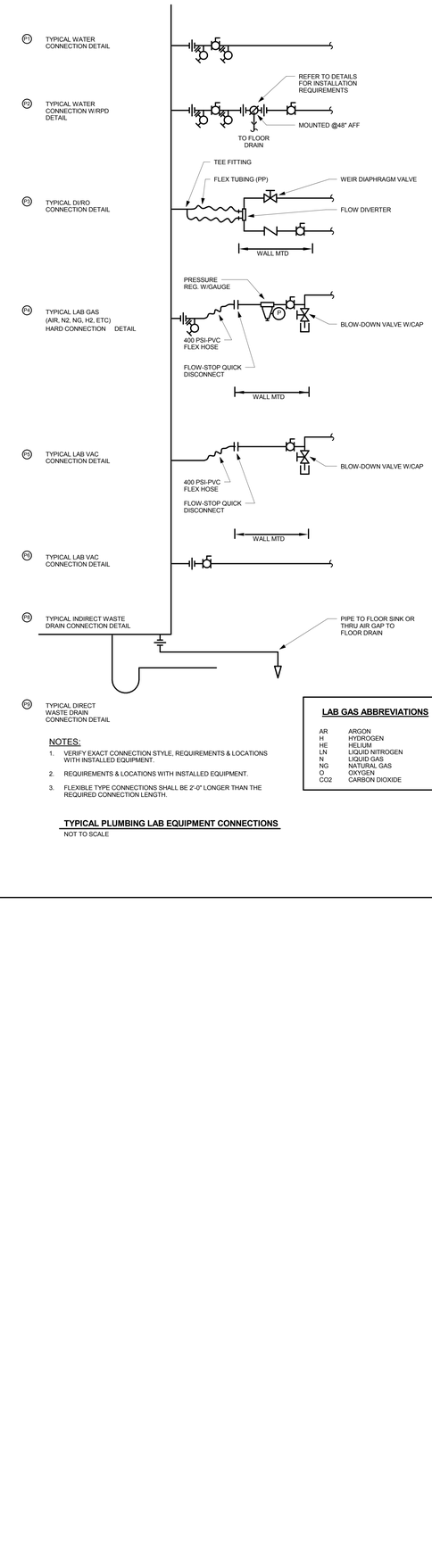
FRONT VIEW

B TYPICAL OVEN SIDE- VENT CONSTRUCTION
NOT TO SCALE

H15 TYPICAL OVEN VENT CONSTRUCTION
NOT TO SCALE

21-10-038

sheet title: LAB EQUIPMENT CONNECTION DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date: 11-21-2012
11-21-2012 Bid Documents			scale: 1" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: DJH
			approved by: GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	drawing no.: MEP402



NOTES:

1. VERIFY EXACT CONNECTION STYLE, REQUIREMENTS & LOCATIONS WITH INSTALLED EQUIPMENT.
2. REQUIREMENTS & LOCATIONS WITH INSTALLED EQUIPMENT.
3. FLEXIBLE TYPE CONNECTIONS SHALL BE 2'-0" LONGER THAN THE REQUIRED CONNECTION LENGTH.

TYPICAL PLUMBING LAB EQUIPMENT CONNECTIONS
NOT TO SCALE

LAB GAS ABBREVIATIONS

AR	ARGON
H	HYDROGEN
HE	HELIUM
LN	LIQUID NITROGEN
N	LIQUID GAS
NG	NATURAL GAS
O	OXYGEN
CO2	CARBON DIOXIDE

ELECTRICAL CONNECTIONS

E1 STATIONARY EQUIPMENT - HARDWIRE THRU JUNCTION BOX. VERIFY EXACT LOCATION IN FIELD. PROVIDE ELECTRICAL WHIP BETWEEN DISCONNECT SWITCH AND EQUIPMENT CONNECTION LOCATION.SEE ELECTRICAL DETAIL.

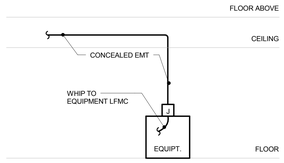
E2 HARD WIRED EQUIPMENT - HARDWIRE THRU FUSED DISCONNECT SWITCH. VERIFY EXACT LOCATION AND FUSE SIZE IN FIELD. PROVIDE ELECTRICAL WHIP BETWEEN DISCONNECT SWITCH AND EQUIPMENT CONNECTION LOCATION. SEE ELECTRICAL DETAIL.

E3 PLUG-IN EQUIPMENT SPECIALTY RECEPTACLE - VERIFY NEMA PLUG CONFIGURATION WITH EQUIPMENT, COORDINATE OPTIMAL WALL/CEILING LOCATION & ELEVATION FOR DEVICE IN FIELD UNLESS OTHERWISE NOTED.

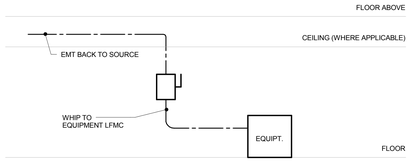
E4 PLUG-IN EQUIPMENT STANDARD RECEPTACLE - UTILIZE STANDARD NEMA 5-20R PLUG CONFIGURATION, COORDINATE OPTIMAL WALL/CEILING LOCATION & ELEVATION FOR DEVICE IN FIELD UNLESS OTHERWISE NOTED.

E5 DATA CONNECTION - JUNCTION BOX CONDUIT W/PULL STRING TO ACCESSIBLE LOCATION.

E6 SEE FLOOR PLANS FOR HOMERUNS AND QUANTITY OF DEVICES.



E1 STATIONARY EQUIPMENT DETAIL
NOT TO SCALE



E2 HARD WIRED EQUIPMENT DETAIL
NOT TO SCALE

21-10-038

LAB EQUIPMENT CONNECTION DETAILS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

2 of 2
date 11-21-2012
scale 1" = 1'-0"
drawn by DJH
approved by GVD
drawing no. MEP403

BRANCH PANEL: HLPBN

LOCATION: MAIN ELECTRICAL 003 **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 65,000
SUPPLY FROM: MDB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 42 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Other	20 A	1	99 / 155			1	20 A	Lighting	2
3	Lighting OFFICE WAITING AREA 108	20 A	1		102 / 192		1	20 A	Lighting Room 108G, 106, 104, 108F	4
5	Lighting	20 A	1			150 / 216	1	20 A	Lighting EGRESS STAIR ST1a	6
7	Lighting Room 003, 005	20 A	1	248 / 588			1	20 A	Room 132, 134	8
9	Lighting Room 002-1, 002-2	20 A	1		310 / 385		1	20 A	Room 105, 108E, 101	10
11	Lighting Room 018, 020-1	20 A	1			345 / 648	1	20 A	Lighting Room 108D, 108C, 108B,	12
13	Lighting Room 004, 006, 010, 008, 012,	20 A	1	1178 / 1196			1	20 A	Lighting Room 141, 143	14
15	Lighting Room 109B, 109A, 109, 103A,	20 A	1		2691 / 150		1	20 A	Lighting	16
17	Lighting MEP 007	20 A	1			887 / 1044	1	20 A	Room 111B, 111, 111A	18
19	Lighting	20 A	1	150 / 0						20
21					4035 / 0					22
23	HLP2N	100 A	3			6169 / 150	1	20 A	Lighting	24
25				4293 / 0						26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	7907 VA	7865	9609 VA				
			TOTAL	29 A	28 A	35 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	24577	125.00%	30721		
Other	804	100.00%	804	TOTAL CONN. LOAD:	25381
				TOTAL EST. DEMAND	31525

NOTES:

BRANCH PANEL: HLPBS

LOCATION: ELECTRICAL 039 **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: MDB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 42 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 039	20 A	1	124 / 318			1	20 A	Lighting Room 026	2
3	Lighting Room 117B, 117A	20 A	1		248 / 308		1	20 A	Room 024, 022, 011	4
5	Lighting Room 126, 130A, 128	20 A	1			288 / 135	1	20 A	Lighting	6
7	Lighting Room 051, 049, 047, 045, 043	20 A	1	680 / 1073			1	20 A	Lighting Room 021, 009B	8
9	Lighting Room 130, 122, 120, 118	20 A	1		463 / 1121		1	20 A	Lighting Room 038, 042, 040	10
11	Lighting Room 118F, 118E, 118D,	20 A	1			842 / 3379	1	20 A	Lighting Room 139, 135, 131, 133	12
13	Lighting Room 123, 119, 125, 127	20 A	1	4464 / 300			1	20 A	Room 048	14
15	Lighting Room 034, 032, 036	20 A	1		1045 / 1296		1	20 A	Lighting OPTICS LABORATORY 124	16
17	Lighting Room 037, 033, 031, 029, 027	20 A	1			3348 / 7837				18
19	Lighting Room ST3a, ST3e	20 A	1	250 / 8748			3	100 A	HLP2S	20
21	Lighting Room 019, 015, 013	20 A	1		4278 / 8088					22
23	Lighting Room 1-B, ST2c	20 A	1			91 / 232	1	20 A	Lighting Room 1-B, 114	24
25	Lighting Room 1-T, 025, 048, 046, 028	20 A	1	350 / 165			1	20 A	Other	26
27	Room 112	20 A	1		395 / 0					28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	16472 VA	17242	16152 VA				
			TOTAL	60 A	62 A	58 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	48676	125.00%	60845		
Other	1190	100.00%	1190	TOTAL CONN. LOAD:	49866
				TOTAL EST. DEMAND	62035

NOTES:

BRANCH PANEL: ELPP

LOCATION: EMERGENCY ELECTRICAL **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: ELP3 **PHASES** 3 **MAINS TYPE:** MLO
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 404A, 404B	20 A	1	186 / 372			1	20 A	Lighting MEP 405	2
3	Room 402	20 A	1		240 / 248		1	20 A	Lighting mep 403	4
5	Lighting mep 404	20 A	1			372 / 152	1	20 A	Lighting	6
7	Lighting	20 A	1	206 / 0						8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	764 VA	488	524 VA				
			TOTAL	3 A	2 A	2 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	1656	125.00%	2070		
Other	120	100.00%	120	TOTAL CONN. LOAD:	1776
				TOTAL EST. DEMAND	2190

NOTES:

BRANCH PANEL: SHLPGN

LOCATION: COASTAL & MARINE **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SHDPB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				0 / 261			1	20 A	Lighting Room 111A, 111	2
3	Lighting Room 007	20 A	1		186 / 0					4
5	Lighting Room 103, 103A, 109	20 A	1			603 / 0				6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	261 VA	186	603 VA				
			TOTAL	1 A	1 A	2 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	1050	125.00%	1313		
				TOTAL CONN. LOAD:	1050
				TOTAL EST. DEMAND	1313

NOTES:

BRANCH PANEL: SHLPGS

LOCATION: ELECTRICAL 129 **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SHDPB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 141	20 A	1	108 / 243			1	20 A	Lighting Room 042, 038	2
3	Lighting Room 032, 036	20 A	1		135 / 162		1	20 A	Lighting OPTICS LABORATORY 124	4
5	Lighting Room 033, 037, 031, 029, 027	20 A	1			868 / 837	1	20 A	Lighting Room 019, 015, 013	6
7	Lighting Room 139, 135, 131, 133	20 A	1	961 / 0						8
9	Lighting Room 119, 123, 125, 127	20 A	1		930 / 0					10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	1312 VA	1227	1705 VA				
			TOTAL	5 A	4 A	6 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	4244	125.00%	5305		
				TOTAL CONN. LOAD:	4244
				TOTAL EST. DEMAND	5305

NOTES:

BRANCH PANEL: HLP2N

LOCATION: ELECTRICAL 207C **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: HLPBN **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting bridge connector 301	20 A	1	132 / 294			1	20 A	Lighting Room 213, 142-152	2
3	Lighting Room 317, 307	20 A	1		259 / 1983		1	20 A	Lighting Room 203, 207A, 207B	4
5	Lighting	20 A	1			186 / 267	1	20 A	Lighting mep 402	6
7	Lighting Room 307, 303, 206-C06a	20 A	1	257 / 444			1	20 A	Lighting CLASSROOM 210	8
9	Lighting Room 211, 209	20 A	1		2091 / 184		1	20 A	Lighting	10
11	Lighting MEP 403	20 A	1			310 / 373	1	20 A	Lighting Room 202A, 202, 206, 204,	12
13	Lighting Room 208, 205, 207	20 A	1	340 / 2568			1	20 A	Lighting molecular biology 305	14
15	Lighting conference /seminar room 319	20 A	1		1320 / 332		1	20 A	Lighting microscopy 324	16
17	Lighting Room 212	20 A	1			1320 / 1837	1	20 A	Lighting Room 312, 314, 318, 322	18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	4035 VA	6169	4293 VA				
			TOTAL	15 A	22 A	16 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	14437	125.00%	18046		
Other	60	100.00%	60	TOTAL CONN. LOAD:	14497
				TOTAL EST. DEMAND	18106

NOTES:

BRANCH PANEL: HLP2S

LOCATION: ELECTRICAL 231 **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: HLPBS **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Room 405	20 A	1	90 / 248			1	20 A	Lighting ELECTRICAL 404A	2
3	Lighting Room 215, 218, 220	20 A	1		209 / 288		1	20 A	Lighting Room 236, 238, 242A	4
5	Lighting Room 358, 321	20 A	1			170 / 486	1	20 A	GROUP STUDY 247	6
7	Lighting Room 220, 242	20 A	1	309 / 265			1	20 A	Lighting Room 349, 339	8
9	Lighting Room 340, 339, 326	20 A	1		299 / 600		1	20 A	Lighting Room 348, 344A, 346, 342,	10
11	Lighting CLASSROOM 222	20 A	1			512 / 612	1	20 A	Lighting Room 214, 218B, 218A, 216,	12
13	Lighting Room 226, 230, 234	20 A	1	837 / 682			1	20 A	Lighting MEP 405	14
15	Lighting Room 356, 340C, 340B, 340A,	20 A	1		756 / 2174		1	20 A	Lighting Room 334, 338	16
17	Lighting MEP 404	20 A	1			744 / 945	1	20 A	Lighting Room 237, 235, 233A, 233B	18
19	Lighting Room 223, 225, 136-143	20 A	1	860 / 2231			1	20 A	Lighting Room 221, 219, M19	20
21	Lighting Room 325, 327, 329, 331,	20 A	1		4216 / 206		1	20 A	Lighting	22
23	Lighting Room 343, 345, 347	20 A	1			2201 / 2418	1	20 A	Lighting Room 335, 337, 341	24
25	Lighting Room 241A, 239, 241, 243,	20 A	1	2315 / 0						26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	7837 VA	8748	8088 VA				
			TOTAL	28 A	32 A	29 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	24323	125.00%	30404		
Other	350	100.00%	350	TOTAL CONN. LOAD:	24673
				TOTAL EST. DEMAND	30754

NOTES:

BRANCH PANEL: SHLP3N

LOCATION: ELECTRICAL 311G **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SHDPB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 211, 203	20 A	1	558 / 196			1	20 A	Lighting	2
3	Lighting Room 322, 318, 314, 312	20 A	1		533 / 0					4
5	Lighting Room 315, 313, 311A, 305	20 A	1			859 / 0				6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	754 VA	533	859 VA				
			TOTAL	3 A	2 A	3 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	2146	125.00%	2683		
				TOTAL CONN. LOAD:	2146
				TOTAL EST. DEMAND	2683

NOTES:

BRANCH PANEL: SHLP3S

LOCATION: ELECTRICAL 333 **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SHDPB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 214	20 A	1	68 / 405			1	20 A	Lighting Room 223, 136-143, 225	2
3	Lighting Room 226, 230, 234	20 A	1		279 / 744		1	20 A	Lighting Room 335, 337, 341	4
5	Lighting Room 243, 239	20 A	1			360 / 465	1	20 A	Lighting Room 343, 345	6
7	Lighting Room 325, 327, 329, 331	20 A	1	1209 / 0						8
9	Lighting Room 237, 235, 233A	20 A	1		567 / 0					10
11	Lighting Room 221, 219	20 A	1			415 / 558	1	20 A	Lighting Room 334, 338	12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	1682 VA	1590	1798 VA				
			TOTAL	6 A	6 A	7 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	5070	125.00%	6338		
				TOTAL CONN. LOAD:	5070
				TOTAL EST. DEMAND	6338

NOTES:

BRANCH PANEL: ELHDPB

LOCATION: EMERGENCY ELECTRICAL **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: MDB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 42 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting ELECTRICAL 039	20 A	1	62 / 150			1	20 A	Lighting	2
3	Lighting	20 A	1		124 / 150		1	20 A	Lighting	4
5	Lighting OFFICE WAITING AREA 108	20 A	1			136 / 186	1	20 A	Lighting Room 002-1, 002-2	6
7	Lighting Room 026, 024	20 A	1	189 / 221			1	20 A	Lighting Room ST1a, ST1b	8
9										10
11	Lighting Room 003, 005	20 A	1			248 / 310	1	20 A	Lighting Room 012, 010	12
13	Lighting Room ST3d, ST3c, ST3a,	20 A	1	238 / 336			1	20 A	Lighting Room 048, 046, 1-T, 025, 028,	14
15					0 / 1800					16
17	Lighting	20 A	1			150 / 0	3	20 A	JP-1	18
19	Lighting Room 023, 021, 009B	20 A	1	620 / 0						20
21										22
23						0 / 2708				24
25				1500 / 1937			3	100 A	ELPG	26
27	TX-ELPD	80 A	3		1500 / 1819					28
29						1000 / 0				30
31	Lighting	20 A	1	150 / 0						32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	5403 VA	5393	4738 VA				
			TOTAL	20 A	20 A	17 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	9554	125.00%	11943		
Other	1980	100.00%	1980	TOTAL CONN. LOAD:	15534
MISC. POWER	4000	65.00%	2600	TOTAL EST. DEMAND	16523

NOTES:

BRANCH PANEL: ELLDPB

LOCATION: EMERGENCY ELECTRICAL **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: TX-ELPD **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 150 A
 # OF POLES 42 **MCB RATING:** 150 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Misc. power elevator machine rm 009a	20 A	1	500 / 500			1	20 A	Misc. power elevator machine rm 009a	2
3	Misc. power elevator machine rm 009a	20 A	1		500 / 500		1	20 A	Misc. power elevator-3 elev 2-3	4
5	Misc. power elevator-3 elev 2-3	20 A	1			500 / 500	1	20 A	Misc. power elevator-3 elev 2-3	6
7	Misc. power elevator machine rm 009a	20 A	1	500 / 0						8
9	Misc. power elevator-3 elev 2-3	20 A	1		500 / 0					10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	1500 VA	1500	1000 VA				
			TOTAL	13 A	13 A	8 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
MISC. POWER	4000	65.00%	2600		
				TOTAL CONN. LOAD:	4000
				TOTAL EST. DEMAND	2600

NOTES:
THIS PANEL IS FOR SMOKE CONTROL AND FIRE ALARM CONTROLS.

BRANCH PANEL: ELPG

LOCATION: ELECTRICAL 107A **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: ELHDPB **PHASES** 3 **MAINS TYPE:** MLO
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting	20 A	1	165 / 156			1	20 A	Lighting KNUCKLE LOBBY 112	2
3	Lighting Room 132, 134	20 A	1		374 / 0					4
5	Lighting Room 122, 118, 120, 114, 130	20 A	1			459 / 0				6
7	Lighting Room 129	20 A	1	62 / 124			1	20 A	Lighting Room 107, 107A	8
9										10
11										12
13	Lighting Room 101, 105	20 A	1	260 / 1941						14
15					0 / 1563		3	100 A	ELP2	16
17						0 / 1360				18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	2708 VA	1937	1819 VA				
			TOTAL	10 A	7 A	7 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	6284	125.00%	7855		
Other	180	100.00%	180	TOTAL CONN. LOAD:	6464
				TOTAL EST. DEMAND	8035

NOTES:

BRANCH PANEL: ELP2

LOCATION: ELECTRICAL 107A **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: ELPG **PHASES** 3 **MAINS TYPE:** MLO
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 213, 142-152	20 A	1	213 / 221			1	20 A	Lighting CLASSROOM 222	2
3	Lighting Room 215, 218, 220	20 A	1		170 / 357		1	20 A	Lighting GROUP STUDY 247	4
5	Lighting Room 207C	20 A	1			62 / 62	1	20 A	Lighting Room 231	6
7	Lighting Room 205, 207, 208	20 A	1	289 / 0						8
9										10
11	Lighting Room 242, 220	20 A	1			170 / 272	1	20 A	Lighting CLASSROOM 210	12
13				1218 / 0						14
15	ELP3	100 A	3		1036 / 0					16
17						794 / 0				18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	1941 VA	1563	1360 VA				
			TOTAL	7 A	6 A	5 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	4744	125.00%	5930		
Other	120	100.00%	120	TOTAL CONN. LOAD:	4864
				TOTAL EST. DEMAND	6050

NOTES:

BRANCH PANEL: ELP3

LOCATION: EMERGENCY ELECTRICAL **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: ELP2 **PHASES** 3 **MAINS TYPE:** MLO
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 100 A
 # OF POLES 42 **MCB RATING:** 100 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 301	20 A	1	128 / 166			1	20 A	Lighting Room 317, 307	2
3	Lighting Room 349, 339	20 A	1		272 / 0					4
5	Lighting Room 340, 339, 326	20 A	1			306 / 0				6
7	Lighting Room 307, 206-C06a, 303	20 A	1	213 / 187			1	20 A	Lighting Room 358, 321	8
9					764 / 0					10
11	ELPP	100 A	3			488 / 0				12
13				524 / 0						14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	1218 VA	1036	794 VA				
			TOTAL	5 A	4 A	3 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	2928	125.00%	3660		
Other	120	100.00%	120	TOTAL CONN. LOAD:	3048
				TOTAL EST. DEMAND	3780

NOTES:

BRANCH PANEL: HMPB

LOCATION: MAIN ELECTRICAL 003 **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 65,000
SUPPLY FROM: MDB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 600 A
 # OF POLES 60 **MCB RATING:** 600 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				8750 / 167						2
3	TX-MPB	300 A	3		6750 / 167		3	20 A	MISC. POWER MEP 009	4
5						6250 / 167				6
7				167 / 167						8
9	MISC. POWER MEP 009	20 A	3		167 / 167		3	20 A	MISC. POWER MEP 009	10
11						167 / 167				12
13				167 / 533						14
15	MISC. POWER MEP 010	20 A	3		167 / 533		3	20 A	SP-2	16
17						167 / 533				18
19				1333 / 1333						20
21	DCS	20 A	3		1333 / 1333		3	20 A	DCS-2	22
23						1333 / 1333				24
25				3000 / 5833						26
27	AWP-1	30 A	3		3000 / 5833		3	50 A	BP-1	28
29						3000 / 5833				30
31				5833 / 5833						32
33	ERCP-N5A	40 A	3		5833 / 5833		3	40 A	ERCP-N5B	34
35						5833 / 5833				36
37				11000 / 11000						38
39	ERCP-S1	80 A	3		11000 / 11000		3	80 A	ERCP-S2	40
41						11000 / 11000				42
43				7600 / 0						44
45	Tx-mpp	20 A	3		8600 / 0		3	20 A	GROWTH CHAMBER	46
47						7600 / 0				48
49				0 / 0						50
51	SPARE	20 A	3		0 / 0		3	30 A	SPARE	52
53						0 / 0				54
55				0 / 0						56
57	SPARE	50 A	3		0 / 0		3	100 A	SPARE	58
59						0 / 0				60
			TOTAL	62717 VA	61717	60217 VA				
			TOTAL	227 A	224 A	217 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	154150	100.00%	154150		
Motor	2500	105.00%	2625	TOTAL CONN. LOAD:	184650
Other	17500	100.00%	17500	TOTAL EST. DEMAND	181100
MISC. POWER	10500	65.00%	6825		

NOTES:

BVH INDEX PANELBOARD SCHEDULE GENERAL NOTE

INDEX PANELBOARD SCHEDULES ARE SHOWN FOR REFERENCE ONLY. VERIFY SIZE, QUANTITY, AND TYPES OF CIRCUIT BREAKERS IN PANELBOARDS WITH PLANS, RISERS, SCHEDULES AND SPECIFICATIONS.

drawing title: PANELBOARD SCHEDULES

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

volume: 2 of 2

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

date: 11-21-2012
scale:
project: SCSU NEW ACADEMIC LABORATORY BUILDING
drawn by: DJH
approved by: GVD
drawing no.: MEP501
CAD no.: 1393
project no.: BI-RS-283-ARC

21-10-038

BRANCH PANEL: SHDPB

LOCATION: MAIN ELECTRICAL 003 **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 65,000
SUPPLY FROM: MDB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 1200 A
 # OF POLES 120 **MCB RATING:** 1200 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				261 / 754						2
3	SHLPGN	100 A	3		186 / 533		3	100 A	SHLP3N	4
5						603 / 859				6
7				1312 / 1682						8
9	SHLPGS	100 A	3		1227 / 1590		3	100 A	SHLP3S	10
11						1705 / 1798				12
13										14
15					11880 / 146587					16
17	TX-SDPB	300 A	3			11920 / 146597	3	400 A	SHDPP	18
19				12160 / 146277						20
21					533 / 533					22
23	SP-1	20 A	3			533 / 533	3	20 A	SP-2	24
25				533 / 533						26
27					833 / 833					28
29	HVAC MEP 010	20 A	3			833 / 833	3	20 A	RF-P-2B	30
31				833 / 833						32
33					5130 / 5833					34
35	UPS	150 A	3			5130 / 5833	3	40 A	RF-N	36
37				5130 / 5833						38
39					7333 / 9333					40
41	LVP-1	50 A	3			7333 / 9333	3	80 A	HW-P-1A	42
43				7333 / 9333						44
45					9333 / 18000					46
47	HW-P-1B	80 A	3			9333 / 18000	3	150 A	CHW-P-4A	48
49				9333 / 18000						50
51					18000 / 21333					52
53	CHW-P-4B	150 A	3			18000 / 21333	3	150 A	LAC-1	54
55				18000 / 21333						56
57					26667 / 26667					58
59	COND-P-3B	200 A	3			26667 / 26667	3	200 A	HVAC MEP 010	60
61				26667 / 26667						62
63					96667 / 96667					64
65	CH-1	600 A	3			96667 / 96667	3	600 A	CH-2	66
67				96667 / 96667						68
69					3833 / 0					70
71	SEP-1	30 A	3			3833 / 0				72
73				3833 / 0						74
75										76
77										78
79										80
81										82
83										84
85										86
87										88
89										90
91										92
93										94
95										96
97				0 / 0						98
99	SPARE	20 A	3		0 / 0		3	20 A	SPARE	100
101						0 / 0				102
103				0 / 0						104
105	SPARE	150 A	3		0 / 0		3	50 A	SPARE	106
107						0 / 0				108
109				0 / 0						110
111	SPARE	600 A	3		0 / 0		3	150 A	SPARE	112
113						0 / 0				114
115				0 / 0						116
117	SPARE	200 A	3		0 / 0		3	100 A	SPARE	118
119						0 / 0				120
			TOTAL	509976 VA	509533	511012 VA				
			TOTAL	1841 A	1839 A	1845 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	1302500	100.00%	1302500		
Lighting	12510	125.00%	15638	TOTAL CONN. LOAD:	1520520
Other	86000	100.00%	86000	TOTAL EST. DEMAND	1481819
RECEPTACLES	75510	65.00%	49082		
MISC. POWER	44000	65.00%	28600		

NOTES:

BRANCH PANEL: SHDPP

LOCATION: ELECTRICAL 404A **VOLTAGE** 480/277 Wye **A.I.C. RATING:** 42,000
SUPPLY FROM: SHDPB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 400 A
 # OF POLES 120 **MCB RATING:** 400 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				23820 / 833						2
3	TX-SDPP	300 A	3		23830 / 833		3	20 A	MREF-1	4
5						23510 / 833				6
7				833 / 933						8
9	P-FP1	20 A	3		833 / 933		3	20 A	P-FP2	10
11						833 / 933				12
13				1667 / 1667						14
15	BASIN HEATER	20 A	3		1667 / 1667		3	20 A	BASIN HEATER	16
17						1667 / 1667				18
19				2000 / 2000						20
21	HVAC	20 A	3		2000 / 2000		3	20 A	HVAC MEP 405	22
23						2000 / 2000				24
25				3000 / 5833						26
27	PEF-3	40 A	3		3000 / 5833		3	40 A	RLF-N	28
29						3000 / 5833				30
31				9333 / 11000						32
33	AHU-N/H2	70 A	3		9333 / 11000		3	80 A	LEF-N2	34
35						9333 / 11000				36
37				11000 / 18000						38
39	LEF-N3	80 A	3		11000 / 18000		3	150 A	CT-1	40
41						11000 / 18000				42
43				27333 / 27333						44
45	AHU-S/H1	70 A	3		27333 / 27333		3	150 A	AHU-S/H1	46
47						27333 / 27333				48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75										76
77										78
79										80
81										82
83										84
85										86
87										88
89										90
91										92
93										94
95										96
97										98
99										100
101										102
103				0 / 0						104
105	SPARE	20 A	3		0 / 0		3	20 A	SPARE	106
107						0 / 0				108
109				0 / 0						110
111	SPARE	20 A	3		0 / 0		3	50 A	SPARE	112
113						0 / 0				114
115				0 / 0						116
117	SPARE	70 A	3		0 / 0		3	100 A	SPARE	118
119						0 / 0				120
			TOTAL	146587 VA	146597	146277 VA				
			TOTAL	529 A	529 A	528 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	361300	100.00%	361300		
RECEPTACLES	33160	65.00%	21554	TOTAL CONN. LOAD:	429460
MISC. POWER	35000	65.00%	22750	TOTAL EST. DEMAND	405604

NOTES:

BRANCH PANEL: SLDPGS

LOCATION: ELECTRICAL 129 **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SLDPP **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 84 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES ASTRONOMICAL	20 A	1	540 / 540			1	20 A	RECEPTACLES ASTRONOMICAL	2
3	RECEPTACLES X-RAY ANALYSIS 225	20 A	2		180 / 750		2	20 A	RECEPTACLES OPTICS LABORATORY 124	4
5						0 / 0				6
7	HVAC	20 A	1	750 / 360			1	20 A	RECEPTACLES OPTICS	8
9	RECEPTACLES OPTICS	20 A	1		360 / 750					10
11	RECEPTACLES ASTRONOMICAL INSTRUMENT & IMAGING 133	20 A	2			1500 / 0	3	50 A	RECEPTACLES PHOTONICS 141	12
13				0 / 0						14
15	RECEPTACLES OPTICS	20 A	1		360 / 360		1	20 A	RECEPTACLES ASTRONOMICAL	16
17	RECEPTACLES SYNTHESIS &	20 A	1			360 / 360	1	20 A	RECEPTACLES OPTICS	18
19	RECEPTACLES OPTICS	20 A	1	360 / 360			1	20 A	RECEPTACLES ASTRONOMICAL	20
21	MISC. POWER SYNTHESIS &	20 A	1		500 / 500		1	20 A	MISC. POWER PHOTONICS 141	22
23	RECEPTACLES GENERIC	20 A	1			360 / 500	1	20 A	RECEPTACLES BREAK ROOM 108F	24
25	MISC. POWER ROCK SAMPLE PREP	20 A	1	500 / 500			1	20 A	MISC. POWER OPTICS	26
27	MISC. POWER GENERIC RESEARCH	20 A	1		500 / 540		1	20 A	RECEPTACLES PHOTONICS 141	28
29	MISC. POWER ROCK SAMPLE PREP	20 A	1			500 / 500	1	20 A	MISC. POWER HISTORICAL, SOFT	30
31	MISC. POWER	20 A	1	500 / 540			1	20 A	RECEPTACLES PHOTONICS 141	32
33	RECEPTACLES PHOTONICS 141	20 A	1		540 / 0					34
35	RECEPTACLES PHOTONICS 141	20 A	1			540 / 540	1	20 A	RECEPTACLES PHOTONICS 141	36
37	RECEPTACLES PHOTONICS 141	20 A	1	540 / 750			2	20 A	RECEPTACLES OPTICS LABORATORY 124	38
39	RECEPTACLES ROCK SAMPLE PREP DIRTY-DRY LAB 123	20 A	2		750 / 0					40
41						0 / 750	2	20 A	RECEPTACLES SYNTHESIS & ELECTRICAL CHARACTERIZATION	42
43	RECEPTACLES OPTICS LABORATORY 124	20 A	2	750 / 0						44
45					0 / 750		2	20 A	RECEPTACLES OPTICS LABORATORY 124	46
47	RECEPTACLES OPTICS LABORATORY 124	20 A	2			750 / 0				48
49				0 / 1500			2	20 A	RECEPTACLES GENERIC RESEARCH LAB 139	50
51	RECEPTACLES PHOTONICS 141	20 A	2		1500 / 0					52
53						0 / 1500	2	20 A	RECEPTACLES PHOTONICS 141	54
55				0 / 0						56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	8490 VA	8340	8160 VA				
			TOTAL	71 A	70 A	68 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	750	100.00%	750		
RECEPTACLES	20240	65.00%	13156	TOTAL CONN. LOAD:	24990
MISC. POWER	4000	65.00%	2600	TOTAL EST. DEMAND	16506

NOTES:

BRANCH PANEL: SLDP2S

LOCATION: ELECTRICAL 231 **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SLDPP **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 84 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	MISC. POWER CLEAN	20 A	1	500 / 540			1	20 A	RECEPTACLES MINERALOGY,	2
3	RECEPTACLES X-RAY SAMPLE	20 A	1		540 / 180					4
5	Hvac	20 A	1			750 / 0	3	35 A	RECEPTACLES GENERAL CHEMISTRY STUDENT RESEARCH LAB E10 136-143	6
7	MISC. POWER X-RAY SAMPLE PREP	20 A	1	500 / 0						8
9					180 / 500		1	20 A	Misc. power corridor 215	10
11	RECEPTACLES GENERAL CHEMISTRY STUDENT RESEARCH LAB E10 136-143	35 A	3			0 / 180				12
13				0 / 0			3	35 A	RECEPTACLES X-RAY ANALYSIS 225	14
15	MISC. POWER X-RAY ANALYSIS 225	20 A	1		500 / 0					16
17	Misc. power general chemistry student	20 A	1			500 / 500	1	20 A	MISC. POWER X-RAY SAMPLE PREP	18
19	MISC. POWER STRUCTURAL	20 A	1	500 / 500			1	20 A	MISC. POWER GENERIC RESEARCH	20
21	MISC. POWER GENERIC RESEARCH	20 A	1		500 / 500		1	20 A	MISC. POWER GENERAL	22
23	MISC. POWER MINERALOGY,	20 A	1			500 / 500	1	20 A	MISC. POWER GENERIC RESEARCH	24
25	MISC. POWER GENERAL	20 A	1	500 / 500			1	20 A	MISC. POWER CLEAN	26
27	MISC. POWER CLEAN	20 A	1		500 / 0					28
29	MISC. POWER GENERAL	20 A	1			500 / 0				30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	3540 VA	3400	3430 VA				
			TOTAL	30 A	28 A	29 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	750	100.00%	750		
RECEPTACLES	1620	65.00%	1053	TOTAL CONN. LOAD:	10370
MISC. POWER	8000	65.00%	5200	TOTAL EST. DEMAND	7003

NOTES:

BRANCH PANEL: SLDPGN

LOCATION: COASTAL & MARINE **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SLDPBN **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 42 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES COASTAL & MARINE	20 A	1	180 / 500			1	20 A	MISC. POWER	2
3	RECEPTACLES COASTAL & MARINE	20 A	1		180 / 1600		1	20 A	RECEPTACLES COASTAL & MARINE	4
5	RECEPTACLES COASTAL & MARINE	20 A	1			540 / 540	1	20 A	RECEPTACLES SALTWATER	6
7	MISC. POWER COASTAL & MARINE	20 A	1	500 / 540			1	20 A	RECEPTACLES AQUARIUM	8
9	MISC. POWER COASTAL & MARINE	20 A	1		500 / 0					10
11	RECEPTACLES SALTWATER	20 A	1			540 / 500	1	20 A	MISC. POWER COASTAL & MARINE	12
13	MISC. POWER COASTAL & MARINE	20 A	1	500 / 0						14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29	SPARE	20 A	2			0 / 0	2	20 A	SPARE	30
31				0 / 0						32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	2220 VA	2280	2120 VA				
			TOTAL	19 A	19 A	18 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	4120	65.00%	2678		
MISC. POWER	2500	65.00%	1625	TOTAL CONN. LOAD:	6620
				TOTAL EST. DEMAND	4303

NOTES:

BRANCH PANEL: SLDP2N

LOCATION: ELECTRICAL 207C **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SLDPBN **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 42 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	MISC. POWER COASTAL & MARINE	20 A	1	500 / 600			1	20 A	RECEPTACLES COASTAL & MARINE	2
3	RECEPTACLES FREEZERS 209	20 A	1		600 / 600		1	20 A	RECEPTACLES FREEZERS 209	4
5	RECEPTACLES FREEZERS 209	20 A	1			600 / 600	1	20 A	RECEPTACLES FREEZERS 209	6
7	RECEPTACLES FREEZERS 209	20 A	1	700 / 500			1	20 A	RECEPTACLES FREEZERS 209	8
9	RECEPTACLES FREEZERS 209	20 A	1		600 / 500		1	20 A	RECEPTACLES GENERIC	10
11	RECEPTACLES FREEZERS 209	20 A	1			600 / 500	1	20 A	RECEPTACLES GENERIC	12
13	RECEPTACLES FREEZERS 209	20 A	1	500 / 500			1	20 A	MISC. POWER GENERIC RESEARCH	14
15	RECEPTACLES FREEZERS 209	20 A	1		500 / 500		1	20 A	RECEPTACLES COASTAL & MARINE	16
17	RECEPTACLES FREEZERS 209	20 A	1			500 / 500	1	20 A	RECEPTACLES COASTAL & MARINE	18
19	MISC. POWER COASTAL & MARINE	20 A	1	500 / 0						20
21	MISC. POWER COASTAL & MARINE	20 A	1		500 / 0					22
23	MISC. POWER GENERIC RESEARCH	20 A	1			500 / 0				24
25										26
27										28
29	SPARE	20 A	2			0 / 0	2	20 A	SPARE	30
31				0 / 0						32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	3800 VA	3800	3800 VA				
			TOTAL	32 A	32 A	32 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	8900	65.00%	5785		
MISC. POWER	2500	65.00%	1625	TOTAL CONN. LOAD:	11400
				TOTAL EST. DEMAND	7410

NOTES:

BRANCH PANEL: SLDPBN

LOCATION: MAIN ELECTRICAL 003 **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: TX-SDPB **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 500 A
 # OF POLES 42 **MCB RATING:** 500 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	MISC. POWER CORRIDOR-1 002-1	20 A	1	500 / 2220						2
3	MISC. POWER CORRIDOR-1 002-1	20 A	1		500 / 2280		3	225 A	SLDPGN	4
5						0 / 2120				6
7				5360 / 3800						8
9	SLDP3N	225 A	3		5340 / 3800		3	225 A	SLDP2N	10
11						6240 / 3800				12
13				0 / 0						14
15	S-gen	100 A	3		0 / 0					16
17						0 / 0				18
19										20
21										22
23										24
25				0 / 0			1	20 A	SPARE	26
27					0 / 0		1	20 A	SPARE	28
29						0 / 0	1	20 A	SPARE	30
31				0 / 0			1	20 A	SPARE	32
33	SPARE	225 A	3		0 / 0		1	20 A	SPARE	34
35						0 / 0	1	20 A	SPARE	36
37				0 / 0						38
39	SPARE	225 A	3		0 / 0		3	100 A	SPARE	40
41						0 / 0				42
			TOTAL	11880 VA	11920	12160 VA				
			TOTAL	99 A	99 A	101 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	26960	65.00%	17524		
MISC. POWER	9000	65.00%	5850	TOTAL CONN. LOAD:	35960
				TOTAL EST. DEMAND	23374

NOTES:

BRANCH PANEL: SLDPBS

LOCATION: ELECTRICAL 039 **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SLDPP **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 42 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES HIGH RESOLUTION	20 A	1	180 / 1600			1	20 A	RECEPTACLES HIGH RESOLUTION	2
3	MISC. POWER CORRIDOR 025	20 A	1		500 / 500		1	20 A	MISC. POWER HIGH RESOLUTION	4
5	MISC. POWER MATERIALS SCIENCE	20 A	1			500 / 500	1	20 A	MISC. POWER MEP 009	6
7	MISC. POWER NTC SPECIMEN PREP	20 A	1	500 / 500			1	20 A	MISC. POWER NTC MULTIPURPOSE	8
9	HVAC	20 A	1		750 / 500		1	20 A	MISC. POWER PROJECT STORAGE /	10
11						750 / 500	1	20 A	MISC. POWER SHARED PREP	12
13	RECEPTACLES NANOMATERIALS 042	30 A	3	0 / 500			1	20 A	MISC. POWER NANOTECHNOLOGY	14
15					0 / 500		1	20 A	MISC. POWER NTC MULTIPURPOSE	16
17	MISC. POWER NTC SPECIMEN PREP	20 A	1			500 / 500	1	20 A	MISC. POWER NTC MULTIPURPOSE	18
19										20
21	MISC. POWER NANOTECHNOLOGY	20 A	1		500 / 0					22
23										24
25										26
27										28
29	SPARE	20 A	2			0 / 0	2	20 A	SPARE	30
31				0 / 0						32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	3280 VA	3250	3250 VA				
			TOTAL	27 A	27 A	27 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	750	100.00%	750		
RECEPTACLES	2530	65.00%	1645	TOTAL CONN. LOAD:	9780
MISC. POWER	6500	65.00%	4225	TOTAL EST. DEMAND	6620

NOTES:

BRANCH PANEL: SLDPP

LOCATION: ELECTRICAL 404A **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: TX-SDPP **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 500 A
 # OF POLES 42 **MCB RATING:** 500 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	MISC. POWER EGRESS STAIR ST1e	20 A	1	500 / 3280						2
3					0 / 3250		3	225 A	SLDPBS	4
5						3540 / 3250				6
7	SLDP2S	225 A	3	3400 / 0						8
9					3430 / 8490					10
11						0 / 8340	3	225 A	SLDPGS	12
13				8480 / 8160						14
15	SLDP3S	225 A	3		8660 / 0					16
17						8380 / 0				18
19										20
21										22
23										24
25										26
27										28
29	SPARE	20 A	1			0 / 0	1	20 A	SPARE	30
31				0 / 0						32
33	SPARE	100 A	3		0 / 0		3	100 A	SPARE	34
35						0 / 0				36
37				0 / 0						38
39	SPARE	225 A	3		0 / 0		3	225 A	SPARE	40
41						0 / 0				42
			TOTAL	23820 VA	23830	23510 VA				
			TOTAL	199 A	199 A	196 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	3000	100.00%	3000		
RECEPTACLES	33160	65.00%	21554	TOTAL CONN. LOAD:	71160
MISC. POWER	35000	65.00%	22750	TOTAL EST. DEMAND	47304

NOTES:

BRANCH PANEL: SLDP3N

LOCATION: ELECTRICAL 311G **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SLDPBN **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 42 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES GROWTH	20 A	1	360 / 360			1	20 A	RECEPTACLES GROWTH	2
3	RECEPTACLES AUTOCLAVE 313	20 A	1		700 / 1600		1	20 A	RECEPTACLES BIOCHEMISTRY 315	4
5	RECEPTACLES MICROBIOLOGY 312	20 A	1			1600 / 1600	1	20 A	RECEPTACLES MICROBIOLOGY 312	6
7	RECEPTACLES BIOCHEMISTRY 315	20 A	1	1600 / 180			1	20 A	RECEPTACLES CCRI TISSUE	8
9	RECEPTACLES MICROBIOLOGY 312	20 A	1		180 / 180		1	20 A	RECEPTACLES CCRI TISSUE	10
11	RECEPTACLES MICROBIOLOGY 312	20 A	1			180 / 180	1	20 A	RECEPTACLES CCRI TISSUE	12
13	RECEPTACLES TISSUE CULTURE	20 A	1	180 / 180			1	20 A	RECEPTACLES BIOCHEMISTRY 315	14
15	RECEPTACLES BIOCHEMISTRY 315	20 A	1		180 / 500		1	20 A	RECEPTACLES MOLECULAR	16
17	RECEPTACLES TISSUE CULTURE	20 A	1			180 / 500	1	20 A	RECEPTACLES MOLECULAR	18
19	RECEPTACLES MICROBIOLOGY 312	20 A	1	500 / 500			1	20 A	RECEPTACLES CCRI TISSUE	20
21	RECEPTACLES TISSUE CULTURE	20 A	1		500 / 500		1	20 A	RECEPTACLES BIOCHEMISTRY 315	22
23	RECEPTACLES MICROBIOLOGY 312	20 A	1			500 / 500	1	20 A	RECEPTACLES BIOCHEMISTRY 315	24
25	RECEPTACLES BIOCHEMISTRY 315	20 A	1	500 / 500			1	20 A	MISC. POWER MICROBIOLOGY 312	26
27	MISC. POWER MOLECULAR	20 A	1		500 / 500		1	20 A	MISC. POWER BIOCHEMISTRY 315	28
29	MISC. POWER MOLECULAR	20 A	1			500 / 500	1	20 A	MISC. POWER CCRI HISTOLOGY 322	30
31	MISC. POWER BIOCHEMISTRY 315	20 A	1	500 / 0			2	20 A	SPARE	32
33	SPARE	20 A	2		0 / 0					34
35						0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	5360 VA	5340	6240 VA				
			TOTAL	45 A	45 A	52 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	13940	65.00%	9061		
MISC. POWER	3000	65.00%	1950	TOTAL CONN. LOAD:	16940
				TOTAL EST. DEMAND	11011

NOTES:

BRANCH PANEL: SLDP3S

LOCATION: ELECTRICAL 333 **VOLTAGE** 120/208 Wye **A.I.C. RATING:** 22,000
SUPPLY FROM: SLDPP **PHASES** 3 **MAINS TYPE:** MCB
MOUNTING: SURFACE **WIRES:** 4 **MAINS:** 225 A
 # OF POLES 84 **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES INORGANIC	20 A	1	180 / 700			1	20 A	RECEPTACLES INORGANIC PREP	2
3	RECEPTACLES PHYSICAL CHEM	20 A	1		540 / 540		1	20 A	RECEPTACLES PHYSICAL CHEM	4
5	HVAC	20 A	1			750 / 750	2	20 A	RECEPTACLES NMR LAB 335	6
7	RECEPTACLES ANALYTICAL	20 A	1	720 / 0						8
9	RECEPTACLES SHARED	20 A	1		700 / 180		1	20 A	RECEPTACLES ORGANIC 337	10
11	RECEPTACLES INORGANIC 329	20 A	1			180 / 500	1	20 A	RECEPTACLES ORGANIC 341	12
13	RECEPTACLES ORGANIC (COCA)	20 A	1	180 / 500			1	20 A	MISC. POWER PHYSICAL CHEM 331	14
15	MISC. POWER CORRIDOR 339	20 A	1		500 / 500		1	20 A	MISC. POWER ORGANIC	16
17	MISC. POWER ORGANIC	20 A	1			500 / 500	1	20 A	MISC. POWER ORGANIC	18
19	MISC. POWER ORGANIC	20 A	1	500 / 500			1	20 A	MISC. POWER ORGANIC	20
21	MISC. POWER ORGANIC	20 A	1		500 / 500		1	20 A	MISC. POWER ORGANIC	22
23	MISC. POWER ORGANIC	20 A	1			500 / 500	1	20 A	MISC. POWER ORGANIC 341	24
25	MISC. POWER ORGANIC 341	20 A	1	500 / 500			1	20 A	MISC. POWER ORGANIC 341	26
27	MISC. POWER ORGANIC 341	20 A	1		500 / 500		1	20 A	MISC. POWER ORGANIC 337	28
29	MISC. POWER ORGANIC 337	20 A	1			500 / 500	1	20 A	MISC. POWER ORGANIC 337	30
31	MISC. POWER ORGANIC 337	20 A	1	500 / 500			1	20 A	MISC. POWER ORGANIC 337	32
33	MISC. POWER ORGANIC 337	20 A	1		500 / 500		1	20 A	MISC. POWER INORGANIC	34
35	MISC. POWER INORGANIC	20 A	1			500 / 500	1	20 A	MISC. POWER INORGANIC	36
37	MISC. POWER INORGANIC	20 A	1	500 / 500			1	20 A	MISC. POWER INORGANIC	38
39	MISC. POWER INORGANIC	20 A	1		500 / 500		1	20 A	MISC. POWER INORGANIC 329	40
41	MISC. POWER INORGANIC 329	20 A	1			500 / 500	1	20 A	MISC. POWER ANALYTICAL	42
43	MISC. POWER INORGANIC 329	20 A	1	500 / 500			1	20 A	MISC. POWER ANALYTICAL	44
45	MISC. POWER ANALYTICAL	20 A	1		500 / 600		1	20 A	Receptacles shared equipment 332	46
47	RECEPTACLES SHARED	20 A	1			600 / 600	1	20 A	RECEPTACLES SHARED	48
49	RECEPTACLES SHARED	20 A	1	600 / 600			1	20 A	RECEPTACLES ORGANIC 337	50
51	RECEPTACLES ORGANIC 341	20 A	1		600 / 0					52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	8480 VA	8660	8380 VA				
			TOTAL	71 A	72 A	70 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	750	100.00%	750		
RECEPTACLES	8770	65.00%	5701	TOTAL CONN. LOAD:	25520
MISC. POWER	16000	65.00%	10400	TOTAL EST. DEMAND	16851

NOTES:

BVH INDEX PANELBOARD SCHEDULE GENERAL NOTE

INDEX PANELBOARD SCHEDULES ARE SHOWN FOR REFERENCE ONLY. VERIFY SIZE, QUANTITY, AND TYPES OF CIRCUIT BREAKERS IN PANELBOARDS WITH PLANS, RISERS, SCHEDULES AND SPECIFICATIONS.

21-10-038

drawing title: PANELBOARD SCHEDULES

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY: BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1393 project no. BI-RS-283-ARC

volume: 2 of 2
date: 11-21-2012
scale:
drawn by: DJH
approved by: GVD
drawing no. MEP502

BRANCH PANEL: LMPB

LOCATION: MAIN ELECTRICAL 003	VOLTAGE 120/208 Wye	A.I.C. RATING: 42,000
SUPPLY FROM: TX-MPB	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 500 A
	# OF POLES 60	MCB RATING: 500 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Misc. power mep 009	20 A	1	500 / 500			1	20 A	Misc. power mep 009	2
3	HVAC	20 A	1		750 / 750		1	20 A	HVAC	4
5	HVAC	20 A	1			750 / 500	1	20 A	MISC. POWER MEP 021	6
7	MISC. POWER MEP 007	20 A	1	500 / 750			1	20 A	HVAC	8
9	MISC. POWER MEP 021	20 A	1		500 / 750		1	20 A	HVAC MEP 010	10
11	HVAC MEP 021	20 A	1			750 / 750	1	20 A	HVAC EGRESS STAIR ST3a	12
13	HVAC GROUND FLOOR WET LAB / MUD ROOM 109	20 A	2	0 / 500			1	20 A	MISC. POWER MEP 007	14
15					0 / 750		1	20 A	HVAC EGRESS STAIR ST1a	16
17	HVAC	20 A	1			750 / 500	1	20 A	Misc. power mep 009	18
19	HVAC MEP 009	20 A	1	750 / 750			1	20 A	HVAC CORRIDOR 101	20
21	HVAC	20 A	1		750 / 500		1	20 A	Misc. power fire pump room 012	22
23	Misc. power fire pump room 012	20 A	1			500 / 250	1	20 A	HTWH-2	24
25	HVAC	20 A	1	750 / 250			1	20 A	HTWH-1	26
27	GFP-3	20 A	1		250 / 250		1	20 A	GFP-2	28
29	Motor	20 A	1			500 / 250	1	20 A	GFP-1	30
31	Motor Room 112	20 A	1	1000 / 1000			1	20 A	Motor room 115, 44	32
33	MISC. POWER	20 A	1		500 / 500		1	20 A	MISC. POWER	34
35	HVAC	20 A	1			750 / 0	1	20 A	HVAC	36
37	HVAC	20 A	1	750 / 750			1	20 A	HVAC	38
39	Misc. power	20 A	1		500 / 0					40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
			TOTAL	8750 VA	6750	6250 VA				
			TOTAL	74 A	57 A	52 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	12750	100.00%	12750		
Motor	2500	105.00%	2625	TOTAL CONN. LOAD:	21750
Other	500	100.00%	500	TOTAL EST. DEMAND	19775
MISC. POWER	6000	65.00%	3900		

NOTES:

BRANCH PANEL: LDPBS1

LOCATION: ELECTRICAL 039	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: LDDPBS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 84	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES NANOMATERIALS	20 A	1	180 / 360			1	20 A	RECEPTACLES NANOMATERIALS	2
3	RECEPTACLES NANOMATERIALS	20 A	1		360 / 180		2	20 A	RECEPTACLES NANOMATERIALS 042	4
5	RECEPTACLES NANOMATERIALS	20 A	1			540 / 0				6
7	RECEPTACLES NANOMATERIALS 042	20 A	2	180 / 1500			2	20 A	RECEPTACLES NANOMATERIALS 042	8
9					0 / 0					10
11	RECEPTACLES NTC MULTIPURPOSE SUPPORT/PREP	20 A	2			1500 / 180	1	20 A	RECEPTACLES NTC UTILITY ROOM	12
13				0 / 180			1	20 A	RECEPTACLES NTC UTILITY ROOM	14
15	RECEPTACLES NTC MULTIPURPOSE SUPPORT/PREP	20 A	2		1500 / 180		1	20 A	RECEPTACLES NTC UTILITY ROOM	16
17						0 / 180	1	20 A	RECEPTACLES NTC SPECIMEN	18
19	RECEPTACLES NTC	20 A	1	180 / 180			1	20 A	RECEPTACLES NANOMATERIALS	20
21	RECEPTACLES NTC	20 A	1		180 / 180		1	20 A	RECEPTACLES NANOMATERIALS	22
23	RECEPTACLES NTC AFM / FIB	20 A	1			180 / 360	1	20 A	RECEPTACLES NTC UTILITY ROOM	24
25	RECEPTACLES NTC SPECIMEN	20 A	1	360 / 360			1	20 A	RECEPTACLES NTC	26
27	RECEPTACLES NTC SPECIMEN	20 A	1		360 / 360		1	20 A	RECEPTACLES NTC SPECIMEN	28
29	RECEPTACLES NTC SPECIMEN	20 A	1			360 / 360	1	20 A	RECEPTACLES NTC	30
31	RECEPTACLES NTC	20 A	1	360 / 360			1	20 A	RECEPTACLES NANOMATERIALS	32
33	RECEPTACLES NTC	20 A	1		360 / 360		1	20 A	RECEPTACLES NTC AFM / FIB	34
35	RECEPTACLES NTC	20 A	1			360 / 540	1	20 A	RECEPTACLES NTC SPECIMEN	36
37	RECEPTACLES NTC	20 A	1	540 / 540			1	20 A	RECEPTACLES NTC	38
39	RECEPTACLES NTC	20 A	1		540 / 540		1	20 A	RECEPTACLES NTC	40
41	RECEPTACLES NTC	20 A	1			540 / 540	1	20 A	RECEPTACLES NTC AFM / FIB	42
43	RECEPTACLES NANOMATERIALS	20 A	1	540 / 540			1	20 A	RECEPTACLES NANOMATERIALS	44
45	RECEPTACLES NTC AFM / FIB	20 A	1		540 / 540		1	20 A	RECEPTACLES NANOMATERIALS	46
47	RECEPTACLES NANOMATERIALS	20 A	1			540 / 540	1	20 A	RECEPTACLES NANOMATERIALS	48
49	RECEPTACLES NANOMATERIALS	20 A	1	540 / 720			1	20 A	RECEPTACLES NTC	50
51	RECEPTACLES NANOMATERIALS	20 A	1		540 / 720		1	20 A	RECEPTACLES NTC	52
53	RECEPTACLES NTC	20 A	1			720 / 720	1	20 A	RECEPTACLES NTC	54
55	RECEPTACLES NTC	20 A	1	720 / 720			1	20 A	RECEPTACLES NANOMATERIALS	56
57	RECEPTACLES NTC	20 A	1		720 / 720		1	20 A	RECEPTACLES NANOMATERIALS	58
59	RECEPTACLES NANOMATERIALS	20 A	1			720 / 750	2	20 A	RECEPTACLES NTC MULTIPURPOSE SUPPORT/PREP	60
61	RECEPTACLES NTC AFM / FIB INSTRUMENT LAB 038	20 A	2	750 / 0						62
63					0 / 750		2	20 A	RECEPTACLES NTC MULTIPURPOSE SUPPORT/PREP	64
65						0 / 0				66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	9810 VA	9630	9630 VA				
			TOTAL	82 A	80 A	80 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	29070	65.00%	18896		
				TOTAL CONN. LOAD:	29070
				TOTAL EST. DEMAND	18896

NOTES:

BRANCH PANEL: LDPBS2

LOCATION: ELECTRICAL 039	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: LDDPBS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 84	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES MATERIALS	20 A	1	720 / 180			1	20 A	RECEPTACLES NTC UTILITY ROOM	2
3	RECEPTACLES MATERIALS	20 A	1		900 / 900		1	20 A	RECEPTACLES MATERIALS	4
5	RECEPTACLES NTC TEM LAB 034	30 A	2			750 / 180	1	20 A	RECEPTACLES SHARED PREP	6
7				0 / 1500			2	20 A	RECEPTACLES HIGH RESOLUTION OPTICS 037	8
9	RECEPTACLES NTC SEM LAB 032	30 A	2		180 / 0					10
11						0 / 1500	2	20 A	RECEPTACLES HIGH RESOLUTION OPTICS 037	12
13	RECEPTACLES NTC UTILITY ROOM	20 A	1	180 / 0						14
15	RECEPTACLES NTC UTILITY ROOM	20 A	1		180 / 180		1	20 A	RECEPTACLES NTC UTILITY ROOM	16
17	RECEPTACLES NTC UTILITY ROOM	20 A	1			180 / 180	1	20 A	RECEPTACLES NTC UTILITY ROOM	18
19	RECEPTACLES NTC UTILITY ROOM	20 A	1	180 / 180			1	20 A	RECEPTACLES NTC UTILITY ROOM	20
21	RECEPTACLES NTC UTILITY ROOM	20 A	1		180 / 180		1	20 A	RECEPTACLES NTC UTILITY ROOM	22
23	RECEPTACLES NTC UTILITY ROOM	20 A	1			180 / 180	1	20 A	RECEPTACLES NTC MICROTOMY	24
25	RECEPTACLES MATERIALS	20 A	1	180 / 360			1	20 A	RECEPTACLES NTC SEM LAB 032	26
27	RECEPTACLES NTC MICROTOMY	20 A	1		180 / 360		1	20 A	RECEPTACLES NTC TEM LAB 034	28
29	RECEPTACLES NTC TEM LAB 034	20 A	1			360 / 360	1	20 A	RECEPTACLES NTC SEM LAB 032	30
31	RECEPTACLES MATERIALS	20 A	1	360 / 360			1	20 A	RECEPTACLES HIGH RESOLUTION	32
33	RECEPTACLES NTC MICROTOMY	20 A	1		360 / 360		1	20 A	RECEPTACLES HIGH RESOLUTION	34
35	RECEPTACLES MATERIALS	20 A	1			360 / 360	1	20 A	RECEPTACLES HIGH RESOLUTION	36
37	RECEPTACLES HIGH RESOLUTION	20 A	1	360 / 540			1	20 A	RECEPTACLES NTC MICROTOMY	38
39	RECEPTACLES HIGH RESOLUTION	20 A	1		360 / 540		1	20 A	RECEPTACLES SHARED PREP	40
41	RECEPTACLES SHARED PREP	20 A	1			540 / 540	1	20 A	RECEPTACLES NTC MICROTOMY	42
43	RECEPTACLES MATERIALS	20 A	1	540 / 540			1	20 A	RECEPTACLES MATERIALS	44
45	RECEPTACLES MATERIALS	20 A	1		540 / 540		1	20 A	RECEPTACLES MATERIALS	46
47	RECEPTACLES MATERIALS	20 A	1			540 / 540	1	20 A	RECEPTACLES MATERIALS	48
49	RECEPTACLES HIGH RESOLUTION	20 A	1	540 / 540			1	20 A	RECEPTACLES HIGH RESOLUTION	50
51	RECEPTACLES HIGH RESOLUTION	20 A	1		540 / 540		1	20 A	RECEPTACLES HIGH RESOLUTION	52
53	RECEPTACLES HIGH RESOLUTION	20 A	1			540 / 540	1	20 A	RECEPTACLES HIGH RESOLUTION	54
55	RECEPTACLES HIGH RESOLUTION	20 A	1	540 / 720			1	20 A	RECEPTACLES MATERIALS	56
57	RECEPTACLES HIGH RESOLUTION	20 A	1		540 / 720		1	20 A	RECEPTACLES MATERIALS	58
59	RECEPTACLES NTC SEM LAB 032	20 A	1			720 / 180	2	30 A	RECEPTACLES NTC UTILITY ROOM 036	60
61	RECEPTACLES NTC UTILITY ROOM 036	30 A	2	180 / 0						62
63					0 / 180		2	30 A	RECEPTACLES NTC UTILITY ROOM 036	64
65						0 / 0				66
67	Disconnect Switch	30 A	3	0 / 0						68
69					0 / 0					70
71										72
73										74
75	SPARE	20 A	2		0 / 0		2	20 A	SPARE	76
77						0 / 0				78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	8700 VA	8460	8730 VA				
			TOTAL	73 A	71 A	73 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	25890	65.00%	16829		
				TOTAL CONN. LOAD:	25890
				TOTAL EST. DEMAND	16829

NOTES:

BRANCH PANEL: LLPBS

LOCATION: ELECTRICAL 039	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: LDDPBS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 84	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 026	20 A	1	55 / 92			1	20 A	Lighting CORRIDOR 026	2
3	RECEPTACLES HIGH RESOLUTION	20 A	1		720 / 0					4
5	RECEPTACLES	20 A	1			180 / 1080	1	20 A	RECEPTACLES PROJECT STORAGE	6
7	RECEPTACLES MATERIALS	20 A	1	360 / 500			1	20 A	MISC. POWER	8
9					0 / 360		1	20 A	RECEPTACLES	10
11	RECEPTACLES TECHNICAL STAFF	20 A	1			1080 / 180	1	20 A	RECEPTACLES NTC SPECIMEN	12
13				8450 / 180			1	20 A	RECEPTACLES HIGH RESOLUTION	14
15	LLPGS	225 A	3		8420 / 360		1	20 A	RECEPTACLES NTC	16
17						8520 / 0				18
19	RECEPTACLES	20 A	1	180 / 360			1	20 A	RECEPTACLES NTC AFM / FIB	20
21					0 / 500		1	20 A	MISC. POWER	22
23	RECEPTACLES Room 009	20 A	1			360 / 360	1	20 A	RECEPTACLES NANOMATERIALS	24
25	RECEPTACLES MDF 009B	20 A	1	360 / 500			1	20 A	MISC. POWER	26
27	MISC. POWER	20 A	1		500 / 540		1	20 A	RECEPTACLES Room 037, 033	28
29	MISC. POWER	20 A	1			500 / 500	1	20 A	MISC. POWER	30
31	MISC. POWER	20 A	1	500 / 540			1	20 A	RECEPTACLES Room 021, 009	32
33	RECEPTACLES NTC SPECIMEN	20 A	1		540 / 540		1	20 A	RECEPTACLES NANOTECHNOLOGY	34
35	RECEPTACLES SHARED PREP	20 A	1			540 / 540	1	20 A	RECEPTACLES NTC TEM LAB 034	36
37	RECEPTACLES NTC SEM LAB 032	20 A	1	540 / 540			1	20 A	RECEPTACLES NANOMATERIALS	38
39	RECEPTACLES MDF 009B	20 A	1		540 / 540		1	20 A	RECEPTACLES GRAD STUDENTS	40
41	RECEPTACLES NANOTECHNOLOGY	20 A	1			540 / 540	1	20 A	RECEPTACLES MDF 009B	42
43	RECEPTACLES MATERIALS	20 A	1	540 / 540			1	20 A	RECEPTACLES CORRIDOR 026	44
45	RECEPTACLES Room 048, 030	20 A	1		720 / 720		1	20 A	RECEPTACLES MEP 021	46
47						0 / 720	1	20 A	RECEPTACLES Room 1-T, 039, 041	48
49	RECEPTACLES Room 028, 025	20 A	1	720 / 0						50
51	RECEPTACLES Room 042	20 A	1		900 / 900		1	20 A	RECEPTACLES FTE FACULTY 047	52
53	RECEPTACLES NTC TEM LAB 034	20 A	1			720 / 900	1	20 A	RECEPTACLES TECHNICAL STAFF	54
55	RECEPTACLES FTE FACULTY 051	20 A	1	900 / 900			1	20 A	RECEPTACLES FTE FACULTY 045	56
57										58
59	RECEPTACLES FTE FACULTY 049	20 A	1			900 / 0				60
61										62
63										64
65										66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	16757 VA	16800	18160 VA				
			TOTAL	140 A	140 A	151 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	717	125.00%	896		
RECEPTACLES	45000	65.00%	29250	TOTAL CONN. LOAD:	51717
MISC. POWER	6000	65.00%	3900	TOTAL EST. DEMAND	34046

NOTES:

BRANCH PANEL: LDPPS

LOCATION: ELECTRICAL 404A	VOLTAGE 120/208 Wye	A.I.C. RATING: 65,000
SUPPLY FROM: TX-LPPS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 500 A
	# OF POLES 60	MCB RATING: 500 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				2300 / 0						2
3	LDPPS1	225 A	3		2360 / 0					4
5						2120 / 2880				6
7				3780 / 2700			3	225 A	LDP3S5	8
9	LDP3S2	225 A	3		3960 / 2700					10
11						3960 / 3960				12
13				3960 / 4320			3	225 A	LDP3S4	14
15	LDP3S3	225 A	3		4100 / 3780					16
17						4140 / 6330				18
19				0 / 6330			3	225 A	LDP3S	20
21					5940 / 6330					22
23	LDP2S2	225 A	3			6120 / 0				24
25				5940 / 10360						26
27					24752 / 10260		3	225 A	LDP2S	28
29	LLP3S	225 A	3			24420 / 10260				30
31				24744 / 0						32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49				0 / 0						50
51	SPARE	225 A	3		0 / 0		3	225 A	SPARE	52
53						0 / 0				54
55				0 / 0						56
57	SPARE	225 A	3		0 / 0		3	100 A	SPARE	58
59						0 / 0				60
			TOTAL	64434 VA	64182	64190 VA				
			TOTAL	537 A	535 A	535 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	276	125.00%	345		
RECEPTACLES	177530	65.00%	115395	TOTAL CONN. LOAD:	192806
MISC. POWER	15000	65.00%	9750	TOTAL EST. DEMAND	125490

NOTES:

BRANCH PANEL: LDDPBS

LOCATION: ELECTRICAL 039	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: TX-LPBS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 600 A
	# OF POLES 42	MCB RATING: 600 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				6060 / 7770						2
3	LDPGS4	225 A	3		5880 / 7590		3	225 A	LDPGS	4
5						6660 / 7590				6
7										8
9					0 / 8700					10
11						8610 / 8460	3	225 A	LDPBS2	12
13	LDPGS3	225 A	3	8790 / 8730						14
15					8070 / 0					16
17						9630 / 9810				18
19	LDPGS2	225 A	3	9630 / 9630			3	225 A	LDPBS1	20
21					9510 / 9630					22
23						16757 / 4320				24
25	LLPBS	225 A	3	16800 / 4320			3	225 A	LDPBS3	26
27					18160 / 4320					28
29										30
31				0 / 0						32
33	SPARE	225 A	3		0 / 0					34
35						0 / 0				36
37				0 / 0						38
39	SPARE	225 A	3		0 / 0		3	225 A	SPARE	40
41						0 / 0				42
			TOTAL	71730 VA	71860	71837 VA				
			TOTAL	598 A	599 A	599 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	717	125.00%	896		
RECEPTACLES	208350	65.00%	135428	TOTAL CONN. LOAD:	215427
MISC. POWER	6360	65.00%	4134	TOTAL EST. DEMAND	140458

NOTES:

BRANCH PANEL: LDDPBN

LOCATION: MAIN ELECTRICAL 003	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: TX-LPBN	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 500 A
	# OF POLES 42	MCB RATING: 500 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				8640 / 5940						2
3	LLP3N	225 A	3		8760 / 5900		3	225 A	LDP2N	4
5						8540 / 5940				6
7				7010 / 0						8
9	LDPGN	225 A	3		7010 / 0					10
11						6980 / 8592				12
13				0 / 8588			3	225 A	LLPGN	14
15					9900 / 8760					16
17	LDP3N	225 A	3			9570 / 10660				18
19				9420 / 11740			3	225 A	LLP2N	20
21					4420 / 10855					22
23	LDPBN	225 A	3			4280 / 0				24
25				4460 / 0						26
27										28
29										30
31										32
33										34
35										36
37				0 / 0						38
39	SPARE	225 A	3		0 / 0		3	225 A	SPARE	40
41						0 / 0				42
			TOTAL	55798 VA	55605	54562 VA				
			TOTAL	466 A	465 A	455 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	1695	125.00%	2119		
Other	0	0.00%	0	TOTAL CONN. LOAD:	165965
RECEPTACLES	130270	65.00%	84676	TOTAL EST. DEMAND	108894
MISC. POWER	34000	65.00%	22100		

NOTES:

BRANCH PANEL: LMPP

LOCATION: ELECTRICAL 404A	VOLTAGE 120/208 Wye	A.I.C. RATING: 42,000
SUPPLY FROM: TX-MPP	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 42	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	HVAC	20 A	1	0 / 0			1	20 A	HVAC	2
3	HVAC VESTIBULE 233B	20 A	1		600 / 1800		1	20 A	HVAC CLEAN GEO-CHEMISTRY LAB	4
5	HVAC GENERAL CHEMISTRY	20 A	1			900 / 1500	1	20 A	HVAC CLEAN GEO-CHEMISTRY LAB	6
7	HVAC GENERAL CHEMISTRY	20 A	1	300 / 900			1	20 A	HVAC CLEAN GEO-CHEMISTRY LAB	8
9	HVAC EGRESS STAIR ST1d	20 A	1		750 / 750		1	20 A	HVAC	10
11	HVAC EGRESS STAIR ST3d	20 A	1			750 / 750	1	20 A	HVAC	12
13	HVAC CLEAN GEO-CHEMISTRY LAB	20 A	1	1200 / 750			1	20 A	HVAC	14
15	HVAC CLEAN GEO-CHEMISTRY LAB	20 A	1		1200 / 1500		1	20 A	HVAC X-RAY ANALYSIS 225	16
17	HVAC GENERAL CHEMISTRY	20 A	1			1200 / 1500	1	20 A	HVAC X-RAY ANALYSIS 225	18
19	HVAC	20 A	1	750 / 1200			1	20 A	HVAC CLEAN GEO-CHEMISTRY LAB	20
21	HVAC	20 A	1		750 / 500		1	20 A	EHC SOUTH WALL	22
23	EHC SOUTH WALL	20 A	1			500 / 500	1	20 A	EHC SOUTH WALL	24
25	HVAC GENERAL CHEMISTRY	20 A	1	1500 / 500			1	20 A	EHC SOUTH WALL	26
27	Hvac	20 A	1		750 / 0					28
29										30
31				0 / 500			1	20 A	EHC SOUTH WALL	32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	7600 VA	8600	7600 VA				
			TOTAL	63 A	72 A	63 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	21300	100.00%	21300		
MISC. POWER	2500	65.00%	1625	TOTAL CONN. LOAD:	23800
				TOTAL EST. DEMAND	22925

NOTES:

BRANCH PANEL: LDPBN

LOCATION: MAIN ELECTRICAL 003	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: LDDPBN	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 42	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES KNUCKLE LOUNGE	20 A	1	180 / 360			1	20 A	MEP 010	2
3	RECEPTACLES AV CLOSET 011	20 A	1		540 / 720		1	20 A	RECEPTACLES KNUCKLE LOUNGE	4
5	RECEPTACLES CONTROL ROOM	20 A	1			1440 / 360	1	20 A	RECEPTACLES Room 020, 018	6
7	RECEPTACLES	20 A	1	360 / 500			1	20 A	MISC. POWER MEN 018	8
9	RECEPTACLES Room 016, 014	20 A	1		360 / 360		1	20 A	RECEPTACLES MEP 009	10
11	RECEPTACLES MEP 009	20 A	1			360 / 500	1	20 A	MISC. POWER WOMEN 020	12
13	RECEPTACLES Room 004, 006	20 A	1	360 / 360			1	20 A	RECEPTACLES FIRE PUMP ROOM	14
15	MISC. POWER MEP 010	20 A	1		500 / 540		1	20 A	RECEPTACLES Room 007, 009	16
17	RECEPTACLES Room 020, 016, 022	20 A	1			540 / 540	1	20 A	RECEPTACLES MEP 010	18
19	MISC. POWER MEP 010	20 A	1	500 / 540			1	20 A	RECEPTACLES MEP 010	20
21	RECEPTACLES MEP 009	20 A	1		540 / 720		1	20 A	RECEPTACLES Room 002-1, 002-2	22
23	RECEPTACLES Room 005, 003	20 A	1			720 / 0				24
25	RECEPTACLES MEP 007	20 A	1	540 / 720			1	20 A	RECEPTACLES MEP 009	26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	4420 VA	4280	4460 VA				
			TOTAL	37 A	36 A	37 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Other	0	0.00%	0		
RECEPTACLES	11160	65.00%	7254	TOTAL CONN. LOAD:	13160
MISC. POWER	2000	65.00%	1300	TOTAL EST. DEMAND	8554

NOTES:

BRANCH PANEL: LDPBS3

LOCATION: MEP 021	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: LDDPBS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 84	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES PROJECT STORAGE	20 A	1	180 / 540			1	20 A	RECEPTACLES NANOTECHNOLOGY	2
3	RECEPTACLES NANOTECHNOLOGY	20 A	1		540 / 540		1	20 A	RECEPTACLES NANOTECHNOLOGY	4
5	RECEPTACLES PROJECT STORAGE	20 A	1			720 / 360	2	20 A	RECEPTACLES PROJECT STORAGE / PREP LABORATORY 015	6
7	RECEPTACLES PROJECT STORAGE / PREP LABORATORY 015	20 A	2	360 / 0						8
9					0 / 360		1	20 A	RECEPTACLES PROJECT STORAGE	10
11	RECEPTACLES PROJECT STORAGE	20 A	1			360 / 360	1	20 A	RECEPTACLES NANOTECHNOLOGY	12
13	RECEPTACLES NANOTECHNOLOGY	20 A	1	360 / 360			1	20 A	RECEPTACLES NANOTECHNOLOGY	14
15	RECEPTACLES NANOTECHNOLOGY	20 A	1		360 / 360		1	20 A	RECEPTACLES NANOTECHNOLOGY	16
17	RECEPTACLES NANOTECHNOLOGY	20 A	1			360 / 360	1	20 A	RECEPTACLES NANOTECHNOLOGY	18
19	RECEPTACLES NANOTECHNOLOGY	20 A	1	360 / 360			1	20 A	RECEPTACLES NANOTECHNOLOGY	20
21	RECEPTACLES NANOTECHNOLOGY	20 A	1		360 / 360		1	20 A	RECEPTACLES NANOTECHNOLOGY	22
23	RECEPTACLES NANOTECHNOLOGY	20 A	1			360 / 360	1	20 A	RECEPTACLES NANOTECHNOLOGY	24
25	RECEPTACLES NANOTECHNOLOGY	20 A	1	360 / 360			1	20 A	MISC. POWER NANOTECHNOLOGY	26
27	RECEPTACLES NANOTECHNOLOGY	20 A	1		360 / 540		1	20 A	RECEPTACLES PROJECT STORAGE	28
29	RECEPTACLES PROJECT STORAGE	20 A	1			540 / 540	1	20 A	RECEPTACLES PROJECT STORAGE	30
31	RECEPTACLES PROJECT STORAGE	20 A	1	540 / 540			1	20 A	RECEPTACLES PROJECT STORAGE	32
33	RECEPTACLES PROJECT STORAGE	20 A	1		540 / 0					34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	4320 VA	4320	4320 VA				
			TOTAL	36 A	36 A	36 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	12600	65.00%	8190		
MISC. POWER	360	65.00%	234	TOTAL CONN. LOAD:	12960
				TOTAL EST. DEMAND	8424

NOTES:

BRANCH PANEL: LDP2S

LOCATION: ELECTRICAL 231	VOLTAGE 120/208 Wye	A.I.C. RATING: 22,000
SUPPLY FROM: LDPPS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 84	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES CLEAN	20 A	1	180 / 500			1	20 A	MISC. POWER CLEAN	2
3	RECEPTACLES GENERAL	20 A	1		360 / 720		1	20 A	RECEPTACLES CLEAN	4
5	RECEPTACLES GENERAL	20 A	1			360 / 720	1	20 A	RECEPTACLES GENERAL	6
7	MISC. POWER GENERIC RESEARCH	20 A	1	500 / 180			1	20 A	RECEPTACLES X-RAY ANALYSIS	8
9	RECEPTACLES X-RAY SAMPLE	20 A	1		180 / 180		1	20 A	RECEPTACLES X-RAY ANALYSIS	10
11	RECEPTACLES X-RAY SAMPLE	20 A	1			180 / 180	1	20 A	RECEPTACLES X-RAY ANALYSIS	12
13	RECEPTACLES GENERAL	20 A	1	180 / 360			1	20 A	RECEPTACLES X-RAY SAMPLE	14
15	RECEPTACLES X-RAY SAMPLE	20 A	1		360 / 360		1	20 A	RECEPTACLES STRUCTURAL	16
17	RECEPTACLES X-RAY SAMPLE	20 A	1			360 / 360	1	20 A	RECEPTACLES X-RAY ANALYSIS	18
19	RECEPTACLES STRUCTURAL	20 A	1	360 / 360			1	20 A	RECEPTACLES MINERALOGY,	20
21	RECEPTACLES MINERALOGY,	20 A	1		360 / 360		1	20 A	RECEPTACLES MINERALOGY,	22
23	RECEPTACLES STRUCTURAL	20 A	1			360 / 360	1	20 A	RECEPTACLES MINERALOGY,	24
25	RECEPTACLES MINERALOGY,	20 A	1	360 / 360			1	20 A	RECEPTACLES GENERIC	26
27	RECEPTACLES MINERALOGY,	20 A	1		360 / 360		1	20 A	RECEPTACLES GENERAL	28
29	RECEPTACLES MINERALOGY,	20 A	1			360 / 360	1	20 A	RECEPTACLES GENERIC	30
31	RECEPTACLES GENERAL	20 A	1	360 / 540			1	20 A	RECEPTACLES X-RAY ANALYSIS	32
33	RECEPTACLES X-RAY SAMPLE	20 A	1		540 / 540		1	20 A	RECEPTACLES X-RAY ANALYSIS	34
35	RECEPTACLES X-RAY SAMPLE	20 A	1			540 / 540	1	20 A	RECEPTACLES X-RAY ANALYSIS	36
37	RECEPTACLES STRUCTURAL	20 A	1	540 / 540			1	20 A	RECEPTACLES MINERALOGY,	38
39	RECEPTACLES MINERALOGY,	20 A	1		540 / 540		1	20 A	RECEPTACLES MINERALOGY,	40
41	RECEPTACLES STRUCTURAL	20 A	1			540 / 540	1	20 A	RECEPTACLES MINERALOGY,	42
43	RECEPTACLES GENERIC	20 A	1	540 / 540			1	20 A	RECEPTACLES GENERAL	44
45	RECEPTACLES GENERAL	20 A	1		540 / 540		1	20 A	RECEPTACLES CLEAN	46
47	RECEPTACLES GENERIC	20 A	1			540 / 540	1	20 A	RECEPTACLES CLEAN	48
49	RECEPTACLES CLEAN	20 A	1	540 / 540			1	20 A	RECEPTACLES	50
51	RECEPTACLES	20 A	1		540 / 540		1	20 A	RECEPTACLES	52
53	RECEPTACLES	20 A	1			540 / 540	1	20 A	RECEPTACLES	54
55	RECEPTACLES	20 A	1	540 / 720			1	20 A	RECEPTACLES MINERALOGY,	56
57	RECEPTACLES MINERALOGY,	20 A	1		720 / 720		1	20 A	RECEPTACLES MINERALOGY	58
59	RECEPTACLES MINERALOGY,	20 A	1			720 / 720	1	20 A	RECEPTACLES MINERALOGY	60
61	RECEPTACLES GENERIC	20 A	1	720 / 900			1	20 A	RECEPTACLES GENERAL	62
63	RECEPTACLES MINERALOGY	20 A	1		900 / 0					64
65	RECEPTACLES MINERALOGY	20 A	1			900 / 0				66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	10360 VA	10260	10260 VA				
			TOTAL	86 A	86 A	86 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	29880	65.00%	19422		
MISC. POWER	1000	65.00%	650	TOTAL CONN. LOAD:	30880
				TOTAL EST. DEMAND	20072

NOTES:

BRANCH PANEL: LDPUPS

LOCATION: MDF 009B	VOLTAGE 120/208 Wye	A.I.C. RATING: 42,000
SUPPLY FROM: UPS	PHASES 3	MAINS TYPE: MCB
MOUNTING: SURFACE	WIRES: 4	MAINS: 225 A
	# OF POLES 84	MCB RATING: 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES IDF 117A	20 A	1	750 / 500			2	20 A	RECEPTACLES IDF M18	2
3	RECEPTACLES IDF M19	20 A	2		500 / 0					4
5						0 / 500	2	20 A	RECEPTACLES MDF 009B	6
7	RECEPTACLES IDF M18	20 A	2	500 / 0						8
9					0 / 500		2	20 A	RECEPTACLES IDF M19	10
11	RECEPTACLES MDF 009B	20 A	2			500 / 0				12
13				0 / 360			1	20 A	RECEPTACLES MDF 009B	14
15	RECEPTACLES IDF 117A	20 A	2		750 / 360		1	20 A	RECEPTACLES MDF 009B	16
17						0 / 750	2	20 A	RECEPTACLES IDF 117A	18
19	RECEPTACLES MDF 009B	20 A	1	360 / 0						20
21	RECEPTACLES MDF 009B	20 A	1		360 / 360		1	20 A	RECEPTACLES	22
23	RECEPTACLES MDF 009B	20 A	1			360 / 360	1	20 A	RECEPTACLES MDF 009B	24
25	RECEPTACLES	20 A	1	360 / 360			1	20 A	RECEPTACLES	26
27	RECEPTACLES	20 A	1		360 / 360		1	20 A	RECEPTACLES	28
29	RECEPTACLES	20 A	1			360 / 360	1	20 A	RECEPTACLES	30
31	RECEPTACLES	20 A	1	360 / 360			1	20 A	RECEPTACLES	32
33	RECEPTACLES	20 A	1		360 / 360		1	20 A	RECEPTACLES	34
35	RECEPTACLES	20 A	1			360 / 360	1	20 A	RECEPTACLES	36
37	RECEPTACLES	20 A	1	360 / 360			1	20 A	RECEPTACLES	38
39	RECEPTACLES	20 A	1		360 / 500		1	20 A	RECEPTACLES IDF M19	40
41	RECEPTACLES	20 A	1			360 / 360	1	20 A	RECEPTACLES	42
43	RECEPTACLES IDF M18	20 A	1	500 / 0						44
45										46
47	RECEPTACLES MDF 009B	20 A	1			500 / 0				48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67	SPARE	20 A	2	0 / 0			2	20 A	SPARE	68
69					0 / 0					70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	5130 VA	5130	5130 VA				
			TOTAL	43 A	43 A	43 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	15390	65.00%	10004		
				TOTAL CONN. LOAD:	15390
				TOTAL EST. DEMAND	10004

NOTES:

BVH INDEX PANELBOARD SCHEDULE GENERAL NOTE

INDEX PANELBOARD SCHEDULES ARE SHOWN FOR REFERENCE ONLY. VERIFY SIZE, QUANTITY, AND TYPES OF CIRCUIT BREAKERS IN PANELBOARDS WITH PLANS, RISERS, SCHEDULES AND SPECIFICATIONS.

21-10-038

drawing title: PANELBOARD SCHEDULES

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1393 | project no. BI-RS-283-ARC

volume: 2 of 2
date: 11-21-2012
scale:
drawn by: DJH
approved by: GVD
drawing no. MEP503

BRANCH PANEL: LDPGN

LOCATION: COASTAL & MARINE **SUPPLY FROM:** LDDPBN **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES AQUARIUM	20 A	1	720 / 1440			1	20 A	RECEPTACLES COASTAL & MARINE	2
3	RECEPTACLES COASTAL & MARINE	20 A	1		720 / 1440		1	20 A	RECEPTACLES COASTAL & MARINE	4
5	RECEPTACLES COASTAL & MARINE	20 A	1			1440 / 1440	1	20 A	RECEPTACLES COASTAL & MARINE	6
7	RECEPTACLES COASTAL & MARINE	20 A	2	750 / 180			1	20 A	RECEPTACLES COASTAL & MARINE	8
9	STUDIES 103				0 / 750		2	20 A	RECEPTACLES GROUND FLOOR	10
11	RECEPTACLES GROUND FLOOR	20 A	1			180 / 0			WET LAB / MUD ROOM 109	12
13	Receptacles phytoplankton 111b	20 A	1	360 / 360			1	20 A	RECEPTACLES COASTAL & MARINE	14
15	RECEPTACLES CORRIDOR 026	20 A	1		180 / 360		1	20 A	Receptacles phytoplankton 111b	16
17	Receptacles saltwater aquarium 111	20 A	1			360 / 360	1	20 A	RECEPTACLES PHYTOPLANKTON	18
19	RECEPTACLES COASTAL & MARINE	20 A	1	360 / 500			1	20 A	MISC. POWER	20
21	RECEPTACLES GROUND FLOOR	20 A	1		360 / 360		1	20 A	RECEPTACLES COASTAL & MARINE	22
23	RECEPTACLES COASTAL & MARINE	20 A	1			360 / 500	1	20 A	MISC. POWER SALTWATER	24
25	RECEPTACLES SALTWATER	20 A	1	540 / 540			1	20 A	RECEPTACLES GROUND FLOOR	26
27	MISC. POWER SALTWATER	20 A	1		500 / 540		1	20 A	RECEPTACLES SALTWATER	28
29	Receptacles coastal & marine studies	20 A	1			540 / 540	1	20 A	RECEPTACLES PHYTOPLANKTON	30
31	RECEPTACLES COASTAL & MARINE	20 A	1	540 / 720			1	20 A	RECEPTACLES COASTAL & MARINE	32
33	RECEPTACLES GROUND FLOOR	20 A	1		540 / 540		1	20 A	RECEPTACLES COASTAL & MARINE	34
35	RECEPTACLES COASTAL & MARINE	20 A	1			540 / 720	1	20 A	Receptacles coastal & marine studies	36
37										38
39	RECEPTACLES MEP 009	20 A	1		720 / 0					40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	2		0 / 0		2	20 A	SPARE	76
77						0 / 0				78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	7010 VA	7010	6980 VA				
			TOTAL	58 A	58 A	58 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	19500	65.00%	12675		
MISC. POWER	1500	65.00%	975	TOTAL CONN. LOAD:	21000
				TOTAL EST. DEMAND	13650

NOTES:

BRANCH PANEL: LLPGN

LOCATION: COASTAL & MARINE **SUPPLY FROM:** LDDPBN **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting department chair 108a	20 A	1	0 / 92			1	20 A	Lighting break room 108f	2
3	RECEPTACLES COASTAL & MARINE	20 A	1		180 / 368		1	20 A	Lighting office waiting area 108	4
5	RECEPTACLES AQUARIUM	20 A	1			720 / 1000	1	20 A	Misc. power	6
7	RECEPTACLES	20 A	1	360 / 1100			1	20 A	RECEPTACLES BREAK ROOM 108F	8
9	Misc. power	20 A	1		1000 / 360		1	20 A	Receptacles office waiting area 108	10
11	Receptacles office waiting area 108	20 A	1			360 / 360	1	20 A	Receptacles office waiting area 108	12
13	Receptacles office waiting area 108	20 A	1	360 / 360			1	20 A	Receptacles copy/ storage 108g	14
15	Receptacles office waiting area 108	20 A	1		360 / 360		1	20 A	Receptacles	16
17	Receptacles	20 A	1			360 / 360	1	20 A	RECEPTACLES Room 107, 107A	18
19	Receptacles	20 A	1	360 / 360			1	20 A	RECEPTACLES COPY/ STORAGE	20
21	RECEPTACLES Room 106, 104	20 A	1		360 / 500		1	20 A	Misc. power women 104	22
23	RECEPTACLES GROUND FLOOR	20 A	1			500 / 500	1	20 A	Misc. power office waiting area 108	24
25	Misc. power office waiting area 108	20 A	1	500 / 500			1	20 A	Misc. power men 106	26
27	Misc. power office waiting area 108	20 A	1		500 / 540		1	20 A	RECEPTACLES Room 110, 105, 112	28
29	RECEPTACLES SHOWER 109B	20 A	1			540 / 540	1	20 A	RECEPTACLES Room 108E, 101, 105	30
31	RECEPTACLES Room 109, 109A	20 A	1	540 / 540			1	20 A	RECEPTACLES BREAK ROOM 108F	32
33	RECEPTACLES OFFICE WAITING	20 A	1		540 / 720		1	20 A	RECEPTACLES OFFICE WAITING	34
35	RECEPTACLES SALTWATER	20 A	1			720 / 900	1	20 A	RECEPTACLES OFFICE 108D	36
37	RECEPTACLES COASTAL & MARINE	20 A	1	720 / 900			1	20 A	RECEPTACLES DEPARTMENT	38
39	RECEPTACLES DEPARTMENT	20 A	1		900 / 900		1	20 A	RECEPTACLES COPY/ STORAGE	40
41	RECEPTACLES DEPARTMENT	20 A	1			900 / 1000	1	20 A	Misc. power	42
43	RECEPTACLES COASTAL & MARINE	20 A	1	900 / 1000			1	20 A	Misc. power	44
45	Misc. power	20 A	1		1000 / 0					46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	2		0 / 0		2	20 A	SPARE	76
77						0 / 0				78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	8592 VA	8588	8760 VA				
			TOTAL	72 A	72 A	73 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	460	125.00%	575		
RECEPTACLES	17980	65.00%	11687	TOTAL CONN. LOAD:	25940
MISC. POWER	7500	65.00%	4875	TOTAL EST. DEMAND	17137

NOTES:

BRANCH PANEL: LLPGS

LOCATION: ELECTRICAL 129 **SUPPLY FROM:** LLPBS **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting bay 134a	20 A	1	0 / 0			1	20 A	Lighting optics laboratory 124	2
3	RECEPTACLES FTE FACULTY 118E	20 A	1		180 / 900		1	20 A	RECEPTACLES FTE FACULTY 118B	4
5	RECEPTACLES HISTORICAL, SOFT	20 A	1			360 / 360	1	20 A	RECEPTACLES OPTICS	6
7	RECEPTACLES	20 A	1	180 / 570			1	20 A	Lighting	8
9	RECEPTACLES CORRIDOR 134	20 A	1		1260 / 180		1	20 A	RECEPTACLES Room 134, 112, 114	10
11	RECEPTACLES Room 126, 128	20 A	1			860 / 860	1	20 A	RECEPTACLES Room 128, 126, 130A	12
13	RECEPTACLES ASTRONOMICAL	20 A	1	720 / 900			1	20 A	RECEPTACLES FTE FACULTY 118A	14
15	RECEPTACLES Room 130, 143, 145	20 A	1		360 / 500		1	20 A	Misc. power men 128	16
17	Receptacles corridor 134	20 A	1			180 / 360	1	20 A	Receptacles corridor 130	18
19	RECEPTACLES OPTICS	20 A	1	180 / 360			1	20 A	RECEPTACLES ROCK SAMPLE	20
21	RECEPTACLES ROCK SAMPLE	20 A	1		540 / 540		1	20 A	RECEPTACLES OPTICS	22
23	Misc. power women 126	20 A	1			500 / 540	1	20 A	RECEPTACLES ROCK SAMPLE	24
25	MISC. POWER OPTICS	20 A	1	500 / 540			1	20 A	RECEPTACLES ROCK SAMPLE	26
27	RECEPTACLES GENERIC	20 A	1		540 / 720		1	20 A	RECEPTACLES SYNTHESIS &	28
29	RECEPTACLES PHOTONICS 141	20 A	1			540 / 540	1	20 A	RECEPTACLES GRADUATE	30
31	RECEPTACLES IDF 117A	20 A	1	540 / 540			1	20 A	RECEPTACLES CORRIDOR 122	32
33	RECEPTACLES HISTORICAL, SOFT	20 A	1		720 / 900		1	20 A	RECEPTACLES FTE FACULTY 118D	34
35	RECEPTACLES TECHNICAL STAFF	20 A	1			720 / 720	1	20 A	RECEPTACLES IDF 117A	36
37	RECEPTACLES Room 122, 120, 129	20 A	1	720 / 720			1	20 A	RECEPTACLES GENERIC	38
39	RECEPTACLES CORRIDOR 134	20 A	1		1080 / 0					40
41	Receptacles corridor 134	20 A	1			900 / 1080	1	20 A	RECEPTACLES CORRIDOR 134	42
43	RECEPTACLES FTE FACULTY 118C	20 A	1	900 / 1080			1	20 A	RECEPTACLES ASTRONOMICAL	44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	8450 VA	8420	8520 VA				
			TOTAL	70 A	70 A	71 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	570	125.00%	713		
RECEPTACLES	22320	65.00%	14508	TOTAL CONN. LOAD:	25390
MISC. POWER	2500	65.00%	1625	TOTAL EST. DEMAND	16846

NOTES:

BRANCH PANEL: LLP2N

LOCATION: ELECTRICAL 207C **SUPPLY FROM:** LDDPBN **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting GRADUATE STUDENTS 208	20 A	1	0 / 180			1	20 A	RECEPTACLES CONFERENCE /	2
3	RECEPTACLES	20 A	1		360 / 720		1	20 A	RECEPTACLES CLASSROOM 210	4
5	RECEPTACLES GENERIC	20 A	1			360 / 540	1	20 A	RECEPTACLES CLASSROOM 210	6
7	MISC. POWER CLASSROOM 210	20 A	1	500 / 540			1	20 A	RECEPTACLES FREEZERS 209	8
9	RECEPTACLES FTE FACULTY 207A	20 A	1		900 / 1500		1	20 A	MISC. POWER	10
11	Lighting	20 A	1			1235 / 1360	1	20 A	RECEPTACLES Room 202, 204	12
13	MISC. POWER	20 A	1	1000 / 1080			1	20 A	RECEPTACLES Room 208A, 208B	14
15	Misc. power men 202	20 A	1		500 / 720		1	20 A	RECEPTACLES COASTAL & MARINE	16
17	Misc. power women 204	20 A	1			500 / 720	1	20 A	RECEPTACLES CONFERENCE /	18
19	MISC. POWER CLASSROOM 210	20 A	1	500 / 720			1	20 A	RECEPTACLES CLASSROOM 210	20
21	RECEPTACLES CLASSROOM 210	20 A	1		720 / 720		1	20 A	RECEPTACLES CLASSROOM 210	22
23	RECEPTACLES CLASSROOM 210	20 A	1			720 / 720	1	20 A	RECEPTACLES CLASSROOM 210	24
25	RECEPTACLES CLASSROOM 210	20 A	1	720 / 720			1	20 A	RECEPTACLES CLASSROOM 210	26
27	RECEPTACLES CLASSROOM 210	20 A	1		720 / 900		1	20 A	Receptacles conference / seminar	28
29	RECEPTACLES CLASSROOM 210	20 A	1			720 / 900	1	20 A	Receptacles graduate students 208	30
31	RECEPTACLES CLASSROOM 210	20 A	1	720 / 900			1	20 A	RECEPTACLES Room 213, 207C,	32
33	MISC. POWER	20 A	1		1000 / 1000		1	20 A	MISC. POWER	34
35	MISC. POWER	20 A	1			1000 / 1000	1	20 A	MISC. POWER	36
37	MISC. POWER	20 A	1	1000 / 1000			1	20 A	MISC. POWER	38
39	RECEPTACLES GRADUATE	20 A	1		1080 / 900		1	20 A	Receptacles fte faculty 208b	40
41	RECEPTACLES Room 205, 206, 202A	20 A	1			1080 / 0				42
43	RECEPTACLES FTE FACULTY 207B	20 A	1	1080 / 0						44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71	SPARE	20 A	2			0 / 0	2	20 A	SPARE	72
73				0 / 0						74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	10660 VA	11740	10855 VA				
			TOTAL	89 A	98 A	91 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	1235	125.00%	1544		
RECEPTACLES	20520	65.00%	13338	TOTAL CONN. LOAD:	33255
MISC. POWER	11500	65.00%	7475	TOTAL EST. DEMAND	22357

NOTES:

BRANCH PANEL: LDPGS

LOCATION: ELECTRICAL 129 **SUPPLY FROM:** LDDPBS **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES ROCK SAMPLE	20 A	1	180 / 360			1	20 A	RECEPTACLES GENERIC	2
3	RECEPTACLES HISTORICAL, SOFT	20 A	1		360 / 750		2	20 A	RECEPTACLES SHUNT TRIP	4
5	RECEPTACLES SHUNT TRIP	30 A	2			360 / 0			CIRCUIT BREAKER	6
7	CIRCUIT BREAKER			0 / 750			2	30 A	RECEPTACLES ROCK SAMPLE	8
9	RECEPTACLES ROCK SAMPLE	20 A	1		180 / 0				PREP DIRTY-WET LAB 119	10
11	RECEPTACLES ROCK SAMPLE	20 A	3			750 / 180	1	20 A	RECEPTACLES ROCK SAMPLE	12
13	PREP DIRTY-DRY LAB 123			0 / 180			1	20 A	RECEPTACLES ROCK SAMPLE	14
15					0 / 180		1	20 A	RECEPTACLES ROCK SAMPLE	16
17	RECEPTACLES ROCK SAMPLE	20 A	1			180 / 180	1	20 A	RECEPTACLES ROCK SAMPLE	18
19	RECEPTACLES ROCK SAMPLE	20 A	1	180 / 180			1	20 A	RECEPTACLES ROCK SAMPLE	20
21	RECEPTACLES ROCK SAMPLE	20 A	1		180 / 180		1	20 A	RECEPTACLES ROCK SAMPLE	22
23	RECEPTACLES ROCK SAMPLE	20 A	1			180 / 360	1	20 A	RECEPTACLES ROCK SAMPLE	24
25	RECEPTACLES ROCK SAMPLE	20 A	1	180 / 360			1	20 A	RECEPTACLES ROCK SAMPLE	26
27	RECEPTACLES ROCK SAMPLE	20 A	1		360 / 360		1	20 A	RECEPTACLES ROCK SAMPLE	28
29	RECEPTACLES ROCK SAMPLE	20 A	1			360 / 360	1	20 A	RECEPTACLES ROCK SAMPLE	30
31	RECEPTACLES ROCK SAMPLE	20 A	1	360 / 360			1	20 A	RECEPTACLES ROCK SAMPLE	32
33	RECEPTACLES ROCK SAMPLE	20 A	1		360 / 360		1	20 A	RECEPTACLES ROCK SAMPLE	34
35	RECEPTACLES ROCK SAMPLE	20 A	1			360 / 540	1	20 A	RECEPTACLES ROCK SAMPLE	36
37	RECEPTACLES HISTORICAL, SOFT	20 A	1	360 / 540			1	20 A	RECEPTACLES ROCK SAMPLE	38
39	RECEPTACLES ROCK SAMPLE	20 A	1		540 / 540		1	20 A	RECEPTACLES ROCK SAMPLE	40
41	RECEPTACLES ROCK SAMPLE	20 A	1			540 / 540	1	20 A	RECEPTACLES ROCK SAMPLE	42
43	RECEPTACLES ROCK SAMPLE	20 A	1	540 / 540			1	20 A	RECEPTACLES PHOTONICS 141	44
45	RECEPTACLES ROCK SAMPLE	20 A	1		540 / 540		1	20 A	RECEPTACLES HISTORICAL, SOFT	46
47	RECEPTACLES HISTORICAL, SOFT	20 A	1			540 / 720	1	20 A	RECEPTACLES HISTORICAL, SOFT	48
49	RECEPTACLES GENERIC	20 A	1	540 / 720			1	20 A	RECEPTACLES HISTORICAL, SOFT	50
51	RECEPTACLES HISTORICAL, SOFT	20 A	1		720 / 720		1	20 A	RECEPTACLES HISTORICAL, SOFT	52
53	RECEPTACLES HISTORICAL, SOFT	20 A	1			720 / 720	1	20 A	RECEPTACLES HISTORICAL, SOFT	54
55	RECEPTACLES HISTORICAL, SOFT	20 A	1	720 / 720			1	20 A	RECEPTACLES HISTORICAL, SOFT	56
57	RECEPTACLES HISTORICAL, SOFT	20 A	1		720 / 0					58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	7770 VA	7590	7590 VA				
			TOTAL	65 A	63 A	63 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	22950	65.00%	14918		
				TOTAL CONN. LOAD:	22950
				TOTAL EST. DEMAND	14918

NOTES:

BRANCH PANEL: LDPGS2

LOCATION: ELECTRICAL 129 **SUPPLY FROM:** LDDPBS **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES GENERIC	20 A	1	180 / 180			1	20 A	RECEPTACLES SYNTHESIS &	2
3	RECEPTACLES ASTRONOMICAL	20 A	1		360 / 540		1	20 A	RECEPTACLES ASTRONOMICAL	4
5	RECEPTACLES SYNTHESIS &	20 A	1			180 / 360	1	20 A	Receptacles synthesis & electrical	6
7	RECEPTACLES ASTRONOMICAL	20 A	1	540 / 720			1	20 A	RECEPTACLES ASTRONOMICAL	8
9	RECEPTACLES GENERIC	20 A	1		720 / 180		1	20 A	RECEPTACLES SYNTHESIS &	10
11	RECEPTACLES SYNTHESIS &	20 A	2			750 / 750	2	20 A	RECEPTACLES SYNTHESIS &	12
13	ELECTRICAL CHARACTERIZATION			0 / 0					ELECTRICAL CHARACTERIZATION	14
15	Receptacles generic research lab 139	20 A	1		360 / 360		1	20 A	Receptacles generic research lab 139	16
17	Receptacles generic research lab 139	20 A	1			360 / 360	1	20 A	RECEPTACLES SYNTHESIS &	18
19	RECEPTACLES SYNTHESIS &	20 A	1	180 / 360			1	20 A	Receptacles generic research lab 139	20
21	RECEPTACLES SYNTHESIS &	20 A	1		360 / 360		1	20 A	RECEPTACLES GENERIC	22
23	RECEPTACLES SYNTHESIS &	20 A	1			360 / 360	1	20 A	RECEPTACLES GENERIC	24
25	RECEPTACLES SYNTHESIS &	20 A	1	360 / 360			1	20 A	RECEPTACLES SYNTHESIS &	26
27	RECEPTACLES ASTRONOMICAL	20 A	1		360 / 360		1	20 A	RECEPTACLES ASTRONOMICAL	28
29	RECEPTACLES ASTRONOMICAL	20 A	1			360 / 360	1	20 A	RECEPTACLES ASTRONOMICAL	30
31	RECEPTACLES GENERIC	20 A	1	360 / 360			1	20 A	RECEPTACLES ASTRONOMICAL	32
33	RECEPTACLES ASTRONOMICAL	20 A	1		360 / 540		1	20 A	RECEPTACLES SYNTHESIS &	34
35	RECEPTACLES SYNTHESIS &	20 A	1			540 / 540	1	20 A	RECEPTACLES SYNTHESIS &	36
37	RECEPTACLES ASTRONOMICAL	20 A	1	360 / 360			1	20 A	RECEPTACLES ASTRONOMICAL	38
39	RECEPTACLES GENERIC	20 A	1		540 / 540		1	20 A	RECEPTACLES ASTRONOMICAL	40
41	RECEPTACLES GENERIC	20 A	1			540 / 720	1	20 A	RECEPTACLES SYNTHESIS &	42
43	RECEPTACLES SYNTHESIS &	20 A	1	540 / 540			1	20 A	RECEPTACLES GENERIC	44
45	RECEPTACLES SYNTHESIS &	20 A	1		720 / 720		1	20 A	RECEPTACLES GENERIC	46
47	RECEPTACLES GENERIC	20 A	1			720 / 0				48
49	RECEPTACLES ASTRONOMICAL	20 A	1	540 / 720			1	20 A	RECEPTACLES GENERIC	50
51	Receptacles generic research lab 139	20 A	2		750 / 1500		2	20 A	RECEPTACLES GENERIC	52
53						0 / 0			RESEARCH LAB 139	54
55	RECEPTACLES GENERIC	20 A	1	720 / 750			2	20 A	RECEPTACLES SYNTHESIS &	56
57					0 / 0				ELECTRICAL CHARACTERIZATION	58
59	Receptacles generic research lab 139	20 A	2			750 / 0				60
61				0 / 1500			2	20 A	RECEPTACLES ASTRONOMICAL	62
63					0 / 0				INSTRUMENT & IMAGING 133	64
65	RECEPTACLES SYNTHESIS &	20 A	2			1500 / 0				66
67	ELECTRICAL CHARACTERIZATION			0 / 0						68
69										70
71										72
73										74
75	SPARE	20 A	2		0 / 0		2	20 A	SPARE	76
77						0 / 0				78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	9630 VA	9630	9510 VA				
			TOTAL	80 A	80 A	79 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	28770	65.00%	18701		
				TOTAL CONN. LOAD:	28770
				TOTAL EST. DEMAND	18701

NOTES:

BRANCH PANEL: LDPGS3

LOCATION: OPTICS LABORATORY 124 **SUPPLY FROM:** LDDPBS **MOUNTING:** RECESSED
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES OPTICS	20 A	1	540 / 750			2	20 A	RECEPTACLES OPTICS	2
3	RECEPTACLES OPTICS	20 A	1		720 / 0				LABORATORY 124	4
5	RECEPTACLES OPTICS	20 A	1			360 / 360	1	20 A	RECEPTACLES OPTICS	6
7	RECEPTACLES OPTICS	20 A	2	750 / 1500			2	20 A	RECEPTACLES OPTICS	8
9	LABORATORY 124				0 / 0				LABORATORY 124	10
11	RECEPTACLES OPTICS	20 A	2			1500 / 1500	2	20 A	RECEPTACLES OPTICS	12
13	LABORATORY 124			0 / 0					LABORATORY 124	14
15	RECEPTACLES OPTICS	20 A	2		1500 / 1500		2	20 A	RECEPTACLES OPTICS	16
17	LABORATORY 124					0 / 0			LABORATORY 124	18
19	RECEPTACLES OPTICS	20 A	1	360 / 360			1	20 A	RECEPTACLES OPTICS	20
21	RECEPTACLES OPTICS	20 A	1		360 / 360		1	20 A	RECEPTACLES OPTICS	22
23	RECEPTACLES OPTICS	20 A	1			360 / 360	1	20 A	RECEPTACLES OPTICS	24
25	RECEPTACLES OPTICS	20 A	1	360 / 360			1	20 A	RECEPTACLES OPTICS	26
27	RECEPTACLES OPTICS	20 A	1		360 / 360		1	20 A	RECEPTACLES OPTICS	28
29	RECEPTACLES OPTICS	20 A	1			360 / 360	1	20 A	RECEPTACLES OPTICS	30
31	RECEPTACLES OPTICS	20 A	1	360 / 360			1	20 A	RECEPTACLES OPTICS	32
33	RECEPTACLES OPTICS	20 A	1		360 / 360		1	20 A	RECEPTACLES OPTICS	34
35	RECEPTACLES OPTICS	20 A	1			360 / 360	1	20 A	RECEPTACLES OPTICS	36
37	RECEPTACLES OPTICS	20 A	1	360 / 360			1	20 A	RECEPTACLES OPTICS	38
39	RECEPTACLES OPTICS	20 A	1		360 / 360		1	20 A	RECEPTACLES OPTICS	40
41	RECEPTACLES OPTICS	20 A	1			360 / 540	1	20 A	RECEPTACLES OPTICS	42
43	RECEPTACLES OPTICS	20 A	1	360 / 540			1	20 A	RECEPTACLES OPTICS	44
45	RECEPTACLES OPTICS	20 A	1		360 / 540		1	20 A	RECEPTACLES OPTICS	46
47	RECEPTACLES OPTICS	20 A	1			540 / 0				48
49	RECEPTACLES OPTICS	20 A	1	540 / 750			2	20 A	RECEPTACLES OPTICS	50
51	RECEPTACLES OPTICS	20 A	1		540 / 0				LABORATORY 124	52
53	RECEPTACLES OPTICS	20 A	2			750 / 0				54
55	LABORATORY 124			0 / 0						56
57	RECEPTACLES OPTICS	20 A	2		750 / 0					58
59	LABORATORY 124					0 / 0				60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	2		0 / 0		2	20 A	SPARE	76
77						0 / 0				78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	8610 VA	8790	8070 VA				
			TOTAL	72 A	74 A	67 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	25470	65.00%	16556		
				TOTAL CONN. LOAD:	25470
				TOTAL EST. DEMAND	16556

NOTES:

BRANCH PANEL: LDPGS4

LOCATION: CORRIDOR 122 **SUPPLY FROM:** LDDPBS **MOUNTING:** RECESSED
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES PHOTONICS 141	20 A	1	360 / 540			1	20 A	RECEPTACLES PHOTONICS 141	2
3	RECEPTACLES PHOTONICS 141	20 A	1		720 / 1500		2	20 A	RECEPTACLES PHOTONICS 141	4
5	Receptacles photonics 141	20 A	1			360 / 0				6
7	RECEPTACLES PHOTONICS 141	20 A	2	1500 / 360			1	20 A	RECEPTACLES PHOTONICS 141	8
9					0 / 360		1	20 A	RECEPTACLES PHOTONICS 141	10
11	RECEPTACLES PHOTONICS 141	20 A	2			1500 / 1500	2	20 A	RECEPTACLES PHOTONICS 141	12
13				0 / 0						14
15	RECEPTACLES PHOTONICS 141	20 A	1		360 / 360		1	20 A	RECEPTACLES PHOTONICS 141	16
17	RECEPTACLES PHOTONICS 141	20 A	1			360 / 360	1	20 A	RECEPTACLES PHOTONICS 141	18
19	RECEPTACLES PHOTONICS 141	20 A	1	360 / 360			1	20 A	RECEPTACLES PHOTONICS 141	20
21	RECEPTACLES PHOTONICS 141	20 A	1		540 / 540		1	20 A	RECEPTACLES PHOTONICS 141	22
23	RECEPTACLES PHOTONICS 141	20 A	1			540 / 540	1	20 A	RECEPTACLES PHOTONICS 141	24
25	RECEPTACLES PHOTONICS 141	20 A	1	540 / 540			1	20 A	RECEPTACLES PHOTONICS 141	26
27	RECEPTACLES PHOTONICS 141	20 A	2		1500 / 0					28
29						0 / 1500	2	20 A	RECEPTACLES PHOTONICS 141	30
31	RECEPTACLES PHOTONICS 141	20 A	2	1500 / 0						32
33					0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	6060 VA	5880	6660 VA				
			TOTAL	51 A	49 A	56 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	18600	65.00%	12090		
				TOTAL CONN. LOAD:	18600
				TOTAL EST. DEMAND	12090

NOTES:

BRANCH PANEL: LDP2S2

LOCATION: ELECTRICAL 231 **SUPPLY FROM:** LDPPS **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES CLEAN	20 A	1	180 / 720			1	20 A	RECEPTACLES GENERIC	2
3	RECEPTACLES STRUCTURAL	20 A	1		360 / 720		1	20 A	RECEPTACLES GENERIC	4
5	RECEPTACLES STRUCTURAL	20 A	1			720 / 720	1	20 A	RECEPTACLES STRUCTURAL	6
7	RECEPTACLES GENERIC	20 A	1	720 / 540			1	20 A	RECEPTACLES STRUCTURAL	8
9	RECEPTACLES STRUCTURAL	20 A	1		720 / 540		1	20 A	RECEPTACLES STRUCTURAL	10
11	RECEPTACLES CLEAN	20 A	2			180 / 540	1	20 A	RECEPTACLES STRUCTURAL	12
13	GEO-CHEMISTRY LAB 233A			0 / 540			1	20 A	RECEPTACLES GENERIC	14
15	RECEPTACLES GENERIC	20 A	1		540 / 540		1	20 A	RECEPTACLES GENERIC	16
17	RECEPTACLES STRUCTURAL	20 A	1			540 / 540	1	20 A	RECEPTACLES GENERIC	18
19	RECEPTACLES GENERIC	20 A	1	540 / 540			1	20 A	RECEPTACLES CLEAN	20
21	RECEPTACLES CLEAN	20 A	1		540 / 720		1	20 A	RECEPTACLES STRUCTURAL	22
23	RECEPTACLES GENERIC	20 A	1			540 / 720	1	20 A	RECEPTACLES STRUCTURAL	24
25	RECEPTACLES STRUCTURAL	20 A	1	720 / 720			1	20 A	RECEPTACLES STRUCTURAL	26
27	RECEPTACLES STRUCTURAL	20 A	1		720 / 720		1	20 A	RECEPTACLES STRUCTURAL	28
29	RECEPTACLES STRUCTURAL	20 A	1			720 / 720	1	20 A	RECEPTACLES STRUCTURAL	30
31	RECEPTACLES STRUCTURAL	20 A	1	720 / 0						32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	5940 VA	6120	5940 VA				
			TOTAL	50 A	51 A	50 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	18000	65.00%	11700		
				TOTAL CONN. LOAD:	18000
				TOTAL EST. DEMAND	11700

NOTES:

BRANCH PANEL: LDP2N

LOCATION: ELECTRICAL 207C **SUPPLY FROM:** LDDPBN **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES COASTAL & MARINE	20 A	1	180 / 180			1	20 A	RECEPTACLES COASTAL & MARINE	2
3	MISC. POWER COASTAL & MARINE	20 A	1		500 / 180		2	20 A	RECEPTACLES COASTAL & MARINE	4
5	RECEPTACLES COASTAL & MARINE	20 A	1			540 / 0			STUDIES 211	6
7	RECEPTACLES COASTAL & MARINE	20 A	1	360 / 180			1	20 A	RECEPTACLES GENERIC	8
9	Receptacles coastal & marine studies	20 A	1		180 / 360		1	20 A	Receptacles generic research	10
11	RECEPTACLES COASTAL & MARINE	35 A	2			180 / 180	1	20 A	Receptacles coastal & marine studies	12
13	STUDIES 211			0 / 360			1	20 A	Receptacles generic research	14
15	Receptacles generic research	20 A	1		360 / 360		1	20 A	Receptacles generic research	16
17	Receptacles generic research	20 A	1			360 / 360	1	20 A	Receptacles generic research	18
19	Receptacles generic research	20 A	1	360 / 360			1	20 A	Receptacles coastal & marine studies	20
21	Receptacles coastal & marine studies	20 A	1		360 / 360		1	20 A	RECEPTACLES GENERIC	22
23	Receptacles generic research	20 A	1			360 / 360	1	20 A	Receptacles coastal & marine studies	24
25	Receptacles coastal & marine studies	20 A	1	360 / 360			1	20 A	RECEPTACLES GENERIC	26
27	Receptacles generic research	20 A	1		540 / 540		1	20 A	RECEPTACLES COASTAL & MARINE	28
29	RECEPTACLES GENERIC	20 A	1			360 / 540	1	20 A	Receptacles generic research	30
31	RECEPTACLES GENERIC	20 A	1	540 / 540			1	20 A	RECEPTACLES COASTAL & MARINE	32
33	Receptacles generic research	20 A	1		720 / 720		1	20 A	Receptacles coastal & marine studies	34
35	RECEPTACLES COASTAL & MARINE	20 A	1			540 / 720	1	20 A	Receptacles generic research	36
37	Receptacles coastal & marine studies	20 A	1	720 / 720			1	20 A	Receptacles coastal & marine studies	38
39	RECEPTACLES GENERIC	20 A	1		720 / 0					40
41	Receptacles coastal & marine studies	20 A	1			720 / 720	1	20 A	RECEPTACLES GENERIC	42
43	RECEPTACLES COASTAL & MARINE	20 A	1	720 / 0						44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	5940 VA	5900	5940 VA				
			TOTAL	50 A	49 A	50 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	17280	65.00%	11232		
MISC. POWER	500	65.00%	325	TOTAL CONN. LOAD:	17780
				TOTAL EST. DEMAND	11557

NOTES:

BRANCH PANEL: LLP2S

LOCATION: ELECTRICAL 231 **SUPPLY FROM:** LLP3S **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting Room 236A, 236B	20 A	1	184 / 860			1	20 A	MEN 238	2
3	MISC. POWER CLASSROOM 222	20 A	1		500 / 500		1	20 A	RECEPTACLES X-RAY SAMPLE	4
5	RECEPTACLES	20 A	1			540 / 1260	1	20 A	RECEPTACLES FTE FACULTY	6
7	WOMEN 236	20 A	1	860 / 180			1	20 A	RECEPTACLES	8
9	RECEPTACLES CLASSROOM 222	20 A	1		900 / 180		1	20 A	RECEPTACLES IDF M19	10
11	RECEPTACLES IDF M19	20 A	1			180 / 180	1	20 A	RECEPTACLES	12
13	RECEPTACLES	20 A	1	180 / 360			1	20 A	RECEPTACLES GROUP STUDY 247	14
15	RECEPTACLES	20 A	1		360 / 360		1	20 A	RECEPTACLES Room 245, 242	16
17	RECEPTACLES STRUCTURAL	20 A	1			360 / 540	1	20 A	RECEPTACLES X-RAY ANALYSIS	18
19	RECEPTACLES Room 233B, 233A	20 A	1	540 / 540			1	20 A	RECEPTACLES GROUP STUDY 247	20
21	RECEPTACLES STRUCTURAL	20 A	1		540 / 540		1	20 A	RECEPTACLES MINERALOGY,	22
23	RECEPTACLES MINERALOGY,	20 A	1			540 / 540	1	20 A	RECEPTACLES GROUP STUDY 247	24
25	RECEPTACLES GENERIC	20 A	1	540 / 540			1	20 A	RECEPTACLES GENERAL	26
27	RECEPTACLES GENERIC	20 A	1		540 / 540		1	20 A	RECEPTACLES GENERAL	28
29	RECEPTACLES GENERIC	20 A	1			540 / 720	1	20 A	RECEPTACLES X-RAY SAMPLE	30
31	RECEPTACLES KNUCKLE LOBBY	20 A	1	720 / 720			1	20 A	RECEPTACLES CLASSROOM 222	32
33	RECEPTACLES Room 218, 220, 231	20 A	1		720 / 720		1	20 A	RECEPTACLES CLASSROOM 222	34
35	RECEPTACLES CLEAN	20 A	1			720 / 720	1	20 A	RECEPTACLES CLASSROOM 222	36
37	RECEPTACLES CLASSROOM 222	20 A	1	720 / 720			1	20 A	RECEPTACLES CLASSROOM 222	38
39	RECEPTACLES CLASSROOM 222	20 A	1		720 / 720		1	20 A	RECEPTACLES CLASSROOM 222	40
41	RECEPTACLES CLASSROOM 222	20 A	1			720 / 720	1	20 A	RECEPTACLES CLASSROOM 222	42
43	RECEPTACLES CLASSROOM 222	20 A	1	720 / 900			1	20 A	RECEPTACLES GROUP STUDY 247	44
45	RECEPTACLES CLASSROOM 222	20 A	1		720 / 900		1	20 A	RECEPTACLES Room 215, 220, 213	46
47	RECEPTACLES STRUCTURAL	20 A	1			900 / 900	1	20 A	RECEPTACLES FTE FACULTY 218D	48
49	RECEPTACLES FTE FACULTY 218B	20 A	1	900 / 900			1	20 A	RECEPTACLES COMPUTER LAB 214	50
51	RECEPTACLES FTE FACULTY 218C	20 A	1		900 / 900		1	20 A	RECEPTACLES FTE FACULTY 216	52
53	RECEPTACLES FTE FACULTY 218A	20 A	1			900 / 1080	1	20 A	RECEPTACLES MINERALOGY	54
55	RECEPTACLES COMPUTER LAB 214	20 A	1	720 / 1000			1	20 A	Misc. power	56
57	Receptacles computer lab 214	20 A	1		720 / 1000		1	20 A	Misc. power	58
59	Misc. power	20 A	1			1000 / 1500	1	20 A	Misc. power room 247	60
61	Misc. power	20 A	1	1000 / 500			1	20 A	Misc. power women 236	62
63	Misc. power men 238	20 A	1		500 / 720		1	20 A	Receptacles classroom 222	64
65	Receptacles computer lab 214	20 A	1			180 / 360	1	20 A	Receptacles computer lab 214	66
67	Receptacles computer lab 214	20 A	1	360 / 360			1	20 A	Receptacles computer lab 214	68
69	Misc. power classroom 222	20 A	1		500 / 720		1	20 A	Receptacles computer lab 214	70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	15024 VA	15420	15100 VA				
			TOTAL	125 A	129 A	126 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	184	125.00%	230		
RECEPTACLES	36860	65.00%	23959	TOTAL CONN. LOAD:	45544
MISC. POWER	8500	65.00%	5525	TOTAL EST. DEMAND	29714

NOTES:

BRANCH PANEL: LDP3S2

LOCATION: CORRIDOR 339 **SUPPLY FROM:** LDPPS **MOUNTING:** RECESSED
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES INORGANIC 329	20 A	1	360 / 360			1	20 A	RECEPTACLES INORGANIC 329	2
3	RECEPTACLES INORGANIC	20 A	1		720 / 720		1	20 A	RECEPTACLES INORGANIC	4
5	RECEPTACLES INORGANIC	20 A	1			720 / 720	1	20 A	RECEPTACLES INORGANIC	6
7	RECEPTACLES INORGANIC PREP	20 A	1	540 / 180			1	20 A	RECEPTACLES INORGANIC	8
9	RECEPTACLES INORGANIC	20 A	1		180 / 360		1	20 A	RECEPTACLES INORGANIC PREP	10
11	RECEPTACLES INORGANIC	20 A	1			180 / 360	1	20 A	RECEPTACLES INORGANIC PREP	12
13	RECEPTACLES INORGANIC	20 A	1	360 / 360			1	20 A	RECEPTACLES INORGANIC	14
15	RECEPTACLES INORGANIC	20 A	1		360 / 360		1	20 A	RECEPTACLES INORGANIC 329	16
17	RECEPTACLES INORGANIC	20 A	1			360 / 360	1	20 A	RECEPTACLES INORGANIC	18
19	RECEPTACLES INORGANIC 329	20 A	1	360 / 540			1	20 A	RECEPTACLES INORGANIC PREP	20
21	RECEPTACLES INORGANIC PREP	20 A	1		540 / 720		1	20 A	RECEPTACLES INORGANIC	22
23	RECEPTACLES INORGANIC PREP	20 A	1			540 / 720	1	20 A	RECEPTACLES INORGANIC	24
25	RECEPTACLES INORGANIC	20 A	1	720 / 0						26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	3780 VA	3960	3960 VA				
			TOTAL	32 A	33 A	33 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	11700	65.00%	7605		
				TOTAL CONN. LOAD:	11700
				TOTAL EST. DEMAND	7605

NOTES:

BVH INDEX PANELBOARD SCHEDULE GENERAL NOTE

INDEX PANELBOARD SCHEDULES ARE SHOWN FOR REFERENCE ONLY. VERIFY SIZE, QUANTITY, AND TYPES OF CIRCUIT BREAKERS IN PANELBOARDS WITH PLANS, RISERS, SCHEDULES AND SPECIFICATIONS.

drawing title: PANELBOARD SCHEDULES

REVISIONS
mark | date | description
| 11-21-2012 | Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1393 | project no. BI-RS-283-ARC

volume: 2 of 2
date: 11-21-2012
scale:
drawn by: DJH
approved by: GVD
drawing no. MEP504

21-10-038

BRANCH PANEL: LLP3N

LOCATION: ELECTRICAL 316 **SUPPLY FROM:** LDDPBN **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	MISC. POWER	20 A	1	500 / 540			1	20 A	RECEPTACLES MICROBIOLOGY 312	2
3	RECEPTACLES BRIDGE	20 A	1		900 / 900		1	20 A	RECEPTACLES BIOCHEMISTRY 315	4
5	MISC. POWER GROWTH CHAMBERS	20 A	1			500 / 540	1	20 A	RECEPTACLES MOLECULAR	6
7	WOMEN 304	20 A	1	680 / 860			1	20 A	Room 302, 302A	8
9	RECEPTACLES Room 206-C06a,	20 A	1		900 / 0		1	20 A	Lighting MICROBIOLOGY 312	10
11	RECEPTACLES Room 306, 308	20 A	1			1440 / 0	1	20 A	Lighting MOLECULAR BIOLOGY 318	12
13	Lighting GENERIC RESEARCH LAB	20 A	1	0 / 360			1	20 A	RECEPTACLES BIOCHEMISTRY 315	14
15	RECEPTACLES GROWTH	20 A	1		360 / 500		1	20 A	MISC. POWER MOLECULAR	16
17	RECEPTACLES MOLECULAR	20 A	1			360 / 500	1	20 A	MISC. POWER WOMEN 304	18
19	MISC. POWER MOLECULAR	20 A	1	500 / 500			1	20 A	MISC. POWER GROWTH CHAMBERS	20
21	MISC. POWER GROWTH CHAMBERS	20 A	1		500 / 540		1	20 A	RECEPTACLES Room 320, 317, 307	22
23	MISC. POWER MEN 302	20 A	1			500 / 540	1	20 A	RECEPTACLES TISSUE CULTURE	24
25	RECEPTACLES MOLECULAR	20 A	1	540 / 720			1	20 A	RECEPTACLES Room 307, 303, 316	26
27	RECEPTACLES Room 313A, 313	20 A	1		720 / 720		1	20 A	RECEPTACLES HISTOLOGY 322	28
29	RECEPTACLES Room 324	20 A	1			720 / 720	1	20 A	RECEPTACLES MOLECULAR	30
31	RECEPTACLES FTE FACULTY 311E	20 A	1	720 / 720			1	20 A	RECEPTACLES FTE FACULTY 311B	32
33	RECEPTACLES FTE FACULTY 311C	20 A	1		720 / 1000		1	20 A	MISC. POWER	34
35	RECEPTACLES FTE FACULTY 311D	20 A	1			720 / 1000	1	20 A	MISC. POWER	36
37	MISC. POWER	20 A	1	1000 / 1000			1	20 A	MISC. POWER	38
39	MISC. POWER	20 A	1		1000 / 0					40
41	MISC. POWER	20 A	1			1000 / 0	3	30 A	Disconnect	42
43				0 / 0						44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	8640 VA	8760	8540 VA				
			TOTAL	72 A	73 A	71 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	0	0.00%	0		
RECEPTACLES	14940	65.00%	9711	TOTAL CONN. LOAD:	25940
MISC. POWER	11000	65.00%	7150	TOTAL EST. DEMAND	16861

NOTES:

BRANCH PANEL: LLP3S

LOCATION: ELECTRICAL 333 **SUPPLY FROM:** LDPPS **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	Lighting corridor 354	20 A	1	0 / 0			1	20 A	Lighting group study 349	2
3	RECEPTACLES ASTRONOMY	20 A	1		540 / 860		1	20 A	Receptacles women 346	4
5	RECEPTACLES GRADUATE	20 A	1			360 / 720	1	20 A	RECEPTACLES ASTRONOMY	6
7	Lighting group study 349	20 A	1	92 / 500			1	20 A	Misc. power men 348	8
9	RECEPTACLES CONFERENCE	20 A	1		1440 / 180		1	20 A	Receptacles conference /seminar room	10
11	RECEPTACLES KNUCKLE LOBBY	20 A	1			1440 / 180	1	20 A	Receptacles inorganic laboratory 325	12
13	Misc. power women 346	20 A	1	500 / 860			1	20 A	RECEPTACLES Room 344A, 348, 346	14
15	RECEPTACLES IDF M18	20 A	1		180 / 360		1	20 A	Receptacles inorganic laboratory 325	16
17	RECEPTACLES Room ST2d, ST2c	20 A	1			180 / 15024				18
19	RECEPTACLES FTE FACULTY 352	20 A	1	900 / 15420			3	225 A	LLP2S	20
21	RECEPTACLES ORGANIC (COCA)	20 A	1		360 / 15100					22
23	Receptacles shared equipment 332	20 A	1			360 / 360	1	20 A	Receptacles conference /seminar room	24
25	RECEPTACLES TECHNICAL STAFF	20 A	1	180 / 180			1	20 A	RECEPTACLES IDF M18	26
27	Receptacles group study 349	20 A	1		540 / 540		1	20 A	RECEPTACLES ORGANIC (COCA)	28
29	Receptacles organic 341	20 A	1			720 / 360	1	20 A	RECEPTACLES ORGANIC	30
31	Receptacles group study 349	20 A	1	360 / 360			1	20 A	RECEPTACLES GRADUATE	32
33	Receptacles bay 354b	20 A	1		720 / 720		1	20 A	RECEPTACLES ORGANIC 337	34
35	Receptacles inorganic laboratory 325	20 A	1			720 / 900	1	20 A	RECEPTACLES ORGANIC	36
37	Receptacles corridor 321	20 A	1	540 / 540			1	20 A	RECEPTACLES NMR LAB 335	38
39	Receptacles fte faculty 340d	20 A	1		900 / 900		1	20 A	RECEPTACLES Room 340E, 340F	40
41	Receptacles fte faculty 340e	20 A	1			900 / 900	1	20 A	Receptacles fte faculty 340b	42
43	RECEPTACLES Room 326, 339, 333	20 A	1	720 / 720			1	20 A	RECEPTACLES FTE FACULTY 342	44
45	RECEPTACLES FTE FACULTY 342	20 A	1		1080 / 0		1	20 A	Lighting astronomy control room 328	46
47	RECEPTACLES Room 344, 339, 347,	20 A	1			1080 / 540	1	20 A	Receptacles analytical chemistry 334	48
49	Receptacles fte faculty 340c	20 A	1	900 / 900			1	20 A	RECEPTACLES FTE FACULTY 356	50
51										52
53										54
55	RECEPTACLES ASTRONOMY	20 A	1	1080 / 0						56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	24752 VA	24420	24744 VA				
			TOTAL	207 A	204 A	207 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Lighting	276	125.00%	345		
RECEPTACLES	63140	65.00%	41041	TOTAL CONN. LOAD:	73916
MISC. POWER	10500	65.00%	6825	TOTAL EST. DEMAND	48211

NOTES:

BRANCH PANEL: LDP3N

LOCATION: ELECTRICAL 320 **SUPPLY FROM:** LDDPBN **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES BIOCHEMISTRY 315	20 A	1	540 / 720			1	20 A	RECEPTACLES BIOCHEMISTRY 315	2
3	RECEPTACLES CCRI HISTOLOGY	20 A	1		720 / 180		2	20 A	Receptacles microbiology 312	4
5	Receptacles microbiology 312	20 A	1			180 / 0				6
7	RECEPTACLES BIOCHEMISTRY 315	20 A	1	720 / 180			1	20 A	Receptacles microbiology 312	8
9	RECEPTACLES MEDIA PREP, GLASS WASH, & STERILIZATION AUTOCLAVE 313A	20 A	3		750 / 180		1	20 A	Receptacles microbiology 312	10
11						0 / 750	3	50 A	RECEPTACLES MEDIA PREP, GLASS WASH, & STERILIZATION AUTOCLAVE 313A	12
13				0 / 0						14
15	RECEPTACLES MOLECULAR	20 A	1		180 / 0					16
17	RECEPTACLES MEDIA PREP, GLASS WASH, & STERILIZATION AUTOCLAVE 313A	20 A	3			750 / 180	1	20 A	RECEPTACLES MOLECULAR	18
19				0 / 180			1	20 A	RECEPTACLES MOLECULAR	20
21					0 / 180		1	20 A	RECEPTACLES BIOCHEMISTRY 315	22
23	RECEPTACLES MOLECULAR	20 A	1			180 / 360	1	20 A	Receptacles molecular biology	24
25	RECEPTACLES AUTOCLAVE 313	20 A	1	180 / 360			1	20 A	Receptacles microbiology 312	26
27	Receptacles molecular biology 305	20 A	1		360 / 360		1	20 A	Receptacles microbiology 312	28
29	Receptacles microbiology 312	20 A	1			360 / 360	1	20 A	RECEPTACLES MOLECULAR	30
31	RECEPTACLES MOLECULAR	20 A	1	360 / 360			1	20 A	RECEPTACLES MOLECULAR	32
33	RECEPTACLES MOLECULAR	20 A	1		360 / 360		1	20 A	RECEPTACLES CCRI TISSUE	34
35	RECEPTACLES MICROBIOLOGY 312	20 A	1			360 / 540	1	20 A	Receptacles molecular biology 305	36
37	RECEPTACLES AUTOCLAVE 313	20 A	1	360 / 540			1	20 A	Receptacles molecular biology 305	38
39	Receptacles molecular biology 305	20 A	1		540 / 540		1	20 A	Receptacles microbiology 312	40
41	Receptacles molecular biology 305	20 A	1			540 / 540	1	20 A	Receptacles biochemistry 315	42
43	Receptacles biochemistry 315	20 A	1	540 / 540			1	20 A	Receptacles biochemistry 315	44
45	Receptacles biochemistry 315	20 A	1		540 / 540		1	20 A	RECEPTACLES MOLECULAR	46
47	RECEPTACLES MOLECULAR	20 A	1			540 / 540	1	20 A	RECEPTACLES MICROBIOLOGY 312	48
49	RECEPTACLES MOLECULAR	20 A	1	540 / 540			1	20 A	RECEPTACLES MICROBIOLOGY 312	50
51	RECEPTACLES MICROBIOLOGY 312	20 A	1		540 / 540		1	20 A	RECEPTACLES CCRI MOLECULAR	52
53	RECEPTACLES MICROBIOLOGY 312	20 A	1			540 / 540	1	20 A	RECEPTACLES CCRI MICROSCOPY	54
55	RECEPTACLES CCRI MOLECULAR	20 A	1	540 / 540			1	20 A	RECEPTACLES CCRI HISTOLOGY	56
57	RECEPTACLES CCRI HISTOLOGY	20 A	1		540 / 720		1	20 A	RECEPTACLES MOLECULAR	58
59	RECEPTACLES MOLECULAR	20 A	1			720 / 720	1	20 A	RECEPTACLES CCRI MOLECULAR	60
61	RECEPTACLES CCRI MOLECULAR	20 A	1	720 / 720			1	20 A	RECEPTACLES CCRI MICROSCOPY	62
63	RECEPTACLES CCRI MICROSCOPY	20 A	1		720 / 720		1	20 A	RECEPTACLES CCRI MICROSCOPY	64
65	RECEPTACLES CCRI MICROSCOPY	20 A	1			720 / 0				66
67	RECEPTACLES CCRI HISTOLOGY	20 A	1	720 / 0						68
69										70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	9900 VA	9570	9420 VA				
			TOTAL	83 A	80 A	79 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	28890	65.00%	18779		
				TOTAL CONN. LOAD:	28890
				TOTAL EST. DEMAND	18779

NOTES:

BRANCH PANEL: LDP3S

LOCATION: ELECTRICAL 333 **SUPPLY FROM:** LDPPS **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES INORGANIC 329	20 A	1	180 / 360			1	20 A	RECEPTACLES NMR LAB 335	2
3	RECEPTACLES INORGANIC 329	20 A	1		180 / 540		1	20 A	RECEPTACLES INORGANIC 329	4
5	RECEPTACLES INORGANIC 329	20 A	1			360 / 540	1	20 A	RECEPTACLES INORGANIC 329	6
7	Receptacles organic 337	20 A	1	720 / 180			2	20 A	Receptacles nmr lab 335	8
9	Receptacles inorganic 329	20 A	1		720 / 0					10
11	Receptacles organic 337	20 A	2			180 / 360	2	20 A	Receptacles physical chem 331	12
13				0 / 0						14
15	RECEPTACLES NMR LAB 335	20 A	2		750 / 180		1	20 A	Receptacles organic 337	16
17						0 / 750	3	20 A	RECEPTACLES PHYSICAL CHEM 331A	18
19	RECEPTACLES NMR LAB 335	30 A	2	750 / 0						20
21					0 / 0					22
23	Receptacles organic 337	20 A	1			180 / 360	1	20 A	Receptacles physical chem 331	24
25	RECEPTACLES ORGANIC 341	20 A	1	180 / 360			1	20 A	Receptacles physical chem 331	26
27	Receptacles physical chem 331	20 A	1		360 / 360		1	20 A	Receptacles organic 337	28
29	Receptacles organic 337	20 A	1			360 / 360	1	20 A	Receptacles nmr lab 335	30
31	Receptacles organic 337	20 A	1	360 / 360			1	20 A	RECEPTACLES NMR LAB 335	32
33	RECEPTACLES PHYSICAL CHEM	20 A	1		360 / 540		1	20 A	Receptacles physical chem 331	34
35	Receptacles physical chem 331	20 A	1			540 / 540	1	20 A	Receptacles physical chem 331	36
37	Receptacles physical chem 331	20 A	1	540 / 540			1	20 A	Receptacles physical chem 331	38
39	Receptacles physical chem 331	20 A	1		540 / 540		1	20 A	Receptacles organic 337	40
41	Receptacles organic 337	20 A	1			540 / 540	1	20 A	Receptacles inorganic 329	42
43	Receptacles nmr lab 335	20 A	1	540 / 540			1	20 A	RECEPTACLES NMR LAB 335	44
45	Receptacles inorganic 329	20 A	1		540 / 720		1	20 A	Receptacles physical chem 331	46
47	Receptacles physical chem 331	20 A	1			720 / 0				48
49	Receptacles organic 337	20 A	1	720 / 0			3	60 A	240V - Fusible 100A	50
51					0 / 0					52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73	SPARE	20 A	2	0 / 0			2	20 A	SPARE	74
75					0 / 0					76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	6330 VA	6330	6330 VA				
			TOTAL	53 A	53 A	53 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	18990	65.00%	12344		
				TOTAL CONN. LOAD:	18990
				TOTAL EST. DEMAND	12344

NOTES:

BRANCH PANEL: RHDPB

LOCATION: MAIN ELECTRICAL 003 **SUPPLY FROM:** MDB **MOUNTING:** SURFACE
VOLTAGE 480/277 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 65.000 **MAINS TYPE:** MCB **MAINS:** 600 A **MCB RATING:** 600 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				7000 / 833						2
3	TX-RDPB	125 A	3		6000 / 833		3	30 A	SMF-N	4
5						4000 / 833				6
7				833 / 29000						8
9	SMF-S	30 A	3		833 / 28500		3	400 A	RHDPP	10
11						833 / 28500				12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29						0 / 0				30
31	SPARE	125 A	3	0 / 0			3	400 A	SPARE	32
33					0 / 0					34
35						0 / 0				36
37	SPARE	30 A	3	0 / 0			3	30 A	SPARE	38
39					0 / 0					40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	37667 VA	36167	34167 VA				
			TOTAL	137 A	132 A	123 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	89000	100.00%	89000		
Motor	2000	106.25%	2125	TOTAL CONN. LOAD:	108000
MISC. POWER	17000	65.00%	11050	TOTAL EST. DEMAND	102175

NOTES:

BRANCH PANEL: LDP3S3

LOCATION: ELECTRICAL 333 **SUPPLY FROM:** LDPPS **MOUNTING:** RECESSED
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES	20 A	1	180 / 180			1	20 A	RECEPTACLES ORGANIC 341	2
3	RECEPTACLES ORGANIC	20 A	1		360 / 500		1	20 A	MISC. POWER	4
5	RECEPTACLES ORGANIC 341	20 A	1			540 / 900	1	20 A	RECEPTACLES	6
7	RECEPTACLES ORGANIC 341	20 A	1	360 / 540			1	20 A	RECEPTACLES ORGANIC 341	8
9	RECEPTACLES	20 A	1		540 / 360		1	20 A	RECEPTACLES ORGANIC 341	10
11	RECEPTACLES ORGANIC	20 A	1			360 / 360	1	20 A	RECEPTACLES ORGANIC 341	12
13	RECEPTACLES ORGANIC 341	20 A	1	360 / 360			1	20 A	RECEPTACLES	14
15	RECEPTACLES ORGANIC 341	20 A	1		360 / 540		1	20 A	RECEPTACLES ORGANIC 341	16
17	RECEPTACLES ORGANIC	20 A	1			540 / 720	1	20 A	RECEPTACLES ORGANIC	18
19	RECEPTACLES ORGANIC 341	20 A	1	540 / 720			1	20 A	RECEPTACLES ORGANIC	20
21	RECEPTACLES ORGANIC 341	20 A	1		720 / 720		1	20 A	RECEPTACLES ORGANIC	22
23	RECEPTACLES ORGANIC	20 A	1			720 / 0				24
25	RECEPTACLES ORGANIC	20 A	1	720 / 0						26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	3960 VA	4100	4140 VA				
			TOTAL	33 A	34 A	35 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	11700	65.00%	7605		
MISC. POWER	500	65.00%	325	TOTAL CONN. LOAD:	12200
				TOTAL EST. DEMAND	7930

NOTES:

BRANCH PANEL: LDP3S4

LOCATION: ELECTRICAL 333 **SUPPLY FROM:** LDPPS **MOUNTING:** RECESSED
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES ANALYTICAL	20 A	1	180 / 720			1	20 A	RECEPTACLES ANALYTICAL	2
3	RECEPTACLES ANALYTICAL	20 A	1		540 / 720		1	20 A	RECEPTACLES ANALYTICAL	4
5	RECEPTACLES ANALYTICAL	20 A	1			720 / 720	1	20 A	RECEPTACLES ANALYTICAL	6
7	RECEPTACLES ANALYTICAL	20 A	1	720 / 180			1	20 A	RECEPTACLES ANALYTICAL	8
9	RECEPTACLES ANALYTICAL	20 A	1		720 / 180		1	20 A	RECEPTACLES ANALYTICAL	10
11	RECEPTACLES ANALYTICAL	20 A	1			180 / 360	1	20 A	RECEPTACLES ANALYTICAL	12
13	RECEPTACLES ANALYTICAL	20 A	1	360 / 540			1	20 A	RECEPTACLES ANALYTICAL	14
15	RECEPTACLES ANALYTICAL	20 A	1		360 / 540		1	20 A	RECEPTACLES ANALYTICAL	16
17	RECEPTACLES ANALYTICAL	20 A	1			540 / 540	1	20 A	RECEPTACLES ANALYTICAL	18
19	RECEPTACLES ANALYTICAL	20 A	1	540 / 720			1	20 A	RECEPTACLES ANALYTICAL	20
21	RECEPTACLES ANALYTICAL	20 A	1		540 / 720		1	20 A	RECEPTACLES ANALYTICAL	22
23	RECEPTACLES ANALYTICAL	20 A	1			720 / 0				24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	3960 VA	4320	3780 VA				
			TOTAL	33 A	36 A	32 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	12060	65.00%	7839		
				TOTAL CONN. LOAD:	12060
				TOTAL EST. DEMAND	7839

NOTES:

BRANCH PANEL: LDP3S5

LOCATION: ELECTRICAL 333 **SUPPLY FROM:** LDPPS **MOUNTING:** RECESSED
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES ANALYTICAL	20 A	1	540 / 540			1	20 A	RECEPTACLES ANALYTICAL	2
3	RECEPTACLES ANALYTICAL	20 A	1		720 / 720		1	20 A	RECEPTACLES ANALYTICAL	4
5	RECEPTACLES ANALYTICAL	20 A	1			720 / 720	1	20 A	RECEPTACLES ANALYTICAL	6
7	RECEPTACLES	20 A	2	180 / 180			2	30 A	RECEPTACLES SHARED EQUIPMENT 332	8
9					0 / 0					10
11	RECEPTACLES ANALYTICAL	20 A	1			540 / 720	1	20 A	RECEPTACLES ANALYTICAL	12
13	RECEPTACLES SHARED EQUIPMENT 332	20 A	2	180 / 540			1	20 A	RECEPTACLES ANALYTICAL	14
15					0 / 540		1	20 A	RECEPTACLES ANALYTICAL	16
17										18
19	RECEPTACLES ANALYTICAL	20 A	1	720 / 0						20
21	RECEPTACLES ANALYTICAL	20 A	1		720 / 0					22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	2880 VA	2700	2700 VA				
			TOTAL	24 A	23 A	23 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	8280	65.00%	5382		
				TOTAL CONN. LOAD:	8280
				TOTAL EST. DEMAND	5382

NOTES:

BRANCH PANEL: RLDPB

LOCATION: MAIN ELECTRICAL 003 **SUPPLY FROM:** TX-RDPB **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 84
A.I.C. RATING: 42,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	MISC. POWER	20 A	1	1500 / 1000			1	20 A	MISC. POWER	2
3	MISC. POWER	20 A	1		1000 / 1000		1	20 A	MISC. POWER	4
5	MISC. POWER	20 A	1			1000 / 1000	1	20 A	MISC. POWER	6
7	MISC. POWER	20 A	1	1000 / 1000			1	20 A	MISC. POWER	8
9	MISC. POWER	20 A	1		1000 / 1000		1	20 A	MISC. POWER	10
11	MISC. POWER	20 A	1			1000 / 1000	1	20 A	MISC. POWER	12
13	MISC. POWER	20 A	1	1000 / 1500			1	20 A	MISC. POWER	14
15	Motor KNUCKLE LOBBY 112	20 A	1		1000 / 1000		1	20 A	Motor Room 115, 44	16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33										34
35										36
37										38
39										40
41										42
43										44
45										46
47										48
49										50
51										52
53										54
55										56
57										58
59										60
61										62
63										64
65										66
67										68
69										70
71										72
73										74
75	SPARE	20 A	1		0 / 0		1	20 A	SPARE	76
77	SPARE	20 A	1			0 / 0	1	20 A	SPARE	78
79	SPARE	20 A	1	0 / 0			1	20 A	SPARE	80
81	SPARE	20 A	1		0 / 0		1	20 A	SPARE	82
83	SPARE	20 A	1			0 / 0	1	20 A	SPARE	84
			TOTAL	7000 VA	6000	4000 VA				
			TOTAL	61 A	53 A	33 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
Motor	2000	106.25%	2125		
MISC. POWER	15000	65.00%	9750	TOTAL CONN. LOAD:	17000
				TOTAL EST. DEMAND	11875

NOTES:

BRANCH PANEL: RHDPP

LOCATION: ELECTRICAL 404A **SUPPLY FROM:** RHDPB **MOUNTING:** SURFACE
VOLTAGE 480/277 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 65,000 **MAINS TYPE:** MCB **MAINS:** 400 A **MCB RATING:** 400 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1				1000 / 3833						2
3	TX-RDPP	125 A	3		500 / 3833		3	30 A	SEF-1	4
5						500 / 3833				6
7				3833 / 5667						8
9	SEF-2	30 A	3		3833 / 5667		3	40 A	SEF-3	10
11						3833 / 5667				12
13				7333 / 7333						14
15	RLF-S	50 A	3		7333 / 7333		3	50 A	SEF-4	16
17						7333 / 7333				18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33					0 / 0					34
35	SPARE	30 A	3			0 / 0	3	50 A	SPARE	36
37				0 / 0						38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	29000 VA	28500	28500 VA				
			TOTAL	105 A	103 A	103 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
HVAC	84000	100.00%	84000		
MISC. POWER	2000	65.00%	1300	TOTAL CONN. LOAD:	86000
				TOTAL EST. DEMAND	85300

NOTES:

BRANCH PANEL: RLDPP

LOCATION: ELECTRICAL 404A **SUPPLY FROM:** TX-RDPP **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 65,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	MISC. POWER	20 A	1	500 / 500			1	20 A	MISC. POWER	2
3	MISC. POWER	20 A	1		500 / 0					4
5	MISC. POWER	20 A	1			500 / 0				6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	1000 VA	500	500 VA				
			TOTAL	8 A	4 A	4 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
MISC. POWER	2000	65.00%	1300		
				TOTAL CONN. LOAD:	2000
				TOTAL EST. DEMAND	1300

NOTES:

BRANCH PANEL: LDPPS1

LOCATION: ELECTRICAL 404A **SUPPLY FROM:** LDPPS **MOUNTING:** SURFACE
VOLTAGE 120/208 Wye **PHASES** 3 **WIRES:** 4 **# OF POLES** 42
A.I.C. RATING: 22,000 **MAINS TYPE:** MCB **MAINS:** 225 A **MCB RATING:** 225 A

CKT	CIRCUIT DISCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DISCRIPTION	CKT
1	RECEPTACLES	20 A	1	360 / 540			1	20 A	RECEPTACLES MEP 403	2
3	MISC. POWER	20 A	1		500 / 1000		1	20 A	MISC. POWER	4
5	RECEPTACLES Room 405, ST3e	20 A	1			540 / 720	1	20 A	RECEPTACLES Room 402	6
7	RECEPTACLES Room 404A, 404B	20 A	1	540 / 360			1	20 A	RECEPTACLES	8
9	RECEPTACLES MEP 404	20 A	1		360 / 500		1	20 A	MISC. POWER	10
11	RECEPTACLES MEP 405	20 A	1			360 / 500	1	20 A	MISC. POWER	12
13	MISC. POWER	20 A	1	500 / 0						14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
31										32
33	SPARE	20 A	1		0 / 0		1	20 A	SPARE	34
35	SPARE	20 A	1			0 / 0	1	20 A	SPARE	36
37	SPARE	20 A	1	0 / 0			1	20 A	SPARE	38
39	SPARE	20 A	1		0 / 0		1	20 A	SPARE	40
41	SPARE	20 A	1			0 / 0	1	20 A	SPARE	42
			TOTAL	2300 VA	2360	2120 VA				
			TOTAL	19 A	20 A	18 A				

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED	PANEL TOTALS	
RECEPTACLES	3780	65.00%	2457		
MISC. POWER	3000	65.00%	1950	TOTAL CONN. LOAD:	6780
				TOTAL EST. DEMAND	4407

NOTES:

BVH INDEX PANELBOARD SCHEDULE GENERAL NOTE

INDEX PANELBOARD SCHEDULES ARE SHOWN FOR REFERENCE ONLY. VERIFY SIZE, QUANTITY, AND TYPES OF CIRCUIT BREAKERS IN PANELBOARDS WITH PLANS, RISERS, SCHEDULES AND SPECIFICATIONS.

