

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FLUSH MOUNTED SINGLE TUB PANEL RATING AS NOTED ON SINGLE LINEPANELS SCHEDULE		FLUSH MOUNTED DOUBLE TUB PANEL RATING AS NOTED ON SINGLE LINEPANELS SCHEDULE
	SURFACE MOUNTED DOUBLE TUB PANEL RATING AS NOTED ON SINGLE LINEPANELS SCHEDULE		TRANSFORMER (SIZE NOTED ON SINGLE LINE DIAGRAM)
	DISCONNECT		COMBINATION MANUAL STARTER WITH INTEGRAL DISCONNECT
	COMBINATION STARTER WITH INTEGRAL DISCONNECT		DIRECT CONNECTION
	DIRECT CONNECTION CW DISCONNECT		MOTOR AND DISCONNECT
	MOTOR AND RELAY DISCONNECT		MOTOR AND COMBINATION STARTER WITH INTEGRAL DISCONNECT
	VARIABLE FREQUENCY DRIVE AND VFD CABLE CONNECTION TO MOTOR, LINE AND LOAD SIDE WIRING OF HARMONIC FILTER AND VFD BY ELECTRICAL CONTRACTOR, MOTOR AND HARMONIC FILTER SUPPLIED BY MECHANICAL DIVISION		VARIABLE FREQUENCY DRIVE, LINE AND LOAD SIDE WIRING OF HARMONIC FILTER AND VFD BY ELECTRICAL CONTRACTOR, LOAD SIDE WIRING OF VFD TO VFD CABLE, VFD AND HARMONIC FILTER SUPPLIED BY MECHANICAL DIVISION
	HARMONIC FILTER (SUPPLIED BY MECH. CONTRACTOR UNLESS NOTED OTHERWISE) LINE AND LOAD SIDE WIRING OF HARMONIC FILTER BY ELECTRICAL CONTRACTOR		

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

10 POWER LEGEND 2 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ISOLATION TRANSFORMER - DELTA-WYE UNLESS OTHERWISE NOTED		GROUND FAULT ALARM RELAY
	ISOLATION TRANSFORMER WITH ELECTROSTATIC SHIELD - DELTA-WYE UNLESS OTHERWISE NOTED		EMERGENCY GENERATOR
	MOLDED CASE CIRCUIT BREAKER, SIZE AS SHOWN		GROUND CONNECTION POINT
	LOW VOLTAGE DRAW-OUT CIRCUIT BREAKER, TRIP PLUG AND FRAME SIZE AS SHOWN		ELECTRONIC TRIP SETTING CONTROL (GROUND FAULT)
	DRAW-OUT VACUUM CIRCUIT BREAKER, PROTECTIVE RELAY FUNCTIONS AND FRAME SIZE AS SHOWN		GROUND LOOP
	FUSIBLE LOAD BREAK ISOLATION SWITCH, VOLTAGE, FUSE AND FRAME SIZE AS SHOWN		HIGH RESISTANCE GROUND FAULT SYSTEM
	FUSE		LIGHTNING SURGE ARRESTOR
	INSULATED CASE CIRCUIT BREAKER		LOAD BANK
	INTEGRAL BREAKER AND STARTER UNIT, BREAKER AND FRAME SIZE AS SHOWN		ELECTRONIC TRIP SETTING CONTROL (LONG SHORT)
	INTEGRAL SWITCH AND FUSE UNIT, FUSE AND FRAME SIZE AS SHOWN		ELECTRONIC TRIP SETTING CONTROL (LONG SHORT, INSTANTANEOUS GROUND FAULT)
	AUTOMATIC TRANSFER SWITCH WITH BY-PASS		ELECTRONIC TRIP SETTING CONTROL (METERING SET)
	AUTOMATIC TRANSFER SWITCH WITHOUT BY-PASS		METERING CABINET
	FIRE PUMP AUTOMATIC TRANSFER SWITCH AND STARTER UNIT BY OTHERS		DIGITAL ELECTRONIC METER
	MANUAL TRANSFER SWITCH OR DOUBLE THROW SWITCH		SURGE PROTECTION DEVICE
	AMMETER		
	AUTO-TRANSFORMER		
	BATTERY		
	CONTACTOR		
	CURRENT TRANSFORMER		
	CURRENT TRANSFORMER (2.5 - DENOTES ZERO SEQUENCE)		

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

11 SINGLE LINE DIAGRAM 1 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	POTENTIAL TRANSFORMER		KEY INTERLOCK SYSTEM - ONE KEY
	ZERO SEQUENCE CURRENT TRANSFORMER		KEY INTERLOCK SYSTEM - ALL LOCKS, N.Y.S. UNLESS NOTED OTHERWISE
	UPS DIODE		ELECTRONIC INTERLOCK SYSTEM - N LOCK
	VOLTAGE INDICATOR		MEDIUM VOLTAGE CABLE TERMINATION POINT WITH STRESS CONE
	TRANSFORMER DENOTES CONNECT TO LOAD APPLIED TO DERIVATIVE TRANSFORMER TEMPERATURE RELAY		POWER METER
	AUTOMATIC POWER FACTOR CORRECTION CAPACITOR SYSTEM, SIZE AS SHOWN, COMPLETE WITH TUNED RPNL FILTER, HIGH RESISTANCE DISCHARGE RESISTOR, MAXIMUM CONTINUOUS AMPS AS SHOWN		DIGITAL TRIP UNIT WITH METERING FUNCTION
	RELAY FUNCTION NUMBER		SHUNT TRIP
			B BUS GATEWAY FOR POWER MONITORING

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

12 SINGLE LINE DIAGRAM 2 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SINGLE POLE LINE VOLTAGE LIGHT SWITCH		2 GANG - LINE VOLTAGE LIGHT SWITCH
	3 GANG - LINE VOLTAGE LIGHT SWITCH		3 WAY - LINE VOLTAGE LIGHT SWITCH
	4 WAY - LINE VOLTAGE LIGHT SWITCH		LOW VOLTAGE LIGHT SWITCH
	KEY OPERATED LINE VOLTAGE SWITCH		MASTER SWITCH
	ALL-OFF SWITCH		SINGLE POLE 347V SWITCH
	DIMMER TYPE TO SUIT LOAD		CEILING MOUNTED PHOTO CELL SWITCH
	WALL MOUNTED PHOTO CELL SWITCH		DAY LIGHT PHOTO SENSOR
	TIME SWITCH		CEILING MOUNTED OCCUPANCY SENSOR, FIRE SENSOR OR 'X' REFER TO OCCUPANCY SENSOR SCHEDULE
	WALL MOUNTED OCCUPANCY SENSOR, FIRE SENSOR OR 'X' REFER TO OCCUPANCY SENSOR SCHEDULE		LIGHTING CONTROL MODULE
	MULTI-ZONE LIGHTING CONTROL PANEL		REMOTE STATION WITH PRESET SCENE SELECTION BUTTON
	PARTITION POSITION INFRARED SENSOR FOR LIGHTING CONTROL		

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

13 LIGHTING LEGEND 2 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WALL MOUNTED VOICE OUTLET FOR EMERGENCY PHONE STATION, CABLE TYPE AS PER SPECIFICATION		WALL MOUNTED VOICE OUTLET FOR EMERGENCY PHONE STATION, CABLE TYPE AS PER SPECIFICATION
	WALL MOUNTED ABOVE COUNTER VOICE AND DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		SERVICE POLE MOUNTED VOICE AND DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION
	WALL MOUNTED DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		RECESSED WALL MOUNTED VOICE AND DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION
	FLOOR MOUNTED ABOVE COUNTER DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		COAXIAL CATV OUTLET
	FLOOR MOUNTED VOICE AND DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		MAIN CABLE SUPPORT ROUTE FOR COMMUNICATIONS CABLING
	FLOOR MOUNTED DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		COMMUNICATIONS BOX
	FURNITURE MOUNTED VOICE AND DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		POWER ZONE BOX
	FURNITURE MOUNTED DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		TELEPHONE ZONE BOX
	CEILING MOUNTED VOICE AND DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		
	CEILING MOUNTED DATA OUTLETS, CABLE TYPE AS PER SPECIFICATION		

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

14 DATA AND COMMUNICATIONS N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R		WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, REFER TO DETAIL
	WALL MOUNTED ABOVE COUNTER DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R		FLOOR CEILING MOUNTED (AS SHOWN) DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, REFER TO CORRESPONDING DETAIL
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 20 AMP, CSA 5-20R (C-UL)		FLOOR POLE THROUGH COMBINATION COMMUNICATION / QUADPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, REFER TO CORRESPONDING DETAIL
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, DEDICATED CIRCUIT		FLOOR POLE THROUGH AS ABOVE WITH AUDIOVISUAL REQUIREMENT REFER TO DETAIL
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, CONTROLLED DUPLEX CIRCUIT		FLOOR MOUNTED DUPLEX (AS SHOWN) DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, REFER TO DETAIL
	WALL MOUNTED DUPLEX GROUND FAULT RECEPTACLE 120 VOLT, 20 AMP, CSA 5-20R		CEILING MOUNTED DUPLEX (AS SHOWN) DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, REFER TO CORRESPONDING DETAIL
	WALL MOUNTED DUPLEX GROUND FAULT RECEPTACLE 120 VOLT, 20 AMP, CSA 5-20R		FLOOR POLE THROUGH COMBINATION COMMUNICATION / DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, REFER TO CORRESPONDING DETAIL
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R		FLOOR POLE THROUGH AS ABOVE WITH AUDIOVISUAL REQUIREMENT REFER TO DETAIL
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R		31-STREAM FURNITURE FEED POINT FOR POWER & COMM. CABLING, LETTER DENOTES FEED LOCATION, W= WALL, F= FLOOR, P= POC POLE, VM = VERMOLD POLE, SLT CIRCUIT
	WALL MOUNTED DUPLEX RECEPTACLE 250 VOLT, 15 AMP, CSA 15-15R		CEILING MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R
	CEILING MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R		CEILING MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 30 AMP, CSA 5-30R		CEILING MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R
	WALL MOUNTED DUPLEX RECEPTACLE 250 VOLT, 30 AMP, CSA 14-30R		FLOOR MOUNTED DUPLEX RECEPTACLE 120 VOLT, 30 AMP, CSA 5-30R
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 30 AMP, CSA 5-30R		FLOOR MOUNTED DUPLEX RECEPTACLE 250 VOLT, 30 AMP, CSA 14-30R
	WALL MOUNTED DUPLEX RECEPTACLE 250 VOLT, 30 AMP, CSA 14-30R		BYPASS RECEPTACLE TYPE AS SPECIFIED ON QUANTITY OF DEVICES INDICATED
	WALL MOUNTED DUPLEX RECEPTACLE 250 VOLT, 30 AMP, CSA 14-30R		SERVICE POLE TYPE AS SPECIFIED ON QUANTITY OF DEVICES INDICATED

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

15 POWER LEGEND 1 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CEILING MOUNTED PHOTO-ELECTRIC SMOKE DETECTOR		AIR SAMPLING SYSTEM CW SUPERVISORY AND ALARM ZONE
	WALL MOUNTED PHOTO-ELECTRIC SMOKE DETECTOR		MANUAL PULL STATION
	CEILING MOUNTED PHOTO-ELECTRIC SMOKE DETECTOR CW RELAY BASE		ALARM FLOW SWITCH (SUPPLIED BY OTHERS)
	CEILING MOUNTED RATE-OF-RISE HEAT DETECTOR		ALARM PRESSURE SWITCH (SUPPLIED BY OTHERS)
	WALL MOUNTED RATE-OF-RISE HEAT DETECTOR		ALARM CHECK VALVE (SUPPLIED BY OTHERS)
	CEILING MOUNTED FIXED TEMPERATURE HEAT DETECTOR		ALARM DRY PIPE VALVE (SUPPLIED BY OTHERS)
	WALL MOUNTED FIXED TEMPERATURE HEAT DETECTOR		BEAM SMOKE DETECTOR (TRANSMITTER)
	DUCT TYPE PHOTO-ELECTRIC SMOKE DETECTOR		BEAM SMOKE DETECTOR (RECEIVER)
	CEILING MOUNTED COMBINATION HEAT + SMOKE DETECTOR		FLAME DETECTOR
	LOCAL 120V SMOKE ALARM		
	LOCAL 120V COMBINATION CARBON MONOXIDE AND SMOKE ALARM		
	LOCAL 120V CARBON MONOXIDE DETECTOR		
	LOCAL 120V COMBINATION SMOKE AND ALARM		

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

16 FIRE ALARM LEGEND 1 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
SIGNALLING DEVICES			
	HORN		CEILING MOUNTED EMERGENCY EVACUATION SPEAKER
	DOUBLE SIDED HORN		WALL MOUNTED EMERGENCY EVACUATION SPEAKER
	HORN-STROKE COMBINATION STROKE INTENSITY TO BE MIN. 150DB UNLESS OTHERWISE NOTED		CEILING MOUNTED EMERGENCY EVACUATION SPEAKER + STROKE COMBINATION STROKE INTENSITY TO BE MIN. 150DB UNLESS OTHERWISE NOTED
	DOUBLE SIDED HORN-STROKE COMBINATION STROKE INTENSITY TO BE MIN. 150DB UNLESS OTHERWISE NOTED		WALL MOUNTED EMERGENCY EVACUATION SPEAKER + STROKE COMBINATION STROKE INTENSITY TO BE MIN. 150DB UNLESS OTHERWISE NOTED
	MIN HORN		CEILING MOUNTED FIRE ALARM BELL, STROKE INTENSITY TO BE MIN. 150DB UNLESS OTHERWISE NOTED, 150DB INTENSITY UNLESS OTHERWISE NOTED
	SPEAKER HORN		FIRE ALARM BELL, 100W/100V UNLESS OTHERWISE NOTED, 150DB INTENSITY UNLESS OTHERWISE NOTED
	FIRE ALARM BELL, 100W/100V UNLESS OTHERWISE NOTED, 150DB INTENSITY UNLESS OTHERWISE NOTED		15 MINUTES SILENCE SWITCH FOR SPEAKERS IN SUITES
ANCILLARY DEVICES			
	ISOLATION MODULE		TROUBLE AND ALARM CONNECTION TO FIRE-ACTION CONTROL PANEL
	FIELD INSTALLED ADDRESSABLE CONTROL POINT		FLOOR MOUNTED DOOR HOLD-OPEN DEVICE
	FIRE, DO NOT ENTER SIGN		WALL MOUNTED DOOR HOLD-OPEN DEVICE
	FIRE ALARM PASSIVE GRAPHIC		FIRE ALARM PANEL, CONTROL, DSP OR ANNUNCIATOR AS NOTED
	VIDEO DISPLAY TERMINAL, FOR BUILDING OPERATIONS PERSONNEL		END-OF-LINE RESISTOR TERMINATION
	SUPERVISED FIRE FIGHTERS HAND SET		SMOKE DAMPER, USED IN CONNECTION WITH MONITORING DEVICE FOR POSITION ANNUNCIATION AND CONTROL DEVICE
	FIRE ALARM SHUT DOWN		
	FIRE ALARM START UP		
	REMOTE TESTING STATION FOR DUCT SMOKE DETECTORS		
	FIELD INSTALLED MONITORING MODULE FOR ALARM OR SUPERVISORY		

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

17 FIRE ALARM LEGEND 2 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CEILING MOUNTED LINEAR LUMINAIRE, DIMENSIONS AS SHOWN REFER TO SCHEDULE FOR FUTURE TYPE		CEILING MOUNTED WALL WASHER LUMINAIRE, ILLUMINATION DIRECTION DENOTED BY HATCHED SIDE
	DENOTES FIXTURE ON EMERGENCY NIGHT LIGHT CIRCUIT		CEILING MOUNTED TRACK LIGHTING CW NUMBER OF FIXTURES
	WALL MOUNTED LINEAR LUMINAIRE, DIMENSIONS AS SHOWN REFER TO SCHEDULE FOR FUTURE TYPE		WALL MOUNTED LUMINAIRE
	CEILING MOUNTED LUMINAIRE OR BASKET LUMINAIRE, LAMP ORIENTATION AS SHOWN, REFER TO SCHEDULE FOR FUTURE TYPE AND NUMBER OF HEADS		PENDANT FIXTURE
	EXISTING LUMINAIRE TO BE REMOVED		CEILING MOUNTED LUMINAIRE
	EXISTING LUMINAIRE TO REMAIN		FLOOR MOUNTED LUMINAIRE
	FLOOR MOUNTED LUMINAIRE, NUMBER OF HEADS SHOWN, REFER TO SCHEDULE FOR FUTURE TYPE AND SIZE OF HEADS		TRACK LIGHT WITH PENDANT LUMINAIRE AS INDICATED
	CEILING MOUNTED LUMINAIRE WITH DIMMABLE HEADS, REFER TO SCHEDULE FOR FUTURE TYPE AND NUMBER OF HEADS		ECLAIR LUMINAIRE
	VERTICAL WALL MOUNTED FLUORESCENT LUMINAIRE		
	CONTINUOUS STRIP LIGHT, REFER TO SCHEDULE FOR FUTURE TYPE		
	STAGGERED COVE LIGHT, DIMENSIONS AND NUMBER OF FIXTURES SHOWN, REFER TO SCHEDULE FOR FUTURE TYPE		
	RECESSED CEILING MOUNTED REMOTE ADJUSTABLE LUMINAIRE CONNECTED TO EMERGENCY LIGHTING BATTERY UNIT		EMERGENCY LIGHTING BATTERY UNIT CW NUMBER OF HEADS SHOWN
	WALL MOUNTED EMERGENCY SINGLE REMOTE HEAD		EMERGENCY LIGHTING BATTERY UNIT
	WALL MOUNTED EMERGENCY DOUBLE REMOTE HEAD		EMERGENCY LIGHTING BATTERY - EXIT LIGHT COMBINATION UNIT CW NUMBER OF HEADS SHOWN
	CEILING MOUNTED EMERGENCY SINGLE REMOTE HEAD		EXIT LIGHT CEILING MOUNTED CW FACES AND ARROWS AS INDICATED
	CEILING MOUNTED EMERGENCY DOUBLE REMOTE HEAD		EXIT LIGHT WALL MOUNTED CW FACES AND ARROWS AS INDICATED

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS

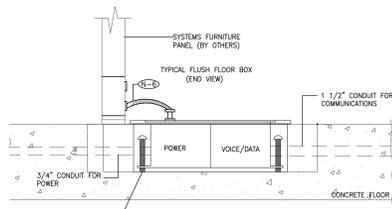
18 LIGHTING LEGEND 1 OF 2 N.T.S

ELECT	
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LUMINAIRE SCHEDULE			
LAMP TYPE	VOLTAGE	DESCRIPTION	MANUFACTURER/CATALOGUE NO.
L1	26.3W LED 3500K 2000 LUMENS	6" LED DOWNLIGHT.	GOTHAM NOTO CAT# 100-35-20-XX-600
L4	11.5W/FT LED 3500K 1500 LUMENS/FT	LINEAR DIRECT/NIRECT LED PENDANT C/W 0-10V DIMMING.	FEITLESS CAT# LDI-40-SUS-8-150-35-B-M-C1-M
L4A	11.5W/FT LED 3500K 1500 LUMENS/FT	LINEAR DIRECT/NIRECT LED PENDANT C/W 0-10V DIMMING.	FEITLESS CAT# LDI-40-SUS-6-80-35-B-M-C1-M
L4B	11.5W/FT LED 3500K 1500 LUMENS/FT	LINEAR DIRECT/NIRECT LED PENDANT C/W 0-10V DIMMING.	FEITLESS CAT# LDI-40-SUS-12-150-35-B-M-C1-M
L5	UNV	EXISTING DOWNLIGHT RELAMPED WITH LED, MATCH CCT AND EQUIVALENT MATRICE WITH EXISTING.	
L6	40W LED 3500K 4000 LUMENS	SURFACE MOUNTED CAN LIGHT C/O 0-10V DIMMING.	GOTHAM NOTO CAT# ED45C-35-40-600-MOLT-021
L7	44W LED 3500K 4500 LUMENS	72 DEGREE CYLINDER C/W 0-10V DIMMING.	SSL S506 D11F S05C-12-SF-UNV-935-45L-WH-725-LD-00
L8	22W LED 3500K 1660 LUMENS	TRACK HEAD, 35 DEGREE C/W ELY DIMMING AND CIRCUIT, GLOBAL PRO PLUS TRACK SYSTEM.	WAC LUCO 6022 CAT# WTK-6022F-835-BK
L9	20W LED 3500K 1125 LUMENS	TRACK MOUNTED CYLINDER, 45 DEGREE, C/W ELY DIMMING AND CIRCUIT, GLOBAL PRO PLUS TRACK SYSTEM.	WAC SLD CAT# P02020-935-BK-BK
L10	4.0W X 6 LED 3500K 280 X 6 LUMENS	SUSPENDED DEPRESSIVE FIXTURE WITH 6 LUMINAIRES PER PENDANT.	EUROLITE M10
L11	40W LED 3500K 4000 LUMENS	RECESSED 6" LINEAR FIXTURE C/W 0-10V DIMMING.	AVIS CLIX CAT# CLXLD-500-80-35-50-8-W-UNV-0P-1
X1	2.5W LED 120-347	NEW RECESSED EDGE-LIT PICTOGRAM (RUNNING MAN) LED EXIT SIGN	LUMACELL LDE SERIES LDE-AC

- NOTES:
- REFER TO DRAWINGS FOR EXIT SIGN QUANTITIES, FACE, LOCATION, AND CHEVRON REQUIREMENTS.
 - THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT FOR ALL MOUNTING HEIGHTS, COLOUR TEMPERATURES, AND FINISHED COLOURS PRIOR TO PROCUREMENT.
 - REFER TO DRAWINGS FOR EXIT SIGN QUANTITIES, FACE, LOCATION, AND CHEVRON REQUIREMENTS.

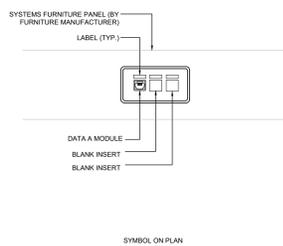
10 LUMINAIRE SCHEDULE N.T.S



DRAWING SYMBOLS

- NOTES:
- ALLOW FOR X-RAY, CORING, CHIPPING AND CHASING, AND PATCHING IN ACCORDANCE WITH BUILDING STANDARDS.
 - COORDINATE EXACT LOCATIONS OF VP FLOOR MONUMENTS ON SITE PRIOR TO ROUGH-IN.
 - FLOOR OUTLETS SHALL BE WELLMARK 442 SERIES 1420-FRN-3/4P-1 1/2C, COLOUR TO DESIGNER'S SELECTION.
 - PROVIDE CONNECTOR C/W NYLON BUSHINGS FOR CONDUIT TERMINATIONS WITHIN ACCESSIBLE CEILING SPACE.
 - PROVIDE PULL STRING IN ALL EMPTY CONDUITS.
 - FURNITURE MANUFACTURER SUPPLIED WIRING HARNESS, ELECTRICAL CONTRACTOR TO TERMINATE USING VP RIX CONNECTOR SIZED TO MATCH HARNESS.
 - COMMUNICATION CONTRACTOR TO PROVIDE ALL COMMUNICATION/WIRING AND COMPONENTS.

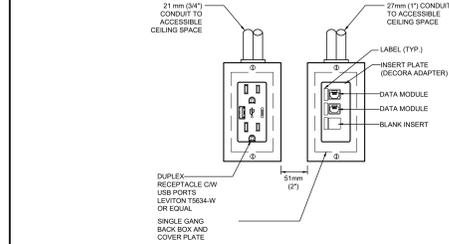
11 FURNITURE SYSTEM CONNECTION-FLOOR FEED (POWER&COMM) N.T.S



SYMBOL ON PLAN

- NOTES:
- REFER TO COMMUNICATIONS CABLING LAYOUT FOR EXACT DATA/VOICE OUTLET QUANTITIES.
 - FOR COMMUNICATIONS CABLING, FACEPLATE, INSERT PLATES, JACKS, BLANK INSERT AND LABELING REFER TO COMMUNICATIONS SPECIFICATION.

