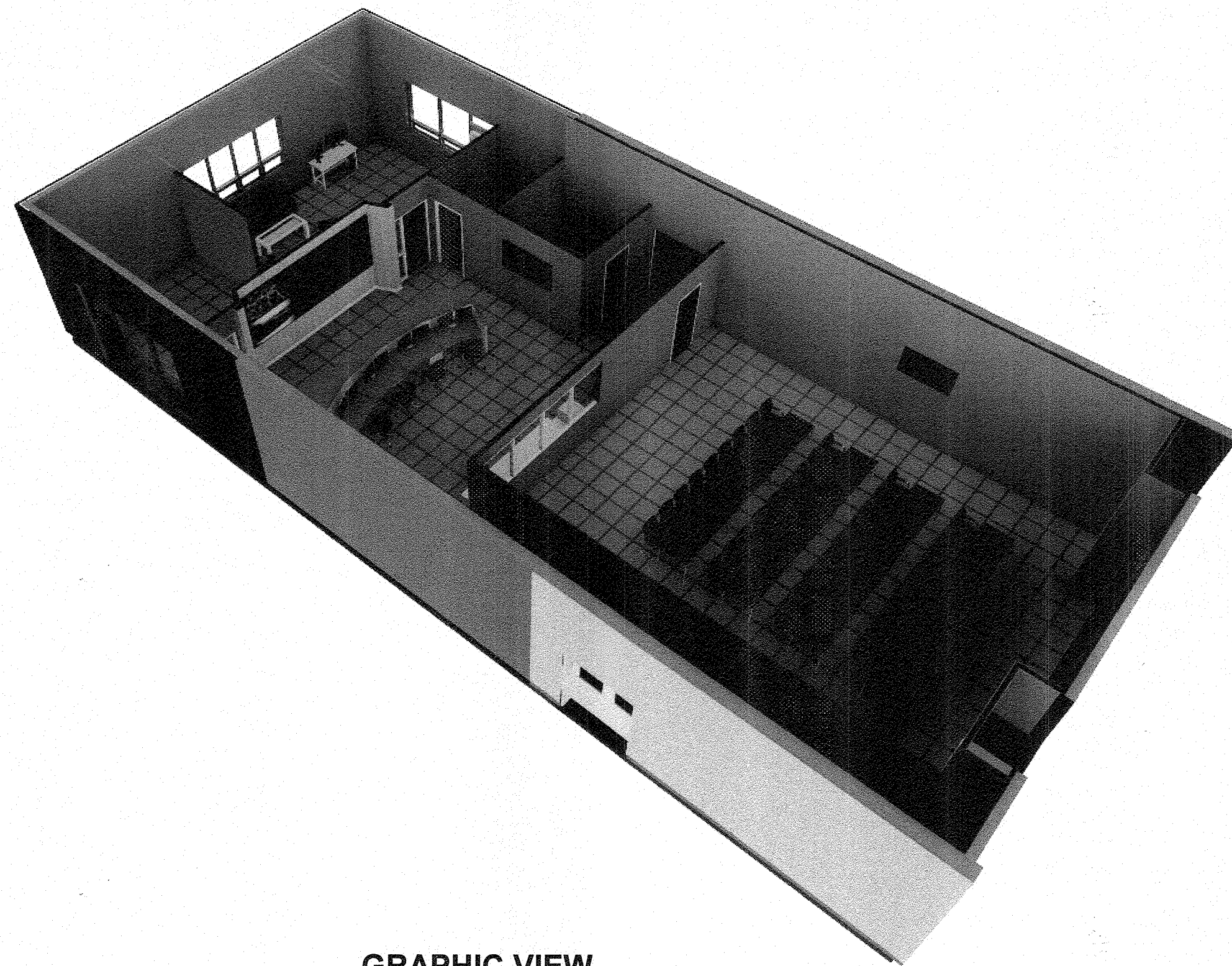


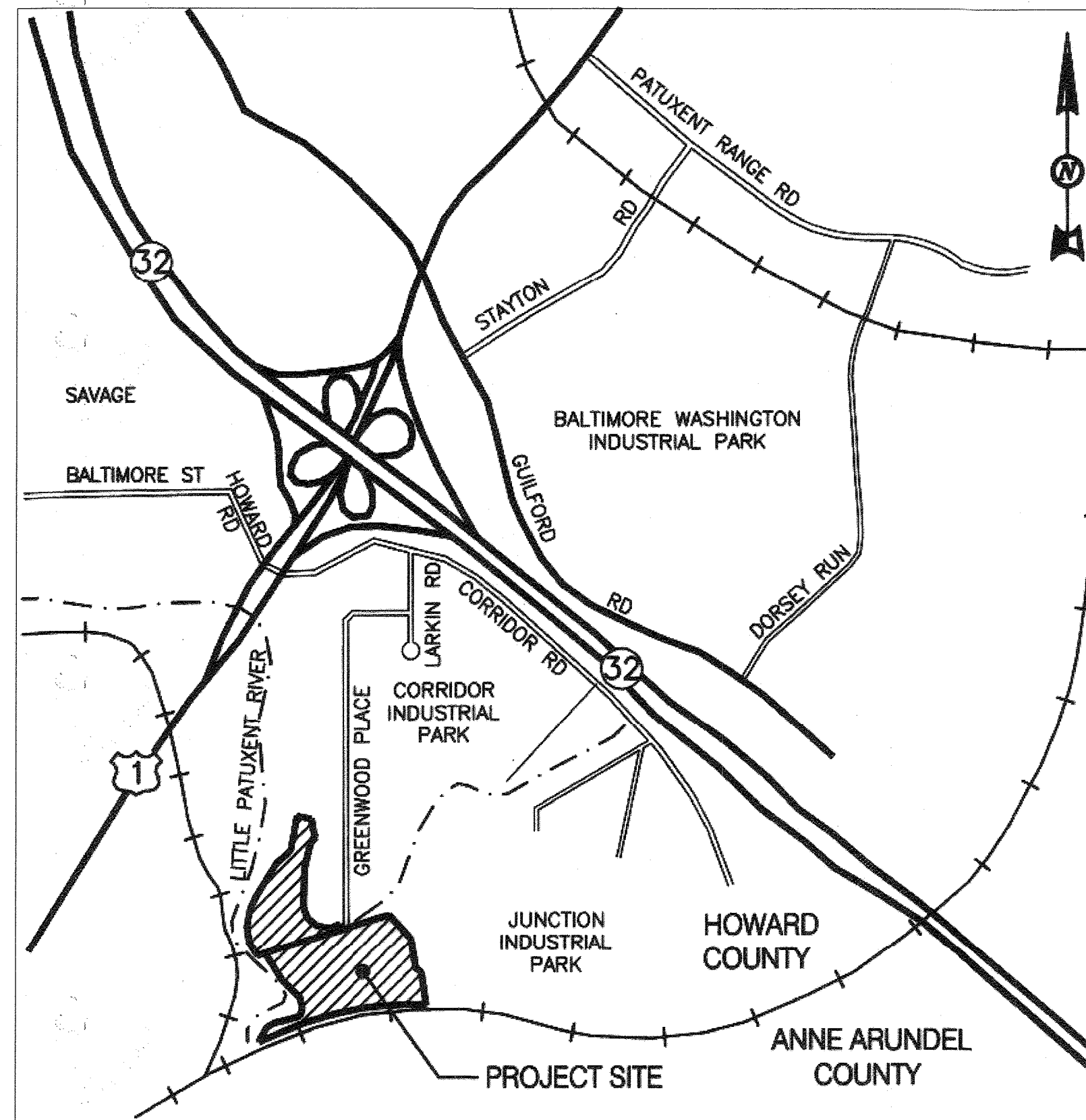
CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

HOWARD COUNTY, MARYLAND LITTLE PATUXENT WATER RECLAMATION PLANT



GRAPHIC VIEW
NOT TO SCALE



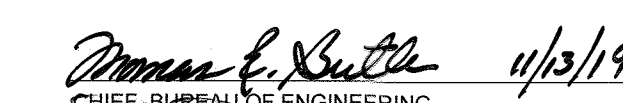


VICINITY MAP
NOT TO SCALE

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*PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

 11/12/19
 DIRECTOR OF PUBLIC WORKS DATE
 10-31-19
 CHIEF, BUREAU OF FACILITIES DATE
 11/13/19
 CHIEF, UTILITY DESIGN DIVISION DATE



DES: JT

DRN: JW

CHK: PJD

10/15/2019

BY NO.

REVISION

DATE

600 SCALE MAP NO.

BLOCK NO.

COVER SHEET

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

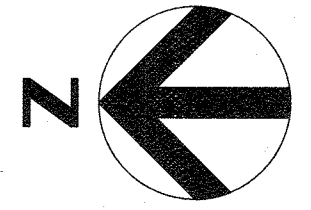
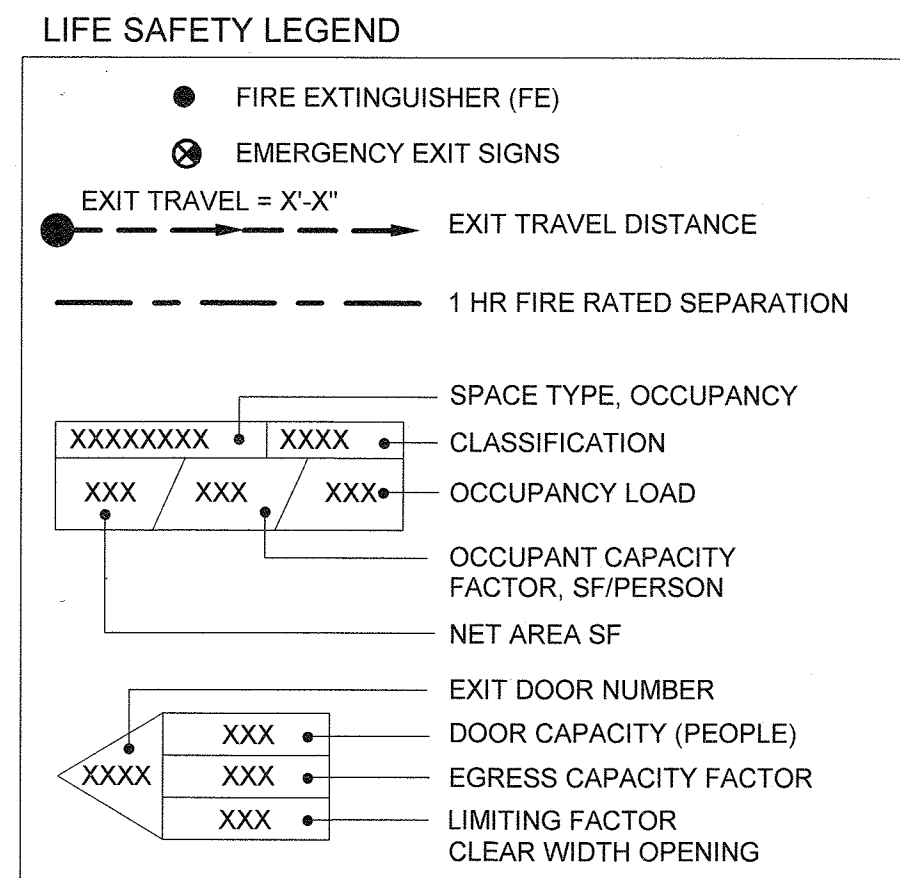
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

G-101

SCALE AS SHOWN

SHEET 1 OF 31

LIFE SAFETY LEGEND



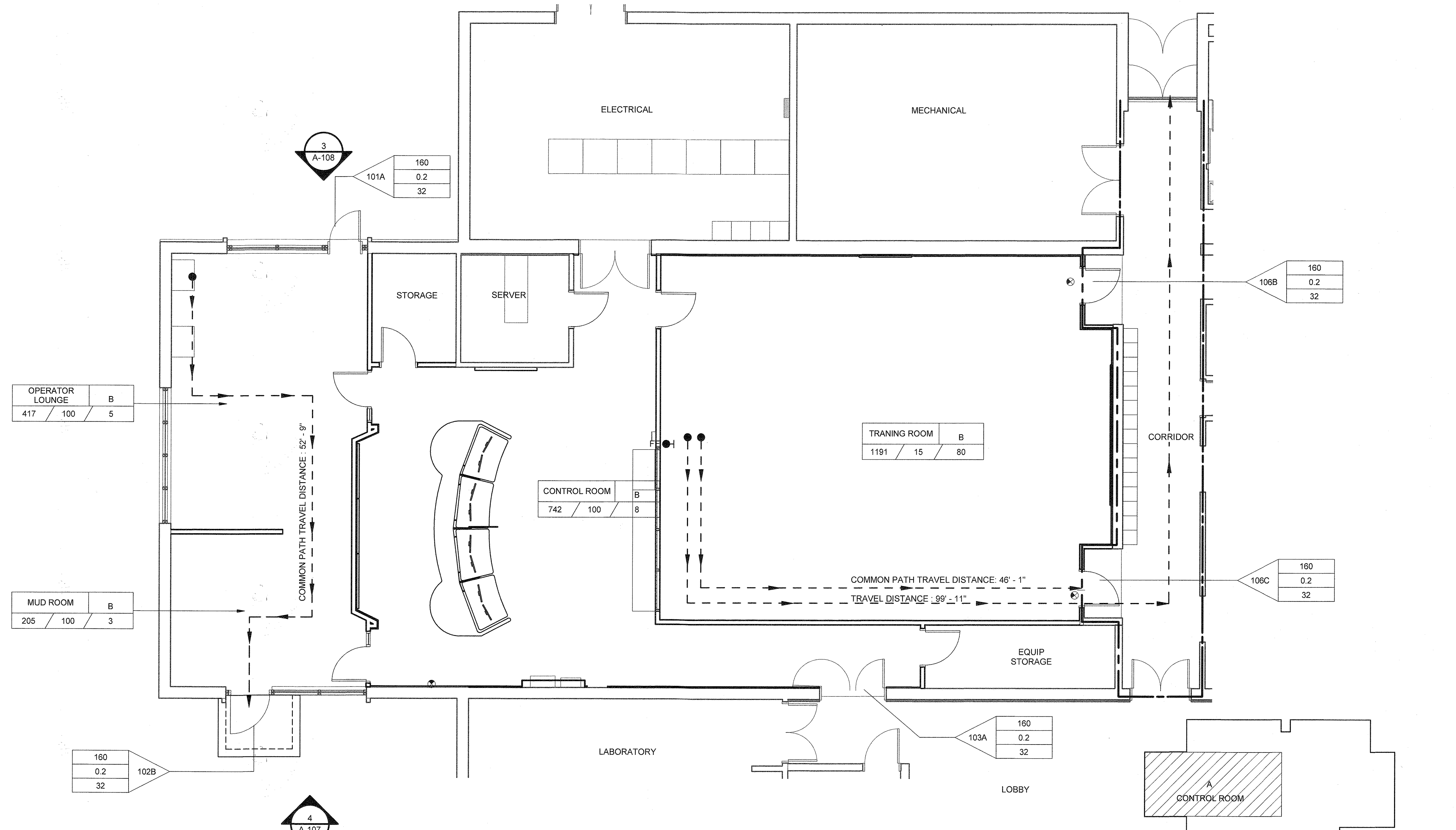
CODE ANALYSIS

LIST OF CODES:

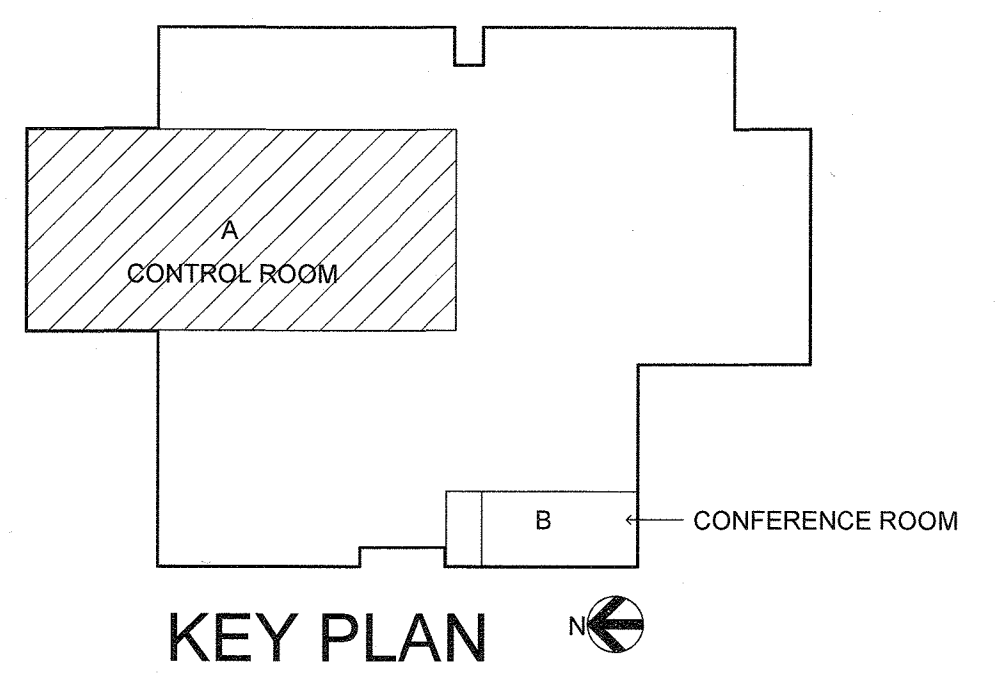
- 2015 INTERNATIONAL EXISTING BUILDING CODE, WITH AMENDMENTS
- 2015 INTERNATIONAL MECHANICAL BUILDING CODE, WITH AMENDMENTS
- 2015 NFPA 101 LIFE SAFETY CODE
- 2015 INTERNATIONAL BUILDING CODE, WITH AMENDMENTS
- 2014 NATIONAL ELECTRIC CODE WITH AMENDMENTS
- 2009 NATIONAL STANDARD PLUMBING CODE
- MARYLAND STATE ACCESSIBILITY CODE

BUILDING DATA:

- A. OCCUPANCY : B, BUSINESS (304)
- B. CONSTRUCTION TYPE (601): II B
- C. TOTAL RENOVATED BUILDING AREA: 2,986 SQ FT
- D. TOTAL OCCUPANCY LOAD: (1004, 1.2)
 - 1. BUSINESS=1795 SF /100=18
 - 2. ASSEMBLY=1191 SF/15=80
- E. EGRESS
 - 1. MAXIMUM ALLOWABLE COMMON PATH OF EGRESS TRAVEL (1006.2) : 75'-0"
 - 2. ACTUAL PATH OF EGRESS TRAVEL=52'-9"
 - 3. MAXIMUM ALLOWABLE EXIT ACCESS TRAVEL DISTANCE (1017.2) 200'-0"
 - 4. ACTUAL MAXIMUM EXIT ACCESS TRAVEL DISTANCE = 46'-11"
- F. NUMBER OF EXITS REQUIRED / PROVIDED : 2/3
- G. AUTOMATIC SPRINKLER SYSTEM (903.2): NOT REQUIRED
EXISTING BUILDING IS NOT SPRINKLER
- H. PANIC HARDWARE: PROVIDED ON DOORS SCHEDULE



FIRST LEVEL LIFE SAFETY PLAN
3/16" = 1'-0"



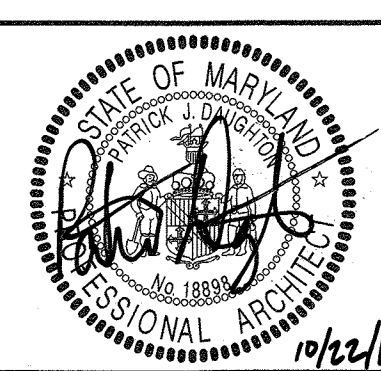
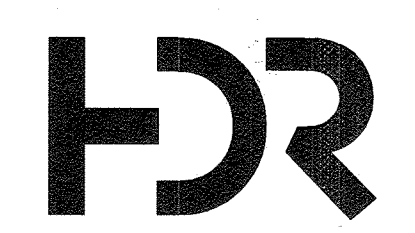
KEY PLAN

C:\m\2018\10134930-00-A_Jamal.Williams\RM\YL.rvt 10/15/2019 12:16:53 PM

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* 11/13/19
 Chief, Bureau of Utilities: *[Signature]* 10-3-19
 Chief, Bureau of Engineering: *[Signature]* 11/13/19
 Chief, Utility Design Division: *[Signature]* 11/13/19



DES: J.T					
DRN: JW					
CHK: PJD					
10/15/2019					
BY	NO.	REVISION	DATE	600 SCALE MAP NO.	BLOCK NO.

ADMINISTRATION BUILDING LIFE SAFETY PLAN

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

G-102

SCALE AS SHOWN
SHEET 2 OF 31

A/C	AIR CONDITIONING	CLKG	CAULKING	F TO F	FACE TO FACE	ID	INSIDE DIAMETER, INTERIOR DIMENSION	N	NORTH, NEUTRAL	R&R	REMOVE AND REPLACE	TOB	TOP OF BOLT, TOP OF BANK
A/E	ARCHITECT/ENGINEER	CLR	CLEAR	F&B	FACE AND BYPASS	IE	INVERT ELEVATION, FOR EXAMPLE	NA	NOT APPLICABLE	R&S	REMOVE AND SALVAGE	TCC	TOP OF CURB, TOP OF CONCRETE
A	AMPERE	CMH	COMMUNICATION MANHOLE	FAB	FABRICATE	IF	INSIDE FACE	NAT	NATURAL, NATIONAL	RA	RADIUS, REGISTER, RISER	TOD	TOP OF DUCT
AB	ANCHOR BOLT	CMP	CORRUGATED METAL PIPE	FB	FLOOR BEAM	IH	INTAKE HOOD	NC	NORMALLY CLOSED	RB	RETURN AIR	TOF	TOP OF FOOTING
ABAN	ABANDON	CMU	CONCRETE MASONRY UNIT	FBD	FIBERBOARD	IMP	IMPACT	NEG	NEGATIVE	RCPT	RECEPTACLE	TOL	TOLERANCE, TOP OF LEDGER
ABC	AGGREGATE BASE COURSE	CO	CLEANOUT, CONCRETE OPENING	FBG	FIBERGLASS	IN	INCH	NF	NEAR FACE, NON-FUSED	RD	ROOF DRAIN	TOM	TOP OF MASONRY
ABT	ABOUT	COL	COLUMN	FBM	BOARD FOOT MEASURE	INC	INCLUDE, INCANDESCENT	NIC	NOT IN CONTRACT	REC	RECESS	TOP	TOP OF PLATE
AC	ALTERNATING CURRENT	COMB	COMBINATION	FBO	FURNISHED BY OWNER	INF	INFLEUNT	NO	NOMINAL	REC'D	RECEIVED	TOPO	TOPOGRAPHY
ACK	ACKNOWLEDGE	COMB	COMBINATION	FCA	FLANGED CONNECTION	INSUL	INSULATION	NPS	NOMINAL PIPE SIZE	RED	REDUCER	TOS	TOP OF SLAB, TOP OF STEEL
ACP	ACOUSTIC CEILING PANEL	COMM	COMMUNICATION	FD	FLOOR DRAIN	INT	INTERIOR, INTERSECTION	NPT	NATIONAL PIPE THREAD	REF	REFERENCE	TOW	TOP OF WALL
ACST	ASPHALTIC CONCRETE PAVEMENT	COMP	COMPOSITION, COMPRESSIBLE	FDC	FLEXIBLE DUCT CONNECTION	INTR	INTERMEDIATE, INTERIOR	NS	NEAR SIDE	REIN	REINFORCING	TP	TOILET PARTITION, TELEPHONE POLE
AD	ACUSTIC	CON	CONCRETE	FDR	FEEDER	INV	INVERT	NTS	NOT TO SCALE	REM	REMOVE	TPD	TOE PLATE, TRAP PRIMER
ADDL	ADDITIONAL	CONC	CONCRETE	FDTN	FOUNDATION	IPS	IRON PIPE SIZE	NWL	NORMAL WATER LEVEL	REQD	REQUIRED	TR	TRANSITION
ADH	ADHESIVE	CONN	CONNECTION	FE	FLANGED END	IPT	INTERNAL PIPE THREAD	O TO O	OUT TO OUT	RESIL	RESILIENT	TRD	TRENCH DRAIN
ADJ	ADJUSTABLE, ADJACENT	CONSTR	CONSTRUCTION	FEC	FIRE EXTINGUISHER CABINET	IR	INSIDE RADIUS, IRON ROD	OA	OUTSIDE AIR, OVERALL	RET	RETAINING, RETURN	TPG	TOPPING, THROUGH PLATE GIRDER
AF	AMP FRAME, AMP FUSE	CONT	CONTINUOUS	FES	FLARED END SECTION	IRR	IRRIGATION	OC	ON CENTER	REV	REVISION, REVERSE	TRNS	TRANSOM
AFF	ABOVE FINISH FLOOR	COORD	COORDINATE	FEXT	FIRE EXTINGUISHER	ISO	ISOMETRIC	OCPD	OVER CURRENT PROTECTION DEVICE	RF	RESILIENT FLOORING	TRD	TRENCH DRAIN
AFG	ABOVE FINISH GRADE	CORR	CORROSIVE, CORRUGATED	FF	FAR FACE, FACTORY FINISH, FLAT FACE	JB	JUNCTION BOX	OD	OUTSIDE DIAMETER	RFL	REFLECTED, REFLECTOR	TY	TYPICAL
AGGR	AGGREGATE	CP	CHECKER PLATE, CONTROL POINT	FG	FINISHED GRADE	JCT	JUNCTION	OED	OPEN END DUCT	RFG	ROUGH	U	URINAL
AI	AREA INLET, ANALOG INPUT	CPLG	COUPLING	FH	FIRE HYDRANT	JF	JOINT FILLER	OF	OFFSIDE FACE, OFFICE FURNISHING	RGS	RIGID GALVANIZED STEEL	UL	UNDERGROUND
AIC	AMPS INTERRUPTING CAPACITY	CRL	CORROSION-RESISTANT LINING	FI	FIGURE	JST	JOIST	OCFI	OWNER FURNISHED CONTRACTOR INSTALLED	RHS-PVC	PVC COATED RGS	UG	UNDERMATE
ALIG	ALIGNMENT	CSC	COMPRESSION SLEEVE COUPLING	FIN	FINISH	JT	JOINT	OFOI	OWNER FURNISHED OWNER INSTALLED	RG	RELIEF HOOD, RIGHT HAND	ULT	ULTIMATE
ALT	ALTERNATE, ALTITUDE	CSK	COUNTERSINK	FJT	FLUSH JOINT	K	KIP	OG	ORIGINAL GROUND	OH	OVERHEAD	UNFN	UNFINISHED
ALUM	ALUMINUM	CSS	CLINIC SERVICE SINK	FL	FLOW, FLOW LINE	KB	KNEE BRACE	OH	OVERHEAD	OPNG	OPENING	UNO	UNLESS NOTED OTHERWISE
AM	ACOUSTICAL MATERIAL	CT	CERAMIC TILE	FLEX	FLEXIBLE	KCMIL	THOUSAND CIRCULAR MILS	OPNG	OPENING	OPP	OPPOSITE	UTIL	UTILITY
AMB	AMBIENT	CTJ	CONTRACTION JOINT	FLG	FLANGE	KD	KNOCK DOWN	OPT	OPTIONAL	OR	OR	V	VENT, VELOCITY, VOLT
ANC	ANCHOR	CTR	CENTER	FLOR	FLUORESCENT	KO	KNOCK OUT	ORD	OVERFLOW RADIUS	OR	ROUGH OPENING	VA	VOLT AMPERE
AO	ANALOG OUTPUT	CTRL	CONTROL	FLR	FLOOR	KSI	KIPS PER SQUARE INCH	OR	OVERFLOW RADIUS	ROW	RIGHT-OF-WAY	VAC	VACUUM
AP	ACCESS PANEL	CVT	CULVERT	FLS	FLASHING, FLUSH	KW	KILOWATT	OR	ORIGINAL	RPM	REVOLUTIONS PER MINUTE	VAR	VARNISH, VARIABLE
APRX	APPROXIMATE	CU	COPPER, CUBIC	FN	FENCE	L	ANGLE, LENGTH, LAVATORY, LINTEL	ORIG	ORIGINAL	RR	RAILROAD	VB	VOLT AMPERES REACTIVE
APVD	APPROVED	CW	CLOCKWISE	FOB	FLAT ON BOTTOM	LAD	LADDER	OVHG	OVERFLOW	RSP	ROCK SLOPE PROTECTION	VC	VERTICAL CURVE
ARCH	ARCHITECTURAL	CY	CUBIC YARD	FOC	FACE OF CONCRETE, FACE OF CURB	LAM	LAMINATE	OZ	OUNCE	RT	RIGHT	VCP	VITRIFIED CLAY PIPE
ASSY	ASSEMBLY	d	PENNY (NAIL MEASURE)	FOM	FACE OF MASONRY	LATL	LATERAL	P	PAINT	RY	READY	VCT	VINYL COMPOSITION TILE
AT	ACOUSTICAL TILE, AMP TRIP	D	DEEP, DIFFUSER, DRAIN	FOT	FLAT ON TOP	LB	LAG BOLT, POUND	PA	PUBLIC ADDRESS	S	SOUTH, SINK	VEL	VELOCITY
ATC	ACOUSTICAL TILE CEILING	DB	DUCT BANK, DECIBEL, DRY BULB	FPT	FEMALE PIPE THREAD	LCTB	LAG BOLT, POUND AND TACK BOARD	PAR	PARALLEL, PARAPET	SA	SUPPLY AIR	VENT	VENTILATION
ATM	ATMOSPHERE	DBA	DEFORMED BAR ANCHOR	FR	FRAME	LDG	LANDING	PB	PANIC BAR, PULL BOX	SAMU	SOUND-ABSORBING MASONRY UNIT	VERTS	VERTICAL
AUTO	AUTOMATIC	DBL	DOUBLE	FRP	FIBERGLASS REINFORCED PLASTIC	LDR	LEADER	PB	PANIC BAR, PULL BOX	SAN	SANITARY	VGF	VERTICAL REINFORCING
AUX	AUXILIARY	DC	DIRECT CURRENT	FRM	FIRE RETARDANT TREATED MATERIAL	LE	LIFTING EYE	PB	PANIC BAR, PULL BOX	PC	POINT OF CURVE, PIECE, PRECAST	VG	VERTICAL GRAIN
AVE	AVENUE	DEG	DEGREE	FRM	FIRE RETARDANT TREATED MATERIAL	LF	LINEAR FOOT	PB	PANIC BAR, PULL BOX	PCC	POINT OF COMPOUND CURVATURE	VIF	VERIFY IN FIELD
AVG	AVERAGE	DEG C	DEGREE CENTIGRADE	FT	FEET, FOOT	LG	LONG	PB	PANIC BAR, PULL BOX	PCF	POUNDS PER CUBIC FOOT	VIN	VINYL
AWG	AMERICAN WIRE GAGE	DEG F	DEGREE FAHRENHEIT	FTG	FOOTING, FITTING	LH	LEFT HAND	PB	PANIC BAR, PULL BOX	PCT	PERCENT	VOL	VOLUME
AWT	ACOUSTICAL WALL TILE	DEMO	DEMOLITION	FUR	FURNITURE, FURNISH	LIN	LINEAR	PB	PANIC BAR, PULL BOX	PE	PLAIN END	VPC	VERTICAL POINT OF CURVATURE
B TO B	BACK TO BACK	DET	DETAIL	FUR	FURNITURE, FURNISH	LIQ	LIQUID	PB	PANIC BAR, PULL BOX	PED	PEDESTAL	VPI	VERTICAL POINT OF INTERSECTION
BAL	BALANCE	DI	DROP INLET, DUCTILE IRON, DIGITAL INPUT	FUT	FUTURE	LLH	LONG LEG HORIZONTAL	PB	PANIC BAR, PULL BOX	PEN	PENETRATION	VPT	VERTICAL POINT OF TANGENCY
BBD	BULLETIN BOARD	DIA	DIAMETER	DI	DROP INLET, DUCTILE IRON, DIGITAL INPUT	LLV	LONG LEG VERTICAL	PB	PANIC BAR, PULL BOX	PERF	PERFORATED	VS	VERSUS, VAPOR SEAL
BC	BASE CABINET, BOTTOM CHORD, BOLT CENTER, BOLT CIRCLE	DIAG	DIAGONAL, DIAGRAM	DIA	DIAMETER	LMLU	LIQUID MARKER LECTURE UNIT	PB	PANIC BAR, PULL BOX	PERM	PERMANENT	VTR	VENT THROUGH ROOF
BD	BOARD	DIFF	DIFFERENTIAL, DIFFERENCE	DIAG	DIAGONAL, DIAGRAM	LNG	LONG	PB	PANIC BAR, PULL BOX	PERP	PERPENDICULAR	VWC	VINYL WALL COVERING
BE	BOTH ENDS, BELL END	DIM	DIMENSION	DIFF	DIFFERENTIAL, DIFFERENCE	LNG	LONG	PB	PANIC BAR, PULL BOX	PERP	PERPENDICULAR	W	WITH
BF	BOTH FACES, BOTTOM FACE, BLIND FLANGE, BOARD FEET	DISCH	DISCHARGE	DIST	DISTANCE, DISTRIBUTION	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	W/O	WITHOUT
BITUM	BITUMINOUS	DIV	DIVISION	DIST	DISTANCE, DISTRIBUTION	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	W	WATT, WEST, WIDE, WINDOW, WIRE,
BKG	BACKING	DL	DEAD LOAD	DIV	DIVISION	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	W	WIDE FLANGE BEAM
BL	BASE LINE	DMJ	DOUBLE MECHANICAL JOINT	DL	DEAD LOAD	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WB	WOOD BASE
BLDG	BUILDING	DMPF	DAMP PROOFING	DMJ	DOUBLE MECHANICAL JOINT	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WC	WATER CLOSET, WATER COLUMN
BLKG	BLOCKING	DN	DOWN	DMJ	DOUBLE MECHANICAL JOINT	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WD	WOOD, WIDTH
BM	BENCHMARK, BEAM	DOW	DISSOLVED OXYGEN, DIGITAL OUTPUT, DITTO	DN	DOWN	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WF	WIDE FLANGE, WATER FOUNTAIN
BOC	BACK OF CURB	DP	DEPTH	DOW	DISSOLVED OXYGEN, DIGITAL OUTPUT, DITTO	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WG	WIRE GLASS, WASH GAGE
BOD	BOTTOM OF DUCT	DPDT	DOUBLE POLE, DOUBLE THROW	DP	DEPTH	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WH	WALL HYDRANT, WEEP HOLE
BOG	BOTTOM OF GRILLE	DPST	DOUBLE POLE, SINGLE THROW	DPDT	DOUBLE POLE, DOUBLE THROW	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WI	WROUGHT IRON
BOL	BOTTOM OF LOUVER, BOLLARD	DS	DOWN SPOUT	DPST	DOUBLE POLE, SINGLE THROW	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WL	WATER LEVEL
BOP	BOTTOM OF PIPE	DST	DOUBLE TEE, DRIP TRAP ASSEMBLY	DS	DOWN SPOUT	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WLD	WELDED
BOR	BOTTOM OF REGISTER	DUP	DUPLICATE	DST	DOUBLE TEE, DRIP TRAP ASSEMBLY	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WM	WIRE MESH
BOT	BOTTOM	DWG	DRAWING	DUP	DUPLICATE	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WP	WATERPROOF
BOT	BOTTOM	DWL	DOWEL	DWG	DRAWING	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WS	WATERSTOP, WATER SURFACE
BOU	BOTTOM OF UNIT	DWR	DRAWER	DWL	DOWEL	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WSCOT	WAINSCOT
BP	BASE PLATE	E	EAST	DWR	DRAWER	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WT	WEIGHT, WATER TIGHT
BRG	BEARING	EA	EACH, EXHAUST AIR	E	EAST	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WTHP	WATERPROOF, WORKING POINT
BRGP	BEARING PLATE	EA	EACH, EXHAUST AIR	EA	EAST	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	WWF	WELDED WIRE FABRIC
BRKT	BRACKET	EC	ELECTRICAL CONTRACTOR	EA	EAST	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	XP	EXPLOSION-PROOF
BS	BOTH SIDES	ECC	ECCENTRIC	EC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	XS	EXTRA STRONG
BTU	BRITISH THERMAL UNIT	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	XSECT	CROSS SECTION
BTW	BETWEEN	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	XXS	DOUBLE EXTRA STRONG
BTWLD	BUTT WELD	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	YH	YARD HYDRANT
BU	BELL UP, BUILT-UP	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR	YS	YIELD STRENGTH
BUR	BUILT-UP ROOFING	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
BW	BOTH WAYS	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
BYP	BYPASS	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
C TO C	CENTER TO CENTER	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
C&G	CURB AND GUTTER	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
C	CHANNEL SHAPE, CENTIGRADE, CONDUIT	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CAB	CABINET	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CAP	CAPACITY	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CAT	CATALOG, CATALOGIORY	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CAV	CAVITY	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CB	CATCH BASIN	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CCB	CONCRETE BLOCK	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CCW	COUNTER CLOCKWISE	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CD	CONTROLLED-DENSITY FILL	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CE	CONCRETE EDGE	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CER	CERAMIC	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CF	CUBIC FEET (FOOT)	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CFL	COUNTER FLASHING	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CHBD	CHALKBOARD	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CHD	CHORD	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CHFR	CHAMFER	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CI	COMMUNICATION HANDHOLE	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CIP	CURB INLET	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CIP	CAST-IN-PLACE	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CIPB	CONCRETE INTERLOCKING PAVER	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CIRC	CIRCULATION, CIRCULAR	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CJ	CONSTRUCTION JOINT	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CKT	CIRCUIT	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CL	CENTERLINE, CLASS, CLOSE	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CLG	CEILING	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		
CLG	CEILING	ECC	ECCENTRIC	ECC	ELECTRICAL CONTRACTOR	LNG	LONG	PB	PANIC BAR, PULL BOX	PF	POWER FACTOR		

- GENERAL NOTES:**
- THESE ABBREVIATIONS APPLY TO THE ENTIRE SET OF CONTRACT DRAWINGS.
 - LISTING OF ABBREVIATIONS DOES NOT IMPLY THAT ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.
 - ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF A WORD. FOR EXAMPLE, "MOD" MAY MEAN MODIFY OR MODIFICATION, "INC" MAY MEAN INCLUDED OR INCLUDING, AND "REIN" MAY MEAN REINFORCE OR REINFORCING.
 - SEE INSTRUMENTATION AND GENERAL LEGEND SHEETS FOR PROJECT-SPECIFIC EQUIPMENT AND PIPING SYSTEM ABBREVIATIONS.

