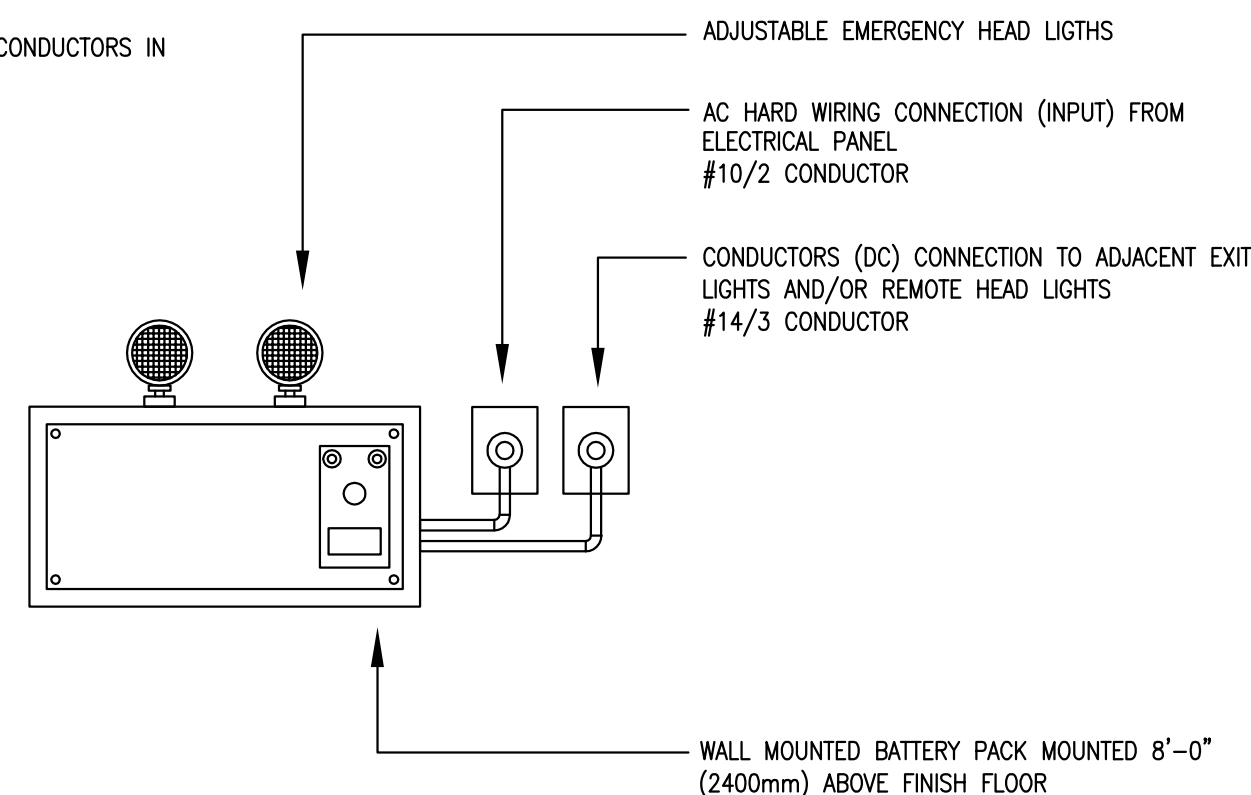


ELECTRICAL SPECIFICATIONS AND GENERAL NOTES

- PROVIDE ALL LABOR EQUIPMENT, AND MATERIAL REQUIRED FOR COMPLETE INSTALLATION AND TESTING OF THE ELECTRICAL SYSTEMS INDICATED ON THESE DRAWINGS. THE WORK SHALL BE LEFT COMPLETE AND IN SATISFACTORY OPERATION SUBJECT TO ELECTRICAL ENGINEER.
- EXAMINE THE SITE AND DRAWINGS TO VERIFY THAT THE WORK CAN BE PERFORMED AS INDICATED AND ADVISE ELECTRICAL ENGINEER OF ANY DISCREPANCIES.
- COMPLY WITH ALL APPLICABLE CODES AND STANDARDS OF AUTHORITIES HAVING JURISDICTION. SUBMIT REQUIRED DOCUMENTATION TO AUTHORITIES FOR APPROVAL AND/OR COMMENTS AND COMPLY WITH ANY REQUESTED CHANGES AS PART OF THE CONTRACT. IN NO CASE REDUCE STANDARD OF THESE SYSTEMS WHERE SHOWN IN EXCESS OF CODE REQUIREMENTS.
- APPLY FOR, OBTAIN, AND PAY FOR, ALL PERMITS, LICENSES, INSPECTIONS, AND EXAMINATIONS PERTINENT TO THE ELECTRICAL WORK. FORWARD TO THE OWNERS ON COMPLETION OF CONTRACT, THE FINAL UNCONDITIONAL ACCEPTANCE CERTIFICATE OF THE AUTHORITIES. ASSOCIATED COST TO BE INCLUDED IN BASE BID PRICE.
- C.S.A. APPROVED AND OF REASONABLE STANDARD AND QUALITY. WORKMANSHIP SHALL BE ACCEPTED STANDARD OF THE INDUSTRY.
- THESE DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL DETAILS OF THE INSTALLATION. HOWEVER, ANY DETAILS, CONNECTIONS AND OTHER WORK INFERRED FROM THESE DRAWINGS SHALL BE INCLUDED IN THIS CONTRACT.
- CONSTRUCTION OF THESE ELECTRICAL SYSTEMS SHALL BE SUBJECT TO SUPERVISION AND APPROVAL OF ELECTRICAL ENGINEER.
- TEMPORARY ELECTRICAL SERVICES WHERE REQUIRED SHALL BE PROVIDED BY THIS SUB TRADE. COST SHALL BE INCLUDED IN THE BASE BID PRICE.
- RACEWAYS GENERALLY SHALL BE CONCEALED IN BUILDING CONSTRUCTION BUT MAY BE EXPOSED IN UNFINISHED AREAS. CONDUIT SHALL BE E.M.T. WHERE ALLOWABLE BY CODE BUT SHALL BE R.G.S. ONLY IN SLAB ON GRADE OR WHERE POSSIBILITY OF DAMAGE IS PREVALENT. HEAVY WALL PLASTIC CONDUIT MAY BE USED BELOW GRADE IN ACCORD WITH CODE APPLICATIONS.
- WIRING GENERALLY SHALL BE COPPER CONDUCTOR TYPE T.W.H. MINIMUM #12 A.W.G. UNLESS OTHERWISE NOTED, OR REQUIRED BY CODE. BX CABLE AND NON METALLIC SHEATHED CABLE MAY BE USED ABOVE SUSPENDED CEILINGS AND IN PARTITIONS WHERE ALLOWABLE BY CODE. MINERAL INSULATED AND FLEXIBLE ARMORED CABLES WHERE INDICATED SHALL BE INSTALLED SUBJECT TO MANUFACTURERS INSTRUCTIONS. SINGLE CONDUCTOR UNITS SHALL BE INSTALLED TO PROVIDE FREE-AIR RATINGS. WIRE SIZES INDICATED ARE BASED ON COPPER CONDUCTORS. ALUMINUM CONDUCTORS MAY BE USED FOR SIZED OVER 60 A. RATING PROVIDED AMPERE RATINGS OF NOTED COPPER WIRING IS MAINTAINED.
- DISTRIBUTION EQUIPMENT SHALL BE AS MANUFACTURED BY SQUARE D OR EQUAL, HAVING ALL PROTECTIVE DEVICES, COMPLETE WITH FUSES CIRCUIT BREAKERS, ETC. AS NOTED.
- CLEARLY IDENTIFY ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT BY USE OF DYMDO LABELS AND COMPLETE PANEL BOARD DIRECTORIES ON INSIDE FACE OF PANEL BOARD DOORS.
- GROUNDING
ANY METAL STRUCTURE ROOF WILL BE BONDED AND CONNECTED TO GROUNDING SYSTEM
- BACKUP BATTERY SHALL BE PROVIDED FOR ALL EMERGENCY LIGHTS.
- COLOR CODING SHALL BE FOLLOWED
PHASE A RED ISOLATED GROUND GREEN
PHASE B BLACK CONTROL - ORANGE
PHASE C BLUE FIRE ALARM SYSTEM - RED
NEUTRAL WHITE GROUND - GREEN
- REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT. HVAC UNIT CIRCUIT BREAKERS AND FUSE RATING SHALL BE SELECTED BASED ON THE ACTUAL HVAC SELECTION. ALL MECHANICAL ITEMS TO BE INCLUDED IN BASE BID PRICE
- LEVITON DIMMERS SHALL BE USED OR EQUIVALENTS. ELECTRICAL ENGINEER SHALL APPROVE THE TYPE. DIMMERS SHALL BE SELECTED FOR INCANDESCENT FIXTURES AND FOR FLUORESCENT FIXTURES. DIMMER RATINGS SHALL BE 1000 VA DIMMER NUMBERS AND LOCATIONS SHALL BE FINALIZED BY THE OWNER REPRESENTATIVE. DIMMERS SHALL BE INSTALLED AS PER MANUFACTURE MANUALS AND INSTRUCTION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL INDICATING NUMBER OF LIGHTING FIXTURES PER EACH DIMMER. OUTDOOR LIGHTING AND SIGN BOARD SHALL BE CONTROLLED BY TIMER AND SWITCH. ROPE LIGHTING SHALL BE PROTECTED BY GFCI CIRCUIT.
- POWER OUTLETS SHALL BE RATED FOR 20 A, 120 VOLTS. SINGLE POWER OUTLET SHALL BE PROVIDED FOR EACH EMERGENCY LIGHT WITH BATTERY. FLOOR OUTLETS SHALL COMPLY TO ONTARIO ELECTRICAL CODE CONTRACTOR SHALL OBTAIN ELECTRICAL ENGINEER APPROVAL BEFORE DELIVERY THE OUTLETS TO THE SITE.
- MAIN CIRCUIT BREAKERS SHORT CIRCUIT CAPACITY SHALL NOT BE LESS THAN 12 KA. BOLTED TYPE CIRCUIT BREAKERS SHALL BE USED LABELS, DIRECTORY NUMBERS SHALL BE USED FOR EACH PANEL BOARD EACH POWER OUTLETS, LIGHTING POINTS, SWITCHES, DIMMERS, FANS AND HVAC UNITS SHALL BE PROVIDED BY TAG (LABEL) INDICATING PANEL BOARD NUMBER AND CIRCUIT NUMBER. LABELS SHALL BE INSTALLED INSIDE THE JUNCTION BOXES.
- EXIT LIGHTS
1. THIN PROFILE TYPE, CAST METAL FRAME WITH MATCHING FACEPLATE, ALUMINUM FINISH, CUTOUT DIRECTION WITH GREEN PLASTIC BACKING, COMPLETE WITH HIGH INTENSITY LED LAMPS FOR 120/347VAC OPERATION ON NORMAL POWER SUPPLY AND 12VDC FOR EMERGENCY OPERATION. EXIT FIXTURES TO BE SUITABLE FOR MOUNTING PICTOGRAM CONFORMING TO ISO STANDARD LUMACELL LER-400 SERIES.
- EMERGENCY LIGHTING UNITS
1. PROVIDE BATTERY OPERATED EMERGENCY LIGHTING IN ACCORDANCE WITH CSA C22.2 NO. 141 AND AS INDICATED FOR FULLY AUTOMATIC OPERATION ON POWER FAILURE FOR 12 VDC OPERATION WITH MINIMUM OPERATING TIME OF 30 MINUTES WITH ALL EXIT AND EMERGENCY LIGHTING OPERATION. LUMACELL RGS SERIES.
2. UNITS TO BE COMPLETE WITH LONG-LIFE SEALED LEAD ACID BATTERIES, 10 YEAR LIFE FULLY AUTOMATIC CHARGER WITH HIGH AND LOW RATES, BUILT-IN TEST SWITCH, HIGH RATE CHARGE INDICATOR, VOLTMETER, AMMETER, AND MOUNTING BRACKET. ENSURE CONDUCTOR SIZES TO REMOTE DEVICES ALLOW FOR RIGID STEEL CABINET WITH CORROSION RESISTANT UNDERCOATING A MAXIMUM 5% VOLTAGE DROP.
3. LIGHTING HEADS SHALL BE MR16 (4W) LED TYPE OTHERLESS NOTED RINK AREA- HIGHOUT MR16 (6W) LED, WATERPROOF FINISHED IN ALUMINUM. LUMACELL RG-NX SERIES.
- EMERGENCY LIGHTING & EXIT SIGN COMBINATION UNITS
1. EXTRUDED ALUMINUM BODY
SEALED LEAD CALCIUM BATTERY, AUTO TESTING FULLY AUTOMATIC OPERATION ON POWER FAILURE FOR 12 VDC OPERATION WITH MINIMUM OPERATING TIME OF 30 MINUTES WITH ALL EXIT AND EMERGENCY LIGHTING OPERATION. LUMACELL LAC SERIES.