21-10-038

drawing title: PANELBOARD SCHEDULES

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

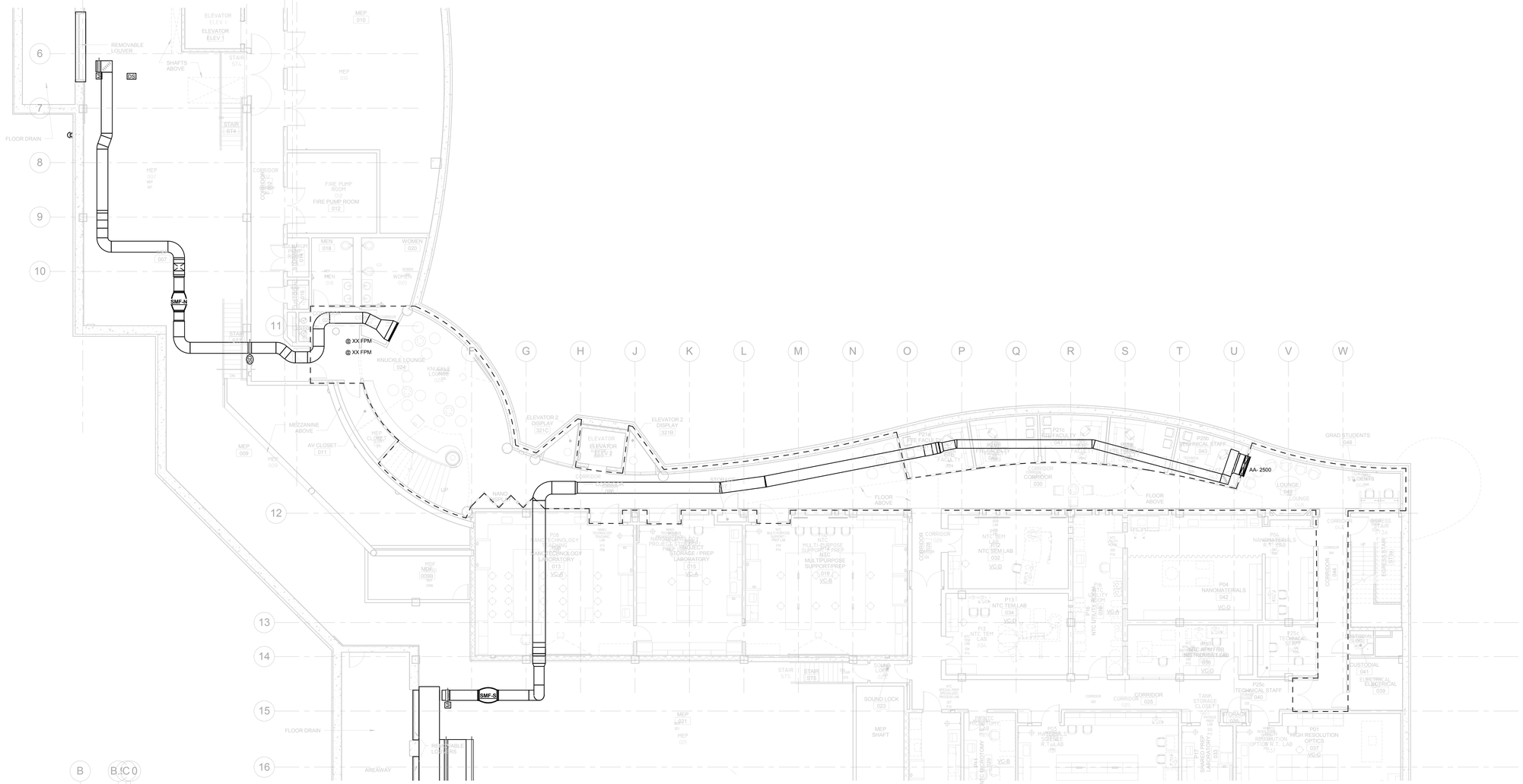
STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

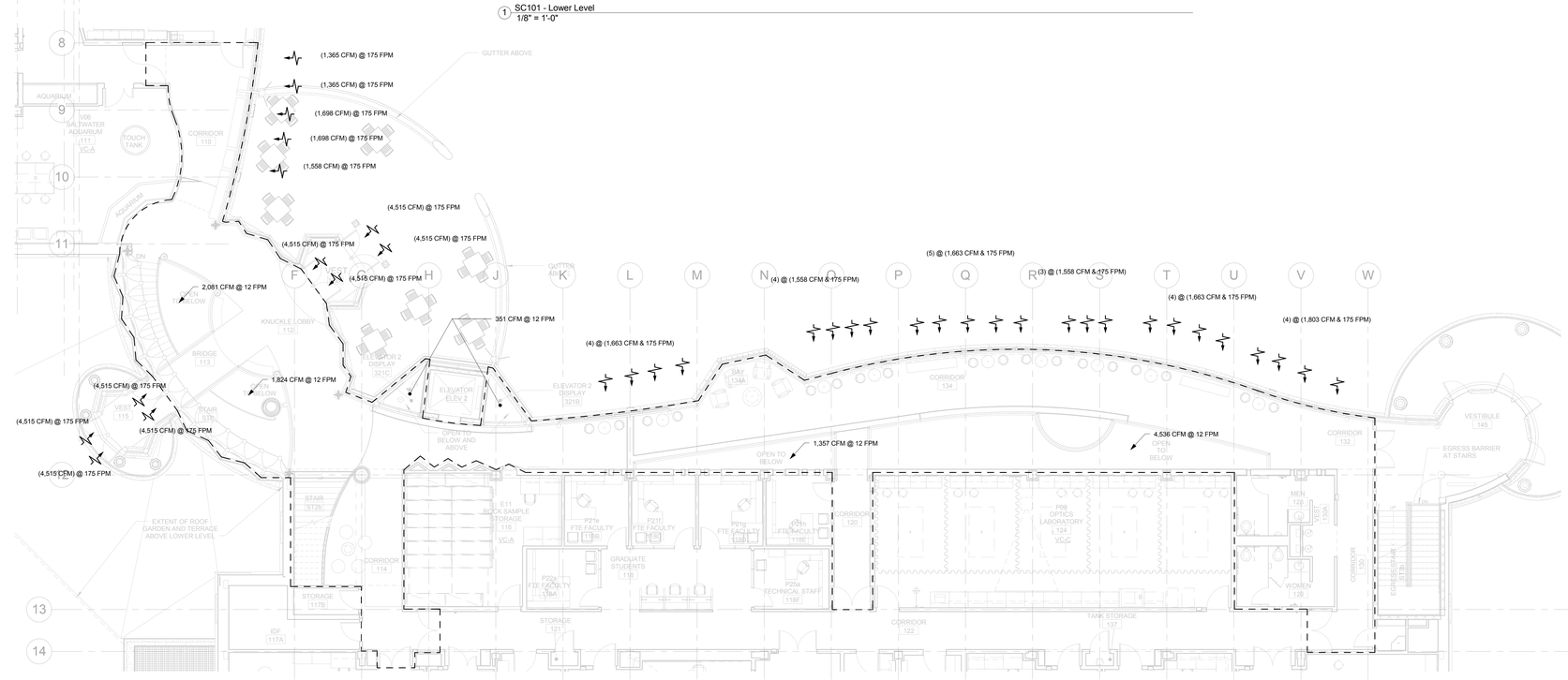
project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1393 — project no. BI-RS-283-ARC

volume: 2 of 2 — date: 11-21-2012 — scale: — drawn by: DJH — approved by: GVD — drawing no.: MEP505



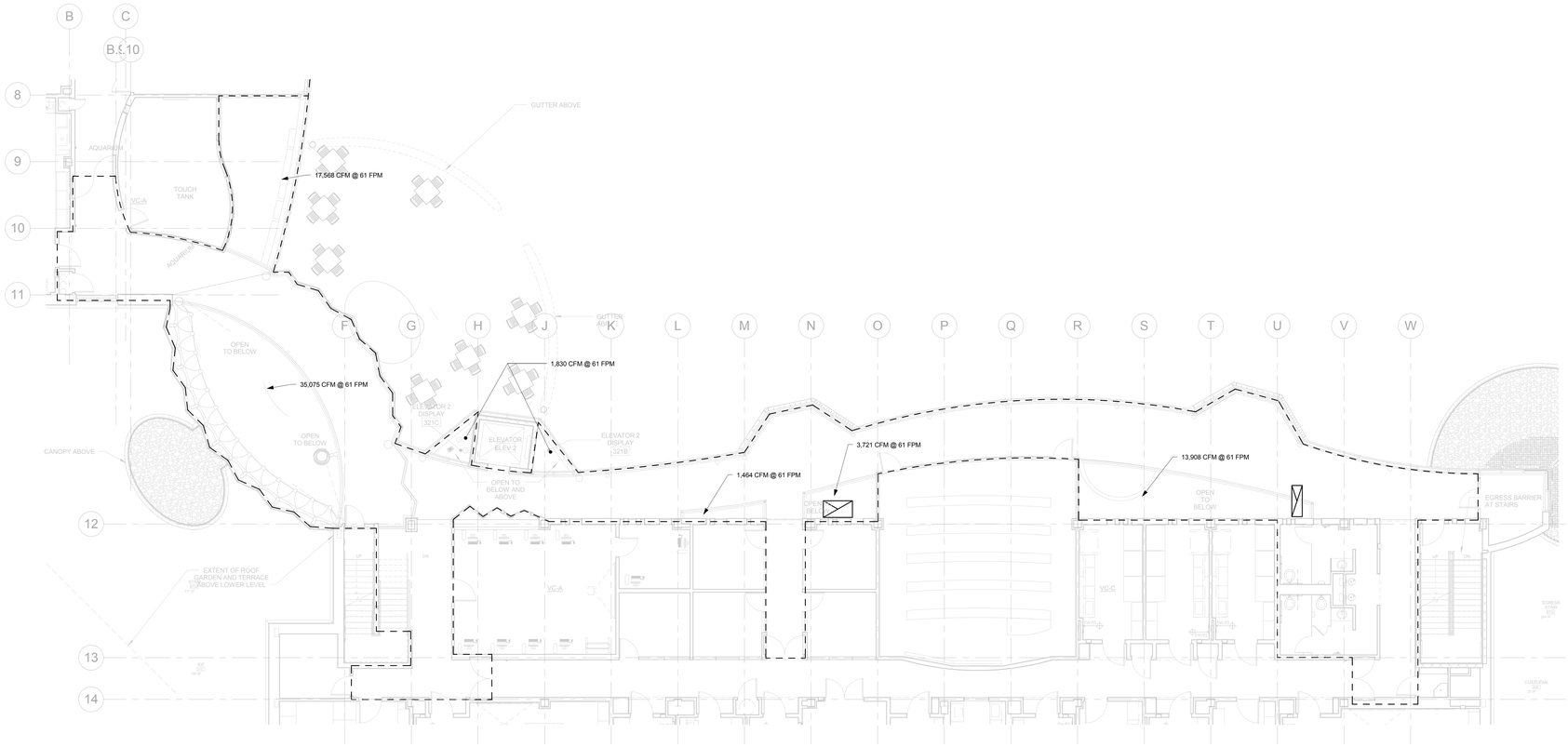
1 SC101 - Lower Level
1/8" = 1'-0"



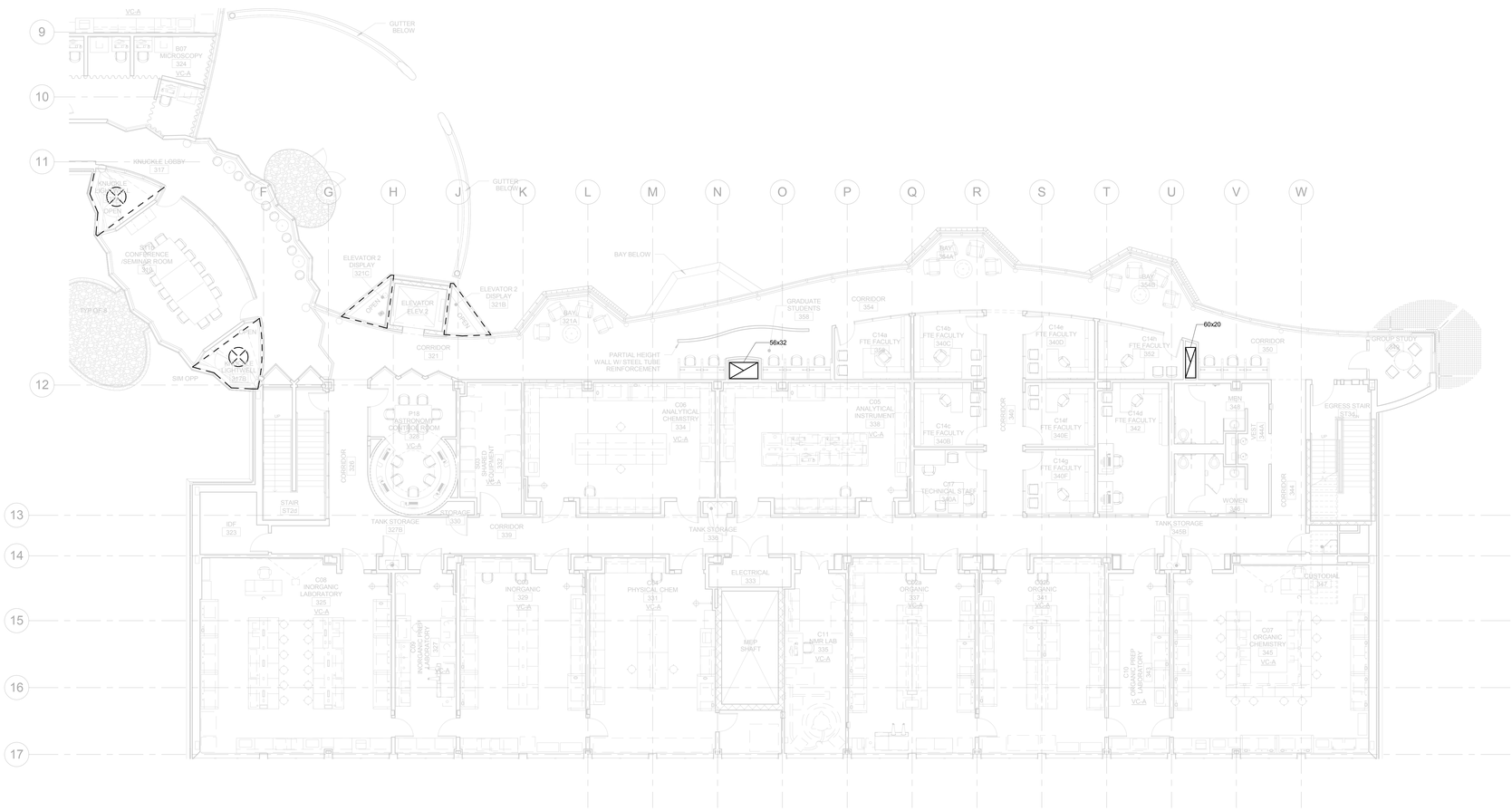
2 SC102 - Ground Floor Plan
1/8" = 1'-0"

21-10-038

drawing title: SMOKE CONTROL PART PLANS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
1 / 11-21-2012 / Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: DJH
			approved by: GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	drawing no.: MEP601



1 SC103 - 2nd Floor Plan
1/8" = 1'-0"

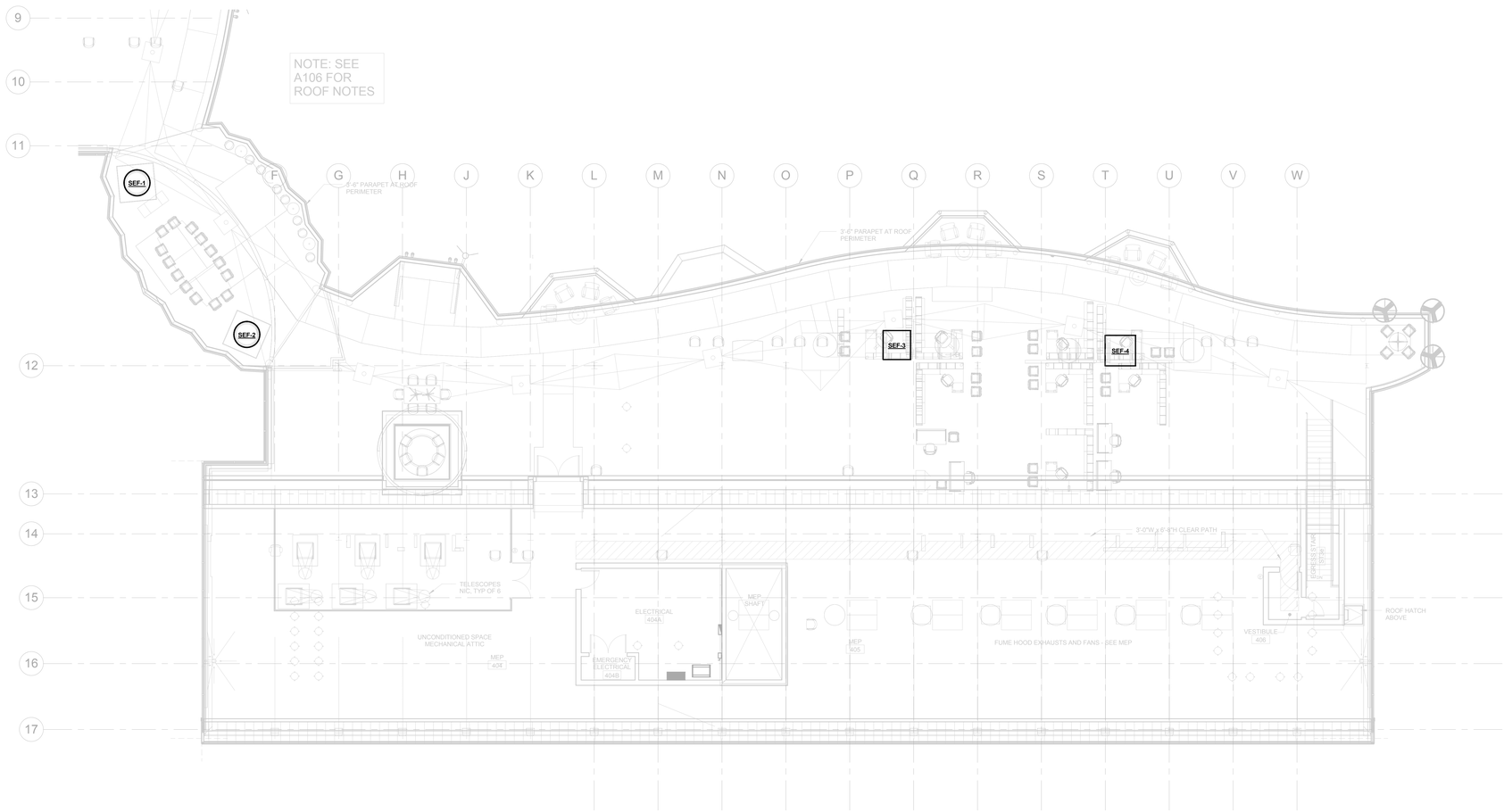


2 SC104 - 3rd Floor Plan
1/8" = 1'-0"

SMOKE CONTROL PART PLANS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET NO. 2 of 2
REVISIONS			DATE 11-21-2012
mark / date / description	DRAWING PREPARED BY		SCALE 1/8" = 1'-0"
11-21-2012 Bid Documents	BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel. (860) 286-9171		DRAWN BY DJH
	project SCSU NEW ACADEMIC LABORATORY BUILDING		APPROVED BY GVD
	CAD no. 1383 / project no. BI-RS-283-ARC		drawing no. MEP602

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



1 SC105 - Mechanical Attic Floor Plan (Parent)
1/8" = 1'-0"

21-10-038

drawing title
SMOKE CONTROL PART PLANS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

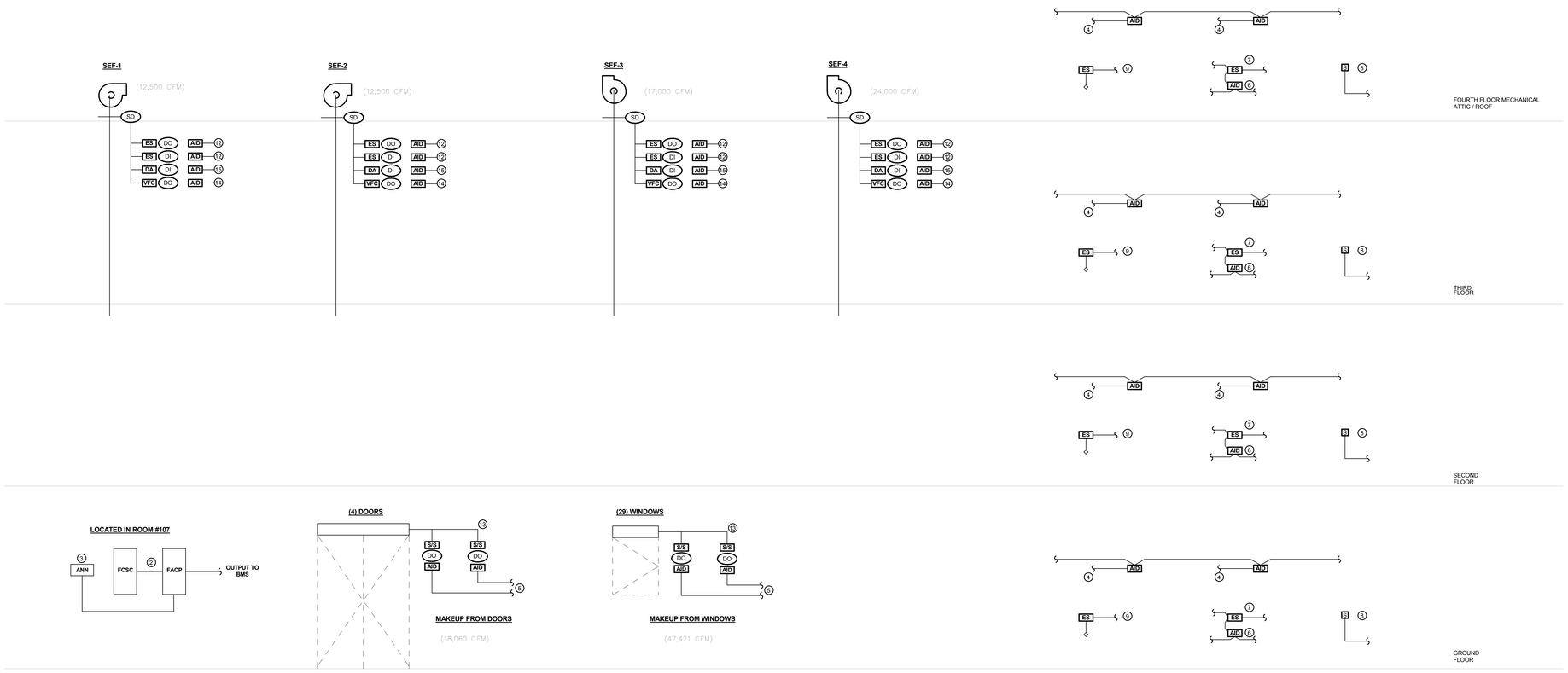
STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1383
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale 1/8" = 1'-0"
drawn by DJH
approved by GVD
drawing no. MEP603



SEQUENCE OF OPERATIONS

1.1 SMOKE CONTROL SYSTEM OPERATION.

1. GENERAL DESCRIPTION: SMOKE EXHAUST FANS PROVIDE SMOKE CONTROL UPON INITIATION BY THE FIRE ALARM SYSTEM. ALL SMOKE CONTROL EQUIPMENT AND CONTROLS SHALL BE UL LISTED FOR USE AS SMOKE CONTROL COMPONENTS. SMOKE CONTROL SYSTEM SHALL INTERFACE WITH BUILDING CONTROLS AND THE FIRE ALARM SYSTEM. THE UL-LISTED SMOKE CONTROLS, THE FIREFIGHTER'S SMOKE CONTROL STATION (FSCS), AND ALL INTERFACES SHALL BE PROVIDED BY THE CONTRACTOR RESPONSIBLE FOR DIVISION 28 "FIRE ALARM." ALL SEQUENCES OF OPERATION SHALL COMPLY WITH CODE AND WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION (AHJ). THE OUTLINED SEQUENCE BELOW IS THE PROPOSED CONTROL SEQUENCE; THE FINAL SEQUENCE OF OPERATION SHALL BE REVIEWED WITH THE AHJ, INCLUDING THE STATE FIRE MARSHAL'S OFFICE, PRIOR TO RELEASE OF CONTROL EQUIPMENT AND PROGRAMMING.

2. SEQUENCE OF OPERATION.

a. SYSTEM INITIATION: SYSTEM INITIATION: SMOKE CONTROL SYSTEM SHALL BE INITIATED UPON A SIGNAL FROM THE FIRE ALARM SYSTEM OR FROM A MANUAL COMMAND FROM THE FSCS. SYSTEM SHALL BE FULLY OPERATIONAL IN 45 SECONDS OR LESS FROM TIME OF INITIATION.

b. ATRIUM BARRIER SMOKE DAMPERS: UPON INITIATION OF THE SYSTEM, ALL RETURN AIR SMOKE DAMPERS AT THE ATRIUM BARRIER SHALL CLOSE.

c. SEQUENCE OF SYSTEM ACTIVATION: MAKEUP AIR IS DELIVERED FROM MULTIPLE SOURCES: EGRESS DOORS, WINDOWS, AND MULTIPLE INTAKE LOUVERS AND FANS AT REMOTE CORRIDORS.

a. SIGNAL DOOR CONTROL SYSTEM, WINDOW CONTROLLERS, AND MAKEUP AIR DAMPERS TO OPEN.

b. OPEN OUTSIDE AIR INTAKE DAMPERS AND START MAKEUP AIR FANS.

c. UPON PROVING WINDOWS, DOORS AND SMOKE FAN ISOLATION DAMPERS HAVE SUCCESSFULLY OPENED START SMOKE EXHAUST FANS AT PRE-SET CONSTANT SPEED (VFC IS FOR BALANCING PURPOSES ONLY).

3. FSCS DISPLAY AND CONTROL: DISPLAY THE FOLLOWING AT THE FIREFIGHTER'S SMOKE CONTROL STATION. MANUAL COMMAND OF SYSTEM COMPONENTS SHALL ONLY BE AVAILABLE AT THE FSCS. ALL ASSOCIATED CONTROLS AND PROGRAMMING ARE THE RESPONSIBILITY OF DIVISION 28 "FIRE ALARM."

a. SYSTEM STATUS.
b. FIRE ALARM SYSTEM SIGNAL STATUS.
c. SYSTEM HAND/OFF/AUTO POSITION.
d. SMOKE EXHAUST FAN STATUS BASED ON DIFFERENTIAL PRESSURE (TYPICAL).
e. SMOKE EXHAUST FAN ON/OFF/AUTO (TYPICAL).
f. SMOKE EXHAUST FAN ISOLATION DAMPER POSITION (TYPICAL).
g. SMOKE EXHAUST FAN ISOLATION DAMPER OPEN/CLOSE/AUTO (TYPICAL).
h. MAKEUP AIR DAMPER STATUS.
i. MAKEUP AIR DOOR STATUS.
j. MAKEUP AIR WINDOW STATUS.
k. MAKEUP AIR FAN STATUS.
l. MAKEUP AIR HAND/OFF/AUTO.

DRAWING NOTES

1. FIREFIGHTER'S SMOKE CONTROL PANEL BY DIVISION 28.
2. INTERFACE WIRING BY DIVISION 28.
3. FIRE ALARM SYSTEM ANNUNCIATOR BY DIVISION 28.
4. TYPICAL ADDRESSABLE INTERFACE DEVICE BY DIVISION 28. MAKEUP AIR COMMAND SIGNAL INPUT WITH OUTPUT TO WINDOW OR DOOR OPERATOR CONTROLLER.
5. TYPICAL MAKEUP AIR WINDOW OR DOOR OPEN PROOF SIGNAL FROM WINDOW OR DOOR CONTROLLER THROUGH ADDRESSABLE INTERFACE DEVICE PER DIVISION 28.
6. TYPICAL ADDRESSABLE INTERFACE DEVICE FOR ZONE SMOKE AND FIRE/SMOKE DAMPERS. SIGNAL SHALL COMMAND DAMPERS CLOSED.
7. TYPICAL SMOKE OR FIRE/SMOKE ZONE DAMPER BY DIVISION 23. DAMPER SHALL CLOSE UPON INITIATION OF SMOKE CONTROL SYSTEM.
8. TYPICAL AREA SMOKE DETECTOR WIRED TO FIRE ALARM SYSTEM.
9. TYPICAL SPRINKLER ZONE FLOW SWITCH WIRED TO FIRE ALARM SYSTEM.
10. TYPICAL ADDRESSABLE INTERFACE DEVICE BY DIVISION 28. MAKEUP AIR COMMAND SIGNAL WITH OUTPUT TO N.O. SMOKE DAMPER.
11. TYPICAL INTAKE SMOKE DAMPER BY DIVISION 23. DAMPER SHALL OPEN UPON INITIATION OF SMOKE CONTROL SYSTEM.
12. TYPICAL SMOKE DAMPER OPEN AND CLOSED SIGNAL FROM DAMPER END SWITCHES TO SMOKE CONTROL SYSTEM.
13. TYPICAL WINDOW OR DOOR OPERATOR WINDOW/DOOR SHALL OPEN UPON INITIATION SIGNAL FROM SMOKE CONTROL SYSTEM.
14. MAKEUP AIR FAN SHALL START UPON SIGNAL FROM SMOKE CONTROL SYSTEM AND PROOF OF OPEN MAKEUP AIR DAMPER.
15. ADDRESSABLE INTERFACE DEVICE TO COMMAND FAN INTAKE DAMPER OPEN. DAMPER SHALL OPEN UPON INITIATION SIGNAL FROM SMOKE CONTROL SYSTEM.
16. SMOKE EXHAUST FAN CONTROLLER.
17. FIRE ALARM SYSTEM BEAM SMOKE DETECTOR.

GENERAL NOTES

1. REFER TO MEP DETAIL SHEETS FOR WIRING DETAILS.
2. REFER TO PLANS FOR QUANTITIES AND LOCATION OF DEVICES.
3. ALL SMOKE CONTROL SYSTEM DEVICES AND EQUIPMENT SHALL BE UL LISTED FOR SMOKE CONTROL SYSTEM OPERATION.

drawing title: SMOKE CONTROL RISERS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

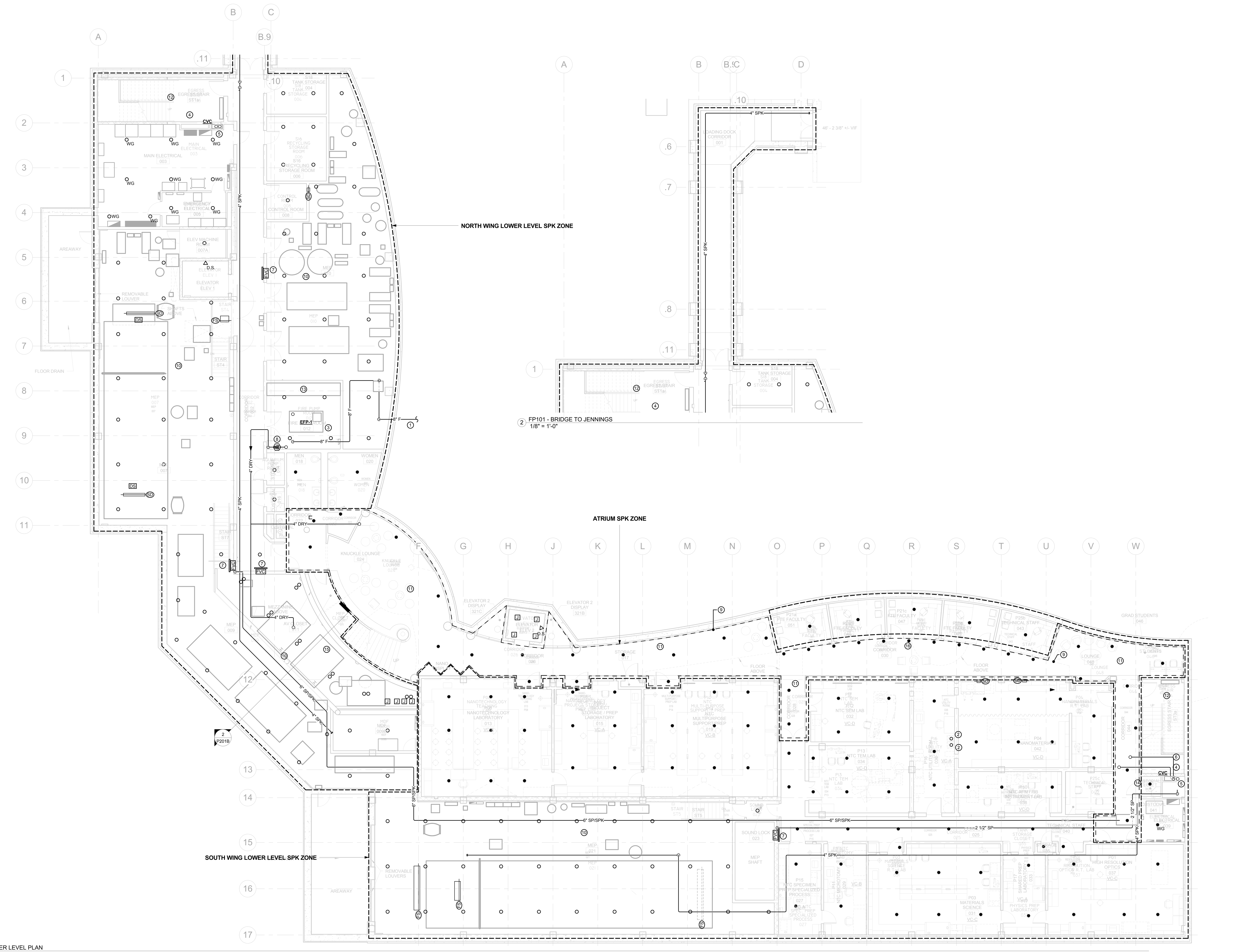
project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1383 | project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale 12" = 1'-0"
drawn by DJH
approved by GVD
drawing no. MEP604

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



1 FP101 - LOWER LEVEL PLAN
1/8" = 1'-0"

2 FP101 - BRIDGE TO JENNINGS
1/8" = 1'-0"

DRAWING NOTES

1. BURIED 8"FIRE SERVICE FROM 5'-0" OUTSIDE OF THE BUILDING. SEE CIVIL DRAWINGS FOR CONTINUATION.
2. PROVIDE SPK HEAD IN VENTED GAS CYLINDER STORAGE CABINET.
3. 750 GPM ELECTRIC FIRE PUMP/JOCKEY PUMP ASSEMBLY. SEE FIRE PUMP SCHEDULE, DETAIL & SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. SPK FLOOR ZONE VALVE ASSEMBLY IN CABINET. SEE DETAIL FOR INFORAMTION.
5. 6" COMBINATION SPK/SPK RISER, 3" DRAIN RISER, AND 2 1/2" HOSE VALVE.
6. ATRIUM SPK ZONE VALVE ASSEMBLY IN CABINET. SEE DETAIL FOR INFORMATION.
7. REMOTE FIRE VALVE CABINET.
8. DRY PIPE SYSTEM FOR GROUND FLOOR, ENTRANCE CANOPIES.
9. ATRIUM AREA OUTLINE. COORDINATE AREA OUTLINE WITH ARCHITECT'S DRAWINGS.
10. PROVIDE COMPLETE SPK COVERAGE IN MECHANICAL ROOMS.
11. PROVIDE ADDITIONAL SPK COVERAGE ABOVE CORRIDOR CEILING.
12. PROVIDE COMPLETE SPK COVERAGE AT STAIRWELL.
13. LOCATION FOR FIRE PUMP & JOCKEY PUMP CONTROLLERS.
14. DRY PIPE UP.
15. PROVIDE SPK COVERAGE ABOVE & BELOW MEZZANINE.
16. PROVIDE SPK HEADS @ 6'-0" SPACING AT GLASS WALLS.

FIRE PROTECTION GENERAL NOTES

1. THIS DRAWING DEPICTS A PROPOSED FIRE PROTECTION SYSTEM LAYOUT WHICH IS INDICATED FOR COORDINATION PURPOSES ONLY. THIS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH NFPA, STATE, & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION.

2. REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR DESIGN CRITERIA AND INSTALLATION REQUIREMENTS.

3. FIRE PROTECTION SYSTEM CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLERS AND PIPING WITH HVAC DUCTS, EQUIPMENT, BEAMS, COLUMNS, LIGHTS, AND ANY OTHER OBSTRUCTIONS IN ACCORDANCE WITH NFPA.

4. THIS CONTRACT INCLUDES A PERFORMANCE SPECIFICATION FOR THE ENTIRE FIRE PROTECTION SYSTEM.

5. PROVIDE ALL PIPING, SUPPORTS, AND EQUIPMENT FOR A COMPLETE FULL COVERAGE SYSTEM IN CONFORMANCE WITH NFPA, STATE & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION. ADVISE ARCHITECT OF ANY CONFLICTS WHICH MUST BE RESOLVED PRIOR TO INSTALLATION.

6. PROVIDE CHROME PLATED ESCUTCHEONS AT EXPOSED PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

7. ALL NEW SPRINKLER HEADS SHALL BE OF QUICK RESPONSE TYPE WITH TEMPERATURE RATING BASED ON AMBIENT TEMPERATURE CONDITIONS FOR EACH PROTECTED SPACE.

8. USE UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS AND WHERE SPRINKLER PIPING MUST BE RUN EXPOSED. USE CONCEALED PENDENT SPRINKLER HEADS IN AREAS WITH FINISHED AND/OR ACCESSIBLE CEILINGS.

9. ALL SPK VALVES SHALL BE LABELED TO IDENTIFY WHAT AREAS THEY CONTROL.

10. ALL SPK SHUT-OFF VALVES SHALL BE CHAINED IN THE OPEN POSITION AND PADLOCKED.

GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.

PROJECT NORTH
N
21-10-038

drawing title	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume
FIRE PROTECTION LOWER LEVEL FLOOR PLAN		2 of 2
REVISIONS	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171	date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING	drawn by: JJM, MT
		approved by: GVD
	CAD no. 1393 / project no. BI-RS-283-ARC	drawing no. FP101

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. 6" SPK/SP RISER, 3" DRAIN RISER.
2. FLOOR SPK ZONE VALVE ASSEMBLY IN CABINET. SEE DETAIL FOR INFORMATION.
3. ATRIUM SPK ZONE RISER.
4. DRY SPK MAIN DN. TO BASEMENT
5. DRY SPK RISER UP & DOWN.
6. REMOTE FIRE VALVE CABINET.
7. FIRE PUMP TEST HEADER.
8. FIRE DEPARTMENT CONNECTION, ELECTRIC ALARM BELL.
9. ATRIUM AREA OUTLINE. COORDINATE AREA OUTLINE WITH ARCHITECT'S DRAWINGS.
10. COVER PLATES FOR SPK HEADS IN THE AREA OF OUTLINE TO BE OF CUSTOM COLOR. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
11. PROVIDE COMPLETE SPK COVERAGE AT STAIRWELL.
12. PROVIDE ADDITIONAL SPK COVERAGE ABOVE CORRIDOR CEILING.

FIRE PROTECTION GENERAL NOTES

1. THIS DRAWING DEPICTS A PROPOSED FIRE PROTECTION SYSTEM LAYOUT WHICH IS INDICATED FOR COORDINATION PURPOSES ONLY. THIS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH NFPA, STATE, & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION.

2. REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR DESIGN CRITERIA AND INSTALLATION REQUIREMENTS.

3. FIRE PROTECTION SYSTEM CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLERS AND PIPING WITH HVAC DUCTS, EQUIPMENT, BEAMS, COLUMNS, LIGHTS, AND ANY OTHER OBSTRUCTIONS IN ACCORDANCE WITH NFPA.

4. THIS CONTRACT INCLUDES A PERFORMANCE SPECIFICATION FOR THE ENTIRE FIRE PROTECTION SYSTEM.

5. PROVIDE ALL PIPING, SUPPORTS, AND EQUIPMENT FOR A COMPLETE FULL COVERAGE SYSTEM IN CONFORMANCE WITH NFPA, STATE & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION. ADVISE ARCHITECT OF ANY CONFLICTS WHICH MUST BE RESOLVED PRIOR TO INSTALLATION.

6. PROVIDE CHROME PLATED ESCUTCHEONS AT EXPOSED PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

7. ALL NEW SPRINKLER HEADS SHALL BE OF QUICK RESPONSE TYPE WITH TEMPERATURE RATING BASED ON AMBIENT TEMPERATURE CONDITIONS FOR EACH PROTECTED SPACE.

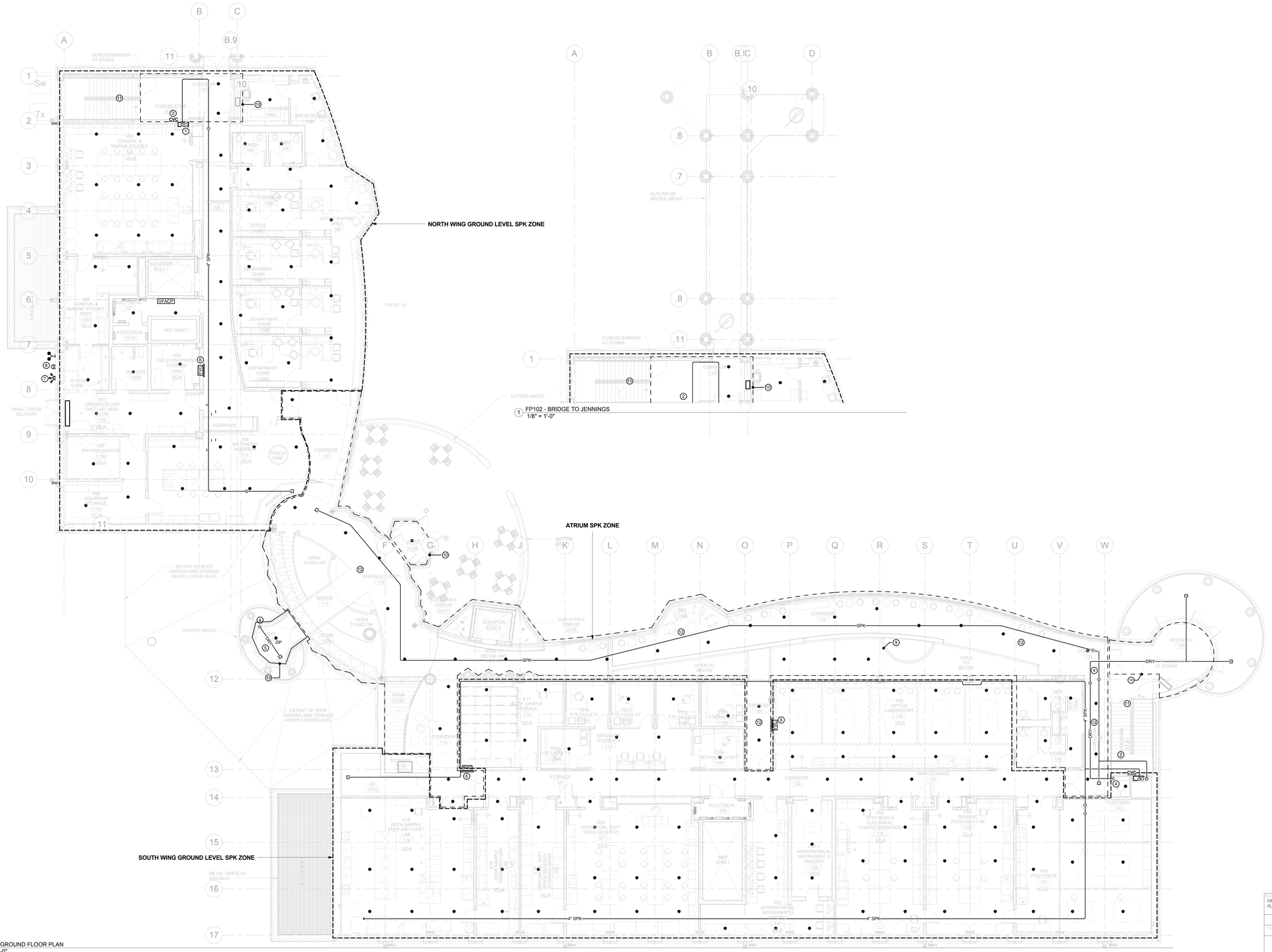
8. USE UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS AND WHERE SPRINKLER PIPING MUST BE RUN EXPOSED. USE CONCEALED PENDENT SPRINKLER HEADS IN AREAS WITH FINISHED AND/OR ACCESSIBLE CEILINGS.

9. ALL SPK VALVES SHALL BE LABELED TO IDENTIFY WHAT AREAS THEY CONTROL.

10. ALL SPK SHUT-OFF VALVES SHALL BE CHAINED IN THE OPEN POSITION AND PADLOCKED.

GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.



1 FP102 - BRIDGE TO JENNINGS
1/8" = 1'-0"

2 FP102 - GROUND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

drawing title: FIRE PROTECTION GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date 11-21-2012
11-21-2012 Bid Documents			scale 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by JPL MT
			checked by GVD
	CAD no. 130	project no. BI-RS-283-ARC	drawing no. FP102

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. 6" SPK/SP RISER, 3" DRAIN RISER.
2. FLOOR SPK ZONE VALVE ASSEMBLY IN CABINET. SEE DETAIL FOR INFORMATION.
3. REMOTE FIRE VALVE CABINET.
4. DRY SPK SYSTEM FOR BRIDE AREA..
5. DRY SPK MAIN FOR COVERAGE UNDER BRIDGE.
6. PROVIDE SPK HEADS AT 6'-0" SPACING ON BOTH SIDES OF GLASS.
7. ATRIUM SPK ZONE RISER.
8. PROVIDE COMPLETE SPK COVERAGE AT STAIR.
9. PROVIDE ADDITIONAL SPRINKLER COVERAGE ABOVE CORRIDOR CEILING.
10. DRY SPK SYSTEM RISER.
11. ATRIUM AREA OUTLINE. COORDINATE AREA OUTLINE WITH ARCHITECT'S DRAWINGS.

FIRE PROTECTION GENERAL NOTES

1. THIS DRAWING DEPICTS A PROPOSED FIRE PROTECTION SYSTEM LAYOUT WHICH IS INDICATED FOR COORDINATION PURPOSES ONLY. THIS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH NFPA, STATE, & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION.

2. REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR DESIGN CRITERIA AND INSTALLATION REQUIREMENTS.

3. FIRE PROTECTION SYSTEM CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLERS AND PIPING WITH HVAC DUCTS, EQUIPMENT, BEAMS, COLUMNS, LIGHTS, AND ANY OTHER OBSTRUCTIONS IN ACCORDANCE WITH NFPA.

4. THIS CONTRACT INCLUDES A PERFORMANCE SPECIFICATION FOR THE ENTIRE FIRE PROTECTION SYSTEM.

5. PROVIDE ALL PIPING, SUPPORTS, AND EQUIPMENT FOR A COMPLETE FULL COVERAGE SYSTEM IN CONFORMANCE WITH NFPA, STATE & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION. ADVISE ARCHITECT OF ANY CONFLICTS WHICH MUST BE RESOLVED PRIOR TO INSTALLATION.

6. PROVIDE CHROME PLATED ESCUTCHEONS AT EXPOSED PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

7. ALL NEW SPRINKLER HEADS SHALL BE OF QUICK RESPONSE TYPE WITH TEMPERATURE RATING BASED ON AMBIENT TEMPERATURE CONDITIONS FOR EACH PROTECTED SPACE.

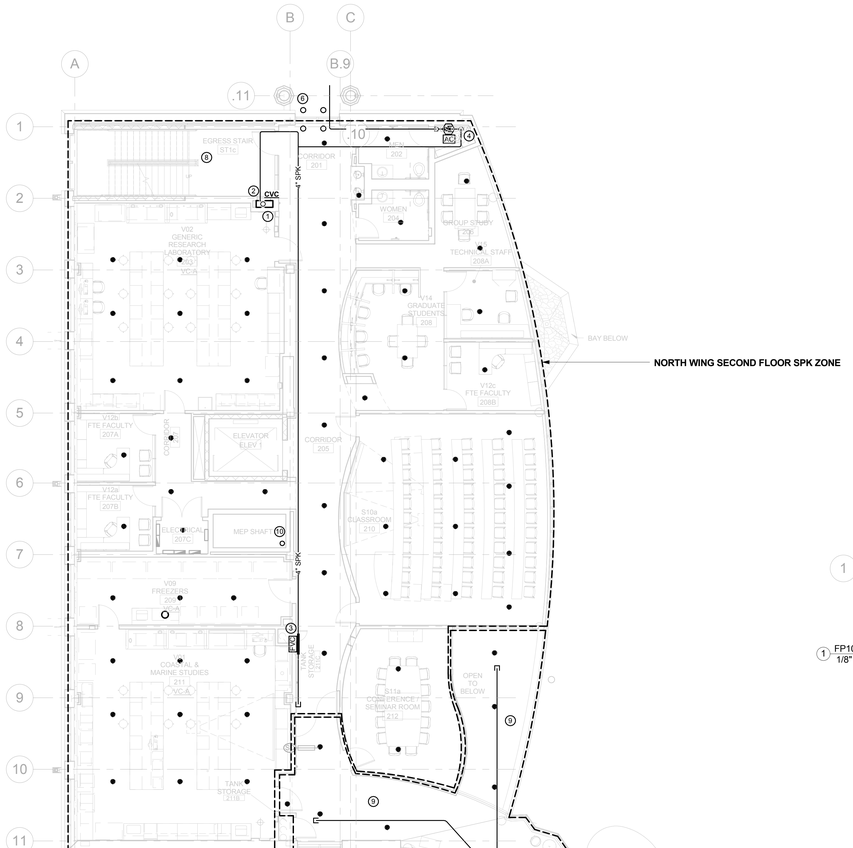
8. USE UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS AND WHERE SPRINKLER PIPING MUST BE RUN EXPOSED. USE CONCEALED PENDENT SPRINKLER HEADS IN AREAS WITH FINISHED AND/OR ACCESSIBLE CEILINGS.

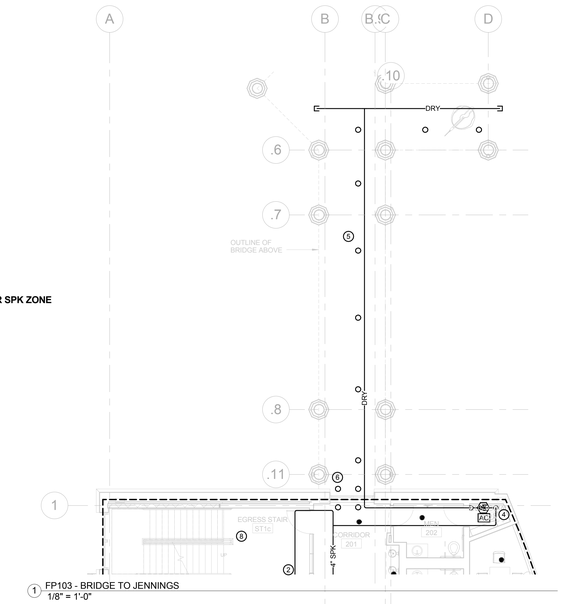
9. ALL SPK VALVES SHALL BE LABELED TO IDENTIFY WHAT AREAS THEY CONTROL.

10. ALL SPK SHUT-OFF VALVES SHALL BE CHAINED IN THE OPEN POSITION AND PADLOCKED.

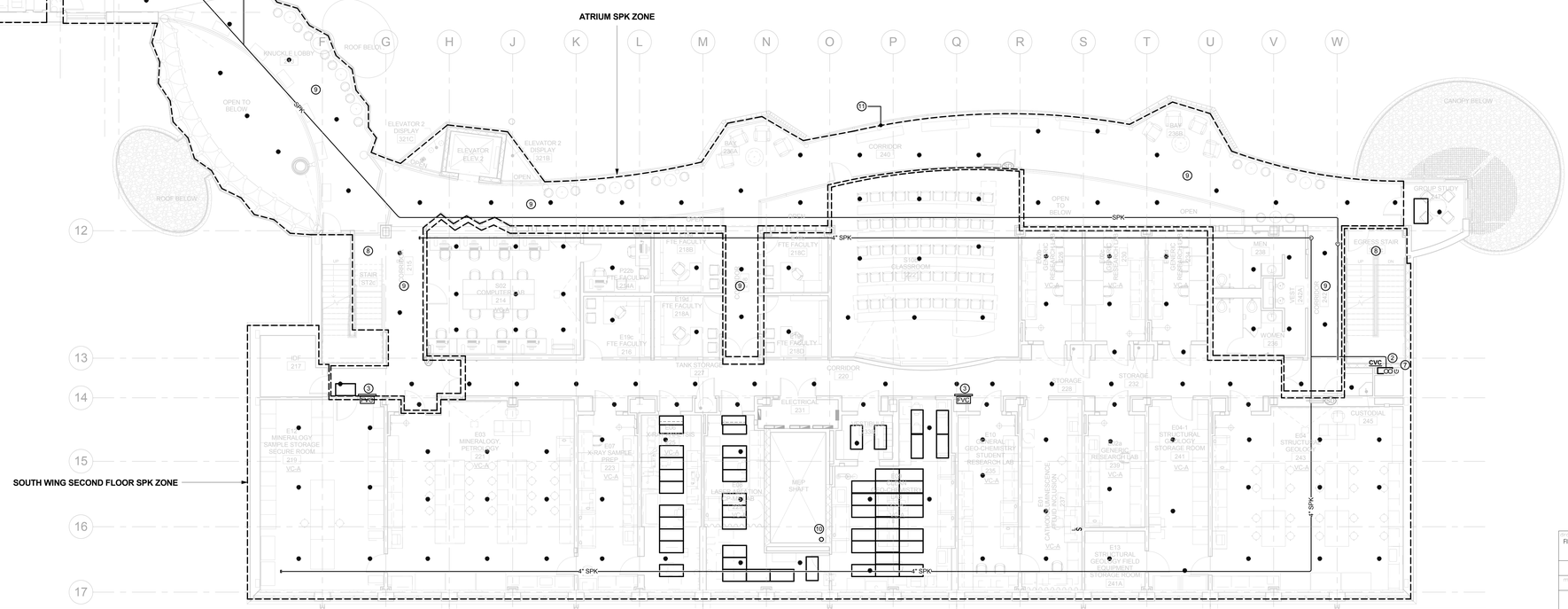
GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.





1 FP103 - BRIDGE TO JENNINGS
1/8" = 1'-0"



PROJECT NORTH

21-10-038

project title	FIRE PROTECTION 2ND FLOOR PLAN
REVISIONS	
mark / date / description	
11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 130
project no. BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale 1/8" = 1'-0"
drawn by JPL MT
checked by GVD
drawing no. FP103

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. 6" SPK/SP RISER, 3" DRAIN RISER.
2. FLOOR SPK ZONE VALVE ASSEMBLY IN CABINET. SEE DETAIL FOR INFORMATION.
3. REMOTE FIRE VALVE CABINET.
4. DRY SPK SYSTEM FOR ATTIC MECH AREA.
5. PROVIDE COMPLETE SPK COVERAGE AT STAIR.
6. PROVIDE ADDITIONAL SPK COVERAGE ABOVE CORRIDOR CEILING.
7. PROVIDE SPK HEAD IN VENTED GAS CYLINDER STORAGE CABINET.
8. PROVIDE CLOSELY SPACED SPK HEADS 6' 0" ON CENTER AT THIS AREA FOR ATRIUM SEPARATION.
9. COVER PLATES FOR SPK HEADS IN THE AREA OF OUTLINE TO BE OF CUSTOM COLOR. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
10. DRY SPK MAIN UP TO ATTIC.

FIRE PROTECTION GENERAL NOTES

1. THIS DRAWING DEPICTS A PROPOSED FIRE PROTECTION SYSTEM LAYOUT WHICH IS INDICATED FOR COORDINATION PURPOSES ONLY. THIS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH NFPA, STATE, & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION.

2. REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR DESIGN CRITERIA AND INSTALLATION REQUIREMENTS.

3. FIRE PROTECTION SYSTEM CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLERS AND PIPING WITH HVAC DUCTS, EQUIPMENT, BEAMS, COLUMNS, LIGHTS, AND ANY OTHER OBSTRUCTIONS IN ACCORDANCE WITH NFPA.

4. THIS CONTRACT INCLUDES A PERFORMANCE SPECIFICATION FOR THE ENTIRE FIRE PROTECTION SYSTEM.

5. PROVIDE ALL PIPING, SUPPORTS, AND EQUIPMENT FOR A COMPLETE FULL COVERAGE SYSTEM IN CONFORMANCE WITH NFPA, STATE & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION. ADVISE ARCHITECT OF ANY CONFLICTS WHICH MUST BE RESOLVED PRIOR TO INSTALLATION.

6. PROVIDE CHROME PLATED ESCUTCHEONS AT EXPOSED PIPING PENETRATIONS OF WALLS, CEILINGS, AND FLOORS.

7. ALL NEW SPRINKLER HEADS SHALL BE OF QUICK RESPONSE TYPE WITH TEMPERATURE RATING BASED ON AMBIENT TEMPERATURE CONDITIONS FOR EACH PROTECTED SPACE.

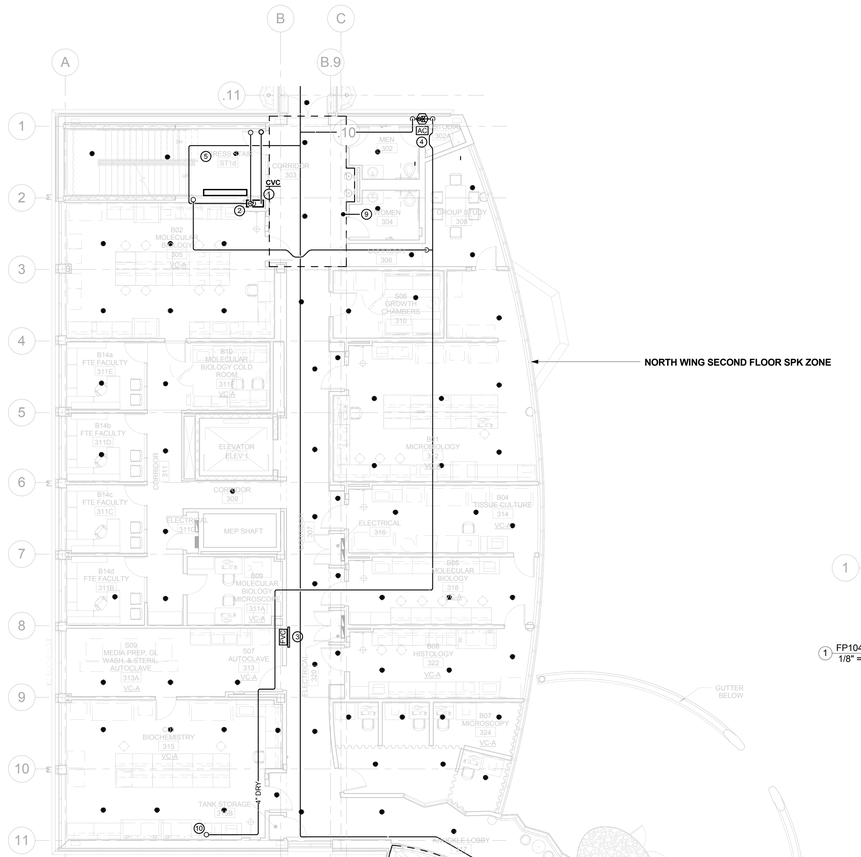
8. USE UPRIGHT SPRINKLER HEADS IN AREAS WITHOUT CEILINGS AND WHERE SPRINKLER PIPING MUST BE RUN EXPOSED. USE CONCEALED PENDENT SPRINKLER HEADS IN AREAS WITH FINISHED AND/OR ACCESSIBLE CEILINGS.

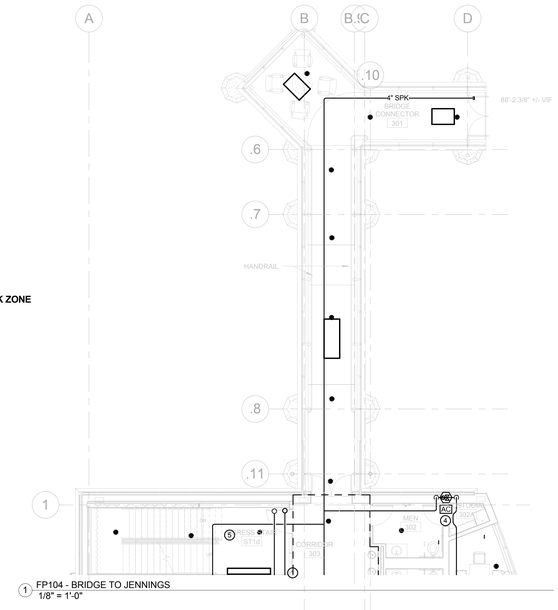
9. ALL SPK VALVES SHALL BE LABELED TO IDENTIFY WHAT AREAS THEY CONTROL.

10. ALL SPK SHUT-OFF VALVES SHALL BE CHAINED IN THE OPEN POSITION AND PADLOCKED.

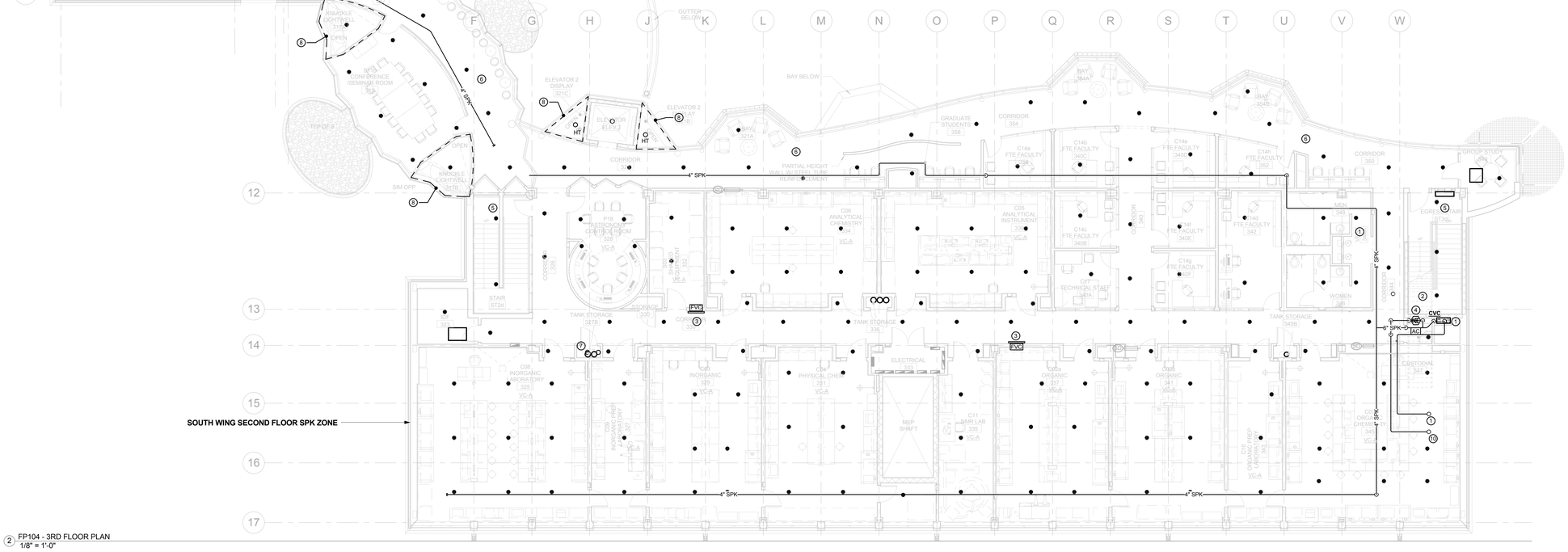
GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.





1 FP104 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 FP104 - 3RD FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

drawing title: FIRE PROTECTION 3RD FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			
mark / date / description	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date: 11-21-2012
1 / 11-21-2012 / Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		scale: 1/8" = 1'-0"
			drawn by: JH, MT
			approved by: GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	drawing no.: FP104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. DRY SPK MAIN FOR PENTHOUSE MECHANICAL SPACE.
2. FIRE HOSE VALVE.
3. DRY SPK MAIN DN.
4. PROVIDE COMPLETE SPK COVERAGE AT MECHANICAL SPACES.
5. ROOF FIRE HOSE VALVE

FIRE PROTECTION GENERAL NOTES

1. THIS DRAWING DEPICTS A PROPOSED FIRE PROTECTION SYSTEM LAYOUT WHICH IS INDICATED FOR COORDINATION PURPOSES ONLY. THIS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH NFPA, STATE, & LOCAL CODES, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION.

2. REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR DESIGN CRITERIA AND INSTALLATION REQUIREMENTS.

3. FIRE PROTECTION SYSTEM CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLERS AND PIPING WITH HVAC DUCTS, EQUIPMENT, BEAMS, COLUMNS, LIGHTS, AND ANY OTHER OBSTRUCTIONS IN ACCORDANCE WITH NFPA.

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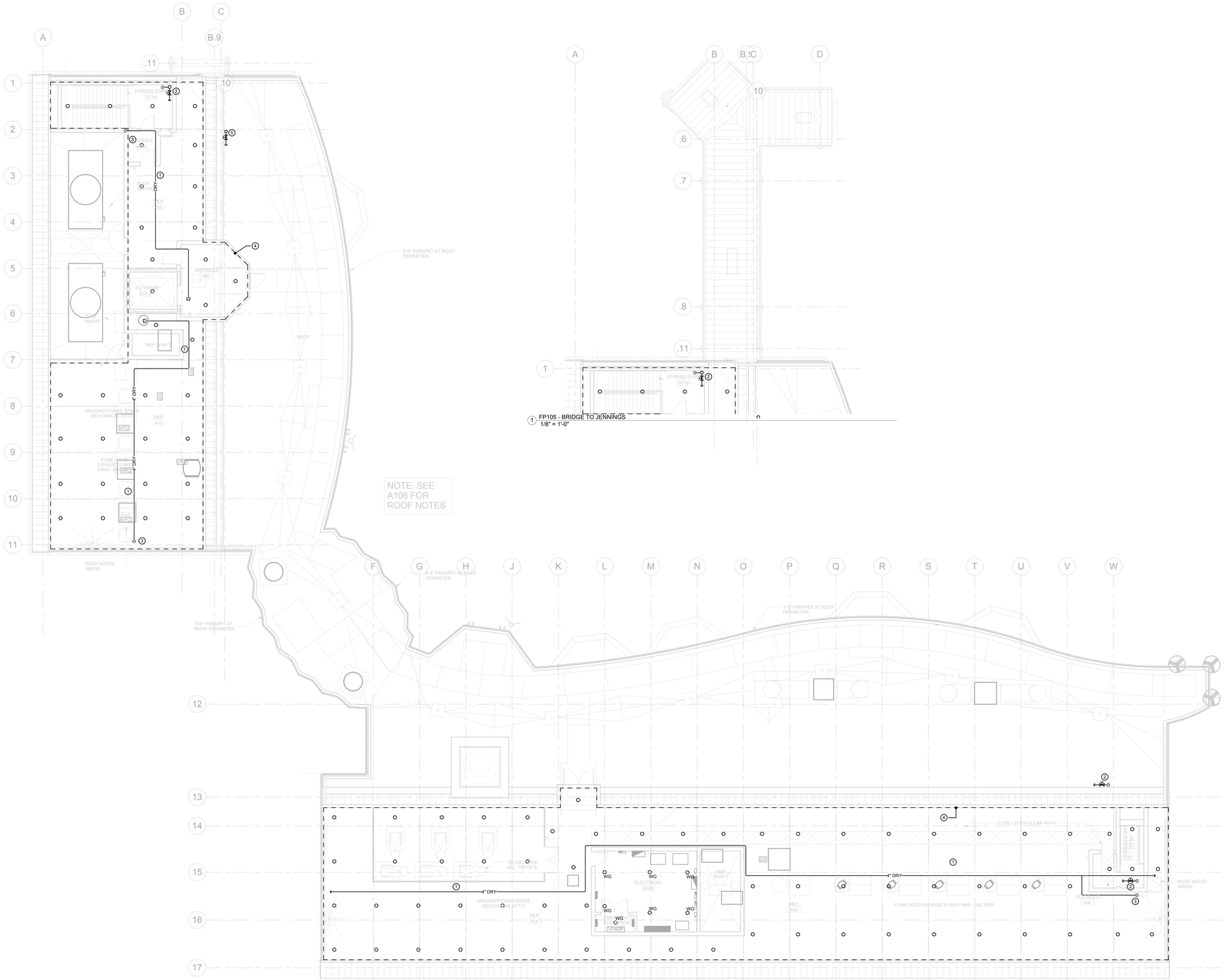
GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.



1 FP105 - BRIDGE TO JENNINGS
1/8" = 1'-0"

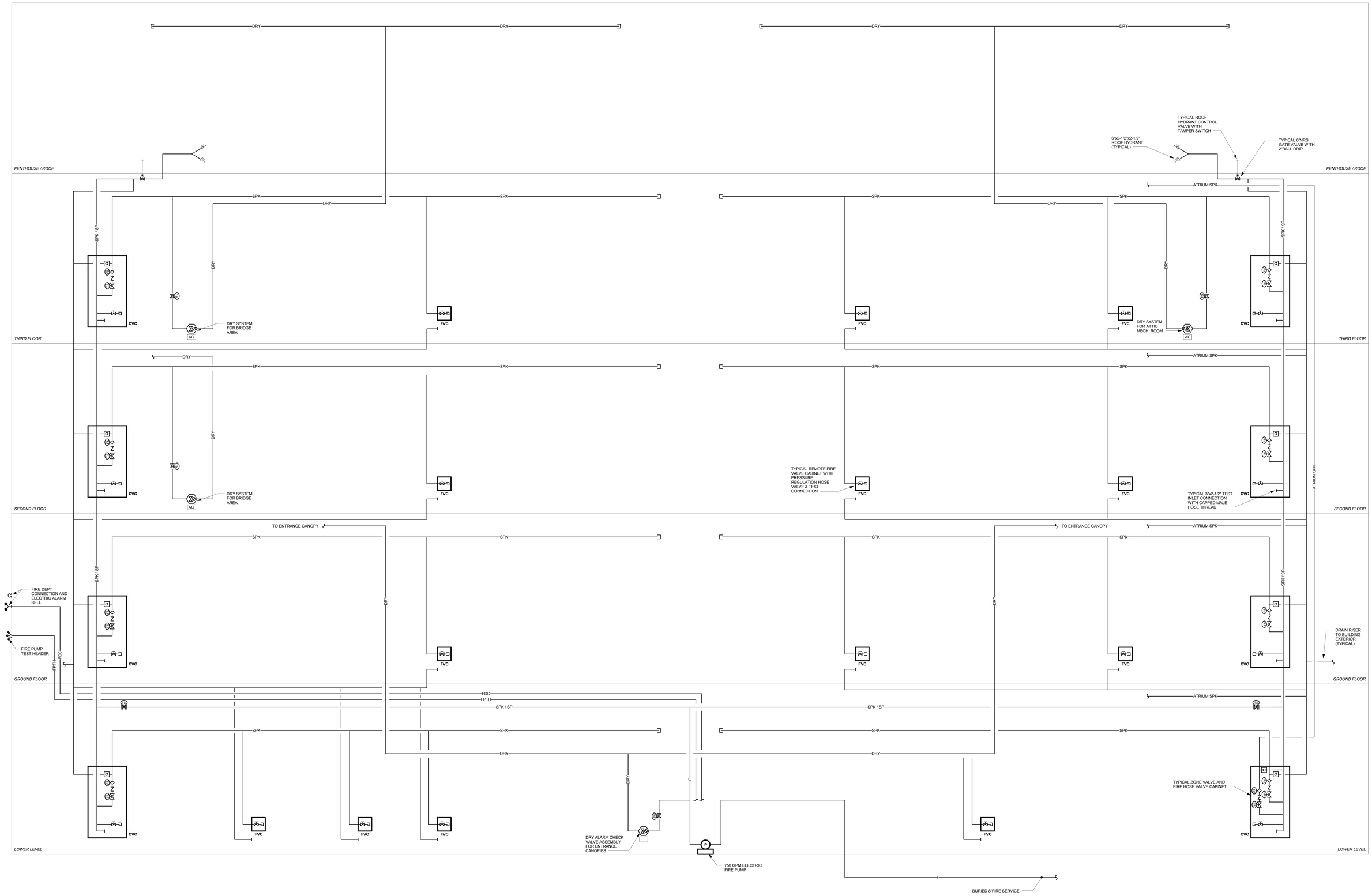
2 FP105 - 4TH FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

drawing title: FIRE PROTECTION MECHANICAL ATTIC FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 1 / 11-21-2012 / Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: JH, MT
			approved by: GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	drawing no.: FP105

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



GENERAL NOTES

1. THIS DRAWING IS DIAGRAMMATIC AND IS INTENDED TO ENHANCE THE CLARITY OF THE DESIGN INTENT. IT DOES NOT INDICATE EVERY PIECE OF EQUIPMENT, FITTING, VALVE AND APPURTENANCE REQUIRED NOR DOES IT INDICATE THE ACTUAL ROUTING THAT MAY BE REQUIRED TO MAKE A COMPLETE SYSTEM INSTALLATION. IT IS THE DIVISION CONTRACTOR'S RESPONSIBILITY TO PROVIDE A COMPLETE SYSTEM AND IDENTIFY ALL ROUTING AND PLACEMENT REQUIREMENTS AS PART OF THE COORDINATION AND CONSTRUCTION PROCESS.

21-10-038

drawing title
FIRE PROTECTION RISER

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

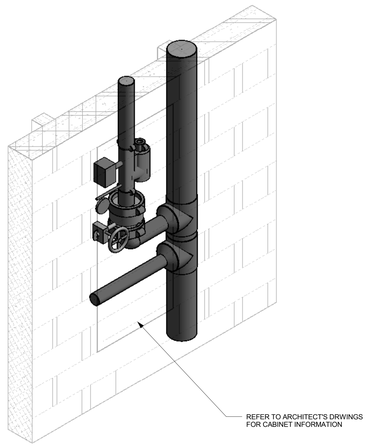
DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

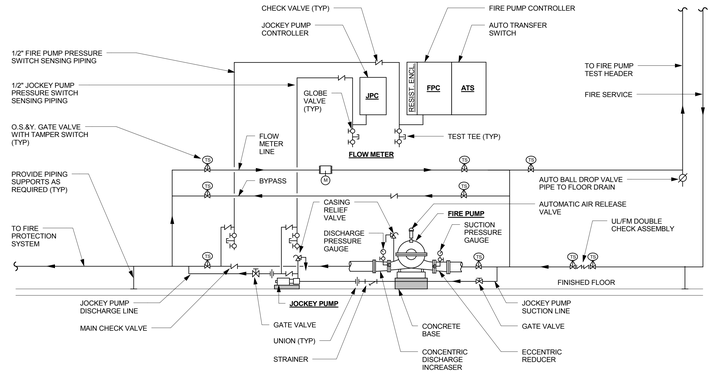
CAD file: 130
project no.: BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale N/ES = 1'-0"
drawn by JM, MT
approved by GVD
drawing no. FP301

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

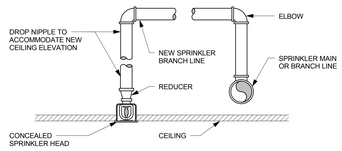


6 Zone Control 3D Iso



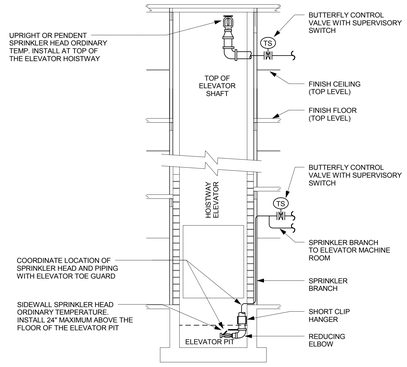
FIRE PUMP INSTALLATION DETAIL

NOT TO SCALE



SPRINKLER HEAD DETAILS

NOT TO SCALE



ELEVATOR HOISTWAY SPRINKLER PIPING DETAIL

NOT TO SCALE

21-10-038

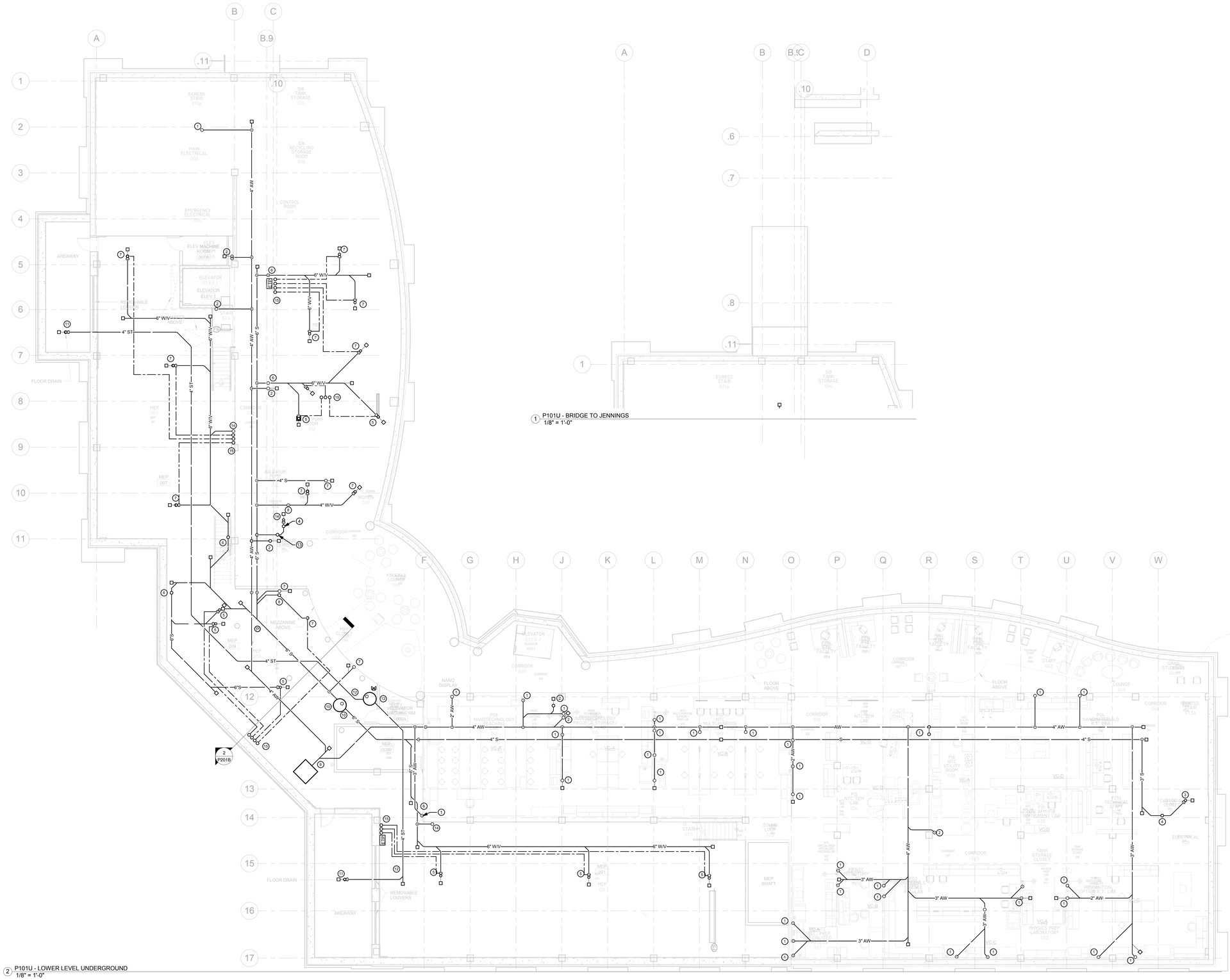
DRAWING TITLE: FIRE PROTECTION DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS: mark / date / description — 11-21-2012 / Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING	CAD file: 130 / project no.: BI-RS-283-ARC
SHEET: 2 of 2	DATE: 11-21-2012
SCALE: 12" = 1'-0"	DRAWN BY: JM, MT
APPROVED BY: GVD	DRAWING NO.: FP101

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. 2"AW UP.
2. 4"AW UP.
3. 3"W UP.
4. 1-1/2"V UP.
5. 6"S UP.
6. 3"V UP.
7. 4"S UP.
8. 2"V UP.
9. 4"AW TO AW PUMPS.
10. 6"S TO SEWAGE EJECTOR PUMPS.
11. 4"ST UP.
12. 4"ST TO SUMP PUMPS.
13. 2"W. UP.
14. 3"W. UP.
15. TRAP PRIMER DISTRIBUTION LINES UP TO TRAP PRIMER.

1 P101U - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 P101U - LOWER LEVEL UNDERGROUND
1/8" = 1'-0"

PROJECT NORTH

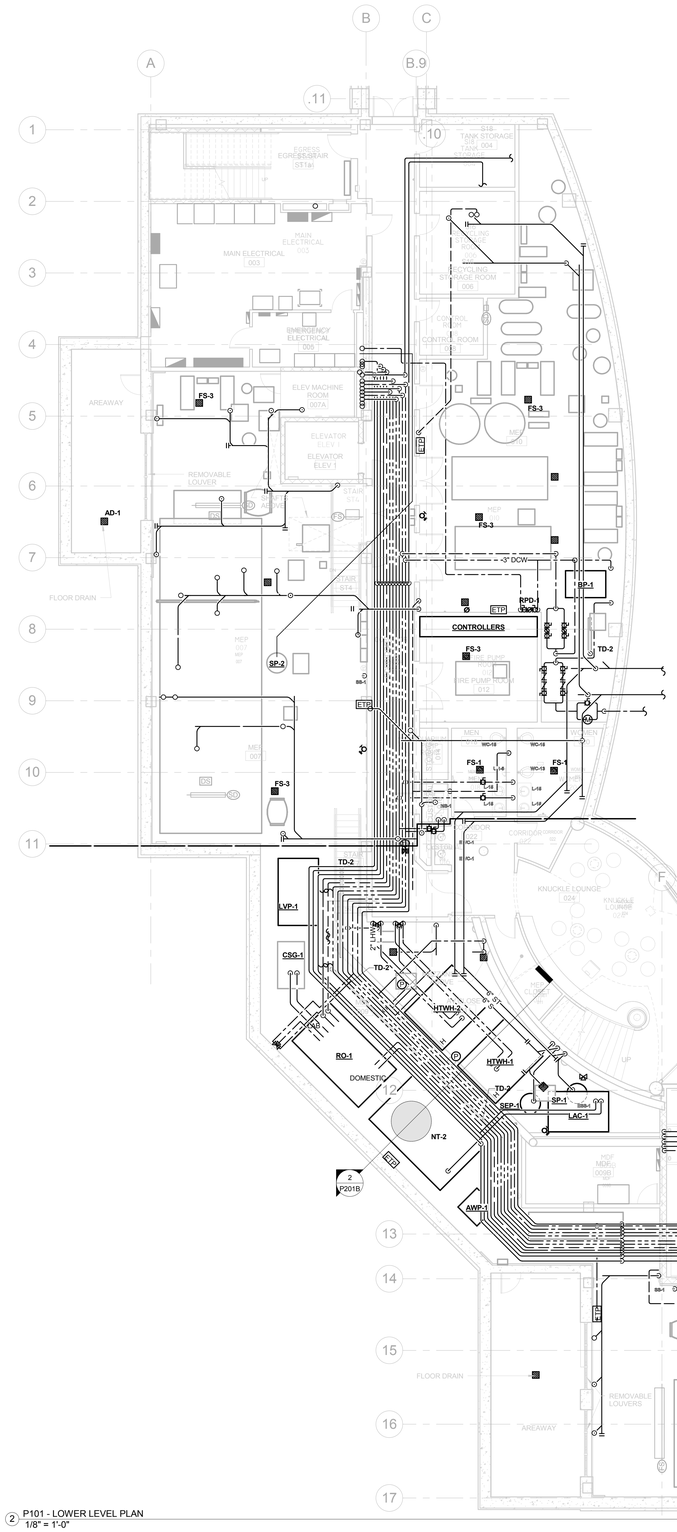
21-10-038

PLUMBING LOWER LEVEL UNDERGROUND PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE: 11-21-2012
11-21-2012 Bid Documents			SCALE: 1/8" = 1'-0"
	SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: JM, MT
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: P101U

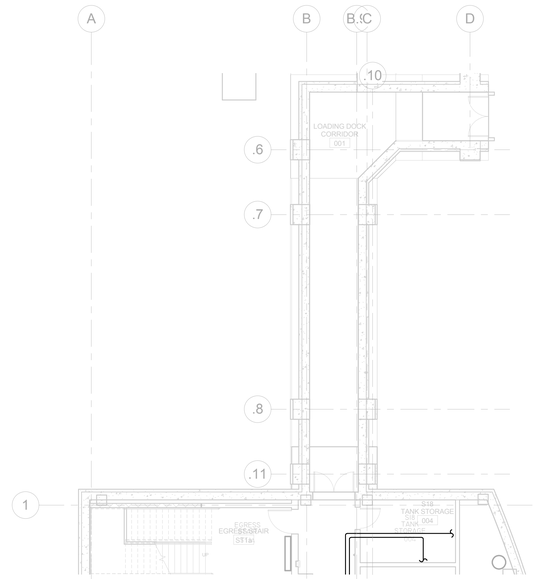
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR PIPE SIZING AND ADDITIONAL INFORMATION.



2 P101 - LOWER LEVEL PLAN
1/8" = 1'-0"



1 P101 - BRIDGE TO JENNINGS
1/8" = 1'-0"

PROJECT NORTH

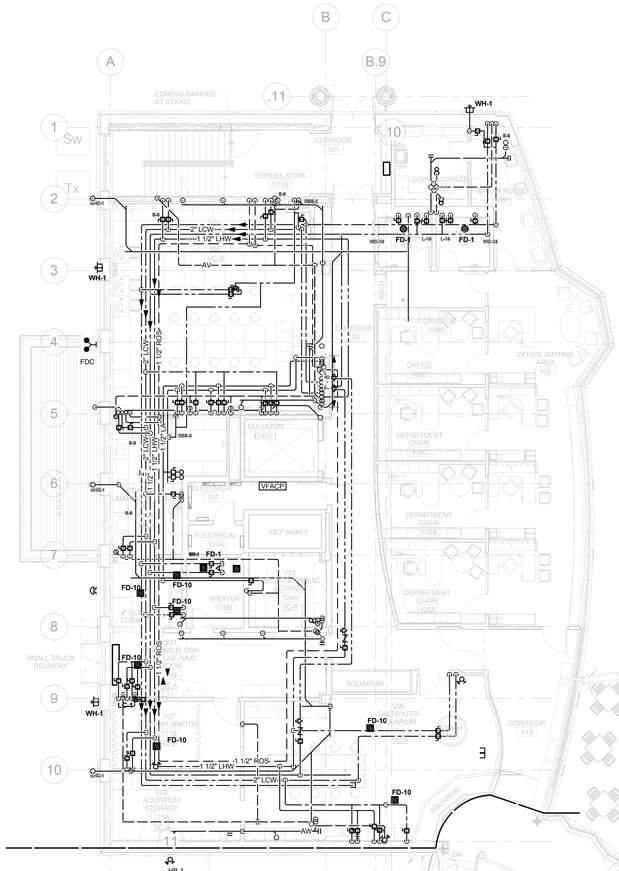
21-10-038

PLUMBING LOWER LEVEL FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY		DATE 11-21-2012
11-21-2012 Bid Documents	BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171		SCALE 1/8" = 1'-0"
	PROJECT SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY JM, MT
			CHECKED BY GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. P101

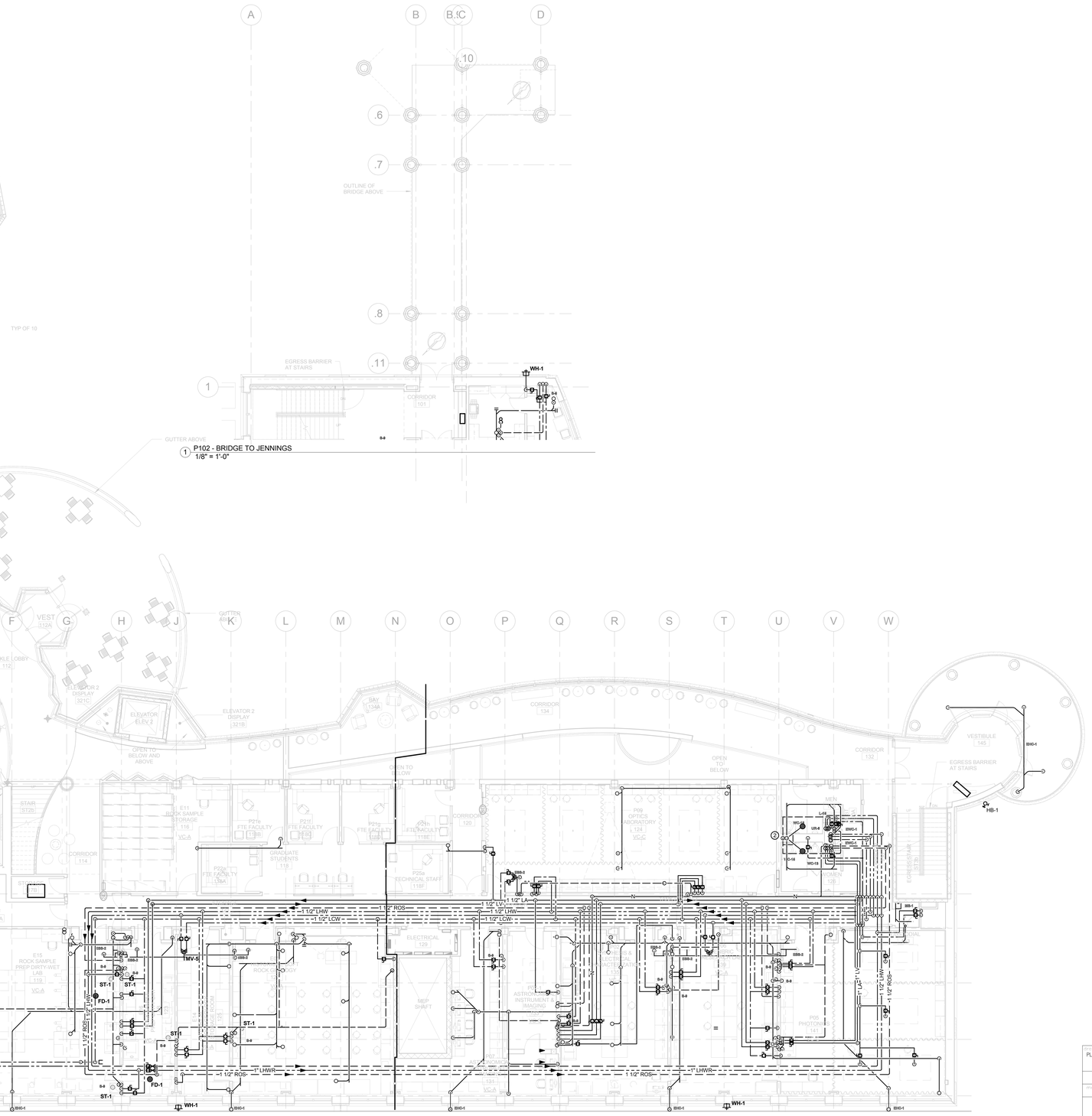
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR PIPE SIZING AND ADDITIONAL INFORMATION.



1 P102 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 P102 - GROUND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

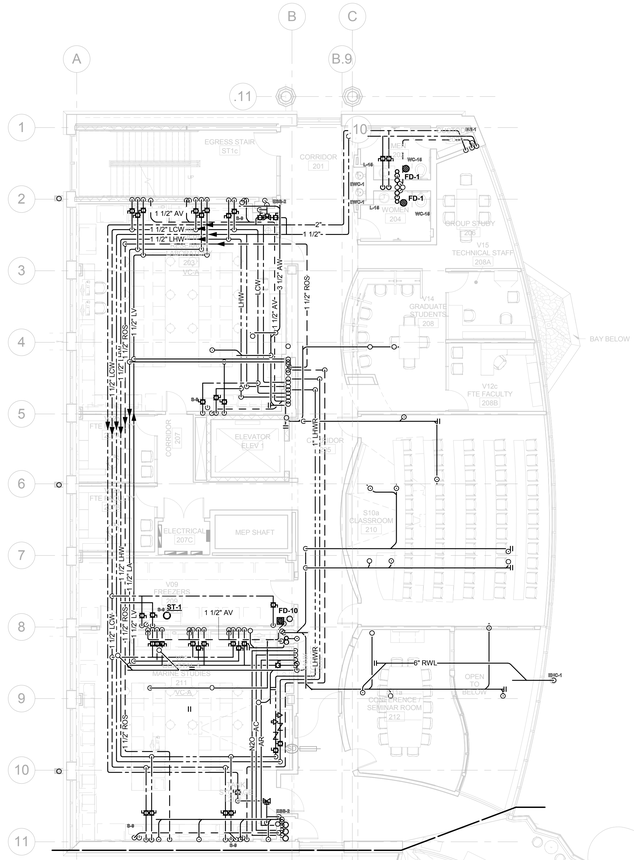
21-10-038

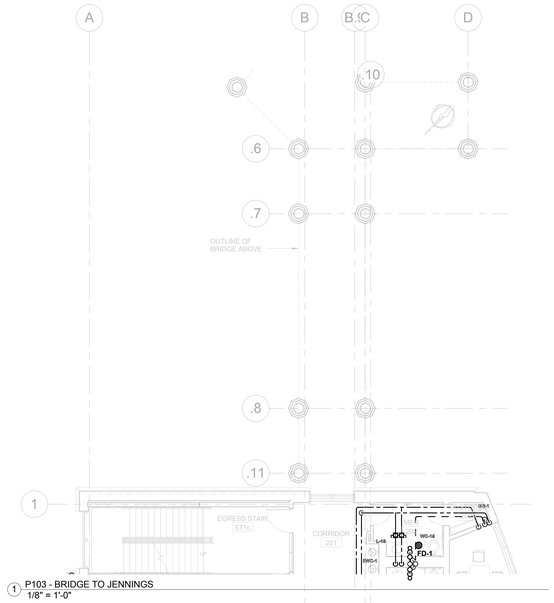
PROJECT TITLE: PLUMBING GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		sheet 2 of 2
REVISIONS			date 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale 1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by JPL MT
			checked by GVD
	CAD no. 130	project no. BI-RS-283-ARC	drawing no. P102

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

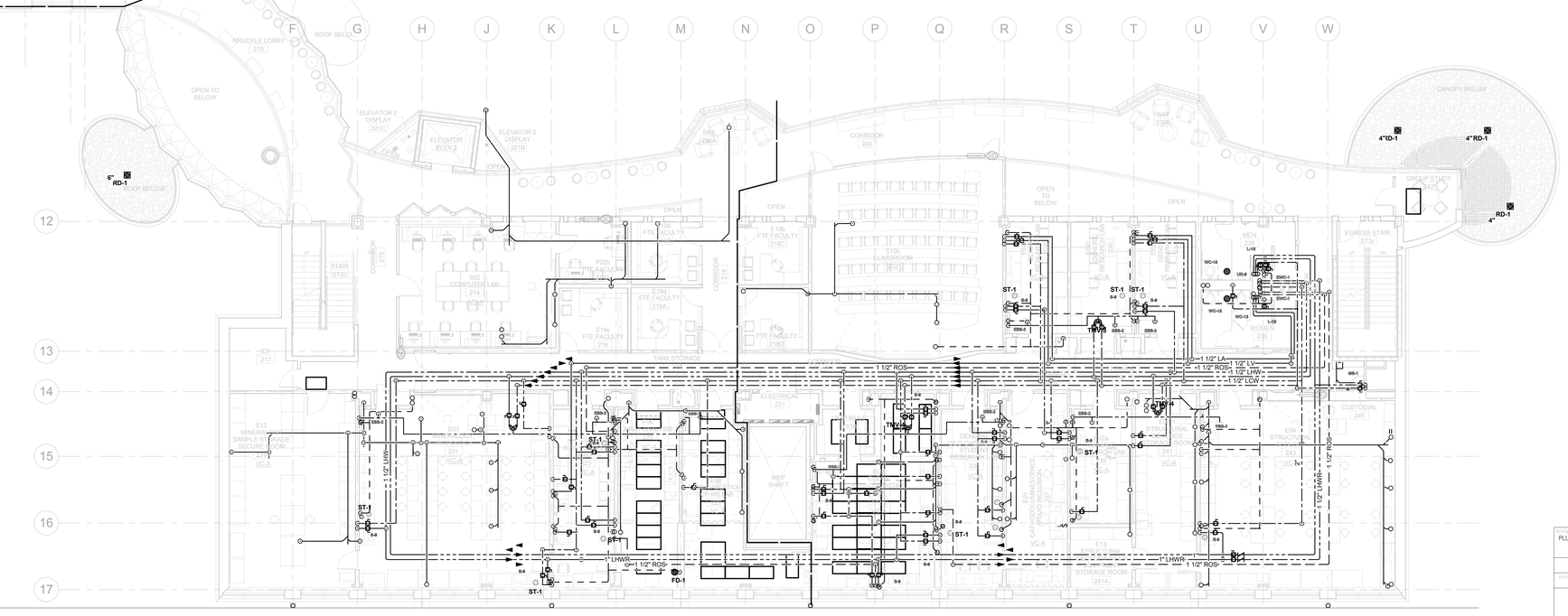
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR PIPE SIZING AND ADDITIONAL INFORMATION.





1 P103 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 P103 - 2ND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

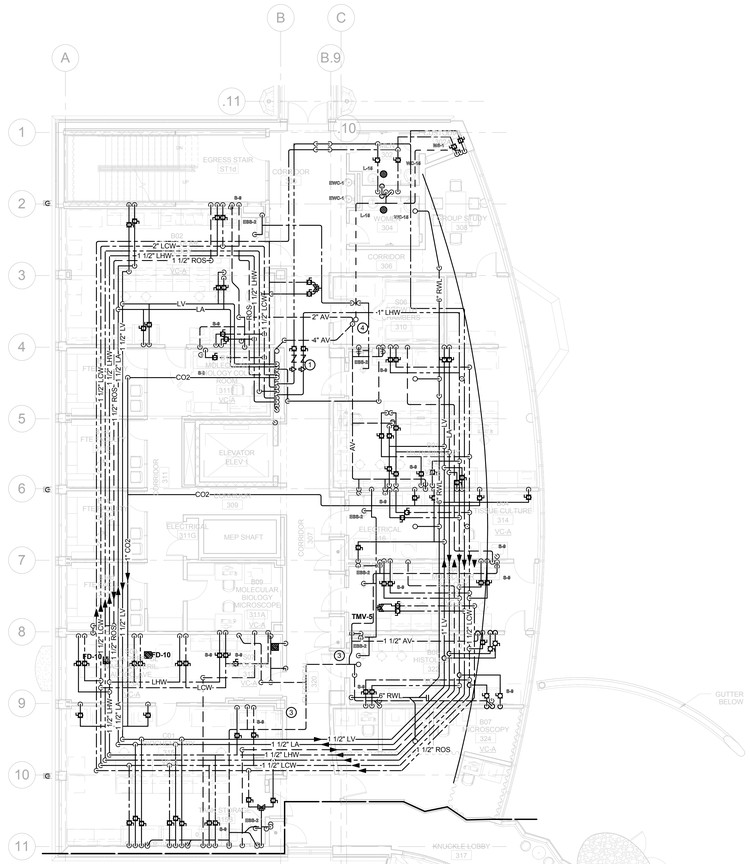
21-10-038

PROJECT: PLUMBING 2ND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		11-21-2012
11-21-2012 Bid Documents			scale 1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by JM, MT
			approved by CVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. P103

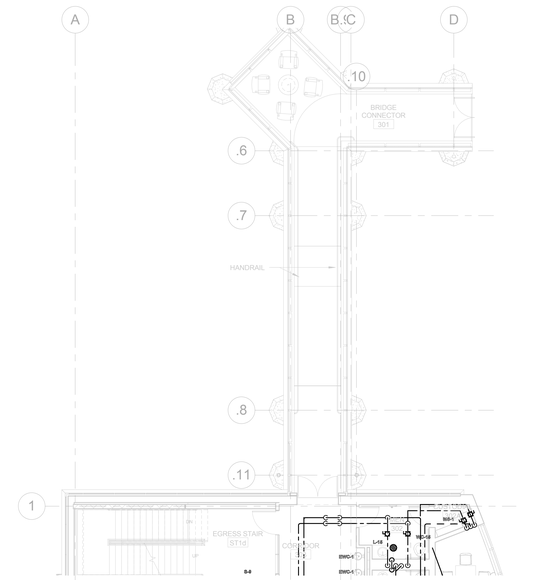
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

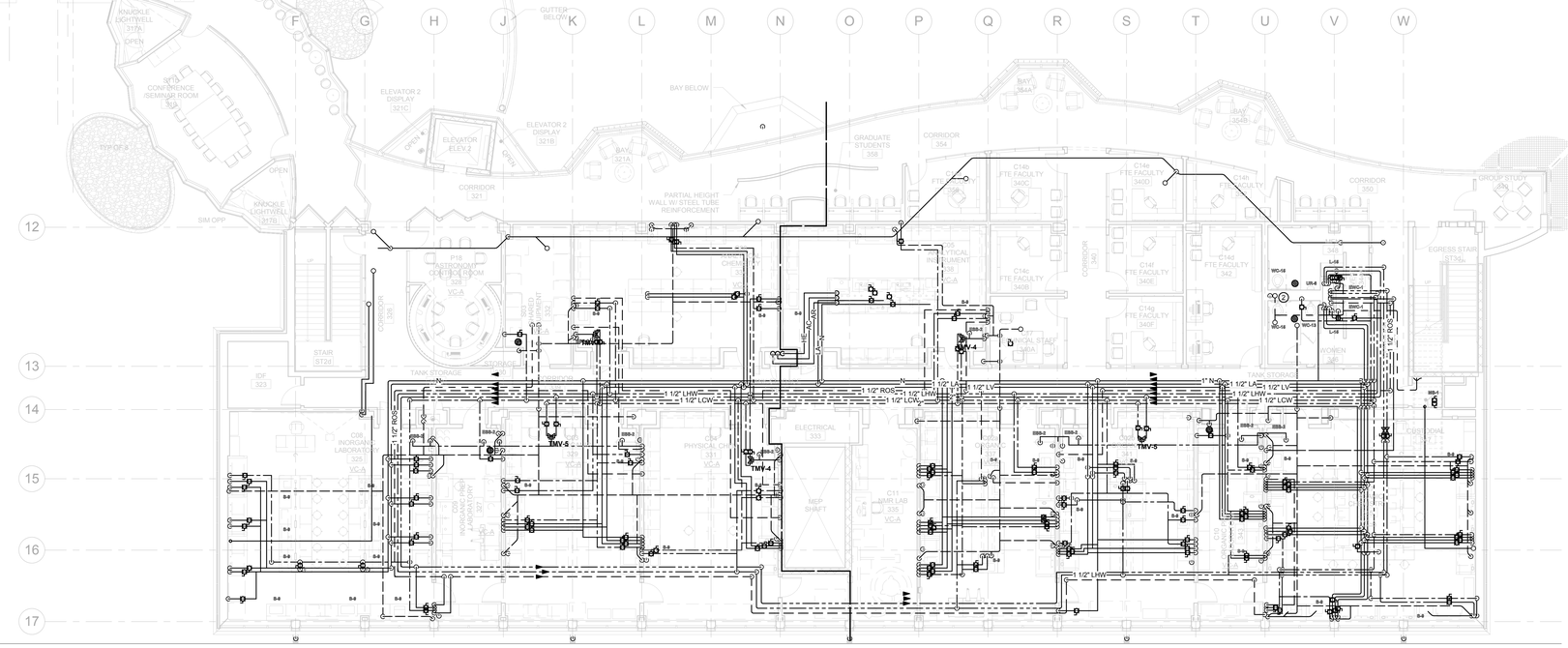
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR PIPE SIZING AND ADDITIONAL INFORMATION.



1 P104 - BRIDGE TO JENNINGS
1/8" = 1'-0"





2 P104 - 3RD FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

PROJECT TITLE: PLUMBING 3RD FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE 11-21-2012
11-21-2012 Bid Documents			SCALE 1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY JM, MT
			APPROVED BY GVD
	CAD file: 1393	project no.: BI-RS-283-ARC	DRAWING NO. P104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

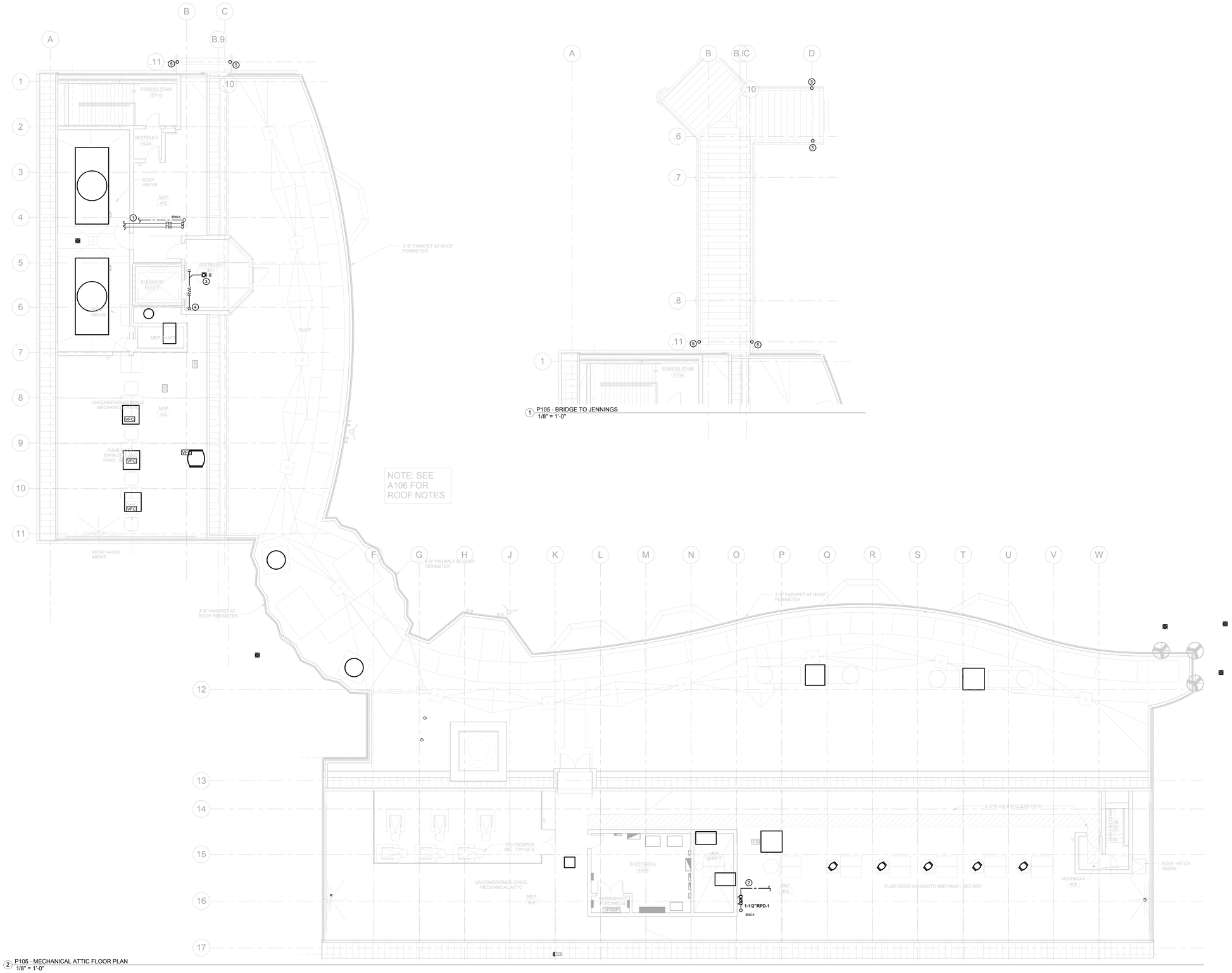
DRAWING NOTES

1. 2"CW MAKE-UP & (2) 2" PUMPED CONDENSATE FOR COOLING TOWER MAKE-UP. ALL PIPING SHALL BE HEAT TRACED AND INSULATED.
2. 1-1/2"CW MAKE-UP FOR HOOD WATERWASH SYSTEM. ALL PIPING SHALL BE HEAT TRACED & INSULATED. PIPE RPD RELIEF DN IN SHAFT TO LOWER LEVEL MECH. ROOM F.D. THROUGH AIR GAP.
3. 4"RWL UP TO R.D.
4. 4"RWL DN.
5. 4"RWL UP TO GUTTER DRAIN & DN TO BELOW GRADE. SEE CIVIL DRAWINGS FOR CONTINUATION.

GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.

1 P105 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 P105 - MECHANICAL ATTIC FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

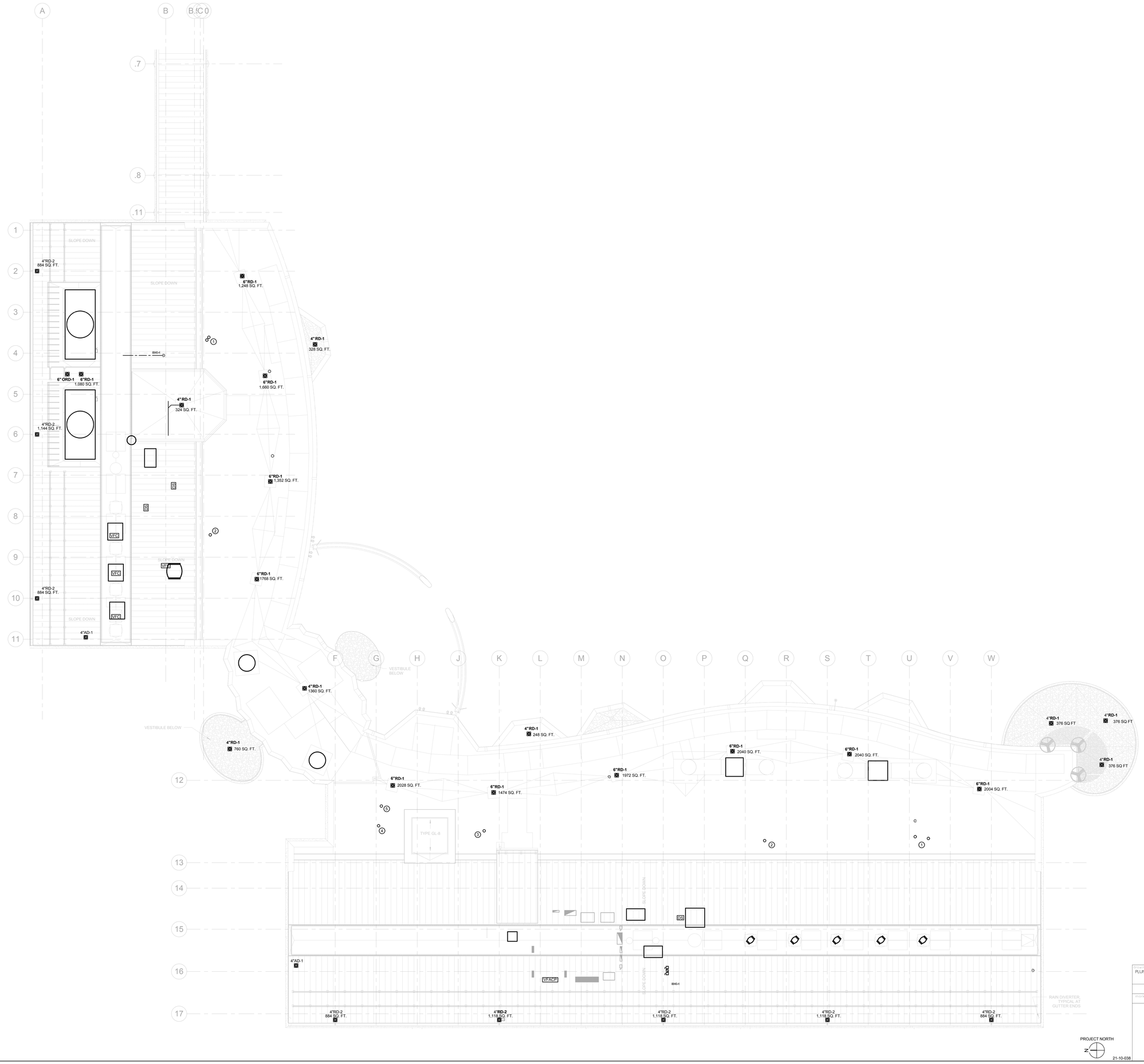
21-10-038

drawing: PLUMBING MECHANICAL ATTIC FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		sheet no. 2 of 2
REVISIONS			date 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		scale 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by JPI, MT
			approved by CVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. P105

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. 4"V., 4"AV. THROUGH ROOF.
2. 4"AV THROUGH ROOF.
3. 4"V. THROUGH ROOF.
4. 4"LAB AIR INTAKE.
5. 4" LAB VAC EXHAUST.

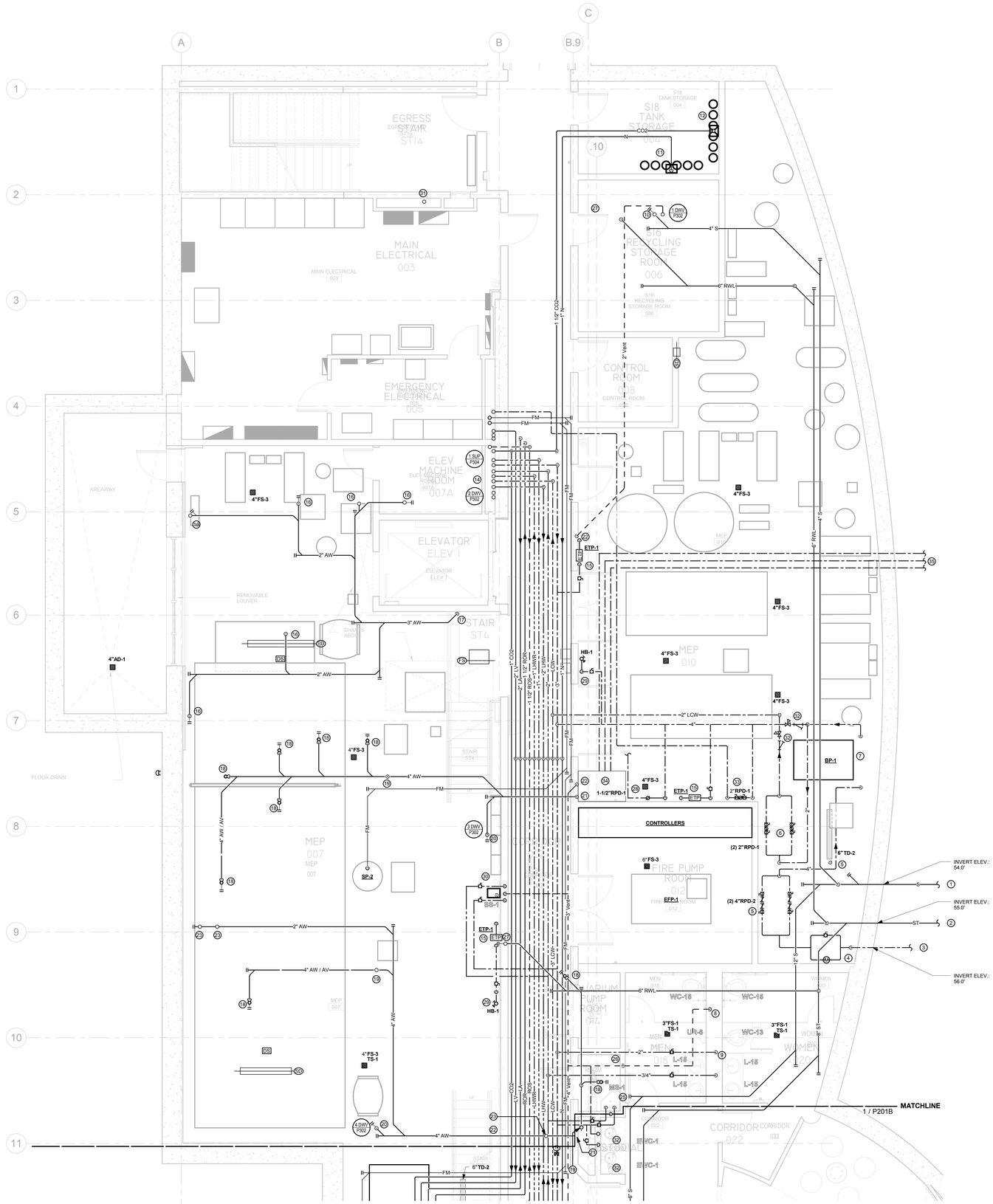


PROJECT NORTH

21-10-038

drawing title	PLUMBING ROOF PLAN
REVISIONS	
mark / date / description	1 / 11-21-2012 / Bid Documents
STATE OF CONNECTICUT	DEPARTMENT OF CONSTRUCTION SERVICES
DRAWING PREPARED BY	BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project	SCSU NEW ACADEMIC LABORATORY BUILDING
CAD file	130
project no.	BI-RS-283-ARC
volume	2 of 2
date	11-21-2012
scale	1/8" = 1'-0"
drawn by	JPM, MT
approved by	GVD
drawing no.	P106

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



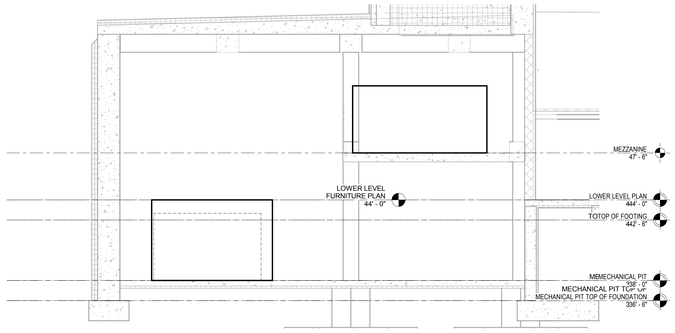
DRAWING NOTES

1. 6"SAN. SEWER TO 5'-0" OUTSIDE OF THE BUILDING. SEE CIVIL DRAWINGS FOR CONTINUATION.
2. 8"ST. SEWER TO 5'-0" OUTSIDE OF THE BUILDING. SEE CIVIL DRAWINGS FOR CONTINUATION.
3. 4" WATER SERVICE FROM 5'-0" OUTSIDE OF THE BUILDING. SEE CIVIL DRAWING FOR CONTINUATION.
4. WATER METER & BYPASS ASSEMBLY BY WATER CO.
5. DUPLEX WATER SERVICE BACKFLOW PREVENTER. PIPE RPD RELIEF TO T.D. THROUGH AIR GAP.
6. DUPLEX BACKFLOW PREVENTER FOR LAB WATER SYSTEM SEPARATION. PIPE RPD RELIEF TO T.D. THROUGH AIR GAP.
7. TRIPLEX DOMESTIC WATER BOOSTER PUMPS. SEE DETAIL FOR INFORMATION. PROVIDE 4" CONNECTIONS.
8. 4"S. DN, 4"V. UP. EXTEND PIPING IN CHASE TO FIXTURES.
9. 2"CW, 3/4"HW DROPS. EXTEND PIPING IN CHASE TO FIXTURES.
10. 4"S. & 4"V. UP.
11. NITROGEN TANKS & MANIFOLD. PROVIDE 1" CONNECTION. SEE DETAIL FOR INFORMATION.
12. CO2 TANKS & MANIFOLD. PROVIDE 1-1/2" CONNECTION. SEE DETAIL FOR INFORMATION.
13. NOT USED.
14. 4"AW, 2" LAB AIR, 2" LAB VAC, 1-1/2"ROS, 1-1/2"ROR, 1"LHWR, 1"HWR, 2"LHW, 2"HW, 2"LCW, 3"CW, 1-1/2"CO2, 2"CW MAKE-UP, (2) 2" FORCED MAIN RISERS UP.
15. ELECTRONIC TRAP PRIMER. EXTEND DISTRIBUTION LINES TO F.D. TRAPS.
16. 1-1/2"AW UP TO SINK/CUP SINK/EYEWASH.
17. 3"AW DN TO BURIED 3"AW.
18. 3"AW UP TO F.D.
19. 2"AV UP.
20. 4"AW STACK.
21. 4"AW DN TO BURIED 4"AW.
22. 3"V. UP FROM 6"W/V.
23. 2"AW UP TO SINK/LAUNDRY BOX.
24. AT EWC PROVIDE 1-1/2"W DN. TO BURIED 2"W., 1-1/2"V. UP, 1/2"CW.
25. AT MOP SINK PROVIDE BURIED 3"W., 1-1/2"V., 1/2"H&CW.
26. 2"V. UP FROM 4"W/V.
27. 6"RWL UP.
28. 1-1/2"RPD FOR HVAC EQUIPMENT WATER MAKE-UP. PIPE RPD RELIEF TO F.D. THROUGH AIR GAP.
29. 1/2"CW DROP TO HOSE BIBB.
30. AT SERVICE SINK PROVIDE 3"W. DN. TO BURIED 3"W., 1-1/2"V., 1/2"H&CW.
31. 2"AW UP & DN TO BURIED 2"AW.
32. PRV STATION WITH STRAINER. SET PRV. AT 80 PSI.
33. 2"CW MAKE-UP FOR COOLING TOWER. PIPE RPD RELIEF TO F.D. THROUGH AIR GAP.
34. IRRIGATION SYSTEM CONTROL PANEL BY OTHERS TO 5'-0" OUTSIDE THE BUILDING.
35. (3) 2"CW MAKE-UP LINES FROM CONTROL PANEL. SEE CIVIL DRAWINGS FOR CONTINUATION.

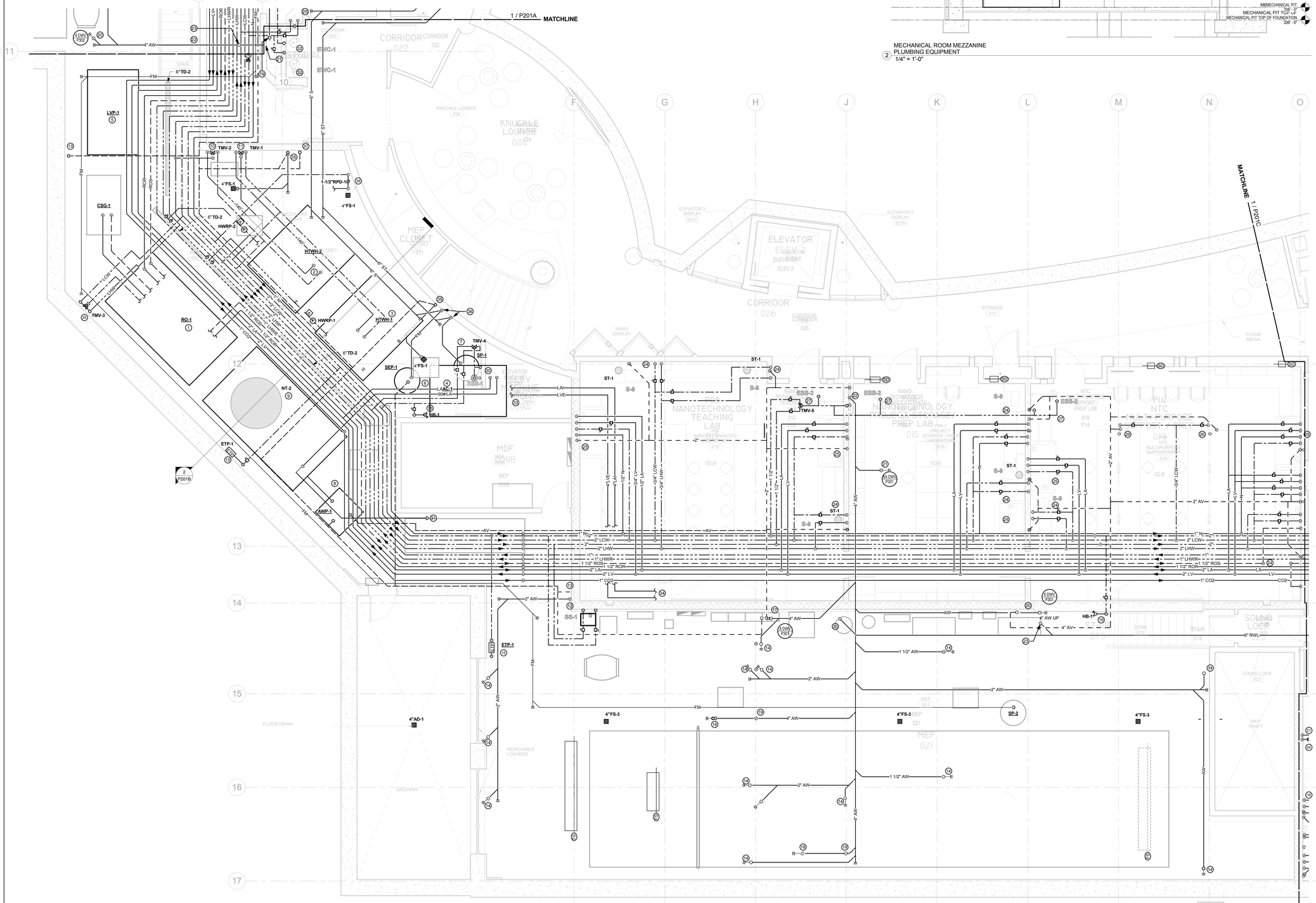
21-10-038

title: PLUMBING LOWER LEVEL PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS: mark / date / description — 11-21-2012 Bid Documents	drawing prepared by: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project: SCSU NEW ACADEMIC LABORATORY BUILDING	CAD file: 130 · project no.: BI-RS-283-ARC
sheet: 2 of 2	date: 11-21-2012 · scale: 1/4" = 1'-0" · drawn by: JM, MT · approved by: GVD · drawing no.: P201A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



MECHANICAL ROOM MEZZANINE
2 PLUMBING EQUIPMENT
1/4" = 1'-0"



DRAWING NOTES

1. REVERSE OSMOSIS PROCESS WATER SKID. PROVIDE 2" TEMPERED LAB WATER SUPPLY. REFER TO DETAIL FOR PIPING INFORMATION.
2. LABORATORY HOT WATER SYSTEM HEAT EXCHANGERS. LOCATED AT MEZZANINE PROVIDE 2"LCW AND 2" LAB HOT WATER CONNECTIONS. REFER TO DETAIL FOR PIPING INFORMATION.
3. DOMESTIC HOT WATER SYSTEM HEAT EXCHANGERS. LOCATED AT MEZZANINE PROVIDE 2"CW AND 2"HW CONNECTIONS. REFER TO DETAIL FOR PIPING INFORMATION.
4. LABORATORY AIR COMPRESSOR SYSTEM. LOCATTED AT MEZZANINE PROVIDE 3"LA CONNECTION AND 4" COMPRESSOR AIR INTAKE. REFER TO DETAIL FOR PIPING INFORMATION.
5. LABORATORY VACUUM PUMP SYSTEM. PROVIDE 4"LV CONNECTION AND 4" VACUUM EXHAUST. REFER TO DETAIL FOR PIPING INFORMATION.
6. DUPLEX SUBMERSIBLE SEWAGE EJECTOR PUMPS AND BASIN. LOCATED BELOW MEZZANINE PROVIDE (2) 6"S INLETS, 4"FM DISCHARGE, AND 4" VENT. REFER TO DETAIL FOR PIPING INFORMATION.
7. DUPLEX SUBMERSIBLE SUMP PUMPS AND BASIN. LOCATED BELOW MEZZANINE PROVIDE (2) 4"ST INLETS AND 4"FM DISCHARGE. REFER TO DETAIL FOR PIPING INFORMATION.
8. DUPLEX SUBMERSIBLE ACID WASTE SYSTEM EJECTOR PUMPS. PROVIDE 6"AW INLET, 4"FM DISCHARGE, AND 4"AV.
9. ACID NEUTRALIZATION SYSTEM SKID. PROVIDE 4" INLET AND OUTLET. REFER TO DETAIL FOR PIPING INFORMATION.
10. MASTER TMV FOR LAB HOT WATER. PROVIDE 2" CONNECTIONS.
11. MASTER TMV FOR DOMESTIC HOT WATER. PROVIDE 2" CONNECTIONS.
12. 2"AW DN. TO BURIED 2"AW.
13. 3"V. UP FROM 6"W/V.
14. 1-1/2"AW UP TO SINK/ CUPSINK/ EYEWASH.
15. ELECTRONIC TRAP PRIMER. EXTEND DISTRIBUTION LINES TO F.D. TRAPS.
16. 1/2"CW DROP TO HOSE BIBB.
17. 4"AW, 4"AV, 4"V. UP.
18. 3"AW UP TO F.D.
19. 1-1/2"AV UP.
20. 4"AW, 4"AV UP.
21. 4"AW UP.
22. 4"AW DN TO BURIED 4"AW.
23. 6"RWL UP.
24. AT LAB SINK PROVIDE 1-1/2"AW, 1-1/2"AV, 1/2"LCW, 1/2"LHW AT SINKS WITH SEDIMENT TRAPS, EXTEND 1-1/2"AW TO SEDIMENT TRAP, THEN DN TO BURIED 2"AW.
25. 3/4"LV, 1/2"LA, 1/2"LCW, 1/2"NITROGEN, 1-1/2"AW DN TO BURIED 2"AW, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
26. 1-1/2"AW DN. TO BURIED 2"AW, 1-1/2"AV UP, 1/2"CW DROP IN UTILITY COLUMN. EXTEND PIPING IN LAB CASEWORK TO CUP SINKS.
27. AT EMERGENCY EYEWASH/ SHOWER PROVIDE 1-1/2"AW DN TO BURIED 2"AW, 1-1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
28. AT SERVICE SINK PROVIDE 3"W. DN TO BURIED 3"W., 1-1/2"V. UP, 1/2"H&CW.
29. TMV FOR RO SYSTEM SUPPLY PIPING. SET TMV FOR 77°. PROVIDE 2" CONNECTIONS.
30. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
31. 1" 90LB LAB DROP TO DUST COLLECTION SYSTEM.
32. AT EWC, PROVIDE 1-1/2"W, 1-1/2"V, 1/2"CW.
33. 4"LAB AIR INTAKE & 4"LAB VAC EXHAUST FROM AIR COMPRESSOR & VAC PUMP.
34. 4"LAI & 4"LVE UP.
35. 4"S DN, 2"V UP.
36. 4"FM FROM BELOW MEZZANINE.
37. 2"V FROM BELOW.
38. 1-1/2"CW MAKE-UP & FLOOR SINK FOR AQUARIUM SYSTEM.

GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.

drawing title: PLUMBING LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

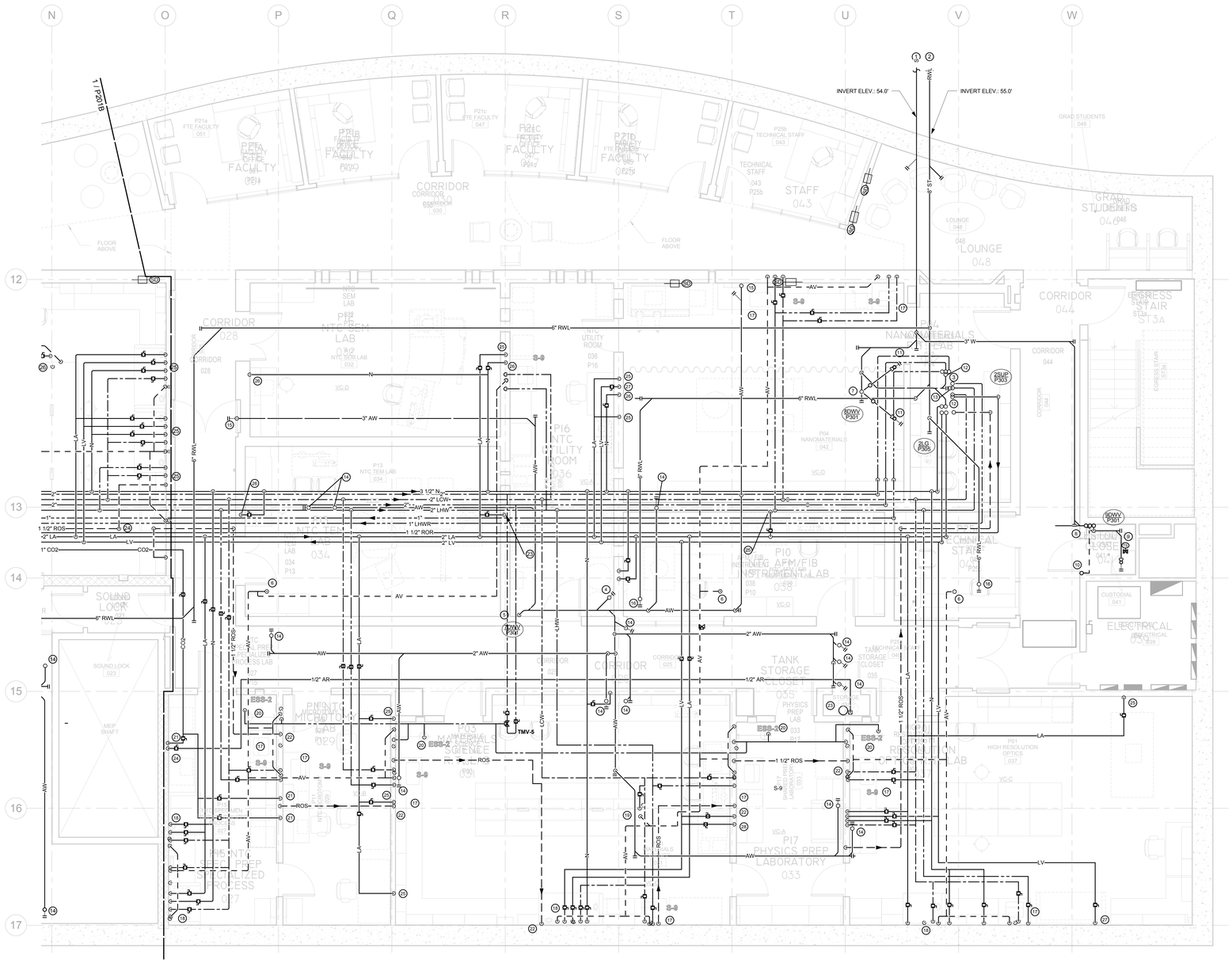
project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 130
project no. BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by JPL MT
checked by GVD
drawing no. P201B

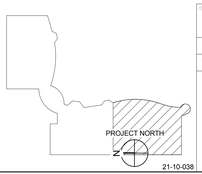
21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



DRAWING NOTES

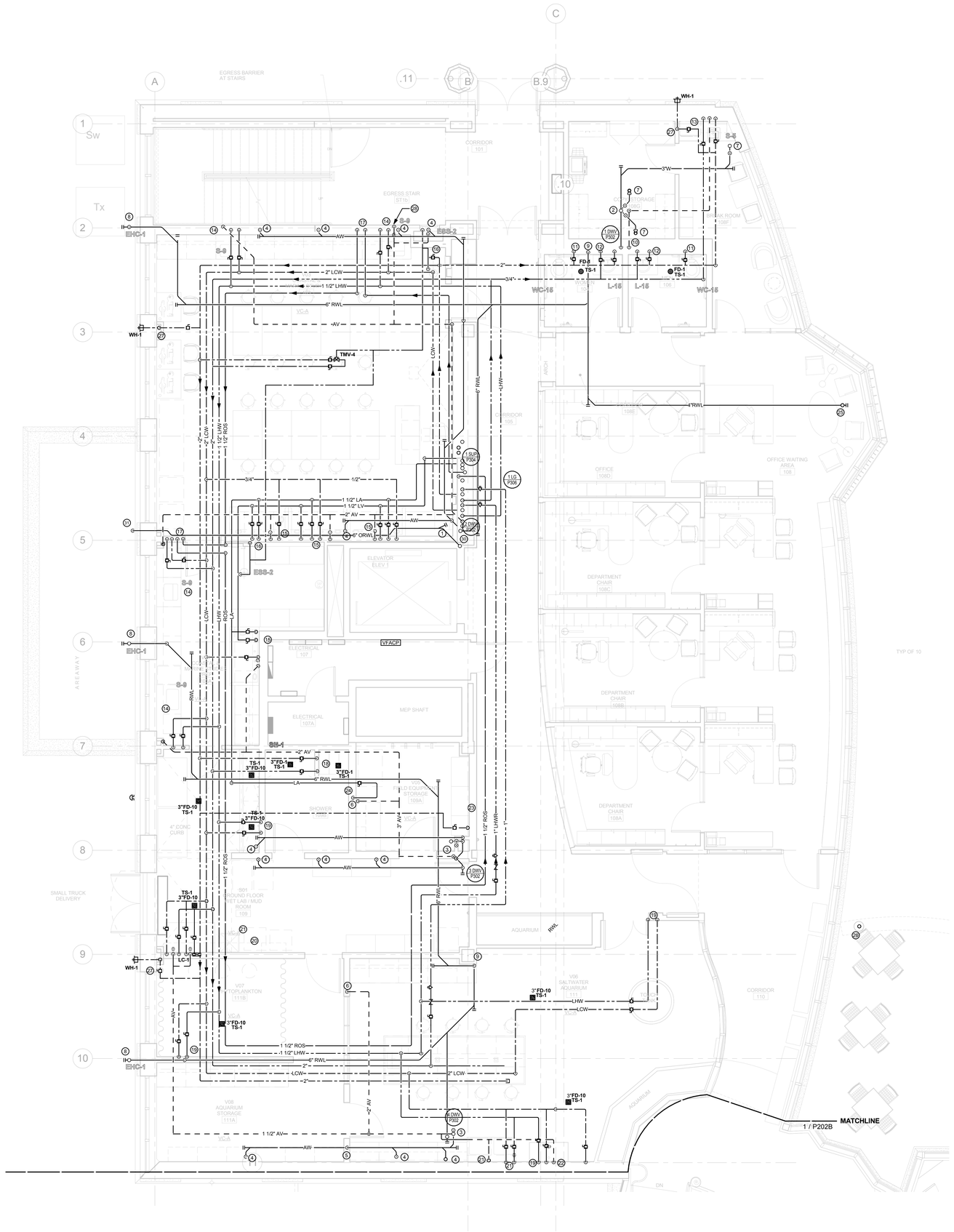
1. 6"SAN. SEWER TO 5'-0" OUTSIDE OF THE BUILDING. SEE CIVIL DRAWINGS FOR CONTINUATION.
2. 8"ST. SEWER TO 5'-0" OUTSIDE OF THE BUILDING. SEE CIVIL DRAWINGS FOR CONTINUATION.
3. 3"LA, 3"LV, 1 1/2"ROS, 1 1/2"ROR, 3"CW, 2"HW, 1"HWR, 2"LCW, 2"LHW, 1"LHWR RISERS.
4. 4"AW UP.
5. 4"AW DN. TO BURIED 4"AW
6. 4"AV UP.
7. 4"S. UP
8. 4"W, 4"V, STACK
9. 3"W. UP TO MOP SINK. 1-1/2"V UP.
10. 1-1/2"V. UP FROM 3" BURIED W.
11. 3"W UP TO FD, 1-1/2"V. UP
12. 1-1/2" W UP TO LAV
13. 1-1/2"W. UP TO EWC.
14. 1-1/2"AW UP TO SINK/CUP SINK/EYEWASH
15. 3"AW. UP
16. 6"RWL, UP
17. AT LAB SINK PROVIDE 1-1/2"AW DN. TO BURIED 2"AW, 1-1/2"AV UP, 1/2"LCW, 1/2"LHW.
18. 3/4"LV, 1/2"LA, 1/2"LCW,1/2" NITROGEN,1-1/2"AW DN TO BURIED 2"AW, 1-1/2"AV. UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
19. 1/2"AW DN TO BURIED 2"AW, 1-1/2"AV UP, 1/2"CW DROP IN UTILITY COLUMN. WXTEND PIPING IN LAB CASEWORK TO CUP SINKS.
20. AT EMERGENCY EYEWASH/SHOWER PROVIDE 1-1/2"AW. DN TO BURIED 2"AW, 1-1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
21. 1/2"CO2 DROP TO LAB EQUIPMENT.
22. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL AND PROVIDE 1/2"TAP FOR RO POINT-OF-USE.
23. ARGON TANK & MANIFOLD. PROVIDE 1/2"ARGON CONNECTION. SEE DETAIL FOR INFORMATION.
24. 1/2"AR DROP TO LAB EQUIPMENT.
25. 1/2"LA DROP TO OUTLET/LAB EQUIPMENT.
26. 1/2"N. DROP TO LAB EQUIPMENT.
27. 3/4" LV DROP TO OUTLET/LAB EQUIPMENT.
28. 3/4"LV, 1/2"LA DROPS TO OUTLETS/LAB EQUIPMENT.



21-10-038

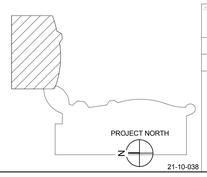
drawing title			
PLUMBING LOWER LEVEL PART PLAN		STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume 2 of 2
REVISIONS			
mark / date	description	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171	date 11-21-2012
11-21-2012	Bid Documents		scale 1/4" = 1'-0"
		project: SCSU NEW ACADEMIC LABORATORY BUILDING	drawn by JH, MT
			approved by GVD
		CAD file 130 / project no. BI-RS-283-ARC	drawing no. P201C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



DRAWING NOTES

1. 2" LAB VAC, 2" LAB AIR, 1-1/2" ROS, 1-1/2" ROR, 1" LHWR, 1" HWR, 2" LHW, 2" HW, 3" LCW, 3" CW, 1-1/2" CO2, 4"AW, 4"AV, 2"CW MAKE-UP, (2) 2" FORCED MAIN RISERS UP IN SHAFT.
2. 4" SAN STACK, 4" V. STACK.
3. 4" AW STACK, 3" AV STACK.
4. 1-1/2"AW UP TO SINK/ CUP SINK/ EYEWASH.
5. 4"AW DN.
6. 2"AV UP FROM BELOW.
7. 3"W. UP TO MOP SINK/ F.D., 1-1/2"V. UP.
8. 6"RWL UP IN ENCLOSURE. PROVIDE EHC FROM 3'-0" ABOVE ELBOW TO 3'-0" INSIDE OF THE EXTERIOR WALL.
9. 6"RWL DN.
10. 4"S., 4"V. STACKS. PROVIDE 4"S. & 2"V. PIPING IN CHASE & EXTEND FROM STACKS TO FIXTURES.
11. 1-1/2"CW DROP TO W.C.
12. 1/2"H&CW DROPS TO LAV.
13. AT SINK PROVIDE 1-1/2"W. DN, 1-1/2"V. UP, 1/2"H&CW.
14. AT LAB SINK PROVIDE 1-1/2"AW DN, 1-1/2"AV UP, 1/2"LCW, 1/2"LHW.
15. 3/4"LV, 1/2"LA, 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
16. AT EMERGENCY EYEWASH/ SHOWER PROVIDE 1-1/2"AW DN, 1-1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
17. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL AND PROVIDE 1/2" TAP FOR RO POINT-OF-USE.
18. 1/2"H&CW DROPS TO SHOWER.
19. 1/2"LCW, 1/2"LHW DROPS TO HOSE BIBB.
20. PROVIDE 2"AW DN, 1-1/2"AV UP, 1/2"LCW & 1/2"LHW DROPS TO LAUNDRY CONNECTION BOX.
21. AT UTILITY SINK PROVIDE 3"AW, 1-1/2"AV UP, 1/2"LCW & 1/2"LHW DROPS.
22. PROVIDE 3"AW, 1-1/2"AV UP AT FLOOR SINK.
23. NOT USED.
24. 1/2"LA DROP TO OUTLET/ LAB EQUIPMENT.
25. 4"RWL UP TO R.D.
26. 6"RWL UP IN ENCLOSURE & DN TO TRELLIS.
27. 1/2"CW DROP TO WALL HYDRANT.
28. 2"AW DN. EXTEND 2"AW HORIZONTALLY IN WALL TO LAB SINKS & EMERG. EYEWASH.
29. 4"RWL UP.
30. 6"RWL, 6"ORWL UP.
31. 6"ORWL TERMINATION. PROVIDE BRONZE DISCHARGE NOZZLE.



