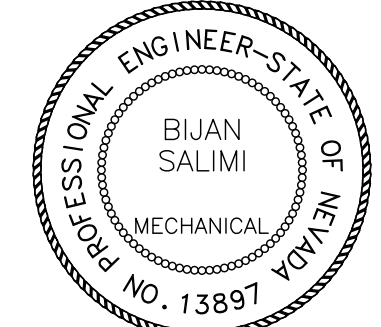


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DATE: 06/16/16

EXP. DATE: 06/30/16

PLEASE RECYCLE

Project

UNLV VIVARIUM**4505 SOUTH**
MARYLAND PARKWAY
LAS VEGAS, NV 89154

Job No: 15-061

Owner

UNIVERSITY OF
NEVADA, LAS VEGAS**PERMIT SET**

REV		REVISIONS	
DATE	DESCRIPTION		
A	08/05/16	ADDENDUM A	

Sheet Title

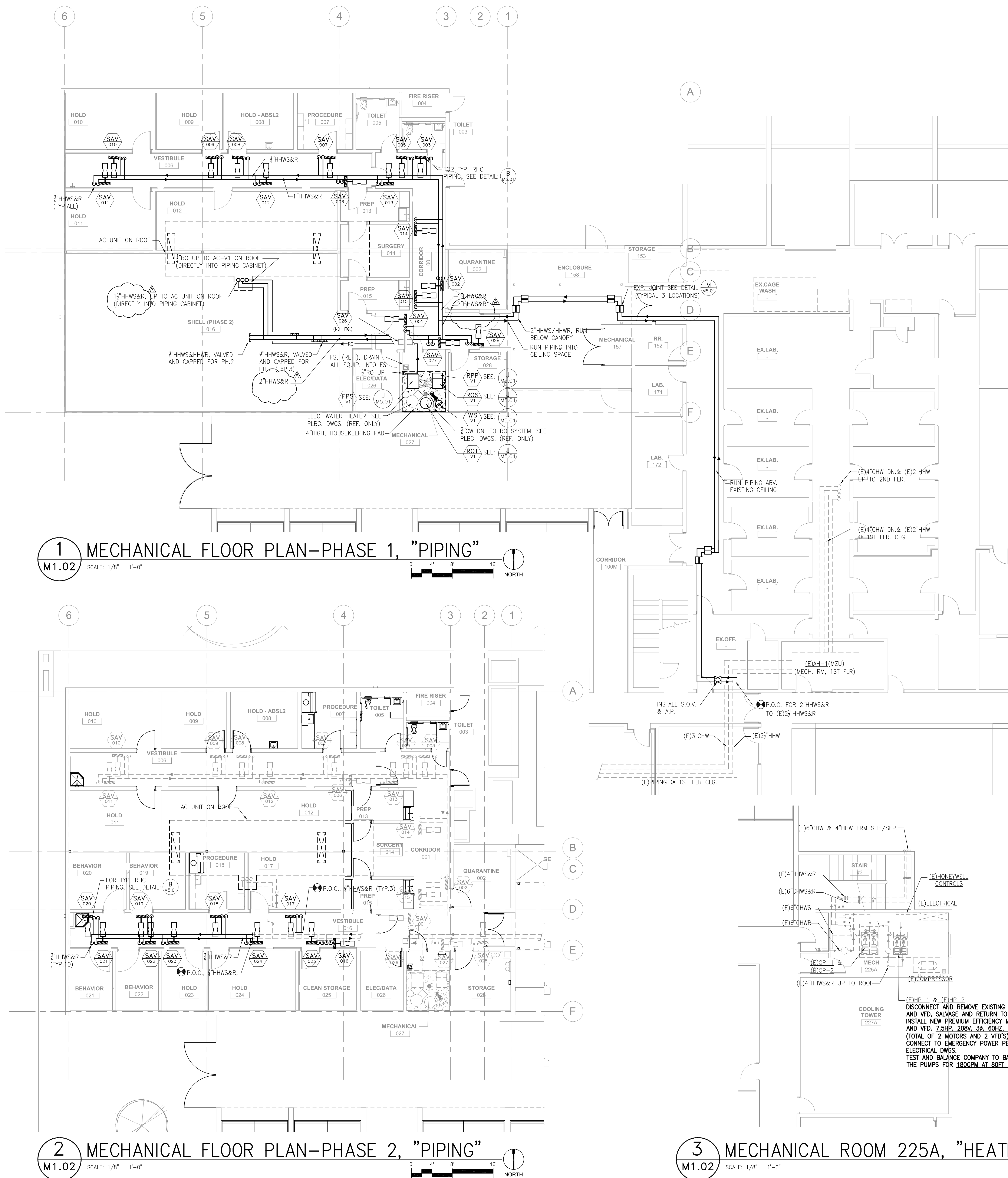
PHASED FLOOR
PLANS-PIPING

Date: 06/17/2016

Sheet No:

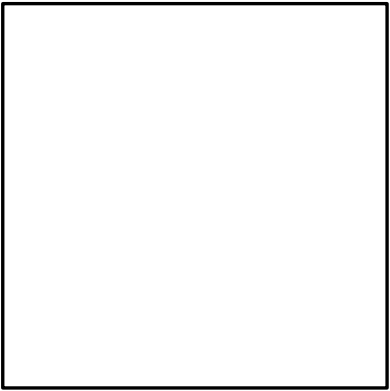
M1.02**GENERAL NOTES:**

- REFER TO ARCHITECTURAL, ELECTRICAL AND STRUCTURAL DRAWINGS FOR SUPPORT WORK.
- SEE ROOF PLAN FOR MECHANICAL ON ROOF.
- INSTALL S.O.V. ON ALL PIPING STUBS FOR PHASE 2 CONNECTION.
- SUPPORT PIPING PER DETAILS **C, E&F/M5.01**. SEE **1/M2.01** FOR ROUTING DETAILS.
- ALL EXTERIOR HYDRONIC PIPING (EXPOSED TO WEATHER) SHALL BE COVERED WITH METAL JACKET. SEE SPECIFICATIONS.
- RUN STAINLESS STEEL PIPING/TUBING FROM ROOF FEED LINE TO AC UNIT ON ROOF. PROVIDE WITH COMPRESSION FITTINGS.





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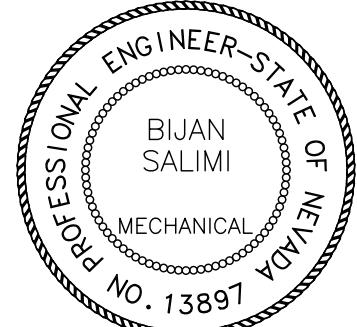


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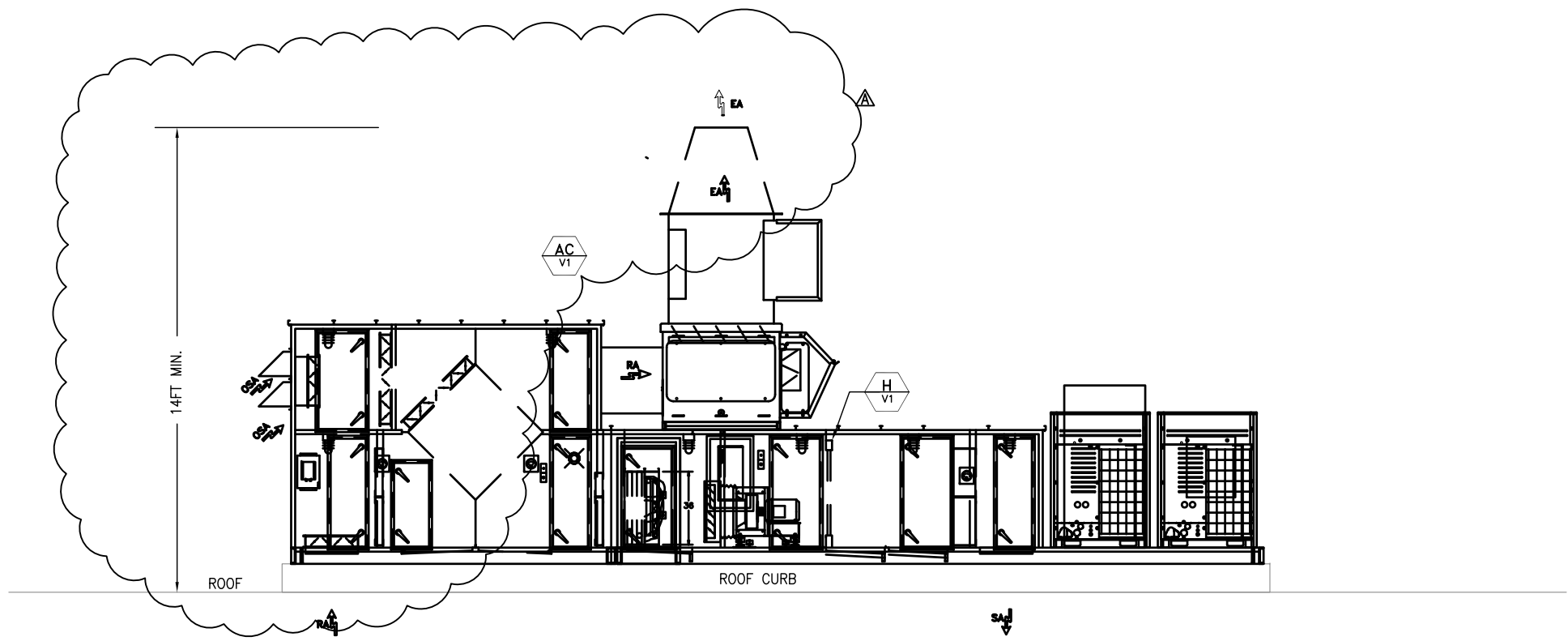
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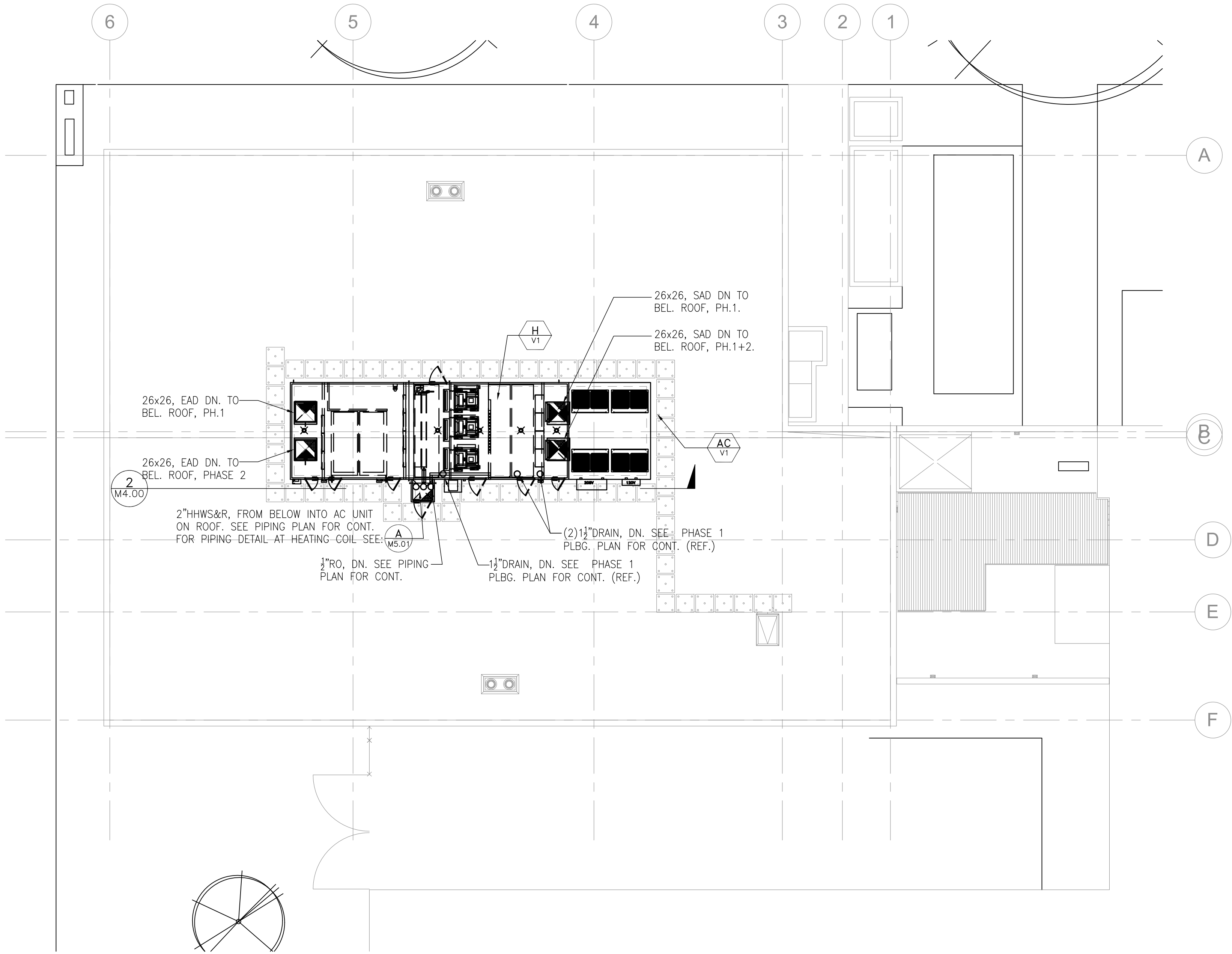
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**PHASED ROOF
PLAN AND SECTION**

Date: 06/17/2016
Sheet No:

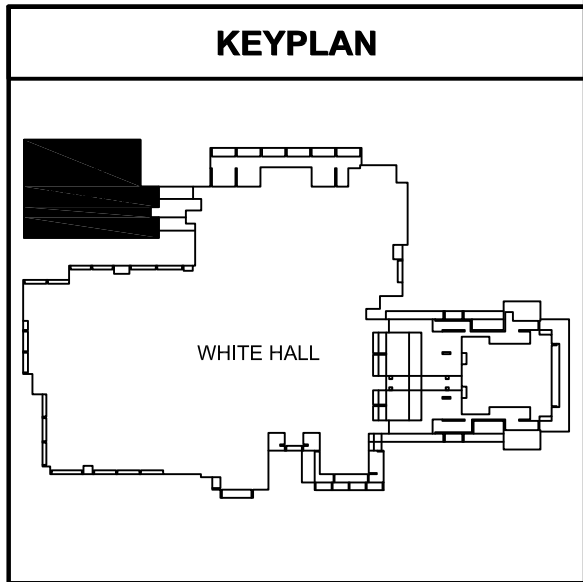
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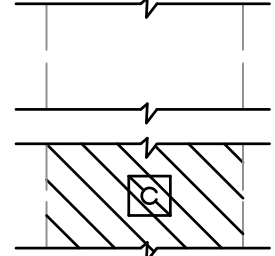
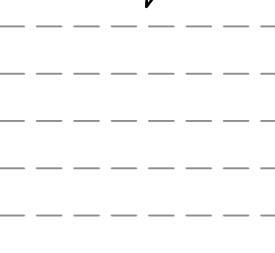
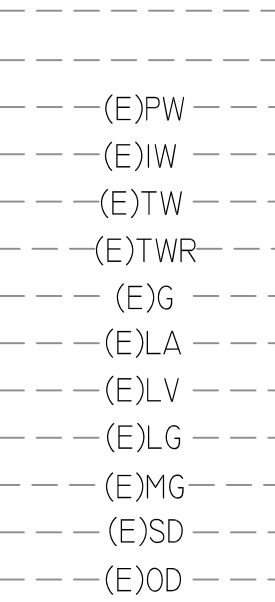
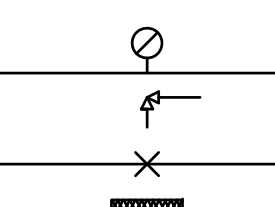
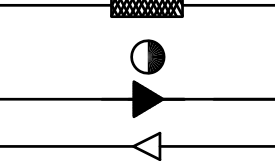
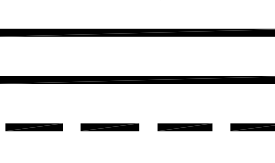

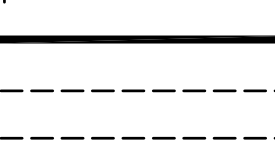

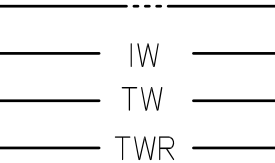
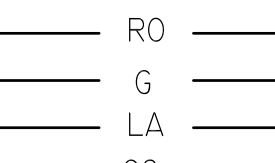
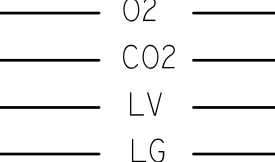
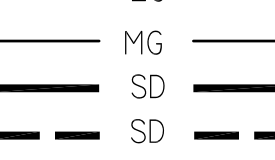
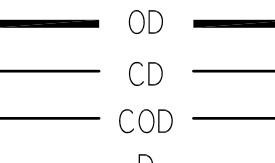
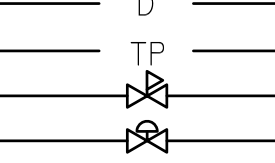
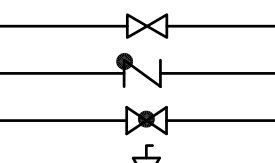
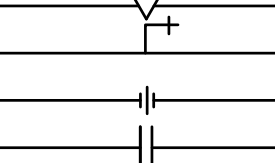
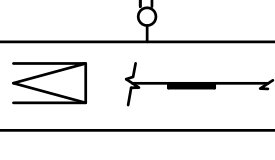
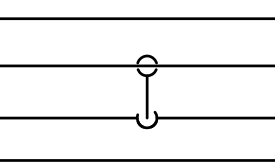
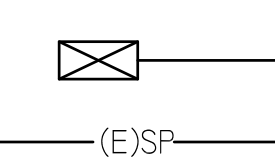
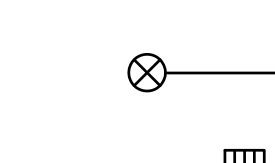
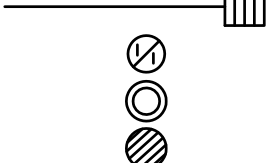
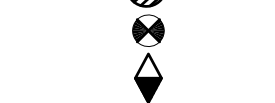







2 MECHANICAL SECTION-ROOF
M4.00 SCALE: 1/4" = 1'-0"

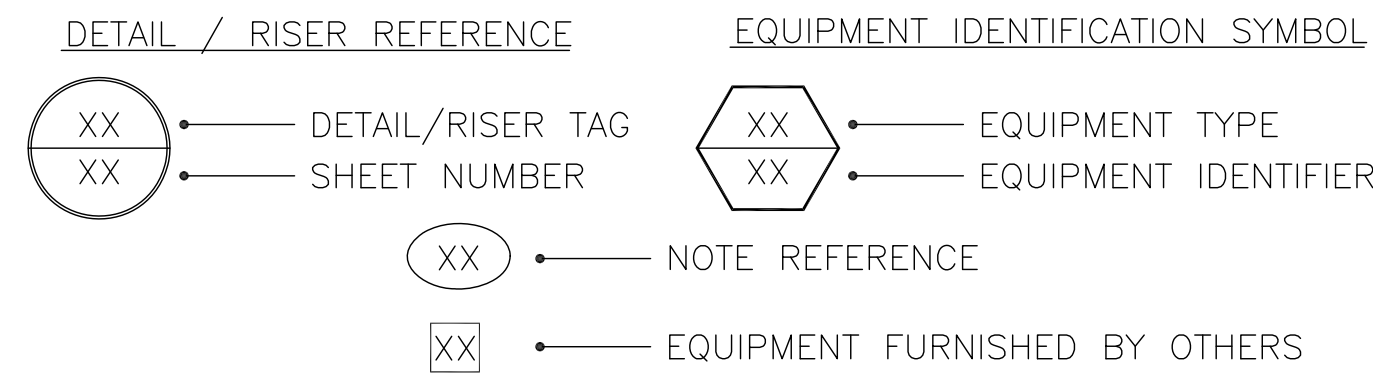


1 MECHANICAL ROOF PLAN - PHASE 1
M4.00 SCALE: 1/8" = 1'-0"



PLUMBING LEGEND

SYMBOLS			ABBREVIATIONS			
SYMBOL	ABBREVIATION	DESCRIPTION				
	(E)	EXISTING PIPING OR EQUIPMENT TO REMAIN.	ABV.	ABOVE	HB	HOSE BIBB
	(E)	EXISTING PIPING, OR EQUIPMENT TO BE REMOVED.	AD	ACCESS DOOR	H.C.	HANDICAP
	(E)AW (E)W (E)AV (E)V (E)CW (E)HW (E)HWR (E)FW (E)IW (E)TW (E)TWR (E)G (E)LA (E)LV (E)LG (E)MG (E)SD (E)OD	(E)ACID WASTE (E)WASTE (E)ACID VENT (E)EVENT (E)DOMESTIC COLD WATER (E)DOMESTIC HOT WATER (E)DOMESTIC HOT WATER RETURN (E)PURIFIED WATER (E)INDUSTRIAL WATER (E)TEMPERED WATER (E)TEMPERED WATER RETURN (E)GAS (8" WATER COLUMN) (E)LABORATORY AIR (E)LABORATORY VACUUM (E)LABORATORY GAS (E)MEDIUM PRESSURE GAS (E)STORM DRAIN (E)OVER FLOW	ARCH AS ASS'Y. BEL BHP BTU BTUH BV C CA CFF C.F.H. CLG. CONN CFM COND CONT CONTR. CU FT CU IN CW DF DFC	ARCHITECTURAL AUTOMATIC FIRE SPRINKLER PIPING ASSEMBLY BELOW BRAKE HORSEPOWER BRITISH THERMAL UNIT BTU PER HOUR BALANCING VALVE CONVERTOR COMPRESSED AIR CAPPED FOR FUTURE CUBIC FEET PER HOUR CEILING CONNECTION/CONNECT CUBIC FEET PER MINUTE CONDENSATE CONTINUATION CONTRACTOR CUBIC FEET CUBIC INCHES DOMESTIC COLD WATER DRINKING FOUNTAIN DRINKING FOUNTAIN AND CUSPIDOR	HP HP HW HWR HZ I.E. IN INT. KW LAV LBS MAX MBH MCC MECH MH MIN MTD. MKV NC N.I.C. NO NTS OD OPER.WT. OPNG O.S&Y GV P PD PG PH PIV PM POC PRV PSI RD R.I.&C. RPPA RPM SD S W SQ.FT. SS TD TEMP TYP U U.G. V V.B. VTR WC W.C. WCO WF WH	HORSEPOWER DOMESTIC HOT WATER DOMESTIC HOT WATER RETURN PIPING HERTZ INVERT ELEVATION INCHES INTEGRAL KILOWATT LAVATORY POUNDS MAXIMUM THOUSAND BTU PER HOUR MOTOR CONTROL CENTER MECHANICAL MANHOLE MINIMUM MOUNTED MIXING VALVE NORMALLY CLOSED NOT IN CONTRACT NORMALLY OPEN NUMBER NOT TO SCALE OVERFLOW DRAINAGE PIPING OPERATING WEIGHT OPENING OUTSIDE STEM AND YOKE GATE VALVE PUMP PRESSURE DROP PRESSURE GAUGE PHASE POST INDICATING VALVE PROJECT MANAGER POINT OF CONNECTION PRESSURE REDUCING VALVE ASSEMBLY POUNDS PER SQUARE INCH PSI GAUGE ROOF DRAIN ROUGH-IN & CONNECT REDUCED PRESSURE BACKFLOW PREVENTER REVOLUTIONS PER MINUTE STORM DRAIN SINK SOIL OR WASTE PIPING SQUARE FEET SERVICE SINK TROUGH DRAIN TEMPERATURE TYPICAL URINAL UNDER GROUND SANITARY VENT PIPING VACUUM BREAKER VENT THROUGH ROOF WATER CLOSET WATER COLUMN WALL CLEAN OUT WASH FOUNTAIN WATER HEATER
	PG	PRESSURE GAUGE	DIA	DIAMETER	O.S&Y	OUTSIDE STEM AND YOKE
		RELIEF VALVE	DN	DOWN	GV	GATE VALVE
		PIPE ANCHOR	DR	DRAIN	P	PUMP
	TP	FLEXIBLE PIPE CONNECTION	DS	DOWN SPOUT	PD	PRESSURE DROP
		TRAP PRIMER	DW	DISH WASHER	PG	PRESSURE GAUGE
		DIRECTION OF FLOW INCREASER	DWG.	DRAWING	PH	PHASE
	AW	ACID WASTE ABOVE FLOOR	EA	EACH	PIV	POST INDICATING VALVE
	W	WASTE ABOVE FLOOR	EL	ELEVATION	PM	PROJECT MANAGER
	GW	GREASE WASTE BELOW FLOOR	ELEC	ELECTRICAL	POC	POINT OF CONNECTION
	AW	ACID WASTE BELOW FLOOR	EQUIP.	EQUIPMENT	PRV	PRESSURE REDUCING VALVE
	W	WASTE BELOW GRADE	EWC	ELECTRIC WATER COOLER	PSI	ASSEMBLY POUNDS PER SQUARE INCH
	F.C.O./Y.C.O. C.O.	FLOOR OR YARD CLEANOUT	EXH	ELECTRIC WATER HEATER	PSIG	PSI GAUGE
	W.C.O.	WALL CLEANOUT	F	FIRE MAIN PIPING	RD	ROOF DRAIN
	C.O.	CLEANOUT	FCO	FLOOR CLEANOUT	R.I.&C.	ROUGH-IN & CONNECT
	AV	ACID VENT	FS	FLOORSINK	RPPA	REDUCED PRESSURE BACKFLOW PREVENTER
	V	VENT	COTG	CLEANOUT TO GRADE		
	CW	DOMESTIC COLD WATER	FCV	FLOW CONTROL VALVE	RPM	REVOLUTIONS PER MINUTE
	HW	DOMESTIC HOT WATER(120°F)	FD	FLOOR DRAIN	SD	STORM DRAIN
	HW 140°	DOMESTIC HOT WATER(140°F)	FDC	FIRE DEPARTMENT CONNECTION	S	SINK
	HWR	DOMESTIC HOT WATER RETURN	FHC	FIRE HOSE CABINET	W	SOIL OR WASTE PIPING
	IW	INDUSTRIAL WATER	FIN.FLR.	FINISH FLOOR FLOOR	SQ.FT.	SQUARE FEET
	TW	TEMPERED WATER	FLR. FPM	FEET PER MINUTE	SS	SERVICE SINK
	TWR	TEMPERED WATER RETURN	FS	FLOOR SINK	TD	TROUGH DRAIN
	RO	REVERSE OSMOSIS WATER	FT	FEET	TEMP	TEMPERATURE
	G	GAS (8" WATER COLUMN)	F.U.	FIXTURE UNIT	TYP	TYPICAL
	LA	LABORATORY AIR	GAL	GALLON	U	URINAL
	O2	OXYGEN	G.D.	GARBAGE DISPOSER	U.G.	UNDER GROUND
	CO2	CARBON DIOXIDE	G.M.	GAS METER	V	SANITARY VENT PIPING
	LV	LABORATORY VACUUM	GPM	GALLON PER MINUTE	V.B.	VACUUM BREAKER
	LG	LABORATORY GAS	GWH	GAS WATER HEATER	VTR	VENT THROUGH ROOF
	MG	MEDIUM PRESSURE GAS	G.R.	GAS REGULATOR	WC	WATER CLOSET
	SD	STORM DRAIN ABOVE FLOOR	GV	GATE VALVE	W.C.	WATER COLUMN
	SD	STORM DRAIN BELOW GRADE			WCO	WALL CLEAN OUT
	OD	OVER FLOW DRAIN ABOVE FLOOR			WF	WASH FOUNTAIN
	CD	CONDENSATE DRAIN			WH	WATER HEATER
	COD	CONDENSATE OVERFLOW DRAIN				
	D	DRAIN				
	TP	TRAP PRIMER LINE				
	PRV	PRESSURE REDUCING VALVE				
	S.V.	SOLENOID VALVE				
	S.O.V.	SHUT-OFF VALVE				
	C.V.	CHECK VALVE				
	B.V.	BALANCING VALVE				
	G.C.	GAS COCK				
	HB	HOSE BIBB				
	U.	UNION				
		FLANGED CONNECTION				
	W.H.A.	WATER HAMMER ARRESTOR				
	A.P.	ACCESS PANEL				
		PIPE RISE				
		PIPE DROP				
		PIPE CONNECTION, BOTTOM				
		PIPE CONNECTION, TOP				
		PIPING CAPPED				
	RPPA	REDUCED PRESSURE BACKFLOW PREVENTER				
	(E)SP	(E)FIRE SPRINKLER PIPING/ BRANCH				
	FS	FIRE SPRINKLER RISER (REFERENCE ONLY)				
	FS	FLOOR SINK				
	FD	FLOOR DRAIN				
	OD	OVERFLOW DRAIN				
	RD	ROOF DRAIN				
	P.O.C.	POINT OF CONNECTION				
	P.O.D.	POINT OF DISCONNECT				



PLUMBING NOTES

- GENERAL NOTES
- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE ENFORCED BUILDING AND PLUMBING CODES, AND AUTHORITIES HAVING JURISDICTION. REFER TO ARCHITECTURAL GENERAL INFORMATION SHEET.
 - REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS OF NEW CONSTRUCTION.
 - THE CONSTRUCTION OF THIS PROJECT IS WORK OF COMPLEX NATURE WHICH WILL REQUIRE ACCURATE PLANNING, CAREFUL PREPARATION AND EXECUTION TO DETAIL AND CLOSE SUPERVISION BY THE CONTRACTOR WHO WILL BE REQUIRED TO DO THIS WORK IN FULL COOPERATION WITH ALL TRADES.
 - THE CONTRACTOR SHALL VERIFY ALL UTILITIES LOCATION, SIZE, INVERT ELEVATIONS, PRESSURE AND AVAILABILITY PRIOR TO START OF ANY WORK.
 - THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES FOR CLEARANCES AND WORK INCLUDED PRIOR TO START OF ANY WORK.
 - SEE ARCHITECTURAL DRAWINGS FOR PLUMBING FIXTURES CASEWORK AND ACCESSORIES.
 - ALL CLEANOUTS SHALL BE ACCESSIBLE AND INSTALLED PER UPC.
 - THESE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND ARE NOT INTENDED TO INDICATE ALL NECESSARY OFFSETS OF PIPING. THE CONTRACTOR SHALL INSTALL MATERIAL AND EQUIPMENT IN A MANNER AS TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. ALL INSTALLATIONS SHALL BE CONSISTENT WITH NORMALLY ACCEPTABLE INDUSTRY STANDARDS. CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES OR CONFLICTS THAT WOULD AFFECT THE SYSTEM PERFORMANCE OR WHICH WOULD INCUR ADDITIONAL COSTS. THIS NOTIFICATION SHALL BE MADE PRIOR TO THE INSTALLATION OF THE ITEMS CONCERNED.
 - EQUIPMENT INDICATED ON THESE DRAWINGS IS SHOWN IN APPROXIMATE POSITION(S). CONTRACTOR SHALL VERIFY ALL CONDITIONS INCLUDING EQUIPMENT LOCATIONS, P.O.C.'S, AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION. IN ALL CASES, ADEQUATE ACCESS (PER MANUFACTURERS RECOMMENDATIONS AND CODE COMPLIANCE) FOR MAINTENANCE AND REPLACEMENT OF EQUIPMENT SHALL BE PROVIDED.
 - ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CODES. NOTHING SHOWN IN THE PLANS OR STATED IN THE SPECIFICATIONS IS INTENDED TO INDICATE THAT THE INSTALLATION OR CONNECTIONS OF ANY ITEM OR DEVICE SHOULD BE DONE CONTRARY TO MANUFACTURERS INSTRUCTIONS AND ALL APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR IS RESPONSIBLE TO INSURE THAT THE INSTALLATIONS AND CONNECTIONS OF ALL ITEMS AND DEVICES CONFORMS TO MANUFACTURERS INSTRUCTIONS AND TO ALL APPLICABLE CODES AND REGULATIONS.
 - ALL PLUMBING EQUIPMENT, MATERIAL, AND ALL CONNECTIONS THERE TO SHALL BE INSTALLED COMPLETE PER MANUFACTURERS INSTRUCTIONS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL SYSTEM.
 - IF THE CONTRACTORS' USE OF SUBSTITUTE MATERIALS, EQUIPMENT OR METHODS OF INSTALLATION REQUIRES ANY CHANGES IN WORK FROM THAT SHOWN ON THE DRAWINGS, THE EXTRA COST OF THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR INITIATING THE SUBSTITUTION.
 - SUBMITTALS: APPROVAL OF SUBMITTALS DOES NOT RELEASE THE CONTRACTOR FROM OBLIGATIONS TO FULLY COMPLY WITH ALL REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS OR APPLICABLE CODE REGULATIONS.
 - BEFORE SUBMITTING BIDS FOR THE WORK THE CONTRACTOR SHALL MAKE A THOROUGH FIELD SURVEY OF THE WORK TO DETERMINE ANY INTERFERENCE THAT MAY AFFECT THE INSTALLATION OF THE WORK.
 - THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, EQUIPMENT, APPURTENANCES, AND OTHER CONTRACTUAL ITEMS REQUIRED FOR THE COMPLETE INSTALLATION OF THE PLUMBING WORK TO THE SATISFACTION OF THE OWNER, ARCHITECT AND ENGINEER.
 - SOIL, SEWER AND WASTE PIPING SHALL SLOPE AT 1/4" PER FOOT MINIMUM UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - ALL PLUMBING SOLDER SHALL BE LEAD FREE.
 - SEISMIC NOTE: SEISMIC BRACING AND ANCHORAGE OF PIPES SHALL BE PER IBC REQUIREMENTS.
 - COORDINATE PLUMBING SYSTEMS WITH WORK OF ALL TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
 - COORDINATE LOCATIONS OF ALL ROOF OPENINGS WITH STRUCTURAL, MECHANICAL AND ARCHITECTURAL PLANS PRIOR TO ANY INSTALLATION.
 - PLATFORMS, CURBS AND FLASHINGS FOR PLUMBING EQUIPMENT SHALL BE AS INDICATED ON THE STRUCTURAL AND ARCHITECTURAL PLANS. UNLESS NOTED OTHERWISE, COORDINATE EXACT SIZES OF REQUIRED OPENINGS AND SUPPORTS FOR FURNISHED EQUIPMENT.
 - TEST TEES SHALL BE INSTALLED AS NECESSARY AND AS REQUIRED FOR TESTING OF ALL PORTIONS OF NEW UNDERGROUND SANITARY WASTE PIPING THAT ARE CONNECTED TO THE EXISTING WASTE PIPING UNDERGROUND.

