LOCATION PLAN

NOT TO SCALE

DRAWING LIST

UNIVERSITY of RHODE ISLAND
CENTER FOR BIOTECHNOLOGY AND LIFE SCIENCES

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

120 FLAGG ROAD • KINGSTON, RHODE ISLAND 02881

30 APRIL 2021
ISSUED FOR: BIDDING and CONSTRUCTION

TLBA Project No: 2020.021
URI Project No: KC.G.CBLS.2020-001

TLB ARCHITECTURE, LLC • 92 WEST MAIN STREET • CHESTER, CONNECTICUT 06412
860· 526· 9448 FAX 860· 526· 9448

STRUCTURAL, MEP + FP ENGINEER:

BVH INTEGRATED SERVICES
206 WEST NEWBERRY RD
BLOOMFIELD, CT 06002
860 286 9171 FAX: 860 242 0236

REVISIONS:

	3/19/21	PERMIT REVIEW
1	3/29/21	OWNER'S REVIEW
2	4/30/21	BIDDING & CONSTRUCTION

APPLICABLE CODES

RHODE ISLAND FIRE SAFETY CODE EFFECTIVE JANUARY 1, 2013

RHODE ISLAND STATE BUILDING CODE SBC-01 EFFECTIVE AUGUST 1, 2019 INCORPORATING THE FOLLOWING: 1

- 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
- 2015 INTERNATIONAL BUILDING CODE (IBC)
- 2015 INTERNATIONAL PLUMBING CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE
- 2017 NATIONAL ELECTRIC CODE (NFPA 70)
- 2009 ICC / ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

IBC

OCCUPANCY CLASSIFICATION	IBC 302.1
BUILDING AND FLOOR: PROJECT AREA (CHANGE OF OCCUPANCY):	B (BUSINESS) & A-3 (ASSEMBLY) NON SEPARATED WITH ACCESSORY USE GROUP S-1 (STORAGE) B (BUSINESS)(304 / 307) - SCIENCE AND RESEARCH LABORATORIES
TYPE OF CONSTRUCTION	IBC 601 TYPE 1B (BASED ON PREVIOUS DNGS)
HEIGHT and AREA LIMITS	IBC TABLE 503
USE GROUP B / TYPE 1B	
TABULAR HEIGHT ALLOWED:	12 STORIES /180 FT
SPRINKLER INCREASE: (504.2)	1 STORY/ 20 FT
TOTAL HEIGHT ALLOWED	13 STORIES / 200 FT
ACTUAL HEIGHT ABOVE GRADE	6 STORIES/ 85 FT (EXISTING)
ACTUAL HEIGHT TO HIGHEST OCCUPIED FLOOR	58'
TABULAR AREA ALLOWED:	UNLIMITED
STREET FRONTAGE INCREASE	NOT CALCULATED FOR THIS PROJECT
SPRINKLER INCREASE	NOT CALCULATED FOR THIS PROJECT
TOTAL AREA ALLOWED	UNLIMITED
ACTUAL TOTAL BUILDING AREA:	127,673 SF (PER 2007 DRAWINGS)
AREA OF LARGEST OCCUPIED FLR (PLAZA LEVEL):	25,590 SF
ACTUAL AREA OF CONSTRUCTION	2,540 SF
TOTAL OCCUPANCY LOAD	IBC 1004.1
PLAZA LEVEL: SEE 4/G1.1	412 PERSONS
LEVEL 1 OCCUPANCY PER 2007 DRAWINGS	600 PERSONS
LEVEL 2 OCCUPANCY PER 2007 DRAWINGS	362 PERSONS
LEVEL 3 OCCUPANCY PER 2007 DRAWINGS	335 PERSONS
LEVEL 4 OCCUPANCY PER 2007 DRAWINGS	391 PERSONS
PENTHOUSE OCCUPANCY PER 2007 DRAWINGS	54 PERSONS
TOTAL BUILDING OCCUPANCY	2,154 PERSONS

CAPACITY OF EGRESS COMPONENTS	IBC 1005	
STAIRWAYS	.3"/PERSON	
OTHER EGRESS COMPONENTS	.2"/PERSON	
	DOORS MIN 32" CLEAR	
	STAIRS MIN 44" CLEAR	
	RAMPS MIN 44" CLEAR, (38" BETWEEN RAILS)	
	CORRIDORS MIN 44" CLEAR	
HANDICAPPED ACCESSIBILITY:	PROVIDED THROUGHOUT	
REQUIRED NUMBER OF EXITS:	2 per IEBC 805.3	
MAX TRAVEL DISTANCE	IBC (ALLOWED / PROVIDED)	
MAXIMUM TRAVEL DISTANCE ALLOWED	300'	
ACTUAL MAX. TRAVEL DISTANCE FROM PROJECT AREA	186' 1	
FIRE RESISTIVE CONSTRUCTION	TABLE 601/602 - 1B CONSTRUCTION	
	REQ. / PROVIDED	
FIRE SUPPRESSION SYSTEM	YES	
EXTERIOR WALLS		
LOAD BEARING:	2 HR	
NON-LOADBEARING	0 HR	
STRUCTURAL FRAME	2 HR	
INTERIOR WALLS		
LOAD BEARING	2 HR	
NON-LOADBEARING	0 HR	
FLOOR CONSTRUCTION	2 HR	
ROOF CONSTRUCTION	1 HR	
FIRE WALLS AND PARTY WALLS	N/A	
FIRE BARRIERS		
SHAFT ENCLOSURES	< 4 STORIES: 1 HR > 4 STORIES: 2HR	
EXIT ENCLOSURES	< 4 STORIES: 1 HR	> 4 STORIES: 2HR
EXIT PASSAGEWAY	MIN 1 HR	
CORRIDORS (1016.1)	0 HR SINCE EQUIP THROUGHOUT W/SPRINKLER SYST	
CLASS OF FINISHES REQ'D. (WALLS & CLGS.)	IBC TABLE 803.9	
VERTICAL EXITS & EXIT PASSAGEWAYS	CLASS B	
EXIT ACCESS CORR. & OTHER EXIT WAYS	CLASS C	
ROOMS & ENCLOSED SPACES	CLASS C	

15 CODE INFORMATION
NO SCALE

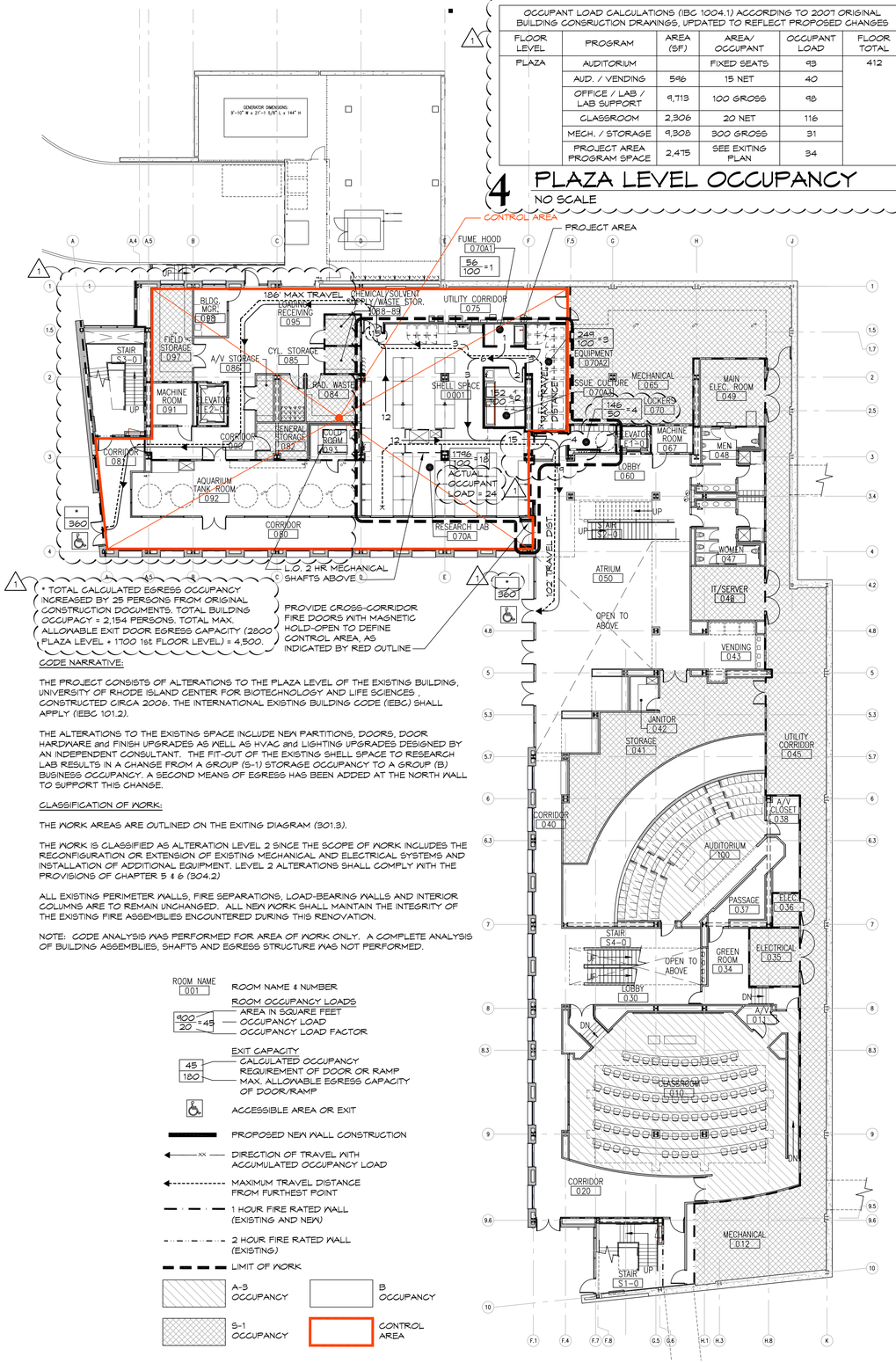
CONTROL AREAS (CA)		L0	L1	L2	L3	L4	L5
TABLE 414.2.2		FLOOR 1 BELOW GRADE	FLOOR 1	FLOOR 2	FLOOR 3	FLOOR 4	FLOOR 5
MAX # OF CONTROL AREAS per FLOOR		3	4	3	2	2	2
% of ALLOWABLE MATERIAL per CONTROL AREA		75%	100%	75%	50%	12½%	12½%
REQUIRE FIRE RATING AT CONTROL AREA							
	WALLS:	1 HOUR	1 HOUR	1 HOUR	1 HOUR	2 HOUR	2 HOUR
	FLOORS:	2 HOUR	2 HOUR	2 HOUR	2 HOUR	2 HOUR	2 HOUR
TABLE 307.1(1)							
SPRINKLER INCREASE		100%	100%	100%	100%	100%	100%
APPROVED CONTAINER INCREASE		100%	100%	100%	100%	100%	100%
ALLOWABLE QUANTITIES per CONTROL AREA (gallons, UON)							
COMBUSTIBLE LIQUIDS: CLASS	II	360	480	360	240	60	60
	IIIA	990	1320	990	660	165	165
	IIIB	NL	NL	NL	NL	NL	NL
FLAMMABLE LIQUIDS: CLASS	1A	90	120	90	60	15	15
	IB,C	360	480	360	240	60	60
OXIDIZERS (pounds)	4	1.5	2	1.5	1	½	½
	3	30	40	30	20	5	5
	2	750	1000	750	500	125	125
	1	6000	8000	6000	4000	1000	1000
CORROSIVE - SOLID (pounds)		3750	5000	3750	2500	625	625
CORROSIVE - LIQUID		375	500	375	250	62.5	62.5
HIGHLY TOXIC		3 (30 lbs.)	4 (40 lbs.)	3 (30 lbs.)	2 (20 lbs.)	½	½
TOXIC		150 gal 1500 lbs	200 gal 2000 lbs	150 gal 1500 lbs	100 gal 1000 lbs	25 gal 250 lbs	25 gal 250 lbs

NFPA 45 - LAB UNIT FIRE HAZARD CLASS C		NFPA 45 - LAB UNIT FIRE HAZARD CLASS D	
MAX. QUANTITIES OF FLAMMABLE OR COMBUSTIBLE MATERIALS PER LAB UNIT IN STORAGE CABINETS	300 GALS./4 GALS. PER 100 FT²	MAX. QUANTITIES OF FLAMMABLE OR COMBUSTIBLE MATERIALS PER LAB UNIT IN STORAGE CABINETS	150 GALS./2 GALS. PER 100 FT²
MAX. QUANTITIES OF FLAMMABLE OR COMBUSTIBLE MATERIALS NOT IN STORAGE CABINETS PER LAB UNIT	150 GALS./2 GALS. PER 100 FT²	MAX. QUANTITIES OF FLAMMABLE OR COMBUSTIBLE MATERIALS NOT IN STORAGE CABINETS PER LAB UNIT	75 GALS./1 GALS. PER 100 FT²
REQUIRED LAB UNIT FIRE SEPARATION: TABLE 5.1.1	NOT REQUIRED / 1 HOUR PROVIDED.	REQUIRED LAB UNIT FIRE SEPARATION: TABLE 5.1.1	NOT REQUIRED / 1 HOUR PROVIDED.

13 CONTROL AREA MAXIMUM QUANTITIES of CHEMICALS
NO SCALE

OCCUPANT LOAD CALCULATIONS (IBC 1004.1) ACCORDING TO 2007 ORIGINAL BUILDING CONSRUCTION DRAWINGS, UPDATED TO REFLECT PROPOSED CHANGES					
FLOOR LEVEL	PROGRAM	AREA (SF.)	AREA/ OCCUPANT	OCCUPANT LOAD	FLOOR TOTAL
PLAZA	AUDITORIUM		FIXED SEATS	93	412
	AUD. / VENDING	596	15 NET	40	
	OFFICE / LAB / LAB SUPPORT	9,713	100 GROSS	98	
	CLASSROOM	2,306	20 NET	116	
	MECH. / STORAGE	9,308	300 GROSS	31	
	PROJECT AREA PROGRAM SPACE	2,475	SEE EXITING PLAN	34	

4 PLAZA LEVEL OCCUPANCY
NO SCALE



1 * TOTAL CALCULATED EGRESS OCCUPANCY INCREASED BY 25 PERSONS FROM ORIGINAL CONSTRUCTION DOCUMENTS. TOTAL BUILDING OCCUPACY = 2,154 PERSONS. TOTAL MAX. ALLOWABLE EXIT DOOR EGRESS CAPACITY (2800 PLAZA LEVEL + 1100 1st FLOOR LEVEL) = 4,500.

PROVIDE CROSS-CORRIDOR FIRE DOORS WITH MAGNETIC HOLD-OPEN TO DEFINE CONTROL AREA, AS INDICATED BY RED OUTLINE

CODE NARRATIVE:

THE PROJECT CONSISTS OF ALTERATIONS TO THE PLAZA LEVEL OF THE EXISTING BUILDING, UNIVERSITY OF RHODE ISLAND CENTER FOR BIOTECHNOLOGY AND LIFE SCIENCES , CONSTRUCTED CIRCA 2006. THE INTERNATIONAL EXISTING BUILDING CODE (IEBC) SHALL APPLY (IEBC 101.2).

THE ALTERATIONS TO THE EXISTING SPACE INCLUDE NEW PARTITIONS, DOORS, DOOR HARDWARE and FINISH UPGRADES AS WELL AS HVAC and LIGHTING UPGRADES DESIGNED BY AN INDEPENDENT CONSULTANT. THE FIT-OUT OF THE EXISTING SHELL SPACE TO RESEARCH LAB RESULTS IN A CHANGE FROM A GROUP (S-1) STORAGE OCCUPANCY TO A GROUP (B) BUSINESS OCCUPANCY. A SECOND MEANS OF EGRESS HAS BEEN ADDED AT THE NORTH WALL TO SUPPORT THIS CHANGE.

CLASSIFICATION OF WORK:

THE WORK AREAS ARE OUTLINED ON THE EXITING DIAGRAM (301.3).

THE WORK IS CLASSIFIED AS ALTERATION LEVEL 2 SINCE THE SCOPE OF WORK INCLUDES THE RECONFIGURATION OR EXTENSION OF EXISTING MECHANICAL AND ELECTRICAL SYSTEMS AND INSTALLATION OF ADDITIONAL EQUIPMENT. LEVEL 2 ALTERATIONS SHALL COMPLY WITH THE PROVISIONS OF CHAPTER 5 & 6 (304.2)

ALL EXISTING PERIMETER WALLS, FIRE SEPARATIONS, LOAD-BEARING WALLS AND INTERIOR COLUMNS ARE TO REMAIN UNCHANGED. ALL NEW WORK SHALL MAINTAIN THE INTEGRITY OF THE EXISTING FIRE ASSEMBLIES ENCOUNTERED DURING THIS RENOVATION.

NOTE: CODE ANALYSIS WAS PERFORMED FOR AREA OF WORK ONLY. A COMPLETE ANALYSIS OF BUILDING ASSEMBLIES, SHAFTS AND EGRESS STRUCTURE WAS NOT PERFORMED.

ROOM NAME 001 — ROOM NAME & NUMBER

ROOM OCCUPANCY LOADS
900 / 20 = 45 — AREA IN SQUARE FEET / OCCUPANCY LOAD / OCCUPANCY LOAD FACTOR

EXIT CAPACITY
45 / 180 — CALCULATED OCCUPANCY / REQUIREMENT OF DOOR OR RAMP / MAX. ALLOWABLE EGRESS CAPACITY OF DOOR/RAMP

ACCESSIBLE AREA OR EXIT

PROPOSED NEW WALL CONSTRUCTION

xx — DIRECTION OF TRAVEL WITH ACCUMULATED OCCUPANCY LOAD

MAXIMUM TRAVEL DISTANCE FROM FURTHEST POINT

1 HOUR FIRE RATED WALL (EXISTING AND NEW)

2 HOUR FIRE RATED WALL (EXISTING)

LIMIT OF WORK

A-3 OCCUPANCY

B OCCUPANCY

S-1 OCCUPANCY

CONTROL AREA

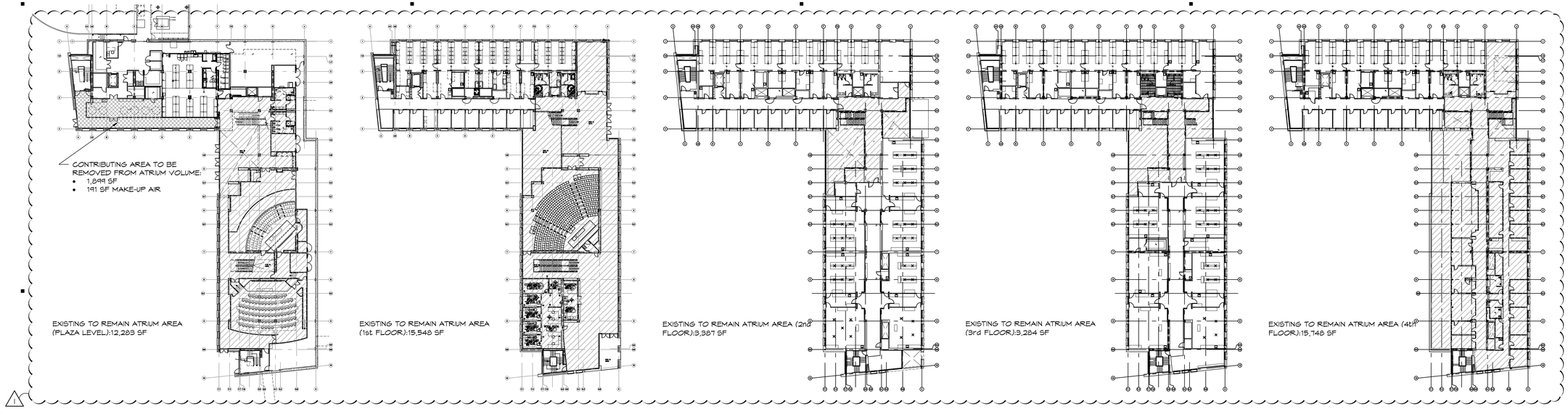
5 PLAZA LEVEL EXITING PLAN, LEGEND AND NOTES
SCALE: 1/16" = 1'-0"

TLBA
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: AMR
CHECKED: PDT
ISSUED FOR:
BIDDING and CONSTRUCTION REVISIONS:
1 4/19/21 PLAN REVIEW RESPONSE
2 4/30/21 BIDDING & CONSTRUCTION

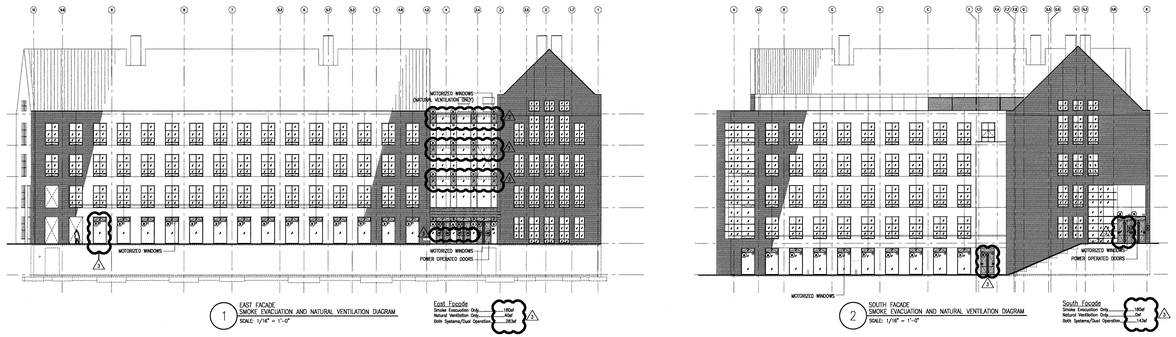
G1.1
CODE INFORMATION



Ⓟ PLAZA LEVEL KEY PLAN ① 1st FLOOR KEY PLAN ② 2nd FLOOR KEY PLAN ③ 3rd FLOOR KEY PLAN ④ 4th FLOOR KEY PLAN

15 FLOOR PLAN DIAGRAMS - ATRIUM VOLUME CALCULATIONS

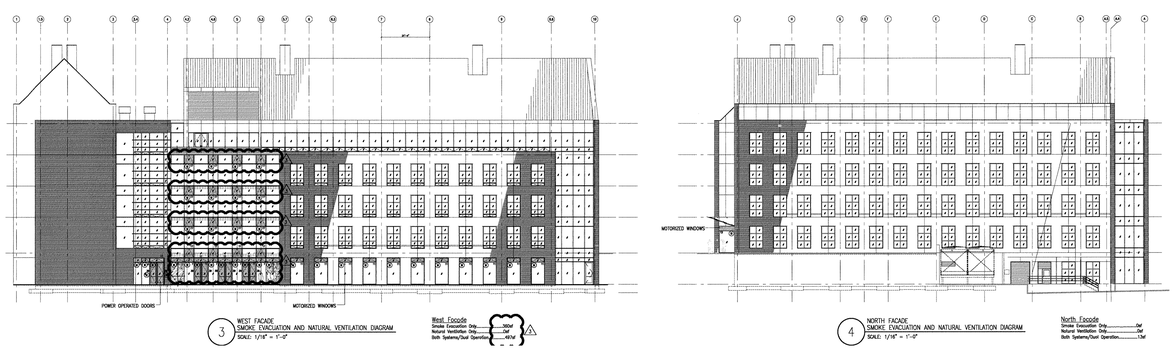
SCALE: 1:40



1 EAST FACADE SMOKE EVACUATION AND NATURAL VENTILATION DIAGRAM
SCALE: 1/16" = 1'-0"

2 SOUTH FACADE SMOKE EVACUATION AND NATURAL VENTILATION DIAGRAM
SCALE: 1/16" = 1'-0"

Building Totals
Smoke Evacuation Only..... 720sf
Natural Ventilation Only..... 40sf
Both Systems/Dual Operation..... 839sf
Smoke Total..... 1559sf (1500 required)
Natural Ventilation Total..... 879sf (600 required)



3 WEST FACADE SMOKE EVACUATION AND NATURAL VENTILATION DIAGRAM
SCALE: 1/16" = 1'-0"

4 NORTH FACADE SMOKE EVACUATION AND NATURAL VENTILATION DIAGRAM
SCALE: 1/16" = 1'-0"

13 ORIGINAL CONSTRUCTION SMOKE EVACUATION / NATURAL VENTILATION DIAGRAMS

NTS

(PAYETTE DWG G0.24 REV 3 DATED 3.05.07 FOR REFERENCE)

SMOKE CONTROLLED VOLUME - ATRIUM

CONTRIBUTING AREA TO BE REMOVED FROM SMOKE CONTROLLED VOLUME

3 LEGEND

NO SCALE

FANS F13 - F18:
- COOK TUBSC, HIGH TEMP. UPBLAST EXHAUST VENTILATOR
- 50,000 CFM EACH (300,000 CFM TOTAL)

2 FAN DATA (EXISTING TO REMAIN)

NO SCALE

1 THE EXISTING SMOKE MANAGEMENT SYSTEM IS A MECHANICAL EXHAUST SYSTEM COMPRISED OF SIX (6) 50,000 CFM ROOF-MOUNTED EXHAUST FANS AND MECHANICALLY OPERATED VENTED OPENINGS IN THE BUILDING FACADE. THE SYSTEM IS MOTORIZED AND CONTROLLED THROUGH THE FIRE ALARM CONTROL PANEL (FACP) LOCATED AT THE PLAZA LEVEL. THE EXISTING ATRIUM SPACE, WHICH CONTRIBUTES TO THE SMOKE-CONTROLLED VOLUME INCLUDES LARGE PORTIONS OF THE SOUTH WING AS SHOWN IN THE DIAGRAMS ABOVE (16/G1.2), ACCORDING TO THE AS-BUILT DOCUMENTATION FROM THE ORIGINAL BUILDING CONSTRUCTION. IN ORDER TO ADDRESS CHEMICAL CONTROL AREA & FIRE SEPARATION REQUIREMENTS AT THE PLAZA LEVEL, CORRIDOR 080 and TANK ROOM 092 WILL NO LONGER CONTRIBUTE TO THE ATRIUM VOLUME, REDUCING THE SMOKE-CONTROLLED VOLUME BY 20,626 CF AND REDUCING THE MAKE-UP OPENINGS BY 191 SF.

2 ADJUSTMENTS TO CONTROL SEQUENCE MAY BE REQUIRED AS THE EXHAUST FANS AT FULL CAPACITY MAY RESULT IN MAKE-UP AIR VELOCITY IN EXCESS OF 200 FT/MIN (NFPA 92, 4.4.4). REFER TO THE BENCHMARKING REQUIREMENTS AND FUNCTIONAL TESTING PROCEDURES OUTLINED IN THE COMMISSIONING SPECIFICATIONS, SECTIONS 019113 and 230800 FOR PRE AND POST CONSTRUCTION TESTING REQUIREMENTS.

1 SMOKE CONTROL NARRATIVE

NO SCALE

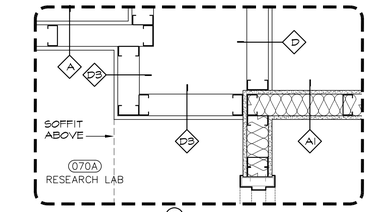
TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9220

RYAN INSTITUTE LABORATORY PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: PDT
CHECKED: MPF
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 4/8/21 PLAN REVIEW RESPONSE
2 4/30/21 BIDDING & CONSTRUCTION

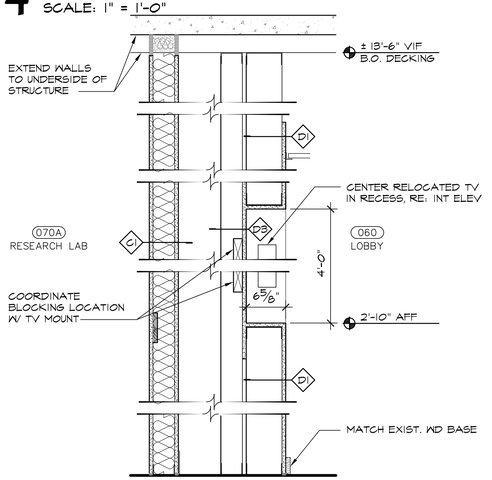
G1.2

SMOKE EVACUATION



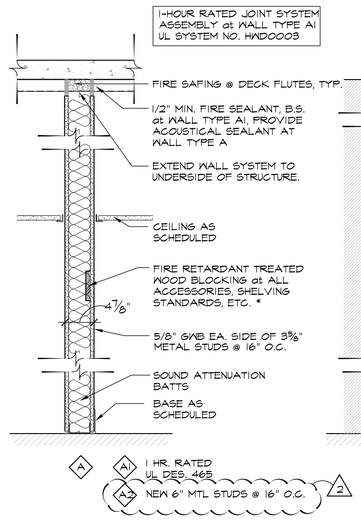
14 PLAN DTL at 1 HR FR WALLS

SCALE: 1" = 1'-0"



13 SECTION DETAIL

SCALE: 1" = 1'-0"



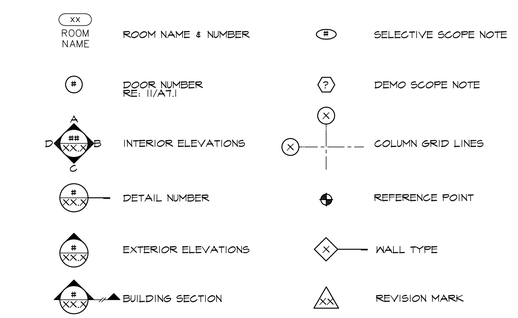
11 WALL TYPES

SCALE: 1" = 1'-0"

9 ABBREVIATIONS

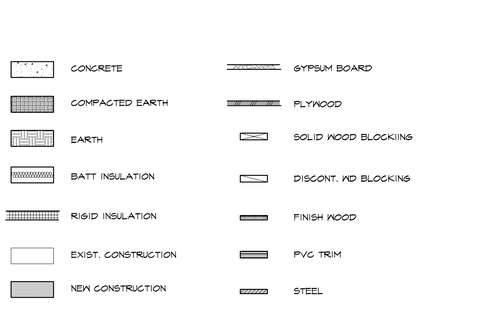
NO SCALE

ABV	ABOVE
ACOUST	ACOUSTICAL
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
APPROX	APPROXIMATE
ASSOC	ASSOCIATION
BARR	BARRIER
B.O.	BY OWNER
BD	BOARD
BIT	BITUMINOUS
BLDG	BUILDING
CL	CHAIN LINK
CLR	CLEAR
CLG	CEILING
CLOS	CLOSET
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
CMU	CONCRETE MASONRY UNIT
CPT	CARPET
DF	DRINKING FOUNTAIN
DIST	DISTANCE
DN	DOWN
DR	DOOR
DTL.	DETAIL
DWGS	DRAWINGS
EA	EACH
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
ELEV	ELEVATION
EQ	EQUAL
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FA	FIRE ALARM
FBRGLS	FIBERGLASS
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FD	FLOOR DRAIN
FDC	FIRE DEPT. CONNECTION
FC	FIRE CODE
FFEL	FINISHED FLOOR ELEVATION
FIN	FINISH
FL/FLR	FLOOR
F.O.	FACE OF
FNDTN	FOUNDATION
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GD	GREASE DUCT
GL	GLASS
GYP	GYPSUM
GWB	GYPSUM WALL BOARD
GL	GLASS
HARDBD	HARDBOARD
HCA	HANDICAPPED ACCESSIBLE
HM	HOLLOW METAL
HNDRL	HANDRAIL
HR	HOUR
HRDWR	HARDWARE
INSUL	INSULATION
JTS	JOINTS
K.S.	KICK SPACE
L.C.C.	LEAD COATED COPPER
LT	LIGHT
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MTL	METAL
M.R.	MOISTURE RESISTANT
NIC	NOT IN CONTRACT
OC	ON CENTER
P.LAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
POLY	POLYETHYLENE
PRE-FAB	PREFABRICATED
PRE-FIN	PRE-FINISHED
PRE-MANF	PRE-MANUFACTURED
PROV	PROVIDE
PT	PRESERVATIVE TREATED
PTD	PAINTED
REINF	REINFORCEMENT
REQ'D	REQUIRED
RLGS	RAILINGS
RM	ROOM
RWL	RAINWATER LEADER
SCHED.	SCHEDULE
SPEC.	SPECIFICATIONS
S.STL	STAINLESS STEEL
ST	STORAGE
STRUCT	DECK
SUSP	SUSPENDED
T&G	TONGUE AND GROOVE
T.O.	TOP OF
TLT	TOILET
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
U/S	UNDERSIDE
VEST	VESTIBULE
VIF	VERIFY IN FIELD
W/	WITH
WD	WOOD
WNDW	WINDOW
WWF	WELDED WIRE FABRIC



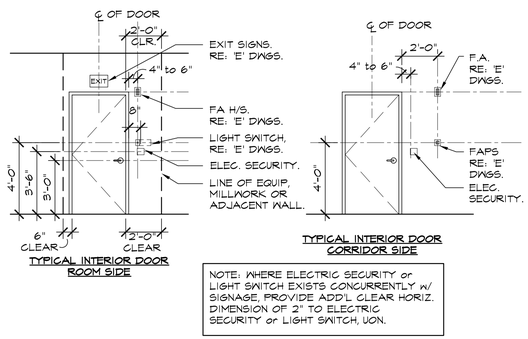
6 SYMBOLS LEGEND

NO SCALE



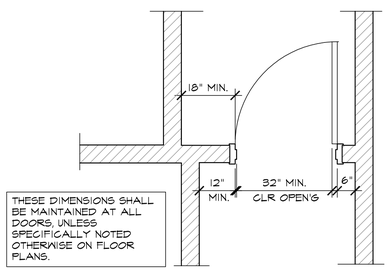
2 MATERIALS LEGEND

NO SCALE



5 TYP. MOUNTING HTS at DOORS

1/4" = 1'-0"



1 TYP. CLEARANCES AND OFFSETS

1/2" = 1'-0"

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	AWR
CHECKED:	PDT

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

G1.3

GENERAL INFORMATION

STRUCTURAL GENERAL NOTES

GENERAL

1. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND DETAILS.

2. STRUCTURAL CONDITIONS WHERE SECTIONS OR DETAILS ARE CUT SHALL ALSO APPLY TO COMPARABLE SIMILAR LOCATIONS ELSEWHERE ON THE PLANS REGARDLESS IF THE SECTION MARK IS NOT INDICATED. DETAILS SHOWN APPLY TO ALL SIMILAR CONDITIONS UNLESS OTHERWISE NOTED. DO NOT SCALE DRAWINGS.

3. CONTRACTOR SHALL VERIFY AND COORDINATE THE DIMENSIONS, LAYOUT AND DETAILS OF ALL OPENINGS, PENETRATIONS, SLEEVES, SLAB DEPRESSIONS, DRAINS, EQUIPMENT PADS, BLOCKOUTS, SLOPED SLABS, ETC. CONTRACTOR SHALL REVIEW ALL OF THE CONTRACT DOCUMENTS AND CONSULT WITH THE SUBCONTRACTORS AND SUPPLIERS TO OBTAIN THE REQUIRED INFORMATION. OPENINGS, PENETRATIONS, SLEEVES, SLAB DEPRESSIONS, DRAINS, EQUIPMENT PADS, BLOCKOUTS, SLOPED SLABS, ETC. THAT VARY FROM OR HAVE NOT BEEN INDICATED ON THE STRUCTURAL DOCUMENTS, SHALL BE INSTALLED AT NO ADDITIONAL COST, ONLY AFTER APPROVAL BY THE STRUCTURAL ENGINEER HAS BEEN OBTAINED.

EXISTING CONDITIONS

1. PRIOR TO BEGINNING OF ANY NEW WORK CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, ELEVATIONS, QUANTITIES, ETC, IN THE FIELD. NOTIFY ENGINEER/ARCHITECT OF ANY DISCREPANCIES FOUND IMMEDIATELY.

2. EXISTING CONDITIONS DEPICTED IN THESE CONTRACT DOCUMENTS IS BASED UPON ORIGINAL DESIGN STRUCTURAL DRAWINGS BY SIMPSON, GUMPERTZ & HEGER DATED 03-05-2007. EXISTING CONDITIONS MAY VARY FROM WHAT IS SHOWN IN THESE CONTRACT DOCUMENTS.

CODES

1. ALLOWABLE UNIT STRESSES AND DESIGN CRITERIA IN ACCORDANCE WITH THE FOLLOWING -

A) '2019 RHODE ISLAND BUILDING CODE'.

B) 'MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES', ASCE/SEI 7-10.

C) 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE', ACI 318-14.

DESIGN CRITERIA (NEW WORK ONLY)

1. LIVE LOADS:

   FLOOR:

   - SLAB ON GRADE 100 PSF

CONCRETE

1. ANY CHANGES IN DIMENSIONS OR DETAILS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW. ALL EXISTING CONSTRUCTION AND UTILITIES SHALL BE SAFEGUARDED AND PROCTECTED FROM DAMAGE OR SETTLEMENT DURING EXCAVATION AND CONSTRUCCTION. ALL DIMENSIONS AND DETAILS RELATING TO THE EXISTING CONSTRUCTION SHOWN ONTHE DRAWINGS SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

2. ALL CONCRETE REINFORCING SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH ACI PROCEDURES AND THE REQUIREMENTS OF THE CODES IN THE PREVIOUSLY OUTLINED "CODES" SECTION AND THE 'MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES', ACI-315.

3. CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING CONSTRUCTION JOINTS, OPENINGS, REINFORCING SIZES, SPACING AND PLACEMENT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. UNCHECKED SHOP DRAWINGS WILL BE REJECTED WITHOUT REVIEW.

4. ALL WELDED WIRE FABRIC SHALL BE LAPPED TWO (2)-FULL MESH PANELS AND TIED SECURELY.

5. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.

6. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL PARTITIONS, FLOOR FINISHES, FLOOR DEPRESSIONS AND CURBS. COORDINATE SIZE AND LOCATION OF EQUIPMENT PADS WITH MECHANICAL AND ELECTRICAL CONTRACTORS.

7. SLABS ON GRADE SHALL NOT CONTAIN ANY CONDUITS, PIPING, OR OTHER BUILDING SYSTEMS.

8. ANY TRADE CONTRACTOR INSTALLING CORES IN EXISTING OR NEW CONCRETE SLABS SHALL SUBMIT A DETAILED CORE LOCATION PLAN INDICATING LOCATIONS AND SIZES OF ALL PROPOSED CORES. ALLOW A MINIMUM OF TWO WEEKS FOR REVIEW AND COORDINATION BY THE DESIGN TEAM FOR EACH SUBMISSION. TRADE CONTRACTORS SHALL ADJUST CORE LOCATIONS (AT NO ADDITIONAL COST TO THE OWNER) AS REQUESTED BY THE STRUCTURAL ENGINEER OF RECORD TO AVOID NEGATIVELY IMPACTING THE BUILDING STRUCTURE. ALL CORES SHALL HAVE A MINIMUM CLEAR SPACING OF 12" O/C UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.

9. REFER TO SECTION 033000 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

E:\Revit\Local Files\URI CBLS Lab Renovation (21-21-013) (18)\2121013 - URI CBLS Laboratory Renovation - BVH STR R18 (APR).rvt

STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUND	K	KIP(S)
&	AND	L	ANGLE
		LG	LIGHT GAGE FRAMING
@	AT	LL	LIVE LOAD
		LLH	LONG LEG HORIZONTAL
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL	LLV	LONG LEG VERTICAL
		LSH	LONG SIDE HORIZONTAL
		LSV	LONG SIDE VERTICAL
AFF	ABOVE FINISHED FLOOR		
ARCH	ARCHITECTURAL/ARCHITECT	MAX	MAXIMUM
AVG	AVERAGE	MECH	MECHANICAL
		MFR	MANUFACTURER
B/S	BOTH SIDES	MIN	MINIMUM
BF	BRACE FRAME	MISC	MISCELLANEOUS
BFE	BOTTOM OF FOOTING ELEVATION	MO	MASONRY OPENING
BLDG	BUILDING		
BM	BEAM	NTS	NOT TO SCALE
BOT	BOTTOM		
		O/C	ON CENTER
C	CHANNEL	OD	OUTSIDE DIAMETER
CANT	CANTILEVER	OF	OUTSIDE FACE
CFMF	COLD-FORMED METAL FRAMING	OH	OPPOSITE HAND
CJ	CONTROL JOINT	OPP	OPPOSITE
CL	CENTER LINE		
CLR	CLEAR	P	CONCRETE PIER
CMU	CONCRETE MASONRY UNIT	PAF	POWDER ACTUATED FASTENER
CO	UNDERDRAIN CLEANOUT	PEN	PENETRATION
COL	COLUMN	PIA	POST-INSTALLED ANCHOR
CONC	CONCRETE	PL	PLATE
CONST	CONSTRUCTION		
CONT	CONTINUOUS	QTY	QUANTITY
COORD	COORDINATE		
		R	REACTION
DEMO	DEMOLITION	RAD	RADIUS
DIA	DIAMETER	RD	ROOF DRAIN
DIAG	DIAGONAL	REINF	REINFORCEMENT
DIM	DIMENSION	REQ'D	REQUIRED
DL	DEAD LOAD	RL	ROOF DRAIN LEADER
DOF	DECK OPENING FRAME	RTU	ROOF TOP UNIT
DWGS	DRAWINGS		
		SDL	SUPERIMPOSED DEAD LOAD
EA	EACH	SECT	SECTION
EE	EACH END	SF	SQUARE FOOT
EF	EACH FACE	SIM	SIMILAR
EJ	EXPANSION JOINT	SJ	SEISMIC JOINT
EL	ELEVATION	SL	SLOPE
ELEC	ELECTRICAL	SOG	SLAB ON GRADE
EOS	EDGE OF SLAB	SPEC	SPECIFICATION
EQ	EQUAL	STR	STRUCTURAL
EW	EACH WAY		
EX	EXISTING	T&B	TOP AND BOTTOM
EXT	EXTERIOR	T/SLAB	TOP OF SLAB ELEVATION
		TCE	TOP OF CONCRETE ELEVATION
FD	FLOOR DRAIN	TGE	TOP OF GRADE BEAM ELEVATION
FDN	FOUNDATION	TPC	TOP OF PILE CAP ELEVATION
FF	FINISHED FLOOR	TPE	TOP OF PIER ELEVATION
FL	FLANGE	TPL	TOP OF PLANK ELEVATION
FS	FOOTING STEP	TSE	TOP OF SHELF ELEVATION
FT	FOOT/FEET	TWE	TOP OF WALL ELEVATION
FTG	FOOTING	TYP	TYPICAL
GALV	GALVANIZED	UON	UNLESS OTHERWISE NOTED
GR	GRADE		
		VERT	VERTICAL
HORIZ	HORIZONTAL	VIF	VERIFY IN FIELD
HSS	HOLLOW STRUCTURAL SECTIONS		
		W	WIDE FLANGE
ID	INSIDE DIAMETER	W/	WITH
IN	INCH(ES)	W/O	WITHOUT
INT	INTERIOR	WP	WORKING POINT
INV	INVERT	WWF	WELDED WIRE FABRIC

CLEAR COVER FOR REINFORCING (UNLESS OTHERWISE NOTED)		
A)	CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3 INCHES
B)	FORMED CONCRETE EXPOSED TO GROUND OR WEATHER -	
	#6 AND LARGER	2 INCHES
	#5 AND SMALLER	1 1/2 INCHES
C)	BEAMS AND COLUMNS NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND (PRIMARY REINFORCING, TIES AND STIRRUPS)	1 1/2 INCHES
D)	STRUCTURAL SLABS, WALLS AND JOISTS NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	3/4 INCHES

STRUCTURAL DRAWING LIST

Grand total: 3

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

"ANY ALTERATIONS TO THIS DRAWING MADE WITHOUT THE EXPRESSED WRITTEN APPROVAL OF TLB ARCHITECTURE, LLC WILL NEITHER HAVE NOR ACCEPT ANY LIABILITY OR LEGAL EXPOSURE ARISING FROM SAID UNAUTHORIZED ALTERATIONS."

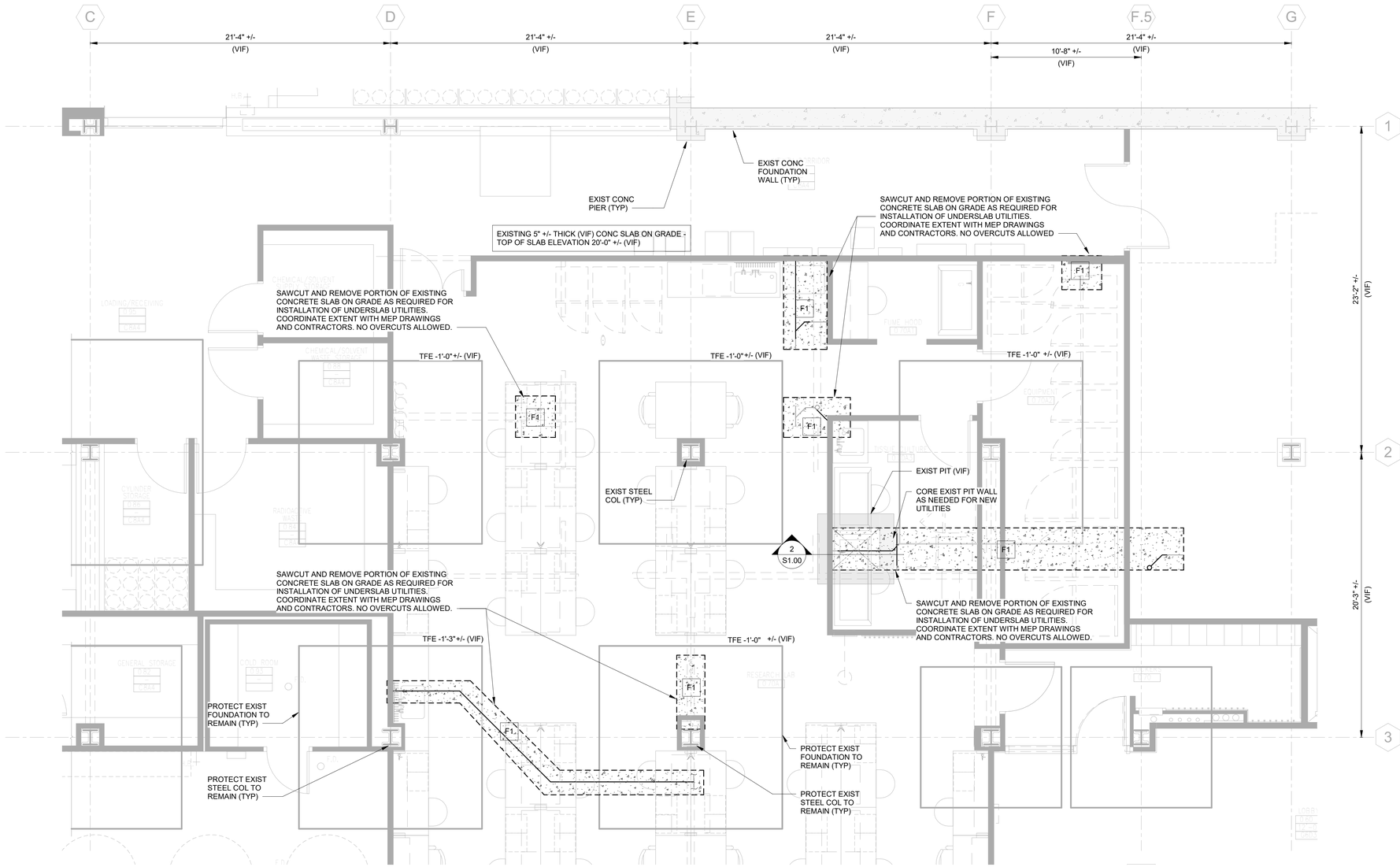
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	APR
CHECKED:	MA

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

S0.01

GENERAL NOTES, ABBREVIATIONS AND DRAWING LIST



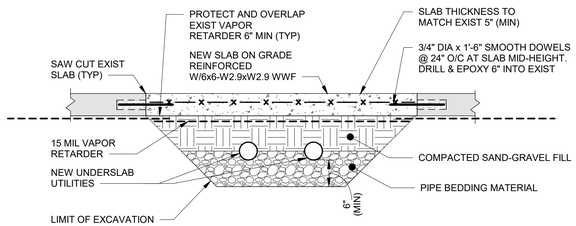
SLAB ON GRADE PLAN

1/4" = 1'-0"

NOTES:

1. TOP OF NEW SLAB ON GRADE TO MATCH EXISTING.
2. TOP OF EXISTING FOUNDATIONS IS NOTED BY (-...) INDICATING THE DISTANCE RELATIVE TO THE TOP OF SLAB ON GRADE.
3. PROVIDE SAWN CUT CONTROL JOINTS IN CONCRETE INFILL TO MATCH EXISTING SLAB CONTROL JOINT LOCATIONS.

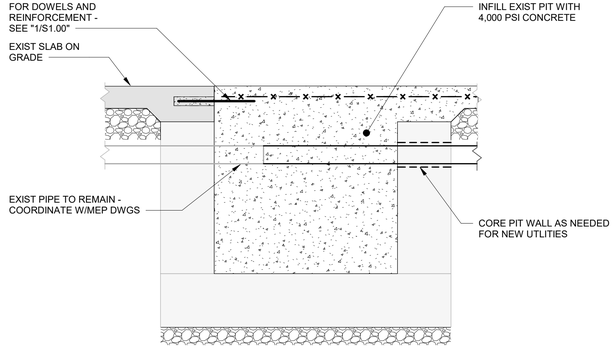
SLAB ON GRADE SYMBOL LEGEND	
F1	INDICATES 5" (MININMUM, MATCH EXISTING (VIF)) CONCRETE SLAB PLACED OVER A VAPOR RETARDER, REINFORCED WITH 6x6-W2 9xW2.9 WWF, PLACED ON 3" HIGH x 4"x4" CONCRETE BLOCKS SPACED AT 3'-0" O/C. PLACE 6" MINIMUM OF COMPACTED SAND-GRAVEL BASE BENEATH VAPOR RETARDER. COORDINATE SLAB PITCH AND DRAIN LOCATION WITH ARCHITECTURAL AND PLUMBING DRAWINGS.