21-10-038

drawing title
PLUMBING GROUND FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

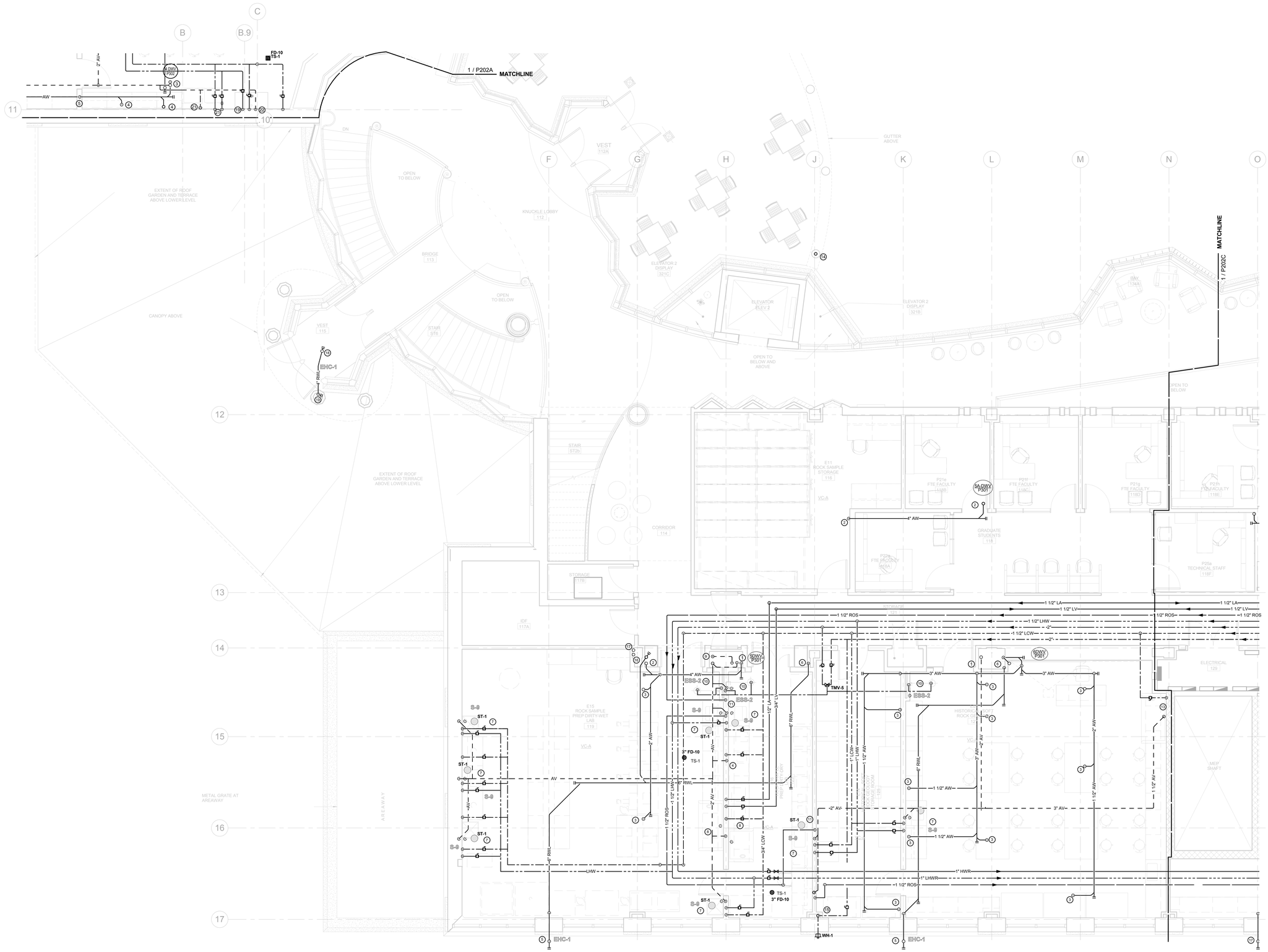
DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 130
project no. BI-RS-283-ARC

sheet 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by JPL MT
checked by GVD
drawing no. P202A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

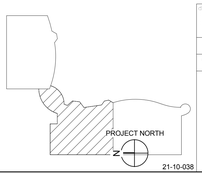


DRAWING NOTES

1. 4" AW STACK, 4" AV. STACK.
2. 4"AW STACK.
3. 1-1/2"AW UP TO SINK/CUP SINK/EYEWASH
4. 1-1/2"AV UP FROM BELOW.
5. 6"RWL UP IN ENCLOSURE. PROVIDE EHC FROM 3'-0" ABOVE ELBOW TO 3'-0" INSIDE OF THE EXTERIOR WALL.
6. 6"RWL DN.
7. AT LAB SINK PROVIDE 1-1/2"AW, 1-1/2"AV, 1/2"LCW, 1/2"LHW, AT SINKS SEDIMENT TRAP, EXTEND 1-1/2"AW TO SEDIMENT TRAP.
8. 3/4"LV, 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
9. 4"V STACK
10. AT EMERGENCY EYEWASH/SHOWER PROVIDE 1-1/2"AW DN, 1-1/2AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
11. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL AND PROVIDE 1/2"TAP FOR RO POINT-OF-USE.
12.
13. 3/4"CW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
14. 8"RWL UP IN ENCLOSURE & DN TO TRELLIS.
15. 1/2"CW DROP TO WALL HYDRANT.
16. 4"RWL UP.
17. 4"LAB AIR INTAKE & 4"LAB VAC EXHAUST UP& DN.
18. 4"RWL UP TO ROOF DRAIN. PROVIDE HEAT TRACE CABLE ON HORIZONTAL AND VERTICAL PIPING.
19. 4"RWL DN IN COLUMN ENCLOSURE. SEE CIVIL DRAWINGS FOR CONTINUATION.

GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.



21-10-038

drawing title:
PLUMBING GROUND FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

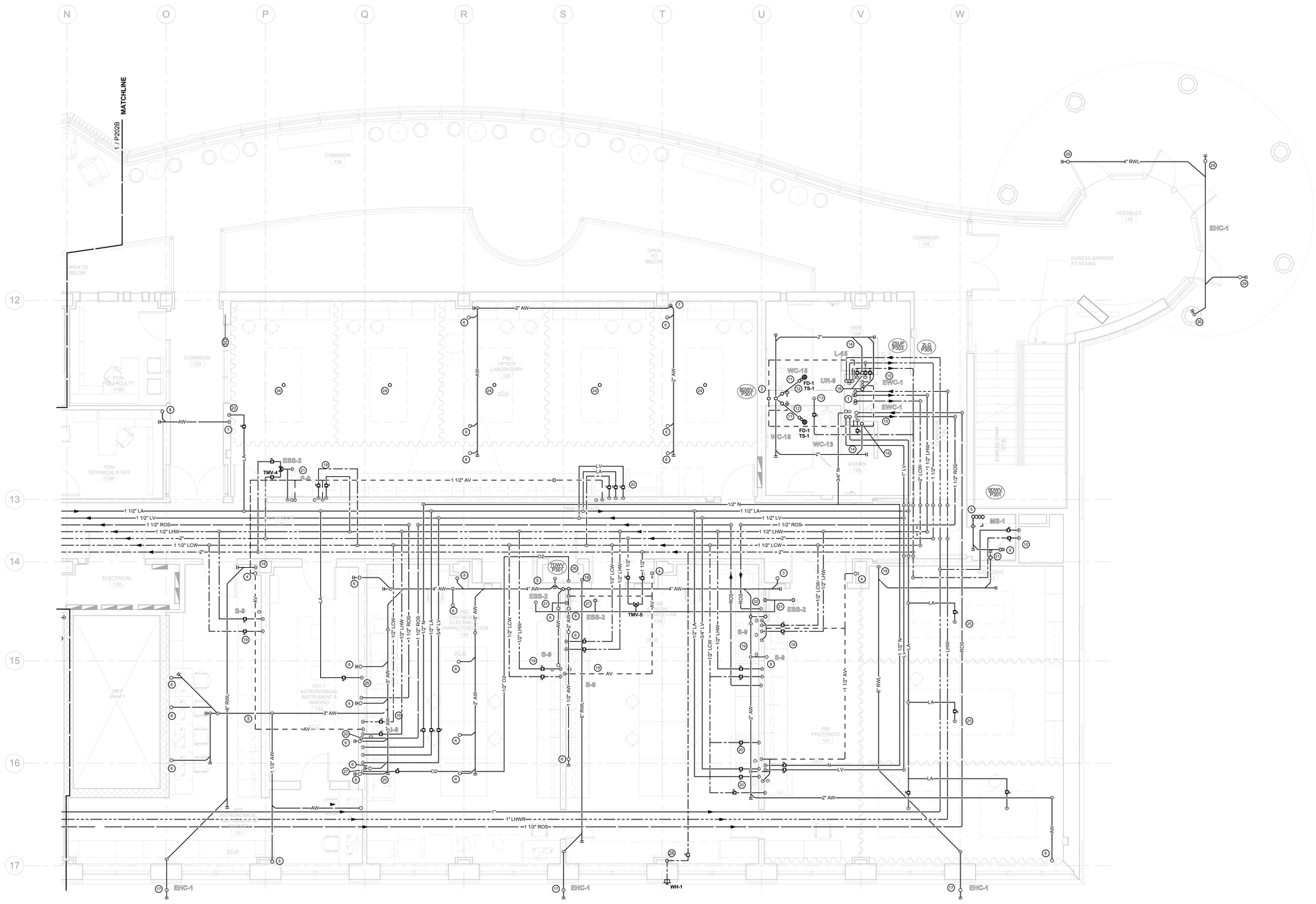
DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 130
project no. BI-RS-283-ARC

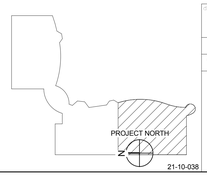
volume 2 of 2
date 11-21-2012
1/4" = 1'-0"
drawn by JPL MT
last revised by GVD
drawing no. P202B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



DRAWING NOTES

1. 3" LAB VAC, 3" LAB AIR, 1-1/2" ROS, 1-1/2" ROR, 1" NITROGEN, 1" LHWR, 1" HWR, 2" LHW, 2" HW, 3" LCW, 3" CW RISERS IN SHAFT.
2. 4" SAN STACK, 4" V STACK. EXTEND 4"S & 2"V IN CHASE TO FIXTURES.
3. 4"AW STACK..
4. 4"AV STACK.
5. 4" W STACK, 4" V STACK
6. 1 1/2"AW UP TO SINK/CUP SINK/EYEWASH.
7. 3"AW DN.
8. 3"AW UP.
9. 3"W UP TO MOP SINK, 1 1/2"V UP.
10. AT MOP SINK PROVIDE 3"W, 1 1/2"V, 1/2" H&CW.
11. 3"W UP TO FD, 1 1/2"V UP.
12. 1 1/2"V UP FROM BELOW.
13. 2"CW DROP. EXTEND IN CHASE TO FIXTURES.
14. AT LAV PROVIDE 1 1/2"W DN, 1 1/2"V UP, 1/2" H&CW DROPS.
15. AT EWC PROVIDE 1 1/2"W DN, 1 1/2"V UP, 1/2"CW DROP.
16. 1 1/2"W UP TO LAV/EWC.
17. 6"RWL IN ENCLOSURE. PROVIDE EHC FROM 3'-0" ABOVE ELBOW TO 3'-0" INSIDE OF THE EXTERIOR WALL.
18. 6" RWL DN.
19. AT LAB SINK PROVIDE 1 1/2"AW DN, 1 1/2"AV UP, 1/2"LCW, AND 1/2"LHW.
20. 3/4"LV, 1/2"LA, 1/2"LCW, 1 1/2"AW DN, 1 1/2"AV UP. EXTEND PIPING TO FUME HOOD AND CUP SINK. PROVIDE 1/2"N AT HOODS WITH NITROGEN REQUIREMENTS.
21. AT EMERGENCY EYEWASH/SHOWER PROVIDE 1 1/2"AW DN, 1 1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH AND 1 1/4"TW TO SHOWER FROM TMV.
22. 1 1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL AND PROVIDE 1/2" TAP AT RO POINT-OF-USE.
23. 1"LA DROP TO BELOW FLOOR. EXTEND PIPING BELOW FLOOR AND UP TO FLOOR OUTLETS.
24. 1/2"LA UP FROM BELOW TO OPTICS TABLE.
25. 1/2"LA DROP TO OUTLET/LAB EQUIPMENT.
26. OXYGENT TANK AND MANIFOLD. PROVIDE 1/2" OXYGEN CONNECTION.
27. 1/2" OXYGEN DROP TO LAB EQUIPMENT.
28. 1/2"CW DROP TO WALL HYDRANT.
29. 4"RWL UP TO ROOF DRAIN. PROVIDE HEAT TRACE CABLE ON HORIZONTAL & VERTICAL RWL PIPING.
30. 4"RWL DN IN COLUMN ENCLOSURE. SEE CIVIL DWGS.
31. 4"RWL UP.



21-10-038

drawing title
PLUMBING GROUND FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

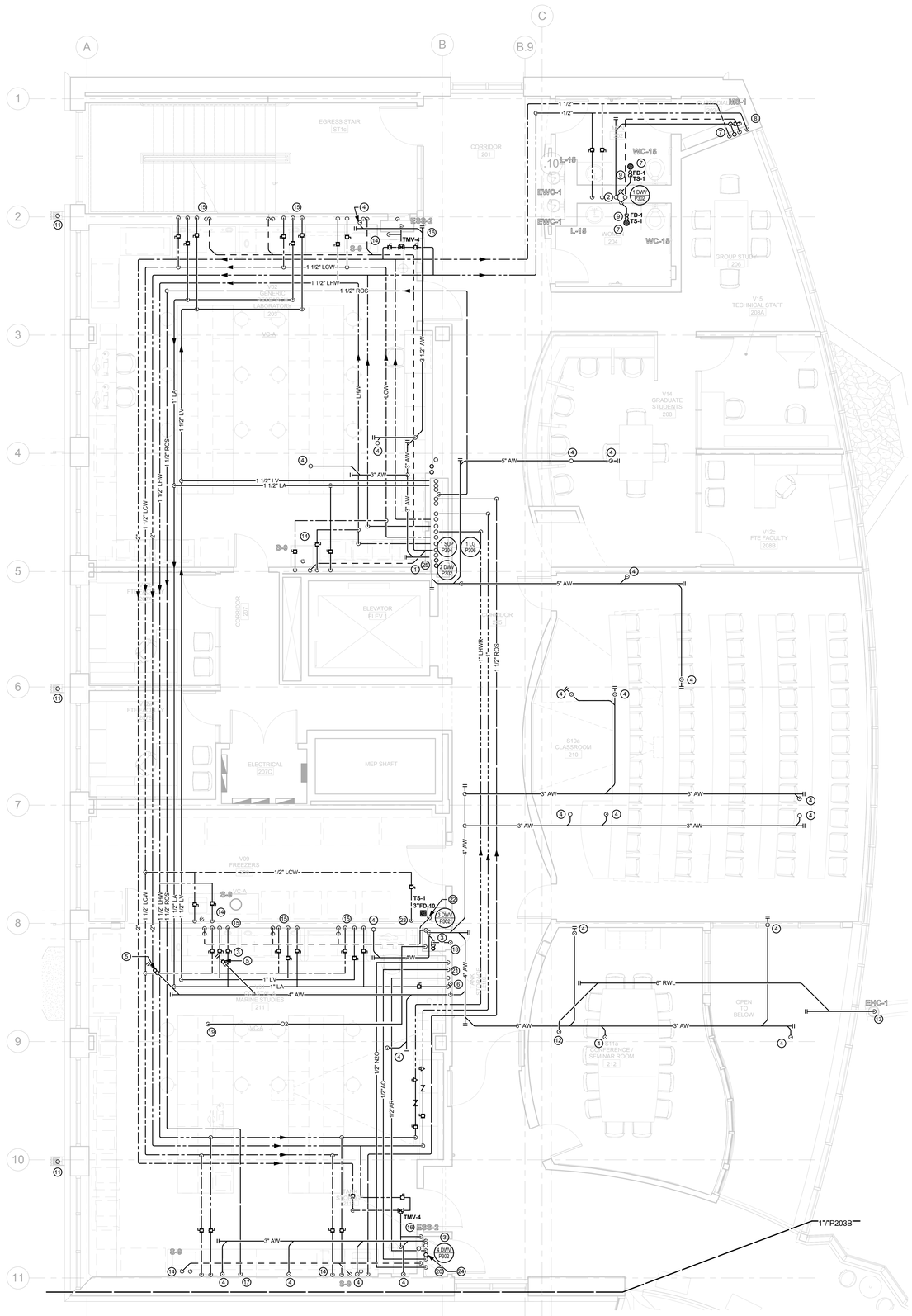
DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no. BI-RS-283-ARC

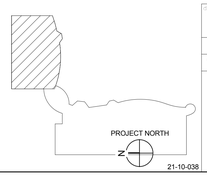
volume 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by JM, MT
approved by GVD
drawing no. P202C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



DRAWING NOTES

1. 2" LAB VAC, 2" LAB AIR, 1-1/2" ROS, 1-1/2" ROR, 1" LHWR, 1" HWR, 2" LHW, 2" HW, 3" LCW, 3" CW, 1-1/2"CO2, 4"AW, 4"AV, 2"CW MAKE-UP, (2) 2" FORCED MAIN RISERS UP IN SHAFT.
2. 4" SAN STACK, 4" V. STACK. EXTEND 4"S & 2"V IN CHASE TO FIXTURES.
3. 4" AW STACK, 4"AV STACK.
4. 1-1/2"AW UP TO SINK/CUP SINK/EYEWASH.
5. 4"AW UP TO F.D.
6. 2"AV UP.
7. 3"W. UP TO MOP SINK/F.D., 1-1/2"V. UP.
8. AT MOP PROVIDE 3"W., 1-1/2"V., 1/2"H&CW.
9. 1-1/2"V. UP FROM BELOW.
10. 1-1/2"CW, 1/2"HW DROPS. EXTEND PIPING IN CHASE TO FIXTURES.
11. 6"RWL UP & DN IN ENCLOSURE.
12. 6"RWL UP.
13. 6"RWL DN IN ENCLOSURE TO TRELLIS, PROVIDE EHC FROM 3'-0" BELOW ELBOW TO 3'-0" IN SIDE OF THE EXTERIOR WALL.
14. AT LAB SINK PROVIDE 1-1/2"AW DN, 1-1/2"AV UP, 1/2"LCW & 1/2"LHW.
15. 3/4"LV, 1/2"LA, 1/2"LCW, 1-1/2"AW, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
16. AT EMERGENCY EYEWASH/ SHOWER PROVIDE 1-1/2"AW DN, 1-1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
17. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL AND PROVIDE 1/2"TAP FOR R.O. POINT-OF-USE.
18. OXYGEN TANK & MANIFOLD. PROVIDE 1/2"OXYGEN CONNECTION.
19. 1/2"OXYGEN DROP TO LAB EQUIPMENT.
20. N2O, ACETYLENE, & ARGON TANKS & MANIFOLDS. PROVIDE 1/2"N2O, 1/2"AC, & 1/2"AR CONNECTIONS.
21. 1/2"N2O, 1/2"AC, 1/2"AR DROPS TO LAB EQUIPMENT.
22. 1-1/2"AV UP FROM BELOW.
23. 1/2"LCW DROP TO ICE MAKER.
24. 4"RWL UP & DN.
25. 6"RWL, 6"ORWL UP & DN.



21-10-038

drawing title
PLUMBING 2ND FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

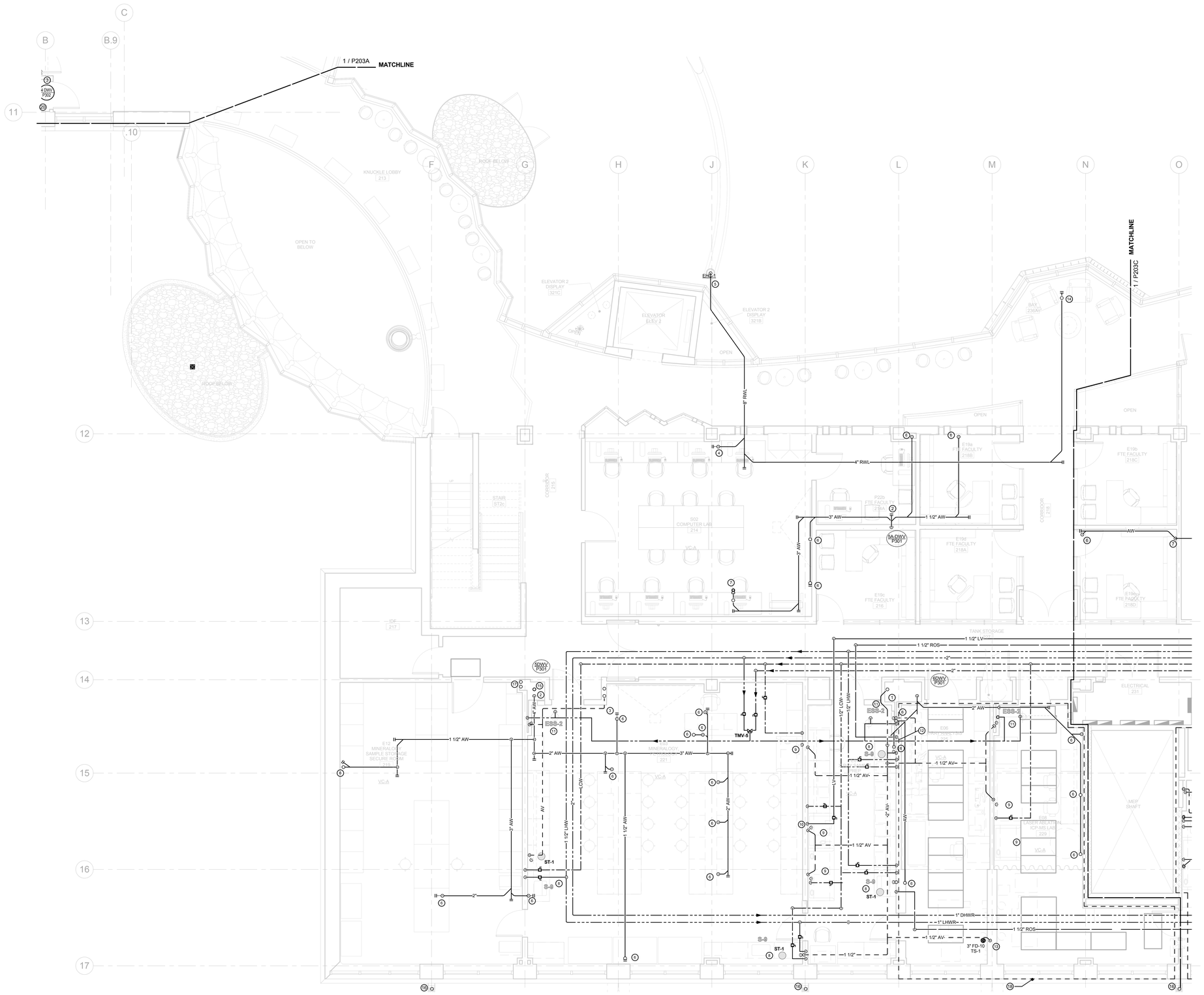
DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by JPL MT
approved by GVD
drawing no. P203A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

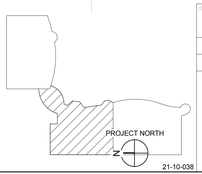


DRAWING NOTES

1. 4"AW AND 4"AV STACKS.
2. 4"AW STACK.
3. 4"V, 4"AV STACKS
4. 8"RWL UP
5. 8"RWL DN. IN ENCLOSURE TO TRELLIS. PROVIDE EHC FROM 3'-0" BELOW ELBOW TO 3'-0" INSIDE OF THE EXTERIOR WALL.
6. 1-1/2"AW UP TO SINK/CUP/SINK/EYEWASH.
7. 3"AW UP TO FD, 1-1/2"AV UP.
8. AT LAB SINK PROVIDE 1-1/2"AW, 1-1/2"AV, 1/2"LCW, 1/2"LHW. AT SINKS WITH SEDIMENT TRAPS, EXTEND 1-1/2"AW TO SEDIMENT TRAP.
9. 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP, EXTEND PIPING TO FUME HOOD & CUP SINK.
10. 3/4"LV DROP TO LAB EQUIPMENT.
11. AT EMERGENCY EYEWASH/SHOWER, PROVIDE 1-1/2"AW DN, 1-1/2" AV UP, PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
12. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL & PROVIDE 1/2"TAP FOR RO POINT-OF-USE.
13. 1-1/2"AV UP FROM BELOW.
14. 4"RWL UP TO R.D.
15. 4"RWL UP & DN.
16. 6"RWL UP & DN IN ENCLOSURE.
17. 4" LAB AIR INTAKE & 4"LAB VAC EXHAUST UP & DN.
18. ANY PLASTIC PIPE LOCATED IN AIR PLENUM SHALL BE FIRE WRAPPED WITH PLENUM RATED FIRE WRAP.

GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.



21-10-038

drawing title:
PLUMBING 2ND FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project:
SCSU NEW ACADEMIC LABORATORY BUILDING

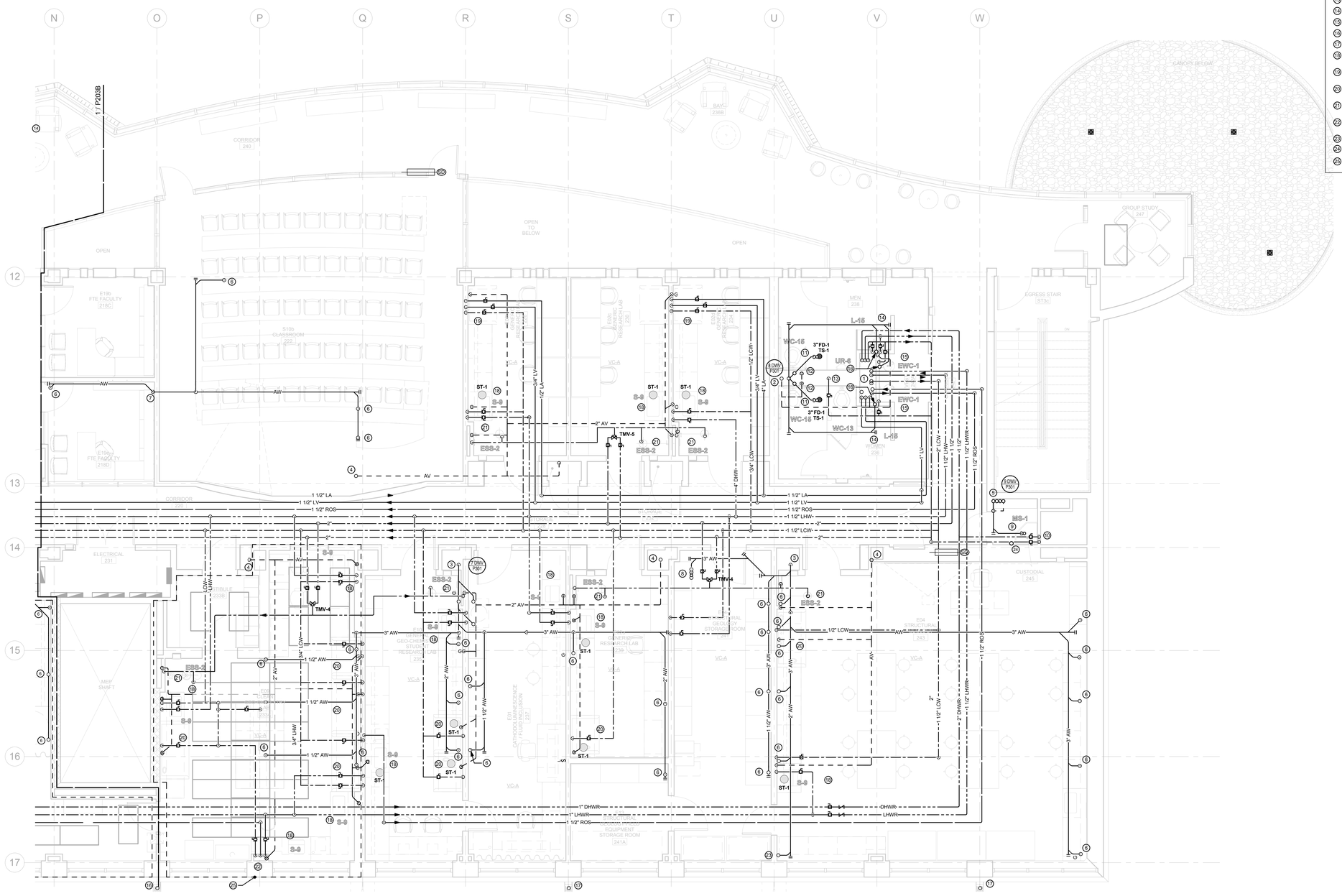
CAD no. 1380
project no. BI-RS-283-ARC

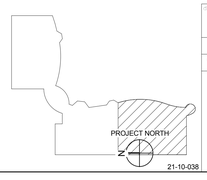
sheet no. 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by JPL MT
approved by GVD
drawing no. P203B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. 3" LAB VAC, 3" LAB AIR, 1-1/2" ROS, 1-1/2" ROR, 1" NITROGEN, 1" LHWR, 1" HWR, 2" LHW, 2" HW, 3" LCW, 3" CW RISERS IN SHAFT.
2. 4" SAN STACK, 4" V. STACK. EXTEND 4"S. & 2"V. IN SHAFT TO FIXTURES.
3. 4" AW STACK.
4. 4" AV STACK.
5. 4"W STACK, 4"V STACK.
6. 1-1/2" AW UP TO SINK/ CUPSINK/ EYEWASH.
7. 3"AW DN.
8. 3"AW UP TO F.D., 1-1/2"AV UP.
9. 3"W. UP TO MOP SINK, 1-1/2"V. UP.
10. AT MOP SINK PROVIDE 3"W., 1-1/2"V., 1/2"H&CW.
11. 3"W. UP TO F.D., 1-1/2"V. UP.
12. 1-1/2"V. UP FROM BELOW.
13. 2"CW DROP. EXTEND IN CHASE TO FIXTURES.
14. AT LAV PROVIDE 1-1/2"W. DN, 1-1/2"V. UP, 1/2"H&CW.
15. AT EWC PROVIDE 1-1/2"W. DN, 1-1/2"V., 1/2"CW.
16. 1-1/2"W UP TO LAV/EWC.
17. 6"RWL UP & DN IN ENCLOSURE.
18. AT LAB SINK PROVIDE 1-1/2"AW DN, 1-1/2"AV UP, 1/2"LCW, 1/2"LHW. AT SINKS WITH SEDIMENT TRAP, EXTEND 1-1/2"AW TO SEDIMENT TRAP.
19. 3/4"LV, 1/2"LA, 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
20. 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK. EXTEND 1-1/2"AW TO SEDIMENT TRAP WHERE SEDIMENT TRAPS ARE PROVIDED.
21. AT EMERGENCY EYEWASH/ SHOWER, PROVIDE 1-1/2"AW DN, 1-1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
22. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL & PROVIDE 1/2" TAP FOR RO POINT-OF-USE.
23. 2"AV UP.
24. 4"RWL UP & DN.
25. ANY PLASTIC PIPE LOCATED IN AIR PLENUM SHALL BE FIRE WRAPPED WITH PLENUM RATED FIRE WRAP.





21-10-038

drawing title: PLUMBING 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/4" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: JH, MT
			approved by: GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	drawing no.: P203C

NOTE:
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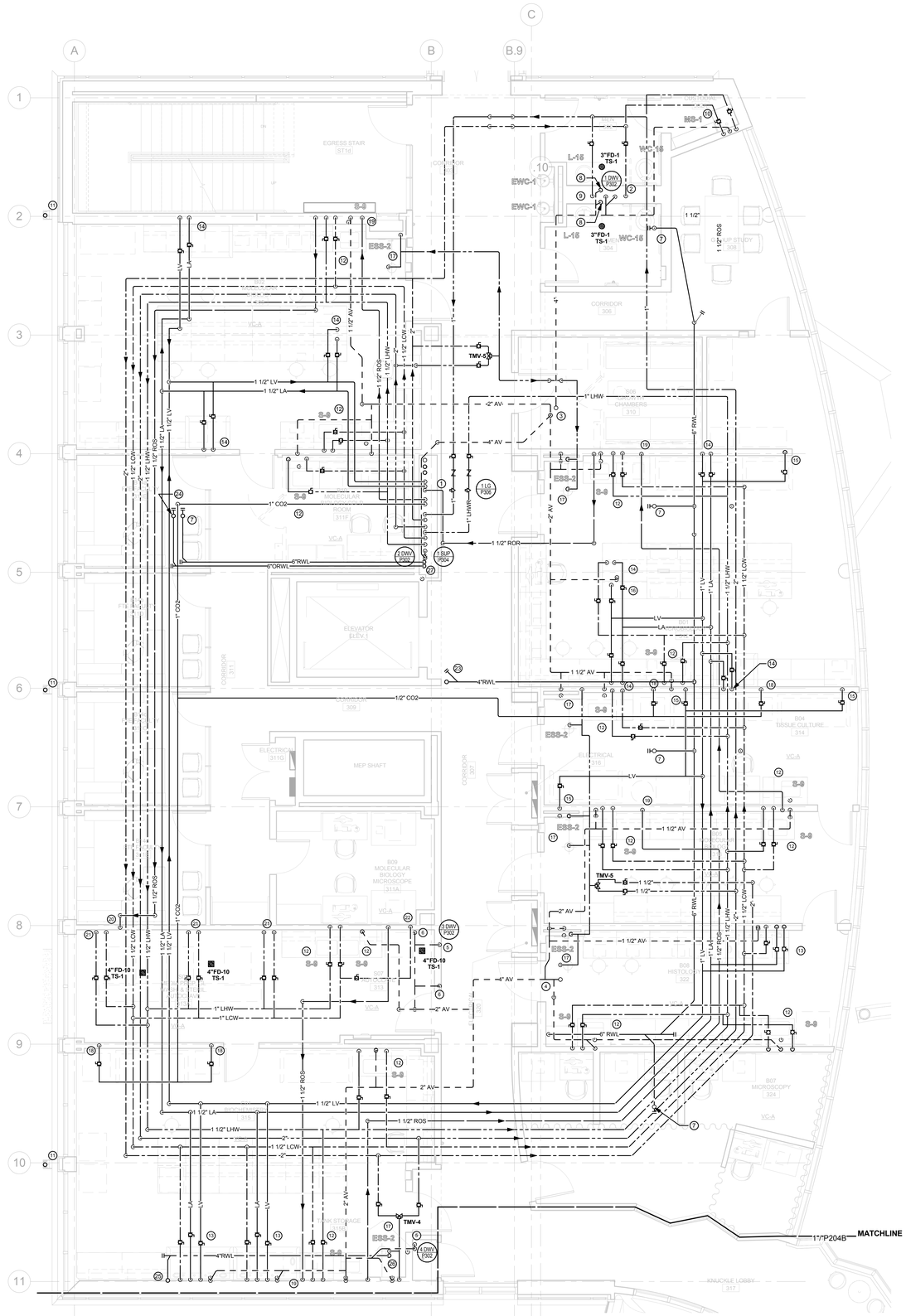
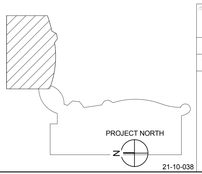


DRAWING NOTES

1. 2" LAB VAC, 2" LAB AIR, 1-1/2" ROS, 1-1/2" ROR, 1" LHWR, 1" HWR, 2" LHW, 2" HW, 3" LCW, 3" CW, 1/2"CO2, 4"AW, 4"AV, 2"CW MAKE-UP, (2) 2" FORCED MAIN RISERS UP IN SHAFT.
2. 4" SAN STACK, 4" V. STACK. EXTEND 4"S & 2"V IN CHASE TO FIXTURES.
3. 4" AV, 4" V UP THRU ROOF.
4. 4" AV UP THRU ROOF.
5. 4"AV STACK.
6. 2"V. UP FROM BELOW.
7. 6"RWL UP TO R.D.
8. 1-1/2"V. UP FROM BELOW.
9. 1-1/2"CW & 1/2"HW DROPS. EXTEND PIPING IN CHASE TO FIXTURES.
10. AT MOP SINK PROVIDE 3"W. 1-1/2"V., 1/2"H&CW.
11. 6"RWL UP TO GUTTER DRAIN & DN.
12. AT LAB SINK PROVIDE 1-1/2"AW, 1-1/2"AV, 1/2"LCW, 1/2"LHW.
13. 3/4"LV, 1/2"LA, 1/2"LCW, 1-1/2"AW, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK.
14. 3/4"LV, 1/2"LA DROPS. EXTEND TO OUTLETS/ FUME HOOD.
15. 3/4"LV DROP TO BIO SAFETY CABINET.
16. 1/2"LCW DROP. EXTEND TO WATER BATH.
17. AT EMERGENCY EYEWASH/ SHOWER PROVIDE 1-1/2"AW DN., 1-1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW TO SHOWER FROM TMV.
18. 1/2"CO2 DROP TO LAB EQUIPMENT.
19. 1-1/2" RO LOOP DROP IN WALL. EXTEND LOOP IN WALL & PROVIDE 1/2" TAP FOR RO POINT-OF-USE.
20. 1-1/2" RO LOOP DROP IN WALL. EXTEND LOOP IN WALL & PROVIDE 1/2" TAPS FOR AUTOCLAVES, GLASSWASHER, & RO POINT-OF-USE.
21. 3/4"LCW, 3/4"LHW DROPS TO AUTOCLAVE GLASSWASHER. PROVIDE 2"IW DRAIN FROM AUTOCLAVE/ GLASSWASHER TO F.D THRU AIR GAP.
22. 1/2"LCW DROP TO ICEMAKER.
23. 4"RWL UP.
24. 6"ORWL UP.
25. 4"RWL UP TO A.D.
26. 4"RWL DN.
27. 6"RWL, 6"ORWL DN.



21-10-038

DRAWING TITLE
PLUMBING 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

PROJECT
SCSU NEW ACADEMIC
LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

sheet	2 of 2
date	11-21-2012
scale	1/4" = 1'-0"
drawn by	JPI, MT
approved by	GVD
drawing no.	P204A

NOTE:
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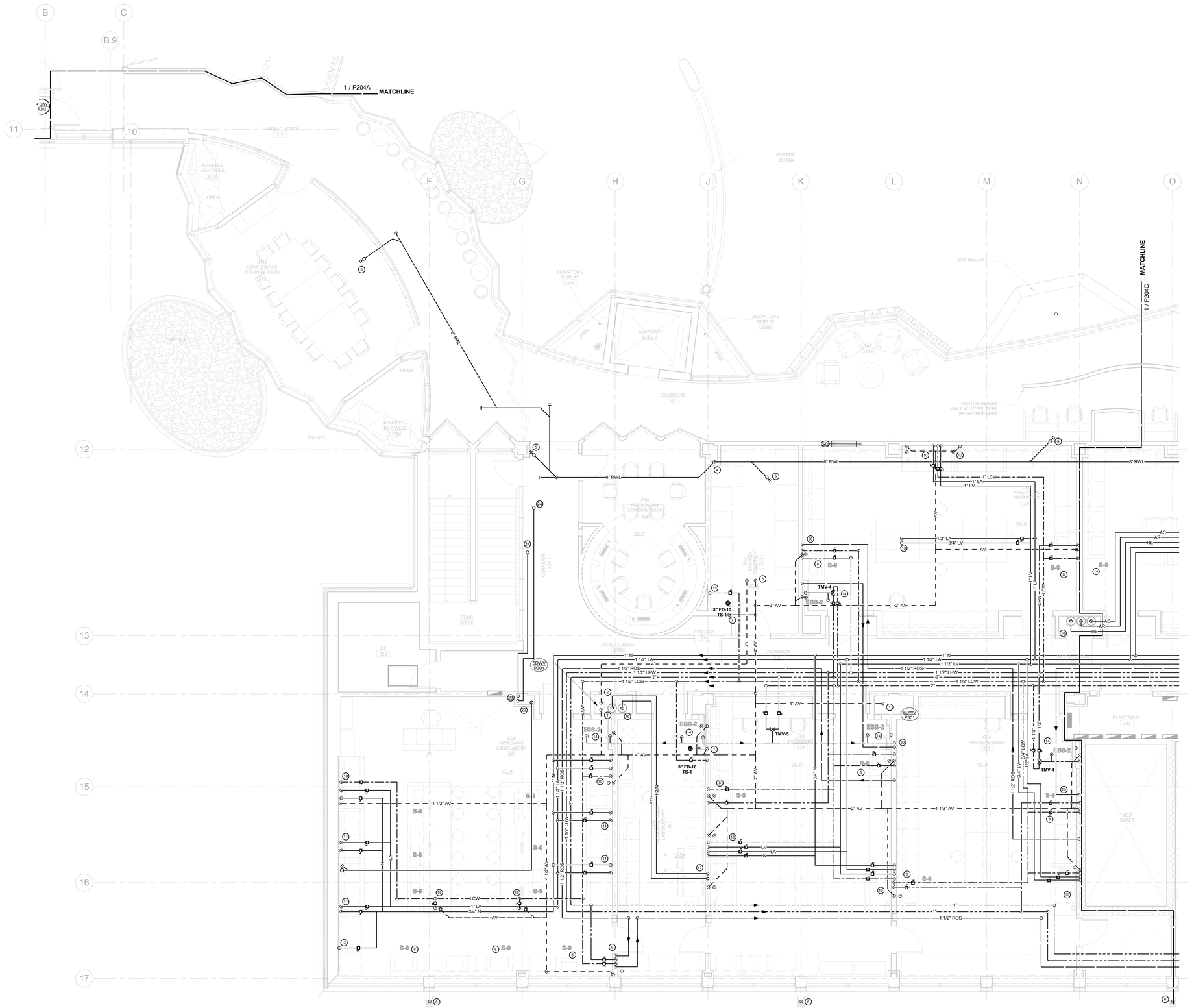
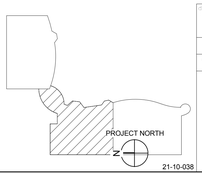


DRAWING NOTES

1. 4" AV STACK.
2. 4"V STACK.
3. 4"V, 4"AV UP THROUGH ROOF.
4. 8"RWL DN.
5. 6"RWL UP TO R.D.
6. 6"RWL UP TO GUTTER DRAIN & DN.
7. 1-1/2"V. FROM BELOW.
8. AT LAB SINK PROVIDE 1-1/2"AW DN, 1-1/2"AV UP, 1/2"LCW, 1-1/2"LHW.
9. 2"AW DN, 1-1/2"AV UP, 1/2"LCW & 1/2"LHW, 1-1/2"RO LOOP DROP. EXTEND 2"AW, 1/2"LCW, 1/2"LHW UNDER COUNTER TO LAB SINKS. EXTEND RO LOOP TO RO POINTS-OF-USE AND RETURN 1-1/2"RO LOOP BACK UP IN WALL.
10. 3/4"LV, 1/2"LA, 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINK. PROVIDE 1/2"NITROGEN @ HOODS WITH NITROGEN CONNECTIONS.
11. 1/2"NITROGEN, 1/2" LAB AIR. EXTEND TO HOOD.
12. 1/2"NITROGEN DROP TO LAB EQUIPMENT.
13. 1"LA & 1"LV TO OVERHEAD SERVICE CARRIER.
14. AT EMERGENCY EYEWASH/SHOWER PROVIDE 1-1/2"AW DN, 1-1/2"AV UP. PROVIDE 3/4"TW TO SHOWER FROM TMV.
15. 1/2"LCW DROP TO ICE MAKER.
16. ETHYLENE & HYDROGEN/NITROGEN TANKS & MANIFOLDS. PROVIDE 1/2"ETH & 1/2"H2/N CONNECTIONS.
17. 1/2"ETH & 1/2"H2/N DROPS TO LAB EQUIPMENT.
18. HELIUM, ARGON & ACETYLENE TANKS & MANIFOLDS. PROVIDE 1/2"HE, 1/2"AR, & 1/2"AC CONNECTIONS.
19. 1-1/2"AW DN, 1-1/2"AV UP, 1/2"LCW DROP IN UTITILITY COLUMN. EXTEND PIPING IN LAB CASEWORK TO CUP SINKS.
20. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL & PROVIDE 1/2"TAP AT RO POINTS-OF-USE.
21. 4"RWL UP TO A.D.
22. 4"RWL DN.
23. 4"LAB AIR INTAKE, 4"LAB VAC EXHAUST DN.
24. 4"LAI & 4"LVE UP THROUGH ROOF.

GENERAL NOTES

1. BUILDING SEISMIC JOINT LOCATED AT COLUMN LINE "G". PROVIDING PIPING SEISMIC JOINT ON ALL PIPING CROSSING SEISMIC JOINT. REFER TO SPECIFICATIONS FOR SEISMIC JOINT INFORMATION. REFER TO ARCHITECT'S DRAWINGS FOR SEISMIC JOINT LOCATION.



21-10-038

title
PLUMBING 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

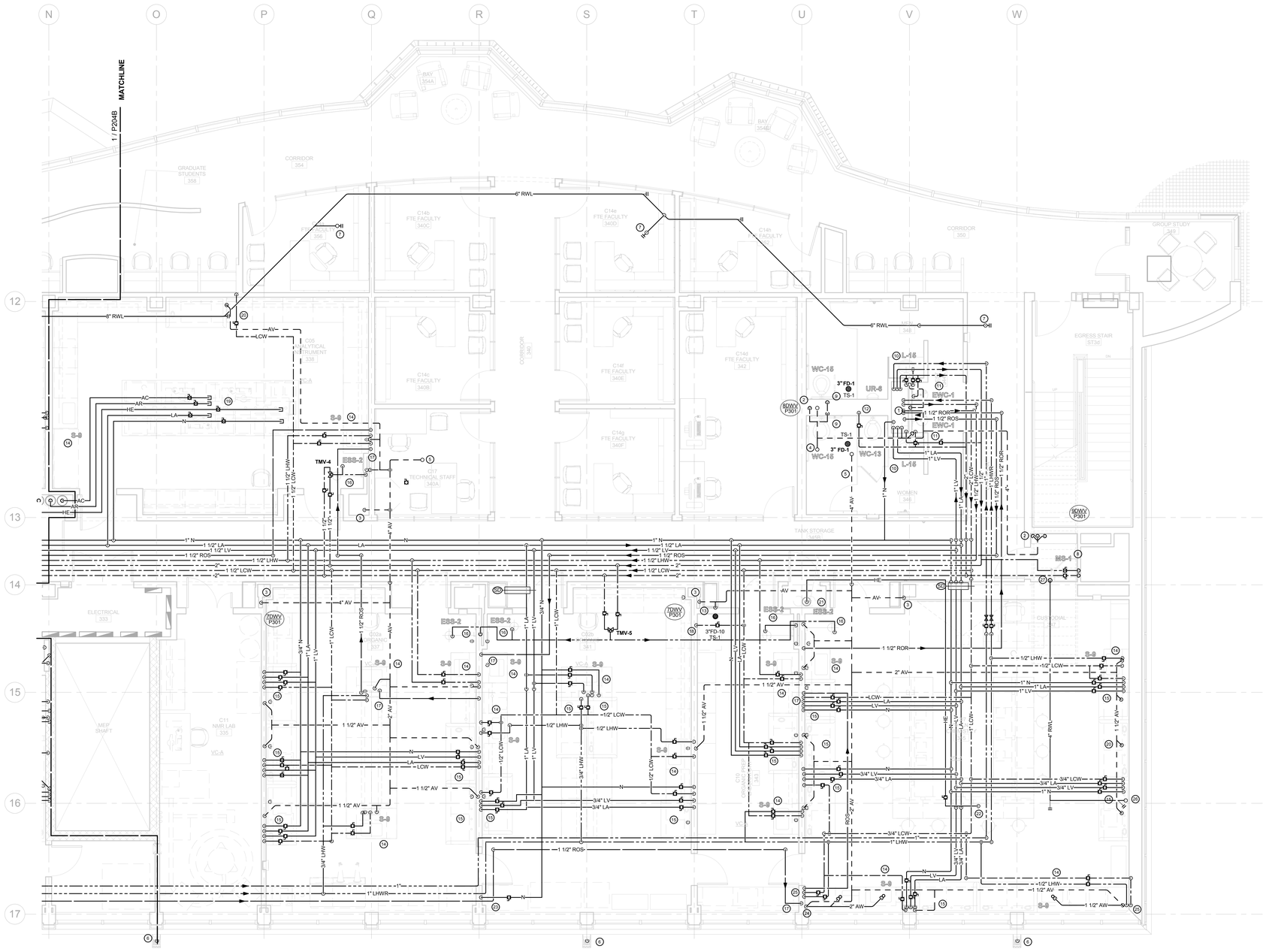
CAD no. 1380
project no. BI-RS-283-ARC

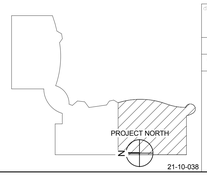
sheet no. 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by JPM, MT
checked by GVD
drawing no. P204B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. 3" LAB VAC, 3" LAB AIR, 1-1/2" ROS, 1-1/2" ROR, 1"NITROGEN, 1" LHWR, 1" HWR, 2" LHW, 2" HW, 3" LCW, 3" CW RISERS IN SHAFT.
2. 4" SAN STACK, 4" V STACK. EXTEND 4"S. & 2"V. IN CHASE TO FIXTURES.
3. 4" AV STACK.
4. 4"V UP THROUGH ROOF.
5. 4"AV UP THROUGH ROOF.
6. 6"RWL UP TO GUTTER DRAIN & DN.
7. 6"RWL UP TO R.D.
8. AT MOP SINK PROVIDE 3"W, 1-1/2"V, 1/2"H & CW.
9. 1-1/2"V. UP FROM BELOW.
10. AT LAV PROVIDE 1-1/2"W DN, 1-1/2"V. UP, 1/2"H & CW.
11. AT EWC PROVIDE 1-1/2"W DN, 1-1/2"V UP, 1/2"CW
12. 2"CW DROP. EXTEND IN CHASE TO FIXTURES.
13. 1-1/2" AV UP FROM BELOW.
14. AT LAB SINK PROVIDE 1-1/2"AW DN, 1-1/2"AV UP, 1/2"LCW, 1/2"LHW.
15. 3/4"LV, 1/2"LA, 1/2"N, 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND PIPING TO FUME HOOD & CUP SINKS.
16. AT EMERGENCY EYEWASH/SHOWER PROVIDE 1-1/2"AW DN, 1-1/2"AV UP. PROVIDE 3/4"TW TO EYEWASH & 1-1/4"TW. TO SHOWER FOR TMV.
17. 1-1/2"RO LOOP DROP IN WALL. EXTEND LOOP IN WALL & PROVIDE 1/2"TAP AT RO POINTS-OF-USE.
18. 1/2"LCW DROP TO ICE MAKER.
19. 1/2"AC, 1/2"AR, 1/2"HE, 1/2"LA, 1/2"N TO OVERHEAD SERVICE CARRIER.
20. 1/2"LCW, 1-1/2"AW DN, 1-1/2"AV UP. EXTEND TO HOOD CUP SINK.
21. HELIUM TANK & MANIFOLD. PROVIDE 1/2"HE CONNECTION.
22. 1/2"HE DROP TO LAB EQUIPMENT.
23. 1/2"NITROGEN DROP TO LAB EQUIPMENT.
24. 2"AW DN.
25. 1/2"LCW, 1/2"LHW DN EXTEND PIPING UNDER COUNTER TO SINKS.
26. 4"RWL UP TO A.D.
27. 4"RWL DN.





21-10-038

drawing title	PLUMBING 3RD FLOOR PART PLAN
REVISIONS	
mark / date / description	11-21-2012 / Bid Documents
STATE OF CONNECTICUT	DEPARTMENT OF CONSTRUCTION SERVICES
DRAWING PREPARED BY	BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project	SCSU NEW ACADEMIC LABORATORY BUILDING
CAD no.	130
project no.	BI-RS-283-ARC
volume	2 of 2
date	11-21-2012
scale	1/4" = 1'-0"
drawn by	JPL MT
checked by	GVD
drawing no.	P204C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

SOUTH WING DRAINAGE & VENT RISER

NOT TO SCALE

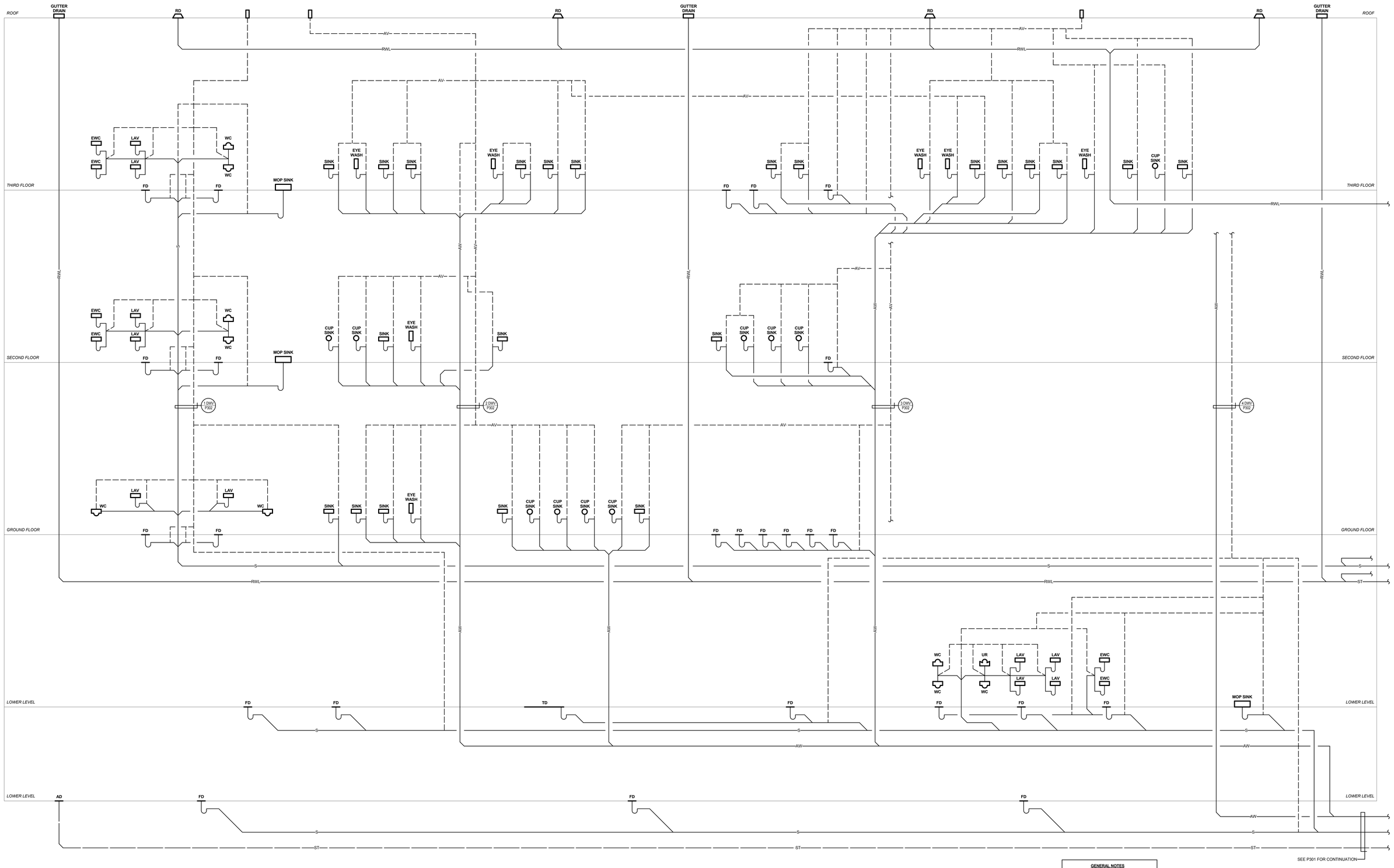
GENERAL NOTES

1. REFER TO FLOOR PLANS FOR SIZES & CLEANOUT LOCATIONS.

21-10-038

drawing title: PLUMBING RISER	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume: 2 of 2
REVISIONS		date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171	scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING	drawn by: JM, MT
		approved by: GVD
	CAD no.: 1380 / project no.: BI-RS-283-ARC	drawing no.: P301

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



GENERAL NOTES

1. REFER TO FLOOR PLANS FOR ALL PIPE SIZES, VALVE LOCATIONS & CLEANOUTS.

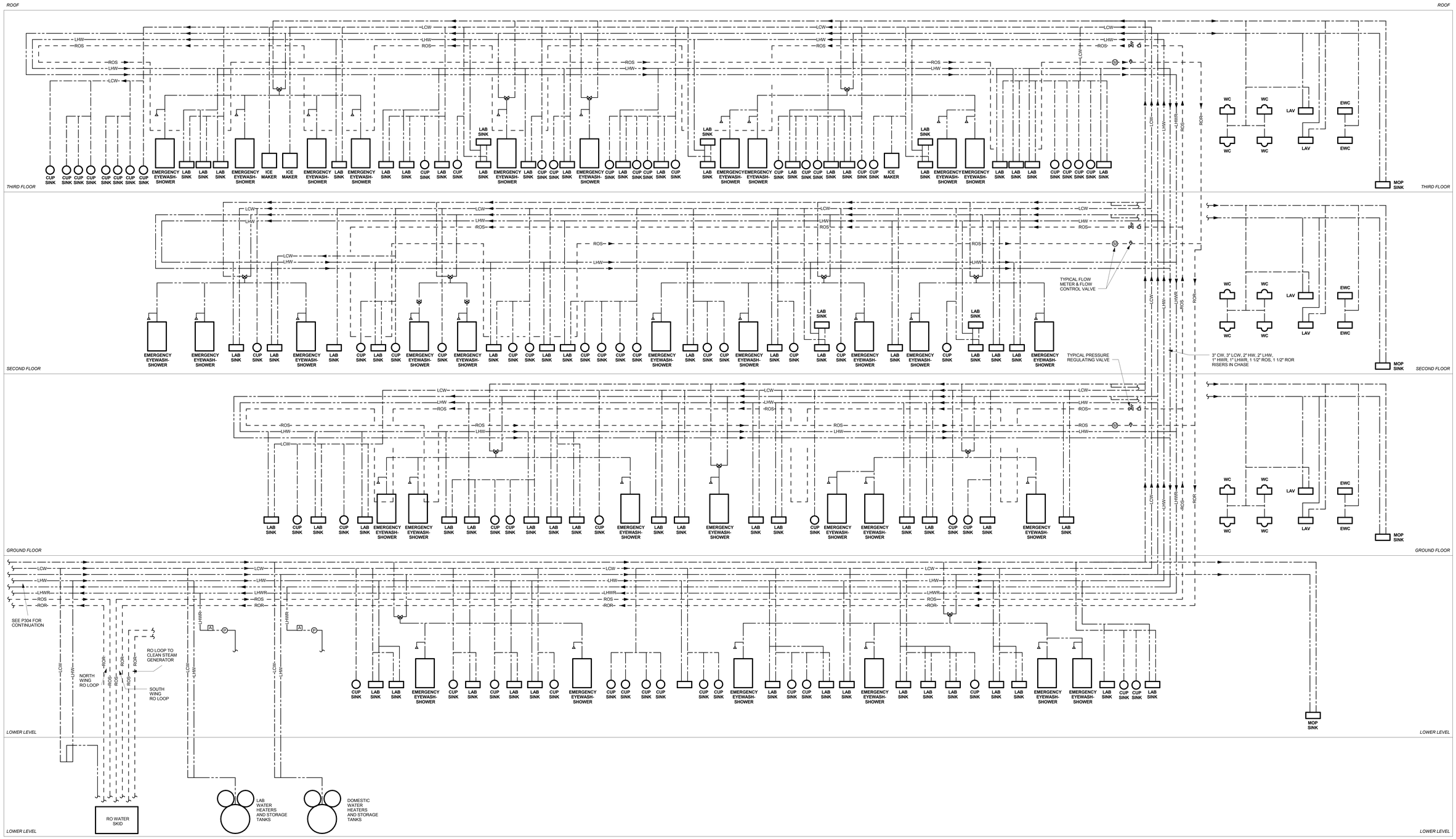
NORTH WING DRAINAGE & VENT RISER

NOT TO SCALE

21-10-038

drawing title: PLUMBING RISER	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: JJH, MT
	CAD file: 1380	project no.: BI-RS-283-ARC	approved by: GVD
			drawing no.: P302

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



GENERAL NOTES

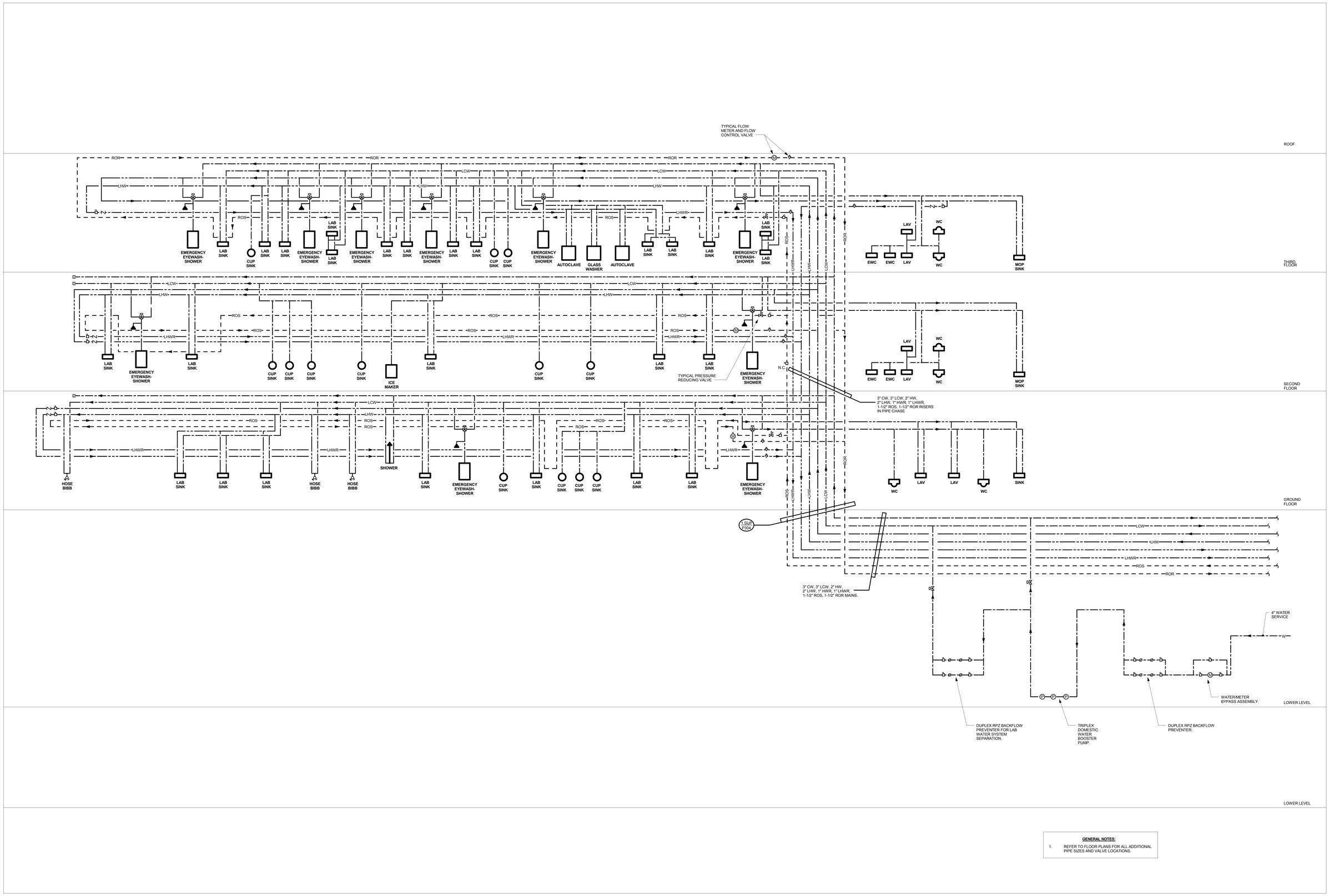
1. REFER TO FLOOR PLANS FOR ALL PIPE SIZES & VALVE LOCATIONS.

SOUTH WING SUPPLY RISER
NOT TO SCALE

21-10-038

drawing title	PLUMBING RISER
REVISIONS	
mark / date / description	1 / 11-21-2012 / Bid Documents
STATE OF CONNECTICUT	DEPARTMENT OF CONSTRUCTION SERVICES
DRAWING PREPARED BY	BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
PROJECT	SCSU NEW ACADEMIC LABORATORY BUILDING
CAD file	130
project no.	BI-RS-283-ARC
volume	2 of 2
date	11-21-2012
scale	1/8" = 1'-0"
drawn by	JM, MT
approved by	GVD
drawing no.	P303

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



GENERAL NOTES:

1. REFER TO FLOOR PLANS FOR ALL ADDITIONAL PIPE SIZES AND VALVE LOCATIONS.

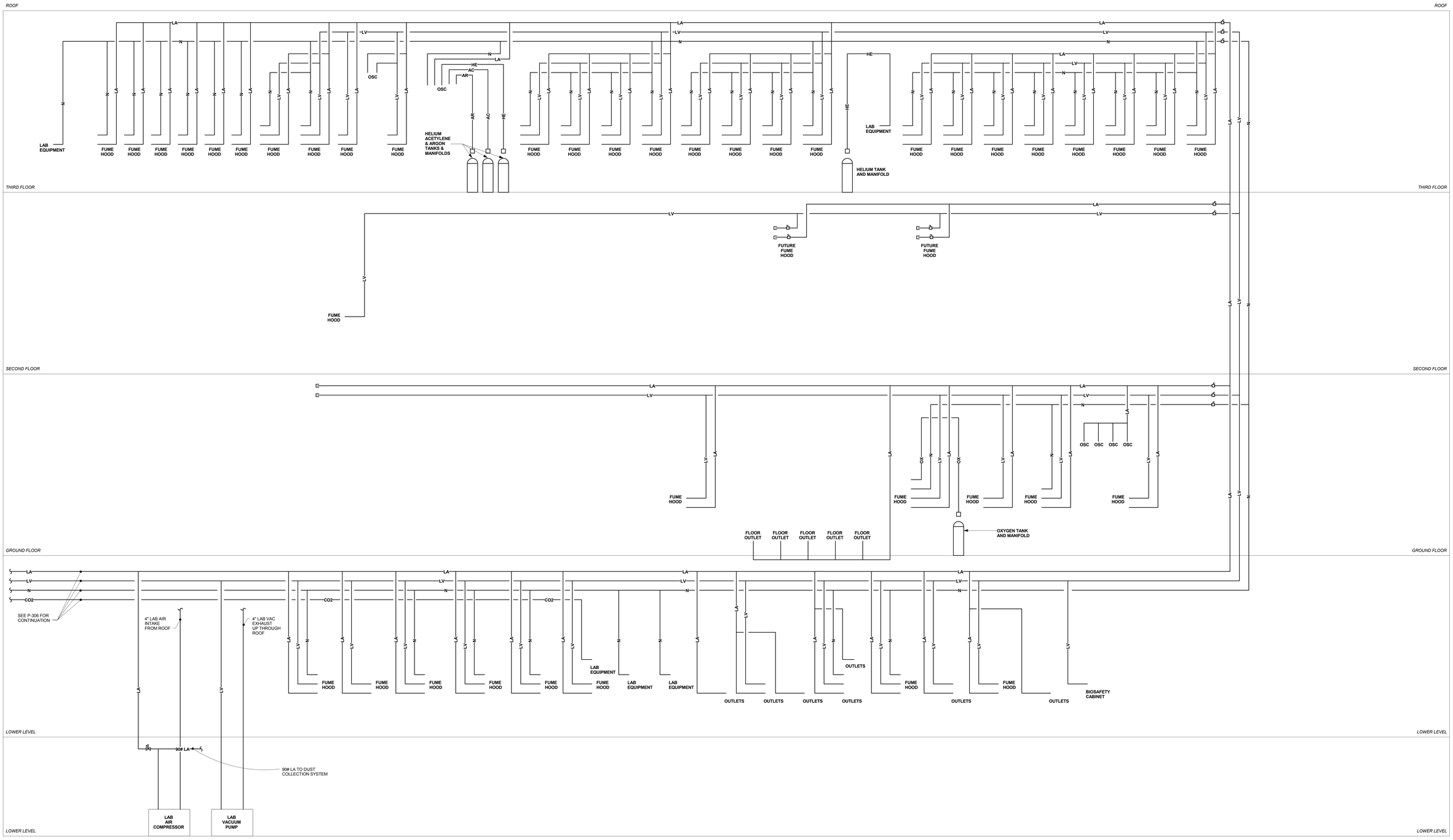
NORTH WING SUPPLY PIPING RISER

NOT TO SCALE

DRAWING TITLE: PLUMBING RISER	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET 2 of 2
REVISIONS: mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE 11-21-2012
11-21-2012 Bid Documents	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		SCALE NOT TO SCALE
			DRAWN BY JM, MT
			APPROVED BY GVD
	CAD file: 1380	project no. BI-RS-283-ARC	DRAWING no. P304

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



GENERAL NOTES

1. REFER TO FLOOR PLANS FOR ALL PIPE SIZES & VALVE LOCATIONS.

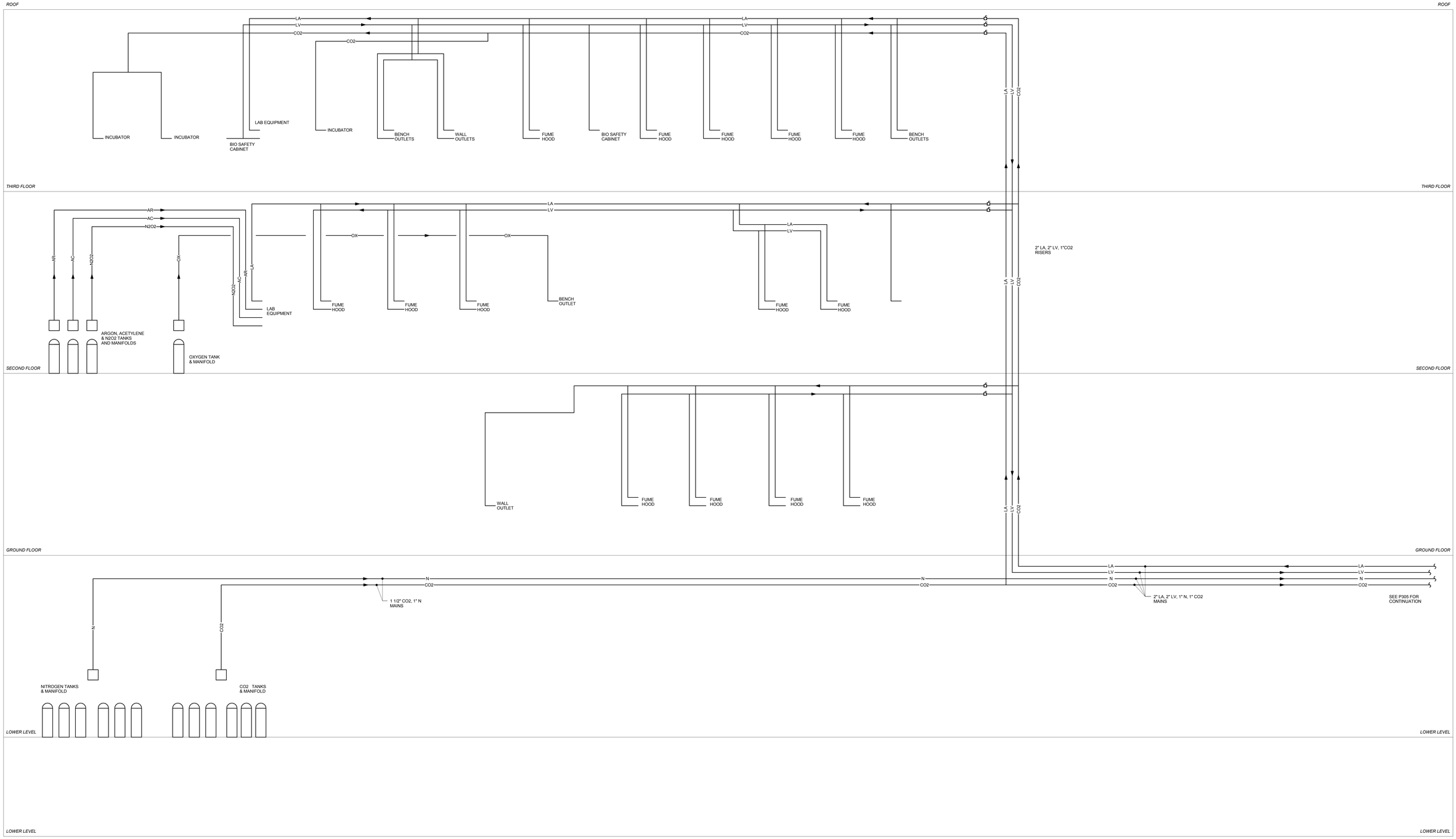
SOUTH WING LAB GAS RISER

NOT TO SCALE

21-10-038

drawing title	PLUMBING RISER
REVISIONS	
mark / date / description	11-21-2012 Bid Documents
STATE OF CONNECTICUT	DEPARTMENT OF CONSTRUCTION SERVICES
DRAWING PREPARED BY	BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project	SCSU NEW ACADEMIC LABORATORY BUILDING
CAD file	130
project no.	BI-RS-283-ARC
sheet of	2 of 2
date	11-21-2012
scale	1/8" = 1'-0"
drawn by	JM, MT
approved by	GVD
drawing no.	P305

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



GENERAL NOTES

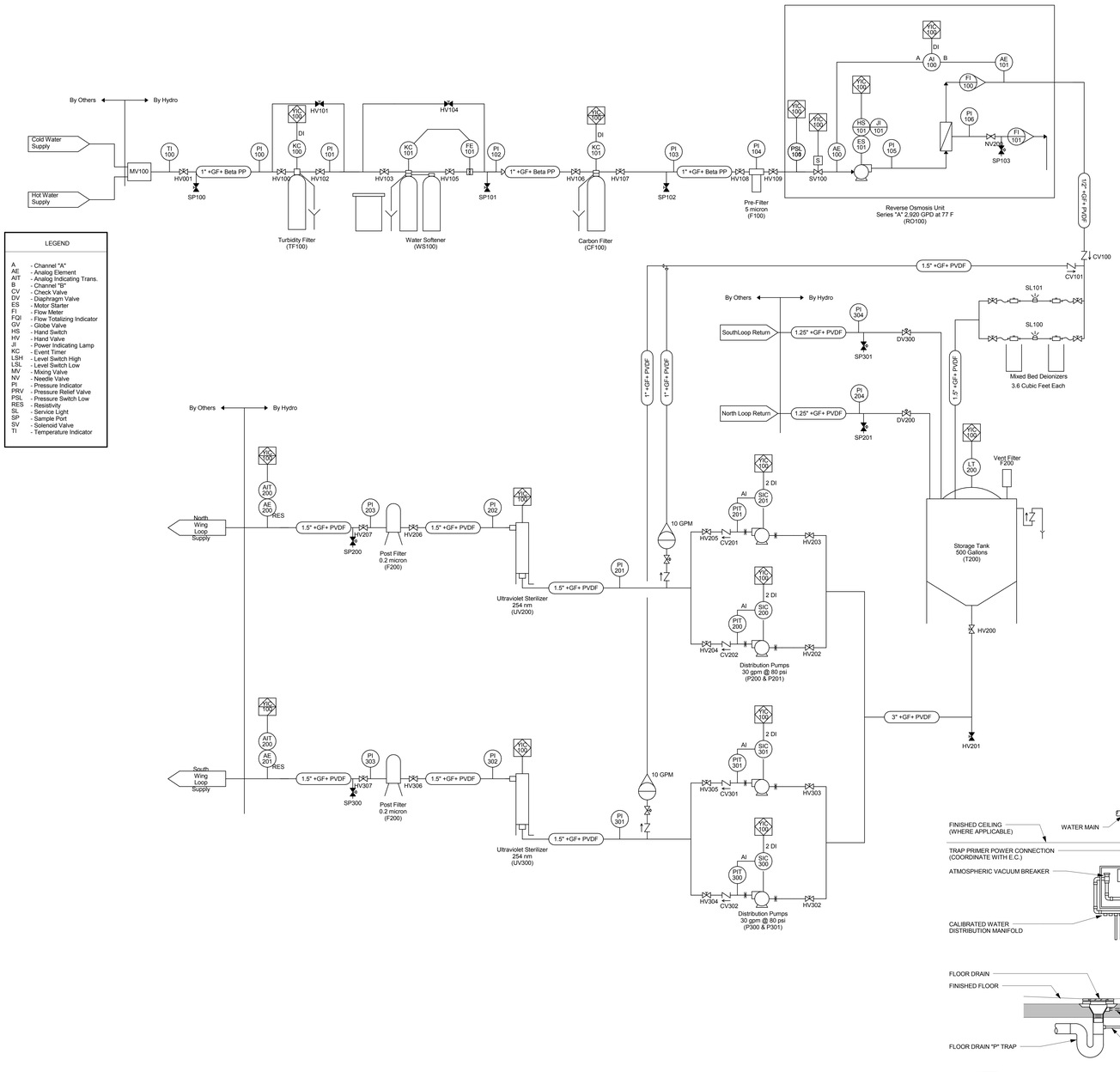
1. REFER TO FLOOR PLANS FOR ALL PIPE SIZES & VALVE LOCATIONS.

NORTH WING LAB GAS RISER

NOT TO SCALE

21-10-038

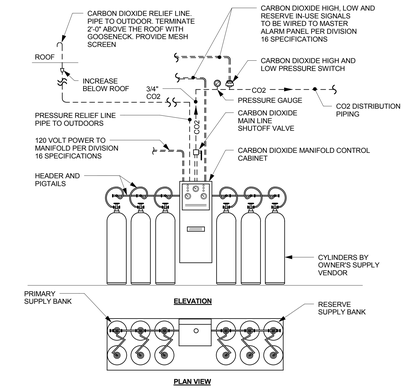
PROJECT TITLE: PLUMBING RISER	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET: 2 of 2
REVISIONS mark / date / description 11-21-2012 / Bid Documents	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE: 11-21-2012 SCALE: 1/8" = 1'-0" DRAWN BY: JJM, MT
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		APPROVED BY: GVD
	CAD file: 1310	project no.: BI-RS-283-ARC	DRAWING no.: P306



LEGEND

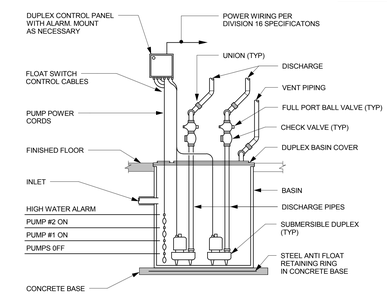
A	- Channel "A"
AE	- Analog Element
AIT	- Analog Indicating Trans.
B	- Channel "B"
CV	- Check Valve
DV	- Diaphragm Valve
ES	- Motor Starter
FI	- Flow Meter
FQI	- Flow Totalizing Indicator
GV	- Globe Valve
HS	- Hand Switch
HV	- Hand Valve
JI	- Power Indicating Lamp
KC	- Event Timer
LSH	- Level Switch High
LSL	- Level Switch Low
MV	- Mixing Valve
NV	- Needle Valve
PI	- Pressure Indicator
PRV	- Pressure Relief Valve
PSL	- Pressure Switch Low
RES	- Resistivity
SL	- Service Light
SP	- Sample Port
SV	- Solenoid Valve
TI	- Temperature Indicator

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



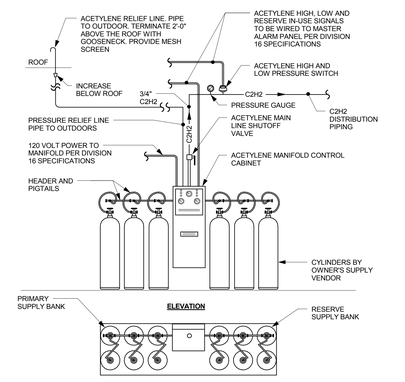
CARBON DIOXIDE (CO2) MANIFOLD DETAIL

NOT TO SCALE



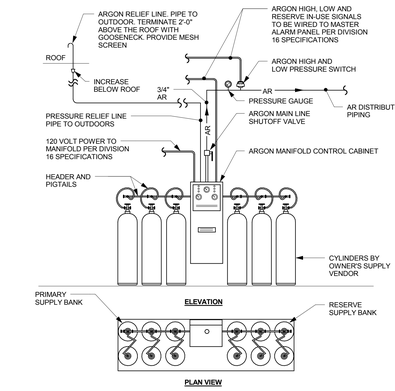
DUPLEX SEWAGE SUMP PUMP DETAIL

NOT TO SCALE



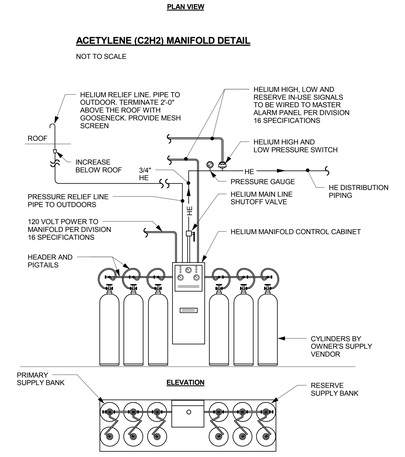
ACETYLENE (C2H2) MANIFOLD DETAIL

NOT TO SCALE



ARGON (AR) MANIFOLD DETAIL

NOT TO SCALE

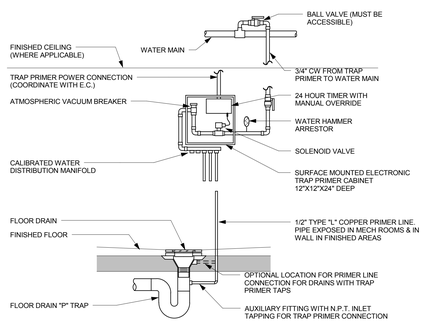


NITROUS OXIDE (N2O) MANIFOLD DETAIL

NOT TO SCALE

HELIUM (HE) MANIFOLD DETAIL

NOT TO SCALE

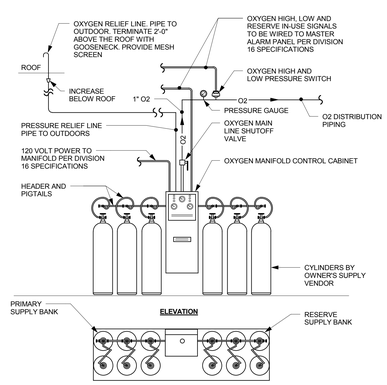


NOTES:

1. BOTTOM OF CABINET TO BE LOCATED A MINIMUM OF 4'-6" ABOVE FINISHED FLOOR.
2. A MINIMUM OF 3'-0" DEEP AND 30" WIDE CLEAR FLOOR SPACE IN FRONT OF CABINET SHALL BE MAINTAINED FOR ACCESS TO CABINET.
3. COORDINATE LOCATION OF T.P. CABINETS WITH OWNER.

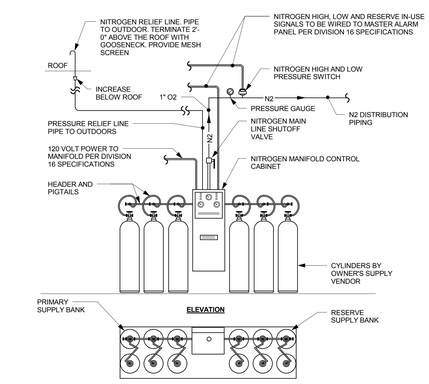
TYPICAL ELECTRONIC TRAP SEAL PRIMER VALVE/SYSTEM DETAIL

NOT TO SCALE



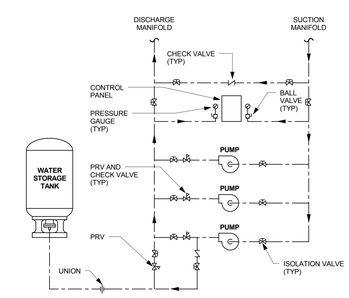
OXYGEN (O2) MANIFOLD DETAIL

NOT TO SCALE



NITROGEN (N2) MANIFOLD DETAIL

NOT TO SCALE



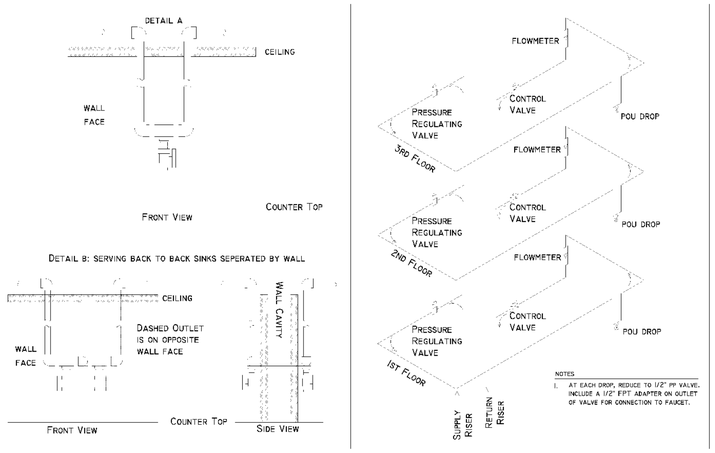
DOMESTIC WATER BOOSTER PUMP SYSTEM PIPING DETAIL

NOT TO SCALE

PLUMBING DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS mark / date / description	DRAWING PREPARED BY BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171		date 11-21-2012 scale 12" = 1'-0"
1 11-21-2012 Bid Documents	project SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by JM, MT approved by GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. P401

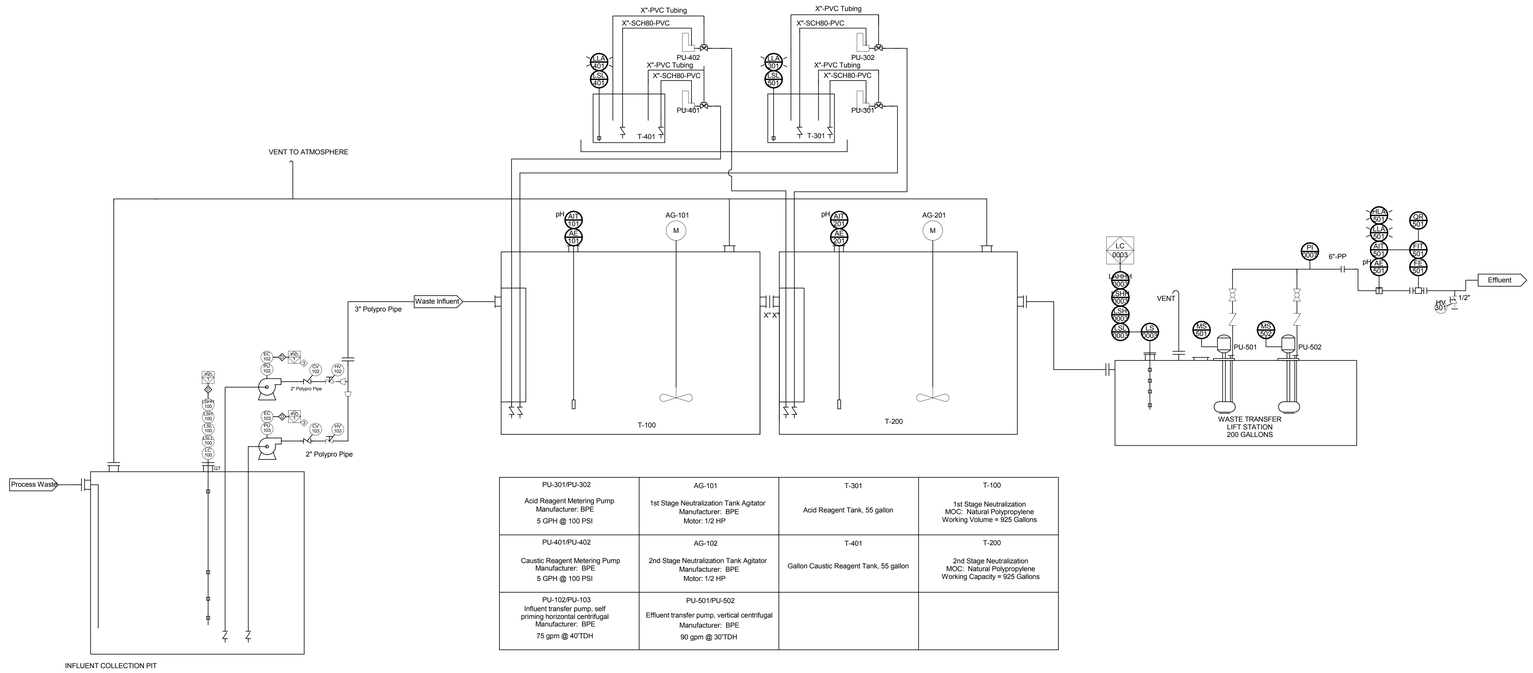
21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



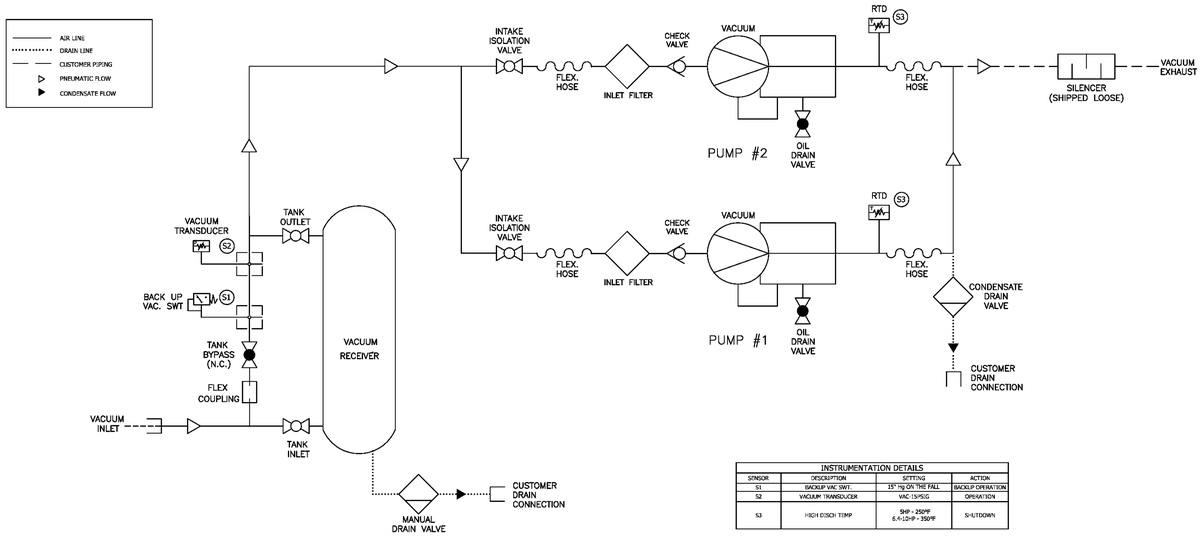
NOTES
1. AT EACH DROP, REDUCE TO 1/2" PP VALVE. INCLUDE A 1/2" FPT ADAPTER ON OUTLET OF VALVE FOR CONNECTION TO FAUCET.

Processed Water Piping Detail
NTS



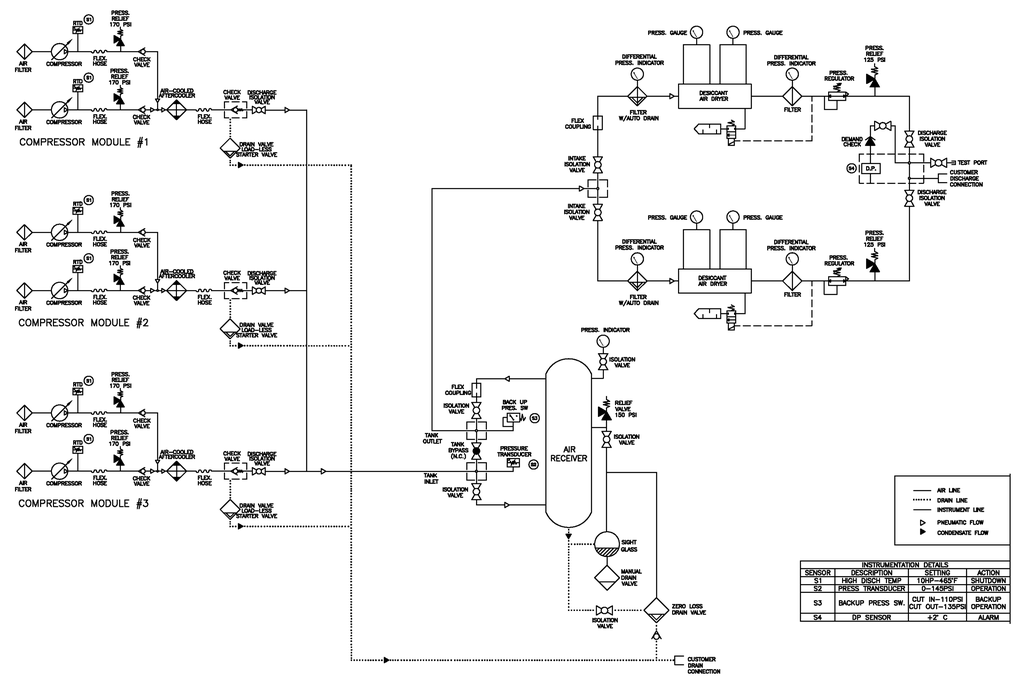
PU-301/PU-302 Acid Reagent Metering Pump Manufacturer: BPE 5 GPH @ 100 PSI	AG-101 1st Stage Neutralization Tank Agitator Manufacturer: BPE Motor: 1/2 HP	T-301 Acid Reagent Tank, 55 gallon	T-100 1st Stage Neutralization MOC: Natural Polypropylene Working Volume = 925 Gallons
PU-401/PU-402 Caustic Reagent Metering Pump Manufacturer: BPE 5 GPH @ 100 PSI	AG-102 2nd Stage Neutralization Tank Agitator Manufacturer: BPE Motor: 1/2 HP	T-401 Gallon Caustic Reagent Tank, 55 gallon	T-200 2nd Stage Neutralization MOC: Natural Polypropylene Working Capacity = 925 Gallons
PU-102/PU-103 Influent transfer pump, self priming horizontal centrifugal Manufacturer: BPE 75 gpm @ 40'TDH	PU-501/PU-502 Effluent transfer pump, vertical centrifugal Manufacturer: BPE 90 gpm @ 30'TDH		

4 Neutralization System
12" = 1'-0"



INSTRUMENTATION DETAILS			
SENSOR	DESCRIPTION	SETTING	ACTION
S1	BACKUP VAC SWT.	15" Hg ON THE FALL	BACKUP OPERATION
S2	VACUUM TRANSDUCER	VAC 15/PSIG	OPERATION
S3	HIGH DISCH TEMP	SHP - 250°F 6.4-120HP - 350°F	SHUTDOWN

Vacuum Pump Detail
NTS



INSTRUMENTATION DETAILS			
SENSOR	DESCRIPTION	SETTING	ACTION
S1	HIGH DISCH TEMP	10HP-145°F	SHUTDOWN
S2	PRESS. TRANSDUCER	0-145PSI	OPERATION
S3	BACKUP PRESS SW.	CUT IN-110PSI CUT OUT-130PSI	BACKUP OPERATION
S4	DP SENSOR	4°F C	ALARM

Compressed Air Piping Detail
NTS

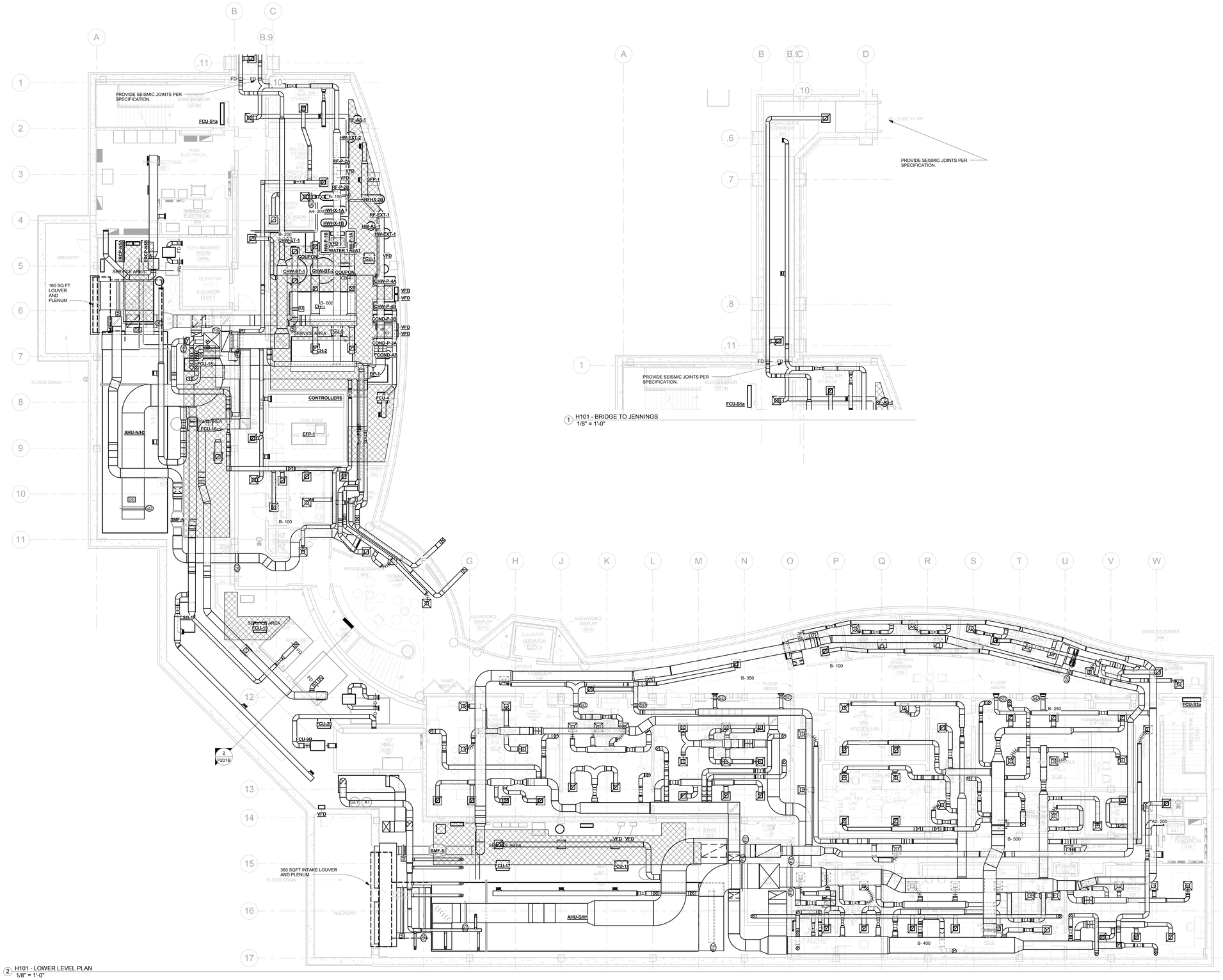
21-10-038

DRAWING TITLE: PLUMBING DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS: mark / date / description 1 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		date: 11-21-2012
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		scale: 12" = 1'-0"
			drawn by: JJM, MT
			approved by: GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. P402

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR DUCT SIZING AND ADDITIONAL INFORMATION.



PROJECT NORTH

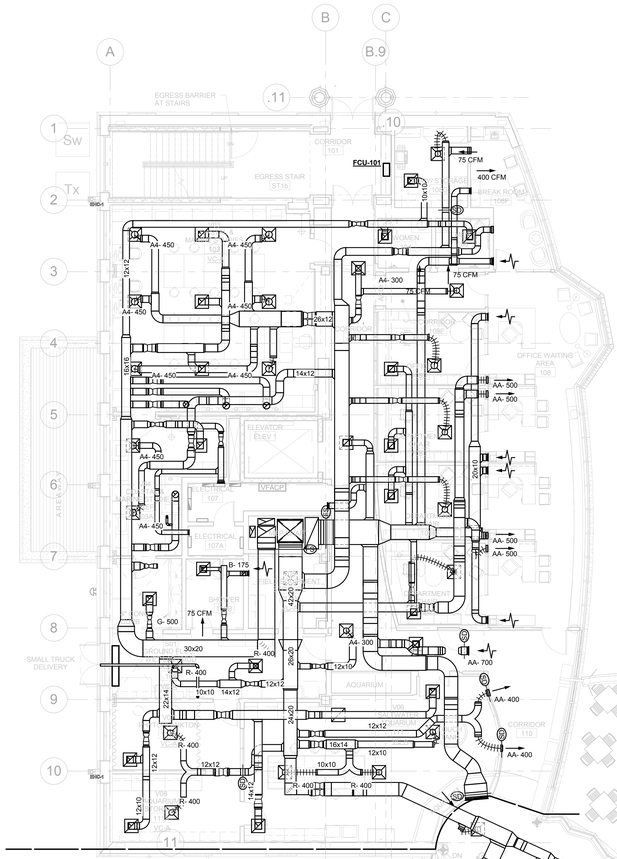
21-10-038

DRAWING TITLE: HVAC LOWER LEVEL FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET 2 of 2
REVISIONS			DATE 11-21-2012
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		SCALE 1/8" = 1'-0"
11-21-2012 Bid Documents	SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHG, DP
			APPROVED BY GVD
	CAD file: 130	project no.: BI-RS-283-ARC	DRAWING NO. H101

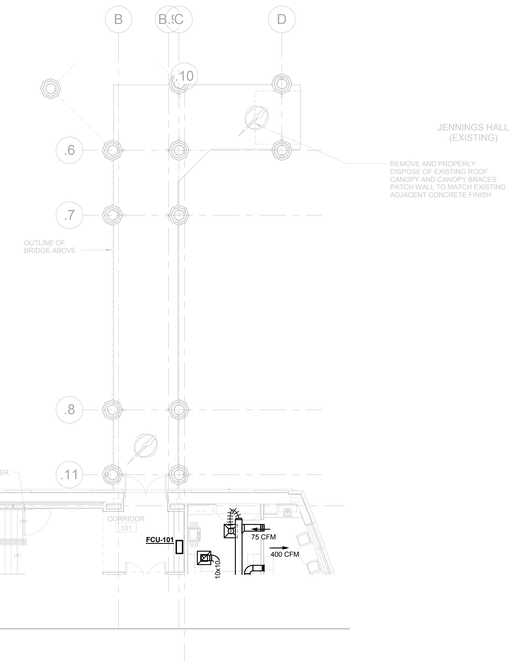
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

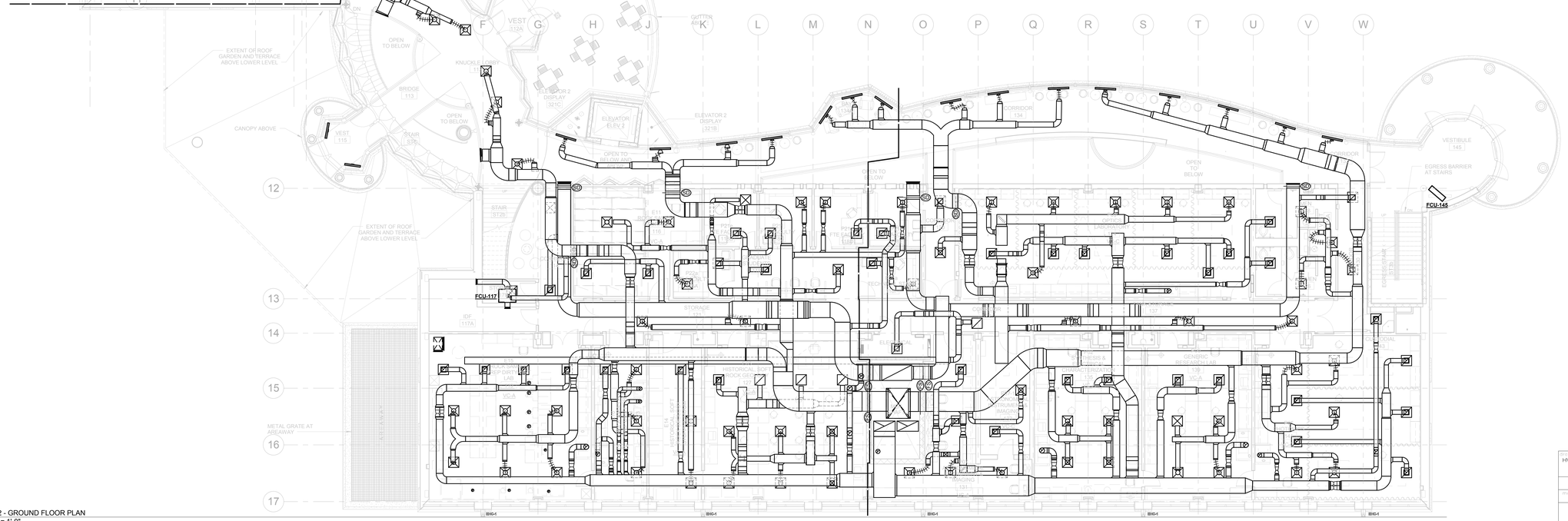
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR DUCT SIZING AND ADDITIONAL INFORMATION.



1 H102 - BRIDGE TO JENNINGS
1/8" = 1'-0"





2 H102 - GROUND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

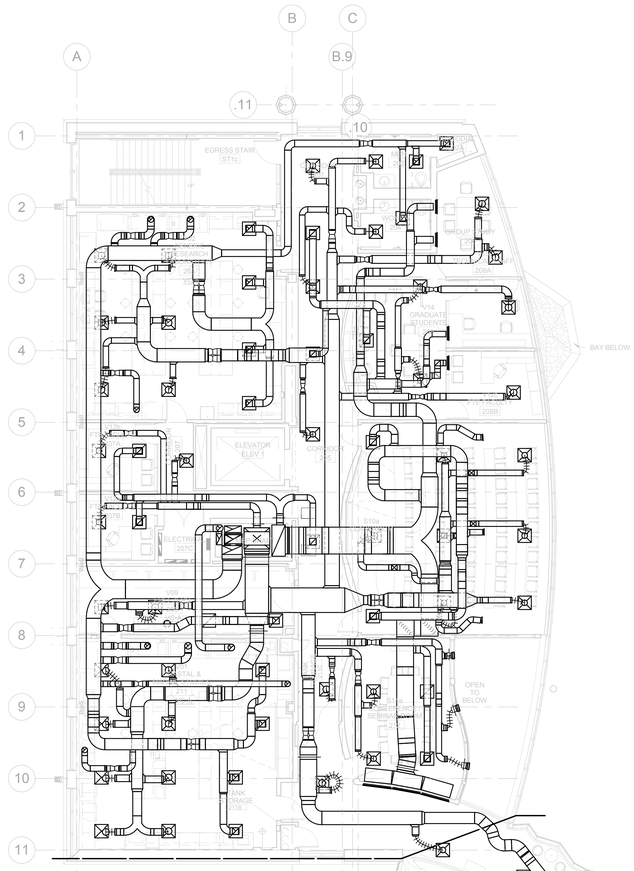
21-10-038

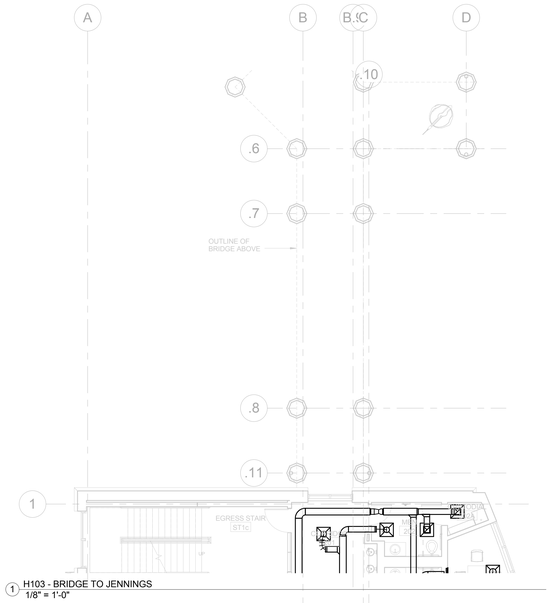
DRAWING TITLE: HVAC GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		DRAWING 2 of 2
REVISIONS			DATE 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		SCALE 1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHG, DP
			APPROVED BY GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	DRAWING NO. H102

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

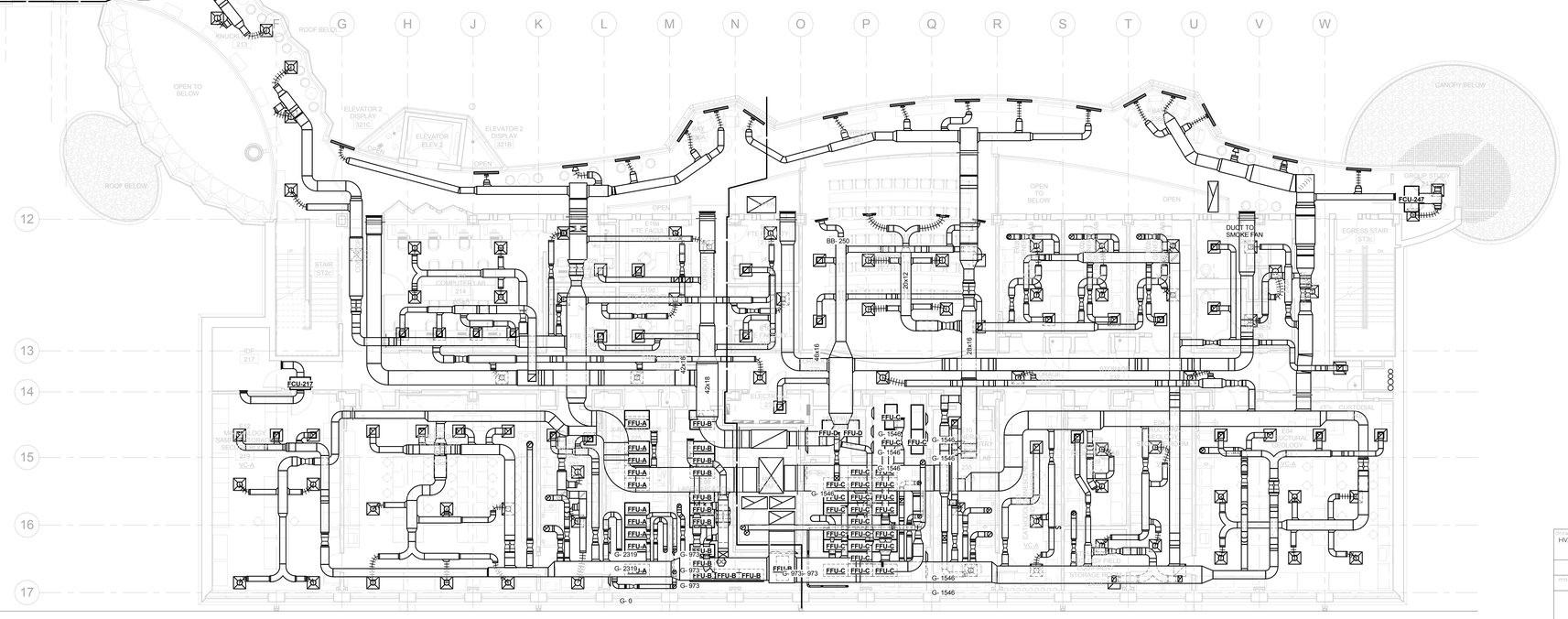
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR DUCT SIZING AND ADDITIONAL INFORMATION.





1 H103 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 H103 - 2ND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

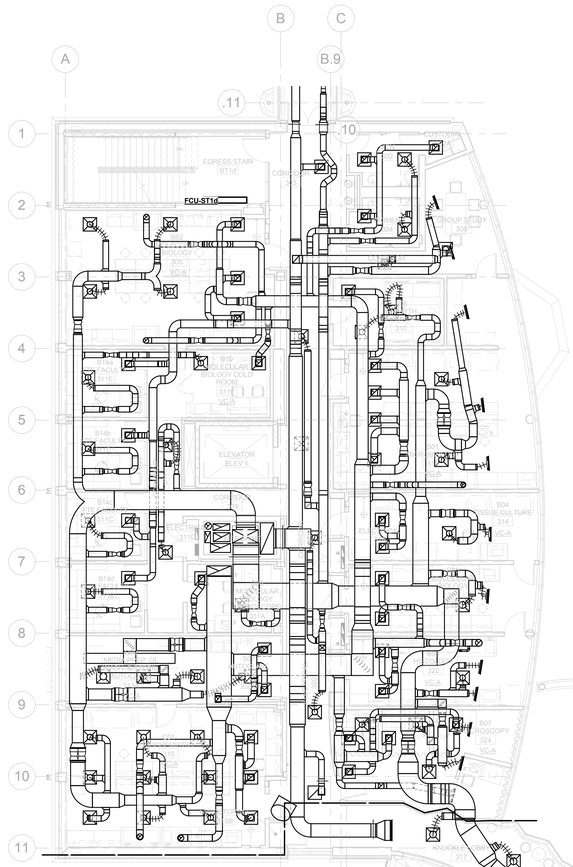
FORMAT 24x36 HVAC 2ND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS	
mark / date / description	
11-21-2012 / Bid Documents	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
	SCSU NEW ACADEMIC LABORATORY BUILDING
	CAD file: 130 / project no.: BI-RS-283-ARC

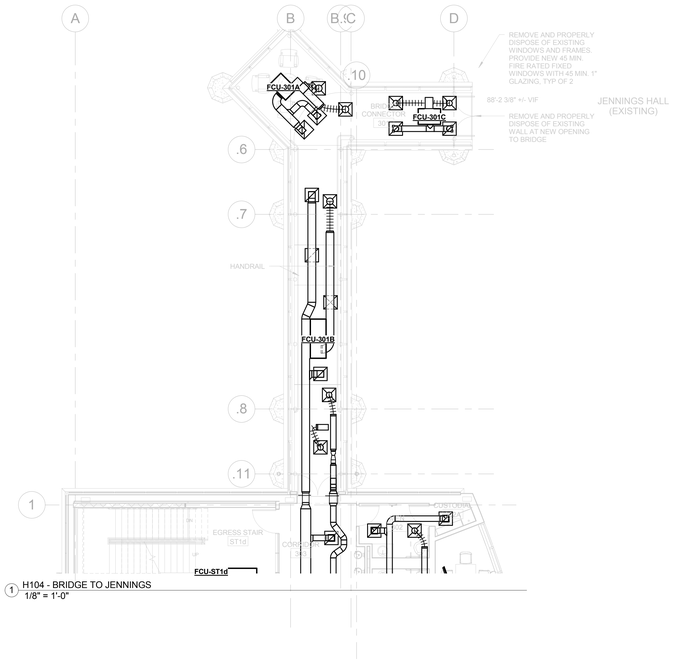
sheet	2 of 2
date	11-21-2012
scale	1/8" = 1'-0"
drawn by	AHG, DP
approved by	GVD
drawing no.	H103

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

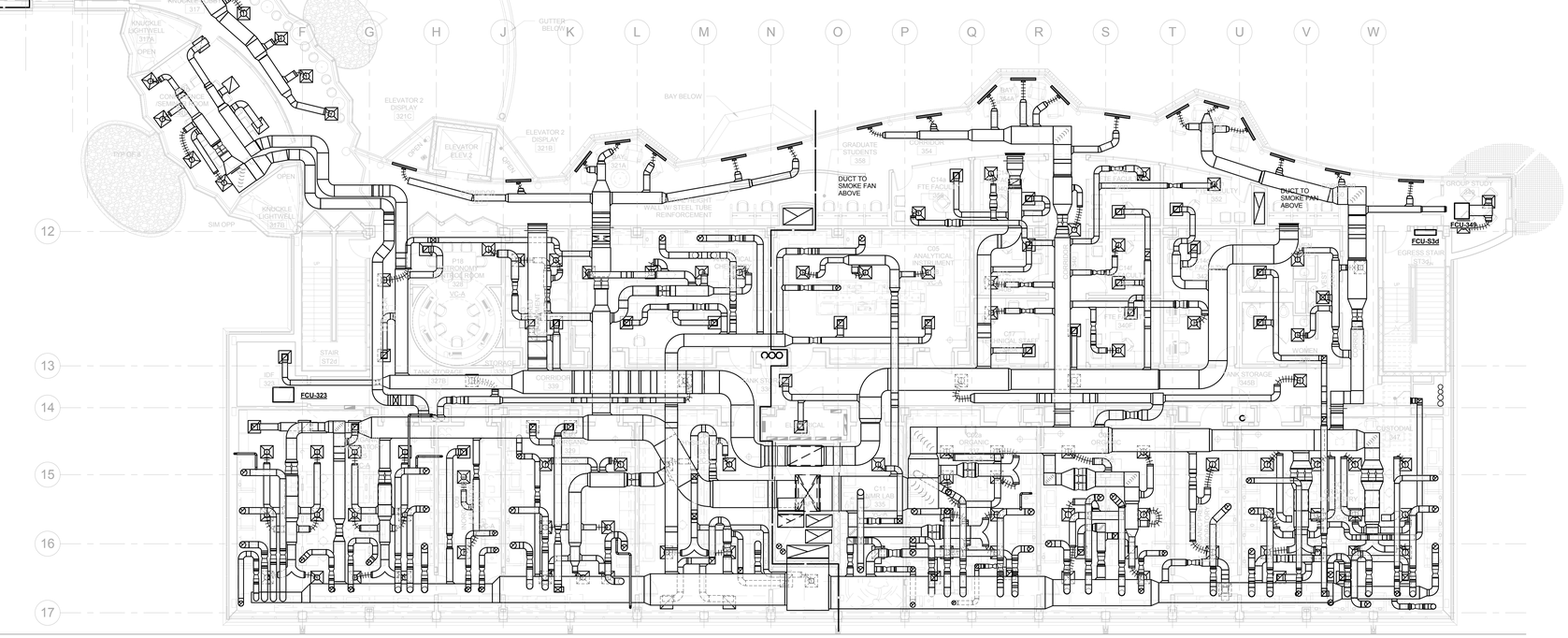
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR DUCT SIZING AND ADDITIONAL INFORMATION.





1 H104 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 H104 - 3RD FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

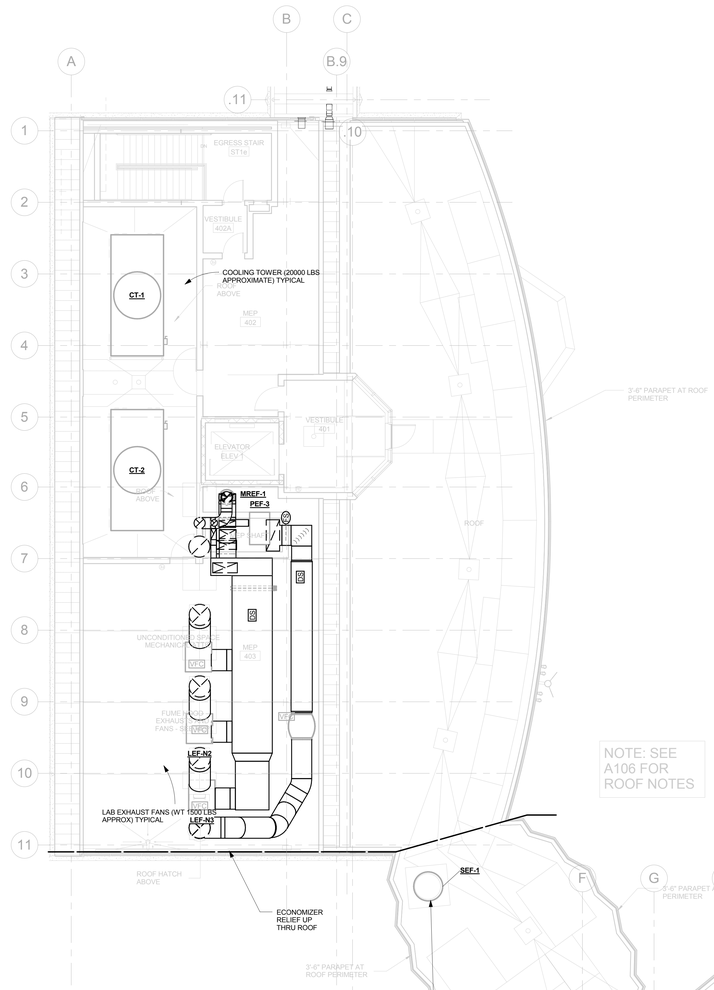
21-10-038

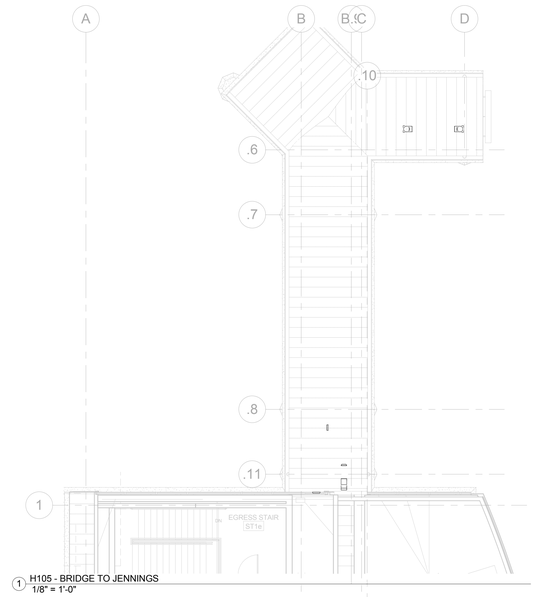
DRAWING TITLE: HVAC 3RD FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE 11-21-2012
11-21-2012 Bid Documents			SCALE 1/8" = 1'-0"
	SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHG, DP
			APPROVED BY GVD
	CAD file: 1310	project no.: BI-RS-283-ARC	DRAWING NO. H104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

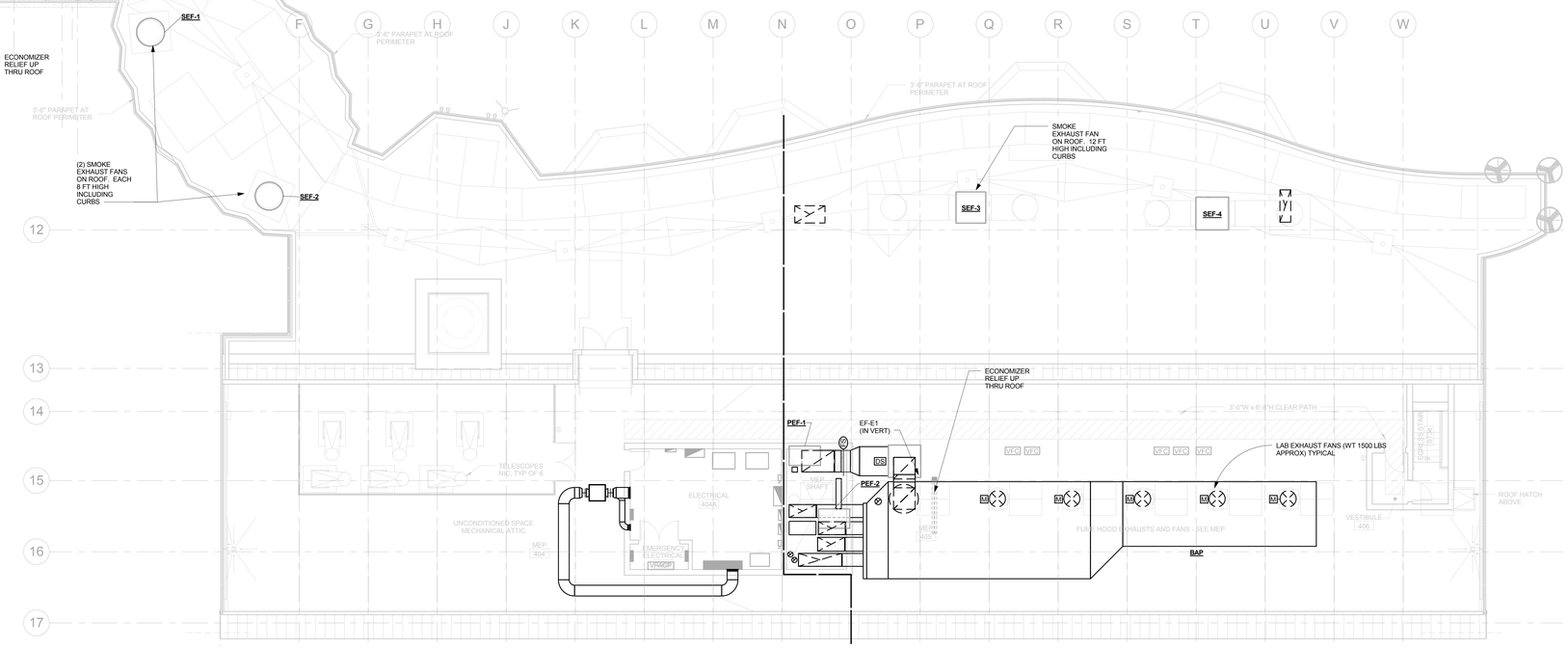
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR DUCT SIZING AND ADDITIONAL INFORMATION.





1 H105 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 H105 - MECHANICAL ATTIC FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

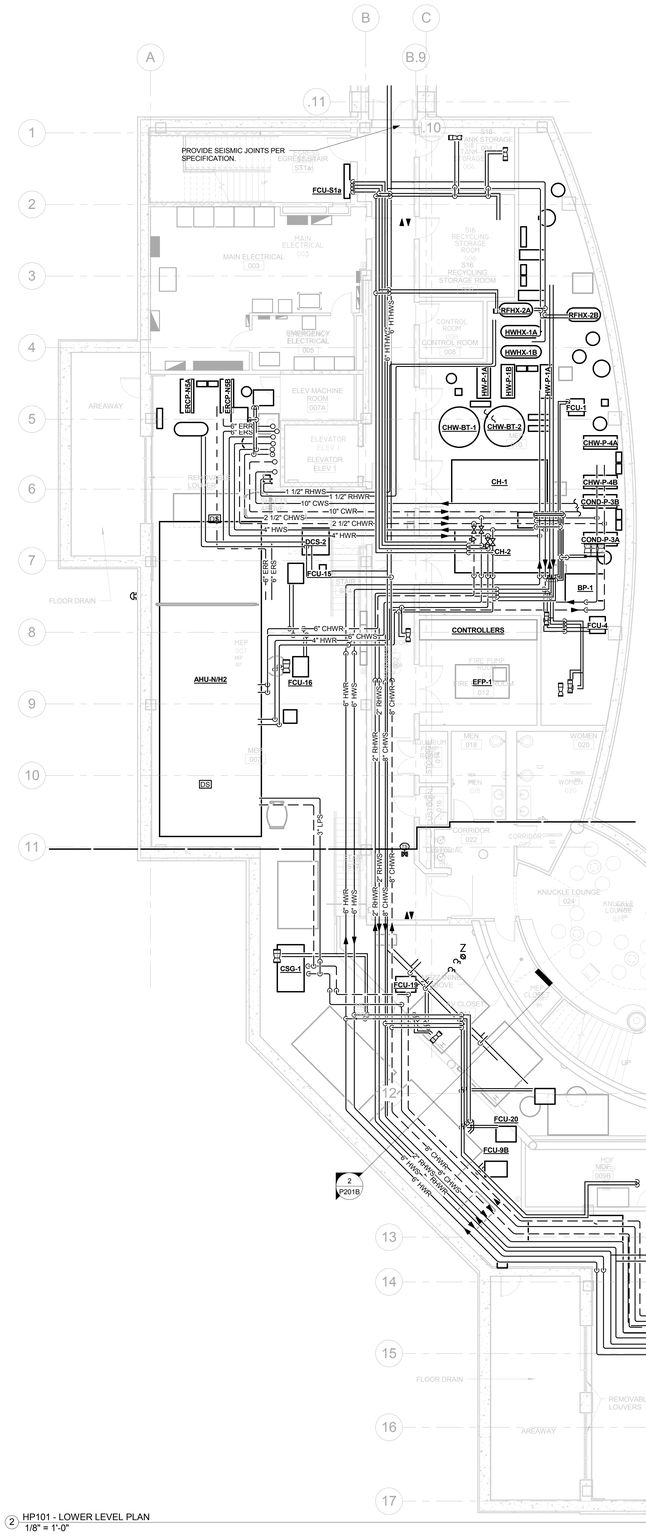
21-10-038

drawing title: HVAC MECHANICAL ATTIC FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: AHG, DP
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: H105

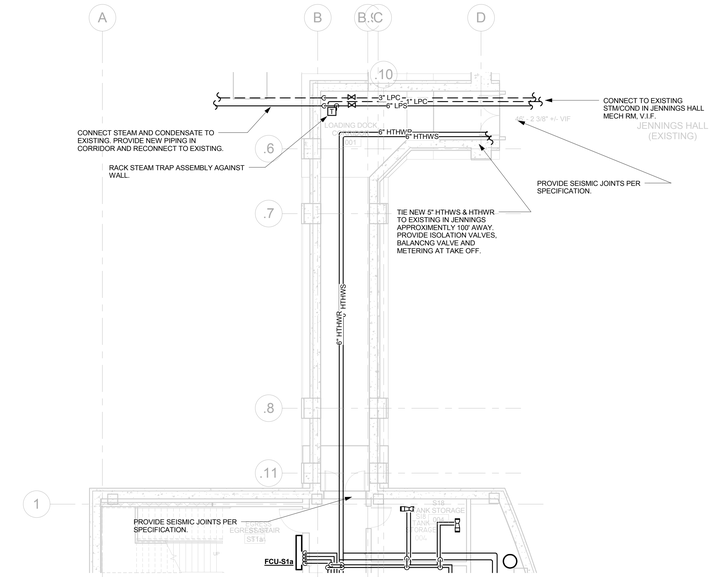
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR SIZING AND ADDITIONAL INFORMATION.



2 HP101 - LOWER LEVEL PLAN
1/8" = 1'-0"



1 HP101 - BRIDGE TO JENNINGS
1/8" = 1'-0"

PROJECT NORTH

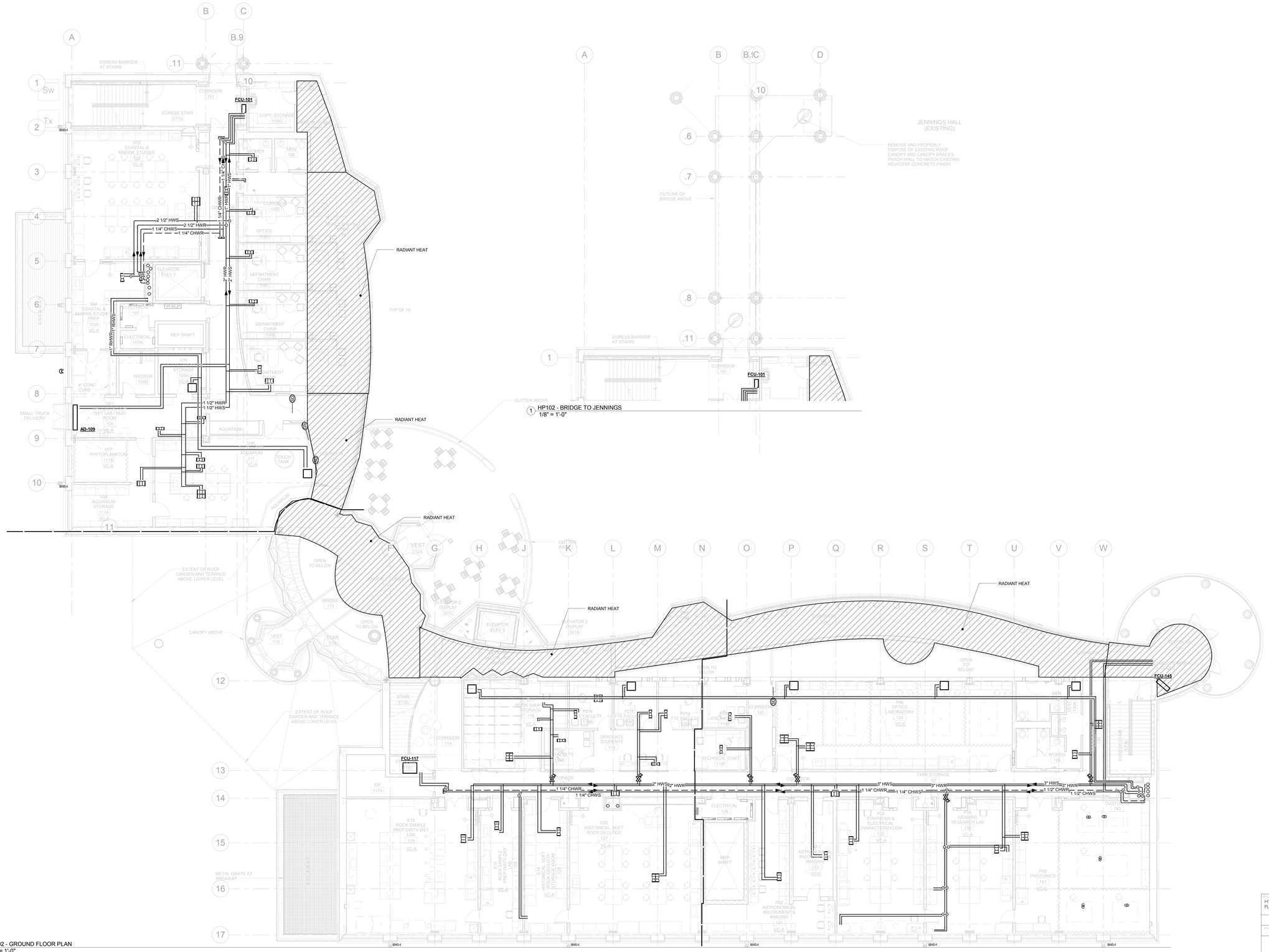
21-10-038

drawing title: HYDRONIC PIPING LOWER LEVEL FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date 11-21-2012
11-21-2012 Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		scale 1/8" = 1'-0"
			drawn by AHD, DP
			approved by GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. HP101

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR SIZING AND ADDITIONAL INFORMATION.



1 HP102 - BRIDGE TO JENNINGS
1/8" = 1'-0"

2 HP102 - GROUND FLOOR PLAN
1/8" = 1'-0"

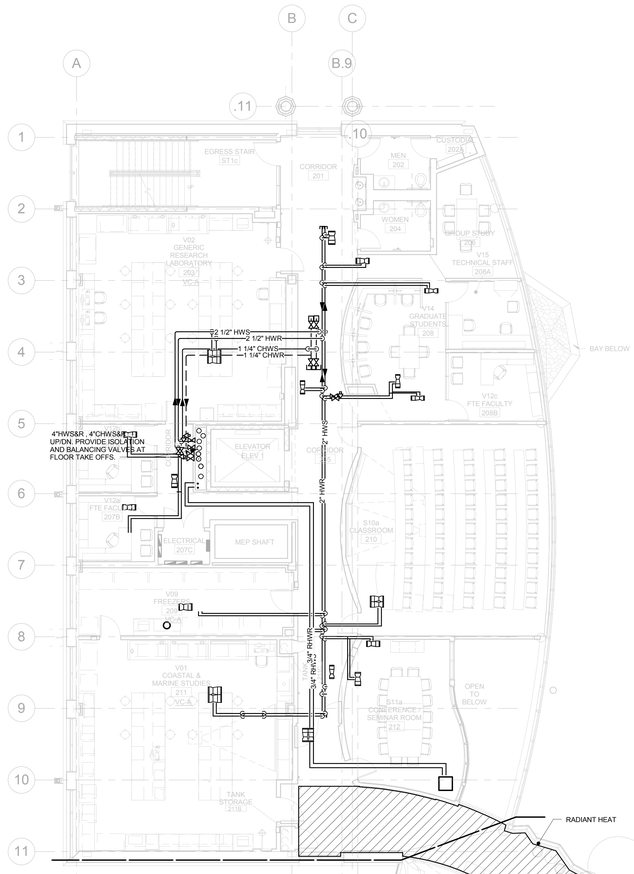
DRAWING TITLE: HYDRONIC PIPING GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET 2 of 2
REVISIONS: mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE 11-21-2012
11-21-2012 Bid Documents			SCALE 1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHD, DP
			APPROVED BY GVD
	CAD FILE 1393	PROJECT NO. BI-RS-283-ARC	DRAWING NO. HP102

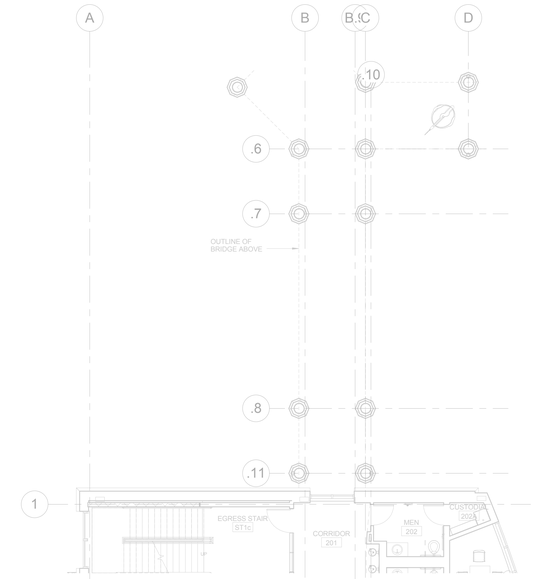
21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

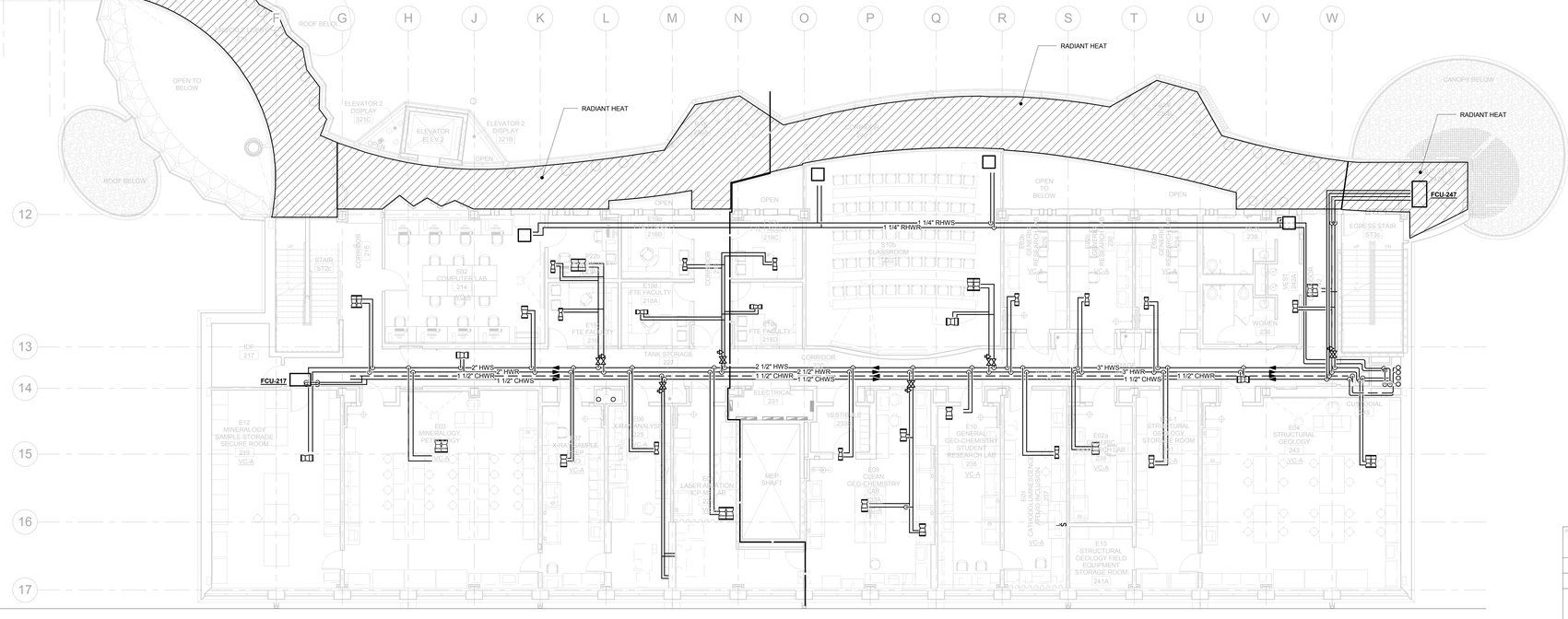
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR SIZING AND ADDITIONAL INFORMATION.





1 HP103 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 HP103 - 2ND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

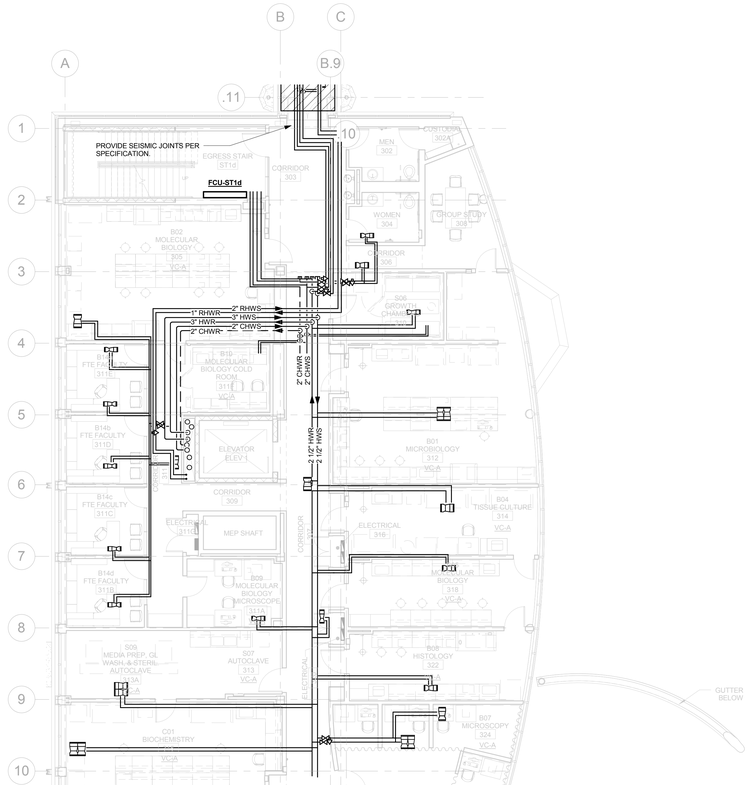
drawing title: HYDRONIC PIPING 2ND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS	
mark / date / description: 1 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project: SCSU NEW ACADEMIC LABORATORY BUILDING	CAD file: 130 / project no.: BI-RS-283-ARC

volume: 2 of 2
date: 11-21-2012
scale: 1/8" = 1'-0"
drawn by: AHD, DP
approved by: GVD
drawing no.: HP103

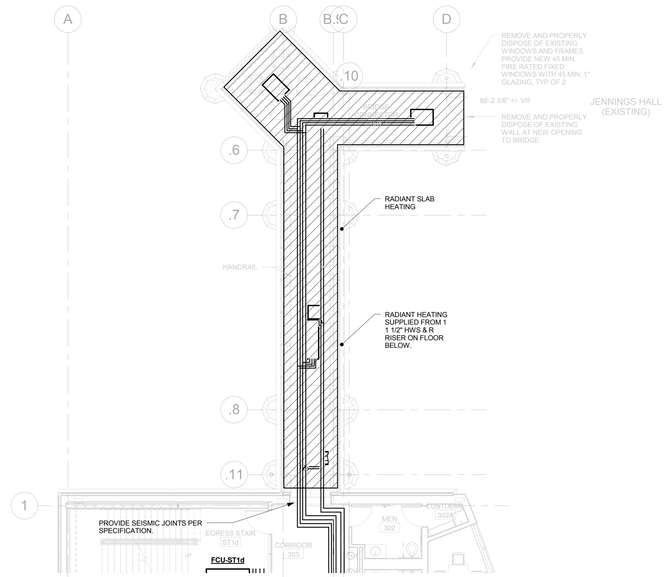
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR SIZING AND ADDITIONAL INFORMATION.



2 HP104 - 3RD FLOOR PLAN
1/8" = 1'-0"



1 HP104 - BRIDGE TO JENNINGS
1/8" = 1'-0"

PROJECT NORTH

21-10-038

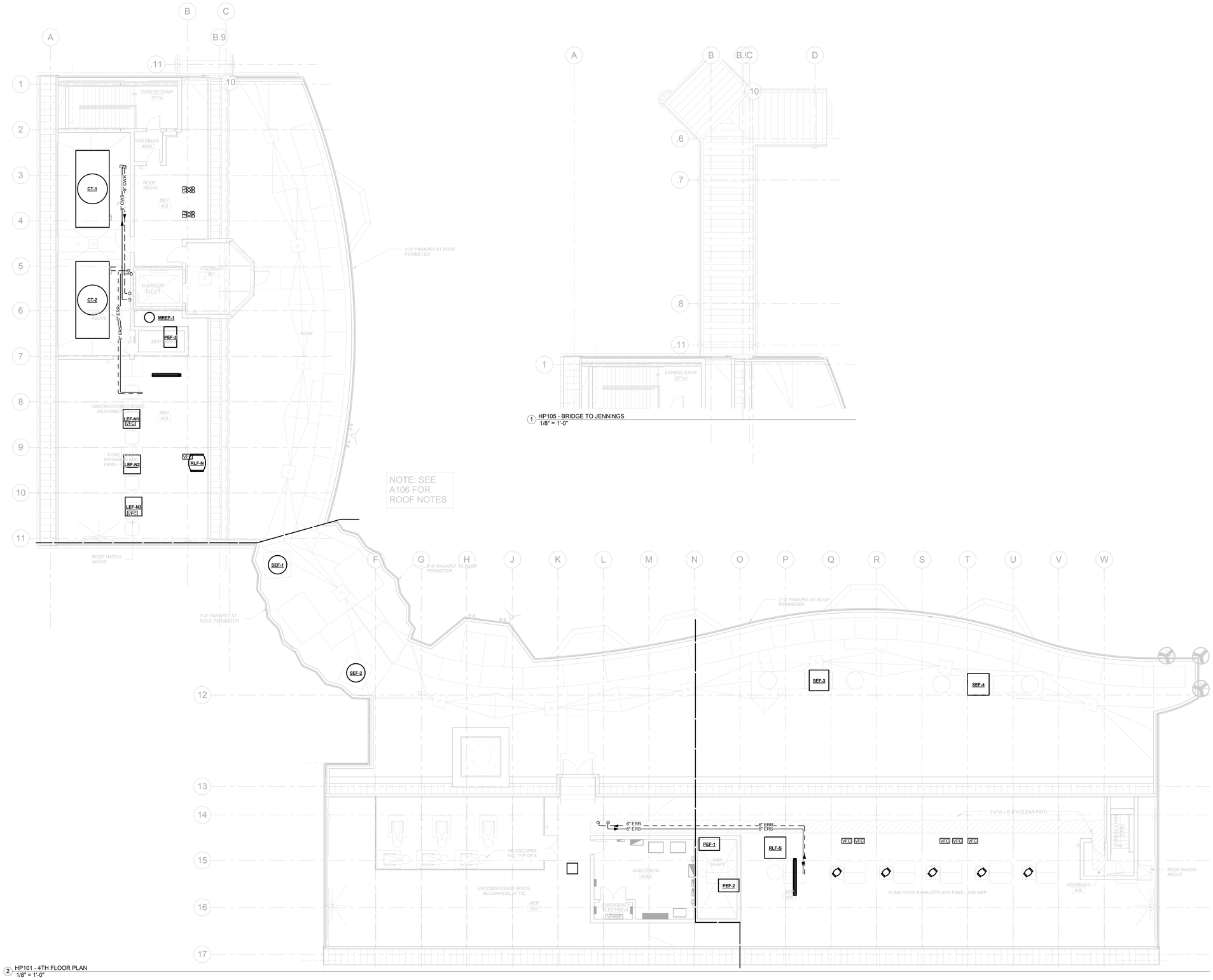
project name: HYDRONIC PIPING 3RD FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		sheet no. 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY		date 11-21-2012
11-21-2012 Bid Documents	BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel. (860) 286-9171		scale 1/8" = 1'-0"
	project SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by AHD, DP
			approved by GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. HP104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR SIZING AND ADDITIONAL INFORMATION.