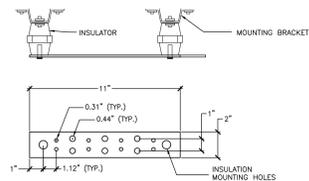
12 TYPICAL FURNITURE MOUNTED COMMUNICATIONS OUTLET DETAIL N.T.S



DRAWING SYMBOLS

- NOTES:
- PROVIDE CONNECTOR, C/W NYLON BUSHINGS FOR CONDUIT TERMINATIONS WITHIN ACCESSIBLE CEILING SPACE.
 - PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT.
 - COVER PLATES BY ELECTRICAL CONTRACTOR.
 - COMMUNICATION CONTRACTOR TO PROVIDE ALL COMMUNICATION / WIRING AND COMPONENTS.

13 POWER, USB AND COMMUNICATION OUTLETS N.T.S

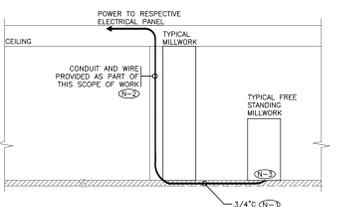


BAR LENGTH (INCHES)	BAR SIZE (MM)
LESS THAN 4 (103)	4 [1.27mm (0.18 in)]
4 TO 6 (103 TO 203)	4 [2.2mm (0.22 in)]
6 TO 8 (203 TO 254)	3 [3.8mm (0.22 in)]
8 TO 10 (254 TO 305)	2 [5.8mm (0.28 in)]
10 TO 13 (305 TO 440)	1 [12.4mm (0.29 in)]
13 TO 18 (440 TO 533)	1/2 [12.4mm (0.492 in)]
18 TO 20 (533 TO 660)	2/3 [14.3mm (0.58 in)]
GREATER THAN 20 (660)	3/8 [14.3mm (0.58 in)]

DRAWING SYMBOLS

- NOTES:
- GROUNDING BUS BAR SHALL BE MOUNTED ON PLYWOOD BACKBOARD OR WALL AT 80° ± 1/2°.
 - GROUNDING BUS BAR KIT SHALL BE EXHIBIT 02280304245 OR EQUIVALENT.
 - PANOUT GROUNDING BUS BAR KIT COMES FULLY ASSEMBLED.
 - KIT INCLUDES: BUSBAR - QTY. 1, MOUNTING BRACKET - QTY. 2, INSULATORS - QTY. 2, 3/8\"/>

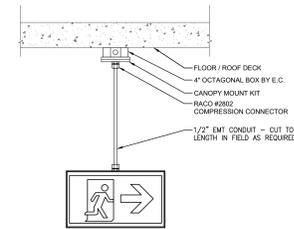
14 GROUNDING BUS BAR N.T.S



DRAWING SYMBOLS

- NOTES:
- POWER CONDUIT INDICATED SHALL BE INSTALLED WITHIN GROUT BED ABOVE STRUCTURAL SLAB. COORDINATE INSTALLATION ON SITE WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN. BEND RADIUS OF CONDUIT MUST BE CONCEALED WITHIN MILLWORK.
 - ROUTE CONDUIT AND WIRE WITHIN WALL CAVITY OR SURFACE MOUNTED ON COLUMN. COORDINATE INSTALLATION ON SITE WITH GENERAL CONTRACTOR PRIOR TO INSTALLATION.
 - CONDUIT TO BE FLUSH WITH FLOOR. COORDINATE INSTALLATION ON SITE WITH GENERAL CONTRACTOR PRIOR TO CUTTING BACK CONDUIT.

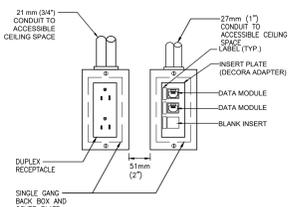
15 FREE STANDING MILLWORK STUB UP DETAIL (TRENCHING) N.T.S



NOTES:

- INSTALL PENDANT EXIT SIGNS AS PER MANUFACTURER'S RECOMMENDATIONS, ALLOW FOR ALL NECESSARY COMPONENTS.
- PENDANT EXIT SIGNS SHALL BE INSTALLED IN EXPOSED CEILING AREAS. REFER TO FLOOR PLANS FOR CEILING TYPES, QUANTITIES, FACE AND CHEVRON REQUIREMENTS. TOP OF SIGN TO BE MOUNTED BELOW UNDERSIDE OF SUSPENDED LIGHT FIXTURES AND/OR CEILING. ENSURE EXIT SIGN IS VISIBLE AND CLEAR OF VISUAL OBSTRUCTIONS.

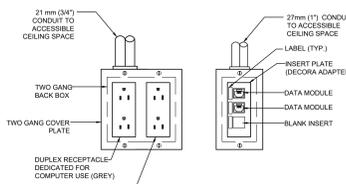
16 PENDANT EXIT SIGN DETAIL N.T.S



DRAWING SYMBOLS

- NOTES:
- PROVIDE CONNECTOR, C/W NYLON BUSHINGS FOR CONDUIT TERMINATIONS WITHIN ACCESSIBLE CEILING SPACE.
 - PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT.
 - COVER PLATES BY DIVISION 16.
 - COMMUNICATION CONTRACTOR TO PROVIDE ALL COMMUNICATION / WIRING AND COMPONENTS.

17 POWER AND COMMUNICATION OUTLETS N.T.S



DRAWING SYMBOLS

- NOTES:
- PROVIDE CONNECTOR, C/W NYLON BUSHINGS FOR CONDUIT TERMINATIONS WITHIN ACCESSIBLE CEILING SPACE.
 - PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT.
 - COVER PLATES BY ELECTRICAL CONTRACTOR.
 - COMMUNICATION CONTRACTOR TO PROVIDE ALL COMMUNICATION / WIRING AND COMPONENTS.

18 POWER AND COMMUNICATION OUTLETS N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
ACCESS CONTROL			
ACSP	ACCESS CONTROL SYSTEM PANEL	KS	KEY SWITCH
ACSS	ACCESS CONTROL SYSTEM SERVER	LM	LATCH BOLT MONITOR
AO	AUTOMATIC DOOR OPERATOR	LMO	LATCH BOLT MONITOR REQUEST TO EXIT
BR	BIOMETRIC READER	MR	MAGLOCK KEY RESET SWITCH
CR	CARD READER	MD	MAGNETIC DOOR HOLD/OPEN DEVICE
CM	CENTRAL MANAGEMENT STATION	ML	MAGNETIC LOCK
DA	DOOR ALARM	MO	MOTION REQUEST TO EXIT
DC	DOOR CONTACT	PSCL	POWER SUPPLY CONTROL UNIT
EDD	ELECTRIC DOOR HOLD/OPEN DEVICE	PO	PUSH BUTTON DOOR OPERATOR
ER	ELECTRIC LATCH RETRACTION	PR	PUSH BUTTON REQUEST TO EXIT
EL	ELECTRIC LATCH LOCK	RR	REMOTE RELEASE
ES	ELECTRIC STRIKE	RF	RF NODE
GW	GATEWAY	RF	RF RECEIVER
IC	IP DOOR CONTROLLER	SD	SECURITY DOOR TAG. XX DENOTES TYPE
KE	KEY ENCODER	W	WIRELESS LOCK
REAL TIME LOCATING SYSTEM (RTLS)			
LE	LOW FREQUENCY EXCITER	RF	RF READER MASTER
IR	INFRARED READER	RF	RF READER
RD	REMOTE DISPLAY UNIT	RF	RF ETHERNET READER
RA	LOCAL AREA RECEIVER	RF	RF LONG RANGE READER

NOTE: NOT ALL SYMBOLS APPLY. REFER TO FLOOR PLANS AND DRAWINGS

19 SECURITY LEGEND 1 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
ELECTRONIC PERSONAL PROTECTION			
EP	EMERGENCY PHONE STATION	DA	DURESS ALARM STATION
SL	STROBE LIGHT	PA	PANIC ALARM RECEIVER
PB	PANIC BUTTON	AS	ASSISTANCE REQUIRED SIGN
INTERCOM LEGEND			
IC	INTERCOM	MI	MASTER INTERCOM
EN	ENTRY PHONE CONSOLE		
VIDEO SURVEILLANCE			
FC	FIXED CAMERA	VSS	VIDEO SURVEILLANCE SYSTEM SERVER
PZ	PAN/TILT/ZOOM CAMERA	PI	POWER INJECTOR
PC	PERSONAL COMPUTER	VM	VIDEO MONITOR
CM	COMPUTER MONITOR	FV	FIXED VIDEO SURVEILLANCE CAMERA HORIZONTAL ANGLE OF VIEW
DR	DIGITAL VIDEO RECORDER	LM	LCD MONITOR, SIZE AS INDICATED
NR	NETWORK VIDEO RECORDER		
INTRUSION DETECTION			
BR	BREIN	ISD	INTRUSION DETECTION SYSTEM PANEL
BG	BREAK GLASS SENSOR	PS	POWER SUPPLY
MS	MOISTURE SENSOR	WM	WALL MOUNTED SECURITY MOTION SENSOR
KE	KEYPAD	CS	CEILING MOUNTED SECURITY 360° MOTION SENSOR

NOTE: NOT ALL SYMBOLS APPLY. REFER TO FLOOR PLANS AND DRAWINGS

20 SECURITY LEGEND 2 OF 2 N.T.S

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
AV	AV EQUIPMENT RACK BY AUDIOVISUAL CONTRACTOR. REFER TO DRAWING FOR POWER REQUIREMENTS.	AV	PROJECTOR BY AUDIOVISUAL CONTRACTOR. 600W AV FULL BOX ABOVE FINISHED CEILING BY ELECTRICAL CONTRACTOR. REFER TO DRAWING FOR POWER REQUIREMENTS.
AV	AV FREE STANDING EQUIPMENT RACK 'C'X' CREDESIA RACK, 12x12x4\"/>		

NOTE: NOT ALL SYMBOLS APPLY. REFER TO FLOOR PLANS AND DRAWINGS. REFER TO AV COORDINATION MATRIX OR AV CONSULTANT DRAWINGS FOR BACK BOX SIZE, MOUNTING HEIGHT AND ALL INFRASTRUCTURE REQUIREMENTS.

21 AUDIOVISUAL N.T.S

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No.	Date	Issue/Revision
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8	2024-02	RE-ISSUED FOR CONSTRUCTION
7	2024-02	RE-ISSUED FOR CONSTRUCTION
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5	2024-02	ISSUED FOR PERMIT/STAKE
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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ELECTRICAL SPECIFICATION SUBMITTED FOR THIS PROJECT.

Smith + Andersen
1100 - 100 Prospect Ave. East, Toronto, ON M2H 1P9
416 497 9111
No. Date Issue/Revision

Robarts 5th Floor MDL Renovation

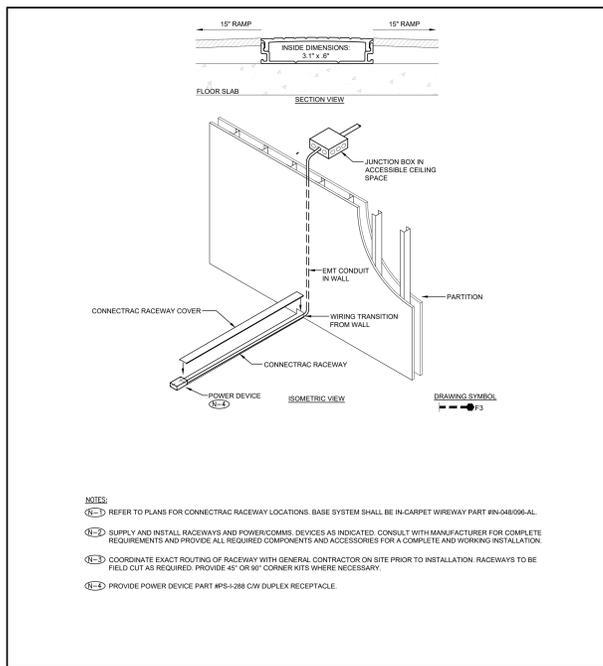
Electrical Details and Legends

Project: No.08086.000 (MEAVD) Scale: AS NOTED

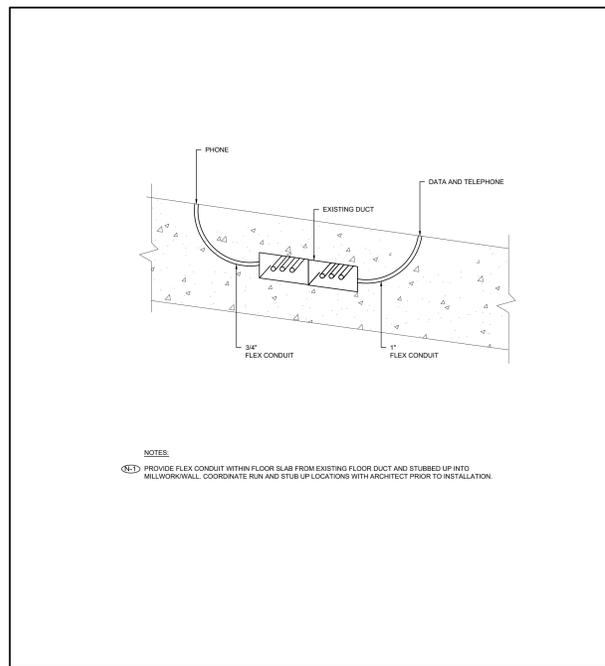
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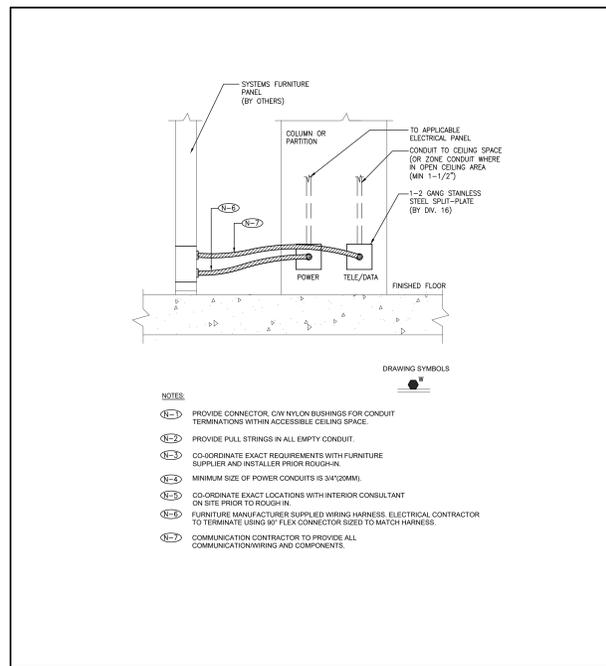
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CONNECTED LOAD (W)	DEMAND FACTOR	TOTAL DEMAND	DESCRIPTION (Bldg, Room Number(s))	BRK (A)	CT	BRK (B)	DESCRIPTION (Bldg, Room Number(s))	CONNECTED LOAD (W)	DEMAND FACTOR	TOTAL DEMAND	
1092	1.00	1092	ZONE 3 AND OFFICES	20	1A	20	ZONE 3 AND OFFICES	1186	1.00	1186	
843.6	1.00	843.6	ZONE 4	20	1B	20	ZONE 4	804	1.00	804	
923	1.00	923	ZONE 4	20	1C	20	OFF LAB AND SUPPORTING ROOMS	1432	1.00	1432	
975	1.00	975	ZONE 4	20	1D	20	SPARE				
0		0	SPARE	20	1E	20	SPARE				
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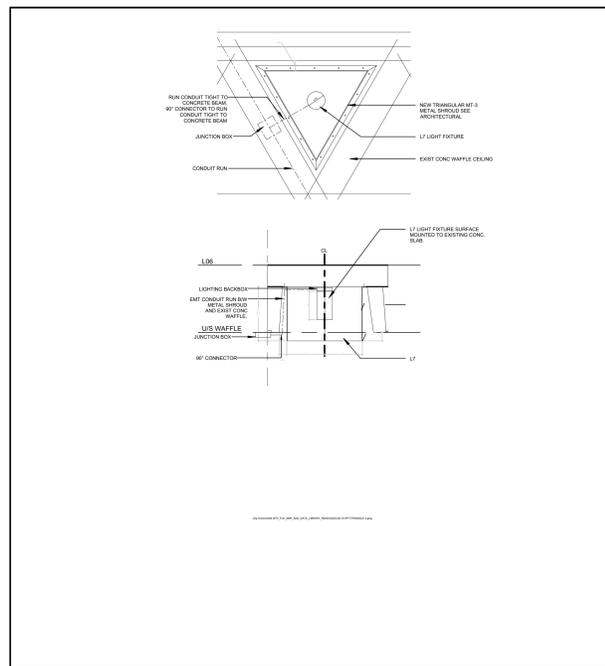
10 CONNECTRAC RACEWAY SYSTEM DETAIL



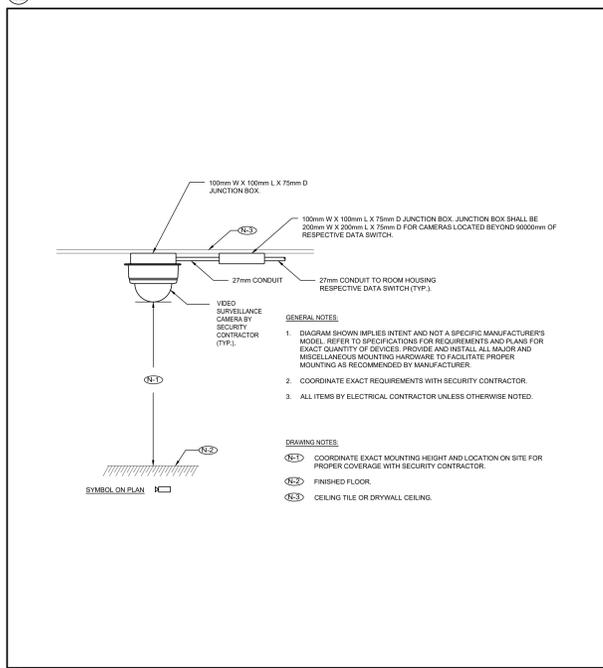
7 FLOOR CONDUITS CONNECTED TO EXISTING RACEWAY



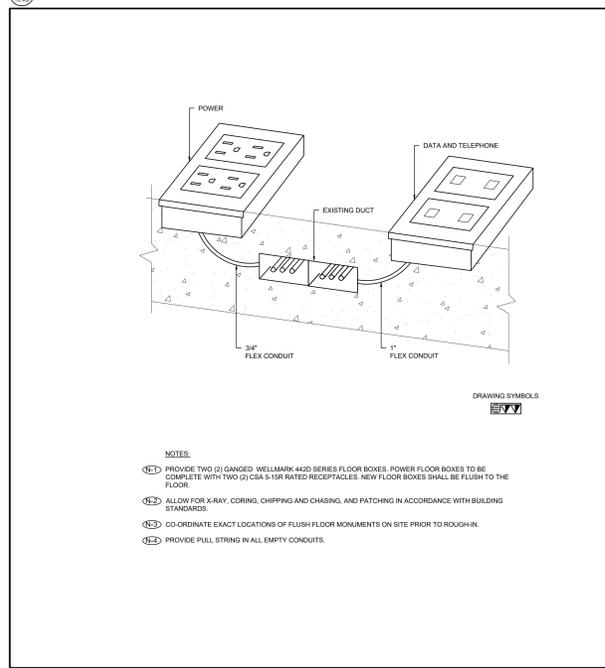
4 FURNITURE SYSTEM CONNECTION - WALL FEED



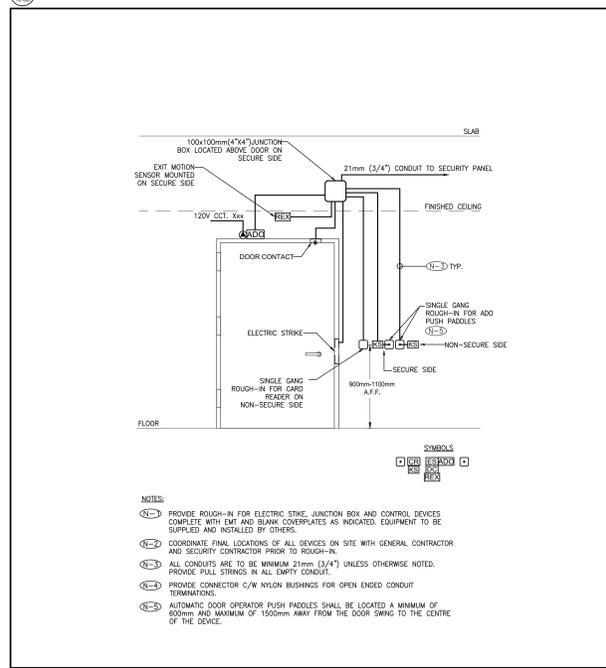
11 TRIANGLE LIGHT INSTALLATION DETAIL



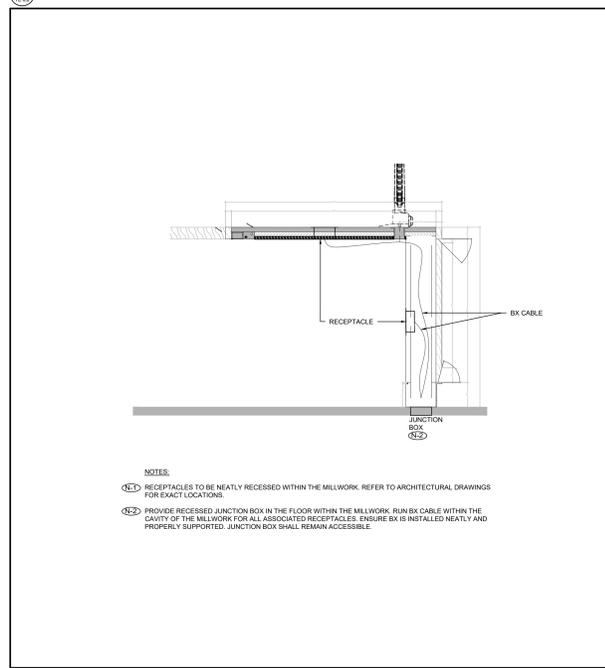
14 TYPICAL SURFACE CEILING MOUNTED INDOOR DOME CAMERA N.T.S.