1. COORDINATE TRENCH LOCATIONS AND EXTENT WITH TRADES REQUIRING TRENCHES.
2. IF EDGE OF TRENCH OCCURS 3'-0 LESS FROM EXISTING SLAB CONSTRUCTION/CONTROL JOINT, REMOVE AND REPLACE SLAB TO THE JOINT. VERIFY IN FIELD.
3. PROVIDE (1)-#5 x 4'-0" LONG DIAGONAL IN CONCRETE SLABS AT ALL RE-ENTRY CORNERS

1 S1.00 TYPICAL UTILITY TRENCH

NOT TO SCALE



2 S1.00 EXIST PIT INFILL DETAIL

3/4" = 1'-0"

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

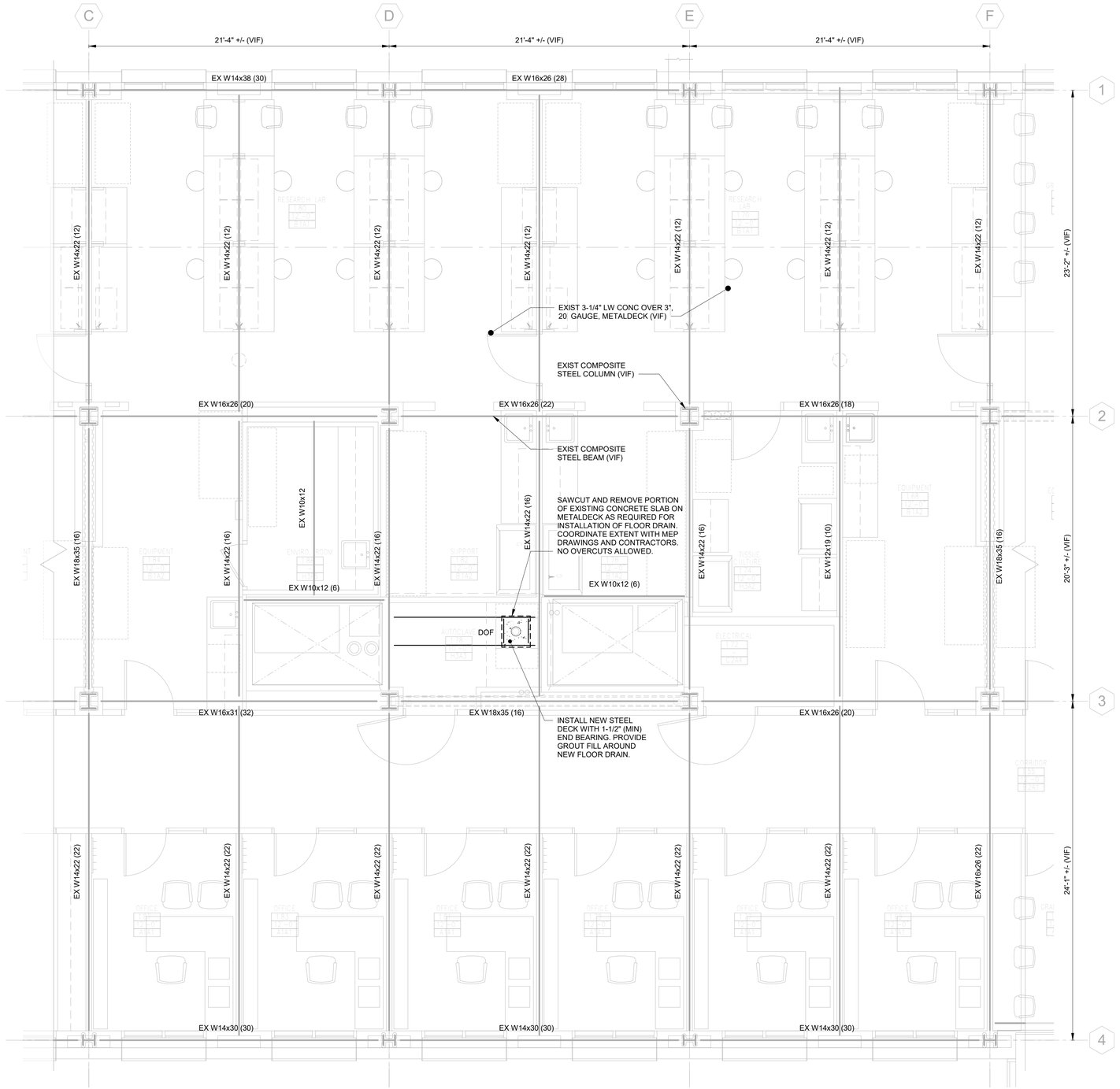
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	APR
CHECKED:	MA
ISSUED FOR:	BIDDING and CONSTRUCTION
REVISIONS:	
1	3/29/21 OWNER'S REVIEW
2	4/30/21 BIDDING & CONSTRUCTION

S1.00

SLAB ON GRADE PLAN

E:\Revit\Local Files\URI CBLS Lab Renovation (21-21-013) (18)\2121013 - URI CBLS Laboratory Renovation - BVH STR R18 (APR).rvt



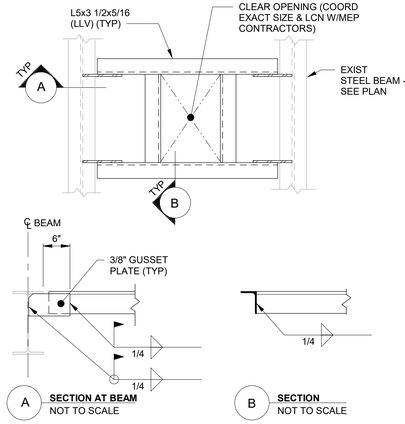
FIRST FLOOR FRAMING PLAN

1/4" = 1'-0"

NOTES:

1. RE-PATCH FIREPROOFING AT EXISTING BEAMS AFTER INSTALLATION OF NEW FRAMING.
2. CONTRACTOR TO VERIFY ALL CONDITIONS, DIMENSIONS, ELEVATIONS, QUANTITIES ETC. IN THE FIELD PRIOR TO THE BEGINNING IF ANY NEW CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES FOUND IMMEDIATELY.
3. BEAM END CONNECTIONS SHALL BE SELECTED AND DETAILED FOR 1.25 TIMES THE REACTIONS INDICATED ON PLAN. END CONNECTIONS ON BEAMS DESIGNATED <WXXxYY> SHALL BE SELECTED AND DETAILED FOR A MINIMUM OF 6 KIPS.

FLOOR FRAMING PLAN SYMBOL LEGEND	
⟷	INDICATES DIRECTION OF SPAN OF COMPOSITE CONCRETE FLOOR SLAB. STRUCTURAL SLAB TO BE 3-1/4" NORMAL WEIGHT CONCRETE OVER 3", 20 GAGE GALVANIZED METAL DECK (NOMINAL THICKNESS = 0.0358") REINFORCED WITH 6x6-W2.9xW2.9 WWF.



1. SLAB NOT SHOWN FOR CLARITY.

1 S2.00 TYPICAL DECK OPENING FRAME INTO EXISTING CONDITIONS

3/4" = 1'-0"

E:\Revit\Local Files\URI CBLS Lab Renovation (21-21-013) (18)\2121013 - URI CBLS Laboratory Renovation - BVH STR R18 (APR).rvt

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

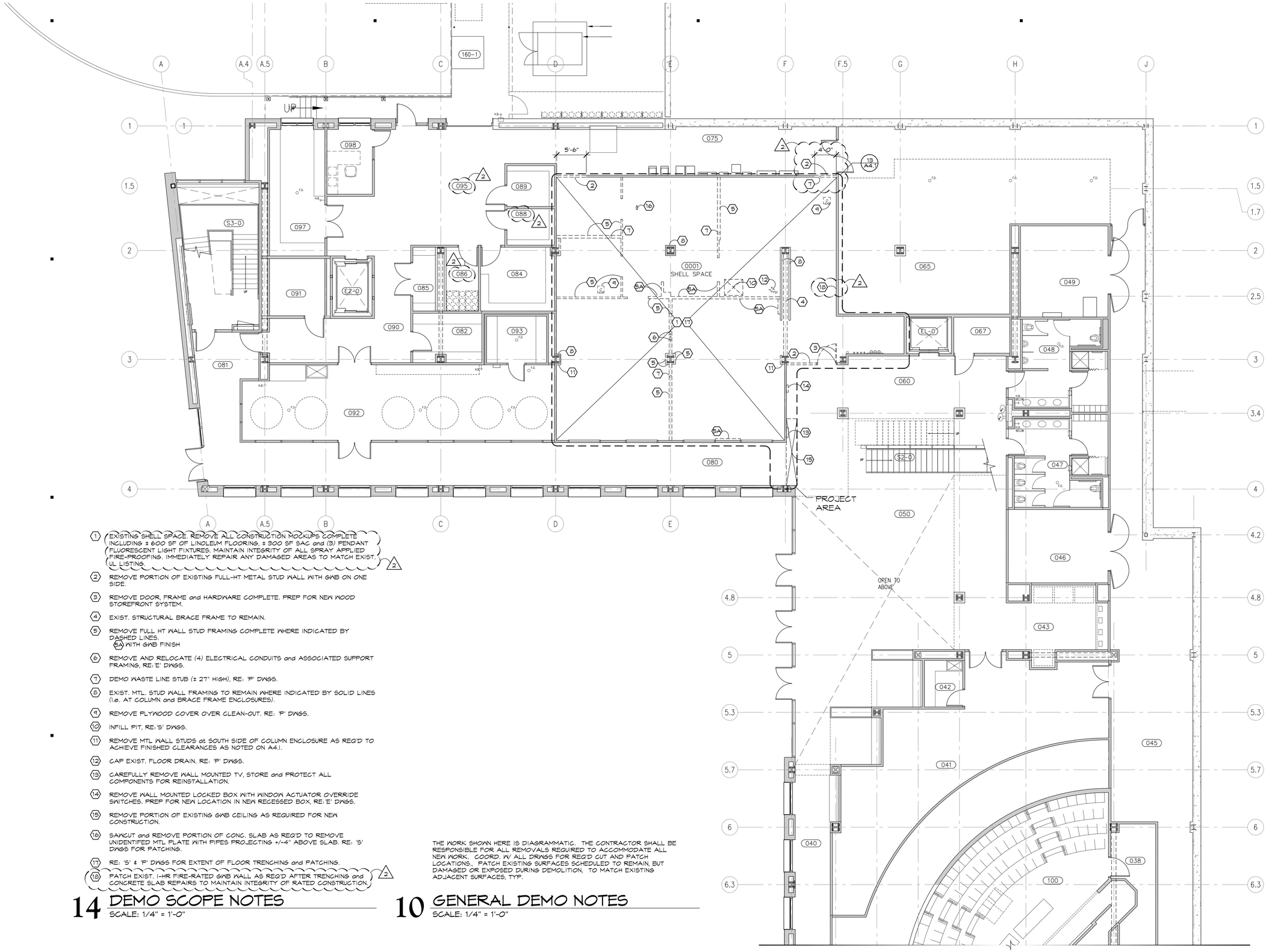
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	APR
CHECKED:	MA

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

S2.00

LEVEL 1 FRAMING PLAN



1. EXISTING SHELL SPACE. REMOVE ALL CONSTRUCTION MOCKUPS COMPLETE INCLUDING ± 600 SF OF LINOLEUM FLOORING, ± 300 SF SAC and (3) PENDANT FLUORESCENT LIGHT FIXTURES. MAINTAIN INTEGRITY OF ALL SPRAY APPLIED FIRE-PROOFING. IMMEDIATELY REPAIR ANY DAMAGED AREAS TO MATCH EXIST. UL LISTING. (2)
2. REMOVE PORTION OF EXISTING FULL-HT METAL STUD WALL WITH GNB ON ONE SIDE.
3. REMOVE DOOR, FRAME and HARDWARE COMPLETE. PREP FOR NEW WOOD STOREFRONT SYSTEM.
4. EXIST. STRUCTURAL BRACE FRAME TO REMAIN.
5. REMOVE FULL HT WALL STUD FRAMING COMPLETE WHERE INDICATED BY DASHED LINES.
   5A WITH GNB FINISH
6. REMOVE AND RELOCATE (4) ELECTRICAL CONDUITS and ASSOCIATED SUPPORT FRAMING, RE: 'E' DWGS.
7. DEMO WASTE LINE STUB (± 27" HIGH), RE: 'P' DWGS.
8. EXIST. MTL. STUD WALL FRAMING TO REMAIN WHERE INDICATED BY SOLID LINES (i.e. AT COLUMN and BRACE FRAME ENCLOSURES).
9. REMOVE PLYWOOD COVER OVER CLEAN-OUT. RE: 'P' DWGS.
10. INFILL PIT, RE: 'S' DWGS.
11. REMOVE MTL WALL STUDS at SOUTH SIDE OF COLUMN ENCLOSURE AS REQ'D TO ACHIEVE FINISHED CLEARANCES AS NOTED ON A4.1.
12. CAP EXIST. FLOOR DRAIN. RE: 'P' DWGS.
13. CAREFULLY REMOVE WALL MOUNTED TV, STORE and PROTECT ALL COMPONENTS FOR REINSTALLATION.
14. REMOVE WALL MOUNTED LOCKED BOX WITH WINDOW ACTUATOR OVERRIDE SWITCHES. PREP FOR NEW LOCATION IN NEW RECESSED BOX, RE: 'E' DWGS.
15. REMOVE PORTION OF EXISTING GNB CEILING AS REQUIRED FOR NEW CONSTRUCTION.
16. SAWCUT and REMOVE PORTION OF CONC. SLAB AS REQ'D TO REMOVE UNIDENTIFED MTL PLATE WITH PIPES PROJECTING +/-4" ABOVE SLAB. RE: 'S' DWGS FOR PATCHING.
17. RE: 'S' & 'P' DWGS FOR EXTENT OF FLOOR TRENCHING and PATCHING.
18. PATCH EXIST. 1-HR FIRE-RATED GNB WALL AS REQ'D AFTER TRENCHING and CONCRETE SLAB REPAIRS TO MAINTAIN INTEGRITY OF RATED CONSTRUCTION. (2)

14 DEMO SCOPE NOTES
SCALE: 1/4" = 1'-0"

THE WORK SHOWN HERE IS DIAGRAMMATIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMOVALS REQUIRED TO ACCOMMODATE ALL NEW WORK. COORD. W/ ALL DRWGS FOR REQ'D CUT AND PATCH LOCATIONS., PATCH EXISTING SURFACES SCHEDULED TO REMAIN, BUT DAMAGED OR EXPOSED DURING DEMOLITION, TO MATCH EXISTING ADJACENT SURFACES, TYP.

10 GENERAL DEMO NOTES
SCALE: 1/4" = 1'-0"

13 PLAZA LEVEL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

TLB
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

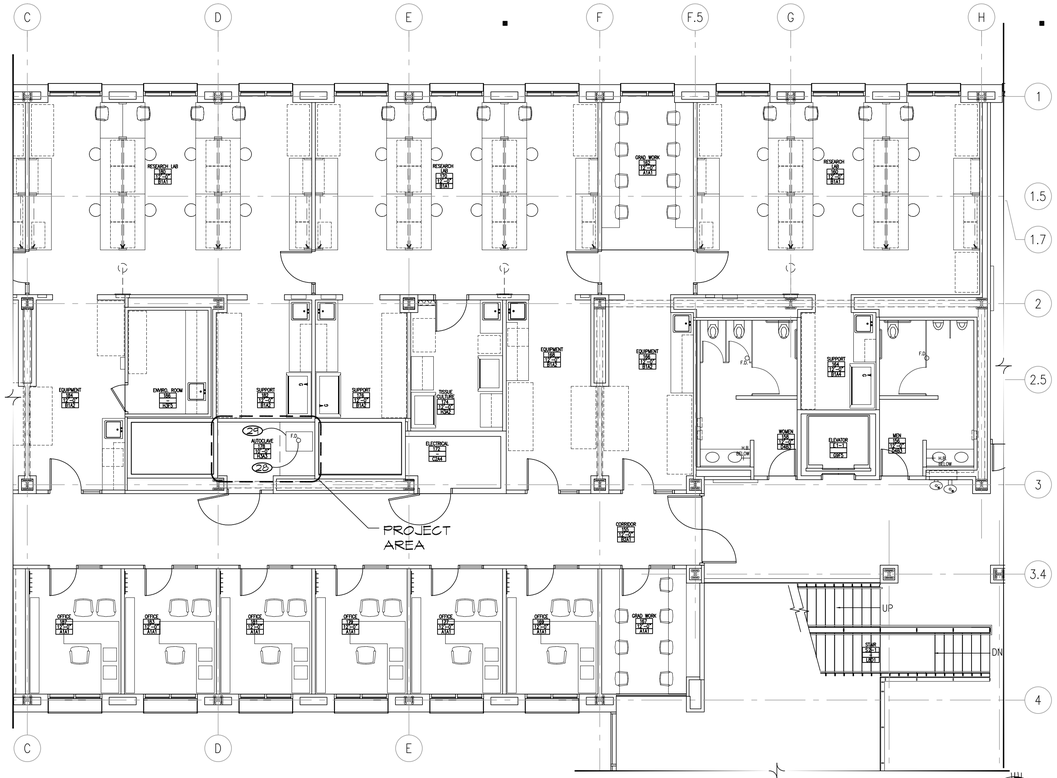
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	PDT
CHECKED:	MPF
ISSUED FOR:	

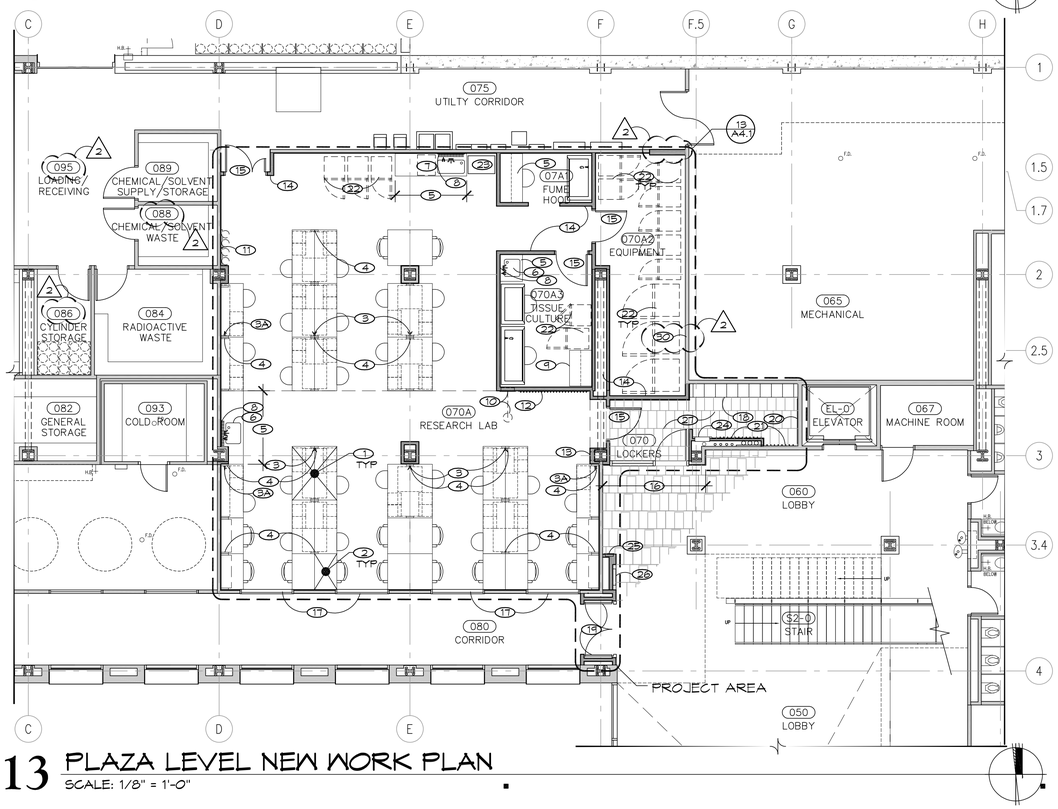
BIDDING and CONSTRUCTION REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION
3 5/10/21 ADDENDUM NO. 1

AD1.1

DEMOLITION PLAN



15 PARTIAL FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



13 PLAZA LEVEL NEW WORK PLAN
SCALE: 1/8" = 1'-0"

RM. NO.	RM. NAME	FLOOR	BASE	WALLS				CLG	HT	REMARKS
				NORTH	EAST	SOUTH	WEST			
070	LOCKERS	CT	WD	PT	PT	PT	PT	GNB/SAC-1	± 10'-0"	MATCH CLG HT OF ADJACENT LOBBY
070A	RESEARCH LAB	LIN	CVB	PT	PT	PT	PT	SAC-1/SAC-3/ OPEN (PT)	± 9'-10"	ALL EXPOSED STRUCTURE, PIPING, DUCTWORK, CONDUITS, ETC. TO BE PAINTED BLACK
070A1	FUME HOOD	LIN	CVB	PT	PT	PT	PT	SAC-1	10'-0"	
070A2	EQUIPMENT	LIN	CVB	PT	PT	PT	PT	SAC-1	9'-0" (2)	
070A3	TISSUE CULTURE	RBR	CVB	PT	PT	PT	PT	SAC-2	10'-0"	
178	AUTOCLAVE	ETR RBR	CVB	ETR	ETR	ETR	ETR	ETR		PATCH FLOORING AS REQ'D

RBR= RUBBER FLOOR TILE
CPT= CARPET
LIN= LINOLEUM
CONC= CONCRETE
SVB= STRAIGHT VINYL BASE
CVB= COVE VINYL BASE
PT= PAINT
CT= CERAMIC TILE TO MATCH EXIST. CORRIDOR FIELD TILE
FBGL= FIBERGLASS PANEL
VEX= VERIFY EXISTING
SHTV= SHEET VINYL
WD= WOOD BASE, SCRIBED TO FLOOR
GNB= SUSPENDED GYPSUM WALLBOARD (PAINTED)
SAC= SUSPENDED ACOUSTICAL CEILING
SAC-1= 2'x2' GRID & TILES
SAC-2= 2'x4' GRID & TILES
SAC-3= SUSPENDED CLOUD W/ 6'x2' TILES

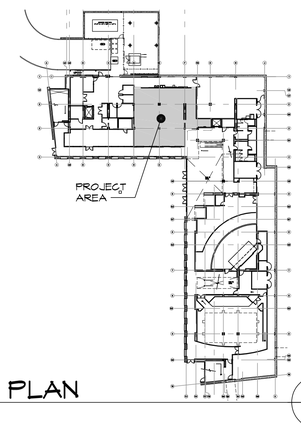
7 FINISH SCHEDULE
NO SCALE

1. TYP. ISLAND LAB BENCH MODULE: 72"x58" PAINTED METAL BENCH ASSEMBLY WITH 84"H UPRIGHTS, ADJUSTABLE HT GREY EPOXY COUNTERTOP, 16"W x 24" HIGH SUSPENDED MTL BASE CABINETS WITH WOOD FRONTS AND 12"D x 1" THICK MAPLE VENEER WOOD SHELVES W/ REAR LIP ON PAINTED MTL SHELF BRACKETS. RE: INT ELEVS.
2. TYP. LAB DESK MODULE: 48"W x 28"D PAINTED METAL TABLE ASSEMBLY WITH ADJ. HT LEGS (31"-37") AND 48"x30"x1" GREY EPOXY COUNTERTOP WITH GROMMET.
3. PROVIDE WYE LAB FITTING W/ (2) BALL VALVES AT UPRIGHT (1 PER ISLAND). PROVIDE BRAIDED S.STL SERVICE HOSE W/ QUICK-CONNECT FITTINGS TO CONNECT TO OVERHEAD SERVICE PANEL ABOVE. RE: 'P' DWGS.
   - 3A. PROVIDE SINGLE GAS TURRET AT SINGLE-SIDED BENCHES
4. PROVIDE FLEX ELECT, POWER and DATA CONNECTIONS FROM OVERHEAD SERVICE PANEL TO BENCH UPRIGHT. RE: RCP and 'E' DWGS.
5. FIXED MTL BASE CABINET(S) W/ WOOD VENEER DOOR and DRAWER PANELS and GREY EPOXY COUNTERTOP w/ BACKSPLASH. RE: INT. ELEVS.
6. 25"x15"x10" LIPPED STYLE EPOXY SINK W/ LAB FAUCET and EYEWASH, RE: 'P' DWGS
7. 36"x18"x12" LIPPED STYLE EPOXY SINK W/ LAB FAUCET and EYEWASH, RE: 'P' DWGS
8. EPOXY PEG BOARD W/ S.STL DRIP TROUGH.
9. ADJ. HT MTL LAB TABLE W/ 1" GREY EPOXY COUNTERTOP.
10. RECESSED EMERGENCY SHOWER/EYEWASH, RE: 'P' DWGS.
11. TANK RESTRAINTS SECURED INTO SOLID IN-WALL WOOD BLOCKING, RE: 'P' DWGS FOR MANIFOLD W/ AUTOMATIC CHANGEOVER and PIPING TO INCUBATORS IN TISSUE CULTURE RM. CO2 TANKS B.O.
12. LAB COAT HOOKS.
13. RECESSED FIRE EXTINGUISHER CABINET.
14. NEW GNB PARTITION, RE: A4.1 and WALL TYPES.
15. NEW WOOD DOOR and HM FRAME. RE: A4.1 and DOOR SCHEDULE.
16. NEW WOOD STOREFRONT and FINISH WALL PANELS. RE: INT. ELEVS.
17. EXIST. INTERIOR WINDOWS TO REMAIN. PROVIDE NEW SHADES, RE: INT. ELEVS.
18. LOCKERS, RE: SPECS and INT ELEVS.
19. NEW CROSS-CORRIDOR F.R. DOOR SYSTEM W/ MAGNETIC HOLD-OPENS, RE: DOOR SCHED.
20. MAGNETIC WHITE BOARD, RE: INT ELEVS.
21. COAT HOOKS
22. LAB EQUIPMENT (SHOWN DASHED) B.O.
23. INSTALL OWNER PROVIDED ICE MAKER, RE: 'P' DWGS.
24. RECESSED DRINK SHELVES, RE: INT. ELEVS.
25. NEW RECESSED ELECT. BOX FOR RELOCATED WINDOW ACTUATOR OVERRIDE SWITCHES. RE: 'E' DWGS.
26. RELOCATED TV CENTERED IN NEW RECESSED OPENING. PROVIDE NEW CHIEF TS218SU DUAL SWING ARM MOUNT SECURED INTO SOLID WOOD BLOCKING. REINSTALL EXISTING CPU SUPPORT BRACKET BEHND TV. RE: RTL AND 'E' DWGS. (2)
27. NEW CERAMIC FLOOR TILE TO MATCH EXIST. STYLE, COLOR, SIZE and PATTERN IN CORRIDOR BUT WITHOUT MTL ACCENT TILES.
28. REPLACE FLOOR DRAIN and REPAIR DAMAGED COMPOSITE SLAB, RE: 'P' & 'S' DWGS. REPLACE DAMAGED RUBBER FLOOR TILES WITH NEW TO MATCH EXISTING.
29. TO FACILITATE FLOOR DRAIN REPLACEMENT, AUTOCLAVE SHALL BE DISCONNECTED, PROTECTED, MOVED and STORED AT AN OWNER DESIGNATED LOCATION WITHIN THE BUILDING BY THE CONTRACTOR. ONCE FLOOR REPAIRS ARE COMPLETE, CONTRACTOR SHALL REINSTALL AND CERTIFY AUTOCLAVE FUNCTIONALITY.
30. PATCH EXIST. 1-HR FIRE-RATED GNB WALL AS REQ'D AFTER CONCRETE SLAB REPAIRS TO MAINTAIN INTEGRITY OF RATED CONSTRUCTION. (2)

5 NEW WORK SCOPE NOTES
NO SCALE

1. REFER TO ENLARGED PLAN FOR DIMENSIONS and WALL TYPES.
2. MAINTAIN INTEGRITY OF ALL SPRAY APPLIED FIRE-PROOFING. IMMEDIATELY REPAIR ANY DAMAGED AREAS TO MATCH EXIST. UL LISTING.

3 GENERAL NOTES
NO SCALE



1 KEY PLAN
NTS

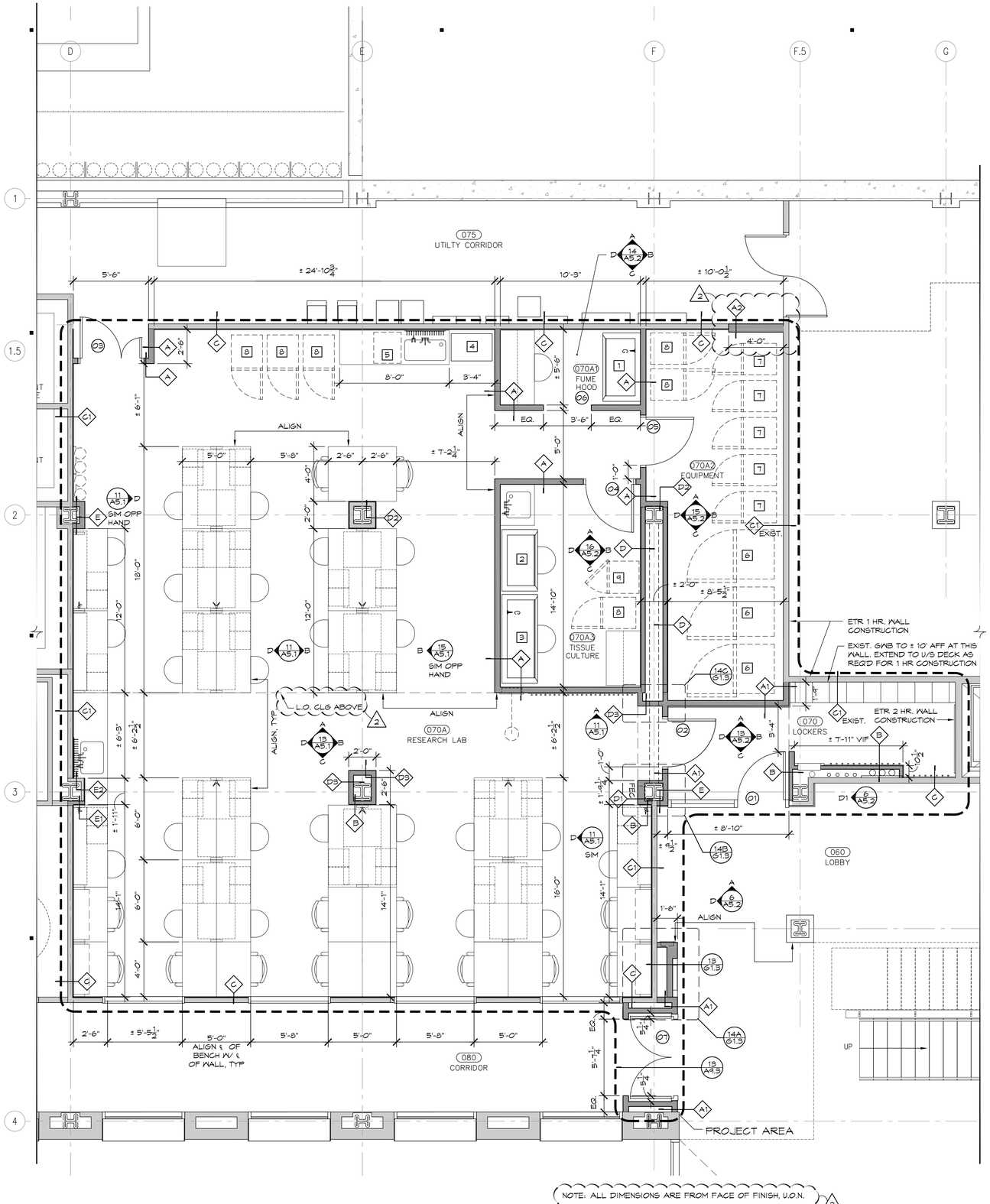
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: FDT
CHECKED: MPF
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION
3 5/10/21 ADDENDUM NO. 1

A2.1

PLAZA & 1st FLOOR PLANS



NOTE: ALL DIMENSIONS ARE FROM FACE OF FINISH, U.O.N.

13 PARTIAL PLAZA LEVEL FLOOR PLAN

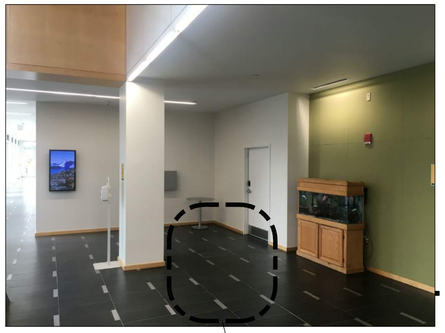
SCALE: 1/4" = 1'-0"

No.	Tag Description	Size (in inches) W	D	H	Basis-of-Design Manufacturer / Model #	Utilities Net-work	HW	CW	Gas	O2	CO2	Emer Power	Provided by:	Installed by:	Remarks
1	Fume hood	60	32 5/8	89 1/4	Mott Pro Bench Model 7321040				X				Contractor	Contractor	With 30" flammable storage and 30" acid storage base cabinets
2	Class II Type A2 Biosafety Cabinet	53 5/8	31 7/16	60 7/8	Nuair NU-540 - 400				X				Contractor	Contractor	
3	Class II Type A2 Biosafety Cabinet	77 5/8	31 7/16	60 7/8	Nuair NU-540 - 600				X				Contractor	Contractor	
4	Ice Maker (Existing)	36	24	39	Hoshizaki Model F-300BAF			X					Owner	Contractor	Air-cooled self-contained flaker with built-in storage
5	Undercounter Glassware Washer	24.1	27.4	34.1	Steris Reliance u/c Model 100								Contractor	Contractor	
6	-80C Freezer	43.3	36	77.7	Eppendorf 740I							X	User	User	
7	-20C Freezer	27.5	31	83.75	Summit Commercial AFS23ML							X	User	User	
8	Lab Refrigerator	27.5	31	83.75	Accucold ARS23ML								User	User	
9	Stacked Incubators										X	X	User	User	CO2 tanks piped to TC room

8 EQUIPMENT SCHEDULE

NO SCALE

TYP. LAB BENCH MODULE w/ INTEGRAL POWER, EPOXY COUNTER, SUSPENDED BASE CABINETS w/ MAPLE WOOD VENEER DRAWER & DOOR FRONTS and ADJUSTABLE WOOD SHELVES ABOVE



LOCKER ROOM FLOOR TILE TO MATCH LOBBY, EXCLUDE ALUMINUM ACCENTS. ALIGN WITH EXISTING LOBBY TILE.

LOCKER ROOM STOREFRONT AND WOOD PANELING IN EXISTING LOBBY TO MATCH EXISTING CONSTRUCTION

5 VARIOUS CBLS PHOTOS for REFERENCE

NO SCALE

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

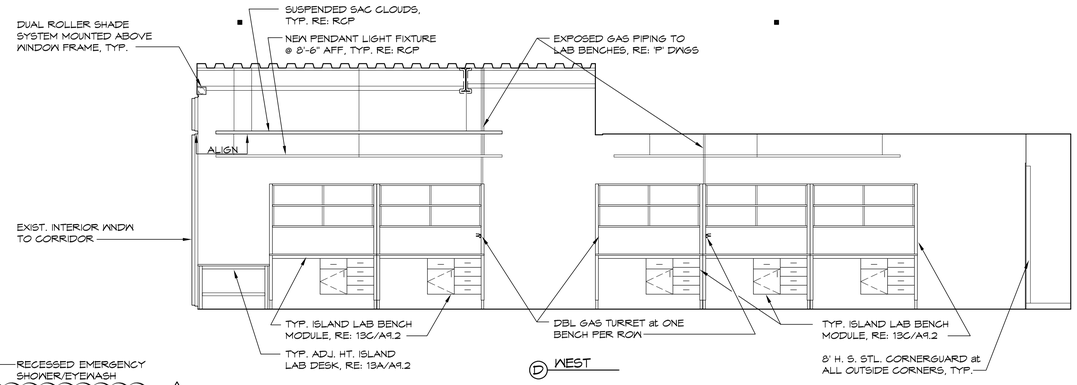
URI - CBLS

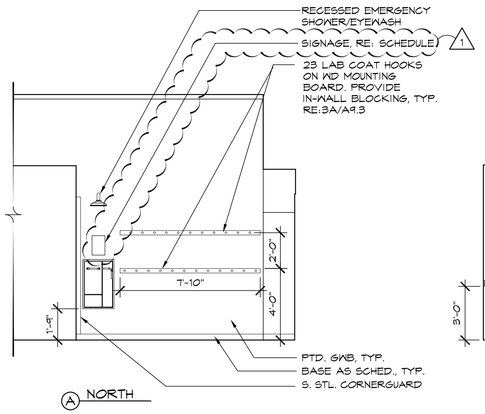
120 FLAGG RD
KINGSTON, RI 02881

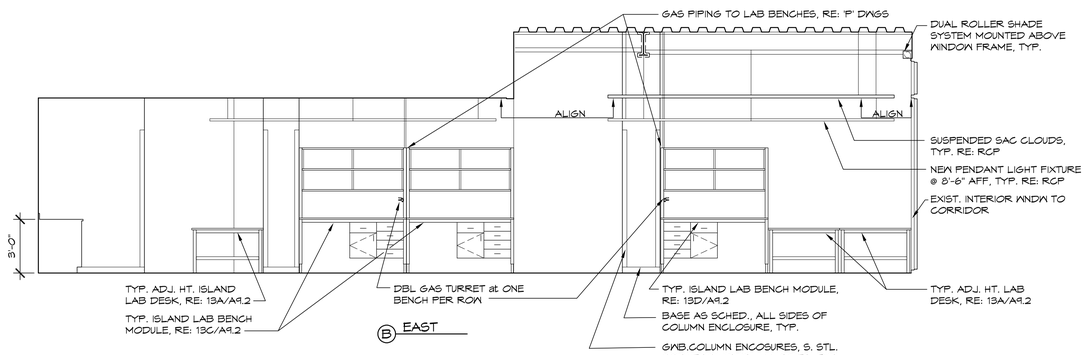
DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: AMR
CHECKED: PDT
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/24/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

A4.1

ENLARGED FLOOR PLAN

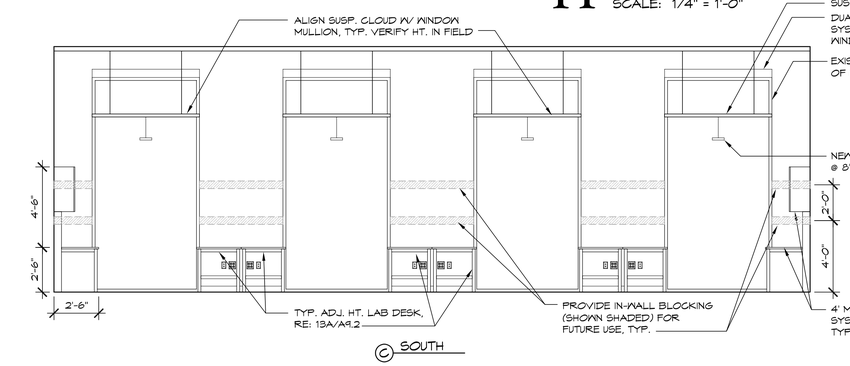


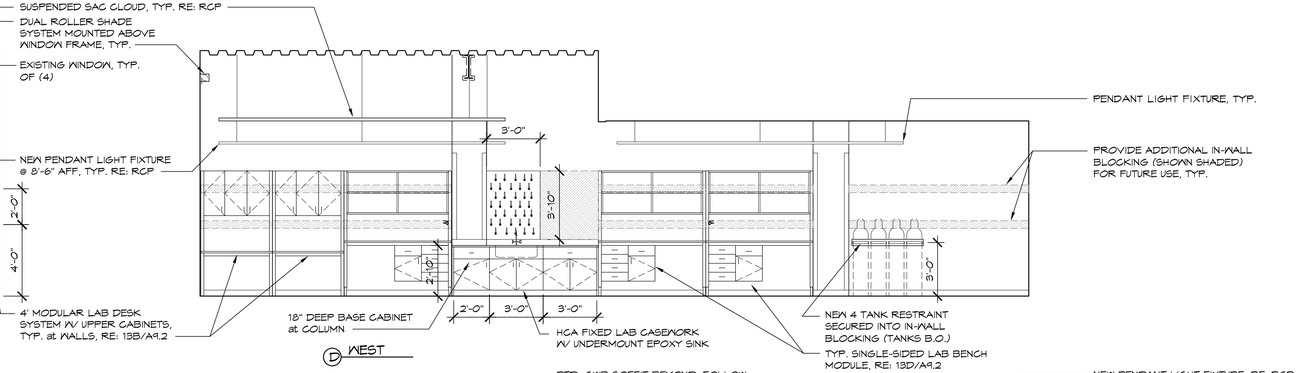


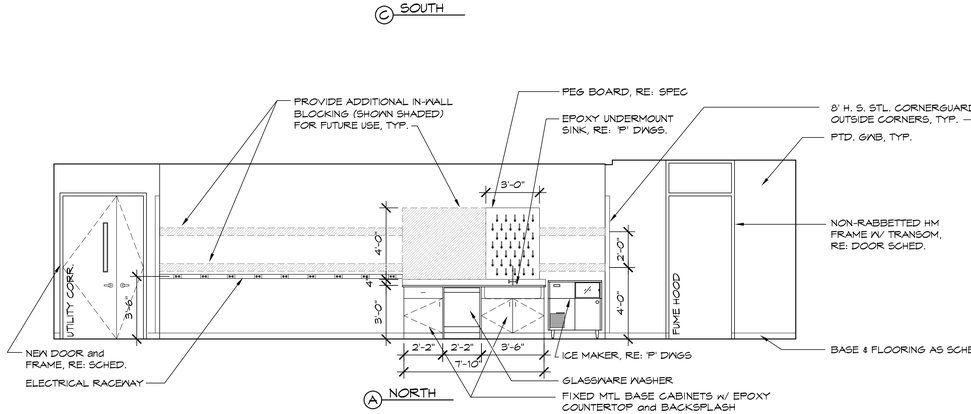


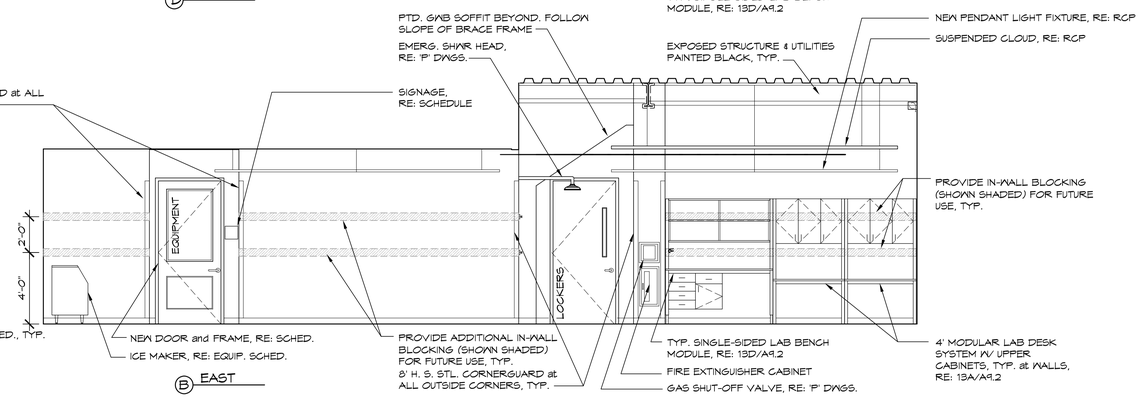
11 INTERIOR ELEVATIONS at LAB 070A - TYP. ISLAND BENCHES

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









13 INTERIOR ELEVATIONS at RESEARCH LAB 070A

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

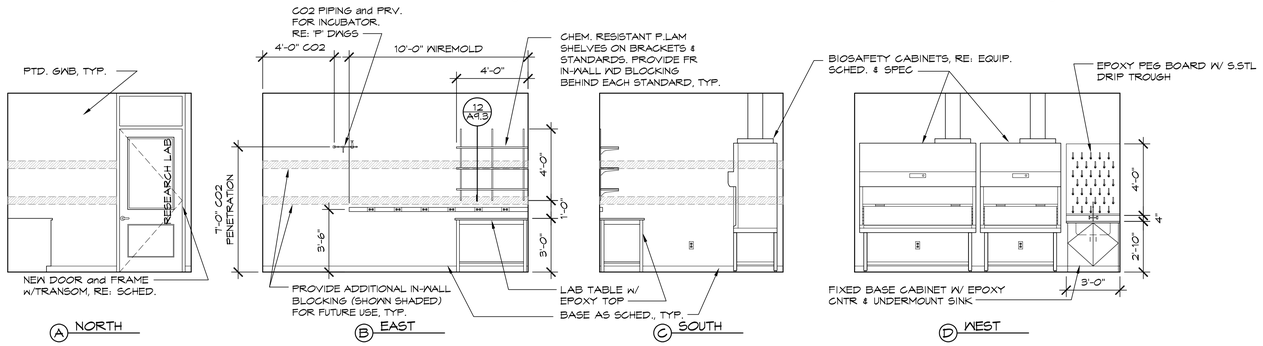
TLBA
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	AMR
CHECKED:	PDT

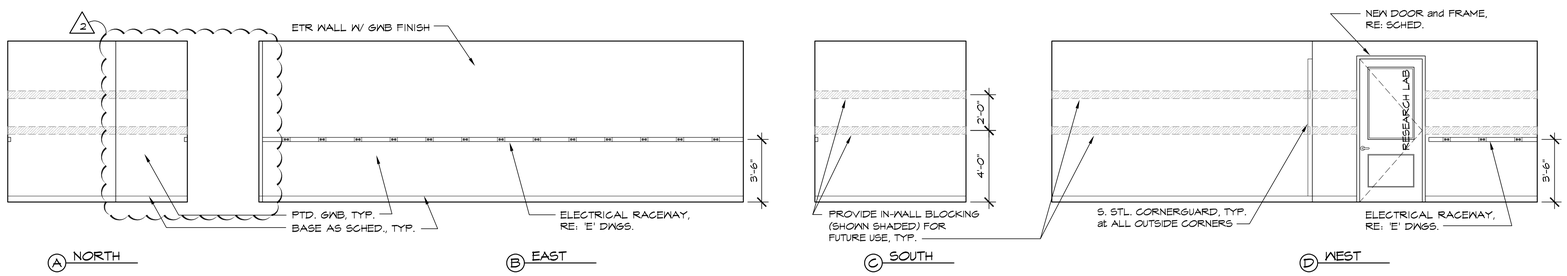
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

A5.1
INTERIOR ELEVATIONS



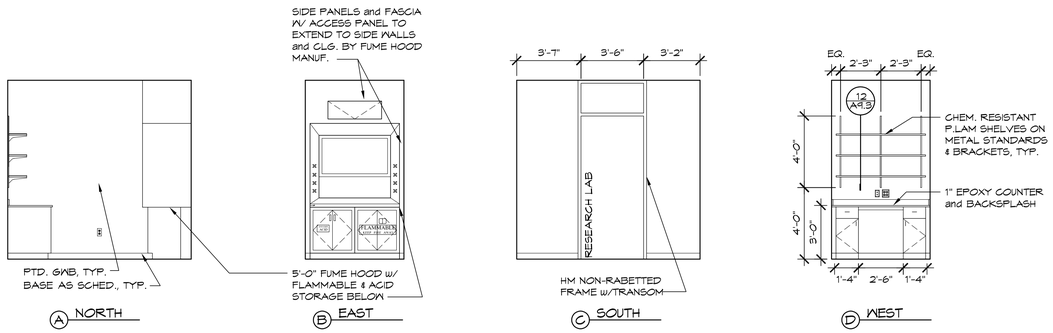
16 INTERIOR ELEVATIONS at TISSUE CULTURE 070A3

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



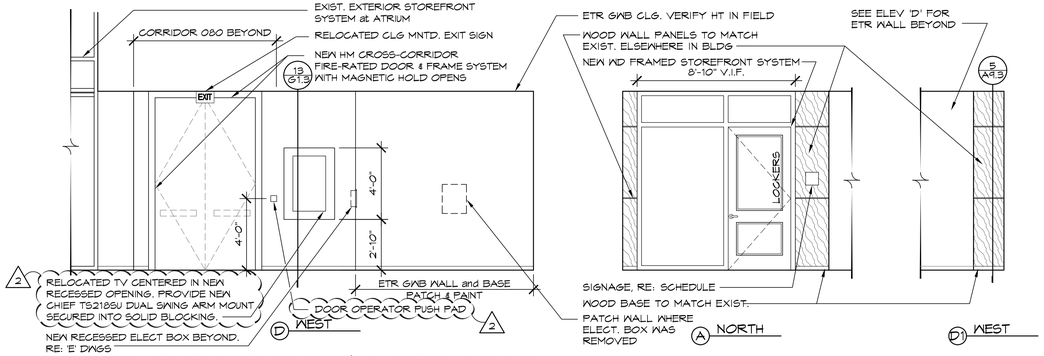
15 INTERIOR ELEVATIONS at EQUIPMENT ROOM 070A2

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



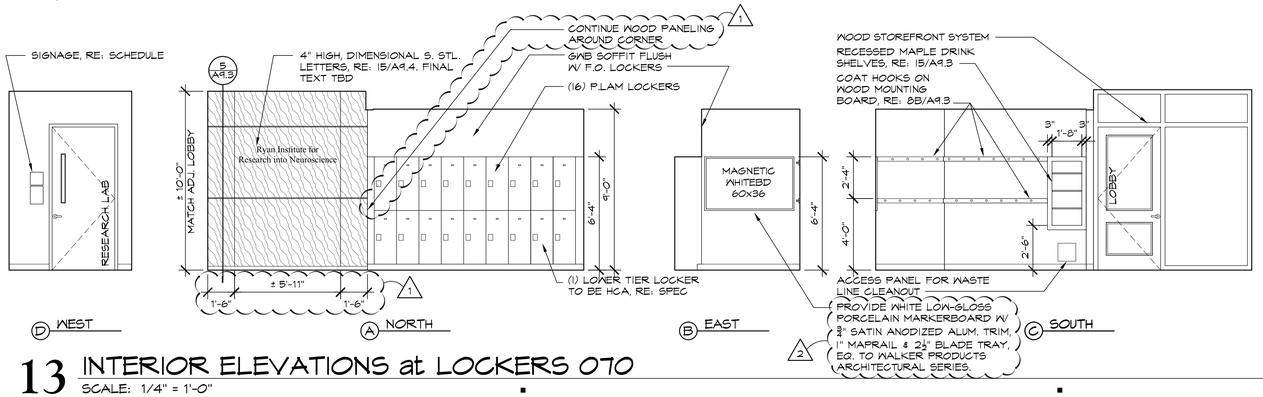
14 INTERIOR ELEVATIONS at FUME HOOD ALCOVE 070A1

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



6 INT. ELEVATIONS at LOBBY 060

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



13 INTERIOR ELEVATIONS at LOCKERS 070

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

TLB
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	PDT
CHECKED:	MPF

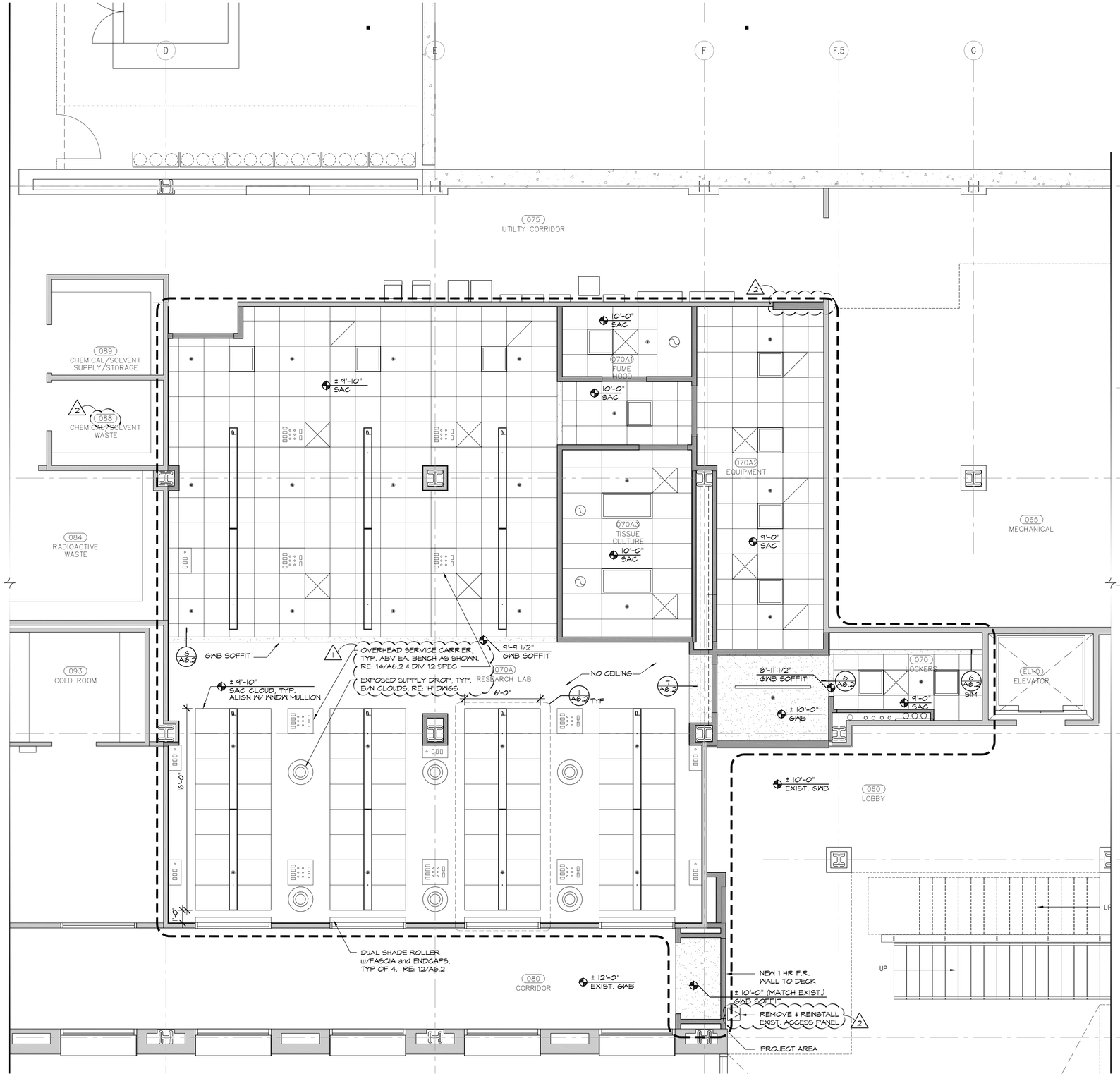
ISSUED FOR:

BIDDING and CONSTRUCTION

REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION
3 5/10/21 ADDENDUM NO. 1

A5.2

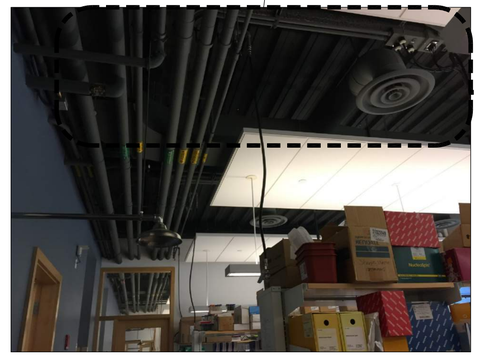
INTERIOR ELEVATIONS



13 PARTIAL PLAZA LEVEL REFLECTED CEILING PLAN

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

EXPOSED STRUCTURE, PIPING, ELECTRICAL and MECHANICAL SYSTEMS TO BE PAINTED



OVERHEAD ELECT. SERVICE CONNECTION TO LAB TABLE

2" ALUM. TRIM at SAC CLOUD PERIMETER

NOTE: FINISHES TO MATCH EXISTING LAB FINISHES ON FLOORS ABOVE

2 VARIOUS CBLS PHOTOS for REF.

NOT TO SCALE

- 2' x 2' SUSPENDED ACOUSTICAL CEILING SYSTEM
- 2' x 4' SUSPENDED ACOUSTICAL CEILING SYSTEM
- 2' x 4' SUSPENDED ACOUSTICAL CEILING SYSTEM W/ SCORED CLG. TILES
- GYPSUM CEILING
- SUPPLY AIR DIFFUSER
- RETURN AIR REGISTER
- LINEAR DIFFUSER
- SPRINKLER HEAD
- FIRE DETECTION / ALARM DEVICE
- CEILING SPEAKER
- EMERGENCY SHOWER HEAD
- DUCT THRU CEILING
- RECESSED LINEAR LIGHT FIXTURE
- RECESSED 2' x 2' LIGHT FIXTURE
- RECESSED 2' x 4' LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- SURFACE MOUNTED LIGHT FIXTURE
- ACCENT FIXTURE
- WALL MOUNTED FIXTURE
- PENDANT LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- EMERGENCY LIGHT FIXTURE
- EXIT SIGN - WALL MOUNTED
- EXIT SIGN - CEILING MOUNTED

1 RCP LEGEND

NOT TO SCALE

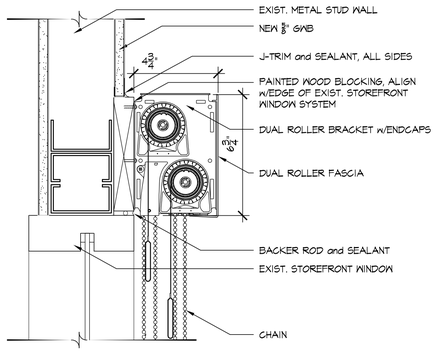
TLBA
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

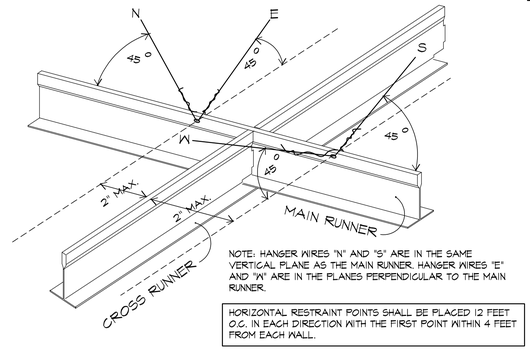
DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: PDT
CHECKED: MPF
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

A6.1

REFLECTED CEILING PLAN



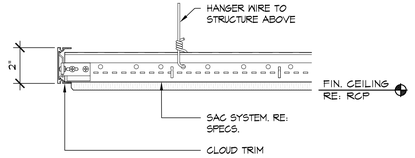
12 SHADE BRACKET DETAIL
3" = 1'-0"



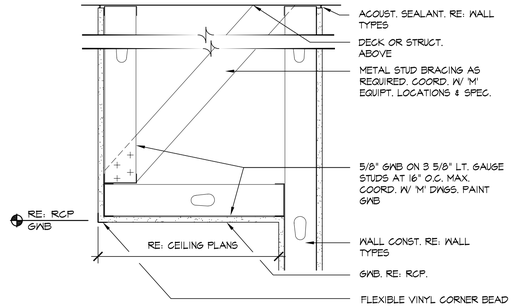
NOTE: HANGER WIRES "N" AND "S" ARE IN THE SAME VERTICAL PLANE AS THE MAIN RUNNER. HANGER WIRES "E" AND "W" ARE IN THE PLANES PERPENDICULAR TO THE MAIN RUNNER.