NOTES:

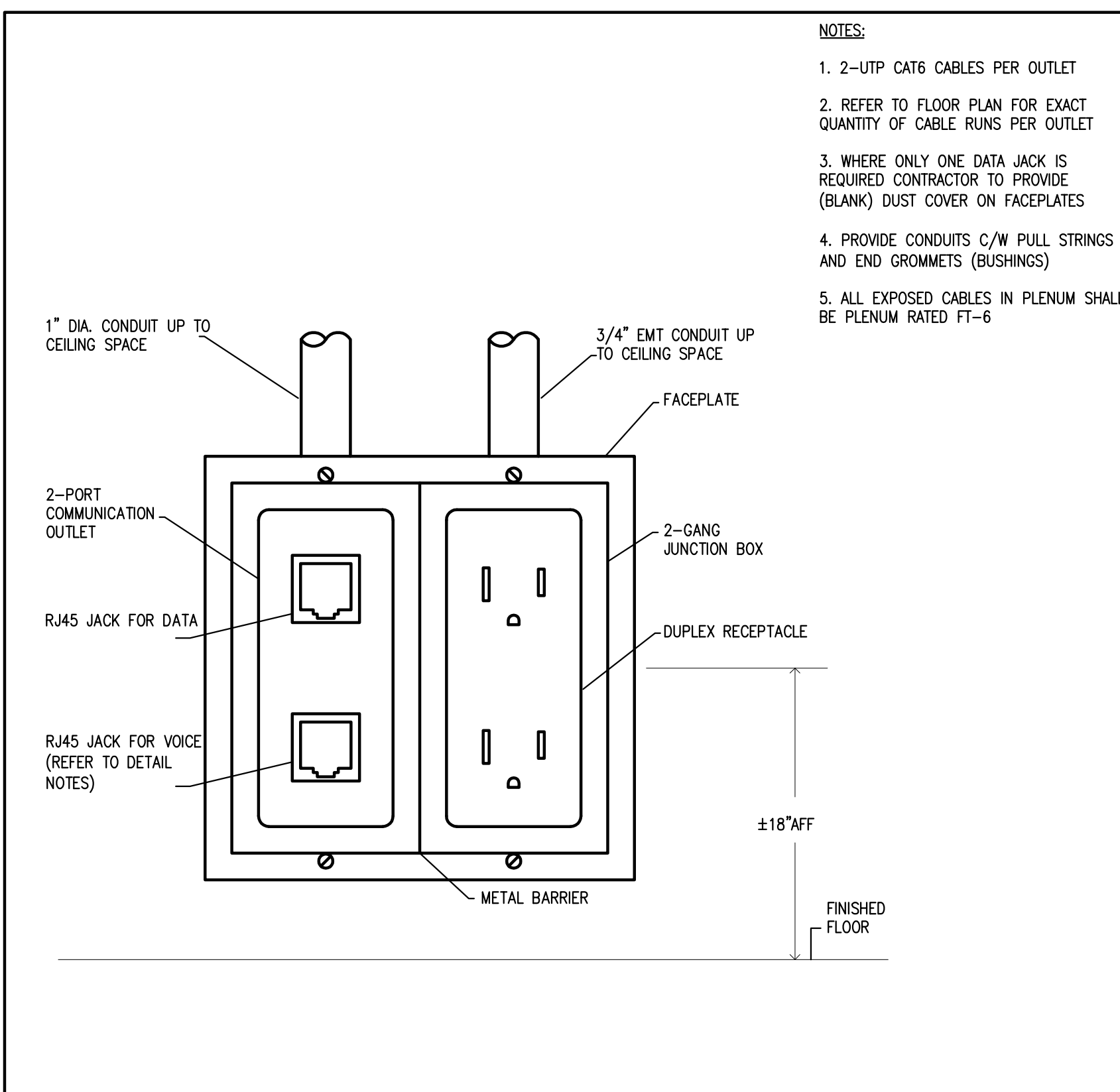
- SIZE CONDUCTORS TO REMOTE EXIT (LED) TO ALLOW MAXIMUM VOLTAGE DROP AS RECOMMENDED BY MANUFACTURER AND INDUSTRY STANDARDS.
- RUN ALL LOW VOLTAGE CONDUCTORS IN CONDUITS.



SYMBOLS:



1 WALL MOUNTED EMERGENCY BATTERY PACK DETAIL
E1 SCALE N.T.S.



NOTES:

- 2-UTP CAT6 CABLES PER OUTLET
- REFER TO FLOOR PLAN FOR EXACT QUANTITY OF CABLE RUNS PER OUTLET
- WHERE ONLY ONE DATA JACK IS REQUIRED CONTRACTOR TO PROVIDE (BLANK) DUST COVER ON FACEPLATES
- PROVIDE CONDUITS C/W PULL STRINGS AND END GROMMETS (BUSHINGS)
- ALL EXPOSED CABLES IN PLENUM SHALL BE PLENUM RATED FT-6

2 POWER & COMM OUTLET DETAIL
E1 SCALE N.T.S.

LEGEND	
SYMBOL	DESCRIPTION
	2'X2' CEILING MOUNTED LED FIXTURE
	2'X4' CEILING MOUNTED LED FIXTURE
	SIMILAR LUMINAIRE EXCEPT NIGHT LIGHT
	RECESSED MOUNTED LED FIXTURE
	LIGHT SWITCH LETTER DENOTES CIRCUIT CONNECTION
	3-WAY LIGHT SWITCH LETTER DENOTES CIRCUIT CONNECTION
	DIMMER SWITCH LETTER DENOTES CIRCUIT CONNECTION
	FIXTURE DESIGNATION - REFER TO SCHEDULE
	CEILING MOUNTED EMERGENCY EXIT SIGN
	WALL MOUNTED EMERGENCY EXIT SIGN
	SURFACE MOUNTED BATTERY PACK WITH REMOTE HEADS
	SURFACE MOUNTED REMOTE EMERGENCY HEADS
	WALL MOUNTED DUPLEX RECEPTACLE
	WALL MOUNTED DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER
	WALL MOUNTED DUPLEX RECEPTACLE GROUND FAULT INTERRUPTER
	WALL MOUNTED DEDICATED SPECIAL RECEPTACLE
	FAN FORCE ELECTRIC HEATER DIRECT CONNECTION, VOLT AND AMP AS SHOWN
	WALL MOUNTED COMBINATION DATA AND VOICE SWITCH
	CABLE TV OUTLET
	MOTOR CONNECTION WITH DISCONNECT SWITCH HORSEPOWER AND VOLT AS SHOWN
	WALL MOUNTED DISCONNECT SWITCH OUTLET
	EXHAUST FAN INTERCONNECTED TO LIGHT
	SURFACE MOUNTED ELECTRICAL PANELBOARD
	FIRE ALARM PULL STATION
	FIRE ALARM BELL/ STROBE
	CEILING MOUNTED SMOKE DETECTOR
	CEILING MOUNTED HEAT DETECTOR
E, EX	DENOTES EXISTING TO REMAIN
RL	DENOTES EXISTING TO BE RELOCATED
WP	DENOTES WEATHERPROOF