SPECIFIC NOTES

- ALL PENETRATIONS THRU WALLS (INTERIOR OR EXTERIOR), CEILING, FLOOR, GRADE, ROOF AND CANOPY SHALL BE SEALED AIR AND WATER TIGHT WITH PROPER MATERIALS AND METHODS. PATCH AND PAINT THE SURFACE PER ARCHITECTURAL DRAWINGS. TYPICAL FOR EVERY AND ALL PENETRATIONS.
- SEAL ALL PIPING PENETRATIONS THRU RATED WALLS AND CEILINGS TO MAINTAIN FIREPROOF RATINGS, AS APPLICABLE.
- INSTALL INSULATION FOR EQUIPMENT VALVES AND FITTINGS REQUIRING ACCESS FOR MAINTENANCE, REPAIR, OR CLEANING, IN SUCH A MANNER THAT IT CAN BE EASILY REMOVED AND REPLACED WITHOUT DAMAGE.
- SEISMIC NOTE: PROVIDE SEISMIC RESTRAINTS PER THE **2012 IBC** CODE REQUIREMENTS AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR TO PROVIDE STAMPED AND SEALED DESIGN DRAWINGS AND CALCULATIONS FOR PIPING AND EQUIPMENT BELOW AND ABOVE ROOF DECK FOR SEISMIC RESTRAINTS FROM THE STATE OF NEVADA LICENSED PROFESSIONAL ENGINEER. SEE STRUCTURAL DRAWINGS FOR SEISMIC RATINGS. SEE DIV.1. FOR SEISMIC CONTROL AND SUBMITTAL REQUIREMENTS.

DEMOLITION NOTES

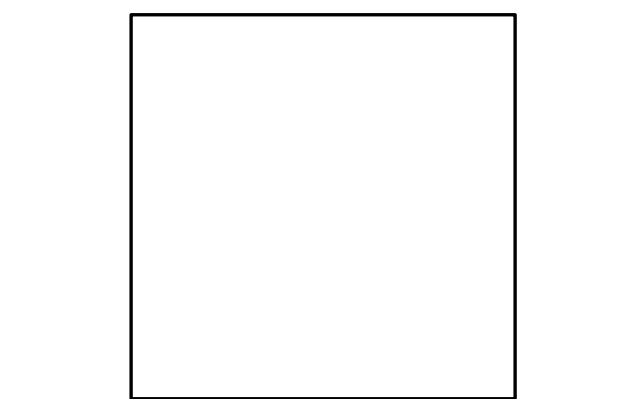
- ALL WORK REQUIRED TO DEMOLISH THE EXISTING PLUMBING INSTALLATION AS INDICATED SHALL BE PROVIDED.
- REMOVE ALL PIPING AND MISCELLANEOUS ITEMS, THAT INTERFERE WITH NEW CONSTRUCTION. EXTEND AND RECONNECT ANY INTERRUPTED SYSTEM TO OTHER EXISTING SYSTEMS WHICH REMAIN.
- EXCEPT AS MAY BE SPECIFICALLY INDICATED OTHERWISE, ALL MATERIALS AND EQUIPMENT REMOVED FROM THE PROJECT SITE IN THE COURSE OF PERFORMING THE INDICATED WORK (AND NOT INDICATED TO BE REUSED) SHALL BE TREATED AS FOLLOWS:
 - ALL ABANDONED PIPES AND FITTINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE
 - ALL PIPING SYSTEM NOT BEING RE-USED SHALL BE CUT-BACK ABOVE CEILING, BELOW FLOOR/GRADE, OR BEHIND WALLS, AND CAPPED IN AN APPROVED MANNER.
- CONTRACTOR SHALL CLEAN ALL REMAINING ITEMS THAT ARE TO BE REUSED OR ARE TO REMAIN.
- CONTRACTOR SHALL REMOVE ALL EXPOSED PIPES THAT ARE NOT IN USE.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY WORK AND MATERIALS TO MAINTAIN ALL EXISTING PLUMBING SYSTEMS IN OPERATION DURING AND AFTER CONSTRUCTION.
- ALL EXISTING SYSTEMS INCLUDING EQUIPMENT, FIXTURES, PIPES, AND OTHER ITEMS WHICH ARE NOT TO BE DEMOLISHED SHALL REMAIN IN SERVICE THROUGHOUT THE CONSTRUCTION PERIOD.
- UNLESS OTHERWISE NOTED ON DRAWINGS, ALL EXISTING PIPES, AND OTHER PLUMBING SYSTEMS IN AREAS WHERE NEW WORK OCCURS SHALL BE REMOVED, EXCEPT WHEN SUCH ITEMS ARE REQUIRED TO MAINTAIN SERVICES TO OTHER AREAS. IN SUCH CASES, CONTRACTOR SHALL RELOCATE THESE ITEMS AND PROVIDE PIPES, AND OTHERS WHERE REQUIRED TO ACCOMMODATE THE NEW WORK.
- CONTRACTOR SHALL ABANDON ANY EXISTING ITEM, ONLY WHEN SUCH ITEM IS CONCEALED BEHIND WALLS, ABOVE HARD CEILING OR BURIED BELOW GRADE, AND SUCH ITEM DOES NOT INTERFERE WITH NEW WORK, AND/OR NOT INDICATED IN THESE DRAWINGS FOR REMOVAL.
- IF ANY INTERRUPTION OR/AND UTILITY SHUTDOWN ALLOWED, SHALL BE AS FOLLOWS:
 - WITH WRITTEN OWNER PERMISSION 2 WEEKS IN ADVANCE OF INTERRUPTION.
 - UNDER WITNESS OF OWNER.
 - MAXIMUM INTERRUPTION SHALL BE LESS THAN 4 HOURS. GENERALLY BUILDING PLUMBING SYSTEM INTERRUPTION WOULD BE ALLOWED ON EVENINGS, SATURDAYS, SUNDAYS, OR HOLIDAYS AT A DATE AND TIME CONVENIENT TO THE OWNER. CONTRACTOR SHALL VERIFY BEFORE CONNECTING, CUTTING OR CAPPING ANY PIPES SO AS NOT TO DISRUPT THE BUILDING OPERATIONS.
- ALL PIPING, FITTINGS, EQUIPMENT AND ACCESSORIES SHALL BE REMOVED AS SHOWN IN THESE DRAWINGS. ABANDONED PIPES SHALL BE REMOVED COMPLETELY BACK TO THE SOURCE.
- THE DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. IT IS NOT THE INTENT TO SHOW ALL EXISTING OFFSETS AND ALL PIPES, FITTINGS AND APPURTENANCES THAT HAVE TO BE REMOVED, CAPPED OR REROUTED.
- INFORMATION GIVEN ON THE DRAWINGS ABOUT EXISTING INSTALLATIONS HAS BEEN OBTAINED FROM THE EXISTING DRAWINGS AND FIELD INSPECTION, BUT CANNOT BE GUARANTEED ACCURATE IN ALL RESPECTS. VERIFY ALL SUCH INFORMATION BEFORE PROCEEDING WITH ANY NEW WORK THAT MAY BE AFFECTED.
- INCLUDE AS PART OF THE CONTRACT ALL WORK REQUIRED TO PRODUCE THE INDICATED RESULT.
- THESE DEMOLITION NOTES REFER TO ALL PLUMBING SHEETS WHERE DEMOLITION WORK IS BEING CARRIED OUT.
- PATCH AND PAINT ALL SURFACES TO MATCH EXISTING CONDITIONS EXCEPT AS NOTED OTHERWISE IN THESE PLANS.

PLUMBING-DRAWING INDEX

P0.01	LEGEND, NOTES AND INDEX
P0.02	SCHEDULES
P0.03	ENERGY COMPLIANCE REPORT
P0.04	DEMOLITION FLOOR PLAN-LEVEL
P1.01	PHASED FLOOR PLANS
P4.00	PHASED ROOF PLAN
P5.01	DETAILS



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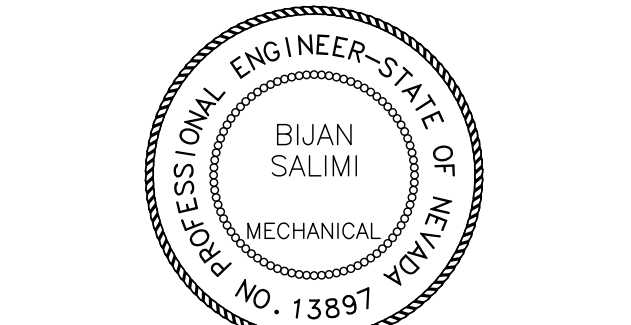
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187 E. Warm Springs Road, Suite A
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DATE: 06/16/16
EXP. DATE: 06/30/16
PLEASE RECYCLE

Project

UNLV VIVARIUM

**4505 SOUTH
MARYLAND PARKWAY
LAS VEGAS, NV 89154**

Job No: 15-061

Owner

**UNIVERSITY OF
NEVADA, LAS VEGAS**

PLUMBING SCHEDULES

MARK	DESCRIPTION	F.U.		MIN. BRANCH SIZE (INCH)				TRAP SIZE (INCH)	REMARKS	
		W	CW	W	V	CW	HW			TW
WC-1	WATER CLOSET	6	8	4	2	1½	—	—	INTEGRAL	WALL HUNG, FLUSH VALVE, 1.3 GPF. PROVIDE WITH CARRIER., ADA COMPLIANT.
L-1	LAVATORY	1	1	2	1½	¾	¾	—	1½" x 1½"	WALL HUNG., WITH ELECTRONIC FAUCET AND MIXING VALVE. ADA COMPLIANT.
S-1	SINK W/FAUCETS - HOLD "ABSL2"	2	2	1½"	1½"	¾"	¾"	—	1½" x 1½"	PROVIDE WITH ACID WASTE AND VENT PIPING.
S-2	SINK W/FAUCETS - PROCEDURE	2	1	1½"	1½"	¾"	¾"	—	1½" x 1½"	PROVIDE WITH ACID WASTE AND VENT PIPING.
S-3	SINK W/FAUCETS - PREP	2	1	1½"	1½"	¾"	¾"	—	1½" x 1½"	PROVIDE WITH ACID WASTE AND VENT PIPING.
SS-1	SERVICE SINK	3	3	3	2	¾	¾	—	3	FLOOR MOUNTED, WITH VACUUM BREAKER.
SSH/EW-1	SAFETY SHOWER/EYEWASH	2	12	2"	1½"	1½"	—	—	2" x 2"	PROVIDE W/S.O.V., SEE PLANS FOR PIPING, DIRECT EYEWASH DRAIN AND FLOOR DRAIN FOR SHOWER.
FD-1	FLOOR DRAIN	2	—	2	1½	—	—	—	2	RESTROOM. PROVIDE WITH TRAP PRIMER CONNECTION.
FD-2	FLOOR DRAIN	4	—	3	2	—	—	—	3	SAFETY SHOWERS. PROVIDE WITH TRAP PRIMER CONNECTION.
FS-1	FLOOR SINK	2	—	2	1½	—	—	—	2	MECH. RM. PROVIDE WITH HALF GRATE AND TRAP PRIMER CONNECTION.
FS-2	FLOOR SINK/RECEPTOR	4	—	4	2	—	—	—	4	FLOOR SINK WITH GRATE. PROVIDE WITH TRAP PRIMER CONNECTION.
FS-3	FLOOR SINK/RECEPTOR	3	—	3	2	—	—	—	3	FLOOR SINK WITH GRATE. EXTERIOR INSTALLATION.
HB-1	HOSE BIBB	—	5	—	—	¾	¾	—	—	RECESSED VALVE BOX WITH VACUUM BREAKER.
HB-2	HOSE BIBB, FILL FAUCET	—	12	—	—	1½"	1½"	—	—	BEHAVIOR ROOMS. RECESSED VALVE BOX WITH VACUUM BREAKER, LESS COVER. SEE DRAWINGS FOR INSTALLATION DETAILS..
										PPP PRIMERITE (REFER TO DWGS. FOR LOCATIONS.)
TP-1	TRAP PRIMER	—	—	—	—	—	—	—	—	
WHA-1	WATER HAMMER ARRESTOR	—	—	—	—	—	—	—	—	
RD-1	ROOF DRAIN	—	—	—	—	—	—	—	—	SEE PLANS FOR SIZE.
OD-1	OVERFLOW DRAIN	—	—	—	—	—	—	—	—	SEE PLANS FOR SIZE. WITH 2" DAM.
DN-1	DOWNSPOUT NOZZLE	—	—	—	—	—	—	—	—	SEE PLANS FOR SIZES AND LOCATIONS. INSTALL ON THE BUILDING'S EXTERIOR WALL.

WATER	LOCATION	FIXTURE UNITS	G.P.M.	MAKE—UP (GPM)		TOTAL (G.P.M.)	MAIN SIZE(IN.)	PRESSURE (P.S.I.G.)	HARDNESS (GR/GAL)	REMARKS
				HVAC	POOL					
	VIVARIUM BLDG	117	75	—	—	75	2 1/2"	45 PSIG	—	SEE CIVIL DRAWINGS, BEYOND SFT OF THE BUILDING.
TOTAL	117	75	—	—	75	2 1/2"				
SEWER	LOCATION	FIXTURE UNITS	BUILDING DRAIN(INCH)		BUILDING SEWER(INCH)	ON—SITE SEWER(INCH)	PUBLIC SEWER(INCH)	REMARKS		
	VIVARIUM BLDG	80	4		SEE PLANS	SEE PLANS	—	SEE CIVIL DRAWINGS, BEYOND SFT OF THE BUILDING.		
	TOTAL	80	4		—					
GAS (CFH) INPUT CAPACITY	GAS METER LOCATION	SPACE HEATING (BOILER)	HVAC UNITS ROOFTOP	WATER HEATING	KILN/ETC.	FOOD SERVICE	SCIENCE ROOMS	TOTAL (CFH) (SEE NOTES)		
	NO GAS	—	—	ELEC.	—	—	—	—		
	NATURAL GAS IS NOT USED IN THIS PROJECT.									
STORM DRAINAGE	STORM DRAINAGE SYSTEM FOR ROOF IS DESIGNED BASED ON MAXIMUM RAINFALL OF 2 INCHES PER HOUR.									

[illegible]

PLUMBING FIXTURE SPECIFICATION <small>(SEE ARCHITECTURAL DRAWINGS FOR MOUNTING ELEVATION OF ALL PLUMBING FIXTURES.)</small>	
DESCRIPTION	
WATER CLOSET (MARK WC-1):	ZURN NO. "Z5815-BWL" ECO VANTAGE, WALL HUNG, ELONGATED BOWL, WHITE VITREOUS CHINA TOILET WITH SOLID RING YK SUPPORT BRACKET, 1½" TOP SPUD BOWL, ZURN ZTR6200EV, 1.28 G.P.F. SENSOR OPERATED FLUSH VALVE AND Z5955S-EL OPEN FRONT, WHITE SEAT. ADA COMPLIANT.
LAVATORY (MARK L-1):	ZURN NO. "Z5351" 19" X 17", WALL HUNG, WHITE VITREOUS CHINA, WITH WALL SUPPORT AND HANGER PLATE. ZURN AQUA-FIT BATTERY POWERED FAUCET #Z6950-XL-S. PROVIDE AND INSTALL "ZWS870XL" AQUA-CARD THERMOSTATIC MIXING VALVE, WITH Z8800 2" I.P.S. FLEXIBLE SUPPLIES WITH LOOSE KEY STOPS, ZURN Z8743-PC STRAINER WITH 1½" TAILPIECE. ADA COMPLIANT.
SINK (MARK S-1):	"BY OTHERS", SEE DIV. 11 SPECIFICATIONS.
SINK (MARK S-2):	"BY OTHERS", SEE DIV. 11 SPECIFICATIONS.
SINK (MARK S-3):	"BY OTHERS", SEE DIV. 11 SPECIFICATIONS.
SERVICE SINK (MARK SS-1):	UNDERMOUNT GROUP "B"-33213", 16GAUGE, CORNER FLOOR MOP SINK, 30" SQUARE TYPE, 8" HEIGHT WITH STAINLESS STEEL STRAINER, 3" I.P.S. DRAIN, CHICAGO "540-LD-8975-WXFCP" FAUCET WITH VACUUM BREAKER STOP, ½" HOSE THREAD OUTLET, FILL HOOK WITH WALL SUPPORT, WXF STRAIGHT SHANK WITH FLANGE, 8" CENTERS, #369 HANDLES.
SAFETY SHOWER/EYEWASH (MARK SSW/EW-1):	"BY OTHERS", SEE DIV. 11 SPECIFICATIONS. 1" WATER CONNECTION AND 2" FOR EYEWASH DRAIN.
FLOOR DRAIN (MARK FD-1):	ZURN FD2321-NH2 CAST IRON DRAIN, FLASHING COLLAR WITH 5" NICKEL-BRONZE WITH TRAP PRIMER CONNECTIONS.
FLOOR DRAIN (MARK FD-2):	ZURN FD2330-PW3-P-Y HEAVY DUTY, ADJUSTABLE, PVC BODY, WITH STEEL THREADED INSERTS AND 8" HEAVY DUTY FULL GRATE, AND SEDIMENT BUCKET. PROVIDE WITH TRAP PRIMER CONNECTIONS.
FLOOR SINK (MARK FS-1):	JR SINK FIG. NO. 310Y 2" NH. CAST IRON DRAIN 6" DEEP WITH NICKEL BRONZE RIM WITH HALF GRATE, WITH TRAP PRIMER CONNECTION AND DOME STRAINER.
FLOOR RECEPTOR (MARK FS-2):	JOSAM 49420 SERIES, 16" SQUARE X 12" DEEP, CAST IRON BODY RECEPTOR, WITH ACID RESISTING INTERIOR, HEAVY DUTY ½" SQUARE GRATE, AND INTERIOR BOTTOM DOME STRAINER. PROVIDE WITH TRAP PRIMER CONNECTIONS. 4" PIPE SIZE (49424).
FLOOR RECEPTOR (MARK FS-3):	JOSAM 49420 SERIES, 16" SQUARE X 12" DEEP, CAST IRON BODY RECEPTOR, WITH ACID RESISTING INTERIOR, HEAVY DUTY ½" SQUARE GRATE FOR EXTERIOR INSTALLATION. PROVIDE WITH INTERIOR BOTTOM DOME STRAINER. 3" PIPE SIZE (49423).
HOSE BIBB (MARK HB-1):	ACORN SS RECESSED DUAL TEMP. (COLD AND HOT) VALVE BOX, NO. "8156", ½" HOSE CONNECTIONS, WITH VACUUM BREAKERS, AND WHEEL HANDLES.
HOSE BIBB (MARK HB-2):	HOSE BIBB (MARK HB-2): ACORN SS RECESSED HOT AND COLD VALVE BOX, NO. "8156", LESS COVER, ½" HOSE CONNECTION, WITH VACUUM BREAKER, AND WHEEL HANDLE.
TRAP PRIMER (MARK TP-1):	PPP PRIMERITE TRAP PRIMER, "PR-500". REFER TO DRAWINGS FOR LOCATIONS.
WATER HAMMER ARRESTOR (MARK WHA-1):	JAY R. SMITH #500S-3", "A" FOR 1-11 FIXTURE UNITS/ JAY R. SMITH #5010-1", "B" FOR 12-32 FIXTURE UNITS/JAY R. SMITH #5020-1", "C" FOR 33-60 FIXTURE UNITS.
ROOF DRAIN (MARK RD-1):	JR. SMITH NO. 1010-Y-C DRAIN WITH DUCO CAST IRON BODY, CAST ALUMINUM DOME AND UNDER DECK CLAMP.
OVERFLOW DRAIN (MARK OD-1):	J.R. SMITH NO. 1080-Y-C DRAIN WITH DUCO CAST IRON BODY, CAST ALUMINUM DOME AND UNDER DECK CLAMP. FOR WOOD DECKS USE SUMP RECEIVER.
DOWNSPOUT NOZZLE (MARK DN-1):	ZURN NO. Z199, ALL NICKEL BRONZE BODY, WITH WALL FLANGE AND OUTLET NOZZLE.

POTABLE WATER PIPE SIZING CALCULATIONS

COLD/HOT WATER PIPE SIZING TABLE

(A) PRESSURE AVAILABLE: MAXIMUM 45 PSIG, AT BUILDING.

(B) WATER HARDNESS: NA

(C) TOTAL FIXTURE UNITS: (FLUSH VALVE)

(D) WATER DEMAND: 1. DOMESTIC
2. IRRIGATION NIGHT USE ONLY
3. A/C EQUIPMENT (RO)
4. MISC. MAKE UP/ EQUIPMENT
5. MISC.

117 F.U.

73 GPM
N/A GPM
2 GPM
N/A GPM
- GPM
- GPM

TOTAL

75 GPM

PRESSURE AVAILABLE: (PSIG, MIN. CALCULATED) +: 35 PSIG

RESIDUAL PRESSURE (PSI) --: 25 PSI

LOSS DUE TO ELEVATION (PSI) --: 3 PSI

LOSS THRU METER (PSI) --: N/A PSI

LOSS THRU PRV (PSI) --: N/A PSI

LOSS THRU BACKFLOW PREVENTER (PSI) --: N/A PSI

PRESSURE AVAILABLE FOR FRICTION LOSS (PSI) : 7 PSI

FRICTION LOSS PER 100FT. 7 *100 / 200 = 3.5 PSI PER 100 FT

PIPE SIZES BASED ON "L" COPPER, @ 3.0 PSI/100 FT., 10 FPS MAXIMUM

FIXTURE UNITS

	FT.	FV.	GPM
½"	= 5	-	4.5
1"	= 13	-	10
1½"	= 25	-	17.5

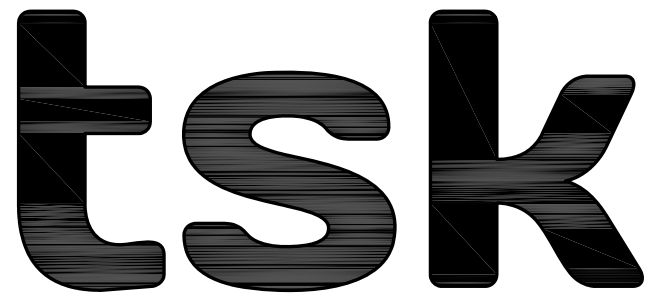
FIXTURE UNITS

	FT.	FV.	GPM
1½"	= 47	10	28
2"	= 171	74	60
2½"	= 401	263	105

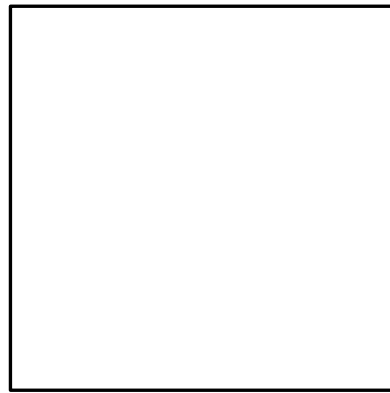
EQUIPMENT "SUPPLIED BY OTHERS" SCHEDULE

(FOR REFERENCE ONLY. SEE ARCH. DWGS AND DIV. 11 SPEC FOR EXACT INFORMATION)

MARK	DESCRIPTION	CO2	O2	EXH. (CFM)	REMARKS
1	FUME HOOD	½"	-	SEE NOTE 3.	1. SEE DIV. 11 SPEC. 2. SEE PLBG. PLAN FOR PIPING. 3. SEE MECH. DWGS. FOR EXHAUST DUCTWORK.
2	CO2 CYLINDERS AND MANIFOLD	½"	-	-	1. SEE DIV. 11 SPEC. 2. SEE PLBG. PLAN FOR PIPING.
3	OXYGEN CYLINDERS AND MANIFOLD	-	½"	-	1. SEE DIV. 11 SPEC. 2. SEE PLBG. PLAN FOR PIPING.
S-1	SINK-HOLD "ABSL2"	-	-	-	1. SEE DIV. 11 SPEC. "SK-1" 2. SEE PLBG. PLAN FOR PIPING. 3. SEE SCHEDULE FOR ROUGH-INS.
S-2	SINK-PROCEDURE	-	-	-	1. SEE DIV. 11 SPEC. "SK-2" 2. SEE PLBG. PLAN FOR PIPING. 3. SEE SCHEDULE FOR ROUGH-INS.
S-3	SINK-PREP	-	-	-	1. SEE DIV. 11 SPEC. "SK-3" 2. SEE PLBG. PLAN FOR PIPING. 3. SEE SCHEDULE FOR ROUGH-INS.
SSH/EW-1	SAFETY SHOWER/ EYEWASH	-	-	-	1. SEE DIV. 11 SPEC. 2. SEE PLBG. PLAN FOR PIPING. 3. SEE SCHEDULE FOR ROUGH-INS.



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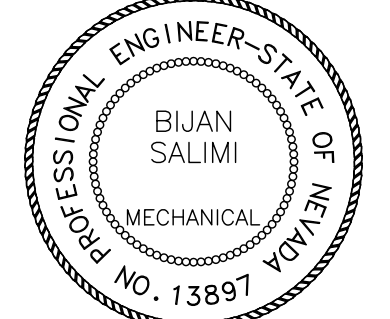
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DATE: 06/16/16

EXP. DATE: 06/30/16



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Project

Project

Project

UNLV VIVARIUM

4505 SOUTH
MARYLAND PARKWAY
LAS VEGAS, NV 89154

Job No: 15-061

Owner

UNIVERSITY OF
NEVADA, LAS VEGAS

PERMIT SET[illegible]

Sheet Title

SCHEDULES

Date: 06/17/2016

Sheet No

P0.02

ENERGY COMPLIANCE REPORT

Project Title: UNLV-WHI Vivarium
Data filename: Z:\1_job\job_past\395dc4115_tsk_unlv whi vivarium\admin\comcheck_plumbing.cck
Report date: 06/14/16
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90.1 (2013) Standard	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
8.4.2 [E10] ¹	At least 50% of all 125 volt 15- and 20-Amp receptacles are controlled by an automatic control device.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
10.4.1 [E19] ²	Electric motors meet requirements where applicable.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV-WHI Vivarium
Data filename: Z:\1_job\job_past\395dc4115_tsk_unlv whi vivarium\admin\comcheck_plumbing.cck
Report date: 06/14/16
Page 5 of 7

90.1 (2013) Standard	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
7.4.4.1 [PL2] ¹	Temperature controls installed on service water heating systems (<=120°F to maximum temperature for intended use).	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.4.4.2 [PL3] ²	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV-WHI Vivarium
Data filename: Z:\1_job\job_past\395dc4115_tsk_unlv whi vivarium\admin\comcheck_plumbing.cck
Report date: 06/14/16
Page 3 of 7

COMcheck Software Version 4.0.1
Mechanical Compliance Certificate

Project Information

Energy Code: 90.1 (2013) Standard
Project Title: UNLV-WHI Vivarium
Location: Las Vegas, Nevada
Climate Zone: 3b (weather data: TBD)
Project Type: New Construction

Construction Site:
4505 S. Maryland Parkway
Las Vegas, NV 89154

Owner/Agent:
Jeni Penas
Tate Snyder Kimsey
709 Vello Verde Court
Henderson, NV 89014
702-456-3000
jpenas@tska.com

Designer/Contractor:
Farid Shahani
Sigma Mechanical Engineering
Consultants Inc.
187 E. Warm Springs Road
Las Vegas, NV 89119
702-315-4272
faridshah@sigamec.com

Mechanical Systems List

Quantity System Type & Description

1 EVH-1:
Electric Storage Water Heater, Capacity: 80 gallons w/ Circulation Pump
Proposed Efficiency: 0.82 EF, Required Efficiency: 0.82 EF

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2013) Standard requirements in COMcheck Version 4.0.1 and to comply with the mandatory requirements listed in the Inspection Checklist.

Bijan Salimi, President

Bijan Salimi
Signature

June 21, 2016
Date

Name - Title

Project Title: UNLV-WHI Vivarium
Data filename: Z:\1_job\job_past\395dc4115_tsk_unlv whi vivarium\admin\comcheck_plumbing.cck
Report date: 06/14/16
Page 1 of 7

90.1 (2013) Standard	Final Inspection	Complies?	Comments/Assumptions
7.4.4.3 [F111] ¹	Public lavatory faucet water temperature <=110°F.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.4.4.4 [F12] ²	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
10.4.3 [F24] ³	Elevators are designed with the proper lighting, ventilation power, and standby mode.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV-WHI Vivarium
Data filename: Z:\1_job\job_past\395dc4115_tsk_unlv whi vivarium\admin\comcheck_plumbing.cck
Report date: 06/14/16
Page 6 of 7

90.1 (2013) Standard	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
6.4.3.4.5 [ME39] ¹	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.3.2.1 [ME40] ²	DX cooling systems >= 75 kBtu/h (>= 65 kBtu/h effective 1/2018) and chilled-water and evaporative cooling fan motor hp >= 1/2 designed to vary indoor fan airflow as a function of load and comply with operational requirements.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for valves.
6.5.7.1.5 [ME49] ³	Approved field test used to evaluate design air flow rates and demonstrate proper capture and containment of kitchen exhaust systems.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
7.4.2 [ME36] ²	Service water heating equipment meets efficiency requirements.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.4.3.9 [ME63] ³	Heating for vestibules and air curtains include automatic controls that shut off the heating system when outdoor air temperatures > 43°F. Vestibule heating systems controlled by a thermostat in the vestibule with setpoint <= 60°F.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
6.5.10 [ME73] ¹	Doors separating conditioned space from the outdoors have controls that disable/rear heating and cooling system when open.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV-WHI Vivarium
Data filename: Z:\1_job\job_past\395dc4115_tsk_unlv whi vivarium\admin\comcheck_plumbing.cck
Report date: 06/14/16
Page 4 of 7

COMcheck Software Version 4.0.1
Inspection Checklist

Energy Code: 90.1 (2013) Standard

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

90.1 (2013) Standard	Plan Review	Complies?	Comments/Assumptions
4.2.2, 7.7.1, 10.4.2 [PR3] ¹	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	
4.2.2, 8.4.1.1, 8.4.1.2, 9.7 [PR6] ²	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Feeder conductors sized in accordance with approved plans and branch circuits sized for maximum drop of 3%.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: UNLV-WHI Vivarium
Data filename: Z:\1_job\job_past\395dc4115_tsk_unlv whi vivarium\admin\comcheck_plumbing.cck
Report date: 06/14/16
Page 2 of 7

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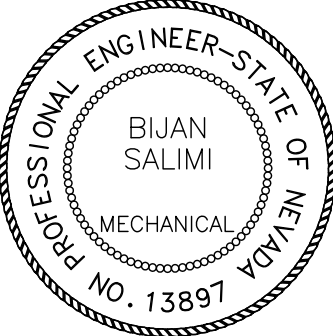
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 **Sigma Mechanical Engineering Consultants**

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DATE: 06/16/16
EXP. DATE: 06/30/16

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Project

UNLV VIVARIUM

4505 SOUTH
MARYLAND PARKWAY
LAS VEGAS, NV 89154

Job No: 15-061

Owner

UNIVERSITY OF
NEVADA, LAS VEGAS

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A	08/05/16 APPENDUM A




















































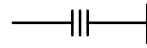









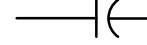




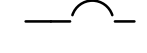



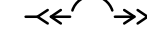



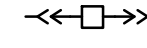




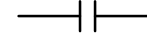




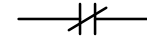







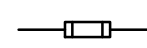














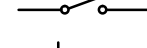












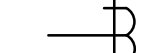







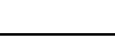

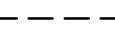





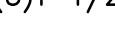



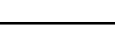
Sheet Title

COMPLIANCE REPORT

Date: 06/17/2016

Sheet No:

P0.03

ELECTRICAL LEGEND											
GENERAL		COMMUNICATION		SWITCHES		RECEPTACLES		LIGHTING FIXTURES			
 JUNCTION BOX		 PHONE OUTLETS ASSIGNED FOR WALL PHONE USE +46" AFF (1)VOIP PHONE OUTLET		 SINGLE POLE SWITCH		 SIMPLEX RECEPTACLE		 CEILING FIXTURE			
 PULLBOX – INTERIOR		 PHONE OUTLETS +18" AFF UNLESS NOTED OTHERWISE (1)VOIP PHONE OUTLET		 THREE-WAY SWITCH		 DUPLEX RECEPTACLE		 WALL MOUNTED LIGHT FIXTURE			
 PULLBOX – EXTERIOR		 DATA OUTLET 18" AFF UNLESS NOTED OTHERWISE ('X' INDICATES QUANTITY OF CABLES ASSIGNED)		 FOUR-WAY SWITCH		 SWITCH & PILOT LIGHT		 LIGHT FIXTURE			
 FLOOR BOX – INTERIOR		 TELE/DATA OUTLET 18" AFF UNLESS NOTED OTHERWISE		 KEY OPERATED SWITCH		 ISOLATED GROUND (ORANGE) TYPE RECEPTACLE		 STRIP LIGHT FIXTURE			
 CIRCUIT BREAKER IN SINGLE ENCLOSURE		 FLOOR MOUNTED COMBO TELE/DATA OUTLET (PT DESIGNATES A POKE THROUGH DEVICE)		 DIMMER SWITCH		 QUAD RECEPTACLE		 CEILING FAN			
 CARD READER		 MEDIA CENTER OUTLET +18" AFF UNLESS NOTED OTHERWISE (POSITIONED NEXT TO DATA @?)		 THERMAL OVERLOAD SWITCH		 DUPLEX RECEPTACLE WITH USB		 BOLLARD LIGHT			
 RELAY		 CEILING ENCLOSURE FOR AUDIO/VISUAL CONNECTION (FOR USE W/VIDEO PROJECTOR MOUNTS)		 TIMER SWITCH		 SWITCHED DUPLEX RECEPTACLE		 TRACK LIGHT			
 TIME CLOCK		 VIDEO PROJECTOR MOUNT		 LOWER CASE LETTER INDICATES SWITCHING		 DUPLEX RECEPTACLE COMPUTER		 FLOOD LIGHT			
 MOTION DETECTOR		 WIRELESS ACCESS POINT. WALL OR CEILING MOUNT AS INDICATED.		SINGLE LINE DIAGRAM			 SPECIAL PURPOSE OUTLET (TYPE AS NOTED)		 WALL WASHER		
 DOOR SWITCH		 TELEVISION CAMERA (CCTV)		 ARRESTOR PLUS GROUND (SURGE ARRESTOR)		 POWER COMMUNICATIONS POLE		 EXIT SIGN, SHADING INDICATES FACE, ARROWS AS INDICATED			
 DOOR CONTACT		 CALL-IN SWITCH		 CABLE TERMINATION (OVER 600 VOLTS)		 MULTIOUTLET ASSEMBLY		 BATTERY PACK, NUMBER OF HEADS AS SHOWN			
 CONTACTOR		 CEILING MOUNTED SPEAKER FOR INTERCOM SYS		 CIRCUIT BREAKER		 FLOOR/ CLG MOUNTED DUPLEX RECEPTACLE (PT DESIGNATES A "POKE THROUGH" DEVICE)		 EMERGENCY FIXTURE			
 BUZZER		 OUTDOOR SPEAKER FOR INTERCOM SYSTEM		 BREAKER WITH DRAWOUT FEATURE			 FLOOR/ CLG MOUNTED DOUBLE DUPLEX RECEPTACLE (PT DESIGNATES A "POKE THROUGH" DEVICE)		 EMERGENCY CEILING FIXTURE		
 PUSHBUTTON		 CEILING SPEAKER CONNECTED TO CEILING MOUNTED ENCLOSURE		 MV BREAKER WITH DRAWOUT FEATURE					 NL = NIGHT LIGHT (CONNECT TO UNSWITCHED LEG OF CIRCUIT)		
 TRANSFORMER		 COMBINATION CLOCK/SPEAKER		 CONTACT (NORMALLY OPEN)		FIRE ALARM SYSTEM			 OCCUPANCY SENSOR WALL		
 POWER METER		 TELEPHONE TERMINAL BACKBOARD		 CONTACT (NORMALLY CLOSED)		 FIRE ALARM CONTROL PANEL		 OCCUPANCY SENSOR CEILING			
 PHOTOCELL		 MOTION DETECTOR		 OPERATING COIL		 FIRE ALARM ANNUNCIATOR		 TUBULAR SKYLIGHT DIMMING CONTROL			
 MOTOR		 IR (INFRARED) SENSOR		 FUSED DISCONNECT SWITCH (UNDER 600 VOLTS)		 FIRE ALARM HORN		BUS DUCT AND WIREWAY			
 SOLENOID VALVE		 ASSISTIVE LISTENING SPEAKER		 SWITCH		 FIRE ALARM HORN AND STROBE		 UNDERFLOOR DUCT (P=POWER, T=TEL, C=COMP)			
 DISCONNECT SWITCH		ANNOTATION TAGS AND NOMENCLATURE		 POWER TRANSFORMER		 FIRE ALARM BELL AND LIGHT		 HEADER DUCT			
 VARIABLE FREQUENCY DRIVE				 CURRENT TRANSFORMER		 FIRE ALARM STROBE		 TRENCH DUCT			
 FUSED DISCONNECT SWITCH				 POTENTIAL TRANSFORMER		 DOOR HOLDER		 BUS DUCT			
 MOTOR CONTROLLER OR STARTER				 DIGITAL METER		 FLOW SWITCH		 CABLE TRAY			
 MOTOR CONTROLLER OR STARTER FURNISHED BY OTHERS				 PILOT LIGHT		 TAMPER SWITCH		PANELS AND RELATED ITEMS			
 COMBINATION CONTROLLER/ DISCONNECT SWITCH				 GENERATOR		 SMOKE DETECTOR		 PANELBOARD – SURFACE			
 LIGHTING CONTACTOR		DEVICE MOUNTING HEIGHTS		 GROUND		 HEAT DETECTOR		 PANELBOARD – RECESSED			
 START/STOP SWITCH		REFER TO ELECTRICAL SPECIFICATIONS FOR DEVICES MOUNTING HEIGHTS. DIMENSIONAL NUMBERS SHOWN ADJACENT TO SYMBOLS INDICATE THE CENTERLINE OF DEVICE MOUNTING HEIGHTS.		 AUTOMATIC TRANSFER SWITCH		 JUNCTION BOX FOR DUCT MOUNTED SMOKE DETECTOR		 SWITCHBOARD OR DISTRIBUTION BOARD QUANTITY OF SECTIONS REQUIRED SHOWN			
WIRES AND RACEWAYS						 SELF CONTAINED 120 VOLT SMOKE DETECTOR					
	CONDUIT					 SMOKE FIRE DAMPER					
	CONDUIT BELOW FLOOR/ GRADE/ OR EXISTING					 CONTROL MODULE					
	CONDUIT OR RACEWAY TURNED UP					 MONITOR MODULE					
	CONDUIT OR RACEWAY TURNED DOWN					 BELL					
	3 SETS OF ONE AND ONE HALF INCH CONDUITS										
	HOME RUN CONDUIT										
	LONG STROKES INDICATE NEUTRAL CONDUCTOR										
	SHORT STROKES INDICATE PHASE OR SWITCHED WIRES LONG STROKES WITH DOT INDICATES GROUNDING CONDUCTOR										
	CAP-OFF										
ABBREVIATIONS											
A, AMP	AMPERE(S)	(E)	EXISTING TO REMAIN	HID	HIGH INTENSITY DISCHARGE	N.C.	NORMALLY CLOSED	SHT	SHEET	V	VOLT(S)
AC	ALTERNATING CURRENT	EC	EMPTY CONDUIT, ELECTRICAL	HP	HORSEPOWER	N.O.	NORMALLY OPEN	SL	SINGLE LINE	VA	VOLT AMP(S)
AFF	ABOVE FINISH FLOOR	EA	CONTRACTOR EACH	HZ	FREQUENCY CYCLES PER SECOND	NF	NON FUSED	SMR	SURFACE METAL RACEWAY	VAR	REACTIVE VOLT AMPERES
AFG	ABOVE FINISHED GRADE	EIA	ELECTRONIC INDUSTRIES ASSOCIATION	HW	HOT WATER	NEC	NATIONAL ELECTRICAL CODE	SP	SINGLE POLE	VOIP	VOICE OVER INTERNET PROTOCOL
AL	ALUMINUM	EIEC	ELECTRIC OR ELECTRIC	IC/ ICOM	INTERCOM	#	NUMBER	SPEC	SPECIFICATIONS	VP	VAPOR PROOF
ALT	ALTERNATE	ELEV	ELEVATOR	IECC	INTERNATIONAL ENERGY CONSERVATION CODE	NTS	NOT TO SCALE	ST	SINGLE THROW		
ATS	AUTOMATIC TRANSFER SWITCH	EM	EMERGENCY	IMC	ISOLATED GROUND CONDUCTOR	NIC	NOT IN CONTRACT	SW	SWITCH	W/O	WITHOUT
AWG	AMERICAN WIRE GAUGE	EMT	ELECTRICAL METALLIC TUBING	IN	INTERMEDIATE METALLIC CONDUIT	OC	ON CENTER	SWBD	SWITCHBOARD	W	WATT(S)
BC	BARE COPPER	EOL	END OF LINE RESISTOR	J–BOX	JUNCTION BOX	OL	OVERLOAD ELEMENT			WP	WEATHERPROOF
BLDG	BUILDING	EW	ELECTRICAL WATER COOLER	K	KIRK KEY INTERLOCKED	PB	PUSH BUTTON/ PULLBOX	TELE	TELEPHONE	XFMR	TRANSFORMER
C	CONDUIT			KCM	THOUSAND CIRCULAR	PF	POWER FACTOR	TEMP	TEMPORARY	XP	EXPLOSION PROOF
CB	CIRCUIT BREAKER	F	FUSE	KV	KILOVOLT	PH, Ø	PHASE	TIA	TELECOMMUNICATIONS		
CCTV	CLOSED CIRCUIT TELEVISION	FAAP	FIRE ALARM ANNUNCIATOR PANEL	KVA	KILOVOLT AMPERE(S)						
CKT	CIRCUIT	FBO	FURNISHED BY OTHERS	KVAR	KILOVAR(S)	PNL	PANEL	TSTAT	THERMOSTAT		
CLG	CEILING	FC	FOOT CANDLE	KW	KILOWATT(S)	PT	POTENTIAL TRANSFORMER	TTB	TELEPHONE TERMINAL		
CT	CURRENT TRANSFORMER	FLR	FLOOR	KWHR	KILOWATT HOUR	PVC	POLYVINYL CHLORIDE	TTC	BOARD TELEPHONE		
CTR	COUNTER, CENTER	FT	FOOT OR FEET			(R)	EXISTING TO BE RELOCATED	TV	TERMINAL CABINET		
CU	COPPER			MAX	MAXIMUM	RMS	ROOT MEAN SQUARE	TYP	TELEVISION		
CW	COLD WATER			MCC	MOTOR CONTROL CENTER					UG	UNDERGROUND
(D)	DEMO, EXISTING TO BE REMOVED	GC	GENERAL CONTRACTOR	MH	MANHOLE					UH	UNIT HEATER
DB	DISTRIBUTION BOARD	GEN	GENERATOR	MIN	MINIMUM					UPS	UNINTERRUPTED POWER SUPPLY
DISC	DISCONNECT	GFI	GROUND FAULT INTERRUPTER	MTD	MOUNTED						
DN	DOWN	GRD,GND	GROUND	MS	MAIN SWITCHBOARD						
DP	DOUBLE POLE, DISTRIBUTION PANEL			MOTOR	MOTOR						
DT	DOUBLE THROW			MTR	MANUAL SWITCHBOARD						
DWG	DRAWING			MTS	MANUAL TRANSFER SWITCH						

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ENGINEERING
T. FOSTER, JR.
Exp. 6/30/17
ELECTRICAL
No. 13075
08/05/2016

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08/05/16

ADDENDUM A

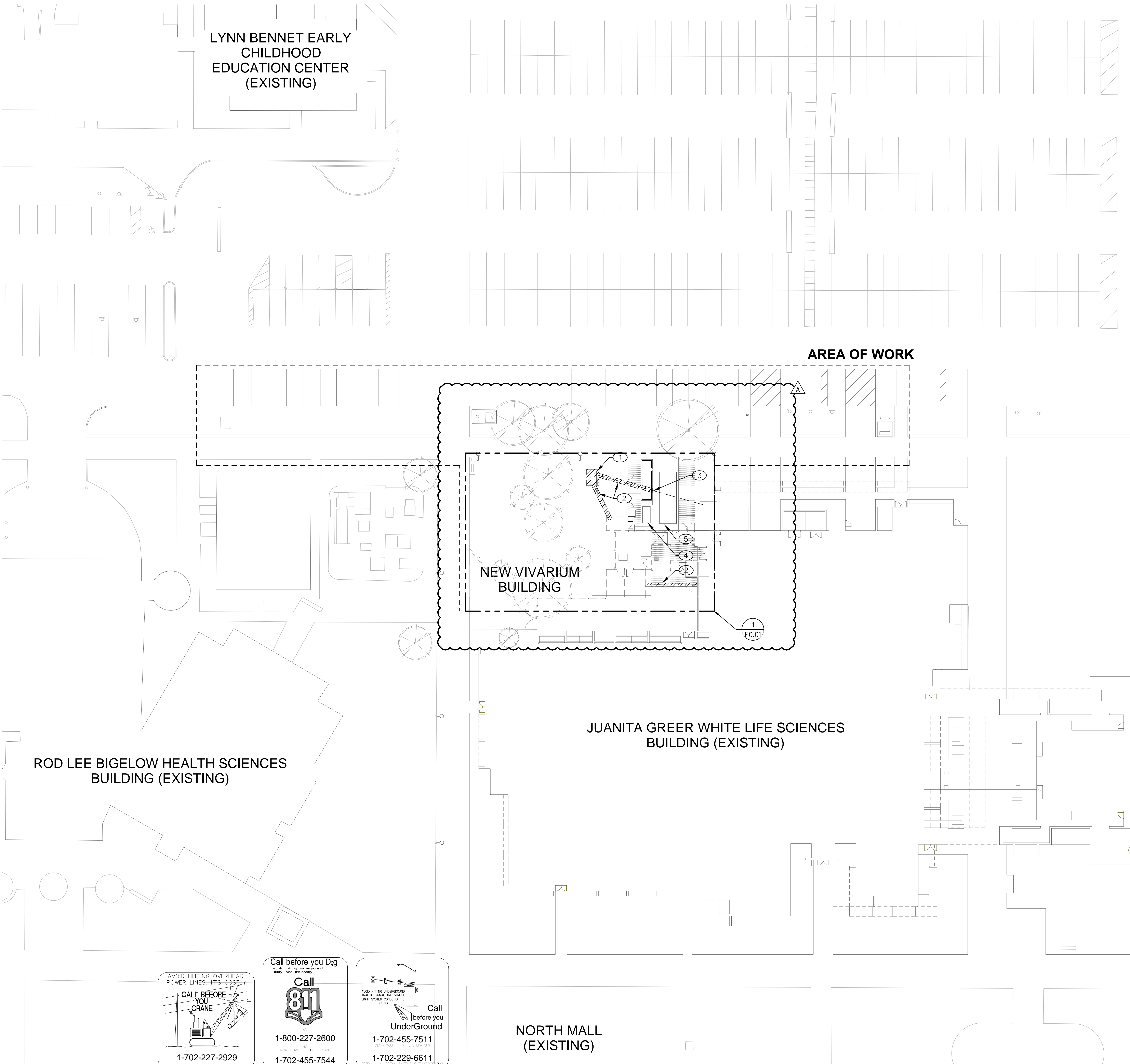
Sheet Title

GEN NOTES, ELEC
LEGEND, AND DWG
INDEX

Date: 06/17/2016

Sheet No:

E 1.01



AVOID HITTING OVERHEAD POWER LINES- IT'S COSTLY

CALL BEFORE YOU CRANE

1-702-227-2929

Call before you Dig

Avoid cutting underground utility lines. It's costly.

Call 811

1-800-227-2600

1-702-455-7544

AVOID HITTING UNDERGROUND TRAFFIC SIGNALS AND STREET LIGHT SYSTEMS. IT'S COSTLY

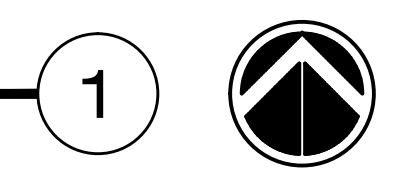
Call before you UnderGround

1-702-455-7511

1-702-229-6611

SITE ELECTRICAL REMOVAL PLAN - VIVARIUM

SCALE: 1" = 20'-0"

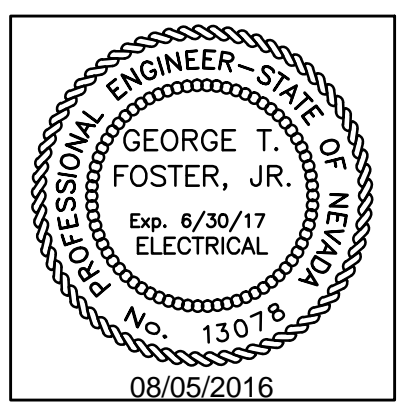


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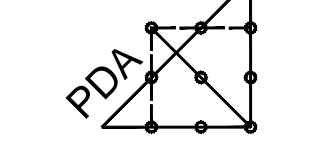
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UNLV VIVARIUM

**4505 SOUTH MARYLAND PARKWAY
LAS VEGAS, NV 89154**

Job No: 15-061

Owner

UNIVERSITY OF NEVADA, LAS VEGAS

PERMIT SET

REVISIONS	
REV	DESCRIPTION
A	08/05/16 ADDENDUM A

Sheet Title

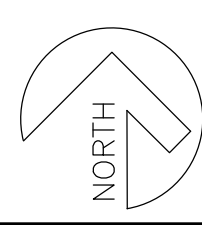
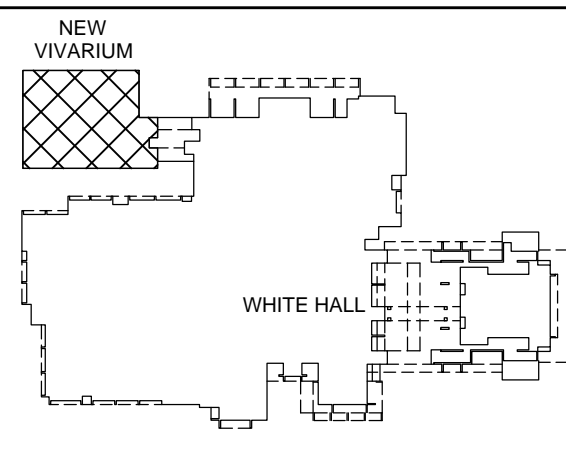
**SITE ELECTRICAL
REMOVAL PLAN-
VIVARIUM**

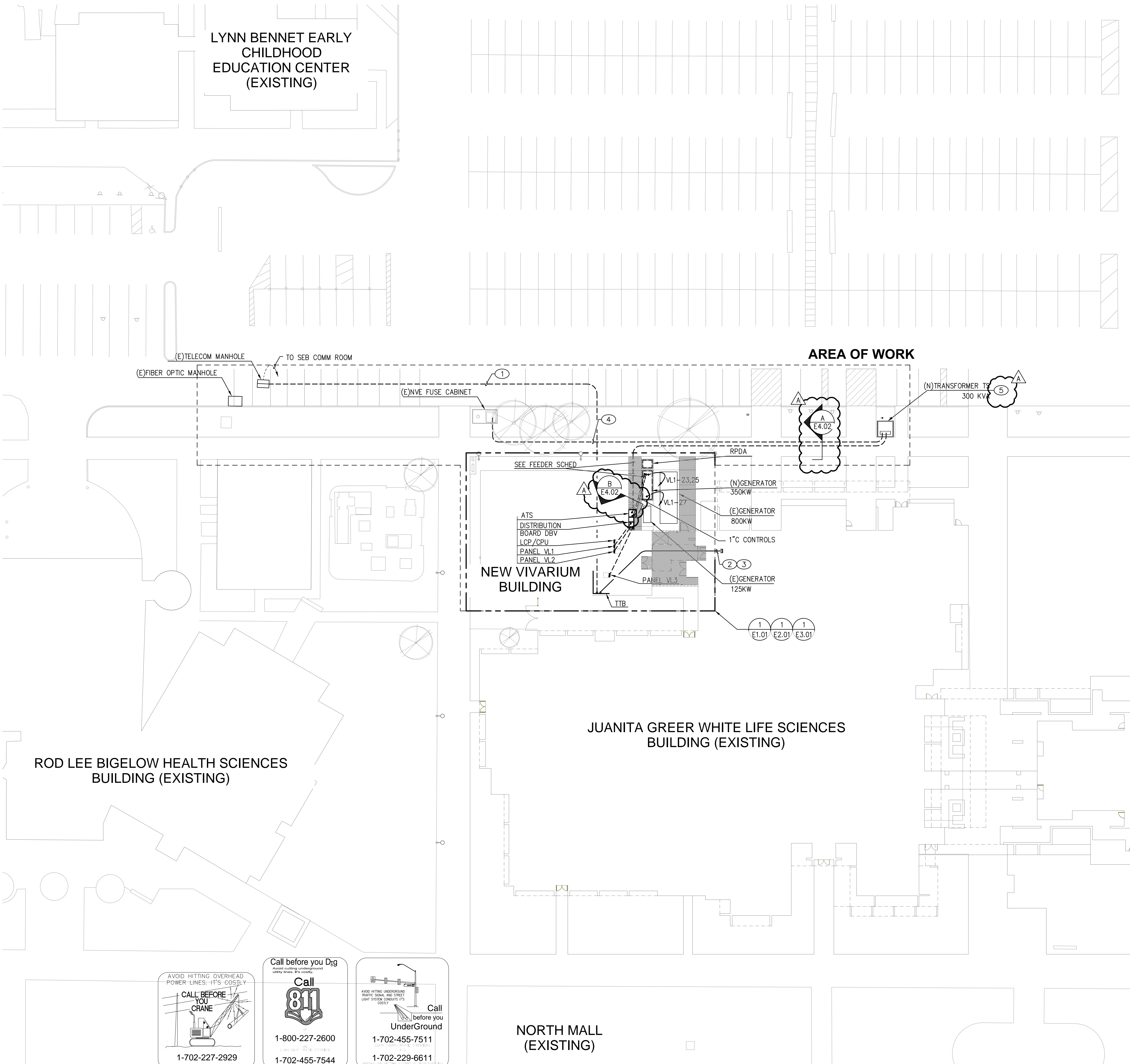
Date: 06/17/2016

Sheet No:

ES0.01

KEYPLAN





LYNN BENNET EARLY
CHILDHOOD
EDUCATION CENTER
(EXISTING)

ROD LEE BIGELOW HEALTH SCIENCES
BUILDING (EXISTING)

JUANITA GREER WHITE LIFE SCIENCES
BUILDING (EXISTING)

NORTH MALL
(EXISTING)

AREA OF WORK

NEW VIVARIUM
BUILDING

AVOID HITTING OVERHEAD
POWER LINES- IT'S COSTLY

**CALL BEFORE
YOU CRANE**



1-702-227-2929

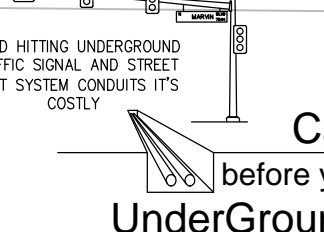
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Avoid cutting underground
utility lines. It's costly.

**Call
811**

1-800-227-2600
1-702-455-7544

AVOID HITTING UNDERGROUND
TRAFFIC SIGNALS AND STREET
LIGHT SYSTEMS- IT'S
COSTLY

**Call
before you
UnderGround**



1-702-455-7511
1-702-229-6611

SITE ELECTRICAL PLAN - VIVARIUM

SCALE: 1" = 20'-0"

1



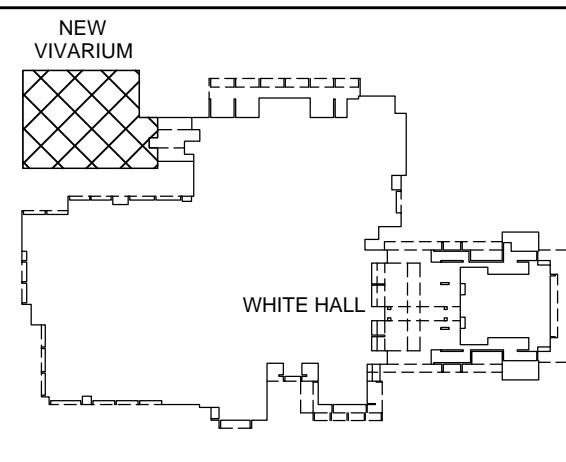
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KEYNOTES

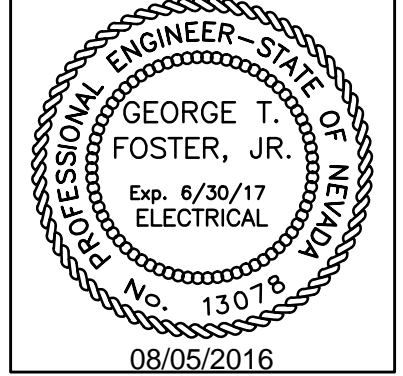
1. 4" C.O. WITH PULL STRING FROM EXISTING COMMUNICATIONS MANHOLE TO ROOM 026 TELEPHONE TERMINAL BACKBOARD 'TTB'. VERIFY LOCATION.
2. PROVIDE (2) 4" C.O.L. WITH PULL TAPE FROM ROOM 026 TTB TO WHITE HALL PLENUM SPACE.
3. PROVIDE 24-STRAND SM FIBER FROM ROOM 026 TTB TO WHITE HALL ROOM 181A. INSTALL FIBER IN 1-1/4" INNER DUCT MINIMUM.
4. ROUTE CONDUIT AROUND TREES.
5. PROVIDE TRANSFORMER PAD, BOLLARDS, AND PRIMARY AND SECONDARY DUCTBANK CONDUITS PER NVE PROJECT DRAWINGS. TRANSFORMER AND PRIMARY & SECONDARY CONDUCTORS BY NVE.

KEYPLAN



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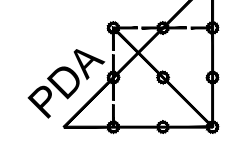
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Job No: 15-061

Owner

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REV	DESCRIPTION
A	08/05/16 ADDENDUM A

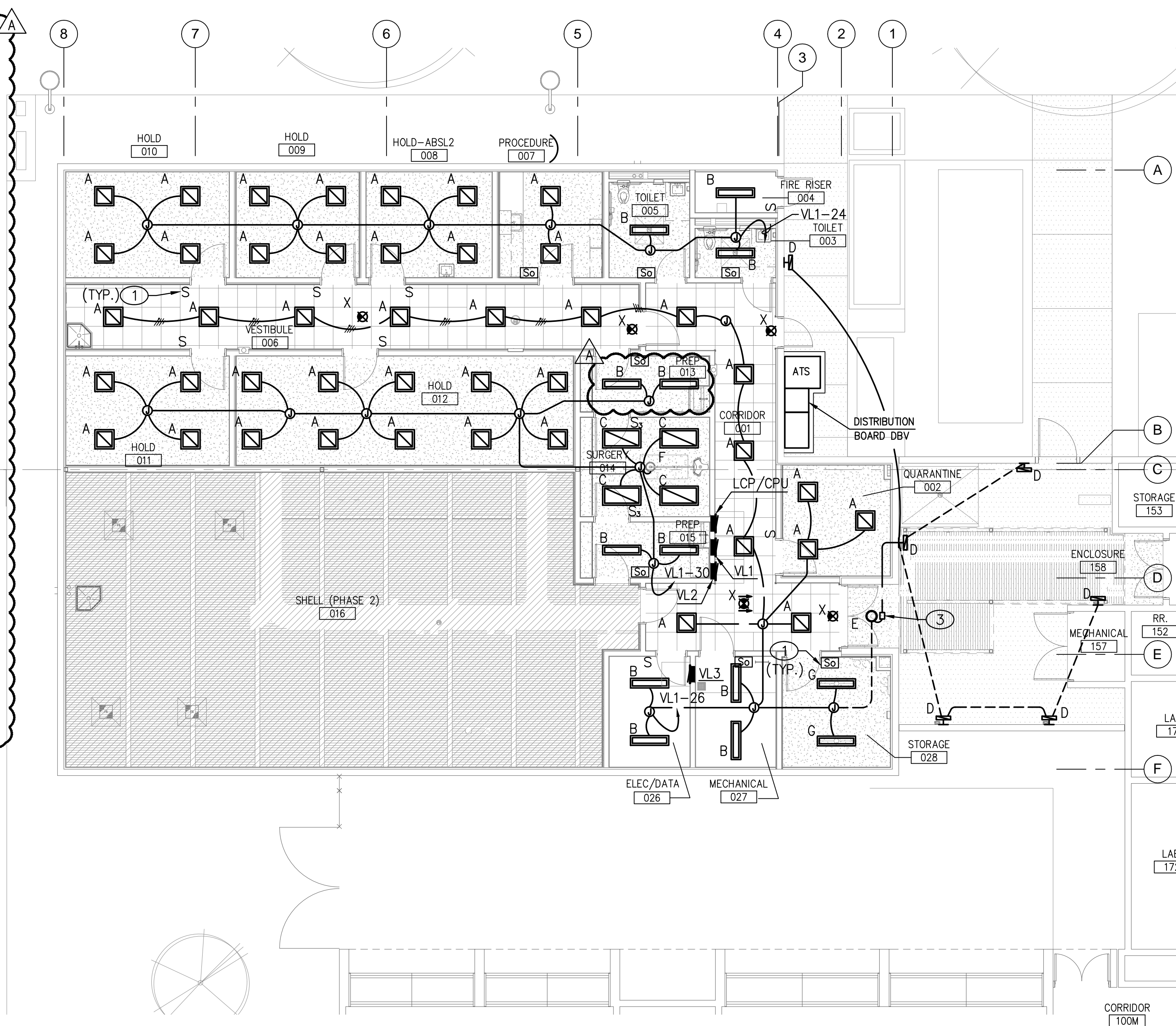
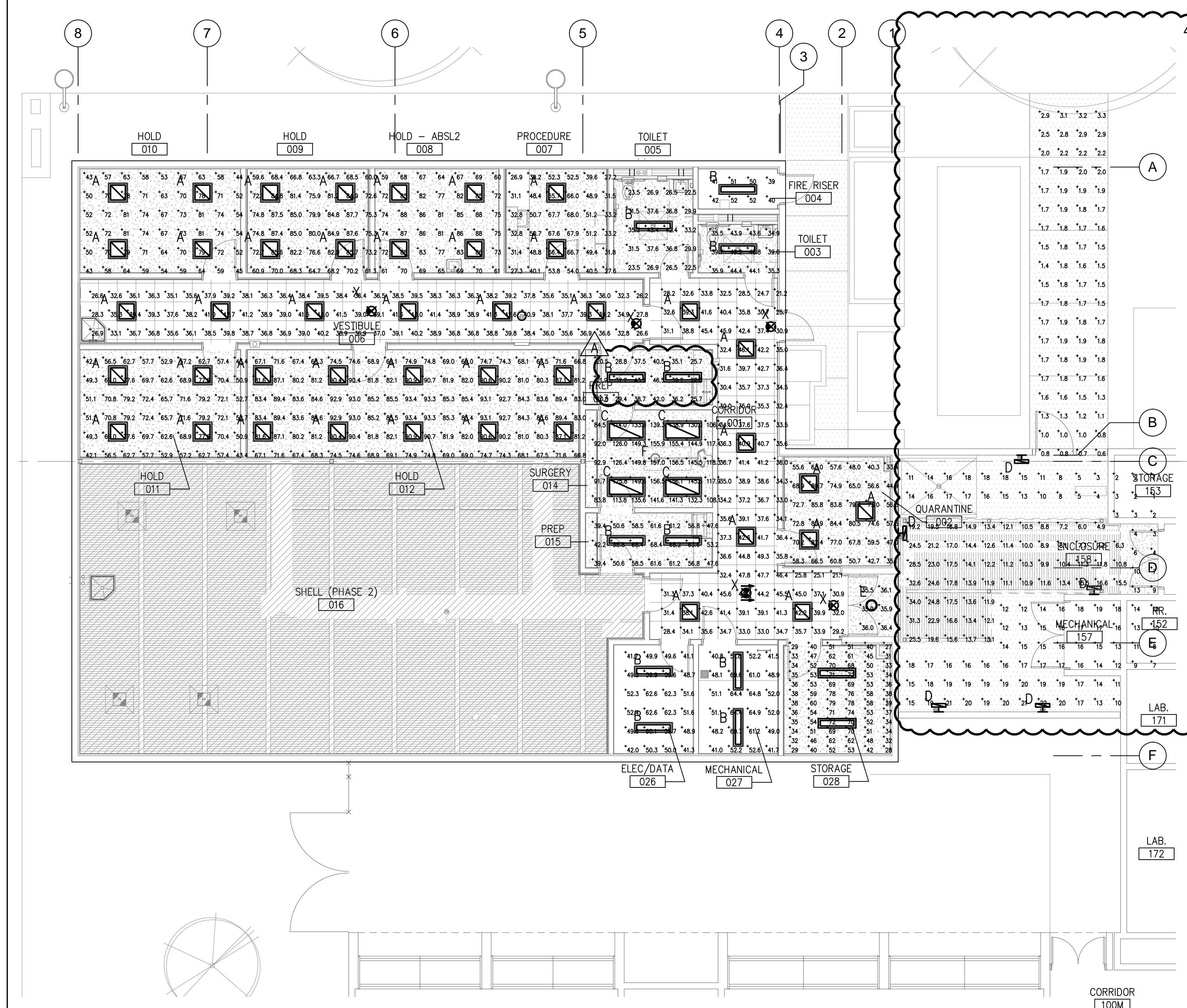
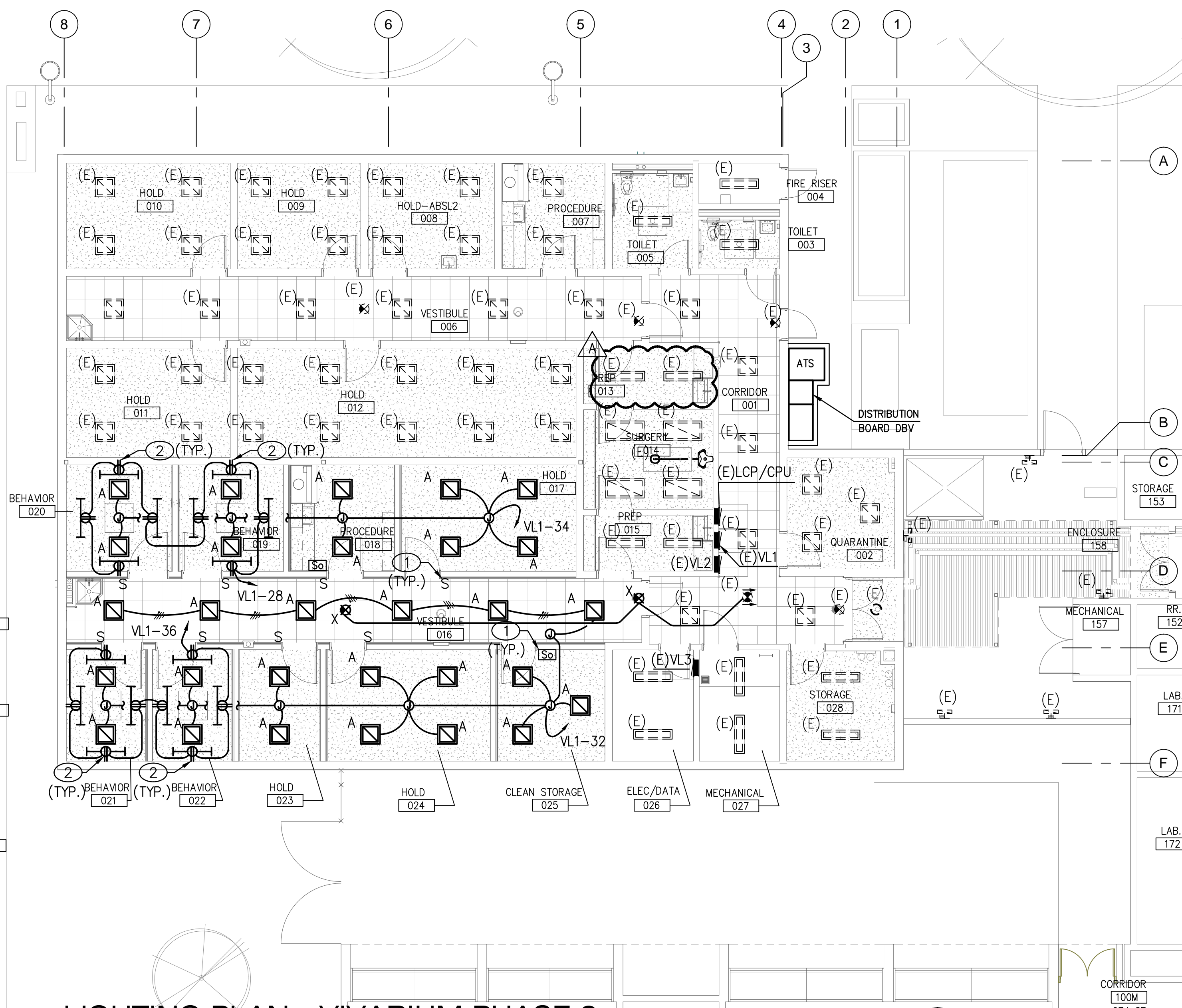
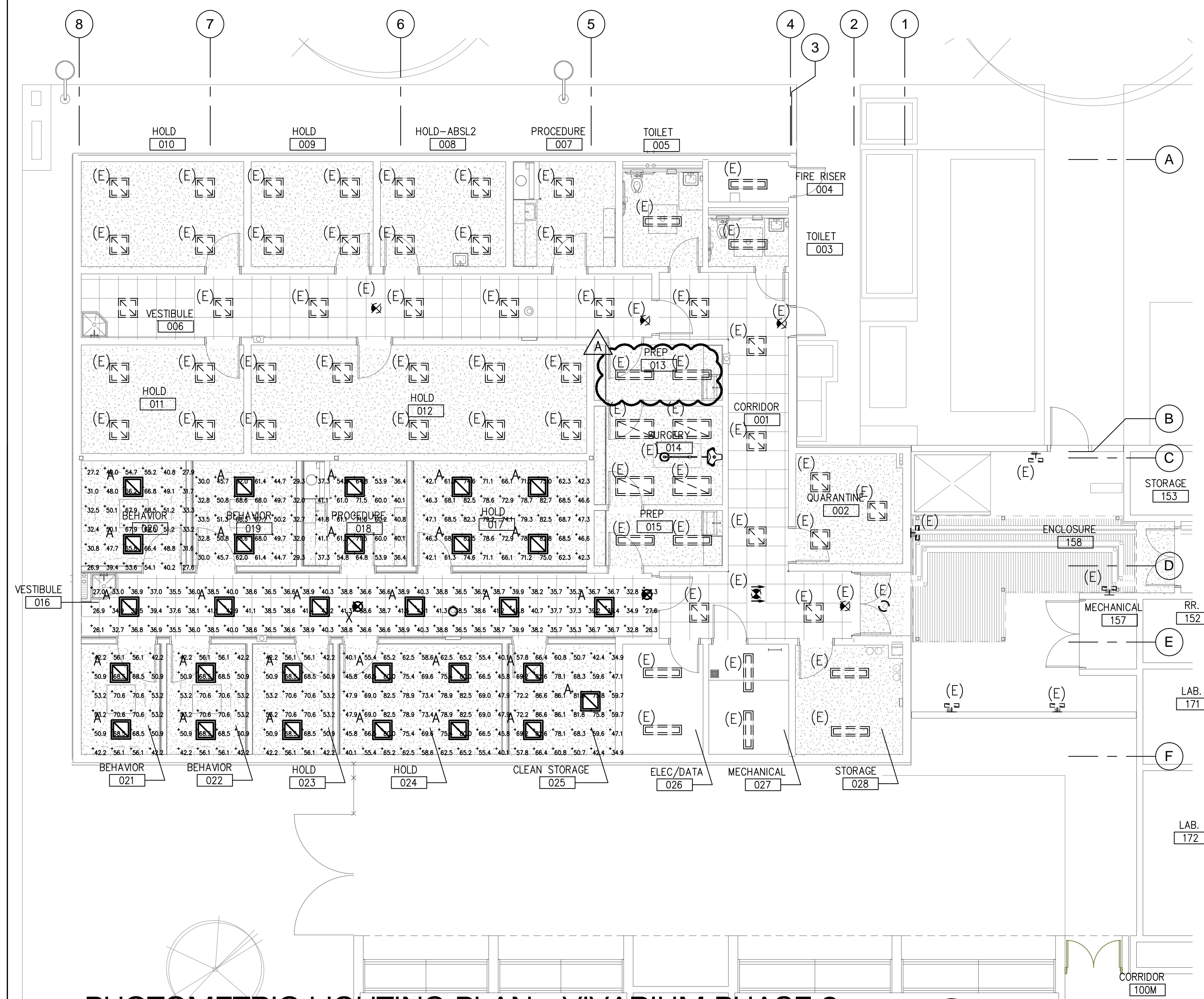
Sheet Title