HORIZONTAL RESTRAINT POINTS SHALL BE PLACED 12 FEET O.C. IN EACH DIRECTION WITH THE FIRST POINT WITHIN 4 FEET FROM EACH WALL.

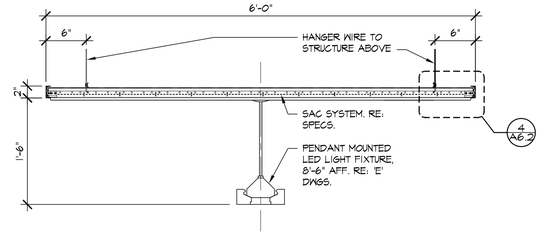
8 TYP. CEILING BRACING
NOT TO SCALE



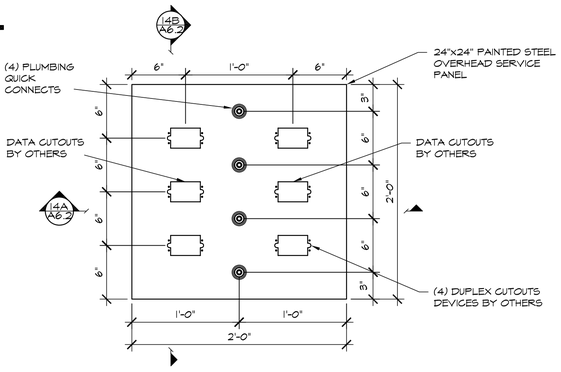
4 CLOUD CEILING TERMINATION
SCALE: 3" = 1'-0"

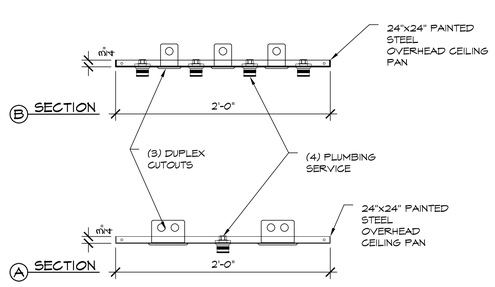


7 SOFFIT DETAIL
SCALE: 1 1/2" = 1'-0"

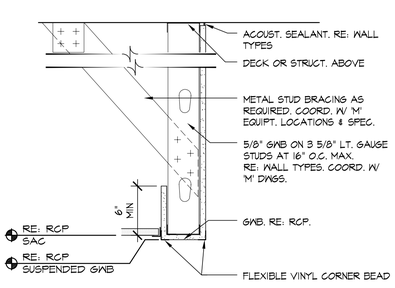


3 TYP. CEILING CLOUD SECTION
SCALE: 1" = 1'-0"

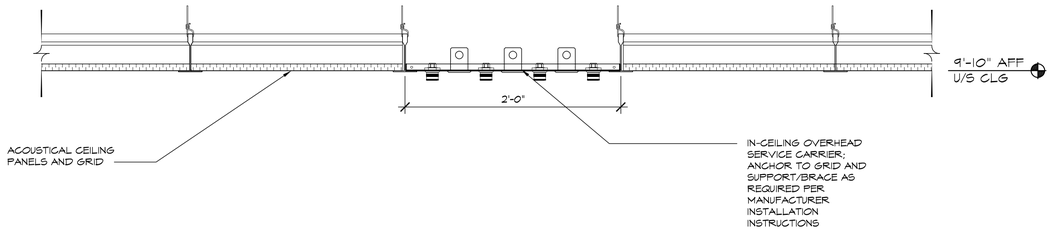




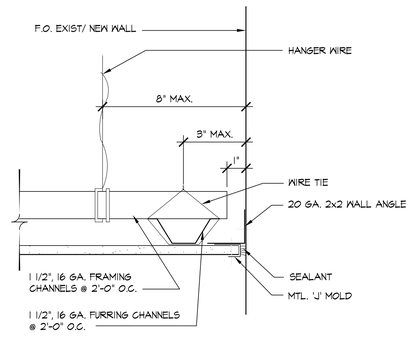
14 TYP. OVERHEAD SERVICE CARRIER
SCALE: 1 1/2" = 1'-0"



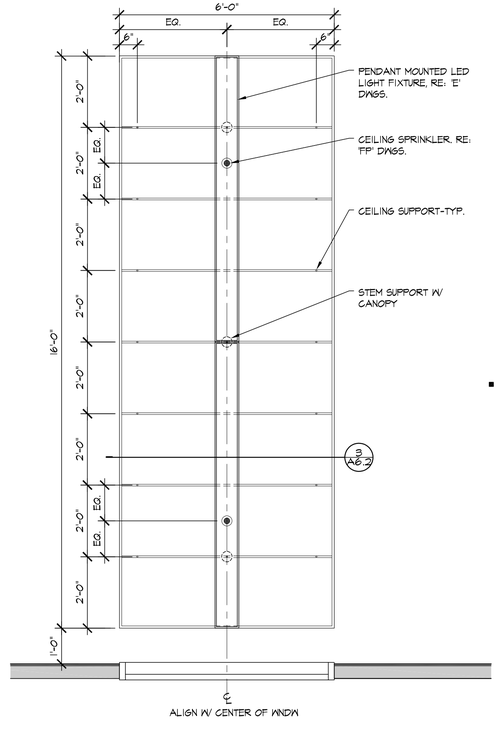
6 SOFFIT DETAIL
SCALE: 1 1/2" = 1'-0"



13 TYP. OVERHEAD SERVICE CARRIER IN SUSP. ACOUSTICAL CLG
SCALE: 1 1/2" = 1'-0"



5 TYP. GWB CEILING SECTION
SCALE: 3" = 1'-0"



1 TYP. CEILING CLOUD LAYOUT
SCALE: 1/2" = 1'-0"

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

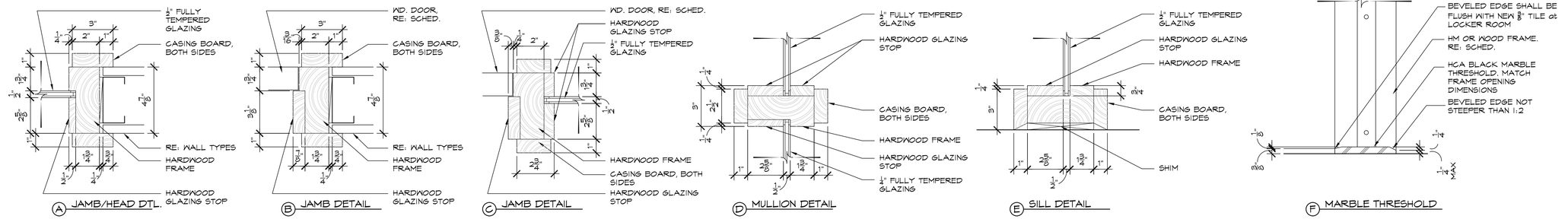
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

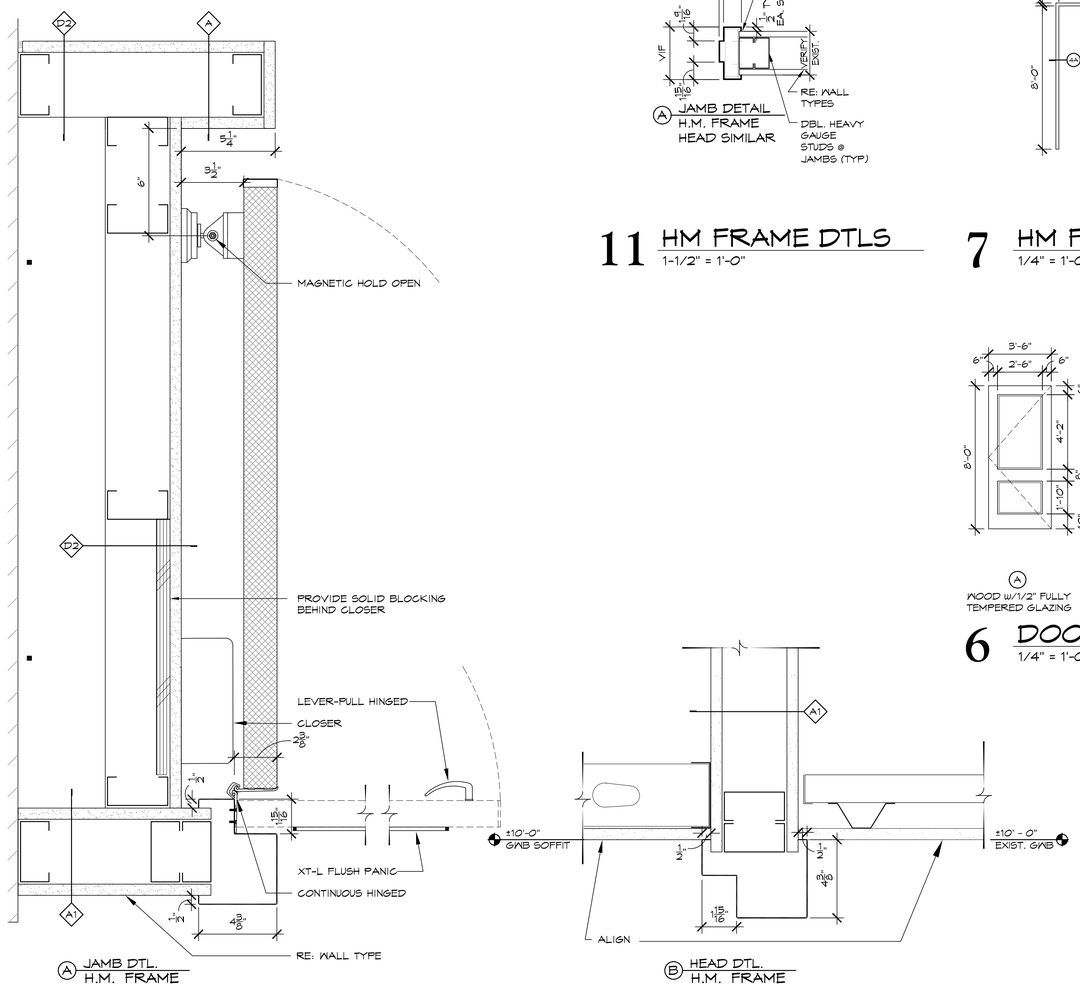
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: FMD
CHECKED: PDT/MPF
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

A6.2
CEILING DETAILS

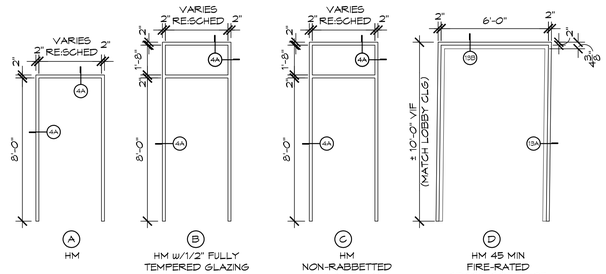


16 WOOD FRAME DETAILS
3" = 1'-0"

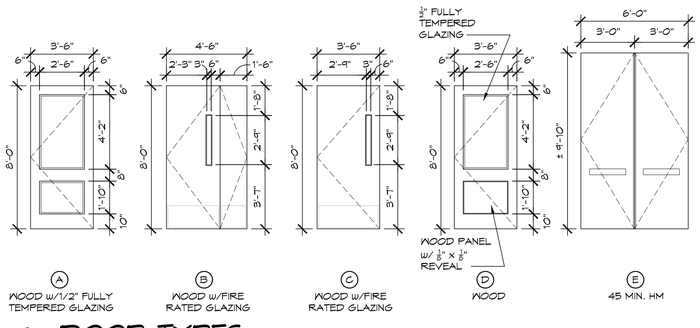


13 INTEGRATED CROSS-CORRIDOR DOOR SYSTEM
3" = 1'-0"

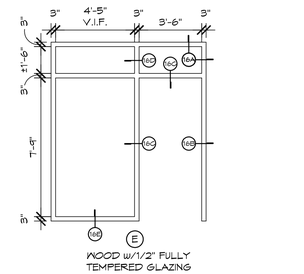
11 HM FRAME DTLS
1-1/2" = 1'-0"



7 HM FRAME ELEVATIONS
1/4" = 1'-0"



6 DOOR TYPES
1/4" = 1'-0"



3 WOOD FRAME ELEVATIONS
1/4" = 1'-0"

1. GENERAL NOTES
   DOOR SCHEDULE IS INTENDED TO PROVIDE SCOPE OF WORK REQUIRED FOR EACH DOOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF ALL HARDWARE AND SHALL VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO SUBMITTING SCHEDULE FOR ARCHITECT'S REVIEW (SHOP DRAWINGS).
2. CONTRACTOR SHALL ADJUST CLOSERS TO MEET THE FOLLOWING CRITERIA:
   A. SWEEP TIME SHALL BE AT LEAST 3 SECONDS FROM A POSITION 70 DEGREES OPEN TO A POINT 3" FROM THE STRIKE, MEASURED AT THE LEADING EDGE OF THE DOOR.
   B. MAXIMUM FORCE REQ'D TO OPEN THE DOOR SHALL BE NOT GREATER THAN 5LBF.
3. ALL DOORS / FRAMES SHOWN TO HAVE GLAZING:
   A. INTERIOR DOORS / FRAMES TO RECEIVE 1/2" FULLY TEMPERED GLASS. RE: SPEC.
   B. PROVIDE TEMPERED GLAZING IN FRAMES WHERE TEMPERED DOOR GLAZING IS NOTED ON SCHEDULE AND AS REQ'D. BY CODE.
4. PROVIDE RATED DOOR SWEEPS WHERE REQ'D BY CODE.
5. CLOSERS AT DOORS TO THE CORRIDOR SHALL BE MOUNTED ON THE ROOM SIDE, TYPICAL.

2 GENERAL NOTES
NO SCALE

DOOR NUMBER	ROOM NAME	DOORS: DOUBLE LEAF DOOR	DOORS: SIZE: (W x H)	DOORS: TYPE / MATERIAL: SEE DOOR ELEVS. 6/A9.1	FRAME: TYPE / MATERIAL: SEE FRAME ELEVS. 3/A9.1 AND 7/A9.1	FRAME: DETAIL/SHEET, NO. HEAD DETAIL RE: 4/A9.1 and 15/A9.1, U.O.N.	FRAME: DETAIL/SHEET, NO. JAMB DETAIL RE: 4/A9.1 and 15/A9.1, U.O.N.	FRAME: DETAIL/SHEET, NO. SILL DETAIL	FIRE RATING	HARDWARE - SEE SPECS: POSITIVE LATCHING	AUTOMATIC CLOSER	MAGNETIC HOLD-OPEN	CARD READER	PANIC HARDWARE	LEVER HANDLE	ARMOR PLATE / SPECIALTY DOOR OPERATOR	HARDWARE GROUP	REMARKS
01	LOCKERS 070		3' x 8'	A/WD	E/WD	16A	16B	16E & 16F		●	●		●		●	●	1	
02	RESEARCH LAB 070A		3' x 8'	C/WD	A/HM	11A	11A	16F	45 MIN.	●	●					●	2	
03	RESEARCH LAB 070A	●	4' x 8'	B/WD	A/HM	11A	11A			●	●		●		●	●	4	UNEQUAL LEAF
04	TISSUE CULTURE 070A3		3' x 8'	D/WD	B/HM	11A	11A			●	●		●		●	●	1	
05	EQUIPMENT RM 070A2		3' x 8'	D/WD	A/HM	11A	11A			●	●				●	●	5	
06	FUME HOOD 070A1		3' x 8'	N/A	C/HM	11A	11A											
07	CORRIDOR 080	●	6' x 9'10"	E/HM	D/HM	13B	13A		45 MIN.	●	●	●		●	●	●	3	CROSS-CORRIDOR INTEGRATED F.R. DOOR SYSTEM. VERIFY HT IN FIELD

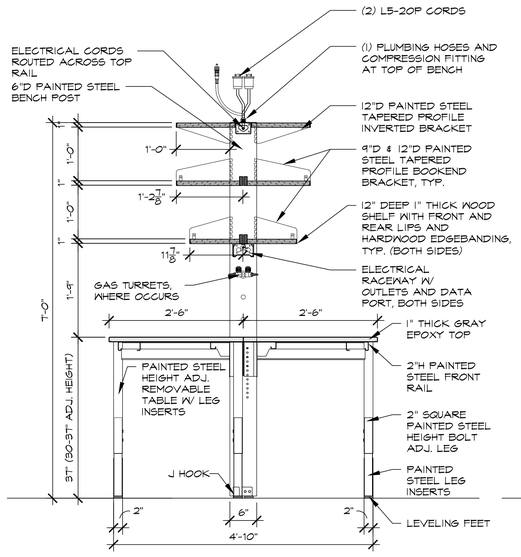
5 DOOR SCHEDULE
NO SCALE

TLB
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

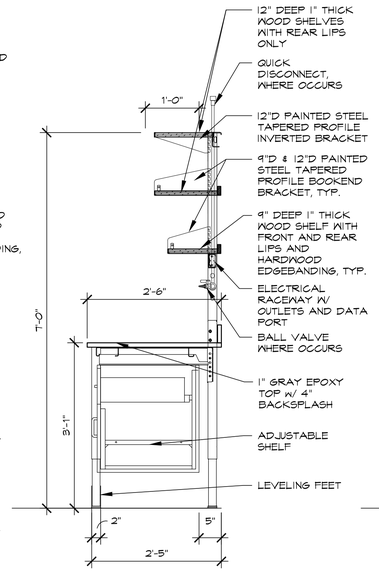
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: AWR
CHECKED: PDT
ISSUED FOR:
BIDDING and CONSTRUCTION REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

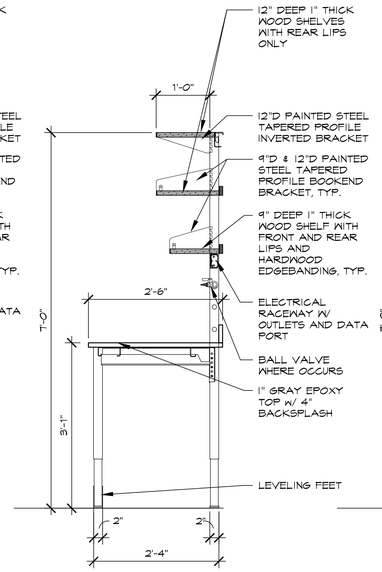
A9.1
DOOR SCHEDULE & DETAILS



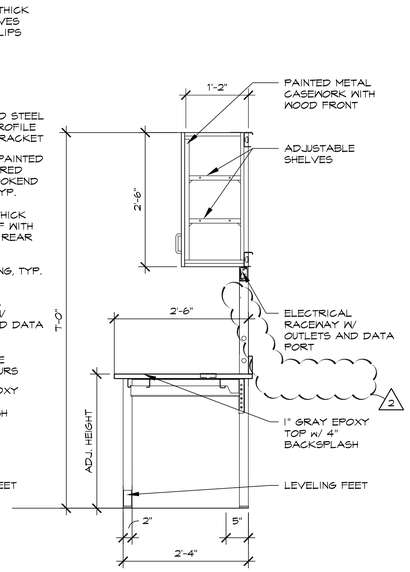
A TYP. ISLAND LAB BENCH



B LAB BENCH at WALL



C LAB BENCH at WALL

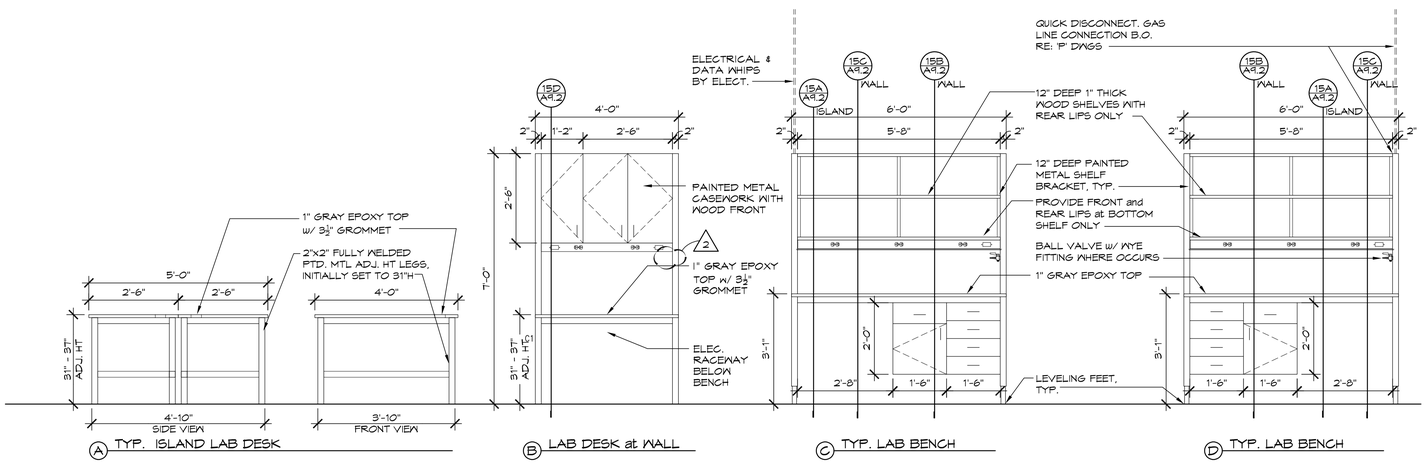


D LAB DESK at WALL

NOTE: BASIS-OF-DESIGN: NEW ENGLAND LAB CASEWORK.

15 LAB CASEWORK SECTIONS

SCALE : 3/4" = 1'-0"



A TYP. ISLAND LAB DESK

B LAB DESK at WALL

C TYP. LAB BENCH

D TYP. LAB BENCH

13 LAB CASEWORK ELEVATIONS

SCALE: 1/2" = 1' - 0"

TLBA
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

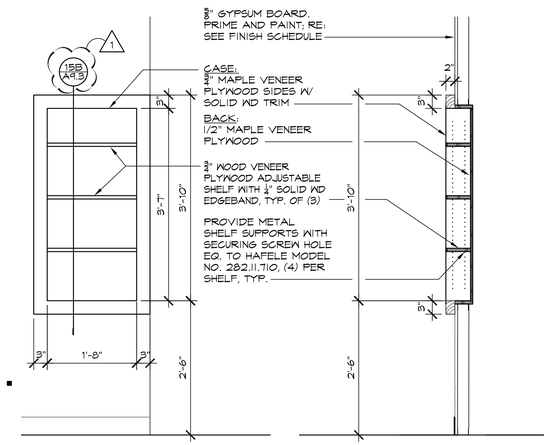
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

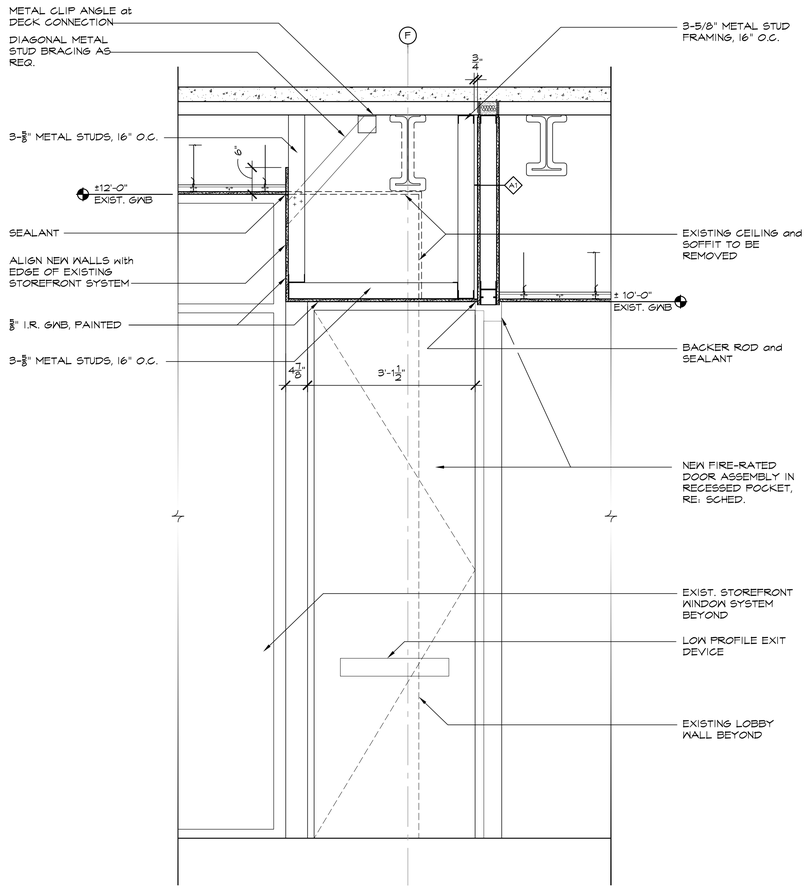
DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: KZ
CHECKED: PDT
ISSUED FOR:
BIDDING and CONSTRUCTION REVISIONS:
1 3/24/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

A9.2

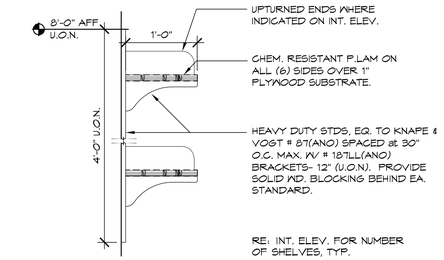
LAB CASEWORK DTLS



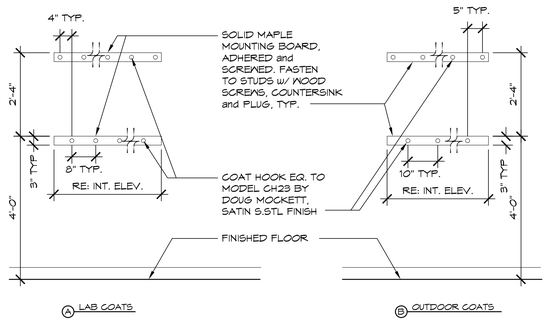
15 RECESSED DRINK SHELF DETAIL
SCALE: 3/4" = 1' - 0"



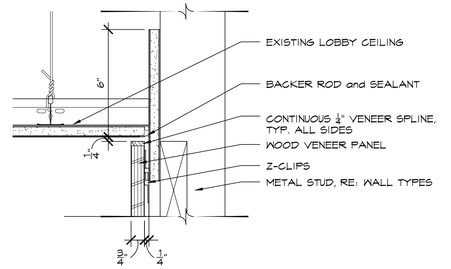
13 SECTION at CORRIDOR SOFFIT
SCALE: 1/2" = 1' - 0"



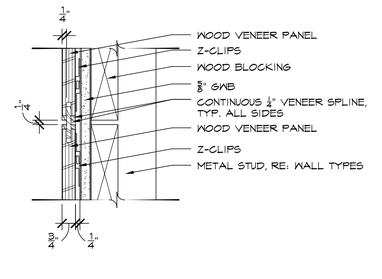
12 ADJUSTABLE SHELF DETAIL
SCALE: 1" = 1'-0"

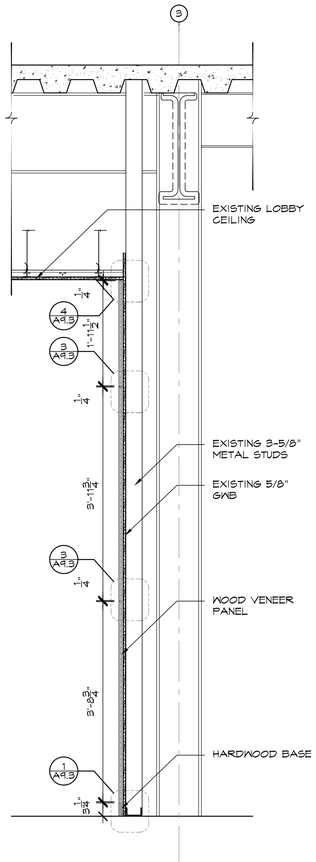


8 COAT HOOK DETAIL
SCALE: 1/2" = 1'-0"

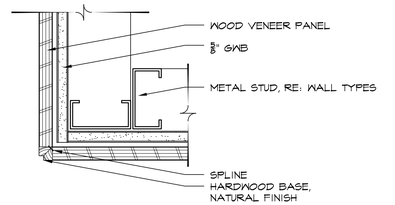


4 WOOD PANELING at CEILING DTL
SCALE: 3" = 1'-0"

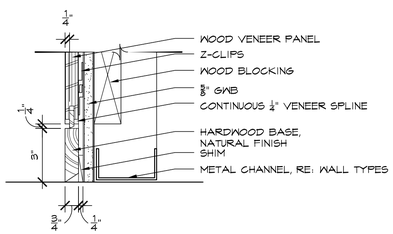




5 SECTION at WOOD PANELING
SCALE: 3/4" = 1'-0"



3 WOOD PANELING JOINT DETAIL
SCALE: 3" = 1'-0"



2 WOOD PANELING CORNER DTL
SCALE: 3" = 1'-0"

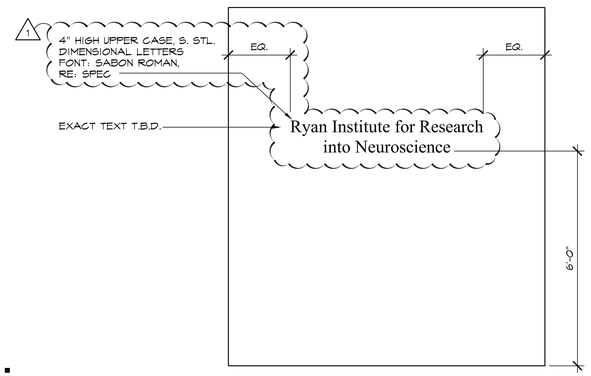
1 WOOD PANELING BASE DETAIL
SCALE: 3" = 1'-0"

TLB
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

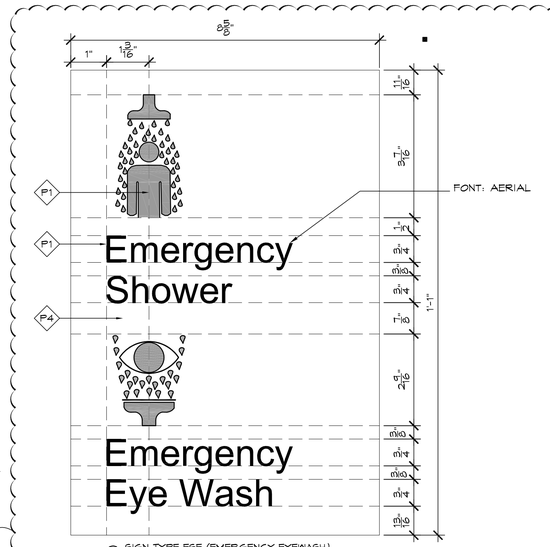
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	AMR
CHECKED:	PDT
ISSUED FOR:	
BIDDING and CONSTRUCTION REVISIONS:	
1 3/29/21 OWNER'S REVIEW	
2 4/30/21 BIDDING & CONSTRUCTION	

A9.3
1 MILLWORK DTLS



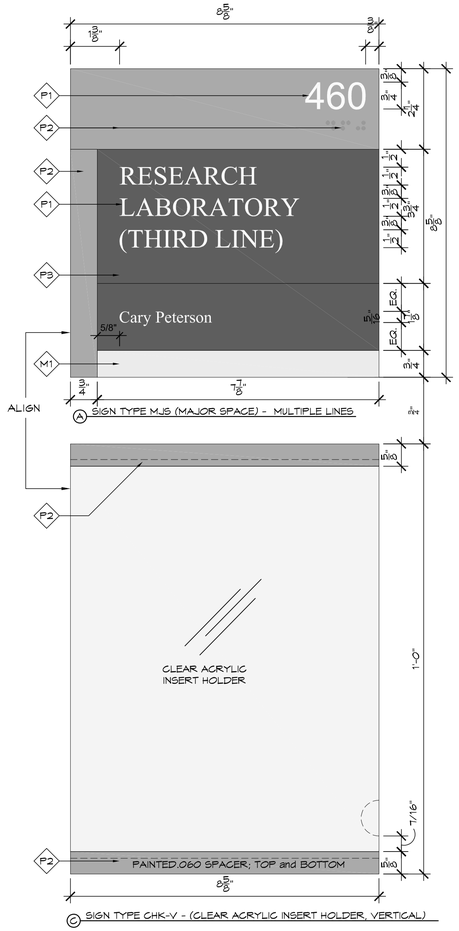
15 DIMENSIONAL SIGNAGE ELEVATION
SCALE: 1/2" = 1' - 0"



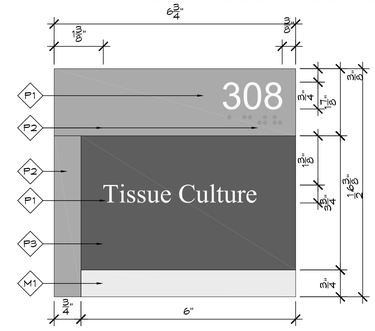
11 SIGNAGE ELEVATION
SCALE: 6" = 1' - 0"

TAG	TYPE	ROOM NUMBER (TACTILE CHARACTERS)	ROOM NAME	MESSAGE (TO BE CONFIRMED BY OWNER DURING SHOP DRAWING REVIEW)	
				FIRST LINE	SECOND LINE
T-01	A	070	LOCKERS	RESEARCH	LABORATORY
T-02	A & C	070A	RESEARCH LAB	RESEARCH	LABORATORY
T-03	A & C	070A	RESEARCH LAB	RESEARCH	LABORATORY
T-04	A & C	070A1	FUME HOOD	FUME HOOD	
T-05	B	070A2	EQUIPMENT	EQUIPMENT	
T-06	A & C	070A3	TISSUE CULTURE	TISSUE	CULTURE
T-07	D				

8 SIGNAGE SCHEDULE
NTS



A SIGN TYPE MJS (MAJOR SPACE) - MULTIPLE LINES



B SIGN TYPE MNS (MINOR SPACE) - SINGLE LINE

C SIGN TYPE CHK-V - (CLEAR ACRYLIC INSERT HOLDER, VERTICAL)

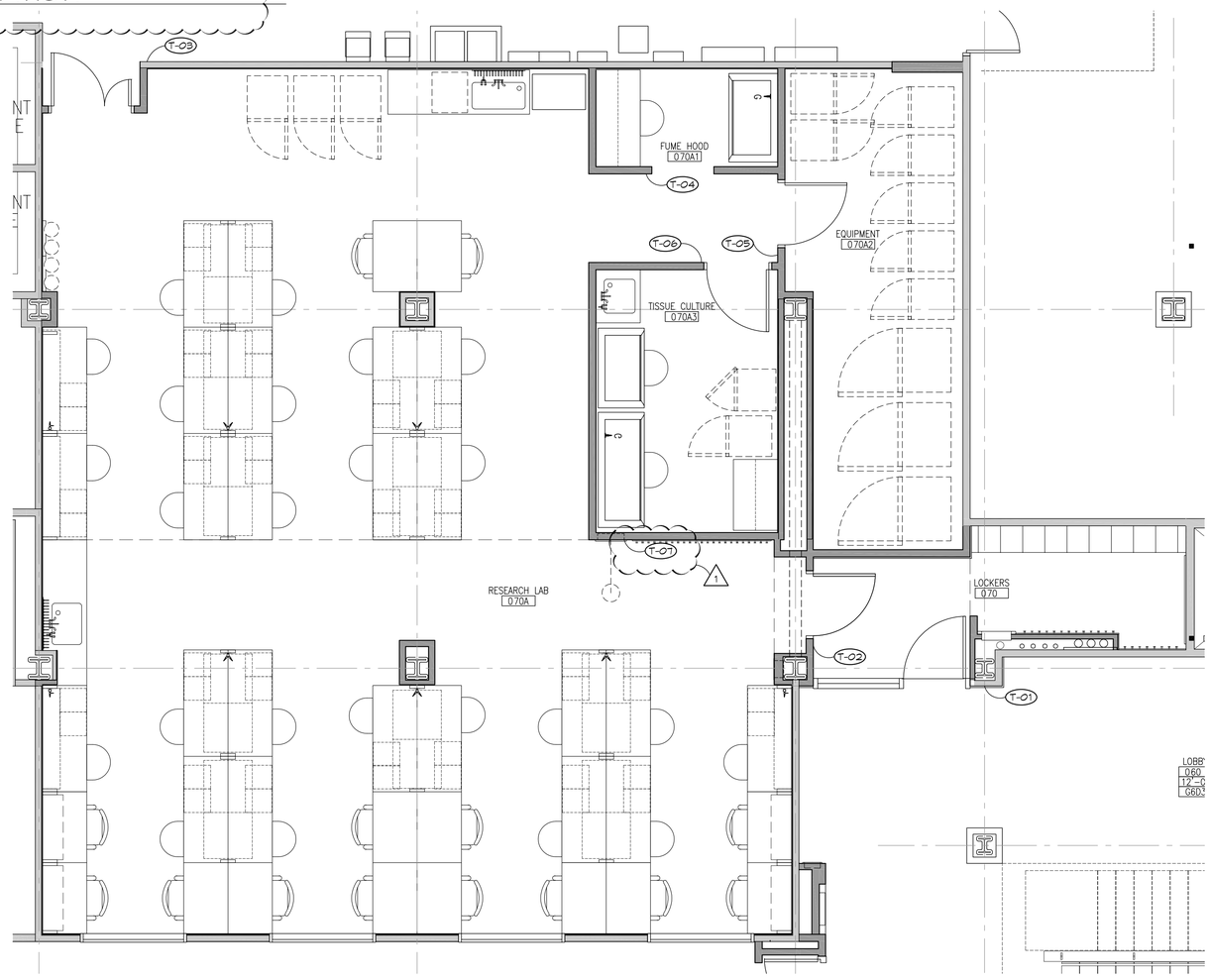
PAINT & FINISH SCHEDULE

THIS SCHEDULE PROVIDES COLOR MATCHING INFORMATION for ALL SIGNS and GRAPHICS SPECIFIED IN THE CONSTRUCTION DRAWINGS. PAINT COLORS ARE IDENTIFIED ON THE DRAWINGS with DIAMOND TAGS CONTAINING A LETTER and NUMBER. LISTED BELOW ARE THE TAGS with COLOR REFERENCES FOR USE IN MATCHING PAINT. SEE SIGN SPECIFICATIONS for PAINT MANUFACTURER and FINISH INFORMATION.

PROGRAM COLORS & MATERIAL FINISHES

- P1 WHITE
- P2 MP 15661 (LIGHT GRAY)
- P3 MP 18214 (DARK GRAY)
- P4 GREEN
- M1 MATERIAL & FINISH SELECTED BY ARCHITECT IN CONSULTATION with OWNER TO MATCH EXISTING BUILDING STANDARD

13 SIGNAGE ELEVATIONS
SCALE: 6" = 1' - 0"



9 SIGNAGE PLAN
SCALE: 1/4" = 1'-0"

TLBA
TLB ARCHITECTURE, LLC
42 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	AMR
CHECKED:	PDT
ISSUED FOR:	
BIDDING and CONSTRUCTION REVISIONS:	
1 3/29/21 OWNER'S REVIEW	
2 4/30/21 BIDDING & CONSTRUCTION	

A9.4
SIGNAGE SCHEDULE & DTLS

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.
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, TECHNOLOGY, AND SPECIAL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS (OPERATIONAL, TESTED, ADJUSTED, CALIBRATED, AND 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 DOCUMENTS INCLUDED IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY 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. IN ORDER TO INDICATE THE SCOPE OF WORK, THE PLANS ARE ARRANGED FOR CLARITY IN TWO DIMENSIONS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE ACTUAL LAYOUT OF SYSTEMS AND COORDINATION WITH OTHER SYSTEMS AND BUILDING ELEMENTS. COORDINATE LOCATIONS OF UTILITIES AND EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATIONS TO THE EQUIPMENT AND UTILITY LAYOUTS REQUIRED FOR INSTALLATION ARE TO BE PERFORMED UNDER THE CONTRACT AGREEMENT AT NO ADDITIONAL COST. PROVIDE ADDITIONAL TRANSITIONS AND OFFSETS IN ALL PIPING, DUCTWORK OR CONDUIT FOR COORDINATION WITH OTHER TRADES AND BUILDING ELEMENTS AND STRUCTURE.
5. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF EQUIPMENT, FIXTURES, AND DEVICES IN FINISHED SPACES. COORDINATE EQUIPMENT, FIXTURE, AND DEVICE COLORS AND FINISHES 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. WHERE THE CONTRACT DOCUMENTS EXCEED CODE REQUIREMENTS, THE CONTRACT DOCUMENTS MUST BE FOLLOWED.
7. INSTALL ALL EQUIPMENT IN ACCESSIBLE LOCATIONS. WHERE EQUIPMENT MUST BE INSTALLED ABOVE AN INACCESSIBLE CEILING OR BEHIND A WALL, PROVIDE AN APPROPRIATE ACCESS DOOR RATED TO MATCH THE CEILING OR WALL RATING. COORDINATE THE LOCATION WITH THE ARCHITECT PRIOR TO INSTALLATION.
8. COORDINATE ALL UTILITIES ENTERING OR LEAVING THE BUILDING WITH THE SITE CONTRACTOR(S) BEFORE INSTALLATION. COORDINATE INVERTS WITH THE STRUCTURE AND SYSTEM REQUIREMENTS PRIOR TO INSTALLATION.
9. NOTIFY THE ARCHITECT IMMEDIATELY OF ANY CONFLICTS DISCOVERED BETWEEN DOCUMENTS. IF THE CONFLICT IS NOT RESOLVED PRIOR TO SUBMITTING A BID, CARRY THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
10. BEFORE INSTALLATION, COORDINATE REQUIRED SERVICE CONNECTIONS, FACTORY START UPS AND INSTALLATION OF FIELD DEVICES ASSOCIATED WITH OWNER-FURNISHED EQUIPMENT.
11. PROVIDE A CONCRETE HOUSEKEEPING PAD FOR ALL FLOOR-MOUNTED EQUIPMENT.
12. ENCLOSED CONTROLLERS SHALL BE PROVIDED BY THE CONTRACTOR PROVIDING THE EQUIPMENT REQUIRING AN ENCLOSED CONTROLLER. REQUIREMENTS ARE SPECIFIED UNDER DIVISION 26: "ENCLOSED CONTROLLERS".
13. DO NOT INSTALL PIPING OR DUCTWORK OVER ELECTRICAL PANELS, TRANSFORMERS, OR SPECIAL EQUIPMENT.
14. DO NOT INSTALL ANY SYSTEMS IN OR THROUGH ELEVATOR MACHINE ROOMS OR ELEVATOR SHAFTS THAT DO NOT SERVE THE ROOM OR SHAFT. MAINTAIN A MINIMUM OF SEVEN (7) FOOT HEAD CLEARANCE IN THE ELEVATOR MACHINE ROOM.
15. DO NOT INSTALL ANY SYSTEMS IN STAIRS NOT ASSOCIATED WITH OR SERVING THAT STAIR.
16. NO SYSTEM COMPONENTS MAY BE SUPPORTED FROM STRUCTURAL BRACED FRAMES.
17. NO SYSTEMS OR COMPONENTS MAY REST ON OR MAKE CONTACT WITH PIPING AND EQUIPMENT REQUIRED BY CODE TO BE INDEPENDENTLY SUPPORTED, SUCH AS FIRE PROTECTION PIPING AND MEDICAL GAS PIPING.

DELEGATED DESIGN AND DEFERRED SUBMITTALS

1. THIS PROJECT INCLUDES SYSTEMS AND ELEMENTS REQUIRING DESIGN AND SUBMITTAL BY A PROFESSIONAL ENGINEER OR QUALIFIED PROFESSIONAL AS PART OF THE CONTRACTOR'S SCOPE OF WORK. THE PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA FOR THESE DELEGATED DESIGN ITEMS ARE INDICATED IN THE SPECIFICATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE SUBMISSION OF DELEGATED DESIGN SUBMITTALS TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL.
3. THE FOLLOWING SYSTEMS, OR PORTIONS THEREOF, REQUIRE A DEFERRED SUBMITTAL. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS. ADDITIONAL SYSTEMS MAY REQUIRE DEFERRED SUBMITTALS WHERE INDICATED IN THE SPECIFICATIONS. THIS LIST IS NOT INTENDED TO BE A COMPREHENSIVE LIST OF ALL SYSTEMS REQUIRING A DELEGATED DESIGN. THE CONTRACTOR IS RESPONSIBLE FOR ALL DELEGATED DESIGN REQUIREMENTS INDICATED IN THE CONTRACT DOCUMENTS.
   a. FIRE PROTECTION SYSTEMS
   b. FIRE ALARM SYSTEMS

FIRE PROTECTION

1. UNLESS OTHERWISE NOTED, THE INTENT OF THESE DOCUMENTS IS TO PROVIDE FULL SPRINKLER COVERAGE TO ALL SCOPE OF WORK AREAS. 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. THE DRAWINGS DEPICT A PROPOSED FIRE PROTECTION SYSTEM LAYOUT; PIPE ROUTING, PIPE SIZES, AND APPROXIMATE SPRINKLER HEAD LOCATIONS ARE SHOWN FOR COORDINATION PURPOSES ONLY. THE CONTRACTOR SHALL PRODUCE A COMPLETE SET OF WORKING PLANS IN ACCORDANCE WITH NFPA 13 BASED ON HYDRAULIC CALCULATIONS PER THE SPECIFIED DESIGN CRITERIA. ALL PLANS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY THE CONTRACTOR'S REGISTERED FIRE PROTECTION ENGINEER AND SHALL BE SUBMITTED TO THE LOCAL AUTHORITY AND OWNER'S UNDERWRITER FOR APPROVAL.
3. WHERE SPRINKLER HEADS ARE SHOWN ON CONTRACT DOCUMENTS, THEY ARE INDICATED FOR GENERAL COORDINATION PURPOSES ONLY; FULL SPRINKLER COVERAGE REMAINS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR. REFER TO THE ARCHITECTURAL DRAWINGS FOR COORDINATION OF SPRINKLER HEAD LOCATIONS WITH CEILING AND WALL CONSTRUCTION.
4. 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.
5. BRANCH PIPING TO SPRINKLER HEADS SHALL NOT BE INSTALLED 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.
6. LOCATIONS OF FIRE DEPARTMENT CONNECTIONS AND FIRE PROTECTION SERVICE CONTROL VALVES SHALL BE COORDINATED WITH THE AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION.
7. PROVIDE DRAINS AT ALL LOW POINTS AND PITCH PIPING TO DRAIN. PROVIDE BALL VALVES ON ALL DRAINS SERVING PIPING CONTAINING MORE THAN 4 GALLONS OF WATER.

PLUMBING

1. FOR DRAWING CLARITY, INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE IS NOT NECESSARILY SHOWN ON PLANS. EACH 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.
4. PIPING SHALL BE INSTALLED WITHIN INTERIOR WALLS UNLESS FIXTURE OR EQUIPMENT LOCATION NECESSITATES PIPING INSTALLATION IN EXTERIOR WALL. PIPING INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED COMPLETELY ON THE INTERIOR SIDE OF THE BUILDING ENVELOPE IN A LOCATION FREE OF INFILTRATION.
5. PROVIDE COOLING COIL CONDENSATE TRAPS AND DRAIN PIPING FOR ALL MECHANICAL EQUIPMENT REQUIRING SAME; PIPE CONDENSATE DRAINS 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.