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1	ISSUED FOR COORDINATION	04/22/20
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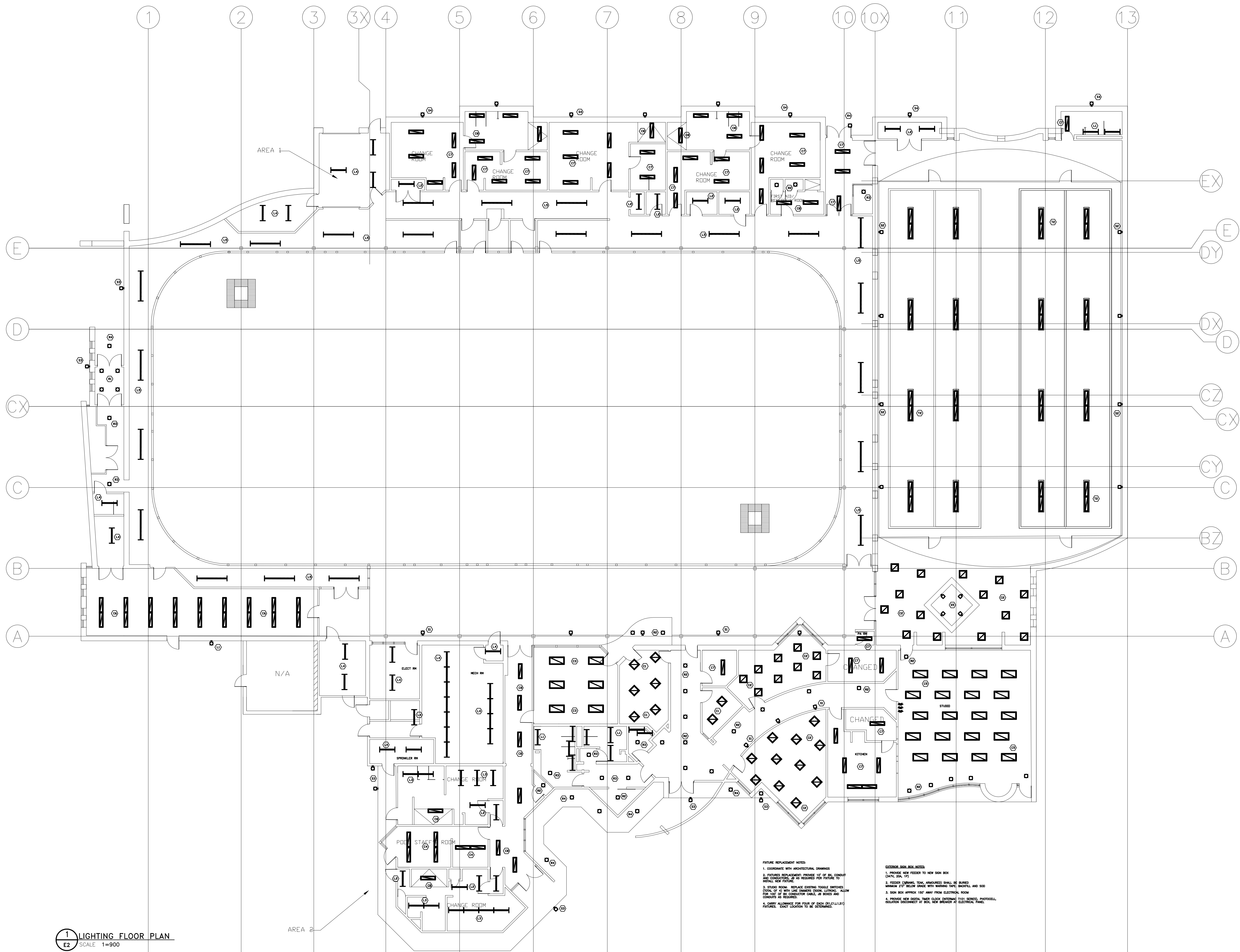
Project Name and Address

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Drawing Title

ELECTRICAL
SPECIFICATIONS AND DETAILS

DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	NTS
DRAWING NO:	E1



5	ISSUED FOR TENDER	03/05/21
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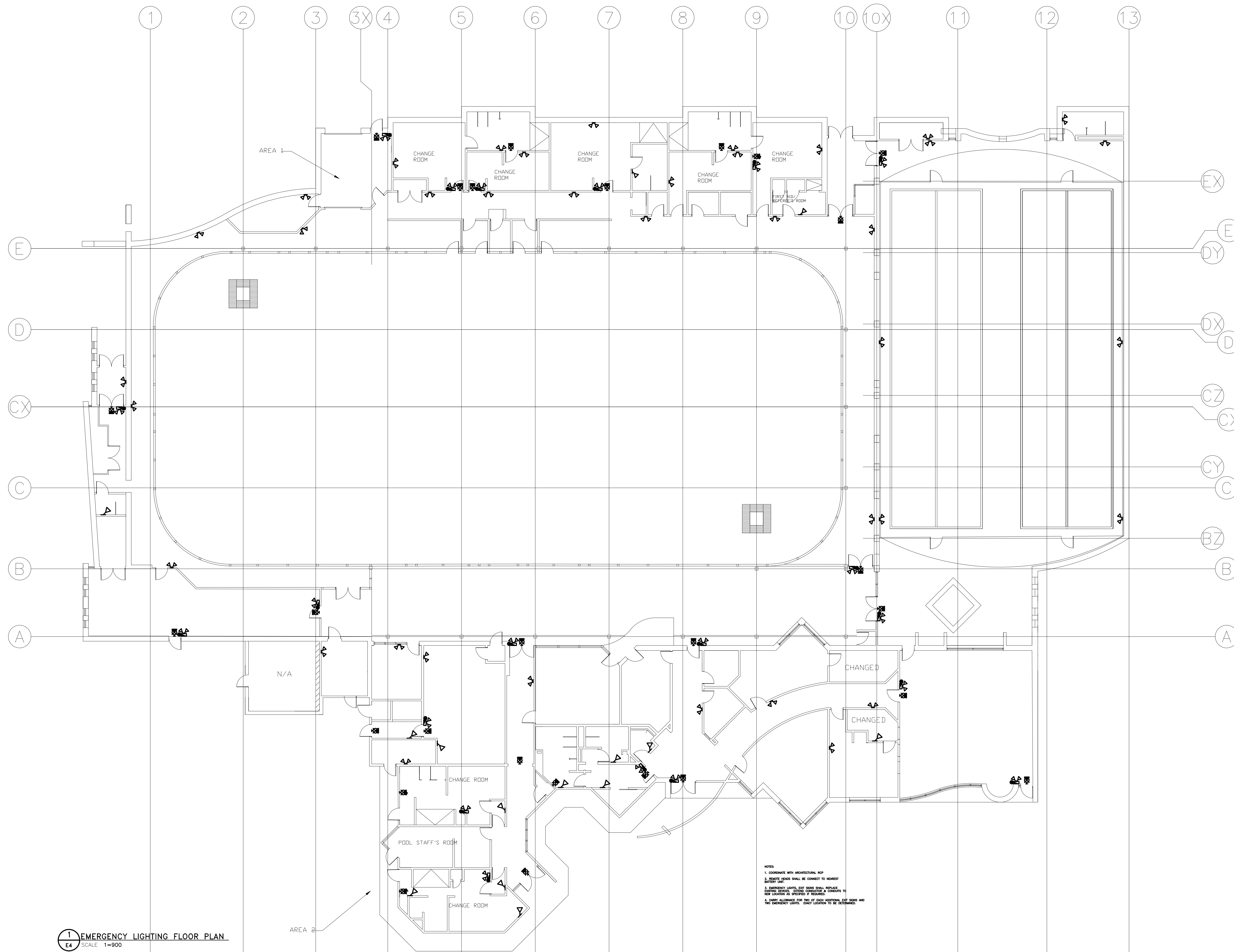
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Drawing Title
ELECTRICAL LIGHTING FLOOR PLAN

DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	E2

- FUTURE REPLACEMENT NOTES:**
- COORDINATE WITH ARCHITECTURAL DRAWINGS.
 - PROVIDE NEW FEEDER TO NEW SIGN BOX (24"X 36" X 12").
 - STRIP ROOM: REPLACE EXISTING TOGGLE SWITCHES (TOTAL OF 4) WITH LINE TRANSFER (SHOW LUTING), ALLOW FOR 100% OF BE CONDUCTOR CABLE, AS NOTED AND CONSULT AS REQUIRED.
 - CARRY ALLOWANCE FOR FOUR OF EACH (01,02,1A,1B,1C) FIXTURES. EXACT LOCATION TO BE DETERMINED.
- EXTERIOR SIGN BOX NOTES:**
- PROVIDE NEW FEEDER TO NEW SIGN BOX (24"X 36" X 12").
 - FEEDER (CABLING, TANK ANCHORS) SHALL BE BURIED MINIMUM 2" BELOW GRADE WITH MINIMUM 2" BACKFILL AND 500
 - NEW SIGN ANCHOR 150' AWAY FROM ELECTRICAL ROOM FOR 100% OF BE CONDUCTOR CABLE, AS NOTED AND CONSULT AS REQUIRED.
 - PROVIDE NEW SIGNAL TIMER CLOCK (OUTSIDE T101 SERIES), PHOTOCELL, SOLATION DISCONNECT AT SIGN NEW BREAKER AT ELECTRICAL PANEL.



1 EMERGENCY LIGHTING FLOOR PLAN
 E4 SCALE 1=900

NOTES:
 1. COORDINATE WITH ARCHITECTURAL RCP
 2. REMOTE HEADS SHALL BE CONNECT TO NEAREST ENTRY UNIT
 3. EMERGENCY LIGHTS, EXIT SIGNS SHALL REPLACE EXISTING SIGNS & SYMBOLS
 4. CARRY ALLOWANCE FOR TWO OF EACH ADDITIONAL EXIT SIGNS AND TWO EMERGENCY LIGHTS. EXACT LOCATION TO BE DETERMINED.