1 HP105 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 HP101 - 4TH FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

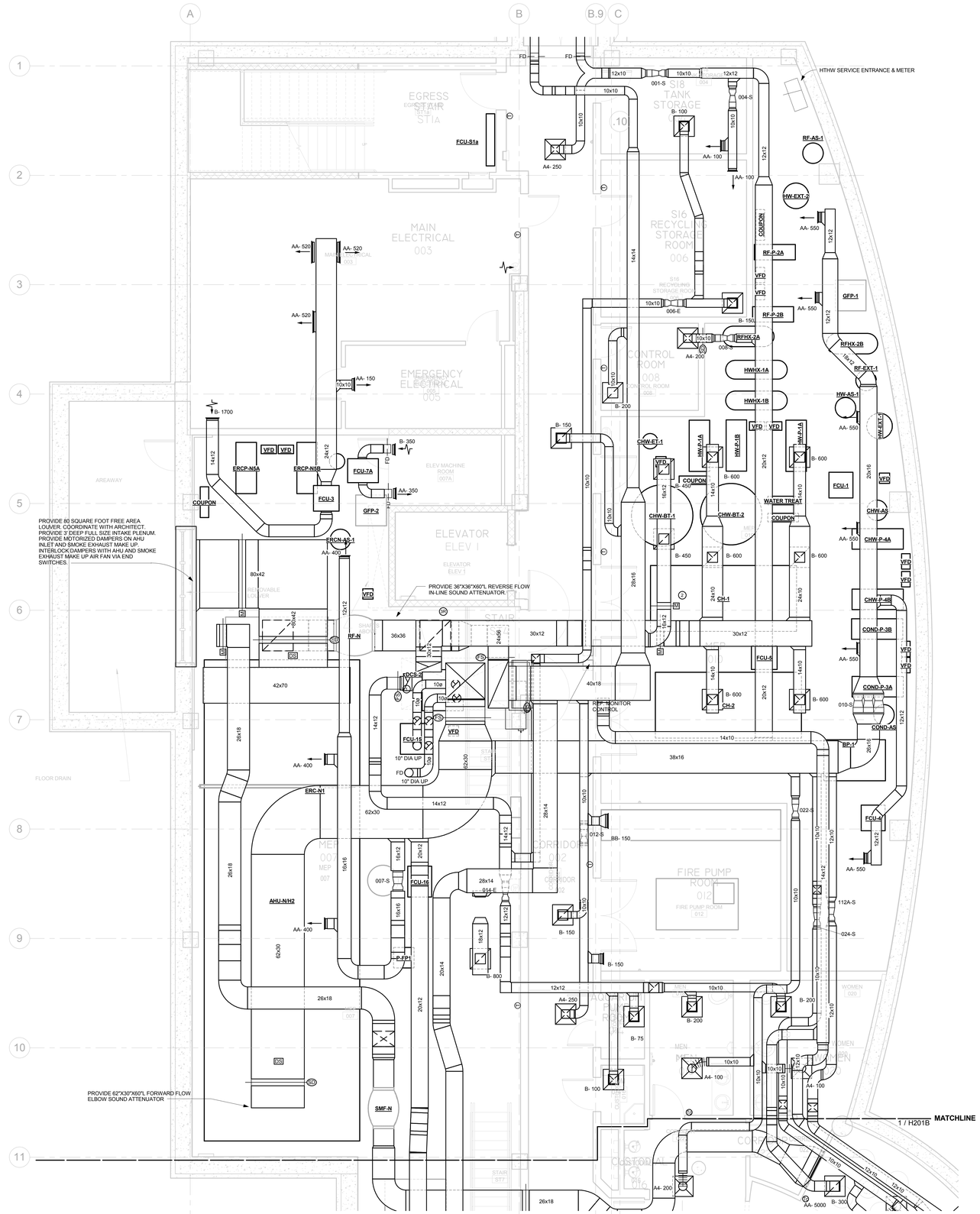
project: HYDRONIC PIPING MECHANICAL ATTIC FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		sheet no. 2 of 2
REVISIONS			date 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		scale 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by AHD, DP
			approved by GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. HP105

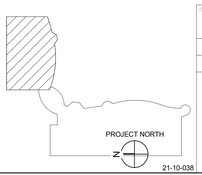
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO DUST COLLECTION SYSTEM. COORDINATE WITH EQUIPMENT SUPPLIER FOR FINAL CONNECTION REQUIREMENTS. SEE SPECIFICATIONS FOR DUST COLLECTION SYSTEM DUCT REQUIREMENTS.
2. PROVIDE MOTORIZED DAMPER. INTERLOCK WITH REFRIGERANT EXHAUST FAN OPERATION.

S SUPPLY DUCT 46x42 UP
R RETURN DUCT 56x24 UP
X LOWER LEVEL EXHAUST DUCT 20x10 UP
E REFRIGERANT EXHAUST DUCT 30x12 UP





21-10-038

title: HVAC LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

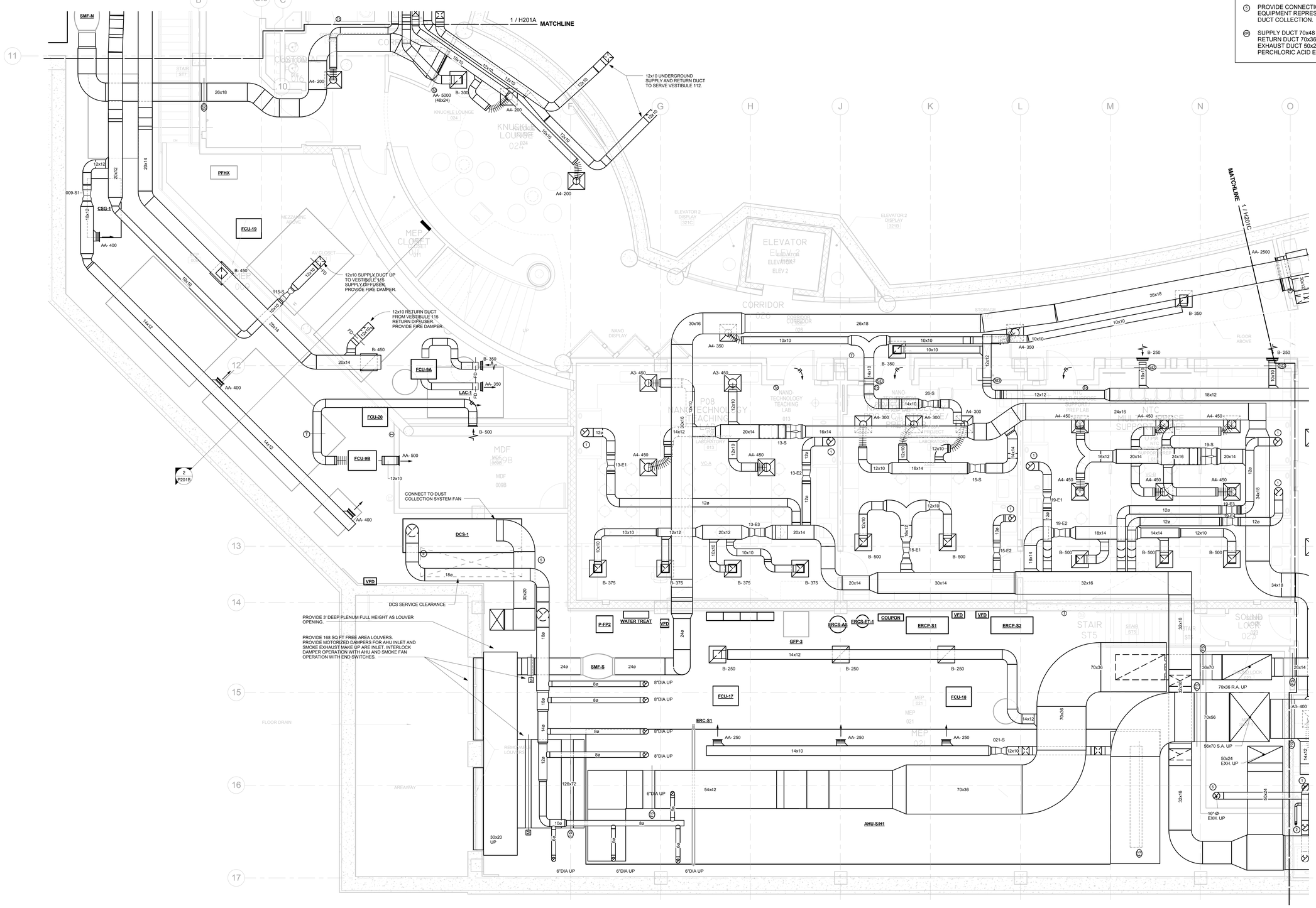
2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no. H201A

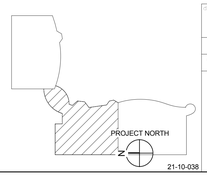
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE EXHAUST CAPTURE HOOD. SEE DETAIL ON SHEET MEP402.
3. PROVIDE EXHAUST COLUMN. COORDINATE EXACT LOCATION WITH LAB PLANNER. SEE DETAIL ON SHEET MEP402.
4. PROVIDE EXHAUST COLLECTION TO LAB EQUIPMENT. COORDINATE EXACT LOCATION WITH LAB PLANNER. COORDINATE AND PROVIDE CONNECTION APPURTENANCES WITH EQUIPMENT REPRESENTATIVE.
5. PROVIDE CONNECTION TO DUST COLLECTION SYSTEM. COORDINATE CONNECTION WITH EQUIPMENT REPRESENTATIVE. SEE SPECIFICATIONS FOR DUCT REQUIREMENTS OF DUCT COLLECTION.

SUPPLY DUCT 70x48 UP
RETURN DUCT 70x36 UP
EXHAUST DUCT 50x24 UP
PERCHLORIC ACID EXHAUST 10" DIA.





21-10-038

PROJECT
HVAC LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

PROJECT
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1310
project no. BI-RS-283-ARC

SHEET
2 of 2

DATE
11-21-2012

SCALE
1/4" = 1'-0"

DRAWN BY
AHG, DP

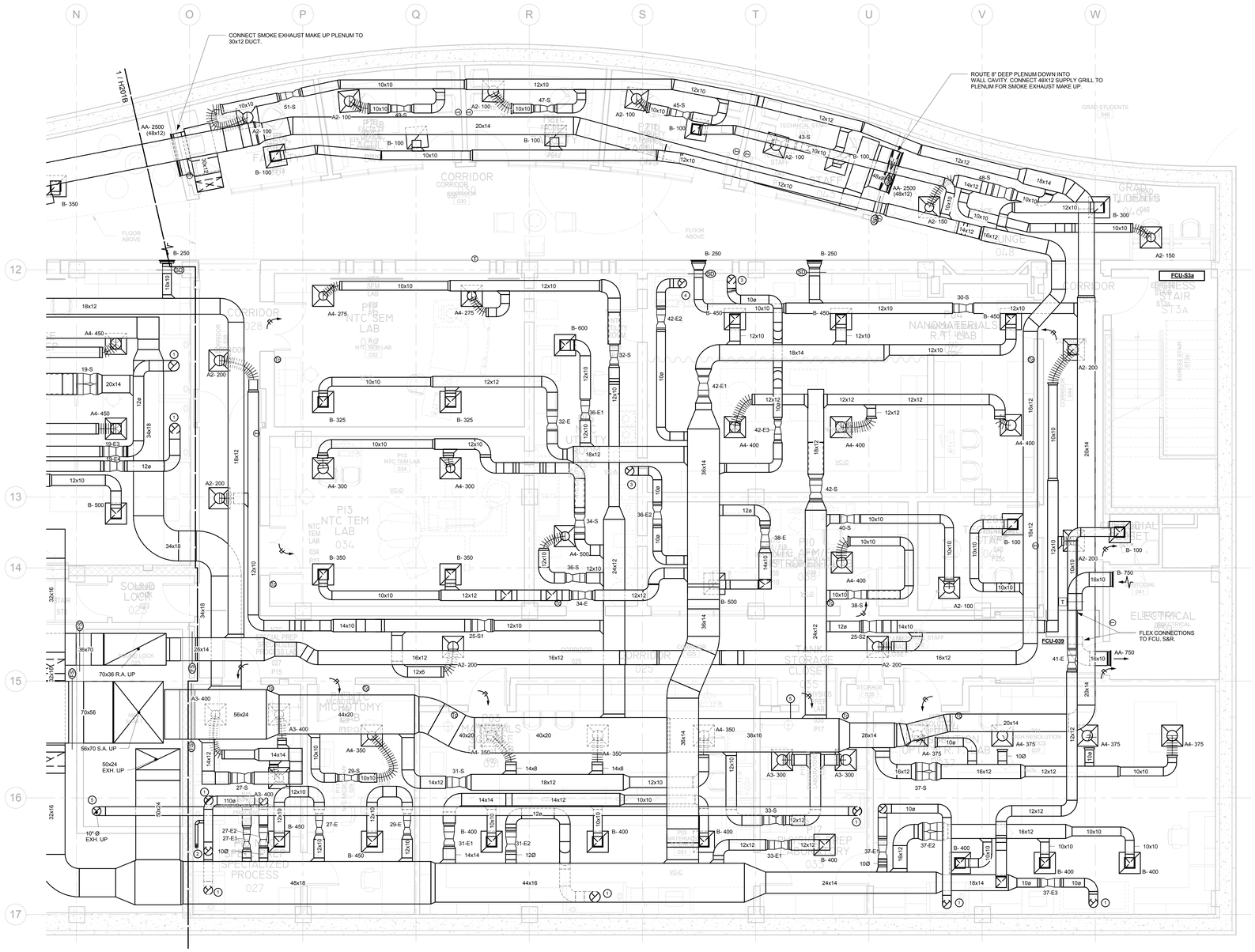
CHECKED BY
GVD

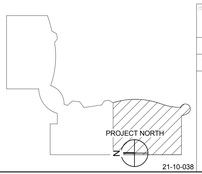
drawing no.
H201B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE EXHAUST CAPTURE HOOD. SEE DETAIL ON SHEET MEP402.
3. PROVIDE EXHAUST COLUMN. COORDINATE EXACT LOCATION WITH LAB PLANNER. SEE DETAIL ON SHEET MEP402.
4. PROVIDE EXHAUST COLLECTION TO LAB EQUIPMENT. COORDINATE EXACT LOCATION WITH LAB PLANNER. COORDINATE AND PROVIDE CONNECTION APPURTENANCES WITH EQUIPMENT REPRESENTATIVE.
5. PERCHLORIC ACID DUCT UP TO EXHAUST FAN ON ROOF. SEE SPECIFICATIONS FOR DUCT REQUIREMENTS.





21-10-038

HVAC LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

PROJECT:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 1393
project no: BI-RS-283-ARC

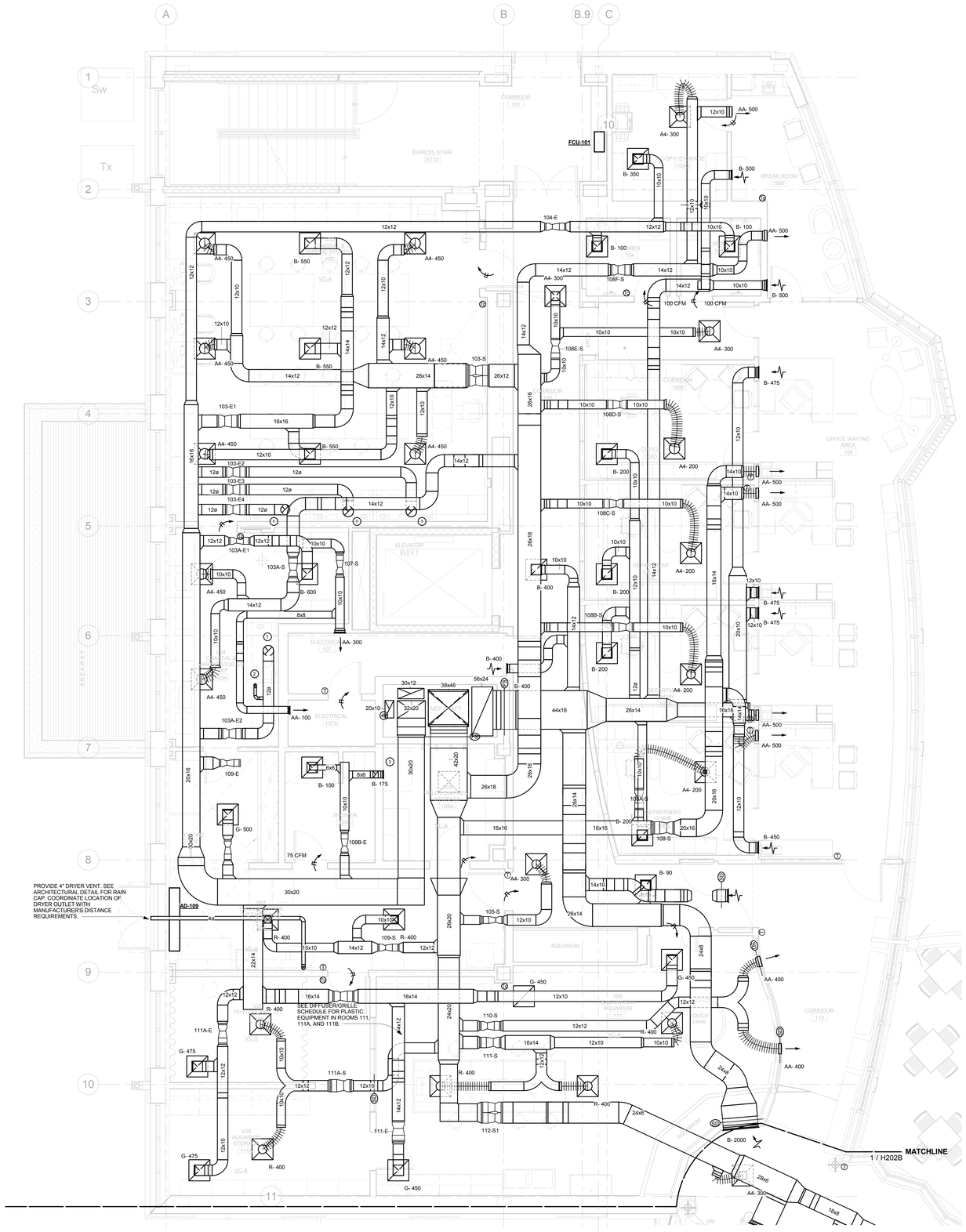
sheet: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no: H201C

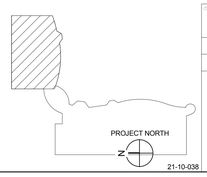
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE EXHAUST CAPTURE HOOD. SEE DETAIL ON SHEET MEP402.
3. PROVIDE 10"Ø EQUIPMENT EXHAUST DUCT FROM LAB EQUIPMENT TO DUST COLLECTION SYSTEM IN BASEMENT. ROUTE 10" RECIRCULATION AIR FROM DUST COLLECTION SYSTEM TO CEILING DIFFUSER.

(RD) SUPPLY DUCT 46x38 UP/46x42 DN
RETURN DUCT 56x24 UP/DN
LOWER LEVEL EXHAUST DUCT 20x10 UP/DN
GROUND LEVEL EXHAUST DUCT 32x20 UP
REFRIGERANT EXHAUST DUCT 30x12 UP/DN





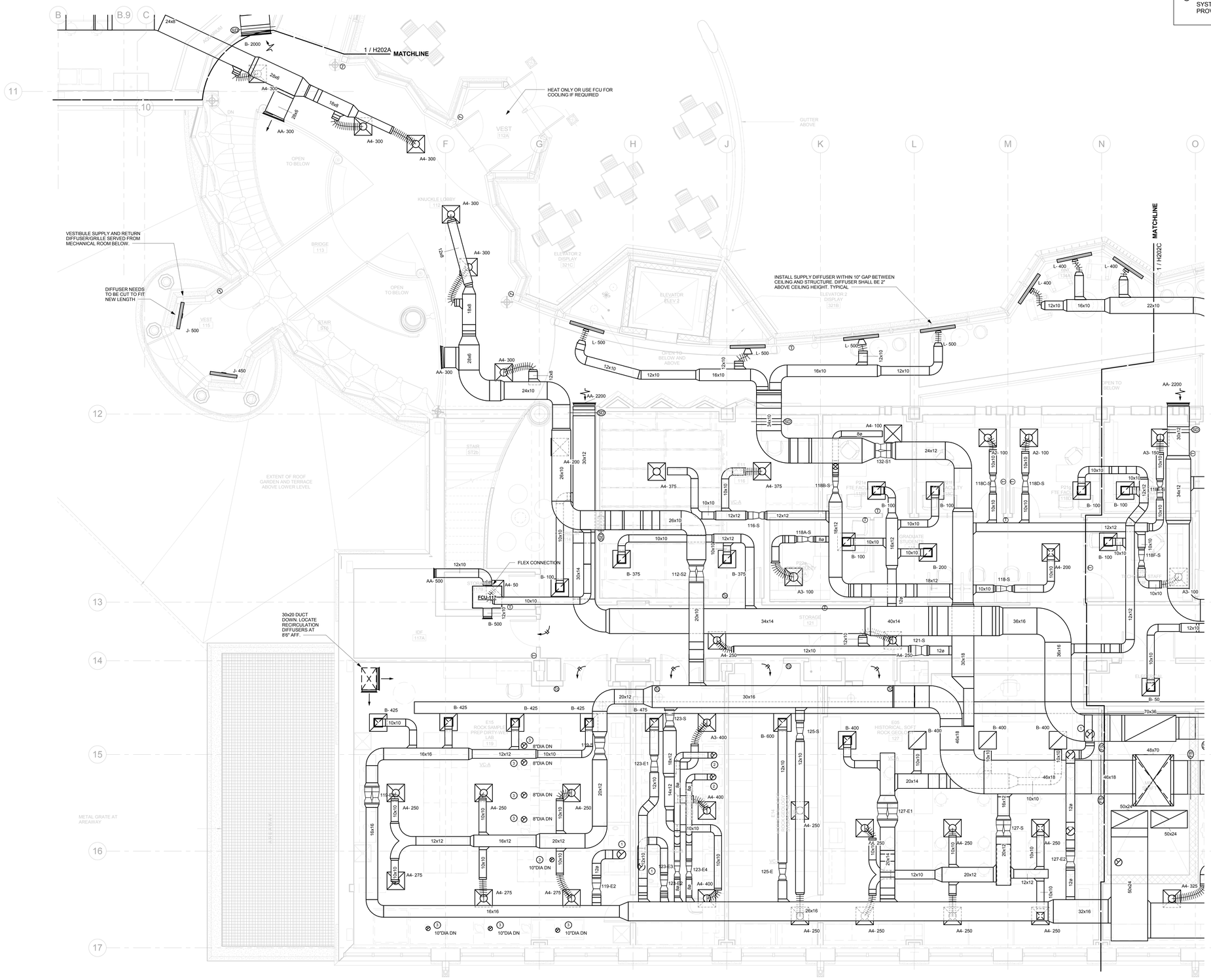
21-10-038

drawing title	HVAC GROUND FLOOR PART PLAN
REVISIONS	
mark / date / description	1 / 11-21-2012 / Bid Documents
STATE OF CONNECTICUT	DEPARTMENT OF CONSTRUCTION SERVICES
DRAWING PREPARED BY	BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project	SCSU NEW ACADEMIC LABORATORY BUILDING
CAD no.	1380
project no.	BI-RS-283-ARC
volume	2 of 2
date	11-21-2012
scale	1/4" = 1'-0"
drawn by	AHG, DP
approved by	GVD
drawing no.	H202A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE EXHAUST CONNECTION TO LAB EQUIPMENT. COORDINATE EXACT LOCATION WITH LAB PLANNER. COORDINATE AND PROVIDE CONNECTION APPURTENANCES WITH EQUIPMENT REPRESENTATIVE.
3. PROVIDE EXHAUST CONNECTION TO LAB EQUIPMENT TO BE CONNECTED TO DUST COLLECTION SYSTEM. COORDINATE EXACT LOCATION WITH LAB PLANNER. COORDINATE CONNECTION AND PROVIDE CONNECTION APPURTENANCES WITH EQUIPMENT REPRESENTATIVE.



21-10-038

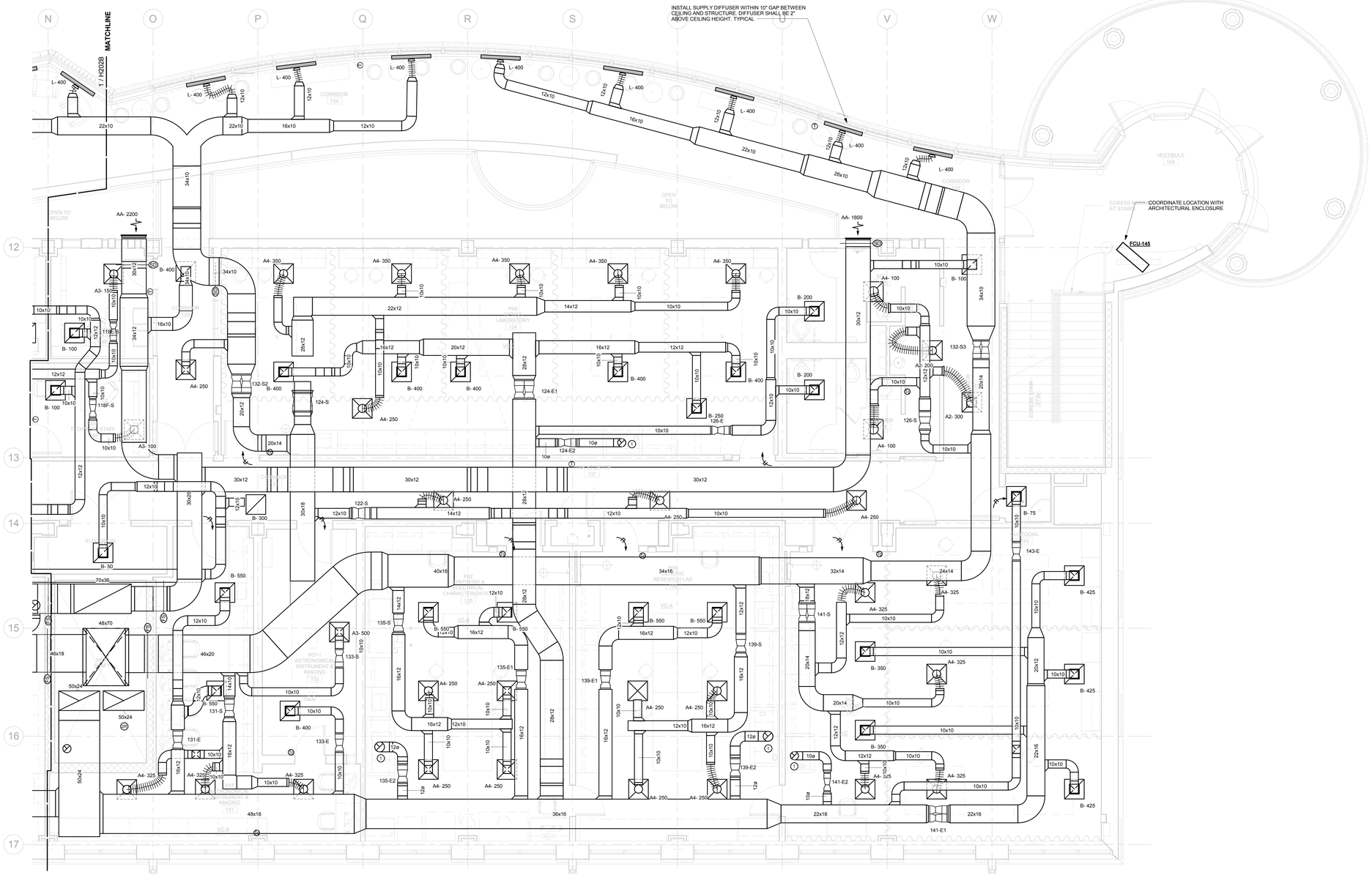
HVAC GROUND FLOOR PART PLAN			STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	2 of 2
REVISIONS				
mark	date	description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171	11-21-2012
	11-21-2012	Bid Documents		1/4" = 1'-0"
			PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING	DRAWN BY: AHG, DP
				APPROVED BY: GVD
			CAD no. 1380 / project no. BI-RS-283-ARC	drawing no. H202B

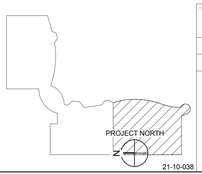
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.

20. SUPPLY DUCT 70x48 UP/DN
RETURN DUCT 70x36 UP/DN
GROUND FLOOR EXHAUST 50x24 UP
LOWER LEVEL EXHAUST 50x24 UP/DN
PERCHLORIC ACID 10" DIA UP/DN





21-10-038

drawing title			
HVAC GROUND FLOOR PART PLAN			
REVISIONS			
mark	date	description	
	11-21-2012	Bid Documents	

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

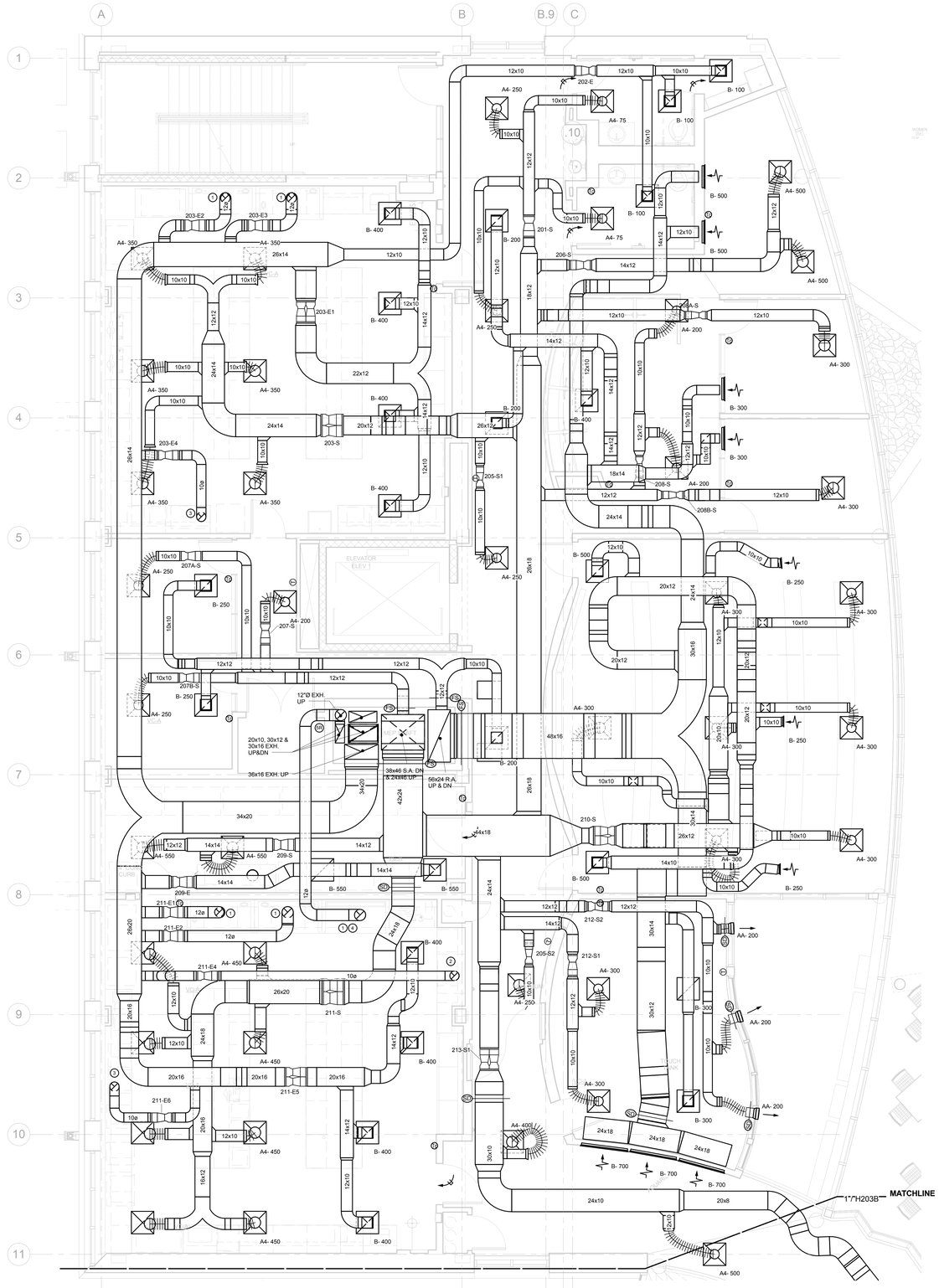
volume: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no.: H202C

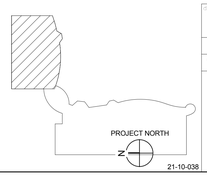
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE EXHAUST CAPTURE HOOD. SEE DETAIL ON SHEET MEP402.
3. PROVIDE EXHAUST CONNECTION TO LAB EQUIPMENT. COORDINATE EXACT LOCATION WITH LAB PLANNER. COORDINATE AND PROVIDE CONNECTION APPURTENANCES WITH EQUIPMENT REPRESENTATIVE.
4. PERCHLORIC ACID EXHAUST. ROUTE DUCT TO EXHAUST FAN ON ROOF. SEE SPECIFICATION FOR DUCT REQUIREMENTS.

SR SUPPLY DUCT 46x24 UP, 46x38 DN
RETURN DUCT 56x24 UP/DN
SECOND FLOOR EXHAUST DUCT 36x16 UP
GROUND FLOOR EXHAUST DUCT 32x20 UP/DN
LOWER LEVEL EXHAUST DUCT 20x10 UP/DN
REFRIGERANT EXHAUST DUCT 30x12 UP/DN
PERCHLORIC ACID EXHAUST DUCT 12x10 UP





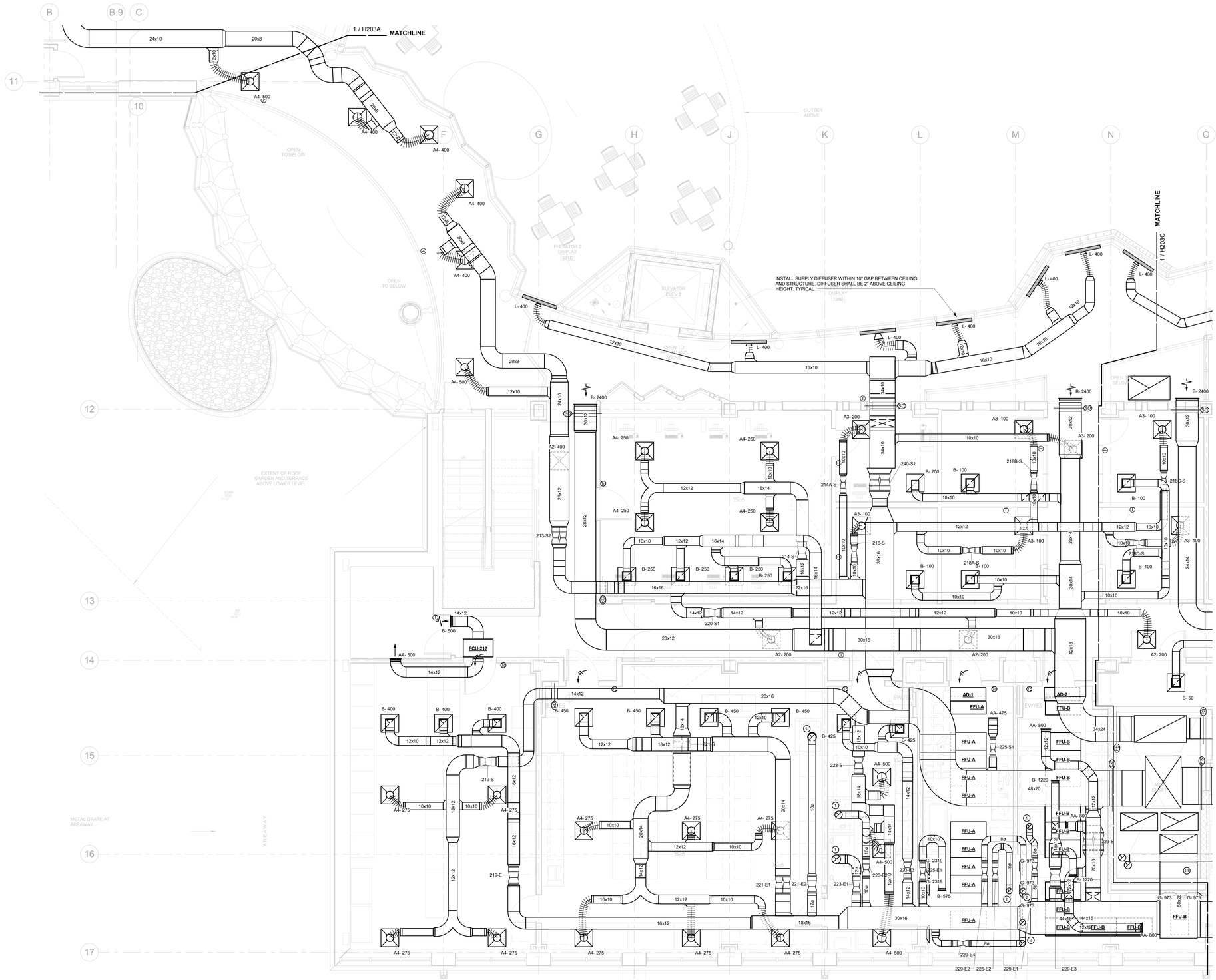
21-10-038

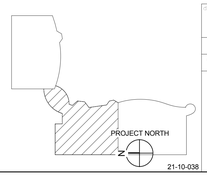
DRAWING: HVAC 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE: 11-21-2012
11-21-2012 Bid Documents			SCALE: 1/4" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY: AHG, DP
			REVIEWED BY: GVD
	CAD no. 1380	project no. BI-RS-283-ARC	DRAWING no. H203A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE EXHAUST COLUMN. COORDINATE EXACT LOCATION WITH LAB PLANNER. SEE DETAIL ON SHEET MEP402.





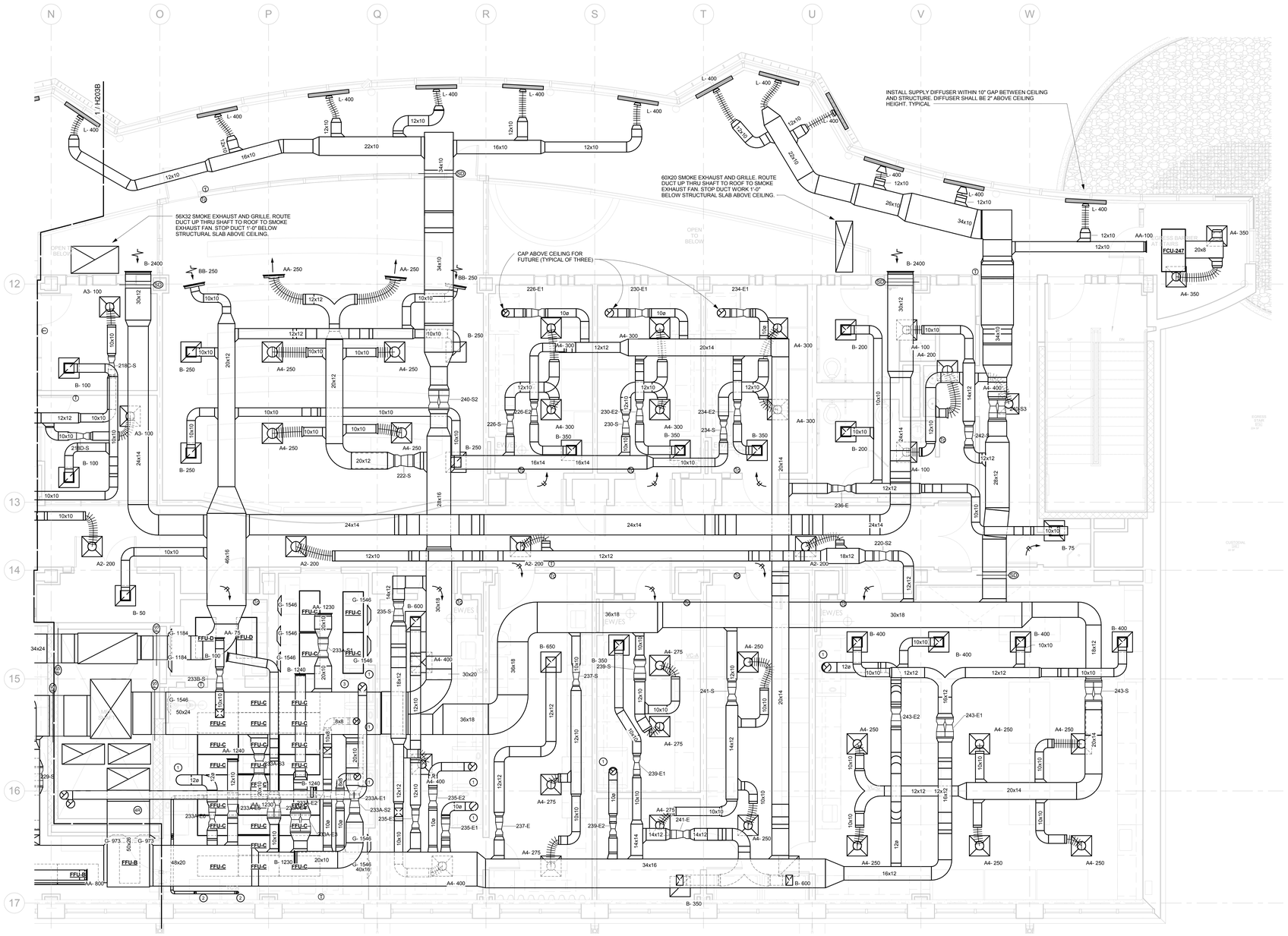
21-10-038

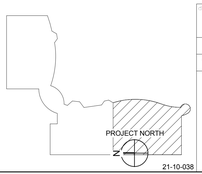
DRAWING TITLE: HVAC 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET NO. 2 of 2
REVISIONS			DATE 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		SCALE 1/4" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHG, DP
			CHECKED BY GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. H203B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE CABINET VENT EXHAUST CONNECTION. SEE DETAIL ON SHEET MEP402.
3. SUPPLY DUCT 70x48 UP/DN
   RETURN DUCT 70x36 UP/DN
   GROUND FLOOR EXHAUST 50x24 UP
   LOWER LEVEL EXHAUST 50x24 UP/DN
   PERCHLORIC ACID 10" DIA UP/DN
5. PERCHLORIC ACID EXHAUST DUCT. ROUTE TO EXHAUST FAN ON ROOF. FIRE WRAP DUCT WITHIN SUPPLY AIR PLENUM. SEE SPECIFICATIONS FOR DUCT REQUIREMENTS.
6. SUPPLY DUCT 70x36 UP, 70x48 DN
   RETURN DUCT 70x36 UP/DN
   SECOND FLOOR EXHAUST 50x26 UP
   GROUND FLOOR EXHAUST 50x24 UP/DN
   LOWER LEVEL EXHAUST 50x24 UP/DN
   PERCHLORIC ACID EXHAUST (FROM SECOND FLOOR) 10" DIA UP
   PERCHLORIC ACID (FROM GROUND FLOOR) 10" DIA UP/DN





21-10-038

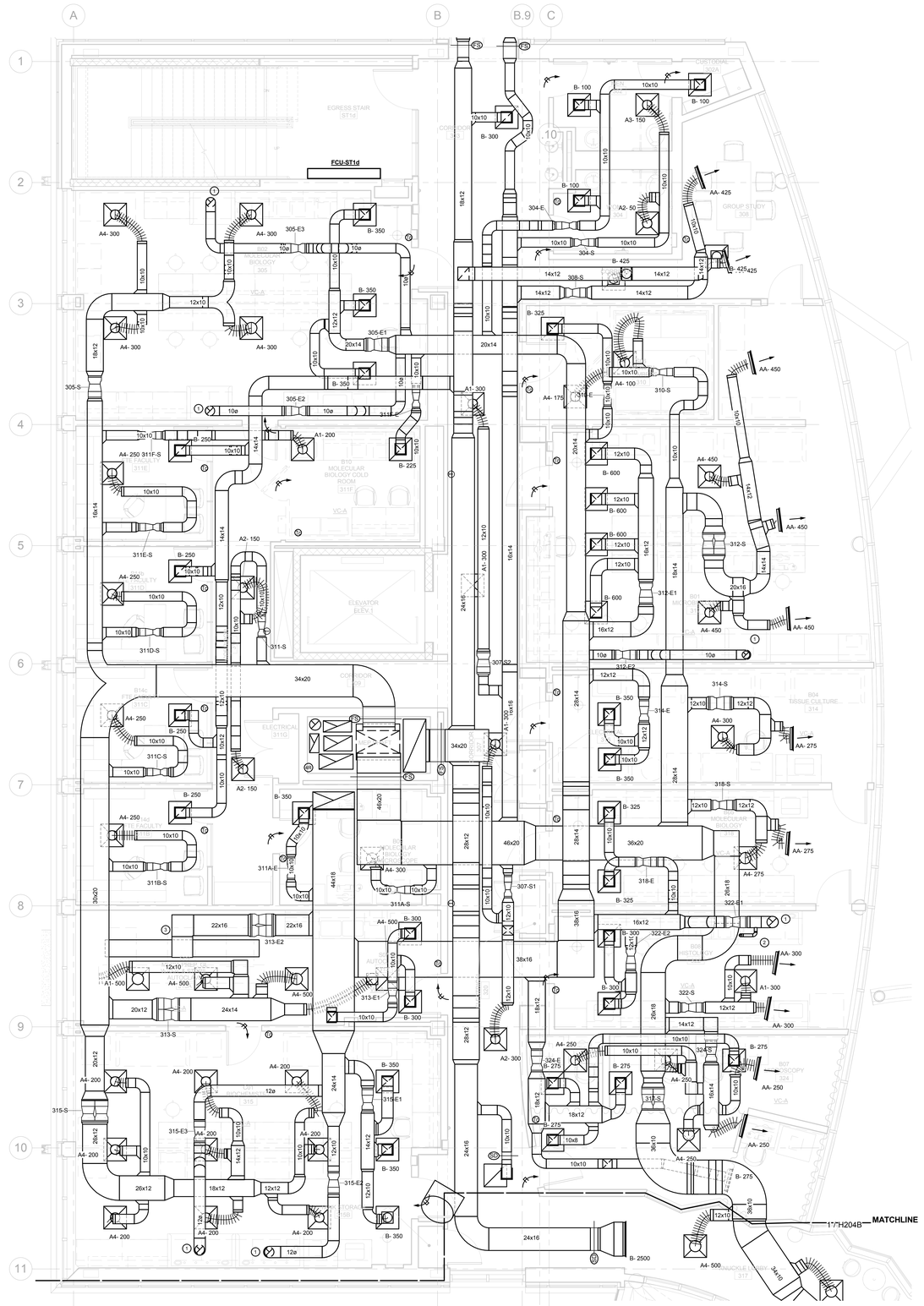
HVAC 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS	
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
11-21-2012 / Bid Documents	SCSU NEW ACADEMIC LABORATORY BUILDING
CAD file: 1380	project no.: BI-RS-283-ARC

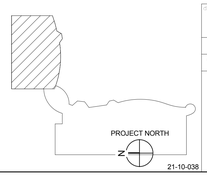
sheet: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
AHG, DP
approved by: GVD
drawing no.: H203C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE CABINET VENT EXHAUST CONNECTION. SEE DETAIL ON SHEET MEP402.
3. PROVIDE EXHAUST CAPTURE HOOD. SEE DETAIL ON SHEET MEP402.
4. SUPPLY DUCT 46x24 DN
   RETURN DUCT 56x24 UP/DN
   THIRD FLOOR EXHAUST DUCT 44x18 UP
   SECOND FLOOR EXHAUST DUCT 36x16 UP/DN
   GROUND FLOOR EXHAUST DUCT 32x20 UP/DN
   LOWER LEVEL EXHAUST DUCT 20x10 UP/DN
   REFRIGERANT EXHAUST DUCT 30x12 UP/DN
   PERCHLORIC ACID EXHAUST DUCT 12x10 UP/DN





21-10-038

drawing title			
HVAC 3RD FLOOR PART PLAN		STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume 2 of 2
REVISIONS			
mark	date	description	
	11-21-2012	Bid Documents	

DRAWN / PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

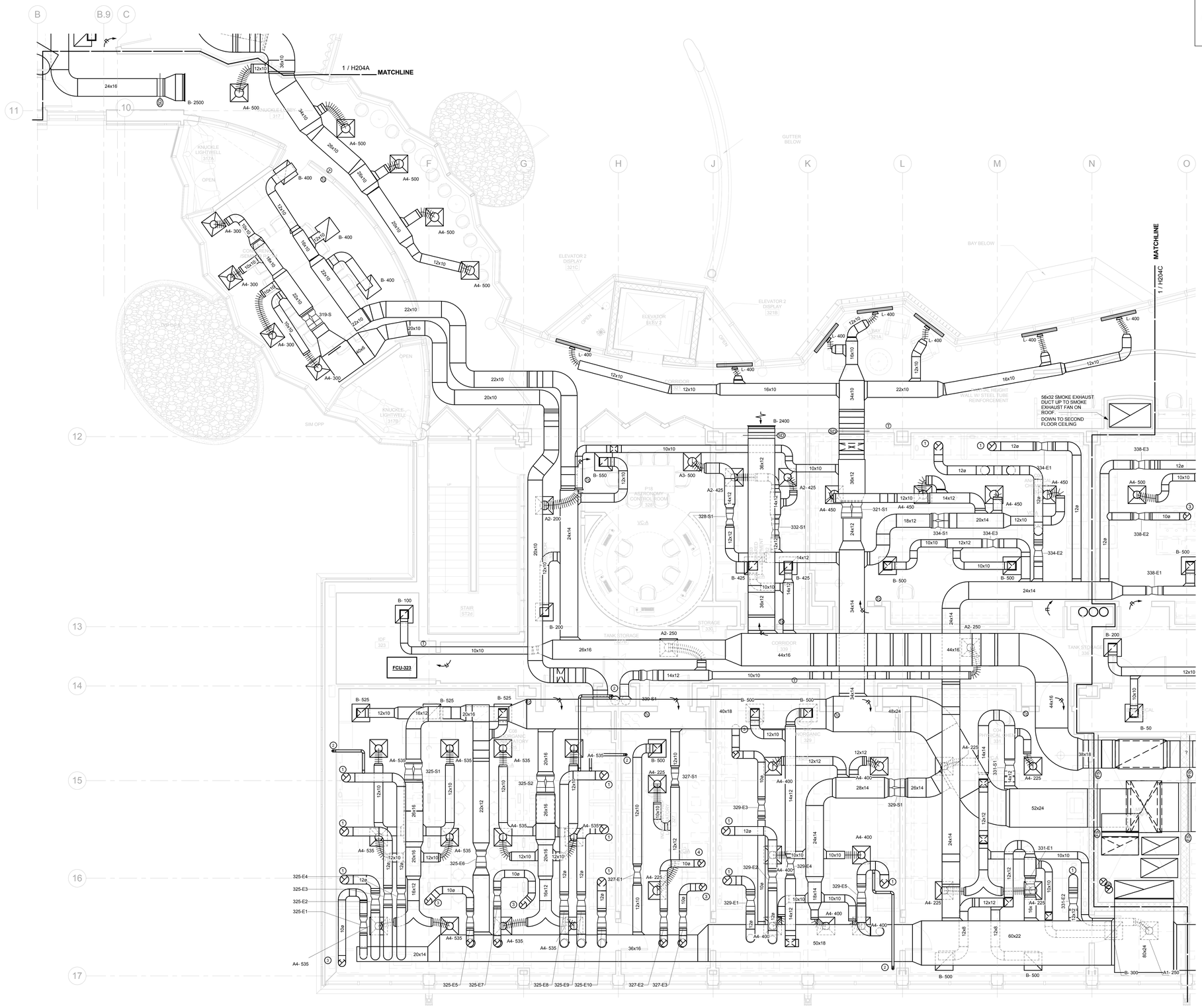
CAD file: 1380
project no.: BI-RS-283-ARC

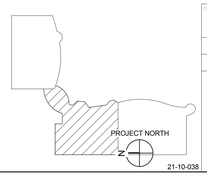
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no.: H204A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE CABINET VENT EXHAUST CONNECTION. SEE DETAIL ON SHEET MEP402.
3. PROVIDE EXHAUST COLUMN. COORDINATE EXACT LOCATION WITH LAB PLANNER. SEE DETAIL ON SHEET MEP402.
4. PROVIDE EXHAUST CONNECTION TO LAB EQUIPMENT. COORDINATE EXACT LOCATION WITH LAB PLANNER. COORDINATE CONNECTION AND PROVIDE CONNECTION APPURTENANCES WITH EQUIPMENT REPRESENTATIVE.





21-10-038

DRAWING TITLE
HVAC 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
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Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

PROJECT
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

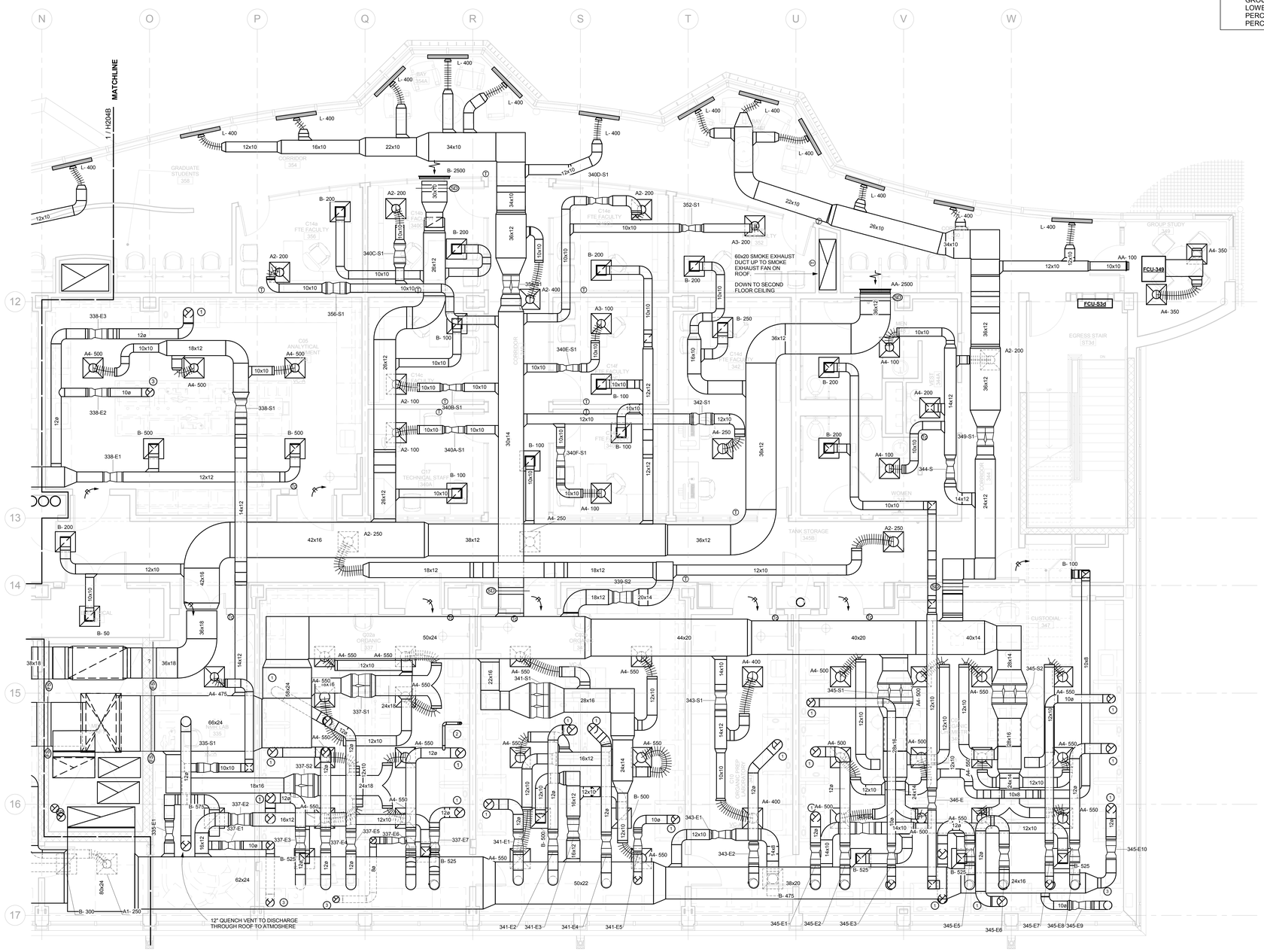
sheet 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by AHG, DP
checked by GVD
drawing no. H204B

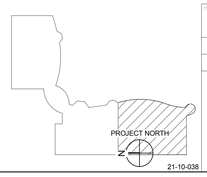
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE EXHAUST CONNECTION TO FUME HOOD. COORDINATE FINAL CONNECTION WITH EQUIPMENT REPRESENTATIVE.
2. PROVIDE CABINET EXHAUST VENT CONNECTION. SEE DETAIL ON SHEET MEP402.
3. PROVIDE EXHAUST COLUMN. COORDINATE EXACT LOCATION WITH LAB PLANNER. SEE DETAIL ON SHEET MEP402.
4. PROVIDE EXHAUST CONNECTION TO LAB EQUIPMENT. COORDINATE EXACT LOCATION WITH LAB PLANNER. COORDINATE CONNECTION AND PROVIDE CONNECTION APPURETENANCES WITH EQUIPMENT REPRESENTATIVES.

SD SUPPLY DUCT 70x36 DN
RETURN DUCT 70x36 UP/DN
THIRD FLOOR EXHAUST 80x24 UP
SECOND FLOOR EXHAUST 50x26 UP/DN
GROUND FLOOR EXHAUST 50x24 UP/DN
LOWER LEVEL EXHAUST 50x24 UP/DN
PERCHLORIC ACID EXHAUST (FROM SECOND FLOOR) 10" DIA UP/DN
PERCHLORIC ACID (FROM GROUND FLOOR) 10" DIA UP/DN





21-10-038

drawing title: HVAC 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

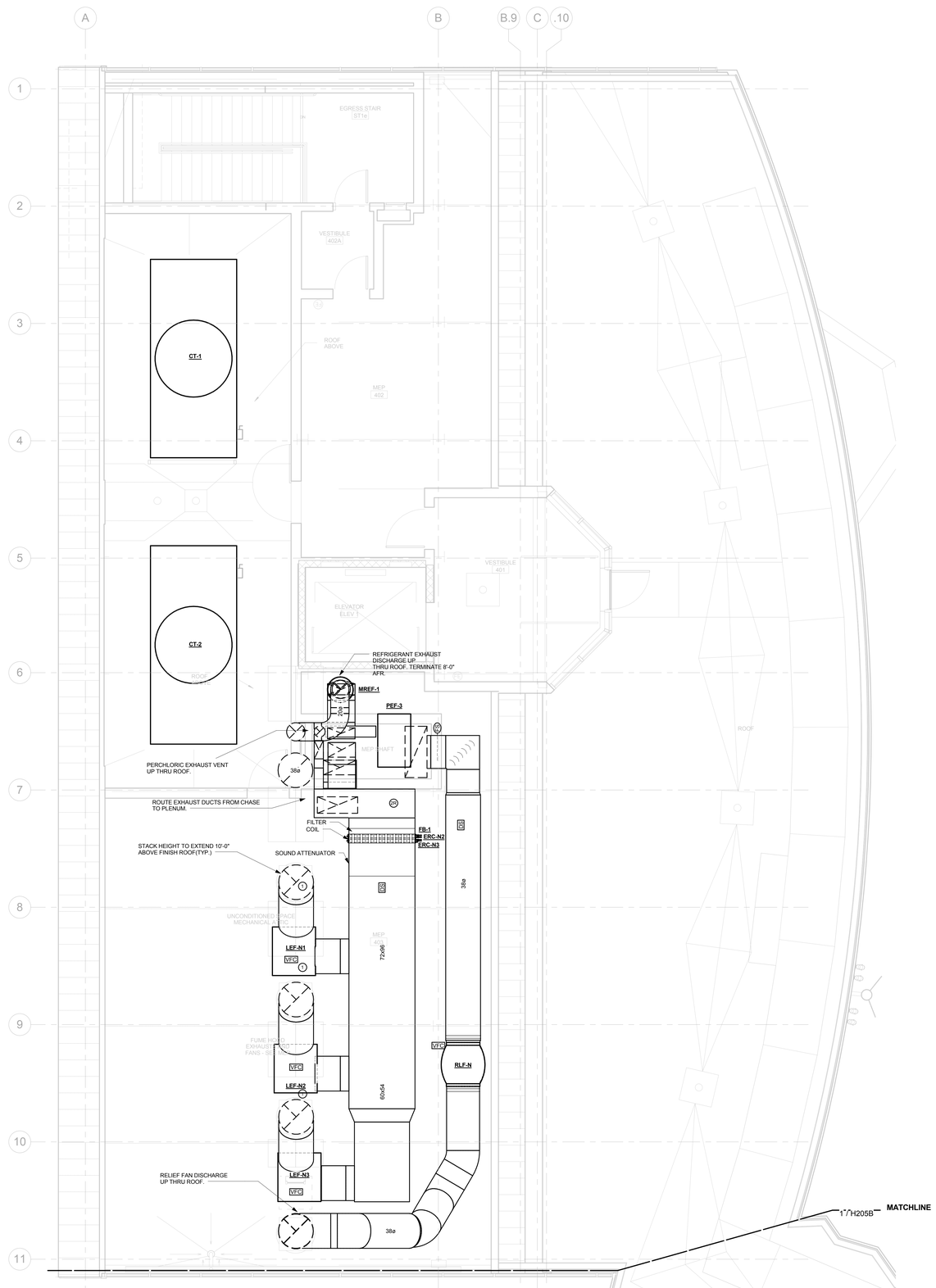
CAD file: 1380
project no.: BI-RS-283-ARC

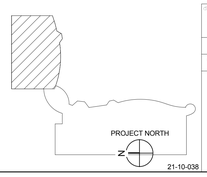
volume: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no.: H204C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. LAB EXHAUST DISCHARGE UP THRU ROOF
20. RETURN DUCT 56x24 DN
THIRD FLOOR EXHAUST DUCT 44x18 DN
SECOND FLOOR EXHAUST DUCT 36x16 DN
GROUND FLOOR EXHAUST DUCT 32x20 DN
LOWER LEVEL EXHAUST DUCT 20x10 DN
REFRIGERANT EXHAUST DUCT 30x12 DN
PERCHLORIC ACID EXHAUST DUCT 12x10 DN





21-10-038

drawing title
HVAC MECHANICAL ATTIC PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWN / PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

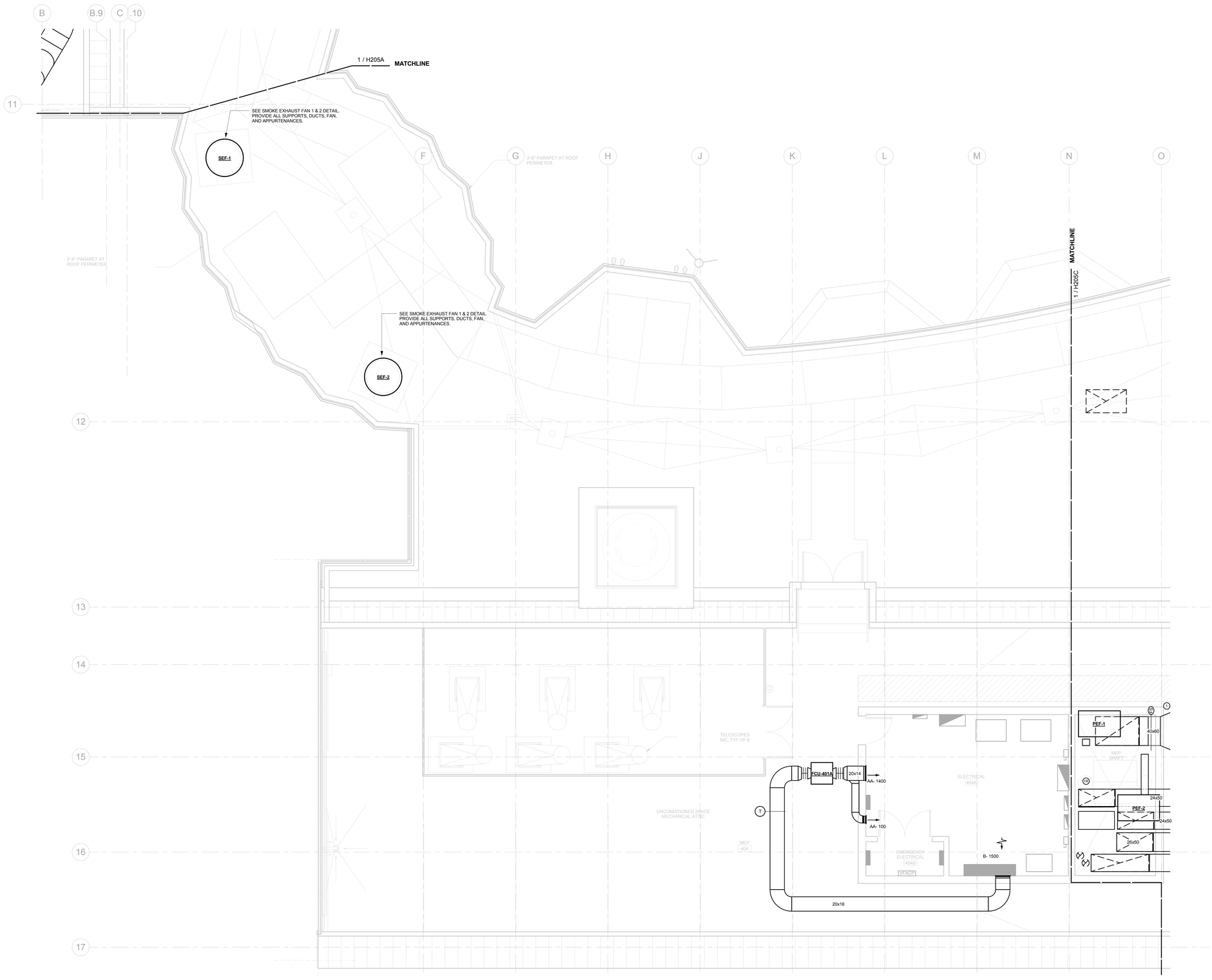
project
SCSU NEW ACADEMIC
LABORATORY BUILDING

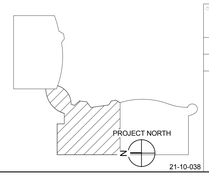
CAD no. 1380
project no. BI-RS-283-ARC

volume
2 of 2

date 11-21-2012
scale 1/4" = 1'-0"
drawn by AHG, DP
approved by GVD
drawing no. H205A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.





21-10-038

drawing title
HVAC MECHANICAL ATTIC PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

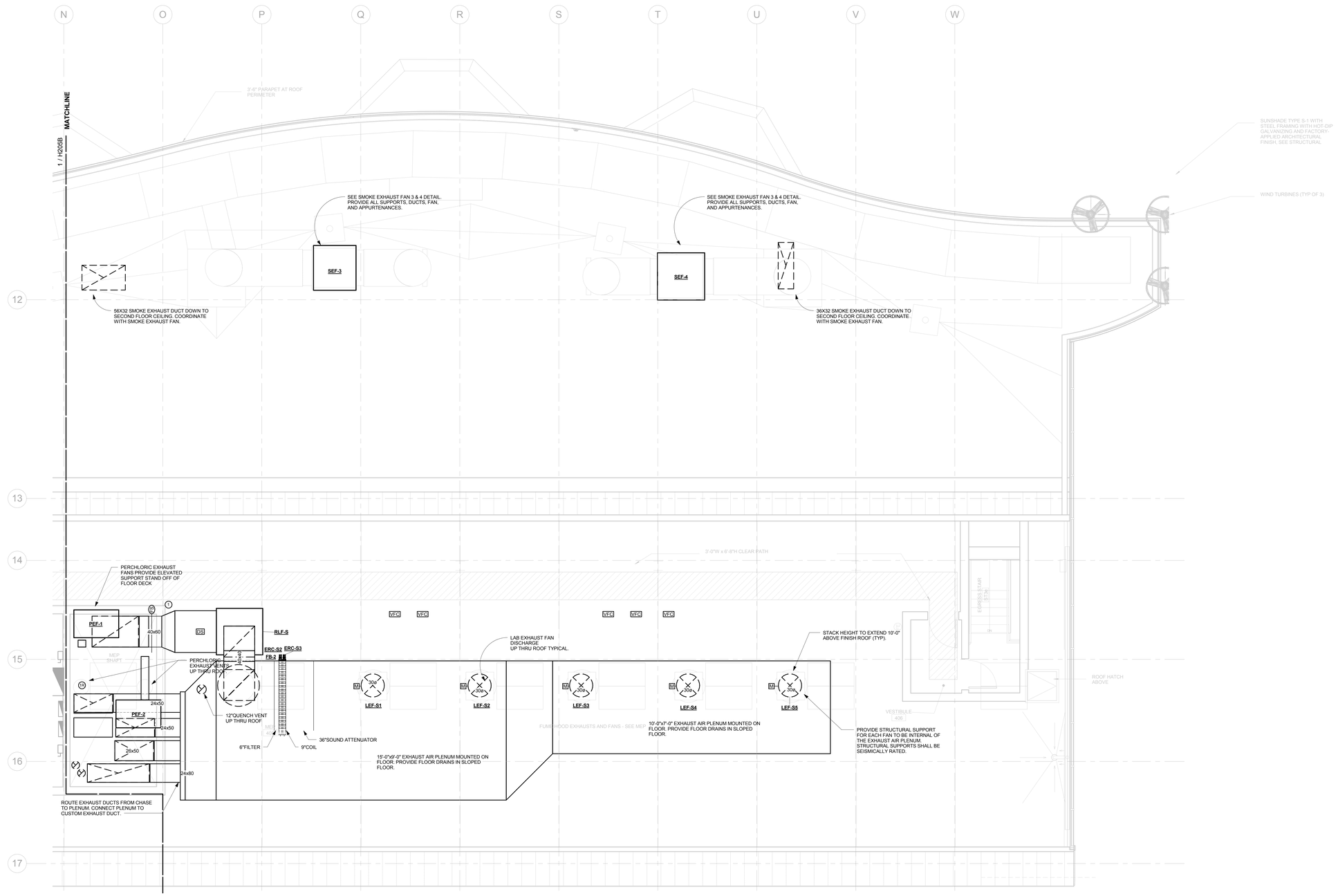
volume: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no.: H205B

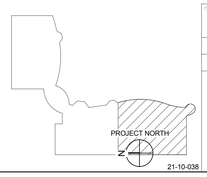
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE FIRE/SMOKE DAMPER ON RELIEF DUCT

10. RETURN DUCT 70x36 DN
THIRD FLOOR EXHAUST 80x24 DN
SECOND FLOOR EXHAUST 50x26 DN
GROUND FLOOR EXHAUST 50x24 DN
LOWER LEVEL EXHAUST 50x24 DN
PERCHLORIC ACID EXHAUST (FROM SECOND FLOOR) 10" DIA DN
PERCHLORIC ACID (FROM GROUND FLOOR) 10" DIA DN





21-10-038

drawing title: HVAC MECHANICAL ATTIC PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130

project no.: BI-RS-283-ARC

volume: 2 of 2

date: 11-21-2012

scale: 1/4" = 1'-0"

drawn by: AHG, DP

approved by: GVD

drawing no.: H205C

NOTE:
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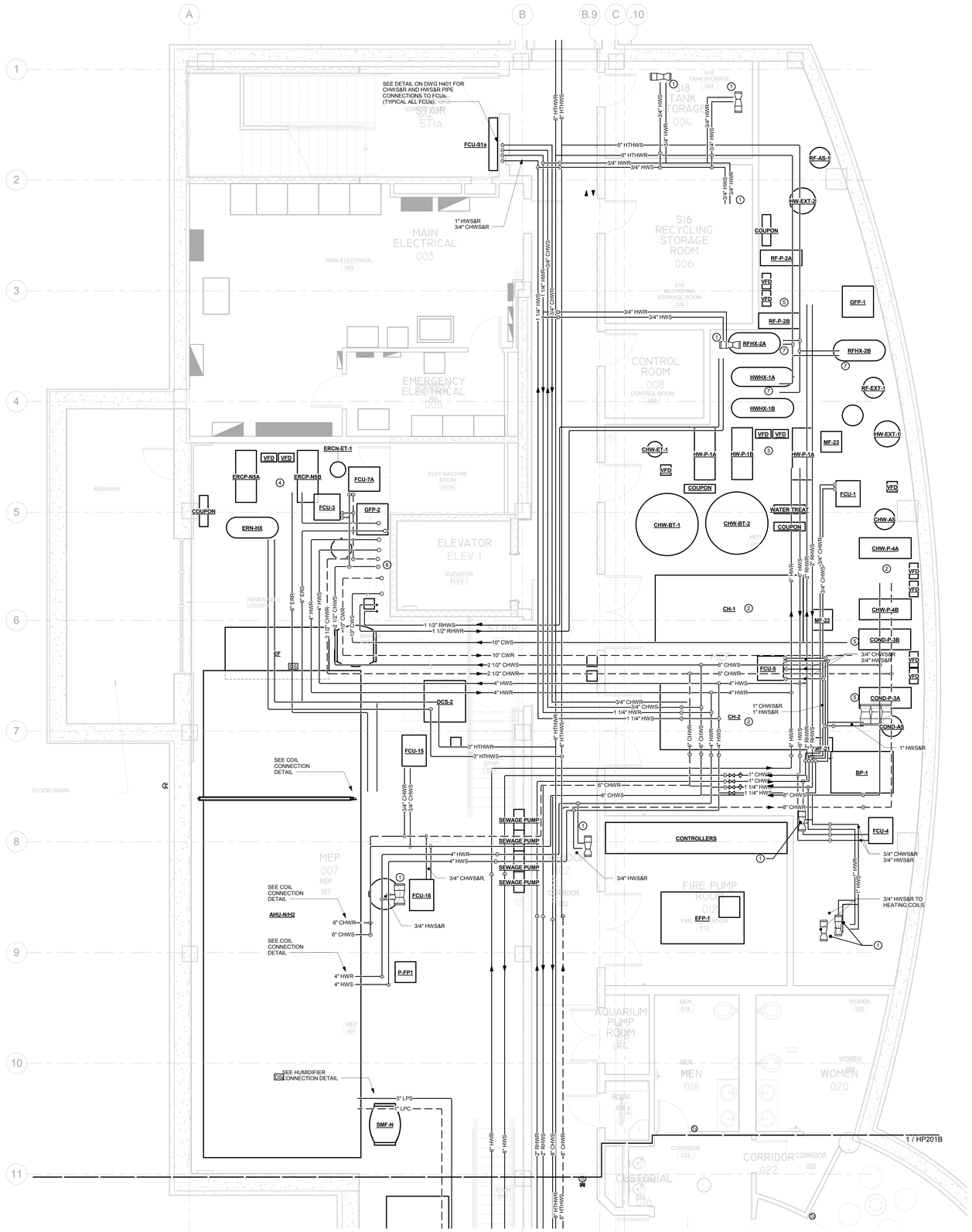
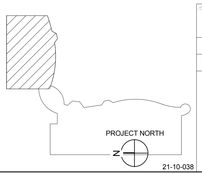


DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE CHILLED WATER CONNECTIONS TO CHILLER, PUMPS, AIR SEPARATOR, BUFFER TANKS AND APPURTENANCES. REFER TO CHILLED WATER RISER DIAGRAM AND DETAILS FOR SYSTEM COMPONENTS, (VALVES, FITTINGS, ETC) AND PIPING REQUIREMENTS.
3. PROVIDE HOT WATER CONNECTIONS TO HEAT EXCHANGERS, PUMPS, AIR SEPARATORS,EXPANSION TANKS AND APPURTENANCES. REFER TO HOT WATER RISER DIAGRAM AND DETAILS FOR SYSTEM COMPONENTS, (VALVES, FITTINGS, ETC) AND PIPING REQUIREMENTS.
4. PROVIDE ENERGY RECOVERY SYSTEM CONNECTIONS TO PUMPS, AIR SEPARATORS,EXPANSION TANKS, COILS AND APPURTENANCES. REFER TO ENERGY RECOVERY RISER DIAGRAM AND DETAILS FOR SYSTEM COMPONENTS, (VALVES, FITTINGS, ETC) AND PIPING REQUIREMENTS.
5. PROVIDE CONDENSER WATER CONNECTIONS TO CHILLER, PUMPS, AIR SEPARATOR, EXPANSION TANKS AND APPURTENANCES. REFER TO CHILLED WATER RISER DIAGRAM AND DETAILS FOR SYSTEM COMPONENTS, (VALVES, FITTINGS, ETC) AND PIPING REQUIREMENTS.
6. PROVIDE RADIENT FLOOR HOT WATER CONNECTIONS TO HEAT EXCHANGERS, PUMPS, AIR SEPARATORS,EXPANSION TANKS AND APPURTENANCES. REFER TO RADIENT HOT WATER RISER DIAGRAM AND DETAILS FOR SYSTEM COMPONENTS, (VALVES, FITTINGS, ETC) AND PIPING REQUIREMENTS.
7. PROVIDE HIGHT TEMP HOT WATER CONNECTIONS TO HOT WATER HEAT EXCHANGERS AND RADIANT FLOOR HEAT EXCHANGERS. PROVIDE HIGHT TEMP HOT WATER DRAINAGE SYSTEM WITH COOLING TANK AND APPURTENANCES. REFER TO DETAILS FOR SYSTEM REQUIREMENTS.
8. 6" ERS&R, 4" HWS&R, 2-1/2" CHWS&R, 10" CWS&R AND 1-1/2" RHWS&R UP.



21-10-038

drawing title
HYDRONIC PIPING LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

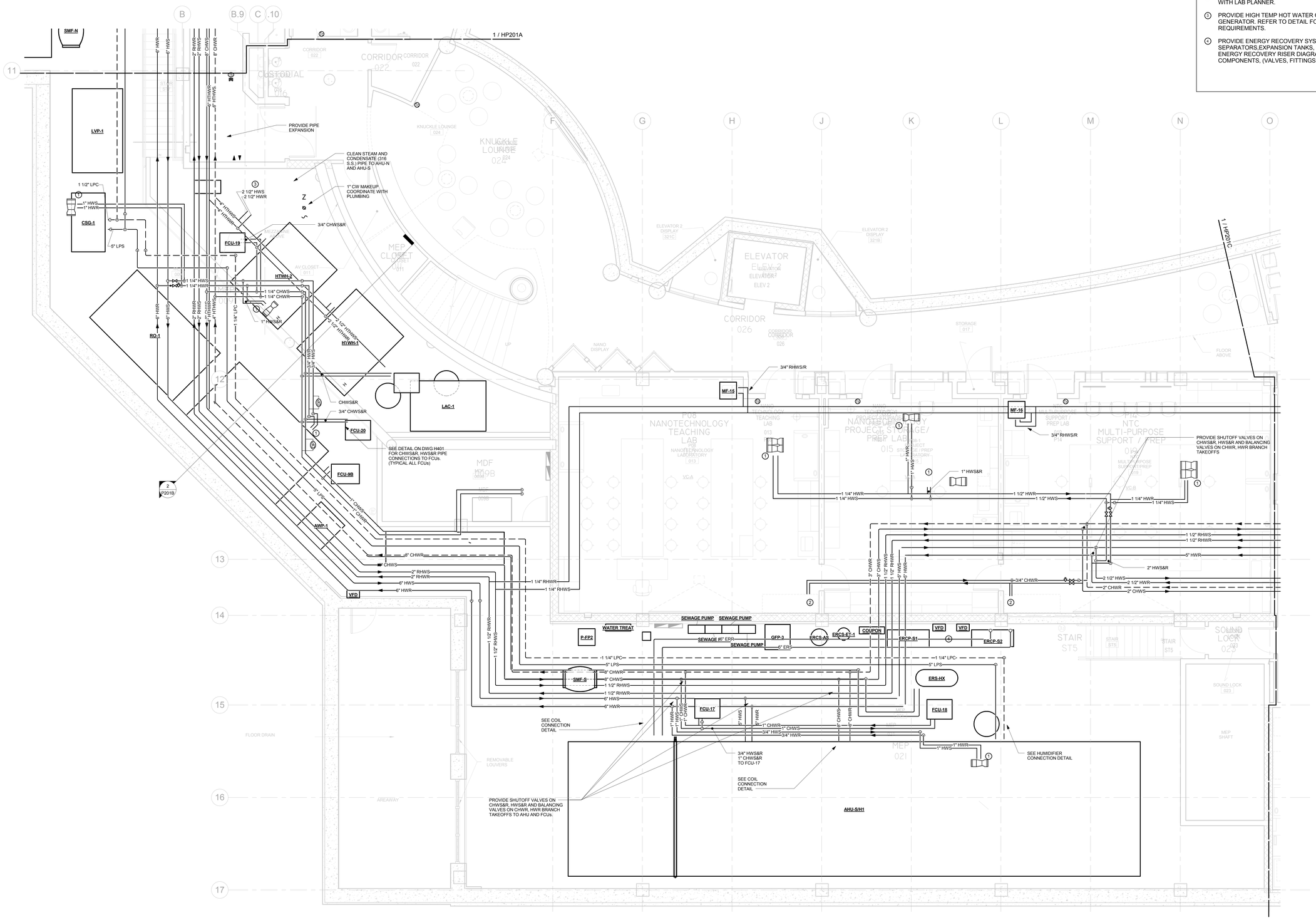
CAD no. 130
project no. BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by AHG, DP
approved by GVD
drawing no. HP201A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE CHILLED WATER CONNECTIONS TO LAB EQUIPMENT. COORDINATE WITH LAB PLANNER.
3. PROVIDE HIGH TEMP HOT WATER CONNECTION TO UNFIRED STEAM GENERATOR. REFER TO DETAIL FOR VALVE, FITTING, AND APPURTENANCE REQUIREMENTS.
4. PROVIDE ENERGY RECOVERY SYSTEM CONNECTIONS TO PUMPS, AIR SEPARATORS,EXPANSION TANKS, COILS AND APPURTENANCES. REFER TO ENERGY RECOVERY RISER DIAGRAM AND DETAILS FOR SYSTEM COMPONENTS, (VALVES, FITTINGS, ETC) AND PIPING REQUIREMENTS.



21-10-038

drawing title
HYDRONIC PIPING LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

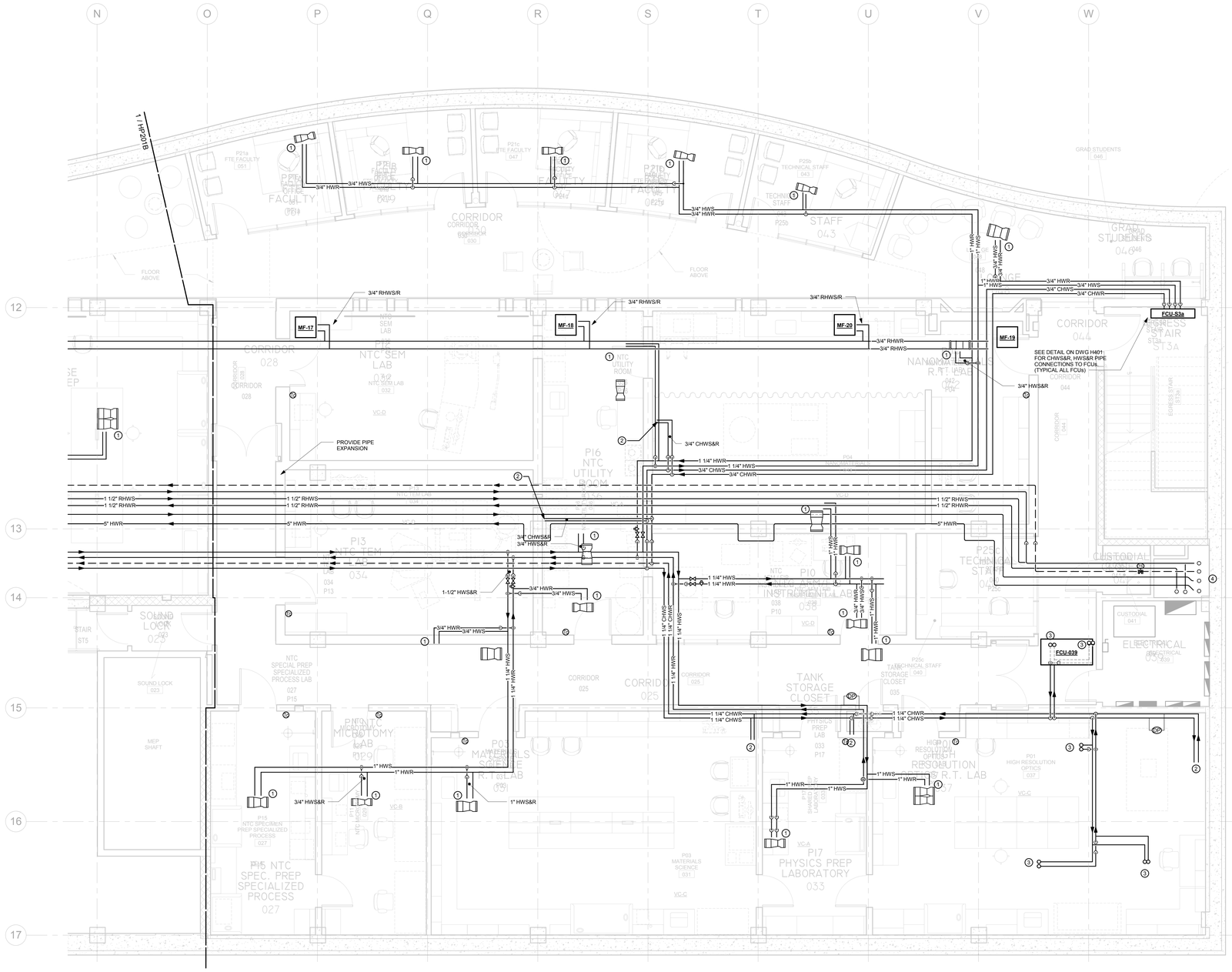
CAD file: 130
project no.: BI-RS-283-ARC

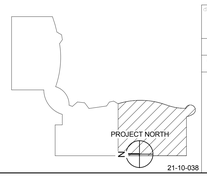
volume: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no.: HP201B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE 3/4"Ø CHWS&R DROPS WITH SHUT OFF VALVES AND HOSE CONNECTIONS. COORDINATE EXACT LOCATION WITH LAB MANAGER.
3. 3/4" CHWS&R UP TO TABLES IN PHOTONICS R.T. LAB ON GROUND FLOOR.
4. 3" CHWS&R, 5" HWS&R, 1-1/2" RHWS&R UP.





21-10-038

HYDRONIC PIPING LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

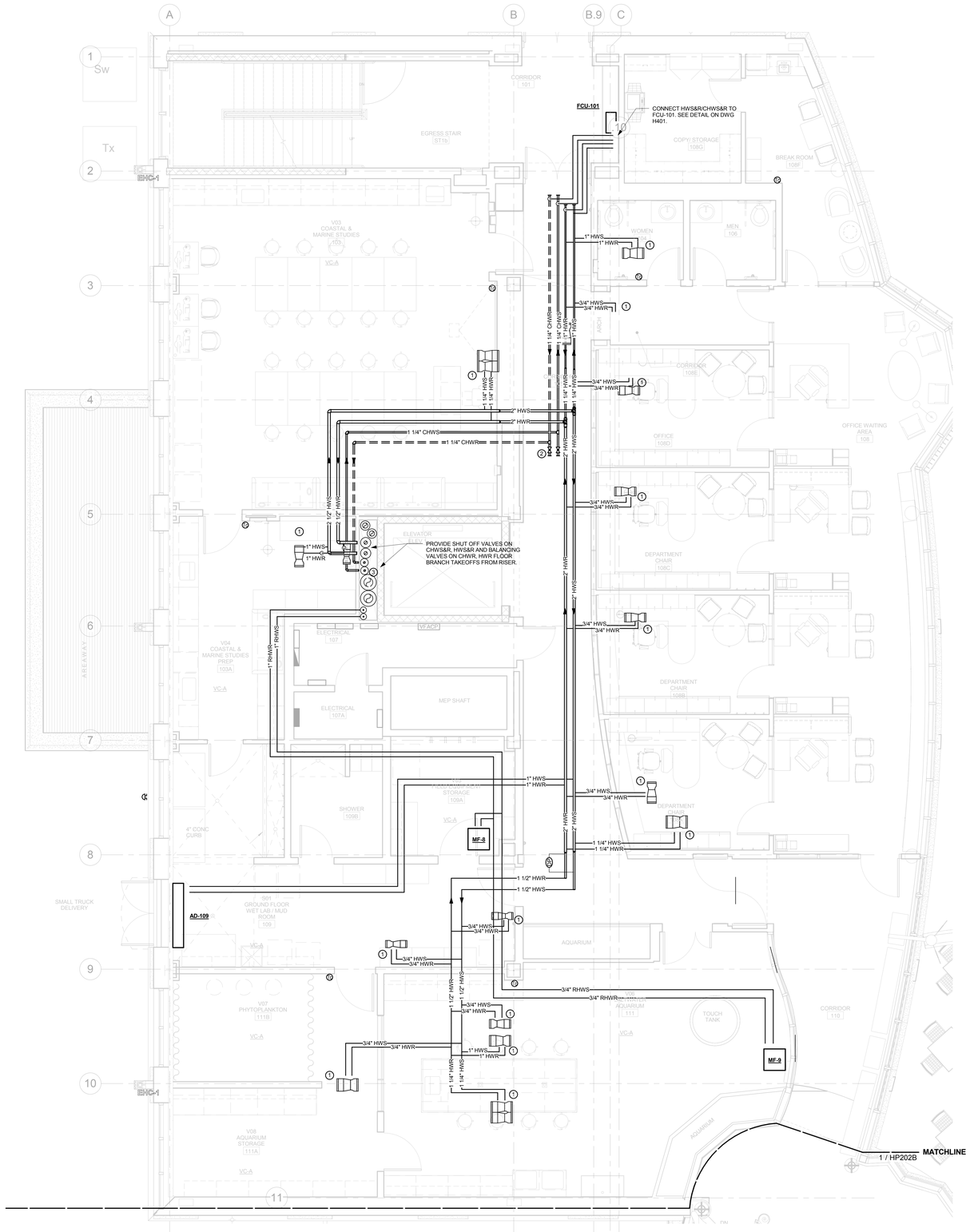
2 of 2

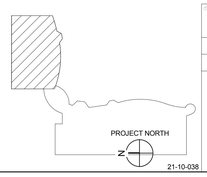
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no. HP201C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE SHUTOFF VALVE & PIPE WITH CAP FOR FUTURE CHWS&R CONNECTION.
3. 6" ERS&R, 4" HWS&R, 2-1/2" CHWS&R, 10" CWS&R, 1-1/2" RHWS&R UP/DOWN.





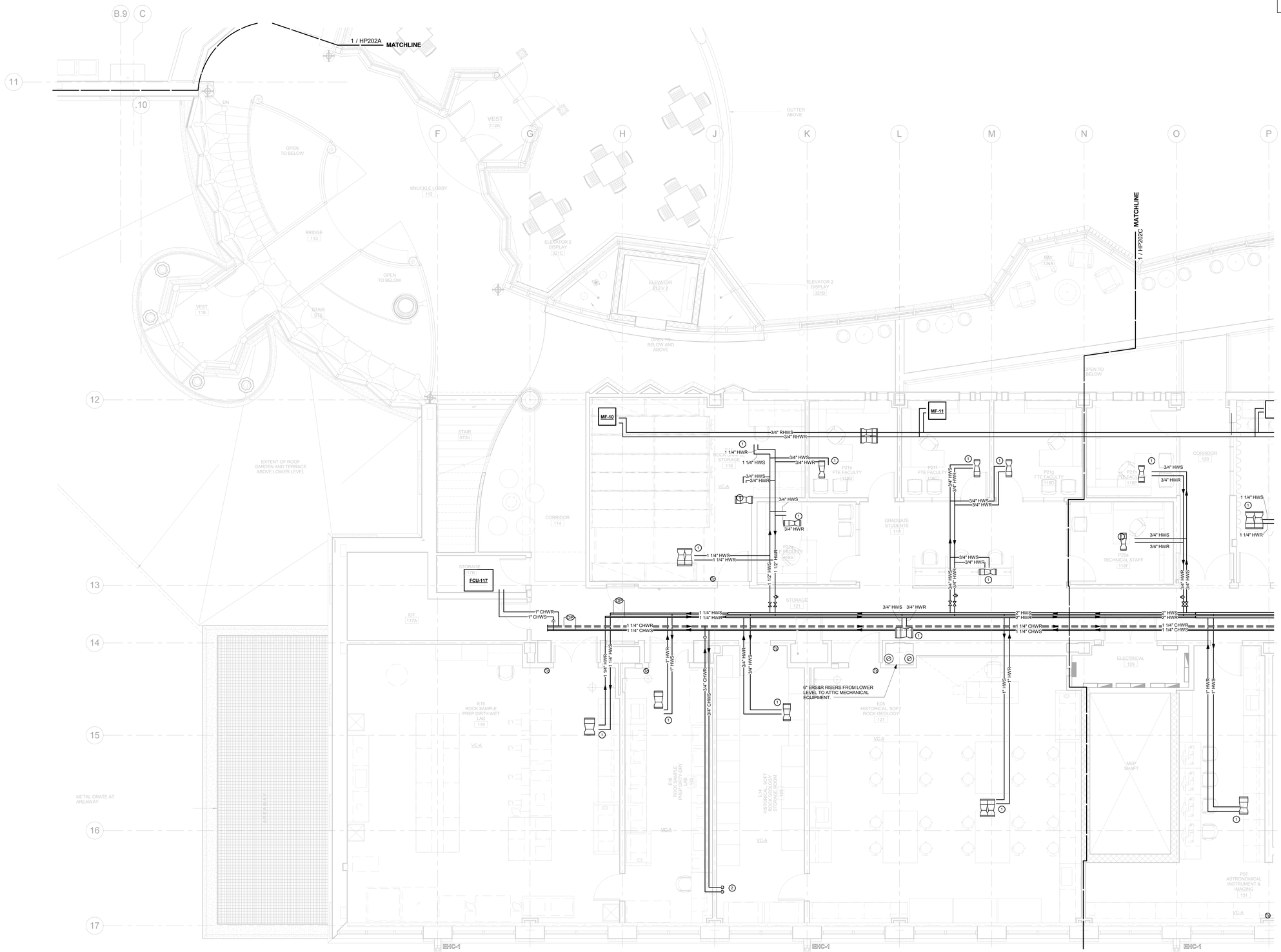
21-10-038

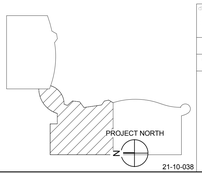
drawing title	HYDRONIC PIPING GROUND FLOOR PLAN
REVISIONS	
mark / date / description	1 / 11-21-2012 / Bid Documents
STATE OF CONNECTICUT	DEPARTMENT OF CONSTRUCTION SERVICES
DRAWING PREPARED BY	BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project	SCSU NEW ACADEMIC LABORATORY BUILDING
CAD file	130
project no.	BI-RS-283-ARC
volume	2 of 2
date	11-21-2012
scale	1/4" = 1'-0"
drawn by	AHC, DP
approved by	GVD
drawing no.	HP202A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE 3/4"Ø CHWS&R DROPS WITH SHUT OFF VALVES AND HOSE CONNECTIONS. COORDINATE EXACT LOCATION WITH LAB MANAGER.





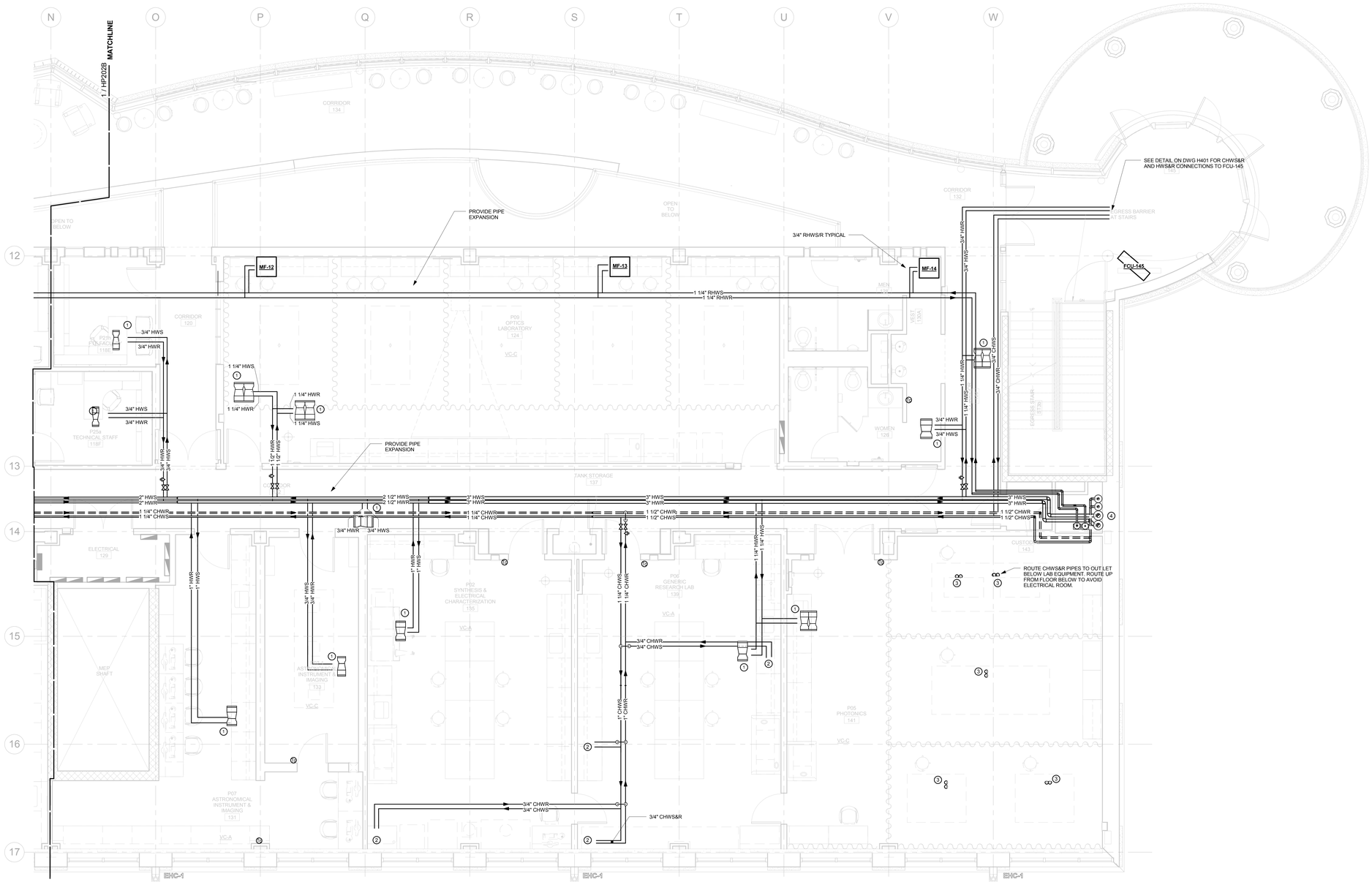
21-10-038

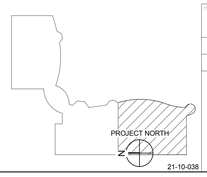
HYDRONIC PIPING GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY		DATE 11-21-2012
11-21-2012 Bid Documents	BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171		SCALE 1/4" = 1'-0"
	project SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN by AHG, DP
			checked by GVD
	CAD no. 130	project no. BI-RS-283-ARC	drawing no. HP202B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE 3/4"Ø CHWS&R DROPS WITH SHUT OFF VALVES AND HOSE CONNECTIONS. COORDINATE EXACT LOCATION WITH LAB MANAGER.
3. 3/4" CHWS&R DOWN TO CHWS&R PIPING MAINS IN LOWER LEVEL CEILING.
4. 3" CHWS&R, 5" HWS&R, 1-1/2" RHWS&R UP/DOWN.



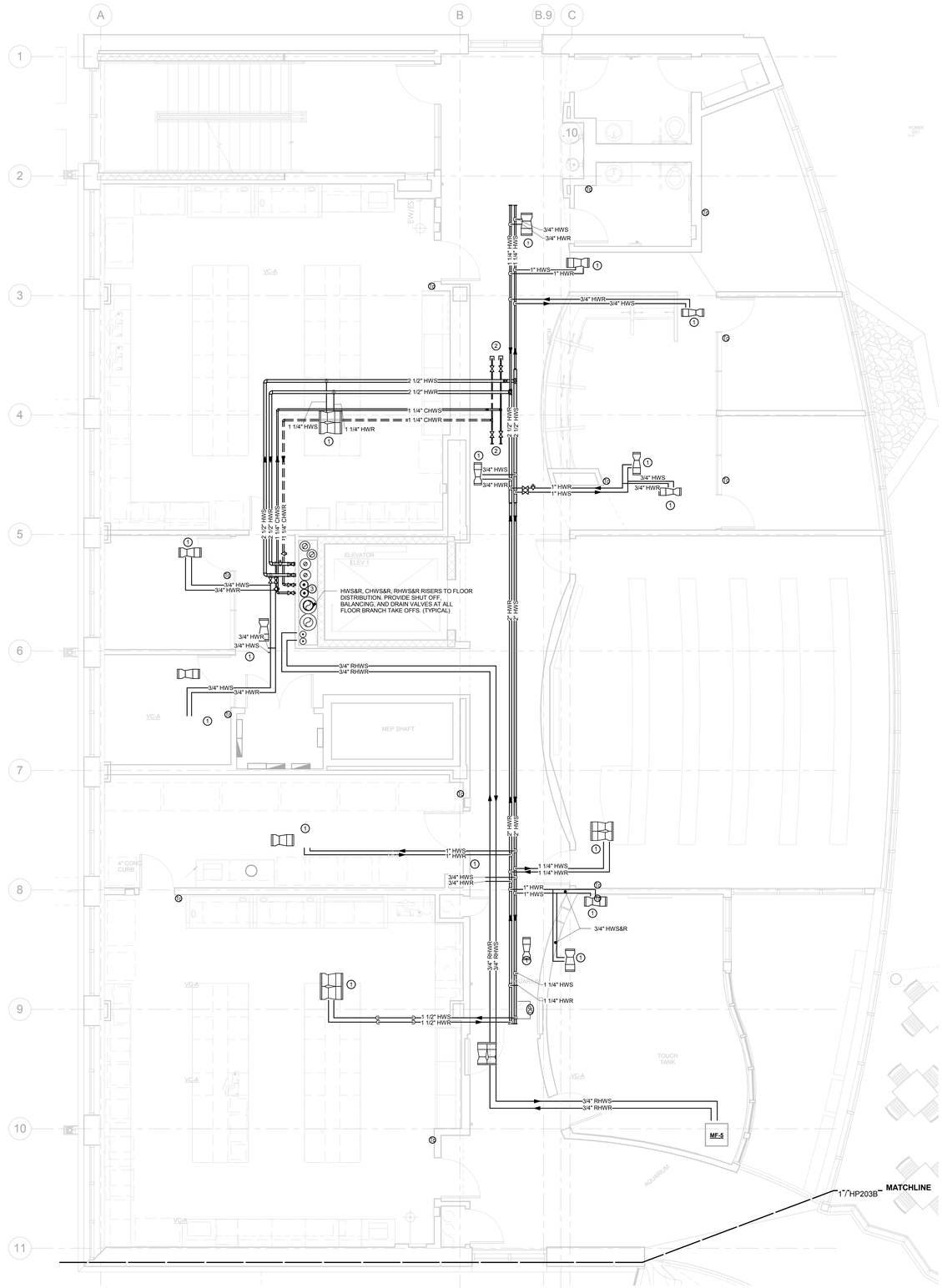


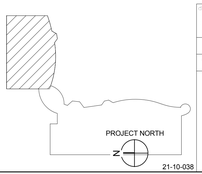
drawing title: HYDRONIC PIPING GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/4" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: AHG, DP
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: HP202C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE SHUTOFF VALVE & PIPE WITH CAP FOR FUTURE CHWS&R CONNECTION.
3. 6" ERS&R, 4" HWS&R, 2" CHWS&R, 10" CWS&R, 1-1/2" RHWS&R UP, 6" ERS&R, 4" HWS&R, 2-1/2" CHWS&R, 10" CWS&R, 1-1/2" RHWS&R DOWN.





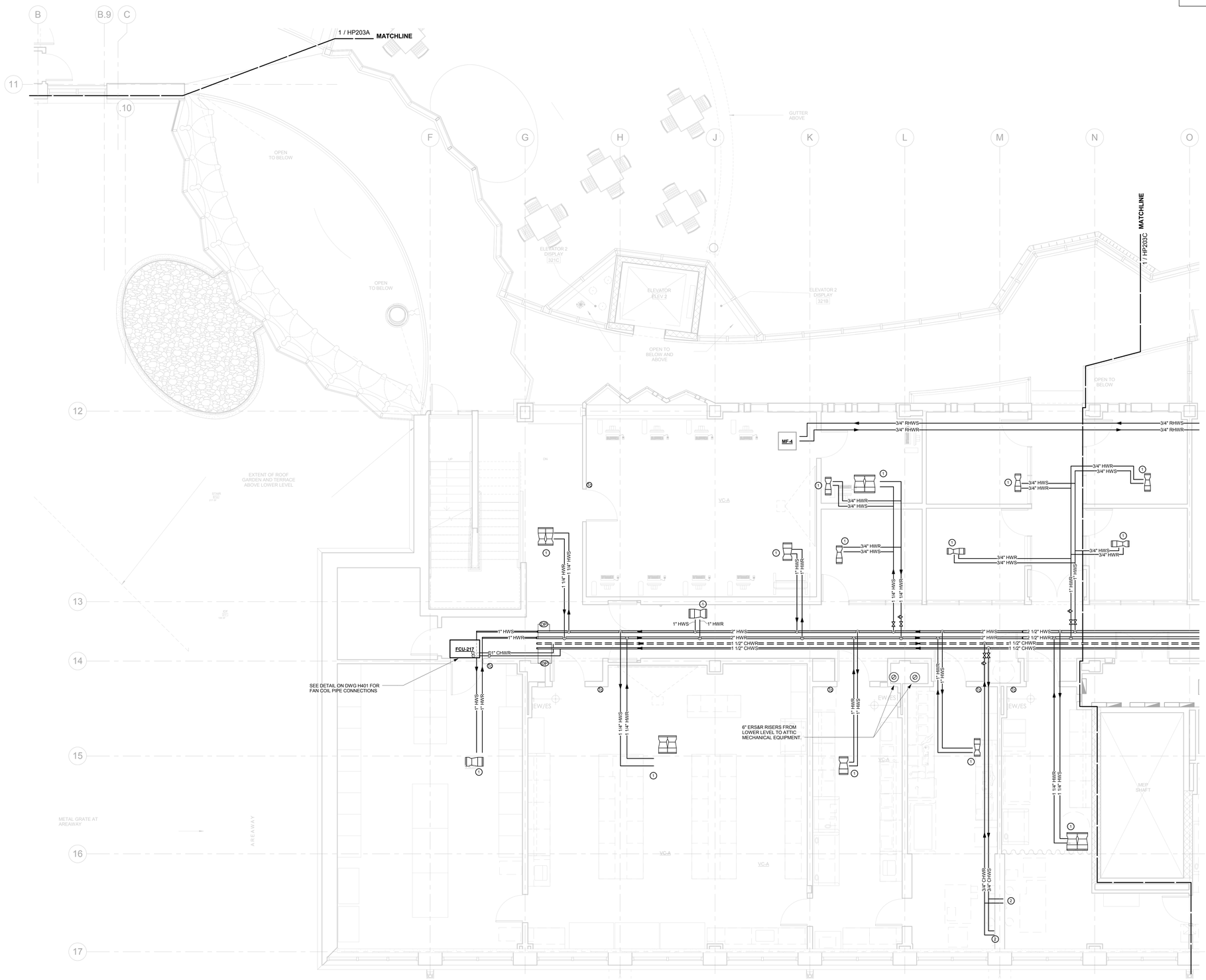
21-10-038

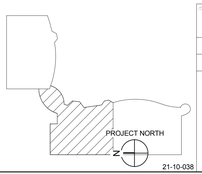
drawing title: HYDRONIC PIPING 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date: 11-21-2012
11-21-2012 Bid Documents			scale: 1/4" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: AHG, DP
			approved by: GVD
	CAD no.: 130	project no.: BI-RS-283-ARC	drawing no.: HP203A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE 3/4"Ø CHWS&R DROPS WITH SHUT OFF VALVES AND HOSE CONNECTIONS. COORDINATE EXACT LOCATION WITH LAB MANAGER.





21-10-038

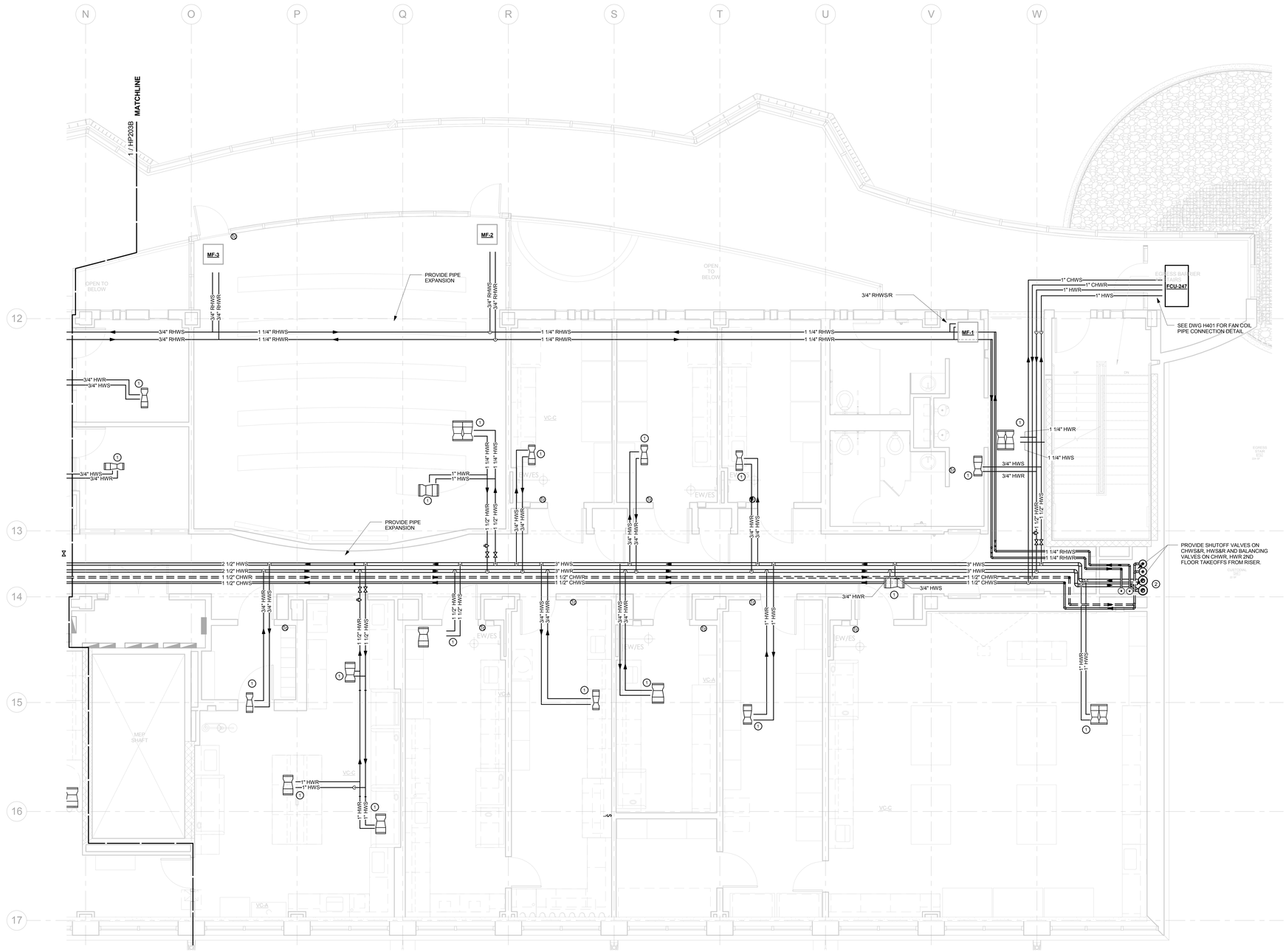
DRAWING TITLE: HYDRONIC PIPING 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS: mark / date / description — 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING	CAD file: 130 / project no.: BI-RS-283-ARC

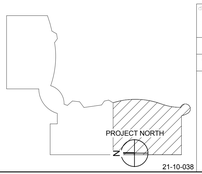
sheet	2 of 2
date	11-21-2012
scale	1/4" = 1'-0"
drawn by	AHG, DP
approved by	GVD
drawing no.	HP203B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. 2-1/2" CHWS&R, 5" HWS&R UP AND 3" CHWS&R, 5" HWS&R, 1-1/2" RHWS&R DOWN





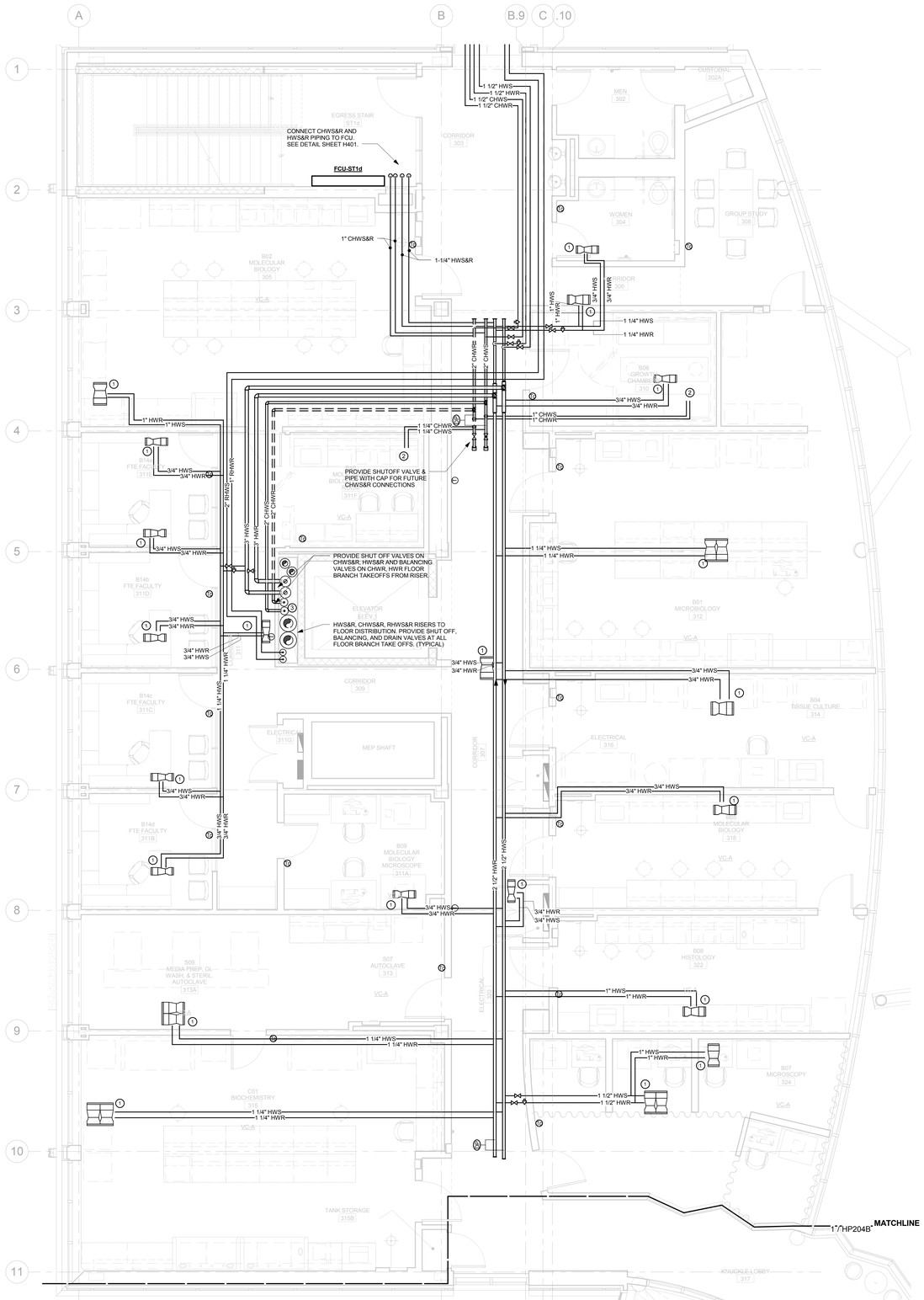
21-10-038

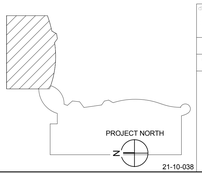
HYDRONIC PIPING 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date: 11-21-2012
11-21-2012 Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		scale: 1/4" = 1'-0"
			drawn by: AHG, DP
			approved by: GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. HP203C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE HOSE AND CAP CONNECTIONS FOR FUTURE EQUIPMENT. COORDINATE EXACT LOCATION WITH LAB PLANNER.
3. 6" ERS&R UP/DOWN, 4" HWS&R, 2" CHWS&R, 10" CWS&R AND 1-1/2" RHWS&R DOWN.





21-10-038

drawing:
HYDRONIC PIPING 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project:
SCSU NEW ACADEMIC LABORATORY BUILDING

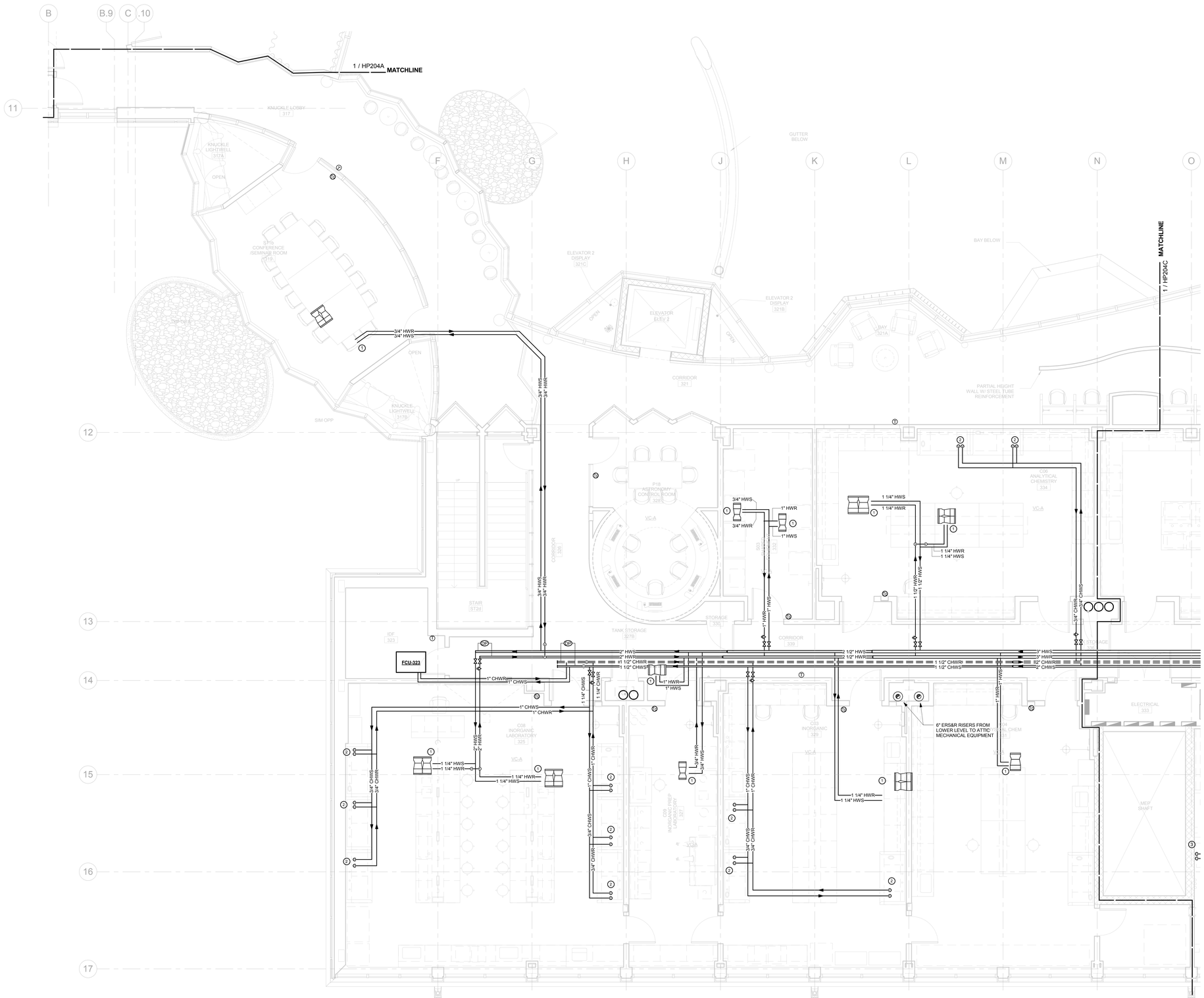
CAD no. 1310
project no. BI-RS-283-ARC

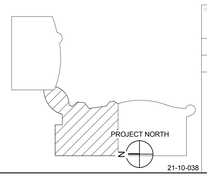
sheet no. 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by AHG, DP
checked by GVD
drawing no. HP204A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE CHILLED WATER CONNECTION TO FUME HOODS. CHWS&R PIPING TO FUME HOODS SIZED AT 3/4" DIAMETER. PROVIDE SHUT OFF VALVES AT CHILLED WATER PIPE MAIN. COORDINATE WITH LAB PLANNER.





21-10-038

DRAWING TITLE
HYDRONIC PIPING 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

PROJECT
SCSU NEW ACADEMIC LABORATORY BUILDING

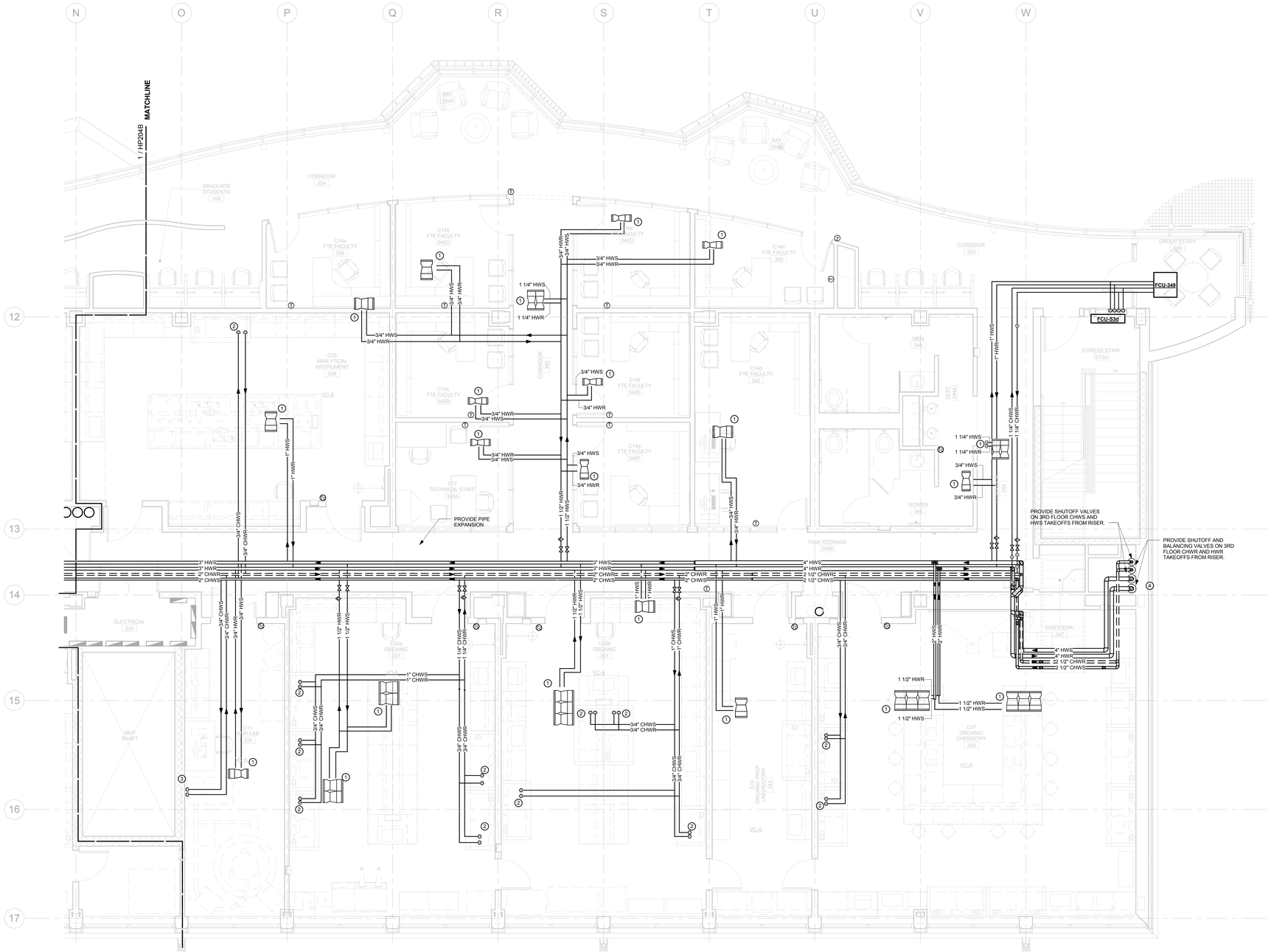
CAD no. 1380
project no. BI-RS-283-ARC

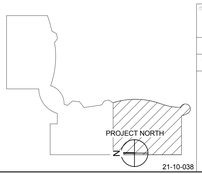
sheet no. 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by AHG, DP
approved by GVD
drawing no. HP204B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. PROVIDE CONNECTION TO HOT WATER COILS. SEE DETAIL ON DWG H401.
2. PROVIDE CHILLED WATER CONNECTION TO FUME HOODS. CHWS&R PIPING TO FUME HOODS SIZED AT 3/4" DIAMETER. PROVIDE SHUT OFF VALVES AT CHILLED WATER PIPE MAIN. COORDINATE WITH LAB PLANNER.
3. PROVIDE 3/4"Ø CHWS&R DROPS WITH SHUT OFF VALVES AND HOSE CONNECTIONS. COORDINATE EXACT LOCATION WITH LAB MANAGER.
4. 2-1/2" CHWS&R, 5" HWS&R DOWN





21-10-038

drawing title
HYDRONIC PIPING 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

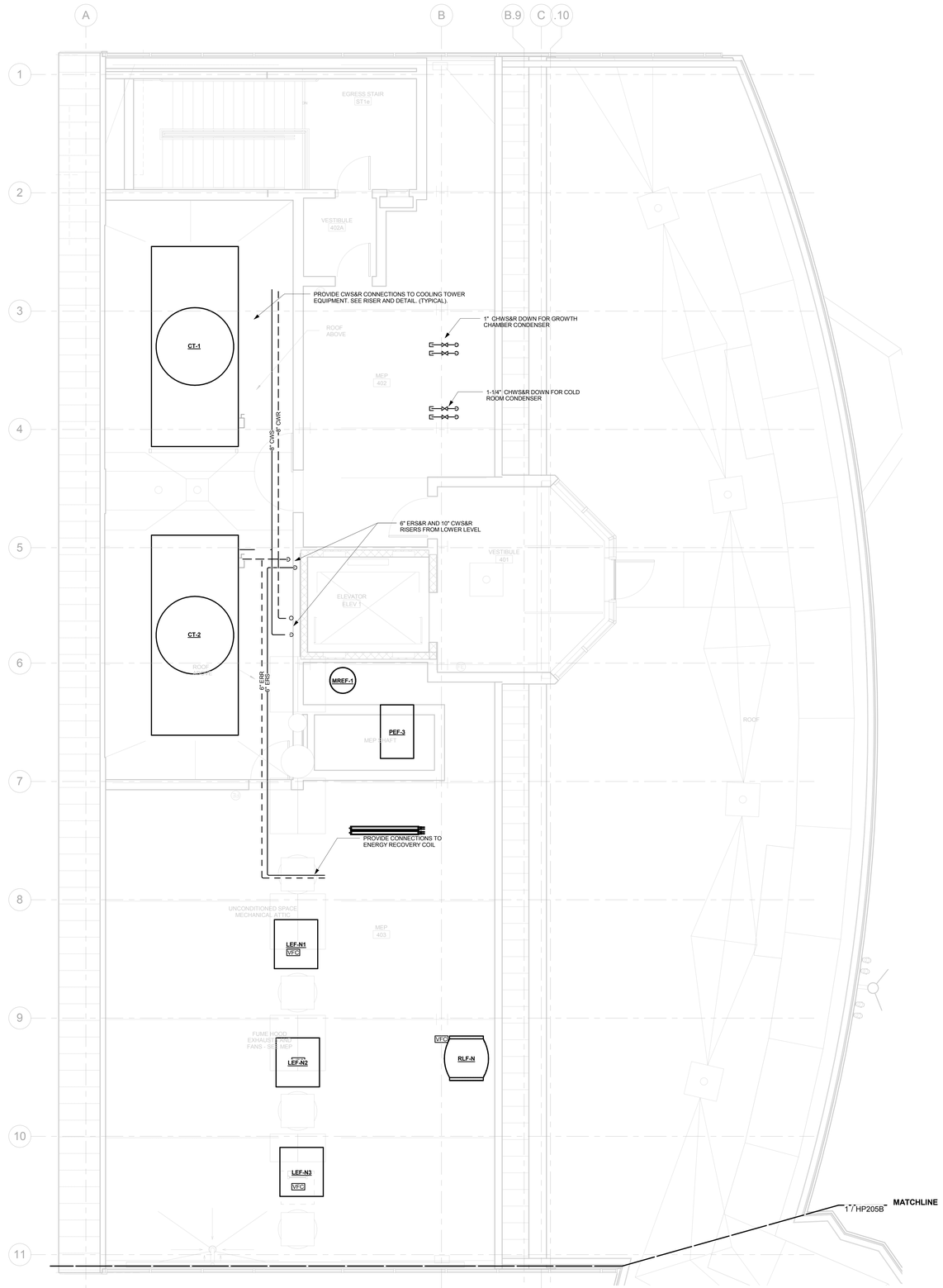
CAD no. 130
project no. BI-RS-283-ARC

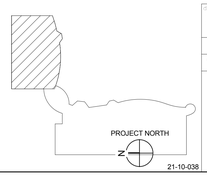
volume 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by AHG, DP
checked by GVD
drawing no. HP204C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. xx
2. xx

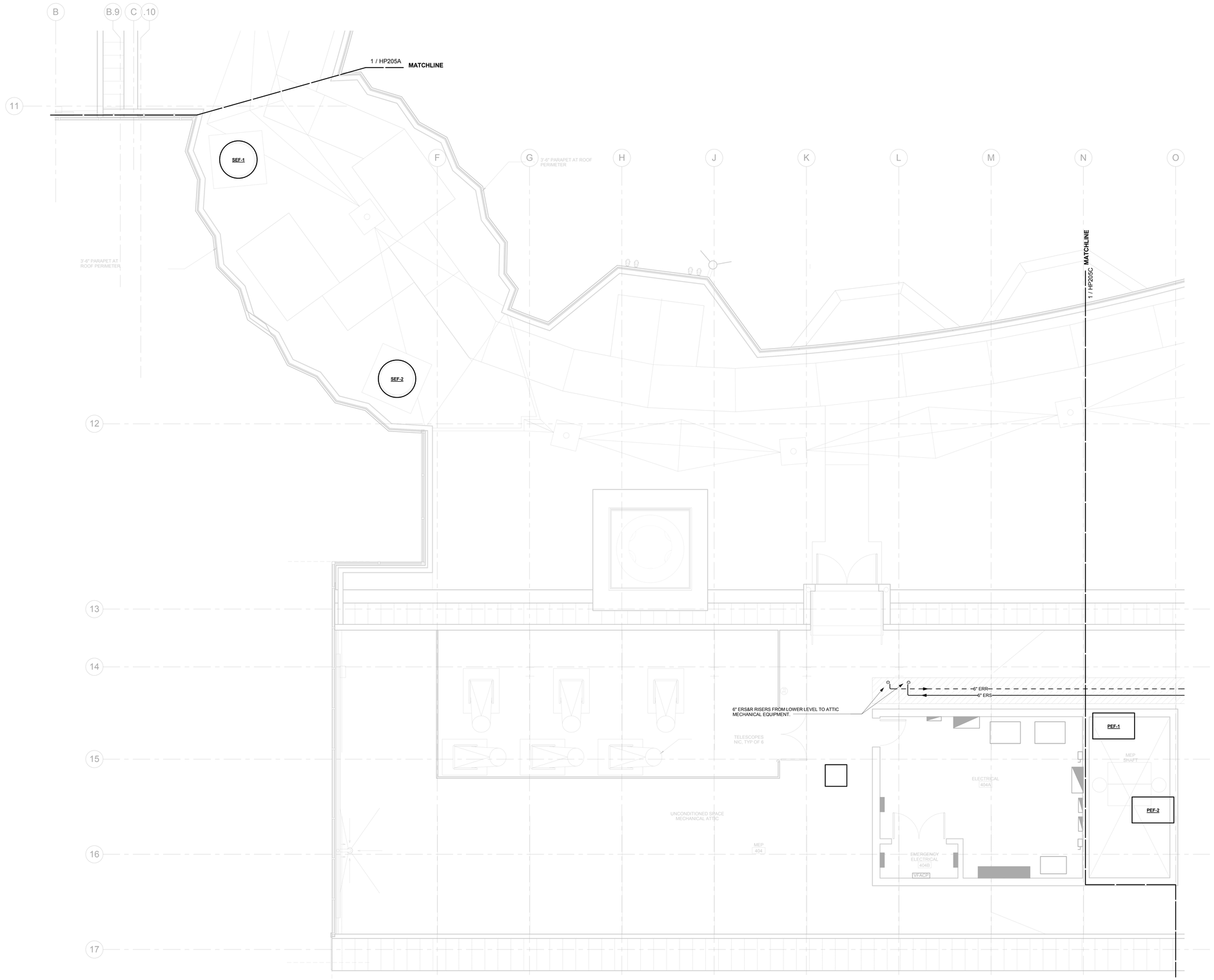


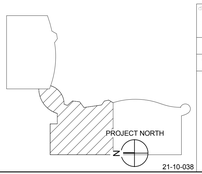


21-10-038

title: HYDRONIC PIPING MECHANICAL PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date: 11-21-2012
11-21-2012 Bid Documents			scale: 1/4" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: AHG, DP
			approved by: GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. HP205A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.