SITE ELECTRICAL
PLAN- VIVARIUM

Date: 06/17/2016

Sheet No:

ES1.01



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 - REFER TO SHEET E4.01 FOR SEQUENCE OF OPERATION.

KEYNOTES

- CONNECT TO LUTRON CONTROL PANEL. REFER TO LUTRON CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.
- CEILING MOUNT RECEPTACLE FOR LIGHT BAR ADJACENT TO RECESSED STEEL STRUT.
- CEILING FLUSH MOUNTED PHOTOCELL FOR TYPE-E FIXTURE.

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PHASED LIGHTING PLANS - VIVARIUM

Date: 06/17/2016
Sheet No:

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Job No: 15-061
Owner
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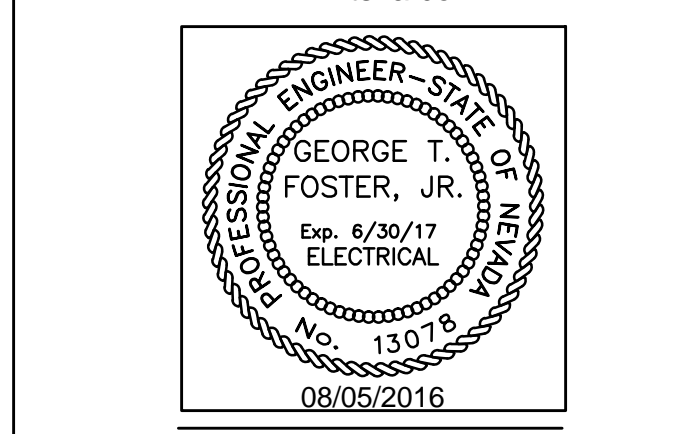
Sheet Title
PHASED LIGHTING PLANS - VIVARIUM

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PHASED LIGHTING PLANS - VIVARIUM

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UNIVERSITY OF NEVADA, LAS VEGAS

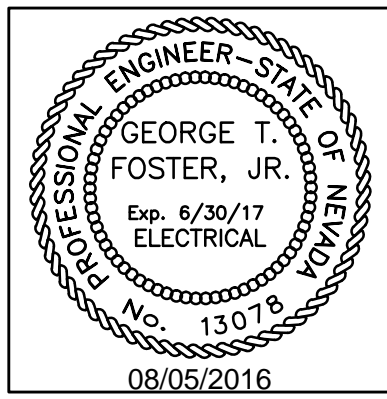
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PHASED LIGHTING PLANS - VIVARIUM

Date: 06/17/2016
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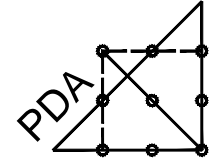
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REV	DATE	DESCRIPTION
A	08/05/16	ADDENDUM A

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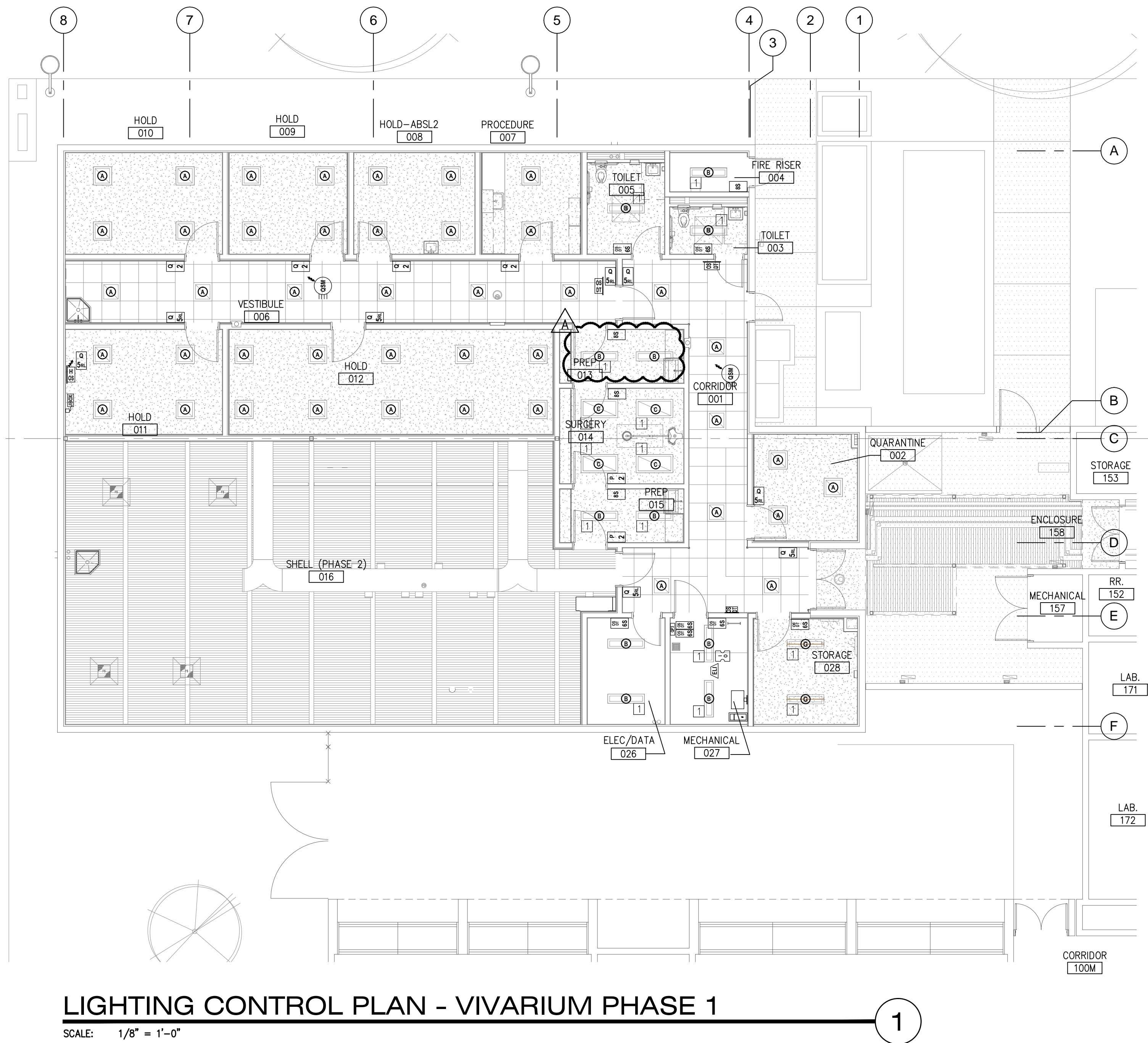
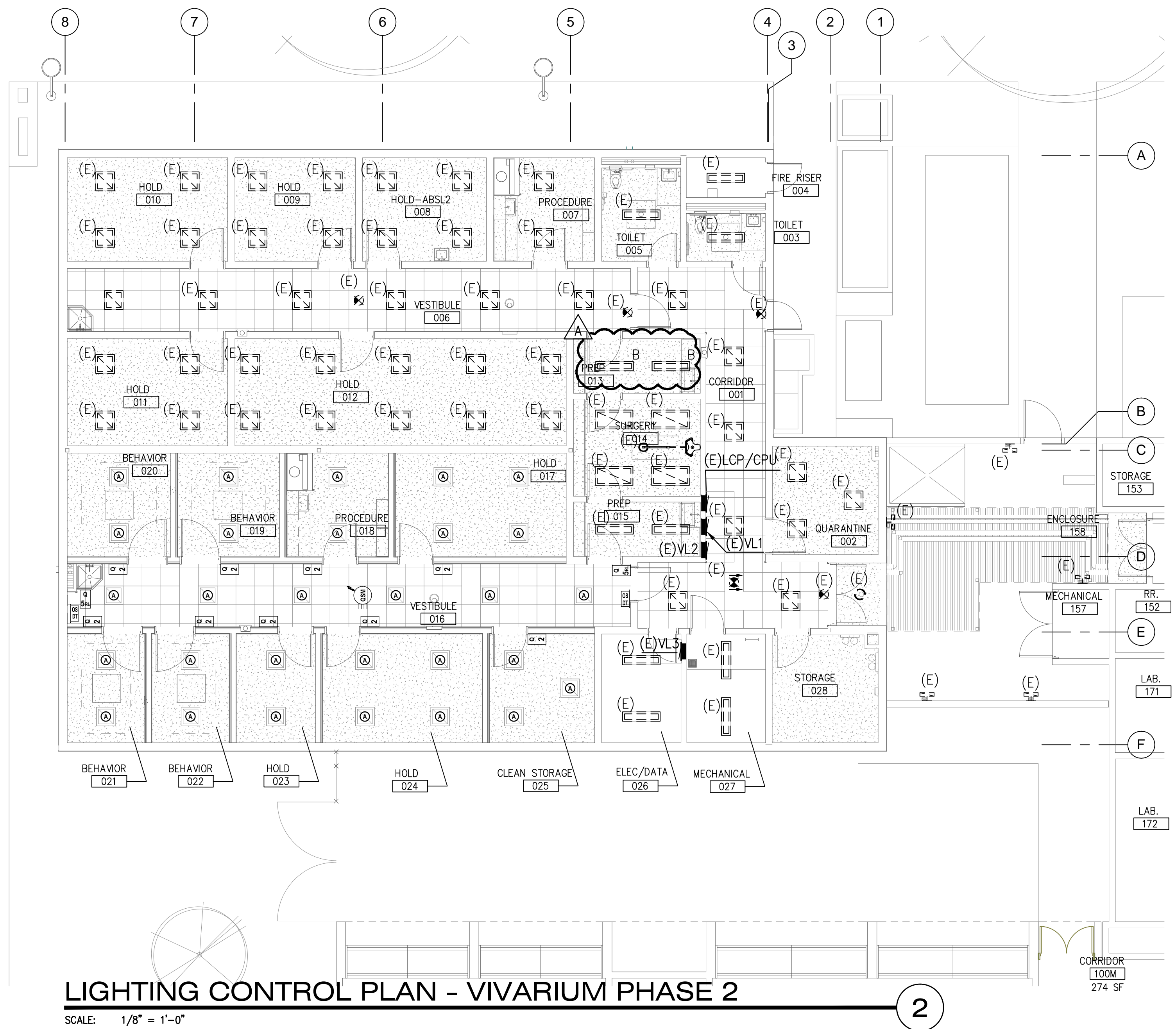
**PHASED LIGHTING
CONTROL PLANS -
VIVARIUM**

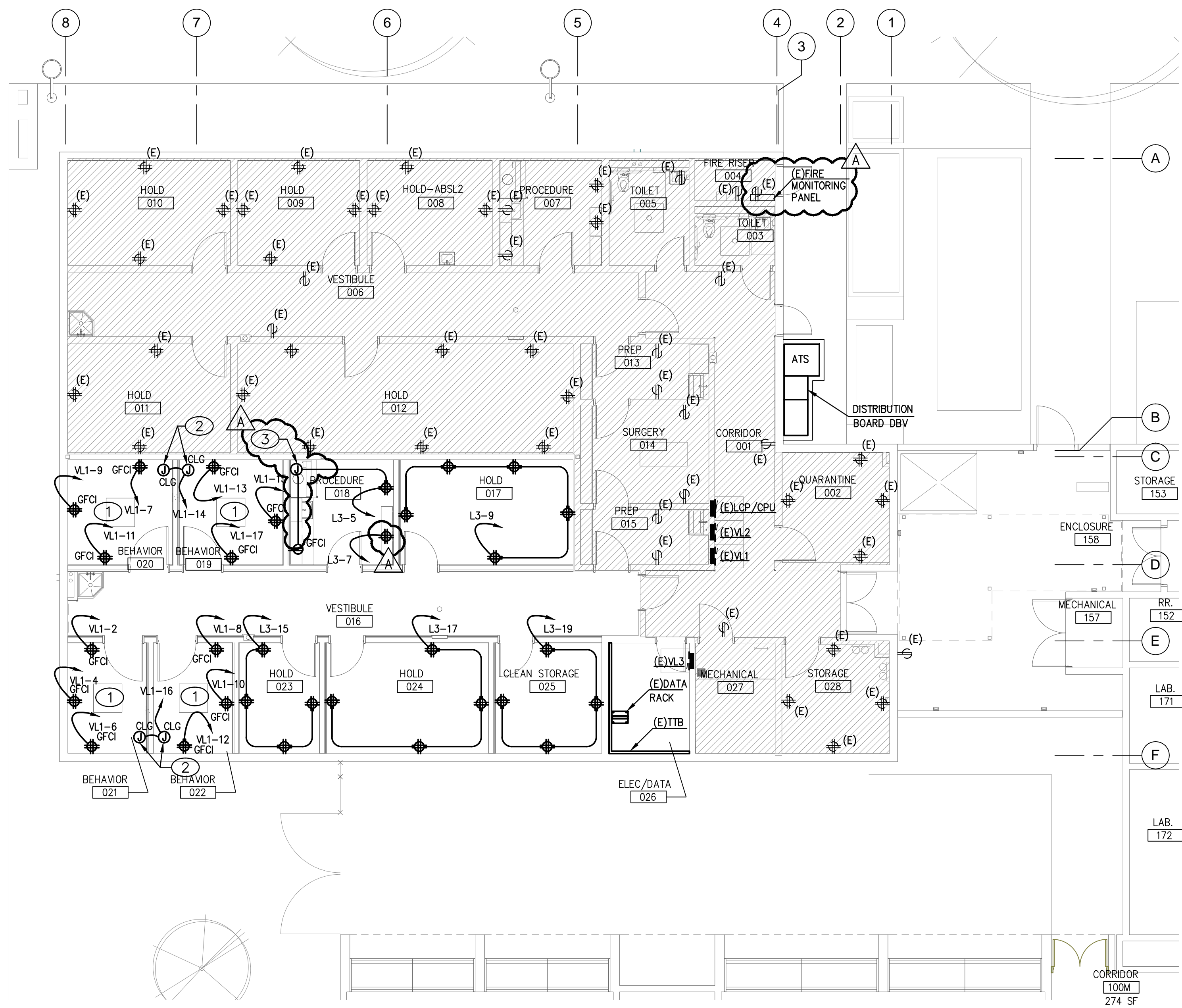
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Sheet No:

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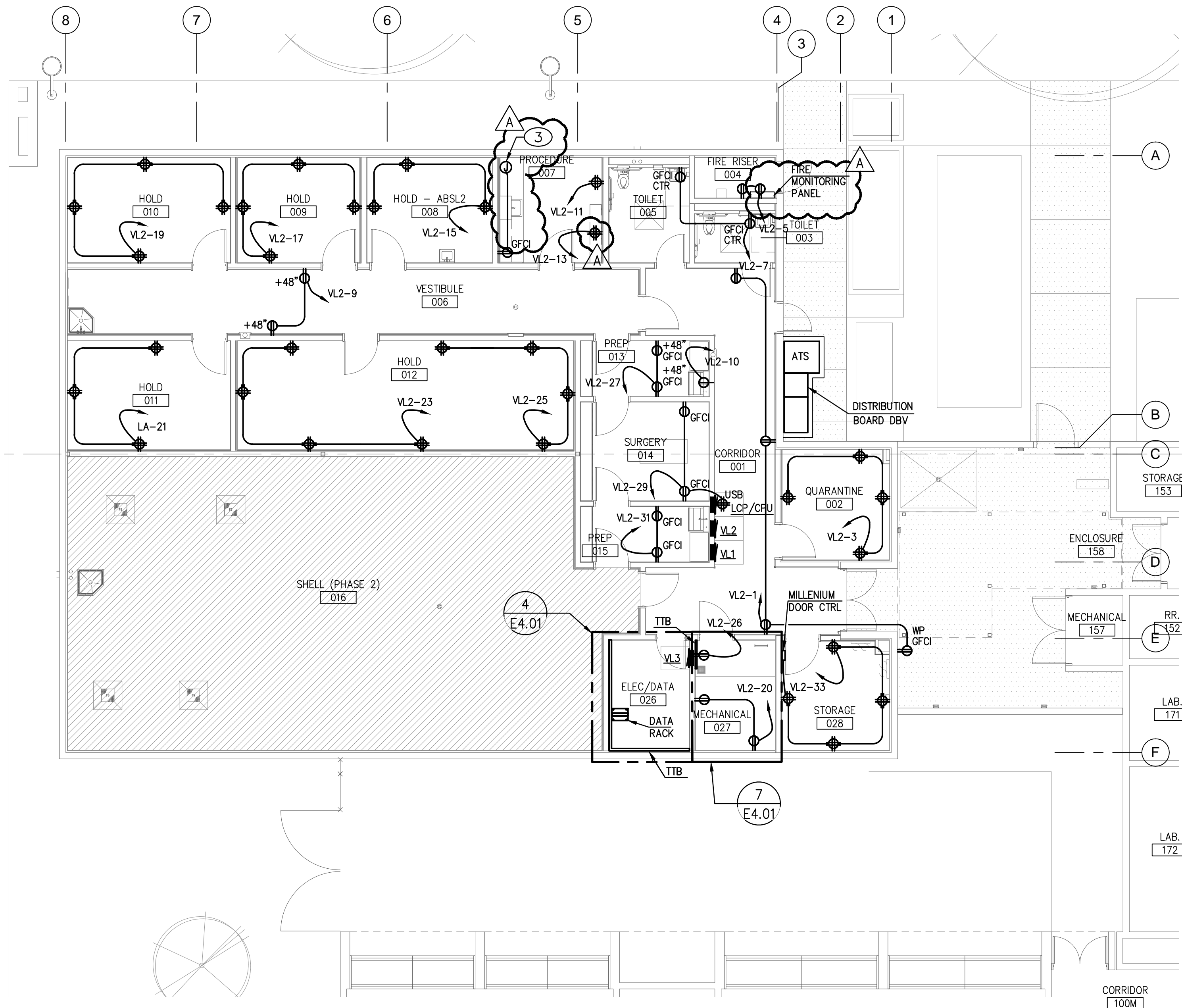
LEGEND	
(A)	E1.01>MECHANICAL 027.HUB 001.LINKA.ESN Eco#1>LOOP 1 (64 of 64)
(B)	E1.01>MECHANICAL 027.HUB 001.LINKA.ESN Eco#1>LOOP 2 (22 of 64)
(C)	E1.01>MECHANICAL 027.HUB 001.LINKA.ESN Eco#2>LOOP 2 (58 of 64)
QS-A-CMP-LBO-0 (1)	
QS-A-CMP-SBO-0 (1)	
QP3-1PL-100-240 (1)	
QSN-2ECO-S (2)	
QSM-2-4W-C (3)	
MS-A102-WH (5)	
PJ2-2B-GWLH-L01 (CW-1-WH) (2)	
QSW2-BI-WH (16)	
QSW2-5BRLI-WH (7)	
LOS-WDT-WH (6)	
LUT-ELI-3PH (PP-120H) (1)	
QSE-IO (1)	
MRF-2-8S-DV-WH (4)	
QSPS-J-1-50 (1)	





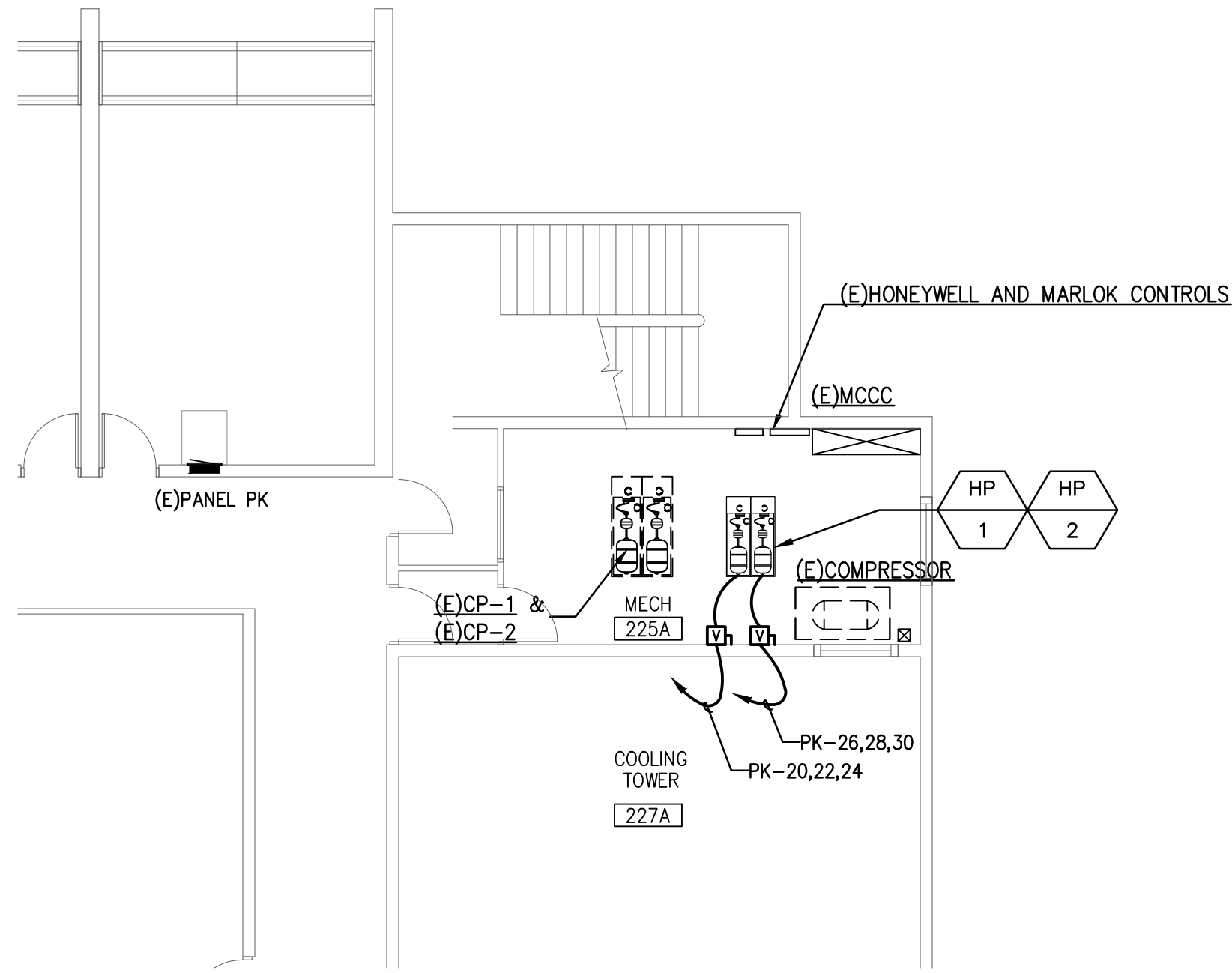
POWER PLAN - VIVARIUM PHASE 2

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



POWER PLAN - VIVARIUM PHASE 1

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



POWER PLAN - VIVARIUM

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

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2. ALL CONDUIT PENETRATIONS AND FIXTURES SHALL BE VERMIN PROOF.
3. VERIFY ALL DEVICE MOUNTING HEIGHTS PRIOR TO ROUGHING IN. IN HOLDING, QUARANTINE AND BEHAVIOR ROOMS, MOUNT 120V, 20A, QUADRUPLUX OUTLETS AT WALLS 6'-0" ABOVE FLOOR, UNLESS NOTED OTHERWISE.

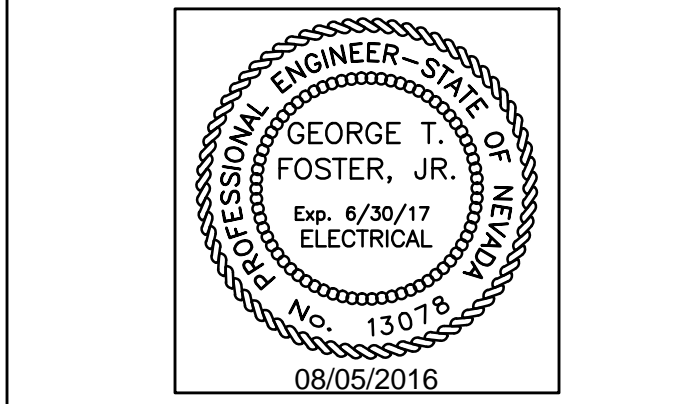
KEYNOTES

1. ALL RECEPTACLES IN THIS ROOM SHALL BE WP, GFCI AND ISOLATED GROUND.
2. CEILING MOUNTED JUNCTION BOX FOR CAMERA. VERIFY EXACT LOCATION WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
3. JUNCTION BOX FOR FUME HOOD. COORDINATE LOCATION AND REQUIREMENTS WITH HOOD CONTRACTOR.