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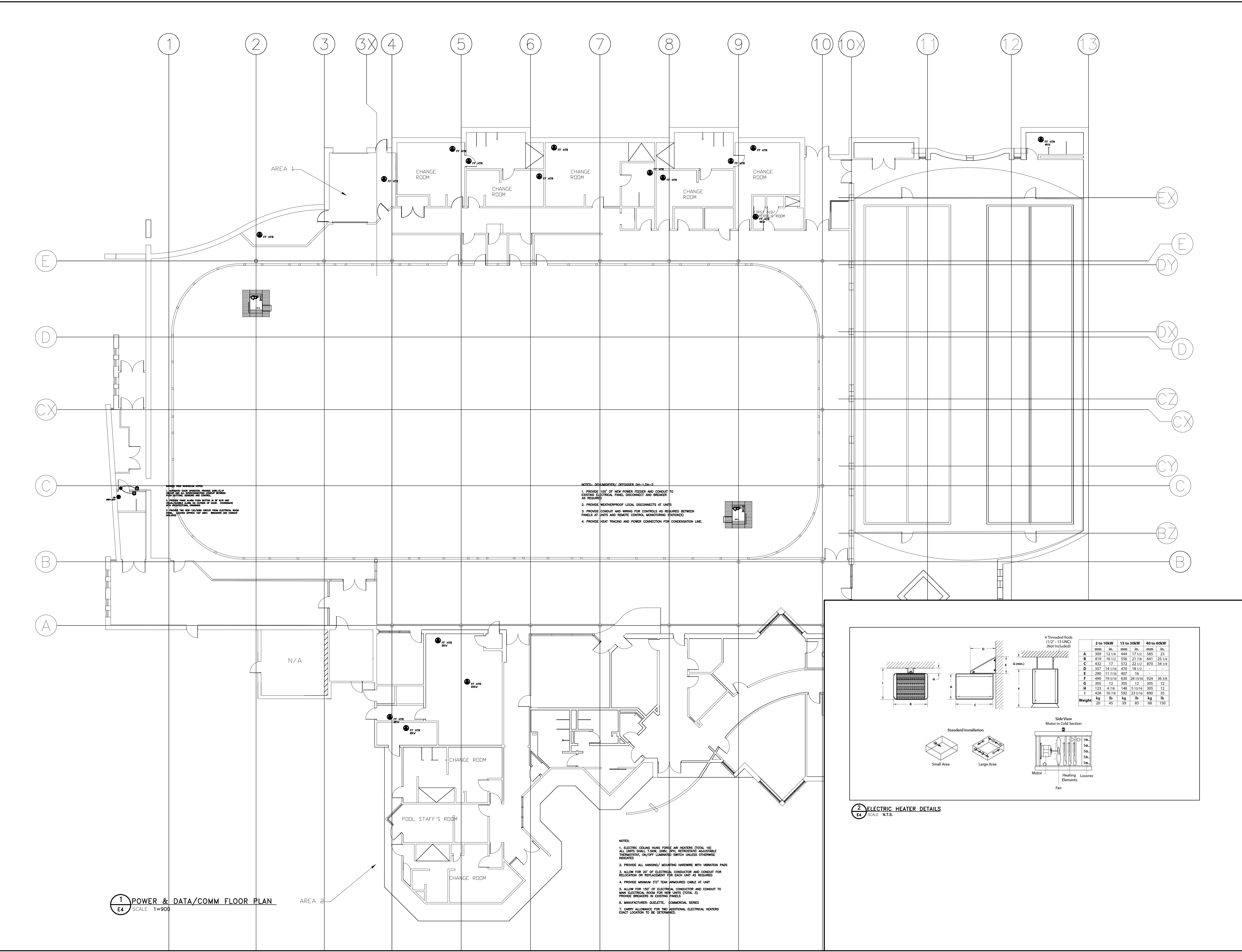
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Drawing Title
 ELECTRICAL
 EMERGENCY LIGHTING
 FLOOR PLAN

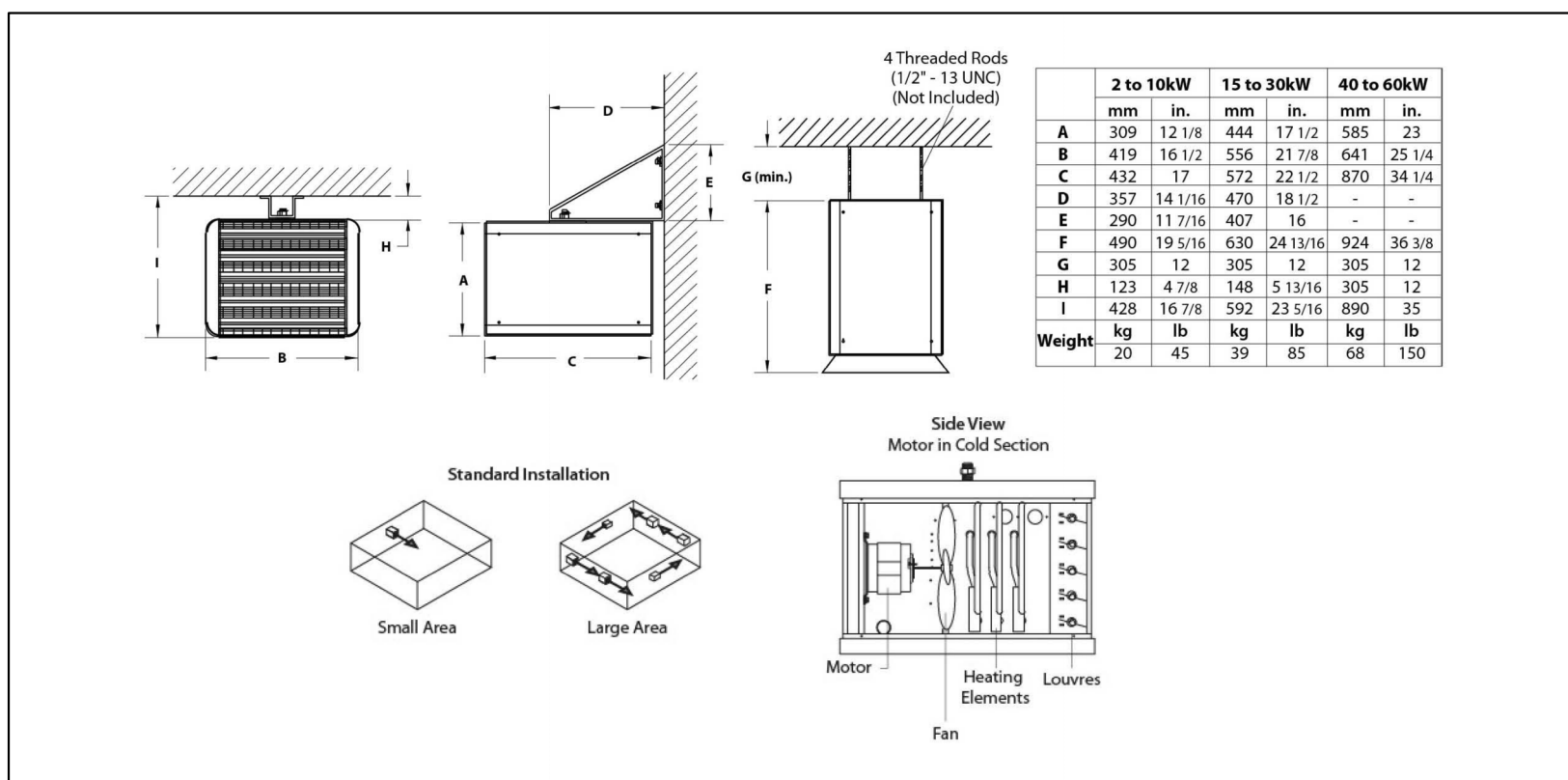
DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	E3



POWER FEEDER NOTES:
 1. PROVIDE NEW FEEDER, POWER CONDUIT, TRAY, AND ALL ACCESSORIES BETWEEN FEEDER AND DISCONNECT AND BREAKER AS REQUIRED.
 2. PROVIDE WEATHERPROOF LOCAL DISCONNECTS AT UNITS.
 3. PROVIDE CONDUIT AND WIRING FOR CONTROLS AS REQUIRED BETWEEN PANELS AT UNITS AND INDICATE CONTROL MONITORING STATIONS.
 4. PROVIDE HEAT TRACING AND POWER CONNECTION FOR CONDENSATION LINE.

HEATER NOTES:
 1. PROVIDE 100' OF NEW POWER FEEDER AND CONDUIT TO EXISTING ELECTRICAL PANEL DISCONNECT AND BREAKER AS REQUIRED.
 2. PROVIDE WEATHERPROOF LOCAL DISCONNECTS AT UNITS.
 3. PROVIDE CONDUIT AND WIRING FOR CONTROLS AS REQUIRED BETWEEN PANELS AT UNITS AND INDICATE CONTROL MONITORING STATIONS.
 4. PROVIDE HEAT TRACING AND POWER CONNECTION FOR CONDENSATION LINE.

1 POWER & DATA/COMM FLOOR PLAN
 E4 SCALE: 1=900



2 ELECTRIC HEATER DETAILS
 E4 SCALE: N.T.S.

NOTES:
 1. ELECTRIC CEILING HUNG FAN HEATERS (TOTAL 14). ALL UNITS SHALL 7.5kW, 500V, 3PH, RETROFITTING ADJUSTABLE THERMOSTAT, ON/OFF LUMINATED SWITCH UNLESS OTHERWISE INDICATED.
 2. PROVIDE ALL HANGING/MOUNTING HARDWARE WITH VIBRATION PADS.
 3. ALLOW FOR 50% OF ELECTRICAL CONDUIT AND CONDUIT FOR RELOCATION OR REPLACEMENT FOR EACH UNIT AS REQUIRED.
 4. PROVIDE MINIMUM 3/4" TEAR ARMOUR CABLE AT UNIT.
 5. ALLOW FOR 150' OF ELECTRICAL CONDUIT AND CONDUIT TO MAIN ELECTRICAL ROOM FOR NEW UNITS (TOTAL 3). PROVIDE BREAKERS IN EXISTING PANELS.
 6. MANUFACTURER: GALETTI, ESUMERICAL SERIES.
 7. CARRY ALLOWANCE FOR TWO ADDITIONAL ELECTRICAL HEATERS EXACT LOCATION TO BE DETERMINED.