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

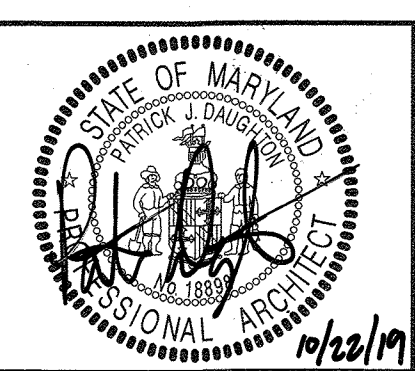
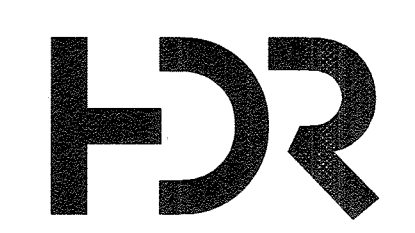
G-103

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 10/21/19
 DIRECTOR OF PUBLIC WORKS DATE

[Signature] 11/13/19
 CHIEF, BUREAU OF UTILITIES DATE

[Signature] 11/13/19
 CHIEF, UTILITY DESIGN DIVISION DATE



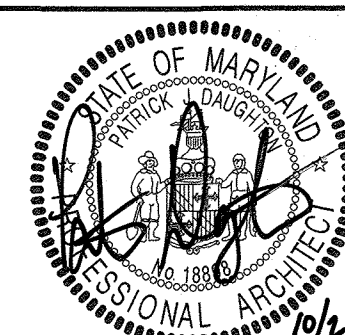
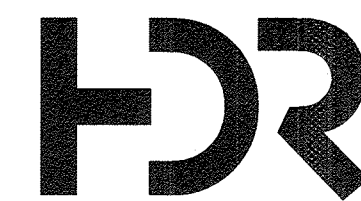
DES: J.T					
DRN: JW					
CHK: PJD					

MATERIALS IN PLAN/SECTION	GENERAL SYMBOLOGY	IDENTIFICATION SYMBOLOGY	SHEET NAMING CONVENTION	
<p>ACOUSTICAL CEILING TILE (SECTION)</p> <p>ASPHALT (PLAN OR SMALL-SCALE SECTION)</p> <p>ASPHALT (LARGE-SCALE SECTION)</p> <p>BATT INSULATION (SECTION)</p> <p>BRICK MASONRY (PLAN AND/OR SECTION)</p> <p>CHECKERED PLATE (PLAN)</p> <p>CONCRETE (PLAN AND/OR SECTION)</p> <p>CONCRETE MASONRY (PLAN AND/OR SECTION)</p> <p>DEMOLITION (PLAN AND/OR SECTION)</p> <p>EARTH (SECTION)</p> <p>FILTER POINT MAT (PLAN)</p> <p>FINISHED WOOD (SECTION)</p> <p>GLULAM LUMBER (SECTION)</p> <p>GRANULAR FILL (SECTION)</p> <p>GRATING (SECTION)</p> <p>GRATING (PLAN)</p> <p>GROUT (SECTION)</p> <p>GYPSUM BOARD (SECTION)</p> <p>METAL (SECTION)</p> <p>ORIENTED STRAND BOARD (SECTION)</p> <p>PARTICLE BOARD (SECTION)</p> <p>PLYWOOD (LARGE-SCALE SECTION)</p> <p>PLYWOOD (SMALL-SCALE SECTION)</p> <p>PRECAST CONCRETE (PLAN AND/OR SECTION)</p> <p>RIGID INSULATION (SECTION)</p> <p>RIPRAP (PLAN AND/OR SECTION)</p> <p>SAND (SECTION)</p> <p>SOD (SECTION)</p> <p>WEEP JOINT MORTAR PROTECTION SYSTEM (SECTION)</p> <p>WOOD - CONTINUOUS (SECTION)</p> <p>WOOD - BLOCKING (SECTION)</p>	<p>ARROW INDICATES DIRECTION OF PLAN NORTH</p> <p>NORTH ARROW</p> <p>PLAN 1/4" = 1'-0" PLAN TITLE</p> <p>ARROW INDICATES DIRECTION OF SECTION CUT</p> <p>SECTION LETTER</p> <p>SHEET WHERE SECTION IS LOCATED</p> <p>FULL BUILDING SECTION CUT MARKER</p> <p>SECTION LETTER</p> <p>FLAG INDICATES DIRECTION OF SECTION CUT</p> <p>SHEET WHERE SECTION IS LOCATED</p> <p>SECTION CUT MARKER</p> <p>SECTION LETTER</p> <p>3/8" = 1'-0" SHEET WHERE SECTION VIEW IS FIRST CUT *</p> <p>SECTION SECTION TITLE</p> <p>DETAIL NUMBER</p> <p>SHEET WHERE DETAIL IS LOCATED *</p> <p>DETAIL MARKER</p> <p>FOR REFERENCING DETAILS INCLUDED IN DRAWING SET.</p> <p>XXXXXXXX</p> <p>DETAIL MARKER</p> <p>FOR REFERENCING DETAILS BOUND IN SPECIFICATIONS OR SEPARATE VOLUME.</p> <p>DETAIL NUMBER</p> <p>1/4" = 1'-0" SHEET WHERE DETAIL IS LOCATED *</p> <p>DETAIL DETAIL TITLE</p> <p>* EXCEPTIONS WHERE THE SHEET NUMBER IS REPLACED BY A DASH (-). 1) FOR COMMON DETAILS, SECTIONS, ELEVATIONS OR DETAILS THAT ARE CUT OR CALLED OUT ON MULTIPLE SHEETS. 2) SECTIONS, ELEVATIONS OR DETAILS THAT ARE LOCATED ON THE SAME SHEET THEY ARE CUT OR CALLED OUT ON.</p>	<p>ARROW INDICATES POINT OF VIEW</p> <p>ELEVATION NUMBER</p> <p>INTERIOR EXTERIOR</p> <p>SHEET WHERE ELEVATION IS LOCATED *</p> <p>SINGLE ELEVATION OR PHOTO MARKER</p> <p>ELEVATION NUMBER</p> <p>ARROW INDICATES POINT OF VIEW</p> <p>ELEVATION NUMBER</p> <p>INDICATES SHEET WHERE ELEVATION IS LOCATED</p> <p>MULTIPLE ELEVATION OR PHOTO MARKER</p> <p>ELEVATION IDENTIFICATION NUMBER</p> <p>3" = 1'-0" SHEET WHERE POINT OF VIEW MARKER CAN BE FOUND *</p> <p>ELEVATION ELEVATION TITLE</p> <p>TARGET ELEVATION</p> <p>ARCHITECTURAL</p> <p>ROOM NAME</p> <p>XX-XX ROOM NUMBER</p> <p>XXX X DOOR NUMBER</p> <p>A COLUMN GRID LINE</p> <p>X WALL TYPE</p> <p>X WINDOW TYPE</p> <p>X LOUVER</p> <p>X ACCESSORY, FURNITURE, AND MISCELLANEOUS EQUIPMENT IDENTIFIER</p> <p>KEY NOTE DESIGNATION</p> <p>KEY NOTE NUMBER</p> <p>GENERAL LINE SYMBOLOGY</p> <p>4-HOUR FIRE RATED WALL</p> <p>3-HOUR FIRE RATED WALL</p> <p>2-HOUR FIRE RATED WALL</p> <p>1-HOUR FIRE RATED WALL</p> <p>COLUMN GRID LINE/CENTERLINE</p>	<p>PIPING</p> <p>FIGURE</p> <p>LINE SIZE 36"</p> <p>SERVICE PLANT EFFLUENT</p> <p>EQUIPMENT IDENTIFICATION</p> <p>ALTERNATIVE 1</p> <p>FIGURE</p> <p>SERVICE ABBREVIATION NPWP2023</p> <p>EQUIPMENT ABBREVIATION INDICATES NON-POTABLE WATER</p> <p>BUILDING OR STRUCTURE NUMBER INDICATES PUMP</p> <p>EQUIPMENT NUMBER BUILDING 20 PUMP 23</p> <p>ALTERNATIVE 2</p> <p>FIGURE</p> <p>SERVICE ABBREVIATION NPWP-23</p> <p>EQUIPMENT ABBREVIATION INDICATES NON-POTABLE WATER</p> <p>EQUIPMENT NUMBER INDICATES PUMP</p> <p>EQUIPMENT NUMBER BUILDING 20 PUMP 23</p>	<p>AREA DESIGNATION</p> <p>TO BE EDITED ON AN A PROJECT BASIS. TO BE DETERMINED BY THE PROJECT MANAGER, THEN ADDED TO THE GENERAL LEGEND.</p> <p>EXAMPLE: 01 BUILDING OR AREA NAME 02 BUILDING OR AREA NAME 03 BUILDING OR AREA NAME</p> <p>DISCIPLINE DESIGNATOR & DISCIPLINE ORDER</p> <p>G GENERAL V SURVEYING/MAPPING X DEMOLITION C CIVIL U MULTI-DISCIPLINE S STRUCTURAL A ARCHITECTURAL D PROCESS M MECHANICAL (HVAC) P PLUMBING E ELECTRICAL Y INSTRUMENTATION</p> <p>SHEET TYPE DESIGNATOR</p> <p>0 GENERAL (SYMBOLS, LEGENDS) 1 PLANS 2 ELEVATIONS 3 SECTIONS 4 LARGE SCALE VIEWS 5 DETAILS 6 SCHEDULES AND DIAGRAMS 8 PROFILES 9 3D REPRESENTATIONS</p> <p>EXAMPLE</p> <p>GRAVITY THICKENER ARCHITECTURAL SECTION, DRAWING 01</p> <p>0 2 BUILDING OR AREA DESIGNATION BUILDING OR AREA 02</p> <p>A ARCHITECTURA DISCIPLINE DESIGNATOR L</p> <p>3 SECTIONS SHEET TYPE DESIGNATOR</p> <p>0 1 SHEET 01 SHEET NUMBER</p> <p>0 2 A 3 0 1 EXAMPLE</p> <p>GENERAL NOTES:</p> <p>1. THIS IS A STANDARD SHEET SHOWING COMMON SYMBOLOGY. ALL SYMBOLS ARE NOT NECESSARILY USED ON THIS PROJECT.</p> <p>2. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.</p>

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *J. J. Clark* 11/15/19
 Chief, Bureau of Utilities: *Thomas E. Sutter* 11/13/19
 Chief, Bureau of Facilities: *[Signature]* 11/13/19
 Chief, Utility Design Division: *[Signature]* 11/13/19



DES: J.T.
DRN: J.W.
CHK: P.J.D.
10/15/2019

BY	NO.	REVISION	DATE

GENERAL LEGEND

800 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

G-104

SCALE AS SHOWN

SHEET 4 OF 31

HVAC SYMBOLOGY

	RECTANGULAR DUCT		HIDDEN DUCT		VD = VOLUME DAMPER BDD = BACKDRAFT DAMPER
	ROUND DUCT		DUCT ELEVATION TAG ABOVE FINISH FLOOR		MOTOR OPERATED DAMPER
	SUPPLY DUCT SECTION, RECTANGULAR		PRESSURE/TEMPERATURE TEST PLUG (PETE PLUG OR EQUAL)		FIRE DAMPER
	RETURN DUCT SECTION, RECTANGULAR		SOUND ATTENUATOR		SMOKE DAMPER
	EXHAUST DUCT SECTION, RECTANGULAR		SUPPLY DIFFUSER (ROUND)		SMOKE AND FIRE DAMPER
	90° ELBOW TURNED UP, RECTANGULAR		SUPPLY AIR REGISTER OR GRILLE - W/DUCT-MOUNTED EXTRACTOR		FLEXIBLE CONNECTION
	90° ELBOW TURNED UP, RECTANGULAR		EXHAUST OR RETURN AIR REGISTER OR GRILLE		FLEXIBLE DUCT
	90° ELBOW TURNED UP, ROUND		DIFFUSER, GRILLE OR REGISTER DESIGNATION TAG		ACOUSTICAL LINING - DUCT DIMENSIONS FOR NET FREE AREA
	90° ELBOW TURNED UP, ROUND		RETURN AIR GRILLE		SPLITTER DAMPER
	TRANSITION - DOUBLE SIDED		EXHAUST AIR GRILLE		ACCESS DOOR
	TRANSITION - ONE SIDED		SUPPLY DIFFUSER (NO ARROWS INDICATE 4-WAY)		UNDERCUT DOOR 3/4"
	TRANSITION - RECTANGULAR TO ROUND DUCT				END POINT OF DEMOLITION WORK
	STANDARD BRANCH - FOR SUPPLY AIR W/EXTRACTOR AND RETURN AIR W/O EXTRACTOR				NEW CONNECTION TO EXISTING
	RECTANGULAR DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW				THERMOSTAT
	ROUND DUCT INCLINE - RISE OR DROP IN RESPECT TO THE AIR FLOW				
	ELBOW - W/TURNING VANE (RECTANGULAR)				
	ELBOW - W/TURNING VANES (RECTANGULAR), SMOOTH RADIUS				

HVAC ABBREVIATIONS

AD ACCESS DOOR	EFF EFFICIENCY	NRC NOISE REDUCTION COEFFICIENT
ADJ ADJUSTABLE	EMCS ENERGY MANAGEMENT CONTROL SYSTEM	NTS NOT TO SCALE
AFF ABOVE FINISHED FLOOR	ESP EXTERNAL STATIC PRESSURE	OA OUTSIDE AIR
AFR ABOVE FINISHED ROOF	EWT ENTERING WATER TEMPERATURE	OD OUTSIDE DIAMETER
AHU AIR HANDLING UNIT	F FUTURE	OFCI OWNER FURNISHED CONTRACTOR INSTALLED
AI ANALOG INPUT	FA FREE AREA	OFOI OWNER FURNISHED OWNER INSTALLED
ALT ALTERNATIVE	FCP FAN CONTROL PANEL	OS&Y OUTSIDE SCREW AND YOKE
AMB AMBIENT	FCU FAN COIL UNIT	PD PRESSURE DROP
AO ANALOG OUTPUT	FL FILTER FLOOR	PH PHASE
APD AIR PRESSURE DROP	FLA FULL LOAD AMPS	PLBG PLUMBING
ARF ABOVE RAISED FLOOR	FPB FAN POWERED BOX	PPH POUNDS PER HOUR
AV AIR VALVE	PPM FEET PER MINUTE	PSI POUNDS PER SQUARE INCH
AVG AVERAGE	GAL GALLONS	PSIA POUNDS PER SQUARE INCH ABSOLUTE
BAS BUILDING AUTOMATION SYSTEM	GPH GALLONS PER HOUR	PSIG POUNDS PER SQUARE INCH GAUGE
BHP BRAKE HORSE POWER	GPM GALLONS PER MINUTE	QTY QUANTITY
BDD BACK DRAFT DAMPER	HP HORSE POWER	RA RETURN AIR
BOD BOTTOM OF DUCT	HR HOUR	REQD REQUIRED
BOE BOTTOM OF EQUIPMENT	HTG HEATING	RH RELATIVE HUMIDITY
BOP BOTTOM OF PIPE	HVAC HEATING, VENTILATION, & AIR CONDITIONING	RPM REVOLUTIONS PER MINUTE
BTUH BRITISH THERMAL UNITS PER HOUR	HZ HERTZ	RTU ROOFTOP UNIT
CAV CONSTANT AIR VOLUME	IAQ INDOOR AIR QUALITY	S SIGNAL PORT
CFH CUBIC FEET PER HOUR	ID INSIDE DIAMETER	SA SUPPLY AIR, SOUND ATTENUATOR
CFM CUBIC FEET PER MINUTE	IE INVERT ELEVATION	SCFM STANDARD CUBIC FEET PER MINUTE
CLG CEILING, COOLING	IN INCHES	SF SQUARE FEET
CO CLEAN OUT	I/O INPUT/OUTPUT	SP STATIC PRESSURE
CONN CONNECTION	IP CURRENT TO PNEUMATIC	SQ SQUARE
CONT CONTINUOUS	KEF KITCHEN EXHAUST FAN	TCP TEMPERATURE CONTROL PANEL
CRAC COMPUTER ROOM AIR CONDITIONER	KW KILOWATT	TD TEMPERATURE DIFFERENTIAL
CU CONDENSING UNIT	LAT LEAVING AIR TEMPERATURE	TEMP TEMPERATURE, TEMPORARY
DB DRY BULB	LB POUNDS	TES THERMAL ENERGY STORAGE
dB DECIBEL(S)	LV LOUVER	TYP TYPICAL
DDC DIRECT DIGITAL CONTROL	LWT LEAVING WATER TEMPERATURE	UNO UNLESS NOTED OTHERWISE
DEG F DEGREES FAHRENHEIT	MAU MAKE-UP AIR UNIT	UH UNIT HEATER
DH DEHUMIDIFIER	MAX MAXIMUM	V VOLTS
DIA DIAMETER	MBH THOUSAND BTUH	VAV VARIABLE AIR VOLUME
DN DOWN	MCC MOTOR CONTROL CENTER	V&C VALVE AND CAP
DX DIRECT EXPANSION	MISC MISCELLANEOUS	VD MANUAL VOLUME DAMPER
E EXISTING	MIN MINIMUM MINUTES	VRF VARIABLE REFRIGERANT FLOW
EA EXHAUST AIR	MFG MANUFACTURING	VTR VENT THROUGH ROOF
EAT ENTERING AIR TEMPERATURE	MOD MOTOR OPERATED DAMPER	W WATTS
EDH ELECTRIC DUCT HEATER	NC NORMALLY CLOSED, NOISE CRITERIA	WB WET BULB
EER ENERGY EFFICIENCY RATIO	NIC NOT IN CONTRACT	WG WATER GAUGE
EF EXHAUST FAN	NO NORMALLY OPEN, NUMBER	WPD WATER PRESSURE DROP

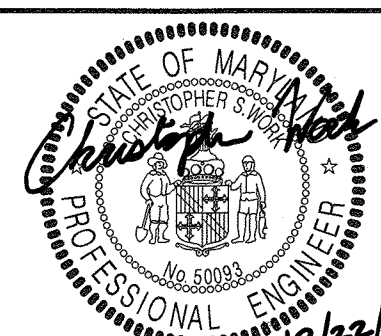
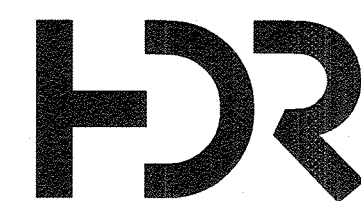
GENERAL NOTES

- PROVIDE AND INSTALL ALL MECHANICAL SYSTEMS IN ACCORDANCE WITH THE MARYLAND BUILDING PERFORMANCE STANDARDS (MBPS), THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE, AND ALL OTHER APPLICABLE STATE AND LOCAL CODES.
- CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. PLANS SHOULD NOT BE SCALED.
- VERIFY ALL CLEARANCES BEFORE FABRICATING AND INSTALLING WORK. COORDINATE WITH ALL OTHER TRADES.
- COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE INTERNATIONAL ELECTRICAL CODE (IEC) AND NFPA 70.
- ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR DUCTWORK (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- PROVIDE ACCESS PANELS FOR INSTALLATION IN DUCTWORK, WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE CONTROLS DEVICES, DAMPERS, VALVES, DUCTWORK, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANEL INSTALLATION SHALL BE COORDINATED WITH PROCESS REQUIREMENTS, ARCHITECTURAL WORK TO MATCH MATERIALS AND FINISHES.
- ALL DUCTWORK SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH ALL TRADES. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS OR AS SHOWN ON THE MECHANICAL AND STRUCTURAL DRAWINGS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED.
- PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK AND PIPING SYSTEMS CONNECTED TO FANS, PUMPS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION.

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: , EXPIRATION DATE: ."

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* DATE: 10/31/19
 Chief, Bureau of Utilities: *[Signature]* DATE: 11/13/19
 Chief, Utility Design Division: *[Signature]* DATE: 11/13/19



DES: CK	
DRN: BR	
CHK: CW	
10/15/2019	
BY	NO.
REVISION	DATE

LEGEND, ABBREVIATIONS AND GENERAL NOTES

800 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

G-105

SCALE AS SHOWN

SHEET 5 OF 31

ONE-LINE, POWER, AND LIGHTING SYMBOLOGY

<p>LOW-VOLTAGE CIRCUIT BREAKER (CB), RATING AND NO. OF POLES AS SHOWN. WHEN SPECIFIC TYPE, OTHER THAN MCCB, IS REQUIRED, X INDICATES TYPE.</p> <p>TYPES: MCCB - MOLDED CASE ICCB - INSULATED CASE LVP - LOW VOLTAGE POWER MCP - MOTOR CIRCUIT PROTECTOR (RATING PER CONNECTED LOAD)</p> <p>TRIP UNIT: L - LONG TIME PICKUP S - SHORT TIME PICKUP I - INSTANTANEOUS PICKUP G - GROUND FAULT PICKUP A - ARC FLASH MAINTENANCE</p> <p>GROUND FAULT PROTECTION GROUND FAULT PROTECTION</p> <p>MEDIUM-VOLTAGE CIRCUIT BREAKER MEDIUM-VOLTAGE CIRCUIT BREAKER</p> <p>FUSE, SIZE, AND NUMBER OF FUSES AS NOTED FUSE, SIZE, AND NUMBER OF FUSES AS NOTED</p> <p>FUSED CUTOUT, CURRENT RATING, FUSE SIZE, AND NUMBER OF POLES AS NOTED FUSED CUTOUT, CURRENT RATING, FUSE SIZE, AND NUMBER OF POLES AS NOTED</p> <p>FUSIBLE SWITCH, CURRENT RATING, FUSE SIZE, AND QUANTITY AS NOTED FUSIBLE SWITCH, CURRENT RATING, FUSE SIZE, AND QUANTITY AS NOTED</p> <p>NON-FUSED SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED NON-FUSED SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED</p> <p>DISCONNECT OR DRAWOUT CONNECTION DISCONNECT OR DRAWOUT CONNECTION</p> <p>MAGNETIC MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MAGNETIC MOTOR STARTER MAGNETIC MOTOR STARTER AND SEPARATELY MOUNTED COMBINATION MAGNETIC MOTOR STARTER</p> <p>MOTOR CONTROLLER AND SEPARATELY MOUNTED MOTOR CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT MOTOR CONTROLLER AND SEPARATELY MOUNTED MOTOR CONTROLLER WITH SHORT CIRCUIT PROTECTION AND DISCONNECT</p> <p>MOTOR STARTER AND CONTROLLER SUBSCRIPTS: A - MAGNETIC STARTER NEMA SIZE B - STARTER TYPE NONE - FULL VOLTAGE NON-REVERSING (FVNR) FVR - FULL VOLTAGE REVERSING 2S - TWO SPEED RVAT - REDUCED VOLTAGE AUTO TRANSFORMER</p> <p>C - CONTROL DIAGRAM OR CONTROLS SCHEDULE NUMBER (IF REQUIRED)</p> <p>D - CONTROLLER TYPE VFD - VARIABLE FREQUENCY DRIVE SS - SOLID STATE CONT - CONTACTOR</p> <p>SEPARATELY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION SEPARATELY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION</p> <p>SEPARATELY MOUNTED MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION SEPARATELY MOUNTED MOTOR STARTER OR CONTROLLER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION</p> <p>DISCONNECT OR SAFETY SWITCH, 30A, 3P, X INDICATES AMP RATING GREATER THAN 30A, NON-FUSED UNLESS OTHERWISE NOTED DISCONNECT OR SAFETY SWITCH, 30A, 3P, X INDICATES AMP RATING GREATER THAN 30A, NON-FUSED UNLESS OTHERWISE NOTED</p> <p>FUSED DISCONNECT OR SAFETY SWITCH, 3P, X INDICATES AMP RATING GREATER THAN 30A, Y INDICATES FUSE SIZE FUSED DISCONNECT OR SAFETY SWITCH, 3P, X INDICATES AMP RATING GREATER THAN 30A, Y INDICATES FUSE SIZE</p> <p>SEPARATELY MOUNTED CIRCUIT BREAKER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION SEPARATELY MOUNTED CIRCUIT BREAKER; SEE ELECTRICAL ONE-LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION</p> <p>MOTOR WITH DESIGN HORSEPOWER (WHEN INDICATED) MOTOR WITH DESIGN HORSEPOWER (WHEN INDICATED)</p>	<p>GENERATOR GENERATOR</p> <p>TRANSFER SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED TRANSFER SWITCH, CURRENT RATING, AND NUMBER OF POLES AS NOTED</p> <p>ATS - AUTOMATIC MTS - MANUAL</p> <p>TRANSFORMER TRANSFORMER</p> <p>3-PHASE, 3-WIRE DELTA CONNECTION 3-PHASE, 3-WIRE DELTA CONNECTION</p> <p>3-PHASE, 4-WIRE GROUNDED WYE CONNECTION 3-PHASE, 4-WIRE GROUNDED WYE CONNECTION</p> <p>SWITCHBOARD OR PANELBOARD; NAME, VOLTAGE, PHASE, NUMBER OF WIRES WHEN INDICATED LP-100 208/120V 3Ø, 4W</p> <p>NON-MOTOR LOAD WITH DESIGN KVA, KW, OR AMP 100 KVA</p> <p>VOLTAGE TRANSFORMER (VT OR PT) VOLTAGE TRANSFORMER (VT OR PT)</p> <p>CURRENT TRANSFORMER (CT) CURRENT TRANSFORMER (CT)</p> <p>UTILITY WATT-HOUR METER PER UTILITY REQUIREMENTS UTILITY WATT-HOUR METER PER UTILITY REQUIREMENTS</p> <p>DIGITAL METERING PACKAGE DIGITAL METERING PACKAGE</p> <p>GROUND GROUND</p> <p>LIGHTNING ARRESTER LIGHTNING ARRESTER</p> <p>LOW VOLTAGE SURGE PROTECTIVE DEVICE LOW VOLTAGE SURGE PROTECTIVE DEVICE</p> <p>SELECTOR SWITCH SELECTOR SWITCH</p> <p>PUSHBUTTON PUSHBUTTON</p> <p>INSTRUMENTATION/CONTROL DEVICE INSTRUMENTATION/CONTROL DEVICE</p> <p>CONTROL PANEL INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT CONTROL PANEL INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT</p> <p>CONTROL PANEL WITH DISCONNECT SWITCH INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT CONTROL PANEL WITH DISCONNECT SWITCH INTEGRAL OR PROVIDED WITH ASSOCIATED EQUIPMENT</p> <p>JUNCTION OR PULL BOX JUNCTION OR PULL BOX</p> <p>PANELBOARD (250V TO 600V) PANELBOARD (250V TO 600V)</p> <p>PANELBOARD (LESS THAN 250V) PANELBOARD (LESS THAN 250V)</p> <p>ELECTRICAL EQUIPMENT ENCLOSURE; SWITCHBOARD, MOTOR CONTROL CENTER, CONTROL PANEL, TRANSFORMER OR OTHER EQUIPMENT AS INDICATED. ESTIMATED SIZE AS INDICATED. WHEN USED X INDICATES EQUIPMENT TYPE. ELECTRICAL EQUIPMENT ENCLOSURE; SWITCHBOARD, MOTOR CONTROL CENTER, CONTROL PANEL, TRANSFORMER OR OTHER EQUIPMENT AS INDICATED. ESTIMATED SIZE AS INDICATED. WHEN USED X INDICATES EQUIPMENT TYPE.</p> <p>EQUIPMENT TYPES: ATS - AUTOMATIC TRANSFER SWITCH CP - CONTROL PANEL MTS - MANUAL TRANSFER SWITCH MCC - MOTOR CONTROL CENTER UPS - UNINTERRUPTIBLE POWER SUPPLY VFD - VARIABLE FREQUENCY DRIVE SB - SWITCHBOARD SG - SWITCHGEAR T - TRANSFORMER</p>	<p>CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</p> <p>CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED) CEILING/PENDANT/BOLLARD MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</p> <p>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</p> <p>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED) WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</p> <p>WALL MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED WALL MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED</p> <p>POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</p> <p>POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED) POLE/STANCHION MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</p> <p>POLE/STANCHION MOUNTED FLOOR LUMINAIRE, LAMP TYPE AS SPECIFIED POLE/STANCHION MOUNTED FLOOR LUMINAIRE, LAMP TYPE AS SPECIFIED</p> <p>CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</p> <p>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED</p> <p>CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED) CEILING/PENDANT MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</p> <p>WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED) WALL MOUNTED LUMINAIRE, LAMP TYPE AS SPECIFIED, ALL OR PARTIAL EMERGENCY (INTERNAL OR EXTERNAL POWER SOURCE AS INDICATED)</p> <p>EMERGENCY LIGHT, 2 ATTACHED HEADS AS SHOWN EMERGENCY LIGHT, 2 ATTACHED HEADS AS SHOWN</p> <p>EMERGENCY LIGHT, REMOTE MOUNTED HEAD EMERGENCY LIGHT, REMOTE MOUNTED HEAD</p> <p>DOUBLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS DOUBLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS</p> <p>SINGLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS SINGLE-FACED CEILING OR WALL MOUNTED EXIT LIGHT; DIRECTIONAL ARROWS (IF REQUIRED) AS INDICATED ON PLANS</p> <p>LIGHTING FIXTURE SUBSCRIPTS: X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD Z - INDICATES CONTROLLING SWITCH (IF REQUIRED) NL - NIGHT LIGHT UNSWITCHED</p> <p>WALL SWITCH SUBSCRIPTS: X - INDICATES TYPE NONE - SINGLE POLE 2 - DOUBLE POLE 3 - THREE-WAY 4 - FOUR-WAY K - KEY SWITCH P - PILOT LIGHT L - LIGHTED HANDLE DM - DIMMING MC - MOMENTARY CONTACT T - TIMER Y - INDICATES CONTROLLING SWITCH (IF REQUIRED)</p> <p>MANUAL MOTOR STARTER SUBSCRIPTS: X - INDICATES TYPE HP - HORSEPOWER RATED TE - HORSEPOWER RATED WITH THERMAL ELEMENT FT - HORSEPOWER RATED WITH FUSETRON FUSE Y - INDICATES SWITCH TYPE NONE - TOGGLE SWITCH TYPE R - ROTARY SWITCH TYPE</p> <p>PHOTOCELL PHOTOCELL</p> <p>TIME CLOCK TIME CLOCK</p> <p>LIGHTING CONTROL OCCUPANCY SENSOR, WALL MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED LIGHTING CONTROL OCCUPANCY SENSOR, WALL MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED</p> <p>LIGHTING CONTROL OCCUPANCY SENSOR, CEILING MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED LIGHTING CONTROL OCCUPANCY SENSOR, CEILING MOUNTED, X INDICATES SPECIFIC TYPE AS SPECIFIED</p>	<p>PLUG-IN RECEPTACLE STRIP, QUANTITY AND SPACING OF RECEPTACLES AS NOTED OR SPECIFIED PLUG-IN RECEPTACLE STRIP, QUANTITY AND SPACING OF RECEPTACLES AS NOTED OR SPECIFIED</p> <p>SPECIAL-PURPOSE RECEPTACLE AS DEFINED ON PLANS SPECIAL-PURPOSE RECEPTACLE AS DEFINED ON PLANS</p> <p>TWO RECEPTACLES IN 2-GANG BOX UNDER COMMON COVER PLATE TWO RECEPTACLES IN 2-GANG BOX UNDER COMMON COVER PLATE</p> <p>DUPLEX RECEPTACLE DUPLEX RECEPTACLE</p> <p>SIMPLEX RECEPTACLE SIMPLEX RECEPTACLE</p> <p>RECESSED FLOOR MOUNTED BOX, QUANTITY AND TYPE OF RECEPTACLES AS INDICATED RECESSED FLOOR MOUNTED BOX, QUANTITY AND TYPE OF RECEPTACLES AS INDICATED</p> <p>SUBSCRIPTS: X - INDICATES TYPE GFCI - GROUND FAULT CIRCUIT INTERRUPTER IG - ISOLATED GROUND TR - TAMPER RESISTANT PLH - PLUG LOAD HALF CONTROLLED PLD - PLUG LOAD DUAL CONTROLLED USB - USB CHARGING STATION SPD - SURGE PROTECTIVE DEVICE Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD</p> <p>CONDUIT TURNING UP CONDUIT TURNING UP</p> <p>CONDUIT TURNING DOWN CONDUIT TURNING DOWN</p> <p>HOMERUN TO PANEL. SINGLE PHASE: 2 #12, 1 #12G IN 3/4" C. THREE PHASE: 3 #12, 1 #12G IN 3/4" C. UNLESS OTHERWISE NOTED HOMERUN TO PANEL. SINGLE PHASE: 2 #12, 1 #12G IN 3/4" C. THREE PHASE: 3 #12, 1 #12G IN 3/4" C. UNLESS OTHERWISE NOTED</p> <p>CONDUIT CONNECTION TO EQUIPMENT CONDUIT CONNECTION TO EQUIPMENT</p> <p>CIRCUIT RUN BETWEEN DEVICES EXPOSED IN NON-ARCHITECTURALLY FINISHED AREAS; CONCEALED IN ARCHITECTURALLY FINISHED AREAS. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT. CIRCUIT RUN BETWEEN DEVICES EXPOSED IN NON-ARCHITECTURALLY FINISHED AREAS; CONCEALED IN ARCHITECTURALLY FINISHED AREAS. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.</p> <p>CONDUIT RUN BETWEEN DEVICES CONCEALED IN NON-ARCHITECTURALLY FINISHED AREAS OR UNDER FLOOR SLAB. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT. CONDUIT RUN BETWEEN DEVICES CONCEALED IN NON-ARCHITECTURALLY FINISHED AREAS OR UNDER FLOOR SLAB. CONDUIT AND CONDUCTOR SIZES SHALL BE THE SAME AS THE HOMERUN FOR THE CIRCUIT.</p> <p>CIRCUIT HASH MARKS (WHEN INDICATED); LONG, SHORT, SINGLE DOT, AND DOUBLE DOT REPRESENT PHASE, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED EQUIPMENT GROUND, RESPECTIVELY. #12 IN 3/4" CONDUIT UNLESS OTHERWISE INDICATED. CIRCUIT HASH MARKS (WHEN INDICATED); LONG, SHORT, SINGLE DOT, AND DOUBLE DOT REPRESENT PHASE, NEUTRAL, EQUIPMENT GROUND, AND ISOLATED EQUIPMENT GROUND, RESPECTIVELY. #12 IN 3/4" CONDUIT UNLESS OTHERWISE INDICATED.</p> <p>CIRCUIT CONTINUATION CIRCUIT CONTINUATION</p> <p>CONDUIT STUBBED OUT AND CAPPED CONDUIT STUBBED OUT AND CAPPED</p> <p>CORD AND PLUG CONNECTION CORD AND PLUG CONNECTION</p> <p>CONDUIT TAG OR CIRCUIT NUMBER - WIRE AND CONDUIT SIZE AS SPECIFIED IN CIRCUIT SCHEDULE ON THE SHEETS CONDUIT TAG OR CIRCUIT NUMBER - WIRE AND CONDUIT SIZE AS SPECIFIED IN CIRCUIT SCHEDULE ON THE SHEETS</p> <p>GROUND CABLE GROUND CABLE</p> <p>GROUND ROD GROUND ROD</p> <p>GENERAL NOTES:</p> <ol style="list-style-type: none"> THIS IS A STANDARD ELECTRICAL SYMBOLOGY SHEET. NOT ALL SYMBOLS MAY BE USED ON THIS PROJECT. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE. SEE P&ID LEGEND SHEET FOR PROJECT SPECIFIC EQUIPMENT SYMBOLS, EQUIPMENT ABBREVIATIONS, AND PIPING SYSTEM ABBREVIATIONS.
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"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 37997, EXPIRATION DATE: 12/18/2019

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Jay L. Williams 11/13/19
DIRECTOR OF PUBLIC WORKS DATE

Monica P. Butler 11/13/19
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 10-31-19
CHIEF, UTILITY DESIGN DIVISION DATE

HR

[Professional Engineer Seal]

DES: RLA
DRN: CLS
CHK: RG
10/15/2019

BY	NO.	REVISION	DATE

ELECTRICAL LEGEND 1

600 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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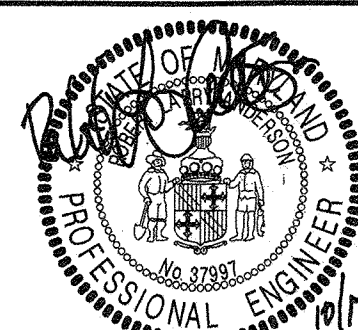
COMMUNICATION SYMBOLOGY	MASS NOTIFICATION SYMBOLOGY	CONTROL SYMBOLOGY	CONTROL SYMBOLOGY
WALL MOUNTED TELEPHONE OUTLET WALL MOUNTED DATA OUTLET WALL MOUNTED COMBINATION TELEPHONE AND DATA OUTLET RECESSED FLOOR MOUNTED TELEPHONE OUTLET RECESSED FLOOR MOUNTED DATA OUTLET RECESSED FLOOR MOUNTED COMBINATION TELEPHONE AND DATA OUTLET	EXTERIOR LOCATION HIGH POWER SPEAKER ARRAY (HPSA) LOCAL OPERATING CONSOLE TEXT MESSAGE DISPLAY UNIT MASS NOTIFICATION SYSTEM CONTROL PANEL COMBINATION SPEAKER/STROBE NOTIFICATION APPLIANCE SPEAKER NOTIFICATION APPLIANCE STROBE NOTIFICATION APPLIANCE CEILING MOUNTED SPEAKER WALL MOUNTED SPEAKER COMBINATION MASS NOTIFICATION/FIRE ALARM CONTROL PANEL COMBINATION MASS NOTIFICATION/FIRE ALARM SPEAKER NOTIFICATION APPLIANCE COMBINATION MASS NOTIFICATION/FIRE ALARM STROBE NOTIFICATION APPLIANCE COMBINATION MASS NOTIFICATION/FIRE ALARM STROBE NOTIFICATION APPLIANCE <p>LENS: FIRE ALARM - CLEAR MASS NOTIFICATION - AMBER</p>	ELECTRICAL CONNECTION NO ELECTRICAL CONNECTION SOLENOID VALVE <p>CONTROL/RELAY COIL: X-INDICATES TYPE Y-INDICATES LOOP NUMBER, WHEN USED</p> <p>TYPES: CR-CONTROL RELAY TC-TIME CLOCK PC-PHOTOCELL LC-LIGHTING CONTACTOR DP-DEFINITE PURPOSE TR-TIMING RELAY M-MOTOR STARTER</p> NORMALLY OPEN CONTACT (N.O.) NORMALLY CLOSED CONTACT (N.C.) NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS ENERGIZED NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS ENERGIZED NORMALLY OPEN TIME DELAY RELAY CONTACT WITH TIME DELAY ON OPENING AFTER COIL IS DE-ENERGIZED NORMALLY CLOSED TIME DELAY RELAY CONTACT WITH TIME DELAY ON CLOSING AFTER COIL IS DE-ENERGIZED NORMALLY OPEN TEMPERATURE SWITCH; CLOSE ON RISING TEMPERATURE NORMALLY CLOSED TEMPERATURE SWITCH; OPEN ON RISING TEMPERATURE NORMALLY OPEN FLOW SWITCH; CLOSE ON INCREASING FLOW NORMALLY CLOSED FLOW SWITCH; OPEN ON INCREASING FLOW NORMALLY OPEN LEVEL SWITCH, CLOSE ON RISING LEVEL NORMALLY CLOSED LEVEL SWITCH, OPEN ON RISING LEVEL NORMALLY OPEN PRESSURE SWITCH, CLOSE ON INCREASING PRESSURE NORMALLY CLOSED PRESSURE SWITCH, OPEN ON INCREASING PRESSURE NORMALLY OPEN LIMIT SWITCH, CLOSE ON REACHING LIMIT NORMALLY CLOSED LIMIT SWITCH, OPEN ON REACHING LIMIT MICROPROCESSOR (PLC, RTU, ETC.) OUTPUT MICROPROCESSOR (PLC, RTU, ETC.) INPUT FIELD WIRING EXTERNAL TO CONTROL PANEL INTERLOCK: X - INDICATES TYPE <p>TYPES: E - ELECTRICAL M - MECHANICAL K - KEY</p> 3 POSITION SELECTOR SWITCH, MAINTAINED CONTACTS; UNLESS OTHERWISE NOTED, 2-POSITION SIMILAR NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED	INDICATING LIGHT: X INDICATES LENS COLOR PUSH TO TEST INDICATING LIGHT: X INDICATES LENS COLOR <p>LENS COLORS: R - RED Y - YELLOW G - GREEN W - WHITE B - BLUE A - AMBER</p> THERMAL OVERLOAD ELEMENT THERMAL OVERLOAD RELAY CONTACT. WHEN SHOWN X INDICATES QUANTITY. CONTROL POWER TRANSFORMER (CPT) RUN TIME METER
AUDIO/VISUAL SYMBOLOGY			
TELEVISION OUTLET CEILING MOUNT SPEAKER WALL MOUNT SPEAKER <p>SPEAKER SUBSCRIPTS: X - INDICATES HEIGHT</p> HORN TYPE TRANSDUCER VOLUME CONTROL HEAD END EQUIPMENT FLOOR MOUNTED MICROPHONE JACK WALL MOUNTED MICROPHONE JACK			
SECURITY SYMBOLOGY	EMERGENCY ALARM SYMBOLOGY		
DOOR POSITION SWITCH COMBINATION ELECTRIC DOOR STRIKE AND POSITION SWITCH PROXIMITY CARD READER PROXIMITY CARD READER WITH KEYPAD DUAL TECHNOLOGY MOTION DETECTOR REQUEST TO EXIT MOTION DETECTOR REQUEST TO EXIT PUSH BUTTON GLASS BREAK DETECTOR CCTV CAMERA PAN/TILT/ZOOM WHEN INDICATED SECURITY EQUIPMENT CABINET REMOTE KEYPAD/CONTROL STATION	ALARM BELL ALARM HORN ALARM FLASHING LIGHT ALARM BELL AND FLASHING LIGHT COMBINATION UNIT ALARM HORN AND FLASHING LIGHT COMBINATION UNIT PUSHBUTTON OR PULLSTATION		
	SITE SYMBOLOGY		
	EXTERIOR PAD MOUNTED TRANSFORMER POLE - MOUNTED TRANSFORMER ELECTRICAL HANDHOLE OR MANHOLE <p>Y - MHX OR HHX X - INDICATES SEQUENCE NUMBER</p> POLE/STANCHION MOUNTED FLOOD LUMINAIRE, LAMP TYPE AS SPECIFIED POLE MOUNTED AREA OR ROADWAY LUMINAIRE, LAMP TYPE AS SPECIFIED HIGH MAST LIGHTING, NUMBER OF LUMINAIRES AS SPECIFIED <p>LIGHTING FIXTURE SUBSCRIPTS: X - INDICATES LUMINAIRE TYPE PER LUMINAIRE SCHEDULE Y - INDICATES CIRCUIT NUMBER FROM PANELBOARD</p> POWER POLE DOWNGUY UNDERGROUND (UNO) ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY OVERHEAD ELECTRICAL AND COMMUNICATION SYSTEMS PATHWAY		
		CONTROL SYMBOLOGY	FIRE ALARM SYMBOLOGY
			FIRE ALARM CONTROL PANEL FIRE ALARM ANNUNCIATOR FIRE ALARM MANUAL PULL STATION FLOW SWITCH TAMPER SWITCH PRESSURE SWITCH SPOT AND DUCT SMOKE DETECTOR: X INDICATES TYPE <p>SUBSCRIPT: I - IONIZATION P - PHOTOELECTRIC D - FIRE OR SMOKE DAMPER</p> HEAT DETECTOR <p>SUBSCRIPT: R/C - RATE COMPENSATION R/F - COMBINATION RATE OF RISE AND FIXED TEMP R - FIXED TEMP F - RATE OF RISE FIXED</p> FLAME DETECTOR <p>SUBSCRIPT: IR - INFRARED UV - ULTRAVIOLET</p> DOOR HOLDER BELL HORN/SPEAKER FLASHING LIGHT HORN/SPEAKER AND FLASHING LIGHT COMBINATION UNIT BELL/SPEAKER AND FLASHING LIGHT COMBINATION UNIT

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G-107

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

11/19/19
 DIRECTOR OF PUBLIC WORKS DATE
 11/13/19
 CHIEF, BUREAU OF ENGINEERING DATE
 11/13/19
 CHIEF, UTILITY DESIGN DIVISION DATE



DES: RLA	
DRN: CLS	
CHK: RG	
10/15/2019	
BY	NO.
REVISION	DATE

ELECTRICAL LEGEND 2

600 SCALE MAP NO. BLOCK NO.

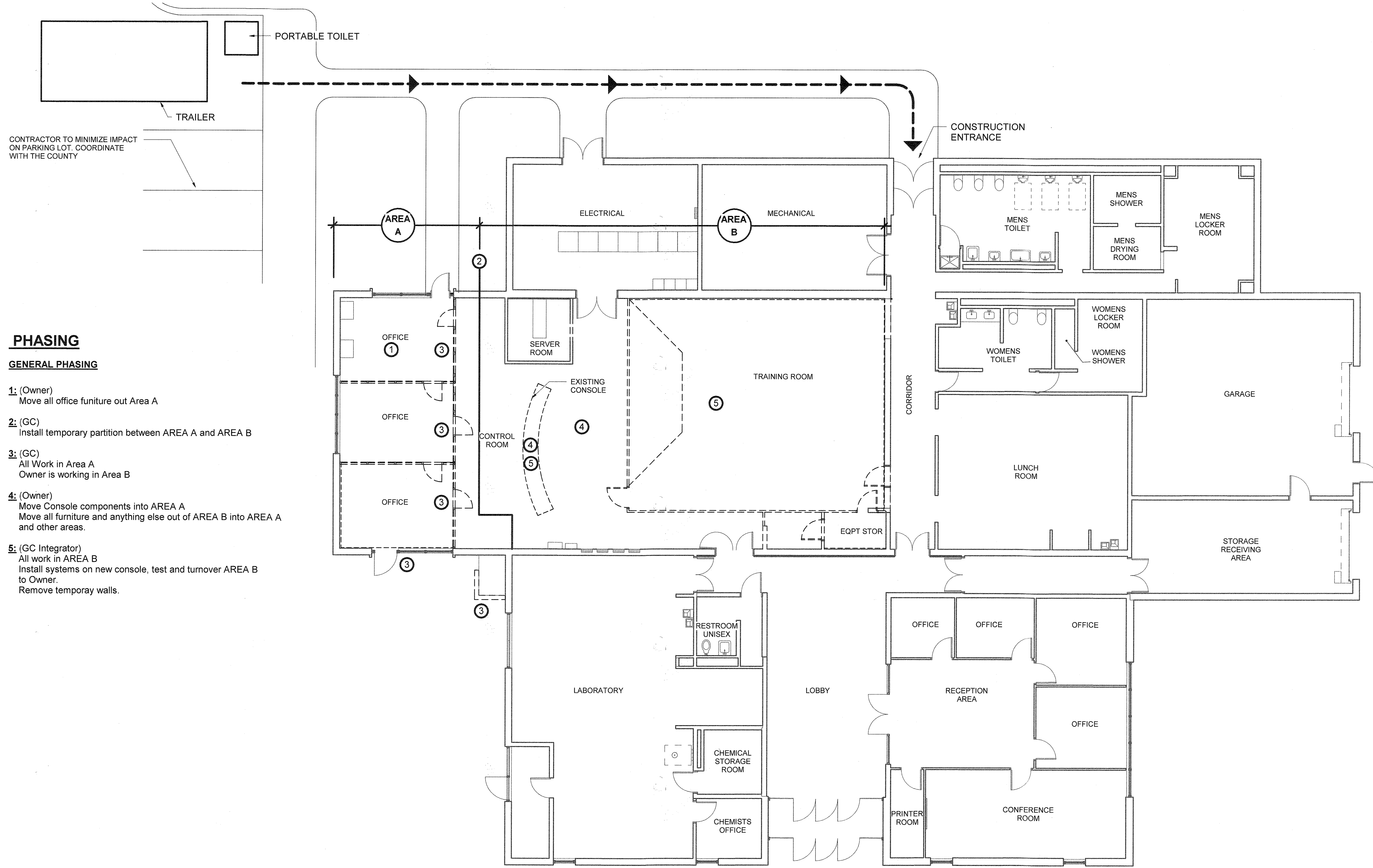
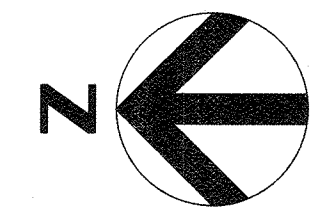
CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
 CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

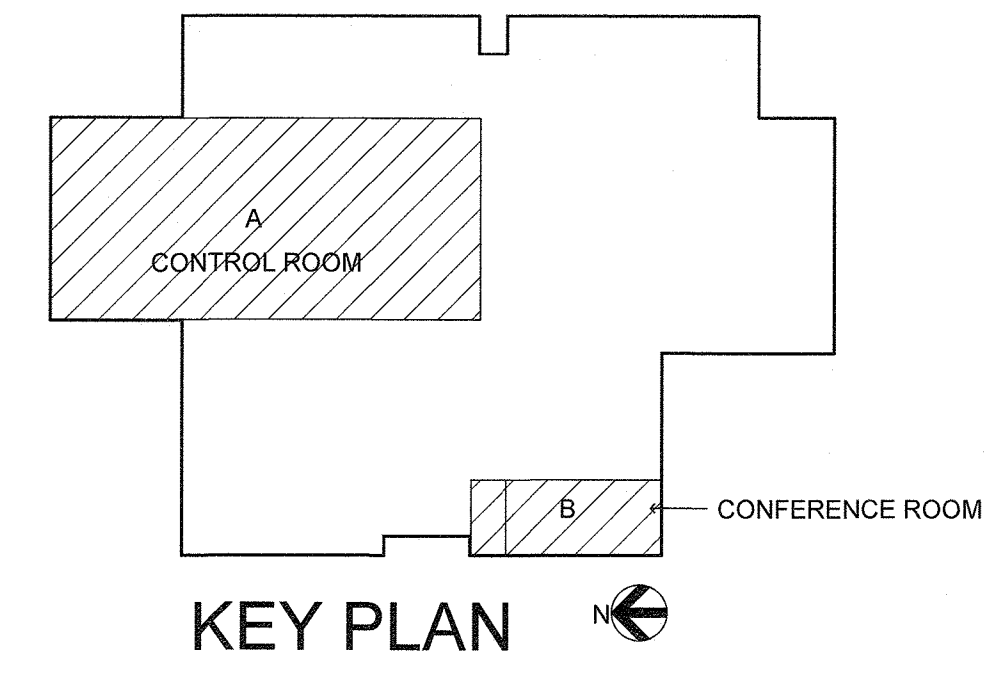
SHEET 7 OF 31



PHASING
GENERAL PHASING

- 1: (Owner)
Move all office furniture out Area A
- 2: (GC)
Install temporary partition between AREA A and AREA B
- 3: (GC)
All Work in Area A
Owner is working in Area B
- 4: (Owner)
Move Console components into AREA A
Move all furniture and anything else out of AREA B into AREA A and other areas.
- 5: (GC Integrator)
All work in AREA B
Install systems on new console, test and turnover AREA B to Owner.
Remove temporary walls.