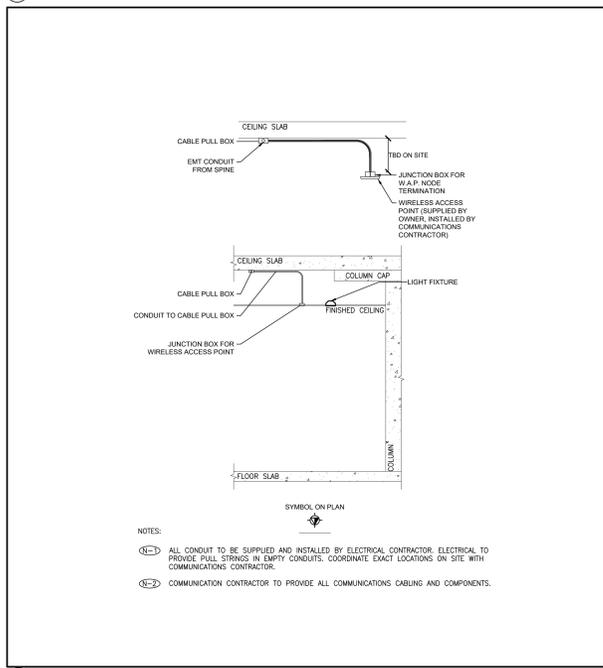
8 FLOOR BOXES CONNECTED TO EXISTING RACEWAY



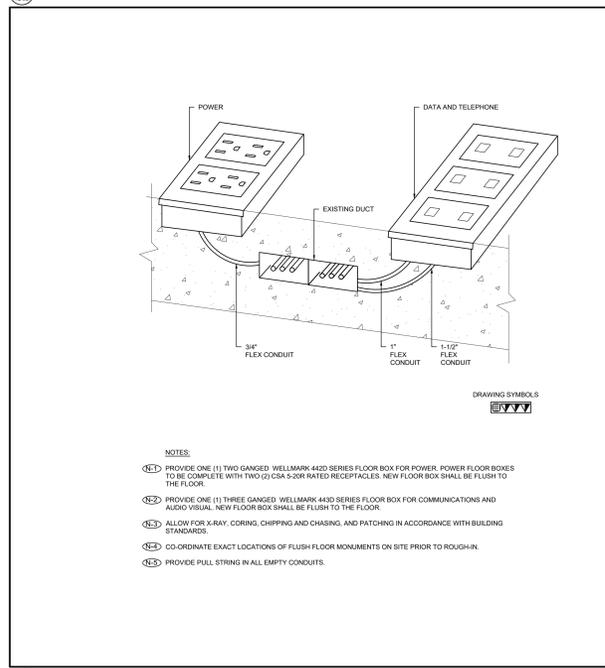
1 SECURITY DOOR ROUGH-IN - SINGLE DOOR ELECTRIC STRIKE C/W ADD AND KEY SWITCH



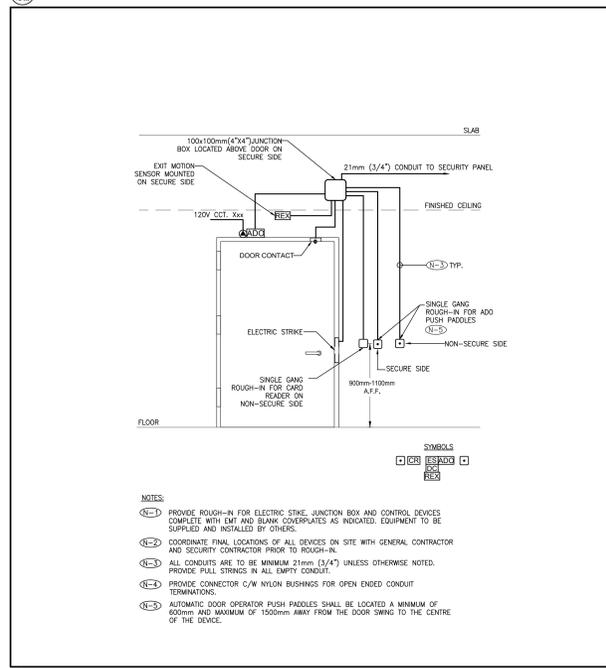
2 RECEPTION DESK MILLWORK MOUNTING DETAIL



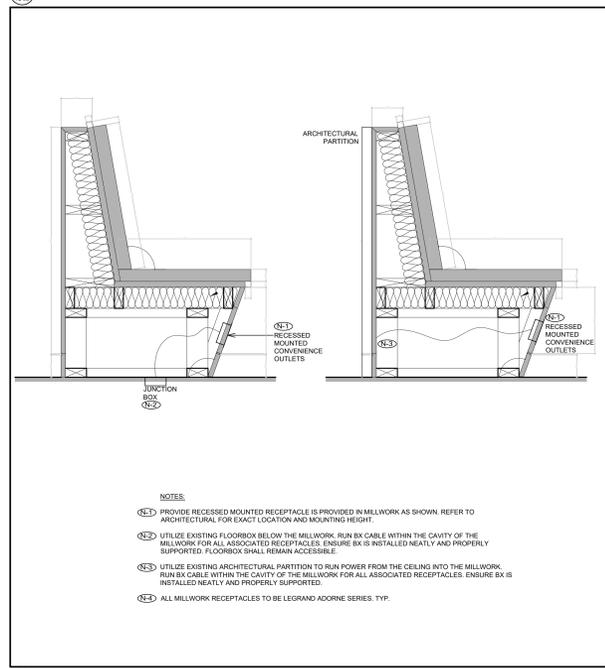
12 WIRELESS ACCESS POINT ROUTING AND TERMINATION DETAIL - CONDUIT SPINE N.T.S.



9 AV FLOOR BOX CONNECTED TO EXISTING RACEWAY



6 SECURITY DOOR ROUGH-IN - SINGLE DOOR ELECTRIC STRIKE C/W ADD



3 MILLWORK RECEPTACLES INSTALLATION DETAIL

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49	2024-02	ISSUED FOR TENDER
50	2024-02	ISSUED FOR TENDER

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No. Date Issue/Revision

Robarts 5th Floor MDL Renovation

ELECTRICAL DETAILS

Project: No.08086.000 (MEAVD) Scale: N.T.S.
 Drawing No.

TE-0.5

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1 2024-02 10 100% FOR CONSTRUCTION
 2 2024-03 05 85% FOR CONSTRUCTION
 3 2024-03 05 85% FOR A01
 4 2024-03 05 85% FOR TRENCH
 1 2024-03 05 85% FOR REVISIONS

No. Date Issue/Revision

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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ELECTRICAL SPECIFICATION SUBMITTED FOR THIS PROJECT.

Smith + Andersen

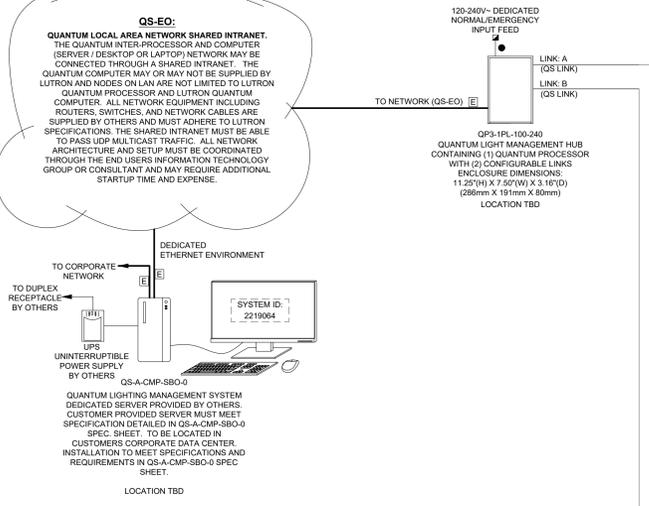
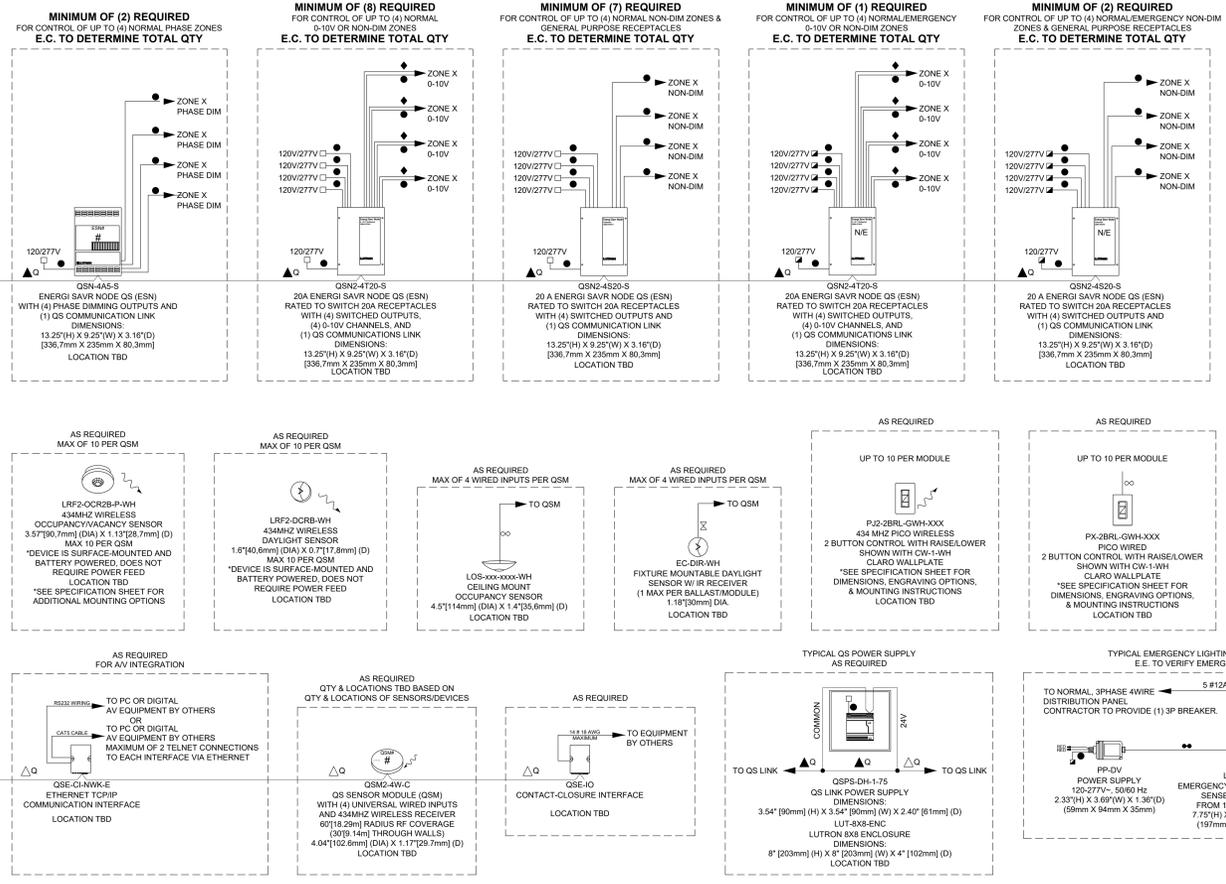
1100 - 100 Prospect Ave. Suite, Toronto, ON M2H 1P7
 No. Date Issue/Revision

Robarts 5th Floor MDL Renovation

Title: ELECTRICAL DETAILS

Project: No.08086.000 (MEAVD) Scale: N.T.S.

Drawing No. TE-0.6



5TH FLOOR ATHENA CONCEPT

WIRING LEGEND:

TOTAL CONTROL LINK LENGTH	WIRE GAUGE	AVAILABLE FROM LUTRON IN ONE CABLE:
LESS THAN 500ft (152.4 m)	POWER (TERMINALS 1-162) 1 PAIR 12 AWG (1.0 mm ²) DATA (TERMINALS 3-346) 1 PAIR 22 AWG (0.5 mm ²), TWISTED AND SHIELDED	GRX-CBL-346S (NON-PLENUM) OR GRX-PCBL-346S (PLENUM)
500ft (152.4 m) TO 2,000ft (609.6 m)	POWER (TERMINALS 1-162) 1 PAIR 12 AWG (1.0 mm ²) DATA (TERMINALS 3-346) 1 PAIR 22 AWG (0.5 mm ²), TWISTED AND SHIELDED	GRX-CBL-486 (NON-PLENUM) OR GRX-PCBL-486 (PLENUM)

*ALTERNATE DATA-ONLY CABLE USE APPROVED DATA LINK CABLE (22 AWG (0.5 mm²), TWISTED/SHIELDED) FROM BELDEN (MODEL # 9461).
 **TOTAL LENGTH OF THE QS LINK MUST NOT EXCEED 2,000 ft (609 m)

- INPUT POWER (NORMAL-EMERGENCY) CLEAR CONNECT - TYPE A WIRELESS SIGNAL
- INPUT POWER (NORMAL) CLEAR CONNECT - TYPE A 2-WAY WIRELESS SIGNAL
- 2 #12AWG (4 mm²)
- 3 #12AWG (4 mm²)
- 10-10V SIGNAL: 2 #18AWG (1.0 mm²)
- CONTACT CLOSURE SIGNAL: 2 #18AWG (1.0 mm²)
- CONTACT CLOSURE SIGNAL: 3 #18AWG (1.0 mm²)

- CAT5E OR BETTER CABLE FOR LUTRON NETWORK. TERMINATED WITH RJ45 CONNECTORS. 328 ft (100 m) MAXIMUM RUN.
- POWER OVER ETHERNET (POE) ETHERNET LINK. CAT5E OR BETTER CABLE FOR LUTRON NETWORK. TERMINATED WITH RJ45 CONNECTORS. 328 ft (100 m) MAXIMUM RUN.
- TEMPORARY ETHERNET CONNECTION - CAT5E OR BETTER CABLE FOR LUTRON NETWORK. TERMINATED WITH RJ45 CONNECTORS. 328 ft (100 m) MAXIMUM RUN.

WIRING NOTES:

- ATHENA QS LINK RULES**
 THE FOLLOWING LINK RULES MUST BE OBSERVED FOR PROPER OPERATION:
- THIS IS A TOPOLOGY-FREE LINK (1-TAP, HOME-RUN, ETC. IS OK); REFER TO TABLE IN WIRING LEGEND FOR WIRE LINK LIMITS.
 - IF WIRED DIFFERENTLY THAN WHAT IS SHOWN, POWER DRAW UNIT REQUIREMENTS NEED TO BE CONFIRMED. SEE POWER DRAW UNITS (PDUs) SPECIFICATION SHEET.
 - FOR LINK EDGE PROCESSORS (QPS-CL, POE & QPS-4L) PER LINK LIMITS ARE:
 - MAXIMUM OF 512 SWITCH-LESS (DIMMED/SWITCHED) OUTPUTS, DIGITALLY ADDRESSABLE DEVICES, A SINGLE DMX CHANNEL, CONTACT CLOSURE OUTPUTS, SHASE DRIVERS.
 - MAXIMUM OF 100 OCCUPANCY SENSORS, 100 DAYLIGHT SENSORS, AND 100 KEYPADS.
 - MAXIMUM OF 100 QS DEVICES (SUCH AS A SEATOUCH QS KEYPAD, SMART PANEL, POWER SUPPLY (QSPS-10P), ESN, QS QS SHADE (DRAPEY DRIVE UNIT), EDGE.
 - THE 10 OUTPUTS ON A QSPS-10P, CANNOT EXCEED A COMBINED LENGTH OF 2,000 ft (609 m).
 - FOR LINK EDGE PROCESSORS (QPS-1L, POE & QPS-1L) PER LINK LIMITS ARE:
 - MAXIMUM OF 256 SWITCH-LESS (DIMMED/SWITCHED) OUTPUTS, DIGITALLY ADDRESSABLE DEVICES, A SINGLE DMX CHANNEL, CONTACT CLOSURE OUTPUTS, SHASE DRIVERS.
 - MAXIMUM OF 50 OCCUPANCY SENSORS, 50 DAYLIGHT SENSORS, & 50 WALL CONTROLS.
 - MAXIMUM OF 25 QS DEVICES (SUCH AS A SEATOUCH QS KEYPAD, SMART PANEL, POWER SUPPLY (QSPS-10P), ESN, QS QS SHADE (DRAPEY DRIVE UNIT), EDGE PROCESSOR COUNTS AS 1 DEVICE PER LINK.
 - MAXIMUM OF 100 ZONES - SUCH AS QS SHADE (DRAPEY DRIVE UNIT).
 - MAXIMUM OF 8 DMX INTERFACES (QSE-CL-DMX).
 - THE 10 OUTPUTS ON A QSPS-10P, CANNOT EXCEED A COMBINED LENGTH OF 2,000 ft (609 m).

ATHENA SYSTEM ETHERNET LINK

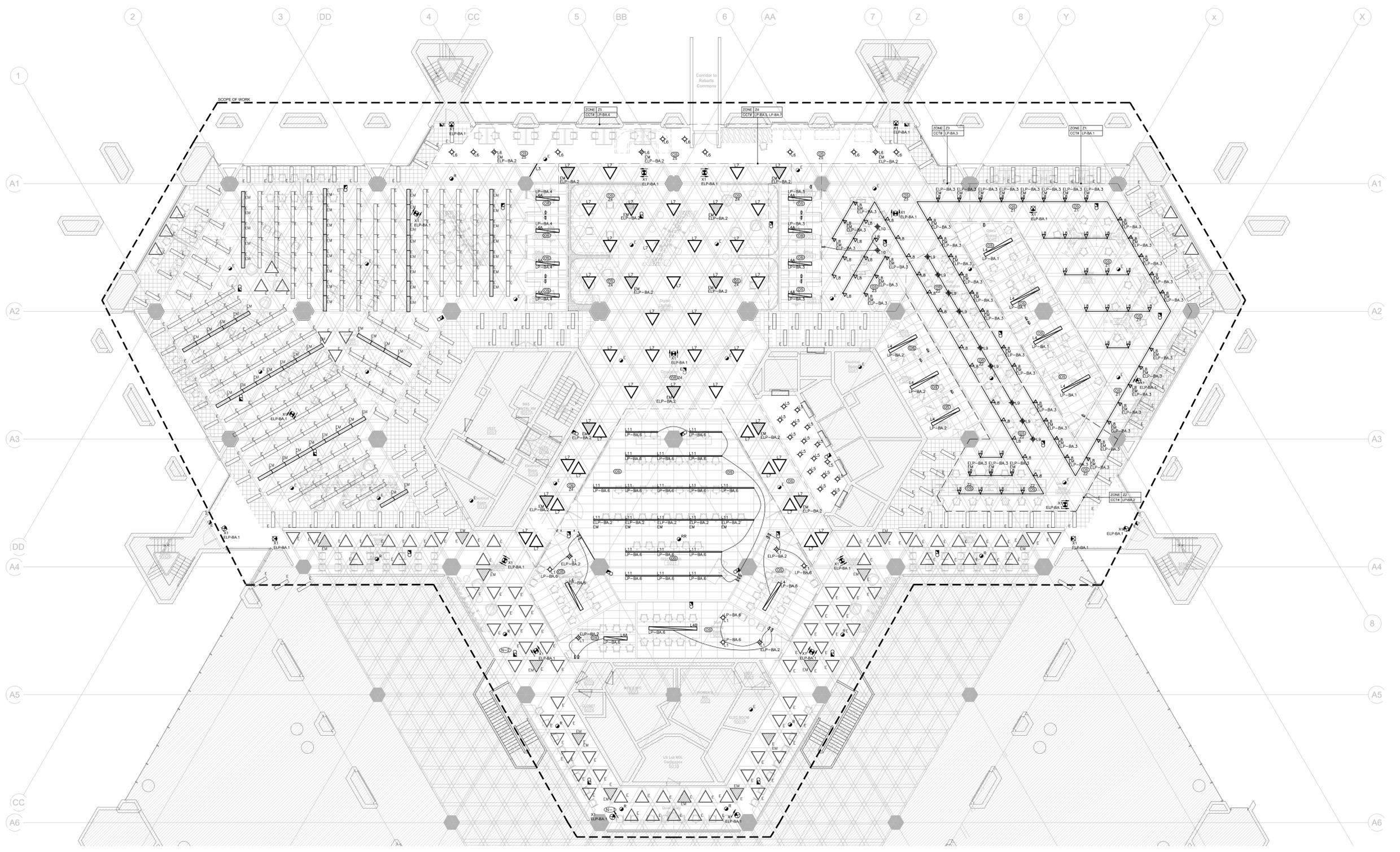
- CAT5E OR BETTER ETHERNET CABLE TO BE RUN FOR SYSTEM ETHERNET LINK, TERMINATED WITH RJ45 CONNECTORS. SYSTEM ETHERNET LINK WIRING USES A STANDARD ETHERNET CONNECTION. ALL WIRING MUST COMPLY WITH IEEE 802.3 STANDARDS. TOTAL LENGTH OF ETHERNET CABLE SHALL NOT EXCEED 328 FT (100M) POINT-TO-POINT. THIS APPLIES FOR INTER-PROCESSOR COMMUNICATION AND COMMUNICATION LINKS TO LUTRON ATHENA CLEAR CONNECT - TYPE X GATEWAYS. USE LUTRON'S CAT5E-PN OR UNMANAGED ETHERNET SWITCHES FOR LONGER DISTANCES. LUTRON ATHENA CLEAR CONNECT - TYPE X GATEWAYS MUST BE CONNECTED TO A POE CAPABLE SWITCH THAT MEETS IEEE 802.3af-2003 OR 802.3at-2009 REQUIREMENTS.
- PROCESSORS CANNOT BE DASH CHAINED. DO NOT DASH CHAIN PROCESSORS USING THE SECOND ETHERNET PORT. THE SECOND ETHERNET CONNECTION IS USED FOR SERVICE DIAGNOSTICS ONLY. EACH PROCESSOR MUST BE CONNECTED TO AN ETHERNET SWITCH.
- MAXIMUM OF (16) ATHENA EDGE PROCESSORS & CLEAR CONNECT - TYPE X GATEWAYS MAY BE CONNECTED AS A SINGLE ATHENA SYSTEM.

EMERGENCY SPECIFICATION TEMPLATE

- ELECTRICAL ENGINEER TO DETERMINE EMERGENCY LIGHTING REQUIREMENTS BELOW.
 NOTE: CHECK EACH APPLICABLE OPTION.
- STEP 1: PLEASE CHECK ONE.**
- LUTRON TO PROVIDE EMERGENCY LIGHTING EQUIPMENT. (PROCEED TO STEP 2)
 - EMERGENCY LIGHTING FOR OTHERS (LUTRON SHALL NOT PROVIDE EMERGENCY LIGHTING EQUIPMENT) (DO NOT PROCEED TO STEP 2)
 - EMERGENCY LIGHTING FROM BATTERY PACKS SUPPLIED WITH FIXTURES.
 - CONTRACTOR TO PROVIDE LEDA LIT-EM TRANSFER RELAYS - FOR BEST PERFORMANCE, TYPICALLY AVAILABLE BY LUTRON.
 - EMERGENCY LIGHTING FIXTURES NOT CONNECTED TO LUTRON SYSTEM.
- STEP 2: PLEASE CONFIRM EMERGENCY POWER SOURCE DETAILS. CHECK ALL THAT APPLY.**
- EMERGENCY LIGHTING FIXTURES WILL HAVE POWER INTERRUPTED DURING TRANSFER FROM NORMAL SOURCE TO EMERGENCY SOURCE, SUCH AS GENERATOR.
 - LUTRON TO SPECIFY (NOT PROVIDE) EMERGENCY INVERTER FOR SYSTEM (GENERATORS).
 - EMERGENCY LIGHTING FIXTURES WILL HAVE UNINTERRUPTED TRANSITION FROM NORMAL SOURCE TO EMERGENCY SOURCE, SUCH AS LIGHTING INVERTER.
- STEP 3: DOES LUTRON NEED TO PROVIDE OVERDRIVE & LOCKOUT INTEGRATION BEYOND EMERGENCY LIGHTING, SUCH AS FIRE ALARM CONTROL PANEL INTEGRATION, SECURITY ALARM INTEGRATION, ETC.?**
- YES (PROCEED TO STEP 4)
 - NO (PROCEED TO STEP 7)
- STEP 4: LUTRON LIGHTING CONTROL SYSTEM SHALL INTEGRATE WITH THE FOLLOWING SYSTEMS (CHECK ALL THAT APPLY):**
- FIRE ALARM CONTROL PANEL (FAC) INTEGRATION
 - SECURITY SYSTEM ALARM INTEGRATION
 - OTHER, PLEASE DEFINE: _____
 - OTHER, PLEASE DEFINE: _____
 - OTHER, PLEASE DEFINE: _____
- STEP 5: THE FOLLOWING LIGHTING SHALL RESPOND TO THE OVERDRIVE & LOCKOUT INTEGRATION REQUEST:**
- EMERGENCY LIGHTING
 - NON-EMERGENCY (NORMAL) LIGHTING
- STEP 6: PLEASE SELECT DEFAULT OR CUSTOM SEQUENCE OF OPERATIONS.**
- [DEFAULT] BOTH EMERGENCY LIGHTING AND OVERDRIVE & LOCKOUT INTEGRATIONS SHALL RESPOND WITH 100% LIGHTING OUTPUT.
 - [CUSTOM] PLEASE CHECK THE BOX FOR STEP 1 AND PROVIDE APPROPRIATE DETAILS.
- STEP 7:**
- THE ABOVE TEMPLATE DOES NOT ADDRESS THE REQUIREMENTS OF THE PROJECT. PLEASE SEE DOCUMENT REFERENCE BELOW FOR DETAILS ON PROJECT REQUIREMENTS. EMERGENCY AND OVERDRIVE & LOCKOUT DETAILS CAN BE FOUND HERE.