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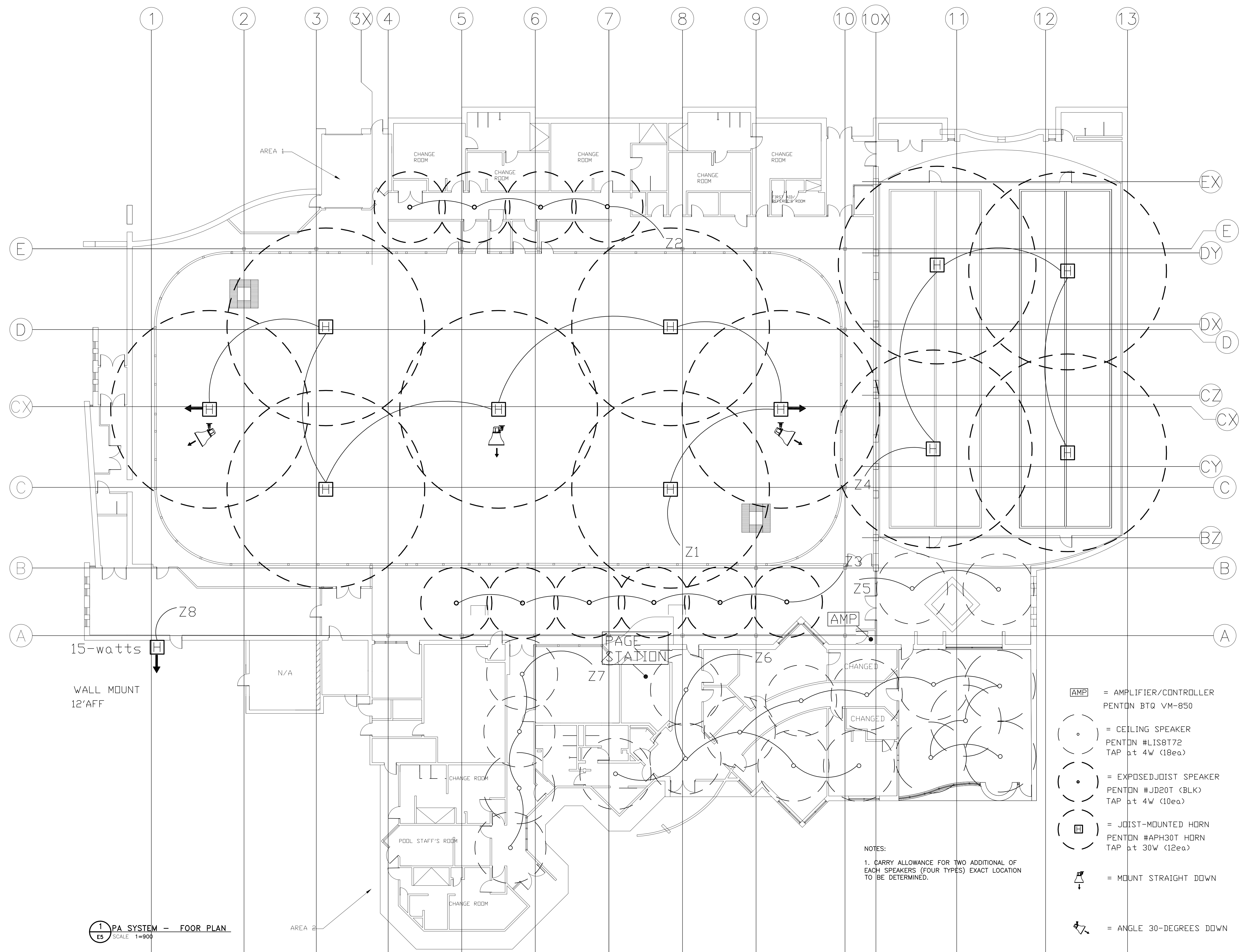
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Drawing Title
ELECTRICAL POWER & SYSTEMS FLOOR PLAN

DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	E4



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Drawing Title
 ELECTRICAL
 PA SYSTEMS
 FLOOR PLAN

DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	E5

- = AMPLIFIER/CONTROLLER
PENTON BTQ VM-850
- = CEILING SPEAKER
PENTON #LIS8172
TAP at 4W (18ea)
- = EXPOSED JOIST SPEAKER
PENTON #JD20T (BLK)
TAP at 4W (10ea)
- = JOIST-MOUNTED HORN
PENTON #APH30T HORN
TAP at 30W (12ea)
- = MOUNT STRAIGHT DOWN
- = ANGLE 30-DEGREES DOWN

NOTES:
 1. CARRY ALLOWANCE FOR TWO ADDITIONAL OF EACH SPEAKERS (FOUR TYPES) EXACT LOCATION TO BE DETERMINED.

1 PA SYSTEM – FLOOR PLAN
 ES SCALE 1=900

LIGHTING SCHEDULE - 120V									
CODE	SYMBOL	AREA	DESCRIPTION	MODEL #/HOUSING	TRIM	LITHONIA LIGHTING		LAMP	REMARKS
						MFR. / DIST.	SUPPLIER		
R1	☐	CORRIDOR	6" RECESSED POT LIGHT	LDN6 SERIES	-WHITE -POLISH REFLECTOR	LITHONIA LIGHTING	-	LED 4000K	-DRY WALL MTD KIT
R2	☐	CORRIDOR	8" RECESSED POT LIGHT	LDN8 SERIES	-WHITE -POLISH REFLECTOR	LITHONIA LIGHTING	-	LED 4000K	-T-BAR MTD KIT
R3	☐	W/R	10" RECESSED POT LIGHT	-	-WHITE -POLISH REFLECTOR	LITHONIA LIGHTING	-	LED 4000K	-DRY WALL MTD KIT
R4	☐	SOFFIT	10" RECESSED POT LIGHT EXTERIOR	-	-LEXAN LENS	LITHONIA LIGHTING	-	LED 4000K	-SUITABLE WATER AREA
C1	☑	OFFICE (COMMUNITY)	2'X2' SURFACE MOUNTED	2BLTX2 SERIES	-ADP CURVED SMOOTH LENS	LITHONIA LIGHTING	-	LED 4000K	-STANDARD EFFICIENCY
C2	☑	OFFICE	2'X2' RECESSED LAYIN T-BAR	2BLTB2 SERIES	-ADSM CURVED SMOOTH LENS	LITHONIA LIGHTING	-	LED 4000K	-STANDARD EFFICIENCY
C3	☑	OFFICE (MEETING)	2'X4' RECESSED DRYWALL	2BLTB4 SERIES	-ADSM CURVED SMOOTH LENS	LITHONIA LIGHTING	-	LED 4000K	-STANDARD EFFICIENCY
C4	☑	OFFICE (POOL)	2'X4' SURFACE MOUNTED	2BLTX4 SERIES	-ADSM CURVED SMOOTH LENS	LITHONIA LIGHTING	-	LED 4000K	-STANDARD EFFICIENCY -ADAPTER ROD SQ
C5	☑	DANCE STUDIO	2'X4' LAYIN, INDIRECT REFLECTOR T-BAR	2BLTB4 SERIES	-INDIRECT CURVED SMOOTH LENS	LITHONIA LIGHTING	-	LED 4000K	-STANDARD EFFICIENCY -DIMMABLE
C6	☑	DAY CARE	1'X4' LAY-IN T-BAR	BLTB4 SERIES	-ADSM CURVED SMOOTH LENS	LITHONIA LIGHTING	-	LED 4000K	-STANDARD EFFICIENCY
C7	☑	UTILITY	1'X4' WRAP AROUND LENS SURFACE MTD	BLWP SERIES	-ADSM CURVED SMOOTH LENS	LITHONIA LIGHTING	-	LED 4000K	-STANDARD EFFICIENCY
C8	☑	CHANGE ROOM (HOCKEY)	1'X4' WRAP AROUND LENS SURFACE MTD	BLWP SERIES	-POLYCARBONATE LENS -VANDALPROOF	LITHONIA LIGHTING	-	LED 4000K	-WATERPROOF -GASKET SEALS
L1	I	W/R COVE	4' STRIP LIGHT COVE MTD	MRSL SERIES	-EGG CRATE DROP CEILING	LITHONIA LIGHTING	-	LED 4000K	*DUAL LAMP EQV. 3500LM
L2	I	W/R CHANGE	4' STRIP LIGHTING SURFACE MTD, WIRE GUARD	SHOPLIGHT SERIES SHLP 48IN 80CRI	-	LITHONIA LIGHTING	-	LED 4000K	*DUAL LAMP EQV. 3200LM
L3	I	W/R CHANGE	4' STRIP LIGHTING SURFACE MTD, WIRE GUARD	MRSL SERIES	-EGG CRATE DROP CEILING	LITHONIA LIGHTING	-	LED 4000K	*SINGLE LAMP EQV. 3500LM
L4	I	W/R CHANGE	4' STRIP LIGHTING CHAIN HUNG	SHOPLIGHT SERIES SHLP 48IN 80CRI	-	LITHONIA LIGHTING	-	LED 4000K	*DUAL LAMP EQV. 3200LM
L5	I	RINK WALKWAY	DUAL 4' STRIP LIGHTING CHAIN HUNG, WIRE GUARD	MRSL SERIES	-EGG CRATE DROP CEILING	LITHONIA LIGHTING	-	LED 4000K	*DUAL LAMP EQV. 5000LM -GASKET SEALED -LOW TEMPERATURE

NOTE:

1. FIXTURE LOCATION AND MOUNTING DETAILS SHALL BE COORDINATE WITH ARCHITECTURAL DRAWINGS

LIGHTING SCHEDULE - 120V									
CODE	SYMBOL	AREA	DESCRIPTION	MODEL #/HOUSING	TRIM	LITHONIA LIGHTING		LAMP	REMARKS
						MFR. / DIST.	SUPPLIER		
S1	☐	CORRIDOR	WALL MOUNTED CYLINDER 4"	EVO4WC SERIES	-LEXAN LENS CLEAR -SEMI SPECULAR	GOHAM EVO STYLE	-	LED 4000K	-2500LM -FINISH TBD
S2	☐	BOWLING	WALL MOUNTED CYLINDER 4"	EVO4WC SERIES	-LEXAN LENS CLEAR -SEMI SPECULAR	GOHAM EVO STYLE	-	LED 4000K	-2500LM -FINISH TBD
S3	☐	EXTERIOR	SECURITY RECTANGULAR SURFACE - EXTERIOR	TWR1 SERIES	-TEMPER GLASS LENS	LITHONIA LIGHTING	-	LED 5000K	-VANDAL PROOF -GASKET SEALED
S4	☐	EXTERIOR	CIRCULAR 20" SURFACE - EXTERIOR	-	-TEMPER GLASS LENS	LITHONIA LIGHTING	-	LED 5000K	-GASKET SEALED
S5	☐	BOWLING	CIRCULAR 16" SURFACE	-	-POLYCARBONATE LENS	LITHONIA LIGHTING	-	LED 4000K	
T1		NOT USED							
T2	☐	BOWLING	DUAL 2'X4' CHAIN HUNG	I-BEAM IBE SERIES	-ACRYLIC LENS (ARC)	LITHONIA LIGHTING	-	LED 4000K (MED)	-WIRE GUARD -GASKET SEALED *DUAL LAMP EQV 30,000LM
T3		NOT USED							
-									
-									

PAGING AND MUSIC SYSTEM SPECIFICATIONS & EQUIPMENT LIST

- Penton #CCS6T-HK - the high-performance coaxial speakers with hanging kit (chain to loop around the bottom of the bar-joists adjustable length up to 10').
- Penton VM850 controller (add the small expander module to the VM850 and an amplifier to handle the extra wattage load)
- Penton SL8 8-zone expander unit to VM850
- Penton BPA2480 power amplifier (configure for bridge/mono mode for 960w)
- Penton LIS8T72 lay-in style ceiling speakers
- Penton JD20T-BLK molded coaxial speakers with yoke bracket - black
- Penton APh30T paging horn
- Penton CCS6T-HK coaxial ceiling speakers with 10' chain hanging kit
- Penton PPM-IT5 IP-based touchscreen paging microphone with 80Mb of internal audio storage for messaging and scheduler
- DPM-T5 Touchscreen, desk-top paging microphone - wires to VM850 unit, powered by VM850 unit

Options:

- Terra-FXO SIP/Analog Telco interface module
- PPM-IT5 Touchscreen, desk-top paging microphone - POE networked Mic - connects to VM850 via the local TCP/IP network


PAGING AND MUSIC SYSTEM SPECIFICATIONS

- INSTALLATION
 - 1.1.1. Install systems in accordance with CAN/ULC standard.
 - 1.1.2. Install central PA control unit and connect to ac power supply.
 - 1.1.3. Provide lockable enclosed rack system for central unit located in PA closet
 - 1.1.5. Provide PA station at the main office reception area
 - 1.1.6. Install speaker, horns as per floor plan.
 - 1.1.7 Provide all equipment specified. System shall complete and operation. Provide all accessory and/or auxiliary devices to make system: performance and operational.
 - 1.1.8. Adjust of speakers and horns shall be commission upon completion to ensure satisfactory quality and volume and levels. Relocate, adjust angle, adjust quantity and/or locations as required. Provide allowance for two speakers and one horn, if required.
 - 1.1.9. Splices are not permitted.
 - 1.1.10. Provide necessary raceways, cable and wiring to make interconnections to terminal boxes, equipment as required by equipment manufacturer. Provide two 15A, 120V duplex receptacle, dedicated circuits for main control panel. Feed from nearest receptacle electrical panel
 - 1.1.11. Ensure that wiring is free of opens, shorts or grounds, before system testing and handing over.
 - 1.1.12. Identify circuits and other related wiring at central control unit, and terminal boxes.
 - 1.1.13. Perform tests in accordance with Section 16010 - Electrical General Requirements and CAN/ULC

5	ISSUED FOR TENDER	03/05/21
4	ISSUED FOR PERMIT	02/09/21
3	ISSUED FOR COORDINATION	09/11/20
2	ISSUED FOR COORDINATION	08/28/20
1	ISSUED FOR COORDINATION	04/22/20
NO	ISSUES AND REVISIONS	DATE

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Drawing Title
ELECTRICAL LIGHTING SCHEDULES AND PA DETAILS

DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	NTS
DRAWING NO:	E6

PLUMBING FIXTURES SCHEDULE

TAG	DESCRIPTION
WC-1	WATER CLOSET WALL MOUNTED TANK AMERICAN STANDARD #335X SERIES 'AF' WALL MILLENNIUM (LOW CONSUMPTION) TANK TOILET, WALL HUNG, FLUSHMETER BOWL, TOP SPUD, EVERCLEAN CLOSED TOILET SEAT AND McQUIRE #H172BV TOILET SUPPLY, SINGLE LEVER FLUSH VALVE AND CONCEALED TANK IN CEILING.
L-1	LAVATORY BASIN WALL HUNG AMERICAN STANDARD #0954 SERIES 'MURRO' WALL HUNG UNIVERSAL LAVATORY BASIN, VITREOUS CHINA SHROUD, ACRYLIC KNEE CONTACT GUARD, REAR OVERFLOW FAUCETS #802-V-XK FAUCET, McQUIRE #155A BASIN DRAIN, McQUIRE #H170BV, McQUIRE #8872C-171 'P' TRAP, ATS SPEC #BF-1 'SANITARY SAFTI COVERS', PROVIDE TEMPERED WATER TO HOT SIDE OF THE FAUCET USING TEMPERED WATER MIXER.

THIS ABBREVIATED SPECIFICATION DESCRIBES SOME EQUIPMENT AND MATERIALS TO BE INCLUDED IN THE WORK. ONLY FIRST CLASS WORKMANSHIP, MATERIALS AND PRACTICES WILL BE ACCEPTED.

1. **GENERAL**
 - A. CONFORM TO ONTARIO BUILDING AND PLUMBING CODES AND AMENDING REGULATIONS
 - B. CONFORM TO NATURAL GAS AND PROPANE INSTALLATION CODE B149.1-05 AND AMENDING REGULATIONS
 - C. CONFORM TO ONTARIO FIRE CODE.
 - D. CONFORM TO LOCAL AND DISTRICT BYLAWS, REGULATIONS AND PUBLISHED ENGINEERING STANDARDS.
2. **SCOPE OF WORK**
THE SUPPLY AND INSTALLATION OF NEW EQUIPMENT AND PIPING AS SHOWN ON THE DRAWINGS AND AS NOTED.
- GENERAL**
 - A. COMPLY WITH GENERAL CONDITIONS.
 - B. PROVIDE SIX (6) COPIES OF SHOP DRAWINGS OF ALL MAJOR EQUIPMENT FOR APPROVAL.
 - C. SUBMIT MAINTENANCE AND INSTRUCTION MANUALS.
 - D. PROVIDE WRITTEN GUARANTEE FOR ALL NEW EQUIPMENT AND WORKMANSHIP FOR ONE YEAR FROM DATE OF ACCEPTANCE. DEFECTIVE PARTS SHALL BE REPAIRED OR REPLACED WITHOUT CHARGE.
3. **PIPE AND PIPE FITTINGS**
STORM DRAINAGE
 - A. **UNBURIED SECTIONS:** CAST IRON SOIL PIPE, 4000# (18KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR PVC-DWV WHERE PERMITTED BY CODE WITH REQUIRED FIRESTOPS.
 - B. **BURIED SECTIONS:** CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED, OR PSM POLY (VINYL CHLORIDE) (PVC) GRAVITY SEWER PIPE WITH DR OF 35 MAXIMUM. PIPE TO INCLUDE RUBBER RING GASKETS.