21-10-038

drawing title:
HYDRONIC PIPING MECHANICAL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

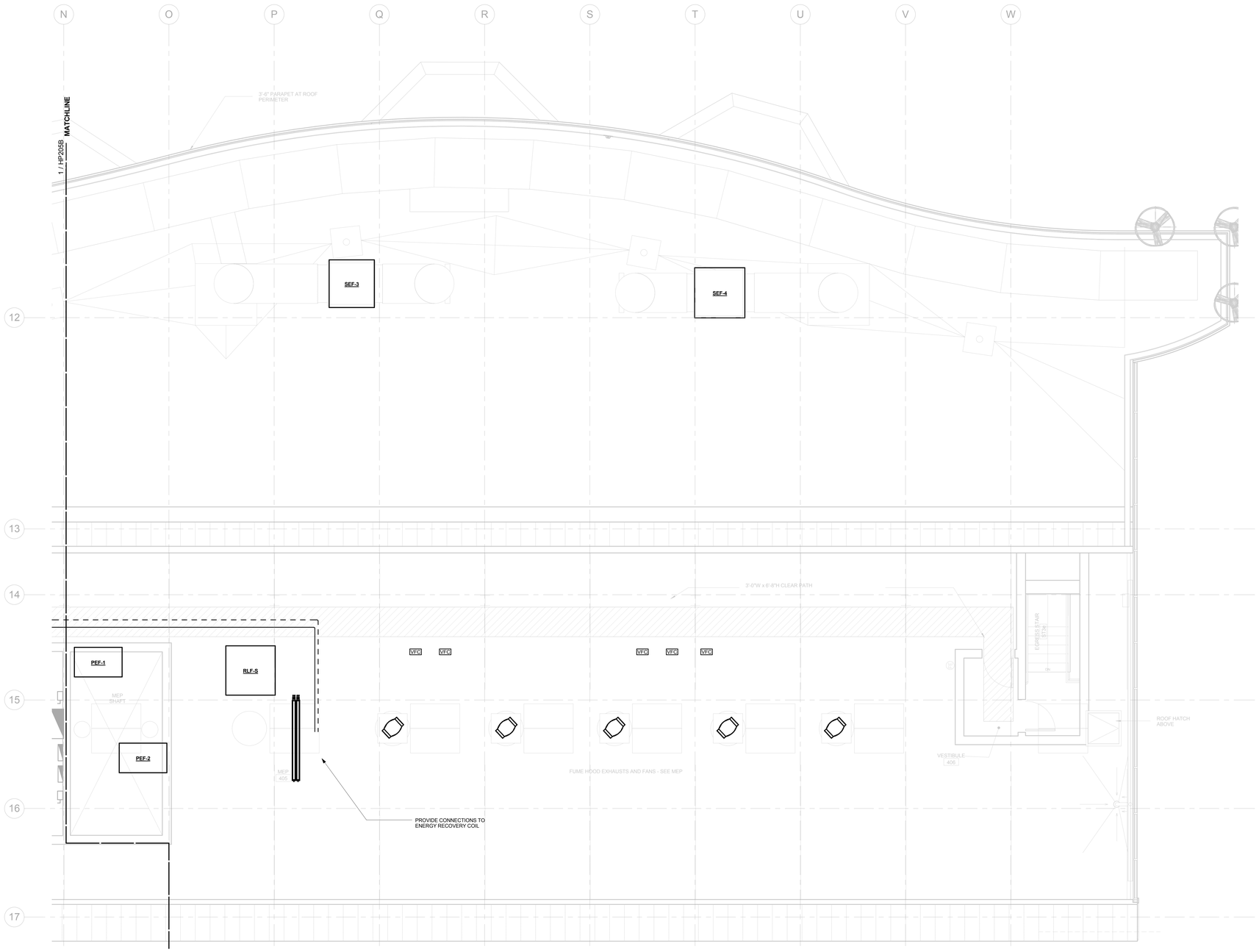
DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

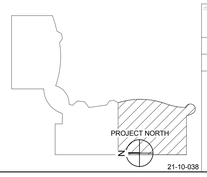
project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by AHG, DP
approved by GVD
drawing no. HP205B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

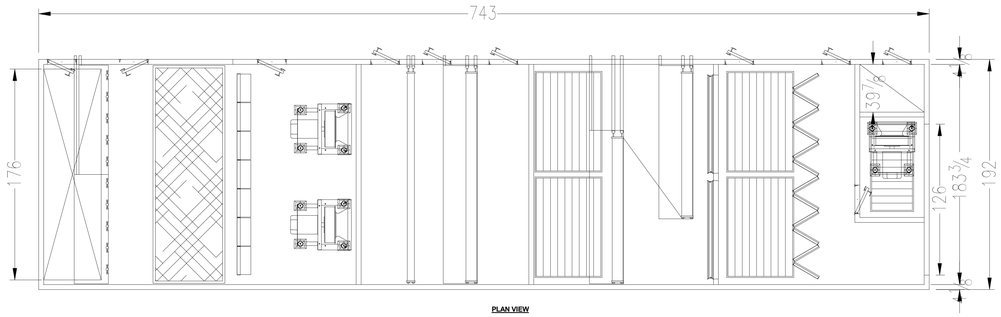




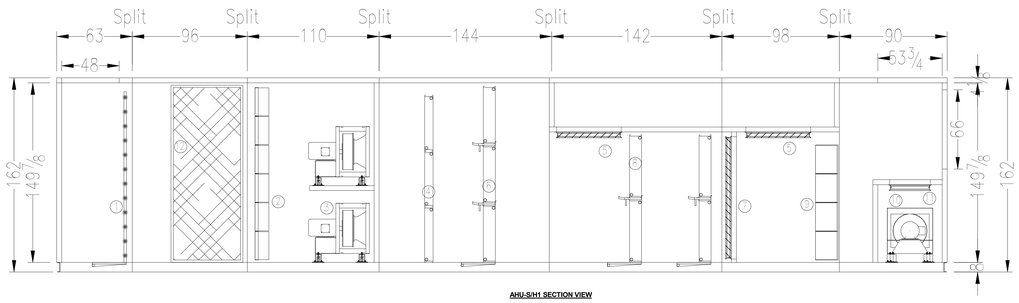
21-10-038

SUBMITTED FOR: HYDRONIC PIPING MECHANICAL PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		DATE 11-21-2012
11-21-2012 Bid Documents			SCALE 1/4" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY: AHG, DP
			APPROVED BY: GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	DRAWING no.: HP205C

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

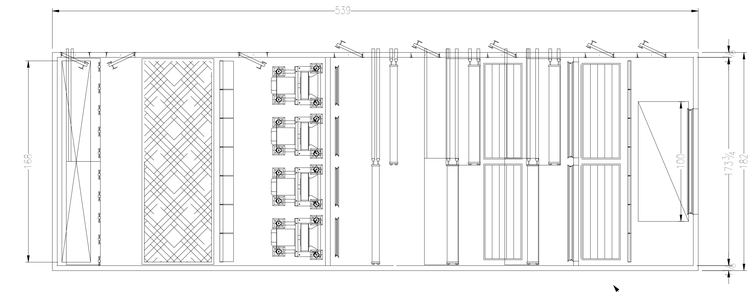


PLAN VIEW



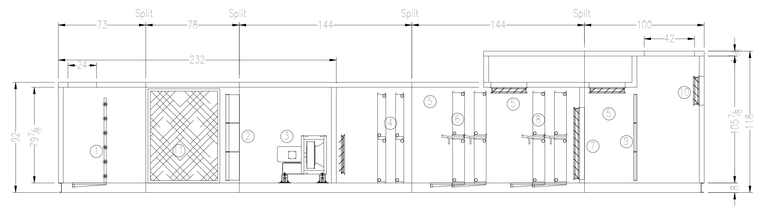
AHU-S/H1 SECTION VIEW

1. Humidifier
2. Filter 12"
   (42) 24" x 24"
3. Supply Fans
   (4) 300-EPFN
   W/60 HP Motor
4. Heating Coil
   (3) 45" x 173"
5. By-Pass Dampers
   (4) 82" x 54"
6. Cooling Coils
   (3) 46.5" x 173"
7. Face Dampers
   (2) 118" x 96"
8. Energy Recovery Coil
   (4) 51" x 119"
9. Filter 2"
   (48) 24" x 24"
10. Return Fan
    270-EPFN
    W/25 HP Motor
11. Damper
    34"x 72"
12. Sound Attenuator
    60"



PLAN VIEW

PIPING CONNECTIONS & ACCESS THIS SIDE



AHU-N/H2 SECTION VIEW

1. Humidifier
2. Filter 12"
   (7) 12" x 24"
   (14) 24" x 24"
3. Supply Fans
   (4) 222-EPFN
   W/25 HP Motor
4. Heating Coil
   (4) 36" x 80"
5. By-Pass Dampers
   (4) 78" x 30"
6. Cooling Coils
   (4) 36" x 80"
7. Face Dampers
   (2) 82" x 60"
8. Energy Recovery Coil
   (4) 36" x 80"
9. Filter 2"
   (7) 12" x 24"
   (14) 24" x 24"
10. Damper
    88" x 24"
11. Sound Attenuator
    60"

DRAWING TITLE
HVAC RISERS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

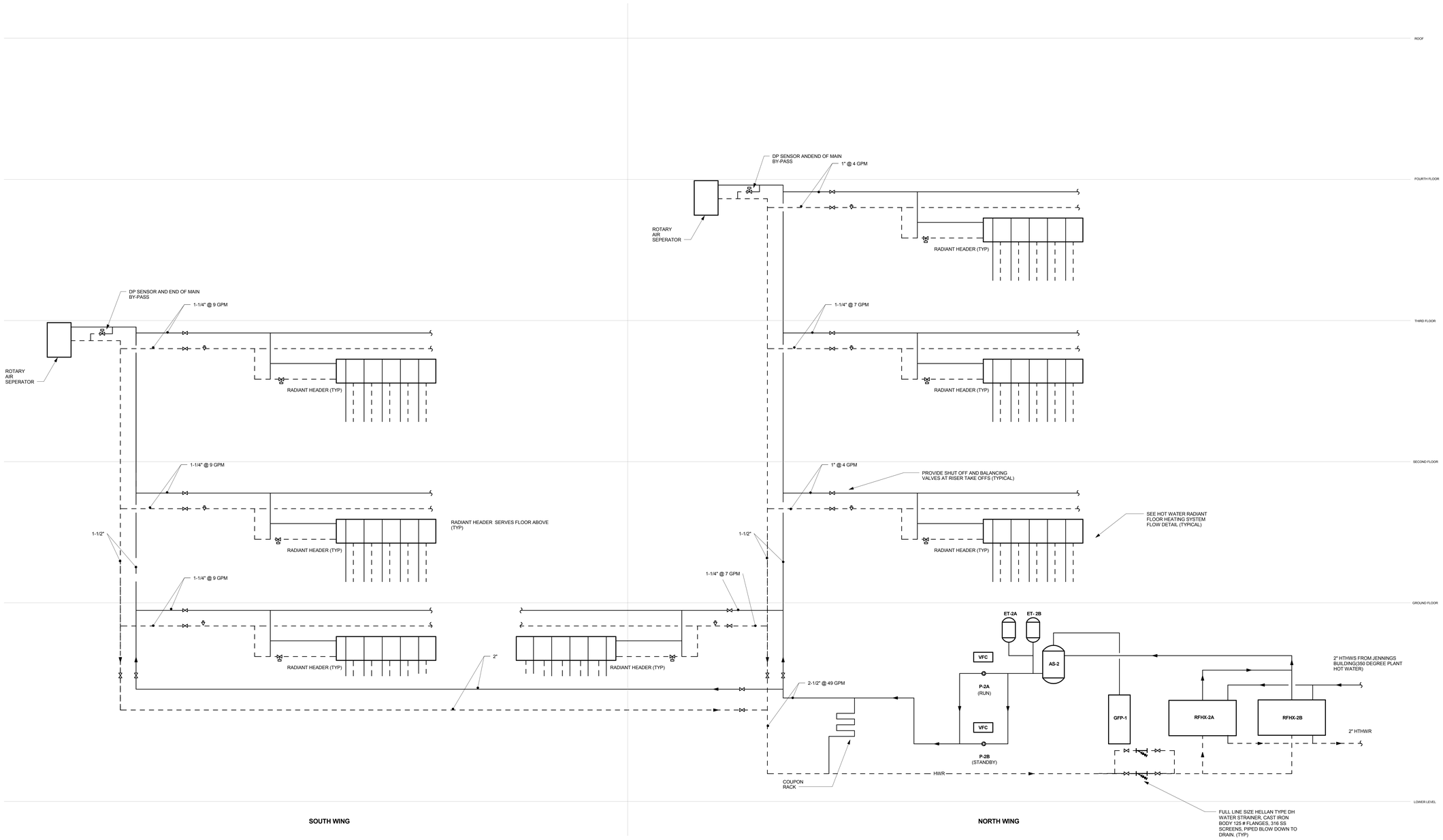
project
SCSU NEW ACADEMIC
LABORATORY BUILDING

CAD no. 1383
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale
drawn by AHG, DP
approved by GVD
drawing no. H301

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



RADIANT HEAT HOT WATER FLOW DIAGRAM

NOT TO SCALE

drawing title: HVAC RISERS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: NOT TO SCALE
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: AHG, DP
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: H302

21-10-038

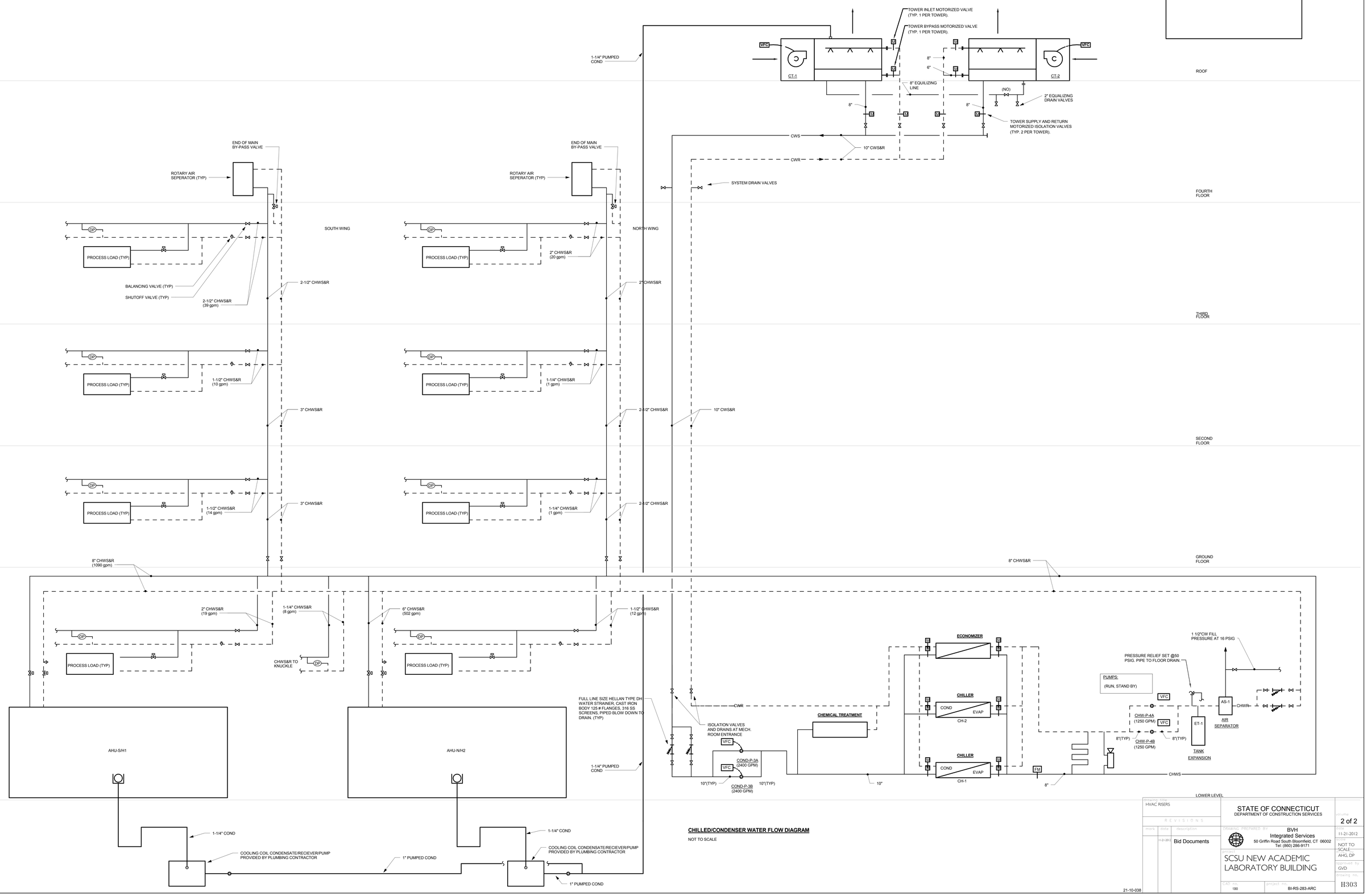
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

FLOW DIAGRAM LEGEND

AS	AIR SEPARATOR
ET	EXPANSION TANK
DP	DIFFERENTIAL PRESSURE SENSOR
VFC	VARIABLE FREQUENCY CONTROLLER

FLOW DIAGRAM GENERAL NOTES:

1. SEE DETAIL DRAWINGS FOR EQUIPMENT PIPING & VALVING REQUIREMENTS



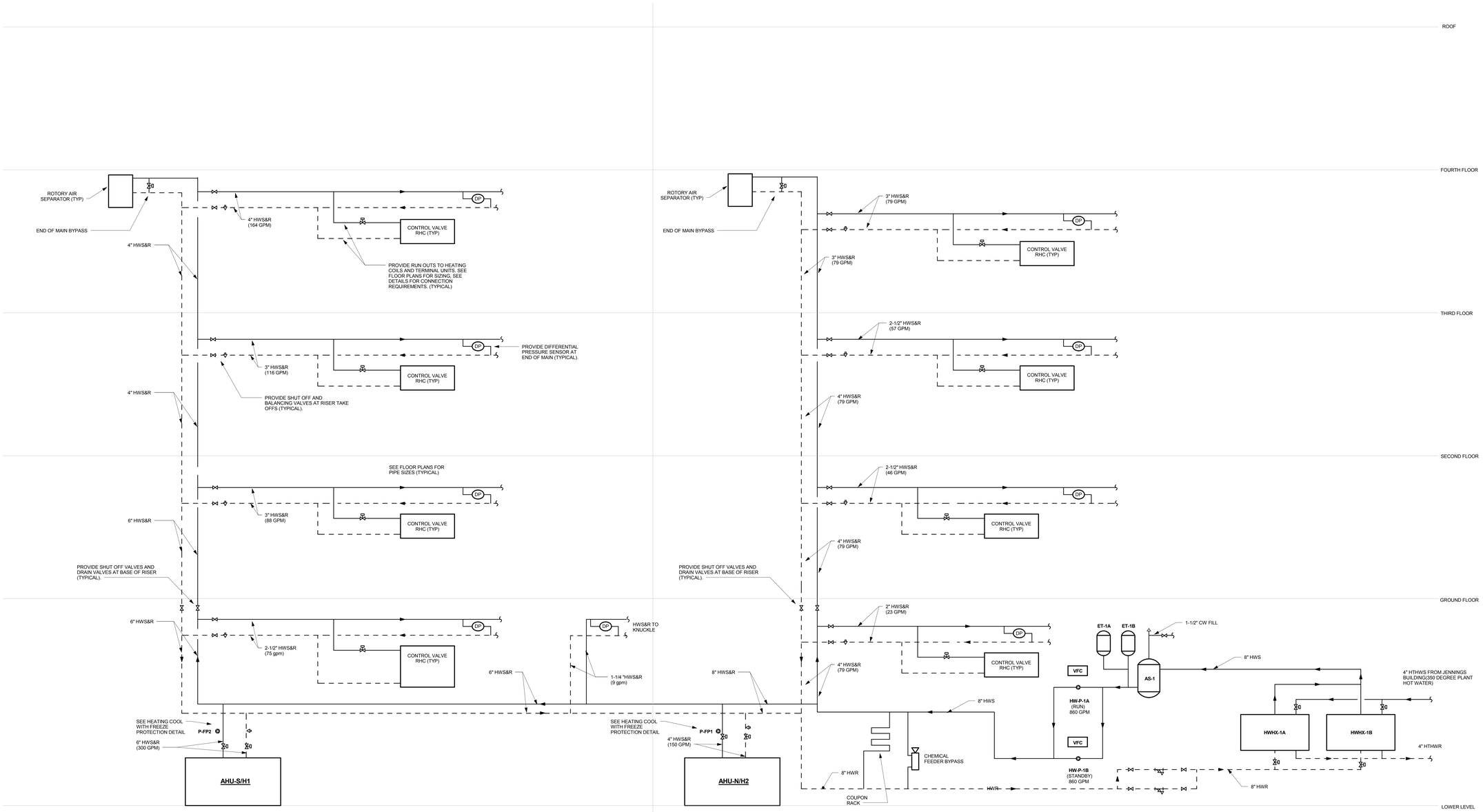
CHILLED/CONDENSER WATER FLOW DIAGRAM

NOT TO SCALE

HVAC RISERS			STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	2 of 2
REVISIONS				
mark	date	description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171	date: 11-21-2012
	11-21-2012	Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING	NOT TO SCALE
				drawn by: AHG, DP
				approved by: GVD
			CAD no. 1380 / project no. BI-RS-283-ARC	drawing no. H303

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

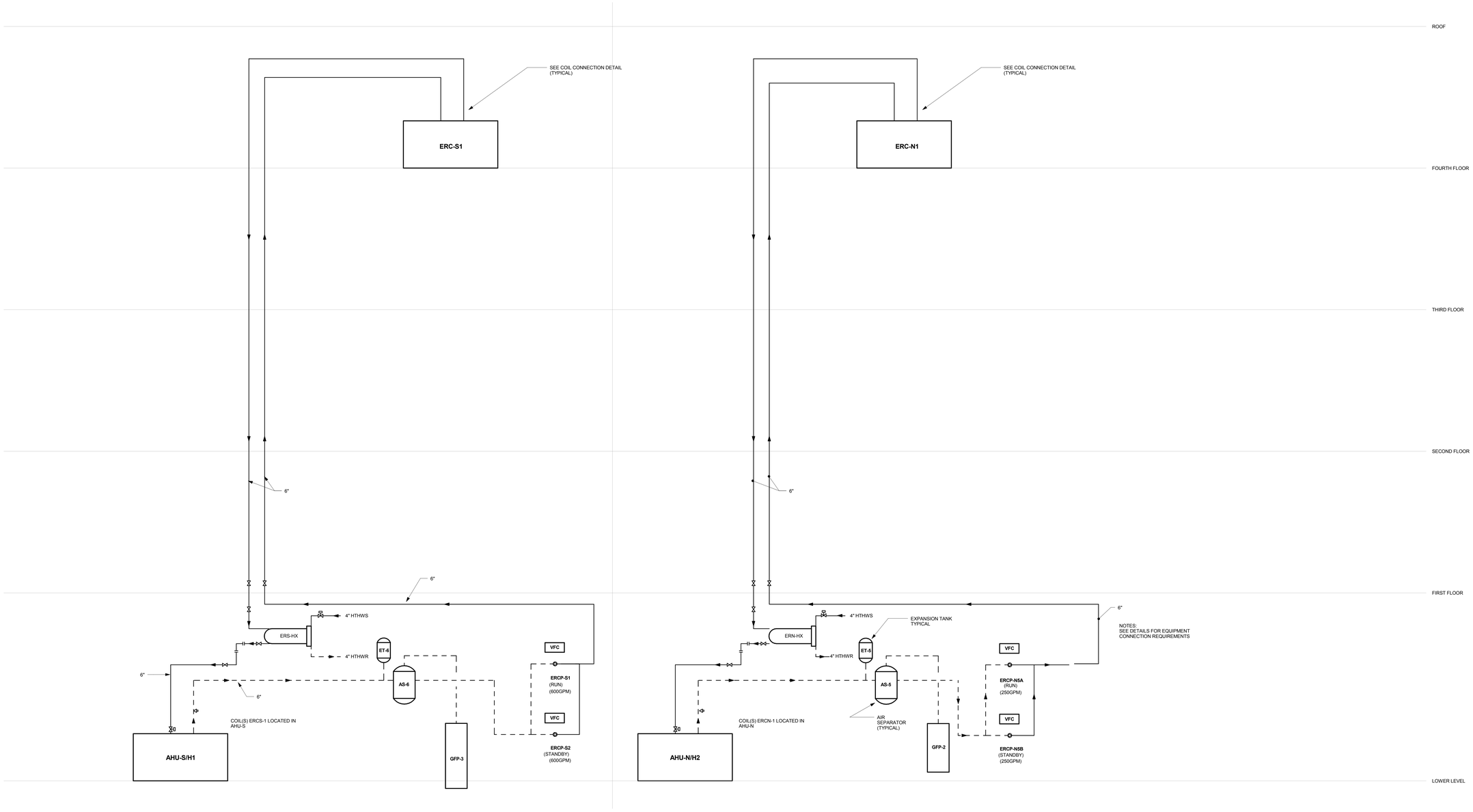


HEATING HOT WATER FLOW DIAGRAM
NOT TO SCALE

DRAWING TITLE: HVAC RISERS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET NO. 2 of 2
REVISIONS			DATE 11-21-2012
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		SCALE NOT TO SCALE
11-21-2012 Bid Documents	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHG, DP
			APPROVED BY GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. H304

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



GLYCOL ENERGY RECOVERY FLOW DIAGRAM

NOT TO SCALE

drawing title: HVAC RISERS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

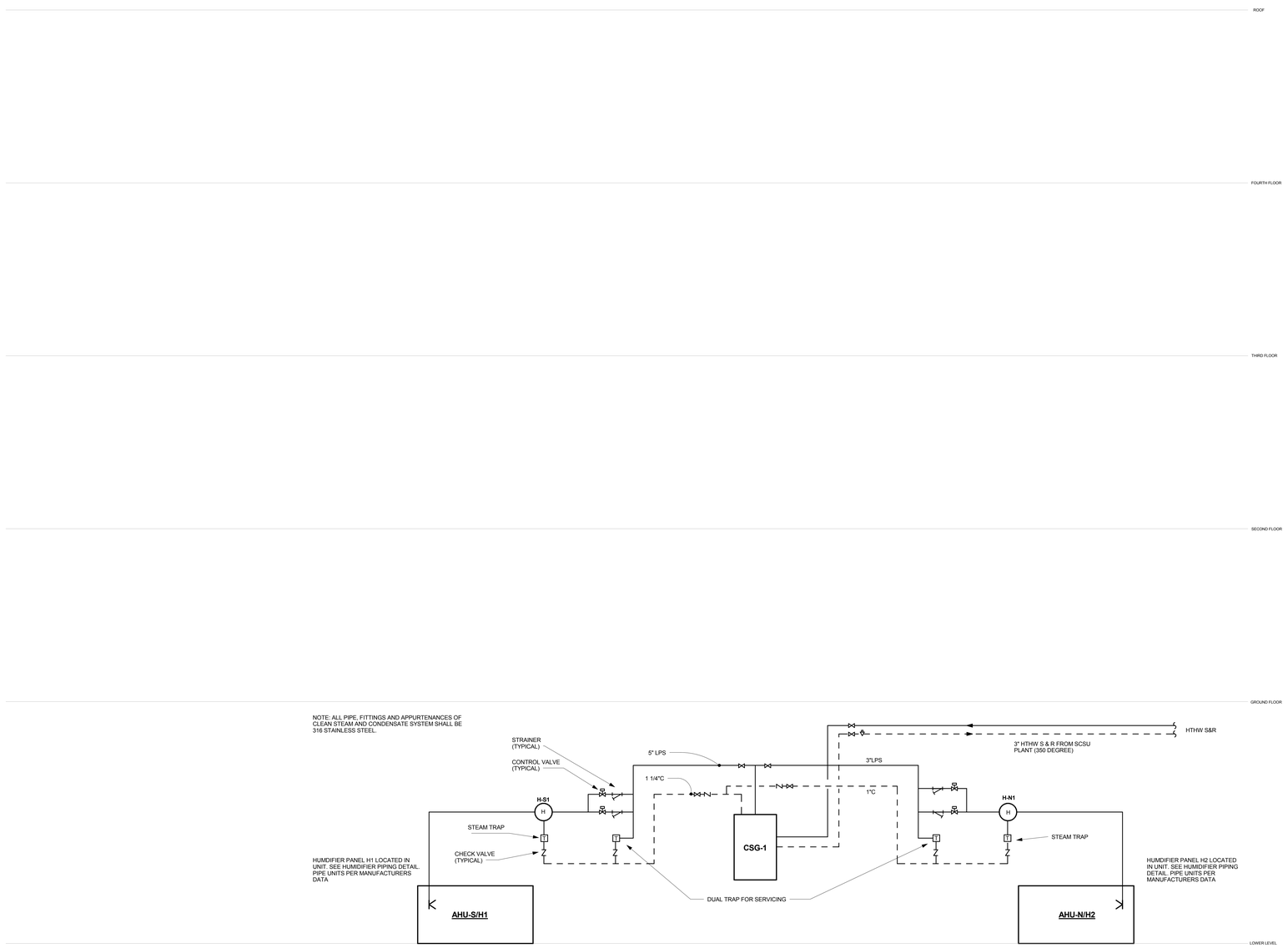
project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale NOT TO SCALE
drawn by AHG, DP
approved by GVD
drawing no. H305

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



HUMIDIFICATION FLOW DIAGRAM
NOT TO SCALE

21-10-038

drawing title
HVAC RISERS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1383
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale NOT TO SCALE
drawn by AHG, DP
approved by GVD
drawing no. H306

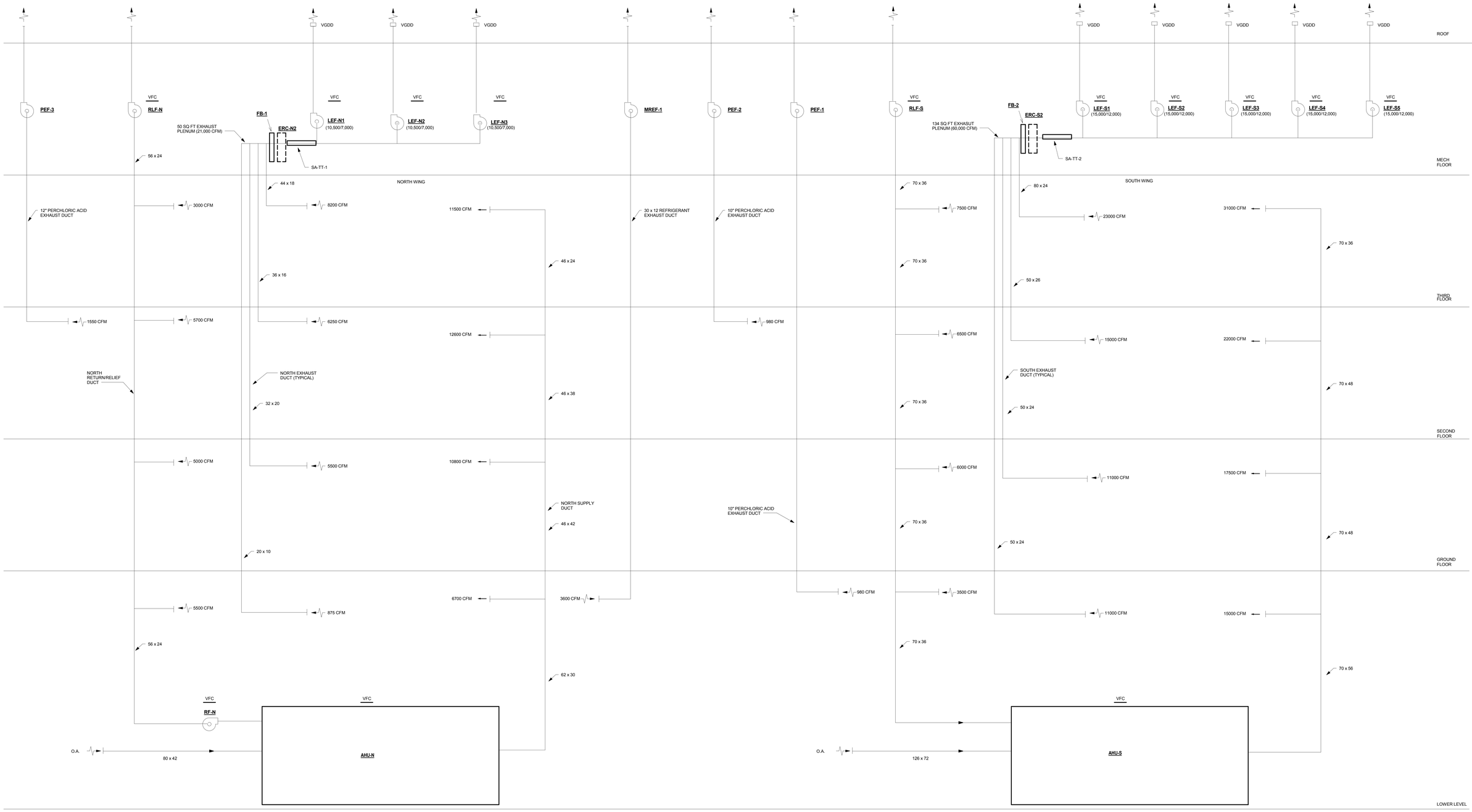
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

FLOW DIAGRAM LEGEND

VGDD	VARIABLE GEOMETRY DISCHARGE DAMPER
	FAN
VFC	VARIABLE FREQUENCY CONTROLLER

FLOW DIAGRAM GENERAL NOTES:

1. SEE DETAIL DRAWINGS FOR EQUIPMENT DUCT & CONNECTION REQUIREMENTS

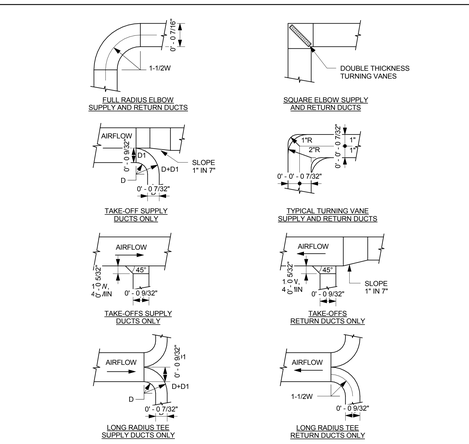


AIR FLOW RISER DIAGRAM

NOT TO SCALE

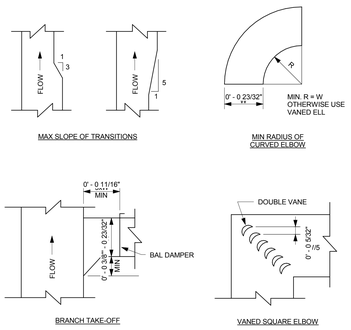
drawing title: HVAC RISERS		STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume: 2 of 2
REVISIONS			
mark	date	description	
	11-21-2012	Bid Documents	
DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171			date: 11-21-2012
			scale: 12" = 1'-0"
project: SCSU NEW ACADEMIC LABORATORY BUILDING			designed by: Designer
			approved by: Approver
CAD no.: 1380		project no.: BI-RS-283-ARC	drawing no.: H307

21-10-038



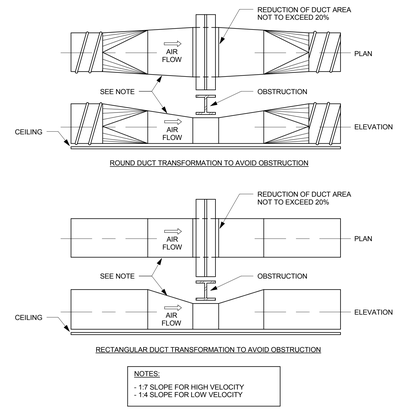
DUCT DETAILS

NOT TO SCALE



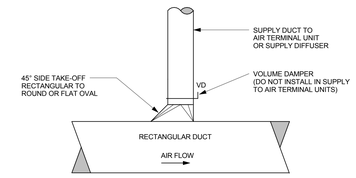
DUCT CONSTRUCTION

NOT TO SCALE



DUCT OBSTRUCTION TRANSFORMATION DETAILS

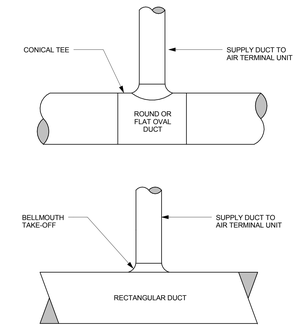
NOT TO SCALE



45° SUPPLY AIR TAKEOFF DETAIL

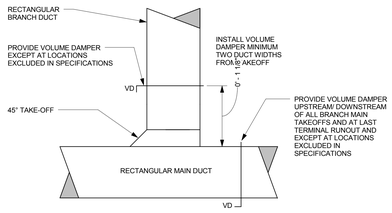
NOT TO SCALE

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



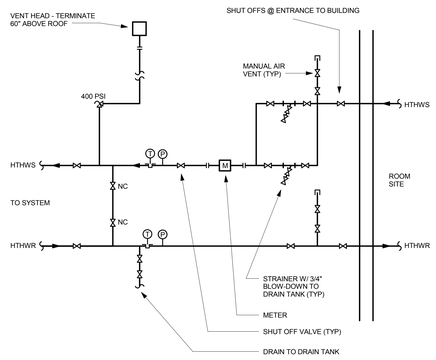
VAV LOOP PRIMARY SUPPLY AIR TAKEOFF DETAIL

NOT TO SCALE



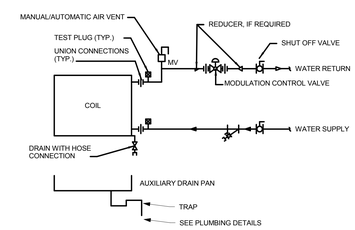
RECTANGULAR BRANCH DUCT TAKEOFF DETAIL

NOT TO SCALE



TYPICAL METERED HTHW SERVICE ENTRANCE

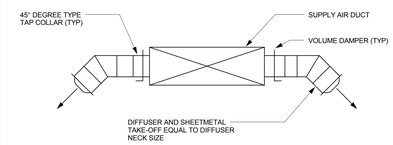
NOT TO SCALE



OVERHEAD FCU -

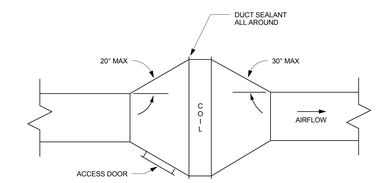
PIPING CONNECTIONS

NTS



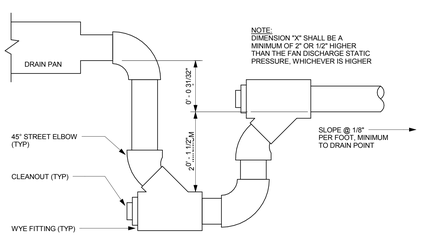
DIRECT TAKE-OFF DIFFUSER DETAIL

NOT TO SCALE



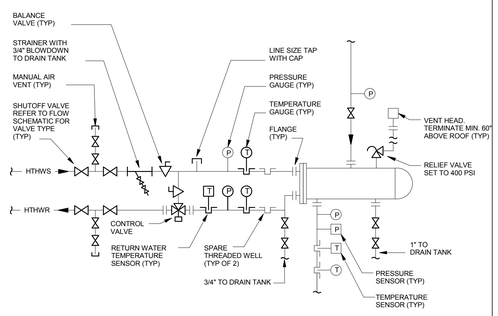
DUCT MOUNTED HEATING COIL PLAN DETAIL

NOT TO SCALE

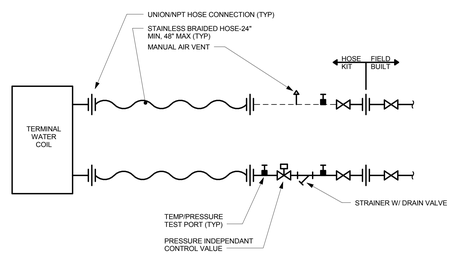


COOLING COIL CONDENSATE TRAP DETAIL FOR DRAW-THRU COILS

NOT TO SCALE



HIGH TEMPERATURE HOT WATER HEAT EXCHANGER DETAIL
NOT TO SCALE



NOTES:

1.) UTILIZE ONLY FOR TERMINAL COILS EQUIPMENT MOUNTED ABOVE ACCESSABLE CEILINGS 1-1/2", 20 GPM AND LESS.

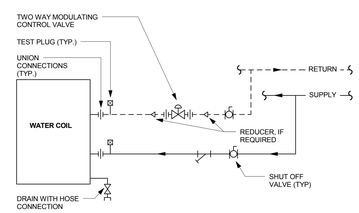
2.) MFR MAY COMBINE ANY COMPONENTS INTO MULTI-FUNCTION DEVICES.

3.) COORDINATE WITH ALL APPLICABLE DIV. 23 SPECIFICAITONS

4.) PROVIDE TWO EXTRA ATTIC STOCK KITS FOR EACH SIZE (3/4", 1", 1-1/2")

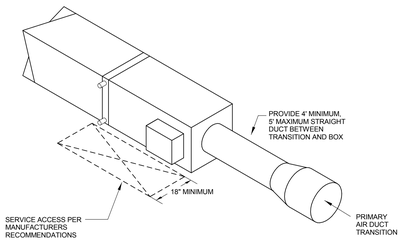
ALTERNATE TERMINAL COIL HOSE KIT DETAIL

NOT TO SCALE



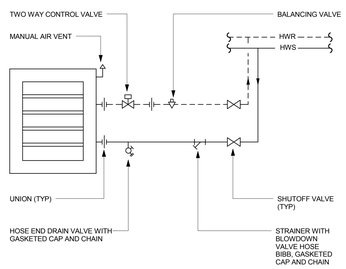
TERMINAL UNIT WATER COIL PIPING DETAIL

NOT TO SCALE



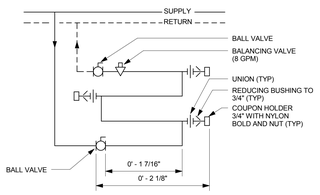
SHUTOFF VAV BOX

NOT TO SCALE



HOT WATER UNIT HEATER PIPING DETAIL

NOT TO SCALE



NOTES:

1. ALL PIPING TO BE 1" DIA PVC SCH 80 UNLESS OTHERWISE NOTED.
2. ALL THREADED JOINTS TO BE SEALED WITH TEFLON PIPE SEALANT.

COUPON RACK DETAIL

NOT TO SCALE

21-10-038

drawing title: HVAC DETAILS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

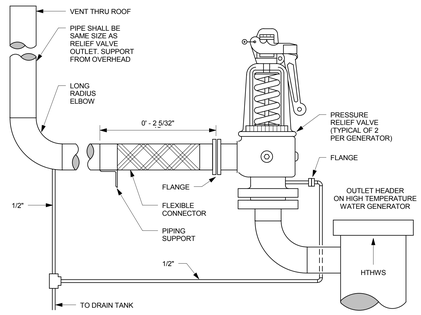
STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1310 | project no. BI-RS-283-ARC

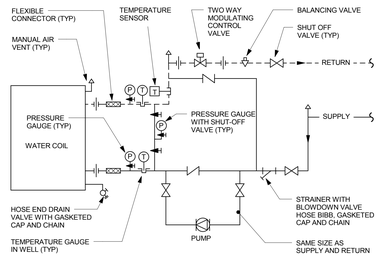
sheet 2 of 2
date 11-21-2012
scale NOT TO SCALE
drawn by AHG, DP
checked by GVD
drawing no. H401



NOTE:
SUPPORT ALL PIPING. DO NOT BEAR ANY WEIGHT ON PRESSURE (SAFETY) RELIEF VALVE

HIGH TEMPERATURE HOT WATER GENERATOR RELIVE VALVE DETAIL

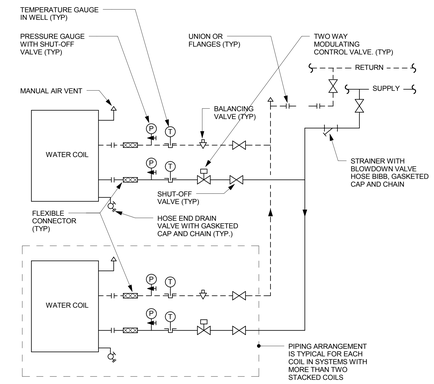
NOT TO SCALE



NOTE: PROVIDE UNIONS IN LIEU OF FLANGES AT CONTROL VALVE AND COIL CONNECTION WHERE APPLICABLE.

HOT WATER HEATING COIL WITH FREEZE PROTECTION PUMP

NOT TO SCALE

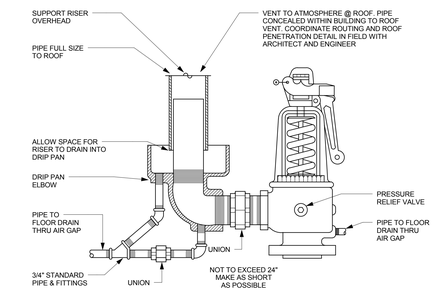


NOTE:
- PROVIDE UNIONS IN LIEU OF FLANGES AT CONTROL VALVE AND COIL CONNECTIONS WHERE APPLICABLE.
- PIPE CHWS TO LEAVING AIR SIDE OF COIL

STACKED AHU WATER COIL PIPING DETAIL

NOT TO SCALE

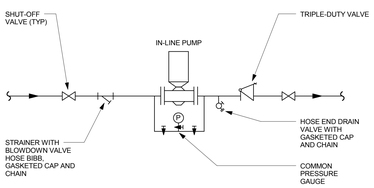
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



NOTE:
SUPPORT ALL PIPING. DO NOT BEAR ANY WEIGHT ON PRESSURE SAFETY RELIEF VALVE.

STEAM PRESSURE RELIEF VALVE PIPING DETAIL

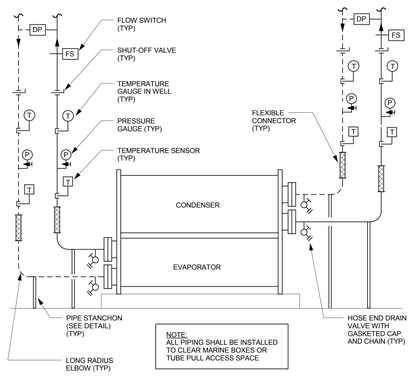
NOT TO SCALE



NOTE:
PROVIDE SUCTION DIFFUSER ON LARGE VERTICAL IN-LINE PUMPS.

IN-LINE PUMP DETAIL

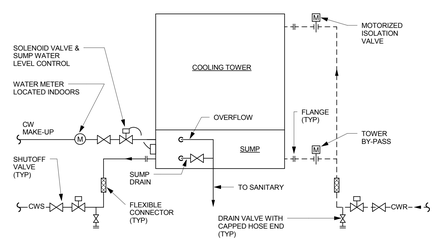
NOT TO SCALE



NOTE:
ALL PIPING SHALL BE INSTALLED TO CLEAR MARINE BOXES OR TUBE PULL ACCESS SPACE

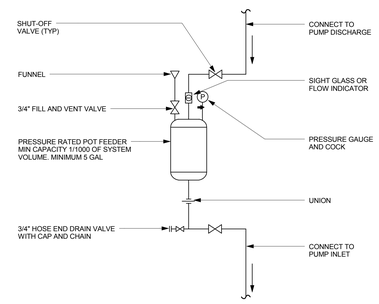
CHILLER PIPING DETAIL

NOT TO SCALE



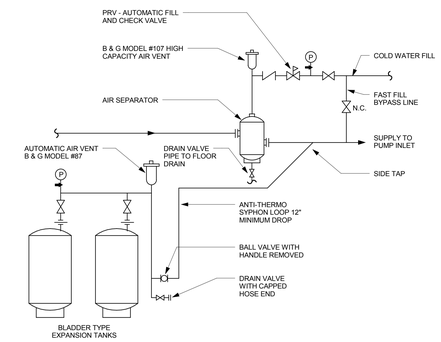
COOLING TOWER PIPING DETAIL

NOT TO SCALE



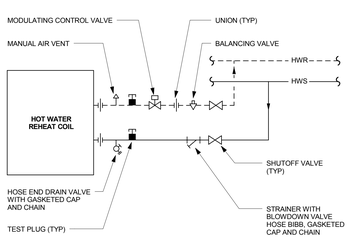
CHEMICAL POT FEEDER DETAIL

NOT TO SCALE



AIR SEPARATOR AND EXPANSION TANK DETAIL

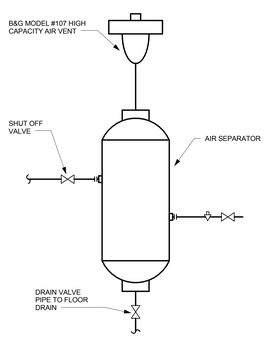
NOT TO SCALE



NOTE:
ALL RUNOUTS TO BE 3/4" UNLESS NOTED OTHERWISE. RUNOUTS LESS THAN 3/4" WILL NOT BE ACCEPTED.

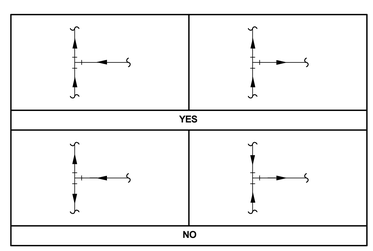
VAV HOT WATER REHEAT COIL PIPING DETAIL

NOT TO SCALE



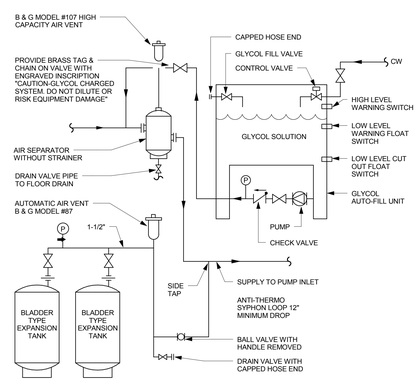
TOP OF RISER AIR SEPARATOR

NOT TO SCALE



ALLOWABLE FLOW CONFIGURATIONS IN PIPING TEES - HVAC SYSTEMS

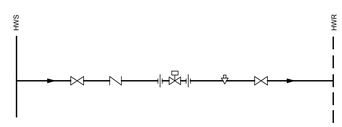
NOT TO SCALE



NOTE:
PROVIDE 30% INHIBITATIVE PROPYLENE GLYCOL SOLUTION.

AIR SEPARATOR & EXPANSION TANK DETAIL (PROPYLENE GLYCOL SYSTEM)

NOT TO SCALE



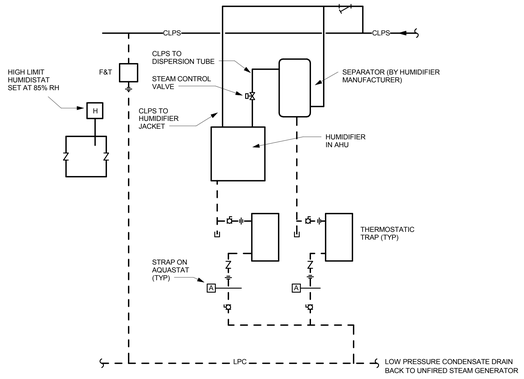
END OF MAIN BY-PASS VALVE DETAIL

NOT TO SCALE

DRAWING TITLE: HVAC DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET NO. 2 of 2
REVISIONS			DATE 11-21-2012
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		SCALE NOT TO SCALE
11-21-2012 Bid Documents	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHG, DP
			APPROVED BY GVD
	CAD no. 1383	project no. BI-RS-283-ARC	drawing no. H402

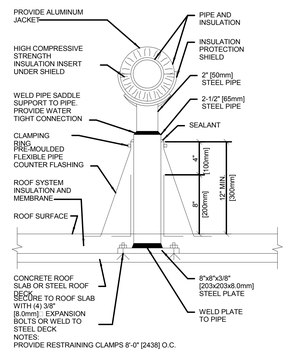
21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



HUMIDIFIER PIPING DIAGRAM

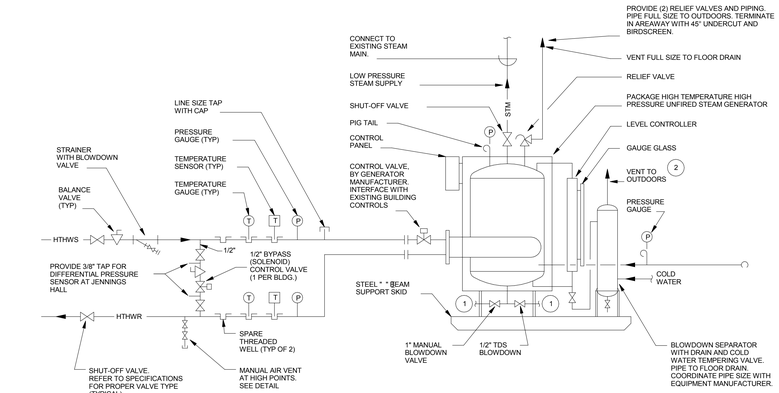
NTS



DETAIL FOR SUPPORTING PIPE ON ROOF

NTS

TO OUTSIDE AIR VENT MANIFOLD



UNFIRED STEAM GENERATOR DETAIL

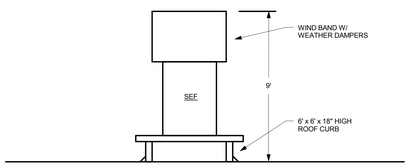
NOT TO SCALE

NOTES:

- PROVIDE NEW ULTRASONIC FLOW METER ON NEW HIGH TEMPERATURE HOT WATER PIPING. INSTALL ON BUILDING SIDE OF BYPASS PIPING
- INSTALL WITH MINIMUM 10 PIPE DIAMETERS UPSTREAM AND 5 DIAMETERS DOWNSTREAM
- PROVIDE REQUIRED SPACE FOR COIL REMOVAL

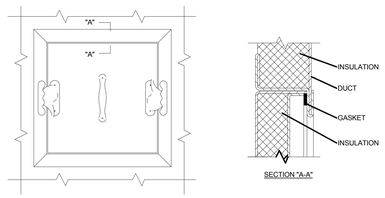
(1) TO BLOWDOWN SEPARATOR. COORDINATE PIPE SIXE AND PIPING CONFIGURATION WITH EQUIPMENT MANUFACTURER ON SG.

(2) VENT PIPE SIZE TO BE COORDINATED WITH EQUIPMENT MANUFACTURER.

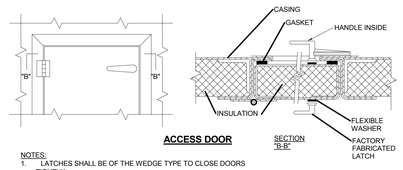


SMOKE EXHAUST FANS 1 & 2

NTS



ACCESS PANEL

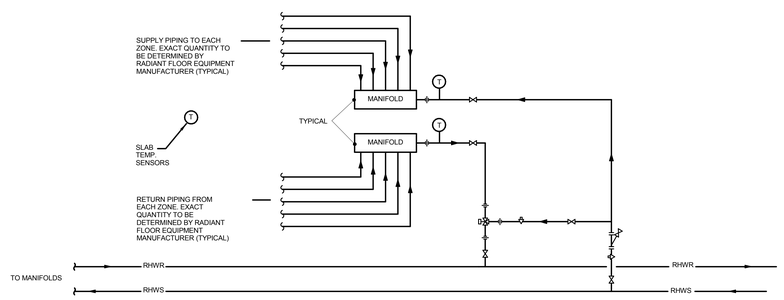


ACCESS DOOR

NOTES:
1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
3. SEE SMACNA 2005, FIGURE 9-15

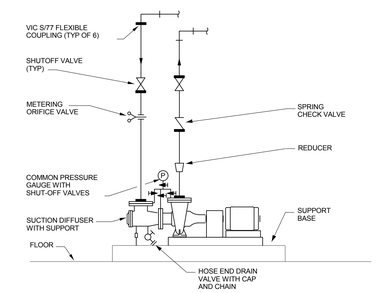
ACCESS PANEL AND DOOR DETAIL

NTS



HOT WATER RADIANT FLOOR HEATING SYSTEM FLOW DETAIL

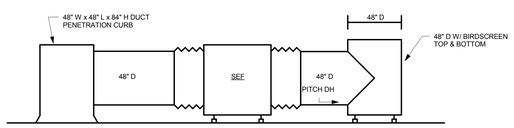
NOT TO SCALE



NOTE:
UTILIZE - THREE (3) VIC S/77 FLEXIBLE COUPLINGS ON THE PUMP INLET AND DISCHARGE PIPING IN LIEU OF FLEXIBLE CONNECTIONS.

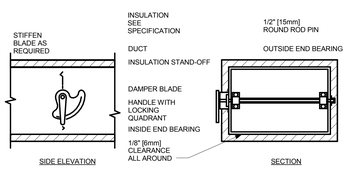
BASE MOUNTED PUMP DETAIL
UTILIZING GROOVED PIPING-VFC CONTROLLED

NOT TO SCALE



SMOKE EXHAUST FANS 3 & 4

NTS

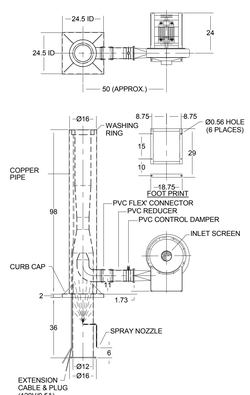


NOTE:

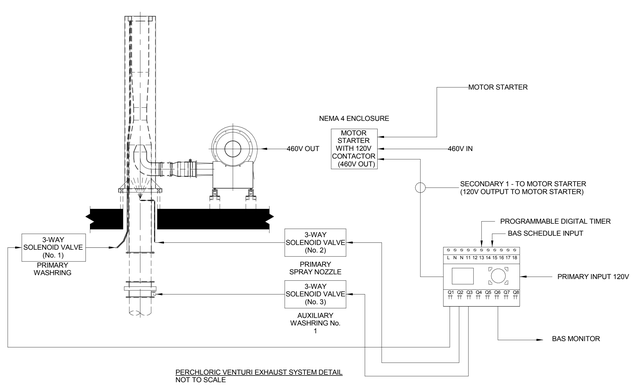
1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

VOLUME DAMPER DETAIL

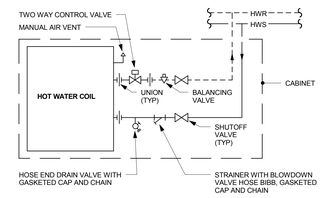
NTS



PERCHLORIC VENTURI EXHAUST SYSTEM DETAIL
NOT TO SCALE



PERCHLORIC VENTURI EXHAUST SYSTEM DETAIL
NOT TO SCALE



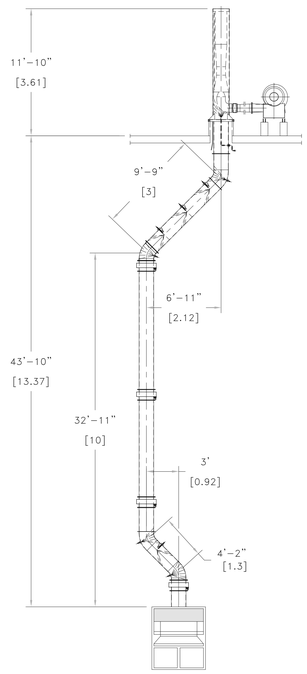
CABINET UNIT HEATER PIPING DETAIL

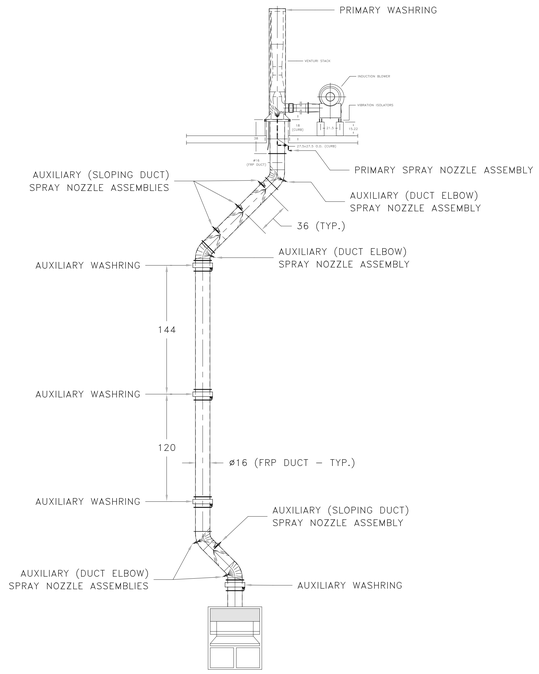
NOT TO SCALE

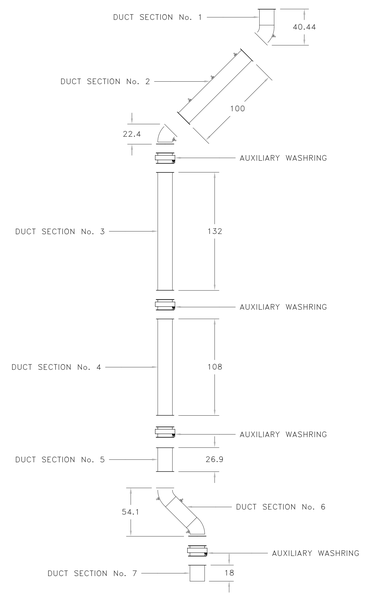
21-10-038

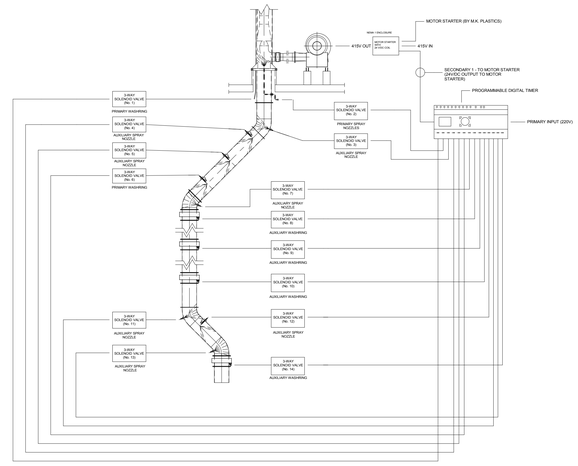
drawing title: HVAC DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description	DRAWN & PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: NOT TO SCALE
11-21-2012 Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: AHG, DP
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: H403

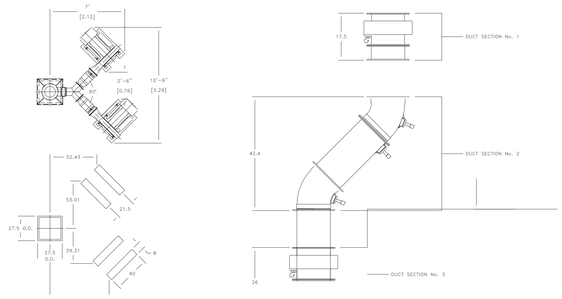
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

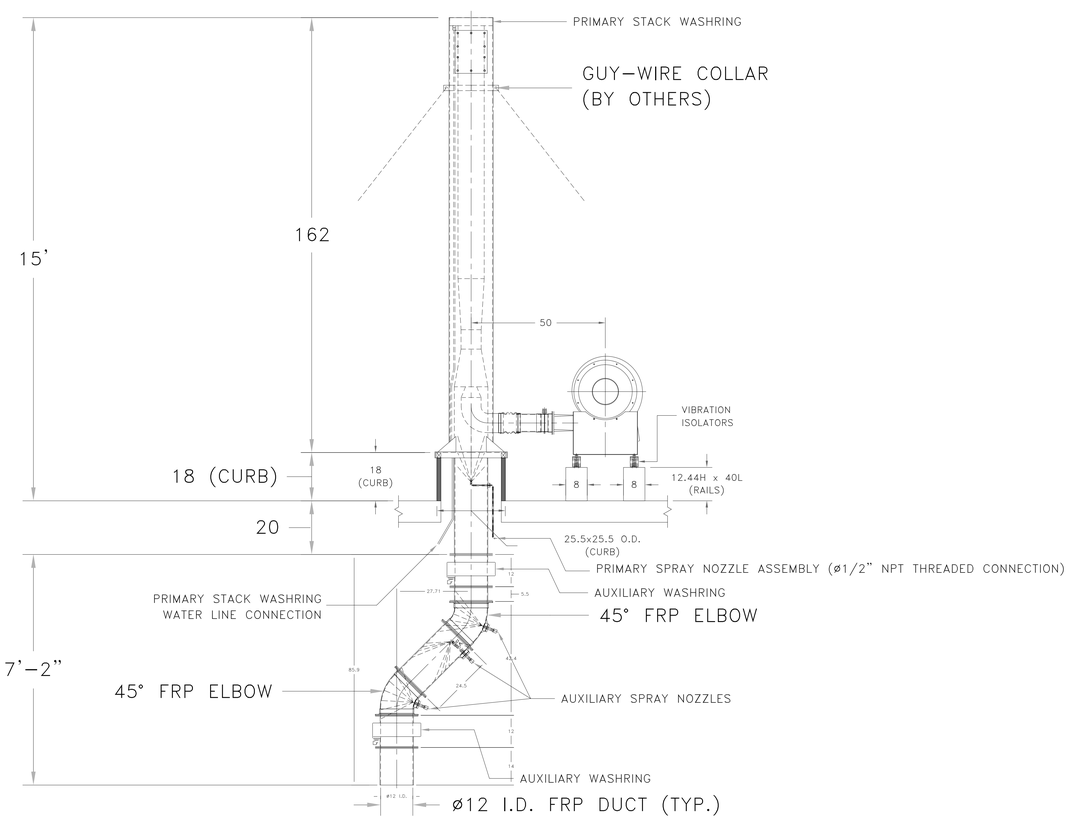


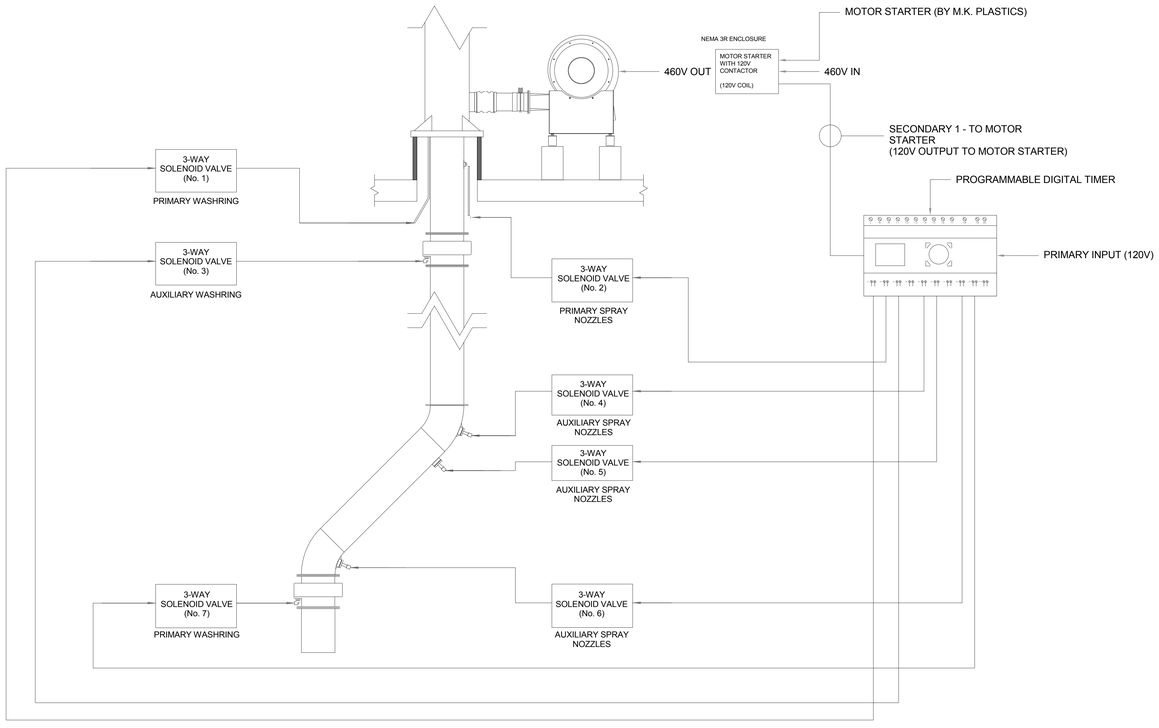












drawing title
HVAC DETAILS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
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project
SCSU NEW ACADEMIC
LABORATORY BUILDING

CAD no. 1310
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volume 2 of 2
date 11-21-2012
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21-10-038

NOTE:
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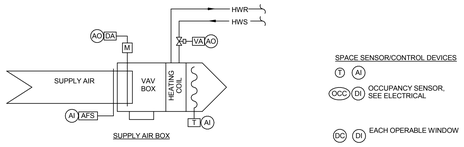
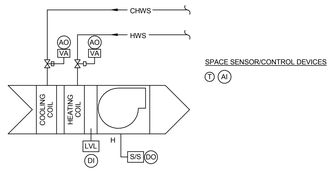


VAV BOX WITH REHEAT COIL
1. SEQUENCE OF OPERATION
   A. OCCUPIED/UNOCCUPIED MODE CONTROL SHALL BE AS SCHEDULED THROUGH THE HEAD END OR IF THE ASSOCIATED AIR SYSTEM. THE SPACE SHALL GO TO UNOCCUPIED MODE AUTOMATICALLY IF THE OCCUPANCY SENSOR INDICATES AN UNOCCUPIED CONDITION FOR MORE THAN 30 MINUTES (ADJ). SPACE SENSOR SHALL HAVE AN OVERRIDE SWITCH THAT WILL PUT THE ZONE INTO OCCUPIED MODE FOR A PERIOD OF 2 HOURS (ADJ.)
   B. THE DAMPER SHALL MODULATE BETWEEN MAX AND MIN AIRFLOW SET POINTS TO SATISFY SPACE OCC/UNOC TEMPERATURE SET POINT
   C. WHEN THE DAMPER IS AT ITS MINIMUM POSITION ON A FURTHER DROP IN TEMPERATURE THE NORMALLY OPEN HEATING VALVE SHALL MODULATE TO MAINTAIN OCC/UNOC SET POINT, SUBJECT TO A MAXIMUM DISCHARGE AIR TEMPERATURE OF 80°F (ADJ.)
   D. WHEN THE DISCHARGE AIR TEMPERATURE HAS REACHED 85°F (ADJ.), ON A FURTHER DECREASE IN TEMPERATURE THE VALVE SHALL MAINTAIN DISCHARGE AIR TEMPERATURE AND THE MINIMUM BOX AIRFLOW SET POINT SHALL BE RESET HIGHER
   E. WHEN THE SPACE CARBON DIOXIDE LEVEL EXCEEDS THE SET POINT THE MINIMUM BOX AIRFLOW SET POINT SHALL BE RESET HIGHER
2. ALARMS
   A. HIGH SPACE TEMPERATURE (10 MINUTE DELAY)
   B. LOW SPACE TEMPERATURE (10 MINUTE DELAY)
   C. LOW AIR FLOW
3. GRAPHICS
   A. ALARM CONDITION
   B. OCCUPIED/UNOCCUPIED MODE
   C. SPACE TEMPERATURE
   D. HEATING VALVE COMMAND PERCENTAGE
   E. DAMPER COMMAND PERCENTAGE
   F. DISCHARGE AIR TEMPERATURE
   G. ROOM OCCUPANCY SENSOR STATUS
   H. SUPPLY AIR FLOW

NON-LAB AIR VALVE WITH REHEAT COIL

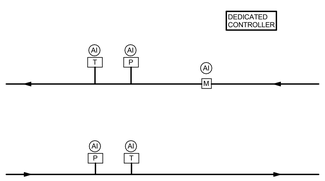
NOT TO SCALE



HEATING AND COOLING CHILLED WATER, HOT WATER FAN/COIL UNITS
1. SEQUENCE OF OPERATION
   A. ON A CALL FOR HEATING OR COOLING AS SENSED BY A SPACE TEMPERATURE SENSOR THE FAN SHALL START
   B. THE HEATING AND COOLING VALVES SHALL MODULATE IN SEQUENCE WITH A DEAD BAND TO SATISFY THE SPACE TEMPERATURE SET POINT
   C. WHEN BOTH VALVES ARE CLOSED FOR 5 MINUTES (ADJ.) THE FAN SHALL SHUT DOWN
   D. A MOISTURE SENSOR AT THE HIGH POINT OF THE COOLING COIL DRAIN PAN SHALL SHUT DOWN THE UNIT WHEN ACTIVATED
2. ALARMS
   A. HIGH SPACE TEMPERATURE
   B. LOW SPACE TEMPERATURE
   C. DRAIN PAN OVERFLOW
3. GRAPHICS
   A. ALARM CONDITION
   B. SPACE TEMPERATURE
   C. HEATING AND COOLING VALVE COMMAND PERCENTAGES
   D. UNIT STATUS

TYPICAL HEATING/COOLING FAN COIL UNIT

NOT TO SCALE



HTHW SERVICE ENTRANCE CONTROL

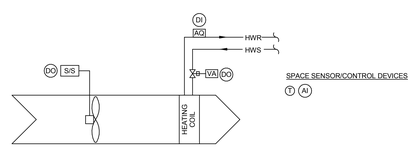
NOT TO SCALE

1. ALARMS
   a. HIGH ENTERING WATER TEMPERATURE
   b. HIGH ENTERING WATER PRESSURE
2. GRAPHICS
   a. ALARMS
   b. ENTERING AND LEAVING TEMPERATURE
   c. ENTERING AND LEAVING PRESSURE
   d. FLOW
   e. BTH AND BTUH

COMMON REQUIREMENTS FOR SEQUENCES OF OPERATIONS
1. ALL SETPOINTS SHALL BE PROGRAMMED ADJUSTABLE AT THE OPERATOR WORKSTATION.
2. ALL HIGH AND LOW LIMITS SHALL BE ALARMED.
3. ALL COOLING COILS LOCATED IN OR OVER OCCUPIED SPACES SHALL HAVE A CONDENSATE PAN HIGH LEVEL ALARM.
4. ALL HYDRONIC PROOF OF FLOW SHALL BE VIA CURRENT SENSORS.
5. ALL FAN PROOF OF OPERATION SHALL BE HIGH AND LOW CURRENT SENSORS.
6. ALL UNIT SMOKE DETECTION, FREEZE PROTECTION, HIGH CONDENSATE LEVEL EMERGENCY SHUTDOWN/HIGH/LOW LIMIT AND/OR OTHER PROTECTIVE DEVICES SHALL BE DONE BY HARDENED RELAY INTERLOCK WITH LOCAL MANUAL RESET AND SHALL NOT RELY ON CONTROL SYSTEM PROGRAMMING.
7. ALL DAMPERS SHALL HAVE OPEN AND CLOSED STATUS INDICATION THROUGH END SWITCHES OR INTEGRAM ACTUATOR FEATURE.
8. ALL DAMPERS SHALL HAVE AN INDEPENDENT CONTROL POINT. MULTIPLE DAMPERS OF DIFFERENT APPLICATIONS (I.E., OUTDOOR, RETURN, RELIEF) CONTROLLED FROM A SINGLE POINT ARE NOT ACCEPTABLE.
9. ALL AIR HANDLING SYSTEMS WITH DUCTED OUTDOOR AIR SHALL BE PROVIDED WITH FREEEZE PROTECTION.

NOTE: THE FOLLOWING ARE 2004 ASHRAE 90.1 MANDATORY PROVISIONS REQUIRED.
10. ALL ZONES SHALL BE THERMOSTATICALLY CONTROLLED RESPONDING TO TEMPERATURE WITHIN THE ZONE AT A MINIMUM.
11. WHERE THERMOSTATIC ZONE CONTROLS ARE USED FOR BOTH HEATING AND COOLING, CONTROL SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5 DEGREES FAHRENHEIT WHERE HEATING/COOLING IS AT MINIMUM OR SHUTOFF, EXCEPT FOR SPECIAL OCCUPANCIES SUCH AS HOSPITALS, MUSEUMS. PROCESS APPLICATIONS WHERE STRICT TEMPERATURE/HUMIDITY CONTROL IS REQUIRED.
12. ALL ZONES WITH SEPARATE HEATING AND COOLING CONTROL SHALL HAVE SETPOINT OVERLAP RESTRICTION TO PREVENT SIMULTANEOUS HEATING AND COOLING.
13. ALL SYSTEMS SHALL HAVE OFF-HOUR CONTROLS INCLUDING:
   A. AUTOMATIC SHUTDOWN BY PROGRAM SCHEDULE, OCCUPANT SENSOR, MANUAL TIMER, OR SECURITY SYSTEM INTERLOCK
   B. TEMPERATURE SETBACK CONTROL SHALL HAVE CAPABILITY TO AUTOMATICALLY CYCLE SYSTEMS DURING UNOCCUPIED MODE DOWN/UP TO THE FOLLOWING ADJUSTABLE SETBACK SETPOINTS:
      HEATING: 55 DEGREES FAHRENHEIT
      COOLING: 90 DEGREES FAHRENHEIT AND 60% RH
   C. OPTIMUM START CONTROL FOR ALL INDIVIDUAL AIR SYSTEMS WHERE TOTAL BUILDING DESIGN CFM IS 10,000 CFM OR GREATER TO MINIMIZE DEMAND LOAD.
   D. ALL STAIR AND ELEVATOR SHAFT VENTS SHALL HAVE NORMALLY CLOSED SMOKE DAMPER INTERLOCKED WITH FIRE ALARM SYSTEM TO OPEN IN ALARM CONDITION.
   E. ALL OUTDOOR SUPPLY AND EXHAUST/RELIEF VENTS IN BUILDINGS (3) STORIES AND HIGHER AND WHERE INDICATED SHALL HAVE LOW LEAKAGE MOTORIZED DAMPERS WITH SHUTOFF CONTROLS.
   F. ALL FANS WITH MOTORS GREATER THAN 3/4 HP SHALL HAVE AUTOMATIC SHUTDOWN CONTROL.
   G. ALL SYSTEMS WITH OUTDOOR AIR CAPACITIES GREATER THAN 3,000 CFM SERVING HIGH OCCUPANCY AREAS (>100 P/1,000 FT2) SHALL HAVE OUTDOOR AIR REDUCTION CONTROL PER ASHRAE 62 EXCEPT SYSTEMS WITH ENERGY RECOVERY OR DEDICATED TO PROVIDING MAKEUP AIR FOR EXHAUST.

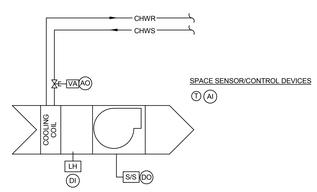
NOTE: THE FOLLOWING ARE 2004 ASHRAE 90.1 PRESCRIPTIVE PATH REQUIREMENTS.
14. ALL SYSTEMS >135,000 BTUH SHALL HAVE AIR OR WATERSIDE ECONOMIZER AND CONTROL
15. AIR ECONOMIZERS SHALL:
   A. BE CAPABLE OF BEING SEQUENCED WITH MECHANICAL COOLING EQUIPMENT AND SHALL NOT BE CONTROLLED BY ONLY MIXED AIR TEMPERATURE.
   B. AIR ECONOMIZER SHALL HAVE DIFFERENTIAL ENTHALPY ECONOMIZER HIGH-LIMIT SHUTOFF CONTROL WITH ECONOMIZER OFF CONTROL SETTING WHEN OUTDOOR AIR ENTHALPY EXCEEDS RETURN AIR ENTHALPY.
   C. AIR ECONOMIZER SHALL PROVIDE MEANS TO RELIEVE EXCESS OUTDOOR AIR AND PREVENT OVERPRESSURIZATION OF BUILDING.
16. WATER ECONOMIZERS SHALL
   A. BE CAPABLE OF PROVIDING PARTIAL COOLING EVEN WHEN ADDITIONAL MECHANICAL COOLING IS REQUIRED TO MEET REMAINDER OF LOAD.
17. ZONE THERMOSTATIC CONTROLS SHALL PREVENT REHEATING, RECOOLING OR SIMULTANEOUS HEATING/COOLING EXCEPT AS ALLOWED PER ASHRAE 90.1-6.5.2.1.
18. VARIABLE AIR VOLUME STATIC PRESSURE SENSOR SHALL BE LOCATED SUCH THAT SETPOINT IS NO GREATER THAN ONE-THIRD THE TOTAL DESIGN FAN SPEED, EXCEPT WHEN SPEED SETPOINT IS RESET.
19. ALL VARIABLE VOLUME AIR SYSTEMS WITH VAV BOXES SHALL HAVE STATIC PRESSURE SETPOINT RESET CONTROL POWERING SETPOINT UNTIL ONE DAMPER IS NEARLY 90% OPEN.
20. ALL VARIABLE VOLUME WATER SYSTEMS SHALL BE CONTROLLED FROM DP SENSORS LOCATED AT END OF DISTRIBUTION SYSTEM WHERE MULTIPLE SENSORS ARE REQUIRED, CONTROL TO SENSOR FARTHEST FROM SETPOINT.
21. CONSTANT VOLUME CHILLED AND HOT WATER SYSTEMS WITH DESIGN CAPACITY EXCEEDING 300,000 BTUH SHALL HAVE SUPPLY WATER TEMPERATURE RESET CONTROL



HEATING ONLY HOT WATER UNIT HEATERS
1. SEQUENCE OF OPERATION
   A. ON A CALL FOR HEAT FROM SPACE SENSOR, A TWO POSITION, NORMALLY OPEN HEATING VALVE SHALL OPEN
   B. SUBJECT TO A STRAP ON AQUASTAT, THE FAN SHALL START
   C. WHERE A WALL MOUNTED SENSOR IS INDICATED PROVIDE WITH "FAN: ON-AUTO" SWITCH
2. ALARMS
   A. LOW SPACE TEMPERATURES
3. GRAPHICS
   A. ALARM CONDITION
   B. SPACE TEMPERATURE
   C. VALVE COMMAND STATUS

TYPICAL HEATING ONLY HOT WATER UNIT HEATERS

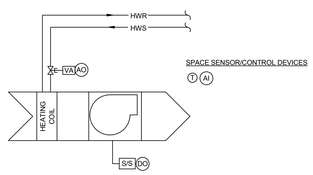
NOT TO SCALE



COOLING ONLY CHILLED WATER FAN/COIL UNITS
1. SEQUENCE OF OPERATION
   A. ON A CALL FOR COOLING AS SENSED BY A SPACE TEMPERATURE SENSOR THE FAN SHALL START
   B. THE NORMALLY CLOSED VALVE SHALL MODULATE TO SATISFY SPACE TEMPERATURE
   C. WHEN THE VALVE IS CLOSED FOR 5 MINUTES (ADJ.) THE FAN SHALL SHUT DOWN
   D. A MOISTURE SENSOR AT THE HIGH POINT OF THE COOLING COIL DRAIN PAN SHALL SHUT DOWN THE UNIT WHEN ACTIVATED
2. ALARMS
   A. HIGH SPACE TEMPERATURE
   B. DRAIN PAN OVERFLOW
3. GRAPHICS
   A. ALARM CONDITION
   B. SPACE TEMPERATURE
   C. COOLING VALVE COMMAND PERCENTAGES
   D. UNIT STATUS

TYPICAL COOLING ONLY FAN COIL UNIT

NOT TO SCALE



HEATING ONLY HOT WATER FAN/COIL UNITS
1. SEQUENCE OF OPERATION
   A. ON A CALL FOR HEATING AS SENSED BY A SPACE TEMPERATURE SENSOR THE FAN SHALL START
   B. THE NORMALLY OPEN VALVE SHALL MODULATE TO SATISFY SPACE TEMPERATURE
   C. WHEN THE VALVE IS CLOSED FOR 5 MINUTES (ADJ.) THE FAN SHALL SHUT DOWN
   D. UNITS LOCATED IN AREAS WITH EMERGENCY EXHAUST SYSTEMS SHALL HAVE THE VALVE FULLY OPEN AND THE FAN OFF DURING THE EMERGENCY CONDITION TO PREVENT FREEZING
2. ALARMS
   A. HIGH SPACE TEMPERATURE
   B. DRAIN PAN OVERFLOW
3. GRAPHICS
   A. ALARM CONDITION
   B. SPACE TEMPERATURE
   C. COOLING VALVE COMMAND PERCENTAGES
   D. UNIT STATUS

TYPICAL HEATING ONLY FAN COIL UNIT

NOT TO SCALE

MISCELLANEOUS MONITORING POINTS

GENERAL
1. SEQUENCE OF OPERATION
   A. MONITOR LOCAL CONTACTS OF MISCELLANEOUS EQUIPMENT PACKAGED CONTROLS FOR DIGITAL AND ANALOG INFORMATION. VERIFY DRY OR POWERED STATUS OF LOCAL CONTACT IN FIELD.
   B. PROVIDE SENSORS AND/OR TRANSMITTERS FOR ANY INFORMATION NOTED BELOW THAT IS NOT AVAILABLE THROUGH PACKAGED CONTROLS.
2. ALARMS
   A. PACKAGED CONTROL SYSTEM OUTPUT ALARMS
   B. AS NOTED

DOMESTIC WATER HEATERS AND RECIRCULATING PUMPS
1. SEQUENCE OF OPERATION
   A. MONITOR DOMESTIC HOT WATER SUPPLY TEMPERATURE FOR EACH HEATER
   B. MONITOR ON/OFF OPERATING STATUS FOR EACH HEATER
   C. MONITOR OPERATING STATUS OF EACH RECIRC PUMP
2. ALARMS
   A. HIGH HOT WATER SUPPLY TEMPERATURE
   B. LOW HOT WATER SUPPLY TEMPERATURE
   C. RECIRC. PUMP FAILURE
   D. GENERAL HEATER FAULT/FAILURE
3. GRAPHICS
   A. ALARM CONDITIONS
   B. HOT WATER SUPPLY TEMPERATURE
   C. RECIRC PUMP STATUS
   D. HEATER STATUS

DOMESTIC WATER BOOSTER PUMPS
1. SEQUENCE OF OPERATION
   A. MONITOR GENERAL STATUS AND ALARM OF BOOSTER PUMP PACKAGED UNIT
   B. MONITOR DOMESTIC WATER INLET AND OUTLET SUPPLY PRESSURES
2. ALARMS
   A. GENERAL FAULT/FAILURE
   B. LOW/HIGH INLET PRESSURE
   C. LOW/HIGH OUTLET PRESSURE
3. GRAPHICS
   A. ALARM CONDITIONS
   B. PACKAGED BOOSTER PUMP STATUS
   C. INLET OUTLET SUPPLY PRESSURE

SEWAGE EJECTORS/SUMP PUMPS
1. SEQUENCE OF OPERATION
   A. MONITOR GENERAL STATUS AND ALARM OF PACKAGED CONTROLS
2. ALARMS
   A. GENERAL FAULT/FAILURE
3. GRAPHICS
   A. ALARM CONDITIONS
   B. PACKAGED PUMP STATUS

LEAK DETECTION
1. SEQUENCE OF OPERATION
   A. MONITOR GENERAL STATUS AND ALARM & PACKAGED CONTROLS
2. ALARMS
   A. GENERAL ALARM INDICATION FOR LEAK AND FAULT/FAILURE
3. GRAPHICS
   A. ALARM CONDITION

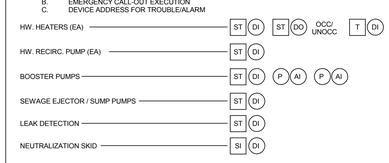
LIGHTING POWER PANELS, NORMAL POWER GENERATOR POWER SWITCHBOARDS
1. SEQUENCE OF OPERATION
   A. MONITOR DATA, STATUS AND ALARMS AVAILABLE THROUGH A LEGACY INTERFACE.
   B. TOTALIZE POWER CONSUMPTION ON MONTHLY AND YEARLY BASIS WITH REPORTING
2. ALARMS
   A. GENERAL FAULT/FAILURE
3. GRAPHICS
   A. STATUS
   B. CURRENT POER DEMAND
   C. PEAK POWER DEMAND FOR MONTH
   D. MTD POWER CONSUMPTION
   E. YTD POWER CONSUMPTION

GENERAL SPACE LIGHTING CONTROL RELAY PANEL
1. SEQUENCE OF OPERATION
   A. ENABLE SYSTEM ON/OFF ON GENERAL OCC/UNOCC SCHEDULE
2. ALARMS
   A. NONE
3. GRAPHICS
   A. SYSTEM GENERAL OCC/UNOCC STATUS

AUTOMATIC TRANSFER SWITCH
1. SEQUENCE OF OPERATION
   A. MONITOR ATS NORMAL AND STANDBY POWER STATUS
2. ALARMS
   A. POWER FAILURE
3. GRAPHICS
   A. ALARM CONDITIONS
   B. ATS STATUS: NORMAL/GENERATOR/FAULT

LIGHTING CONTROL (INDIVIDUAL ZONES)
1. SEQUENCE OF OPERATION
   A. MONITOR EACH ROOM OCCUPPANCY SENSOR ZONE (SEE ELECTRICAL DRAWINGS) AND ENABLE HVAC SYSTEM CONTROL MODES AS INDICATED IN SEQUENCES
2. ALARMS
   A. NONE
3. GRAPHICS
   A. ZONE OCC/UNOC STATUS (EACH ZONE)

FIRE ALARM
1. SEQUENCE OF OPERATION
   A. MONITOR GENERAL STATUS AND ALARM AND ENABLE HVAC SYSTEM. SYSTEM CONTROL MODES AS INDICATED IN SEQUENCES
   B. MONITOR INDIVIDUAL ADDRESSABLE INTERFACE DEVICES INTERFACED WITH HVAC SYSTEM.
2. ALARMS
   A. GENERAL ALARM
3. GRAPHICS
   A. ALARM/TROUBLE/NORMAL STATUS
   B. EMERGENCY CALL-OUT EXECUTION
   C. DEVICE ADDRESS FOR TROUBLE/ALARM



NOTE: REFER TO PLANS AND SPECIFICATIONS OF ALL TRADES FOR QUANTITIES AND LOCATIONS.

HVAC CONTROLS LEGEND

CONTROL ABBREVIATIONS

BMS	CENTRAL BUILDING MANAGEMENT SYSTEM
C	COMMON
EA	EXHAUST AIR
MA	MIXED AIR
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OA	OUTDOOR AIR
RA	RETURN AIR
SA	SUPPLY AIR

CONTROL SYMBOLS

- 2-WAY CONTROL VALVE
- FS — FLOW SWITCH
- M — MOTORIZED DAMPER
- DA — DAMPER ACTUATOR
- RS — DUCT SMOKE DETECTOR
- VA — VALVE ACTUATOR
- VFD — VARIABLE FREQUENCY CONTROLLER
- AFS — AIR FLOW STATION
- AVERAGING SENSOR
- S_P — PILOT LIGHT SWITCH
- M_T — MARK TIME SWITCH
- PILOT LIGHT
- SD — SMOKE DAMPER
- FSD — COMBINATION FIRE / SMOKE DAMPER
- FM — FLOW METER
- AID — FIRE ALARM ADDRESSABLE INTERFACE DEVICE
- SPACE SENSOR / TRANSMITTER
- SENSOR / TRANSMITTER

AQ	AQUASTAT
AFS	AIR FLOW STATION
BG	EMERGENCY BREAK GLASS
CS	CURRENT SENSOR
CO2	CARBON DIOXIDE LEVEL
CO	CARBON MONOXIDE
DA	DAMPER ACTUATOR
DC	DOOR / WINDOW CONTACT
DEW	DEW POINT
DP	DIFFERENTIAL PRESSURE
ES	END SWITCH
F	FAULT
FV	FACE VELOCITY
GD	GAS DETECTION
H	HUMIDITY (RELATIVE)
HS	HORN/SPEAKER STROBE
L	LIQUID LEVEL
LK	LEAK
LVL	LEVEL
OX	OXYGEN LEVEL
OCC	OCCUPANCY
P	PRESSURE
PB	PUSH BUTTON
PN	POSITION
SPD	SPEED
SP	STATIC PRESSURE
S/S	START / STOP
ST	STATUS
T	TEMPERATURE
VA	VALVE ACTUATOR

- L — LOW LIMIT INDICATION
- H — HIGH LIMIT INDICATION
- O — OPEN POSITION INDICATION
- C — CLOSED POSITION INDICATION

INTERFACE

AI	ANALOG INPUT
AO	ANALOG OUTPUT
BAC	BACNET MS / TP LAN INTERFACE
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
HDW	HARDWIRE THRU RELAY
LEG	LEGACY MAPPED INTERFACE
LON	LONWORKS INTERFACE
RS	MAPPED RS INTERFACE

21-10-038

project title: HVAC CONTROLS

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project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
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sheet 2 of 2
date 11-21-2012
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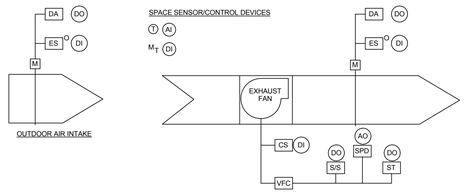
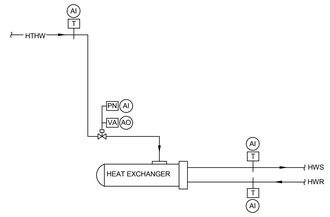


EXHAUST FANS
1. SEQUENCE OF OPERATION
   A. THE FAN SHALL CYCLE ON/OFF TO MAINTAIN SPACE TEMP SET POINT
   B. FAN SHALL BE ENABLED UPON MANUAL INITIATION OF MARK TIME SWITCH
   C. INTERLOCK O.A. DAMPER TO OPEN WHEN FAN IS ON
   D. FAN SPEED SHALL RESET ON OUTDOOR AIR TEMPERATURE 20HZ @ 30°F, 60HZ @ 70°F (ADJ.)
   E. WHERE ROOM ALSO SERVED BY FCU FAN ENABLED OFF AND FCU ENABLE ON. WHEN OUTDOOR AIR TEMPERATURE ABOVE 70°F (ADJ.) UNLESS MT INITIATED BELOW THEM FAN ON AND FCU OFF. BELOW 70°F OUTDOOR AIR TEMPERATURE, FAN ON, FCU OFF
   F. EMERGENCY SHUTDOWN COMMAND FROM BUILDING FIRE ALARM SYSTEM FOR BOTH ALARM CONDITION IN ACCORDANCE WITH AHJ AND OWNER'S REQUIREMENTS AND FOR A MANUAL EMERGENCY SHUTDOWN COMMAND FOR FANS 2,000 CFM AND GREATER
2. ALARMS
   A. FAN FAILURE
3. GRAPHICS
   A. ALARM CONDITION
   B. FAN STATUS
   C. FAN SPEED
   D. VFC FAULT
   E. SPACE TEMPERATURE
   F. OUTDOOR AIR TEMPERATURE
   G MARK TIME INITIATION INDICATION
   H. OUTDOOR AIR DAMPER POSITION

EXHAUST FAN CONTROL #2 (TYPICAL ELECTRICAL/MECHANICAL/TELE-DATA ROOM)

NOT TO SCALE

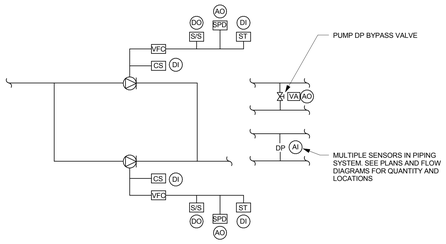


TYPICAL HTHW TO WATER HEAT EXCHANGERS
1. SEQUENCE OF OPERATION
   A. THE HEAT EXCHANGER SEQUENCE SHALL BE ENABLED WHENEVER ITS ASSOCIATED SYSTEM PUMPS ARE ENABLED AND OPERATION IS PROVEN
   B. THE CONTROL VALVES SHALL MODULATE TO MAINTAIN DISCHARGE WATER TEMPERATURE SET POINT
   C. DISCHARGE WATER SET POINT SHALL BE RESET BASED ON OUTSIDE AIR TEMPERATURE FROM 180°F (ADJ.) AT 35°F OUTSIDE AIR TO 140°F (ADJ.) AT 55°F OUTSIDE AIR
2. ALARMS
   A. LOW DISCHARGE WATER TEMPERATURE
   B. HIGH DISCHARGE WATER TEMPERATURE
3. GRAPHICS
   A. ALARM CONDITION
   B. SYSTEM STATUS: ENABLED/DISABLED
   C. VALVE COMMAND PERCENTAGES
   D. DISCHARGE WATER TEMPERATURE SET POINT
   E. DISCHARGE WATER TEMPERATURE
   F. ENTERING WATER TEMPERATURE
   G. ENTERNING HTHW TEMPERATURE

TYPICAL HTHW TO WATER HEAT EXCHANGER CONTROL

NOT TO SCALE

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



VARIABLE SPEED LEAD/LAG PUMP CONTROL
1. SEQUENCE OF OPERATION
   A. HEATING PUMPS SHALL BE ENABLED YEAR ROUND. WHENEVER AT LEAST ONE HEATING VALVE IS COMMANDED TO ANY OPEN PERCENTAGE. WHEN ALL BUILDING HEATING VALVES ARE COMMANDED CLOSED THE SYSTEM SHALL BE DISABLED
   B. CHILLED WATER PUMPS SHALL BE ENABLED ON/OFF BY SWITCHOVER COMMAND FROM BMS.
   C. PUMPS SHALL RUN IN PARALLEL UNLESS ONE PUMP FAILS
   D. UPON FAILURE OF THE LEAD PUMP AS SENSED BY THE CURRENT TRANSFORMERS OR FAILURE OF THE DRIVE IT SHALL SHUT DOWN AND THE LAG PUMP SHALL START AUTOMATICALLY
   E. PUMP SPEED SHALL BE VARIED AS REQUIRED TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE. IF MULTIPLE DIFFERENTIAL PRESSURE TRANSMITTERS ARE USED IN THE SYSTEM THE LOWEST CONSTANTLY POLLED PRESSURE SHALL BE USED
   F. WHENEVER THE VFC IS AT MINIMUM SPEED AND ALL DIFFERENTIAL PRESSURE SENSORS ARE ABOVE SET POINT THE BY-PASS VALVE SHALL MODULATE OPEN TO MAINTAIN SET POINT AT THE LOWEST SENSOR
   G. UNIT SHALL REMAIN OFF WHENEVER AN AREA RCU IS RUNNING.
2. ALARMS
   A. PUMP FAILURE
   B. DRIVE FAILURE
   C. SYSTEM FAILURE (BOTH PUMPS NOT RUNNING)
3. GRAPHICS
   A. ALARM CONDITIONS
   B. SPEED COMMAND PERCENTAGE
   C. PUMP STATUSES
   D. SYSTEM DIFFERENTIAL PRESSURE(S)
   E. MANUAL LEAD/LAG SELECTION
   F. MANUAL SYSTEM ENABLE/DISABLE
   G. BYPASS VALVE COMMAND PERCENTAGE

VARIABLE SPEED LEAD/LAG PUMP CONTROL

NOT TO SCALE

LAB EQUIPMENT

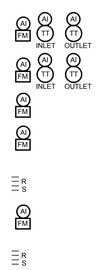
GROWTH CHAMBERS ----------
FRIDGE/FREEZE ----------
COLD ROOMS ----------

MISCELLANEOUS LAB MONITORING POINTS

MISCELLANEOUS LAB MONITORING POINTS
1.SEQUENCE OF OPERATION
   a.MONITOR LOCAL CONTACTS OF EQUIPMENT FOR DIGITAL AND ANALOG INFORMATION. VERIFY DRY OR POWERED STATUS OF LOCAL CONTACT IN FIELD.
   b.PROVIDE SENSORS AND/OR TRANSMITTERS FOR NON-AVAILABLE INFORMATION.
2.ALARMS
   a.PACKAGED CONTROL SYSTEM OUTPUT ALARMS
   b.AS NOTED
3.GRAPHICS (FOR EACH PIECE OF EQUIPMENT MONITORED AS NOTED)
   a.ALARM CONDITIONS
   b.TEMPERATURES
   c.PRESSURES
   d.STATUSES
   e.PH LEVEL

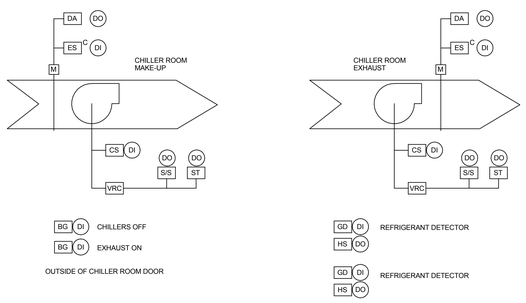
ENERGY MONITORING

DOMESTIC HOT WATER ----------
PROCESS HOT WATER ----------
DOMESTIC COLD WATER ----------
PROCESS COLD WATER ----------
NATURAL GAS ----------
STORM WATER RECLAMATION ----------
ELECTRIC SWITCHGEAR & PANELS ------



NOTE:
INFORMATION REQUIRED FOR ENERGY MONITORING ALSO INDICATED ELSEWHERE

ENERGY MONITORING
1. SEQUENCE OF OPERATION
a. CALCULATE AND TREND-LOG THE FOLLOWING REAL TIME BTU PER HOUR USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL BTU AND TOTALIZED BTU FOR THE FOLLOWING SYSTEMS:
   a. CHILLED WATER
   b. TOTAL HIGH TEMP HOT WATER
   c. DOMESTIC HOT WATER
   d. PROCESS HOT WATER
   HVAC SYSTEM HTHW TOTAL
   e. ENERGY RECOVERY LOOP
b. CALCULATE AND TREND-LOG THE FOLLOWING ELECTRICAL REAL TIME KW USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL KWH AND TOTALIZED KWH FOR THE FOLLOWING SYSTEMS:
   a. TOTAL BUILDING
   b. HVAC EQUIPMENT
   c. LIGHTING
   d. RECEPTACLE LOAD
   e. PEAK DEMAND ON A DAILY, MONTHLY AND ANNUAL BASIS
c. CALCULATE AND TREND-LOG THE FOLLOWING PLUMBING REAL TIME GALLON PER HOUR USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL GALLONS AND TOTALIZED GALLONS FOR THE FOLLOWING SYSTEMS:
   a. TOTAL BUILDING USAGE
   b. DOMESTIC COLD WATER
   c. DOMESTIC HOT WATER
   d. PROCESS COLD WATER
   e. PROCESS HOT WATER
   f. STORM WATER RECLAMATION
d. CALCULATE AND TREND-LOG THE FOLLOWING BUILDING ENERGY SAVINGS:
   a. UNOCCUPIED LABORATORY SAVINGS: REAL TIME KW USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL KWH AND TOTALIZED KWH
   i. [THERMAL SAVINGS CALCULATED BASED ON ACTUAL REDUCED AIR FLOW VOLUME AND CURRENT OUTSIDE AND SUPPLY LATENT AND SENSIBLE INFORMATION]
   ii. [ELECTRICAL SAVINGS BASED ON ACTUAL LIGHTING WATTAGE]
   b. ENERGY RECOVERY SAVINGS: REAL TIME KW USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL KWH AND TOTALIZED KWH
2. ALARMS
   a. NO INITIAL ALARMS ARE TO BE PROGRAMMED, HOWEVER THE FUTURE ABILITY TO HAVE ALARMS BASED ON CATALOGED DATA WILL BE ENABLED
3. GRAPHICS
a. REAL TIME BTU PER HOUR USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL BTU AND TOTALIZED BTU FOR THE FOLLOWING SYSTEMS:
   a. CHILLED WATER
   b. TOTAL HTHW
   c. DOMESTIC HOT WATER
   d. PROCESS HOT WATER
   e. HVAC SYSTEM STEAM TOTAL
   f. ENERGY RECOVERY LOOP
b. REAL TIME KW USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL KWH AND TOTALIZED KWH FOR THE FOLLOWING SYSTEMS:
   a. TOTAL BUILDING
   b. HVAC EQUIPMENT
   c. LIGHTING
   d. RECEPTACLE LOAD
   e. PEAK DEMAND ON A DAILY, MONTHLY AND ANNUAL BASIS
c. REAL TIME GALLON PER HOUR USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL GALLONS AND TOTALIZED GALLONS FOR THE FOLLOWING SYSTEMS:
   a. TOTAL BUILDING USAGE
   b. DOMESTIC COLD WATER
   c. DOMESTIC HOT WATER
   d. PROCESS COLD WATER
   e. PROCESS HOT WATER
   f. STORM WATER RECLAMATION
d. CALCULATED BUILDING ENERGY SAVINGS:
   a. ESTIMATED OPEN WINDOW ENERGY SAVINGS: REAL TIME KW USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL KWH AND TOTALIZED KWH
   b. ESTIMATED UNOCCUPIED LABORATORY SAVINGS: REAL TIME KW USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL KWH AND TOTALIZED KWH
   c. ENERGY RECOVERY SAVINGS: REAL TIME KW USAGE, AVERAGE DAILY, MONTHLY AND ANNUAL KWH AND TOTALIZED KWH
4. PROVIDE ENERGY
   a. REPORTS SOFTWARE PACKAGE BY ALC
   b. PROVIDE LATEST REVISION ALC SOFTWARE FOR FACULTY



CHILLER ROOM EMERGENCY VENTILATION

NOT TO SCALE

TYPICAL CHILLER ROOM EMERGENCY VENTILATION SYSTEM CONTROL
1. SEQUENCE OF OPERATION
   a. SYSTEM SET-UP: THE CHILLER SYSTEM SHALL BE SET UP WITH SPEAKER ALERT SOUNDS AUDIBLY DIFFERENT THAN THAT USED FOR THE FIRE ALARM. STROBE FREQUENCIES SHALL BE SET SUBSTANTIALLY SLOWER THAN THAT OF THE FIRE ALARM. ALARM LEVELS AND CONTROL SHALL BE SET UP IN ACCORDANCE WITH ASHRAE 15, APPLICABLE CODES AND THE RECOMMENDATION OF THE CHILLER AND REFRIGERANT MANUFACTURERS.
   b. REFRIGERANT PRESENCE ALERT: IF REFRIGERANT IS DETECTED IN THE ROOM BUT IS BELOW THE ALARM LEVEL A YELLOW WARNING STROBE SHALL FLASH AND A CRITICAL BMS ALARM SHALL BE GENERATED.
   c. SYSTEM INITIATION: THE SYSTEM SHALL BE INITIATED BY ANY ONE OF MULTIPLE REFRIGERANT GAS DETECTORS IN THE ROOM, BY A COMMAND AT THE HEAD END OR BY MANUAL BREAK-GLASS SWITCHES OUTSIDE OF THE ROOM AT THE MAIN CHILLER ROOM DOOR. WHEN THE SYSTEM IS INITIATED THE CHILLERS SHALL SHUT DOWN AND AN ALARM SHALL SOUND AND A RED ALARM STROBE SHALL FLASH CONTINUOUSLY. UPON SATISFYING A 15 SECOND (ADJ) DELAY THE FANS SHALL BE ALLOWED TO START.
   d. FAN CONTROL: UPON SATISFYING THE INITIATION SEQUENCE THE FAN DAMPERS SHALL OPEN. ONCE OPEN TO 10% THE MAKE-UP AND EXHAUST FANS SHALL START AND RAMP UP TO THEIR OPERATING SPEED OVER 120 SECONDS (ADJ).
2. ALARMS
   a. REFRIGERANT PRESENCE ALERT
   b. SYSTEM INITIATED BY GAS DETECTION
   c. SYSTEM INITIATED BY BREAK-GLASS SWITCH
   d. CHILLERS SHUT DOWN BY BREAK-GLASS SWITCH
   e. MAKE-UP FAN FAILURE
   f. MAKE-UP DAMPER FAILURE
   g. EXHAUST FAN FAILURE
   h. EXHAUST DAMPER FAILURE
3. GRAPHICS
   a. ALARM CONDITIONS
   b. SYSTEM STATUS
   c. MAKE-UP FAN STATUS
   d. MAKE-UP FAN SPEED
   e. EXHAUST FAN STATUS
   f. EXHAUST FAN SPEED
   g. REFRIGERANT LEVELS
   h. REMOTE ACTIVATION

drawing title: HVAC CONTROLS

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2 of 2

DRAWING PREPARED BY:
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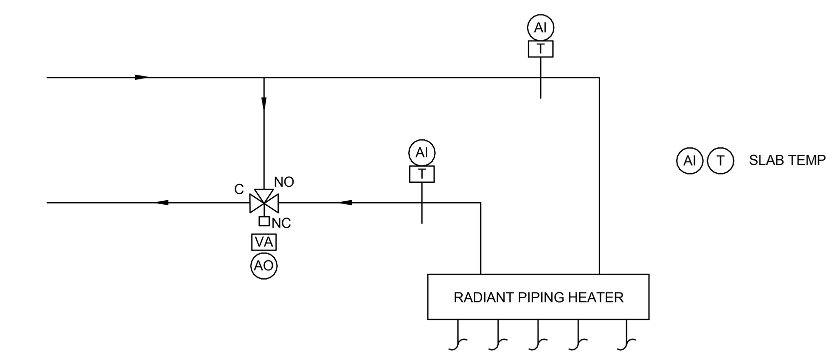
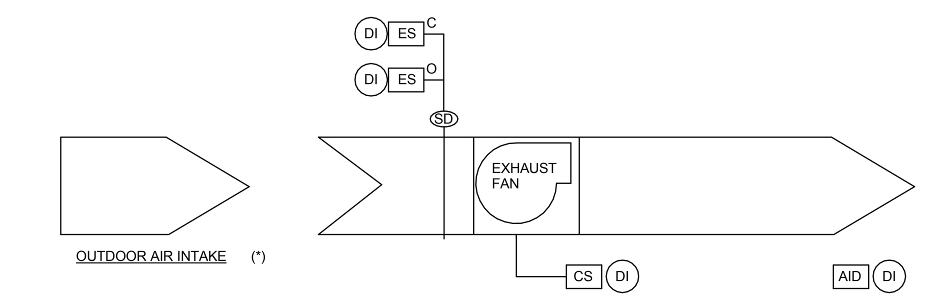


RADIANT HEATING SYSTEM CONTROL
1. SEQUENCE OF OPERATION: ZONE PUMPING AND TERMINAL CONTROL
   A. SYSTEM ENABLING: RADIANT SYSTEMS SHALL BE ENABLED WHENEVER THE OUTSIDE AIR TEMPERATURE IS BELOW 50°F (ADJ.)
   B. IN FLOOR RADIANT: THE 3-WAY VALVE SHALL MODULATE TO MAINTAIN A CONSTANT TEMPERATURE OF 90°F (ADJ.) TO THE MANIFOLD
   C. IF A TEMPERATURE OF 175°F (ADJ.) OR OVER WITH A 3 MINUTE DELAY (ADJ.) IS DETECTED IN THE LOOP THE ZONE SHALL BE DISABLED SUBJECT TO MANUAL SOFTWARE RESET
2. ALARMS
   A. HIGH ZONE WATER TEMPERATURE
3. GRAPHICS
   A. ALARM CONDITIONS
   B. LOOP SUPPLY AND RETURN TEMPERATURES
   C. SYSTEM SUPPLY TEMPERATURE
   D. 3-WAY VALVE COMMAND PERCENTAGE

TYPICAL IN-FLOOR RADIANT CONTROL SCHEMATIC

NOT TO SCALE



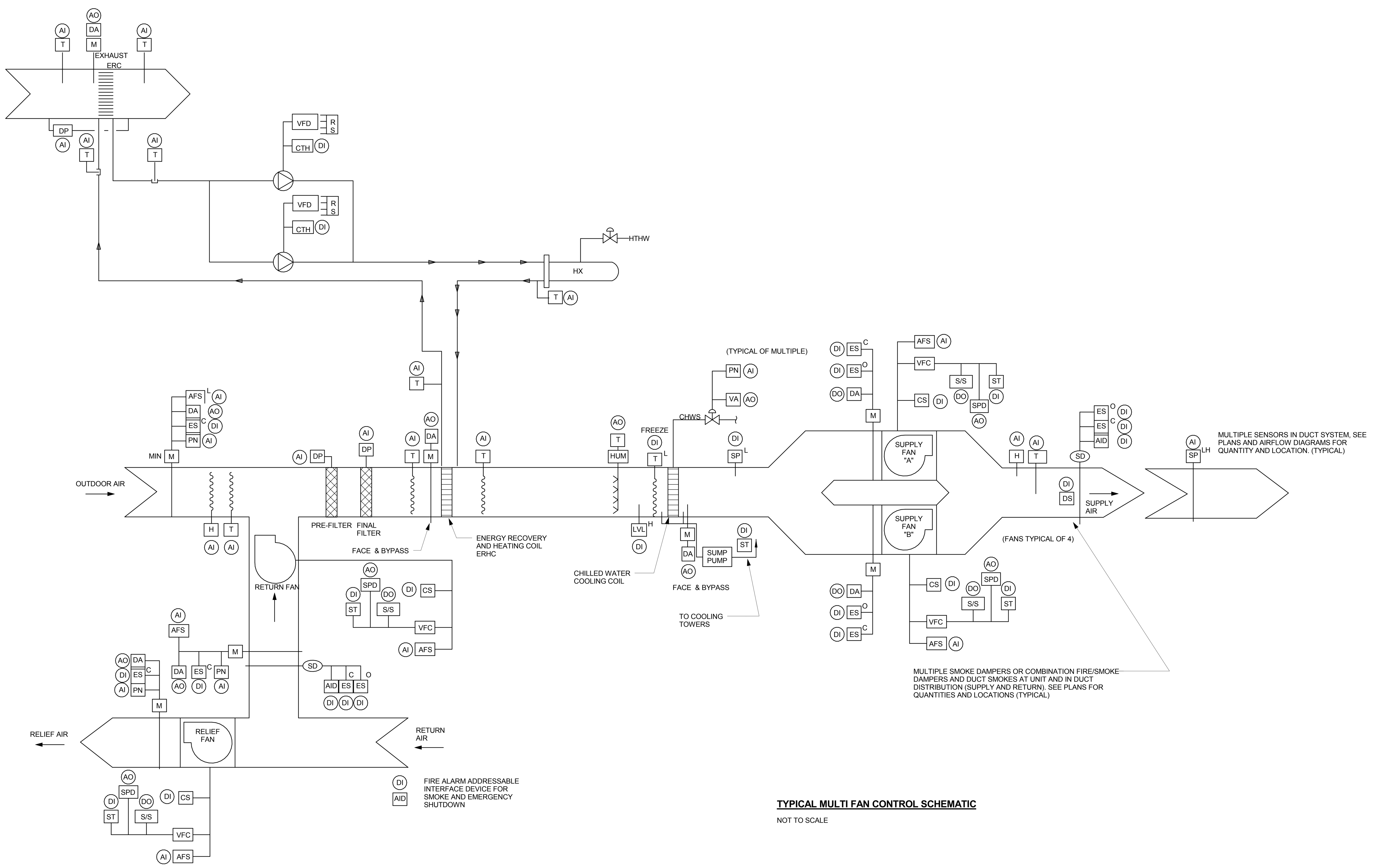
(*)THROUGH 1ST LEVEL ENTRY DOORS WITH FIRE ALARM CONTROLS AND AUTOMATIC OPENERS BY OTHERS.

EXHAUST FANS
1. SEQUENCE OF OPERATION
   A. THE FAN SHALL CYCLE ON/OFF UPON SIGNAL FROM BUILDING FIRE ALARM SYSTEM
   B. MONITOR FAN STATUS AND DAMPER POSITION
2. ALARMS
   A. FAN FAILURE
   B. DAMPER FAILURE
3. GRAPHICS
   A. ALARM CONDITION
   B. FAN STATUS
   C. SMOKE DAMPER POSITION

EXHAUST FAN CONTROL #3 (ATRIUM SMOKE EXHAUST)

NOT TO SCALE

TYPICAL AIR HANDLING UNIT CONTROL
1. DISABLED CONDITION
   A. WHENEVER THE UNIT IS DISABLED FANS SHALL BE OFF, THE SUPPLY AND RETURN SMOKE DAMPERS ALL DAMPERS IN UNIT AND ASSOCIATED DUCT DISTRIBUTION SHALL BE CLOSED, OUTSIDE AIR AND RELIEF AIR DAMPERS SHALL BE CLOSED. THE HEATING COIL VALVE SHALL MODULATE TO MAINTAIN AN INTERNAL CASE TEMPERATURE OF 50°F (ADJ) AT THE UNIT DISCHARGE AIR TEMPERATURE SENSOR. WHENEVER A SUPPLY FAN IS STOPPED ITS DEDICATED ISOLATION DAMPER SHALL BE CLOSED. THE COOLING VALVES SHALL BE FULLY CLOSED WHEN THE UNIT IS OFF
2. RESTART/START COMMAND:
   A. WHEN THE SYSTEM IS STARTED OR RESET, THE HEATING VALVE SHALL BE INDEXED TO FULL OPEN AND THE FREEZE PUMPS SHALL BE INDEXED ON (WHEN O.A. TEMP IS BELOW 40°F), SUPPLY AND RETURN AHU AND DUCT DISTRIBUTION SMOKE DAMPERS SHALL OPEN, SUPPLY FAN ISOLATION DAMPERS AND AHU RETURN DAMPERS SHALL OPEN AND, SUBJECT TO END SWITCHES ON THE DAMPER CLOSED POSITIONS THE FANS SHALL BE SENT A START COMMAND. SUPPLY FANS SHALL RAMP UP OVER 240 SECONDS (ADJ). ONCE FANS AND COILS ARE UNDER STABLE CONTROL AT SET POINT, OUTSIDE AIR AND RELIEF AIR DAMPERS AND ALL COIL FUNCTIONS SHALL COME UNDER CONTROL OVER 240 SECONDS.
3. SINGLE FAN START/STOP:
   A. IF A SINGLE FAN FAILS OR IS SHUT DOWN MANUALLY IT SHALL BE COMPLETELY SHUT DOWN AND ITS DEDICATED ISOLATION SHALL CLOSE. WHEN A SINGLE FAN IS RESTARTED WITH THE SYSTEM RUNNING IT SHALL BE INDEXED TO MINIMUM VFC SPPED, AS ITS ISOLATION DAMPER THEN LIFTS FROM THE CLOSED POSITION, IT SHALL RAMP UP AS FAST AS PRUDENT TO PREVENT BACKSPIN. ONCE ITS SPEED IS WITHIN 10% OF THE SPEED OF THE FAN IN OPERATION ALL FANS SHALL COME UNDER PARALLEL CONTROL
8. STOP/SHUT-DOWN COMMAND:
   UNIT SHUTDOWN SHALL OCCUR UNDER THE CONDITIONS INDICATED BELOW:
   A. THE SUPPLY FAN VARIABLE FREQUENCY CONTROLLERS SHALL RAMP DOWN TO MINIMUM SPEED IN 120 SECONDS (ADJ) AND COMMAND OFF. ALL EMERGENCY COMMANDS SHALL BE A HARD WIRE INTERLOCK THAT IMMEDIATELY DISCONNECTS POWER TO THE SUPPLY AND RETURN FANS AND IS ALARMED AT OPERATOR WORKSTATION. ONCE COMMANDED TO SHUTDOWN, THE UNIT SHALL GO TO DISABLED MODE. EACH EMERGENCY CONDITION SHUTDOWN REQUIRES A MANUAL RESET TO CLEAR ALARM AND ALLOW START OF UNIT, SUBJECT TO OPTIMUM/DEMAND LIMITING CONTROL SEQUENCE
   B. EMERGENCY SMOKE CONDITION IN AHU SUPPLY OR RETURN DUCT DISTRIBUTION AS SENSED BY AHU/DUCT DISTRIBUTION SMOKE DETECTORS
   C. EMERGENCY SHUTDOWN CONDITION AS COMMANDED FROM BUILDING FIRE ALARM SYSTEM FOR BOTH ALARM CONDITION IN ACCORDANCE WITH AHJ AND OWNER REQUIREMENTS AND FOR A MANUAL EMERGENCY SHUTDOWN COMMAND
   D. EMERGENCY SUPPLY FAN STATIC ALARM CONDITION
   E. EMERGENCY RETURN FAN STATIC ALARM CONDITION
   F. EMERGENCY FREEZE CONDITION
   G. EMERGENCY HIGH LEVEL CONDENSATE CONDITION
   H. MANUAL COMMAND FROM THE OPERATOR'S WORKSTATION
9. SUPPLY FAN CONTROL:
   A. THE SUPPLY FANS SHALL RUN CONTINUOUSLY TO MAINTAIN SET POINT OF THE STATIC PRESSURE SENSOR LOWEST FROM SET POINT OF THE MULTIPLE STATIC PRESSURE SENSORS. UPON THE FAULT OR FAILURE OF A FAN, IT SHALL BE TURNED OFF AND UNIT SHALL CONTINUE OPERATION WITH REMAINING FANS.
   B. MULTIPLE FAN APPLICATIONS: OPERATE FANS IN PARALLEL, MODULATING AT THE SAME SPEED. UPON THE FAULT OR FAILURE OF ONE OF THE FANS IN MULTIPLE FAN APPLICATIONS THE SECOND FAN SHALL IMMEDIATELY COME UNDER PRIMARY CONTROL AND IT'S SPEED SHALL MODULATE, SUBJECT TO STATIC PRESSURE CONTROL SET POINT. THE FAILED FAN SHALL SHUT OFF AND IT'S ISOLATION DAMPER SHALL IMMEDIATELY CLOSE TO PREVENT BACKSPIN
   C. STATIC PRESSURE SET POINTS ON EACH FLOOR SHALL BE RESET LOWER WHEN ALL BOX DAMPERS ARE CLOSED 70% OR LESS. STATIC PRESSURE SET POINTS ON EACH FLOOR SHALL BE RESET HIGHER WHEN ANY BOX IS OPENED GREATER THAN 90%.
10. RETURN AND RELIEF FAN CONTROL:
   A. WHENEVER THE OUTSIDE AIR TEMPERATURE IS 55 DEGREES F (ADJ) AND BELOW OR 75 DEGREES F (ADJ) AND ABOVE THE RELIEF FAN SHALL REMAIN OFF AND ITS DAMPER CLOSED. THE RETURN FAN SHALL BE ACTIVE.
   B. WHENEVER THE OUTSIDE AIR IS BETWEEN 55 DEGREES F(ADJ) AND 75 DEGREES F (ADJ) THE RETURN FAN SHALL REMAIN OFF AND ITS DAMPER SHALL BE CLOSED. THE RELIEF SHLL BE ACTIVE.
   C. THE ACTIVE FAN SHALL MODULATE SPEED TO MAINTAIN POSITIVE PRESSURE AT ALL INTERIOR TO EXTERIOR PRESSURE SENSORS.
12. DISCHARGE AIR TEMPERATURE RESET:
   A. AIR HANDLER DISCHARGE AIR TEMPERATURE SHALL BE RESET HIGHER WHENEVER ALL EXTERIOR ZONE TERMINAL REHEAT VALVES ARE COMMANDED TO SOME OPEN POSITION SUBJECT TO A MAXIMUM RETURN RELATIVE HUMIDITY OF 60% AND NO BOX IS COMMANDED TO MAXIMUM COOLING. AIR HANDLER DISCHARGE AIR TEMPERATURE SHALL BE RESET LOWER WHENEVER ANY BOX IS AT MAXIMUM COOLING OR WHEN THE RETURN AIR HUMIDITY RISES ABOVE 65% SUBJECT TO A LOW LIMIT OF 50°F (ADJ).
13. HOT WATER HEATING COIL WITH FREEZE PROTECTION PUMP:
   A. MODULATE CONTROL VALVE IN SEQUENCE WITH THE COOLING VALVE TO MAINTAIN SUPPLY AIR TEMPERATURE SET POINT
   B. ENABLE THE FREEZE PROTECTION PUMP WHENEVER THE OUTDOOR AIR TEMPERATURE IS BELOW 45°F
   C. DISABLED CONDITION: ENABLE THE FREEZE PROTECTION PUMP WHENEVER THE OUTDOOR AIR TEMPERATURE IS BELOW 35°F
   D. MONITOR PUMP STATUS AND IF PUMP FAILS, ALARM AND OPEN HEATING VALVE TO FULL OPEN POSITION
   E. WHEN FAN IS OFF, MODULATE CONTROL VALVE TO MAINTAIN A LOW LIMIT TEMPERATURE OF 50°F AT THE HEATING COIL DISCHARGE AND A LOW LIMIT HOT WATER RETURN TEMPERATURE OF 45°F.
14. HUMIDIFIER:
   SUBJECT TO POSITIVE SUPPLY DUCT STATIC PRESSURE, THE HUMIDIFICATION CONTROL VALVE SHALL BE MODULATED TO MEET A MINIMUM OF 30% RH AS SENSED IN THE LOWEST OF 4 EXHAUST DUCT MOUNTED HUMIDITY SENSORS. CONTROL SHALL BE SUBJECT TO HIGH LIMIT NOT TO EXCEED 90% RH (ADJ). WHEN AIR SYSTEM TEMPERATURE CONTROL IS LOST, CONTROL VALVE SHALL CLOSE. UPON REESTABLISHING SYSTEM TEMPERATURE CONTROL, DELAY START OF HUMIDIFICATION SYSTEM UNTIL ROOM TEMPERATURE HAS STABILIZED. IF STEAM SUPPLY PRESSURE IS LOST, STEAM GENERATOR CONTROL VALVE SHALL CLOSE.
15. PUMP OPERATIONS:
   THE PUMPS SHALL RUN CONTINUOUSLY IN PARALLEL SUBJECT TO SAFTIES WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE THE ENTERINGEXHAUST AIR TEMPERATURE AND WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW THE UNIT DISCHARGE AIR TEMPERATURE SETPOINT. IF A PUMP FAILS THE SECOND PUMP WILL CHANGE SPEED TO MAINTAIN SYSTEM FLOW AND THE FAILED PUMP SHALL BE SHUT DOWN.
16. ENERGY RECOVERY:
   WHEN THE OUTSIDE AIR TEMPERAURE IS ABOVE 75 DEGREES F (ADJ) THE PUMP SHALL BE AT DESIGN FLOW. WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW 55 DEGREES F (ADJ) THE PUMPS SHALL MODULATE TO MAINTAIN A MAKEUP AIR DISCHARGE TEMPERATURE. THE COIL DISCHARGE TEMPERATURE SHALL BE RESET TO MAINTAIN A UNIT DISCHARGE AIR TEMPERATURE OF 55 DEGREES F (ADJ). WHEN NOT IN ONE OF THE TWO MODES ABOVE THE SYSTEM SHALL BE OFF.
17. HEAT EXCHANGER COMMAND:
   WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW THE UNIT DISCHARGE TEMPERATURE, THERE IS DESIGN FLOW THRU THE COILS, AND THE DISCHARGE AIR TEMPERATURE CONTINUES TO FALL, THE HTHW CONTROL VALVE SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE. THE HTHW VALUE SHALL MODULATE TO NEVER ALLOW THE LEAVING WATER TEMPERATURE TO FALL BELOW 35°F. THIS SYSTEM SHALL REMAIN RUNNING WHEN AHU FANS ARE SHUT DOWN.
18. BYPASS DAMPERS:
   WHENEVER ENERGY RECOVERY IS NOT ACTIVE THE AIR HANDLER AND EXHAUSET ENERGY RECOVERY COIL BYPASS DAMPERS SHALL OPEN FULLY.
19. CONDENSATE RECOVERY:
   A PACKAGED SUMP PUMP SHALL COLLECT COOLING COIL CONDENSATE AND SHALL PUMP IT UP TO THE COOLING TOWERS AS MAKE-UP ACCORDING TO IT PACKAGED FLOAT STYLE CONTROLS.



TYPICAL MULTI FAN CONTROL SCHEMATIC

NOT TO SCALE

OUTDOOR AIR GLOBAL SENSORS
- T AI
- H AI

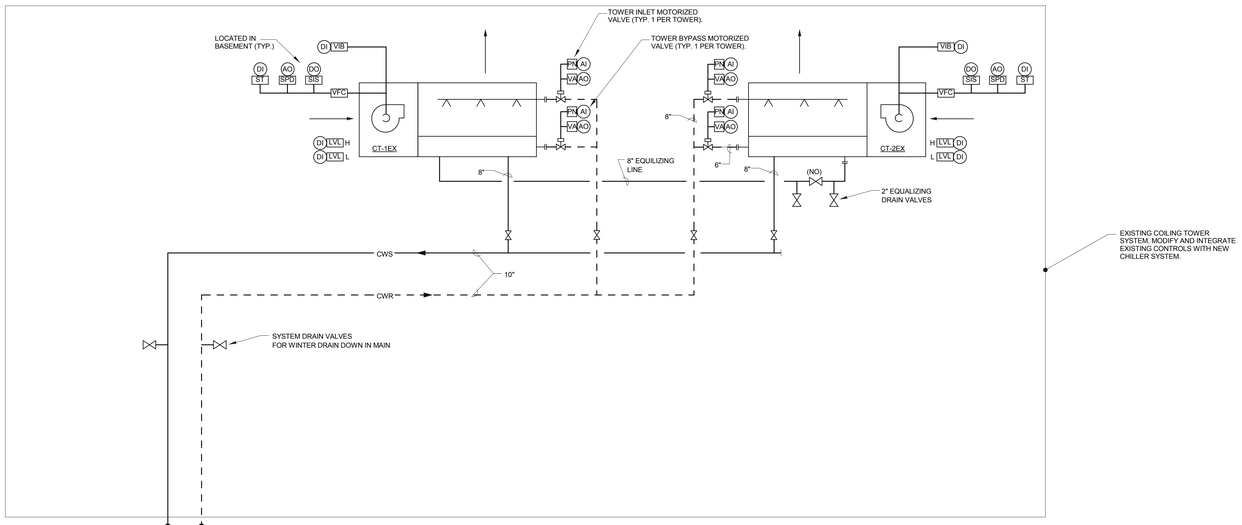
BUILDING INTERIOR/EXTERIOR SENSORS
- SP AI 3RD FLOOR
- SP AI 2ND FLOOR
- SP AI GROUND FLOOR
- SP AI LOWER LEVEL

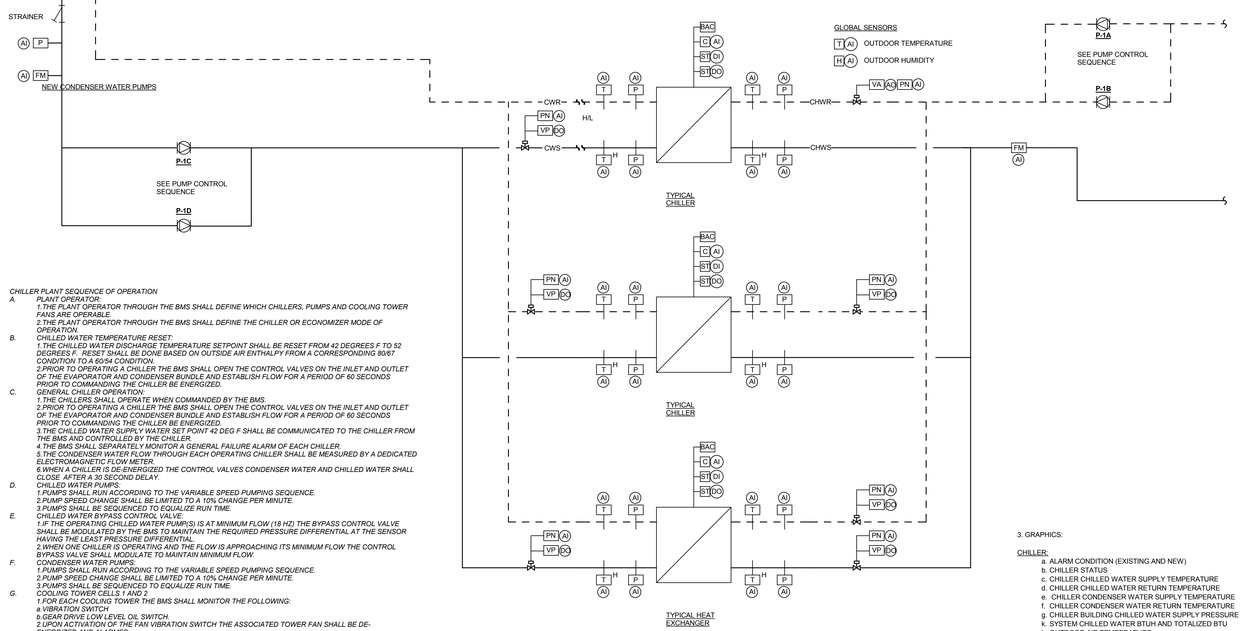
18. ALARMS:
   A. CAUTIONARY ALARM WHEN UNOCCUPIED MODE IS OVERRIDDEN
   B. UNIT STOPPED CONDITION
   C. SINGLE SUPPLY FAN STOPPED CONDITION
   D. SINGLE SUPPLY FAN FAULT/FAILURE CONDITION
   E. RETURN FAN STOPPED CONDITION
   F. RETURN FAN FAULT/FAILURE CONDITION
   G. SUPPLY SMOKE CONDITION
   H. SUPPLY FAN DISCHARGE HIGH STATIC CONDITION
   I. SUPPLY FAN INTAKE LOW STATIC CONDITION
   J. RETURN SMOKE CONDITION
   K. FREEZE CONDITION
   L. FREEZE PUMP FAILURE CONDITION
   M. RETURN/EXHAUST HUMIDIFICATION HIGH/LOW CONDITIONS
   N. LOW/HIGH OUTSIDE AIR FLOWS
   O. LOW/HIGH UNIT DISCHARGE AIR TEMPERATURES
   P. LOW/HIGH SUPPLY DUCT STATIC PRESSURES
   Q. LOW/HIGH FILTER BANK PRESSURES
   R. RELIEF/RETURN/OUTDOOR AIR DAMPERS FAILURE CONDITION
   S. LOW CHILLED WATER GENERATION TEMPERATURE
   T. PUMP FAILURE
   U. LOW DISCHARGE AIR TEMPERATURE (120) SECOND DELAY)
   V. LOW ENTERING WATER TEMPERATURE (360 SECOND DELAY)
19. GRAPHICS
   A. ALARM CONDITIONS
   B. OCCUPIED/UNOCCUPIED MODE
   C. SUPPLY FAN STATUSES
   D. SUPPLY FAN SPEEDS
   E. SUPPLY FAN AIR FLOWS
   F. TOTAL SUPPLY AIR FLOW
   G. SUPPLY SYSTEM STATIC PRESSURES
   H. DISCHARGE AIR TEMPERATURE
   I. DISCHARGE AIR TEMPERATURE BASE SET POINT
   J. DISCHARGE AIR TEMPERATURE RESET SET POINT
   K. CHW COIL VALVE COMMAND PERCENTAGE
   L. CHW COIL VALVE POSITION PERCENTAGE
   M. CHW COIL DISCHARGE AIR TEMPERATURE
   N. ENERGY RECOVERY COIL VALVE COMMAND PERCENTAGE AND POSITION
   O. ENERGY RECOVERY COIL LEAVING AIR TEMPERATURE
   P. ENERGY RECOVERY COIL LEAVING WATER TEMPERATURE
   Q. ENERGY RECOVERY COIL F&B DAMPER COMMAND PERCENTAGE
   R. MIXED AIR TEMPERATURE SET POINT
   S. ENERGY RECOVERY COIL ENTERING WATER TEMPERATURE
   T. ENERGY RECOVERY COIL ENTERING AIR TEMPERATURE
   U. RHC LEAVING WATER TEMPERATURE
   V. RHC LEAVING WATER TEMPERATURE. LOW LIMIT SET POINT
   W. MIXED AIR TEMPERATURE
   X. RELIEF FAN STATUS
   Y. RELIEF FAN SPEED
   Z. RELIEF FAN AIR FLOW
   AA. RETURN FAN STATUS
   AB. RETURN AIR SPEED
   AC. RETURN AIR AIRFLOW
   AD. OUTSIDE AIR TEMPERATURE (GLOBAL)
   AE. OUTSIDE AIR HUMIDITY (GLOBAL)
   AF. OUTSIDE AIR ENTHALPY (GLOBAL)
   AG. OUTSIDE AIR FLOW (MIN/MAX/TOTAL)
   AH. FILTER DIFFERENTIAL PRESSURES
   AI. ALARM CONDITIONS
   AJ. PUMP "A" STATUS
   AK. PUMP "B" STATUS
   AL. GLYCOL LEAVING HEAT EXCHANGER TEPERATURE

drawing title: HVAC CONTROLS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS	volume: 2 of 2
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
date	11-21-2012
scale	12" = 1'-0"
project	SCSU NEW ACADEMIC LABORATORY BUILDING
drawn by	AHG, DP
approved by	GVD
CAD no.	1393
project no.	BI-RS-283-ARC
drawing no.	H503

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.





CHILLER PLANT SEQUENCE OF OPERATION

A. PLANT OPERATOR:
1.THE PLANT OPERATOR THROUGH THE BMS SHALL DEFINE WHICH CHILLERS, PUMPS AND COOLING TOWER FANS ARE OPERABLE.
2.THE PLANT OPERATOR THROUGH THE BMS SHALL DEFINE THE CHILLER OR ECONOMIZER MODE OF OPERATION.

B. CHILLED WATER TEMPERATURE RESET:
1.THE CHILLED WATER DISCHARGE TEMPERATURE SETPOINT SHALL BE RESET FROM 42 DEGREES F TO 52 DEGREES F. RESET SHALL BE DONE BASED ON OUTSIDE AIR ENTHALPY FROM A CORRESPONDING 80/67 CONDITION TO A 60/54 CONDITION.
2.PRIOR TO OPERATING A CHILLER THE BMS SHALL OPEN THE CONTROL VALVES ON THE INLET AND OUTLET OF THE EVAPORATOR AND CONDENSER BUNDLE AND ESTABLISH FLOW FOR A PERIOD OF 60 SECONDS PRIOR TO COMMANDING THE CHILLER BE ENERGIZED.

C. GENERAL CHILLER OPERATION:
1.THE CHILLERS SHALL OPERATE WHEN COMMANDED BY THE BMS.
2.PRIOR TO OPERATING A CHILLER THE BMS SHALL OPEN THE CONTROL VALVES ON THE INLET AND OUTLET OF THE EVAPORATOR AND CONDENSER BUNDLE AND ESTABLISH FLOW FOR A PERIOD OF 60 SECONDS PRIOR TO COMMANDING THE CHILLER BE ENERGIZED.
3.THE CHILLED WATER SUPPLY WATER SET POINT 42 DEG F SHALL BE COMMUNICATED TO THE CHILLER FROM THE BMS AND CONTROLLED BY THE CHILLER.
4.THE BMS SHALL SEPARATELY MONITOR A GENERAL FAILURE ALARM OF EACH CHILLER.
5.THE CONDENSER WATER FLOW THROUGH EACH OPERATING CHILLER SHALL BE MEASURED BY A DEDICATED ELECTROMAGNETIC FLOW METER.
6.WHEN A CHILLER IS DE-ENERGIZED THE CONTROL VALVES CONDENSER WATER AND CHILLED WATER SHALL CLOSE AFTER A 30 SECOND DELAY.

D. CHILLED WATER PUMPS:
1.PUMPS SHALL RUN ACCORDING TO THE VARIABLE SPEED PUMPING SEQUENCE.
2.PUMP SPEED CHANGE SHALL BE LIMITED TO A 10% CHANGE PER MINUTE.
3.PUMPS SHALL BE SEQUENCED TO EQUALIZE RUN TIME.

E. CHILLED WATER BYPASS CONTROL VALVE:
1.IF THE OPERATING CHILLED WATER PUMP(S) IS AT MINIMUM FLOW (18 HZ) THE BYPASS CONTROL VALVE SHALL BE MODULATED BY THE BMS TO MAINTAIN THE REQUIRED PRESSURE DIFFERENTIAL AT THE SENSOR HAVING THE LEAST PRESSURE DIFFERENTIAL.
2.WHEN ONE CHILLER IS OPERATING AND THE FLOW IS APPROACHING ITS MINIMUM FLOW THE CONTROL BYPASS VALVE SHALL MODULATE TO MAINTAIN MINIMUM FLOW.

F. CONDENSER WATER PUMPS:
1.PUMPS SHALL RUN ACCORDING TO THE VARIABLE SPEED PUMPING SEQUENCE.
2.PUMP SPEED CHANGE SHALL BE LIMITED TO A 10% CHANGE PER MINUTE.
3.PUMPS SHALL BE SEQUENCED TO EQUALIZE RUN TIME.

G. COOLING TOWER CELLS 1 AND 2
1.FOR EACH COOLING TOWER THE BMS SHALL MONITOR THE FOLLOWING:
a.VIBRATION SWITCH
b.GEAR DRIVE LOW LEVEL OIL SWITCH.
2.UPON ACTIVATION OF THE FAN VIBRATION SWITCH THE ASSOCIATED TOWER FAN SHALL BE DE-ENERGIZED AND ALARMED.
3.ACTIVATION OF THE GEAR DRIVE LOW OIL DRIVE SWITCH SHALL ACTIVATE AN ALARM.

H. COOLING TOWER WATER LEVEL CONTROL
1.EACH COOLING TOWER CELL (QUANTITY 2) SHALL BE EQUIPPED WITH AN ELECTRONIC LEVEL CONTROL.
2.THE PLANT OPERATOR SHALL MANUALLY INPUT THROUGH THE BMS THE CELL WITH THE LEVEL CONTROL TO BE UTILIZED.
3.UTILIZING THIS CONTROL THE BMS SHALL:
a.ENERGIZE OPEN THE MAKEUP WATER VALVE IF THE LEVEL DROPS BELOW SET POINT
b.ALARM AT HIGH AND LOW LEVEL.

I. CONDENSER WATER PUMPS AND COOLING TOWER CELLS 1 AND 2 OPERATION.
1.IN THE NORMAL MODE CONDENSER WATER PUMPS CIRCULATE CONDENSER WATER UP TO THE COOLING TOWER CELLS 1 AND 2.
a.THE BMS SHALL CONTROL THE SPEED OF THE OPERATING PUMPS TO MAINTAIN CONSTANT FLOW RATES AS MEASURED BY THE DEDICATED ELECTROMAGNETIC FLOW METER.
b.THE COOLING TOWER FANS SHALL OPERATE WHEN THE CHILLER SYSTEM IS ENABLED. THE BMS SHALL OPERATE THE FANS IN PARALLEL TO MAINTAIN THE DESIRED CONDENSER WATER RETURN TEMPERATURE NOT TO EXCEED 85 DEG F.
c.HEAT EXCHANGER ISOLATION VALVES SHALL REMAIN CLOSED.
2.WHEN OUTDOOR CONDITIONS ARE FAVORABLE TO MAKE CHILLED WATER THROUGH THE HEAT EXCHANGER THE SYSTEM SHALL BE INDEXED TO ECONOMIZER MODE. IN THE "ECONOMIZER MODE" CONDENSER WATER PUMPS CIRCULATE CONDENSER WATER UP TO THE COOLING TOWER CELLS 1 AND 2 AND THROUGH THE ECONOMIZER HEAT EXCHANGER.
a.THE BMS SHALL CONTROL THE SPEED OF THE OPERATING PUMPS TO MAINTAIN CONSTANT FLOW RATES AS MEASURED BY THE DEDICATED ELECTROMAGNETIC FLOW METER.
b.THE HEAT EXCHANGER ISOLATION VALVES SHALL OPEN.
c.THE COOLING TOWER FANS SHALL OPERATE TO MAINTAIN DISCHARGE CONDENSER WATER TEMPERATURE. THE BMS SHALL OPERATE THE FANS IN PARALLEL TO MAINTAIN THE DESIRED CONDENSER WATER RETURN TEMPERATURE NOT TO FALL BELOW 45 DEG F.
d.ONCE THE FANS ARE AT MINIMUM SPEED THE BY-PASS VALVE AND SPRAY HEAD VALVE SHALL MODULATE TOGETHER TO BY PASS WATER THROUGH THE BASIN TO MAINTAIN THE DESIRED CONDENSER WATER RETURN TEMPERATURE NOT TO FALL BELOW 45 DEG F.
e.CHILLERS SHALL BE ALLOWED TO RUN ACCORDING TO THEIR NORMAL SEQUENCE IF LOAD DEMAND ARE GREATER THAN WHAT THE HEAT EXCHANGER PROVIDES AND WHEN THE CONDENSER WATER TEMPERATURE IS ABOVE THE MANUFACTURER'S MINIMUM.
3.TRANSITION FROM ECONOMIZER TO NORMAL
a.IF THE CONDENSER WATER TEMPERATURE IS BELOW THE CHILLER MANUFACTURER'S MINIMUM THE TOWER WILL FULLY BY PASS WATER TO THE BASIN AND THE BASIN HEATERS SHALL BE INDEXED FULL ON.
b.WHEN THE CONDENSER WATER IS ABOVE THE CHILLER MANUFACTURER'S MINIMUM THE CHILLERS WILL BE ALLOWED TO START AND THE SYSTEM INDEXED TO NORMAL MODE.
4.BASIN HEATER SHALL OPERATE WHENEVER THE LEAVING CONDENSER WATER TEMPERATURE FALLS BELOW 40 DEGREES F.

2. ALARMS:

CHILLER:
- a. CHILLER LOW CHILLED WATER RETURN TEMPERATURE
- b. CHILLER HIGH CHILLED WATER RETURN TEMPERATURE
- c. CHILLER HIGH CHILLED WATER DP
- d. CHILLER LOW CONDENSER WATER SUPPLY TEMP
- e. CHILLER HIGH CONDENSER WATER SUPPLY TEMP
- f. CHILLER HIGH CONDENSER WATER DP
- g. CHILLER CHILLER FAILURE ALARM

PLATE FRAME:
- a. LOW CHILLED WATER RETURN TEMPERATURE
- b. HIGH CHILLED WATER RETURN TEMPERATURE
- c. HIGH CHILLED WATER DP
- d. HIGH CONDENSER WATER DP
- e. HIGH CONDENSERWATER SUPPLY TEMP

COOLING TOWER:
- e. VFC FAILURE (EXISTING).
- f. FAN VIBRATION SAFETY ALARM (EXISTING),
- g. SUMP LOW LEVEL ALARM (EXISTING).
- h. SUMP HIGH LEVEL ALARM (EXISTING).

3. GRAPHICS:

CHILLER:
- a. ALARM CONDITION (EXISTING AND NEW)
- b. CHILLER STATUS
- c. CHILLER CHILLED WATER SUPPLY TEMPERATURE
- d. CHILLER CHILLED WATER RETURN TEMPERATURE
- e. CHILLER CONDENSER WATER SUPPLY TEMPERATURE
- f. CHILLER CONDENSER WATER RETURN TEMPERATURE
- g. CHILLER BUILDING CHILLED WATER SUPPLY PRESSURE
- k. SYSTEM CHILLED WATER BTUH AND TOTALIZED BTU
- l. OUTDOOR AIR TEMPERATURE
- m. OUTDOOR AIR HUMIDITY

PLATE FRAME:
- a. ALARM CONDITION (EXIST)
- c. HX TEMP CV COMMAND PERCENTAGE (EXIST)
- d. CHILLED WATER SUPPLY TEMPERATURE
- e. CHILLED WATER RETURN TEMPERATURE
- f. CONDENSER WATER SUPPLY TEMPERATURE
- g. CONDENSER WATER RETURN TEMPERATURE
- h. CHILLED WATER SUPPLY PRESSURE
- i. CHILLED WATER RETURN PRESSURE
- j. CONDENSER WATER SUPPLY PRESSURE
- k. CONDENSER WATER RETURN PRESSURE
- l. CONDENSER WATER FLOW
- m. SYSTEM BTUH AND TOTALIZED BTU

COOLING TOWER:
1. COMMON CONDENSER WATER SUPPLY TEMPERATURE SETPOINT
2. COMMON CONDENSER WATER SUPPLY AND RETURN TEMPERATURES (EXISTING TO BE REMOVED, NEW INSTALLED IN NEW PIPING).
3. SUPPLY AND RETURN MOTORIZED ISOLATION VALVES POSITION.
4. BYPASS MOTORIZED VALVES POSITION.
5. SUPPLY INLET MOTORIZED VALVES POSITION.
6. FANS ON-OFF INDICATION.
7. VFC FAILURE.
8. FAN SPEED.
9. FAN VIBRATION SAFETY ALARM.
10. SUMP LOW LEVEL ALARM.
11. SUMP HIGH LEVEL ALARM.