KEYPLAN

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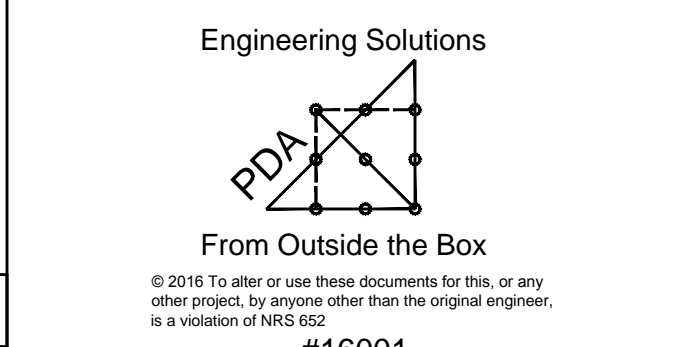


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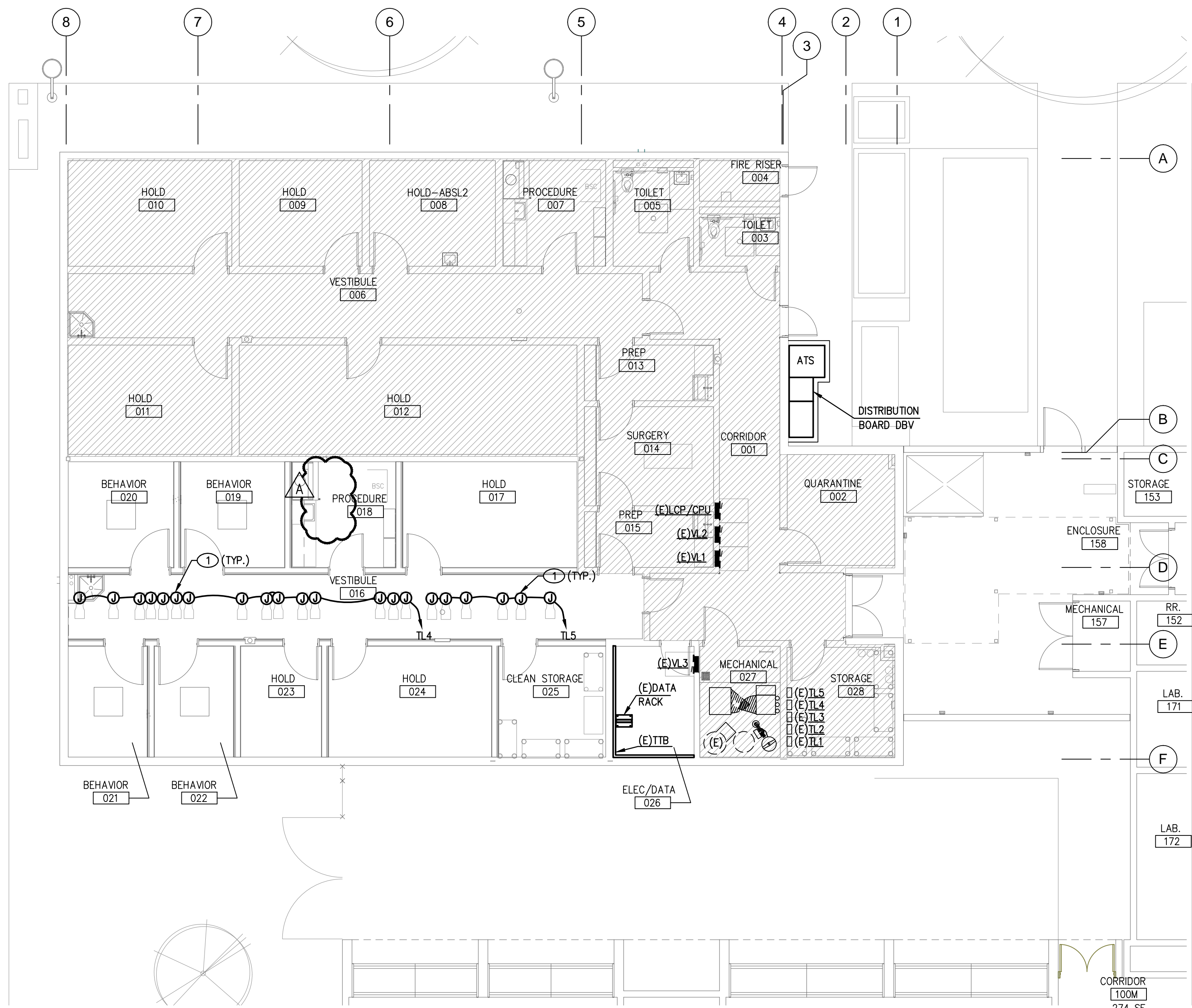
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Sheet Title
PHASED POWER PLANS - VIVARIUM

Date: 06/17/2016
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E2.01

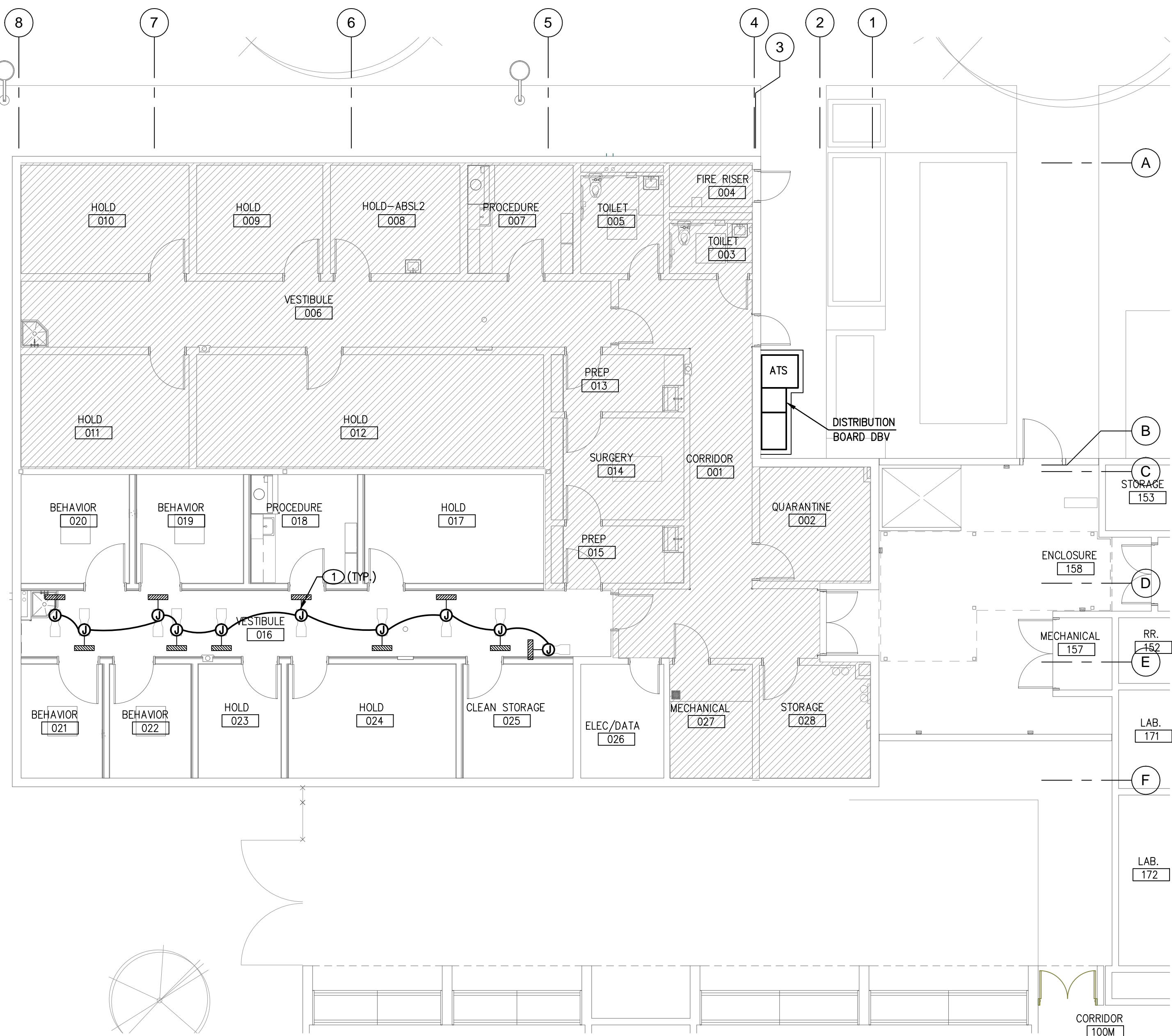


EQUIPMENT POWER PLAN - VIVARIUM PHASE 2

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

EXHAUST AIR SYSTEM

4

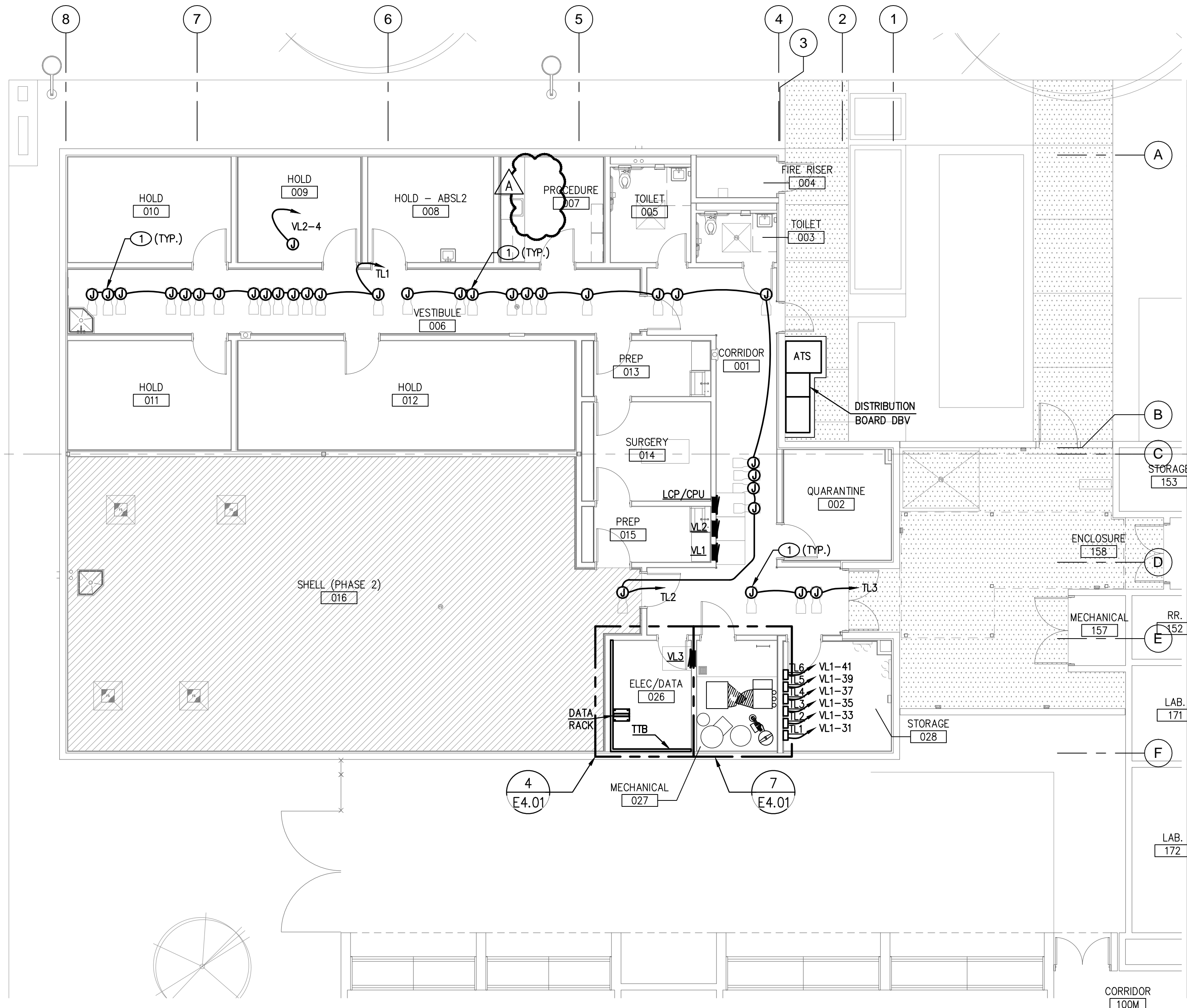


EQUIPMENT POWER PLAN - VIVARIUM PHASE 2

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

SUPPLY AIR SYSTEM

3

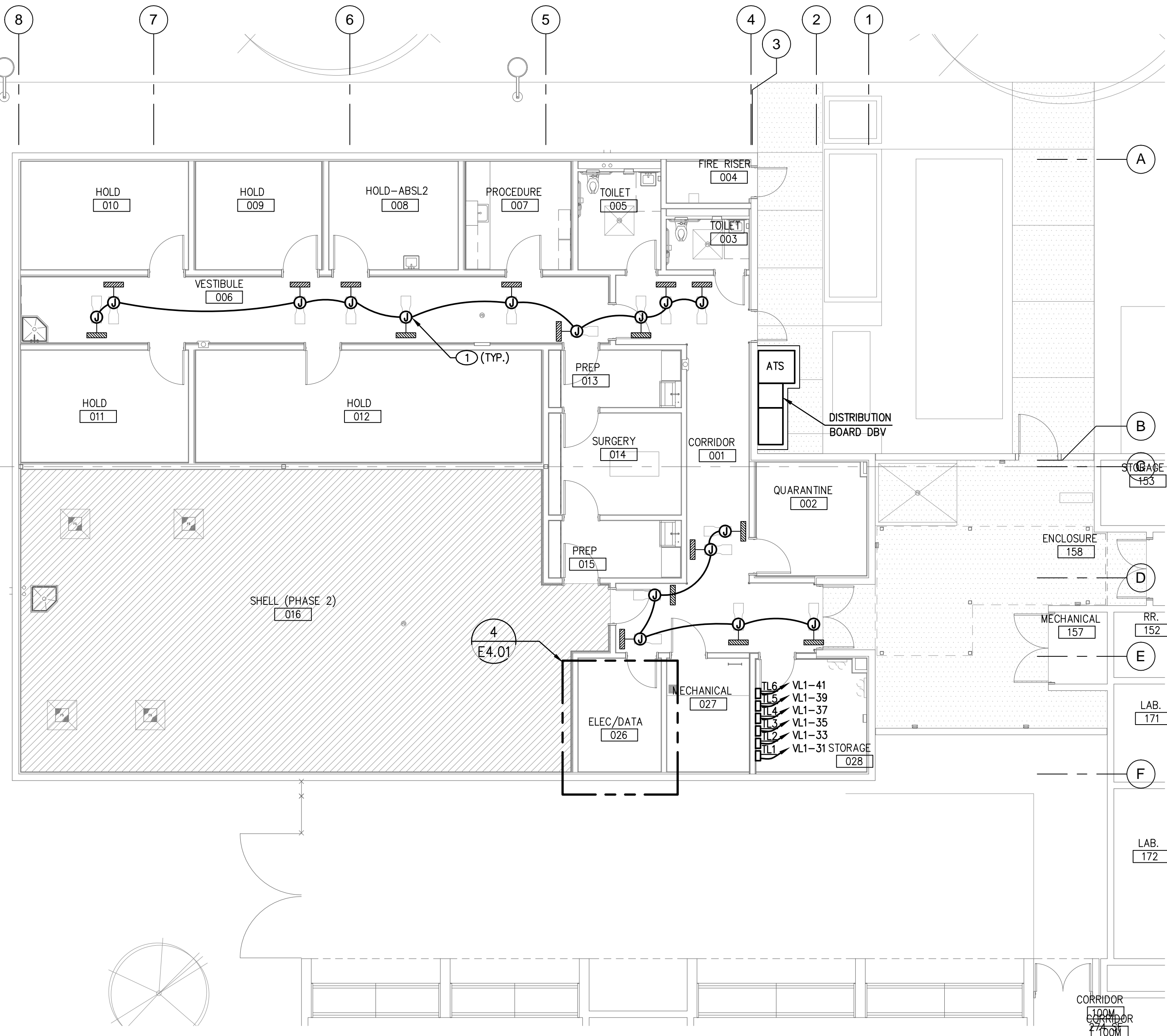


EQUIPMENT POWER PLAN - VIVARIUM PHASE 1

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

EXHAUST AIR SYSTEM

2



EQUIPMENT POWER PLAN - VIVARIUM PHASE 1

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

SUPPLY AIR SYSTEM

1

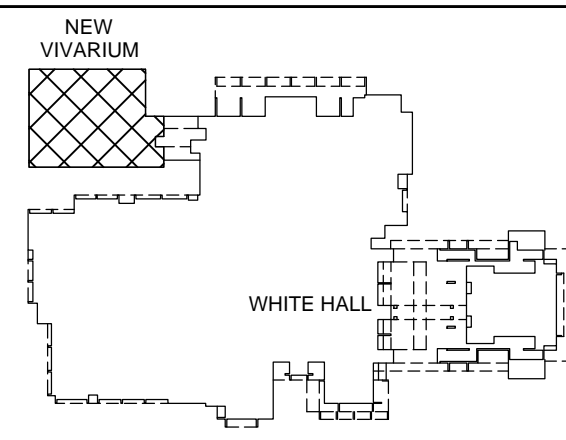
GENERAL NOTES

- INFORMATION SHOWN IS BASED ON LIMITED FIELD SURVEYS. CONTRACTOR SHALL VERIFY ALL INFORMATION PRIOR TO BID WHICH MAY RESULT IN EXTRA WORK AND BRING SUCH ITEMS TO THE ATTENTION OF THE OWNER AT LEAST TEN DAYS PRIOR TO BID OPENING FOR RESOLUTION. SUBMITTAL OF BIDS FOR THE WORK IDENTIFIED IN THE CONSTRUCTION CONTRACT DOCUMENTS SHALL INDICATE TO THE OWNER THAT:
 - YOUR DETAILED EXAMINATION OF THE DRAWINGS AND SPECIFICATIONS HAS REVEALED NO AMBIGUITIES WHICH NEED CLARIFICATION,
 - ONLY AUTHORIZED DATA HAVE BEEN USED TO ARRIVE AT YOUR BID FIGURE, AND
 - THE EXPERIENCE AND CAPABILITIES OF YOUR FIRM, YOUR WORKERS, AND SUBCONTRACTORS ARE ADEQUATE AND APPROPRIATE TO PERFORM THE CONSTRUCTION OF THIS TYPE OF PROJECT.
- ALL CONDUIT PENETRATIONS AND FIXTURES SHALL BE VERMIN PROOF.
- VERIFY ALL DEVICE MOUNTING HEIGHTS PRIOR TO ROUGHING IN. IN HOLDING, QUARANTINE AND BEHAVIOR ROOMS, MOUNT 120V, 20A, QUADRUPLUX OUTLETS AT WALLS 6'-0" ABOVE FLOOR, UNLESS NOTED OTHERWISE.

KEYNOTES

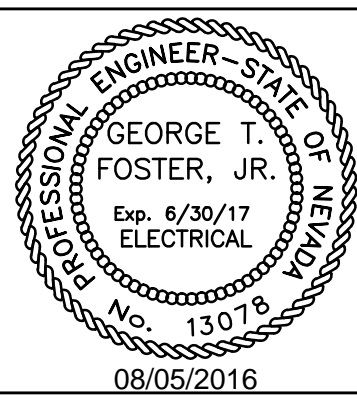
- PROVIDE 24V JUNCTION BOXES FOR CONTROL VALVE. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION AND REQUIREMENTS PRIOR TO ROUGH-IN. REFER TO TRANSFORMER SCHEDULE E6.02 FOR ADDITIONAL INFORMATION.

KEYPLAN



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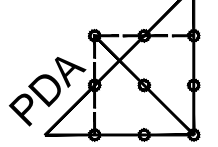
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Project

UNLV VIVARIUM

Job No: 15-061

Owner

UNIVERSITY OF NEVADA, LAS VEGAS

PERMIT SET

REVISIONS		DESCRIPTION
REV	DATE	
A	08/05/16	ADDENDUM A

Sheet Title

PHASED EQUIPMENT POWER PLANS - VIVARIUM

Date: 06/17/2016

Sheet No:

E2.02

FIRE ALARM REQUIREMENTS

PROVIDE A COMPLETE NEW ADDRESSIBLE FIRE ALARM SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS AND AS FOLLOWS:

THE INTENT OF THE PLANS AND SPECIFICATIONS IS TO ESTABLISH CRITERIA AND QUALITY ONLY. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AS WELL AS THE INSTALLATION. THE PRICE SHALL BE FOR A COMPLETE TURN-KEY PROJECT. NO CHANGE ORDERS SHALL BE ALLOWED EXCEPT FOR BUILDING CHANGES TO THE BID DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS. THE FIRE ALARM CONTRACTOR SHALL REGARD THEM AS REFERENCE DOCUMENTS ONLY. WHEN DESIGN DOCUMENTS ARE IN CONFLICT WITH CODES, CODES SHALL GOVERN THE INSTALLATION, AND THE CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AT NO ADDITIONAL COST. HOWEVER, WHENEVER THE DESIGN CRITERIA EXCEEDS CODE REQUIREMENTS, THE DESIGN DOCUMENTS SHALL GOVERN THE INSTALLATION AND THE CONTRACTOR SHALL BID JOB ACCORDINGLY.

THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT TO COMPLETE THE FIRE ALARM SYSTEMS AS DESCRIBED HEREWITHIN AND AS HEREIN AFTER DESCRIBED READY FOR SERVICE TO THE ENTIRE SATISFACTION OF THE ARCHITECT/ENGINEER.

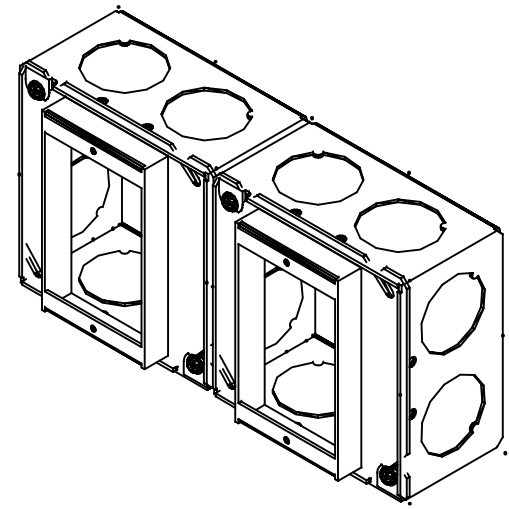
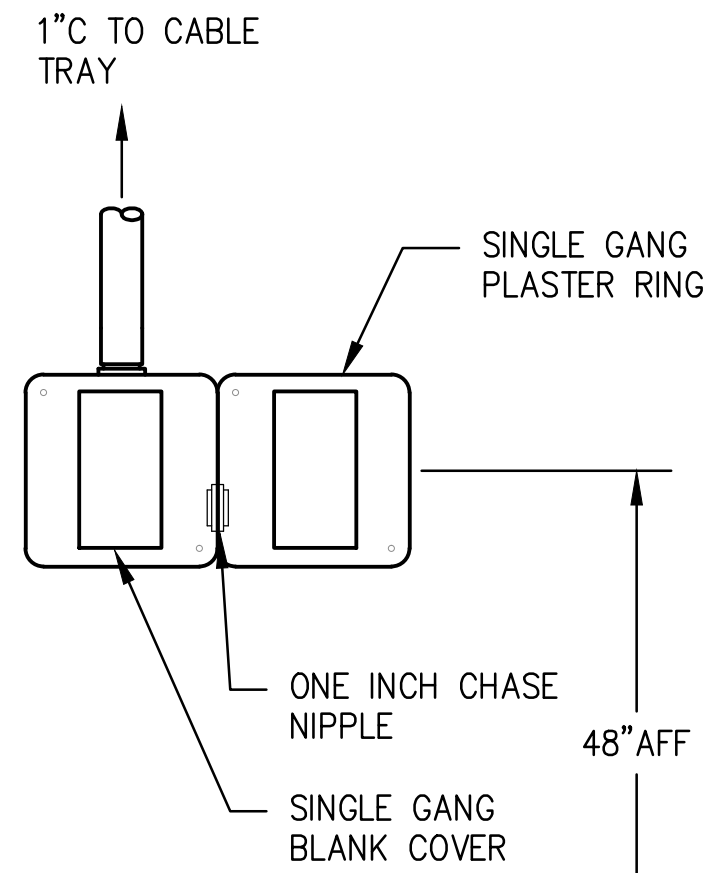
THE WORK INCLUDES, IN GENERAL, THE FOLLOWING:

- (1) ENGINEERED DRAWINGS, CALCULATIONS, AND MATERIAL SUBMITTALS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- (2) COORDINATION OF WORK IN THIS SECTION WITH ALL TRADES.
- (3) VERIFY ALL DIMENSIONS IN THE FIELD.
- (4) COMPLETE MONITORING SERVICE TO TELEPHONE BACKBOARD.
- (5) COMPLETE SYSTEM OF FIRE ALARM DEVICES (INCLUDING SMOKE DETECTORS, HEAT DETECTORS, HORNS, STROBES, PULL STATIONS, ETC.) FOR ALL AREAS AS REQUIRED BY STATE AND LOCAL FIRE MARSHALS AND INSTALLED PER NFPA GUIDELINES.
- (6) EXCAVATION, TRENCHING AND BACKFILL.
- (7) INSPECTIONS AND TESTS.
- (8) INCIDENTAL ITEMS NOT INDICATED ON THE DRAWINGS NOR MENTIONED IN THE SPECIFICATIONS THAT BELONG TO THE WORK DESCRIBED TO PROVIDE A COMPLETE SYSTEM.
- (9) GUARANTEE.

FIRE SPRINKLER CONTRACTOR SHALL FURNISH AND INSTALL TAMPER SWITCHES, FLOW INDICATORS, AND FIRE ALARM BELLS.

THE WORK OF THIS SECTION SHALL COMPLY WITH CURRENT EDITIONS OF NFPA, UNIFORM BUILDING CODE, STATE FIRE AUTHORITY (STATE OF NEVADA INDUSTRIAL INSURANCE SYSTEM), AND ALL LOCAL AND OTHER GOVERNING AGENCIES HAVING JURISDICTION.

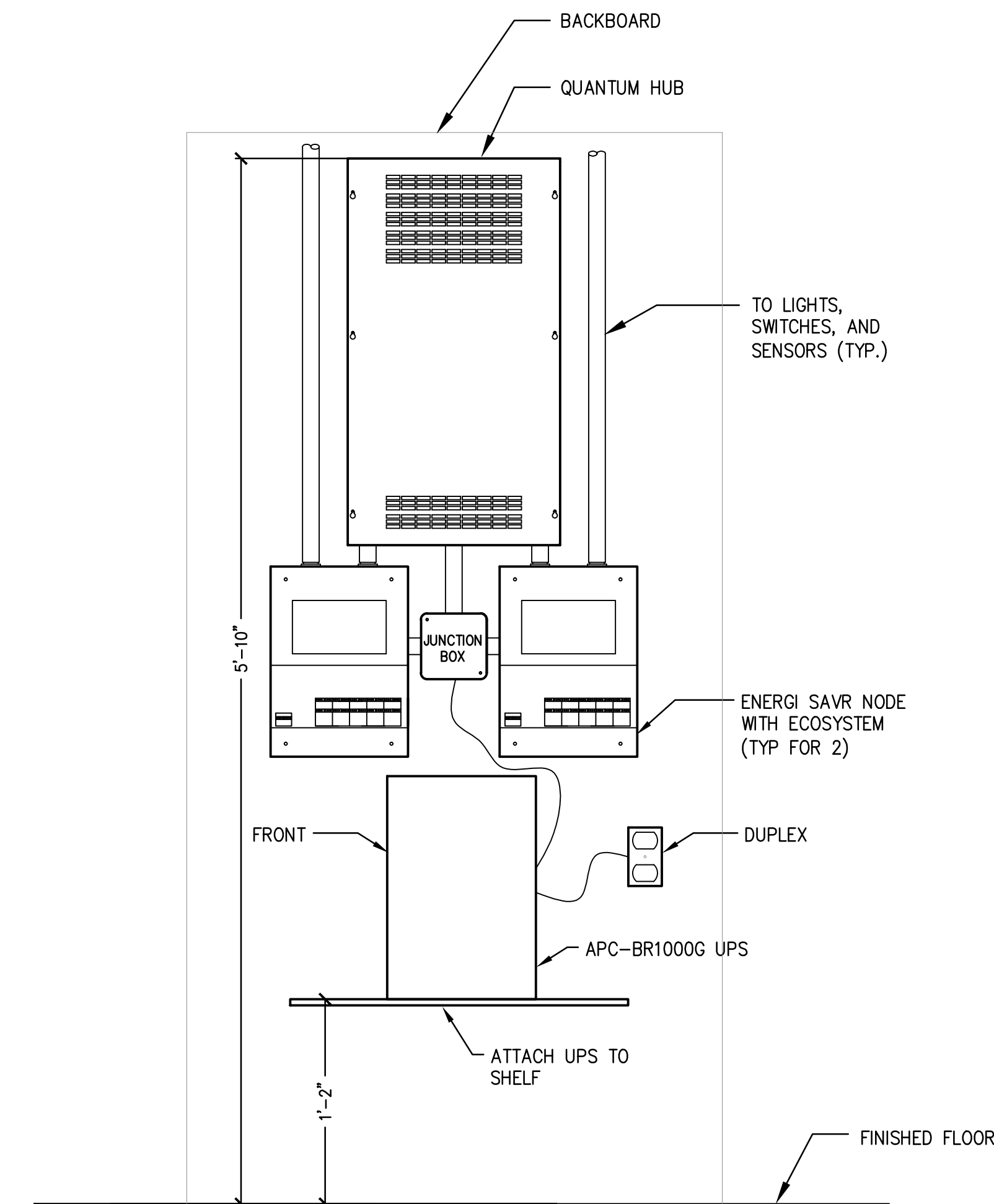
DESIGN-BUILD OF THE FIRE ALARM SYSTEM SHALL BE ACCOMPLISHED BY THE STATE LICENSED ALARM COMPANY. LAYOUT OF DEVICES SHALL BE COORDINATED WITH ARCHITECT'S PLANS. PRIOR TO SUBMITTAL OF SHOP DRAWINGS TO GOVERNING AUTHORITIES, THIS CONTRACTOR SHALL SUBMIT TO ARCHITECT/ENGINEER, FOR APPROVAL PRELIMINARY CONDUIT ROUTING AND DEVICE LAYOUTS. THIS CONTRACTOR SHALL THEN OBTAIN STAMPED APPROVALS FROM THE STATE FIRE MARSHAL'S OFFICE, LOCAL FIRE DEPARTMENT AGENCIES, AND BUILDING DEPARTMENT. AFTER ALL GOVERNING AGENCIES HAVE APPROVED THE DRAWINGS, SUBMIT TO ARCHITECT/ENGINEER, FOR FINAL APPROVAL. APPROVED DRAWINGS SHALL THEN BE ISSUED TO ALL PARTIES CONCERNED FOR CONSTRUCTION.



ISOMETRIC VIEW

SCADA DROPS (TYPICAL)

SCALE: NOT TO SCALE



LUTRON CONTROL PANEL ELEVATION

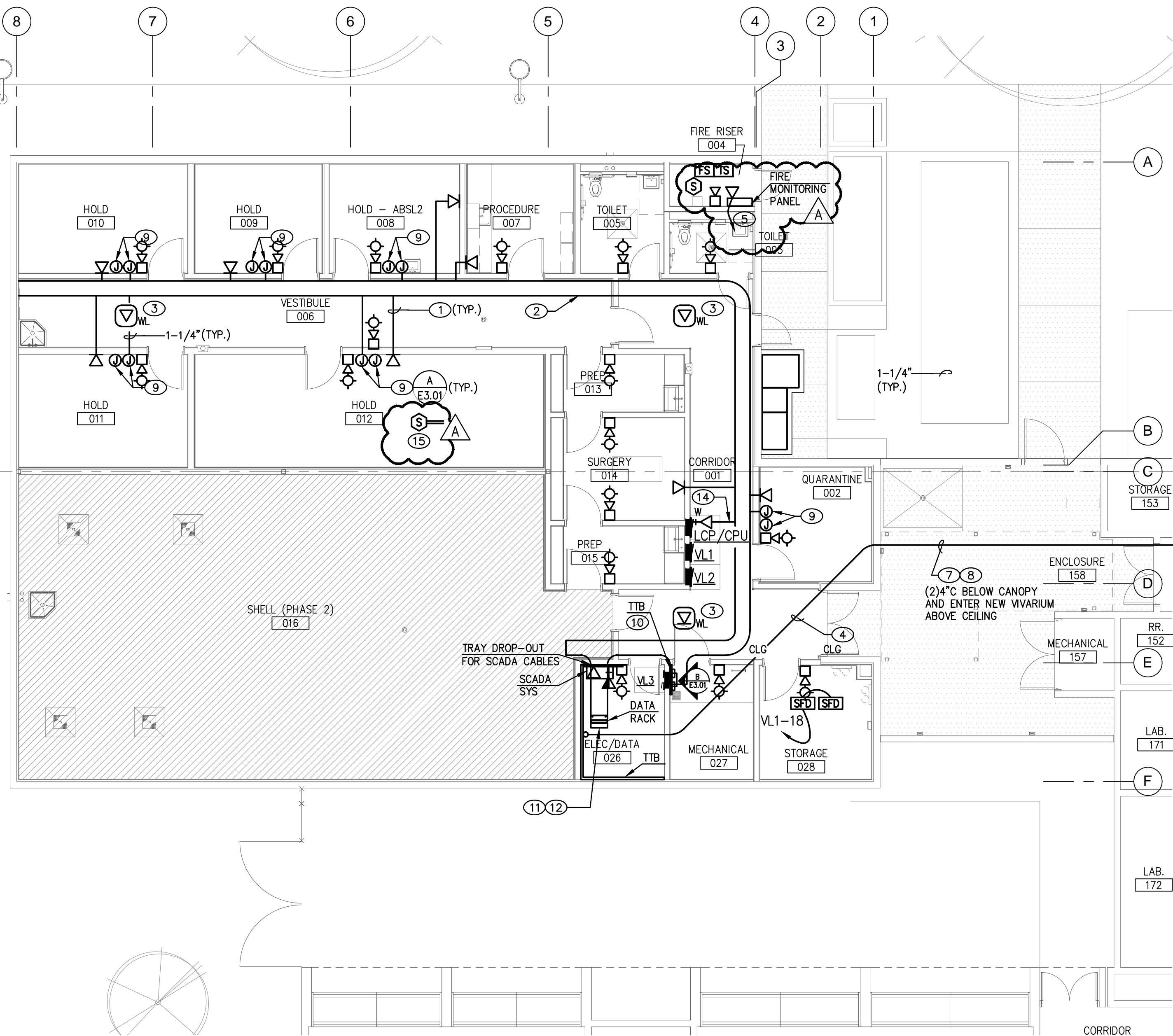
SCALE: NOT TO SCALE
REFER TO SHEET E1.02; E1.03; E1.04; E1.05 AND E4.01 FOR ADDITIONAL INFORMATION

LEGEND

- DATA WALL OUTLET 18" AFF. COORDINATE WITH OWNER'S REPRESENTATIVE.
- VOIP WALL OUTLET VERIFY EXACT MOUNTING HEIGHT WITH OWNER'S REPRESENTATIVE
- COMBINATION VOIP/ANALOG WALL OUTLET VERIFY EXACT MOUNTING HEIGHT WITH OWNER'S REPRESENTATIVE
- DATA CEILING OUTLET VERIFY EXACT MOUNTING HEIGHT WITH OWNER'S REPRESENTATIVE
- WIRELESS ACCESS POINT. VERIFY EXACT MOUNTING REQUIREMENTS AND LOCATION WITH OWNER'S REPRESENTATIVE
- CARD READER.
- CARD READER (FUTURE)
- FIRE ALARM RED STROBE AND HORN (LESS THAN 900 HZ)
- FIRE ALARM HORN (LESS THAN 900 HZ)

AUXILIARY PLAN - VIVARIUM PHASE 2

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



AUXILIARY PLAN - VIVARIUM PHASE 1

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

GENERAL NOTES

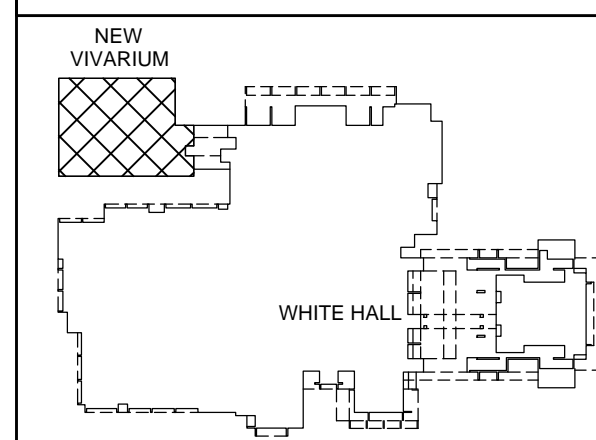
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- ALL CONDUIT PENETRATIONS AND FIXTURES SHALL BE VARMIN PROOF
- FIRE ALARM CHIME STROBE LESS THAN 900 MEGAHERTZ.
- VERIFY ALL DEVICE MOUNTING HEIGHTS PRIOR TO ROUGHING IN.
- ALL DATA OUTLET CABLING SHALL BE CAT-6A.