MECHANICAL SPECIFICATION PLUMBING

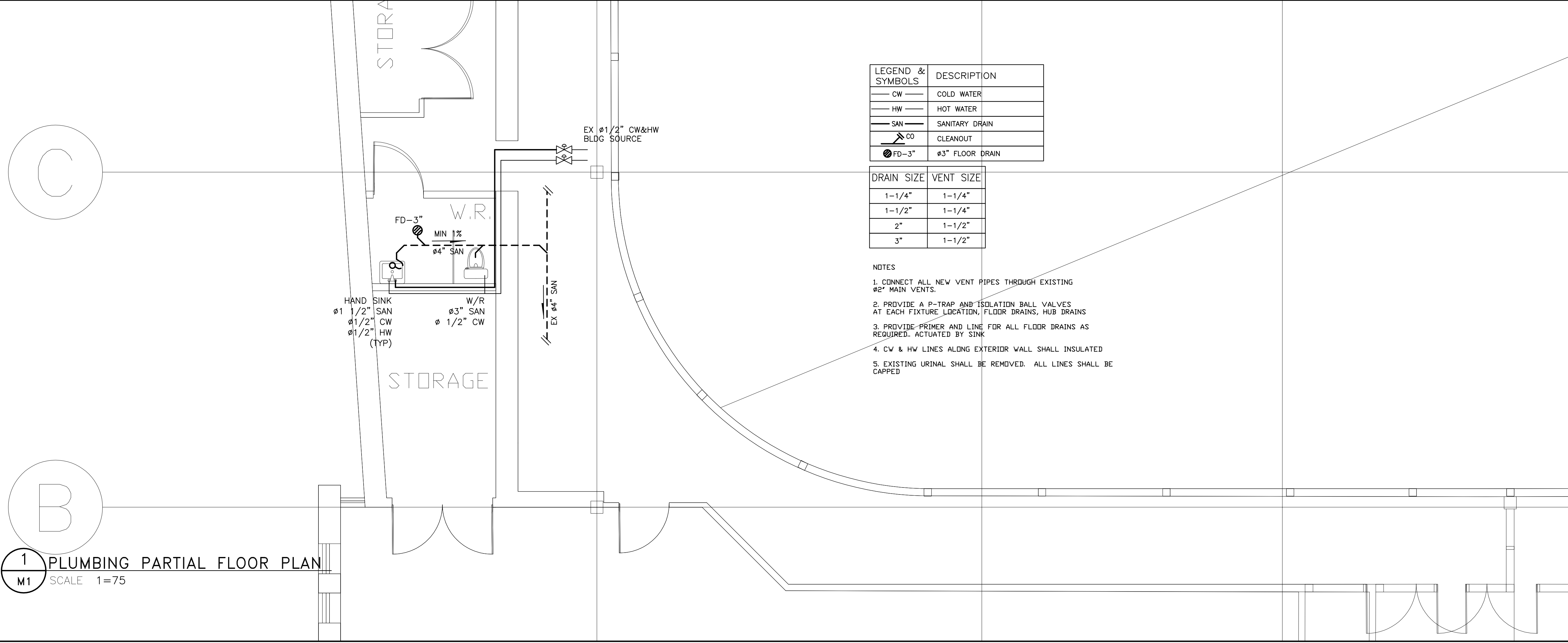
- SANITARY DRAINAGE**
- A. **UNBURIED SECTIONS:** 2" (50 MM) AND SMALLER DIA., HARD TEMPER COPPER TUBING TYPE DWV, SOLDERED WITH WROUGHT COPPER OR CAST BRASS DRAINAGE FITTINGS. 3" (75 MM) AND LARGER DIA., CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED OR PVC-DWV WHERE PERMITTED BY CODE WITH REQUIRED FIRESTOPS. BARRIER FREE W/R: TRAP SHALL BE OFF SET
 - B. **BURIED SECTIONS:** 2" (50 MM) AND SMALLER DIAMETER, HARD TEMPER COPPER PIPE TYPE L, WITH WROUGHT COPPER, COPPER ALLOY SOLDER JOINT, CSA APPROVED. 3" (75 MM) AND LARGER DIAMETER, CAST IRON SOIL PIPE 4000# (18 KN) CRUSH STRENGTH, NO-HUB MECHANICAL JOINT WITH NEOPRENE GASKETS AND STAINLESS STEEL PIPE CLAMPS WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND PLASTIC FITTINGS, CSA APPROVED OR PVC GRAVITY SEWER PIPE CAN/CSA APPROVED WITH DR OF 35 MAXIMUM. INCLUDE RUBBER RING GASKETS, SOLVENT CEMENT.
- VENI**
- A. **UNBURIED SECTIONS:** 2" (50 MM) AND SMALLER DIA., HARD TEMPER COPPER TUBE TYPE L DWV, SOLDERED WITH WROUGHT COPPER OR CAST BRASS DRAINAGE FITTINGS. 3" (75 MM) AND LARGER DIA., CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB - MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED.
 - B. **BURIED SECTIONS:** 2" (50 MM) AND SMALLER DIA., HARD TEMPER COPPER TUBE TYPE L, SOLDERED WITH WROUGHT COPPER OR CAST BRASS DRAINAGE FITTINGS. 3" (75 MM) AND LARGER DIA., CAST IRON SOIL PIPE, 4000# (18 KN) CRUSH STRENGTH, NO HUB MECHANICAL JOINT WITH CAST IRON DRAINAGE FITTINGS OR ABS-DWV PLASTIC PIPE AND FITTINGS, CSA APPROVED, OR PVC PIPE AND FITTINGS, PVC PRIMER AND PVC SOLVENT CEMENT.
- WATER**
- DOMESTIC WATER DISTRIBUTION:** HARD TEMPER COPPER TUBING, TYPE L, SOLDERED, WITH WROUGHT COPPER OR CAST BRASS PRESSURE FITTINGS, WITH INSULATED AND VAPOUR BARRIERED COLD WATER AND INSULATED ONLY HOT WATER WITH ALL SERVICE ASJ JACKETING. COMBUSTIBLE PIPING PERMITTED AS AN ALTERNATE WITH FLAME SPREAD RATING NOT GREATER THAN 25

- 4. PIPE INSULATION**
MINIMUM PIPE INSULATION SHALL CONFORM TO ASHRAE 90.1-2004 AND SHALL BE MOUNTED GLASS FIBRE INSULATION WITH VAPOUR BARRIER JACKET, EQUAL TO FIBREGLASS OF CANADA INC.; STANDARD TEMP PIPE INSULATION WITH ASJ; MANSON INSULATION INC. ALLEY-K WITH APT; KNAUF FIBREGLASS OR ROXUL-SEITZ. INSULATE NEW PIPING WITH RIGID PIPE INSULATION AS FOLLOW:
- | SERVICE | THICKNESS |
|---|-----------|
| HORIZONTAL STORM, RAINWATER LEADERS AND SANITARY DRAINAGE | 1" |
| CHWS, CHWR, HWR, HWS, CWR, CWS | 1 1/2" |
| CONDENSATE DRAINS (COLD) | 0.5" |
| DOMESTIC COLD WATER | 0.5" |
| DOMESTIC HOT WATER | 0.5" |
- 6. PIPING SPECIALTIES**
- ISOLATION VALVES - DOMESTIC WATER:** 2" (50 MM) AND SMALLER: FORGED BRONZE, 600 PSI (4 MPA) WOG BALL VALVE, SOLDER ENDS, AND TEFLON SEATS. CRANE NO. 9322, JENKINS, RED & WHITE.
- 7. PLUMBING SPECIALTIES**
- A. **CLEANOUTS:** CLEANOUTS IN EXPOSED AREAS AND ACCESSIBLE PIPE CHASES SHALL BE LACQUERED CAST IRON CLEANOUT WITH NEOPRENE GASKET AND PLUG. ANCON CO-200 SERIES.
 - B. **FLOOR DRAINS:** FLOOR DRAINS SHALL BE LACQUERED CAST IRON BODY WITH WEEP HOLES AND STRAINER. ANCON FD-200 SERIES.
 - C. **FUNNEL FLOOR DRAIN:** COMPLETE WITH 4"x 9" (102 x 228 MM) OVAL FUNNEL STRAINER, ANCHORING FLANGE AND STRAINER. ANCON FD-200-EG-1.
 - D. **TRAP SEAL PRIMER:** TRAP SEAL PRIMERS SHALL BE AUTOMATIC, CAST BRASS BODY, RENEWABLE DISC AND SEAT RINGS, VACUUM BREAKER, AND REMOVABLE COVER. ANCON MS-810.
 - E. **BACKFLOW PREVENTER:** BRONZE BODY, STAINLESS STEEL WORKING PARTS, INTEGRAL STRAINER AND DURABLE RUBBER DISCS, MAXIMUM EMERGENCY BACKFLOW TEMPERATURE 250°F (120°C) AND MAXIMUM PRESSURE 175 PSI (1.2 MPA), WATTS 9D SERIES.
 - F. **ACCESS DOOR:** MIN. 12 GA. (2.6 MM) STEEL, PRIME COATED, WITH HEAVY DUTY FULLY CONCEALED FRAME AND HINGE, POSITIVE LOCKING DEVICE. DOORS IN FIRE SEPARATIONS OR FIRE RATED ASSEMBLIES SHALL BE UL LABELLED, CONTOUR INDICATED, ACUDOR OR EQUIVALENT CEB, LE HAGE.

4	ISSUED FOR TENDER	03/05/21
3	ISSUED FOR PERMIT	02/09/21
2	ISSUED FOR COORDINATION	09/11/20
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NO	ISSUES AND REVISIONS	DATE

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2650 FINCH AVE. W.
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Drawing Title
MECHANICAL PLUMBING PARTIAL FLOOR PLAN AND SPECIFICATIONS

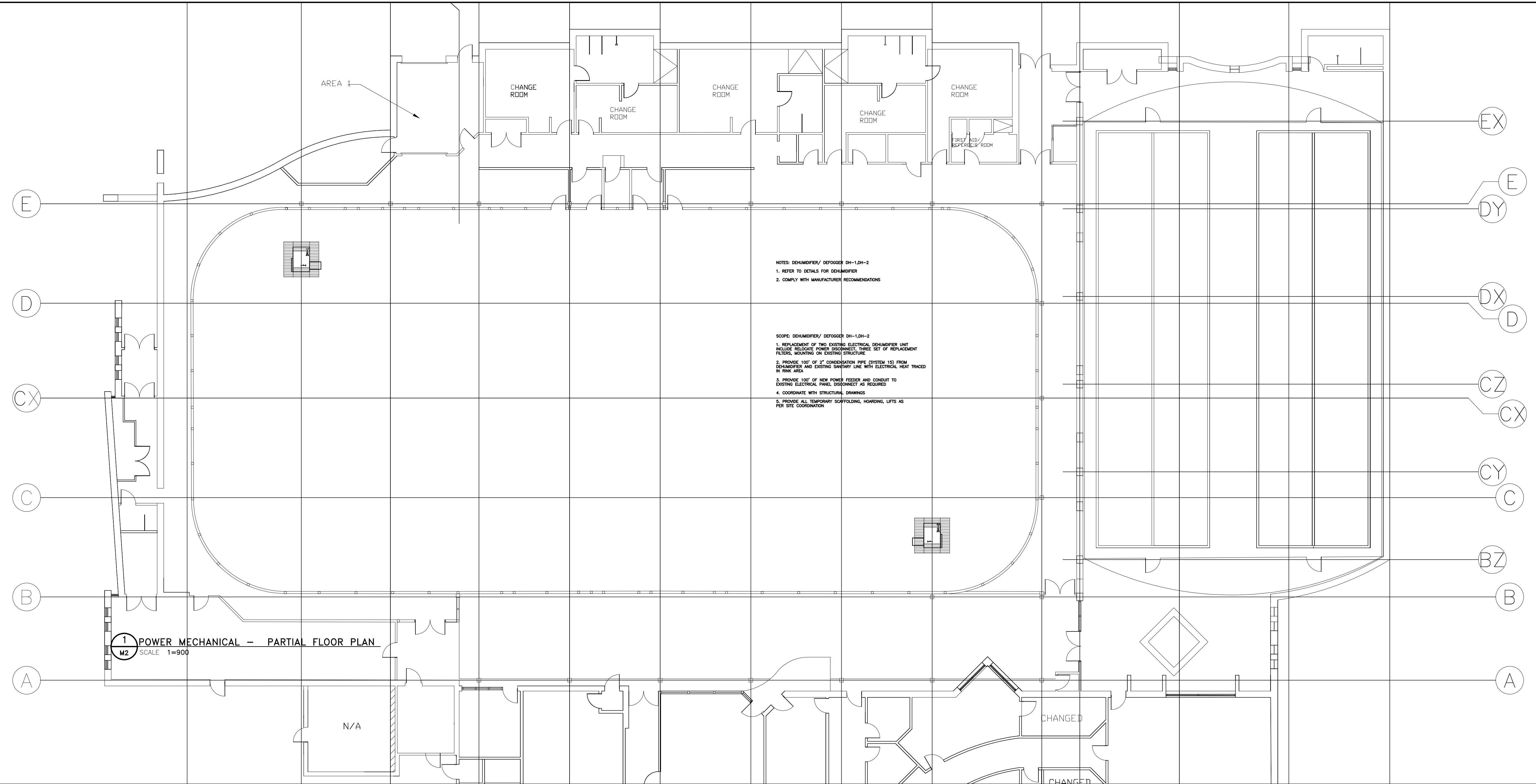
DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M1