PHASING PLAN
1/8" = 1'-0"



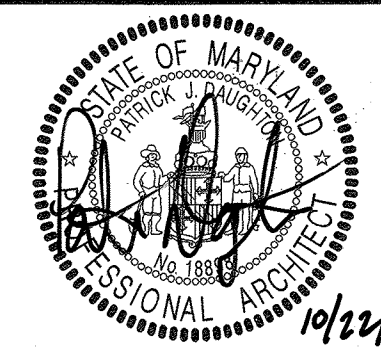
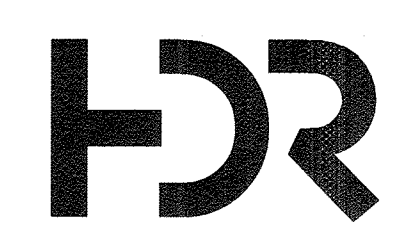
KEY PLAN

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**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 10-31-19
 CHIEF, BUREAU OF UTILITIES: *[Signature]* DATE: 10/22/19
 CHIEF, BUREAU OF ENGINEERING: *[Signature]* DATE: 11/13/19
 CHIEF, UTILITY DESIGN DIVISION: *[Signature]* DATE: 11/13/19

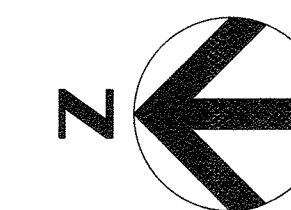


DES: J.T					
DRN: JW					
CHK: PJD					
10/15/2019	BY	NO.	REVISION	DATE	

ADMINISTRATION BUILDING PHASING PLAN

CONTROL ROOM UPGRADE
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

G-108
SCALE AS SHOWN
SHEET 8 OF 31

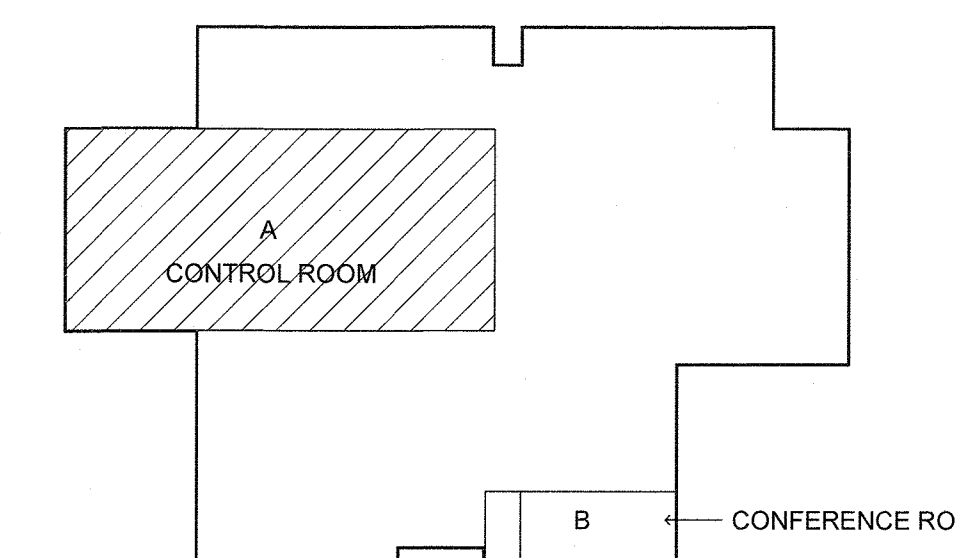


GENERAL NOTES:

1. REMOVE SUSPENDED ACOUSTICAL TILE CEILING SYSTEM IN THREE OFFICES, CONTROL ROOM, TRAINING ROOM, EQUIPMENT STORAGE AND SERVER ROOM.
2. EXISTING ACCESS FLOOR SYSTEM IS MANUFACTURED BY LISKEY
3. CONTRACTOR TO PROTECT EXISTING EQUIPMENT IN SERVER ROOM DURING DEMOLITION AND NEW WORK.
4. EXISTING ACCESS FLOOR SYSTEM TO REMAIN IN ALL ROOMS UNDER BASE BID
5. CONTRACTOR TO FIELD VERIFY ALL CONDITIONS PRIOR TO COMMENCEMENT OF WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES

KEYNOTES (X)

- 1 SALVAGE ALL DEMOUNTABLE PARTIONS, FRAMING, DOORS AND ASSOCIATED HARDWARE AND TURN OVER TO OWNER FOR REUSE. DO NOT DAMAGE DURING REMOVAL PROCESS.
- 2 REMOVE DRYWALL & FURRING.
- 3 REMOVE SECTION OF CONCRETE MASONRY UNIT WALL AS REQUIRED TO FIT NEW CONDITIONS REFER TO NEW WORK SHEET A-101.
- 4 REMOVE FIVE LOCKERS AS REQUIRED TO COMPLETE NEW WORK. (FIELD VERIFY).
- 5 REMOVE DOOR AND FRAME.
- 6 ADD ALTERNATE NO. 1 - REMOVE ACCESS FLOOR PANELS IN CONTROL ROOM AND PROVIDE NEW.
- 7 EXISTING WALLS TO REMAIN.
- 8 REMOVE INTERIOR DRYWALL AND STUD PARTITION.
- 9 EXISTING WINDOW TO REMAIN.
- 10 REMOVE RAISED STAGE ASSEMBLY.
- 11 REMOVE 40" HIGH BRICK SCREEN WALLS
- 12 REMOVE PORTION OF EXTERIOR WALL AND SECTION OF WINDOW TO PROVIDE NEW DOOR OPENING.



KEY PLAN

DEMOLITION PLAN

1/8" = 1'-0"

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"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

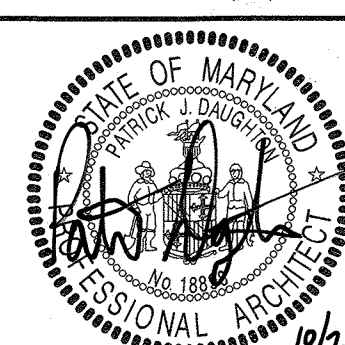
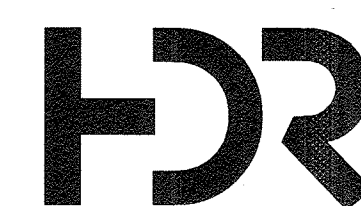
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jamal Williams 10/15/19
DIRECTOR OF PUBLIC WORKS DATE

James E. Suttler 11/15/19
CHIEF, BUREAU OF UTILITIES DATE

James E. Suttler 11/15/19
CHIEF, BUREAU OF ENGINEERING DATE

James E. Suttler 11/15/19
CHIEF, UTILITY DESIGN DIVISION DATE



DES: J.T

DRN: JW

CHK: PJD

10/15/2019

BY NO.

REVISION

DATE

ADMINISTRATION BUILDING DEMOLITION PLAN

600 SCALE MAP NO.

BLOCK NO.

CONTROL ROOM UPGRADE

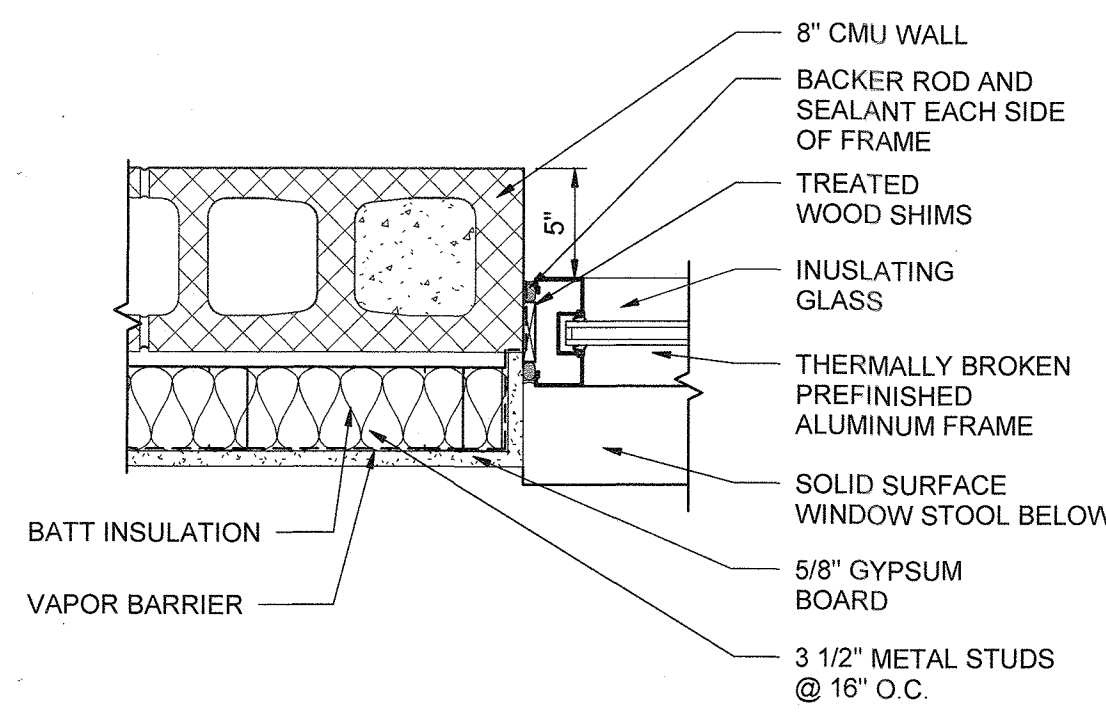
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AD-100

SCALE AS SHOWN

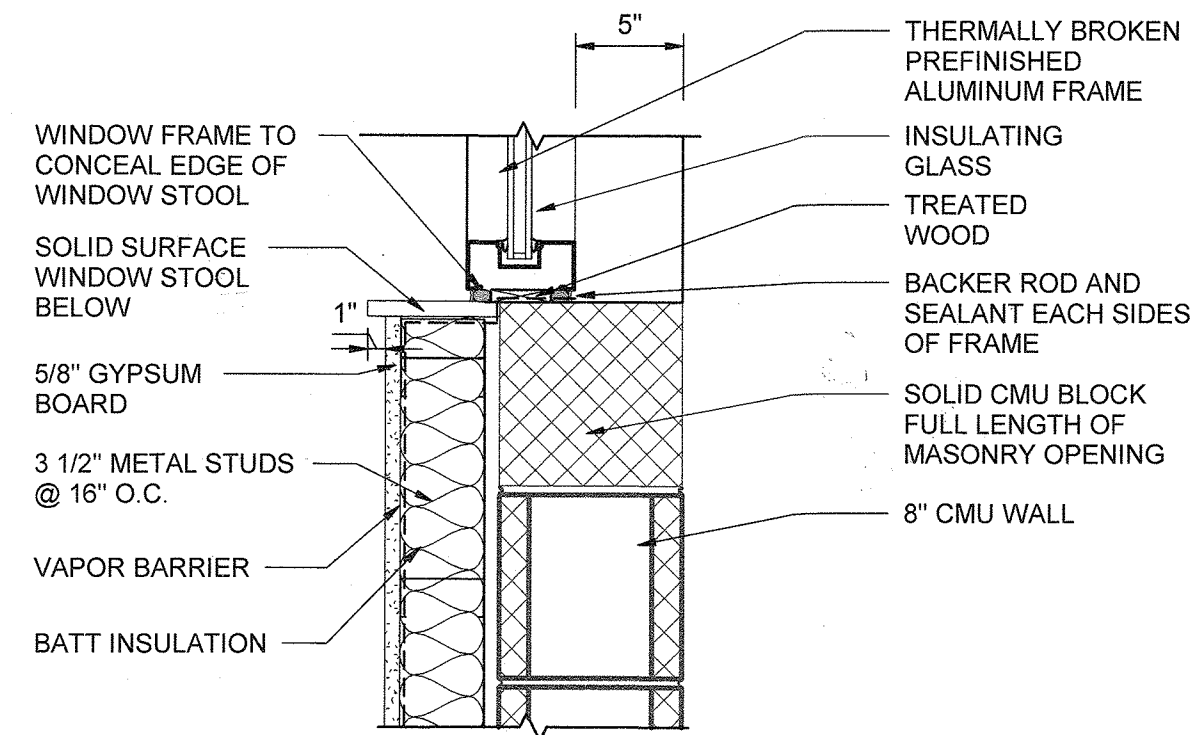
SHEET 9 OF 31



NOTE: THERMALLY BROKEN ALUMINUM WINDOW FRAME BASIS OF DESIGN KAWNEER TRIFAB 4515 (OR APPROVED EQUAL)

NOTE: HEAD CONDITION SIMILAR

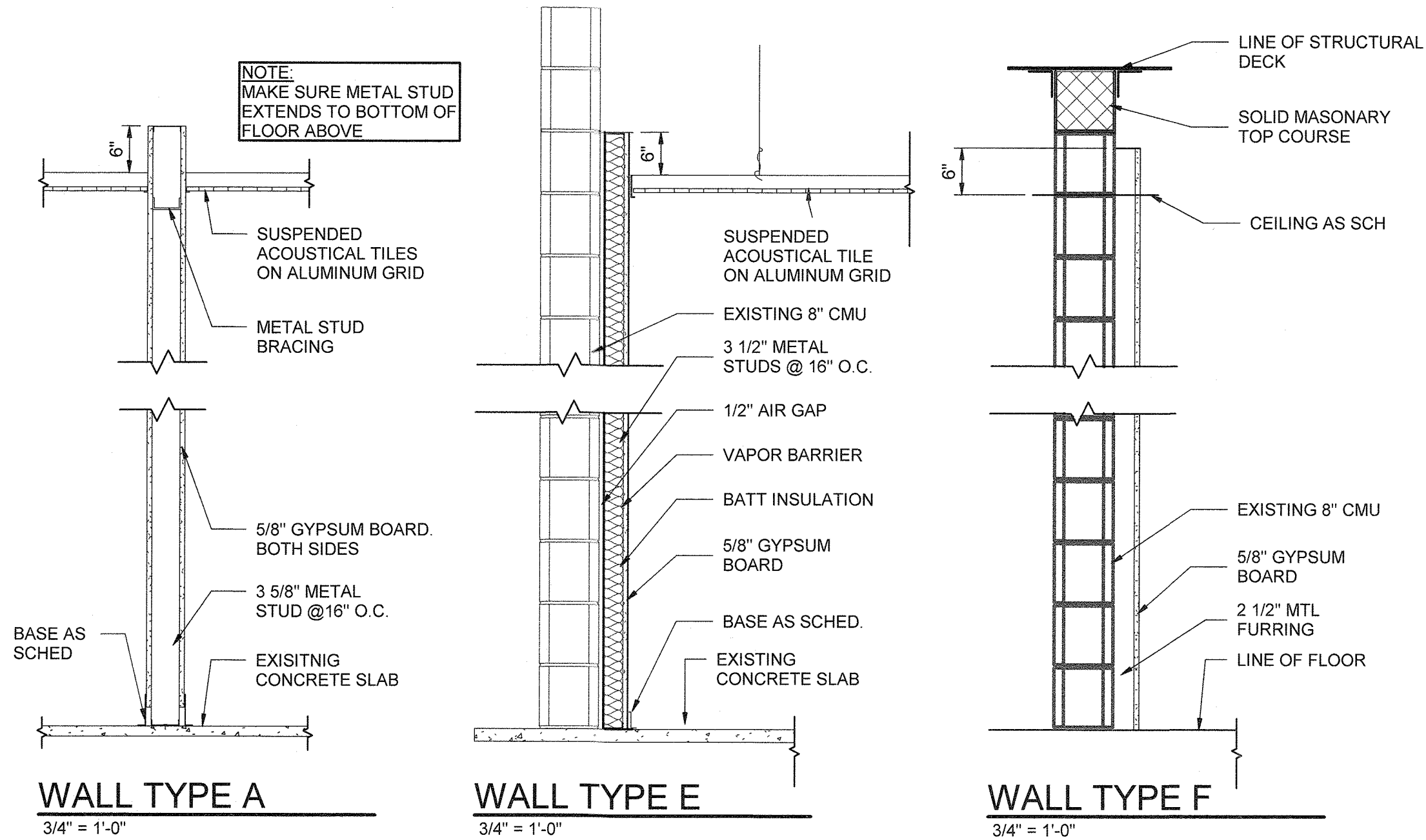
WINDOW JAMB DETAIL
1 1/2" = 1'-0"



NOTE: THERMALLY BROKEN ALUMINUM WINDOW FRAME BASIS OF DESIGN KAWNEER TRIFAB 4515 (OR APPROVED EQUAL)

NOTE: HEAD CONDITION SIMILAR

WINDOW SILL DETAIL
1 1/2" = 1'-0"



WALL TYPE A
3/4" = 1'-0"

WALL TYPE E
3/4" = 1'-0"

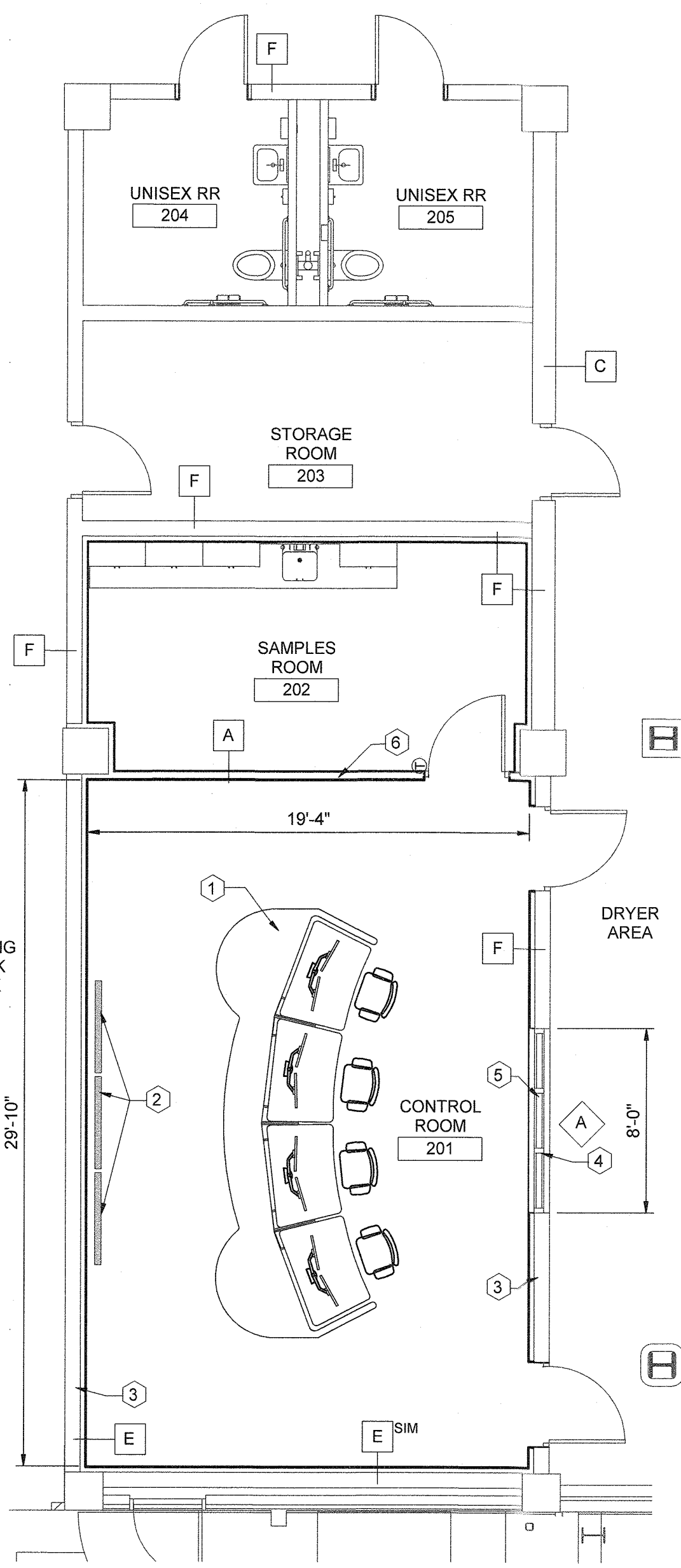
WALL TYPE F
3/4" = 1'-0"

GENERAL NOTES:

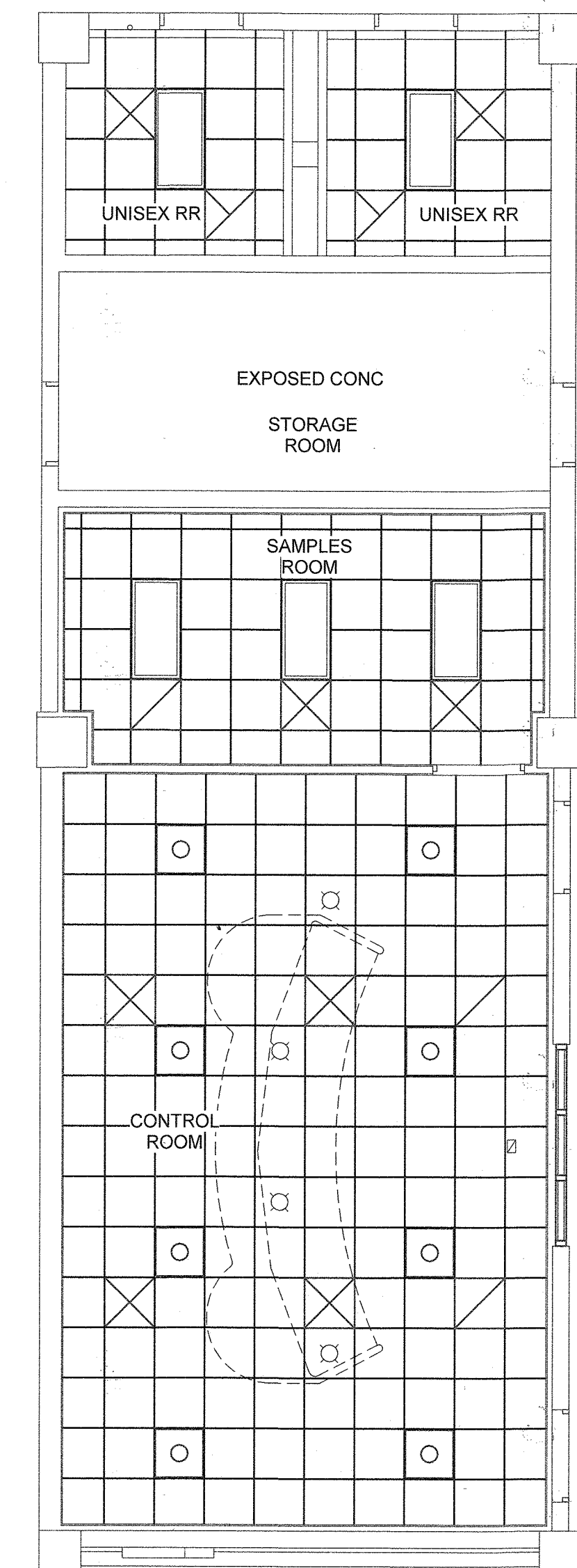
1. CONTRACTOR TO FIELD VERIFY ALL CONDITIONS PRIOR TO COMMENCEMENT OF WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES.
2. PROVIDE NEW AVI CONSOLE WORKSTATIONS.
3. ADD ALTERNATE NO. 5. PROVIDE WALL FRAMING, GYPSUM BOARD (PAINT), INSULATION, SUSPEND ACOUSTIC CEILINGS, VCT FLOOR TILES AND SOLID SURFACE WINDOW SILL.
4. CONTROL ROOM CONTRACTOR TO COORDINATION INSTALLATION OF DOORS/FRAMES BY DRYER BUILDING CONTRACTOR WITH CONSTRUCTION OF NEW WALLS.
5. ALL LIGHTING FIXTURES AND HVAC EQUIPMENT BY OTHERS.
6. ALL FIXTURES AND TOILET ACCESSORIES IN TOILET ROOMS 204 & 205 BY OTHERS.

KEY NOTES (X)

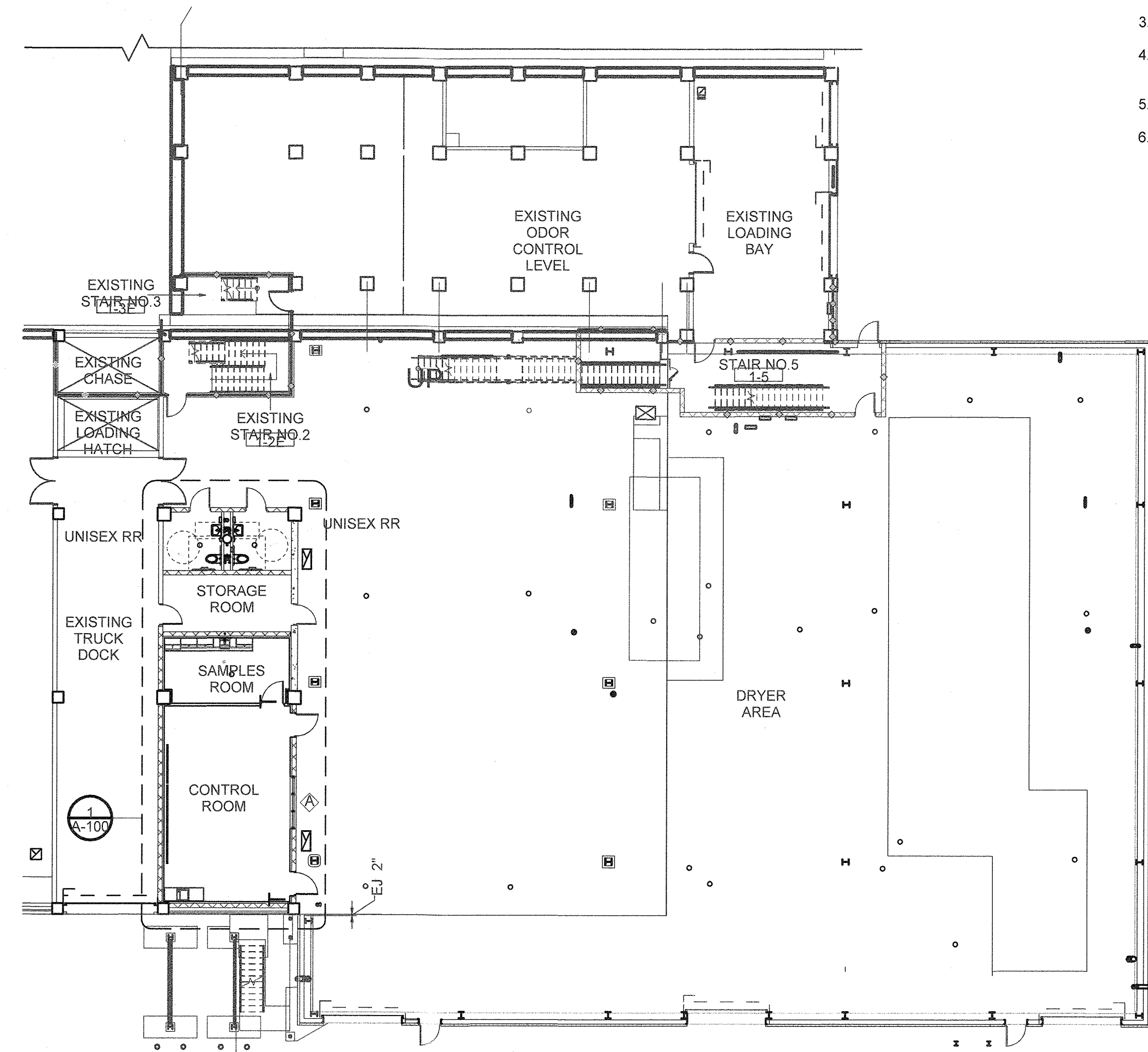
1. (4) MOTOR OPERATED ADJUSTABLE WORKSTATION CONSOLE WITH PLASTIC LAMINATE VERTICAL SURFACES AND SOLID SURFACE COUNTERTOPS, REFER TO A-106 FOR DETAILS
2. WALL MOUNTED VIDEO/MONITORS. COORDINATE WITH ELECTRICAL.
3. EXISTING 8" CMU WALL TO REMAIN
4. INSTALL THERMALLY BROKEN ANODIZED ALUMINUM STORE FRONT FRAMING WITH CLEAR, TEMPERED INSULATING GLASS.
5. PROVIDE SOLID SURFACE WINDOW STOOL FULL LENGTH OF WINDOW
6. NEW GYPSUM PARTITION WALL TYPE A



1 ENLARGED PLAN
3/16" = 1'-0"

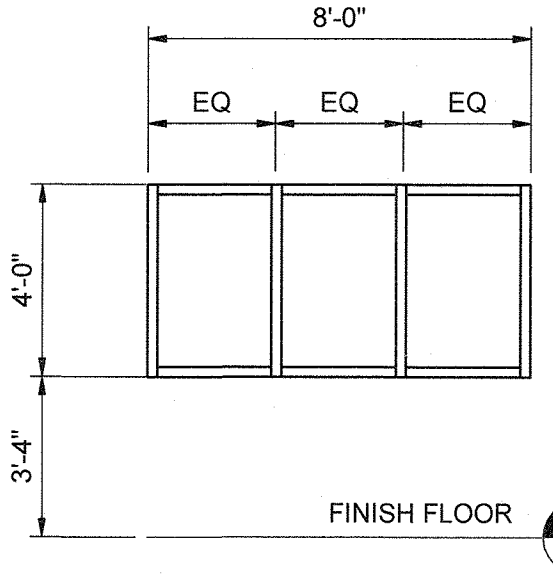


2 REFLECTIVE CEILING PLAN
3/16" = 1'-0"

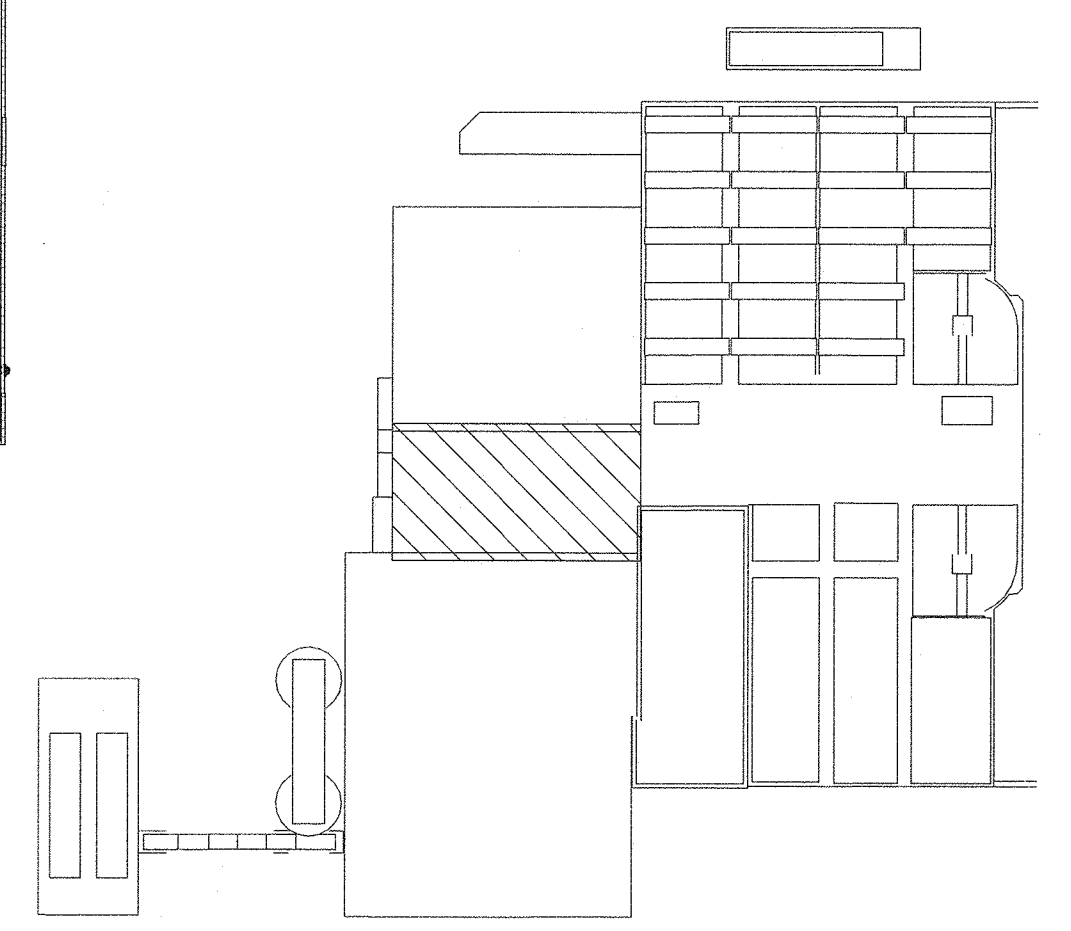


FLOOR PENETRATION
PROVIDE U.L. RATED FLOOR THROUGH PENETRATION FIRE STOP WHERE CONDUIT PENETRATES EXISTING 2 HOUR RATED FLOOR OF MCC ELECTRICAL ROOM ABOVE CONTROL ROOM 201. FIRE STOP SYSTEM TO HAVE F AND T RATING > 2 HOURS. COORDINATE FLOOR PENETRATION LOCATION WITH OWNER AND ELECTRICAL DRAWINGS. ACCEPTABLE SYSTEM "C-AJ-1518 OR APPROVED EQUAL.
EXISTING CONCRETE SLAB HAS REINFORCING 12" O.C. EW CORE DRILL HOLE IN CENTER OF REINFORCING GRID AVOIDING STEEL ENFORCING

PARTIAL FLOOR PLAN- DRYER BUILDING
1/16" = 1'-0"



WINDOW TYPE A
1/4" = 1'-0"



KEY PLAN

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

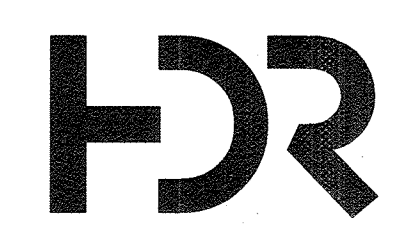
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 11/13/19
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 11/13/19
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 10-31-15
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 11/13/19
CHIEF, UTILITY DESIGN DIVISION DATE



DES: J.T					
DRN: J.W					
CHK: P.J.D					
10/15/2019					
BY	NO.	REVISION	DATE	600 SCALE MAP NO.	BLOCK NO.

DRYER BUILDING CONTROL ROOM PLANS

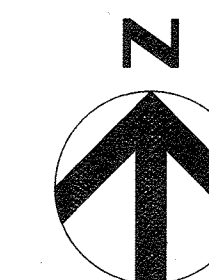
CONTROL ROOM UPGRADE
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

A-100
SCALE AS SHOWN
SHEET 10 OF 31

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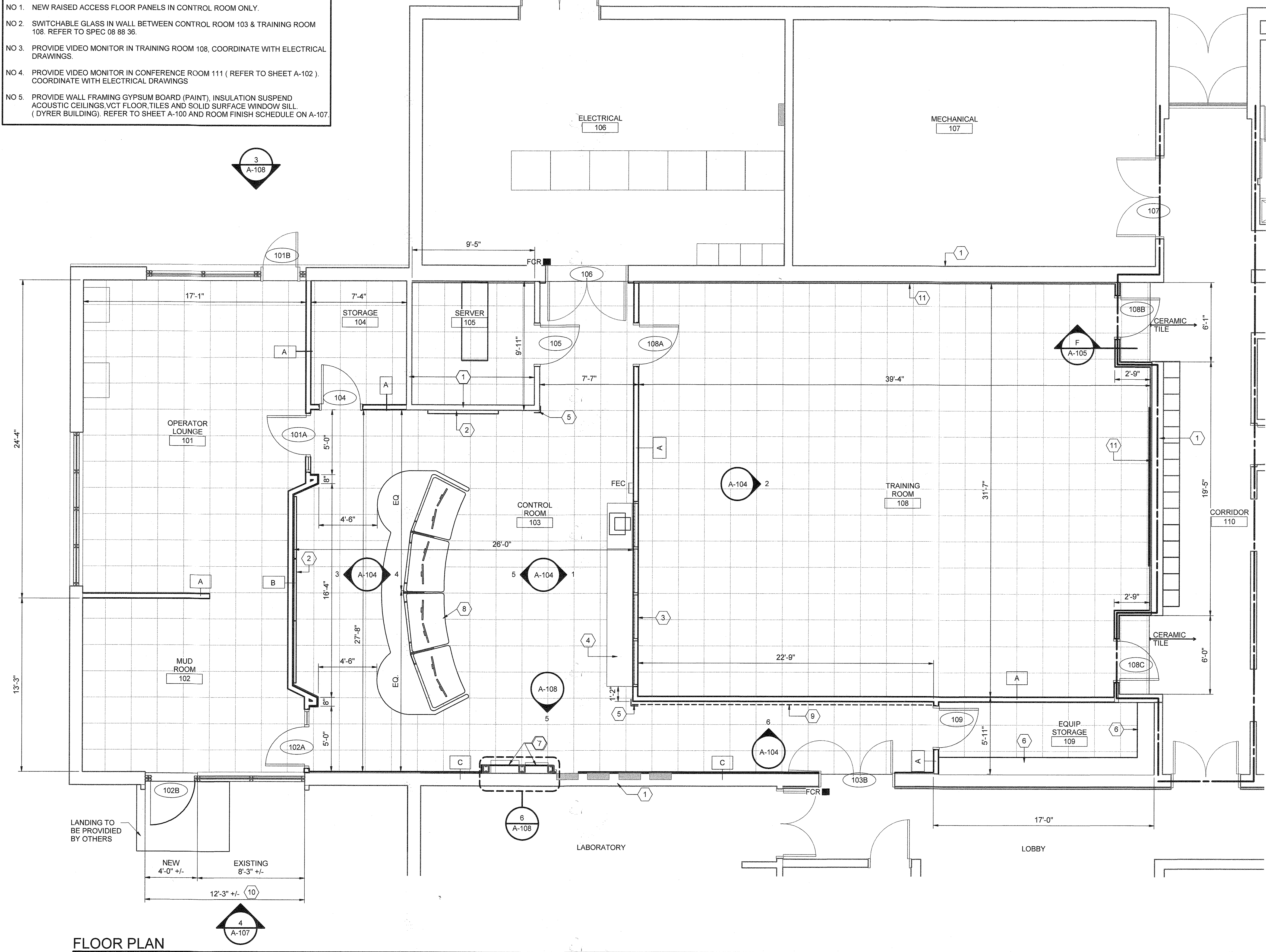
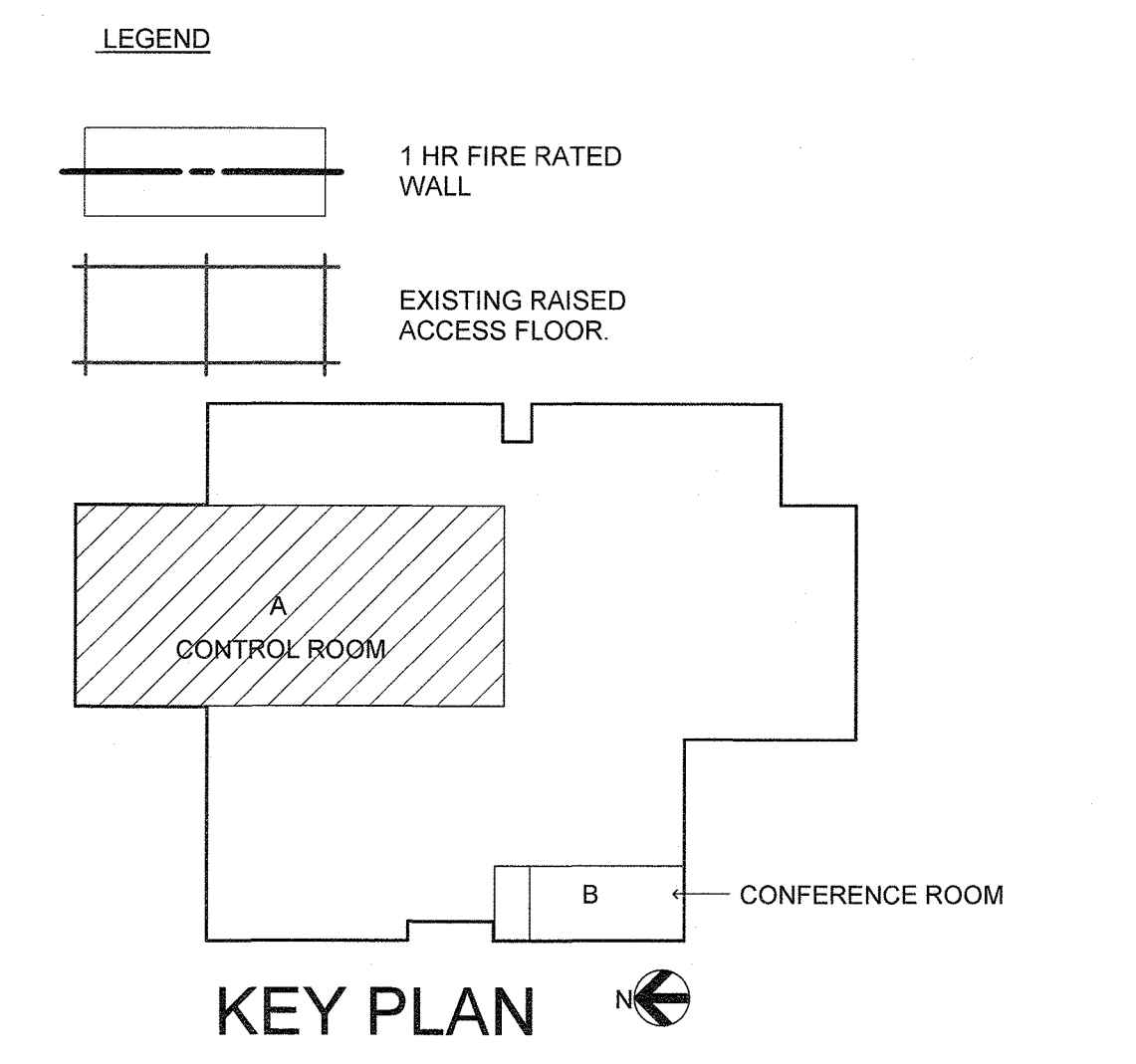
ADD ALTERNATES:

- NO 1. NEW RAISED ACCESS FLOOR PANELS IN CONTROL ROOM ONLY.
- NO 2. SWITCHABLE GLASS IN WALL BETWEEN CONTROL ROOM 103 & TRAINING ROOM 108. REFER TO SPEC 08 88 36.
- NO 3. PROVIDE VIDEO MONITOR IN TRAINING ROOM 108, COORDINATE WITH ELECTRICAL DRAWINGS.
- NO 4. PROVIDE VIDEO MONITOR IN CONFERENCE ROOM 111 (REFER TO SHEET A-102). COORDINATE WITH ELECTRICAL DRAWINGS.
- NO 5. PROVIDE WALL FRAMING GYPSUM BOARD (PAINT), INSULATION SUSPEND ACOUSTIC CEILINGS,VCT FLOOR,TILES AND SOLID SURFACE WINDOW SILL (DYRER BUILDING). REFER TO SHEET A-100 AND ROOM FINISH SCHEDULE ON A-107.