CONCEPT DRAWING NOTES

- CONTROL SYSTEM DRAWING IS PROVIDED FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. EXACT EQUIPMENT REQUIREMENTS, INCLUDING LOCATIONS AND QUANTITIES, SHOULD BE VERIFIED IN ACCORDANCE WITH THE MOST UP-TO-DATE LIGHTING/ELECTRICAL REFLECTED CEILING PLANS, LIGHTING FIXTURE SCHEDULES, PANEL SCHEDULES, CONTROL INTENT AND SPECIFICATIONS. SHASE EQUIPMENT SHOULD BE VERIFIED IN ACCORDANCE WITH ARCHITECTURAL PLANS, SPECIFICATIONS AND WINDOW SCHEDULES/DETAILS.
- LED DIMMING REQUIRES AN EXACT MATCH BETWEEN THE LED ARRAY, DRIVER AND CONTROL. LUTRON CANNOT GUARANTEE COMPATIBILITY OR PERFORMANCE WITHOUT TESTING THIS COMBINATION.
- TO CONFIRM WHAT PRODUCTS LUTRON HAS AVAILABLE OR WHAT INTERFACES MAY BE REQUIRED, CALL 1-877-336-4658 OR CHECK LUTRON'S PRODUCT COMPATIBILITY MATRIX ON-LINE AT WWW.LUTRON.COM/LED.
- TO REQUEST THE TESTING OF AN LED PRODUCT BY LUTRON MANUFACTURERS CAN FILL OUT AN LED EVALUATION REQUEST FORM ON-LINE AT WWW.LUTRON.COM/LED OR CONTACT LED@LUTRON.COM.
- LUTRON CAN GUARANTEE COMPATIBILITY AND PERFORMANCE OF LUTRON HI-LINE A-SERIES LED DRIVERS USED WITH APPROPRIATE LUTRON CONTROL. THE HI-LINE A-SERIES LED DRIVER CAN BE USED ON PRODUCTS UNDER 40 WATTS WITH SUITABLE MOUNTING LOCATIONS. PLEASE REFER TO THE SPECIFICATION SUBMITTAL SHEET FOR FURTHER INFORMATION.
- IF USING UNTESTED, NON-LUTRON LED DRIVERS REQUIRING 0-10V CONTROL, PERFORMANCE AND COMPATIBILITY CANNOT BE GUARANTEED BY LUTRON. A-SERIES OR ELV PRODUCTS PROVIDING HIGH END AND LOW END TRIM ADJUSTMENTS ARE MORE LIKELY TO PROVIDE ACCEPTABLE PERFORMANCE RESULTS. DETERMINATION OF RESULT ACCEPTABILITY IS UP TO THE USER'S DISCRETION.
- IF USING UNTESTED, NON-LUTRON LED DRIVERS REQUIRING PHASE CONTROL, PERFORMANCE AND COMPATIBILITY CANNOT BE GUARANTEED BY LUTRON. A-SERIES OR ELV PRODUCTS PROVIDING HIGH END AND LOW END TRIM ADJUSTMENTS ARE MORE LIKELY TO PROVIDE ACCEPTABLE PERFORMANCE RESULTS. DETERMINATION OF RESULT ACCEPTABILITY IS UP TO THE USER'S DISCRETION.



- GENERAL NOTES:**
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH INTERIOR DESIGNER'S DRAWINGS FOR DIMENSIONS, HEIGHTS, CONSTRUCTION DETAILING, FINISHES AND COLOURS.
 - CIRCUITING IN PART IS DIAGRAMMATIC INTENDED TO SHOW GENERAL CIRCUIT ARRANGEMENT AND PANEL DESIGNATION.
 - PROVIDE EMT CONDUIT IN AREAS WITH EXPOSED CEILING. BY CALLING IS NOT ACCEPTABLE UNLESS OTHERWISE NOTED. BX CABLES MAY BE USED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES OR EQUIPMENT WITH A MAXIMUM HORIZONTAL RUN LENGTH OF 3 FEET / 1 METER. PAINT CONDUITS TO MATCH ARCHITECTURAL BACKGROUNDS. MOUNT EXISTING, OCCUPANCY SENSORS, EXIT SIGNS, CAMERAS, WAPS AND ALL OTHER CEILING MOUNTED DEVICES WITH STEMS SUCH THAT THEY ARE ON THE SAME PLANE AS SUSPENDED LIGHTING FIXTURES. COORDINATE CEILING AND WALL HEIGHTS WITH INTERIOR DESIGNER DRAWINGS.
 - REFER TO LIGHTING LAYOUT SHOWN FOR FINAL LOCATION ONLY. VISIT THE SITE AND COORDINATE EXACT QUANTITY OF LIGHTING LUMINAIRES TO BE NEW, RELOCATED AND/OR RETAINED IN EXISTING LOCATION. PROVIDE NEW LUMINAIRES TO MATCH EXISTING WHERE INSUFFICIENT QUANTITY EXIST TO SUIT. ALL RELOCATED LUMINAIRES SHALL HAVE WIRING EXTENDED TO SUIT NEW LOCATION. OFFER ALL UNUSED EXISTING LUMINAIRES TO LANDLORD AND TURN OVER ALL RELATED LUMINAIRES AT A PLACE DESIGNATED BY LANDLORD. DISPOSAL OF ALL LUMINAIRES REJECTED BY LANDLORD.
 - ALL NEW/RELOCATED BASE BUILDING STANDARD LUMINAIRES AND NEW PROCESSED DOWN LIGHTS SHALL BE DOWN HUNG AND SUPPORTED FROM THE SLAB ABOVE. PROVIDE LETTER TO BE INCLUDED AS PART OF CLOSE-OUT DOCUMENT SUBMITTAL PACKAGE.
 - REPLACE EXISTING AND RELOCATED LUMINAIRES DUE TO BURNOUT CONDITIONS AND REPLACE FAULTY BALLASTS AS REQUIRED. INCLUDE IN BASE PRICE.
 - REWORK EXISTING EMERGENCY LIGHTING TO ACHIEVE NEW EMERGENCY LIGHTING AS SHOWN. CONNECT NEW AND/OR RELOCATED LUMINAIRES TO NEAREST EMERGENCY LIGHTING CIRCUITS ON THIS FLOOR. IF NEW EMERGENCY BRANCH CIRCUITS ARE REQUIRED FOR EMERGENCY LIGHTING AND EXISTING EMERGENCY LIGHTING PANEL IS LOCATED ON A DIFFERENT STOREY (i.e. NOT LOCATED ON SAME FLOOR) THEN NEW BRANCH CIRCUIT WIRING SHALL BE 2-HOUR FIRE RATED (i.e. MIN. 2" RIGID) TO FIRST EMERGENCY LIGHT FEED. IF EXISTING EMERGENCY LIGHTING PANEL IS LOCATED ON THE SAME STOREY, THE NEW BRANCH CIRCUIT WIRING DOES NOT NEED TO BE FIRE RATED. PROVIDE LOCK-ON BREAKERS TO SUIT.
 - MEASURE THE ILLUMINATION OF THE FLOOR AT NIGHT WITH EMERGENCY LIGHTING ON ONLY, AND SEND A DRAWING SHOWING THE MAXIMUM AND MINIMUM LEVEL OF ILLUMINATION, TO THE CONSULTING ENGINEER FOR REVIEW. PROVIDE WRITTEN CONFIRMATION THAT EMERGENCY LIGHTING HAS BEEN INSTALLED IN ACCORDANCE WITH CONTRACT DOCUMENTS AND LATEST EDITION OF THE ONTARIO BUILDING CODE SECTIONS 3.2.7.3 AND 3.2.7.4. LETTER TO BE INCLUDED AS PART OF CLOSE-OUT DOCUMENT SUBMITTAL PACKAGE.
 - PROVIDE NEW PICTORIAL (DRAWING) AND TYPE EXIT SIGNS. MATCH EXISTING BASE BUILDING STANDARD UNLESS OTHERWISE NOTED. CONNECT NEW EXIT SIGNS TO THE NEAREST AVAILABLE SPARE EXIT LIGHTING CIRCUIT. DO NOT OVERLOAD THE CIRCUIT ALLOW FOR (2) ADDITIONAL EXIT SIGNS (COMPLETE WITH MATERIAL AND LABOUR) TO BE INSTALLED AS PER BUILDING INSPECTORS REQUIREMENTS UPON FINAL INSPECTION.
 - LOCATE AND POSITION EXIT SIGNS SUCH THAT THEY DO NOT INTERFERE WITH ADJACENT EXIT SIGNS AND EMERGENCY LIGHTING COVERAGE.
 - ALL MODIFICATIONS TO FIRE ALARM SYSTEM AND DEVICES TO BE COMPLETED BY BASE

- BUILDING FIRE ALARM CONTRACTOR AND VENDOR/MANUFACTURER:** BASE BUILDING FIRE ALARM CONTRACTOR/VENDOR/MANUFACTURER IS RESPONSIBLE TO ENSURE THAT ALL ADDITIONAL COMPONENTS (INTERNAL SOFTWARE INCLUDING ANY LABOUR TO INSTALL OR MODIFY FIRE ALARM DEVICES) ARE INCLUDED FOR BASED ON ISSUED DRAWINGS.
- ELECTRICAL CONTRACTOR:** ALLOW FOR ALL ASSOCIATED COSTS: NEW FIRE ALARM BELLS ARE TO MATCH EXISTING AND BE CONNECTED TO THE NEAREST AVAILABLE SPACE EMERGENCY ZONE CIRCUITS. CONNECT NEW BELLS TO EXISTING CIRCUITS WHERE THERE IS SPARE CAPACITY ON RESPECTIVE CIRCUITS. IF THERE IS NO CAPACITY ON EXISTING CIRCUITS, PROVIDE NEW FIRE ALARM CIRCUITS. ALLOW FOR ALL ASSOCIATED COSTS INCLUDING, BUT NOT LIMITED TO: ASSOCIATED EQUIPMENT, DEVICES, PROGRAMMING, TESTING AND VERIFICATION TO MAKE SYSTEM OPERATIONAL AND CODE COMPLIANT. ALL FIRE ALARM VERIFICATION SHALL CONFORM TO CAN/ULC-S537 LATEST EDITION. FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH CAN/ULC-S524 LATEST EDITION. PROVIDE FIRE ALARM MUSIC RELAY SHUT DOWN AS SUCH THAT MUSIC SYSTEM SHUTS DOWN UPON ACTIVATION OF FIRE ALARM SYSTEM. COORDINATE WITH MUSIC VENDOR AND GENERAL CONTRACTOR TO ENSURE MUSIC SYSTEM IS INSTALLED AND FULLY FUNCTIONAL AT THE TIME OF FIRE ALARM VERIFICATION. ALLOW FOR FIVE (5) ADDITIONAL BELLS AND FIRE ALARM VERIFICATION.
- ENSURE THAT ALL LIGHTING FIXTURES ARE CLEAN AND ILLUMINATED BY END OF PROJECT.
 - NEW LOW VOLTAGE SWITCH ARRANGEMENT OF LIGHTING TO BE CO-ORDINATED WITH LANDLORD AND REARRANGED TO SUIT NEW LAYOUT. ALL LIGHTING, EXCLUDING EMERGENCY, WITHIN THE TENANT PREMISES TO BE ON A SEPARATE LIGHTING ZONE AND TO BE CONTROLLED BY BASE BUILDING LIGHTING CONTROL SYSTEM. PROVIDE ALL NECESSARY RELAYS, CONTACTORS, RELAY PANELS, AND DRY INTERFACES REQUIRED FOR SUCH CONTROL. INCLUDE COST IN THIS CONTRACT.
 - RE-IN NEW 120V SPECIALTY LIGHTING FIXTURES INTO TENANT LIGHTING ZONE AND TO BE CONTROLLED BY BASE BUILDING LIGHTING CONTROL SYSTEM. PROVIDE ALL NECESSARY RELAYS, CONTACTORS, RELAY PANELS, AND DRY INTERFACES REQUIRED FOR SUCH CONTROL. INCLUDE COST IN THIS CONTRACT.
 - COORDINATE INSTALLATION OF FIXTURES WITH MECHANICAL EQUIPMENT, ELECTRICAL EQUIPMENT, SPRINKLERS AND DUCT WORK WITH OTHER TRADES PRIOR TO WORK COMMENCING.
 - ALL CEILING MOUNTED OCCUPANCY SENSORS PROVIDED AS PART OF THIS SCOPE OF WORK MUST BE LOCATED AT LEAST 8'0" AWAY FROM ANY SURREY AIR DIFFUSER AND RETURN AIR GRILLE AS PER MANUFACTURER'S RECOMMENDATION. COORDINATE INSTALLATION ON SITE WITH MECHANICAL CONTRACTOR PRIOR TO COMMENCING WORK.
- LIGHTING SEQUENCE OF OPERATIONS:**
- OFFICES/SHARED DESKES: MANUAL ON VIA DIMMER. AUTO OFF AFTER 15 MIN OF VACANCY.
 - COLLABORATION ROOMS: AUTO ON TO 50% UPON OCCUPANCY. MANUAL DIMMING CONTROL. AUTO OFF AFTER 15 MIN OF VACANCY.
 - DATA LAB: AUTO ON TO 100% UPON OCCUPANCY. MANUAL DIMMING CONTROL. AUTO OFF AFTER 15 MIN OF VACANCY. TO BE ON AT 100% DURING STANDARD HOURS OF OPERATION FROM 7AM TO 5PM. DURING ALL OTHER HOURS OUTSIDE OF STANDARD OPERATING HOURS LIGHTS SHALL AUTO ON TO 100% UPON OCCUPANCY AND AUTO OFF AFTER 15 MIN OF VACANCY. MANUAL DIMMING CONTROL.
 - OFFICE AREAS: AUTO ON TO 100% UPON OCCUPANCY WITHIN EACH INDIVIDUAL ZONE. AUTO OFF AFTER 30 MIN OF VACANCY IN EACH INDIVIDUAL ZONE.

1. NIGHT LIGHTS, EMERGENCY LIGHTS TO BE CONTROLLED NORMALLY WITH ASSOCIATED ZONES DURING STANDARD HOURS OF OPERATION FROM 7AM TO 5PM. DURING ALL OTHER HOURS OUTSIDE OF STANDARD OPERATING HOURS EMERGENCY LIGHTS SHALL SERVE AS NIGHT LIGHT AND BE LEFT ON AT 50% EMERGENCY LIGHTS SHALL REVERT TO 100% UPON LOSS OF POWER OR ACTIVATION OF FIRE ALARM.
- DRAWING NOTES:**
- ALL DEVICES NOTED AS 'R' TO BE RELOCATED FROM THEIR CURRENT LOCATION TO THEIR FINAL LOCATION AS SHOWN ON TI-5.1.
 - CEILING MOUNTED BELLS TO BE MOUNTED ON THE VERTICAL FACE OF THE CEILING STRUCTURE.
 - ALL OSN TO BE LOCATED IN ACCESSIBLE CEILING SPACES OR ELECTRICAL ROOMS. OSNS SHALL NOT BE LOCATED IN OPEN ISLANDS. COORDINATE EXACT LOCATIONS ON SITE.

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Prior to commencement of the Work the contractor shall verify all drawing dimensions, details, and notes with the Contract documents and with the conditions on site; ascertain and discrepancies between the site and the contract documents, and bring these items to the attention of the consultant for clarification.



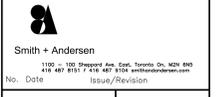
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No.	Date	Issue/Revision
10	2024-12	RESUB FOR CONSTRUCTION
9	2024-12	RESUB FOR CONSTRUCTION
8	2024-10-08	RESUB FOR CONSTRUCTION
7	2024-07	RESUB FOR REVIEW
6	2024-06-06	ISSUED FOR PERMIT/STAMP
5	2024-04-02	ISSUED FOR PERMITS
4	2024-03-06	REVISION FOR LIGHTING
3	2024-03-10	ISSUED FOR COORDINATION
2	2024-11-11	ISSUED FOR PERMITTING
1	2024-04	ISSUED FOR ISSUE

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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ELECTRICAL SPECIFICATION SUBMITTED FOR THIS PROJECT.

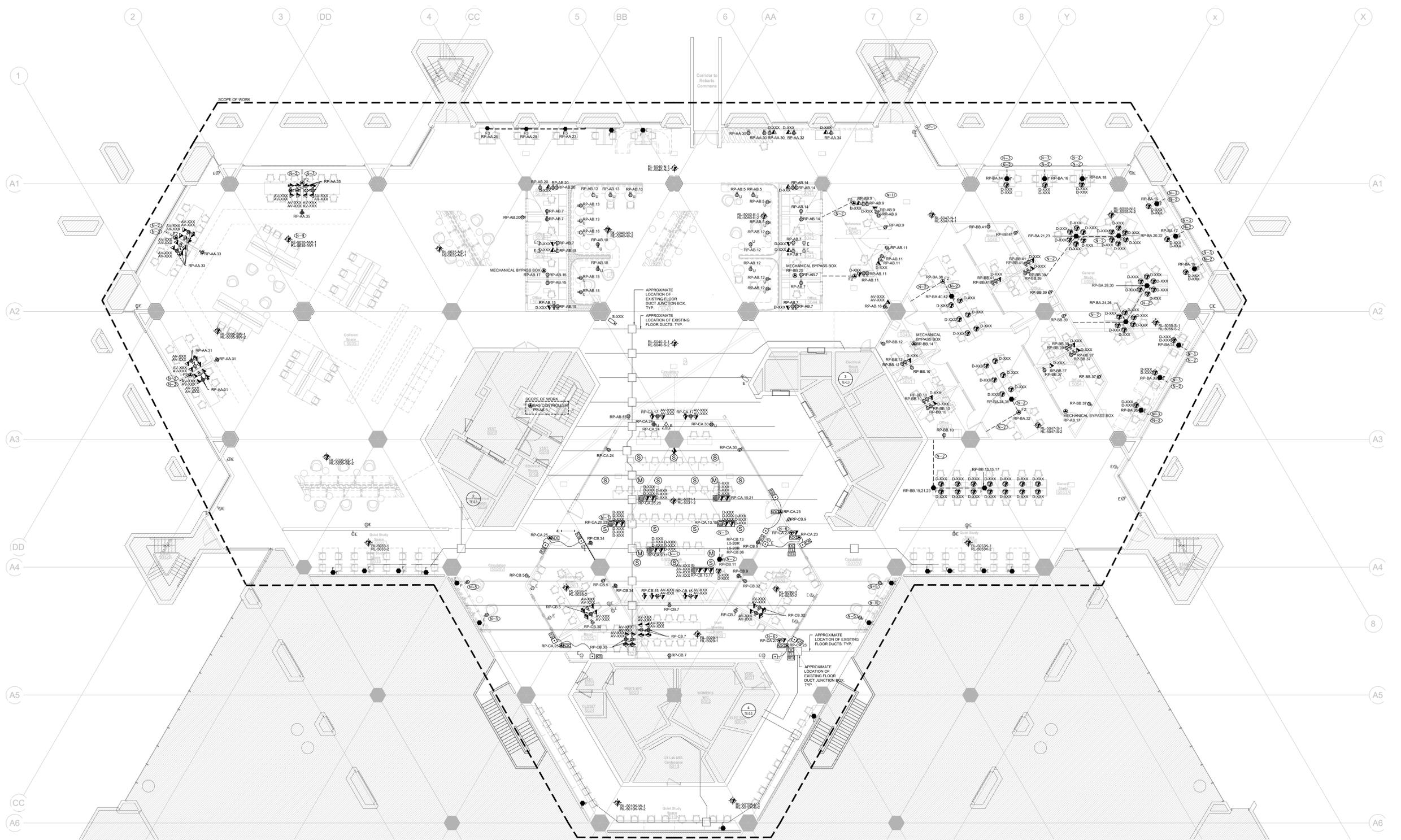


Roberts 5th Floor MDL Renovation

FIFTH FLOOR LIGHTING AND FIRE ALARM LAYOUT

Project No. 08086.000 (MEAD) Scale 1:100
 Drawing No.

TE-5.1



- GENERAL NOTES:**
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH INTERIOR DESIGNER'S DRAWINGS FOR DIMENSIONS, HEIGHTS, CONSTRUCTION DETAILING, FINISHES AND COLOURS.
 - CIRCUITING IN PART IS DIAGNOSTIC INTENDED TO SHOW GENERAL CIRCUIT ARRANGEMENT AND PANEL DESIGNATION.
 - PROVIDE EMT CONDUIT IN AREAS WITH EXPOSED CEILING EX. CABLING IS NOT ACCEPTABLE UNLESS OTHERWISE NOTED. BY CABLES MAY BE USED FOR FINAL CONNECTIONS TO LIGHTING FIXTURES OR EQUIPMENT WITH A MAXIMUM HORIZONTAL RUN LENGTH OF 3 FEET / 1 METER. PLANT CONDUITS TO MATCH ARCHITECTURAL BACKGROUNDS. MOUNT EXIT SIGNS, OCCUPANCY SENSORS, EXIT SIGNS, CAMERAS, WAFS AND ALL OTHER CEILING MOUNTED DEVICES WITH STEELS SUCH THAT THEY ARE ON THE SAME PLANE AS SUSPENDED LIGHTING FIXTURES. COORDINATE CEILING AND WALL HEIGHTS WITH INTERIOR DESIGNER DRAWINGS.
 - REUSE CIRCUITS OBTAINED THROUGH DEMOLITION IS ACCEPTABLE.
 - VERIFY EXACT POWER REQUIREMENTS AND RECEPTACLE TYPES FOR SPECIAL EQUIPMENT WITH MANUFACTURER PRIOR TO INSTALLATION. PROVIDE HARDWARE CONNECTIONS FOR DISMISHERS AND COPIERS ETC. IN USE OF RECEPTACLES OR VICE VERSA, AS REQUIRED.
 - REFER TO INTERIOR DESIGN DRAWINGS FOR THE COLOUR OF COVERPLATES AND MOUNTING HEIGHTS.
 - MARK UP OUTLET AND DEVICE LOCATIONS AND OBTAIN APPROVAL BY DESIGN CONSULTANT PRIOR TO INSTALLATION.
 - PROVIDE SUITABLE LABELS ON ALL RECEPTACLES AND SYSTEM FURNITURE FEEDS. LABELS TO INCLUDE BOTH PANEL AND CIRCUIT DESIGNATION. REVIEW LABEL SIZE AND TYPE WITH CONSULTANT PRIOR TO INSTALLATION.
 - TRACE ALL EXISTING OUTLETS, NOTED AS EXISTING, AND IDENTIFY ON AS BUILT DRAWING AS PER SPECIFICATION.
 - ALLOW FOR THE REMOVAL AND RE-INSTALLATION OF SYSTEMS FURNITURE CONNECTIONS.
 - CONFIRM ELECTRICAL REQUIREMENTS AND EXACT LOCATION OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND CONTRACTOR PRIOR TO ROUGH-INS.
 - ROUTE ALL CONDUIT SYSTEMS AROUND DUCT WORK, BEAMS AND PIPING AS REQUIRED TO ACCOMMODATE LAYOUT SHOWN. REFER TO MECHANICAL DRAWINGS AND ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.
 - CONFIRM ELECTRICAL REQUIREMENTS AND EXACT LOCATION OF ALL AV EQUIPMENT WITH AV DRAWINGS AND CONTRACTOR PRIOR TO ALL ROUGH-INS. NO ADDITIONAL COST WILL BE APPROVED FOR ANY REVISIONS/MODIFICATIONS REQUIRED BY ANY TRADE OR CONTRACTOR DUE TO LACK OF COORDINATION BETWEEN TRADES AND CONTRACTORS. AV PACKAGE HAS BEEN ATTACHED WITH ELECTRICAL, FOR REVIEW AND PRICING.
 - CONFIRM ELECTRICAL REQUIREMENTS AND EXACT LOCATION OF ALL SECURITY EQUIPMENT WITH SECURITY DRAWINGS AND CONTRACTOR PRIOR TO ALL ROUGH-INS. NO ADDITIONAL COST WILL BE APPROVED FOR ANY REVISIONS/MODIFICATIONS REQUIRED BY ANY TRADE OR CONTRACTOR DUE TO LACK OF COORDINATION BETWEEN TRADES AND CONTRACTORS.
 - CONFIRM ELECTRICAL REQUIREMENTS AND EXACT LOCATION OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND CONTRACTOR PRIOR TO ALL ROUGH-INS. NO ADDITIONAL COST WILL BE APPROVED FOR ANY REVISIONS/MODIFICATIONS REQUIRED BY ANY TRADE OR CONTRACTOR DUE TO LACK OF COORDINATION BETWEEN TRADES AND CONTRACTORS.
 - ALLOW FOR ALL ASSOCIATED COST TO RELOCATE TEN (10) EXISTING RECEPTACLES 20 FEET AS NECESSARY TO ACCOMMODATE SITE CONDITIONS.