1 PLUMBING PARTIAL FLOOR PLAN
M1 SCALE 1=75

4	ISSUED FOR TENDER	03/05/21
3	ISSUED FOR PERMIT	02/09/21
2	ISSUED FOR COORDINATION	09/11/20
1	ISSUED FOR COORDINATION	08/28/20
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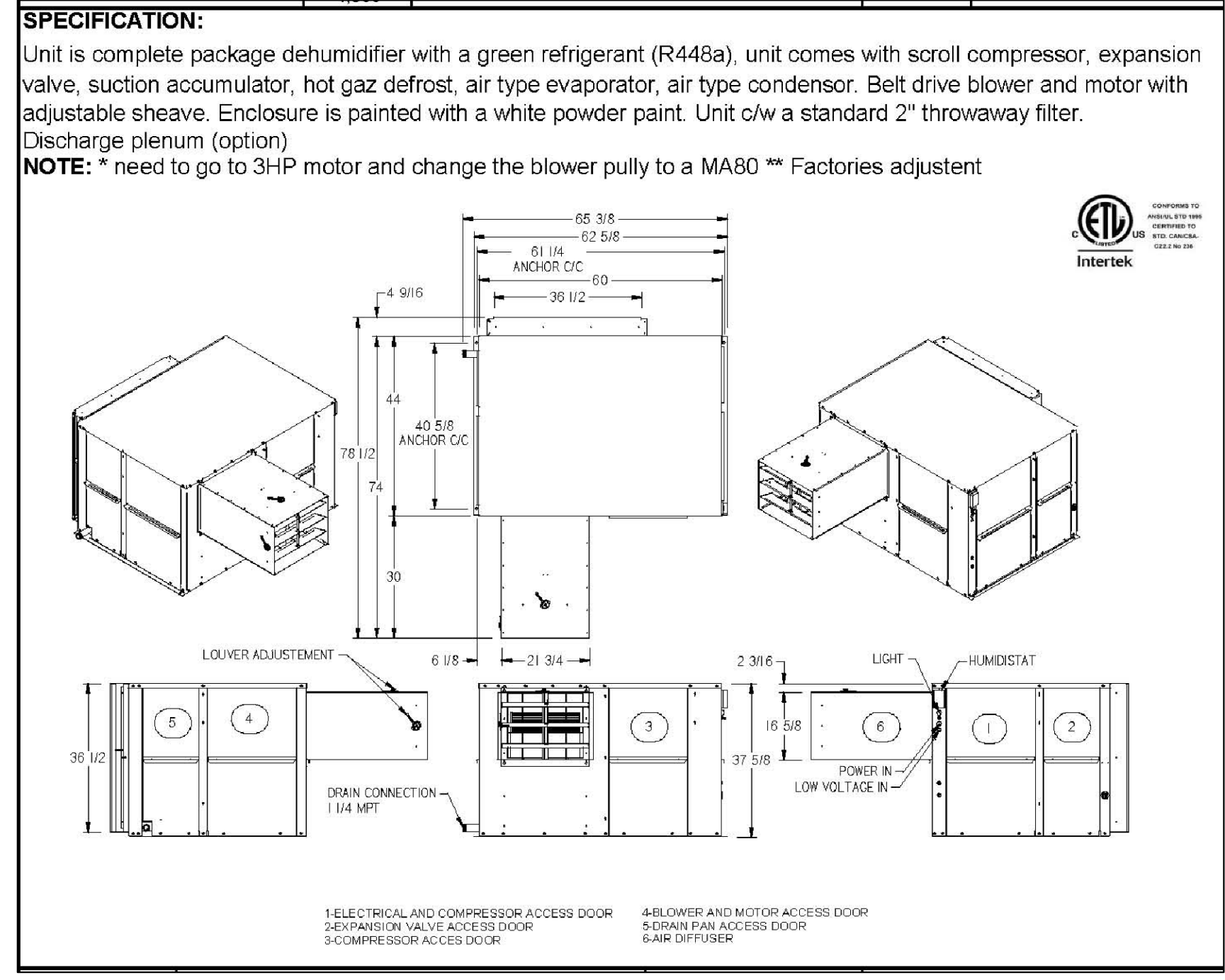
NOTES: DEHUMIDIFIER/ DEFOGGER DH-1,DH-2
 1. REFER TO DETAILS FOR DEHUMIDIFIER
 2. COMPLY WITH MANUFACTURER RECOMMENDATIONS

SCOPE: DEHUMIDIFIER/ DEFOGGER DH-1,DH-2
 1. REPLACEMENT OF TWO EXISTING ELECTRICAL DEHUMIDIFIER UNIT INCLUDE RELOCATE POWER DISCONNECT, THREE SET OF REPLACEMENT FILTERS, MOUNTING ON EXISTING STRUCTURE
 2. PROVIDE 100' OF 2" CONDENSATION PIPE (SYSTEM IS) FROM DEHUMIDIFIER AND EXISTING SANITARY LINE WITH ELECTRICAL HEAT TRACED IN RINK AREA
 3. PROVIDE 100' OF NEW POWER FEEDER AND CONDUIT TO EXISTING ELECTRICAL PANEL DISCONNECT AS REQUIRED
 4. COORDINATE WITH STRUCTURAL DRAWINGS
 5. PROVIDE ALL TEMPORARY SCOFFLING, HOARDING, LIFTS AS PER SITE COORDINATION

1 POWER MECHANICAL - PARTIAL FLOOR PLAN
 M2 SCALE: 1=900

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- SPECIFICATIONS:**
- IRD/IRH SERIES ICE RINK DEHUMIDIFIER
 -ETL, CSA LISTED, COMPLY WITH BOCA CODE M-401 & M-402.1
 -FACTORY TESTED AND ASSEMBLED
 -INCLUDE COMPRESSOR, EVAPORATOR, REHEAT COIL, HE SUPPLY FAN, DDC CONTROLS
 - HORIZONTAL MODEL WITH ADJUSTABLE BLADES FOR AIR FLOW
 - HOUSING: STEEL, 16 AWG, G90 GALVANIZED, ZINC PRIMER WITH SILICON POLYMER TOP COAT, SUITABLE FOR WET HIGH HUMIDITY ENVIRONMENT.
 ALL EXPOSED PARTS SHALL BE COATED AND/OR PROTECTED
 - EVAPORATOR COIL: 3/8" OD SEAMLESS COPPER TUBING, FACTORY PRESSURE TESTED
 - AIR REHEAT COIL: 3/8" OD SEAMLESS COPPER TUBING, FACTORY PRESSURE TESTED, ALUMINUM CORRUGATED FINS, GALVANIZED ENCLOSURE
 - REFRIGERANT: R449a, LOW AND HIGH CUT OFF SWITCH LEVELS
 - COMPRESSOR: RUBBER ISOLATION PAD, HIGH EFFICIENCY UNIT
 - ELECTRICAL ISOLATION DISCONNECT IN WEATHER PROOF ENCLOSURE
 - PIPING: MEET BOCA CODE P-308.2 & M-702.0 STANDARD, TYPE L, VINYL COATED CORROSION PREVENTION
 - CONDENSING LINE: ELECTRIC HEAT TRACED, MINIMUM 2' SLOPE
 - FAN: CENTRIFUGAL TYPE, BALANCED THREE BLADE, IE4 HIGH EFFICIENCY UNIT
 - FILTER: 2" MERV 8 COMMERCIAL GRADE
 - CONTROLLER: BACnet MSTP COMPATIBLE, SOLID STATE PROGRAMMABLE, LED DISPLAY, ALARM FAULT, LOW AND HIGH WARNING. REMOTE CONSOLE AT MAINTANCE OFFICE. VICONICS MODEL: VT652A1000B BACnet MSTP STAT
 - MANUAL AND AS-BUILT PROVIDED UPON COMPLETION
 - WARRANTY: MINIMUM 1 YEAR UPON START UP.

- NOTES:**
- ICE RINK DEHUMIDIFIER/DEFOGGER (TWO)
 -ELECTRICAL: 575V 3PH, 20A
 -SET 60% RELATIVITY HUMIDITY
 -MANUFACTURER: THERMOPLUS AIR, MODEL IRD-050F
 -REFRIGERANT (R448a)
 -4,500 CFM, 10 TONS
 -FILTER: DUAL 20"X20"
 -WEIGHT: 454 LBS INSTALLED
 - CONNECT TO EXISTING BUILDING MANAGEMENT SYSTEM (BMS) AND REMOTE DDC CONTROL PANEL IN STAFF AREA

2 DEHUMIDIFIER DETAILS AND SPECIFICATIONS
 M2 SCALE: N.T.S.

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Project Name and Address
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TORONTO, ONTARIO

Drawing Title
 MECHANICAL
 DEHUMIDIFIER SYSTEMS
 PARTIAL FLOOR PLAN
 AND DETAILS

DRAWN BY	HL
DESIGNED BY	HL
APPROVED BY	JK
SCALE	AS NOTED
DRAWING NO:	M2