- GENERAL NOTES:**
1. REFER TO GENERAL NOTES ON AD-100
 2. REFER TO DOOR & ROOM FINISH SCHEDULES ON SHEET A-107.
 3. REFER TO REFLECTED CEILING PLAN ON SHEET A-103.
 4. INSTALL NEW ACCESS FLOOR FRAME AND FLOOR PANELS IN ALL ROOMS INDICATED ON ROOM FINISH SCHEDULE, SEE SHEET A-106.
 5. REFER TO A-102 FOR ENLARGED CONFERENCE ROOM AREA.
 6. REFER TO WALL TYPES ON A-105.
 7. ALL FURNITURE SHOWN ON DRAWINGS OTHER THAN CONSOLE WORKSTATION AND CASEWORK TO BE PROVIDED BY OWNER.

- KEYNOTES:**
- 1 EXISTING WALLS TO REMAIN.
 - 2 WALL MOUNTED T.V. MONITOR. PROVIDE WOOD BLOCKING AT MOUNTING. COORDINATE WITH ELECTRICAL. PATCH & REPAIR GYP. BOARD.
 - 3 BASE BID TO INCLUDE HOLLOW METAL FRAME WITH CLEAR, TEMPERED GLASS. ADD ALTERNATE NO.2 TO INCLUDE SWITCHABLE/PRIVACY GLASS AND METAL FRAME SYSTEM. COORDINATE WITH ELECTRICAL.
 - 4 PLASTIC LAMINATE CASEWORK WITH SOLID SURFACE COUNTERTOPS.
 - 5 VINYL CORNER GUARD (FULL HEIGHT).
 - 6 PROVIDE 12" WIDE ADJUSTABLE PLASTIC LAMINATE SHELVING. SEE SPECIFICATION SECTION 08 41 00
 - 7 FIXED WALL MOUNTED ELECTRICAL EQUIPMENT TO REMAIN. FURR OUT AROUND EQUIPMENT.
 - 8 BUILT-IN PLASTIC LAMINATE CASEWORK WITH SOLID SURFACE COUNTERTOP AROUND ADJUSTABLE WORKSTATIONS. REFER TO ENLARGED PLAN A-106.
 - 9 MURAL WALL
 - 10 NEW DOOR AND FRAME TO BE COMPATIBLE WITH AND INCORPORATED INTO EXISTING STOREFRONT SYSTEM. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS. PROVIDE NEW GALVANIZED STEEL SUPPORTS THAT ARE COMPATIBLE WITH EXISTING FRAMING SYSTEM. ALL NEW PREFINISHED ALUMINUM FLASHINGS AND COVERS SHALL MATCH EXISTING.
 - 11 EXISTING GYPSUM WALL CAN REMAIN

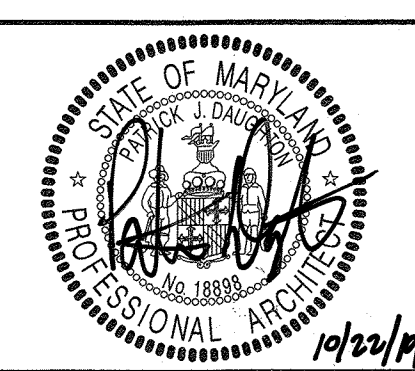
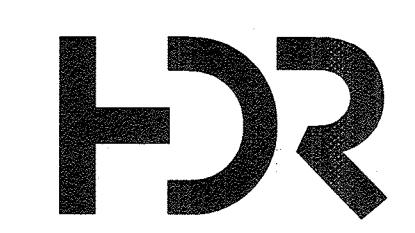


FLOOR PLAN
1/4" = 1'-0"

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* 10/31/19
 Chief, Bureau of Engineering: *[Signature]* 11/13/19
 Chief, Utility Design Division: *[Signature]* 11/13/19



DES: J.T					
DRN: JW					
CHK: PJD					
10/15/2019					
BY	NO.	REVISION	DATE	600 SCALE MAP NO.	BLOCK NO.

ADMINISTRATION BUILDING FLOOR PLAN

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

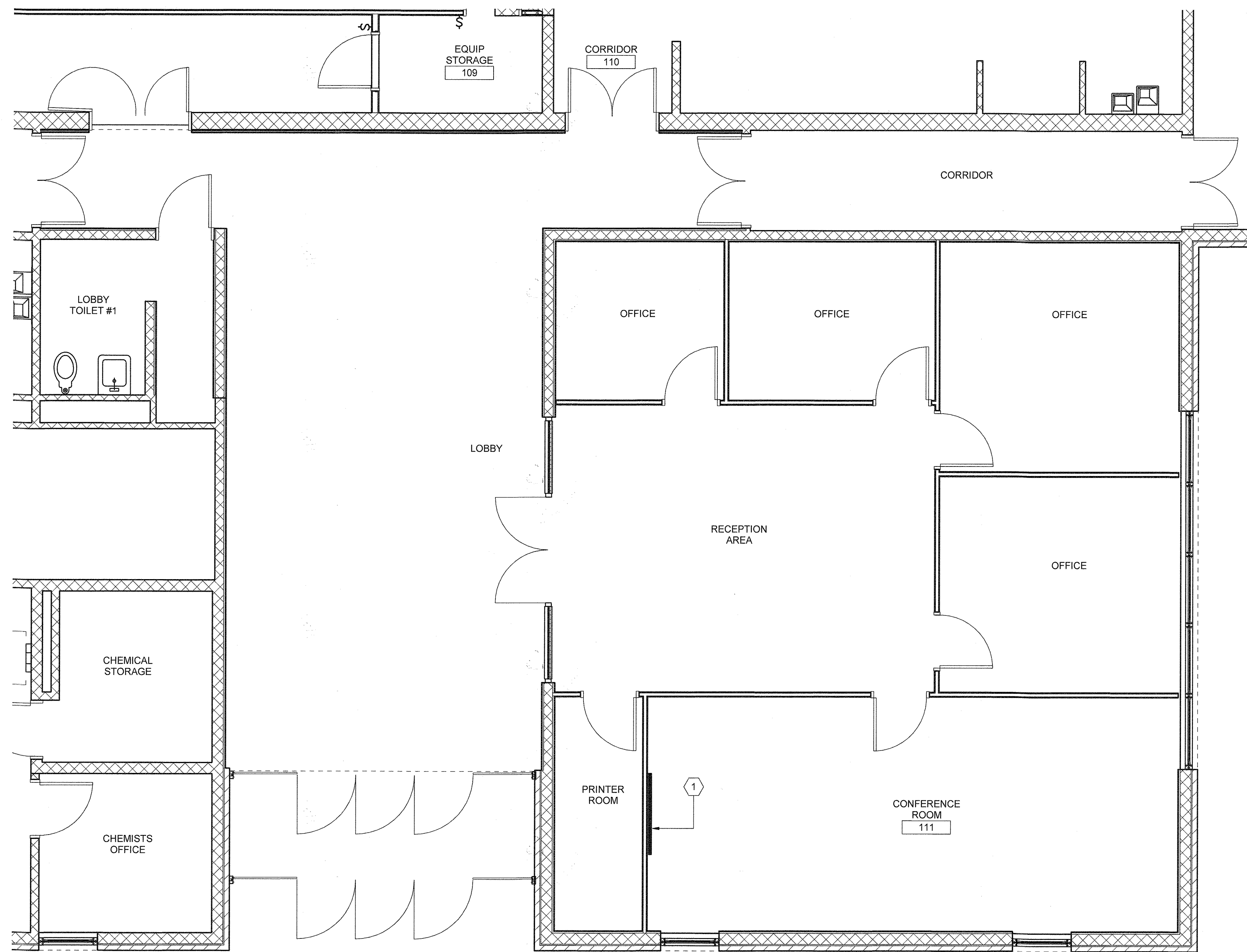
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

A-101

SCALE AS SHOWN

SHEET 11 OF 31

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GENERAL NOTES:

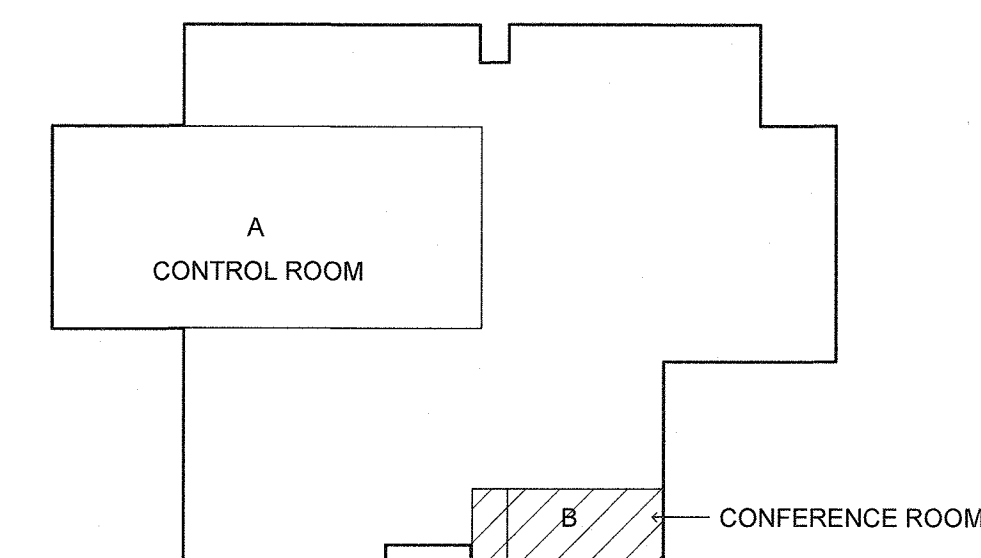
1. COORDINATE WORK REQUIRED IN THIS AREA WITH ELECTRICAL
2. CONTRACTOR TO FIELD VERIFY ALL CONDITIONS PRIOR TO COMMENCEMENT OF WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES

KEYNOTES

1. ADD ALTERNATE NO.4 VIDEO MONITOR, COORDINATE WITH ELECTRICAL DRAWINGS. PROVIDE BLOCKING AS REQUIRED. PATCH AND REPAIR GYPSUM BOARD. PAINT ALL WALLS IN ROOM 111

ENLARGED ADMIN PLAN FLOOR PLAN

1/4" = 1'-0"

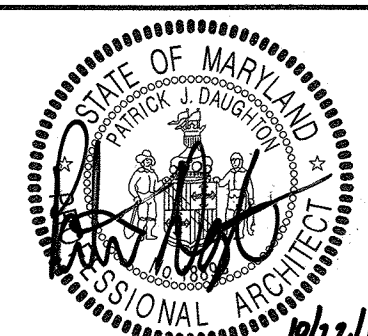
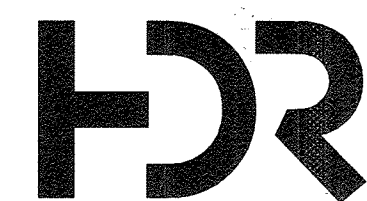


KEY PLAN

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* DATE: 10-31-19
 Chief, Bureau of Utilities: *[Signature]* DATE: 11/15/19
 Chief, Bureau of Engineering: *[Signature]* DATE: 11/15/19
 Chief, Utility Design Division: *[Signature]* DATE: 11/15/19



DES: Designer	
DRN: Author	
CHK: Checker	
10/15/2019	
BY	NO.
	REVISION
	DATE

ADMINISTRATION BUILDING CONFERENCE ROOM

600 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

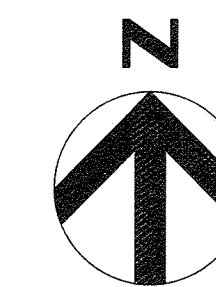
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

A-102

SCALE AS SHOWN

SHEET 12 OF 31

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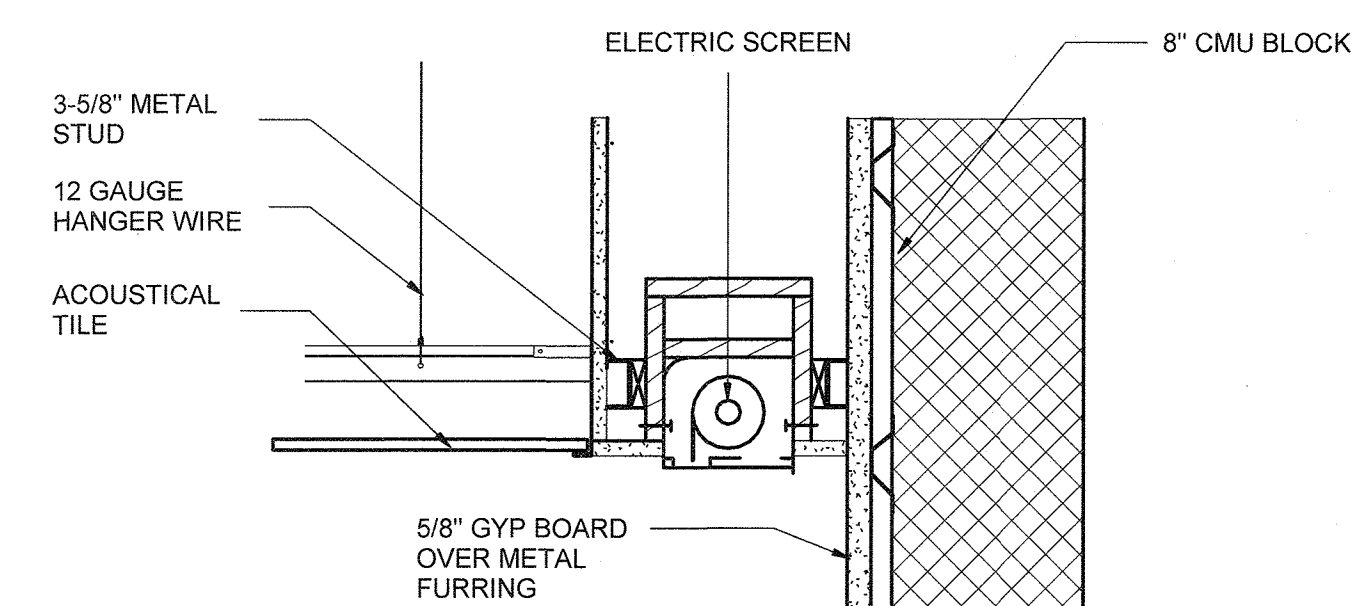
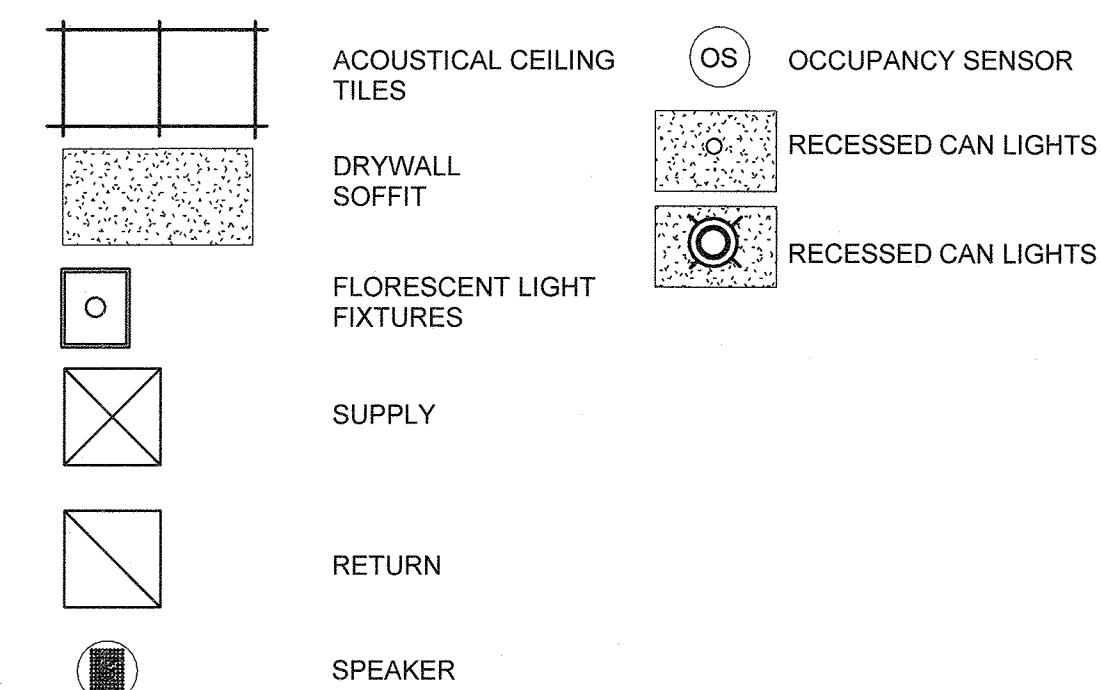
GENERAL NOTES:

- COORDINATE SUSPENDED CEILINGS, LIGHTING FIXTURES & HVAC SUPPLY & RETURN GRILLS WITH EXISTING DUCTWORK TO REMAIN

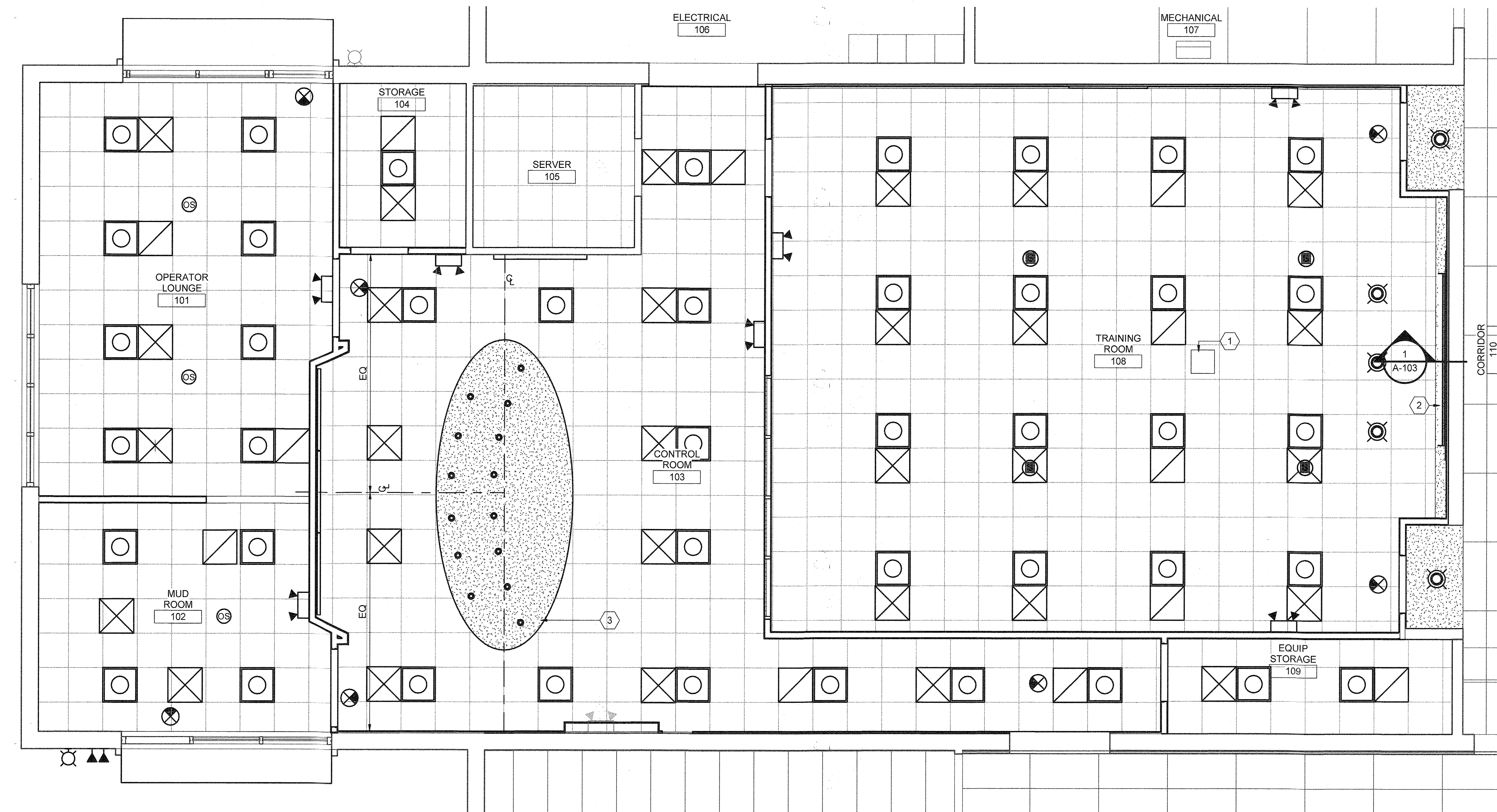
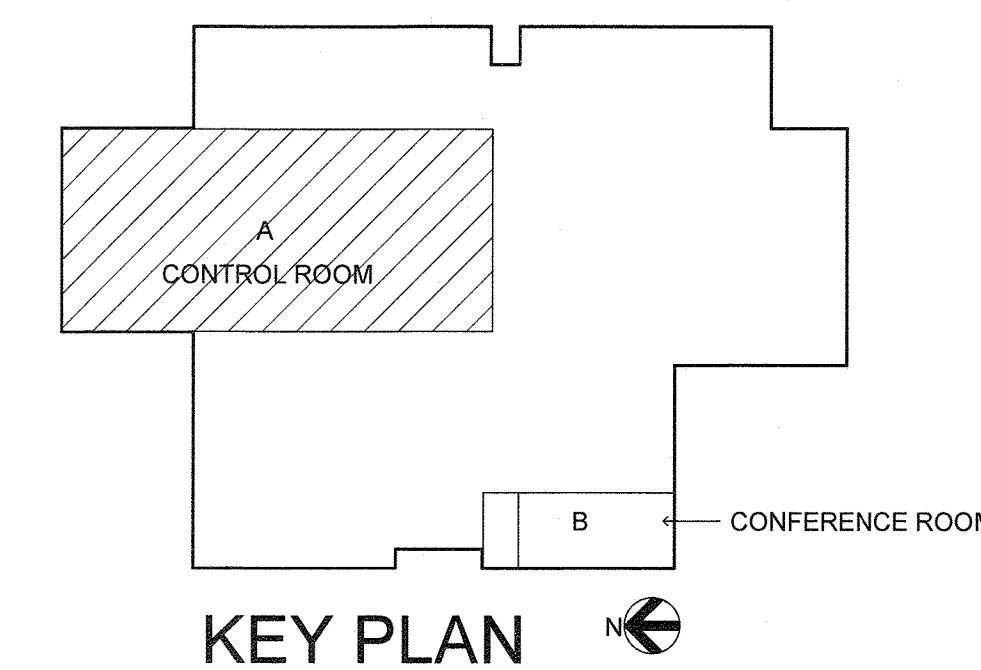
KEYNOTES

- CONCEALED DROP DOWN PROJECTOR LIFT, COORDINATE WITH ELECTRICAL DRAWINGS.
- CEILING RECESSED MOTOR OPERATED PROJECTOR SCREEN, COORDINATE WITH ELECTRICAL DRAWINGS. VERIFY SIZE WITH OWNER.
- DROPPED GYPSUM BOARD SOFFIT OVER CONSOLE WORKSTATIONS. REFER TO ENLARGED PLAN A-106.

LEGEND



1 DROP CEILING WITH SCREEN
A-103 1 1/2" = 1'-0"

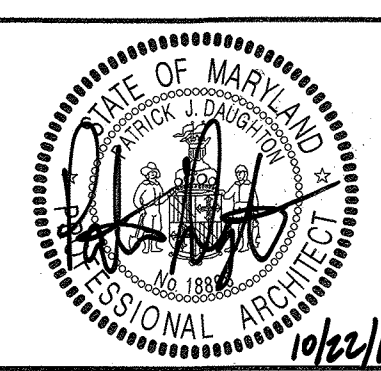
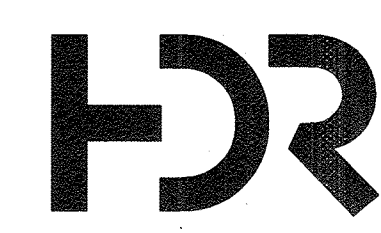


REFLECTED CEILING PLAN
1/4" = 1'-0"

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"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
 DIRECTOR OF PUBLIC WORKS DATE: 10/15/19	 CHIEF, BUREAU OF ENGINEERING DATE: 11/13/19
 CHIEF, BUREAU OF UTILITIES DATE: 10/21/19	 CHIEF, UTILITY DESIGN DIVISION DATE: 11/13/19

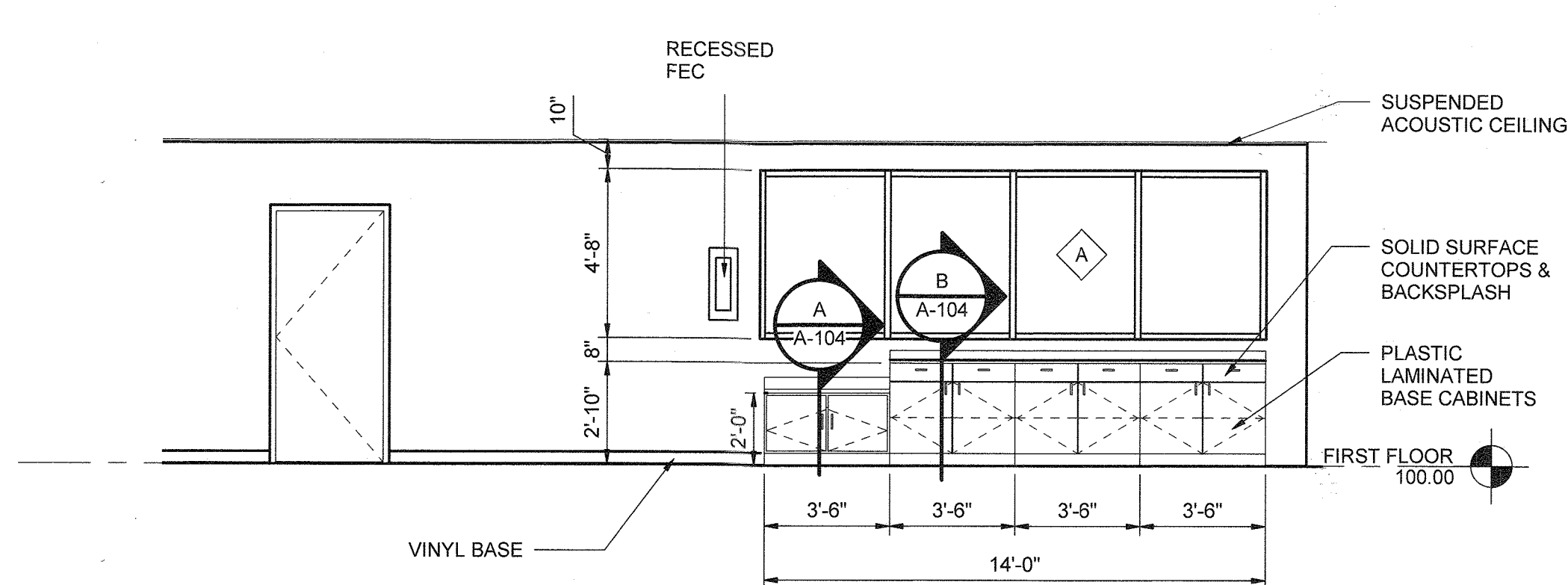


DES: JT					
DRN: JW					
CHK: PJD					
10/15/2019	BY	NO.	REVISION	DATE	

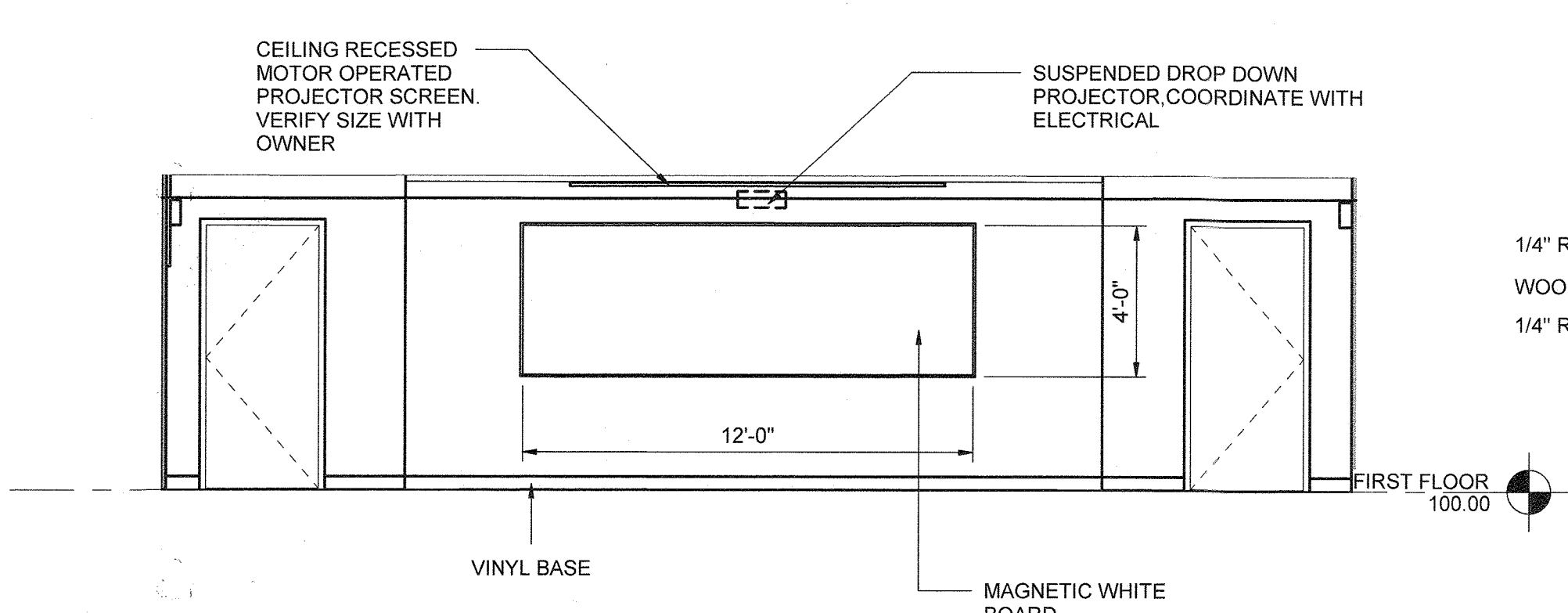
ADMINISTRATION BUILDING REFLECTED CEILING PLAN

CONTROL ROOM UPGRADE
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

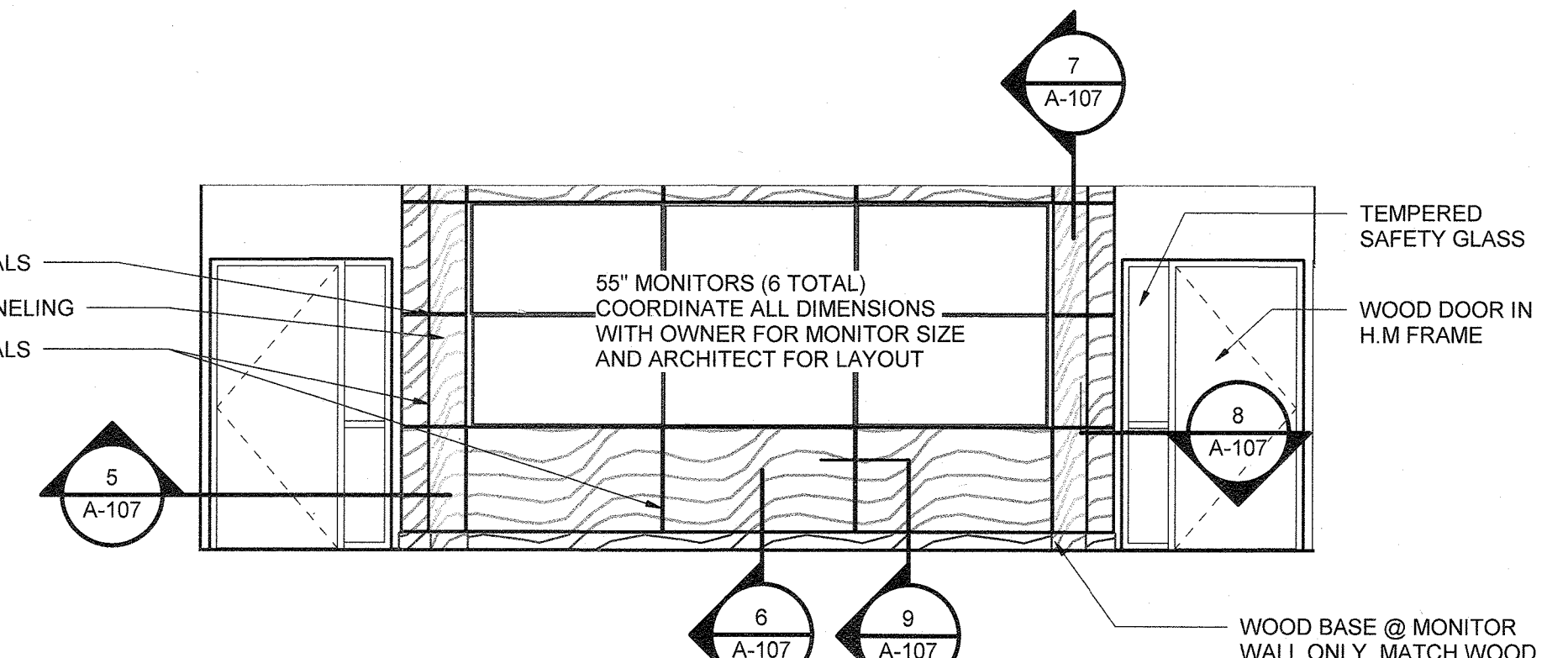
A-103
SCALE AS SHOWN
SHEET 13 OF 31



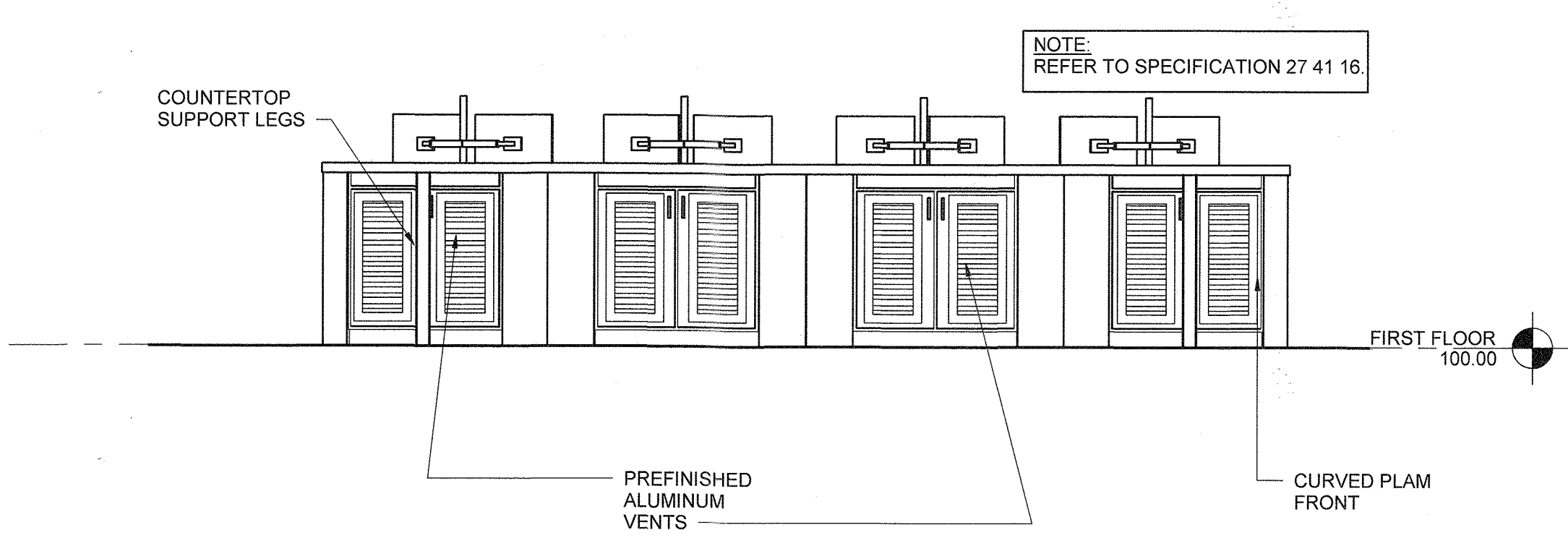
1 ELEVATION
A-101 1/4" = 1'-0"



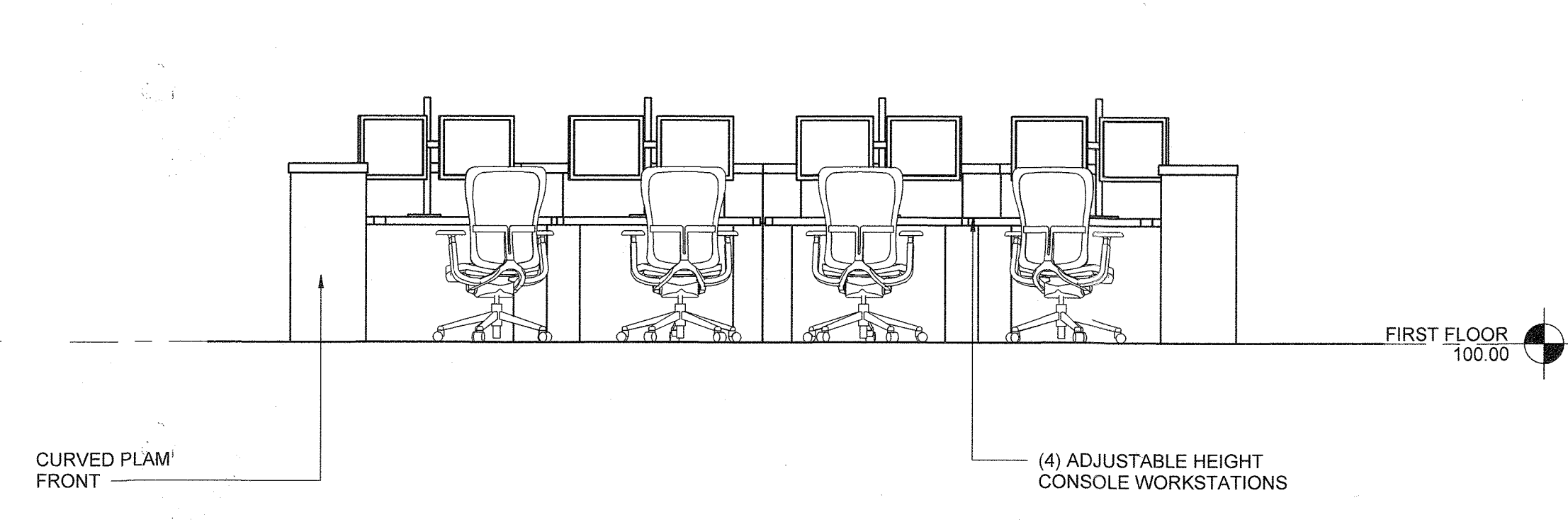
2 ELEVATION
A-101 1/4" = 1'-0"



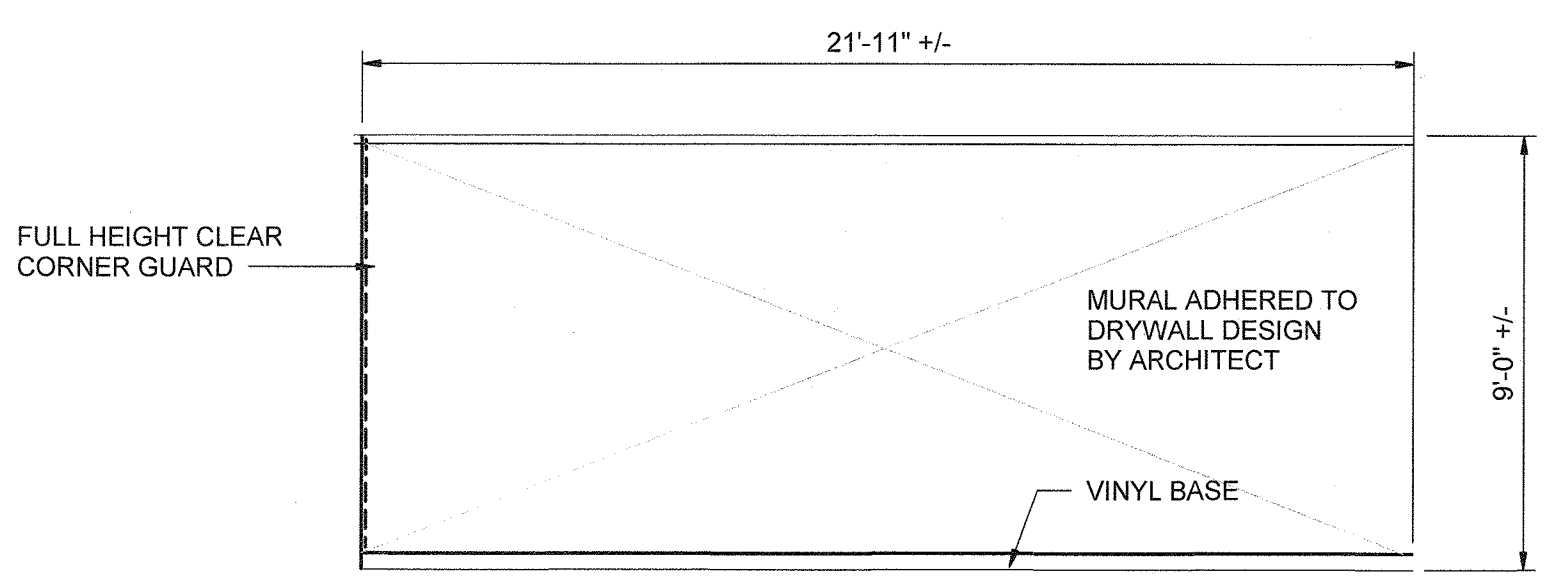
3 MONITOR WALL
A-101 1/4" = 1'-0"