HVAC

1. FOR DRAWING CLARITY, VOLUME DAMPERS ARE NOT NECESSARILY SHOWN ON DUCTWORK PLANS. REFER TO SPECIFICATIONS, DETAILS, AND SCHEMATIC DIAGRAMS FOR VOLUME DAMPER LOCATIONS; VOLUME DAMPERS SHOWN ON DUCT PLANS ARE IN ADDITION TO THOSE INDICATED IN THE SPECIFICATIONS AND DETAILS.
2. FOR DRAWING CLARITY, VALVES AND ACCESSORIES ARE NOT NECESSARILY SHOWN ON PIPING PLANS. REFER TO SPECIFICATIONS, DETAILS, AND SCHEMATIC DIAGRAMS FOR VALVE AND ACCESSORY LOCATIONS; VALVES AND ACCESSORIES SHOWN ON PLANS ARE IN ADDITION TO THOSE INDICATED IN THE SPECIFICATIONS AND DETAILS.
3. PROVIDE DUCT TAKE-OFF FITTINGS PER THE SPECIFICATIONS AND DETAILS ON DRAWINGS. TAKE-OFFS SHOWN ON FLOOR PLANS DO NOT NECESSARILY REPRESENT THE SPECIFIC TYPE OF TAKE-OFF REQUIRED.
4. 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.
5. FOR ALL PIPING SYSTEMS, PROVIDE AIR VENTS AT ALL HIGH POINTS AND DRAINS AT ALL LOW POINTS.
6. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE-RATED CONSTRUCTION, INCLUDING WALLS, SHAFTS AND FLOOR PENETRATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS.
7. PROVIDE MOTORIZED DAMPERS AT ALL PERMANENT EXTERIOR DUCTED OR LOUVERED OPENINGS (EXCEPT DRYER, KITCHEN, AND FUME EXHAUST) AND PROVIDE BMS CONTROL OF THE DAMPER OPERATION. PITCH ALL DUCTWORK CONNECTED TO LOUVERS TO EXTERIOR OF BUILDING.

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. EACH INDIVIDUAL ELECTRICAL HOMERUN SHOWN ON FLOOR PLANS, DETAILS, OR SCHEDULES SHALL BE PROVIDED IN A DEDICATED RACEWAY.
5. SERIES RATING OF PROTECTIVE/ISOLATION DEVICES AND/OR ELECTRICAL EQUIPMENT IS UNACCEPTABLE. ALL ELECTRICAL EQUIPMENT AND PROTECTIVE DEVICES SHALL BE "FULLY" RATED.
6. 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 FOR LOCATIONS AND SPECIFIC ELECTRICAL REQUIREMENTS. COORDINATE EXACT LOCATION AND ORIENTATION OF EQUIPMENT WITH OTHER TRADES.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR THE EXACT LOCATION OF ALL CEILING MOUNTED LUMINAIRES SHOWN ON ELECTRICAL PLANS.
14. BOND ALL OF THE FOLLOWING SERVICES TOGETHER PER THE NEC: POWER, TELECOMMUNICATIONS, CATV AND LIGHTNING PROTECTION.
15. 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.
16. PROVIDE GROUND FAULT RECEPTACLES WITHIN SIX FEET (6') OF SINK OR OTHER WATER SOURCE; PROVIDE GROUND FAULT WEATHER PROOF RECEPTACLES AT ALL EXTERIOR LOCATIONS.

ELECTRICAL CONDUITS

1. PARTIAL CONDUIT ROUTING INDICATED ARE INTENDED TO REPRESENT A PROPOSED PATHWAY SHOWN FOR DESIGN INTENT ONLY. NOT ALL CONDUITS, PULL BOXES AND JUNCTION BOXES ARE SHOWN.
2. THE CONTRACTOR IS RESPONSIBLE PROVIDING AND SIZING OF ALL PULL BOXES, SPLICE BOXES, FITTINGS, RACEWAYS AND TRANSITIONS ETC. FOR ALL ELECTRICAL WORK AS INDICATED BY SCHEDULE, RISERS, SEQUENCES, SPECIFICATIONS AND DRAWINGS.

TECHNOLOGY

1. 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.
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 REFLECTED 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 16/26 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 23.
19. COORDINATE ELEVATOR CAB TELEPHONE LINE CONNECTION TERMINATION. CONNECTION BETWEEN ELEVATOR MACHINE ROOM AND ELEVATOR CAB BY ELEVATOR CONTRACTOR.
20. PROVIDE OSP WET LOCATIONS RATED CABLE FOR CONDUIT RUNS IN SLAB. REFER TO FLOOR PLANS AND RISER DIAGRAMS FOR FURTHER INFORMATION.

TECHNOLOGY CONDUITS

1. PARTIAL CONDUIT ROUTING INDICATED ARE INTENDED TO REPRESENT A PROPOSED PATHWAY SHOWN FOR DESIGN INTENT ONLY.
2. NOT ALL CONDUITS, PULL BOXES AND JUNCTION BOXES ARE SHOWN.
3. THE CONTRACTOR IS RESPONSIBLE PROVIDING AND SIZING OF ALL PULL BOXES, SPLICE BOXES, FITTINGS, RACEWAYS AND TRANSITIONS ETC. FOR ALL TECHNOLOGY WORK AS INDICATED BY SCHEDULE, RISERS, SEQUENCES, SPECIFICATIONS AND DRAWINGS.
4. PROVIDE SPARE CONDUITS WITH PULL STRING AND THREADED CAP.
5. PROVIDE BACKBONE AND HORIZONTAL CONDUITS AS INDICATED ON THE TECHNOLOGY/COMMUNICATION RISER.
6. DIVISION 26/27 CONTRACTOR TO COORDINATE EXACT ROUTING WITH STRUCTURAL, MECHANICAL, UTILITY, OTHER TRADE CONTRACTORS, AND ARCHITECTURAL DRAWINGS.
7. REFER TO SPECIFICATIONS FOR CONDUIT TYPES, APPLICATIONS AND INSTALLATION REQUIREMENTS.

RENOVATION

1. THIS PROJECT INVOLVES THE RENOVATION OF AN EXISTING FACILITY; BEFORE SUBMITTING A BID, CONTRACTORS SHALL ARRANGE A VISIT TO THE SITE THROUGH THE BUILDING OWNER AND BECOME THOROUGHLY FAMILIAR WITH THE EXISTING CONDITIONS UNDER WHICH THE PROJECT IS TO BE COMPLETED.
2. CONTRACTORS SHALL BE HELD RESPONSIBLE FOR ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS.
3. IT IS NOT THE INTENT OF THESE DOCUMENTS TO SHOW EVERY DEVICE, APPURTENANCE, PIPE, WIRE OR CONDUIT TO BE REMOVED. COMPLETELY REMOVE EQUIPMENT AND SYSTEMS NOT BEING REUSED, INCLUDING ASSOCIATED HANGERS, SUPPORTS, BASES, PADS, PIPES, DUCTS, CONDUITS, WIRES, INSULATION, AND CONTROLS BACK TO THE ACTIVE POINT OF ORIGIN.
4. EQUIPMENT, PIPING, OR CONDUIT SHALL NOT BE ABANDONED IN PLACE UNLESS SPECIFICALLY NOTED.
5. PROPERLY DISPOSE OF REMOVED EQUIPMENT IN COMPLIANCE WITH CODES, REGULATIONS, AND ENVIRONMENTAL PROTECTION STANDARDS.
6. VERIFY THE EXACT LOCATION AND QUANTITY OF ALL SYSTEM COMPONENTS SCHEDULED FOR REMOVAL OR RELOCATION.
7. PROTECT ALL SYSTEMS SCHEDULED TO REMAIN DURING CONSTRUCTION.
8. RELOCATE EXISTING SYSTEM COMPONENTS SCHEDULED TO REMAIN IN ORDER TO ACCOMMODATE CONSTRUCTION OF NEW SYSTEMS AND FINISHES.
9. MAINTAIN THE CONTINUITY OF ALL EXISTING SYSTEMS SCHEDULED TO REMAIN ACTIVE DURING CONSTRUCTION INCLUDING ACTIVE SYSTEMS PARTIALLY REMOVED AS PART OF THIS PROJECT. COORDINATE ALL INTERRUPTIONS OF SERVICE WITH THE OWNER IN ADVANCE.
10. PROVIDE TEMPORARY SERVICES REQUIRED TO ACCOMMODATE PHASING IN ORDER TO MAINTAIN EXISTING SERVICES TO ACTIVE AREAS.
11. PRIOR TO CONSTRUCTION, MEASURE AND RECORD EXISTING AIRFLOW AND FAN DATA FOR OPERATING CONDITION PRIOR TO DEMOLITION FOR ALL EXISTING AIR SYSTEMS AND BRANCH DUCTS SCHEDULED TO REMAIN. PROVIDE REPORT TO ENGINEER PRIOR TO DEMOLITION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171
www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	
CHECKED:	JRD
ISSUED FOR:	

BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

MEP0.01

MEP GENERAL NOTES

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

GENERAL ABBREVIATIONS

AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
AVG	AVERAGE
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
C	CONDUIT
CAT	CATEGORY ETHERNET CABLE
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CT	CURRENT TRANSFORMER
CU FT or CF	CUBIC FEET
D	DEPTH
dB	DECIBEL
DEG or °	DEGREE
DIA or ø	DIAMETER
DN	DOWN
DWG	DRAWING
EFF	EFFICIENCY
ELEC	ELECTRICAL
EMI	ELECTROMAGNETIC INTERFERENCE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAHRENHEIT
FA	FIRE ALARM
FM	FACTORY MUTUAL
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET OR FOOT
GA	GAUGE
GND	GROUND
GPM	GALLONS PER MINUTE
H	HEIGHT
HD	HEAD
HDCP	HANDICAP
HP	HORSEPOWER
HR	HOUR
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HZ	FREQUENCY (HERTZ), CYCLES PER SECOND
IN	INCHES
IN WG	INCHES WATER, GAUGE (PRESSURE)
KVA	KILOVOLT AMPERE
KW	KILOWATT
L	LENGTH
LB/HR	POUNDS PER HOUR
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
MA	MILIAMPERE
MAX	MAXIMUM
MBH	THOUSAND BTUH
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NA or N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PD	PRESSURE DROP
PRESS	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RH	RELATIVE HUMIDITY
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
S&R	SUPPLY AND RETURN
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STP	SHIELDED TWISTED PAIR
TAG	IDENTIFICATION OF EQUIPMENT
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TEMP	TEMPORARY
TYP	TYPICAL
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
VA	VOLT AMPERE
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WATT
WI	WIDTH
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WTR	WATER

DEVICE AND EQUIPMENT PLACEMENT AND DISPOSITION ABBREVIATIONS

a	SPECIAL HEIGHT: REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS
c	CEILING MOUNTED
BSC	LAB BIOSAFETY CABINET
EX	EXISTING TO REMAIN
F	FREEZER
H	LAB HOOD
k	REFRIGERATOR
m	MICROWAVE
NL	NEW LOCATION
P	PRINTER/COPIER
RE	EXISTING TO BE DISCONNECTED AND REMOVED
RL	EXISTING TO BE DISCONNECTED, REMOVED, AND RELOCATED
s	CONTROLLED RECEPTACLE

EQUIPMENT ABBREVIATIONS

AAP	AREA ALARM PANEL
AC	AIR COMPRESSOR
ATC	AUTOMATIC TEMPERATURE CONTROL SYSTEM
AHU	AIR HANDLING UNIT
ANN	ANNUNCIATOR
ATS	AUTOMATIC TRANSFER SWITCH
CP	CONDENSATE PUMP
EF	EXHAUST FAN
FACP	FIRE ALARM CONTROL PANEL
FCU	FAN COIL UNIT
FSCP	FIREFIGHTER'S SMOKE CONTROL PANEL
FSD	COMBINATION FIRE/SMOKE DAMPER
HUM	HUMIDIFIER
HX	HEAT EXCHANGER
LAC	LABORATORY AIR COMPRESSOR
LVP	LABORATORY VACUUM PUMP
MCC	MOTOR CONTROL CENTER
SD	SMOKE DAMPER
TX	TRANSFORMER
UPS	UNINTERRUPTIBLE POWER SUPPLY
VFC	VARIABLE FREQUENCY CONTROLLER

FIRE PROTECTION ABBREVIATIONS

C	CLEAN ROOM SPRINKLER HEAD
DCV	DOUBLE CHECK VALVE
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DRY	DRY SPRINKLER
F	FIRE SERVICE
FDC	FIRE DEPARTMENT CONNECTION
FDV	FIRE DEPARTMENT VALVE
FHC	FIRE HOSE CABINET
FM	FIRE MAIN
FVC	FIRE VALVE CABINET
PIV	POST INDICATOR VALVE
PRE	PRE-ACTION SPRINKLER
SP	STANDPIPE
SPK	SPRINKLER
SPK/SP	COMBINED SPRINKLER/STANDPIPE
WG	WIREGUARD

PLUMBING GENERAL ABBREVIATIONS

AD	AREA DRAIN
BFP	BACKFLOW PREVENTER
CO	CLEAN OUT
DCV	DOUBLE CHECK VALVE
DET	DOMESTIC WATER EXPANSION TANK
DP	DIFFERENTIAL PRESSURE
ET	EXPANSION TANK
FD	FLOOR DRAIN
FM	FLOW METER
FS	FLOOR SINK
KHWST	KITCHEN HOT WATER STORAGE TANK
LAV	LAVATORY
ORD	OVERFLOW ROOF DRAIN
RD	ROOF DRAIN
REF	ROOF EXHAUST FAN
RPD	REDUCED PRESSURE DEVICE
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WH	WALL HYDRANT (HOSE BIBB)
WHA	WATER HAMMER ARRESTER

PLUMBING PIPING SYSTEM ABBREVIATIONS

A	GENERAL SERVICE COMPRESSED AIR
CD	CONDENSATE (COOLING)
CW or DCW	DOMESTIC COLD WATER
G	GAS
GCC	GRAVITY COOLING CONDENSATE
GW	GREASE WASTE
GWA	GREASE WASTE ABOVE GRADE
GWB	GREASE WASTE BURIED
GW / V	COMBINATION GREASE WASTE AND VENT
HPG	HIGH PRESSURE GAS
HW or DHW	DOMESTIC HOT WATER
HWR or DHWR	DOMESTIC HOT WATER RETURN
IW	INDIRECT WASTE
NPCW	NON-POTABLE COLD WATER
NPHW	NON-POTABLE HOT WATER
ORWL	OVERFLOW RAIN WATER LEADER
PCD	PUMPED CONDENSATE DRAIN (COOLING)
RO	REVERSE OSMOSIS WATER
RWL	RAIN WATER LEADER
S	SOIL
SAN	SANITARY
ST	STORM
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
V	VENT
VAC	VACUUM
W	WASTE
W / V	COMBINATION WASTE AND VENT

LABORATORY PIPING SYSTEM ABBREVIATIONS

AV	ACID VENT
AVTR	ACID VENT THROUGH ROOF
AW	ACID WASTE
CO2	CARBON DIOXIDE
DE	DEIONIZED PROCESS WATER
DI	DISTILLED WATER
LA	LABORATORY COMPRESSED AIR
LG	LABORATORY GAS
LGM	LABORATORY GAS MANIFOLD
LV	LABORATORY VACUUM
LW	LABORATORY WASTE

HVAC GENERAL ABBREVIATIONS

CV	COEFFICIENT, VALVE FLOW
CV	CONSTANT VOLUME
DB	DRY BULB TEMPERATURE
DP	DIFFERENTIAL PRESSURE
EAT	ENTERING AIR TEMPERATURE
EWB	ENERING WET BULB TEMPERATURE
LAT	LEAVING AIR TEMPERATURE
RHC	REHEAT COIL
T'STAT	THERMOSTAT
WB	WET BULB TEMPERATURE

HVAC HYDRONIC PIPING SYSTEM ABBREVIATIONS

AWT	AVERAGE WATER TEMPERATURE
C	COOLING COIL CONDENSATE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
ET	EXPANSION TANK
GWR	GLYCOL WATER RETURN
GWS	GLYCOL WATER SUPPLY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
PCD	PUMPED CONDENSATE DRAIN (COOLING)

HVAC STEAM SYSTEM ABBREVIATIONS

COND	STEAM CONDENSATE
CLPS	CLEAN LOW PRESSURE STEAM
CMPS	CLEAN MEDIUM PRESSURE STEAM
CHPS	CLEAN HIGH PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
PCR	PUMPED CONDENSATE RETURN

HVAC AIR SYSTEM ABBREVIATIONS

APD	AIR PRESSURE DROP
BDD	BACKDRAFT DAMPER
DSA	DUCT SOUND ATTENUATOR
EA	EXHAUST AIR
EAV	EXHAUST AIR VALVE
ESP	EXTERNAL STATIC PRESSURE
FD	FIRE DAMPER
MD	MOTORIZED DAMPER
OA	OUTSIDE AIR
RGD	REGISTERS, GRILLES, AND DIFFUSERS
SA	SUPPLY AIR
SAV	SUPPLY AIR VALVE
SP	STATIC PRESSURE
TSP	TOTAL STATIC PRESSURE
VD	VOLUME DAMPER

ELECTRICAL GENERAL ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
AL	ALUMINUM CABLING
AMP	AMPERE
AF	ARC FAULT
AIC	AMPS INTERRUPTING CURRENT
AWG	AMERICAN WIRE GAUGE
BNC	BAYONET NEIL-CONCELMAN
C/B	CIRCUIT BREAKER
CKT	CIRCUIT
COP or CU	COPPER CABLING
DC	DIRECT CURRENT
EM	EMERGENCY
EM/NL	EMERGENCY/NIGHT LIGHT WALK THROUGH
EMT	ELECTRICAL METAL TUBING
FC	FOOT CANDLE
FMC	FLEXIBLE METALLIC CONDUIT
GE	GROUNDING EQUALIZER
GEC	GROUNDING ELECTRODE CONDUCTOR
GF	GROUND FAULT
IG	ISOLATED GROUND
JB	JUNCTION BOX
MC	METAL-CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NL	NIGHT LIGHT WALK THROUGH
P	POLE
PE	PRIMARY ELECTRIC SERVICE
PF	POWER FACTOR
PH or ø	PHASE
PNL	PANELBOARD
PT	POTENTIAL TRANSFORMER
R	RELAY
RGS	RIGID GALVANIZED STEEL CONDUIT
RMS	ROOT MEAN SQUARED
SE	SECONDARY ELECTRIC SERVICE
SPDT	SINGLE POLE DOUBLE THROW
SPST	SINGLE POLE SINGLE THROW
SW	SWITCH
TP	TAMPER PROOF

TECHNOLOGY GENERAL ABBREVIATIONS

CATV	COMMUNITY ANTENNA TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
COAX	COAXIAL CABLING
CT	CABLE TRAY
CVP	CEILING VIDEO PRESENTATION
D	DATA
DEMARC	DEMARCATION
EF	ENTRANCE FACILITY
EIA	ELECTRONICS INDUSTRIES ALLIANCE
ER	EQUIPMENT ROOM
H	HIGH OUTPUT SPEAKER
HC	HORIZONTAL CROSS-CONNECT
IC	INTERMEDIATE CROSS-CONNECT
IDC	INSULATION DISPLACEMENT CONNECTOR
L	LOCAL SOUND SPEAKER
LAN	LOCAL AREA NETWORK
LVP	LOW VIDEO PRESENTATION
MC	MAIN CROSS-CONNECT
MM	MULTI-MODE
OF	OPTICAL FIBER
P	PENDANT SPEAKER
PA	PUBLIC ADDRESS
PBX	PRIVATE BRANCH EXCHANGE
POE	POWER OVER ETHERNET
PP	PATCH PANEL
PR	PAIR
RU	RACK UNIT
S	SLEEVE(S)
SM	SINGLE MODE
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TE	TELECOMMUNICATIONS ENCLOSURE
TEBC	TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TEL	TELECOMMUNICATIONS SERVICE
TGB	TELECOMMUNICATIONS GROUNDING BUSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TR	TELECOMMUNICATIONS ROOM
TS	TELEPHONE SERVICE
VOIP	VOICE OVER INTERNET PROTOCOL
W	WALL TELEPHONE
WAO	WORK AREA OUTLET
WAP	WIRELESS ACCESS POINT

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171
www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN:
CHECKED: **JRD**
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

MEP0.02

MEP ABBREVIATIONS

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" INDICATE EXISTING EQUIPMENT TO REMAIN INTACT
RE	SUB LETTERS "RE" INDICATE EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED
RL	SUB LETTERS "RL" INDICATE EXISTING EQUIPMENT TO BE DISCONNECTED, REMOVED AND RELOCATED
NL	SUB LETTERS "NL" INDICATE NEW LOCATION OF RELOCATED EQUIPMENT
NR	SUB LETTERS "NR" INDICATE NEW EQUIPMENT TO REPLACE EXISTING
RR	SUB LETTERS "RR" INDICATE REMOVE EQUIPMENT AND REPLACE ON NEW SURFACE
*	* = a, b, clg, AF, GF IG OR TP. WHEN TAGGED IN THE ELECTRICAL SYMBOL LIST, REFER TO THE ABBREVIATION LIST

FIRE PROTECTION SYMBOLS

——F——	FIRE SERVICE
——SP/SPK——	COMBINATION SP / SPK MAIN
——SPK——	WET SPRINKLER MAIN
——SP——	STANDPIPE MAIN
FS	FLOW SWITCH
TS	OS&Y WITH TAMPER SWITCH ON PIPE RISE
TS	BUTTERFLY VALVE WITH TAMPER SWITCH
TS	OS&Y VALVE WITH TAMPER SWITCH
	PENDANT SPRINKLER HEAD CONCEALED
	PENDANT SPRINKLER HEAD SEMI-RECESSED
	UPRIGHT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD
E	EXISTING SPRINKLER HEAD TO REMAIN
	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

PLUMBING SYMBOLS

—— – ——	COLD WATER
—— – – ——	HOT WATER
—— – – – ——	HOT WATER RECIRCULATING
— — — —	VENT
——S——	SOIL OR WASTE ABOVE GRADE
– ——— –	STORM, SOIL OR WASTE BURIED
——WV——	WASTE & VENT COMBINATION ABOVE GRADE
——IW——	INDIRECT WASTE
——ORWL——	OVERFLOW RAIN WATER LEADER
——RWL——	RAIN WATER LEADER
——C——	CONDENSATE DRAIN
——PCD——	PUMPED CONDENSATE DRAIN
——EHC——	ELECTRICAL HEATING CABLE
——G——	GAS ABOVE GRADE
——TW——	TEMPERED WATER
- - -TWR- - -	TEMPERED WATER RETURN
	FLOOR DRAIN
	ROOF DRAIN

LABORATORY GAS SYMBOLS

——CO2——	CARBON DIOXIDE
- - -RO- - -	REVERSE OSMOSIS WATER
- - - DI - - -	DISTILLED WATER
——DE——	DEIONIZED PROCESS WATER
- - -AV- - -	ACID (CHEMICAL) VENT
——AW——	ACID (CHEMICAL) WASTE ABOVE GRADE
——AW——	ACID (CHEMICAL) WASTE BELOW GRADE
——LG——	LABORATORY GAS
——LA——	LABORATORY COMPRESSED AIR
——LV——	LABORATORY VACUUM
LGM	LABORATORY GAS MANIFOLD
G	GAS TURRET

HVAC SYMBOLS

	RECTANGULAR, FLAT OVAL 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
AD	ACCESS DOOR
	FLEXIBLE DUCT CONNECTION
	CEILING SUPPLY DIFFUSERS
	CEILING RETURN / EXHAUST GRILLE
	HARD DUCTED DIFFUSER OR GRILLE WITH FULL SIZE BOTTOM TAKE-OFF
	DIRECTION OF SUPPLY OR OUTDOOR AIRFLOW
	DIRECTION OF RETURN OR EXHAUST AIRFLOW
	AIR TRANSFER UNDER DOOR
VD	VOLUME DAMPER
FD	FIRE DAMPER
A	AIR VALVE
——XXX——	SUPPLY PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
- - -XXX- - -	RETURN PIPING. REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)
SD	SMOKE DAMPER SYSTEM AND ASSOCIATED DEVICES PER SPECIFICATIONS AND MEP DETAILS
SD	COMBINATION FIRE AND SMOKE DAMPER
M	MOTORIZED DAMPER
DS	DUCT SMOKE DETECTOR WITH REMOTE INDICATING LIGHT AND TEST SWITCH
SP	DUCT STATIC PRESSURE SENSOR
VFC	VARIABLE FREQUENCY CONTROLLER
T	ROOM THERMOSTAT OR TEMPERATURE SENSOR
CO	CARBON MONOXIDE SENSOR
H	HUMIDISTAT

DUCT SIZING

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

FITTINGS AND VALVES

	BACKFLOW PREVENTER
	STRAINER OR STRAINER WITH BLOW-DOWN VALVE HOSE END, CAP AND CHAIN
	WALL CLEANOUT OR BLIND FLANGE
	"P" TRAP
	PIPE TEE DOWN
	FLOOR CLEANOUT
T	STEAM TRAP ASSEMBLY
	PIPE ELBOW UP OR PIPE TEE UP
	PIPE ELBOW DOWN
	COMPANION FLANGE
	PIPE CAP OR CAPPED END OF PIPE
	UNION
	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
	AIR VENT
	PIPE DROP WITH VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE
	BALL VALVE
1	SOLENOID 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
A	AQUASTAT
T	TEMPERATURE SENSOR WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
T	TEMPERATURE GAUGE WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
	THERMOMETER WITH SEPARABLE SOCKET IN IMMERSIBLE WELL
P	PRESSURE GAUGE
P	PRESSURE SENSOR WITH SYPHON (STEAM)
	FLEXIBLE CONNECTOR

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN:
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

MEP0.03

MEP SYMBOL LIST

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

CODE INFORMATION

THE FOLLOWING CODES APPLY TO ALL DRAWINGS AND SPECIFICATIONS	
STATE BUILDING CODE AND FIRE CODE	SBC-1 RHODE ISLAND STATE BUILDING AND FIRE CODE
STATE PLUMBING CODE	SBC-3 RHODE ISLAND STATE PLUMBING CODE
STATE MECHANICAL CODE	SBC-4 RHODE ISLAND STATE MECHANICAL CODE
STATE ELECTRICAL CODE	SBC-5 RHODE ISLAND STATE ELECTRICAL CODE
STATE ENERGY CONSERVATION CODE	SBC-8 RHODE ISLAND STATE ENERGY CONSERVATION CODE
STATE FUEL GAS CODE	SBC-19 RHODE ISLAND STATE FUEL GAS CODE
PARTIAL LIST OF APPLICABLE AND REFERENCED CODES AND STANDARDS, AS AMENDED BY STATE CODES, REGULATIONS, AND LAWS (NOT ALL REFERENCED AND APPLICABLE CODES AND STANDARDS ARE LISTED)	
BUILDING CODE	2015 INTERNATIONAL BUILDING CODE
PLUMBING CODE	2015 INTERNATIONAL PLUMBING CODE
MECHANICAL CODE	2015 INTERNATIONAL MECHANICAL CODE
ELECTRICAL CODE	2017 NFPA 70; NATIONAL ELECTRIC CODE
ENERGY CODE	2015 INTERNATONAL ENERGY CONSERVATION CODE
	2013 ANSI/ASHRAE/IESNA 90.1; ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS
FIRE CODE	NFPA 1 - 2015; FIRE CODE
FIRE PROTECTION	NFPA 13 - INSTALLATION OF SPRINKLER SYSTEMS
	NFPA 14 - 2013; STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
FIRE ALARM	NFPA 72 - 2013; NATIONAL FIRE ALARM CODE
LIFE SAFETY CODE	NFPA 101-2015; LIFE SAFETY CODE
ACCESSIBILITY	2009 ICC/ANSI A117.1, GUIDELINES FOR ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
	THE AMERICANS WITH DISABILITIES ACT, TITLE II, INCLUDING THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND ADA REGULATIONS
STATE LAW	STATE OF RHODE ISLAND GENERAL LAWS
MUNICIPAL REQUIREMENTS	LOCAL CODES AND ORDINANCES ADOPTED BY MUNICIPALITY

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

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
- 2S — DOUBLE-POLE SWITCH
- 3S — 3-WAY SWITCH
- 4S — 4-WAY SWITCH
- PS — SINGLE-POLE SWITCH (TOGGLE LIGHTED - LOAD ON)
- LS — LOW VOLTAGE SWITCH
- EMS — EMERGENCY OFF SWITCH
- RS — EMERGENCY LIGHTING RELAY
- DS — SINGLE-POLE DIMMER SWITCH
- D3S — THREE-WAY DIMMER SWITCH
- TS — SINGLE-POLE TIMER SWITCH
- KS — SINGLE-POLE KEYED SWITCH
- K3S — KEYED, 3-WAY SWITCH
- K4S — KEYED, 4-WAY SWITCH
- SCS — SPEED CONTROL SWITCH
- MCS — MOMENTARY CONTACT SWITCH
- OCC — OCCUPANCY SENSOR W / POWER PACK (CEILING / WALL)
- OCS — OCCUPANCY SENSOR SWITCH
- VSS — VACANCY SENSOR SWITCH
- VCS — VACANCY SENSOR CONTROL SWITCH
- TM — MARK TIME SWITCH
- DL — DAYLIGHTING SENSOR
- TC — TIME CLOCK
- PC — PHOTOCELL
- EMERGENCY OFF SWITCH WITH COVER
- DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE SPLIT WIRED
- DUPLEX RECEPTACLE ON EMERGENCY POWER
- DOUBLE DUPLEX RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE ON EMERGENCY POWER
- SINGLE RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE; VERIFY NEMA CONFIGURATION WITH EQUIPMENT
- SPECIAL PURPOSE RECEPTACLE ON EMERGENCY POWER; VERIFY NEMA CONFIGURATION WITH EQUIPMENT
- G — GROUNDING BUSBAR

ELECTRICAL SYMBOLS

- FURNITURE PARTITION WHIP CONNECTION
- FB-X — FLOOR SERVICE FITTING WITH OUTLET(S); REFER TO SCHEDULE (X)
- PT-X — POKE-THRU ASSEMBLY WITH OUTLET(S); REFER TO SCHEDULE (X)
- TP-X — TELEPOWER POLE WITH OUTLET(S); REFER TO SCHEDULE (X)
- 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
- EHC — ELECTRICAL HEATING CABLE
- POWER WIRING
- SWITCH LEG WIRING
- CONTROL WIRING
- XXX — WIRING - REFER TO ABBREVIATION LIST (XXX)
- (1) 20A- 1P — CIRCUIT BREAKER SIZE
- LV-1 — HOME RUN
- PANEL DESIGNATION
- LV-1 — PANEL DESIGNATION 20A-1P HOME RUN (TYPICAL)
- HOME RUN
- LV-1 XP/XXA — PANEL DESIGNATION POLES/AMPERAGE
- HOME RUN
- LV-1 1,2,3 — PANEL DESIGNATION CIRCUIT NUMBERS
- HOME RUN
- FEEDER TAG
- SURFACE ELECTRICAL PANEL, 480Y/277 OR 480 VOLT
- SURFACE ELECTRICAL PANEL, 208Y/120 OR 208 VOLT
- XXXX — SURFACE SPECIAL-PURPOSE PANEL OR CABINET
- FLUSH ELECTRICAL PANEL, 480Y/277 VOLT
- FLUSH ELECTRICAL PANEL, 208Y/120 VOLT
- XXXX — FLUSH SPECIAL-PURPOSE PANEL OR CABINET
- TX — TRANSFORMER
- TX — TRANSFORMER
- 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
- SCO — COMBINATION SMOKE/CARBON MONOXIDE DETECTOR
- H — HEAT DETECTOR
- RI — REMOTE INDICATOR
- F — FIRE ALARM MANUAL PULL STATION
- H — FIRE ALARM HORN / STROBE
- FIRE ALARM SPEAKER / STROBE
- C — FIRE ALARM CHIME / STROBE
- FIRE ALARM STROBE
- FIRE ALARM CEILING-MOUNTED SPEAKER
- FIRE ALARM CEILING-MOUNTED SPEAKER/STROBE
- 2 — FIREFIGHTER'S TELEPHONE JACK
- WALL CLOCK WITH HANGER TYPE OUTLET
- B — PROGRAM BELL
- PP — PUSH PLATE
- DO — DOOR OPERATOR
- E — CALL-FOR-AID SWITCH W/ CORD
- CALL-FOR-AID LIGHT AND BUZZER
- ML — MAGNETIC DOOR LOCK

COMMUNICATIONS SYMBOLS

- XD — DATA OUTLET(S)
- XD/XV — DATA AND VOICE OUTLET(S)
- XV — VOICE OUTLET(S)

BUILDING STANDARD COMMUNICATIONS OUTLETS OF INDICATED TYPE, WHERE "X" DENOTES THE NUMBER OF CABLES REQUIRED WHEN GREATER THAN ONE.

- FB-X — FLOOR SERVICE FITTING WITH OUTLET(S)

REFER TO ELECTRICAL SCHEDULES FOR "X"

- X — VOICE OUTLET(S); REFER TO ABBREVIATIONS FOR "X"
- X/X — SPECIALTY OUTLET(S); REFER TO ABBREVIATIONS FOR "X"
- WAP WAP — CEILING OR WALL-MOUNTED WIRELESS ACCESS POINT DATA OUTLET
- TB -X — TABLE BOX WITH OUTLET(S); REFER TO SCHEDULE (X)
- TP-X — TELE-POWER POLE WITH OUTLET(S); REFER TO SCHEDULE (X)
- CABLE TRAY
- LADDER RACK
- G — TELECOMMUNICATIONS GROUNDING BUSBAR (TGB)
- RACEWAY UP / DOWN
- SURFACE MOUNTED RACEWAY

SECURITY SYMBOLS

ACCESS CONTROL

- DO — DOOR OPERATOR
- PP — PUSH PLATE
- ML — MAGNETIC DOOR LOCK
- ES — ELECTRONIC DOOR STRIKE
- EL — ELECTRONIC LOCK
- ELR — ELECTRONIC LATCH RETRACTION
- CR — CARD READER
- CRK — CARD READER/KEYPAD COMBO
- REX — REQUEST TO EXIT
- IC — INTERCOM STATION
- MIC — MASTER INTERCOM STATION
- EH — ELECTRONIC DOOR HARDWIRING
- DA — DURESS ALARM
- EP — EMERGENCY PHONE

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

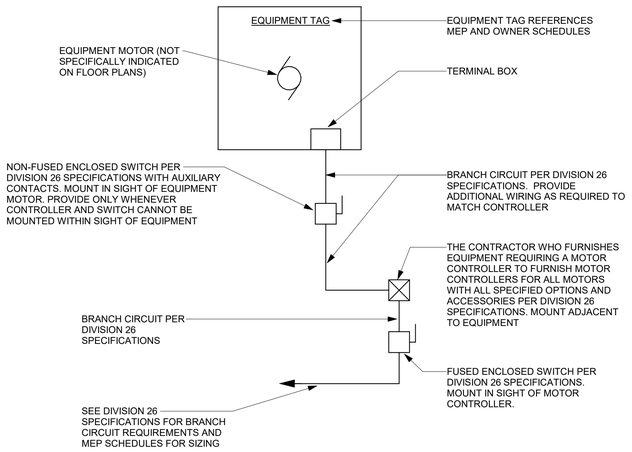
BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171
www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN:
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

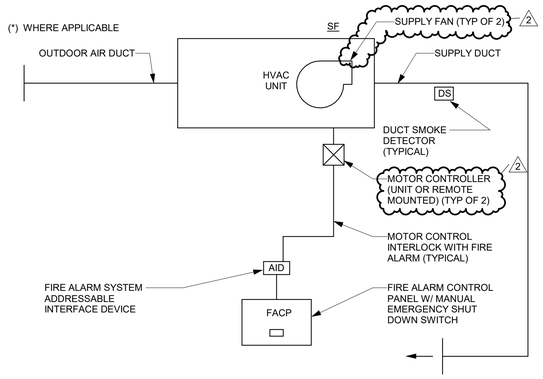
MEP0.04

MEP SYMBOL LIST



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.

2 TYPICAL MOTOR, SWITCH AND CONTROLLER DETAIL
N.T.S.

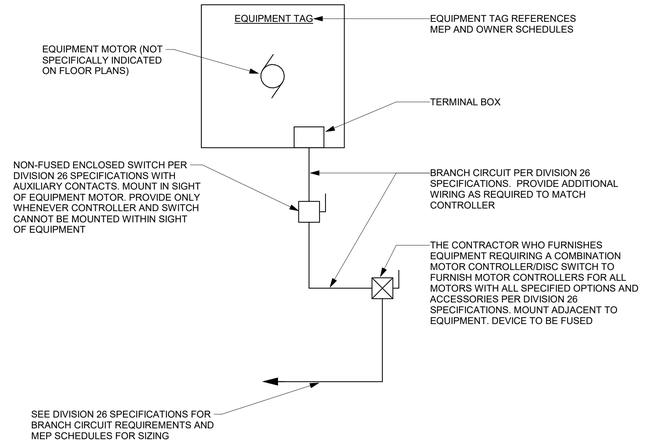


NOTES:

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.
5. AHU-4 SHALL SHUT DOWN DURING SMOKE CONTROL EVENT; LAB EXHAUST FANS F-3A AND F-3B SHALL CONTINUE TO OPERATE AT REDUCED SPEED.

2

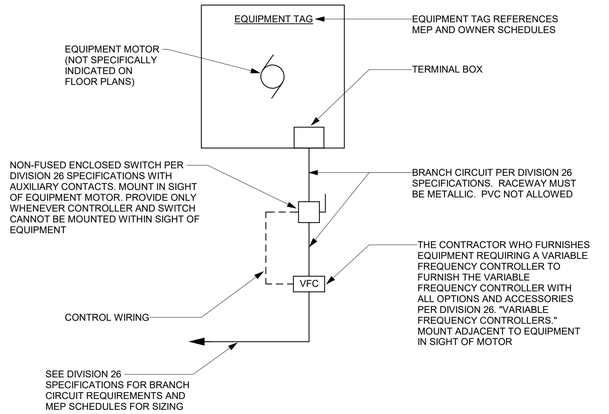
HVAC UNIT SMOKE / EMERGENCY SHUTDOWN AND SMOKE ISOLATION SYSTEM DIAGRAM
N.T.S.



NOTE:

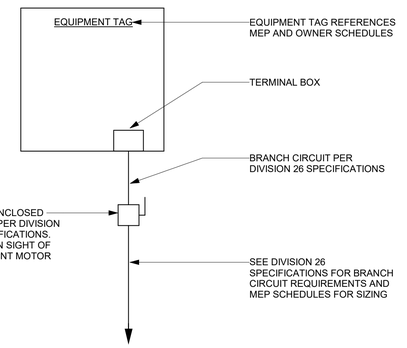
THIS DETAIL IS FOR ALL EQUIPMENT MOTORS. CONTRACTOR TO PROVIDE WIRING BETWEEN REMOTE COMBINATION MOTOR CONTROLLER/ DISC SWITCH AND MOTORS. SEE EQUIPMENT SCHEDULES AND SPECIFICATIONS. IF NOT NOTED OTHERWISE IN EQUIPMENT SCHEDULES, CONTRACTOR SHALL PROVIDE A COMBINATION MOTER CONTROLLER/DISC. SWITCH.

TYPICAL COMBINATION MOTOR CONTROLLER/DISC SWITCH DETAIL
N.T.S.



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.

2 TYPICAL MOTOR CONTROLLER AND VFC DETAIL
N.T.S.



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.

2 TYPICAL EQUIPMENT CONNECTION DETAIL
N.T.S.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

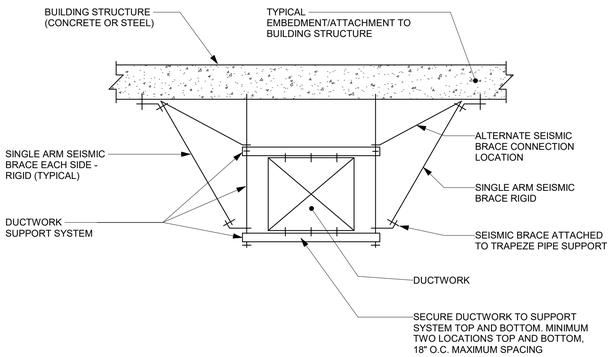
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN:
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

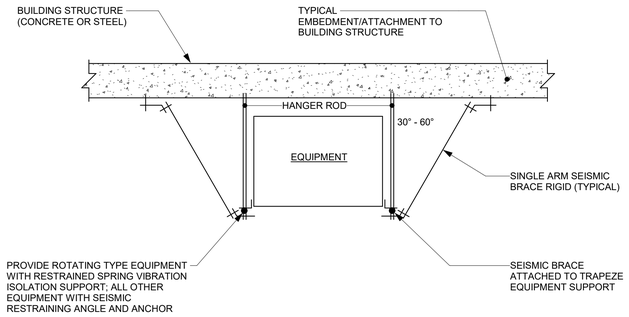
MEP1.01

MEP DETAILS



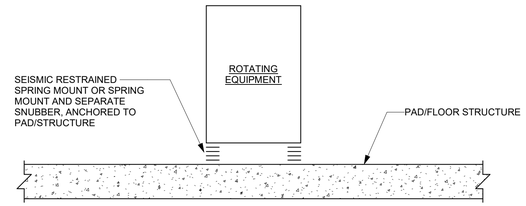
NOTE:
CABLE RESTRAINTS MAY BE USED, PROVIDED ADDITIONAL RESTRAINT CABLES ARE INSTALLED TO COMPLY WITH ALL SYSTEM SEISMIC CODE MOVEMENT REQUIREMENTS. PROVIDE ROD STIFFENERS AS REQUIRED.

SEISMIC DUCTWORK SYSTEM SUPPORT DETAIL
NOT TO SCALE

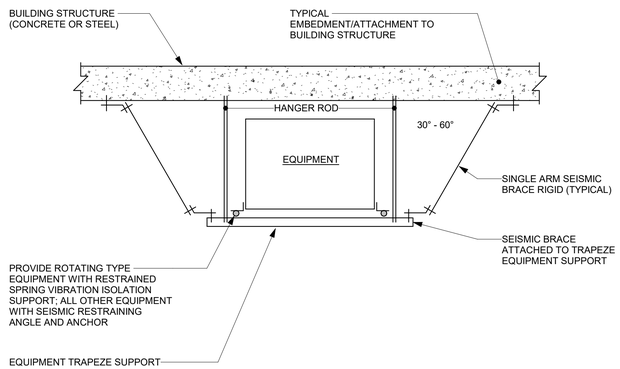


NOTE:
CABLE RESTRAINTS MAY BE USED, PROVIDED ADDITIONAL RESTRAINT CABLES ARE INSTALLED TO COMPLY WITH ALL SYSTEM SEISMIC CODE MOVEMENT REQUIREMENTS. PROVIDE ROD STIFFENERS AS REQUIRED.

SEISMIC EQUIPMENT HANGER SUPPORT DETAIL
NOT TO SCALE

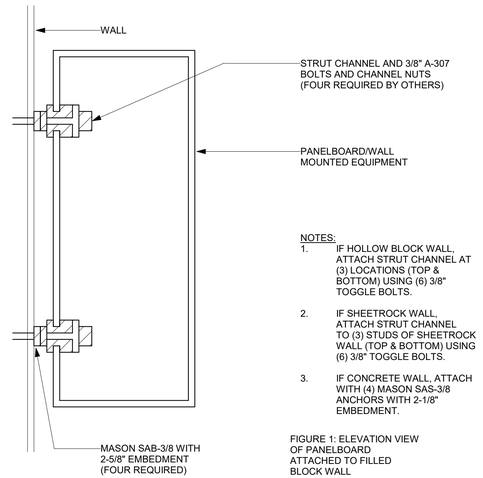


SEISMIC FLOOR MOUNTED ROTATING EQUIPMENT DETAIL
NOT TO SCALE



NOTE:
CABLE RESTRAINTS MAY BE USED, PROVIDED ADDITIONAL RESTRAINT CABLES ARE INSTALLED TO COMPLY WITH ALL SYSTEM SEISMIC CODE MOVEMENT REQUIREMENTS. PROVIDE ROD STIFFENERS AS REQUIRED.

SEISMIC TRAPEZE SUPPORTED EQUIPMENT DETAIL
NOT TO SCALE



NOTES:
1. IF HOLLOW BLOCK WALL, ATTACH STRUT CHANNEL AT (3) LOCATIONS (TOP & BOTTOM) USING (6) 3/8" TOGGLE BOLTS.
2. IF SHEETROCK WALL, ATTACH STRUT CHANNEL TO (3) STUDS OF SHEETROCK WALL (TOP & BOTTOM) USING (6) 3/8" TOGGLE BOLTS.
3. IF CONCRETE WALL, ATTACH WITH (4) MASON SAS-3/8 ANCHORS WITH 2-1/8" EMBEDMENT.

FIGURE 1: ELEVATION VIEW OF PANELBOARD ATTACHED TO FILLED BLOCK WALL

SEISMIC PANELBOARD DETAIL
NOT TO SCALE

SEISMIC BRACING GENERAL NOTES

1. REFER TO SPECIFICATIONS FOR SEISMIC REQUIREMENTS INCLUDING ENGINEERED SUBMITTAL.
2. DETAILS SHOW GENERAL INTENT OF RESTRAINTS. PROVIDE SPECIFIC DETAILS AS PART OF ENGINEERED SUBMITTAL AND PER SECTION "VIBRATION ISOLATION AND SEISMIC RESTRAINTS.
3. ALL EQUIPMENT, CONDUIT, PIPING AND DUCTWORK NOT EXCLUDED BY THE LATEST SEISMIC CODE SHALL BE SEISMICALLY RESTRAINED. VERIFY ALL SEISMIC REQUIREMENTS WITH APPLICABLE CODES AND REGULATIONS.
4. ALL FLOOR MOUNTED EQUIPMENT NOT REQUIRING VIBRATION ISOLATION SHALL BE ANCHORED DIRECTLY TO THE CONCRETE PAD/STRUCTURE.
5. ALL PAD MOUNTED EQUIPMENT REQUIRING VIBRATION ISOLATION SHALL BE PROVIDED WITH SNUBBERS ON ALL SIDES OR PROVIDED WITH SEISMIC ISOLATORS ANCHORED TO CONCRETE PAD/STRUCTURE.
6. ALL MATERIAL AND EQUIPMENT SECURED TO ROOF TRUSSES MUST BE SUPPORTED OR ANCHORED TO THE TOP OR BOTTOM CHORD ONLY.
7. ALL LIGHTING FIXTURES SHALL BE SECURED TO THE STRUCTURE.
8. FLUSH OR RECESSED LIGHT FIXTURES AND AIR DIFFUSERS OR GRILLES RESTRAINED PER CODE REQUIREMENTS SHALL HAVE DIAGONAL CORNERS ATTACHED TO BUILDING STRUCTURE.
9. SECURE SURFACE MOUNTED LIGHT FIXTURES WITH POSITIVE CLAMPING DEVICES TO BUILDING STRUCTURE.
10. SEE NFPA #13 AND SPECIFICATIONS FOR SEISMIC REQUIREMENTS OF FIRE PROTECTION SPRINKLER SYSTEMS.
11. WHEN MULTIPLE PIPING IS INSTALLED AND SUPPORTED IN A RACKING CONFIGURATION, PROVIDE ENGINEERED SUBMITTAL PER SPECIFICATIONS "HANGERS AND SUPPORTS". AA
12. AIR CRAFT CABLE CAN BE USED AS A SUBSTITUTE FOR THE DIAGONAL BRACING. SINCE CABLE IS NOT CAPABLE OF SUPPORTING COMPRESSIVE LOADS, ADDITIONAL CABLES IN OTHER DIRECTION WILL BE REQUIRED.
13. A RIGID SYSTEM SHALL NOT BE BRACED TO DISSIMILAR PARTS OF BUILDING OR TWO DISSIMILAR BUILDING SYSTEMS THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE.
14. PROVIDE LARGE ENOUGH PIPE SLEEVES THROUGH WALLS OR FLOORS TO ALLOW FOR ANTICIPATED DIFFERENTIAL MOVEMENTS.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: TS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

MEP1.02

MEP DETAILS

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"Ø	0-150	6 x 6	0-350	12 x 12	0-100	6"Ø
101-250	9 x 9	8"Ø	151-350	10X10	351-1200	22 x 22	101-250	8"Ø
251-400	12 x 12	10"Ø	351-650	12X12			251-400	10"Ø
401-600	15 x 15	12"Ø	651-1000	18X18			401-600	12"Ø
601-800	18 x 18	14"Ø					601-800	14"Ø

TYPE	MODEL	DESCRIPTION
A4	TDC	SQUARE LOUVER FACE CEILING SUPPLY DIFFUSER WITH REMOVABLE CORE, LAY-IN, 4-WAY THROW. TRANSITIONAL ADAPTER.
B	355 RL	LOUVER TYPE CEILING/WALL RETURN OR EXHAUST GRILLE, 35° FIXED DEFLECTION, 1/2" SPACING WITH BLADES PARALLEL TO THE LONG DIMENSION.
F	TMRA	ROUND CEILING DIFFUSER, 360° DISCHARGE PATTERN, FOUR (4) CONES, WITH ROTATING CENTER CONE FOR ADJUSTABLE AIR FLOW PATTERN FROM HORIZONTAL TO VERTICAL. TRANSITIONAL ADAPTER.
Y	TRITEC-AL	HIGH VOLUME LOW VELOCITY RADIAL AIR DIFFUSER, 304 STAINLESS STEEL REMOVABLE FACE WITH RETAINER CABLES FACE SHALL BE PERFORATED WITH 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTER, 6" TALL. 24"X24" MODULE, LAY-IN.

FAN COIL UNIT SCHEDULE

TAG	MFR	MODEL NO.	FILTER	ARRANGEMENT	SIZE	CFM	FANS	
							ESP	BHP
FCU-1	TRANE	FCCB100	1" MERV 8	DUCTED CONCEALED	100	1000	0.5"	0.13/0.25

CHILLED WATER COOLING COIL

TAG	EAT DB / WB (°F)	LAT DB / WB (°F)	EWT/LWT (°F)	TOTAL MBH	SENSIBLE MBH	GPM	MAX. WPD (FT)	ROWS	PIPE RUNOUT SIZE (IN)
FCU-1	75/63	53/52/4	44/56	30	22	5	8.4	4	1"

ELECTRICAL

TAG	WATTS/MCA	VOLTS / PHASE	HOME RUN	BRANCH CIRCUIT SIZE	SW / FUSE
FCU-1	389W/3.65	208/1	X	X	15

1. PROVIDE CONDENSATE OVERFLOW SENSOR AND NON-FUSED DISCONNECT SWITCH.

HVAC POWER VENTILATORS SCHEDULE

TAG	MFR	MODEL	TYPE	DRIVE	CFM	ESP (IN WC)	RPM	BHP	MOTOR HP	VFC
F-3A	COOK	225 CPS	UTILITY SET	BELT	10,600	4.5	2003	13.2	15	YES
F-3B	COOK	225 CPS	UTILITY SET	BELT	10,600	4.5	2003	13.2	15	YES

ELECTRICAL

TAG	VOLTS / PHASE	HOME RUN	BRANCH CIRCUIT SIZE	SW / FUSE
F-3A	480/3	50A-3P	(3) #6 AND (1) #8 GROUND IN 1" C	60A/35A
F-3B	480/3	50A-3P	(3) #6 AND (1) #8 GROUND IN 1" C	60A/35A

SCHEDULE NOTES:

1. PROVIDE SHAFT GROUNDING RINGS, DISCONNECT SWITCH, SPARE BELT
2. EACH FAN TO BE SERVED BY GENERATOR POWER SOURCE.
3. TOP DISCHARGE. UNIT WEIGHT IS 617 LBS. CONTRACTOR TO DISASSEMBLE/REASSEMBLE FAN AS REQUIRED TO RIG UP TO PENTHOUSE THROUGH ELEVATOR.