- DRAWINGS NOTES:**
- WHEN DIRECTLY OVER FLOOR DUCT UTILIZE FLOOR DUCT SYSTEM WITHOUT ANY ADDITIONAL TRACING.
 - APPROXIMATE LOCATION OF EXISTING POWER CONDUIT FROM TRENCH HEADER DUTTY TO NEW FURNITURE. PROVIDE ONE (1) NEW 27mm (1") CONDUIT FOR COMMUNICATIONS CABLING BACK FROM ELECTRICAL ROOM 5041.
 - ALL MILLWORK RECEPTACLES TO BE LEGRAND AEROSERIE. TYP.
 - NEW RECEPTACLES MOUNTED IN MILLWORK. REUSE EXISTING CIRCUIT FROM FLOOR FEED.
 - PROVIDE 3/4" EMT CONDUIT C/W ONE (1) DATA CABLE FROM EACH HOT SPOT CONTROLLER TO BUS CONTROL ROOM AND TERMINATE IN 1/2" NETWORK SWITCH. ALLOW FOR ALL ASSOCIATED COSTS.
 - ALL NEW CONDUIT RUNS AS A PART OF THIS SCOPE SHALL BE RUN ALONG THE VERTICES OF THE TRIANGULAR CEILING STRUCTURE. CONDUITS SHALL NOT CROSS TRIANGULAR BUTTLES.
 - COLOR CODING REQUIREMENTS FOR CABLES SHALL BE IN ACCORDANCE WITH UNIVERSITY OF TORONTO STANDARDS FOR COMMUNICATIONS AND ELECTRICAL INSTALLATIONS.
 - PROVIDE A 3/4" EMT CONDUIT FOR ALL WIRELESS ACCESS POINTS AND BRING BACK TO ELECTRICAL ROOM 5041.
 - REFER TO ARCHITECTURAL DRAWINGS TO COORDINATE PHASING AROUND EXISTING HOARDING TYP. WALLS.
 - ALL BX TO BE NEATLY RUN AND PROPERLY SUPPORTED IN MILLWORK. REFER TO DETAIL 2 AND 3 ON DRAWING TE-5.2.
- ITEMIZED PRICE:**
- CONTRACTOR PROVIDE ITEMIZED PRICE TO REWORK 100' OF 1" CONDUIT AND ASSOCIATED JUNCTION BOXES AND POWER BRING IN MULTIPLE SECTIONS TO ALIGN WITH VERTICES OF TRIANGULAR CEILING STRUCTURE. ALLOW FOR ALL ASSOCIATED COST.
 - CONTRACTOR PROVIDE ITEMIZED PRICE TO REWORK 100' OF 2" CONDUIT AND ASSOCIATED JUNCTION BOXES AND POWER BRING IN MULTIPLE SECTIONS TO ALIGN WITH VERTICES OF TRIANGULAR CEILING STRUCTURE. ALLOW FOR ALL ASSOCIATED COST.
 - CONTRACTOR PROVIDE ITEMIZED PRICE TO REWORK 100' OF 1" CONDUIT AND ASSOCIATED JUNCTION BOXES AND FIVE (5) CAT 6 CABLES IN MULTIPLE SECTIONS TO ALIGN WITH VERTICES OF TRIANGULAR CEILING STRUCTURE. ALLOW FOR ALL ASSOCIATED COST.
 - CONTRACTOR PROVIDE ITEMIZED PRICE TO REWORK 100' OF 1" CONDUIT AND ASSOCIATED JUNCTION BOXES AND ASSOCIATED FIRE ALARM WIRING TO ALIGN WITH VERTICES OF TRIANGULAR CEILING STRUCTURE. ALLOW FOR ADDITIONAL VERIFICATION. ALLOW FOR ALL ASSOCIATED COST.

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No.	Date	Issue/Revision
10	2024-12	RE-ISSUE FOR CONSTRUCTION
9	2024-12	RE-ISSUE FOR CONSTRUCTION
8	2024-10	ISSUED FOR CONSTRUCTION
7	2024-10	REVISION FOR REVIEW
6	2024-07	ISSUED FOR TENDER
5	2024-06	ISSUED FOR POINT/TENDER
4	2024-06	REVISION FOR REV. 12
3	2024-06	ISSUED FOR BILD COSTING
2	2024-10	ISSUED FOR REVIEW
1	2024-11	ISSUED FOR PRICING
1	2024-04	ISSUED FOR ISSUE

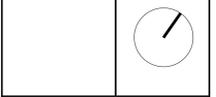
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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ELECTRICAL SPECIFICATION SUBMITTED FOR THIS PROJECT.

Smith + Andersen

1100 - 100 Progress Ave. Ste. Toronto, ON M2H 4P4
 No. Date Issue/Revision



Robarts 5th Floor MDL Renovation

Title:
FIFTH FLOOR POWER AND SYSTEMS LAYOUT

Project No. 08086.000 (MEVD) Scale 1:100
 Drawing No.

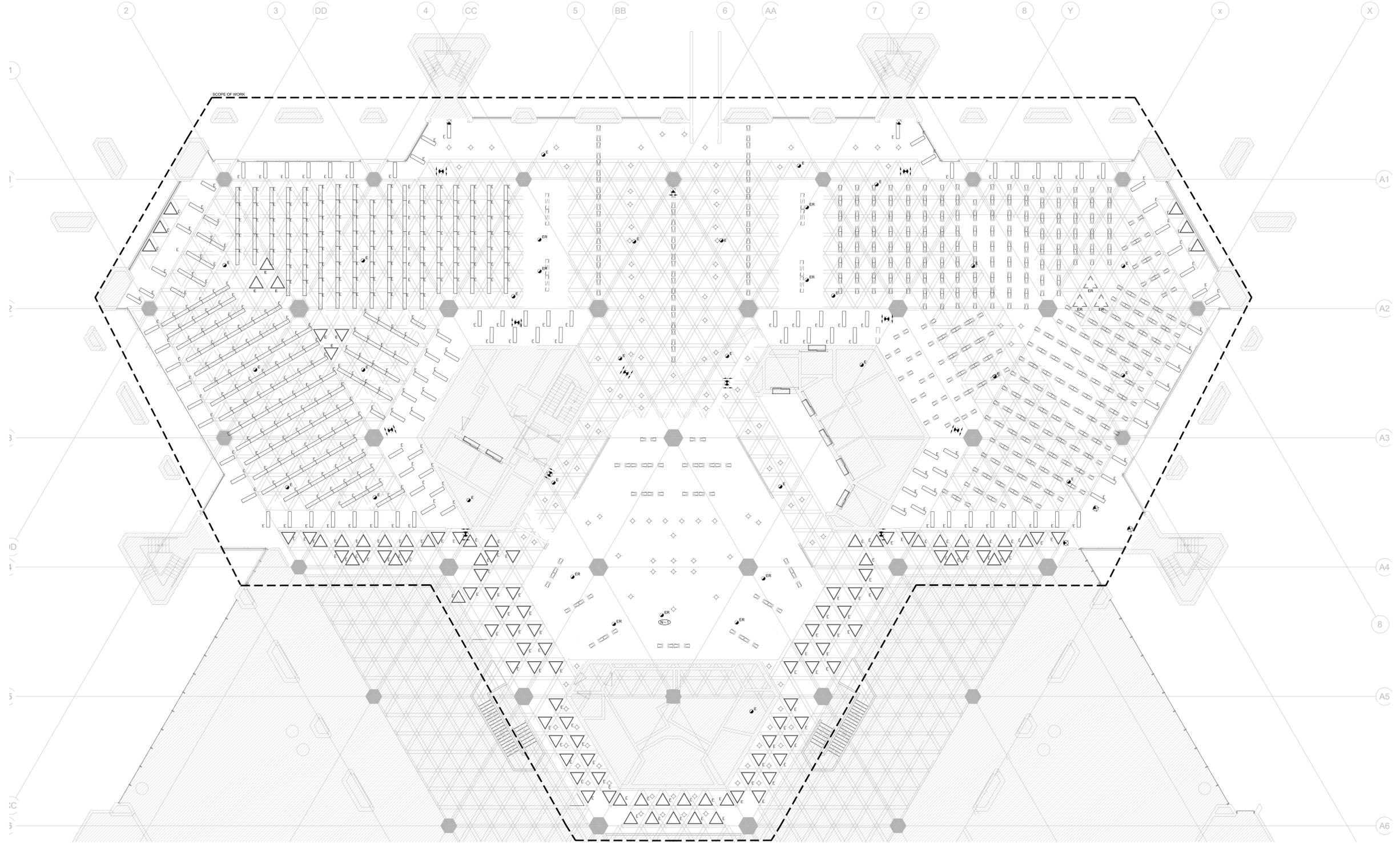
TE-5.2

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- GENERAL NOTES:**
- REFER TO THE ARCHITECT'S DRAWINGS TO DETERMINE COMPLETE EXTENT OF DEMOLITION AND ALLOW FOR ALL COSTS. COMPLETE EXTENT OF DEMOLITION IS NOT SHOWN.
 - ENSURE THAT ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT AND LIGHTING WITHIN BASE BUILDING ROOMS, STAIRWELLS AND AREAS DEEMED NOT IN SCOPE, REMAIN LIVE OPERATIONAL, ISOLATED AND PROTECTED DURING CONSTRUCTION.
 - EXISTING CONDITIONS SHOWN ARE BASED ON DRAWINGS, FIELD SURVEY AND INFORMATION PROVIDED BY LANDLORD. ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN HERE SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER PRIOR TO BIDDING.
 - NO ADDITIONAL COST WILL BE APPROVED FOR ANY REVISIONS/MODIFICATIONS REQUIRED BY ANY TRADE OR CONTRACTOR DUE TO THE LACK OF COORDINATION BETWEEN TRADES AND CONTRACTORS.
 - COORDINATE WITH GENERAL CONTRACTOR AND LANDLORD FOR DISPOSAL OF ALL MATERIALS FROM SITE.
 - EXISTING FIRE ALARM DEVICES SHALL BE COOLED AND FULLY FUNCTIONAL THROUGHOUT DEMOLITION CONSTRUCTION. NEW FIRE ALARM DEVICES SHALL BE PROVIDED AS PART OF NEW CONSTRUCTION PHASE. REFER TO PHASING SCHEDULE FOR CONSTRUCTION SCHEDULING.
 - ELECTRICAL CONTRACTOR TO PROVIDE TEMPORARY EMERGENCY LIGHTING FOR ENTIRE SPACE TO ACCOMMODATE DEMOLITION WORK AND FUTURE BUILD-OUT. ENSURE FIXTURES ARE OWN HUNG AND SUPPORTED FROM THE CEILING SUB/STRUCTURE ABOVE.
 - EXISTING EXIT SIGNS SHALL BE MAINTAINED THROUGHOUT DEMOLITION CONSTRUCTION. PROVIDE TEMPORARY SUPPORT FROM THE CEILING SUB/STRUCTURE ABOVE. NEW EXIT SIGNS SHALL BE PROVIDED AS PART OF NEW CONSTRUCTION PHASE.

DRAWING NOTES:

⬅️ ALL DEVICES NOTED AS 'M' TO BE RELOCATED FROM THEIR CURRENT LOCATION TO THEIR FINAL LOCATION AS SHOWN ON TE-5.1.

No.	Date	Issue/Revision
1	2024-04-22	ISSUED FOR CONSTRUCTION
2	2024-04-22	REVISED CONSTRUCTION
3	2024-04-27	ISSUED FOR TENDER
4	2024-04-28	ISSUED FOR POINT/INDEX
5	2024-04-28	ISSUED FOR BIDDING
6	2024-04-28	ISSUED FOR BIDDING
7	2024-04-28	ISSUED FOR BIDDING
8	2024-04-28	ISSUED FOR BIDDING
9	2024-04-28	ISSUED FOR BIDDING
10	2024-04-28	ISSUED FOR BIDDING

PROJECT CONTACT

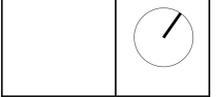
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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ELECTRICAL SPECIFICATION SUBMITTED FOR THIS PROJECT.

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No. Date Issue/Revision



Robarts 5th Floor MDL Renovation

Title:
FIFTH FLOOR LIGHTING AND FIRE ALARM DEMOLITION LAYOUT

Project No. 08086.000 (MEAVD) Scale 1:100
 Drawing No.

TE-5.3

UNIVERSITY OF TORONTO, ROBARTS MDL

TORONTO, ONTARIO, 5TH FLOOR

AUDIO-VISUAL SYSTEMS DRAWINGS
ISSUED FOR AV TENDER- 2024-11-04

SCOPE ITEM	AUDIOVISUAL CONTRACTOR (A.V.C.)	ELECTRICAL CONTRACTOR (E.C.)	GENERAL CONTRACTOR (G.C.)	COMMUNICATIONS CONTRACTOR (C.C.)
AV SYSTEMS CONDUIT, BACKBOXES AND CABLE TRAYS	-	PROVIDE PULL-READY SYSTEM INCLUDING ALL CONDUIT, BACKBOXES AND CABLE TRAYS. ALL CONDUITS TO BE COMPLETE WITH PULLSTRING.	-	-
AV WALLBOX CONNECTOR PLATES, CUSTOM OR STANDARD	PROVIDE, FINISH PER ARCHITECT'S INSTRUCTIONS	-	-	-
AV SYSTEMS CABLE (LOW VOLTAGE, INCLUDING NETWORK CABLING FOR AV SYSTEMS)	PROVIDE	-	-	-
AC OUTLETS FOR DISPLAYS, PROJECTORS, AV EQUIPMENT, FLOORBOXES, ETC	-	PROVIDE	-	-
DIRECT POWER CONNECTIONS FOR AV SYSTEMS RACKS	PROVIDE DISTRIBUTION WITHIN RACK	PROVIDE POWER CIRCUITS AS REQUIRED AT LOCATIONS NOTED ON DRAWINGS. COORDINATE LOCATIONS WITH AV CONTRACTOR. PROVIDE SEPARATE NEUTRAL CONDUCTOR FOR EACH CIRCUIT.	-	-
LAN DROPS FOR OWNER SUPPLIED NETWORK	SPECIFY LOCATIONS AND COORDINATE WITH C.C.	-	-	PROVIDE. REFER TO COORDINATION MATRIX FOR LOCATIONS AND QUANTITIES
PATCH CABLING TO CLIENT NETWORK FOR AV DEVICES	INSTALL	COORDINATE CABLE TYPE REQUIREMENTS FOR SYSTEM WITH A.V.C.	-	SUPPLY
MILLWORK FURNITURE (TABLES, RACK ENCLOSURES, LECTERNS AND CREDENZAS)	FIT-UP MILLWORK WITH AV DEVICES, COORDINATE WITH DESIGNERS, E.C., E.C. AND FURNITURE/MILLWORK MANUFACTURER	PROVIDE POWER AND LAN CONNECTIVITY SHOWN ON DRAWINGS AND INSTALL ROUGH-INS AS REQUIRED	PROVIDE AND COORDINATE CUTOUTS, WIRING AND DEVICE PLACEMENTS	-
DISPLAY AND PROJECTOR MOUNTING	SUPPLY AND INSTALL STANDARD OR CUSTOM BRACKETS AS REQUIRED	-	PROVIDE BLOCKING AND MISCELLANEOUS METALS AS REQUIRED	-
AV SYSTEMS ELECTRONICS, HARDWARE, RACKS PERMANENT AND PORTABLE	PROVIDE, REUSE OWNER SUPPLIED EQUIPMENT AS NOTED	-	-	-
AV CONTROL SYSTEM PAGE DESIGN AND TESTING	PROVIDE, WRITE ALL PROGRAMMING CODE, DESIGN AND IMPLEMENT	-	-	-
REMOVAL OF EXISTING INSTALLED AUDIOVISUAL EQUIPMENT NOT PLANNED FOR REUSE	COORDINATE IF AV CONTRACTOR IS NOT ONBOARD, COORDINATE WITH AV CONSULTANT.	-	PROVIDE REMOVAL AND DISPOSAL	-

THE SCOPE OF WORK OF THE TRADES AS IT RELATES TO AUDIO VISUAL SYSTEMS IS DESCRIBED IN THE TABLE ABOVE. THE TERM "PROVIDE" MEANS "SUPPLY, INSTALL, TERMINATE, TEST AND COMMISSION"

2.1.000 DIVISION OF RESPONSIBILITY

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH OTHER CONSULTANT'S DRAWINGS AND SPECIFICATION. ANY DISCREPANCIES OR CONFLICT BETWEEN CONSULTANT'S DRAWINGS FOR A/V SCOPE, SHALL BE REPORTED TO S+A IMMEDIATELY FOR CLARIFICATION.
- ALL EQUIPMENT AND CABLING HAVE BEEN SHOWN FOR DIAGNOSTIC PURPOSES ONLY. CONTRACTOR IS TO PROVIDE SHOP DRAWINGS FOR ALL HARDWARE, FIXTURES AND EQUIPMENT, FOR CONSULTANT'S APPROVAL PRIOR TO PURCHASE.
- ALL DEVICE LOCATIONS ARE SCHEMATIC ONLY. EXACT LOCATIONS SHOULD BE LOCATED USING ARCHITECTURAL OR INTERIOR DESIGN DRAWINGS. IF LOCATION IS UN-CLEAR A REQUEST FOR INFORMATION SHOULD BE ISSUED.
- CONTRACTOR TO ENSURE ALL WORK INSTALLATIONS ARE IN COMPLIANCE WITH ALL AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR MUST REVIEW SITE AND ENSURE ALL AV WORK WITHIN EXTENT IS INCLUDED IN THE AV CONTRACT.
- CARE AND ATTENTION SHALL BE MADE TO ALL DRAWING NOTES AND ITEMS INCLUDED WITHIN SPECIFICATION FOR INCLUSION IN SCOPE OF WORK. QUESTIONS OR CONCERNS SHALL BE REPORTED TO CONSULTANT BY THE BIDDER PRIOR TO BIDDING FOR TENDER. OTHERWISE, SUCCESSFUL BIDDER ASSUMES ALL RESPONSIBILITY FOR INCLUDING ALL EQUIPMENT AND PROVISIONS AS STATED WITHIN THE DRAWING AND SPECIFICATION PACKAGE IN SCOPE OF WORK.
- ALL EQUIPMENT INSTALLATIONS SHALL ADHERE TO EXACT MANUFACTURERS' SPECIFICATIONS AND REQUIREMENTS. ANY INSTALLATIONS NOT MEETING CORRECT INSTALLATION METHODS AS OUTLINED BY THE MANUFACTURER SHALL BE RECTIFIED TO OPERATE AS INTENDED AT THE EXPENSE OF THE CONTRACTOR.
- CONTRACTOR TO COORDINATE ON SITE WITH OTHER TRADES FOR EXACT LOCATION AND MOUNTING HEIGHTS OF REQUIRED BACKBOXES AND RECEIPTABLES FOR DISPLAYS, PROJECTORS, SPEAKERS AND OTHER AV EQUIPMENT. ALL RECEIPTABLES SHALL BE CONCEALED BEHIND EQUIPMENT.
- ALL EQUIPMENT MUST BE SECURELY FASTENED AND INSTALLED TO SUPPORT WEIGHT, USER FUNCTION AND OPERATION. SCREENS SHALL BE ANCHORED TO STUDS AND SUPPORTED BY THREADED RODS AND CHAIN LINKS. PROJECTOR POLE MOUNTS AND DISPLAYS SHALL ALSO BE ANCHORED TO STUDS, AS REQUIRED TO SUPPORT EQUIPMENT FUNCTION. CONTRACTOR TO WARRANT INSTALLATION FROM ANY IMPROPER INSTALLATION WITH NO EXPENSE TO THE USER.
- AV CONTRACTOR SHALL INCLUDE FOR ALL MISCELLANEOUS CONNECTORS, SIGNAL CONVERTERS, SIGNAL REPEATERS, EXPANSION MODULES, POLE EXTENDERS, SHELVEING, MOUNTING HARDSHIMS ETC. THAT IS NOT STATED BUT IS REQUIRED TO COMPLETE THE SCOPE OF WORK AND PROVIDE THE SYSTEM FUNCTIONALITY AS WAS INTENDED WITH NO DEGRADATION IN QUALITY AND PERFORMANCE. ANY CONCERNS WITH RESPECT TO EQUIPMENT NOT INCLUDED WITHIN THE SCOPE OF WORK SHALL BE REPORTED TO THE CONSULTANT PRIOR TO TENDER CLOSE FOR INCLUSION. FAILURE TO DO SO WILL BE AT THE EXPENSE OF THE BIDDER/SUCCESSFUL CONTRACTOR DURING CONSTRUCTION AND EXTRAS WILL NOT BE TOLERATED.
- REVIEW ALL PROJECT RELATED ARCHITECTURAL, MECHANICAL, ELECTRICAL, COMMUNICATIONS AND SECURITY DRAWINGS AND SPECIFICATIONS, DISCERN AND COORDINATE ALL OVERLAPPING WORK WITH AUDIOVISUAL SYSTEMS TO AVOID COLLISIONS AND CONFLICTS OF DEVICES.
- DEVICES SHALL NOT BE INSTALLED IN WALL AREAS THAT ARE DESIGNATED TO HAVE WAINCO BOARD, FABRIC PANELS, OR ACCENT FINISHES/DETAIL UNLESS INDICATED SPECIFICALLY ON AN ELEVATION DRAWING.
- DEVICES SHALL NOT BE INSTALLED ABOVE ANY FURNITURE - AND SHALL BE LOCATED WHERE THERE IS ADEQUATE ACCESS FOR USE UNLESS INDICATED SPECIFICALLY ON AN ELEVATION DRAWING.
- INFORM THE ENGINEER'S REPRESENTATIVE AND GC OF ALL DEVICE AND FURNITURE CONFLICTS PRIOR TO INSTALLATION. OBTAIN RESOLUTION TO DEVICE AND FURNITURE CONFLICTS FROM THE ENGINEER'S REPRESENTATIVE PRIOR TO INSTALLATION.

4.1.000 GENERAL NOTES - AUDIOVISUAL BIDDER INFORMATION

SYMBOL	DESCRIPTION
	AUDIO VISUAL SYSTEM
	DEVICE IDENTIFICATION NUMBER
	AV EQUIPMENT RACK RACK "10" DESIGNATION: "AV" = FREE STANDING EQUIPMENT RACK, "CR" = CREDENZA RACK, "RC" = RACK ON CASTERS.
	WALL MOUNT FLAT PANEL DISPLAY. DISPLAY "TAG" DESIGNATION: "FPD" = FLAT PANEL DISPLAY. "INT" = INTERACTIVE DISPLAY. "DS" = DIGITAL SIGNAGE DISPLAY. "MW" = MEDIA WALL DISPLAY(S). SEE DRAWING FOR QUANTITIES. NOTE: "XX" DENOTES SCREEN SIZE (IN INCHES)
	CEILING MOUNT FLAT PANEL DISPLAY. DISPLAY "TAG" DESIGNATION: "PMD" = POLE MOUNT FLAT PANEL DISPLAY. "PPD" = POLE MOUNT DUAL FLAT PANEL DISPLAYS. NOTE: "XX" DENOTES SCREEN SIZE (IN INCHES)
	WALL MOUNT AV INTERFACE. "TAG" DESIGNATION: "RSD" = ROOM SCHEDULING DISPLAY. "MRD" = MEETING ROOM DISPLAY. "CTL" = TOUCH CONTROL PANEL. NOTE: "XX" DENOTES SCREEN SIZE (IN INCHES)
	BUTTON CONTROL PANEL BY AUDIOVISUAL CONTRACTOR. "TAG" DESIGNATION: "BP" = BUTTON PANEL. "VC" = VOLUME CONTROL. "SC" = SCREEN CONTROL (FOR PROJECTION SCREENS).
	FLOORBOX CONNECTION FOR TABLETOP CONNECTIVITY.
	WALL MOUNT AV CAMERA.
	CEILING MOUNT AV CAMERA.
	PROJECTOR.
	PROJECTOR ON LIFT.
	PROJECTION SCREEN. NOTE: "XX" DENOTES SCREEN SIZE (IN INCHES)
	CEILING RECESSED SPEAKER. "TAG" DESIGNATION: "S" = AV SPEAKER. "PDS" = PAGING SPEAKER.
	SURFACE MOUNT SPEAKER. "TAG" DESIGNATION: "S" = AV SPEAKER. "PDS" = PAGING SPEAKER.
	WALL MOUNT ANTENNA. "TAG" DESIGNATION: "ANT" = MICROPHONE ANTENNA. "ALS" = ASSISTIVE LISTENING ANTENNA.
	CEILING MOUNT ANTENNA. "TAG" DESIGNATION: "ANT" = MICROPHONE ANTENNA. "ALS" = ASSISTIVE LISTENING ANTENNA.
	CEILING MOUNT MICROPHONE.
	OCCUPANCY SENSORS.
	PARTITION SENSORS.
	AV MUDRING AV INPUT PLATE. (1 GANG) (2 GANG)
	AV BACKBOX. (1 GANG) (2 GANG) (3 GANG)
	AV CABLE PULL BOX BY ELECTRICAL CONTRACTOR. SIZE DESIGNATION: "6X6" = 6X6X6 AV CABLE PULL BOX. "12X12" = 12X12X6 AV CABLE PULL BOX.