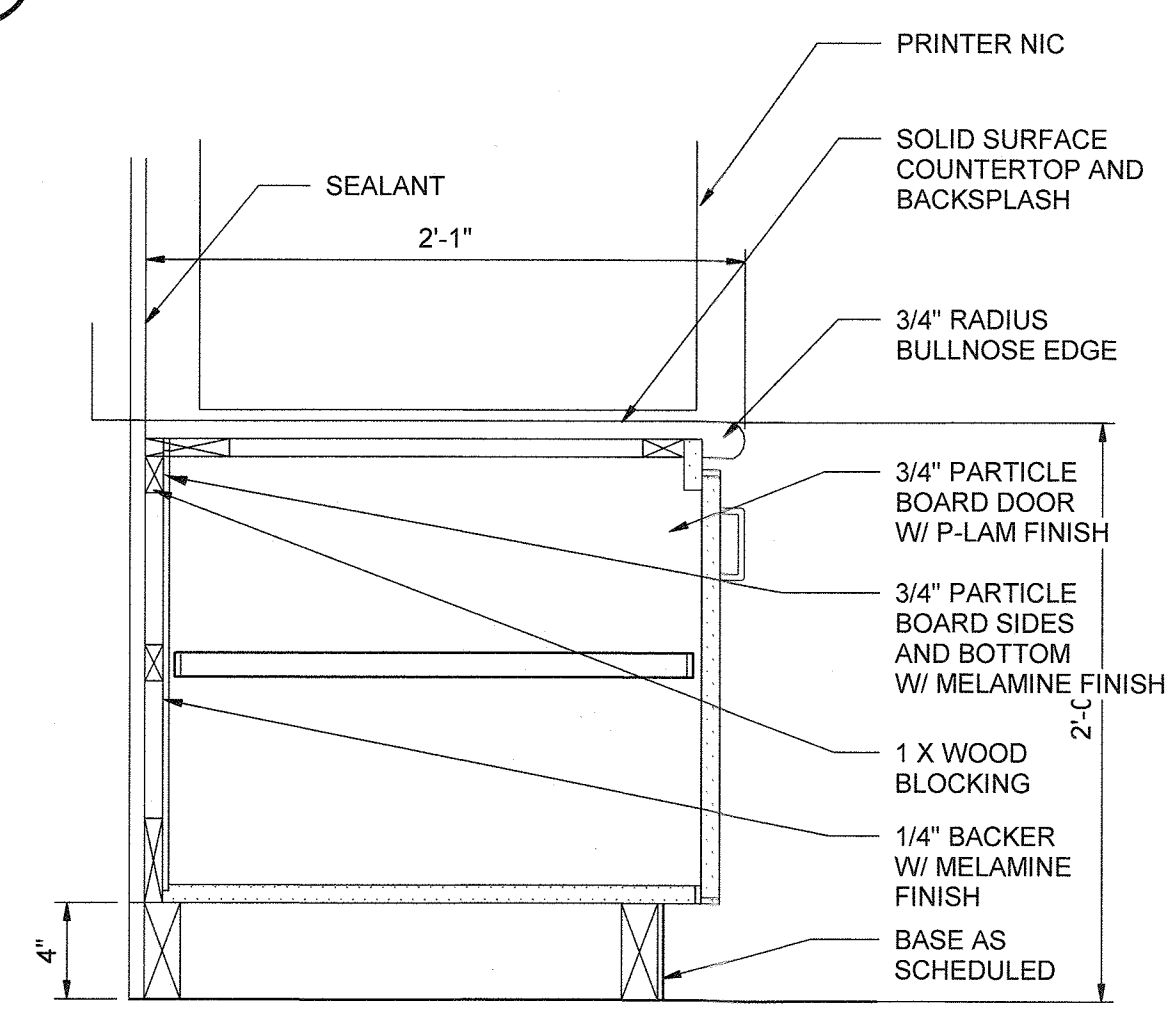
4 CONSOLE ELEVATION
A-101 3/8" = 1'-0"



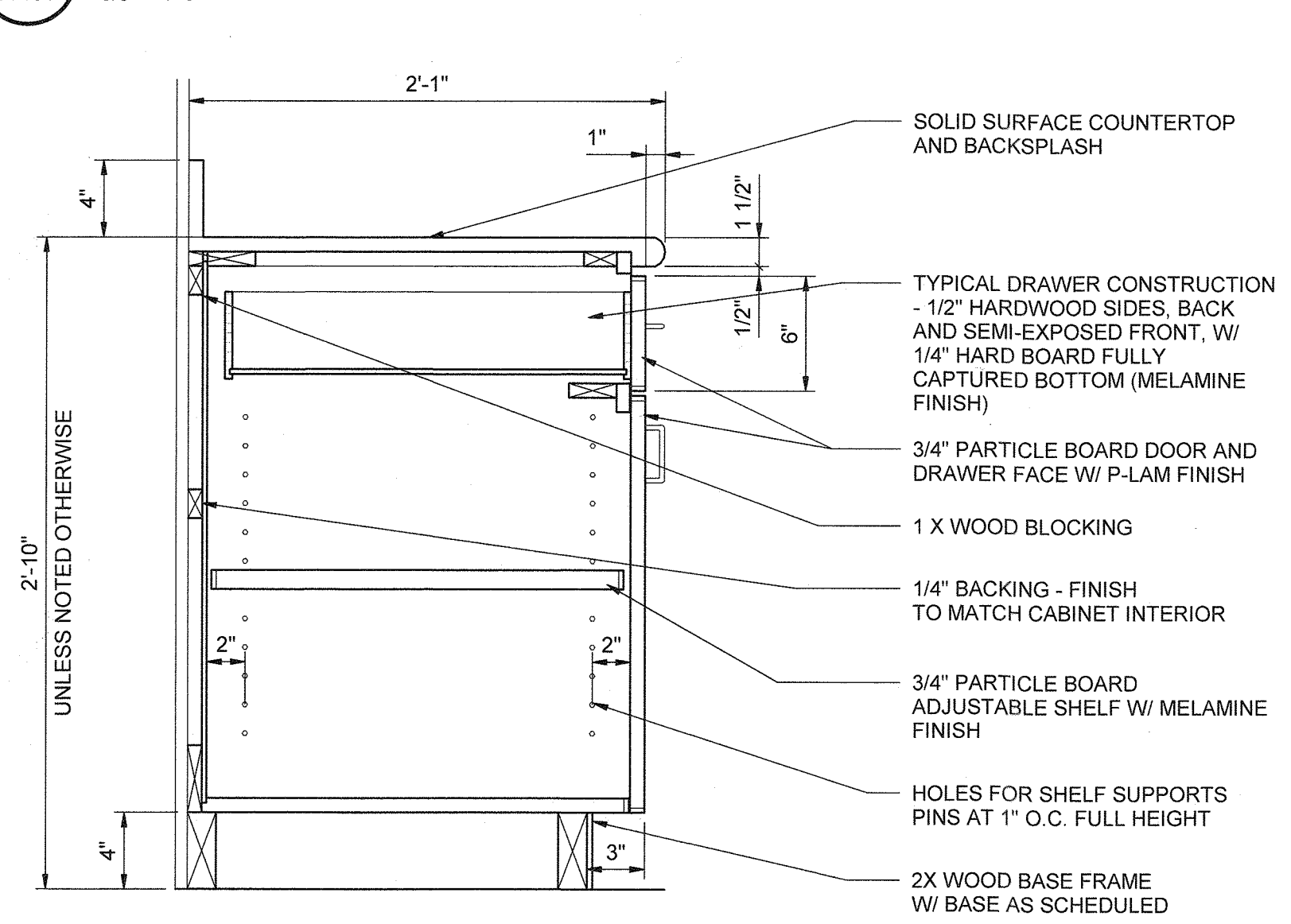
5 CONSOLE ELEVATION
A-101 3/8" = 1'-0"



6 MURAL ELEVATION
A-101 1/4" = 1'-0"



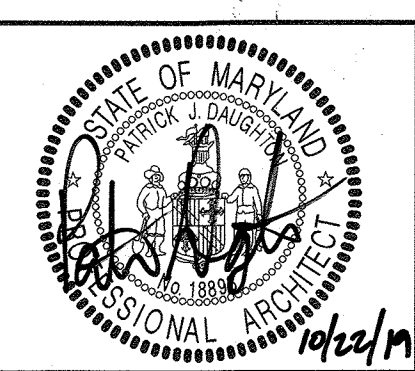
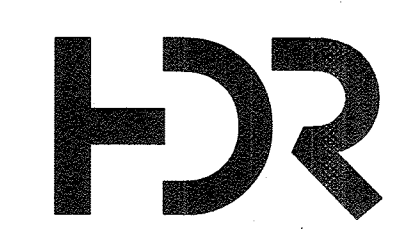
A BASE CABINET SECTION
A-104 1 1/2" = 1'-0"



B BASE CABINET SECTION
A-104 1 1/2" = 1'-0"

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS: *James E. Kelly* DATE: 10-31-19
CHIEF, BUREAU OF UTILITIES: *Thomas E. Stella* DATE: 11/13/19
CHIEF, UTILITY DESIGN DIVISION: *Thomas E. Stella* DATE: 11/13/19



DES: J.T.					
DRN: J.W.					
CHK: P.J.D.					
10/15/2019	BY	NO.	REVISION	DATE	

INTERIOR ELEVATIONS

600 SCALE MAP NO. BLOCK NO.

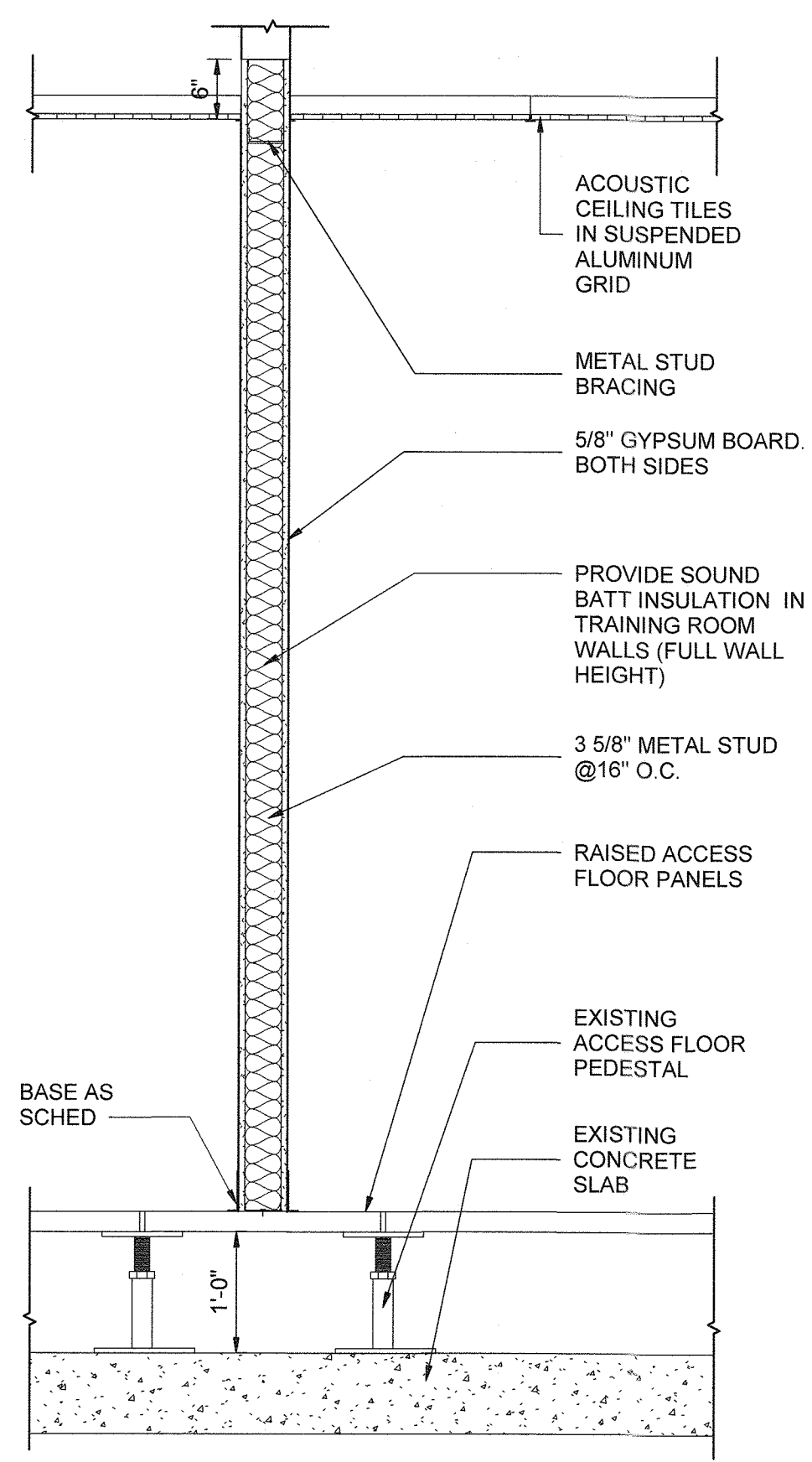
CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

A-104
SCALE AS SHOWN
SHEET 14 OF 31

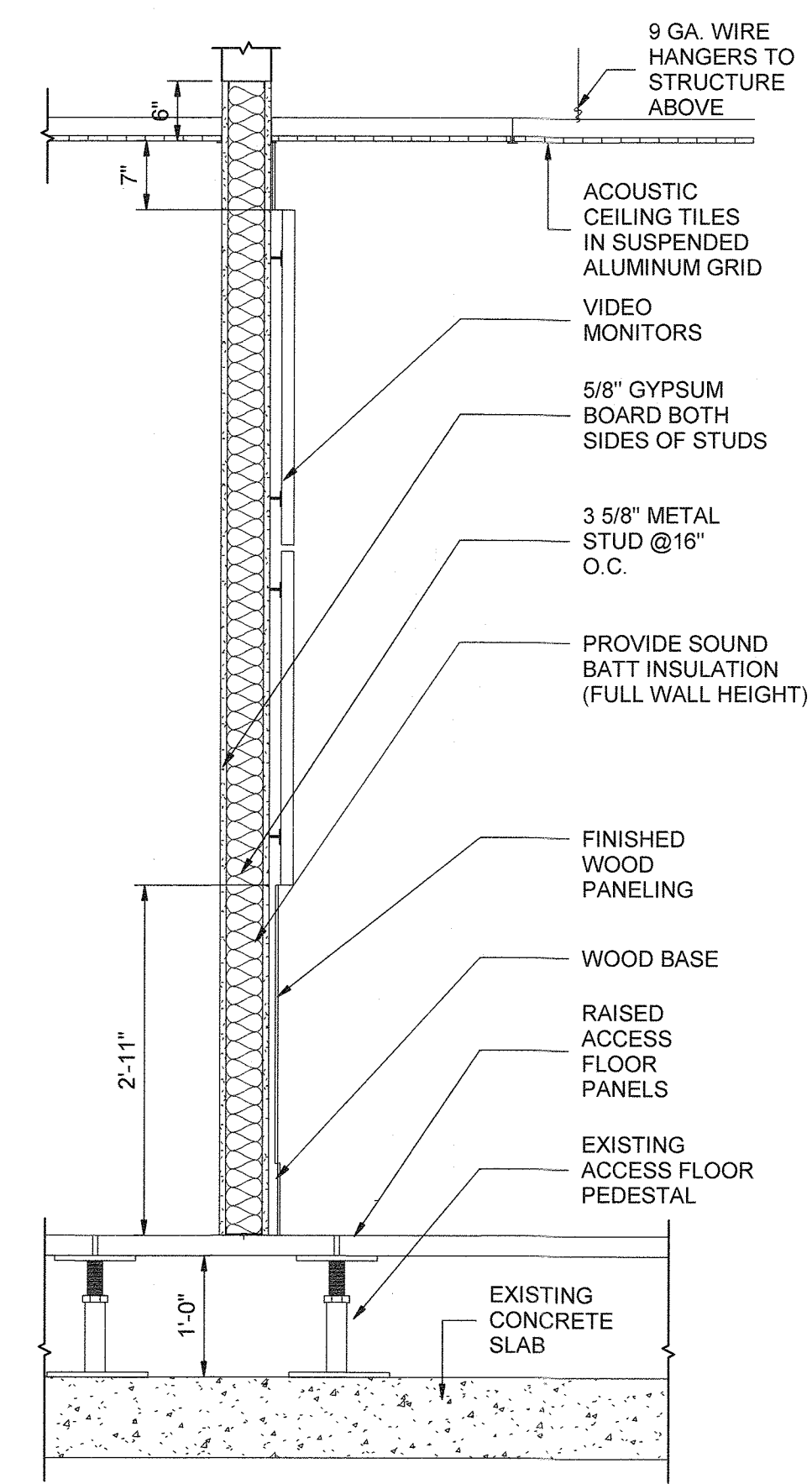
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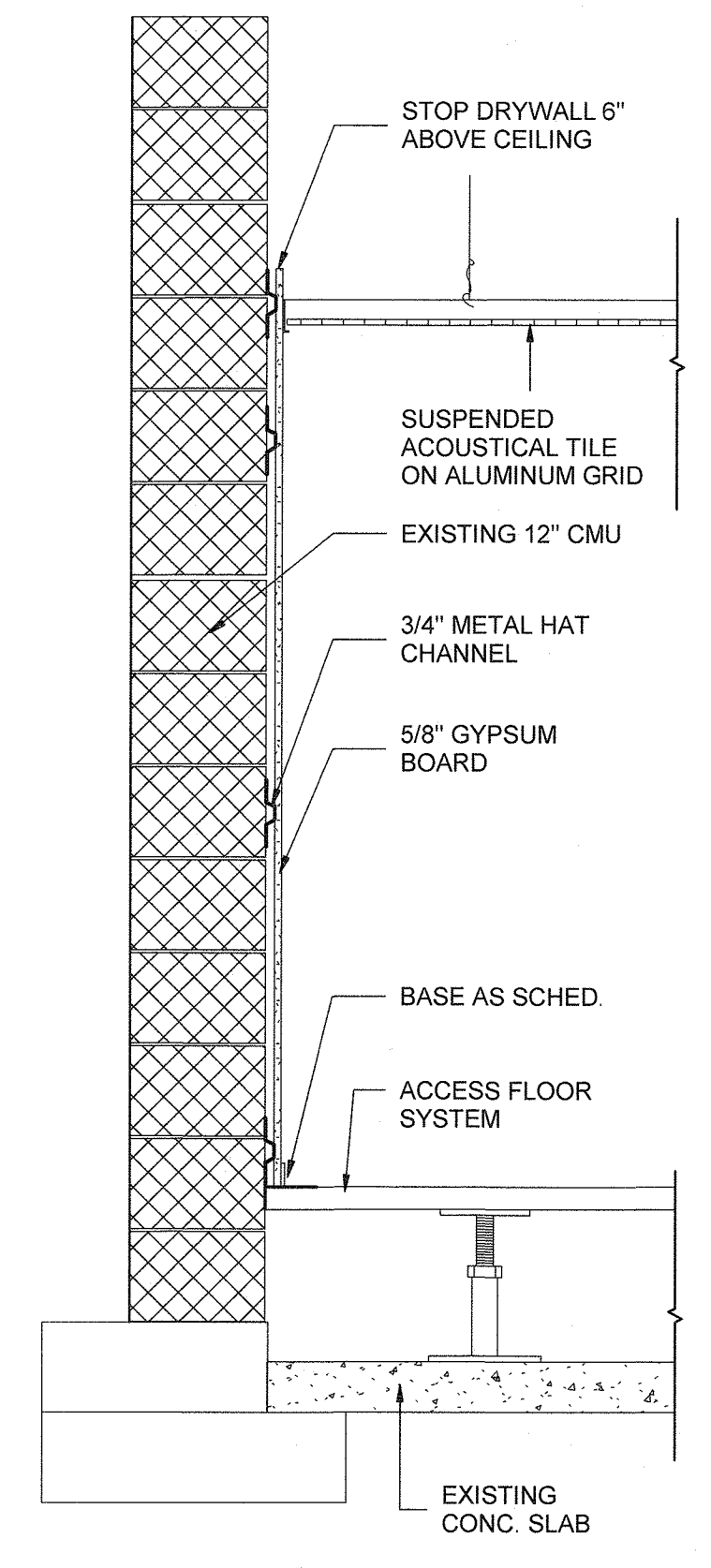
WALL TYPE A
3/4" = 1'-0"

NOTE:
CONTRACTOR SHALL ENGAGE AN ENGINEER TO DESIGN METAL STUD CONNECTIONS AND VERIFY SIZING. SUBMIT CALCULATIONS WITH METAL STUD SUBMITTAL. CALCULATIONS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF MARYLAND.

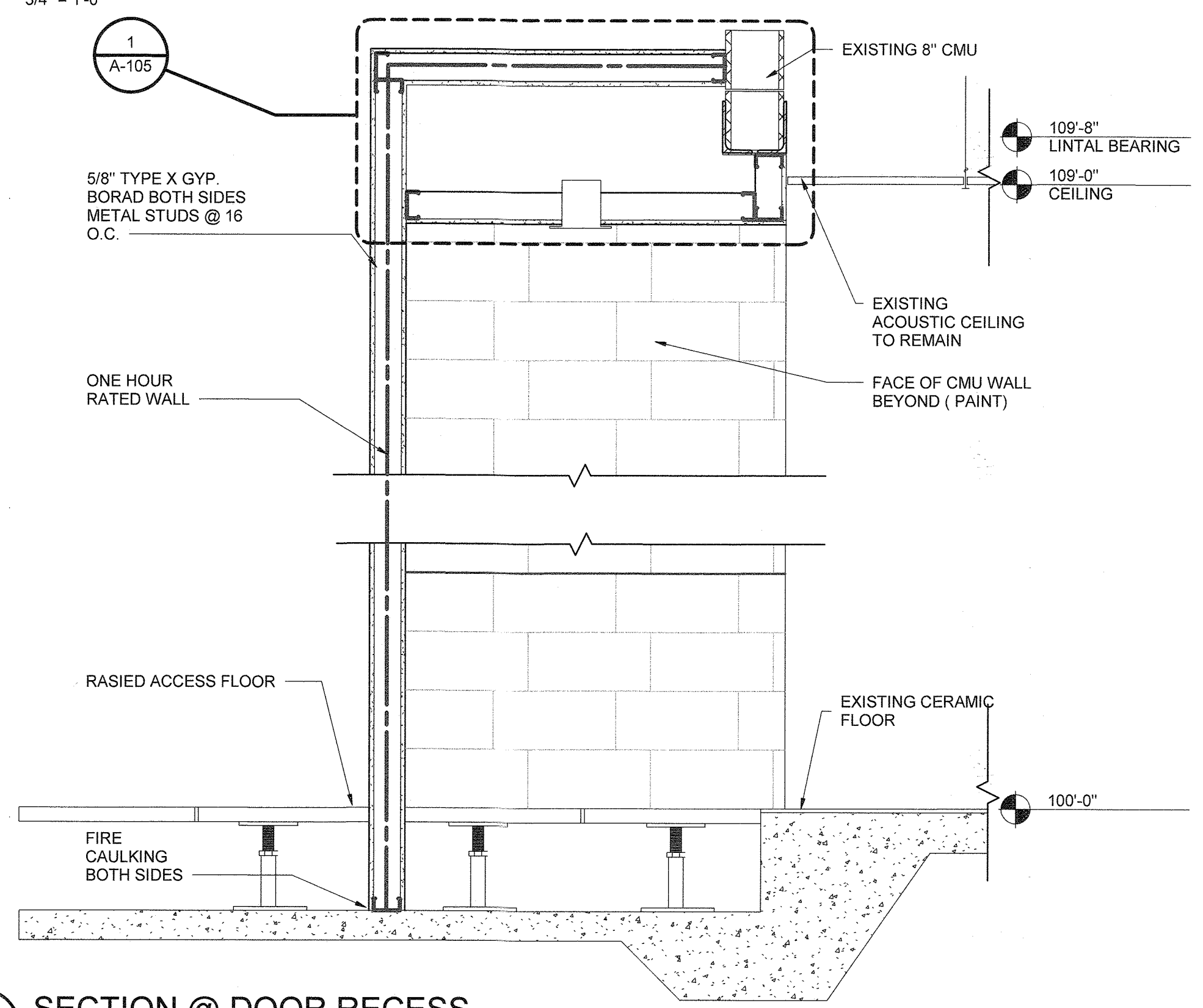
**GENERAL NOTE:
PARTITION WALL BRACING**
EXTEND METAL STUD PARTITION WALLS UP TO BOTTOM OF STRUCTURE. PROVIDE METAL STUD SLIP TRACK TO ALLOW FOR EXPANSION. FRAME AROUND DUCT WORK AS REQUIRED. DO NOT EXTEND GYPSUM BOARD TO BOTTOM OF STRUCTURE, STOP 6" ABOVE FINISHED CEILING.



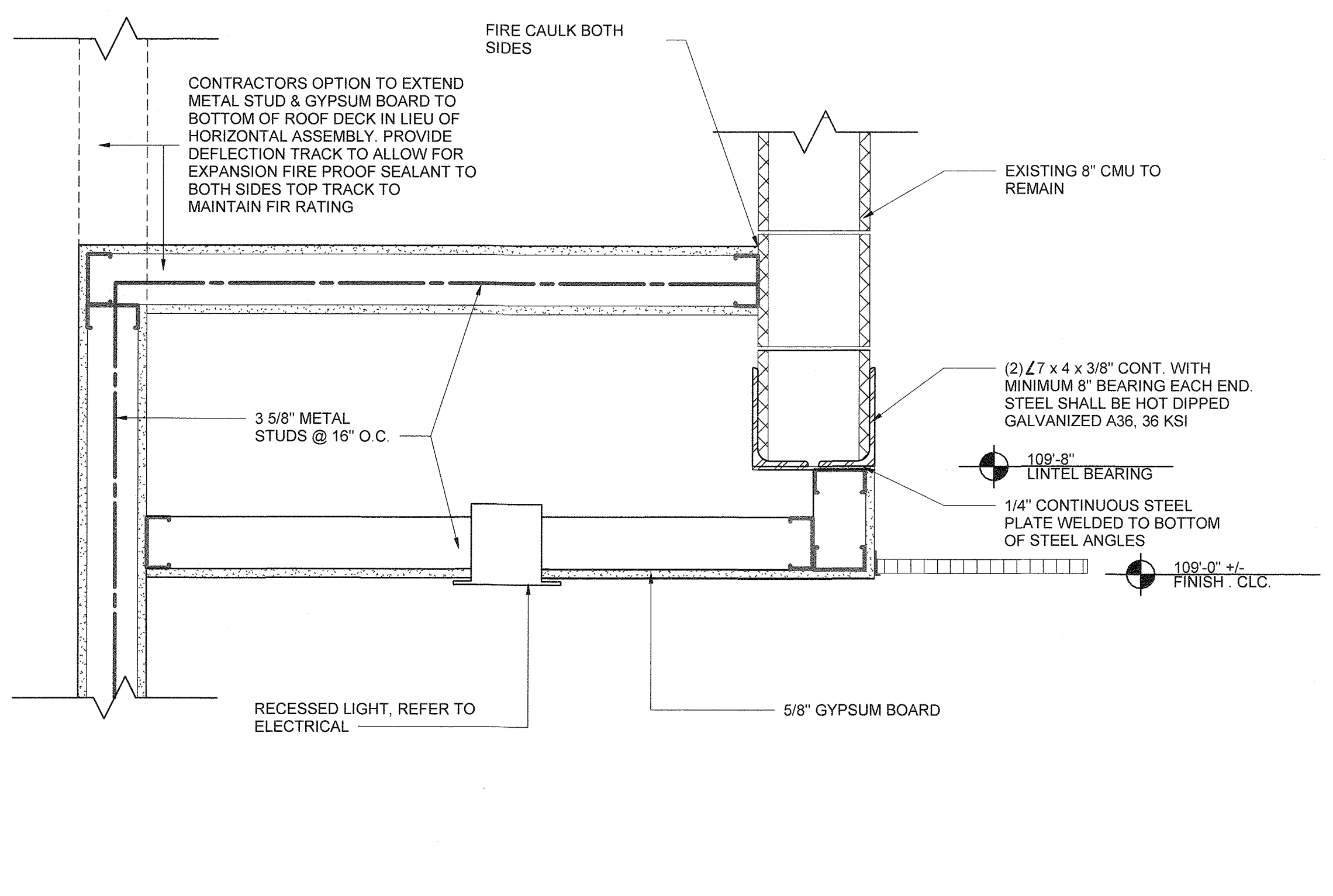
WALL TYPE B
3/4" = 1'-0"



WALL TYPE C
3/4" = 1'-0"



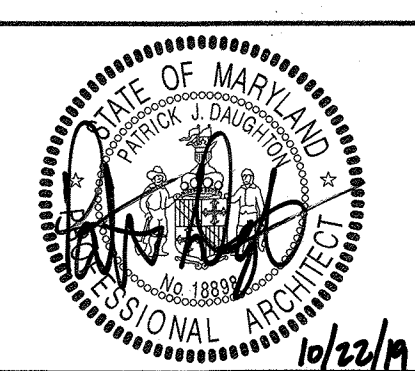
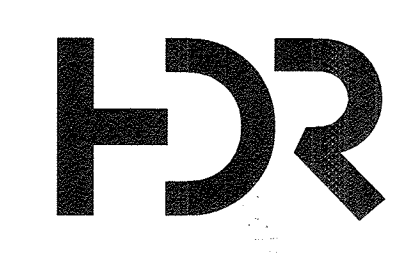
SECTION @ DOOR RECESS
3/4" = 1'-0"



DOOR RECESS DETAIL
1 1/2" = 1'-0"

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**
 Director: *[Signature]* 11/19/19
 Chief, Bureau of Engineering: *[Signature]* 11/13/19
 Chief, Bureau of Utility Design Division: *[Signature]* 11/13/19



DES: J.T.					
DRN: J.W.					
CHK: P.J.D.					
10/15/2019	BY	NO.	REVISION	DATE	

WALL TYPES AND DETAILS

600 SCALE MAP NO. BLOCK NO.

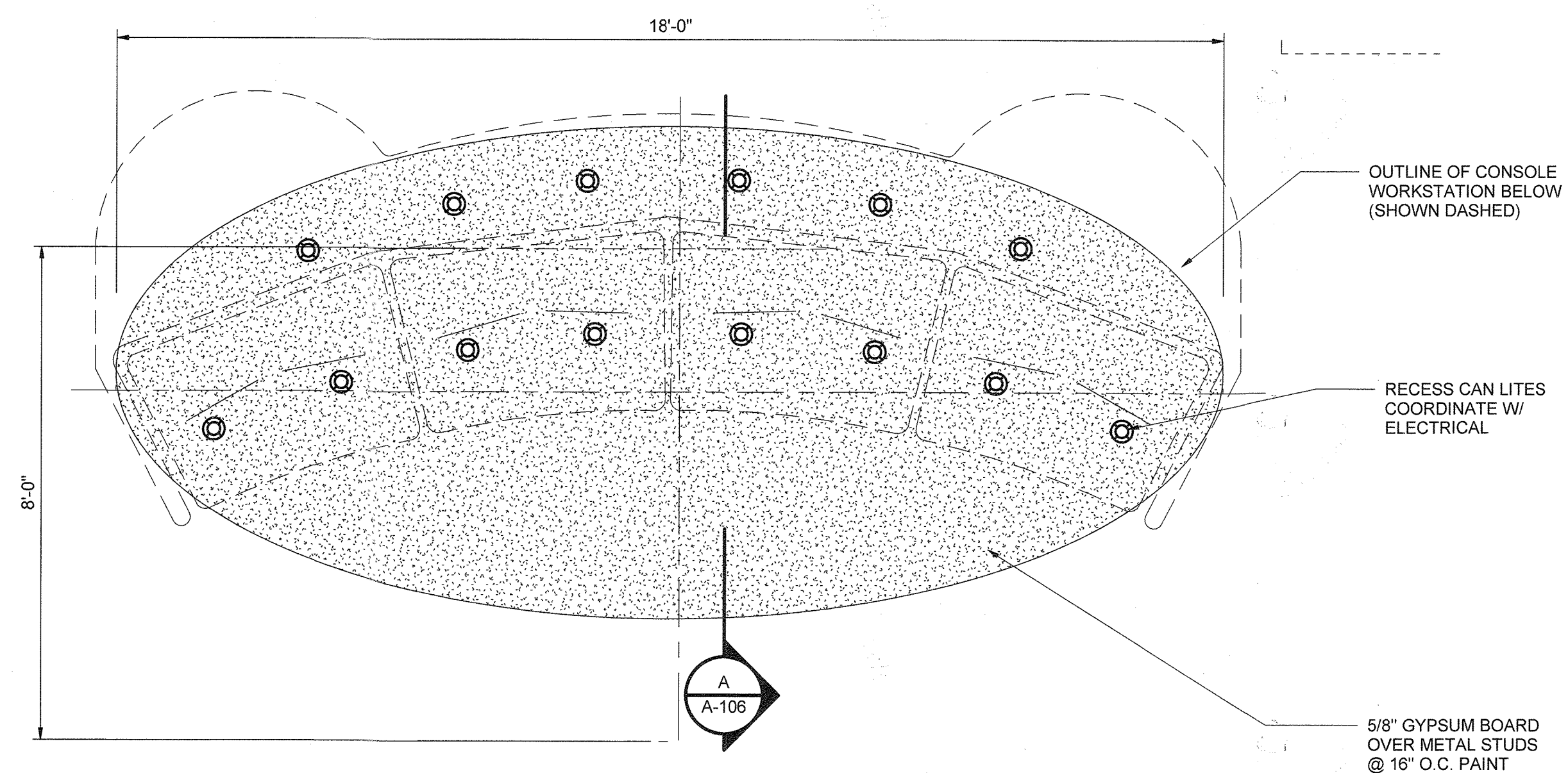
CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

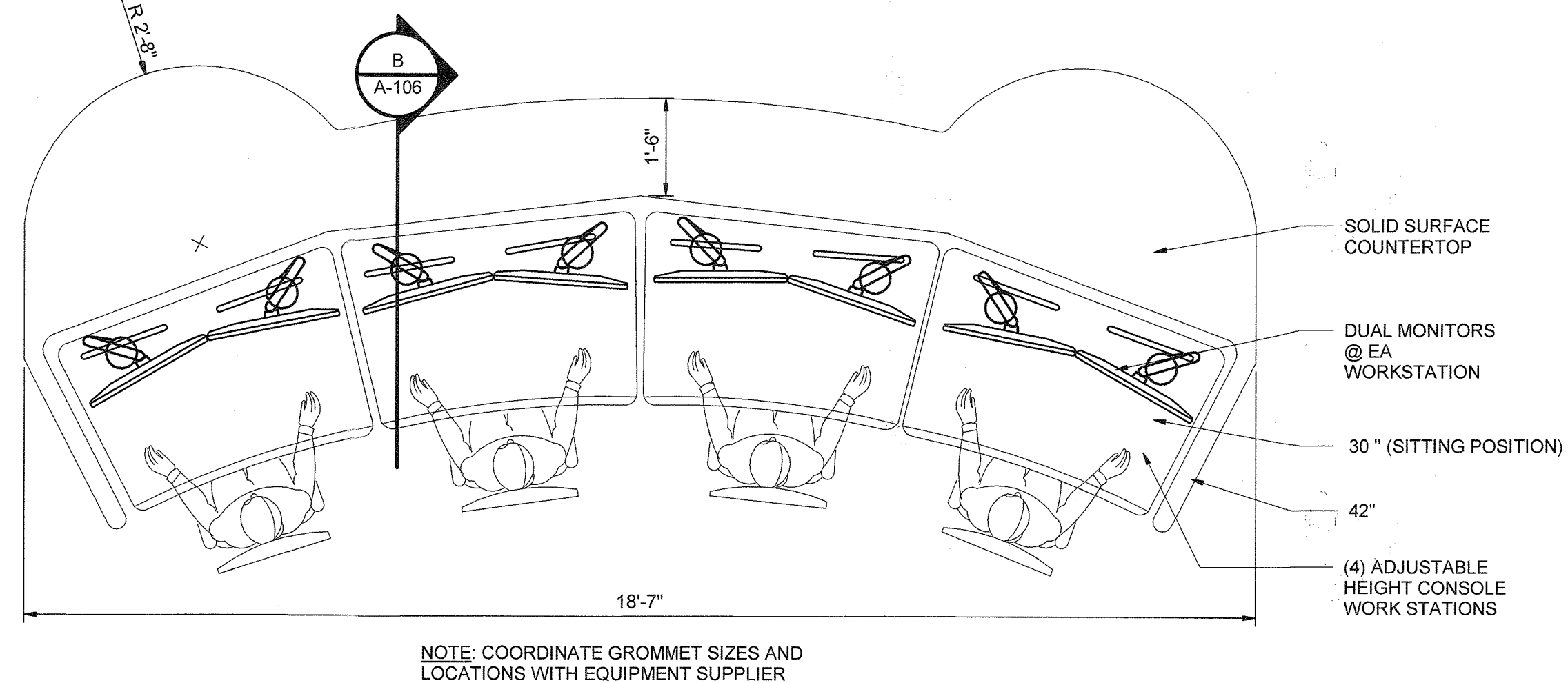
A-105
SCALE AS SHOWN
SHEET 15 OF 31

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DROPPED SOFFIT OVER CONSOLE WORKSTATIONS

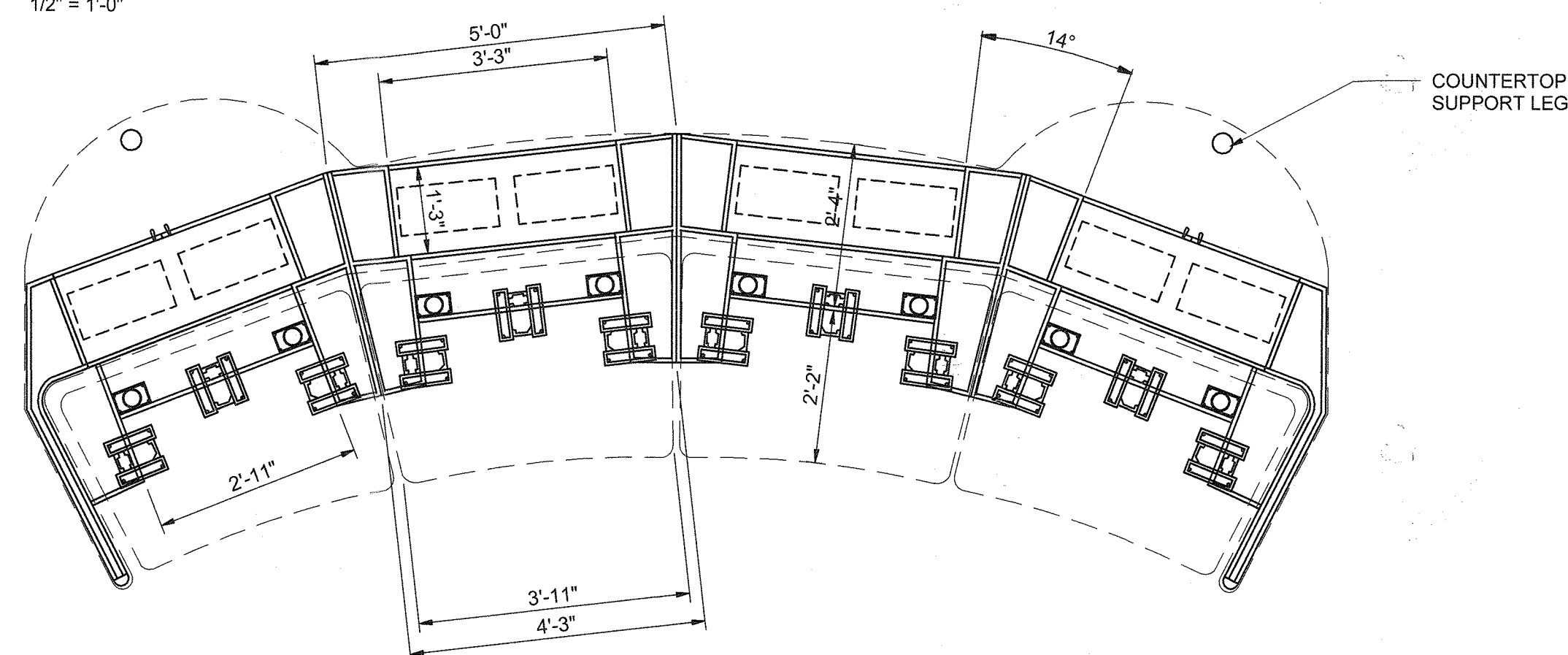
1/2" = 1'-0"



NOTE: COORDINATE GROMMET SIZES AND LOCATIONS WITH EQUIPMENT SUPPLIER

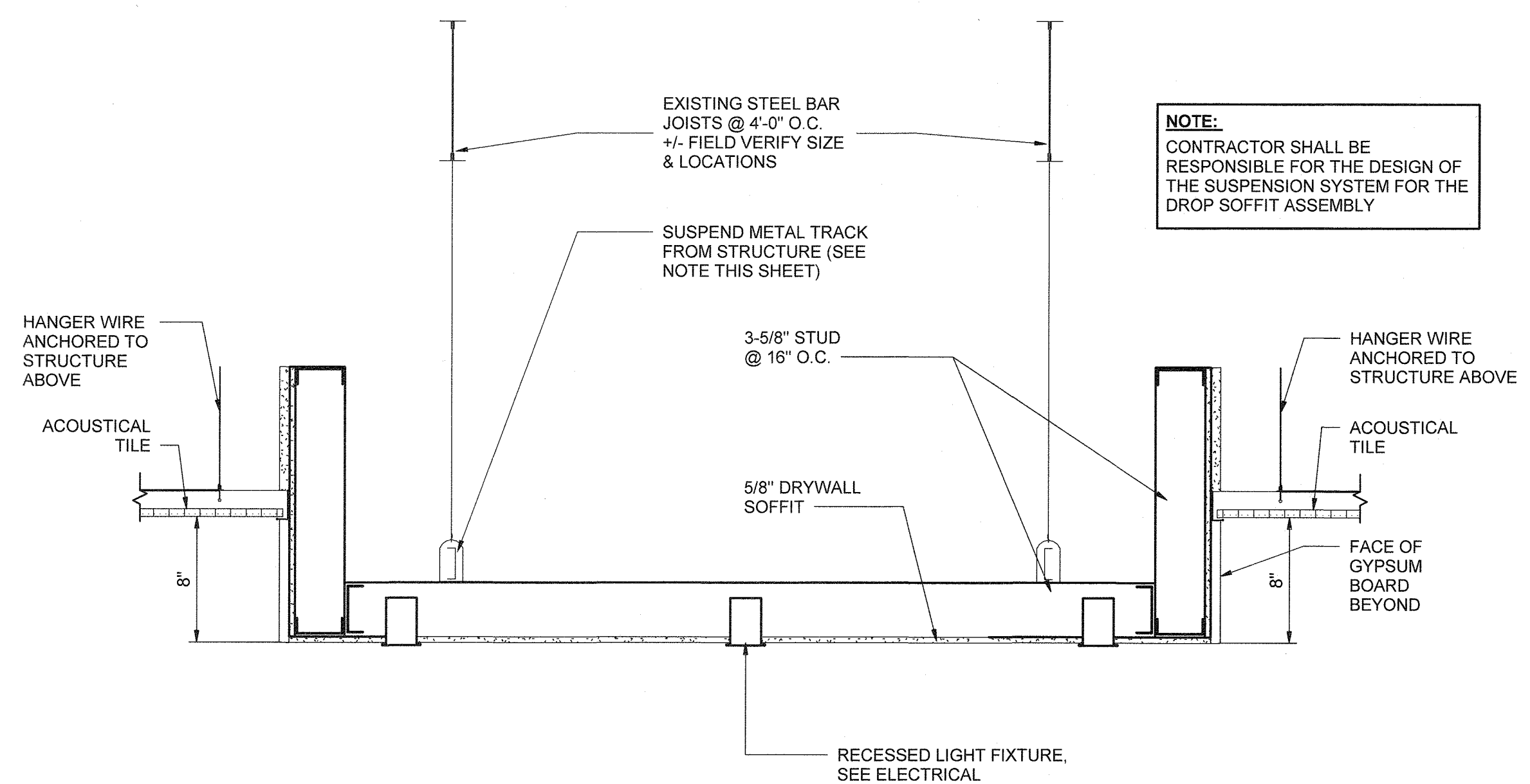
ENLARGED CONSOLE WORKSTATION PLAN

1/2" = 1'-0"



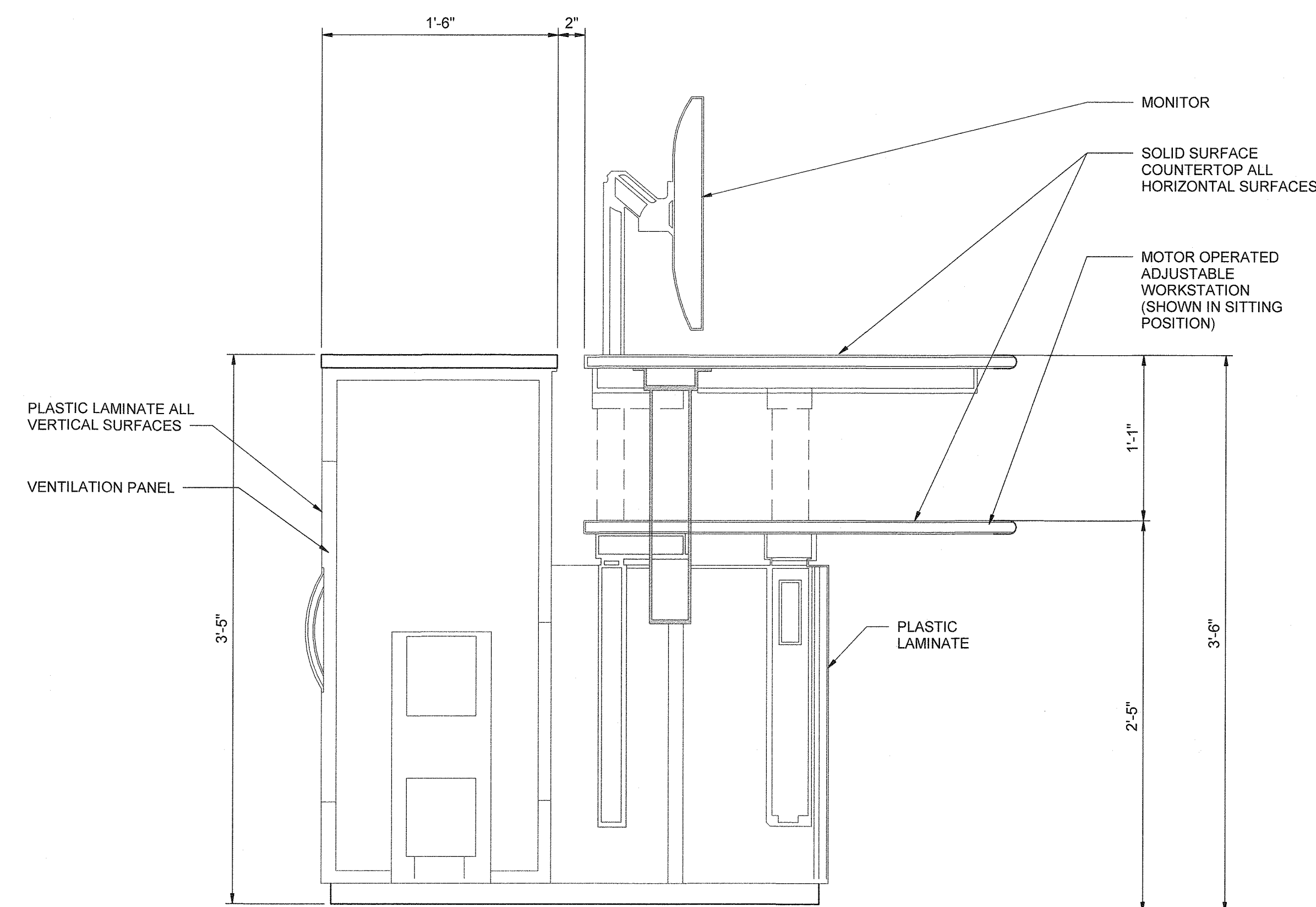
CONSOLE PLAN

1/2" = 1'-0"



SECTION @ SUSPENDED SOFFIT

1 1/2" = 1'-0"



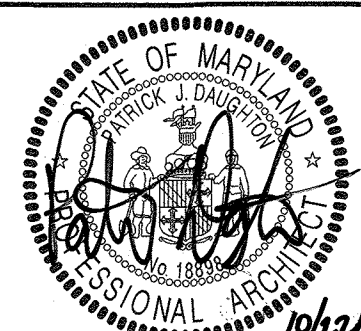
CONSOLE SECTION

1 1/2" = 1'-0"

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* DATE: 10/31/19
 Chief, Bureau of Engineering: *[Signature]* DATE: 11/15/19
 Chief, Utility Design Division: *[Signature]* DATE: 11/15/19



DES: J.T.