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drawing title: HVAC CONTROLS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
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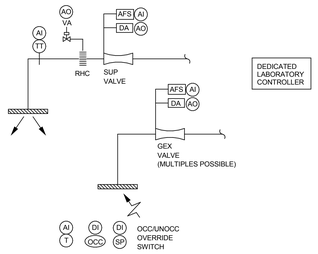
project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1310
project no. BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale 12" = 1'-0"
drawn by AHG, DP
approved by GVD
drawing no. H504

MODE	MIN A/C	MAX TEMP	MIN TEMP
OCCUPIED	8	75	68
UNOCCUPIED	4	85	65

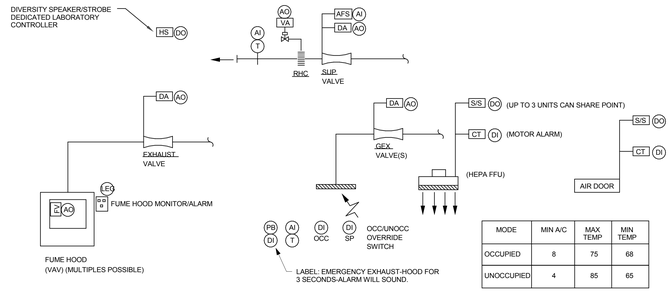


TYPICAL LAB CONTROL

WITHOUT HOOD

NOT TO SCALE

TYPICAL LAB/LAB CLASSROOM CONTROL WITHOUT HOOD
1.SEQUENCE OF OPERATION
a.CONTROL PROGRAMMING AND EQUIPMENT SHALL ALLOW FOR FUTURE INSTALLATION OF A FUME HOOD.
b.OCCUPIED MODE SHALL BE ESTABLISHED WHEN THE SPACE OCCUPANCY SENSOR HAS BEEN ACTIVATED.
c.DURING OCCUPIED TIMES THE SUPPLY AIR VALVE STANDARD SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE BUT SHALL NEVER GO BELOW 8 AIR CHANGES. ON A FURTHER DROP IN TEMPERATURE BELOW SETPOINT WHEN THE VALVE IS ALREADY AT MINIMUM THE REHEAT COIL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
d.A GENERAL EXHAUST (GEX) VALVE(S) STANDARD SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN ROOM AIR VOLUME OFFSET EQUAL TO 150 CFM PER CORRIDOR DOOR (ADJ) MORE THAN SUPPLY AIR CFM.
e.DURING UNOCCUPIED TIMES THE SUPPLY AIR VALVE STANDARD SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE BUT SHALL NEVER GO BELOW 4 AIR CHANGES. ON A FURTHER DROP IN TEMPERATURE BELOW SETPOINT WHEN THE VALVE IS ALREADY AT MINIMUM THE REHEAT COIL VALVE SHALL MODULATE TO MAINTAIN OFFSET SPACE TEMPERATURES.
2.ALARMS
a.LOW/HIGH AIR VOLUME FOR SUPPLY OR GEX.
b.LOW/HIGH SPACE TEMPERATURE
3.GRAPHICS
a.ALARM CONDITIONS
b.OCCUPIED/UNOCCUPIED MODE
c.OFFSET AIR VOLUME SETPOINT & ACTUAL
d.ROOM TEMPERATURE SETPOINT
e.ROOM TEMPERATURE
f. SUPPLY AIR VOLUME
g.GEX AIR VOLUME(S)



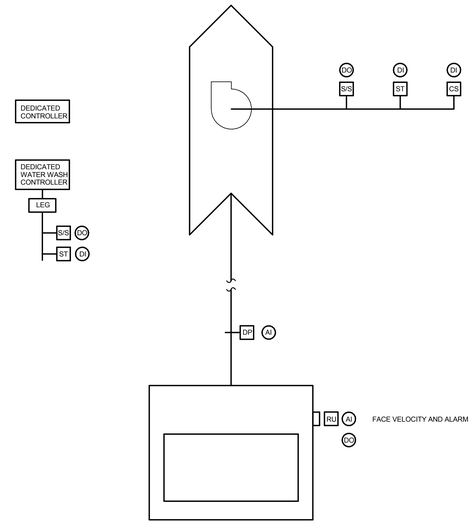
MODE	MIN A/C	MAX TEMP	MIN TEMP
OCCUPIED	8	75	68
UNOCCUPIED	4	85	65

TYPICAL CLEAN LAB CONTROL

NOT TO SCALE

TYPICAL CLEAN LAB/CONTROL
1.SEQUENCE OF OPERATION
a.OCCUPIED MODE SHALL BE ESTABLISHED WHEN EITHER ANY HOOD SASH IS NOT AT CLOSED POSITION OR WHEN THE SPACE OCCUPANCY SENSOR HAS BEEN ACTIVATED.
b.A SASH SENSOR ON EACH HOOD SHALL ESTABLISH SASH POSITION TO CALCULATE REQUIRED EXHAUST VOLUME TO MAINTAIN 90 FPM MINIMUM FACE VELOCITY. THE CONTROLLER SHALL MODULATE A HIGH SPEED ELECTRIC ACTUATOR ON THE EXHAUST VALVE TO OBTAIN THE DESIRED VOLUME.
c.OCCUPIED: THE SUPPLY AIR VALVE HIGH SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE AND SHALL USE CURRENT HOOD EXHAUST AIR VOLUME AS A MINIMUM AIR VOLUME SETPOINT BUT SHALL NEVER GO BELOW 8 AIR CHANGES. ON A FURTHER DROP IN TEMPERATURE BELOW SETPOINT WHEN THE VALVE IS ALREADY AT MINIMUM THE REHEAT COIL VALVE SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE.
d.A GENERAL EXHAUST (GEX) VALVE HIGH SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN ROOM AIR VOLUME OFFSET EQUAL TO 150 CFM PER CORRIDOR DOOR (ADJ) MORE THAN SUPPLY AIR CFM.
e.UNOCCUPIED: THE SUPPLY AIR VALVE HIGH SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE AND SHALL USE CURRENT HOOD EXHAUST AIR VOLUME AS A MINIMUM AIR VOLUME SETPOINT BUT SHALL NEVER GO BELOW 4 AIR CHANGES PER HOUR. ON A FURTHER DROP IN TEMPERATURE BELOW SETPOINT WHEN THE VALVE IS ALREADY AT MINIMUM THE REHEAT COIL VALVE SHALL MODULATE TO MAINTAIN OFFSET SPACE TEMPERATURES.
f.LABORATORY AIR-FLOW DIVERSITY SHALL BE CALCULATED BASED ON MAXIMUM DESIGN EXHAUST AIR FLOW. WHENEVER THE MAXIMUM AIR FLOW IS EXCEEDED FOR MORE THEN 180 SECONDS (ADJ) AND ALARM SHALL BE GENERATED AND A SPACER/STROBE UNIT SHALL BE ACTIVATED.
e. EMERGENCY EXHAUST: WHEN A WALL MOUNTED MOMENTARY PUSH BUTTON IS ACTIVATED FOR 3 SECONDS ALL EXHAUST VALVES SHALL OPEN TO 125% OF MAXIMUM DESIGN EXHAUST AIR FLOW. SUPPLY AIR FLOW SHALL MODULATE TO 100% OF DESIGN SUPPLY AIR FLOW. THE DIVERSITY SPEAKER/STROBE SHALL ACTIVATE AND AN ALARM SHALL SOUND. CANCELLATION OF THE ALARM SHALL BE AT THE HEAD END OR AFTER THE BUTTON IS DEPRESSED FOR 5 SECONDS.
2.ALARMS
a.LOW/HIGH AIR VOLUME FOR SUPPLY EXHAUST OR GEX.
b.LOW/HIGH AIR VELOCITY AT HOOD
c.LOW/HIGH SPACE TEMPERATURE
d.LAB DIVERSITY EXCEEDED
e.HEPA FFU FAILURE.
f.HEPA FFU: FFU'S SHALL RUN CONTINUOUSLY. START/STOP COMMAND BE ISSUED AT THE HEAD END ONLY.
3.GRAPHICS
a.ALARM CONDITIONS
b.OCCUPIED/UNOCCUPIED MODE
c.OFFSET AIR VOLUME SETPOINT & ACTUAL
d.ROOM TEMPERATURE SETPOINT
e.ROOM TEMPERATURE
f. HOOD EXHAUST AIR VOLUME
g.SUPPLY AIR VOLUME
h.GEX AIR VOLUME
i. HOOD FACE VELOCITY
j. HEPA FFU BANK STATUS

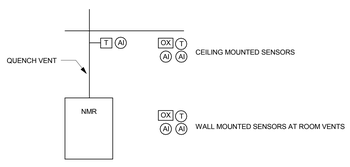
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



TYPICAL PERCHLORIC EXHAUST SYSTEM

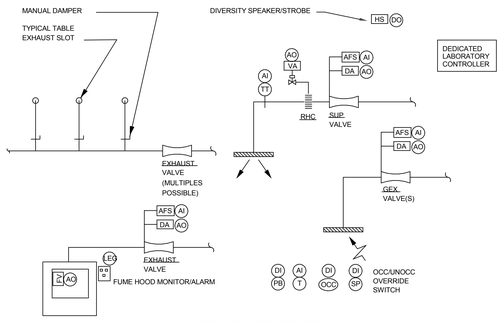
NOT TO SCALE

ADDITIONAL REQUIREMENTS IN LABORATORIES HOUSING PERCHLORIC HOODS
1. SEQUENCE OF OPERATION
a. INTEGRATION: THIS SEQUENCE AND ALL ASSOCIATED DEVICES SHALL BE INTEGRATED INTO THE NORMAL LABORATORY SEQUENCE FOR THE SPACE HOUSING THE PERCHLORIC HOOD INCLUDING AIR FLOW SUPPLY AND EXHAUST CONTROL.
b. FAN CONTROL: THE PERCHLORIC EXHAUST FAN SHALL REMAIN ACTIVE AT ALL TIMES SUBJECT TO SAFETY PERMISSIVES. A DOUBLE ACTION COMMAND (CLICK AND CONFIRM) AT THE OPERATOR'S WORKSTATION SHALL ALLOW THE FAN TO SHUT DOWN.
c. WATER WASH DOWN CONTROL: THE WATER WASH SYSTEM SHALL BE PROGRAMMED TO PERIODICALLY WASH DOWN THE SYSTEM INCLUDING THE FAN AND HOOD. PROGRAM TO THE FREQUENCY AS RECOMMENDED BY THE HOOD AND SYSTEM MANUFACTURERS.
2. ALARMS
a. EXHAUST FAN FAILURE
b. LOW DIFFERENTIAL DUCT PRESSURE
c. WASH SYSTEM FAILURE
d. LOW HOOD FACE VELOCITY
3. GRAPHICS
a. ALARM CONDITIONS
b. FAN STATUS
c. DUCT STATIC PRESSURE
d. WASH SYSTEM STATUS (ON/OFF)
e. WASH SYSTEM ADVANCE CLEAN CYCLE ALERT (15 MINS ADJ)



ADDITIONAL REQUIREMENTS FOR LABORATORY HOUSING NMR EQUIPMENT
NOT TO SCALE

ADDITIONAL REQUIREMENTS IN LABORATORIES HOUSING NMR EQUIPMENT
1.SEQUENCE OF OPERATION
a. INTEGRATION: THIS SEQUENCE AND ALL ASSOCIATED DEVICES SHALL BE INTEGRATED INTO THE NORMAL LABORATORY SEQUENCE FOR THE SPACE HOUSING THE NMR.
b. EMERGENCY CONTROL: WHENEVER A QUENCH SITUATION IS INITIATED THE SYSTEM SHALL BE INDEXED TO EMERGENCY VENTALATION MODE AND THE SPEAKER/STROBE WILL ACTIVATE. THE SPEAKER CAN BE SILENCED VIA KEY-SWITCH. THE EMERGENCY MODE SHALL BE INTIATED AS NOTED BELOW.
a. IF AN OXYGEN SENSOR INDICATES AN UNSAFE LEVEL
b. IF ANY MAGNET QUENCH THIMBLE TEMPERATURE SENSOR INDICATES A TEMPERATURE LOWER THAN 35 DEGREES F (ADJ).
c. IF ANY MAGNET CEILING TEMPERATURE SENSOR INDICATES A TEMPERATURE LOWER THAN 35 DEGREES F (ADJ).
d. ANY PUSH BUTTON (PB) ALARM ACTIVATION STATIONS IS MANUALLY PRESSED. PB STATIONS SHALL HAVEA CLEAR LEXAN NOISE ACTIVATION COVER TO PREVENT VANDAL BASED TRIPS.
2.ALARMS
a.EMERGENCY QUENCH
3.GRAPHICS
a.ALARM CONDITIONS
b.OXYGEN LEVEL
c.TEMPERATURES AT SENSORS

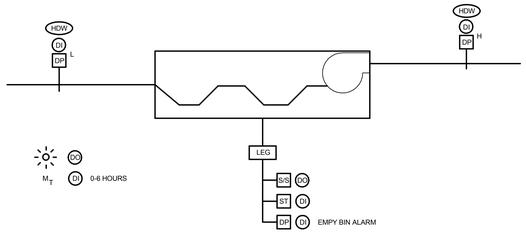


TYPICAL LAB CONTROL WITH HOOD(S)

AND/OR EQUIPMENT EXHAUST

NOT TO SCALE

TYPICAL LAB/LAB CLASSROOM CONTROL WITH HOOD
1.SEQUENCE OF OPERATION
a.OCCUPIED MODE SHALL BE ESTABLISHED WHEN EITHER ANY HOOD SASH IS NOT AT CLOSED POSITION OR WHEN THE SPACE OCCUPANCY SENSOR HAS BEEN ACTIVATED.
b.A SASH SENSOR ON EACH HOOD SHALL ESTABLISH SASH POSITION TO CALCULATE REQUIRED EXHAUST VOLUME TO MAINTAIN 100 FPM FACE VELOCITY. THE CONTROLLER SHALL MODULATE A HIGH SPEED ELECTRIC ACTUATOR ON THE EXHAUST VALVE TO OBTAIN THE DESIRED VOLUME.
c.THE SUPPLY AIR VALVE HIGH SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN A CONSTANT VOLUME AND SHALL USE CURRENT HOOD AND EQUIPMENT EXHAUST AIR VOLUME AS A MINIMUM AIR VOLUME SETPOINT. WHEN THE ROOM IS OCCUPIED A MINIMUM OF 8 AIR CHANGES SHALL BE MAINTAINED. THE REHEAT COIL VALVE SHALL MODULATE TO MAINTAIN A CONSTANT DISCHARGE AIR TEMPERATURE AS RESET BY SPACE TEMPERATURE REQUIREMENTS.
d. WHEN UNOCCUPIED THE SUPPLY AIR VALVE HIGH SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN RESET SPACE TEMPERATURE AND SHALL USE CURRENT HOOD EXHAUST AIR VOLUME AS A MINIMUM AIR VOLUME SETPOINT BUT SHALL NEVER GO BELOW 4 AIR CHANGES PER HOUR. ON A FURTHER DROP IN TEMPERATURE BELOW SETPOINT WHEN THE VALVE IS ALREADY AT MINIMUM THE REHEAT COIL VALVE SHALL MODULATE TO MAINTAIN A CONSTANT DISCHARGE AIR TEMPERATURE AS RESET BY SPACE TEMPERATURE REQUIREMENTS
e.A GENERAL EXHAUST (GEX) VALVE HIGH SPEED ELECTRIC ACTUATOR SHALL MODULATE TO MAINTAIN ROOM AIR VOLUME OFFSET EQUAL TO 150 CFM PER CORRIDOR DOOR (ADJ) MORE THAN SUPPLY AIR CFM.
f.LABORATORY AIR-FLOW DIVERSITY SHALL BE CALCULATED BASED ON MAXIMUM DESIGN AIR FLOW. WHENEVER THE MAXIMUM AIR FLOW IS EXCEEDED FOR MORE THEN 180 SECONDS (ADJ) AND ALARM SHALL BE GENERATED AND A HORN/STROBE UNIT SHALL BE ACTIVATED
e. EMERGENCY EXHAUST: WHEN A WALL MOUNTED MOMENTARY PUSH BUTTON IS ACTIVATED FOR 3 SECONDS ALL EXHAUST VALVES SHALL OPEN TO 125% OF MAXIMUM DESIGN EXHAUST AIR FLOW. SUPPLY AIR FLOW SHALL MODULATE TO 100% OF DESIGN SUPPLY AIR FLOW. THE DIVERSITY SPEAKER/STROBE SHALL ACTIVATE AND AN ALARM SHALL SOUND. CANCELLATION OF THE ALARM SHALL BE AT THE HEAD END OR AFTER THE BUTTON IS DEPRESSED FOR 5 SECONDS.
4.ALARMS
a.LOW/HIGH AIR VOLUME FOR SUPPLY EXHAUST OR GEX.
b.LOW/HIGH AIR VELOCITY AT HOOD
c.LOW/HIGH SPACE TEMPERATURE
d.LAB DIVERSITY EXCEEDED
3.GRAPHICS
a.ALARM CONDITIONS
b.OCCUPIED/UNOCCUPIED MODE
c.OFFSET AIR VOLUME SETPOINT & ACTUAL
d.ROOM TEMPERATURE SETPOINT
e.ROOM TEMPERATURE
f. DISCHARGE AIR TEMPERATURE SETPOINT
g.DISCHARGE AIR TEMPERATURE
h.HOOD EXHAUST AIR VOLUME
i. SUPPLY AIR VOLUME
j. GEX AIR VOLUME
k.HOOD FACE VELOCITY



DUST COLLECTION SYSTEM CONTROL

NOT TO SCALE

ADDITIONAL REQUIREMENTS IN LABORATORIES HOUSING DUST COLLECTION EQUIPMENT
1. SEQUENCE OF OPERATION
a. INTEGRATION: THIS SEQUENCE AND ALL ASSOCIATED DEVICES SHALL BE INTEGRATED INTO THE NORMAL LABORATORY SEQUENCE FOR THE SPACE HOUSING THE DUST COLLECTOR.
b. DUST COLLECTION CONTROL: THE DUST COLLECTION SYSTEM SHALL BE INDEXED ON BY A 0 TO 6 HOUR MARK-TIME SWITCH. A PILOT LIGHT SHALL LOCALLY INDICATE THAT THE SYSTEM IS IN OPERATION. THE SYSTEM SHALL SHUT DOWN ON A LOW PRESSURE INDICATION (EXHAUST SIDE) OR A HIGH PRESSURE INDICATION (DISCHARGE SIDE).
2. ALARMS
a. COLLECTION BIN FULL
b. DUST COLLECTOR FAILURE
c. HIGH/LOW DUCT PRESSURE
3. GRAPHICS
a. ALARM CONDITIONS
b. DUST COLLECTOR STATUS
c. SYSTEM STATUS (ON/OFF)

21-10-038

drawing title	
HVAC CONTROLS	

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

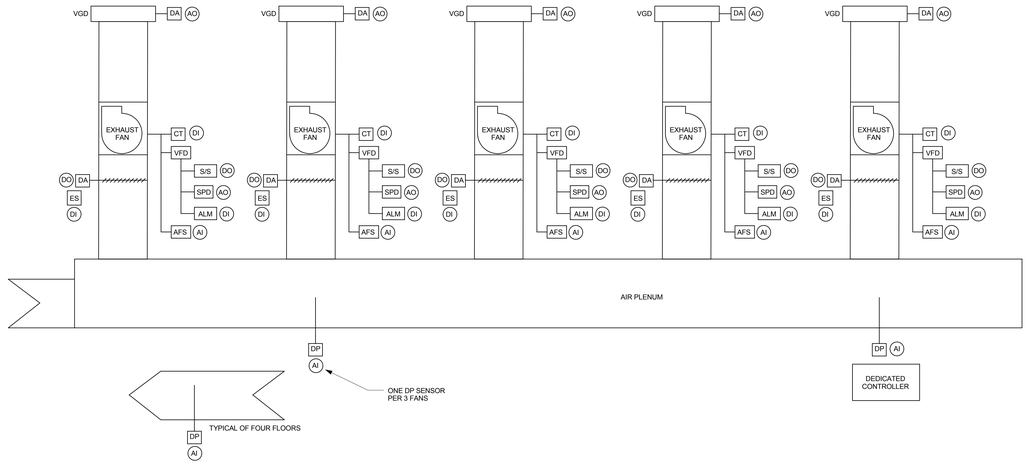
DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC
LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

sheet of: 2 of 2
date: 11-21-2012
scale: 12" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no.: H505

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

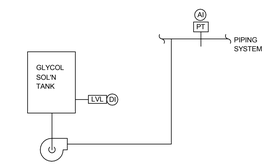


TYPICAL LABORATORY EXHAUST FAN CONTROL SCHEMATIC

NOT TO SCALE

TYPICAL LABORATORY EXHAUST FAN CLUSTER CONTROL

1. SEQUENCE OF OPERATION
   a. STOPPED CONDITION: WHENEVER THE CLUSTER IS STOPPED THE FAN ISOLATION DAMPERS AND VARIABLE GEOMETRY DAMPERS SHALL BE CLOSED. WHENEVER A SINGLE FAN IS STOPPED ITS DEDICATED ISOLATION DAMPER AND ITS VARIABLE GEOMETRY DAMPER SHALL BE CLOSED.
   b. SINGLE FAN START/STOP: WHEN ANY FAN STARTS IT SHALL RAMP UP TO MINIMUM VFD SPEED WITH THE ISOLATION DAMPER CLOSED. ONCE AT SPEED THE FAN SHALL RAMP UP AND ITS ISOLATION DAMPER SHALL BEGIN OPENING SIMULTANEOUSLY TO PREVENT BACKSPIN. FANS SHALL RAMP UP AND DOWN OVER A 240 SECOND PERIOD (ADJ). WHEN THE FAN REACHES THE COMMAND PERCENTAGE SPEED OF THE OTHER FANS IF THE END SWITCH SIGNAL IS NOT GIVEN WITHIN 360 SECONDS (ADJ) THE FAN SHALL BE SHUT DOWN THE ISOLATION DAMPER CLOSED AND AN ALARM GENERATED. WHEN A FAN STOPS IT SHALL RAMP DOWN TO MINIMUM SPEED, THEN THE ISOLATION DAMPER SHALL CLOSE AND THE FAN SHALL STOP.
   c. FAN CONTROL: ALL FANS SHALL RUN SIMULTANEOUSLY IN PARALLEL TO MAINTAIN SETPOINT OF THE STATIC PRESSURE SENSOR FURTHEST FROM ITS SETPOINT. WHEN ALL RUNNING FANS ARE AT MINIMUM SPEED AND THE STATIC PRESSURE CONTINUES TO RISE A FAN SHALL SHUT DOWN. WHEN ALL RUNNING FAN RISE ABOVE 40% SPEED AND THE STATIC PRESSURE CONTINUES TO RISE ANOTHER FAN SHALL BE TURNED ON. A MINIMUM OF 1/3 OF ALL FANS SHALL RUN AT ALL TIMES. ROTATE FAN LEAD/LAG STATUS QUARTERLY WITH MANUAL REORDERING AT THE OPERATOR'S WORKSTATION GRAPHIC.
   d. VARIABLE GEOMETRY DISCHARGE (VGD) DAMPER CONTROL: WHEN A FAN IS ENABLED TO RUN, ITS DEDICATED VARIABLE GEOMETRY DAMPER SHALL MODULATE TO MAINTAIN A QUASI-CONSTANT MOMENTUM IN ACCORDANCE WITH THE RESET SCHEDULE OF 3000 FPM AT MAXIMUM FLOW AND 4500 FPM AT 40% FLOW.
   e. STOP/SHUT-DOWN COMMAND: A SYSTEM STOP/SHUT-DOWN COMMAND CAN BE ISSUED MANUALLY AT THE OPERATOR'S WORKSTATION FOR THE SYSTEM AND EACH INDIVIDUAL FAN. WHEN A MANUAL SHUTDOWN OCCURS THE FANS SHALL RAMP DOWN TO MINIMUM SPEED IN 120 SECONDS (ADJ) AND STOP.
2. ALARMS
   a. LEAD LAG SWITCHOVER 1 WEEK AWAY
   b. SWITCHOVER DELAY FUNCTION BY OPERATOR
   c. FAN MANUALLY STOPPED CONDITION (TYP FOR EACH FAN)
   d. FAN FAULT/FAILURE CONDITION (TYP FOR EACH FAN)
   e. DAMPER FAILURE
   f. SMOKE CONDITION
   g. PLENUM HIGH STATIC CONDITION
   h. PLENUM LOW STATIC CONDITION
   i. DUCT HIGH STATIC CONDITION (TYP)
   j. DUCT LOW STATIC CONDITION (TYP)
3. GRAPHICS
   a. ALARM CONDITIONS
   b. FAN LEAD, LAG ORDER STATUS
   c. NEXT LEAD LAG STATUS CHANGE DATE
   d. MANUAL LEAD/LAG SWITCHOVER DELAY
   e. FAN STATUS (TYP FOR EACH FAN)
   f. FAN SPEED (TYP FOR EACH FAN)
   g. ISOLATION DAMPER STATUS
   h. VGD COMMAND PERCENTAGE.
   i. TOTALIZED EXHAUST AIR FLOW BY FLOOR AND WING
   j. DUCT STATIC PRESSURES (TYP FOR EACH)
   k. DUCT STATIC PRESSURE SETPOINTS (TYP FOR EACH)
   l. PLENUM STATIC PRESSURES
   m. PLENUM STATIC PRESSURE HIGH/LOW SETOINTS

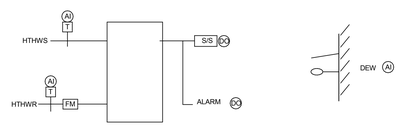


TYPICAL GLYCOL FEED SYSTEM CONTROL
NOT TO SCALE

GLYCOL FILL SYSTEM CONTROL
1.SEQUENCE OF OPERATION
   a.THE PACKAGES CONTROLLER SHALL CYCLE THE PUMP TO MAINTAIN SYSTEM FILL PRESSURE.
2.ALARMS
   a.LOW GLYCOL IN RESERVE TANK
   b.EXCESSIVE FLOW
3.GRAPHICS
   a.ALARM CONDITIONS
   b.GLYCOL SOLUTION FLOW
   c.GLYCOL SOLUTION FLOW TOTALIZATION

TYPICAL HYDRONIC FILL CONTROL
1.SEQUENCE OF OPERATION
   a.SYSTEM FILL PRESSURE IS MANUALLY SET IN FIELD
4.ALARMS
   c.EXCESSIVE FLOW
5.GRAPHICS
   d.ALARM CONDITIONS
   e.FILL WATER FLOW
   f. FILL WATER FLOW TOTALIZATION

TYPICAL HYDRONIC FILL CONTROL
NOT TO SCALE



UN-FIRED STEAM GENERATOR
NOT TO SCALE

UNFIRED STEAM GENERATOR
1. SEQUENCE OF OPERATION
   a. THE UNIT SHALL BE ENABLED WHENEVER THE OUTSIDE AIR DEW POINT IS BELOW 50 DEGREES F (ADJ).
   b. ONCE ENABLED THE FACTORY CONTROLS SHALL ACCOMPLISH FUNCTIONS INCLUDING HTHW/VALVE CONTROL FOR PRESSURE, FILL/MAKE-UP CONTROL, BLOW-DOWN CONTROL, ETC..
2. ALARMS
   a. UNIT ALARM
3. GRAPHICS
   a. ALARM CONDITION
   b. STATUS
   c. BLOW-DOWN OPERATING
   d. OPERATING PRESSURE
   e. OUTSIDE AIR DEW POINT

21-10-038

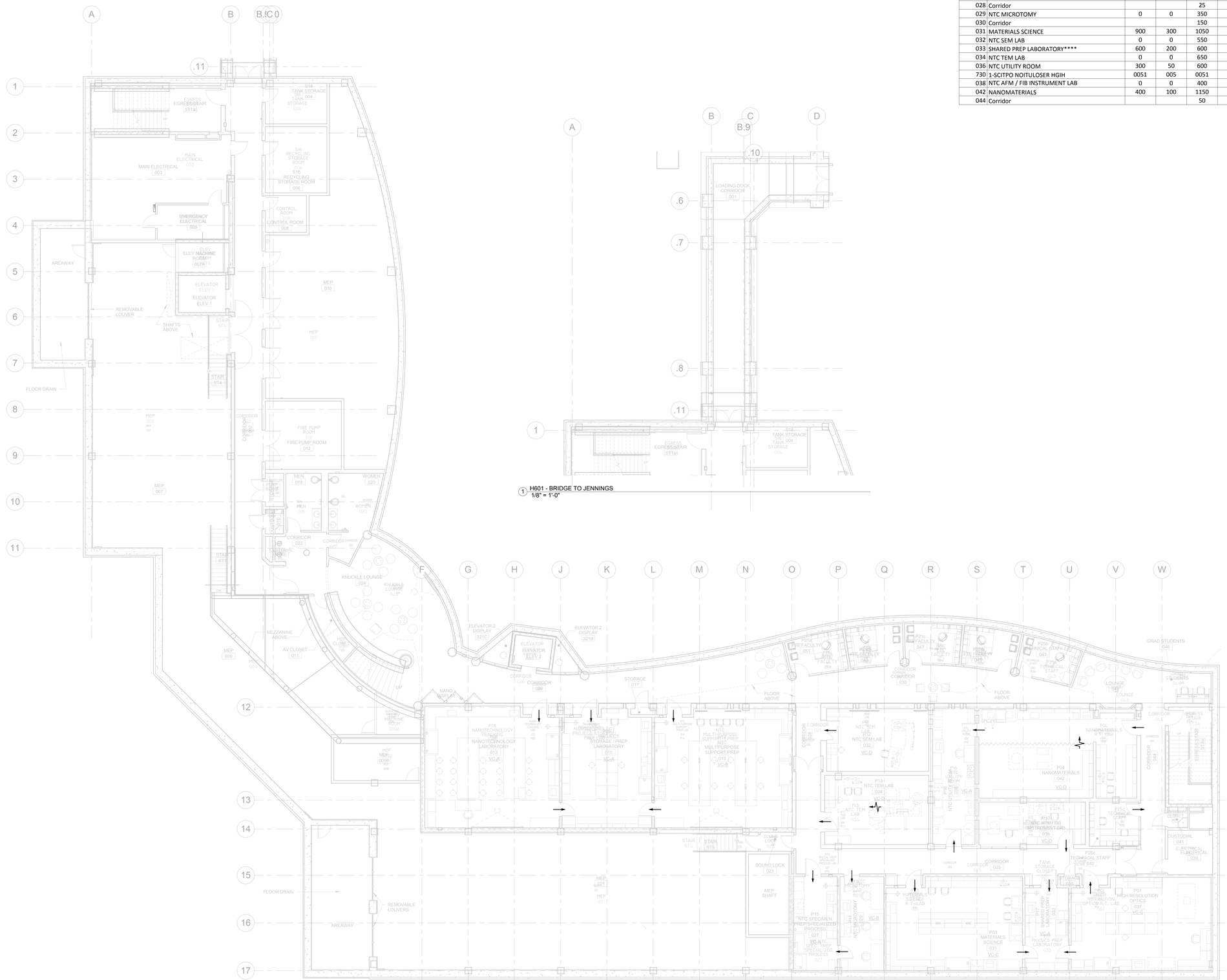
drawing title: HVAC CONTROLS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date: 11-21-2012
11-21-2012 Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		scale: 12" = 1'-0"
			drawn by: AHG, DP
			approved by: GVD
	CAD no. 130	project no. BI-RS-283-ARC	drawing no. H506

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

SouthEast

Lower Level

		Equipment												HW
		Exh Max	Exh Min	Req'd Air Flow		Supply Blalance		Exhaust Balance		Air Change Rate		Balance Pressure		gpm
RM #	Room Name	CFM	CFM	MAX CFM	MIN CFM	MAX	MIN	MAX	MIN	ACH MAX	ACH MIN	MAX	MIN	
013	NANOTECHNOLOGY LAB	1800	600	1800	600	1650	450	1800	600	13	4	(0.25)	(0.05)	7
015	PROJECT STORAGE / PREP LAB	600	200	860	400	850	200	1000	350	12	4	(0.25)	(0.05)	3
019	NTC MULTIPURPOSE SUPPORT/PREP	2700	900	2700	900	2550	750	2700	900	20	7	(0.25)	(0.05)	10
025	Corridor			225	0	675	675					0.05	0.05	1
026	Corridor			225	0	450	450					0.25	0.05	1
027	NTC Specimen Process	1200	400	1200	400	1200	0	1350	150	39	4	(0.25)	(0.05)	5
028	Corridor			25	0	-225	-225					0.02	0.05	1
029	NTC MICROTOMY	0	0	350	150	300	0	450	150	13	4	(0.25)	(0.05)	1
030	Corridor			150	0	0	0					0.25	0.05	1
031	MATERIALS SCIENCE	900	300	1050	425	1050	275	1200	425	12	4	(0.25)	(0.05)	4
032	NTC SEM LAB	0	0	550	0	875	450	650	225	12	4	0.25	0.50	2
033	SHARED PREP LABORATORY****	600	200	600	200	450	50	600	200	20	7	(0.25)	(0.05)	2
034	NTC TEM LAB	0	0	650	250	975	475	750	250	12	4	0.25	0.05	2
036	NTC UTILITY ROOM	300	50	600	200	450	50	600	200	12	4	(0.25)	(0.05)	2
730	1-SCITPO NOITULOSER HGIH	0051	005	0051	524	0531	053	0051	005	41	5	)52.0(	)50.0(	6
038	NTC AFM / FIB INSTRUMENT LAB	0	0	400	150	650	300	500	150	13	4	0.25	0.05	2
042	NANOMATERIALS	400	100	1150	475	1050	175	1350	475	12	4	(0.25)	(0.05)	4
044	Corridor			50	0	150	150							1



1 H601 - BRIDGE TO JENNINGS
1/8" = 1'-0"

2 H601 - LOWER LEVEL PLAN
1/8" = 1'-0"

SYMBOL KEY

= DIRECTION OF AIR FLOW BALANCE TO 0.05" TO 0.2"

= DIRECTIONAL FLOW ACROSS CURTAIN-BALANCE TO 50 - 100 CFM

21-10-038

DRAWING TITLE: LOWER LEVEL AIR BALANCE PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

PROJECT:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

sheet: 2 of 2
date: 11-21-2012
scale: 1/8" = 1'-0"
drawn by: AHG, DP
approved by: GVD
drawing no.: H601

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

North

Ground floor

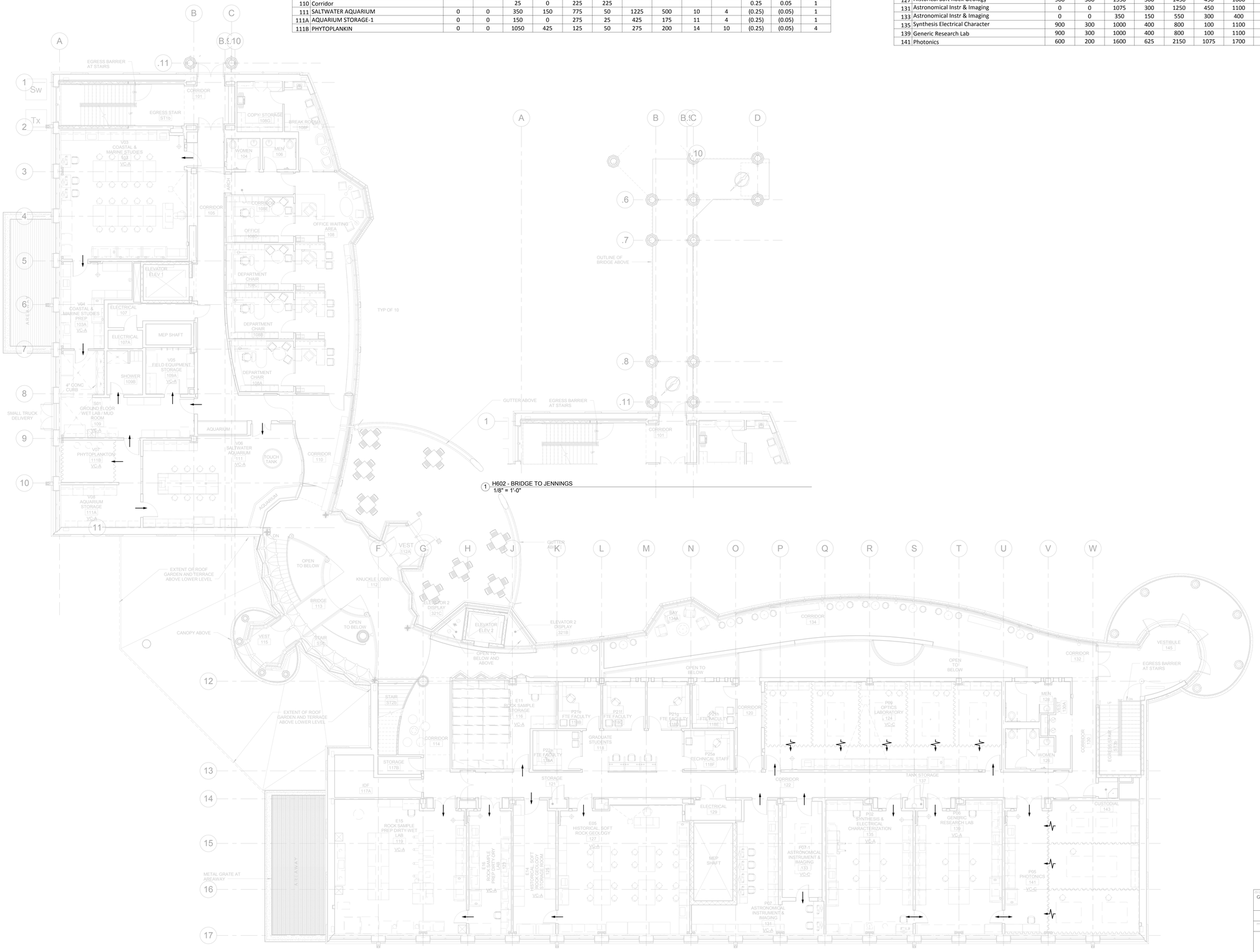
		Equipment												HW
		Exh Max	Exh Min	Req'd Air Flow		Supply Blalance		Exhaust Balance		Air Change Rate		Balance Pressure		gpm
RM #	Room Name	CFM	CFM	MAX CFM	MIN CFM	MAX	MIN	MAX	MIN	ACH MAX	ACH MIN	MAX	MIN	
103	COASTAL & MARINE STUDIES	2700	900	1800	600	2400	600	2700	900	18	6	(0.25)	(0.05)	7
103A	COASTAL & MARINE STUDIES PREP	900	300	860	400	900	300	900	300	21	7	(0.25)	(0.05)	3
105	CORRIDOR N1			2700	900	825	825					0.25	0.05	10
109	GROUND FLOOR WET LAB / MUD ROOM			225	0	375	50	675	350	10	5	(0.25)	(0.05)	1
A901	EGAROTS TNEMPIUQE DLEIF	0	0	522	0	57	57	522	522	61	61	)52.0(	)50.0(	1
109B	Shower							50	50			(0.25)	(0.05)	0
110	Corridor			25	0	225	225					0.25	0.05	1
111	SALTWATER AQUARIUM	0	0	350	150	775	50	1225	500	10	4	(0.25)	(0.05)	1
111A	AQUARIUM STORAGE-1	0	0	150	0	275	25	425	175	11	4	(0.25)	(0.05)	1
111B	PHYTOPLANKIN	0	0	1050	425	125	50	275	200	14	10	(0.25)	(0.05)	4

SouthEast

Ground floor

Level

		Equipment												HW
		Exh Max	Exh Min	Req'd Air Flow		Supply Blalance		Exhaust Balance		Air Change Rate		Balance Pressure		gpm
RM #	Room Name	CFM	CFM	MAX CFM	MIN CFM	MAX	MIN	MAX	MIN	ACH MAX	ACH MIN	MAX	MIN	
116	ROCK SAMPLE STORAGE	0	0	750	0	525	25	750	250	12	4	(0.25)	(0.05)	3
119	Rock Sample Prep Dirty-Wet	900	300	1575	625	1400	325	1700	625	11	4	(0.25)	(0.05)	6
122	Corridor			325	0	525	525					0.25	0.05	1
321	teW-ytriD perP elpmaS kcoR	0021	004	0021	004	0501	05	0021	002	62	4	)52.0(	)50.0(	5
124	OPTICS LABORATORY-1	600	200	1900	200	2300	650	2000	350	11	2	0.25	0.05	7
125	Historical Soft Rock Geo Storage	0	0	525	200	450	50	600	200	12	4	(0.25)	(0.05)	2
127	Historical Soft Rock Geology	900	300	1550	500	1450	450	1600	600	11	4	(0.25)	(0.05)	1
131	Astronomical Instr & Imaging	0	0	1075	300	1250	450	1100	300	15	4	0.25	0.05	4
133	Astronomical Instr & Imaging	0	0	350	150	550	300	400	150	12	4	0.25	0.05	1
135	Synthesis Electrical Character	900	300	1000	400	800	100	1100	400	11	4	(0.25)	(0.05)	4
139	Generic Research Lab	900	300	1000	400	800	100	1100	400	11	4	(0.25)	(0.05)	4
141	Photonics	600	200	1600	625	2150	1075	1700	625	11	4	0.25	0.05	6



SYMBOL KEY

= DIRECTION OF AIR FLOW BALANCE TO 0.05" TO 0.2"

= DIRECTIONAL FLOW ACROSS CURTAIN-BALANCE TO 50 - 100 CFM

21-10-038

DRAWING TITLE: GROUND FLOOR AIR BALANCE PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET NO. 2 of 2
REVISIONS			DATE 11-21-2012
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		SCALE 1/8" = 1'-0"
11-21-2012 Bid Documents	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY AHG, DP
			APPROVED BY GVD
	CAD no. 1380	project no. BI-RS-283-ARC	DRAWING NO. H602

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

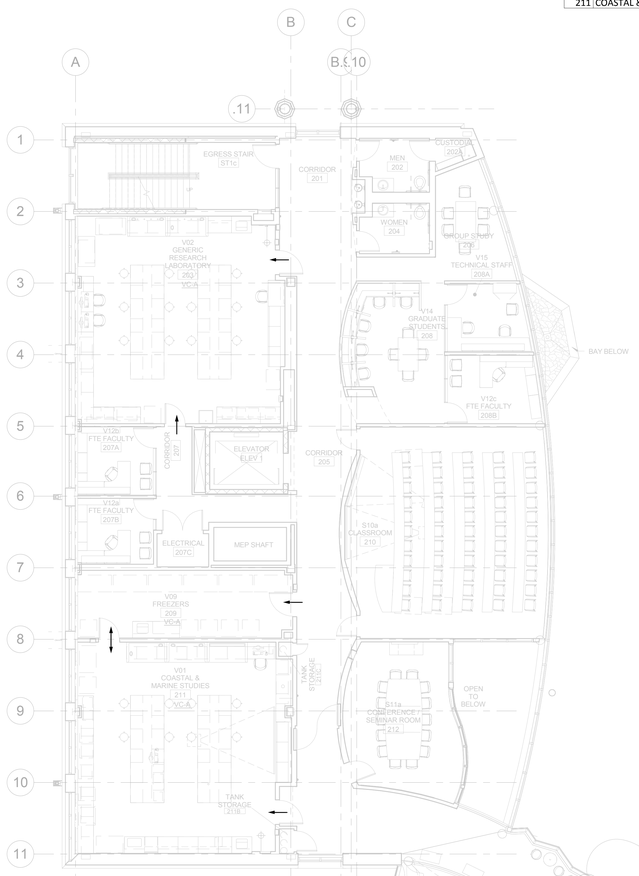
NORTH
SECOND FLOOR

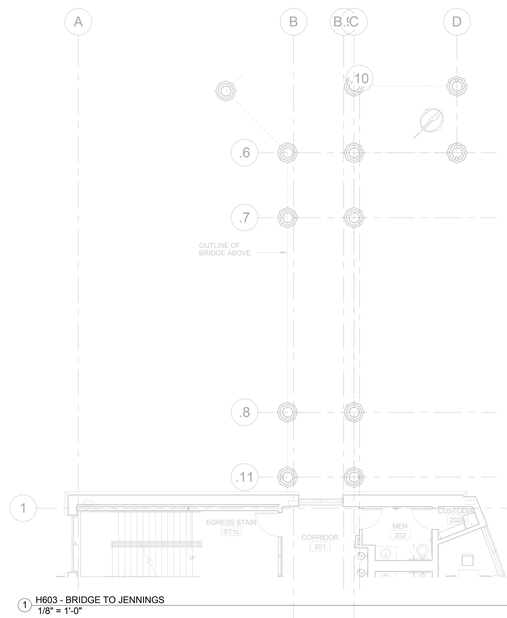
		Equipment												HW
		Exh Max	Exh Min	Req'd Air Flow		Supply Balance		Exhaust Balance		Air Change Rate		Balance Pressure		gpm
RM #	Room Name	CFM	CFM	MAX CFM	MIN CFM	MAX	MIN	MAX	MIN	ACH MAX	ACH MIN	MAX	MIN	
201	CORRIDOR			70	70	450	450			0	0	0.25	0.05	1
203	GENERIC RESEARCH LABORATORY	2100	700	860	400	1800	400	2100	700	14	5	(0.25)	(0.05)	3
205	Corridor			170	170	300	300			0	0	0.25	0.05	1
209	Freezers			225	0	1000	50	1150	200	23	4	(0.25)	(0.05)	1
211	COASTAL & MARINE STUDIES	3300	1100	225	0	3000	800	3300	1100	21	7	(0.25)	(0.05)	1

SOUTHEAST
SECOND FLOOR

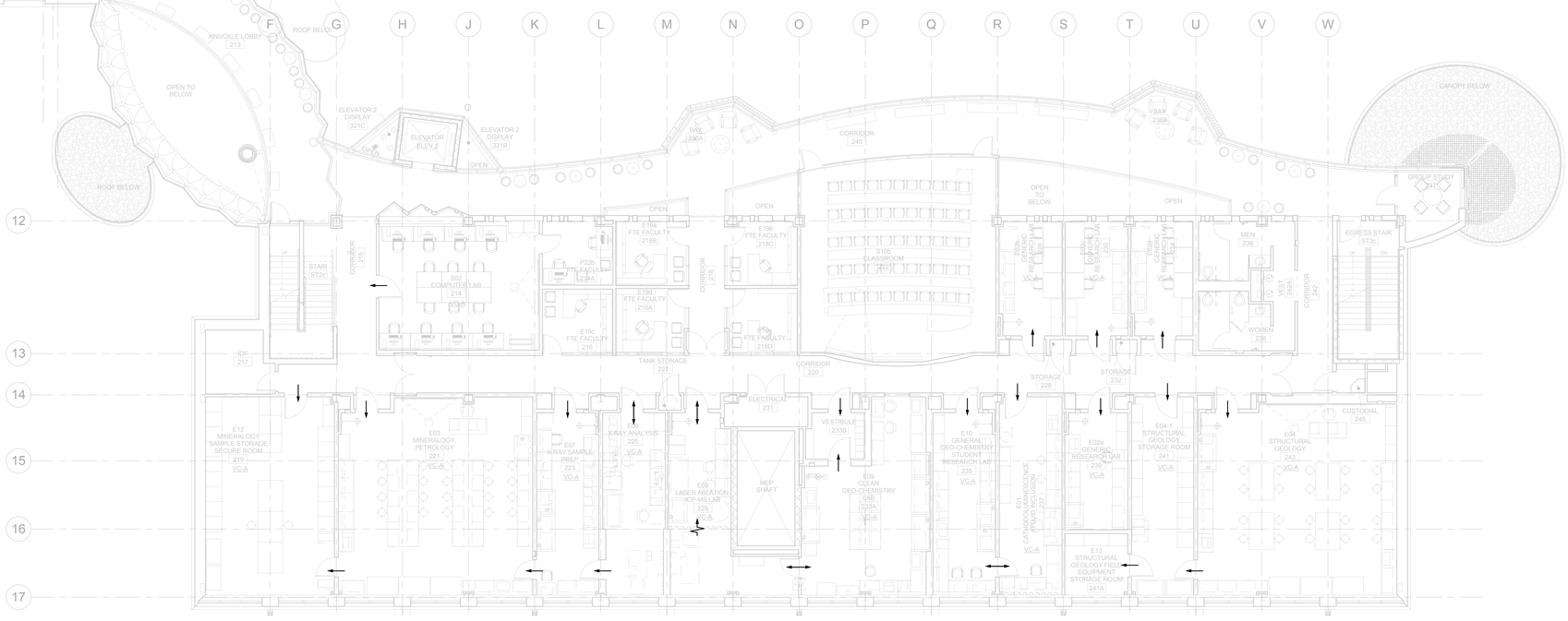
		Equipment												HW
		Exh Max	Exh Min	Req'd Air Flow		Supply Balance		Exhaust Balance		Air Change Rate		Balance Pressure		gpm
RM #	Room Name	CFM	CFM	MAX CFM	MIN CFM	MAX	MIN	MAX	MIN	ACH MAX	ACH MIN	MAX	MIN	
214	COMPUTER LAB	0	0	1375	0	1400	950					0.25	0.05	5
215	Corridor			50		300	300					0.25	0.05	1
219	MINERALOGY SAMPLE STORAGE SECURE ROOM	0	0	1100	425	1050	275	1200	425	11	4	(0.25)	(0.05)	4
220	Corridor			325		1650	1650					0.25	0.05	1
221	MINERALOGY, PETROLOGY	900	300	1575	625	1800	625	1800	625	12	4	(0.25)	(0.05)	6
223	X-RAY SAMPLE PREP	1500	500	1500	500	1050	50	1500	500	32	11	(0.25)	(0.05)	6
225	X-RAY ANALYSIS	300	50	475	200	425	50	575	200	12	4	0.00	0.00	1
226	GENERIC RESEARCH LAB	600	200	600	200	450	50	600	200	21	7	(0.25)	(0.05)	2
229	Laser Ablation Lab	1200	200	1200	500	2290	450	2440	600	42	10	0.00	0.00	5
230	GENERIC RESEARCH LAB	600	200	600	200	450	50	600	200	21	7	(0.25)	(0.05)	2
233A	CLEAN GEO-CHEMISTRY LAB****	3600	1400	3750	1250	4050	1700	3750	1400	43	16	0.25	0.05	14
233B	Vestibule-Clean Geo-Chem Lab	0	0	125	50	125	50	125	50	11	4	(0.25)	(0.05)	1
234	GENERIC RESEARCH LAB	600	200	600	200	450	50	600	200	21	7	(0.25)	(0.05)	2
235	General Geo-Chemistry Stud research Lab	1200	400	1200	400	1050	250	1200	400	26	9	(0.25)	(0.05)	5
237	Cathodoluminescence/ Fluid Inclusion	0	0	525	200	500	75	650	225	13	4	(0.25)	(0.05)	2
239	Generic Research Lab	600	200	600	200	450	50	600	200	20	7	(0.25)	(0.05)	2
241	STRUCTURAL GEOLOGY STORAGE ROOM			525	0	450	100	600	250	12	5	(0.25)	(0.05)	2
241A	Struct Geo Field Equip Storage Room			275	0	200	0	350	100	22	6	(0.25)	(0.05)	1
241A	Struct Geo Field Equip Storage Room	900	300	1625	650	1450	500	1600	650	98	40	(0.25)	(0.05)	1

**** Perchloric Fume Hood

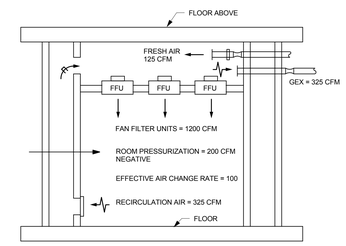




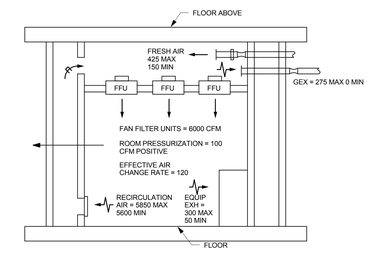
1 H603 - BRIDGE TO JENNINGS
1/8" = 1'-0"



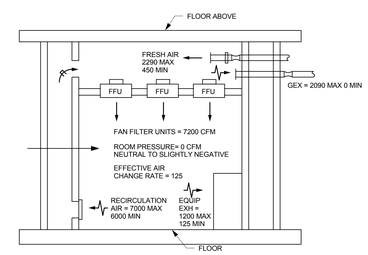
2 H603 - 2ND FLOOR PLAN
1/8" = 1'-0"



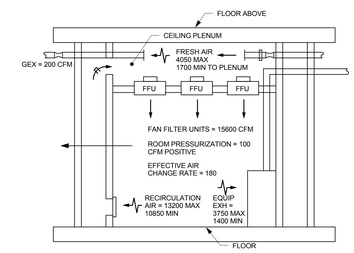
AIR BALANCE: 233B VESTIBULE
NOT TO SCALE



AIR BALANCE: 225 X-RAY ANALYSIS
NOT TO SCALE



AIR BALANCE: 229 LASER ABLATION
NOT TO SCALE



AIR BALANCE: 233A CLEAN GEO-CHEMISTRY
NOT TO SCALE

SYMBOL KEY

= DIRECTION OF AIR FLOW BALANCE TO 0.05" TO 0.2"

= DIRECTIONAL FLOW ACROSS CURTAIN-BALANCE TO 50 - 100 CFM

21-10-038

drawing title: 2ND FLOOR AIR BALANCE PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: As indicated
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: AHG, DP
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: H603

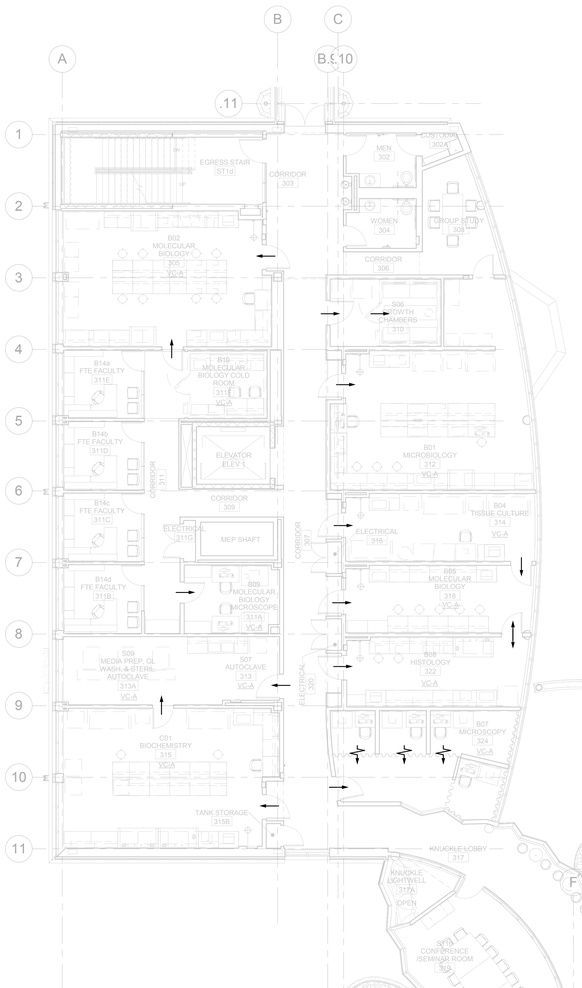
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

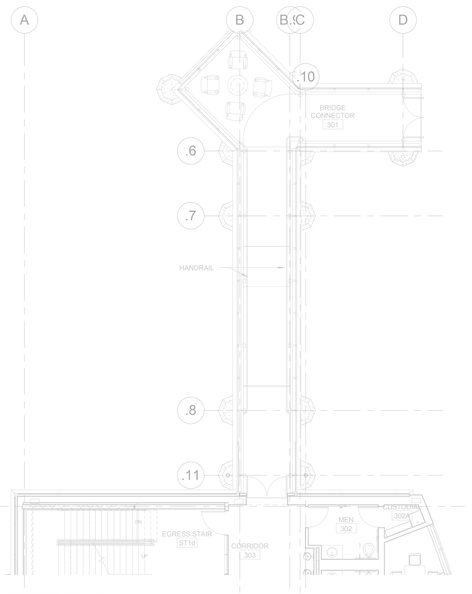
NORTH
3RD FLOOR PLAN

		Equipment												HW
		Exh Max	Exh Min	Req'd Air Flow		Supply Blalance		Exhaust Balance		Air Change Rate		Balance Pressure		gpm
RM #	Room Name	CFM	CFM	MAX CFM	MIN CFM	MAX	MIN	MAX	MIN	ACH MAX	ACH MIN	MAX	MIN	
303	Corridor			0	0	450	450					0.25	0.05	1
305	MOLECULAR BIOLOGY	1200	400	1200	400	900	100	1200	400	12	4	(0.25)	(0.05)	5
307	CORRIDOR			1200	0	1200	1200					0.25	0.05	5
310	GROWTH CHAMBERS	0	0	275	100	175	-50	325	100	13	4	(0.25)	(0.05)	1
311	Corridor			300	0	150	150					0.25	0.05	1
311A	MOLECULAR BIOLOGY			300	250	200	100	350	250	18	13	(0.25)	(0.05)	1
312	MICROBIOLOGY-1	600	200	2350	675	2150	375	2450	675	15	4	(0.25)	(0.05)	1
313	AutoClave	450	300	450	300	300	150	450	300	41	27	(0.25)	(0.05)	2
313A	Media Prep	900	300	900	300	750	150	900	300	83	28	(0.25)	(0.05)	3
314	CCRI TISSUE CULTURE			575	225	700	225	700	225	12	4	(0.25)	(0.05)	2
315	BIOCHEMISTRY	1800	600	1800	600	1800	600	1800	600	18	6	(0.25)	(0.05)	7
318	CCRI MOLECULAR BIOLOGY			550	500	200	50	650	500	12	9	(0.25)	(0.05)	2
322	CCRI HISTOLOGY	1150	300	900	450	1150	450	1150	450	21	8	(0.25)	(0.05)	3
324	CCRI MICROSCOPY			1175	650	1125	150	1275	300	18	4	(0.25)	(0.05)	4

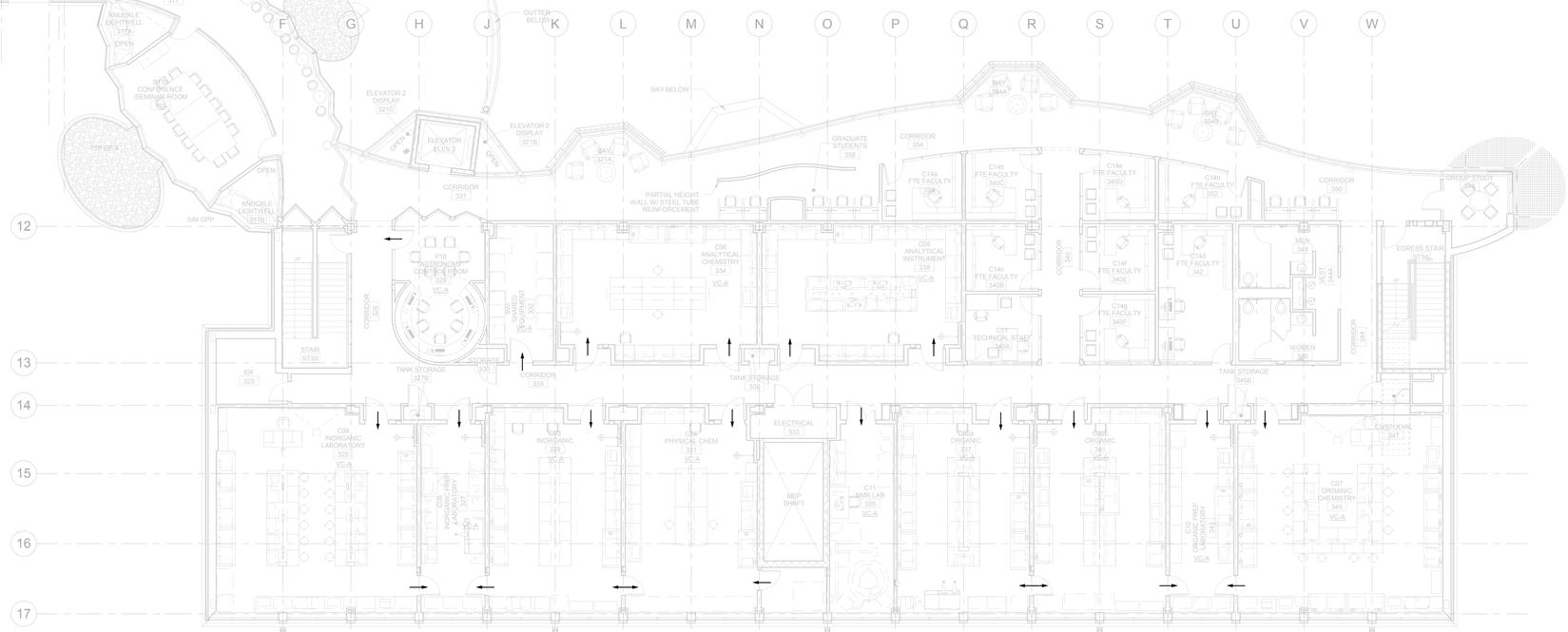
SOUTHEAST
3RD FLOOR PLAN

		Equipment												HW
		Exh Max	Exh Min	Req'd Air Flow		Supply Blalance		Exhaust Balance		Air Change Rate		Balance Pressure		gpm
RM #	Room Name	CFM	CFM	MAX CFM	MIN CFM	MAX	MIN	MAX	MIN	ACH MAX	ACH MIN	MAX	MIN	
325	Inorganic Laboratory	6600	1950	6600	2100	6450	1950	6600	2100	43	14	(0.25)	(0.05)	25
326	Corridor			50	50	2925	2925					0.25	0.05	1
327	Inorganic Prep Laboratory	400	100	400	100	50	50	500	500	11	11	(0.25)	(0.05)	2
328	ASTRONOMY CONTROL ROOM	0	0	450	0	450	200					0.05	0.05	2
329	Inorganic	3150	1150	3150	900	2850	850	3150	1150	31	11	(0.25)	(0.05)	12
331	Physical Chem	900	300	1150	450	1000	150	1300	450	12	4	(0.25)	(0.05)	4
332	SHARED EQUIPMENT	0	0	775	125	625	150	775	300	28	11	(0.25)	(0.05)	1
334	ANALYTICAL CHEMISTRY-1	1800	600	1800	600	1500	300	1800	600	19	6	(0.25)	(0.05)	7
335	NMR Lab			475	400	350	175	575	400	13	9	(0.25)	(0.05)	2
337	Organic	5050	1650	4950	1650	4750	1350	5050	1650	50	16	(0.25)	(0.05)	19
338	Analytical Instrument	1200	400	1200	400	900	100	1200	400	12	4	(0.25)	(0.05)	5
339	Corridor			325	0	300	300					0.25	0.05	1
341	Organic	3300	1100	3300	1100	3000	800	3300	1100	33	11	(0.25)	(0.05)	12
343	Organic Prep Laboratory	900	300	900	300	450	50	900	500	19	11	(0.25)	(0.05)	3
345	Organic Chemistry	6900	2200	6900	2200	6750	2050	6900	2200	44	14	(0.25)	(0.05)	26





1 H604 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 H604 - 3RD FLOOR PLAN
1/8" = 1'-0"

SYMBOL KEY

= DIRECTION OF AIR FLOW BALANCE TO 0.05" TO 0.2"

= DIRECTIONAL FLOW ACROSS CURTAIN-BALANCE TO 50 - 100 CFM

21-10-038

drawing title: 3RD FLOOR AIR BALANCE PLAN		STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	sheet no. 2 of 2
REVISIONS			
mark	date	description	
	11-21-2012	Bid Documents	
		DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171	date 11-21-2012
			scale 1/8" = 1'-0"
		project: SCSU NEW ACADEMIC LABORATORY BUILDING	drawn by AHG, DP
			approved by GVD
		CAD no. 1383 / project no. BI-RS-283-ARC	drawing no. H604

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TYPICAL FOOT CANDLE LEVELS	
TYPICAL SPACE	FOOT CANDLE LEVEL
CLASSROOM	40-60
CONFERENCE ROOM	40-60
CORRIDOR	10-15
LAB	65-80
MECHANICAL ROOM	15-25
OFFICE	30-50
RESTROOM	15-25
STAIRWELL	10-15
STORAGE	15-20

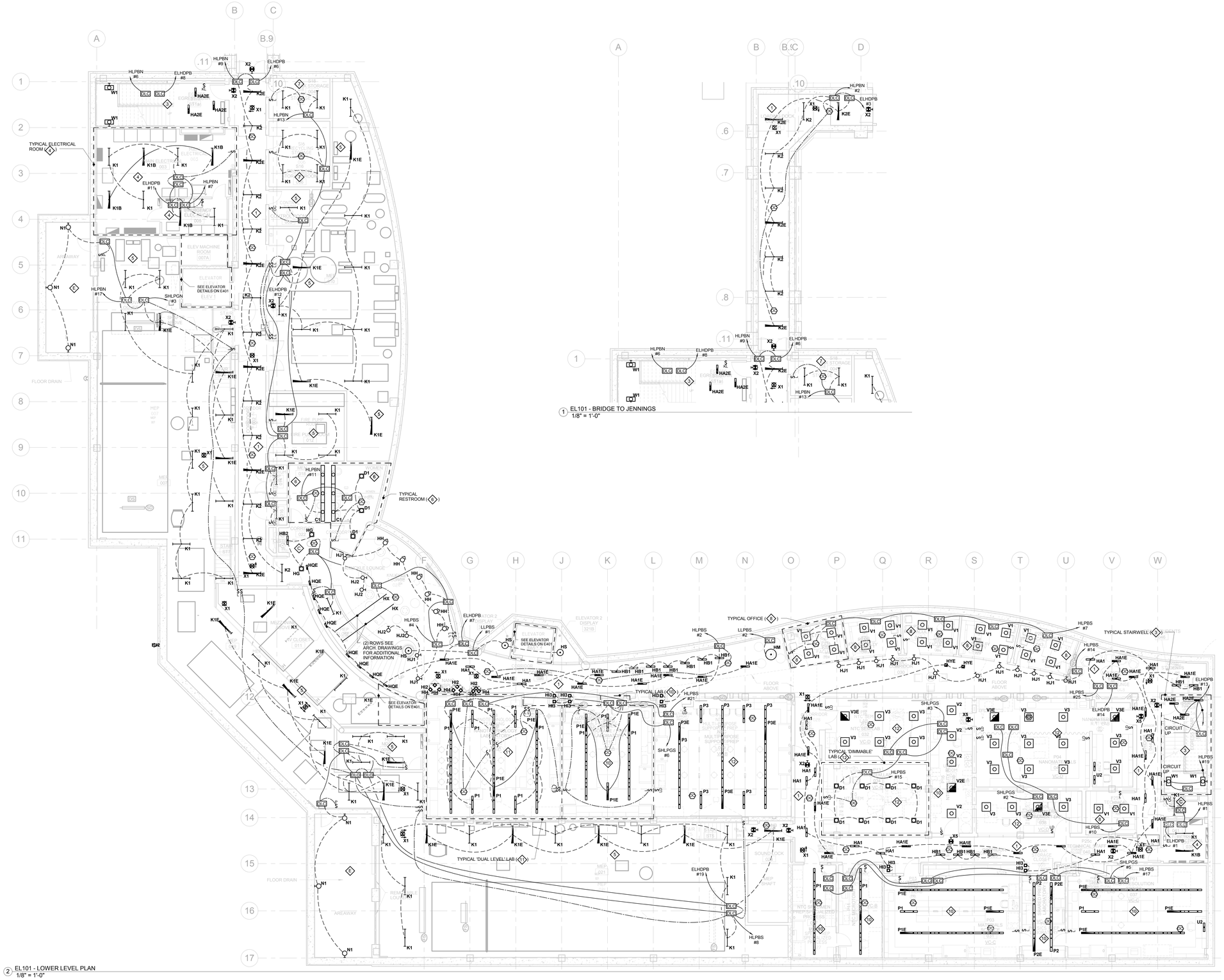
LIGHTING CONTROL DETAIL REFERENCES

1. SEE LIGHTING CONTROL 'TYPICAL CORRIDOR (NO DAYLIGHTING)' DETAIL ON E501.
2. SEE LIGHTING CONTROL ' TYPICAL CORRIDOR (DAYLIGHTING)' DETAIL ON E501.
3. SEE LIGHTING CONTROL 'TYPICAL STAIRS' DETAIL ON E501.
4. SEE LIGHTING CONTROL 'TYPICAL ELECTRICAL ROOM' DETAIL ON E501.
5. SEE LIGHTING CONTROL 'TYPICAL MEPT ROOM' DETAIL ON E501.
6. SEE LIGHTING CONTROL 'TYPICAL RESTROOM' DETAIL ON E501.
7. SEE LIGHTING CONTROL 'TYPICAL STORAGE' DETAIL ON E501.
8. SEE LIGHTING CONTROL 'TYPICAL OFFICE' DETAIL ON E501.
9. SEE LIGHTING CONTROL 'TYPICAL CONFERENCE/ MEETING ROOM' DETAIL ON E501.
10. SEE LIGHTING CONTROL 'TYPICAL LAB' DETAIL ON E501.
11. SEE LIGHTING CONTROL 'TYPICAL DUAL LEVEL LAB' DETAIL ON E501.
12. SEE LIGHTING CONTROL 'TYPICAL DIMMABLE LAB' DETAIL ON E501.
13. SEE LIGHTING CONTROL 'TYPICAL CLASSROOM' DETAIL ON E501.
14. SEE LIGHTING CONTROL 'TYPICAL EXTERIOR' DETAIL ON E501.
15. ALL FIXTURES ON THIS SWITCH LEG TO BE SWITCH CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
16. ALL FIXTURES ON THIS SWITCH LEG TO BE VACANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
17. ALL FIXTURES ON THIS SWITCH LEG TO BE OCCUPANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.

DRAWING NOTES

1. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN OVERHEAD SERVICE CARRIER.
2. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN CASEWORK FOR ADA SPACE.
3. PROVIDE POWER FOR INTEGRAL COLD ROOM LUMINAIRES AND CONTROLS.
4. PROVIDE POWER FOR INTEGRAL AQUARIUM LIGHTING. CONTROL BY TIME CLOCK LOCATED IN ROOM.

1 EL101 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 EL101 - LOWER LEVEL PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

drawing title: ELECTRICAL LIGHTING LOWER LEVEL FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		MCS, REL
	CAD: 130	project no.: BI-RS-283-ARC	approved by: GVD
			drawing no.: EL101

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

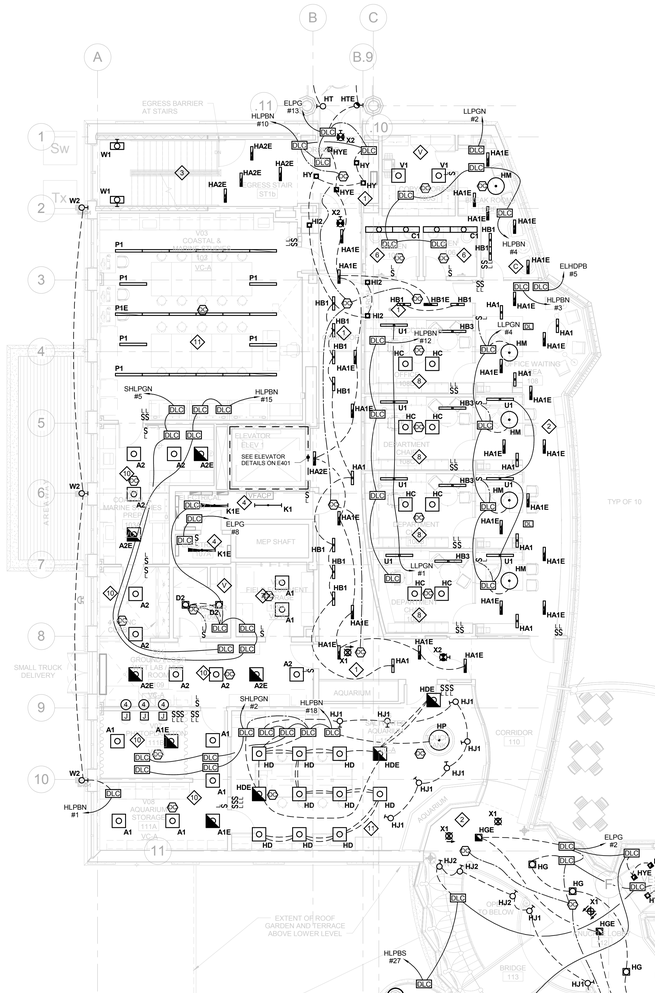
TYPICAL FOOT CANDLE LEVELS	
TYPICAL SPACE	FOOT CANDLE LEVEL
CLASSROOM	40-60
CONFERENCE ROOM	40-60
CORRIDOR	10-15
LAB	65-80
MECHANICAL ROOM	15-25
OFFICE	30-50
RESTROOM	15-25
STAIRWELL	10-15
STORAGE	15-20

LIGHTING CONTROL DETAIL REFERENCES

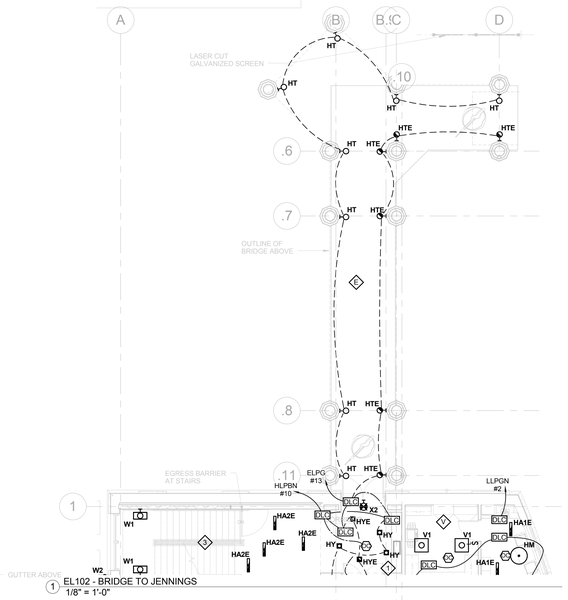
1. SEE LIGHTING CONTROL 'TYPICAL CORRIDOR (NO DAYLIGHTING)' DETAIL ON E501.
2. SEE LIGHTING CONTROL ' TYPICAL CORRIDOR (DAYLIGHTING)' DETAIL ON E501.
3. SEE LIGHTING CONTROL 'TYPICAL STAIRS' DETAIL ON E501.
4. SEE LIGHTING CONTROL 'TYPICAL ELECTRICAL ROOM' DETAIL ON E501.
5. SEE LIGHTING CONTROL 'TYPICAL MEPT ROOM' DETAIL ON E501.
6. SEE LIGHTING CONTROL 'TYPICAL RESTROOM' DETAIL ON E501.
7. SEE LIGHTING CONTROL 'TYPICAL STORAGE' DETAIL ON E501.
8. SEE LIGHTING CONTROL 'TYPICAL OFFICE' DETAIL ON E501.
9. SEE LIGHTING CONTROL 'TYPICAL CONFERENCE/ MEETING ROOM' DETAIL ON E501.
10. SEE LIGHTING CONTROL 'TYPICAL LAB' DETAIL ON E501.
11. SEE LIGHTING CONTROL 'TYPICAL DUAL LEVEL LAB' DETAIL ON E501.
12. SEE LIGHTING CONTROL 'TYPICAL DIMMABLE LAB' DETAIL ON E501.
13. SEE LIGHTING CONTROL 'TYPICAL CLASSROOM' DETAIL ON E501.
14. SEE LIGHTING CONTROL 'TYPICAL EXTERIOR' DETAIL ON E501.
15. ALL FIXTURES ON THIS SWITCH LEG TO BE SWITCH CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
16. ALL FIXTURES ON THIS SWITCH LEG TO BE VACANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
17. ALL FIXTURES ON THIS SWITCH LEG TO BE OCCUPANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.

DRAWING NOTES

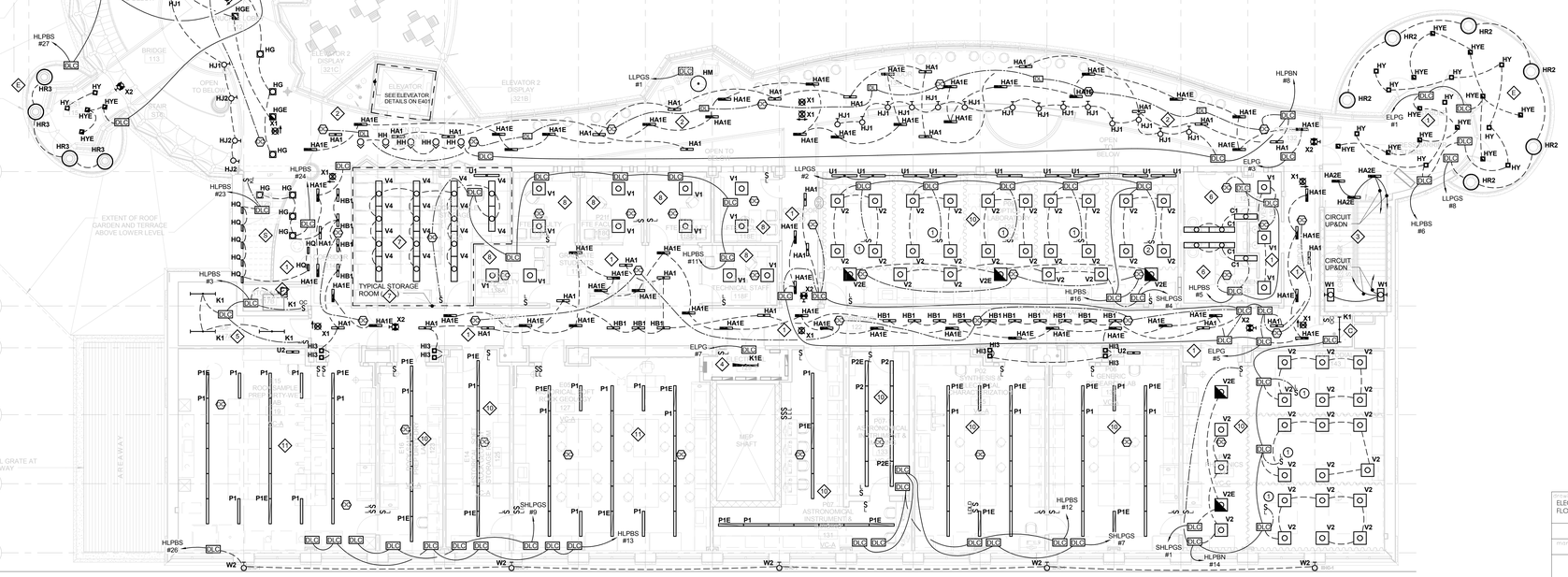
1. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN OVERHEAD SERVICE CARRIER.
2. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN CASEWORK FOR ADA SPACE.
3. PROVIDE POWER FOR INTEGRAL COLD ROOM LUMINAIRES AND CONTROLS.
4. PROVIDE POWER FOR INTEGRAL AQUARIUM LIGHTING. CONTROL BY TIME CLOCK LOCATED IN ROOM.



2 EL102 - GROUND FLOOR PLAN
1/8" = 1'-0"



1 EL102 - BRIDGE TO JENNINGS
1/8" = 1'-0"



PROJECT NORTH

21-10-038

drawing title: ELECTRICAL LIGHTING GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: MCS, REL
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: EL102

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

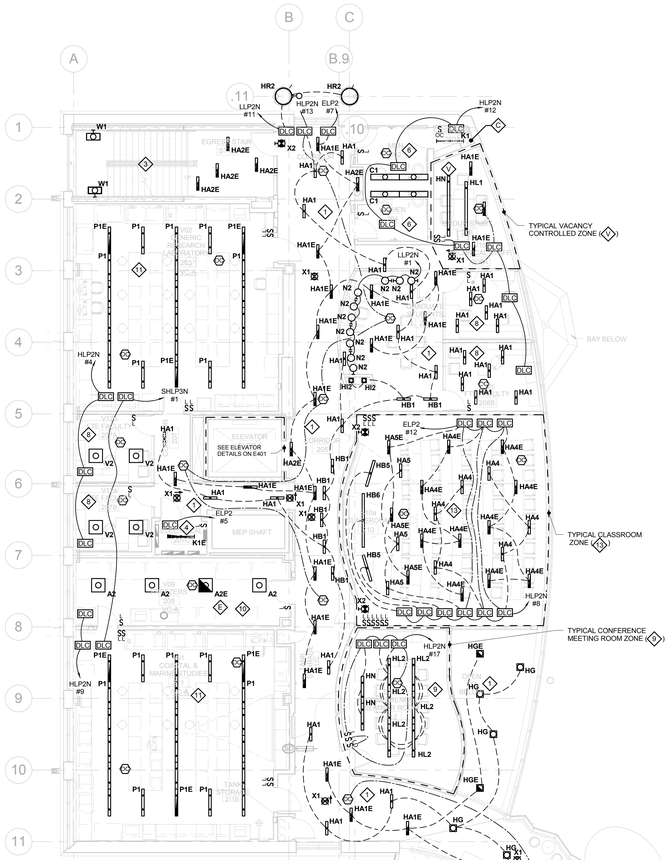
TYPICAL FOOT CANDLE LEVELS	
TYPICAL SPACE	FOOT CANDLE LEVEL
CLASSROOM	40-60
CONFERENCE ROOM	40-60
CORRIDOR	10-15
LAB	65-80
MECHANICAL ROOM	15-25
OFFICE	30-50
RESTROOM	15-25
STAIRWELL	10-15
STORAGE	15-20

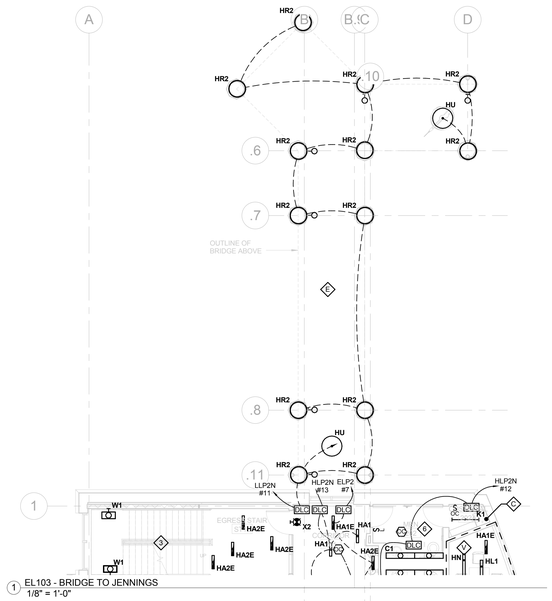
LIGHTING CONTROL DETAIL REFERENCES

1. SEE LIGHTING CONTROL 'TYPICAL CORRIDOR (NO DAYLIGHTING)' DETAIL ON E501.
2. SEE LIGHTING CONTROL ' TYPICAL CORRIDOR (DAYLIGHTING)' DETAIL ON E501.
3. SEE LIGHTING CONTROL 'TYPICAL STAIRS' DETAIL ON E501.
4. SEE LIGHTING CONTROL 'TYPICAL ELECTRICAL ROOM' DETAIL ON E501.
5. SEE LIGHTING CONTROL 'TYPICAL MEPT ROOM' DETAIL ON E501.
6. SEE LIGHTING CONTROL 'TYPICAL RESTROOM' DETAIL ON E501.
7. SEE LIGHTING CONTROL 'TYPICAL STORAGE' DETAIL ON E501.
8. SEE LIGHTING CONTROL 'TYPICAL OFFICE' DETAIL ON E501.
9. SEE LIGHTING CONTROL 'TYPICAL CONFERENCE/ MEETING ROOM' DETAIL ON E501.
10. SEE LIGHTING CONTROL 'TYPICAL LAB' DETAIL ON E501.
11. SEE LIGHTING CONTROL 'TYPICAL DUAL LEVEL LAB' DETAIL ON E501.
12. SEE LIGHTING CONTROL 'TYPICAL DIMMABLE LAB' DETAIL ON E501.
13. SEE LIGHTING CONTROL 'TYPICAL CLASSROOM' DETAIL ON E501.
14. SEE LIGHTING CONTROL 'TYPICAL EXTERIOR' DETAIL ON E501.
- V - ALL FIXTURES ON THIS SWITCH LEG TO BE SWITCH CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
- V - ALL FIXTURES ON THIS SWITCH LEG TO BE VACANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
- C - ALL FIXTURES ON THIS SWITCH LEG TO BE OCCUPANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.

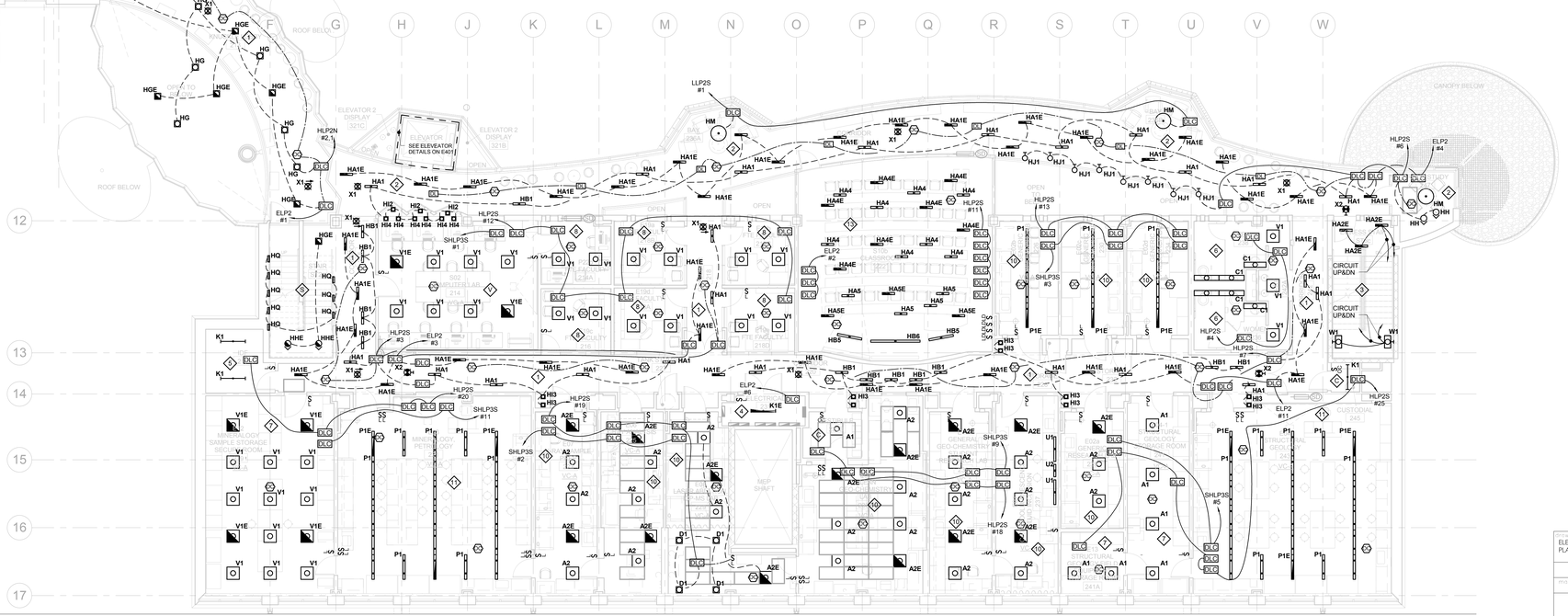
DRAWING NOTES

1. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN OVERHEAD SERVICE CARRIER.
2. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN CASEWORK FOR ADA SPACE.
3. PROVIDE POWER FOR INTEGRAL COLD ROOM LUMINAIRES AND CONTROLS.
4. PROVIDE POWER FOR INTEGRAL AQUARIUM LIGHTING. CONTROL BY TIME CLOCK LOCATED IN ROOM.





1 EL103 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 EL103 - 2ND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

DRAWING TITLE: ELECTRICAL LIGHTING 2ND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date 11-21-2012
11-21-2012 Bid Documents			1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: MCS, REL
			checked by: GVD
	CAD no. 130	project no. BI-RS-283-ARC	drawing no. EL103

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

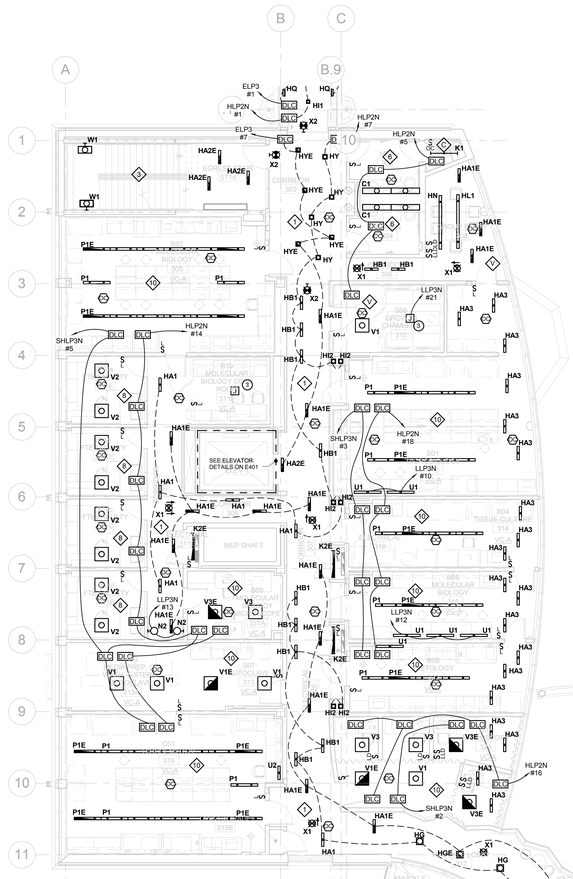
TYPICAL FOOT CANDLE LEVELS	
TYPICAL SPACE	FOOT CANDLE LEVEL
CLASSROOM	40-60
CONFERENCE ROOM	40-60
CORRIDOR	10-15
LAB	65-80
MECHANICAL ROOM	15-25
OFFICE	30-50
RESTROOM	15-25
STAIRWELL	10-15
STORAGE	15-20

LIGHTING CONTROL DETAIL REFERENCES

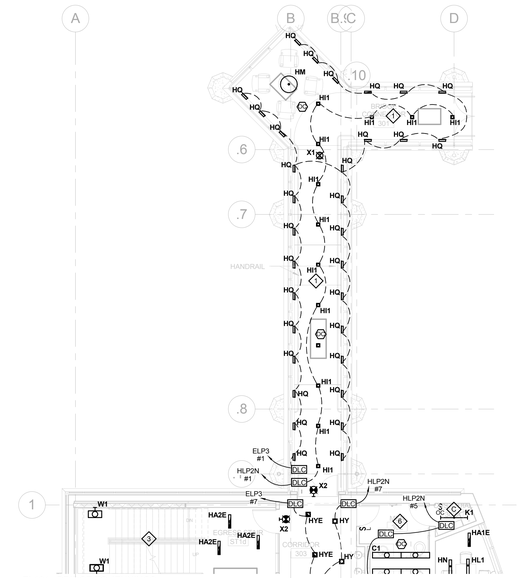
1. SEE LIGHTING CONTROL 'TYPICAL CORRIDOR (NO DAYLIGHTING)' DETAIL ON E501.
2. SEE LIGHTING CONTROL ' TYPICAL CORRIDOR (DAYLIGHTING)' DETAIL ON E501.
3. SEE LIGHTING CONTROL 'TYPICAL STAIRS' DETAIL ON E501.
4. SEE LIGHTING CONTROL 'TYPICAL ELECTRICAL ROOM' DETAIL ON E501.
5. SEE LIGHTING CONTROL 'TYPICAL MEPT ROOM' DETAIL ON E501.
6. SEE LIGHTING CONTROL 'TYPICAL RESTROOM' DETAIL ON E501.
7. SEE LIGHTING CONTROL 'TYPICAL STORAGE' DETAIL ON E501.
8. SEE LIGHTING CONTROL 'TYPICAL OFFICE' DETAIL ON E501.
9. SEE LIGHTING CONTROL 'TYPICAL CONFERENCE/ MEETING ROOM' DETAIL ON E501.
10. SEE LIGHTING CONTROL 'TYPICAL LAB' DETAIL ON E501.
11. SEE LIGHTING CONTROL 'TYPICAL DUAL LEVEL LAB' DETAIL ON E501.
12. SEE LIGHTING CONTROL 'TYPICAL DIMMABLE LAB' DETAIL ON E501.
13. SEE LIGHTING CONTROL 'TYPICAL CLASSROOM' DETAIL ON E501.
14. SEE LIGHTING CONTROL 'TYPICAL EXTERIOR' DETAIL ON E501.
15. ALL FIXTURES ON THIS SWITCH LEG TO BE SWITCH CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
16. ALL FIXTURES ON THIS SWITCH LEG TO BE VACANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
17. ALL FIXTURES ON THIS SWITCH LEG TO BE OCCUPANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.

DRAWING NOTES

1. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN OVERHEAD SERVICE CARRIER.
2. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN CASEWORK FOR ADA SPACE.
3. PROVIDE POWER FOR INTEGRAL COLD ROOM LUMINAIRES AND CONTROLS.
4. PROVIDE POWER FOR INTEGRAL AQUARIUM LIGHTING. CONTROL BY TIME CLOCK LOCATED IN ROOM.



1 EL104 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 EL104 - 3RD FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

ELECTRICAL LIGHTING 3RD FLOOR PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

PROJECT:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

sheet no. 2 of 2
date: 11-21-2012
scale: 1/8" = 1'-0"
drawn by: MCS, REL
approved by: GVD
drawing no.: EL104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

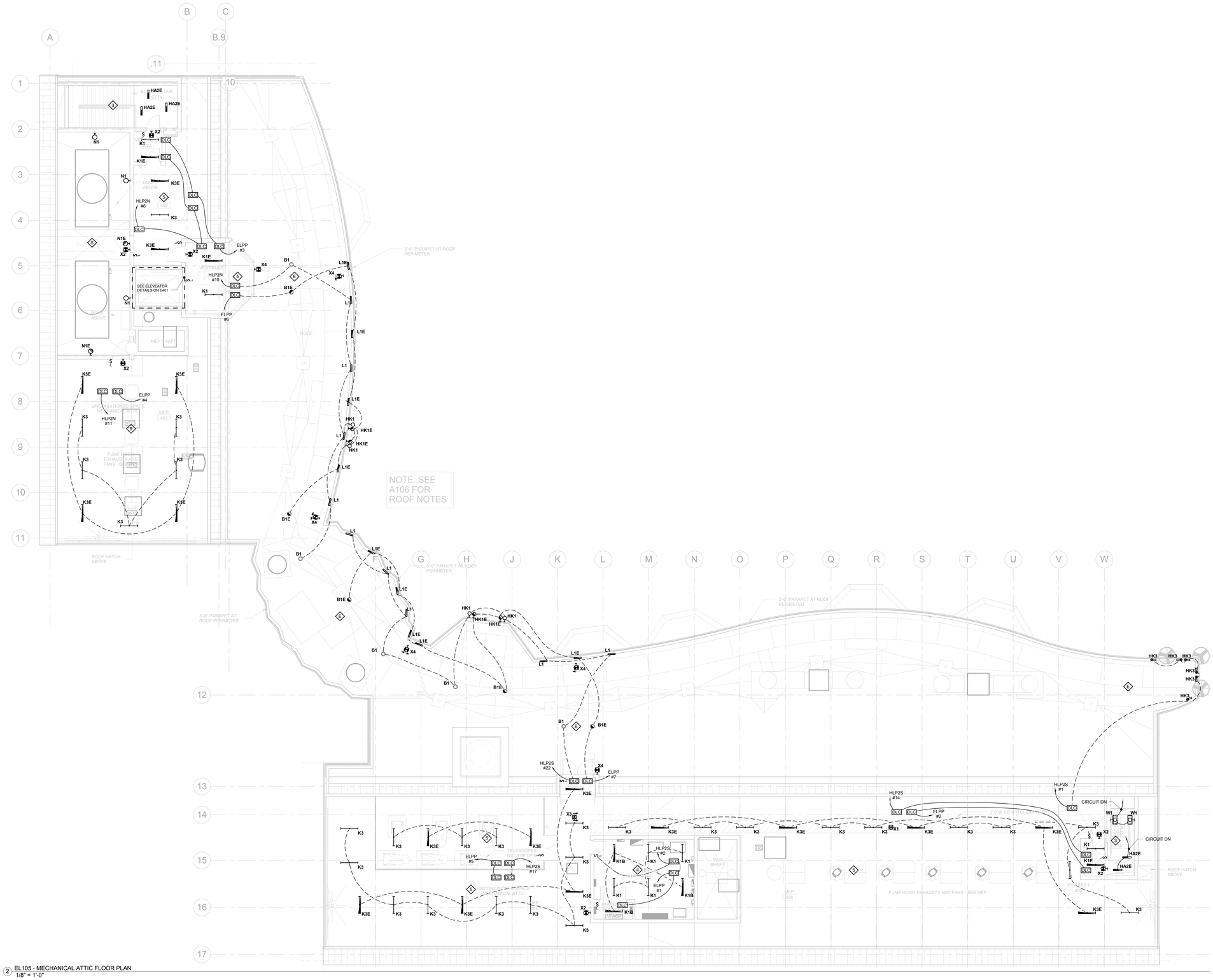
TYPICAL FOOT CANDLE LEVELS	
TYPICAL SPACE	FOOT CANDLE LEVEL
CLASSROOM	40-60
CONFERENCE ROOM	40-60
CORRIDOR	10-15
LAB	65-80
MECHANICAL ROOM	15-25
OFFICE	30-50
RESTROOM	15-25
STAIRWELL	10-15
STORAGE	15-20

LIGHTING CONTROL DETAIL REFERENCES

1. SEE LIGHTING CONTROL 'TYPICAL CORRIDOR (NO DAYLIGHTING)/' DETAIL ON E501.
2. SEE LIGHTING CONTROL ' TYPICAL CORRIDOR (DAYLIGHTING)/' DETAIL ON E501.
3. SEE LIGHTING CONTROL 'TYPICAL STAIRS' DETAIL ON E501.
4. SEE LIGHTING CONTROL 'TYPICAL ELECTRICAL ROOM' DETAIL ON E501.
5. SEE LIGHTING CONTROL 'TYPICAL MEPT ROOM' DETAIL ON E501.
6. SEE LIGHTING CONTROL 'TYPICAL RESTROOM' DETAIL ON E501.
7. SEE LIGHTING CONTROL 'TYPICAL STORAGE' DETAIL ON E501.
8. SEE LIGHTING CONTROL 'TYPICAL OFFICE' DETAIL ON E501.
9. SEE LIGHTING CONTROL 'TYPICAL CONFERENCE/ MEETING ROOM' DETAIL ON E501.
10. SEE LIGHTING CONTROL 'TYPICAL LAB' DETAIL ON E501.
11. SEE LIGHTING CONTROL 'TYPICAL DUAL LEVEL LAB' DETAIL ON E501.
12. SEE LIGHTING CONTROL 'TYPICAL DIMMABLE LAB' DETAIL ON E501.
13. SEE LIGHTING CONTROL 'TYPICAL CLASSROOM' DETAIL ON E501.
14. SEE LIGHTING CONTROL 'TYPICAL EXTERIOR' DETAIL ON E501.
15. ALL FIXTURES ON THIS SWITCH LEG TO BE SWITCH CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
16. ALL FIXTURES ON THIS SWITCH LEG TO BE VACANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.
17. ALL FIXTURES ON THIS SWITCH LEG TO BE OCCUPANCY CONTROLLED. SEE SEQUENCE OF OPERATION ON SHEET E501.

DRAWING NOTES

1. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN OVERHEAD SERVICE CARRIER.
2. LOCAL LOW VOLTAGE SWITCH TO BE MOUNTED IN CASEWORK FOR ADA SPACE.
3. PROVIDE POWER FOR INTEGRAL COLD ROOM LUMINAIRES AND CONTROLS.
4. PROVIDE POWER FOR INTEGRAL AQUARIUM LIGHTING. CONTROL BY TIME CLOCK LOCATED IN ROOM.



2 EL105 - MECHANICAL ATTIC FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

ELECTRICAL LIGHTING MECHANICAL ATTIC FLOOR PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

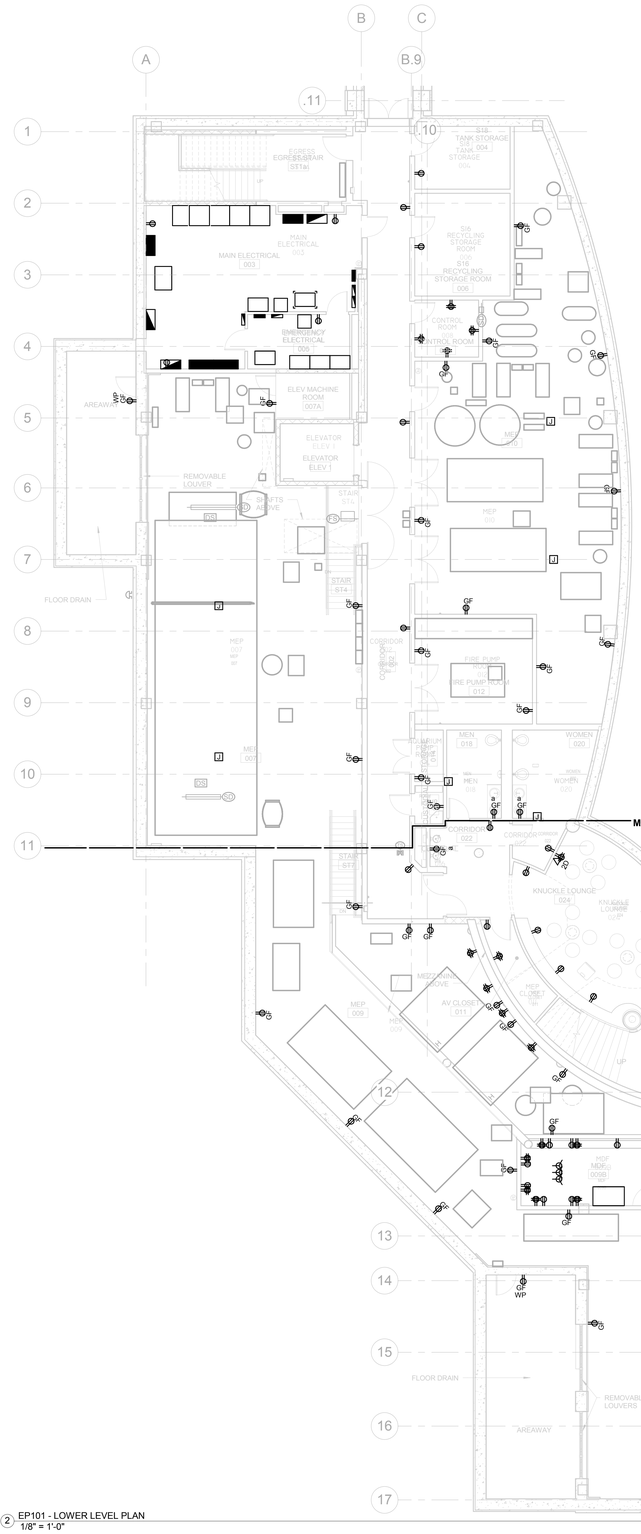
2 of 2

date: 11-21-2012
scale: 1/8" = 1'-0"
drawn by: MCS, REL
approved by: GVD
drawing no.: EL105

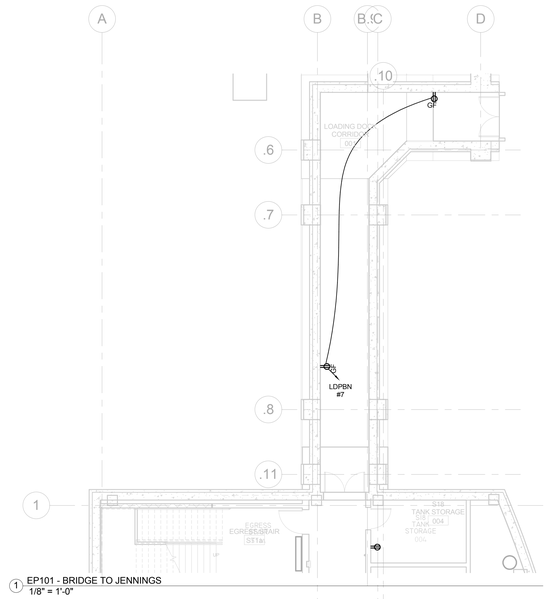
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

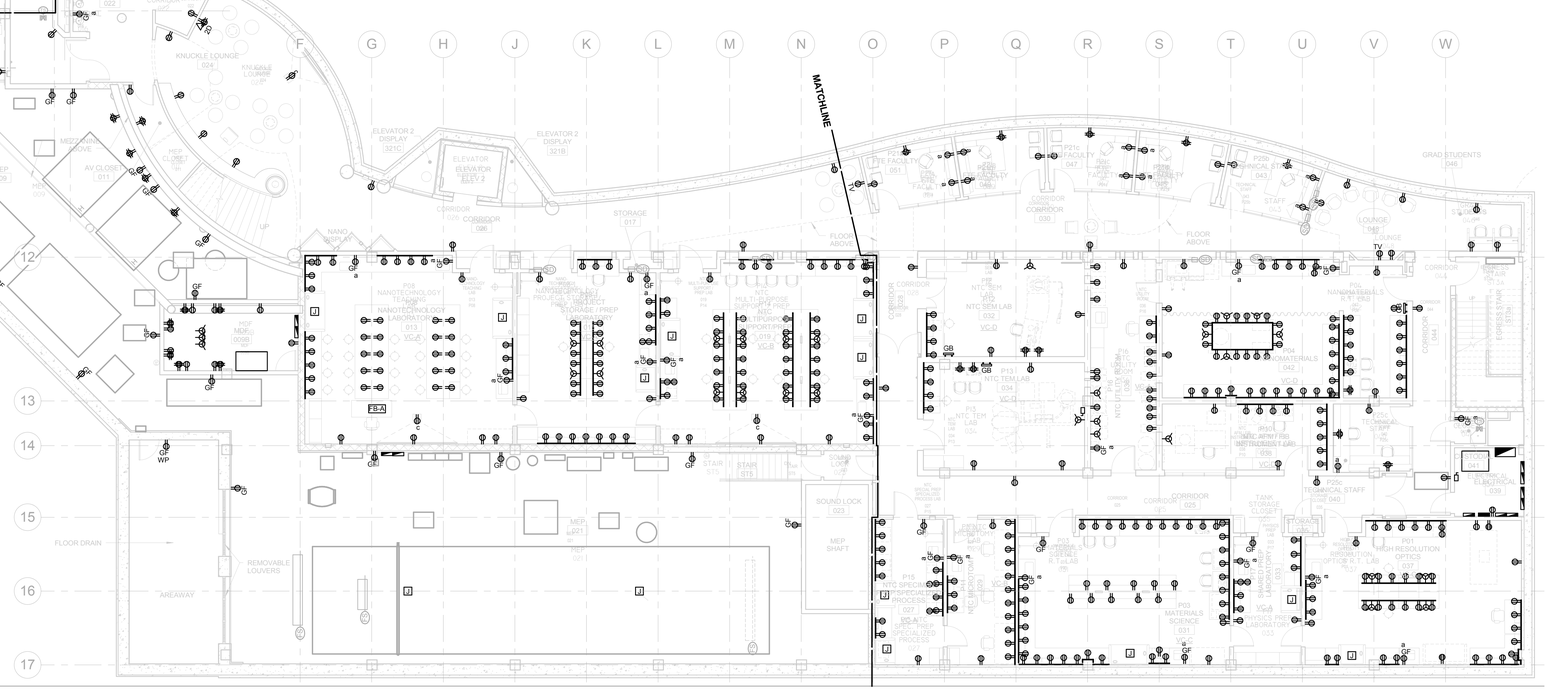
1. SEE 1/4" SCALE PART PLANS FOR CIRCUITING AND ADDITIONAL INFORMATION.



2 EP101 - LOWER LEVEL PLAN
1/8" = 1'-0"



1 EP101 - BRIDGE TO JENNINGS
1/8" = 1'-0"



PROJECT NORTH
N
21-10-038

drawing title	
ELECTRICAL POWER LOWER LEVEL FLOOR PLAN	

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWN PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

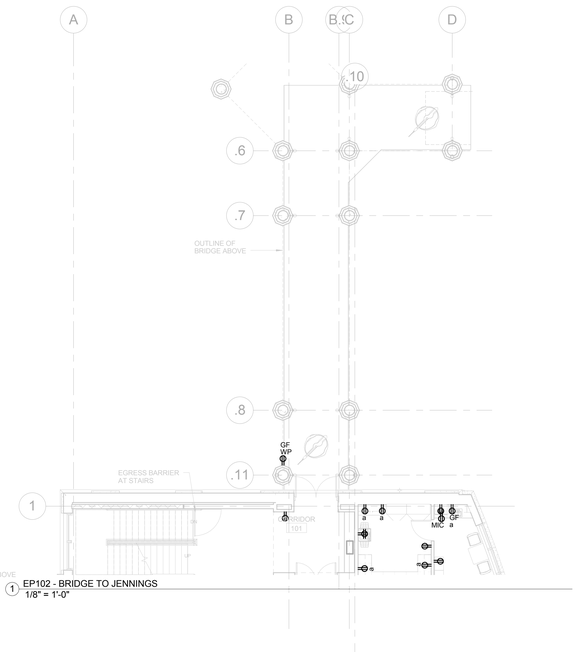
volume: 2 of 2
date: 11-21-2012
scale: 1/8" = 1'-0"
drawn by: MCS, REL
approved by: GVD
drawing no.: EP101

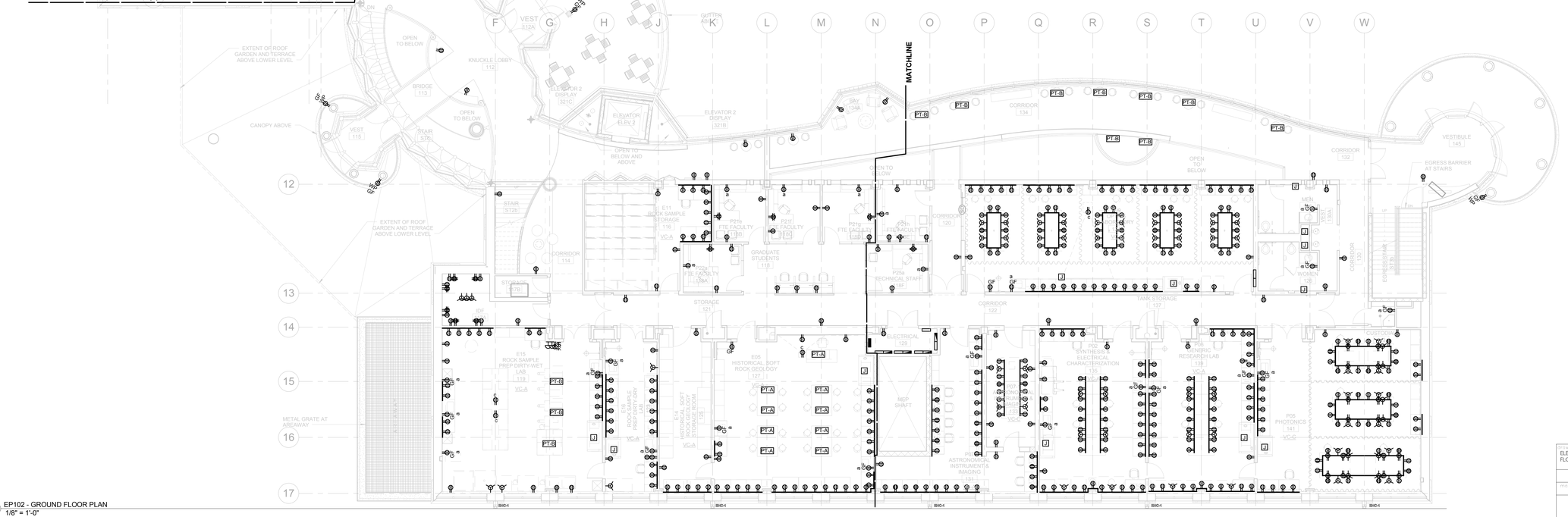
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR CIRCUITING AND ADDITIONAL INFORMATION.

1 EP102 - BRIDGE TO JENNINGS
1/8" = 1'-0"





2 EP102 - GROUND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

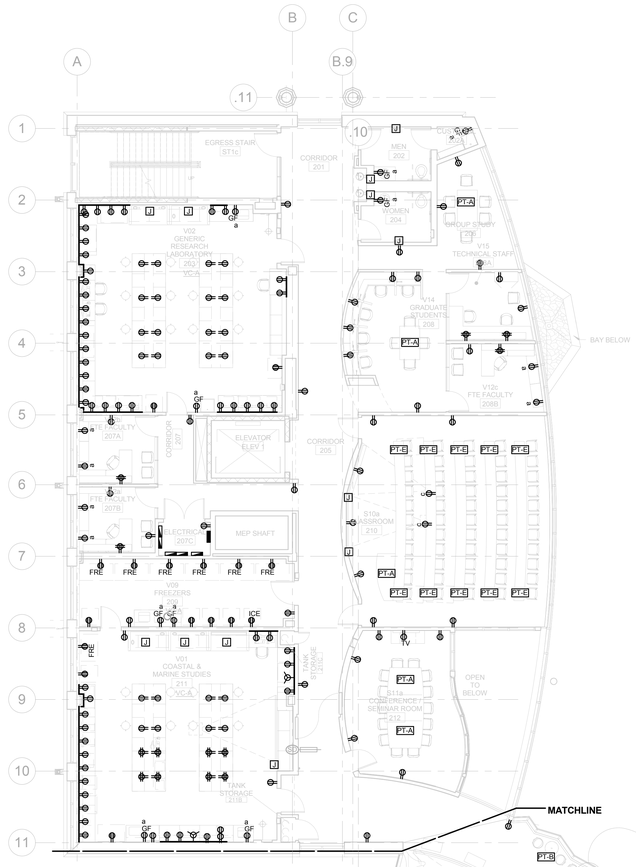
21-10-038

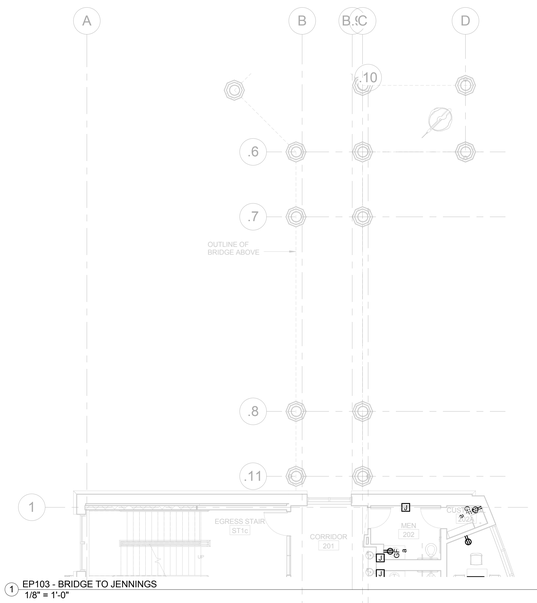
drawing title: ELECTRICAL POWER GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date 11-21-2012
11-21-2012 Bid Documents			scale 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by MCS, REL
			approved by GVD
	CAD file 130	project no. BI-RS-283-ARC	drawing no. EP102

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

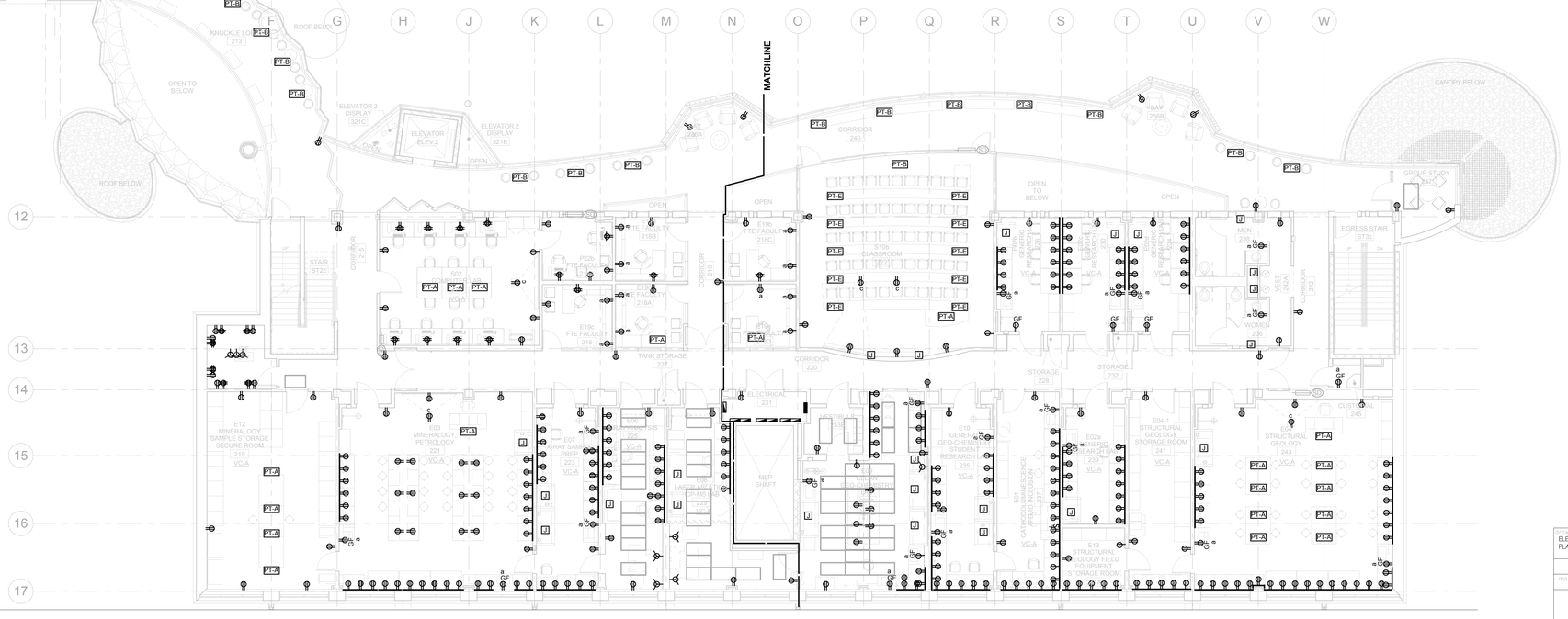
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR CIRCUITING AND ADDITIONAL INFORMATION.





1 EP103 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 EP103 - 2ND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

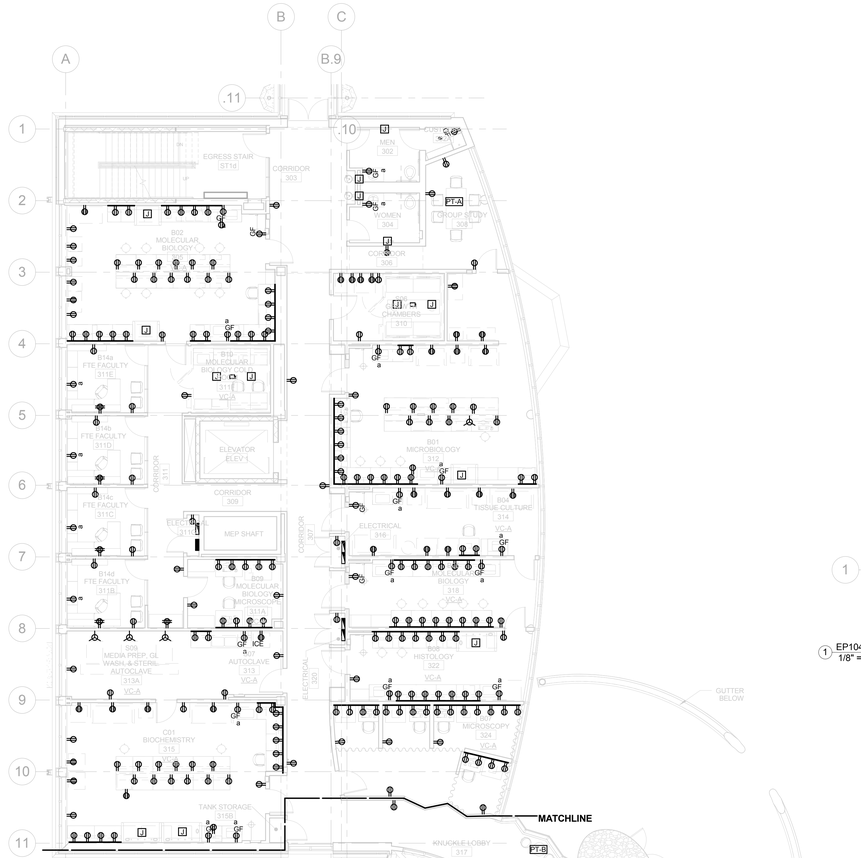
21-10-038

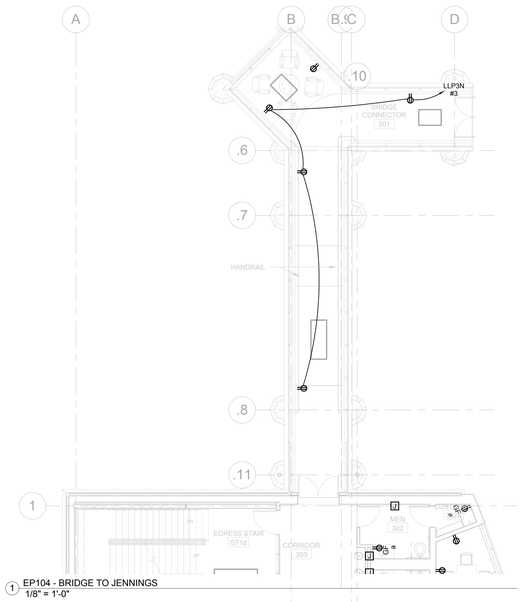
drawing title: ELECTRICAL POWER 2ND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
1 / 11-21-2012 / Bid Documents	SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: MCS, REL
	CAD file: 1380	project no.: BI-RS-283-ARC	approved by: GVD
			drawing no.: EP103

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

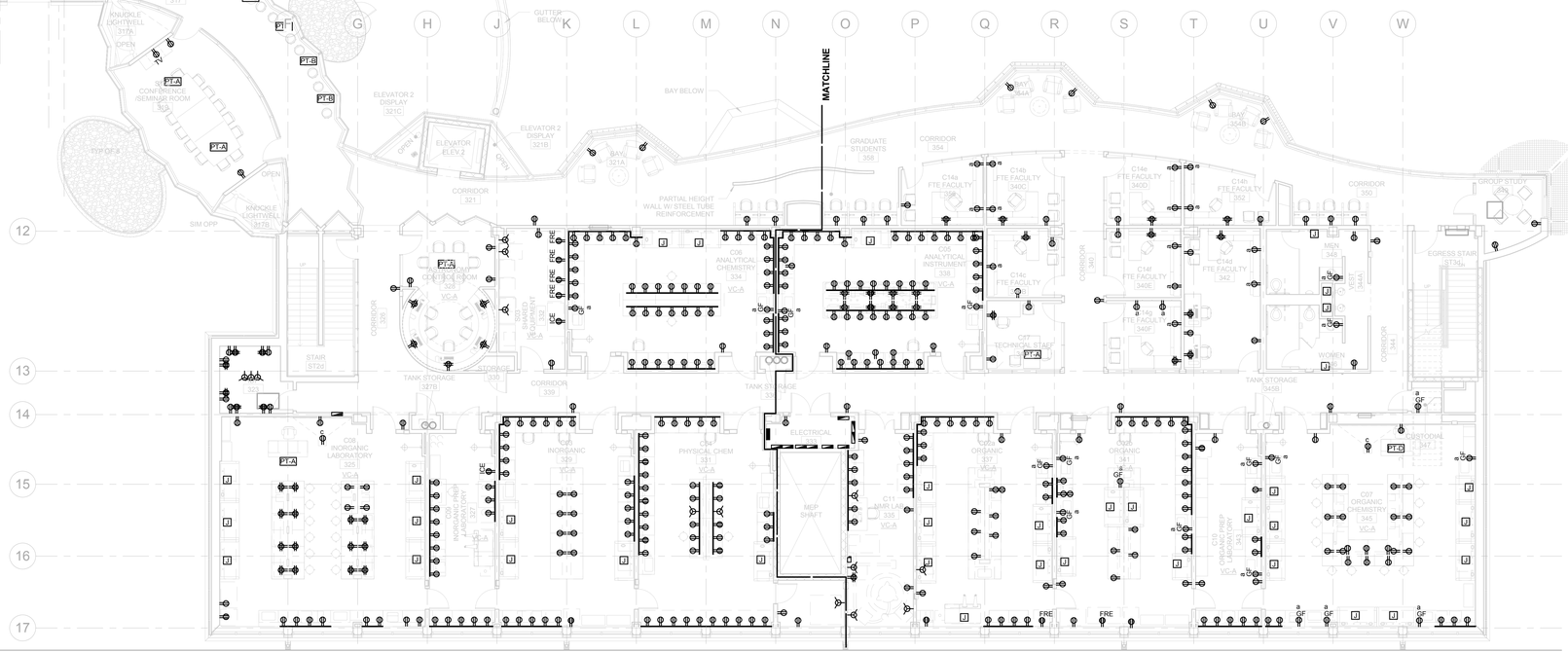
GENERAL NOTES

1. SEE 1/4" SCALE PART PLANS FOR CIRCUITING AND ADDITIONAL INFORMATION.





1 EP104 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 EP104 - 3RD FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

ELECTRICAL POWER 3RD FLOOR PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

SCSU NEW ACADEMIC LABORATORY BUILDING

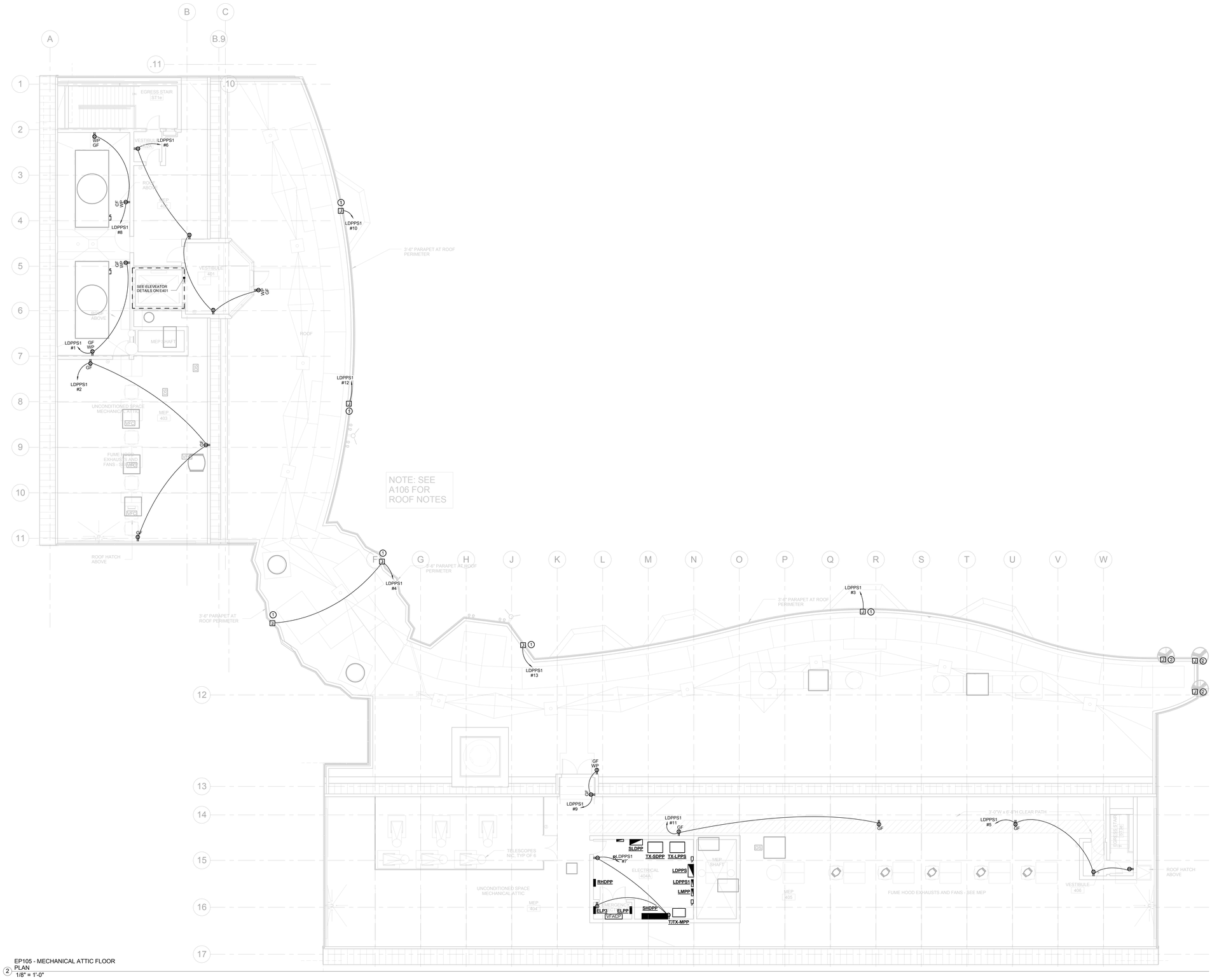
CAD file: 130
project no.: BI-RS-283-ARC

sheet of: 2 of 2
date: 11-21-2012
scale: 1/8" = 1'-0"
drawn by: MCS, REL
approved by: GVD
drawing no.: EP104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

1. WEATHER PROOF JUNCTION BOX MOUNTED TO PARAPET WALL TO PROVIDE POWER FOR TELESCOPE.
2. JUNCTION BOX FOR CONNECTION TO WIND TURBINE. RUN 1 1/2" CONDUIT BACK TO ELECTRICAL ROOM 404A FOR CONNECTION TO INVERTER SYSTEM.



2 EP105 - MECHANICAL ATTIC FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

project
ELECTRICAL POWER MECHANICAL ATTIC FLOOR PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

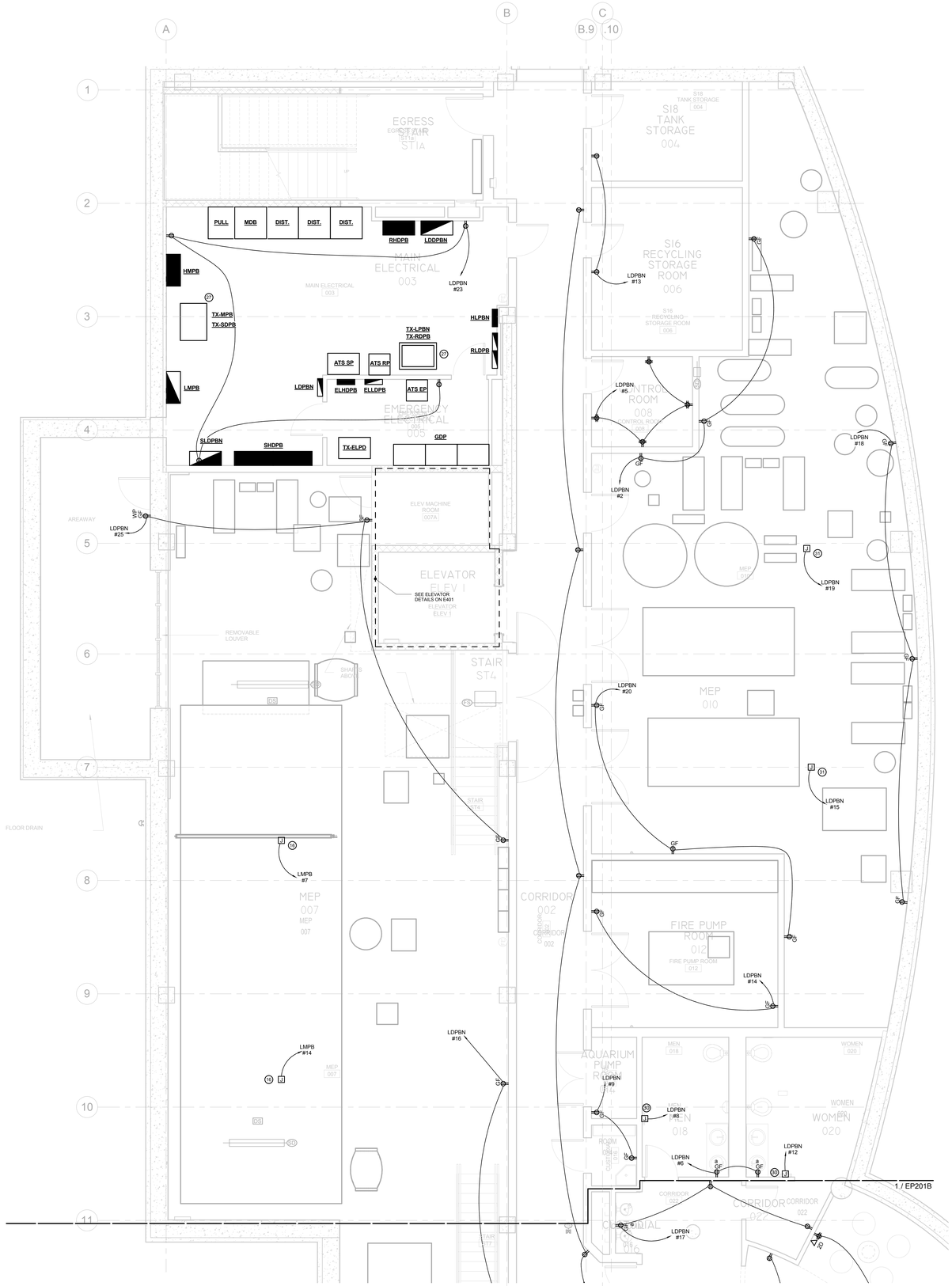
DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 130
project no. BI-RS-283-ARC

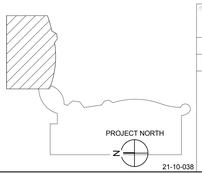
sheet no. 2 of 2
date 11-21-2012
scale 1/8" = 1'-0"
drawn by MCS, REL
checked by GVD
drawing no. EP105

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



DRAWING NOTES

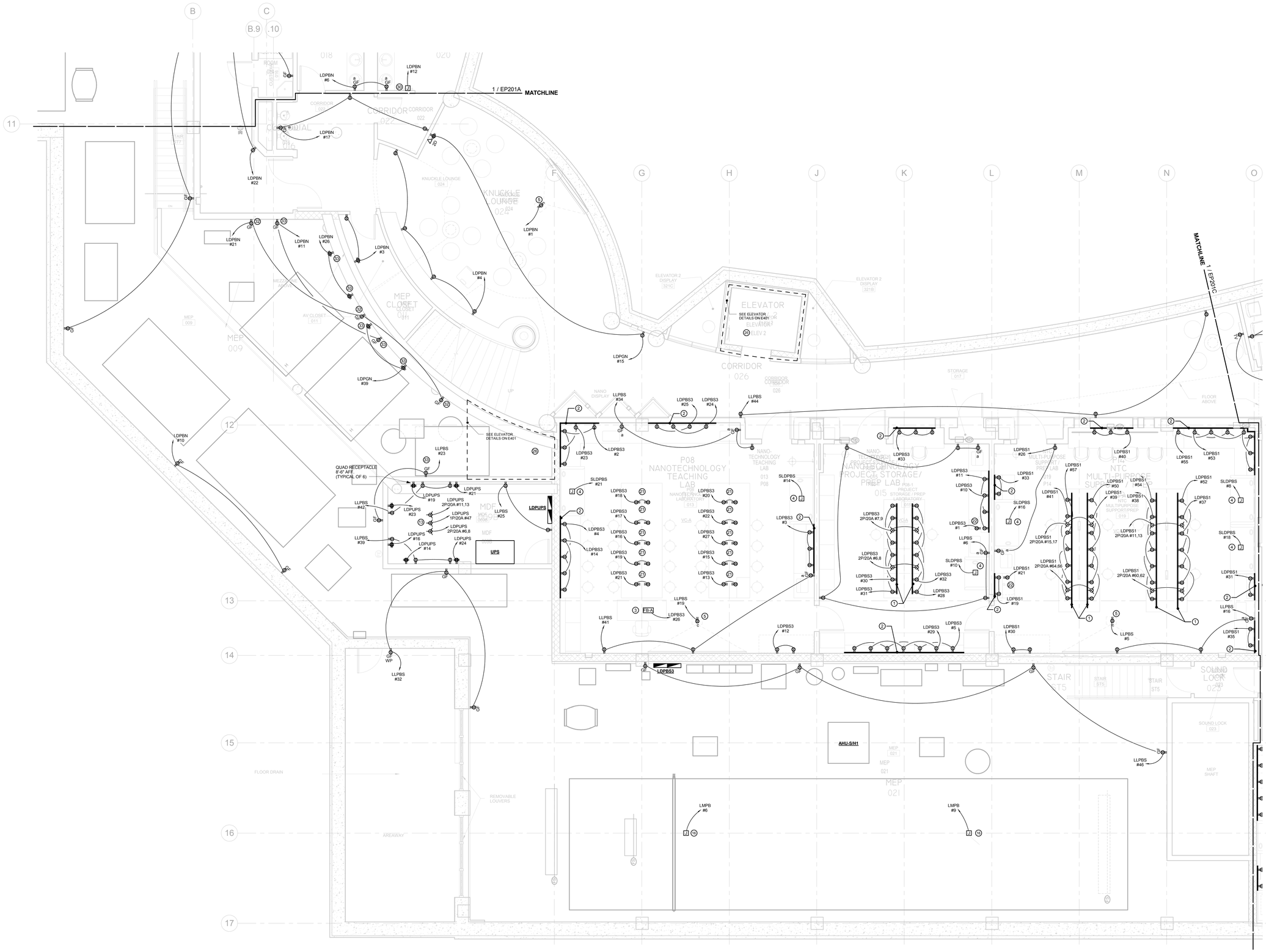
1. TYPICAL 4000 SERIES RACEWAY SUSPENDED 6'-4" A.F.F. RECEPTACLES 2'-0" O.C. COORDINATE EXACT ELEVATION WITH ARCHITECTURAL AND LAB PLANS. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
2. TYPICAL 4000 SERIES RACEWAY WALL MOUNTED. RECEPTACLES 2'-0"O.C. COORDINATE EXACT ELEVATION WITH ARCHITECTURAL AND LAB PLANS. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
3. POWER PROVIDED FOR PREWIRED CASEWORK. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
4. POWER FOR FUME HOOD LOCATION. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
5. POWER AT CEILING FOR OVERHEAD PROJECTOR.
6. POWER AT CEILING FOR MOTORIZED PROJECTOR SCREEN.
7. POWER FOR BIO SAFETY CABINET.
8. TYPICAL 4000 SERIES RACEWAY SUSPENDED 6'-4" A.F.F. RECEPTACLES 1'-6" O.C. COORDINATE EXACT ELEVATION WITH ARCHITECTURAL AND LAB PLANS. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
9. POWER FOR AQUARIUM. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
10. HORIZONTAL MOUNTED RECEPTACLE. SEE ARCHITECTURAL DETAILS FOR ADDITIONAL INFORMATION.
11. POWER FOR TOUCH TANK. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
12. TYPICAL 4000 SERIES RACEWAY FLOOR MOUNTED 1'-6"" A.F.F. RECEPTACLES 2'-0" O.C. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
13. PROVIDE (1) L5-20R AND (2) L6-20R MOUNTED TO UNDERSIDE OF LADDER RACK ABOVE THE ACTIVE RACK IN THE REAR. COORDINATE WITH TECHNOLOGY DRAWINGS FOR ACTIVE RACK LOCATIONS.
14. TYPICAL 5400 SERIES RACEWAY SUSPENDED 6'-4" A.F.F. RECEPTACLES 2'-0" O.C. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
15. TYPICAL 4000 SERIES RACEWAY WALL MOUNTED. RECEPTACLES 1'-6" O.C.
16. PROVIDE POWER FOR AIR HANDLING UNIT MISC. INTEGRAL DEVICES.
17. PROVIDE POWER FOR CONTROL PANEL.
18. PROVIDE POWER FOR PRE-WIRED RECEPTACLES.
19. PROVIDE DISCONNECT FOR EVAPORATOR.
20. TYPICAL 5400 SERIES RACEWAY WALL MOUNTED. RECEPTACLES 2'-0" O.C.
21. PROVIDE POWER FOR PEDESTAL MOUNTED RECEPTACLES. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND LAB PLANS.
22. POWER FOR DI POLISHER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS.
23. PROVIDE POWER FOR SHELF MOUNTED RECEPTACLES. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND LAB PLANS.
24. PROVIDE POWER FOR CEILING MOUNTED REELS. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND LAB PLANS.
25. PROVIDE POWER FOR ELECTRIC WATER CLOSET.
26. PROVIDE 4"X6" WIREWAY FROM ELEVATOR TO ELEVATOR MACHINE ROOM COORDINATE WITH DUCT WORK. WIREWAY TO BE ABOVE CEILING SPACE.
27. PROVIDE UNI-STRUT STAND FOR STACKED TRANSFORMERS.
28. PROVIDE (1) KEYED 2 POLE SWITCH FOR LARGE DISK MILL AND LARGE JAW CRUSHER.
29. PROVIDE EMERGENCY PUSH BUTTON SWITCH FOR LARGE DISK MILL AND LARGE JAW CRUSHER. PROVIDE SHUNT TRIP CIRCUIT BREAKER FOR EACH PIECE OF EQUIPMENT.
30. PROVIDE POWER FOR HAND DRYERS.
31. PROVIDE POWER FOR MISC. MECHANICAL EQUIPMENT CONTROLS.
32. DEVICES TO BE LOCATED TO SERVE MEZZANINE LEVEL.
33. DEVICES TO BE LOCATED TO SERVE THE MECHANICAL PIT LEVEL.



21-10-038

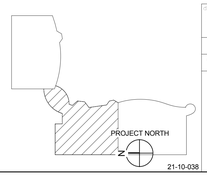
drawing title: ELECTRICAL POWER LOWER LEVEL PART PLAN			STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume 2 of 2
REVISIONS				
mark	date	description	DRAWN & PREPARED BY: BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171	date 11-21-2012
	11-21-2012	Bid Documents		scale 1/4" = 1'-0"
			project: SCSU NEW ACADEMIC LABORATORY BUILDING	drawn by MCS, REL
				approved by GVD
			CAD file 130 / project no. BI-RS-283-ARC	drawing no. EP201A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



DRAWING NOTES

1. TYPICAL 4000 SERIES RACEWAY SUSPENDED 6'-4" A.F.F. RECEPTACLES 2'-0" O.C. COORDINATE EXACT ELEVATION WITH ARCHITECTURAL AND LAB PLANS. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
2. TYPICAL 4000 SERIES RACEWAY WALL MOUNTED. RECEPTACLES 2'-0"O.C. COORDINATE EXACT ELEVATION WITH ARCHITECTURAL AND LAB PLANS. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
3. POWER PROVIDED FOR PREWIRED CASEWORK. SEE ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
4. POWER FOR FUME HOOD LOCATION. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
5. POWER AT CEILING FOR OVERHEAD PROJECTOR.
6. POWER AT CEILING FOR MOTORIZED PROJECTOR SCREEN.
7. POWER FOR BIO SAFETY CABINET.
8. TYPICAL 4000 SERIES RACEWAY SUSPENDED 6'-4" A.F.F. RECEPTACLES 1'-6" O.C. COORDINATE EXACT ELEVATION WITH ARCHITECTURAL AND LAB PLANS. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
9. POWER FOR AQUARIUM. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
10. HORIZONTAL MOUNTED RECEPTACLE. SEE ARCHITECTURAL DETAILS FOR ADDITIONAL INFORMATION.
11. POWER FOR TOUCH TANK. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
12. TYPICAL 4000 SERIES RACEWAY FLOOR MOUNTED 1'-6"" A.F.F. RECEPTACLES 2'-0" O.C. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
13. PROVIDE (1) L5-20R AND (2) L6-20R MOUNTED TO UNDERSIDE OF LADDER RACK ABOVE THE ACTIVE RACK IN THE REAR. COORDINATE WITH TECHNOLOGY DRAWINGS FOR ACTIVE RACK LOCATIONS.
14. TYPICAL 5400 SERIES RACEWAY SUSPENDED 6'-4" A.F.F. RECEPTACLES 2'-0" O.C. SEE DETAILS ON MEP SHEETS FOR ADDITIONAL INFORMATION.
15. TYPICAL 4000 SERIES RACEWAY WALL MOUNTED. RECEPTACLES 1'-6" O.C.
16. PROVIDE POWER FOR AIR HANDLING UNIT MISC. INTEGRAL DEVICES.
17. PROVIDE POWER FOR CONTROL PANEL.
18. PROVIDE POWER FOR PRE-WIRED RECEPTACLES.
19. PROVIDE DISCONNECT FOR EVAPORATOR.
20. TYPICAL 5400 SERIES RACEWAY WALL MOUNTED. RECEPTACLES 2'-0" O.C.
21. PROVIDE POWER FOR PEDESTAL MOUNTED RECEPTACLES. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND LAB PLANS.
22. POWER FOR DI POLISHER. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS.
23. PROVIDE POWER FOR SHELF MOUNTED RECEPTACLES. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND LAB PLANS.
24. PROVIDE POWER FOR CEILING MOUNTED REELS. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND LAB PLANS.
25. PROVIDE POWER FOR ELECTRIC WATER CLOSET.
26. PROVIDE 4"X6" WIREWAY FROM ELEVATOR TO ELEVATOR MACHINE ROOM COORDINATE WITH DUCT WORK. WIREWAY TO BE ABOVE CEILING SPACE.
27. PROVIDE UNI-STRUT STAND FOR STACKED TRANSFORMERS.
28. PROVIDE (1) KEYED 2 POLE SWITCH FOR LARGE DISK MILL AND LARGE JAW CRUSHER.
29. PROVIDE EMERGENCY PUSH BUTTON SWITCH FOR LARGE DISK MILL AND LARGE JAW CRUSHER. PROVIDE SHUNT TRIP CIRCUIT BREAKER FOR EACH PIECE OF EQUIPMENT.
30. PROVIDE POWER FOR HAND DRYERS.
31. PROVIDE POWER FOR MISC. MECHANICAL EQUIPMENT CONTROLS.
32. DEVICES TO BE LOCATED TO SERVE MEZZANINE LEVEL.
33. DEVICES TO BE LOCATED TO SERVE THE MECHANICAL PIT LEVEL.