AIR FILTER SCHEDULE

TAG	MFR	MODEL	SERVICE	LOCATION	TOTAL MEDIA AREA (SQ FT)	EFFICIENCY	MAX PRESS DROP		MAX FACE VELOCITY (FPM)
							CLEAN (IN WG)	REPLACE (IN WG)	
FB-2	CAMFIL	AEROPLEAT III	PREFILTER	PENTHOUSE	24	MERV 8	0.3	0.6	443
FB-3	CAMFIL	AEROPLEAT III	AFTER-FILTER	PENTHOUSE	24	MERV 14	0.45	0.8	443

TAG	FILTER SIZE (IN) SECTION x LENGTH	CAPACITY (CFM)	NUMBER OF FILTERS	SYSTEM SERVED	REMARKS
FB-2	VARIES	10,600	6	AHU-4	
FB-3	VARIES	10,600	6	AHU-4	

SUPPLY VAV BOX INDIVIDUAL PERFORMANCE SCHEDULE

TAG ID	SIZE	MAX CFM	HEATING COIL PERFOMANCE				HEATING CFM	MAXIMUM COOLING CFM	MINIMUM CFM	COMMENTS
			MBH	LAT (F°)	GPM	PIPE SIZE				
CV-1	10	1200	39	85	2.6	3/4"	750	750	375	
CV-2	10	1200	39	85	2.6	3/4"	750	750	375	
CV-3	6	400	13	85	0.9	3/4"	300	300	150	
CV-4	10	1200	39	85	2.6	3/4"	900	900	450	
CV-5	8	800	26	85	1.8	3/4"	700	700	350	
CV-6	8	800	26	85	1.8	3/4"	700	700	350	
CV-7	8	800	26	85	1.8	3/4"	550	550	275	

GENERAL NOTES:

1. BOXES ARE BASED ON ENVIRO-TECH WITH PRESSURE INDEPENDENT DDC CONTROLS.
2. 0.5" MAXIMUM ALLOWABLE STATIC PRESSURE DROP FOR BOX AND REHEAT COIL.
3. HEATING COIL PERFORMANCE BASED ON MAXIMUM BOX CFM LISTED IN THE SCHEDULE WITH A 1 ROW HOT WATER COIL UNLESS OTHERWISE NOTED. COIL CAPACITY BASED ON 55°F ENTERING AIR TEMPERATURE. 180°F/150°F E/LWT.
4. ALL SUPPLY BOXES SHALL HAVE 36" LONG SOUND ATTENUATOR.

EXHAUST VAV BOX INDIVIDUAL PERFORMANCE SCHEDULE

TAG ID	SIZE	MAX CFM	DESIGN CFM	MINIMUM CFM	COMMENTS
EV-1	8	600	450	225	STAINLESS STEEL
EV-2	8	600	650	325	STAINLESS STEEL
EV-3	12	1400	700	400	STAINLESS STEEL
EV-4	12	1400	1000	500	STAINLESS STEEL
EV-5	12	1400	900	450	STAINLESS STEEL
EV-6	12	1400	850	425	STAINLESS STEEL

GENERAL NOTES:

1. BOXES ARE BASED ON ENVIRO-TECH WITH PRESSURE INDEPENDENT DDC CONTROLS.
2. 0.5" MAXIMUM ALLOWABLE STATIC PRESSURE DROP.

DUCT SOUND ATTENUATOR SCHEDULE

TAG	MFR	MODEL	SERVICE	TOTAL CFM	VELOCITY FPM	MAX PRESS DROP (IN WG)	OVERALL SIZE (IN)		INSERTION LOSS OCTAVE BAND FREQUENCIES (Hz)							SERVES
							SECTION	LENGTH	63	125	250	500	1K	2K	4K	8K	
SATT-EV1	VIBRO-ACOUSTICS	RFL-ULV-F4	BSC EXH.	450	-450	0.08	12"x12"	36"	8	14	15	13	14	13	10	7	EV-1
SATT-EV2	VIBRO-ACOUSTICS	RFL-ULV-F4	BSC EXH.	650	-650	0.08	12"x12"	36"	8	14	15	13	14	13	10	7	EV-2
SATT-EV3	VIBRO-ACOUSTICS	RFL-MLV-F4	FH EXH.	700	-700	0.08	12"x12"	36"	5	8	12	11	10	9	8	6	EV-3
SATT-EV4	VIBRO-ACOUSTICS	RFL-MLV-F6	GEN. EXH.	1000	-605	0.06	20"x12"	36"	5	8	10	1	13	12	9	7	EV-4
SATT-EV5	VIBRO-ACOUSTICS	RFL-LV-F6	GEN.EXH.	900	-545	0.08	20"x12"	36"	6	9	12	12	15	14	11	7	EV-5
SATT-EV6	VIBRO-ACOUSTICS	RFL-LV-F6	GEN. EXH.	850	-515	0.08	20"x12"	36"	6	9	12	12	15	14	11	7	EV-6

1. ALL UNITS TO BE VIBAR FILM-LINED, STAINLESS STEEL CONSTRUCTION.

ENERGY RECOVERY COIL SCHEDULE

TAG	MFR	CFM	GPM	FACE VEL. (FPM)	APD (IN. WG)	WPD (FT HD)	PERFORMANCE (WINTER)				PERFORMANCE (SUMMER)				QTY	MISC.					
							EDB/EWB (°F)	LDB/LWB (°F)	MBH	EWT/LWT (°F)	EDB/EWB (°F)	LDB/LWB (°F)	MBH	EWT/LWT (°F)		COIL H X L	UNIT DIMEN (LxWxH)	ROWS/FPI	FILTERS	FILTER MEAN APD	SOLUTION
ERU-3	DAIKIN	10,600	45	499	0.56	15.8	73.0/56.0	50.7/46.3	258	36/48	75.0/64.0	81.3/45.0	73	85/81	2	30"x51"	90" x 64" x 78"	4/8	MERV 8	0.65"	30% PG

AIR HANDLING UNIT SCHEDULE

TAG	DESIGN	TOTAL CFM	OA CFM	ESP (IN)	EST. TOTAL SP (IN) (W/ MEAN FILTER)	COOLING COIL			HEAT RECOVERY COIL (WINTER)				HEAT RECOVERY COIL (SUMMER)			
						LDB/LWB (°F)	GPM	EWT/LWT (°F)	EDB (°F)	LDB/LWB (°F)	GPM	EWT/LWT (°F)	EDB/EWB (°F)	LDB/LWB (°F)	GPM	EWT/LWT (°F)
AHU-4	ORIGINAL	10,625	10,625	3.5"	9.5"	49.3/49.0	121	42/54	5	55/37	34	70/34	86/71	81/69.8	34	80/85.2
AHU-4	NEW	4,650	4,650	2.0"	5.75"	49.3/49.0	62	42/54	5	55/37	18	70/34	86/71	81/69.8	18	80/85.2

SCHEDULE NOTES:

1. THE INFORMATION CONTAINED WITHIN THIS SCHEDULE IS STRICTLY FOR REBALANCING PURPOSES.
2. AHU-4 WILL OPERATE AT REDCUED CAPACITY UNDER THIS DESIGN HOWEVER IS EXPECTED TO OPERATE AT OR NEAR ORIGINAL DESIGN CAPACITY UNDER A FUTURE EXPANSION.
3. UNIT TO BE SERVED BY GENERATOR POWER SOURCE.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN:
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

MEP2.01

MEP SCHEDULES

COMMERCIAL SINK SCHEDULE

TYPE	FIXTURE	SOIL	VENT	COLD	HOT	MOUNT	DESCRIPTION	NOTES
S-1	LAB SINK	1-1/2"	1-1/2"	1/2"	1/2"	COUNTER	SINK BY ARCHITECT. WATER SAVER #L412VB FAUCET WITH GOOSENECK SPOUT, VACUUM BREAKER, AND SERRATED HOSE TIP. GUARDIAN #G5022, DECK MOUNTED DRENCH HOSE/EYEWASH WITH VACUUM BREAKER	

EMERGENCY PLUMBING FIXTURE SCHEDULE

TYPE	FIXTURE	SOIL	VENT	COLD	TEPID	MOUNT	DESCRIPTION	NOTES
ESS-1	EMERGENCY SAFETY STATION	---	---	---	1"	CEILING/FLOOR	GUARDIAN #GBF2170 BARRIER FREE SAFETY STATION WITH 16 GAUGE STAINLESS STEEL RECESSED PULL-DOWN EYEWASH WITH DRAIN PAN, EXPOSED STAINLESS STEEL SHOWER HEAD.	

DOMESTIC WATER AND NATURAL GAS PIPING SPECIALTIES SCHEDULE

TYPE	SPECIALTY ITEM	DESCRIPTION
BFP-1	DOUBLE CHECK VALVE BACKFLOW PREVENTER	WATTS #9D, DUAL CHECK VALVE W/ INTERMEDIATE ATMOSPHERIC VENT, BRASS BODY, STAINLESS STEEL PARTS.
BV-1	BALANCING VALVE	BELL & GOSSETT CIRCUIT SETTER PLUS CALIBRATED BALANCING VALVE WITH BRONZE BODY. NSF-61-G COMPLIANT.
ETMV-1	THERMOSTATIC MIXING VALVE	GUARDIAN #G6042, TEMPERING VALVE W/ 50 GPM CAPACITY AND HOT WATER SHUTOFF DURING COLD WATER INTERRUPTION AND COLD WATER ONLY FLOW DURING HOT WATER INTERRUPTION. PROVIDE SURFACE MOUNTED STAINLESS STEEL CABINET
PRV-1	PRESSURE REDUCING VALVE	WATTS #LF223-S LEAD FREE PRESSURE REGULATOR WITH STRAINER, BRONZE BODY CONSTRUCTION. SEE PLANS FOR SIZES
PRV-2	PRESSURE REDUCING VALVE	WATTS # R119-04C WITH #18A57 MOUNTING BRACKET AND 275Y60WS. 0 TO 60 PSI.
RPZ-1	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS #LF009-S, CAST COPPER SILICON ALLOY BODY CONSTRUCTION WITH QUARTER-TURN BALL VALVES AND COPPER SILICON ALLOY STRAINER. NSF-61-G COMPLIANT. PROVIDE #909AG FIXED AIR GAP. PIPE RELIEF VALVE TO FLOOR DRAIN. SEE PLANS FOR SIZES
RPZ-2	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS #LF909-OSY-S-FDA, FUSED EPOXY COATED CAST IRON BODY CONSTRUCTION, OSY VALVES AND FDA EPOXY COATED STRAINER. NSF-61-G COMPLIANT. PROVIDE #909AG FIXED AIR GAP. PIPE RELIEF VALVE TO FLOOR DRAIN. SEE PLANS FOR SIZES
SV-1	SOLENOID VALVE	REDHAT #8210G002LF, BRASS SOLENOID VALVE. NORMALLY CLOSED 1/2", 120V/60HZ.
VB-1	VACUUM BREAKER BACKFLOW PREVENTER	WATTS #LF800M4QT, LEAD FREE, ANTI-SIPHON PRESSURE BACKFLOW PREVENTER WITH CAST COPPER SILICON ALLOY BODY.

LABORATORY GAS FIXTURE SCHEDULE

Type		GENERAL USE	DESCRIPTION
Gas Turret	G	STANDARD LABORATORY WALL / ISLAND BENCH	GAS OUTLET BY LAB BENCH / FUME HOOD MANUFACTURERS.
GVB-1		GAS VALVE BOX	ISIMET "S" SERIES FLUSH MOUNTED ENCLOSURE, BRUSHED STAINLESS STEEL FINISH, SLOTTED LATCH STAINLESS STEEL DOOR. 12"x12"x6"D.
MB-1		MANIFOLD BOX	COORDINATE W/ CAMPUS GAS VENDOR. SEE PLUMBING DETAILS FOR ADDITIONAL INFORMATION.

DRAINAGE PIPING SPECIALTIES SCHEDULE

TYPE	SPECIALITY TYPE	DESCRIPTION
FD-1	FLOOR DRAIN	JRS #3001Y,STAINLESS STEEL FLOOR DRAIN WITH 12"STAINLESS STEEL SQUARE TOP, 4"DEEP SUMP AND STAINLESS STEEL SEDIMENT BUCKET. PROVIDE HALF GRATES IN AREAS RECEIVING INDIRECT WASTES. PROVIDE FLANGE, FLASHING CLAMP AND 316 STAINLESS STEEL FUNNEL.

BRANCH PANEL: GP2BN2

LOCATION:		**VOLTAGE:**	208/120 Wye	**AIC RATING:**	22,000
SUPPLY FROM:	TX-GP2BN2	**PHASES / WIRES:**	3Φ / 4W	**MAINS TYPE:**	MCB
MOUNTING:	RECESSED	**BUSSING MATERIAL:**	COPPER	**BUS RATING:**	400 A
ENCLOSURE:	TYPE 1	**MAX # OF POLES:**	84	**MCB RATING:**	400 A

PANELBOARD NOTES:
NONE

CIRCUIT BREAKER NOTES:
[A] PROVIDE 5MA GROUND FAULT CIRCUIT INTERRUPTER CIRCUIT BREAKERS.
SEE SPECIFICATION SECTION 'PANELBOARDS' FOR FEATURES OF PANELBOARDS.
VERIFY SIZE, QUANTITY AND TYPES OF CIRCUIT BREAKERS IN PANELBOARDS WITH PLANS, RISERS, SCHEDULES, AND SPECIFICATIONS.

CKT	NOTES	CIRCUIT DESCRIPTION	TRIP	POLES	A		B		C		POLES	TRIP	CIRCUIT DESCRIPTION	NOTES	CKT
1		RECEPTACLES	20 A	1	180	180					1	20 A	RECEPTACLES		2
3		RECEPTACLES Room 3	20 A	1			360	360			1	20 A	RECEPTACLES Room 3		4
5		RECEPTACLES Room 4, 3	20 A	1					1260	1250	2	20 A	RECEPTACLES		6
7		BVH - Overhead Service...	20 A	1	1200	1250									8
9		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		10
11		RECEPTACLES Space 4	20 A	1					360	720	1	20 A	RECEPTACLES Space 3		12
13		RECEPTACLES	20 A	1	540	720					1	20 A	RECEPTACLES Space 3		14
15		RECEPTACLES Room 3	20 A	1			540	720			1	20 A	RECEPTACLES Space 3		16
17		BVH - Overhead Service...	20 A	1					1200	1200	1	20 A	BVH - Overhead Service...		18
19		BVH - Overhead Service...	20 A	1	1200	1200					1	20 A	BVH - Overhead Service...		20
21		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		22
23		BVH - Overhead Service...	20 A	1					1200	1200	1	20 A	BVH - Overhead Service...		24
25		BVH - Overhead Service...	20 A	1	1200	1200					1	20 A	BVH - Overhead Service...		26
27		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		28
29		BVH - Overhead Service...	20 A	1					1200	1200	1	20 A	BVH - Overhead Service...		30
31		BVH - Overhead Service...	20 A	1	1200	1200					1	20 A	BVH - Overhead Service...		32
33		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		34
35		BVH - Overhead Service...	20 A	1					1200	1200	1	20 A	BVH - Overhead Service...		36
37		BVH - Overhead Service...	20 A	1	1200	1200					1	20 A	BVH - Overhead Service...		38
39		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		40
41		BVH - Overhead Service...	20 A	1					1200	1200	1	20 A	BVH - Overhead Service...		42
43		BVH - Overhead Service...	20 A	1	1200	1200					1	20 A	BVH - Overhead Service...		44
45		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		46
47		BVH - Overhead Service...	20 A	1					1200	1200	1	20 A	BVH - Overhead Service...		48
49		BVH - Overhead Service...	20 A	1	1200	1200					1	20 A	BVH - Overhead Service...		50
51		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		52
53		BVH - Overhead Service...	20 A	1					1200	1200	1	20 A	BVH - Overhead Service...		54
55		BVH - Overhead Service...	20 A	1	1200	1200					1	20 A	BVH - Overhead Service...		56
57		BVH - Overhead Service...	20 A	1			1200	1200			1	20 A	BVH - Overhead Service...		58
59		RECEPTACLES	20 A	1					180	120	1	20 A	Other Space 3		60
61		SPARE	20 A	1	0	0					1	20 A	SPARE		62
63		SPARE	20 A	1			0	0			1	20 A	SPARE		64
65		SPARE	20 A	1					0	0	1	20 A	SPARE		66
67		SPARE	20 A	1	0	0					1	20 A	SPARE		68
69		SPARE	20 A	1			0	0			1	20 A	SPARE		70
71		SPARE	20 A	1					0	0	1	20 A	SPARE		72
73		SPARE	20 A	1	0	0					1	20 A	SPARE		74
75		SPARE	20 A	1			0	0			1	20 A	SPARE		76
77	a	SPARE	20 A	1					0	0	1	20 A	SPARE	A	78
79	A	SPARE	20 A	1	0	0					1	20 A	SPARE	A	80
81		SPARE	30 A	2			0	0			2	30 A	SPARE		82
83									0	0					84
		TOTAL LOAD:			20870 VA		21180 VA		20690 VA						
		TOTAL AMPS:			174 A		177 A		172 A						

LUMINAIRE SCHEDULE

GENERAL NOTES:
1. LM/FT = LUMENS PER LINEAR FOOT. W/FT = WATTAGE PER LINEAR FOOT.
2. ALL LUMINAIRES ARE TO BE 80+ CRI UNLESS OTHERWISE NOTED.
3. LED DRIVERS TO BE RUN AT 700 MILLIAMPS UNLESS NOTED.
4. VERIFY MAXIMUM DISTANCE FOR REMOTE DRIVERS WITH MANUFACTURER.
5. ALL ACCEPTABLE EQUIVALENTS SUBMITTED ARE TO PROVIDE LIGHTING CALCULATIONS TO DEMONSTRATE EQUIVALENT LUMINAIRE PERFORMANCE.
6. LUMINAIRE EQUIVALENTS TO MEET SPECIFIED BASIS OF DESIGN FIXTURE LUMEN AND WATTAGE PERFORMANCE.
7. ELECTRICAL CONTRACTOR TO PROVIDE INDIVIDUAL FIXTURE COST DUE TO ANY CHANGES DURING CONSTRUCTION.

TYPE	BASIS OF DESIGN MANUFACTURER	EQUIVALENT MANUFACTURER	EQUIVALENT MANUFACTURER	FIXTURE DESCRIPTION	MAX HEIGHT	DRIVER	VOLTS	OUTPUT	KELVIN	CRI
B1	COLUMBIA LJT24 SERIES	DAY-BRITE 2TG SERIES	LITHONIA 2GTL SERIES	RECESSED 2'x4' LENS TROFFER LUMINAIRE. STEEL HOUSING, ALUMINUM DOOR FRAME. FLUSH FROSTED ACRYLIC LENS, DOOR TO HOUSING GASKETING.	3 1/2"	INTEGRAL 0-10V DIMMABLE DOWN TO 1%.	277 V	4700 LUMENS 38W	3500 K	80+
F1	AXIS WWR SERIES	METALUMEN DP25 SERIES	MARK SL2L SERIES	RECESSED 2" WIDE 6' LINEAR WALL WASHER LUMINAIRE. ALUMINUM HOUSING, MICROGROOVE ALUMINUM ASYMETRICAL KICKER.	4 1/2"	INTEGRAL 0-10V DIMMABLE DOWN TO 1%.	277 V	750 LM/FT 9.1W/FT	3500 K	90+
P2	LEDALITE 7406 SERIES	LITECONTROL SAE104 SERIES	PMC E9010 SERIES	PENDANT 8" WIDE 8' LINEAR LUMINAIRE. STEEL HOUSING, EDGE-LIT OPTICS. 55% INDIRECT, 45% DIRECT BEAM DISTRIBUTION.	2"	INTEGRAL 0-10V DIMMABLE DOWN TO 1%.	277 V	13000 LUMENS 114W	3500 K	80+
P2E	LEDALITE 7406 SERIES	LITECONTROL SAE104 SERIES	PMC E9010 SERIES	SAME AS LUMINAIRE TYPE P2, EXCEPT ON EMERGENCY POWER.	2"	INTEGRAL 0-10V DIMMABLE DOWN TO 1%.	277 V	13000 LUMENS 114W	3500 K	80+
V1	DAY-BRITE 2EV SERIES	COLUMBIA LCAT22 SERIES	PMC SC2134 SERIES	RECESSED 2'x2' VOLUMETRIC LUMINAIRE OPAL CENTER DIFFUSER.	3"	INTEGRAL 0-10V DIMMABLE DOWN TO 1%.	277 V	3800 LUMENS 33W	3500 K	80+
V1E	DAY-BRITE 2EV SERIES	COLUMBIA LCAT22 SERIES	PMC SC2134 SERIES	SAME AS LUMINAIRE TYPE V1, EXCEPT ON EMERGENCY POWER.	3"	INTEGRAL 0-10V DIMMABLE DOWN TO 1%.	277 V	3800 LUMENS 33W	3500 K	80+
X1	EXITRONIX 900E SERIES	DUAL-LITE LE SERIES	LITHONIA EDGR SERIES	CEILING MOUNTED EDGE-LIT EXIT LUMINAIRE. SINGLE FACE, GREEN LETTERING, MIRRORED BACKGROUND. REFER TO FLOOR PLANS TO DETERMINE CHEVRON ARROWS.		INTEGRAL	277 V	LED		
X1P	EXITRONIX 900E SERIES	DUAL-LITE LE SERIES	LITHONIA EDGR SERIES	PENDANT MOUNTED EDGE-LIT EXIT LUMINAIRE. SINGLE FACE, GREEN LETTERING, MIRRORED BACKGROUND. REFER TO FLOOR PLANS TO DETERMINE CHEVRON ARROWS.		INTEGRAL	277 V	LED		

MECHANICAL EQUIPMENT CIRCUITING SCHEDULE

NOTES:
[1] PROVIDE A NEW ELECTRONIC TRIP CIRCUIT BREAKER WITH INDEPENDENT LONG, SHORT AND INSTANTANEOUS SETTINGS IN EXISTING TO REMAIN SQUARE D I-LINE PANELBOARD. PROVIDE IN 65,000 AIC.

TAG ID	PANEL	C/B	POLES	VOLTS	BRANCH CIRCUIT SIZE	SW/FUSE SIZE	REMARKS
ERU-3	OS2BN	20 A	1	120 V	(2) #12 AND (1) #12 GND IN 3/4"C.	20A TOGGLE	
F-3A	OSDP45	50 A	3	480 V	(3) #6 AND (1) #8 GROUND IN 1"C.	60A/35A	1
F-3B	OSDP45	50 A	3	480 V	(3) #6 AND (1) #8 GROUND IN 1"C.	60A/35A	1
FCU-1	OS2BN	20 A	1	120 V	(2) #12 AND (1) #12 GND IN 3/4"C.	INTEGRAL	
SF-1	OSDP45	50 A	3	480 V	(3) #6 AND (1) #8 GROUND IN 1"C.	60A/35A	1
SF-2	OSDP45	50 A	3	480 V	(3) #6 AND (1) #8 GROUND IN 1"C.	60A/35A	1

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171
www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

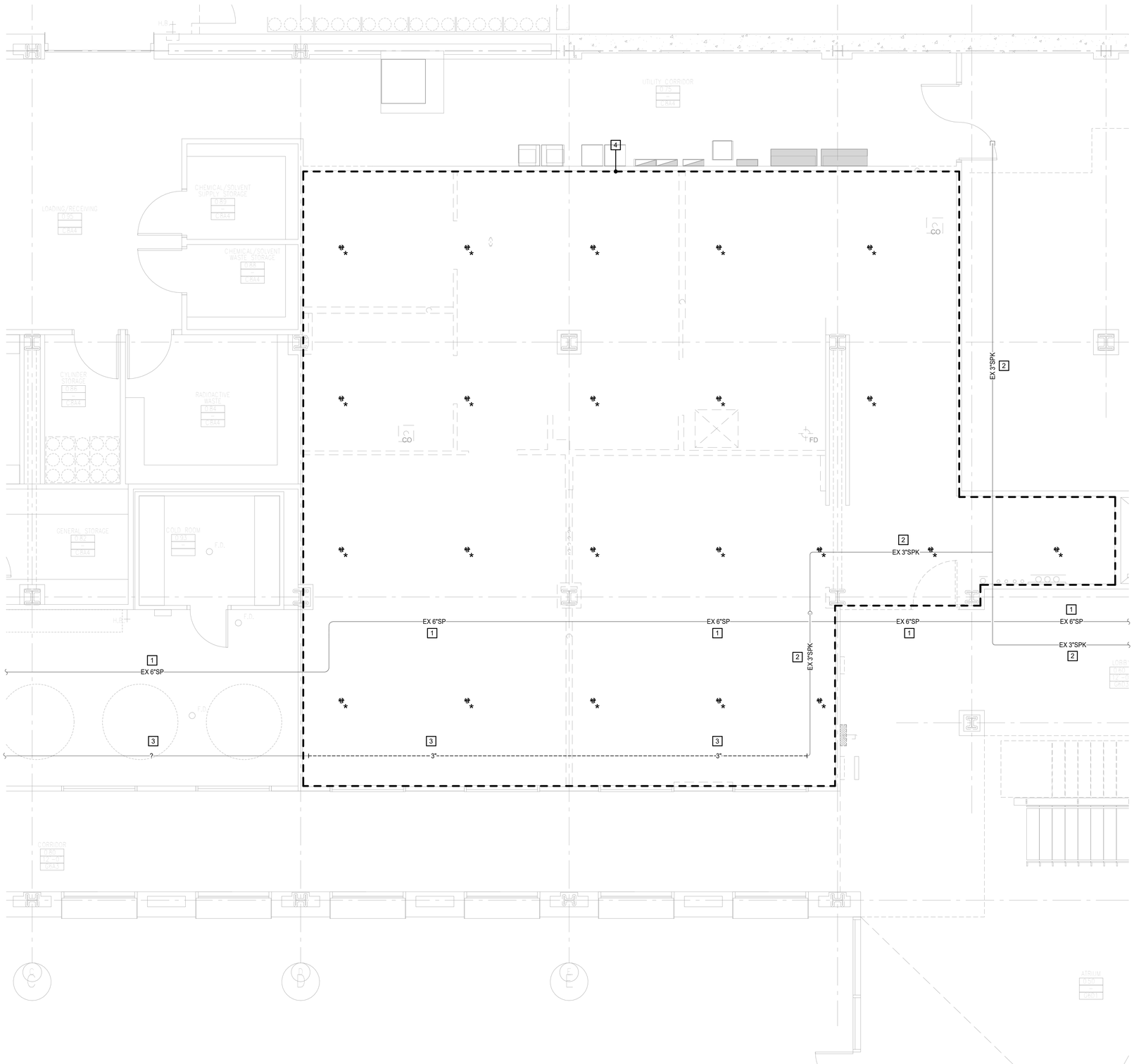
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN:
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

MEP2.02

MEP SCHEDULES

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

FIRE PROTECTION DEMOLITION GENERAL NOTES:

1. ALL EXISTING FIRE PROTECTION PIPE SIZES, ELEVATIONS, AND LOCATIONS SHALL BE VERIFIED IN FIELD.
2. REMOVE ALL ASSOCIATED ACCESSORIES, HANGERS, AND SUPPORTS EXCEPT AS NOTED OTHERWISE.

FIRE PROTECTION DEMOLITION DRAWING NOTES:

1 6"SP MAIN TO REMAIN.

2 3"SPK MAIN TO REMAIN.

3 REMOVE EXISITNG 3"SPK MAIN. CUT BACK PIPING AS SHOWN AND MAKE READY FOR CONNECTION TO NEW.

4 REMOVE SPRINKLER HEADS AND ASSOCIATED BRANCH PIPING PROTECTING THIS AREA.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

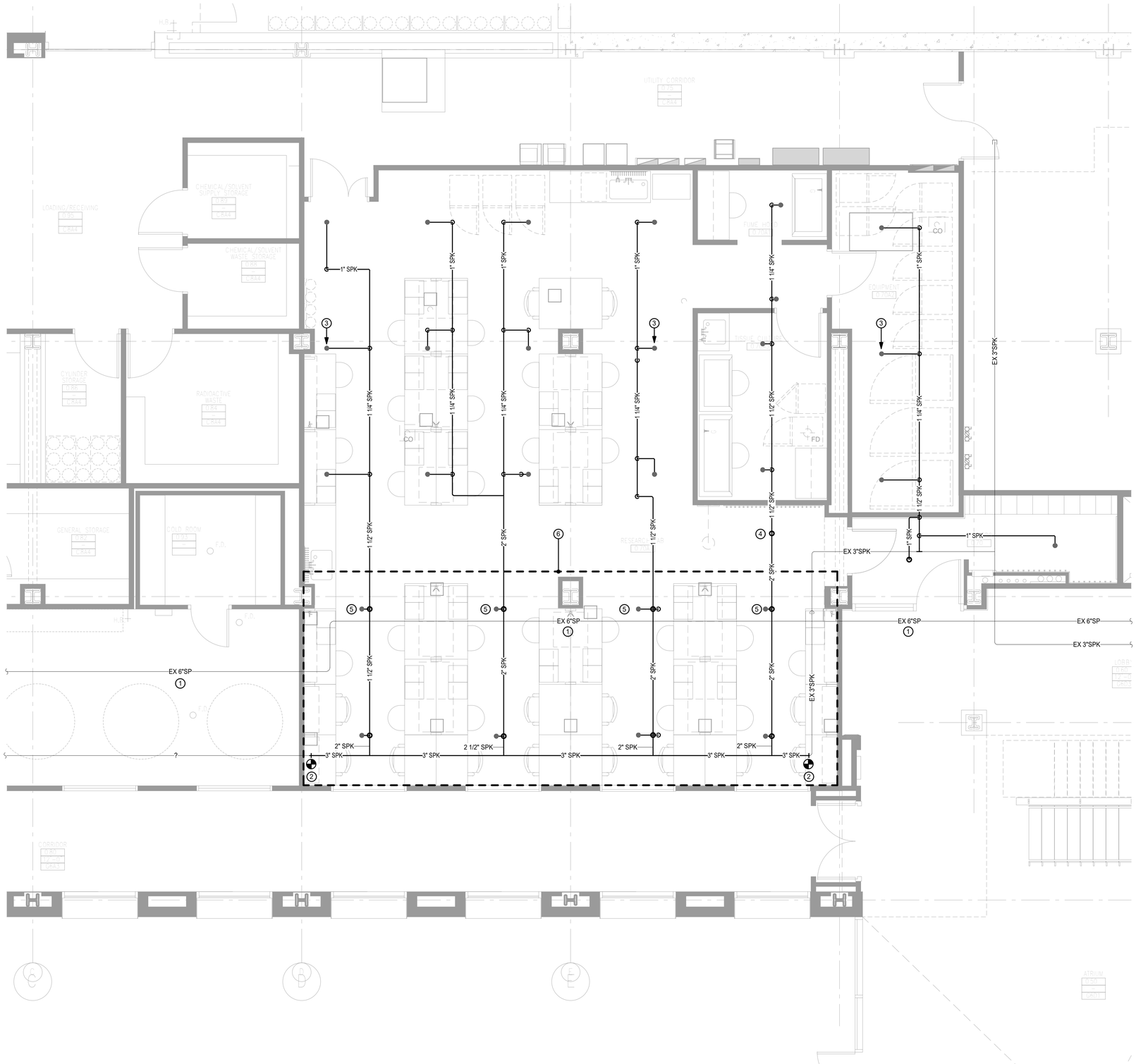
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: DLN
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

FPD1.01

FIRE PROTECTION PLAZA LEVEL DEMOLITION PLAN



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 INSTALLAION REQUIREMENTS.
3. THE CONTRACTOR SHALL COORDINATE SPRINKLER HEADS LOCATION WITH EXPOSED MECHANICAL/ELECTRICAL SYSTEMS OR ANY OTHER OBSTRUCTIONS. PROVIDE ADDITIONAL SPRINKLER HEADS IF REQUIRED TO INSURE PROPER FLOOR COVERAGE PER NFPA 13.
4. PROVIDE ALL PIPING, SUPPORTS, AND EQUIPMENT FOR ALL 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.
5. PROVIDE CHROME PLATED ESCUTCHEONS AT EXPOSED PIPING PENETRATIONS OF WALLS, CELINGS, AND FLOORS.
6. IN AREAS WITH NO CEILING ROUTE EXPOSED PIPING TIGHT TO UNDERSIDE OF BEAMS. COORDINATE PAINTING/FINISH OF EXPOSED PIPING WITH ARCHITECT.
7. SPRINKLER HEADS SHALL BE INSTALLED IN THE CENTER OF ACOUSTICAL CEILING PANELS/TITLES, ALIGN WITH ADJACENT DEVICES AND BE EQUALLY SPACED BETWEEN.
8. ALL NEW SPRINKLER HEADS SHALL BE RATED BASED ON AMBIENT TEMPERATURE CONDITIONS FOR EACH PROTECTED SPACE.
9. SPRINKLERS OF INTERMEDIATE- AND HIGH-TEMPERATURE CLASSIFICATION SHALL BE INSTALLED IN CONFORMANCE WITH NFPA, THE OWNER'S INSURANCE COMPANY, AND THE AUTHORITY HAVING JURISDICTION.
10. 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.
11. ALL EXISTING FIRE PROTECTION PIPE SIZES, ELEVATIONS, AND LOCATIONS SHALL BE VERIFIED IN FIELD.

FIRE PROTECTION DRAWING NOTES:

#	
1	EXISTING 6"SP MAIN.
2	CONNECT NEW 3"SPK MAIN TO EXISTING 3"SPK MAIN.
3	TYPICAL CONCEAL PENDANT SPRINKLER WITH RETURN BEND AND REDUCER.
4	TYPICAL EXPOSED UPRIGHT SPRINKLER WITH RISER NIPPLE AND REDUCER.
5	TYPICAL CONCEAL PENDANT AND EXPOSED UPRIGHT SPRINKLERS AT CLOUD CEILINGS FOR COVERAGE ABOVE AND BELOW.
6	IN ADDITION TO COVERAGE BELOW CLOUD CEILINGS, PROVIDE COVERAGE ABOVE IN THIS AREA.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171
www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

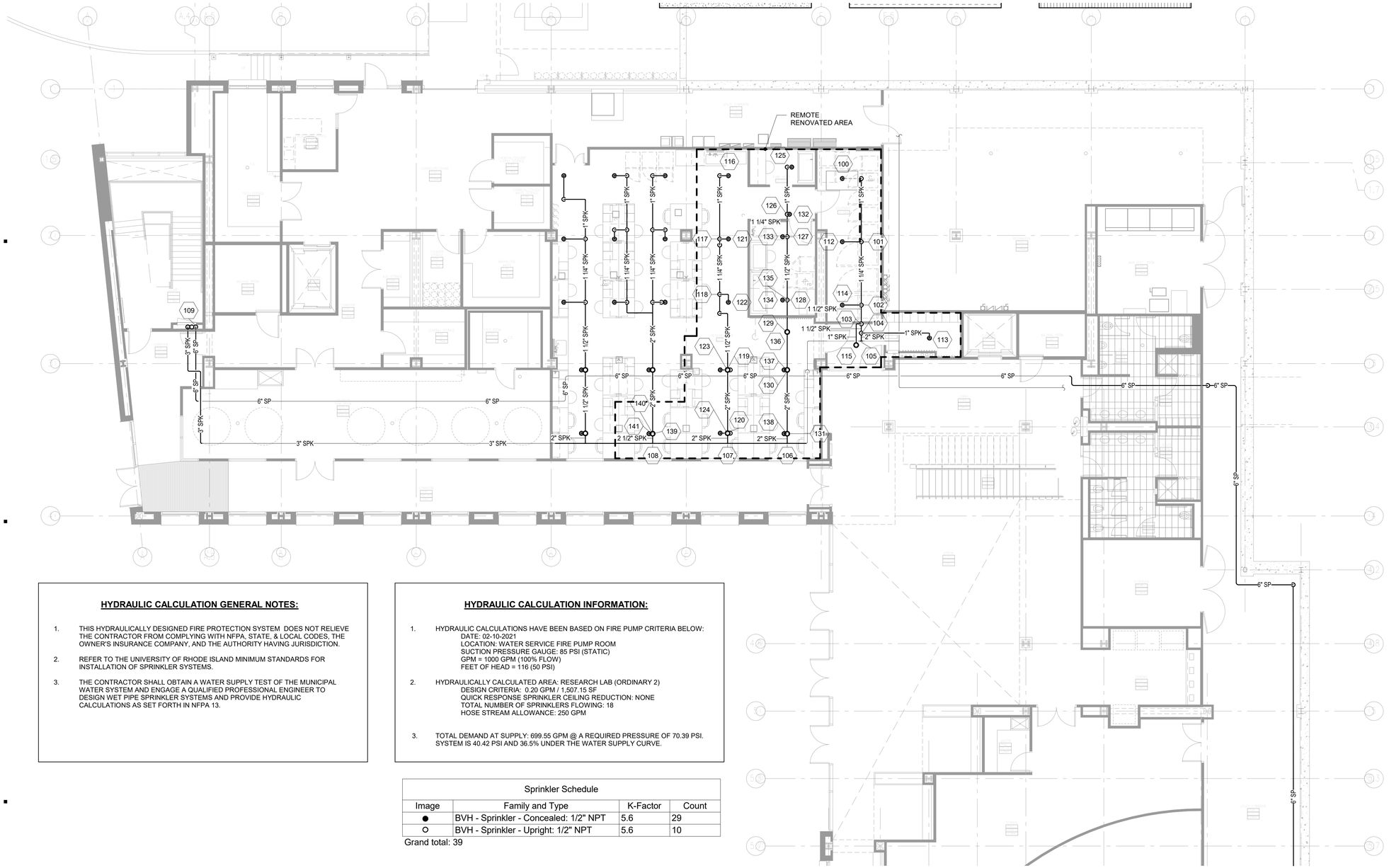
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	DLN
CHECKED:	JRD

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

FP1.01

FIRE PROTECTION PLAZA LEVEL PLAN

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



HYDRAULIC CALCULATION GENERAL NOTES:

1. THIS HYDRAULICALLY DESIGNED FIRE PROTECTION SYSTEM 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 UNIVERSITY OF RHODE ISLAND MINIMUM STANDARDS FOR INSTALLATION OF SPRINKLER SYSTEMS.
3. THE CONTRACTOR SHALL OBTAIN A WATER SUPPLY TEST OF THE MUNICIPAL WATER SYSTEM AND ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN WET PIPE SPRINKLER SYSTEMS AND PROVIDE HYDRAULIC CALCULATIONS AS SET FORTH IN NFPA 13.

HYDRAULIC CALCULATION INFORMATION:

1. HYDRAULIC CALCULATIONS HAVE BEEN BASED ON FIRE PUMP CRITERIA BELOW:
   DATE: 02-10-2021
   LOCATION: WATER SERVICE FIRE PUMP ROOM
   SUCTION PRESSURE GAUGE: 85 PSI (STATIC)
   GPM = 1000 GPM (100% FLOW)
   FEET OF HEAD = 116 (50 PSI)
2. HYDRAULICALLY CALCULATED AREA: RESEARCH LAB (ORDINARY 2)
   DESIGN CRITERIA: 0.20 GPM / 1,507.15 SF
   QUICK RESPONSE SPRINKLER CEILING REDUCTION: NONE
   TOTAL NUMBER OF SPRINKLERS FLOWING: 18
   HOSE STREAM ALLOWANCE: 250 GPM
3. TOTAL DEMAND AT SUPPLY: 699.55 GPM @ A REQUIRED PRESSURE OF 70.39 PSI. SYSTEM IS 40.42 PSI AND 36.5% UNDER THE WATER SUPPLY CURVE.

Sprinkler Schedule			
Image	Family and Type	K-Factor	Count
●	BVH - Sprinkler - Concealed: 1/2" NPT	5.6	29
O	BVH - Sprinkler - Upright: 1/2" NPT	5.6	10

Grand total: 39

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: DLN
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

FP4.01

FIRE PROTECTION HYDRAULIC CALCULATIONS

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

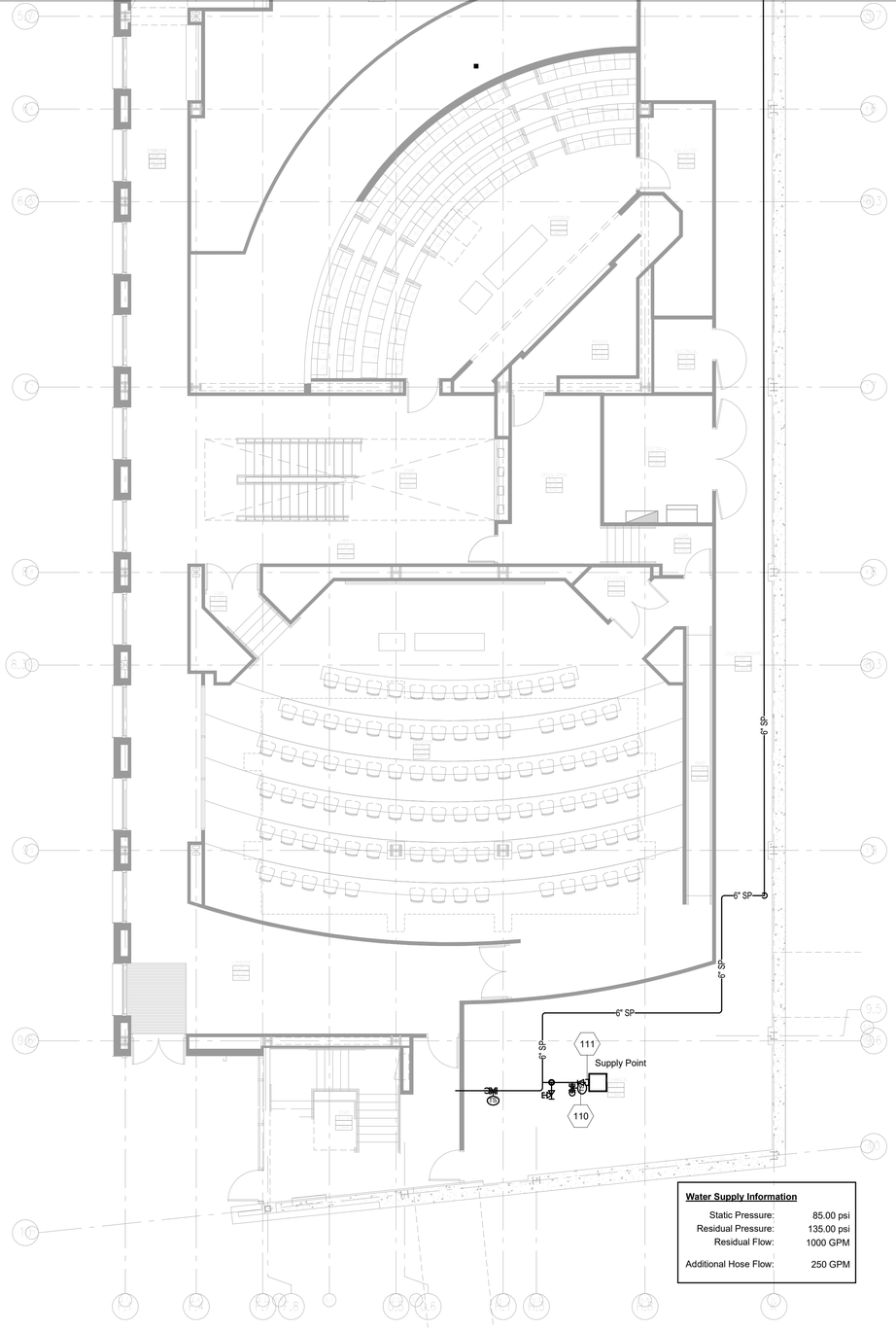
E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

HYDRAULIC CALCULATION GENERAL NOTES:

1. THIS HYDRAULICALLY DESIGNED FIRE PROTECTION SYSTEM 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 UNIVERSITY OF RHODE ISLAND MINIMUM STANDARDS FOR INSTALLATION OF SPRINKLER SYSTEMS.
3. THE CONTRACTOR SHALL OBTAIN A WATER SUPPLY TEST OF THE MUNICIPAL WATER SYSTEM AND ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN WET PIPE SPRINKLER SYSTEMS AND PROVIDE HYDRAULIC CALCULATIONS AS SET FORTH IN NFPA 13.

HYDRAULIC CALCULATION INFORMATION:

1. HYDRAULIC CALCULATIONS HAVE BEEN BASED ON FIRE PUMP CRITERIA BELOW:
   DATE: 02-10-2021
   LOCATION: WATER SERVICE FIRE PUMP ROOM
   SUCTION PRESSURE GAUGE: 85 PSI (STATIC)
   GPM = 1000 GPM (100% FLOW)
   FEET OF HEAD = 116 (50 PSI)
2. HYDRAULICALLY CALCULATED AREA: RESEARCH LAB (ORDINARY 2)
   DESIGN CRITERIA: 0.20 GPM / 1,500 SF
   QUICK RESPONSE SPRINKLER CEILING REDUCTION: NONE
   TOTAL NUMBER OF SPRINKLERS FLOWING: 18
   HOSE STREAM ALLOWANCE: 250 GPM
3. TOTAL DEMAND AT SUPPLY: 699.55 GPM @ A REQUIRED PRESSURE OF 70.39 PSI. SYSTEM IS 40.42 PSI AND 36.5% UNDER THE WATER SUPPLY CURVE.



Water Supply Information

Static Pressure:	85.00 psi
Residual Pressure:	135.00 psi
Residual Flow:	1000 GPM
Additional Hose Flow:	250 GPM

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

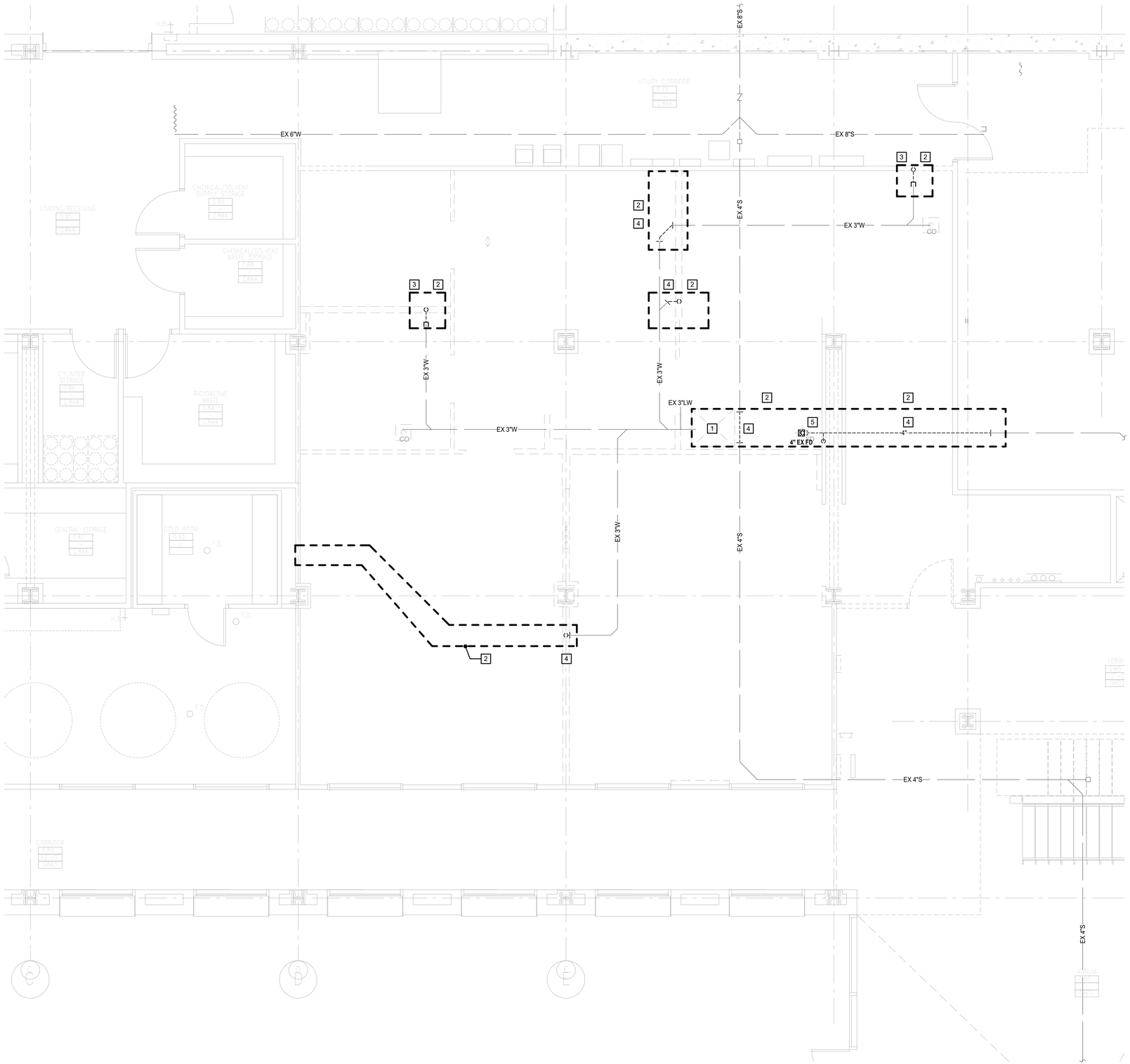
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: DLN
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

FP4.02

FIRE PROTECTION HYDRAULIC CALCULATIONS



PLUMBING DEMOLITION DRAWING NOTES:

#	
1	EXISTING PIT.
2	APPROXIMATE AREA OF SLAB CUT, SLAB REMOVAL AND SLAB PATCH WORK.
3	REMOVE EXISTING SECTION OF PIPE AND CAP BELOW SLAB.
4	REMOVE EXISTING SECTION OF PIPE AND MAKE READY FOR CONNECTION TO NEW.
5	REMOVE EXISTING 4" DRAIN, TRAP AND ASSOCIATED VENT. CUT WASTE PIPING BACK AS SHOWN AND PREPARE FOR CONNECTION TO NEW.

PLUMBING DEMOLITION GENERAL NOTES:

1. IN SLAB CUT AREA, PRIOR TO SLAB CUT CONTRACTOR SHALL PERFORM A GROUND PENETRATING RADAR SURVEY TO VERIFY DRAINAGE UTILITY LOCATIONS.
2. ALL EXISTING PLUMBING PIPE SIZES, ELEVATIONS, AND LOCATIONS SHALL BE VERIFIED IN FIELD.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

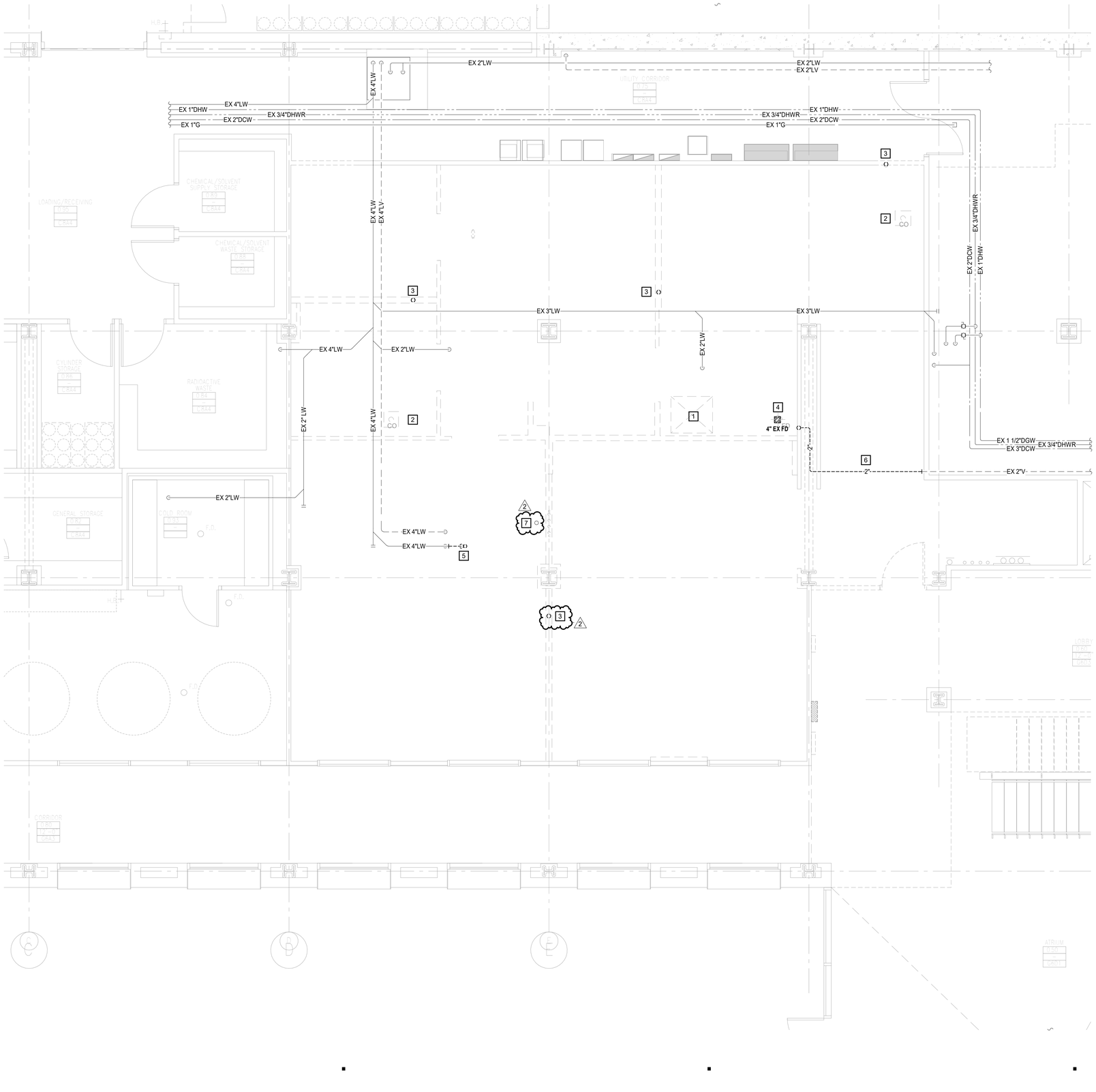
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	DLN
CHECKED:	JRD

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

PD0.01

PLUMBING UNDERGROUND DEMOLITION PLAN

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



PLUMBING DEMOLITION DRAWING NOTES:

#	
1	EXISTING PIT TO BE INFILLED.
2	EXISTING PIPING STUBS TO REMAIN. MAKE READY FOR CONNECTION TO NEW.
3	REMOVE EXISTING DRAIN AND TRAP UP TO FLOOR DRAIN. MAKE WASTE PIPING READY FOR CONNECTION TO NEW.
3	REMOVE EXISTING PIPE STUBS UP THRU SLAB.
4	REMOVE EXISTING 4"FLOOR DRAIN.
5	REMOVE EXISTING DRAIN AND TRAP UP TO FLOOR DRAIN. MAKE WASTE PIPING READY FOR CONNECTION TO NEW.
6	REMOVE EXISTING 2"VENT. CUT PIPING BACK AS SHOWN AND MAKE READY FOR CONNECTION TO NEW.
7	EXISTING OPEN VENT PIPE.