DRN: J.W.

CHK: P.J.D.

10/15/2019

BY	NO.	REVISION	DATE

DETAILS

800 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

A-106

SCALE AS SHOWN

SHEET 16 OF 31

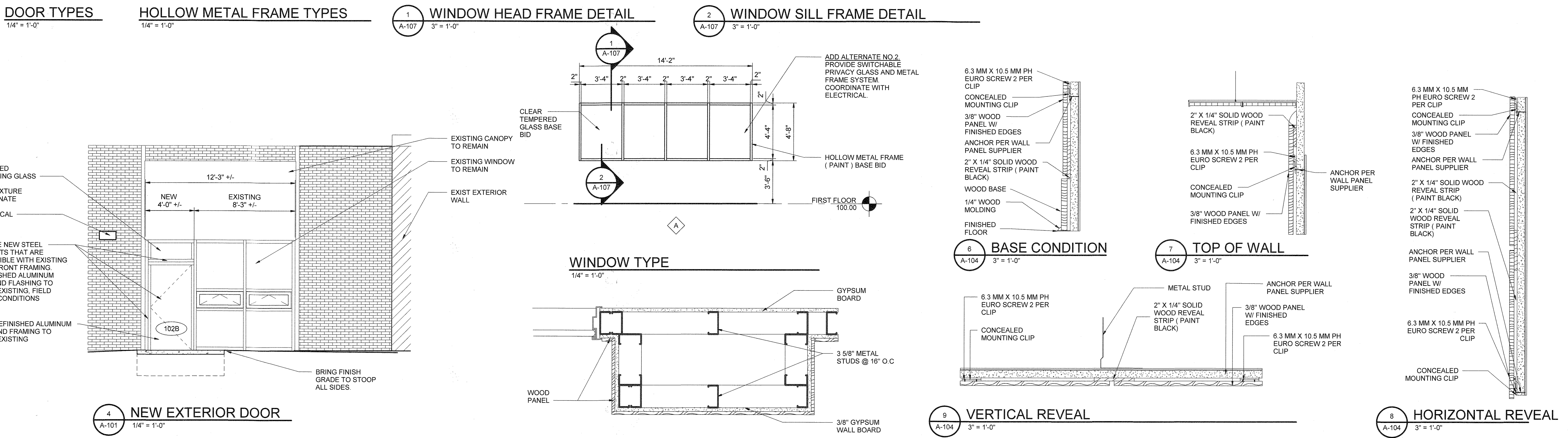
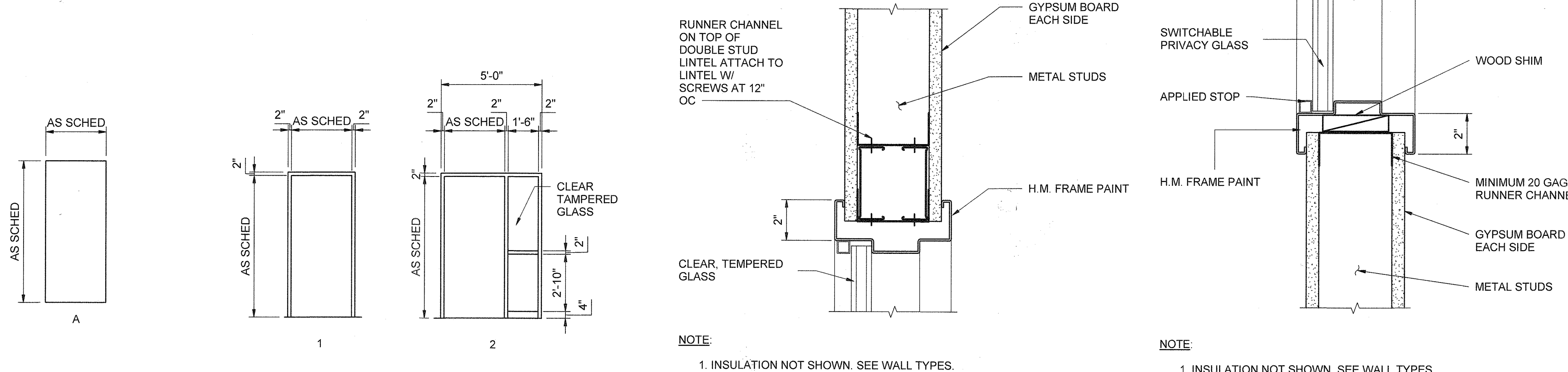
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DOOR AND FRAME SCHEDULE											
DOOR NO	DOOR			FRAME			FIRE RATING	HARDWARE	HEAD	JAMB	COMMENTS
	WIDTH	HEIGHT	TYPE	MATERIAL	TYPE	MATERIAL					
101A	3'-0"	7'-0"	A	WD	2	HM	-	1	2 / A-108	1 / A-108	
101B							EXISTING TO REMAIN				
102A	3'-0"	7'-0"	A	WD	2	HM	-	1	2 / A-108	1 / A-108	
102B	3'-5"	7'-0"	A	AL	1	AL	-	1			1,4
103B							EXISTING TO REMAIN				
104	3'-0"	7'-0"	A	HM	1	HM	-	3	2 / A-108	1 / A-108	
105	3'-0"	7'-0"	A	HM	1	HM	-	3	2 / A-108	1 / A-108	2
106							EXISTING TO REMAIN				
107							EXISTING TO REMAIN				
108A	3'-0"	7'-0"	A	WD	1	HM	-	4	2 / A-108	1 / A-108	2
108B	3'-0"	7'-0"	A	WD	1	HM	60	5	2 / A-108	1 / A-108	3
108C	3'-0"	7'-0"	A	WD	1	HM	60	5	2 / A-108	1 / A-108	3
109	3'-0"	7'-0"	A	WD	1	HM	-	3	2 / A-108	1 / A-108	

HARDWARE SCHEDULE			
Hardware Set	Quantity	Unit	Description
HW-1	1-1/2	PR	Butts
	1	EA	Lockset (Office Function)
	1	EA	Closer
HW-2	1-1/2	PR	Butts
	1	EA	Lockset (Entry Function)
	1	EA	Threshold
	1	Set	Weatherstripping
	1	EA	Closer
	1	EA	Sweep
	1	EA	Drip Cap
HW-3	1-1/2	PR	Butts
	1	EA	Lockset (Store Room)
	1	EA	Closer
HW-4	1-1/2	PR	Butts
	1	EA	Lockset (Office Function)
	1	EA	Closer
HW-5	1-1/2	PR	Butts
	1	EA	Exit Device (Classroom Function)
	1	EA	Closer
	1	Set	Smoke Seals

ROOM FINISH SCHEDULE							
ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALL	CEILING		NOTES
					TYPE	HEIGHT	
101	OPERATOR LOUNGE	LVT	VINYL	XCMU/GWB-P	ACT	9'-0"	1,7
102	MUD ROOM	A.F.	VINYL	GWB/P	ACT	9'-0"	1
103	CONTROL ROOM	A.F.	VINYL	GWB/P	ACT	9'-0"	1,3,5
104	STORAGE	A.F.	VINYL	XCMU/GWB-P	ACT	9'-0"	1
105	SERVER			EXISTING TO REMAIN			1
106	ELECTRICAL			EXISTING TO REMAIN			1
107	MECHANICAL			EXISTING TO REMAIN			1
108	TRAINING ROOM	AF/CT	VINYL	GWB/P	ACT	9'-0"	1
109	EQUIP STORAGE	A.F.	VINYL	GWB/P	ACT	9'-0"	1
110	CORRIDOR			EXISTING TO REMAIN			2
201	DRYER BUILDING CONTROL ROOM	VCT	VINYL	GWB/X	ACT	9'-0"	4,6,8
202	SAMPLES ROOM			GWB	ACT	8'-0"	6,8
203	UNISEX RR			XCMU	ACT	8'-0"	6,8
204	UNISEX RR			XCMU	ACT	8'-0"	6,8
205	STORAGE ROOM			XCMU	ETS	ETS	8

- COMMENTS:**
- PROVIDE INSULATED DOOR
 - PROVIDE FOUR CARD READER ACCESS
 - PROVIDE FIRE RATED DOOR HARDWARE
 - FEILD VERIFY FRAME AND DOOR OPENING CONDITIONS PRIOR TO ORDERING DOOR.
- ABBREVIATIONS**
- ACT - SUSPENDED ACOUSTICAL CEILING TILES
A.F. - RAISED ACCESS FLOOR
CT- CARPET TILE (OVER EXISTING ACCESS FLOOR PANELS)
AL- ALUMINUM
- GWB-P - GYPSUM WALL BOARD PAINTED
XCMU - EXISTING CONCRETE BLOCK
LVT- LAMINATE TILE
ETS- EXPOSED TO STRUCTURE



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**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Jamal Williams 10/13/19
DIRECTOR OF PUBLIC WORKS DATE

Roman E. Sudd 11/13/19
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 10-31-19
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 11/13/19
CHIEF, UTILITY DESIGN DIVISION DATE

5 WALL PANEL DETAIL
A-104 1 1/2" = 1'-0"

6 BASE CONDITION
A-104 3" = 1'-0"

7 TOP OF WALL
A-104 3" = 1'-0"

8 HORIZONTAL REVEAL
A-104 3" = 1'-0"

9 VERTICAL REVEAL
A-104 3" = 1'-0"

A-107

DES: J.T
DRN: JW
CHK: PJD
10/15/2019

BY NO. REVISION DATE

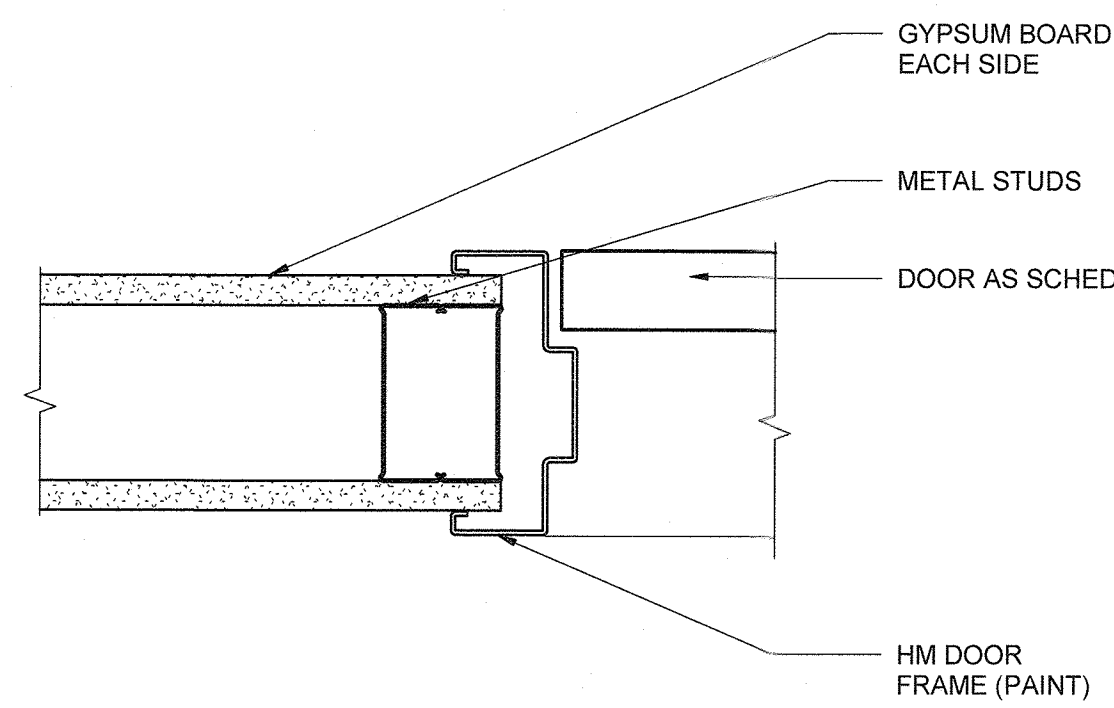
SCHEDULES AND DETAILS

CONTROL ROOM UPGRADE
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

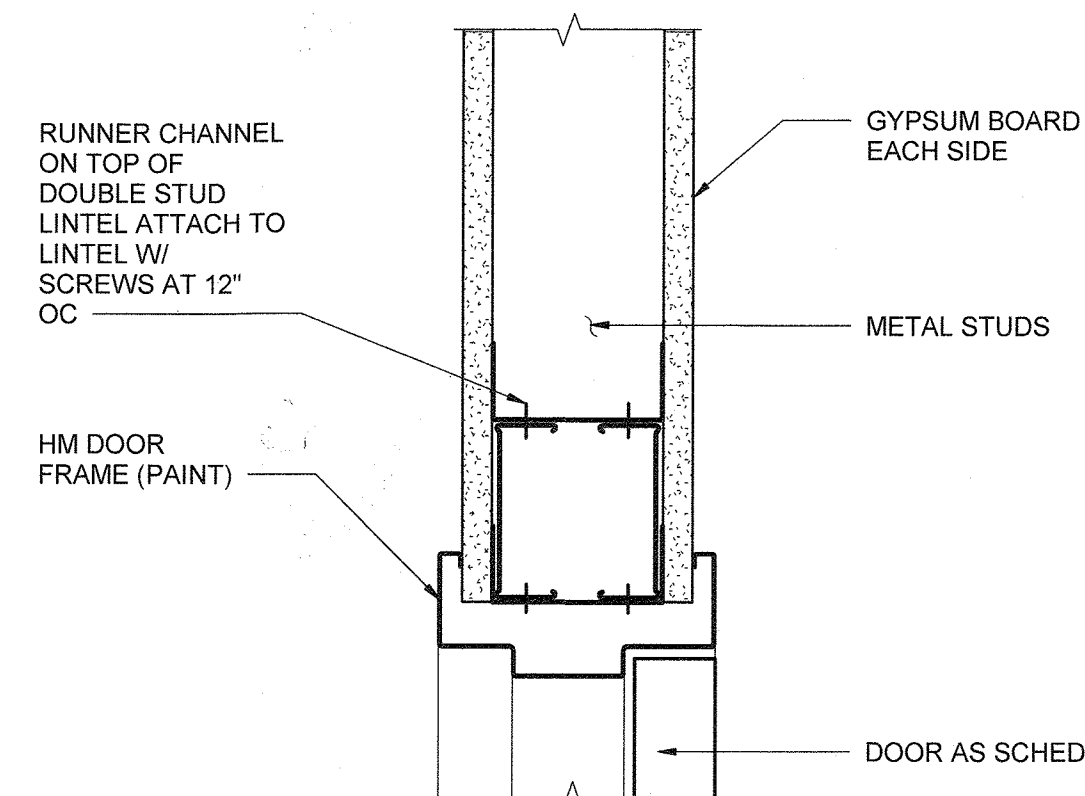
SCALE AS SHOWN
SHEET 17 OF 31

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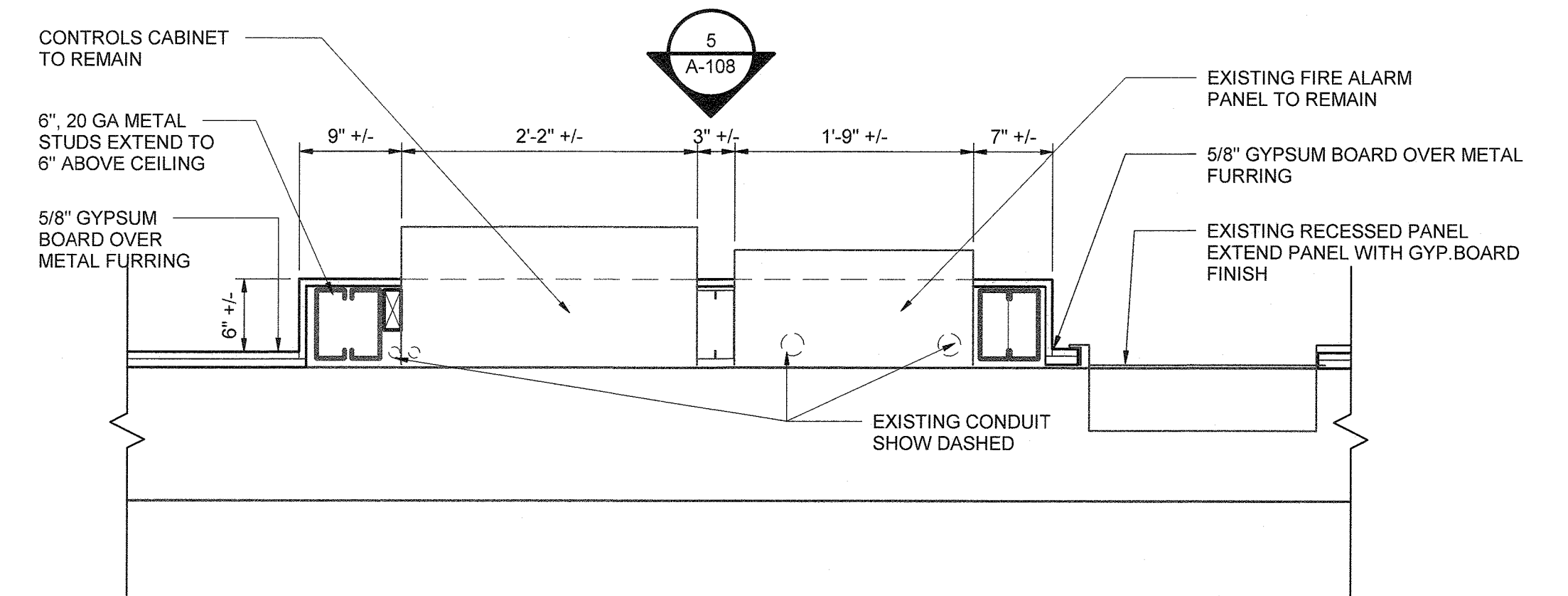
NOTE:
1. INSULATION NOT SHOWN. SEE WALL TYPES.

1 H.M. JAMB WITH STUD/DRYWALL
3" = 1'-0"

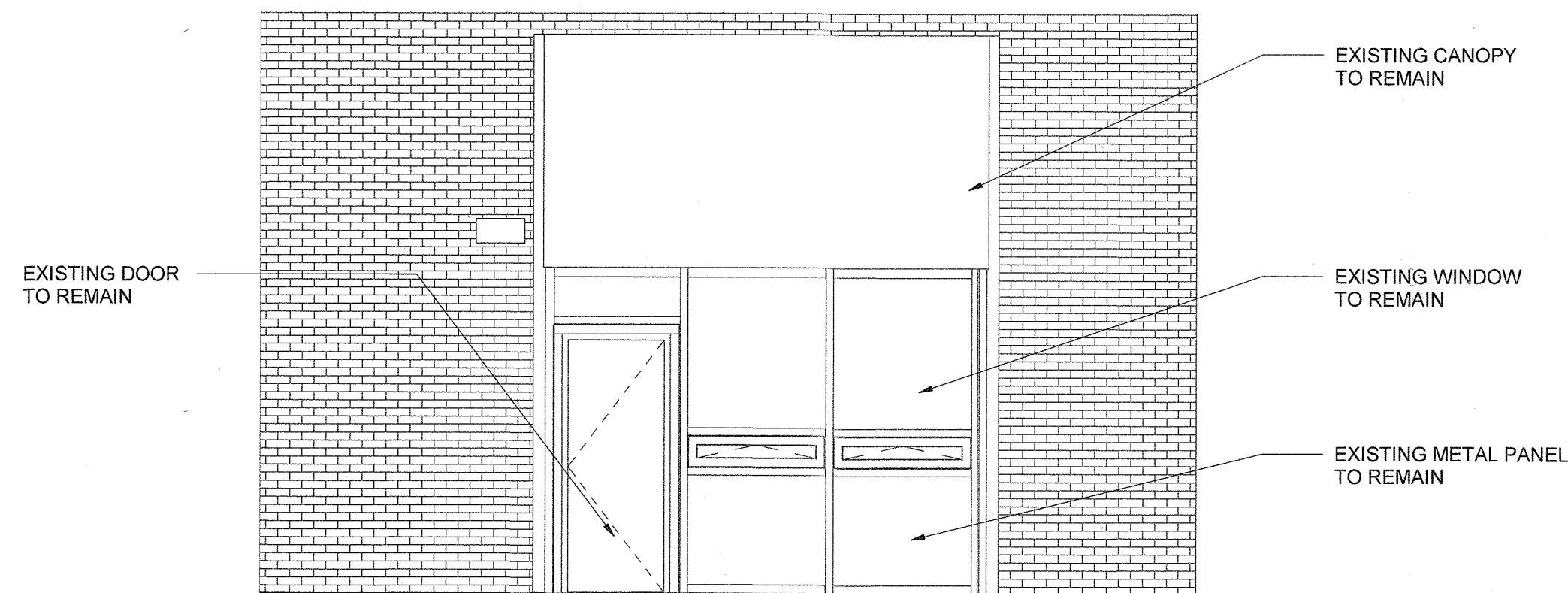


NOTE:
1. INSULATION NOT SHOWN. SEE WALL TYPES.

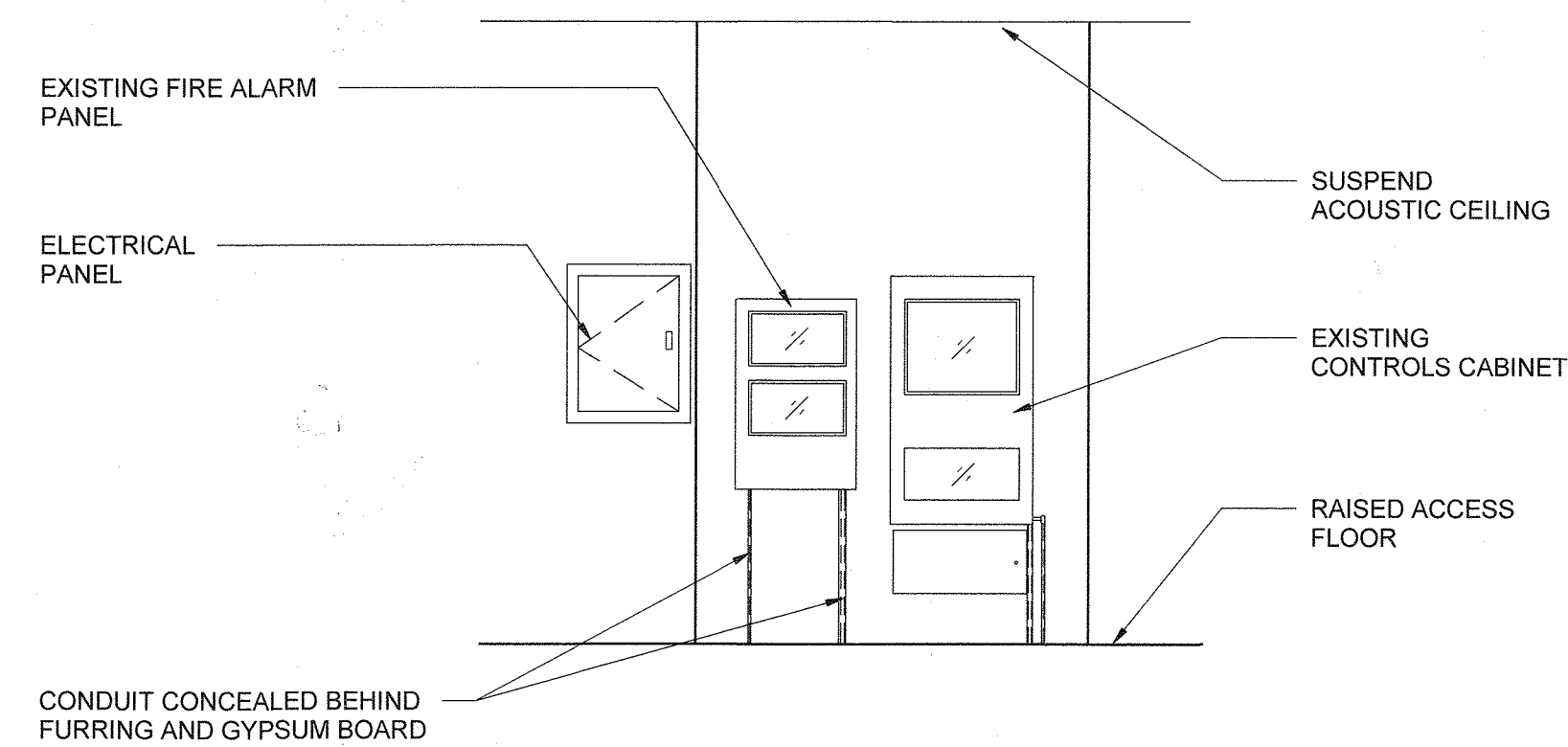
2 H.M. HEAD WITH STUD/ DRYWALL
3" = 1'-0"



6 ELECTRICAL PANEL WALL DETAIL
1" = 1'-0"



3 PARTIAL EXTERIOR ELEVATION
A-101 1/4" = 1'-0"

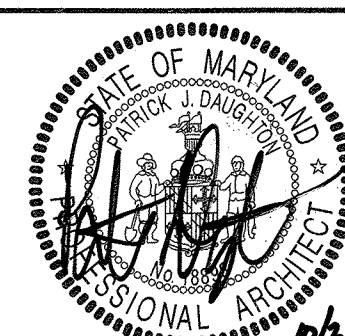


5 PARTIAL ELEVATION
A-101 3/8" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 10-31-19
Chief, Bureau of Utilities: *[Signature]*
Chief, Bureau of Engineering: *[Signature]* 11/13/19
Chief, Utility Design Division: *[Signature]* 11/13/19



DES: J.T					
DRN: J.W					
CHK: P.J.D					
10/15/2019	BY	NO.	REVISION	DATE	

DETAILS

600 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

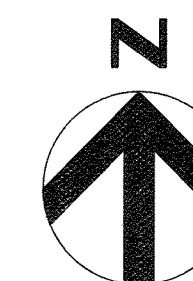
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

A-108

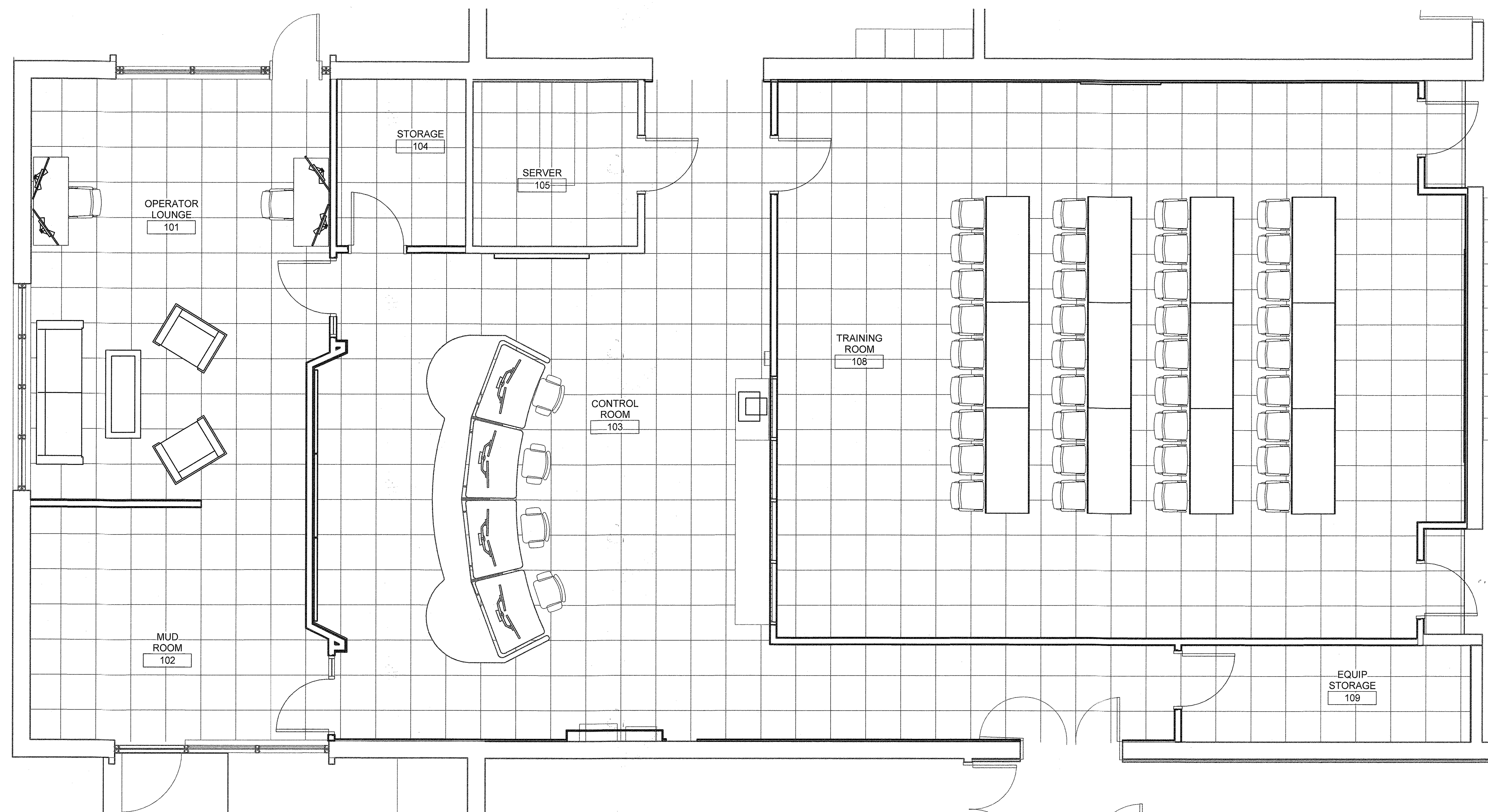
SCALE AS SHOWN

SHEET 18 OF 31



GENERAL NOTES:

1. THIS DRAWING DEPICTS POTENTIAL FURNITURE LAYOUT AND IS FOR REFERENCE PURPOSES ONLY.
2. ALL FURNITURE SHOWN IN OPERATOR LOUNGE 101 AND TRAINING ROOM 108 IS PROVIDED BY OWNER. (2) STAND ALONE WORKSTATIONS AND ALL CHAIRS IN CONTROL ROOM 103 ARE PROVIDED BY OWNER.



FURNITURE PLAN
1/4" = 1'-0"

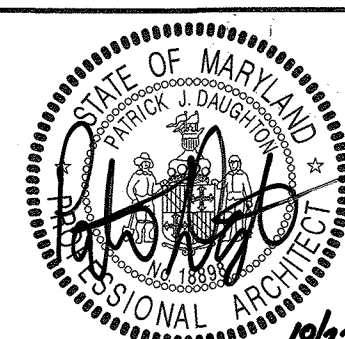
**FOR -
REFERENCE ONLY**

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"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 18898, EXPIRATION DATE: 02-19-2021

A-109

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**



DES: J.T

DRN: JW

CHK: PJD

10/15/2019

BY	NO.	REVISION	DATE

ADMINISTRATION BUILDING FURNITURE PLAN

600 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

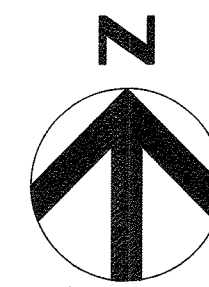
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 19 OF 31

[Signature] 10/15/19
 DIRECTOR OF PUBLIC WORKS
 [Signature] 10-31-19
 CHIEF, BUREAU OF UTILITIES
 [Signature] 11/3/19
 CHIEF, UTILITY DESIGN DIVISION

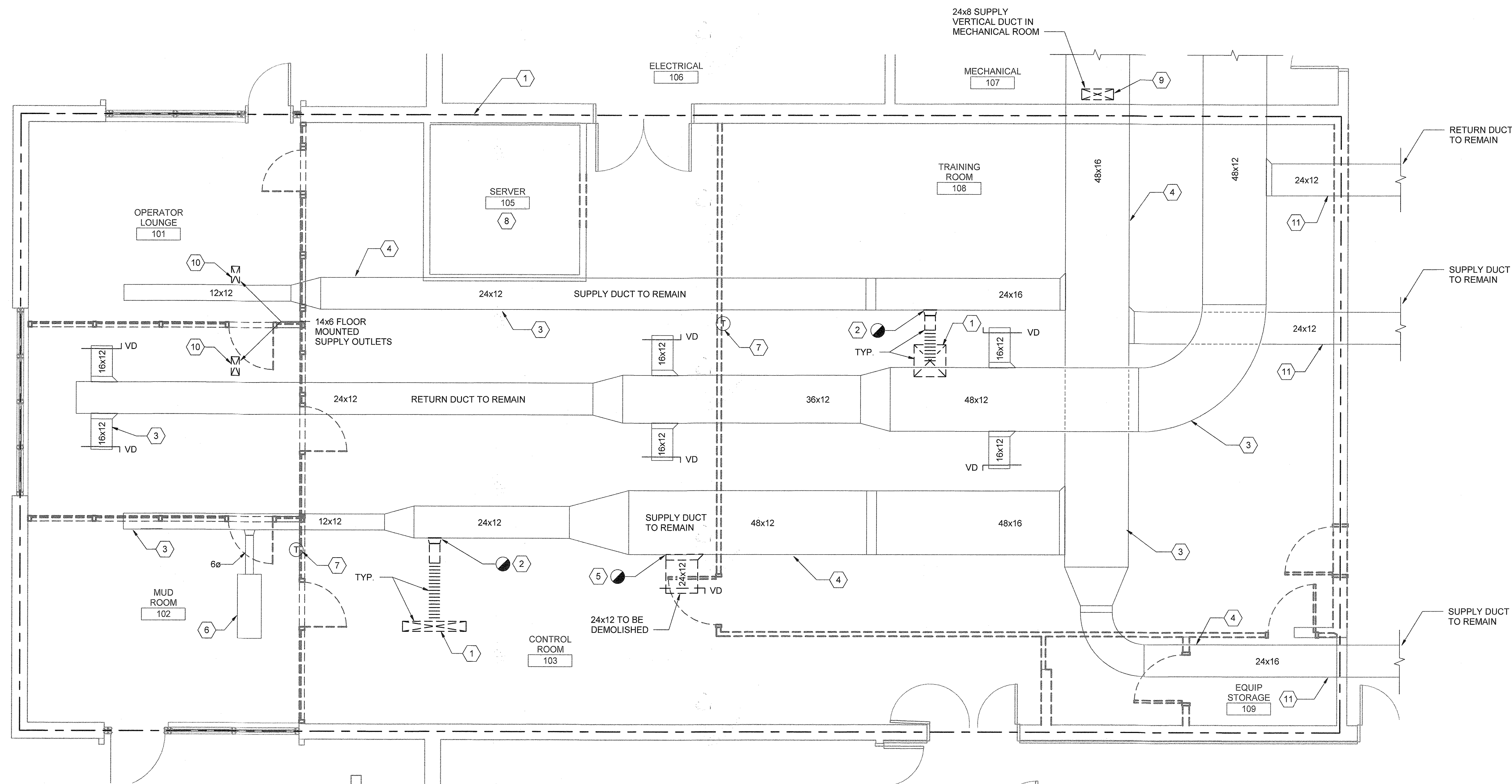


GENERAL NOTES:

1. REFER TO PHASING PLAN ON G-108.

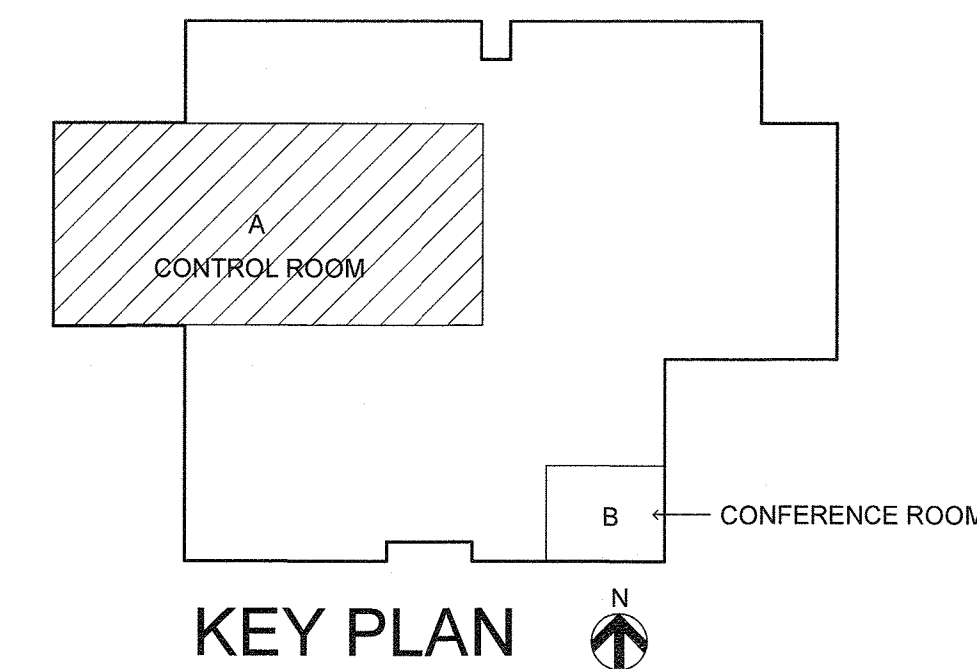
DEMOLITION KEY NOTES:

1. REMOVE ALL CEILING MOUNTED SUPPLY AND RETURN AIR OUTLETS WITHIN INDICATED AREA.
2. REMOVE ALL (CONNECTED AND NOT CONNECTED) SUPPLY TAKEOFFS AND BRANCH DUCTS UNLESS INDICATED OTHERWISE.
3. ALL RETURN DUCTWORK TO REMAIN.
4. REMOVE THERMAL INSULATION FROM SUPPLY DUCT.
5. REMOVE 24" X 12" SUPPLY DUCT BRANCH AS SHOWN.
6. FAN POWERED BOX TO REMAIN. 6" Ø DUCT BETWEEN BOX AND MAIN DUCT TO REMAIN. DUCT DOWNSTREAM OF THE BOX TO BE REMOVED. POWER AND CONTROL WIRING TO REMAIN.
7. WALL MOUNTED THERMOSTATS WITH ASSOCIATED CONNECTION WIRING TO BE SALVAGED AND PROTECTED FROM DAMAGE.
8. ALL HVAC INSTALLATIONS IN SERVER ROOM TO REMAIN.
9. VERTICAL 24" X 8" SUPPLY DUCT (AS SHOWN) IN MECHANICAL ROOM TO BE DEMOLISHED, CAPPED AND SEALED.
10. TWO FLOOR SUPPLY OUTLETS (AS SHOWN) TO BE DEMOLISHED, CAPPED AND SEALED.
11. PERFORM AIR FLOW TRAVERSE READING (AT INDICATED LOCATION) ON SUPPLY AND RETURN DUCTS SERVING OTHER SPACES PRIOR TO DEMOLITION WORK. AIR FLOW VALUES TO BE RECORDED AND USED DURING MODIFIED SYSTEM AIR BALANCING PROCESS.