NOTE: NOT ALL SYMBOLS APPLY, REFER TO FLOOR PLANS AND DRAWINGS.
REFER TO AV COORDINATION MATRIX OR AV CONSULTANT DRAWINGS FOR BACKBOX SIZE, MOUNTING HEIGHT AND ALL INFRASTRUCTURE REQUIREMENTS.

2.1.000 AUDIO-VISUAL LEGEND

Sheet List Table	
Sheet Number	Sheet Title
AV000	AV DRAWING LIST, LEGENDS & NOTES
AV001	AV COORDINATION MATRIX
AV105A	5th FLOOR AV DEVICE FLOOR PLAN
AV105B	5th FLOOR AV DEVICE RCP
AV200	AV ELEVATIONS
AV300	AV CONDUIT NOTES
AV301	AV RISER DIAGRAMS
AV400	AV DETAILS
AV500	AV FUNCTIONALS
AV501	AV FUNCTIONALS

2.1.000 DRAWING LIST

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1. 2024.11.04 ISSUED FOR AV TENDER
No. Date Issue/Revision

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No. Date Issue/Revision

Robarts 5th Floor MDL Renovation

Title:
AV DRAWING LIST, LEGENDS & NOTES

Project No.08086.000(MEAVD) Scale AS NOTED
Drawing No.

AV000

AUDIOVISUAL				ELECTRICAL							COMMUNICATION	MECHANICAL	GENERAL	
DEVICE DETAILS				REQUIREMENTS			RECEPTACLES				OWNER SUPPLIED NETWORK DROPS	HEAT LOAD	NOTES	
SYMBOL NAME	SYMBOL	ID	MOUNTING HEIGHT (TO CENTRE LINE)	AV BACKBOX/MIDRING SIZE	BACKBOX/MIDRING MOUNTING HEIGHT	VOLTAGE [V]	CURRENT [A]	UNIT POWER [W]	GROUND TYPE	TYPE	QUANTITY	HEAT [BTU]		
55" WALL MOUNT DIGITAL SIGNAGE DISPLAY (PORTRAIT)		DS1	1500mm (59") AFF	-	1935mm (76") AFF	120	2	240	NORMAL	5-15R	(1)QUAD	(2)NETWORK DROPS	818.88	POWER AND DATA ONLY
55" WALL MOUNT FLAT PANEL DISPLAY		FPD1	1575mm (62") AFF	(1)2 GANG AV MIDRING	1780mm (70") AFF	120	2	240	NORMAL	5-15R	(1)QUAD	(2)NETWORK DROPS	818.88	
75" WALL MOUNT FLAT PANEL DISPLAY		FPD2	1700mm (67") AFF	(1)2 GANG AV MIDRING	1955mm (77") AFF	120	4	480	NORMAL	5-15R	(1)QUAD	(2)NETWORK DROPS	1637.76	
110" WALL MOUNT FLAT PANEL DISPLAY		FPD3	1925mm (76") AFF	(1)2 GANG AV MIDRING	2355mm (93") AFF	120	5	600	NORMAL	5-15R	(1)QUAD	(2)NETWORK DROPS	2047.00	
43" WALL MOUNT FLAT PANEL DISPLAY		FPD4	1310mm (51.6") AFF	(1)2 GANG AV MIDRING	1500mm (59") AFF	120	1	120	NORMAL	5-15R	(1)QUAD	(2)NETWORK DROPS	409.44	
110" WALL MOUNT FLAT PANEL DISPLAY		FPD5	1925mm (76") AFF	(1)2 GANG AV MIDRING	2355mm (93") AFF	120	5	600	NORMAL	5-15R	(1)QUAD	(2)NETWORK DROPS	2047.00	
WALL MOUNT PTZ CAMERA		CAM1	2130mm (84") AFF	(1)2 GANG AV MIDRING	2130mm (84") AFF	-	-	-	-	-	-	-	-	-
CEILING MOUNT PTZ CAMERA		CAM2	AT FINISHED CEILING	-	-	-	-	-	-	-	-	-	-	-
AV WALLPLATE AV INPUT		AV1	AT RECEPTACLE HEIGHT	(1)2 GANG AV MIDRING	AT RECEPTACLE HEIGHT	120	1	120	NORMAL	5-15R	(1)DUPLX	(2)NETWORK DROPS	409.44	
AV WALLPLATE VIDEO INPUT		AV2	917mm (36") AFF	(1)1 GANG AV MIDRING	917mm (36") AFF	120	1	120	NORMAL	5-15R	(1)DUPLX	(2)NETWORK DROPS	409.44	
CEILING RECESSED SPEAKERS		S1	AT FINISHED CEILING	-	-	-	-	-	-	-	-	-	-	-
WIRELESS MIC ANTENNA		ANT1	AT FINISHED CEILING	(1)1 GANG AV BACKBOX	AT FINISHED CEILING	-	-	-	-	-	-	-	-	-
ASSISTIVE LISTENING SYSTEM ANTENNA		ANT2	AT FINISHED CEILING	(1)1 GANG AV BACKBOX	AT FINISHED CEILING	-	-	-	-	-	-	-	-	-
CEILING MICROPHONE		MC	AT FINISHED CEILING	-	-	-	-	-	-	-	-	-	-	-
CREDENZA RACK		RACK1	ON THE FLOOR	(1)3 GANG OPENING AT ELECTRICAL FLOORBOX	AT RECEPTACLE HEIGHT	120	10.00	1200	ISOLATED	5-20R	(2)DUPLX	(4)NETWORK DROPS	3100	DEDICATED CIRCUITS REQUIRED, WITH ISOLATED GROUND, FIRE ALARM, LIGHTING INTERCONNECTION REQUIRED.

AV DEVICE MATRIX

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1. 2024.11.04 ISSUED FOR AV TENDER
No. Date Issue/Revision

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Robarts 5th Floor MDL
Renovation

Title:
AV COORDINATION
MATRIX

Project: No.08086.000.MEAVD | Scale: AS NOTED
Drawing No.

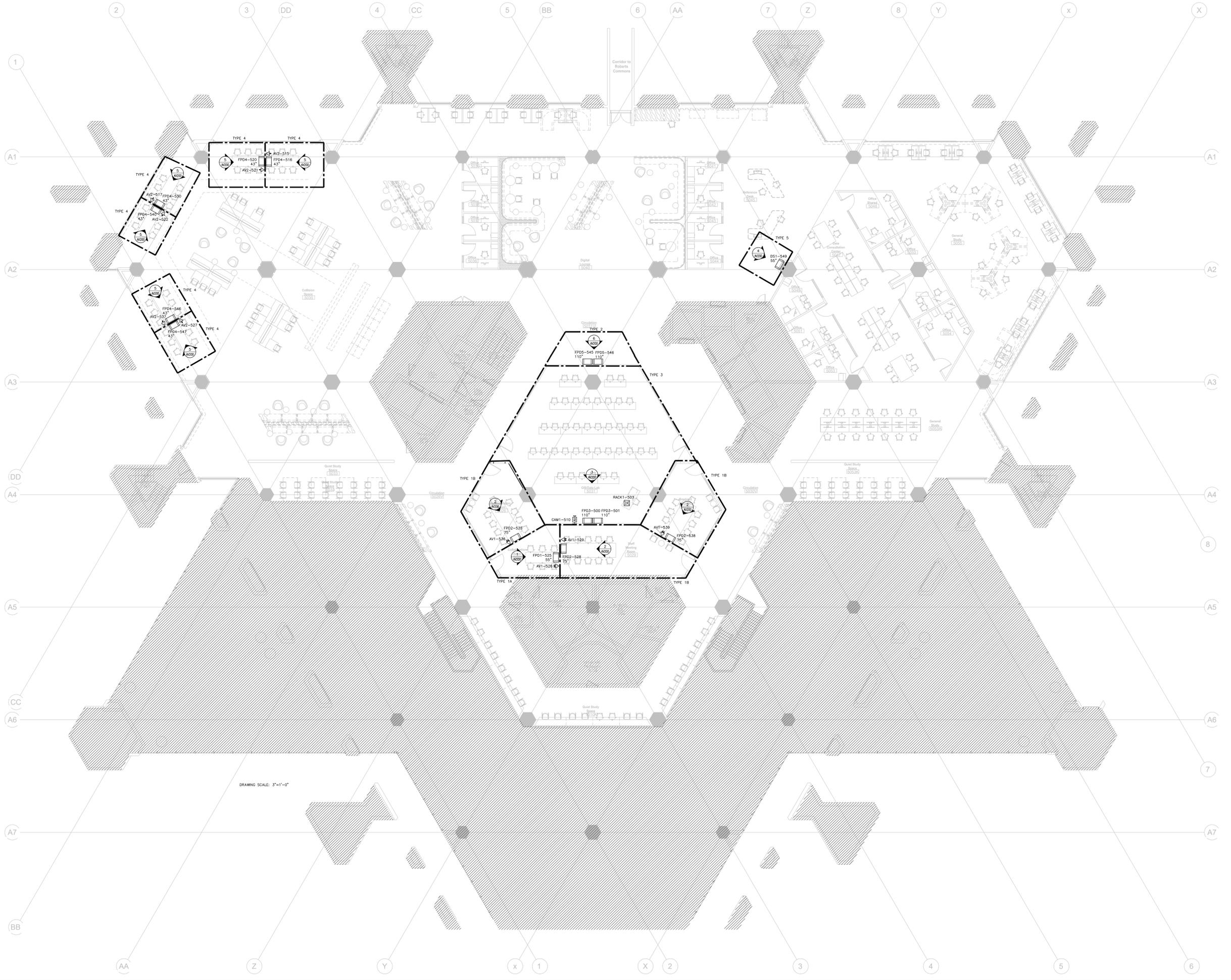
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No. Date Issue/Revision

Roberts 5th Floor MDL Renovation

Title:
5th FLOOR AV DEVICE FLOOR PLAN

Project: No.08086.000 MEAVD | Scale: AS NOTED
Drawing No.

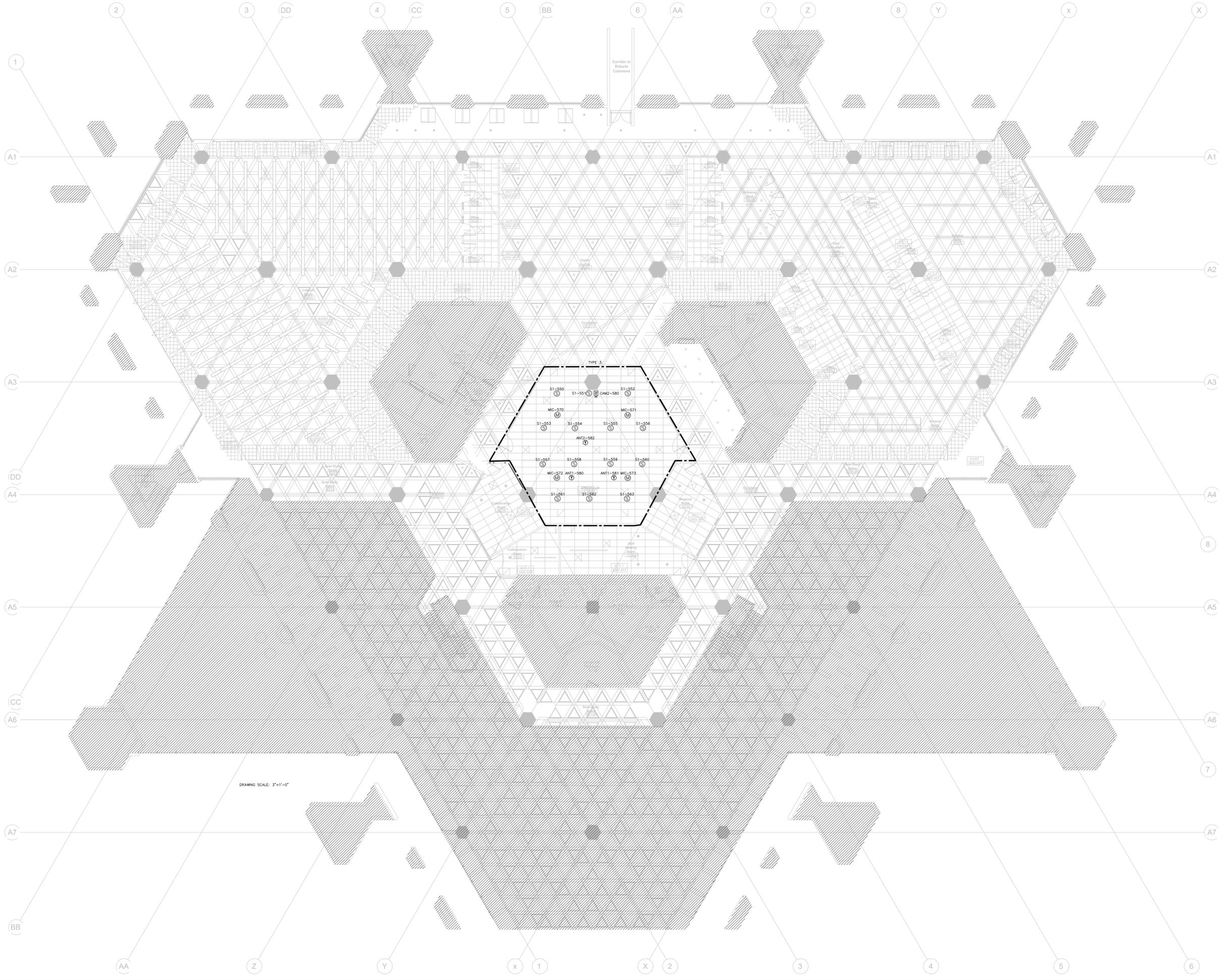
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DRAWING SCALE: 3/8"=1'-0"

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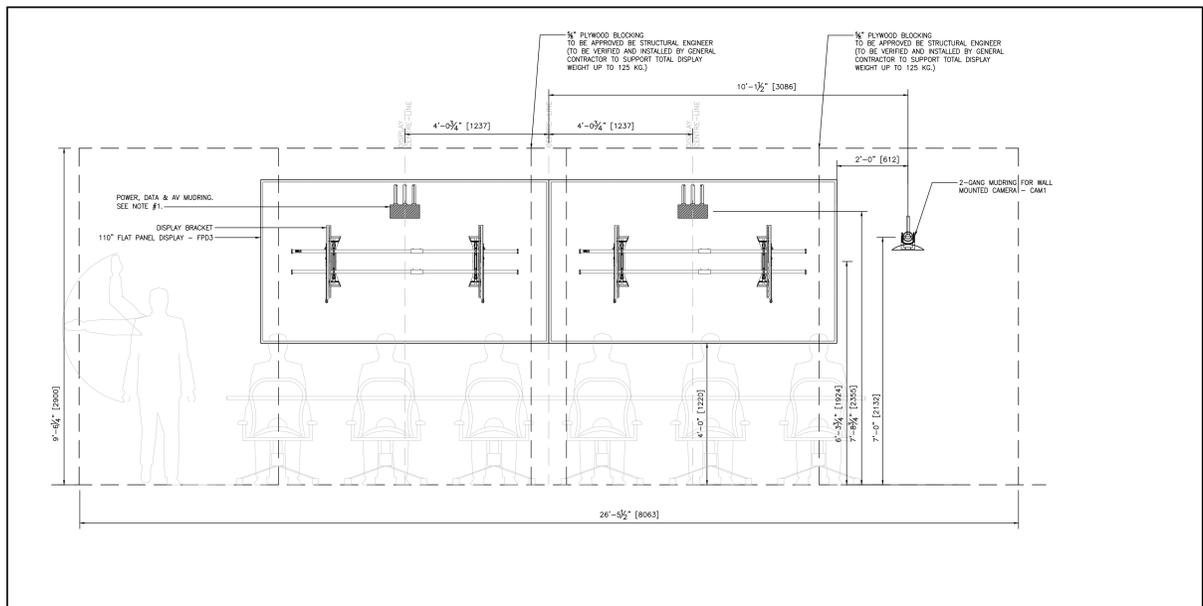


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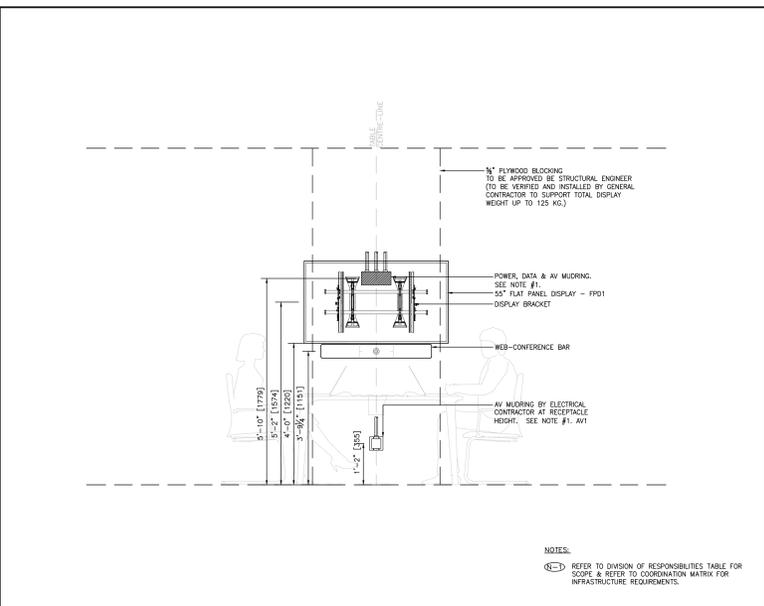
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5th FLOOR AV DEVICE RCP

Project: No.08086.000 MEAVD | Scale: AS NOTED
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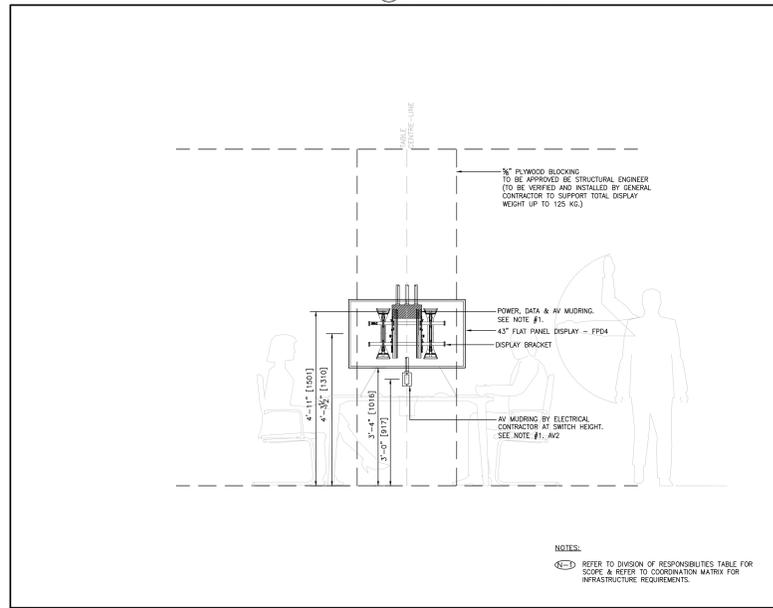
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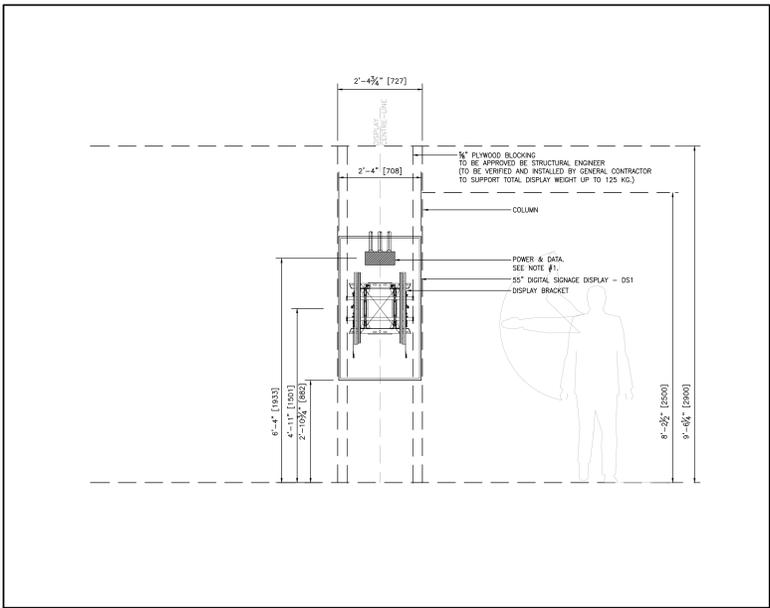
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2020 TYPE 3 - TEACHING LAB
TYPICAL AV DEVICE ELEVATION



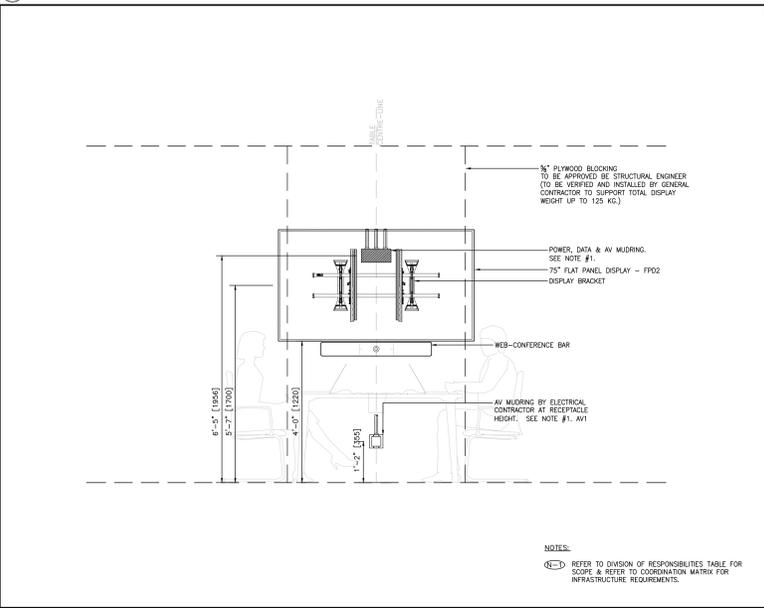
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2020 TYPE 1A - COLLABORATION ROOM
TYPICAL AV DEVICE ELEVATION



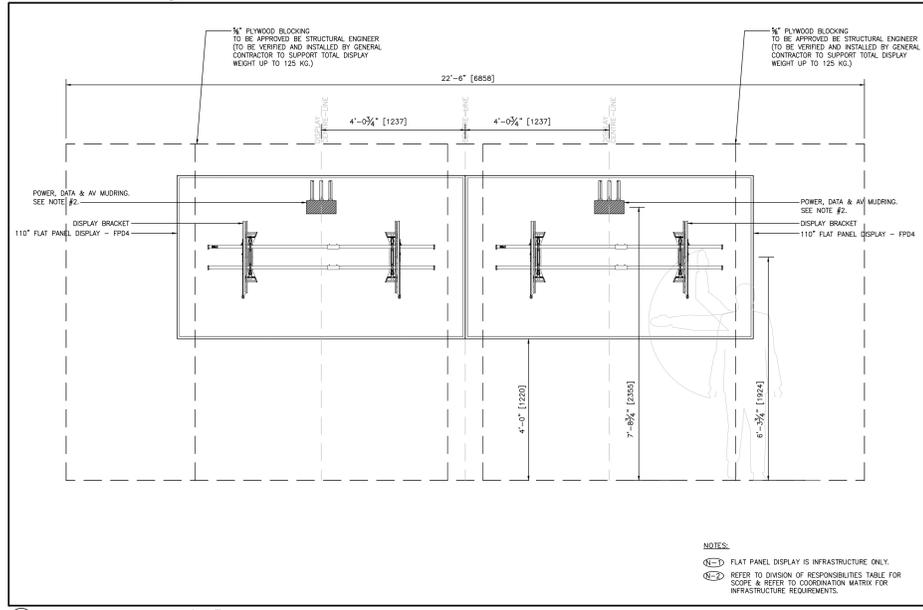
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2020 TYPE 4 - OPEN COLLABORATION TABLES
TYPICAL AV DEVICE ELEVATION



4
2020 TYPE 5 - DIGITAL SIGNAGE
TYPICAL AV DEVICE ELEVATION



2
2020 TYPE 1B - COLLABORATION ROOM
TYPICAL AV DEVICE ELEVATION



2
2020 TYPE 2 - DIGITAL LOUNGE (110')
TYPICAL AV DEVICE ELEVATION

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NOTES:
REFER TO DIVISION OF RESPONSIBILITIES TABLE FOR SCOPE & REFER TO COORDINATION MATRIX FOR INFRASTRUCTURE REQUIREMENTS.