PLUMBING DEMOLITION GENERAL NOTES:

1. ALL EXISTING PLUMBING PIPE SIZES, ELEVATIONS, AND LOCATIONS SHALL BE VERIFIED IN FIELD.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

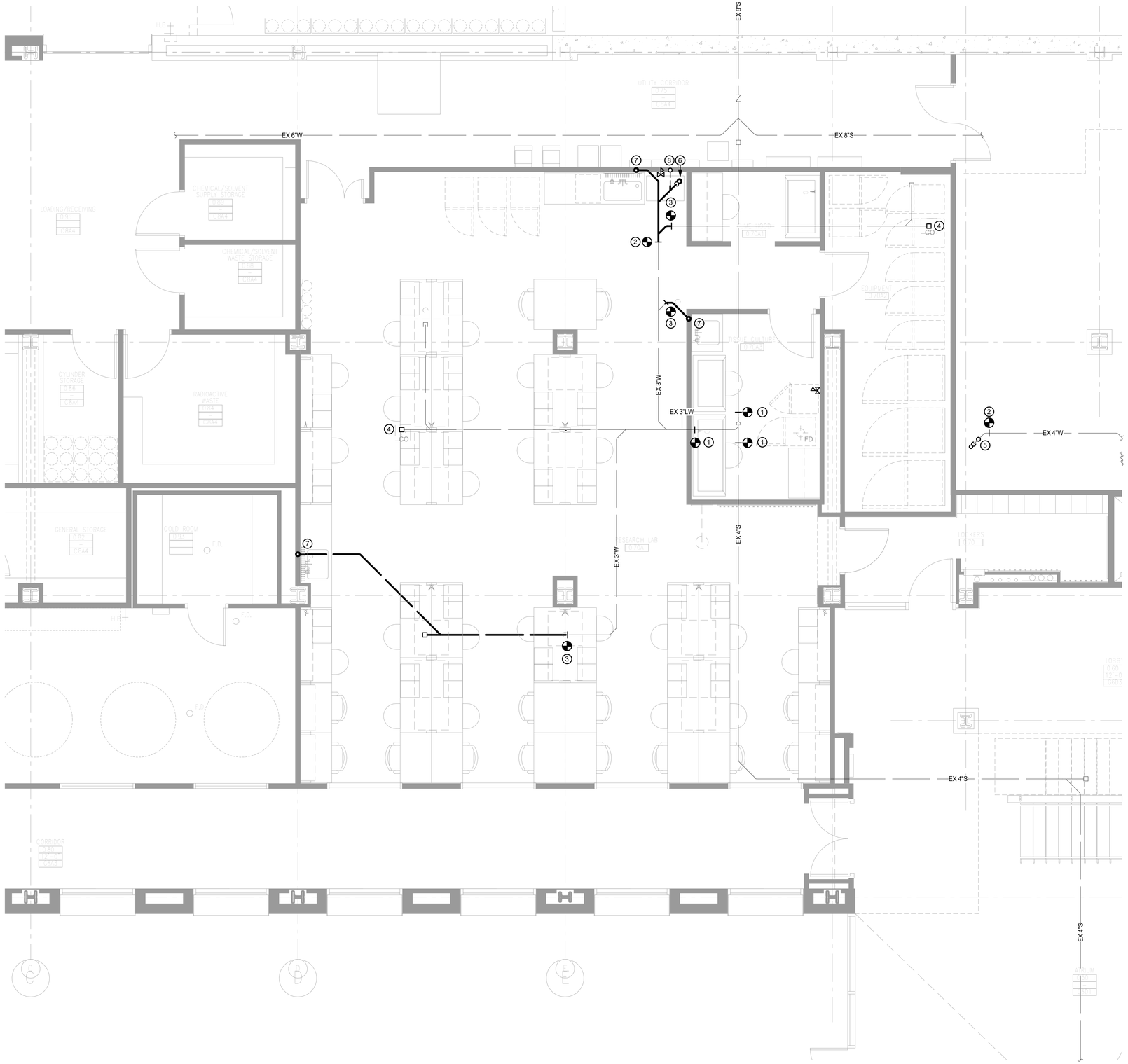
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	DLN
CHECKED:	JRD

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

PD1.01

PLUMBING PLAZA LEVEL DEMO PLAN

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

PLUMBING DRAWING NOTES:

#	
1	CONNECT NEW 4"W TO EXISTING.
2	CONNECT NEW 3"W TO EXISTING.
3	CONNECT NEW 2"W TO EXISTING.
4	PROVIDE NEW CLEANOUT AT EXISTING PIPE STUB.
5	3"W UP TO FD & 2"V UP.
6	3"W UP TO FD.
7	2"W UP TO SINK.
8	2"V UP.

PLUMBING DEMOLITION GENERAL NOTES:

1. ALL EXISTING PLUMBING PIPE SIZES, ELEVATIONS, AND LOCATIONS SHALL BE VERIFIED IN FIELD.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

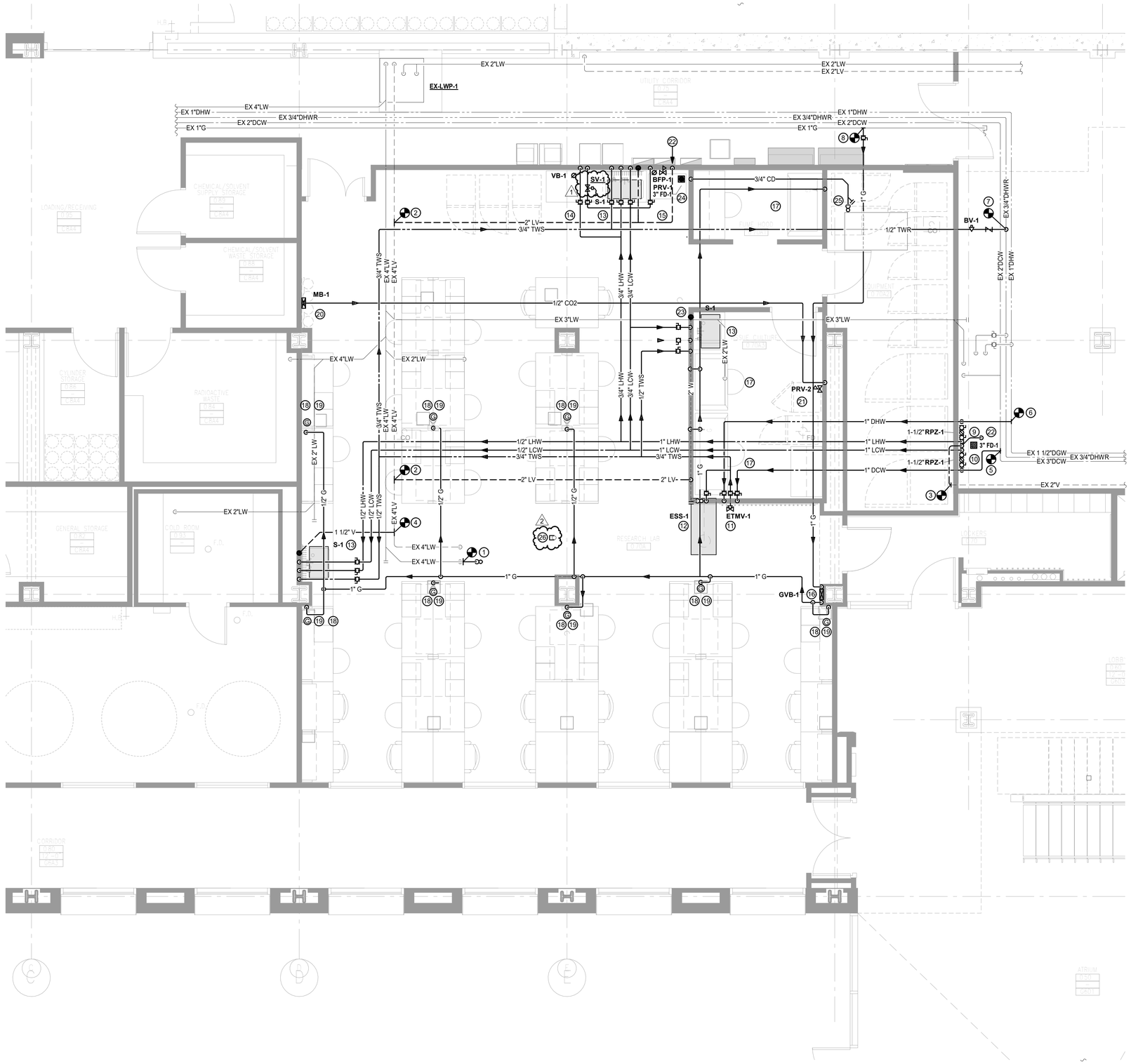
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: DLN
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

P0.01

PLUMBING UNDERGROUND PLAN



LEVEL 2 AUTOCLAVE PART PLAN
1/8" = 1'-0"

PLUMBING DRAWING NOTES:

#	
1	CONNECT NEW 3"WASTE TO EXISTING 3"W. EXTEND NEW DRAIN AND TRAP UP TO NEW AUTOCLAVE FLOOR DRAIN.
2	CONNECT NEW 2"V TO EXISTING 4"V.
3	CONNECT NEW 2"ENT TO EXISTING 2"V.
4	CONNECT NEW 1-1/2"V TO EXISTING 4"V.
5	CONNECT NEW 1-1/2"DCW TO EXISTING 3"DCW.
6	CONNECT NEW 1-1/2"DHW TO EXISTING 1-1/2"DHW.
7	CONNECT NEW 1/2"TWR TO EXISTING 3/4"DHWR.
8	CONNECT NEW 1"G TO EXISTING 1"G.
9	1-1/2"REDUCED PRESSURE ZONE BACKFLOW PREVENTER FOR LHW. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
10	1-1/2"REDUCED PRESSURE ZONE BACKFLOW PREVENTER FOR LCW. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
11	PROVIDE 1"DHW, 1"DCW, & 1-1/4"TW AT EMERGENCY MIXING VALVE.
12	PROVIDE 1-1/4"TW & 2"W DRAIN, TRAP AND CLEANOUT AT EMERGENCY SAFETY STATION.
13	PROVIDE 1/2"LHW, 1/2"LCW, & 1-1/2"W & 1-1/2"VENT AT SINK. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
14	PROVIDE 1/2"LCW & 1"IW DRAIN AT GLASS WASHER. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
15	PROVIDE 1/2"LCW & 3/4"IW AT ICE-MAKER. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
16	PROVIDE 1"GAS AT GAS VALVE BOX INLET AND OUTLET.
17	PROVIDE 1/2"LAB GAS AT FUME HOOD / BIOSAFETY CABINET. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
18	1/2"FLEXIBLE LAB GAS DROPS TO LAB BENCH PLUMBING CONNECTIONS. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
19	PROVIDE LAB BENCH GAS TURRETS. SEE PLUMBING SCHEDULE FOR ADDITIONAL INFORMATION.
20	CO2 MANIFOLD CONTROL CABINET. PROVIDE CO2 CONNECTION. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
21	1/2"CO2 DROP DOWN TO PRV & CO2 OUTLET. REFER TO PLUMBING DETAILS FOR ADDITIONAL INFORMATION.
22	2"V DOWN.
23	2"W DOWN.
24	TERMINATE 3/4"CONDENSATE DRAIN TO FLOOR DRAIN THRU AIR GAP.
25	PROVIDE 3/4"CONDENSATE DRAIN AND TRAP AT FCU.
26	CAP EXISTING OPEN VENT PIPE ABOVE CEILING.

PLUMBING GENERAL NOTES

1. ALL EXISTING PLUMBING PIPES SIZE, DIRECTION OF FLOW, ELEVATION, AND LOCATION SHALL BE VERIFIED IN FIELD.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171
www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

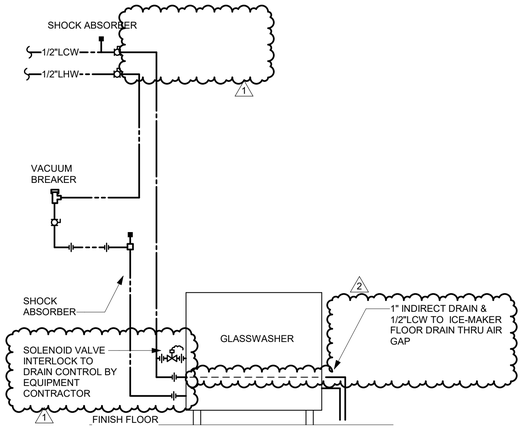
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	DLN
CHECKED:	JRD
ISSUED FOR:	BIDDING and CONSTRUCTION
REVISIONS:	1 3/29/21 OWNER'S REVIEW 2 4/30/21 BIDDING & CONSTRUCTION

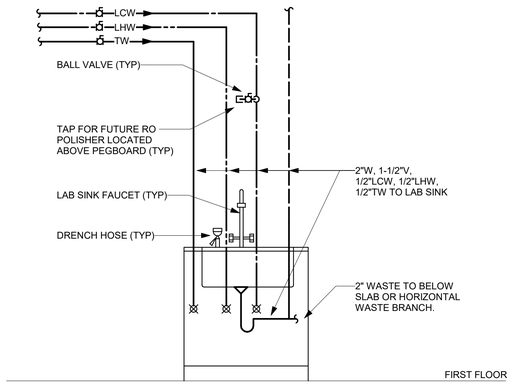
P1.01

PLUMBING PLAZA LEVEL PLAN

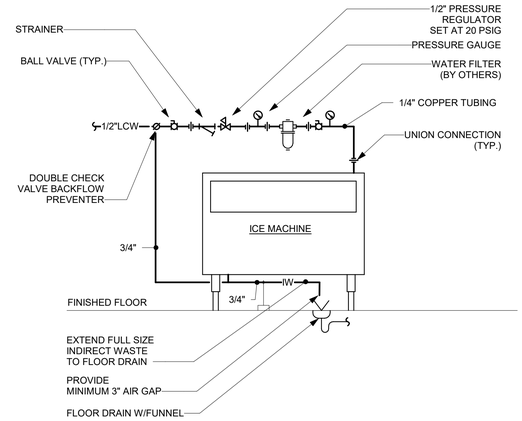
E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



2 GLASS WASHER PIPING DETAIL
NTS



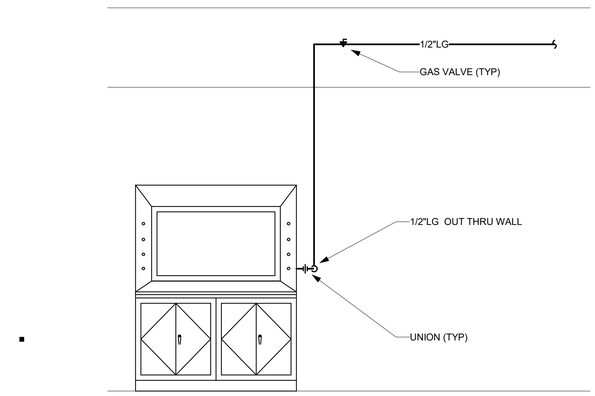
5 LAB SINK DETAIL
N.T.S.



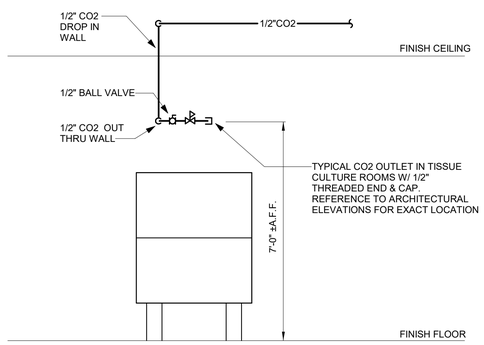
NOTES:

1. REFER TO FLOOR PLANS FOR PIPE SIZES
2. REFER TO SPECIFICATIONS FOR PIPE MATERIALS AND SPECIALTIES

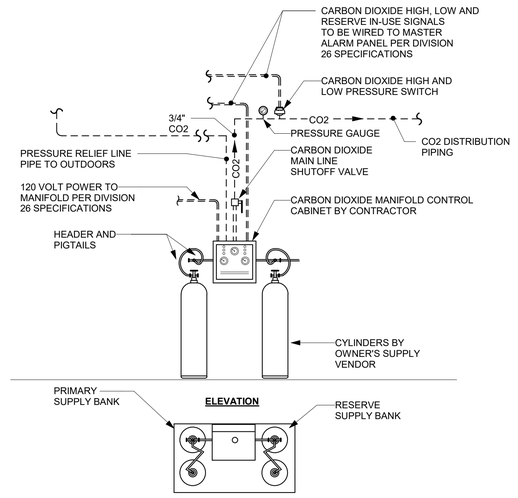
1 LABORATORY ICE MACHINE CONNECTION DETAIL
N.T.S.



6 FUME HOOD / BIOSAFETY CABINET DETAIL
N.T.S.



4 CO2 INCUBATOR PRV PIPING DETAIL
N.T.S.



3 CARBON DIOXIDE (CO2) MANIFOLD DETAIL
N.T.S.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

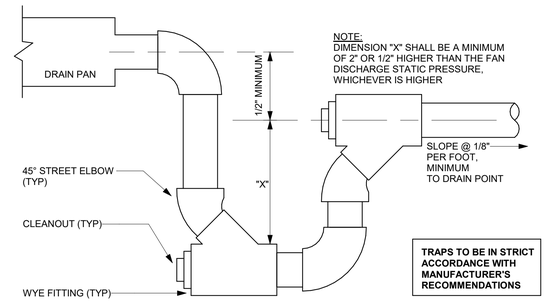
BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

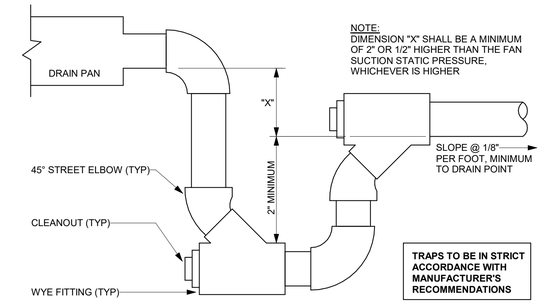
DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: DLN
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

P4.01

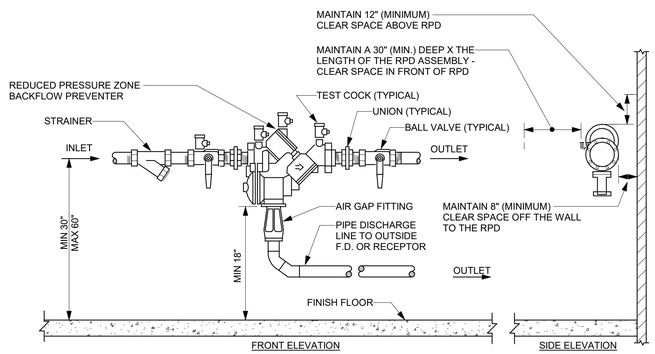
PLUMBING DETAILS



2 COOLING COIL CONDENSATE TRAP DETAIL FOR BLOW-THRU COILS
N.T.S.



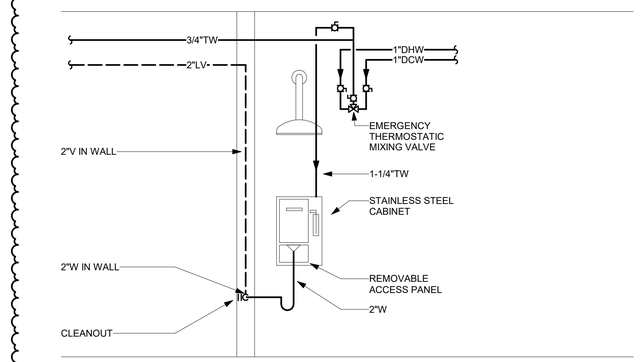
3 COOLING COIL CONDENSATE TRAP DETAIL FOR DRAW-THRU COILS
N.T.S.



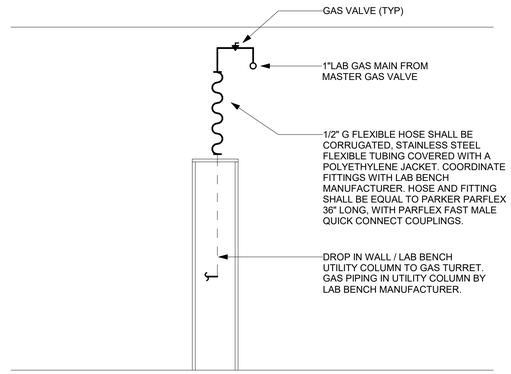
NOTE:
ALL ASSEMBLIES SHALL BE ADEQUATELY SUPPORTED AND/OR RESTRAINED TO PREVENT LATERAL MOVEMENT. PIPE HANGERS, BRACES, SADDLES, STANCHIONS, PIERS, ETC., SHOULD BE USED TO SUPPORT THE DEVICE AND SHOULD BE PLACED IN A MANNER THAT WILL NOT OBSTRUCT THE FUNCTION OF OR ACCESS TO THE RELIEFT VALVE, TEST PORTS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



5 P5603 - EMERGENCY EYEWASH / SHOWER DETAIL
N.T.S.



1 TYPICAL LAB BENCH DETAIL
N.T.S.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

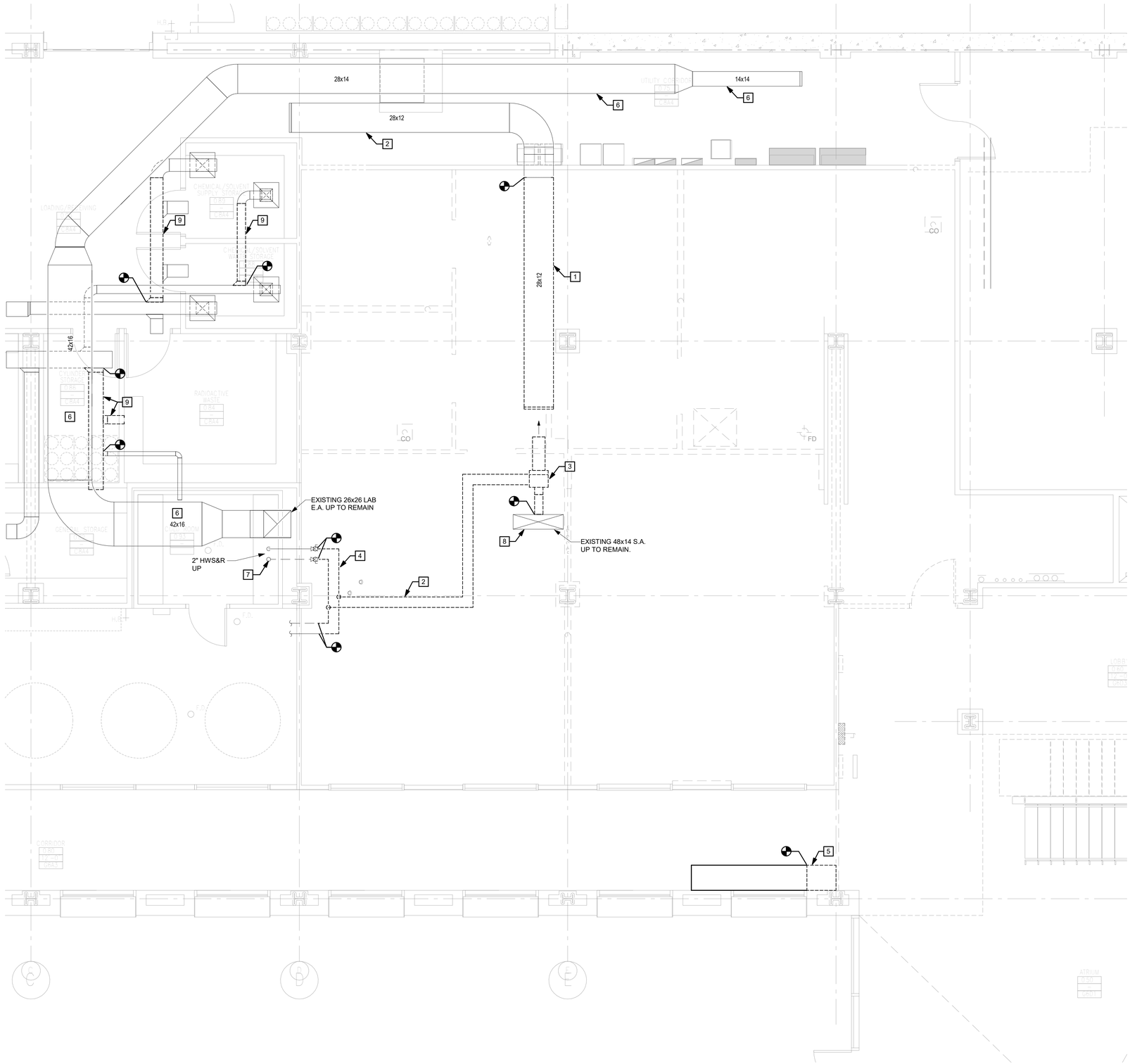
BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: DLN
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

P4.02

PLUMBING DETAILS



E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

HVAC & HYDRONIC PIPING DEMOLITION DRAWING NOTES:

#	
1	REMOVE ABANDONED AND EXPOSED 28x12 GALVANIZED STEEL DUCT CAPPED AT BOTH ENDS.
2	EXISTING GALVANIZED STEEL DUCT TO BE ABANDONED IN PLACE.
3	REMOVE EXISTING VAV BOX AND ALL ASSOCIATED SUPPLY DUCTWORK, BRANCH PIPING AND CONTROLS.
4	REMOVE EXISTING 2" HWS&R PIPING AS REQUIRED TO ACCOMMODATE NEW PIPING INSTALLATION.
5	MODIFY SECTION OF EXISTING HOT WATER RADIANT CEILING PANEL TO ACCOMMODATE ARCHITECTURAL CEILING MODIFICATIONS.
6	EXISTING GALVANIZED STEEL DUCT TO BE ABANDONED IN PLACE.
6	EXISTING WELDED STAINLESS STEEL LAB EXHAUST DUCTWORK TO REMAIN. CONTRACTOR TO CONFIRM ALL EXISTING TAPS ARE SEALED.
7	EXISTING 2" HWS&R RISERS TO REMAIN.
8	EXISTING SUPPLY DUCT RISER FROM AHU-4 TO REMAIN.
9	REMOVE EXISTING BRANCH DUCT (AND SALVAGE) AS REQUIRED TO ACCOMMODATE NEW EXHAUST AIR CONNECTIONS TO LAB EXHAUST MAIN.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

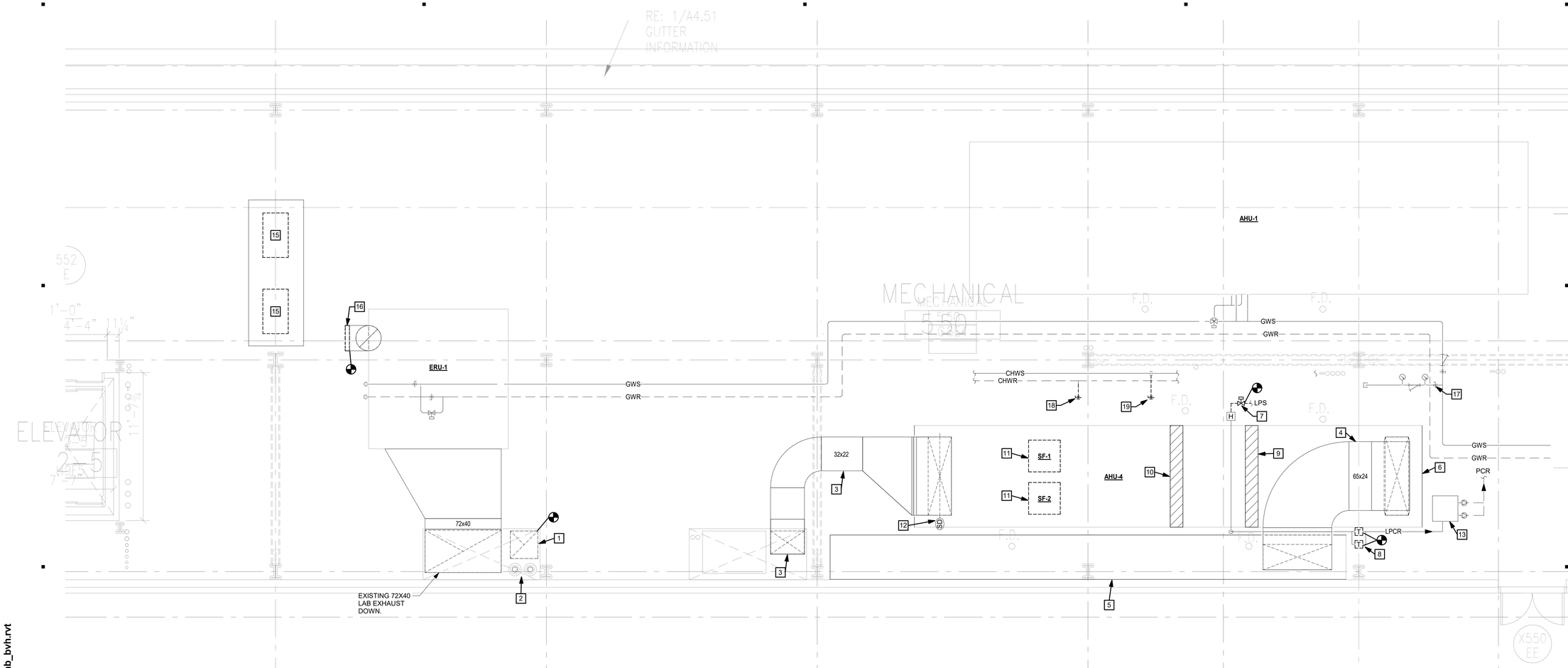
BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: TS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

HD1.01

HVAC PLAZA LEVEL DEMOLITION PLAN



RE: 1/A4.51 FOR

2

HVAC PRE-DEMOLITION TESTING REQUIREMENTS

1. CONTRACTOR SHALL TAKE PRE-DEMO MEASUREMENTS OF EXISTING CHILLED WATER PUMP (P-2.3 & P-2.4) SPEED, FLOW, OPERATING PRESSURES, AMPS, ETC. PRIOR TO ANY SYSTEM MODIFICATIONS. SUBMIT FOR ENGINEER REVIEW AND RECORD.
2. CONTRACTOR SHALL TAKE PRE-DEMO MEASUREMENTS OF EXISTING GW PUMP (P-3.1, P-3.2 & P-3.3) SPEED, FLOW, OPERATING PRESSURES, AMPS, ETC. PRIOR TO ANY SYSTEM MODIFICATIONS. SUBMIT FOR ENGINEER REVIEW AND RECORD.
3. CONTRACTOR SHALL TAKE PRE-DEMO MEASUREMENTS OF EXISTING ATRIUM SMOKE CONTROL FANS (F-13, F-14, F-15, F-16, F-17 & F-18) SPEED, FLOW, OPERATING PRESSURES, AMPS, ETC. PRIOR TO ANY SYSTEM MODIFICATIONS. SUBMIT FOR ENGINEER REVIEW AND RECORD.

HVAC & HYDRONIC PIPING DEMOLITION DRAWING...

1 EXISTING 26"x26" WELDED STAINLESS STEEL LAB EXHAUST TO REMAIN DEDICATED TO THE PLAZA LEVEL RENOVATED SPACE. REMOVE EXISTING DUCT CAP AND PREP FOR NEW CONNECTION.

2 EXISTING HWS&R RISERS TO PLAZA LEVEL TO REMAIN.

3 EXISTING 32"x22" SUPPLY DUCTWORK DEDICATED TO THE PLAZA LEVEL RENOVATED SPACE TO REMAIN. THOROUGHLY CLEAN THE INTERIOR OF THE ACCESSIBLE FROM THE PENTHOUSE LEVEL.

4 EXISTING 65"x24" OUTDOOR AIR DUCT TO REMAIN.

5 EXISTING OUTDOOR AIR PLENUM TO REMAIN.

6 THOROUGHLY CLEAN AND DISSINFECT ENTIRE INTERIOR OF AHU-4 AND ALL ASSOCIATED INTERNAL COMPONENTS. WORK TO BE PERFORMED BY HTS SERVICE GROUP.

7 REPLACE EXISTING LPS AND LPCR PIPING AND VALVE ASSEMBLIES TO HUMIDIFIER WITH NEW OF SAME VALVE TYPE AND PIPE SIZES. REFER TO DETAIL.

8 REPLACE EXISTING LPCR TRAPS WITH NEW OF SAME TYPE. SALVAGE EXISTING TRAP INSULATING COVERS AND STORE FOR REUSE.

HVAC & HYDRONIC PIPING DEMOLITION DRAWING...

9 PRESSURE AND DISSINFECT EXISTING ENERGY RECOVERY COIL. FLUSH AND HYDROSTATICALLY AND PRESSURE TEST COIL TO TEST PRESSURE RECOMMENDED BY HAAKON. WORK TO BE PERFORMED BY HTS SERVICE GROUP.

10 PRESSURE AND DISSINFECT EXISTING CHILLED WATER COIL. FLUSH AND HYDROSTATICALLY AND PRESSURE TEST COIL TO TEST PRESSURE RECOMMENDED BY HANKON. WORK TO BE PERFORMED BY HTS SERVICE GROUP.

11 REPLACE EXISTING SUPPLY FANS IN THEIR ENTIRETY. WORK TO BE PERFORMED BY HTS SERVICE GROUP

12 FULLY SERVICE AND REFURBISH SMOKE ISOLATION DAMPER INCLUDING LINKAGE, SEALS, ETC. WORK TO BE PERFORMED BY HTS SERVICE GROUP.

13 ELECTRIC STEAM CONDENSATE PUMP/RECIEVER TO BE SERVICED BY AUTHORIZED SERVICE AGENT. PROVIDE $2000 ALLOWANCE FOR SERVICE/REFURBISHMENT.

15 DISPOSE OF OR STORE EXISTING EXHAUST FANS F-3A & F3B AT OWNER'S DISCRETION AND SPECIFIED LOCATION.

16 EXISTING WELDED STAINLESS STEEL LAB EXHAUST STACK THROUGH THE ROOF TO REMAIN. REMOVE EXISTING DUCT CAP AND PREP FOR NEW CONNECTION.

17 2-1/2" GWS ISOLATION VALVE "GLS-018" TO REMAIN. CONTRACTOR TO EXERCISE VALVE TO ENSURE PROPER WORKING ORDER AND 100% POSITIVE CLOSE-OFF PRIOR TO CONNECTING NEW PIPING.

18 REMOVE EXISTING 3" CHWS VALVE "CHWS-016".

19 REMOVE EXISTING 3" CHWR VALVE "CHWR-012".

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9446 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

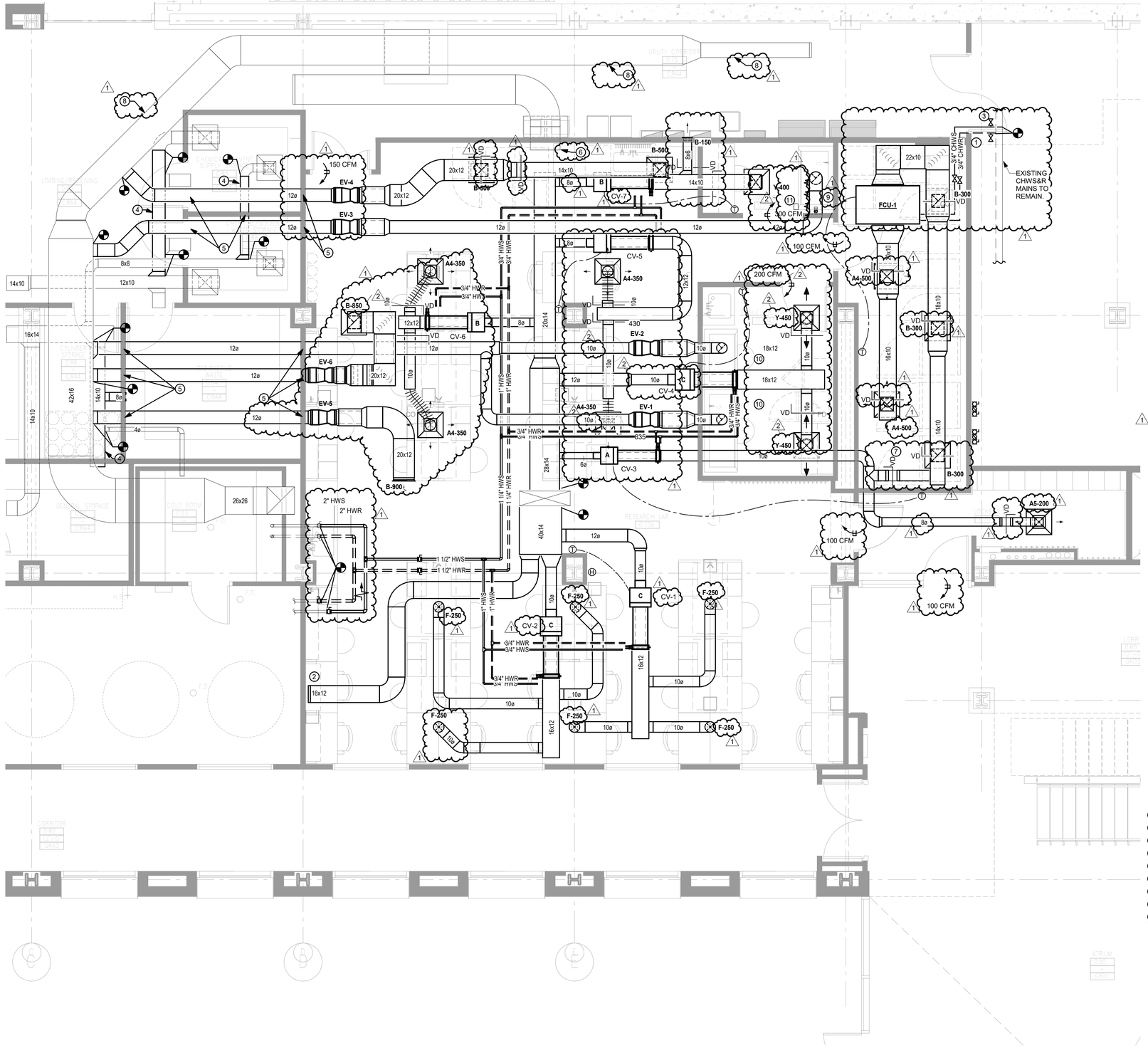
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	TS
CHECKED:	JRD

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

HD1.02

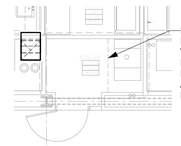
HVAC PENTHOUSE DEMOLITION PLAN

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



HVAC & HYDRONIC PIPING DRAWING NOTES:

1. EXTEND 3/4" CHWS&R FROM EXISTING CHWS&R MAINS IN MER TO NEW FAN COIL UNIT.
2. PROVIDE 16x12 SUPPLY DUCT CAPPED FOR FUTURE EXPANSION.
3. EXTEND 1" CHWS&R FROM EXISTING 1" VALVED AND CAPPED CHWS&R TAPS IN MER AND EXTEND 1" CHWS&R TO NEW FAN COIL UNIT. PROVIDE 1" VALVED AND CAPPED DRAIN VALVES IN NEW 1" BRANCH PIPING.
4. REINSTALL SALVAGED DUCTWORK AS REQUIRED AFTER NEW LAB EXHAUST DUCT CONNECTIONS HAVE BEEN COMPLETED.
5. FIRE SAFE ALL NEW DUCT PENETRATIONS THROUGH EXISTING WALLS.
6. CAP EXISTING DUCTWORK. FIRE SAFE EXISTING WALL PENETRATION.
7. BALANCE TO 100 CFM.
8. EXISTING WELDED LAB EXHAUST DUCT TO REMAIN.
9. PROVIDE 4" STAINLESS STEEL EXHAUST WITH BLAST GATE DOWN TO FUME HOOD STORAGE CABINET.
10. INTERFACE HOOD CONTROLLER ALARM WITH BMS.
11. PROVIDE FUME HOOD SASH MONITOR AND INTERFACE ALARM WITH BMS.



DISCONNECT ALL EXISTING HVAC SERVICES IN IMMEDIATE VICINITY AS REQUIRED TO REMOVE AUTOCLAVE AND REPAIR FLOOR AND DRAIN ASSEMBLY. REINSTALL/REPAIR BACK TO PRE-DEMO CONDITION.

② LEVEL 2 AUTOCLAVE PART PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. ALL LAB EXHAUST DUCTWORK SHALL BE STAINLESS STEEL THROUGHOUT.
2. THE 2007 RECORD DRAWINGS AND ASSOCIATED AS-BUILTS SHALL BE USED FOR REFERENCE ONLY AND UNDERSTANDING OF THE ASSOCIATED HVAC SYSTEMS DURING THE PROJECT CONSTRUCTION. BVH TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE DOCUMENTATION.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

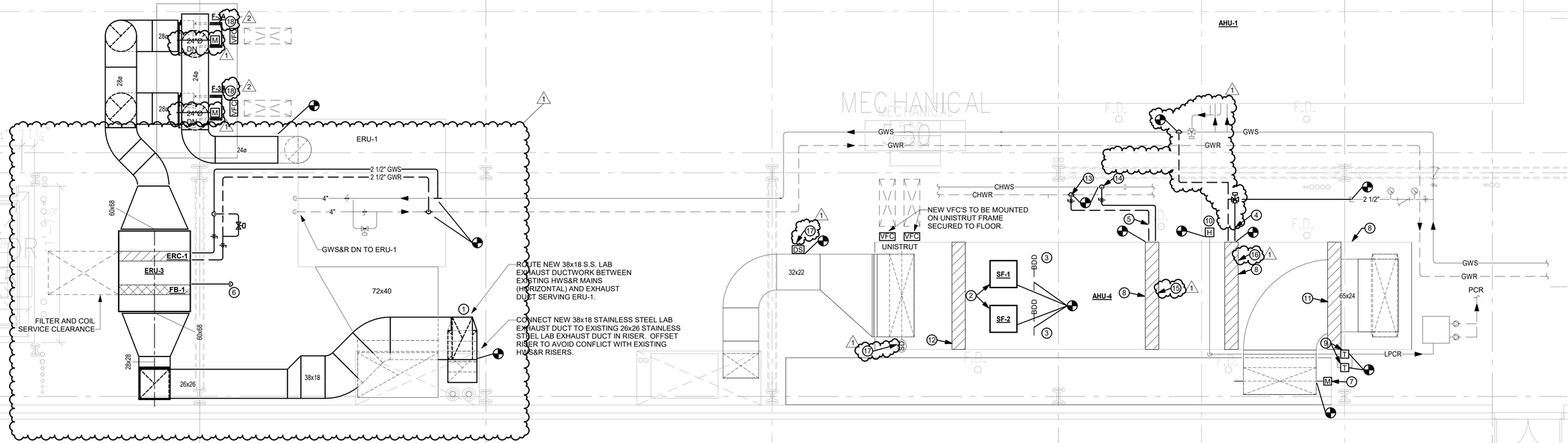
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	TS
CHECKED:	JRD

ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

H1.01

HVAC PLAZA LEVEL PLAN

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



HVAC POST-CONSTRUCTION TESTING REQUIREMENTS

1. CONTRACTOR SHALL TAKE POST CONSTRUCTION MEASUREMENTS OF EXISTING CHILLED WATER PUMP (P-2.3 & P-2.4) SPEED, FLOW, OPERATING PRESSURES, AMPS, ETC. PRIOR TO ANY SYSTEM MODIFICATIONS. SUBMIT FOR ENGINEER REVIEW AND RECORD.
2. CONTRACTOR SHALL TAKE POST CONSTRUCTION MEASUREMENTS OF EXISTING GW PUMP (P-3.1, P-3.2 & P-3.3) SPEED, FLOW, OPERATING PRESSURES, AMPS, ETC. PRIOR TO ANY SYSTEM MODIFICATIONS. SUBMIT FOR ENGINEER REVIEW AND RECORD.
3. CONTRACTOR SHALL TAKE POST CONSTRUCTION MEASUREMENTS OF EXISTING ATRIUM SMOKE CONTROL FANS (F-13, F-14, F-15, F-16, F-17 & F-18) SPEED, FLOW, OPERATING PRESSURES, AMPS, ETC. AS REQUIRED PER CONTRACT SPECIFICATIONS. SUBMIT FOR ENGINEER REVIEW AND RECORD. CX AGENT SHALL BE RESPONSIBLE FOR CONFIRMING EXISTING ATRIUM SMOKE CONTROL SYSTEM OPERATES AS INTENDED WITH ALL REQUIRED SMOKE EXHAUST FANS OPERATING, ALL REQUIRED WINDOWS AND DOORS OPEN, AND ALL REQUIRED HVAC SYSTEMS EITHER SHUT DOWN OR TURN DOWN TO A REDUCED FLOW CAPACITY.

HVAC & HYDRONIC PIPING DRAWING NOTES:

1. CONNECT NEW 26"x26" WELDED STAINLESS STEEL LAB EXHAUST TO EXISTING DEDICATED RISER SERVING THE RENOVATED SPACE ON THE PLAZA LEVEL. EXISTING DUCT CAPPED APPROXIMATELY 12" AFF.
2. REPLACE EXISTING SUPPLY FANS IN THEIR ENTIRETY WITH SIMILAR FANS HAVING THE SAME CAPACITY. FANS SHALL BE TEFC BELT DRIVEN, 12.45 BHP/45 MHP, 480V/3PH, AND CAPABLE OF 10,625 CFM @ 9.5" TSP AND CONTROLLED BY VFCS. BALANCE TO COMBINED AIRFLOW INDICATED IN AIR HANDLING UNIT SCHEDULE. THIS UNIT SHALL BE CAPABLE OF SERVING A FUTURE RENOVATION OF THE ADJACENT MOLECULAR LAB.
3. PROVIDE FAN GRAVITY BACKDRAFT DAMPER ASSEMBLY AS RECOMMENDED BY HAAKON INDUSTRIES.
4. EXTEND GWS&R PIPING TO EXISTING LOOP IN LOCAL AREA. PROVIDE NEW COIL VALVE ASSEMBLY - SEE DETAIL.
5. EXTEND CHWS&R PIPING TO EXISTING LOOP IN LOCAL AREA. PROVIDE NEW COIL VALVE ASSEMBLY - SEE DETAIL.
6. EXTEND 1" GRAVITY DRAIN TO NEAREST FLOOR DRAIN.
7. PROVIDE MOTORIZED ISOLATION DAMPER WITHIN OUTDOOR AIR PLENUM AT DUCT TAP. MECHANICAL CONTRACTOR TO VERIFY EXACT SIZE IN FIELD.
8. THOROUGHLY CHEMICALLY CLEAN AND DISSINFECT EXISTING AHU-4 INTERIOR SURFACES, AND ALL INTERNAL COMPONENTS. REMOVE ALL EXISTING DEBRIS, INSTALL MISSING OR NON-FUNCTIONING LIGHT BULBS, INSTALL MISSING LIGHT FIXTURE LENSES, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
9. PROVIDE NEW STEAM CONDENSATE TRAPS OF EQUAL TYPE AND QUANTITY. REINSTALL EXISTING INSULATING COVERS.
10. PROVIDE NEW STEAM HUMIDIFIER PIPING AND VALVE ASSEMBLY - SEE DETAIL.
11. INSTALL NEW MERV 8 PRE-FILTER IN EXISTING FILTER RACK ASSEMBLY
12. INSTALL NEW MERV 14 FINAL FILTER IN EXISTING FILTER RACK ASSEMBLY.
13. PROVIDE NEW 3" CHWS ISOLATION VALVE: TAG "CHWS-016"
14. PROVIDE NEW 3" CHWR ISOLATION VALVE: TAG "CHWS-012".
15. BALANCE CHW COIL TO 62 GPM. TWO WAY MODULATING CONROL VALVE SHALL BE OVERSIZED FOR ORIGINAL DESIGN CAPACITY.
16. BALANCE GW/HEATING COIL TO 18 GPM. THREE-WAY CONTROL VALVE SHALL BE SIZED FOR ORIGINAL DESIGN CAPACITY.
17. INTERLOCK AHU-4 TO MAIN BUILDING FIRE ALARM SYSTEM SHALL BE OFF DURING SMOKE CONTROL EVENT.
18. OPERATING EXHAUST FAN SHALL TURN DOWN TO REDUCED FLOW OF 2,200 CFM VIA INPUT FROM BMS TO CONTROL VFC PRE-SET SPEED.

GLYCOL ENERGY RECOVERY LOOP SYSTEM MODIFICATIONS:

1. THE EXISTING SYSTEM SHALL OPERATE UNDER ITS PRESENT SEQUENCE OF OPERATIONS. THIS PROJECT INCORPORATES ADDING AHU-4 TO THE ENERGY RECOVERY LOOP (WHICH WAS PLANNED FOR IN THE 2007 PROJECT DESIGN) AND ERU-3 SUPPLEMENTAL ENERGY RECOVERY UNIT WHICH IS AN ENHANCEMENT TO THE 2007 PROJECT DESIGN.
2. ADJUST CIRCUIT SETTERS (IF PRESENT) AT CENTRAL CIRCULATING PUMPS P-3.1, P-3.2 AND P-3.3 TO ACCOMMODATE INCREASED FLOW TO NEW AHU-4 AND ERU-3 COILS (APPROXIMATELY 45 GPM ADDITIONAL). THESE PUMPS ARE CONTROLLED VIA VFC DRIVES AND DIFFERENTIAL PRESSURE SENSORS.
3. NEW PIPING TO ERU-3 SHALL BE CONNECTED UPSTREAM OF THE EXISTING ERU-1 TWO-WAY BYPASS CONTROL VALVE. A NEW TWO-WAY BYPASS CONTROL VALVE SHALL BE PROVIDED TO CONTROL FLOW TO ERU-3.THESE VALVES SHALL BE CONFIGURED TO OPERATE IN UNISON.