21-10-038

DRAWING TITLE
ELECTRICAL POWER LOWER LEVEL PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

PROJECT
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 1380
project no.: BI-RS-283-ARC

volume: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: MCS, REL
approved by: GVD
drawing no.: EP201B

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

DRAWING NOTES

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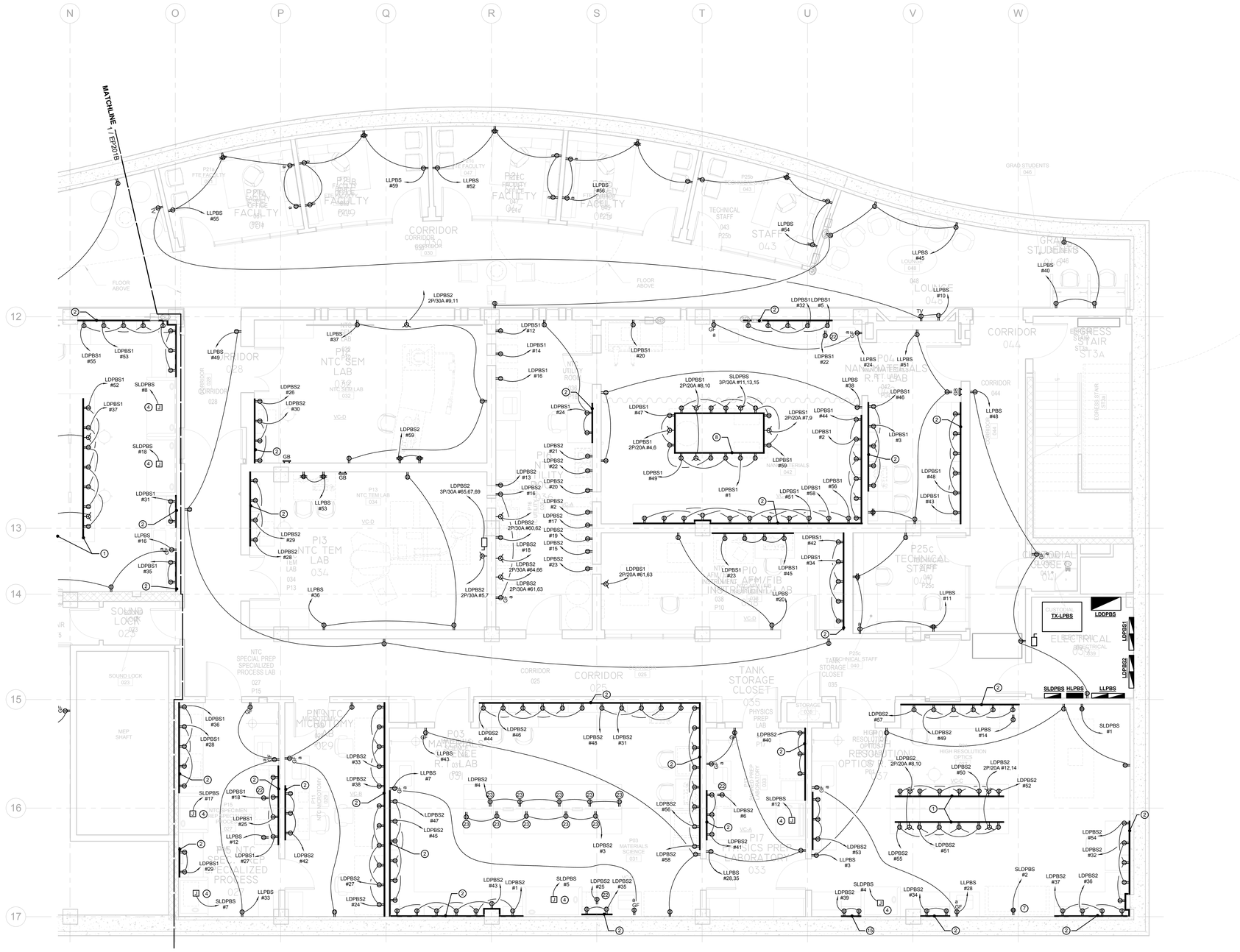

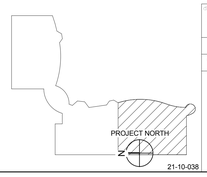

21-10-038

ELECTRICAL POWER LOWER LEVEL PART PLAN

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CAD no. 1310
project no. BI-RS-283-ARC

sheet 2 of 2
date 11-21-2012
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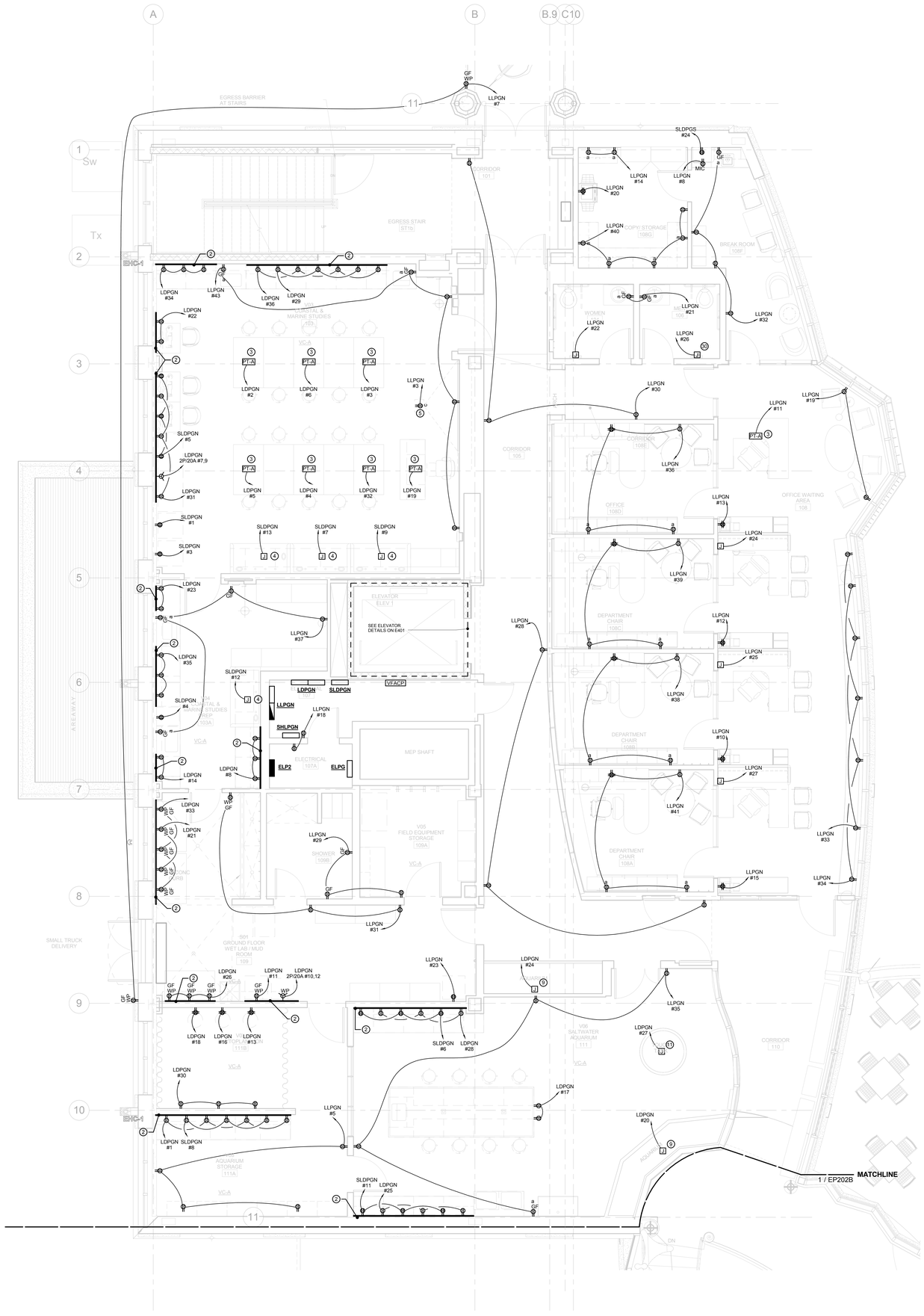

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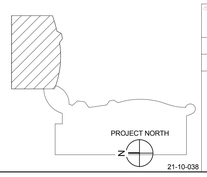

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drawing title
ELECTRICAL POWER GROUND FLOOR PART PLAN

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project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

volume: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
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drawing no.: EP202A

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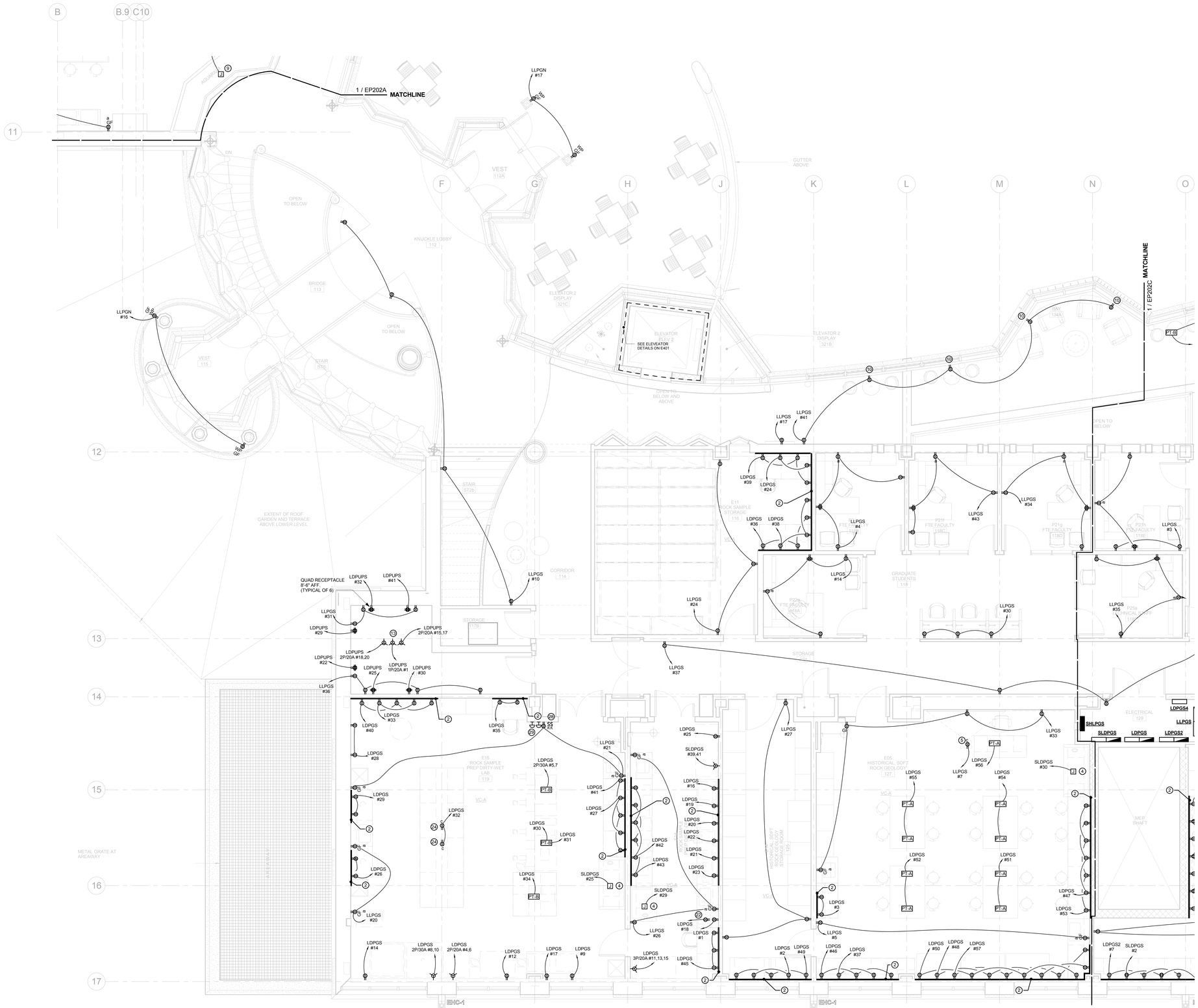

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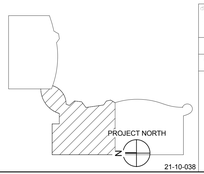

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DRAWING TITLE: ELECTRICAL POWER GROUND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET NUMBER: 2 of 2
REVISIONS			DATE: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		SCALE: 1/4" = 1'-0"
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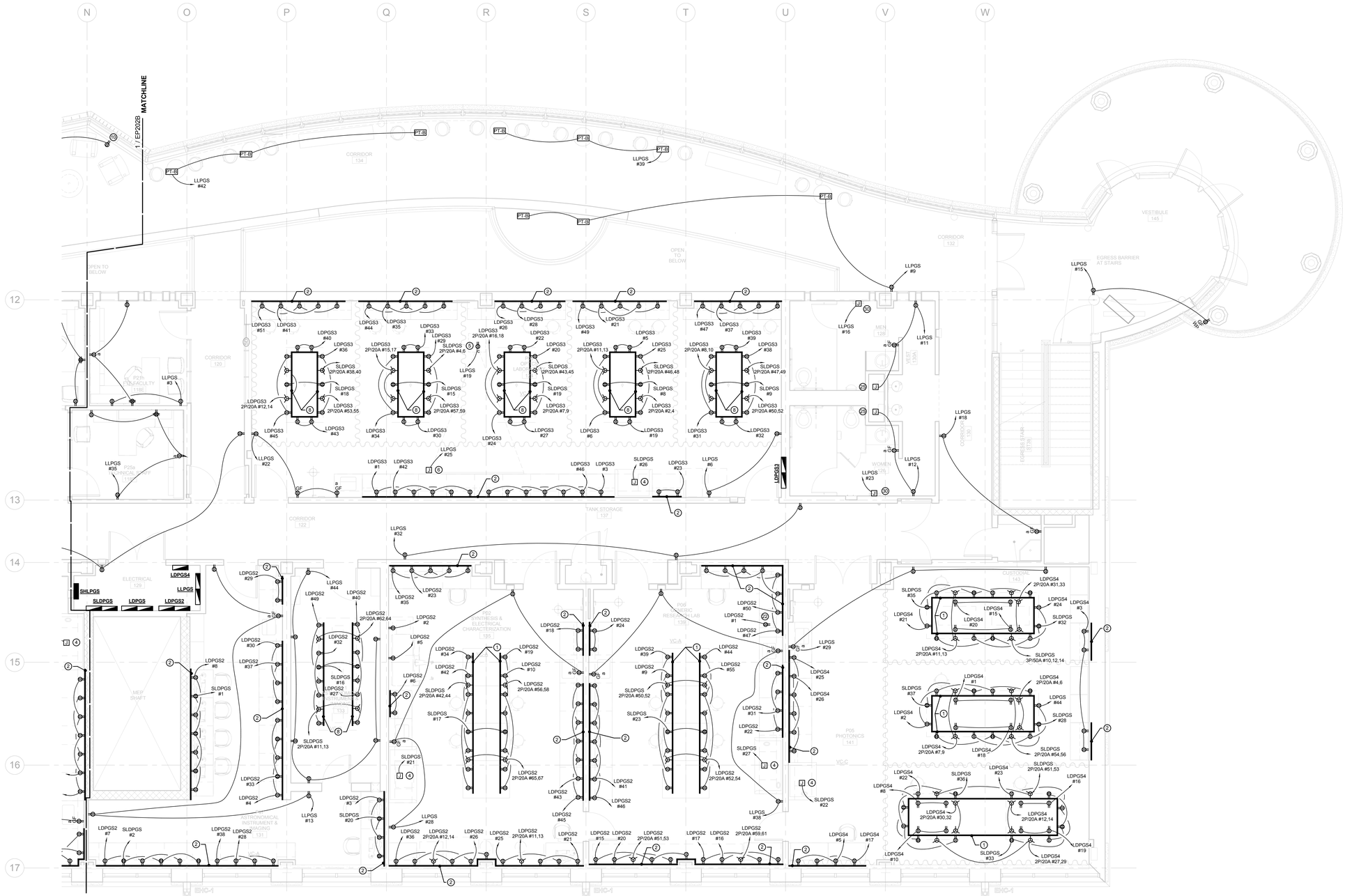

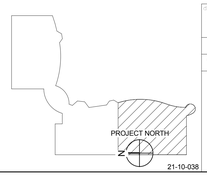

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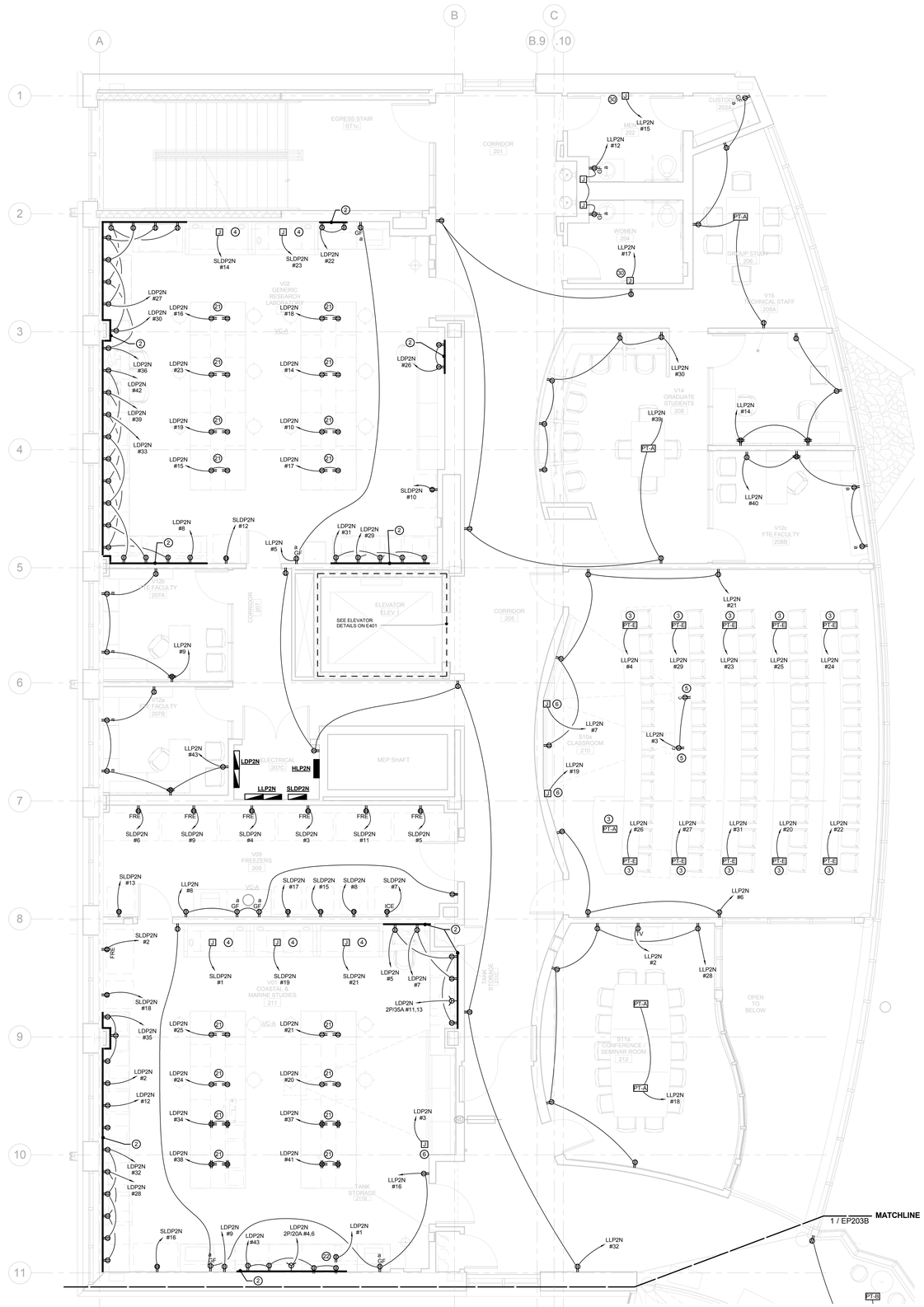

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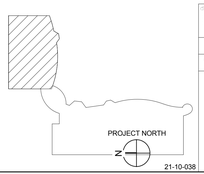
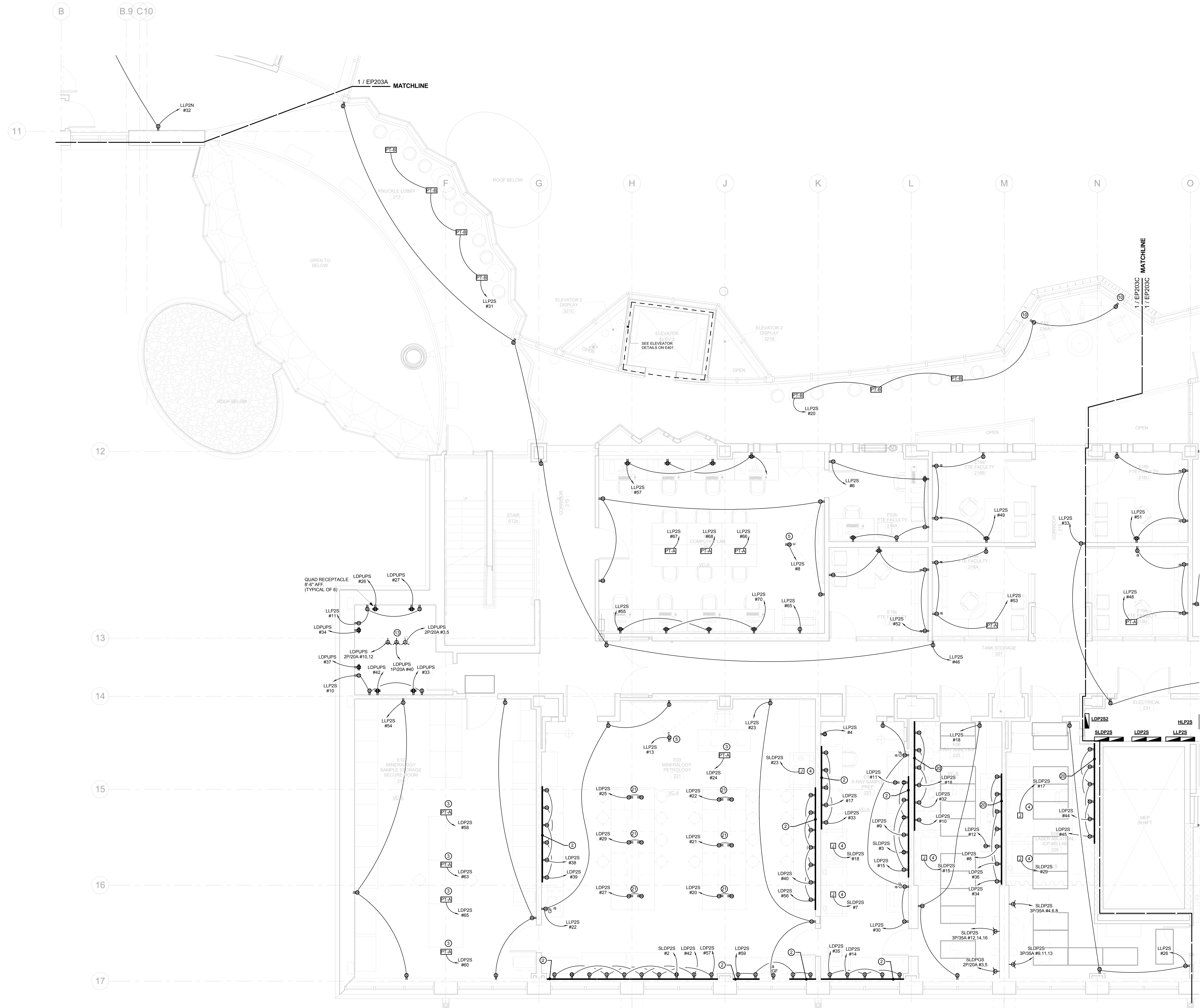


21-10-038

DRAWING TITLE: ELECTRICAL POWER 2ND FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS	
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171
PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING	CAD no. 1393 / project no. BI-RS-283-ARC
SHEET NO. 2 of 2	DATE 11-21-2012
SCALE 1/4" = 1'-0"	DRAWN BY MCS, REL
CHECKED BY GVD	DRAWING NO. EP203A

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



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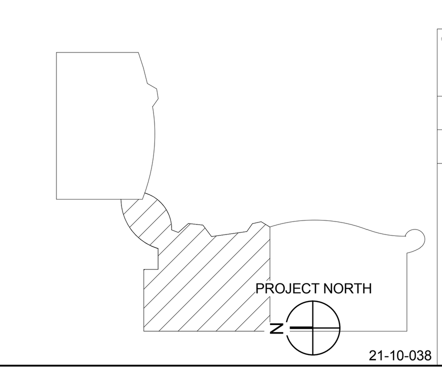

21-10-038

drawing title: ELECTRICAL POWER 2ND FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1393 | project no. BI-RS-283-ARC

volume: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: MCS, REL
approved by: GVD
drawing no.: EP203B

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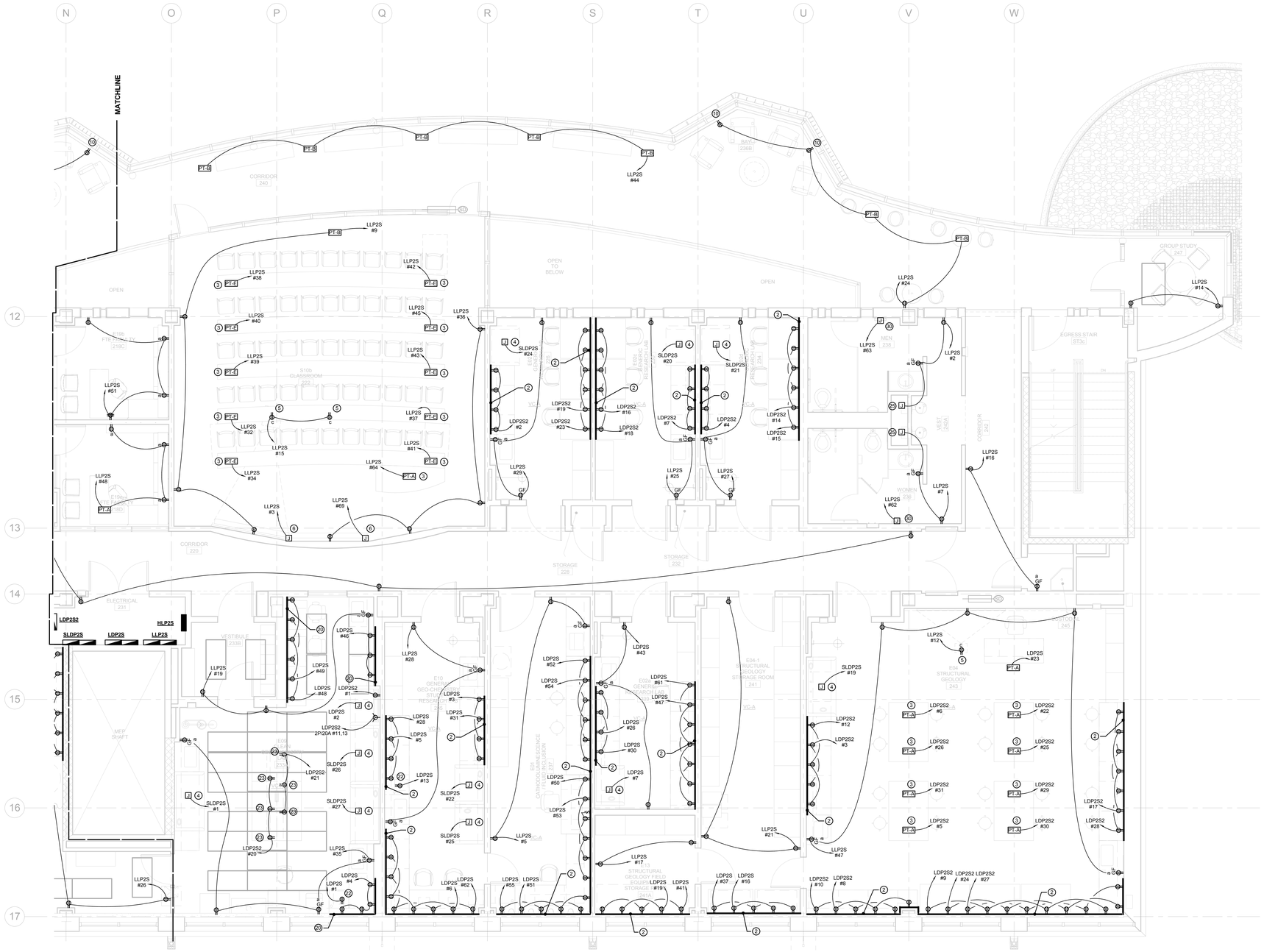

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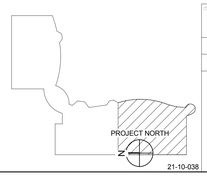

21-10-038

project title
ELECTRICAL POWER 2ND FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 1380
project no.: BI-RS-283-ARC

sheet no.: 2 of 2
date: 11-21-2012
scale: 1/4" = 1'-0"
drawn by: MCS, REL
approved by: GVD
drawing no.: EP203C

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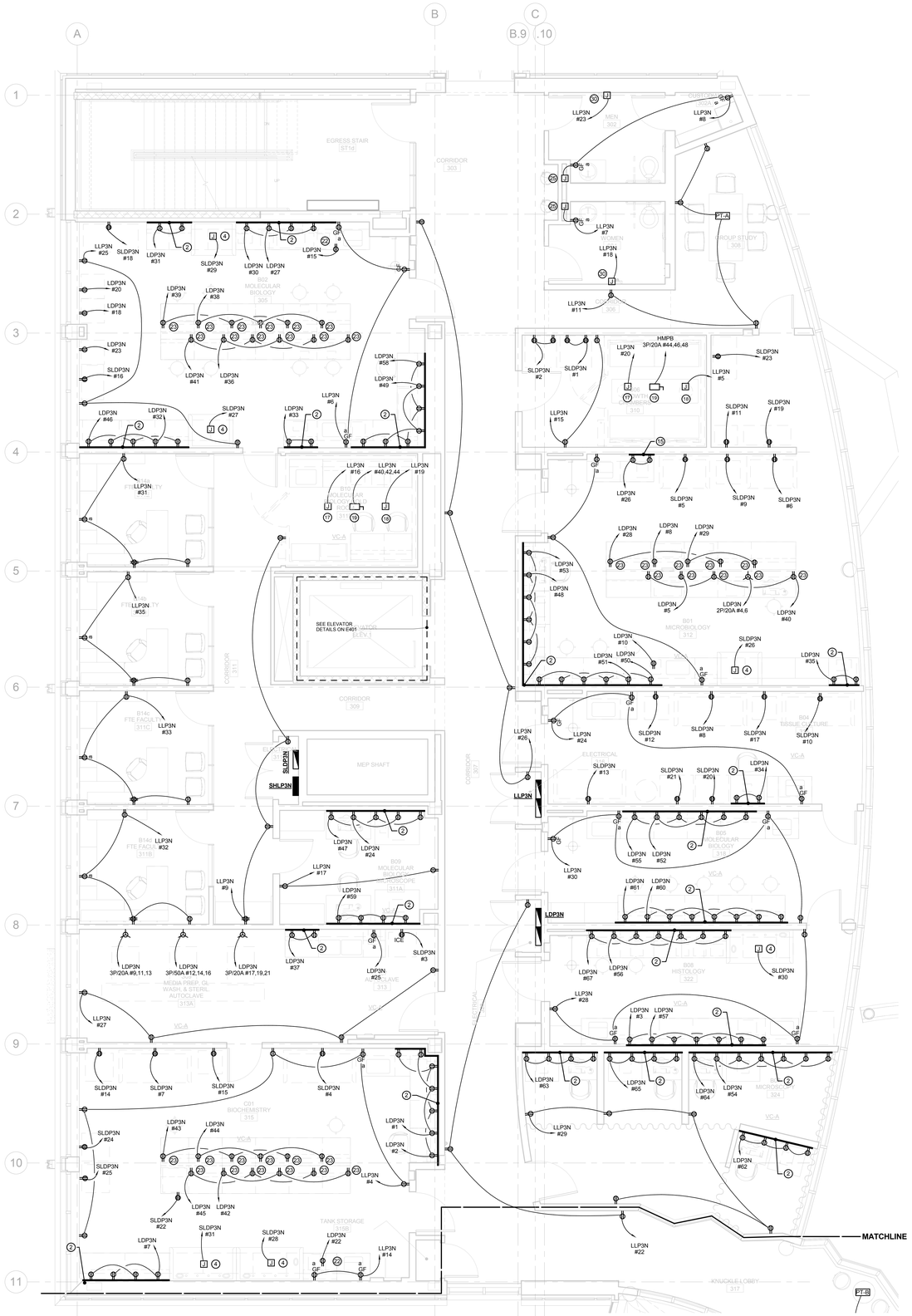

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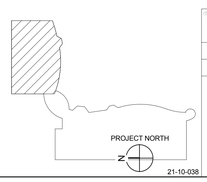

21-10-038

title:
ELECTRICAL POWER 3RD FLOOR PART PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
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2 of 2

date: 11-21-2012
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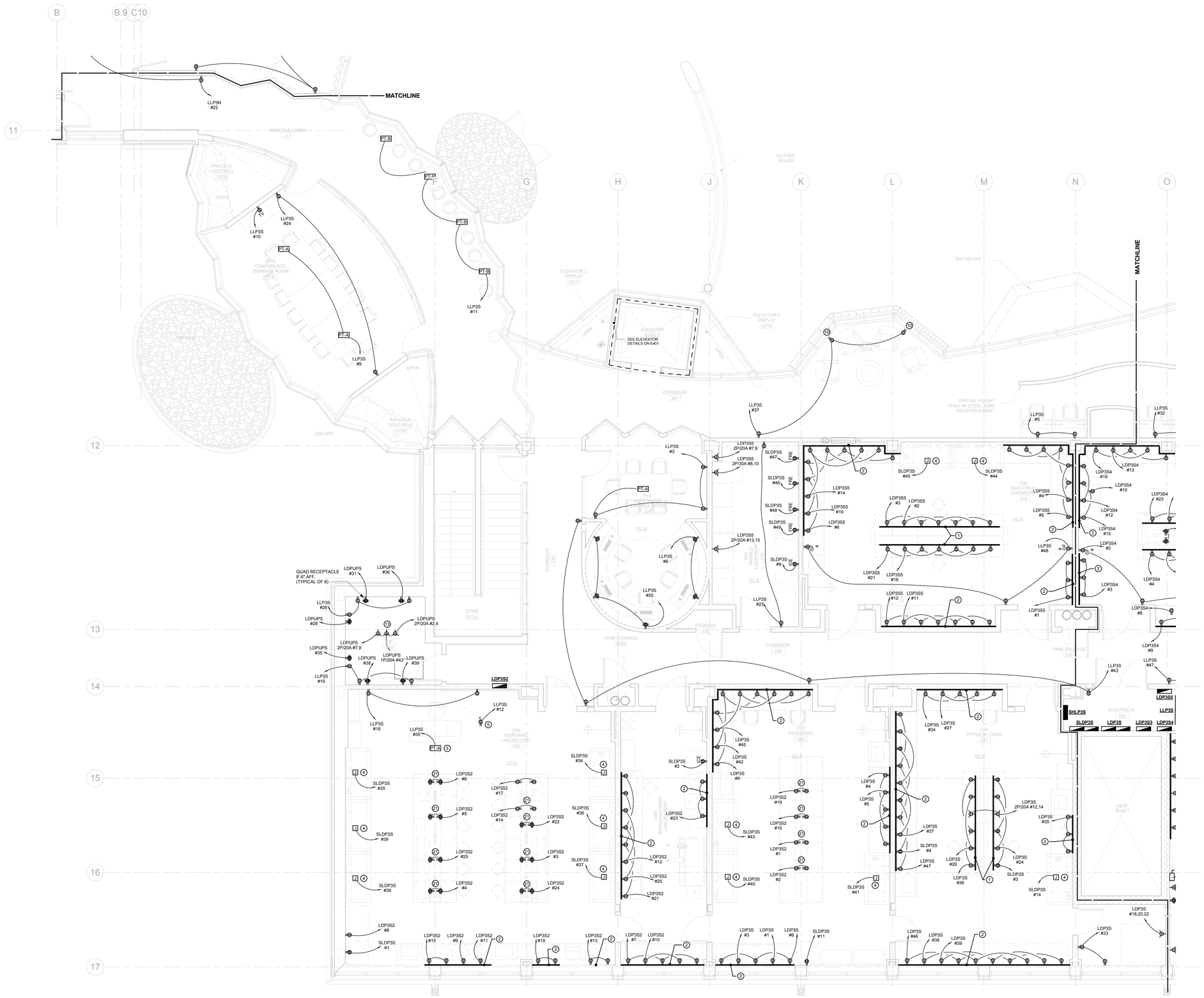

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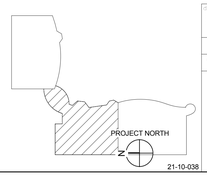

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PROJECT TITLE: ELECTRICAL POWER 3RD FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		drawing: 2 of 2
REVISIONS			date: 11-21-2012
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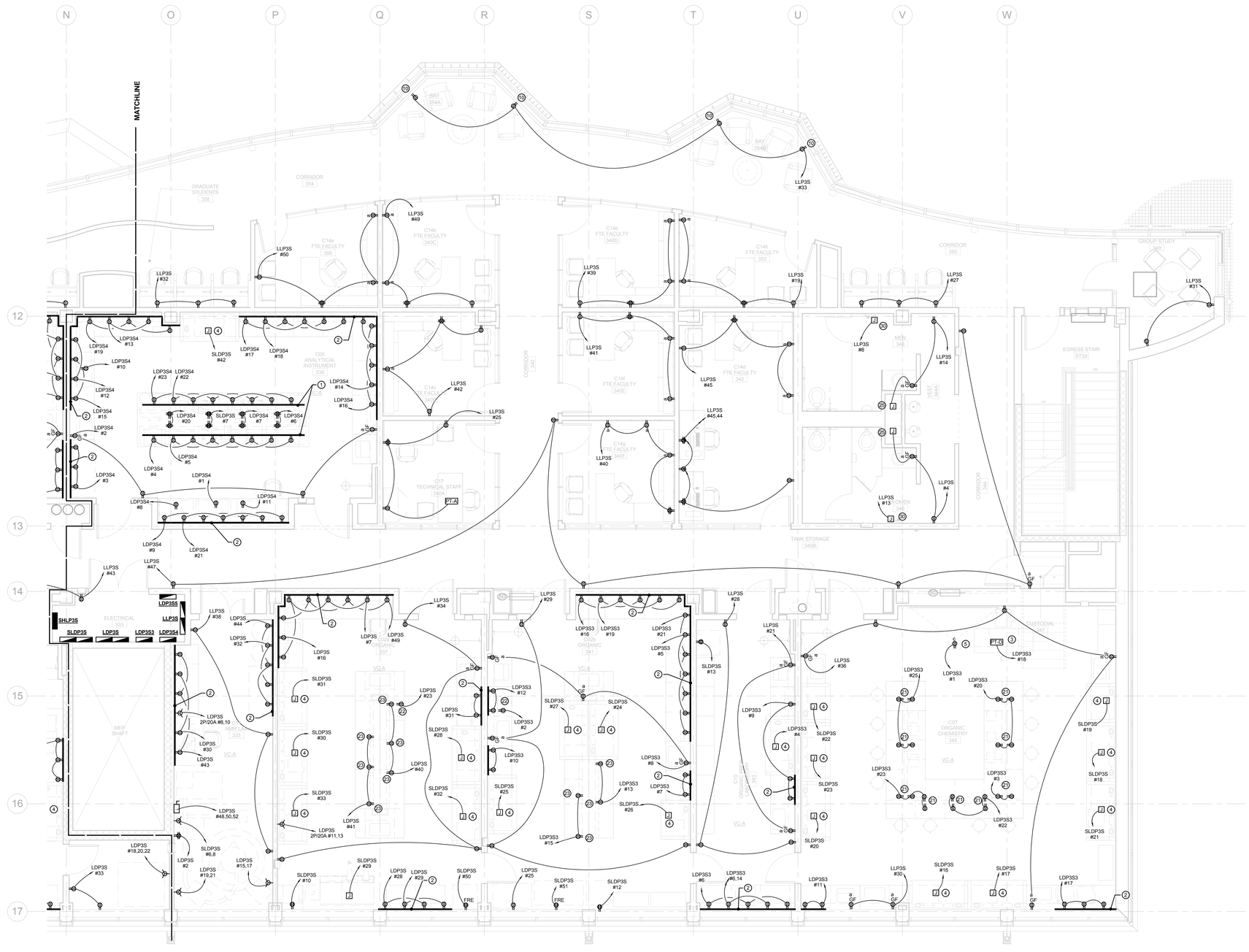
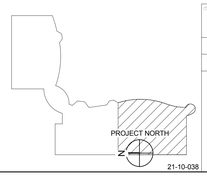
32. DEVICES TO BE LOCATED TO SERVE MEZZANINE LEVEL.
33. DEVICES TO BE LOCATED TO SERVE THE MECHANICAL PIT LEVEL.





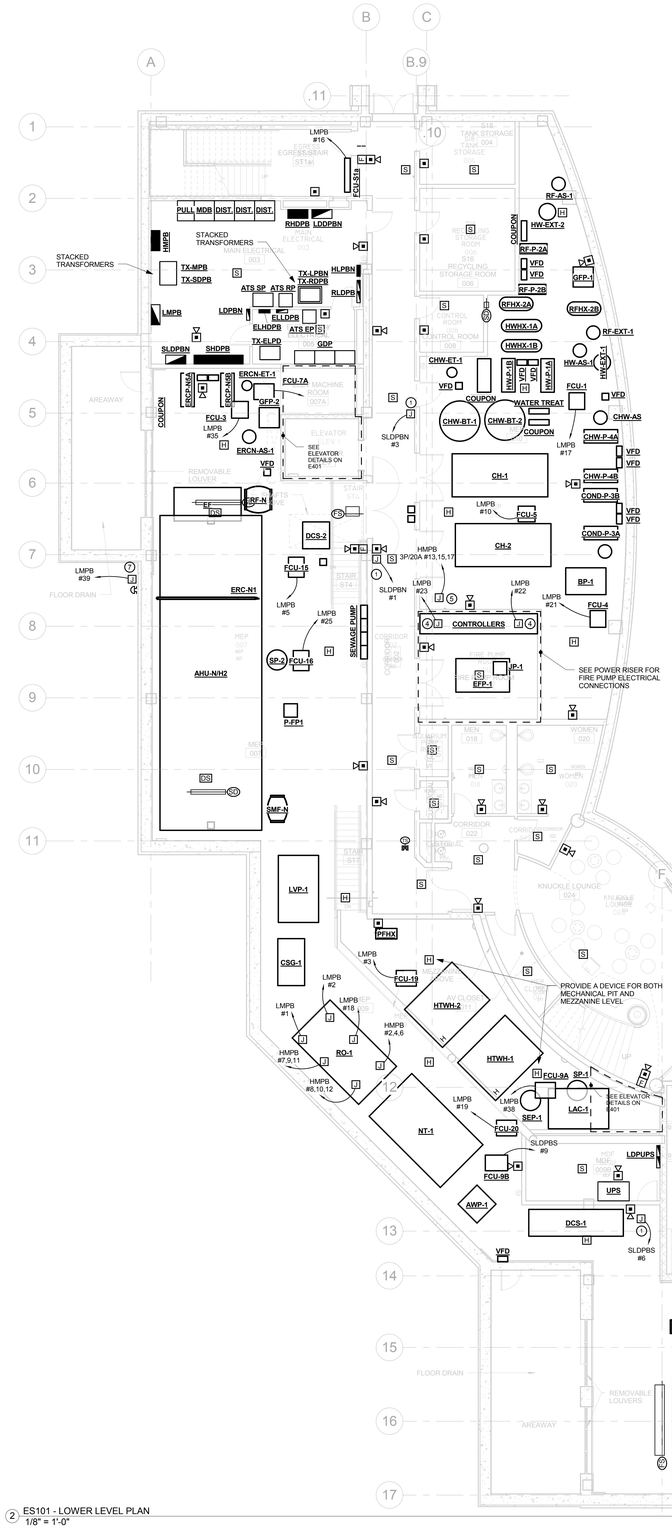
21-10-038

drawing title: ELECTRICAL POWER 3RD FLOOR PART PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
R E V I S I O N S			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171		date 11-21-2012
11-21-2012 Bid Documents			1/4" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: MCS, REL
			checked by: GVD
	CAD no. 130	project no. BI-RS-283-ARC	drawing no. EP204C

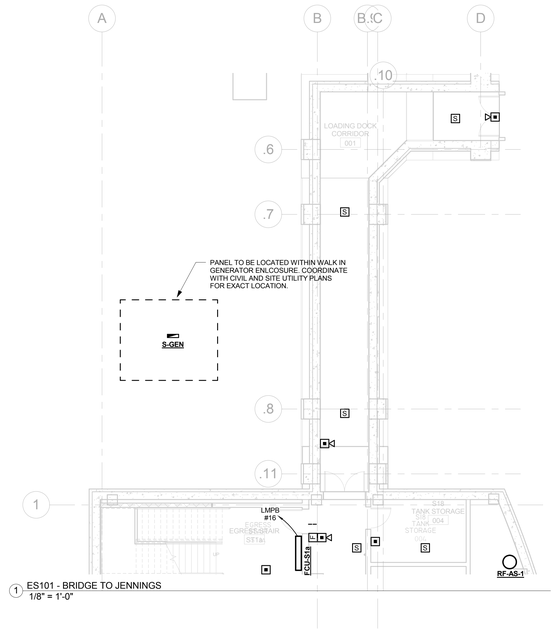
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

ELECTRICAL SPECIAL SYSTEM DRAWING NOTES

1. PROVIDE POWER FOR CARD READER.
2. PROVIDE POWER FOR AUTOMATIC OPENER FOR ATRIUM SMOKE CONTROL SYSTEM AND ELECTRONIC RELEASE SYSTEM.
3. PROVIDE POWER FOR TECHNIA ORSIS MICROSCOPE.
4. PROVIDE POWER FOR MISC. MECHANICAL EQUIPMENT CONTROLS.
5. PROVIDE POWER FOR IRRIGATION CONTROLLER. CONTROLLER PROVIDED BY OTHERS.
6. PROVIDE 1"x6" CABLETRAY FOR CONTROLS AND MISC WIRING IN THE LAB.
7. PROVIDE POWER FOR ELECTRIC BELL ALARM. COORDINATE EXACT LOCATION WITH ARCHITECT.



2 ES101 - LOWER LEVEL PLAN
1/8" = 1'-0"



1 ES101 - BRIDGE TO JENNINGS
1/8" = 1'-0"

PROJECT NORTH

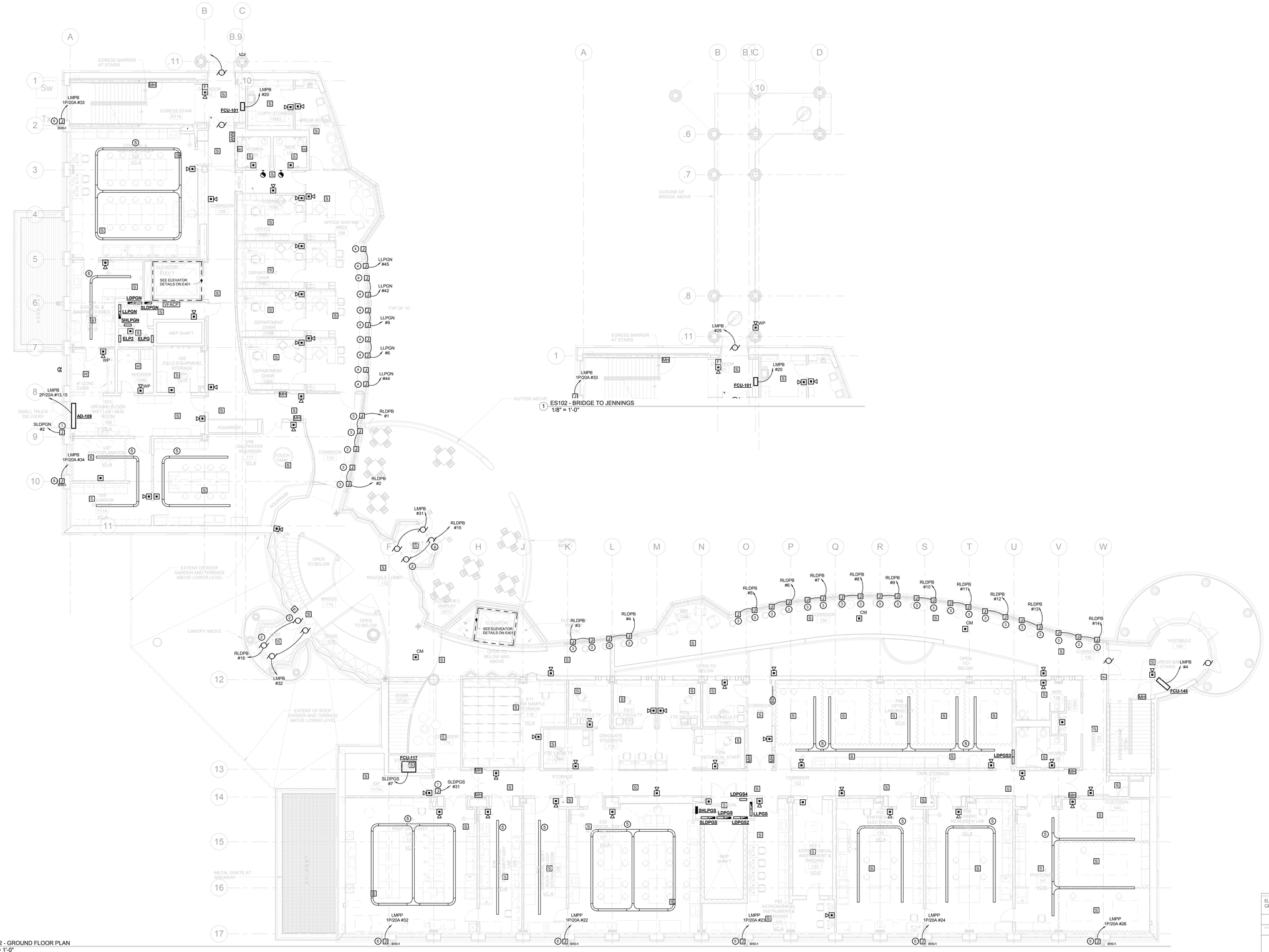
21-10-038

drawing title: ELECTRICAL SPECIAL SYSTEMS LOWER LEVEL FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date 11-21-2012
11-21-2012 Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		scale 1/8" = 1'-0"
			drawn by MCS, REL
			approved by GVD
	CAD file: 1380	project no.: BI-RS-283-ARC	drawing no. ES101

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

ELECTRICAL SPECIAL SYSTEM DRAWING NOTES

1. PROVIDE POWER FOR CARD READER.
2. PROVIDE POWER FOR AUTOMATIC OPENER FOR ATRIUM SMOKE CONTROL SYSTEM AND ELECTRONIC RELEASE SYSTEM.
3. PROVIDE POWER FOR AUTOMATIC WINDOW ACTUATOR FOR ATRIUM SMOKE CONTROL SYSTEM.
4. PROVIDE POWER FOR MOTORIZED WINDOW SHADES. PROVIDE HARD PIPE CONNECTION. COORDINATE SWITCHING AND CONTROL WITH ARCHITECT.
5. PROVIDE 1"x6" CABLETRAY FOR CONTROLS AND MISC WIRING IN THE LAB.
6. PROVIDE POWER VIA JUNCTION BOX TO ELECTRIC HEATING COIL.



PROJECT NORTH

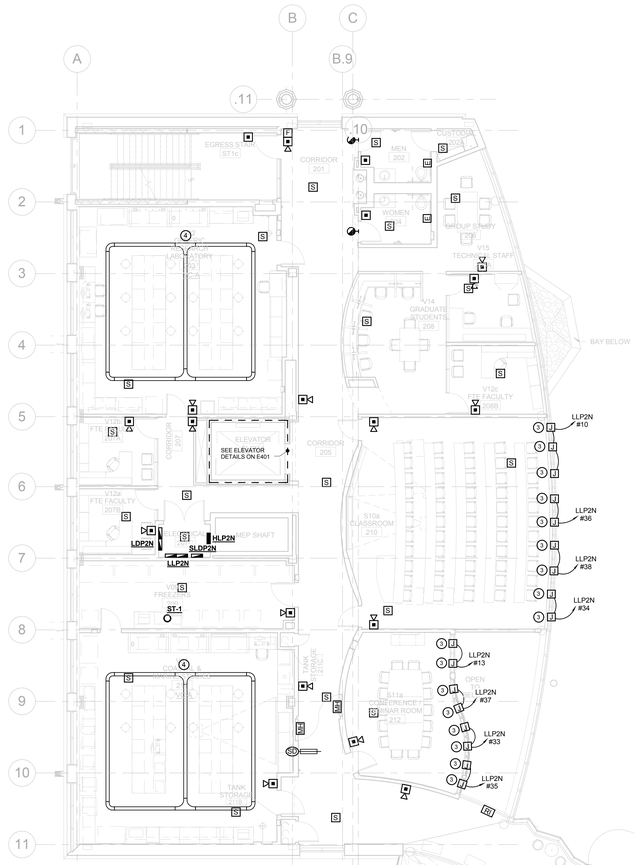
21-10-038

drawing title: ELECTRICAL SPECIAL SYSTEMS GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date 11-21-2012
11-21-2012 Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		scale 1/8" = 1'-0"
			drawn by MCS, REL
			approved by GVD
	CAD file: 1310	project no.: BI-RS-283-ARC	drawing no. ES102

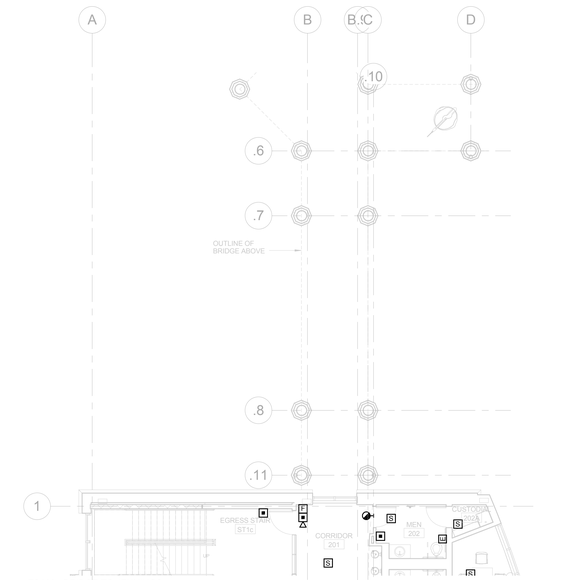
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

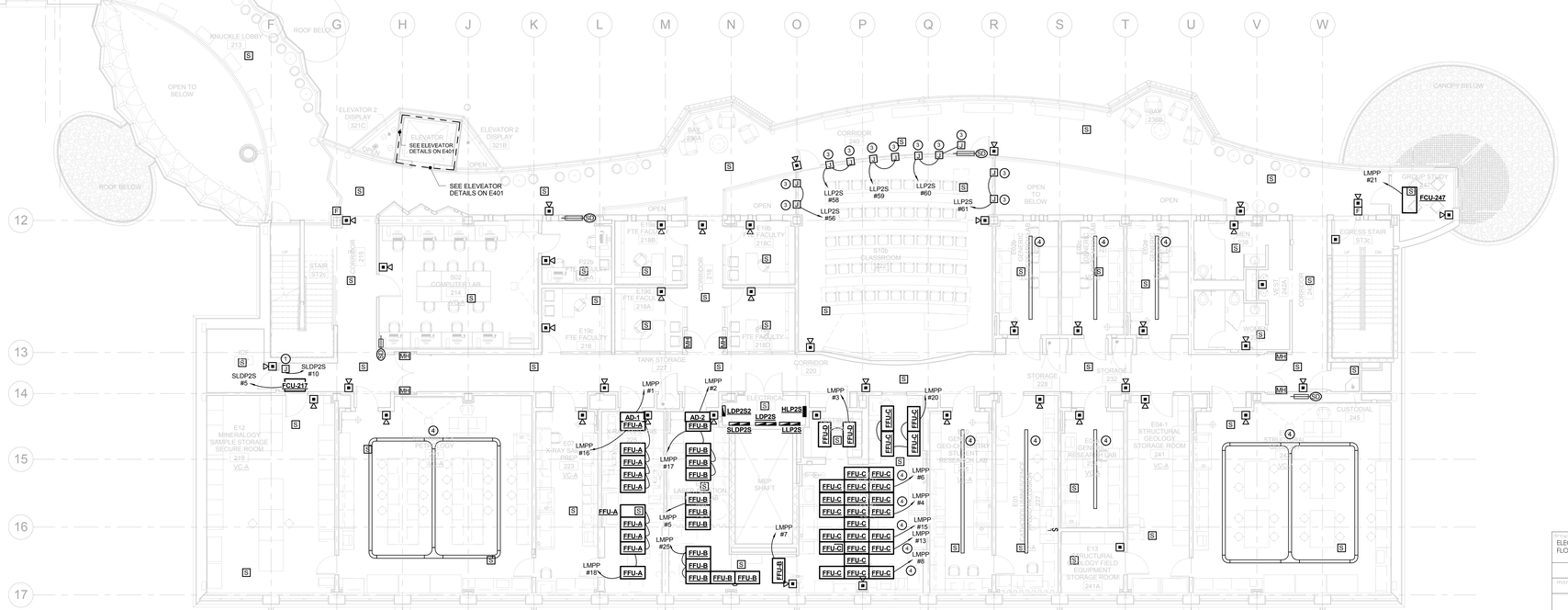
ELECTRICAL SPECIAL SYSTEM DRAWING NOTES

1. PROVIDE POWER FOR CARD.
2. PROVIDE POWER FOR AUTOMATIC OPENER FOR ATRIUM SMOKE CONTROL SYSTEM AND ELECTRONIC RELEASE SYSTEM.
3. PROVIDE POWER FOR MOTORIZED WINDOW SHADES. PROVIDE HARD PIPE CONNECTION. COORDINATE SWITCHING AND CONTROL WITH ARCHITECT.
4. PROVIDE 1"x6" CABLETRAY FOR CONTROLS AND MISC WIRING IN THE LAB.



1 ES103 - BRIDGE TO JENNINGS
1/8" = 1'-0"





2 ES103 - 2ND FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

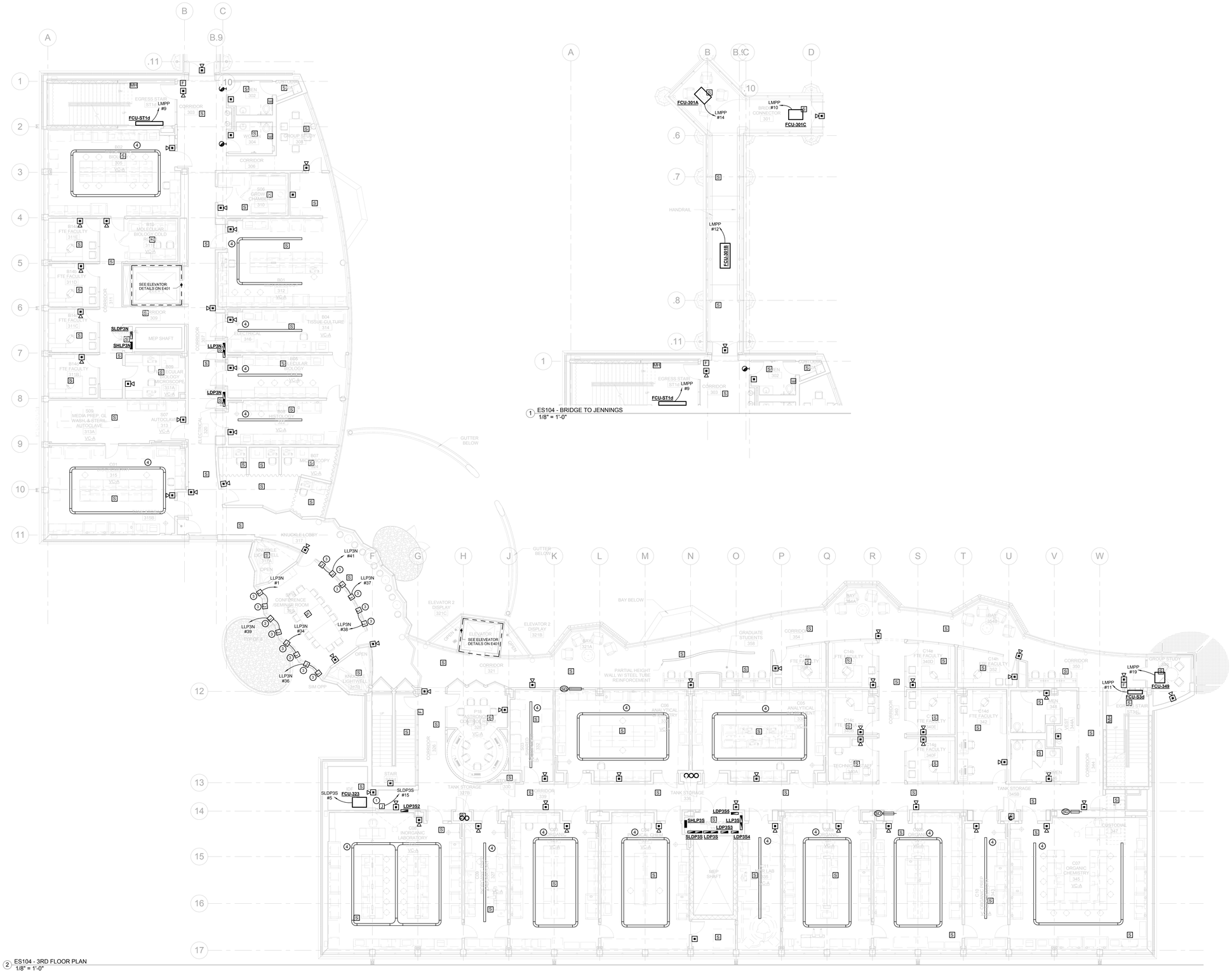
21-10-038

drawing title: ELECTRICAL SPECIAL SYSTEMS 2ND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 1 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: MCS, REL
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: ES103

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

ELECTRICAL SPECIAL SYSTEM DRAWING NOTES

1. PROVIDE POWER FOR CARD.
2. PROVIDE POWER FOR AUTOMATIC OPENER FOR ATRIUM SMOKE CONTROL SYSTEM AND ELECTRONIC RELEASE SYSTEM.
3. PROVIDE POWER FOR MOTORIZED WINDOW SHADES. PROVIDE HARD PIPE CONNECTION. COORDINATE SWITCHING AND CONTROL WITH ARCHITECT.
4. PROVIDE 1"x6" CABLETRAY FOR CONTROLS AND MISC WIRING IN THE LAB.



1 ES104 - BRIDGE TO JENNINGS
1/8" = 1'-0"

2 ES104 - 3RD FLOOR PLAN
1/8" = 1'-0"

PROJECT NORTH

21-10-038

title: ELECTRICAL SPECIAL SYSTEMS 3RD FLOOR PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

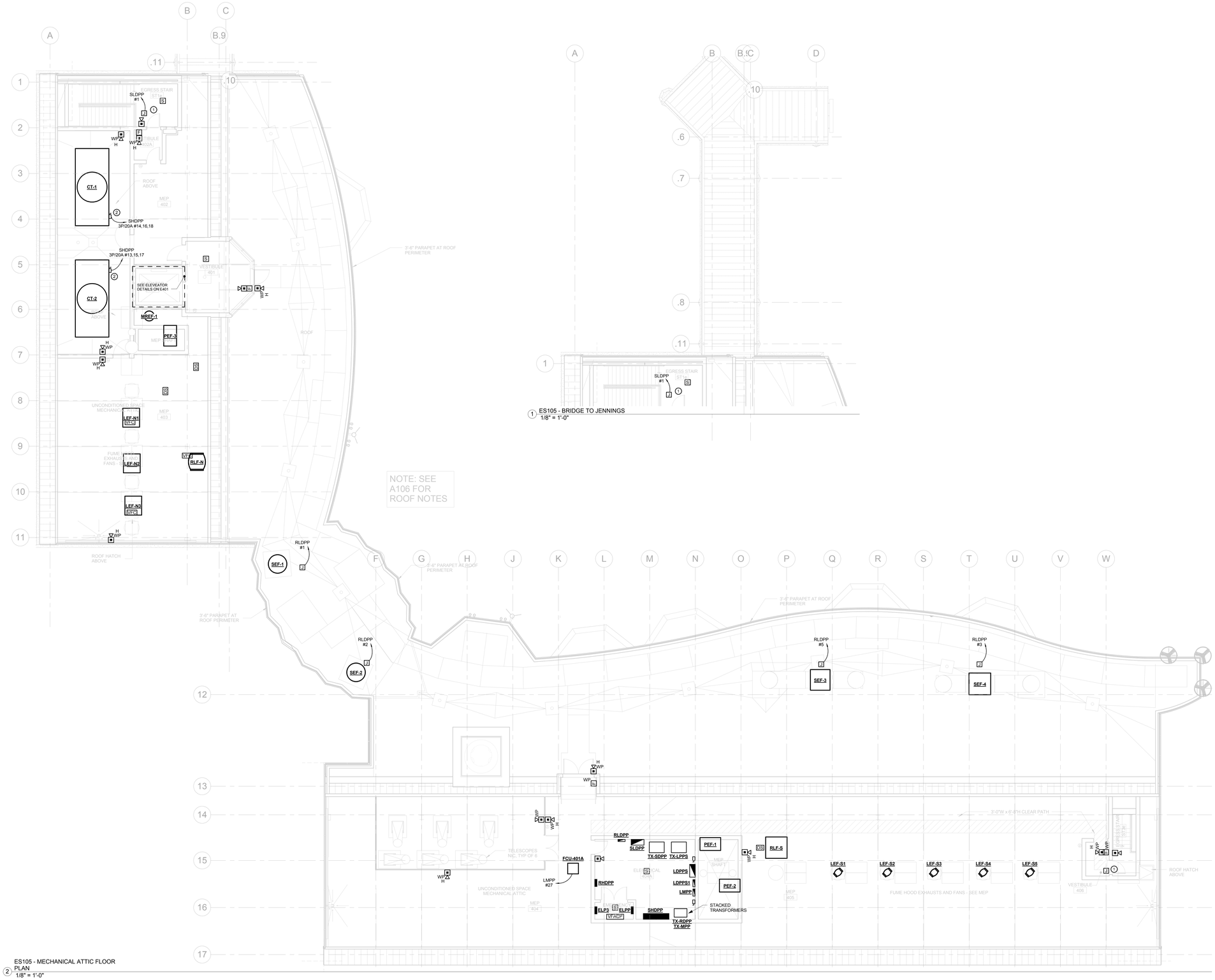
CAD no. 1393 | project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale 1/8" = 1'-0"
drawn by MCS, REL
approved by GVD
drawing no. ES104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

ELECTRICAL SPECIAL SYSTEM DRAWING NOTES

1. PROVIDE POWER FOR CARD READER.
2. PROVIDE WEATHER PROOF DISCONNECT AND WHIP FOR COOLING TOWER BASIN HEATER.
3. PROVIDE POWER AND WHIP FOR MISC. MECHANICAL EQUIPMENT.



ES105 - MECHANICAL ATTIC FLOOR PLAN
1/8" = 1'-0"

ES105 - BRIDGE TO JENNINGS
1/8" = 1'-0"

PROJECT NORTH

21-10-038

DRAWING TITLE: ELECTRICAL SPECIAL SYSTEMS MECHANICAL ATTIC FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		SHEET NO. 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171		DATE: 11-21-2012
11-21-2012 Bid Documents			SCALE: 1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		DRAWN BY: MCS, REL
			APPROVED BY: GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. ES105

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TRANSFORMER SIZING CHART

KVA RATING	VOLTAGE		FEEDER			O.C.P.D. (AMPS)		GROUNDING ELECTRODE (AWG)
	PRIMARY	SECONDARY	PRIMARY	SECONDARY	K RATED SEC.	PRIMARY	SECONDARY	
15	480 △	208Y/120	30A -N 1G	50A 1N 1G	50A 2N 1G	30	50	8
30	480 △	208Y/120	60A -N 1G	100A 1N 1G	100A 2N 1G	60	100	6
45	480 △	208Y/120	80A -N 1G	150A 1N 1G	150A 2N 1G	80	150	4
75	480 △	208Y/120	125A -N 1G	250A 1N 1G	250A 2N 1G	125	225	2
112.5	480 △	208Y/120	200A -N 1G	400A 1N 1G	400A 2N 1G	200	400	1/0
150	480 △	208Y/120	300A -N 1G	500A 1N 1G	500A 2N 1G	300	500	2/0
225	480 △	208Y/120	400A -N 1G	800A 1N 1G	800A 2N 1G	400	800	3/0
300	480 △	208Y/120	500A -N 1G	1000A 1N 1G	1000A 2N 1G	500	1000	3/0
500	480 △	208Y/120	800A -N 1G	1600A 1N 1G	1600A 2N 1G	800	1600	3/0
750	480 △	208Y/120	1000A -N 1G	2500A 1N 1G	2500A 2N 1G	1000	2500	3/0

NOTES:

1. ALL TRANSFORMERS LISTED ABOVE ARE THREE PHASE VENTILATED TYPE.
2. PROVIDE MAIN O.C.P.D. ON PRIMARY AND SECONDARY SIDE OF EACH TRANSFORMER. CONNECT GROUNDING ELECTRODE CONDUCTOR TO NEAREST STRUCTURAL STEEL & TO NEAREST METALLIC COLD WATER PIPE, PER NEC.
3. PROVIDE PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMERS AS LISTED ABOVE.

POWER RISER DIAGRAM FEEDER SIZING CHART

(SEE FEEDER LEGEND FOR APPLICATION OF THIS CHART)

AMPERAGE	NUMBER OF PARALLEL SETS	PHASE CONDUCTOR(S)	NEUTRAL CONDUCTOR(S)		GROUNDING CONDUCTOR(S)			RACEWAY SIZE
			STANDARD	OVERSIZED	EQUIPMENT	ISOLATED	OVERSIZED	
20 or 30	1	(3) # 10	(1) # 10	(1) # 8	(1) # 10	(1) # 10	8	1"
40 or 50	1	(3) # 8	(1) # 8	NA	(1) # 10	NA	8	1"
60	1	(3) # 6	(1) # 6	(1) # 3	(1) # 10	(1) # 10	8	1 1/4"
70	1	(3) # 4	(1) # 4	NA	(1) # 8	NA	8	1 1/4"
80	1	(3) # 4	(1) # 4	NA	(1) # 8	NA	6	1 1/4"
90	1	(3) # 3	(1) # 3	NA	(1) # 8	NA	6	1 1/2"
100	1	(3) # 2	(1) # 2	(1) # 1/0	(1) # 8	(1) # 8	4	1 1/2"
110	1	(3) # 2	(1) # 2	(1) # 2/0	(1) # 6	(1) # 6	3	2"
125	1	(3) # 1	(1) # 1	(1) # 3/0	(1) # 6	(1) # 6	2	2"
150	1	(3) # 1/0	(1) # 1/0	(1) # 4/0	(1) # 6	(1) # 6	2	2"
175	1	(3) # 2/0	(1) # 2/0	(1) # 300	(1) # 6	(1) # 6	1	2 1/2"
200	1	(3) # 3/0	(1) # 3/0	(2) # 1/0	(1) # 6	(1) # 6	1	2 1/2"
225	1	(3) # 4/0	(1) # 4/0	(2) # 2/0	(1) # 4	(1) # 4	1/0	3"
250	1	(3) # 250	(1) # 250	(2) # 3/0	(1) # 4	(1) # 4	2/0	3"
300	1	(3) # 350	(1) # 350	(2) # 4/0	(1) # 4	(1) # 4	2/0	4"
350	1	(3) # 400	(1) # 400	(2) # 300	(1) # 3	(1) # 3	3/0	4"
400	1	(3) # 500	(1) # 500	(1) # 350	(1) # 3	(1) # 3	3/0	4"

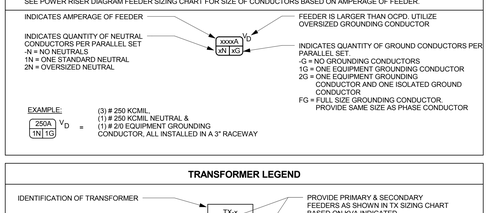
AMPERAGE	NUMBER OF PARALLEL SETS	PHASE CONDUCTOR(S)	NEUTRAL CONDUCTOR(S)		GROUNDING CONDUCTOR(S)			RACEWAY SIZE
			STANDARD	OVERSIZED	EQUIPMENT	ISOLATED	OVERSIZED	
420	1	(3) # 600	(1) # 600	(1) # 350	(1) # 2	(1) # 2	3/0	4"
450	2	(3) # 4/0	(1) # 4/0	(2) # 2/0	(1) # 2	(1) # 2	3/0	3"
500	2	(3) # 250	(1) # 250	(2) # 3/0	(1) # 2	(1) # 2	3/0	3"
600	2	(3) # 350	(1) # 350	(2) # 4/0	(1) # 1	(1) # 1	4/0	4"
700	2	(3) # 500	(1) # 500	(2) # 300	(1) # 1/0	(1) # 1/0	4/0	4"
800	2	(3) # 500	(1) # 500	(2) # 350	(1) # 1/0	(1) # 1/0	250	4"
840	2	(3) # 600	(1) # 600	(1) # 350	(1) # 2	(1) # 2	3/0	4"
1000	3	(3) # 500	(1) # 500	(2) # 500	(1) # 2/0	N.A.	500	4"
1200	4	(3) # 500	(1) # 500	(2) # 500	(1) # 3/0	N.A.	500	4"
1600	5	(3) # 500	(1) # 500	(2) # 500	(1) # 4/0	N.A.	500	4"
2000	6	(3) # 500	(1) # 500	N.A.	(1) # 250	N.A.	500	4"
2500	7	(3) # 500	(1) # 500	N.A.	(1) # 350	N.A.	500	4"
3000	8	(3) # 500	(1) # 500	N.A.	(1) # 400	N.A.	500	4"
3200	9	(3) # 500	(1) # 500	N.A.	(1) # 500	N.A.	500	4"
3600	10	(3) # 500	(1) # 500	N.A.	(1) # 500	N.A.	500	4"
4000	11	(3) # 500	(1) # 500	N.A.	(1) # 500	N.A.	500	4"

NOTES:

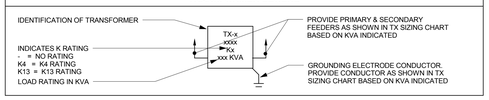
1. ALL CONDUCTORS LISTED ABOVE ARE THHN/THWN, COPPER.
2. CONTRACTOR MAY ELECT TO INCREASE SIZE OF CONDUCTORS LISTED ABOVE IF THERE IS NO INCREASE IN COST. INCREASE SIZE OF RACEWAY PER CODE AS REQUIRED.
3. PROVIDE AUXILIARY LUGS AND OVERSIZED GUTTERS IN DISTRIBUTION EQUIPMENT TO ACCOMMODATE OVERSIZED CONDUCTORS.

FEEDER LEGEND

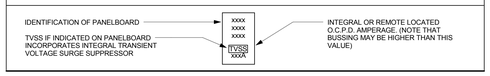
NOTE:
SEE POWER RISER DIAGRAM FEEDER SIZING CHART FOR SIZE OF CONDUCTORS BASED ON AMPERAGE OF FEEDER.

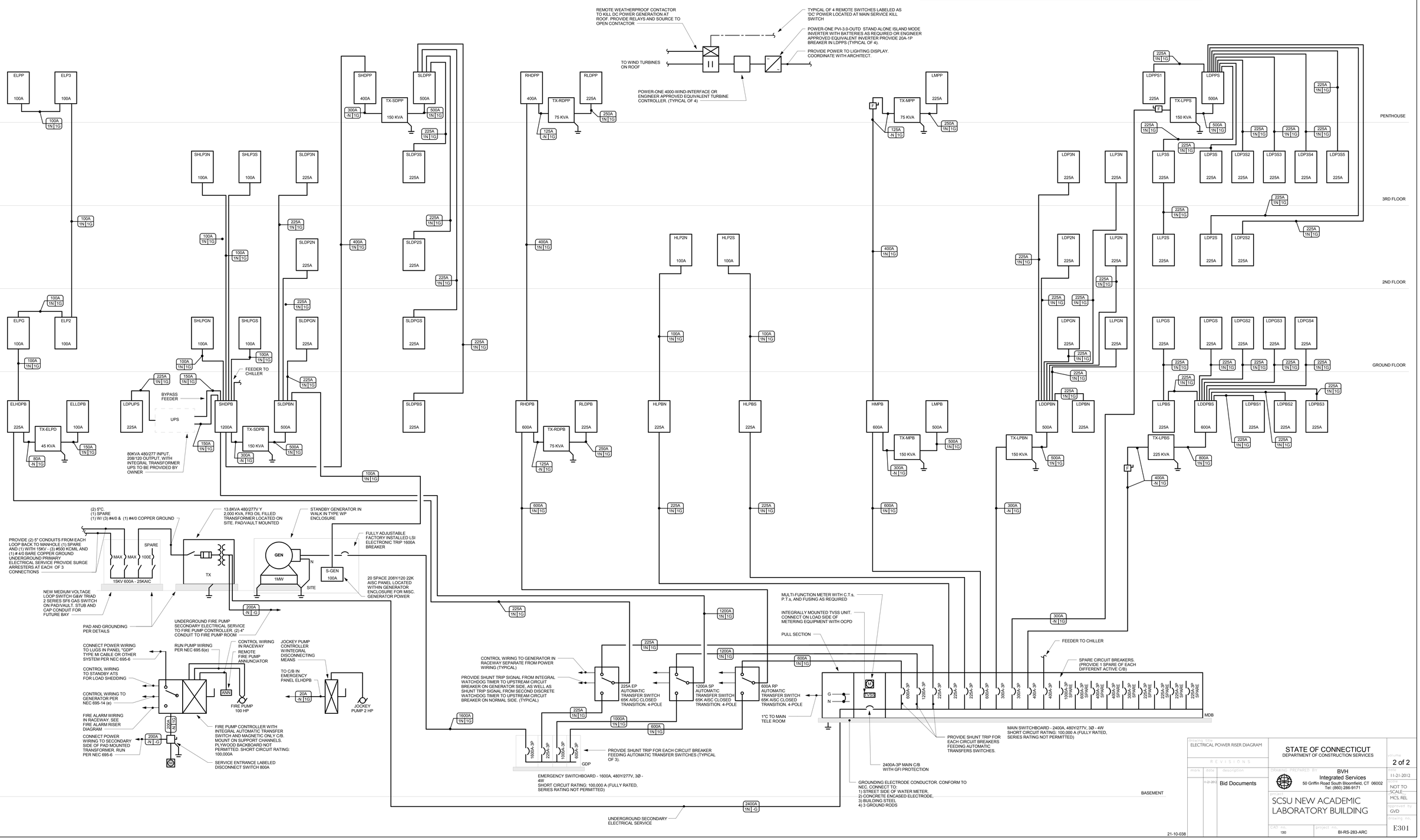


TRANSFORMER LEGEND



PANELBOARD LEGEND





21-10-038

title: ELECTRICAL POWER RISER DIAGRAM

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

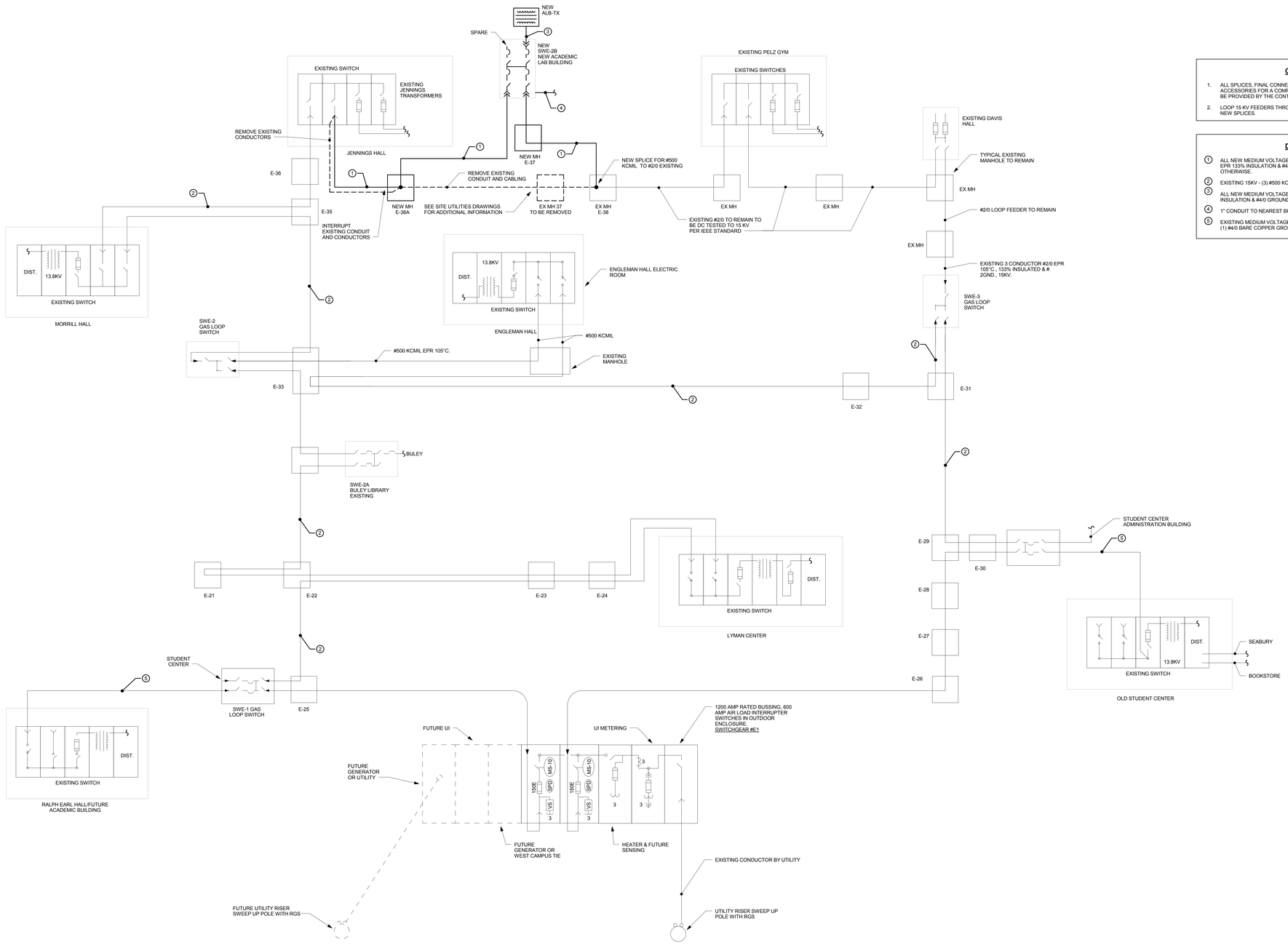
DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1310 | project no. BI-RS-283-ARC

sheet 2 of 2
date 11-21-2012
scale NOT TO SCALE
drawn by MCS, REL
checked by GVD
drawing no. E301

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



1 MODIFICATIONS TO EAST CAMPUS ELECTRICAL DISTRIBUTION
1/8" = 1'-0"

GENERAL NOTES

1. ALL SPLICES, FINAL CONNECTIONS AND NECESSARY EQUIPMENT AND ACCESSORIES FOR A COMPLETE NEW ELECTRICAL DISTRIBUTION SYSTEM TO BE PROVIDED BY THE CONTRACTOR.
2. LOOP 15 KV FEEDERS THROUGH ELECTRICAL MANHOLE TO ALLOW FOR FUTURE NEW SPLICES.

DRAWING NOTES

1. ALL NEW MEDIUM VOLTAGE CABLE TO BE COMPACT 15 KV, (3) #500 KCMIL 105°C - EPR 133% INSULATION & #4/0 GROUND, UNLESS SPECIFICALLY STATED OTHERWISE.
2. EXISTING 15KV - (3) #500 KCMIL 105°C. EPR & (1) #4/0 BARE COPPER GROUND.
3. ALL NEW MEDIUM VOLTAGE CABLE TO BE COMPACT 15KV, (3) #2 105°C-EPR 133% INSULATION & #4/0 GROUND, UNLESS SPECIFICALLY STATED OTHERWISE.
4. 1" CONDUIT TO NEAREST BUILDING FOR BMS LOOP SWITCH MONITORING.
5. EXISTING MEDIUM VOLTAGE 15 KV CABLE (3) #2/0 105°C-EPR 133% INSULATION & (1) #4/0 BARE COPPER GROUND.

project
ELECTRICAL POWER CAMPUS RISER

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

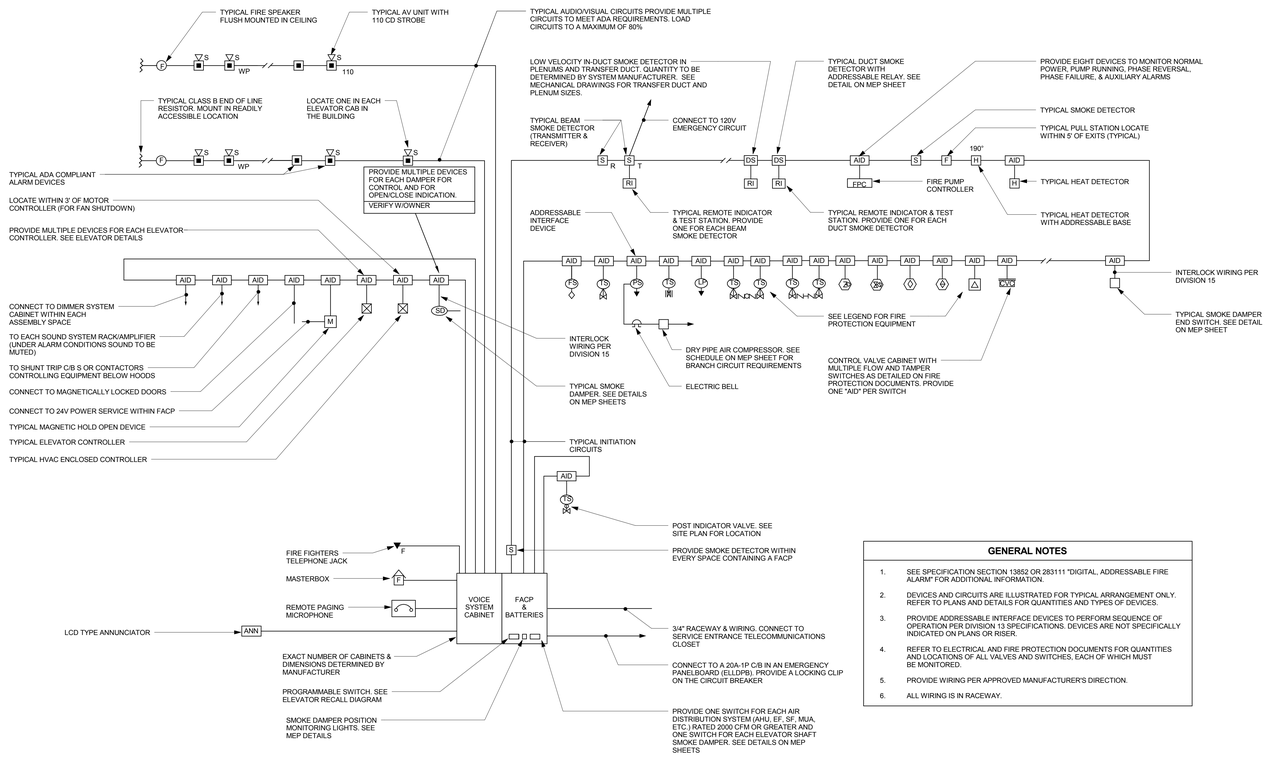
project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1310
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale 1/8" = 1'-0"
drawn by Designer
checked by Approver
drawing no. E302

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



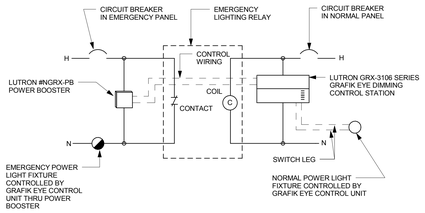
1 FIRE ALARM RISER
12" = 1'-0"

GENERAL NOTES

1. SEE SPECIFICATION SECTION 13852 OR 283111 "DIGITAL, ADDRESSABLE FIRE ALARM" FOR ADDITIONAL INFORMATION.
2. DEVICES AND CIRCUITS ARE ILLUSTRATED FOR TYPICAL ARRANGEMENT ONLY. REFER TO PLANS AND DETAILS FOR QUANTITIES AND TYPES OF DEVICES.
3. PROVIDE ADDRESSABLE INTERFACE DEVICES TO PERFORM SEQUENCE OF OPERATION PER DIVISION 13 SPECIFICATIONS. DEVICES ARE NOT SPECIFICALLY INDICATED ON PLANS OR RISER.
4. REFER TO ELECTRICAL AND FIRE PROTECTION DOCUMENTS FOR QUANTITIES AND LOCATIONS OF ALL VALVES AND SWITCHES, EACH OF WHICH MUST BE MONITORED.
5. PROVIDE WIRING PER APPROVED MANUFACTURER'S DIRECTION.
6. ALL WIRING IS IN RACEWAY.

drawing title			STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	volume
FIRE ALARM RISER				2 of 2
REVISIONS				
mark	date	description	DRAWN & PREPARED BY: BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171	date 11-21-2012
	11-21-2012	Bid Documents		scale 12" = 1'-0"
project SCSU NEW ACADEMIC LABORATORY BUILDING				drawn by MCS, REL
				approved by GVD
CAD file 130		project no. BI-RS-283-ARC		drawing no. E303

21-10-038



NOTES:

1. PROVIDE EQUIPMENT & WIRING SHOWN ABOVE IN ALL SPACES CONTAINING NORMAL AND EMERGENCY CIRCUITS, WITH LUTRON GRAFIK EYE CONTROL UNIT CONTROLLING EACH CIRCUIT.
2. CONTACT POSITION SHOWN WITH COIL IN DE-ENERGIZED POSITION.

EMERGENCY LIGHTING DETAIL FOR DIMMING SYSTEM

NOT TO SCALE

LUMINAIRE SCHEDULE

NOTES:

1. BIDS SHALL BE BASED ON THE LUMINAIRE SCHEDULE BELOW AND THE SPECIFICATIONS. REFER TO THE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL GENERAL REQUIREMENTS.

TYPE	MANUFACTURER	FIXTURE DESCRIPTION	VOLTS	LAMPS
ELEV1	METALUX VT2 SERIES OR FOLLOWING EQUIVALENT LITHONIA DMS SERIES COLUMBIA LU SERIES	THREE-LAMP ENCLOSED 4' FLUORESCENT INDUSTRIAL; FIBERGLASS REINFORCED POLYESTER HOUSING; UL LISTED FOR WET LOCATION; (3) FLUORESCENT LAMPS; UV-RESISTANT DEEP HIGH-IMPACT ACRYLIC LENS (1) LOW TEMPERATURE BALLAST;	120V	(3) 28 W T5 LAMPS
ELEV2	SURE-LITES CC SERIES OR FOLLOWING EQUIVALENT LITHONIA 6ELM2 SERIES DUAL LITE LM SERIES	EMERGENCY LIGHTING UNIT: IMPACT RESISTANT HOUSING; ACRYLIC PRISMATIC LENS; (2) TUNGSTEN HALOGEN LAMPS; WHITE FINISH; SEALED NICKEL CADMIUM BATTERY; INTEGRAL TEST SWITCH; CHARGER; LOW VOLTAGE DISCONNECT; INTEGRAL SELF-DIAGNOSTIC TEST FEATURE;	120V	BY MFG.

ELEVATOR SCHEDULE

GENERAL NOTES:

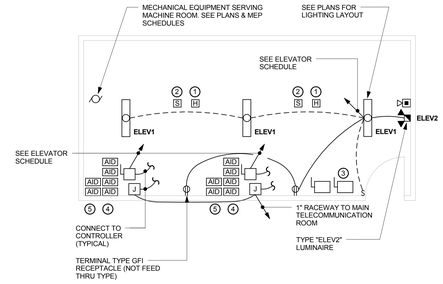
1. SEE ELEVATOR DETAILS.
2. FUSES SIZED PER ELEVATOR MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE BRANCH CIRCUIT FROM ELEVATOR SHUNT TRIP SWITCH TO ELEVATOR CONTROLLER, SAME SIZE AS CONTROLLER BRANCH CIRCUIT SIZE LISTED BELOW.
4. TERMINATE EACH 20 AMP HOMERUN IN A 30 AMP SAFETY SWITCH LOCATED IN THE ELEVATOR MACHINE ROOM OR CLOSET.
5. PROVIDE A LOCKING CLIP ON EACH BRANCH CIRCUIT BREAKER.

ITEM #	HP	FLA	VOLTS	HYDRAULIC/ TRACTION	SHUNT TRIP SWITCH SIZE	CONTROLLER HOMERUN	CONTROLLER BRANCH CIRCUIT SIZE
ELEV-1	40	52	460	X	100A	125A-3P SHDPB	(3) #1 & (1) #1 GND - 2"C
ELEV-2	40	52	460	X	100A	125A-3P MDB	(3) #1 & (1) #1 GND - 2"C

ITEM #	MACHINE ROOM LIGHTING & POWER HOMERUN	ELEVATOR SHAFT LIGHTING & POWER HOMERUN	ELEVATOR CAB LIGHTING & POWER HOMERUN	ELEVATOR CONTROLLER OIL COOLER HOMERUN	NOTES
ELEV-1	20A-1P ELLDPB	20A-1P ELLDPB	20A-1P ELLDPB	20A-1P ELLDPB	
ELEV-2	20A-1P ELLDPB	20A-1P ELLDPB	20A-1P ELLDPB	20A-1P ELLDPB	

NOTES:

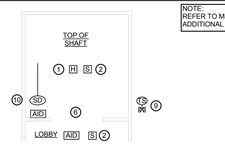
A. PROVIDE CONTROL WIRING FROM EACH ELEVATOR TO STANDBY ATS.



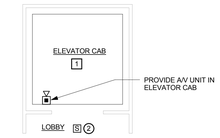
LOWER LEVEL ELEVATOR ELEVATOR MACHINE ROOM

NOT TO SCALE

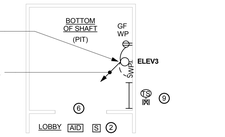
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



TOP FLOOR



TYPICAL FLOOR

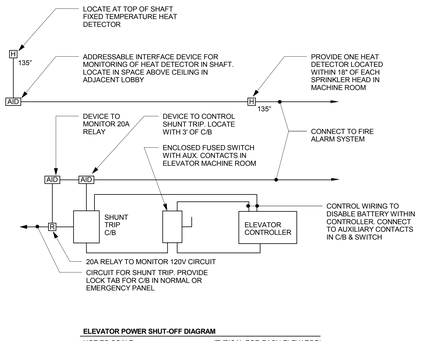


LOWEST FLOOR

ELEVATOR PARTIAL PLANS

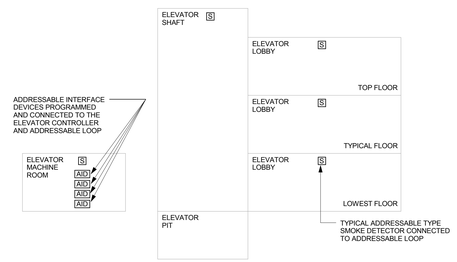
NOT TO SCALE

TYPICAL FOR EACH ELEVATOR. SEE FLOOR PLANS FOR EXACT CONFIGURATION OF ROOM.



ELEVATOR POWER SHUT-OFF DIAGRAM

NOT TO SCALE (TYPICAL FOR EACH ELEVATOR)



ELEVATOR FIRE RECALL DETAIL

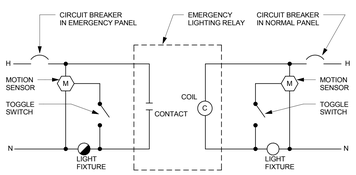
NOT TO SCALE (TYPICAL FOR EACH ELEVATOR)

ELEVATOR DRAWING NOTES

1. MOUNT A HEAT DETECTOR WITHIN 18" OF EACH SPRINKLER HEAD. CONNECT HEAT DETECTORS AND ADDRESSABLE INTERFACE DEVICE AS SHOWN ON ELEVATOR POWER SHUT-OFF DIAGRAM.
2. CONNECT SMOKE DETECTOR AS SHOWN ON FIRE ALARM RISER DIAGRAM.
3. ELEVATOR SHUNT TRIP SWITCH. LOCATE SWITCH ONE FOOT FROM DOOR FRAME. SEE ELEVATOR SCHEDULE FOR SIZE OF SWITCH AND BRANCH CIRCUIT.
4. FIRE ALARM ADDRESSABLE INTERFACE DEVICE (4 TOTAL). CONNECT TO CONTROLLER. SEE FIRE ALARM RISER & ELEVATOR FIRE RECALL DETAIL.
5. FIRE ALARM ADDRESSABLE INTERFACE DEVICE (2 TOTAL). CONNECT TO ELEVATOR SHUNT TRIP CIRCUIT BREAKER. SEE FIRE ALARM RISER & ELEVATOR POWER SHUT-OFF DIAGRAM.
6. ADDRESSABLE INTERFACE DEVICE. LOCATE IN ELEVATOR LOBBY. SEE ELEVATOR POWER SHUT-OFF DIAGRAM.
7. WHEREVER MULTIPLE ELEVATORS ARE LOCATED IN COMMON MACHINE ROOMS OR SHAFTS INTERLOCK ALL HEAT AND SMOKE DETECTORS THAT ARE PART OF SHUTOFF AND RECALL SYSTEMS.
8. WHEREVER MULTIPLE ELEVATORS ARE CONNECTED TO THE ESSENTIAL POWER SYSTEM IN A BUILDING PROVIDE WIRING FROM THE ASSOCIATED ATS TO EACH ELEVATOR CONTROLLER.
9. SPRINKLER SYSTEM SUPERVISORY SWITCH WIRED TO FIRE ALARM SYSTEM.
10. SMOKE DAMPER AND FIRE ALARM ADDRESSABLE INTERFACE DEVICE WHERE SHOWN ON PLANS.

GENERAL NOTES

1. THIS ARRANGEMENT IS TYPICAL FOR EACH ELEVATOR.
2. PROVIDE "ELEVATOR" FUNCTION SWITCH IN FACP TO ALLOW ANY SMOKE DETECTOR SHOWN ON THIS DETAIL TO FUNCTION WITHOUT NOTIFICATION OF BUILDING ALARM.
3. SEQUENCE OF OPERATION:
   INITIATION OF ANY HEAT DETECTOR IN THE SHAFT OR ELEVATOR MACHINE ROOM TO INTERRUPT THE POWER FEED TO THE ELEVATOR CONTROLLER VIA THE SHUNT TRIP CIRCUIT BREAKER.
4. PROGRAM THE FOLLOWING TOGETHER:
   A. MACHINE ROOM DETECTORS
   B. SHAFT DETECTORS
   C. DESIGNATED FLOOR DETECTOR
   D. ALL OTHER DETECTORS SHOWN ON THIS DETAIL

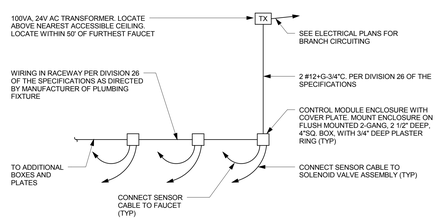


NOTES:

1. PROVIDE EQUIPMENT & WIRING SHOWN ABOVE IN ALL SPACES CONTAINING ALL OF THE FOLLOWING: EMERGENCY & NORMAL LIGHTING CIRCUITS, (2) MOTION SENSORS, EMERGENCY LIGHTING RELAY AND OVERRIDE OFF SWITCHES.
2. CONTACT POSITION SHOWN WITH COIL IN ENERGIZED POSITION.

EMERGENCY LIGHTING DETAIL 'F'

NOT TO SCALE

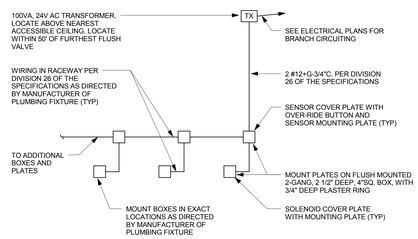


NOTES:

1. CONNECT ONE TRANSFORMER TO NO MORE THAN 6 PLUMBING FIXTURES (LAVATORIES AND/OR SINKS).
2. TRANSFORMER, FAUCET, SOLENOID VALVE ASSEMBLY, CONTROL MODULE ENCLOSURE AND COVERPLATE, AND SENSOR CABLES FURNISHED BY PLUMBING FIXTURE MANUFACTURER PER DIVISION 22 OF THE SPECIFICATIONS.
3. TERMINATE ALL CABLES PER REQUIREMENTS OF PLUMBING FIXTURE MANUFACTURER.
4. ADJUST RANGE AND TIME OUT SETTINGS PER PLUMBING FIXTURE MANUFACTURER AND OWNER.

TYPICAL LAVATORY/SINK FAUCET SENSOR DETAIL

NOT TO SCALE

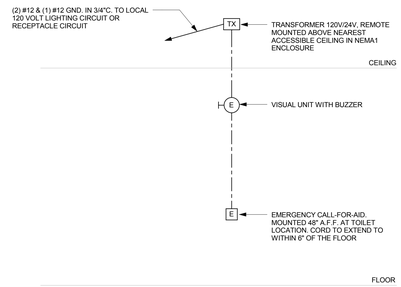


NOTES:

1. CONNECT ONE TRANSFORMER TO NO MORE THAN 6 PLUMBING FIXTURES (WATER CLOSETS AND/OR URINALS).
2. TRANSFORMER, SENSOR PLATES, SOLENOID PLATES, AND SOLENOID OPERATOR FURNISHED BY PLUMBING FIXTURE MANUFACTUTER PER DIVISION 22 OF THE SPECIFICATIONS.
3. TERMINATE ALL CABLES PER REQUIREMENTS OF PLUMBING FIXTURE MANUFACTER.
4. ADJUST RANGE AND TIME OUR SETTINGS PER PLUMBING FIXTURE MANUFACTURER AND OWNER.

TYPICAL WATER CLOSET/URINAL FLUSH VALVE SENSOR DETAIL

NOT TO SCALE

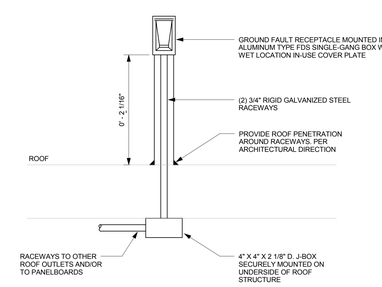


NOTES:

1. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. UTILIZE (2) #18 IN RACEWAY FOR ALL WIRING, UNLESS OTHERWISE NOTED.

HANDICAPPED TOILET CALL FOR AID DETAIL

NOT TO SCALE



NOTE:
RECEPTACLE SHALL BE PROVIDED WITHIN 25'-0" OF EACH HEATING, AIR CONDITIONING OR REFRIGERATION EQUIPMENT PER NEC ART. Z10.63.

ROOF MOUNTED RECEPTACLE DETAIL

NOT TO SCALE

title: ELECTRICAL DETAILS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY: BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project name: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD file: 130
project no.: BI-RS-283-ARC

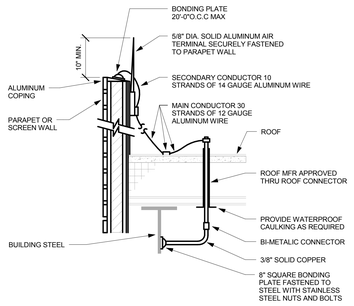
21-10-038

sheet no.: 2 of 2
date: 11-21-2012
scale: NOT TO SCALE
drawn by: MCS, REL
approved by: GVD
drawing no.: E401

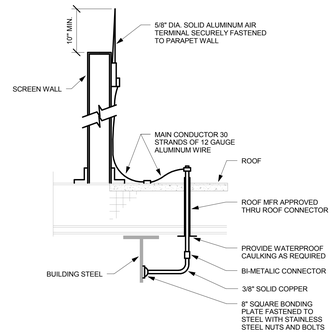
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

LIGHTNING PROTECTION

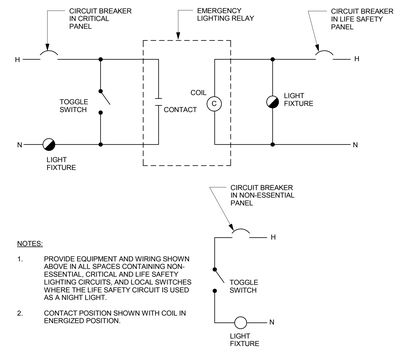
- FLAT ROOF MOUNTED AIR TERMINAL
- P — PARAPET MOUNTED AIR TERMINAL
- S — SCREEN WALL MOUNTED AIR TERMINAL
- THRU ROOF DOWN CONDUCTOR TO GROUNDING SYSTEM
- MAIN CONDUCTOR
- SECONDARY CONDUCTOR
- BONDING CONNECTION
- G — GROUND CONDUCTOR
- GROUND ROD 3/4"DIA. x 10'-0" LONG



TYPICAL PARAPET MOUNTED AIR TERMINAL INSTALLATION
NOT TO SCALE



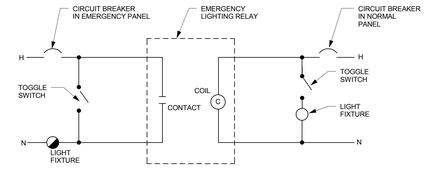
TYPICAL SCREEN WALL MOUNTED AIR TERMINAL INSTALLATION
NOT TO SCALE



NOTES:

1. PROVIDE EQUIPMENT AND WIRING SHOWN ABOVE IN ALL SPACES CONTAINING NON-ESSENTIAL, CRITICAL AND LIFE SAFETY LIGHTING CIRCUITS, AND LOCAL SWITCHES WHERE THE LIFE SAFETY CIRCUIT IS USED AS A NIGHT LIGHT.
2. CONTACT POSITION SHOWN WITH COIL IN ENERGIZED POSITION.

EMERGENCY LIGHTING DETAIL 'D'
NOT TO SCALE



NOTES:

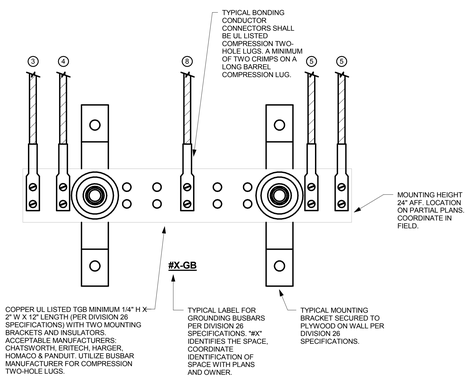
1. PROVIDE EQUIPMENT & WIRING SHOWN ABOVE IN ALL SPACES CONTAINING NORMAL AND EMERGENCY CIRCUITS, WITH LOCAL SWITCHES CONTROLLING EACH CIRCUIT.
2. CONTACT POSITION SHOWN WITH COIL IN ENERGIZED POSITION.

EMERGENCY LIGHTING DETAIL 'A'
NOT TO SCALE

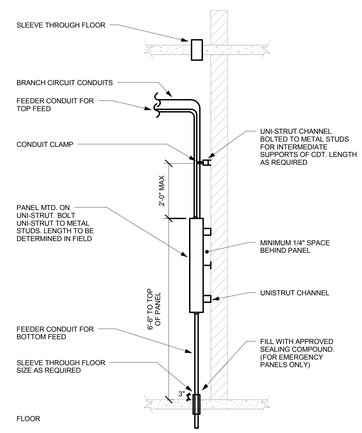
GROUNDING & BONDING DETAIL NOTES

1. REFER TO GROUNDING AND BONDING DIVISION 26 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. BONDING CONDUCTORS SHALL BE #3/0 AWG COLOR GREEN INSULATED COPPER CONDUCTOR OR SIZED PER "BONDING CONDUCTOR SIZING CHART" (ANSI J-STD-607-A) IN PATHWAY.
3. FASTENING BONDING CONNECTOR TWO-HOLE LUGS TO ALL BUSBARS SHALL BE CLEANED AND APPLY A COPPER ANTI-OXIDANT TO THE CONTACT AREA OF BOTH THE CONNECTOR LUG AND THE BUSBAR.
4. BONDING CONDUCTORS AND BUSBARS SHALL BE LABELED WITH IDENTIFICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/TIA/EIA-606-A.
5. SEE PLANS FOR QUANTITY OF BUS BARS.

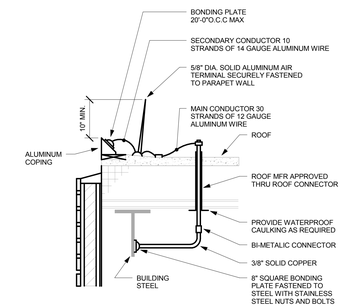
1. BONDING CONDUCTOR (BCT) TO BUILDING GROUNDING ELECTRODE.
2. BONDING CONDUCTOR TO NEAREST BUILDING METALLIC DOMESTIC COLD WATER PIPE. IF APPLICABLE. UTILIZE BRONZE WATER PIPE GROUNDING CLAMP CONNECTION TO WATER PIPE.
3. BCT TO NEAREST BUILDING STEEL STRUCTURE. IF APPLICABLE. UTILIZE EXOTHERMIC WELDING CONNECTION TO BUILDING STEEL.
4. BCT TO NEAREST BUILDING ELECTRICAL PANELBOARD GROUND BAR. UTILIZE LISTED CONNECTOR TO PANELBOARD GROUND BUS.
5. TYPICAL BONDING CONDUCTOR THAT INTERCONNECTS ALL GB(S).
6. BONDING CONDUCTOR TO EXISTING BUILDING MAIN ELECTRICAL SERVICE.
7. BONDING CONDUCTOR TO GENERATOR GROUND SYSTEM.
8. TYPICAL BONDING CONDUCTOR THAT INTERCONNECTS GB(S) WITH THE MGB.



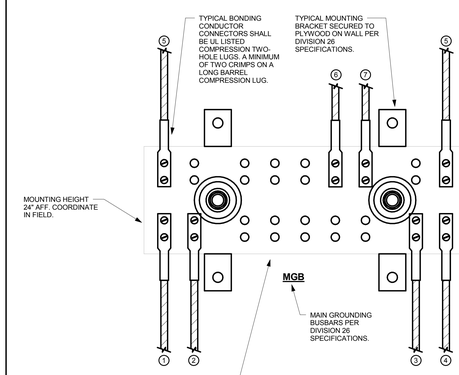
GROUNDING BUSBAR (GB)
NOT TO SCALE



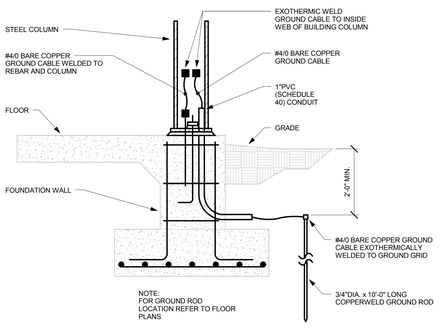
TYPICAL PANELBOARD MOUNTING IN ELECTRIC CLOSETS
NOT TO SCALE



TYPICAL FLAT ROOF MOUNTED AIR TERMINAL INSTALLATION
NOT TO SCALE

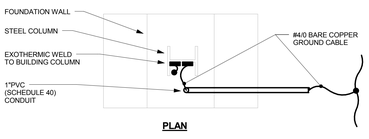


MAIN GROUNDING BUSBAR (MGB)
NOT TO SCALE



NOTE:
FOR GROUND ROD LOCATION REFER TO FLOOR PLANS

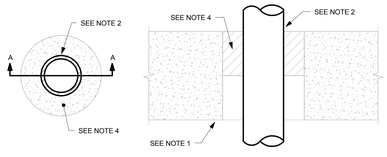
SECTION



PLAN

TYPICAL COLUMN GROUNDING
NOT TO SCALE

SYSTEM NO. C-AJ-1013
DECEMBER 07, 1999
(FORMERLY SYSTEM NO. 130)
F RATING - 1 HR
T RATING - 0 HR
L RATING AT AMBIENT - LESS THEN 1 CFM/SQ FT.
(SEE ITEM 4)
L RATING AT 400F - LESS THAN 1 CFM/SQ FT.
(SEE ITEM 4)



1. FLOOR OR WALL ASSEMBLY - MINIMUM 5 INCH THICK REINFORCED NORMAL WEIGHT (140-155 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM DIAMETER OF OPENING IS 6 INCHES.

   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE 'FIRE RESISTANCE DIRECTORY' FOR NAMES OF MANUFACTURERS.

2. THROUGH PENETRATES - ONE METALLIC PIPE, OR CONDUIT TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL OR FLOOR ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED.

   A. STEEL PIPE - NOMINAL 4 INCH DIAMETER (OR SMALLER) SCHEDULE 5 (OR HEAVIER) STEEL PIPE WITH NOMINAL ANNULAR SPACE OF 3/4 INCH IS REQUIRED WITHIN THE FIRESTOP SYSTEM.

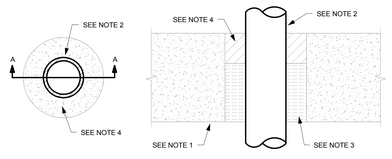
   B. CONDUIT -NOMINAL 4 INCH DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT. A NOMINAL ANNULAR SPACE OF 3/4 INCHES REQUIRED WITHIN THE FIRESTOP SYSTEM.

3. PACKING MATERIAL (NOT SHOWN) - NOMINAL 1 INCH DIAMETER OPEN CELL POLYURETHANE FOAM BACKER ROD FRICTION-FITTED INTO THE OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

4. FILL VOID OR CAVITY MATERIAL - SEALANT - MINIMUM 3/4 INCH THICKNESS OF MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

TYPICAL CONDUIT PENETRATION THROUGH 1 HOUR FIRE RATED WALL OR FLOOR
NOT TO SCALE

SYSTEM NO. C-AJ-1014
DECEMBER 07, 1999
(FORMERLY SYSTEM NO. 133)
F RATING - 2 HR
T RATING - 0 HR
L RATING AT AMBIENT - LESS THEN 1 CFM/SQ FT.
(SEE ITEM 4)
L RATING AT 400F - LESS THAN 1 CFM/SQ FT.
(SEE ITEM 4)



1. FLOOR OR WALL ASSEMBLY - MINIMUM 3 1/4 INCH THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-155 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAXIMUM DIAMETER OF CIRCULAR OPENING IS 6 INCHES.

   SEE CONCRETE BLOCKS (CAZT) CATEGORY IN THE 'FIRE RESISTANCE DIRECTORY' FOR NAMES OF MANUFACTURERS.

2. THROUGH PENETRATES - ONE METALLIC PIPE, OR CONDUIT TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOMINAL ANNULAR SPACE OF 3/4" INCH IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL OR FLOOR ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED.

   A. STEEL PIPE - NOMINAL 4 INCH DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.

   B. CONDUIT -NOMINAL 4 INCH DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.

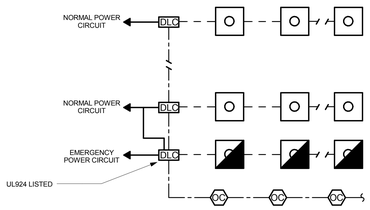
3. PACKING MATERIAL - MINIMUM 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRE THICKNESS OF FILL MATERIAL. MINIMUM THICKNESS OF PACKING MATERIAL IN FLOORS AND WALLS TO BE 2 3/4 INCHES, RESPECTIVELY.

4. FILL VOID OR CAVITY MATERIAL - SEALANT - MINIMUM 1/2 INCH THICKNESS OF MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL. AS AN ALTERNATE. THE PERMANENT FORMING MATERIAL (ITEM 3) MAY BE OMITTED IF THE FILL MATERIAL THICKNESS IS INCREASED TO AN MINIMUM OF 1 1/2 INCHES.

TYPICAL CONDUIT PENETRATION THROUGH 2 HOUR FIRE RATED WALL OR FLOOR
NOT TO SCALE

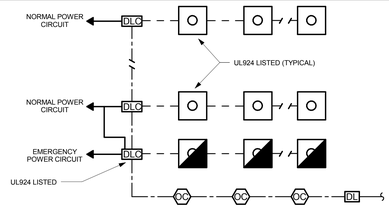
21-10-038

drawing title: ELECTRICAL DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: As indicated
11-21-2012 Bid Documents	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: MCS, REL
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: E402



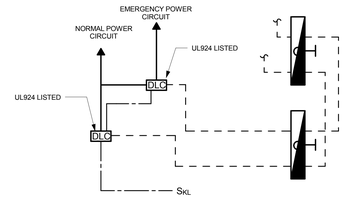
TYPICAL CORRIDOR (WITHOUT DAYLIGHTING HARVESTING) LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. TIME PERIODS THAT THE BUILDING IS CONSIDERED OCCUPIED OR UNOCCUPIED ARE TO BE DETERMINED BY THE EXISTING AUTOMATED LOGIC BMS SYSTEM ON CAMPUS.
2. NORMAL OPERATION
   A. IF THE BUILDING IS OCCUPIED, ALL LIGHTING FIXTURES ARE TO BE ON.
   B. IF THE BUILDING IS UNOCCUPIED, ALL FIXTURES ARE TO TURN ON WHEN OCCUPANCY SENSOR ACTIVATED.
      1. FIXTURES TO TURN OFF WHEN OCCUPANCY SENSOR TIMES OUT.
3. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON EMERGENCY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
   B. ALL CONTROL FOR LIGHTING ON NORMAL POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL EMERGENCY POWER FOR LIGHTING.
4. OVERRIDES
   B. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   C. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

1 TYPICAL CORRIDOR (NO DAYLIGHTING)
NOT TO SCALE



TYPICAL CORRIDOR (WITH DAYLIGHT HARVESTING) LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. TIME PERIODS THAT THE BUILDING IS CONSIDERED OCCUPIED OR UNOCCUPIED ARE TO BE DETERMINED BY THE EXISTING AUTOMATED LOGIC BMS SYSTEM ON CAMPUS.
2. NORMAL OPERATION
   A. IF THE BUILDING IS OCCUPIED, ALL LIGHTING FIXTURES ARE TO BE ON.
   B. IF THE BUILDING IS UNOCCUPIED, ALL FIXTURES ARE TO TURN ON WHEN OCCUPANCY SENSOR ACTIVATED;
      1. FIXTURES TO TURN OFF WHEN OCCUPANCY SENSOR TIMES OUT.
   C. ALL FIXTURES SHALL ALSO BE CONTROLLED BY DAYLIGHT HARVESTING SENSORS, AND ARE TO TURN ON AND OFF BASED ON THE LIGHT LEVELS SET BY THESE SENSORS.
3. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON EMERGENCY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
   B. ALL CONTROL FOR LIGHTING ON NORMAL POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL EMERGENCY POWER FOR LIGHTING.
4. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   C. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

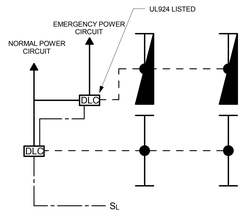
2 TYPICAL CORRIDOR (DAYLIGHTING)
NOT TO SCALE



TYPICAL STAIR LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) ON NORMAL POWER TO TURN ON WHEN KEYED SWITCH IS CLOSED.
   B. ALL FIXTURE(S) ON NORMAL POWER TO TURN OFF WHEN KEYED SWITCH IS OPENED.
2. EMERGENCY OPERATION
   A. ALL LIGHTING ON EMERGENCY POWER TO BE ON AT ALL TIMES BUILDING IS OCCUPIED.
   B. ALL CONTROL FOR LIGHTING ON EMERGENCY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
   C. ALL CONTROL FOR LIGHTING ON NORMAL POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL EMERGENCY POWER FOR LIGHTING.
3. OVERRIDES
   A. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE;
   B. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.

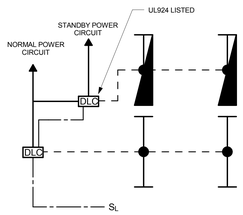
3 TYPICAL STAIRS
NOT TO SCALE

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



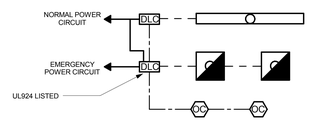
TYPICAL ELECTRICAL ROOM LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURE(S) TO TURN OFF WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON.
2. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON EMERGENCY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
3. OVERRIDES
   A. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE;
   B. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.

4 TYPICAL ELECTRICAL ROOM
NOT TO SCALE



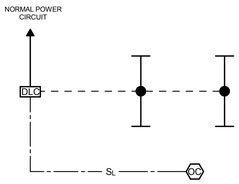
TYPICAL MEPT ROOM LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURE(S) TO TURN OFF WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON.
2. EMERGENCY OPERATION
   A. ALL FIXTURE(S) ON STANDBY TO FOLLOW NORMAL SEQUENCE OF OPERATIONS DURING LOSS OF NORMAL LINE POWER.
3. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

5 TYPICAL MEPT SPACE
NOT TO SCALE



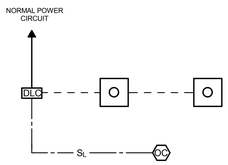
TYPICAL RESTROOM LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN OCCUPANCY SENSOR IS ACTIVATED.
   B. ALL FIXTURE(S) TO TURN OFF WHEN OCCUPANCY SENSOR TIMES OUT.
2. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON STANDBY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
3. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

6 TYPICAL RESTROOM
NOT TO SCALE



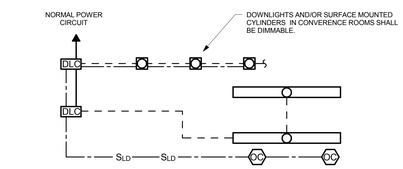
TYPICAL STORAGE SPACE LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURE(S) TO TURN OFF WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON OR WHEN VACANCY SENSOR TIMES OUT.
2. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

7 TYPICAL STORAGE ROOM
NOT TO SCALE



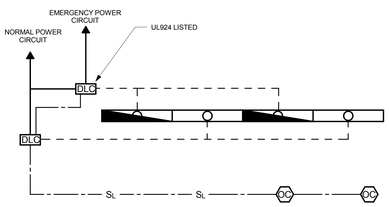
TYPICAL OFFICE LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURE(S) TO TURN OFF WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON OR WHEN VACANCY SENSOR TIMES OUT.
2. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE;

8 TYPICAL OFFICE
NOT TO SCALE



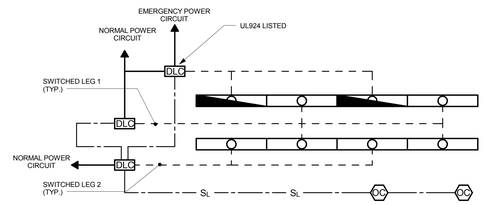
TYPICAL CONFERENCE/MEETING ROOM LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) ON SWITCHED CIRCUIT TO TURN ON WHEN CORRESPONDING LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURE(S) ON SWITCHED CIRCUIT TO TURN OFF WHEN CORRESPONDING LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON OR WHEN VACANCY SENSOR TIMES OUT.
   C. DIMMING LEVELS TO BE DETERMINED BY LOW VOLTAGE DIMMING SWITCH CORRESPONDING TO EACH ZONE.
2. OVERRIDES
   A. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE;
   B. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS.

9 TYPICAL CONFERENCE/MEETING ROOM
NOT TO SCALE



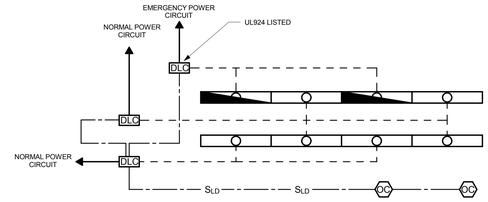
TYPICAL LAB LIGHTING CONTROL
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURES TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURES TO TURN OFF (INCLUDING FUME HOOD LUMINAIRES) WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON OR WHEN VACANCY SENSOR TIMES OUT.
2. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON STANDBY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
3. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

10 TYPICAL LAB
NOT TO SCALE



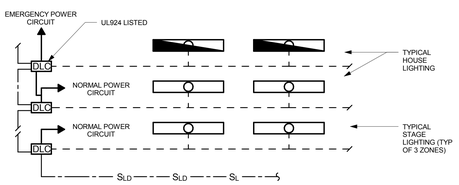
TYPICAL 'DUAL LEVEL' LAB LIGHTING CONTROL
SEQUENCE OF OPERATIONS
- LUMINAIRES ARE TO BE SEPARATED INTO (2) ZONES PER ROOM, WITH ADJACENT FIXTURES BEING ON DIFFERENT ZONES (TYPICAL).
1. NORMAL OPERATION
   A. ALL FIXTURES TO TURN ON WHEN LOW VOLTAGE SWITCH FOR ITS ZONE IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURES TO TURN OFF (INCLUDING FUME HOOD LUMINAIRES) WHEN LOW VOLTAGE SWITCH FOR ITS ZONE IS ACTIVATED WHILE LIGHTS ARE ON.
   C. ALL FIXTURES TO TURN OFF (INCLUDING FUME HOOD LUMINAIRES WHEN VACANCY SENSOR TIMES OUT
   C. LIGHTING CONTROLS
2. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON STANDBY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
3. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

11 TYPICAL 'DUAL LEVEL' LAB
NOT TO SCALE



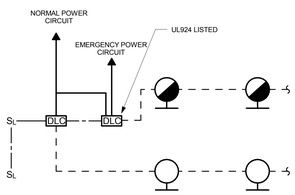
TYPICAL 'DIMMABLE' LAB LIGHTING CONTROL
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURES TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURES TO TURN OFF (INCLUDING FUME HOOD LUMINAIRES) WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON OR WHEN VACANCY SENSOR TIMES OUT.
   C. DIMMING LEVELS TO BE DETERMINED BY LOW VOLTAGE DIMMING SWITCH CORRESPONDING TO EACH ZONE.
2. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON STANDBY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
3. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

12 TYPICAL 'DIMMABLE' LAB
NOT TO SCALE



TYPICAL CLASSROOM LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. HOUSE LIGHTING
      1. PROVIDE EACH OF (3) ZONES WITH (1) LOW VOLTAGE SWITCH AND (1) LOW VOLTAGE DIMMING SWITCH.
      2. EACH ZONE TO TURN ON WHEN ONE OF THE TWO SWITCHES ACTIVATED WHILE FIXTURES OFF.
      3. EACH ZONE TO TURN OFF WHEN ONE OF THE TWO SWITCHES IS ACTIVATED WHILE FIXTURES ON.
      4. EACH ZONE TO HAVE (1) SWITCHED LEG ON EMERGENCY AND (1) SWITCHED LEG ON NORMAL POWER.
   B. STAGE LIGHTING
      1. PROVIDE EACH OF (3) ZONES WITH (1) LOW VOLTAGE DIMMING SWITCH.
      2. EACH ZONE TO TURN ON WHEN THE SWITCH IS ACTIVATED WHILE FIXTURES ARE OFF.
      3. EACH ZONE TO TRUN OFF WHEN THE SWITCH IS ACTIVATED WHILE FIXTURE IS ON.
2. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON STANDBY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
3. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

13 TYPICAL CLASSROOM
NOT TO SCALE



TYPICAL EXTERIOR LIGHTING CONTROLS
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. FIXTURES TO TURN ON BASED ON PHOTOCELL AND BMS TIMECLOCK INPUT.
   B. FIXTURES TO TURN OFF BASED ON PHOTOCELL AND BMS TIMECLOCK INPUT.
   C. LOCAL OVERRIDE SWITCH SHALL TAKE PRIORITY OVER ALL OTHER CONTROLS BUT EMERGENCY.
2. EMERGENCY OPERATION
   A. ALL CONTROL FOR LIGHTING ON EMERGENCY POWER SHALL BE OVERRODE AND BYPASSED TO "FULL ON" VIA UL924 LISTED CONTROLS AUTOMATICALLY UPON LOSS OF LINE SIDE OF LOCAL NORMAL POWER FOR LIGHTING.
3. OVERRIDES
   A. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE;
   B. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.

E TYPICAL EXTERIOR
NOT TO SCALE

TYPICAL SWITCH CONTROLLED ZONE
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURE(S) TO TURN OFF WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON.
2. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

TYPICAL VACANCY CONTROLLED ZONE
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE OFF.
   B. ALL FIXTURE(S) TO TURN OFF WHEN LOW VOLTAGE SWITCH IS ACTIVATED WHILE LIGHTS ARE ON OR WHEN VACANCY SENSOR TIMES OUT.
2. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

TYPICAL OCCUPANCY CONTROLLED ZONE
SEQUENCE OF OPERATIONS
1. NORMAL OPERATION
   A. ALL FIXTURE(S) TO TURN ON WHEN OCCUPANCY SENSOR IS ACTIVATED.
   B. ALL FIXTURE(S) TO TURN OFF WHEN OCCUPANCY SENSOR TIMES OUT.
2. OVERRIDES
   A. ALL BMS INPUTS TO TAKE PRIORITY OVER ALL LOCAL CONTROLS EXCEPT THOSE FOR EMERGENCY OPERATION.
   B. PROVIDE REQUIRED HARDWARE AND PROGRAMMING FOR THE FOLLOWING INPUTS FROM THE EXISTING AUTOMATED LOGIC BMS SYSTEM VIA BACNET PROTOCOL:
      1. FORCE ON;
      2. FORCE OFF;
      3. RESUME NORMAL SEQUENCE.

LIGHTING CONTROL GENERAL NOTES

1. THE DETAILS ON THIS SHEET ARE INTENDED SOLELY TO REPRESENT THE CONTROL SCHEME OF EACH DETAILED ROOM OR AREA, AND ARE NOT EXACT WIRING AND/OR COMPONENT DIAGRAMS. IN ALL INSTANCES, THE MANUFACTURER AND CONTRACTOR ARE RESPONSIBLE FOR PROVIDING A COMPLETE SYSTEM OF WIRING AND DEVICES TO ACCOMPLISH A COMPLETE LIGHTING CONTROL SYSTEM FOR THE INTENDED SEQUENCE OF OPERATIONS.
2. ALL CONTROL SCHEMES REPRESENTED HERE NEED TO BE CONFIRMED BY THE PROPOSED MANUFACTURER AS BEING READILY IMPLEMENTABLE WITH THEIR PRODUCT.
3. EXACT QUANTITY OF FIXTURES AND CONTROL DEVICES ARE NOT INTENDED TO MATCH THOSE SHOWN ON THE FLOOR PLANS. FLOOR PLANS SHOULD ALSO BE USED FOR THIS INFORMATION.
4. SEE FLOOR PLANS FOR GENERAL QUANTITIES AND TYPES OF FIXTURES, WHICH MAY NOT NECESSARILY MATCH THOSE DISPLAYED IN THE DETAILS.
5. CONTRACTOR SHALL PROVIDE DISTRIBUTIVE NETWORK LIGHTING CONTROLS BY SENSOR SWITCH, LUTRON OR WATTSTOPPER.
6. ALL OCCUPANCY AND VACANCY SENSORS SHALL HAVE AUXILIARY CONTACTS FOR OUTPUT TO MECHANICAL SYSTEMS.
7. THE 'DLC' SYMBOL IS A GRAPHIC REPRESENTATION OF ALL NECESSARY COMPONENTS (CONTRACTOR TO COORDINATE WITH LISTED MANUFACTURER'S THE EXACT COMPONENTS) REQUIRED TO PERFORM THE DESIRED FUNCTION SHOWN WITHIN EACH DETAIL.

DISCIPLINE: ELECTRICAL CONTROLS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

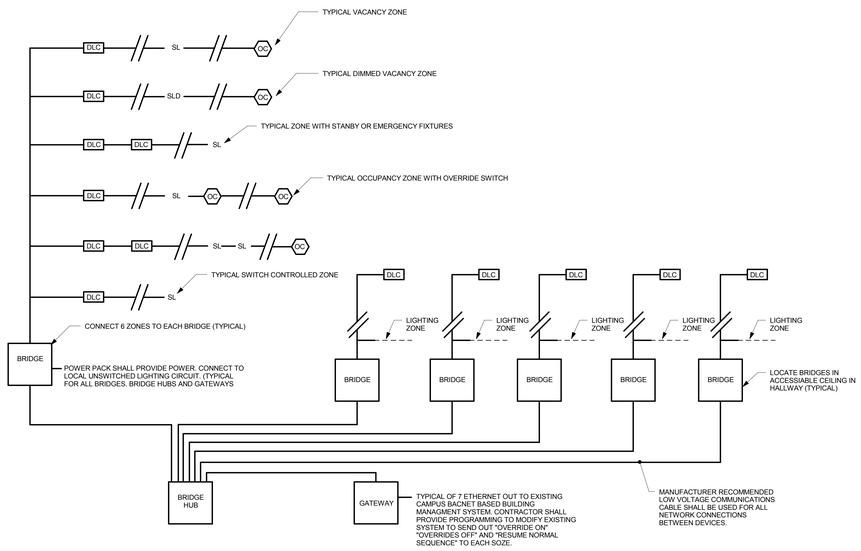
PROJECT:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

21-10-038

2 of 2
DATE: 11-21-2012
SCALE: NOT TO SCALE
drawn by: MCS, REL
approved by: GVD
drawing no. E501

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



LIGHTING CONTROLS RISER DIAGRAM
N.T.S.

GENERAL NOTES

1. NLIGHT IS THE BASIS OF DESIGN. NETWORK LIGHTING CONTROLS SYSTEM SHALL BE BY SENSOR SWITCH. LUTRON OR WATTSTOPPER, WITH NO OTHER ACCEPTABLE EQUALS.
2. THE DETAIL INDICATED IS FOR GENERAL ARRANGEMENT ONLY QUANTITIES.
3. CONTROL WIRING TO BE PER MANUFACTURES RECOMMENDATIONS AND BE PLENUM RATED.
4. PROVIDE SOFTWARE PROGRAMMING, STARTUP, COMMISSIONING AND FIELD ADJUSTMENTS.
5. PROVIDE APPROPRIATE # OF BRIDGES AS PER MANUFACTURER'S RECOMMENDATIONS FOR COMPLETE SYTSTEM.

drawing title: ELECTRICAL CONTROL RISER

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

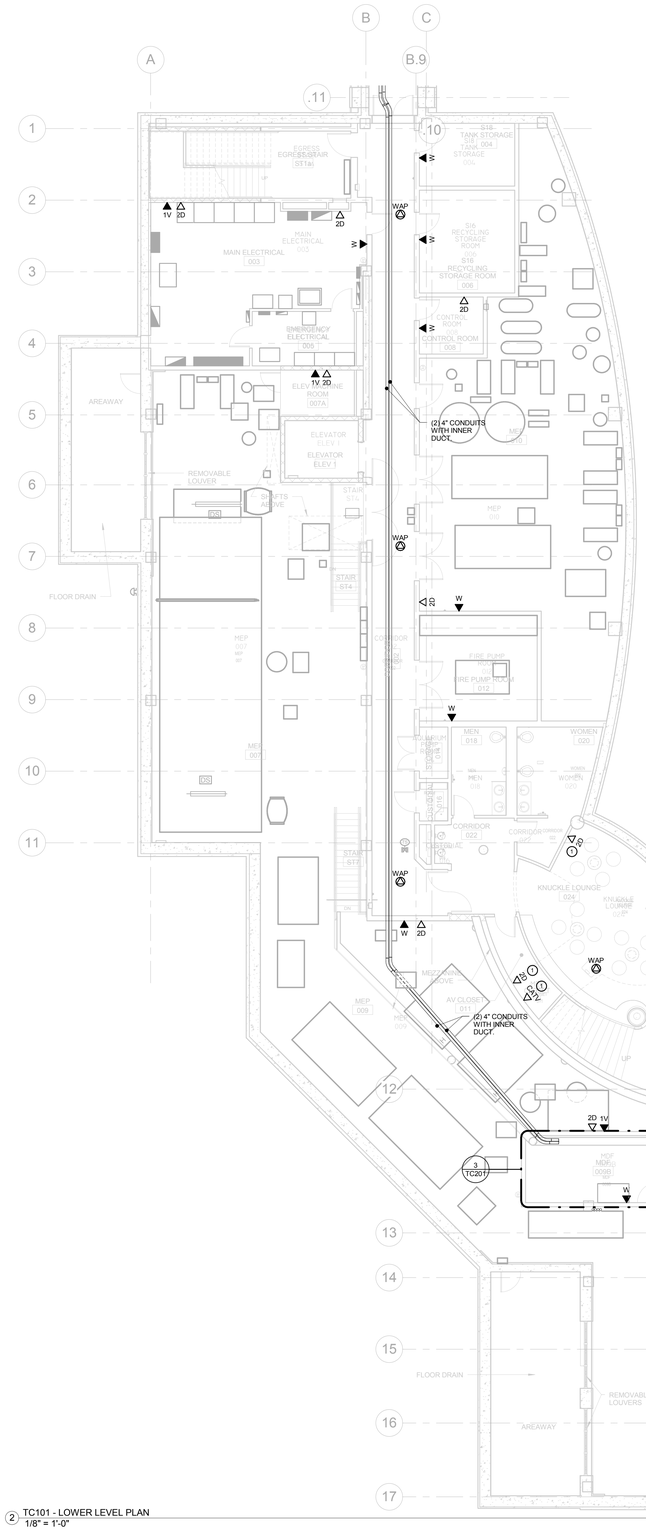
project:
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

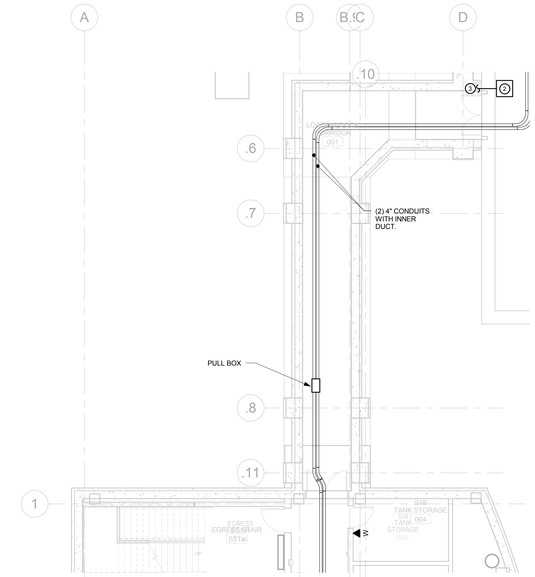
volume 2 of 2
date 11-21-2012
scale NOT TO SCALE-MCS, REL
approved by GVD
drawing no. E502

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



2 TC101 - LOWER LEVEL PLAN
1/8" = 1'-0"



1 TC101 - BRIDGE TO JENNINGS
1/8" = 1'-0"

DRAWING NOTES

1. DATA LOCATION FOR AUDIOVISUAL EQUIPMENT. COORDINATE WITH AUDIOVISUAL DRAWINGS FOR EXACT LOCATION AND ADJACENCY MOUNTING REQUIREMENTS.
2. RE-USE EXISTING CABLES. PROVIDE SPLICE AT PULL BOX LOCATED AT THE BASEMENT CEILING IN JENNINGS BUILDING. PROVIDE PLYWOOD WALL FIELD LOCATED ABOVE PULL BOX WITH ASSOCIATED SPICE CASES AND HARDWARE. INSTALL NEW PATHWAYS IN PULLBOX FOR EXISTING CABLE TO TRANSITION TO WALLFIELD. REFER TO RISER DRAWING FOR FURTHER INFORMATION.
3. CABLING PATHWAYS. REFER TO SITE UTILITY PLANS & BACKBONE CABLING, REFER TO RISER DIAGRAM.
4. PROVIDE DATA FOR PEDESTAL MOUNTED DATA OUTLET. REFER TO ARCITECTURAL DRAWINGS FOR EXACT LOCATION.

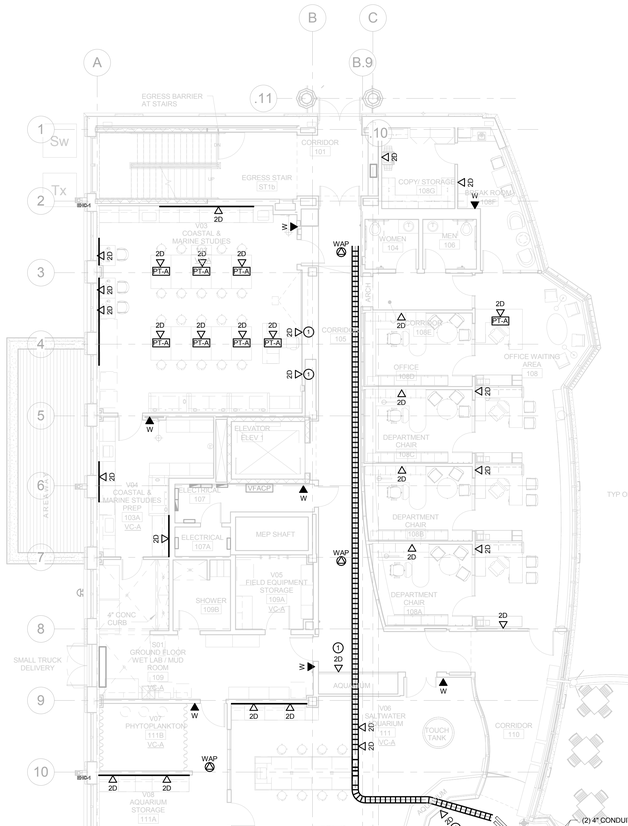
GENERAL NOTES

1. REFER TO ELECTRICAL SERIES DRAWINGS FOR OUTLET REQUIREMENTS IN PROVIDED RACEWAY. REFER TO MEP DETAILS FOR RACEWAY INSTALLATION AND CONFIGURATION.

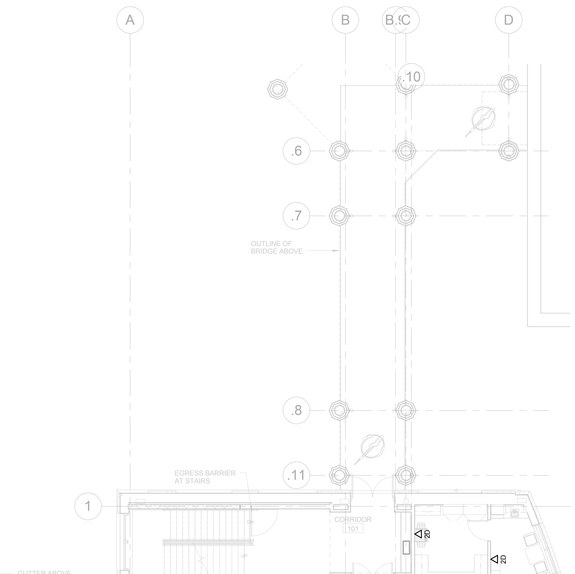
PROJECT NORTH
N
21-10-038

drawing title: TECHNOLOGY COMMUNICATIONS LOWER LEVEL FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume 2 of 2
REVISIONS			date 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWN / PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by FDZ
			approved by GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: TC101

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



2 TC102 - GROUND FLOOR PLAN
1/8" = 1'-0"



1 TC102 - BRIDGE TO JENNINGS
1/8" = 1'-0"

DRAWING NOTES

1. DATA LOCATION FOR AUDIOVISUAL EQUIPMENT. COORDINATE WITH AUDIOVISUAL DRAWINGS FOR EXACT LOCATION AND ADJACENCY MOUNTING REQUIREMENTS.

GENERAL NOTES

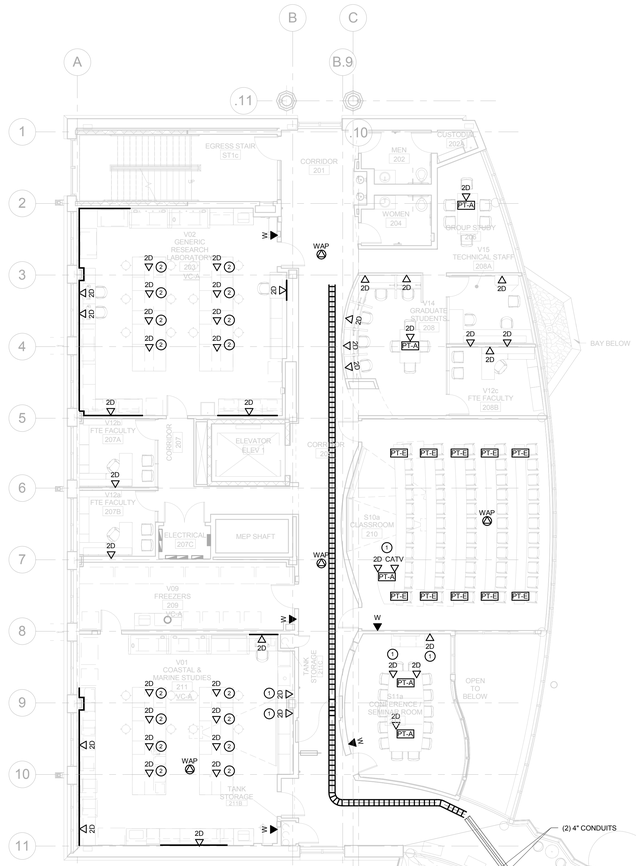
1. REFER TO ELECTRICAL SERIES DRAWINGS FOR OUTLET REQUIREMENTS IN PROVIDED RACEWAY, REFER TO MEP DETAILS FOR RACEWAY INSTALLATION AND CONFIGURATION.

PROJECT NORTH

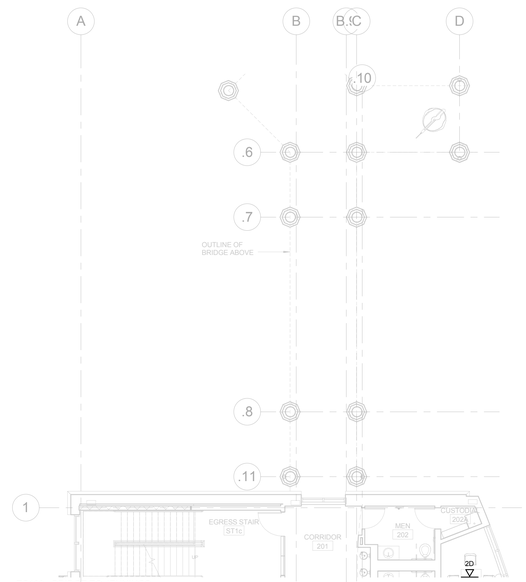
21-10-038

TECHNOLOGY COMMUNICATIONS GROUND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		11-21-2012
11-21-2012 Bid Documents			1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING		Drawn by: FDZ
			Approved by: GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. TC102

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



2 TC103 - 2ND FLOOR PLAN
1/8" = 1'-0"



1 TC103 - BRIDGE TO JENNINGS
1/8" = 1'-0"

DRAWING NOTES

1. DATA LOCATION FOR AUDIOVISUAL EQUIPMENT. COORDINATE WITH AUDIOVISUAL DRAWINGS FOR EXACT LOCATION AND ADJACENCY MOUNTING REQUIREMENTS.
2. PROVIDE DATA FOR PEDESTAL MOUNTED DATA OUTLET. REFER TO ARCITECTURAL DRAWINGS FOR EXACT LOCATION.

GENERAL NOTES

1. REFER TO ELECTRICAL SERIES DRAWINGS FOR OUTLET REQUIREMENTS IN PROVIDED RACEWAY, REFER TO MEP DETAILS FOR RACEWAY INSTALLATION AND CONFIGURATION.

PROJECT NORTH

21-10-038

TECHNOLOGY COMMUNICATIONS
2ND FLOOR PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

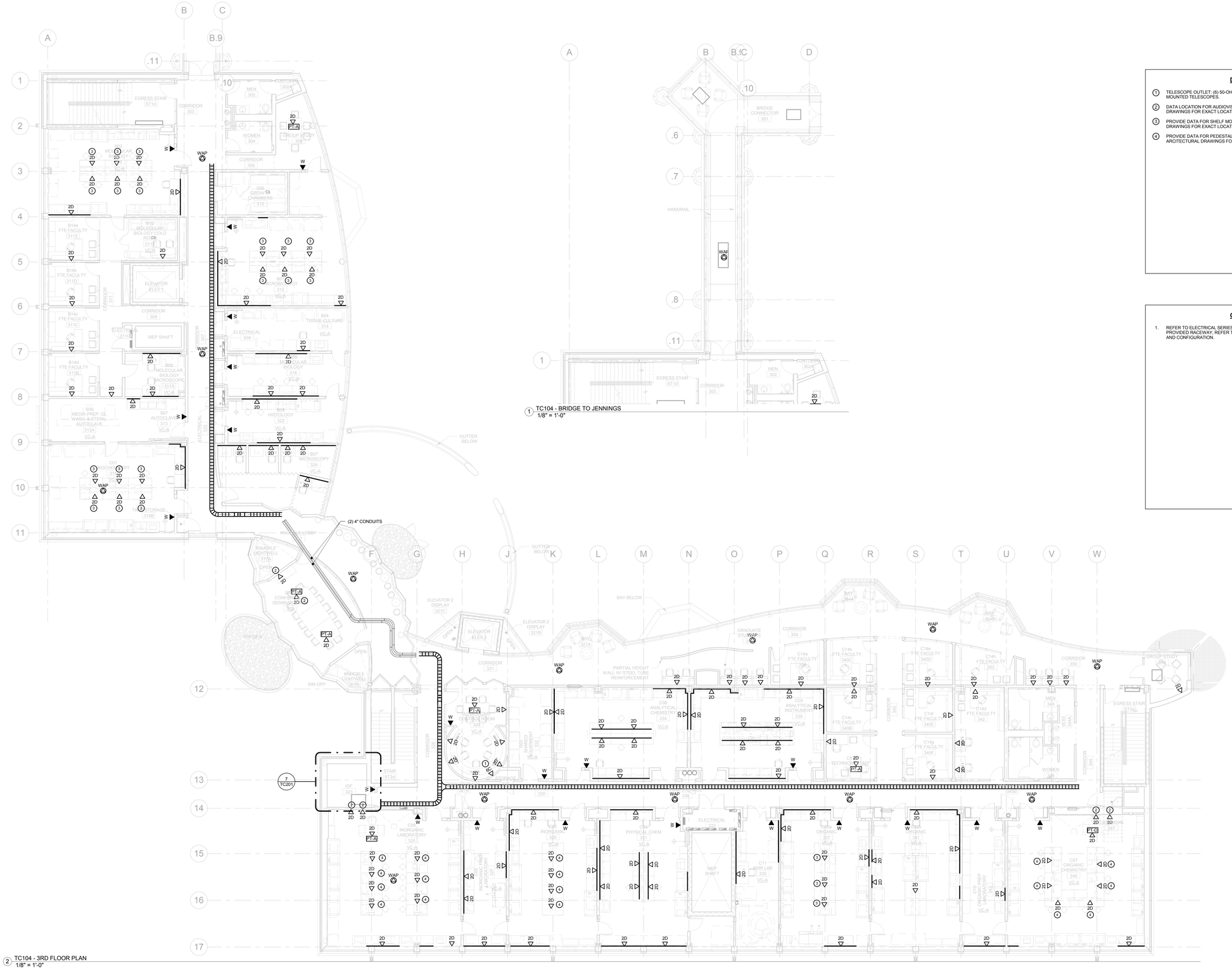
DRAWING PREPARED BY
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 130
project no. BI-RS-283-ARC

sheet 2 of 2
date 11-21-2012
scale 1/8" = 1'-0"
drawn by FDZ
checked by GVD
drawing no. TC103

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



2 TC104 - 3RD FLOOR PLAN
1/8" = 1'-0"

1 TC104 - BRIDGE TO JENNINGS
1/8" = 1'-0"

DRAWING NOTES

1. TELESCOPE OUTLET: (6) 50-OHHM COAXIAL CABLE, RUN IN 1" CONDUIT TO ROOF MOUNTED TELESCOPES.
2. DATA LOCATION FOR AUDIOVISUAL EQUIPMENT. COORDINATE WITH AUDIOVISUAL DRAWINGS FOR EXACT LOCATION AND ADJACENCY MOUNTING REQUIREMENTS.
3. PROVIDE DATA FOR SHELF MOUNTED DATA OUTLET. REFER TO ARCITECTURAL DRAWINGS FOR EXACT LOCATION.
4. PROVIDE DATA FOR PEDESTAL MOUNTED DATA OUTLET. REFER TO ARCITECTURAL DRAWINGS FOR EXACT LOCATION.

GENERAL NOTES

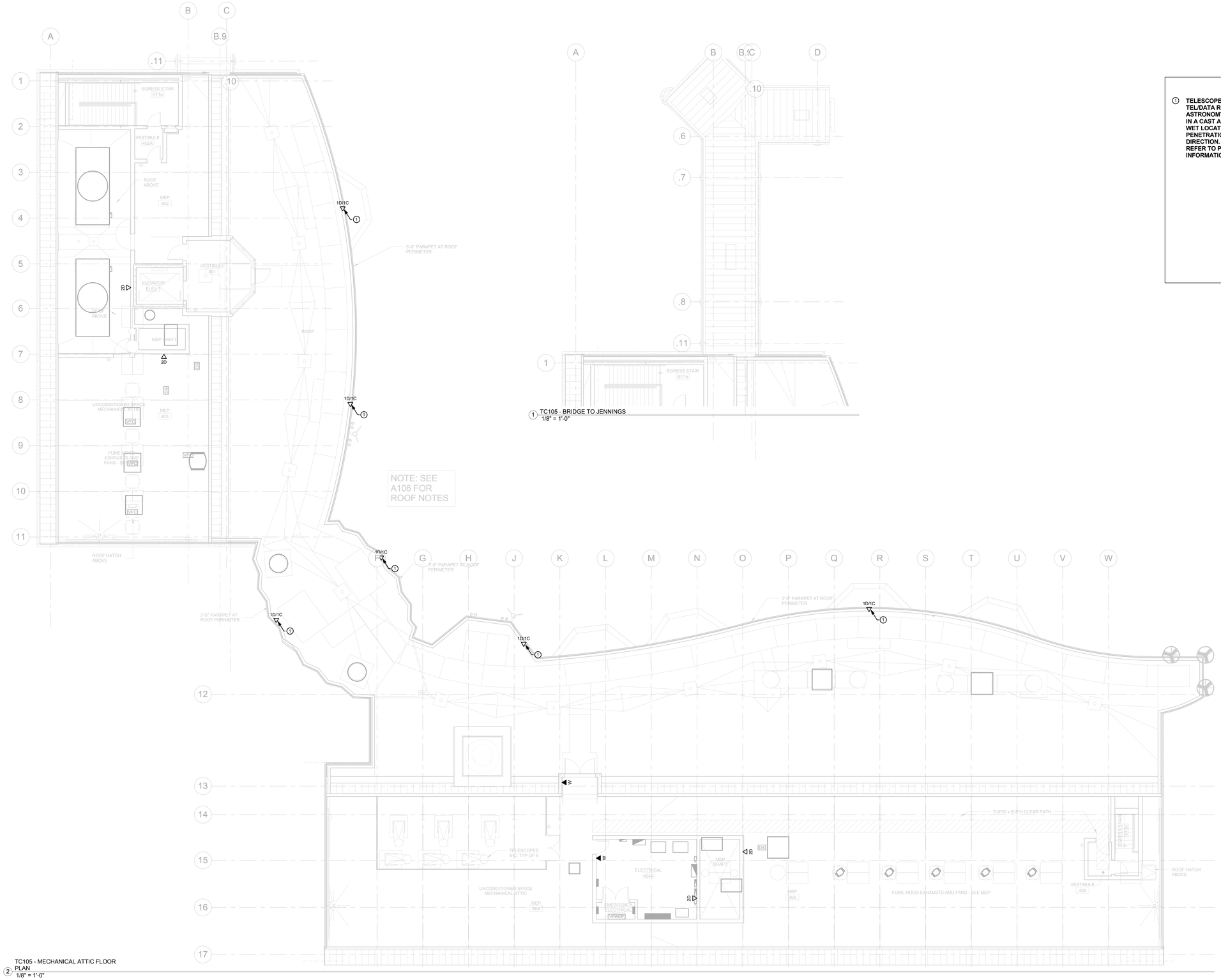
1. REFER TO ELECTRICAL SERIES DRAWINGS FOR OUTLET REQUIREMENTS IN PROVIDED RACEWAY. REFER TO MEP DETAILS FOR RACEWAY INSTALLATION AND CONFIGURATION.