DEMOLITION FLOOR PLAN

1/4" = 1'-0"



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**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 11/13/19
 CHIEF, BUREAU OF UTILITIES: *[Signature]* DATE: 10-31-19
 CHIEF, BUREAU OF ENGINEERING: *[Signature]* DATE: 11/13/19
 CHIEF, UTILITY DESIGN DIVISION: *[Signature]* DATE: 11/13/19



DES: CK					
DRN: BR					
CHK: CW					
DATE: 10/15/2019	BY: NO.	REVISION	DATE	600 SCALE MAP NO.	BLOCK NO.

DEMOLITION FLOOR PLAN

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

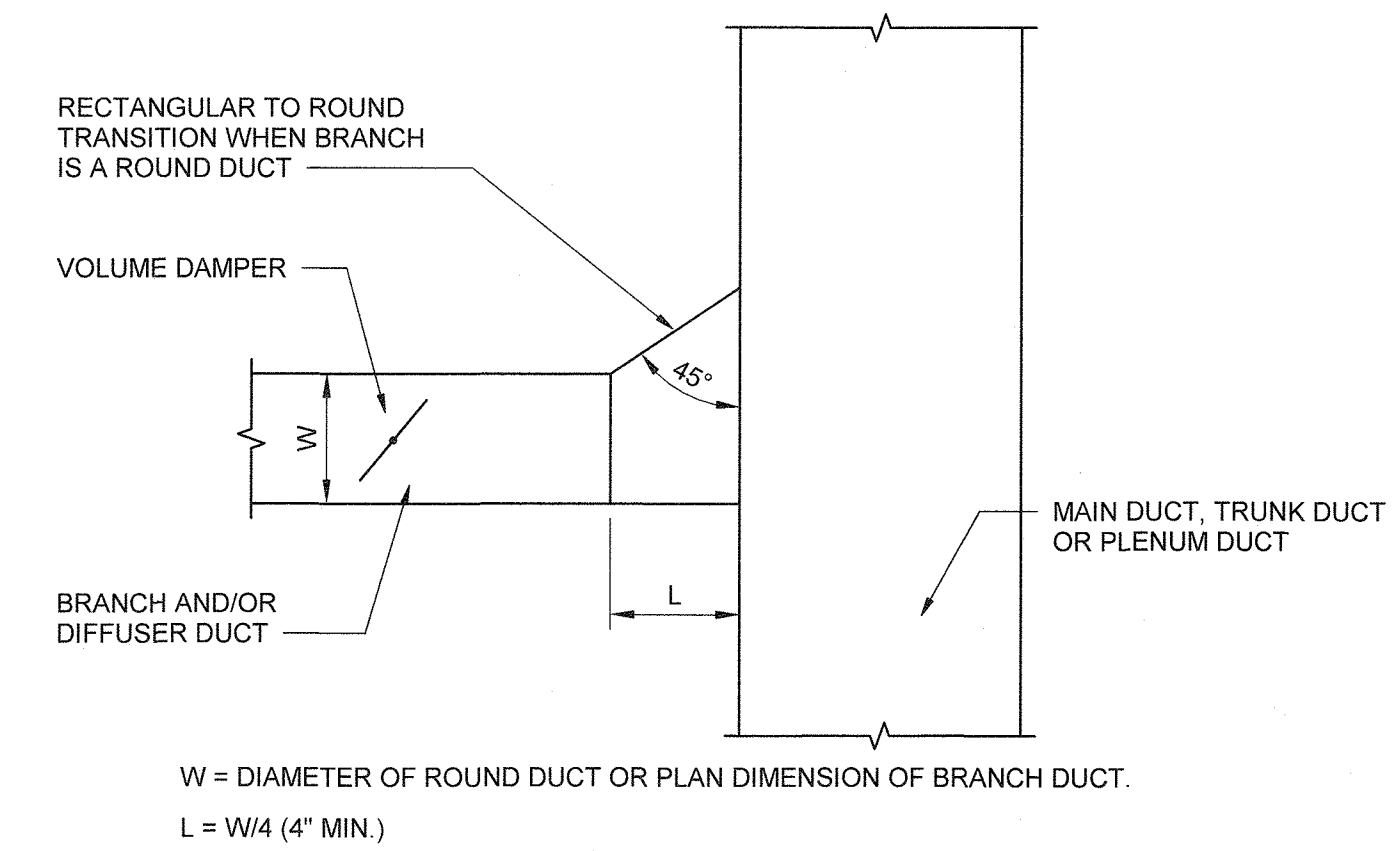
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SCALE AS SHOWN

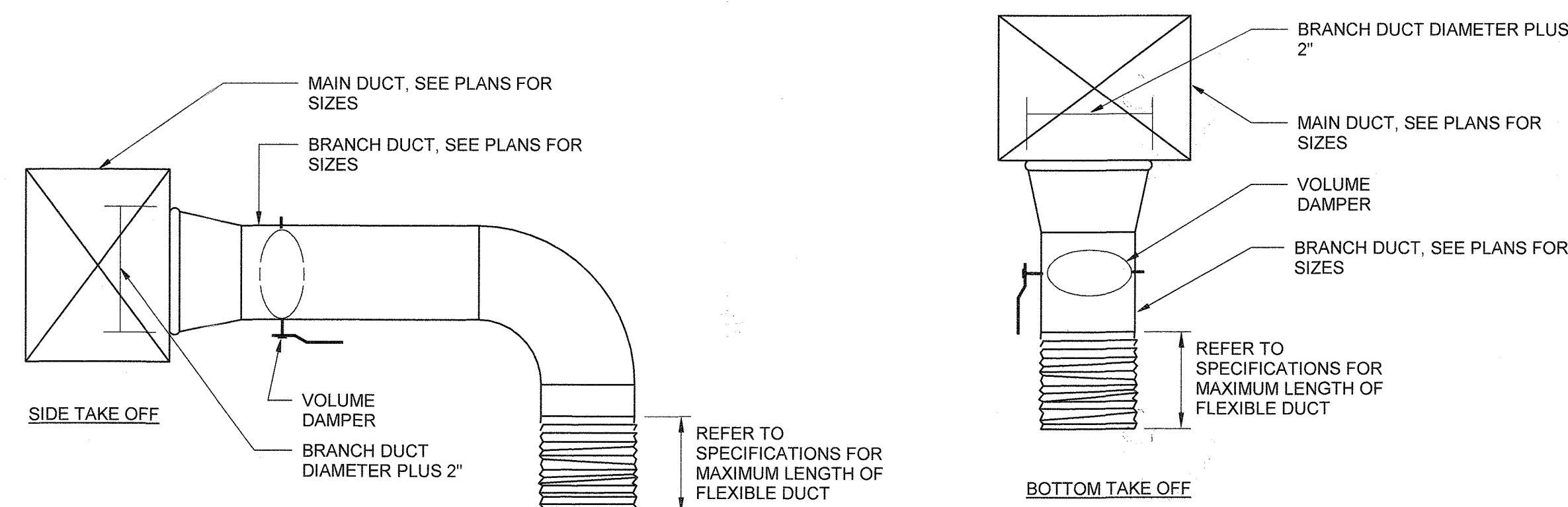
SHEET 20 OF 31

DIFFUSER, REGISTER, AND GRILLE SCHEDULE											
MARK	DESCRIPTION	FACE TYPE	MAX NC	MATERIAL	FINISH	FRAME TYPE	FACE SIZE	NECK SIZE	BASIS OF DESIGN		NOTES
									MANUFACTURER	MODEL	
SA	SQUARE CEILING SUPPLY	PLAQUE	30	ALUMINUM	WHITE	LAY-IN	24x24	SEE PLANS	PRICE	ASPD	1
RA	SQUARE CEILING RETURN	PERFORATED	30	ALUMINUM	WHITE	LAY-IN	24x24	15 INCHES ROUND	PRICE	APDDR	1

NOTES:
1. PROVIDE BORDERS/FRAMES SUITABLE FOR SECURING TO CONSTRUCTION MATERIAL.



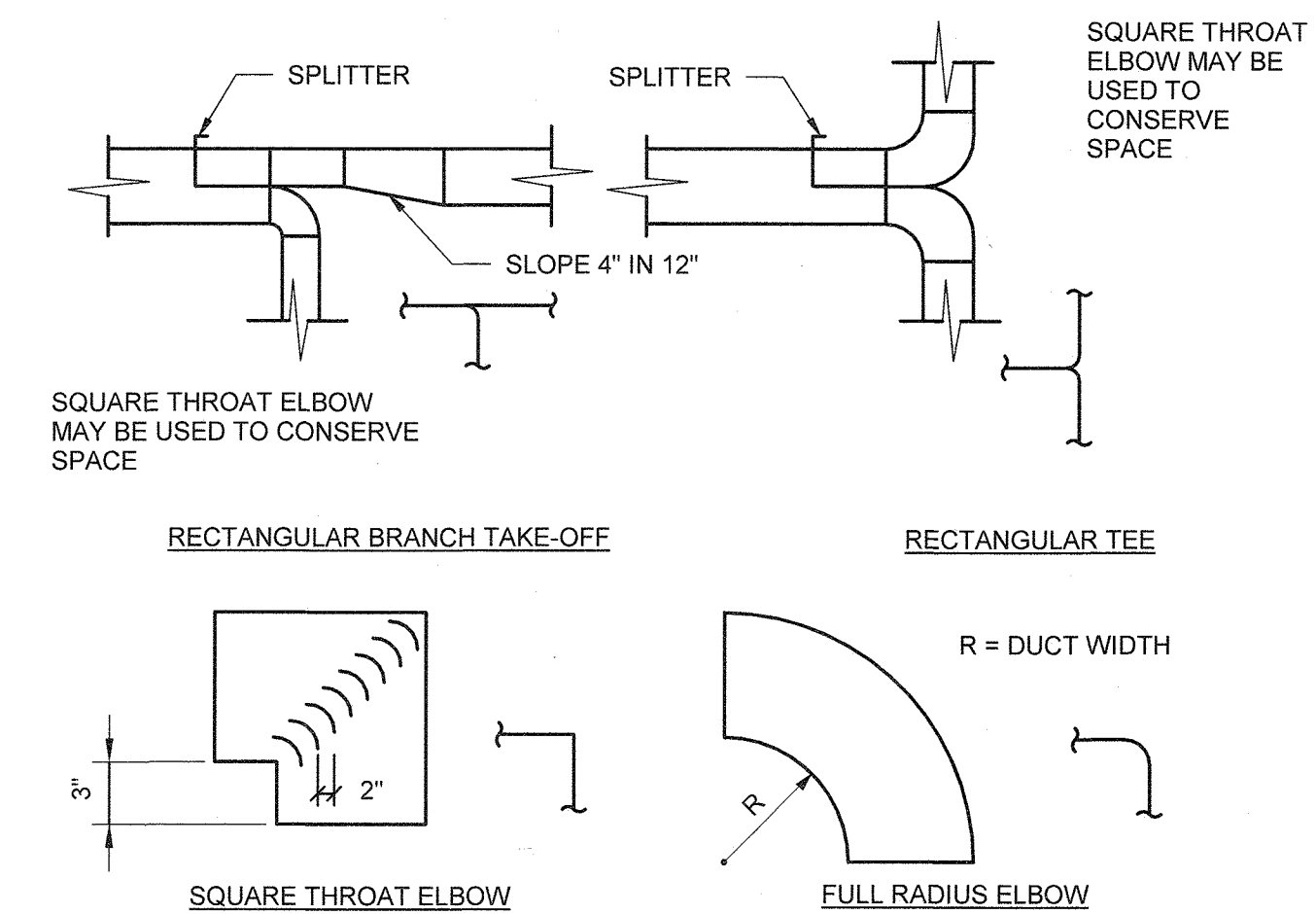
BRANCH DUCT TAKE OFF FITTING DETAIL
12" = 1'-0"



NOTE:
ALL ROUND BRANCH DUCT TAKE-OFFS FROM RECTANGULAR DUCTS SHALL BE MADE WITH SPIN-IN TYPE FITTINGS. THE MOUNTING GROOVE SHALL BE SO CONSTRUCTED AS TO ASSURE CONSTANT FIT CONTROL. BALANCING DAMPERS SHALL BE FACTORY INSTALLED WITH SPRING LOADED RETRACTABLE BEARINGS AND A POSITIVE LOCKING WING NUT FOR EASY READJUSTMENT WHEN NEEDED. FITTING SHALL BE MASTIC SEALED AND TAPERED

LOW VELOCITY ROUND DUCT TAKE OFF FITTING DETAIL
12" = 1'-0"

- NOTES:
- INSTALL MANUAL VOLUME DAMPERS IN ALL LOW PRESSURE SUPPLY, RETURN AND EXHAUST DUCT BRANCHES.
 - INSTALL SPLITTER DAMPER IN ALL LOW PRESSURE SUPPLY, RETURN AND EXHAUST DUCT BRANCHES SERVING TWO OR MORE OUTLETS.



NOTE:
1. SEE "BRANCH TAKEOFF & DAMPER" DETAIL, ALSO.

LOW PRESSURE DUCT CONNECTION
NOT TO SCALE

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**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

[Signature]
DIRECTOR OF PUBLIC WORKS
DATE: 10-31-19

[Signature]
CHIEF, BUREAU OF ENGINEERING
DATE: 11/13/19

[Signature]
CHIEF, UTILITY DESIGN DIVISION
DATE: 11/15/19



DES: CK

DRN: BR

CHK: CW

10/15/2019

BY: NO.

REVISION

DATE

800 SCALE MAP NO.

BLOCK NO.

DETAILS AND SCHEDULES

CONTROL ROOM UPGRADE

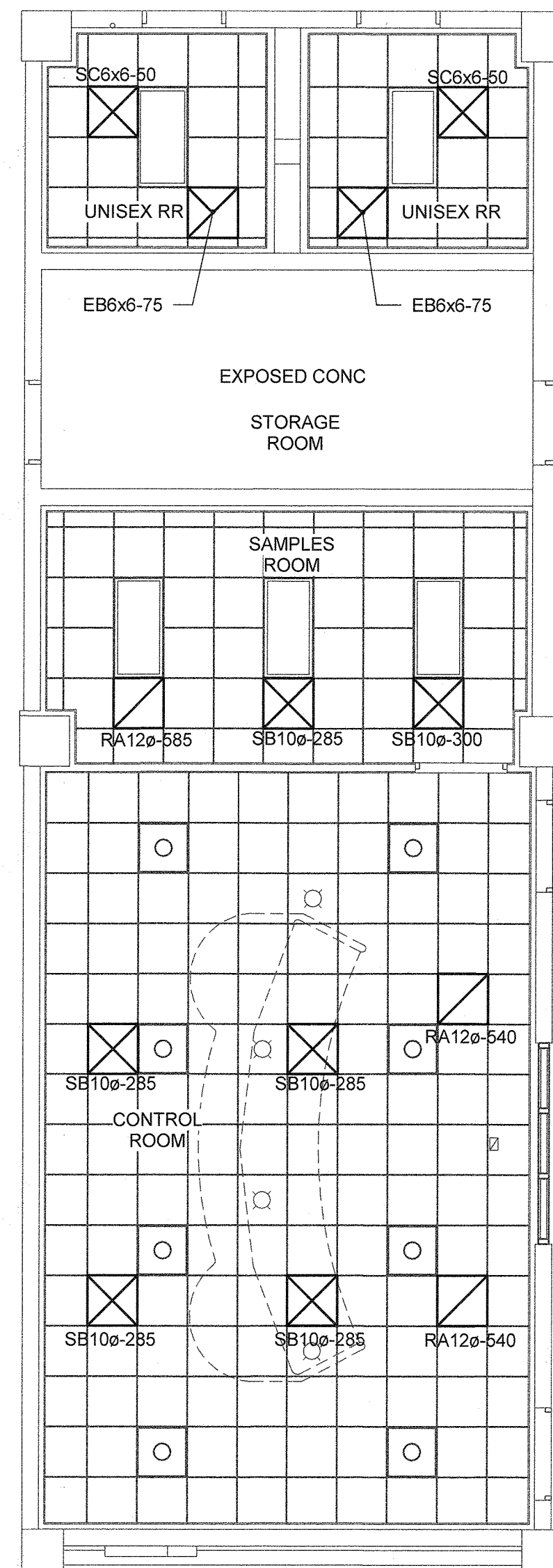
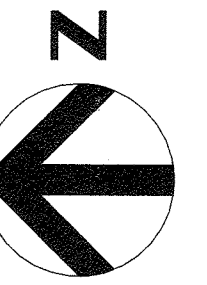
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

H-101

SCALE AS SHOWN

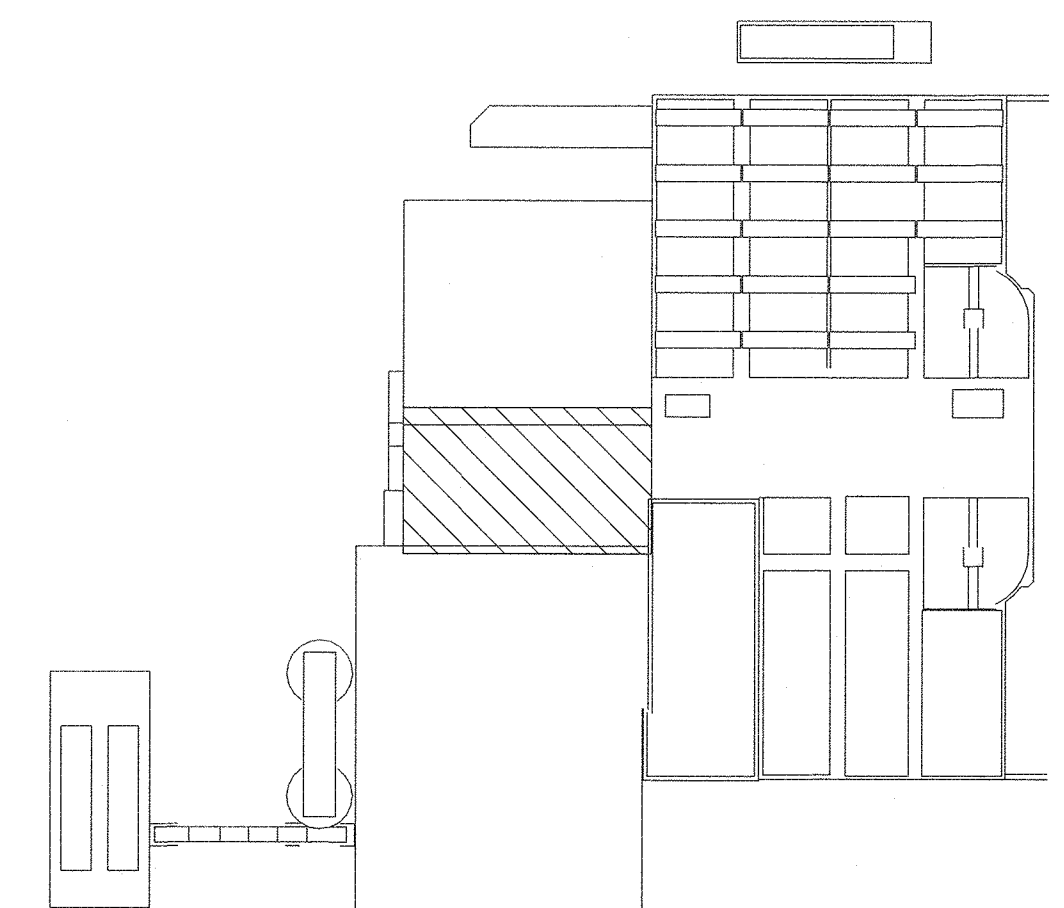
SHEET 22 OF 31



AIR OUTLET PLACEMENT PLAN
3/16" = 1'-0"

MECHANICAL NOTES:

1. ABOVE CEILING HVAC EQUIPMENT AND DUCTWORK INSTALLATION TO BE PERFORMED BY OTHERS PRIOR TO AIR OUTLET INSTALLATION.
2. SUPPLY DIFFUSERS, RETURN GRILLES AND EXHAUST GRILLES TO BE SUPPLIED BY OTHERS.
3. EXHAUST GRILLES IN RESTROOMS TO BE HARD DUCTED TO EXISTING EXHAUST DUCT.
4. SUPPLY DIFFUSERS AND RETURN GRILLES TO BE CONNECTED TO EXISTING DUCTWORK BY MEANS OF THERMALLY INSULATED FLEXIBLE DUCT. DUCT LENGTH NOT TO EXCEED 6 FEET LENGTH. AIR OUTLET NECK SIZE - PERFORM HARD DUCT EXTENSION IF FLEXIBLE IF NEEDED TO REACH AIR OUTLET LOCATION.
5. AIR OUTLET SIZE, NECK SIZE AND AIR FLOW VOLUME ARE INDICATED BY OUTLET TAG.
6. PERFORM AIR BALANCING TO FLOW VALUES INDICATED BY AIR OUTLET.
7. INSTALL AIR OUTLETS BY FOLLOWING IDENTIFICATION:
 - A. SB- PRICE MODEL ASPD 24 x 24 PLAQUE CEILING LAY-IN SUPPLY DIFFUSER.
 - B. RA- PRICE MODEL APPDR 24 x 24 PERFORATED CEILING LAY-IN RETURN GRILLE.
 - C. SC- PRICE MODEL 510 24 x 24 LOUVERED FACE CEILING LAY-IN DIFFUSER
 - D. EB- PRICE MODEL 530 24 x 24 LOUVERED FACE CEILING LAY-IN EXHAUST GRILLE

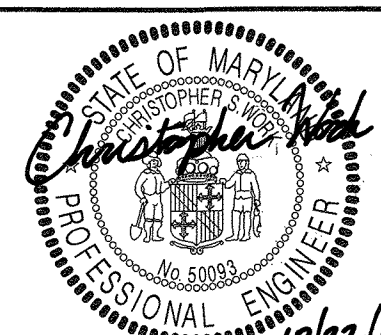


KEY PLAN

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: , EXPIRATION DATE:

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 10-31-15
 CHIEF, BUREAU OF UTILITIES: *[Signature]* DATE: 11/13/19
 CHIEF, BUREAU OF ENGINEERING: *[Signature]* DATE: 11/13/19
 CHIEF, UTILITY DESIGN DIVISION: *[Signature]* DATE: 10/22/19



DES: CK					
DRN: BR					
CHK: CW					
10/15/2019	BY	NO.	REVISION	DATE	

DRYER BUILDING CONTROL ROOM PLANS

600 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

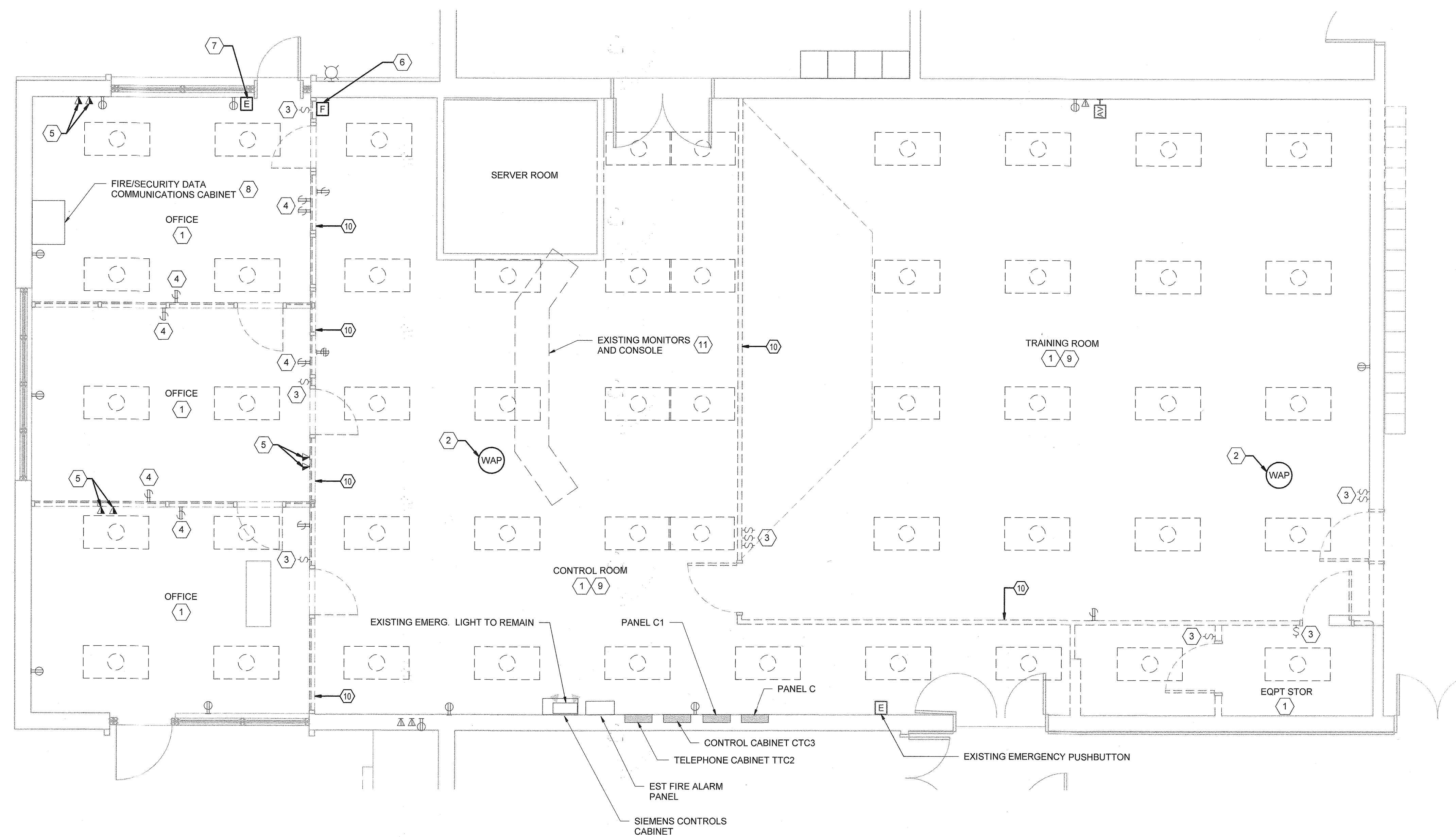
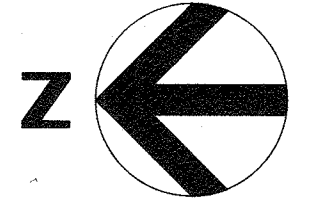
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

H-200

SCALE AS SHOWN

SHEET 23 OF 31

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GENERAL NOTES

1. CONNECT ALL EXIT AND EMERGENCY FIXTURES TO THE NEAREST LIGHTING CIRCUIT AHEAD OF LOCAL SWITCHING.
2. REFER TO PHASING PLAN ON SHEET G-108.

KEY NOTES

1. REMOVE ALL RECESSED TROFFERS.
2. CEILING MOUNTED WIRELESS ACCESS POINT. REMOVE AND REINSTALL IN NEW CONFERENCE AND TRAINING ROOM. SEE SHEET E-103.
3. REMOVE LIGHT SWITCHES. EXISTING LIGHTING CIRCUIT WILL BE USED TO REFEED NEW LIGHTS. EXTEND WIRES AND CONDUITS AS REQUIRED.
4. REMOVE RECEPTACLE. EXTEND WIRING AND CONDUIT TO NEW RECEPTACLE LOCATION. SEE SHEET E-103.
5. REMOVE DATA OUTLET. EXTEND WIRING AND CONDUIT TO NEW DATA OUTLET LOCATION. SEE SHEET E-103.
6. RELOCATE FIRE ALARM PULLSTATION. EXTEND WIRING AND CONDUIT AS REQUIRED.
7. RELOCATE EMERGENCY PUSHBUTTON STATION. EXTEND WIRING AND CONDUIT AS REQUIRED.
8. SECURITY CABINET TO BE RELOCATED. EXTEND ALL WIRING AND CONDUITS TO CABINET NEW LOCATION. SEE SHEET E-103.
9. REMOVE ALL UNUSED/ABANDONED WIRING, CABLES AND CONDUITS LOCATED UNDER EXISTING RAISED FLOOR.
10. REMOVE ALL ELECTRICAL AND DATA OUTLETS PRIOR TO WALL PARTITION REMOVAL.
11. EXISTING MONITORS AND CONSOLE TO BE REMOVED. EXISTING POWER CIRCUITS TO BE REUSED TO FEED NEW CONSOLE. EXTEND EXISTING WIRING AND CONDUITS AS REQUIRED.

ELECTRICAL DEMOLITION PLAN
1/4" = 1'-0"

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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND				DES: RLA					
DIRECTOR OF PUBLIC WORKS <i>[Signature]</i> DATE: 10-31-19	CHIEF, BUREAU OF ENGINEERING <i>[Signature]</i> DATE: 11/15/19			DRN: CLS					
CHIEF, BUREAU OF UTILITIES <i>[Signature]</i> DATE:	CHIEF, UTILITY DESIGN DIVISION <i>[Signature]</i> DATE:			CHK: RG					
				10/15/2019	BY:	NO.	REVISION	DATE	600 SCALE MAP NO.

ELECTRICAL DEMOLITION PLAN

CONTROL ROOM UPGRADE

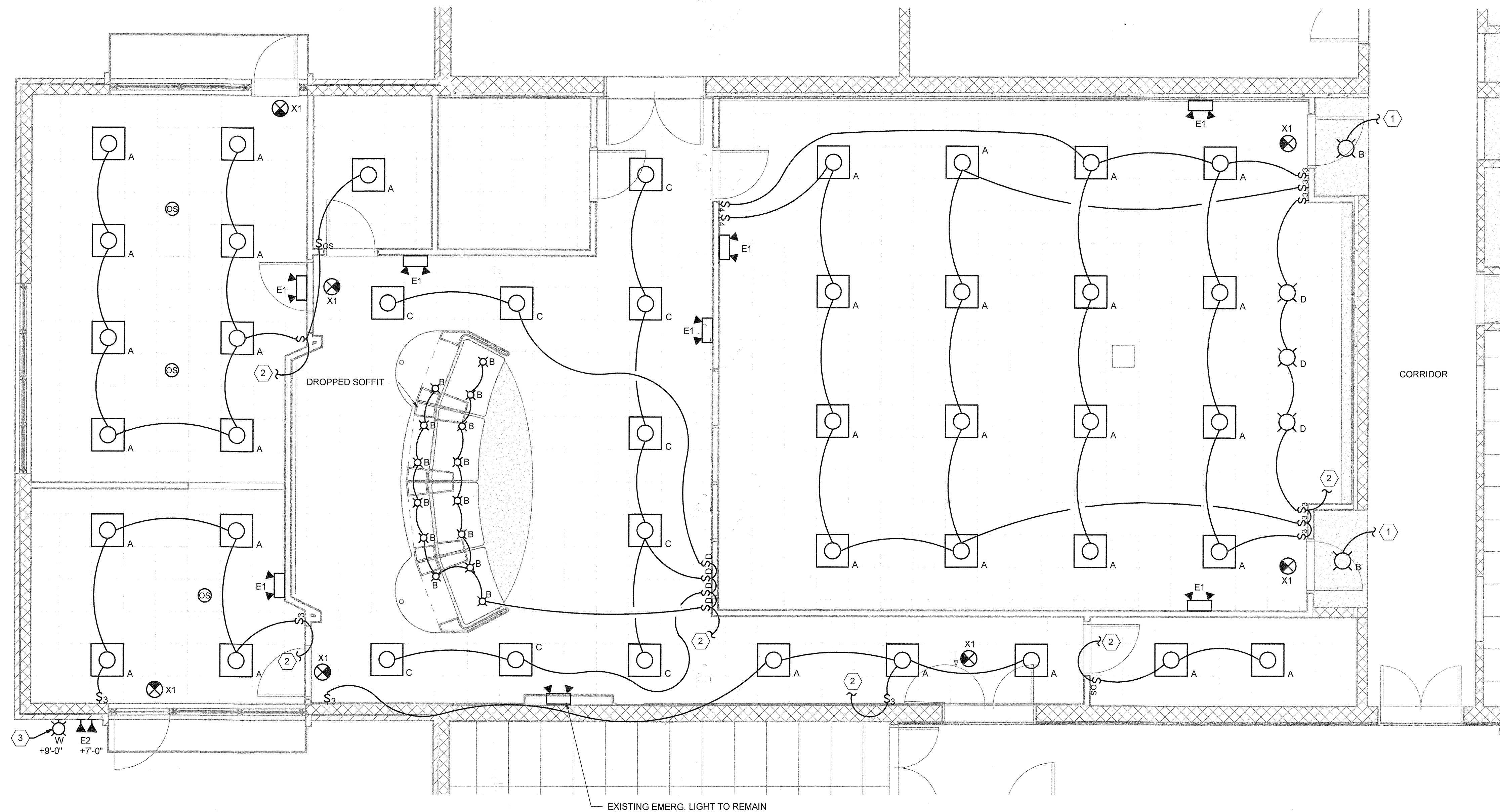
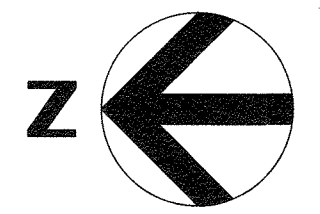
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

ED-101

SCALE AS SHOWN

SHEET 24 OF 31



GENERAL NOTES

1. CONNECT ALL EXIT AND EMERGENCY FIXTURES TO THE NEAREST LIGHTING CIRCUIT AHEAD OF LOCAL SWITCHING.
2. REFER TO SHEET E-109 FOR LIGHT FIXTURE SCHEDULE.

KEY NOTES

1. CONNECT TO EXISTING CORRIDOR LIGHTING CIRCUIT.
2. CONNECT TO EXISTING LIGHTING CIRCUIT.
3. CONNECT TO EXISTING EXTERIOR LIGHTING CIRCUIT.

ELECTRICAL LIGHTING PLAN

1/4" = 1'-0"

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"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 37997, EXPIRATION DATE: 12/16/2019

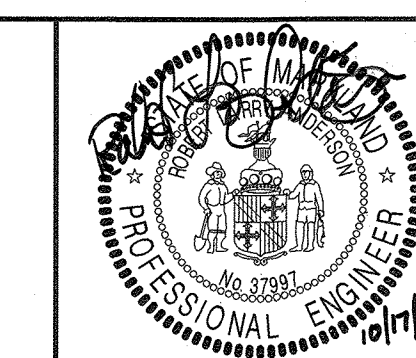
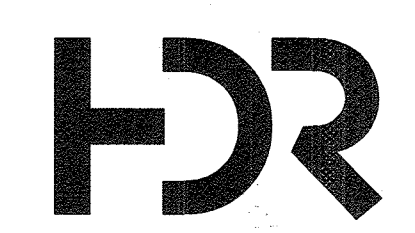
**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

[Signature] 10/15/19
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 10/15/19
CHIEF, BUREAU OF UTILITIES DATE

[Signature] 10/15/19
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 10/15/19
CHIEF, UTILITY DESIGN DIVISION DATE



DES: RLA	
DRN: CLS	
CHK: RG	
10/15/2019	
BY	NO.
REVISION	DATE

ADMIN. BUILDING PARTIAL LIGHTING PLAN

800 SCALE MAP NO. BLOCK NO.

CONTROL ROOM UPGRADE

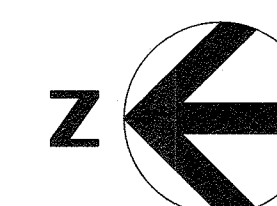
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

E-102

SCALE AS SHOWN

SHEET 25 OF 31

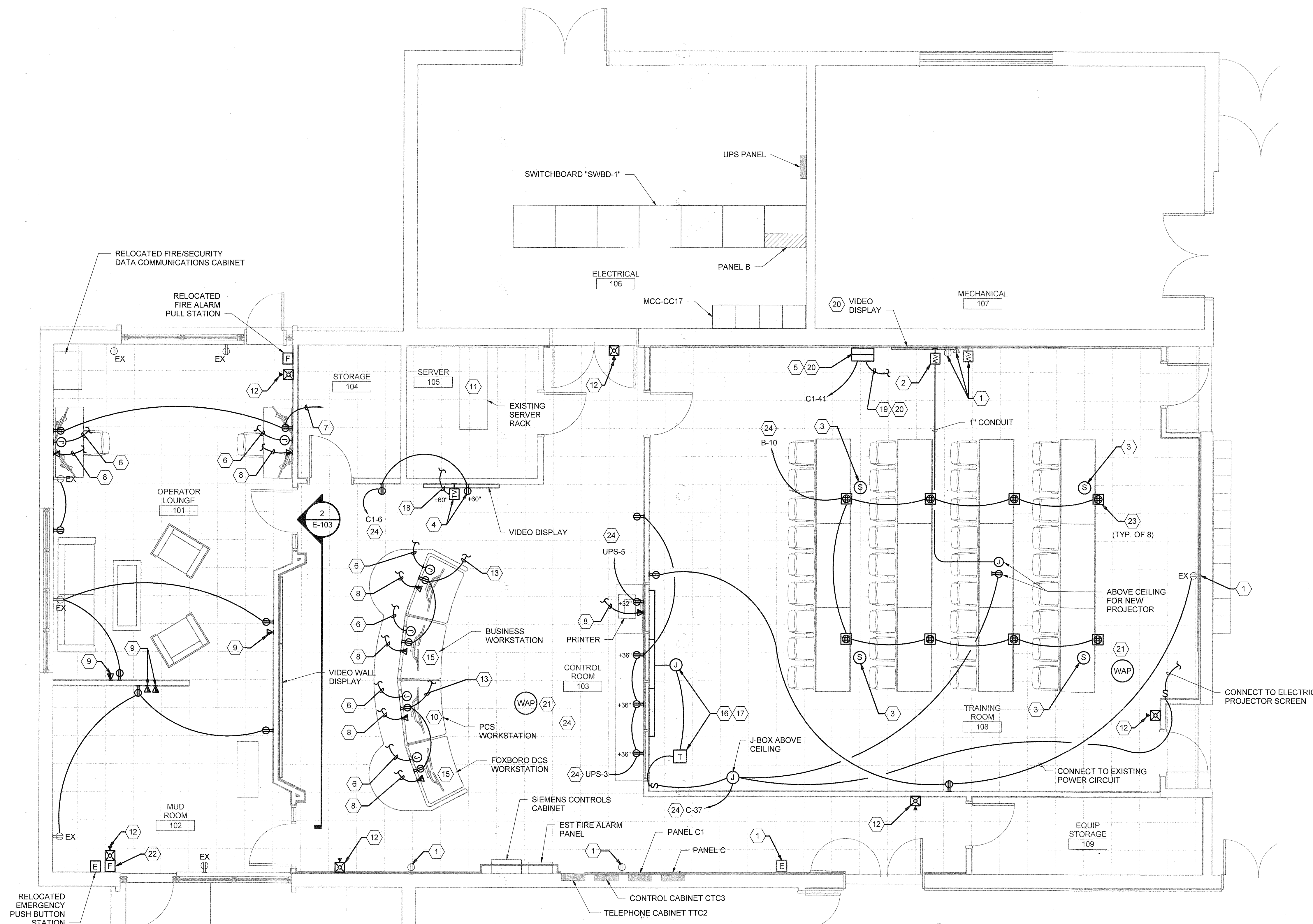


GENERAL NOTES

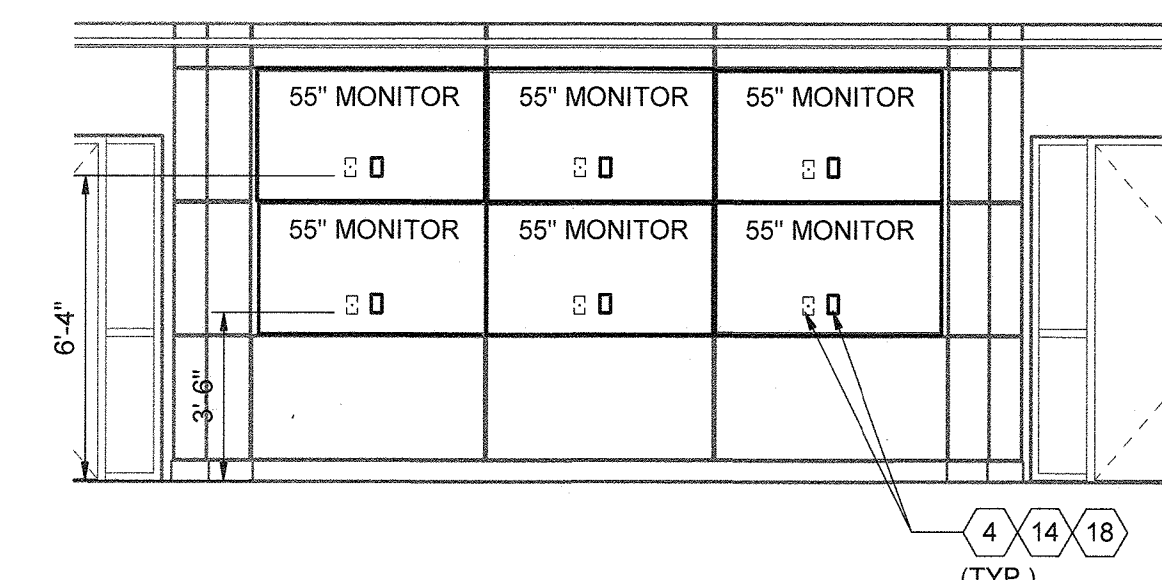
1. ELECTRICAL AND COMMUNICATION DEVICES SHOWN LIGHT ARE EXISTING TO REMAIN.
2. ALL POWER CIRCUITING SHOWN IS 2#12, #12G, IN 3/4" C. POWER HOMERUNS ARE ROUTED TO SPARE 20A, 1P CIRCUIT BREAKER IN PANEL C, PANEL C1, PANEL B OR UPS PANEL UNLESS OTHERWISE NOTED.
3. REFER TO SHEET E-107 FOR SCADA AV BLOCK DIAGRAM.