GENERAL NOTES:

1. ALL LAB EXHAUST DUCTWORK SHALL BE STAINLESS STEEL THROUGHOUT.
2. THE 2007 RECORD DRAWINGS AND ASSOCIATED AS-BUILTS SHALL BE USED FOR REFERENCE ONLY AND UNDERSTANDING OF THE ASSOCIATED HVAC SYSTEMS DURING THE PROJECT CONSTRUCTION. BVH TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THE DOCUMENTATION.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

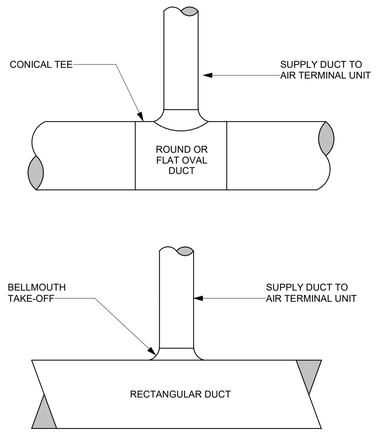
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

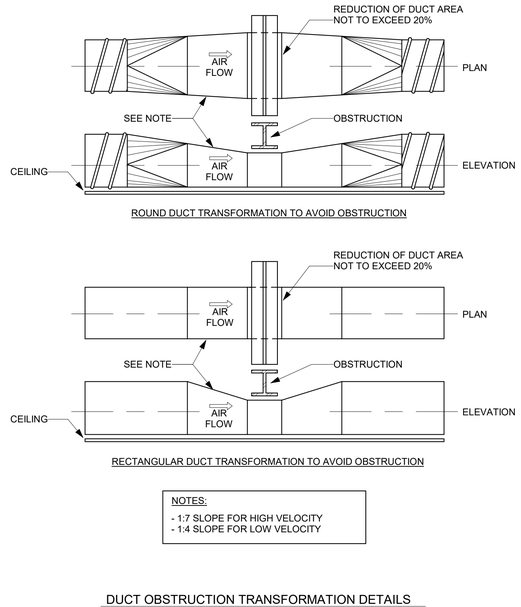
DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: TS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

H1.02

HVAC PENTHOUSE PLAN



VAV PRIMARY SUPPLY AIR TAKEOFF DETAIL
N.T.S.

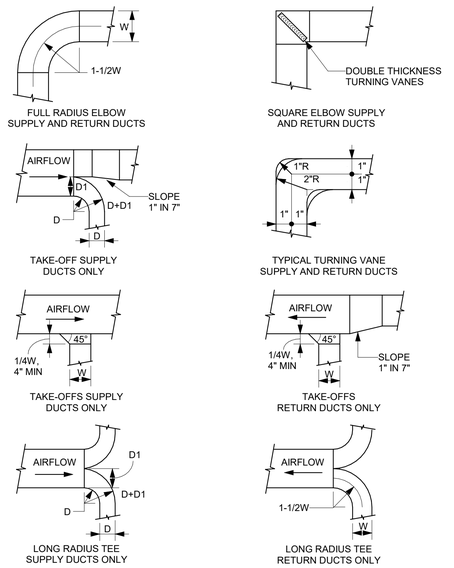


ROUND DUCT TRANSFORMATION TO AVOID OBSTRUCTION

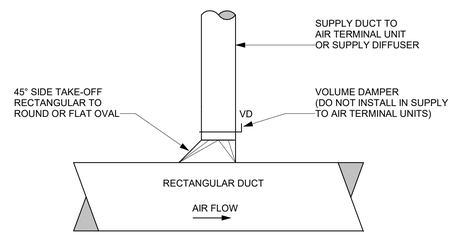
RECTANGULAR DUCT TRANSFORMATION TO AVOID OBSTRUCTION

NOTES:
- 1:7 SLOPE FOR HIGH VELOCITY
- 1:4 SLOPE FOR LOW VELOCITY

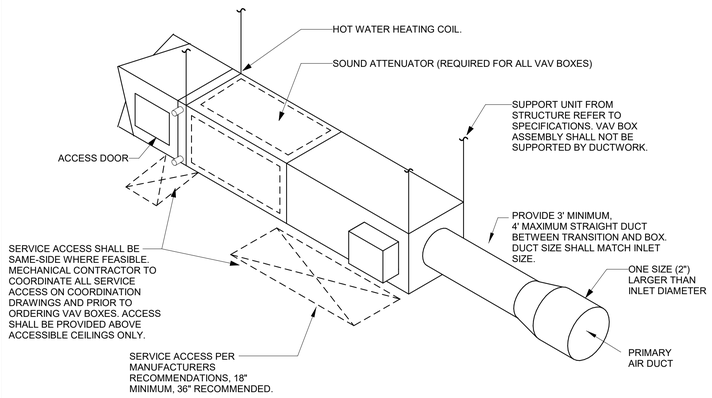
DUCT OBSTRUCTION TRANSFORMATION DETAILS
N.T.S.



DUCT DETAILS
N.T.S.

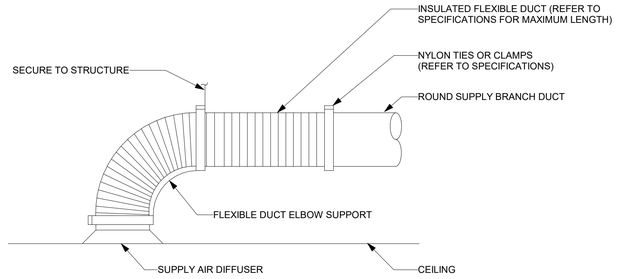


45° SUPPLY AIR TAKEOFF DETAIL
N.T.S.



NOTE: DO NOT INSTALL VAV BOX, PIPING, OR VALVES ABOVE INACCESSIBLE CEILINGS.

SHUT OFF VAV BOX DETAIL
NOT TO SCALE



NOTE: DO NOT INSTALL FLEXIBLE DUCTWORK ABOVE INACCESSIBLE CEILINGS

SUPPLY DIFFUSER CONNECTION DETAIL
NOT TO SCALE

NOTE:
REFER TO MEP DRAWINGS FOR
ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

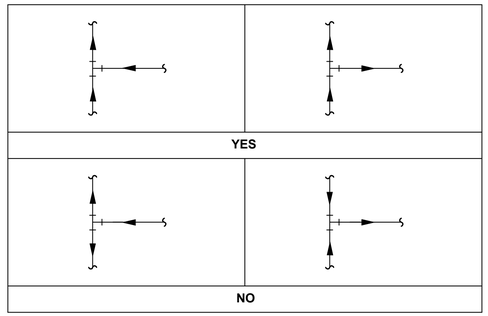
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: TS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

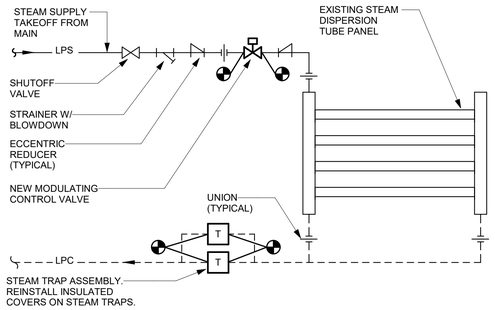
H4.01

HVAC DETAILS

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

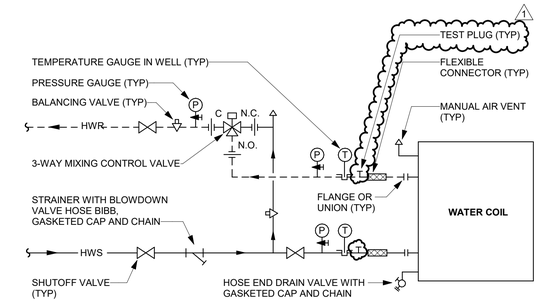


ALLOWABLE FLOW CONFIGURATIONS IN PIPING TEES - HVAC SYSTEMS
NOT TO SCALE



NOTE: ALL WORK SHOWN DARK IS NEW

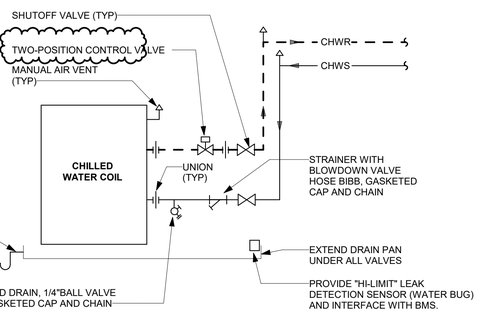
AHU-4 DISPERSION TUBE PANEL HUMIDIFIER DETAIL
N.T.S.



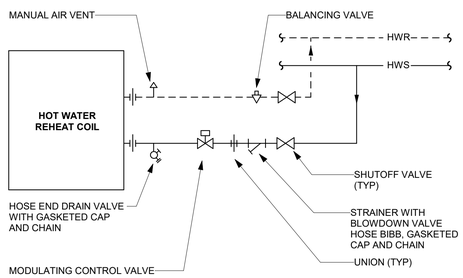
NOTE:

PROVIDE UNIONS IN LIEU OF FLANGES AT CONTROL VALVES AND COIL CONNECTIONS WHERE APPLICABLE.

AHU-4 ENERGY RECOVERY COIL PIPING DETAIL
N.T.S.

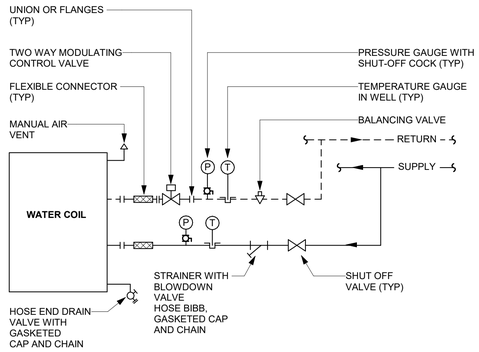


FAN COIL UNIT CHILLED WATER COIL PIPING DETAIL
NOT TO SCALE



NOTE:
ALL RUNOUTS TO BE 3/4" UNLESS NOTED OTHERWISE. RUNOUTS LESS THAN 3/4" WILL NOT BE ACCEPTED. PROVIDE AQUASTAT PER CONTROL DIAGRAM.

VAV HOT WATER REHEAT COIL PIPING DETAIL
NOT TO SCALE



NOTES:

1. UNIONS MAY BE OMITTED AT CONTROL VALVE PROVIDED THAT CONTROL VALVE HAS FLANGED ENDS.

2. PIPE SUPPLY TO LEAVING AIR SIDE OF COIL.

AHU-4 CHILLED WATER COIL PIPING DETAIL
N.T.S.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

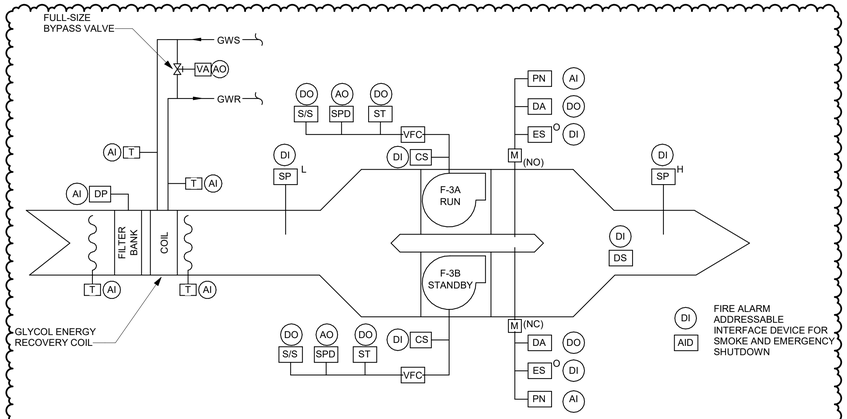
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: TS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

H4.02

HVAC DETAILS

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



EXHAUST FANS

1. SEQUENCE OF OPERATION:
   - A. THE FANS SHALL OPERATE 24/7 IN A RUN/STANBY MODE IN SEQUENCE WITH AHU-4. UNIT AND CONTROLS SHALL BE ON GENERATOR POWER SOURCE.
   - B. FAN SHALL OPERATE UNDER CONSTANT VOLUME DURING OCCUPIED MODE, REDUCED FLOWDURING UNOCCUPIED MODE. FANS SHALL BE ROTATED ON A WEEKLY BASIS FOR EQUAL RUNTIME.
   - C. GLYCOL CONTROL VALVE SHALL MODULATE IN UNISON WITH EXISTING ERU-1 CONTROL VALVE IN ACCORDANCE WITH PRESENT SEQUENCE OF OPERATIONS. TWO BYPASS CONTROL VALVES SHALL MODULATE TO MAINTAIN GLYCOL LOOP TEMPERATURE.
   - D. UPON SMOKE CONDITION, EXHAUST FANS SHALL CYCLE OFF AND MOTORIZED DAMPERS SHALL CLOSE.
2. STANDBY POWER MODE:
   - A. DUAL FANS ARE POWERED FROM STANDBY BRANCH OF POWER. SYSTEM SHALL MONITOR STATUS OF STANDBY POWER AT ATS.
3. RESTART/START COMMAND:
   - A. WHEN THE SYSTEM IS STARTED OR RESET:
     - a. EXHAUST FAN ISOLATION DAMPER SHALL OPEN.
     - b. SUBJECT TO END SWITCHES ON THE DAMPER CLOSED POSITIONS, THE FAN SHALL BE SENT A START COMMAND.
     - c. EXHAUST FAN SHALL RAMP UP IN PARALLEL OVER 240 SECONDS (ADJ)
4. SINGLE FAN START/STOP:
   - A. IF A SINGLE FAN FAILS, IS DISABLED OR IS SHUT DOWN, IT SHALL BE COMPLETELY SHUT DOWN AND ITS DEDICATED ISOLATION DAMPER SHALL CLOSE. WHEN A SINGLE FAN IS RESTARTED WITH THE SYSTEM RUNNING IT SHALL BE ENABLED TO RAMP UP AS SOON AS ITS ISOLATION DAMPER LIFTS FROM THE CLOSED POSITION AND SHALL RAMP UP AS FAST AS PRUDENT TO PREVENT BACKSPIN.
5. STOP/SHUT-DOWN COMMAND:
   - A. UNIT SHUTDOWN SHALL OCCUR UNDER THE CONDITIONS INDICATED BELOW:
     - a. EMERGENCY SMOKE CONDITION AS SENSED BY SMOKE DETECTORS.
     - b. 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
     - c. EMERGENCY EXHAUST FAN STATIC ALARM CONDITION
     - d. MANUAL COMMAND FROM THE OPERATOR'S WORKSTATION
   - B. THE EXHAUST 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
6. ALARMS:
   - A. SINGLE FAN STOPPED CONDITION (EA)
   - B. SINGLE FAN FAULT/FAILURE CONDITION (EA)
   - C. SMOKE CONDITION
   - D. FAN DISCHARGE HIGH STATIC CONDITION
   - E. FAN INTAKE LOW STATIC CONDITION
   - F. HIGH FILTER BANK PRESSURES
   - G. DAMPER FAILURE CONDITION (EA)
   - H. VFC FAULT (EA)
7. GRAPHICS
   - A. ALARM CONDITIONS
   - B. OCCUPIED/UNOCCUPIED MODE
   - C. FAN STATUS (EA)
   - D. FAN SPEED (EA)
   - E. FAN AIR FLOW (EA)
   - G. SYSTEM STATIC PRESSURES
   - H. DISCHARGE AIR TEMPERATURE
   - I. INLET AIR TEMPERATURE
   - J. GW COIL VALVE COMMAND PERCENTAGE
   - K. GW COIL VALVE POSITION PERCENTAGE
   - L. GW COIL RETURN WATER TEMPERATURE
   - M. GW COIL DISCHARGE AIR TEMPERATURE
   - N. DAMPER COMMAND
   - O. DAMPER POSITION
   - P. FILTER DIFFERENTIAL PRESSURE
   - Q. DUCT STATIC PRESSURE
   - R. VFC STATUS (EA)
   - S. VFC SPEED (EA)
   - T. VFC COMMAND (EA)

LAB EXHAUST FAN CONTROL

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

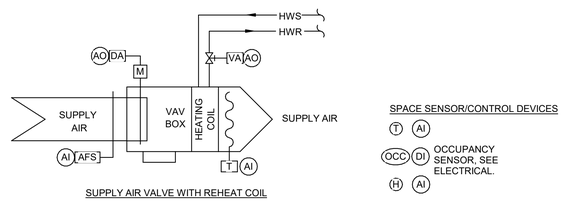
FIRE ALARM
1. SEQUENCE OF OPERATION
   - A. MONITOR GENERAL STATUS AND ALARM AND ENABLE HVAC SYSTEM. SYSTEM CONTROL MODES AS INDICATED IN SEQUENCES.
   - B. MONITOR INDIVIDUAL ADDRESSABLE INTERFACE DEVICES INTERFACED WITH HVAC SYSTEM.
2. ALARMS
   - A. GENERAL ALARM
3. GRAPHICS
   - A. ALARM/TROUBLE/NORMAL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

ELECTRICAL EQUIPMENT

FIRE ALARM — LEG

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

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.
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,
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.



SUPPLY AIR VALVE WITH REHEAT COIL

SPACE SENSOR/CONTROL DEVICES
- T AI
- OCC DI OCCUPANCY SENSOR, SEE ELECTRICAL.
- H AI

VAV BOX WITH REHEAT COIL
1. SEQUENCE OF OPERATION
   - A. OCCUPIED/UNOCCUPIED MODE CONTROL SHALL BE AS SCHEDULED THROUGH THE HEAD END FOR 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.) UNOCCUPIED AIRFLOW SHALL BE SET AT 30% (ADJ.) MINIMUM.
   - B. THE DAMPER SHALL MODULATE TO MAINTAIN CONSTANT VOLUME AIR DISCHARGE FROM VAV TERMINAL.
   - C. ON A FURTHER DROP IN TEMPERATURE THE NORMALLY OPEN REHEAT VALVE SHALL MODULATE TO MAINTAIN OCC/UNOC SET POINT, SUBJECT TO A MAXIMUM DISCHARGE AIR TEMPERATURE OF 70°F (ADJ.)
   - E. ON A FURTHER DROP IN TEMPERATURE THE NORMALLY OPEN REHEAT VALVE SHALL MODULATE TO MAINTAIN OCC/UNOCC SET POINT, SUBJECT TO A MAXIMUM AIR TEMPERATURE OF 85°F (ADJ.).
   - F. WHEN THE RADIATION VALVE IS FULLY OPEN ON A FURTHER DECREASE IN TEMPERATURE THE REHEAT VALVE SHALL MAINTAIN DISCHARGE AIR TEMPERATURE AND THE MINIMUM BOX AIRFLOW SET POINT SHALL BE RESET HIGHER TO MAINTAIN SPACE TEMPERATURE
   - G.
   - I, WHEN ANY SPACE HUMIDITY SENSOR SENSES A SPACE DEWPOINT ABOVE 58°F (ADJ.)...
2. ALARMS
   - A. HIGH SPACE TEMPERATURE (10 MINUTE DELAY)
   - B. LOW SPACE TEMPERATURE (10 MINUTE DELAY)
   - C. HIGH SPACE CARBON DIOXIDE LEVEL (10 MINUTE DELAY)
   - D. LOW AIR FLOW
   - E. HIGH SPACE HUMIDITY
3. GRAPHICS
   - A. ALARM CONDITIONS
   - B. OCCUPIED/UNOCCUPIED MODE
   - C. SPACE TEMPERATURE
   - D. SPACE TEMPERATURE SETPOINT
   - E. SPACE HUMIDITY AND DEW POINT
   - F. REHEAT VALVE COMMAND PERCENTAGE
   - H. DAMPER COMMAND PERCENTAGE
   - I. DISCHARGE AIR TEMPERATURE
   - K. ROOM OCCUPPANCY SENSOR
   - L. SUPPLY AIR FLOW VOLUME

VAV BOX WITH REHEAT COIL

NOT TO SCALE

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
DS	DUCT SMOKE DETECTOR
VA	VALVE ACTUATOR
VFC	VARIABLE FREQUENCY CONTROLLER
AFS	AIR FLOW STATION
	AVERAGING SENSOR
S P	PILOT LIGHT SWITCH
M T	MARK TIME SWITCH
	PILOT LIGHT
SD	SMOKE DAMPER
FS	COMBINATION FIRE / SMOKE DAMPER
FM	FLOW METER
AID	FIRE ALARM ADDRESSABLE INTERFACE DEVICE
	SPACE SENSOR / TRANSMITTER
	SENSOR / TRANSMITTER

AP	AIR PURITY STATION
AQ	AQUASTAT
AFS	AIR FLOW STATION
BG	EMERGENCY BREAK GLASS
BRB	RED EMERGENCY BUTTON
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
OUT	OUTPUT
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

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171
www.bvhis.com

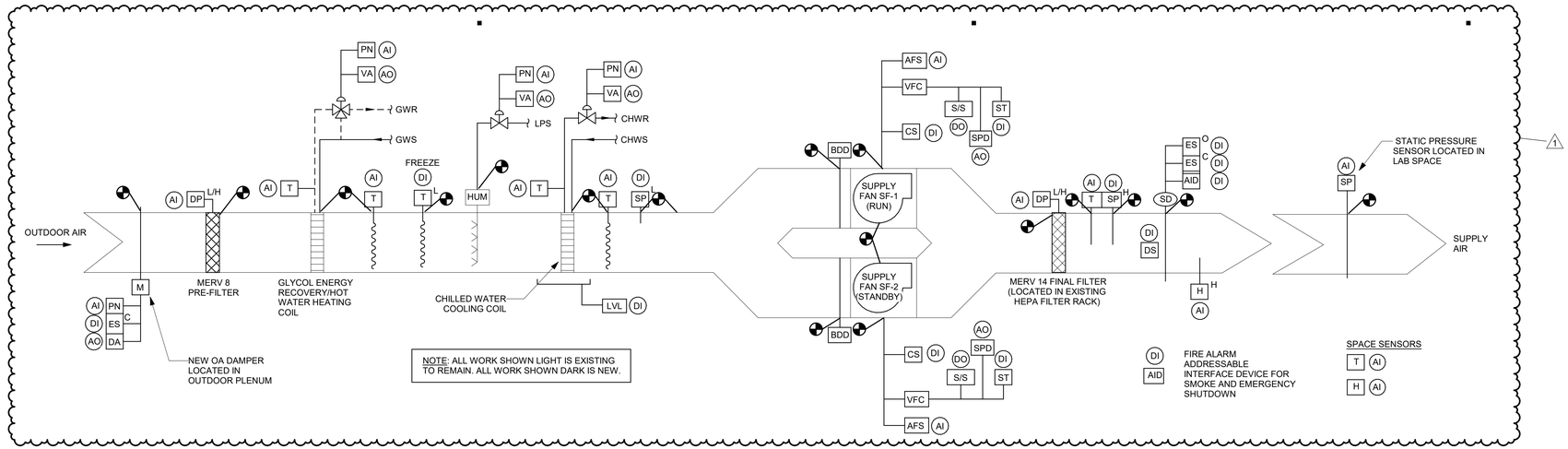
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: TS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

H5.01

HVAC CONTROLS

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



EXISTING AIR HANDLING UNIT CONTROL SCHEMATIC (AHU-4)

NOT TO SCALE

1. GENERAL:
   A. 100% OUTDOOR AIR CONSTANT VOLUME AIR HANDLING UNIT WITH DUAL SUPPLY FANS, GLYCOL ENERGY RECOVERY/HOT WATER HEATING, CHILLED WATER COOLING, AND FILTRATION SERVING DUCT DISTRIBUTION. UNIT AND CONTROLS SHALL BE PROVIDED ON GENERATOR POWER SOURCE. FANS SHALL BE ROTATED ON A WEEKLY BASIS FOR EQUAL RUNTIME.

2. ENABLE / DISABLE MODE:
   A. UNIT SHALL BE ENABLED AND OPERATE CONTINUOUSLY 24/7/365, SUBJECT TO DISABLE AND SHUTDOWN COMMANDS.

3. DISABLED CONDITION
   A. WHENEVER THE UNIT IS DISABLED OR SHUTDOWN:
      a. FANS SHALL BE OFF
      b. THE SUPPLY SMOKE DAMPERS IN DUCT DISTRIBUTION SHALL BE CLOSED.
      c. OUTSIDE AIR, RELIEF AIR, AND EXHAUST AIR DAMPERS SHALL BE CLOSED.
      d. THE HEATING & COOLING VALVES SHALL BE FULLY CLOSED WHEN THE UNIT IS OFF.

4. STANDBY POWER MODE:
   A. DUAL FANS (SUPPLY) ARE POWERED FROM STANDBY BRANCH OF POWER. SYSTEM SHALL MONITOR STATUS OF STANDBY POWER AT ATS.

5. RESTART/START COMMAND:
   A. WHEN THE SYSTEM IS STARTED OR RESET:
      a. COILS SHALL COME UNDER CONTROL FIRST.
      b. SUPPLY SMOKE DAMPERS SHALL OPEN.
      c. OUTDOOR AIR DAMPER SHALL OPEN.
      d. SUBJECT TO END SWITCHES ON THE DAMPER CLOSED POSITIONS, THE RUN FAN SHALL BE SENT A START COMMAND.
      e. SUPPLY FAN SHALL RAMP UP OVER 240 SECONDS (ADJ) AND HEATING/COOLING COIL COME UNDER NORMAL CONTROL.

6. SINGLE FAN START/STOP:
   A. IF A SINGLE SUPPLY FAN FAILS, IS DISABLED OR IS SHUT DOWN, IT SHALL BE COMPLETELY SHUT DOWN AND THE STANDBY FAN SHALL BE INITIATED TO RUN BASED ON ITS INTERNAL SAFETIES AND RAMP UP OVER 240 SECONDS (ADJ).

7. STOP/SHUT-DOWN COMMAND:
   A. UNIT SHUTDOWN SHALL OCCUR UNDER THE CONDITIONS INDICATED BELOW:
      a. EMERGENCY SMOKE CONDITION IN AHU SUPPLY DUCT DISTRIBUTION AS SENSED BY AHU/DUCT DISTRIBUTION SMOKE DETECTORS.
      b. 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
      c. EMERGENCY SUPPLY FAN STATIC ALARM CONDITION
      d. EMERGENCY FREEZE CONDITION
      e. MANUAL COMMAND FROM THE OPERATOR'S WORKSTATION
   B. 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 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.

8. SUPPLY FAN CONTROL:
   A. THE SUPPLY FANS SHALL RUN CONTINUOUSLY TO MAINTAIN STATIC PRESSURE, TEMPERATURE AND HUMIDITY.

9. DISCHARGE AIR TEMPERATURE RESET:
   A. AIR HANDLER DISCHARGE AIR TEMPERATURE SHALL BE SET TO 5°5F (ADJ) AND RESET 2°F. AIR HANDLER DISCHARGE AIR TEMPERATURE SHALL BE RESET LOWER WHENEVER ANY AIR TERMINAL IS AT MAXIMUM COOLING OR WHEN THE SPACE HUMIDITY RISES ABOVE 60% SUBJECT TO A LOW DISCHARGE LIMIT OF 50°F (ADJ).

10. HUMIDITY CONTROL:
    A. THE HUMIDIFIER SHALL BE ENABLED WHENEVER THE SPACE RH DROPS BELOW 35% (ADJ). SUBJECT TO POSITIVE SUPPLY DUCT STATIC PRESSURE, THE HUMIDIFICATION CONTROL OUTPUT SHALL BE MODULATED TO MEET A MINIMUM OF35% RH AS SENSED AT THE SPACE HUMIDITY SENSOR. CONTROL SHALL BE SUBJECT TO A HIGH LIMIT NOT TO EXCEED 85% RH (ADJ). WHEN AIR SYSTEM TEMPERATURE CONTROL IS LOST, CONTROL OUTPUT SHALL BE SET TO ZERO. UPON RE-ESTABLISHING SYSTEM TEMPERATURE CONTROL, DELAY START OF HUMIDIFICATION SYSTEM UNTIL ROOM TEMPERATURE HAS STABILIZED.

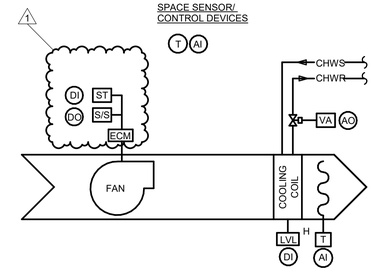
11. COOLING COIL CONTROL:
    A. THE COOLING COIL CONTROL VALVE SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT IN SEQUENCE WITH THE HEATING COIL. HEATING AND COOLING COILS SHALL NOT BE PERMITTED TO OPERATE SIMULATENOUSLY. MONITOR HIGH LEVEL IN CONDENSATE PAN AND ALARM AT BMS. DO NOT DISABLE AHU IN CONDENSATE HIGH LEVEL ALARM CONDITION.

12. FILTER BANKS:
    A. DIFFERENTIAL PRESSURE AT EACH FILTER BANK SHALL BE MONITORED AND ALARM WHEN DIFFERENTIAL STATIC PRESSURE IS REACHED.

13. ENERGY RECOVERY CONTROL:
    A. MONITOR BOTH ENTERING AND LEAVING TEMPERATURE AND HUMIDITY FOR BOTH OUTDOOR AND EXHAUST AIRSTREAMS.

14. ALARMS:
    A. UNIT STOPPED CONDITION
    B. SINGLE SUPPLY FAN STOPPED CONDITION (EA)
    C. SINGLE SUPPLY FAN FAULT/FAILURE CONDITION (EA)
    D. SUPPLY SMOKE CONDITION
    E. SUPPLY DISCHARGE HIGH STATIC CONDITION
    F. SUPPLY INTAKE LOW STATIC CONDITION
    G. FREEZE CONDITION
    H. SPACE TEMPERATURE HIGH/LOW CONDITIONS
    I. SPACE RH HIGH/LOW CONDITIONS
    J. LOW/HIGH UNIT DISCHARGE AIR TEMPERATURES
    K. HIGH FILTER BANK PRESSURES
    L. OUTDOOR AIR DAMPER FAILURE CONDITION
    M. CONDENSATE HIGH LEVEL ALARM
    N. VFC FAULT (EA)

15. GRAPHICS
    A. ALARM CONDITIONS
    B. OCCUPIED/UNOCCUPIED MODE
    C. SUPPLY FAN STATUS (EA)
    D. SUPPLY FAN SPEED (EA)
    E. SUPPLY FAN AIR FLOW (EA)
    F. HIGH HUMIDITY CONDITION
    G. SUPPLY SYSTEM STATIC PRESSURE
    H. DISCHARGE AIR TEMPERATURE
    I. DISCHARGE AIR TEMPERATURE BASE SET POINT
    J. DISCHARGE AIR TEMPERATURE RESET SET POINT
    K. GW COIL VALVE COMMAND PERCENTAGE
    L. GW COIL VALVE POSITION PERCENTAGE
    M. GW COIL RETURN WATER TEMPERATURE
    N. GW COIL DISCHARGE AIR TEMPERATURE
    O. CHW COIL VALVE COMMAND PERCENTAGE
    P. CHW COIL VALVE POSITION PERCENTAGE
    Q. CHW COIL DISCHARGE AIR TEMPERATURE
    R. OA DAMPER COMMAND
    S. OA DAMPER POSITION
    T. OUTSIDE AIR TEMPERATURE (GLOBAL)
    U. OUTSIDE AIR HUMIDITY (GLOBAL)
    V. FILTER DIFFERENTIAL PRESSURE (EA)
    W. SUPPLY DUCT STATIC PRESSURE
    X. SUPPLY STATIC PRESSURE SETPOINT
    Y. HUMIDIFIER VALVE COMMAND PERCENTAGE
    Z. HUMIDIFIER VALVE POSITION PERCENTAGE
    AA. SPACE TEMPERATURE
    AB. SPACE RH (%)
    AC. VFC STATUS (EA)
    AD. VFC SPEED (EA)
    AE. VFC COMMAND (EA)



COOLING ONLY CHILLED WATER FAN COIL UNIT CONTROL

NOT TO SCALE

1. SEQUENCE OF OPERATION
   a. FAN COIL UNIT SHALL RUN CONTINUOUSLY.
   b. ON A CALL FOR COOLING FROM SPACE SENSOR, MODULATE COOLING VALVE OPEN TO MAINTAIN SETPOINT.
   c. OCC SETPOINT: 75°F (ADJ)
   d. ON COOLING COIL HIGH LEVEL CONDITION, CLOSE CHW VALVE, SYSTEM TO CONTINUE TO OPERATE

2. ALARMS
   a.HIGH SPACE TEMPERATURE (85°F)
   b.FAN FAILURE ALARM
   c.HIGH LEVEL CONDENSATE

3. GRAPHICS
   a. ALARM CONDITION
   b. SPACE TEMPERATURE
   c. VALVE COMMAND STATUS
   d. FAN STATUS
   e. FAN COMMAND

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

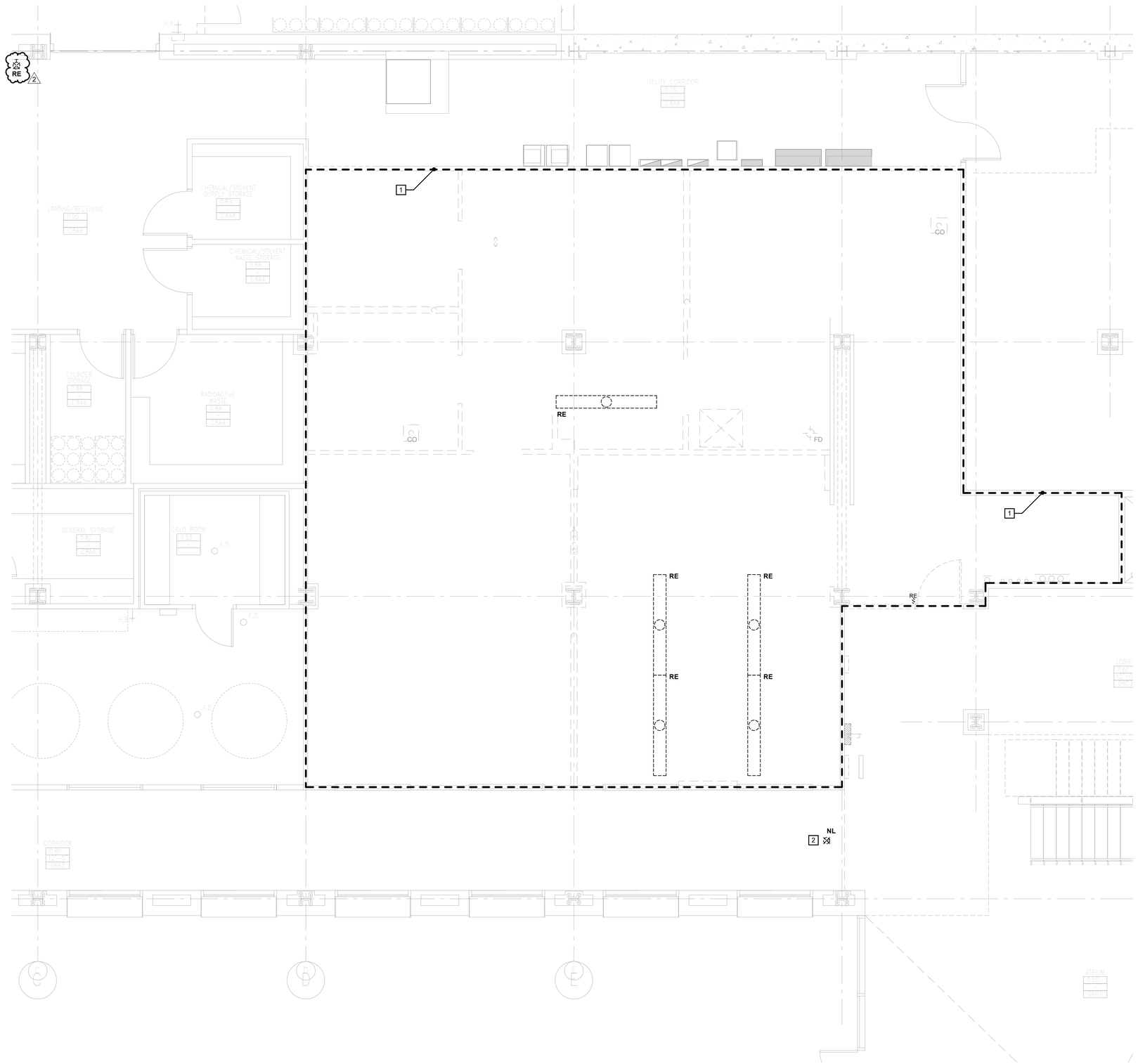
BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: TS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

H5.02

HVAC CONTROLS



LIGHTING DEMOLITION DRAWING NOTES:

1. REMOVE EXISTING LUMINAIRES AND ASSOCIATED CIRCUITRY BACK TO NEAREST JUNCTION BOX.
2. RELOCATE EXISTING EXIT LUMINAIRE TO NEW LOCATION. MATCH AND EXTEND EXISTING CONDUIT AND CONDUCTORS. REFER TO REFLECTED CEILING PLANS FOR FINAL LOCATION.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

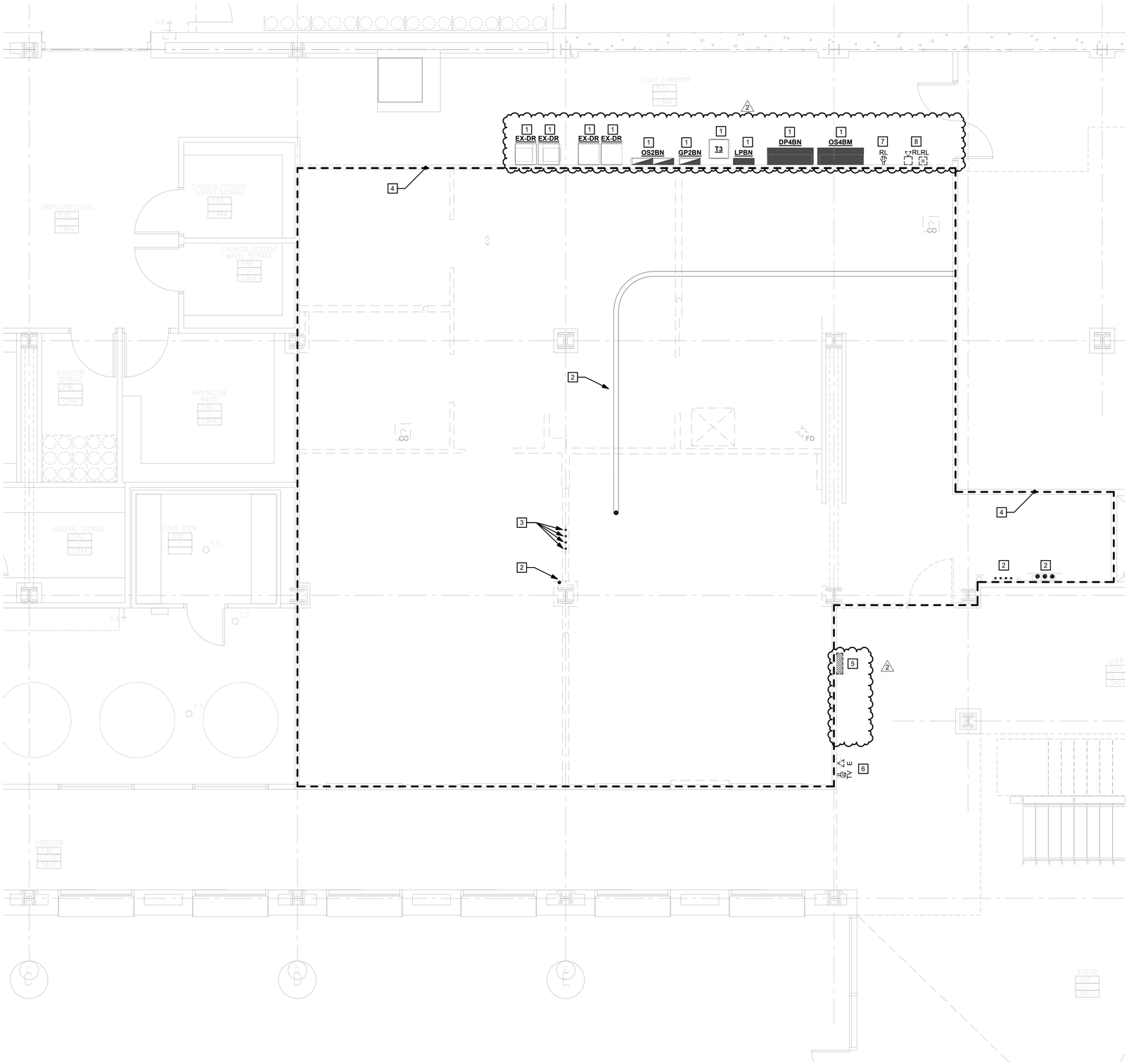
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	MCS
CHECKED:	JRD

ISSUED FOR:
BIDDING and CONSTRUCTION

REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

ELD1.01

ELECTRICAL LIGHTING PLAZA LEVEL DEMOLITION PLAN



ELECTRICAL POWER & SPECIAL SYSTEMS DEMOLITION DRAWING NOTES:

#	
1	EXISTING TO REMAIN ELECTRICAL EQUIPMENT.
2	EXISTING TO REMAIN CONDUIT.
3	EXISTING CONDUIT TO BE MOVED. TRENCH OUT EXISTING CONDUIT TO EXTEND TO ADJACENT COLUMN. SEE DETAIL FOR ADDITIONAL INFORMATION.
4	EXISTING EXPOSED CONDUIT, MC CABLE ARE TO REMAIN. FASTEN AND SECURE EXISTING MC CABLE TO CODE PRIOR TO ANY NEW INSTALLATION.
5	RELOCATE EXISTING WINDOW ACTUATOR SWITCHES.
6	RELOCATE POWER AND DATA FOR TV.
7	RELOCATE EXISTING DUPLEX TO AVOID NEW PANELBOARD LOCATION. MATCH AND EXTEND EXISTING CONDUIT AND CONDUCTORS.
8	RELOCATE EXISTING FIRE ALARM SPEAKER AND ORANGE STROBE TO AVOID INSTALLATION OF NEW PANELBOARD. MATCH AND EXTEND EXISTING CONDUIT AND CONDUCTORS.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	MCS
CHECKED:	JRD

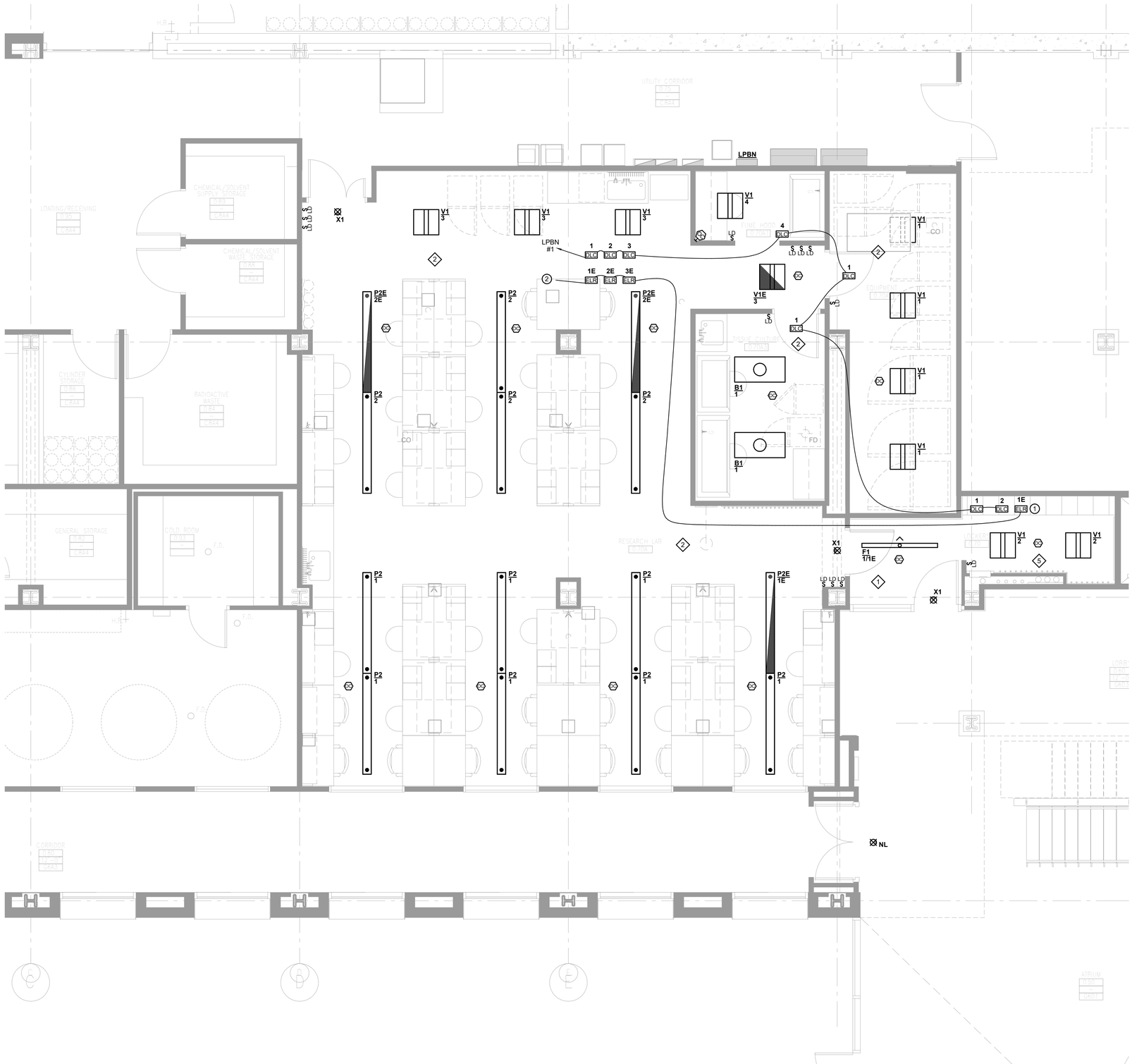
ISSUED FOR:
BIDDING and CONSTRUCTION

REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

EPSD1.01

ELECTRICAL POWER & SPECIAL SYSTEMS PLAZA LEVEL DEMOLITION PLAN

E:\Work\Job Aid\Revit Jobs\2121013 - URI CBLS\2121013 - URI CBLS Laboratory Renovation - MCS MEP R18.rvt



PLAZA LEVEL EXIT CORRIDOR
1/8" = 1'-0"

#	LIGHTING DRAWING NOTES:
1	PROVIDE UL1008 RELAY TO TRANSFER BETWEEN NORMAL AND EMERGENCY CIRCUITRY.
2	CIRCUIT TO EMERGENCY CIRCUIT FED FROM EXISTING PANELBOARD E4P SERVING CORRIDOR #80.

#	LIGHTING CONTROL DRAWING NOTES:
1	CORRIDOR
2	LABORATORY
5	STORAGE

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

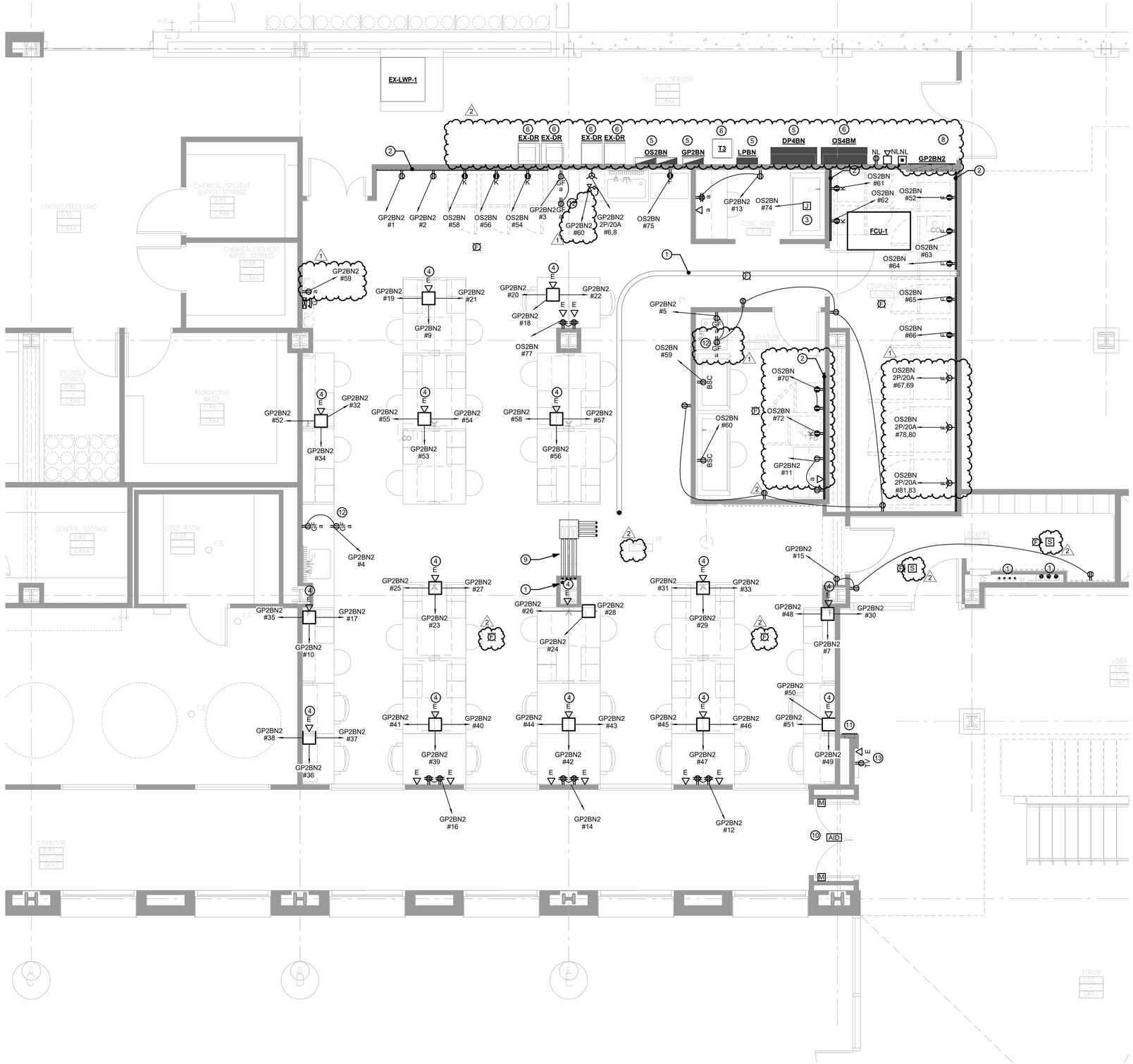
120 FLAGG RD
KINGSTON, RI 02881

DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	MCS
CHECKED:	JRD
ISSUED FOR:	BIDDING and CONSTRUCTION

REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

EL1.01

ELECTRICAL LIGHTING PLAZA LEVEL PLAN



ELECTRICAL POWER & SPECIAL SYSTEMS DRAWING NOTES:

#	
1	EXISTING TO REMAIN CONDUIT.
2	PROVIDE WALL MOUNTED STEEL SINGLE CHANNEL RACEWAY SYSTEM. REFER TO FLOORPLANS FOR LENGTHS, CIRCUITRY AND RECEPTACLE SPACING. BASIS OF DESIGN LEGRAND 2000 SERIES.
3	PROVIDE POWER FOR FUME HOOD. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
4	PROVIDE RECEPTACLES MOUNTED WITHIN THE OVERHEAD SERVICE PANEL. REFER TO DETAIL FOR ADDITIONAL INFORMATION.
5	EXISTING TO REMAIN ELECTRICAL PANELBOARD. UPDATE INDEX PANELBOARD SCHEDULE TO REFLECT NEW CIRCUITRY.
6	EXISTING TO REMAIN ELECTRICAL EQUIPMENT.
7	SUPPORT TRANSFORMER FROM STRUCTURE ABOVE. TRANSFORMER TO BE LOCATED ABOVE EXISTING TRANSFER SWITCH TO MAINTAIN ACCESS TO THE SIDE OF THE EXISTING TRANSFER SWITCH. LOCATE FUSED DISCONNECT IN ACCESSIBLE LOCATION UNDER THE TRANSFORMER. REFER TO ELECTRICAL RISER FOR ADDITIONAL INFORMATION.
8	PROVIDE NEW PANELBOARD FED FROM TX-GP2BN2. REFER TO ELECTRICAL RISER FOR ADDITIONAL INFORMATION.
9	PROVIDE NEW 2" CONDUIT TO EXTEND EXISTING 2" CONDUIT TO NEW LOCATION. INTERCEPT EXISTING CONDUCTORS AND SPLICE IN NEW CONDUCTORS IN CEILING MOUNTED HINGED JUNCTION BOX. COORDINATE WITH OTHER TRADES TO MAINTAIN ACCESSIBILITY TO JUNCTION BOX.
10	PROVIDE ADDRESSABLE INTERFACE DEVICE TO TIE NEW FIRE DOOR INTO THE EXISTING EDWARDS EST3 FIRE ALARM SYSTEM.
11	PROVIDE RECESSED WALLBOX TO HOUSE RELOCATED WINDOW ACTUATOR MANUAL SWITCHES. MATCH AND EXTENDED EXISTING WIRING TO NEW LOCATION. WALL BOX TO HAVE (8) GANGS, 14" WIDE X 13" TALL x 4" DEEP WITH LOCKABLE HINGED COVER. BASIS OF DESIGN LEGRAND EHWB8.
12	PROVIDE RECEPTACLE FOR FUTURE RO POLISHER. COORDINATE LOCATION IN FIELD WITH ARCHITECT/OWNER.
13	RELOCATED POWER AND DATA FOR TV. EXTEND EXISTING CONDUIT AND CIRCUITRY TO NEW LOCATION.
14	DISCONNECT AND MAKE SAFE EXISTING AUTOCLAVE. MATCH AND EXTEND EXISTING CONDUIT AND CONDUCTORS TO FACILITATE REINSTALLATION OF THE AUTOCLAVE.
15	PROVIDE AN ADDRESSIBLE INTERFACE DEVICE TO TIE THE FIRE ALARM SYSTEM TO THE VARIABLE FREQUENCY DRIVER. REFER TO HVAC CONTROL SEQUENCE FOR ADDITIONAL INFORMATION.