KEYNOTES

- 1" CAT-6A CABLE FROM OUTLET TO ROOM 026 DATA RACK. REFER TO DETAIL 2/E4.01 FOR ADDITIONAL INFORMATION.
- 18"x4" DEEP CENTER SUPPORT OPEN LADDER CABLE TRAY.
- WIRELESS ACCESS POINT (2)CAT-6A CABLES FROM EACH LOCATION TO DATA RACK IN ROOM 026.
- DO NOT ROUTE THIS CONDUIT THROUGH FIRE RATED ROOM 028.
- 3/4" CAT-6A CABLE TRAY FOR FIRE PANEL MONITORING.
- FIRE ALARM STROBES TO FLASH RED.
- PROVIDE (1) 24 STRANDS OF SINGLE-MODE FIBER FROM ROOM 026 TO WHITE HALL ROOM 181 IN ONE OF TWO 4" CONDUITS.
- PROVIDE (1) 25 PAIR TELEPHONE CABLE FROM ROOM 026 TO WHITE HALL ROOM 181 IN ONE OF TWO 4" CONDUITS.
- IN EACH BEHAVIOR, HOLDING AND QUARANTINE ROOM, ALONG THE WALL ADJACENT TO THE CORRIDOR, PROVIDE (1) 1" CONDUIT FROM TWO INDIVIDUAL 4-S DEEP BOXES (WITH SINGLE GANG RINGS SEPARATED BY 2 INCHES), 48" AFF, UP TO CABLE TRAY FOR SCADA SYSTEM. SEE DETAIL-A/E3.01.
- 3"x8"x3/4" FIRE RATED BACKBOARD.
- DIV. 16 CONTRACTOR SHALL INSTALL CAT 6A CABLE BETWEEN THE EV VALVE ON ROOF DOWN INTO DATA ROOM. THE CAT 6A CABLE INSTALLATION FOR THE ENERGY VALVE CONTROL MODULE SHALL BE REVIEWED AND APPROVED (CERTIFIED) BY THE UNLV OFFICE OF INFORMATION TECHNOLOGY PRIOR TO CONNECTION TO THE DATA NETWORK.
- PROVIDE A 750VA RACK-MOUNTED UPS FOR JACE EQUIPMENT.
- PROVIDE A COMPLETE CODE COMPLIANT DESIGN/BUILD FIRE ALARM SYSTEM THROUGHOUT THE ENTIRE BUILDING. CONNECT ALARM, TROUBLE, AND SUPERVISORY FORM-C CONTACTS FROM THE FACP TO THE BAS/JACE FOR CAMPUS BAS MONITORING.
- ROUTE ONE CAT-6A TO LUTRON CONTROL PANEL IN ROOM 027.
- VERIFY DUCT SMOKE DETECTOR LOCATION.

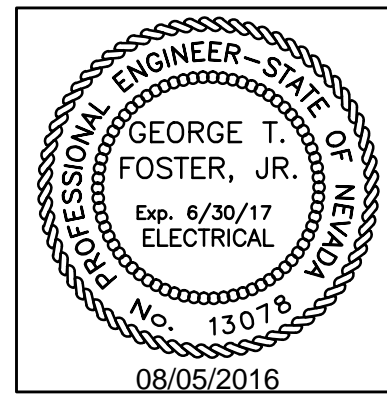
NOTE:
LOW VOLTAGE INSTALLATION SHALL MEET UNLV CAMPUS WIRING STANDARDS DATED AUGUST 26, 2015

KEYPLAN



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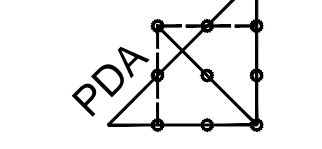
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UNLV VIVARIUM

4505 SOUTH
MARYLAND PARKWAY
LAS VEGAS, NV 89154

Job No: 15-061

Owner

UNIVERSITY OF
NEVADA, LAS VEGAS

PERMIT SET

REVISIONS		
REV	DATE	DESCRIPTION
A	08/05/16	ADDENDUM A

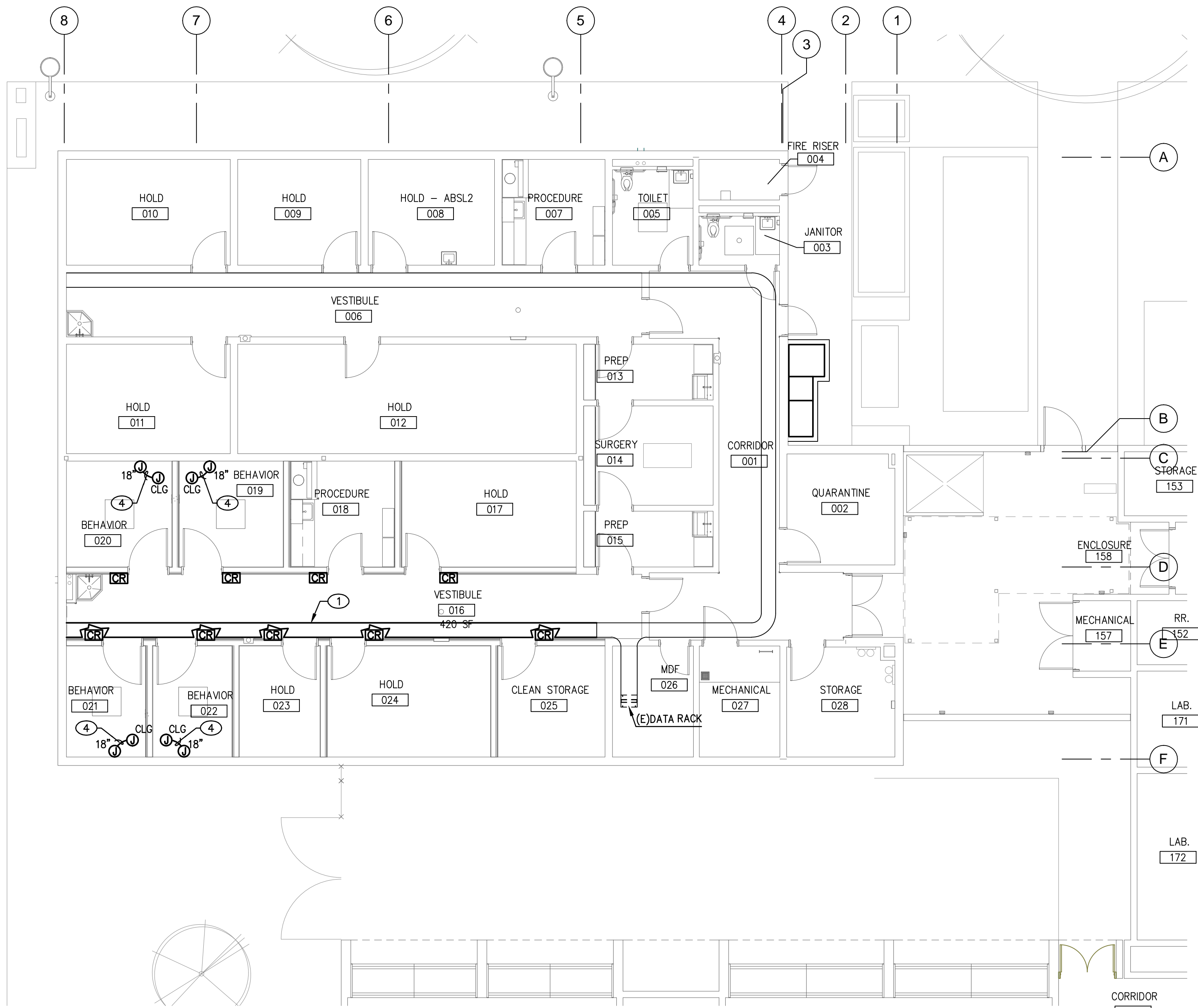
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PHASED AUXILIARY
PLANS - VIVARIUM

Date: 06/17/2016

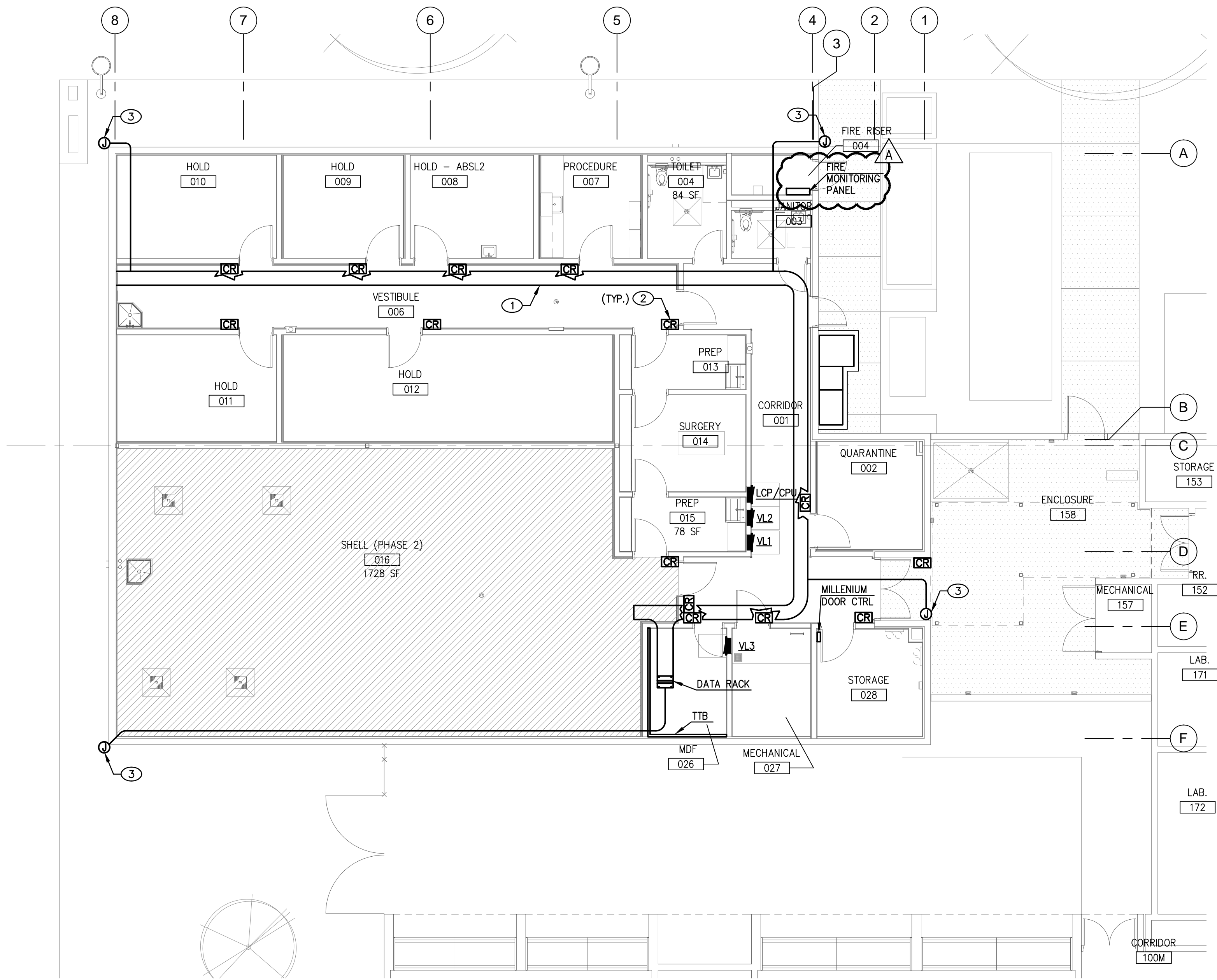
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E3.01



SECURITY PLAN - VIVARIUM PHASE 2

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

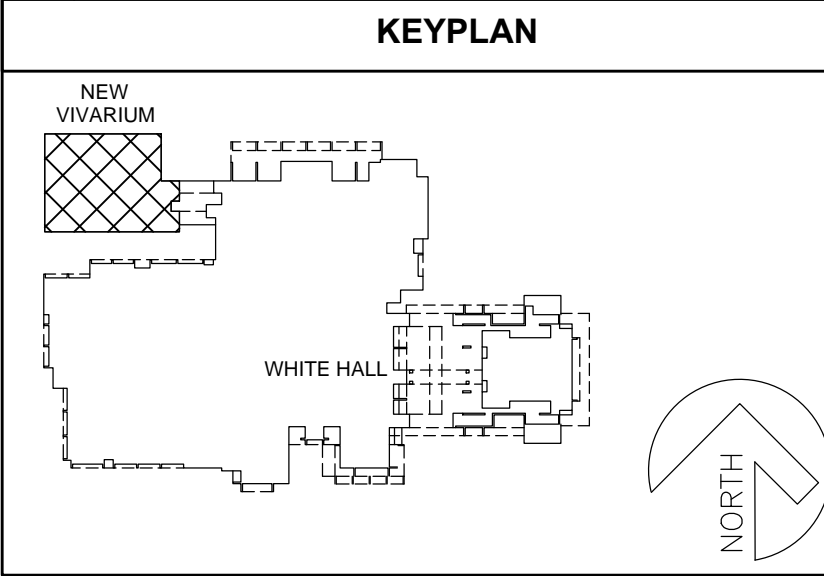


SECURITY PLAN - VIVARIUM PHASE 1

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

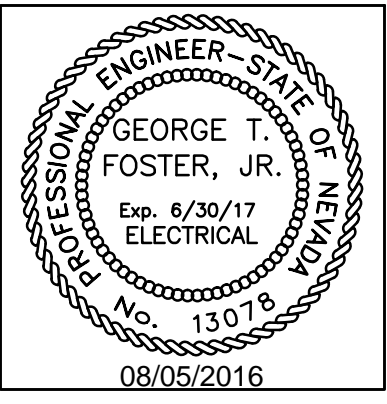
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 - ALL CONDUIT PENETRATIONS AND FIXTURES SHALL BE VARMIN PROOF
 - FIRE ALARM CHIME STROBE LESS THAN 900 MEGAHERTZ.
 - VERIFY ALL DEVICE MOUNTING HEIGHTS PRIOR TO ROUGHING IN.
 - ALL DATA OUTLET CABLING SHALL BE CAT-6A.

- KEYNOTES**
- 18"x4" DEEP CENTER SUPPORT OPEN LADDER CABLE TRAY.
 - PROXIMITY BQ CARD READERS AT ALL INTERIOR DOORS (EXCLUDING RESTROOMS). ALL BUILDING ENTRANCES SHALL HAVE CARD READERS PER UNLV SPECIFICATIONS AND BUILDING CODE REQUIREMENTS. VERIFY WIRING REQUIREMENTS, EXACT LOCATIONS AND MOUNTING HEIGHTS WITH LOCK SHOP. DOOR LATCH WILL CLICK AND CARD READER BEEPS.
 - CAMERA MOUNT AT 15 FEET AFF. PROVIDE 2"C W/(2)CAT-6A TO ROOM 026.
 - IN CEILING DATA JUNCTION BOXES SHALL BE 4S DEEP OR 5S AS A MINIMUM FOR PROPRIETARY VIDEO MONITORING. 1-1/2"C FROM CEILING TO 4S DEEP OR 5S AS A MINIMUM JUNCTION BOX ON WALL 18" AFF WITHIN 3 FEET OF DATA DROP.



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**4505 SOUTH MARYLAND PARKWAY
LAS VEGAS, NV 89154**

Job No: 15-061
Owner
UNIVERSITY OF NEVADA, LAS VEGAS

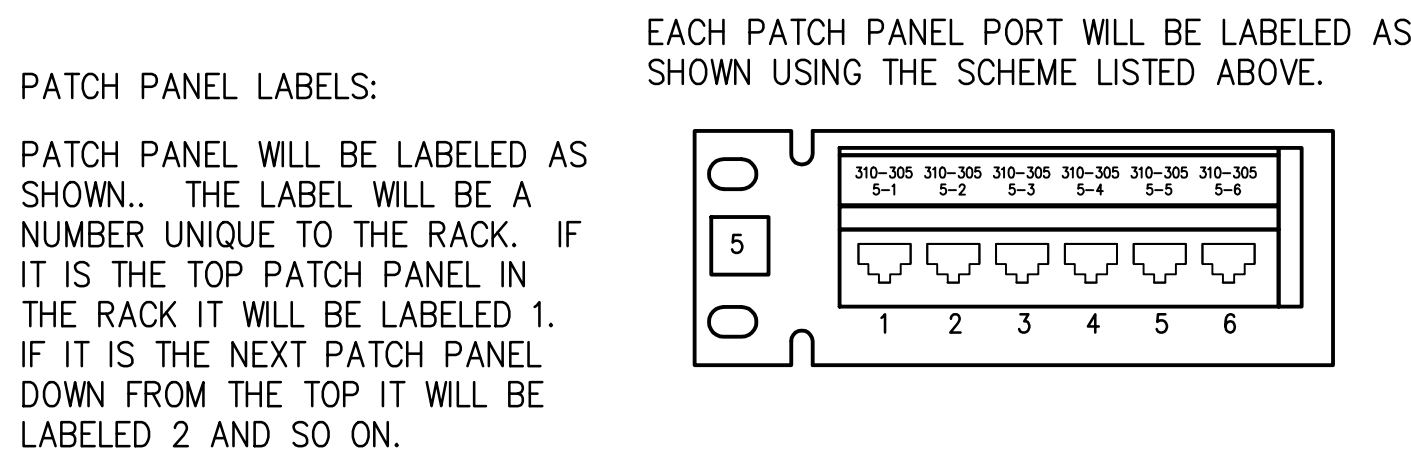
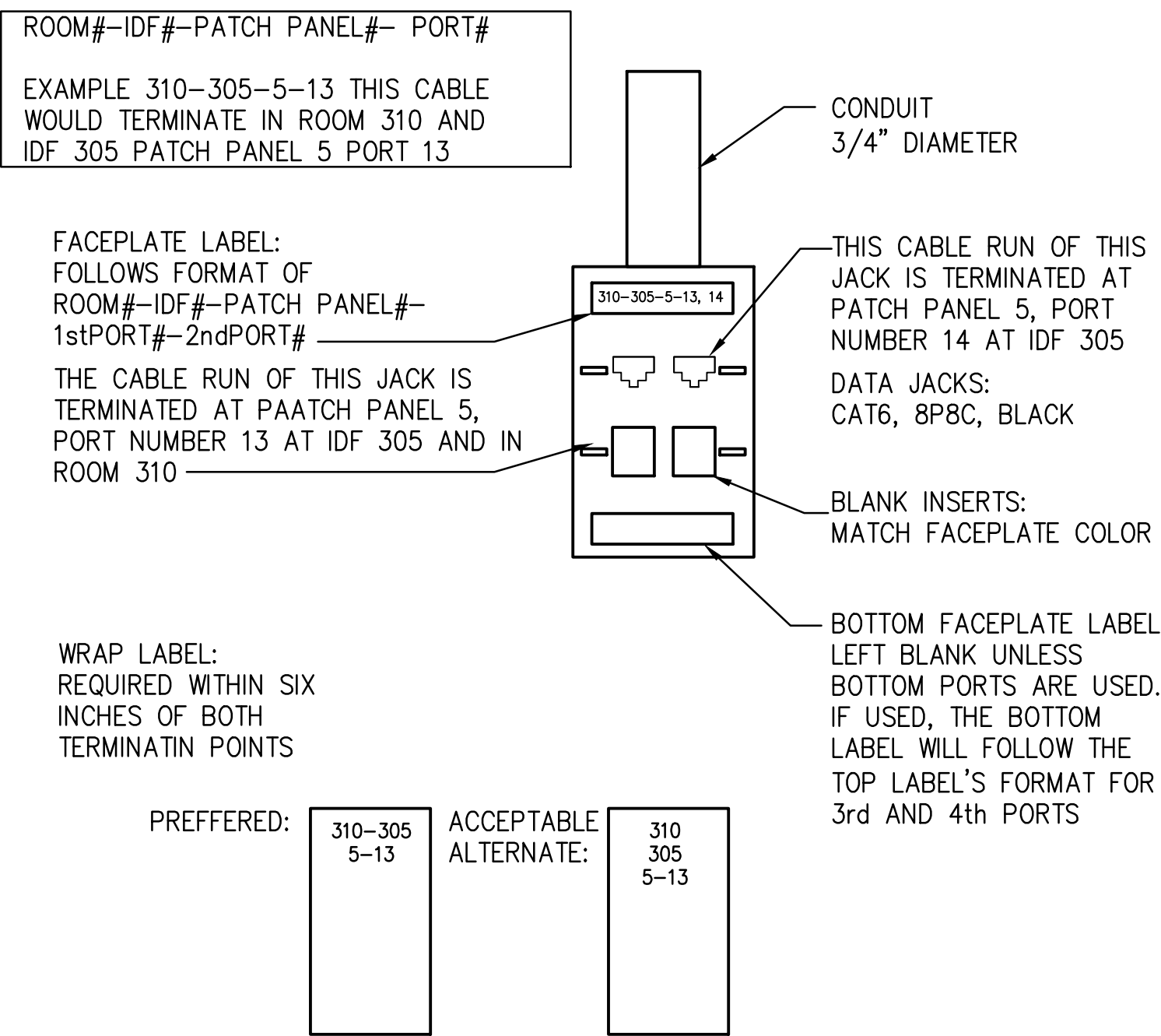
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A	08/05/16 ADDENDUM A

Sheet Title
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Date: 06/17/2016
Sheet No:

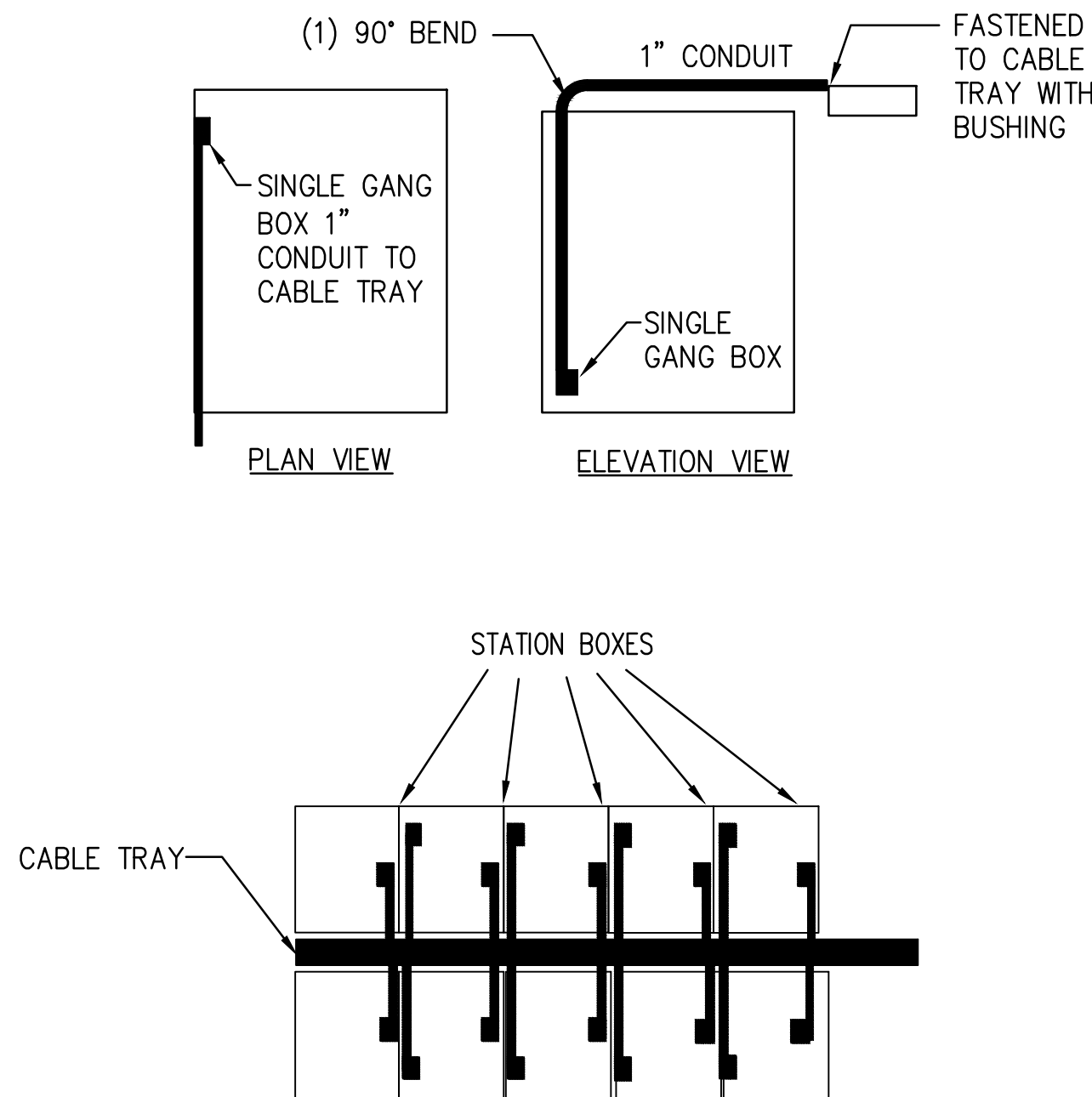
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STANDARD LABEL SCHEME

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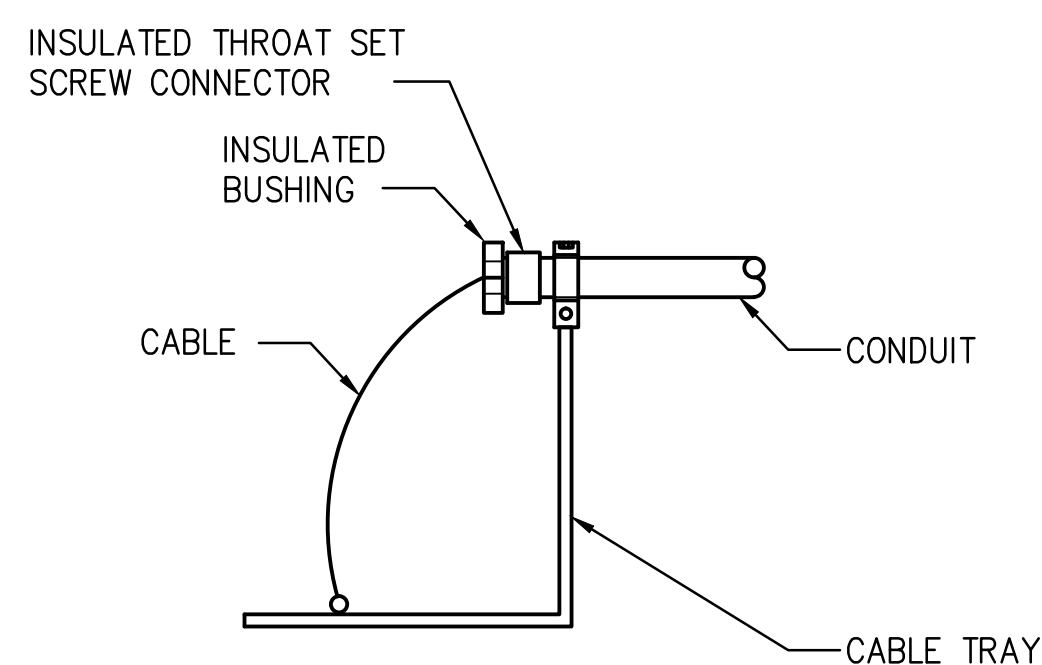
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STANDARD CONDUIT ROUTING

SCALE: NOT TO SCALE

2



DETAIL-A

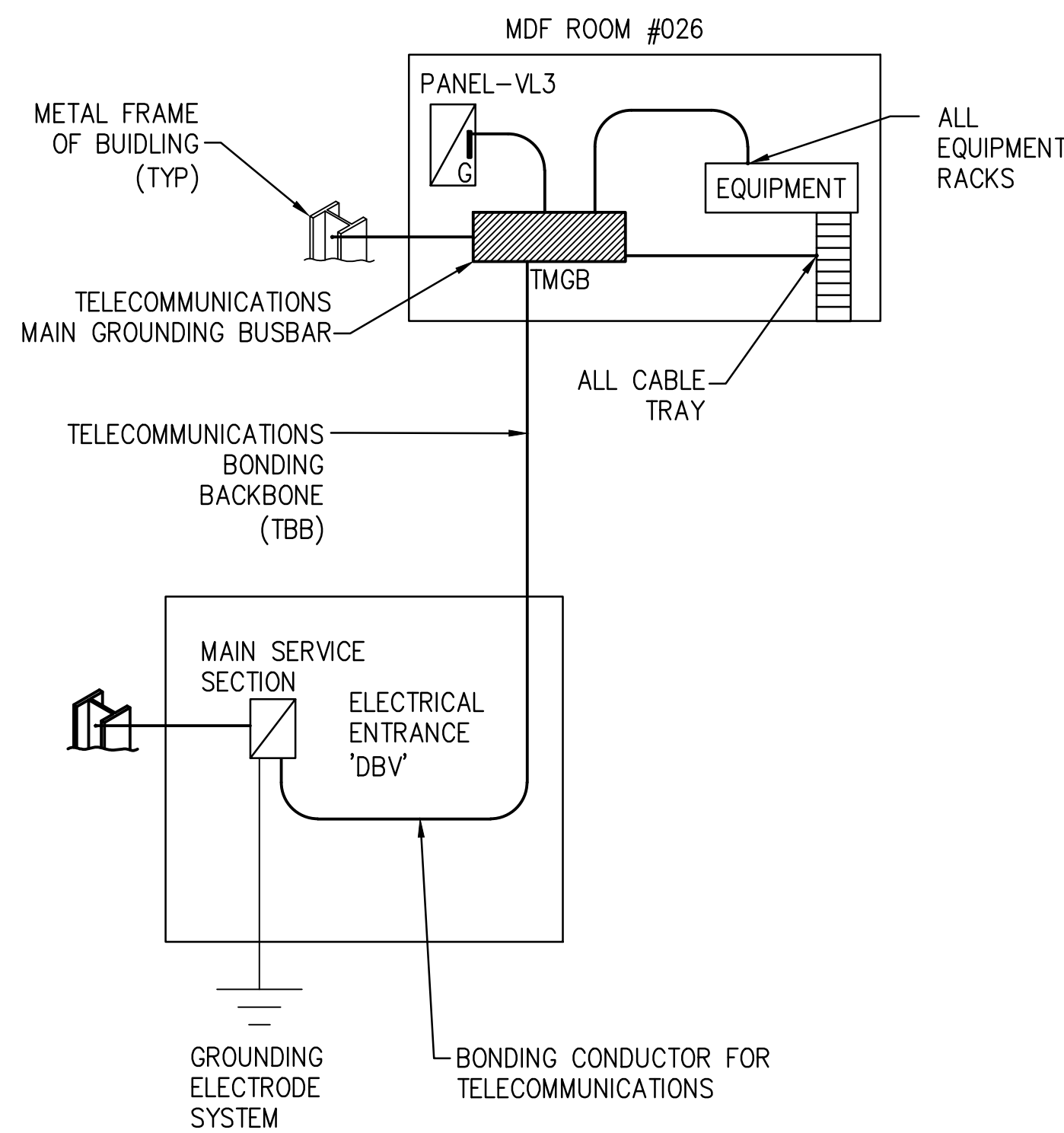
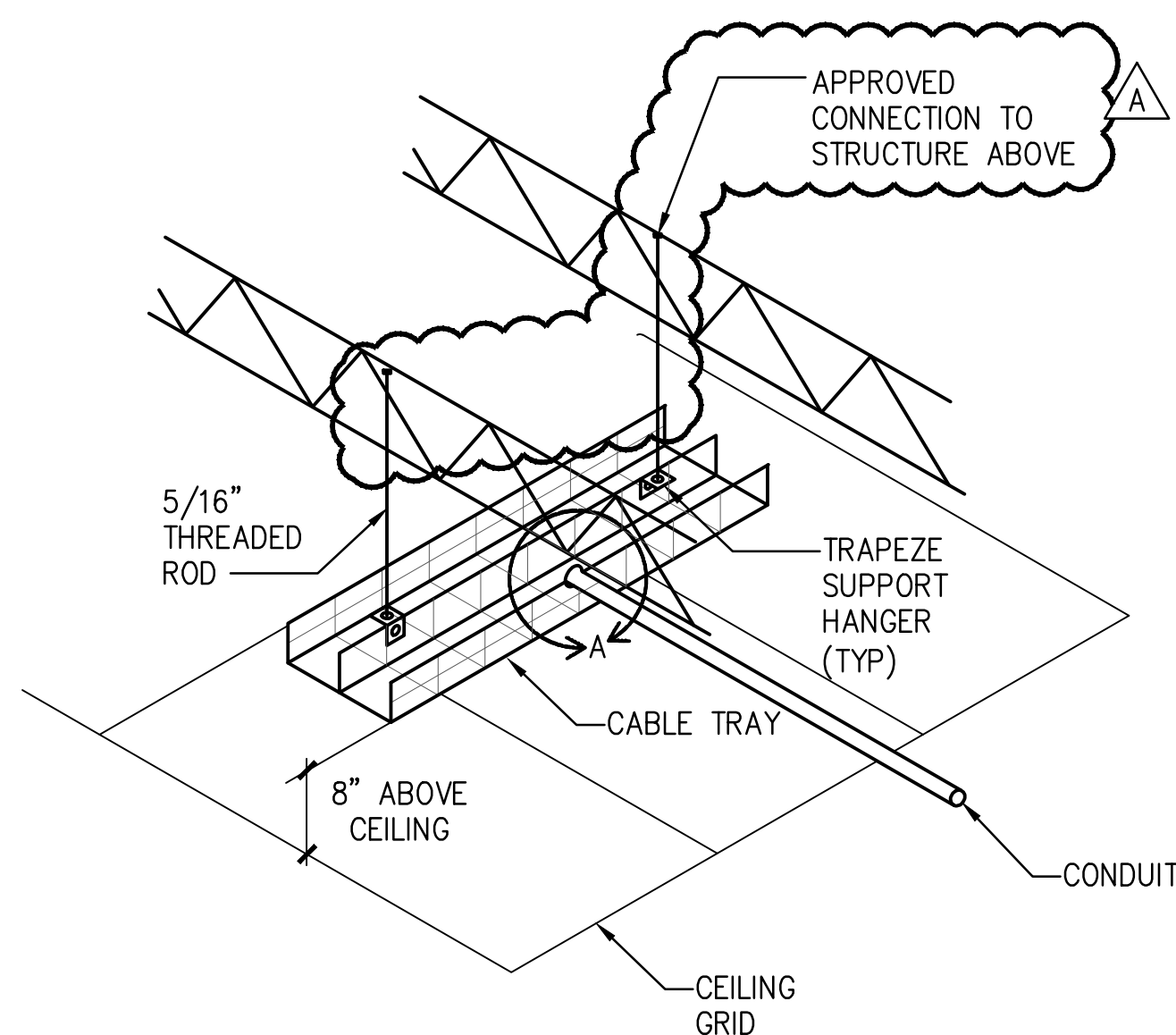
TYPICAL CONDUIT CONNECTION @ CABLE TRAY