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No. Date Issue/Revision

Robarts 5th Floor MDL Renovation

Title:
AV ELEVATIONS

Project: No.08086.000(MEAVD) Scale: AS NOTED
Drawing No.

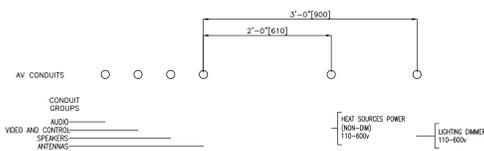
AV200

AUDIO-VISUAL CONDUIT SEPARATION CRITERIA

1. DO NOT RUN AV CONDUITS PARALLEL TO AC AND LIGHTING CONDUITS. WHERE RUNS ARE PARALLEL, ADHERE TO THE SEPARATION SHOWN BELOW:

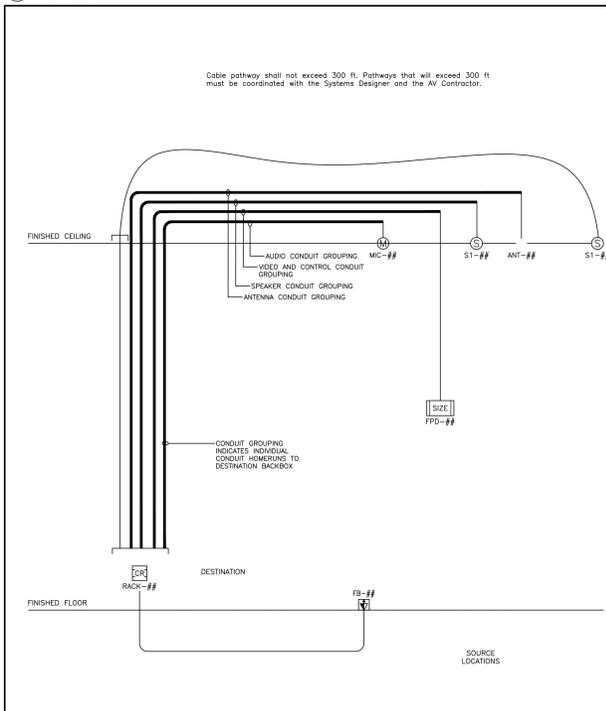
LENGTH OF RUN PARALLEL TO HIGH VOLTAGE CONDUITS meters (feet)	MIN. SEPARATION OF AV CONDUITS FROM AC CONDUITS mm (inch)	MIN. SEPARATION OF AV CONDUITS FROM DIMMER CONDUITS mm (inch)
<= 1.8 (6)	150 (6)	228 (9)
1.8 (6) to 9.1 (30)	300 (12)	406 (16)
>= 9.1 (30)	600 (24)	812 (32)

2. WHERE SYSTEM CONDUITS ARE RUN TOGETHER AND PARALLEL THEY SHALL BE IN THE FOLLOWING ORDERED SEQUENCE, STARTING AT THE SIDE FURTHEST FROM AC CONDUITS:



- WHERE AUDIO-VISUAL CONDUITS CROSS HIGH VOLTAGE CONDUITS, CROSSINGS SHOULD BE AS CLOSE TO 90° AS POSSIBLE.
- AV CONDUITS CONTAINING MICROPHONE CABLE SHOULD BE RUN AS FAR AS POSSIBLE FROM HIGH VOLTAGE CONDUITS. WHEN MULTIPLE AV CONDUITS ARE PROVIDED, ENSURE CONDUIT DESIGNATED FOR MICROPHONE CABLE IS FURTHEST AWAY FROM HIGH VOLTAGE CONDUIT.
- NOTIFY AV CONSULTANT IF AV CONDUITS ARE TO BE RUN AT A DISTANCE CLOSER THAN RECOMMENDED SEPARATIONS.
- ALL DIMENSIONS ARE MINIMUM VALUES.
- FOR RUNS OF LENGTH GREATER THAN 75', DOUBLE ALL VALUES.
- IF NOT PHYSICALLY POSSIBLE TO PROVIDE THE SEPARATION SPECIFIED FOR PARALLEL RUNS FOR DISTANCES OVER 75' WRAP THE EXTERIOR OF THE SIGNAL CONDUIT IN 1/32" THICK LEAD SHEET.

3. AUDIO-VISUAL CONDUIT SEPARATION CRITERIA
SCALE: NTS



4. RISER DIAGRAM DEFINITION
SCALE: NTS

UNLESS NOTED ON RISER, PROVIDE THE FOLLOWING CONDUIT SIZES AND QUANTITY:

- ALL BUTTON PANEL CONDUITS ARE (1) 1" [27mm]
- ALL WALL PLATE CONDUITS ARE MINIMUM (1) 1.5" [41mm]
- ALL SPEAKER CONDUITS ARE MINIMUM (1) 1" [27mm]
- ALL ANTENNA CONDUITS ARE MINIMUM (1) 1.5" [41mm]
- ALL FLOORBOX CONDUITS ARE MINIMUM (2) 1.5" [41mm]
- ALL DISPLAY CONDUITS ARE MINIMUM (1) 1" [27mm]
- ALL CONTROL PANELS ARE MINIMUM (1) 1" [27mm]
- ALL PROJECTORS ARE MINIMUM (1) 1" [27mm]
- ALL PROJECTION LIFTS ARE MINIMUM (1) 1.25" [35mm]
- ALL PROJECTION SCREENS ARE MINIMUM (1) 0.75" [21mm]

5. CONDUIT SIZES
SCALE: NTS

GENERAL

- SUPPLY AND INSTALL NETWORKS OF CONDUITS (INCLUDING PULLBOXES AND JUNCTION BOXES) AND BACKBOXES, READY FOR PULLING OF WIRE TO CAPTURE THE REQUIREMENTS SHOWN ON AV DRAWINGS.
- THE DESCRIPTION OF CONDUIT SYSTEMS AS SHOWN IN AV SCHEDULES AND RISERS IS SCHEMATIC ONLY AND IS INTENDED TO CONVEY THE REQUIREMENTS OF THE AV CONDUIT SYSTEM SUCH THAT THE AV SYSTEMS WILL FUNCTION CORRECTLY.

BACKBOXES

- THE TERM "BACKBOX" INCLUDES TERMINATION BOXES MOUNTED TO WALLS, CEILING AND IN FLOORS. ALL BACKBOXES TO BE SUPPLIED WITH UTILITY COVERS, FASTENED IN PLACE.
- THE DRAWINGS SHOW APPROXIMATELY WHERE BACKBOXES ARE TO BE LOCATED. FOR EXACT LOCATIONS, SEE ARCHITECTURAL DRAWINGS OR OBTAIN DIRECTION FROM THE ARCHITECT. THE LOCATIONS OF SOME PULL-BOXES AND JUNCTION BOXES ARE INDICATED FOR REFERENCE. THEIR EXACT LOCATIONS TO BE DETERMINED BY THE CONTRACTOR IN THE FIELD, SUBJECT TO THE REQUIREMENTS SHOWN HEREIN AND IN THE DRAWINGS.
- PROVIDE THAT THE SPACED REQUIREMENTS ARE MET. THE ELECTRICAL CONTRACTOR MAY USE ITS DISCRETION TO ADJUST THE DESIGN OF THE CONDUIT NETWORK TO CONFORM TO SITE CONDITIONS AND REALIZE ECONOMIES IN MATERIALS AND/OR PHYSICAL SPACE. EXAMPLE OF SUCH CONDITIONS ARE AS FOLLOWS:
 - ROUTING OF CONDUIT FROM POINT TO POINT MAY BE CHANGED TO RUN VIA AVAILABLE BUILDING LINES AND ACCESSIBLE AREA
 - WITH SHARE GROUPS, MANY SMALLER CONDUITS MAY BE COMBINED INTO FEWER LARGER CONDUITS THAT THE STATED FILL RATIO IS OBSERVED AND NET CAPACITY IS NOT REDUCED.

NOMENCLATURE

- CONSULT AV DRAWINGS FOR DETAILS OF BACKBOX INSTALLATION REQUIREMENTS (SIZE, MOUNTING HEIGHT, ETC.).
- EACH BACKBOX IS IDENTIFIED BY SYSTEM CODE ACCORDING TO THE AV SYSTEM(S) CABLES THAT WILL BE TERMINATED THERE.

SIZE

- UNLESS NOTED OTHERWISE, SIZE CONDUIT ACCORDING TO REQUIREMENTS OF WIRES TO BE CONTAINED THEREIN. THE QUANTITY AND TYPES OF CABLES SHALL BE PROVIDED BY THE AV CONTRACTOR.
- THE FILL RATIO SHALL NOT EXCEED 40%.

MATERIALS

- ALL BACKBOXES TO BE MANUFACTURED OF STEEL.
- ALL BACKBOXES TO BE 75MM (3") DEEP OR GREATER, EXCEPT CEILING LOUDSPEAKER BACKBOXES, WHICH ARE SPECIFIED SEPARATELY.
- ALL SUSPENDED BACKBOXES SHALL INCLUDE AT LEAST ONE REDUNDANT CHAIN TO BE FASTENED TO THE CEILING SLAB OR OTHER STRUCTURAL MEMBER FOR SEISMIC AND FIRE SAFETY PURPOSES. TENSION RATING OF CHAIN AND FASTENERS TO MEET CODE REQUIREMENTS.
- WHERE NOTED ON DRAWINGS, USE RIGID CONDUIT UP TO 2400MM (8'-0") ABOVE FINISHED FLOOR WHERE EXPOSED INDOORS AND SUBJECT TO DAMAGE. USE EPOXY COATED RIGID CONDUIT WHERE EXPOSED IN CORROSIVE AREAS INDOORS.
- UNLESS NOTED OTHERWISE, PVC CONDUIT, BUSHINGS AND CONNECTORS ARE NOT ACCEPTABLE.
- ALL EXPOSED SURFACE-MOUNTED GANGING BACKBOXES (i.e. MOUNTED TO EXPOSED CONCRETE COLUMNS OR WALLS) SHALL BE SIMILAR TO WIREMOLD 15744-SERIES, ALLOWING FOR ALL COVER PLATES TO NOT OVERHANG BACKBOX. STANDARD METAL ELECTRICAL BACKBOXES ARE NOT ACCEPTABLE.

INSTALLATION

- COORDINATE BACKBOX LOCATIONS AS REQUIRED WITH ELECTRICAL POWER RECEPTACLES AND LIGHT SWITCHES TO PRESENT A UNIFORM APPEARANCE TO THE SATISFACTION OF THE ARCHITECT.
- MOUNT SURFACE OR RECESSED ACCORDING TO LOCAL FINISH REQUIREMENTS, AT THE DISCRETION OF THE ARCHITECT.
- MARK BACKBOXES IN THE FIELD CONSISTENT WITH THE DRAWINGS FOR IDENTIFICATION PURPOSES. USE PERMANENT MARKER TO MARK ID AND SYSTEM CODE ON THE FACING SURFACE OF THE BACKBOX.
- COORDINATE CEILING BACKBOXES WITH OTHER SERVICES IN CEILING SUCH THAT BACKBOXES ARE CLEAR OF INTERFERENCES AND DIRECTLY ACCESSIBLE FROM BELOW.
- IN OPEN CEILING, WHERE CHAIN OR STRUT IS THE PRIMARY HANGING SUPPORT, ENSURE THAT LOUDSPEAKER ARE SUSPENDED PLUMB AND LEVEL AT CONSISTENT HEIGHT ABOVE FINISHED FLOOR.
- WHERE LOUDSPEAKER BACKBOXES WILL BE CONCEALED ABOVE PLASTER OR GYPSUM BOARD CEILING PRIOR TO INSTALLATION OF THE LOUDSPEAKERS, PROVIDE PULLSTRING SUSPENDED BELOW THE CEILING LINE TO INDICATE ITS LOCATION.
- ALL JUNCTION BOXES MUST BE ACCESSIBLE AFTER THE INSTALLATION OF WALL FINISHES AND OTHER PERMANENT BUILDING FEATURES.

CONDUIT ORGANIZATION

- UNLESS NOTED OTHERWISE, PROVIDE A SEPARATE NETWORK CONNECTING ALL BACKBOXES OF EACH SYSTEM, AS IDENTIFIED ON THE DRAWINGS.
- UNLESS NOTED OTHERWISE, PROVIDE CONDUIT TO JOIN EVERY BACKBOX TO THE NETWORK(S), WHETHER OR NOT THE CONDUIT IS SPECIFICALLY DESCRIBED HEREIN.

BONDING

- ALL CONDUIT, PULL BOXES AND JUNCTION BOXES TO BE CONTINUOUSLY GROUNDED BY MEANS OF BONDING STRAPS LINKING EACH ELEMENT.
- LOW VOLTAGE CONDUITS SHALL BE MECHANICALLY AND ELECTRICALLY ISOLATED FROM SOUND SYSTEM EQUIPMENT BACKS AT RACKS. USE ISOLATED CONNECTION, SUCH AS PVC BUSHING, SUCH THAT CONDUIT REMAINS ISOLATED FROM THE RACK. CONNECT LOW VOLTAGE CONDUITS WITH HEAVY INSULATED GROUND WIRE TO THE NEAREST GROUND OF A UTILITY PANEL.

PROXIMITIES AND ROUTING

- AV CONDUITS AND AC CONDUITS RUN IN PARALLEL SHOULD BE SEPARATED BY A DISTANCE OF 24" FOR RUNS LESS THAN 75'. FOR PARALLEL RUNS GREATER THAN 75' DOUBLE ALL VALUES.
- DO NOT RUN WIRING, RACETRAYS AND CONDUIT NEAR POWER TRANSFORMERS, LIGHTING DIMMERS, POWER CONTROL EQUIPMENT, HEAVY CURRENT SWITCHGEAR, FUSIBLES, FLUORESCENT BALLASTS, MOTORS, OR ANY OTHER EQUIPMENT WHICH PRODUCE EM.
- CROSS CONDUITS OF POWER SYSTEMS AT 90 DEGREES.
- UNUSUALLY HEAVY CURRENT DEMANDS IN ADJACENT CONDUIT OR LONG PARALLEL RUNS MAY DICTATE GREATER SEPARATION TO AVOID INTERFERENCE IN THE SOUND AND VIDEO. NOTIFY SUCH INSTANCES ON SITE AND CONSULT WITH ELECTRICAL CONSULTANT FOR RESOLUTION PRIOR TO INSTALLATION OF CONDUITS.
- WHERE CONDUIT CROSSES ACQUISICAL JOINTS, PROVIDE ISOLATION METHODS AS SHOWN IN ARCHITECTURAL DETAIL.
- CONDUIT EXPANSION FITTINGS TO BE PROVIDED WHEN CROSSING BUILDING EXPANSION JOINTS. CROSSING TO BE DONE AT 90 DEGREES TO JOINT.
- ALL WALL-MOUNTED PAGING LOUDSPEAKER AND ATTENUATOR BACKBOXES ARE TO BE SERVED BY CONDUIT ROUTED INTO CEILING SPACE ABOVE.

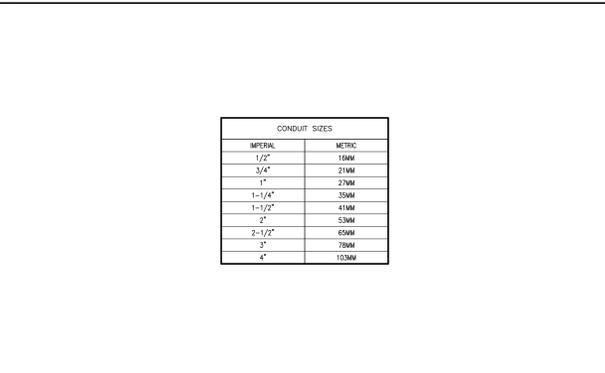
INSTALLATION

- BEND RADIUS OF CONDUIT MUST BE NO LESS THAN 10 (TEN) TIMES THE CONDUIT DIAMETER. BEND CONDUIT WITHOUT HEATING. REPLACE CONDUIT IF CHINCKED OR FLATTENED MORE THAN 1/10 OF THE ORIGINAL DIAMETER.
- MINIMUM DISTANCE BETWEEN TWO PULL BOXES TO INCLUDE A MAXIMUM OF 2 (TWO) 90 DEGREE BENDS OR EQUIVALENT UP TO 180 DEGREES, OR 20M (100') OF CONDUIT, WHICHEVER IS LESS.
- MARK ALL CONDUITS IN THE FIELD FOR IDENTIFICATION PURPOSES. FOR RISERS, SHOW SHARE GROUP LETTER AT EVERY JUNCTION BOX. FOR HORIZONTAL RUNS, SHOW DEVICE LOCATION ID AND SHARE GROUP LETTER AT EVERY JUNCTION BOX.

PULL STRINGS

- FOR PULL-STRINGS THROUGH ALL NETWORKS, AT EACH END OF EACH PULL-STRING, LABEL STRING WITH ID OF OTHER END. SECURE BOTH ENDS OF STRING TO CONDUIT OUTSIDE BACKBOX TO PREVENT IT FROM RE-ENTERING CONDUIT.
- WHERE LOUDSPEAKER BACK BOXES WILL BE CONCEALED ABOVE PLASTER OR GYPSUM BOARD CEILING PRIOR TO INSTALLATION OF THE LOUDSPEAKERS, PROVIDE PULL STRING SUSPENDED BELOW THE CEILING LINE TO INDICATE ITS LOCATION.
- FASTEN UTILITY COVERS TO ALL BACKBOXES.

1. AV CONDUIT AND BACKBOX NETWORK
SCALE: NTS



2. CONDUIT SIZES
SCALE: NTS

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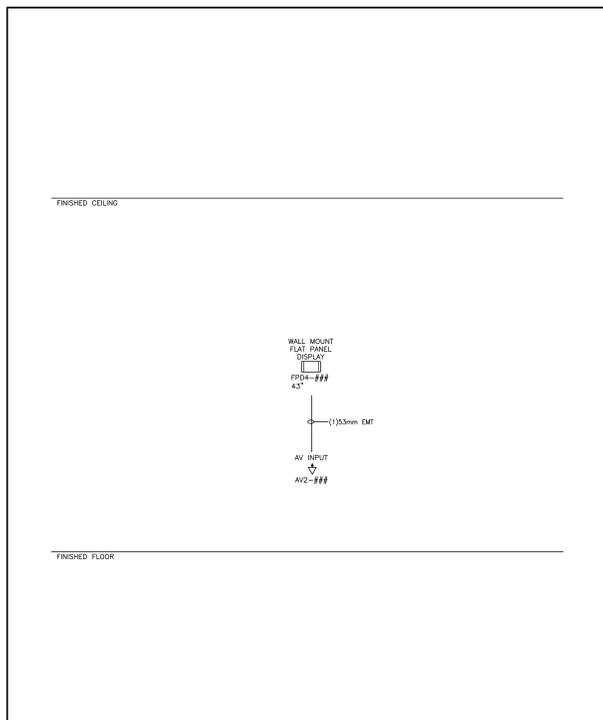


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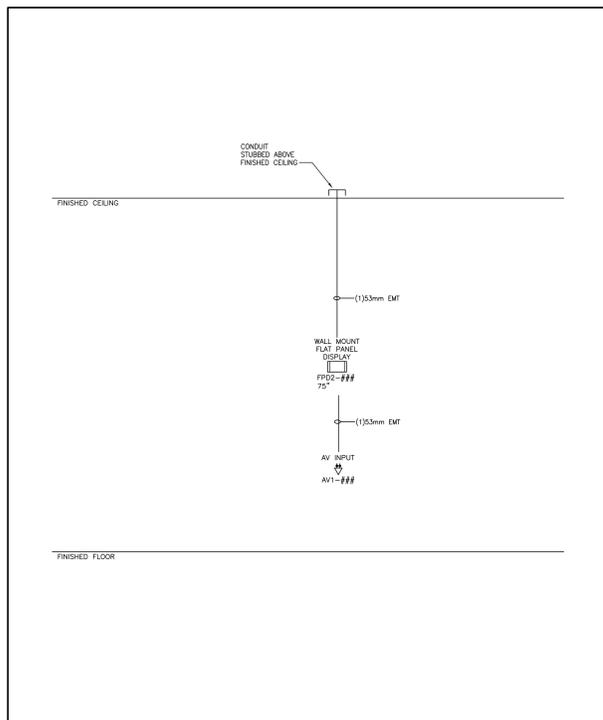
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Project: No.08086.000(MEAVD) Scale: AS NOTED
Drawing No.

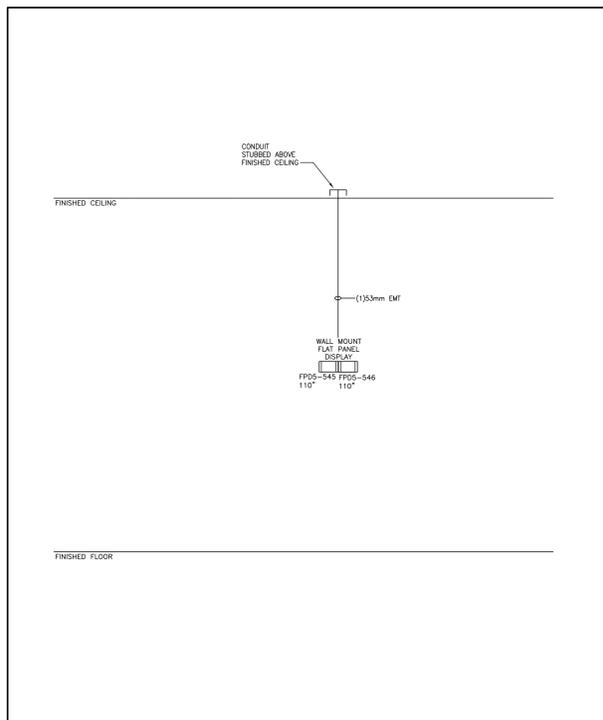
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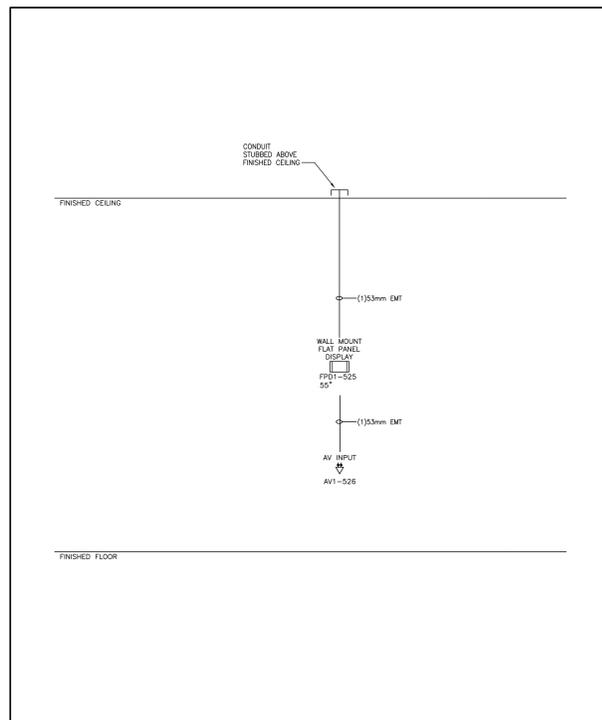
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0301 TYPE 4 - OPEN COLLABORATION TABLES
AV RISER DIAGRAM