POWER & SPECIAL SYSTEMS GENERAL NOTES:

1. TYPICAL HOMERUN FOR EACH BRANCH CIRCUIT SHALL BE FED WITH (2) #12 AND (1) #12 GROUND IN 3/4" CONDUIT TO A 20A-1P CIRCUIT BREAKER IN PANELBOARD DESIGNATED, UNLESS OTHERWISE NOTED.
2. PROVIDE BACKBOX AND CONDUIT FOR ALL TECHNOLOGY AND SECURITY DEVICES. CABLING AND ALL ASSOCIATED HARDWARE ARE TO BE PROVIDED BY OTHERS.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLBA
TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
www.bvhis.com
Tel: (860) 286-9171

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

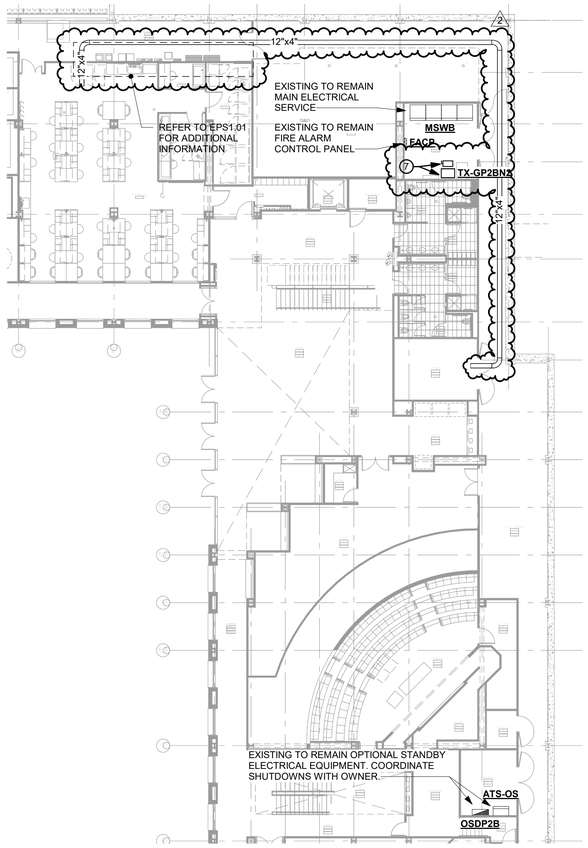
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	MCS
CHECKED:	JRD
ISSUED FOR:	BIDDING and CONSTRUCTION

REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

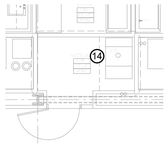
EPS1.01

ELECTRICAL POWER & SPECIAL SYSTEMS PLAZA LEVEL PLAN

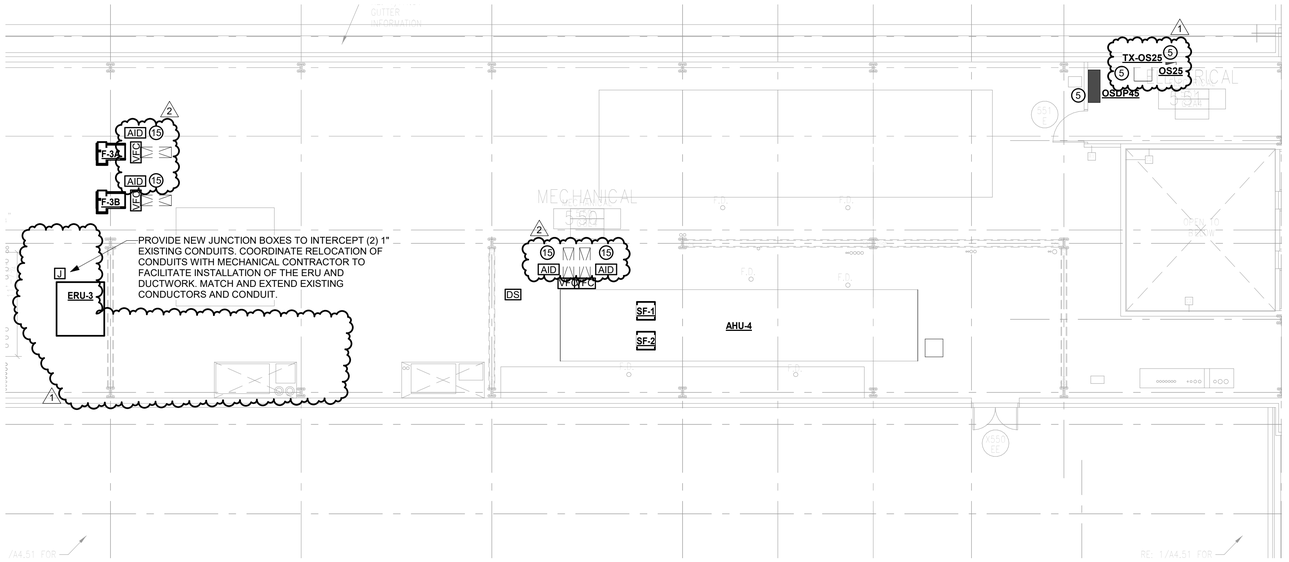
E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



PLAZA LEVEL EXTENDED PLAN
1/16" = 1'-0"



3 LEVEL 2 AUTOCLAVE PART PLAN
1/8" = 1'-0"



PENTHOUSE LEVEL PLAN
1/8" = 1'-0"

ELECTRICAL POWER & SPECIAL SYSTEMS DRAWING NOTES:

1. EXISTING TO REMAIN CONDUIT.
2. PROVIDE WALL MOUNTED STEEL SINGLE CHANNEL RACEWAY SYSTEM. REFER TO FLOORPLANS FOR LENGTHS, CIRCUITRY AND RECEPTACLE SPACING. BASIS OF DESIGN LEGRAND 2000 SERIES.
3. PROVIDE POWER FOR FUME HOOD. COORDINATE EXACT LOCATION AND TERMINATION IN FIELD.
4. PROVIDE RECEPTACLES MOUNTED WITHIN THE OVERHEAD SERVICE PANEL. REFER TO DETAIL FOR ADDITIONAL INFORMATION.
5. EXISTING TO REMAIN ELECTRICAL PANELBOARD. UPDATE INDEX PANELBOARD SCHEDULE TO REFLECT NEW CIRCUITRY.
6. EXISTING TO REMAIN ELECTRICAL EQUIPMENT.
7. SUPPORT TRANSFORMER FROM STRUCTURE ABOVE. TRANSFORMER TO BE LOCATED ABOVE EXISTING TRANSFER SWITCH TO MAINTAIN ACCESS TO THE SIDE OF THE EXISTING TRANSFER SWITCH. LOCATE FUSED DISCONNECT IN ACCESSIBLE LOCATION UNDER THE TRANSFORMER. REFER TO ELECTRICAL RISER FOR ADDITIONAL INFORMATION.
8. PROVIDE NEW PANELBOARD FED FROM TX-GP2BN2. REFER TO ELECTRICAL RISER FOR ADDITIONAL INFORMATION.
9. PROVIDE NEW 2" CONDUIT TO EXTEND EXISTING 2" CONDUIT TO NEW LOCATION. INTERCEPT EXISTING CONDUCTORS AND SPLICE IN NEW CONDUCTORS IN CEILING MOUNTED HINGED JUNCTION BOX. COORDINATE WITH OTHER TRADES TO MAINTAIN ACCESSIBILITY TO JUNCTION BOX.
10. PROVIDE ADDRESSABLE INTERFACE DEVICE TO TIE NEW FIRE DOOR INTO THE EXISTING EDWARDS EST3 FIRE ALARM SYSTEM.
11. PROVIDE RECESSED WALLBOX TO HOUSE RELOCATED WINDOW ACTUATOR MANUAL SWITCHES. MATCH AND EXTENDED EXISTING WIRING TO NEW LOCATION. WALL BOX TO HAVE (8) GANGS, 14" WIDE X 13" TALL x 4" DEEP WITH LOCKABLE HINGED COVER. BASIS OF DESIGN LEGRAND EHWB8.
12. PROVIDE RECEPTACLE FOR FUTURE RO POLISHER. COORDINATE LOCATION IN FIELD WITH ARCHITECT/OWNER.
13. RELOCATED POWER AND DATA FOR TV. EXTEND EXISTING CONDUIT AND CIRCUITRY TO NEW LOCATION.
14. DISCONNECT AND MAKE SAFE EXISTING AUTOCLAVE. MATCH AND EXTEND EXISTING CONDUIT AND CONDUCTORS TO FACILITATE REINSTALLATION OF THE AUTOCLAVE.
15. PROVIDE AN ADDRESSIBLE INTERFACE DEVICE TO TIE THE FIRE ALARM SYSTEM TO THE VARIABLE FREQUENCY DRIVER. REFER TO HVAC CONTROL SEQUENCE FOR ADDITIONAL INFORMATION.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: MCS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

EPS1.02

ELECTRICAL POWER & SPECIAL SYSTEMS PENTHOUSE PLAN

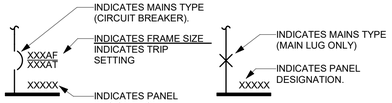
POWER RISER DIAGRAM FEEDER SIZING CHART

(SEE FEEDER LEGEND FOR APPLICATION OF THIS CHART)

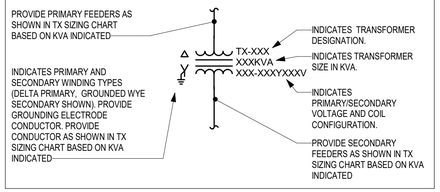
SCHEDULE NOTES:
1. ALL CONDUCTORS LISTED BELOW ARE THHN/THWN, COPPER.
2. CONTRACTOR MAY ELECT TO INCREASE SIZE OF CONDUCTORS LISTED ABOVE IF THERE IS NO INCREASE IN COST. INCREASE SIZE OF RACEWAY PER CODE AS REQUIRED.
3. PROVIDE AUXILARY LUGS AND OVERSIZED GUTTERS IN DISTRIBUTION EQUIPMENT TO ACCOMMODATE OVERSIZED CONDUCTORS.
4. ALL FEEDER SIZING IS BASED ON THE NEC, TABLE 310.15(B)(16), 90°C COLUMN AT A MINIMUM AND OVERSIZED AT THE ENGINEERS DISCRETIOON OR AS DIRECTED BY THE ENGINEER. CONDUCTORS REFLECT AN 80% DERATING DUE TO NONLINEAR LOADS.

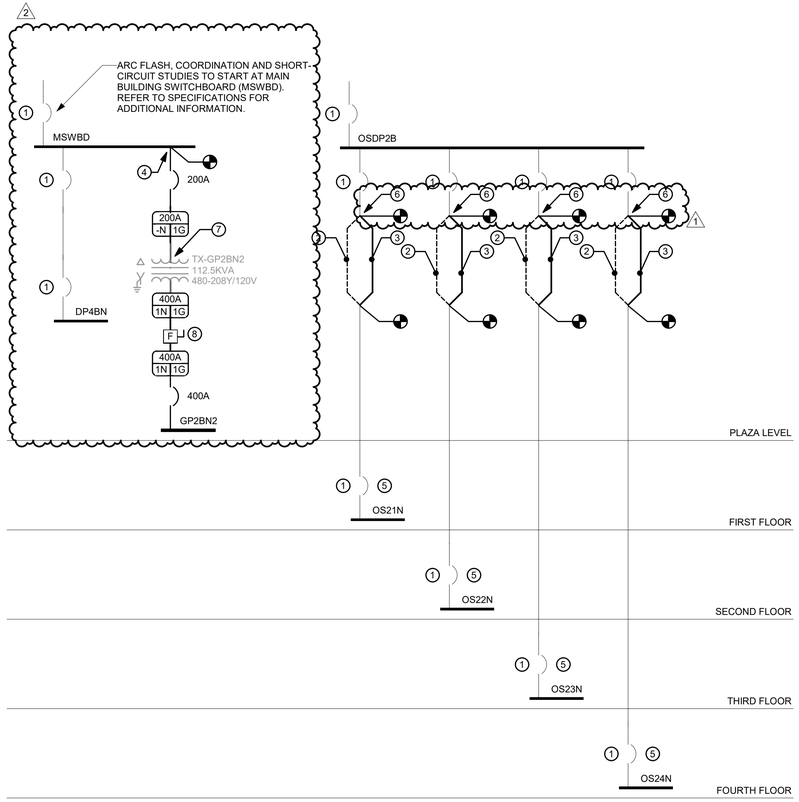
AMPERAGE	NUMBER OF PARALLEL SETS	PHASE CONDUCTOR(S)	NEUTRAL CONDUCTOR(S)	GROUNDING CONDUCTOR(S)	RACEWAY SIZE
20 OR 30	1	(3) #10	(1) #10	(1) #10	1"
40 OR 50	1	(3) #8	(1) #8	(1) #10	1"
60	1	(3) #6	(1) #6	(1) #10	1 1/4"
70 OR 80	1	(3) #4	(1) #4	(1) #8	1 1/4"
90	1	(3) #3	(1) #3	(1) #8	1 1/2"
100	1	(3) #2	(1) #2	(1) #8	1 1/2"
125	1	(3) #1	(1) #1	(1) #6	2"
150	1	(3) #1/0	(1) #1/0	(1) #6	2"
175	1	(3) #2/0	(1) #2/0	(1) #6	2 1/2"
200	1	(3) #3/0	(1) #3/0	(1) #6	2 1/2"
225	1	(3) #4/0	(1) #4/0	(1) #4	3"
250	1	(3) #250	(1) #250	(1) #4	3"
300	1	(3) #350	(1) #350	(1) #4	4"
350	1	(3) #500	(1) #500	(1) #3	4"
400	1	(3) #600	(1) #600	(1) #3	4"

PANELBOARD AND SWITCHBOARD LEGEND



LOW VOLTAGE TRANSFORMER LEGEND





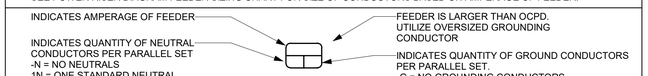
TRANSFORMER SIZING CHART

KVA RATING	VOLTAGE		FEEDER		O.C.P.D. (AMPS)		GROUNDING ELECTRODE (AWG)
	PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY	
15	480 △	208Y/120	30A -N 1G	60A 1N 1G	30	50	8
30	480 △	208Y/120	60A -N 1G	100A 1N 1G	60	100	6
45	480 △	208Y/120	80A -N 1G	175A 1N 1G	80	150	4
75	480 △	208Y/120	125A -N 1G	250A 1N 1G	125	225	2
112.5	480 △	208Y/120	200A -N 1G	400A 1N 1G	200	400 FRAME 400 TRIP SENSOR SET AT 90%	1/0

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.
4. ALL TRANSFORMERS ARE TO BE LOCATED ADJACENT TO THE PANELBOARD THAT THEY SUPPLY TO LIMIT THE SECONDARY CONDUCTOR LENGTHS TO 10' PER NEC 240.21 UNLESS SPECIFICALLY SHOWN OTHERWISE.

FEEDER LEGEND

NOTE:
SEE POWER RISER DIAGRAM FEEDER SIZING CHART FOR SIZE OF CONDUCTORS BASED ON AMPERAGE OF FEEDER.



EXAMPLE:
250A 1N 1G (YD) = (3) # 250 KCMIL, (1) # 250 KCMIL NEUTRAL & (1) # 2/0 EQUIPMENT GROUNDING CONDUCTOR, ALL INSTALLED IN A 3" RACEWAY

ELECTRICAL RISER GENERAL NOTES

1. ALL FEEDER SIZES ARE TO BE BASED OFF OF THE FRAME SIZE. IF THERE IS A VARIANCE BETWEEN THE ELECTRICAL RISER AND THE FEEDER LEGEND, THE ELECTRICAL CONTRACTOR IS TO CARRY THE LARGER FEEDER.

ELECTRICAL RISERS NOTES:

#	
1	EXISTING TO REMAIN ELECTRICAL EQUIPMENT.
2	EXISTING CONDUIT TO BE RELOCATED. REFER TO FLOORPLANS FOR ADDITIONAL INFORMATION. PULL CONDUCTORS BACK TO SOURCE TO PROVIDE NEW CONDUCTORS TO EXTEND CONDUIT.
3	PROVIDE (4) #1/0 AND (1) #6 GROUND IN THE RELOCATED CONDUITS.
4	PROVIDE A NEW ELECTRONIC TRIP POWERPACT BREAKER IN THE EXISTING TO REMAIN SQUARE D SWITCHBOARD. UTILIZE EXISTING SPACE LOCATED BETWEEN DP4BS AND ATS-E.
5	REBALANCE EXISTING TO REMAIN PANELBOARD. REFER TO PANELBOARD SPECIFICATION FOR LOAD BALANCING REQUIREMENTS. PROVIDE TESTS AND REPORTS INDICIATING LOAD BALANCE BEFORE AND AFTER.
6	INTERCEPT EXISTING BURIED CONDUIT TO BE EXTENDED TO NEW LOCATION.
7	OWNER FURNISHED, CONTRACTOR INSTALLED TRANSFORMER. REFER TO SPECIFICATIONS FOR REQUIRED TESTING PROCEDURES.
8	PROVIDE 400A FUSED DISCONNECT. MOUNT DISCONNECT UNDER TRANSFORMER.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

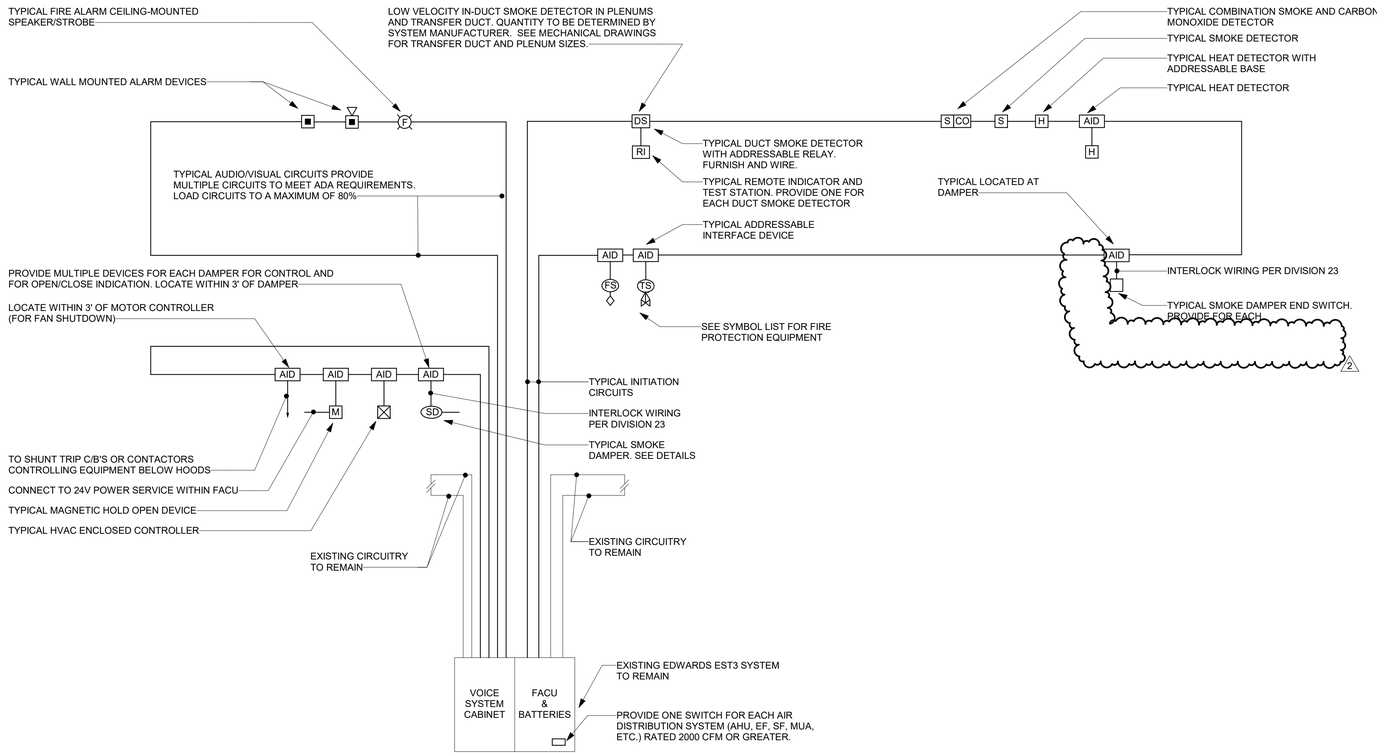
DATE:	03/19/2021
PROJECT NO:	2020.021
DRAWN:	MCS
CHECKED:	JRD
ISSUED FOR:	

BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

E3.01

ELECTRICAL RISERS

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



PARTIAL FIRE ALARM RISER

NOT TO SCALE

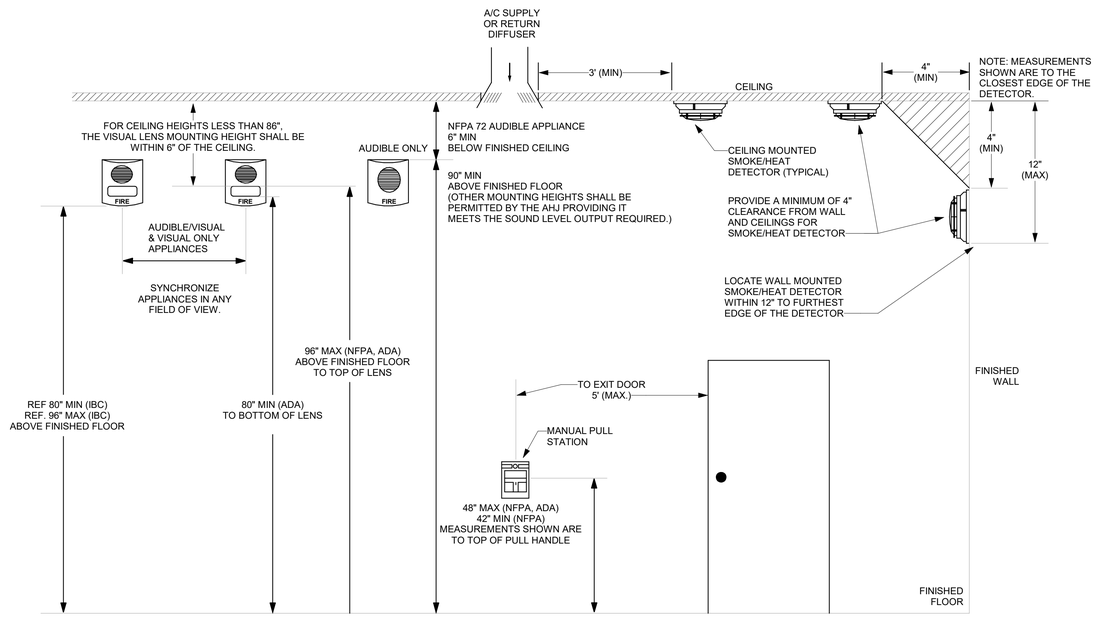
GENERAL NOTES

1. SEE SPECIFICATION SECTION 284621-11 "ADDRESSABLE FIRE-ALARM SYSTEMS" 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 28 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.
7. INSTALLATION OF CARBON MONOXIDE DETECTORS SHALL BE PER MANUFACTURER'S INSTRUCTIONS AND AS REMOTELY LOCATED FROM THE HEATING APPLIANCE AS POSSIBLE AND PER NFPA 720. TESTING OF CARBON MONOXIDE DETECTORS SHALL BE PER NFPA 720 AND PER MANUFACTURER'S INSTRUCTIONS.
8. CARBON MONOXIDE DETECTOR ALARMS MEET OR EXCEED UL 2034.
9. CARBON MONOXIDE DETECTORS MEET OR EXCEED UL 2075.
10. CARBON MONOXIDE DETECTORS SHALL BE CONNECTED TO MAIN FIRE ALARM SYSTEM AS TROUBLE.
11. PROVIDE SIGN READING "CARBON MONOXIDE DETECTORS INSIDE THE ROOM" OUTSIDE THE ENTRANCE TO THE ROOMS WHERE CARBON MONOXIDE DETECTORS ARE LOCATED.
12. REFER TO ELECTRICAL AND HVAC DOCUMENTS FOR QUANTITIES AND LOCATIONS OF ALL COMBINATION FIRE / SMOKE DAMPERS, SMOKE DAMPERS, DUCT SMOKE DETECTORS ETC.

FIRE ALARM SEQUENCE OF OPERATIONS

GENERAL NOTES:
1. DETECTORS ON ALARM VERIFICATION SHOULD 'SNIFF' THE AIR, THEN CHECK AGAIN. IF THE SMOKE IS STILL THERE, THEN A GENERAL ALARM SHOULD SOUND TO EVACUATE. THESE ARE THE ALARMS THAT DO NOT HAVE A CROSS-ZONE CAPABILITY.
2. PROVIDE POWER FOR STROBES IN ALL LARGE OPEN AREAS FROM A SINGLE FIRE ALARM SOURCE SO THAT ALL STROBES ARE SYNCHRONIZED PER SPECIFICATIONS.

		CONTROL UNIT ANNUNCIATION							NOTIFICATION						FIRE SAFETY CONTROL					
	SYSTEM OUTPUTS	ACTUATE COMMON ALARM SIGNAL	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE APPROPRIATE LOCATION INDIACTOR	ACTUATE ALL AUDIBLE EVACUATION SIGNALS	ACTUATE ALL VISIBLE EVACUATION SIGNALS	DISPLAY CHANGE OF STATUS	TRANSMIT ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	UNLOCK ELECTRIC DOORS IN EGRESS PATHS	RELEASE MAG HELD FIRE AND SMOKE DOORS	SWITCH HVAC CONTROLS TO FIRE ALARM MODE	CLOSE SMOKE DAMPERS SERVING ZONE OF ALARM	ACTIVATE EMERGENCY SHUTOFFS FOR GAS	SHUT DOWN FANS 2000 CFM AND ABOVE
0	SYSTEM INPUTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	MANUAL PULL STATION	X	X					X	X	X	X	X			X	X	X	X	X	
2	SMOKE SENSOR / DETECTOR	X	X					X	X	X	X	X			X	X	X	X	X	
3	HEAT SENSOR / DETECTOR	X	X					X	X	X	X	X						X	X	
4	DUCT SENSOR / DETECTOR			X	X			X			X		X							X
5	WATERFLOW SWITCH	X	X					X	X	X	X	X			X	X	X	X	X	
6	TAMPER SWITCH			X	X			X			X		X							
7	CO DETECTOR			X	X			X			X		X							
8	OPEN CIRCUIT OR GROUND CIRCUIT					X					X			X						
9	NOTIFICATION APPLIANCE CIRCUIT (NAC) SHORT					X	X				X			X						
10	REMOVAL OF DEVICE					X	X				X			X						
11	ABNORMAL AC VOLTAGE					X	X				X			X						
12	BREAK IN STANDBY BATTERY CIRCUIT					X	X				X			X						
13	ABNORMAL POSITION OF ANY SWITCH AT FACU OR ANNUNCIATOR					X	X				X			X						
14	VOICE SIGNAL AMPLIFIER FAILURE					X	X				X			X						



FIRE ALARM DEVICE MOUNTING HEIGHTS

N.T.S.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

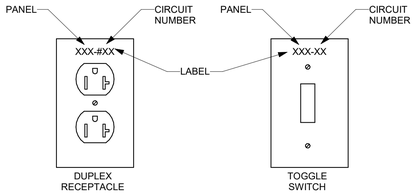
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: MCS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

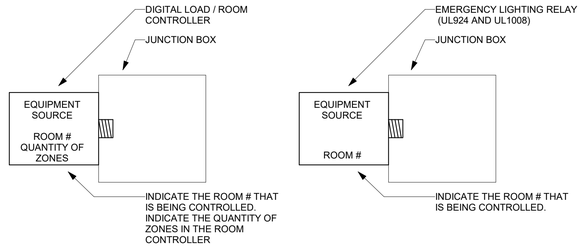
E3.02

FIRE ALARM RISER



NOTES:
1. ELECTRICAL DEVICE PLATE LABEL SHALL IDENTIFY THE SOURCE OF POWER TO THE DEVICE. LABELS SHALL BE HOT STAMPED OR ENGRAVED.
2. THIS DETAIL DOES NOT APPLY TO LOW VOLTAGE LIGHTING CONTROL DECVICES.

ELECTRICAL DEVICE LABELING DETAIL
N.T.S.

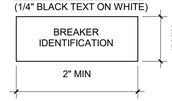


NOTES:
1. LIGHTING CONTROL DEVICE LABELS SHALL IDENTIFY THE SOURCE OF POWER TO THE DEVICE. LABELS SHALL BE SELF-ADHESIVE.

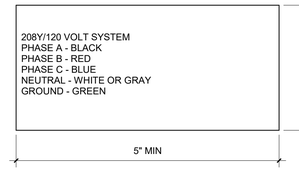
ELECTRICAL DEVICE LABELING DETAIL
N.T.S.

EQUIPMENT IDENTIFICATION LABEL
(1/2" BLACK TEXT ON WHITE)

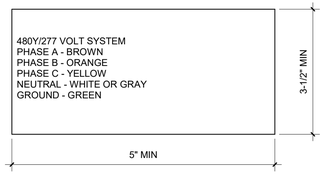
PROTECTIVE DEVICE LOAD LABEL SAMPLE
(1/4" BLACK TEXT ON WHITE)



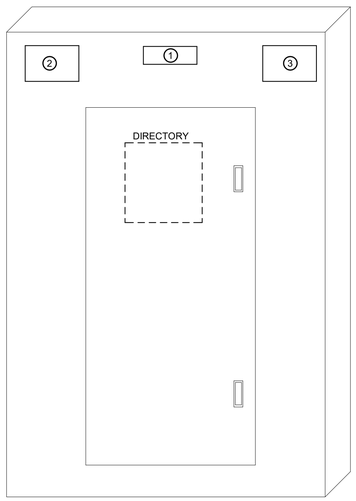
VOLTAGE LABEL SAMPLE
(1/4" BLACK TEXT ON ORANGE)



VOLTAGE LABEL SAMPLE
(1/4" BLACK TEXT ON ORANGE)



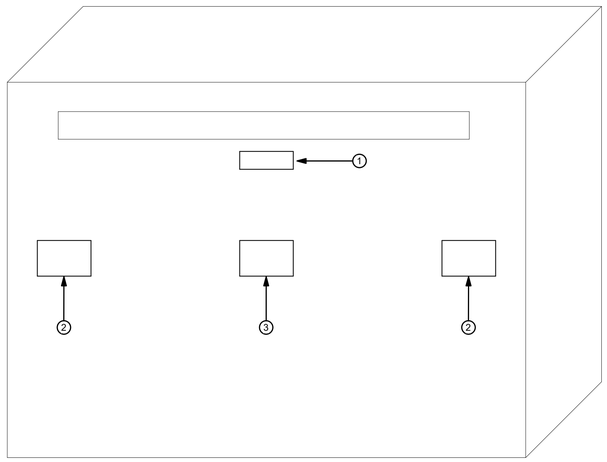
ELECTRICAL IDENTIFICATION LABELS
N.T.S.



BRANCH CIRCUIT PANELBOARD

NOTES:
1. PANELBOARD IDENTIFICATION LABEL
2. VOLTAGE IDENTIFICATION LABEL
3. ARC FLASH WARNING AND INCIDENT ENERGY LEVEL LABELS.

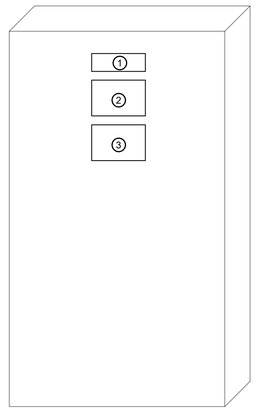
PANELBOARD LABELING
N.T.S.



TRANSFORMER

NOTES:
1. EQUIPMENT IDENTIFICATION LABEL.
2. VOLTAGE LABEL.
3. ARC FLASH WARNING AND INCIDENT ENERGY LEVEL LABELS.

TRANSFORMER LABELING
N.T.S.



MOTOR DISCONNECT SWITCH /
VARIABLE FREQUENCY CONTROLLER

NOTES:
1. EQUIPMENT IDENTIFICATION LABEL.
2. VOLTAGE LABEL.
3. ARC FLASH WARNING AND INCIDENT ENERGY LEVEL LABELS.

MOTOR DISCONNECT / VARIABLE FREQUENCY CONTROLLER LABELING
N.T.S.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

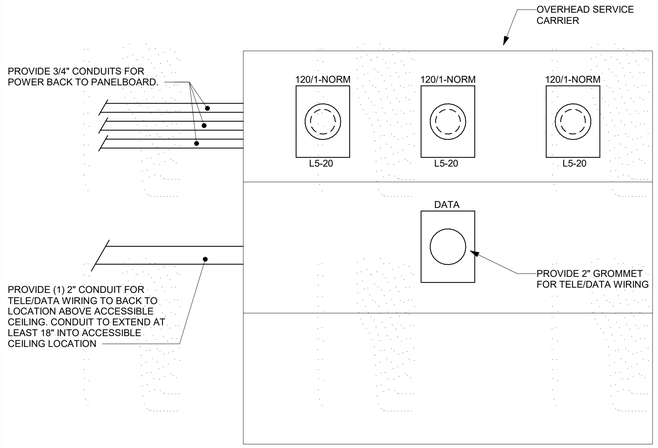
RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: MCS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

E4.01

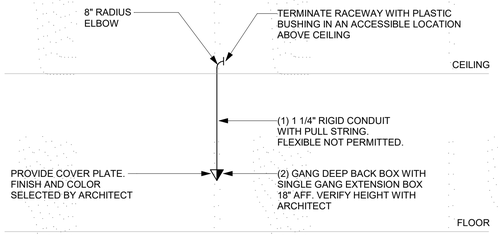
ELECTRICAL DETAILS

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt



GENERAL NOTES:
1. OVERHEAD SERVICE CARRIER PROVIDED BY OTHERS. REFER TO ARCHITECTURAL DRAWINGS/SPECIFICATIONS FOR ADDITIONAL INFOMRATION.
2. PROVIDE L5-20 TWIST LOCK RECEPTACLES TO BE MOUNTED WITHIN OVERHEAD SERVICE PANEL.

OVERHEAD SERVICE CARRIER
N.T.S.

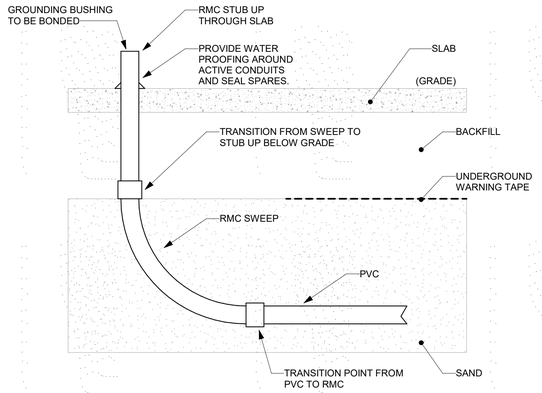


UTILIZE THIS DETAIL WHEN ANY OF THE FOLLOWING SYMBOLS ARE SHOWN ON PLAN: E E E

NOTES:
1. ELECTRICAL CONTRACTOR TO PROVIDE BACKBOX AND CONDUIT FOR ALL TELEPHONE/DATA COMMNICATION OUTLETS.
2. CABLING WILL BE PROVIDED BY OWNER'S VENDOR.

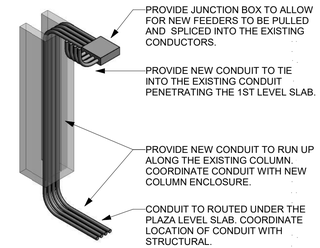
TELEPHONE/DATA OUTLET DETAIL
N.T.S.

2



GENERAL NOTES:
1. THIS DETAIL APPLIES TO ALL CONDUITS PENETRATING A SLAB.
2. PROVIDE UNDERGROUND WARNING TAPE WHEN OUTSIDE OF THE BUILDING FOOTPRINT.
3. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

TYPICAL CONDUIT SWEEP THRU SLAB
N.T.S.



PROPOSED CONDUIT RELOCATION ROUTING

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

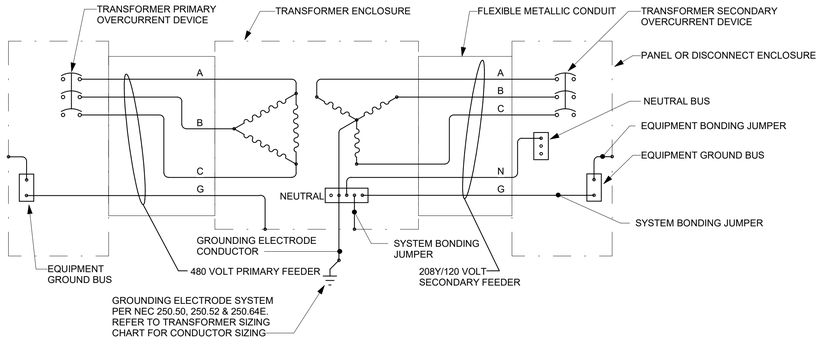
BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS
URI - CBLS
120 FLAGG RD
KINGSTON, RI 02881

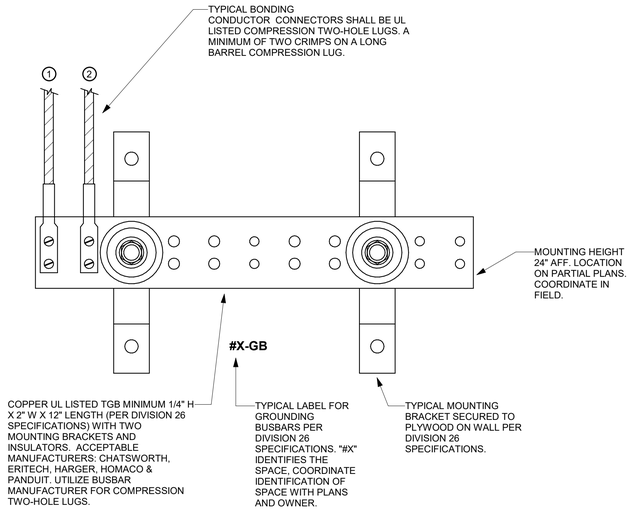
DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: MCS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

E4.02

ELECTRICAL DETAILS



GROUNDING SCHEMATIC FOR SEPARATELY DERIVED SYSTEM
N.T.S.



GROUNDING BUSBAR (GB)
N.T.S.

BUSBAR DETAIL GENERAL NOTES

1. 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.
2. BONDING CONDUCTORS AND BUSBARS SHALL BE LABELED WITH IDENTIFICATION IN ACCORDANCE WITH THE REQUIREMENTS OF ANSI/TIA/EIA-606-A.
3. SEE PLANS FOR QUANTITY OF BUS BARS.

BUSBAR DETAIL DRAWING NOTES

(1) BCT TO NEAREST BUILDING STEEL STRUCTURE, IF APPLICABLE. UTILIZE EXOTHERMIC WELDING CONNECTION TO BUILDING STEEL.

(2) BCT TO NEAREST BUILDING ELECTRICAL PANELBOARD GROUND BAR. UTILIZE LISTED CONNECTOR TO PANELBOARD GROUND BUS.

GROUNDING & BONDING DETAIL NOTES
N.T.S.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

E:\Revit Local Files\2121013 - URI CBLS Laboratory Renovation - BVH MEP R18_joshb_bvh.rvt

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

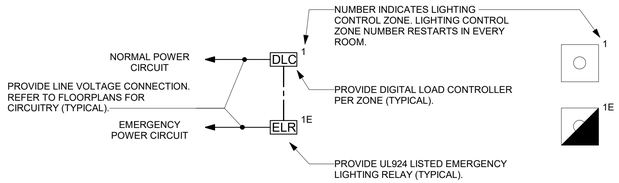
URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: MCS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

E4.03

ELECTRICAL DETAILS



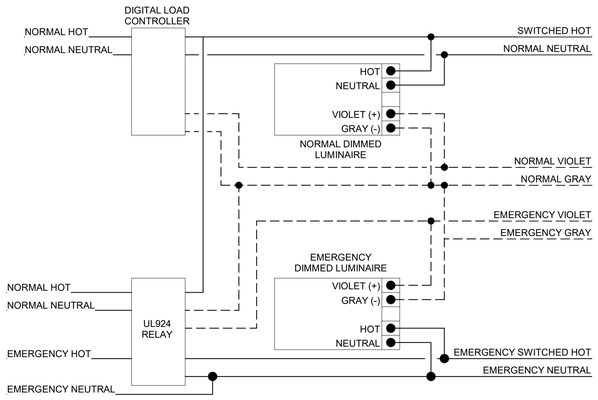
GENERAL NOTES:
1. LIGHTING CONTROL ZONE NUMBER RESTARTS AT 1 IN EVERY ROOM.
2. WHEN TWO ZONES ARE PRESENT (IE: 1,2) ON A DIRECT / INDIRECT LUMINAIRE, THE FIRST ZONE REPRESENTS THE DIRECT DRIVER AND THE SECOND ZONE REPRESENTS THE INDIRECT DRIVER.

LIGHTING CONTROL ZONE DETAIL
N.T.S.

LIGHTING CONTROL SCHEDULE

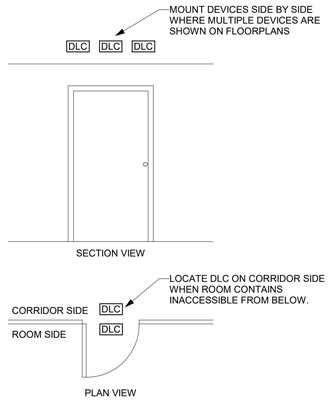
GENERAL NOTES:
1. SEE SPECIFICATION SECTIONS 260936 OR 260943 FOR ADDITIONAL INFORMATION.
2. CONTRACTOR TO PROVIDE EQUIPMENT AND PROGRAMMING IN ROOM PER "CONTROL TYPE NUMBER" SHOWN ON PLANS. SPACES LISTED UNDER "TYPICAL SPACE" ARE A GENERIC SPACE ONLY.
3. SEE PLANS FOR ACTUAL QUANTITY OF EQUIPMENT UTILIZED.
4. SEE LIGHTING CONTROL NOTES.
5. SEE TYPICAL WIRING DETAIL.
6. SEE TYPICAL DIGITAL LOAD CONTROLLER LOCATION DETAIL.
7. OPEN LOOP DAYLIGHT SENSOR: LOCATE PER DAYLIGHT SENSOR DETAIL, AIM AT WINDOW. ONLY LUMINAIRES WITHIN FESTOONING AREA ARE CONTROLLED VIA THE SIGNAL.
8. CLOSED LOOP DAYLIGHT SENSOR: LOCATE IN CENTER OF SPACE. ALL LUMINAIRES WITHIN SPACE TO BE DIMMED TO TRIM LEVEL INDICATED BELOW.
9. LUMINAIRES CONNECTED TO EMERGENCY CIRCUITS WILL AUTOMATICALLY BE ILLUMINATED TO 100% UPON FAILURE OF NORMAL CIRCUIT IN SAME AREA VIA USE OF UL 924 DEVICES.
10. TRIM LEVEL: AVERAGE VALUE OF 4 LOCATIONS IN SPACE: CENTER, MID-POINT CENTER TO SIDE, SIDE, AND CORNER.
11. ALL OCCUPANCY SENSORS TO CONTAIN AN AUXILIARY CONTACT DEDICATED FOR HVAC USE.

CONTROL TYPE NUMBER	TYPICAL SPACE	SEQUENCE OF OPERATIONS												FC LEVELS AND TIMING		SPECIFIC NOTES
		MANUAL ON (VACANCY MODE)	MANUAL ON	MANUAL OFF	MANUAL DIMMING	AUTOMATIC ON LEVELS (OCCUPANCY MODE)	AUTOMATIC OFF LEVELS (OCCUPANCY MODE)	AUTOMATIC DIMMABLE DAYLIGHT HARVESTING	SCHEDULE BY DIGITAL TIMECLOCK	EMERGENCY (LIFE SAFTY) ILLUMINATION	NETWORK CONTROLLED	STANDALONE LIGHTING CONTROLS	BMS CONNECTION VIA OCCUPANCY SENSOR	TRIM LEVELS (MAX FC)	OCCUPANCY SENSOR TIMEOUT MINUTES (OCCUPIED MODE)	
1	CORRIDOR					100%	0%		X	X		X	X		10	
2	LABORATORY			X	X	25%	0%	X		X		X	X		20	
5	STORAGE	X		X	X							X	X	N/A	5	



NOTES:
1. BASES OF DESIGN IS THE LVS 'EPC-1-D' SERIES. VERIFY ALL WIRING WITH SUBMITTED UL924 MANUFACTURER.
2. THE FOLLOWING DETAIL APPLIES TO EXTERNAL UL924 RELAYS WHEN USED IN CONJUNCTION WITH DIGITAL LOAD CONTROLLERS.

E5421 - UL924 EMERGENCY LIGHTING DETAIL
N.T.S.



GENERAL NOTES:
1. THIS DETAIL APPLIES TO ALL LIGHTING CONTROL SPACES UTILIZING A DIGITAL LOAD CONTROLLER (DLC) UNLESS OTHERWISE NOTED. LOCATION IS SHOWN AS A BASIS OF DESIGN. REFER TO FLOOR PLANS FOR DIGITAL LOAD CONTROLLER QUANTITIES. VARIATIONS FROM THIS INTENT MAY BE REQUIRED AS PART OF THE COORDINATION PROCESS.
2. VERIFY DIGITAL LOAD CONTROLLER REQUIRED CLEARANCES WITH MANUFACTURE.
3. ACCESSIBLE CEILING CONDITIONS:
   A. LOCATE DIGITAL LOAD CONTROLLER(S) 1' ABOVE THE CEILING CENTERED OVER THE DOORWAY.
4. INACCESSIBLE CEILING CONDITIONS:
   1. LOCATE DIGITAL LOAD CONTROLLER(S) 1' ABOVE THE CEILING CENTERED OVER THE DOORWAY IN ACCESSIBLE CORRIDORS. THIS CONDITION APPLIES WHEN ACCESSIBLE CEILINGS ARE LOCATED ADJACENT (WITHIN 20' OF THE ROOM) TO INACCESSIBLE CEILING LOCATIONS.
   2. LOCATE DIGITAL LOAD CONTROLLER(S) 1' ABOVE THE CEILING CENTERED OVER THE DOORWAY WITH ACCESS PANEL. PROVIDE ACCESS PANEL IN ACCORDANCE WITH ARCHITECTURAL SPECIFICATIONS. THIS CONDITION APPLIES WHEN ACCESSIBLE CEILINGS ARE NOT LOCATED WITHIN 20' OF THE ROOM.
5. EXPOSED CEILING CONDITIONS:
   A. LOCATED DIGITAL LOAD CONTROLLERS WITHIN NEMA ENCLOSURE MOUNTED IN ACCESSIBLE LOCATION. EXPOSED DIGITAL LOAD CONTROLLERS ARE NOT PERMITTED.

TYPICAL DIGITAL LOAD CONTROLLER LOCATION
N.T.S.

LIGHTING CONTROL NETWORK GENERAL NOTES

1. THE DETAILS ON THESE SHEETS 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 LUMINAIRES, LUMINAIRE TYPES, NUMBER OF ZONES, AND LIGHTING CONTROL DEVICES ARE NOT INTENDED TO MATCH THOSE SHOWN ON THE FLOOR PLANS. FLOOR PLANS SHOULD BE USED IN CONJUNCTION WITH THE CORRESPONDING DETAIL FOR THIS SPECIFIC INFORMATION.
4. THE 'DLC' OR 'RC' 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.
5. TIME PERIODS THAT THE BUILDING IS CONSIDERED OCCUPIED OR UNOCCUPIED ARE TO BE DETERMINED BY THE BMS SYSTEM.
6. CONNECT TO BMS SYSTEM VIA 'BACNET' PROTOCOL TO PROVIDE SEAMLESS COMMUNICATION BETWEEN BMS AND LIGHTING CONTROL SYSTEM.
7. ALL EMERGENCY LUMINAIRES ARE TO BE CONTROLLED THE SAME AS NORMAL LUMINAIRES IN NORMAL OPERATION. REFER TO SPECIFIC DETAIL FOR EMERGENCY OPERATIONS.
8. TIMEOUTS AND DIMMING PERCENTAGES ARE BASIS OF DESIGN ONLY. THESE VALUES ARE TO BE FIELD ADJUSTED TO OWNER GIVEN REQUIREMENTS.
9. PROVIDE MANUFACTURER PROGRAMMING FOR EACH SPACE, SCHEDULE AND BMS INTERFACE FOR INITIAL SET-UP.
10. PROVIDE FLOORPLANS OF ALL OCCUPANCY/VACANCY SENSOR, CONTROL DEVICES AND CONNECTIONS TO BMS. FLOORPLANS TO INCLUDE SPECIFIC DEVICE NAMING INCORPORATING LOCATIONS, FLOOR AND ROOM NUMBERS. CONTRACTOR TO ADJUST PLACEMENT BASED ON FIELD CONDITIONS, IE: PROPER DISTANCE FROM HVAC DIFFUSERS. PROVIDE UPDATED FLOORPLANS AND PROGRAMMING TO OWNER UPON COMPLETION OF INSTALLATION.
11. ALL LIGHTING ZONES SHALL HAVE HIGH AND LOW END TRIM DIMMING CAPABILITIES UNLESS SPECIFICALLY NOTED OTHERWISE AND EACH SPACE/ZONE SHALL BE ADJUSTED TO ITS SPECIFIC CONDITIONS.
12. ALL OCCUPANCY AND VACANCY SENSORS SHALL HAVE AUXILIARY CONTACTS FOR OUTPUT TO MECHANICAL SYSTEMS.
13. LIGHTING CONTROL DEVICES LOCATIONS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC ONLY. COORDINATE WITH REFLECTED CEILING PLANS, AND OTHER TRADES TO LOCATE ALL LIGHTING CONTROL DEVICES IN AN ACCESSIBLE LOCATION.

NOTE:
REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION.

TLB ARCHITECTURE, LLC
92 WEST MAIN STREET
CHESTER, CONNECTICUT 06412
860.526.9448 FAX 860.526.9020

BVH integrated services
206 West Newberry Road
Bloomfield, CT 06002
Tel: (860) 286-9171 www.bvhis.com

RYAN INSTITUTE LABORATORY
PHASE 1 RENOVATIONS

URI - CBLS

120 FLAGG RD
KINGSTON, RI 02881

DATE: 03/19/2021
PROJECT NO: 2020.021
DRAWN: MCS
CHECKED: JRD
ISSUED FOR:
BIDDING and CONSTRUCTION
REVISIONS:
1 3/29/21 OWNER'S REVIEW
2 4/30/21 BIDDING & CONSTRUCTION

E5.01

ELECTRICAL CONTROLS