PROJECT NORTH

21-10-038

TECHNOLOGY COMMUNICATIONS 3RD FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY		11-21-2012
11-21-2012 Bid Documents	BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel: (860) 286-9171		1/8" = 1'-0"
	PROJECT SCSU NEW ACADEMIC LABORATORY BUILDING		Drawn by FDZ
			Approved by GVD
	CAD no. 1380	project no. BI-RS-283-ARC	drawing no. TC104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



TC105 - MECHANICAL ATTIC FLOOR PLAN
1/8" = 1'-0"

TC105 - BRIDGE TO JENNINGS
1/8" = 1'-0"

DRAWING NOTES

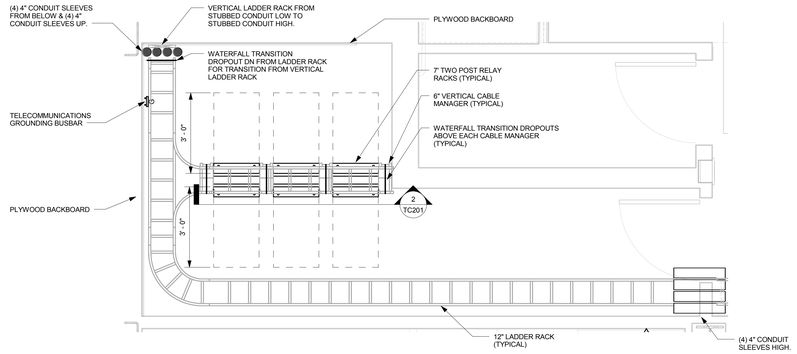
1. **TELESCOPE OUTLET: (1) 4-PAIR UTP CABLE TO 3RD FLOOR TEL/DATA ROOM & (1) 50-OHHM COAXIAL CABLE TO ASTRONOMY CONTROL ROOM, RUN IN 1" CONDUIT. MOUNT IN A CAST ALUMINUM TYPE FDS SINGLE-GANG BOX WITH A WET LOCATION IN-USE COVER PLATE. PROVIDE ROOF PENETRATION AROUND RACEWAYS. PER ARCHITECTURAL DIRECTION. LOCATE ADJACENT TO ELECTRICAL OUTLET, REFER TO POWER PLANS & DETAILS FOR FURTHER INFORMATION.**

PROJECT NORTH

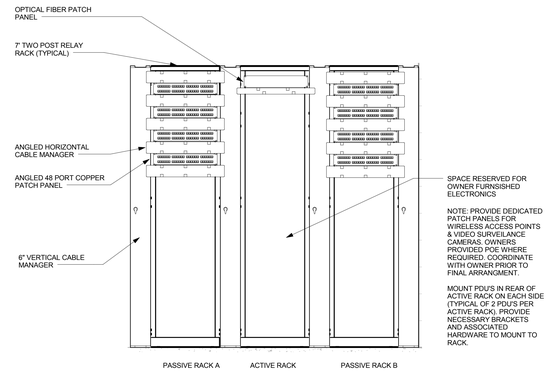
21-10-038

DRAWING TITLE: TECHNOLOGY COMMUNICATIONS MECHANICAL ATTIC FLOOR PLAN		STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	SHEET NO. 2 of 2
REVISIONS			
mark	date	description	
	11-21-2012	Bid Documents	
DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171			DATE: 11-21-2012
			SCALE: 1/8" = 1'-0"
PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING			DRAWN BY: FDZ
			APPROVED BY: GVD
CAD no. 1380		project no. BI-RS-283-ARC	drawing no. TC105

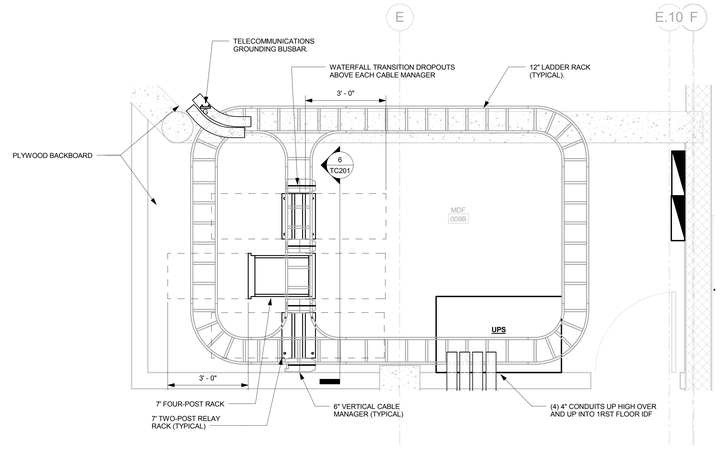
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



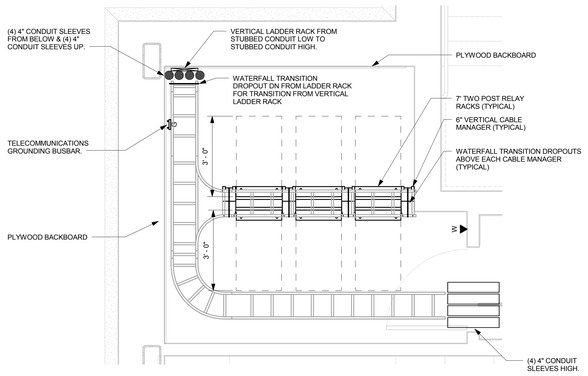
1 PART PLAN - 1ST FLOOR IDF
1/2" = 1'-0"



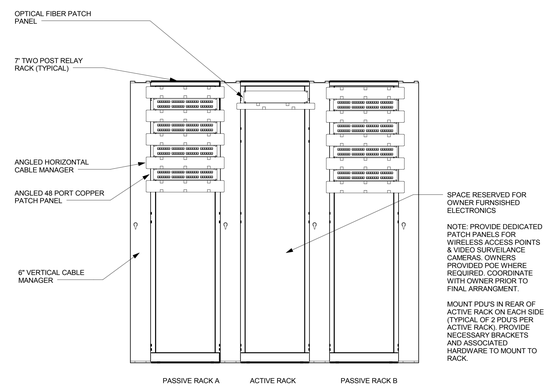
2 RACK ELEVATION - 1ST FLOOR IDF
3/4" = 1'-0"



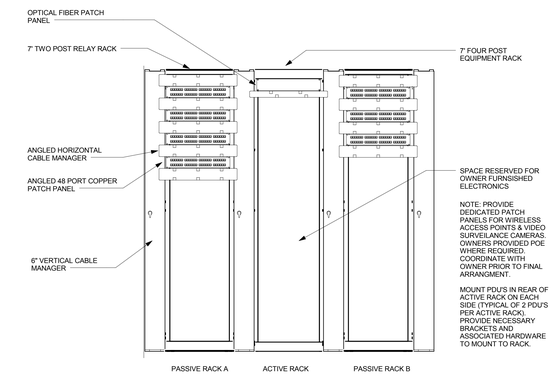
3 PART PLAN - LOWER LEVEL MDF
1/2" = 1'-0"



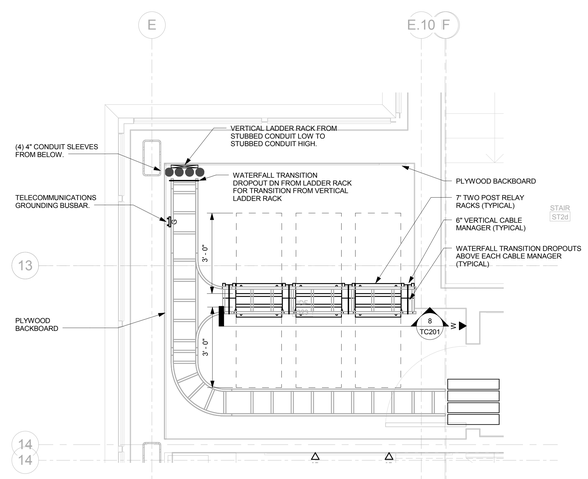
4 PART PLAN - 2ND FLOOR IDF
1/2" = 1'-0"



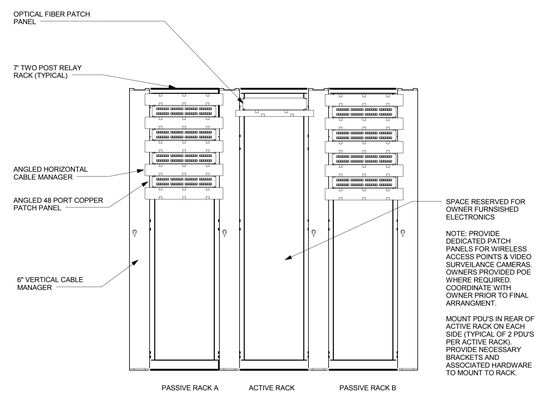
5 RACK ELEVATION - 2ND FLOOR IDF
3/4" = 1'-0"



6 RACK ELEVATION - LOWER LEVEL MDF
3/4" = 1'-0"



7 PART PLAN - 3RD FLOOR IDF
1/2" = 1'-0"

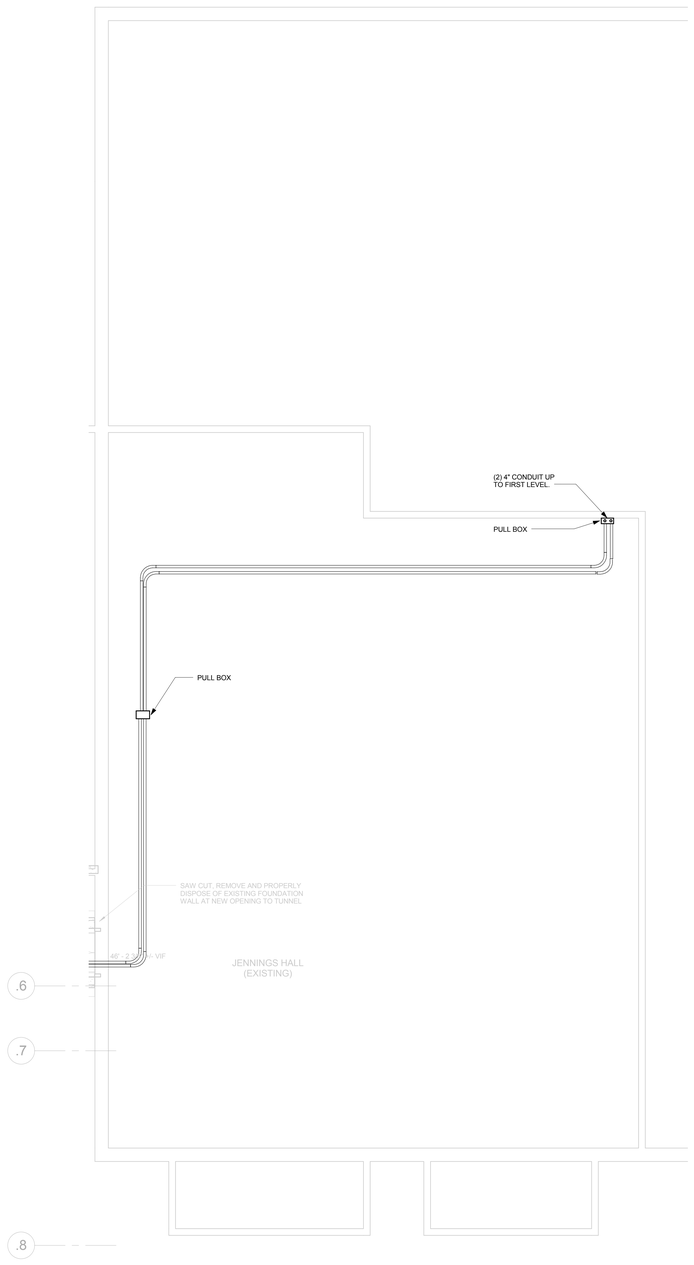


8 RACK ELEVATION - 3RD FLOOR IDF
3/4" = 1'-0"

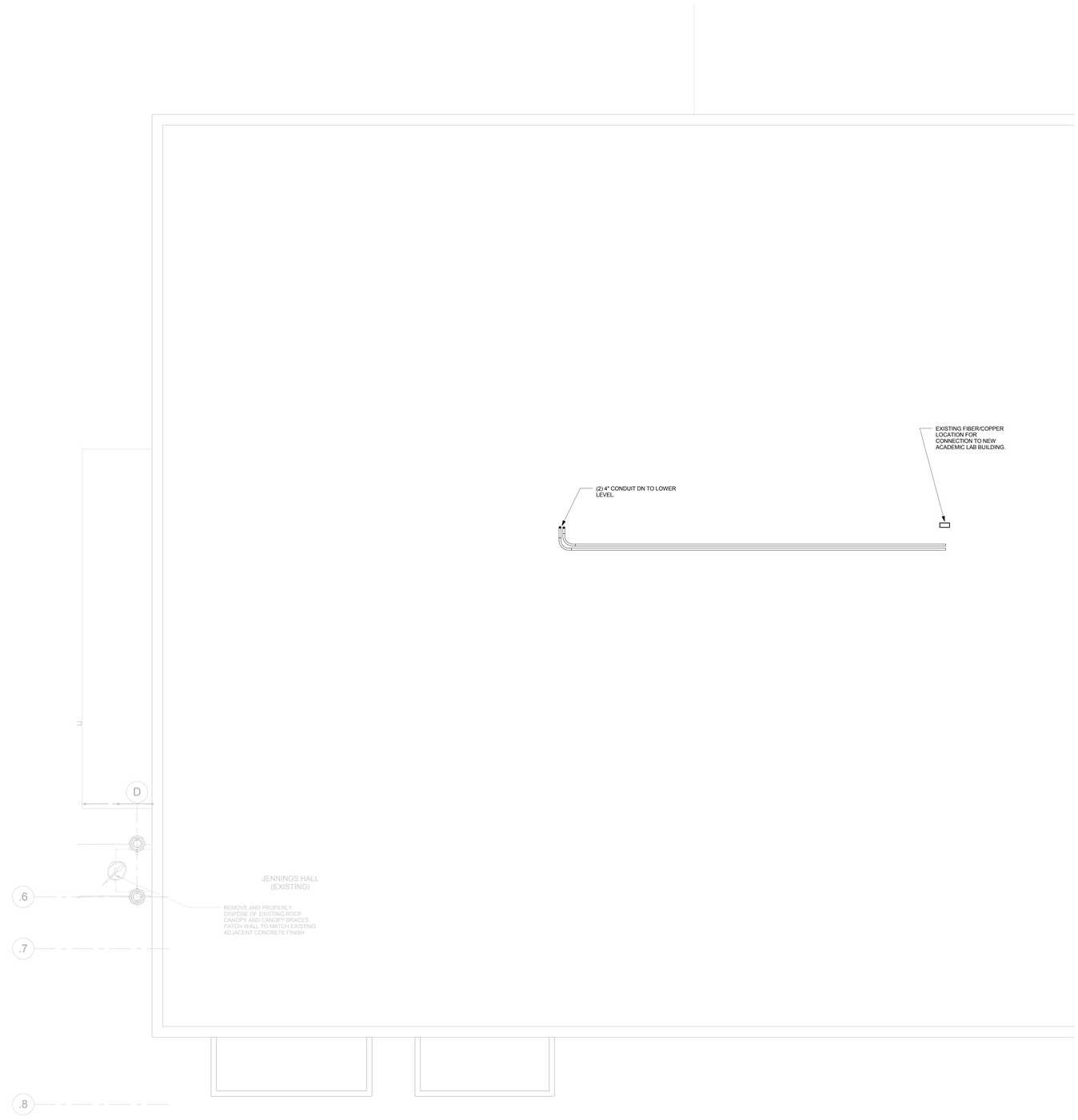
PROJECT NORTH
N
21-10-038

drawing title: TECHNOLOGY COMMUNICATION PART PLANS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS mark / date / description 11-21-2012 / Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
project: SCSU NEW ACADEMIC LABORATORY BUILDING	CAD file: 1380 / project no.: BI-RS-283-ARC
volume: 2 of 2	date: 11-21-2012
scale: As indicated	drawn by: FDZ
approved by: GVD	drawing no.: TC201

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



TC201 - LOWER LEVEL JENNINGS BUILDING PART PLAN
1/8" = 1'-0"



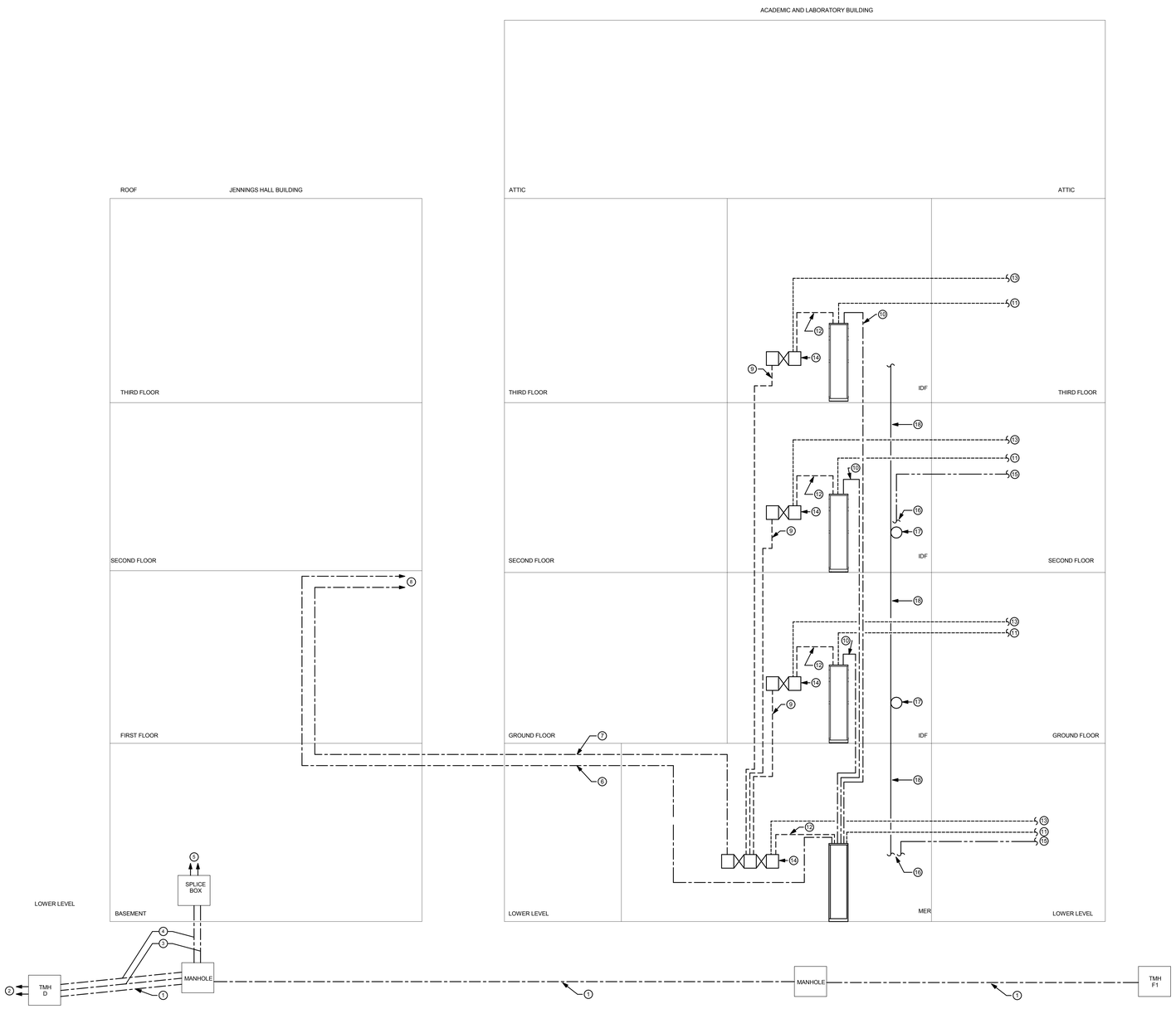
TC202 - FIRST FLOOR JENNINGS BUILDING PART PLAN
1/8" = 1'-0"

PROJECT NORTH
N

21-10-038

drawing title: TECHNOLOGY COMMUNICATION PART PLANS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			date: 11-21-2012
mark / date / description: 11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		scale: 1/8" = 1'-0"
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: FDZ
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: TC202

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



DRAWING NOTES

1. ONE (1) 48 STRAND MM FIBER OPTIC CABLE AND ONE (1) 24 STRAND SM FIBER OPTIC CABLE FROM TMH-D TO TMH-F1. SPLICE BOTH ENDS OF BOTH CABLES IN TMH-D & TMH-F1 TO EXSITING CABLES USING FUSION SPLICE TECHNOLOGY. PROVIDE SPLICE CASE AND ASSOCIATED HARDWARE AS REQUIRED.
2. TO PELZ GYM, DAVIS HALL AND FACILITIES BUILDING.
3. 8 MM / 4 SM FIBER OPTIC CABLES AND 200-PAIR COPPER CABLE FROM JENNINGS HALL SPLICE PULL BOX TO TMH-D AND FUSION SPLICE BOTH ENDS. CABLES SERVE PELZ GYM.
4. 8 MM / 4 SM FIBER OPTIC CABLES AND 500-PAIR COPPER CABLE FROM JENNINGS HALL SPLICE PULL BOX TO TMH-D AND FUSION SPLICE BOTH ENDS. CABLES SERVE DAVIS HALL.
5. RE-USE EXISTING CABLES. PROVIDE SPLICE AT PULL BOX LOCATED AT THE BASEMENT CEILING IN JENNINGS BUILDING.
6. 48 SM STRANDS FIBER OPTIC CABLE IN (1) 4"CONDUIT WITH INNER DUCT FROM JENNINGS HALL, FIRST FLOOR, CORE #131 TO NEW MDF IN THE ACADEMIC AND LABORATORY BUILDING, LOWER LEVEL. THE OTHER (1) 4"CONDUIT WITH INNER DUCT IS FOR OWNERS FUTURE USE.
7. 200-PAIR COPPER CABLE IN THE SAME 4"CONDUIT AS THE FIBER FROM JENNINGS HALL, FIRST FLOOR, CORE #131 TO NEW MDF IN THE ACADEMIC AND LABORATORY BUILDING, LOWER LEVEL. THE OTHER (1) 4" CONDUIT WITH INNER DUCT IS FOR OWNERS FUTURE USE.
8. TERMINATE COPPER AND FIBER OPTIC CABLES IN JENNINGS HALL, FIRST FLOOR, CORE ROOM #131 AT WEST SIDE OF THE ROOM NEAR THE WEST DOOR. COORDINATE EXACT LOCATION IN THE FIELD WITH OWNER. PROVIDE FIBER AND COPPER PANELS, BLOCKS AND ASSOCIATED HARDWARE.
9. ONE (1) 100 PAIR COPPER CABLES FROM MDF TO EACH IDF.
10. ONE (1) 24 SM STRANDS FIBER OPTIC CABLE WITH INNER DUCT FROM MDF TO EACH IDF.
11. HORIZONTAL UTP CABLING (TYPICAL).
12. (2) 25 PAIR UTP CABLING FROM 110 BLOCK TO PATCH PANEL LOCATED IN RACK FOR CROSS-CONNECTION TO ANY SPECIAL CIRCUITS AND OR ANALOG LINES REQUIRED.
13. HORIZONTAL CABLING WIRED BACK TO 110 BLOCK FOR EMERGENCY CIRCUITS.
14. 110 BLOCKS WITH CROSS-CONNECTS (TYPICAL).
15. HORIZONTAL COAXIAL CABLING (TYPICAL).
16. CONNECTORIZE, COIL, STORE AND LABEL COXIAL CABLING FOR FUTURE SERVICE PROVIDER USE.
17. PROVIDE 15 FOOR SERVICE LOOP IN TELECOMMUNICATIONS ROOM. LOCATE ON WALL NEAR HORIZONTAL COAXIAL CABLING AND LABEL FOR FUTURE SERVICE PROVIDER.
18. BACKBONE COAXIAL CABLING (TYPICAL).

GENERAL NOTES

1. REFER TO "SU100" SITE UTILITY PLAN FOR ADDITIONAL INFORMATION.

drawing title: TECHNOLOGY RISER DIAGRAM

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel. (860) 286-9171

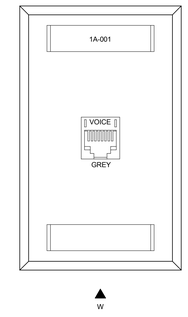
project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380 | project no. BI-RS-283-ARC

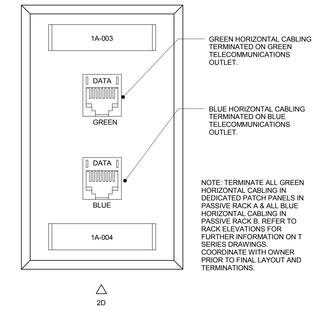
sheet no. 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by FDZ
approved by GVD
drawing no. TC301

21-10-038

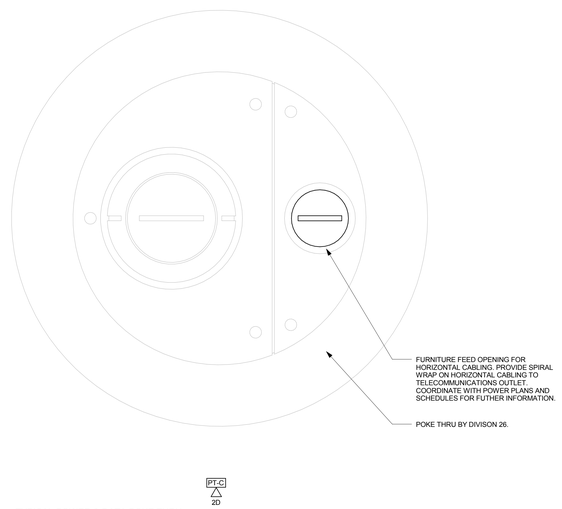
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



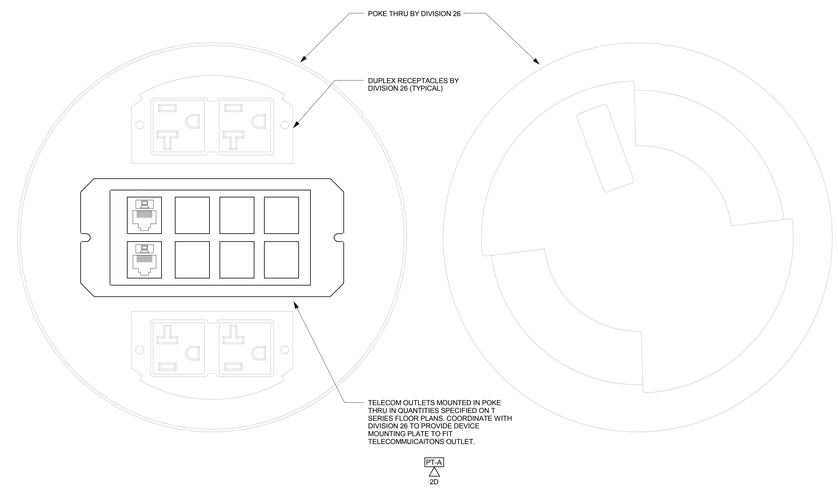
1 TYPICAL WALL MOUNTED TELEPHONE RECESSED OUTLET
12" = 1'-0"



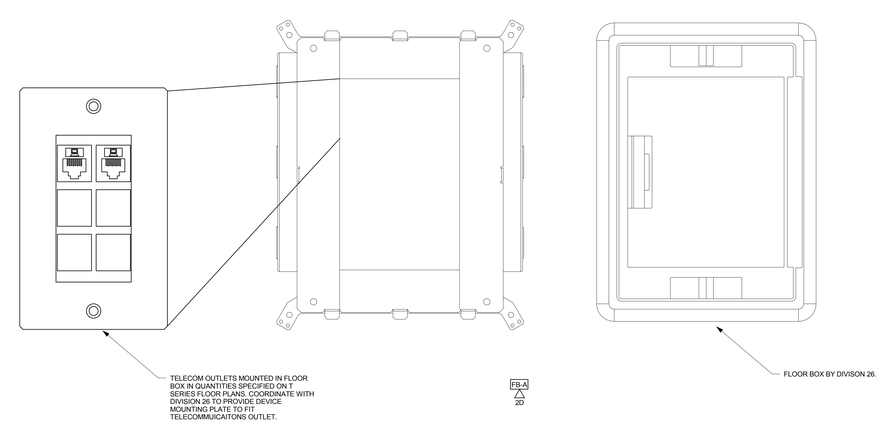
3 TYPICAL RECESSED 2 DATA OUTLET
12" = 1'-0"



8 TYPICAL POWER & DATA POKE THRU - FURNITURE
NOT TO SCALE



7 TYPICAL POWER & POKE THRU
NOT TO SCALE

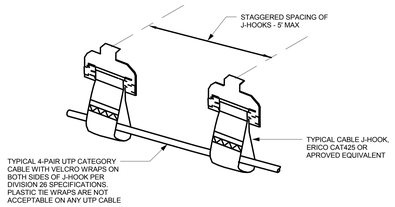


9 TYPICAL POWER & DATA FLOOR BOX DETAIL
NOT TO SCALE

project name: TECHNOLOGY COMMUNICATIONS DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		sheet no. 2 of 2
REVISIONS			date 11-21-2012
mark / date / description	DRAWING PREPARED BY		scale As indicated
11-21-2012 Bid Documents	BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel. (860) 286-9171		drawn by FDZ
	project SCSU NEW ACADEMIC LABORATORY BUILDING		checked by GVD
	CAD no. 1310 / project no. BI-RS-283-ARC		drawing no. TC401

21-10-038

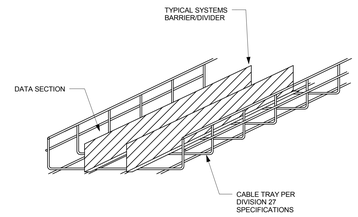
NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



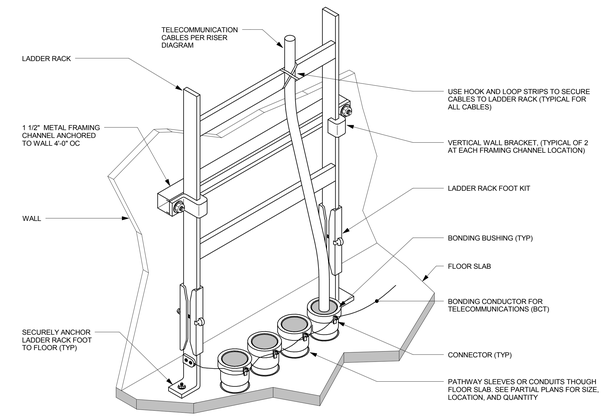
1 J-HOOK DETAIL
NOT TO SCALE

NOTES:

1. PRIMARY PATHWAYS ARE TO BE USED AS NECESSARY FOR CABLES TO COMPLY WITH ANSI/TIA/EIA REQUIREMENTS FOR CABLE SUPPORT. OTHER ALTERNATIVES MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
2. CABLE TRAYS SHALL BE MOUNTED ABOVE ACOUSTICAL TILE CEILING IN CORRIDORS. CABLE TRAYS SHALL BE SUPPORT WITH UNISTRUT AND THREADED RODS. THREADED RODS SHALL BE SECURELY FASTENED TO THE STRUCTURE ABOVE. SUPPORT CABLE TRAYS AT INTERVALS AS REQUIRED AND RECOMMENDED BY THE CABLE TRAY MANUFACTURER BASED ON MAXIMUM FILL CAPACITY OF CABLES IN TRAY.
3. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR MAXIMUM LOADING, APPLICATION REQUIREMENTS AND SECURING TO STRUCTURE.
4. ALL CABLE SUPPORTS SHALL BE SPECIFICALLY MANUFACTURED TO SUPPORT HIGH SPEED COMMUNICATION CABLES.



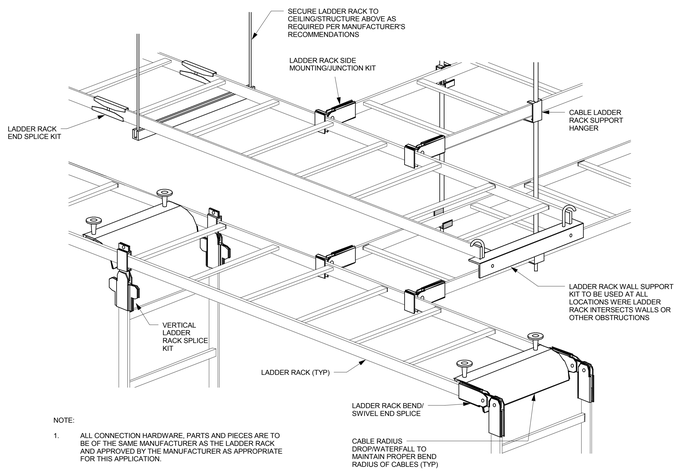
2 PRIMARY PATHWAY / CABLE TRAY DETAIL
NOT TO SCALE



NOTE:

FIRE STOP ALL PENETRATIONS PER DIVISION 07 SPECIFICATIONS.

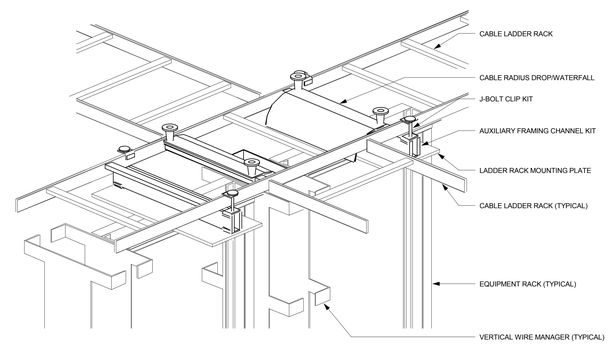
3 VERTICAL LADDER RACK INSTALLATION DETAIL
NOT TO SCALE



NOTE:

1. ALL CONNECTION HARDWARE, PARTS AND PIECES ARE TO BE OF THE SAME MANUFACTURER AS THE LADDER RACK AND APPROVED BY THE MANUFACTURER AS APPROPRIATE FOR THIS APPLICATION.

4 TYPICAL LADDER RACK CONNECTION DETAIL
NOT TO SCALE

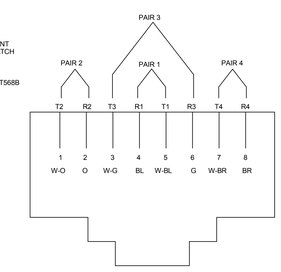


5 TYPICAL LADDER RACK INSTALLED ABOVE EQUIPMENT RACKS DETAIL
NOT TO SCALE

NOTES:

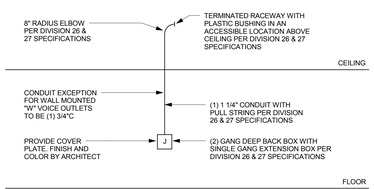
1. THIS ILLUSTRATION DEPICTS THE FRONT VIEW OF THE OUTLET/CONNECTOR/PATCH PANEL.
2. PIN/PAIR ASSIGMENT FOR ALL EIGHT-POSITION MODULAR JACKS SHALL BE T568B AS DESCRIBED IN ANSI/TIA-568-C.0.

PAIR 1 → WHITE-BLUE/BLUE T1 R1
PAIR 2 → WHITE-ORANGE/ORANGE T2 R2
PAIR 3 → WHITE-GREEN/GREEN T3 R3
PAIR 4 → WHITE-BROWN/BROWN T4 R4

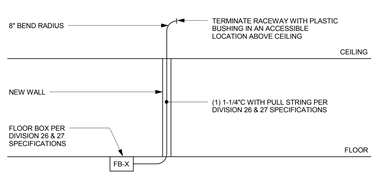


(VIEW FROM FRONT OF JACK)

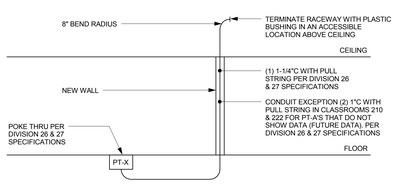
6 T568B WIRING SCHEME DETAIL
NOT TO SCALE



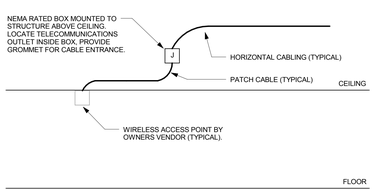
8 VOICE / DATA / AUDIO / VIDEO OUTLET RECESSED RACEWAY DETAIL
NOT TO SCALE



9 VOICE / DATA / AUDIO / VIDEO FLOOR BOX OUTLET DETAIL
NOT TO SCALE



10 VOICE / DATA / AUDIO / VIDEO POKE THRU OUTLET DETAIL
NOT TO SCALE

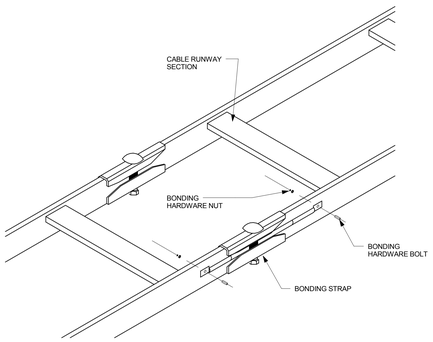


11 WIRELESS ACCESS POINT DETAIL
NOT TO SCALE

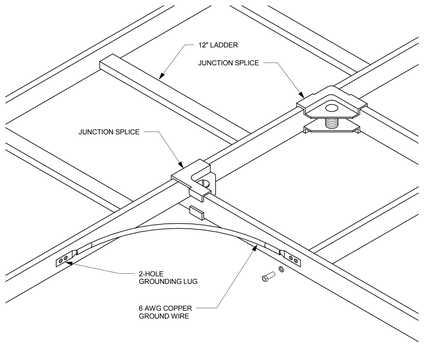
21-10-038

drawing title: TECHNOLOGY COMMUNICATIONS DETAILS	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		volume: 2 of 2
REVISIONS			
mark / date / description	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171		date: 11-21-2012
11-21-2012 Bid Documents			scale: As indicated
	project: SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by: FDZ
			approved by: GVD
	CAD file: 130	project no.: BI-RS-283-ARC	drawing no.: TC402

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



1 TYPICAL CABLE RUNWAY INLINE AND GROUND STRAP
NOT TO SCALE



2 TYPICAL CABLE RUNWAY GROUNDING STRAP DETAIL
NOT TO SCALE

BONDING CONDUCTOR SIZING CHART	
LENGTH (FEET)	SIZE (AWG)
LESS THAN (<) 13'	# 6
14' - 20'	# 4
21' - 26'	# 3
27' - 33'	# 2
34' - 41'	# 1
42' - 52'	# 1/0
53' - 66'	# 2/0
GREATER THAN (>) 66'	# 3/0

GROUNDING & BONDING DETAIL NOTES

1. REFER TO GROUNDING AND BONDING DIVISION 26/27 SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. REFER TO GROUNDING AND BONDING RISER DIAGRAM FOR ADDITIONAL INFORMATION.
3. PROVIDED 2"C SLEEVE PATHWAY AT EACH FLOOR AND WALL PENETRATIONS FOR THE TELECOMMUNICATION BONDING BACKBONE (TBB). COORDINATE PROPER METHODS FOR PENETRATIONS WITH FIRESTOPPING AS REQUIRED PER DIVISION 07 SPECIFICATIONS.
4. BONDING CONDUCTORS SHALL BE #3/0 AWG COLOR GREEN INSULATED COPPER CONDUCTOR OR SIZED PER "BONDING CONDUCTOR SIZING CHART" (ANSI J-STD-607-A) IN PATHWAY.
5. FASTENING BONDING CONNECTOR TWO-HOLE LUGS TO ALL BUSBARS SHALL BE CLEANED AND APPLY A COPPER ANTI-OXIDANT TO THE CONTACT AREA OF BOTH THE CONNECTOR LUG AND THE BUSBAR.
6. BONDING CONDUCTORS AND BUSBARS SHALL BE LABELED WITH IDENTIFICATIONIN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/TIA/EIA-606-A.
7. BONDING CONDUCTORS SHALL BE LABELED WITH IDENTIFICATION LABEL NOTED BELOW AND SECURED WITH CABLE TIE TO EACH CONDUCTOR. (ANSI J-STD-607-A) "IF THIS CONNECTOR OR CABLE IS LOOSE OR MUST BE REMOVED, PLEASE CALL THE BUILDING TELECOMMUNICATIONS MANAGER".
8. CONTINUITY TESTING MEASUREMENTS OF THE GROUNDING RESISTANCE TO NOT EXCEED 0.1 OHM BETWEEN:
   - A. THE TMGB AND THE NEAREST GROUNDING ELECTRODE.
   - B. EACH TGB AND THE NEAREST GROUNDING ELECTRODE.
   - C. EACH TGB AND PATHWAY(S), RACK(S), CABINET(S) AND APPLICABLE EQUIPMENT.

(1) BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT) TO BUILDING GROUNDING ELECTRODE. REFER TO RISER DIAGRAM.

(2) BCT TO NEAREST BUILDING METALLIC DOMESTIC COLD WATER PIPE, IF APPLICABLE. UTILIZE BRONZE WATER PIPE GROUNDING CLAMP CONNECTION TO WATER PIPE.

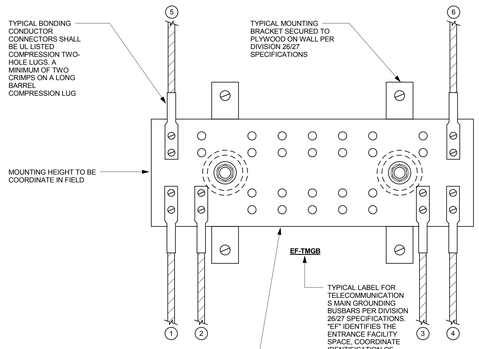
(3) BCT TO NEAREST BUILDING STEEL STRUCTURE, IF APPLICABLE. UTILIZE EXOTHERMIC WELDING CONNECTION TO BUILDING STEEL.

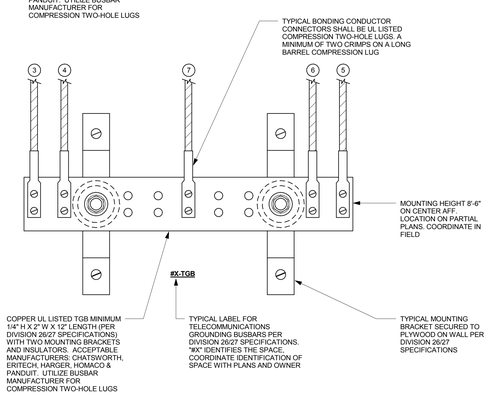
(4) BCT TO NEAREST BUILDING ELECTRICAL PANELBOARD GROUND BAR. UTILIZE LISTED CONNECTOR TO PANELBOARD GROUND BUS.

(5) TELECOMMUNICATION BONDING BACKBONE (TBB) FOR GROUNDING EQUALIZER (GE), IF APPLICABLE. REFER TO RISER DIAGRAM.

(6) TYPICAL TBB(S) THAT INTERCONNECTS ALL TGB(S) WITH THE TMGB. REFER TO RISER DIAGRAM.

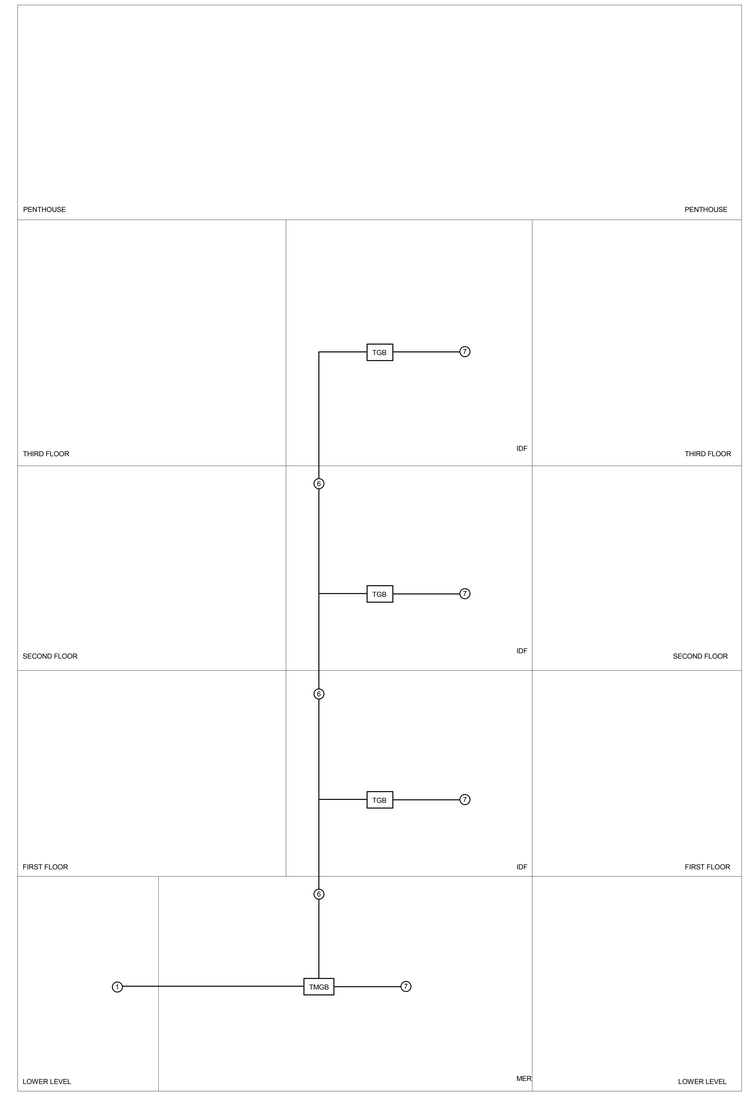
(7) BCT TO TELECOMMUNICATIONS CABLE RUNWAY(S), RACK(S), CABINET(S) AND APPLICABLE EQUIPMENT. DAISY CHAINING OF BCT AT RELAY IS NOT ACCEPTABLE. EACH RACK IS TO HAVE A BCT TO A COMPRESSION LUG TAP TO THE DEDICATED HOMERUN BCT BACK TO THE TGB. SEE DETAILS.





3 TELECOMMUNICATIONS GROUNDING DETAILS & RISER
NOT TO SCALE

ACADEMIC AND LABORATORY BUILDING



project title
TECHNOLOGY COMMUNICATIONS DETAILS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

project
SCSU NEW ACADEMIC LABORATORY BUILDING

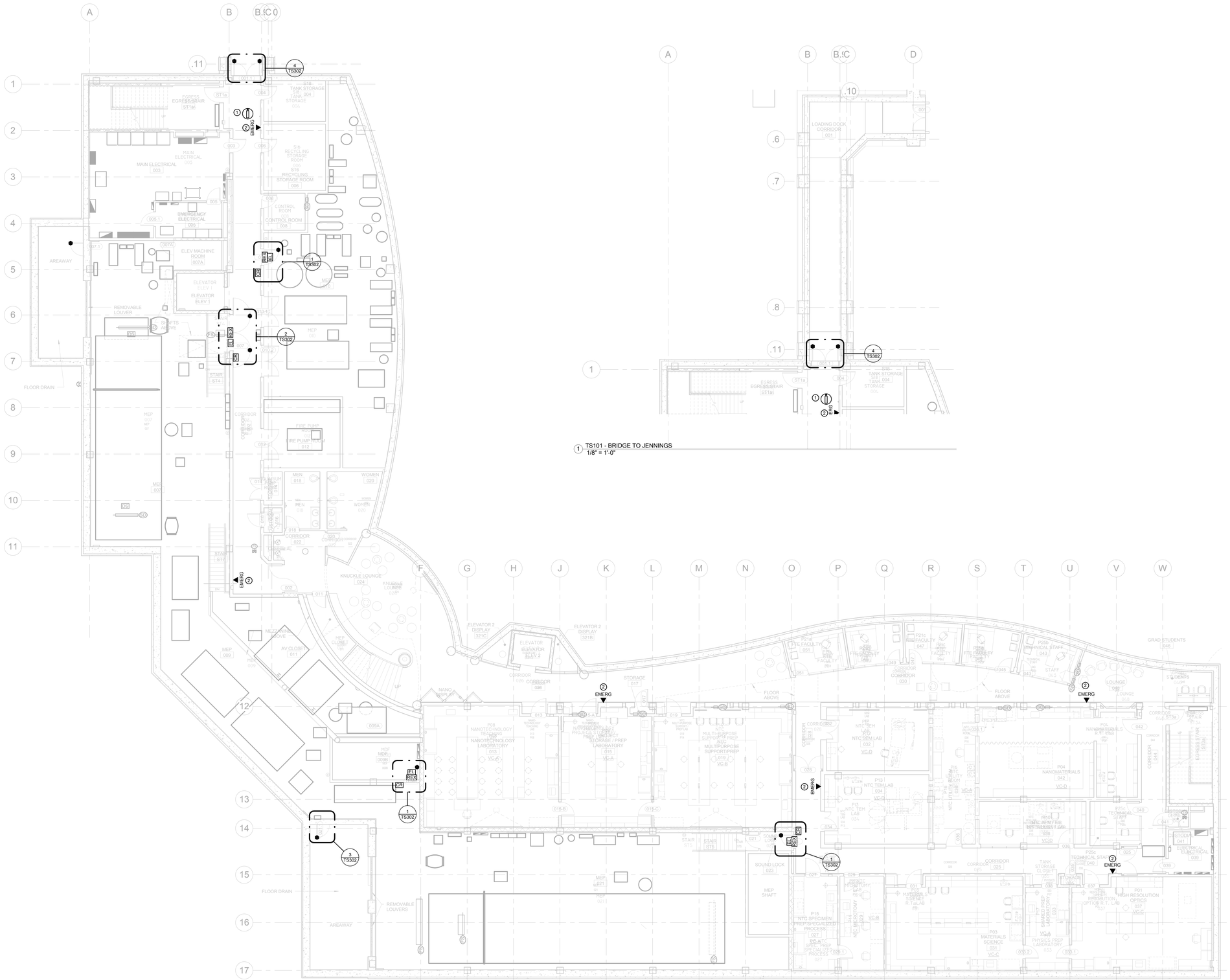
CAD no. 130
project no. BI-RS-283-ARC

volume 2 of 2
date 11-21-2012
scale As indicated
drawn by FDZ
reviewed by GVD
drawing no. TC403

21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

1 TS101 - BRIDGE TO JENNINGS
1/8" = 1'-0"


A
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TS302
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TS302
2
TS302
3
TS302
EGRESS STAIR
ST1a
TANK STORAGE
004
MAIN ELECTRICAL
003
EMERGENCY ELECTRICAL
006
ELEV MACHINE ROOM
007A
ELEVATOR
ELEV 1
AREAWAY
REMOVABLE LOUVER
FLOOR DRAIN
STAIR
ST4
FIRE PUMP
012
KNUCKLE LOUNGE
024
CORRIDOR
022
MEN
018
WOMEN
020
EMERG
ELEVATOR 2 DISPLAY
321C
ELEVATOR 2 DISPLAY
321B
STORAGE
017
NANO DISPLAY
NANOTECHNOLOGY LABORATORY
013
NTC MULTI-PURPOSE SUPPORT/PREP
019
NTC TEM LAB
034
SOUND LOCK
023
MEP SHAFT
REMOVABLE LOUVERS
FLOOR ABOVE
GRAD STUDENTS
042
LOUNGE
048
P04 NANOMATERIALS
042
P01 HIGH RESOLUTION OPTICS
037
P03 MATERIALS SCIENCE
031
P15 NTC SPECIMEN PREP/SPECIALIZED PROCESS
027
EXPRESS STAIR
ST3a
STORAGE
041
MECHANICAL ELECTRICAL
039
TANK STORAGE CLOSET
036
STORAGE
038
PHYSICS PREP LABORATORY
033
P25c TECHNICAL STAFF
040
P22c TECHNICAL STAFF
043
P21c FACULTY
047
P14 FACULTY
051
P13 NTC TEM LAB
034
P16 NTC TEM LAB
035
P17 NTC TEM LAB
036
P18 NTC TEM LAB
037
P19 NTC TEM LAB
038
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P27 NTC TEM LAB
042
P28 NTC TEM LAB
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P29 NTC TEM LAB
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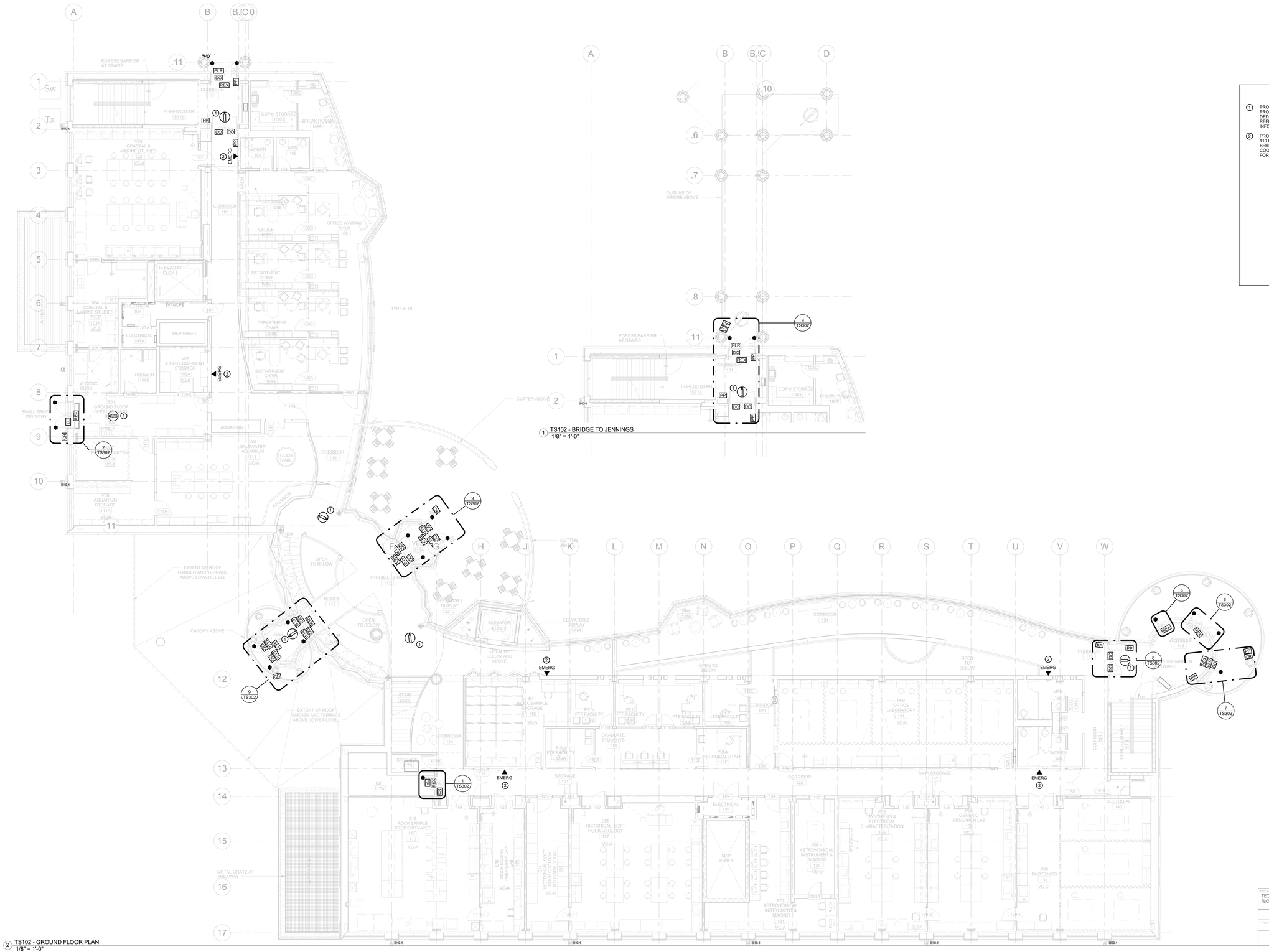
045
P31 NTC TEM LAB
046
P32 NTC TEM LAB
047

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



1 TS102 - BRIDGE TO JENNINGS
1/8" = 1'-0"

2 TS102 - GROUND FLOOR PLAN
1/8" = 1'-0"

DRAWING NOTES

1. PROVIDE INDOOR FIXED DOME CAMERA PER DIVISON 28 SPECIFICATIONS. PROVIDE (1) UTP CABLE PER DIVISION 27 SPECIFICATIONS. TERMINATE ON DEDICATED PATCH PANEL IN TELECOMMUNICATIONS ROOM ON SAME FLOOR. REFER TO T SERIES DRAWINGS AND RACK ELEVATIONS FOR FURTHER INFORMATION. COORDINATE WITHY OWNER PRIOR TO INSTALLATION.
2. PROVIDE (1) UTP CABLE PER DIVISION 27 SPECIFICATIONS. TERMINATE ON 110 BLOCK IN TELECOMMUNICATIONS ROOM ON SAME FLOOR. REFER TO T SERIES DRAWINGS AND PART PLANS FOR FURTHER INFORMATION. COORDINATE WITH OWNER PRIOR TO INSTALLATION. CABLE DEDICATED FOR EMERGENCY PHONE.

drawing title: TECHNOLOGY SECURITY GROUND FLOOR PLAN

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

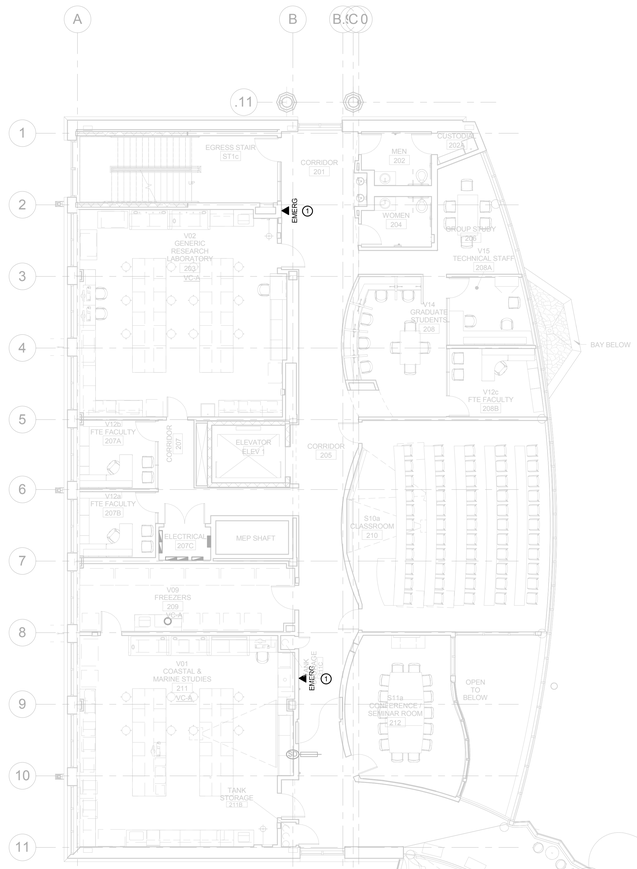
DRAWING PREPARED BY:
BVH
Integrated Services
50 Griffin Road South Bloomfield, CT 06002
Tel: (860) 286-9171

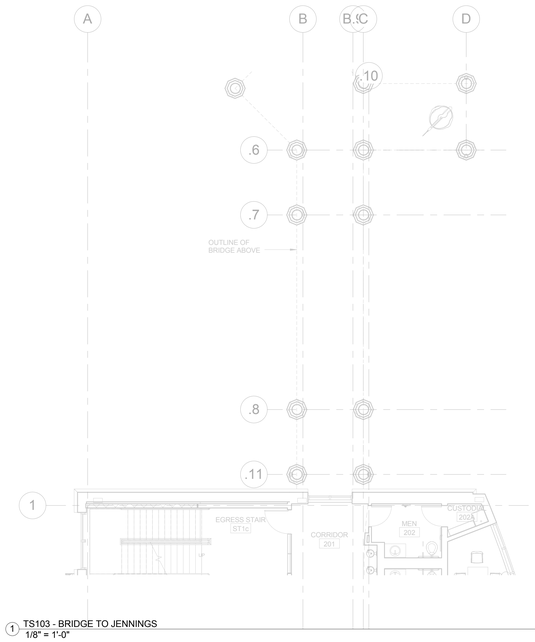
project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1380
project no. BI-RS-283-ARC

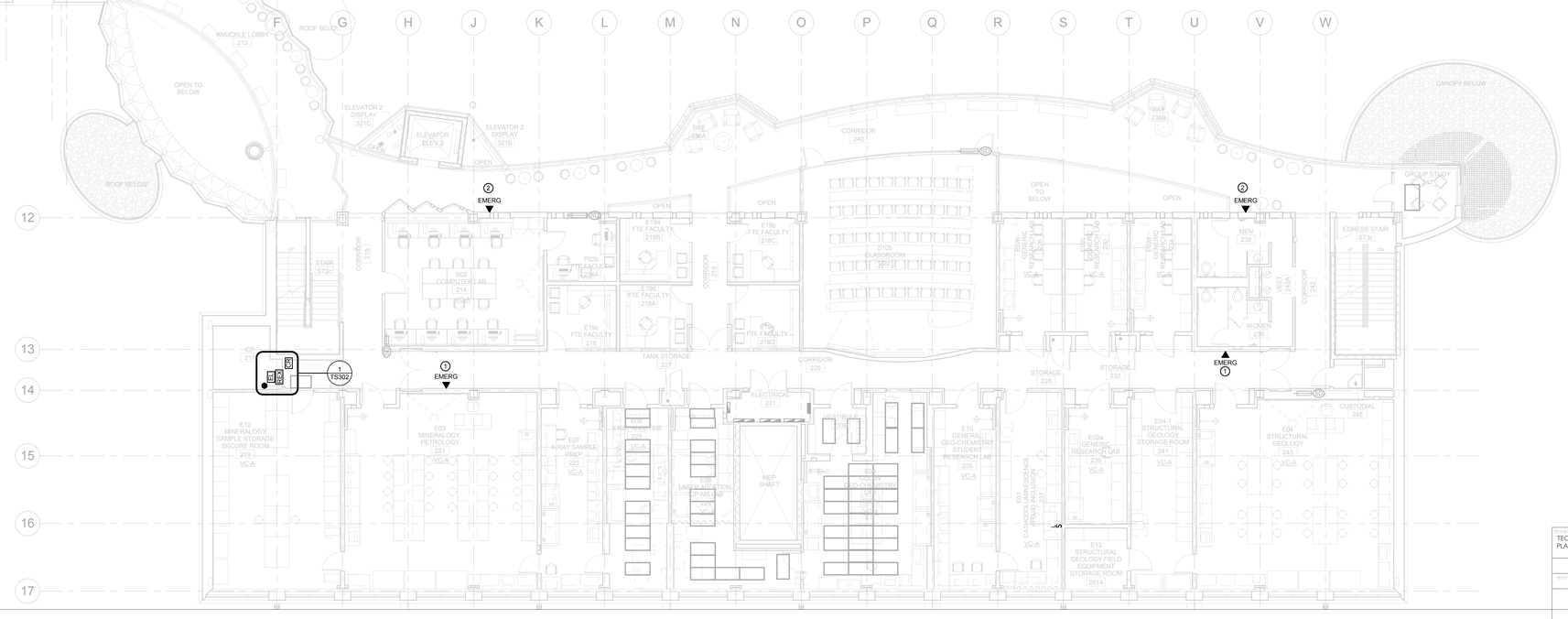
volume 2 of 2
date 11-21-2012
scale 1/8" = 1'-0"
drawn by FDZ
approved by GVD
drawing no. TS102

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.





1 TS103 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 TS103 - 2ND FLOOR PLAN
1/8" = 1'-0"

DRAWING NOTES

1. PROVIDE (1) UTP CABLE PER DIVISION 27 SPECIFICATIONS. TERMINATE ON 110 BLOCK IN TELECOMMUNICATIONS ROOM ON SAME FLOOR. REFER TO T SERIES DRAWINGS AND PART PLANS FOR FURTHER INFORMATION. COORDINATE WITH OWNER PRIOR TO INSTALLATION. CABLE DEDICATED FOR EMERGENCY PHONE.

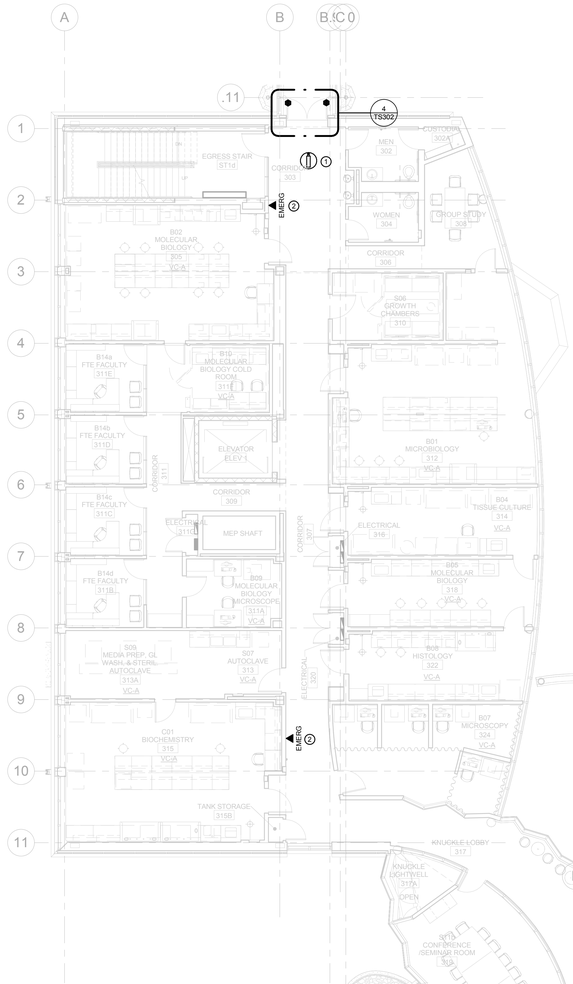
PROJECT NORTH

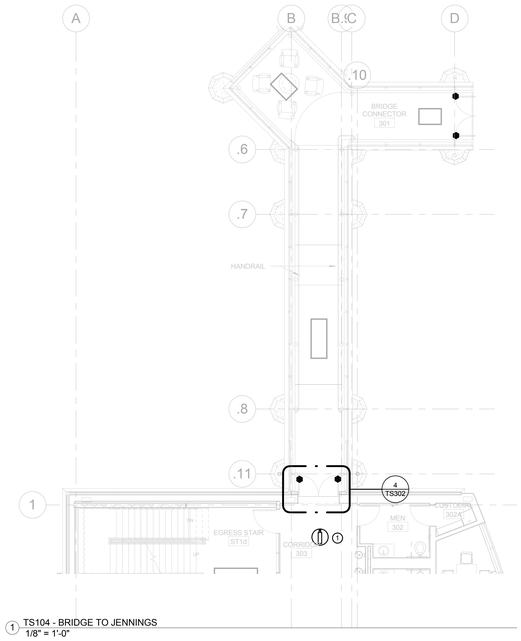
21-10-038

TECHNOLOGY SECURITY 2ND FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES
REVISIONS	
mark / date / description	
11-21-2012 Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel: (860) 286-9171
	SCSU NEW ACADEMIC LABORATORY BUILDING
	CAD no. 1380 / project no. BI-RS-283-ARC

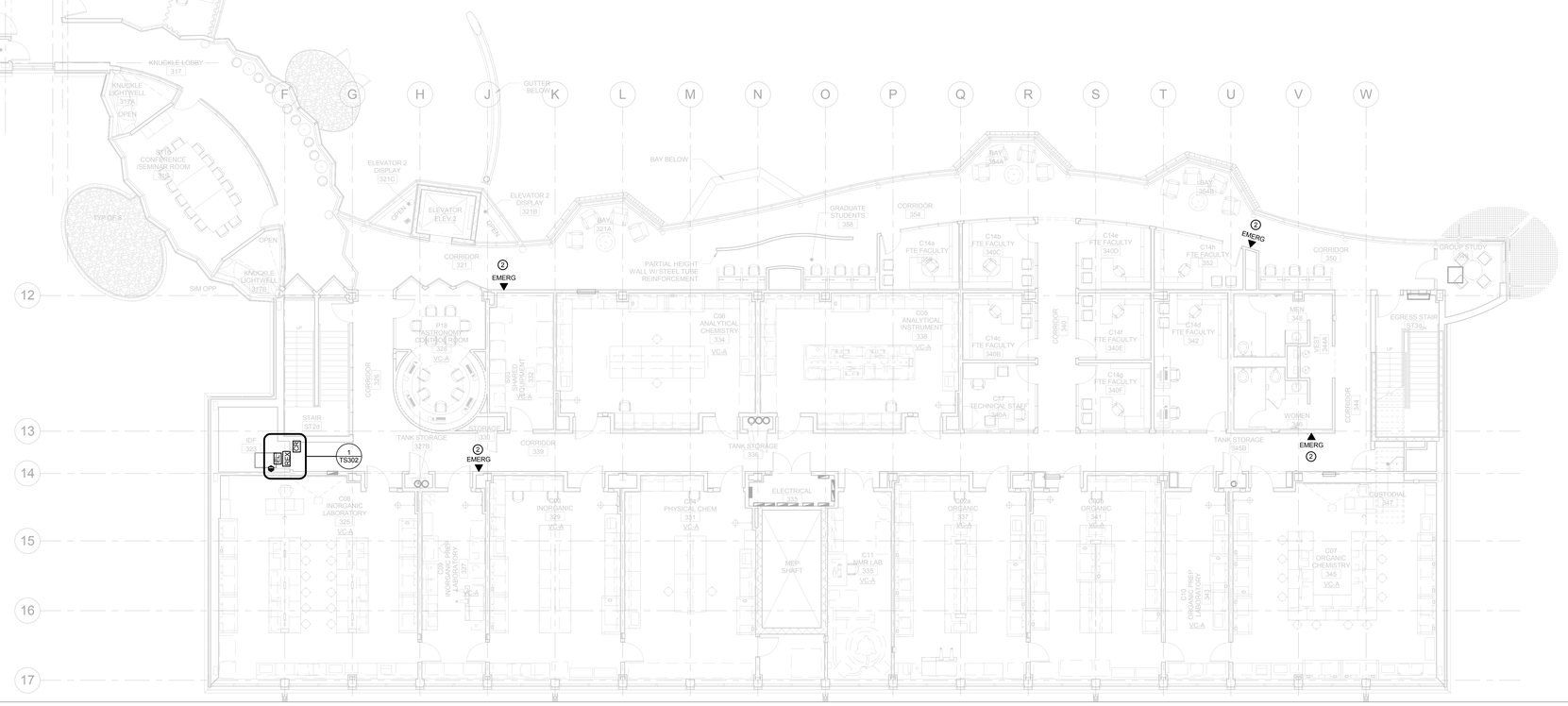
sheet	2 of 2
date	11-21-2012
scale	1/8" = 1'-0"
drawn by	FDZ
approved by	GVD
drawing no.	TS103

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.





1 TS104 - BRIDGE TO JENNINGS
1/8" = 1'-0"



2 TS104 - 3RD FLOOR PLAN
1/8" = 1'-0"

DRAWING NOTES

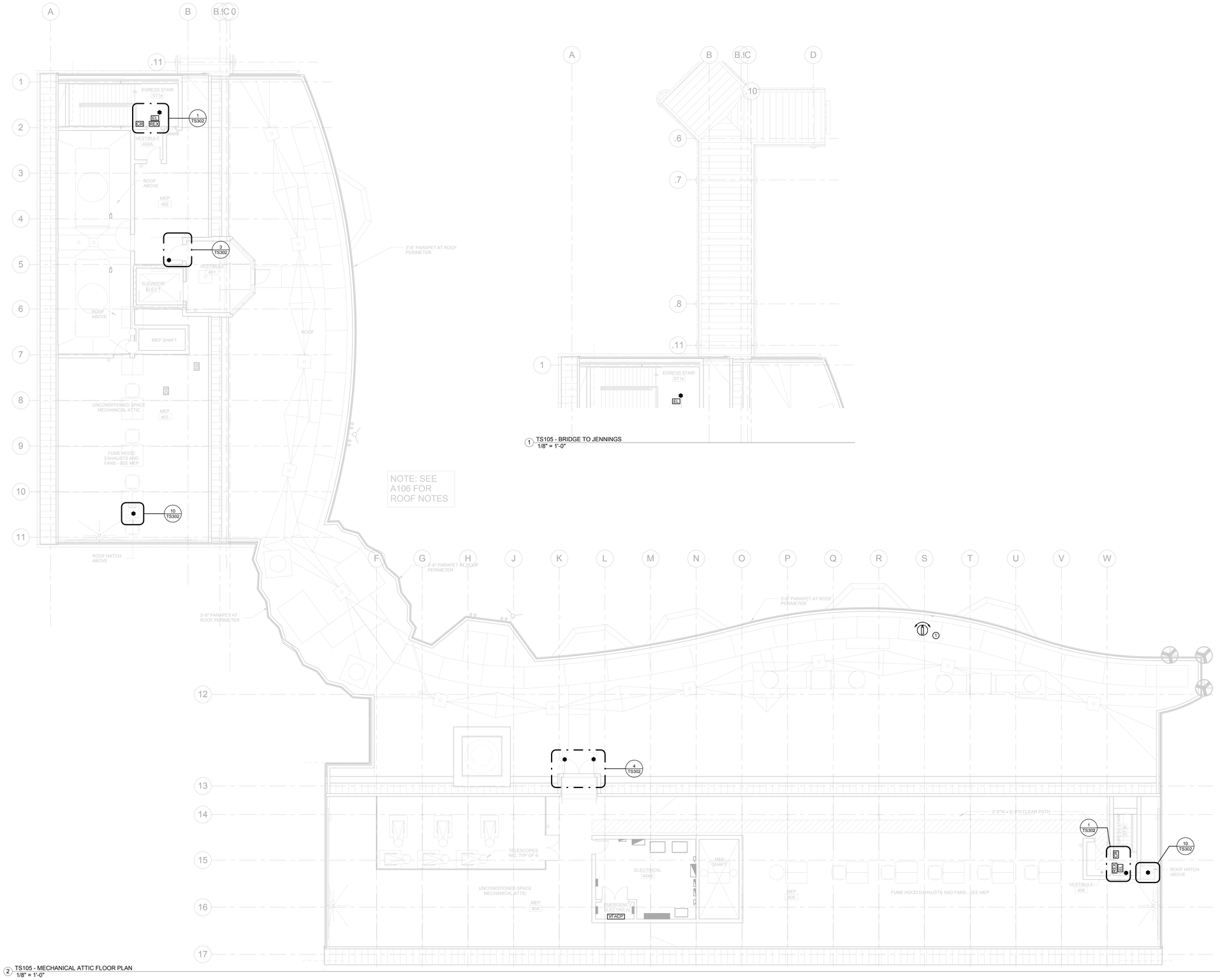
1. PROVIDE INDOOR FIXED DOME CAMERA PER DIVISON 28 SPECIFICATIONS. PROVIDE (1) UTP CABLE PER DIVSION 27 SPECIFICATIONS. TERMINATE ON DEDICATED PATCH PANEL IN TELECOMMUNICATIONS ROOM ON SAME FLOOR. REFER TO T SERIES DRAWINGS AND RACK ELEVATIONS FOR FURTHER INFORMATION. COORDINATE WITHY OWNER PRIOR TO INSTALLATION.
2. PROVIDE (1) UTP CABLE PER DIVSION 27 SPECIFICATIONS. TERMINATE ON 110 BLOCK IN TELECOMMUNICATIONS ROOM ON SAME FLOOR. REFER TO T SERIES DRAWINGS AND PART PLANS FOR FURTHER INFORMATION. COORDINATE WITH OWNER PRIOR TO INSTALLATION. CABLE DEDICATED FOR EMERGENCY PHONE.

PROJECT NORTH

21-10-038

drawing title: TECHNOLOGY SECURITY 3RD FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES		sheet no. 2 of 2
REVISIONS mark / date / description 11-21-2012 / Bid Documents	DRAWING PREPARED BY BVH Integrated Services 50 Griffin Road South Bloomfield, CT 06002 Tel. (860) 286-9171		date 11-21-2012 scale 1/8" = 1'-0"
	project SCSU NEW ACADEMIC LABORATORY BUILDING		drawn by FDZ approved by GVD
	CAD no. 1383	project no. BI-RS-283-ARC	drawing no. TS104

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



1 TS105 - BRIDGE TO JENNINGS
1/8" = 1'-0"

2 TS105 - MECHANICAL ATTIC FLOOR PLAN
1/8" = 1'-0"

DRAWING NOTES

1. PROVIDE OUT PTZ DOME CAMERA PER DIVISON 28 SPECIFICATIONS. PROVIDE (1) UTP CABLE PER DIVSION 27 SPECIFICATIONS. TERMINATE ON DEDICATED PATCH PANEL IN TELECOMMUNICATIONS ROOM ON THIRD FLOOR. REFER TO T SERIES DRAWINGS AND RACK ELEVATIONS FOR FURTHER INFORMATION. COORDINATE WITHY OWNER PRIOR TO INSTALLATION.

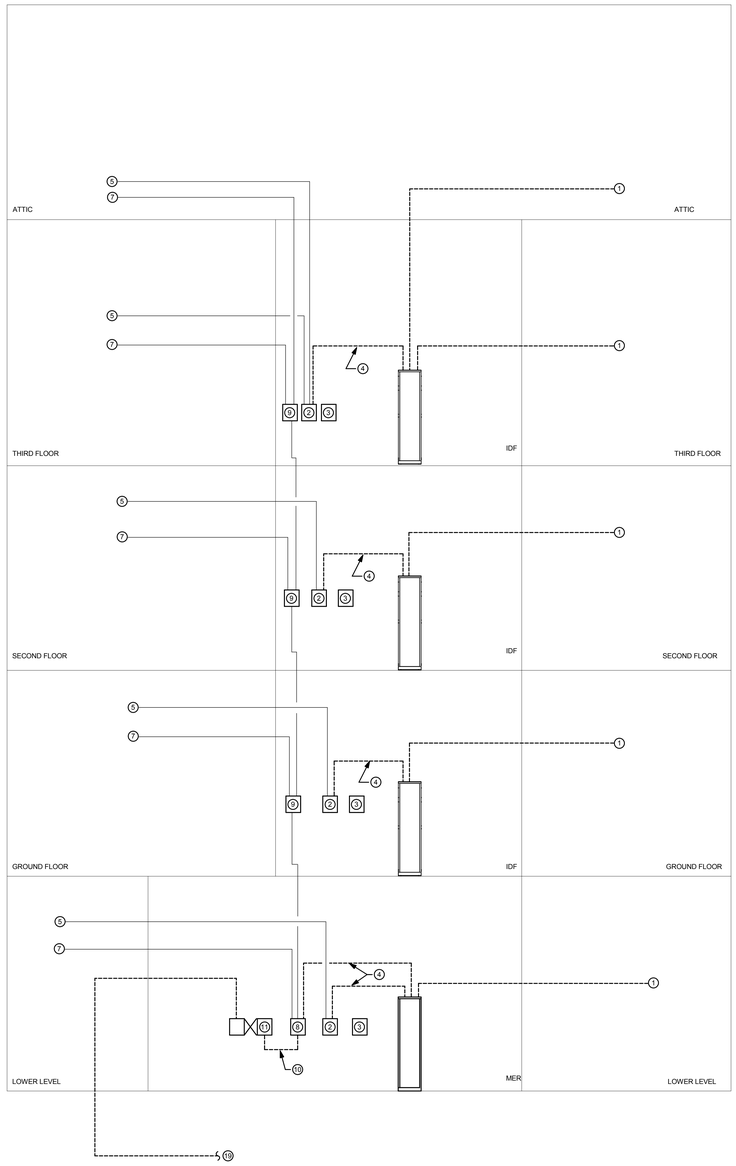
PROJECT NORTH

21-10-038

DRAWING TITLE: TECHNOLOGY SECURITY MECHANICAL ATTIC FLOOR PLAN	STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION SERVICES	SHEET NO. 2 of 2
REVISIONS: mark / date / description — 11-21-2012 / Bid Documents	DRAWING PREPARED BY: BVH Integrated Services, 50 Griffin Road South Bloomfield, CT 06002, Tel. (860) 286-9171	DATE: 11-21-2012
		SCALE: 1/8" = 1'-0"
	PROJECT: SCSU NEW ACADEMIC LABORATORY BUILDING	DRAWN BY: FDZ
		APPROVED BY: GVD
	CAD no. 1383 / project no. BI-RS-283-ARC	DRAWING NO.: TS105

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

ACADEMIC AND LABORATORY BUILDING



DRAWING NOTES

1. HORIZONTAL VIDEO SURVEILANCE & EMERGENCY PHONE UTP CABLING (TYPICAL).
2. DOOR CONTRROLLER
3. POWER SUPPLY
4. DATA UTP CABLING FOR SECURITY PANEL (TYPICAL).
5. ACCESS CONTROL CABLING FROM DEVICE LOCATION (CARD READER, DOOR CONTACT, ETC) TO DOOR CONTROLLER (TYPICAL).
6. ACCESS CONTROL CABLING FROM DOOR CONTROLLER TO ACCESS CONTROL PANEL.
7. INTRUSION DETECTION CABLING FROM DEVICE LOCATION (DOOR CONTACT, ETC) TO INTRUSION DETECTION PANEL (TYPICAL).
8. INTRUSION DETECTION PANEL
9. EXPANSION PANEL
10. VOICE UTP CABLING FOR SECURITY PANEL (TYPICAL).
11. 110 BLOCK PER DIVSION 27 AND TC SERIES DRAWINGS.
12. (2) HORIZONTAL UTP CABLING TO EACH CODE BLUE PHONE LOCATION. (TYPICAL OF 2 CODE BLUE PHONES). REFER TO SITE UTILITY PLANS FOR FURTHER INFORMATION. PROVIDE LIGHTNING PROTECTION AT ENTRANCE LOCATION.

drawing title
TECHNOLOGY SECURITY RISER DIAGRAM

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH
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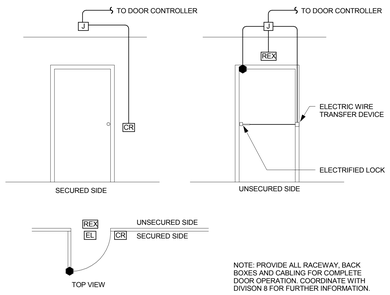
project
SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 130
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale 1/4" = 1'-0"
drawn by FDZ
checked by GVD
drawing no. TS301

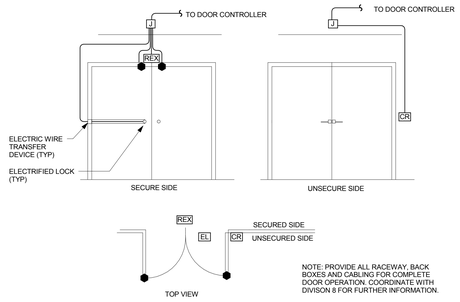
21-10-038

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.



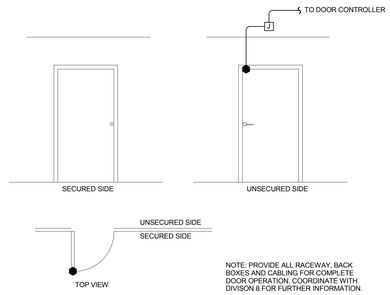
NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

1 TYPICAL CARD READER SINGLE DOOR - WITH ELECTRIC LOCK
NOT TO SCALE



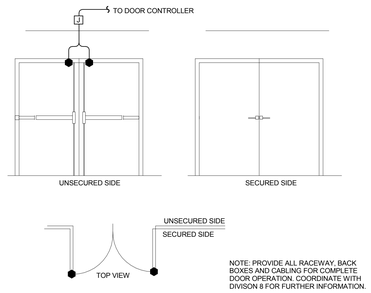
NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

2 TYPICAL CARD READER DOUBLE DOOR - WITH ELECTRIC LOCK
NOT TO SCALE



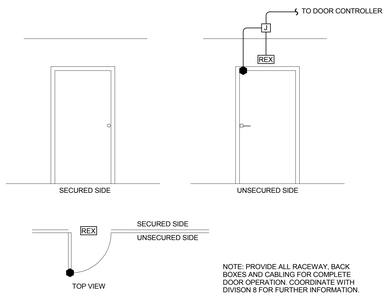
NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

3 TYPICAL MONITOR SINGLE DOOR
NOT TO SCALE



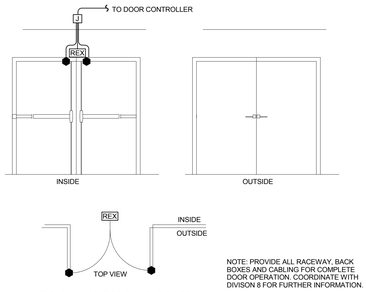
NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

4 TYPICAL MONITOR DOUBLE DOOR
NOT TO SCALE



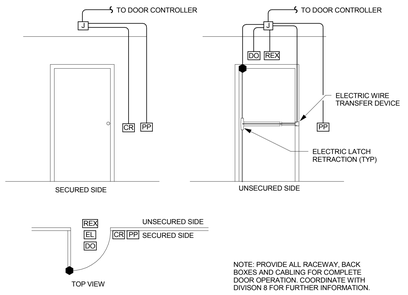
NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

5 TYPICAL MONITOR SINGLE DOOR
NOT TO SCALE



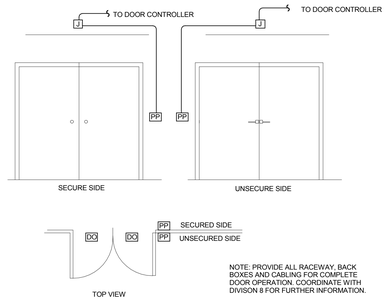
NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

6 TYPICAL MONITOR DOUBLE DOOR
NOT TO SCALE



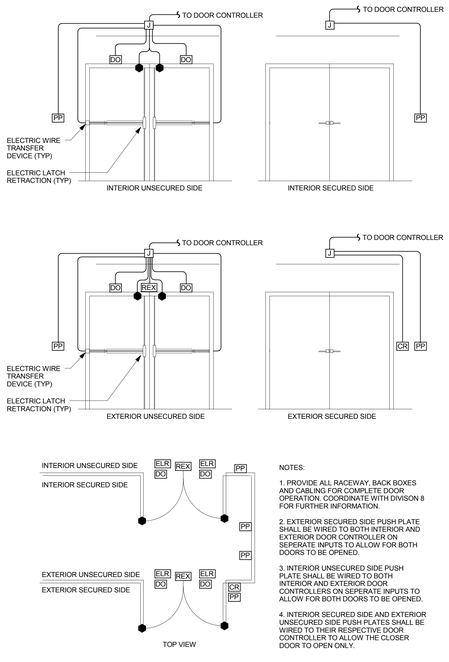
NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

7 TYPICAL CARD READER SINGLE DOOR - WITH ELECTRIC LOCK & DOOR OPENER
NOT TO SCALE



NOTE: PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

8 TYPICAL PUSH PLATE DOUBLE DOOR - INTERIOR
NOT TO SCALE



NOTES:

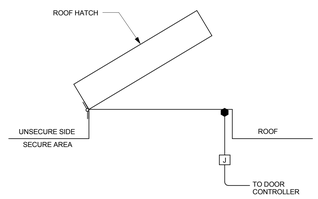
1. PROVIDE ALL RACEWAY, BACK BOXES AND CABLING FOR COMPLETE DOOR OPERATION. COORDINATE WITH DIVISON 8 FOR FURTHER INFORMATION.

2. EXTERIOR SECURED SIDE PUSH PLATE SHALL BE WIRED TO BOTH INTERIOR AND EXTERIOR DOOR CONTROLLER ON SEPERATE INPUTS TO ALLOW FOR BOTH DOORS TO BE OPENED.

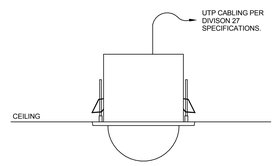
3. INTERIOR UNSECURED SIDE PUSH PLATE SHALL BE WIRED TO BOTH INTERIOR AND EXTERIOR DOOR CONTROLLERS ON SEPERATE INPUTS TO ALLOW FOR BOTH DOORS TO BE OPENED.

4. INTERIOR SECURED SIDE AND EXTERIOR UNSECURED SIDE PUSH PLATES SHALL BE WIRED TO THEIR RESPECTIVE DOOR CONTROLLER TO ALLOW THE CLOSER DOOR TO OPEN ONLY.

9 TYPICAL CARD READER DOUBLE DOOR - WITH ELECTRIC LOCK & DOOR OPENER - DOUBLE SET
NOT TO SCALE



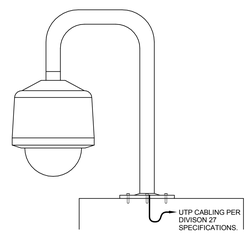
10 ROOF HATCH
NOT TO SCALE



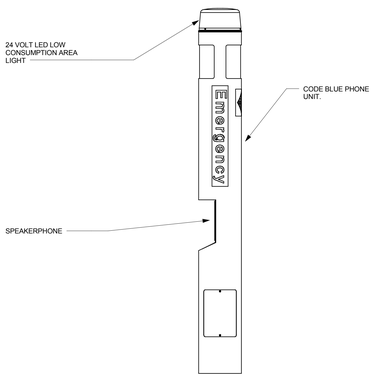
NOTE:

INSTALL A SAFETY CHAIN OR CABLE THAT WILL SUPPORT UP TO 16 POUNDS. FASTEN ONE END TO A SUPPORT STRUCTURE IN THE CEILING. FASTEN THE OTHER END TO THE SAFETY CHAIN BRACKET TO PREVENT THE BACK BOX FROM FALLING.

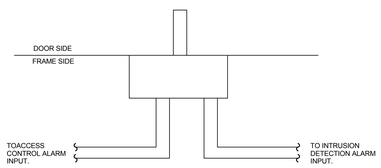
11 INDOOR FIXED DOME CAMERA
NOT TO SCALE



12 OUTDOOR PTZ DOME CAMERA
NOT TO SCALE



14 TYPICAL CODE BLUE PHONE
NOT TO SCALE



NOTE: DOUBLE POLE DOUBLE THROW DOOR SWITCH (CONTACT) (TYPICAL).

13 TYPICAL DOUBLE POLE DOUBLE THROW DOOR SWITCH (CONTACT)
NOT TO SCALE

drawing title: TECHNOLOGY SECURITY DETAILS

REVISIONS

mark	date	description
	11-21-2012	Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

DRAWING PREPARED BY
BVH Integrated Services
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project: SCSU NEW ACADEMIC LABORATORY BUILDING

CAD no. 1383
project no. BI-RS-283-ARC

sheet no. 2 of 2
date 11-21-2012
scale As indicated
drawn by FDZ
approved by GVD
drawing no. TS302

21-10-038

SOUTHERN CONNECTICUT STATE UNIVERSITY
ACADEMIC LABORATORY BUILDING
AUDIOVISUAL SYSTEMS

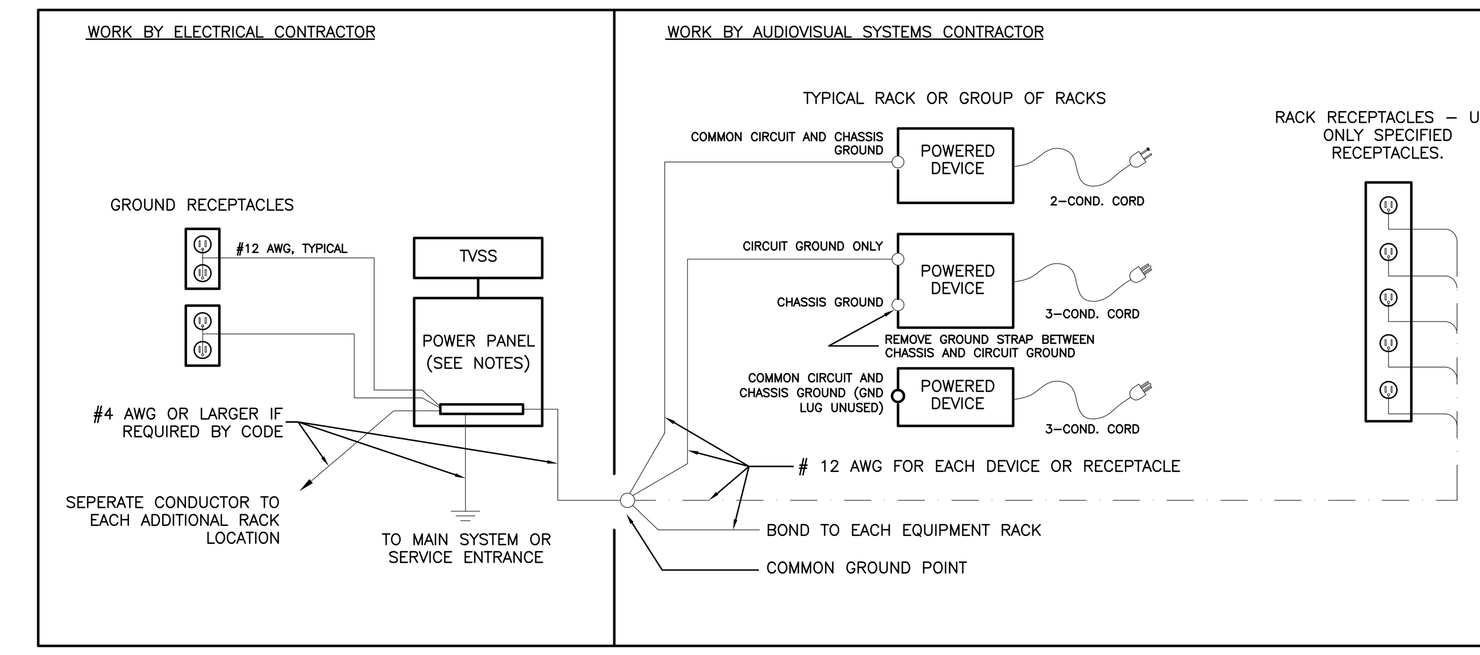
AUDIOVISUAL SYSTEMS SYMBOL LEGEND

SYMBOL	DESCRIPTION	BOX TYPE	MOUNTING LOCATION	ADDITIONAL NOTES
AV JUNCTION BOX SYMBOLS				
A	ANTENNA	1-GANG DEEP METAL BOX	FLUSH MOUNT 12" BELOW FINISHED CEILING UNLESS NOTED OTHERWISE	
AL	ALS EMITTER	1-GANG METAL BOX	FLUSH MOUNT IN WALL AT 77" A.F.F.	
AR	AUDIENCE RESPONSE	2-GANG DEEP METAL BOX	FLUSH MOUNTED 12" BELOW FINISHED CEILING UNLESS NOTED OTHERWISE	
AR (circle)	AUDIENCE RESPONSE	2-GANG DEEP METAL BOX	FLUSH MOUNTED TO FINISHED CEILING UNLESS NOTED OTHERWISE	
BP	BUTTON PANEL	4-GANG DEEP METAL BOX	FLUSH IN WALL AT SWITCH HEIGHT UNLESS NOTED OTHERWISE	DATA CONNECTION BY TEL/DATA INSTALLER
C (circle)	CEILING CAMERA	2-GANG METAL BOX	MOUNTED IN CEILING FOR VIDEO CAMERA	
C	PAN/TILT VIDEO CAMERA	1-GANG ELECTRIC BOX	MOUNTED 7' 0" A.F.F.	
CP	CONTROL PANEL	3 GANG ELECTRIC BOX	FLUSH MOUNT IN WALL AT SWITCH HEIGHT UNLESS NOTED OTHERWISE	DATA CONNECTION BY TEL/DATA INSTALLER
CP 2	AV CONTROL PANEL	2 GANG ELECTRIC BOX	MOUNT IN SWITCH HEIGHT OR BELOW MARKERBOARD (36" A.F.F.)	
CP 1	AV CONTROL PANEL	1 GANG ELECTRIC BOX	MOUNT IN SWITCH HEIGHT	
D	FLAT PANEL DISPLAY BOX	CHIEF PAC 516	MOUNT 60" A.F.F.	POWER/DATA CONNECTION BY ELECTRICAL & TEL/DATA CONTRACTOR
FB	FLOOR BOX	WIREMOULD EVOLUTION 8ATCPGY W/682A PLATE	MOUNT IN FLOOR AS INDICATED ON DRAWINGS	TEL/DATA AND POWER REQUIREMENTS BY OTHERS. 3 INDICATES NO. OF DATA JACKS.
J1	JUNCTION BOX	2 GANG ELECTRIC BOX OR AS REQUIRED	MOUNTED AT RECEPTACLE HEIGHT UNLESS NOTED OTHERWISE	
J2	JUNCTION BOX	12"X12"X4" BOX WITH OVERSIZED FLUSH COVER	MOUNTED 18" AFF UNLESS NOTED OTHERWISE	
J3	JUNCTION BOX	20"X16"X4" BOX WITH OVERSIZED FLUSH COVER	MOUNTED 18" AFF UNLESS NOTED OTHERWISE	
LV	LOW VOLTAGE MOTOR CONTROLLER	4" SQUARE METAL BOX	RECESSED INTO CEILING AS PART OF PROJECTION SCREEN CASE.	
M	CEILING MICROPHONE	1-GANG METAL BOX	FLUSH MOUNT IN CEILING	
L	LINE LEVEL RECEPTACLE	1-GANG ELEC. BOX	RECEPTACLE HEIGHT OR AS NOTED	
RS	ROOM SCHEDULE DISPLAY	1-GANG ELEC. BOX MOUNTED HORIZONTALLY	MOUNT IN SWITCH HEIGHT	
S	WALL SPEAKER	1-GANG METAL BOX	MOUNTED 6" BELOW FINISHED CEILING UNLESS NOTED OTHERWISE	
SC	WALL MOUNTED SCREEN CONTROL	1-GANG ELEC METAL BOX	MOUNTED IN SWITCH HEIGHT	CUSTOM BY ARCHITECT
S (circle)	CEILING LOUDSPEAKER	SPECIAL (BY AV CONTRACTOR)	FLUSH MOUNT IN CEILING	
L (circle)	CEILING SUBWOOFER	SPECIAL (BY AV CONTRACTOR)	FLUSH MOUNT IN CEILING	
SW	VIDEO PROJECTOR SCREEN SWITCH	1-GANG METAL BOX	FLUSH MOUNT IN WALL AT SWITCH HEIGHT UNLESS OTHERWISE NOTED	
RF	CABLE TV OUTLET	I GANG ELEC. BOX	RECEPTACLE HEIGHT AS NOTED	
IP	INPUT PANEL	2 GANG ELECTRIC BOX	MOUNTED AT RECEPTACLE HEIGHT OR AT SWITCH HEIGHT ABOVE BASE CABINETS	
T3	CABLE TROUGH	6"X6"X48" METAL TROUGH	MOUNTED AT 78" AFF BEHIND AV EQUIPMENT RACK	
TB	TABLE BOX	TBD	MOUNTED IN TABLE	SUPPLIED BY AV CONTRACTOR, INSTALLED BY CARPENTER
TV	CATV CONNECTION	2-GANG METAL BOX		
VP	VIDEO PROJECTOR WALL BOX	1-GANG ELEC. BOX	MOUNTED BEHIND PROJECTOR MOUNT, AS SHOWN	
VP (circle)	VIDEO PROJECTIOR CEILING BOX	SPECIAL(BY AV CONTRACTOR)	MOUNT TO CEILING ABOVE PROJECTOR	
W1	WALL PLATE	1-GANG METAL BOX	FLUSH MOUNT IN WALL AT 18" AFF UNLESS OTHERWISE NOTED	
W2	WALL PLATE	2-GANG METAL BOX	FLUSH MOUNT IN WALL AT 18" AFF UNLESS OTHERWISE NOTED	
W3	WALL PLATE	3-GANG METAL BOX	FLUSH MOUNT IN WALL AT 18" AFF UNLESS OTHERWISE NOTED	
W4	WALL PLATE	4-GANG METAL BOX	FLUSH MOUNT IN WALL AT 18" AFF UNLESS OTHERWISE NOTED	
WR	WALL RACK	SPECIAL(BY AV CONTRACTOR)	IN WALL 12" A.F.F	
WC	WEB CAMERA	1-GANG METAL BOX	MOUNTED 6" BELOW FINISHED CEILING UNLESS NOTED OTHERWISE	
LS	LOUDSPEAKER	1-GANG METAL BOX	MOUNTED 6" BELOW FINISHED CEILING UNLESS NOTED OTHERWISE	

SYMBOL	DESCRIPTION	BOX TYPE	MOUNTING LOCATION	ADDITIONAL NOTES
AV ELECTRICAL SYMBOLS (COORDINATION ONLY) NOTE: I.G. = ISOLATED GROUND RECEPTACLE				
	DUPLEX AC RECEPTACLE 120V 20 AMP	1-GANG METAL BOX	FLUSH MOUNT IN WALL AT RECEPTACLE HEIGHT	
	RECEPTACLE WITH ISOLATED GROUND 120V 20 AMP	1-GANG METAL BOX	FLUSH MOUNT IN WALL BEHIND LCD DISPLAY INTEGRATED IN D1 BOX	
	DOUBLE DUPLEX AC RECEPTACLE 2 CIRCUIT 20V 20 A	2-GANG METAL BOX	FLUSH MOUNT IN WALL AT RECEPTACLE HEIGHT	PROVIDE AS PART OF FLOOR BOX
	DUPLEX AC RECEPTACLE 120V 20 AMP	1-GANG METAL BOX	FLUSH MOUNT IN FLOOR AS INDICATED	
	DUPLEX AC RECEPTACLE 120V 20 AMP	1-GANG METAL BOX	FLUSH MOUNT IN CEILING UNLESS OTHERWISE NOTED	
AV TEL/DATA SYMBOLS (COORDINATION ONLY)				
	CEILING MOUNT TWO DATA DROP	1-GANG METAL BOX	FLUSH MOUNT IN CEILING	2-CAT-6 CABLE BY TEL/DATA CONTRACTOR
XP	TEL DATA DROP	1-GANG METAL BOX	FLUSH MOUNT IN WALL AT 18"A.F.F.UNLESS OTHERWISE NOTED	2-CAT-6 CABLE BY TEL/DATA CONTRACTOR
XP	FLOOR BOX COMPONENT	1-GANG METAL BOX	FLUSH MOUNT IN FLOOR AS INDICATED	PROVIDE AS PART OF FLOOR BOX. 3-CAT-6 CABLE BY TEL/DATA CONTRACTOR
XP	LECTREN PHONE	1-GANG METAL BOX	FLUSH MOUNT AS INDICATED	1-CAT-6 CABLE BY TEL/DATA CONTRACTOR
	LADDER RACK	18" WIDE x 6" DEEP	MOUNTED 12" ABOVE EQUIPMENT RACKS	
	CABLE TRAY			
AV CONDUIT LEGEND				
	WIRING IN CONDUIT, ELECTRICAL CONTRACTOR SUPPLIES CONDUIT. TERMINATED WITH PLASTIC BUSHINGS			
	WIRING EXPOSED, PROVIDE PLENUM CABLE.			
	CONDUIT TURNED DOWN (IN PLAN).			
	CONDUIT TURNED UP (IN PLAN)			
	CONDUIT STUB. TERMINATE ALL CONDUIT WITH PLASTIC BUSHING.			

1 NOTE: SUBSCRIPT X INDICATES NUMBER OF IT OUTLETS
SUBSCRIPT P INDICATES POWER OVER ETHERNET (POE) REQUIRED.

1 / AV000 — AV SYMBOLS LEGEND
SCALE: NTS



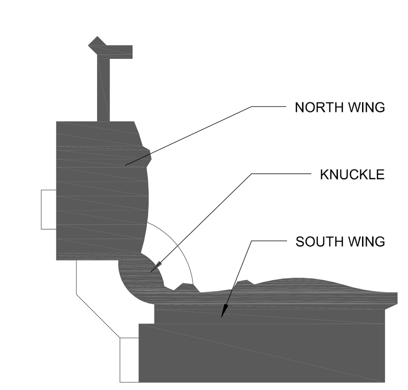
2 / AV000 — NON-ISOLATED ELECTRICAL GROUND DETAIL
SCALE: NTS

SYMBOL	DESCRIPTION	NOTES
CONNECTOR CONNECTOR GENDER QTY. OF CONNECTORS SPECIAL DESIGNATION CIRCUIT DESIGNATION IF SHOWN TYPE OF CONNECTOR PLUG OR RECEPTACLE	**AUDIO** P1 1/4" PHONE P2 3.5MM MINATURE PHONE RCA RCA XLR XLR NL SPEAKON MP MULTI-PIN CONNECTOR	CONNECTOR GENDER/ PLUG OR RECEPTACLE: CKT CIRCUIT F FEMALE M MALE P PLUG R RECEPTACLE QTY QUANTITY TYP TYPE
LINE TYPE LEGEND VIDEO TEL/DATA CONTROL AUDIO	**VIDEO - RF** BNC 75-OHM BNC CONNECTOR UHF UHF CONNECTOR Y/C S-VIDEO CONNECTOR VPT VIDEO PATCH CONNECTOR F "F" STYLE RF CONNECTOR KS 75-OHM CATV CONNECTOR BC 50-OHM BNC CONNECTOR CM CAMERA CONNECTOR TR 75-OHM TRIAX CONNECTOR VGA 15 PIN D-SUB CONNECTOR	SPECIAL DESIGNATIONS: BL BLUE GN GREEN H HORIZONTAL RD RED V VERTICAL VID VIDEO YC LUMA/CHROMA DA DIGITAL AUDIO LAN LOCAL AREA NETWORK NET NETWORK MM MULTI-MODE FIBER SM SINGLE-MODE FIBER APC ANGLED POLISH FIBER NET NETWORK LT LEFT RT RIGHT
PATCH PANEL CONNECTIONS LISTEN AUDIO PATCH NORMALLED AUDIO PATCH AUDIO PATCH PLUG AUDIO PATCH RECEPTACLE NORMALLED VIDEO PATCH VIDEO PATCH PLUG VIDEO PATCH RECPTACLE	**CONTROL - TELCO - DATA** CRL CONTROL RJ RJ-45 CONNECTOR RJT RJ-11 CONNECTOR ST ST FIBER CONNECTOR SC SC FIBER CONNECTOR FC FC FIBER CONNECTOR SFF MT-RJ FIBER CONNECTOR	

3 / AV000 — FUNCTIONAL DIAGRAM SYMBOL LEGEND
SCALE: NTS

DRAWING NUM.	TITLE
AV-000	AUDIOVISUAL SYSTEMS LEGENDS & NOTES I
AV-001	AUDIOVISUAL SYSTEMS LEGENDS & NOTES II
AV-002	AUDIOVISUAL SYSTEMS INSTALLATION DETAILS I
AV-003	AUDIOVISUAL SYSTEMS INSTALLATION DETAILS II
AV-004	AUDIOVISUAL SYSTEMS INSTALLATION DETAILS III
AV-100	AUDIOVISUAL SYSTEMS BASEMENT FLOOR PLAN
AV-110	AUDIOVISUAL SYSTEMS FIRST FLOOR PLAN
AV-120	AUDIOVISUAL SYSTEMS SECOND FLOOR PLAN
AV-130	AUDIOVISUAL SYSTEMS THIRD FLOOR PLAN
AV-140	AUDIOVISUAL SYSTEMS FOURTH FLOOR PLAN
AV-150	AUDIOVISUAL SYSTEMS FIFTH FLOOR PLAN
AV-160	AUDIOVISUAL SYSTEMS SIXTH FLOOR PLAN
AV-200	AUDIOVISUAL SYSTEMS CONDUIT RISERS A
AV-210	AUDIOVISUAL SYSTEMS CONDUIT RISERS B

4 / AV000 — DRAWING SCHEDULE
SCALE: NTS



PROJECT NORTH
0 4 8 16

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drawing title: AV SYSTEMS LEGENDS & NOTES i

REVISIONS
11-21-2012 100% Bid Documents

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

volume: 2 of 2

DRAWING PREPARED BY: Acentech Inc., 33 Moulton Street, Cambridge, MA 02138

project: SCSU ACADEMIC LABORATORY BUILDING

project no. BI-RS-283

drawing no. AV000

NOTES TO ELECTRICAL CONTRACTOR:

1. PROVIDE AN AC POWER SYSTEM FOR THE AUDIOVISUAL SYSTEM. AC SYSTEM INCLUDES A DEDICATED POWER PANEL WITH TRANSIENT VOLTAGE SURGE SUPPRESSORS, AND A SEPARATE ISOLATED GROUND BUS.
2. PROVIDE A COMPLETE CONDUIT SYSTEM FOR THE AUDIOVISUAL SYSTEM.
3. CONDUIT AND AC POWER ON AV DRAWINGS IS DIAGRAMMATIC AND PROVIDED FOR COORDINATION AND REFERENCE ONLY. AV DRAWINGS DO NOT SHOW ALL REQUIRED COMPONENTS FOR A COMPLETE SYSTEM (E.G., PULL BOXES, ETC.).
4. AC CIRCUITS IN AUDIOVISUAL EQUIPMENT RACKS TERMINATE IN RECEPTACLES PROVIDED BY THE AUDIOVISUAL CONTRACTOR.
5. PROVIDE A PULL BOX IN RUNS OVER 100 FEET OR THAT CONTAIN MORE THAN (2) CONSECUTIVE 90° BENDS.
6. PROVIDE A PULL LINE IN THE AUDIOVISUAL SYSTEM CONDUITS.
7. ALL CONDUITS SHALL BE FERROUS METALS, BONDED TO GROUND EVEN IN OR BELOW SLABS. CONDUITS IN OR BELOW SLABS SHALL BE RIGID METALLIC CONDUITS. SEAL ALL JOINTS TO PREVENT LEAKING.
8. NO FLEX CONDUIT IS TO BE USED IN THE AUDIOVISUAL SYSTEM UNLESS OTHERWISE NOTED.
9. ALL CONDUITS TO BE 3/4" UNLESS OTHERWISE NOTED.
10. ALL GANG BOXES ARE 2-1/2" DEEP WITH 13/16" GANG COVER FOR DRYWALL OR PLASTER WALL CONSTRUCTION OR 3-1/2" DEEP FOR MASONARY WALL CONSTRUCTION UNLESS OTHERWISE NOTED.
11. ALL CONDUIT STUBS SHALL BE TERMINATED WITH PLASTIC BUSHINGS AND SHALL BE STUBBED INTO ACCESSIBLE LOCATIONS.
12. ALL AV ELECTRICAL CIRCUITS ARE TO BE FROM THE SAME PANEL OR SAME PHASE FOR EACH ROOM.

GENERAL CONDUIT AND BACK BOX NOTES:

1. CONDUIT AND AC POWER SHOWN FOR COORDINATION AND REFERENCE ONLY. CONDUIT QUANTITIES AND SIZES HAVE BEEN CHOSEN BASED UPON SYSTEM REQUIREMENTS. DO NOT COMBINE MULTIPLE RUNS INTO LARGER CONDUITS. SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DETAILS.
2. THE AUDIOVISUAL SYSTEM CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS CONDUIT AND WIREWAYS TO THE EXTENT NOT PROVIDED BY THE E.C. IN ORDER TO PROVIDE A COMPLETE AND OPERABLE SYSTEM.
3. INSULATE AUDIOVISUAL EQUIPMENT ENCLOSURES FROM INCOMING METAL CONDUITS WITH PVC TO EMT CONNECTOR IN TOP OF ENCLOSURE OR OTHER APPROVED MEANS.
4. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AC POWER SYSTEM FOR THE AUDIOVISUAL SYSTEM.

NOTES FOR RACKS, PLATES AND PANELS:

1. LAYOUT OF EQUIPMENT RACKS, RECEPTACLE PLATES, AND PANELS ARE DIAGRAMMATIC. ACTUAL LAYOUTS SHOULD BE SUBMITTED TO THE OWNER AND THE CONSULTANT.
2. PROVIDE SHAFT LOCKS OR SECURITY COVERS FOR AMPLIFIERS VOLUME CONTROLS.
3. USE AC RECEPTACLES SIMILAR TO THE LOWELL RPC5 SERIES FOR EQUIPMENT RACKS.
4. EQUIPMENT RACK WIRING MUST MEET INDUSTRY STANDARDS FOR NEATNESS AND SEPARATION OF SIGNAL TYPES (MIC, LINE, VIDEO, LOUDSPEAKER, AND AC POWER).
5. PROVIDE ENGRAVED LABELS ON EQUIPMENT RACKS THAT CLEARLY INDICATE THE EQUIPMENT TYPE AND FUNCTION. SECURE LABELS BELOW EQUIPMENT ON VENT OR BLANK PANELS.
6. LAYOUT OF CONDUIT BOXES ARE DIAGRAMMATIC. ACTUAL LAYOUT SHOULD BE COORDINATED WITH THE OWNER AND THE CONSULTANT.
7. ALL CONNECTION PANELS AND FLOOR BOX PANELS ARE FINISHED 1/8" ALUMINUM ANODIZED WITH ENGRAVED LETTERING FILLED WITH ENAMEL PAINT. COORDINATE FINISH WITH ARCHITECT AND CONSULTANT PRIOR TO FABRICATION AND INSTALLATION OF PANELS.
8. RACK PANELS ARE FINISHED 1/8" ALUMINUM ANODIZED BLACK WITH ENGRAVED LETTERING FILLED WITH WHITE ENAMEL PAINT. COORDINATE FINISH WITH ARCHITECT AND CONSULTANT PRIOR TO FABRICATION AND INSTALLATION OF PANELS.
9. USE INSULATED JACKS ON RACK PANELS, CONNECTION PANELS, AND WALL PLATES.
10. CLEARLY LABEL ALL FLOOR BOX RECEPTACLES AND PANEL RECEPTACLES. SUBMIT LABELING SCHEDULE AND SAMPLE TO OWNER AND CONSULTANT PRIOR TO FABRICATING LABELS.
11. SUBMIT FINISHES TO ARCHITECT AND CONSULTANT PRIOR TO FABRICATION.

SYSTEM NOTES:

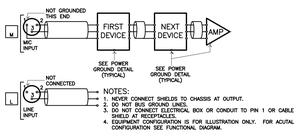
1. VERIFY EXACT LOCATION OF AUDIOVISUAL EQUIPMENT WITH ARCHITECTURAL DRAWINGS.
2. THE SIGNAL LEVEL SEPARATION INDICATED ON DRAWINGS (MICROPHONE, LINE, SPEAKER, INTERCOM, VIDEO, CONTROL, RF, AND AC) IS TO BE MAINTAINED.
3. NO SPLICES SHALL BE PERMITTED. ALL CABLE RUNS SHALL BE CONTINUOUS FROM POINT OF ORIGIN TO TERMINATION POINT.
4. WIRING ENTERING A PLENUM SPACE FROM A CONDUIT STUB SHALL BE PLENUM RATED IN ITS ENTIRETY.
5. GENERAL CONTRACTOR SHALL PROVIDE BLOCKING FOR WALL MOUNTED AUDIOVISUAL DEVICES.
6. GENERAL CONTRACTOR SHALL SUPPLY MILLWORK IN CONTROL ROOMS.
7. GENERAL CONTRACTOR SHALL PROVIDE ATTACHMENT POINTS AT SUPERSTRUCTURE FOR MOUNTING LOUDSPEAKERS AND VIDEO PROJECTORS AS REQUIRED. AUDIOVISUAL SYSTEM CONTRACTOR PROVIDES FLYWARE OUR MOUNTING HARDWARE TO ATTACH AUDIOVISUAL EQUIPMENT TO ATTACHMENT POINTS PROVIDED BY GENERAL CONTRACTOR.

CONSTRUCTION PHASE ITEM OR SERVICE:	TELECOM CONTRACTOR	GENERAL CONTRACTOR	ELECTRICAL CONTRACTOR	AV CONTRACTOR	AV FURNISHINGS SYSTEM/EQUIPMENT ITEM OR SERVICE:	TELECOM CONTRACTOR	GENERAL CONTRACTOR	ELECTRICAL CONTRACTOR	AV CONTRACTOR
SCREENS:									
ELECTRIC PROJECTION SCREEN SUPPLY BY:			X						
ELECTRIC PROJECTION SCREEN INSTALLED BY:			X						
ELECTRIC PROJECTION SCREENS SET UP AND ADJUSTED BY:			X						
ELECTRIC SCREEN LOW VOLTAGE CONTROLS & SWITCHES SUPPLY BY:			X						
ELECTRIC SCREEN LOW VOLTAGE CONTROLS & SWITCHES INSTALLED BY:				X					
LOUDSPEAKERS:									
CEILING LOUDSPEAKERS SUPPLIED BY:				X					
CEILING LOUDSPEAKERS BACK BOXES INSTALLED BY:			X						
LOUDSPEAKERS INSTALLED & TERMINATED BY:				X					
SPEAKER CABLE SUPPLIED BY:				X					
SPEAKER CABLE INSTALLED BY:				X					
VIDEO PROJECTORS:									
VIDEO PROJECTOR CEILING MOUNT PROVIDED & INSTALLED BY:				X	VIDEO PROJECTORS SUPPLIED & INSTALLED BY:				X
VIDEO PROJECTOR UNISTRUT SUPPLIED AND INSTALLED BY:			X						
LCD MONITOR:									
LCD MONITOR MOUNTS PROVIDED BY:				X	LCD MONITORS SUPPLIED & INSTALLED BY:				X
LCD MONITOR MOUNTS BLOCKING PROVIDED & INSTALLED BY:			X						
AV SYSTEMS									
RACKS AND SYSTEMS SUPPLIED BY:				X	SYSTEMS SUPPLIED, INSTALLED, AND TERMINATED BY:				X
FLUSH BOX COVER PLATES SUPPLIED BY:			X						
VOTING, LIGHTING, & BOARD SWITCHES									
SWITCHES AND PLATES PROVIDED BY:			X						
PANELS ASSEMBLED AND INSTALLED BY:				X					
DESK MICROPHONES									
DESK HOLES AND MOUNTS PREP PROVEDED BY:			X		MICROPHONES PROVIDED AND INSTALLED BY:				X
MICROPHONE CABLE AND INSTALLATION BY:				X					
ELECTRICAL:									
BLANK PLATES FOR J-BOXES & PULL BOXES SUPPLIED & INSTALLED BY:				X	AV INTERCONNECT PLATES SUPPLIED, INSTALLED, & TERMINATED BY:				X
CONNECTOR & J-BOXES SUPPLIED & INSTALLED BY:				X					
AV CONNECTORS/PLATES SUPPLIED, INSTALLED, & TERMINATED BY:				X					
CONDUIT SUPPLIED & INSTALLED BY:				X					
AC OUTLETS & CABLE (EXCEPT WITHIN RACKS) SUPPLIED & INSTALLED BY:				X					
AV LOW-VOLTAGE CABLE SUPPLIED & INSTALLED BY:				X					
FLOOR BOXES, CABLE TRAYS, LADDER RACKS SUPPLIED & INSTALLED BY:				X					
LIGHTING:									
DIMMER LOW-VOLTAGE AV INTERFACE (RS-232) SUPPLIED & INSTALLED BY:				X					
DIMMING EQUIPMENT SUPPLIED & INSTALLED BY:				X					
LIGHTING SCENES PROGRAMMED BY:				X					
RACKS AND MILLWORK:									
MILLWORK SUPPLIED AND INSTALLED BY:			X		AV EQUIPMENT RACKS SUPPLIED AND INSTALLED BY:				X
AV DATA/CATV/FIBER OPTIC:									
AV TELCO/DATA PLATES & CONNECTORS SUPPLIED & INSTALLED BY:			X						
AV TELCO/DATA CABLES SUPPLIED & INSTALLED BY:	X								
NETWORK SERVICES SUPPLIED AND INSTALLED BY:	X								
AV TELCO/DATA SERVICES TESTED & ACTIVATED BY:	X								
CATV RG-6 CABLE SUPPLIED & INSTALLED BY:				X					
CATV BACKBONE SUPPLIED & INSTALLED BY:				X					
FIBER OPTIC CABLE INSTALLED AND TERMINATED BY:			X						
FIBER OPTIC EQUIPMENT JUMPERS PROVIDED BY:				X	AV FIBER OPTIC EQUIPMENT PROVIDED BY:				X
MISCELLANEOUS:									
ADA/HEARING ASSISTANCE SYSTEM SUPPLIED & INSTALLED BY:				X					
WIREMESS MICROPHONE ANTENNA SYSTEM SUPPLIED & INSTALLED BY:				X					

NOTE: SCHEDULE IS FOR REFERENCE ONLY – CONFIRM RESPONSIBILITIES WITH GENERAL CONTRACTOR.

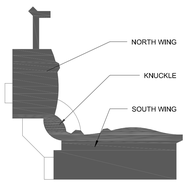
1 / AV001 SCHEDULE OF RESPONSIBILITIES

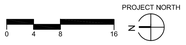
SCALE: NTS



2 / AV001 TYPICAL AUDIOVISUAL GROUNDING SYSTEM

SCALE: NTS





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Drawing title: AV SYSTEMS LEGENDS & NOTES ii

REVISIONS

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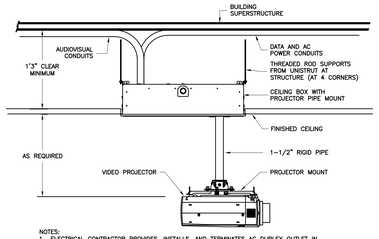
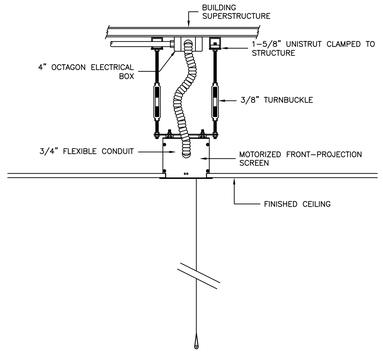


NOTES:
1. ELECTRICAL CONTRACTOR PROVIDES, INSTALLS, AND TERMINATES AC DUPLEX OUTLET IN INSTALLATION BOX AND ALL CONDUIT.
2. AV SIGNALS ROUTE FROM CONDUITS INTO CEILING BOX, DOWN SUPPORT PIPE, AND TO PROJECTOR INPUTS.
3. PROJECTOR POWER CORD ROUTES UP SUPPORT PIPE AND TERMINATES IN AC DUPLEX OUTLET.
4. ADJUST PIPE LENGTH AS REQUIRED TO ALIGN PROJECTOR LENSE WITH TOP OF IMAGE AREA ON SCREEN. PAINT PIPE AS APPROVED BY ARCHITECT.
5. G.C. PROVIDES AND INSTALLS CROSSED UNISTRUT SUPPORT FRAME ATTACHED TO UNDERSIDE OF STRUCTURE.
6. AV CONTRACTOR PROVIDES AND INSTALLS VIDEO PROJECTOR AND WIRING, PROJECTOR MOUNT, TRIM-RING, PIPE, CEILING BOX, AND MOUNTING PLATE.

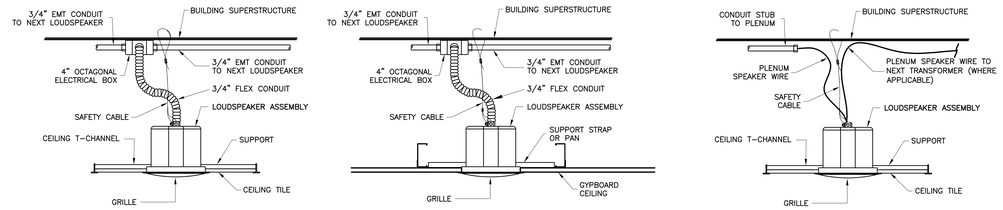
1 / AV002 TYPICAL PROJECTOR MOUNTING DETAIL

SCALE: NTS



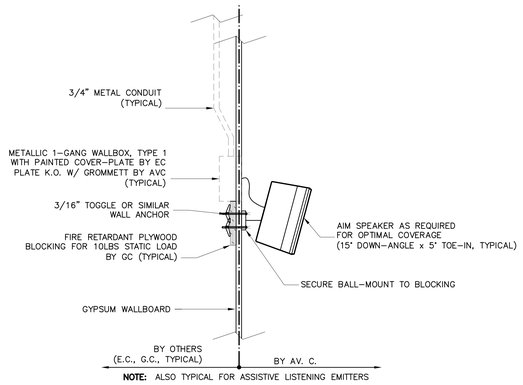
2 / AV002 PROJECTION SCREEN MOUNTING DETAIL

SCALE: NTS



3 / AV002 CEILING MOUNTED SPEAKER DETAILS

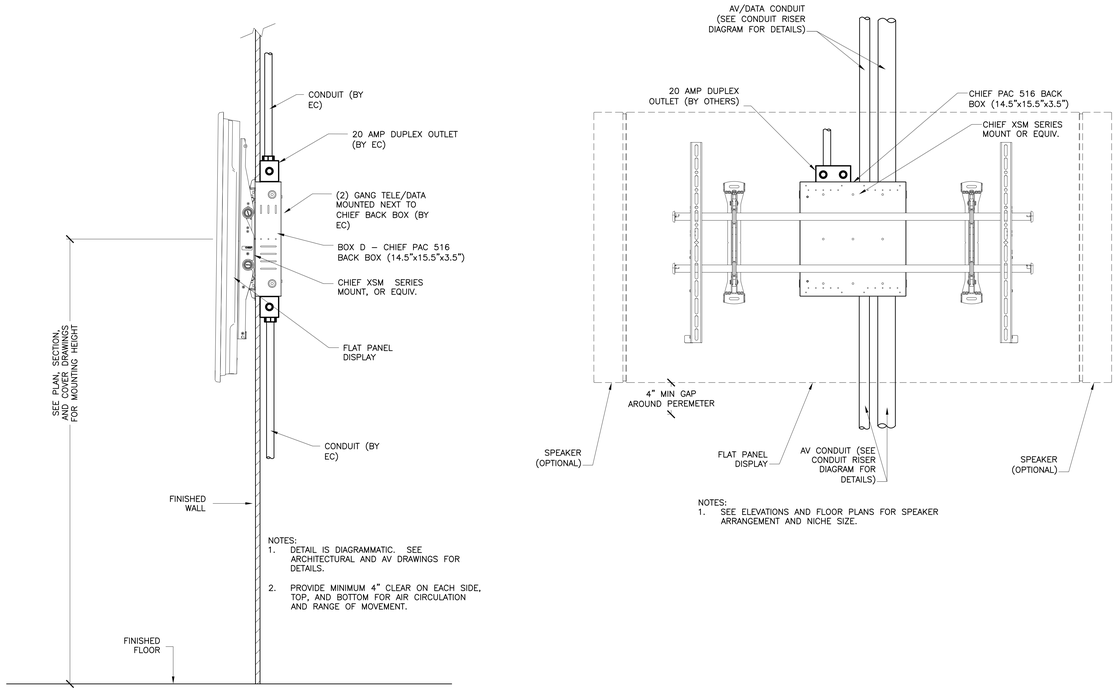
SCALE: NTS



NOTE: ALSO TYPICAL FOR ASSISTIVE LISTENING EMITTERS

4 / AV002 WALL MOUNTED SPEAKER DETAIL A

SCALE: NTS

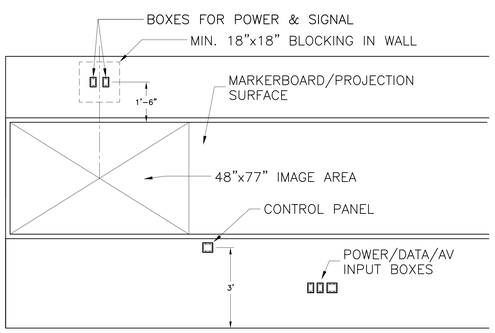


NOTES:
1. DETAIL IS DIAGRAMMATIC. SEE ARCHITECTURAL AND AV DRAWINGS FOR DETAILS.
2. PROVIDE MINIMUM 4" CLEAR ON EACH SIDE, TOP, AND BOTTOM FOR AIR CIRCULATION AND RANGE OF MOVEMENT.

NOTES:
1. SEE ELEVATIONS AND FLOOR PLANS FOR SPEAKER ARRANGEMENT AND NICHE SIZE.

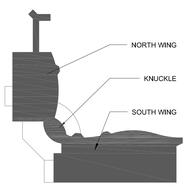
5 / AV002 TYPICAL FLAT PANEL DISPLAY SIDE AND FRONT VIEWS

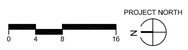
SCALE: NTS



6 / AV002 SHORT-THROW PROJECTOR ELEVATION

SCALE: APPROX. 1/2" = 1'0"





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Drawing title: AV SYSTEMS INSTALLATION DETAILS i

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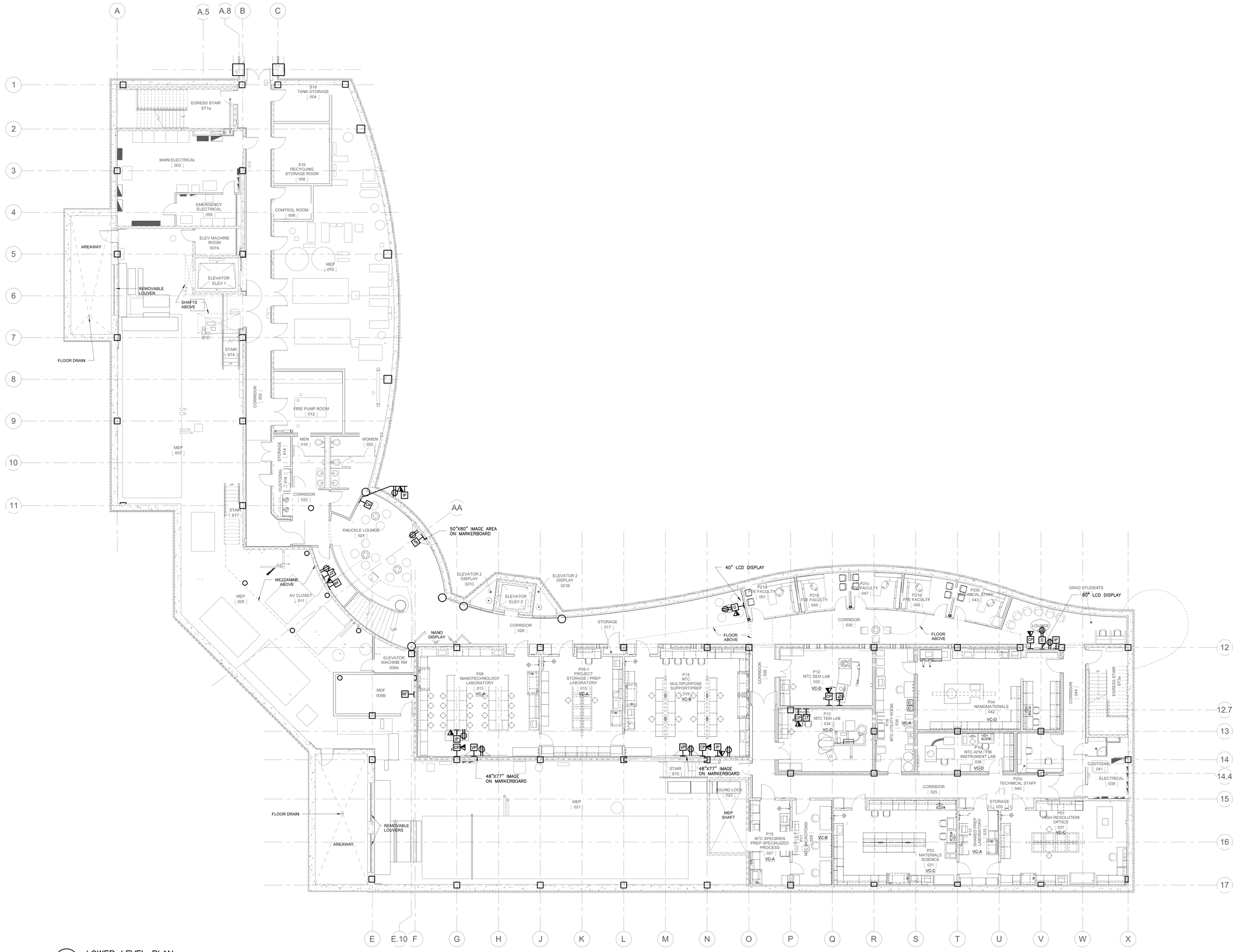

1 LOWER LEVEL PLAN

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

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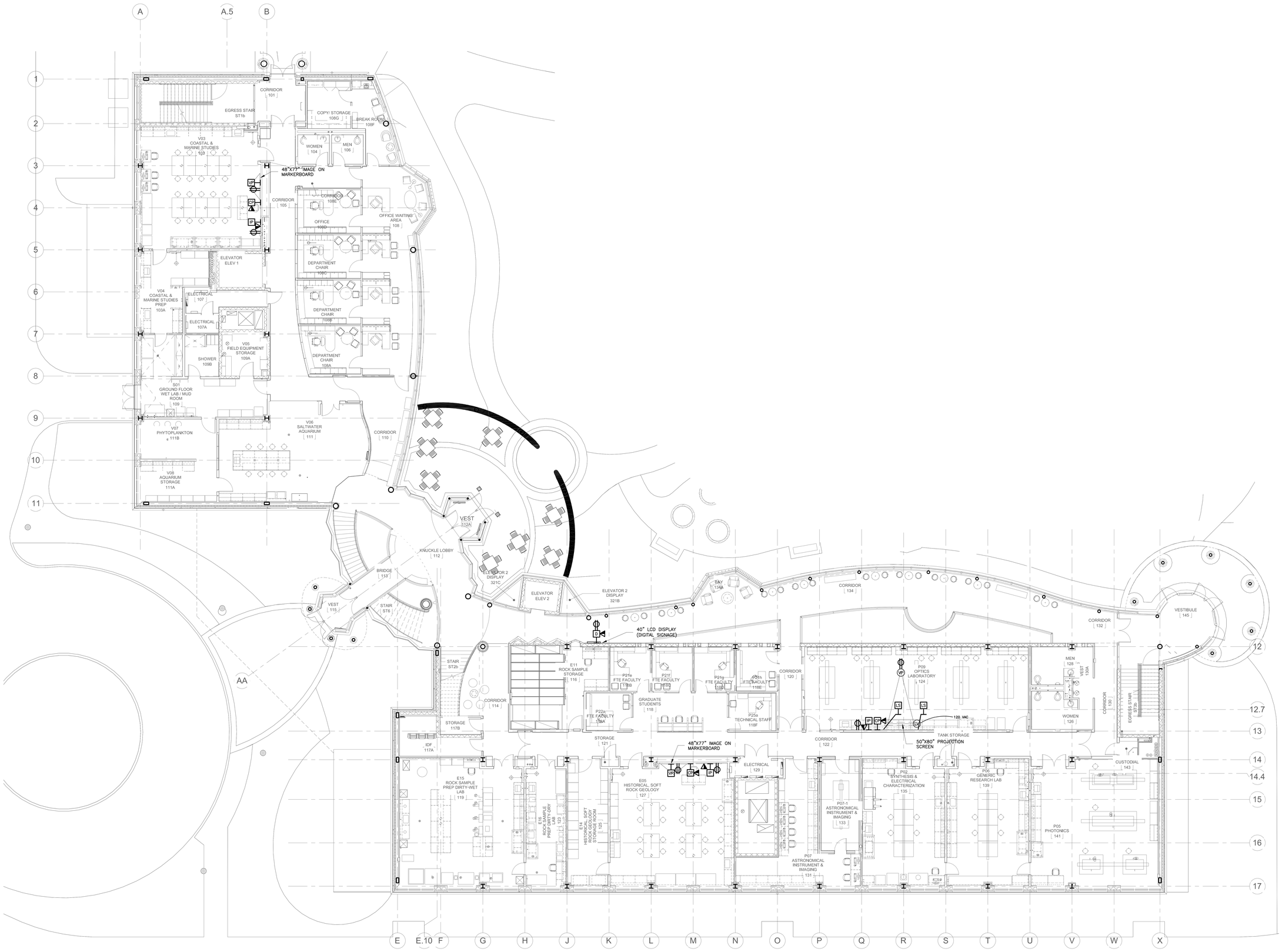

1 GROUND FLOOR PLAN

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

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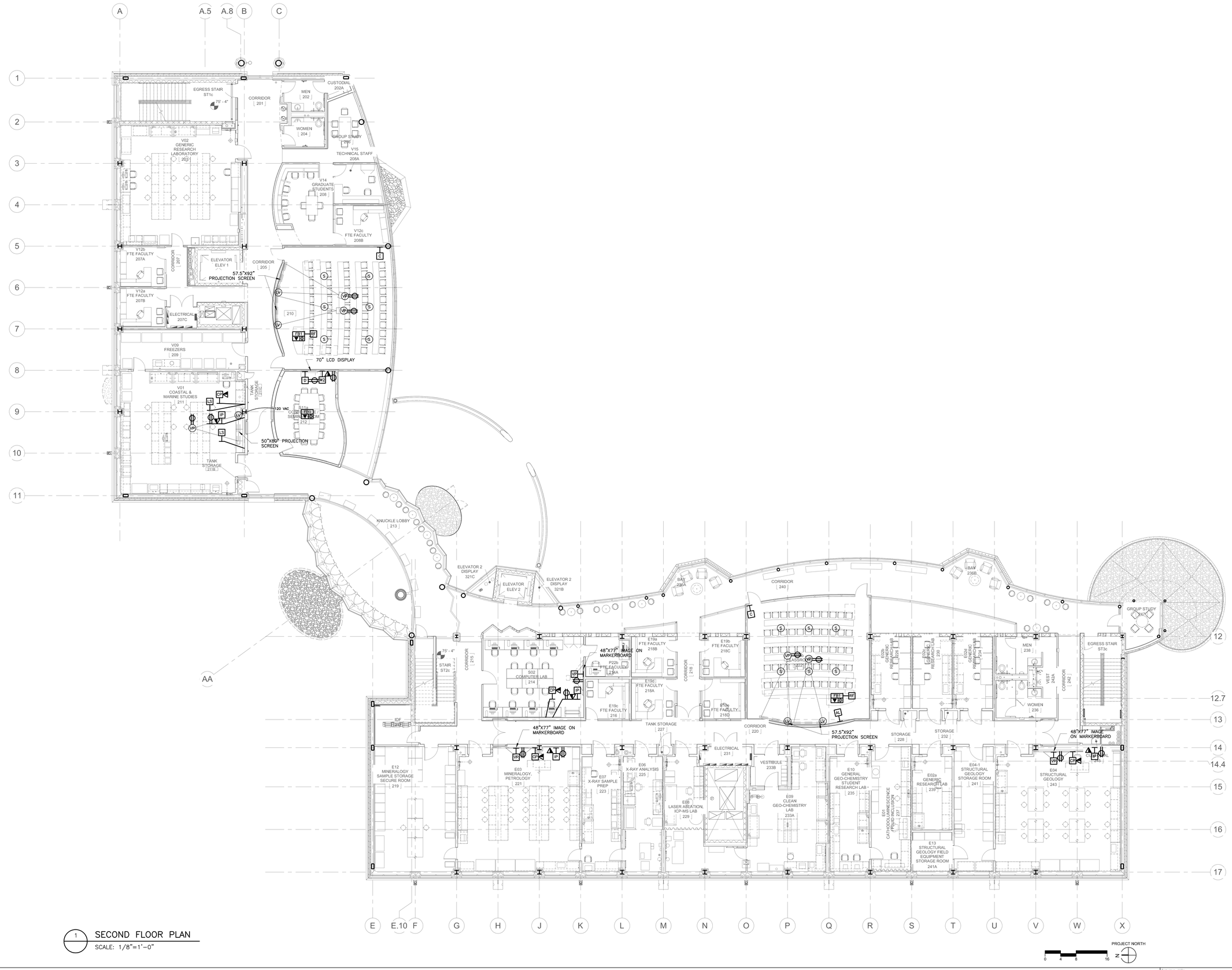
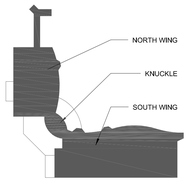
PROJECT: SCSU ACADEMIC LABORATORY BUILDING

PROJ. NO. BI-RS-283

DRAWING NO. AV101





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

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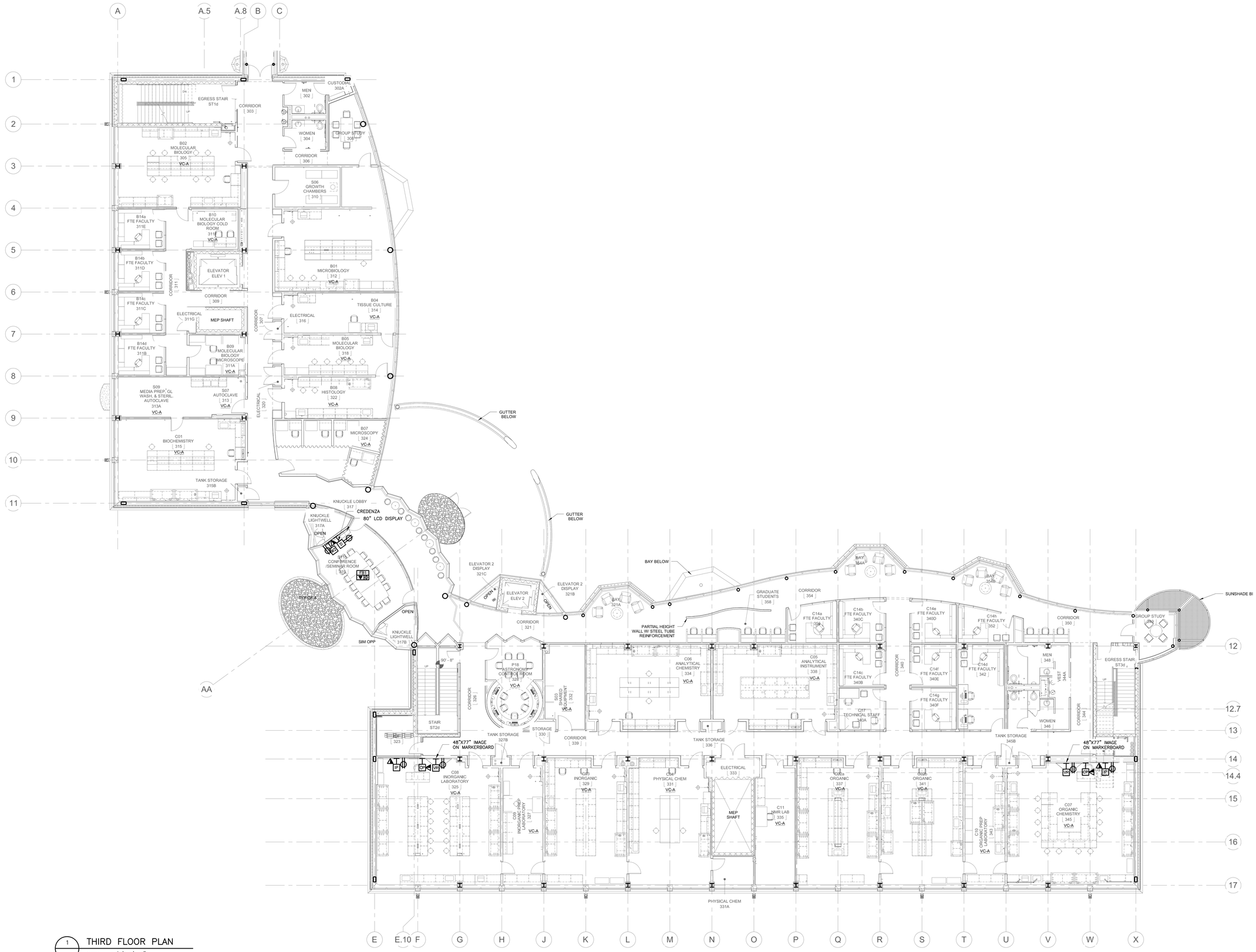

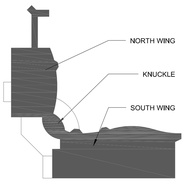

1 THIRD FLOOR PLAN
SCALE: 1/8'=1'-0"

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Drawing title	AV SYSTEMS THIRD FLOOR PLAN
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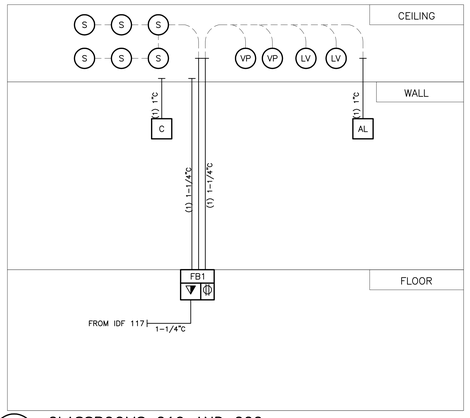
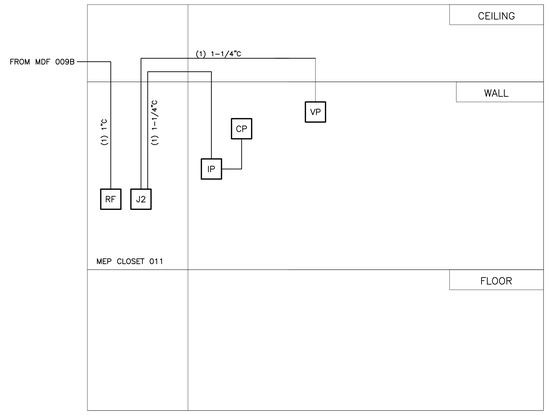
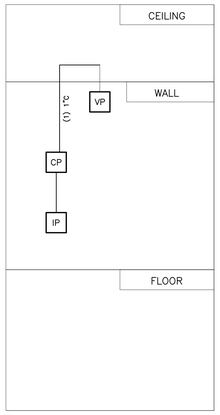
Lab no.	
Project no.	BI-RS-283



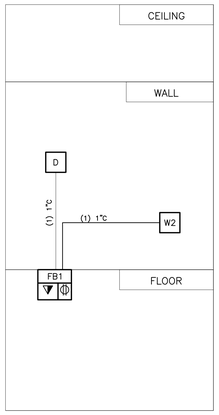
1 AV-200 CLASSROOMS 210 AND 222
SCALE: NTS



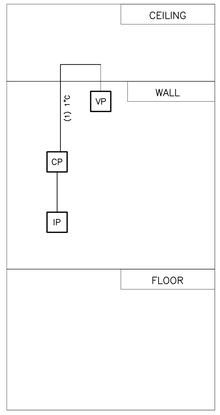
2 AV-200 KNUCKLE LOUNGE 024
SCALE: NTS



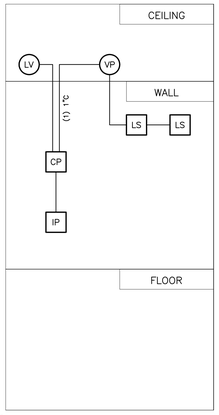
3 AV-200 LOUNGE 048
SCALE: NTS



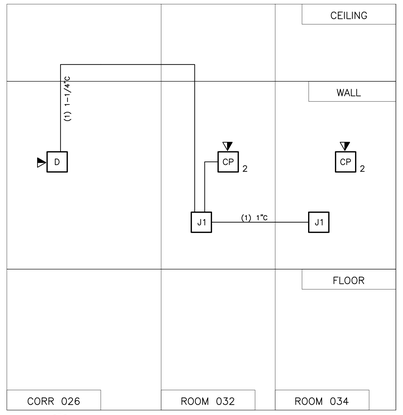
4 AV-200 CONF./SEMINAR ROOMS 212 & 319
SCALE: NTS



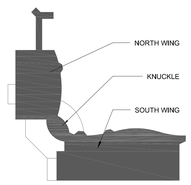
5 AV-200 TYP. TEACHING & COMPUTER LAB
SCALE: NTS TYP. FOR RMS 013, 103, 127, 214, 221, 243, 325, & 345

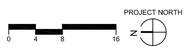


6 AV-200 TYP. TEACHING & COMPUTER LAB
SCALE: NTS TYP. FOR RMS 019 & 211



7 AV-200 CORRIDOR 026 SYSTEM
SCALE: NTS





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AV SYSTEMS
CONDUIT RISER DIAGRAMS

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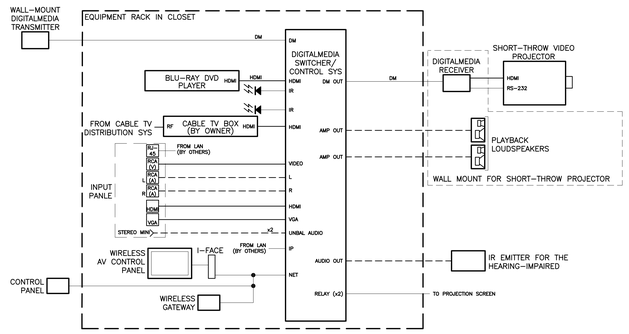
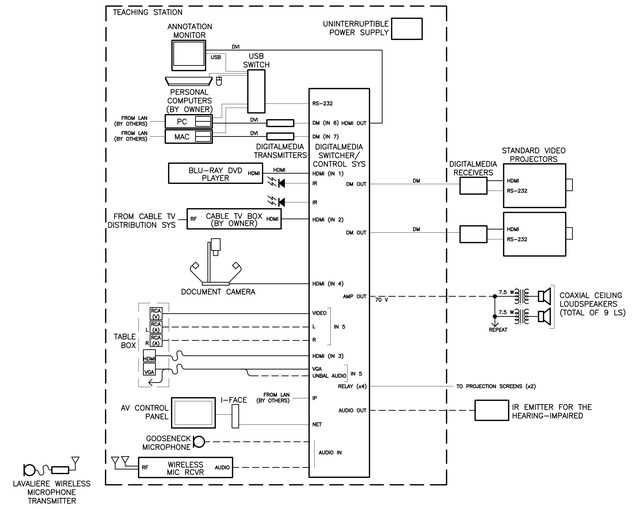


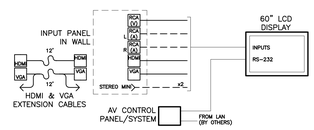
4 AV-300 FUNCTIONAL DIAGRAM – KNUCKLE LOUNGE 024

SCALE: NTS



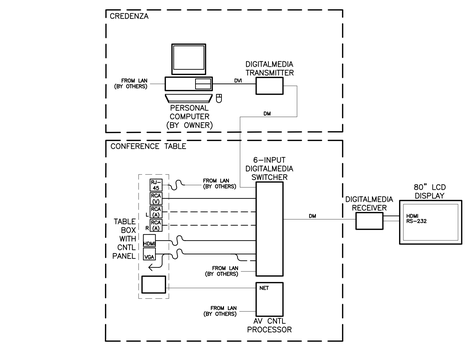
1 AV-300 FUNCTIONAL DIAGRAM – CLASSROOMS 210 & 222

SCALE: NTS



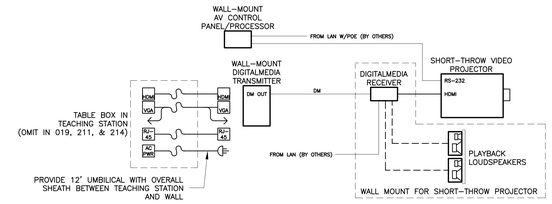
5 AV-300 FUNCTIONAL DIAGRAM – LOUNGE 048

SCALE: NTS



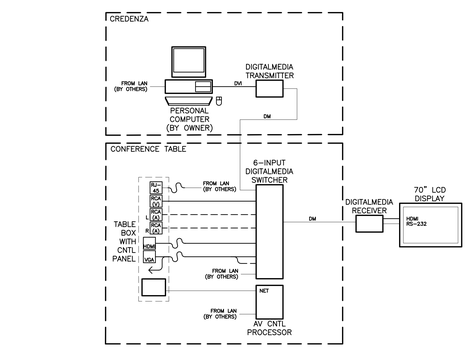
2 AV-300 FUNCTIONAL DIAGRAM – CONF/SEMINAR RM 319

SCALE: NTS



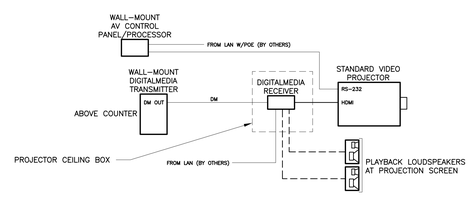
6 AV-300 FUNCTIONAL DIAGRAM –TEACHING & CMPTR LABS

SCALE: NTS (TYP. FOR LABS 013, 019, 103, 127, 214, 221, 243, 325, & 345)



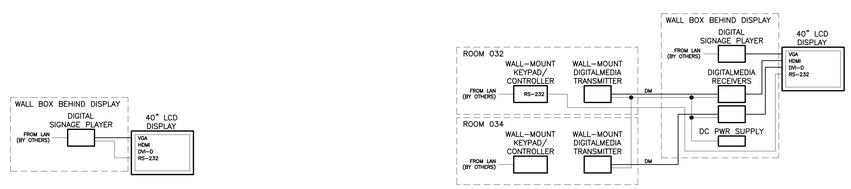
3 AV-300 FUNCTIONAL DIAGRAM – CONF/SEMINAR RM 212

SCALE: NTS



7 AV-300 FUNCTIONAL DIAGRAM –TEACHING LABS

SCALE: NTS (TYP. FOR LABS 124 & 211)

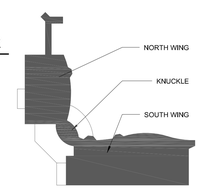


8 AV-300 FUNCTIONAL DIAGRAM – CORR 026 AT RM 051

SCALE: NTS

9 AV-300 FUNCTIONAL DIAGRAM – CORR 134

SCALE: NTS



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DRAWING TITLE: AV SYSTEMS FUNCTIONAL DIAGRAMS

DRAWING PREPARED BY: Acentech Inc. 33 Moulton Street Cambridge, MA 02138

PROJECT: SCSU ACADEMIC LABORATORY BUILDING

PROJ. NO.: BI-RS-283

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES

SHEET 2 of 2

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DESIGN BY:

APPROVED BY:

DRAWING NO.: AV300