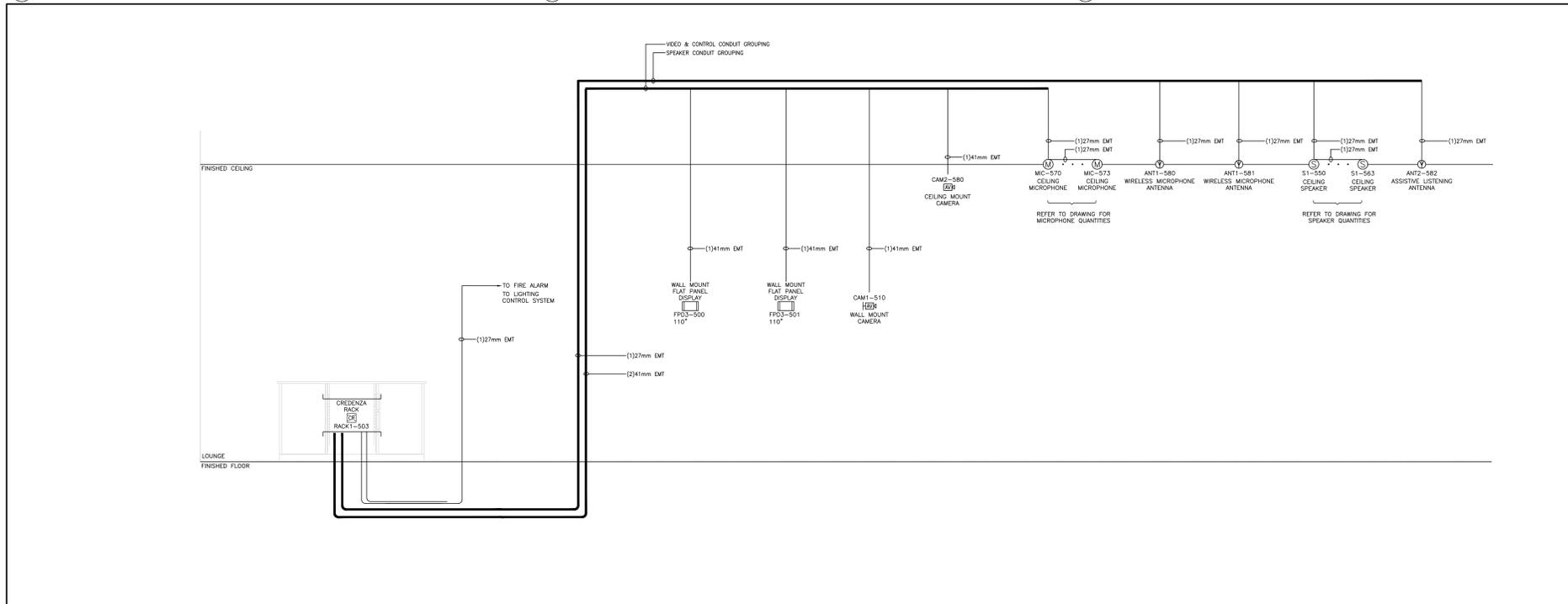
4
0301 TYPE 1B - COLLABORATION ROOMS
AV RISER DIAGRAM



3
0301 TYPE 2 - DIGITAL LOUNGE
AV RISER DIAGRAM



1
0301 TYPE 1A - COLLABORATION ROOM
AV RISER DIAGRAM



2
0301 TYPE 3 - TEACHING LAB
AV RISER DIAGRAM

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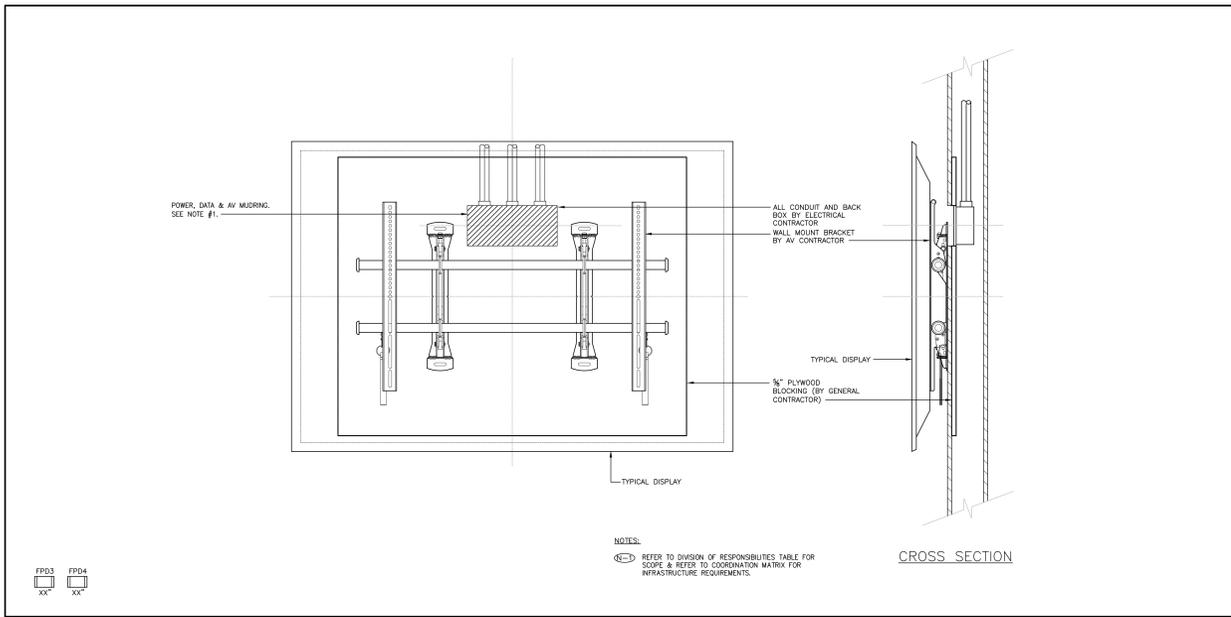
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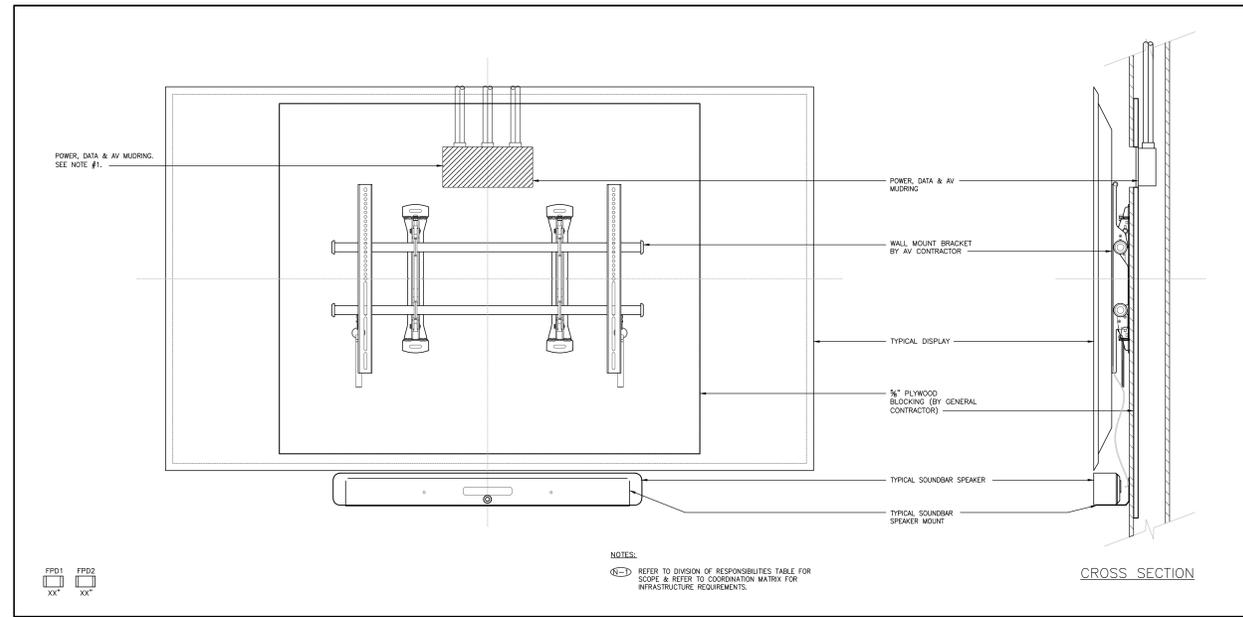
AV RISER DIAGRAMS

Project: No.08086.000(MEAVD) Scale: AS NOTED
Drawing No.

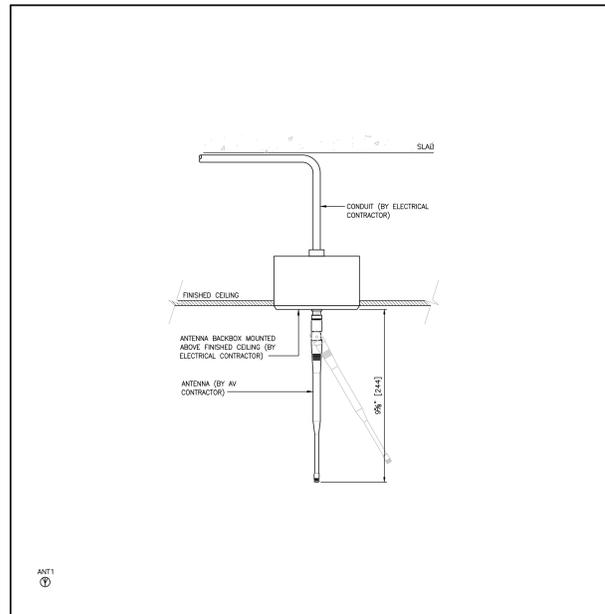
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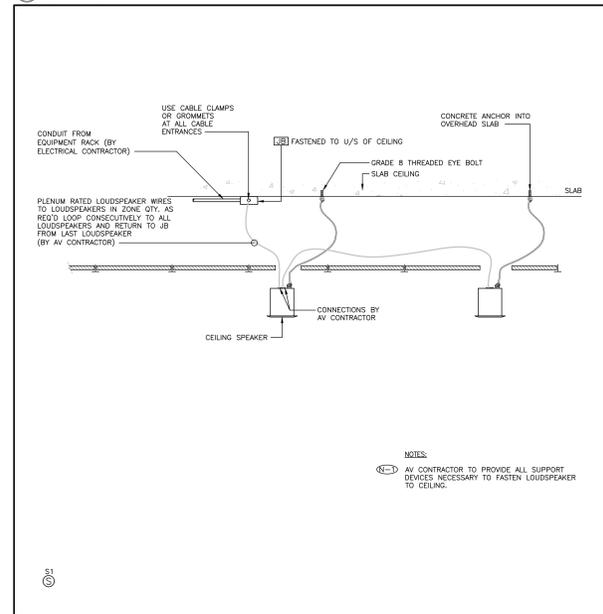
4 WALL MOUNT FLAT PANEL DISPLAY
SCALE: NTS



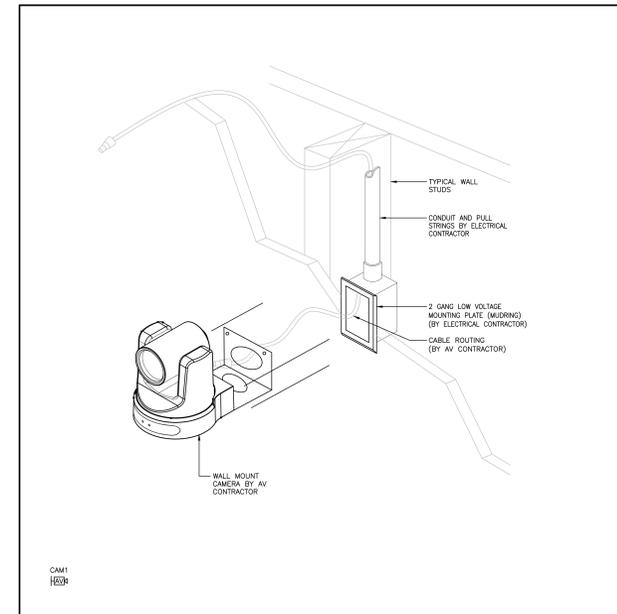
4 WALL MOUNT DISPLAY W/ SOUND BAR
SCALE: NTS



3 TYPICAL WIRELESS MICROPHONE ANTENNA
SCALE: NTS



3 TYPICAL CEILING SPEAKER INSTALLATION INTO TILE
SCALE: NTS



2 WALL MOUNT CAMERA
SCALE: NTS

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1. 2024.11.04 ISSUED FOR AV TENDER
No. Date Issue/Revision

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THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ADDITIONAL SPECIFICATION SUBMITTED FOR THIS PROJECT.

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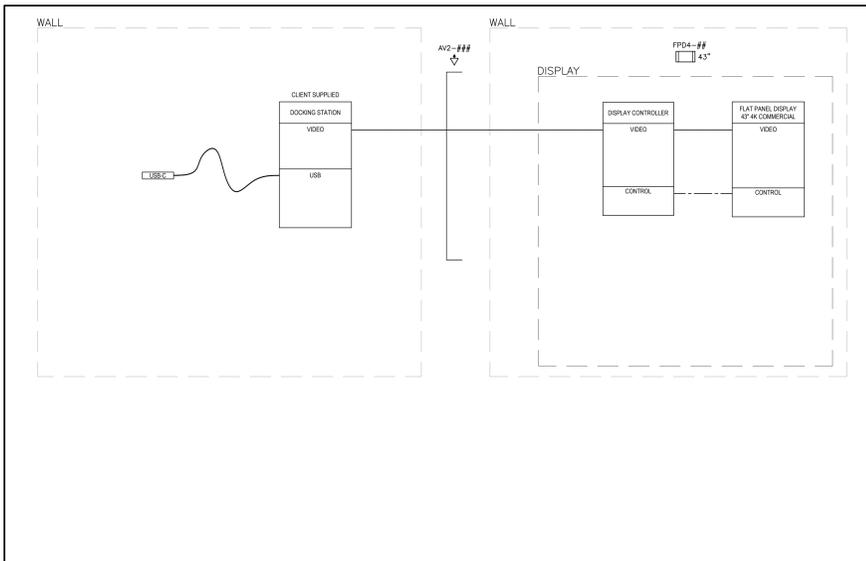
AV400

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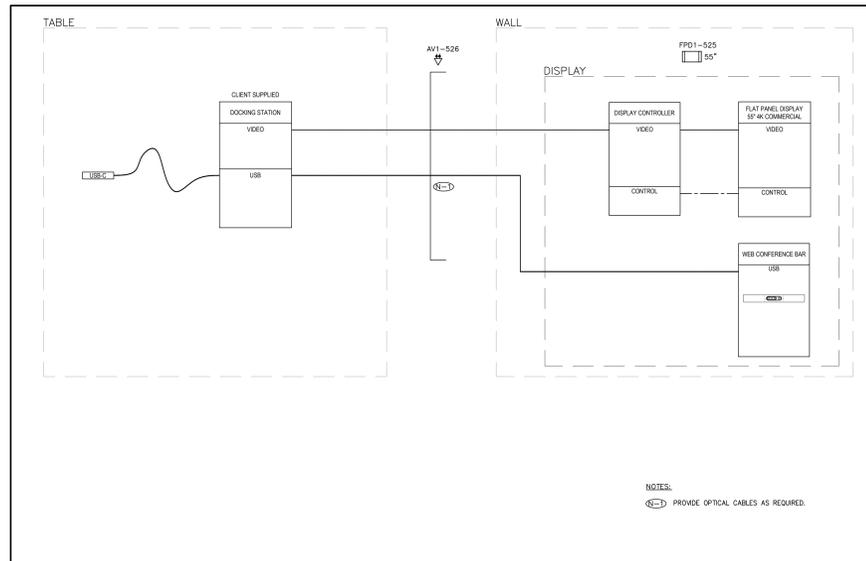
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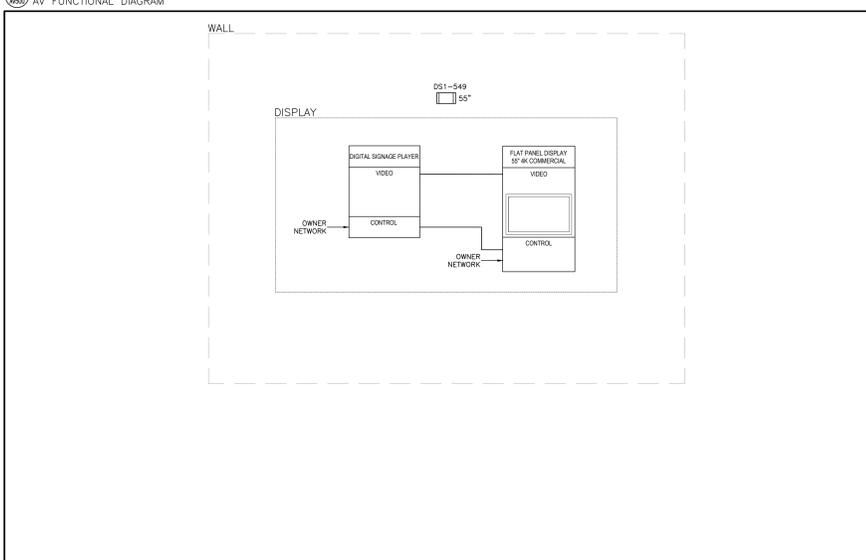
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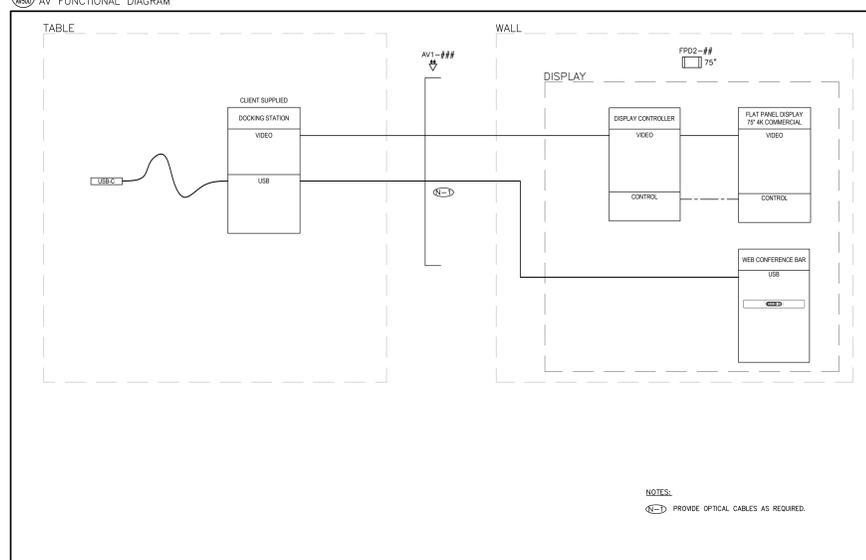
1 4200 TYPE 4 - OPEN COLLABORATION TABLES AV FUNCTIONAL DIAGRAM



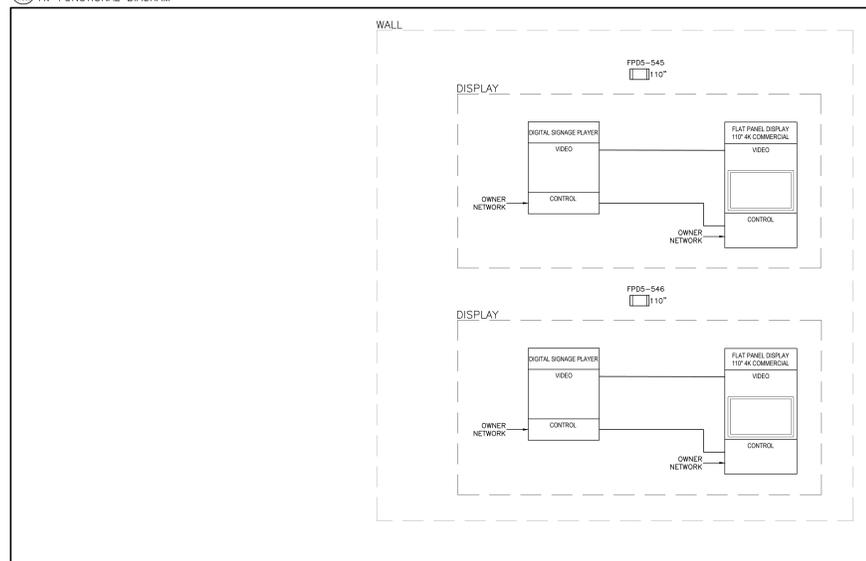
1 4200 TYPE 1A - COLLABORATION ROOM AV FUNCTIONAL DIAGRAM



2 4200 TYPE 5 - DIGITAL SIGNAGE AV FUNCTIONAL DIAGRAM



2 4200 TYPE 1B - COLLABORATION ROOM AV FUNCTIONAL DIAGRAM



3 4200 TYPE 2 - DIGITAL LOUNGE AV FUNCTIONAL DIAGRAM

LEGEND
 VIDEO
 AUDIO
 CONTROL
 USB

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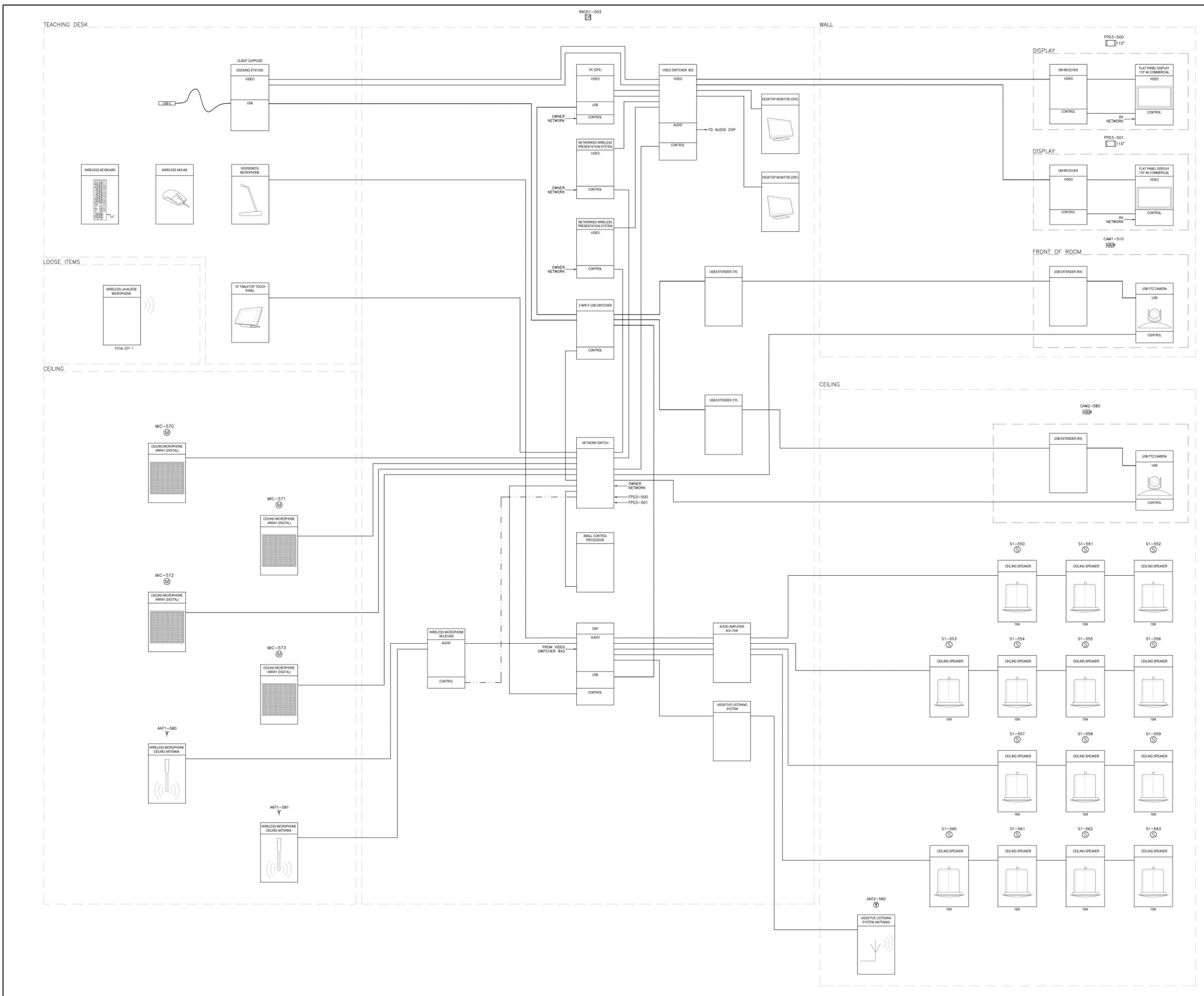


Robarts 5th Floor MDL Renovation

Title:
AV FUNCTIONALS

Project No.08086.000(MEAVD) Scale AS NOTED
 Drawing No.

AV500



3 TYPE 3 - TEACHING LAB
AV FUNCTIONAL DIAGRAM

LEGEND	
HDMI	—
VIDEO	—
AUDIO	—
CONTROL	—
USB	—

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AV501