CABLE TRAY DETAIL

SCALE: NOT TO SCALE

REFERENCE E3.01

1

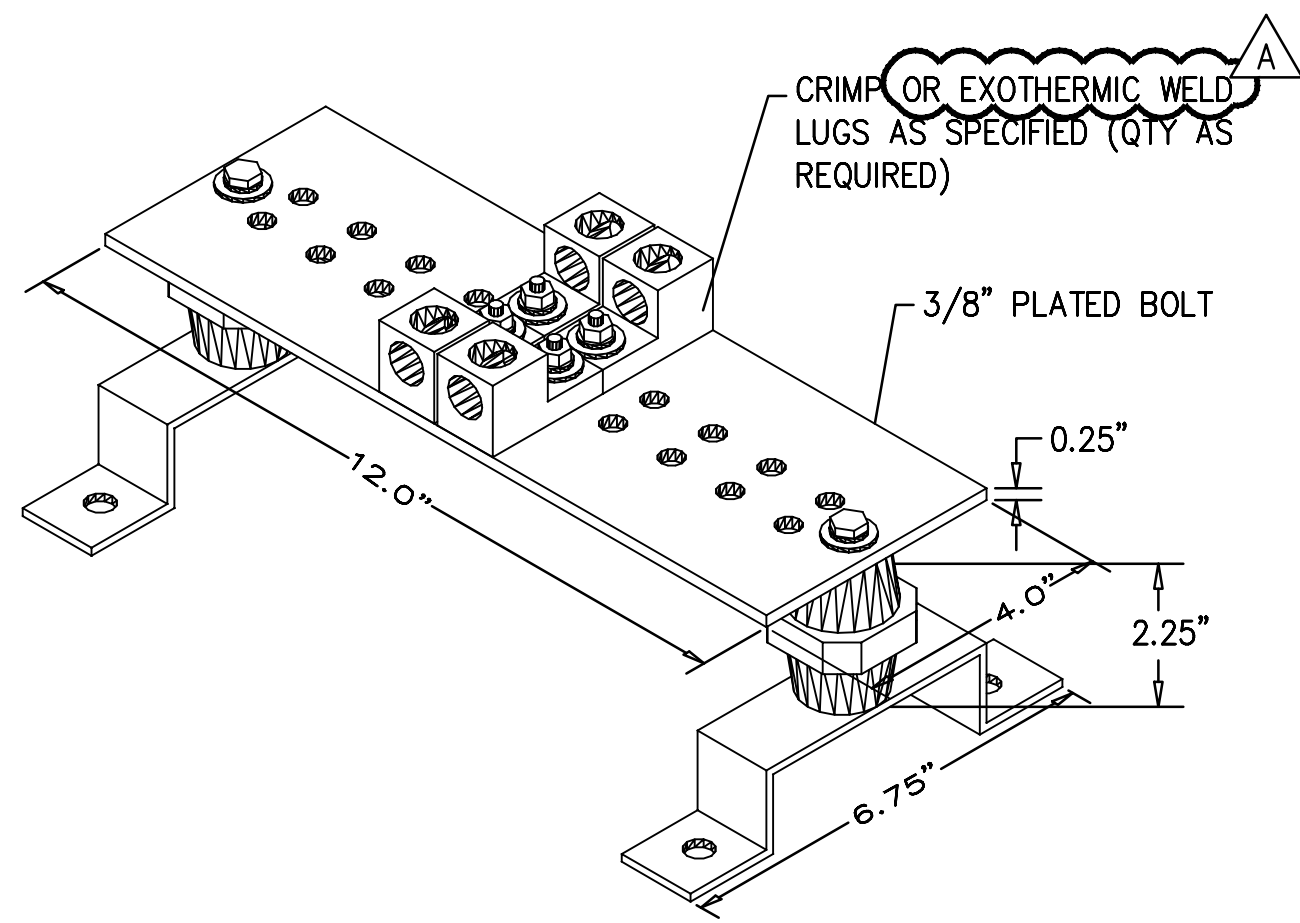


LOW VOLTAGE GROUNDING DETAIL

SCALE: NOT TO SCALE

REFERENCE E3.01

6

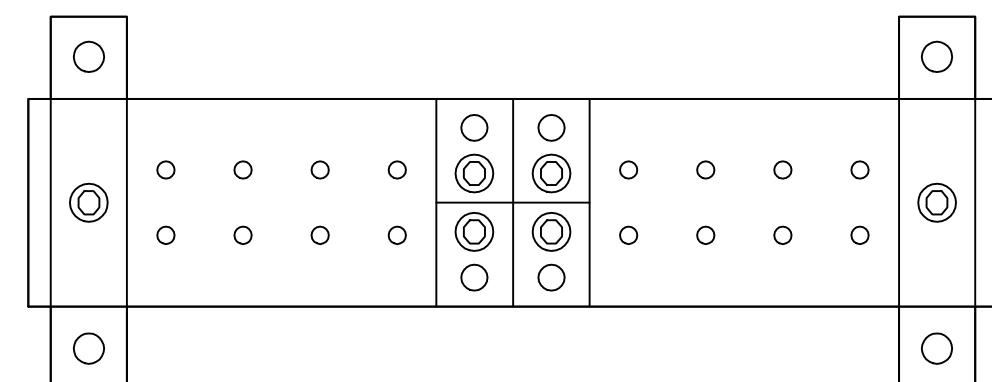


TMGB AND TGB DETAIL

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REFERENCE E3.01

5



KEY NOTES

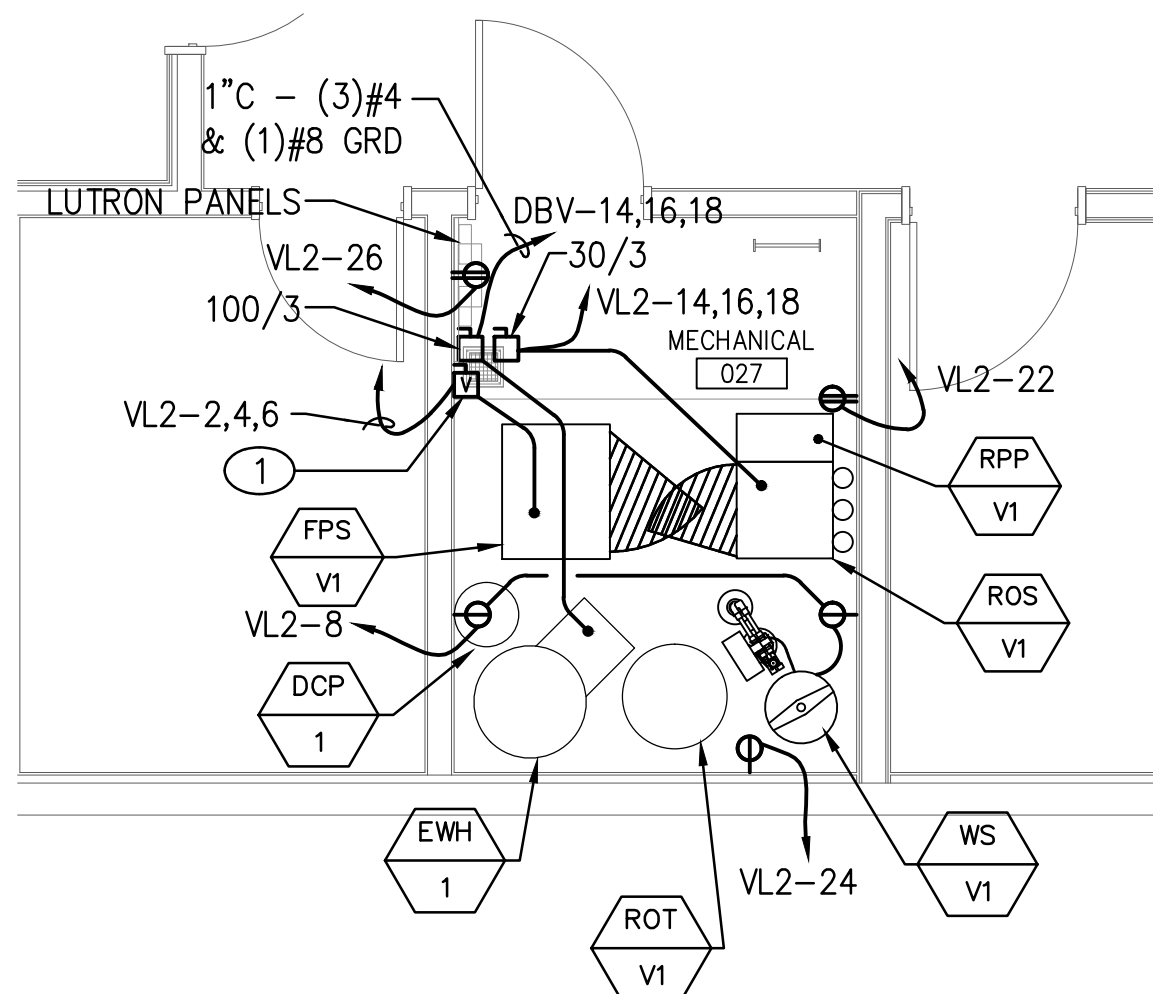
- REFER TO DETAIL 5/E4.01 FOR ADDITIONAL INFORMATION.
- THESE OUTLETS SHALL BE ORANGE COLOR AND LOCATED WITHIN 4'-0" OF THE REAR OF THE RACKS. VERIFY EXACT LOCATION AND REQUIREMENTS WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN. ONE CIRCUIT PER RECEPTACLE, DO NOT SHARE NEUTRAL.
- BACKBOARDS SHALL BE PLYWOOD 3/4"x4"x8' SHEETS, GRADE A, TREATED ON ONE SIDE WITH FIRE RESISTANT PAINT OR MATERIAL, INSTALLED WITH FINISHED SIDE EXPOSED.

ENLARGED ELEC/DATA RM ELECTRICAL PLAN

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

REFERENCE E2.01

4



KEY NOTES

- VFD FURNISHED BY MECHANICAL CONTRACTOR, CONNECTIONS BY ELECTRICAL CONTRACTOR.

ENLARGED MECH RM ELECTRICAL PLAN

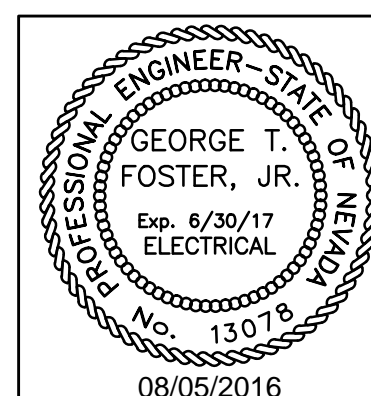
SCALE: 1/4" = 1'-0"

REFERENCE E2.01

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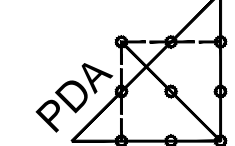
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UNLV VIVARIUM

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LAS VEGAS, NV 89154

Job No: 15-061

Owner

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REV	DATE	
A	08/05/16	ADDENDUM A

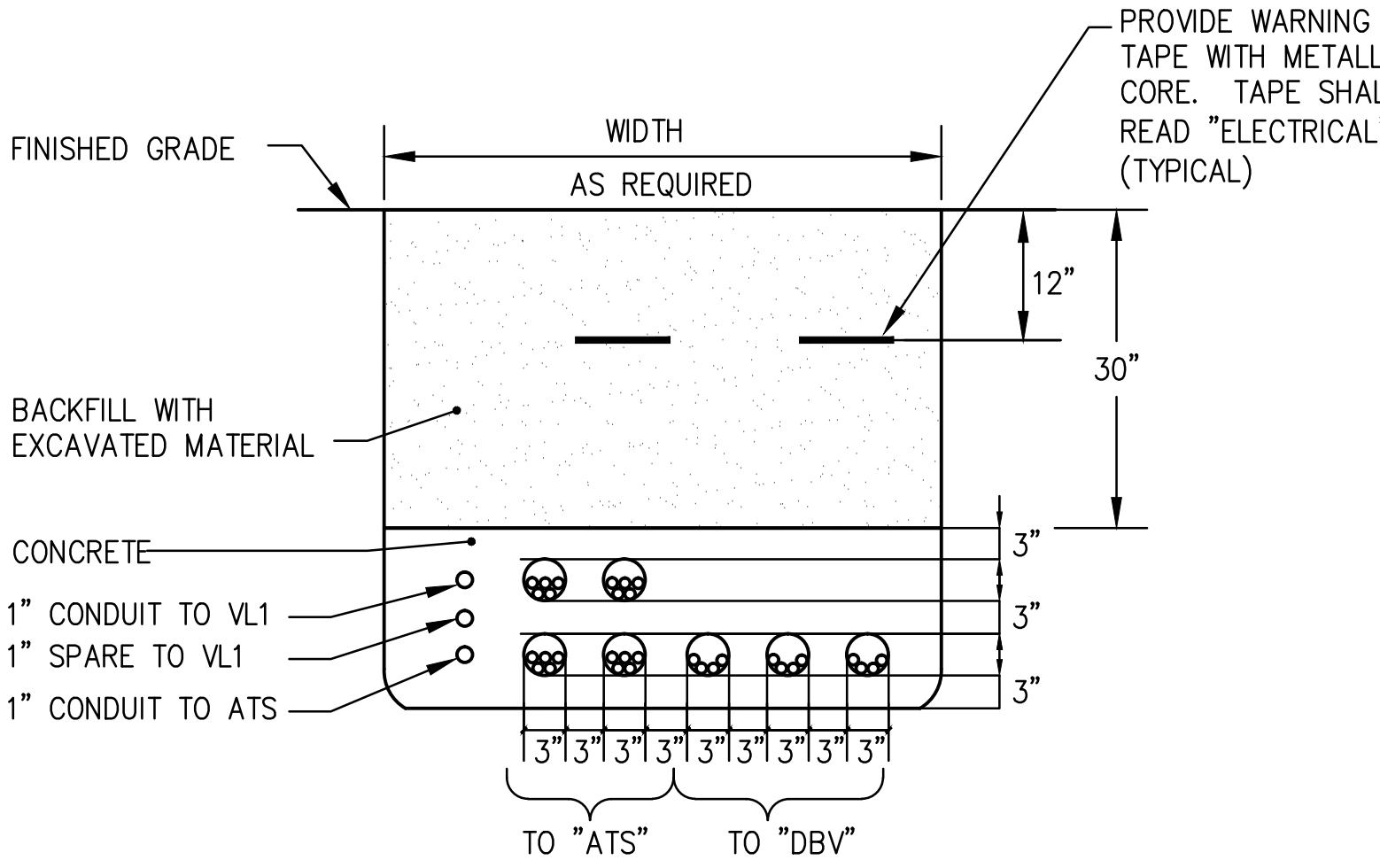
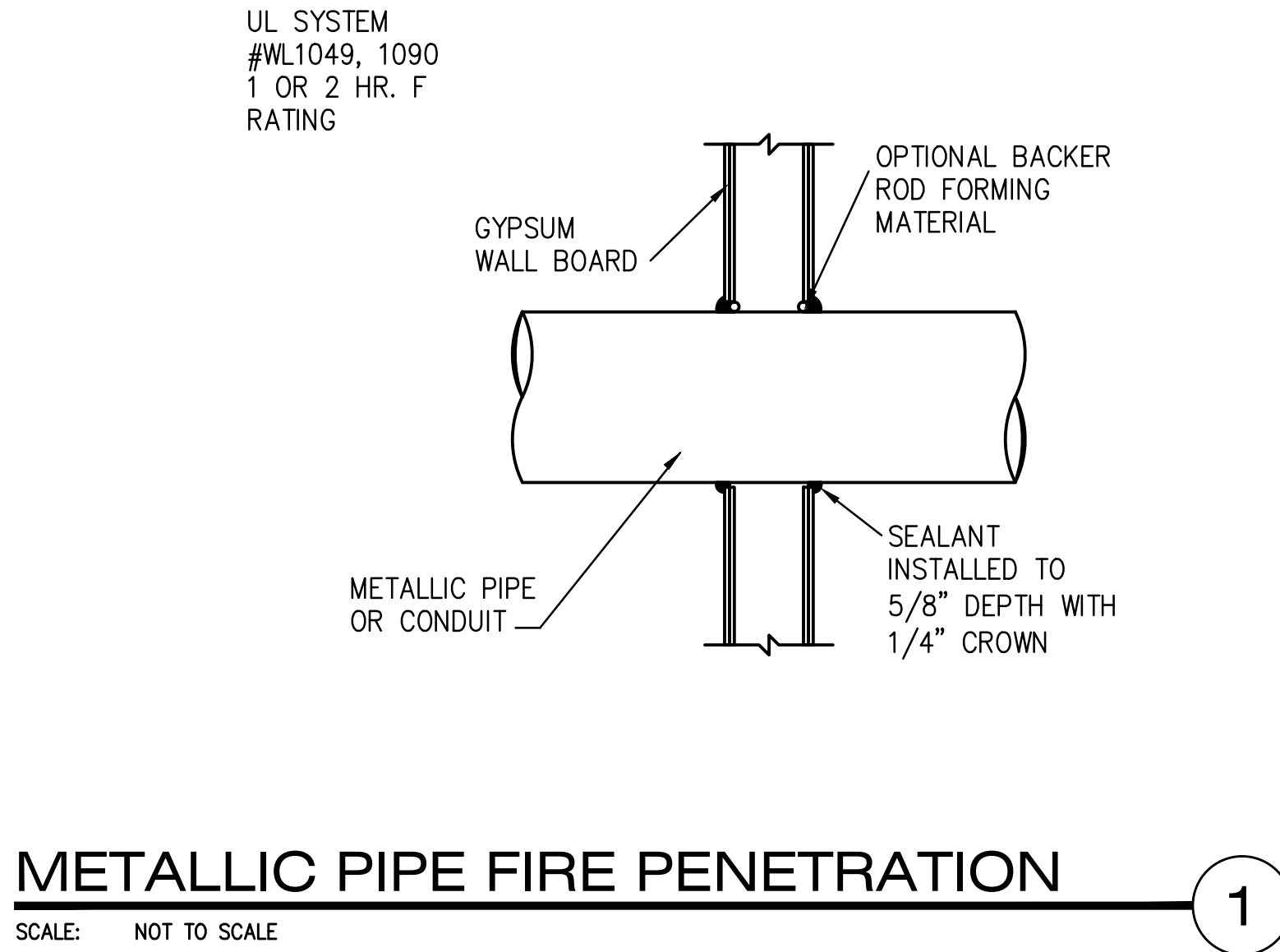
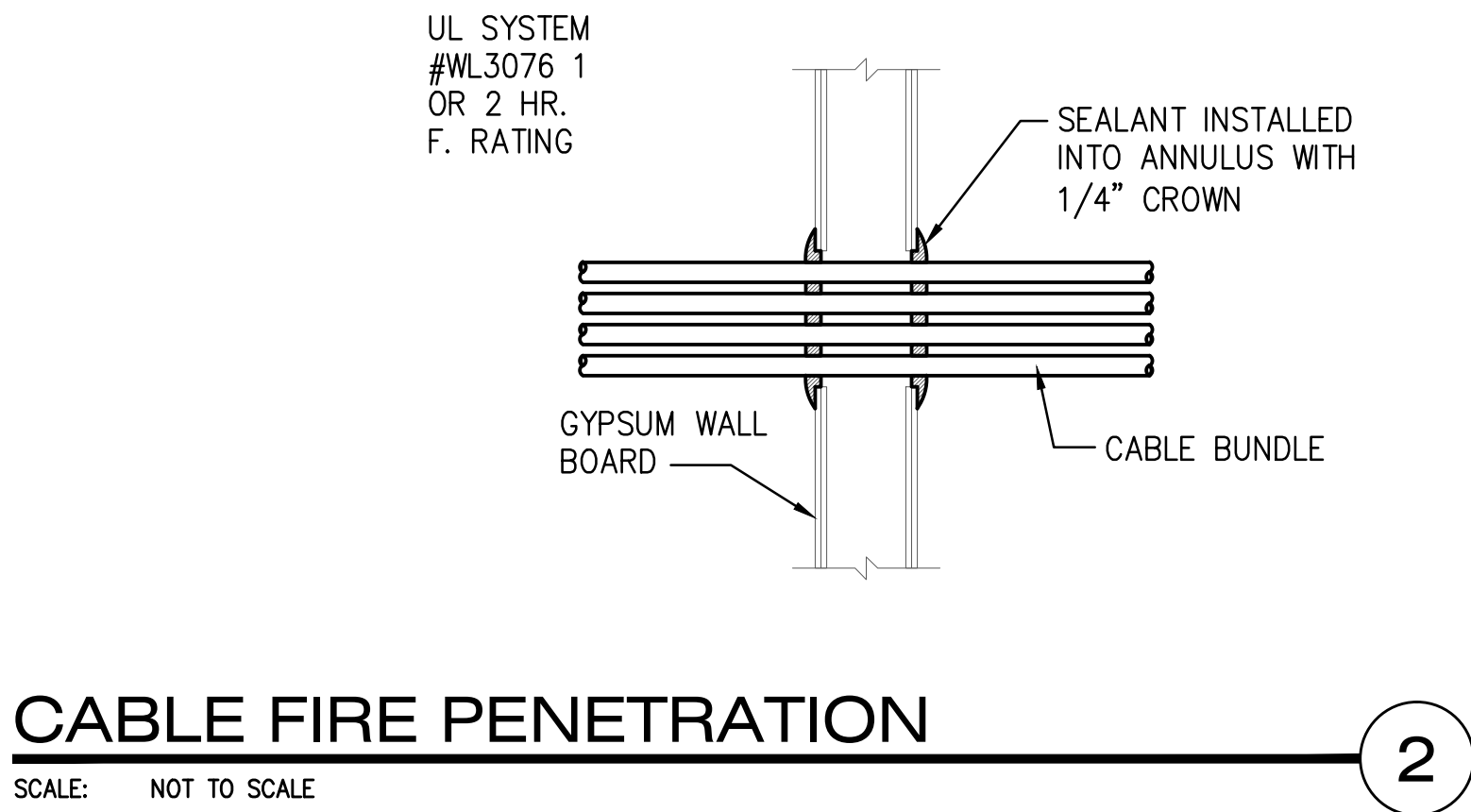
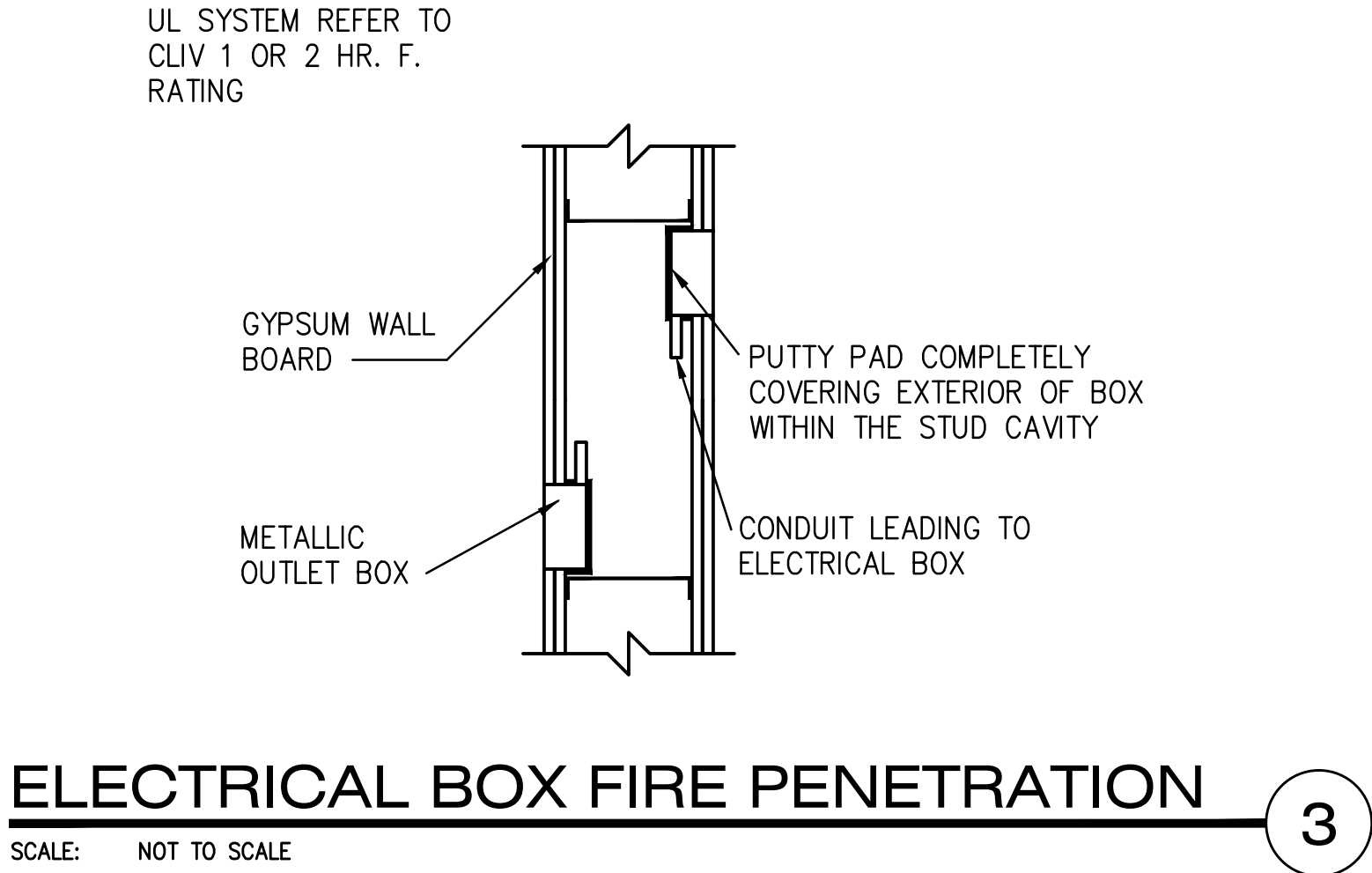
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DETAILS

Date: 06/17/2016

Sheet No:

E4.01

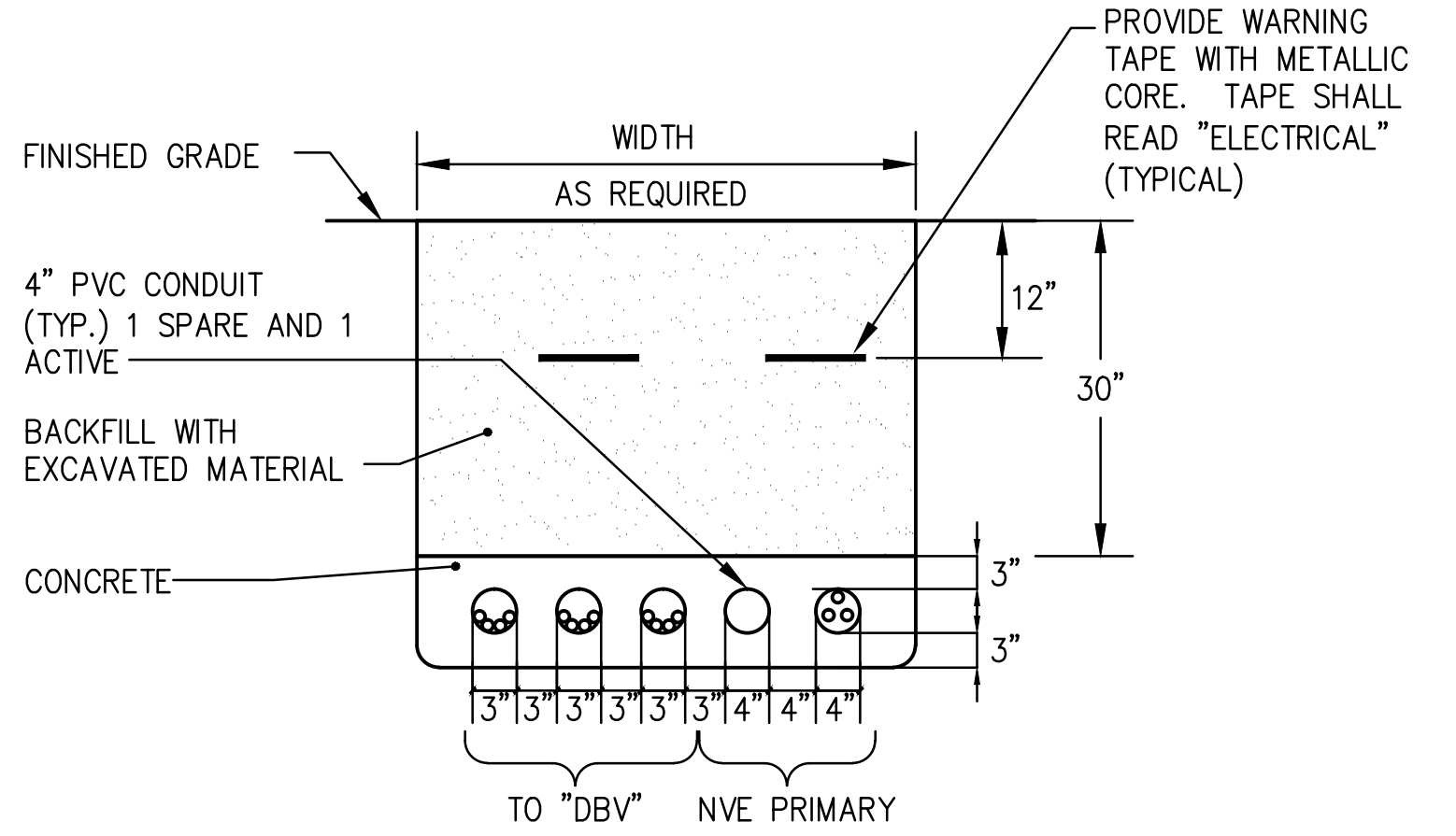


DUCTBANK FEEDER SECTION B

SCALE: NOT TO SCALE

REFERENCE SHEET ES1.01

B



DUCTBANK FEEDER SECTION A

SCALE: NOT TO SCALE

REFERENCE SHEET ES1.01

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PROFESSIONAL ENGINEER - STATE OF NEVADA
GEORGE T. FOSTER, JR.
Exp. 8/30/17
ELECTRICAL
No. 13075
08/05/2016

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#16001

PLEASE RECYCLE

Project

UNLV VIVARIUM

**4505 SOUTH MARYLAND PARKWAY
LAS VEGAS, NV 89154**

Job No: 15-061

Owner

UNIVERSITY OF NEVADA, LAS VEGAS

PERMIT SET

REVISIONS		
REV	DATE	DESCRIPTION
A	08/05/16	ADDENDUM A

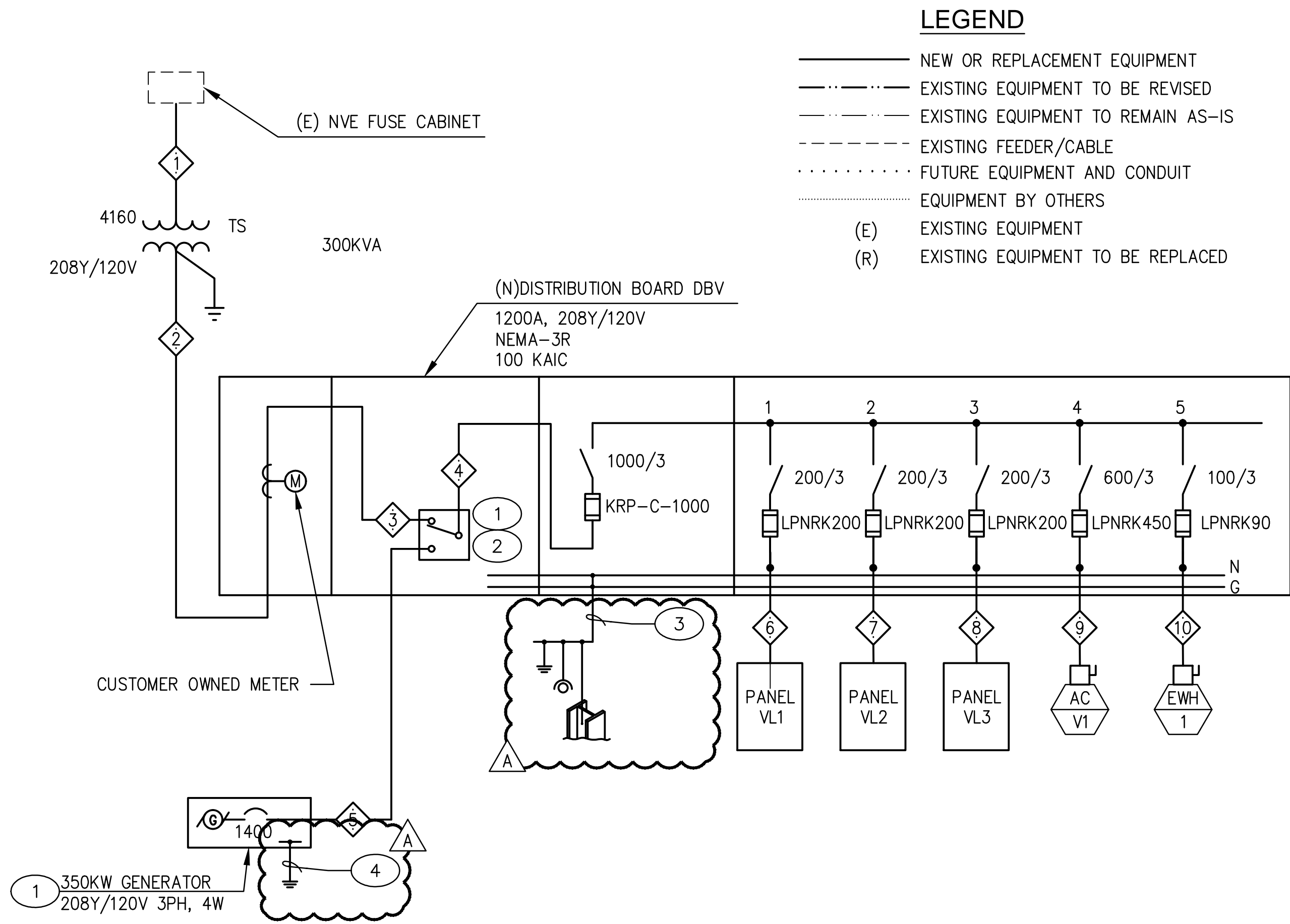
Sheet Title

DETAILS

Date: 06/17/2016

Sheet No:

E4.02
ADDED ENTIRE SHEET



SINGLE LINE DIAGRAM

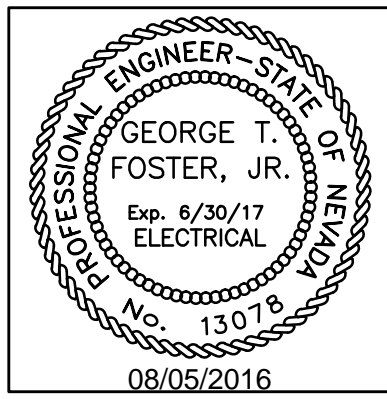
SCALE: NOT TO SCALE

KEY NOTES:

- PROVIDE FORM-C CONTACT FOR EMERGENCY AND NORMAL POWER STATUS TO BAS/JACE CONNECTION TO THE CAMPUS BAS.
- 1600A SERVICE ENTRANCE RATED ATS.
- #1/0 CU GEC - 1" TO GROUNDING ELECTRODE, COLD WATER SERVICE AND BUILDING STEEL PER NEC 250.
- PROVIDE #4/0 COPPER GEC TO 3/4"X10FT COPPER CLAD GROUND ROD.

tsk

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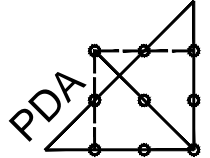
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#16001

PLEASE RECYCLE

Project

UNLV VIVARIUM

4505 SOUTH
MARYLAND PARKWAY
LAS VEGAS, NV 89154

Job No: 15-061

Owner

UNIVERSITY OF
NEVADA, LAS VEGAS

PROJECT# 16001 Professional Design Associates, Inc.