KEY NOTES

1. EXISTING ELECTRICAL OR COMMUNICATION OUTLET IS RECESSED IN CEMENT BLOCK WALL. PROVIDE ELECTRICAL BOX EXTENDER TO ALLOW EXISTING ELECTRICAL OR COMMUNICATION OUTLET TO BE INSTALLED IN NEW FURRED OUT WALL.
2. PROVIDE A MULTIFUNCTION HDMI VGA 3RCA AV OUTLET.
3. CEILING MOUNTED SPEAKER PROVIDE FOR NEW PROJECTOR.
4. RECEPTACLE AND AV OUTLET PROVIDED FOR EACH WALL MOUNTED MONITOR.
5. FLOOR MOUNTED NETWORK RACK WITH VIDEO CONTROLLER.
6. PROVIDE PLENUM RATED HDMI CABLES FROM HUB TO IP ENCODERS/VIDEO CONTROLLERS LOCATED IN SERVER ROOM, TRAINING ROOM AND CONFERENCE ROOM. PROVIDE 1X4 HDMI SPLITTER AT EACH WORKSTATION. HDMI SPLITTER SHALL BE MANUFACTURED BY KANEXPRO OR APPROVED EQUAL. PROVIDE ONE (1) HDMI CABLE PER MONITOR.
7. ROUTE 2#12, #12G, 3/4" C TO SPARE 20A, 1P CIRCUIT BREAKER IN UPS PANEL.
8. ROUTE CAT 6 CABLE IN 3/4" C TO NETWORK SWITCH IN SERVER ROOM.
9. RELOCATED COMMUNICATION OUTLET LOCATIONS. EXTEND WIRING AND CONDUIT AS REQUIRED.
10. PCS WORKSTATION PROVIDED BY ADDITION 8 CONTRACTOR.
11. INSTALL VIDEO CONTROLLER IN EXISTING FOXBORO SERVER RACK.
12. CONNECT FIRE ALARM NOTIFICATION DEVICE TO EXISTING FIRE ALARM PANEL WITH CLASS "B" WIRING. VOLTAGE DROP MUST NEVER EXCEED 14%.
13. CONNECT TO EXISTING CONSOLE CIRCUIT.
14. PROVIDE 2#12, #12G, IN 3/4" C TO SPARE 20A, 1P CIRCUIT BREAKER IN PANEL C1, CKT #6 FOR MONITOR POWER.
15. EXISTING FOXBORO DCS AND BUSINESS WORKSTATIONS TO BE RELOCATED TO NEW CONSOLE.
16. PROVIDE TRANSFORMER AND JUNCTION BOX FOR LOW VOLTAGE WIRING FOR SWITCHABLE/PRIVACY GLASS. INSTALL TRANSFORMER AND JUNCTION BOX ABOVE SUSPENDED CEILING.
17. SWITCHABLE/PRIVACY GLASS WILL ONLY BE INSTALLED UNDER ADD ALTERNATE NO 2.
18. PROVIDE PLENUM RATED HDMI CABLES FROM EACH MONITOR TO VIDEO CONTROLLER IN SERVER ROOM. RUN CABLES ALONG CONTROL ROOM AND TRAINING ROOM CEILING.
19. PROVIDE HDMI CABLE FROM VIDEO CONTROLLER TO VIDEO DISPLAY.
20. NETWORK RACK, 55" MONITOR AND ASSOCIATED WORK WILL ONLY BE INSTALLED UNDER ADD ALTERNATE NO 3.
21. REINSTALL EXISTING CEILING MOUNTED WAP IN NEW CEILING.
22. CONNECT FIRE ALARM PULL STATION TO EXISTING FIRE ALARM PANEL WITH CLASS "B" WIRING.
23. 1-GANG RECESSED BRASS FLOOR OUTLET. COORDINATE INSTALLATION OF FLOOR OUTLET WITH RAISED FLOOR TILE INSTALLER.
24. CONNECT TO EXISTING 20A, 1P CIRCUIT BREAKER IN PANELBOARD. SEE GENERAL NOTE 2.



PARTIAL POWER PLAN 1
1/4" = 1'-0"



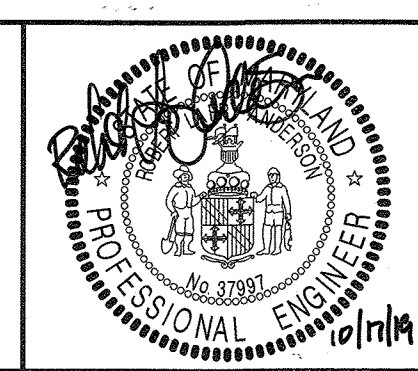
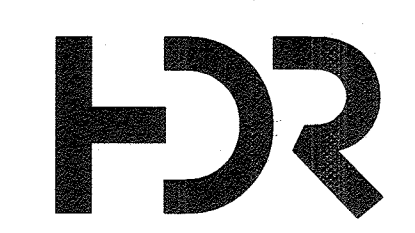
2 VIDEO WALL DISPLAY ELEVATION
E-103 1/4" = 1'-0"

E-103

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 37997, EXPIRATION DATE: 12/16/2019

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* 10-3-19
 Chief, Bureau of Utility Design: *[Signature]* 11/13/19



DES: RLA	
DRN: CLS	
CHK: RG	
10/15/2019	
BY: NO.	REVISION
DATE	800 SCALE MAP NO.
	BLOCK NO.

ADMIN. BUILDING PARTIAL POWER PLAN

CONTROL ROOM UPGRADE

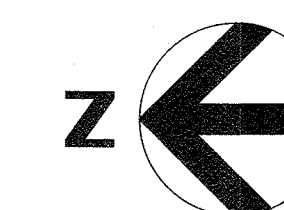
CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 26 OF 31

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GENERAL NOTES

1. ALL POWER CIRCUITING SHOWN IS 2#12, #12G. IN 3/4" C UNLESS OTHERWISE NOTED.
2. REFER TO SHEET E-107 FOR SCADA AV BLOCK DIAGRAM.

KEY NOTES

1. FLOOR MOUNTED NETWORK RACK WITH VIDEO CONTROLLER.
2. PROVIDE PLENUM RATED HDMI CABLES ROUTED ABOVE CEILING FROM NETWORK RACK TO 1X4 HDMI SPLITTER AT EACH WORKSTATION IN CONTROL ROOM.
3. RECEPTACLE AND AV OUTLET PROVIDED FOR WALL MOUNTED MONITOR. PROVIDE PLENUM RATED HDMI CABLE FROM MONITOR TO VIDEO CONTROLLER IN FLOOR MOUNTED NETWORK RACK.
4. NETWORK RACK, 55" MONITOR AND ASSOCIATED WORK WILL ONLY BE INSTALLED UNDER ADD ALTERNATE NO.4.

PARTIAL POWER PLAN 2

1/4" = 1'-0"

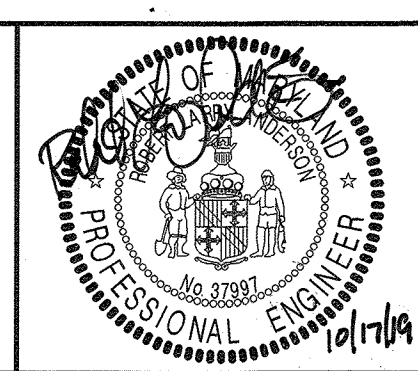
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"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 37997, EXPIRATION DATE: 12/16/2019

E-104

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* 10/21/19
 Chief, Bureau of Utilities: *[Signature]* 10-21-19
 Chief, Bureau of Engineering: *[Signature]* 11/13/19
 Chief, Utility Design Division: *[Signature]* 11/13/19



DES: RLA				
DRN: CLS				
CHK: RG				
10/15/2019	BY	NO.	REVISION	DATE

ADMIN. BUILDING PARTIAL POWER PLAN

800 SCALE MAP NO. BLOCK NO.

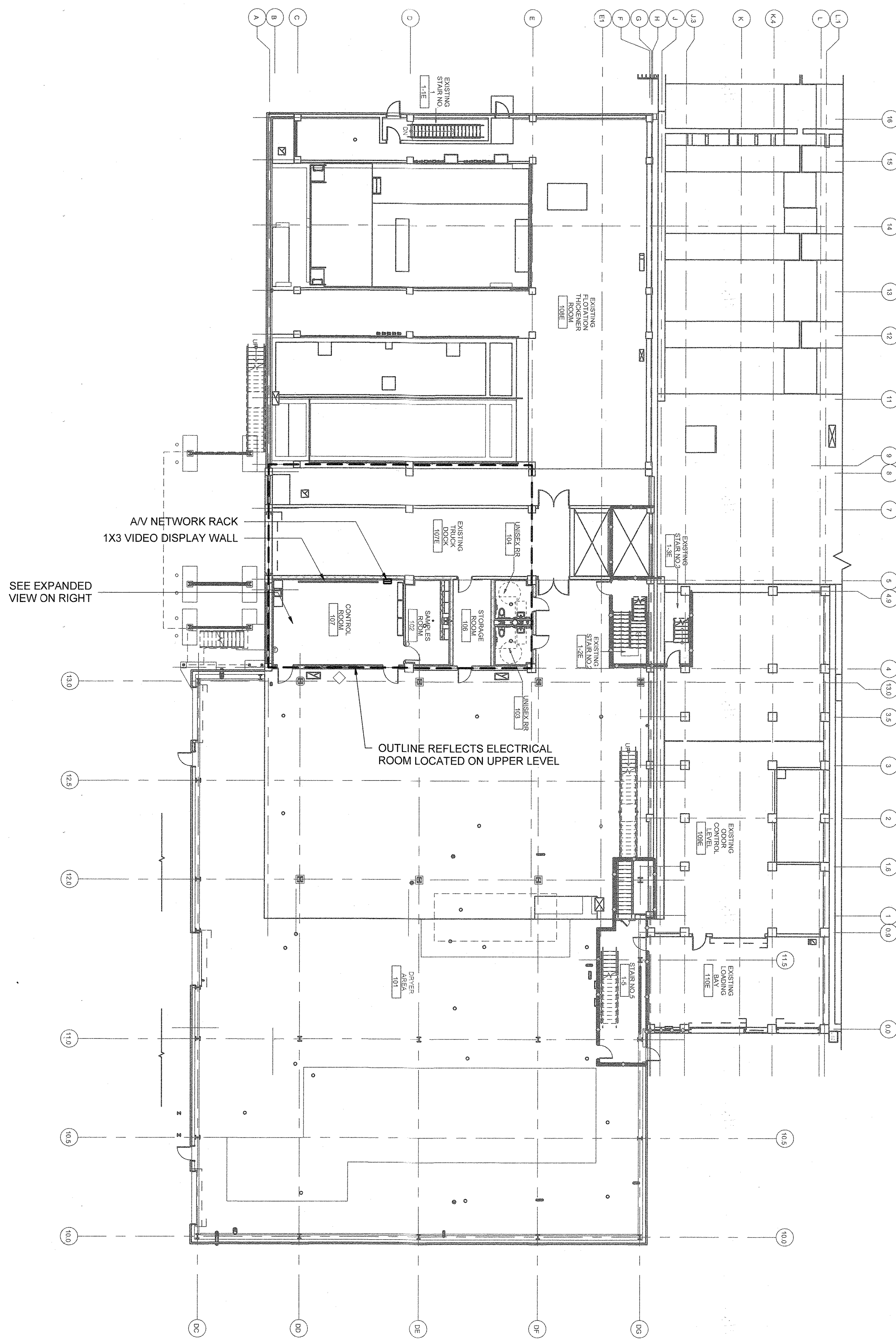
CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

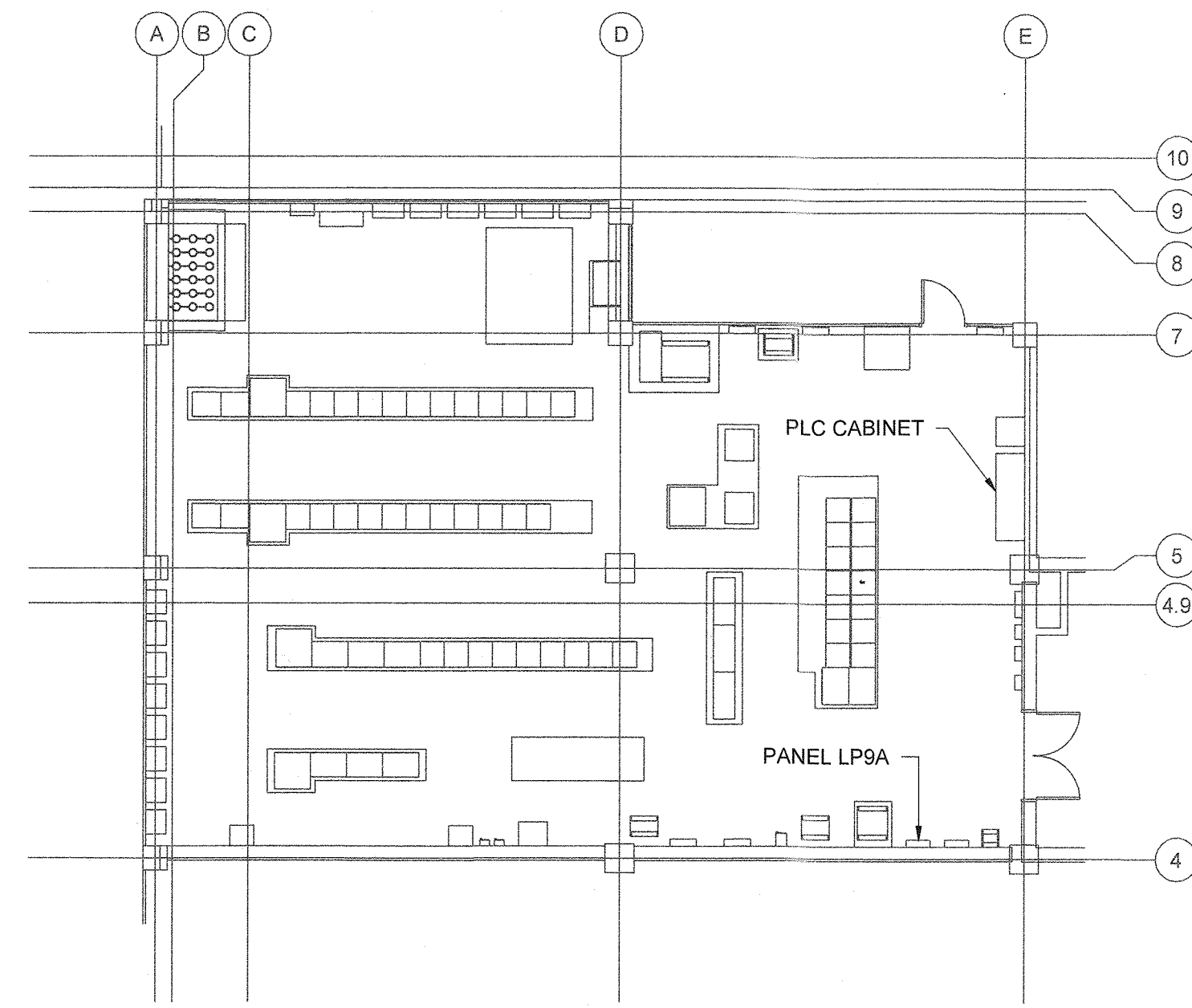
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

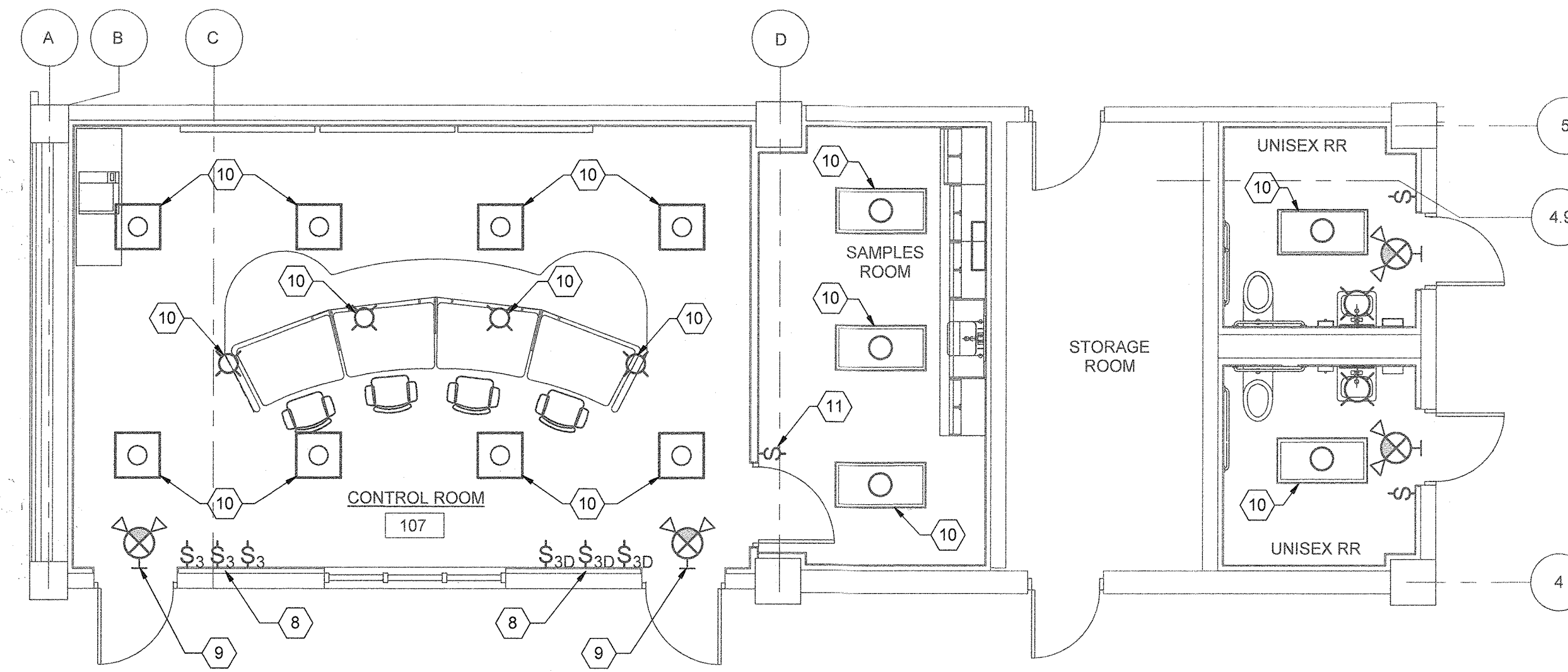
SHEET 27 OF 31



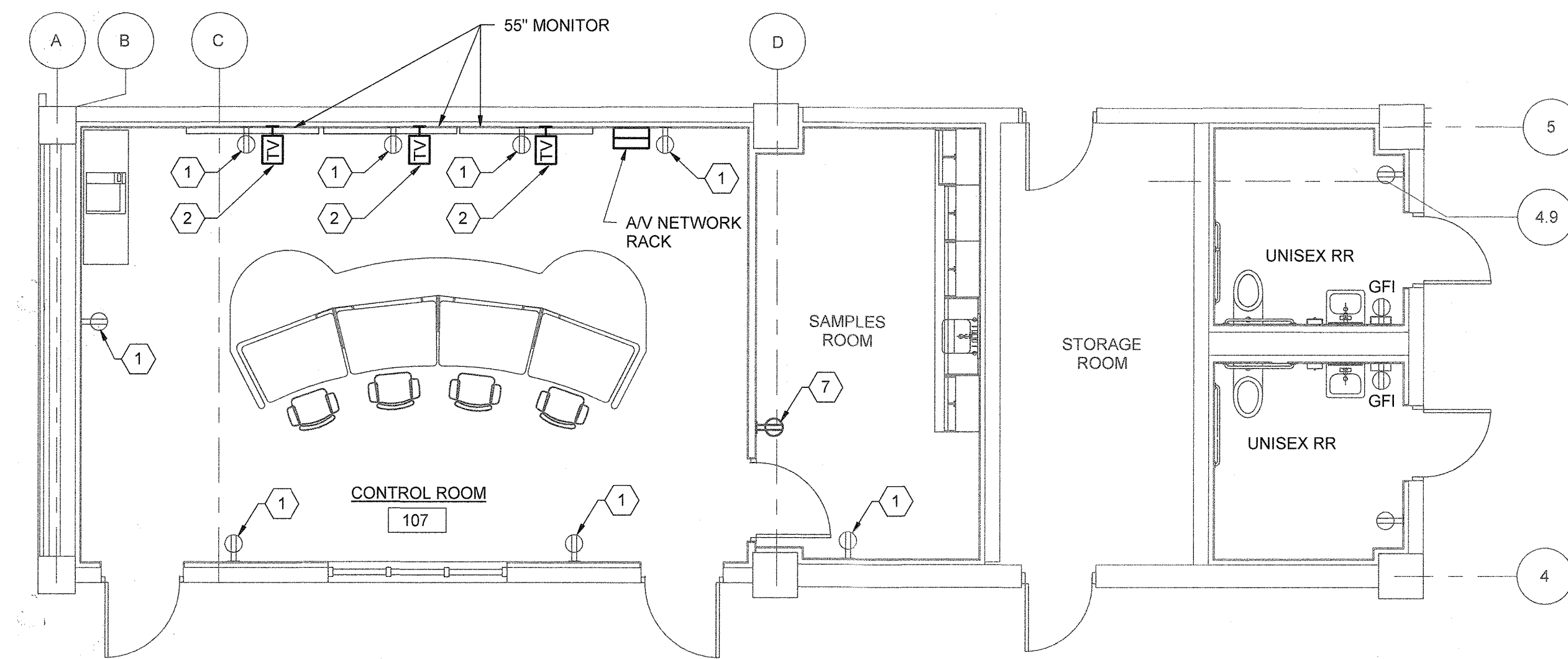
DRYER BUILDING PLAN AT EL 141.20 I&C
1/16" = 1'-0"



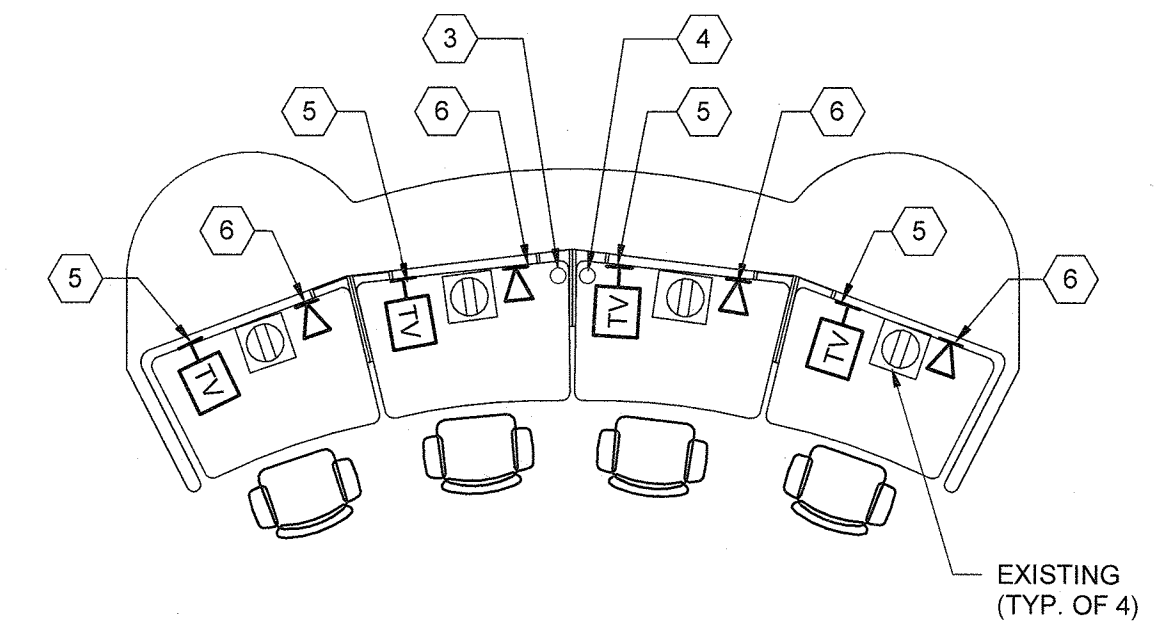
DRYER BUILDING ELECTRICAL ROOM - EL 156
3/32" = 1'-0"



DRYER BUILDING PARTIAL LIGHTING PLAN
3/16" = 1'-0"



DRYER BUILDING PARTIAL POWER PLAN
3/16" = 1'-0"



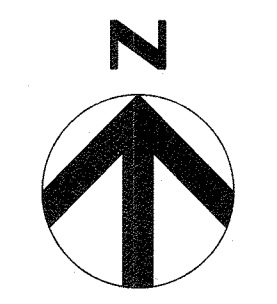
WORKSTATION POWER AND COMM. PLAN
1/4" = 1'-0"

GENERAL NOTES

1. LIGHT FIXTURES, LIGHT SWITCHES AND RECEPTACLES WAS PROVIDED AND INSTALLED BY OTHERS.
2. ALL POWER CIRCUITING SHOWN IS 2#12, #12G. IN 3/4" C ROUNDED TO SPARE 20A, 1P CIRCUIT BREAKER IN PANEL LP9A UNLESS OTHERWISE NOTED.
3. REFER TO SHEET E-107 FOR SCADA AV BLOCK DIAGRAM.
4. FLOOR OF DRYER BUILDING ELECTRICAL ROOM IS 2 HOUR FIRE RATED.

KEY NOTES

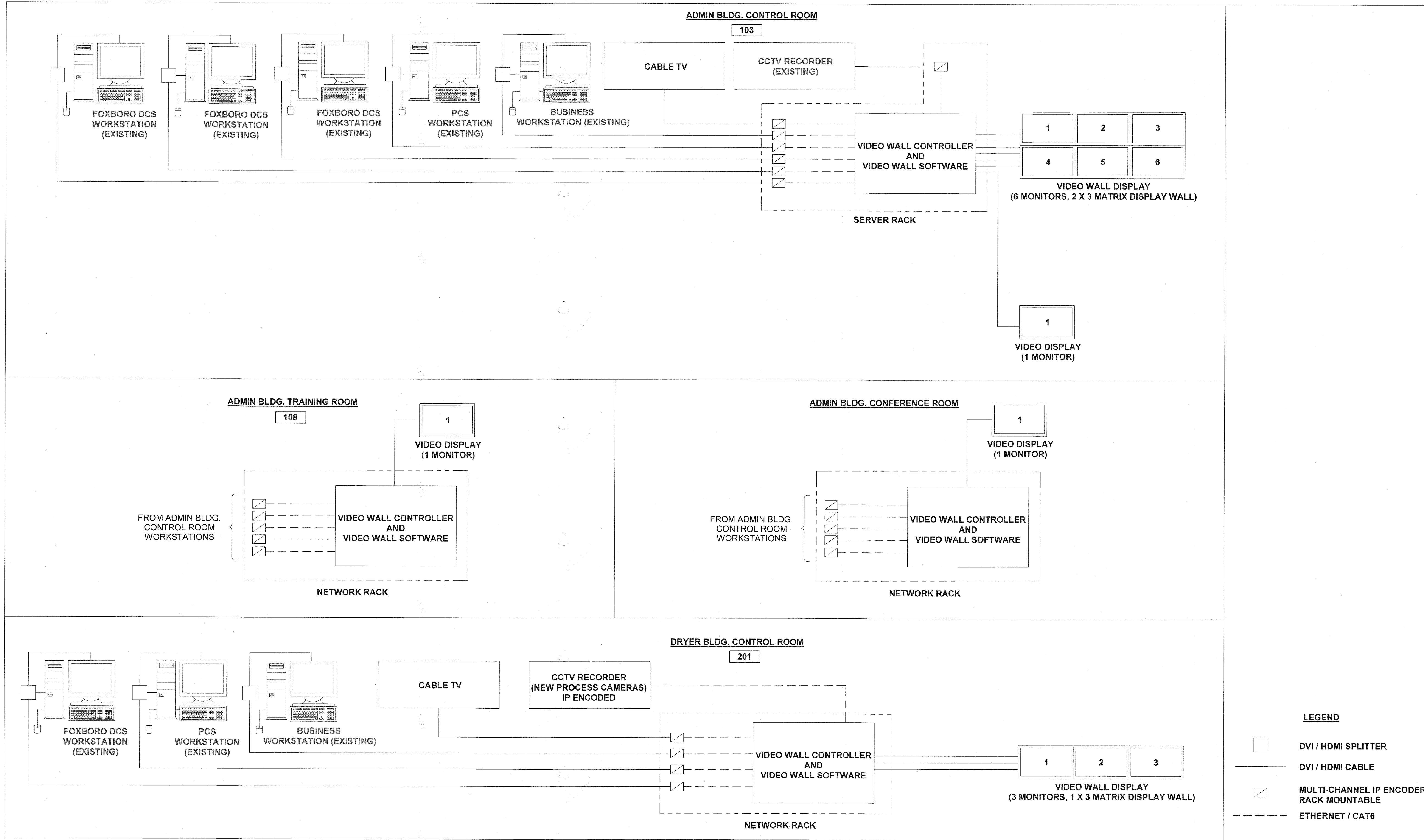
1. RECEPTACLE WAS PROVIDED AND INSTALLED BY OTHERS. REMOVE RECEPTACLE, INSTALL ELECTRICAL BOX EXTENDER AND REINSTALL RECEPTACLE FLUSH WITH NEW FURRED OUT WALL.
2. PROVIDE AV OUTLET FOR NEW WALL MOUNTED MONITOR. PROVIDE PLENUM RATED HDMI CABLE IN 3/4" C ROUNDED TO VIDEO CONTROLLER IN FLOOR MOUNTED NETWORK RACK. MOUNT AV OUTLET 5'-6" AFF.
3. EXISTING CONDUIT STUB UP FOR NEW HDMI CABLES FROM WORKSTATIONS TO NETWORK RACK. CONDUIT FROM WORKSTATIONS TO NETWORK RACK PROVIDED BY OTHERS. FIELD COORDINATE EXACT LOCATION.
4. EXISTING CONDUIT STUB UP FOR NEW CAT6 CABLES FROM WORKSTATIONS TO PLC CABINET IN ELECTRICAL ROOM. CONDUIT FROM WORKSTATIONS TO PLC CABINET PROVIDED BY OTHERS. FIELD COORDINATE EXACT LOCATION.
5. PROVIDE PLENUM RATED HDMI CABLE ROUTED TO VIDEO CONTROLLER IN FLOOR MOUNTED NETWORK RACK.
6. PROVIDE CAT6 CABLE ROUTED TO PLC CABINET IN ELECTRICAL ROOM.
7. RECEPTACLE WAS PROVIDED AND INSTALLED BY OTHERS. RECEPTACLE IS SUSPENDED FROM CONCRETE CEILING. RELOCATE RECEPTACLE TO NEW WALL.
8. LIGHT SWITCHES WAS PROVIDED AND INSTALLED BY OTHERS. REMOVE LIGHT SWITCH, INSTALL ELECTRICAL BOX EXTENDER AND REINSTALL LIGHT SWITCH FLUSH WITH NEW FURRED OUT WALL.
9. WALL MOUNTED LIGHT FIXTURE WAS PROVIDED AND INSTALLED BY OTHERS. REMOVE LIGHT FIXTURE, INSTALL ELECTRICAL BOX EXTENDER AND REINSTALL LIGHT FIXTURE FLUSH WITH NEW FURRED OUT WALL.
10. LAY-IN TROFFER AND/OR RECESSED LIGHT WAS PROVIDED AND INSTALLED BY OTHERS. THE FIXTURE ARE SUSPENDED FROM CONCRETE CEILING. RELOCATE FIXTURE TO NEW SUSPENDED CEILING.
11. LIGHT SWITCH WAS PROVIDED AND INSTALLED BY OTHERS. SWITCH IS SUSPENDED FROM CONCRETE CEILING. RELOCATE SWITCH TO NEW WALL.



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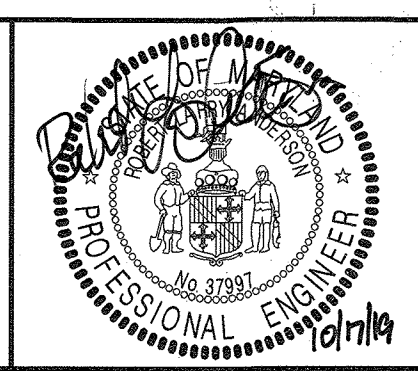
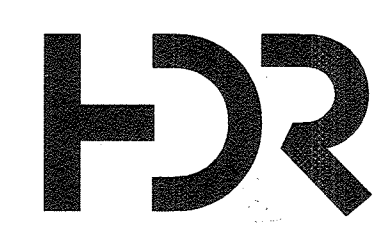
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND				DES. RLA		DRYER BUILDING CONTROL ROOM SCADA A/V	CONTROL ROOM UPGRADE CAPITAL PROJECT S-6264 CONTRACT NO. 20-5099 6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	E-105 SCALE AS SHOWN SHEET 28 OF 31	
DIRECTOR OF PUBLIC WORKS <i>[Signature]</i>	DATE 10-31-19			CHIEF, BUREAU OF UTILITIES <i>[Signature]</i>	DATE 11/13/19				DRN. CLS
				CHK. RG					
				10/15/2019					
				BY	NO.	REVISION	DATE	600 SCALE MAP NO.	BLOCK NO.



"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 37997, EXPIRATION DATE: 12/16/2019

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**

Director of Public Works: *[Signature]* 10/31/19
 Chief, Bureau of Utilities: *[Signature]* 10-31-19
 Chief, Bureau of Engineering: *[Signature]* 11/3/19
 Chief, Utility Design Division: *[Signature]* 11/3/19



DES: RLA			
DRN: CLS			
CHK: RG			
10/15/2019	BY: NO.	REVISION	DATE

ELECTRICAL A/V BLOCK DIAGRAM

600 SCALE MAP NO. | BLOCK NO.

CONTROL ROOM UPGRADE

CAPITAL PROJECT S-6264
CONTRACT NO. 20-5099

6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

E-107

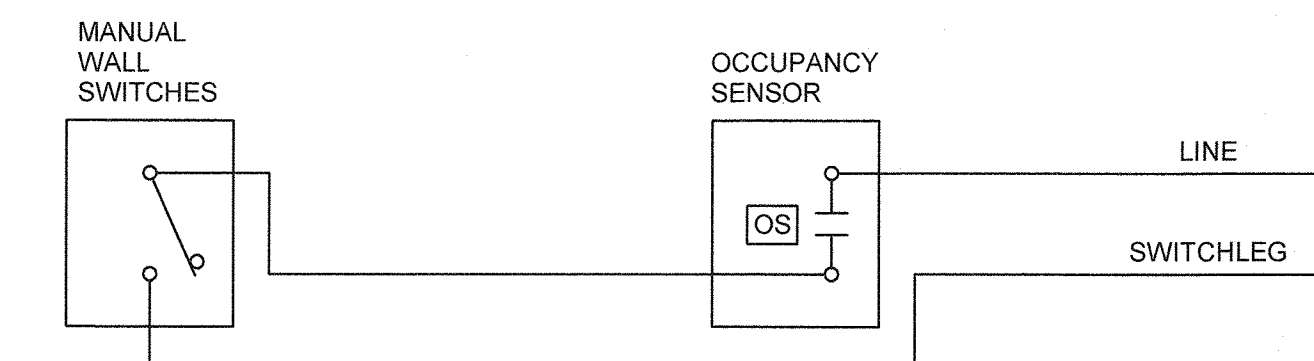
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SHEET 30 OF 31

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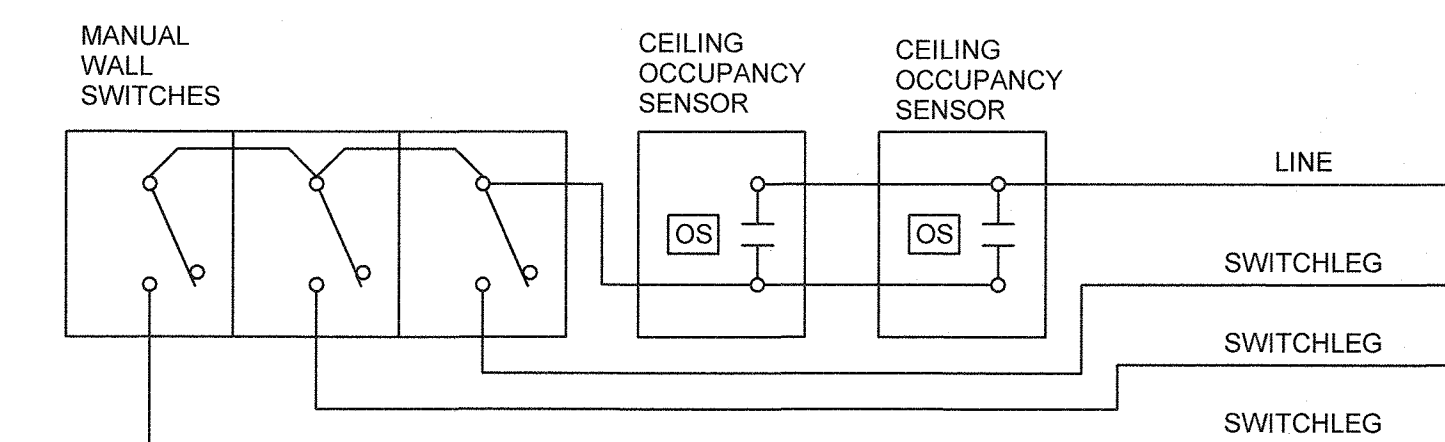
LIGHTING FIXTURE SCHEDULE											
FIXTURE DESIG.	MANUFACTURER	CATALOG SERIES	DESCRIPTION	LAMPS			BALLAST			FIXTURE WATTS	FIXTURE VOLT.
				QTY	TYPE	WATTS	QTY	TYPE	WATTS		
A	ACUITY LITHONIA HUBBELL COLUMBIA H.E. WILLIAMS	2GTL2 LJT 22 50	LED 2'X2' RECESSED TROFFER. WHITE FINISH, ACRYLIC LENS.	1	LED 4,000 LUMENS 4000K CCT 80 CRI	-	1	SOLID STATE LED DRIVER	34	34	120/277 MULTI- VOLT
B	ACUITY LITHONIA	LK5B	5" LED RECESSED LIGHT, WHITE FINISH, BAFFLE REFLECTOR, DIMMING DOWN TO 15%.	1	LED 660 LUMENS 3000K CCT 93 CRI	-	1	SOLID STATE LED DRIVER	10.6	10.6	120 VOLT
C	LITHONIA LIGHTING	2ESL2	LED PARABOLIC 2'X2' RECESSED TROFFER, DIMMING DRIVER	1	LED 4,000 LUMENS 4000K CCT 80 CRI	-	1	SOLID STATE LED DRIVER	34	34	120/277 MULTI- VOLT
D	ACUITY LITHONIA	L6	6" LED RECESSED LIGHT, PARABOLIC REFLECTOR, FROSTED CONVEXED LENS WITH BAFFLE, DIMMABLE	1	LED 3,300 LUMENS 4000K CCT 80 CRI	-	1	SOLID STATE LED DRIVER	21	21	120/277 MULTI- VOLT
E1	ACUITY LITHONIA HUBBELL DJAL LITE EATON CROUSE-HINDS	INDX DYN N2LPS	EMERGENCY LIGHTING UNIT. IMPACT-RESISTANT, CORROSION RESISTANT, NON-METALLIC HOUSING WITH STAINLESS STEEL HARDWARE, TWO INTEGRAL LIGHTING HEADS, SELF-DIAGNOSTIC ELECTRONICS, MAINTENANCE-FREE NI-CAD OR LITHIUM IRON PHOSPHATE BATTERY, MINIMUM OF 3 HOURS OF ILLUMINATION, OPERATING TEMP. OF 10 DEG. C (MIN) AND 35 DEG. C (MAX), NEMA 4X RATED.	2	LED	3	-	6V OR 12V BATTERY	-	6	120/277 MULTI- VOLT
E2	ACUITY LITHONIA PHILIPS CHLORIDE COOPER SURE-LITES	AFN FDN AEL2	EMERGENCY LIGHTING UNIT. COMPACT, WEDGE SHAPED, DIE-CAST ALUMINUM HOUSING, DARK BRONZE FINISH, INTEGRAL LAMPS, SELF-DIAGNOSTIC ELECTRONICS, OPERATING TEMPERATURE OF -18 DEG. C (MIN) AND 40 DEG. C (MAX), MINIMUM OF 90 MINUTES OF ILLUMINATION, WET LOCATION LABEL.	2	LED	2	-	6V BATTERY	-	4	120/277 MULTI- VOLT
X1	ACUITY LITHONIA PHILIPS CHLORIDE LSI	LV ER60MLD EWV	EMERGENCY EXIT SIGN. IMPACT-RESISTANT, FIBERGLASS REINFORCED HOUSING WITH STAINLESS STEEL HARDWARE, OPERATING TEMPERATURE OF 10 DEG. C (MIN) AND 35 DEG. C (MAX), SELF-DIAGNOSTIC ELECTRONICS, NICKEL-CADMIUM MAINTENANCE-FREE BATTERY, MINIMUM OF 90 MINUTES OF ILLUMINATION, NEMA 4X.	-	LED (RED)	-	-	6V BATTERY	-	5	120/277 MULTI- VOLT
W	HUBBELL (LAREDO LMC SERIES) ACUITY LITHONIA COOPER MCGRAW-EDISON	LMC WST IST	MEDIUM-SIZE WALLPACK, DIE-CAST ALUMINUM PAINTED BRONZE HOUSING, TEMPERED GLASS LENS, WIDE THROW AND SHARP CUT-OFF OPTICS, WET LOCATION LABEL. CONTROLLED BY INTEGRAL PHOTOCELL	1	LED CCT <= 5000K CCT >= 4000K 2,000 LUMENS	-	1	SOLID STATE LED DRIVER	24	24	120

NOTES:
1. COMPLIANCE WITH NORTH CAROLINA GENERAL STATUTE 133-3 IS REQUIRED. THE MANUFACTURER AND SERIES NUMBERS PROVIDED IN THE ABOVE SCHEDULE ARE USED ONLY TO DENOTE THE QUALITY STANDARD OF PRODUCT DESIRED TO MEET THE SCHEDULED REQUIREMENTS AND DO NOT RESTRICT THE CONTRACTOR TO A SPECIFIC BRAND, MAKE, MANUFACTURER OR SPECIFIC NAME; THEY ARE USED ONLY TO SET FORTH AND CONVEY THE GENERAL STYLE, TYPE, CHARACTER AND QUALITY OF PRODUCT DESIRED TO MEET THE SCHEDULED REQUIREMENTS. EQUIVALENT PRODUCTS MAY BE ACCEPTABLE.
2. IF A CONFLICT OCCURS BETWEEN THE FEATURES LISTED IN THE SCHEDULED REQUIREMENTS AND THE FEATURES AVAILABLE FOR A LISTED MANUFACTURER/SERIES, THE SCHEDULED REQUIREMENTS SHALL TAKE PRECEDENCE.



LIGHTING CONTROLS WITH OCCUPANCY SENSOR AND MANUAL SWITCHES

NTS



LIGHTING CONTROLS WITH MULTIPLE OCCUPANCY SENSORS AND MANUAL SWITCHES

NTS

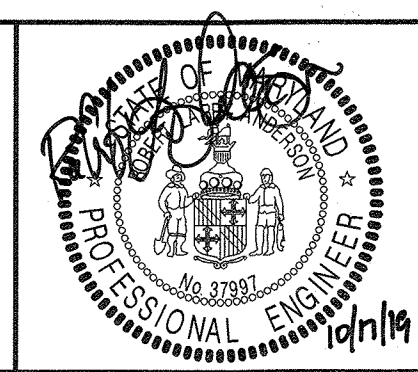
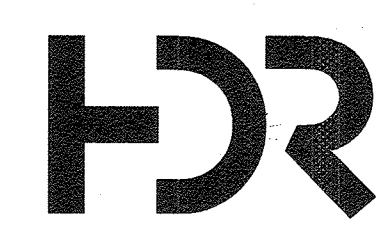
CONTROLS DIAGRAM NOTES:

1. LIGHTING CONTROLS DIAGRAMS INDICATE THE DESIGN INTENT FOR THE CONTROLS. PROVIDE ALL CONTROL WIRING CONNECTIONS, CONTACTORS AND CONTROLS COMPONENTS NECESSARY TO ACHIEVE THE CONTROL FUNCTIONS INDICATED ON THE PLANS AND LIGHTING CONTROLS DIAGRAMS.
2. SEE LIGHTING PLANS FOR EXACT NUMBER OF OCCUPANCY SENSORS AND MANUAL WALL SWITCHES.
3. THE TIME DELAY SETTING FOR ALL OCCUPANCY SENSORS SHALL BE SET TO 30 MINUTES.

C:\p\2018\10134930-00-E_Jamal Williams\RM\XL.rvt 10/15/2019 11:17:30 AM

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO.: 37997, EXPIRATION DATE: 12/16/2019

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
<i>[Signature]</i> DIRECTOR, PUBLIC WORKS DATE 10/15/19	<i>[Signature]</i> CHIEF, BUREAU OF ENGINEERING DATE 10/15/19
<i>[Signature]</i> CHIEF, BUREAU OF UTILITIES DATE 10/15/19	<i>[Signature]</i> CHIEF, UTILITY DESIGN DIVISION DATE 10/15/19



DES: RLA	
DRN: CLS	
CHK: RG	
10/15/2019	
BY	NO.
REVISION	DATE

ELECTRICAL SCHEDULES	
600 SCALE MAP NO.	BLOCK NO.

CONTROL ROOM UPGRADE
CAPITAL PROJECT S-6264 CONTRACT NO. 20-5099
6TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

E-108
SCALE AS SHOWN
SHEET 31 OF 31