PROJECT NAME: UNLV VIVARIUM 02-Aug-16

FEEDER SCHEDULE NOTES:

1. SIZING INFORMATION BASED ON THHN/THWN CONDUCTORS IN METALLIC CONDUIT UNLESS OTHERWISE NOTED, PER 2011 N.E.C.

2. CONDUCTOR SIZES BASED ON 75°C REQUIREMENTS. ALL TERMINATIONS SHALL BE 75°C RATED.

TAG	FEEDER NUMBER	FROM	TO	CONDUCTOR INFORMATION AND SIZES										CONDUIT INFORMATION			REMARKS
				NEUTRAL CAPACITY	MATERIAL CU OR AL	VOLTS DROP	% DROP	PHASE QUANTITY	NEUTRAL SIZE	GROUND SIZE	MATERIAL	SIZE	QUANTITY				
1	UTILITY	T1		N/A	CU	0.68	0.02	3	#1/0	N/A	#8	NON-METALLIC	4"	1	BY UTILITY		
2	T1	METER		100%	CU	0.55	0.26	3	400 kcmil	1	400 kcmil	N/A	NON-METALLIC	3"	3	PARALLEL FEEDERS	
3	METER	ATS		100%	CU	0.28	0.13	3	1200 A	1	1200 A	50%	BUS DUCT	-----	1	BUS	
4	ATS	DBV		100%	CU	0.28	0.13	3	1200 A	1	1200 A	50%	BUS DUCT	-----	1	BUS	
5	GEN	ATS		100%	CU	0.28	0.12	3	350 kcmil	1	350 kcmil	#3/0	NON-METALLIC	3"	4	PARALLEL FEEDERS	
6	DBV	VL1		100%	CU	0.84	0.40	3	#5/0	1	#5/0	#8	NON-METALLIC	2"	1		
7	DBV	VL2		100%	CU	0.84	0.40	3	#5/0	1	#5/0	#8	NON-METALLIC	2"	1		
8	DBV	VL3		100%	CU	1.12	0.54	3	#5/0	1	#5/0	#8	NON-METALLIC	2"	1		
9	DBV	AC-V1		100%	CU	1.46	0.70	3	250 kcmil	1	250 kcmil	#2	METALLIC	2 1/2"	2	PARALLEL FEEDERS	
10	DBV	WH-1		N/A	CU	1.89	0.91	3	#3	N/A	#8	NON-METALLIC	1 1/4"	1			

Project # 16001		Professional Design Associates, Inc.	
Project Name: UNLV VIVARIUM		02-Aug-16	
BRANCH NUMBER	AVAILABLE SCA	AT EQUIPMENT	EQUIPMENT AIC RATING
0	94,573	UTILITY	N/A
1	32,116	DBV	65,000
2	14,170	PNL VL1	22,000
3	13,584	PNL VL2	22,000
4	13,063	PNL VL3	22,000
5	9,542	AC-1	10,000

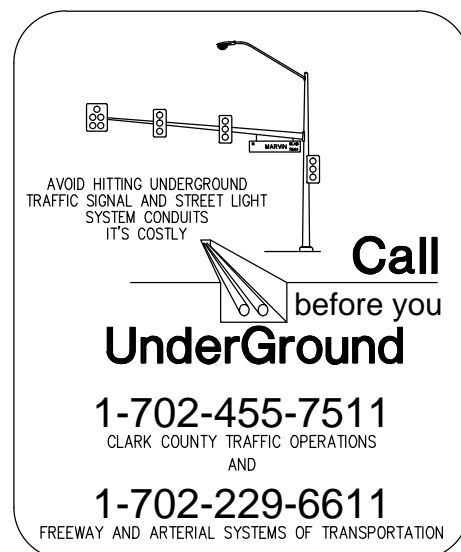
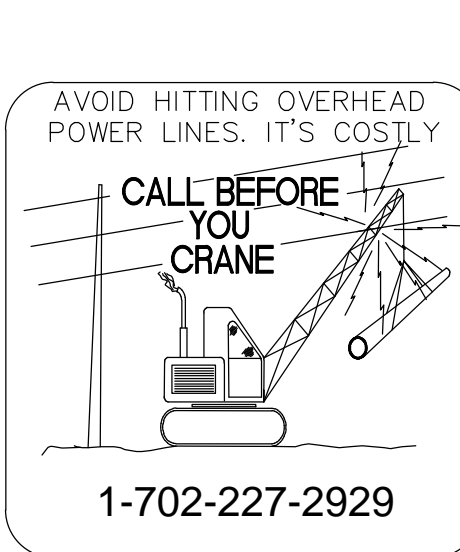
NOTICE:

ALL WIRE SHALL BE COPPER TYPE THWN, WHERE NONMETALLIC CONDUIT IS USED A GROUND WIRE SIZED PER N.E.C. SHALL BE PROVIDED AND INSTALLED PER N.E.C. INCREASE CONDUIT SIZE AS REQUIRED BY N.E.C.

THE DESIGN PROFESSIONAL HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUITS AND FEEDERS COMPLY WITH NEC 210-19(A)(1) FPN No. 4.

THE DESIGN PROFESSIONAL HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS INDICATED FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND ELECTRICAL SYSTEM.

THE DESIGN PROFESSIONAL HAS PERFORMED ALL REQUIRED LOAD CALCULATIONS AND VERIFIES THAT ALL UPSTREAM PANELS AND EQUIPMENT ARE NOT OVERLOADED.



PERMIT SET

REV		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION
A	08/05/16	ADDENDUM A	

Sheet Title

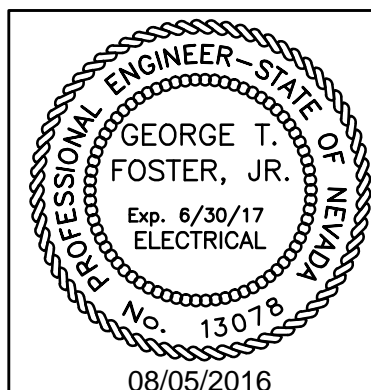
SINGLE LINE DIAGRAM
AND SCHEDULES

Date: 06/17/2016

Sheet No:

E5.02

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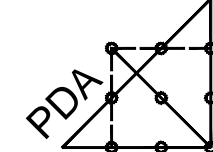
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Project

UNLV VIVARIUM

4505 SOUTH
MARYLAND PARKWAY
LAS VEGAS, NV 89154

Job No: 15-061

Owner

UNIVERSITY OF
NEVADA, LAS VEGAS

PERMIT SET

[illegible]

Sheet Title

SCHEDULES

Date: 06/17/2016

Sheet No

E6.01

[illegible]

Professional Design Associates, Inc.

PANELBOARD : PK

PROJECT NAME
PROJECT NUMBER:
PANEL LOCATION:
BUS MATERIAL:
GROUND BUS
SPRACHERORE:
NEUTRAL RATING:
POLES REQUIRED:

UTILITY WIRIARIUM
1051
RW-2-212
CU
YES
BOLT-ON
100
42

NO.	LOAD SERVED	PHASE "A" VA	PHASE "B" VA	PHASE "C" VA	CIRCUIT BREAKER AMP / POLE	CIRCUIT BREAKER HUR	CIRCUIT BREAKER	PHASE "A" VA	PHASE "B" VA	PHASE "C" VA	LOAD SERVED	NO.
1	RECEPTACLES	960			20	1	2	1	20	720	RECEPTACLES	1
2	RECEPTACLES		720		20	1	3	4	1	20	RECEPTACLES	2
3	RECEPTACLES			720	20	1	5	6	1	20	RECEPTACLES	3
4	RECEPTACLES	1080			20	2	6	6	20	000	RECEPTACLES	4
5	RECEPTACLES		1080		20	1	5	10	2	20	RECEPTACLES	5
6	RECEPTACLES			960	20	1	11			1080	RECEPTACLES	6
7	RECEPTACLES	240			20	1	12	14	1	20	OK 10 LTR & PURGE	7
8	RECEPTACLES		240		20	1	15	16	1	20	CHRY TREATMENT	8
9	RECEPTACLES			960	20	1	17			1080	RECEPTACLES	9
10	RECEPTACLES				20	1	18			20	RECEPTACLES	10
11	RECEPTACLES	1000			20	1	19	2	30	2004	RECEPTACLES	11
12	RECEPTACLES		1000		20	1	21			2004	RECEPTACLES	12
13	RECEPTACLES			0	20	1	23			2004	RECEPTACLES	13
14	RECEPTACLES	0			20	1	25	3	30	2004	RECEPTACLES	14
15	RECEPTACLES	0			20	1	27			2004	RECEPTACLES	15
16	RECEPTACLES	0			20	1	29			2004	RECEPTACLES	16
17	RECEPTACLES	0			20	1	31	52	1	20	SPACE	17
18	RECEPTACLES	0			20	1	33	34			SPACE	18
19	RECEPTACLES	0			20	1	35	36		0	SPACE	19
20	RECEPTACLES	0			20	1	37	38	1	0	SPACE	20
21	RECEPTACLES	0			20	1	39	40	1	0	SPACE	21
22	RECEPTACLES	0			20	1	41	42	1	0	SPACE	22
SUB FEED											SUB FEED	
SUB-TOTALS				3520	2160	1980		1048	6688	3280	SUB-TOTALS	
CONNECTED VA - PHASE A				12488	CONNECTED AMPS - PHASE A				1019	CONNECTED KVA :	34.2	
CONNECTED VA - PHASE B				11894	CONNECTED AMPS - PHASE B				94.7	NEC DEMAND KVA :	33.0	
CONNECTED VA - PHASE C				18036	CONNECTED AMPS - PHASE C				85.2	NEC DEMAND KVA :	34.9	
TOTAL CONNECTED VA :				34714	MAX CORR. PHASE AMPS * 74" @				1019	NEC DEMAND AMPS (INCLUDING SPARE CAPACITY) :	97.0	

GENERAL NOTES

MORE THAN 10% UNBALANCED
ERROR CODES: 0

* BRANCH CIRCUIT BREAKERS SHOULD BE APPROPRIATE AS INDICATED ABOVE. PHASING DEVIATIONS WILL NOT BE ALLOWED
* ALL CIRCUIT BREAKERS FEEDING REFRIGERATION EQUIPMENT SHALL BE "HACR" TYPE EQUIPMENT NAMEPLATE.

N.E.C. DEMAND CALCULATIONS FOR PANEL PK

1	CONNECTED LIGHTING LOAD	11894 VA	CONNECTED LIGHTING LOAD @	125% +	8 VA
2	CONNECTED RECEPTACLE LOAD	21284 VA	1st 100% OF RECEPTACLES @ 100% + BALANCE @	50% +	10848 VA
3	CONNECTED EQUIPMENT LOAD	22294 VA	EQUIPMENT LOAD DEMAND @	100% +	22294 VA
4	CONNECTED KITCHEN EQUIPMENT LOAD	0 VA	PER NEC 220-2. 8 KITCHEN UNITS	100% +	0 VA
5	CONNECTED HEATING LOAD	0 VA	LARGER OF HEATING OR COOLING LOAD @	100% +	0 VA
6	CONNECTED COOLING LOAD	0 VA	LARGER OF COOLING OR HEATING LOAD @	100% +	0 VA
7	CONNECTED HEAT PUMP LOAD	0 VA	HEAT PUMP OR COMPRESSOR & HEAT SINKS @	100% +	0 VA
8	CONNECTED ELEVATOR LOAD	0 VA	PER NEC 620.14. 0 ELEVATORS @	100% +	0 VA
10	CONNECTED MISC. MECHANICAL LOAD	0 VA	MISC. MECHANICAL LOAD @	100% +	0 VA
13	CONNECTED HOTEL GUEST ROOM LOAD	0 VA	HOTEL GUEST ROOM LOAD PER NEC 200-42	100% +	0 VA
14	CONNECTED NON-COMBUSTIBLE LOAD	0 VA	NON-COMBUSTIBLE LOAD (PER-ADDITIVE)	100% +	0 VA
15	CONNECTED NON-COMBUSTIBLE LOAD	0 VA	VA OF LARGEST MOTOR @	25% +	0 VA
16	LARGEST MOTOR	0 VA	ADDITIONAL SPARE CAPACITY ADDED	5% +	1602 VA
TOTAL CONNECTED:		34714 VA	TOTAL DEMAND:		34896

Professional Design Associates, Inc.

PANELBOARD : VLT

PROJECT NAME: UNLV VIVARIUM
PROJECT NUMBER: 1601
PANEL LOCATION: CORRIDOR
BUS MATERIAL: CU
GROUND BUS
BRANCH BREAKS
NEUTRAL RATING: 1015
POLES REQUIRED: 42

NO.	LOAD SERVED	PHASE "A" VA	PHASE "B" VA	PHASE "C" VA	CIRCUIT BREAKER AMP	CIRCUIT BREAKER POLE	CIRCUIT NUMBER	CIRCUIT FUSE AMP	PHASE "A" VA	PHASE "B" VA	PHASE "C" VA	LOAD SERVED	NO.	
1	RECEPT RM 001	720			20	1	2	20	936			HUMIDIFIER FOG PUMP **	12	
2	RECEPT RM 002		1440		20	1	3	4		936		****	13	
3	RECEPT RM 004			936	20	1	5	6		936		CIRC PUMP & SOFTENER **	12	
4	RECEPT RM 007 AND 005	360			20	1	6	1	1204			WATER COOLER	3	
5	RECEPT RM 006		360		20	1	9	10	1	20		RPH HIGH PRESS PUMP **	12	
6	RECEPT RM 007	720			20	1	11	12	1	20		R.O. TREATMENT SYSTEM **	12	
7	RECEPT RM 007	1200			20	1	13	14	3	20		708	708	12
8	RECEPT RM 008		1680		20	1	15	16	1			708	708	12
9	RECEPT RM 009		1440		20	1	17	18				708	708	12
10	RECEPT RM 010	1440			20	1	19	20	1	20		360	RECEPTACLES	12
11	RECEPT RM 011		1680		20	1	21	22	1	20		864	R.O. RE-PRESS PUMP **	12
12	RECEPT RM 012		1440		20	1	23	24	1	20		180	R.O. STORAGE TANK	12
13	RECEPT RM 012	1440			20	1	25	26	1	20		280	LUTRON PANELS RECEPT	2
14	RECEPT RM 013		360		20	1	27	28	1	20		0	SPARE	18
15	RECEPT RM 014		360		20	1	29	30	1	20		0	SPARE	18
16	RECEPT RM 015	360			20	1	31	32	1	20		0	SPARE	18
17	RECEPT RM 016		1440		20	1	33	34	1	20		0	SPARE	18
18	RECEPT RM 017		360		20	1	35	36	1	20		0	SPARE	18
19	RECEPT RM 018	360			20	1	37	38	3	20		0	SPARE	18
20	SPARE	0			20	1	39	40				0	SPARE	18
21	SPARE				20	1	41	42				0	SPARE	18
SUB-FEED												SUB-FEED	0	
SUB-TOTALS												SUB-TOTALS	0	
CONNECTED VA - PHASE A				6880				CONNECTED AMPS - PHASE A				CONNECTED KVA:		
CONNECTED VA - PHASE B				6880				CONNECTED AMPS - PHASE B				70.0 NEC DIVERSITY KVA:		
CONNECTED VA - PHASE C				6880				CONNECTED AMPS - PHASE C				69.2 NEC DEMAND KVA:		
												(INCLUDES SPARE CAPACITY)		
TOTAL CONNECTED VA:				26540				MAX CONC PHASE AMPS *A* @				80.1 NEC DEMAND AMPS:		
												(INCLUDES SPARE CAPACITY)		

GENERAL NOTES:
* BRANCH CIRCUIT BREAKERS SHALL BE ARRANGED AS INDICATED ABOVE. PHASES/DEVIATIONS WILL NOT BE ALLOWED.
** ALL CIRCUIT BREAKERS FEEDING REFRIGERATION EQUIPMENT SHALL BE "MAGIC" TYPE PER EQUIPMENT NAMEPLATE.
** PROVIDE 0.8 CIRCUIT BREAKER

MORE THAN 10% UNBALANCED
ERROR CODES: 0

N.E.C. DEMAND CALCULATIONS FOR PANEL - VLT

1	CONNECTED LIGHTING LOAD	0 VA	CONNECTED LIGHTING LOAD @	125% =	0 VA
2	CONNECTED RECEPTACLE LOAD	15600 VA	1st 10% KW OF RECEPTACLES @ 100% - BALANCE @	62% =	12380 VA
3	CONNECTED EQUIPMENT LOAD	2070 VA	EQUIPMENT LOAD DEVADED @	100% =	2070 VA
4	CONNECTED KITCHEN EQUIPMENT LOAD	0 VA	PER NEC 210.10, 1 KITCHEN UNITS @	100% =	0 VA
5	CONNECTED HEATING LOAD	0 VA	LARGER @ HEATING @ COOLING LOAD @	100% =	0 VA
6	CONNECTED COOLING LOAD	0 VA	LARGER @ COOLING @ HEATING LOAD @	100% =	0 VA
7	CONNECTED HEAT PUMP LOAD	0 VA	HEAT PUMP COMPRESSOR & HEAT STRIPS @	100% =	0 VA
8	CONNECTED ELEVATOR LOAD	0 VA	PER NEC 210.14, 0 ELEVATORS @	100% =	0 VA
11	CONNECTED MISC. MECHANICAL LOAD	8810 VA	MISC. MECHANICAL LOAD @	100% =	8810 VA
12	CONNECTED HOTEL GUEST ROOM LOAD	0 VA	HOTEL GUEST ROOM LOAD PER NEC 210-42	100% =	0 VA
14	CONNECTED NON-COINCIDENTAL LOAD	0 VA	NON-COINCIDENTAL LOAD (NON-ADDITIONE)	100% =	0 VA
LARGEST MOTOR =		4580 VA	VA OF LARGEST MOTOR @	25% =	1142 VA
			ADDITIONAL SPARE CAPACITY ADDED	15% =	3557 VA
TOTAL CONNECTED:		26540 VA	TOTAL DEMAND:		28515 VA

Professional Design Associates, Inc.				PANELBOARD :				PV		PROJECT NAME		WULF VIVARIUM	
VOLTS : L-L :		200		MLO :		400	MAIN BUS RATING :		400	AMPS	PROJECT NUMBER		16001
VOLTS : L-N :		120		MCB :		400	GFN W/ SHUNT TRIP :		NO		PANEL LOCATION :		RM 147
PHASE :		3		AIC RATING :		65 K	FULLY RATED :		YES		BUS MATERIAL :		CU
W/OUT				BASIS OF DESIGN :			NEUTRAL RATING :		YES		BRANCH BREAKERS :		BOLT-ON
ENCLOSURE :		NEMA 1		SERIES RATED :			POLES RATED :		42				
DATE :		06/02/2016											
LINE NO.	LOAD SERVED	PHASE "A" VA	PHASE "B" VA	PHASE "C" VA	CIRCUIT BREAKER AMP POLE	CIRCUIT BREAKER NUMBER	CIRCUIT BREAKER POLE AMP	PHASE "A" VA	PHASE "B" VA	PHASE "C" VA	LOAD SERVED	LINE NO.	
2	RW1-32 167 151A 204	120			20	1	2	1	20	801	RW1-130	3	
2	RW1-130 151 201 EXT		721		20	1	3	4	1	20	RW1-140	3	
2	RW1-32 167 151		721	120	20	1	5	6	1	20	E-2	3	
3	EP-1	1200			20	1	7	8	1	20	E-2	3	
3	EP-4		1200		20	1	9	10	1	20	RW1-130 137 138 145 146	2	
10	SPARE			0	20	1	11	12	1	20	RW1-130 137 138 145 146	2	
10	SPARE	0		0	20	1	13	14	1	20	SPARE	10	
10	SPARE	0		0	20	1	15	16	1	20	SPARE	10	
10	SPARE	0		0	20	1	17	18	1	20	SPARE	10	
3	RW1-132 STELL	4001			50	2	19	20	3	50	G	RW1-147 STEAM CLEANER	3
3	.....		4000				21	22				.....	3
3	RW1-147 WASHER			1810	20	2	23	24			8	.....	3
3	.....	1800					25	26	3	70	6070	RW1-130 STEER LIDER	3
3	RW1-147 DRYER		1810		30	3	27	28			6880	.....	3
3	.....			2510			29	30			8880	.....	3
3	RW1-130 CAGE WASH	3451	3450		70	3	31	32	3	35	10010	RW1-130 STEAM GEN	3
3	.....						33	34			10200	.....	3
3	.....		3450				35	36			10300	.....	3
8	SPACE	0		0	1	37	38	1	0			SPACE	8
8	SPACE	0		0	1	39	40	1	0			SPACE	8
8	SPACE	0		0	1	41	42	1	0			SPACE	8
0	SUB-FEED										8	SUB-FEED	0
0	SUB-TOTALS	12970	11870	8270					19100	17635	19160	SUB-TOTALS	0
CONNECTED VA - PHASE A		36070	CONNECTED AMPS - PHASE A		245.6	CONNECTED KVA :		87.9					
CONNECTED VA - PHASE B		26950	CONNECTED AMPS - PHASE B		245.6	NEC DIVERSITY KVA :		87.0					
CONNECTED VA - PHASE C		27430	CONNECTED AMPS - PHASE C		228.8	NEC DEMAND KVA :		91.4					
TOTAL CONNECTED VA		90450	MAX. CONN. PHASE AMPS * "A" @		250.6	NEC DEMAND AMPS :		253.3					
GENERAL NOTES												BALANCED WITHIN 10% ERROR CODES: 0	
* BRANCH CIRCUIT BREAKERS SHOULD BE ARRANGED AS INDICATED ABOVE. PHASING DEVIATIONS WILL NOT BE ALLOWED													
* ALL CIRCUIT BREAKERS FEEDING REFRIGERATION EQUIPMENT SHALL BE "HACR" TYPE FOR EQUIPMENT NAMEPLATE													
N.E.C. DEMAND CALCULATIONS FOR PANEL - PV													
1	CONNECTED LIGHTING LOAD	0 VA	CONNECTED LIGHTING LOAD	125% +	0 VA								
2	CONNECTED RECEPTACLE LOAD	3800 VA	100% OF RECEPTABLES @ 100% + BALANCE @	100% +	3800 VA								
4	CONNECTED EQUIPMENT LOAD	0 VA	EQUIPMENT LOAD DEEMED @	100% +	0 VA								
4	CONNECTED KITCHEN EQUIPMENT LOAD	0 VA	PER NEC 210.0. KITCHEN UNITS	100% +	0 VA								
6	CONNECTED HEATING LOAD	0 VA	LARGER IF HEATING w/ COOLING LOAD @	100% +	0 VA								
6	CONNECTED COOLING LOAD	0 VA	LARGER IF COOLING w/ HEATING LOAD @	100% +	0 VA								
6	CONNECTED HEAT PUMP LOAD	0 VA	HEAT PUMP COMPRESSOR w/ HEAT STRIPS @	100% +	0 VA								
11	CONNECTED ELEVATOR LOAD	0 VA	PER NEC 210.4. ELEVATORS @	100% +	0 VA								
12	CONNECTED MISC. MECHANICAL LOAD	0 VA	MISC. MECHANICAL LOAD @	100% +	0 VA								
13	CONNECTED HOT STEAM ROOM LOAD	0 VA	HOT/QUEST ROOM LOAD PER NEC 210.4.2	100% +	0 VA								
14	CONNECTED NON-COMBUSTIBLE LOAD	0 VA	NON-COMBUSTIBLE LOAD (NON-ADDITIONAL)	100% +	0 VA								
	LARGEST MOTOR	0 VA	VA OF LARGEST MOTOR @	25% +	0 VA								
			ADDITIONAL SPARE CAPACITY ADDED	5% +	4350 VA								
TOTAL CONNECTED:		87005 VA		TOTAL DEMAND:		91355							

Professional Design Associates, Inc.

VOLTS-L

200

VOLTS-L-N

120

PHASE :

3

WIRE

4

MOUNTING

SURFACE

ENCLOSURE

NEMA 1

DATE

06/02/2016

PANELBOARD : VL1

PROJECT NAME

PROJECT NUMBER

PANEL LOCATION

BUS MATERIAL

GROUND BUS

SPARC EXRS

NEUTRAL RATING

POLES REQUIRED

42

UNLY VVARIUM

CORRIDOR

CU

YES

BOLT-ON

100

NO.

LOAD SERVED

PHASE
"A"

PHASE
"B"

PHASE
"C"

CIRCUIT
BREAKER
AMPS

CIRCUIT
BREAKER
POLES

CIRCUIT
BREAKER
AMPS

PHASE
"A"

PHASE
"B"

PHASE
"C"

LOAD SERVED

NO.

2

RECEPT RWR 017

1000

20

1

1

2

1

20

1000

RECEPT RWR 021***

2

3

RECEPT REF RWR 018

1200

20

1

3

4

1

20

1000

RECEPT RWR 021***

2

3

RECEPT RWR 019

720

20

1

5

6

1

20

1000

RECEPT RWR 021***

2

3

RECEPT RWR 019***

1000

20

1

1

1

1

20

1000

RECEPT RWR 022***

2

3

RECEPT RWR 019***

1000

20

1

9

10

1

20

1000

RECEPT RWR 022***

2

3

RECEPT RWR 020***

1000

20

1

11

12

1

20

1000

RECEPT RWR 022***

2

3

RECEPT RWR 020***

1000

20

1

13

14

1

20

200

CEILING RECEPTS 019 X 320

2

3

RECEPT RWR 021***

1000

20

1

15

16

1

20

200

CEILING RECEPTS 019 X 322

2

3

RECEPT RWR 021***

1000

20

1

17

18

1

20

500

SMOKE/FIRE DAMPERS

3

3

RECEPT RWR 025

1440

20

1

19

20

1

20

0

SPARE

10

3

ROOF RECEPTACLE

180

20

1

21

22

1

20

0

SPARE

10

3

GEN KEXTER

1000

20

2

23

24

1

20

760

LIGHTING

1

3

GEN CHARGER

1000

20

1

25

26

1

20

1000

LIGHTING

1

3

GEN CHARGER

500

20

1

27

28

1

20

1000

LIGHTING

1

10

SPARE

0

20

1

29

30

1

20

845

LIGHTING

1

3

TL1

1244

20

1

31

32

1

20

895

LIGHTING

1

3

TL2

1244

20

1

33

34

1

20

955

LIGHTING

1

3

TL3

768

20

1

35

36

1

20

1000

LIGHTING

1

3

TL4

1244

20

1

37

38

1

0

0

SPACE

8

3

TL5

1244

0

20

1

39

40

1

0

0

SPACE

8

10

SPARE

0

20

1

41

42

1

0

2

SPACE

8

0

SUB-FEED

SUB-FEED

2

SUB-TOTALS

8508

8728

4646

4440

4515

5270

SUB-TOTALS

2

CONNECTED VA - PHASE A

13528

CONNECTED VA - PHASE B

11243

CONNECTED VA - PHASE C

10118

TOTAL CONNECTED VA

34789

CONNECTED AMPS - PHASE A

112.7

CONNECTED AMPS - PHASE B

63.7

CONNECTED AMPS - PHASE C

83.5

MAX. CORR. PHASE AMPS * "A" @

112.7

CONNECTED KVA:

34.6

NEC DIVERSITY KVA:

30.9

NEC DEMAND KVA:

58.6

NEC DEMAND AMPS:

162.7

[INCLUDING SPARE CAPACITY]

[INCLUDING SPARE CAPACITY]

GENERAL NOTES

* BRANCH CIRCUIT BREAKERS SHALL BE ARRANGED AS INDICATED ABOVE. PHASING DEVIATIONS WILL NOT BE ALLOWED.

* ALL CIRCUIT BREAKERS FEEDING REFRIGERATION EQUIPMENT SHALL BE "HACR" TYPE PER EQUIPMENT MANUFACTURE.

MORE THAN 10% UNBALANCED
ERROR CODES: 0

** THESE CIRCUITS SHALL BE ISOLATED GROUP.

N.E.C. DEMAND CALCULATIONS FOR PANEL - VL1

1

CONNECTED LIGHTING LOAD

8825 VA

CONNECTED LIGHTING LOAD

141-15 VA @ 100% BALANCE @

25% +

5200 VA

2

CONNECTED RECEPTACLE LOAD

17803 VA

EQUIPMENT LOAD DEMAND @

100% +

10000 VA

3

CONNECTED EQUIPMENT LOAD

10344 VA

PER NEC 220-20, 3 KITCHEN UNITS @

100% +

0 VA

4

CONNECTED KITCHEN EQUIPMENT LOAD

0 VA

HEATING & HEATING @ COOLING LOAD @

100% +

0 VA

5

CONNECTED HEATING LOAD

0 VA

LARGER @ COOLING @ HEATING LOAD @

100% +

0 VA

6

CONNECTED COOLING LOAD

0 VA

HEAT PUMP COMPRESSOR & HEAT STRIPS @

100% +

0 VA

7

CONNECTED HEAT PUMP LOAD

0 VA

PER NEC 220-14, 0 ELEVATORS @

100% +

0 VA

11

CONNECTED ELEVATOR LOAD

0 VA

MECH. MECHANICAL LOAD

100% +

0 VA

12

CONNECTED MECH. MECHANICAL LOAD

0 VA

HOTEL GUEST ROOM LOAD PER NEC 220-42

100% +

0 VA

13

CONNECTED HOTEL GUEST ROOM LOAD

0 VA

NON-CONCIDENTAL LOAD (NON-ADDITIVE)

25% +

0 VA

14

CONNECTED NON-CONCIDENTAL LOAD

0 VA

VA OF LARGEST MOTOR @

80% +

20120 VA

LARGEST MOTOR =

0 VA

ADDITIONAL SPARE CAPACITY ADDED

TOTAL CONNECTED:

34789 VA

TOTAL DEMAND:

58593 VA

[illegible]

PANEL INDEX

PANEL VL3	PANEL VL2	PANEL VL1
PANEL PK	PANEL PV	PANEL LC